PFAS via Draft Method 1633

Semivolatiles QC Summary

Surrogate Recovery Summary
Form 2
Semivolatiles

Client: P. W. Grosser
Project Name: ROANOKE SAND + GRAVEL

Lab Number: L2450786
Project Number: BSD1504
Matrix: Water

CLIENT ID (LAB SAMPLE NO.)	S1 ()	S2 ()	S3 ()	S4 ()	S5 ()	S6 ()	S7 ()
MW-6A (L2450786-03)	63	67	60	80	58	58	56
MW-8A (L2450786-07)	87	89	89	247	84	83	83
MW-10A (L2450786-09)	78	80	78	118	74	73	73
FIELD BLANK (L2450786-11)	42	46	40*	41	40	39	36*
MW-3A (L2450786-13)	80	87	77	102	76	77	74
WG1973357-1BLANK	82	91	82	93	80	77	76
WG1973357-2LCS	50	54	49	53	44	46	46
WG1973357-3LCS	66	77	57	62	60	66	56
MW-6AMS	51	52	50	59	45	45	46
MW-6AMSD	84	88	84	99	79	78	77

QC LIMITS

(41-123) S1 = PERFLUORO[13C4]BUTANOIC ACID (MPFBA)
(29-123) S2 = PERFLUORO[13C5]PENTANOIC ACID (M5PFPEA)
(41-125) S3 = PERFLUORO[2,3,4-13C3]BUTANESULFONIC ACID (M3PFBS)
(10-290) S4 = 1H,1H,2H,2H-PERFLUORO[1,2-13C2]HEXANESULFONIC ACID (M2-4:2FTS)
(40-121) S5 = PERFLUORO[1,2,3,4,6-13C5]HEXANOIC ACID (M5PFHXA)
(27-156) S6 = PERFLUORO[1,2,3,4-13C4]HEPTANOIC ACID (M4PFHPA)
(46-115) S7 = PERFLUORO[1,2,3-13C3]HEXANESULFONIC ACID (M3PFHXS)

*** Values outside of QC limits**

Surrogate Recovery Summary
Form 2
Semivolatiles

Client: P. W. Grosser
Project Name: ROANOKE SAND + GRAVEL

Lab Number: L2450786
Project Number: BSD1504
Matrix: Water

CLIENT ID (LAB SAMPLE NO.)	S8 ()	S9 ()	S10 ()	S11 ()	S12 ()	S13 ()	S14 ()
MW-6A (L2450786-03)	61	59	58	61	64	63	33
MW-8A (L2450786-07)	91	134	81	79	79	183	58
MW-10A (L2450786-09)	75	76	69	68	76	83	38
FIELD BLANK (L2450786-11)	40	35	38	33	38	39	23
MW-3A (L2450786-13)	78	77	76	70	76	78	39
WG1973357-1BLANK	86	80	71	71	71	76	35
WG1973357-2LCS	51	46	46	41	47	45	22
WG1973357-3LCS	67	59	59	56	64	59	30
MW-6AMS	48	45	44	45	47	43	24
MW-6AMSD	82	80	74	70	81	78	41

QC LIMITS

(39-121) S8 = PERFLUORO[13C8]OCTANOIC ACID (M8PFOA)
(10-261) S9 = 1H,1H,2H,2H-PERFLUORO[1,2-13C2]OCTANESULFONIC ACID (M2-6:2FTS)
(38-114) S10 = PERFLUORO[13C9]NONANOIC ACID (M9PFNA)
(32-114) S11 = PERFLUORO[13C8]OCTANESULFONIC ACID (M8PFOS)
(28-115) S12 = PERFLUORO[1,2,3,4,5,6-13C6]DECANOIC ACID (M6PFDA)
(10-213) S13 = 1H,1H,2H,2H-PERFLUORO[1,2-13C2]DECANESULFONIC ACID (M2-8:2FTS)
(10-172) S14 = N-DEUTERIOMETHYLPERFLUORO-1-OCTANESULFONAMIDOACETIC ACID (D3-NMEFOSAA)

*** Values outside of QC limits**

Surrogate Recovery Summary
Form 2
Semivolatiles

Client: P. W. Grosser
Project Name: ROANOKE SAND + GRAVEL

Lab Number: L2450786
Project Number: BSD1504
Matrix: Water

CLIENT ID (LAB SAMPLE NO.)	S15 ()	S16 ()	S17 ()	S18 ()	S19 ()	S20 ()	S21 ()
MW-6A (L2450786-03)	66	64	58	82	58	59	55
MW-8A (L2450786-07)	83	87	94	104	67	82	73
MW-10A (L2450786-09)	75	70	66	92	63	72	62
FIELD BLANK (L2450786-11)	45	50	41	58	39	42	38
MW-3A (L2450786-13)	74	72	66	89	62	79	63
WG1973357-1BLANK	71	75	66	88	59	79	61
WG1973357-2LCS	50	45	40	61	41	47	33
WG1973357-3LCS	66	74	54	89	59	71	64
MW-6AMS	48	46	46	62	41	45	36
MW-6AMSD	75	72	66	97	69	78	68

QC LIMITS

(16-123) S15 = PERFLUORO[1,2,3,4,5,6,7-13C7]UNDECANOIC ACID (M7-PFUDA)
(14-108) S16 = PERFLUORO[13C8]OCTANESULFONAMIDE (M8FOSA)
(10-150) S17 = N-DEUTERIOETHYLPERFLUORO-1-OCTANESULFONAMIDOACETIC ACID (D5-NETFOSAA)
(10-126) S18 = PERFLUORO[1,2-13C2]DODECANOIC ACID (MPFDOA)
(10-145) S19 = PERFLUORO[1,2-13C2]TETRADECANOIC ACID (M2PFTEDA)
(35-142) S20 = 2,3,3,3-TETRAFLUORO-2-[1,1,2,2,3,3,3-HEPTAFLUOROPROPOXY]-13C3-PROPANOIC ACID (M3HFPO-DA)
(11-94) S21 = N-METHYL-D3-PERFLUORO-1-OCTANESULFONAMIDE (D3-NMEFOSA)

*** Values outside of QC limits**

Surrogate Recovery Summary
Form 2
Semivolatiles

Client: P. W. Grosser
Project Name: ROANOKE SAND + GRAVEL

Lab Number: L2450786
Project Number: BSD1504
Matrix: Water

CLIENT ID (LAB SAMPLE NO.)	S22 ()	S23 ()	S24 ()	S25 ()	S26 ()	S27 ()	S28 ()	TOT OUT
MW-6A (L2450786-03)	55	69	72	--	--	--	--	0
MW-8A (L2450786-07)	73	87	90	--	--	--	--	0
MW-10A (L2450786-09)	64	73	75	--	--	--	--	0
FIELD BLANK (L2450786-11)	40	50	52	--	--	--	--	2
MW-3A (L2450786-13)	70	73	77	--	--	--	--	0
WG1973357-1BLANK	61	75	79	--	--	--	--	0
WG1973357-2LCS	38	48	50	--	--	--	--	0
WG1973357-3LCS	62	81	78	--	--	--	--	0
MW-6AMS	38	46	49	--	--	--	--	0
MW-6AMSD	70	74	77	--	--	--	--	0

QC LIMITS

(11-97) **S22 = N-ETHYL-D5-PERFLUORO-1-OCTANESULFONAMIDE (D5-NETFOSA)**

(10-137) **S23 = 2-(N-METHYL-D3-PERFLUORO-1-OCTANESULFONAMIDO)ETHAN-D4-OL (D7-NMEFOSE)**

(10-130) **S24 = 2-(N-ETHYL-D5-PERFLUORO-1-OCTANESULFONAMIDO)ETHAN-D4-OL (D9-NETFOSE)**

*** Values outside of QC limits**

FORM II A2-1633-DRAFT (Continued)

Laboratory Control Sample (Low Level) Summary
Form 3
Semivolatiles

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Matrix (Level)	: WATER ()		
LCS Sample ID	: WG1973357-2 **Analysis Date** : 09/19/24 08:07	**File ID**	: SCI05_240919_14.wiff
LCSD Sample ID	: **Analysis Date** :	**File ID**	:

	Laboratory Control Sample (LOW)			Laboratory Control Duplicate (LOW)					
Parameter	**True (ng/l)**	**Found (ng/l)**	**%R**	**True (ng/l)**	**Found (ng/l)**	**%R**	**RPD**	**Recovery Limits**	**RPD Limit**
Perfluorobutanoic Acid (PFBA)	12.8	14.2	111				-	40-150	30
Perfluoropentanoic Acid (PFPeA)	6.4	7.61	119				-	40-150	30
Perfluorobutanesulfonic Acid (PFBS)	2.84	3.00	106				-	40-150	30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	12	11.3	94				-	40-150	30
Perfluorohexanoic Acid (PFHxA)	3.2	3.94	123				-	40-150	30
Perfluoropentanesulfonic Acid (PFPeS)	3.01	3.35	111				-	40-150	30
Perfluoroheptanoic Acid (PFHpA)	3.2	3.74	117				-	40-150	30
Perfluorohexanesulfonic Acid (PFHxS)	2.92	3.49	119				-	40-150	30
Perfluorooctanoic Acid (PFOA)	3.2	3.18	99				-	40-150	30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	12.2	14.5	119				-	40-150	30
Perfluoroheptanesulfonic Acid (PFHpS)	3.05	3.27	107				-	40-150	30
Perfluorononanoic Acid (PFNA)	3.2	3.53	110				-	40-150	30
Perfluorooctanesulfonic Acid	2.97	3.34	112				-	40-150	30

Laboratory Control Sample (Low Level) Summary
Form 3
Semivolatiles

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Matrix (Level)	: WATER ()		
LCS Sample ID	: WG1973357-2 **Analysis Date** : 09/19/24 08:07	**File ID**	: SCI05_240919_14.wiff
LCSD Sample ID	: **Analysis Date** :	**File ID**	:

	Laboratory Control Sample (LOW)			Laboratory Control Duplicate (LOW)					
Parameter	**True (ng/l)**	**Found (ng/l)**	**%R**	**True (ng/l)**	**Found (ng/l)**	**%R**	**RPD**	**Recovery Limits**	**RPD Limit**
(PFOS)									
Perfluorodecanoic Acid (PFDA)	3.2	4.06	127				-	40-150	30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	12.3	16.2	132				-	40-150	30
Perfluorononanesulfonic Acid (PFNS)	3.08	3.62	118				-	40-150	30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	3.2	4.09	128				-	40-150	30
Perfluoroundecanoic Acid (PFUnA)	3.2	3.66	114				-	40-150	30
Perfluorodecanesulfonic Acid (PFDS)	3.09	3.14	102				-	40-150	30
Perfluorooctanesulfonamide (PFOSA)	3.2	3.47	108				-	40-150	30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	3.2	3.82	120				-	40-150	30
Perfluorododecanoic Acid (PFDoA)	3.2	2.82	88				-	40-150	30
Perfluorotridecanoic Acid (PFTrDA)	3.2	2.93	92				-	40-150	30

Laboratory Control Sample (Low Level) Summary
Form 3
Semivolatiles

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Matrix (Level)	: WATER ()		
LCS Sample ID	: WG1973357-2 **Analysis Date** : 09/19/24 08:07	**File ID**	: SCI05_240919_14.wiff
LCSD Sample ID	: **Analysis Date** :	**File ID**	:

	Laboratory Control Sample (LOW)			Laboratory Control Duplicate (LOW)					
Parameter	**True (ng/l)**	**Found (ng/l)**	**%R**	**True (ng/l)**	**Found (ng/l)**	**%R**	**RPD**	**Recovery Limits**	**RPD Limit**
Perfluorotetradecanoic Acid (PFTeDA)	3.2	3.74	117				-	40-150	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	12.8	14.9	116				-	40-150	30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	12.1	13.8	114				-	40-150	30
Perfluorododecanesulfonic Acid (PFDoS)	3.1	3.30	106				-	40-150	30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	12	13.7	115				-	40-150	30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	12.1	13.0	108				-	40-150	30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	3.2	4.01	125				-	40-150	30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	3.2	3.46	108				-	40-150	30
N-Methyl Perfluorooctanesulfonami	32	34.6	108				-	40-150	30

Laboratory Control Sample (Low Level) Summary
Form 3
Semivolatiles

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Matrix (Level)	: WATER ()		
LCS Sample ID	: WG1973357-2 **Analysis Date** : 09/19/24 08:07	**File ID**	: SCI05_240919_14.wiff
LCSD Sample ID	: **Analysis Date** :	**File ID**	:

	Laboratory Control Sample (LOW)			Laboratory Control Duplicate (LOW)					
Parameter	**True (ng/l)**	**Found (ng/l)**	**%R**	**True (ng/l)**	**Found (ng/l)**	**%R**	**RPD**	**Recovery Limits**	**RPD Limit**
do Ethanol (NMeFOSE)									
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	32	35.2	110				-	40-150	30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	6.4	7.43	116				-	40-150	30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	6.4	6.73	105				-	40-150	30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	5.7	6.72	118				-	40-150	30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	6.4	8.41	131				-	40-150	30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	16	15.4	96				-	40-150	30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	80	93.8	117				-	40-150	30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	80	44.2	55				-	40-150	30

Laboratory Control Sample Summary
Form 3
Semivolatiles

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Matrix (Level)	: WATER ()		
LCS Sample ID	: WG1973357-3	**Analysis Date** : 09/19/24 08:20	**File ID** : SCI05_240919_15.wiff
LCSD Sample ID	:	**Analysis Date** :	**File ID** :

	Laboratory Control Sample			Laboratory Control Duplicate					
Parameter	**True (ng/l)**	**Found (ng/l)**	**%R**	**True (ng/l)**	**Found (ng/l)**	**%R**	**RPD**	**Recovery Limits**	**RPD Limit**
Perfluorobutanoic Acid (PFBA)	80	94.4	118				-	40-150	30
Perfluoropentanoic Acid (PFPeA)	40	49.4	124				-	40-150	30
Perfluorobutanesulfonic Acid (PFBS)	17.7	20.1	113				-	40-150	30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	75	77.7	104				-	40-150	30
Perfluorohexanoic Acid (PFHxA)	20	24.0	120				-	40-150	30
Perfluoropentanesulfonic Acid (PFPeS)	18.8	21.6	115				-	40-150	30
Perfluoroheptanoic Acid (PFHpA)	20	23.0	115				-	40-150	30
Perfluorohexanesulfonic Acid (PFHxS)	18.3	21.3	117				-	40-150	30
Perfluorooctanoic Acid (PFOA)	20	21.8	109				-	40-150	30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	76	86.3	114				-	40-150	30
Perfluoroheptanesulfonic Acid (PFHpS)	19.1	22.1	116				-	40-150	30
Perfluorononanoic Acid (PFNA)	20	25.0	125				-	40-150	30
Perfluorooctanesulfonic Acid	18.6	20.7	112				-	40-150	30

Laboratory Control Sample Summary
Form 3
Semivolatiles

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Matrix (Level)	: WATER ()		
LCS Sample ID	: WG1973357-3 **Analysis Date** : 09/19/24 08:20	**File ID**	: SCI05_240919_15.wiff
LCSD Sample ID	: **Analysis Date** :	**File ID**	:

	Laboratory Control Sample			Laboratory Control Duplicate					
Parameter	True (ng/l)	Found (ng/l)	%R	True (ng/l)	Found (ng/l)	%R	RPD	Recovery Limits	RPD Limit
(PFOS)									
Perfluorodecanoic Acid (PFDA)	20	24.6	123				-	40-150	30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	76.8	96.8	126				-	40-150	30
Perfluorononanesulfonic Acid (PFNS)	19.2	24.3	126				-	40-150	30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	20	25.7	128				-	40-150	30
Perfluoroundecanoic Acid (PFUnA)	20	24.7	123				-	40-150	30
Perfluorodecanesulfonic Acid (PFDS)	19.3	22.0	114				-	40-150	30
Perfluorooctanesulfonamide (PFOSA)	20	21.8	109				-	40-150	30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	20	22.0	110				-	40-150	30
Perfluorododecanoic Acid (PFDoA)	20	17.0	85				-	40-150	30
Perfluorotridecanoic Acid (PFTrDA)	20	17.0	85				-	40-150	30

Laboratory Control Sample Summary
Form 3
Semivolatiles

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Matrix (Level)	: WATER ()		
LCS Sample ID	: WG1973357-3 **Analysis Date** : 09/19/24 08:20	**File ID**	: SCI05_240919_15.wiff
LCSD Sample ID	: **Analysis Date** :	**File ID**	:

	Laboratory Control Sample			Laboratory Control Duplicate					
Parameter	**True (ng/l)**	**Found (ng/l)**	**%R**	**True (ng/l)**	**Found (ng/l)**	**%R**	**RPD**	**Recovery Limits**	**RPD Limit**
Perfluorotetradecanoic Acid (PFTeDA)	20	23.3	116				-	40-150	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	80	95.5	119				-	40-150	30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	75.6	83.7	111				-	40-150	30
Perfluorododecanesulfonic Acid (PFDoS)	19.4	22.8	117				-	40-150	30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	74.8	80.6	108				-	40-150	30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	75.6	77.8	103				-	40-150	30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	20	20.4	102				-	40-150	30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	20	22.2	111				-	40-150	30
N-Methyl Perfluorooctanesulfonami	200	215	107				-	40-150	30

Laboratory Control Sample Summary
Form 3
Semivolatiles

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Matrix (Level)	: WATER ()		
LCS Sample ID	: WG1973357-3 **Analysis Date** : 09/19/24 08:20	**File ID**	: SCI05_240919_15.wiff
LCSD Sample ID	: **Analysis Date** :	**File ID**	:

	Laboratory Control Sample			Laboratory Control Duplicate					
Parameter	True (ng/l)	Found (ng/l)	%R	True (ng/l)	Found (ng/l)	%R	RPD	Recovery Limits	RPD Limit
do Ethanol (NMeFOSE)									
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	200	228	114				-	40-150	30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	40	50.7	127				-	40-150	30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	40	44.8	112				-	40-150	30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	35.6	43.2	121				-	40-150	30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	40	56.6	141				-	40-150	30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	100	120	120				-	40-150	30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	500	631	126				-	40-150	30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	500	337	67				-	40-150	30

Matrix Spike Sample Summary
Form 3
Semivolatiles

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: MW-6A	**Matrix (Level)**	: WATER ()
Lab Sample ID	: L2450786-03	**Analysis Date**	: 09/19/24 08:32
Matrix Spike	: WG1973357-4	**MS Analysis Date**	: 09/19/24 08:45
Matrix Spike Dup	: WG1973357-5	**MSD Analysis Date**	: 09/19/24 08:58

		Matrix Spike Sample			Matrix Spike Duplicate					
Parameter	Sample Conc. (ng/l)	Spike Added (ng/l)	Spike Conc. (ng/l)	%R	Spike Added (ng/l)	Spike Conc. (ng/l)	%R	RPD	Recovery Limits	RPD Limit
Perfluorobutanoic Acid (PFBA)	2.47J	77.4	94.0	118	78	95.5	119	2	40-150	30
Perfluoropentanoic Acid (PFPeA)	1.06J	38.7	47.6	120	39	48.7	122	2	40-150	30
Perfluorobutanesulfonic Acid (PFBS)	1.04J	17.2	21.2	118	17.3	21.6	119	2	40-150	30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	72.5	74.8	103	73.1	78.8	108	5	40-150	30
Perfluorohexanoic Acid (PFHxA)	2.44	19.3	25.9	121	19.5	25.6	119	1	40-150	30
Perfluoropentanesulfonic Acid (PFPeS)	ND	18.2	22.3	123	18.3	22.3	122	0	40-150	30
Perfluoroheptanoic Acid (PFHpA)	1.85	19.3	24.4	117	19.5	24.5	116	0	40-150	30
Perfluorohexanesulfonic Acid (PFHxS)	3.06	17.7	23.6	116	17.8	24.6	121	4	40-150	30
Perfluorooctanoic Acid (PFOA)	6.32	19.3	26.6	105	19.5	27.6	109	4	40-150	30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	73.5	90.8	124	74.1	94.3	127	4	40-150	30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	18.4	21.4	116	18.6	23.9	129	11	40-150	30
Perfluorononanoic Acid (PFNA)	3.11	19.3	27.4	126	19.5	27.0	123	1	40-150	30
Perfluorooctanesulfonic Acid (PFOS)	18.4	17.9	39.1	115	18.1	42.1	131	7	40-150	30
Perfluorodecanoic Acid (PFDA)	ND	19.3	23.0	119	19.5	22.9	117	0	40-150	30
1H,1H,2H,2H-Perfluorodecanesulfon	ND	74.3	106	143	74.9	98.1	131	8	40-150	30

Matrix Spike Sample Summary
Form 3
Semivolatiles

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: MW-6A	**Matrix (Level)**	: WATER ()
Lab Sample ID	: L2450786-03	**Analysis Date**	: 09/19/24 08:32
Matrix Spike	: WG1973357-4	**MS Analysis Date**	: 09/19/24 08:45
Matrix Spike Dup	: WG1973357-5	**MSD Analysis Date**	: 09/19/24 08:58

		Matrix Spike Sample			Matrix Spike Duplicate					
Parameter	Sample Conc. (ng/l)	Spike Added (ng/l)	Spike Conc. (ng/l)	%R	Spike Added (ng/l)	Spike Conc. (ng/l)	%R	RPD	Recovery Limits	RPD Limit
ic Acid (8:2FTS)										
Perfluorononanesulfonic Acid (PFNS)	ND	18.6	21.8	117	18.8	23.3	124	7	40-150	30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	19.3	28.4	147	19.5	26.4	135	7	40-150	30
Perfluoroundecanoic Acid (PFUnA)	ND	19.3	22.9	118	19.5	24.0	123	5	40-150	30
Perfluorodecanesulfonic Acid (PFDS)	ND	18.7	21.1	113	18.8	20.8	111	1	40-150	30
Perfluorooctanesulfonamide (PFOSA)	ND	19.3	22.1	114	19.5	23.0	118	4	40-150	30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	19.3	22.6	117	19.5	24.5	126	8	40-150	30
Perfluorododecanoic Acid (PFDoA)	ND	19.3	16.6	86	19.5	17.3	89	4	40-150	30
Perfluorotridecanoic Acid (PFTrDA)	ND	19.3	16.6	86	19.5	17.9	92	8	40-150	30
Perfluorotetradecanoic Acid (PFTeDA)	ND	19.3	22.7	117	19.5	22.6	116	0	40-150	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	77.4	98.6	127	78	97.2	125	1	40-150	30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	73.1	85.1	116	73.7	89.1	121	5	40-150	30
Perfluorododecanesulfonic Acid	ND	18.8	21.8	116	18.9	21.3	113	2	40-150	30

Matrix Spike Sample Summary
Form 3
Semivolatiles

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: MW-6A	**Matrix (Level)**	: WATER ()
Lab Sample ID	: L2450786-03	**Analysis Date**	: 09/19/24 08:32
Matrix Spike	: WG1973357-4	**MS Analysis Date**	: 09/19/24 08:45
Matrix Spike Dup	: WG1973357-5	**MSD Analysis Date**	: 09/19/24 08:58

Parameter	Sample Conc. (ng/l)	Matrix Spike Sample Spike Added (ng/l)	Matrix Spike Sample Spike Conc. (ng/l)	Matrix Spike Sample %R	Matrix Spike Duplicate Spike Added (ng/l)	Matrix Spike Duplicate Spike Conc. (ng/l)	Matrix Spike Duplicate %R	RPD	Recovery Limits	RPD Limit
(PFDoS)										
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	72.3	86.9	120	72.9	87.8	120	1	40-150	30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	73.1	82.7	113	73.7	78.5	106	5	40-150	30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	19.3	25.4	131	19.5	24.5	126	4	40-150	30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	19.3	24.0	124	19.5	23.0	118	4	40-150	30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	193	230	119	195	234	120	2	40-150	30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	193	226	117	195	231	118	2	40-150	30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	38.7	61.3	158 Q	39	59.5	153 Q	3	40-150	30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	38.7	42.8	111	39	43.8	112	2	40-150	30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	34.4	40.1	116	34.7	40.8	118	2	40-150	30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	38.7	48.5	125	39	48.4	124	0	40-150	30
3-Perfluoropropyl Propanoic Acid	ND	96.7	118	122	97.5	125	128	6	40-150	30

Matrix Spike Sample Summary
Form 3
Semivolatiles

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: MW-6A	**Matrix (Level)**	: WATER ()
Lab Sample ID	: L2450786-03	**Analysis Date**	: 09/19/24 08:32
Matrix Spike	: WG1973357-4	**MS Analysis Date**	: 09/19/24 08:45
Matrix Spike Dup	: WG1973357-5	**MSD Analysis Date**	: 09/19/24 08:58

		Matrix Spike Sample			Matrix Spike Duplicate					
Parameter	Sample Conc. (ng/l)	Spike Added (ng/l)	Spike Conc. (ng/l)	%R	Spike Added (ng/l)	Spike Conc. (ng/l)	%R	RPD	Recovery Limits	RPD Limit
(3:3FTCA)										
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND	484	575	119	488	572	117	1	40-150	30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND	484	350	72	488	366	75	4	40-150	30

Method Blank Summary
Form 4
Semivolatiles

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab Sample ID	: WG1973357-1	**Lab File ID**	: SCI05_240919_13.wiff
Instrument ID	: LCMS05	**Extraction Date**	: 09/18/24
Matrix	: WATER	**Analysis Date**	: 09/19/24 07:54
Level	: LOW		

Client Sample No.	Lab Sample ID	Analysis Date
WG1973357-2LCS	WG1973357-2	09/19/24 08:07
WG1973357-3LCS	WG1973357-3	09/19/24 08:20
MW-6A	L2450786-03	09/19/24 08:32
MW-6AMS	WG1973357-4	09/19/24 08:45
MW-6AMSD	WG1973357-5	09/19/24 08:58
MW-8A	L2450786-07	09/19/24 09:23
MW-10A	L2450786-09	09/19/24 09:36
FIELD BLANK	L2450786-11	09/19/24 09:49
MW-3A	L2450786-13	09/19/24 10:02

Method: EPA 1633
Matrix: Aqueous
SOP ID / Revision: 45852, Rev 1

Method Detection Limit (MDLs)

Alpha Analytical, Inc.
Mansfield, MA

Instrument(s): LCMS05
Analyst: PB
Date(s): 3/2/22 - 3/4/22

EPA 1633, Aqueous Compound	Units	Target Concentration	Mean (x)	% Recovery	Standard Deviation (S)	Number of Replicates	Student t-value (t)	MDLs	MDLb	MDL	ML
PFBA	ng/L	3.20	4.15	130%	0.325	7	3.143	1.02	N/A	1.02	4.0
PFPeA	ng/L	1.60	2.30	144%	0.272	7	3.143	0.855	N/A	0.855	4.0
PFHxA	ng/L	0.80	1.26	157%	0.151	7	3.143	0.475	N/A	0.475	2.0
PFHpA	ng/L	0.80	1.15	144%	0.102	7	3.143	0.320	N/A	0.320	2.0
PFOA	ng/L	0.80	1.06	133%	0.220	7	3.143	0.692	N/A	0.692	2.0
PFNA	ng/L	0.80	1.07	134%	0.159	7	3.143	0.500	N/A	0.500	2.0
PFDA	ng/L	0.80	1.04	130%	0.207	7	3.143	0.649	N/A	0.649	2.0
PFUnA	ng/L	0.80	1.20	150%	0.222	7	3.143	0.696	N/A	0.696	2.0
PFDoA	ng/L	0.80	1.26	157%	0.234	7	3.143	0.736	N/A	0.736	2.0
PFTrDA	ng/L	0.80	1.04	130%	0.190	7	3.143	0.599	N/A	0.599	2.0
PFTeDA	ng/L	0.80	1.29	161%	0.134	7	3.143	0.421	N/A	0.421	2.0
PFBS	ng/L	0.71	1.06	150%	0.171	7	3.143	0.538	N/A	0.538	2.0
PFPeS	ng/L	0.75	1.02	135%	0.089	7	3.143	0.280	N/A	0.280	2.0
PFHxS	ng/L	0.73	1.07	147%	0.121	7	3.143	0.380	N/A	0.380	2.0
PFHpS	ng/L	0.76	1.15	151%	0.137	7	3.143	0.432	N/A	0.432	2.0
PFOS	ng/L	0.74	1.20	162%	0.231	7	3.143	0.726	N/A	0.726	2.0
PFNS	ng/L	0.77	1.06	138%	0.158	7	3.143	0.497	N/A	0.497	2.0
PFDS	ng/L	0.77	1.05	136%	0.117	7	3.143	0.368	N/A	0.368	2.0
PFDoS	ng/L	0.78	1.10	141%	0.194	7	3.143	0.611	N/A	0.611	2.0
4:2FTS	ng/L	3.00	4.16	139%	0.533	7	3.143	1.67	N/A	1.67	8.0
6:2FTS	ng/L	3.04	4.61	152%	0.618	7	3.143	1.94	2.16	2.16	8.0
8:2FTS	ng/L	3.07	4.64	151%	0.792	7	3.143	2.49	N/A	2.49	10.0
PFOSA	ng/L	0.80	1.07	134%	0.137	7	3.143	0.432	N/A	0.432	2.0
NMeFOSA	ng/L	0.80	1.23	154%	0.221	7	3.143	0.694	N/A	0.694	2.0
NEtFOSA	ng/L	0.80	1.26	157%	0.234	7	3.143	0.736	N/A	0.736	2.0
NMeFOSAA	ng/L	0.80	1.49	186%	0.277	7	3.143	0.869	N/A	0.869	4.0
NEtFOSAA	ng/L	0.80	0.95	119%	0.275	7	3.143	0.864	N/A	0.864	4.0
NMeFOSE	ng/L	8.00	10.63	133%	1.20	7	3.143	3.76	N/A	3.76	16.0
NEtFOSE	ng/L	8.00	11.15	139%	0.623	7	3.143	1.96	N/A	1.96	8.0
HFPO-DA	ng/L	3.20	2.53	79%	0.284	7	3.143	0.893	N/A	0.893	4.0
ADONA	ng/L	3.02	2.14	71%	0.322	7	3.143	1.01	N/A	1.01	4.0
9Cl-PF3ONS	ng/L	2.99	2.13	71%	0.420	7	3.143	1.32	N/A	1.32	4.0
11Cl-PF3OUdS	ng/L	3.02	2.09	69%	0.419	7	3.143	1.32	N/A	1.32	4.0
3:3FTCA	ng/L	4.00	7.76	194%	0.839	7	3.143	2.64	N/A	2.64	10.0
5:3FTCA	ng/L	20.0	38.3	192%	2.98	7	3.143	9.36	N/A	9.36	40.0
7:3FTCA	ng/L	20.0	31.7	159%	2.01	7	3.143	6.31	N/A	6.31	20.0
PFEESA	ng/L	1.42	1.89	132%	0.112	7	3.143	0.351	N/A	0.351	2.0
PFMPA	ng/L	1.60	1.94	121%	0.144	7	3.143	0.452	N/A	0.452	2.0
PFMBA	ng/L	1.60	1.83	114%	0.134	7	3.143	0.421	N/A	0.421	2.0
NFDHA	ng/L	1.60	1.91	119%	0.601	7	3.143	1.89	N/A	1.89	8.0

Comments:

Prep Method: EPA 1633
Initial Weight / Volume: 500 mL
Final Volume: 4 mL

QA Review: JRH
Approval Date:: 9/26/2022

Method Detection Limit (MDLs)

Alpha Analytical, Inc.
Mansfield, MA

EPA 1633, Aqueous		LCMS05	LCMS05	LCMS05	LCMS05	LCMS05	LCMS05	LCMS05
		WG1608884-1	WG1608884-2	WG1597410-5	WG1597410-6	WG1597410-7	WG1610804-1	WG1610804-2
Compound	**Units**	3/2/2022	3/2/2022	3/3/2022	3/3/2022	3/3/2022	3/4/2022	3/4/2022
PFBA	ng/L	3.84	3.76	4.48	4.40	4.56	4.00	4.00
PFPeA	ng/L	1.76	2.16	2.48	2.48	2.56	2.32	2.32
PFHxA	ng/L	1.12	1.20	1.44	1.44	1.28	1.04	1.28
PFHpA	ng/L	0.96	1.12	1.20	1.28	1.12	1.20	1.20
PFOA	ng/L	0.96	1.20	1.12	1.20	1.36	0.88	0.72
PFNA	ng/L	0.88	0.88	1.20	1.20	1.28	1.04	1.04
PFDA	ng/L	0.88	0.88	1.20	1.44	0.96	0.96	0.96
PFUnA	ng/L	1.04	1.20	1.12	1.68	1.20	1.04	1.12
PFDoA	ng/L	0.88	1.20	1.52	1.44	1.44	1.04	1.28
PFTrDA	ng/L	0.96	0.88	1.20	1.20	1.20	1.12	0.72
PFTeDA	ng/L	1.20	1.12	1.36	1.28	1.20	1.36	1.52
PFBS	ng/L	1.12	1.12	1.04	0.96	1.36	0.80	1.04
PFPeS	ng/L	0.96	1.04	0.96	1.12	1.12	0.88	1.04
PFHxS	ng/L	1.04	1.04	0.96	1.28	1.04	0.96	1.20
PFHpS	ng/L	0.96	1.12	1.28	1.36	1.12	1.20	1.04
PFOS	ng/L	0.96	1.12	1.12	1.60	1.28	0.96	1.36
PFNS	ng/L	0.88	0.88	1.12	1.12	1.20	0.96	1.28
PFDS	ng/L	0.96	1.04	0.96	1.12	1.28	0.96	1.04
PFDoS	ng/L	0.96	1.20	1.04	1.28	1.36	1.04	0.80
4:2FTS	ng/L	3.36	3.92	4.88	4.56	4.56	3.76	4.08
6:2FTS	ng/L	4.00	3.92	4.64	5.76	4.88	4.40	4.64
8:2FTS	ng/L	3.92	3.84	5.76	4.24	5.68	4.72	4.32
PFOSA	ng/L	0.88	0.96	1.12	1.20	1.20	1.20	0.96
NMeFOSA	ng/L	1.12	1.04	1.28	1.28	1.68	1.20	1.04
NEtFOSA	ng/L	0.88	1.12	1.52	1.12	1.28	1.52	1.36
NMeFOSAA	ng/L	1.12	1.28	1.28	1.68	1.76	1.84	1.44
NEtFOSAA	ng/L	1.04	1.28	1.20	1.12	0.64	0.64	0.72
NMeFOSE	ng/L	9.28	9.76	11.52	10.48	12.32	11.60	9.44
NEtFOSE	ng/L	10.24	10.72	11.36	11.68	12.08	10.80	11.20
HFPO-DA	ng/L	2.96	2.80	2.24	2.16	2.48	2.56	2.48
ADONA	ng/L	2.48	2.40	1.84	1.76	1.84	2.48	2.16
9Cl-PF3ONS	ng/L	2.56	2.64	1.76	1.68	1.68	2.40	2.16
11Cl-PF3OUdS	ng/L	2.64	2.48	1.84	1.68	1.52	2.24	2.24
3:3FTCA	ng/L	6.24	8.32	7.44	8.80	7.92	7.36	8.24
5:3FTCA	ng/L	34.08	35.68	42.80	41.04	38.32	38.80	37.60
7:3FTCA	ng/L	29.44	33.20	30.40	30.24	32.40	35.20	31.20
PFEESA	ng/L	1.92	2.00	1.84	1.84	1.68	1.92	2.00
PFMPA	ng/L	1.68	1.84	2.08	2.00	1.92	2.00	2.08
PFMBA	ng/L	1.60	1.76	1.84	2.00	1.92	1.76	1.92
NFDHA	ng/L	1.76	1.44	2.24	2.80	2.48	1.28	1.36

Method Detection Limit - Method Blanks (MDLb)

Alpha Analytical, Inc.
Mansfield, MA

EPA 1633, Aqueous Compound	Units	Mean (x)	Standard Deviation (S)	Number of Blanks	Student-t Value (t)	x + S * t	Highest Value	99th Percentile	MDLb	ML	Comments
PFBA	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	2.0	
PFPeA	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	2.0	
PFHxA	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	1.0	
PFHpA	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	1.0	
PFOA	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	1.0	
PFNA	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	1.0	
PFDA	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	1.0	
PFUnA	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	1.0	
PFDoA	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	1.0	
PFTrDA	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	1.0	
PFTeDA	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	1.0	
PFBS	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	1.0	
PFPeS	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	1.0	
PFHxS	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	1.0	
PFHpS	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	1.0	
PFOS	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	1.0	
PFNS	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	1.0	
PFDS	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	1.0	
PFDoS	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	1.0	
4:2FTS	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	4.0	
6:2FTS	ng/L	1.093	0.927	7	3.143	N/A	2.16	N/A	2.16	4.0	
8:2FTS	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	5.0	
FOSA	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	1.0	
NMeFOSA	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	1.0	
NEtFOSA	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	1.0	
NMeFOSAA	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	2.0	
NEtFOSAA	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	2.0	
NMeFOSE	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	8.0	
NEtFOSE	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	4.0	
HFPO-DA	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	2.0	
ADONA	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	2.0	
9Cl-PF3ONS	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	2.0	
11Cl-PF3OUdS	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	2.0	
3:3FTCA	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	5.0	
5:3FTCA	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	20.0	
7:3FTCA	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	10.0	
PFEESA	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	1.0	
PFMPA	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	1.0	
PFMBA	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	1.0	
NFDHA	ng/L	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	4.0	

Comments: _____

Method Detection Limit - Method Blanks (MDLb)

Alpha Analytical, Inc.
Mansfield, MA

EPA 1633, Aqueous		LCMS05	LCMS05	LCMS05	LCMS05	LCMS05	LCMS05	LCMS05
		L2205090-06	L2205090-07	L2205090-03	L2205090-04	L2205090-05	L2205090-08	L2205090-09
Compound	**Units**	3/2/2022	3/2/2022	3/3/2022	3/3/2022	3/3/2022	3/4/2022	3/4/2022
PFBA	ng/L	ND	ND	ND	ND	ND	ND	ND
PFPeA	ng/L	ND	ND	ND	ND	ND	ND	ND
PFHxA	ng/L	ND	ND	ND	ND	ND	ND	ND
PFHpA	ng/L	ND	ND	ND	ND	ND	ND	ND
PFOA	ng/L	ND	ND	ND	ND	ND	ND	ND
PFNA	ng/L	ND	ND	ND	ND	ND	ND	ND
PFDA	ng/L	ND	ND	ND	ND	ND	ND	ND
PFUnA	ng/L	ND	ND	ND	ND	ND	ND	ND
PFDoA	ng/L	ND	ND	ND	ND	ND	ND	ND
PFTrDA	ng/L	ND	ND	ND	ND	ND	ND	ND
PFTeDA	ng/L	ND	ND	ND	ND	ND	ND	ND
PFBS	ng/L	ND	ND	ND	ND	ND	ND	ND
PFPeS	ng/L	ND	ND	ND	ND	ND	ND	ND
PFHxS	ng/L	ND	ND	ND	ND	ND	ND	ND
PFHpS	ng/L	ND	ND	ND	ND	ND	ND	ND
PFOS	ng/L	ND	ND	ND	ND	ND	ND	ND
PFNS	ng/L	ND	ND	ND	ND	ND	ND	ND
PFDS	ng/L	ND	ND	ND	ND	ND	ND	ND
PFDoS	ng/L	ND	ND	ND	ND	ND	ND	ND
4:2FTS	ng/L	ND	ND	ND	ND	ND	ND	ND
6:2FTS	ng/L	2.16	0.64	0.48	ND	ND	ND	ND
8:2FTS	ng/L	ND	ND	ND	ND	ND	ND	ND
FOSA	ng/L	ND	ND	ND	ND	ND	ND	ND
NMeFOSA	ng/L	ND	ND	ND	ND	ND	ND	ND
NEtFOSA	ng/L	ND	ND	ND	ND	ND	ND	ND
NMeFOSAA	ng/L	ND	ND	ND	ND	ND	ND	ND
NEtFOSAA	ng/L	ND	ND	ND	ND	ND	ND	ND
NMeFOSE	ng/L	ND	ND	ND	ND	ND	ND	ND
NEtFOSE	ng/L	ND	ND	ND	ND	ND	ND	ND
HFPO-DA	ng/L	ND	ND	ND	ND	ND	ND	ND
ADONA	ng/L	ND	ND	ND	ND	ND	ND	ND
9Cl-PF3ONS	ng/L	ND	ND	ND	ND	ND	ND	ND
11Cl-PF3OUdS	ng/L	ND	ND	ND	ND	ND	ND	ND
3:3FTCA	ng/L	ND	ND	ND	ND	ND	ND	ND
5:3FTCA	ng/L	ND	ND	ND	ND	ND	ND	ND
7:3FTCA	ng/L	ND	ND	ND	ND	ND	ND	ND
PFEESA	ng/L	ND	ND	ND	ND	ND	ND	ND
PFMPA	ng/L	ND	ND	ND	ND	ND	ND	ND
PFMBA	ng/L	ND	ND	ND	ND	ND	ND	ND
NFDHA	ng/L	ND	ND	ND	ND	ND	ND	ND

Method: EPA 1633
Matrix: Soil
SOP ID / Revision: 45852, Rev 2

Method Detection Limit - Method Blanks (MDLb)

Alpha Analytical, Inc.
Mansfield, MA

Instrument(s): LCMS05
Analyst: PB
Date(s): 4/1/22 - 4/6/22

EPA 1633, Soil Compound	Units	Mean (x)	Standard Deviation (S)	Number of Blanks	Student-t Value (t)	x + S * t	Highest Value	99th Percentile	MDLb	RL	Comments
PFBA	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	0.8	
PFPeA	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	0.4	
PFHxA	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	0.2	
PFHpA	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	0.2	
PFOA	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	0.2	
PFNA	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	0.2	
PFDA	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	0.2	
PFUnA	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	0.2	
PFDoA	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	0.2	
PFTrDA	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	0.2	
PFTeDA	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	0.2	
PFBS	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	0.2	
PFPeS	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	0.2	
PFHxS	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	0.2	
PFHpS	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	0.2	
PFOS	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	0.2	
PFNS	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	0.2	
PFDS	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	0.2	
PFDoS	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	0.2	
4:2FTS	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	0.8	
6:2FTS	ng/g	0.163	0.046	7	3.143	N/A	0.22	N/A	0.22	0.8	
8:2FTS	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	0.8	
PFOSA	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	0.2	
NMeFOSA	ng/g	N/A	N/A	7	3.143	N/A	0.10	N/A	0.10	0.2	
NEtFOSA	ng/g	N/A	N/A	7	3.143	N/A	0.10	N/A	0.10	0.2	
NMeFOSAA	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	0.2	
NEtFOSAA	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	0.2	
NMeFOSE	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	2	
NEtFOSE	ng/g	N/A	N/A	7	3.143	N/A	0.03	N/A	0.03	2	
HFPO-DA	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	0.8	
ADONA	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	0.8	
9Cl-PF3ONS	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	0.8	
11Cl-PF3OUdS	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	0.8	
3:3FTCA	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	1	
5:3FTCA	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	5	
7:3FTCA	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	5	
PFEESA	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	0.4	
PFMPA	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	0.4	
PFMBA	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	0.4	
NFDHA	ng/g	N/A	N/A	7	3.143	N/A	0.00	N/A	N/A	0.4	

Comments: _____

Prep Method: EPA 1633
Initial Weight / Volume: 5 g
Final Volume: 4 mL

QA Review: JH
Effective Date:: 4/6/2022

Method: EPA 1633
Matrix: Soil
SOP ID / Revision: 45852, Rev 2

Method Detection Limit - Method Blanks (MDLb)

Alpha Analytical, Inc.
Mansfield, MA

Instrument(s): LCMS05
Analyst: PB
Date(s): 4/1/22 - 4/6/22

EPA 1633, Soil		LCMS05	LCMS05	LCMS05	LCMS05	LCMS05	LCMS05	LCMS05
		L2205100-03	L2205100-04	L2205100-05	L2205100-06	L2205100-07	L2205100-08	L2205100-09
Compound	**Units**	4/1/2022	4/1/2022	4/1/2022	4/4/2022	4/4/2022	4/6/2022	4/6/2022
PFBA	ng/g	ND	ND	ND	ND	ND	ND	ND
PFPeA	ng/g	ND	ND	ND	ND	ND	ND	ND
PFHxA	ng/g	ND	ND	ND	ND	ND	ND	ND
PFHpA	ng/g	ND	ND	ND	ND	ND	ND	ND
PFOA	ng/g	ND	ND	ND	ND	ND	ND	ND
PFNA	ng/g	ND	ND	ND	ND	ND	ND	ND
PFDA	ng/g	ND	ND	ND	ND	ND	ND	ND
PFUnA	ng/g	ND	ND	ND	ND	ND	ND	ND
PFDoA	ng/g	ND	ND	ND	ND	ND	ND	ND
PFTrDA	ng/g	ND	ND	ND	ND	ND	ND	ND
PFTeDA	ng/g	ND	ND	ND	ND	ND	ND	ND
PFBS	ng/g	ND	ND	ND	ND	ND	ND	ND
PFPeS	ng/g	ND	ND	ND	ND	ND	ND	ND
PFHxS	ng/g	ND	ND	ND	ND	ND	ND	ND
PFHpS	ng/g	ND	ND	ND	ND	ND	ND	ND
PFOS	ng/g	ND	ND	ND	ND	ND	ND	ND
PFNS	ng/g	ND	ND	ND	ND	ND	ND	ND
PFDS	ng/g	ND	ND	ND	ND	ND	ND	ND
PFDoS	ng/g	ND	ND	ND	ND	ND	ND	ND
4:2FTS	ng/g	ND	ND	ND	ND	ND	ND	ND
6:2FTS	ng/g	0.146	0.127	0.215	ND	ND	ND	ND
8:2FTS	ng/g	ND	ND	ND	ND	ND	ND	ND
PFOSA	ng/g	ND	ND	ND	ND	ND	ND	ND
NMeFOSA	ng/g	ND	ND	ND	ND	ND	0.104	0.104
NEtFOSA	ng/g	ND	ND	ND	0.088	0.064	0.104	0.064
NMeFOSAA	ng/g	ND	ND	ND	ND	ND	ND	ND
NEtFOSAA	ng/g	ND	ND	ND	ND	ND	ND	ND
NMeFOSE	ng/g	ND	ND	ND	ND	ND	ND	ND
NEtFOSE	ng/g	ND	ND	0.032	ND	ND	ND	ND
HFPO-DA	ng/g	ND	ND	ND	ND	ND	ND	ND
ADONA	ng/g	ND	ND	ND	ND	ND	ND	ND
9Cl-PF3ONS	ng/g	ND	ND	ND	ND	ND	ND	ND
11Cl-PF3OUdS	ng/g	ND	ND	ND	ND	ND	ND	ND
3:3FTCA	ng/g	ND	ND	ND	ND	ND	ND	ND
5:3FTCA	ng/g	ND	ND	ND	ND	ND	ND	ND
7:3FTCA	ng/g	ND	ND	ND	ND	ND	ND	ND
PFEESA	ng/g	ND	ND	ND	ND	ND	ND	ND
PFMPA	ng/g	ND	ND	ND	ND	ND	ND	ND
PFMBA	ng/g	ND	ND	ND	ND	ND	ND	ND
NFDHA	ng/g	ND	ND	ND	ND	ND	ND	ND

Prep Method: EPA 1633
Initial Weight / Volume: 5 g
Final Volume: 4 mL

QA Review: JH
Effective Date:: 4/6/2022

Method: EPA 1633
Matrix: Soil
SOP ID / Revision: 45852, Rev 2

Method Detection Limit (MDLs)

Alpha Analytical, Inc.
Mansfield, MA

Instrument(s): LCMS05
Analyst: PB
Date(s): 4/1/22 - 4/6/22

EPA 1633, Soil Compound	Units	Target Concentration	Mean (x)	% Recovery	Standard Deviation (S)	Number of Replicates	Student t-value (t)	MDLs	MDLb	MDL	RL
PFBA	ng/g	0.320	0.341	106%	0.016	7	3.143	0.051	N/A	0.051	0.8
PFPeA	ng/g	0.160	0.178	111%	0.017	7	3.143	0.054	N/A	0.054	0.4
PFHxA	ng/g	0.080	0.101	126%	0.015	7	3.143	0.047	N/A	0.047	0.2
PFHpA	ng/g	0.080	0.094	118%	0.007	7	3.143	0.024	N/A	0.024	0.2
PFOA	ng/g	0.080	0.111	139%	0.016	7	3.143	0.050	N/A	0.050	0.2
PFNA	ng/g	0.080	0.109	136%	0.025	7	3.143	0.079	N/A	0.079	0.2
PFDA	ng/g	0.080	0.108	135%	0.023	7	3.143	0.072	N/A	0.072	0.2
PFUnA	ng/g	0.080	0.082	102%	0.016	7	3.143	0.052	N/A	0.052	0.2
PFDoA	ng/g	0.080	0.093	116%	0.012	7	3.143	0.039	N/A	0.039	0.2
PFTrDA	ng/g	0.080	0.081	101%	0.017	7	3.143	0.053	N/A	0.053	0.2
PFTeDA	ng/g	0.080	0.100	125%	0.033	7	3.143	0.105	N/A	0.105	0.2
PFBS	ng/g	0.071	0.078	109%	0.013	7	3.143	0.040	N/A	0.040	0.2
PFPeS	ng/g	0.075	0.086	114%	0.007	7	3.143	0.022	N/A	0.022	0.2
PFHxS	ng/g	0.073	0.098	133%	0.018	7	3.143	0.057	N/A	0.057	0.2
PFHpS	ng/g	0.076	0.090	118%	0.012	7	3.143	0.037	N/A	0.037	0.2
PFOS	ng/g	0.074	0.122	164%	0.024	7	3.143	0.076	N/A	0.076	0.2
PFNS	ng/g	0.077	0.078	101%	0.014	7	3.143	0.045	N/A	0.045	0.2
PFDS	ng/g	0.077	0.088	113%	0.010	7	3.143	0.032	N/A	0.032	0.2
PFDoS	ng/g	0.078	0.075	97%	0.011	7	3.143	0.034	N/A	0.034	0.2
4:2FTS	ng/g	0.300	0.353	118%	0.026	7	3.143	0.080	N/A	0.08	0.8
6:2FTS	ng/g	0.304	0.421	138%	0.065	7	3.143	0.203	0.28	0.28	0.8
8:2FTS	ng/g	0.307	0.412	134%	0.123	7	3.143	0.387	N/A	0.39	0.8
PFOSA	ng/g	0.080	0.092	116%	0.013	7	3.143	0.040	N/A	0.040	0.2
NMeFOSA	ng/g	0.080	0.106	132%	0.021	7	3.143	0.065	0.10	0.104	0.2
NEtFOSA	ng/g	0.080	0.131	163%	0.035	7	3.143	0.111	0.10	0.111	0.2
NMeFOSAA	ng/g	0.080	0.097	122%	0.031	7	3.143	0.098	N/A	0.098	0.2
NEtFOSAA	ng/g	0.080	0.090	113%	0.026	7	3.143	0.081	N/A	0.081	0.2
NMeFOSE	ng/g	0.800	0.888	111%	0.079	7	3.143	0.248	N/A	0.25	2
NEtFOSE	ng/g	0.800	0.950	119%	0.163	7	3.143	0.513	0.03	0.51	2
HFPO-DA	ng/g	0.320	0.368	115%	0.030	7	3.143	0.095	N/A	0.095	0.8
ADONA	ng/g	0.302	0.394	130%	0.047	7	3.143	0.146	N/A	0.146	0.8
9Cl-PF3ONS	ng/g	0.299	0.360	120%	0.062	7	3.143	0.194	N/A	0.194	0.8
11Cl-PF3OUdS	ng/g	0.302	0.369	122%	0.054	7	3.143	0.170	N/A	0.170	0.8
3:3FTCA	ng/g	0.400	0.382	95%	0.047	7	3.143	0.148	N/A	0.15	1
5:3FTCA	ng/g	2.000	1.85	93%	0.161	7	3.143	0.506	N/A	0.51	5
7:3FTCA	ng/g	2.000	1.96	98%	0.560	7	3.143	1.76	N/A	1.76	5
PFEESA	ng/g	0.142	0.183	129%	0.027	7	3.143	0.086	N/A	0.086	0.4
PFMPA	ng/g	0.160	0.173	108%	0.012	7	3.143	0.038	N/A	0.038	0.4
PFMBA	ng/g	0.160	0.166	104%	0.010	7	3.143	0.032	N/A	0.032	0.4
NFDHA	ng/g	0.160	0.169	106%	0.030	7	3.143	0.096	N/A	0.096	0.4

Comments: _____

Prep Method: EPA 1633
Initial Weight / Volume: 5 g
Final Volume: 4 mL

QA Review: JH
Effective Date:: 4/6/2022

Method: EPA 1633
Matrix: Soil
SOP ID / Revision: 45852, Rev 2

Method Detection Limit (MDLs)

Alpha Analytical, Inc.
Mansfield, MA

Instrument(s): LCMS05
Analyst: PB
Date(s): 4/1/22 - 4/6/22

EPA 1633, Soil		LCMS05	LCMS05	LCMS05	LCMS05	LCMS05	LCMS05	LCMS05
		WG1620579-1	WG1620579-2	WG1620579-3	WG1621903-1	WG1621903-2	WG1621922-1	WG1621922-2
Compound	**Units**	4/1/2022	4/1/2022	4/1/2022	4/4/2022	4/4/2022	4/6/2022	4/6/2022
PFBA	ng/g	0.35	0.31	0.33	0.36	0.35	0.34	0.34
PFPeA	ng/g	0.18	0.16	0.17	0.17	0.16	0.21	0.19
PFHxA	ng/g	0.09	0.09	0.11	0.09	0.10	0.10	0.13
PFHpA	ng/g	0.09	0.09	0.09	0.10	0.10	0.09	0.10
PFOA	ng/g	0.13	0.10	0.12	0.14	0.11	0.10	0.10
PFNA	ng/g	0.12	0.09	0.09	0.10	0.10	0.11	0.16
PFDA	ng/g	0.09	0.12	0.07	0.13	0.12	0.11	0.12
PFUnA	ng/g	0.08	0.08	0.06	0.06	0.08	0.09	0.11
PFDoA	ng/g	0.10	0.10	0.07	0.11	0.10	0.08	0.10
PFTrDA	ng/g	0.07	0.08	0.08	0.06	0.11	0.07	0.10
PFTeDA	ng/g	0.09	0.06	0.08	0.11	0.09	0.10	0.17
PFBS	ng/g	0.09	0.07	0.07	0.09	0.07	0.09	0.06
PFPeS	ng/g	0.09	0.08	0.08	0.08	0.10	0.09	0.09
PFHxS	ng/g	0.12	0.08	0.08	0.12	0.10	0.10	0.09
PFHpS	ng/g	0.09	0.09	0.08	0.10	0.08	0.08	0.11
PFOS	ng/g	0.13	0.12	0.07	0.14	0.12	0.12	0.15
PFNS	ng/g	0.07	0.08	0.05	0.09	0.09	0.07	0.10
PFDS	ng/g	0.08	0.08	0.07	0.09	0.10	0.09	0.10
PFDoS	ng/g	0.08	0.06	0.07	0.09	0.08	0.06	0.08
4:2FTS	ng/g	0.36	0.32	0.33	0.36	0.35	0.35	0.40
6:2FTS	ng/g	0.47	0.46	0.52	0.37	0.35	0.36	0.42
8:2FTS	ng/g	0.66	0.39	0.32	0.46	0.40	0.33	0.32
PFOSA	ng/g	0.11	0.08	0.08	0.10	0.10	0.09	0.10
NMeFOSA	ng/g	0.12	0.08	0.08	0.14	0.11	0.11	0.10
NEtFOSA	ng/g	0.11	0.11	0.10	0.20	0.12	0.15	0.13
NMeFOSAA	ng/g	0.16	0.10	0.07	0.09	0.11	0.06	0.09
NEtFOSAA	ng/g	0.10	0.08	0.09	0.04	0.11	0.12	0.09
NMeFOSE	ng/g	0.82	0.83	0.79	0.92	0.98	1.00	0.87
NEtFOSE	ng/g	0.88	0.84	0.78	1.17	1.16	0.82	1.01
HFPO-DA	ng/g	0.35	0.32	0.40	0.36	0.36	0.40	0.38
ADONA	ng/g	0.39	0.39	0.40	0.43	0.46	0.36	0.32
9Cl-PF3ONS	ng/g	0.31	0.34	0.31	0.45	0.45	0.34	0.32
11Cl-PF3OUdS	ng/g	0.33	0.32	0.32	0.44	0.45	0.38	0.34
3:3FTCA	ng/g	0.32	0.35	0.46	0.42	0.35	0.39	0.38
5:3FTCA	ng/g	1.76	1.63	1.70	1.91	1.89	2.06	2.02
7:3FTCA	ng/g	1.58	1.64	1.44	1.65	1.90	2.81	2.70
PFEESA	ng/g	0.16	0.16	0.17	0.23	0.21	0.18	0.17
PFMPA	ng/g	0.18	0.15	0.18	0.18	0.18	0.17	0.16
PFMBA	ng/g	0.16	0.15	0.18	0.18	0.16	0.18	0.16
NFDHA	ng/g	0.14	0.16	0.14	0.19	0.14	0.20	0.21

Prep Method: EPA 1633
Initial Weight / Volume: 5 g
Final Volume: 4 mL

QA Review: JH
Effective Date:: 4/6/2022

Semivolatile Sample Data

Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-03	**Date Collected**	: 09/05/24 12:50
Client ID	: MW-6A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/19/24 08:32
Sample Matrix	: WATER	**Date Extracted**	: 09/18/24
Analytical Method	: 144,1633	**Dilution Factor**	: 1
Lab File ID	: SCI05_240919_16	**Analyst**	: AC
Sample Amount	: 521.9 g	**Instrument ID**	: LCMS05
Extraction Method	: EPA 1633	**GC Column**	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	**%Solids**	: N/A
GPC Cleanup	: N	**Injection Volume**	: 3 uL

		ng/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
375-22-4	Perfluorobutanoic Acid (PFBA)	2.47	6.13	0.981	J
2706-90-3	Perfluoropentanoic Acid (PFPeA)	1.06	3.06	0.820	J
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	1.04	1.53	0.514	J
757124-72-4	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	6.13	1.60	U
307-24-4	Perfluorohexanoic Acid (PFHxA)	2.44	1.53	0.452	
2706-91-4	Perfluoropentanesulfonic Acid (PFPeS)	ND	1.53	0.268	U
375-85-9	Perfluoroheptanoic Acid (PFHpA)	1.85	1.53	0.306	
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	3.06	1.53	0.368	
335-67-1	Perfluorooctanoic Acid (PFOA)	6.32	1.53	0.667	
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	6.13	2.07	U
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	1.53	0.414	U
375-95-1	Perfluorononanoic Acid (PFNA)	3.11	1.53	0.483	
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	18.4	1.53	0.697	
335-76-2	Perfluorodecanoic Acid (PFDA)	ND	1.53	0.621	U
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	6.13	2.38	U
68259-12-1	Perfluorononanesulfonic Acid (PFNS)	ND	1.53	0.475	U
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	1.53	0.835	U
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	ND	1.53	0.667	U

Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-03	**Date Collected**	: 09/05/24 12:50
Client ID	: MW-6A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/19/24 08:32
Sample Matrix	: WATER	**Date Extracted**	: 09/18/24
Analytical Method	: 144,1633	**Dilution Factor**	: 1
Lab File ID	: SCI05_240919_16	**Analyst**	: AC
Sample Amount	: 521.9 g	**Instrument ID**	: LCMS05
Extraction Method	: EPA 1633	**GC Column**	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	**%Solids**	: N/A
GPC Cleanup	: N	**Injection Volume**	: 3 uL

		ng/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	1.53	0.352	U
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND	1.53	0.414	U
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	1.53	0.828	U
307-55-1	Perfluorododecanoic Acid (PFDoA)	ND	1.53	0.705	U
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	ND	1.53	0.575	U
376-06-7	Perfluorotetradecanoic Acid (PFTeDA)	ND	1.53	0.406	U
13252-13-6	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	6.13	0.858	U
919005-14-4	4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	6.13	0.966	U
79780-39-5	Perfluorododecanesulfonic Acid (PFDoS)	ND	1.53	0.582	U
756426-58-1	9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	6.13	1.26	U
763051-92-9	11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	6.13	1.26	U
31506-32-8	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	1.53	0.667	U
4151-50-2	N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	1.53	0.705	U
24448-09-7	N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	15.3	3.60	U

Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-03	**Date Collected**	: 09/05/24 12:50
Client ID	: MW-6A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/19/24 08:32
Sample Matrix	: WATER	**Date Extracted**	: 09/18/24
Analytical Method	: 144,1633	**Dilution Factor**	: 1
Lab File ID	: SCI05_240919_16	**Analyst**	: AC
Sample Amount	: 521.9 g	**Instrument ID**	: LCMS05
Extraction Method	: EPA 1633	**GC Column**	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	**%Solids**	: N/A
GPC Cleanup	: N	**Injection Volume**	: 3 uL

		ng/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
1691-99-2	N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	15.3	1.88	U
377-73-1	Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	3.06	0.437	U
863090-89-5	Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	3.06	0.406	U
113507-82-7	Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	3.06	0.337	U
151772-58-6	Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	3.06	1.81	U
356-02-5	3-Perfluoropropyl Propanoic Acid (3: 3FTCA)	ND	7.66	2.53	U
914637-49-3	2H,2H,3H,3H-Perfluorooctanoic Acid (5: 3FTCA)	ND	38.3	8.97	U
812-70-4	3-Perfluoroheptyl Propanoic Acid (7: 3FTCA)	ND	38.3	6.05	U

Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-07	**Date Collected**	: 09/05/24 08:00
Client ID	: MW-8A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/19/24 09:23
Sample Matrix	: WATER	**Date Extracted**	: 09/18/24
Analytical Method	: 144,1633	**Dilution Factor**	: 1
Lab File ID	: SCI05_240919_20	**Analyst**	: AC
Sample Amount	: 530.5 g	**Instrument ID**	: LCMS05
Extraction Method	: EPA 1633	**GC Column**	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	**%Solids**	: N/A
GPC Cleanup	: N	**Injection Volume**	: 3 uL

		ng/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
375-22-4	Perfluorobutanoic Acid (PFBA)	2.62	6.03	0.965	J
2706-90-3	Perfluoropentanoic Acid (PFPeA)	2.57	3.02	0.807	J
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	3.13	1.51	0.505	
757124-72-4	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	6.03	1.58	U
307-24-4	Perfluorohexanoic Acid (PFHxA)	3.27	1.51	0.445	
2706-91-4	Perfluoropentanesulfonic Acid (PFPeS)	0.294	1.51	0.264	J
375-85-9	Perfluoroheptanoic Acid (PFHpA)	4.71	1.51	0.302	
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	1.64	1.51	0.362	
335-67-1	Perfluorooctanoic Acid (PFOA)	8.33	1.51	0.656	
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	6.03	2.04	U
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	1.51	0.407	U
375-95-1	Perfluorononanoic Acid (PFNA)	0.558	1.51	0.475	J
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	1.85	1.51	0.686	
335-76-2	Perfluorodecanoic Acid (PFDA)	ND	1.51	0.611	U
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	6.03	2.34	U
68259-12-1	Perfluorononanesulfonic Acid (PFNS)	ND	1.51	0.467	U
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	1.51	0.822	U
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	ND	1.51	0.656	U

Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-07	**Date Collected**	: 09/05/24 08:00
Client ID	: MW-8A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/19/24 09:23
Sample Matrix	: WATER	**Date Extracted**	: 09/18/24
Analytical Method	: 144,1633	**Dilution Factor**	: 1
Lab File ID	: SCI05_240919_20	**Analyst**	: AC
Sample Amount	: 530.5 g	**Instrument ID**	: LCMS05
Extraction Method	: EPA 1633	**GC Column**	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	**%Solids**	: N/A
GPC Cleanup	: N	**Injection Volume**	: 3 uL

		ng/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	1.51	0.347	U
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND	1.51	0.407	U
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	1.51	0.814	U
307-55-1	Perfluorododecanoic Acid (PFDoA)	ND	1.51	0.694	U
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	ND	1.51	0.566	U
376-06-7	Perfluorotetradecanoic Acid (PFTeDA)	ND	1.51	0.400	U
13252-13-6	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	6.03	0.844	U
919005-14-4	4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	6.03	0.950	U
79780-39-5	Perfluorododecanesulfonic Acid (PFDoS)	ND	1.51	0.573	U
756426-58-1	9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	6.03	1.24	U
763051-92-9	11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	6.03	1.24	U
31506-32-8	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	1.51	0.656	U
4151-50-2	N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	1.51	0.694	U
24448-09-7	N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	15.1	3.54	U

Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-07	**Date Collected**	: 09/05/24 08:00
Client ID	: MW-8A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/19/24 09:23
Sample Matrix	: WATER	**Date Extracted**	: 09/18/24
Analytical Method	: 144,1633	**Dilution Factor**	: 1
Lab File ID	: SCI05_240919_20	**Analyst**	: AC
Sample Amount	: 530.5 g	**Instrument ID**	: LCMS05
Extraction Method	: EPA 1633	**GC Column**	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	**%Solids**	: N/A
GPC Cleanup	: N	**Injection Volume**	: 3 uL

		ng/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
1691-99-2	N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	15.1	1.85	U
377-73-1	Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	3.02	0.430	U
863090-89-5	Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	3.02	0.400	U
113507-82-7	Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	3.02	0.332	U
151772-58-6	Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	3.02	1.78	U
356-02-5	3-Perfluoropropyl Propanoic Acid (3: 3FTCA)	ND	7.54	2.49	U
914637-49-3	2H,2H,3H,3H-Perfluorooctanoic Acid (5: 3FTCA)	ND	37.7	8.82	U
812-70-4	3-Perfluoroheptyl Propanoic Acid (7: 3FTCA)	ND	37.7	5.95	U

Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-09	**Date Collected**	: 09/05/24 10:10
Client ID	: MW-10A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/19/24 09:36
Sample Matrix	: WATER	**Date Extracted**	: 09/18/24
Analytical Method	: 144,1633	**Dilution Factor**	: 1
Lab File ID	: SCI05_240919_21	**Analyst**	: AC
Sample Amount	: 520.07 g	**Instrument ID**	: LCMS05
Extraction Method	: EPA 1633	**GC Column**	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	**%Solids**	: N/A
GPC Cleanup	: N	**Injection Volume**	: 3 uL

		ng/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
375-22-4	Perfluorobutanoic Acid (PFBA)	3.28	6.15	0.984	J
2706-90-3	Perfluoropentanoic Acid (PFPeA)	3.67	3.08	0.823	
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	3.28	1.54	0.515	
757124-72-4	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	6.15	1.61	U
307-24-4	Perfluorohexanoic Acid (PFHxA)	2.87	1.54	0.454	
2706-91-4	Perfluoropentanesulfonic Acid (PFPeS)	ND	1.54	0.269	U
375-85-9	Perfluoroheptanoic Acid (PFHpA)	1.44	1.54	0.308	J
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	1.01	1.54	0.369	J
335-67-1	Perfluorooctanoic Acid (PFOA)	2.50	1.54	0.669	
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	6.15	2.08	U
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	1.54	0.415	U
375-95-1	Perfluorononanoic Acid (PFNA)	ND	1.54	0.484	U
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	2.57	1.54	0.700	
335-76-2	Perfluorodecanoic Acid (PFDA)	ND	1.54	0.623	U
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	6.15	2.39	U
68259-12-1	Perfluorononanesulfonic Acid (PFNS)	ND	1.54	0.477	U
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	1.54	0.838	U
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	ND	1.54	0.669	U

Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-09	**Date Collected**	: 09/05/24 10:10
Client ID	: MW-10A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/19/24 09:36
Sample Matrix	: WATER	**Date Extracted**	: 09/18/24
Analytical Method	: 144,1633	**Dilution Factor**	: 1
Lab File ID	: SCI05_240919_21	**Analyst**	: AC
Sample Amount	: 520.07 g	**Instrument ID**	: LCMS05
Extraction Method	: EPA 1633	**GC Column**	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	**%Solids**	: N/A
GPC Cleanup	: N	**Injection Volume**	: 3 uL

		ng/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	1.54	0.354	U
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND	1.54	0.415	U
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	1.54	0.831	U
307-55-1	Perfluorododecanoic Acid (PFDoA)	ND	1.54	0.708	U
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	ND	1.54	0.577	U
376-06-7	Perfluorotetradecanoic Acid (PFTeDA)	ND	1.54	0.408	U
13252-13-6	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	6.15	0.861	U
919005-14-4	4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	6.15	0.969	U
79780-39-5	Perfluorododecanesulfonic Acid (PFDoS)	ND	1.54	0.584	U
756426-58-1	9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	6.15	1.27	U
763051-92-9	11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	6.15	1.27	U
31506-32-8	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	1.54	0.669	U
4151-50-2	N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	1.54	0.708	U
24448-09-7	N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	15.4	3.61	U

Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-09	**Date Collected**	: 09/05/24 10:10
Client ID	: MW-10A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/19/24 09:36
Sample Matrix	: WATER	**Date Extracted**	: 09/18/24
Analytical Method	: 144,1633	**Dilution Factor**	: 1
Lab File ID	: SCI05_240919_21	**Analyst**	: AC
Sample Amount	: 520.07 g	**Instrument ID**	: LCMS05
Extraction Method	: EPA 1633	**GC Column**	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	**%Solids**	: N/A
GPC Cleanup	: N	**Injection Volume**	: 3 uL

		ng/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
1691-99-2	N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	15.4	1.88	U
377-73-1	Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	3.08	0.438	U
863090-89-5	Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	3.08	0.408	U
113507-82-7	Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	3.08	0.338	U
151772-58-6	Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	3.08	1.82	U
356-02-5	3-Perfluoropropyl Propanoic Acid (3: 3FTCA)	ND	7.69	2.54	U
914637-49-3	2H,2H,3H,3H-Perfluorooctanoic Acid (5: 3FTCA)	ND	38.4	9.00	U
812-70-4	3-Perfluoroheptyl Propanoic Acid (7: 3FTCA)	ND	38.4	6.07	U

Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-11	**Date Collected**	: 09/04/24 11:00
Client ID	: FIELD BLANK	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/19/24 09:49
Sample Matrix	: WATER	**Date Extracted**	: 09/18/24
Analytical Method	: 144,1633	**Dilution Factor**	: 1
Lab File ID	: SCI05_240919_22	**Analyst**	: AC
Sample Amount	: 560.93 g	**Instrument ID**	: LCMS05
Extraction Method	: EPA 1633	**GC Column**	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	**%Solids**	: N/A
GPC Cleanup	: N	**Injection Volume**	: 3 uL

		ng/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
375-22-4	Perfluorobutanoic Acid (PFBA)	ND	5.70	0.913	U
2706-90-3	Perfluoropentanoic Acid (PFPeA)	ND	2.85	0.763	U
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	ND	1.43	0.478	U
757124-72-4	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	5.70	1.49	U
307-24-4	Perfluorohexanoic Acid (PFHxA)	ND	1.43	0.421	U
2706-91-4	Perfluoropentanesulfonic Acid (PFPeS)	ND	1.43	0.250	U
375-85-9	Perfluoroheptanoic Acid (PFHpA)	ND	1.43	0.285	U
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	ND	1.43	0.342	U
335-67-1	Perfluorooctanoic Acid (PFOA)	ND	1.43	0.620	U
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	5.70	1.92	U
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	1.43	0.385	U
375-95-1	Perfluorononanoic Acid (PFNA)	ND	1.43	0.449	U
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	ND	1.43	0.649	U
335-76-2	Perfluorodecanoic Acid (PFDA)	ND	1.43	0.578	U
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	5.70	2.22	U
68259-12-1	Perfluorononanesulfonic Acid (PFNS)	ND	1.43	0.442	U
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	1.43	0.777	U
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	ND	1.43	0.620	U

Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-11	**Date Collected**	: 09/04/24 11:00
Client ID	: FIELD BLANK	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/19/24 09:49
Sample Matrix	: WATER	**Date Extracted**	: 09/18/24
Analytical Method	: 144,1633	**Dilution Factor**	: 1
Lab File ID	: SCI05_240919_22	**Analyst**	: AC
Sample Amount	: 560.93 g	**Instrument ID**	: LCMS05
Extraction Method	: EPA 1633	**GC Column**	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	**%Solids**	: N/A
GPC Cleanup	: N	**Injection Volume**	: 3 uL

		ng/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	1.43	0.328	U
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND	1.43	0.385	U
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	1.43	0.770	U
307-55-1	Perfluorododecanoic Acid (PFDoA)	ND	1.43	0.656	U
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	ND	1.43	0.535	U
376-06-7	Perfluorotetradecanoic Acid (PFTeDA)	ND	1.43	0.378	U
13252-13-6	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	5.70	0.799	U
919005-14-4	4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	5.70	0.898	U
79780-39-5	Perfluorododecanesulfonic Acid (PFDoS)	ND	1.43	0.542	U
756426-58-1	9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	5.70	1.18	U
763051-92-9	11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	5.70	1.18	U
31506-32-8	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	1.43	0.620	U
4151-50-2	N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	1.43	0.656	U
24448-09-7	N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	14.3	3.35	U

Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-11	**Date Collected**	: 09/04/24 11:00
Client ID	: FIELD BLANK	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/19/24 09:49
Sample Matrix	: WATER	**Date Extracted**	: 09/18/24
Analytical Method	: 144,1633	**Dilution Factor**	: 1
Lab File ID	: SCI05_240919_22	**Analyst**	: AC
Sample Amount	: 560.93 g	**Instrument ID**	: LCMS05
Extraction Method	: EPA 1633	**GC Column**	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	**%Solids**	: N/A
GPC Cleanup	: N	**Injection Volume**	: 3 uL

		ng/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
1691-99-2	N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	14.3	1.75	U
377-73-1	Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	2.85	0.406	U
863090-89-5	Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	2.85	0.378	U
113507-82-7	Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	2.85	0.314	U
151772-58-6	Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	2.85	1.68	U
356-02-5	3-Perfluoropropyl Propanoic Acid (3: 3FTCA)	ND	7.13	2.35	U
914637-49-3	2H,2H,3H,3H-Perfluorooctanoic Acid (5: 3FTCA)	ND	35.6	8.34	U
812-70-4	3-Perfluoroheptyl Propanoic Acid (7: 3FTCA)	ND	35.6	5.63	U

Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-13	**Date Collected**	: 09/04/24 11:30
Client ID	: MW-3A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/19/24 10:02
Sample Matrix	: WATER	**Date Extracted**	: 09/18/24
Analytical Method	: 144,1633	**Dilution Factor**	: 1
Lab File ID	: SCI05_240919_23	**Analyst**	: AC
Sample Amount	: 528.92 g	**Instrument ID**	: LCMS05
Extraction Method	: EPA 1633	**GC Column**	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	**%Solids**	: N/A
GPC Cleanup	: N	**Injection Volume**	: 3 uL

		ng/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
375-22-4	Perfluorobutanoic Acid (PFBA)	3.03	6.05	0.968	J
2706-90-3	Perfluoropentanoic Acid (PFPeA)	2.71	3.02	0.809	J
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	1.16	1.51	0.507	J
757124-72-4	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	6.05	1.58	U
307-24-4	Perfluorohexanoic Acid (PFHxA)	2.63	1.51	0.446	
2706-91-4	Perfluoropentanesulfonic Acid (PFPeS)	ND	1.51	0.265	U
375-85-9	Perfluoroheptanoic Acid (PFHpA)	2.18	1.51	0.302	
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	2.00	1.51	0.363	
335-67-1	Perfluorooctanoic Acid (PFOA)	5.73	1.51	0.658	
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	6.05	2.04	U
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	1.51	0.408	U
375-95-1	Perfluorononanoic Acid (PFNA)	8.18	1.51	0.476	
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	25.3	1.51	0.688	
335-76-2	Perfluorodecanoic Acid (PFDA)	ND	1.51	0.612	U
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	6.05	2.35	U
68259-12-1	Perfluorononanesulfonic Acid (PFNS)	ND	1.51	0.469	U
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	1.51	0.824	U
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	ND	1.51	0.658	U

Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-13	**Date Collected**	: 09/04/24 11:30
Client ID	: MW-3A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/19/24 10:02
Sample Matrix	: WATER	**Date Extracted**	: 09/18/24
Analytical Method	: 144,1633	**Dilution Factor**	: 1
Lab File ID	: SCI05_240919_23	**Analyst**	: AC
Sample Amount	: 528.92 g	**Instrument ID**	: LCMS05
Extraction Method	: EPA 1633	**GC Column**	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	**%Solids**	: N/A
GPC Cleanup	: N	**Injection Volume**	: 3 uL

		ng/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	1.51	0.348	U
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND	1.51	0.408	U
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	1.51	0.817	U
307-55-1	Perfluorododecanoic Acid (PFDoA)	ND	1.51	0.696	U
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	ND	1.51	0.567	U
376-06-7	Perfluorotetradecanoic Acid (PFTeDA)	ND	1.51	0.401	U
13252-13-6	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	6.05	0.847	U
919005-14-4	4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	6.05	0.953	U
79780-39-5	Perfluorododecanesulfonic Acid (PFDoS)	ND	1.51	0.575	U
756426-58-1	9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	6.05	1.25	U
763051-92-9	11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	6.05	1.25	U
31506-32-8	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	1.51	0.658	U
4151-50-2	N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	1.51	0.696	U
24448-09-7	N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	15.1	3.55	U

Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-13	**Date Collected**	: 09/04/24 11:30
Client ID	: MW-3A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/19/24 10:02
Sample Matrix	: WATER	**Date Extracted**	: 09/18/24
Analytical Method	: 144,1633	**Dilution Factor**	: 1
Lab File ID	: SCI05_240919_23	**Analyst**	: AC
Sample Amount	: 528.92 g	**Instrument ID**	: LCMS05
Extraction Method	: EPA 1633	**GC Column**	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	**%Solids**	: N/A
GPC Cleanup	: N	**Injection Volume**	: 3 uL

		ng/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
1691-99-2	N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	15.1	1.85	U
377-73-1	Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	3.02	0.431	U
863090-89-5	Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	3.02	0.401	U
113507-82-7	Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	3.02	0.333	U
151772-58-6	Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	3.02	1.78	U
356-02-5	3-Perfluoropropyl Propanoic Acid (3: 3FTCA)	ND	7.56	2.50	U
914637-49-3	2H,2H,3H,3H-Perfluorooctanoic Acid (5: 3FTCA)	ND	37.8	8.85	U
812-70-4	3-Perfluoroheptyl Propanoic Acid (7: 3FTCA)	ND	37.8	5.97	U

Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1973357-1	**Date Collected**	: NA
Client ID	: WG1973357-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 09/19/24 07:54
Sample Matrix	: WATER	**Date Extracted**	: 09/18/24
Analytical Method	: 144,1633	**Dilution Factor**	: 1
Lab File ID	: SCI05_240919_13	**Analyst**	: AC
Sample Amount	: 500 g	**Instrument ID**	: LCMS05
Extraction Method	: EPA 1633	**GC Column**	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	**%Solids**	: N/A
GPC Cleanup	: N	**Injection Volume**	: 3 uL

		ng/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
375-22-4	Perfluorobutanoic Acid (PFBA)	ND	6.40	1.02	U
2706-90-3	Perfluoropentanoic Acid (PFPeA)	ND	3.20	0.856	U
375-73-5	Perfluorobutanesulfonic Acid (PFBS)	ND	1.60	0.536	U
757124-72-4	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	6.40	1.67	U
307-24-4	Perfluorohexanoic Acid (PFHxA)	ND	1.60	0.472	U
2706-91-4	Perfluoropentanesulfonic Acid (PFPeS)	ND	1.60	0.280	U
375-85-9	Perfluoroheptanoic Acid (PFHpA)	ND	1.60	0.320	U
355-46-4	Perfluorohexanesulfonic Acid (PFHxS)	ND	1.60	0.384	U
335-67-1	Perfluorooctanoic Acid (PFOA)	ND	1.60	0.696	U
27619-97-2	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	6.40	2.16	U
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND	1.60	0.432	U
375-95-1	Perfluorononanoic Acid (PFNA)	ND	1.60	0.504	U
1763-23-1	Perfluorooctanesulfonic Acid (PFOS)	ND	1.60	0.728	U
335-76-2	Perfluorodecanoic Acid (PFDA)	ND	1.60	0.648	U
39108-34-4	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	6.40	2.49	U
68259-12-1	Perfluorononanesulfonic Acid (PFNS)	ND	1.60	0.496	U
2355-31-9	N-Methyl Perfluorooctanesulfonamidoaceti c Acid (NMeFOSAA)	ND	1.60	0.872	U
2058-94-8	Perfluoroundecanoic Acid (PFUnA)	ND	1.60	0.696	U

Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1973357-1	**Date Collected**	: NA
Client ID	: WG1973357-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 09/19/24 07:54
Sample Matrix	: WATER	**Date Extracted**	: 09/18/24
Analytical Method	: 144,1633	**Dilution Factor**	: 1
Lab File ID	: SCI05_240919_13	**Analyst**	: AC
Sample Amount	: 500 g	**Instrument ID**	: LCMS05
Extraction Method	: EPA 1633	**GC Column**	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	**%Solids**	: N/A
GPC Cleanup	: N	**Injection Volume**	: 3 uL

		ng/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
335-77-3	Perfluorodecanesulfonic Acid (PFDS)	ND	1.60	0.368	U
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND	1.60	0.432	U
2991-50-6	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	1.60	0.864	U
307-55-1	Perfluorododecanoic Acid (PFDoA)	ND	1.60	0.736	U
72629-94-8	Perfluorotridecanoic Acid (PFTrDA)	ND	1.60	0.600	U
376-06-7	Perfluorotetradecanoic Acid (PFTeDA)	ND	1.60	0.424	U
13252-13-6	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	6.40	0.896	U
919005-14-4	4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	6.40	1.01	U
79780-39-5	Perfluorododecanesulfonic Acid (PFDoS)	ND	1.60	0.608	U
756426-58-1	9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	6.40	1.32	U
763051-92-9	11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	6.40	1.32	U
31506-32-8	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	1.60	0.696	U
4151-50-2	N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	1.60	0.736	U
24448-09-7	N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	16.0	3.76	U

Results Summary
Form 1
Perfluorinated Alkyl Acids by EPA 1633

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1973357-1	**Date Collected**	: NA
Client ID	: WG1973357-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 09/19/24 07:54
Sample Matrix	: WATER	**Date Extracted**	: 09/18/24
Analytical Method	: 144,1633	**Dilution Factor**	: 1
Lab File ID	: SCI05_240919_13	**Analyst**	: AC
Sample Amount	: 500 g	**Instrument ID**	: LCMS05
Extraction Method	: EPA 1633	**GC Column**	: Acquity UPLC BEH C18
Extract Volume	: 4000 uL	**%Solids**	: N/A
GPC Cleanup	: N	**Injection Volume**	: 3 uL

		ng/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
1691-99-2	N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	16.0	1.96	U
377-73-1	Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND	3.20	0.456	U
863090-89-5	Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND	3.20	0.424	U
113507-82-7	Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND	3.20	0.352	U
151772-58-6	Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND	3.20	1.89	U
356-02-5	3-Perfluoropropyl Propanoic Acid (3: 3FTCA)	ND	8.00	2.64	U
914637-49-3	2H,2H,3H,3H-Perfluorooctanoic Acid (5: 3FTCA)	ND	40.0	9.36	U
812-70-4	3-Perfluoroheptyl Propanoic Acid (7: 3FTCA)	ND	40.0	6.31	U

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

Method: EPA1633_NIS_CALC.qmethod
Calibration: 240813_1633_ICAL

ID: L2450786-03
Name: SCI05_240919_16.wiff
Date & Time: 2024-09-19T08:32:50
Description: WG1973506,WG1973357,ICAL21391
Instrument: Triple Quad 5500+
User: LCMS05:AC

LC/MS-MS Method:EPA_1633.dam

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
1	PFBA	375-22-4	2.85	213.0 / 169.0	48598		0.322	N/A	N/A	N/A	N/A
2	PFPeA	2706-90-3	4.66	263.0 / 219.0	30796		0.138	0.007	0.007	N/A	N/A
3	PFPeA_2	2706-90-3	4.65	263.0 / 68.9	209		0.133	0.007	0.007	N/A	N/A
4	PFHxA	307-24-4	5.35	313.0 / 269.0	105633		0.318	0.091	0.072	Pass	N/A
5	PFHxA_2	307-24-4	5.35	313.0 / 119.0	9615		0.392	0.091	0.072	Pass	N/A
6	PFHpA	375-85-9	6.25	363.1 / 319.0	77746		0.241	0.319	0.297	Pass	N/A
7	PFHpA_2	375-85-9	6.25	363.1 / 169.0	24794		0.251	0.319	0.297	Pass	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
8	PFOA	335-67-1	7.48	413.1 / 369.1	169815	M5	0.824	0.538	0.586	Pass	N/A
9	PFOA_2	335-67-1	7.48	413.1 / 169.0	91360	M7	0.809	0.538	0.586	Pass	N/A
10	PFNA	375-95-1	7.92	462.8 / 418.9	113639	M5	0.406	0.255	0.313	Pass	N/A
11	PFNA_2	375-95-1	7.92	462.8 / 218.9	28971	M7	0.339	0.255	0.313	Pass	N/A
12	PFDA	335-76-2	8.14	513.1 / 469.1	17134		0.052	0.168	0.142	Pass	N/A
13	PFDA_2	335-76-2	8.14	513.1 / 219.0	2874		0.058	0.168	0.142	Pass	N/A
14	PFUnA	2058-94-8	N/A	563.1 / 519.1	N/A		N/A	N/A	0.194	N/A	N/A
15	PFUnA_2	2058-94-8	N/A	563.1 / 269.0	N/A		N/A	N/A	0.194	N/A	N/A
16	PFDoA	307-55-1	N/A	613.1 / 569.1	N/A		N/A	N/A	0.167	N/A	N/A
17	PFDoA_2	307-55-1	N/A	613.1 / 319.0	N/A		N/A	N/A	0.167	N/A	N/A
18	PFTrDA	72629-94-8	N/A	663.1 / 619.1	N/A		N/A	N/A	0.228	N/A	N/A
19	PFTrDA_2	72629-94-8	N/A	663.1 / 169.0	N/A		N/A	N/A	0.228	N/A	N/A
20	PFTeDA	376-06-7	N/A	713.1 / 669.1	N/A		N/A	N/A	0.137	N/A	N/A
21	PFTeDA_2	376-06-7	N/A	713.1 / 169.0	N/A		N/A	N/A	0.137	N/A	N/A
22	PFBS	375-73-5	5.32	299.1 / 80.1	29577		0.136	0.342	0.396	Pass	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
23	PFBS_2	375-73-5	5.32	299.1 / 99.1	10109		0.117	0.342	0.396	Pass	N/A
24	PFPeS	2706-91-4	6.33	349.1 / 80.1	4906	M2	0.030	0.257	0.299	Pass	N/A
25	PFPeS_2	2706-91-4	6.33	349.1 / 99.1	1261	M7	0.025	0.257	0.299	Pass	N/A
26	PFHxS	355-46-4	7.59	399.1 / 80.1	61952	M5	0.399	0.312	0.315	Pass	N/A
27	PFHxS_2	355-46-4	7.59	399.1 / 99.1	19324	M7	0.401	0.312	0.315	Pass	N/A
28	PFHpS	375-92-8	7.98	449.1 / 80.1	3450	M2	0.020	0.271	0.287	Pass	N/A
29	PFHpS_2	375-92-8	7.99	449.1 / 99.1	936	M7	0.019	0.271	0.287	Pass	N/A
30	PFOS	1763-23-1	8.21	499.1 / 80.1	433565	M5	2.398	0.210	0.238	Pass	N/A
31	PFOS_2	1763-23-1	8.23	499.1 / 99.1	90901	M7	2.052	0.210	0.238	Pass	N/A
32	PFNS	68259-12-1	N/A	549.1 / 80.1	N/A		N/A	N/A	0.301	N/A	N/A
33	PFNS_2	68259-12-1	N/A	549.1 / 99.1	N/A		N/A	N/A	0.301	N/A	N/A
34	PFDS	335-77-3	N/A	599.1 / 80.1	N/A		N/A	N/A	0.275	N/A	N/A
35	PFDS_2	335-77-3	N/A	599.1 / 99.1	N/A		N/A	N/A	0.275	N/A	N/A
36	PFDoS	79780-39-5	N/A	699.2 / 80.1	N/A		N/A	N/A	0.274	N/A	N/A
37	PFDoS_2	79780-39-5	N/A	699.2 / 99.1	N/A		N/A	N/A	0.274	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
38	4:2FTS	757124-72-4	N/A	327.1 / 307.1	N/A		N/A	N/A	0.516	N/A	N/A
39	4:2FTS_2	757124-72-4	N/A	327.1 / 81.1	N/A		N/A	N/A	0.516	N/A	N/A
40	6:2FTS	27619-97-2	N/A	427.2 / 407.2	N/A		N/A	N/A	0.565	N/A	N/A
41	6:2FTS_2	27619-97-2	N/A	427.2 / 81.1	N/A		N/A	N/A	0.565	N/A	N/A
42	8:2FTS	39108-34-4	N/A	527.2 / 507.2	N/A		N/A	N/A	0.662	N/A	N/A
43	8:2FTS_2	39108-34-4	N/A	527.2 / 81.1	N/A		N/A	N/A	0.662	N/A	N/A
44	PFOSA	754-91-6	N/A	498.1 / 78.1	N/A		N/A	N/A	0.025	N/A	N/A
45	PFOSA_2	754-91-6	N/A	498.1 / 478.0	N/A		N/A	N/A	0.025	N/A	N/A
46	NMeFOSA	31506-32-8	N/A	512.2 / 219.0	N/A		N/A	N/A	1.551	N/A	N/A
47	NMeFOSA_2	31506-32-8	N/A	512.2 / 169.0	N/A		N/A	N/A	1.551	N/A	N/A
48	NEtFOSA	4151-50-2	N/A	526.2 / 219.0	N/A		N/A	N/A	1.285	N/A	N/A
49	NEtFOSA_2	4151-50-2	N/A	526.2 / 169.0	N/A		N/A	N/A	1.285	N/A	N/A
50	NMeFOSAA	2355-31-9	N/A	570.2 / 419.1	N/A		N/A	N/A	0.700	N/A	N/A
51	NMeFOSAA_2	2355-31-9	N/A	570.2 / 483.0	N/A		N/A	N/A	0.700	N/A	N/A
52	NEtFOSAA	2991-50-6	N/A	584.2 / 419.1	N/A		N/A	N/A	0.487	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
53	NEtFOSAA_2	2991-50-6	N/A	584.2 / 526.2	N/A		N/A	N/A	0.487	N/A	N/A
54	NMeFOSE	24448-09-7	N/A	616.1 / 58.9	N/A		N/A	N/A	N/A	N/A	N/A
55	NEtFOSE	1691-99-2	N/A	630.0 / 58.9	N/A		N/A	N/A	N/A	N/A	N/A
56	HFPO-DA	13252-13-6	N/A	285.0 / 169.0	N/A		N/A	N/A	0.464	N/A	N/A
57	HFPO-DA_2	13252-13-6	N/A	285.0 / 184.9	N/A		N/A	N/A	0.464	N/A	N/A
58	ADONA	919005-14-4	N/A	377.1 / 251.0	N/A		N/A	N/A	0.634	N/A	N/A
59	ADONA_2	919005-14-4	N/A	377.1 / 84.8	N/A		N/A	N/A	0.634	N/A	N/A
60	9Cl-PF3ONS	756426-58-1	N/A	530.8 / 351.1	N/A		N/A	N/A	0.322	N/A	N/A
61	9Cl-PF3ONS_2	756426-58-1	N/A	532.8 / 353.0	N/A		N/A	N/A	0.322	N/A	N/A
62	11Cl-PF3OUdS	763051-92-9	N/A	630.9 / 451.0	N/A		N/A	N/A	0.331	N/A	N/A
63	11Cl-PF3OUdS_2	763051-92-9	N/A	632.9 / 452.9	N/A		N/A	N/A	0.331	N/A	N/A
64	3:3FTCA	356-02-5	N/A	241.1 / 177.1	N/A		N/A	N/A	1.074	N/A	N/A
65	3:3FTCA_2	356-02-5	N/A	241.1 / 117.0	N/A		N/A	N/A	1.074	N/A	N/A
66	5:3FTCA	914637-49-3	N/A	341.1 / 237.1	N/A		N/A	N/A	0.953	N/A	N/A
67	5:3FTCA_2	914637-49-3	N/A	341.1 / 217.0	N/A		N/A	N/A	0.953	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
68	7:3FTCA	812-70-4	N/A	441.1 / 316.9	N/A		N/A	N/A	1.558	N/A	N/A
69	7:3FTCA_2	812-70-4	N/A	441.1 / 337.1	N/A		N/A	N/A	1.558	N/A	N/A
70	PFEESA	113507-82-7	N/A	315.1 / 135.0	N/A		N/A	N/A	0.087	N/A	N/A
71	PFEESA_2	113507-82-7	N/A	315.1 / 82.9	N/A		N/A	N/A	0.087	N/A	N/A
72	PFMPA	377-73-1	N/A	229.0 / 85.0	N/A		N/A	N/A	N/A	N/A	N/A
73	PFMBA	863090-89-5	N/A	279.0 / 85.0	N/A		N/A	N/A	N/A	N/A	N/A
74	NFDHA	151772-58-6	N/A	295.0 / 201.0	N/A		N/A	N/A	0.910	N/A	N/A
75	NFDHA_2	151772-58-6	N/A	295.0 / 84.9	N/A		N/A	N/A	0.910	N/A	N/A
76	TDCA	516-50-7	N/A	499.1 / 124.1	N/A		N/A	N/A	40.716	N/A	N/A
77	TDCA_2	516-50-7	N/A	499.1 / 79.9	N/A		N/A	N/A	40.716	N/A	N/A
78	13C2D4-4:2FTS	Surr	N/A	333.2 / 312.1	N/A		N/A	N/A	N/A	N/A	N/A
79	13C2-PFOA	Surr	N/A	415.0 / 370.0	N/A		N/A	N/A	N/A	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C4-PFBA	EIS	2.84	217.0 / 172.0	1860123		6.311	NA	NA	NA	63.1

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C5-PFPeA	EIS	4.65	268.0 / 223.0	1208422		3.361	NA	NA	NA	67.2
	13C5-PFHxA	EIS	5.34	318.0 / 273.0	680727		1.442	NA	NA	NA	57.7
	13C4-PFHpA	EIS	6.24	367.0 / 322.0	688739		1.457	NA	NA	NA	58.3
	13C8-PFOA	EIS	7.47	421.0 / 376.0	989930		1.535	NA	NA	NA	61.4
	13C9-PFNA	EIS	7.92	472.0 / 427.0	477861		0.728	NA	NA	NA	58.2
	13C6-PFDA	EIS	8.14	519.0 / 474.0	478078		0.794	NA	NA	NA	63.5
	13C7-PFUnA	EIS	8.41	570.0 / 525.0	404125		0.829	NA	NA	NA	66.3

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C2-PFDoA	EIS	8.82	615.1 / 570.0	325789		1.028	NA	NA	NA	82.2
	13C2-PFTeDA	EIS	9.85	715.1 / 670.1	249611		0.725	NA	NA	NA	58.0
	13C3-PFBS	EIS	5.32	302.1 / 80.1	518082		1.404	NA	NA	NA	60.3
	13C3-PFHxS	EIS	7.58	402.1 / 80.1	388874		1.327	NA	NA	NA	56.0
	13C8-PFOS	EIS	8.23	507.1 / 80.1	440166		1.452	NA	NA	NA	60.6
	13C2-4:2FTS	EIS	5.14	329.1 / 81.1	246531		3.744	NA	NA	NA	79.8
	13C2-6:2FTS	EIS	7.07	429.2 / 81.1	136305		2.824	NA	NA	NA	59.4
	13C2-8:2FTS	EIS	8.04	529.2 / 81.1	213045		3.016	NA	NA	NA	62.8

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C8-PFOSA	EIS	9.51	506.1 / 78.1	649420		1.612	NA	NA	NA	64.5
	d3-NMeFOSA	EIS	10.14	515.2 / 219.0	92856		1.369	NA	NA	NA	54.8
	d5-NEtFOSA	EIS	10.35	531.2 / 219.0	91007		1.373	NA	NA	NA	54.9
	d3-NMeFOSAA	EIS	8.19	573.2 / 419.1	254411		1.659	NA	NA	NA	33.2
	d5-NEtFOSAA	EIS	8.32	589.3 / 419.1	234545		2.910	NA	NA	NA	58.2
	d7-NMeFOSE	EIS	10.05	623.2 / 58.9	900727		17.195	NA	NA	NA	68.8
	d9-NEtFOSE	EIS	10.24	639.2 / 58.9	1385622		17.942	NA	NA	NA	71.8

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C3-HFPO-DA	EIS	5.60	287.0 / 169.0	1841925		5.886	NA	NA	NA	58.9
	13C3-PFBA	NIS	2.84	216.0 / 172.0	1289362		6.030	NA	NA	NA	120.6
	13C2-PFHxA	NIS	5.34	315.0 / 270.0	1402067		2.864	NA	NA	NA	114.5
	13C4-PFOA	NIS	7.47	417.0 / 372.0	843751		2.695	NA	NA	NA	107.8
	13C5-PFNA	NIS	7.91	468.0 / 423.0	799858		1.460	NA	NA	NA	116.8
	13C2-PFDA	NIS	8.14	515.1 / 470.1	707541		1.381	NA	NA	NA	110.5
	18O2-PFHxS	NIS	7.58	403.1 / 84.1	595707		2.543	NA	NA	NA	107.3
	13C4-PFOS	NIS	8.23	503.1 / 80.1	536128		2.546	NA	NA	NA	106.3

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
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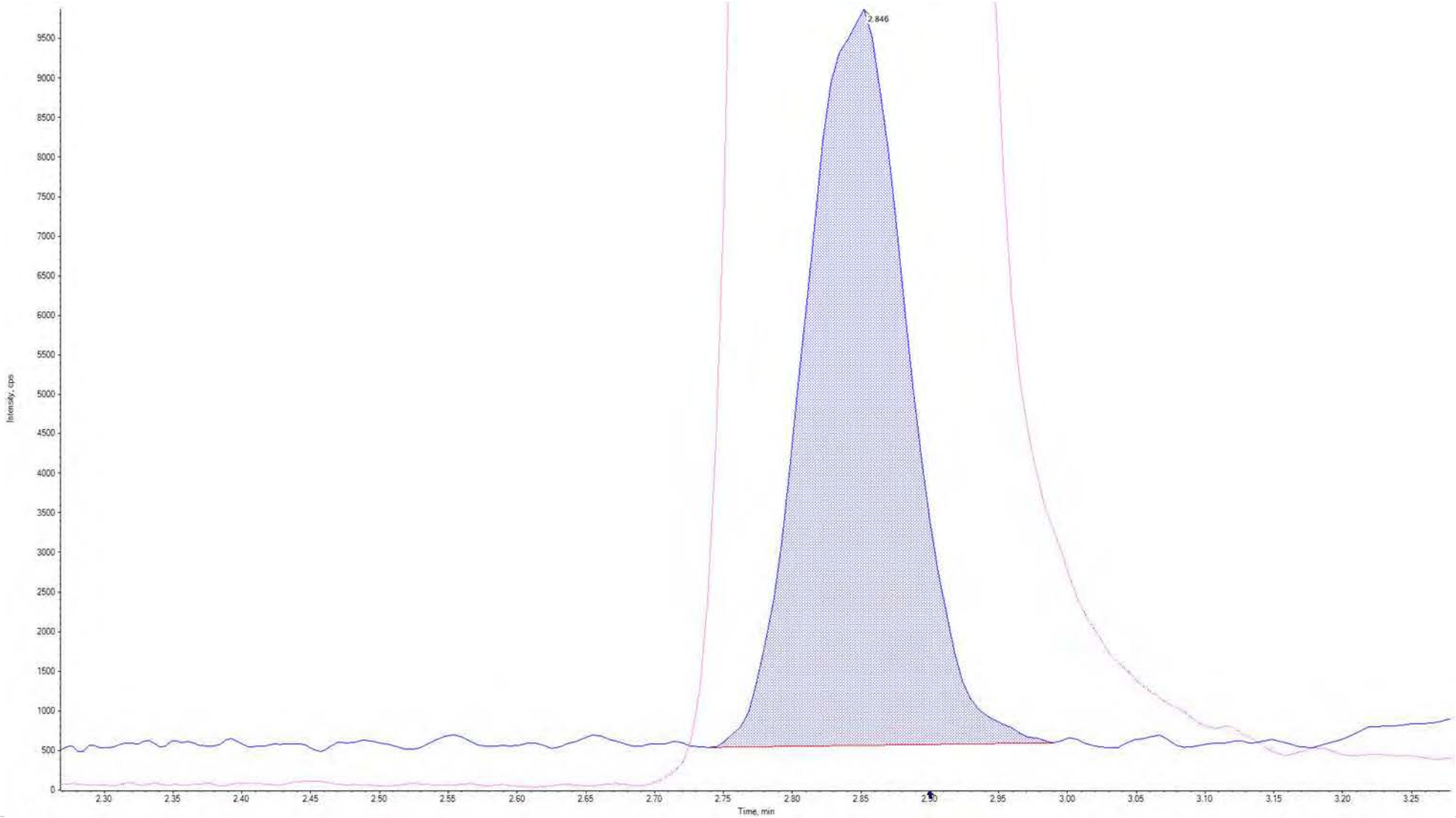
Generated: 9/19/2024 8:04:31 AM

PFBA
Sample: L2450786-03 S/N:321.6 Points Across peak:43



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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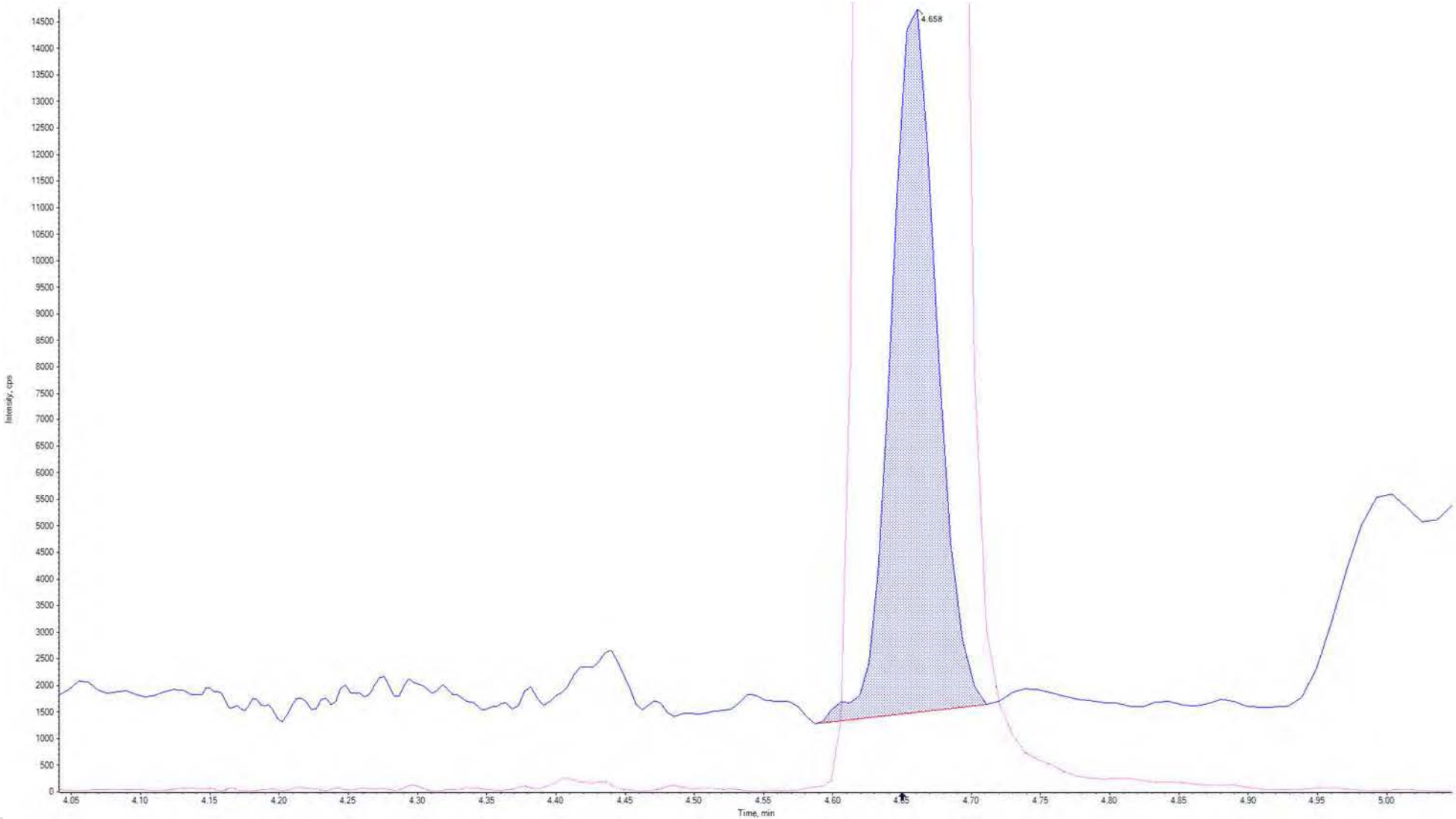
Generated: 9/19/2024 8:04:31 AM

PFPeA
Sample: L2450786-03 S/N:126.4 Points Across peak:18



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Alpha Analytical Inc.
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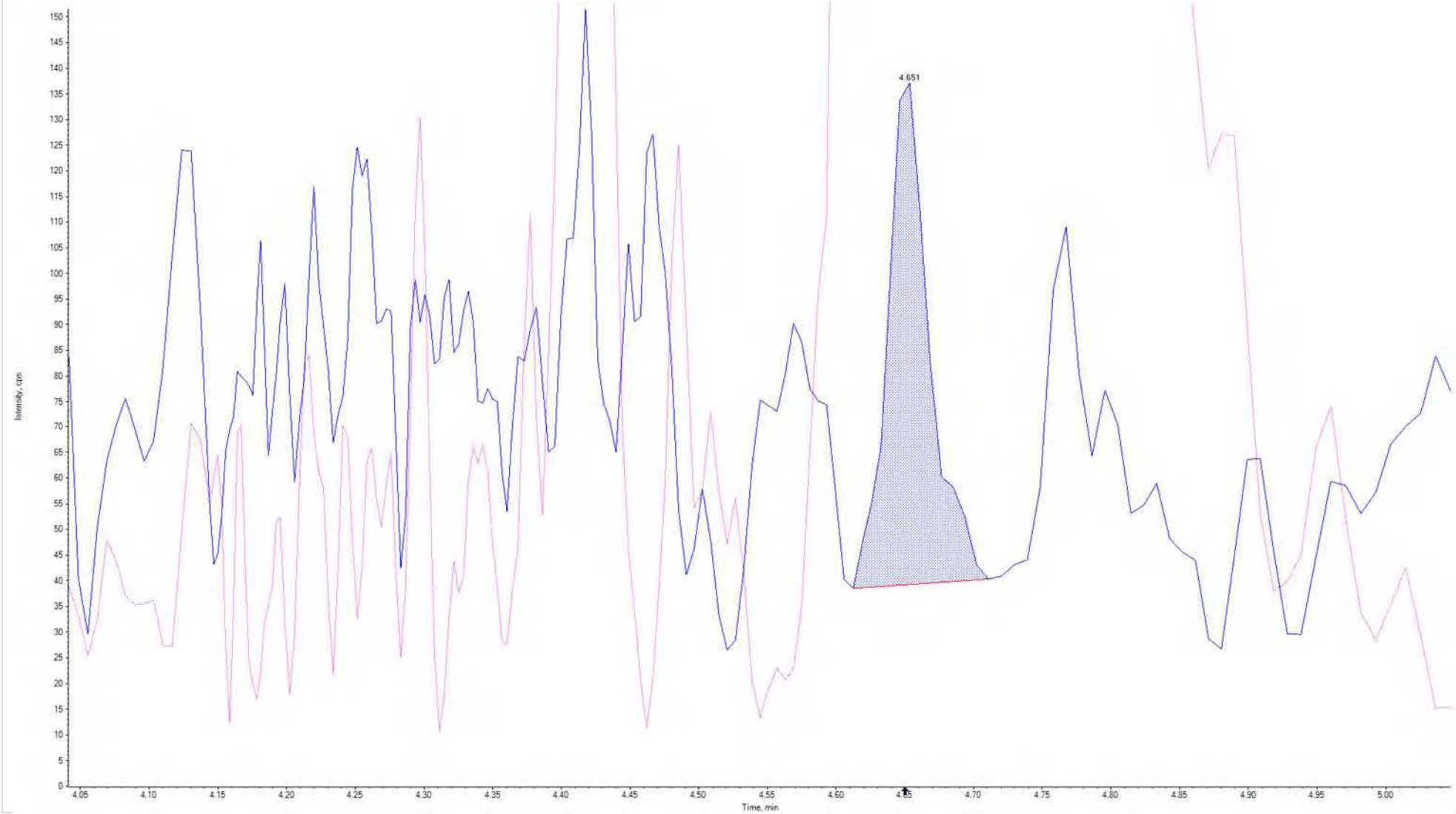
Generated: 9/19/2024 8:04:31 AM

PFPeA_2
Sample: L2450786-03 S/N:16.5 Points Across peak:14



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Alpha Analytical Inc.
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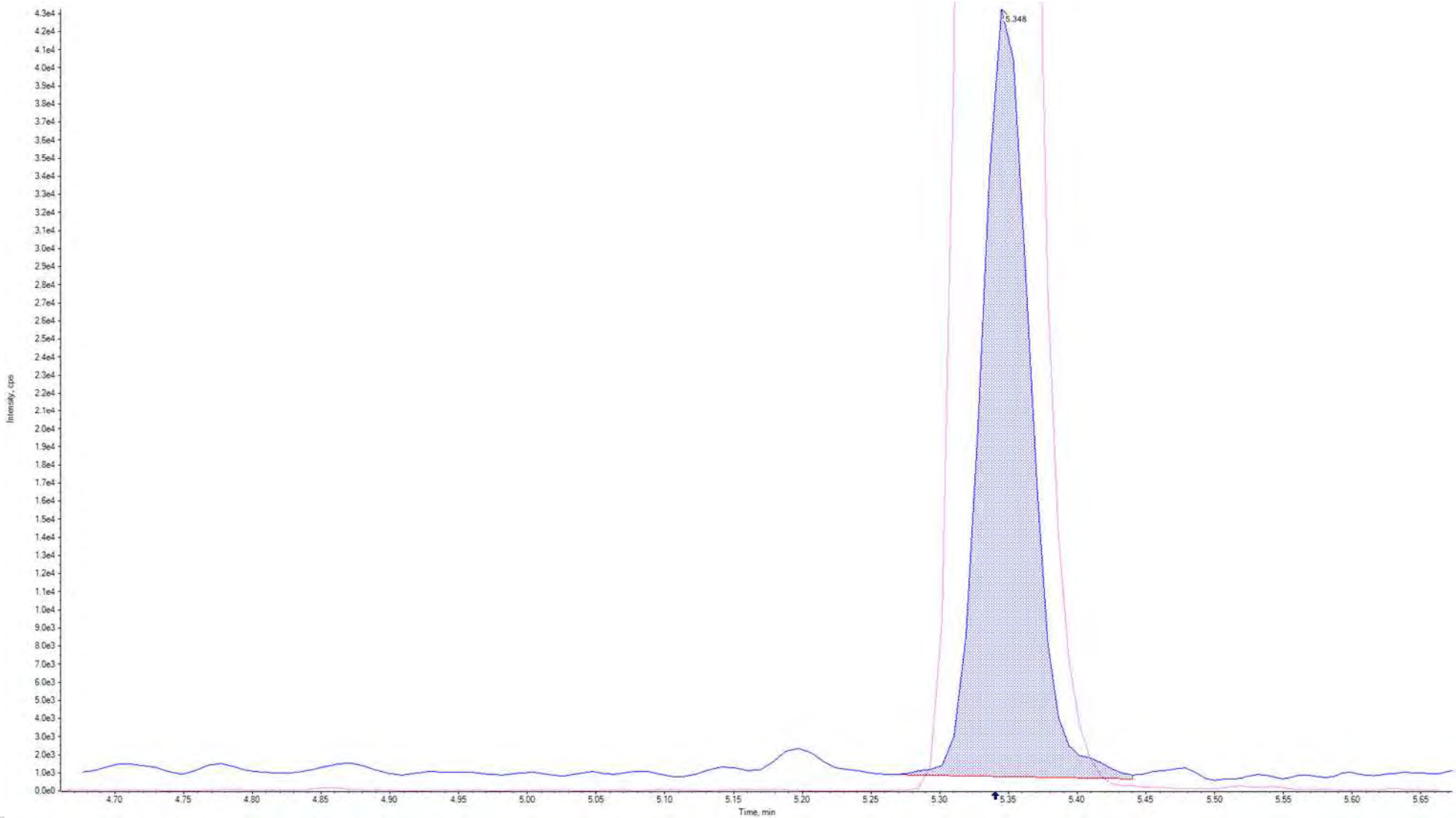
Generated: 9/19/2024 8:04:31 AM

PFHxA
Sample: L2450786-03 S/N:280.8 Points Across peak:22



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Alpha Analytical Inc.
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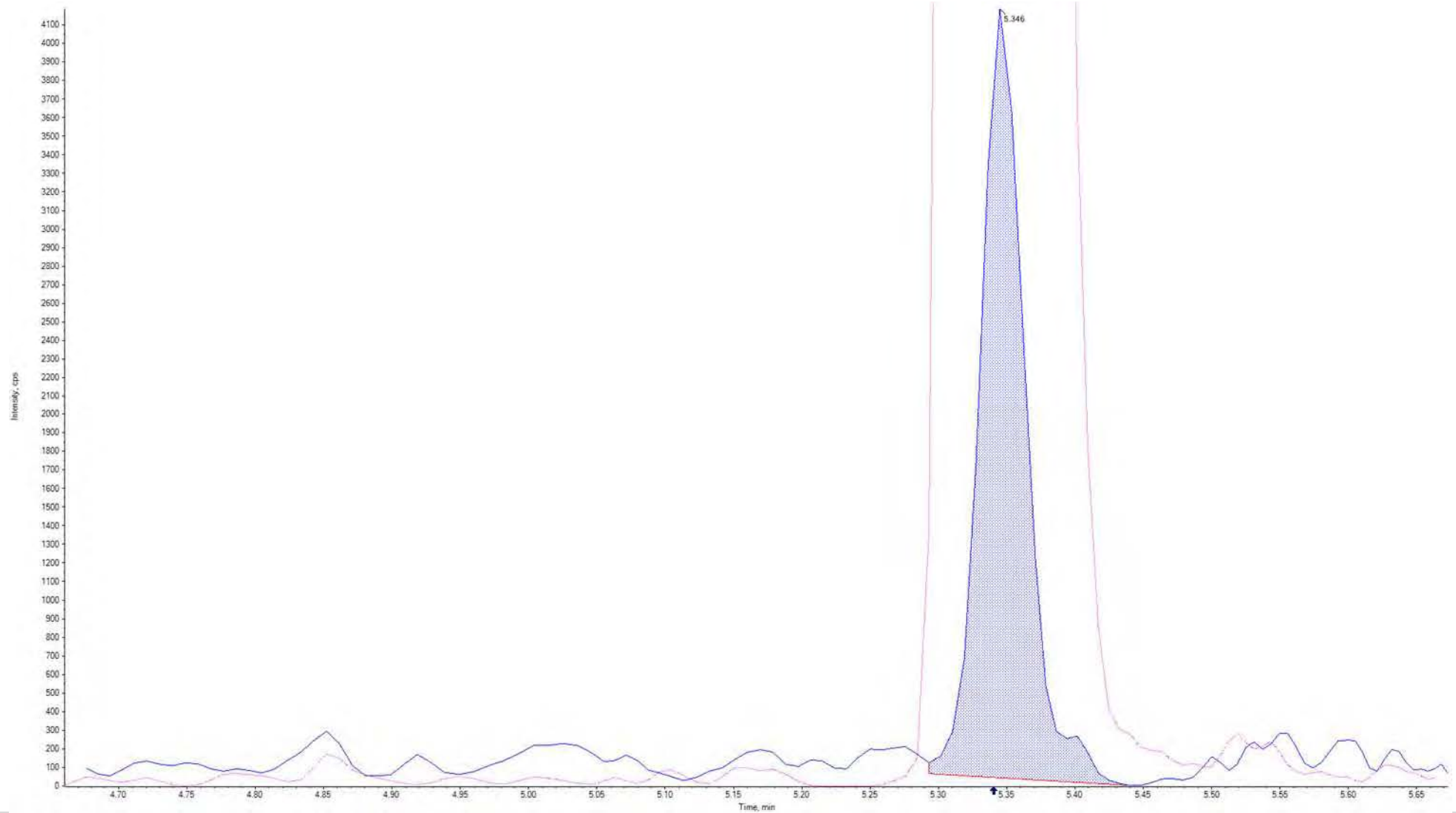
PFHxA_2
Sample: L2450786-03 S/N:696.8 Points Across peak:19



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Alpha Analytical Inc.
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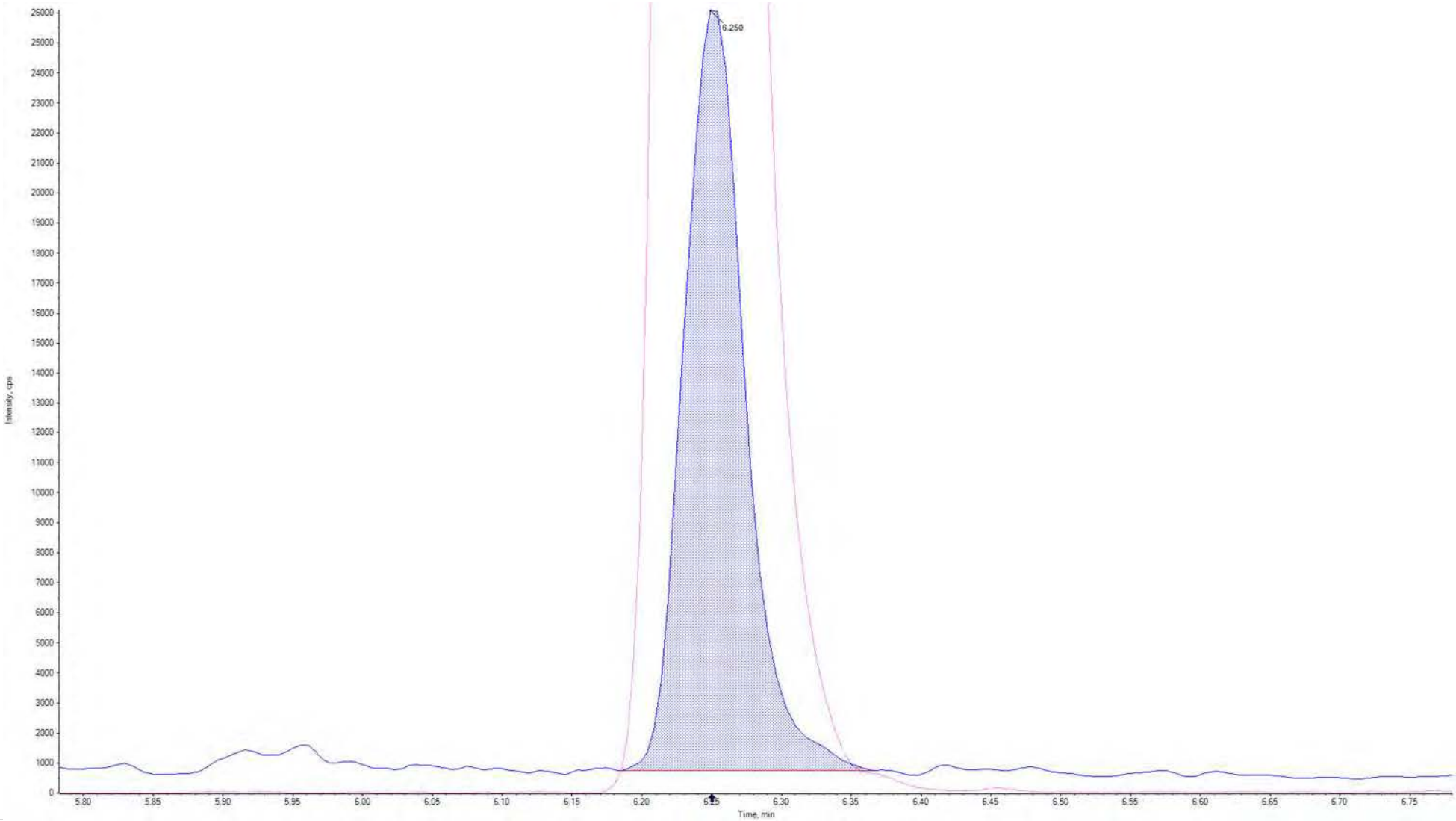
Generated: 9/19/2024 8:04:31 AM

PFHpA
Sample: L2450786-03 S/N:469.4 Points Across peak:32



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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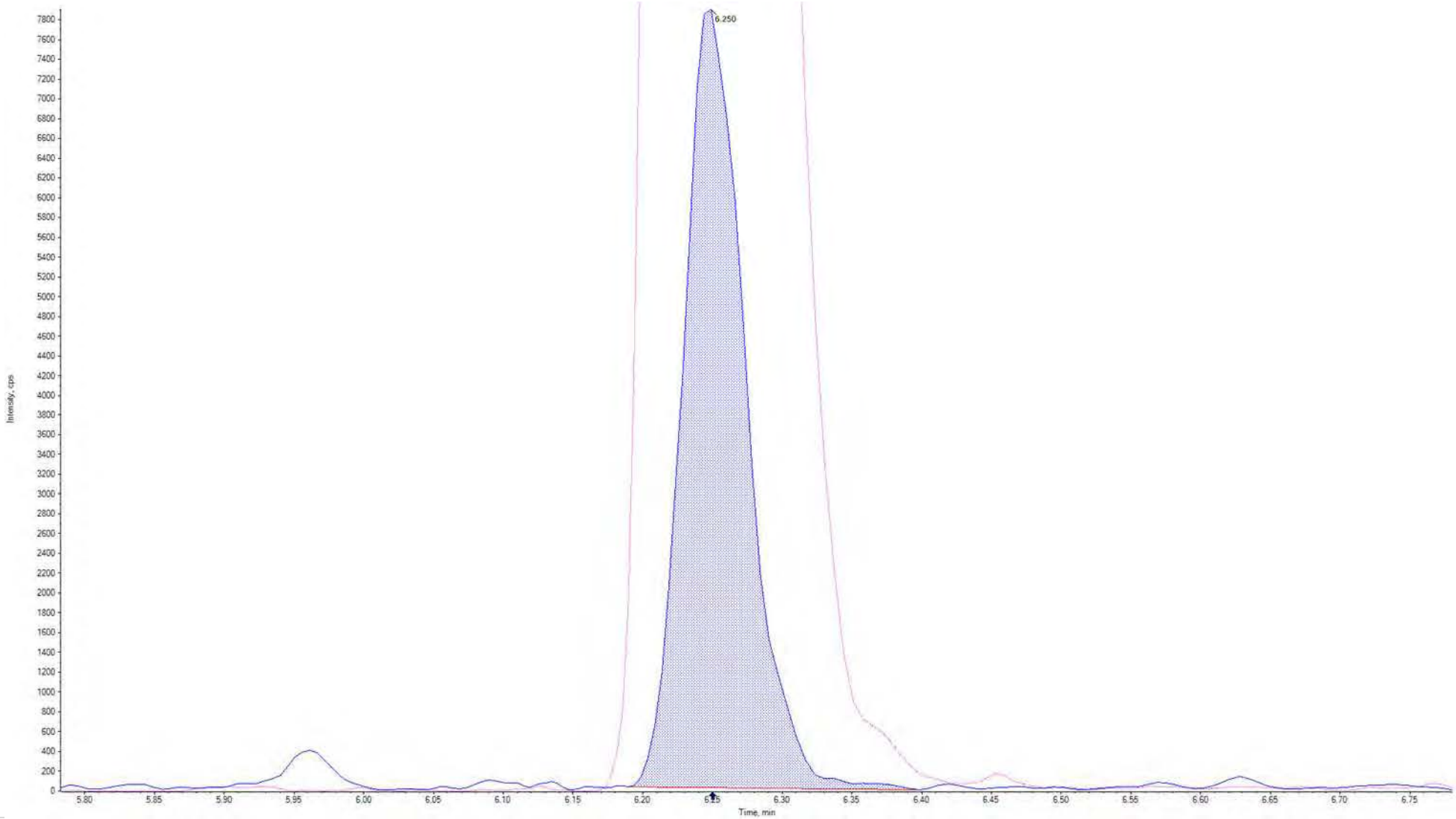
PFHpA_2
Sample: L2450786-03 S/N:866.2 Points Across peak:36



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Alpha Analytical Inc.
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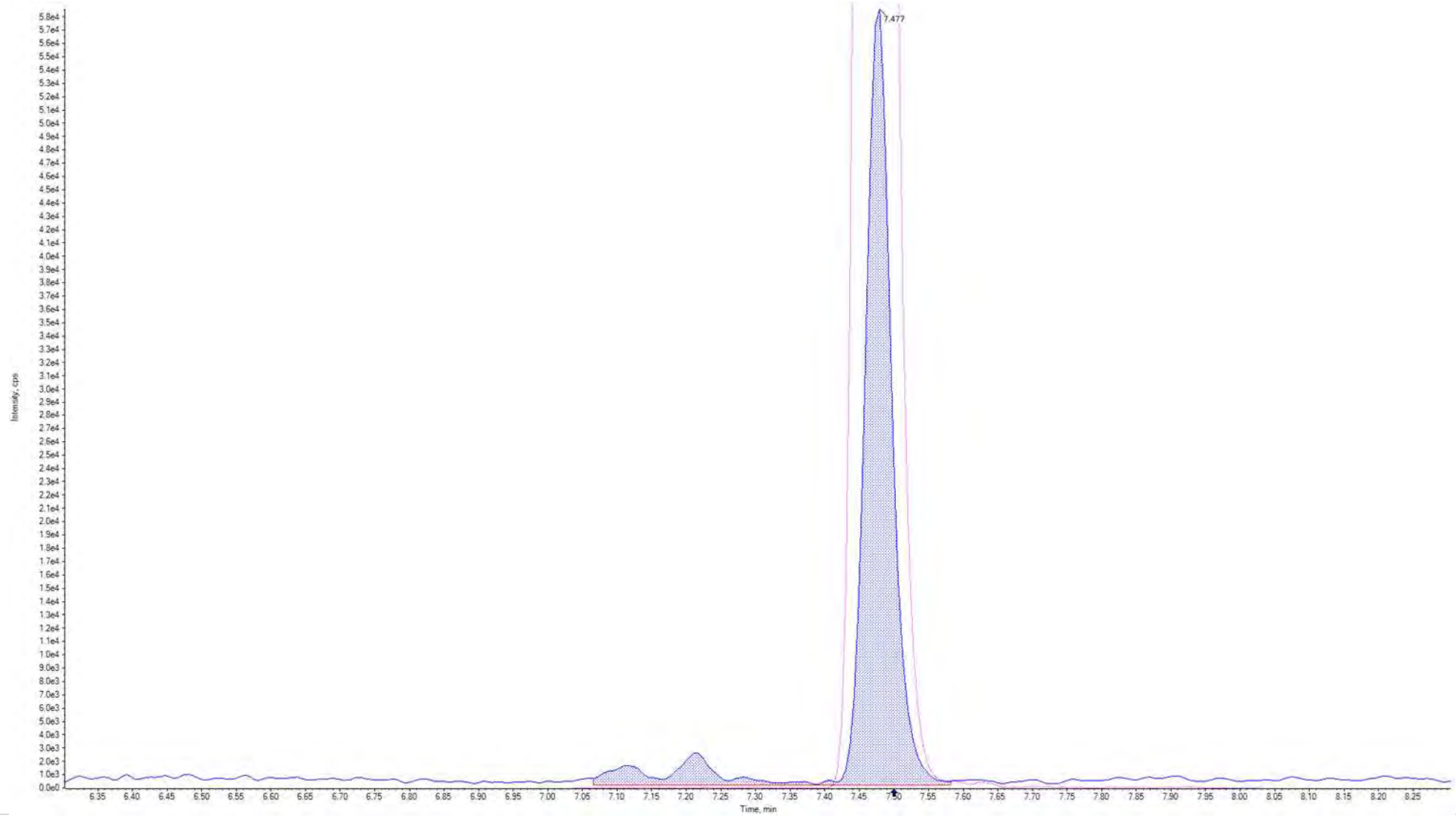
PFOA
Sample: L2450786-03 S/N:884.8 Points Across peak:84



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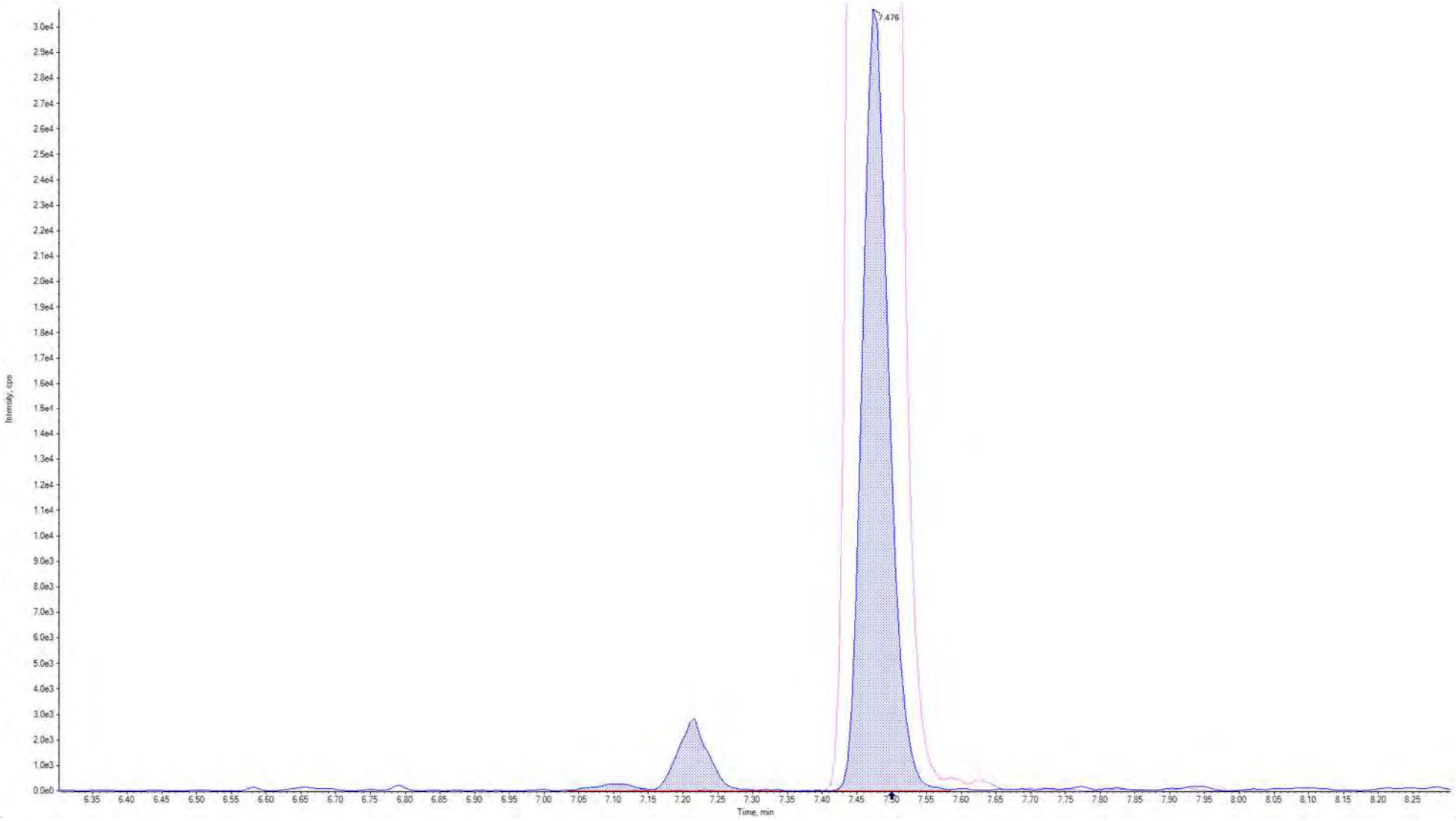
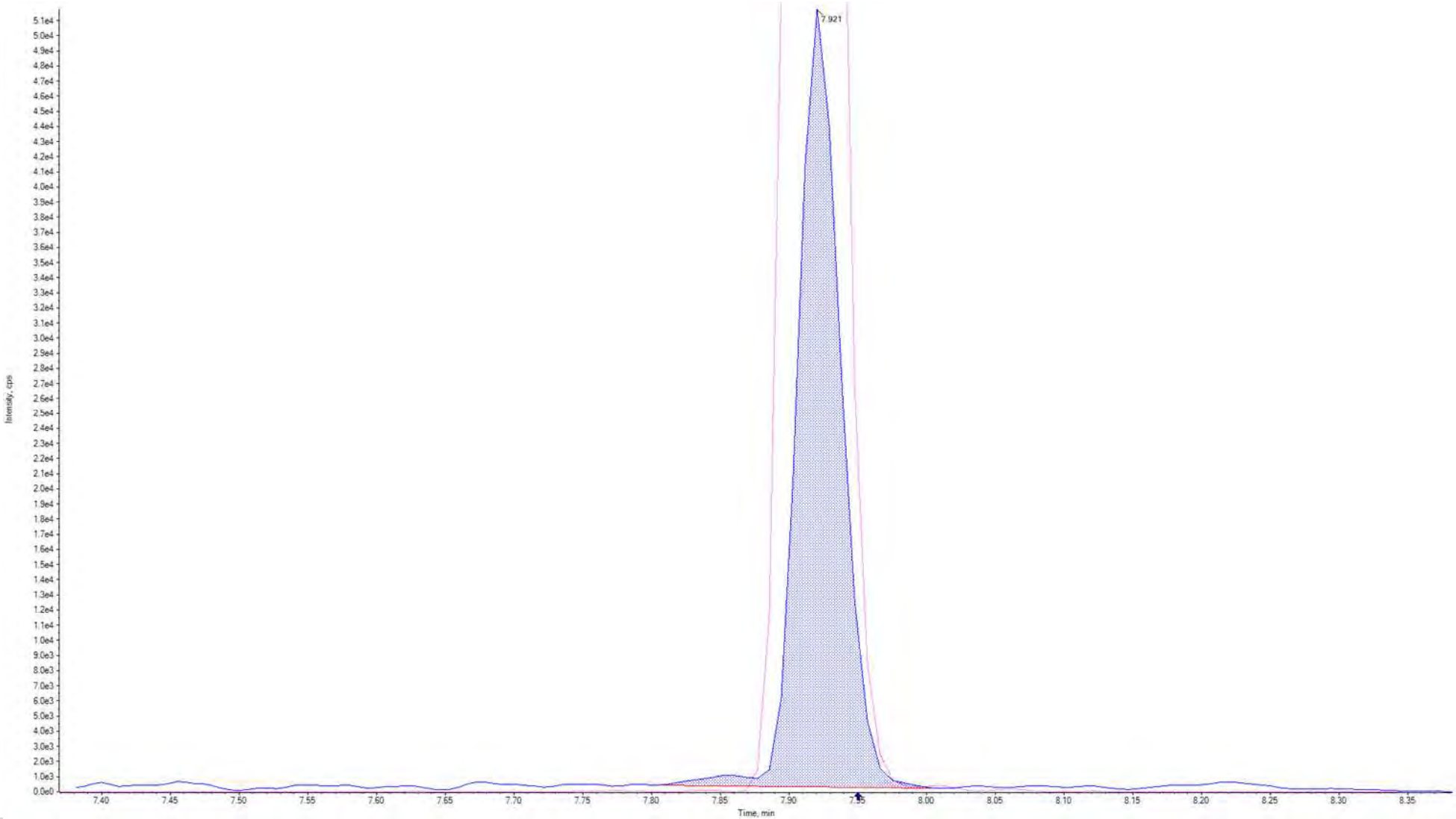
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOA_2
Sample: L2450786-03 S/N:99239.9 Points Across peak:88



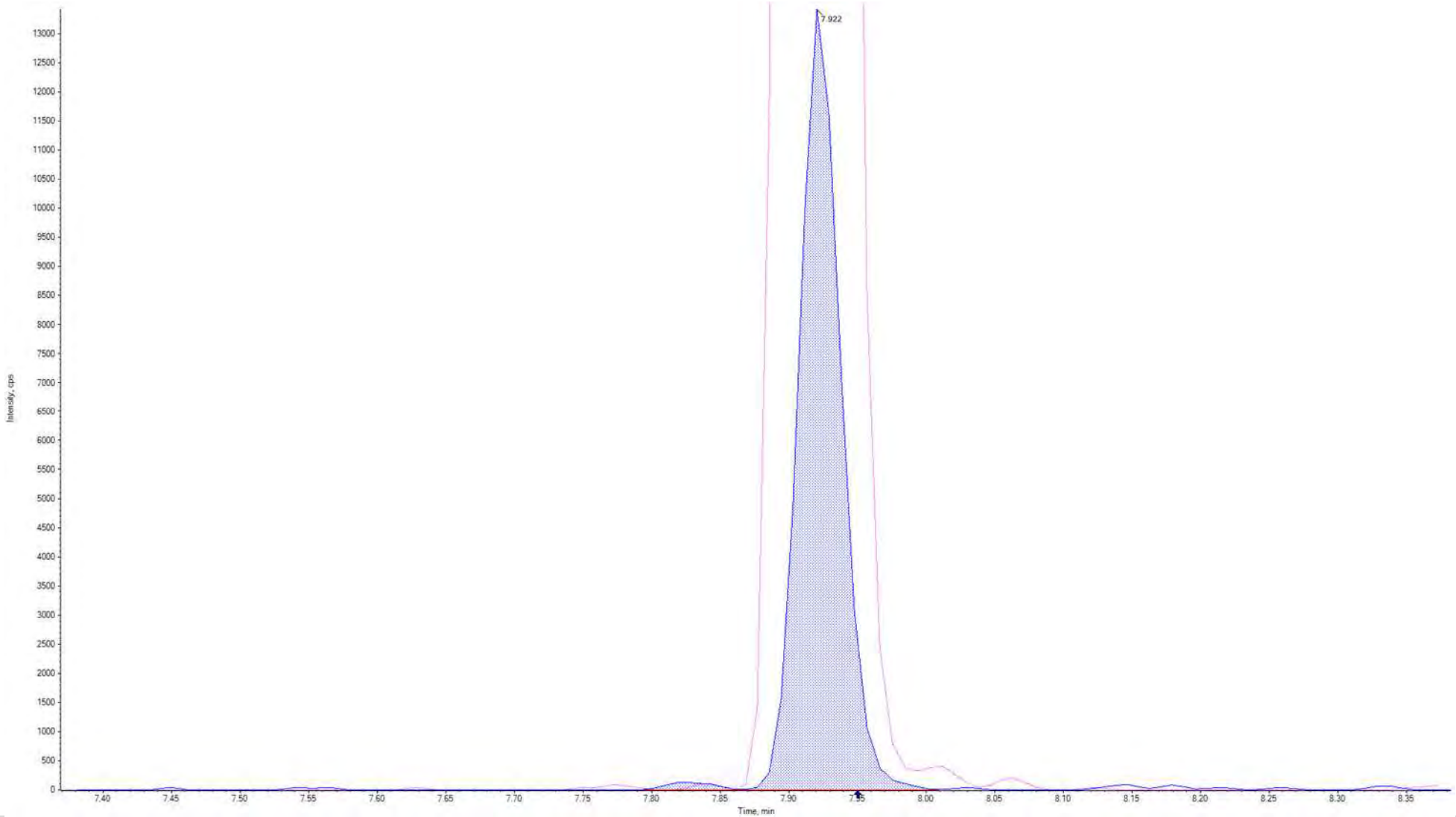
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFNA
Sample: L2450786-03 S/N:1791.7 Points Across peak:25



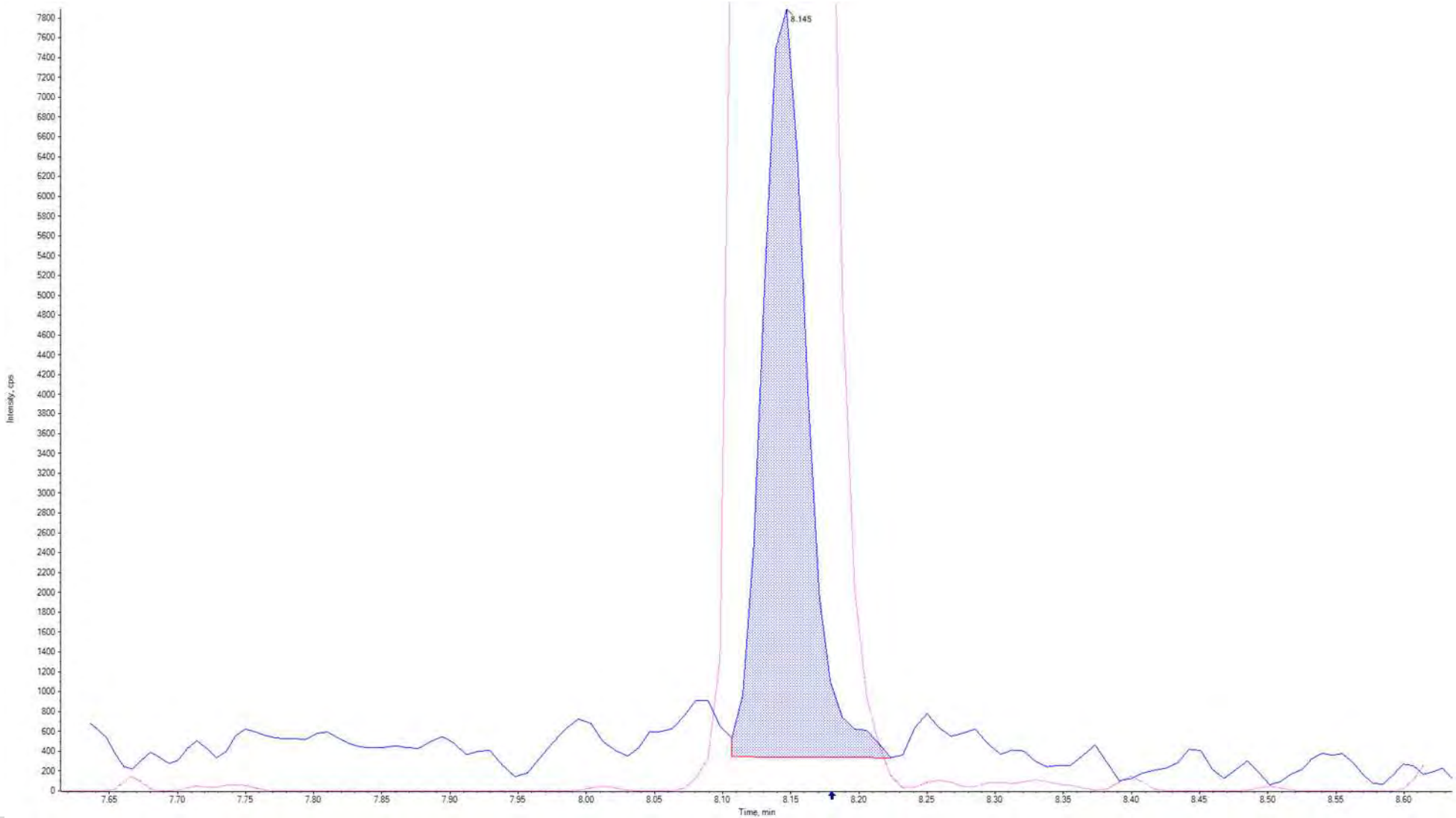
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFNA_2
Sample: L2450786-03 S/N:1393.5 Points Across peak:27



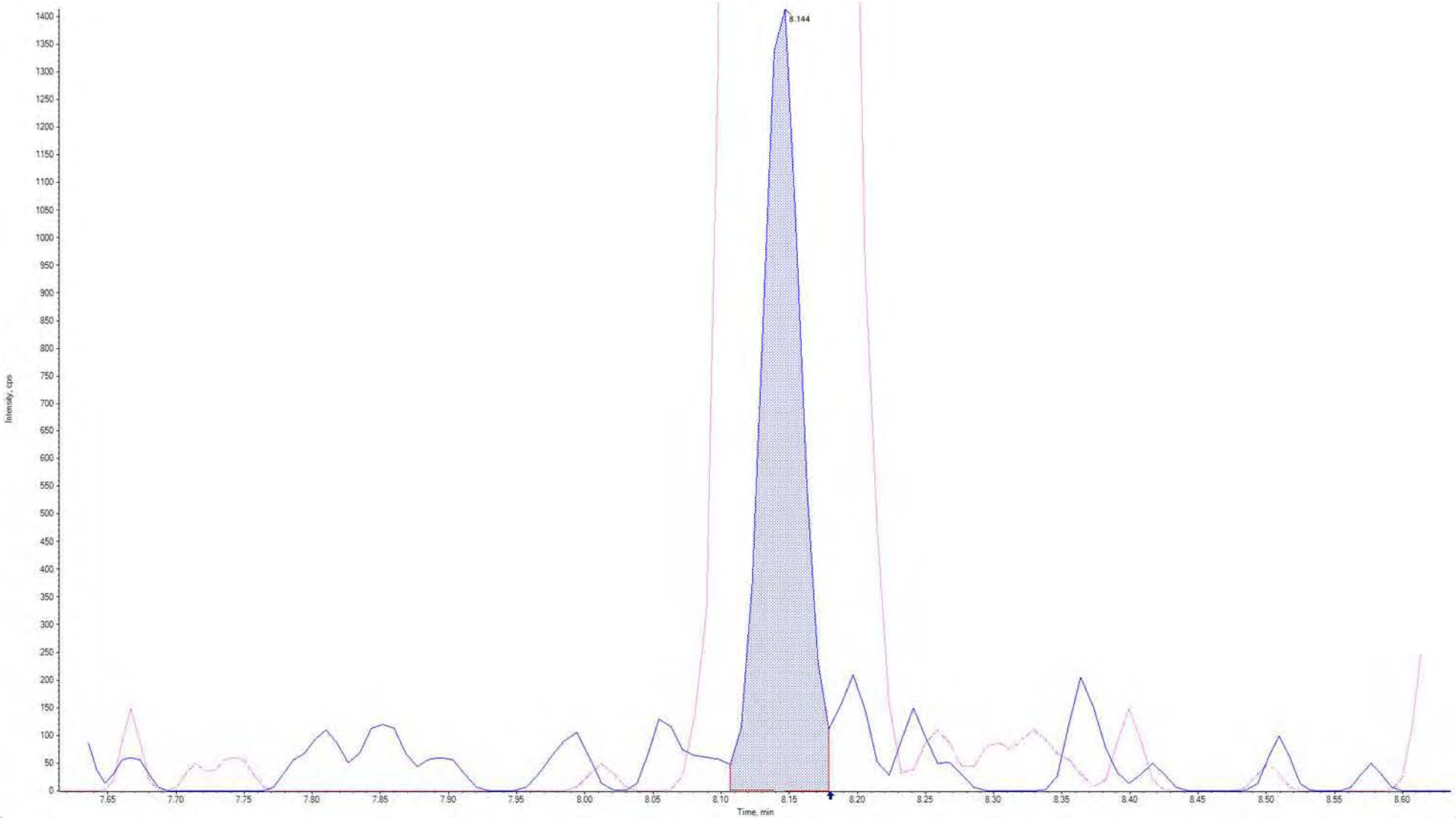
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDA
Sample: L2450786-03 S/N:210.7 Points Across peak:15



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDA_2
Sample: L2450786-03 S/N:75.9 Points Across peak:10



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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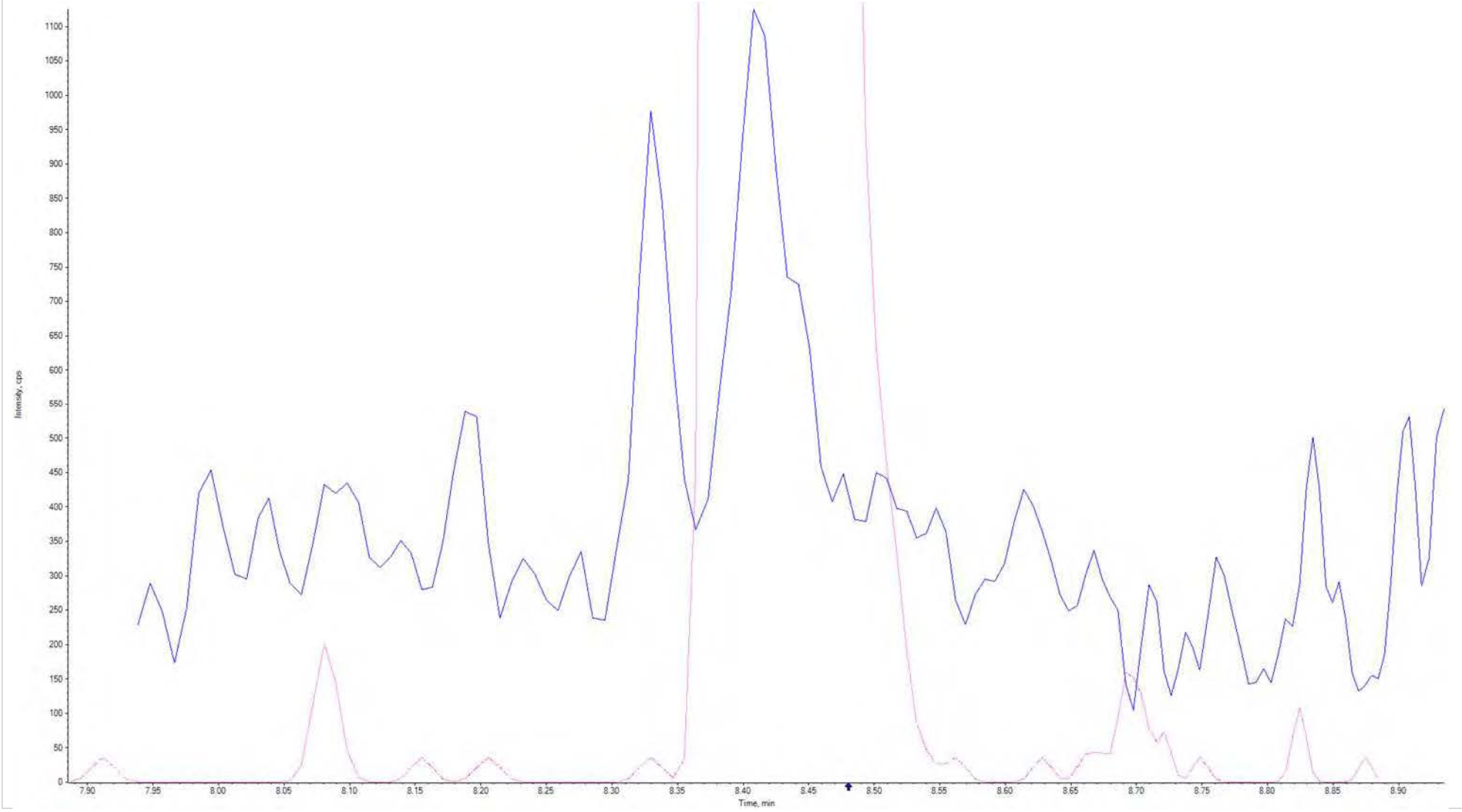
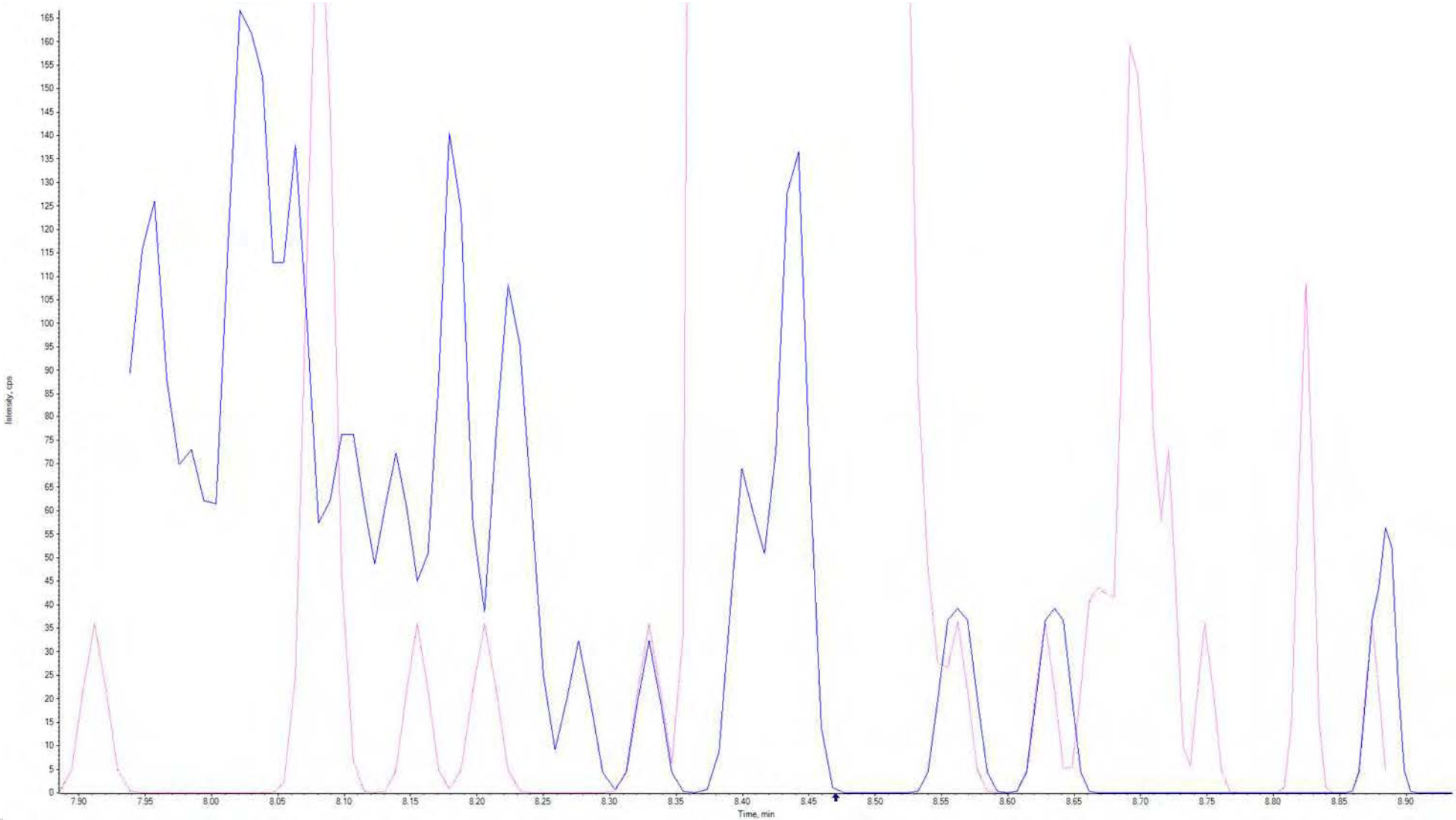
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFUnA
Sample: L2450786-03 S/N:N/A Points Across peak:N/A



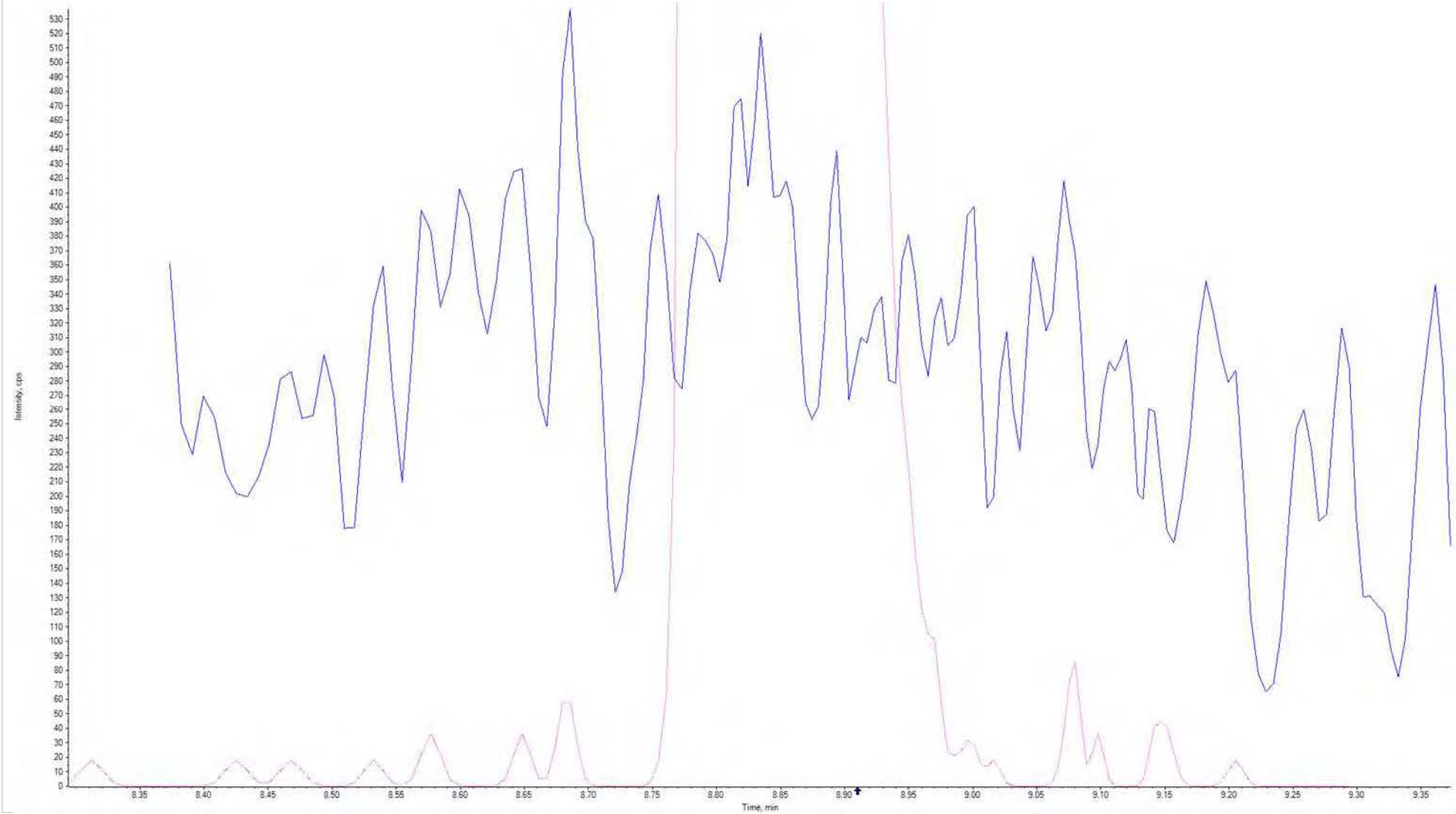
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFUnA_2
Sample: L2450786-03 S/N:N/A Points Across peak:N/A



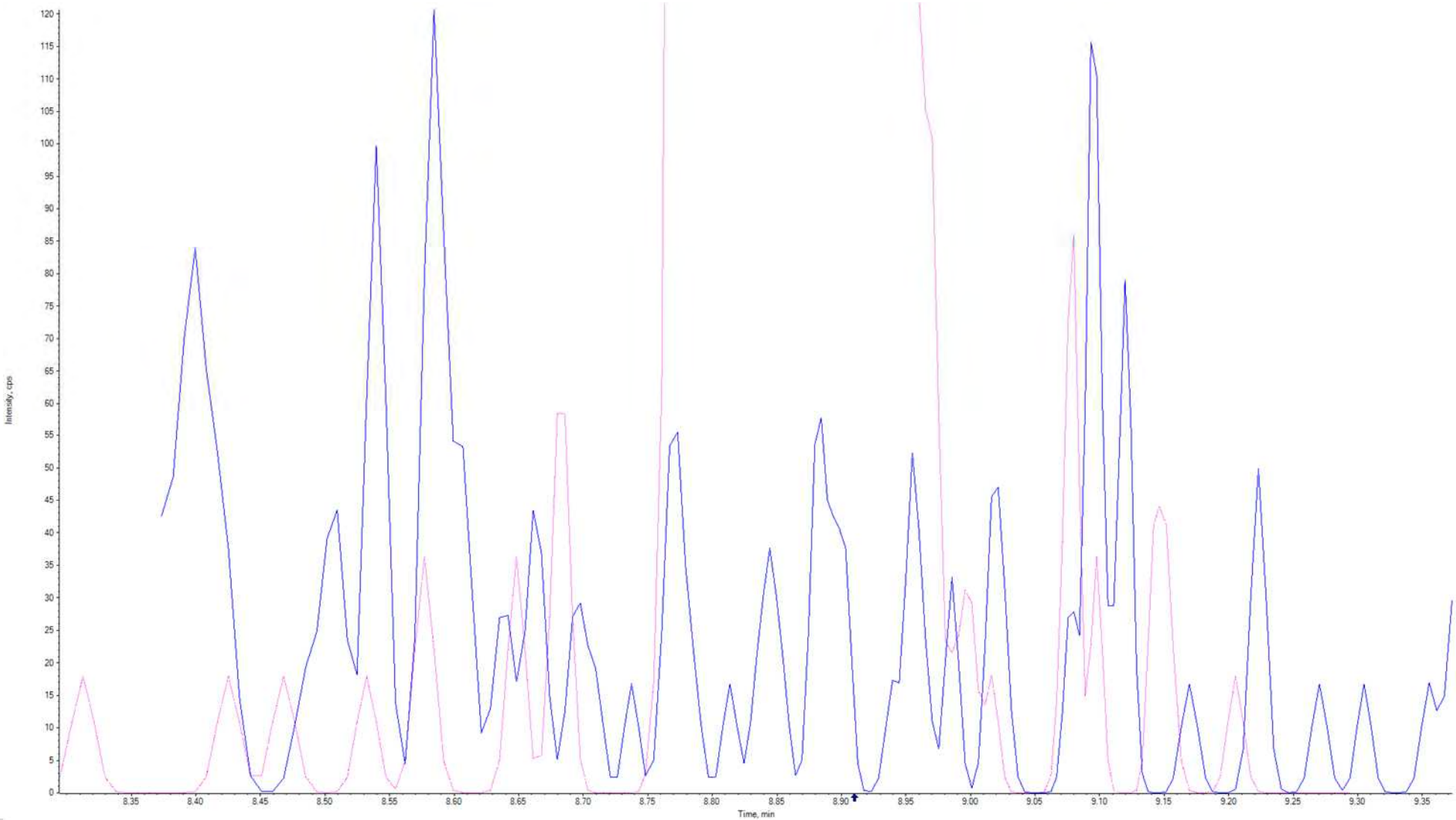
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoA
Sample: L2450786-03 S/N:N/A Points Across peak:N/A



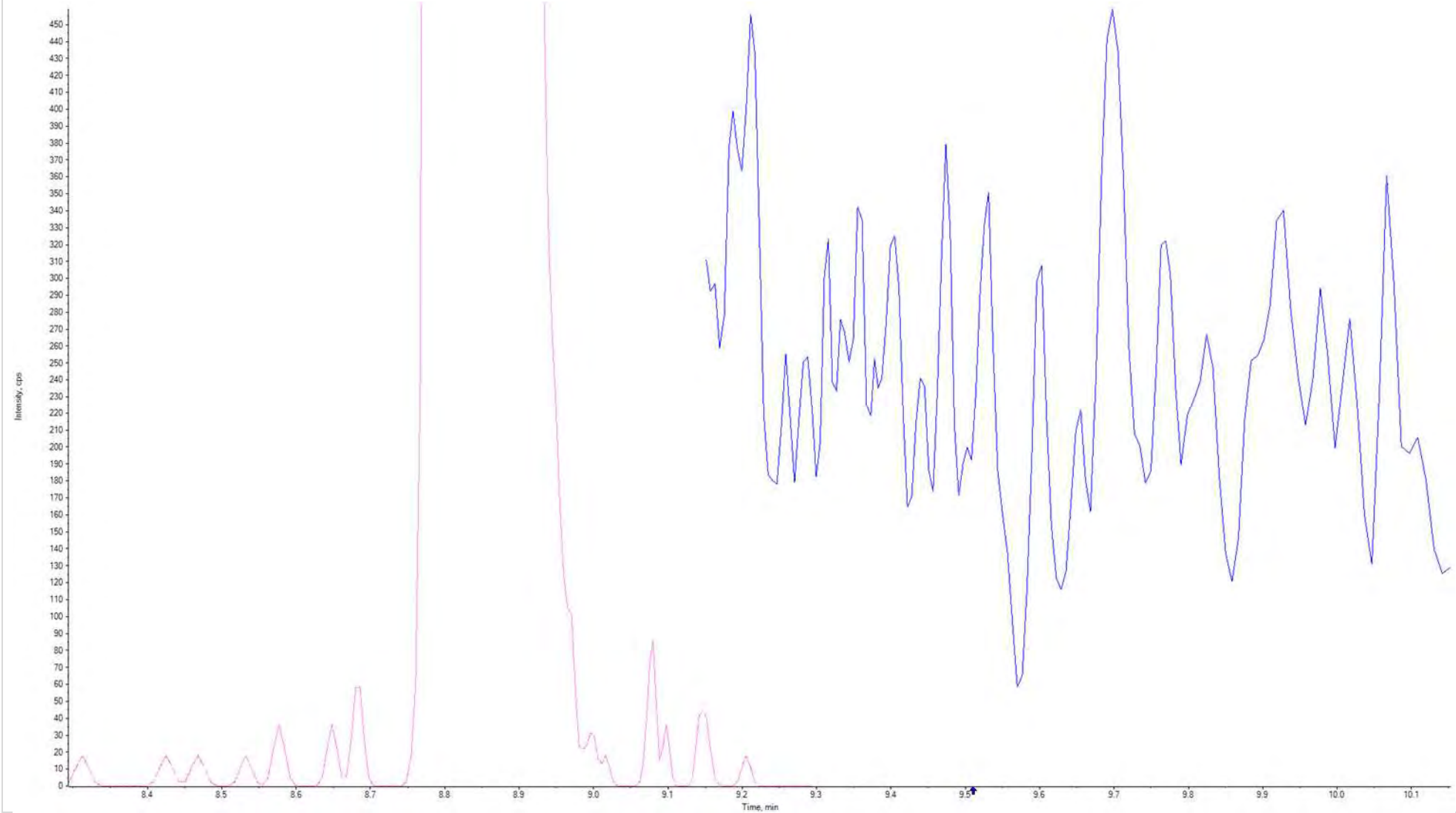
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoA_2
Sample: L2450786-03 S/N:N/A Points Across peak:N/A

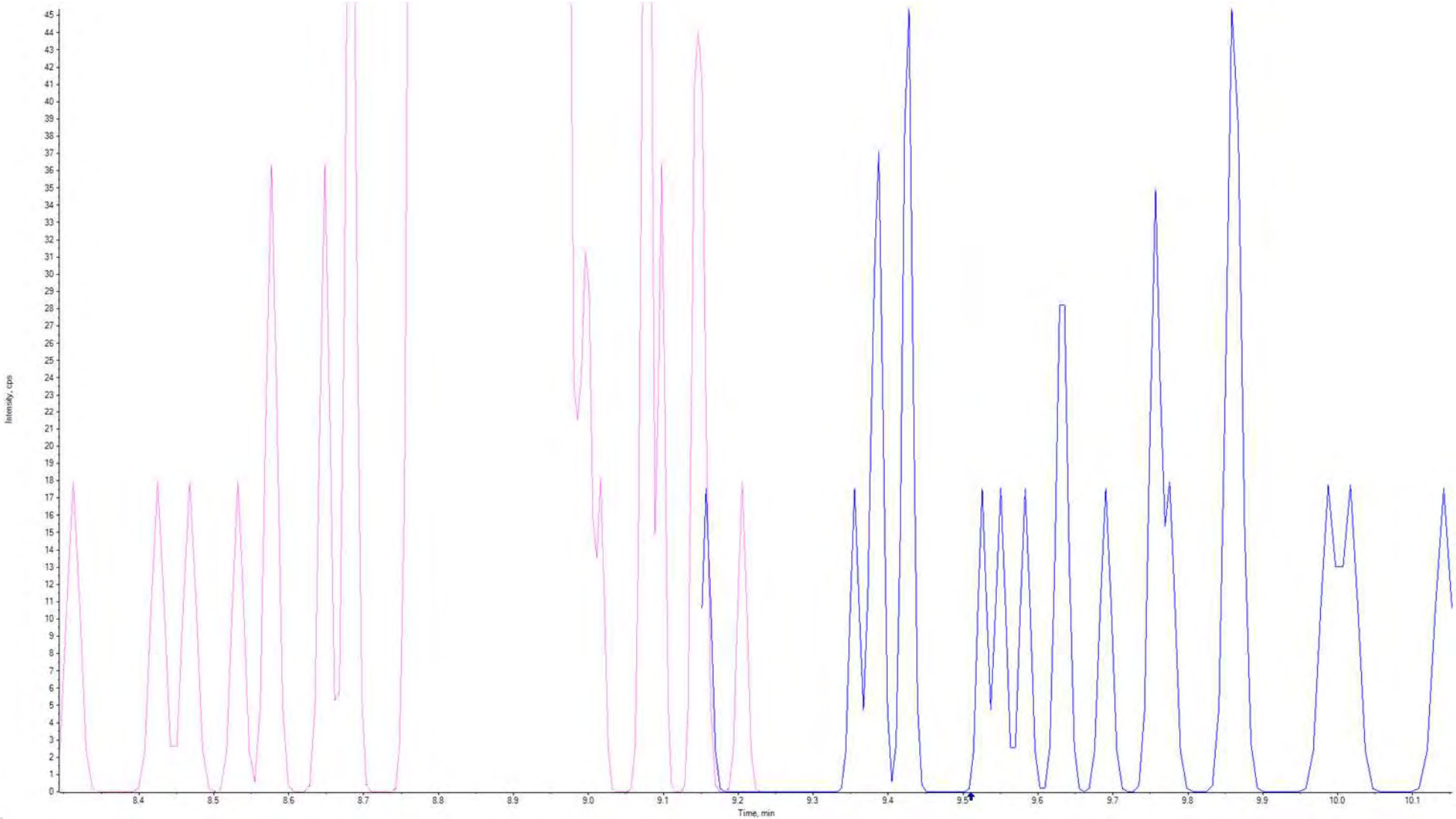


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFTrDA
Sample: L2450786-03 S/N:N/A Points Across peak:N/A

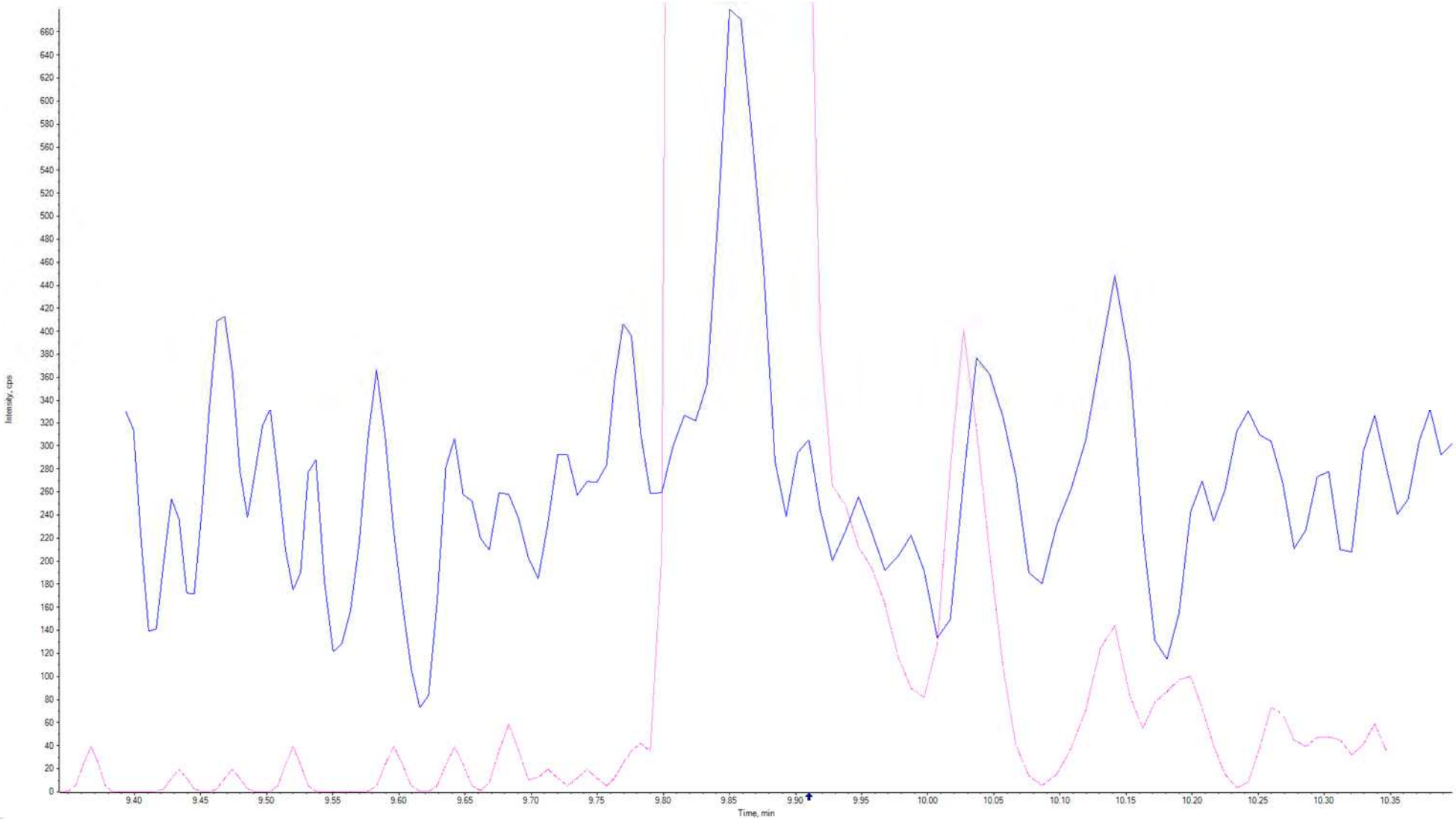


PFTrDA_2
Sample: L2450786-03 S/N:N/A Points Across peak:N/A



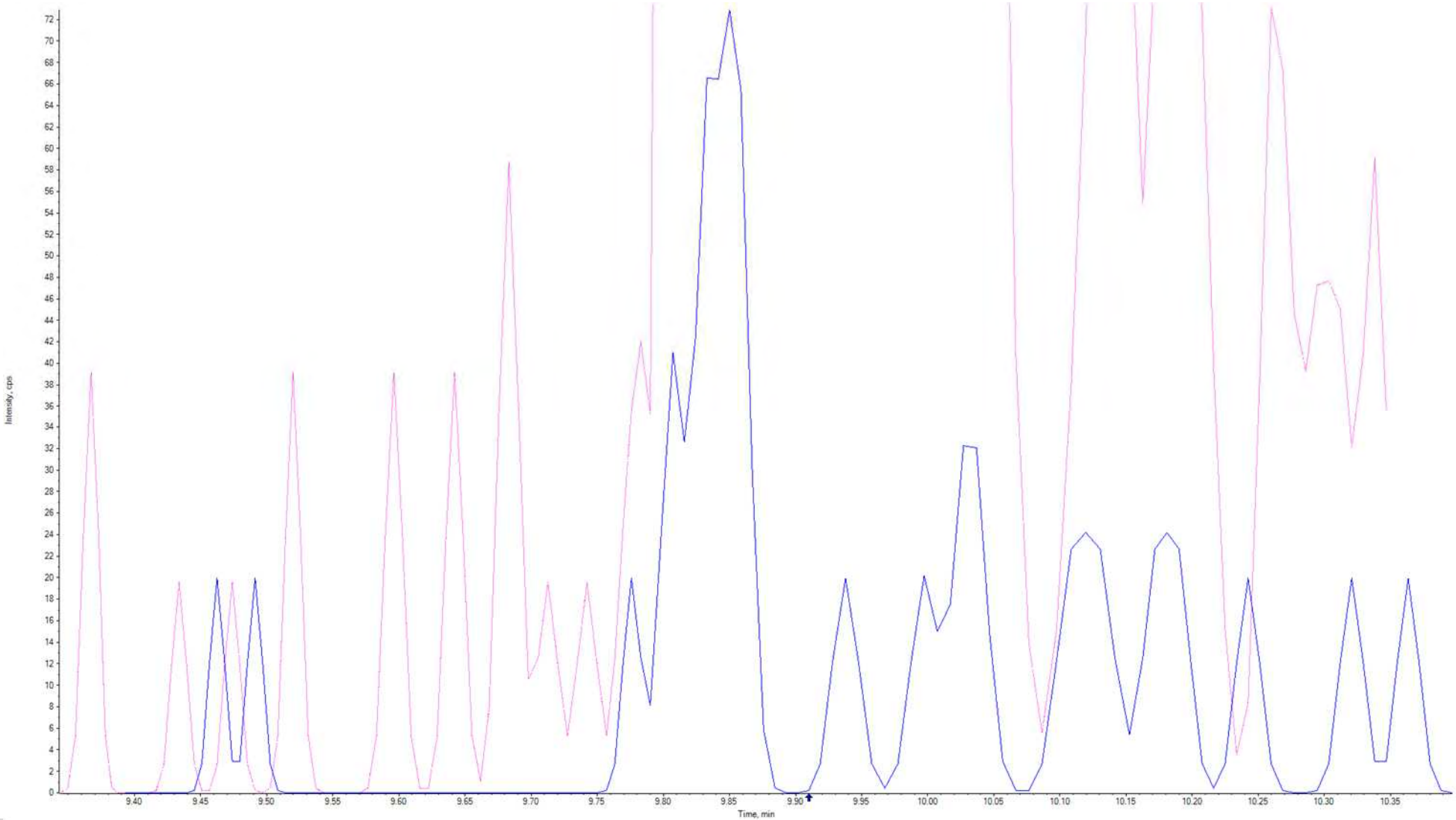
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFTeDA
Sample: L2450786-03 S/N:N/A Points Across peak:N/A



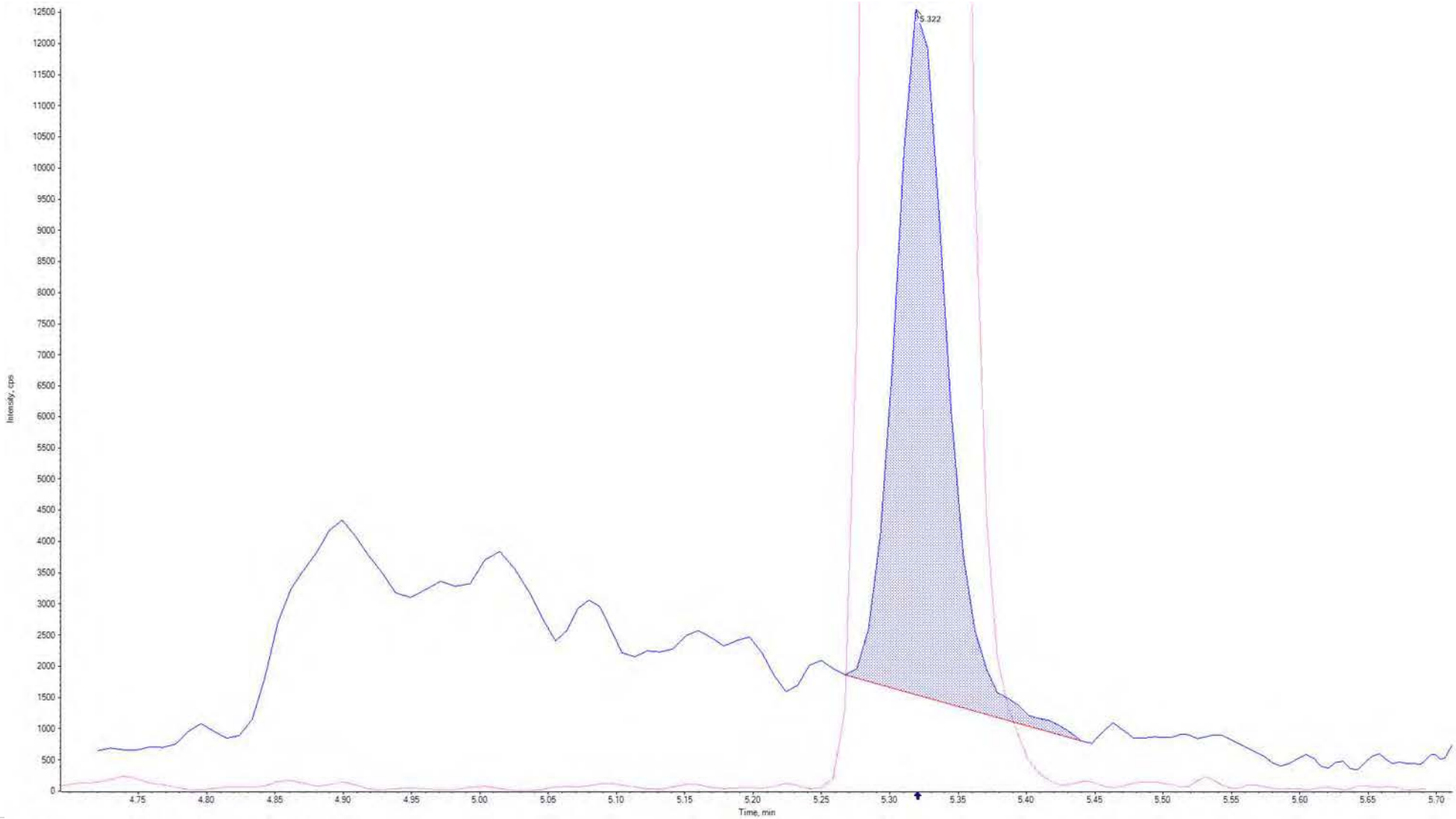
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFTeDA_2
Sample: L2450786-03 S/N:N/A Points Across peak:N/A



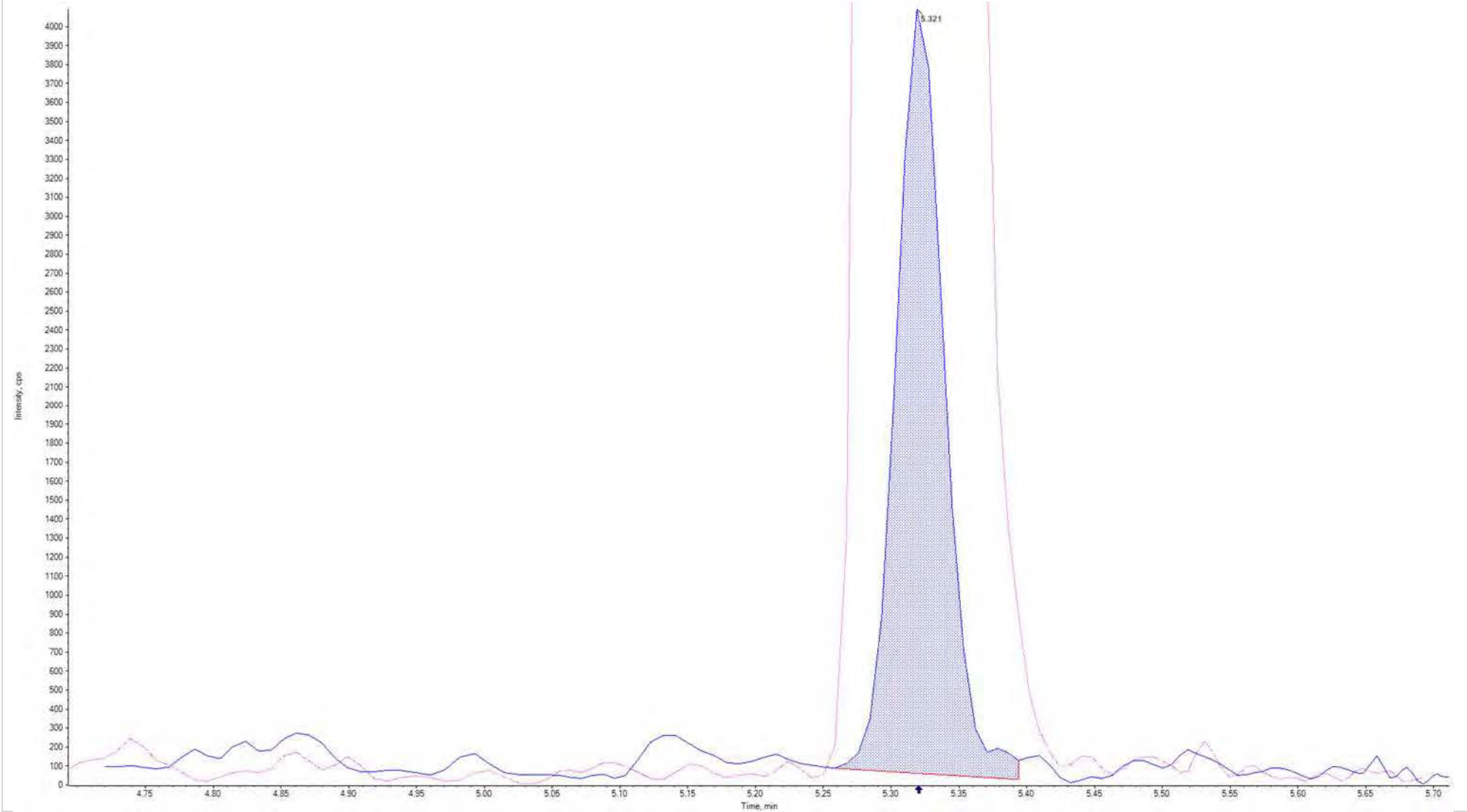
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFBS
Sample: L2450786-03 S/N:42.3 Points Across peak:22



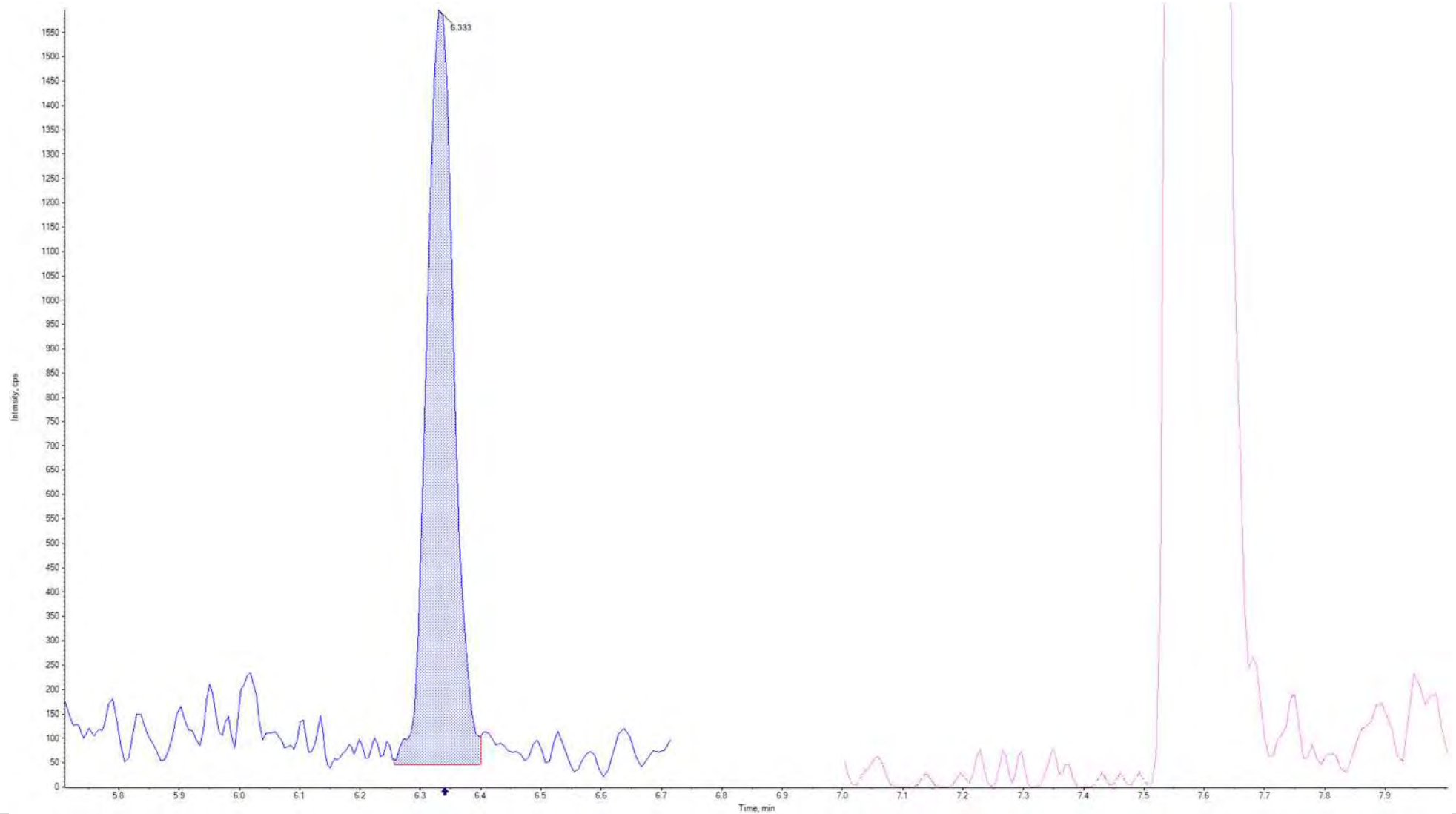
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFBS_2
Sample: L2450786-03 S/N:413.6 Points Across peak:17



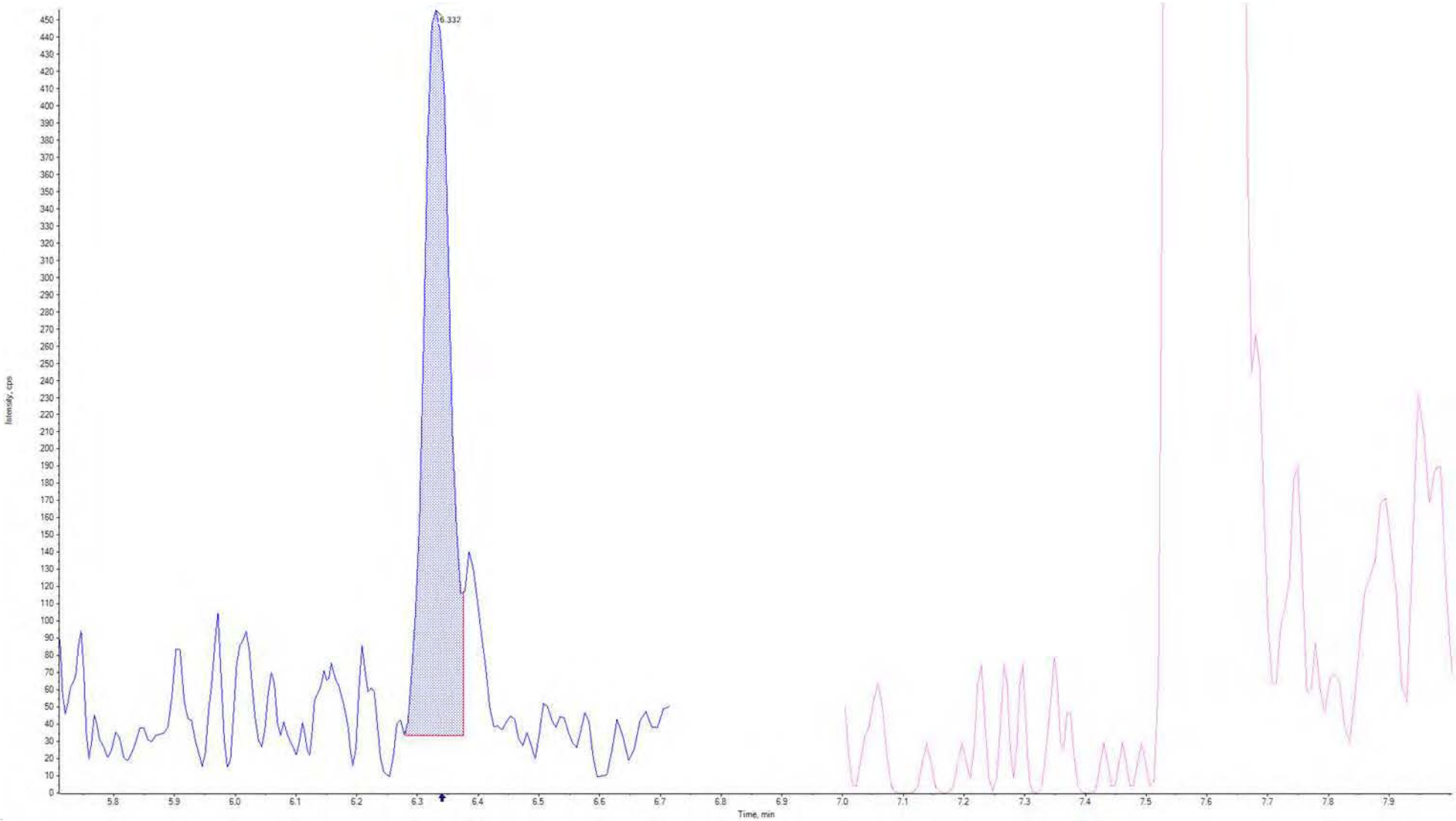
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFPeS
Sample: L2450786-03 S/N:139.3 Points Across peak:24



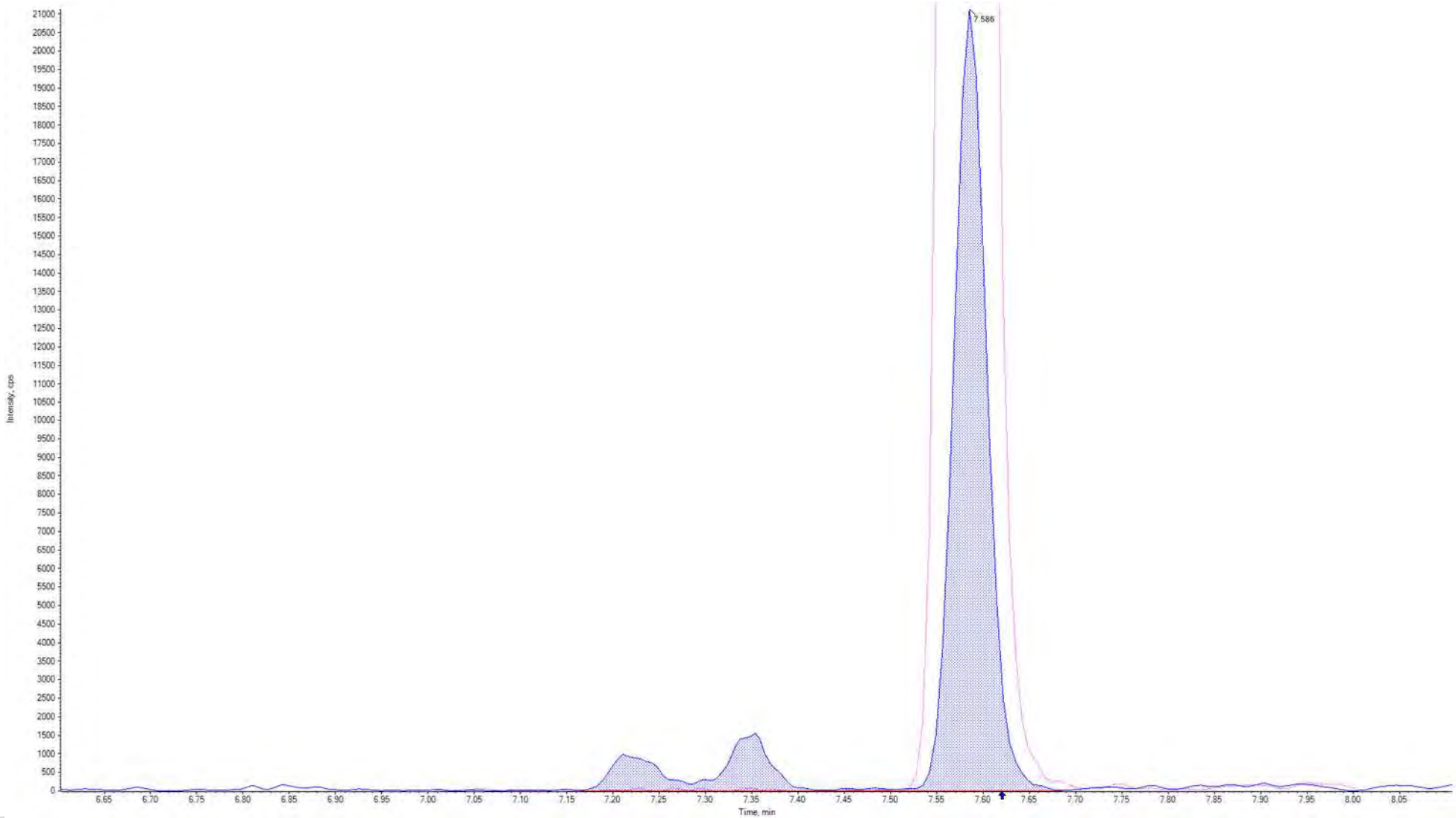
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFPeS_2
Sample: L2450786-03 S/N:85.1 Points Across peak:16



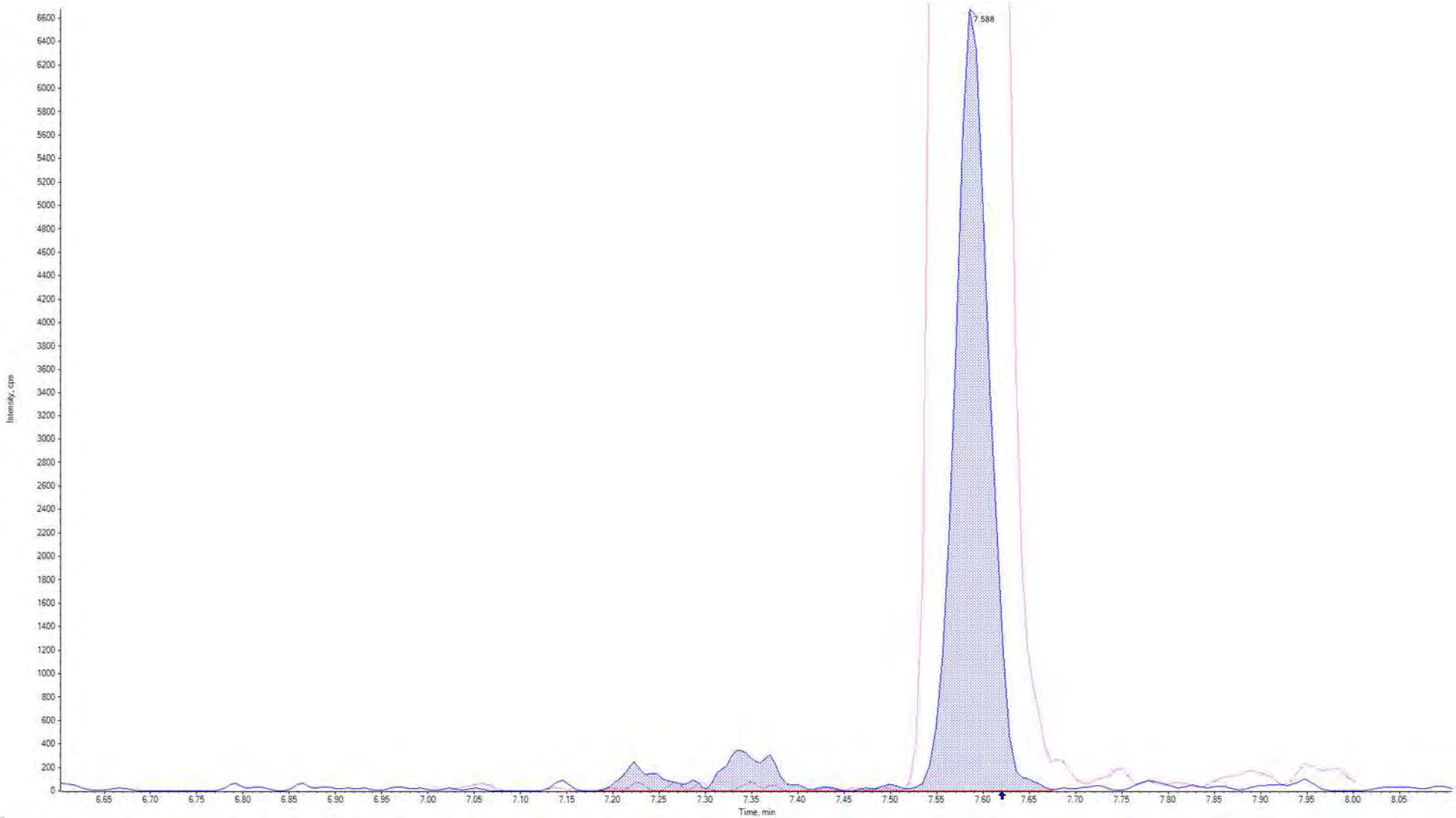
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHxS
Sample: L2450786-03 S/N:6646.8 Points Across peak:85



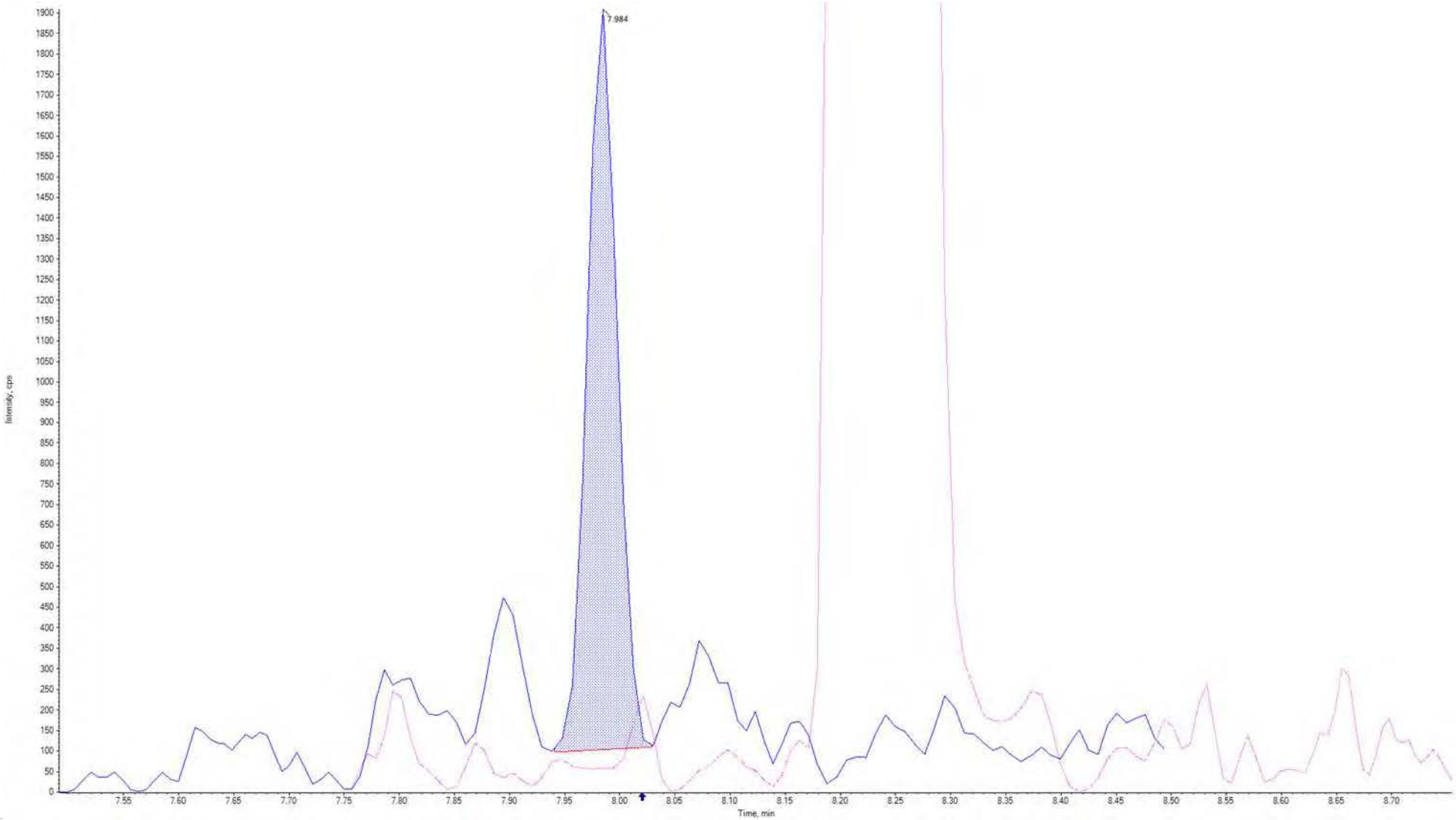
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHxS_2
Sample: L2450786-03 S/N:4197590.8 Points Across peak:81



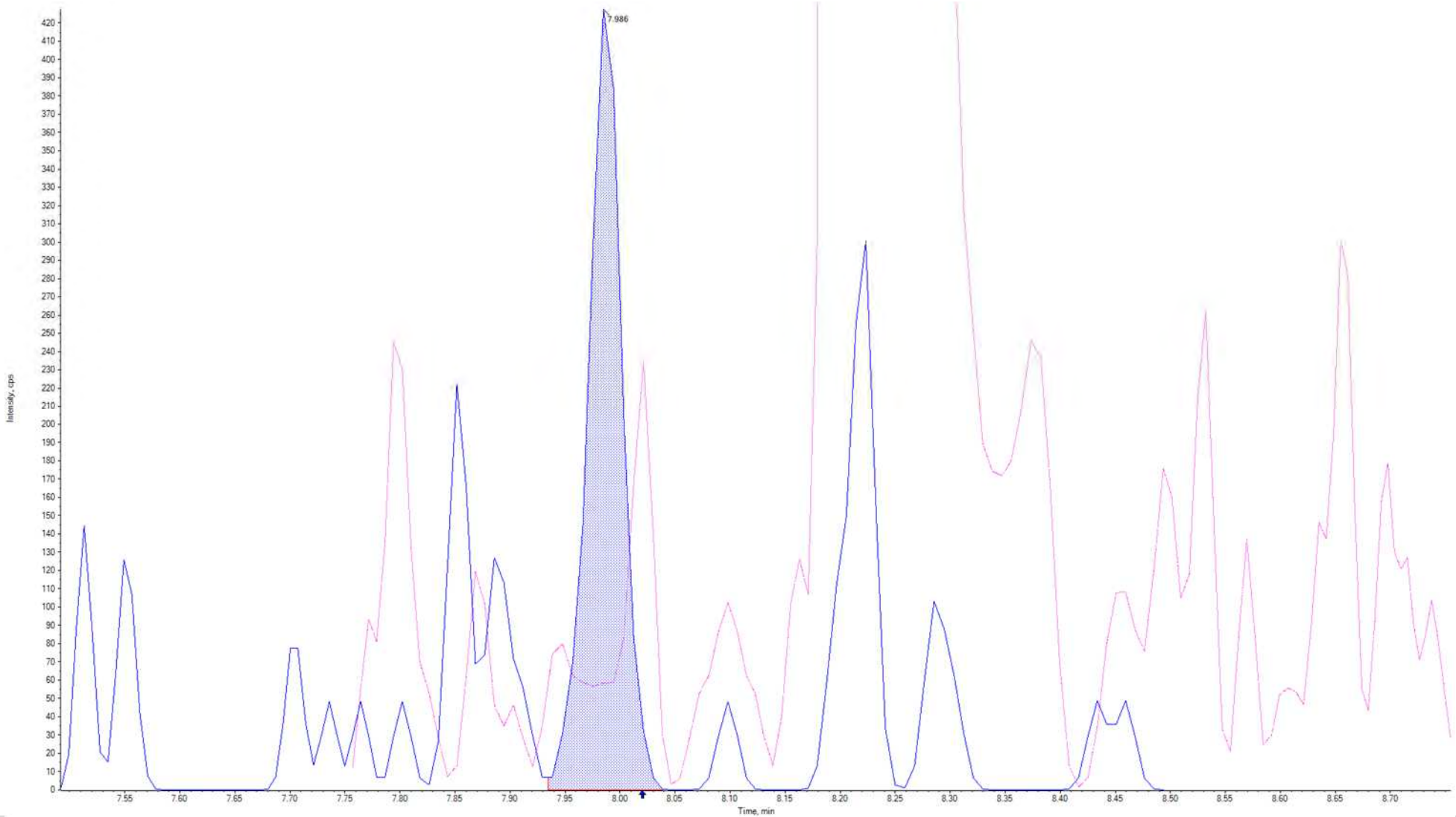
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHpS
Sample: L2450786-03 S/N:753.2 Points Across peak:11



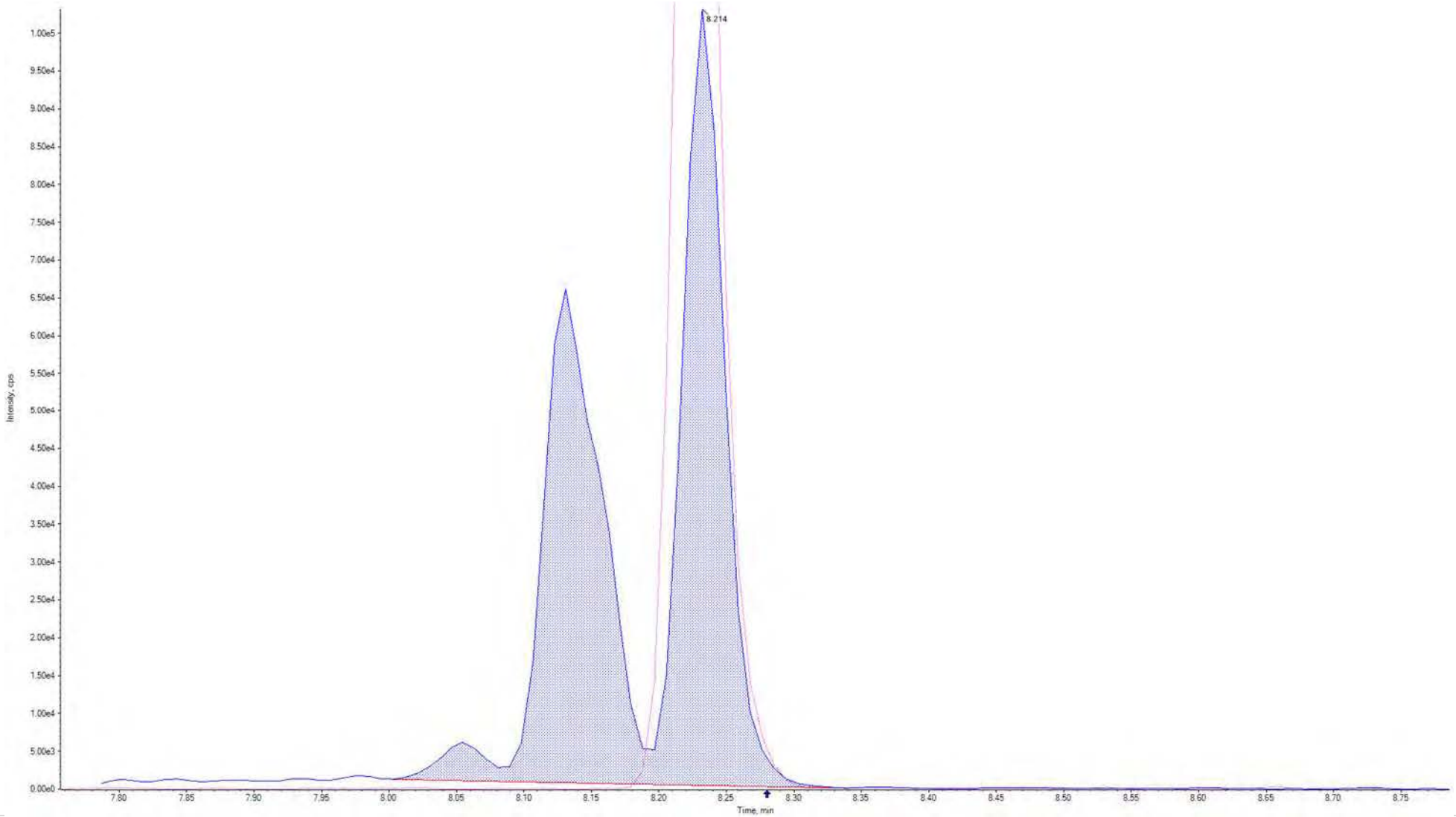
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHpS_2
Sample: L2450786-03 S/N:30.3 Points Across peak:14



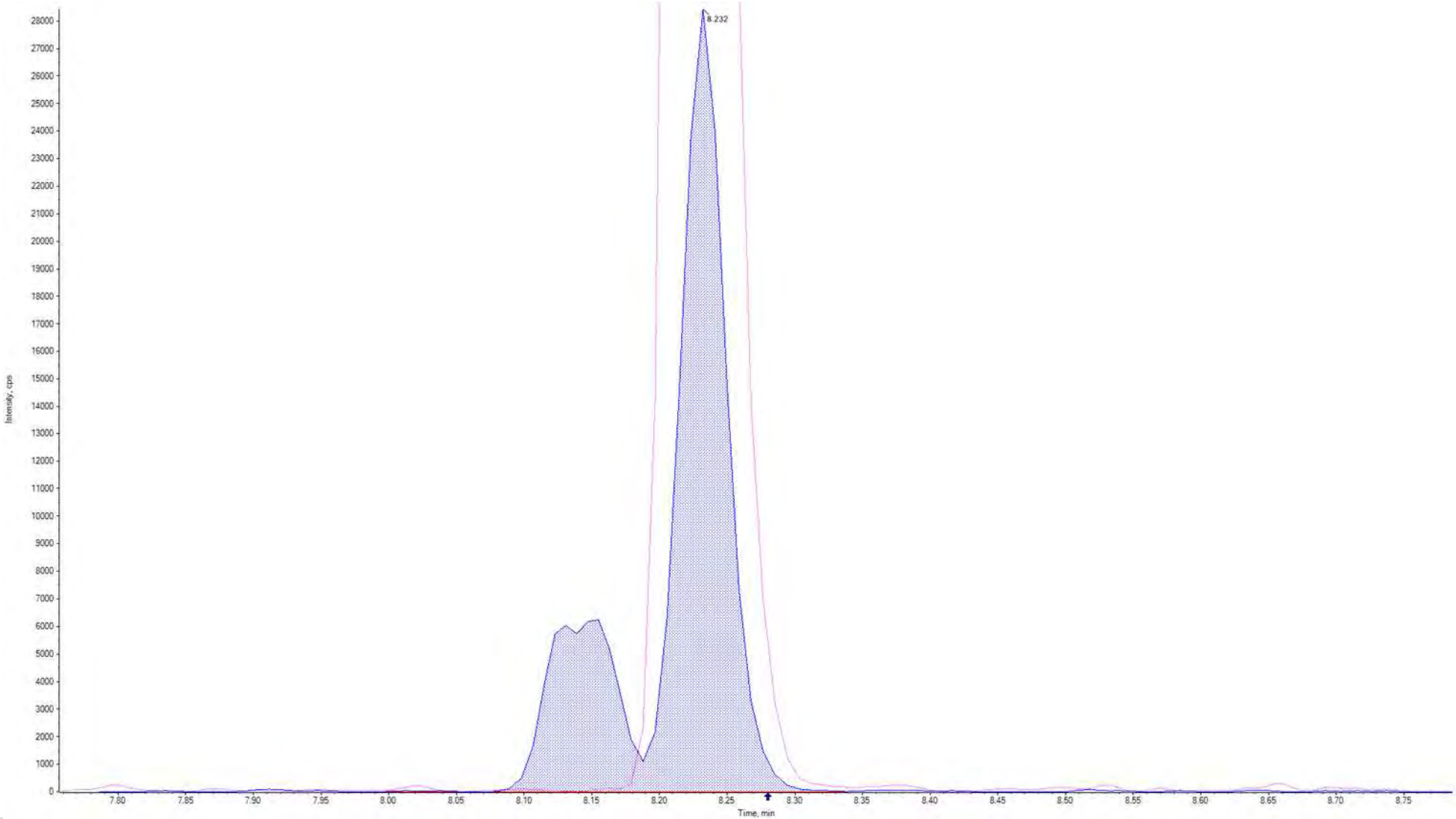
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOS
Sample: L2450786-03 S/N:2912.7 Points Across peak:41



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOS_2
Sample: L2450786-03 S/N:702.9 Points Across peak:43



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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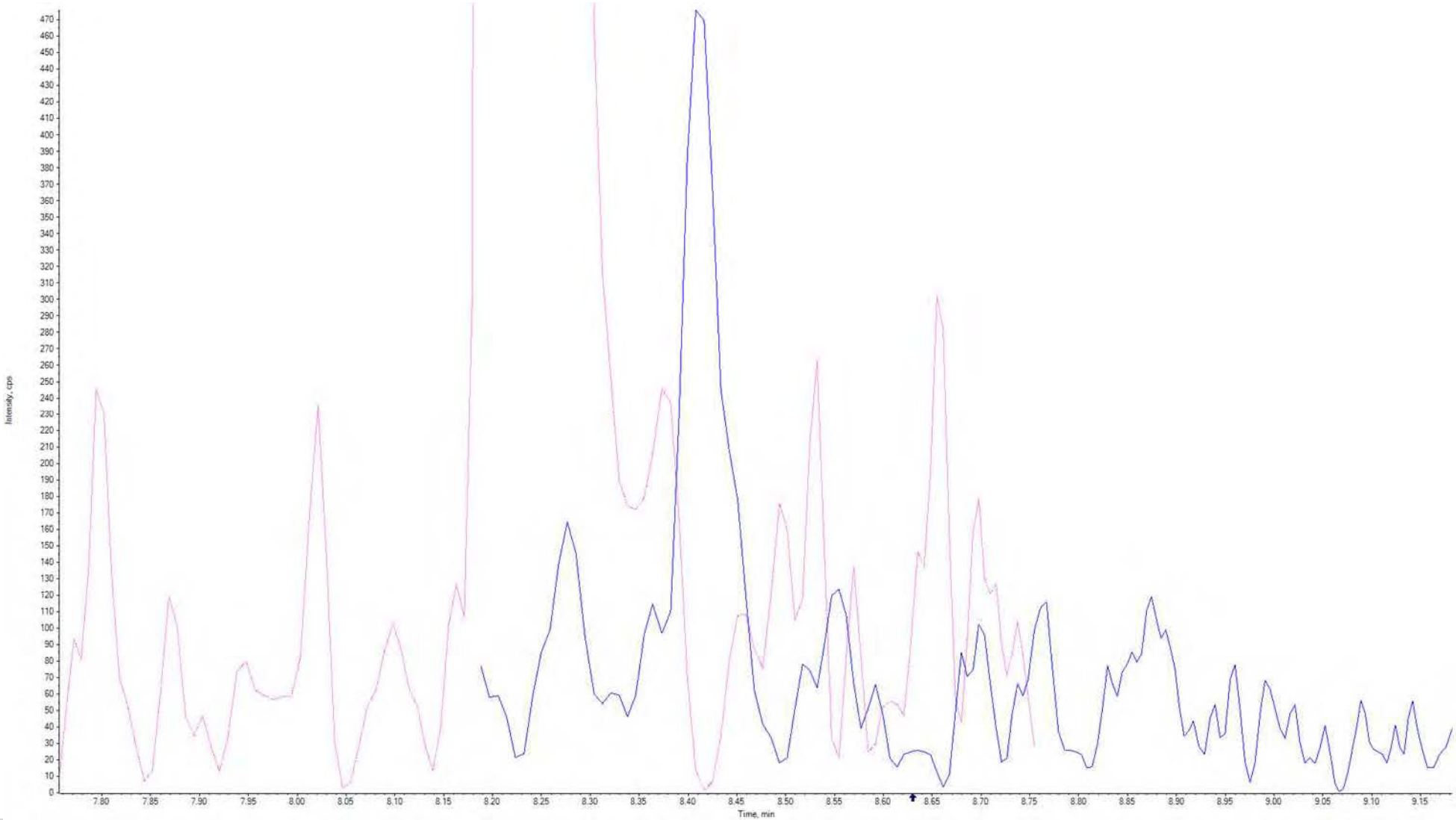
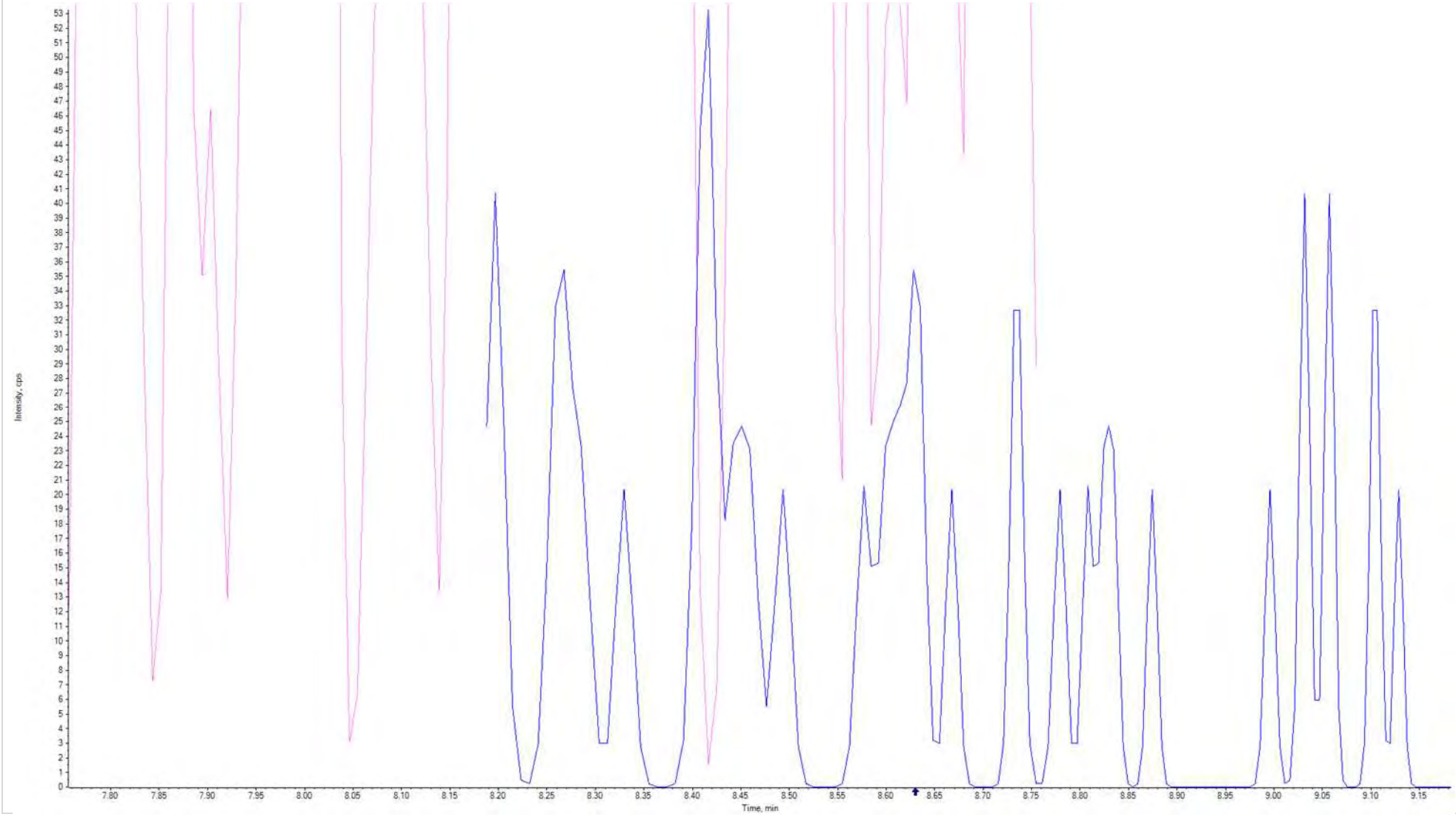
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFNS
Sample: L2450786-03 S/N:N/A Points Across peak:N/A



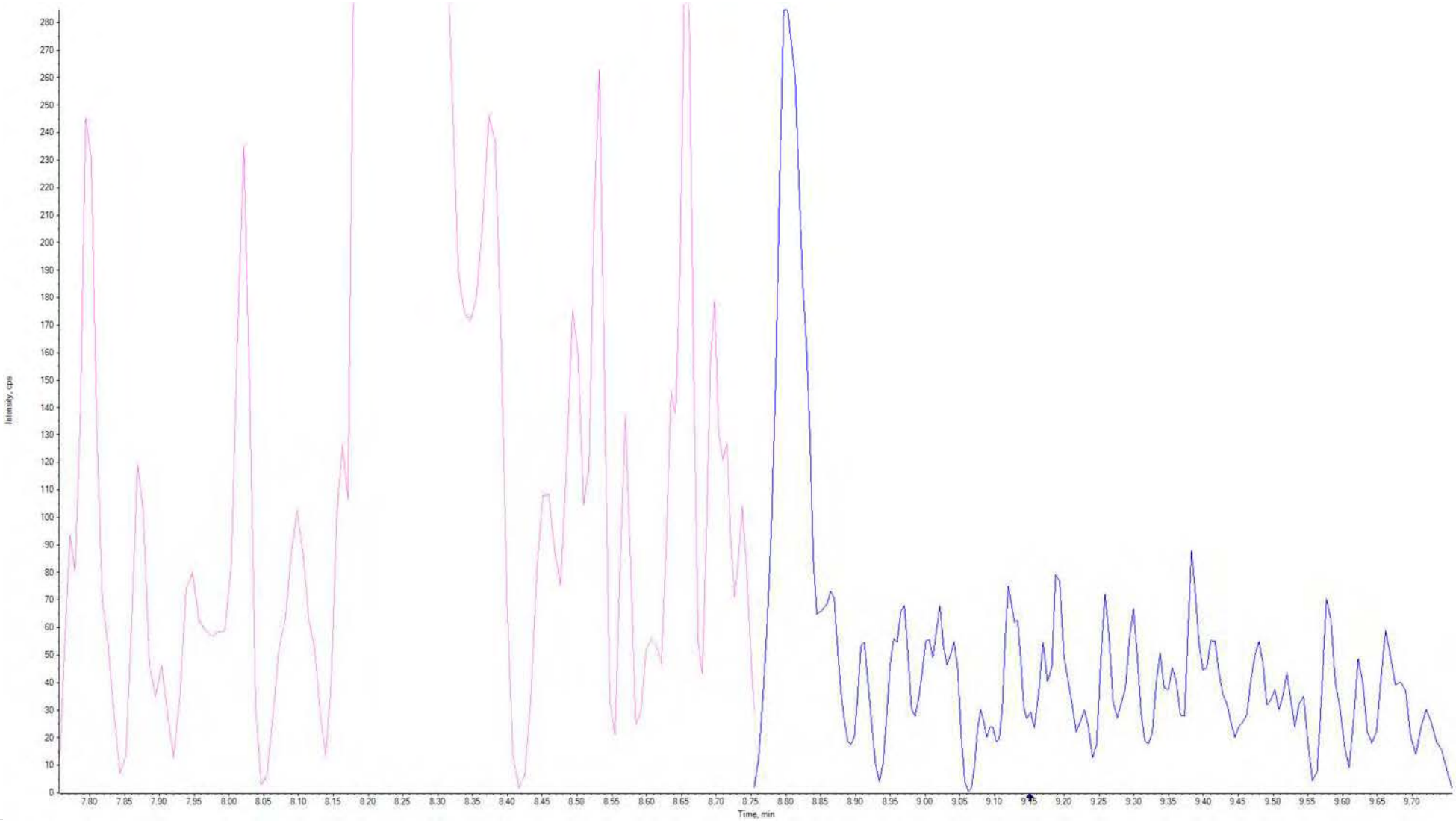
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFNS_2
Sample: L2450786-03 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDS
Sample: L2450786-03 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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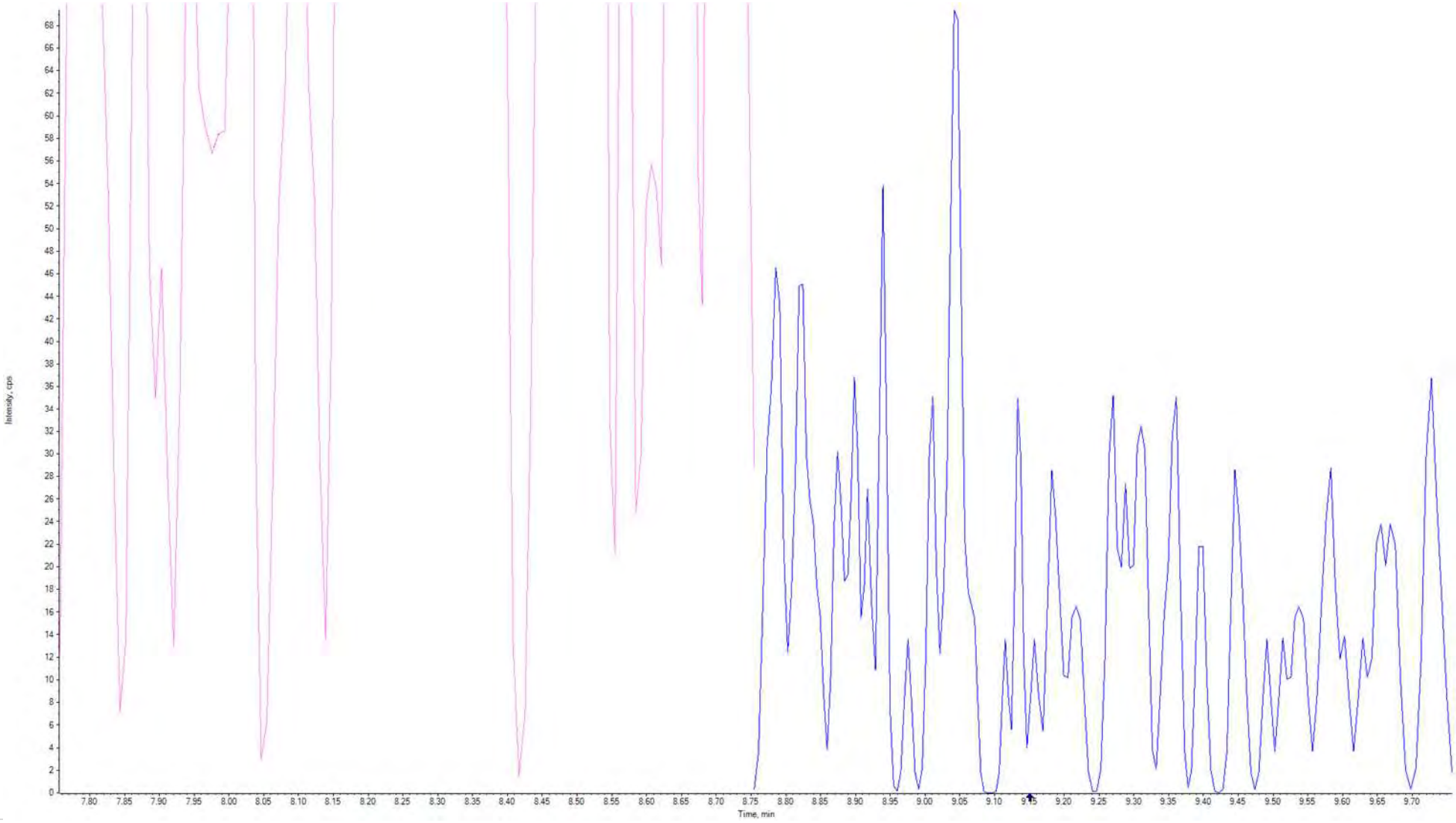
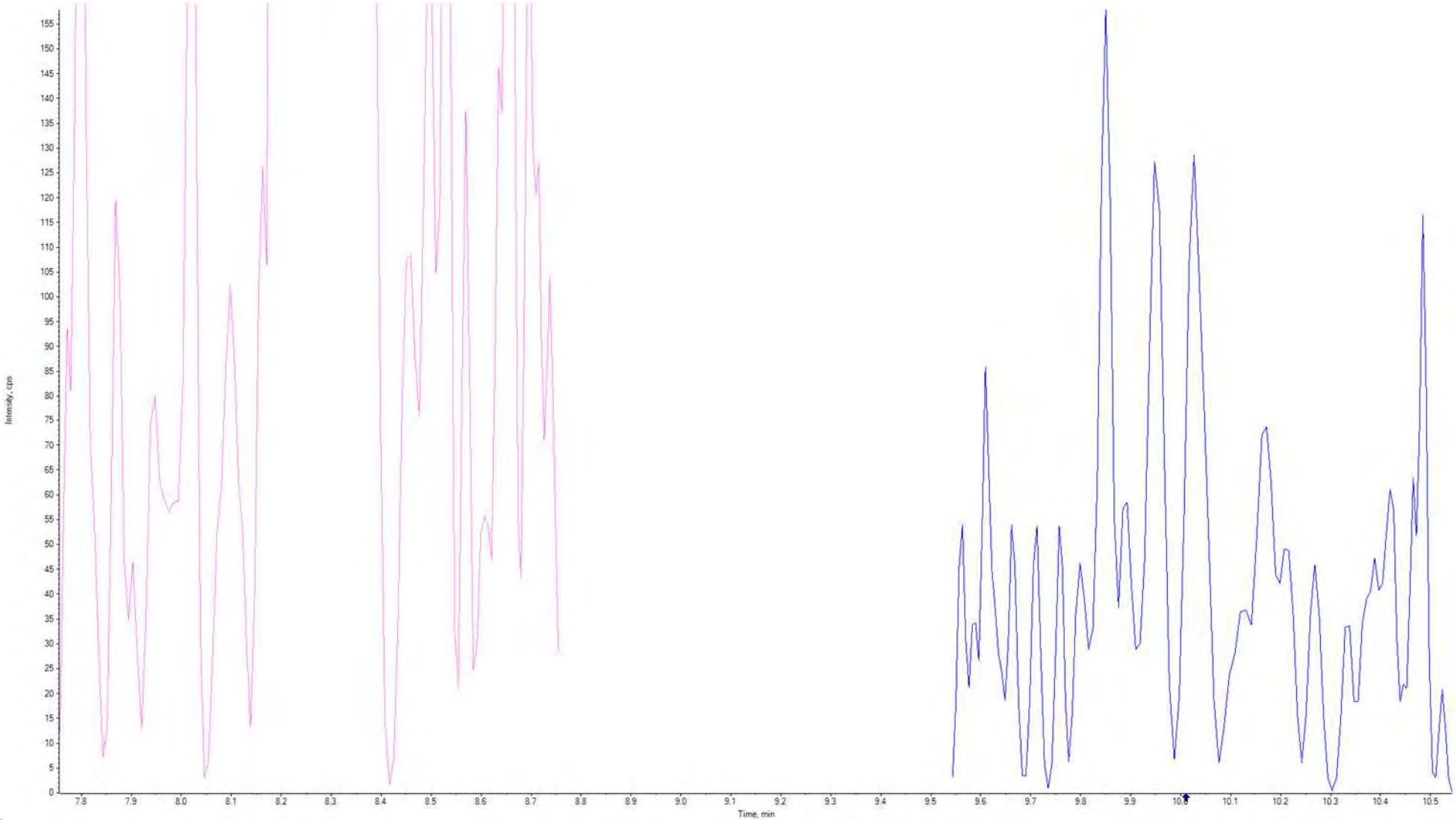
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDS_2
Sample: L2450786-03 S/N:N/A Points Across peak:N/A



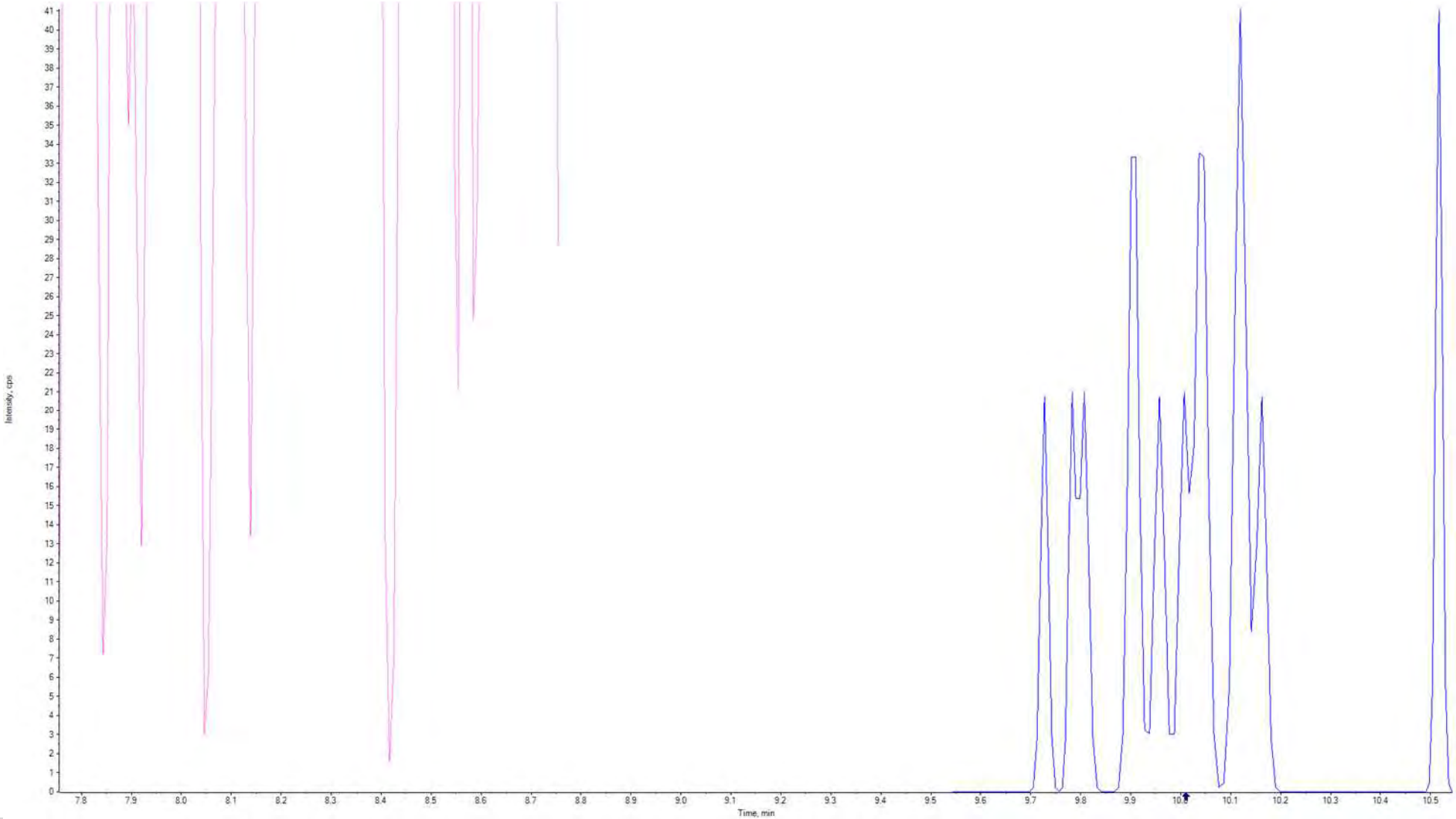
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoS
Sample: L2450786-03 S/N:N/A Points Across peak:N/A



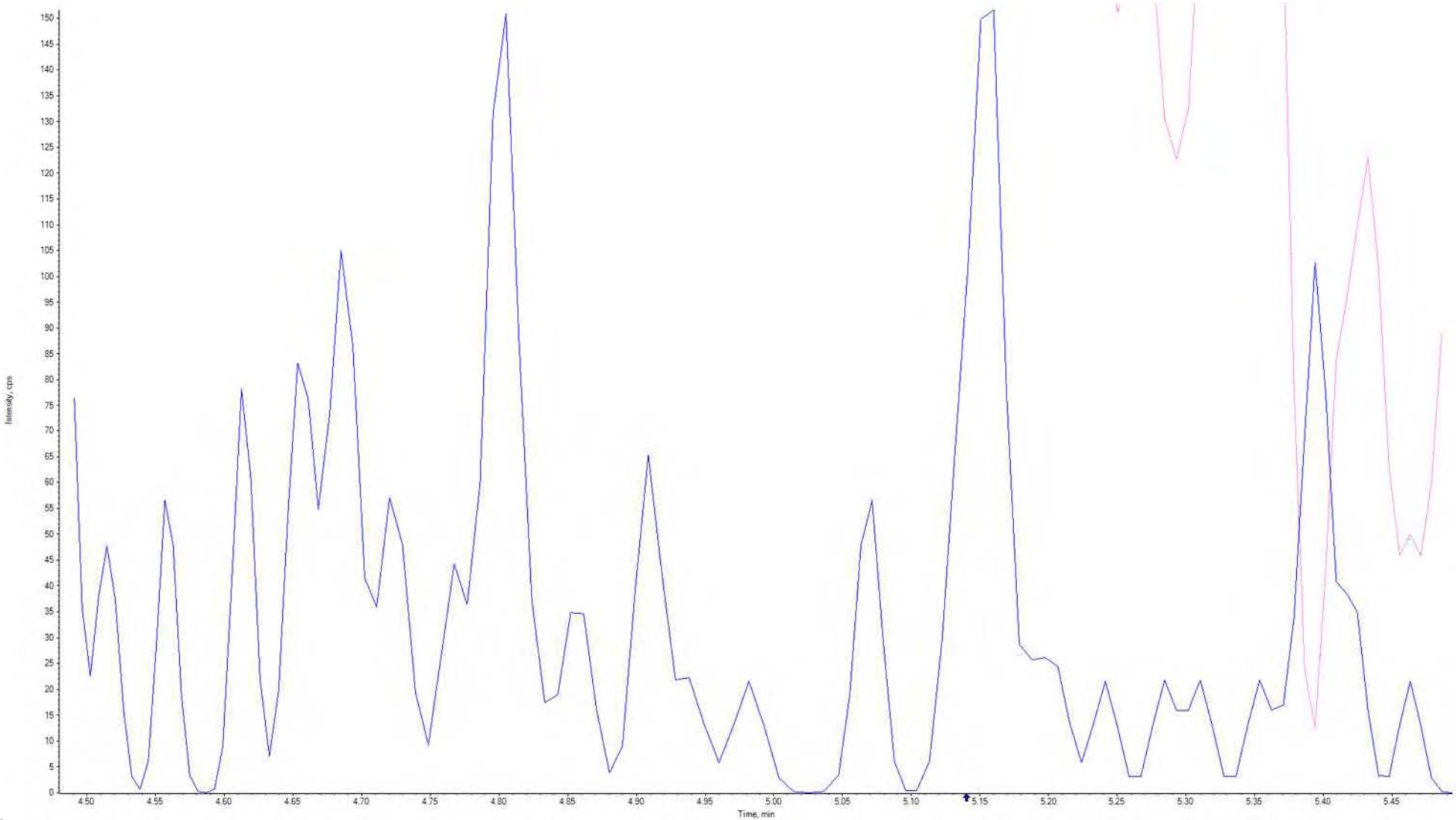
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoS_2
Sample: L2450786-03 S/N:N/A Points Across peak:N/A

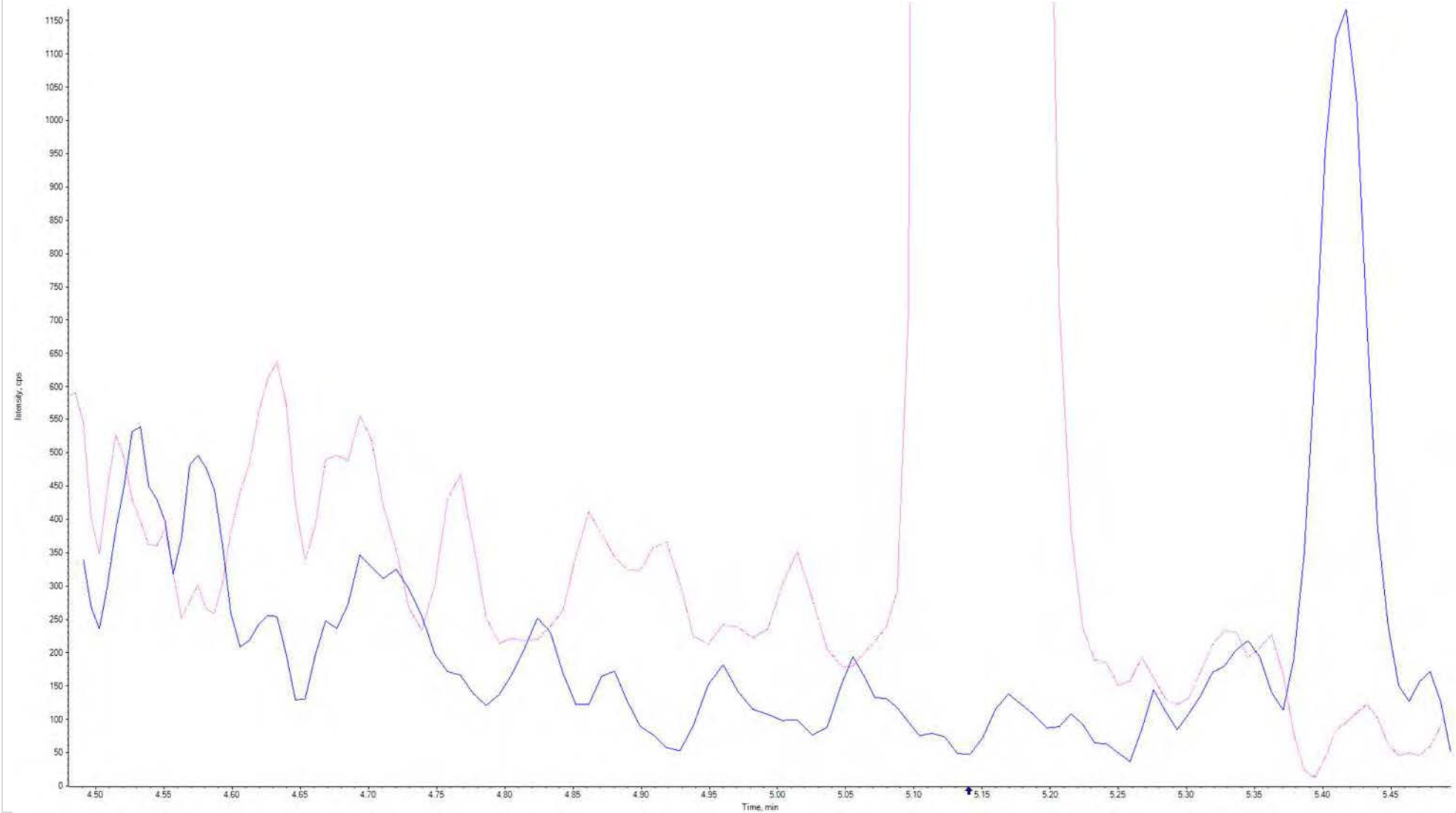


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

4:2FTS
Sample: L2450786-03 S/N:N/A Points Across peak:N/A

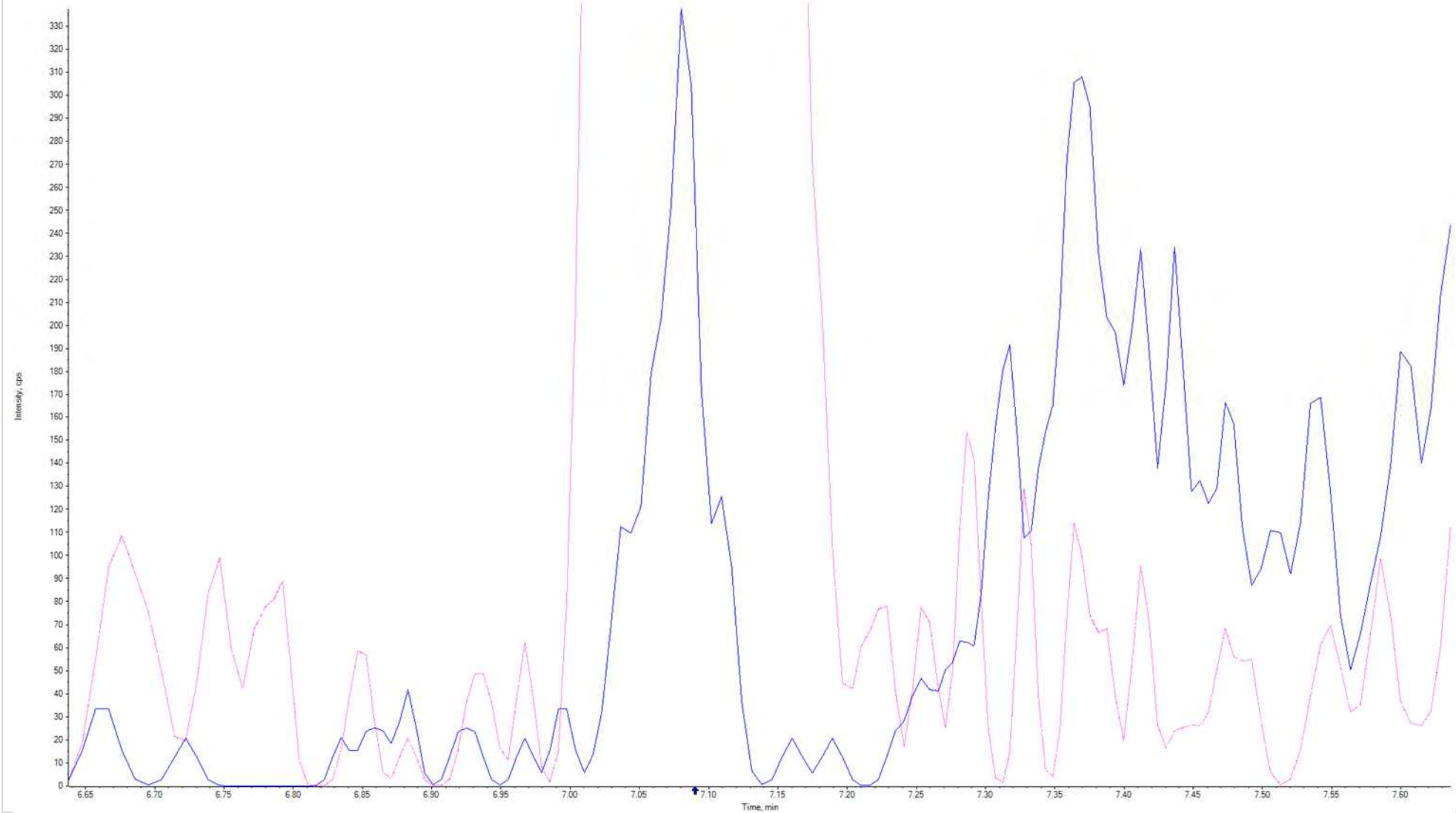


4:2FTS_2
Sample: L2450786-03 S/N:N/A Points Across peak:N/A



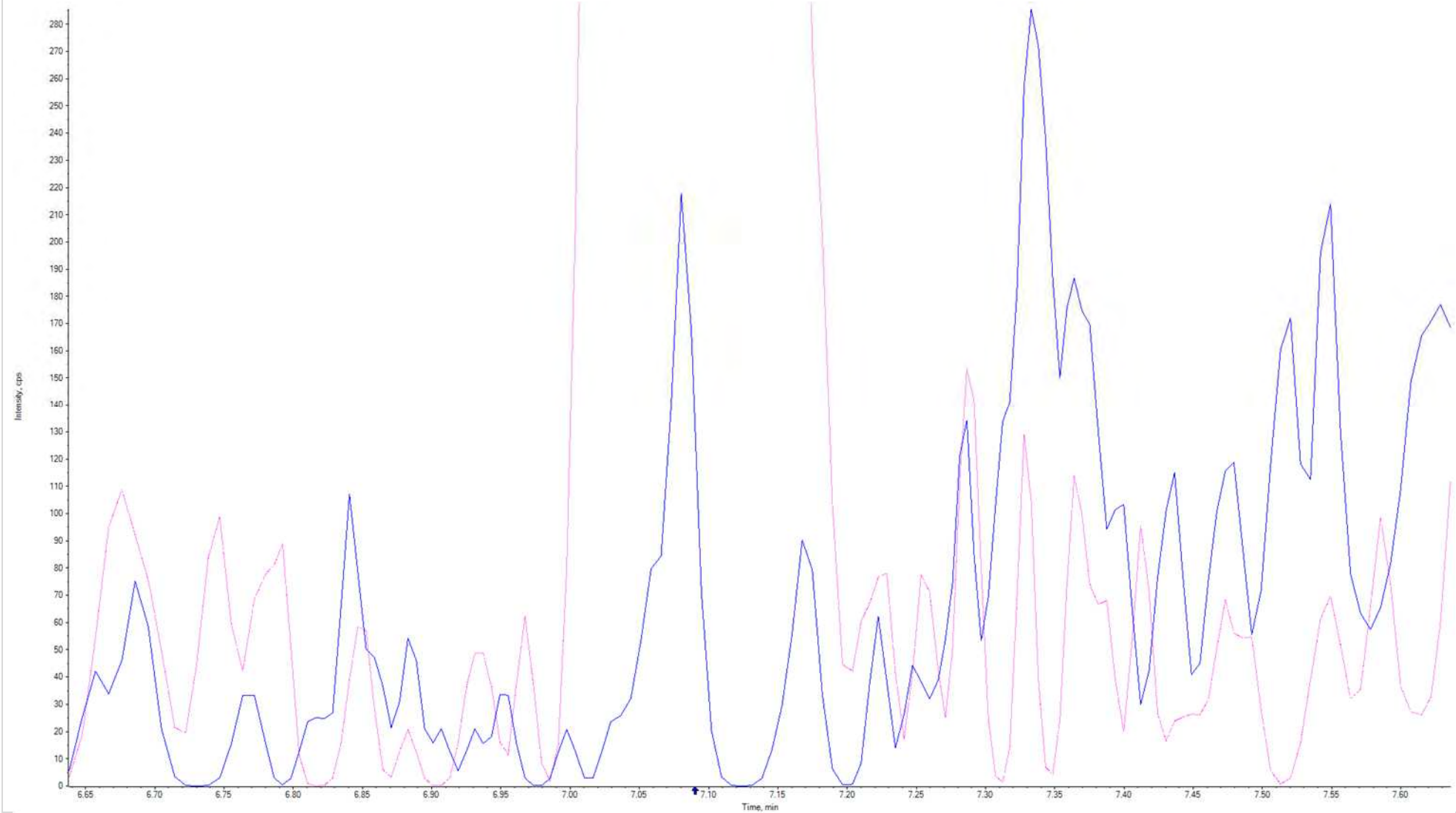
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

6:2FTS
Sample: L2450786-03 S/N:N/A Points Across peak:N/A



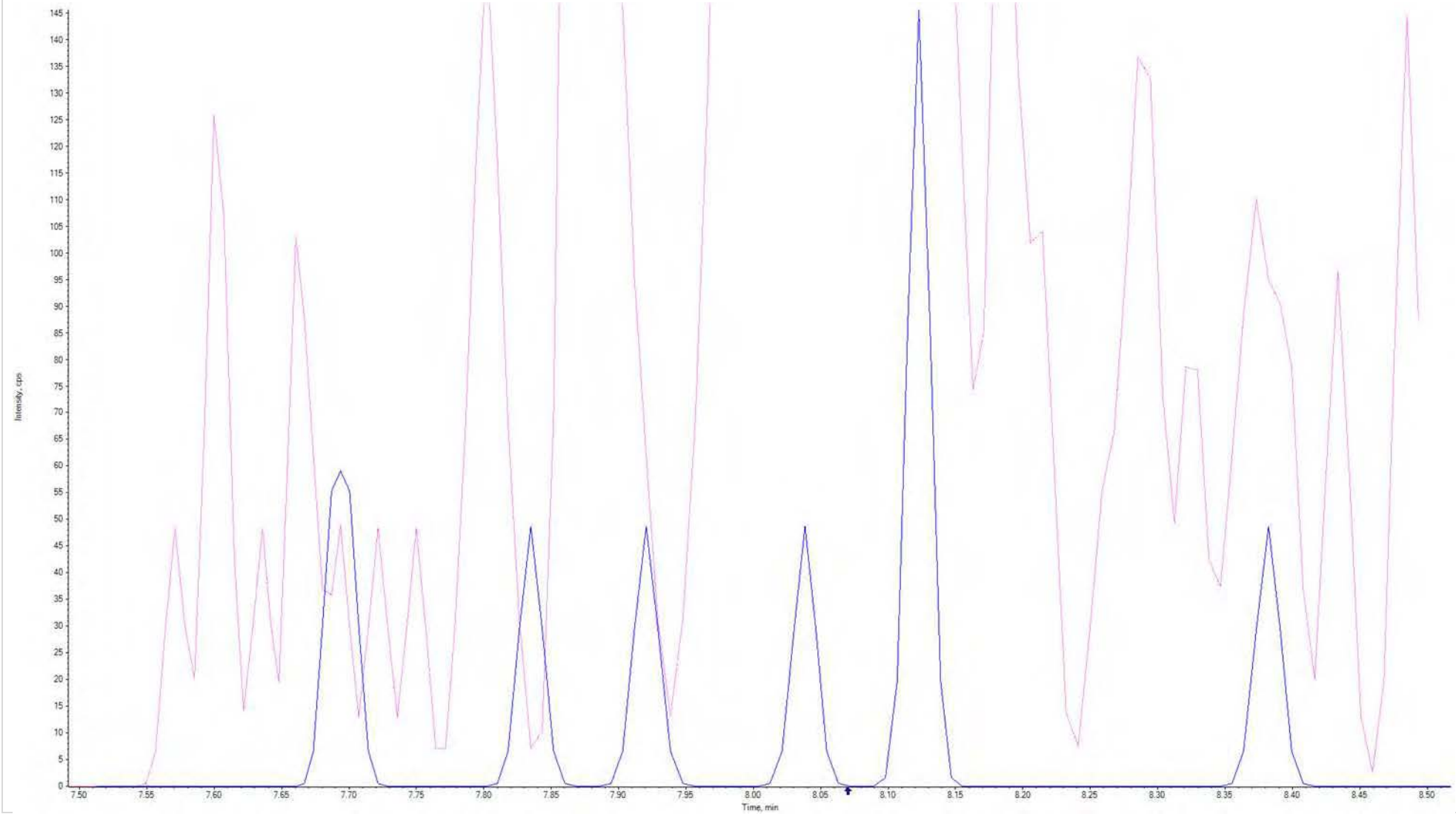
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

6:2FTS_2
Sample: L2450786-03 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

8:2FTS
Sample: L2450786-03 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

8:2FTS_2
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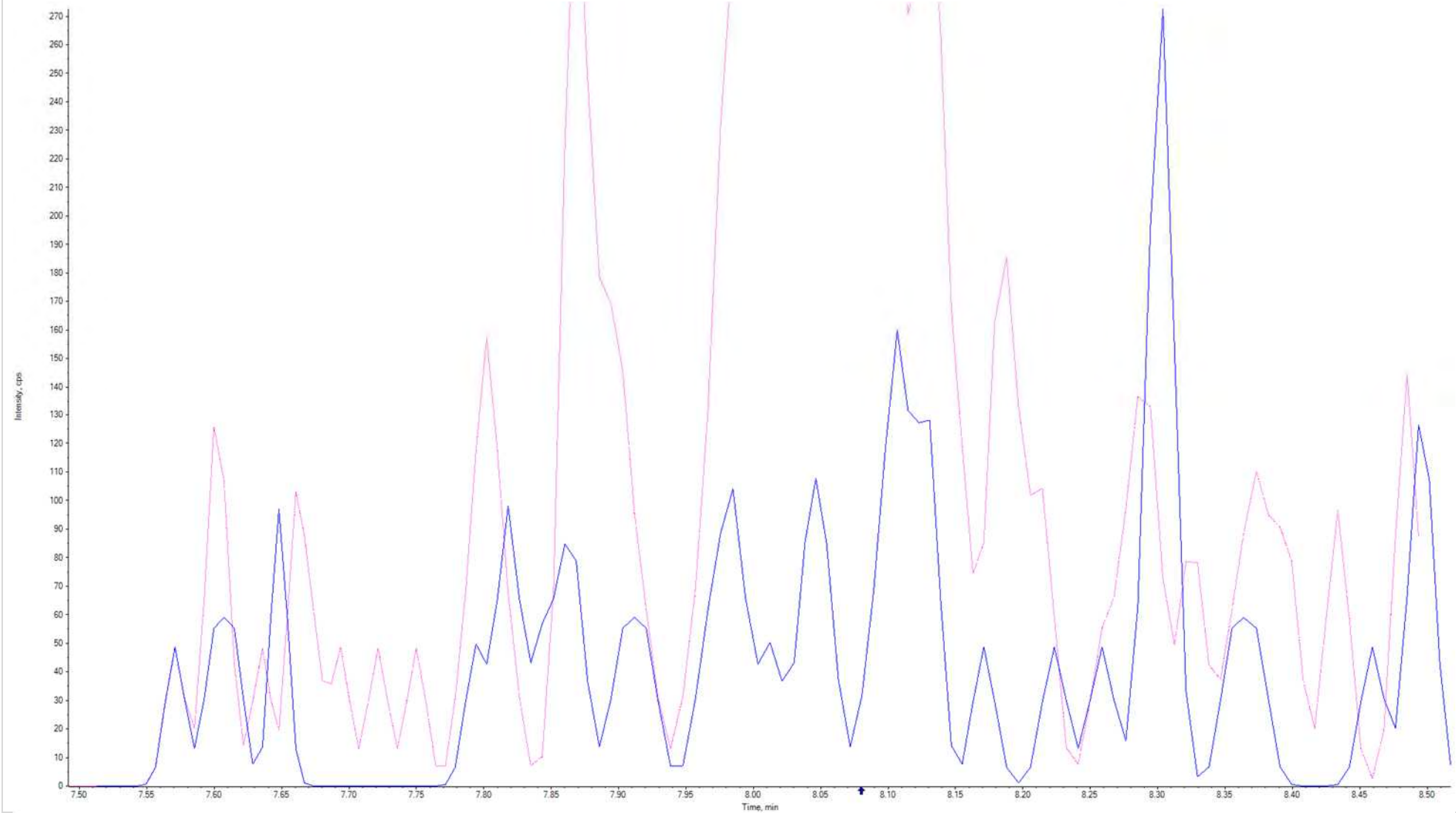

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOSA
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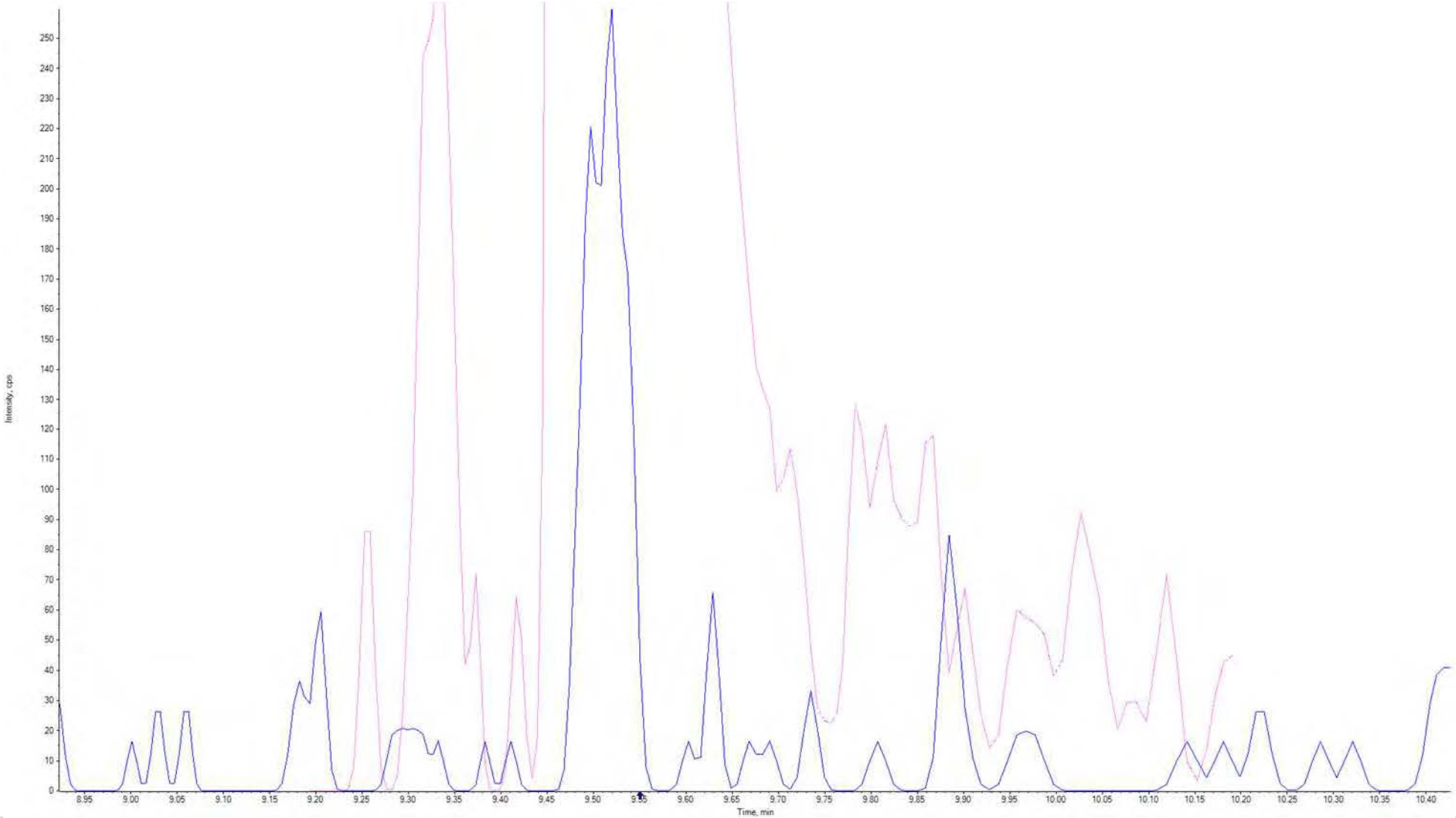

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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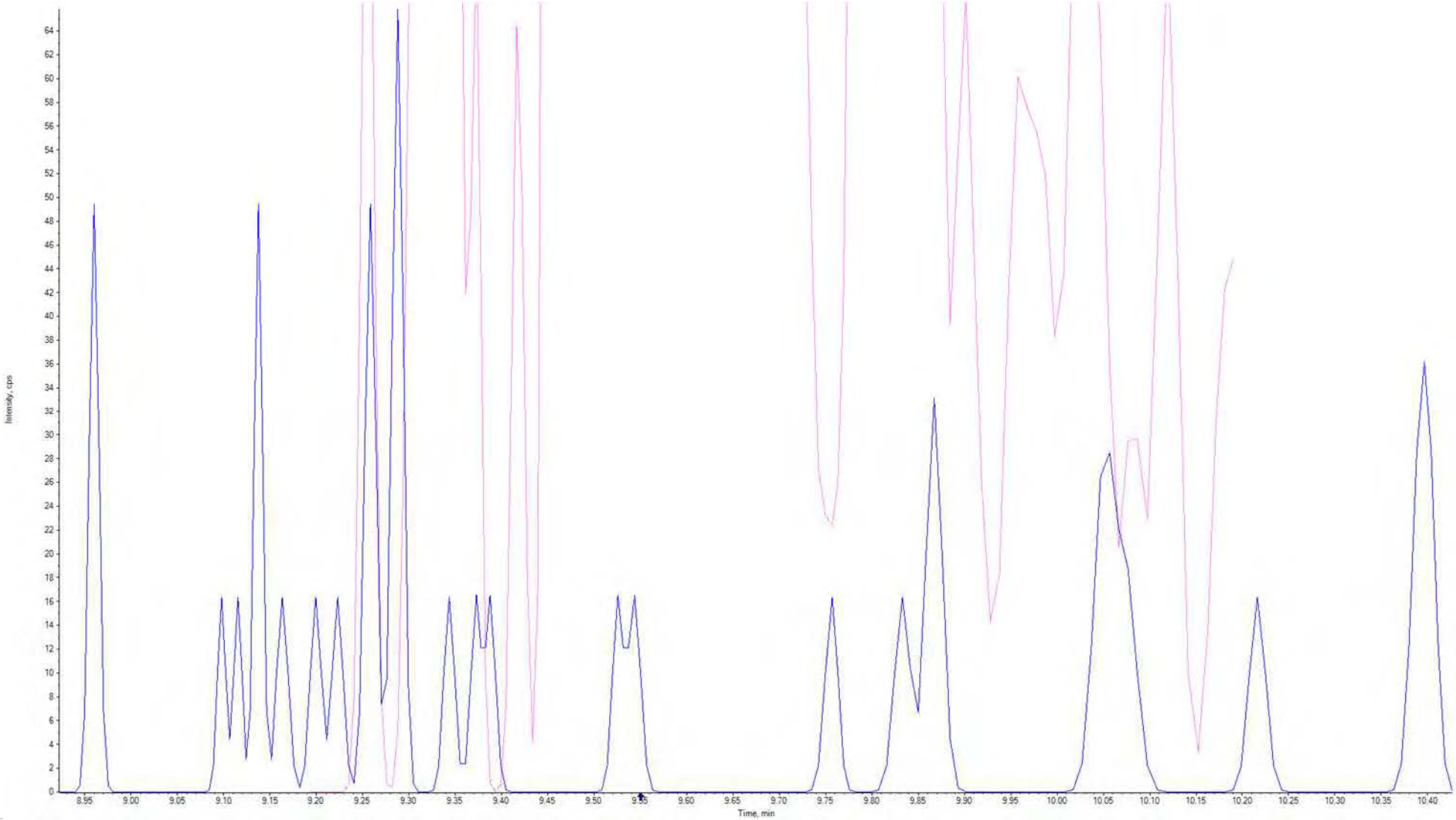
PFOSA_2
Sample: L2450786-03 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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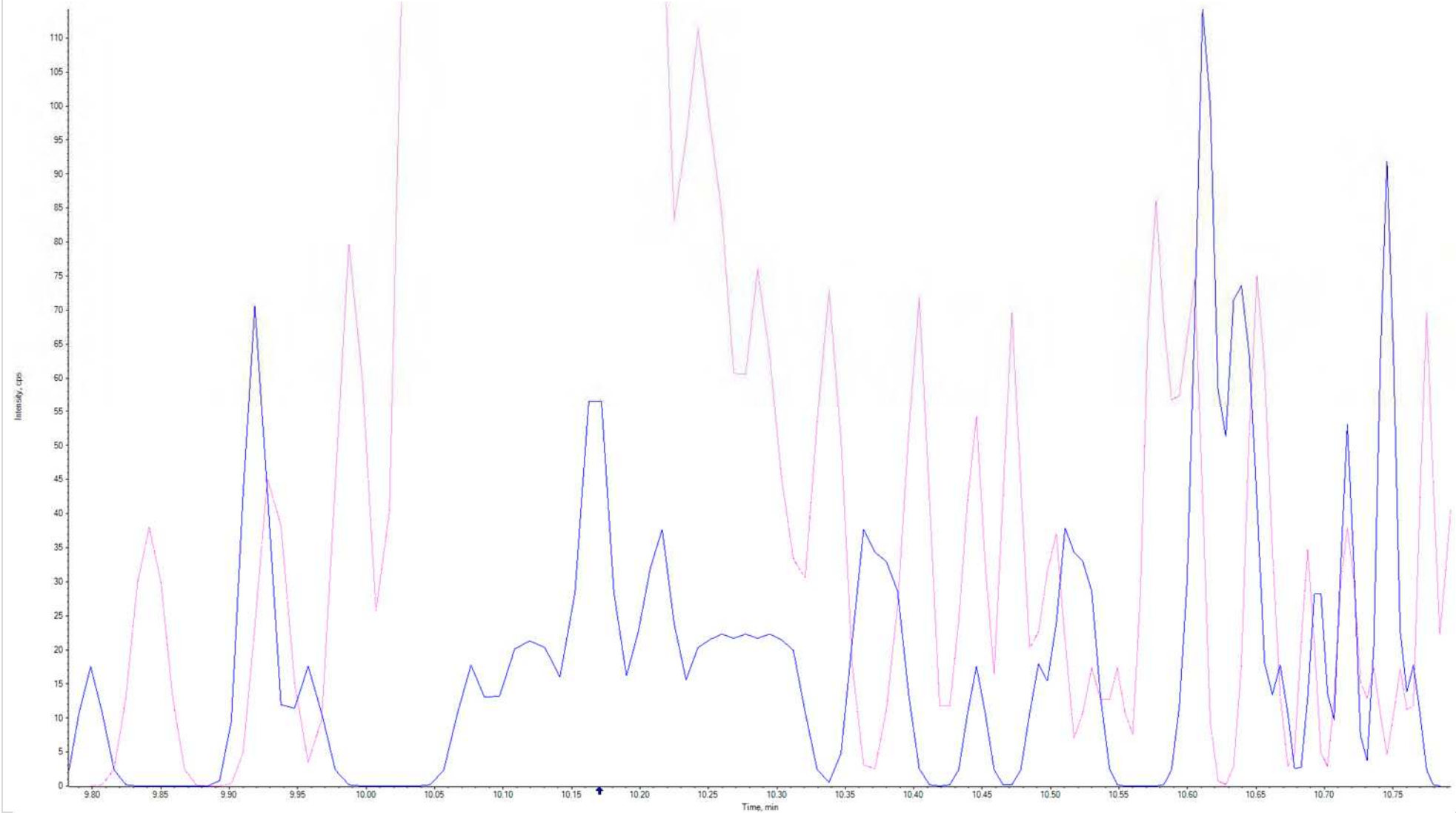
Generated: 9/19/2024 8:04:31 AM

NMeFOSA
Sample: L2450786-03 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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NMeFOSA_2
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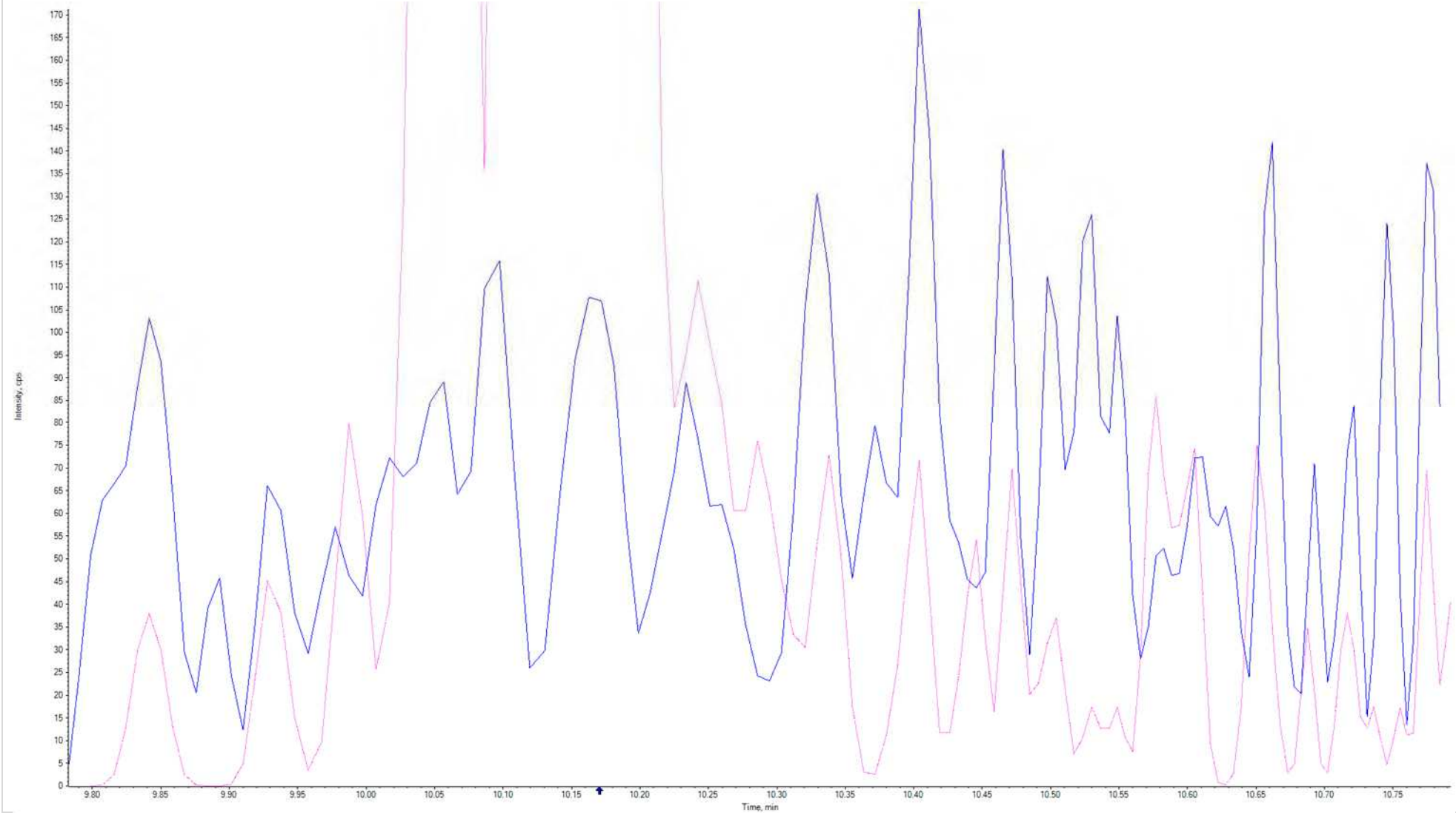

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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NEtFOSA
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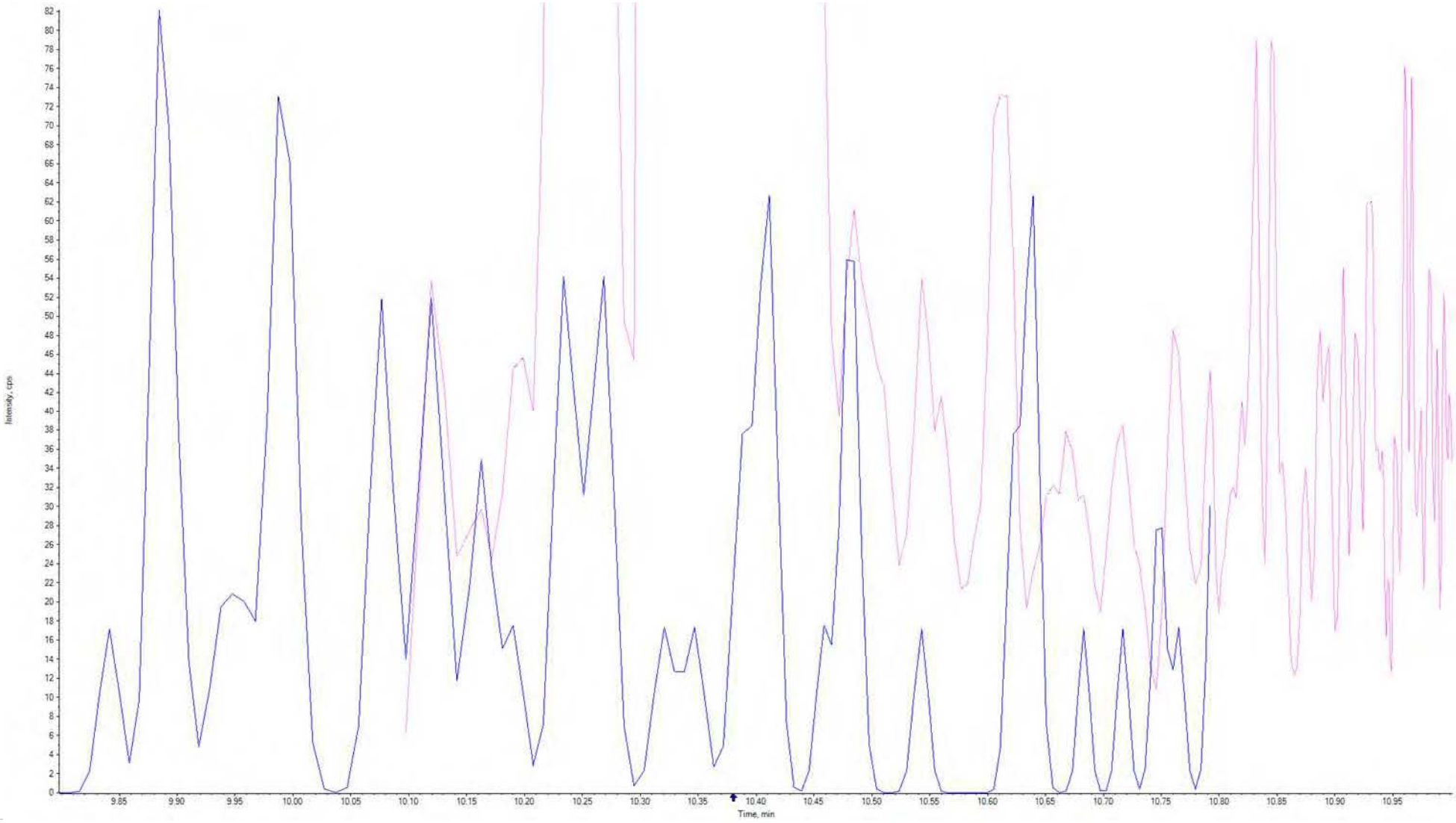

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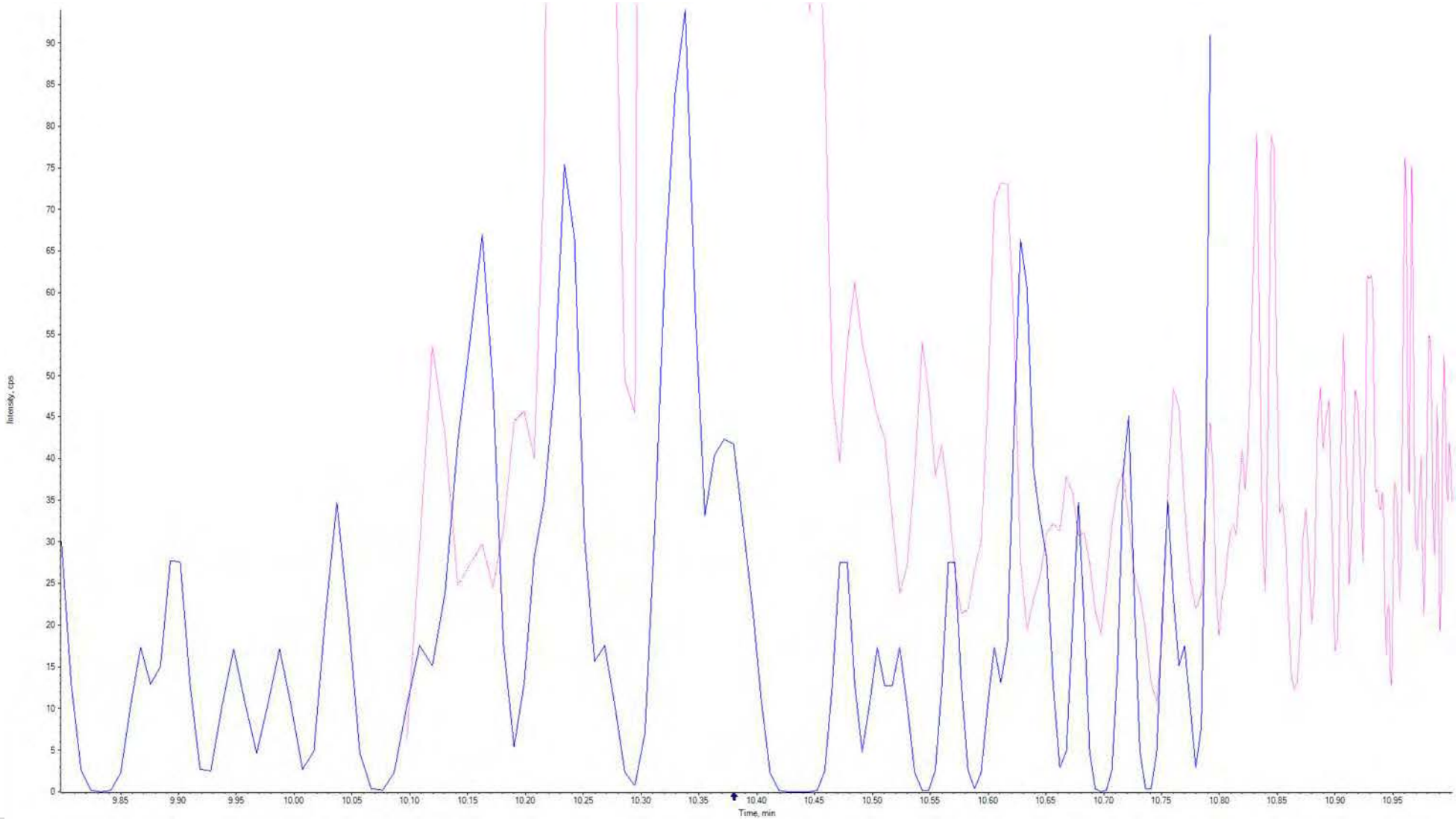

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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NMeFOSAA
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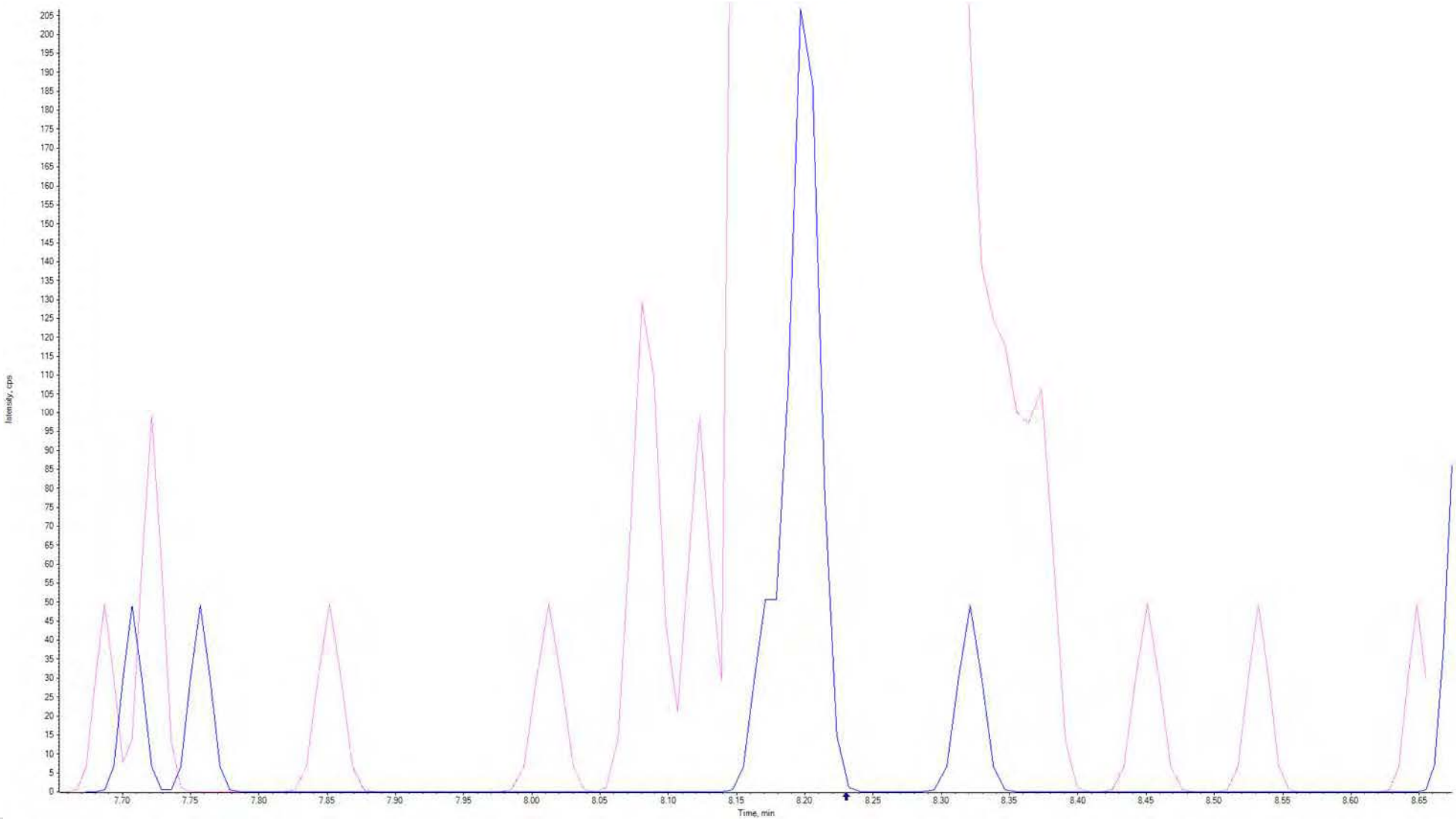

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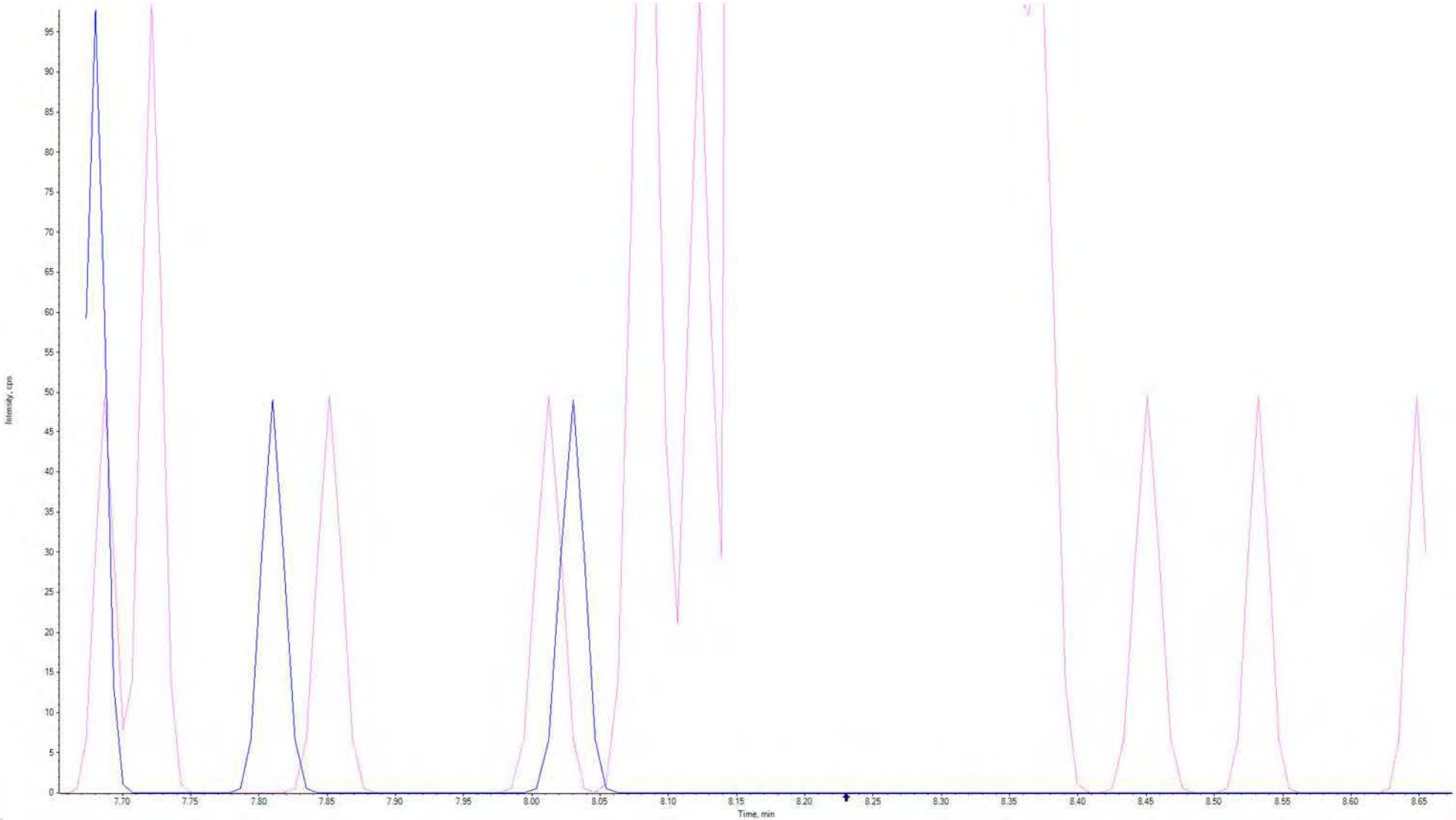

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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NEtFOSAA
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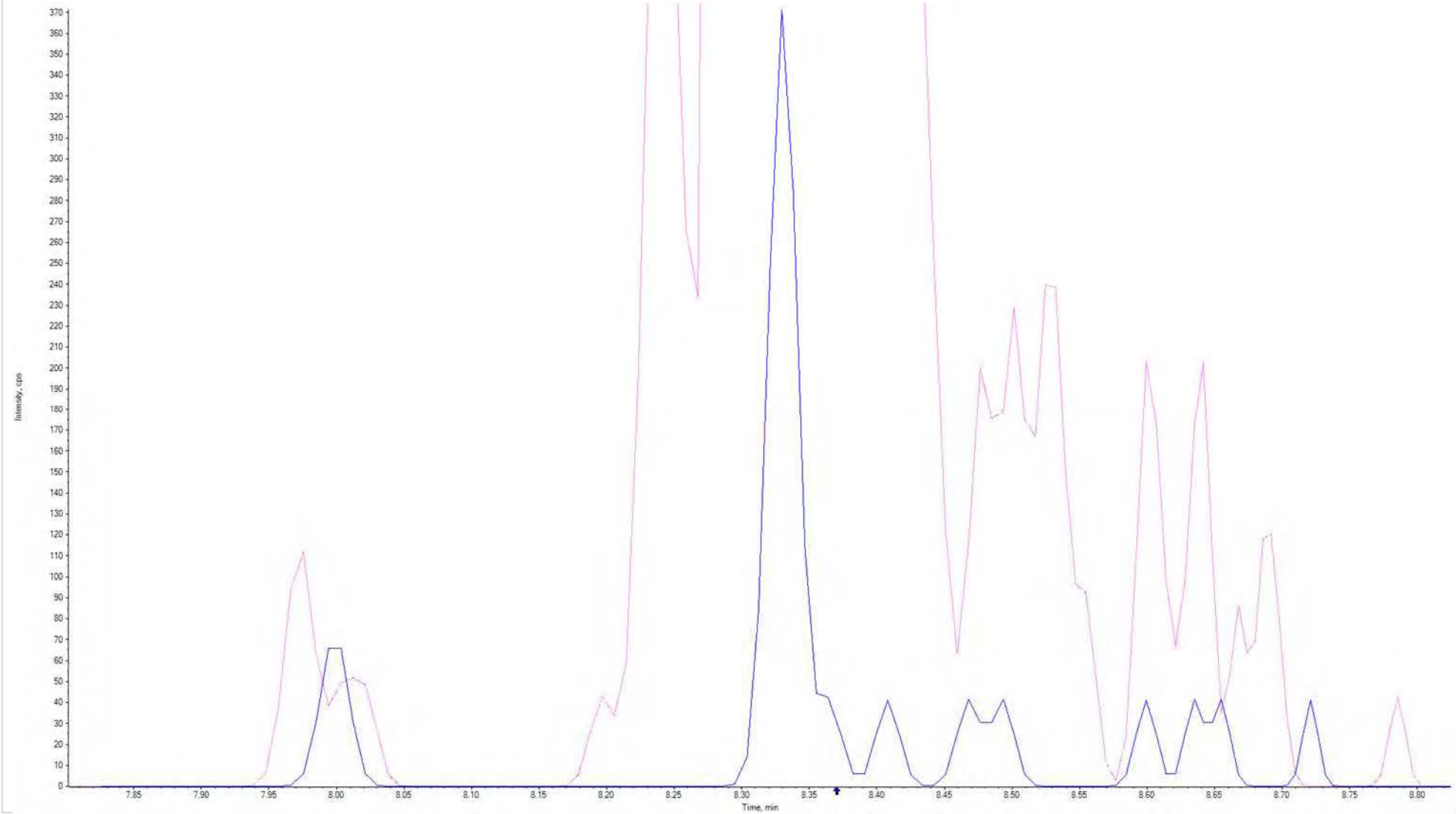

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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NEtFOSAA_2
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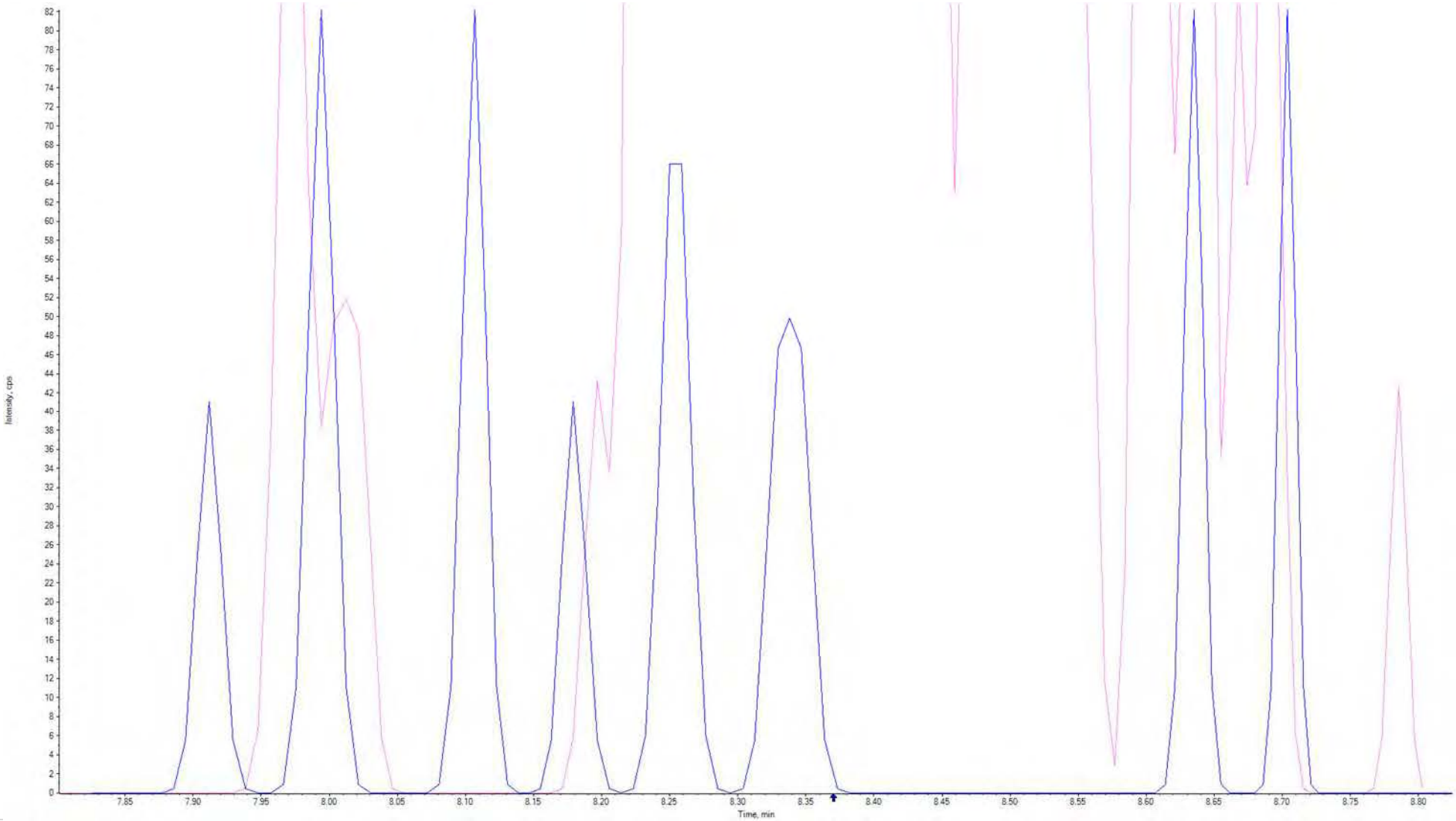

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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NMeFOSE
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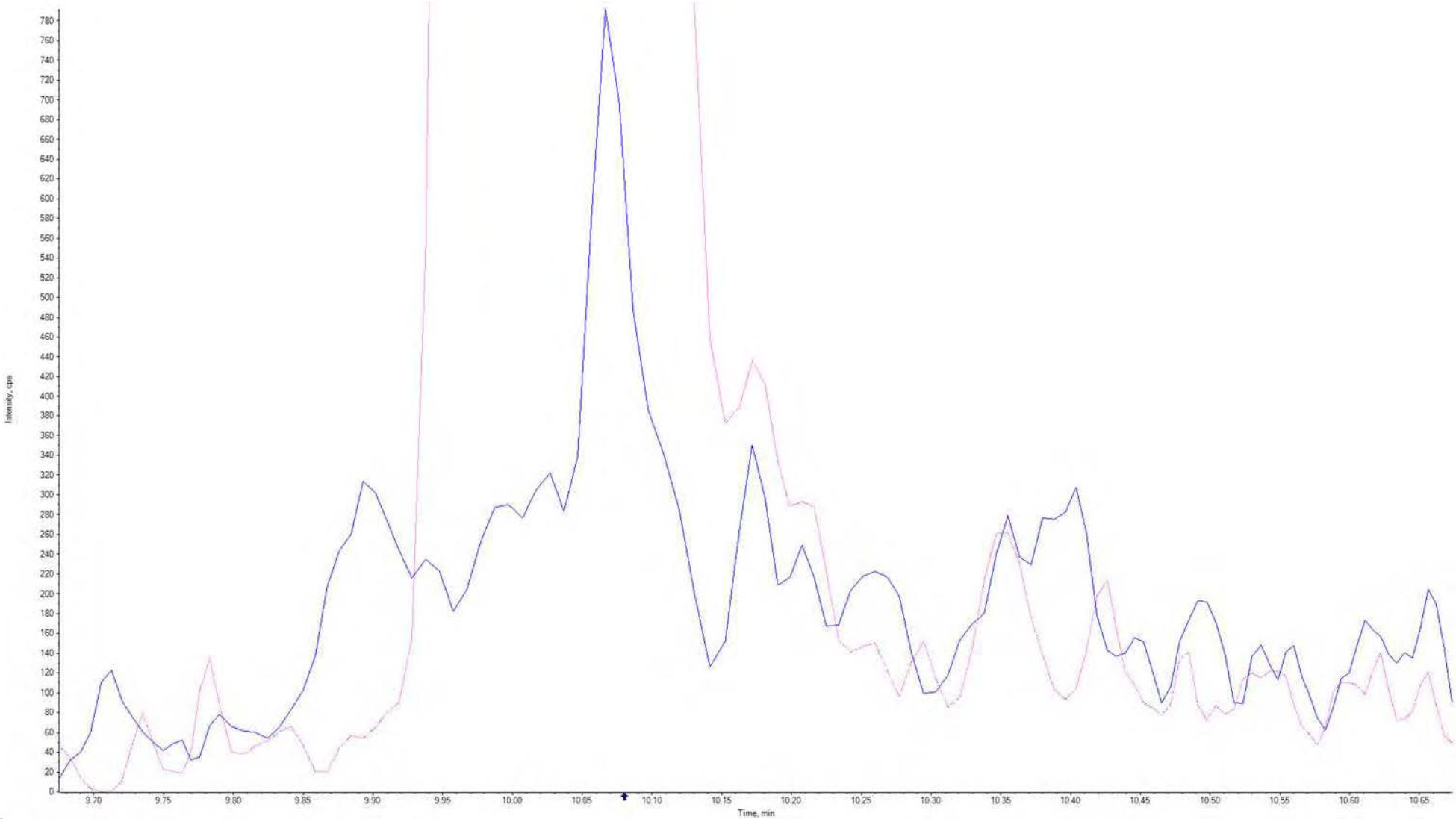

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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NEtFOSE
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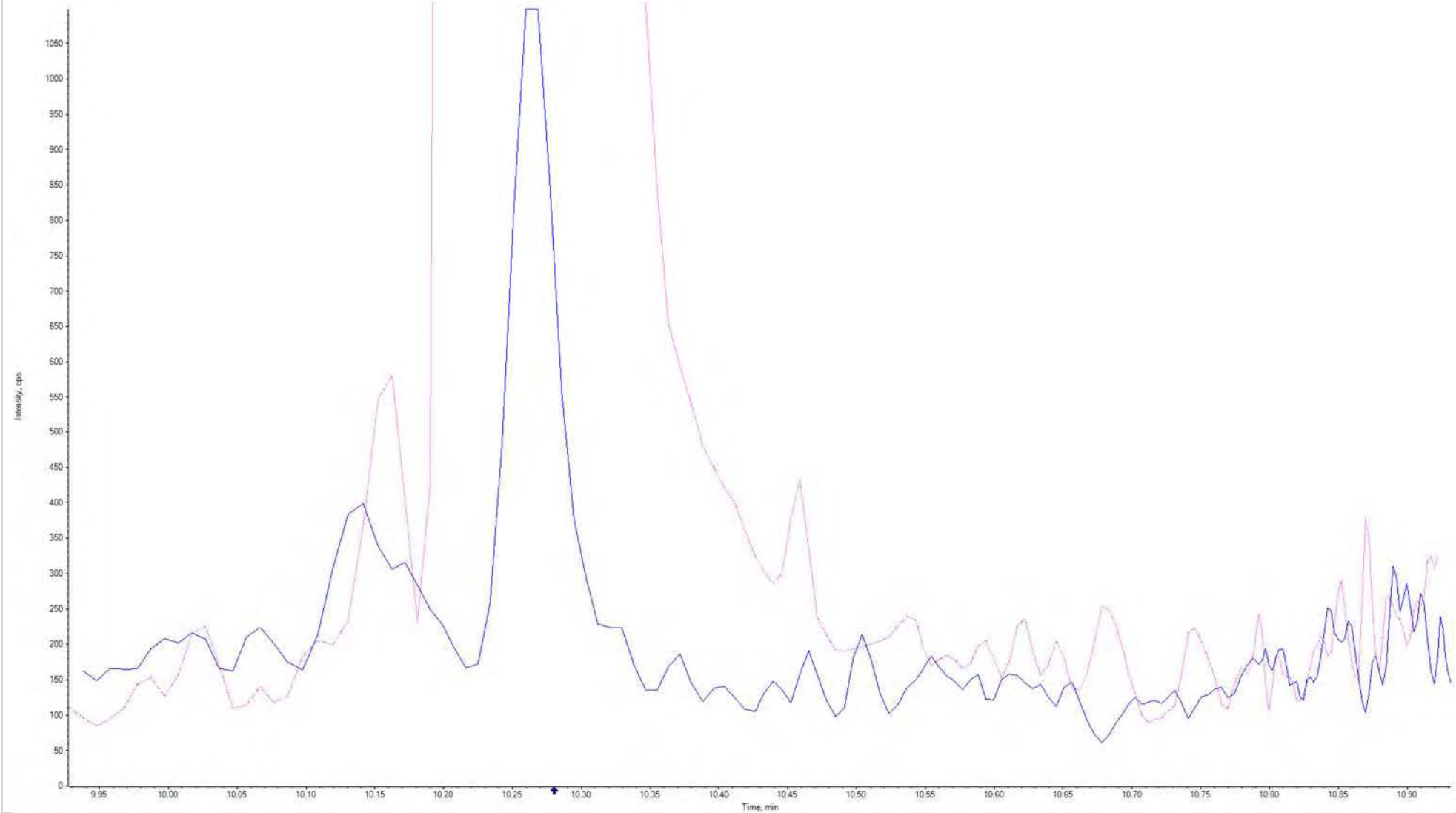

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Generated: 9/19/2024 8:04:31 AM

HFPO-DA
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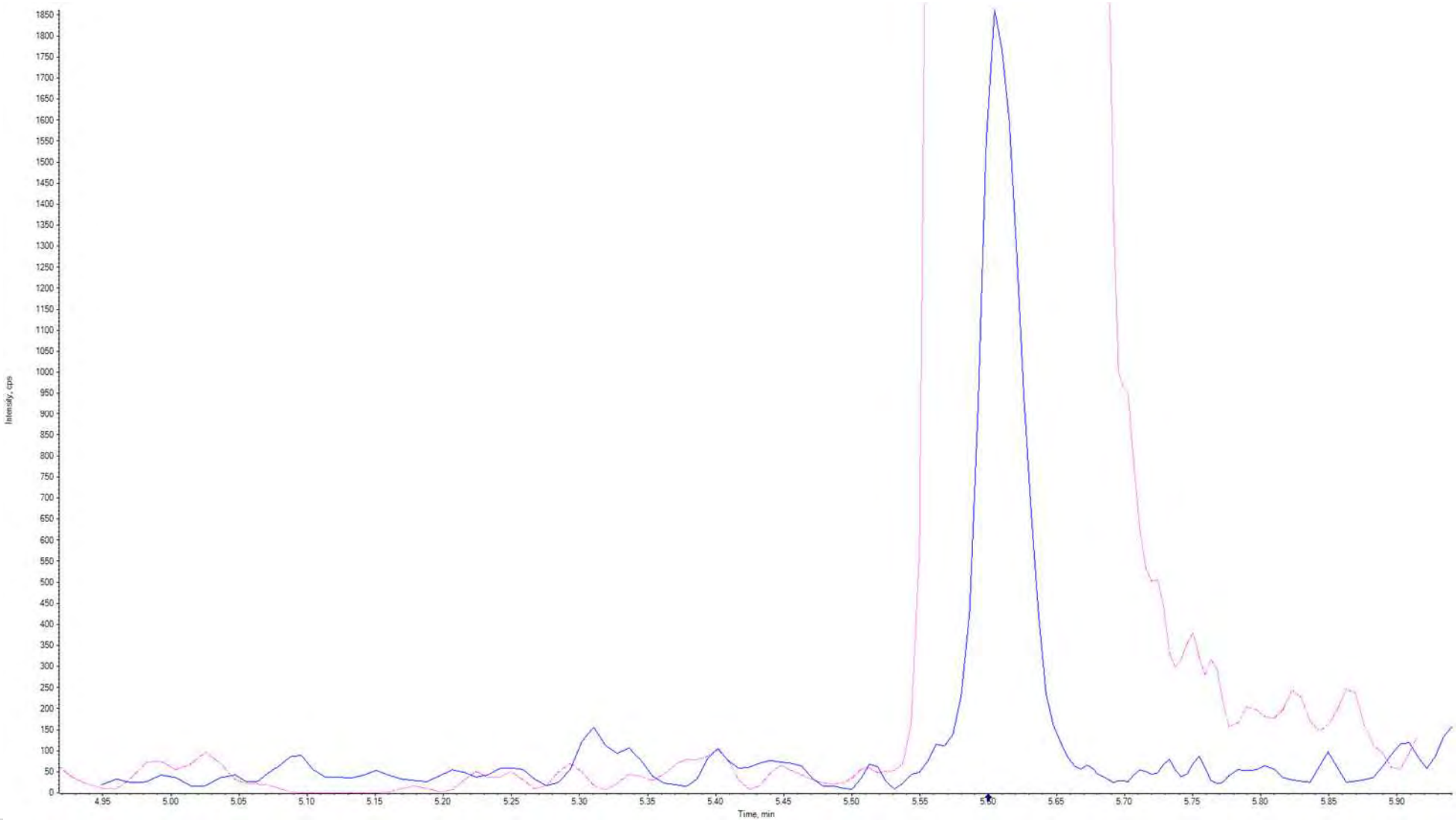

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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HFPO-DA_2
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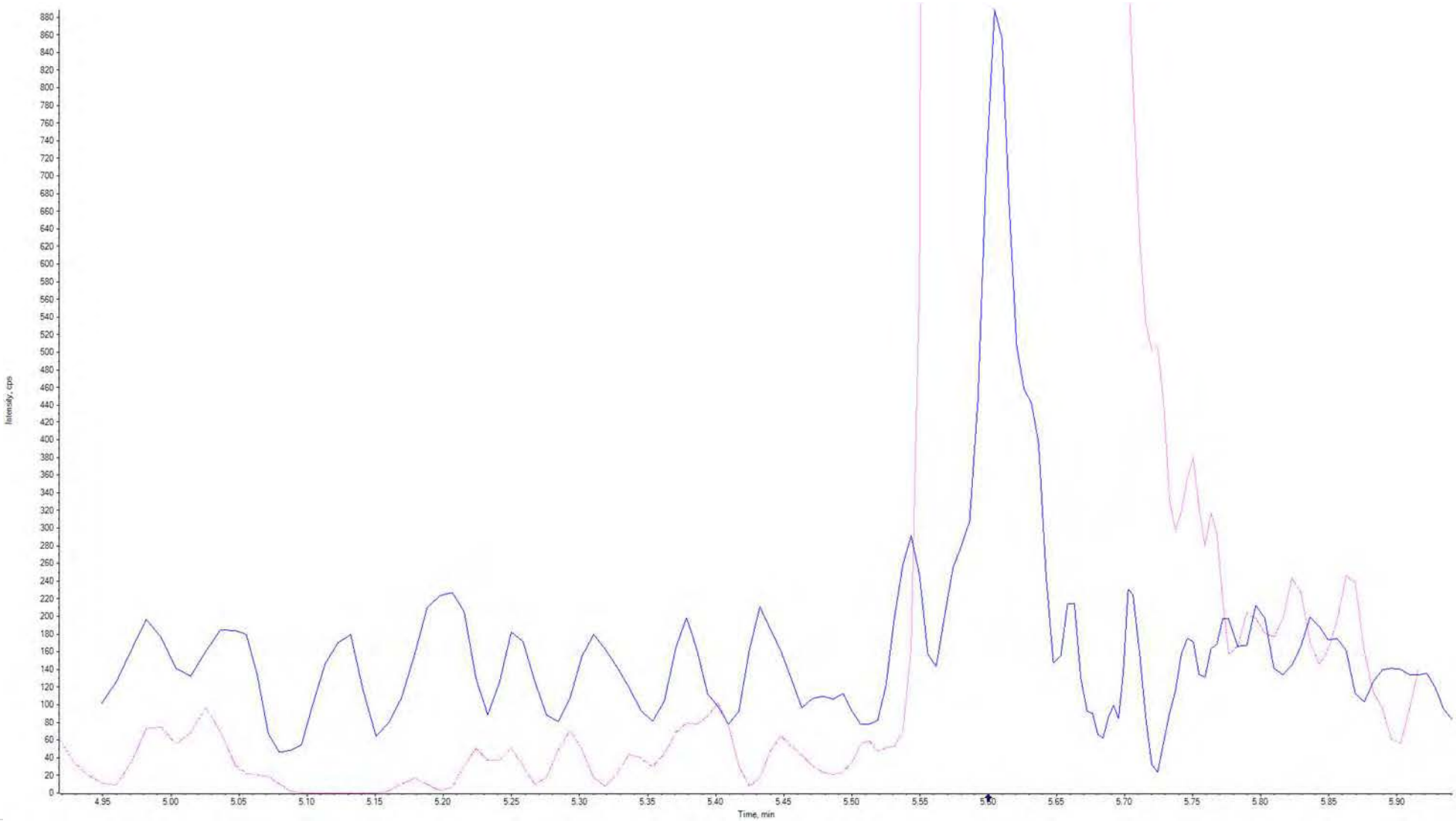

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Generated: 9/19/2024 8:04:31 AM

ADONA
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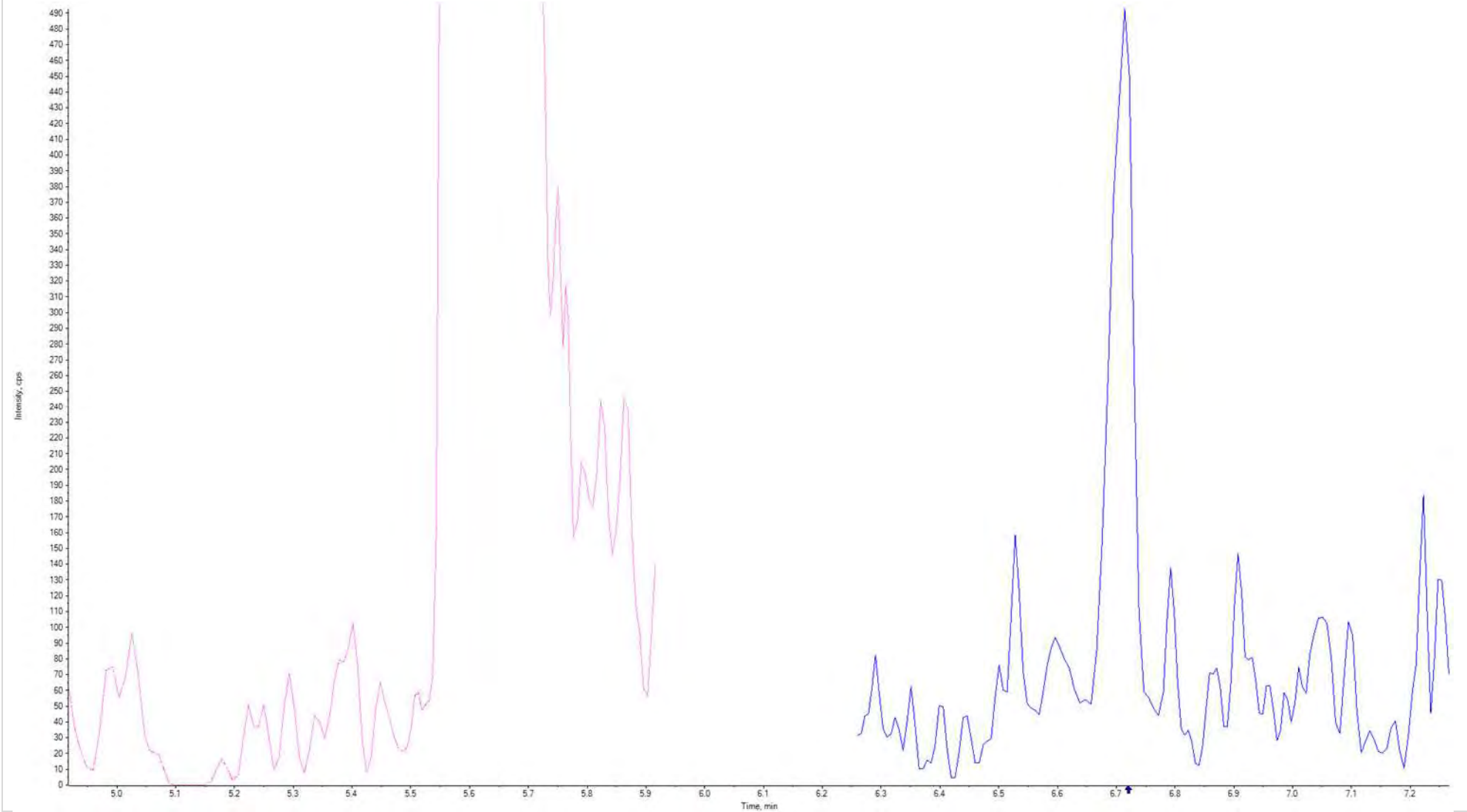

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

ADONA_2
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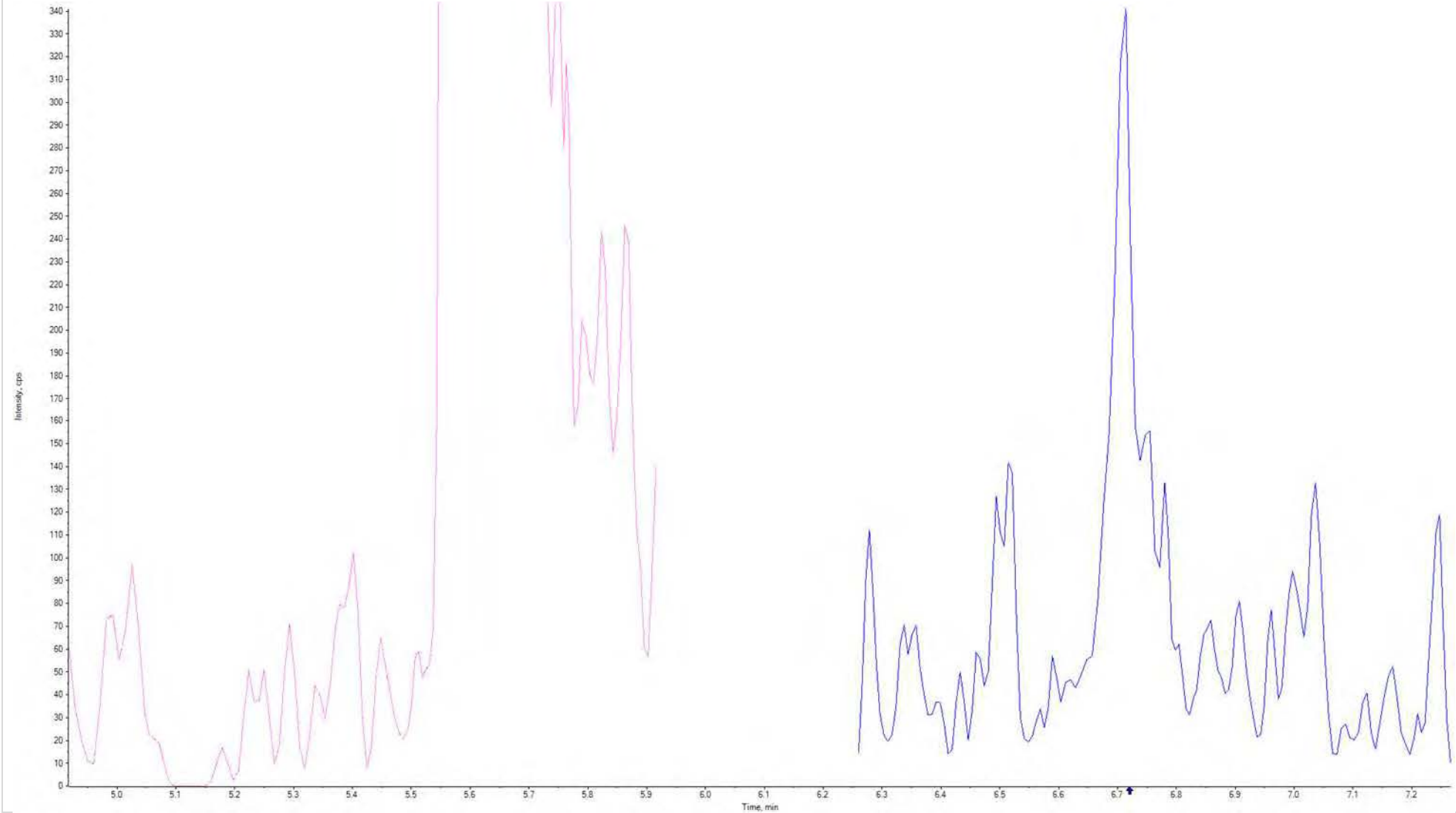

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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9Cl-PF3ONS
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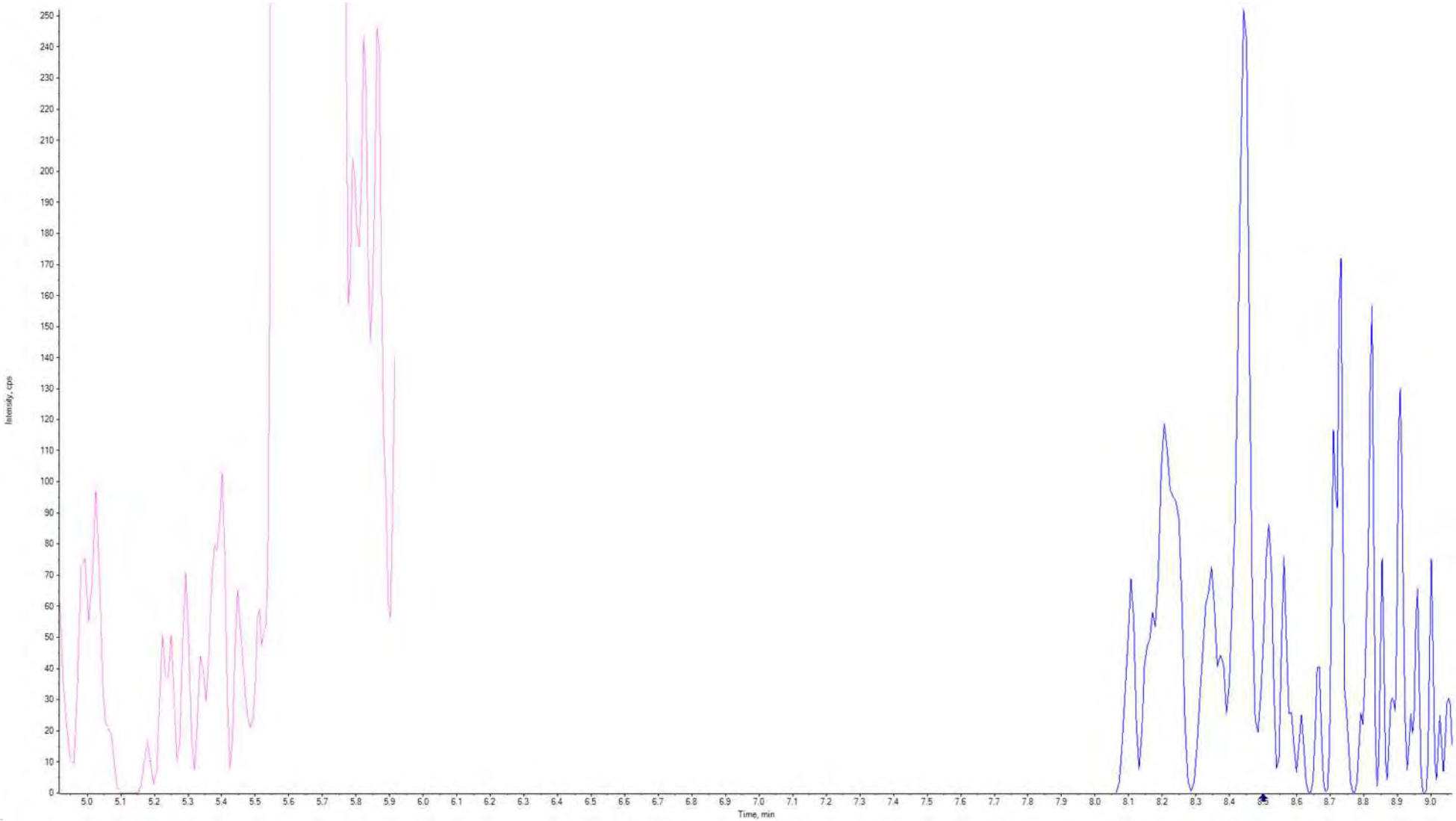

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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9Cl-PF3ONS_2
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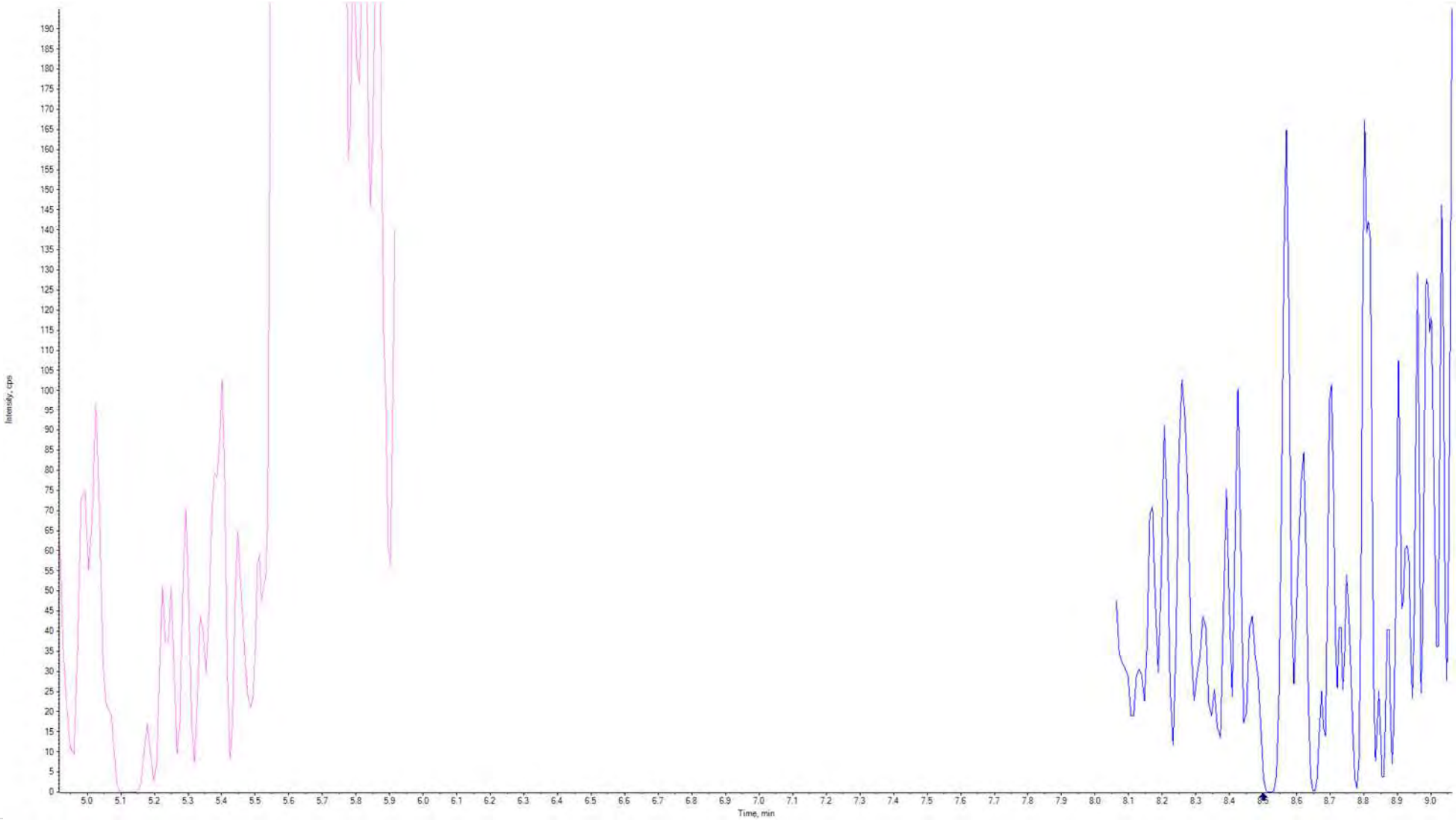

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Generated: 9/19/2024 8:04:31 AM

11Cl-PF3OUdS
Sample: L2450786-03 S/N:N/A Points Across peak:N/A

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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11Cl-PF3OUdS_2
Sample: L2450786-03 S/N:N/A Points Across peak:N/A

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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3:3FTCA
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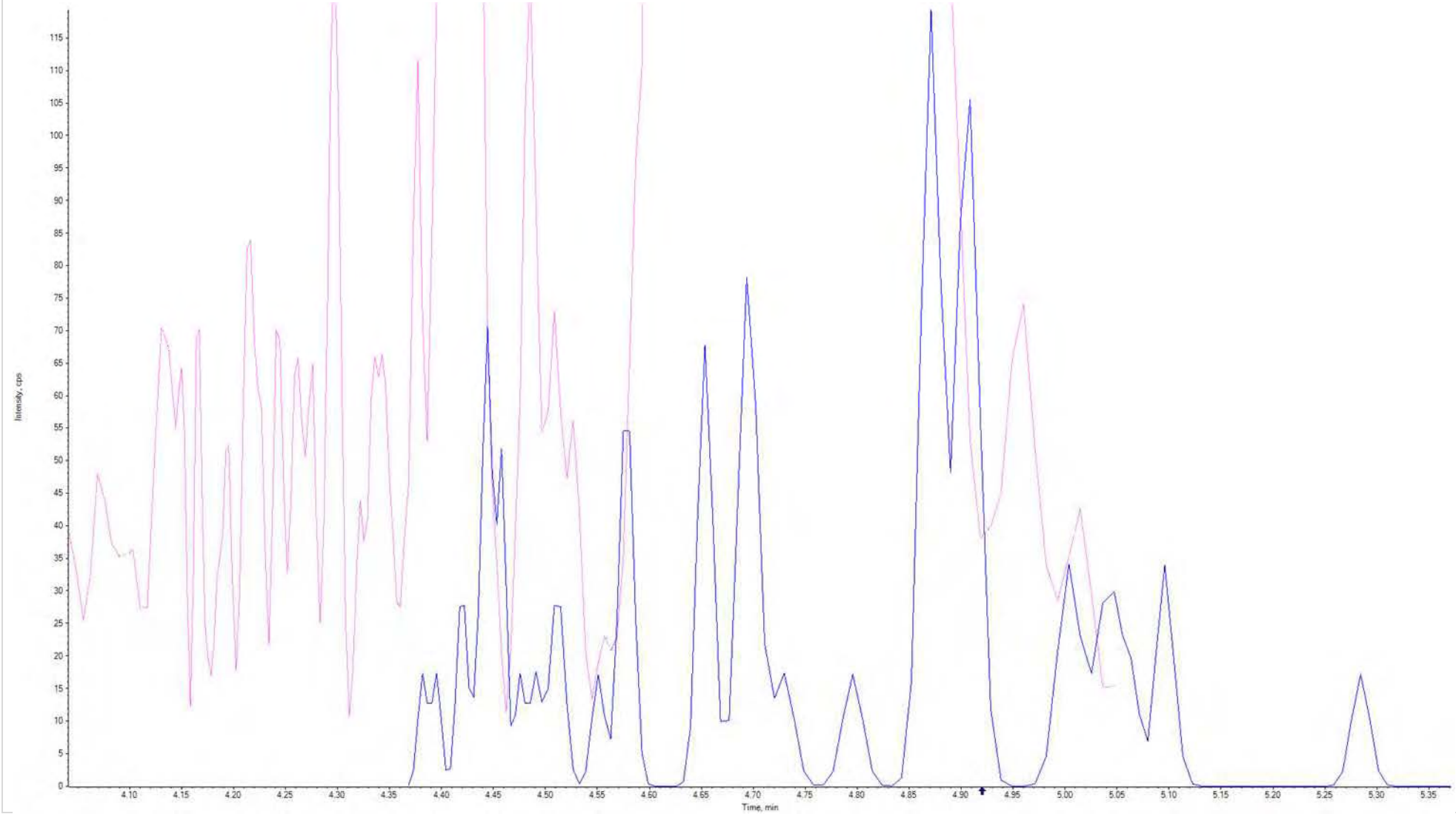

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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3:3FTCA_2
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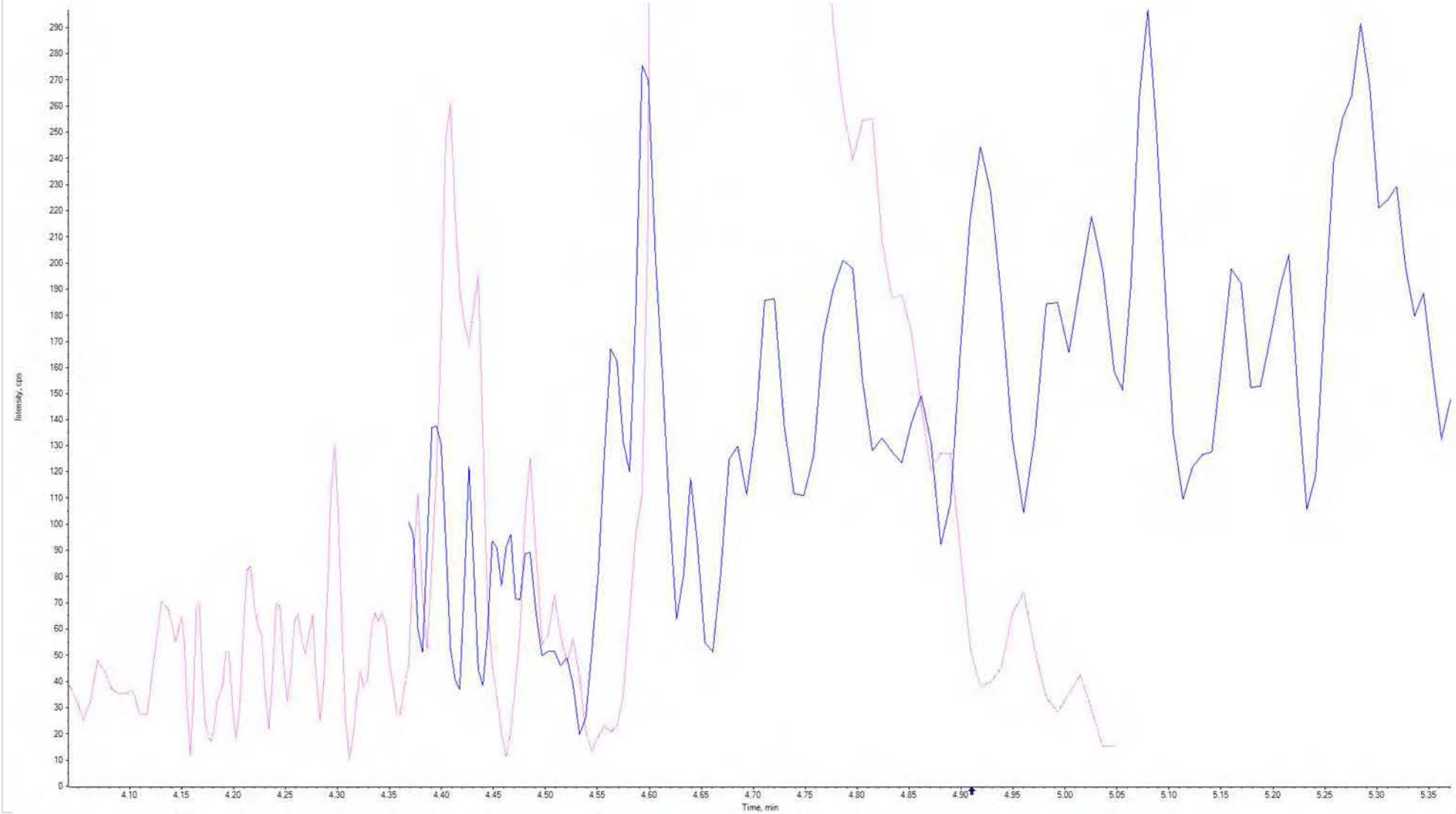

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Generated: 9/19/2024 8:04:31 AM

5:3FTCA
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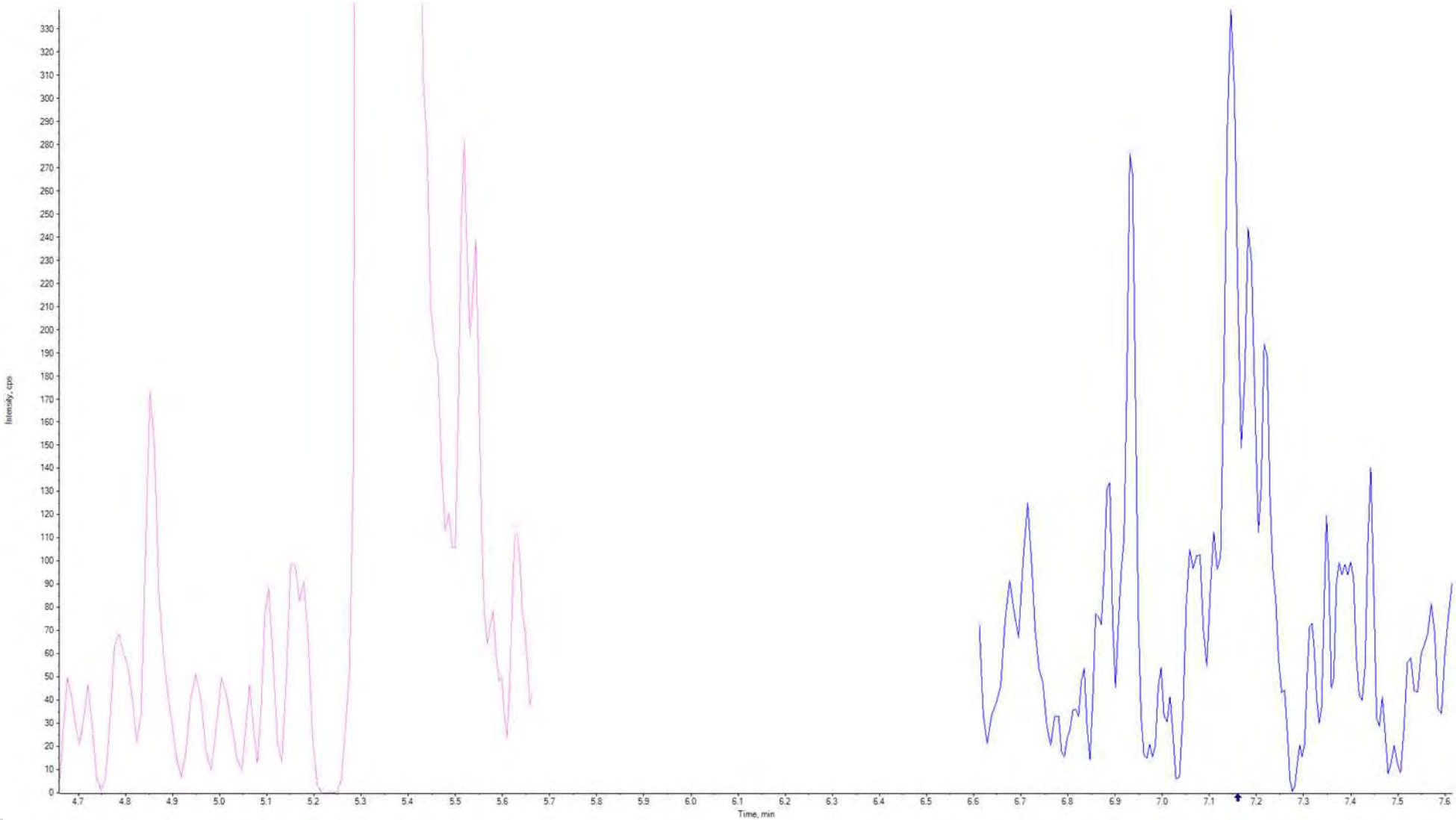

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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5:3FTCA_2
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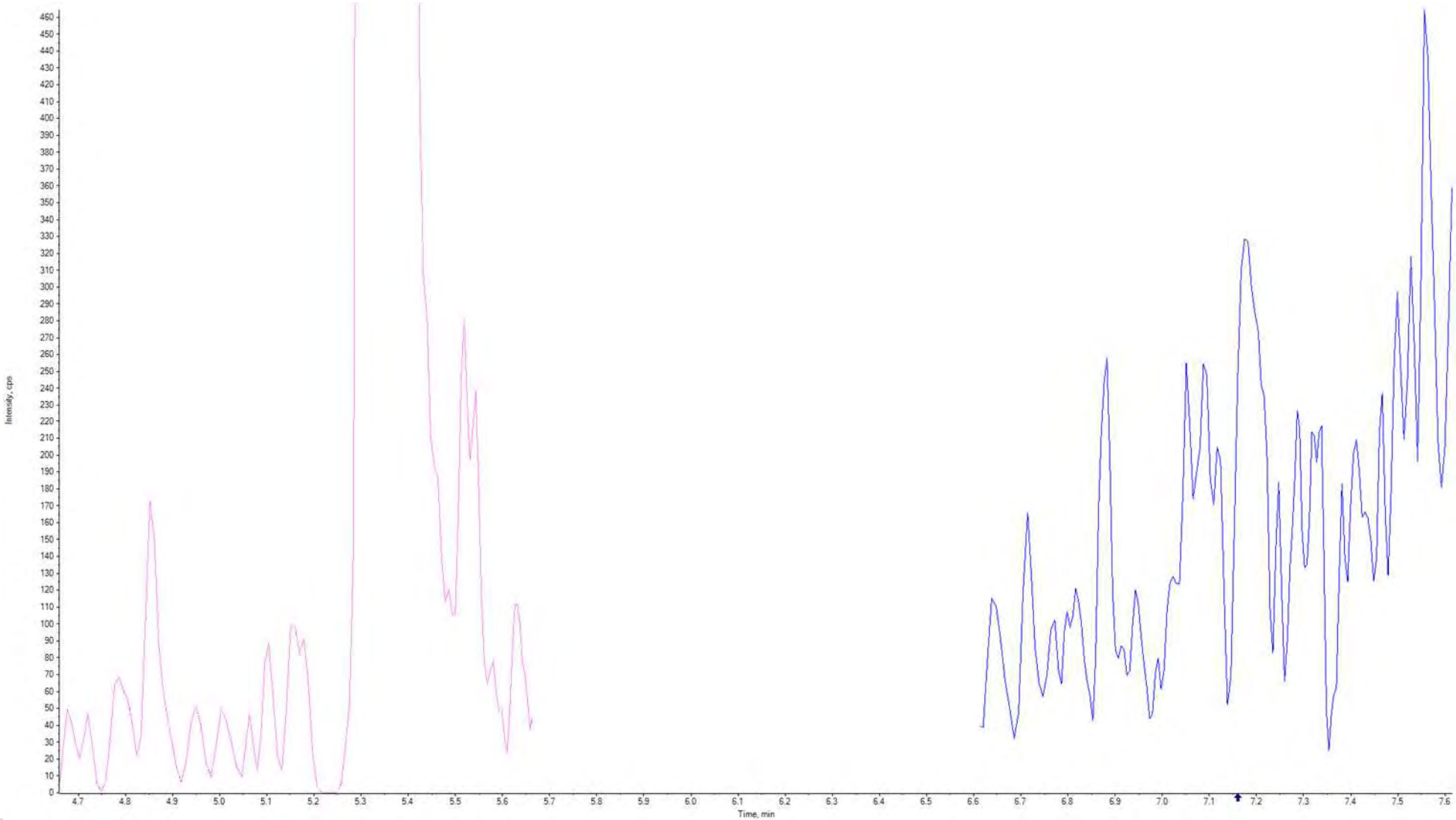

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Last Altered: 9/19/2024 11:40:51 AM
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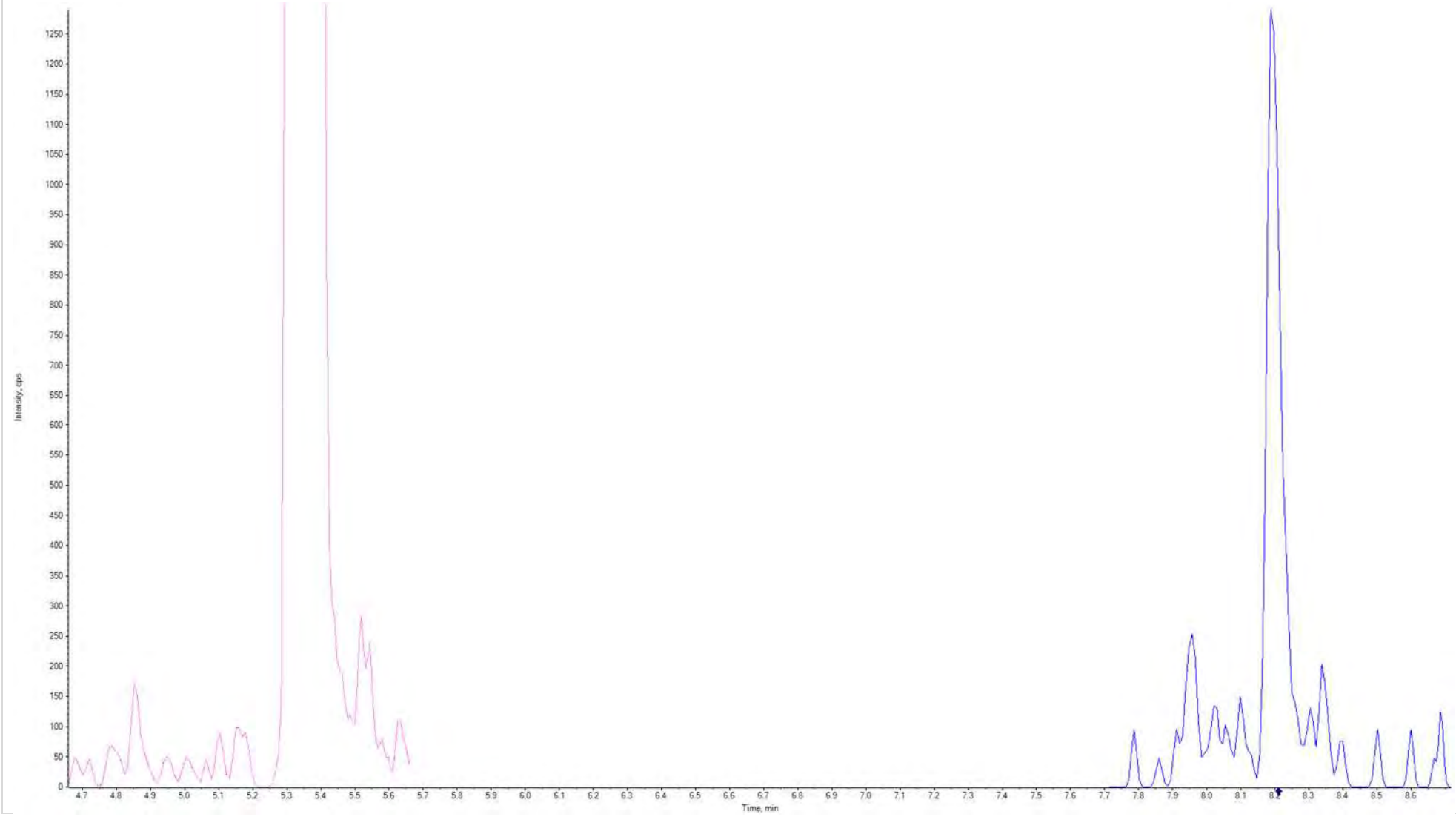
7:3FTCA
Sample: L2450786-03 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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7:3FTCA_2
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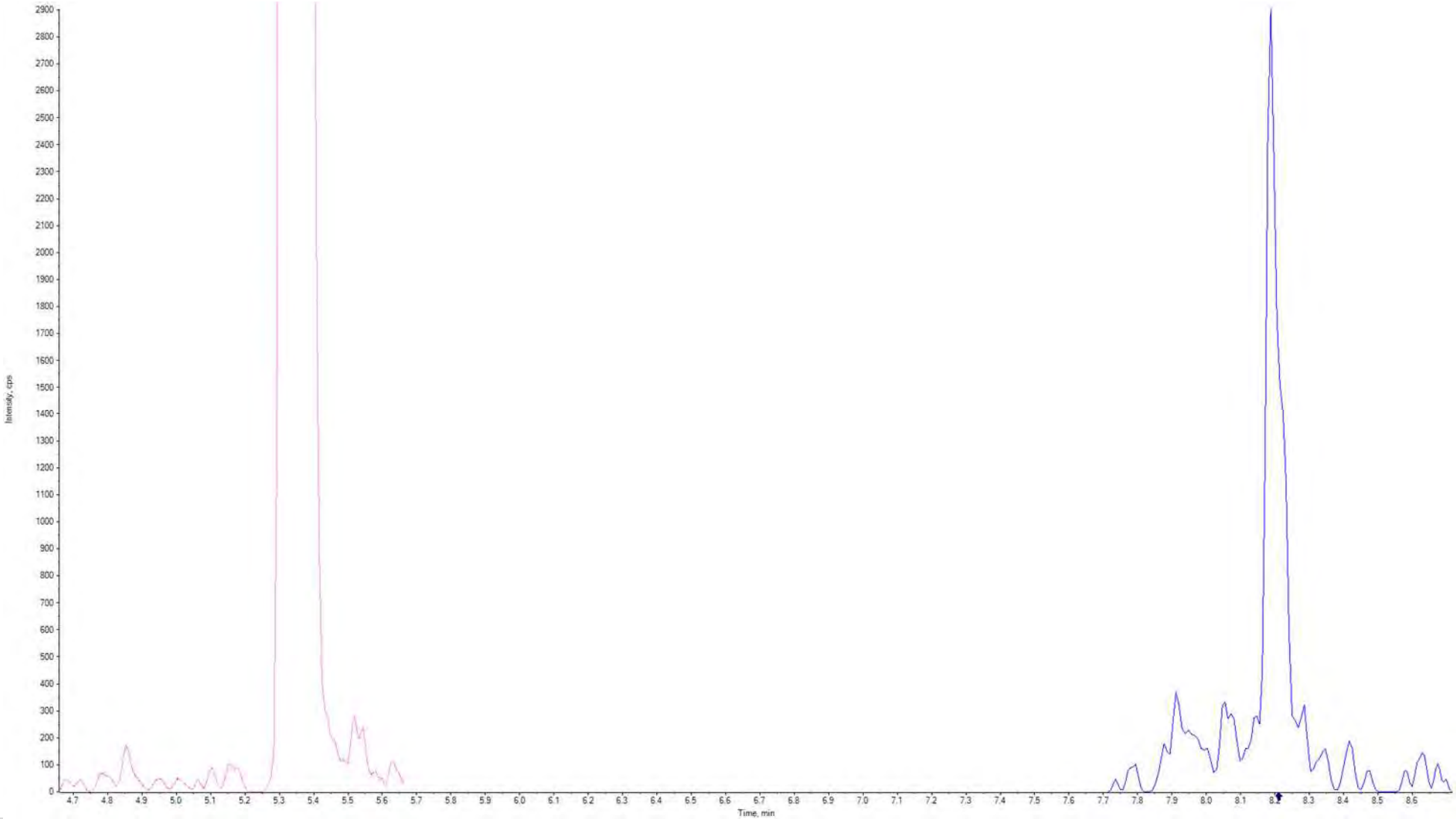

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFEESA
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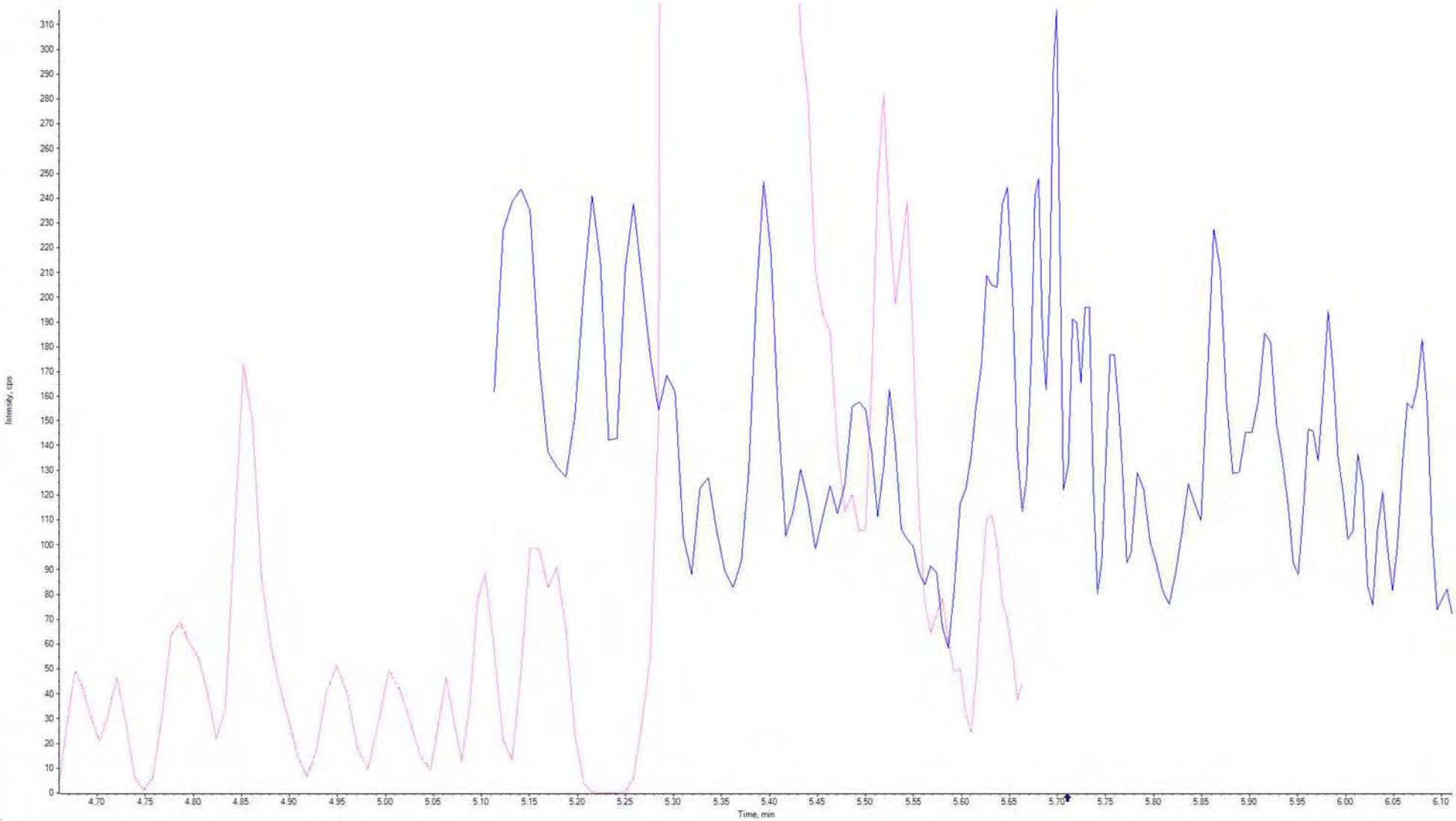

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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PFEESA_2
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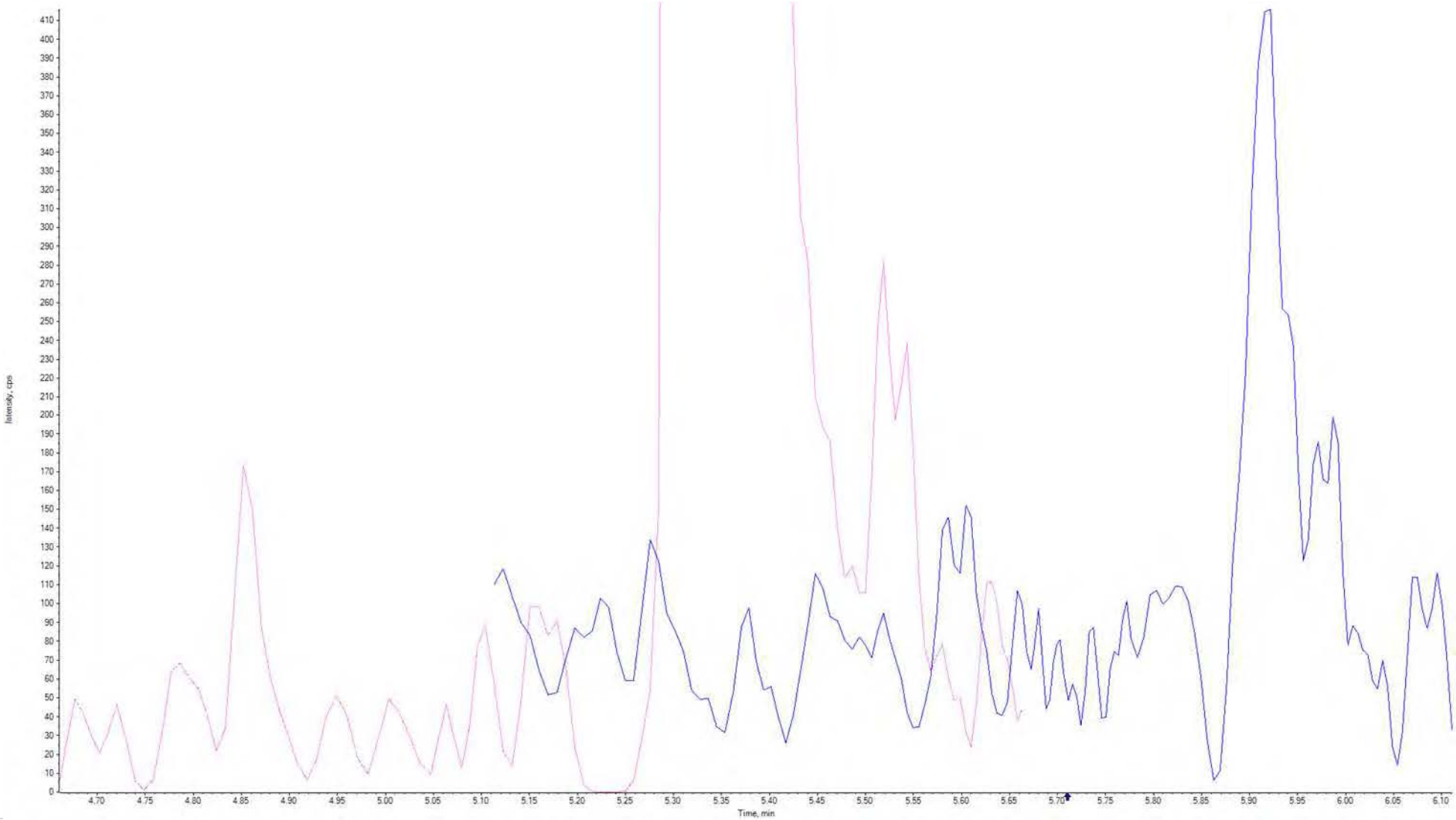

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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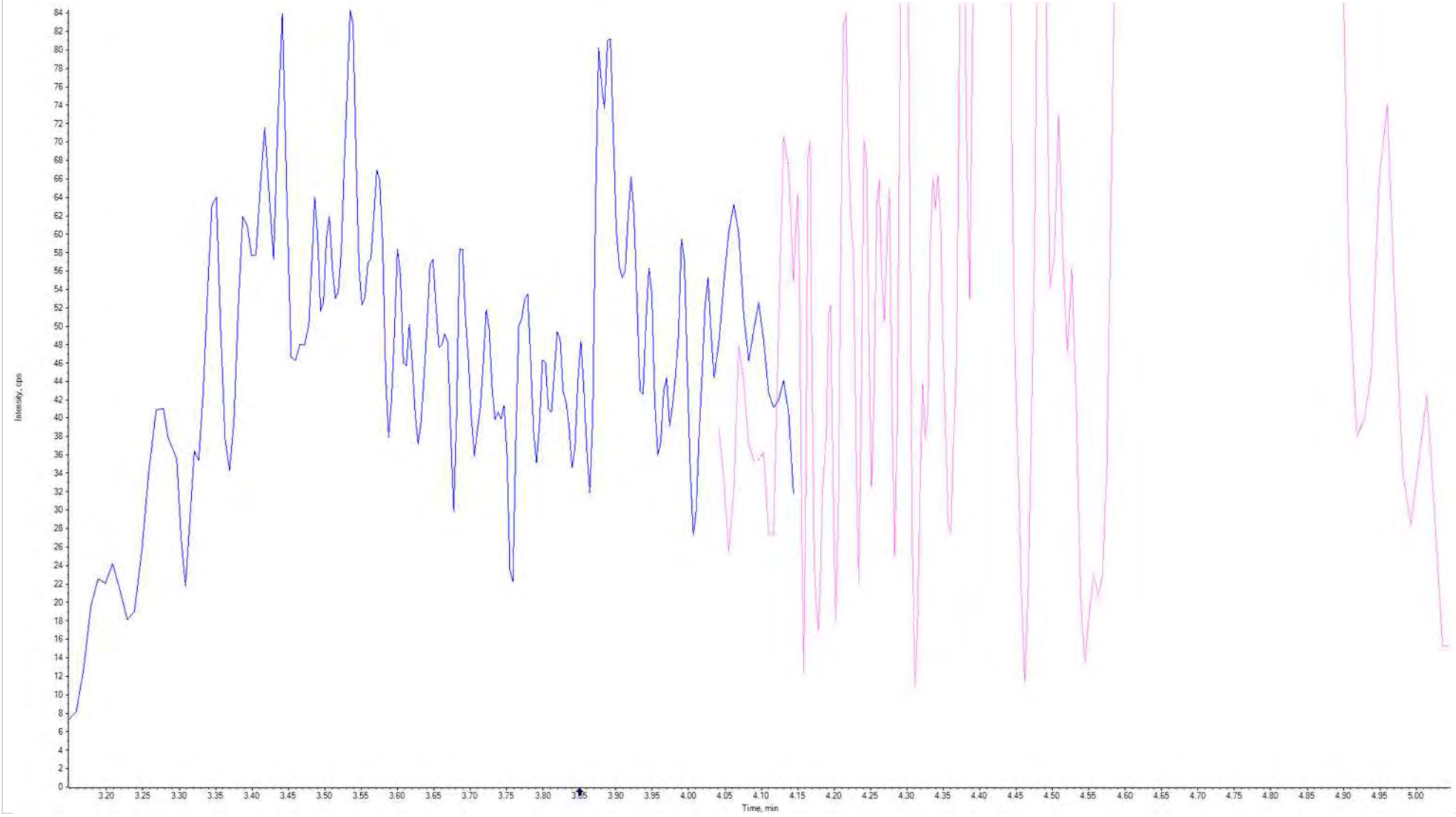
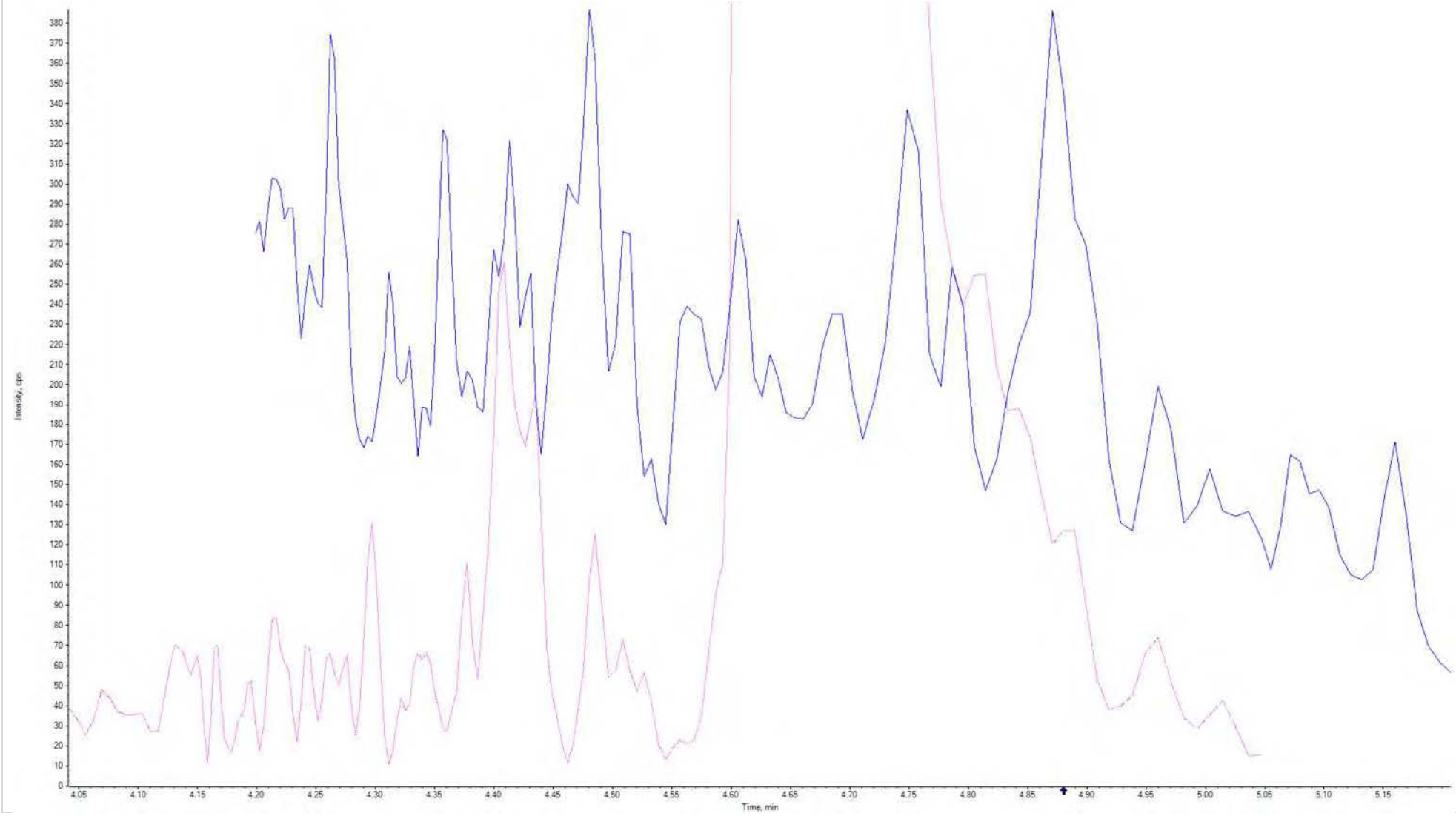
Generated: 9/19/2024 8:04:31 AM

PFMPA
Sample: L2450786-03 S/N:N/A Points Across peak:N/A



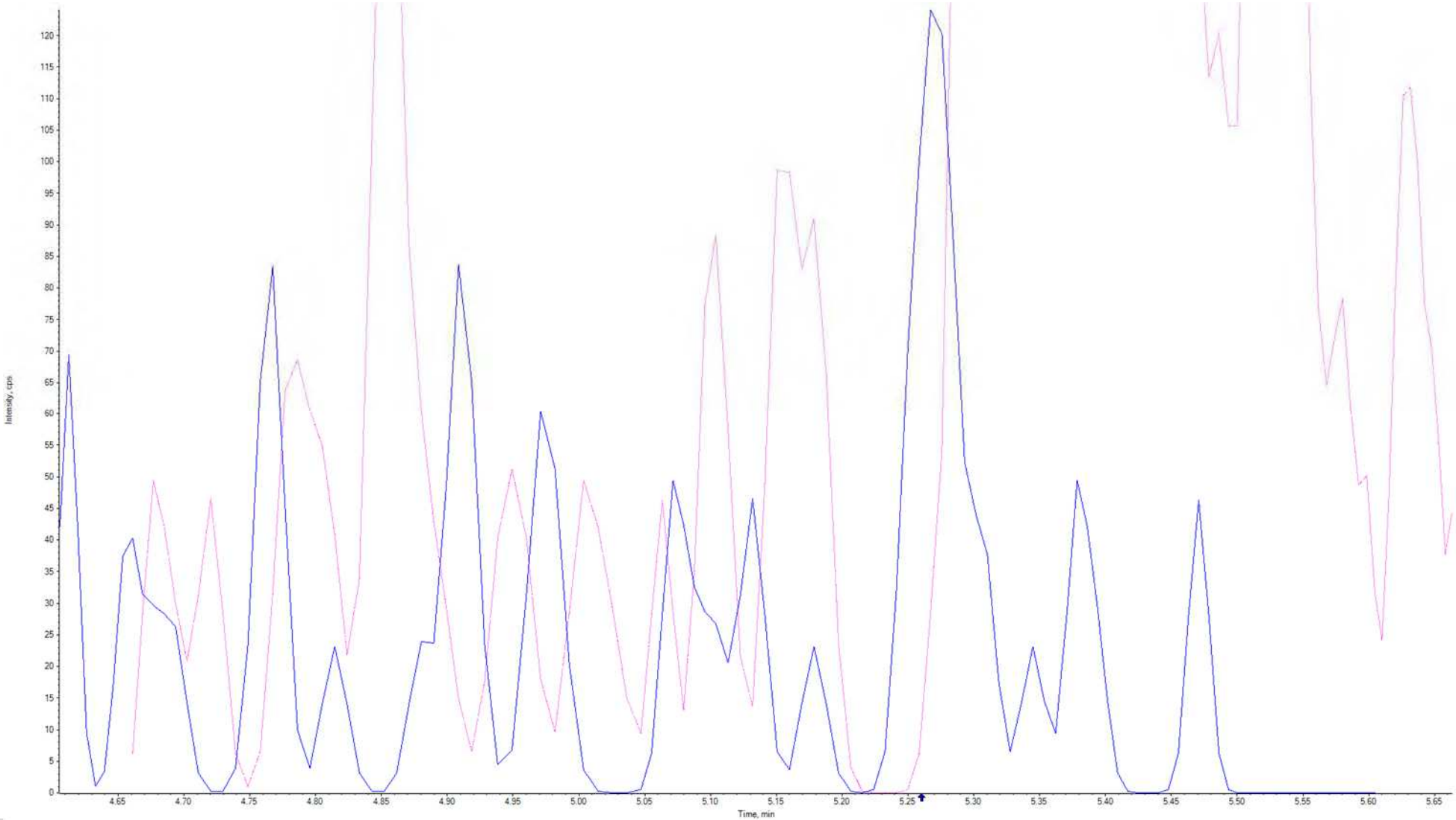
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFMBA
Sample: L2450786-03 S/N:N/A Points Across peak:N/A



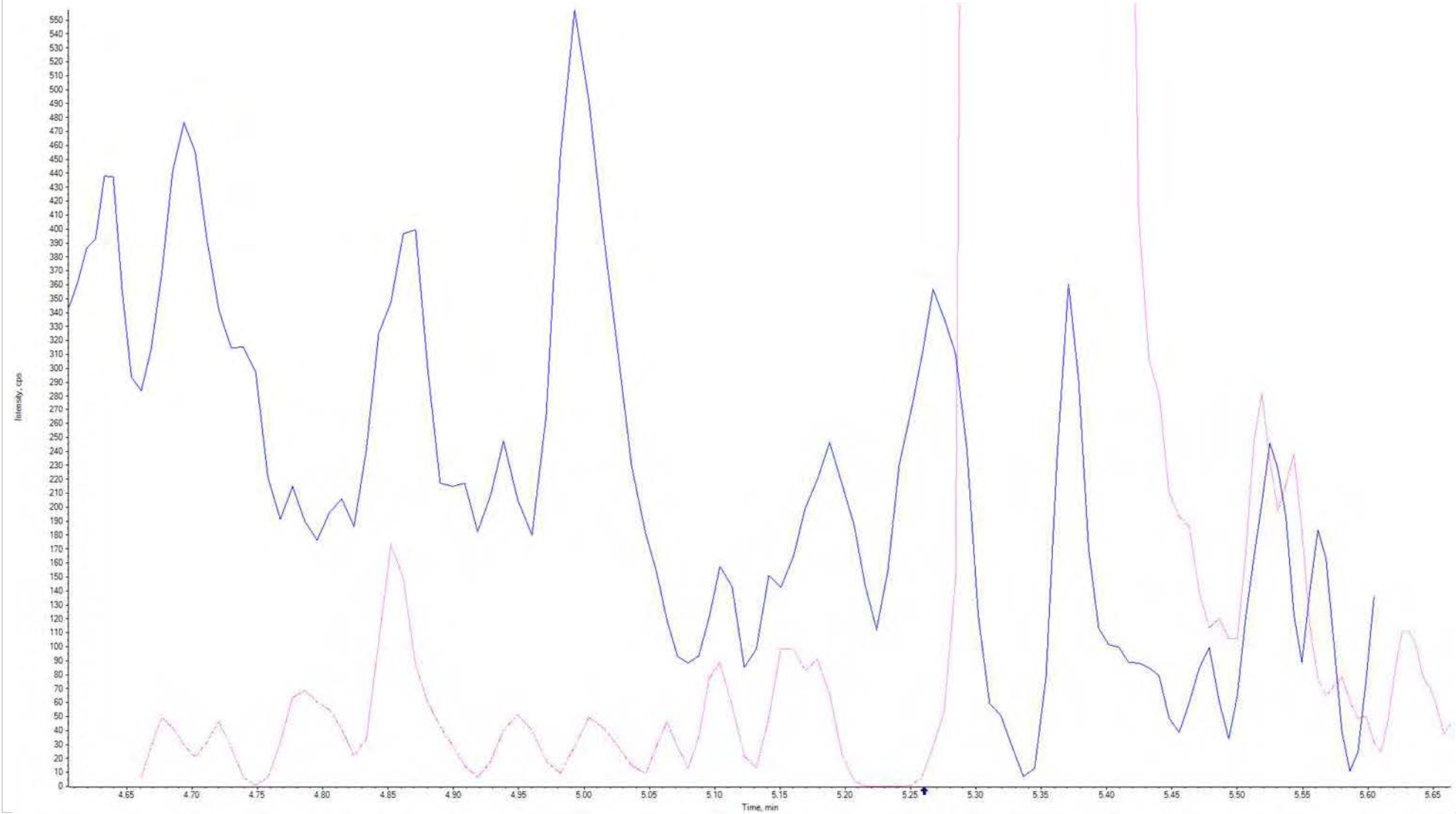
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NFDHA
Sample: L2450786-03 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NFDHA_2
Sample: L2450786-03 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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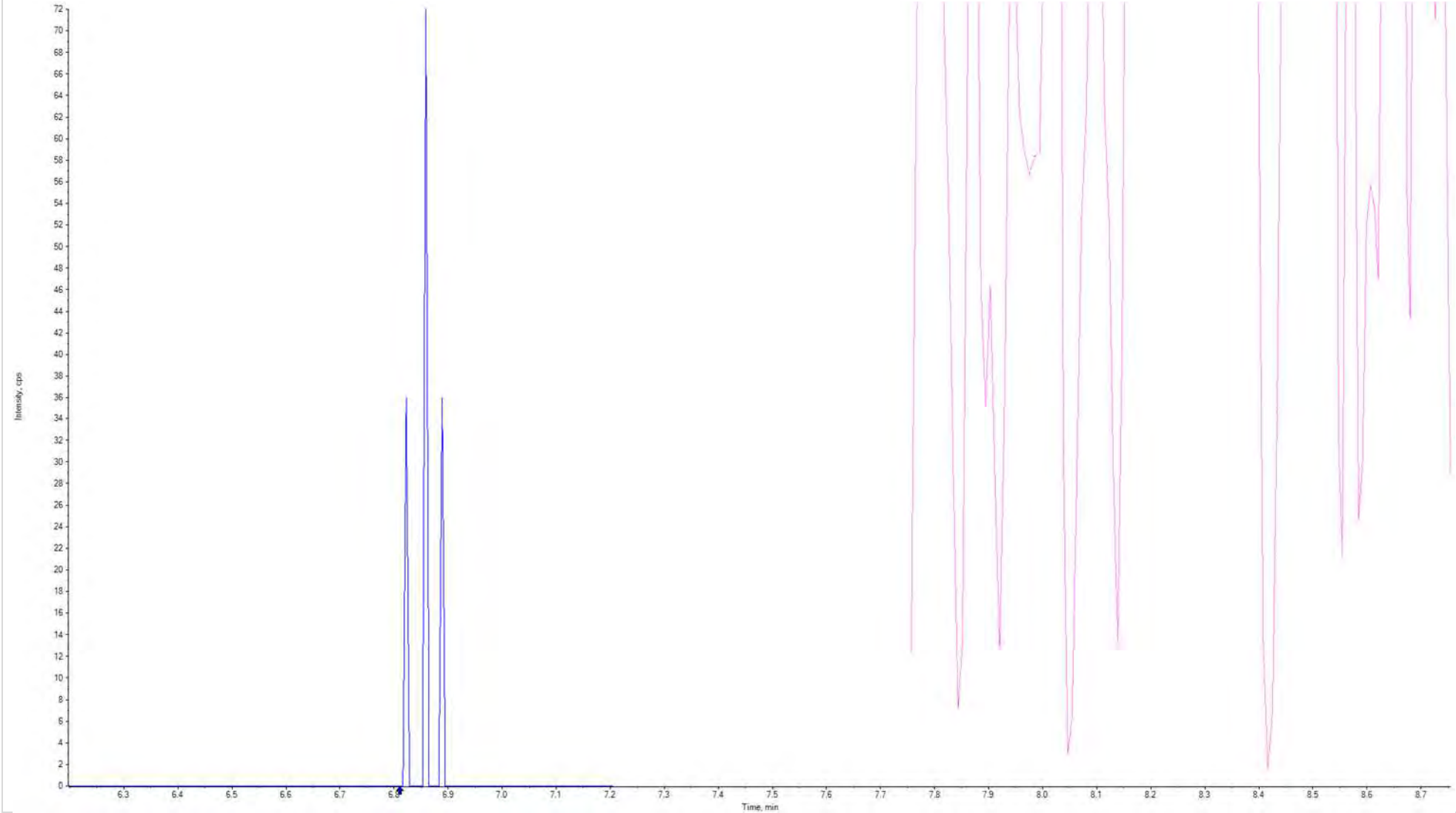
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

TDCA
Sample: L2450786-03 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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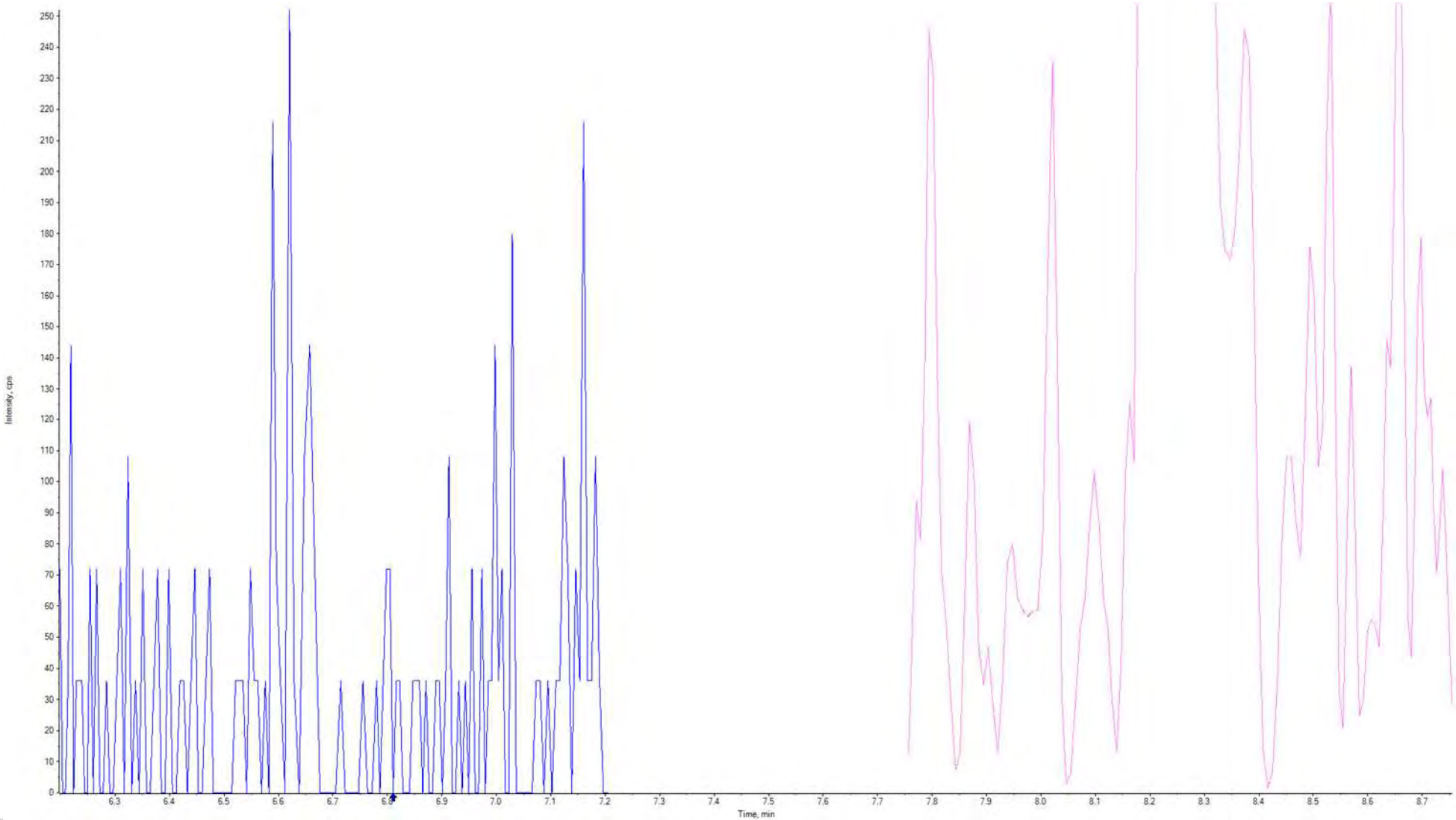
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

TDCA_2
Sample: L2450786-03 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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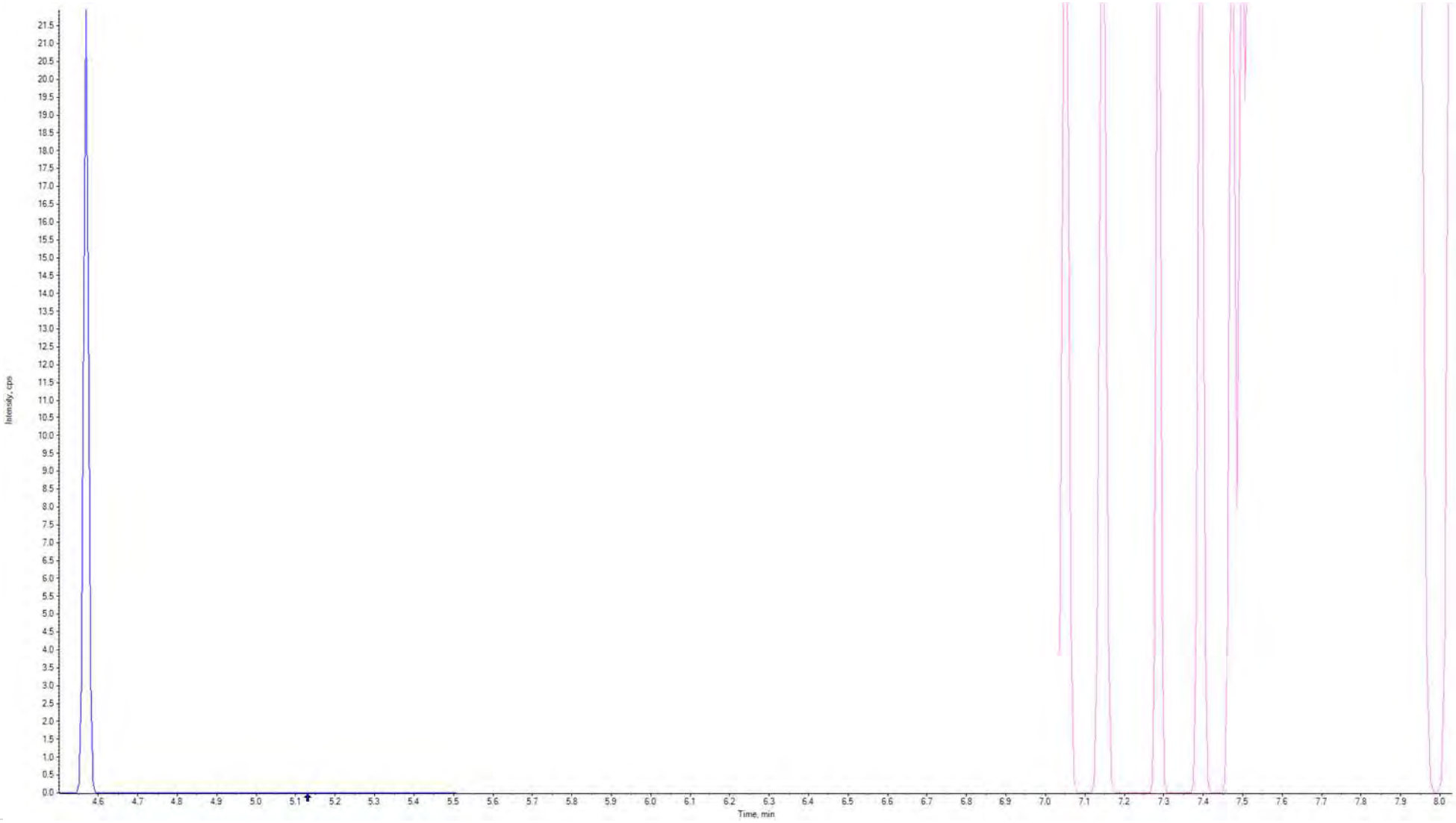
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C2D4-4:2FTS
Sample: L2450786-03 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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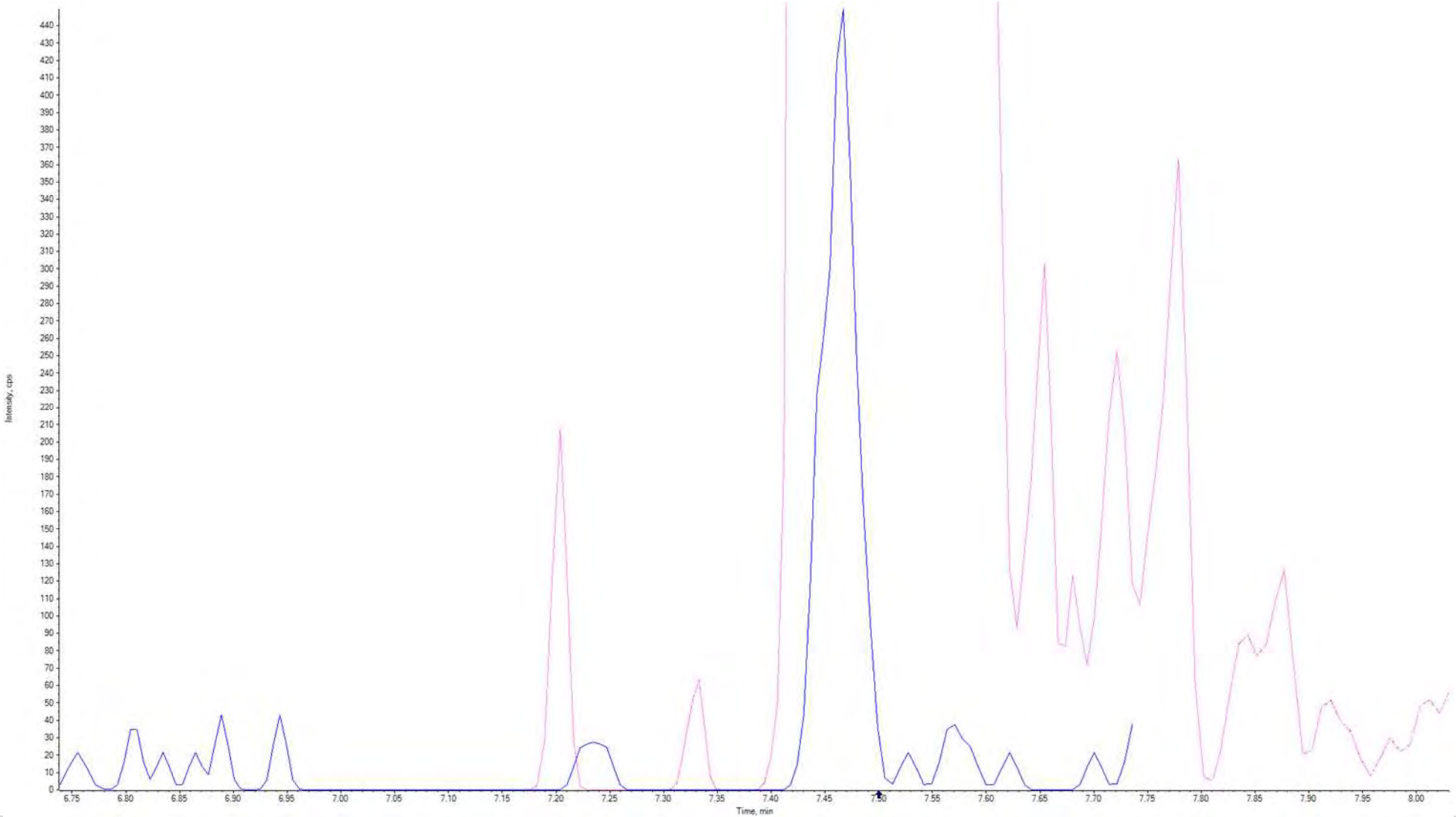
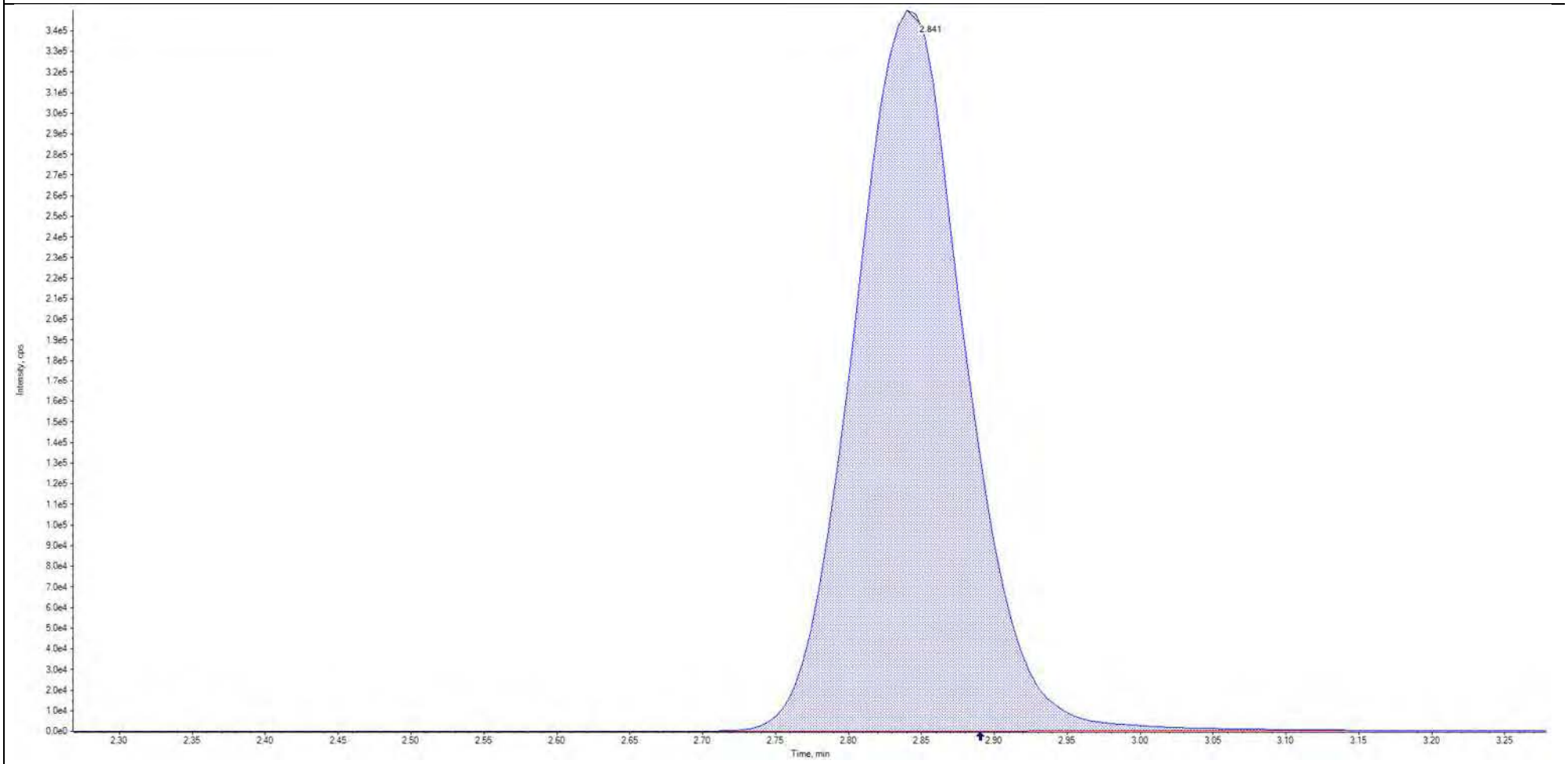
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

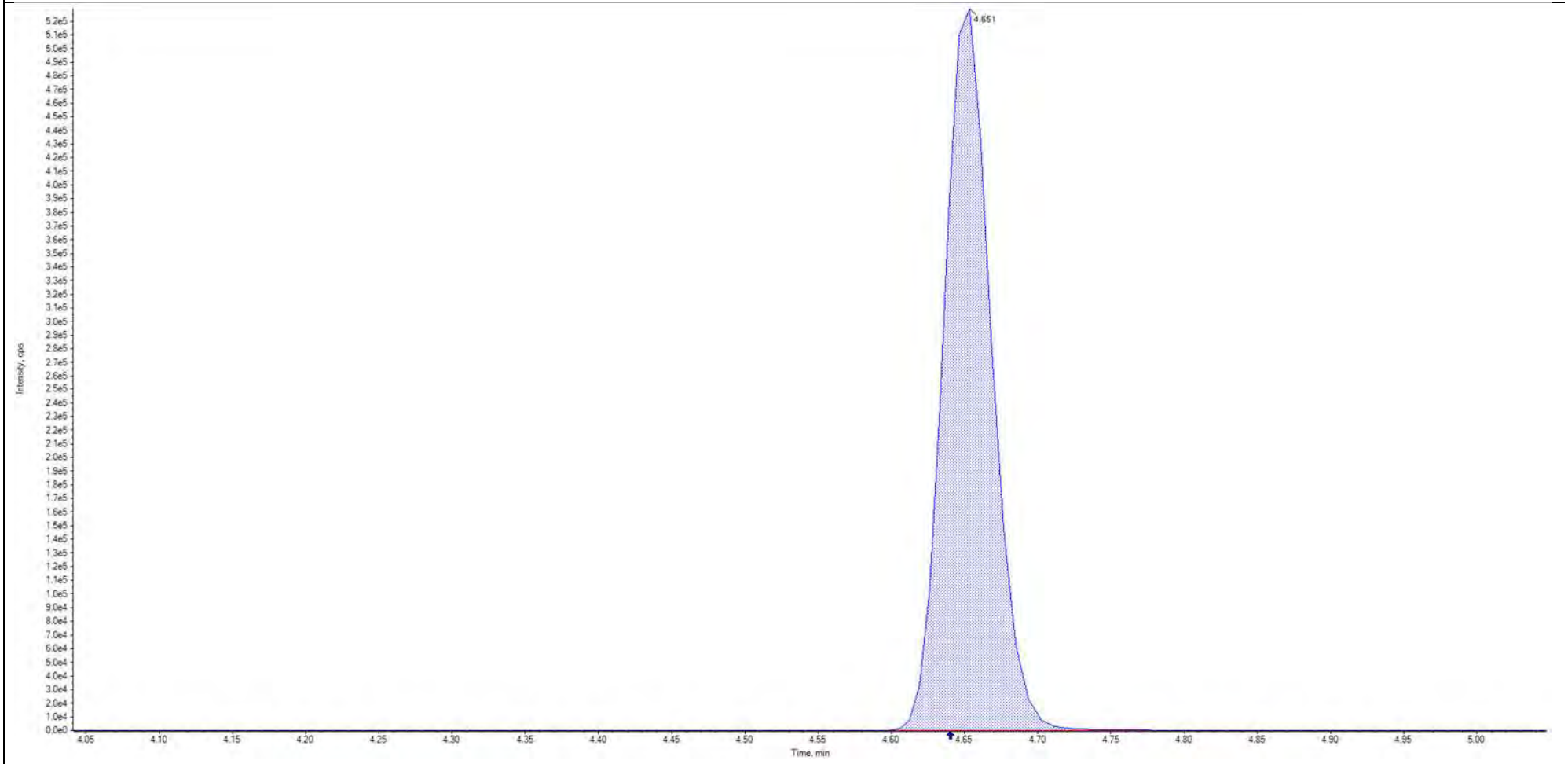
13C2-PFOA
Sample: L2450786-03 S/N:N/A Points Across peak:N/A



13C4-PFBA
Sample: L2450786-03



13C5-PFPeA
Sample: L2450786-03



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Generated: 9/19/2024 8:04:31 AM

13C5-PFHxA
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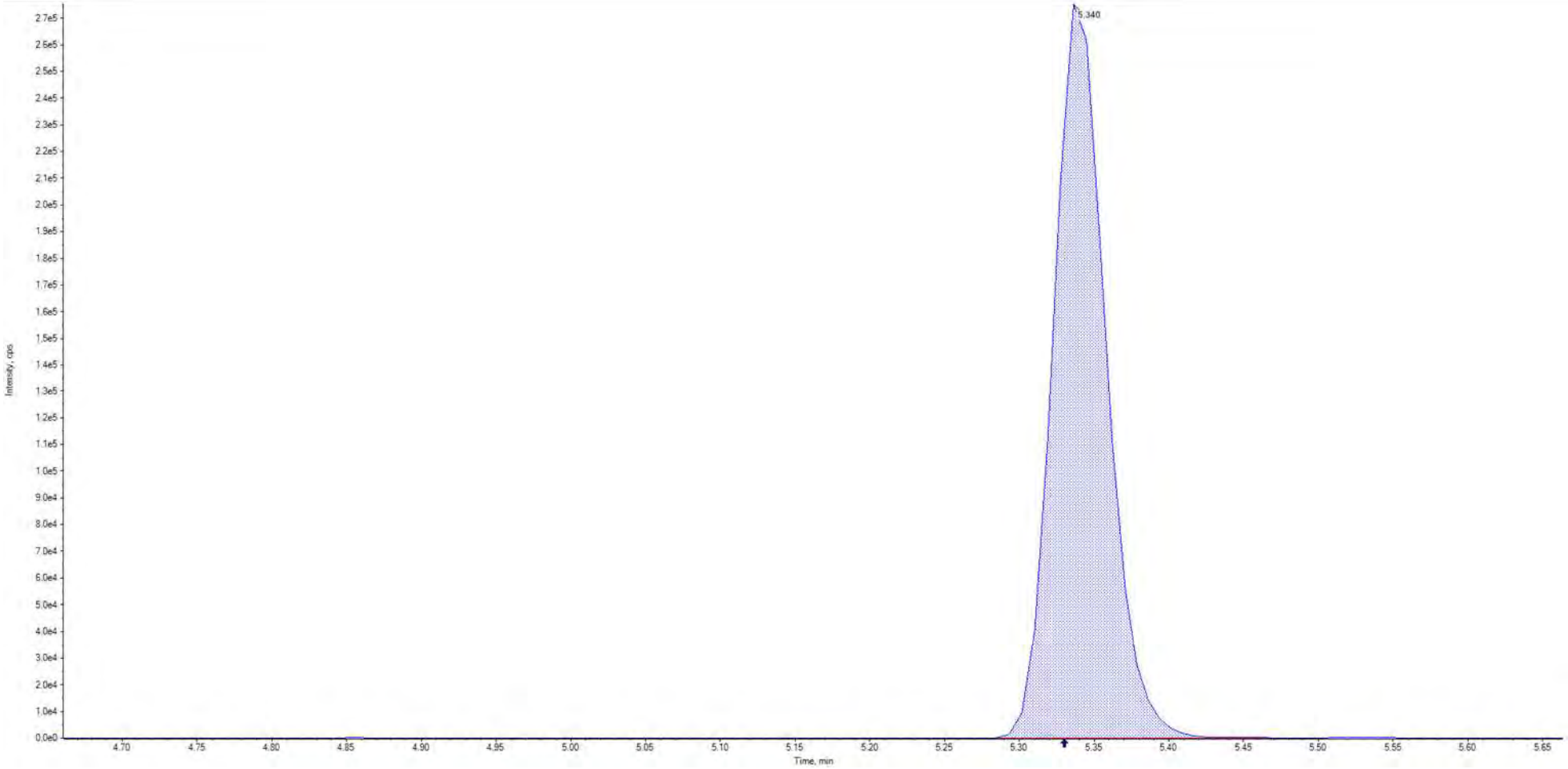

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
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Generated: 9/19/2024 8:04:31 AM

13C4-PFHpA
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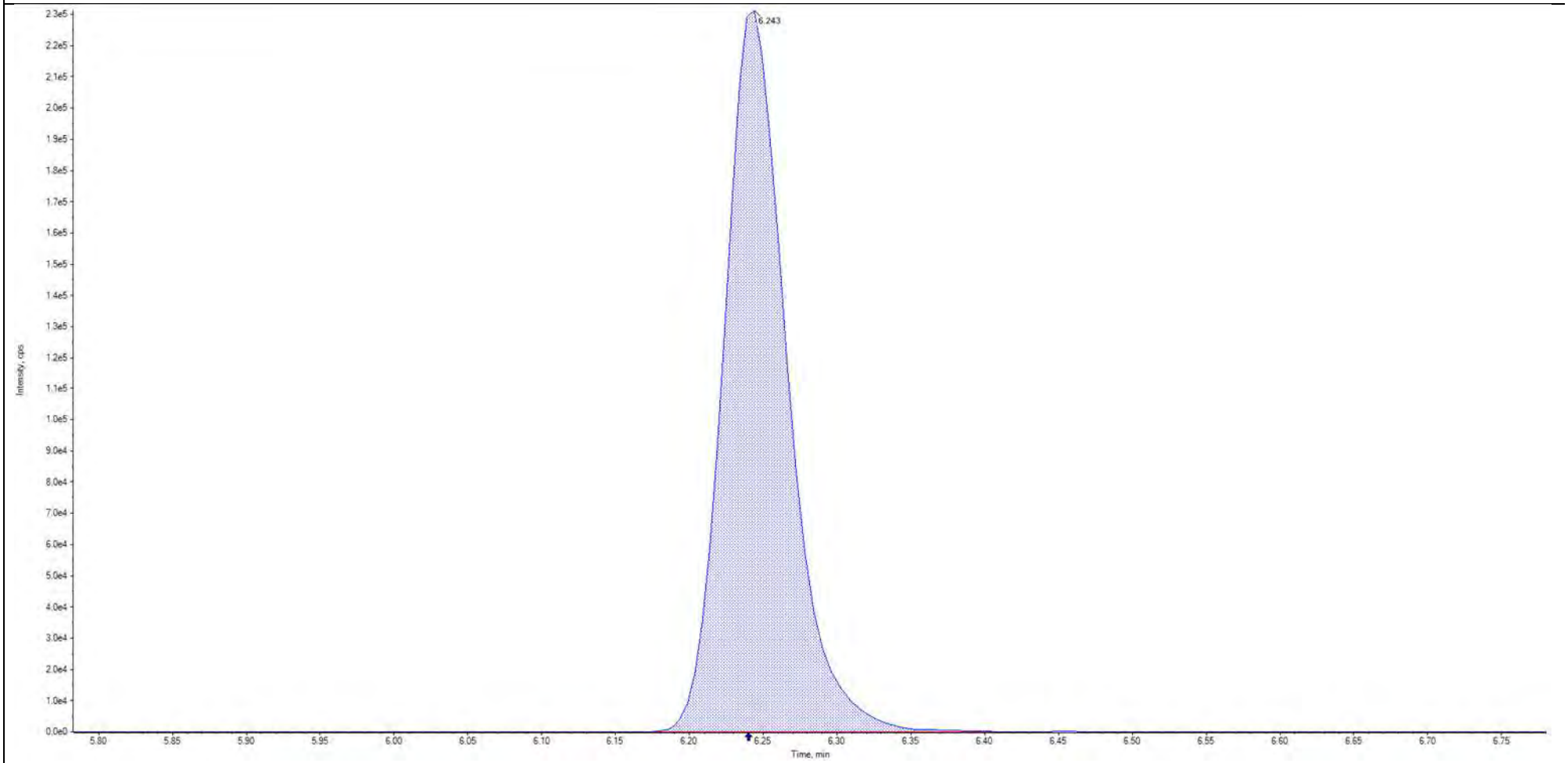
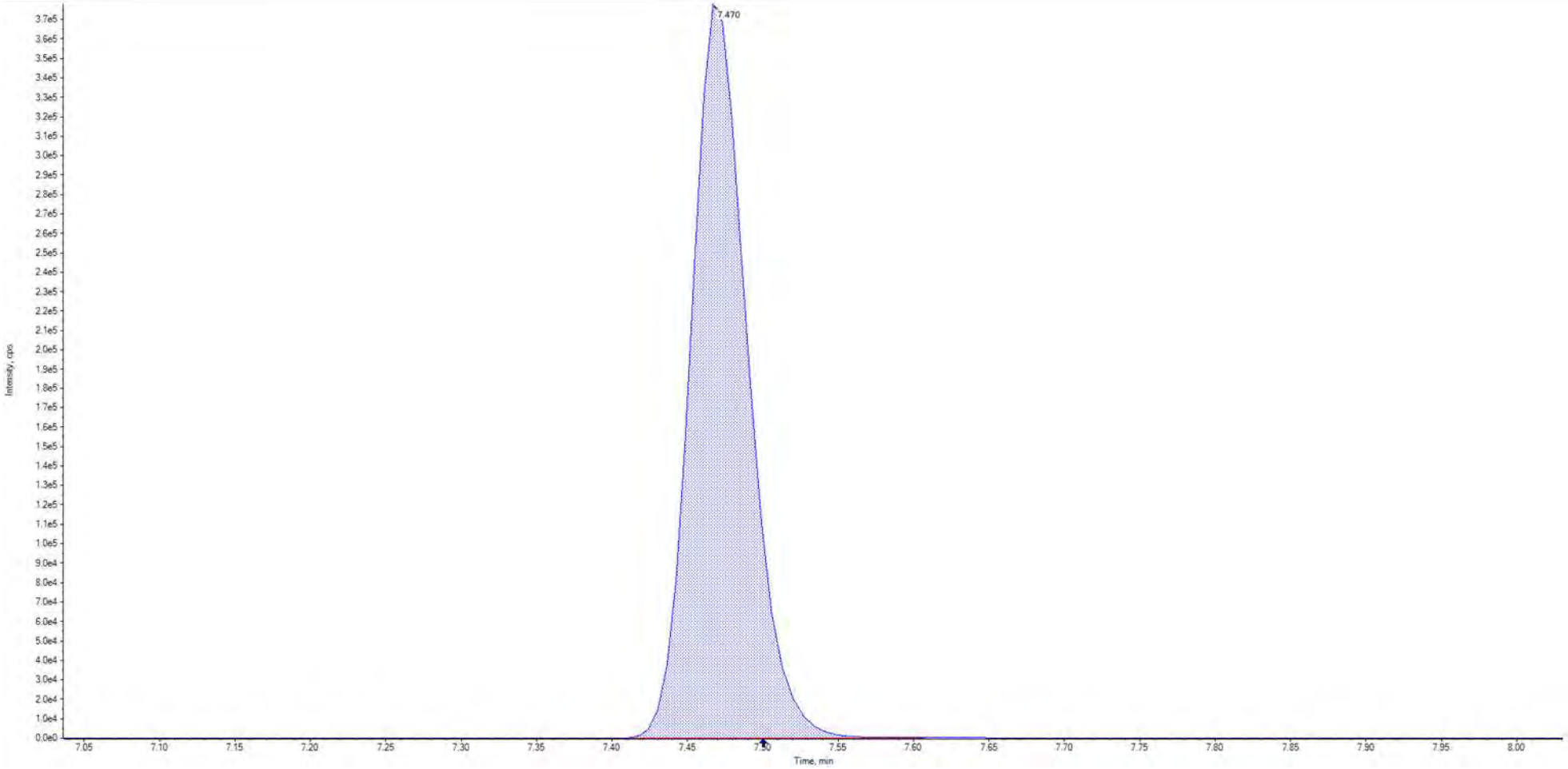


13C8-PFOA
Sample: L2450786-03



13C9-PFNA
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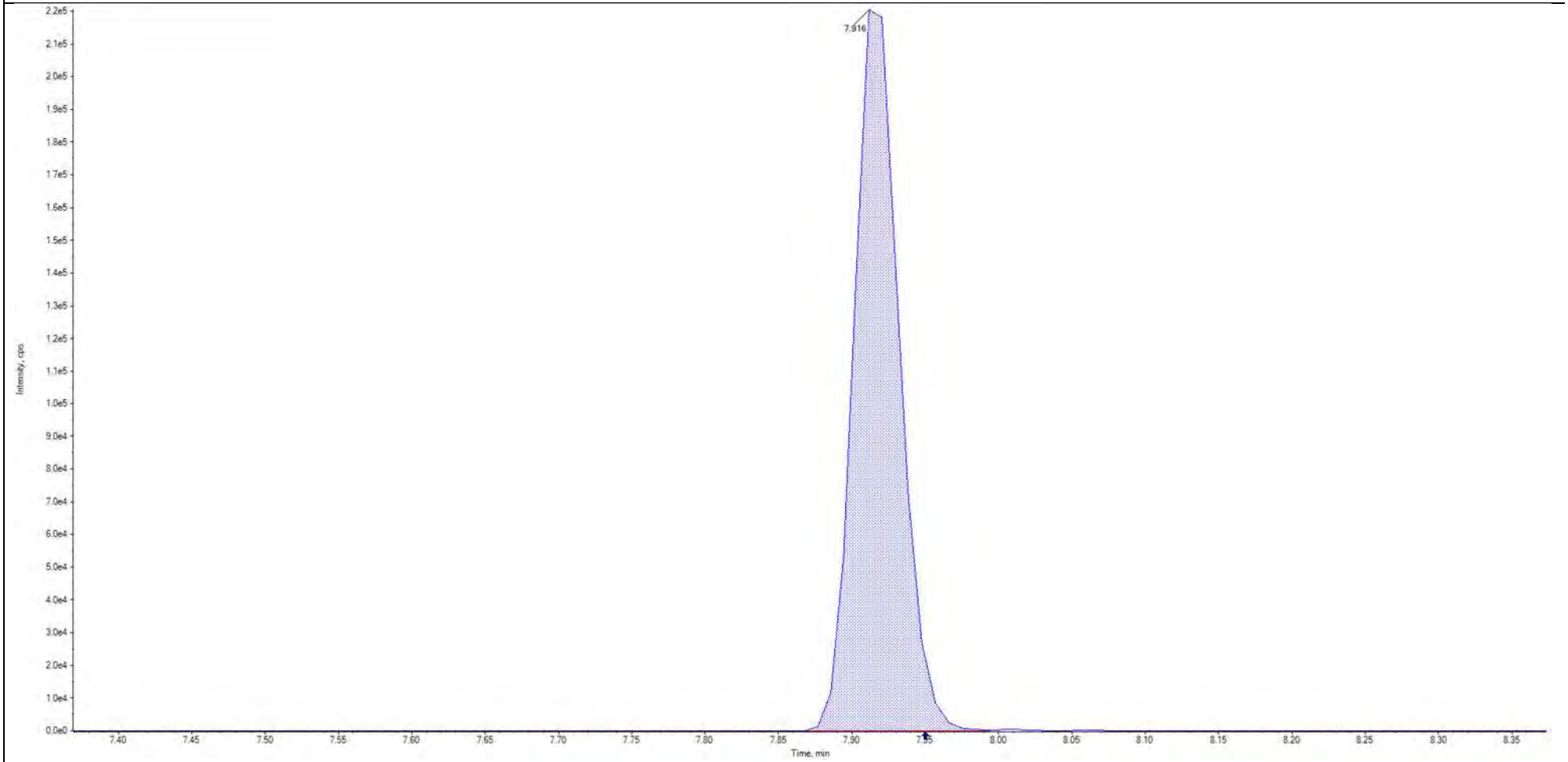
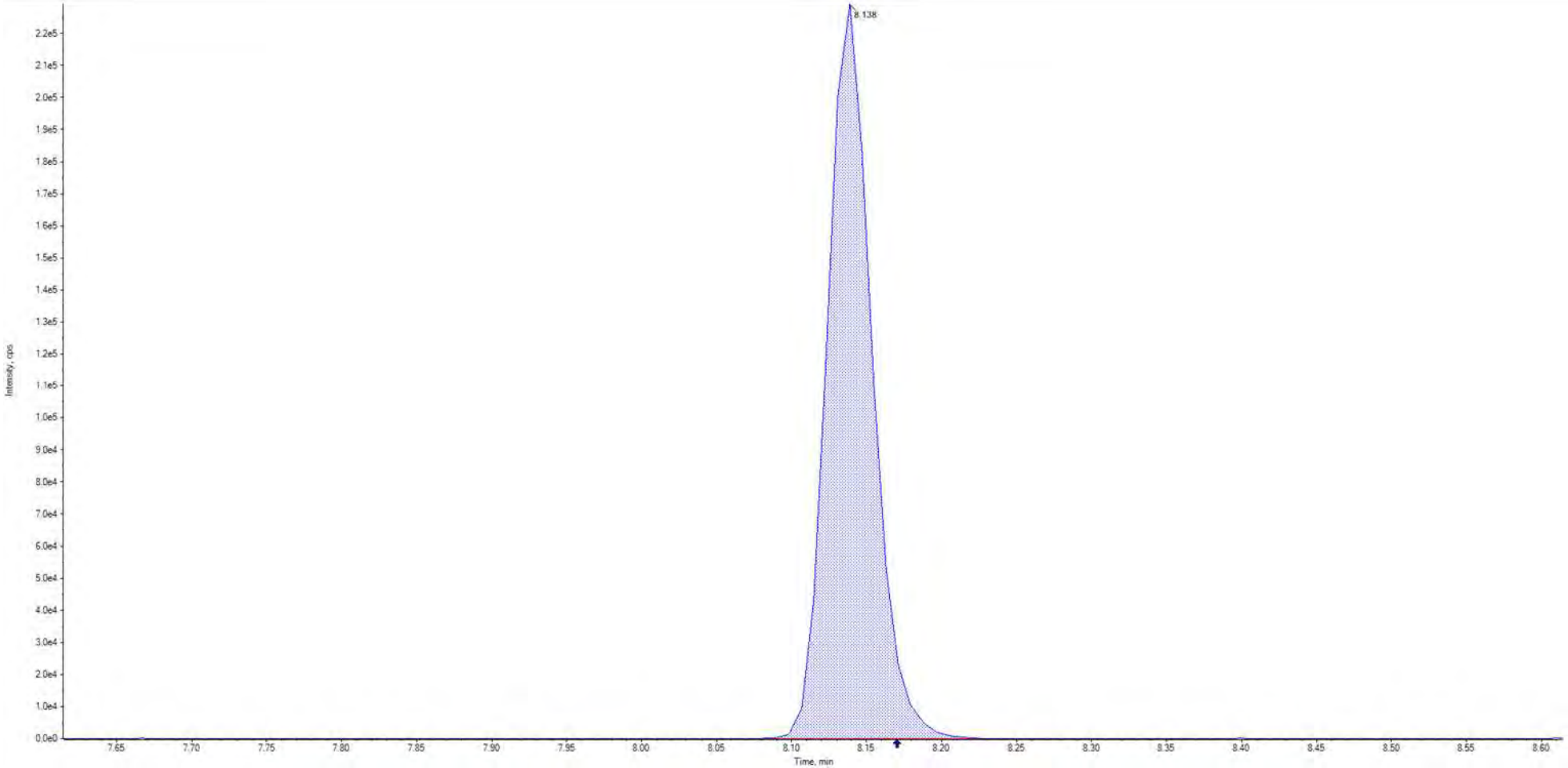
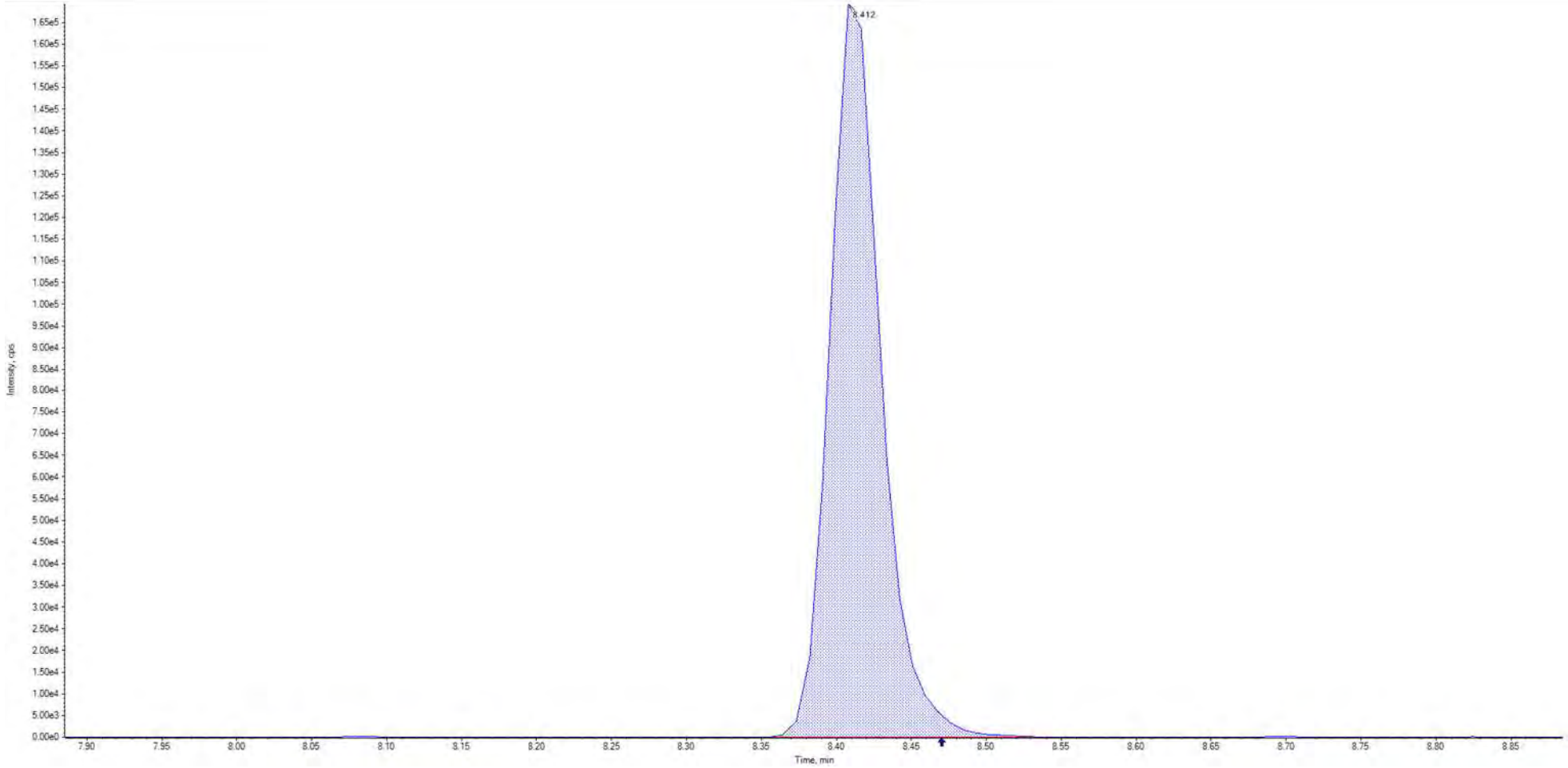


13C6-PFDA
Sample: L2450786-03



13C7-PFUnA
Sample: L2450786-03



13C2-PFDoA
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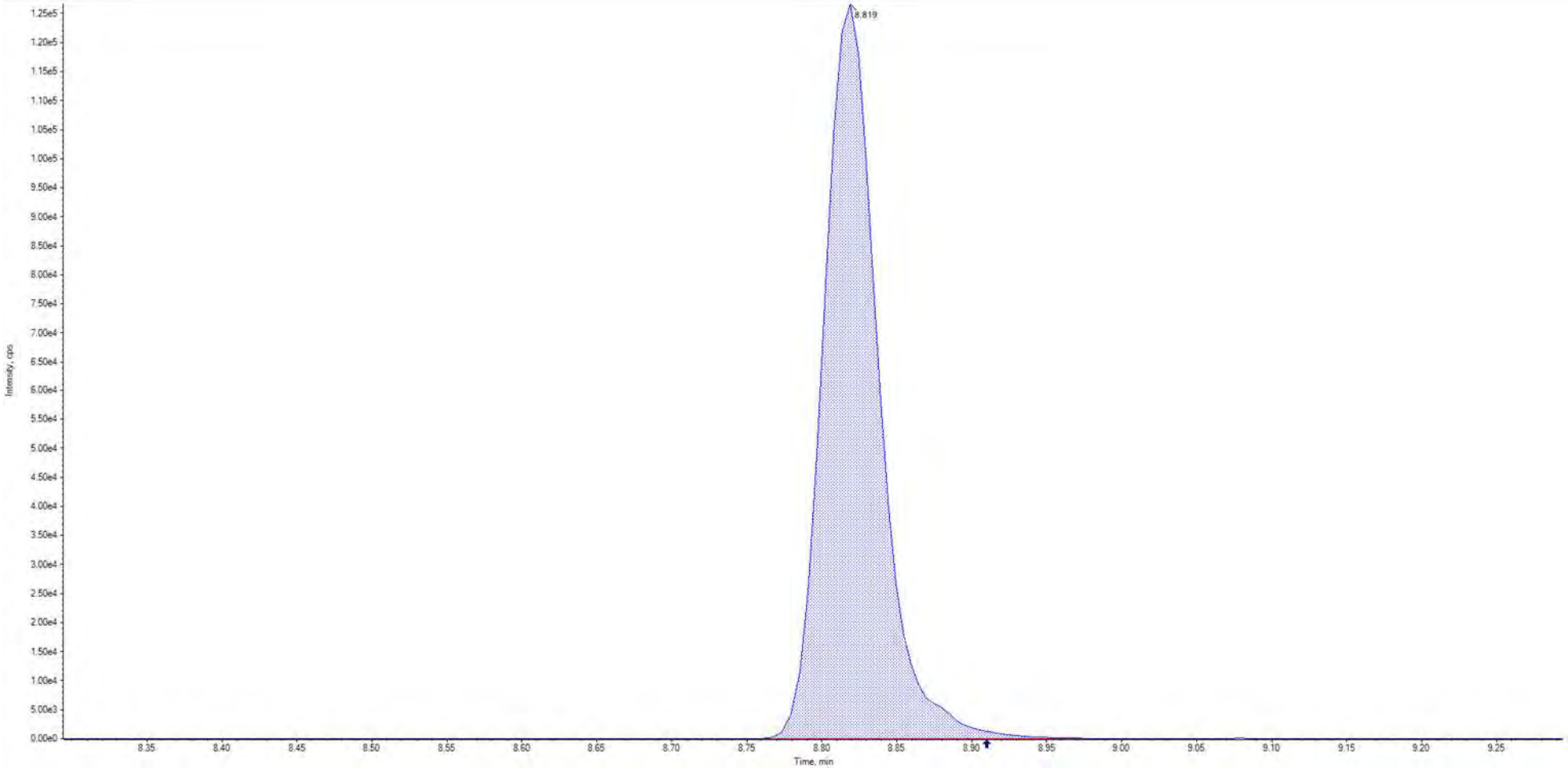
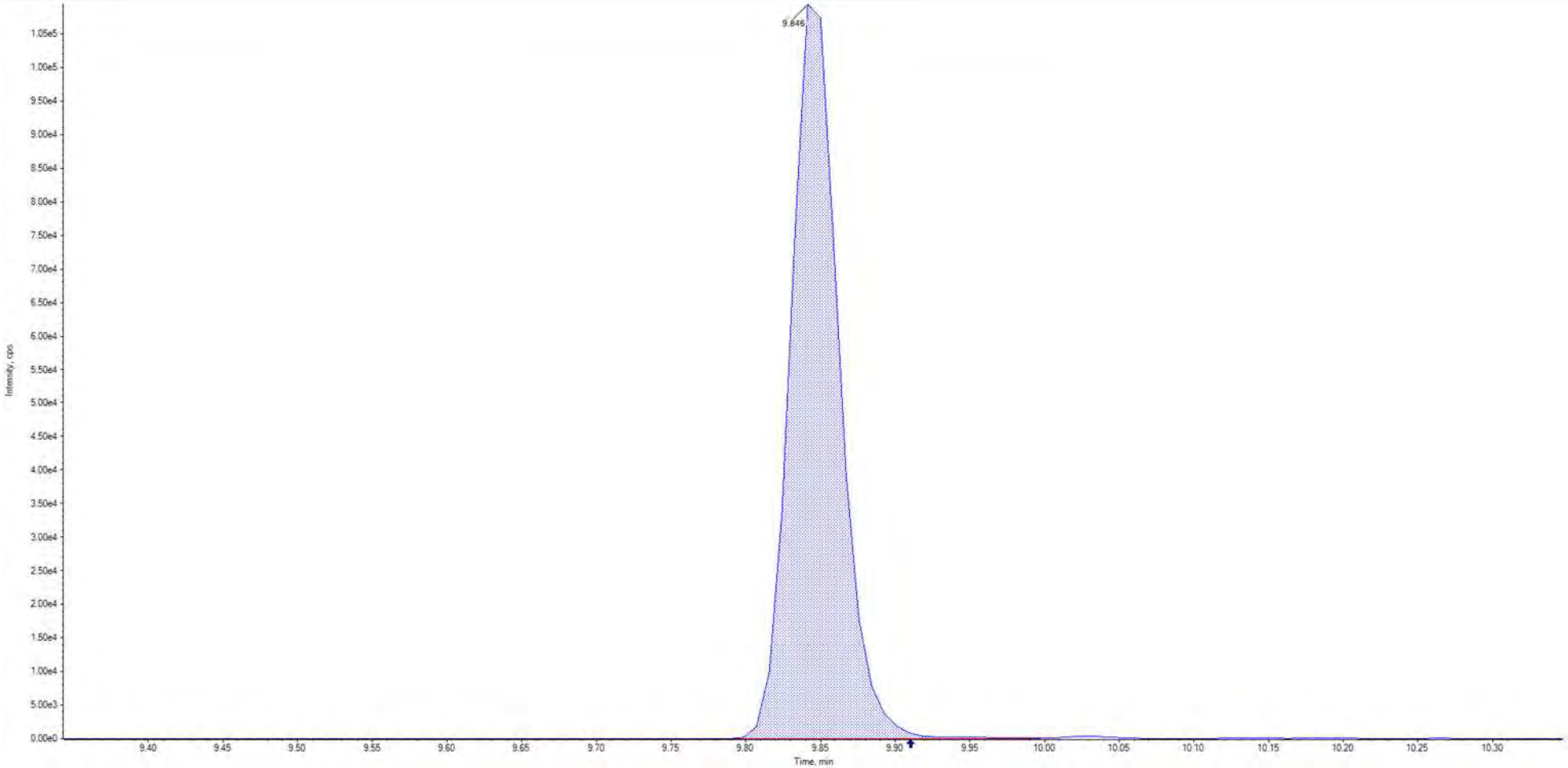


13C2-PFTeDA
Sample: L2450786-03



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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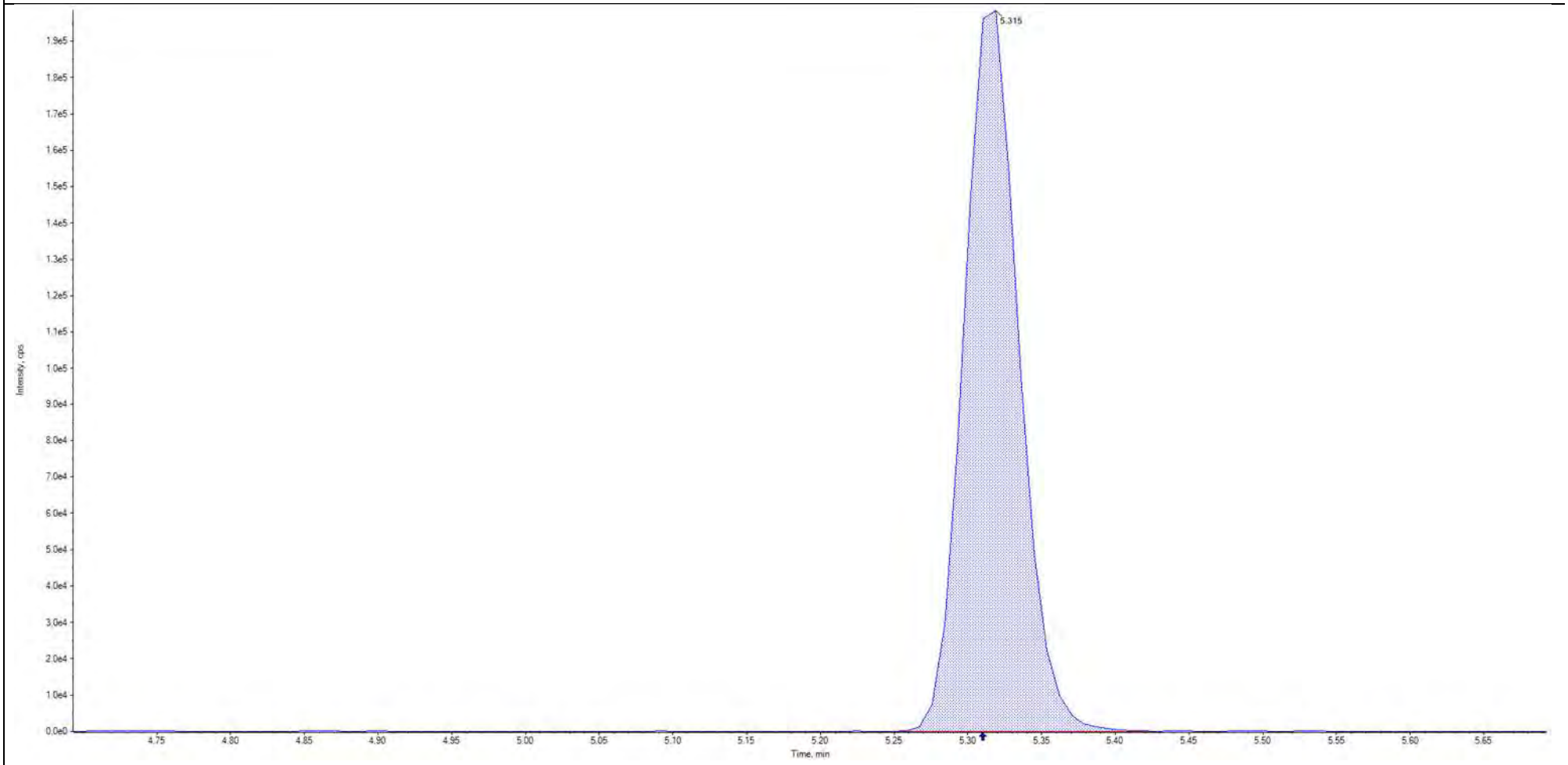
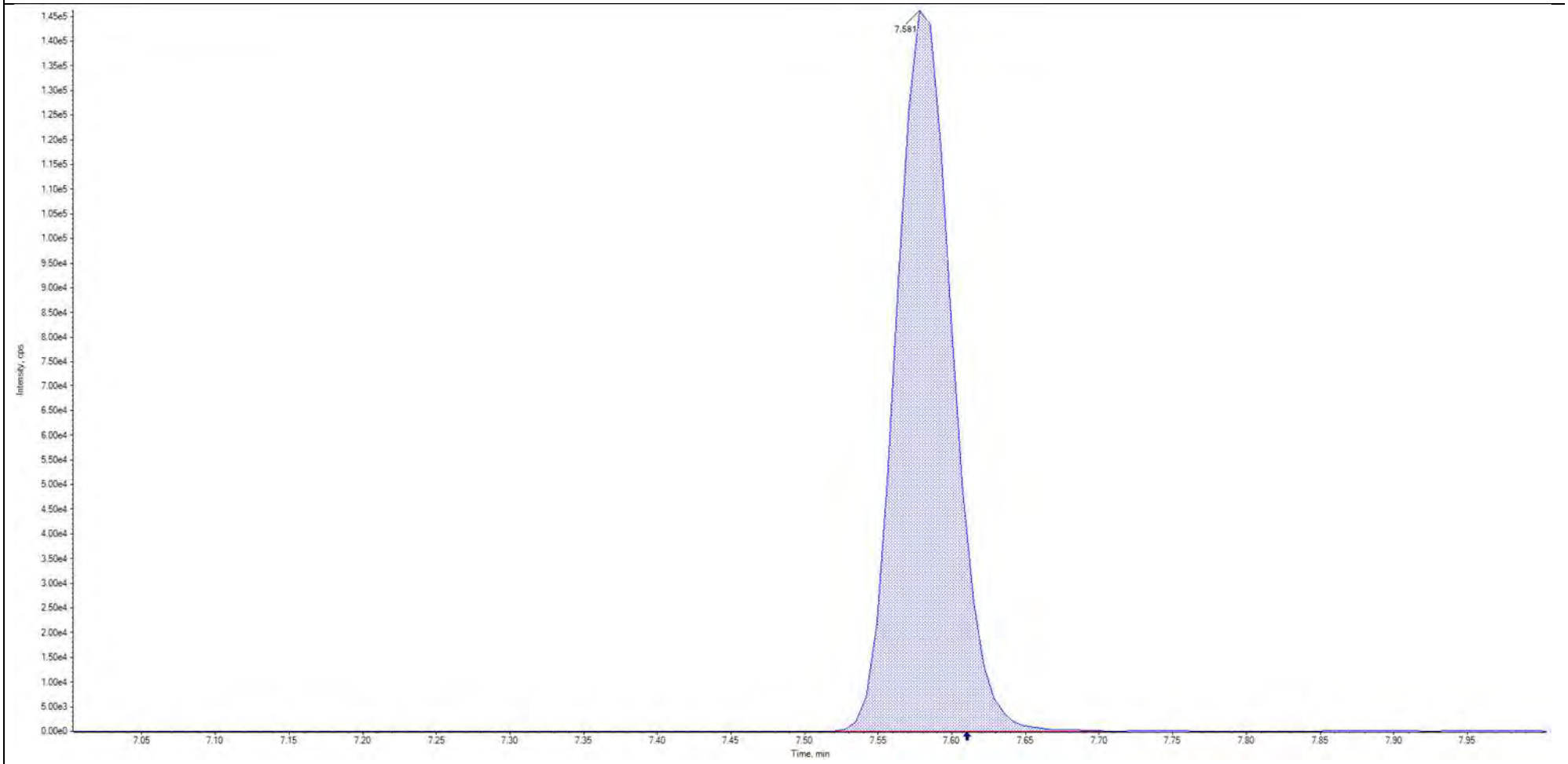
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C3-PFBS
Sample: L2450786-03



13C3-PFHxS
Sample: L2450786-03



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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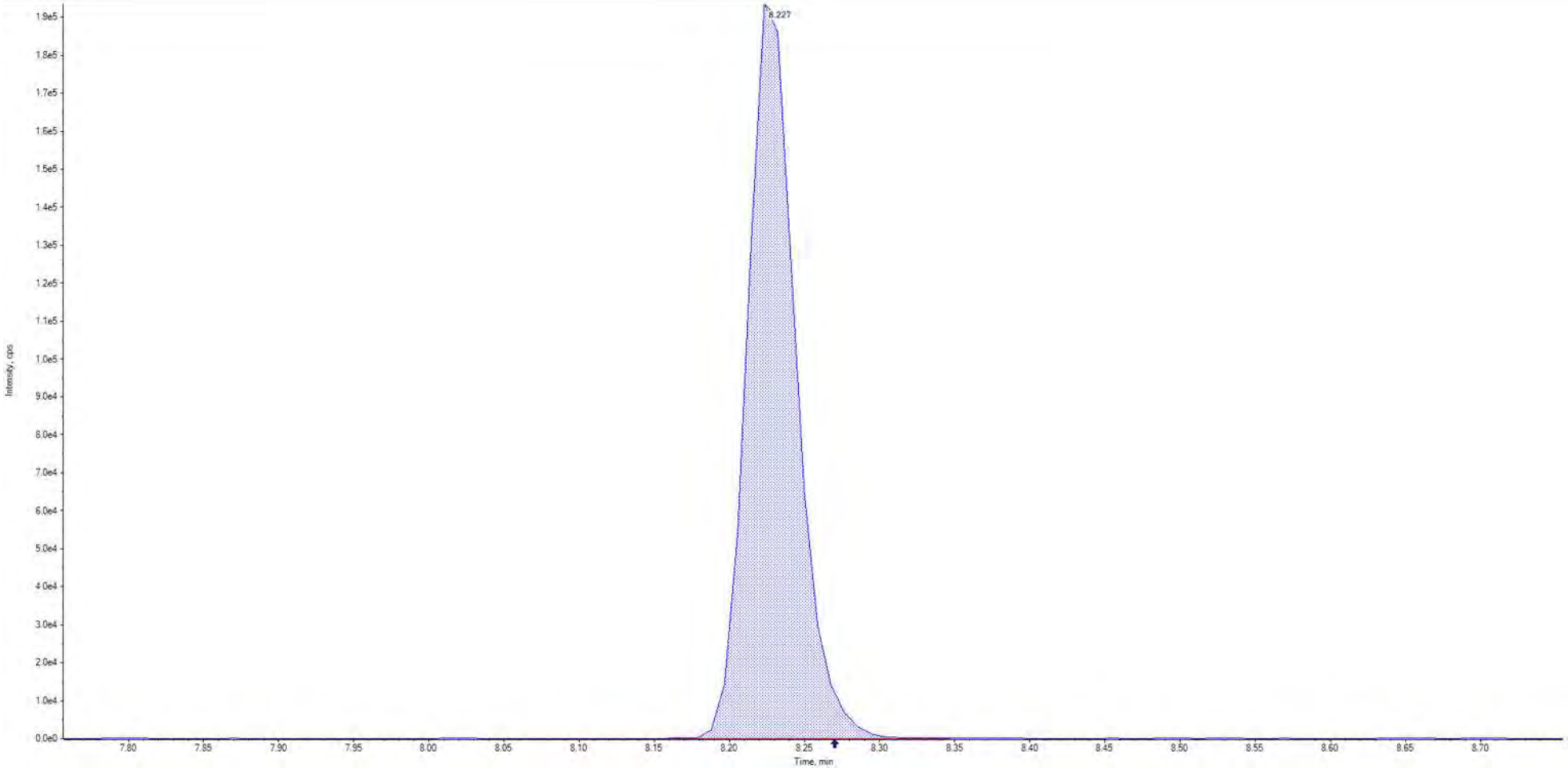
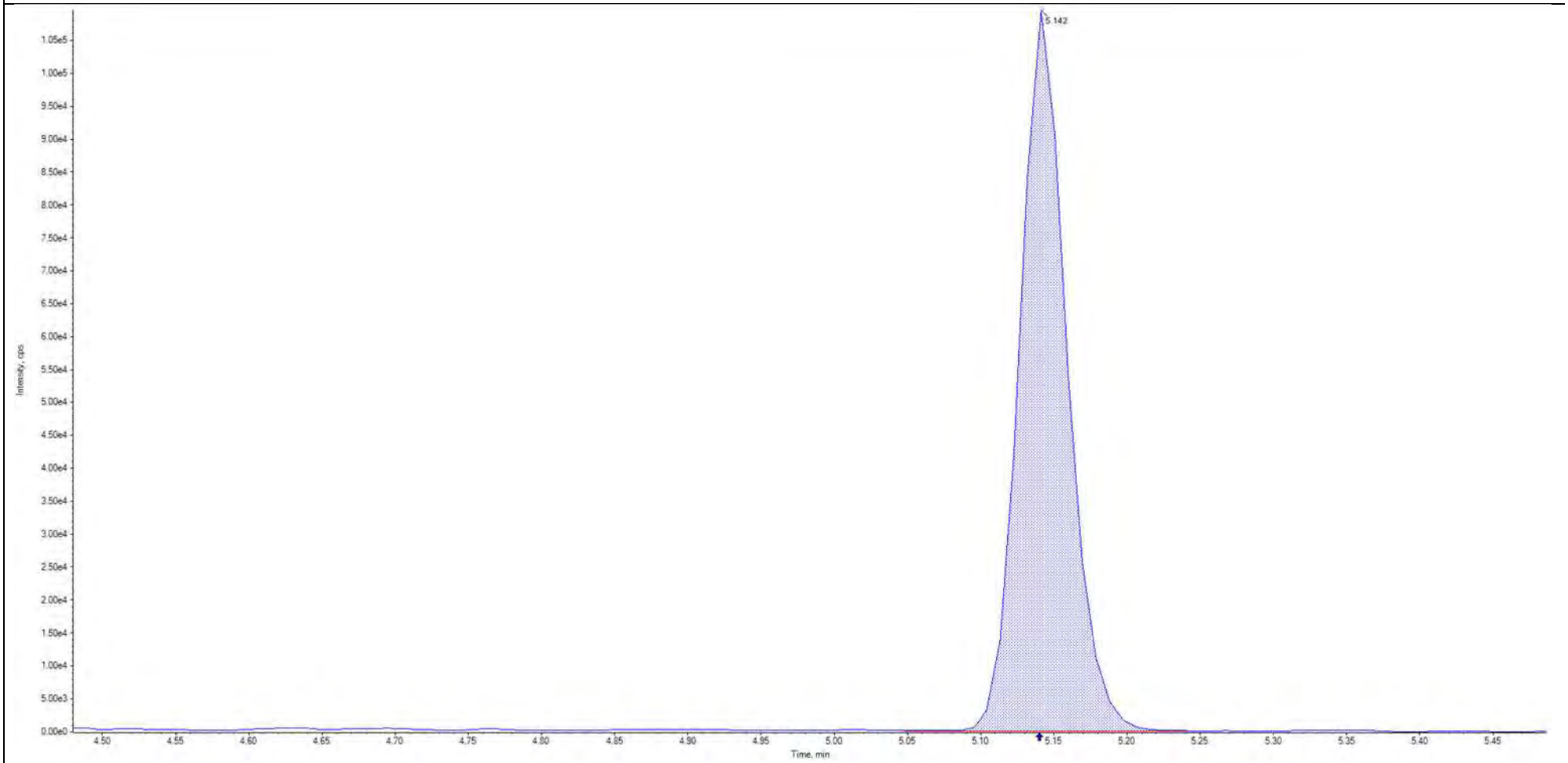
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C8-PFOS
Sample: L2450786-03



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C2-4:2FTS
Sample: L2450786-03



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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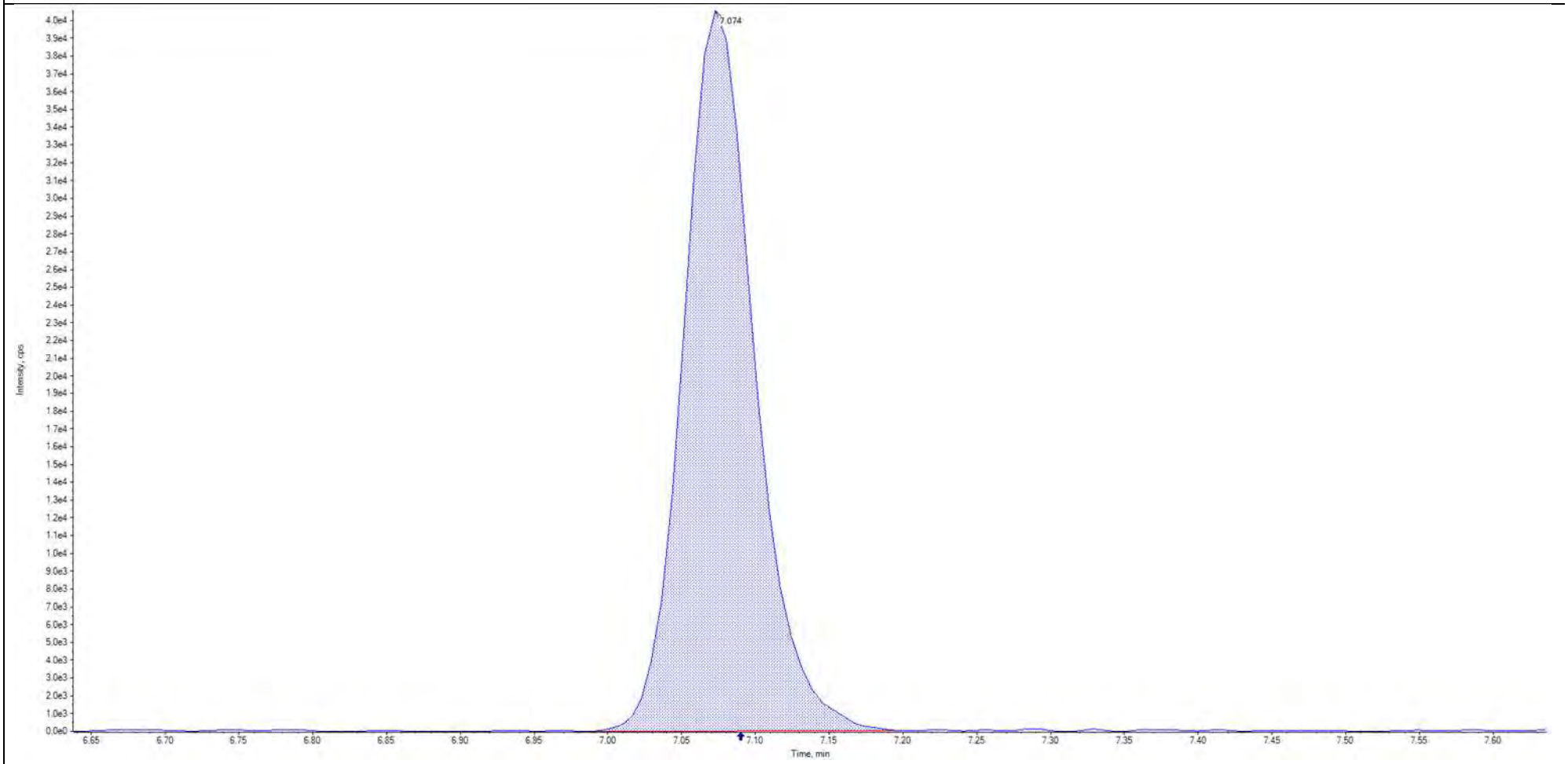
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C2-6:2FTS
Sample: L2450786-03



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
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Generated: 9/19/2024 8:04:31 AM

13C2-8:2FTS
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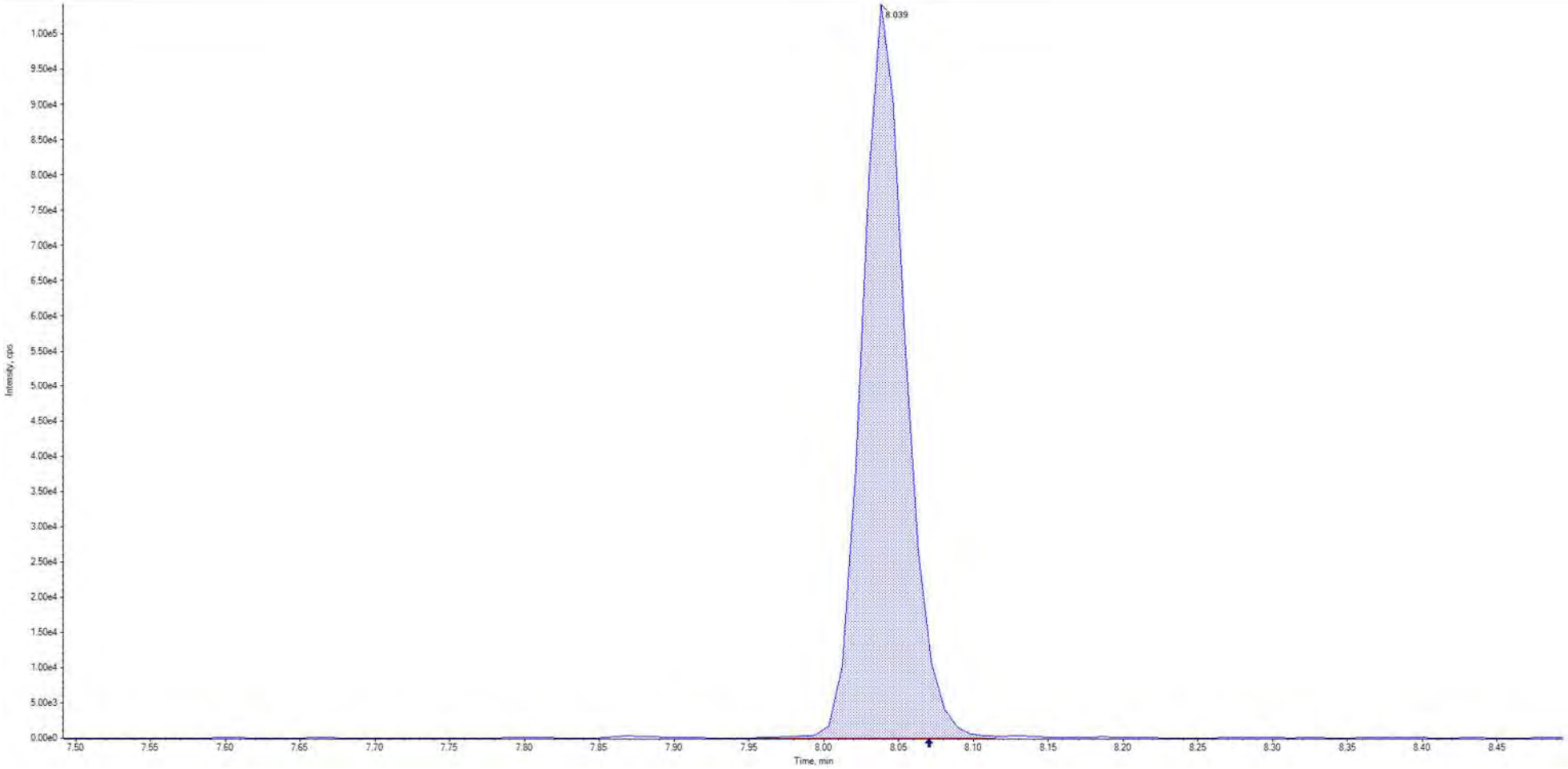
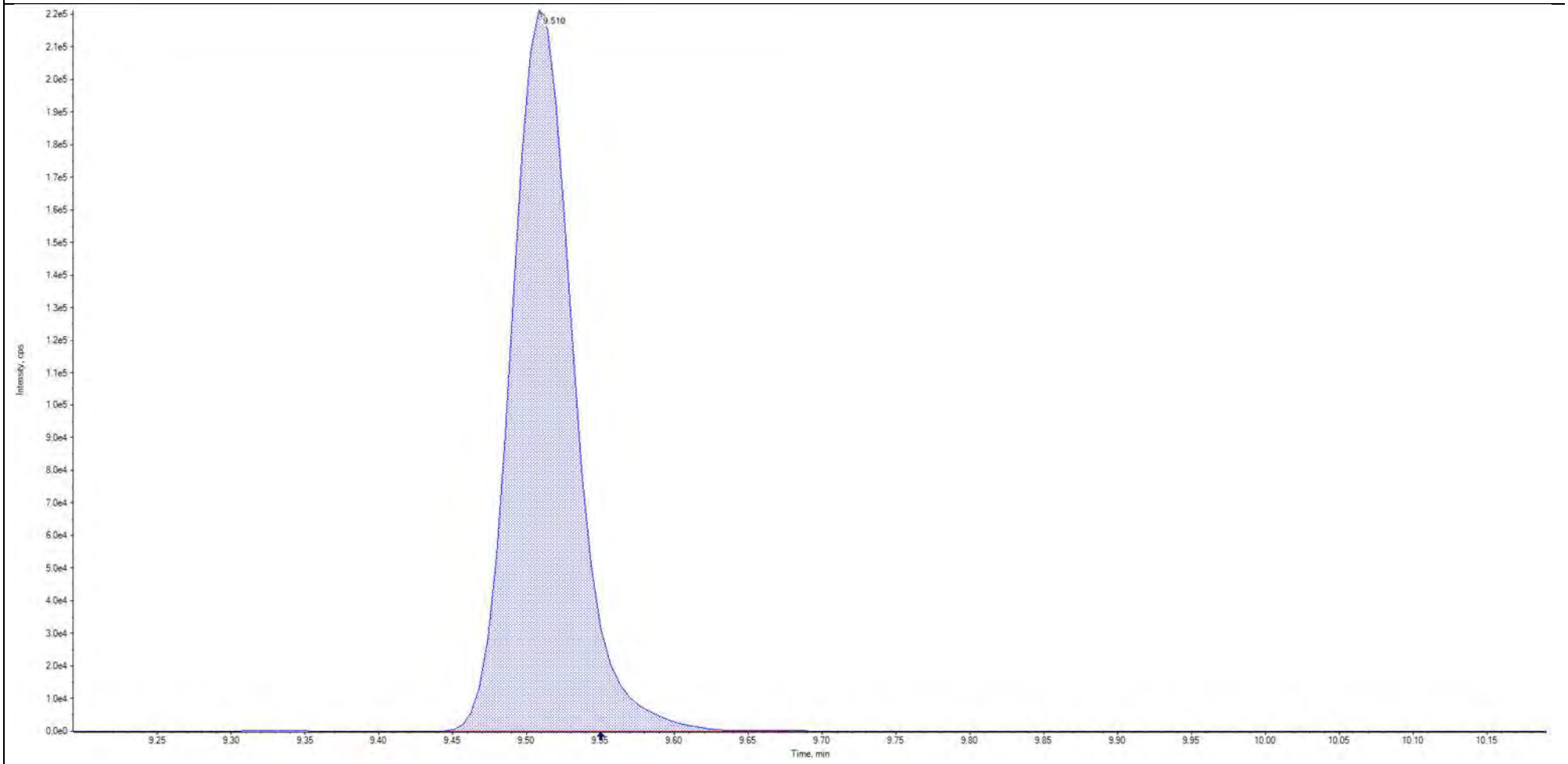
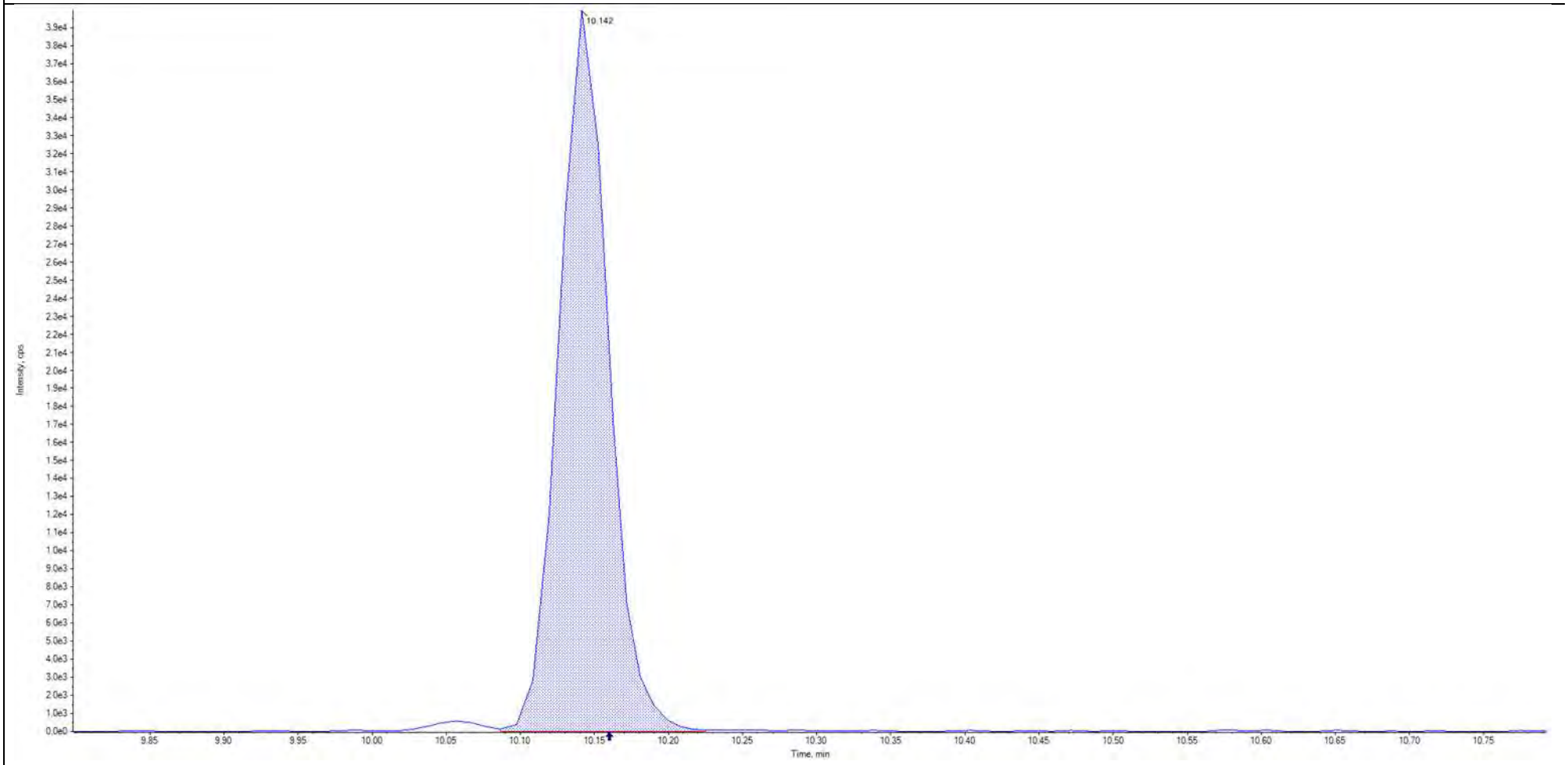


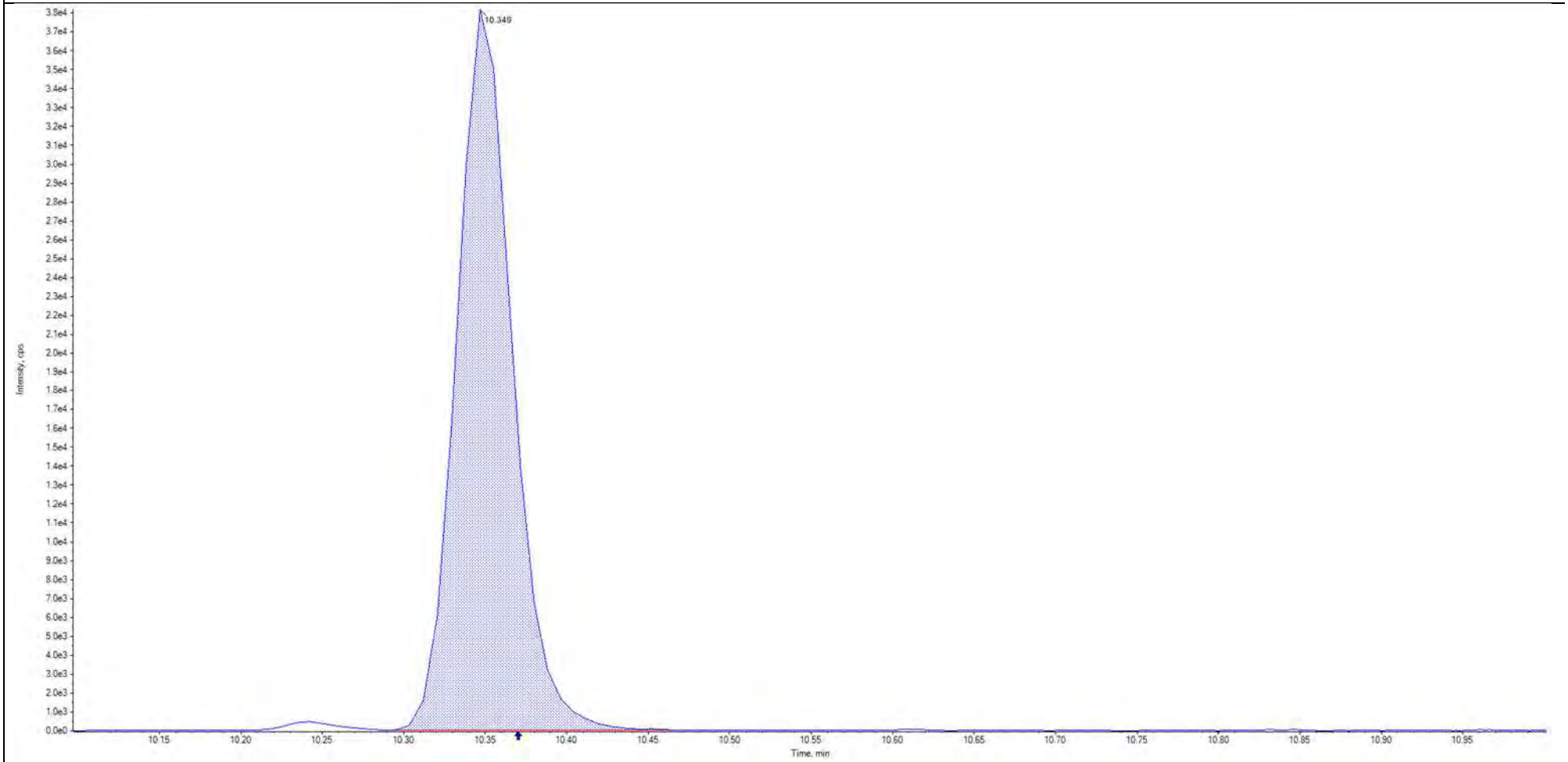
13C8-PFOSA
Sample: L2450786-03



d3-NMeFOSA
Sample: L2450786-03



d5-NEtFOSA
Sample: L2450786-03



d3-NMeFOSAA
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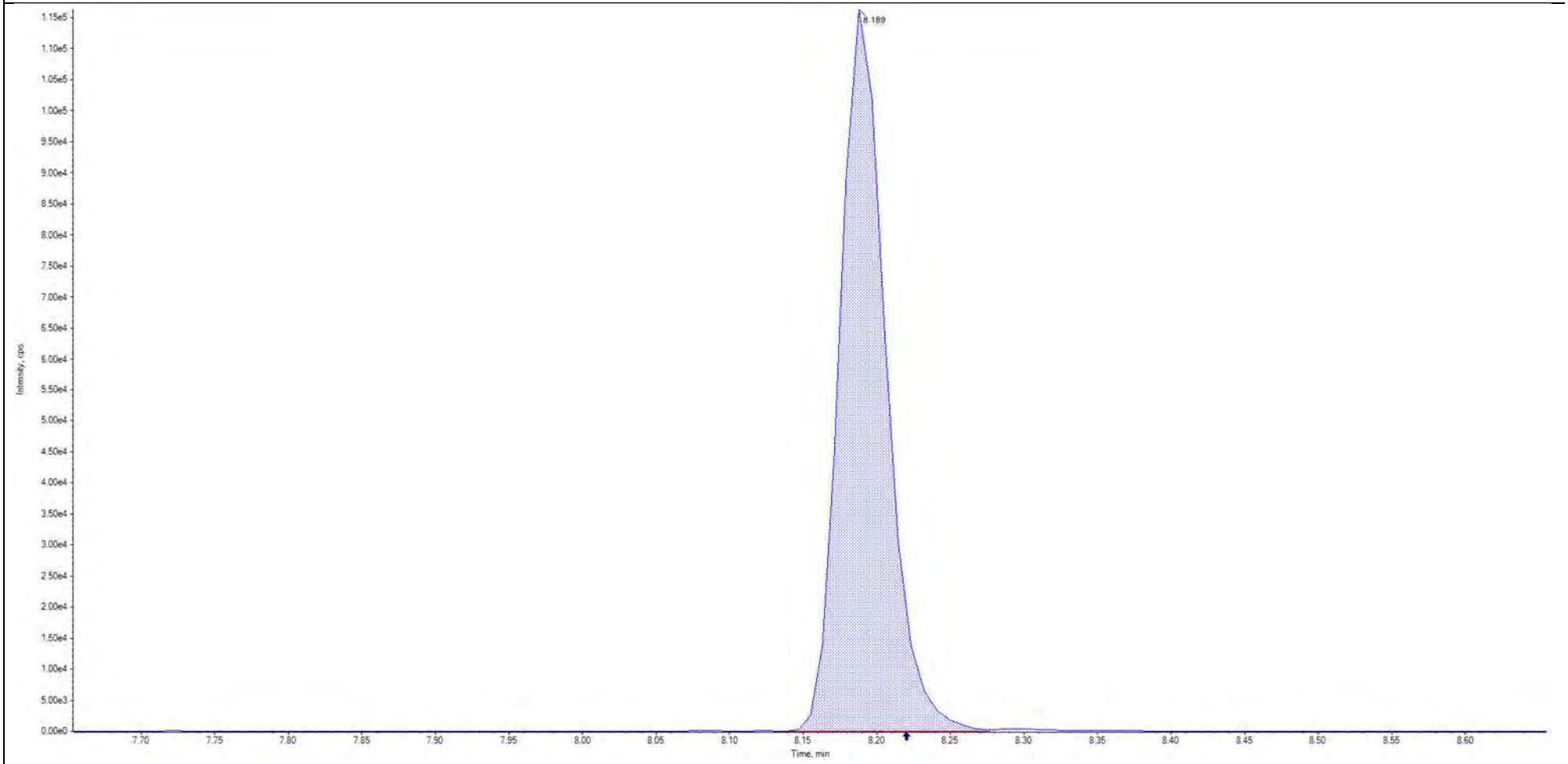

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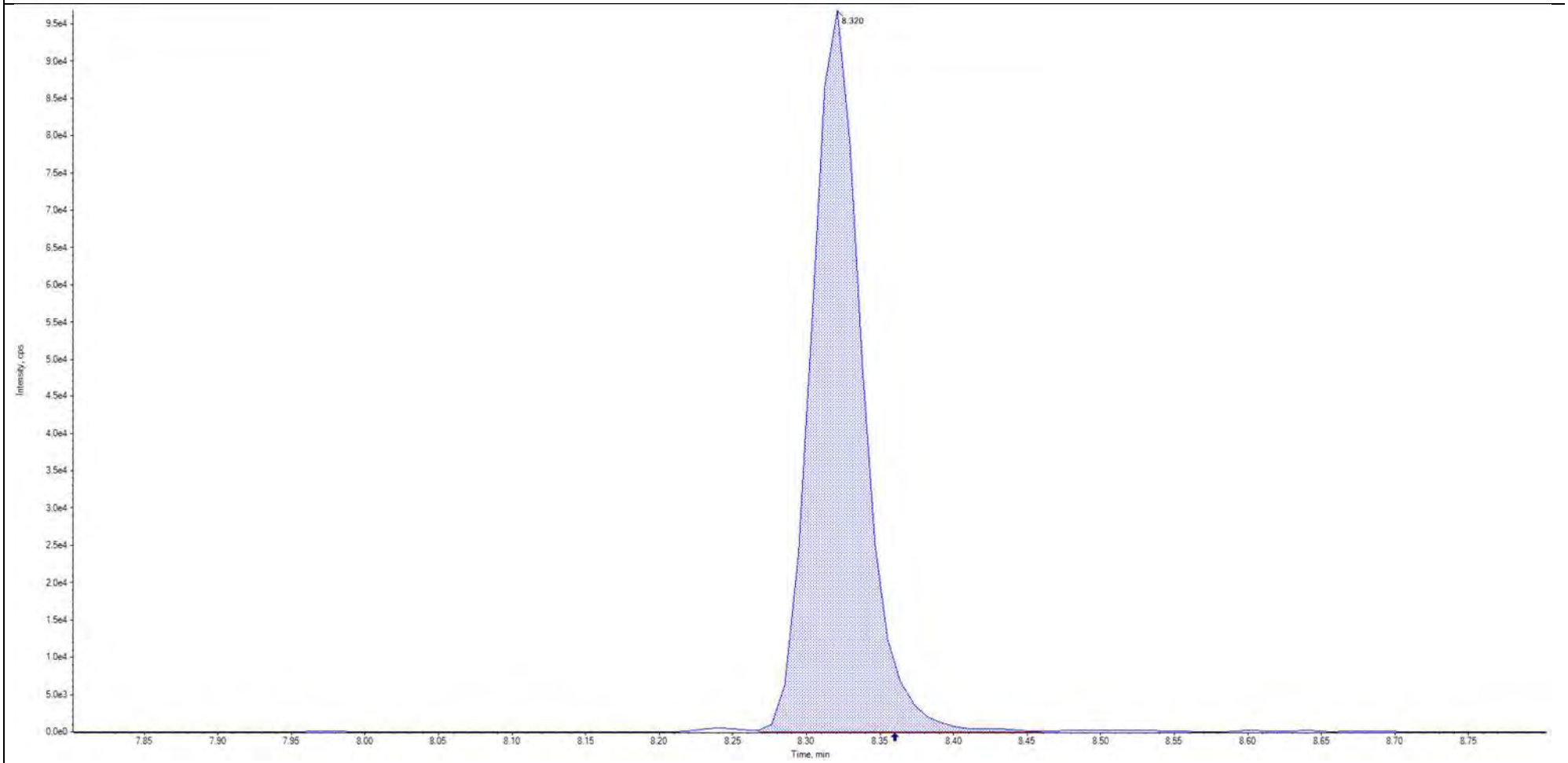
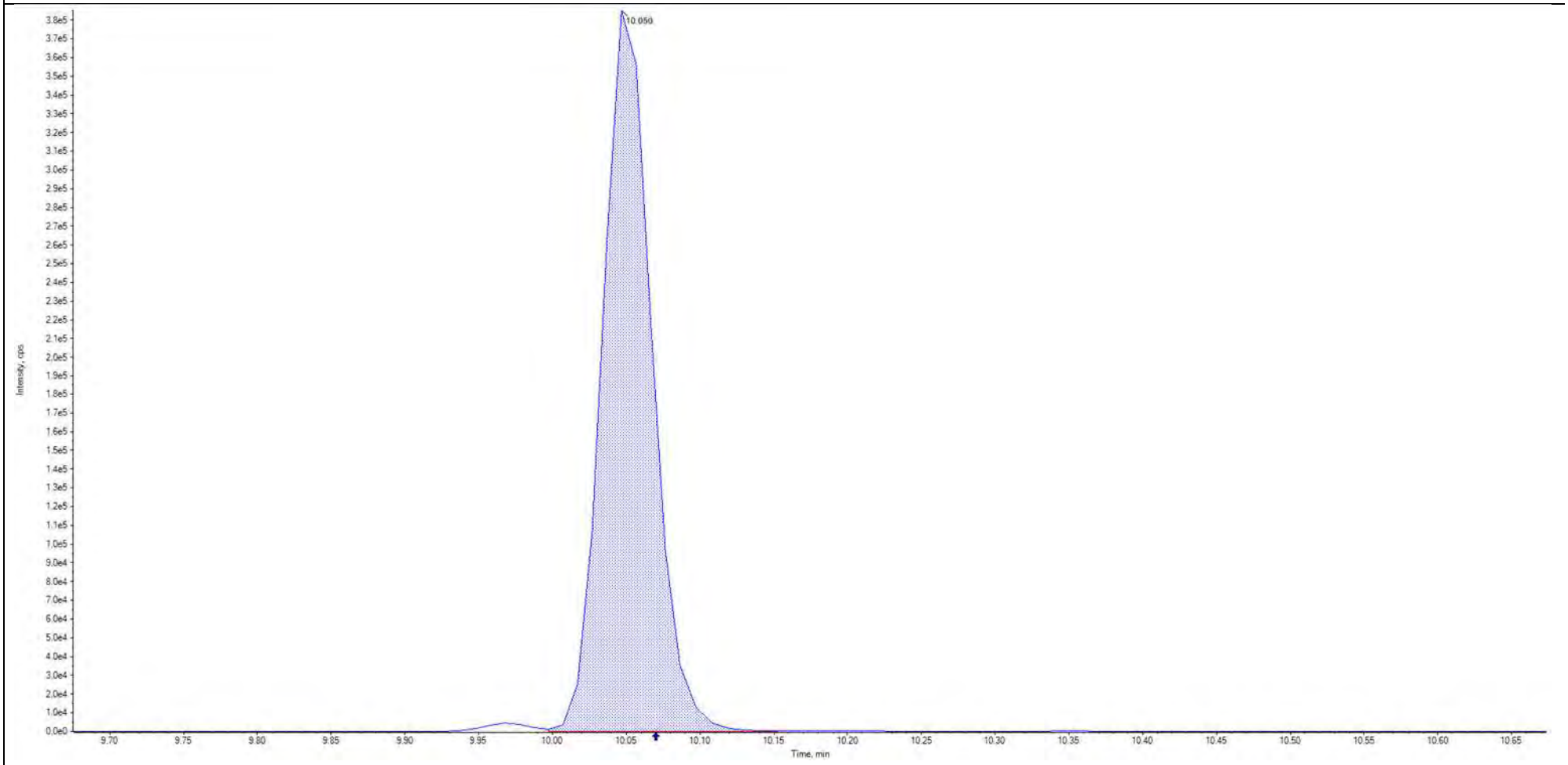


d7-NMeFOSE
Sample: L2450786-03



d9-NEtFOSE
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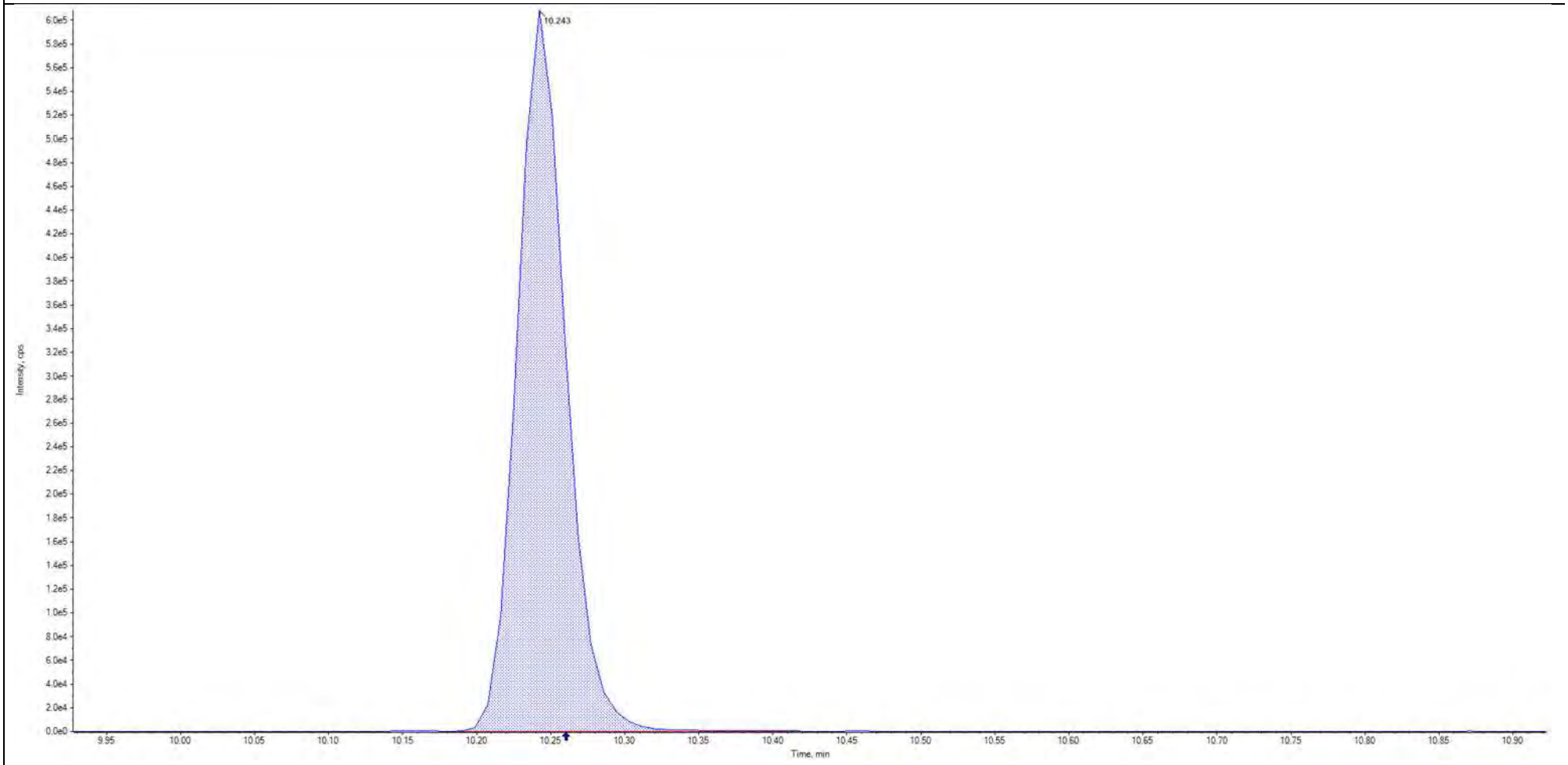

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
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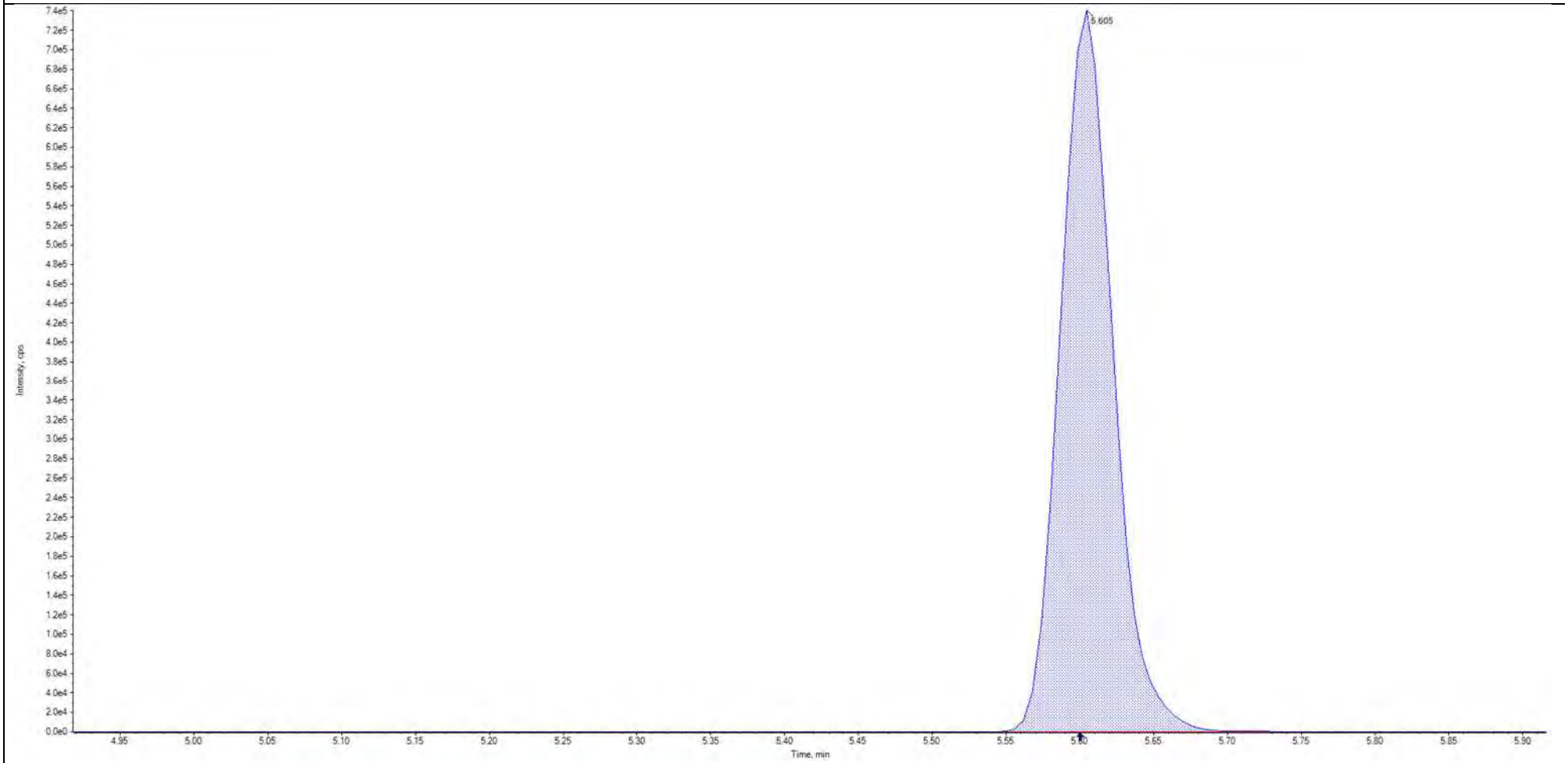
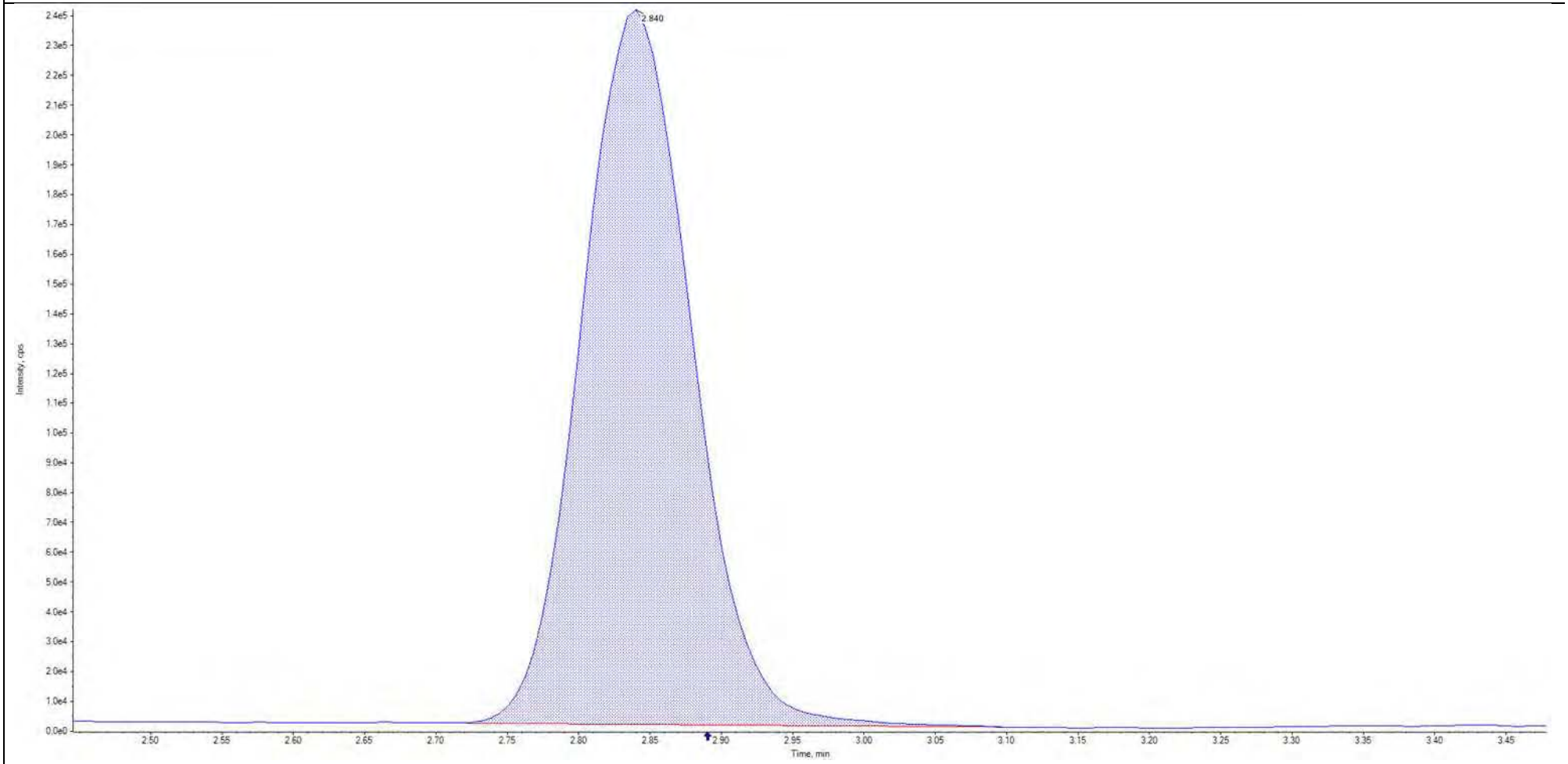
Generated: 9/19/2024 8:04:31 AM

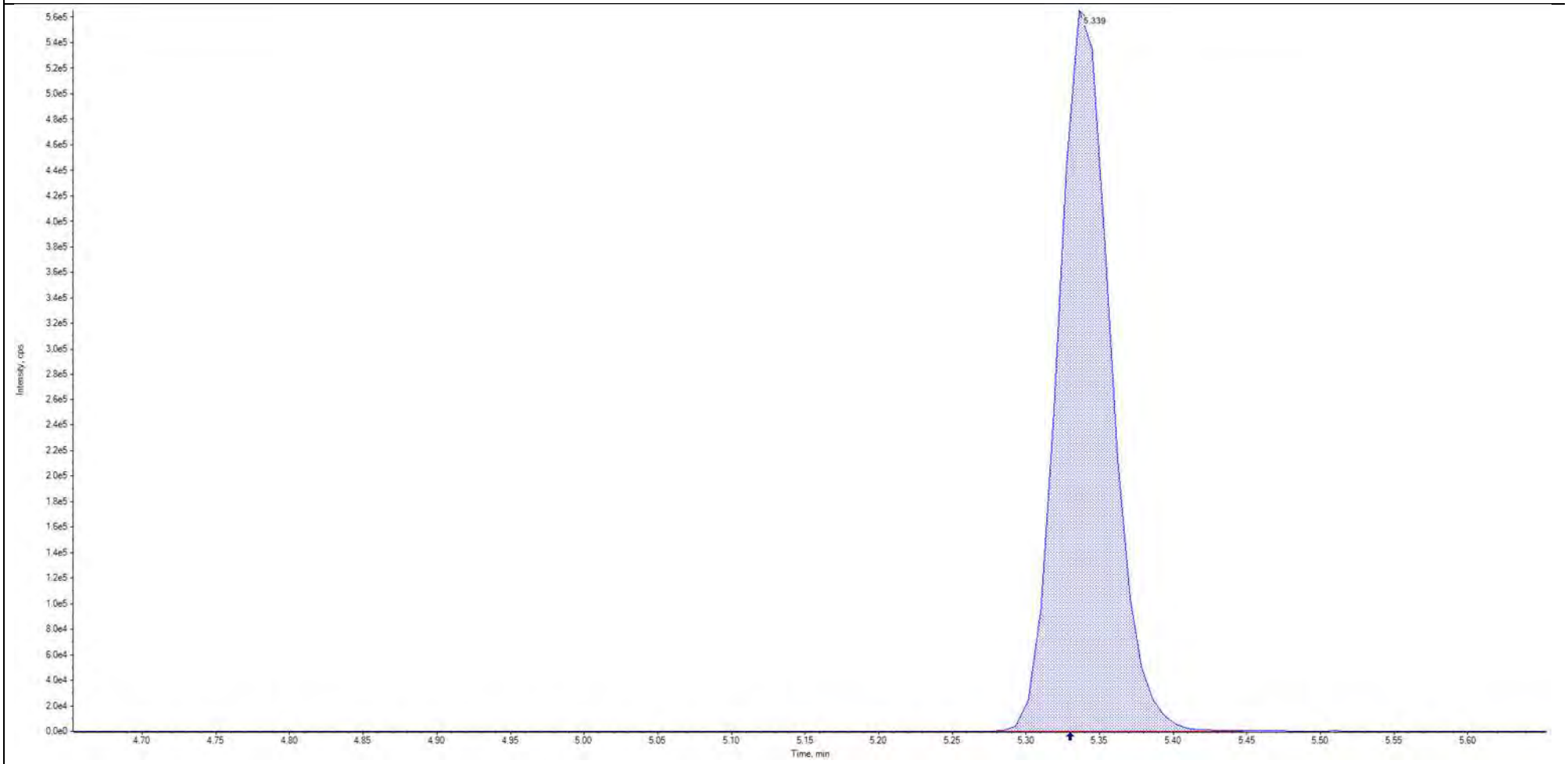
13C3-HFPO-DA
Sample: L2450786-03



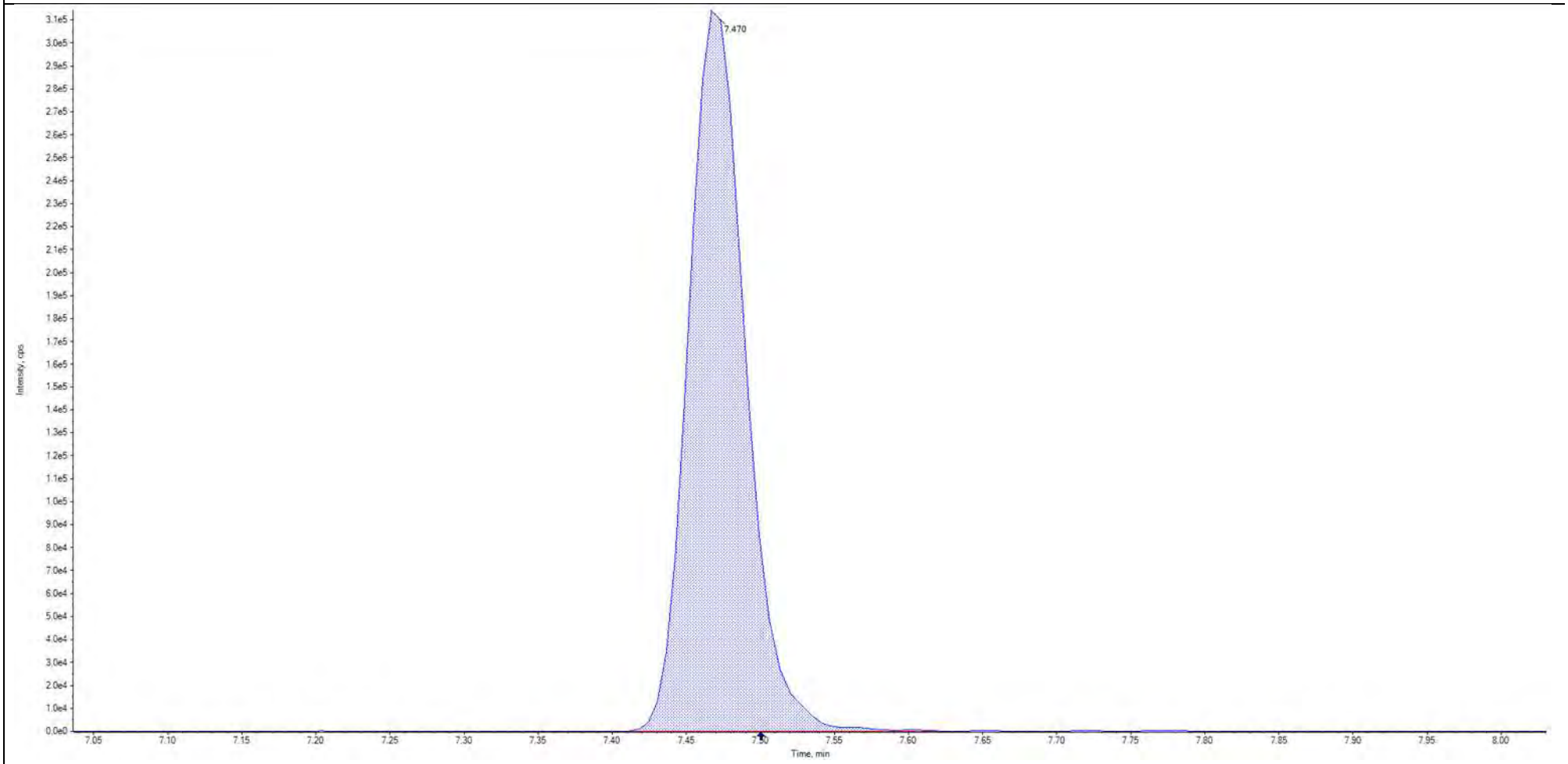
13C3-PFBA
Sample: L2450786-03



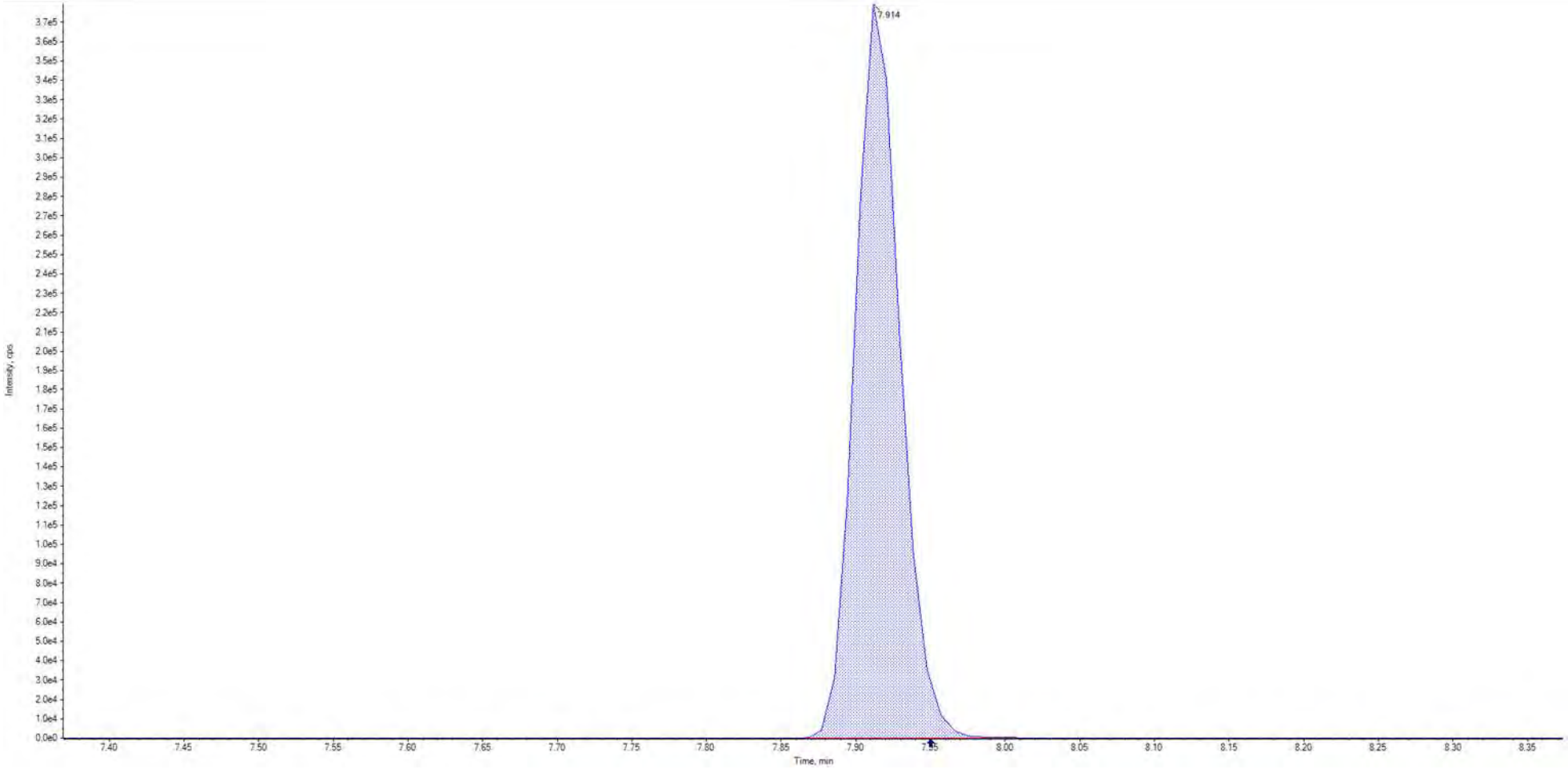
13C2-PFHxA
Sample: L2450786-03



13C4-PFOA
Sample: L2450786-03



13C5-PFNA
Sample: L2450786-03



13C2-PFDA
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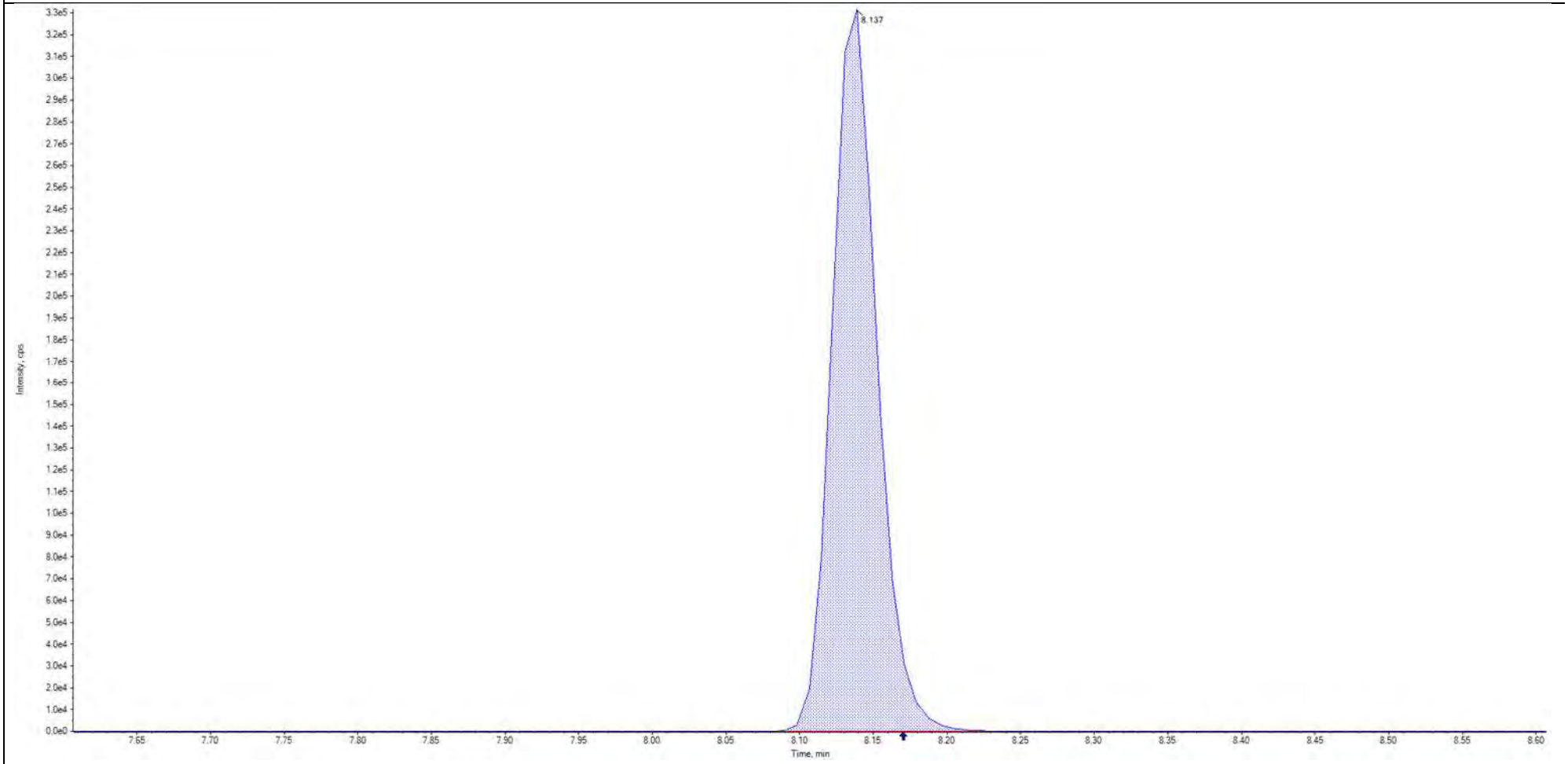
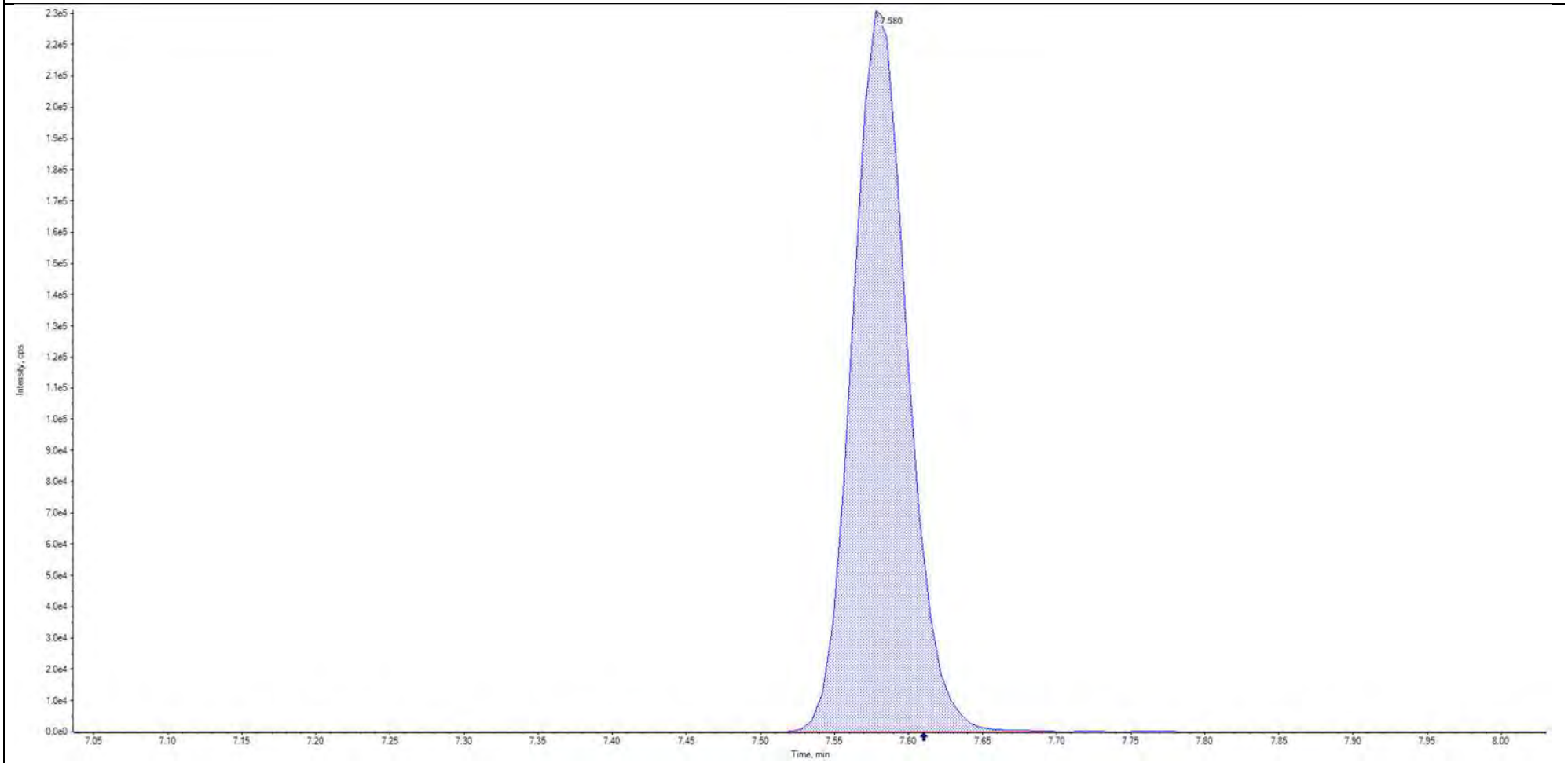


18O2-PFHxS
Sample: L2450786-03



13C4-PFOS
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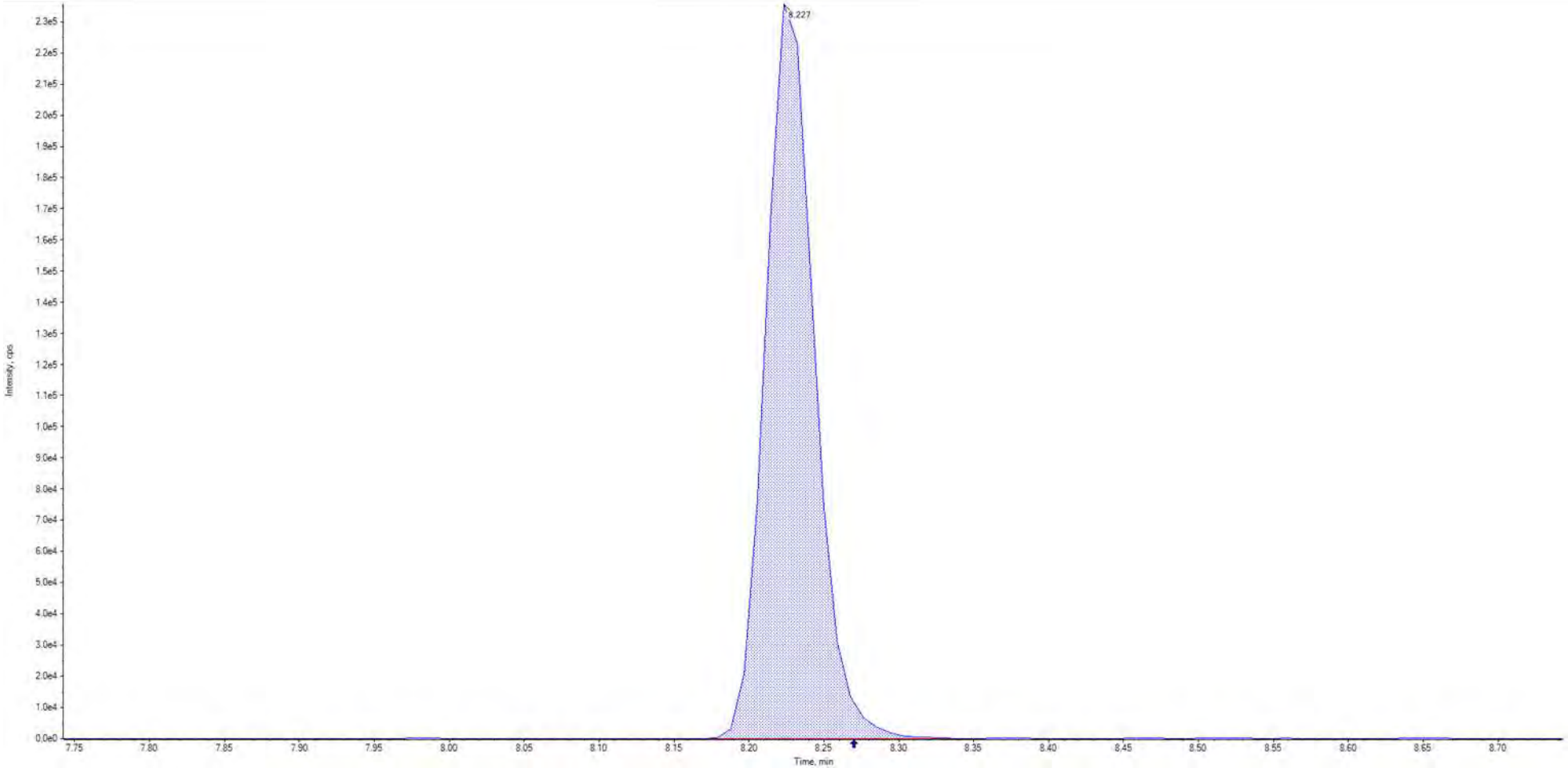

Quantity Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_16.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

Method: EPA1633_NIS_CALC.qmethod
Calibration: 240813_1633_ICAL

ID: L2450786-07
Name: SCI05_240919_20.wiff
Date & Time: 2024-09-19T09:23:53
Description: WG1973506,WG1973357,ICAL21391
Instrument: Triple Quad 5500+
User: LCMS05:AC

LC/MS-MS Method:EPA_1633.dam

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
1	PFBA	375-22-4	2.84	213.0 / 169.0	63206		0.348	N/A	N/A	N/A	N/A
2	PFPeA	2706-90-3	4.65	263.0 / 219.0	91345		0.341	0.008	0.007	N/A	N/A
3	PFPeA_2	2706-90-3	4.65	263.0 / 68.9	768		0.407	0.008	0.007	N/A	N/A
4	PFHxA	307-24-4	5.34	313.0 / 269.0	191283		0.434	0.066	0.072	Pass	N/A
5	PFHxA_2	307-24-4	5.34	313.0 / 119.0	12693		0.390	0.066	0.072	Pass	N/A
6	PFHpA	375-85-9	6.24	363.1 / 319.0	261010		0.625	0.317	0.297	Pass	N/A
7	PFHpA_2	375-85-9	6.24	363.1 / 169.0	82619		0.647	0.317	0.297	Pass	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
8	PFOA	335-67-1	7.47	413.1 / 369.1	311428	M5	1.105	0.519	0.586	Pass	N/A
9	PFOA_2	335-67-1	7.47	413.1 / 169.0	161566	M7	1.046	0.519	0.586	Pass	N/A
10	PFNA	375-95-1	7.92	462.8 / 418.9	28058		0.074	0.208	0.313	Pass	N/A
11	PFNA_2	375-95-1	7.92	462.8 / 218.9	5830		0.051	0.208	0.313	Pass	N/A
12	PFDA	335-76-2	N/A	513.1 / 469.1	N/A		N/A	N/A	0.142	N/A	N/A
13	PFDA_2	335-76-2	N/A	513.1 / 219.0	N/A		N/A	N/A	0.142	N/A	N/A
14	PFUnA	2058-94-8	N/A	563.1 / 519.1	N/A		N/A	N/A	0.194	N/A	N/A
15	PFUnA_2	2058-94-8	N/A	563.1 / 269.0	N/A		N/A	N/A	0.194	N/A	N/A
16	PFDoA	307-55-1	N/A	613.1 / 569.1	N/A		N/A	N/A	0.167	N/A	N/A
17	PFDoA_2	307-55-1	N/A	613.1 / 319.0	N/A		N/A	N/A	0.167	N/A	N/A
18	PFTrDA	72629-94-8	N/A	663.1 / 619.1	N/A		N/A	N/A	0.228	N/A	N/A
19	PFTrDA_2	72629-94-8	N/A	663.1 / 169.0	N/A		N/A	N/A	0.228	N/A	N/A
20	PFTeDA	376-06-7	N/A	713.1 / 669.1	N/A		N/A	N/A	0.137	N/A	N/A
21	PFTeDA_2	376-06-7	N/A	713.1 / 169.0	N/A		N/A	N/A	0.137	N/A	N/A
22	PFBS	375-73-5	5.32	299.1 / 80.1	116534		0.415	0.372	0.396	Pass	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
23	PFBS_2	375-73-5	5.32	299.1 / 99.1	43335		0.387	0.372	0.396	Pass	N/A
24	PFPeS	2706-91-4	6.33	349.1 / 80.1	8343		0.039	0.311	0.299	Pass	N/A
25	PFPeS_2	2706-91-4	6.33	349.1 / 99.1	2592		0.040	0.311	0.299	Pass	N/A
26	PFHxS	355-46-4	7.58	399.1 / 80.1	43659	M5	0.218	0.329	0.315	Pass	N/A
27	PFHxS_2	355-46-4	7.58	399.1 / 99.1	14368	M7	0.231	0.329	0.315	Pass	N/A
28	PFHpS	375-92-8	N/A	449.1 / 80.1	N/A		N/A	N/A	0.287	N/A	N/A
29	PFHpS_2	375-92-8	N/A	449.1 / 99.1	N/A		N/A	N/A	0.287	N/A	N/A
30	PFOS	1763-23-1	8.21	499.1 / 80.1	49443	M5	0.245	0.167	0.238	Pass	N/A
31	PFOS_2	1763-23-1	8.24	499.1 / 99.1	8236	M7	0.166	0.167	0.238	Pass	N/A
32	PFNS	68259-12-1	N/A	549.1 / 80.1	N/A		N/A	N/A	0.301	N/A	N/A
33	PFNS_2	68259-12-1	N/A	549.1 / 99.1	N/A		N/A	N/A	0.301	N/A	N/A
34	PFDS	335-77-3	N/A	599.1 / 80.1	N/A		N/A	N/A	0.275	N/A	N/A
35	PFDS_2	335-77-3	N/A	599.1 / 99.1	N/A		N/A	N/A	0.275	N/A	N/A
36	PFDoS	79780-39-5	N/A	699.2 / 80.1	N/A		N/A	N/A	0.274	N/A	N/A
37	PFDoS_2	79780-39-5	N/A	699.2 / 99.1	N/A		N/A	N/A	0.274	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
38	4:2FTS	757124-72-4	N/A	327.1 / 307.1	N/A		N/A	N/A	0.516	N/A	N/A
39	4:2FTS_2	757124-72-4	N/A	327.1 / 81.1	N/A		N/A	N/A	0.516	N/A	N/A
40	6:2FTS	27619-97-2	N/A	427.2 / 407.2	N/A		N/A	N/A	0.565	N/A	N/A
41	6:2FTS_2	27619-97-2	N/A	427.2 / 81.1	N/A		N/A	N/A	0.565	N/A	N/A
42	8:2FTS	39108-34-4	N/A	527.2 / 507.2	N/A		N/A	N/A	0.662	N/A	N/A
43	8:2FTS_2	39108-34-4	N/A	527.2 / 81.1	N/A		N/A	N/A	0.662	N/A	N/A
44	PFOSA	754-91-6	N/A	498.1 / 78.1	N/A		N/A	N/A	0.025	N/A	N/A
45	PFOSA_2	754-91-6	N/A	498.1 / 478.0	N/A		N/A	N/A	0.025	N/A	N/A
46	NMeFOSA	31506-32-8	N/A	512.2 / 219.0	N/A		N/A	N/A	1.551	N/A	N/A
47	NMeFOSA_2	31506-32-8	N/A	512.2 / 169.0	N/A		N/A	N/A	1.551	N/A	N/A
48	NEtFOSA	4151-50-2	N/A	526.2 / 219.0	N/A		N/A	N/A	1.285	N/A	N/A
49	NEtFOSA_2	4151-50-2	N/A	526.2 / 169.0	N/A		N/A	N/A	1.285	N/A	N/A
50	NMeFOSAA	2355-31-9	N/A	570.2 / 419.1	N/A		N/A	N/A	0.700	N/A	N/A
51	NMeFOSAA_2	2355-31-9	N/A	570.2 / 483.0	N/A		N/A	N/A	0.700	N/A	N/A
52	NEtFOSAA	2991-50-6	N/A	584.2 / 419.1	N/A		N/A	N/A	0.487	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
53	NEtFOSAA_2	2991-50-6	N/A	584.2 / 526.2	N/A		N/A	N/A	0.487	N/A	N/A
54	NMeFOSE	24448-09-7	N/A	616.1 / 58.9	N/A		N/A	N/A	N/A	N/A	N/A
55	NEtFOSE	1691-99-2	N/A	630.0 / 58.9	N/A		N/A	N/A	N/A	N/A	N/A
56	HFPO-DA	13252-13-6	N/A	285.0 / 169.0	N/A		N/A	N/A	0.464	N/A	N/A
57	HFPO-DA_2	13252-13-6	N/A	285.0 / 184.9	N/A		N/A	N/A	0.464	N/A	N/A
58	ADONA	919005-14-4	N/A	377.1 / 251.0	N/A		N/A	N/A	0.634	N/A	N/A
59	ADONA_2	919005-14-4	N/A	377.1 / 84.8	N/A		N/A	N/A	0.634	N/A	N/A
60	9Cl-PF3ONS	756426-58-1	N/A	530.8 / 351.1	N/A		N/A	N/A	0.322	N/A	N/A
61	9Cl-PF3ONS_2	756426-58-1	N/A	532.8 / 353.0	N/A		N/A	N/A	0.322	N/A	N/A
62	11Cl-PF3OUdS	763051-92-9	N/A	630.9 / 451.0	N/A		N/A	N/A	0.331	N/A	N/A
63	11Cl-PF3OUdS_2	763051-92-9	N/A	632.9 / 452.9	N/A		N/A	N/A	0.331	N/A	N/A
64	3:3FTCA	356-02-5	N/A	241.1 / 177.1	N/A		N/A	N/A	1.074	N/A	N/A
65	3:3FTCA_2	356-02-5	N/A	241.1 / 117.0	N/A		N/A	N/A	1.074	N/A	N/A
66	5:3FTCA	914637-49-3	N/A	341.1 / 237.1	N/A		N/A	N/A	0.953	N/A	N/A
67	5:3FTCA_2	914637-49-3	N/A	341.1 / 217.0	N/A		N/A	N/A	0.953	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
68	7:3FTCA	812-70-4	8.19	441.1 / 316.9	8307	M4	0.093	2.116	1.558	Pass	N/A
69	7:3FTCA_2	812-70-4	8.19	441.1 / 337.1	17577		0.136	2.116	1.558	Pass	N/A
70	PFEESA	113507-82-7	N/A	315.1 / 135.0	N/A		N/A	N/A	0.087	N/A	N/A
71	PFEESA_2	113507-82-7	N/A	315.1 / 82.9	N/A		N/A	N/A	0.087	N/A	N/A
72	PFMPA	377-73-1	N/A	229.0 / 85.0	N/A		N/A	N/A	N/A	N/A	N/A
73	PFMBA	863090-89-5	N/A	279.0 / 85.0	N/A		N/A	N/A	N/A	N/A	N/A
74	NFDHA	151772-58-6	N/A	295.0 / 201.0	N/A		N/A	N/A	0.910	N/A	N/A
75	NFDHA_2	151772-58-6	N/A	295.0 / 84.9	N/A		N/A	N/A	0.910	N/A	N/A
76	TDCA	516-50-7	N/A	499.1 / 124.1	N/A		N/A	N/A	40.716	N/A	N/A
77	TDCA_2	516-50-7	N/A	499.1 / 79.9	N/A		N/A	N/A	40.716	N/A	N/A
78	13C2D4-4:2FTS	Surr	N/A	333.2 / 312.1	N/A		N/A	N/A	N/A	N/A	N/A
79	13C2-PFOA	Surr	N/A	415.0 / 370.0	N/A		N/A	N/A	N/A	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C4-PFBA	EIS	2.84	217.0 / 172.0	2240732		8.718	NA	NA	NA	87.2

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C5-PFPeA	EIS	4.64	268.0 / 223.0	1451529		4.440	NA	NA	NA	88.8
	13C5-PFHxA	EIS	5.34	318.0 / 273.0	903348		2.104	NA	NA	NA	84.1
	13C4-PFHpA	EIS	6.24	367.0 / 322.0	891355		2.073	NA	NA	NA	82.9
	13C8-PFOA	EIS	7.47	421.0 / 376.0	1354337		2.265	NA	NA	NA	90.6
	13C9-PFNA	EIS	7.92	472.0 / 427.0	643839		1.008	NA	NA	NA	80.6
	13C6-PFDA	EIS	8.14	519.0 / 474.0	555919		0.992	NA	NA	NA	79.4
	13C7-PFUnA	EIS	8.41	570.0 / 525.0	472545		1.042	NA	NA	NA	83.4

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C2-PFDoA	EIS	8.82	615.1 / 570.0	384698		1.304	NA	NA	NA	104.3
	13C2-PFTeDA	EIS	9.85	715.1 / 670.1	267470		0.835	NA	NA	NA	66.8
	13C3-PFBS	EIS	5.31	302.1 / 80.1	669644		2.070	NA	NA	NA	88.8
	13C3-PFHxS	EIS	7.58	402.1 / 80.1	502632		1.956	NA	NA	NA	82.5
	13C8-PFOS	EIS	8.23	507.1 / 80.1	491940		1.894	NA	NA	NA	79.1
	13C2-4:2FTS	EIS	5.14	329.1 / 81.1	669464		11.593	NA	NA	NA	247.2
	13C2-6:2FTS	EIS	7.07	429.2 / 81.1	269410		6.366	NA	NA	NA	133.9
	13C2-8:2FTS	EIS	8.04	529.2 / 81.1	543753		8.779	NA	NA	NA	182.9

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C8-PFOSA	EIS	9.51	506.1 / 78.1	749626		2.171	NA	NA	NA	86.8
	d3-NMeFOSA	EIS	10.15	515.2 / 219.0	105673		1.818	NA	NA	NA	72.7
	d5-NEtFOSA	EIS	10.35	531.2 / 219.0	104136		1.834	NA	NA	NA	73.4
	d3-NMeFOSAA	EIS	8.19	573.2 / 419.1	381657		2.905	NA	NA	NA	58.1
	d5-NEtFOSAA	EIS	8.32	589.3 / 419.1	325861		4.719	NA	NA	NA	94.4
	d7-NMeFOSE	EIS	10.05	623.2 / 58.9	972626		21.670	NA	NA	NA	86.7
	d9-NEtFOSE	EIS	10.25	639.2 / 58.9	1486853		22.469	NA	NA	NA	89.9

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C3-HFPO-DA	EIS	5.60	287.0 / 169.0	2324714		8.169	NA	NA	NA	81.7
	13C3-PFBA	NIS	2.84	216.0 / 172.0	1124395		5.259	NA	NA	NA	105.2
	13C2-PFHxA	NIS	5.34	315.0 / 270.0	1275021		2.604	NA	NA	NA	104.2
	13C4-PFOA	NIS	7.46	417.0 / 372.0	782100		2.498	NA	NA	NA	99.9
	13C5-PFNA	NIS	7.92	468.0 / 423.0	778199		1.421	NA	NA	NA	113.7
	13C2-PFDA	NIS	8.14	515.1 / 470.1	658421		1.285	NA	NA	NA	102.8
	18O2-PFHxS	NIS	7.58	403.1 / 84.1	522372		2.230	NA	NA	NA	94.1
	13C4-PFOS	NIS	8.23	503.1 / 80.1	459388		2.182	NA	NA	NA	91.1

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
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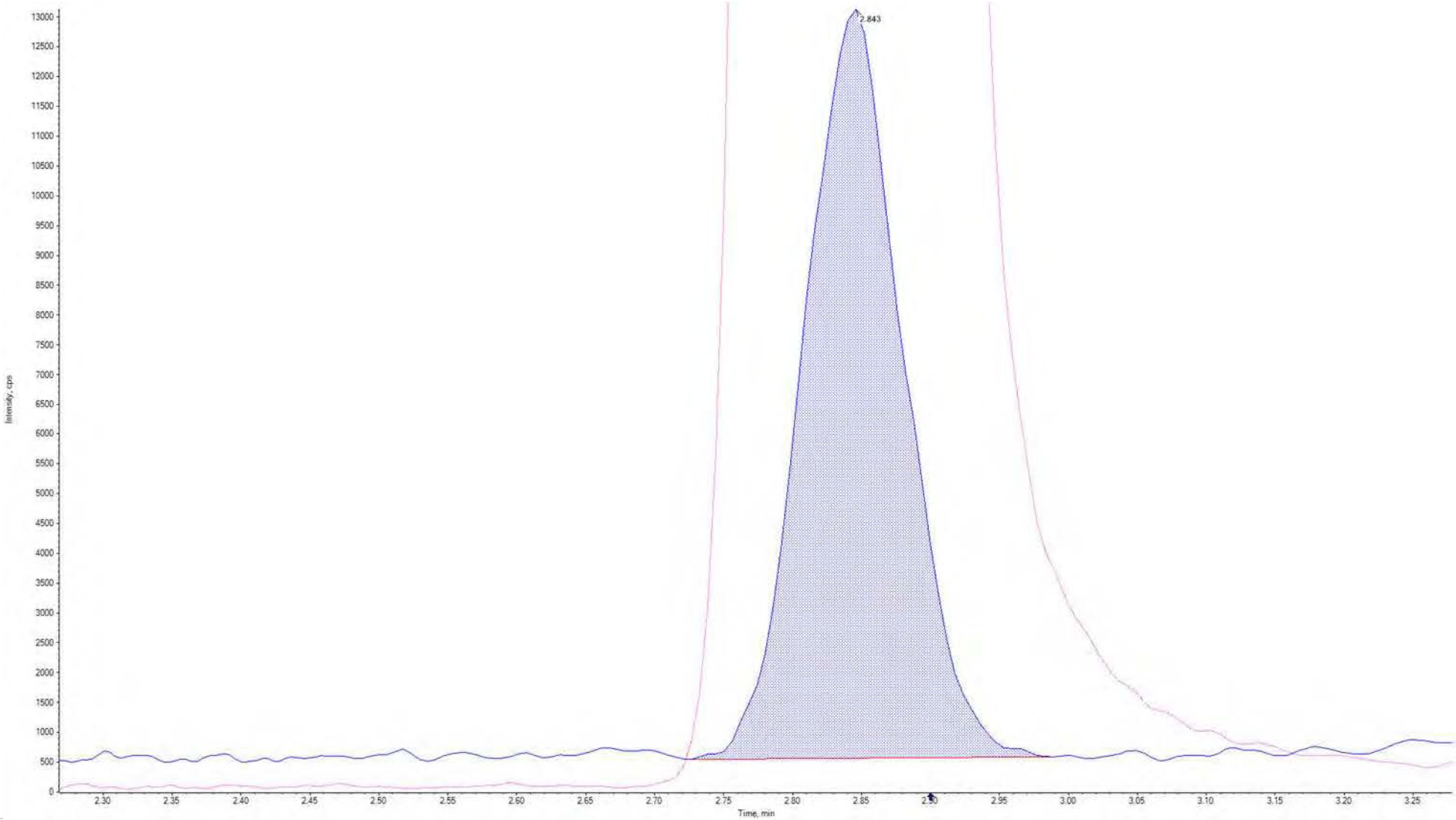
PFBA
Sample: L2450786-07 S/N:375.1 Points Across peak:45



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Alpha Analytical Inc.
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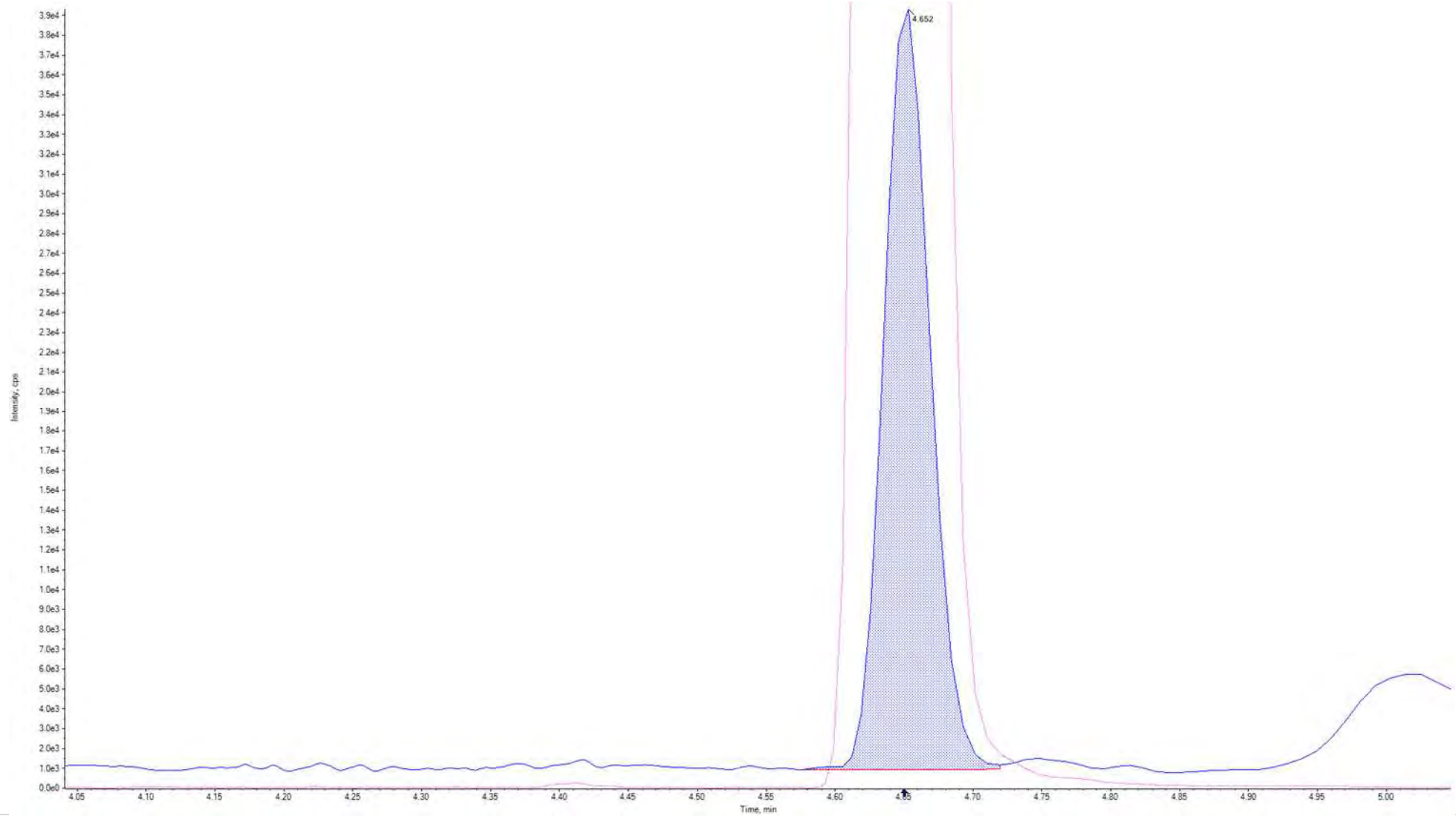
Generated: 9/19/2024 8:04:31 AM

PFPeA
Sample: L2450786-07 S/N:311.1 Points Across peak:21



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Alpha Analytical Inc.
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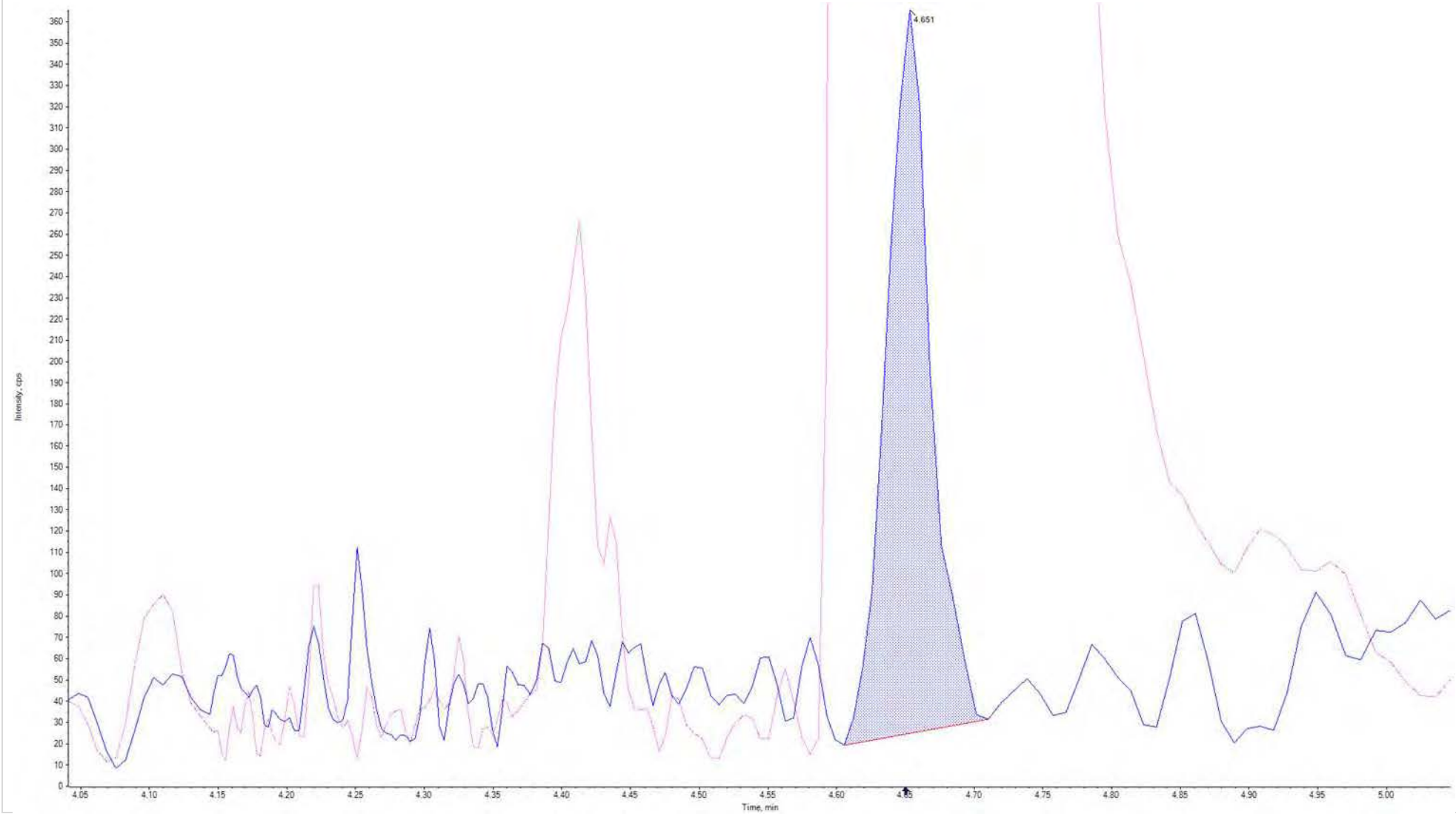
Generated: 9/19/2024 8:04:31 AM

PFPeA_2
Sample: L2450786-07 S/N:60.3 Points Across peak:15



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Alpha Analytical Inc.
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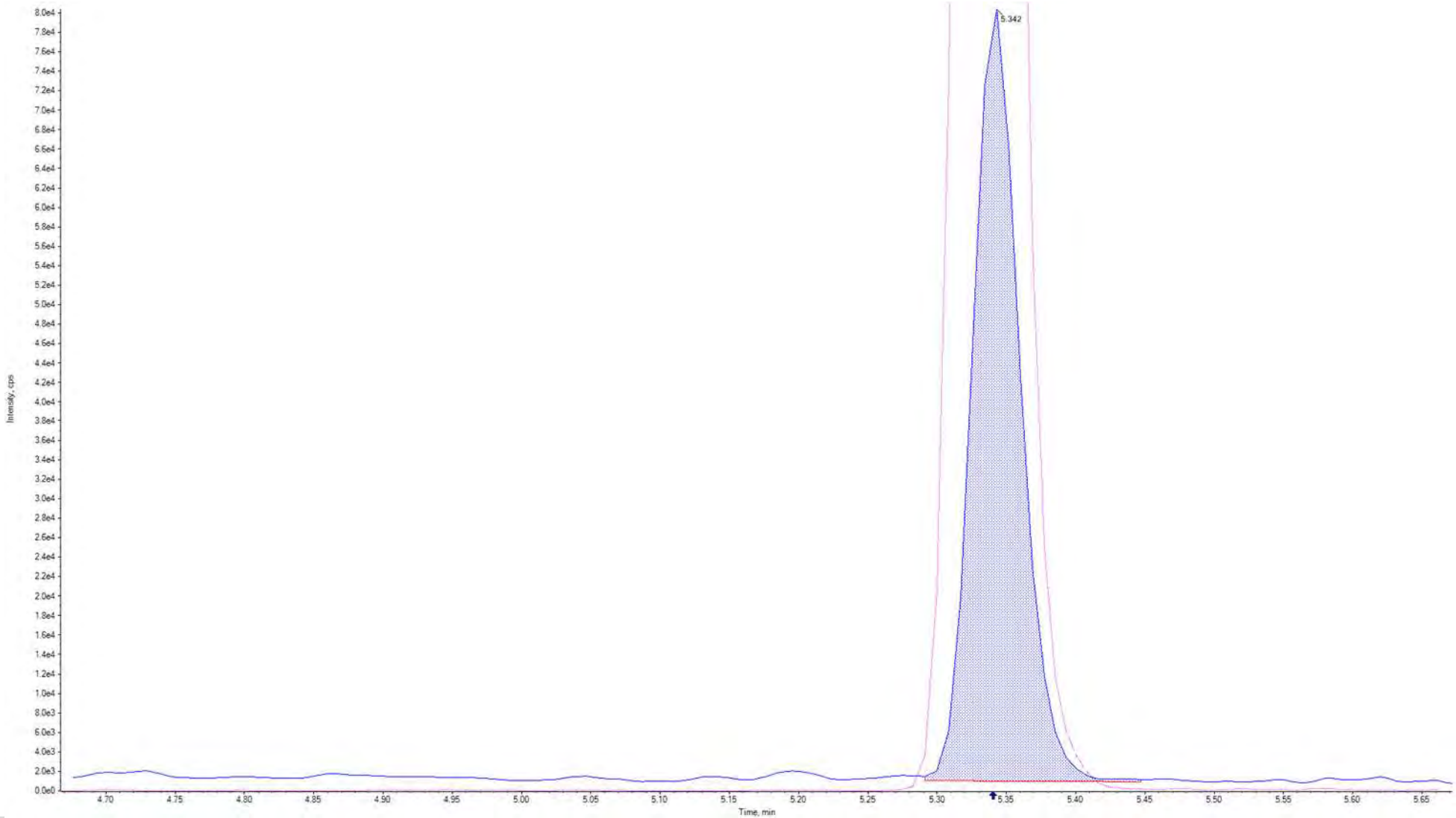
PFHxA
Sample: L2450786-07 S/N:332.8 Points Across peak:20



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Alpha Analytical Inc.
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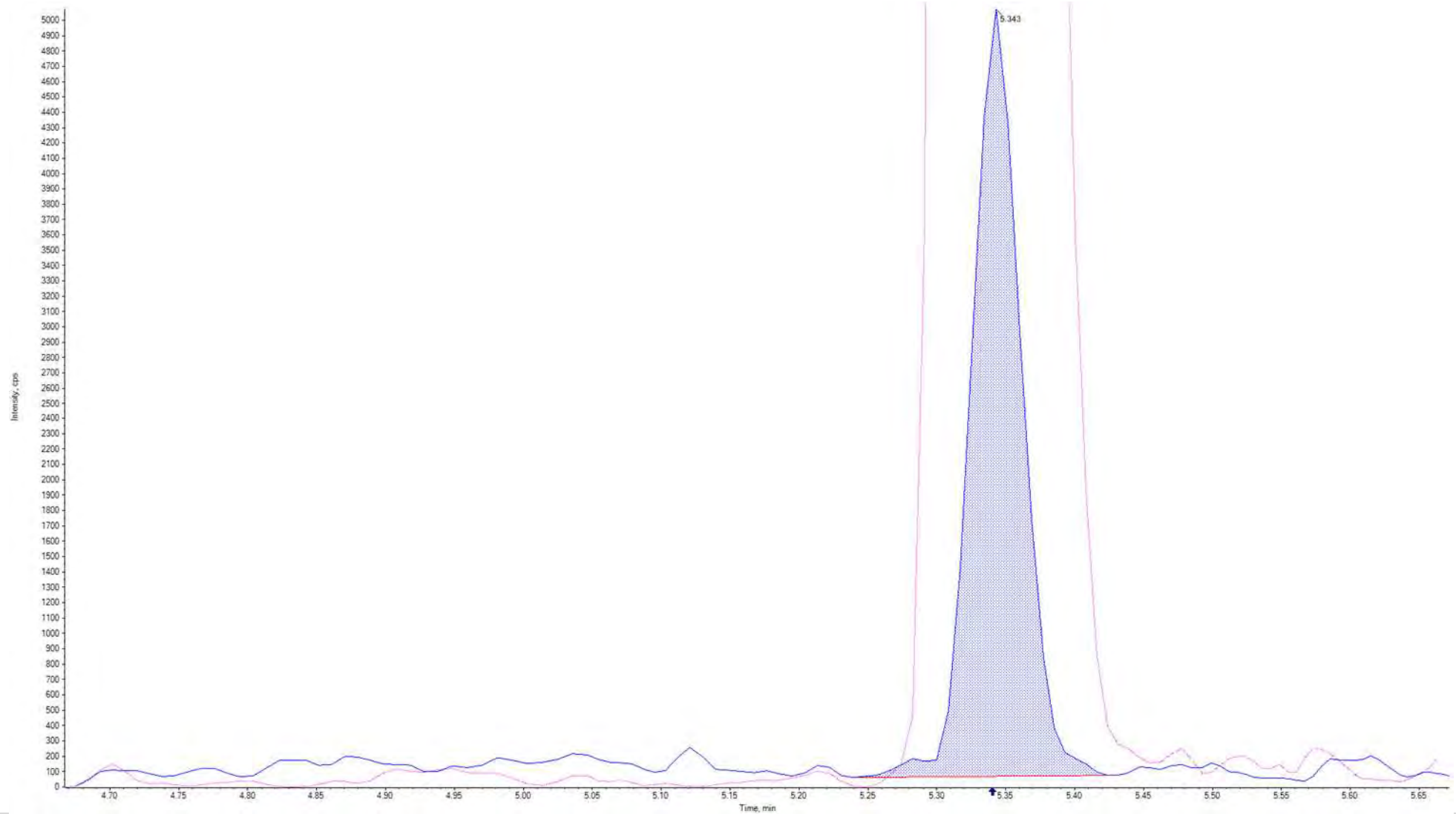
PFHxA_2
Sample: L2450786-07 S/N:323.0 Points Across peak:23



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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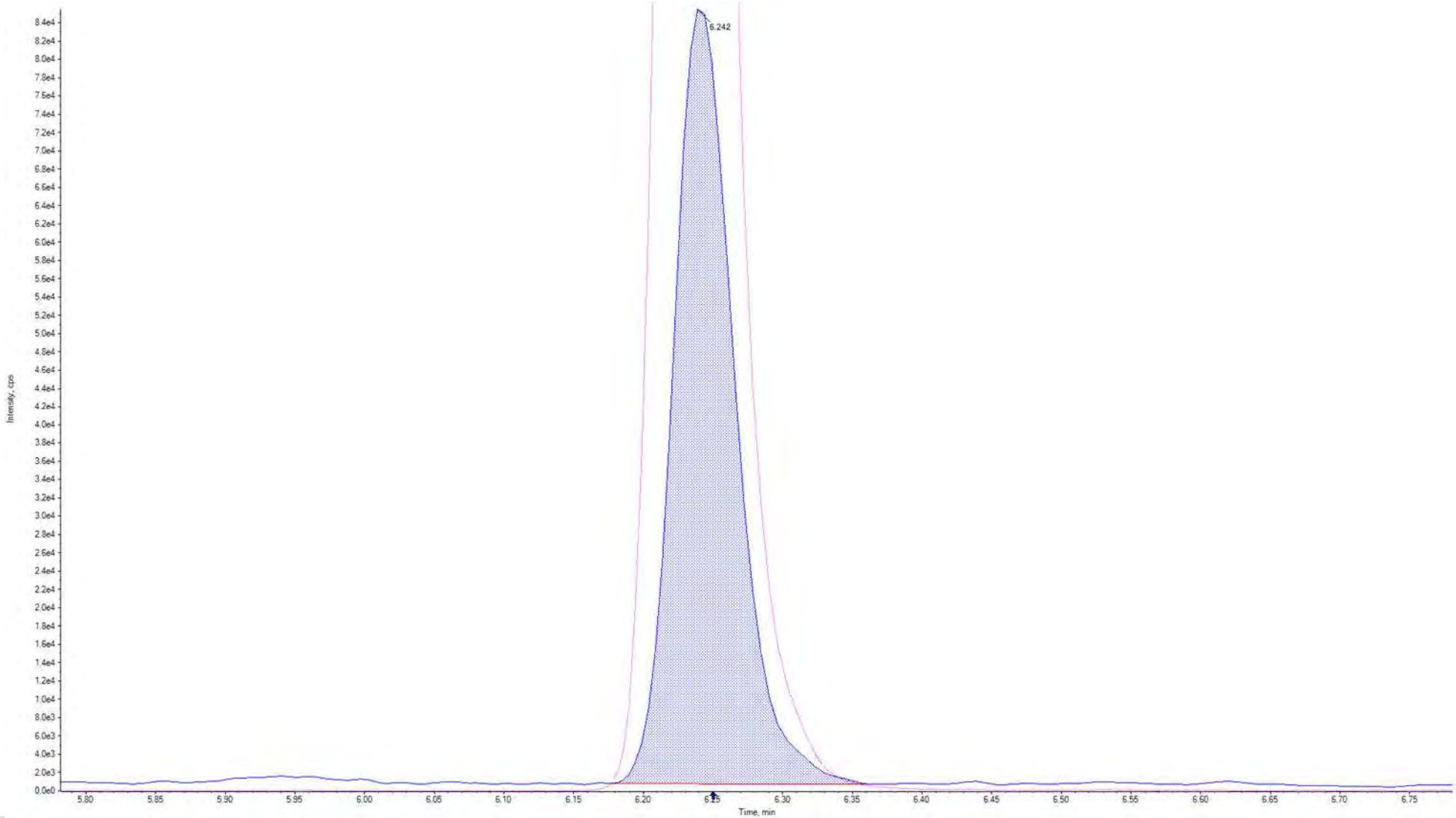
Generated: 9/19/2024 8:04:31 AM

PFHpA
Sample: L2450786-07 S/N:976.5 Points Across peak:34



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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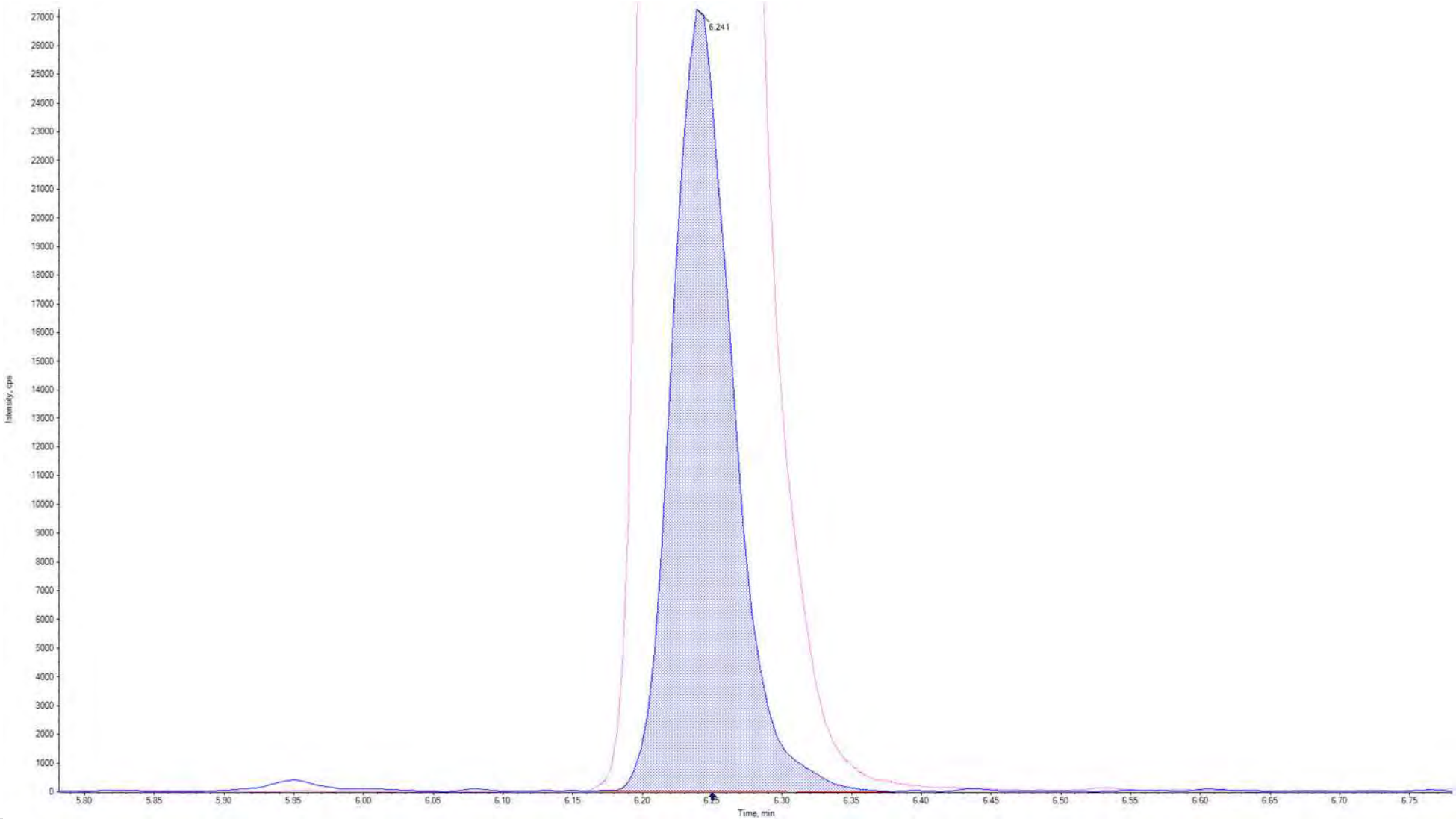
Generated: 9/19/2024 8:04:31 AM

PFHpA_2
Sample: L2450786-07 S/N:2827.1 Points Across peak:40



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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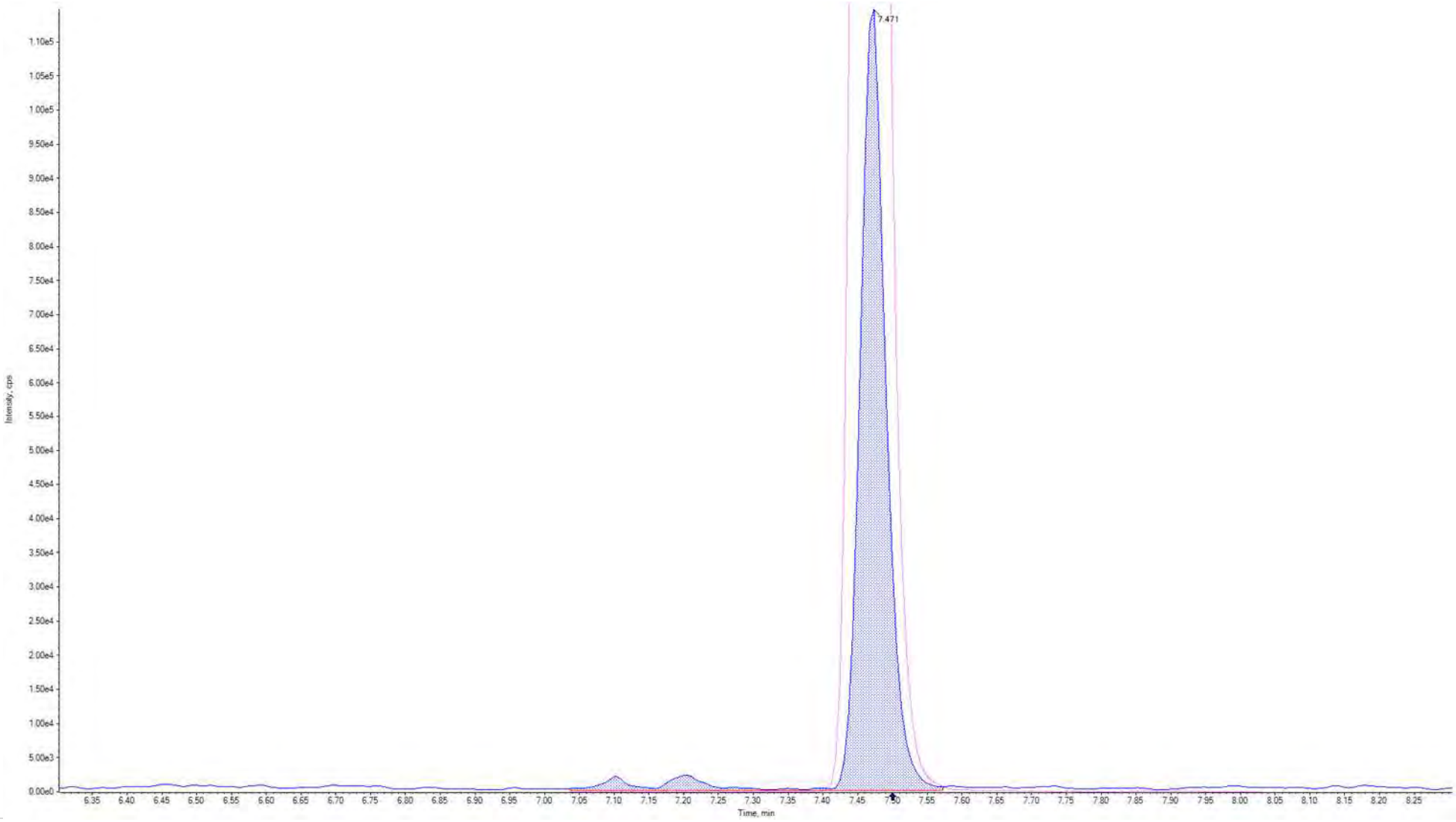
PFOA
Sample: L2450786-07 S/N:1401.3 Points Across peak:86



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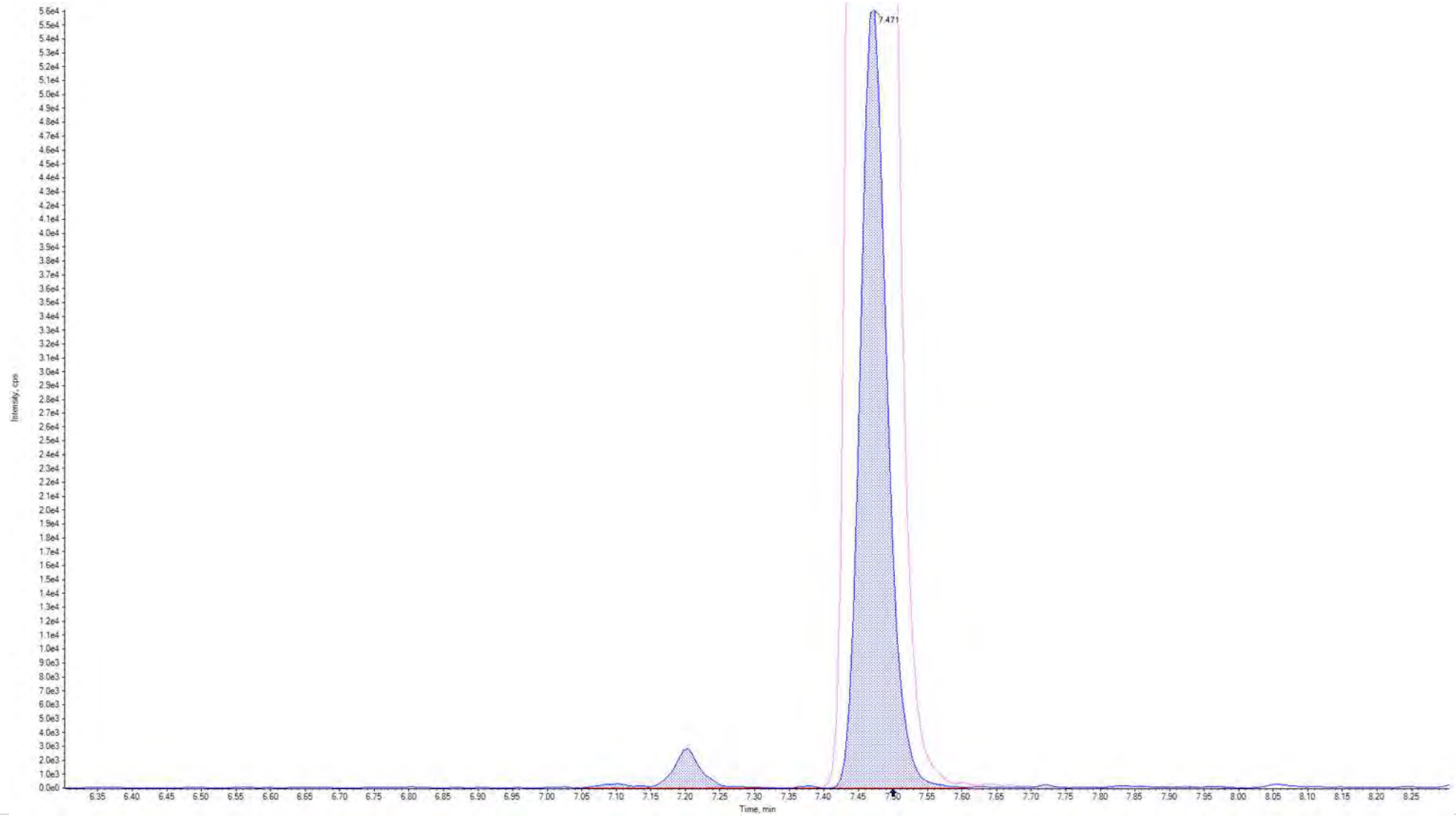
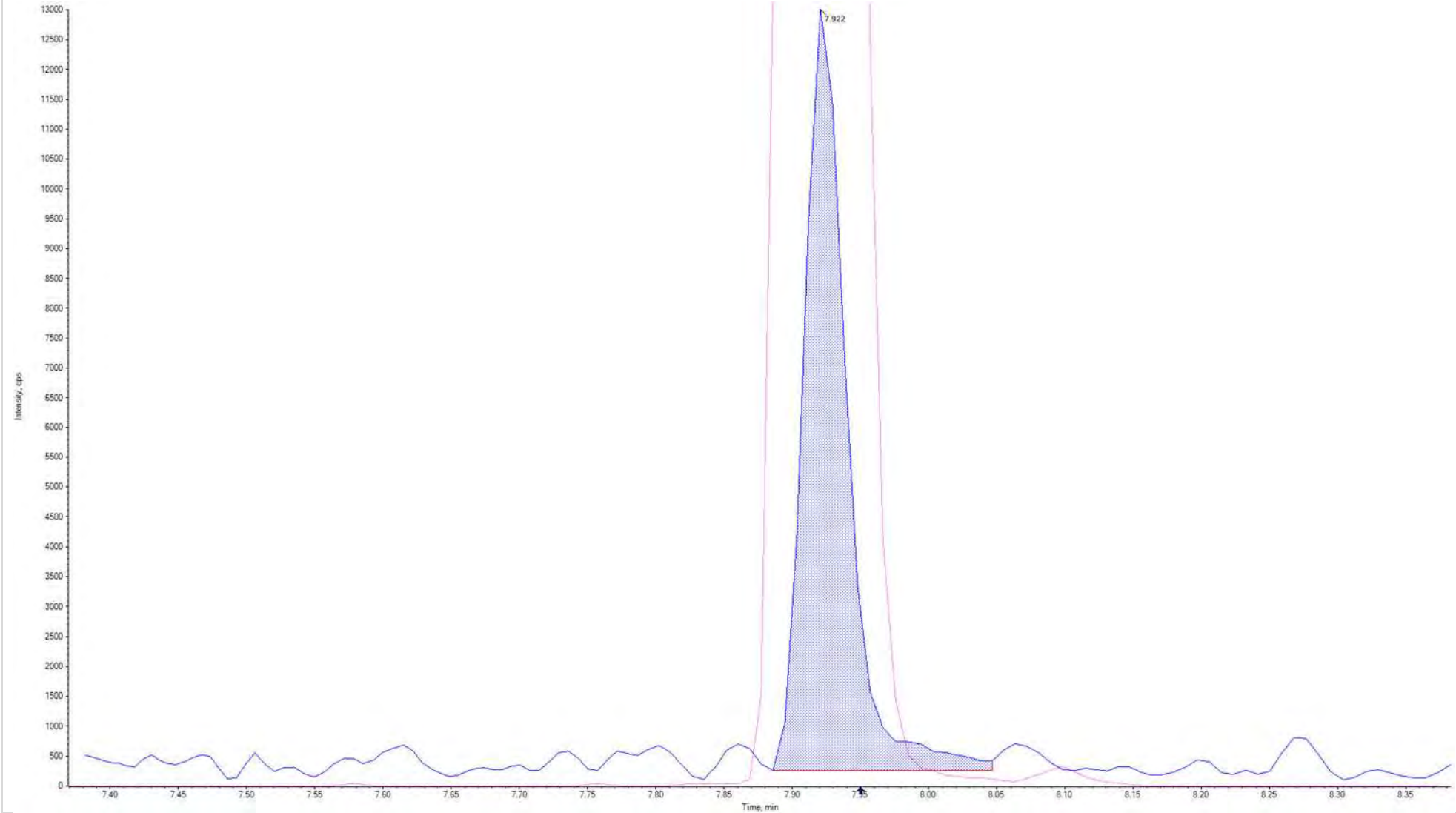
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOA_2
Sample: L2450786-07 S/N:1107905.7 Points Across peak:89



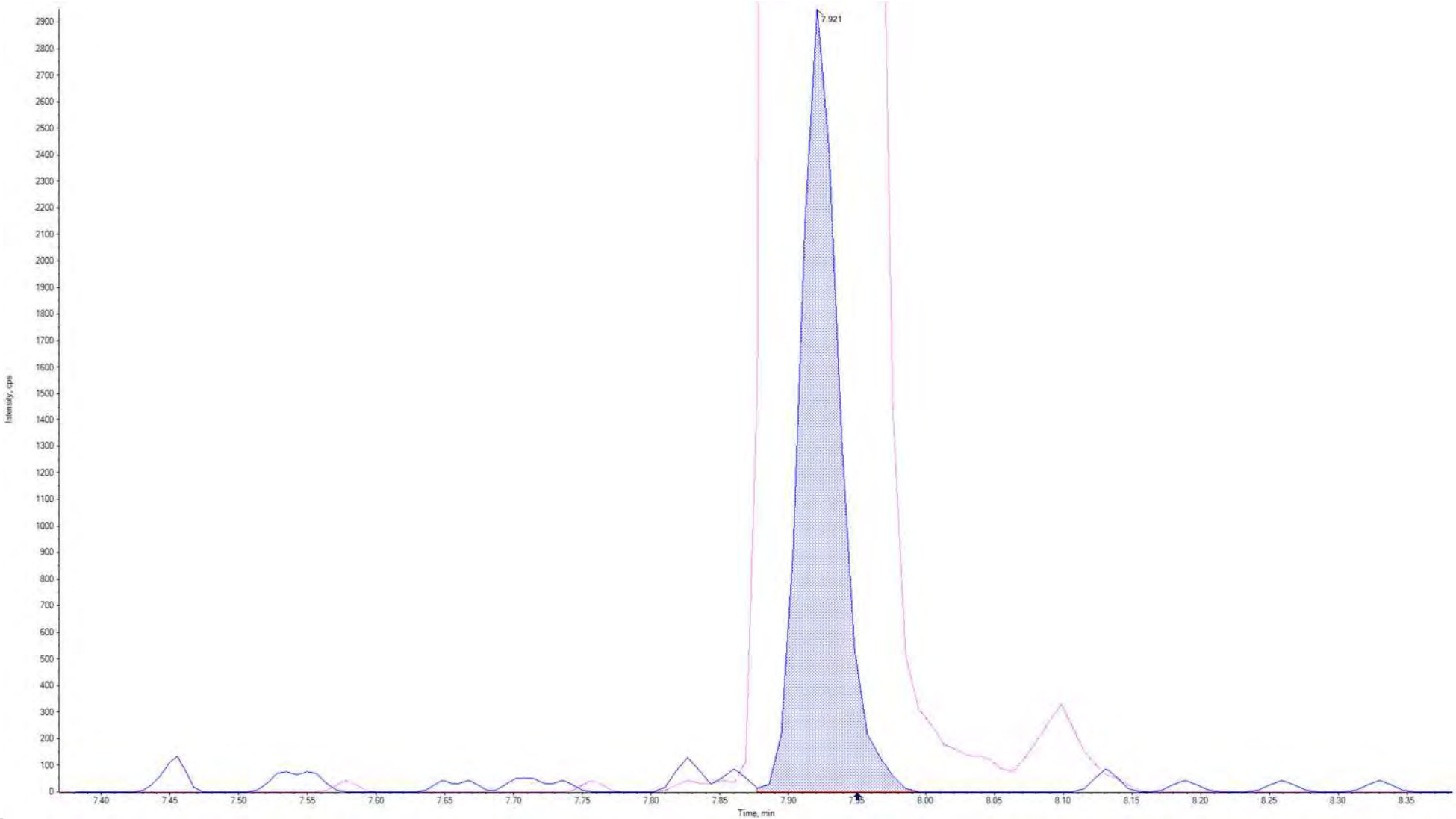
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFNA
Sample: L2450786-07 S/N:238.0 Points Across peak:19



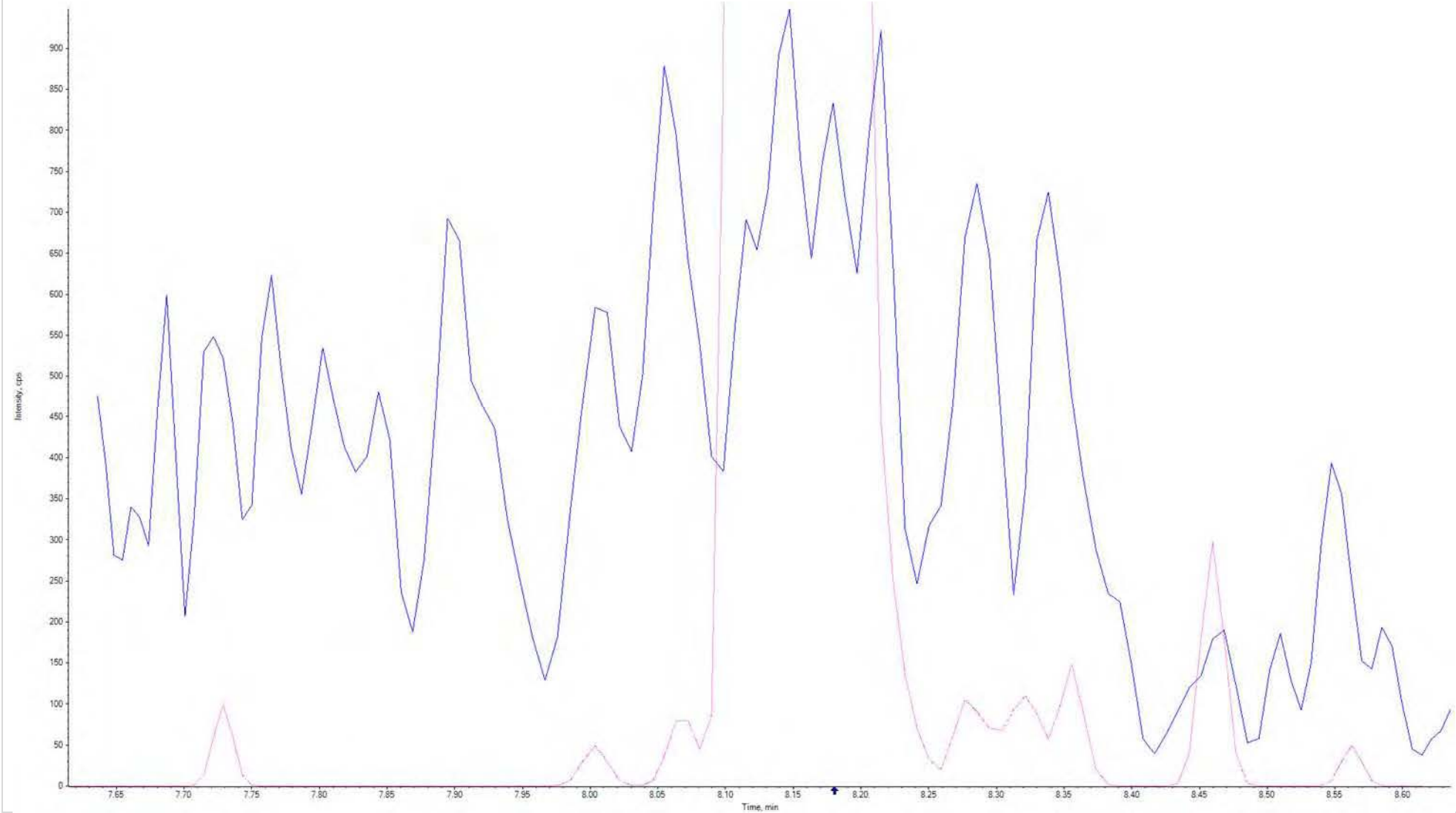
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFNA_2
Sample: L2450786-07 S/N:382.8 Points Across peak:19



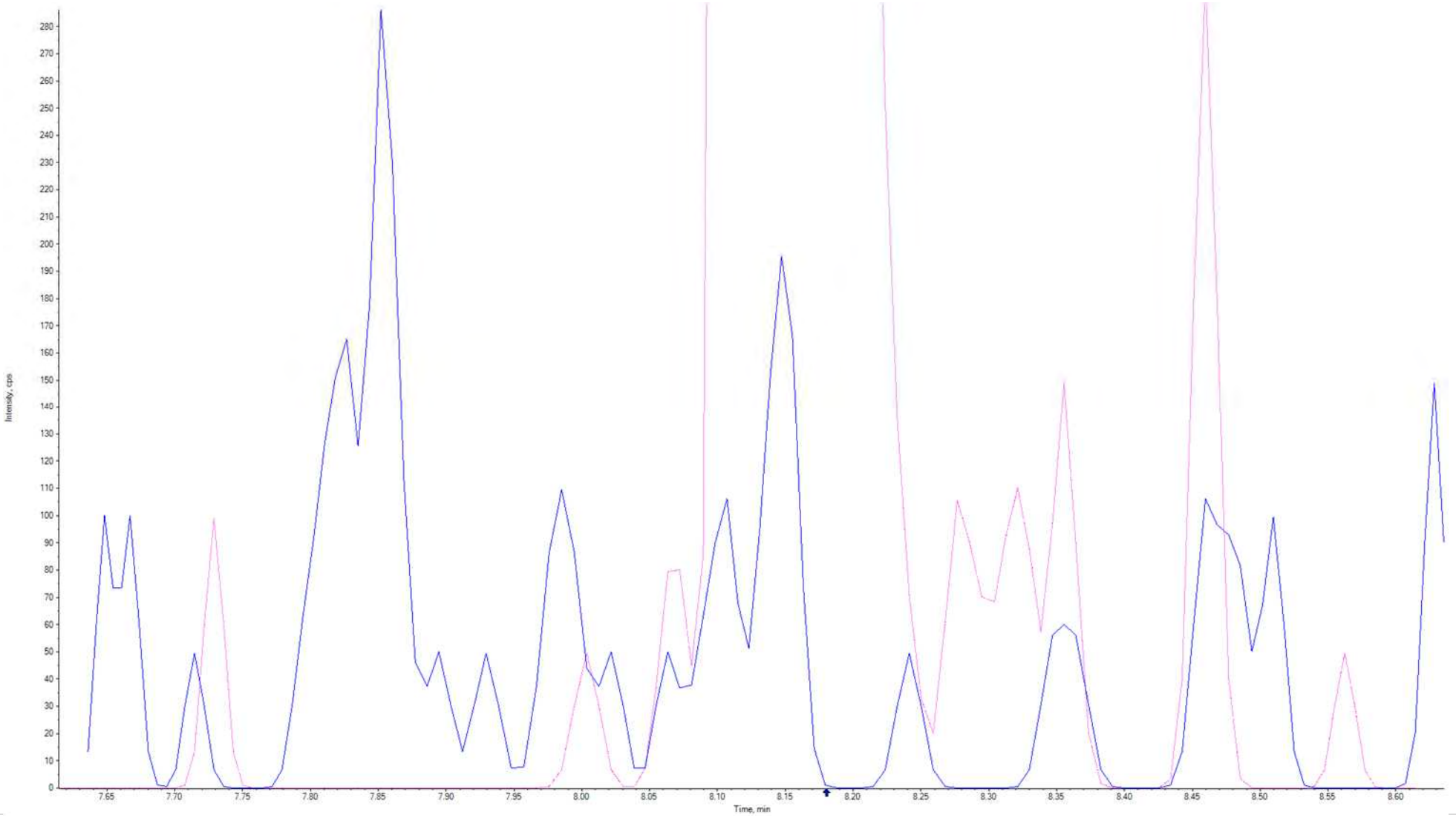
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDA
Sample: L2450786-07 S/N:N/A Points Across peak:N/A



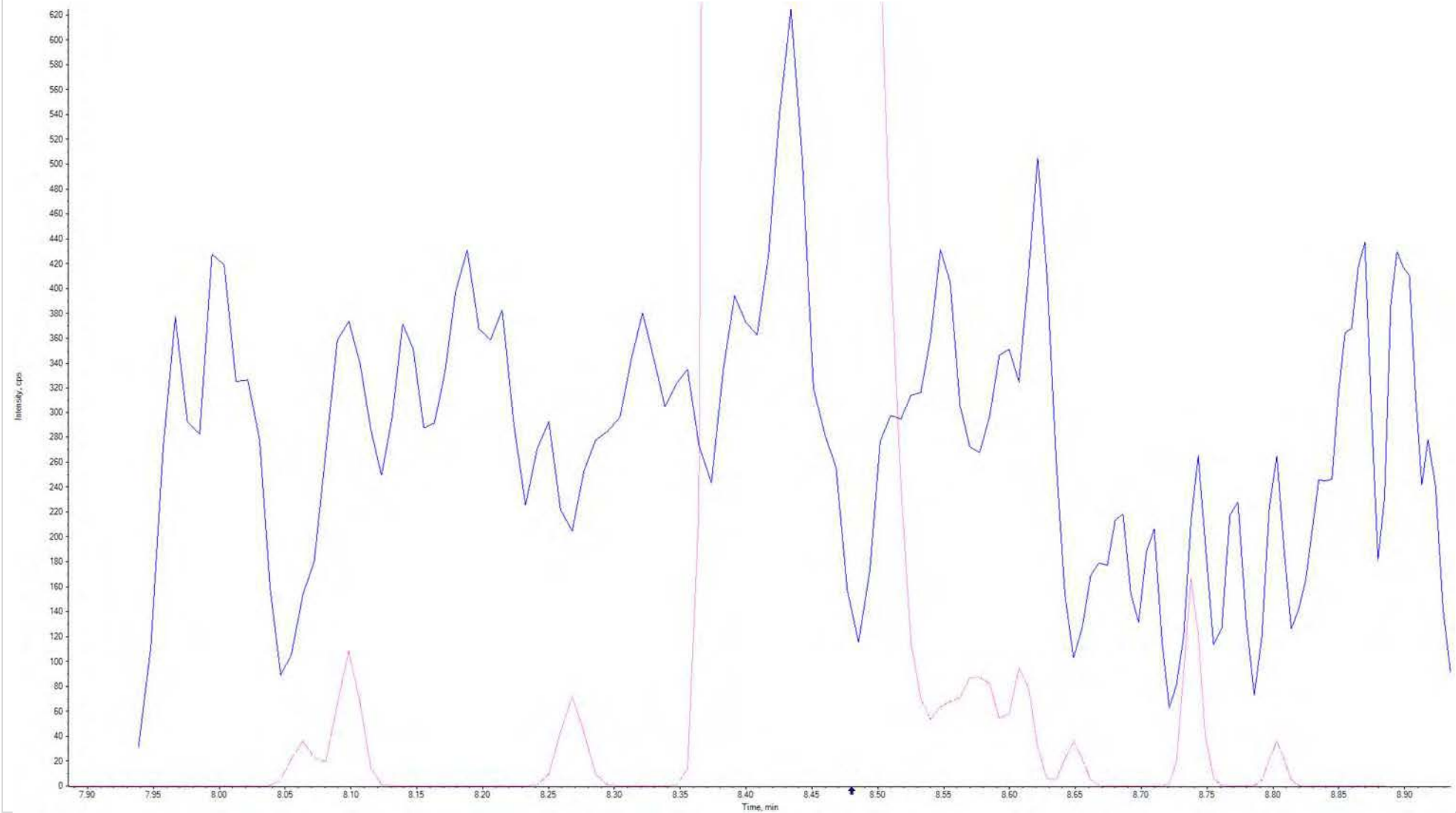
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDA_2
Sample: L2450786-07 S/N:N/A Points Across peak:N/A



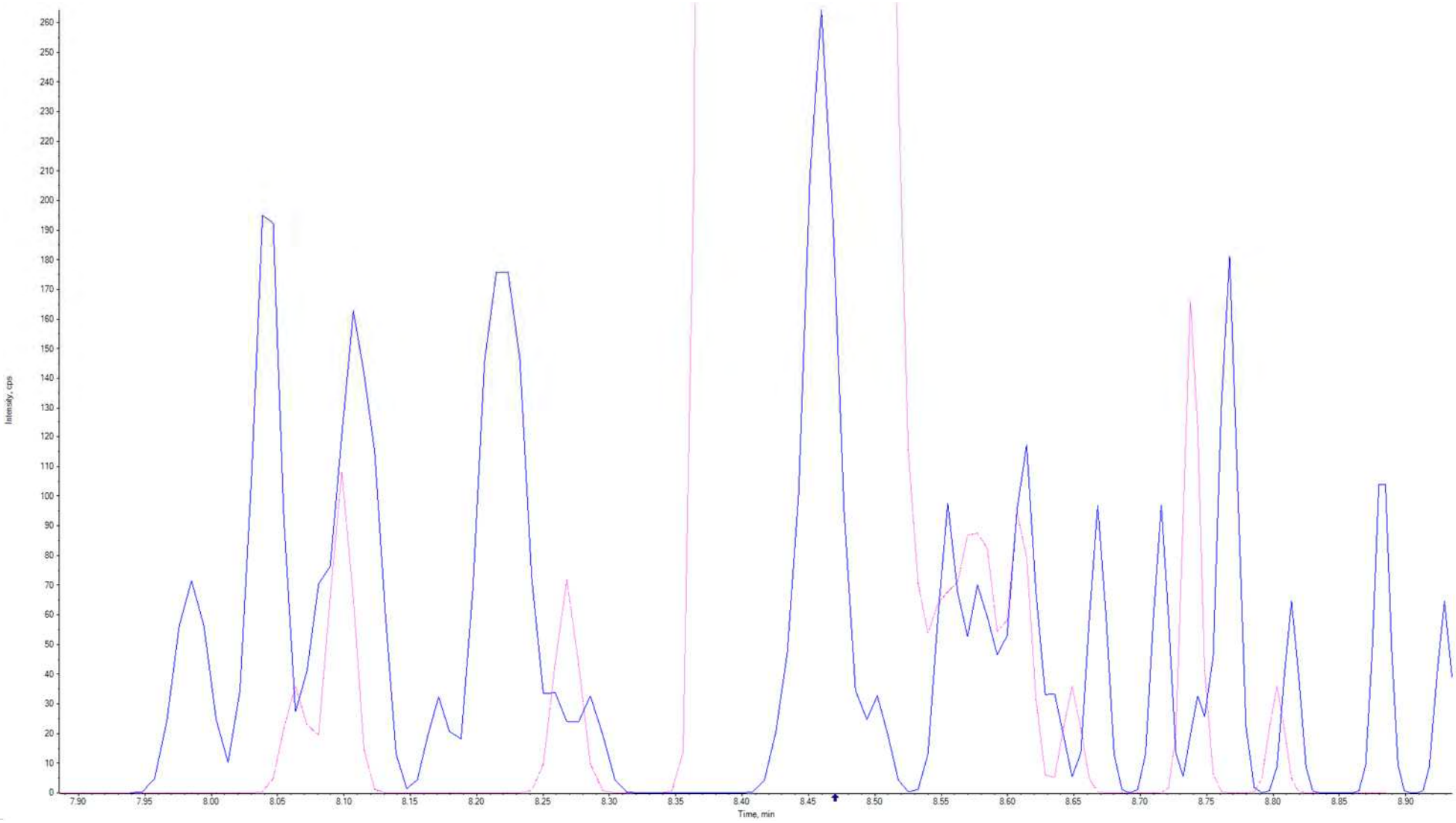
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFUnA
Sample: L2450786-07 S/N:N/A Points Across peak:N/A



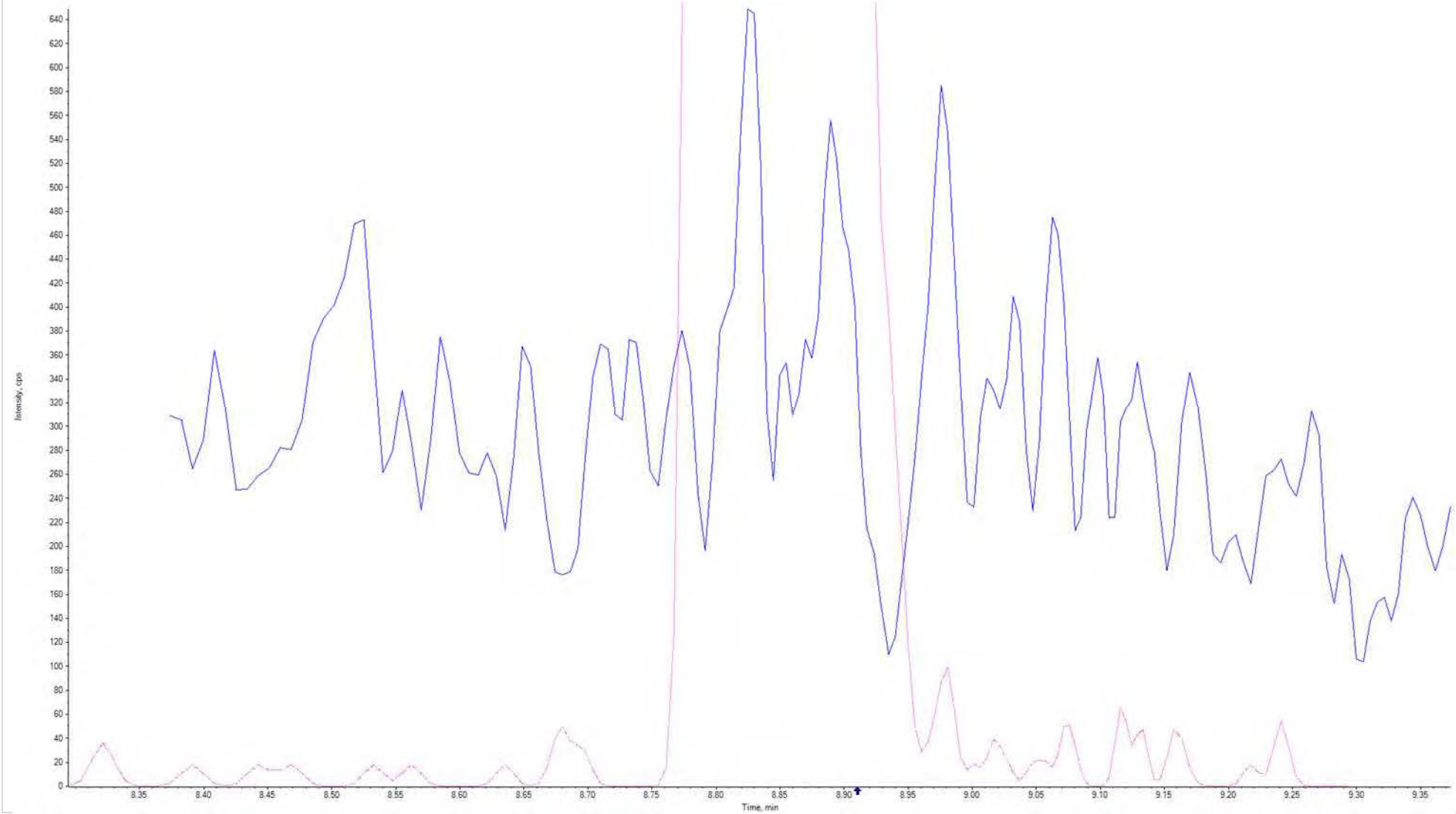
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFUnA_2
Sample: L2450786-07 S/N:N/A Points Across peak:N/A



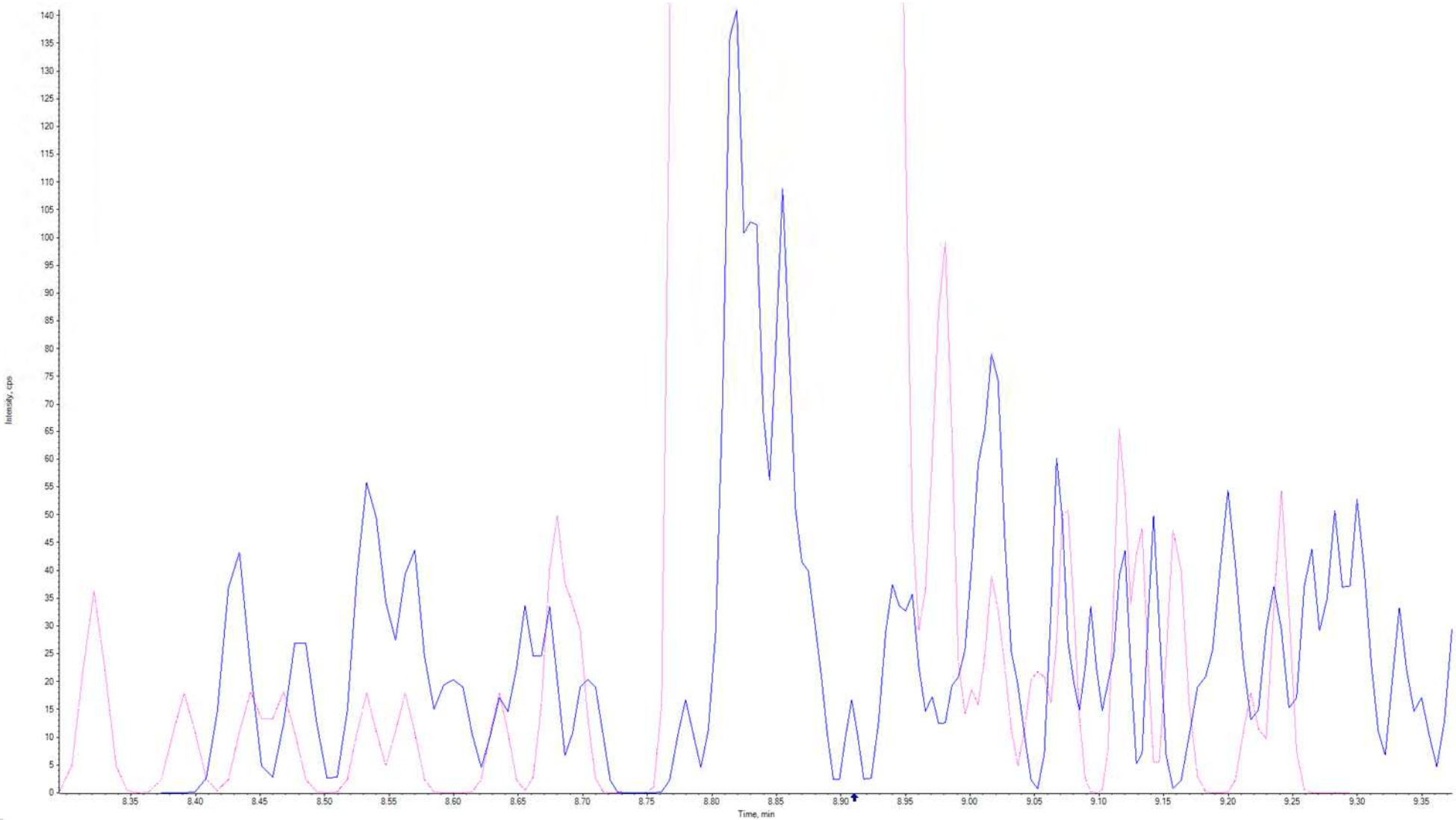
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoA
Sample: L2450786-07 S/N:N/A Points Across peak:N/A



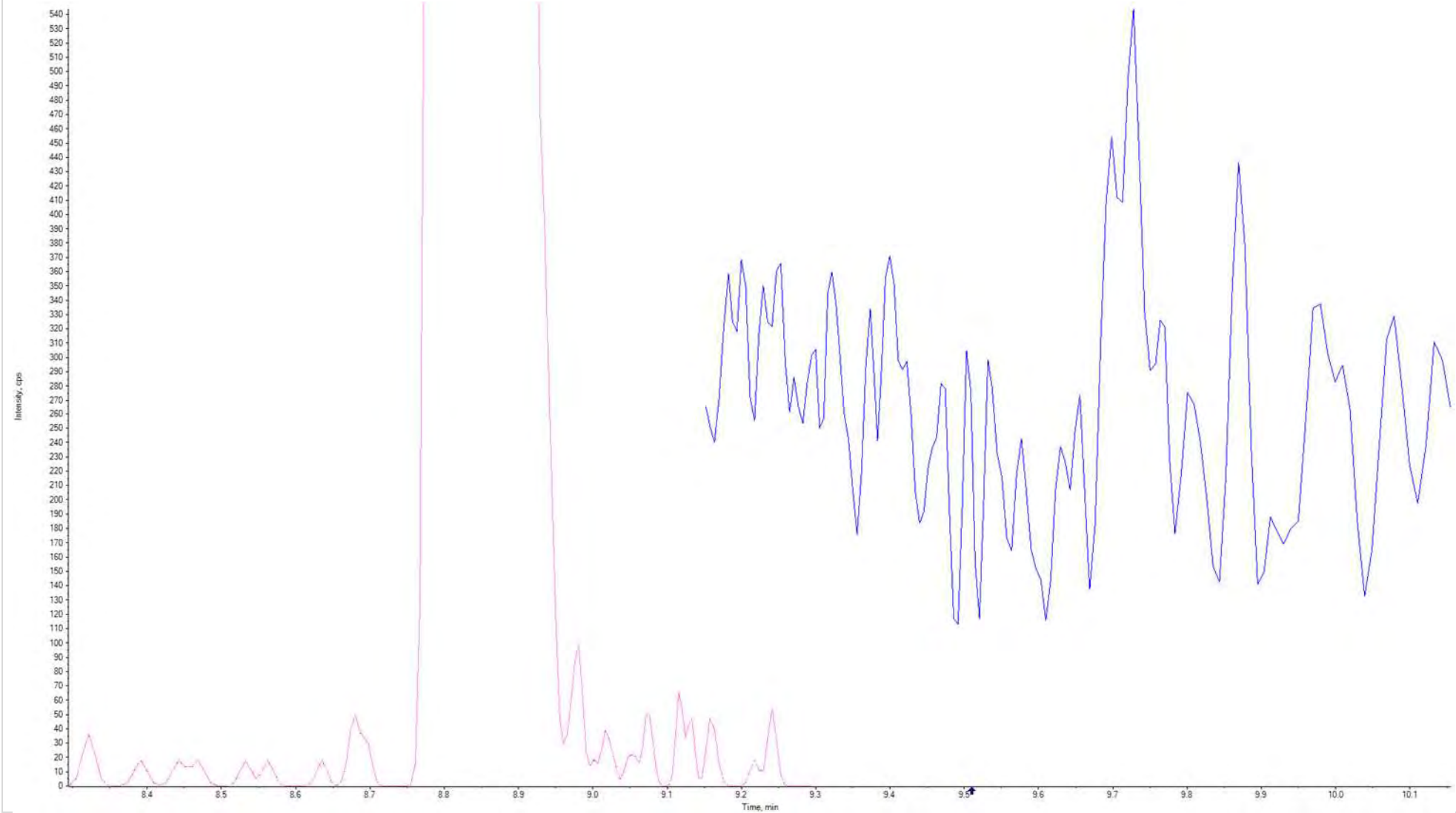
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoA_2
Sample: L2450786-07 S/N:N/A Points Across peak:N/A



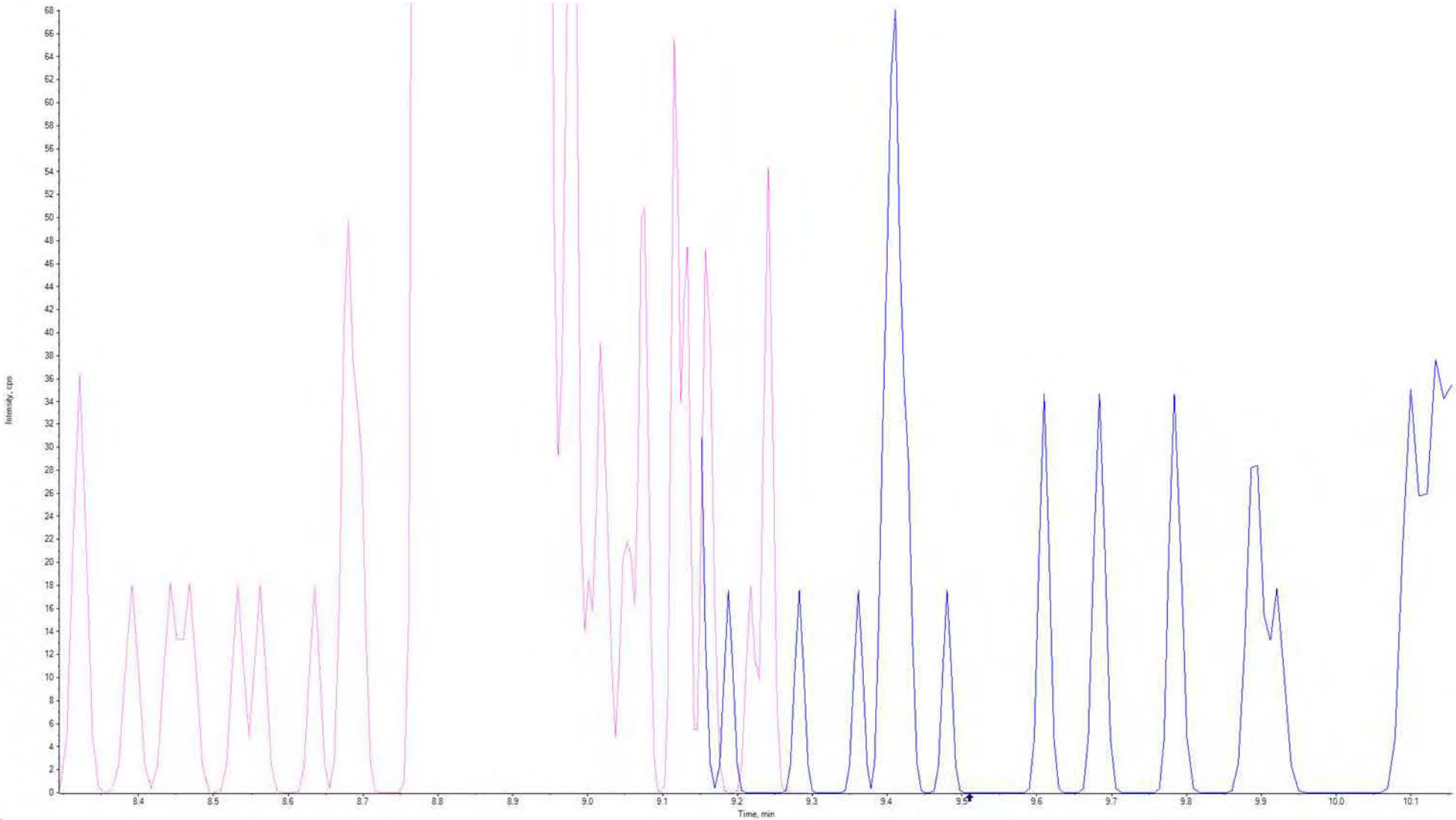
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFTrDA
Sample: L2450786-07 S/N:N/A Points Across peak:N/A



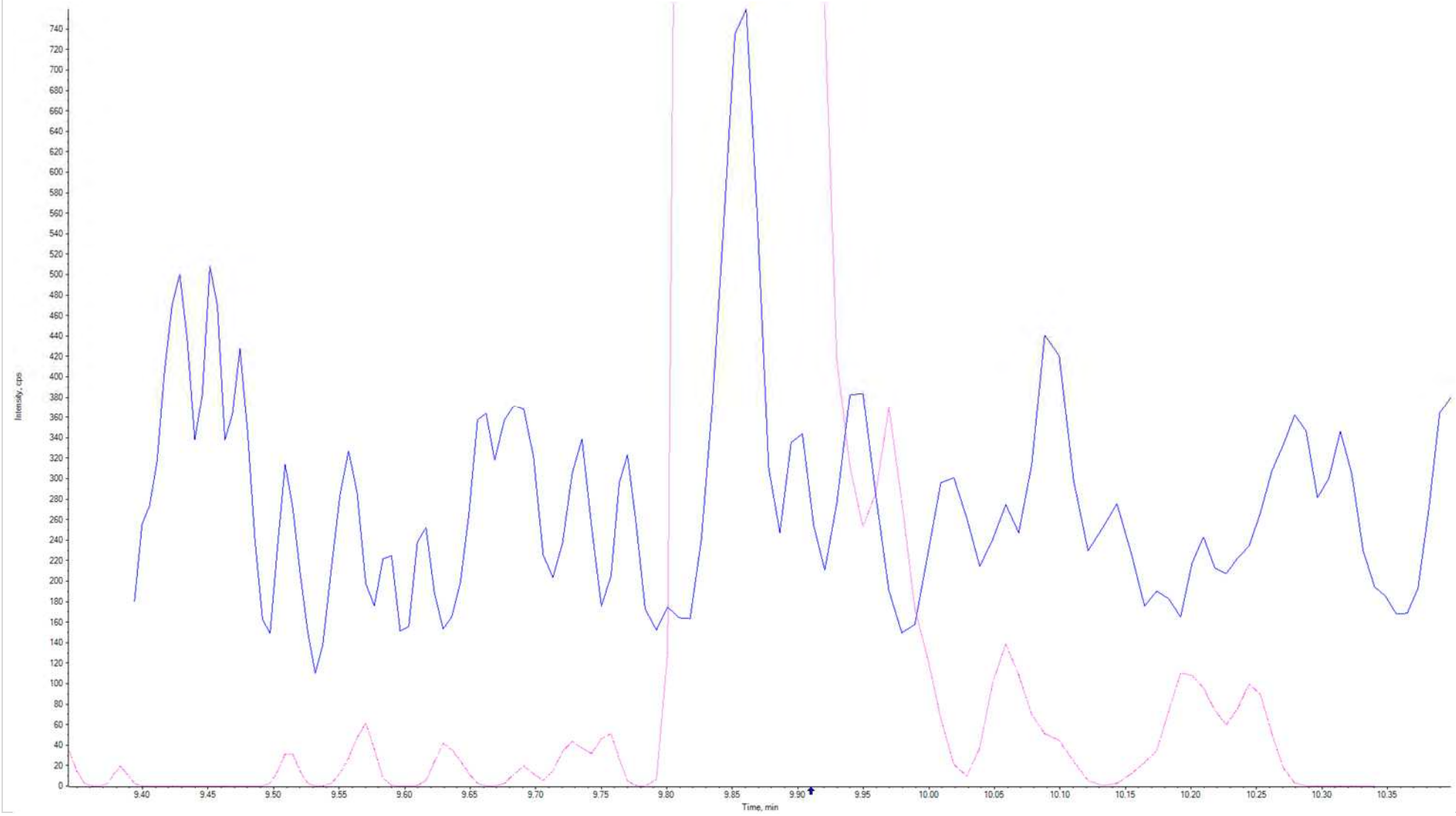
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFTrDA_2
Sample: L2450786-07 S/N:N/A Points Across peak:N/A



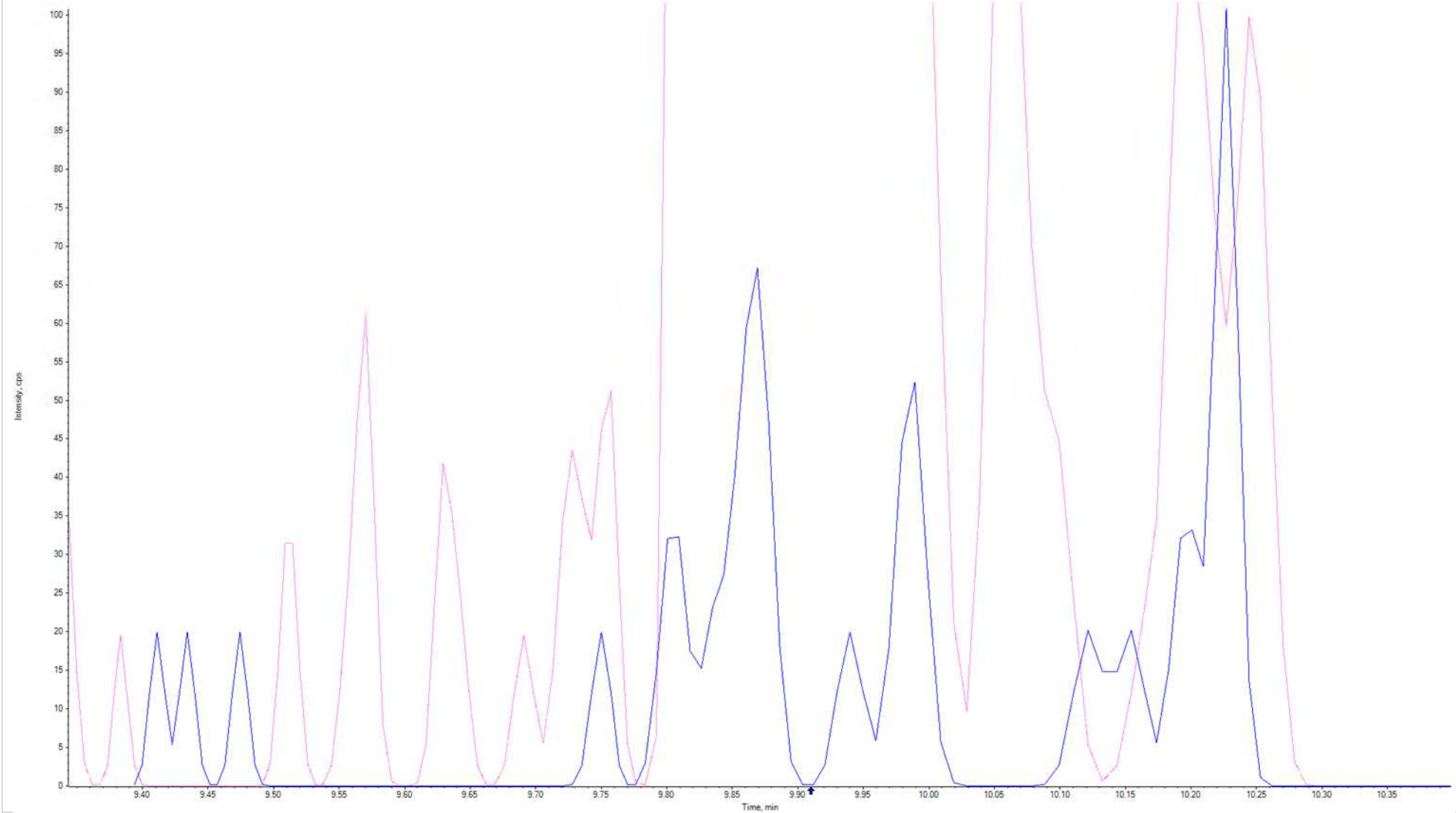
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFTeDA
Sample: L2450786-07 S/N:N/A Points Across peak:N/A



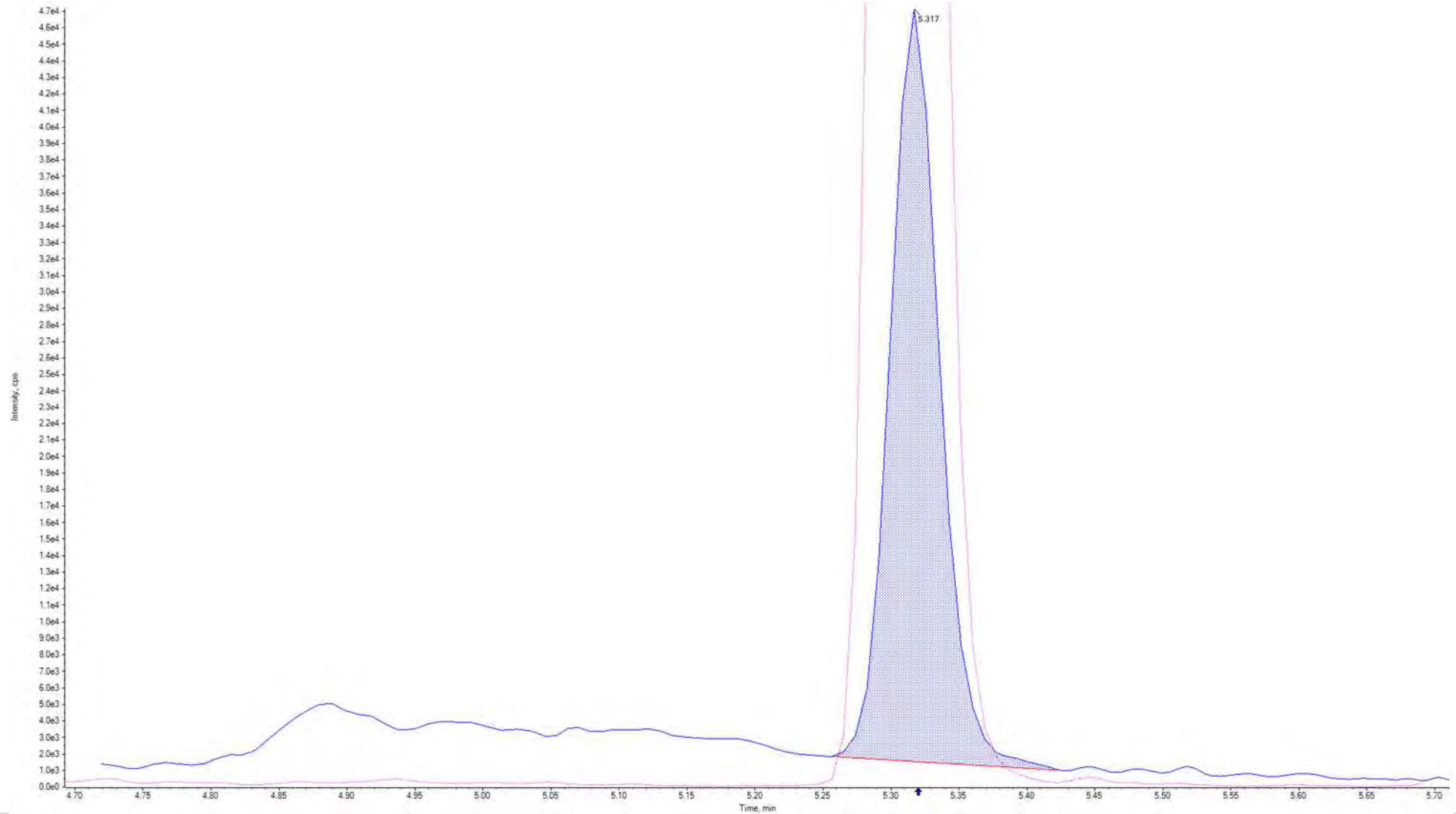
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFTeDA_2
Sample: L2450786-07 S/N:N/A Points Across peak:N/A



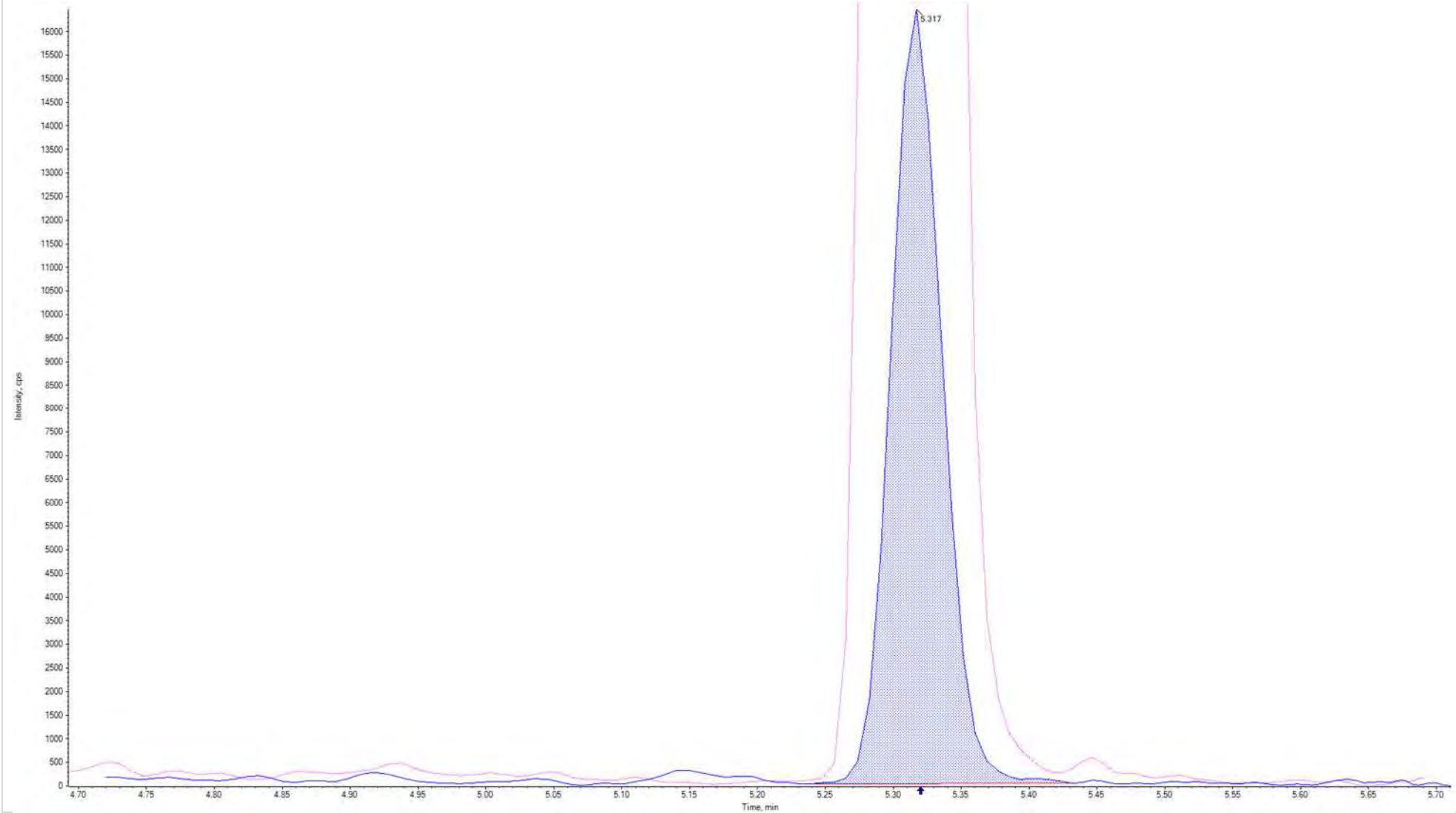
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFBS
Sample: L2450786-07 S/N:74.1 Points Across peak:21



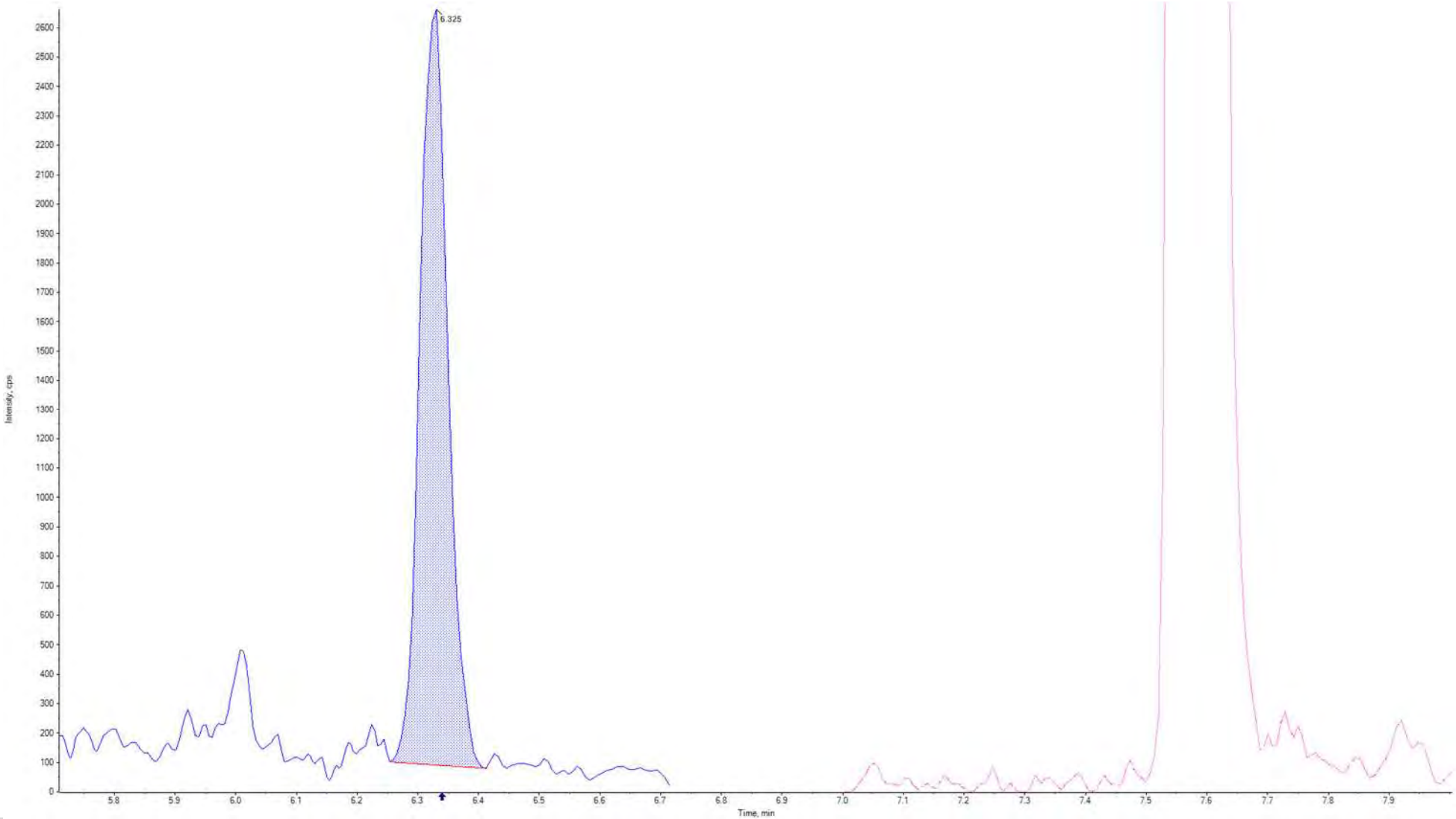
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFBS_2
Sample: L2450786-07 S/N:960.0 Points Across peak:24



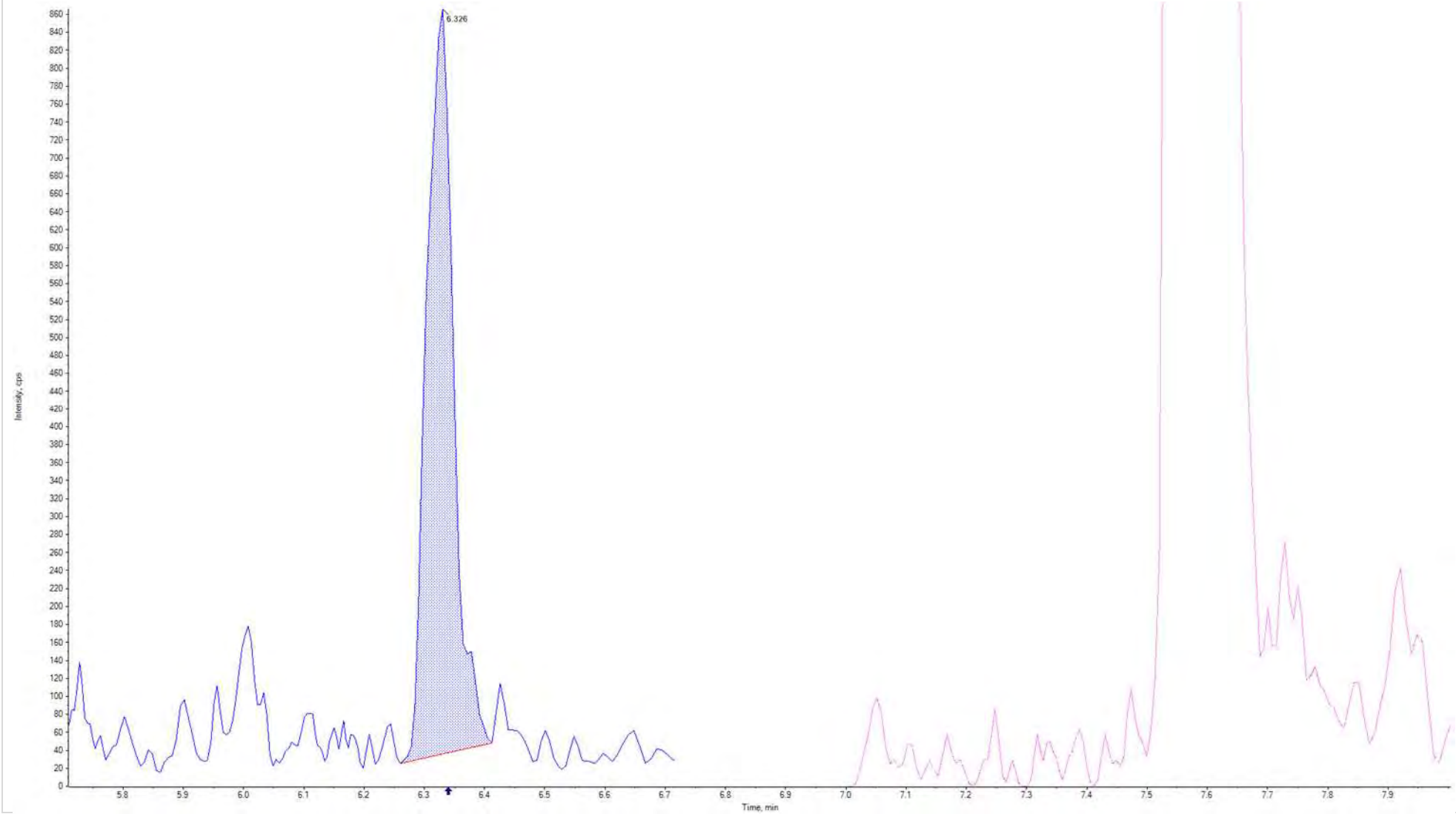
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFPeS
Sample: L2450786-07 S/N:232.3 Points Across peak:25



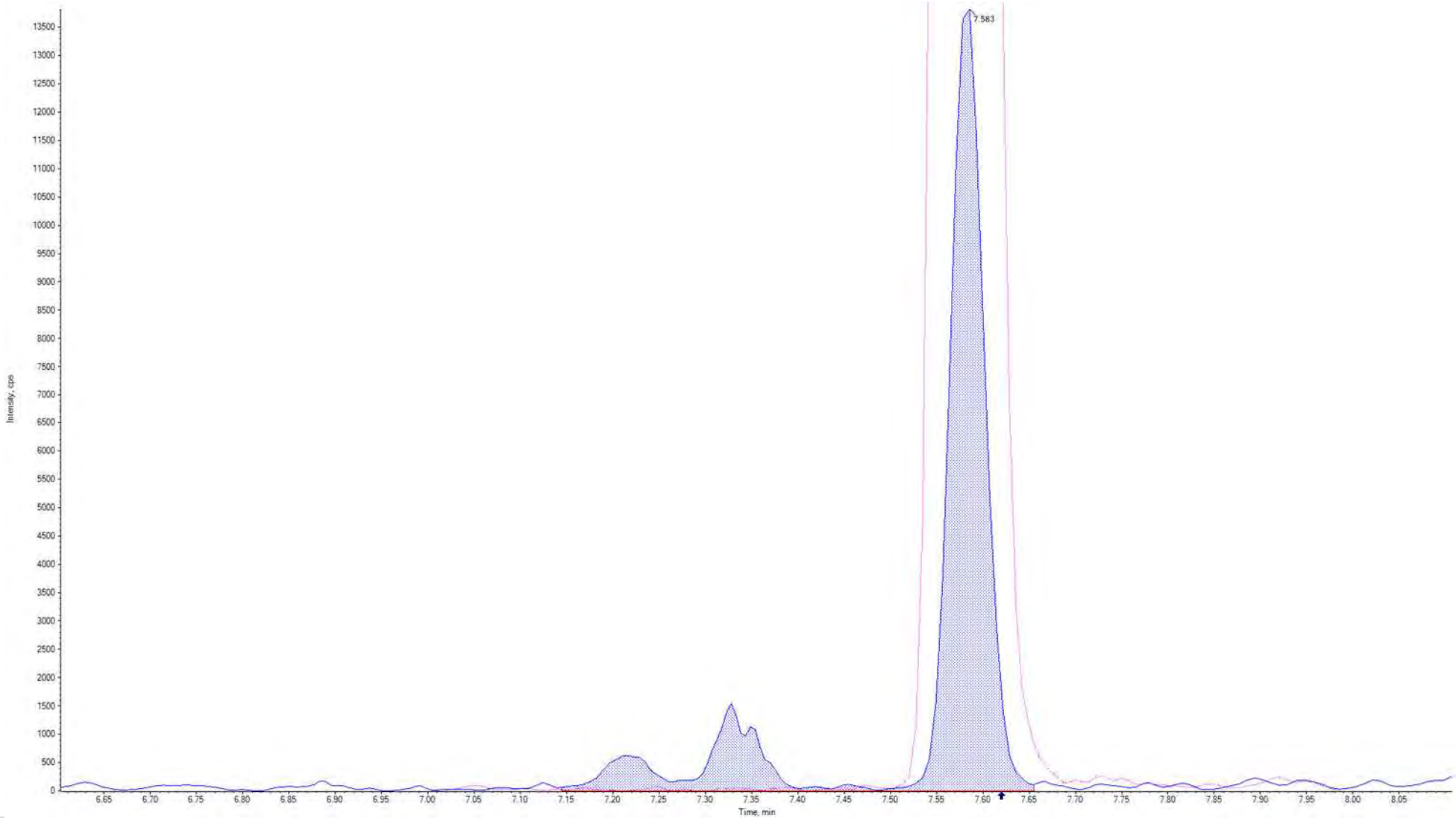
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFPeS_2
Sample: L2450786-07 S/N:123.3 Points Across peak:24



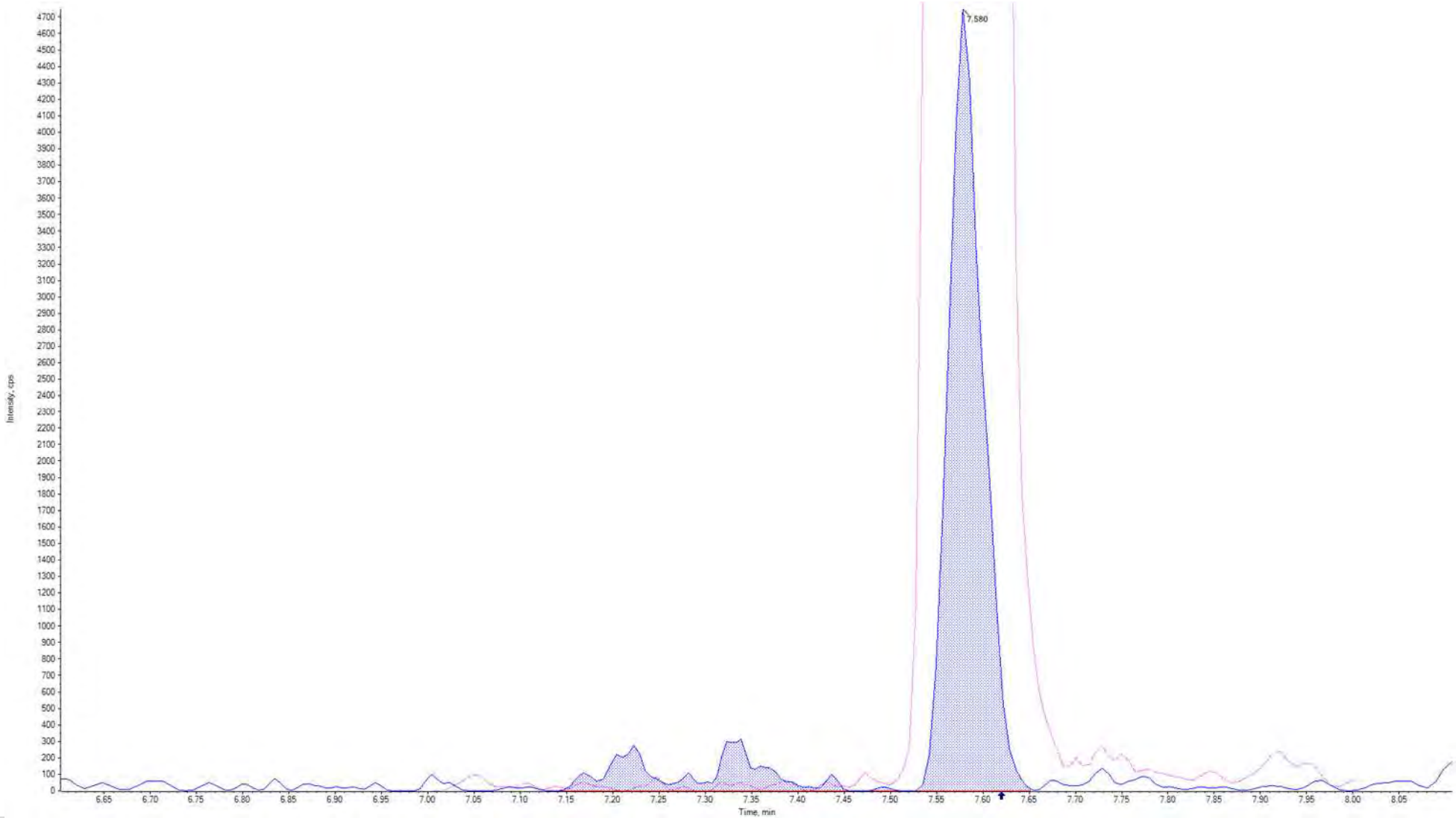
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHxS
Sample: L2450786-07 S/N:2398.9 Points Across peak:84



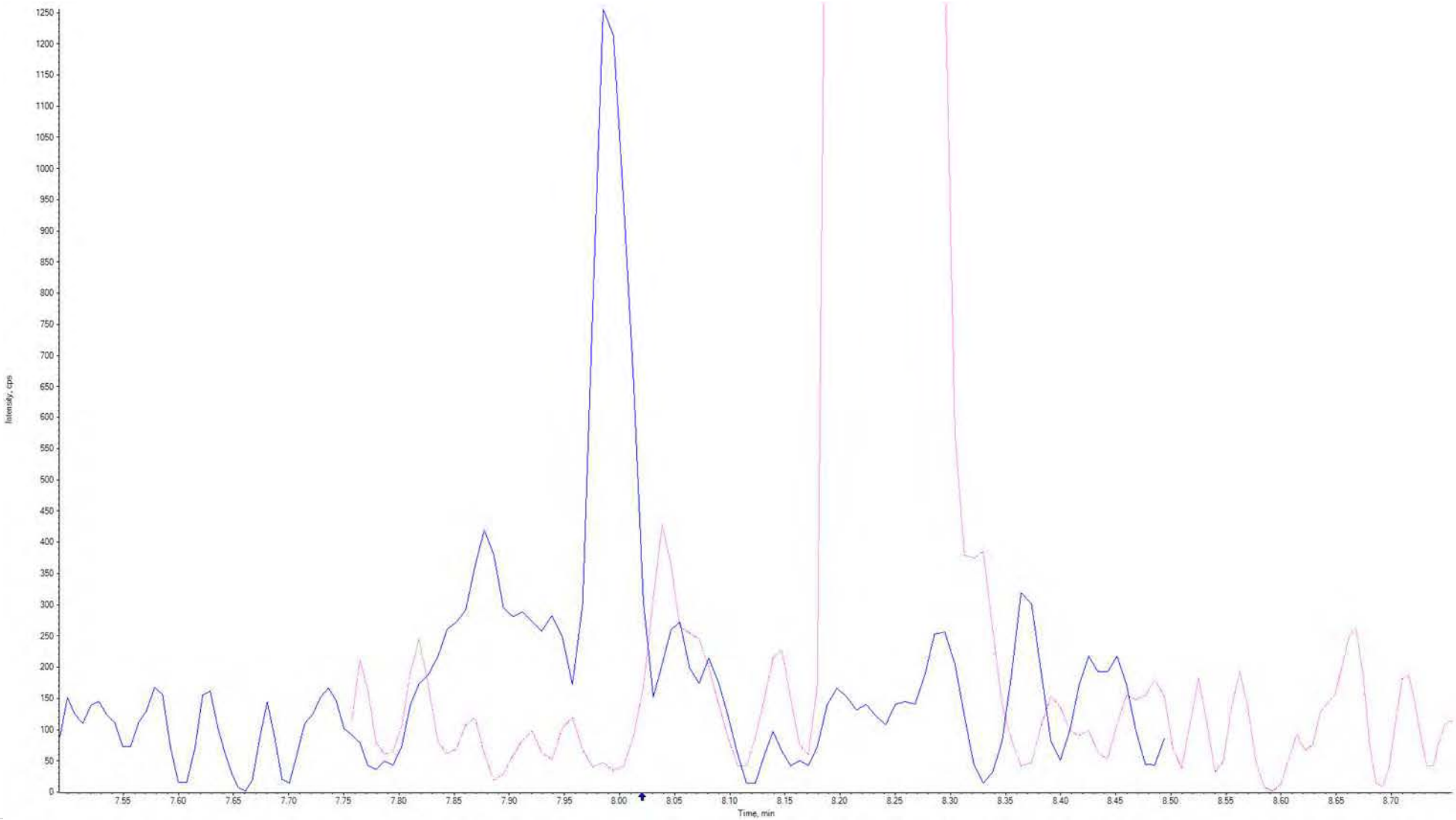
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHxS_2
Sample: L2450786-07 S/N:17161.8 Points Across peak:83



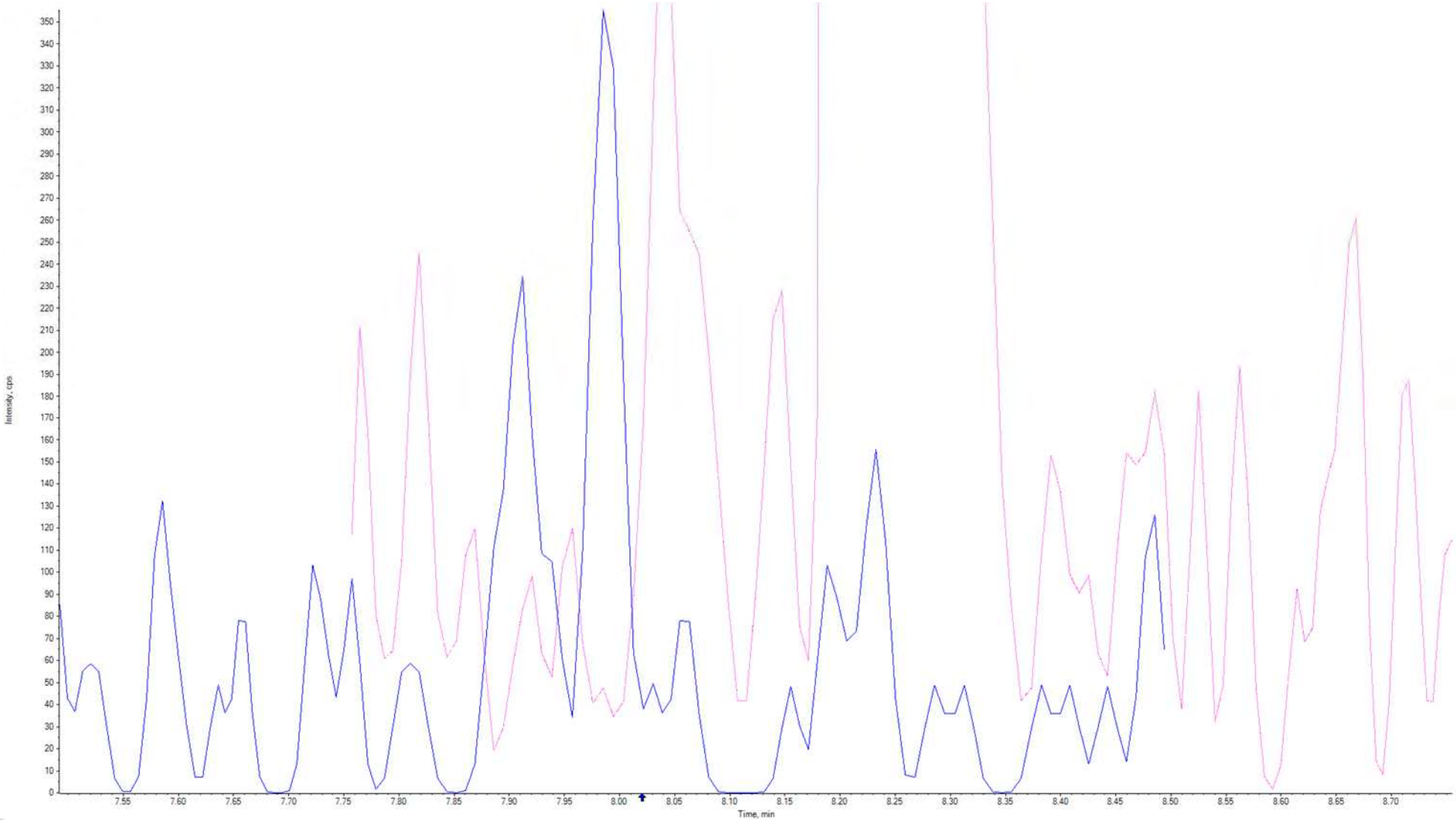
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHpS
Sample: L2450786-07 S/N:N/A Points Across peak:N/A



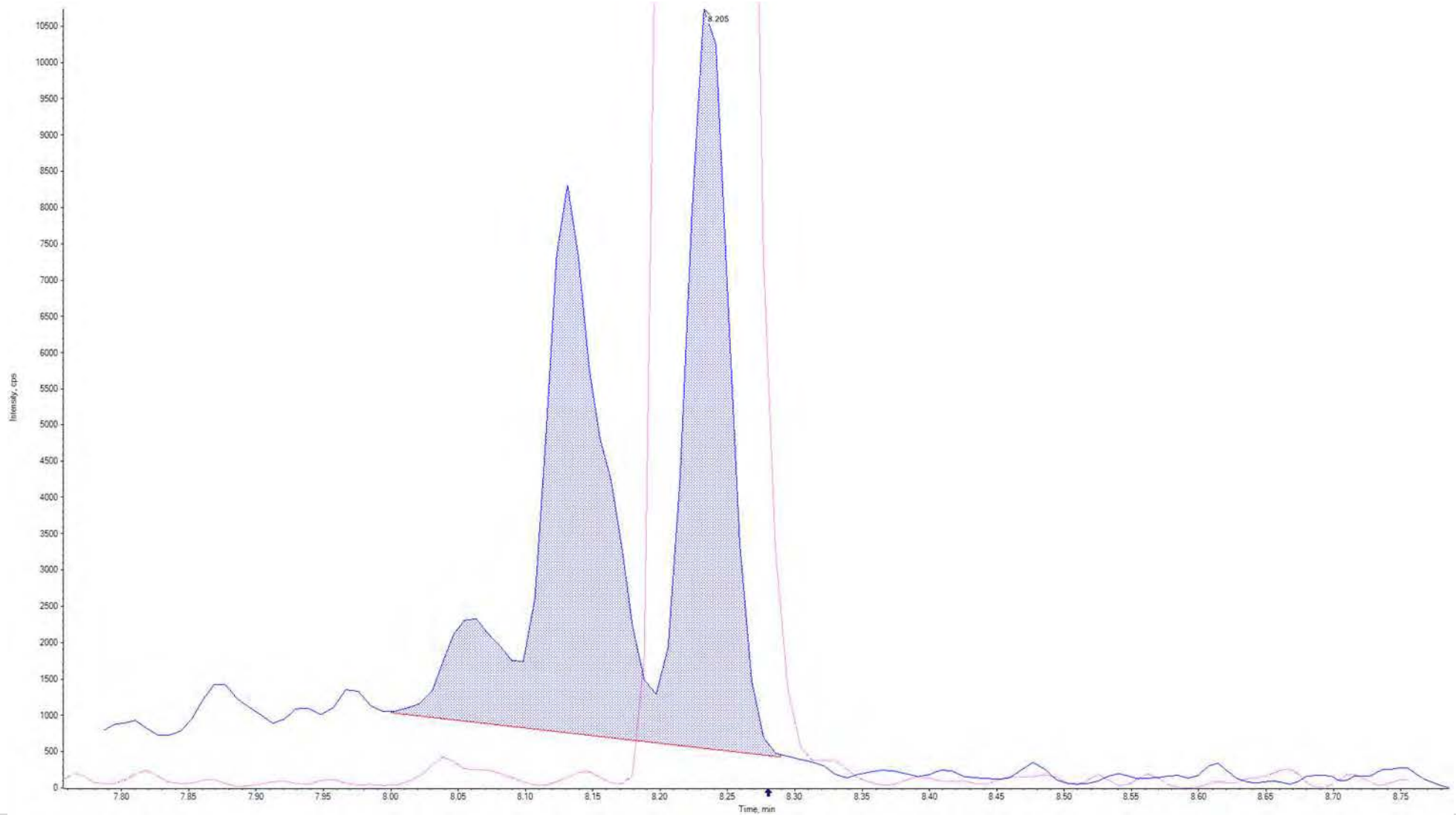
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHpS_2
Sample: L2450786-07 S/N:N/A Points Across peak:N/A



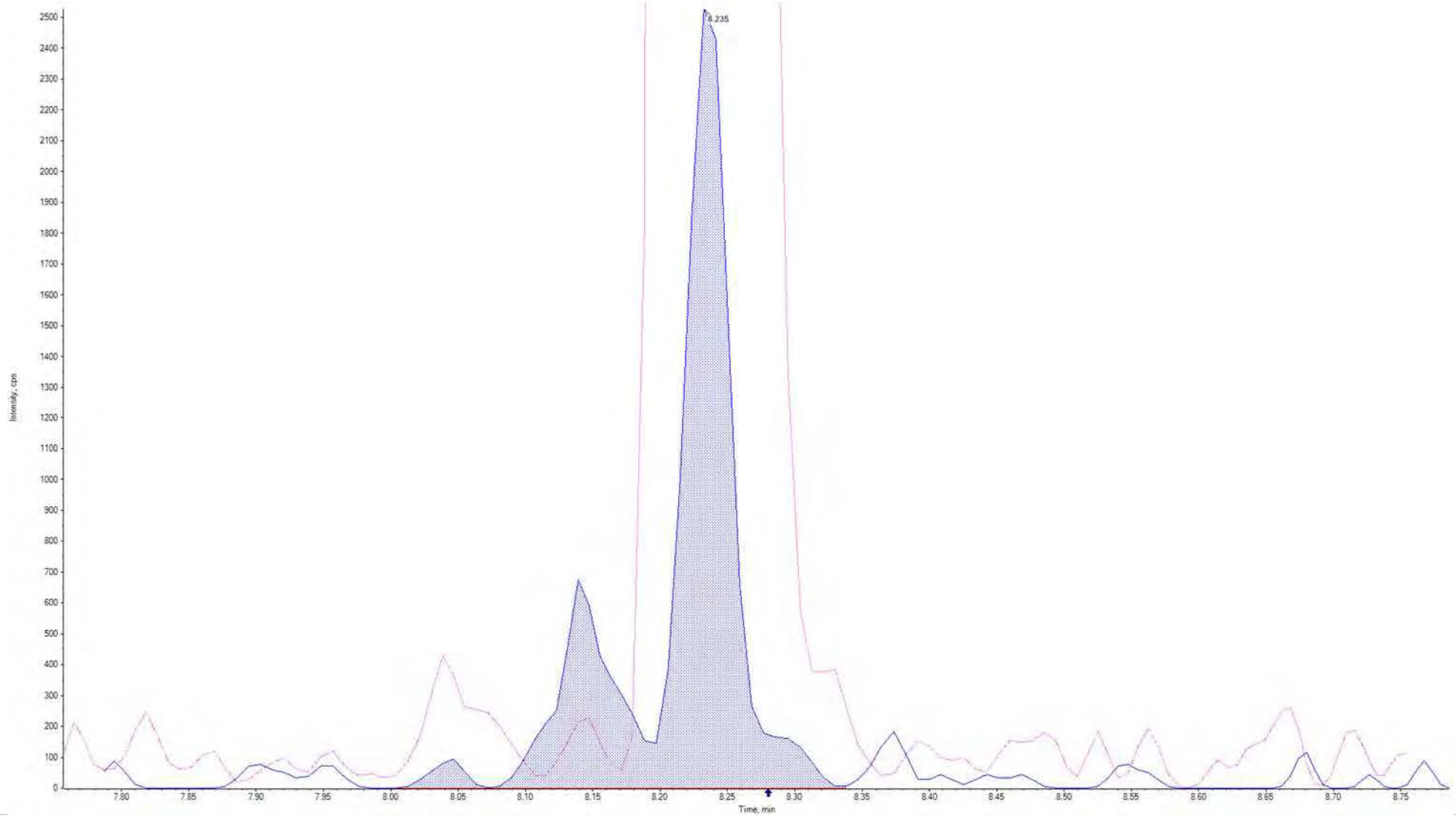
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOS
Sample: L2450786-07 S/N:354.9 Points Across peak:36



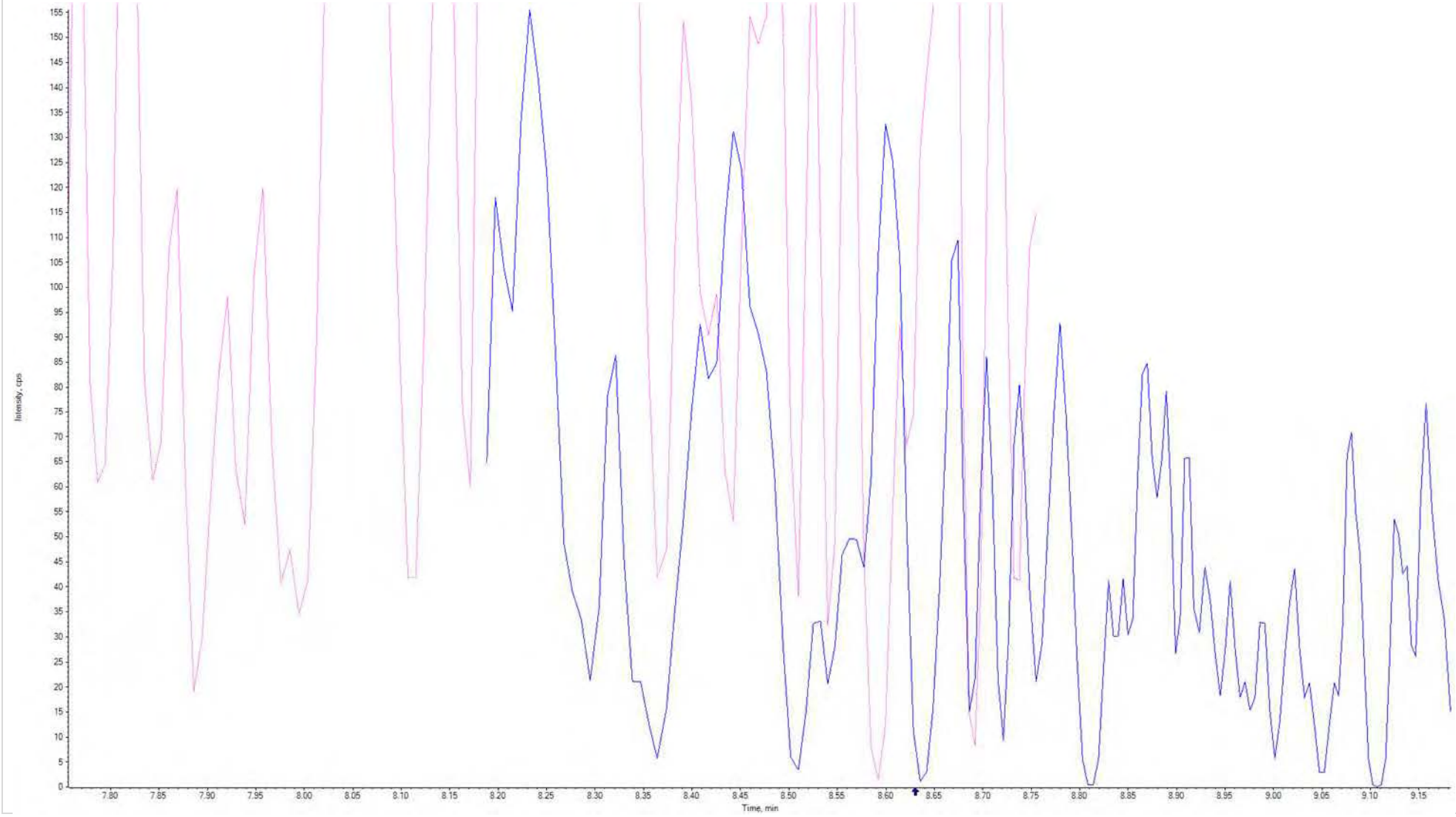
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOS_2
Sample: L2450786-07 S/N:126.0 Points Across peak:41



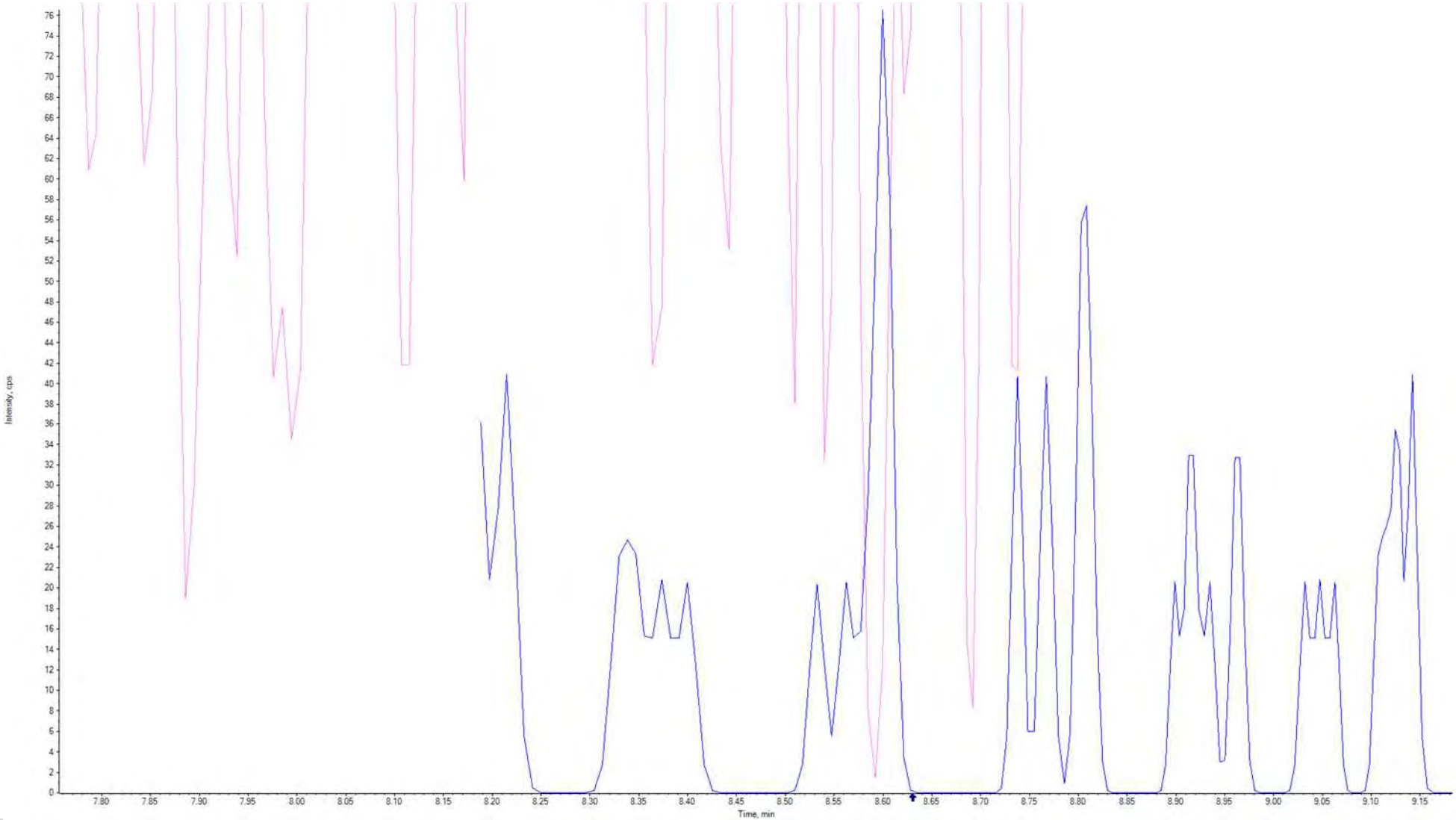
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFNS
Sample: L2450786-07 S/N:N/A Points Across peak:N/A



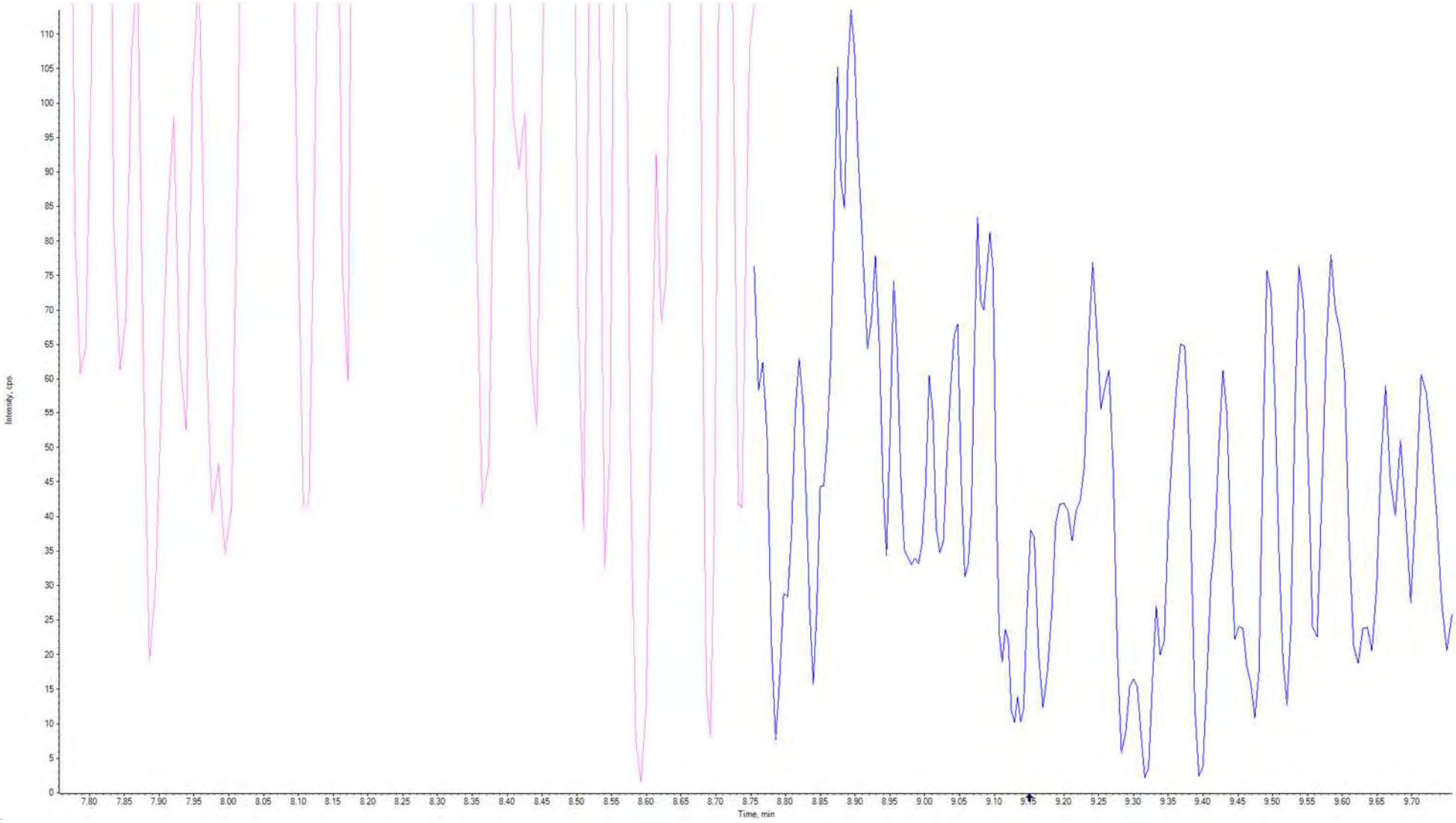
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFNS_2
Sample: L2450786-07 S/N:N/A Points Across peak:N/A



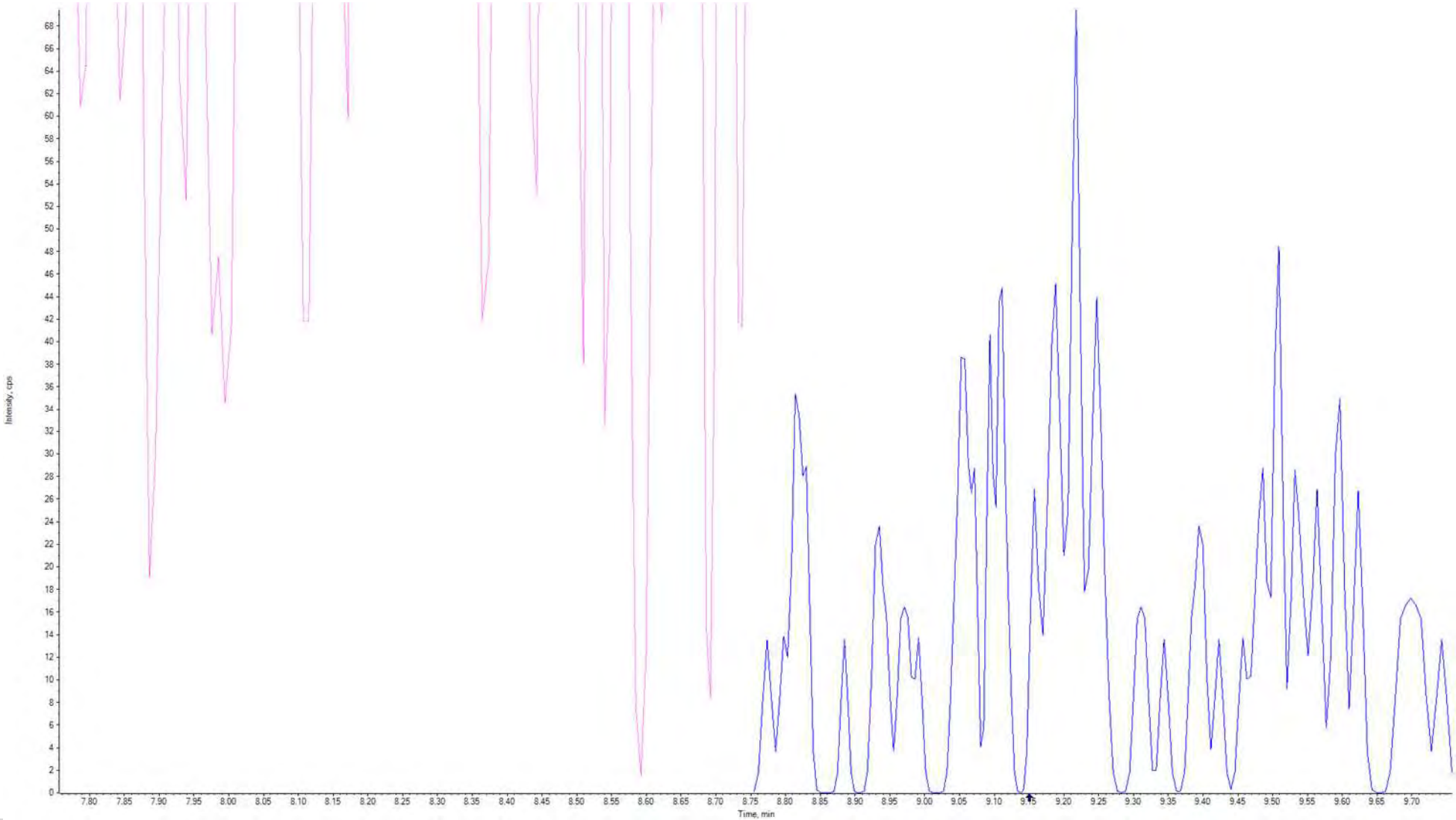
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDS
Sample: L2450786-07 S/N:N/A Points Across peak:N/A



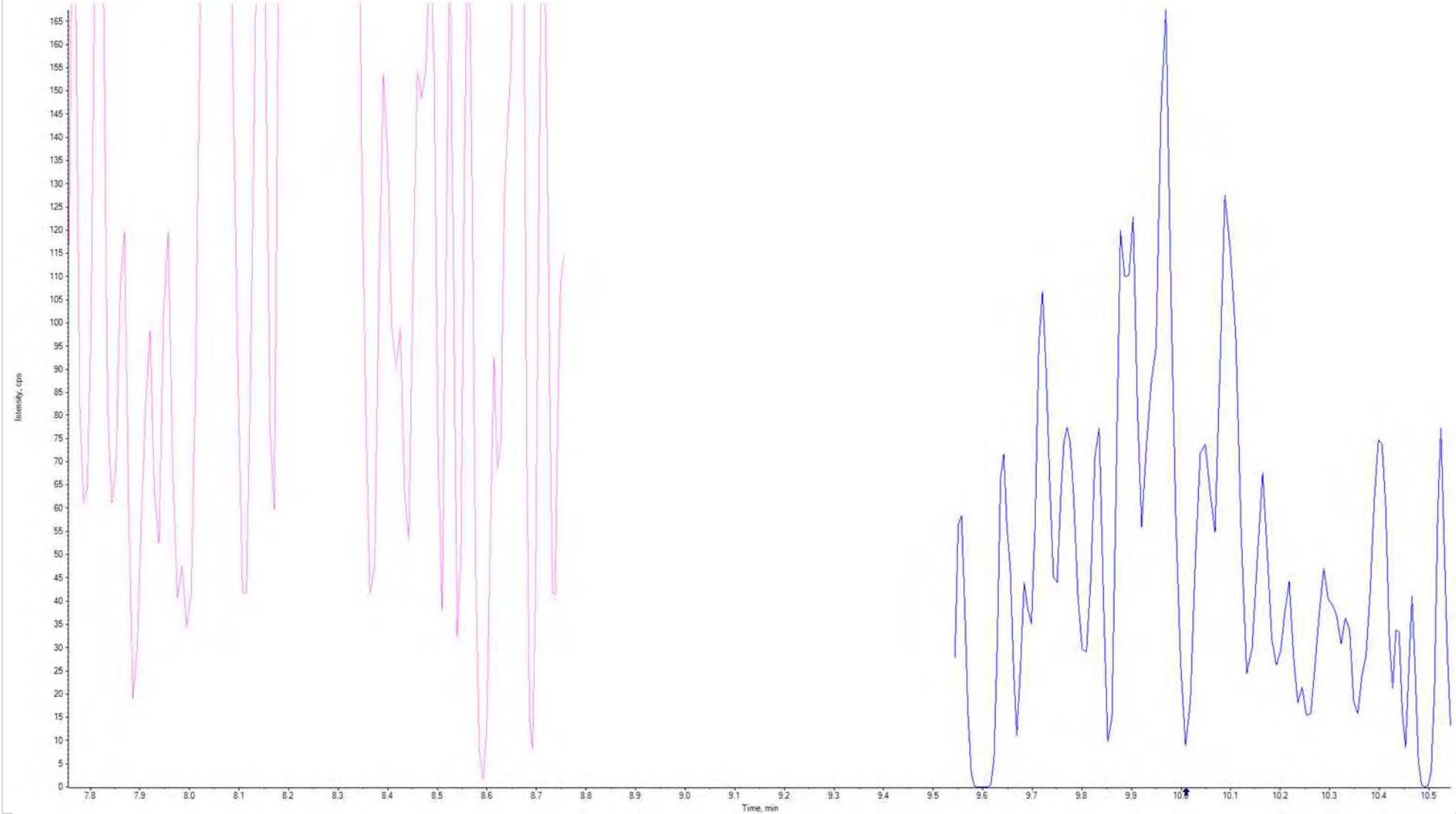
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDS_2
Sample: L2450786-07 S/N:N/A Points Across peak:N/A



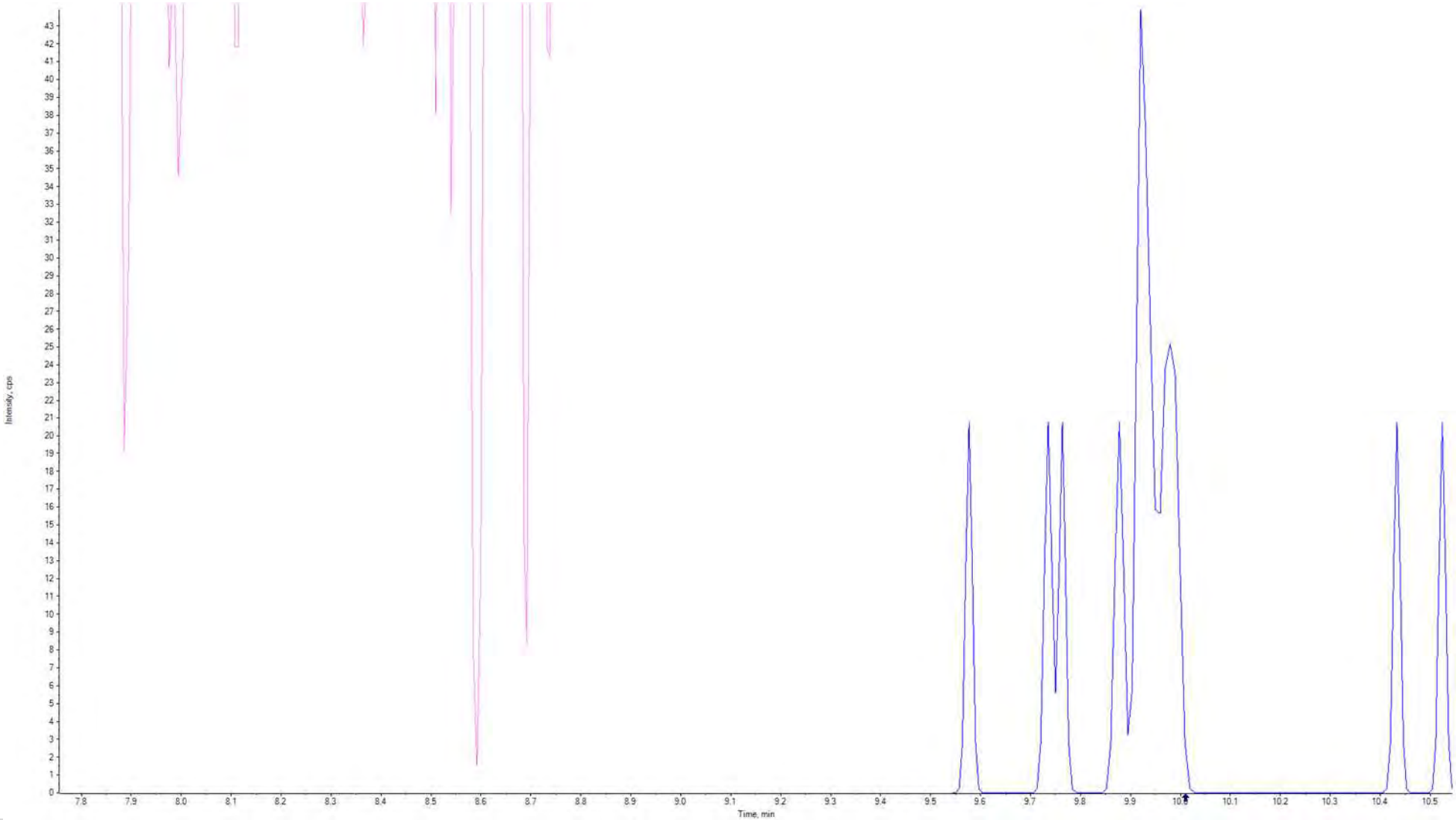
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoS
Sample: L2450786-07 S/N:N/A Points Across peak:N/A



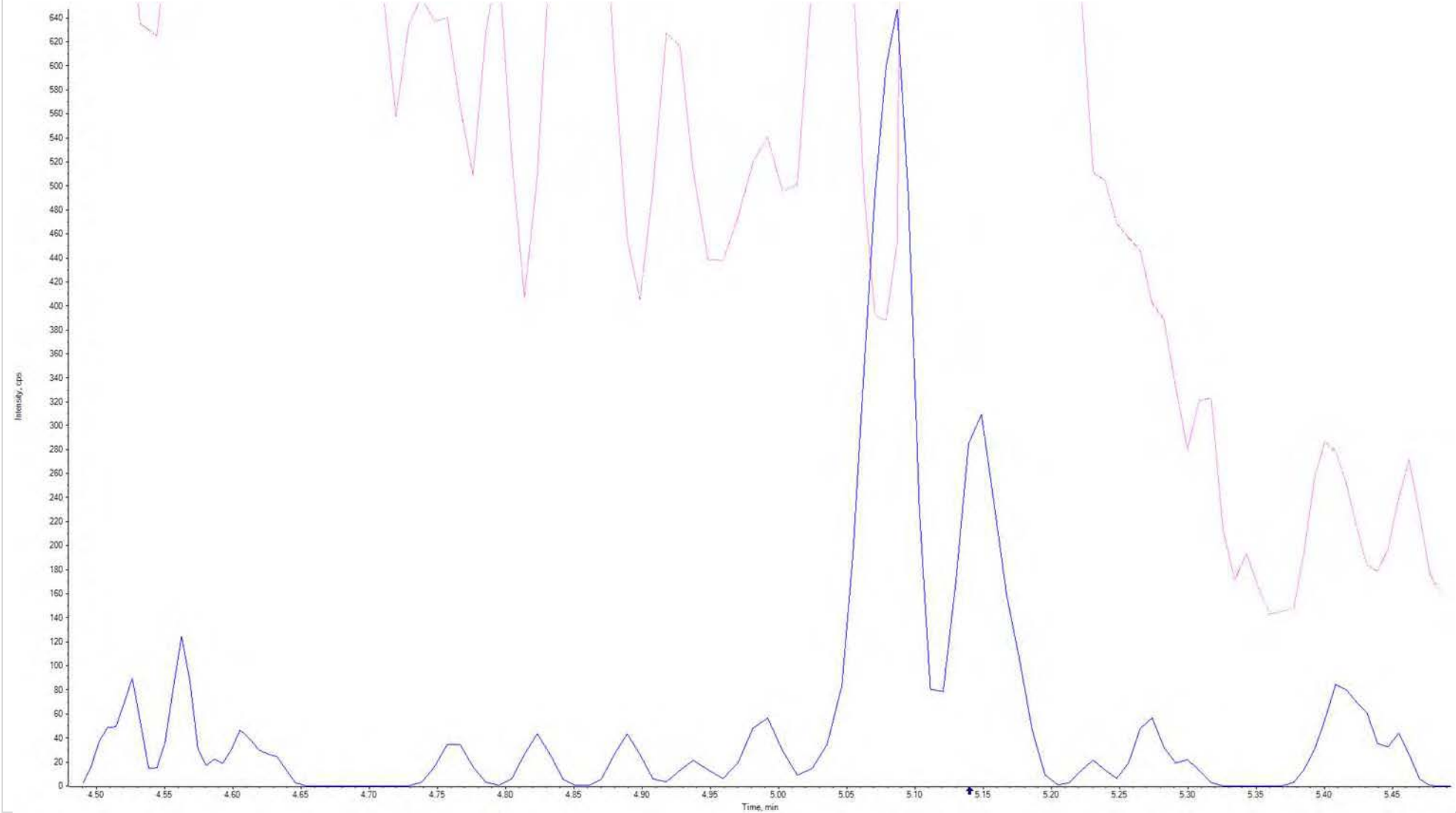
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoS_2
Sample: L2450786-07 S/N:N/A Points Across peak:N/A

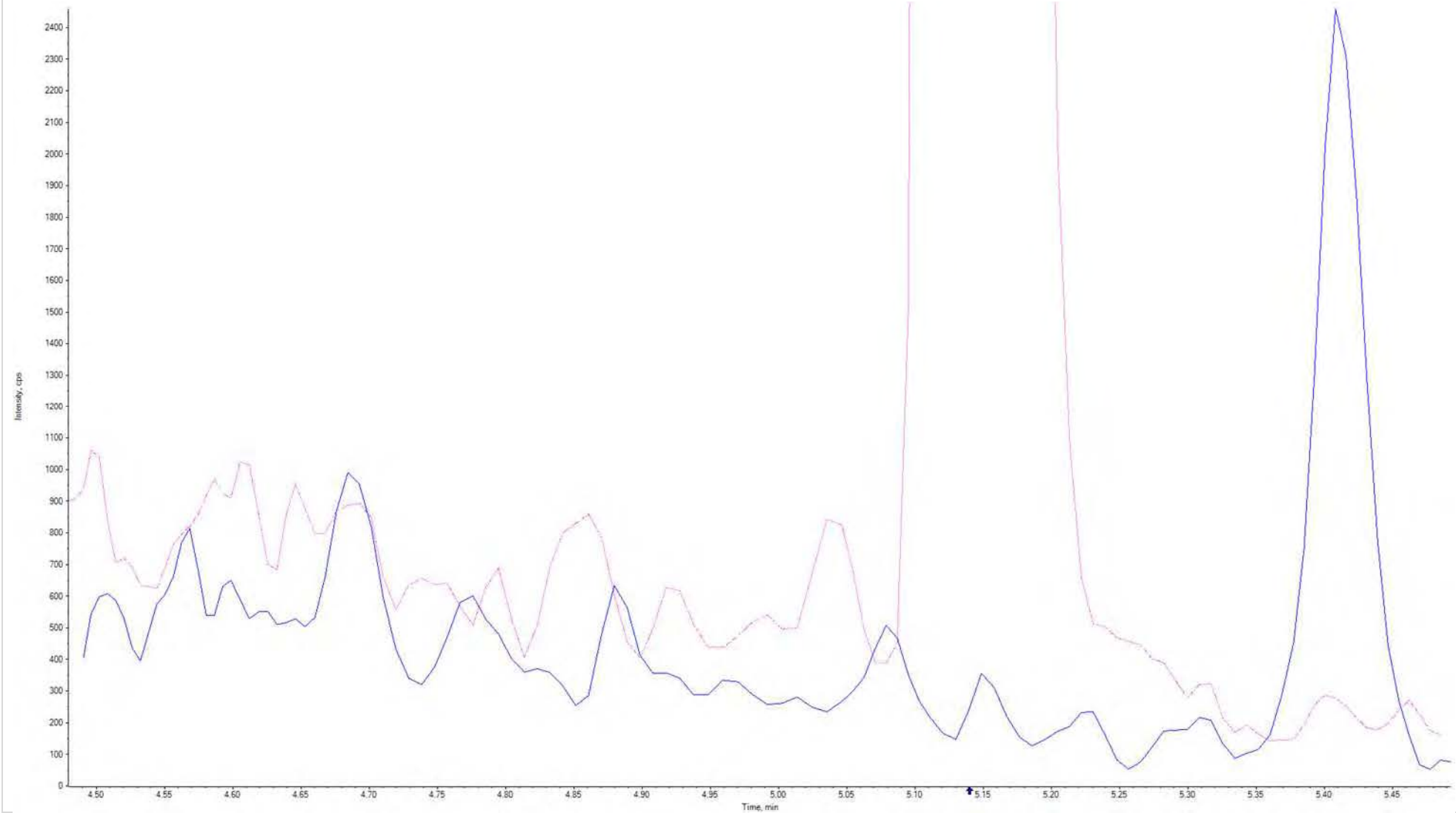


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

4:2FTS
Sample: L2450786-07 S/N:N/A Points Across peak:N/A

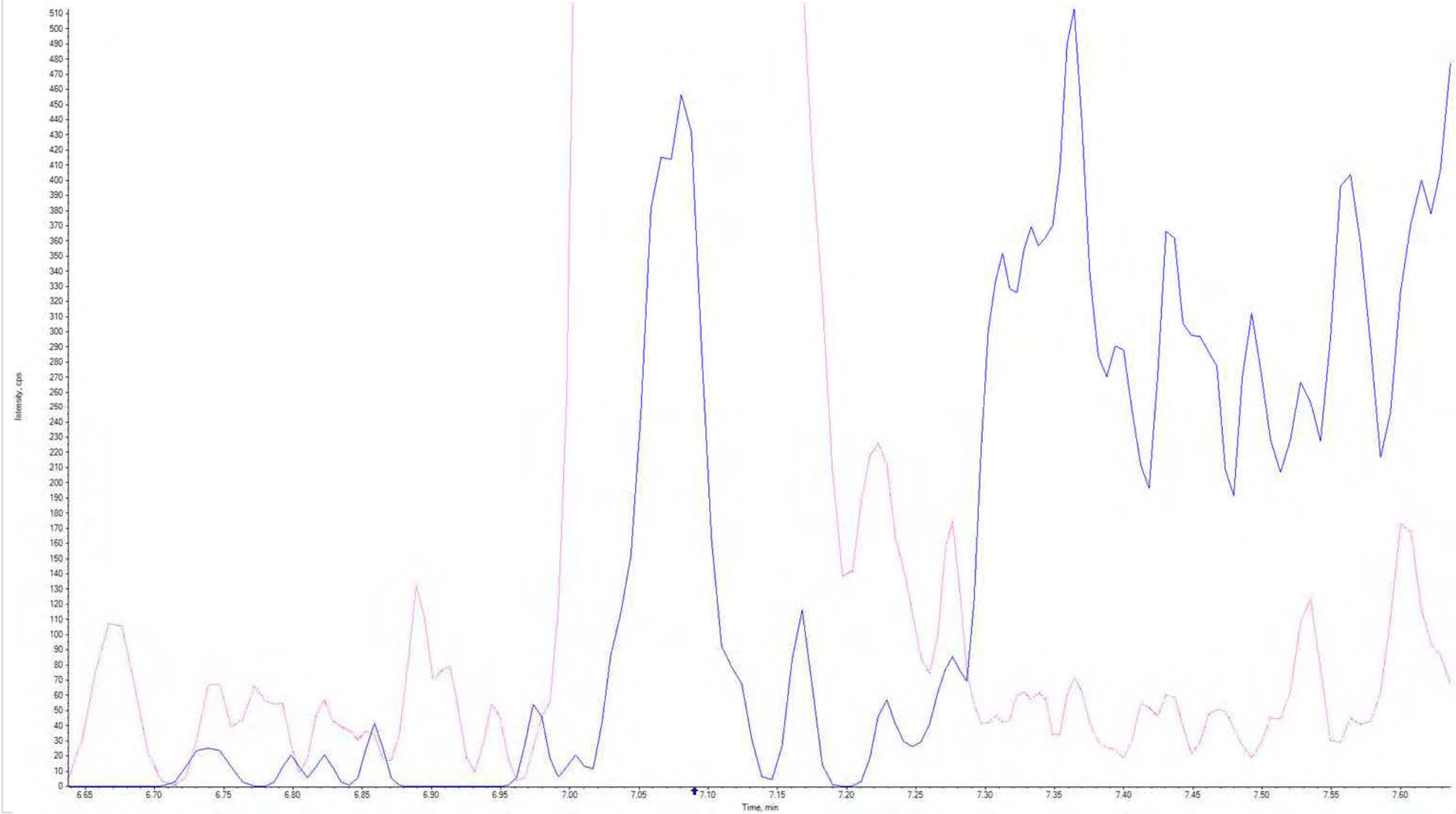


4:2FTS_2
Sample: L2450786-07 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

6:2FTS
Sample: L2450786-07 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

6:2FTS_2
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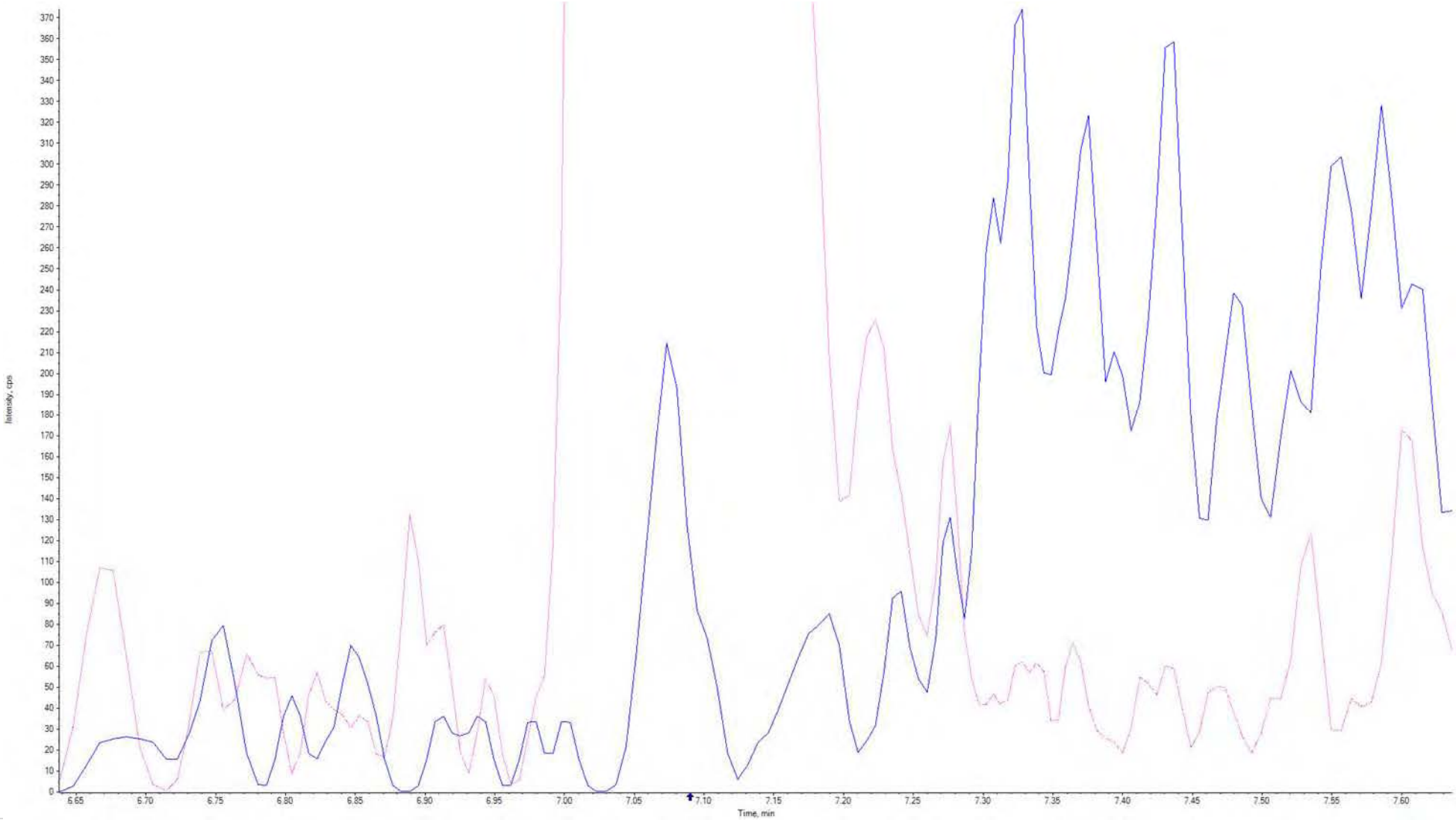

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

8:2FTS
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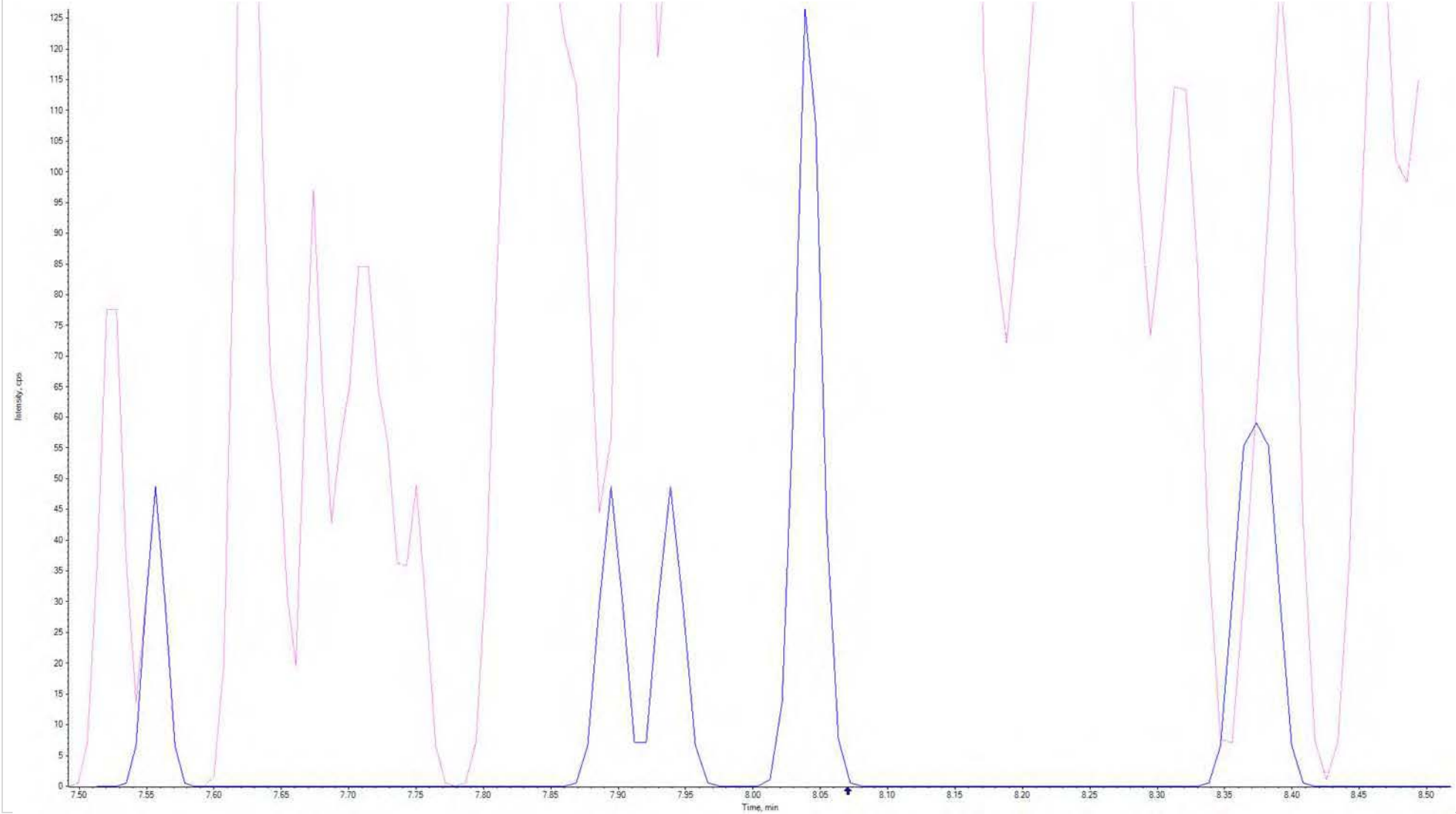

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

8:2FTS_2
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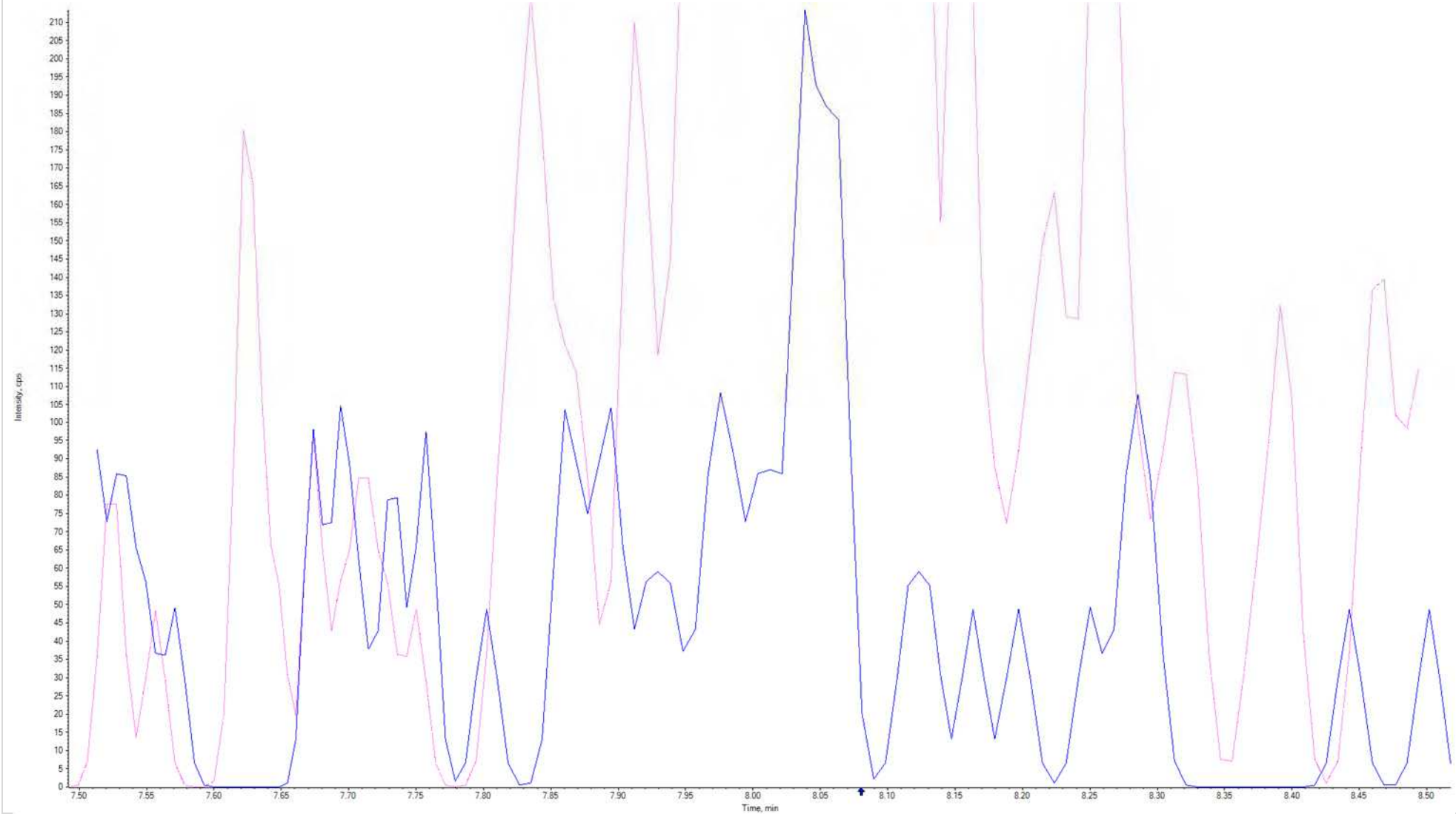

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Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOSA
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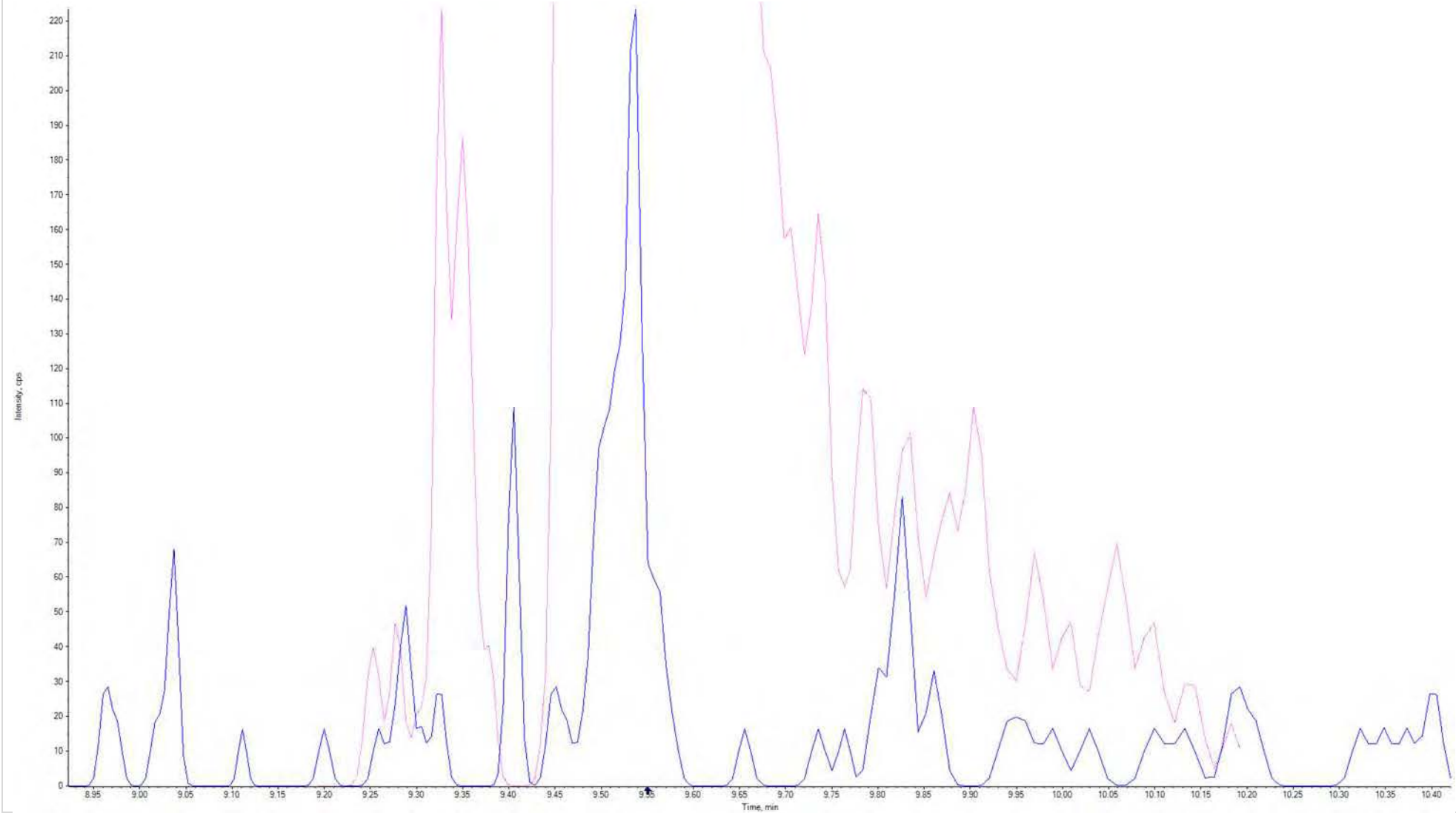

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOSA_2
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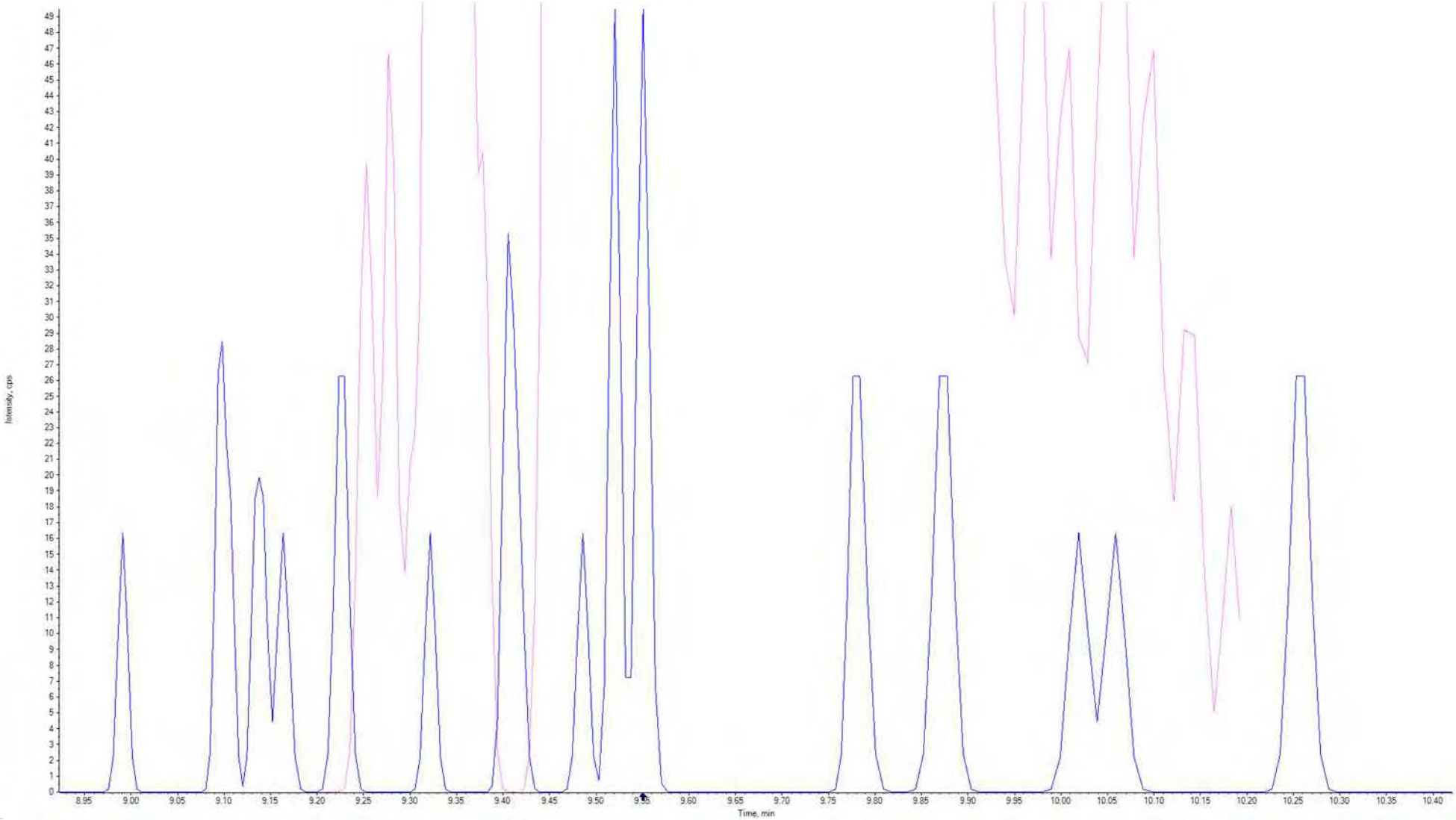

NMeFOSA
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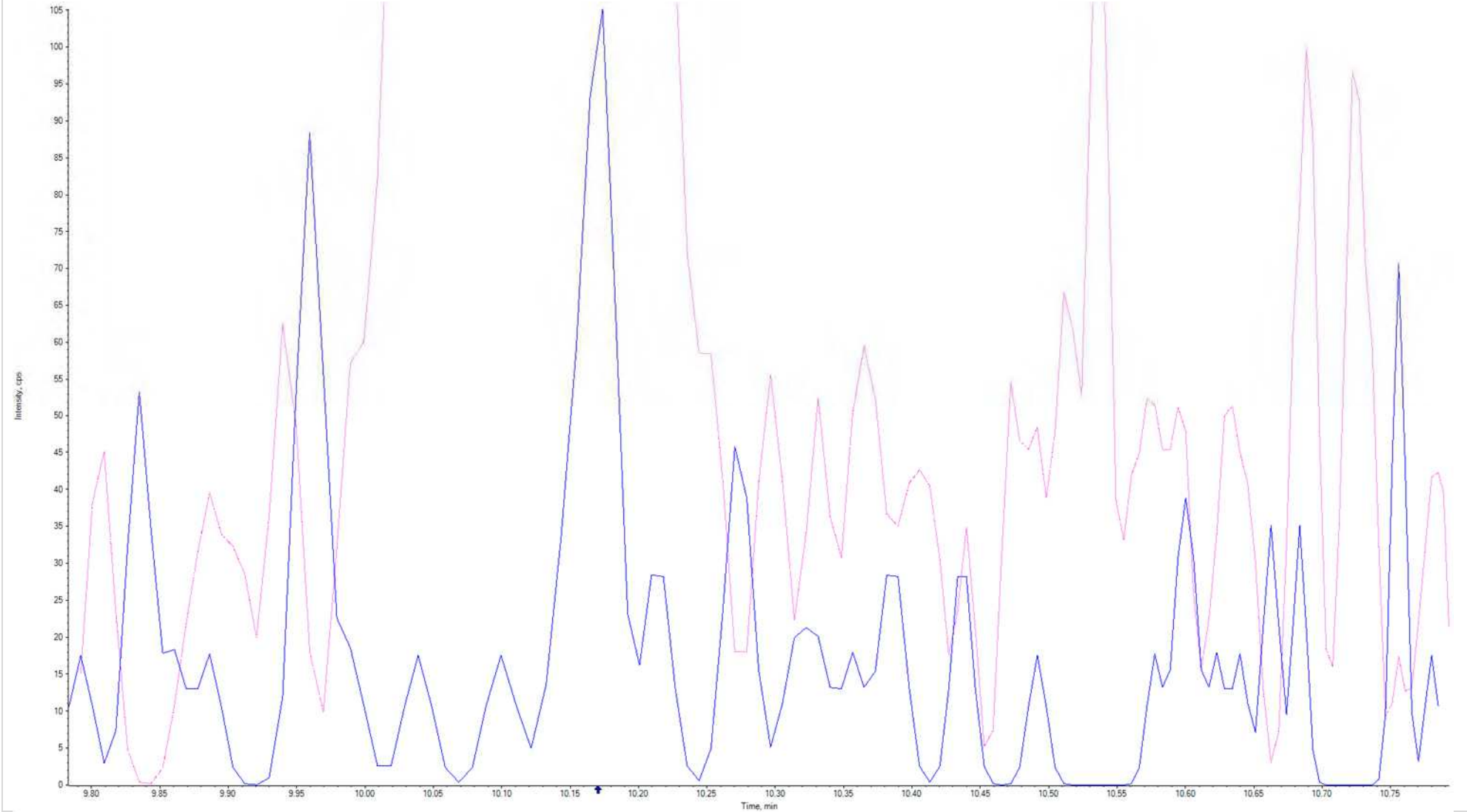

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSA_2
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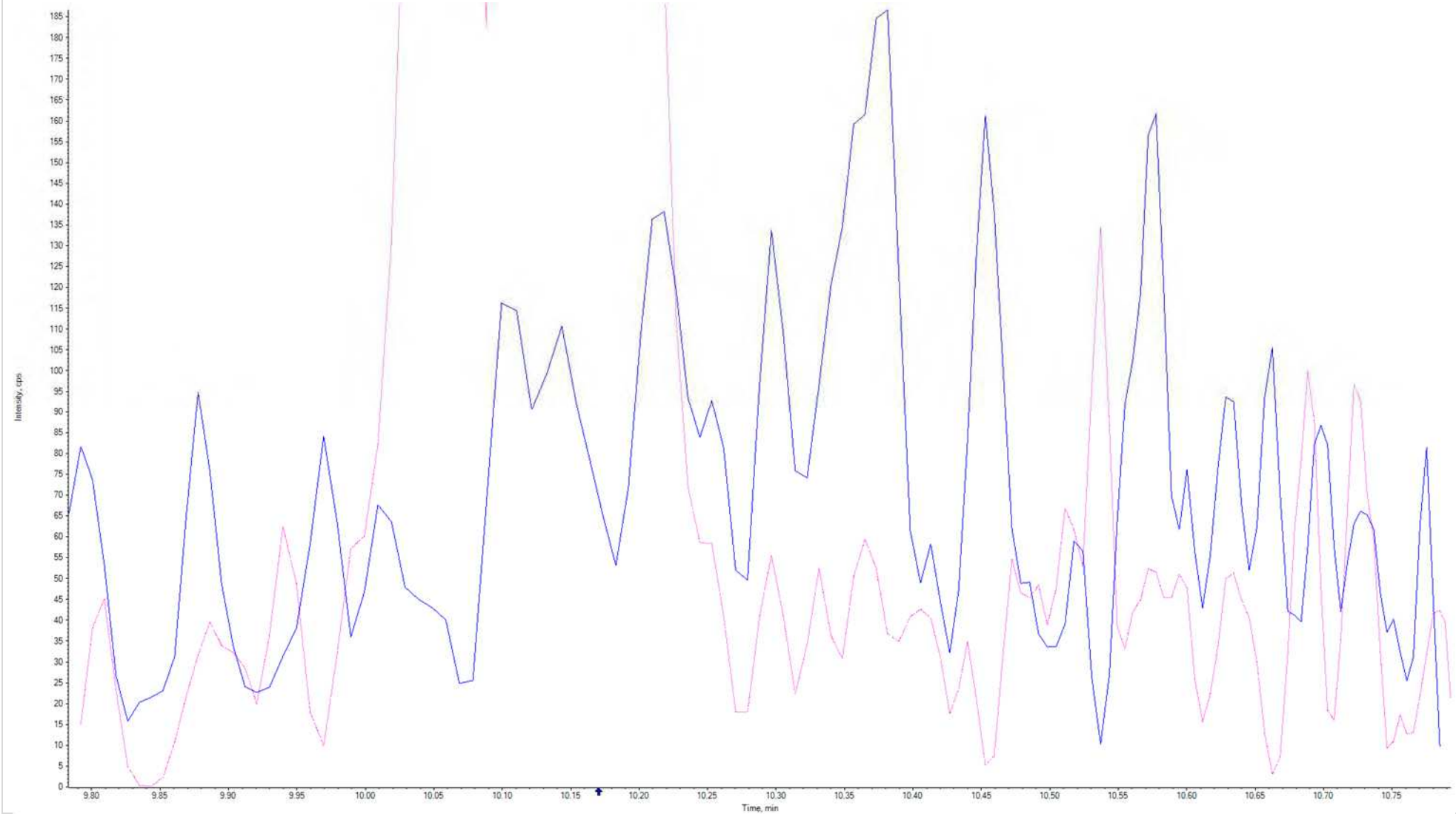

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSA
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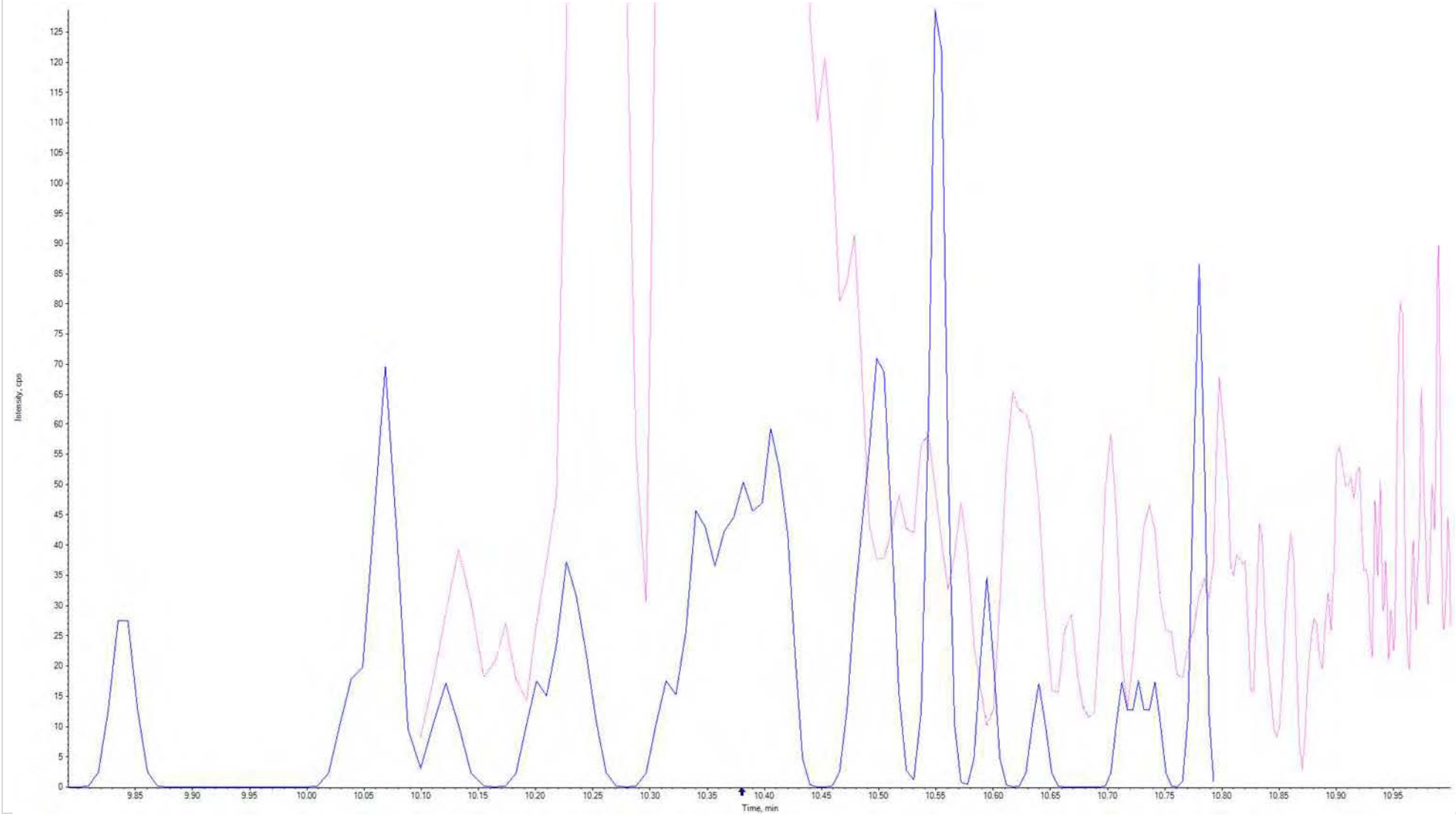

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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NEtFOSA_2
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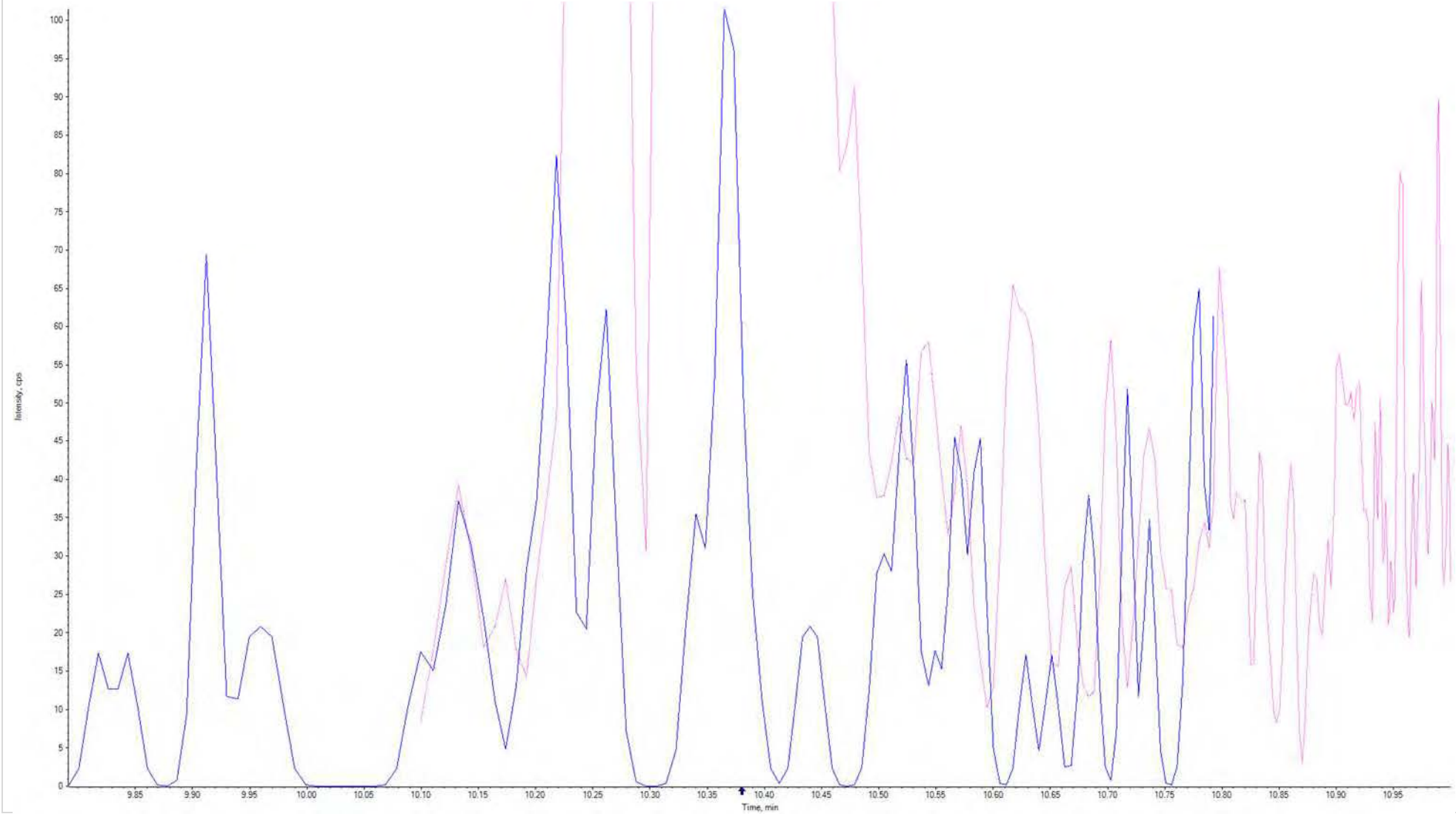

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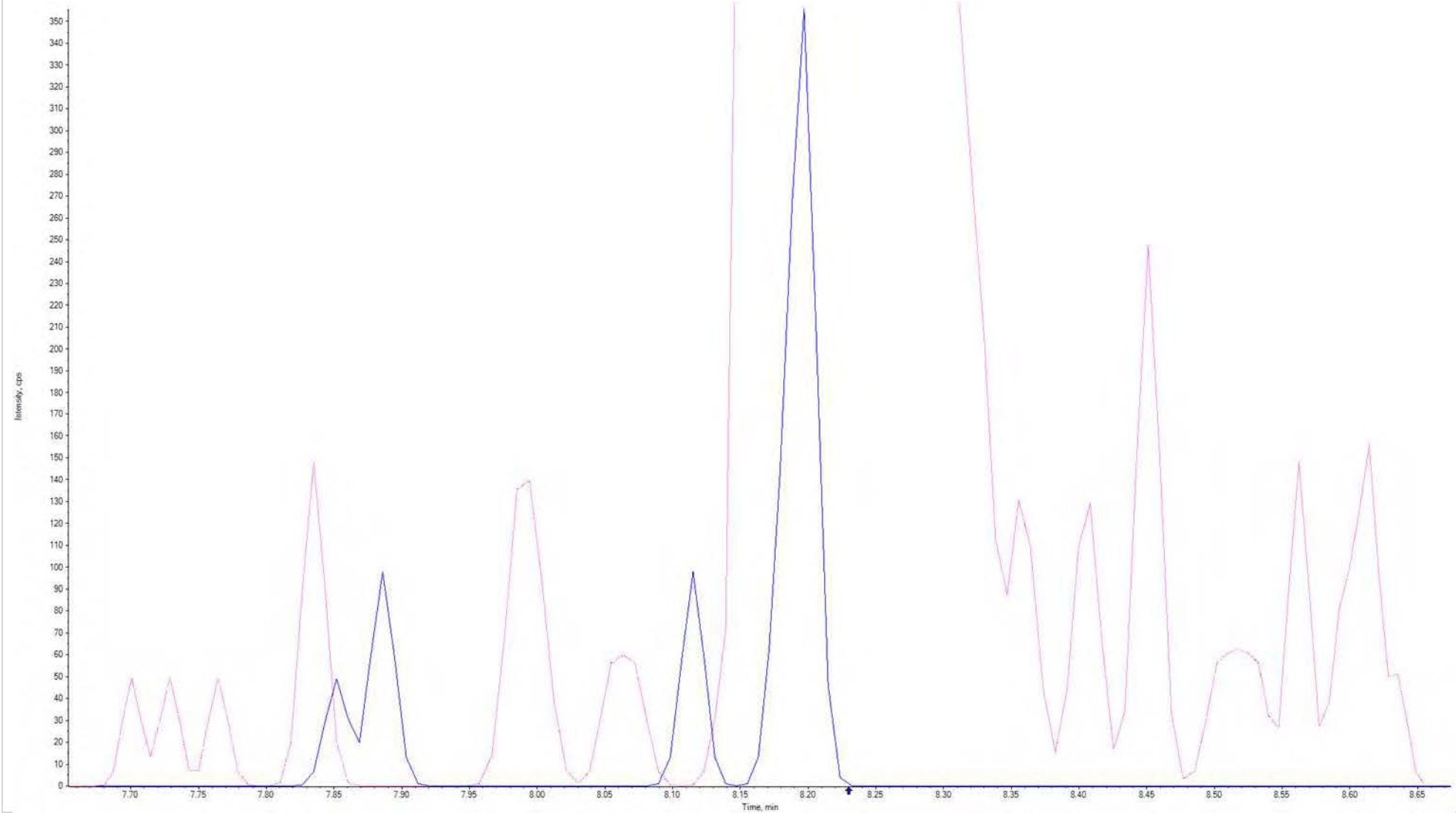

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSAA_2
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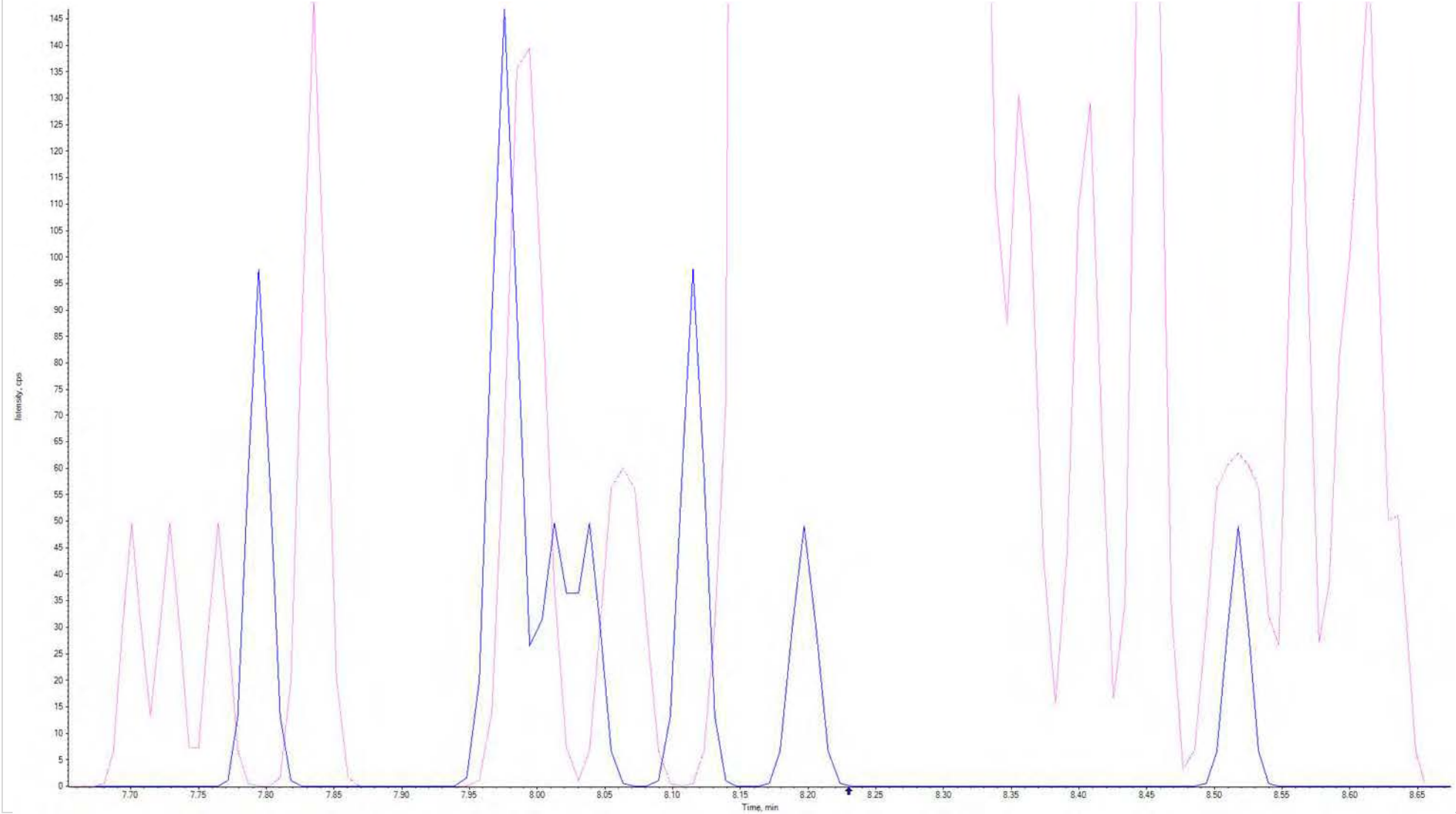

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Alpha Analytical Inc.
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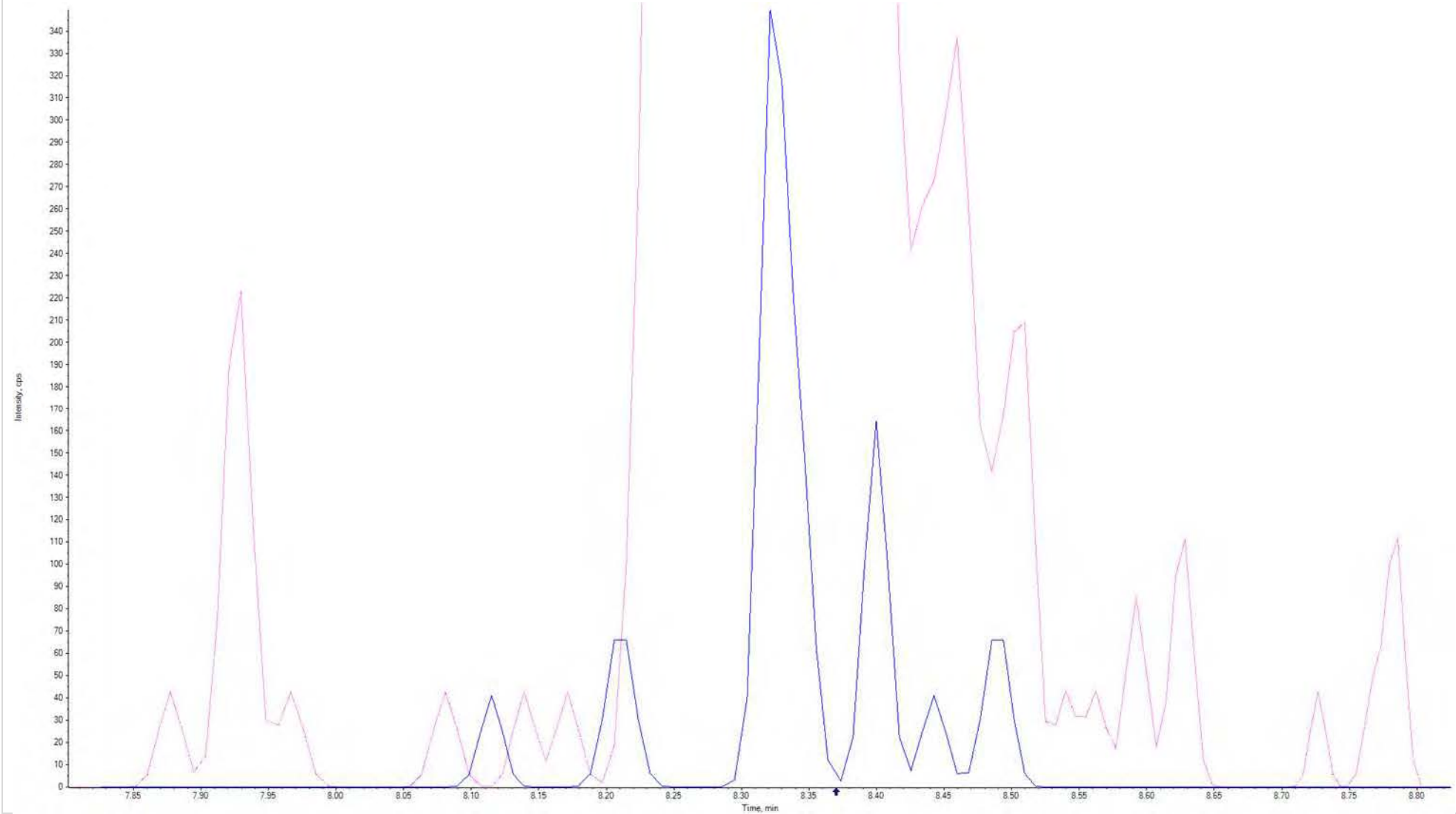
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSAA
Sample: L2450786-07 S/N:N/A Points Across peak:N/A



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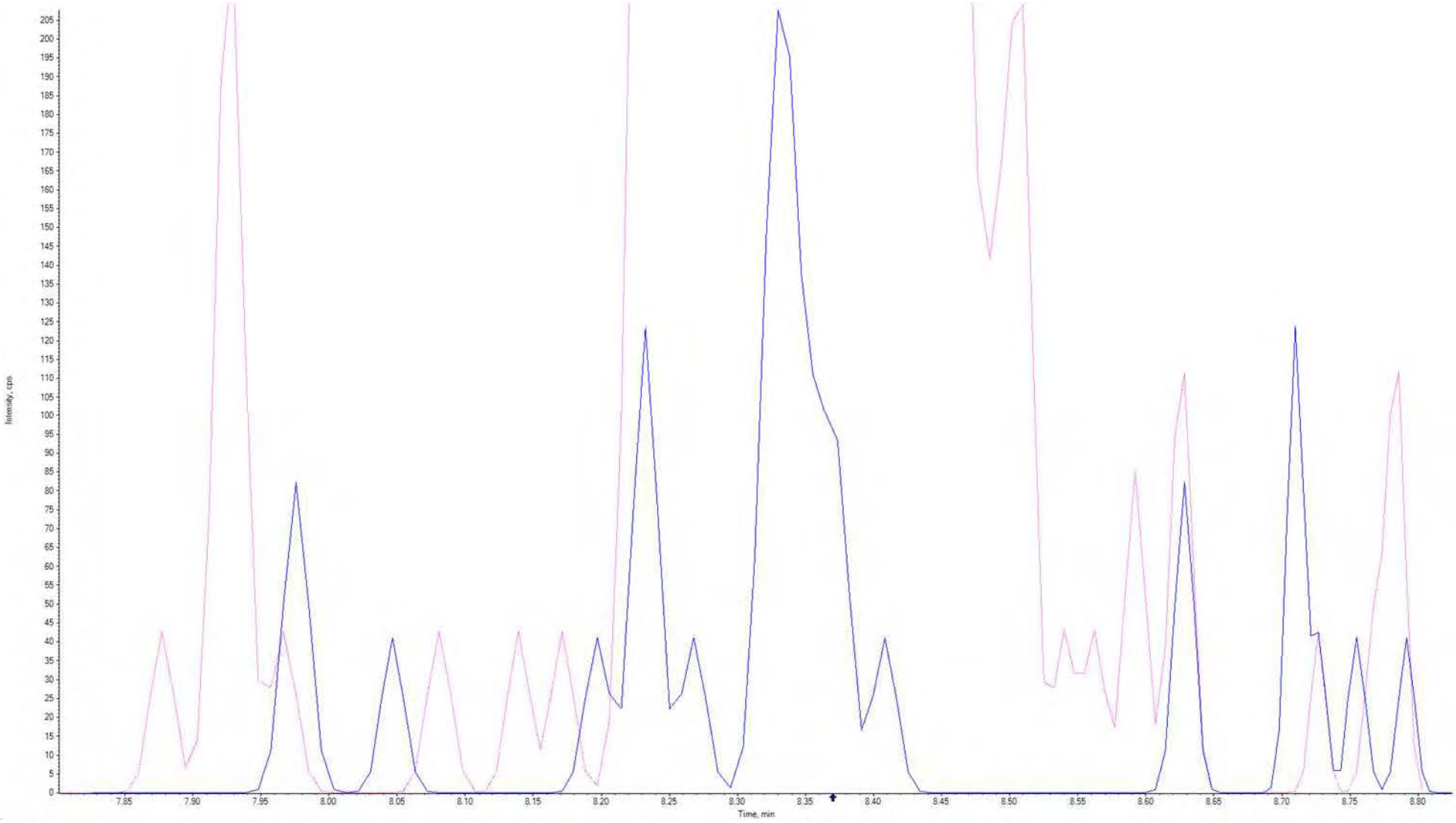
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSAA_2
Sample: L2450786-07 S/N:N/A Points Across peak:N/A



NMeFOSE
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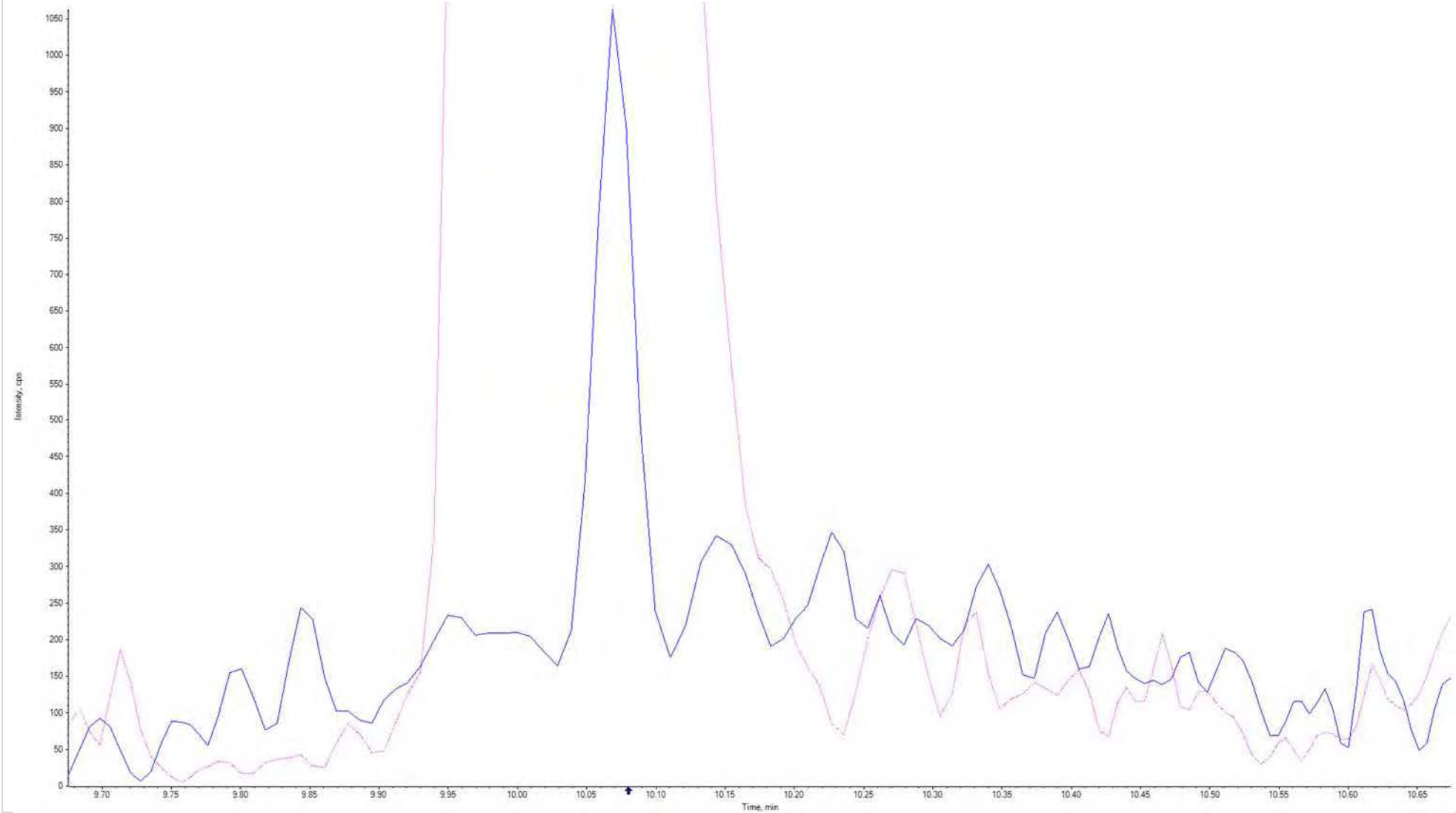

NEtFOSE
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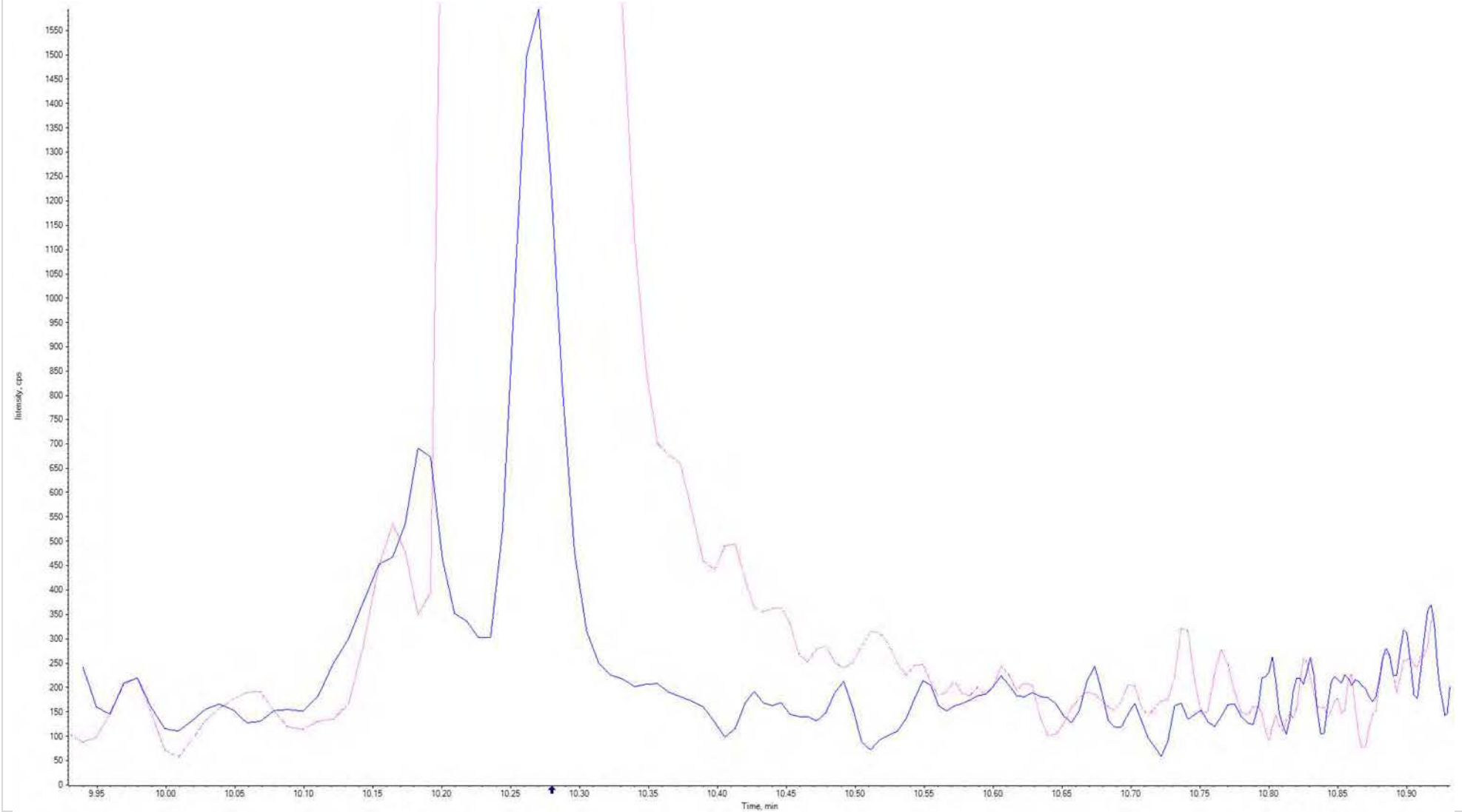

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

HFPO-DA
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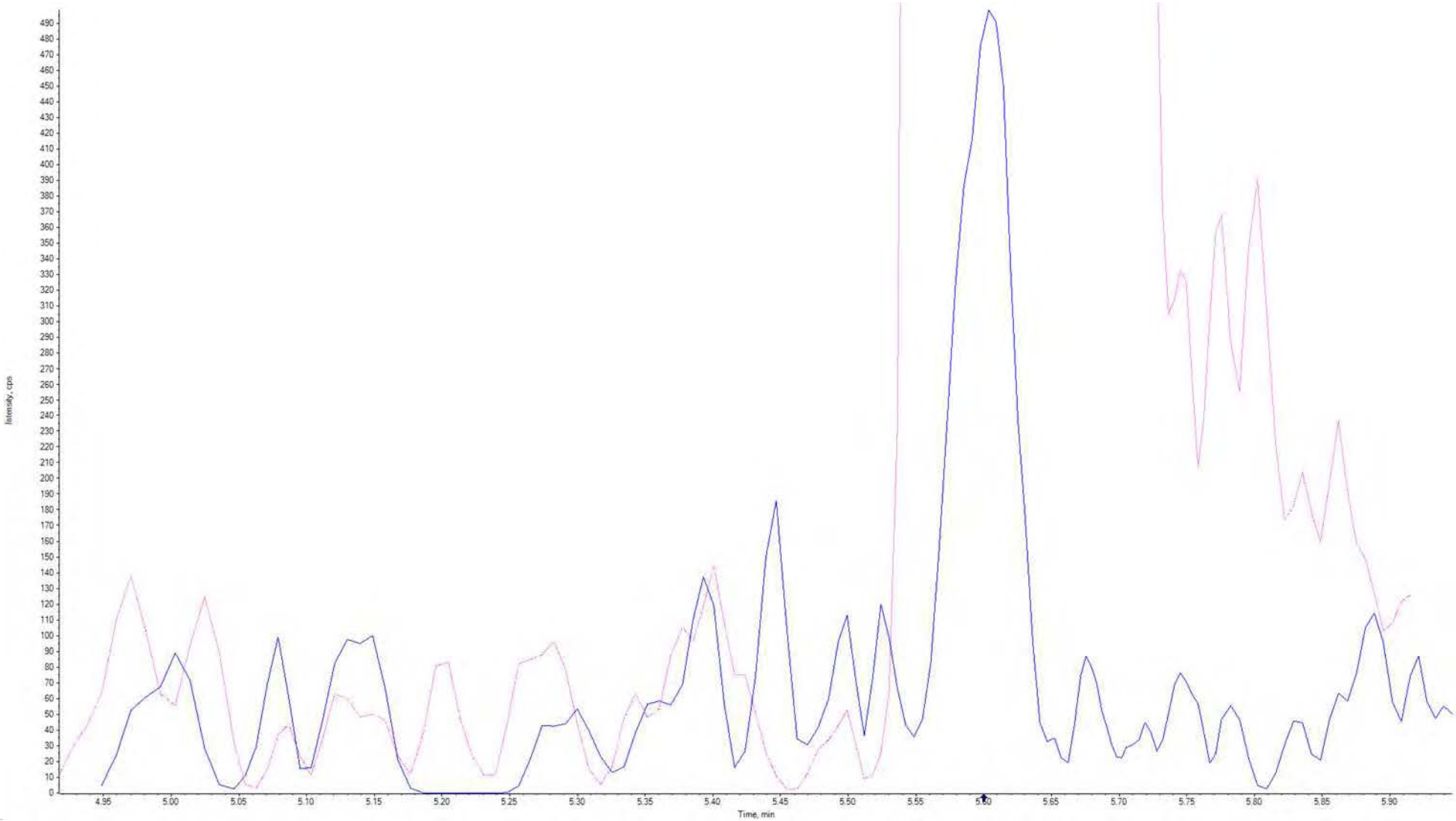

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

HFPO-DA_2
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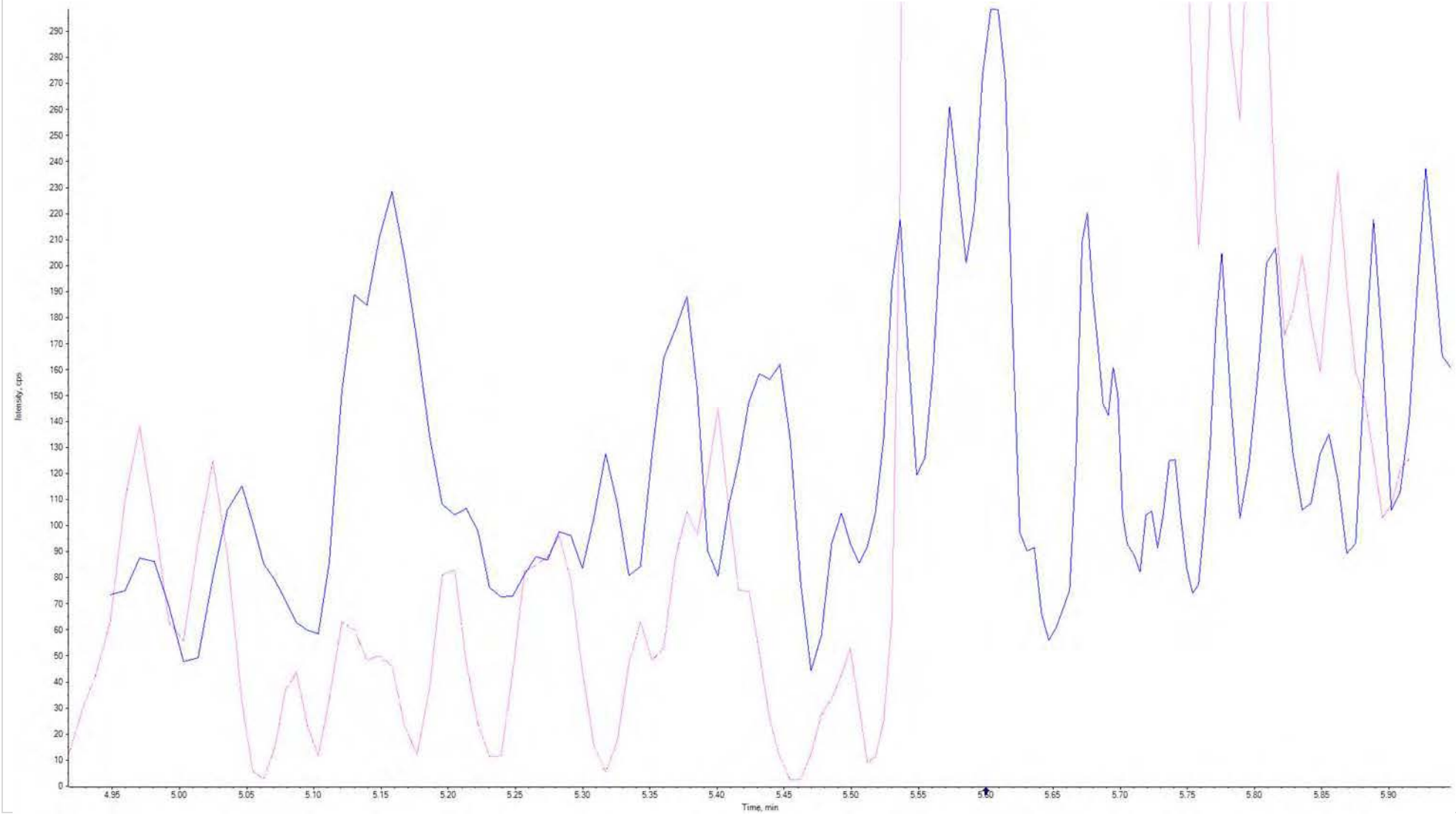

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

ADONA
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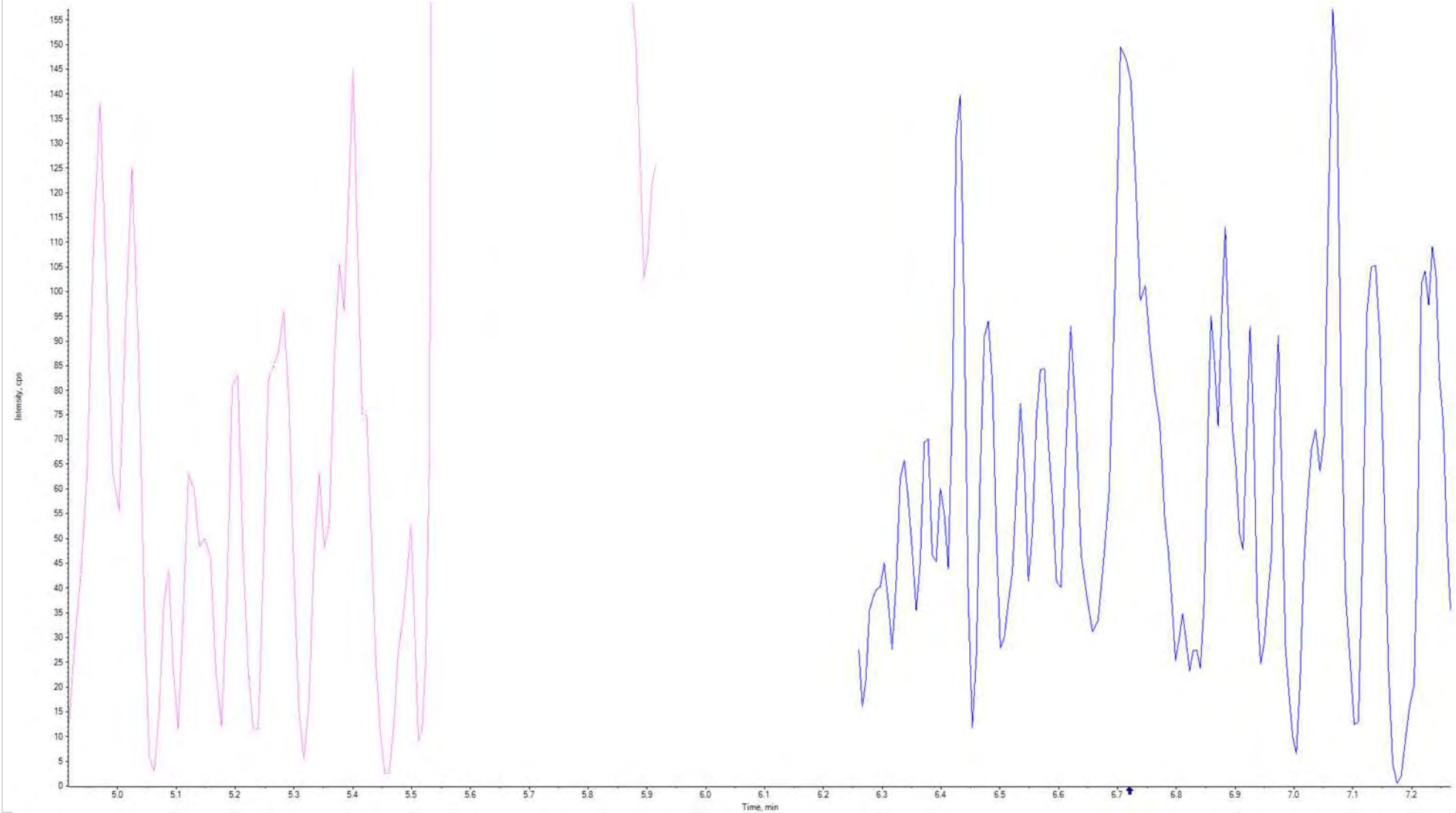

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

ADONA_2
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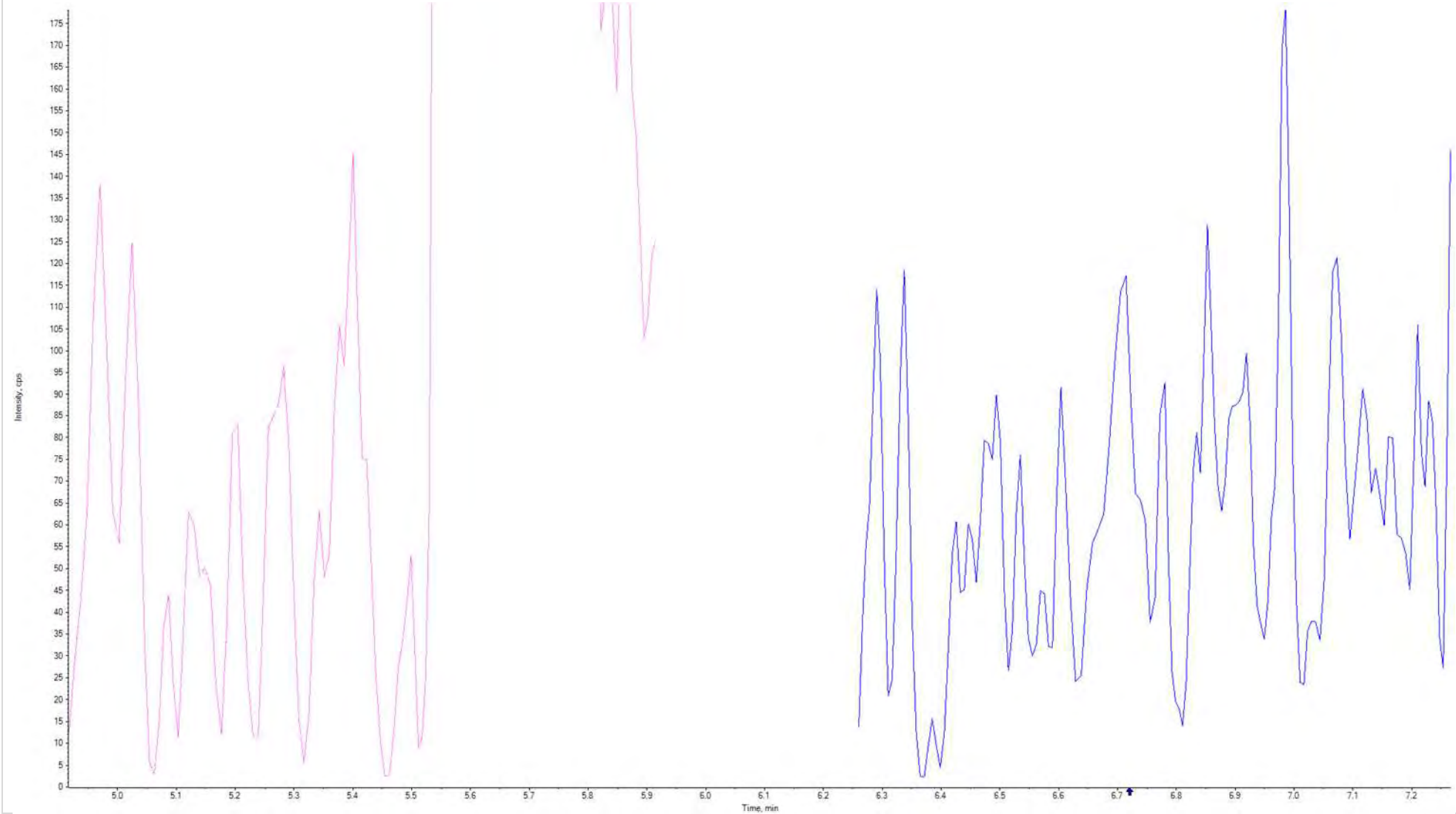

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

9Cl-PF3ONS
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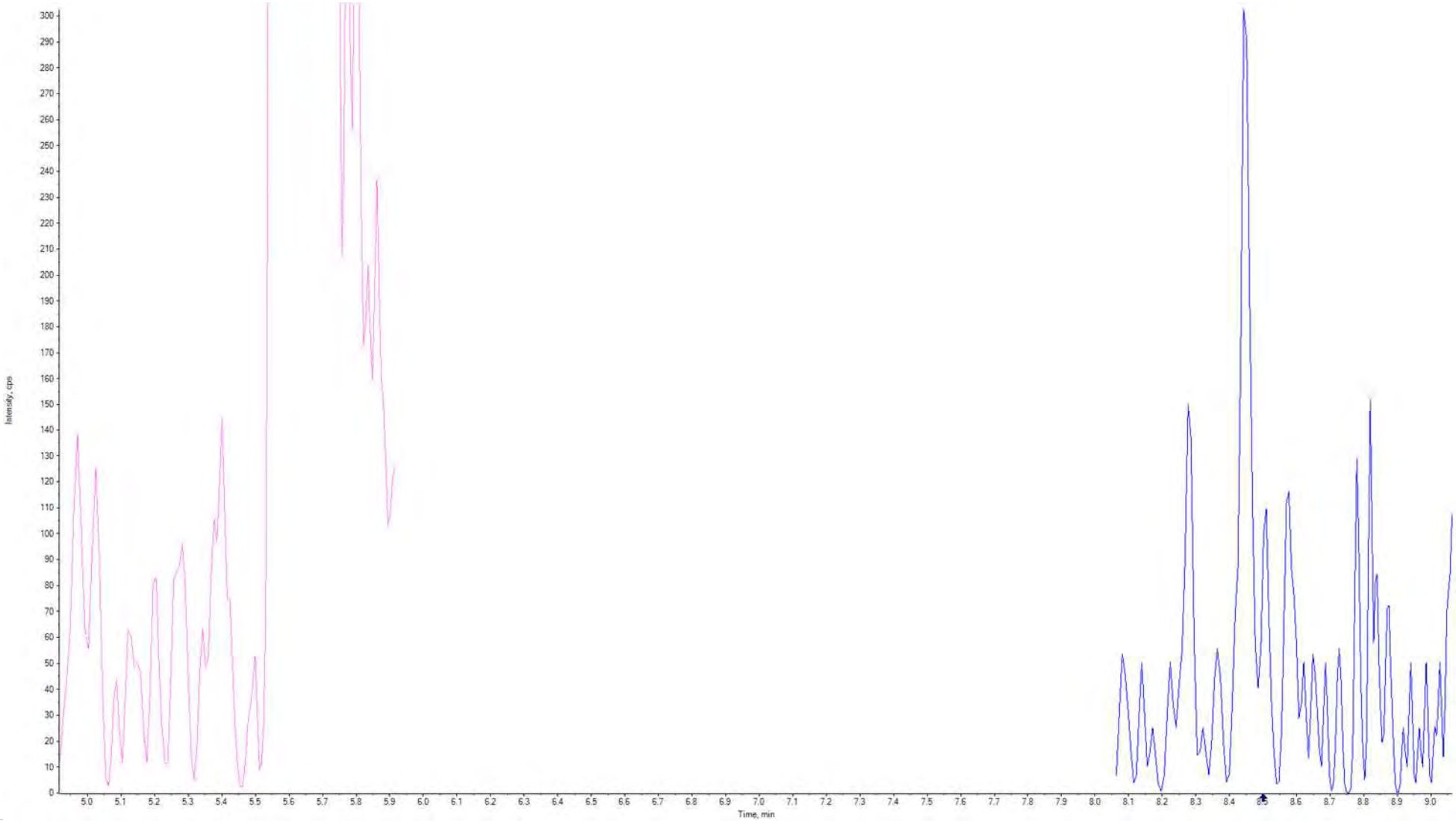

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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9Cl-PF3ONS_2
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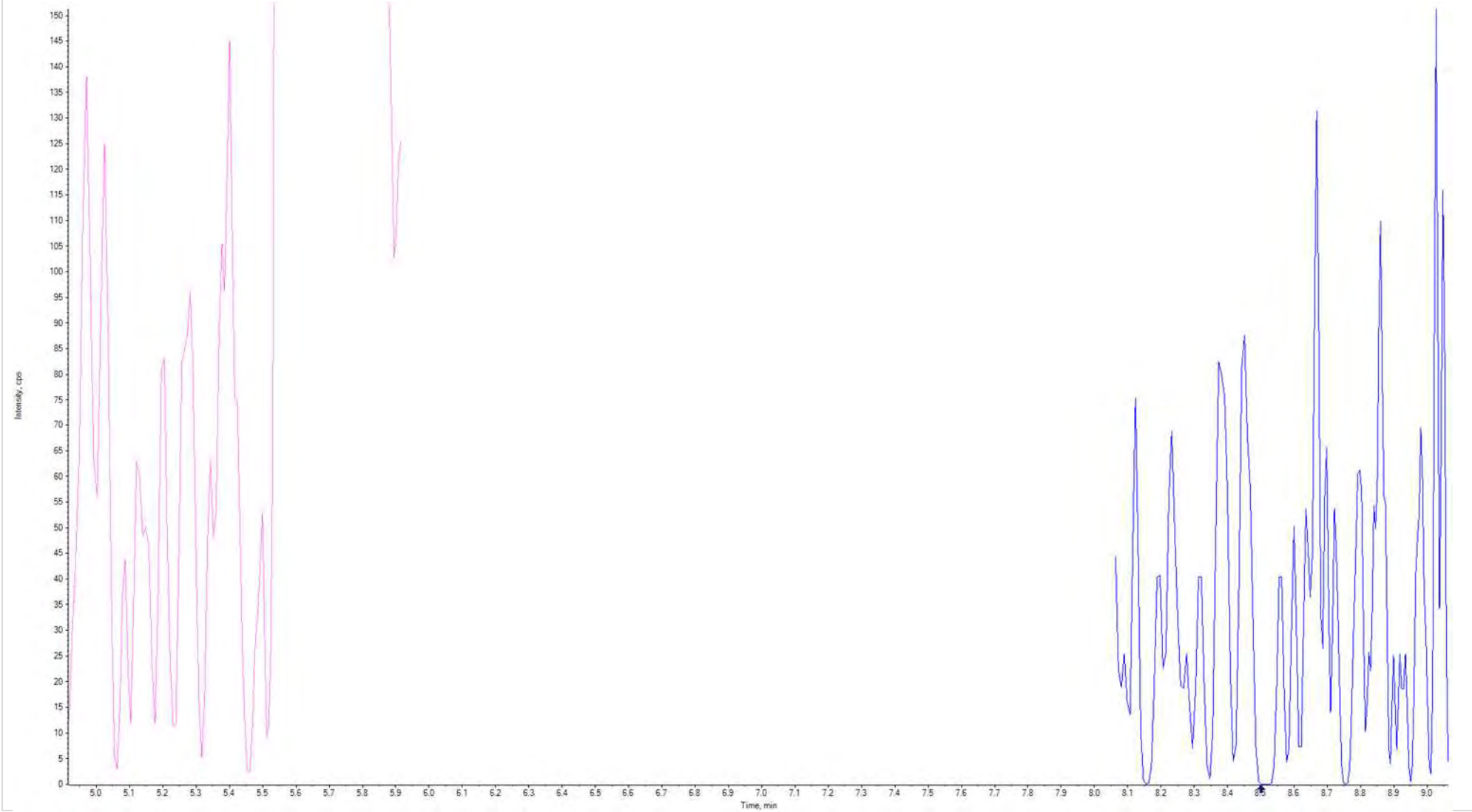

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

11Cl-PF3OUdS
Sample: L2450786-07 S/N:N/A Points Across peak:N/A

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

11Cl-PF3OUdS_2
Sample: L2450786-07 S/N:N/A Points Across peak:N/A

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

3:3FTCA
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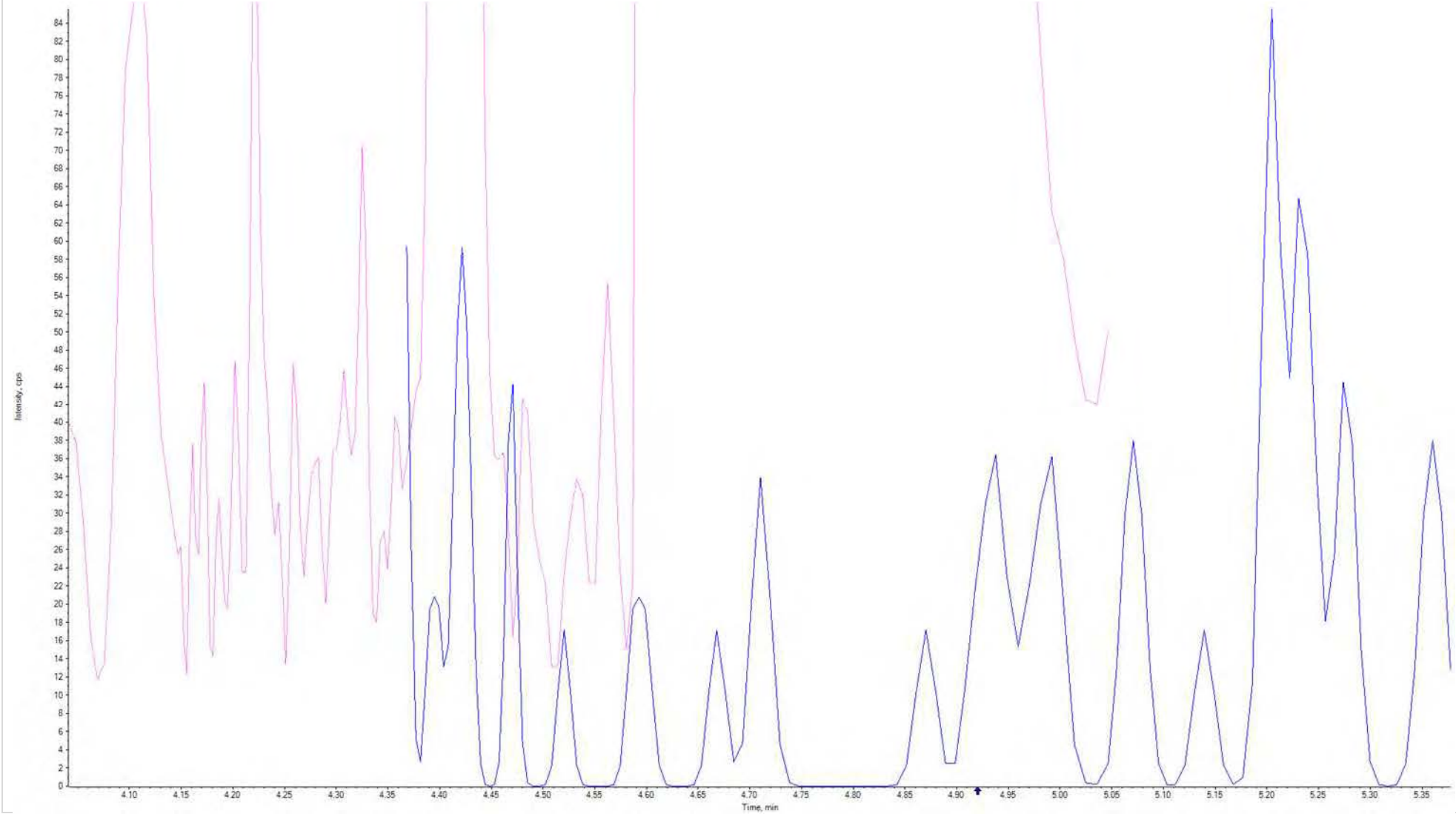

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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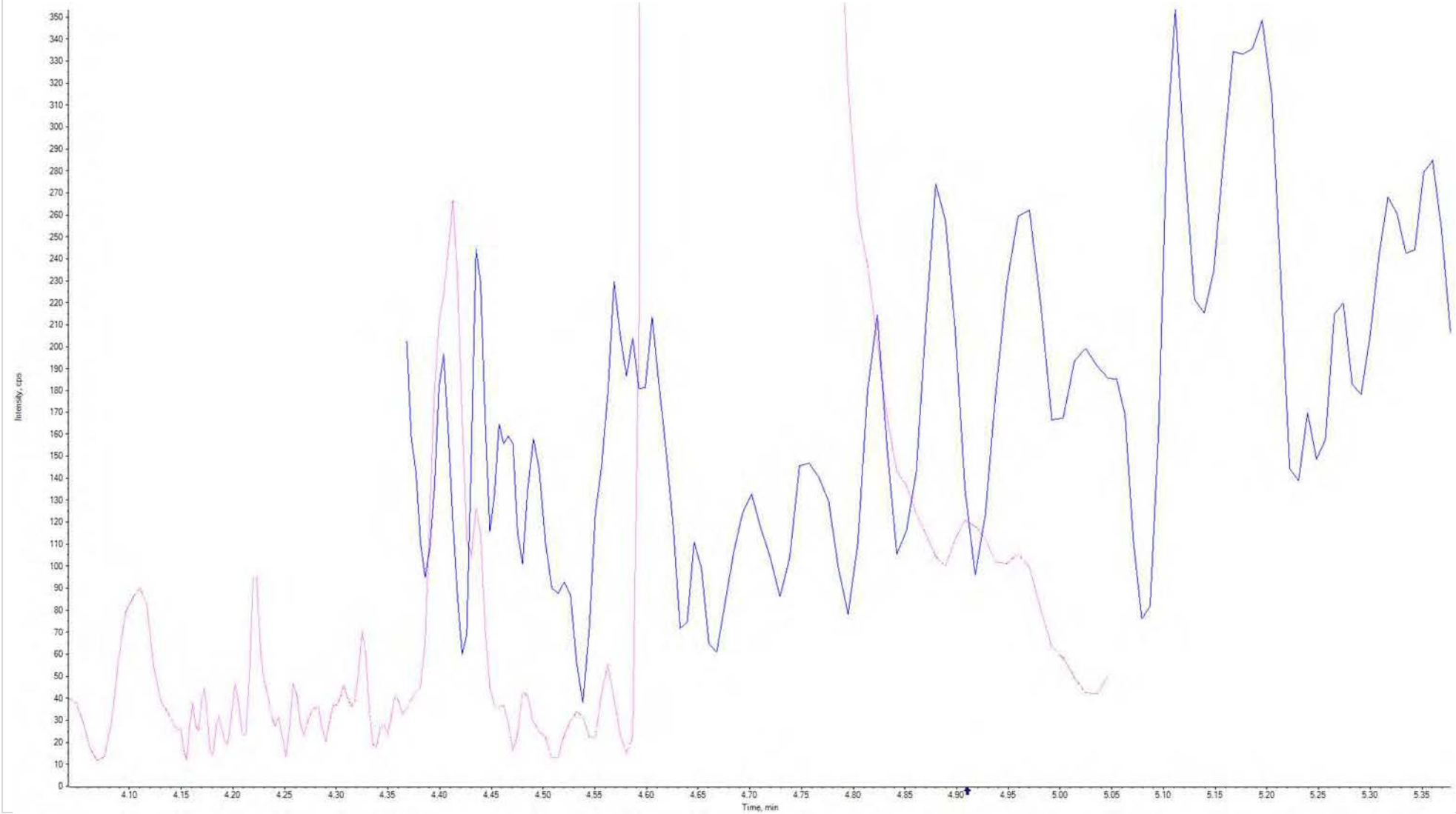
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

3:3FTCA_2
Sample: L2450786-07 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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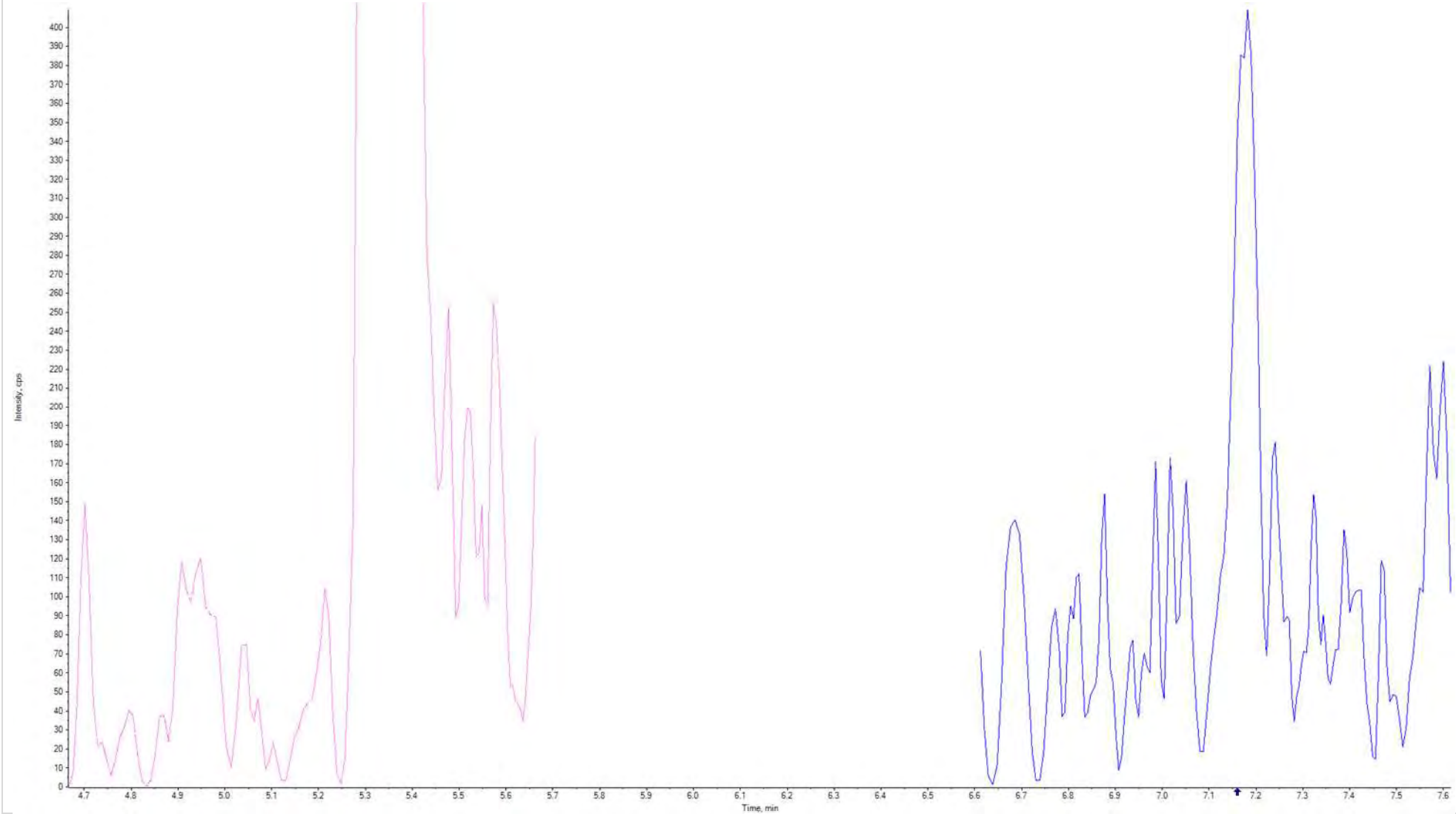
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

5:3FTCA
Sample: L2450786-07 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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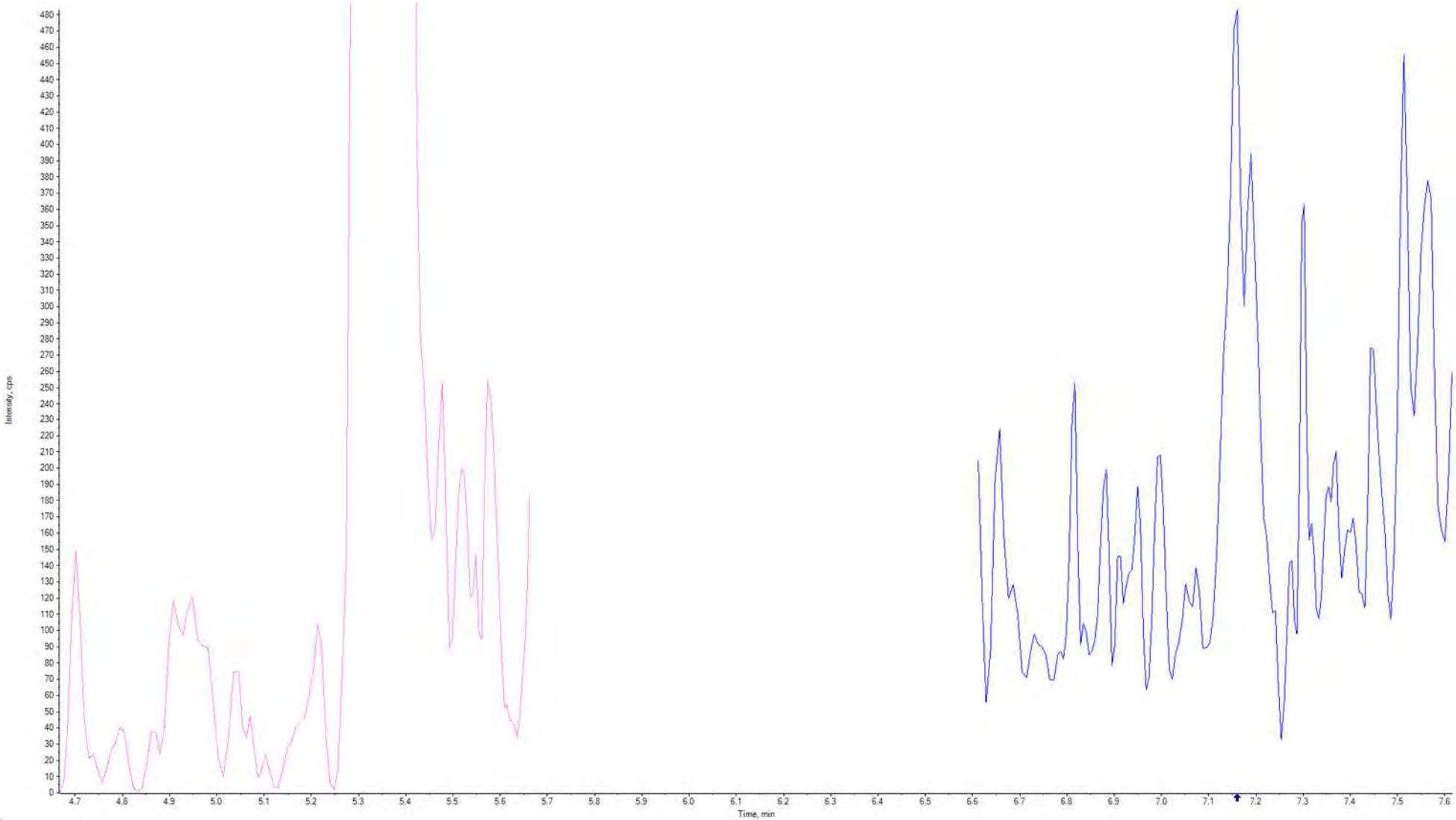
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

5:3FTCA_2
Sample: L2450786-07 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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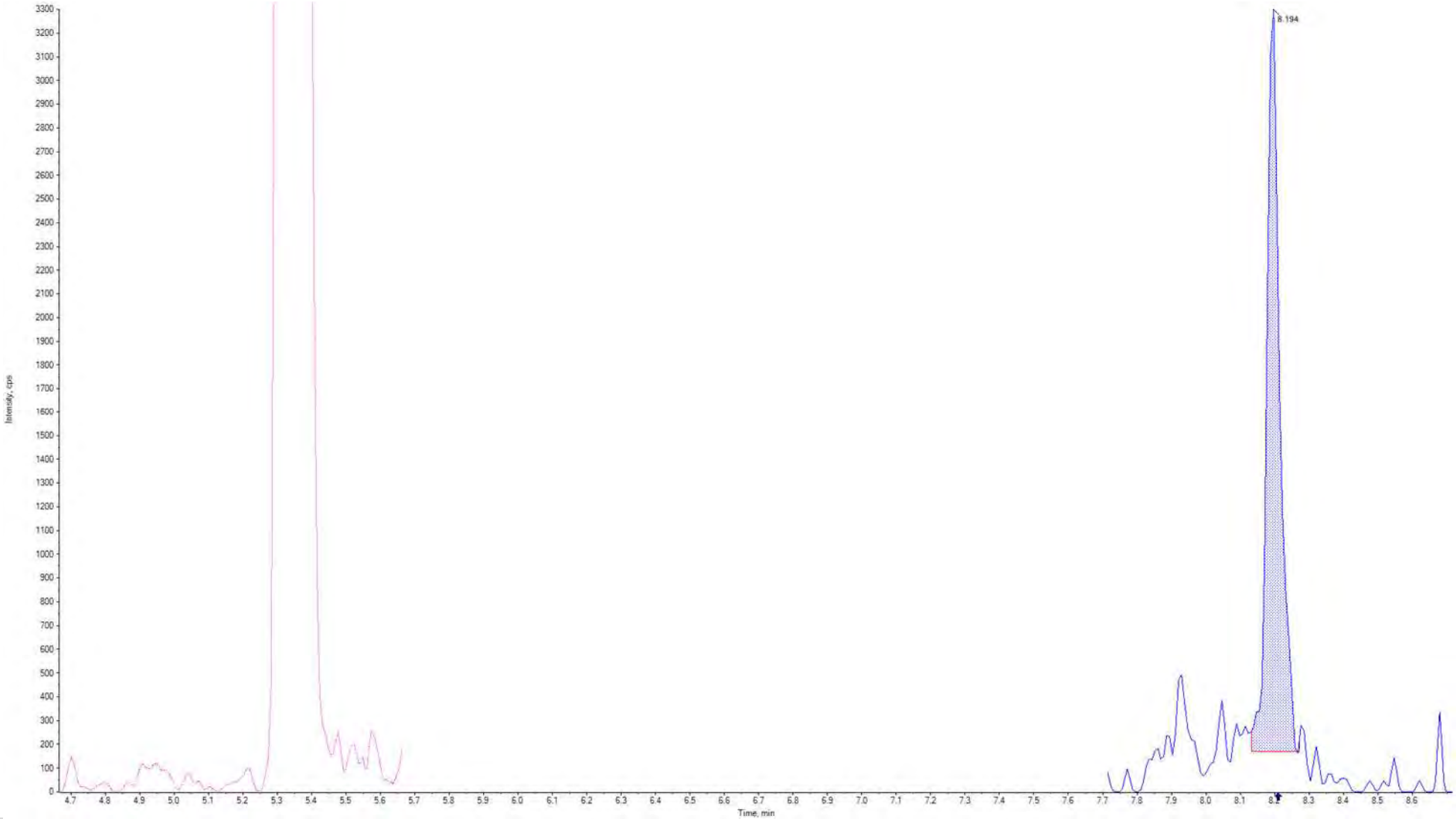
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

7:3FTCA
Sample: L2450786-07 S/N:28185.4 Points Across peak:18



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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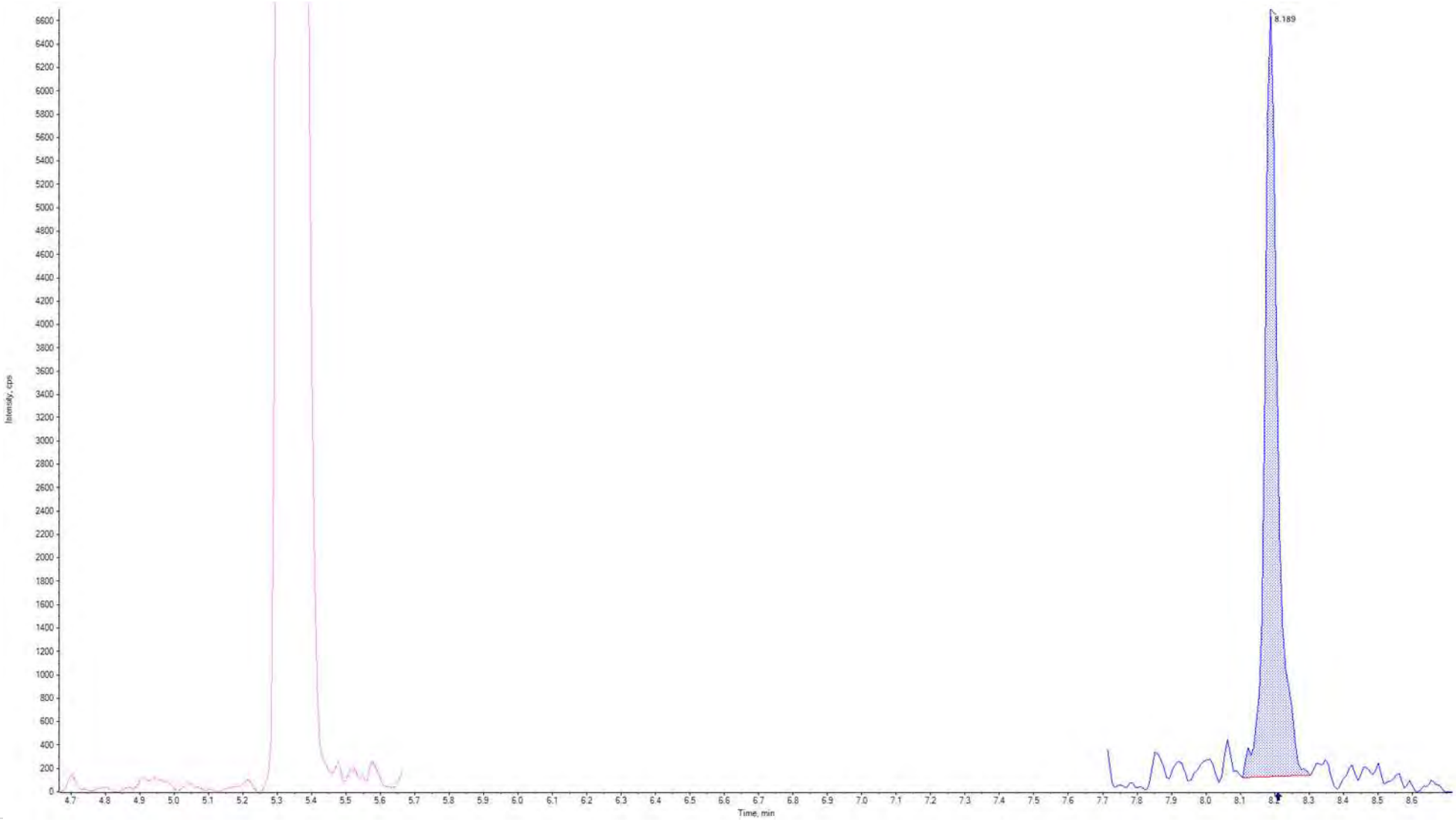
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

7:3FTCA_2
Sample: L2450786-07 S/N:118025.0 Points Across peak:24



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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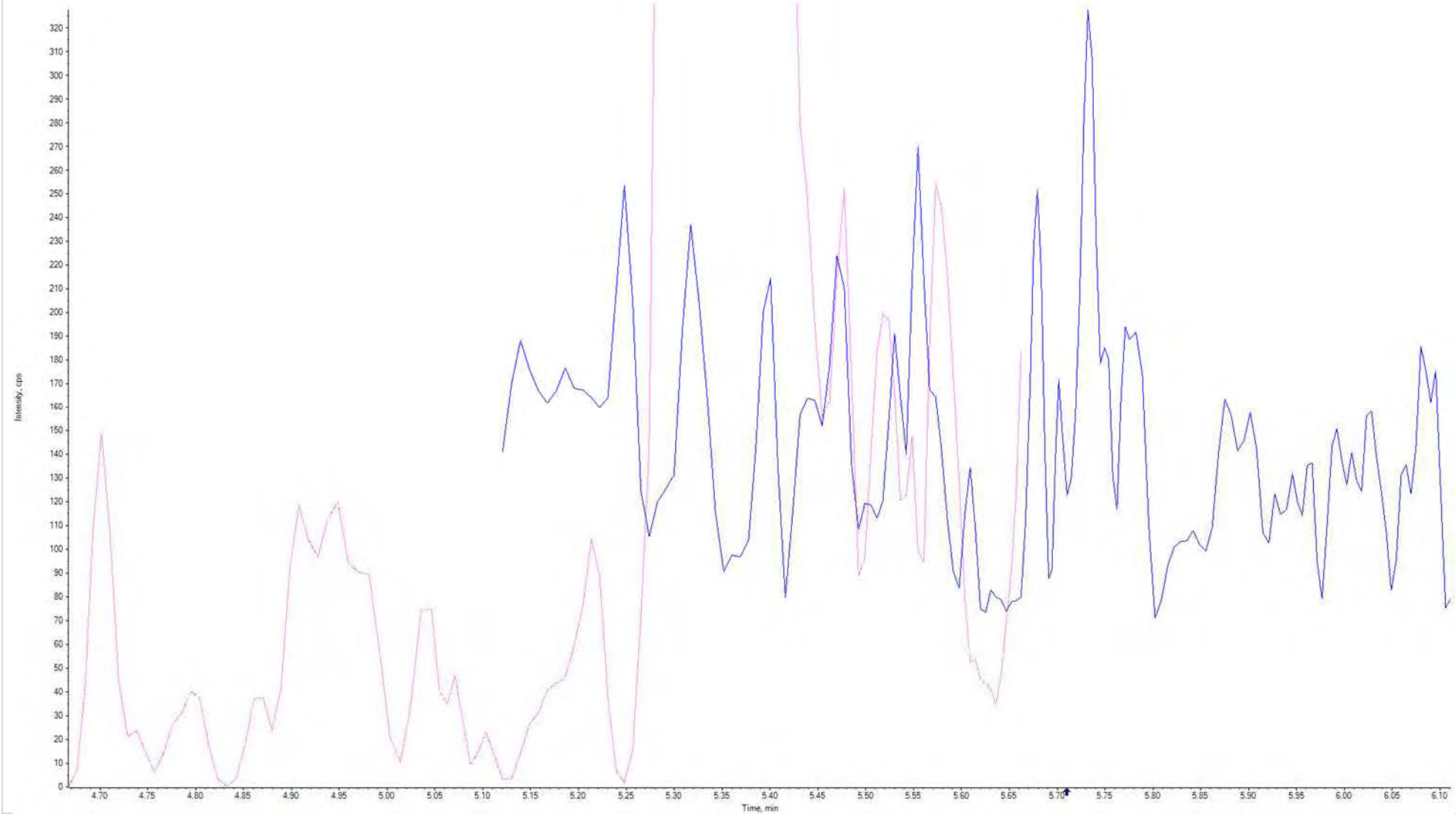
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFEESA
Sample: L2450786-07 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Generated: 9/19/2024 8:04:31 AM

PFEESA_2
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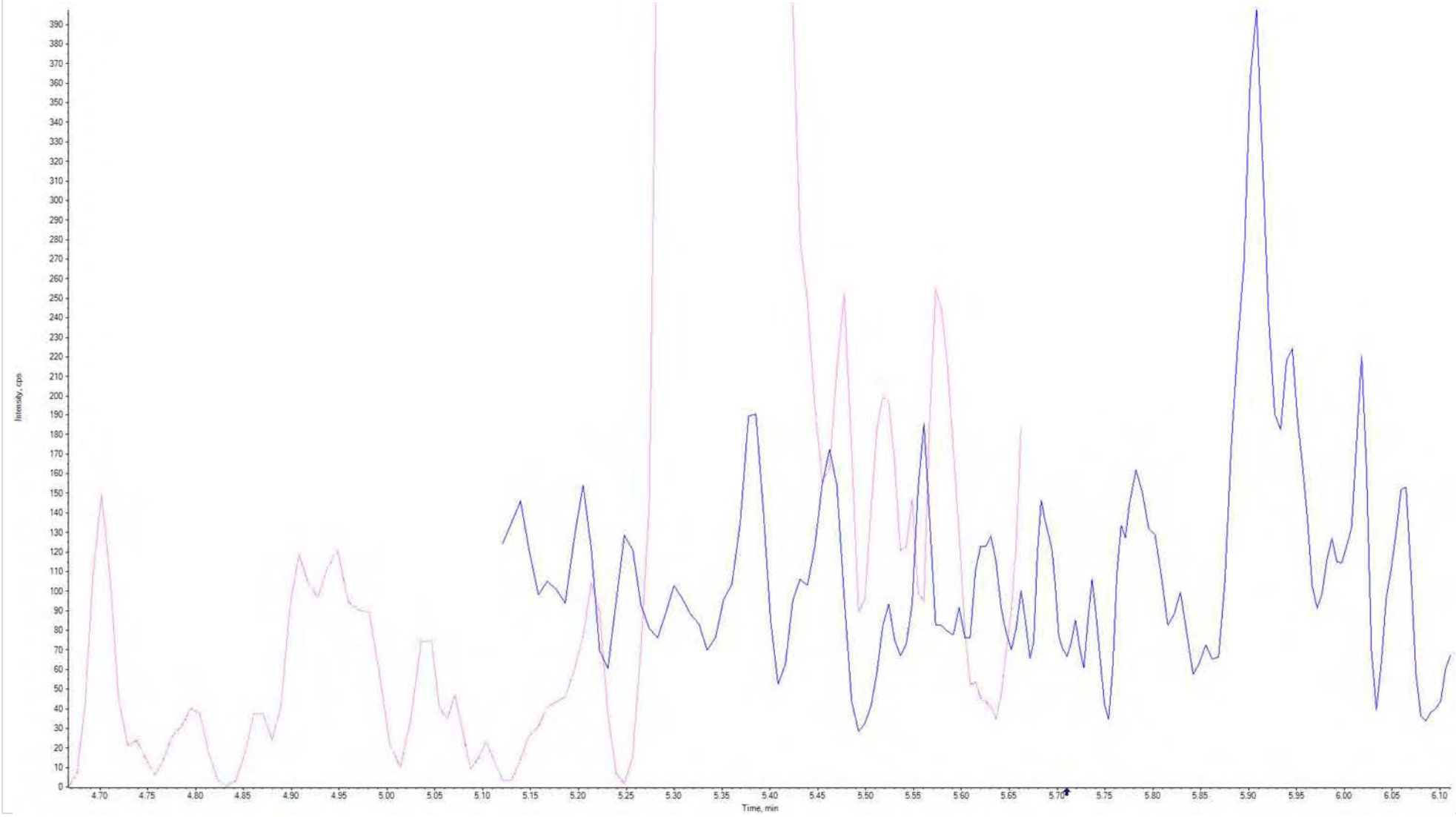

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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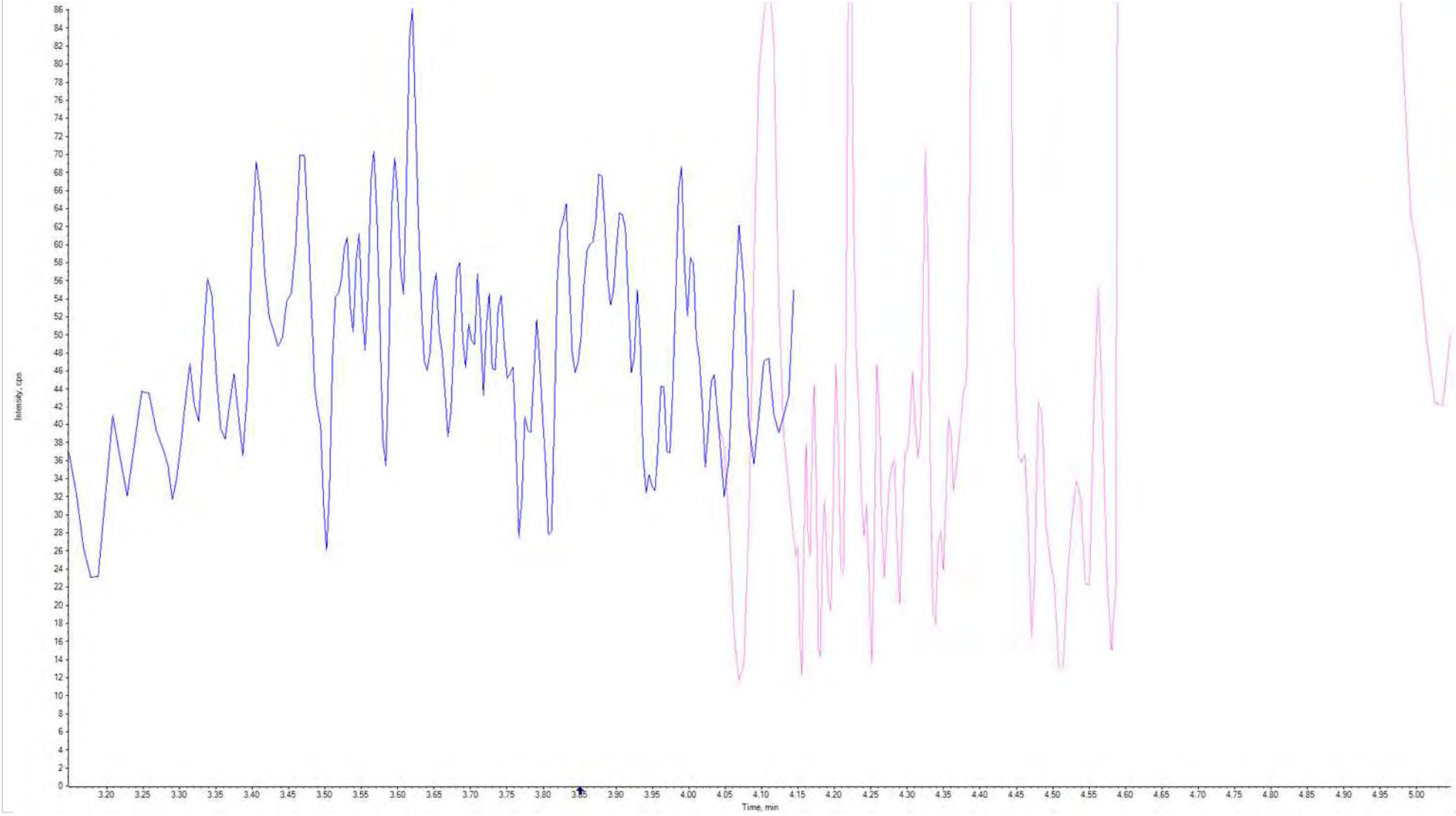
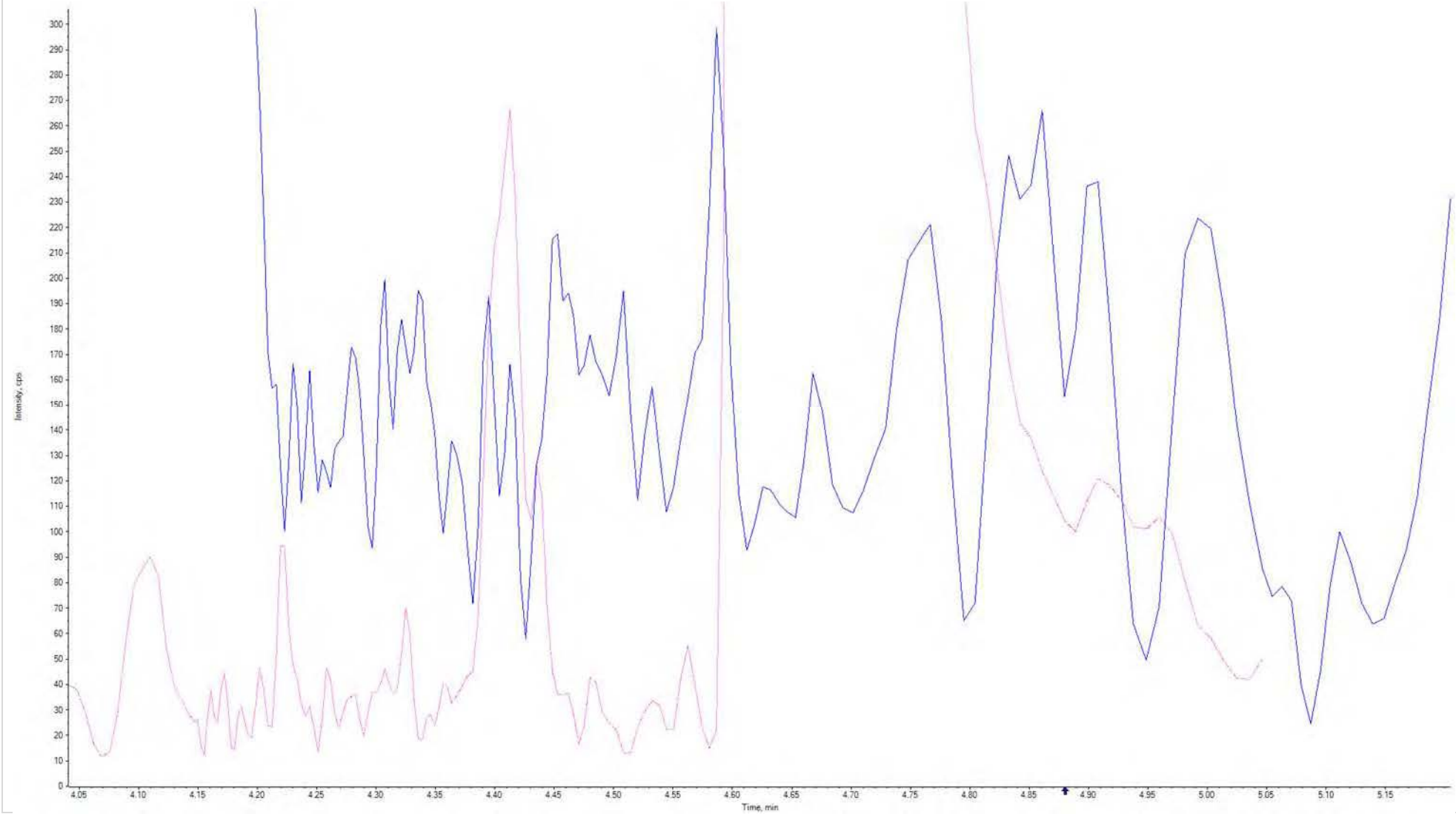
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFMPA
Sample: L2450786-07 S/N:N/A Points Across peak:N/A

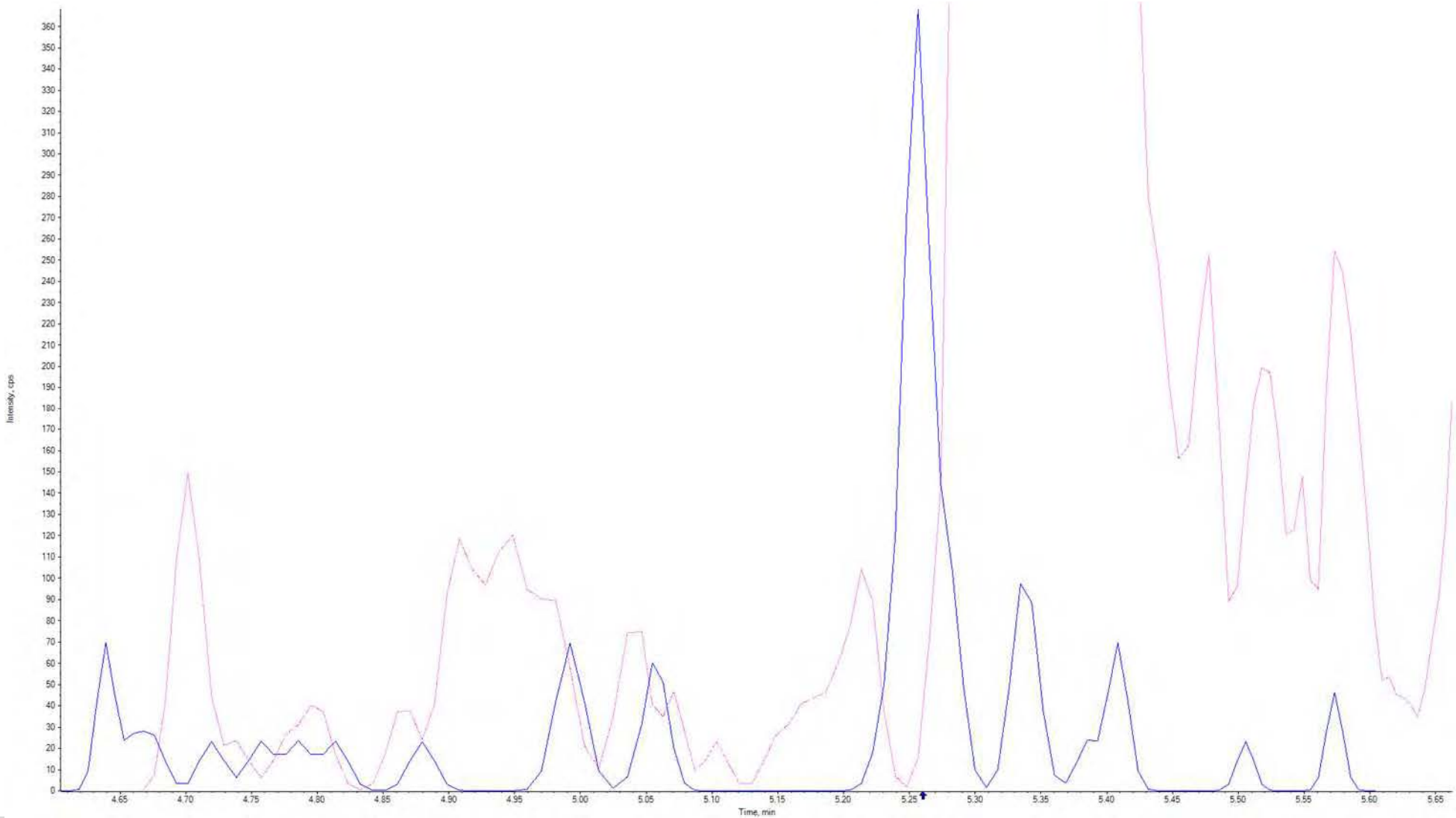


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFMBA
Sample: L2450786-07 S/N:N/A Points Across peak:N/A

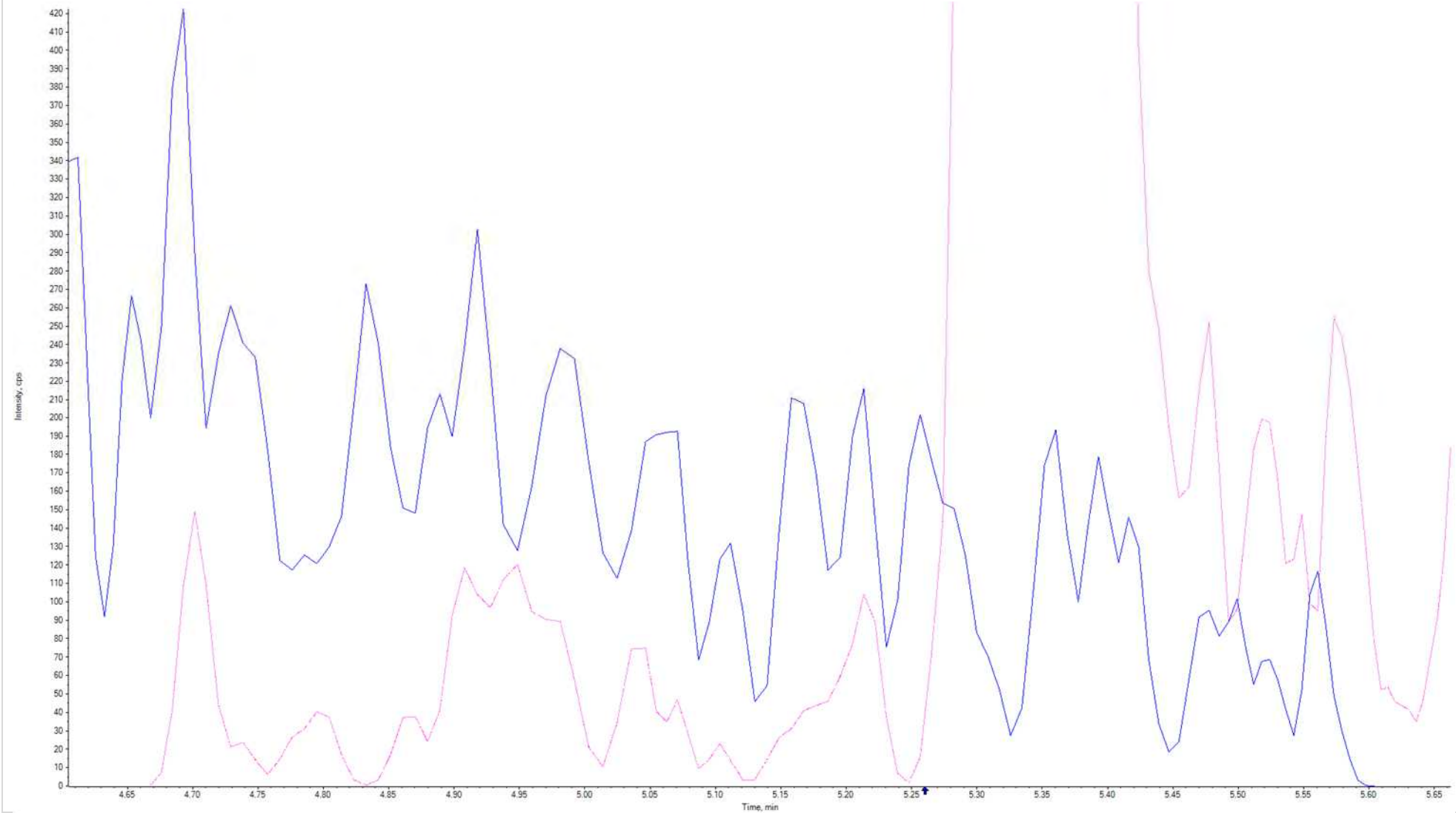


NFDHA
Sample: L2450786-07 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NFDHA_2
Sample: L2450786-07 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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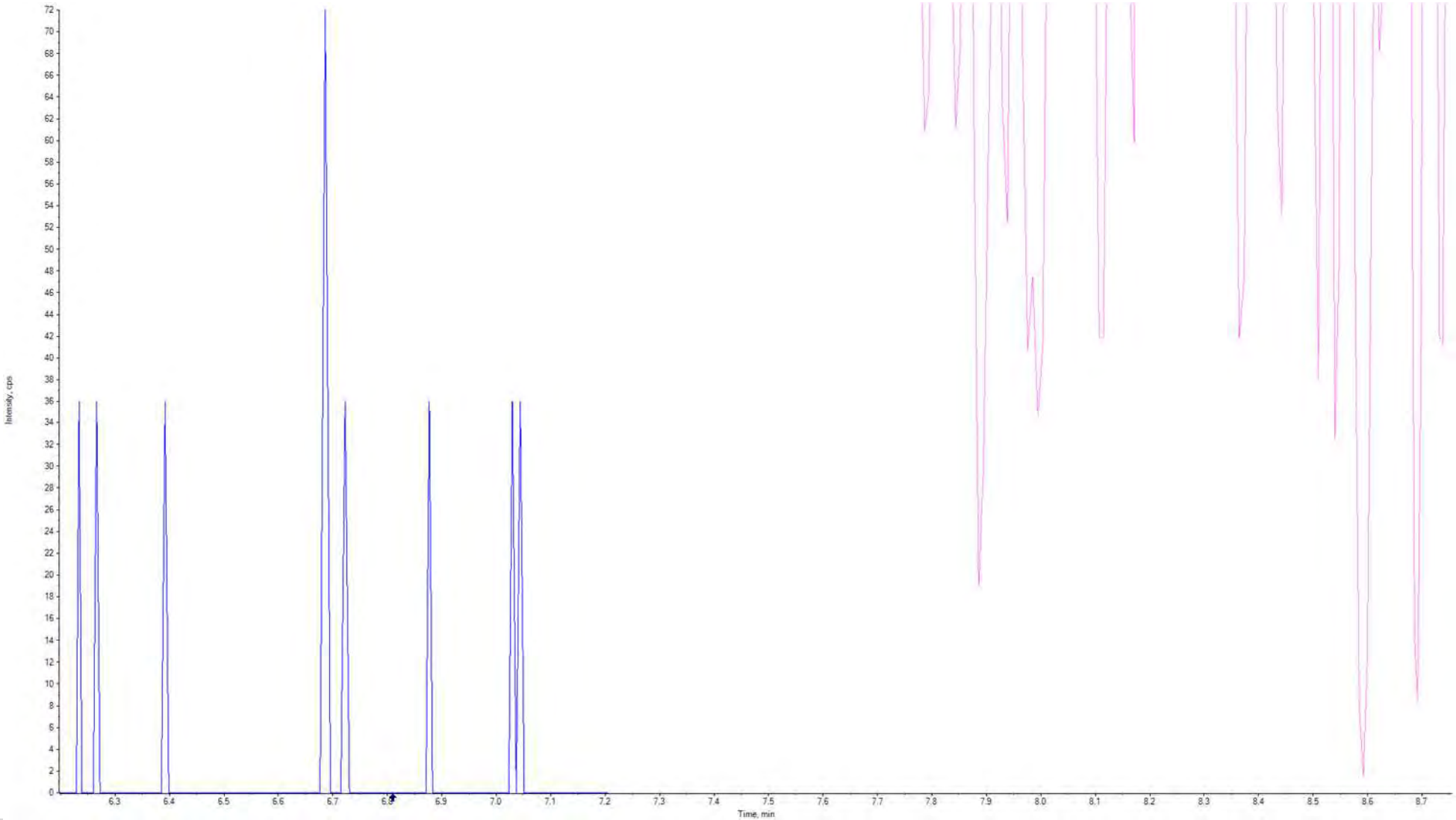
Generated: 9/19/2024 8:04:31 AM

TDCA
Sample: L2450786-07 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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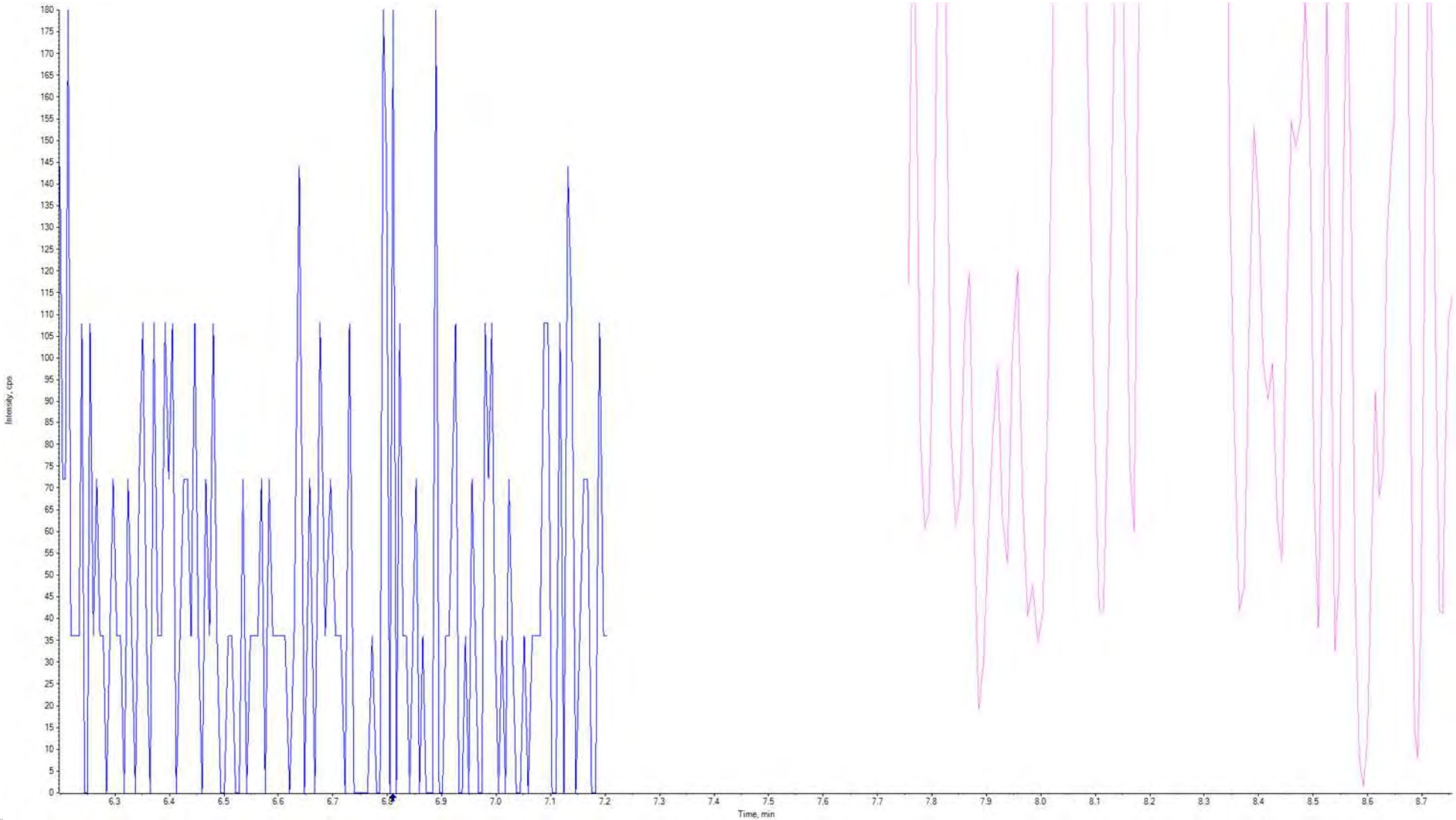
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

TDCA_2
Sample: L2450786-07 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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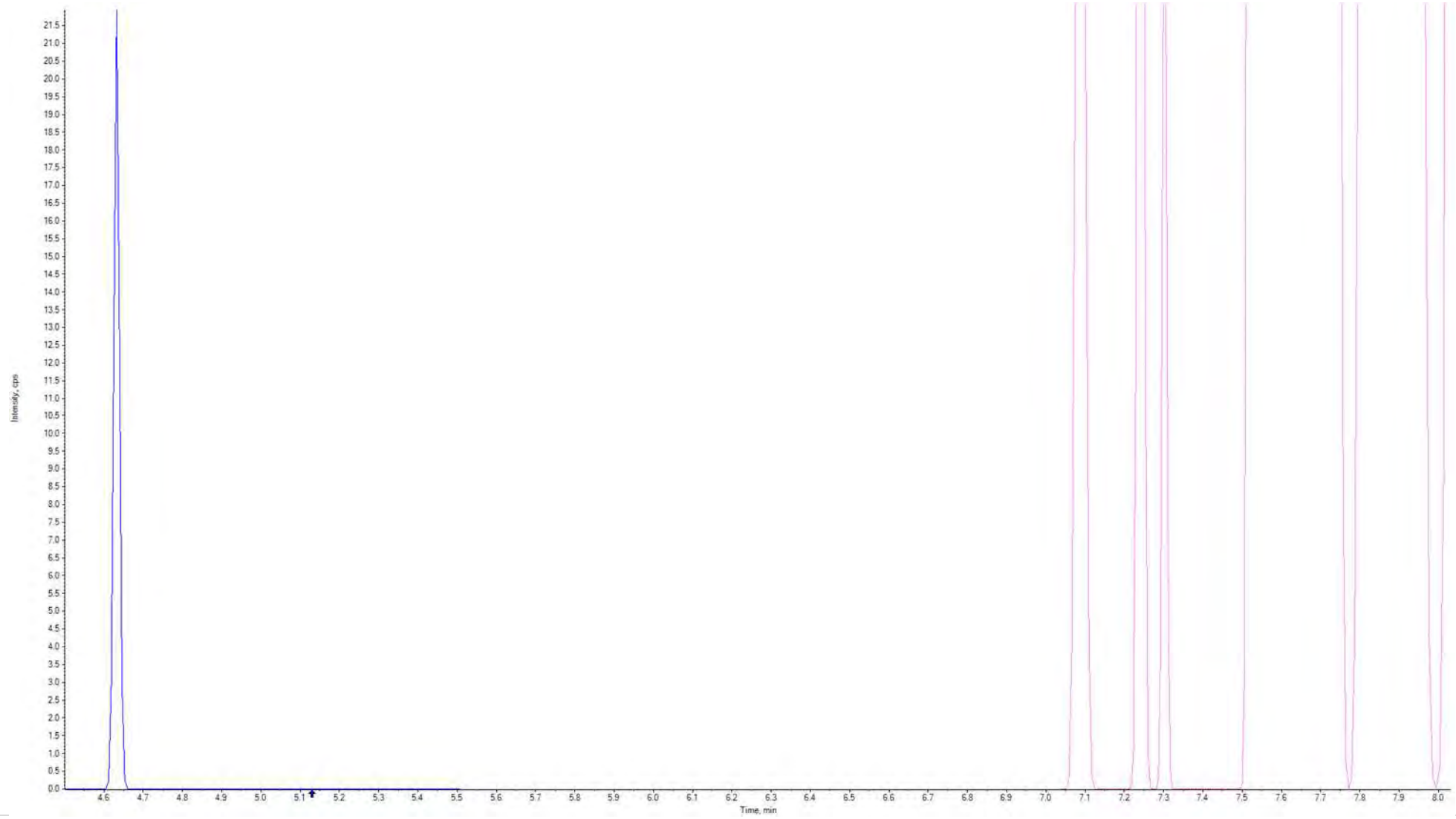
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C2D4-4:2FTS
Sample: L2450786-07 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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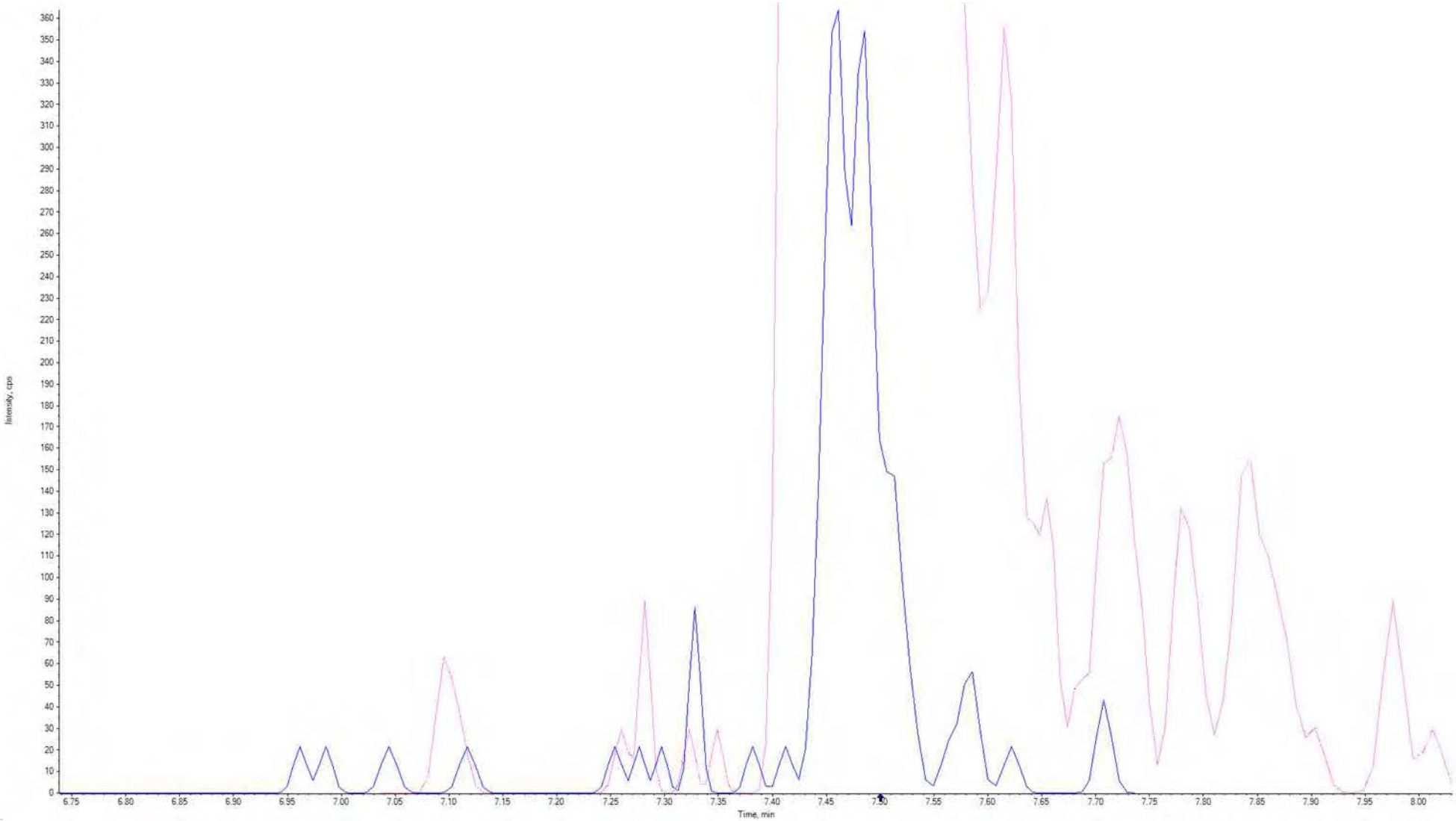
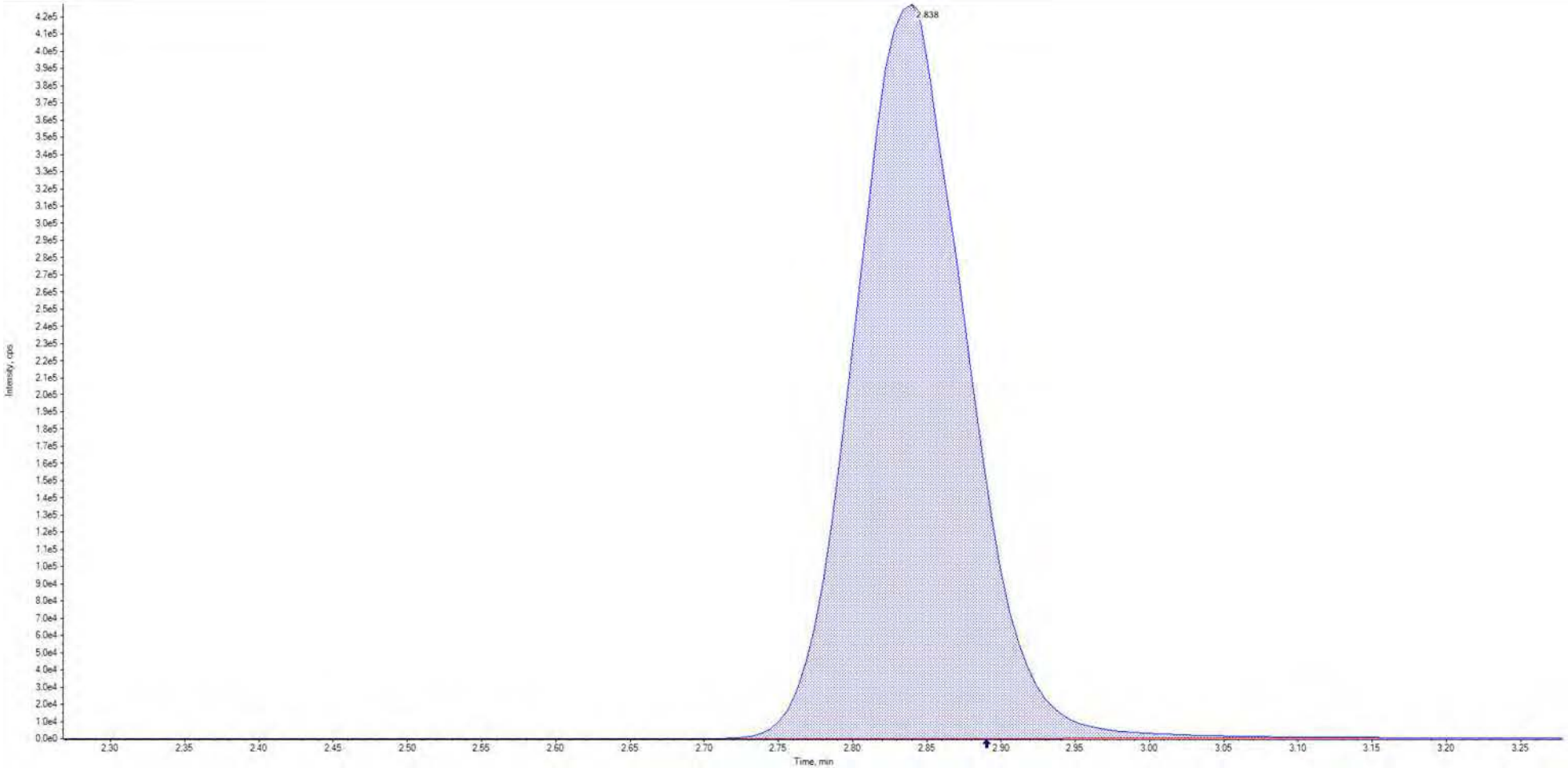
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C2-PFOA
Sample: L2450786-07 S/N:N/A Points Across peak:N/A



13C4-PFBA
Sample: L2450786-07



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Generated: 9/19/2024 8:04:31 AM

13C5-PFPeA
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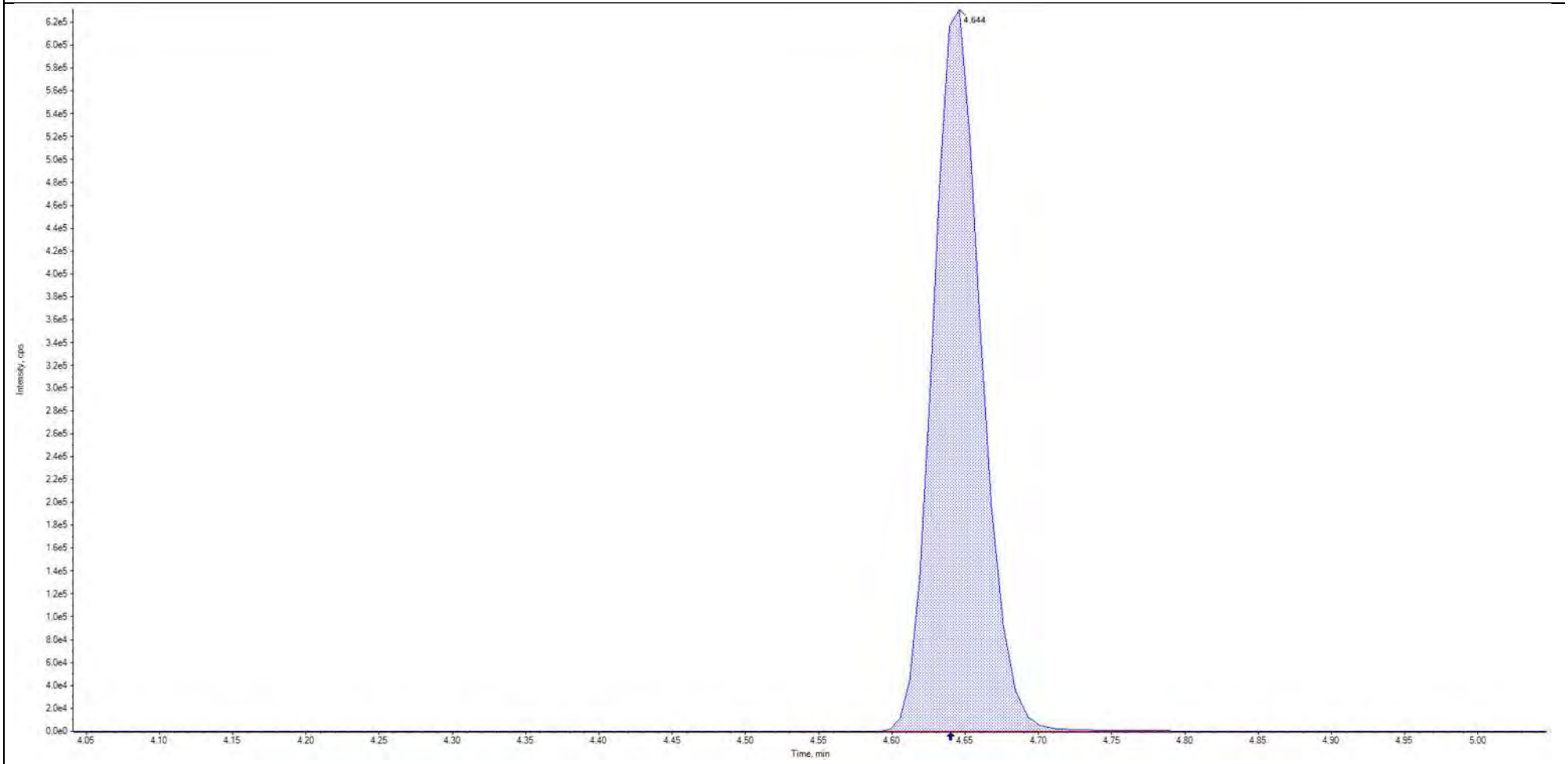
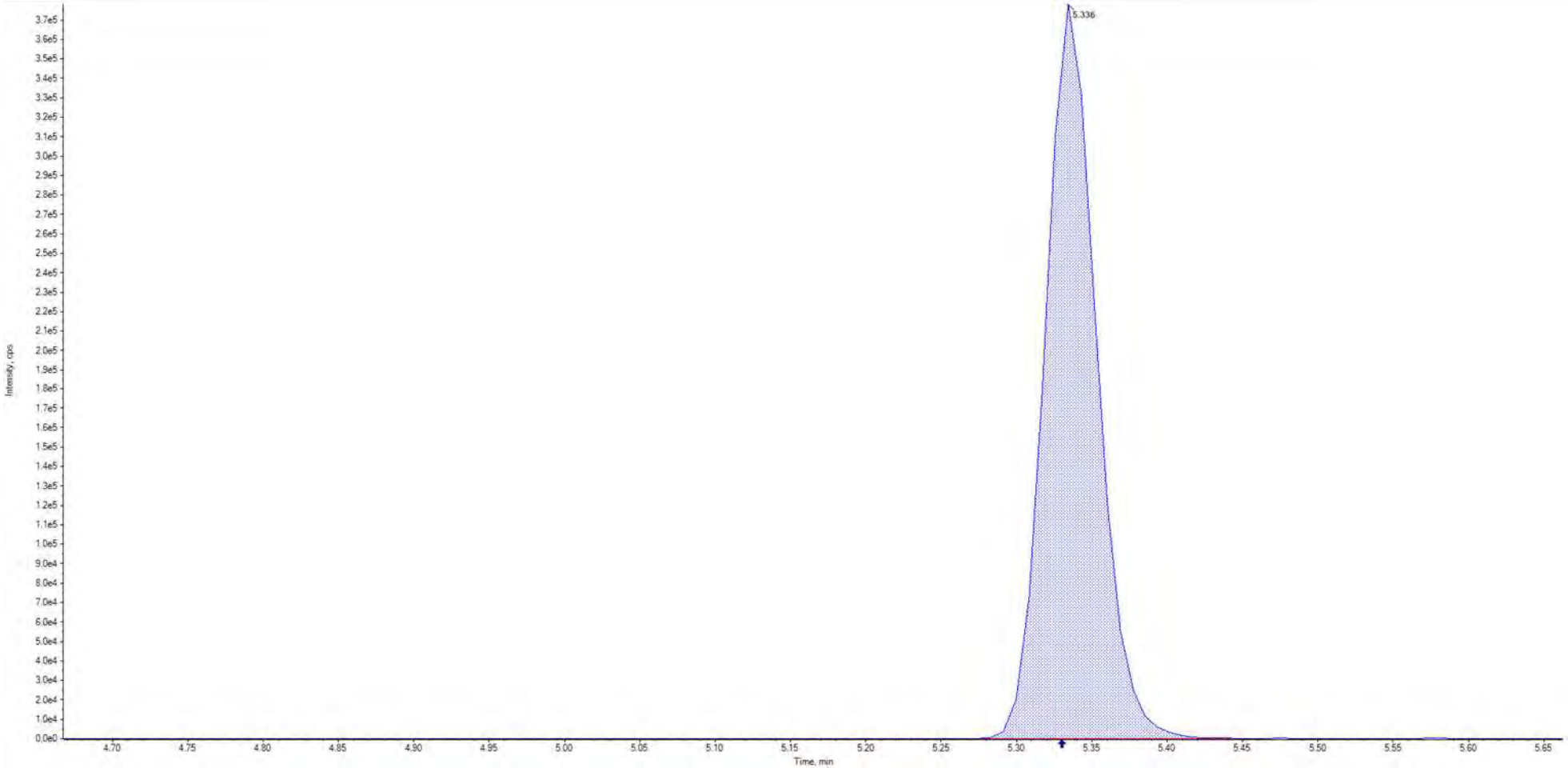
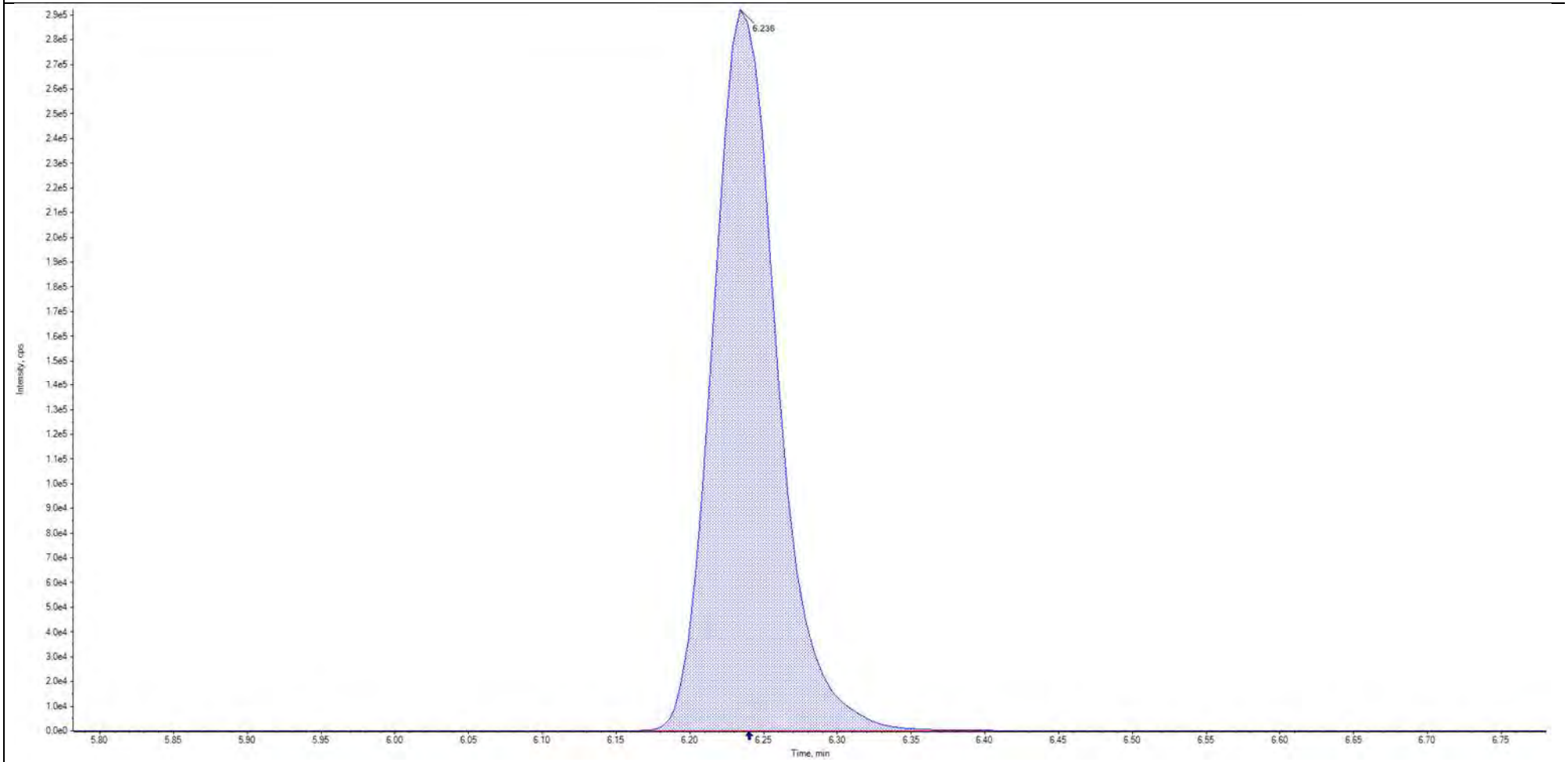


13C5-PFHxA
Sample: L2450786-07



13C4-PFHpA
Sample: L2450786-07



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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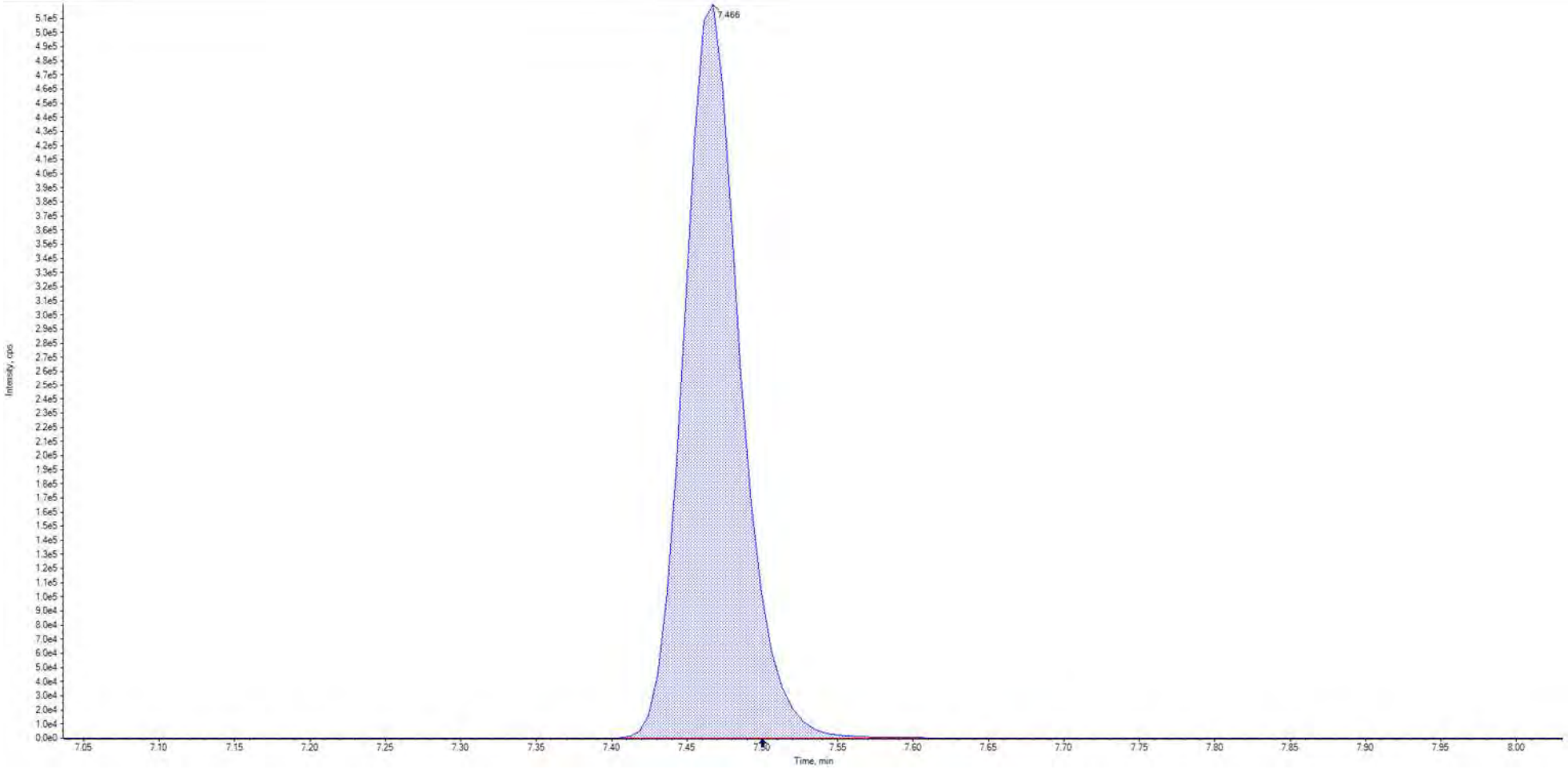
Generated: 9/19/2024 8:04:31 AM

13C8-PFOA
Sample: L2450786-07



13C9-PFNA
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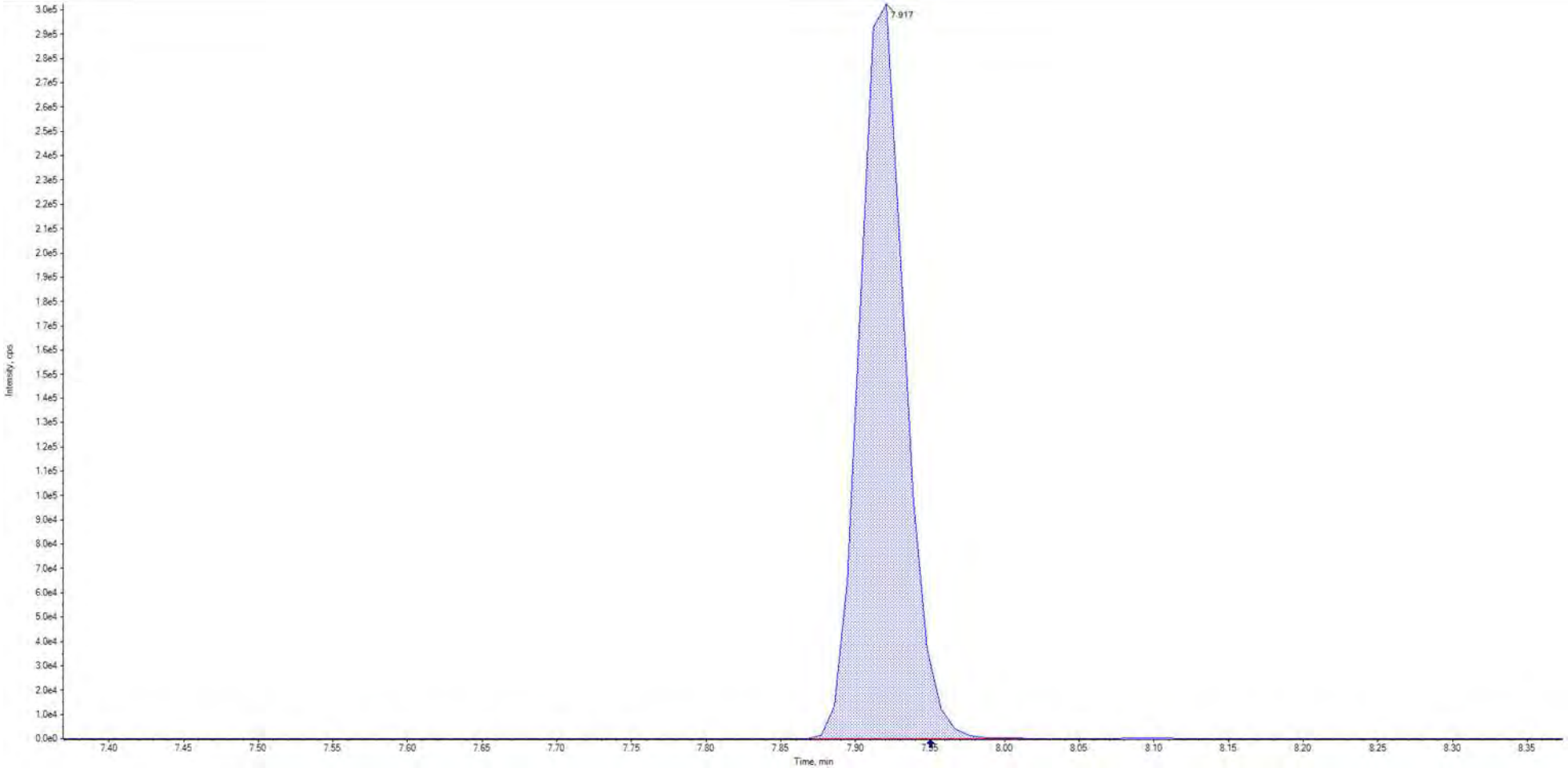

13C6-PFDA
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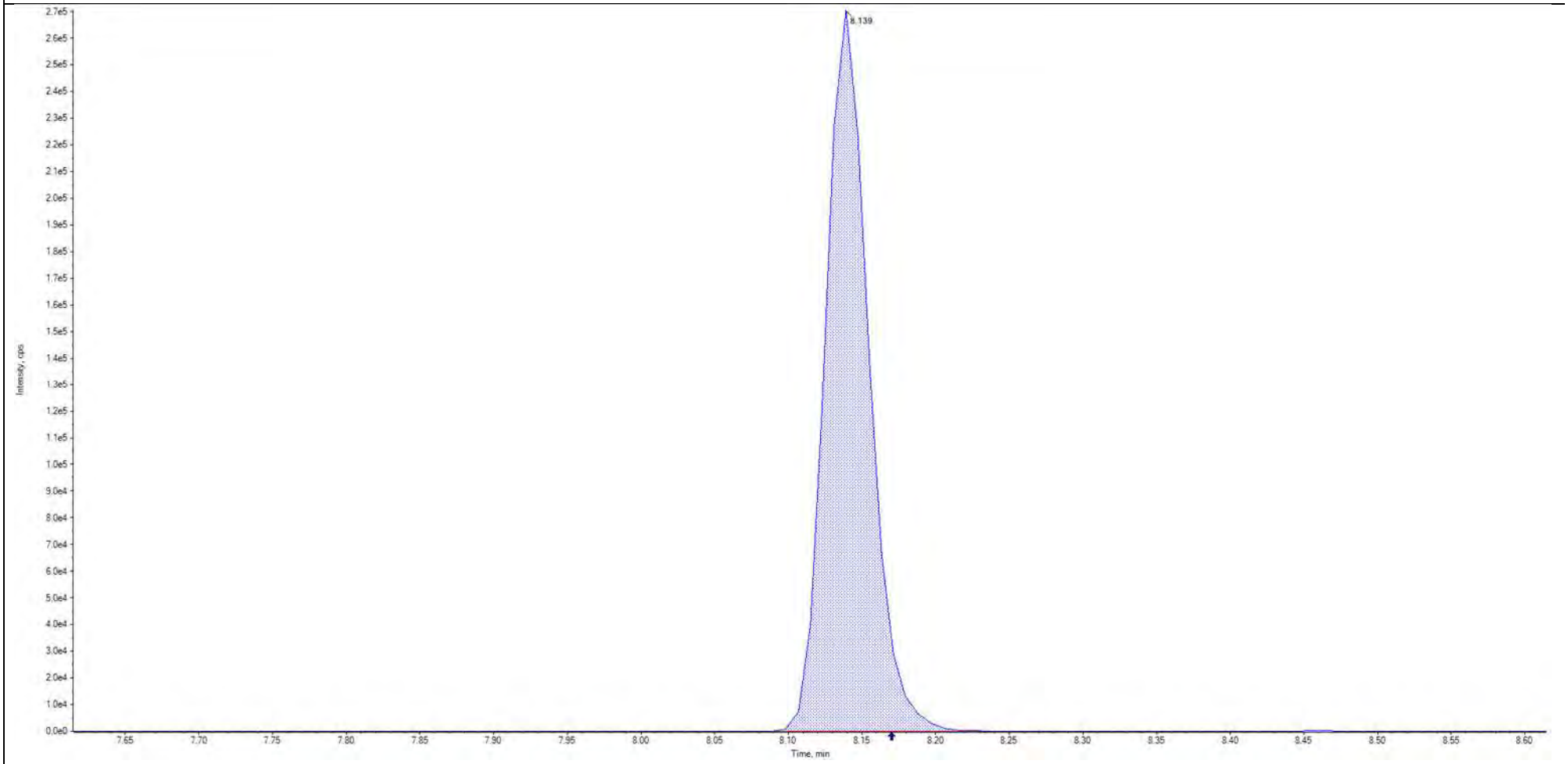

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
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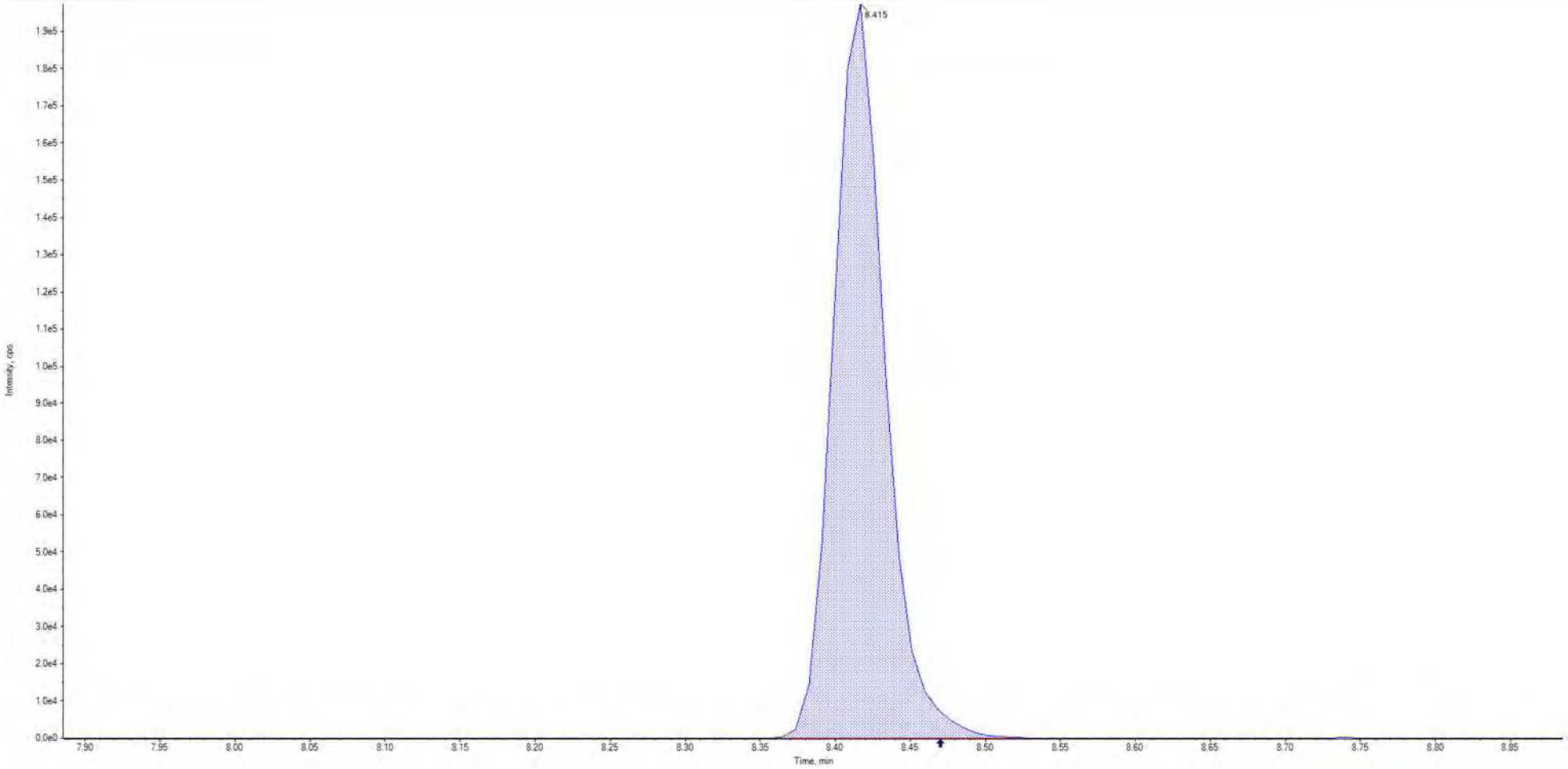
Generated: 9/19/2024 8:04:31 AM

13C7-PFUnA
Sample: L2450786-07



13C2-PFDoA
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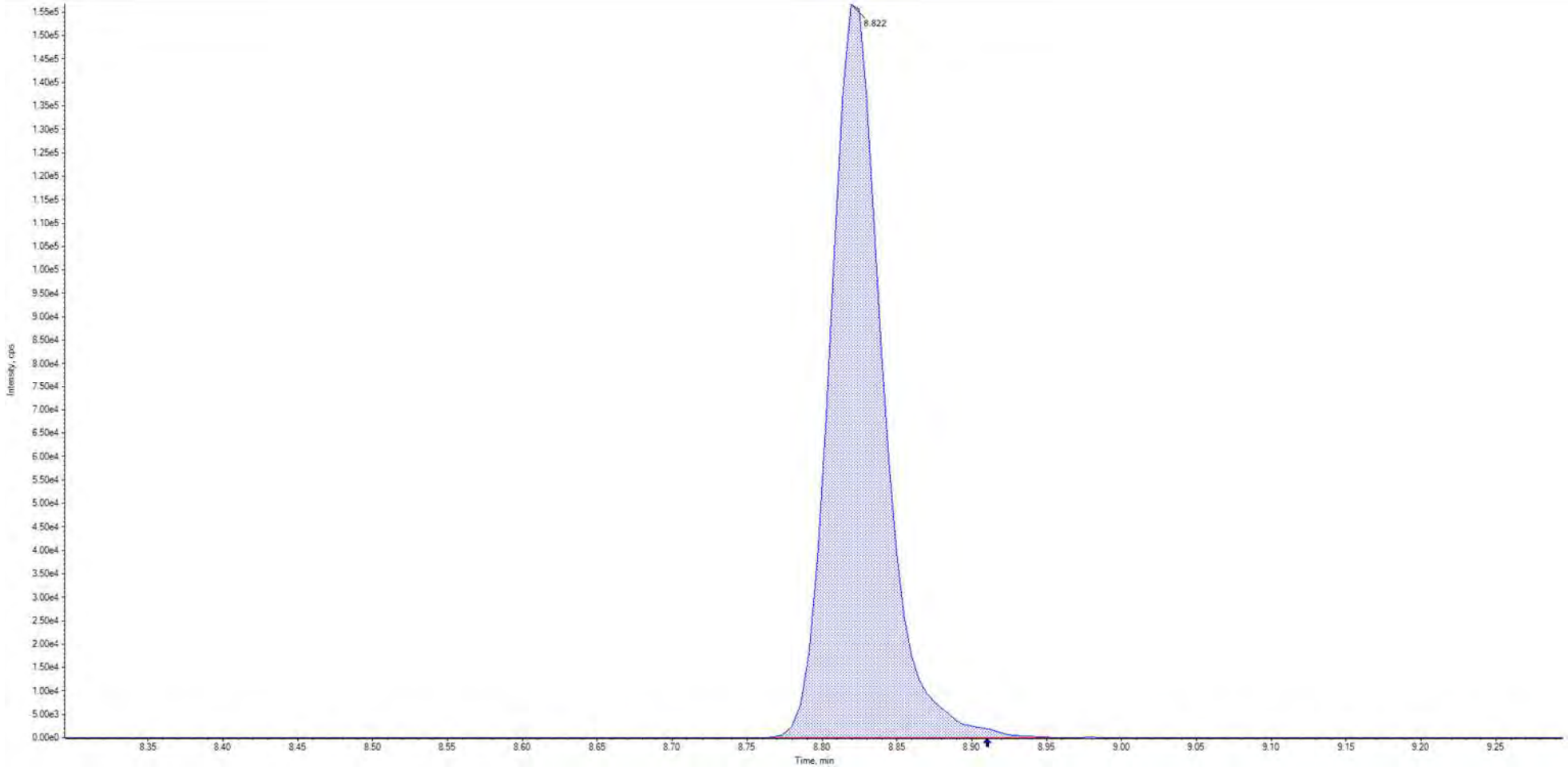

13C2-PFTeDA
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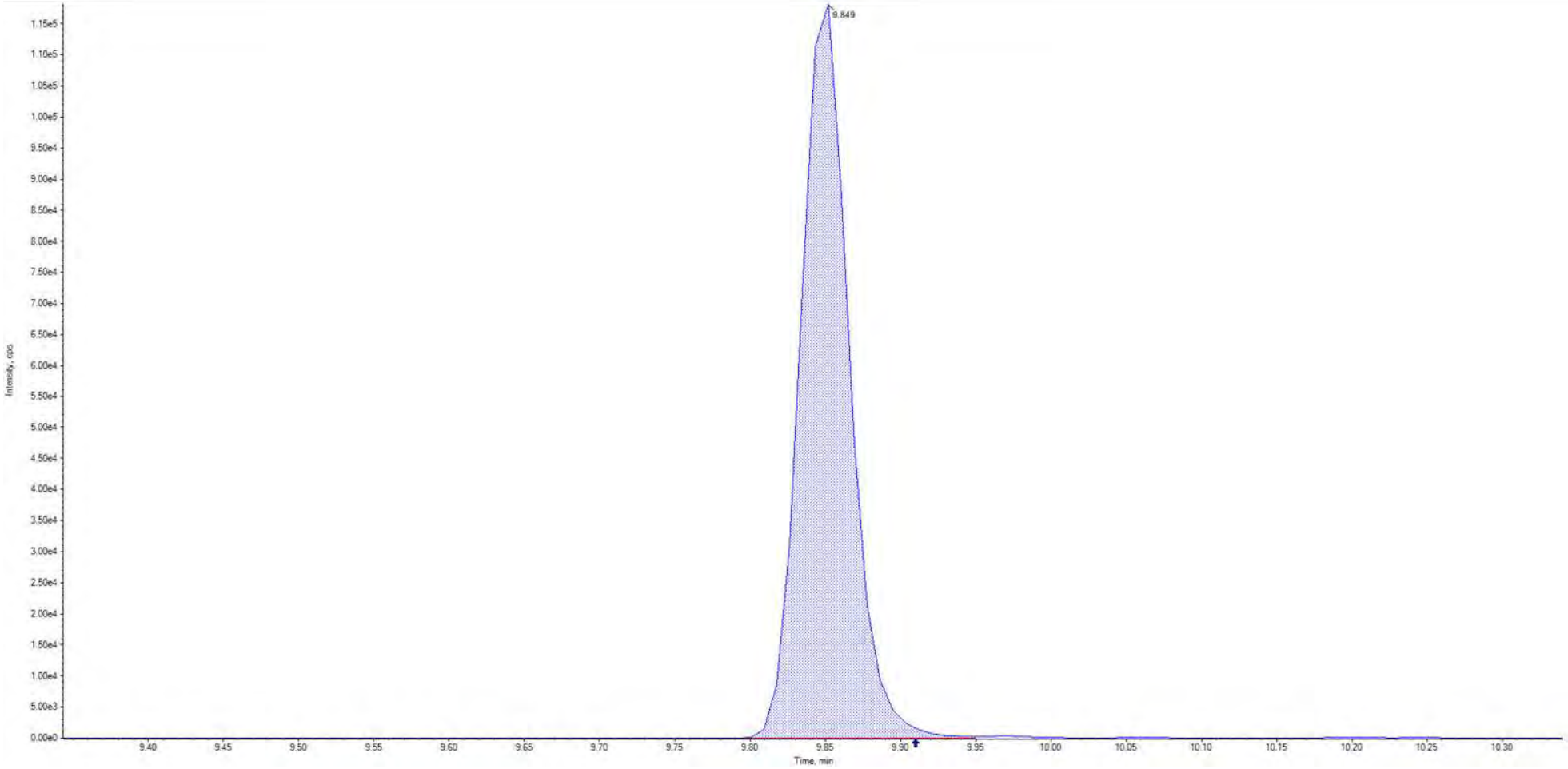

13C3-PFBS
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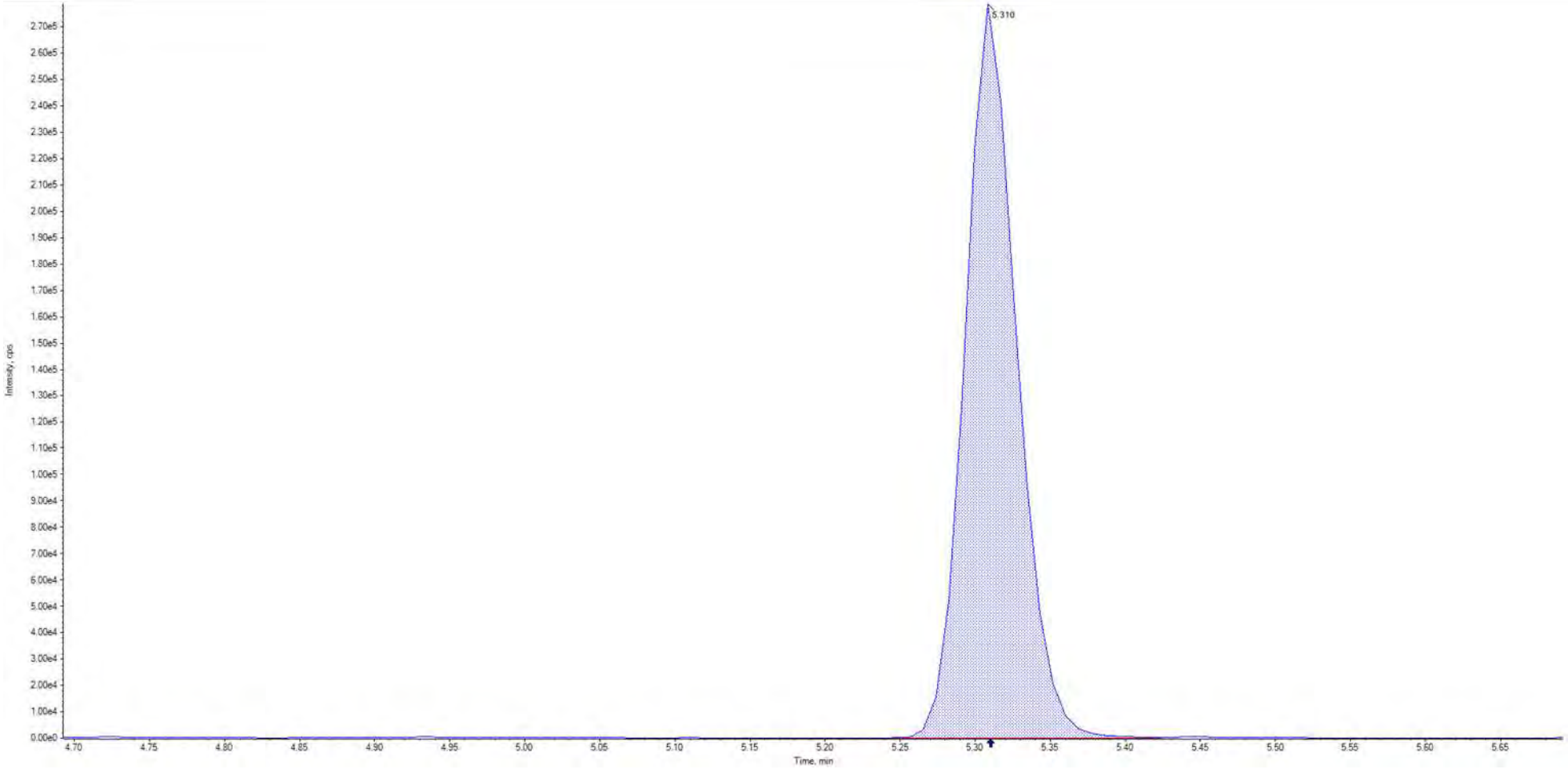

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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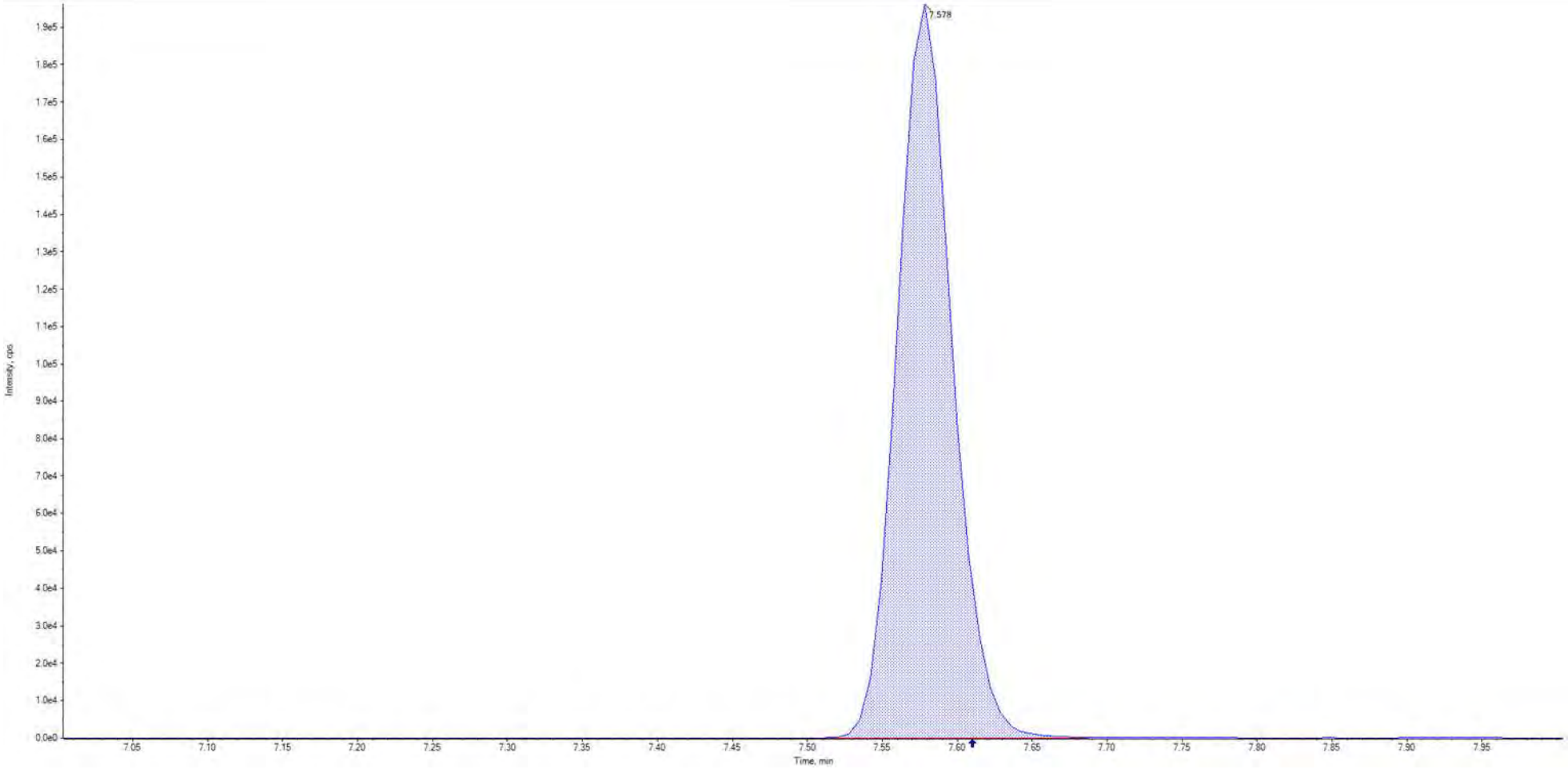
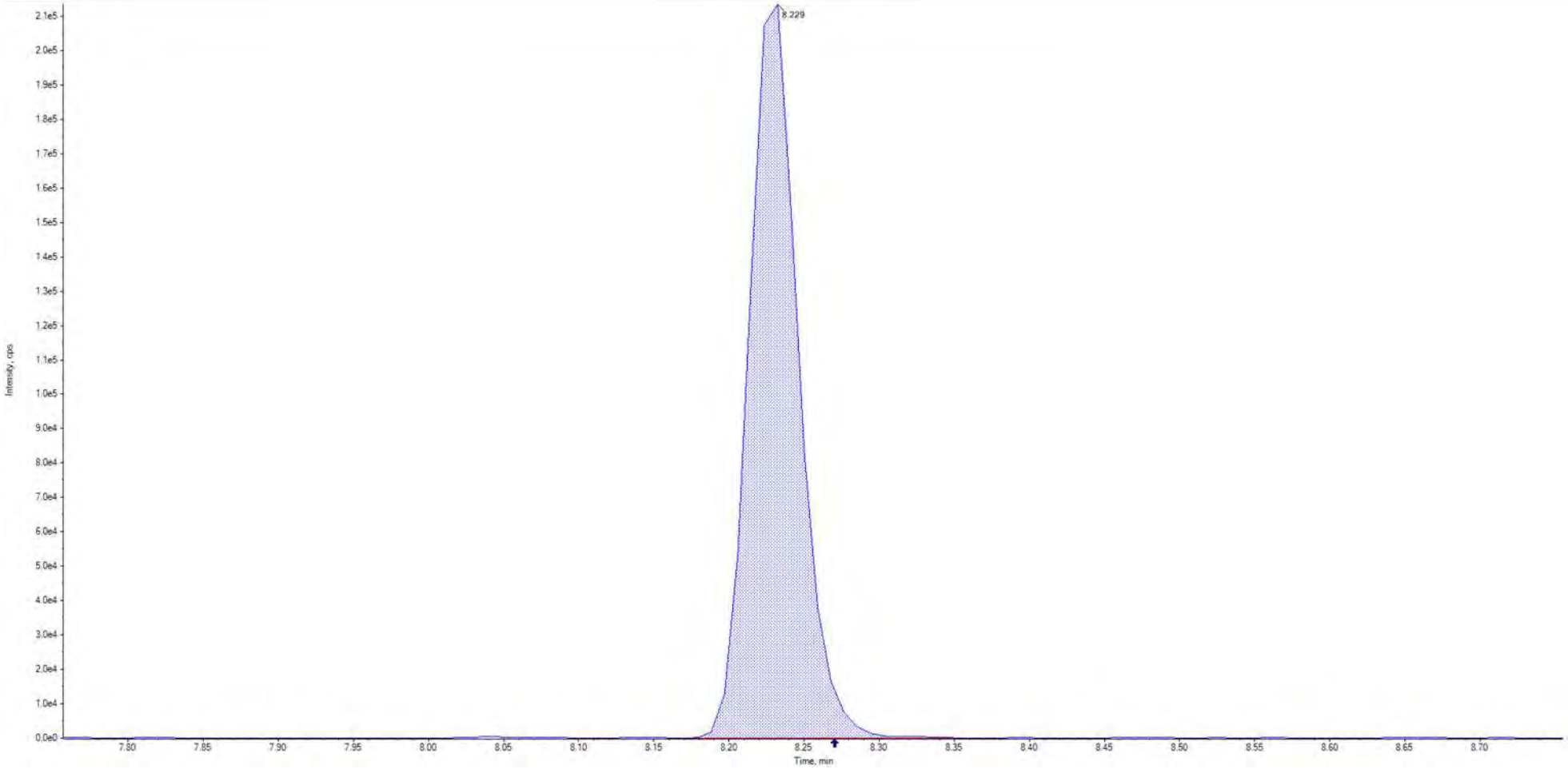
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C3-PFHxS
Sample: L2450786-07



13C8-PFOS
Sample: L2450786-07



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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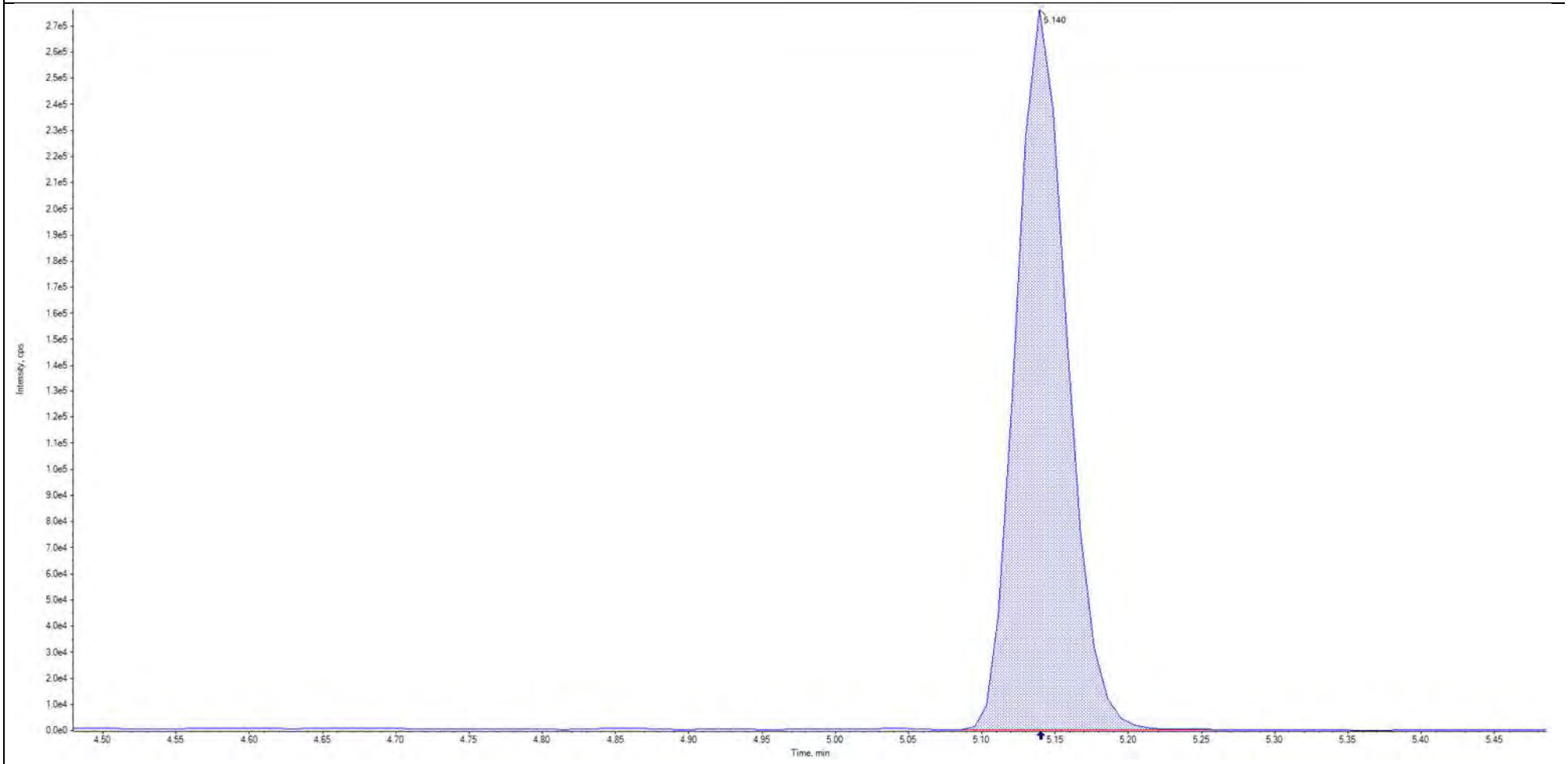
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C2-4:2FTS
Sample: L2450786-07



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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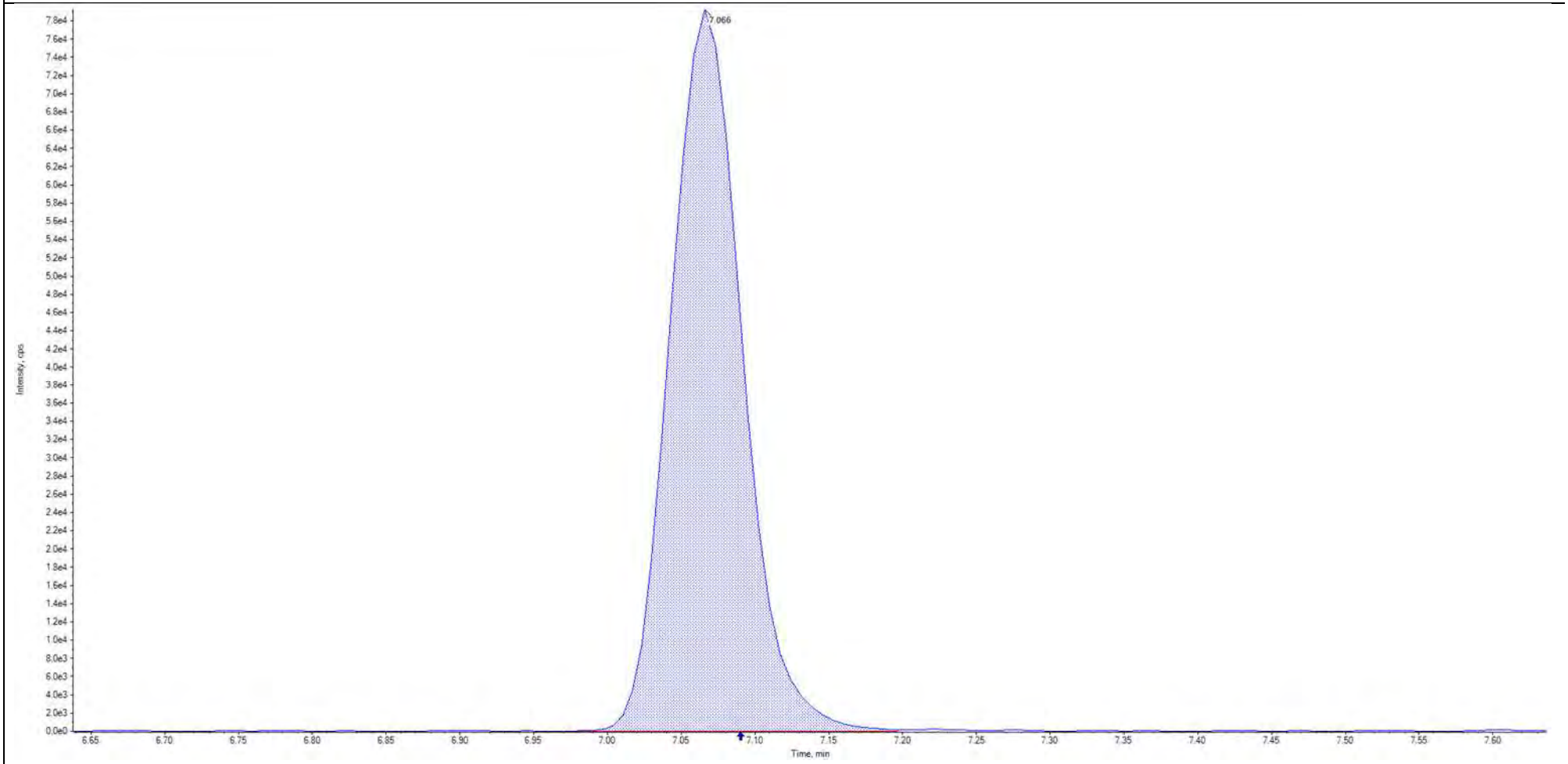
13C2-6:2FTS
Sample: L2450786-07



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Generated: 9/19/2024 8:04:31 AM

13C2-8:2FTS
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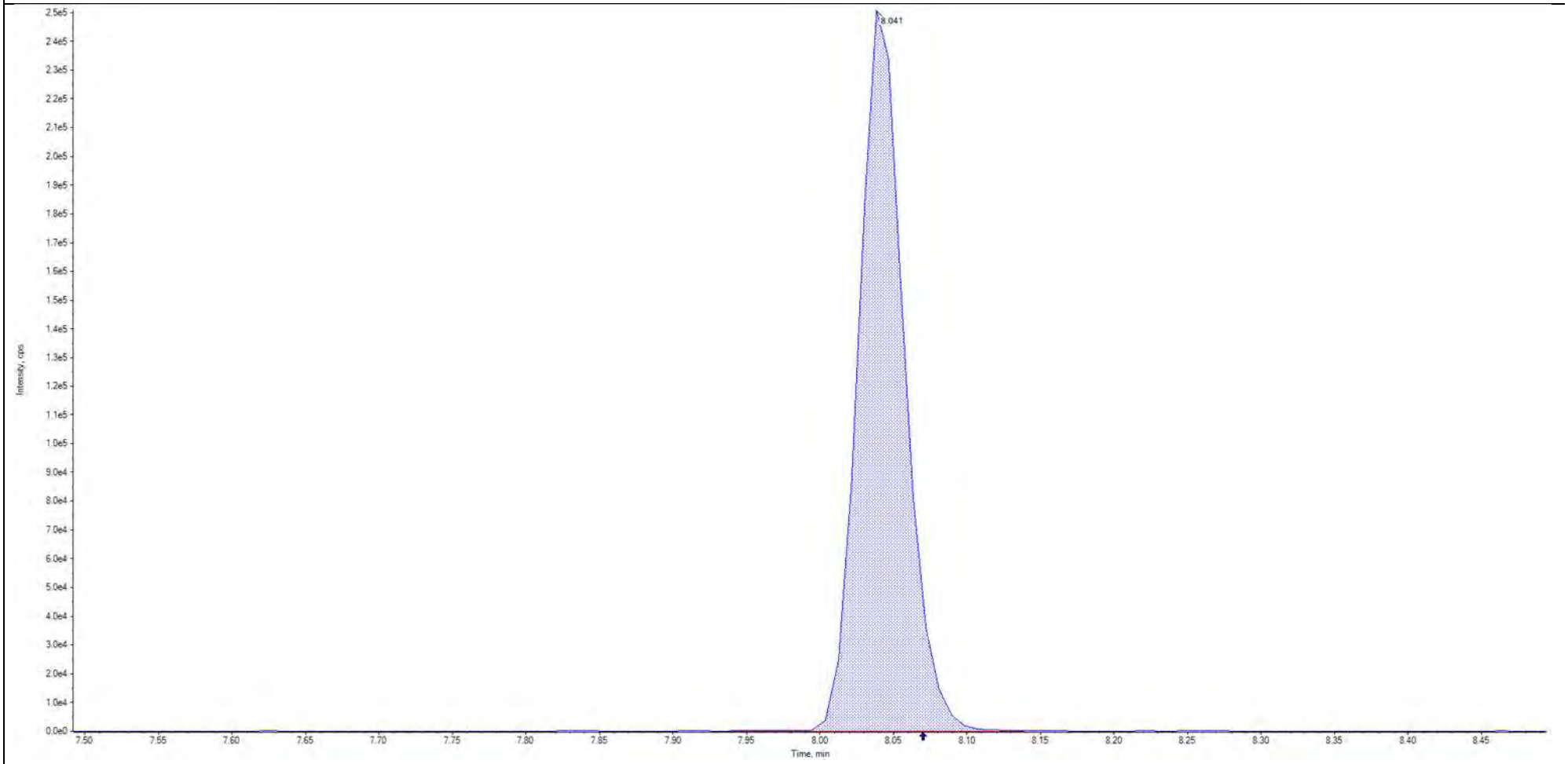

13C8-PFOSA
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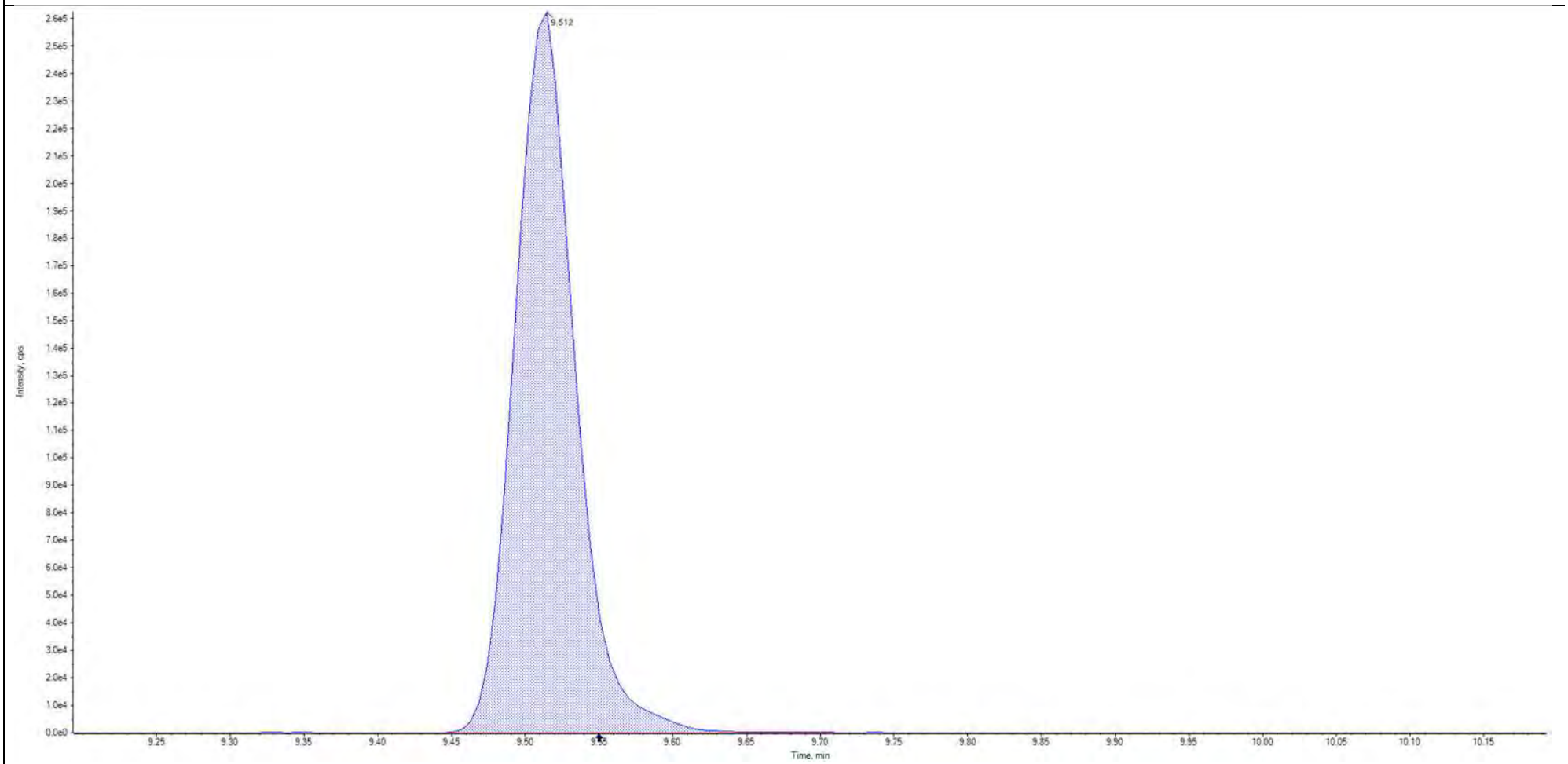
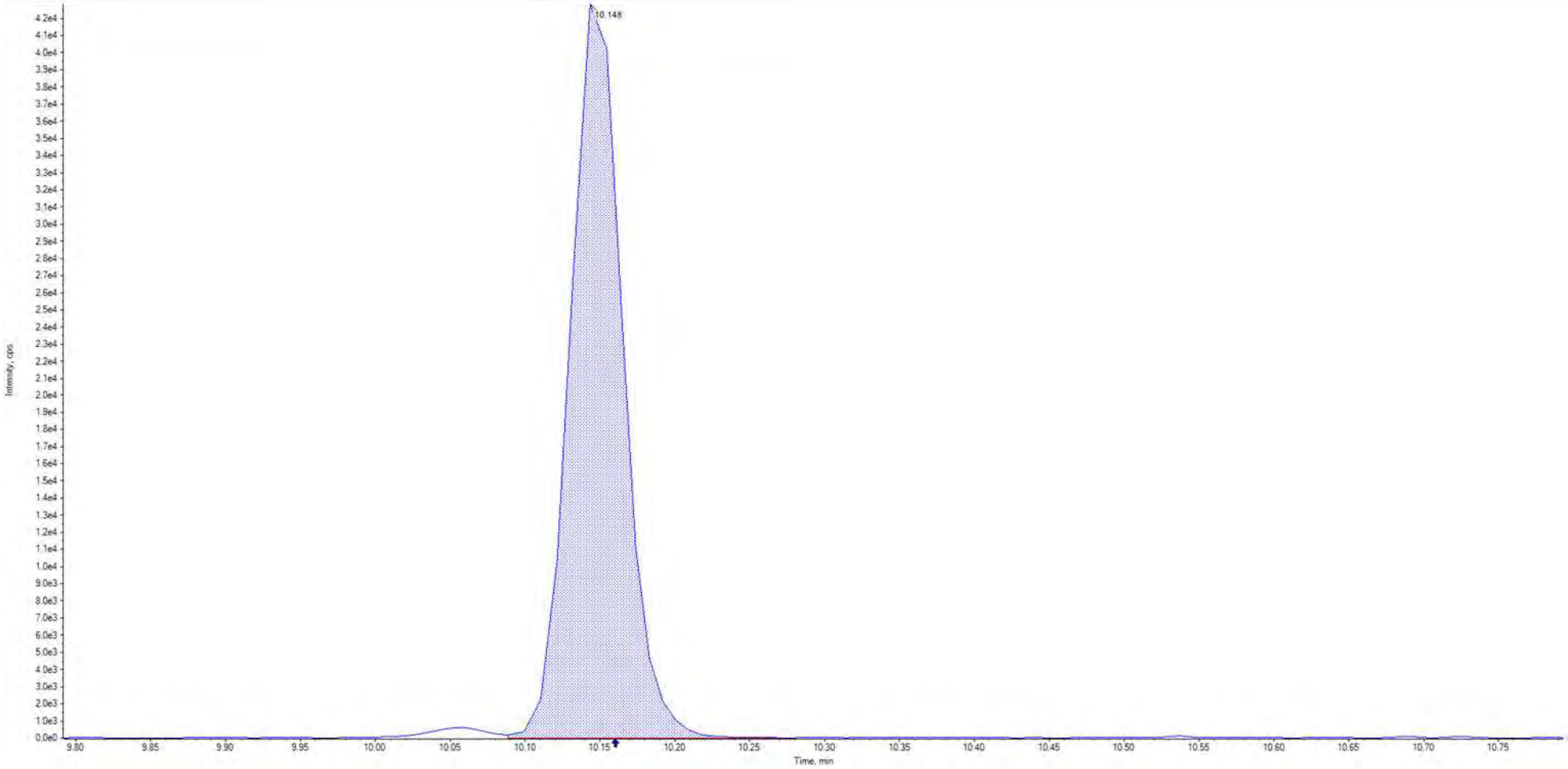


d3-NMeFOSA
Sample: L2450786-07



d5-NEtFOSA
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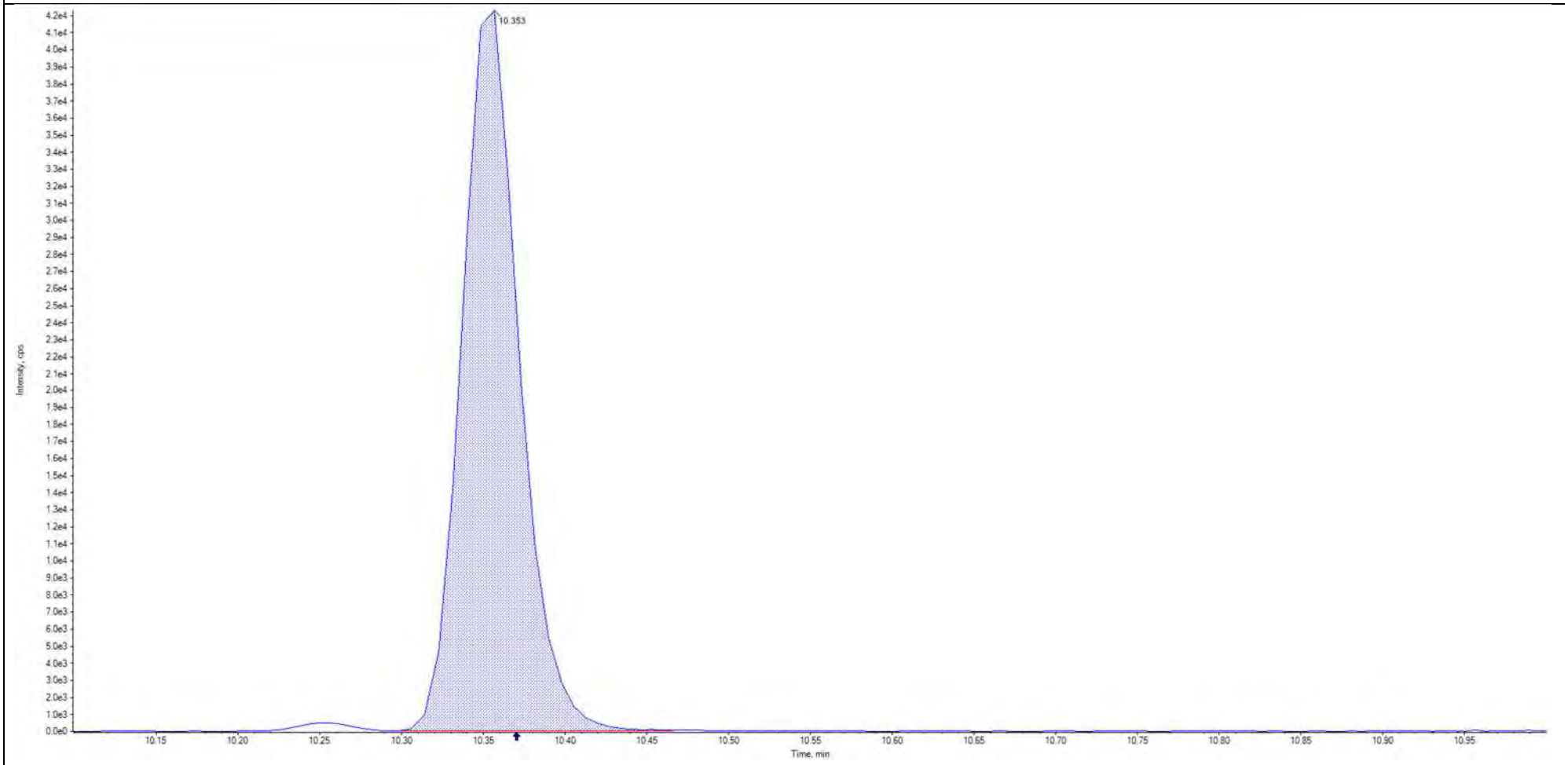

d3-NMeFOSAA
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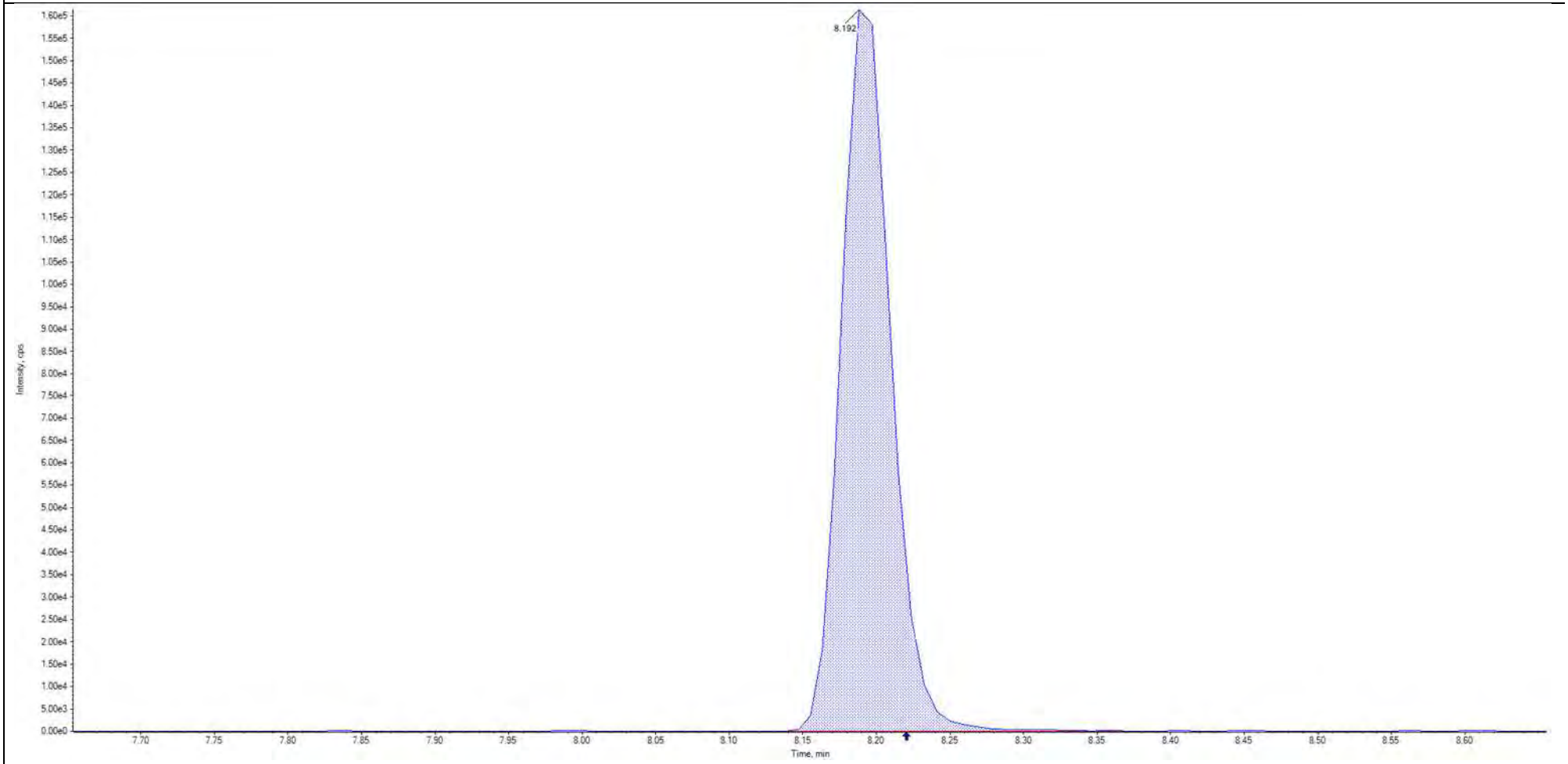

d5-NEtFOSAA
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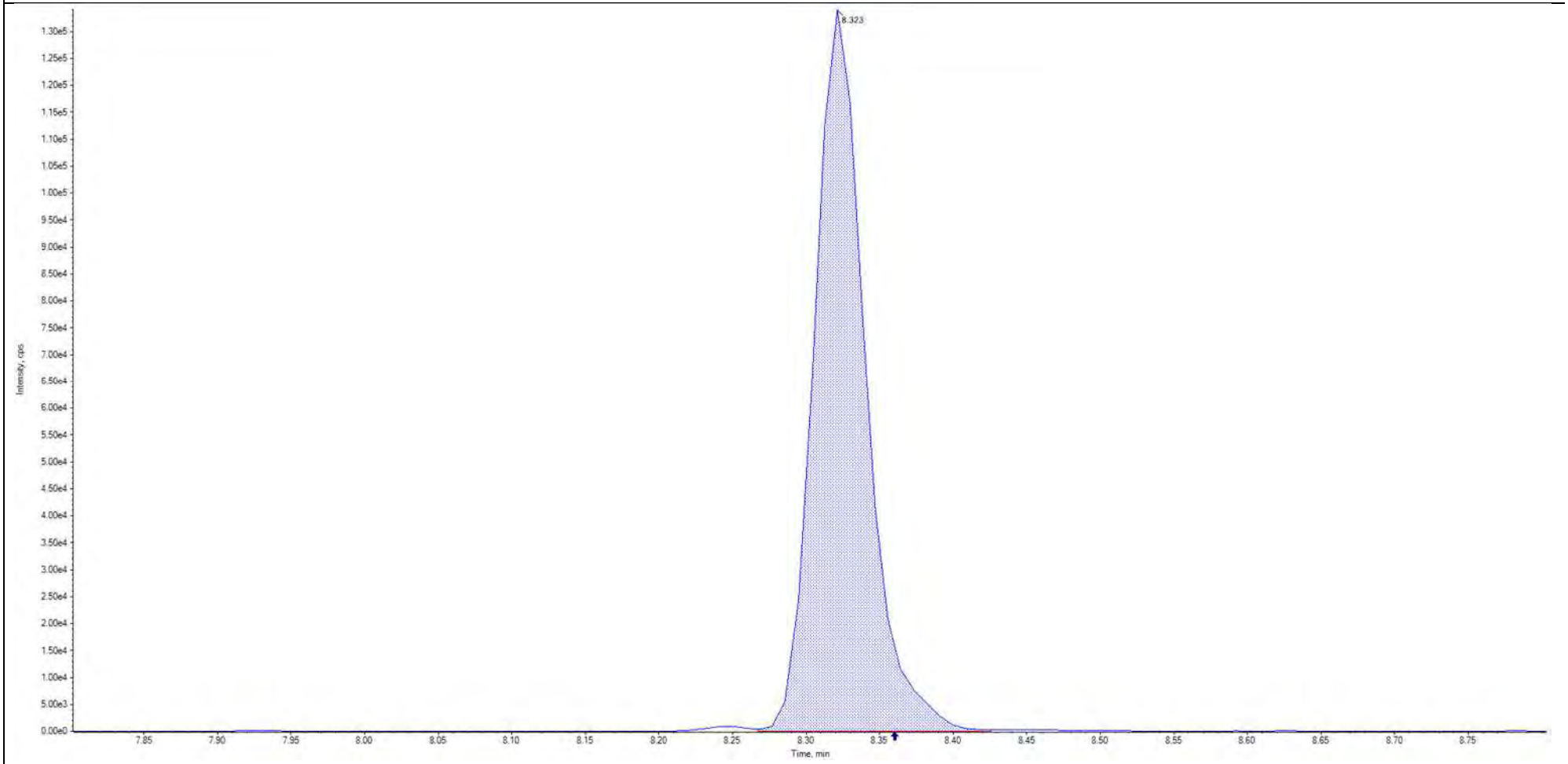
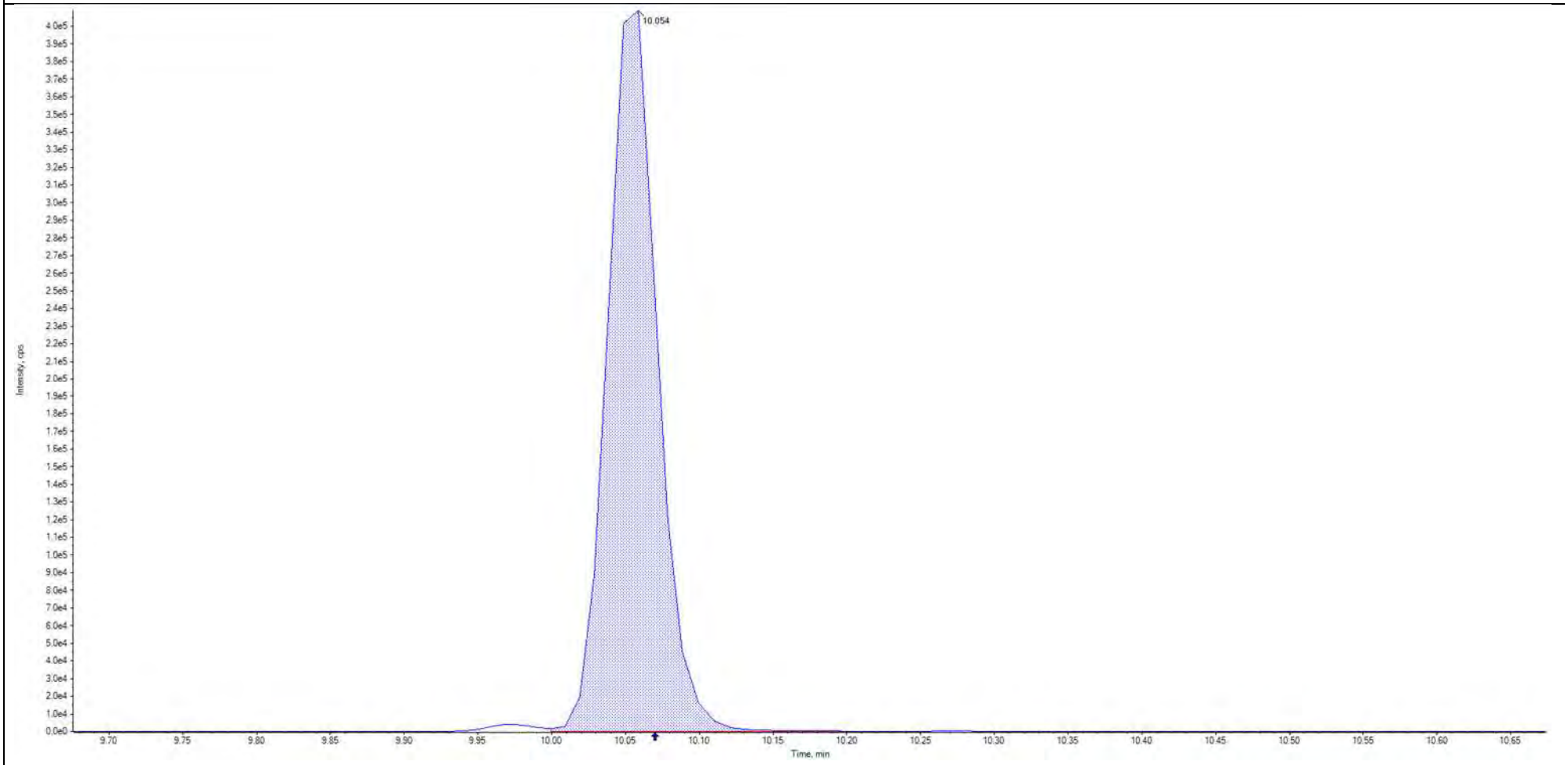


d7-NMeFOSE
Sample: L2450786-07



d9-NEtFOSE
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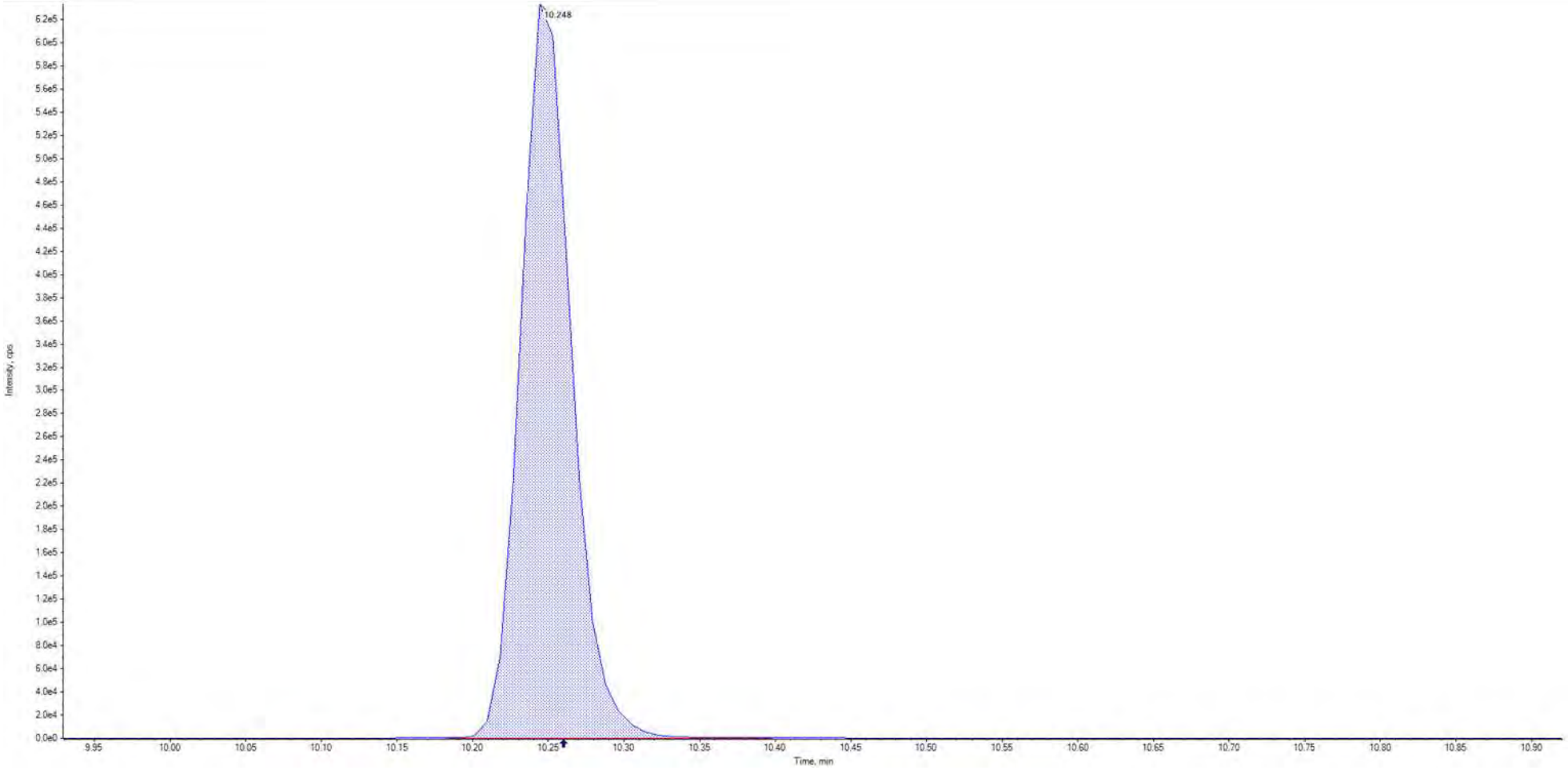
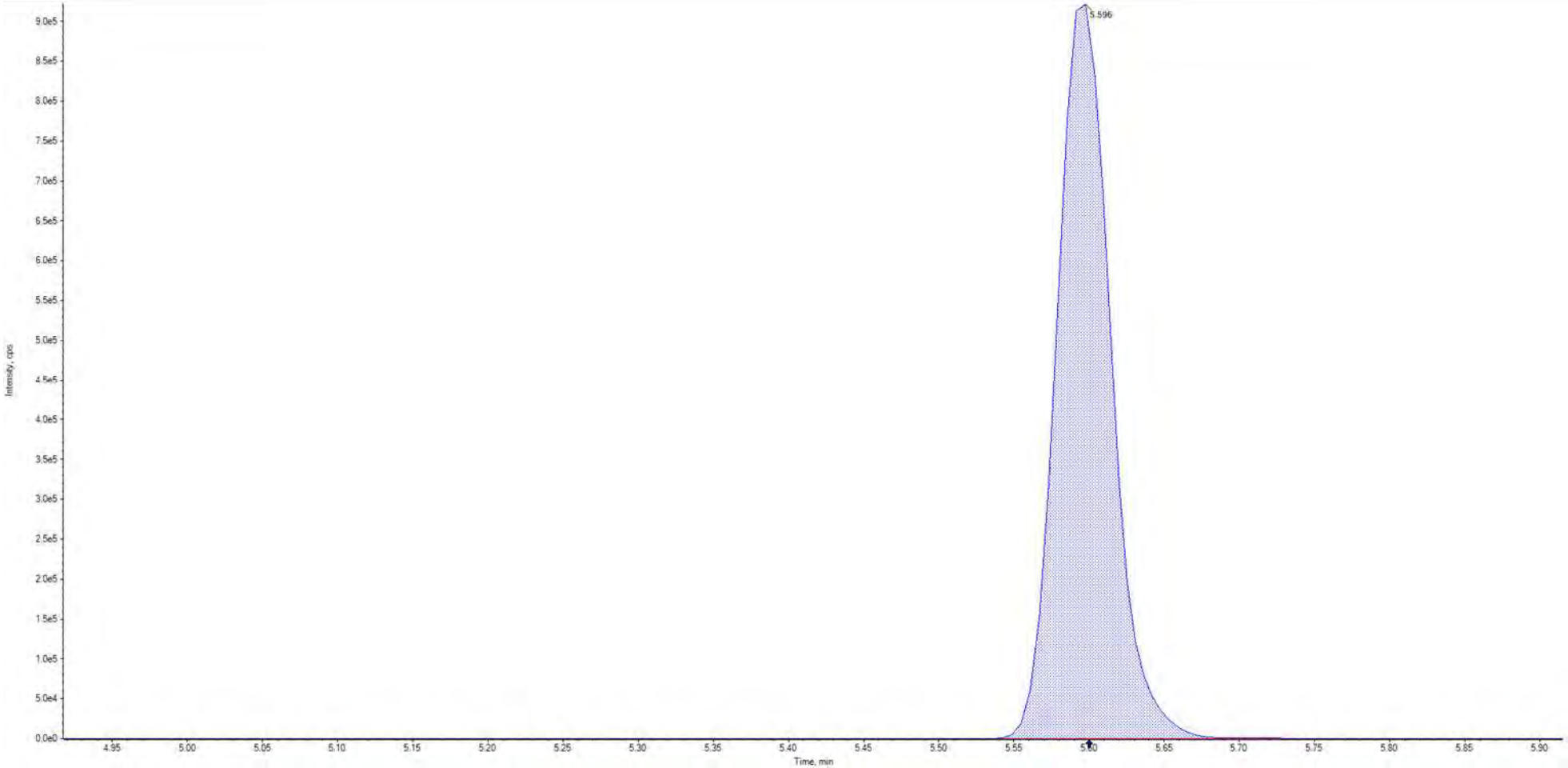


13C3-HFPO-DA
Sample: L2450786-07



13C3-PFBA
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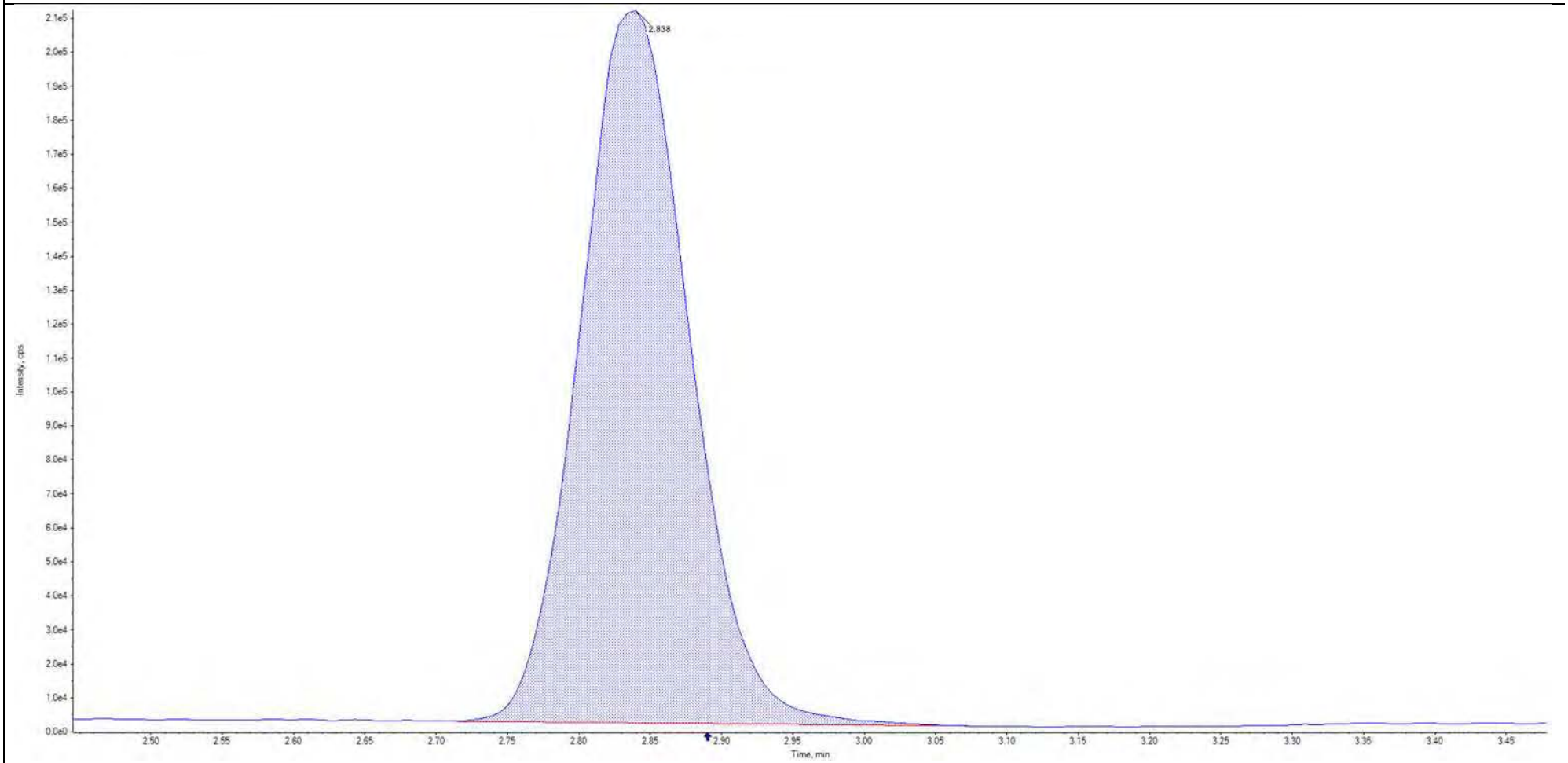
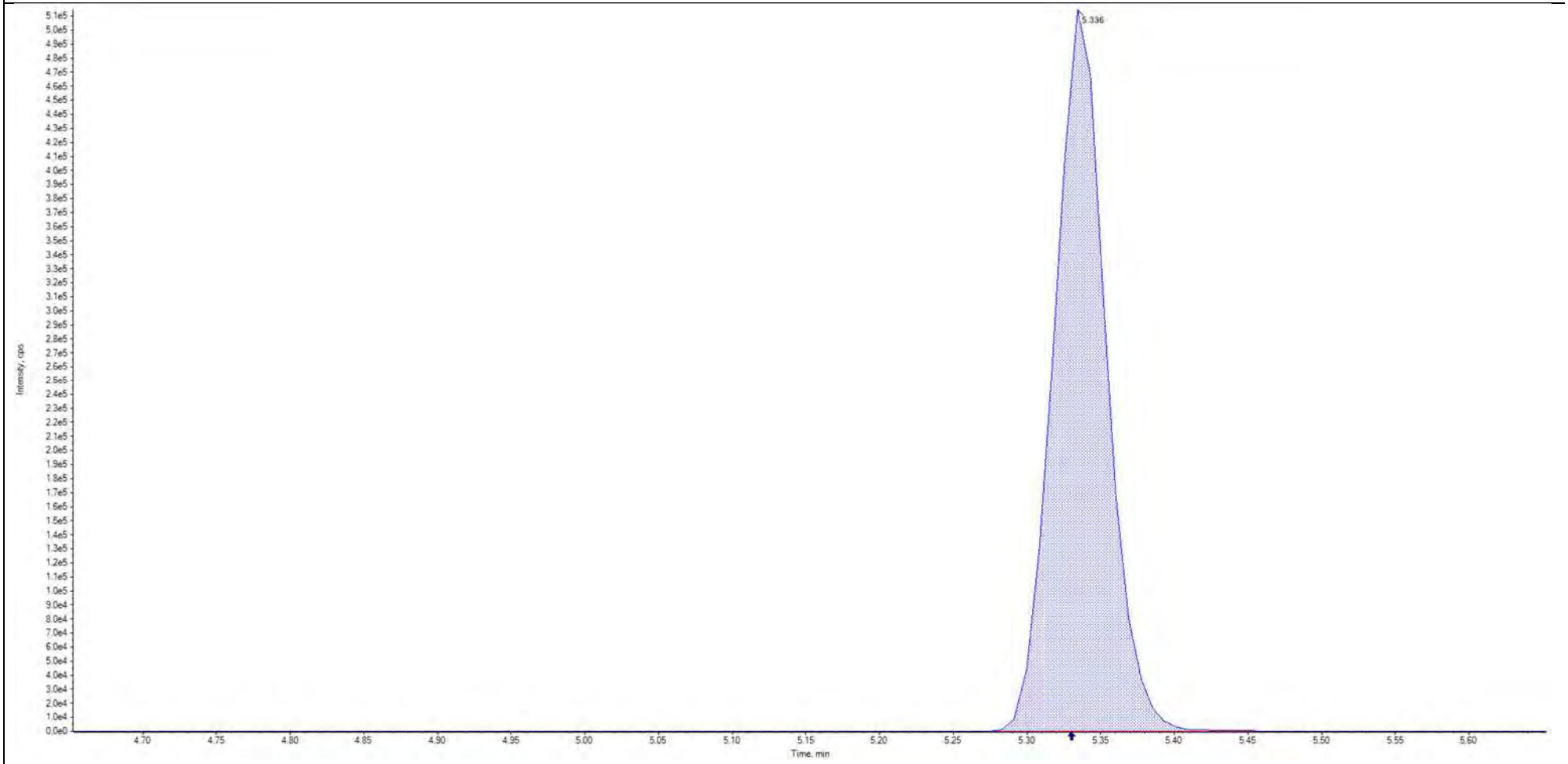


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C2-PFHxA
Sample: L2450786-07



13C4-PFOA
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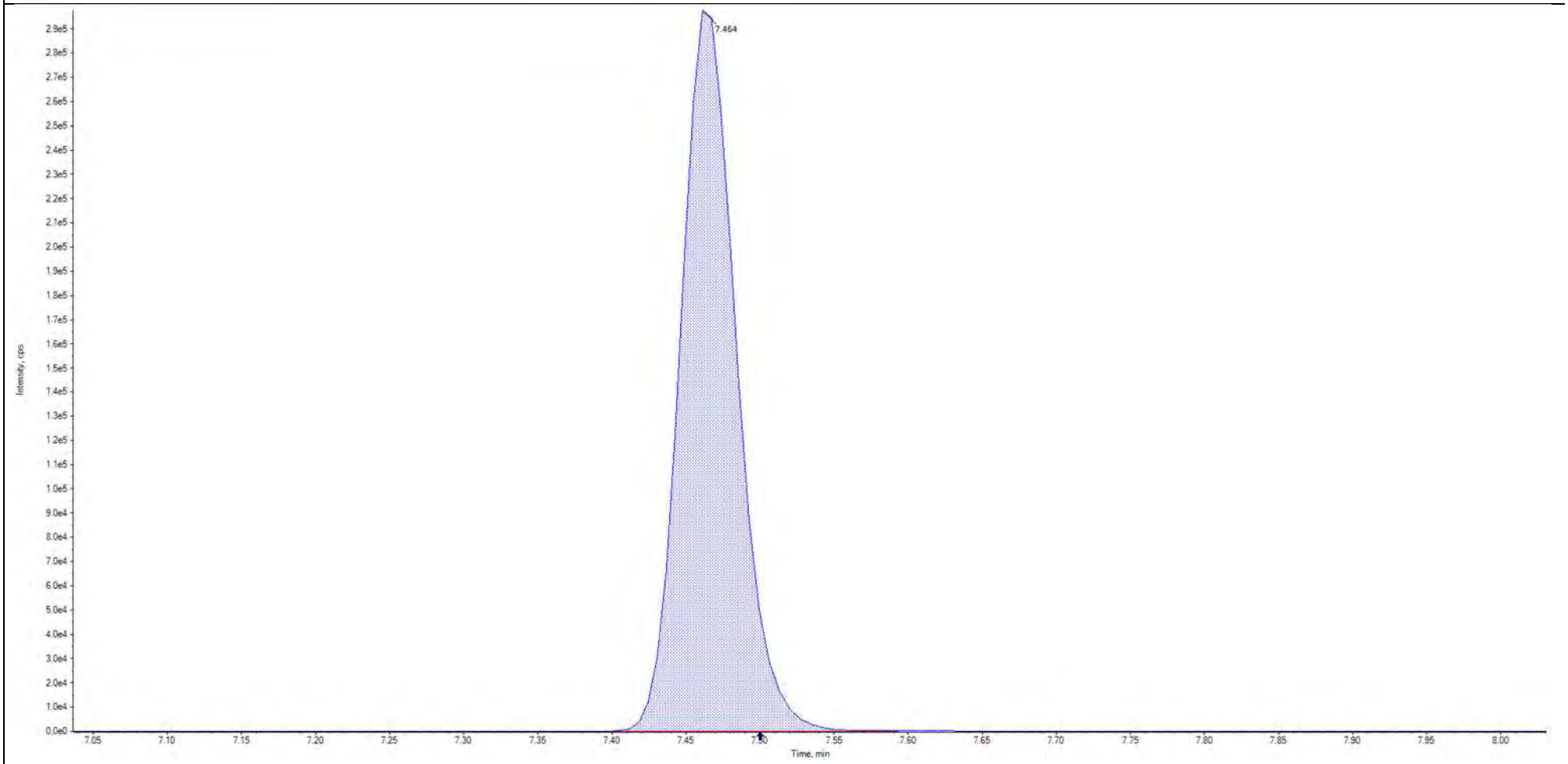

13C5-PFNA
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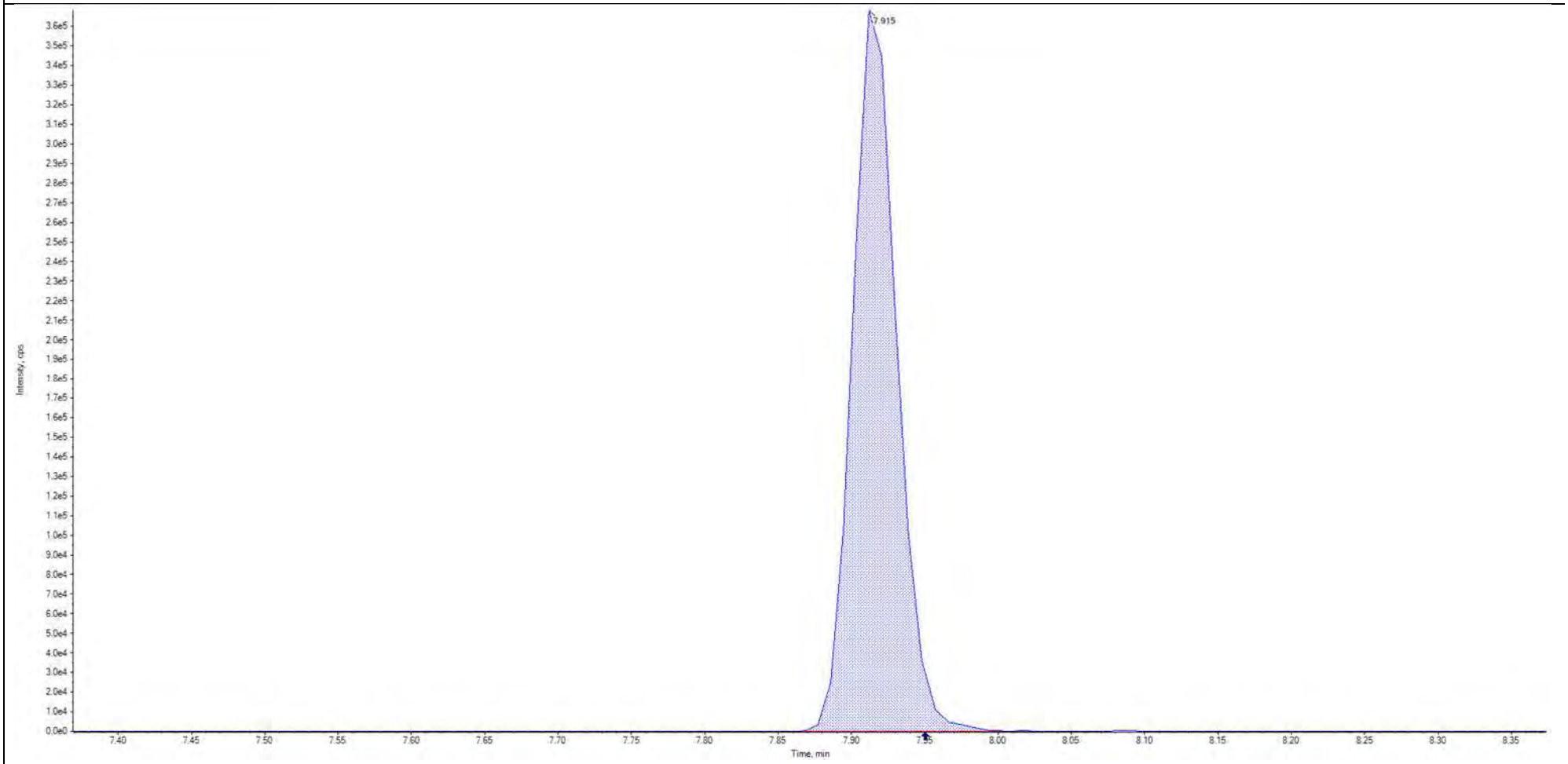

13C2-PFDA
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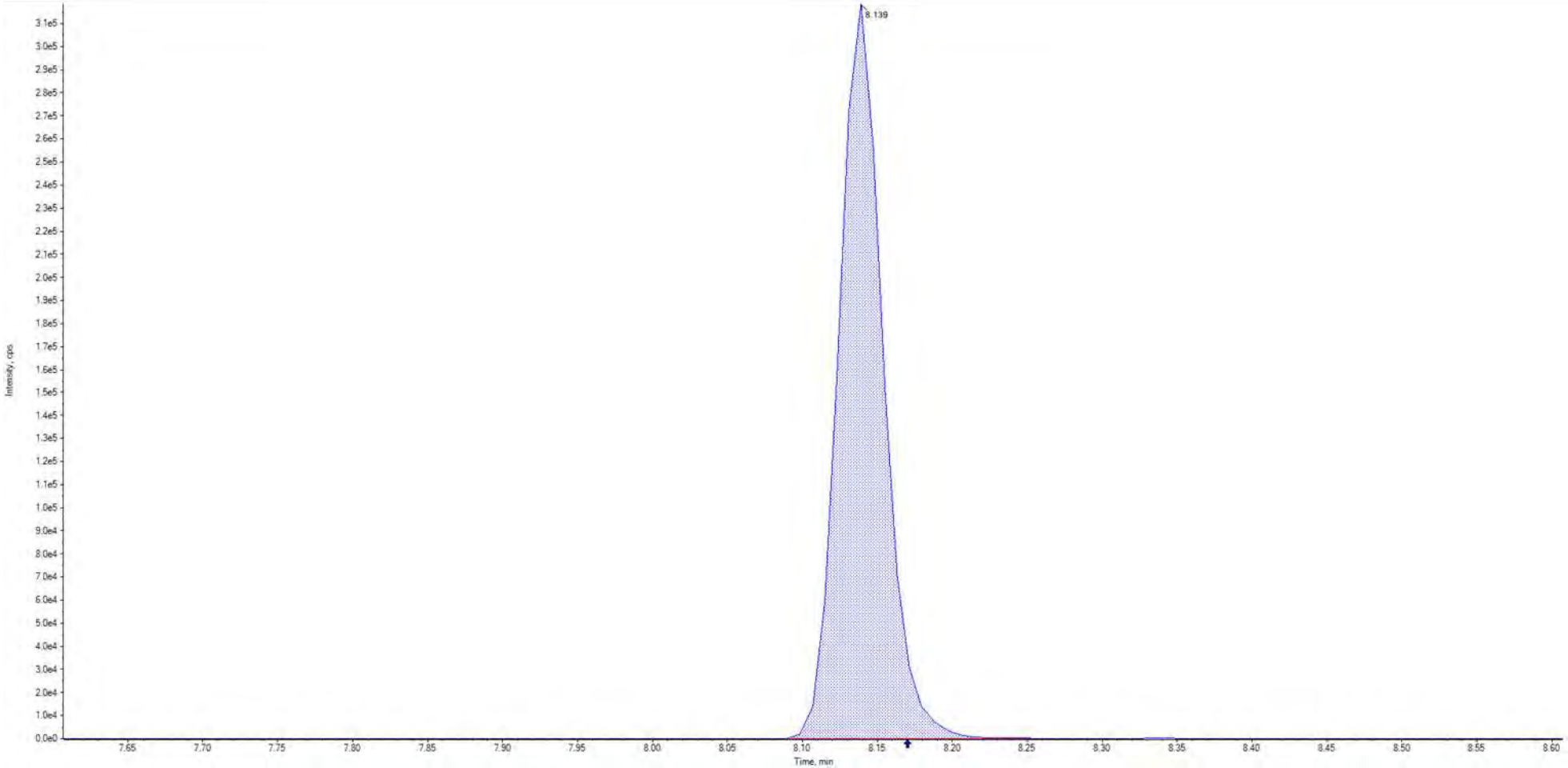
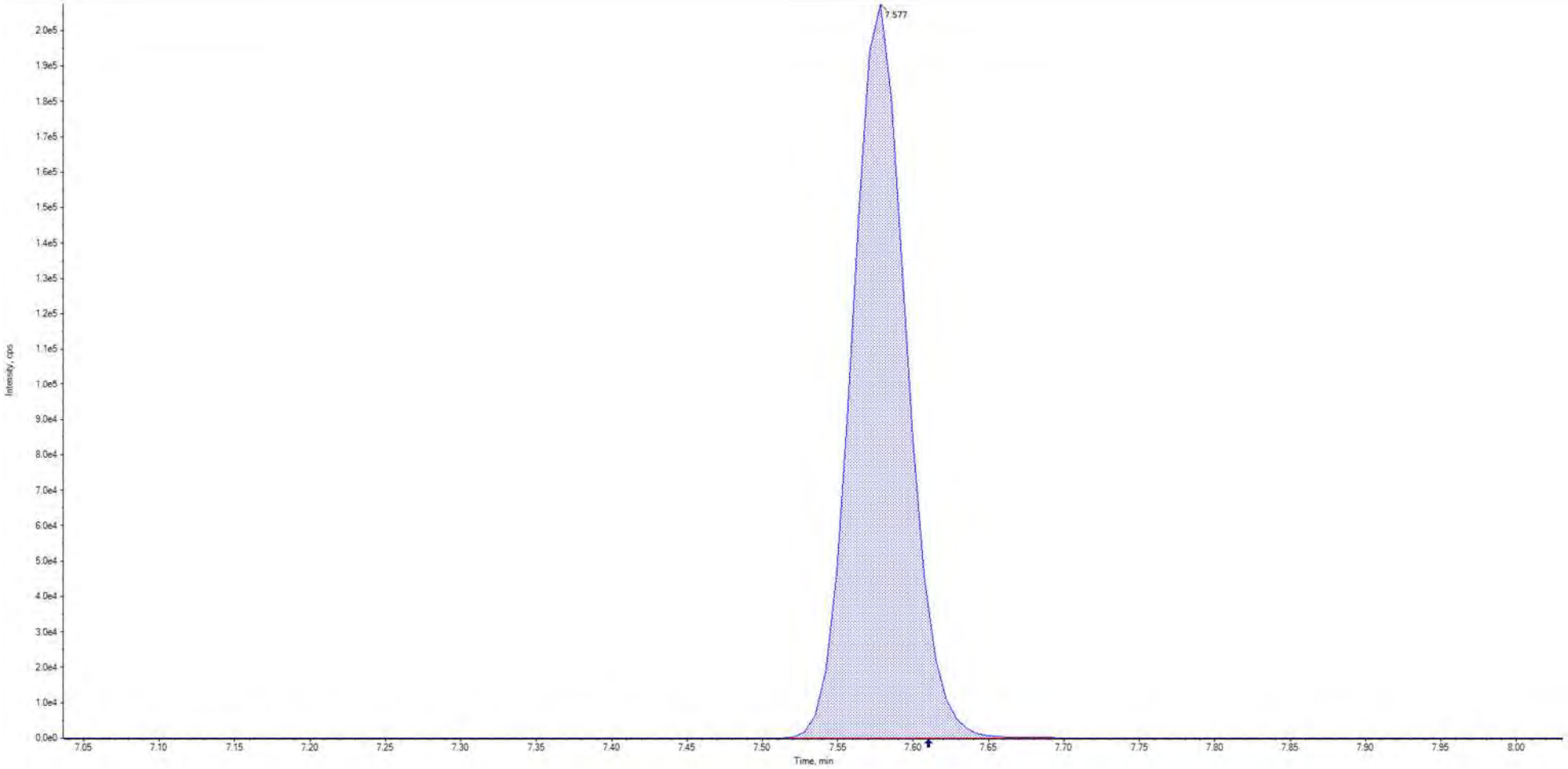
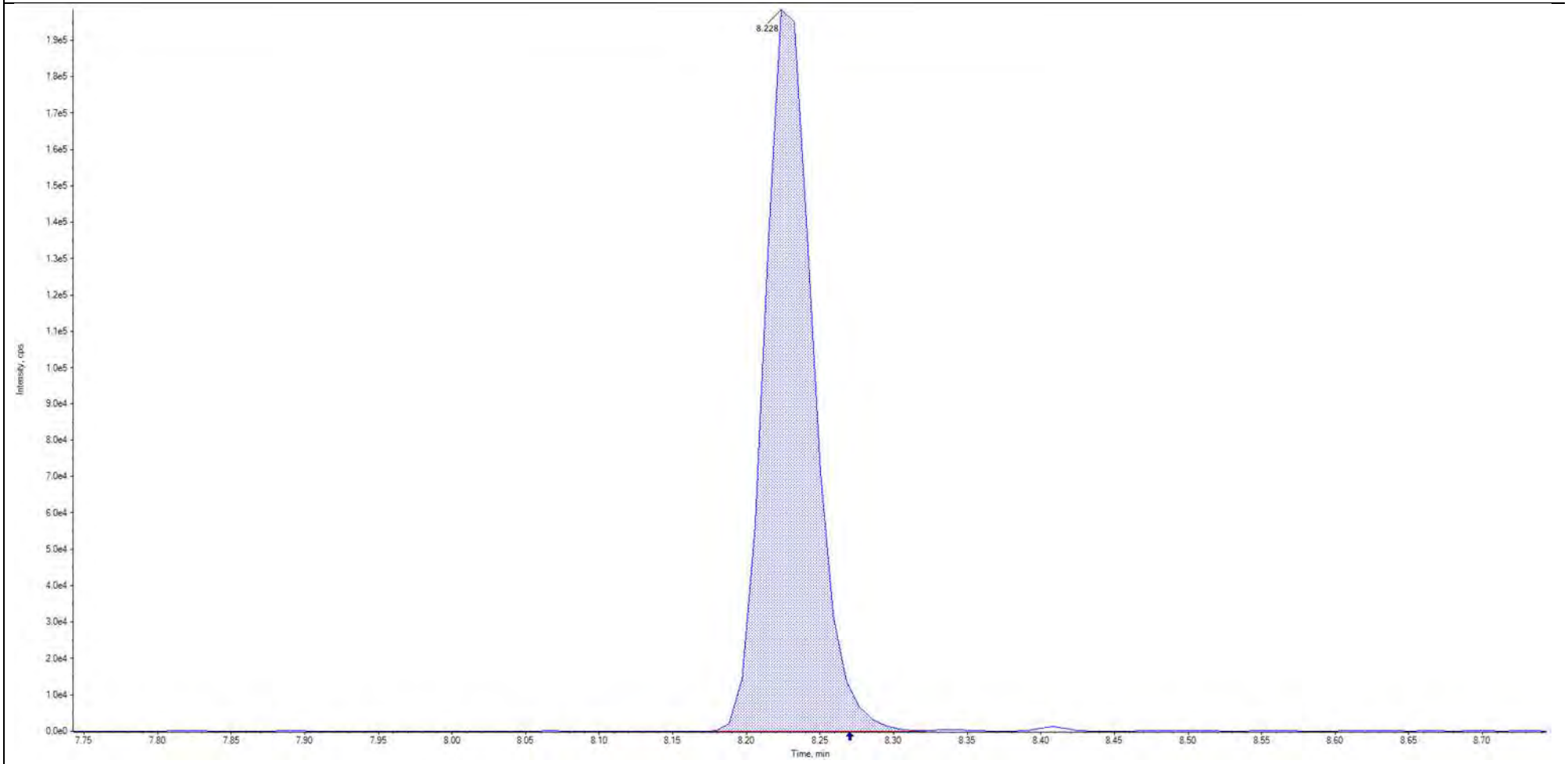


18O2-PFHxS
Sample: L2450786-07



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C4-PFOS
Sample: L2450786-07



Quantity Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_20.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

Method: EPA1633_NIS_CALC.qmethod
Calibration: 240813_1633_ICAL

ID: L2450786-09
Name: SCI05_240919_21.wiff
Date & Time: 2024-09-19T09:36:38
Description: WG1973506,WG1973357,ICAL21391
Instrument: Triple Quad 5500+
User: LCMS05:AC

LC/MS-MS Method:EPA_1633.dam

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
1	PFBA	375-22-4	2.84	213.0 / 169.0	78622		0.426	N/A	N/A	N/A	N/A
2	PFPeA	2706-90-3	4.66	263.0 / 219.0	129737		0.477	0.008	0.007	N/A	N/A
3	PFPeA_2	2706-90-3	4.65	263.0 / 68.9	1089	M7	0.567	0.008	0.007	N/A	N/A
4	PFHxA	307-24-4	5.35	313.0 / 269.0	163461	M4	0.373	0.067	0.072	Pass	N/A
5	PFHxA_2	307-24-4	5.35	313.0 / 119.0	11009		0.340	0.067	0.072	Pass	N/A
6	PFHpA	375-85-9	6.25	363.1 / 319.0	78060		0.187	0.299	0.297	Pass	N/A
7	PFHpA_2	375-85-9	6.25	363.1 / 169.0	23333		0.183	0.299	0.297	Pass	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
8	PFOA	335-67-1	7.47	413.1 / 369.1	87016	M5	0.325	0.535	0.586	Pass	N/A
9	PFOA_2	335-67-1	7.47	413.1 / 169.0	46559	M7	0.317	0.535	0.586	Pass	N/A
10	PFNA	375-95-1	7.93	462.8 / 418.9	20377		0.060	0.196	0.313	Pass	N/A
11	PFNA_2	375-95-1	7.92	462.8 / 218.9	3993		0.039	0.196	0.313	Pass	N/A
12	PFDA	335-76-2	8.15	513.1 / 469.1	23400	M4	0.059	0.137	0.142	Pass	N/A
13	PFDA_2	335-76-2	8.15	513.1 / 219.0	3209		0.054	0.137	0.142	Pass	N/A
14	PFUnA	2058-94-8	N/A	563.1 / 519.1	N/A		N/A	N/A	0.194	N/A	N/A
15	PFUnA_2	2058-94-8	N/A	563.1 / 269.0	N/A		N/A	N/A	0.194	N/A	N/A
16	PFDoA	307-55-1	N/A	613.1 / 569.1	N/A		N/A	N/A	0.167	N/A	N/A
17	PFDoA_2	307-55-1	N/A	613.1 / 319.0	N/A		N/A	N/A	0.167	N/A	N/A
18	PFTrDA	72629-94-8	N/A	663.1 / 619.1	N/A		N/A	N/A	0.228	N/A	N/A
19	PFTrDA_2	72629-94-8	N/A	663.1 / 169.0	N/A		N/A	N/A	0.228	N/A	N/A
20	PFTeDA	376-06-7	N/A	713.1 / 669.1	N/A		N/A	N/A	0.137	N/A	N/A
21	PFTeDA_2	376-06-7	N/A	713.1 / 169.0	N/A		N/A	N/A	0.137	N/A	N/A
22	PFBS	375-73-5	5.33	299.1 / 80.1	123543		0.426	0.384	0.396	Pass	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
23	PFBS_2	375-73-5	5.32	299.1 / 99.1	47401		0.410	0.384	0.396	Pass	N/A
24	PFPeS	2706-91-4	6.33	349.1 / 80.1	5817	M2	0.026	0.291	0.299	Pass	N/A
25	PFPeS_2	2706-91-4	6.33	349.1 / 99.1	1691	M7	0.025	0.291	0.299	Pass	N/A
26	PFHxS	355-46-4	7.59	399.1 / 80.1	27341	M5	0.131	0.310	0.315	Pass	N/A
27	PFHxS_2	355-46-4	7.58	399.1 / 99.1	8488	M7	0.131	0.310	0.315	Pass	N/A
28	PFHpS	375-92-8	N/A	449.1 / 80.1	N/A		N/A	N/A	0.287	N/A	N/A
29	PFHpS_2	375-92-8	N/A	449.1 / 99.1	N/A		N/A	N/A	0.287	N/A	N/A
30	PFOS	1763-23-1	8.24	499.1 / 80.1	70023	M5	0.334	0.230	0.238	Pass	N/A
31	PFOS_2	1763-23-1	8.24	499.1 / 99.1	16071	M7	0.312	0.230	0.238	Pass	N/A
32	PFNS	68259-12-1	N/A	549.1 / 80.1	N/A		N/A	N/A	0.301	N/A	N/A
33	PFNS_2	68259-12-1	N/A	549.1 / 99.1	N/A		N/A	N/A	0.301	N/A	N/A
34	PFDS	335-77-3	N/A	599.1 / 80.1	N/A		N/A	N/A	0.275	N/A	N/A
35	PFDS_2	335-77-3	N/A	599.1 / 99.1	N/A		N/A	N/A	0.275	N/A	N/A
36	PFDoS	79780-39-5	N/A	699.2 / 80.1	N/A		N/A	N/A	0.274	N/A	N/A
37	PFDoS_2	79780-39-5	N/A	699.2 / 99.1	N/A		N/A	N/A	0.274	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
38	4:2FTS	757124-72-4	N/A	327.1 / 307.1	N/A		N/A	N/A	0.516	N/A	N/A
39	4:2FTS_2	757124-72-4	N/A	327.1 / 81.1	N/A		N/A	N/A	0.516	N/A	N/A
40	6:2FTS	27619-97-2	N/A	427.2 / 407.2	N/A		N/A	N/A	0.565	N/A	N/A
41	6:2FTS_2	27619-97-2	N/A	427.2 / 81.1	N/A		N/A	N/A	0.565	N/A	N/A
42	8:2FTS	39108-34-4	N/A	527.2 / 507.2	N/A		N/A	N/A	0.662	N/A	N/A
43	8:2FTS_2	39108-34-4	N/A	527.2 / 81.1	N/A		N/A	N/A	0.662	N/A	N/A
44	PFOSA	754-91-6	N/A	498.1 / 78.1	N/A		N/A	N/A	0.025	N/A	N/A
45	PFOSA_2	754-91-6	N/A	498.1 / 478.0	N/A		N/A	N/A	0.025	N/A	N/A
46	NMeFOSA	31506-32-8	N/A	512.2 / 219.0	N/A		N/A	N/A	1.551	N/A	N/A
47	NMeFOSA_2	31506-32-8	N/A	512.2 / 169.0	N/A		N/A	N/A	1.551	N/A	N/A
48	NEtFOSA	4151-50-2	N/A	526.2 / 219.0	N/A		N/A	N/A	1.285	N/A	N/A
49	NEtFOSA_2	4151-50-2	N/A	526.2 / 169.0	N/A		N/A	N/A	1.285	N/A	N/A
50	NMeFOSAA	2355-31-9	N/A	570.2 / 419.1	N/A		N/A	N/A	0.700	N/A	N/A
51	NMeFOSAA_2	2355-31-9	N/A	570.2 / 483.0	N/A		N/A	N/A	0.700	N/A	N/A
52	NEtFOSAA	2991-50-6	N/A	584.2 / 419.1	N/A		N/A	N/A	0.487	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
53	NEtFOSAA_2	2991-50-6	N/A	584.2 / 526.2	N/A		N/A	N/A	0.487	N/A	N/A
54	NMeFOSE	24448-09-7	N/A	616.1 / 58.9	N/A		N/A	N/A	N/A	N/A	N/A
55	NEtFOSE	1691-99-2	N/A	630.0 / 58.9	N/A		N/A	N/A	N/A	N/A	N/A
56	HFPO-DA	13252-13-6	N/A	285.0 / 169.0	N/A		N/A	N/A	0.464	N/A	N/A
57	HFPO-DA_2	13252-13-6	N/A	285.0 / 184.9	N/A		N/A	N/A	0.464	N/A	N/A
58	ADONA	919005-14-4	N/A	377.1 / 251.0	N/A		N/A	N/A	0.634	N/A	N/A
59	ADONA_2	919005-14-4	N/A	377.1 / 84.8	N/A		N/A	N/A	0.634	N/A	N/A
60	9Cl-PF3ONS	756426-58-1	N/A	530.8 / 351.1	N/A		N/A	N/A	0.322	N/A	N/A
61	9Cl-PF3ONS_2	756426-58-1	N/A	532.8 / 353.0	N/A		N/A	N/A	0.322	N/A	N/A
62	11Cl-PF3OUdS	763051-92-9	N/A	630.9 / 451.0	N/A		N/A	N/A	0.331	N/A	N/A
63	11Cl-PF3OUdS_2	763051-92-9	N/A	632.9 / 452.9	N/A		N/A	N/A	0.331	N/A	N/A
64	3:3FTCA	356-02-5	N/A	241.1 / 177.1	N/A		N/A	N/A	1.074	N/A	N/A
65	3:3FTCA_2	356-02-5	N/A	241.1 / 117.0	N/A		N/A	N/A	1.074	N/A	N/A
66	5:3FTCA	914637-49-3	N/A	341.1 / 237.1	N/A		N/A	N/A	0.953	N/A	N/A
67	5:3FTCA_2	914637-49-3	N/A	341.1 / 217.0	N/A		N/A	N/A	0.953	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
68	7:3FTCA	812-70-4	N/A	441.1 / 316.9	N/A		N/A	N/A	1.558	N/A	N/A
69	7:3FTCA_2	812-70-4	N/A	441.1 / 337.1	N/A		N/A	N/A	1.558	N/A	N/A
70	PFEESA	113507-82-7	N/A	315.1 / 135.0	N/A		N/A	N/A	0.087	N/A	N/A
71	PFEESA_2	113507-82-7	N/A	315.1 / 82.9	N/A		N/A	N/A	0.087	N/A	N/A
72	PFMPA	377-73-1	N/A	229.0 / 85.0	N/A		N/A	N/A	N/A	N/A	N/A
73	PFMBA	863090-89-5	N/A	279.0 / 85.0	N/A		N/A	N/A	N/A	N/A	N/A
74	NFDHA	151772-58-6	N/A	295.0 / 201.0	N/A		N/A	N/A	0.910	N/A	N/A
75	NFDHA_2	151772-58-6	N/A	295.0 / 84.9	N/A		N/A	N/A	0.910	N/A	N/A
76	TDCA	516-50-7	N/A	499.1 / 124.1	N/A		N/A	N/A	40.716	N/A	N/A
77	TDCA_2	516-50-7	N/A	499.1 / 79.9	N/A		N/A	N/A	40.716	N/A	N/A
78	13C2D4-4:2FTS	Surr	N/A	333.2 / 312.1	N/A		N/A	N/A	N/A	N/A	N/A
79	13C2-PFOA	Surr	N/A	415.0 / 370.0	N/A		N/A	N/A	N/A	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C4-PFBA	EIS	2.84	217.0 / 172.0	2276560		7.769	NA	NA	NA	77.7

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C5-PFPeA	EIS	4.65	268.0 / 223.0	1476065		3.987	NA	NA	NA	79.7
	13C5-PFHxA	EIS	5.35	318.0 / 273.0	900248		1.851	NA	NA	NA	74.0
	13C4-PFHpA	EIS	6.24	367.0 / 322.0	890274		1.828	NA	NA	NA	73.1
	13C8-PFOA	EIS	7.47	421.0 / 376.0	1287435		1.883	NA	NA	NA	75.3
	13C9-PFNA	EIS	7.92	472.0 / 427.0	576326		0.864	NA	NA	NA	69.1
	13C6-PFDA	EIS	8.14	519.0 / 474.0	576560		0.956	NA	NA	NA	76.5
	13C7-PFUnA	EIS	8.42	570.0 / 525.0	454522		0.932	NA	NA	NA	74.5

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C2-PFDoA	EIS	8.83	615.1 / 570.0	364911		1.150	NA	NA	NA	92.0
	13C2-PFTeDA	EIS	9.85	715.1 / 670.1	270145		0.784	NA	NA	NA	62.7
	13C3-PFBS	EIS	5.32	302.1 / 80.1	691367		1.828	NA	NA	NA	78.5
	13C3-PFHxS	EIS	7.58	402.1 / 80.1	521281		1.735	NA	NA	NA	73.2
	13C8-PFOS	EIS	8.23	507.1 / 80.1	511092		1.620	NA	NA	NA	67.7
	13C2-4:2FTS	EIS	5.15	329.1 / 81.1	373013		5.526	NA	NA	NA	117.8
	13C2-6:2FTS	EIS	7.07	429.2 / 81.1	178782		3.614	NA	NA	NA	76.0
	13C2-8:2FTS	EIS	8.04	529.2 / 81.1	289721		4.002	NA	NA	NA	83.4

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C8-PFOSA	EIS	9.52	506.1 / 78.1	730307		1.742	NA	NA	NA	69.7
	d3-NMeFOSA	EIS	10.15	515.2 / 219.0	110050		1.559	NA	NA	NA	62.4
	d5-NEtFOSA	EIS	10.36	531.2 / 219.0	109736		1.591	NA	NA	NA	63.7
	d3-NMeFOSAA	EIS	8.20	573.2 / 419.1	304406		1.907	NA	NA	NA	38.2
	d5-NEtFOSAA	EIS	8.32	589.3 / 419.1	278257		3.318	NA	NA	NA	66.4
	d7-NMeFOSE	EIS	10.06	623.2 / 58.9	988787		18.138	NA	NA	NA	72.6
	d9-NEtFOSE	EIS	10.25	639.2 / 58.9	1500899		18.674	NA	NA	NA	74.7

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C3-HFPO-DA	EIS	5.61	287.0 / 169.0	2332076		7.236	NA	NA	NA	72.4
	13C3-PFBA	NIS	2.84	216.0 / 172.0	1281901		5.995	NA	NA	NA	119.9
	13C2-PFHxA	NIS	5.34	315.0 / 270.0	1444020		2.949	NA	NA	NA	118.0
	13C4-PFOA	NIS	7.47	417.0 / 372.0	894550		2.858	NA	NA	NA	114.3
	13C5-PFNA	NIS	7.92	468.0 / 423.0	812567		1.484	NA	NA	NA	118.7
	13C2-PFDA	NIS	8.14	515.1 / 470.1	708263		1.382	NA	NA	NA	110.6
	18O2-PFHxS	NIS	7.58	403.1 / 84.1	610579		2.606	NA	NA	NA	110.0
	13C4-PFOS	NIS	8.23	503.1 / 80.1	557964		2.650	NA	NA	NA	110.7

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
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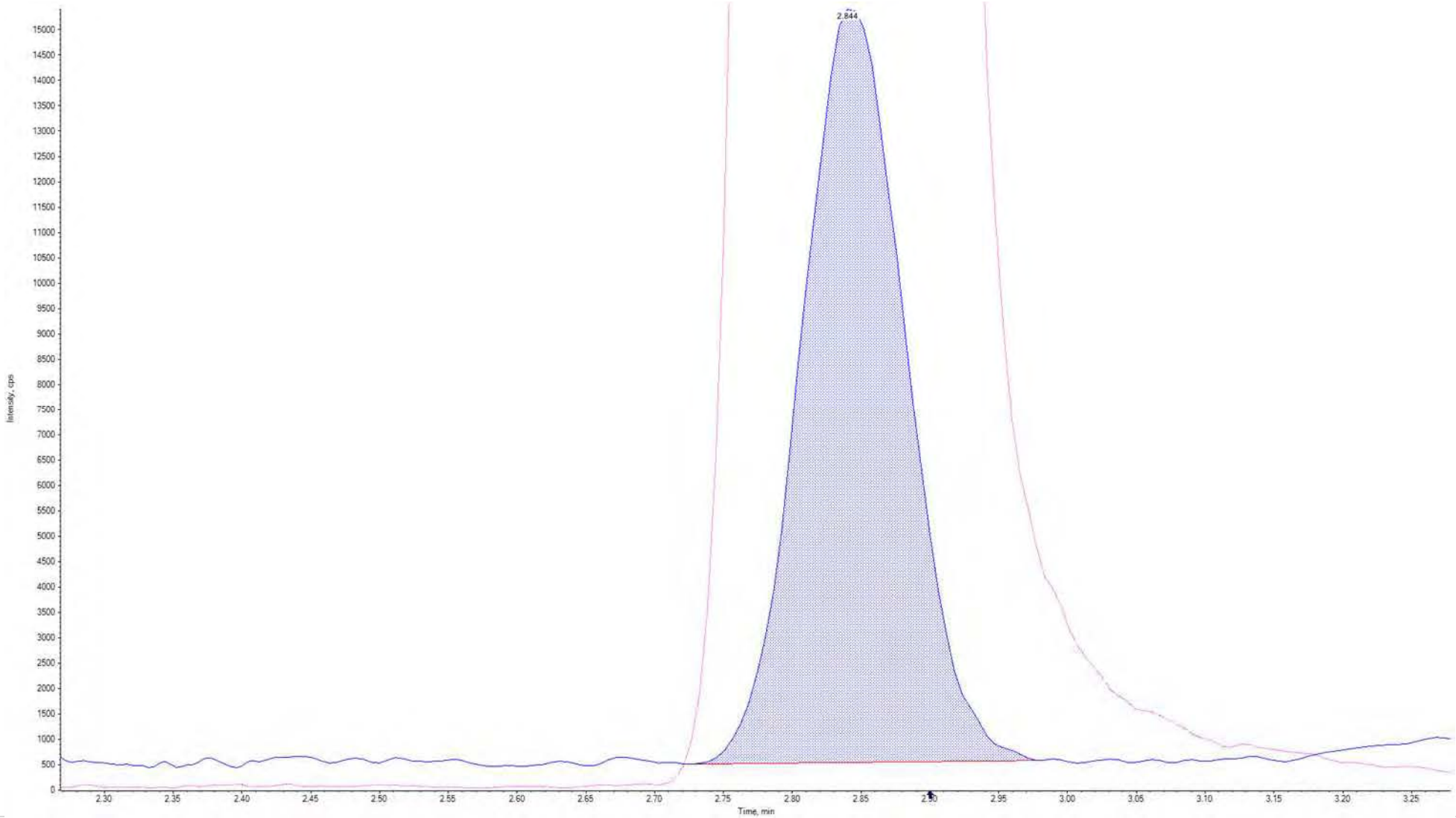
Generated: 9/19/2024 8:04:31 AM

PFBA
Sample: L2450786-09 S/N:475.7 Points Across peak:43



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Alpha Analytical Inc.
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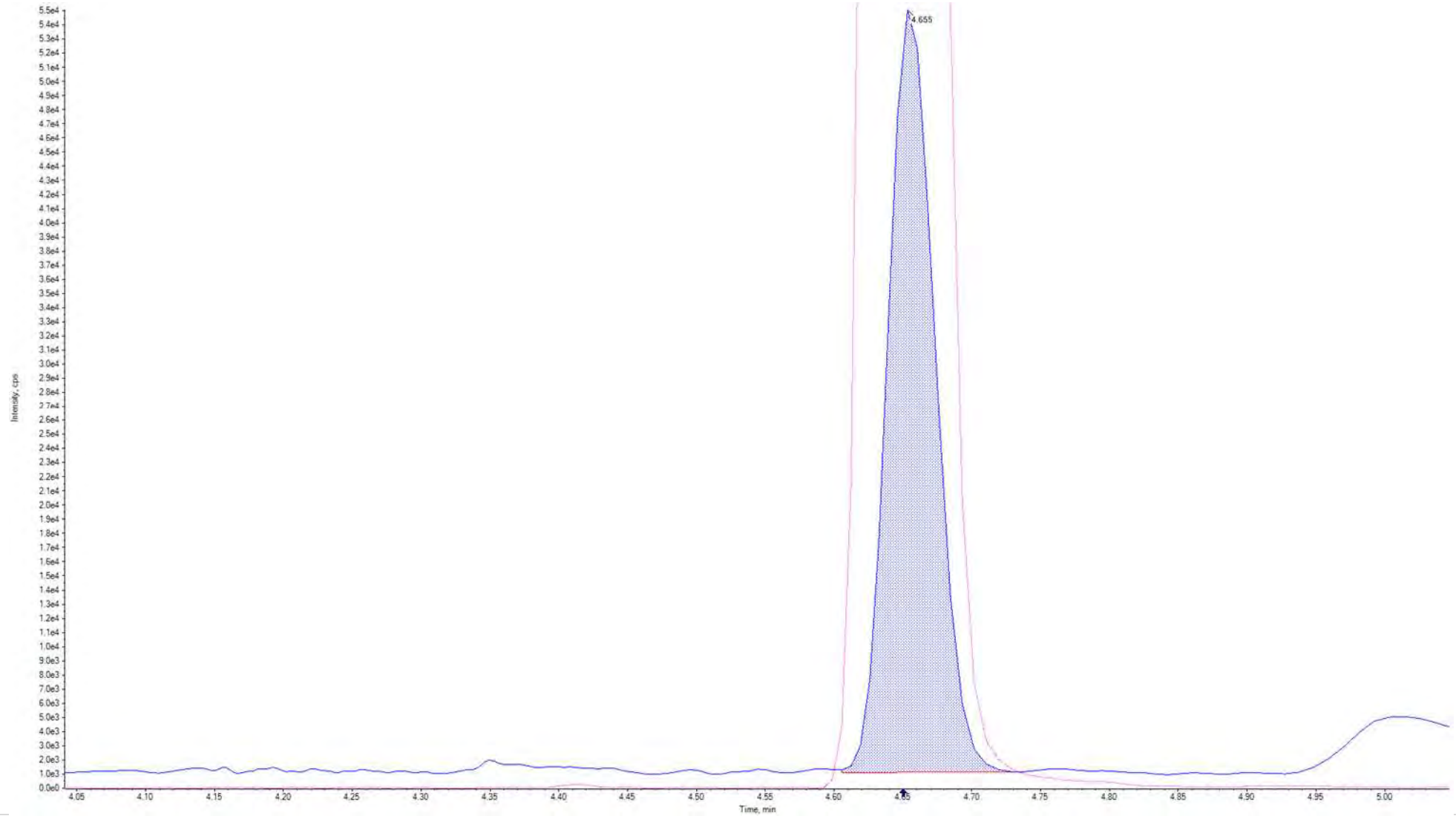
Generated: 9/19/2024 8:04:31 AM

PFPeA
Sample: L2450786-09 S/N:312.3 Points Across peak:17



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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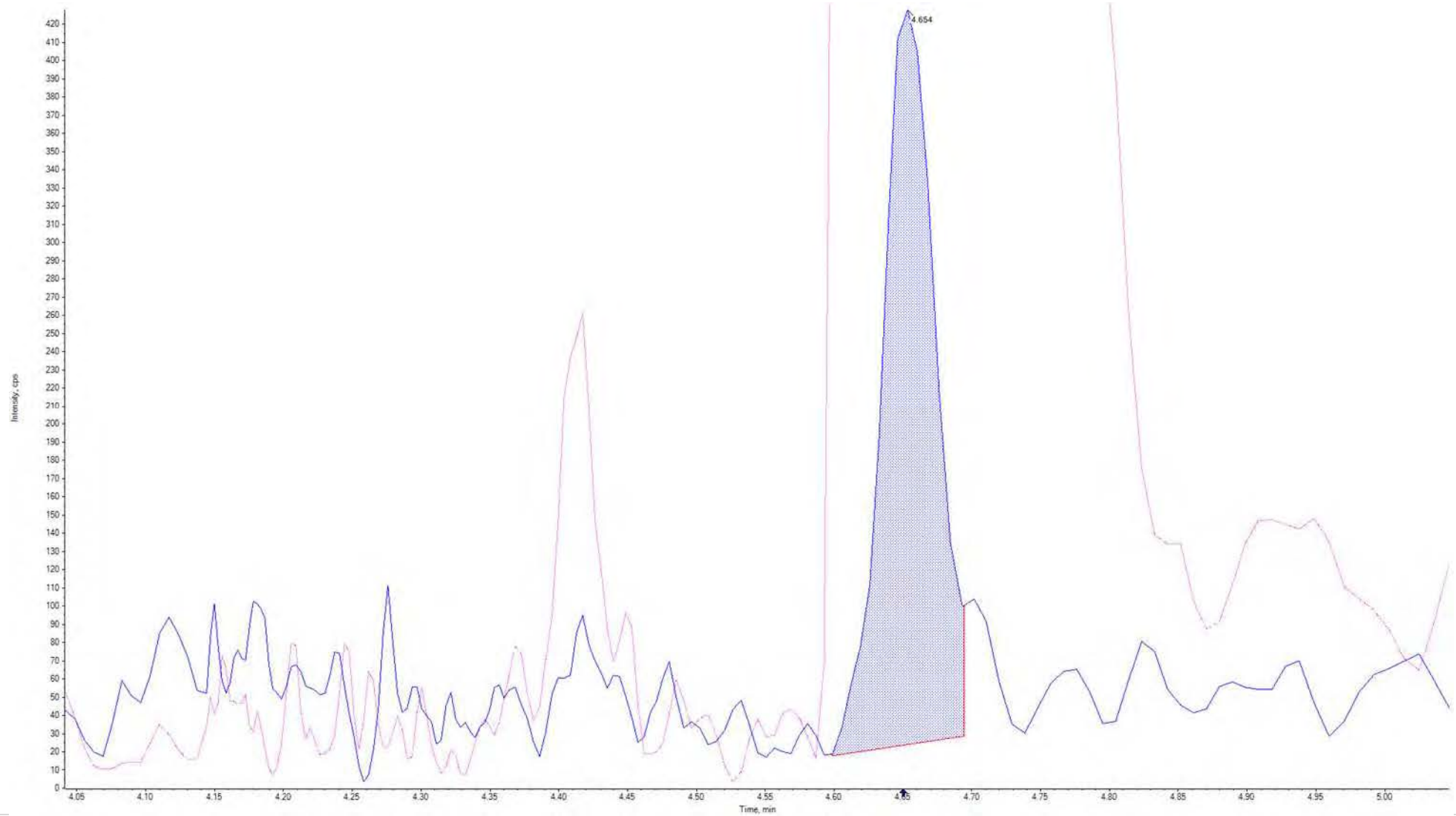
Generated: 9/19/2024 8:04:31 AM

PFPeA_2
Sample: L2450786-09 S/N:107.3 Points Across peak:16



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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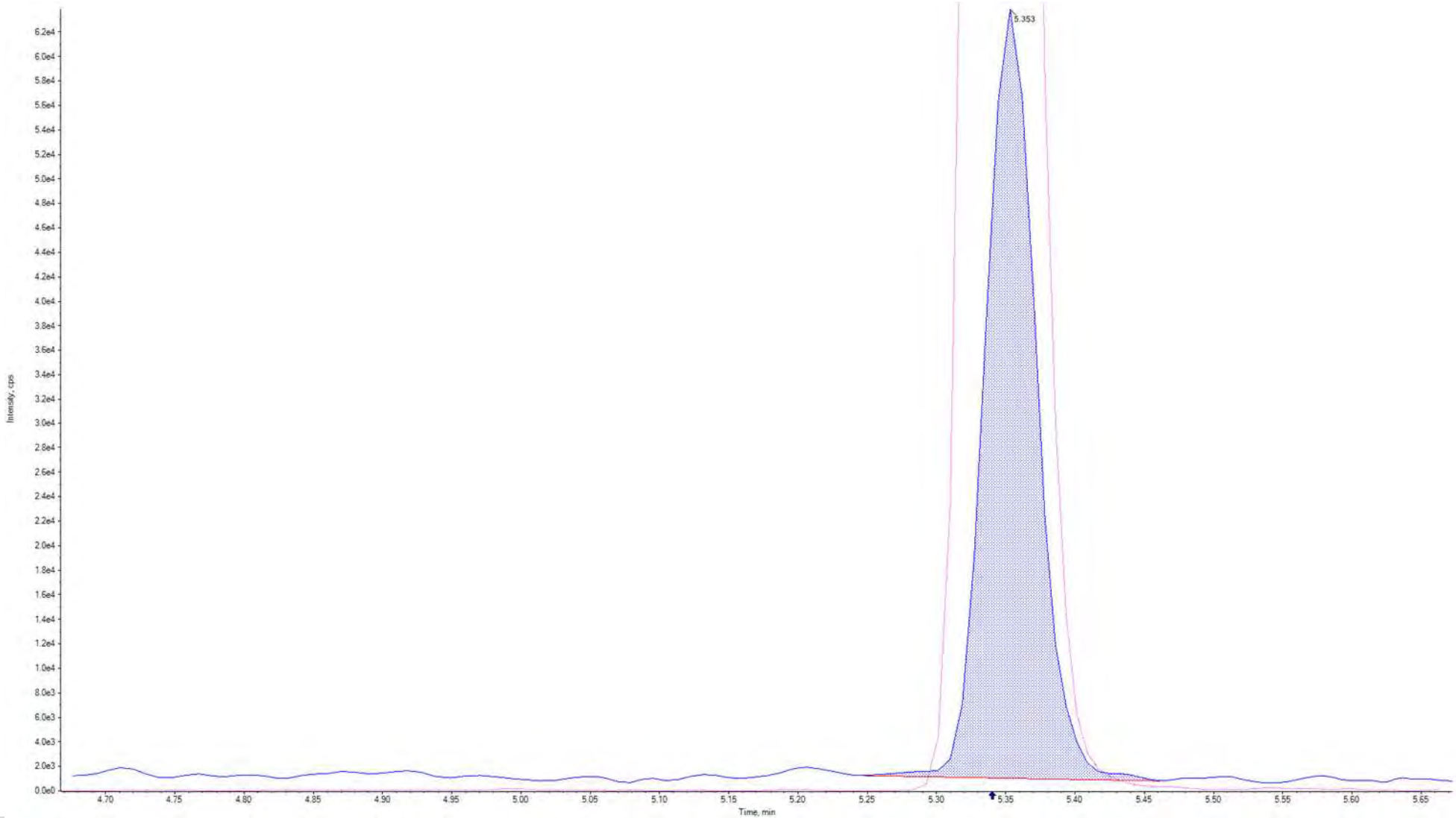
Generated: 9/19/2024 8:04:31 AM

PFHxA
Sample: L2450786-09 S/N:324.6 Points Across peak:28



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Alpha Analytical Inc.
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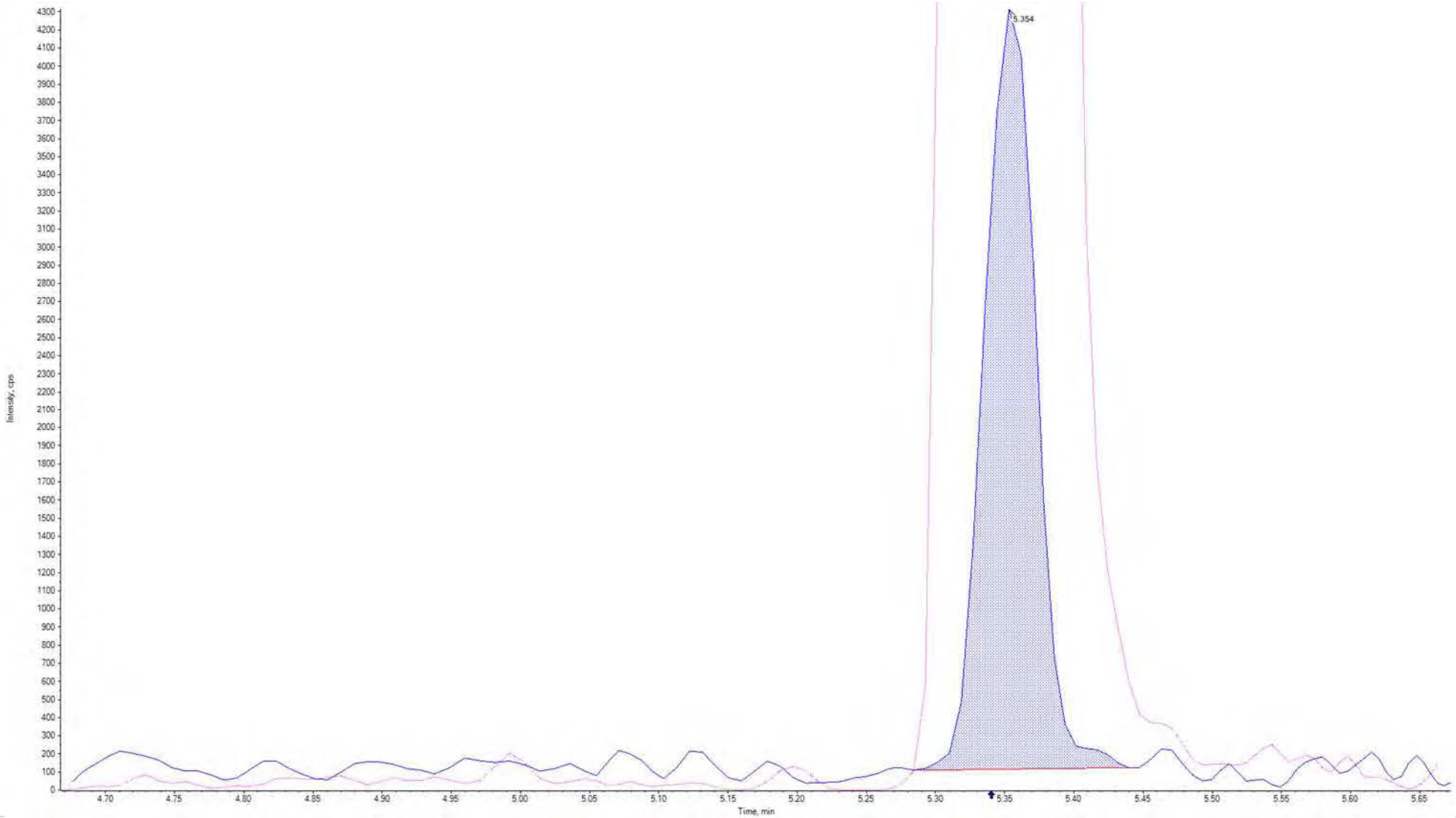
PFHxA_2
Sample: L2450786-09 S/N:247.5 Points Across peak:20



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Alpha Analytical Inc.
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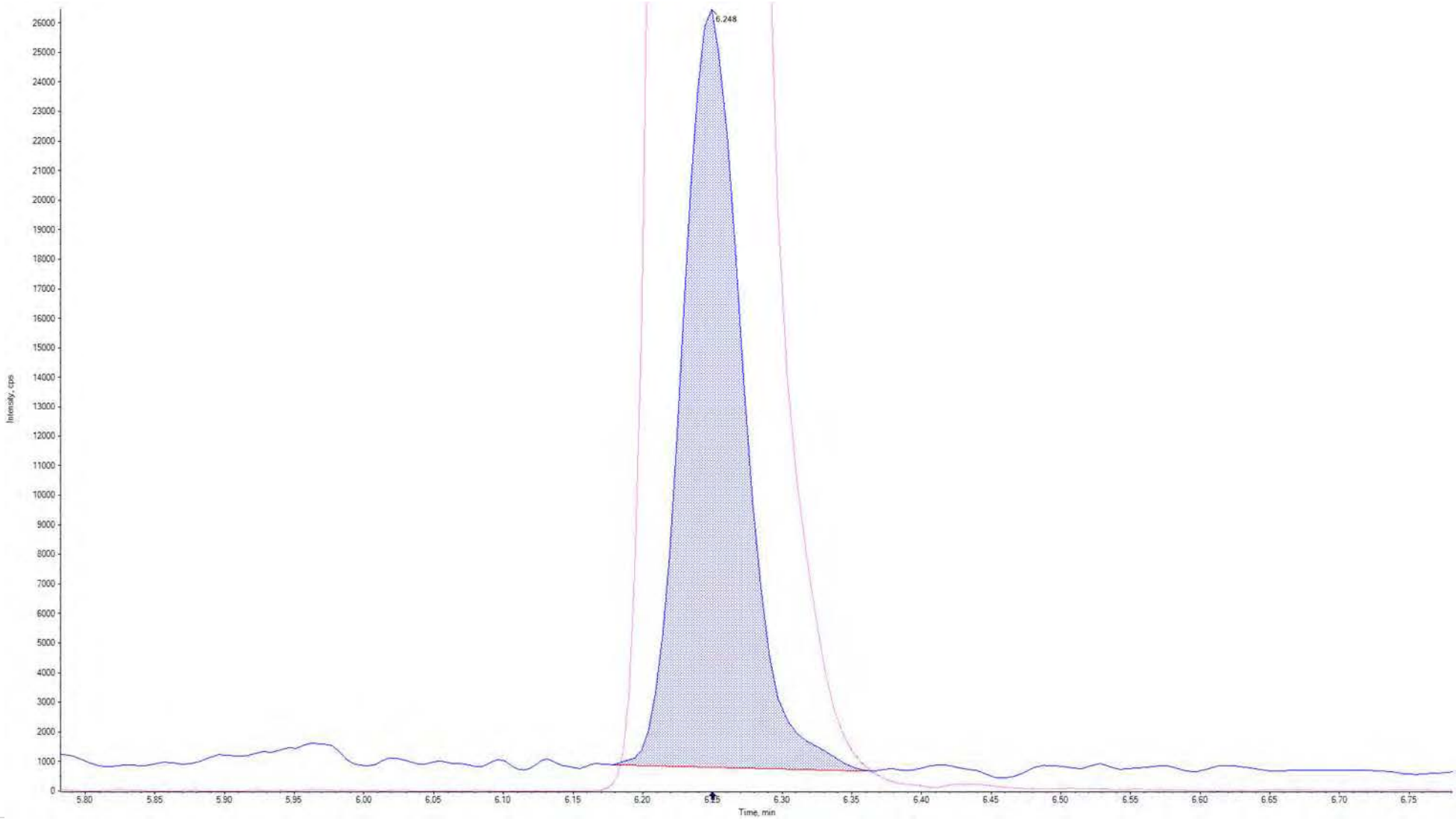
Generated: 9/19/2024 8:04:31 AM

PFHpA
Sample: L2450786-09 S/N:432.9 Points Across peak:34



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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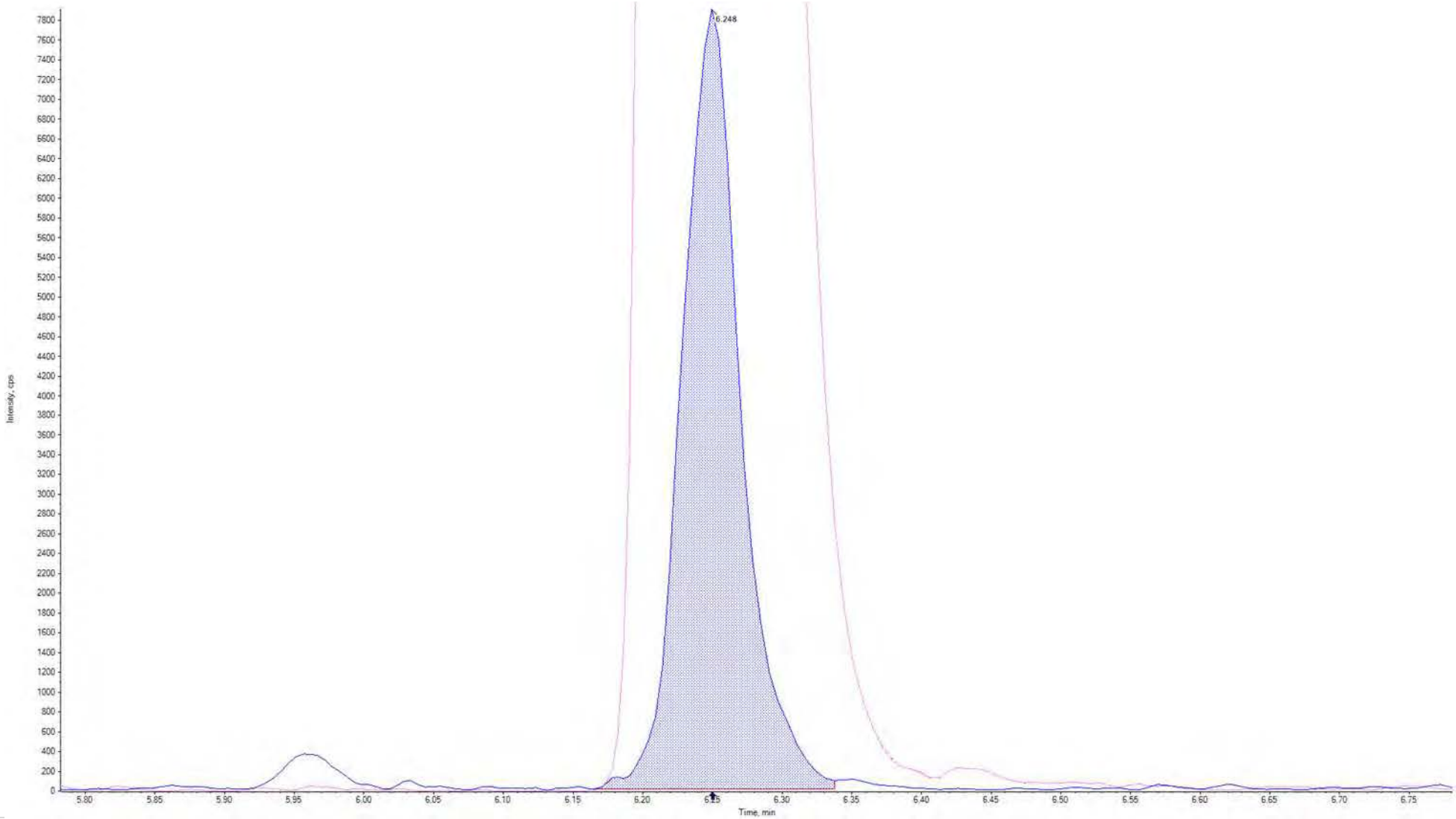
PFHpA_2
Sample: L2450786-09 S/N:1065.9 Points Across peak:34



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Alpha Analytical Inc.
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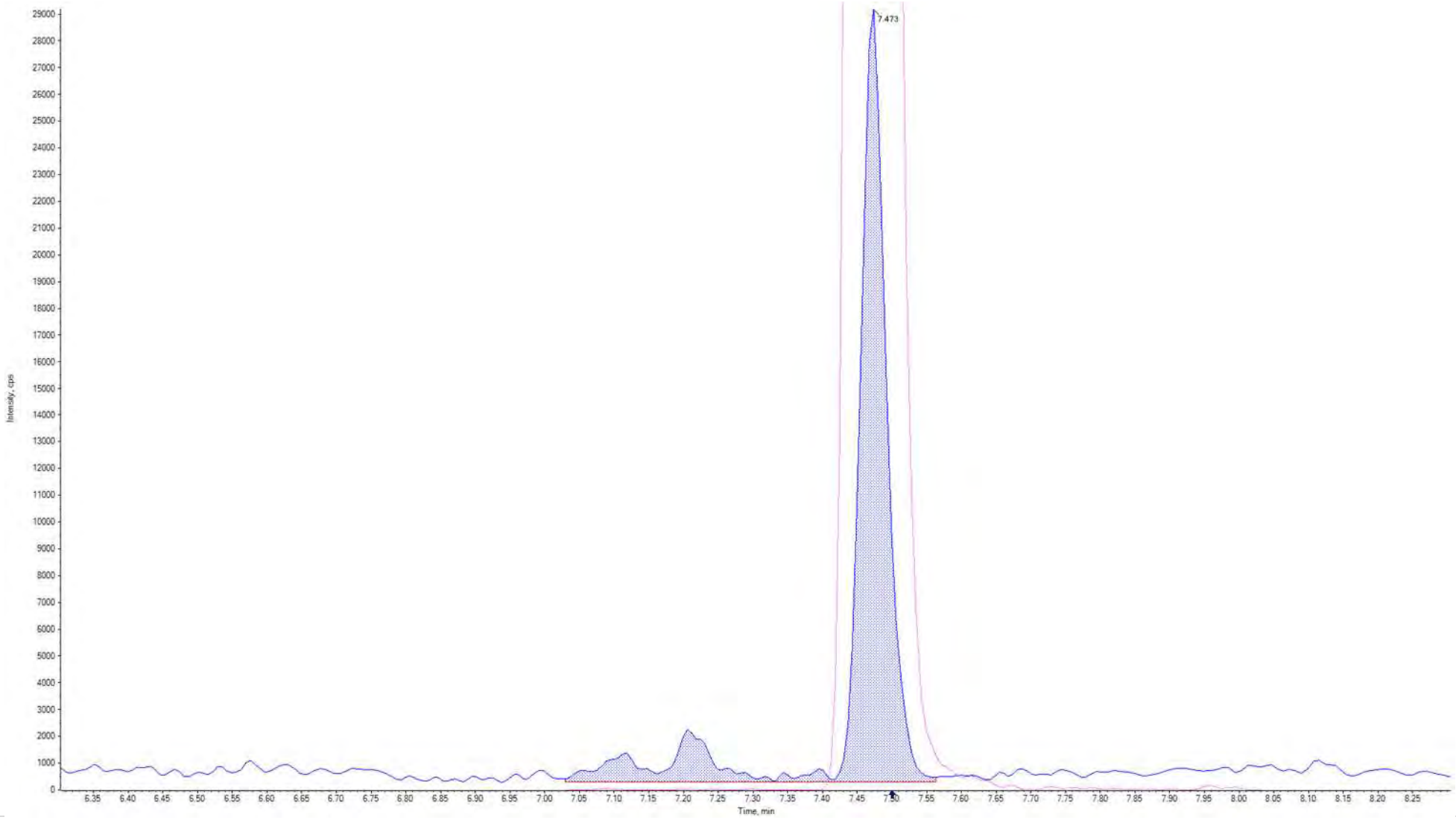
Generated: 9/19/2024 8:04:31 AM

PFOA
Sample: L2450786-09 S/N:469.2 Points Across peak:86



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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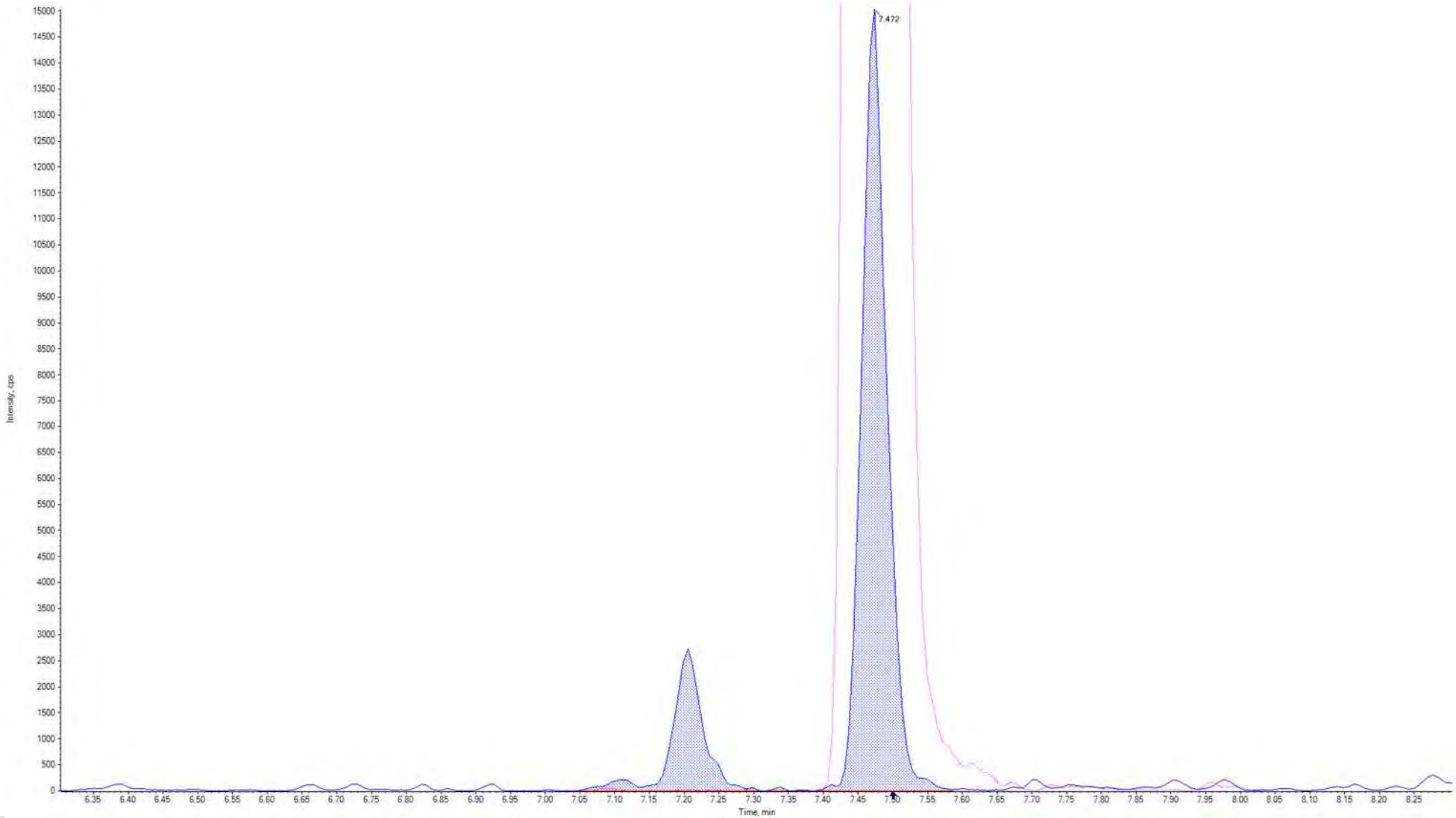
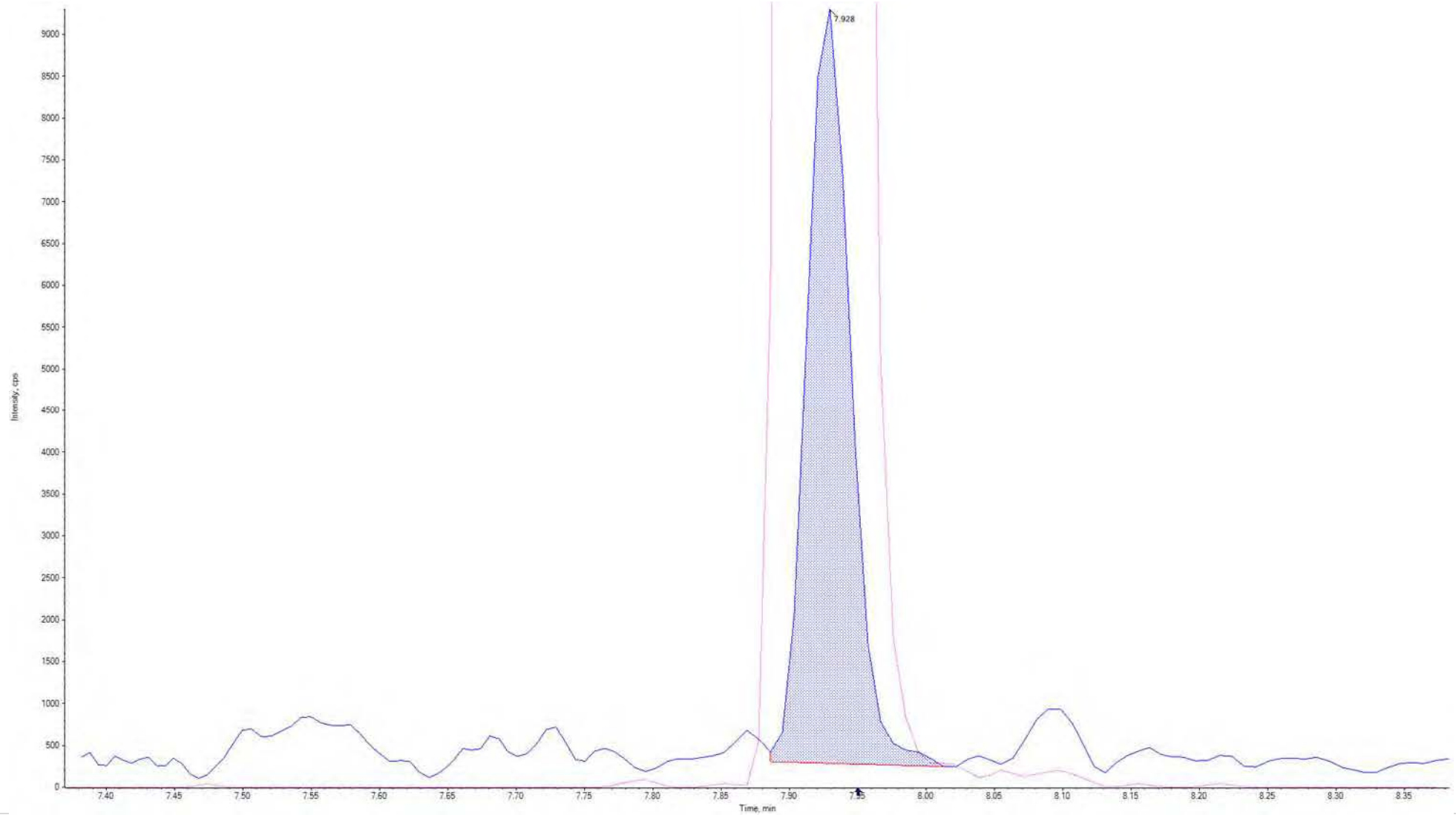
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOA_2
Sample: L2450786-09 S/N:501867.3 Points Across peak:88



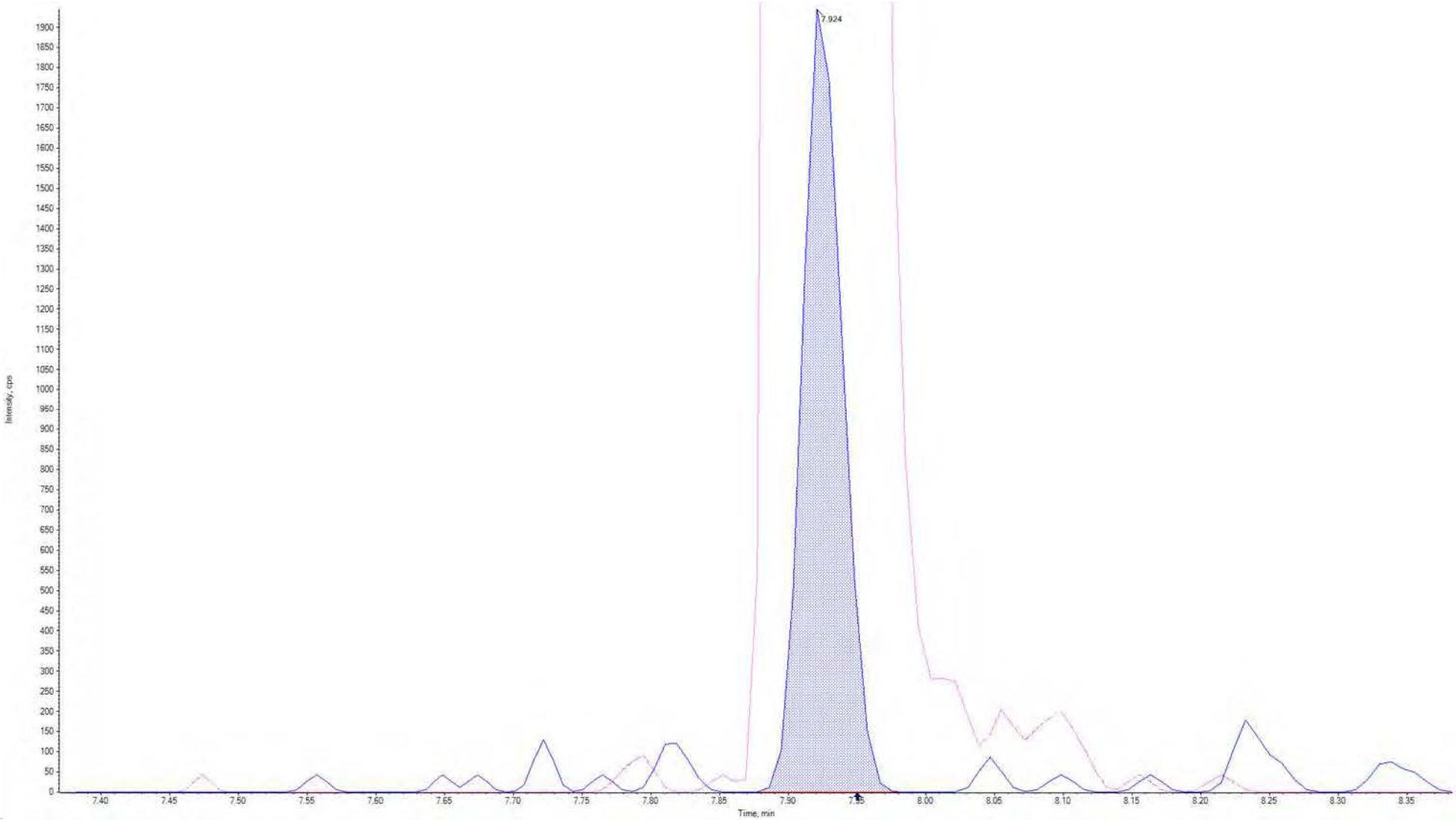
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFNA
Sample: L2450786-09 S/N:221.6 Points Across peak:16



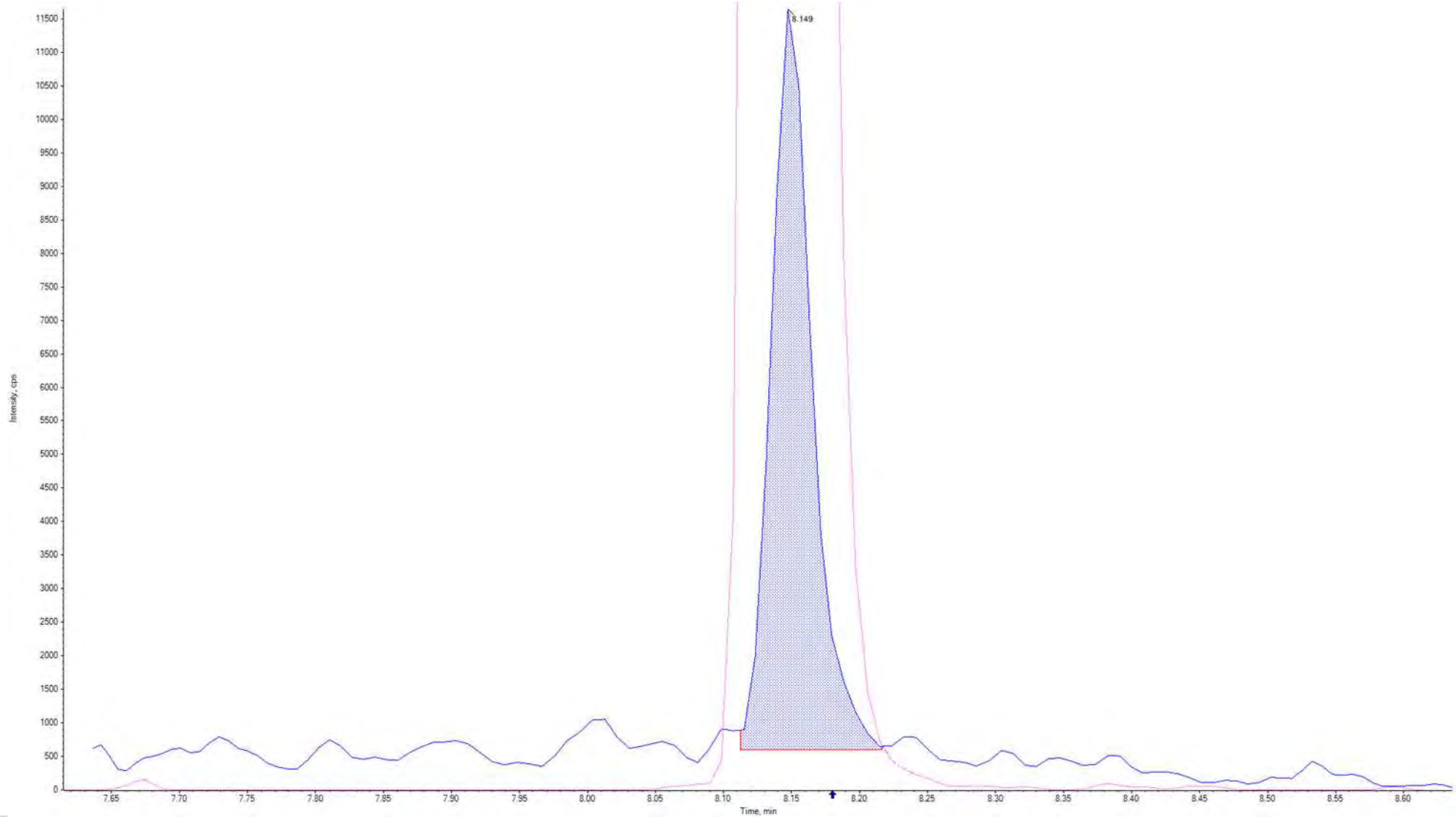
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFNA_2
Sample: L2450786-09 S/N:224.1 Points Across peak:16



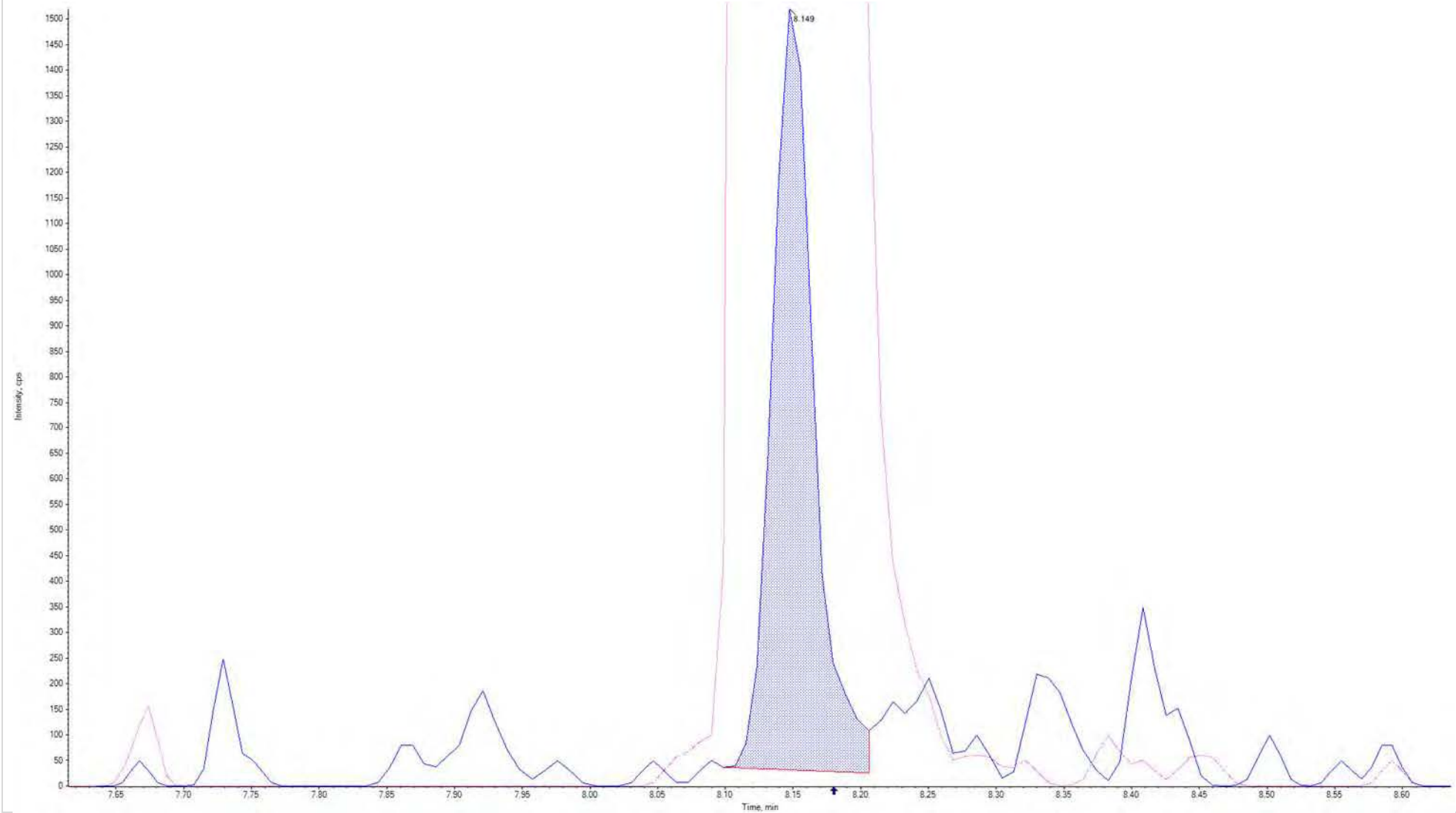
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDA
Sample: L2450786-09 S/N:339.0 Points Across peak:15



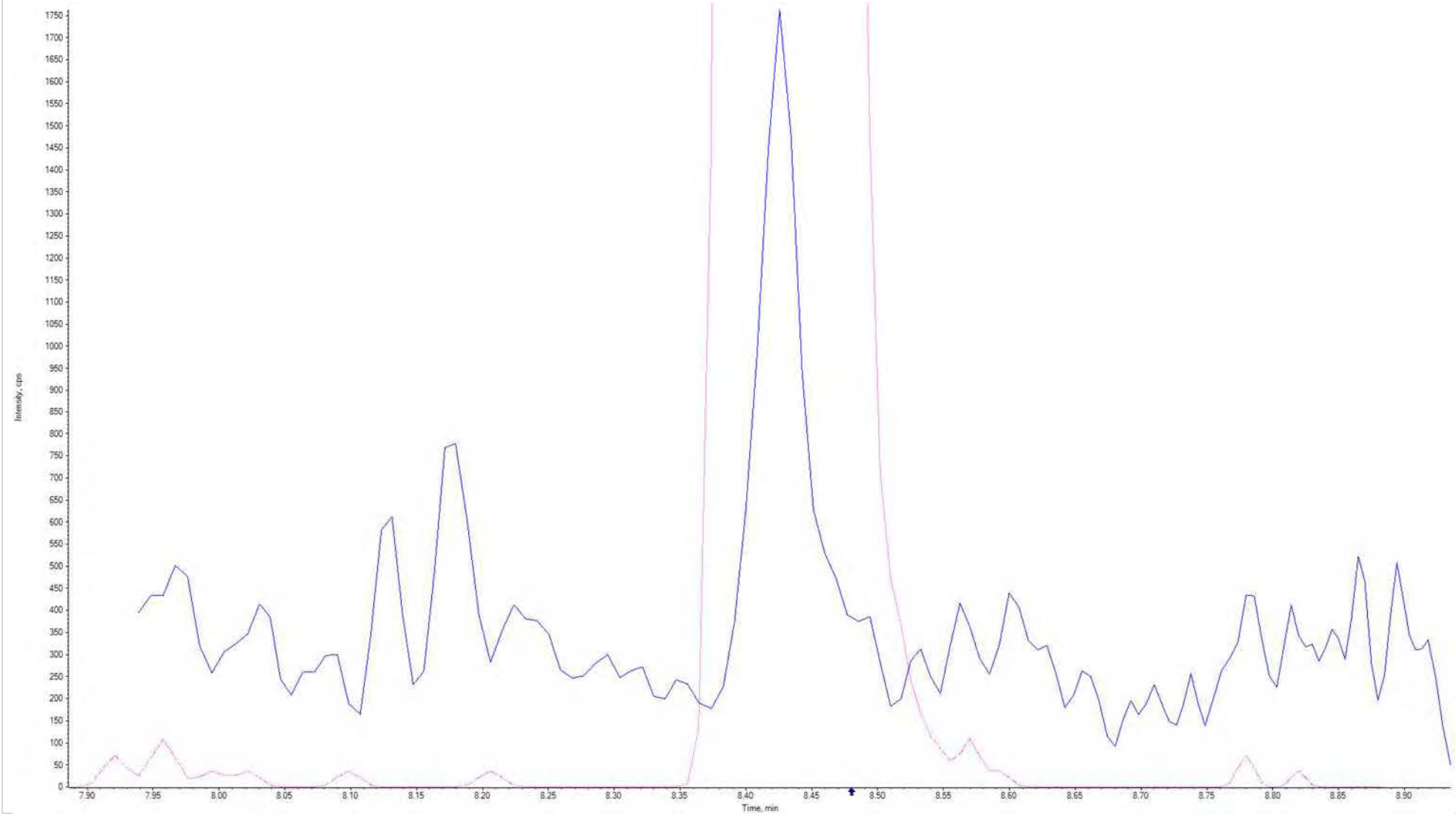
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDA_2
Sample: L2450786-09 S/N:462679.5 Points Across peak:14



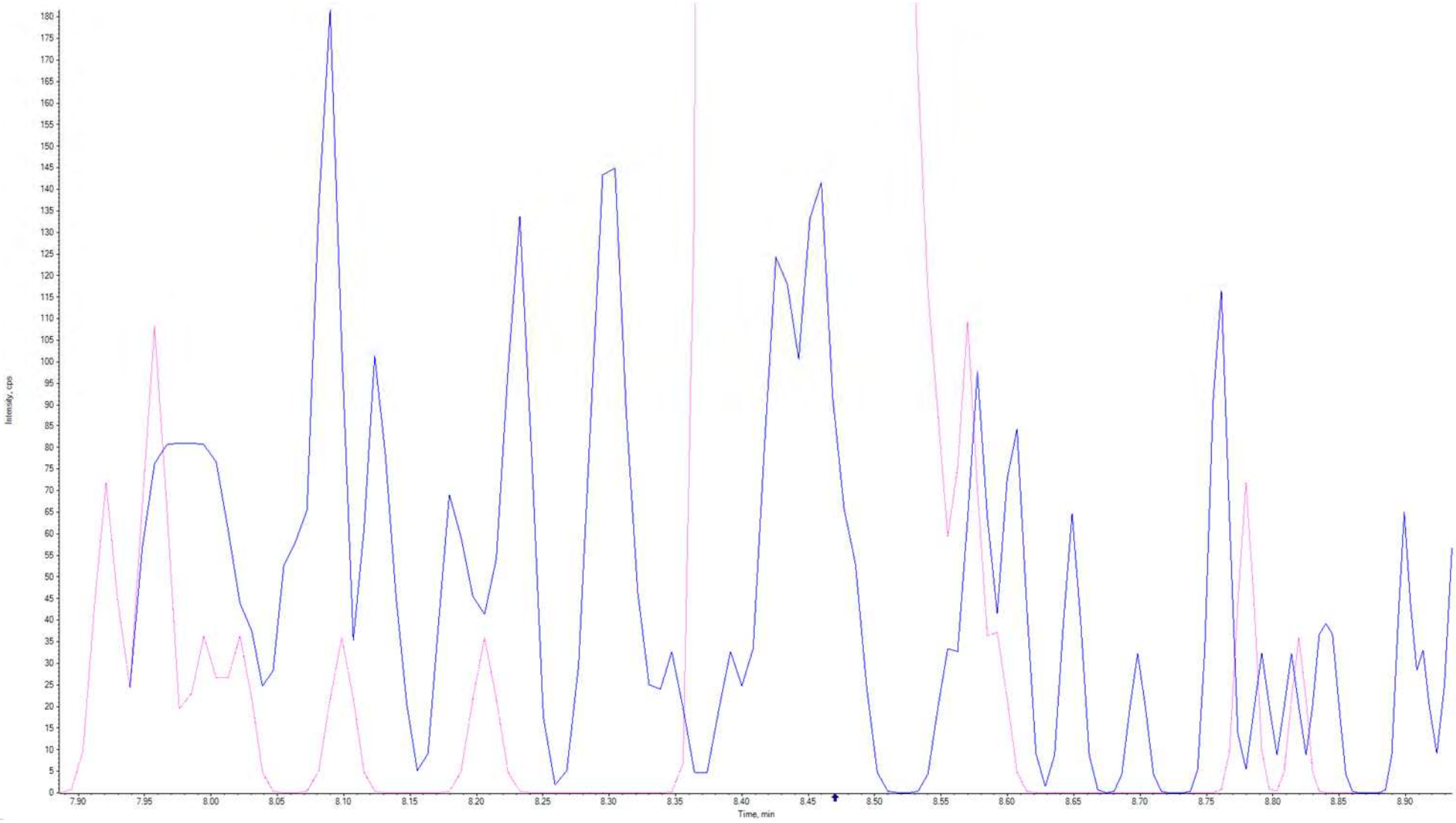
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFUnA
Sample: L2450786-09 S/N:N/A Points Across peak:N/A



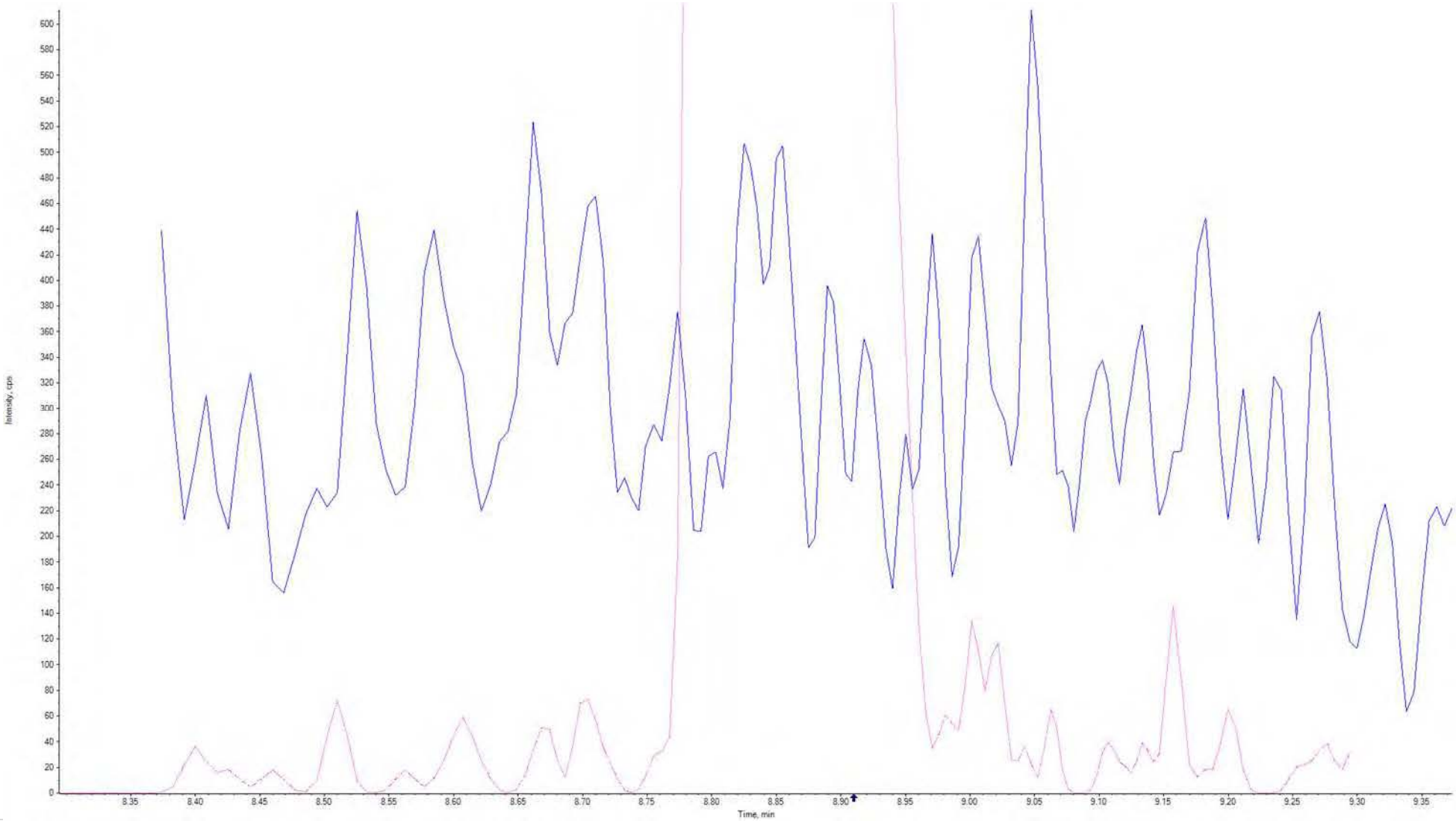
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFUnA_2
Sample: L2450786-09 S/N:N/A Points Across peak:N/A



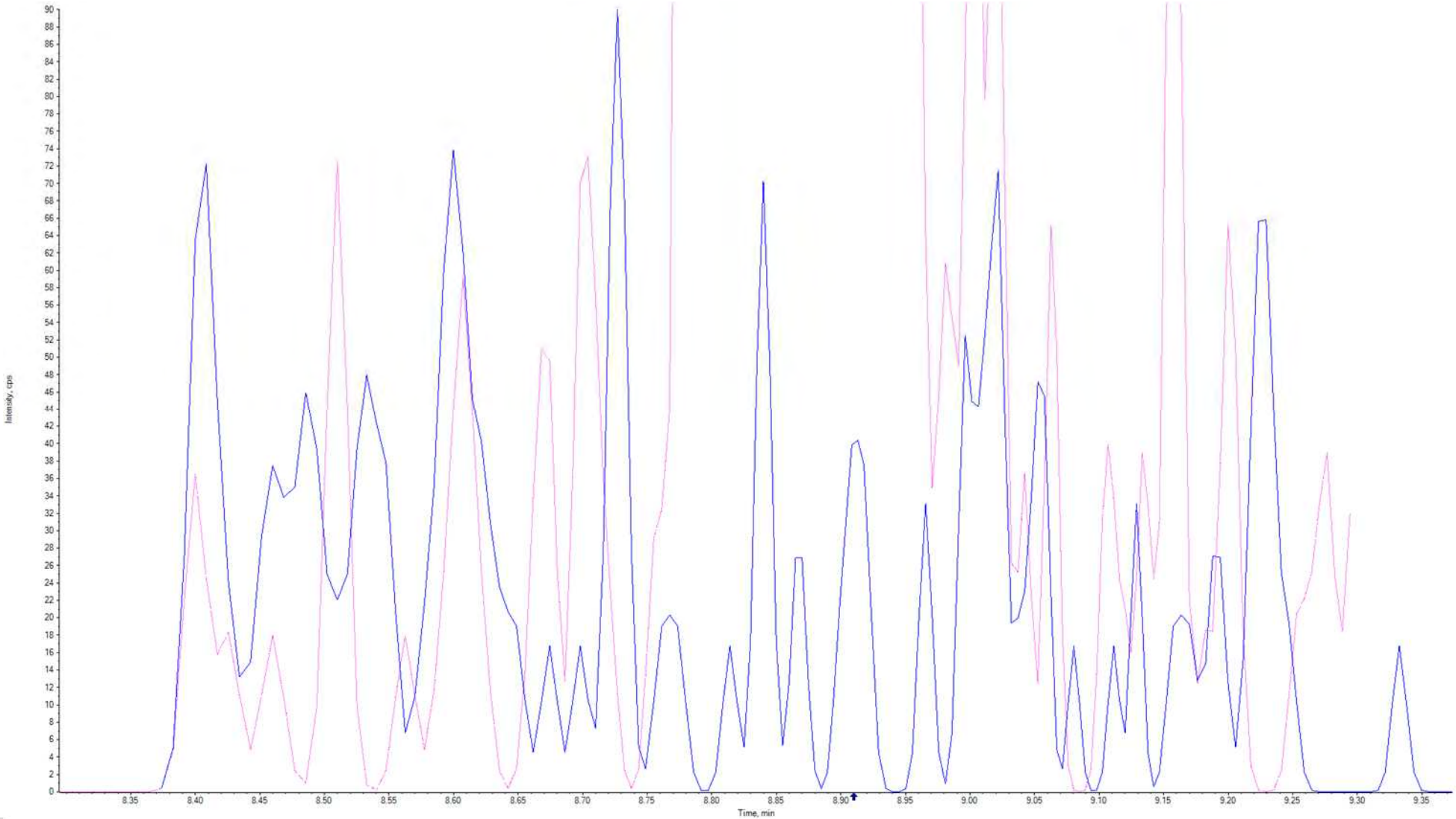
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoA
Sample: L2450786-09 S/N:N/A Points Across peak:N/A



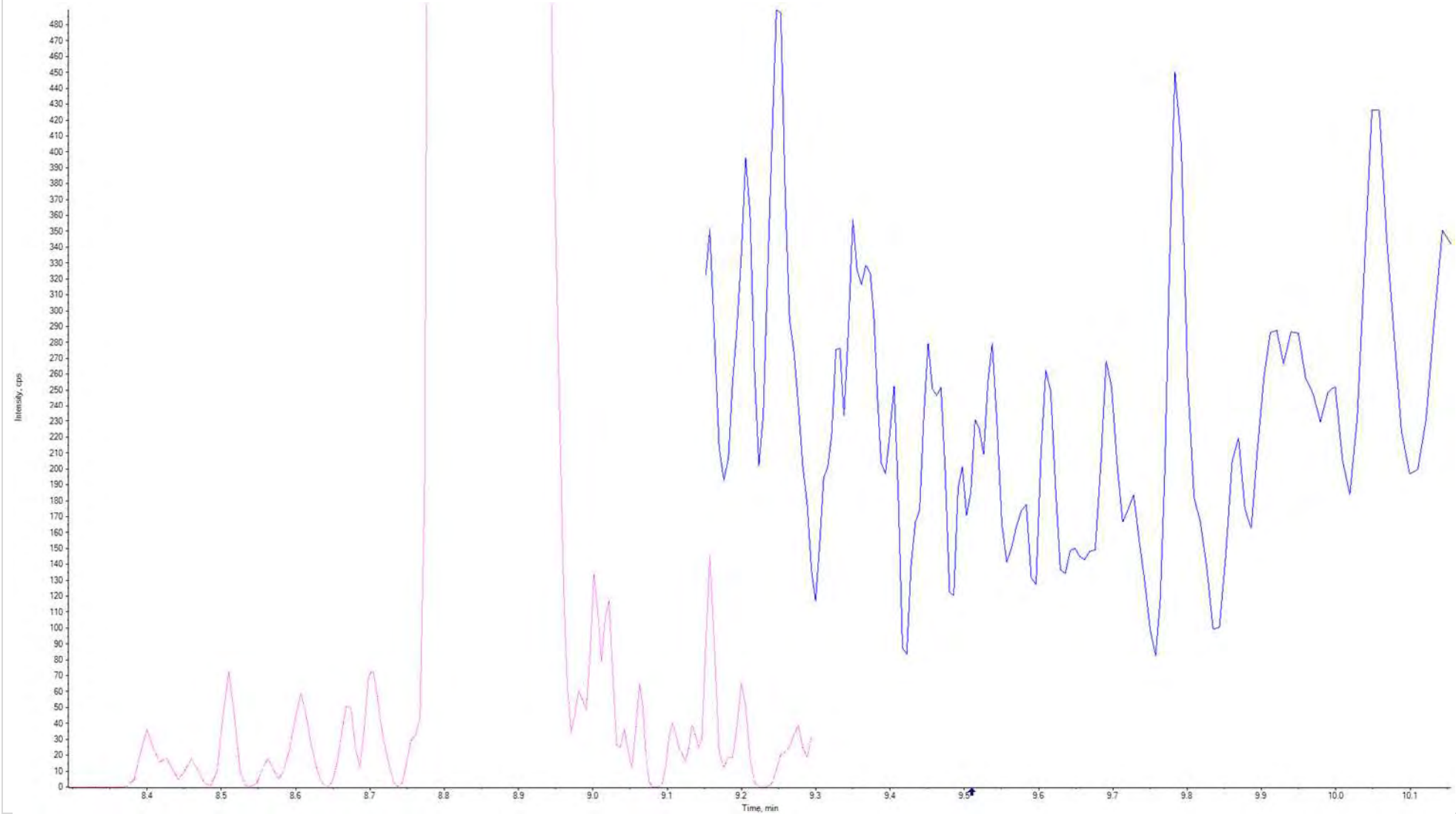
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoA_2
Sample: L2450786-09 S/N:N/A Points Across peak:N/A



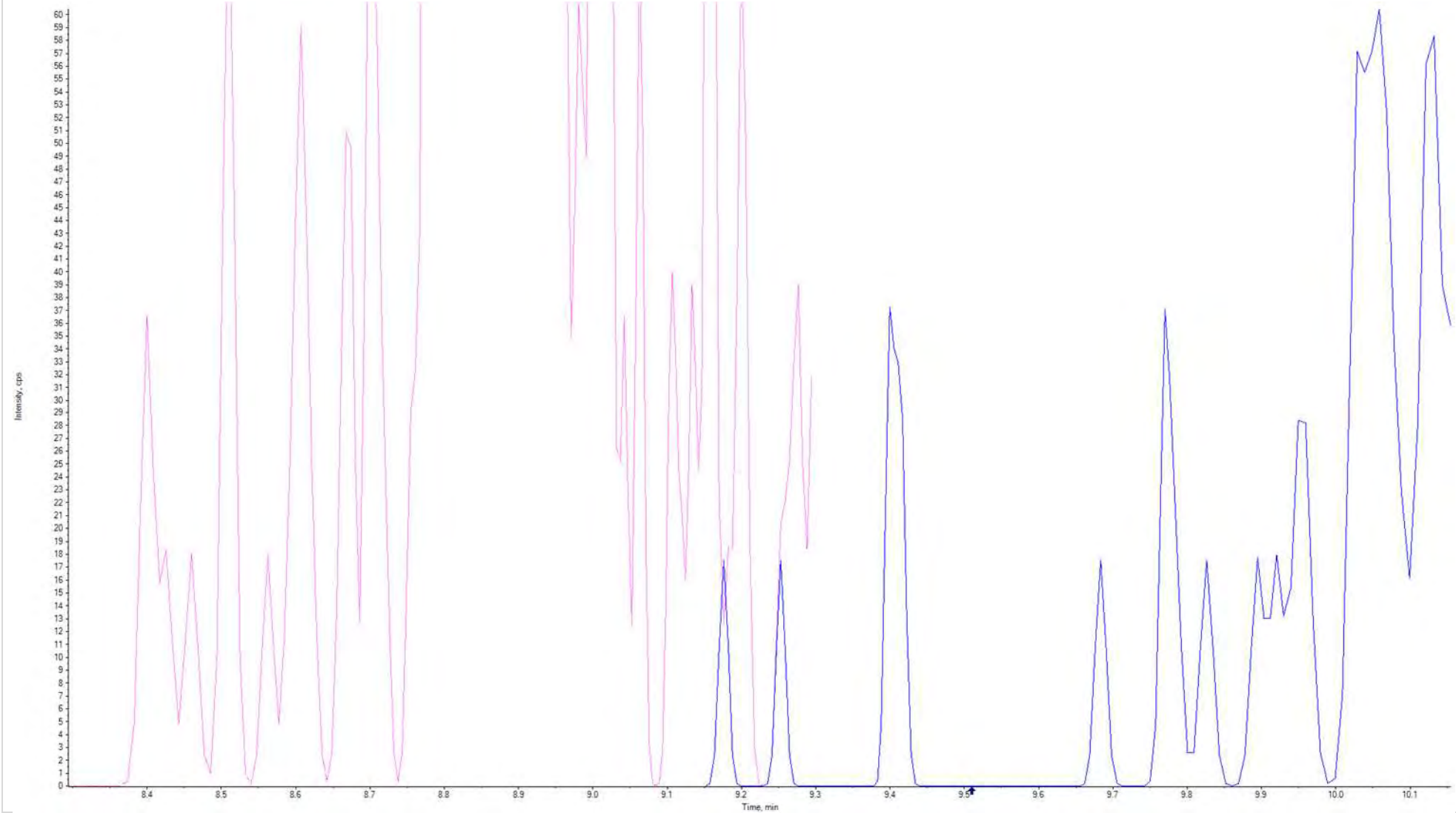
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFTrDA
Sample: L2450786-09 S/N:N/A Points Across peak:N/A



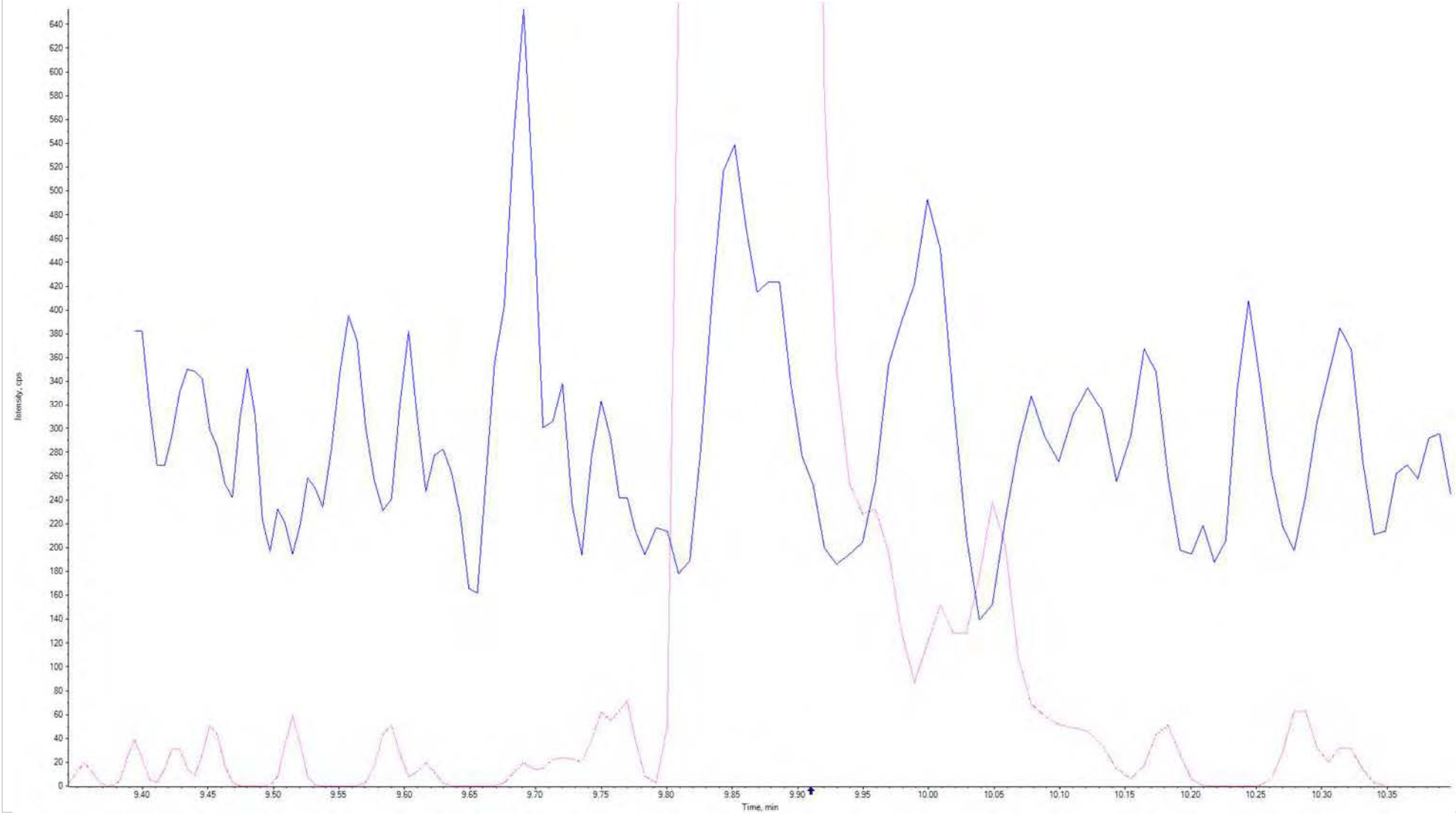
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFTrDA_2
Sample: L2450786-09 S/N:N/A Points Across peak:N/A



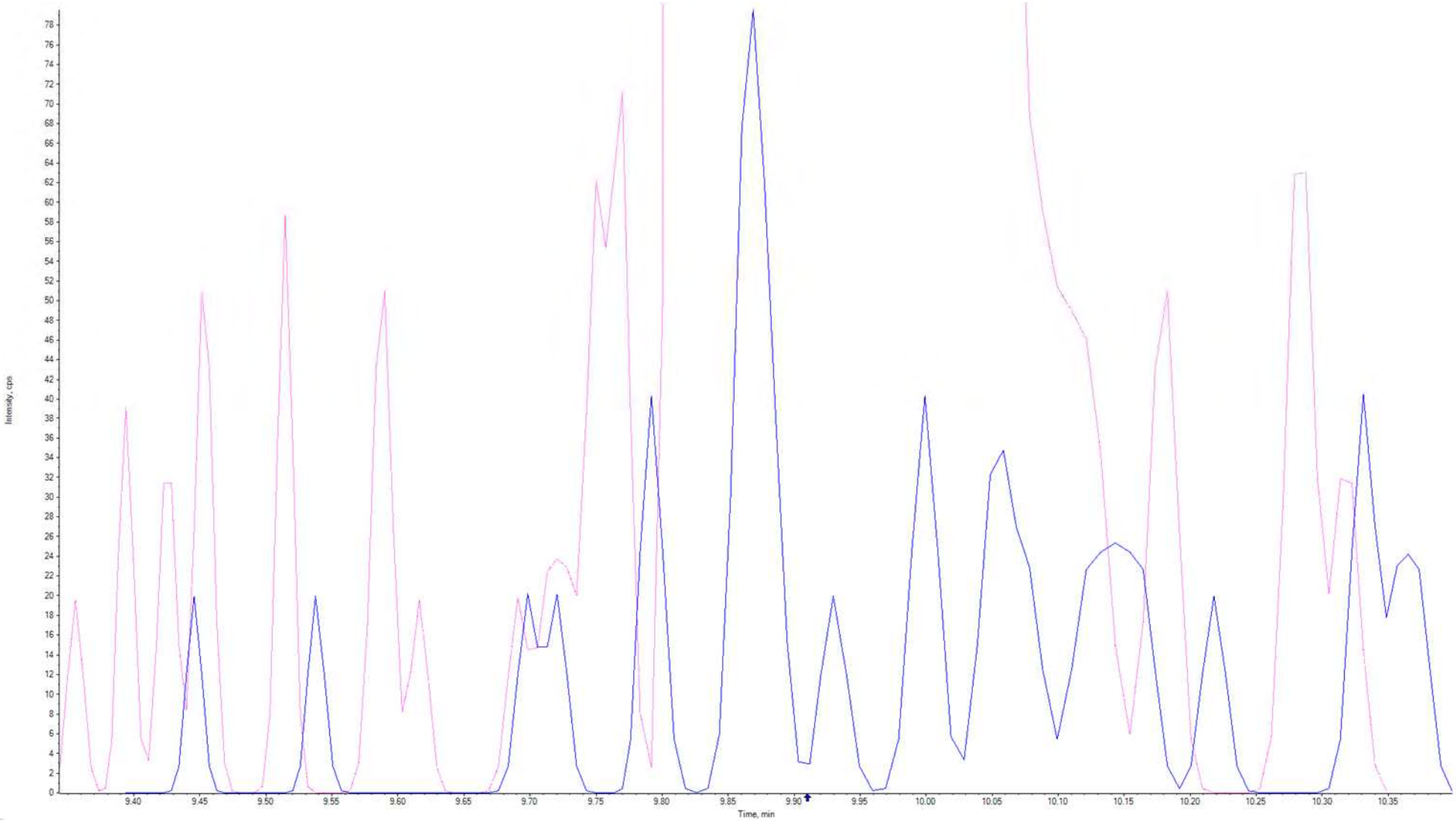
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFTeDA
Sample: L2450786-09 S/N:N/A Points Across peak:N/A



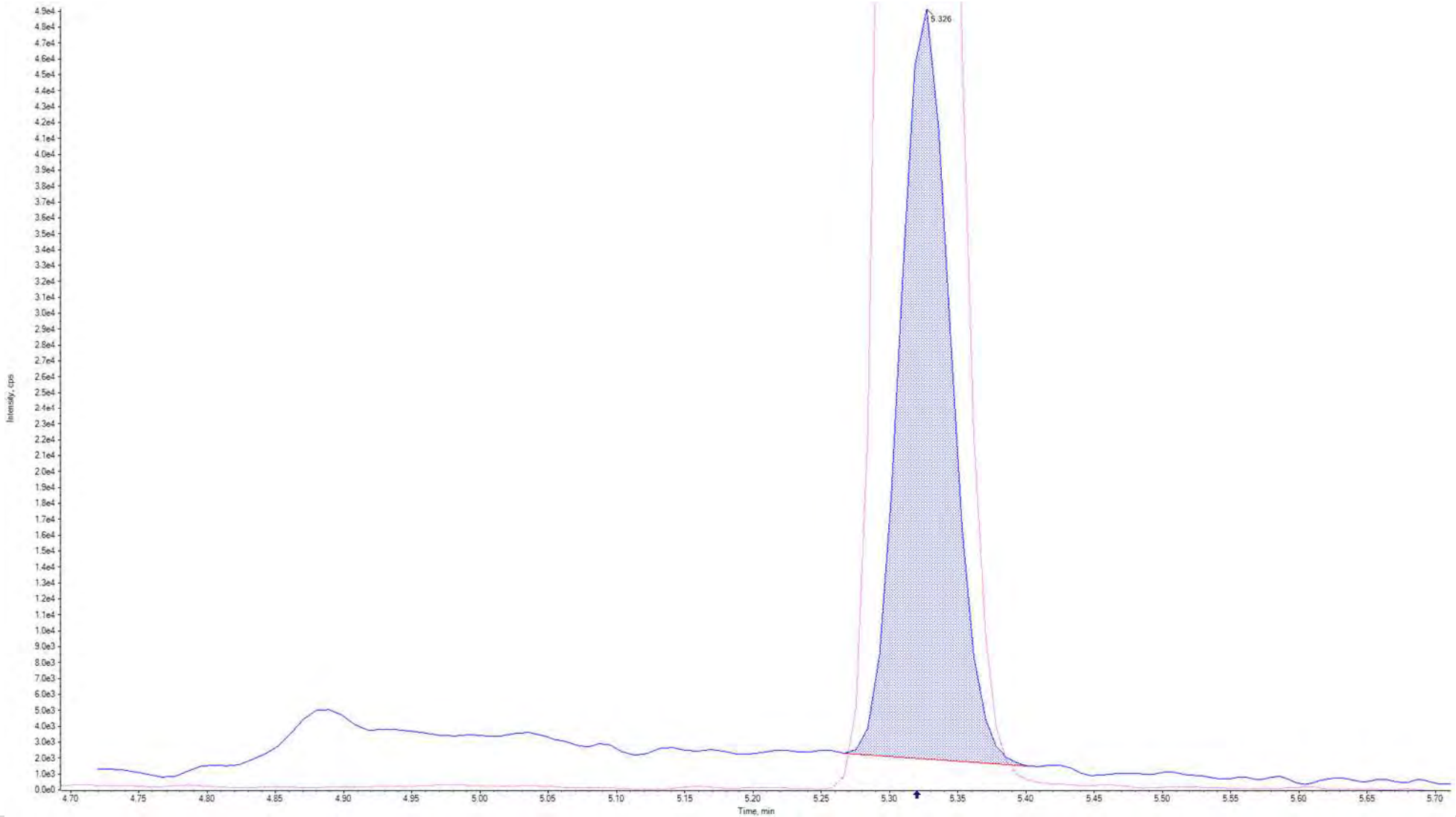
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFTeDA_2
Sample: L2450786-09 S/N:N/A Points Across peak:N/A



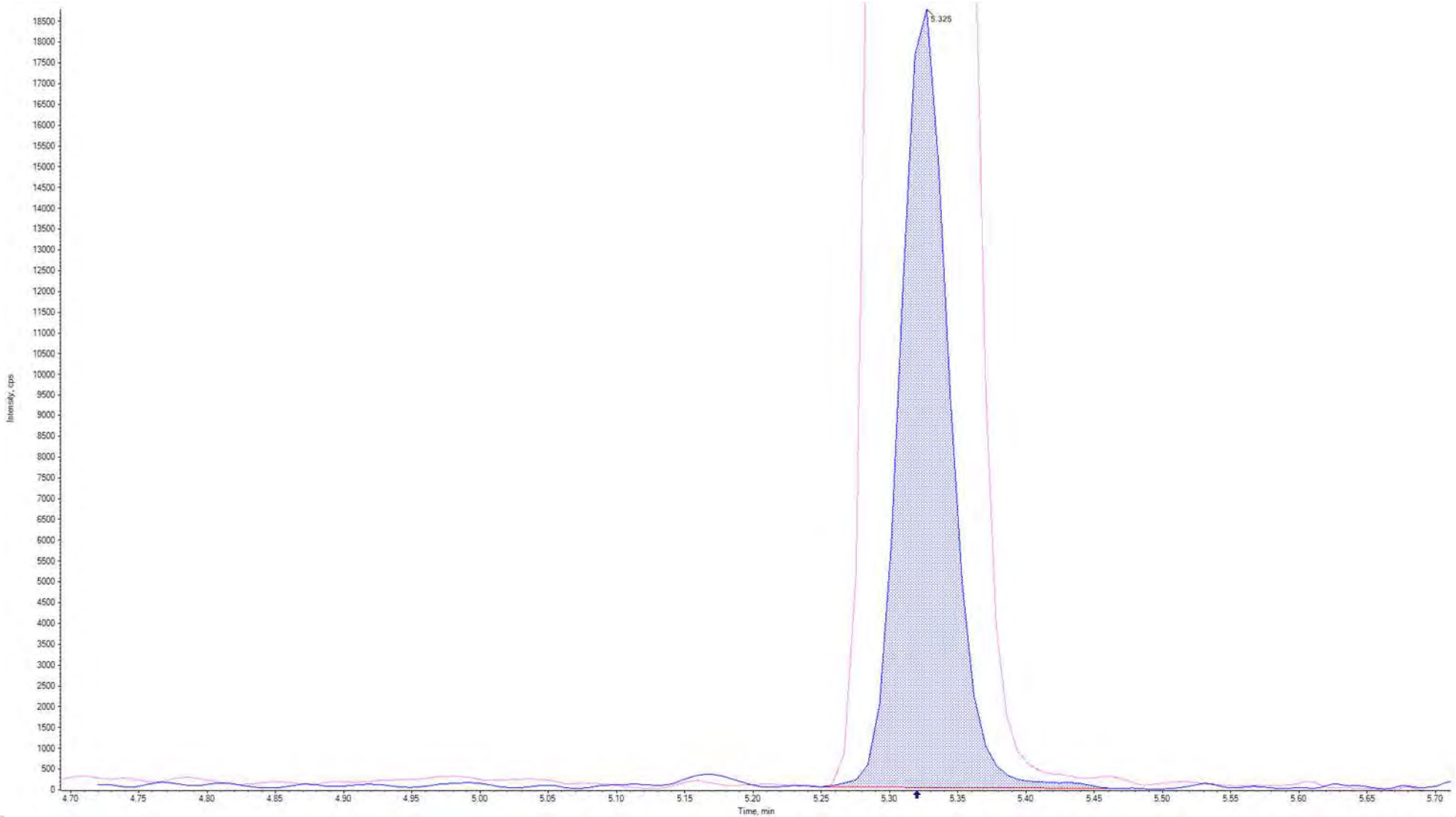
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFBS
Sample: L2450786-09 S/N:60.1 Points Across peak:17



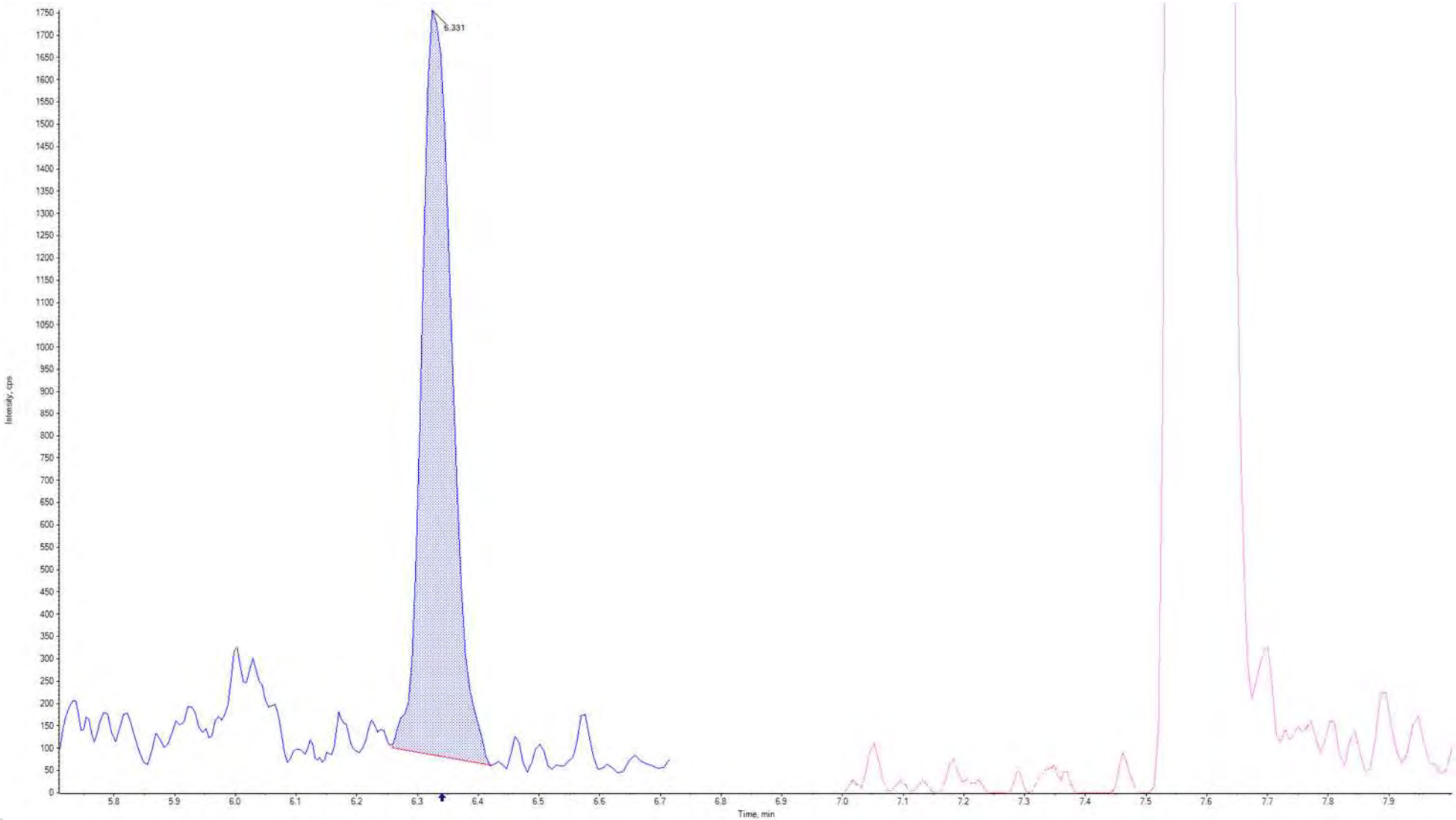
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFBS_2
Sample: L2450786-09 S/N:757.0 Points Across peak:27



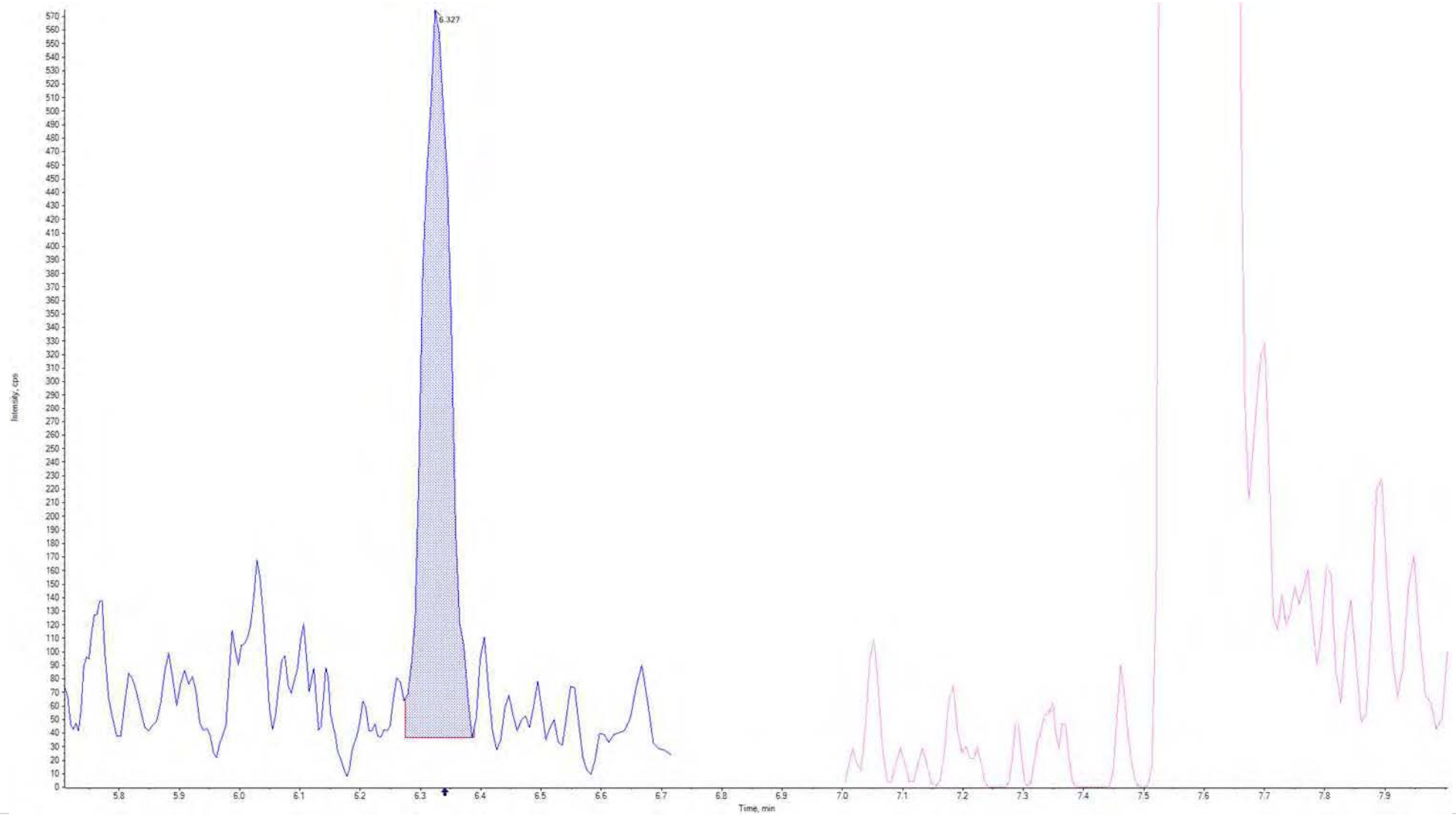
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFPeS
Sample: L2450786-09 S/N:151.5 Points Across peak:27



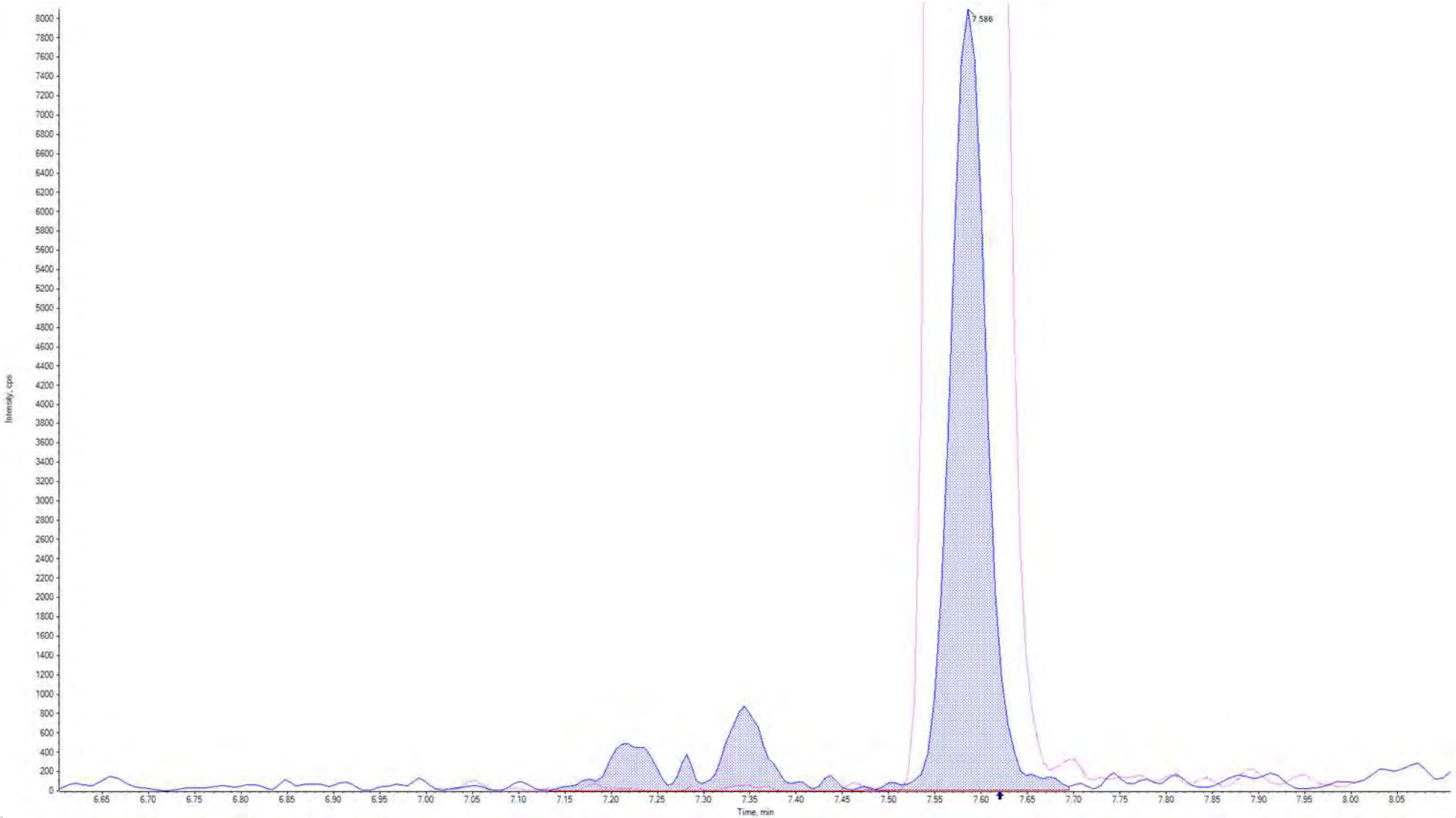
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFPeS_2
Sample: L2450786-09 S/N:103.5 Points Across peak:19



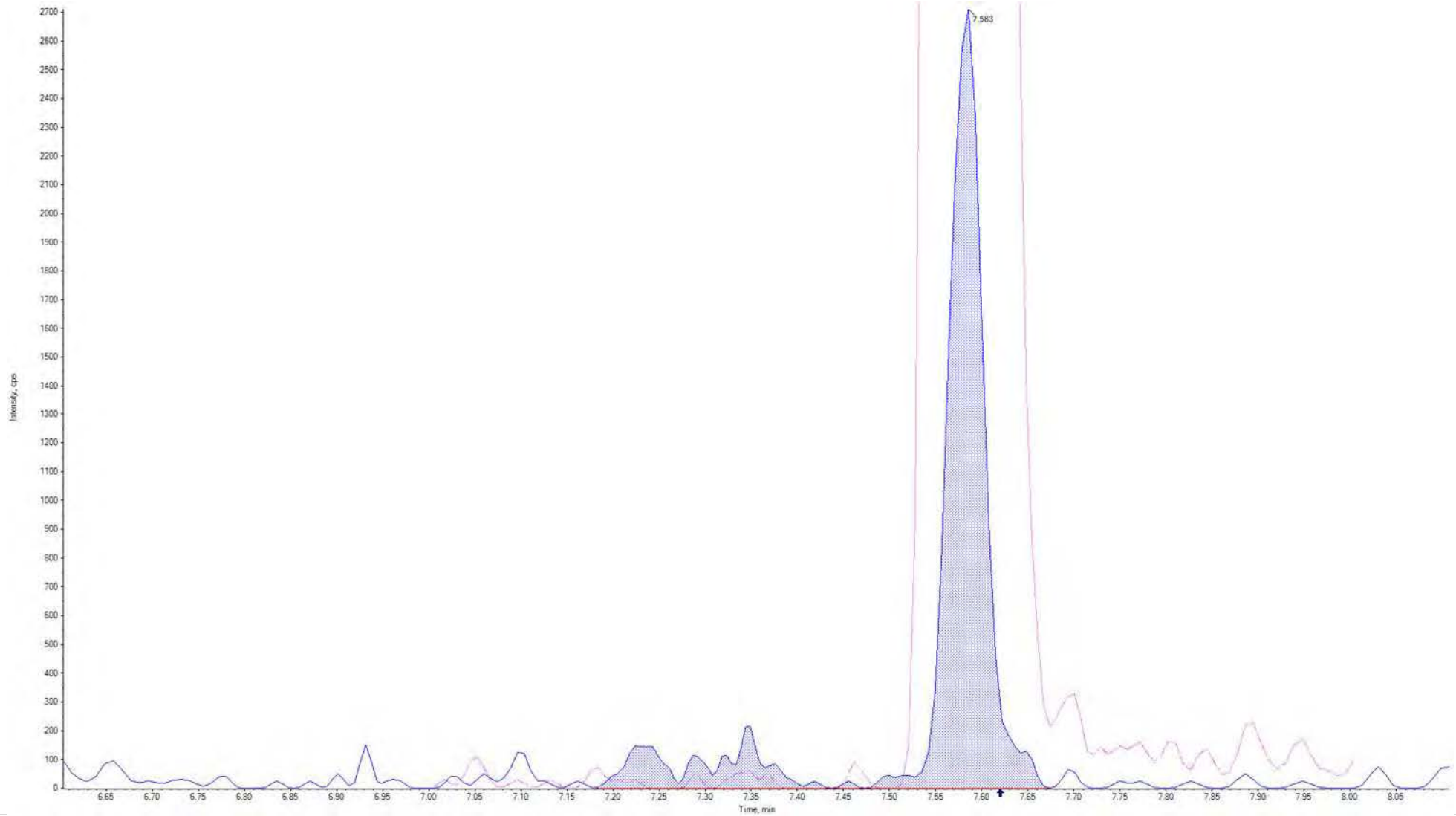
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHxS
Sample: L2450786-09 S/N:1210.6 Points Across peak:91



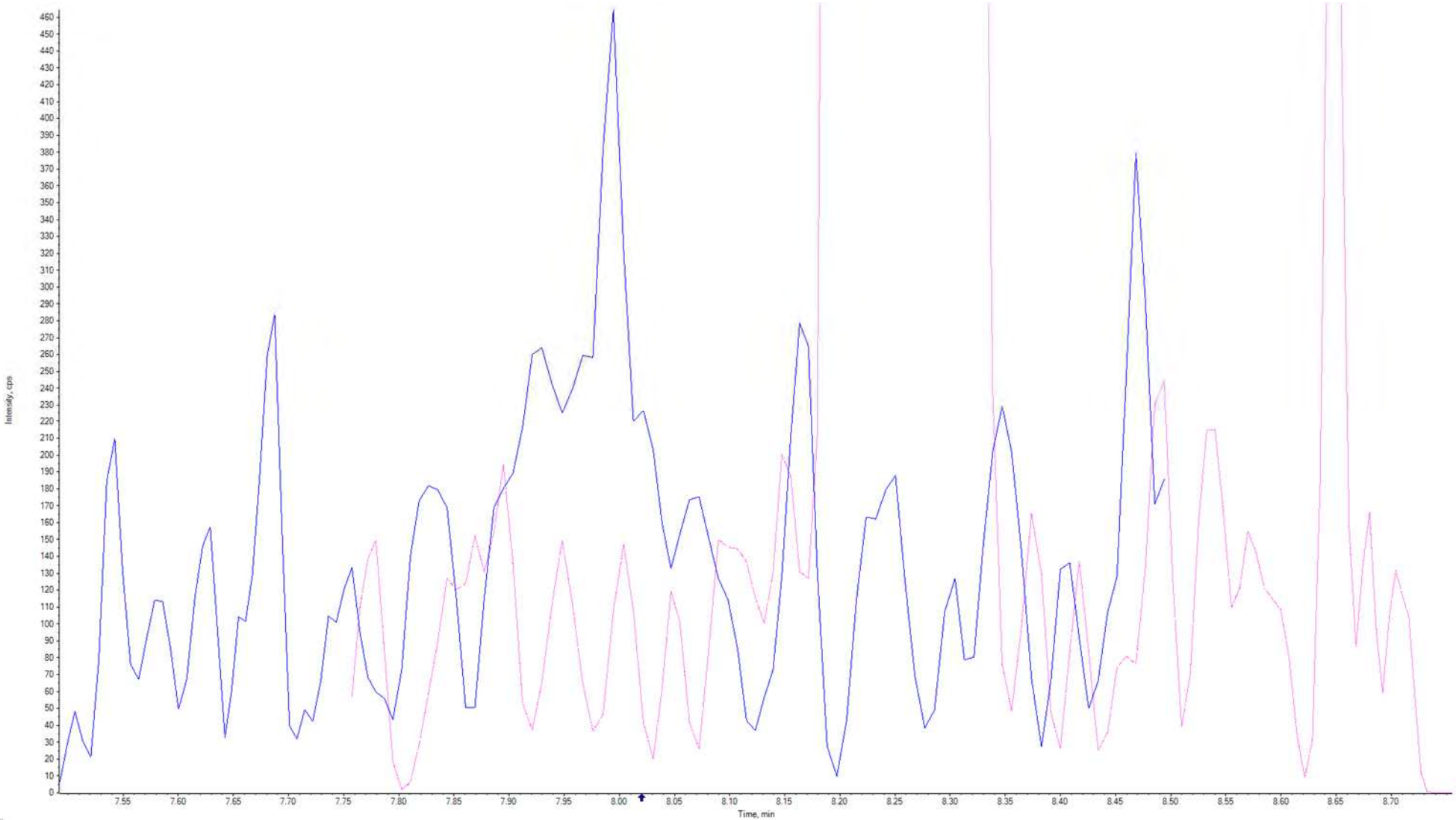
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHxS_2
Sample: L2450786-09 S/N:10786.0 Points Across peak:81



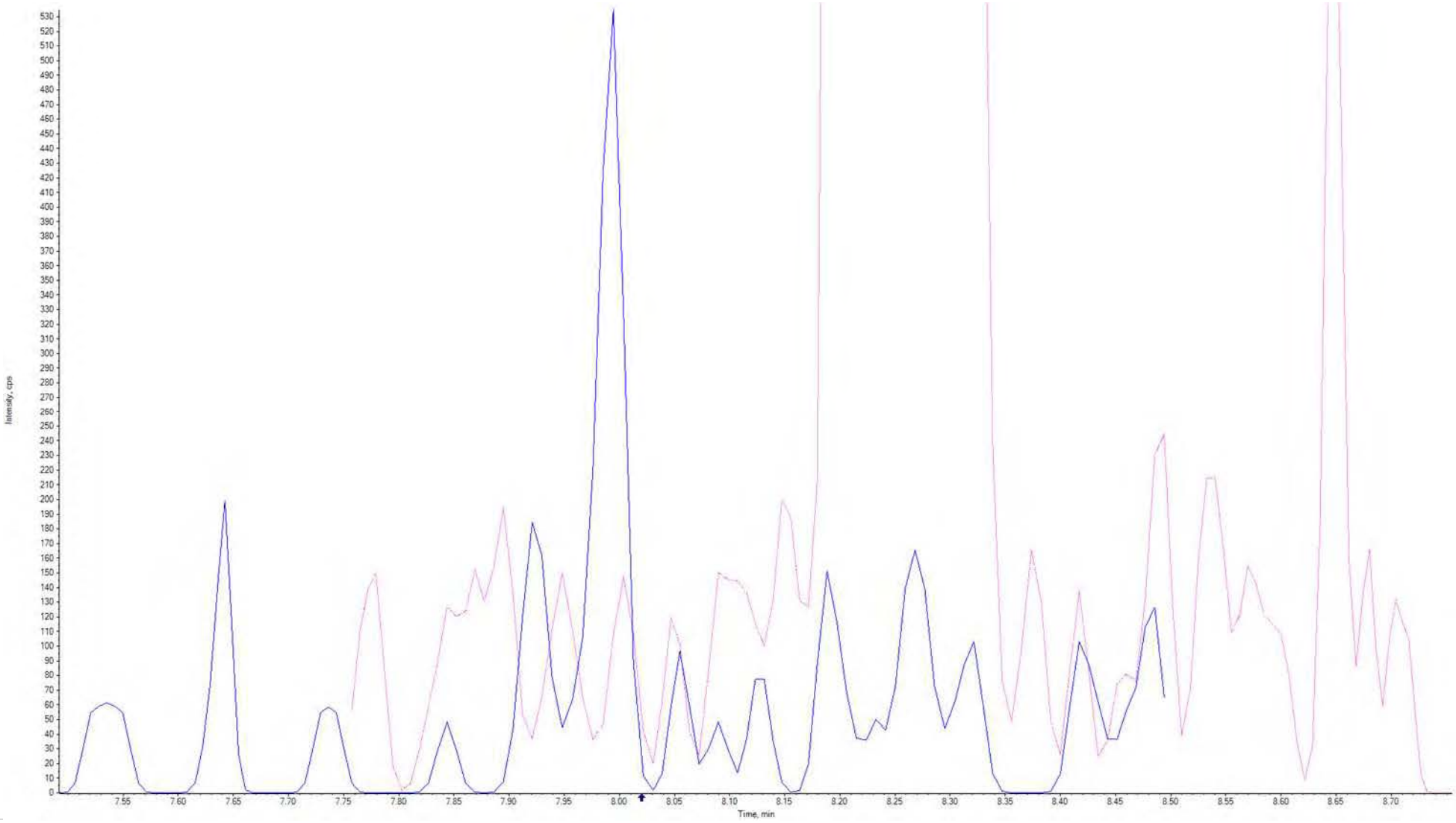
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHpS
Sample: L2450786-09 S/N:N/A Points Across peak:N/A



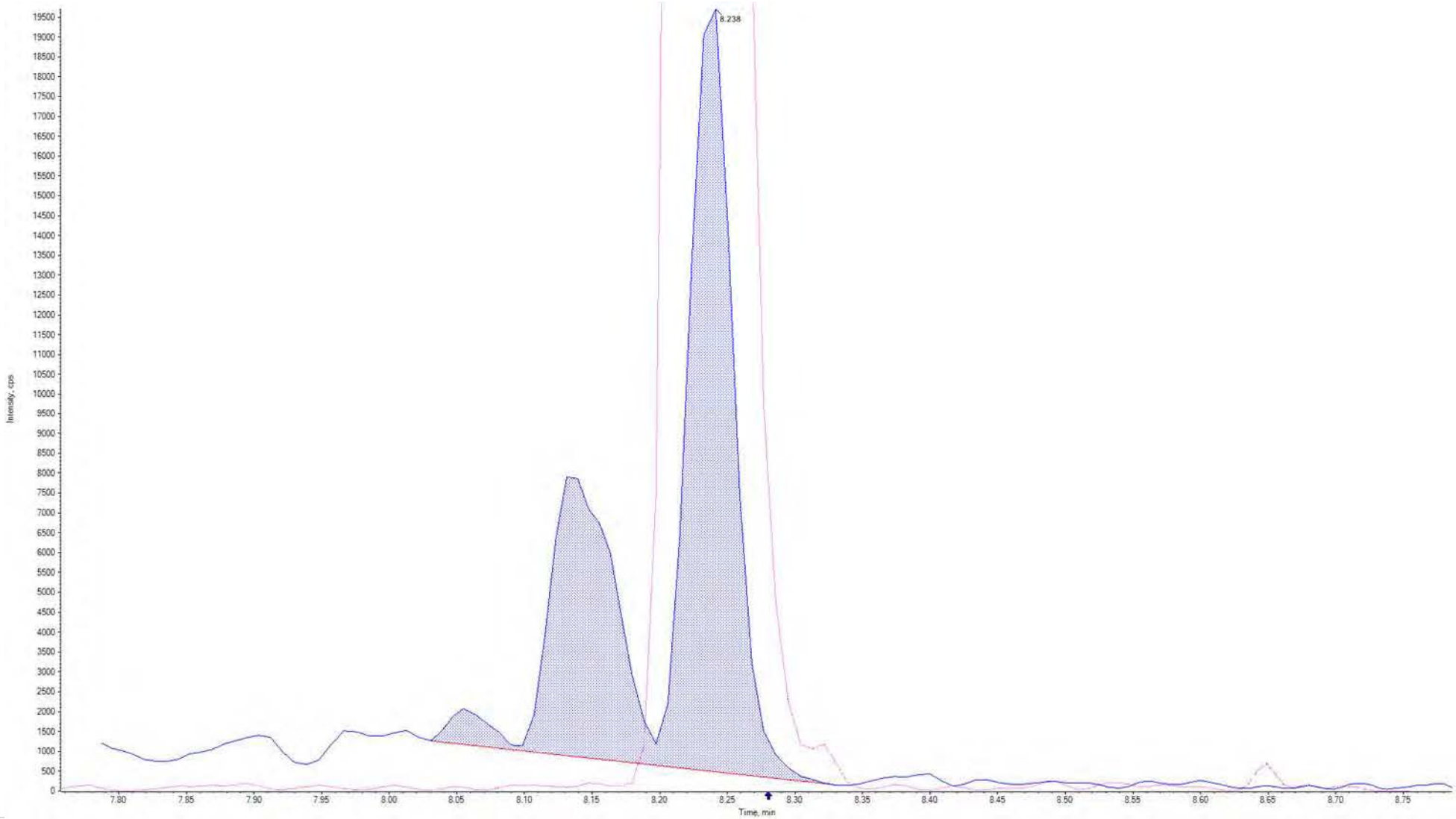
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHpS_2
Sample: L2450786-09 S/N:N/A Points Across peak:N/A



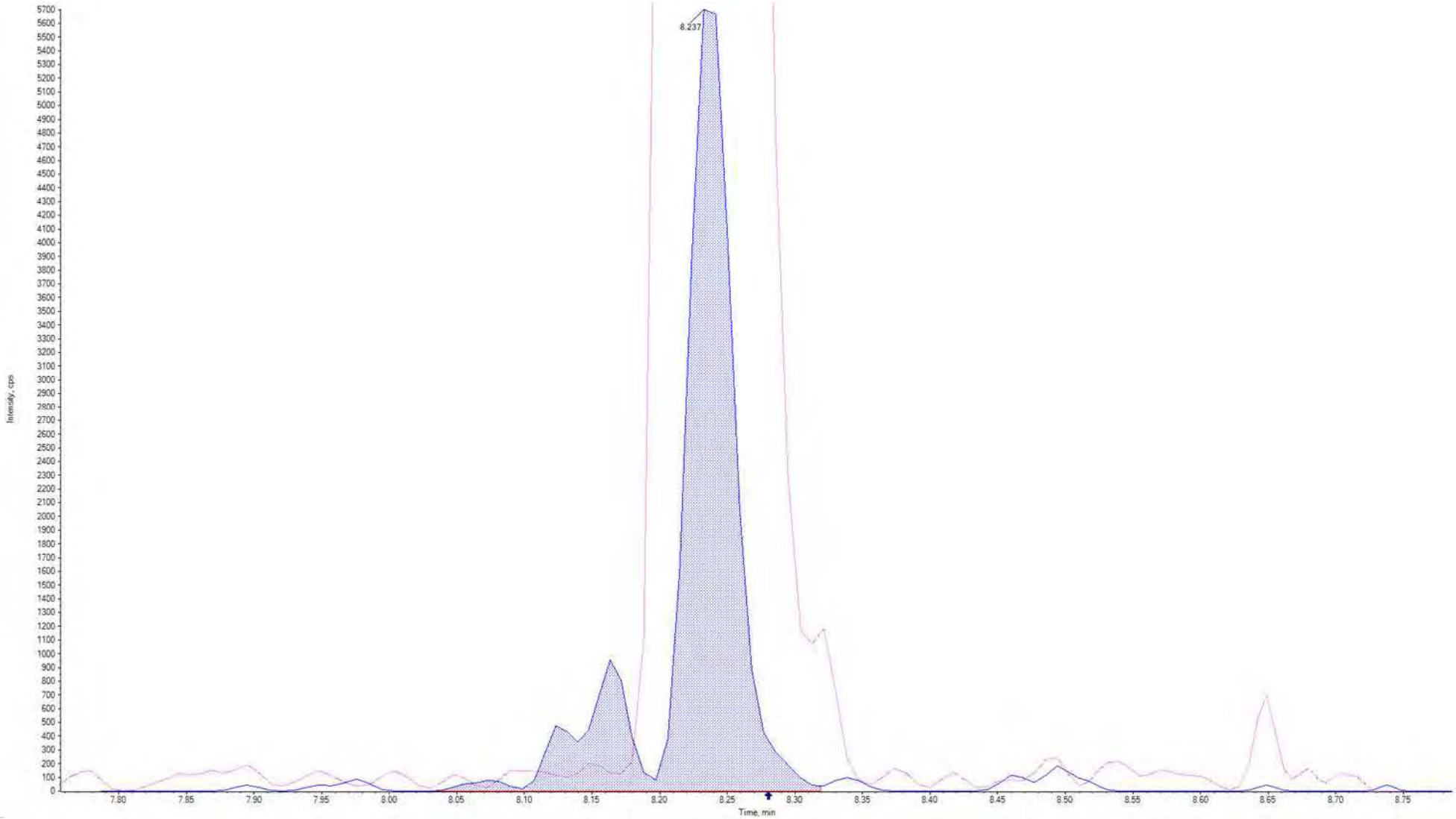
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOS
Sample: L2450786-09 S/N:392.2 Points Across peak:36



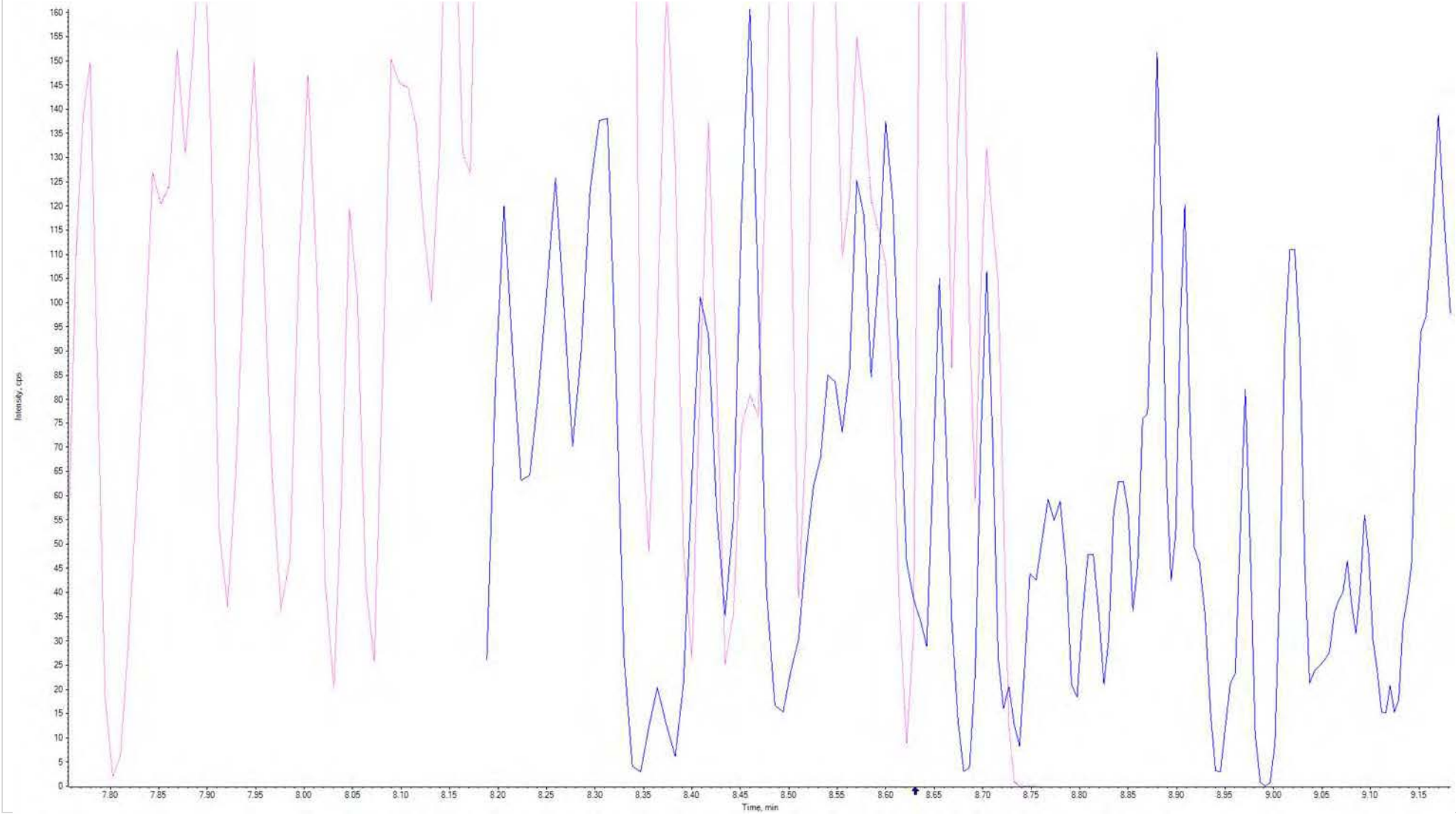
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOS_2
Sample: L2450786-09 S/N:424.3 Points Across peak:35



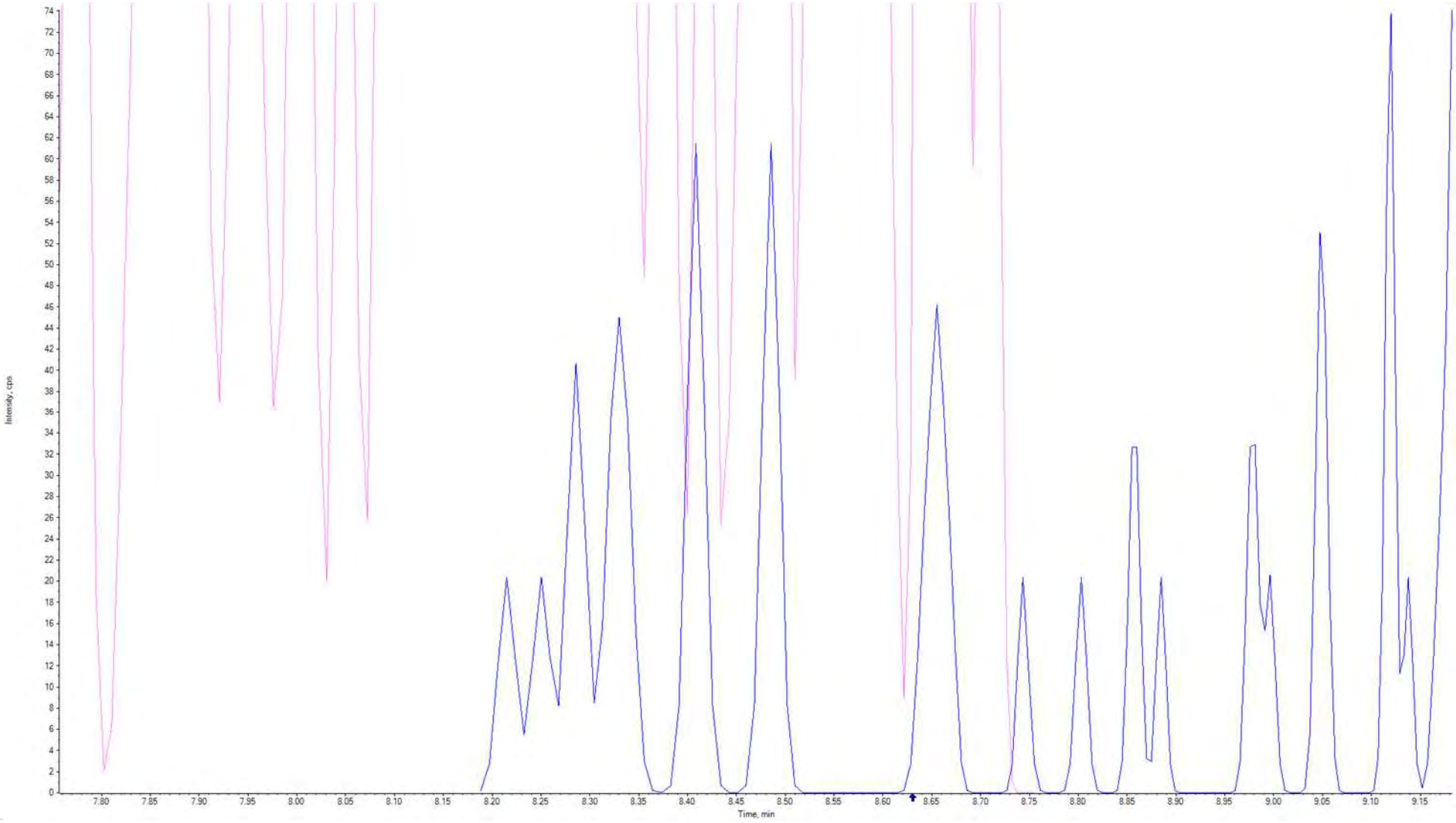
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFNS
Sample: L2450786-09 S/N:N/A Points Across peak:N/A

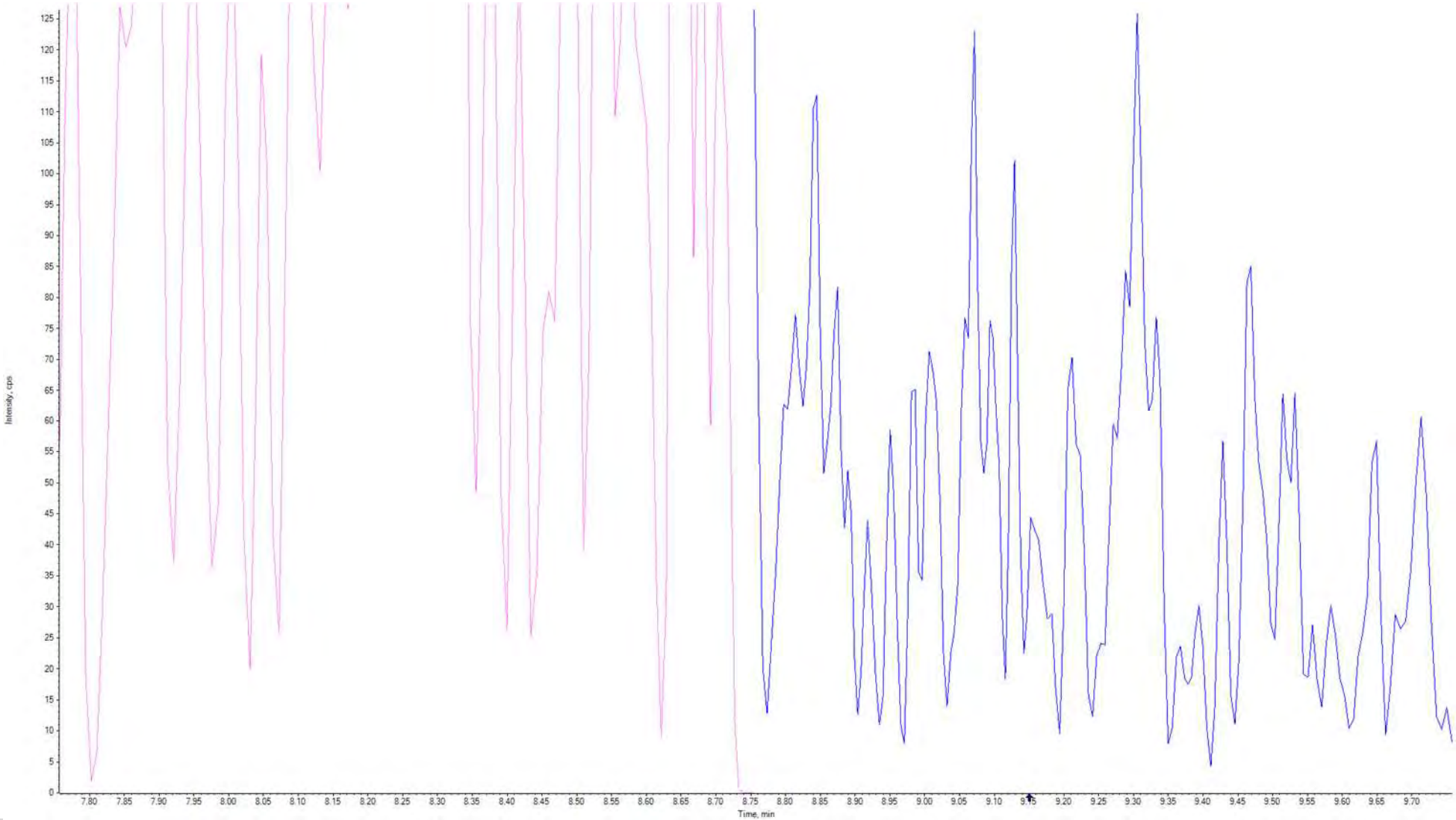


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFNS_2
Sample: L2450786-09 S/N:N/A Points Across peak:N/A

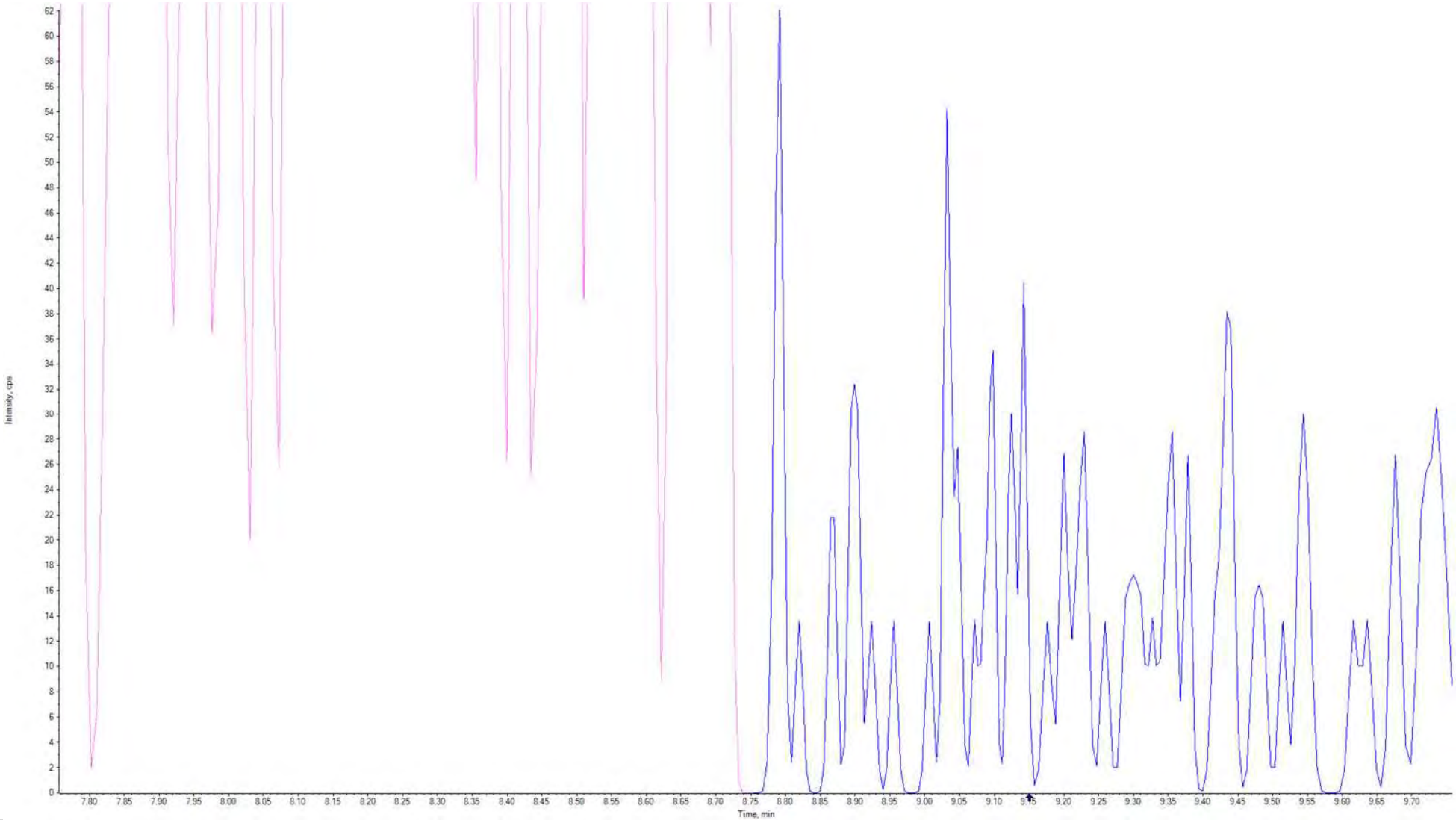


PFDS
Sample: L2450786-09 S/N:N/A Points Across peak:N/A



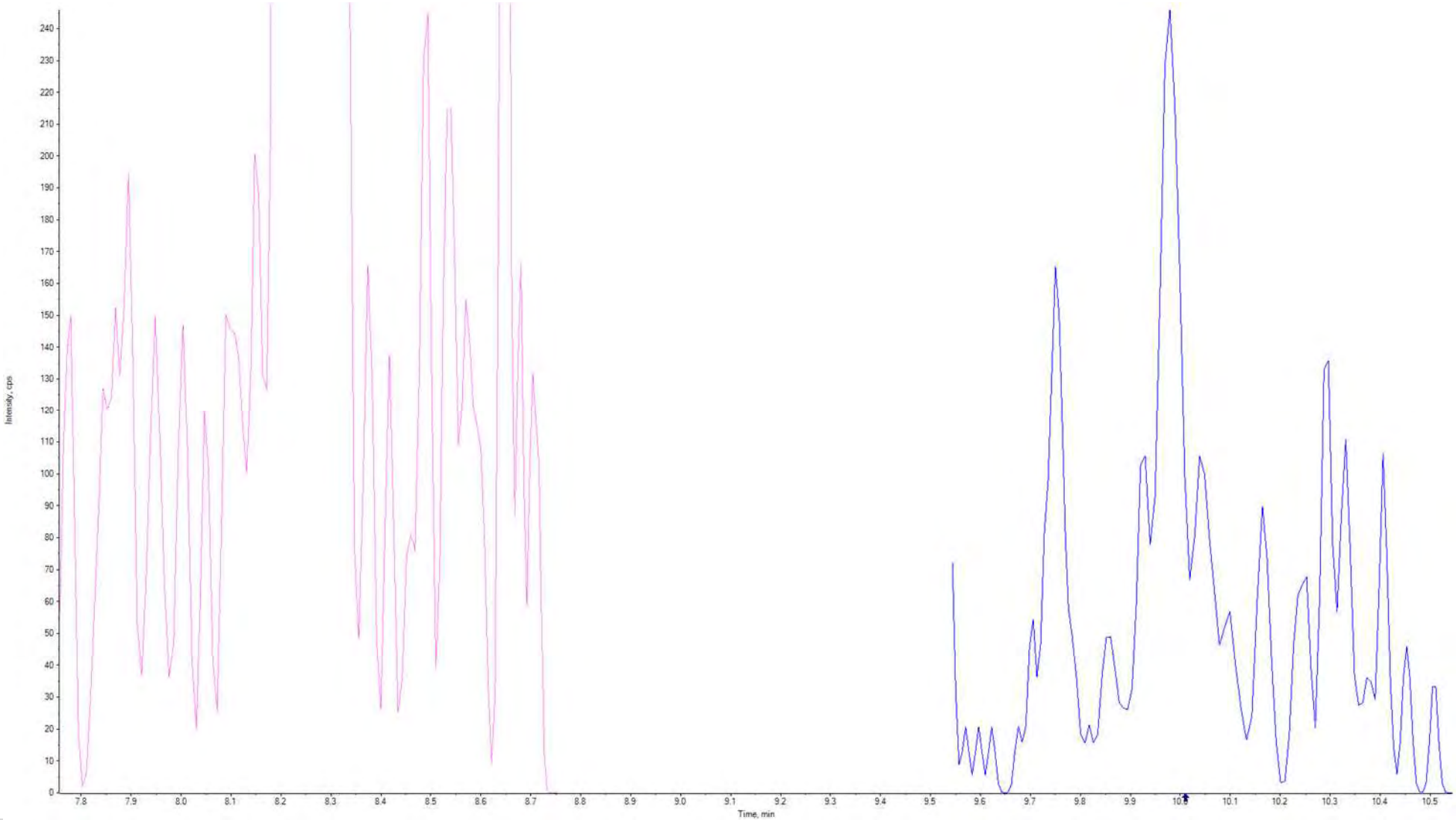
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDS_2
Sample: L2450786-09 S/N:N/A Points Across peak:N/A



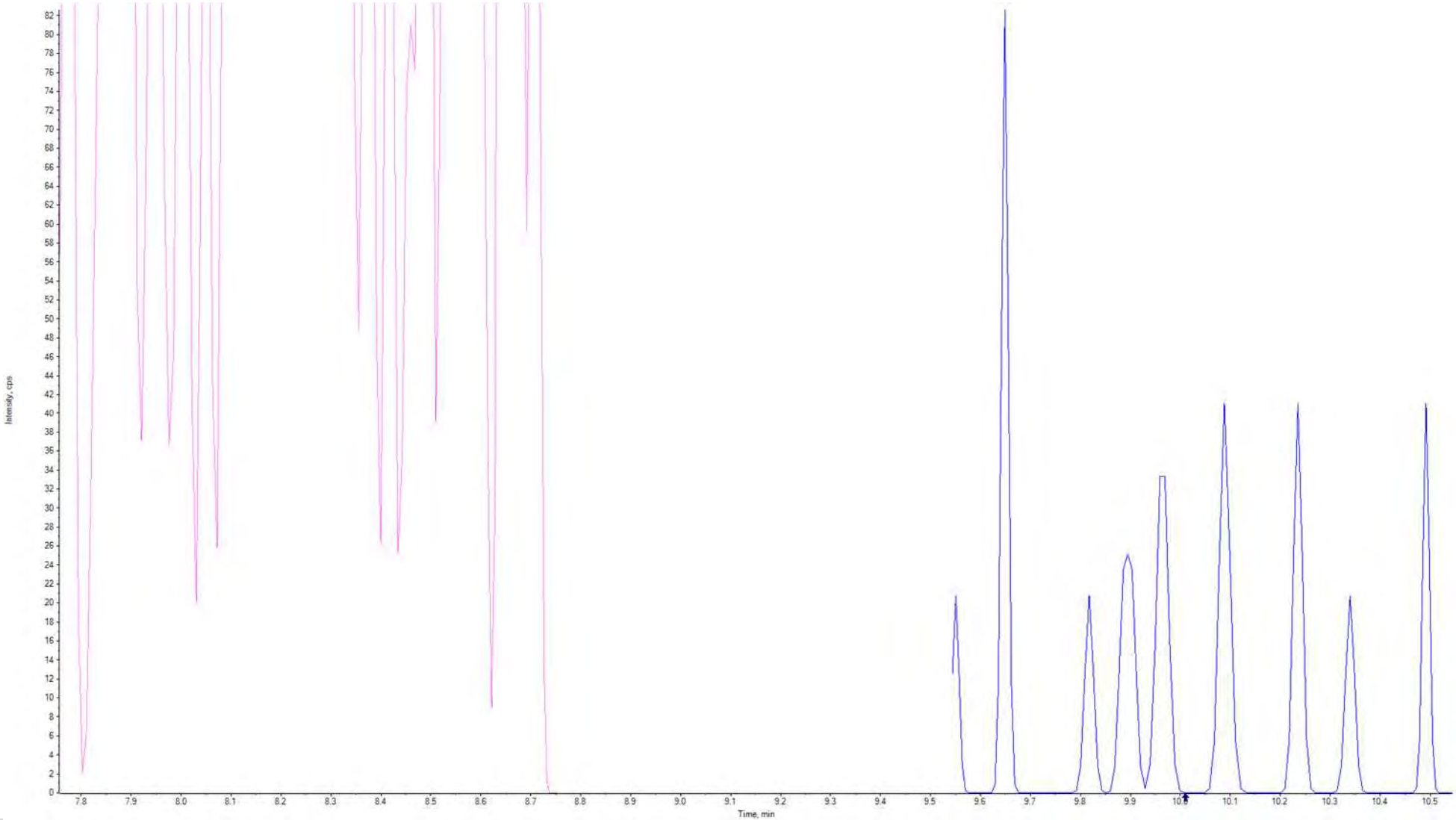
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoS
Sample: L2450786-09 S/N:N/A Points Across peak:N/A



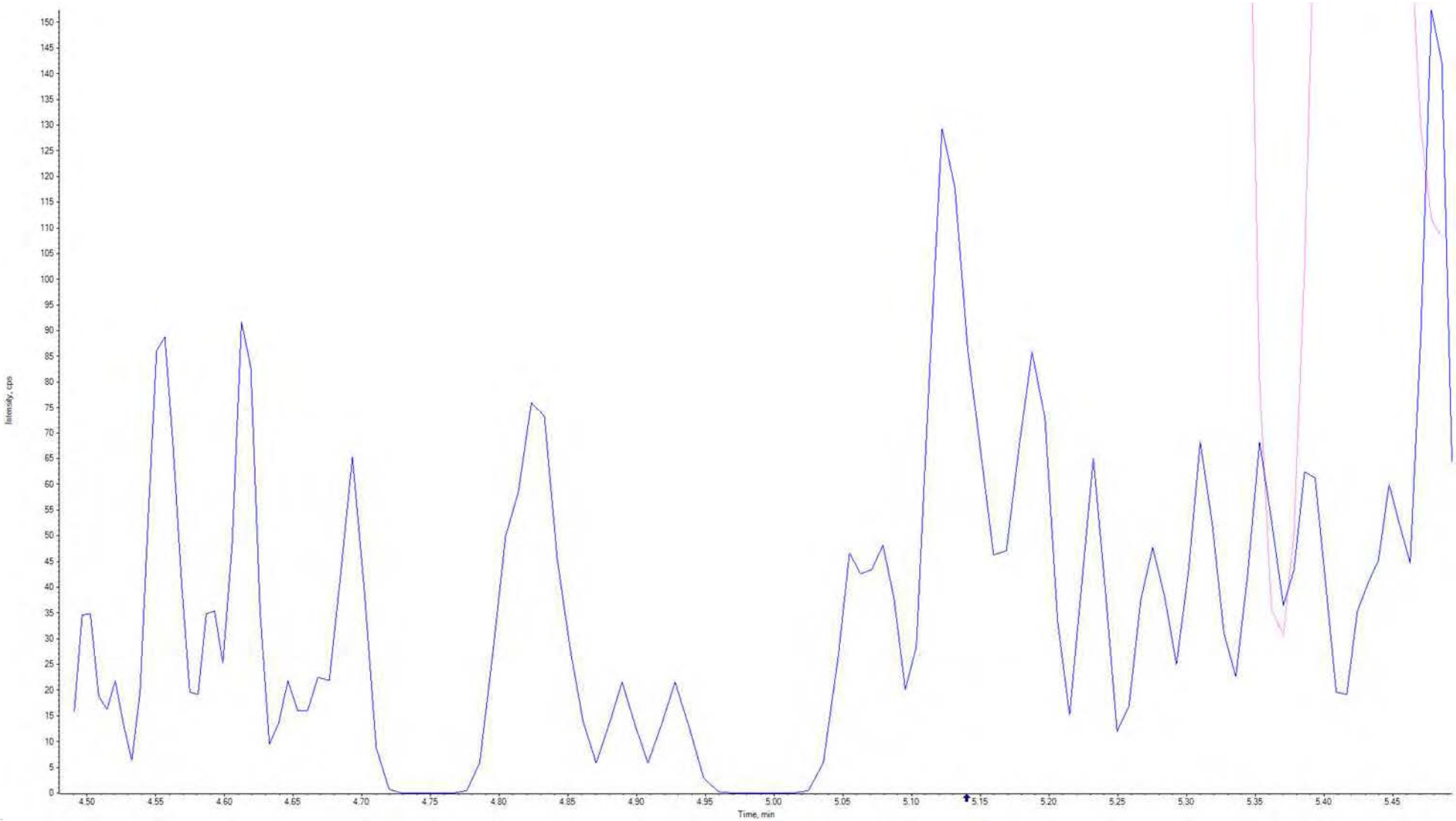
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoS_2
Sample: L2450786-09 S/N:N/A Points Across peak:N/A



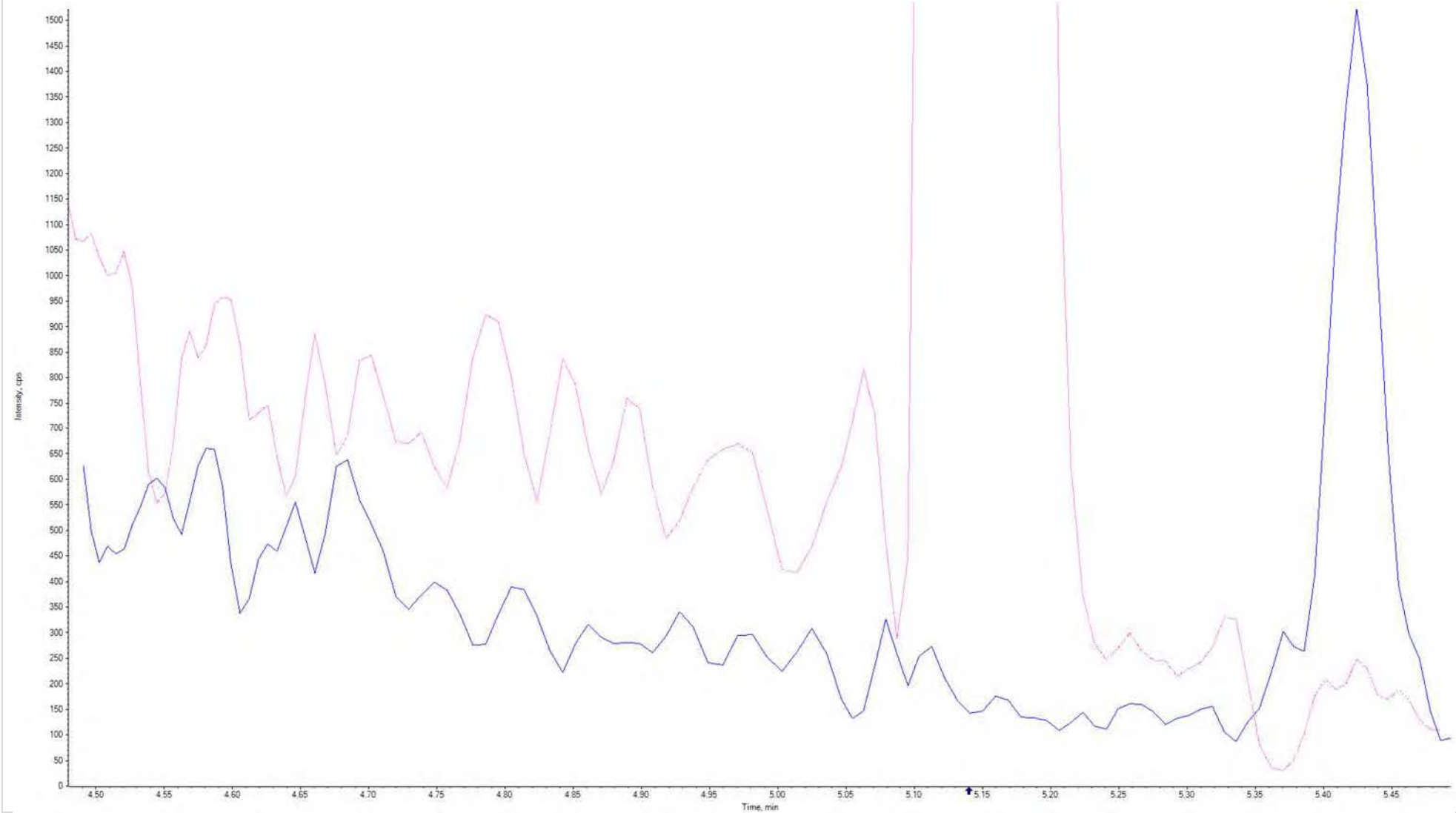
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

4:2FTS
Sample: L2450786-09 S/N:N/A Points Across peak:N/A



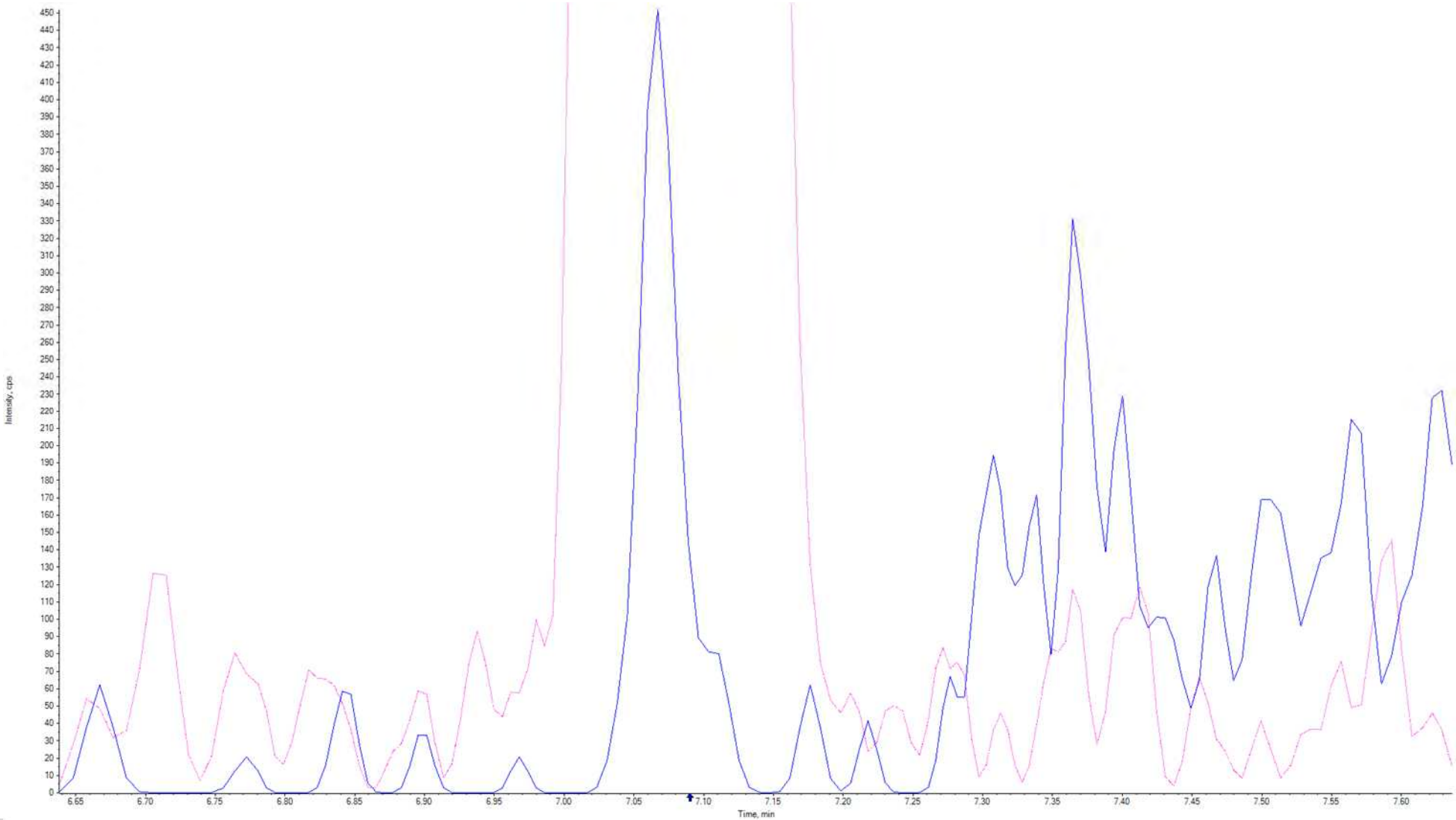
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

4:2FTS_2
Sample: L2450786-09 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

6:2FTS
Sample: L2450786-09 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

6:2FTS_2
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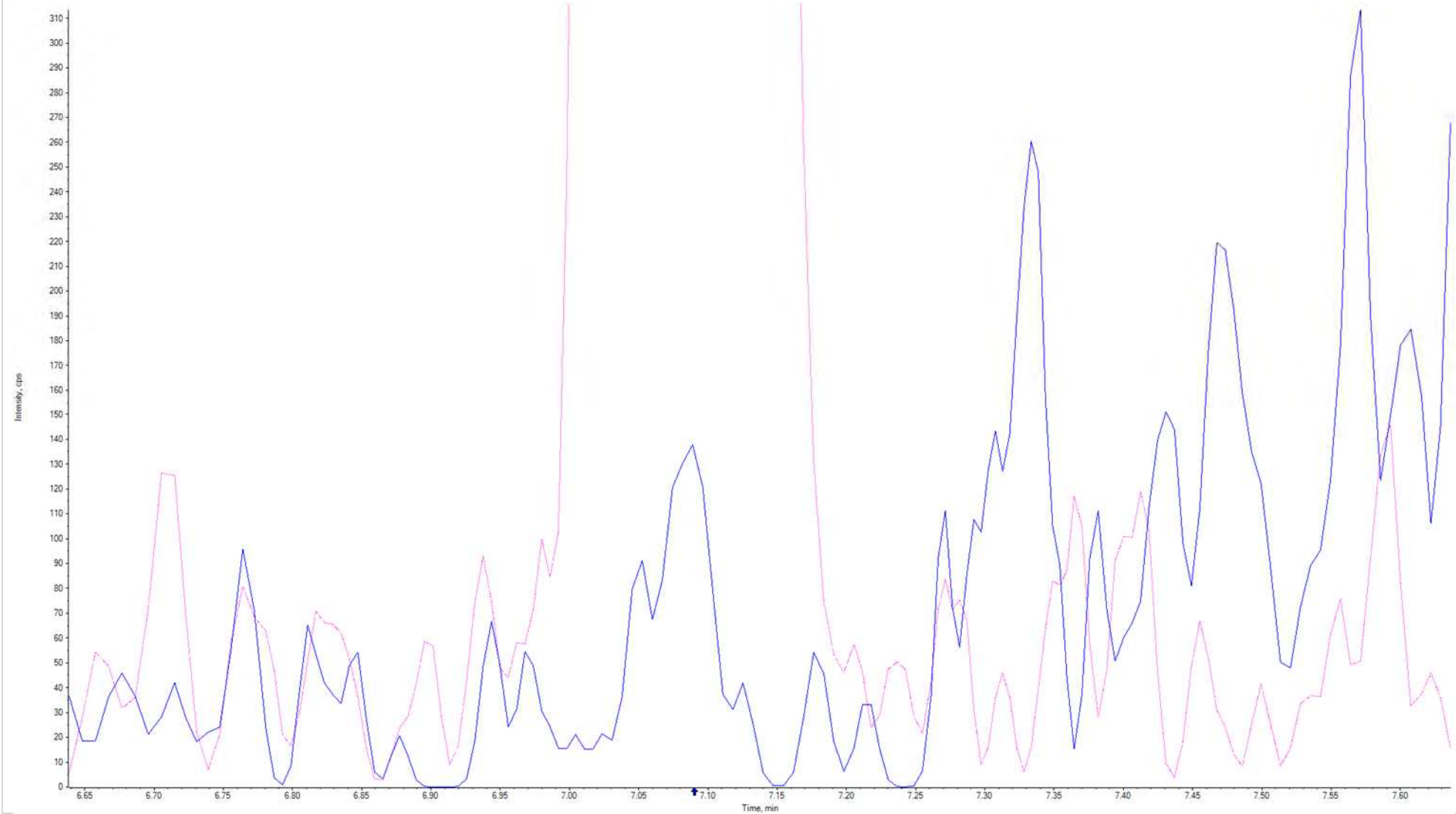

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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8:2FTS
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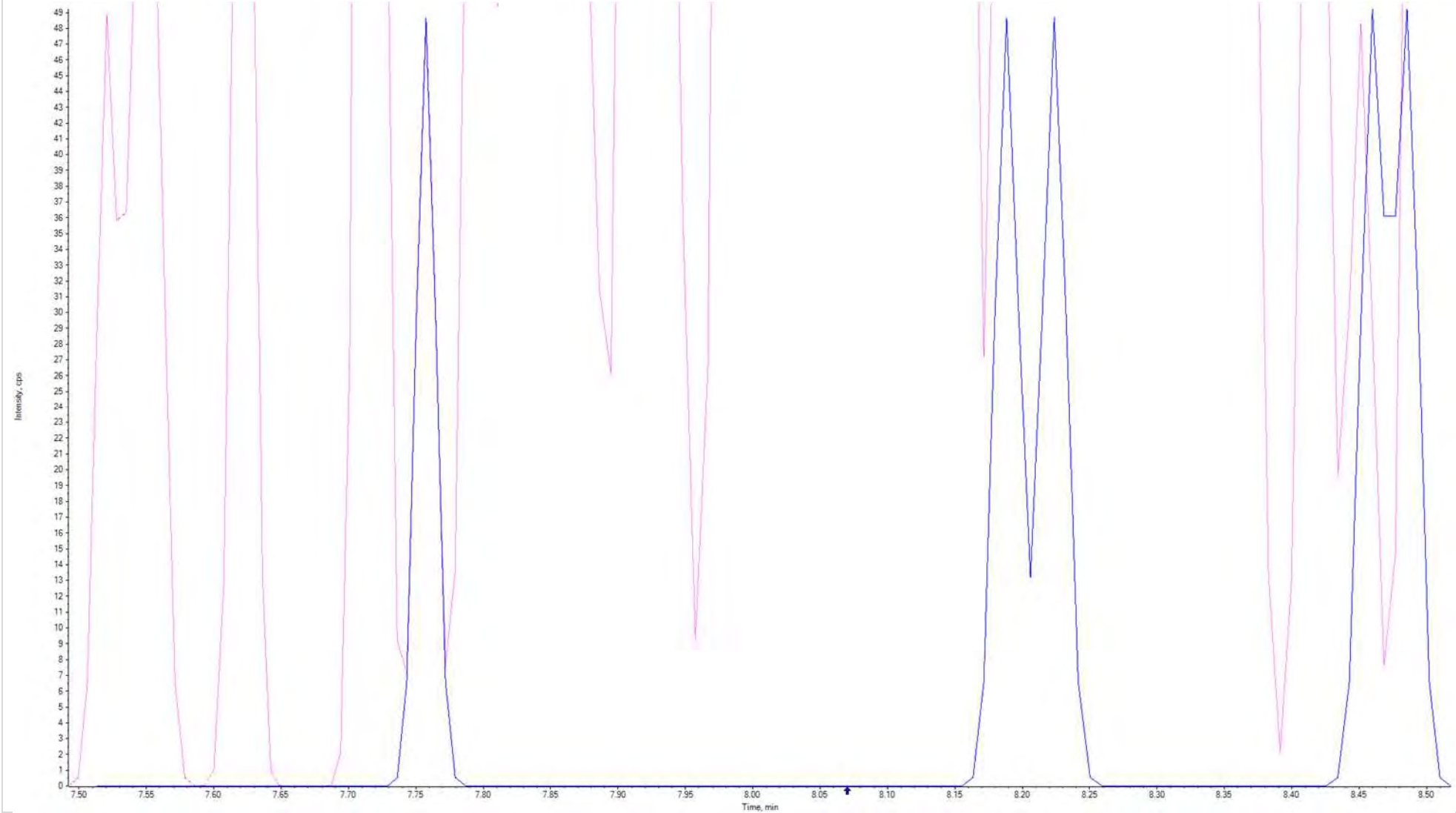

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Alpha Analytical Inc.
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8:2FTS_2
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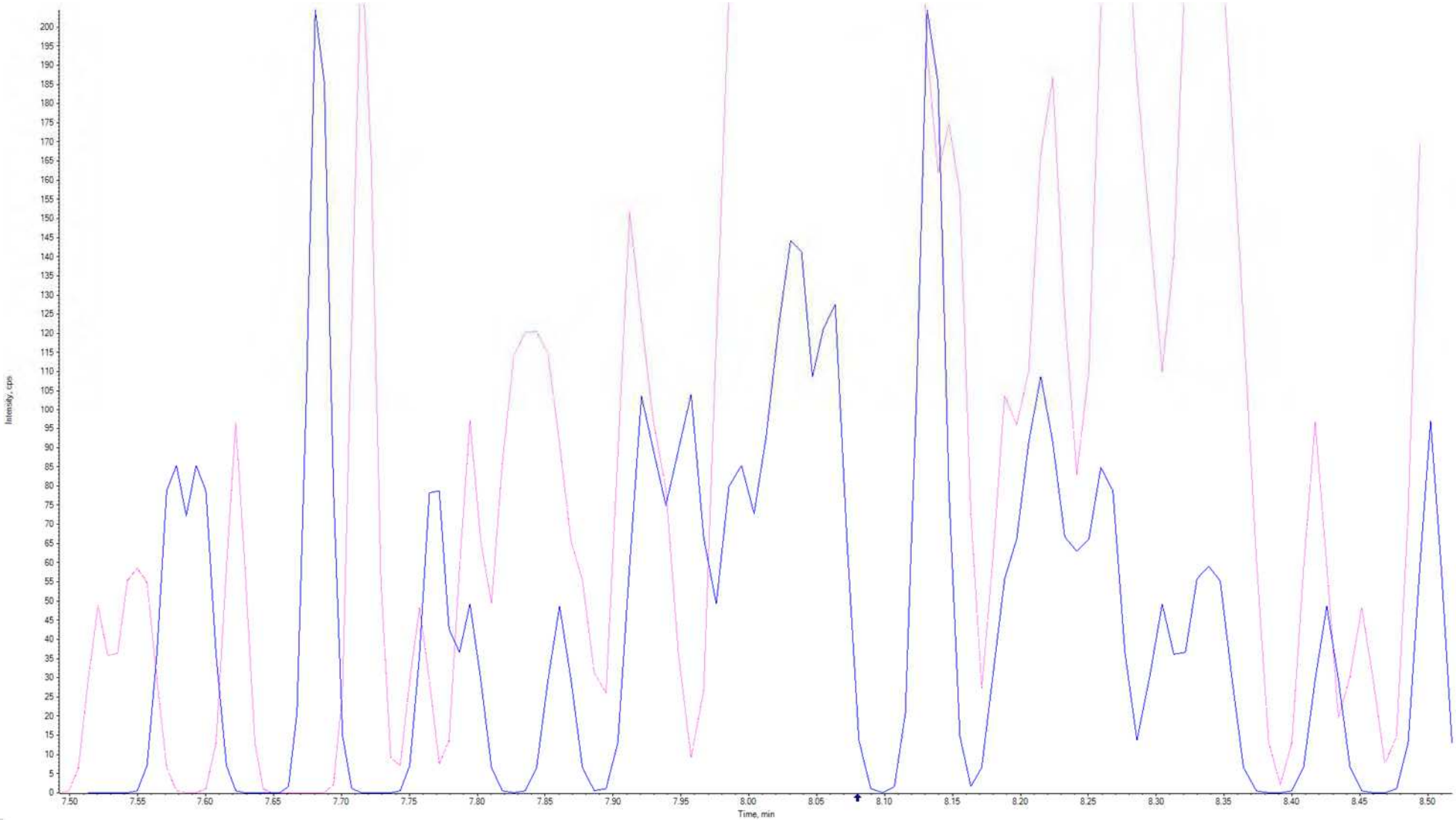

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Alpha Analytical Inc.
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PFOSA
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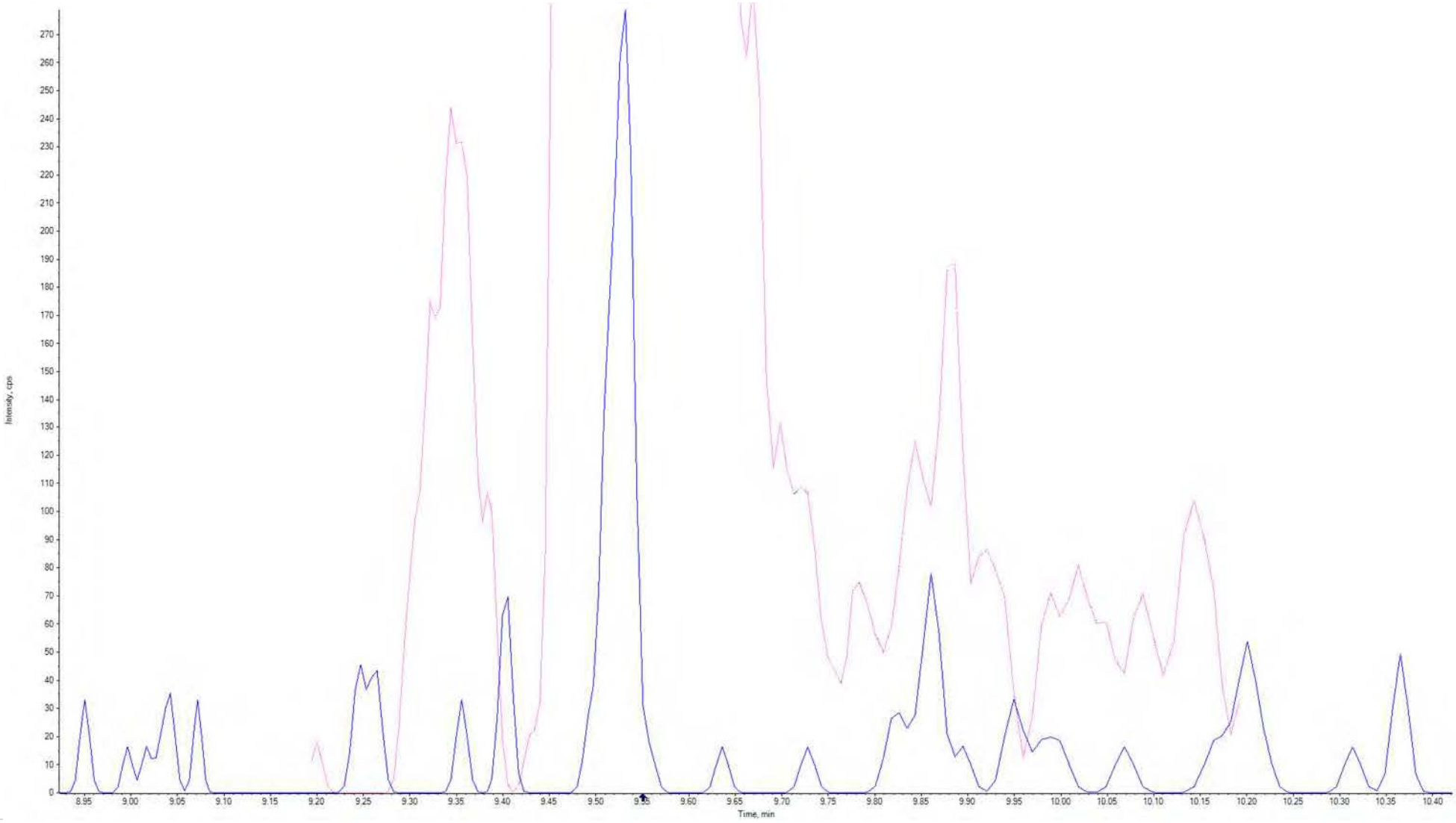

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PFOSA_2
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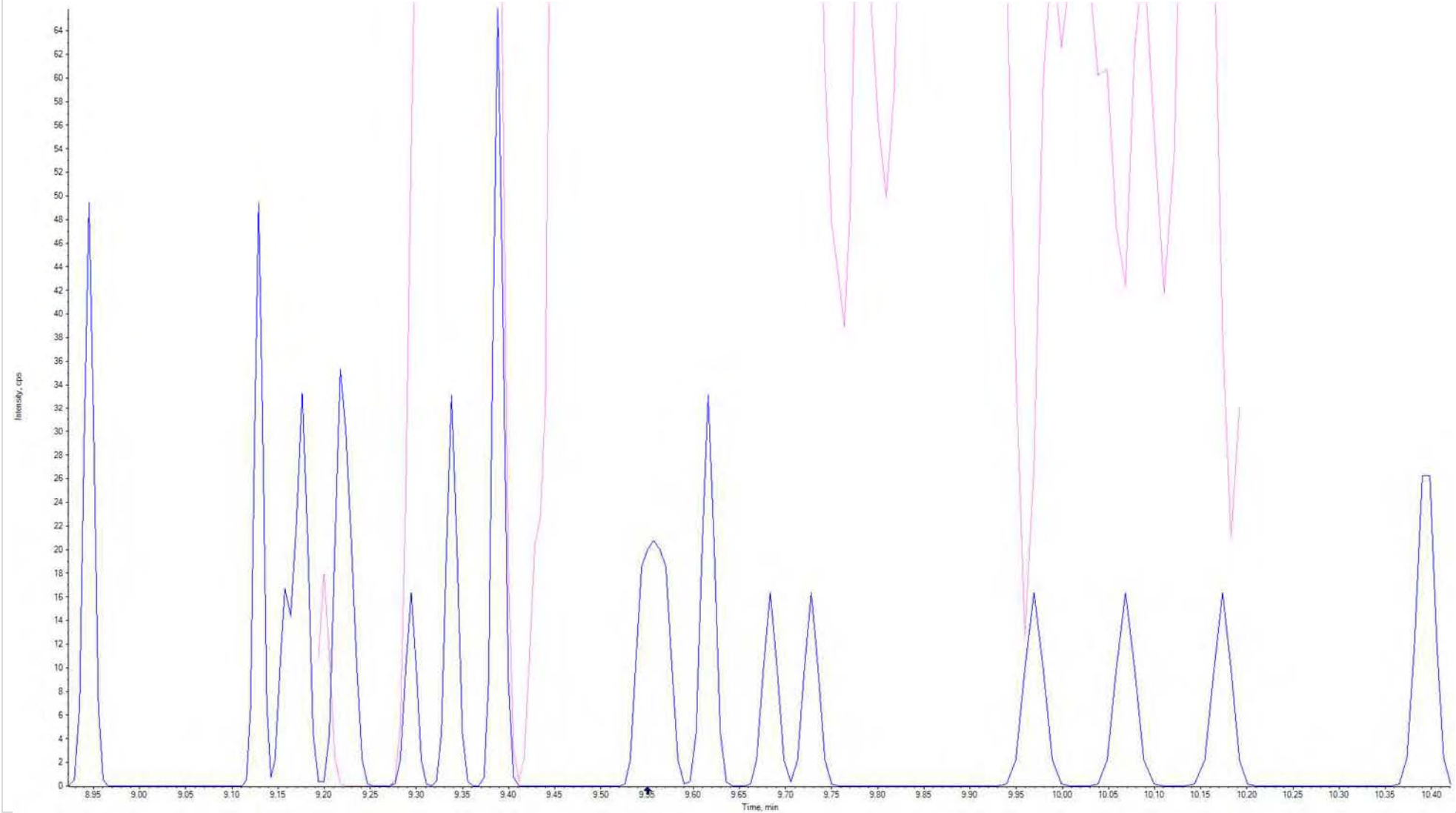

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Generated: 9/19/2024 8:04:31 AM

NMeFOSA
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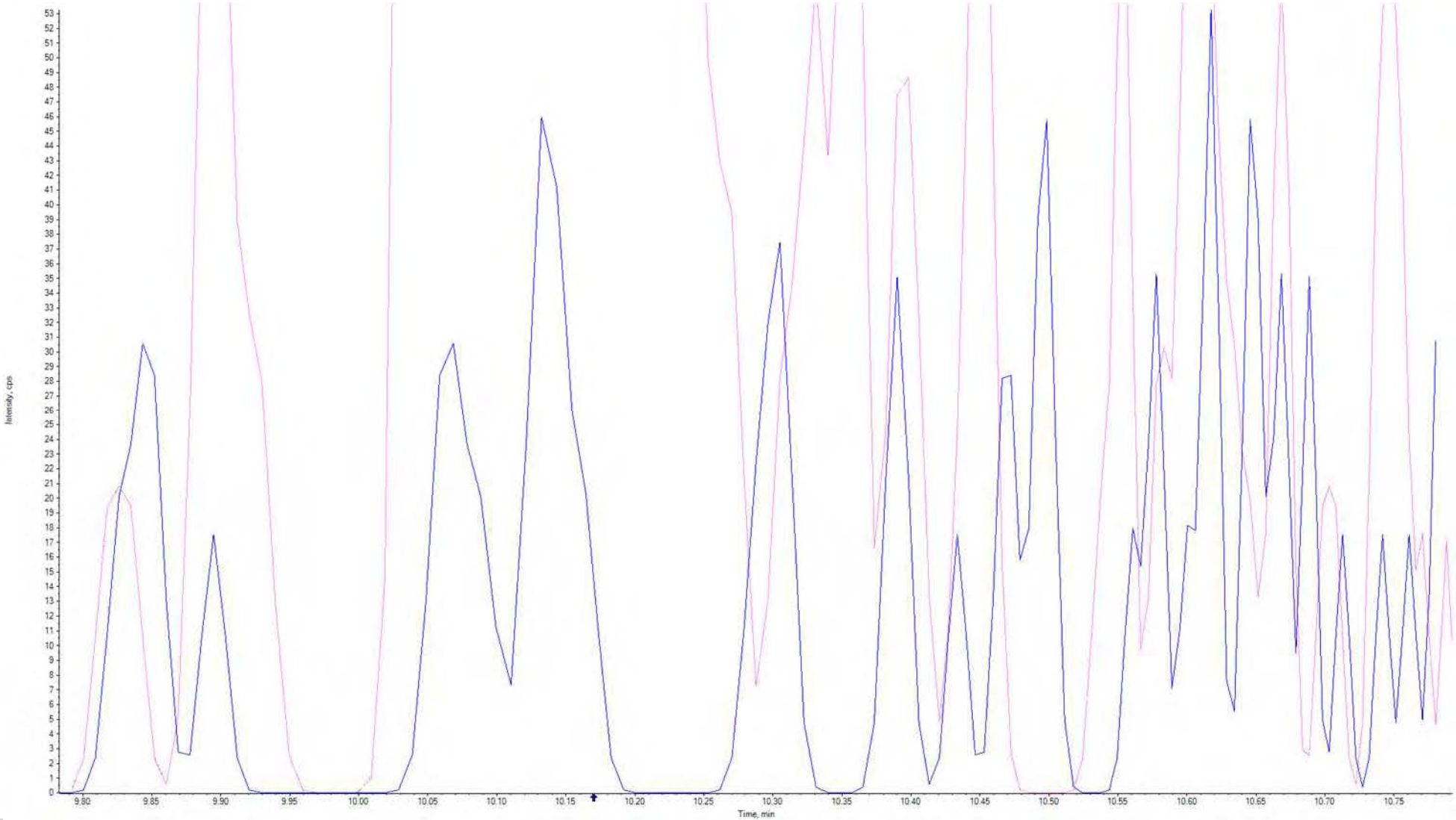

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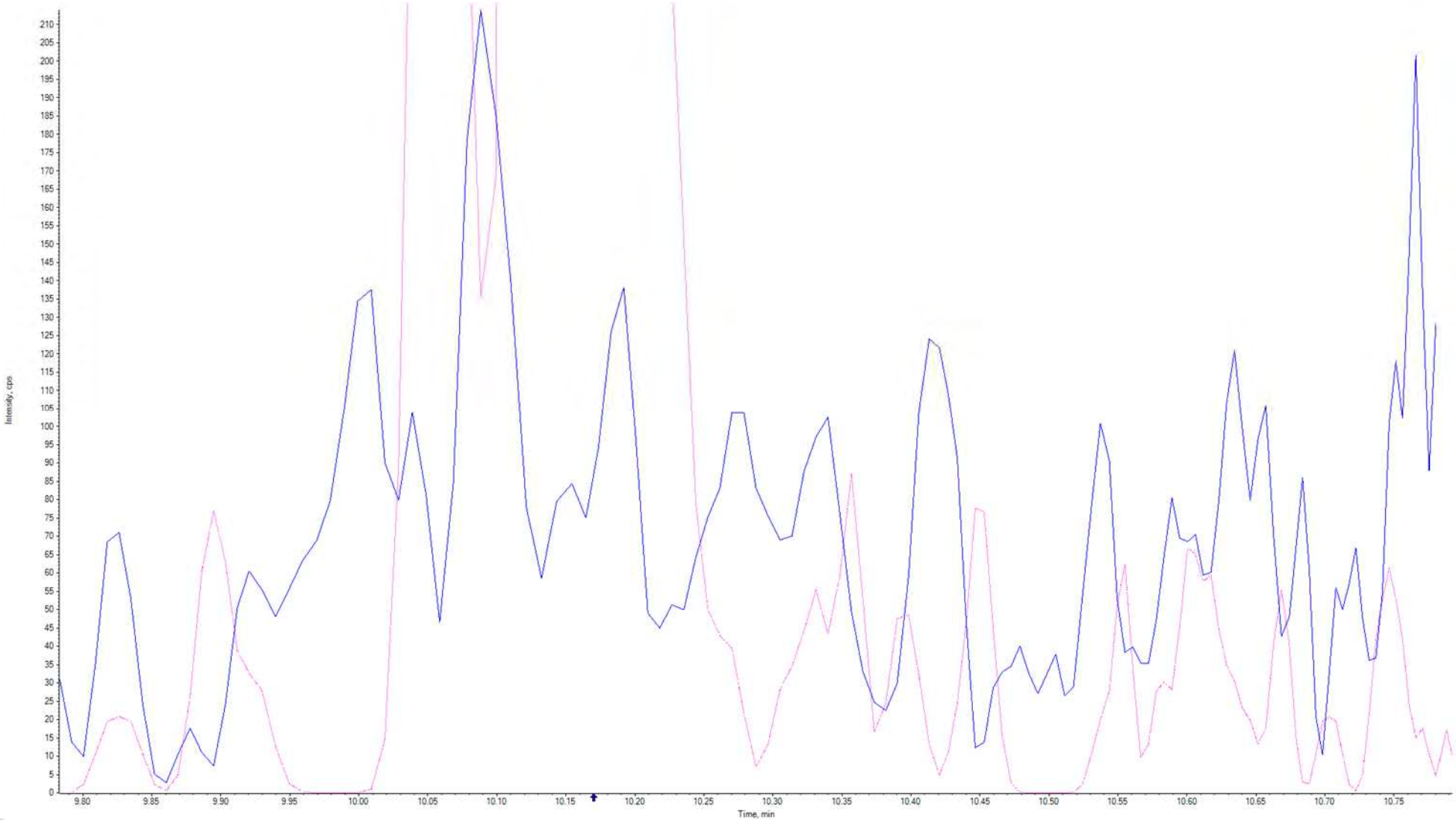

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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NEtFOSA
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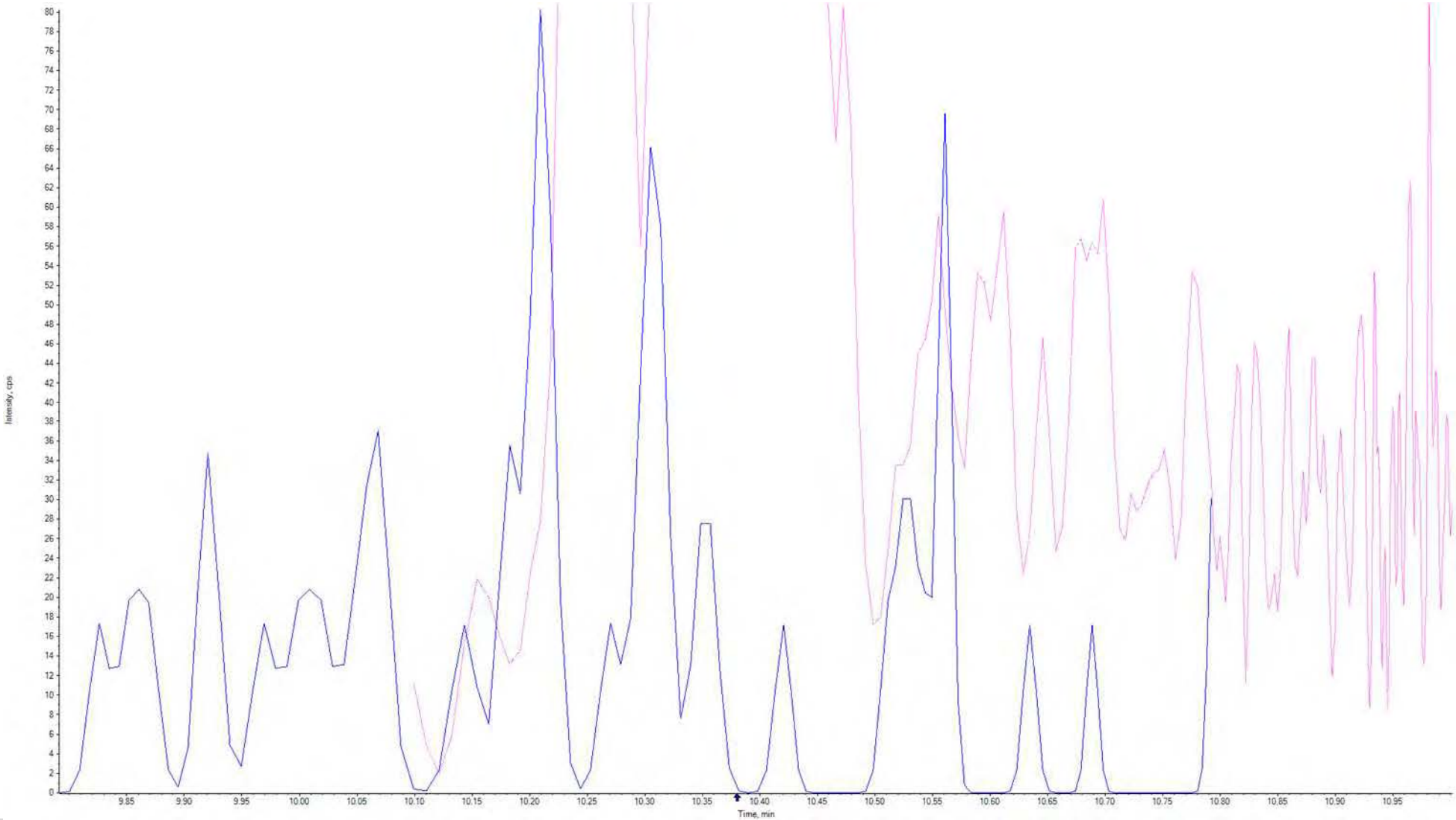

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Generated: 9/19/2024 8:04:31 AM

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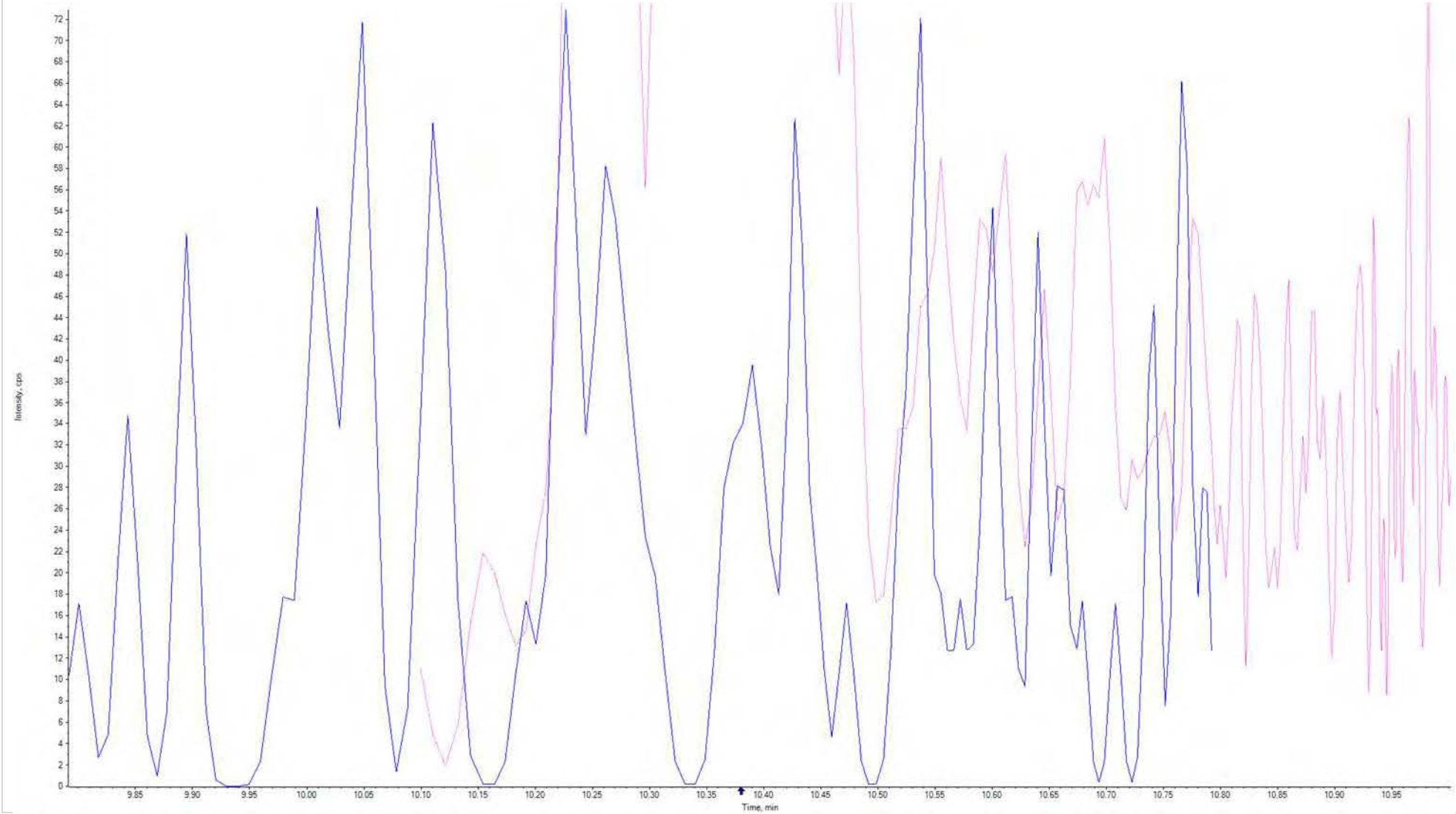

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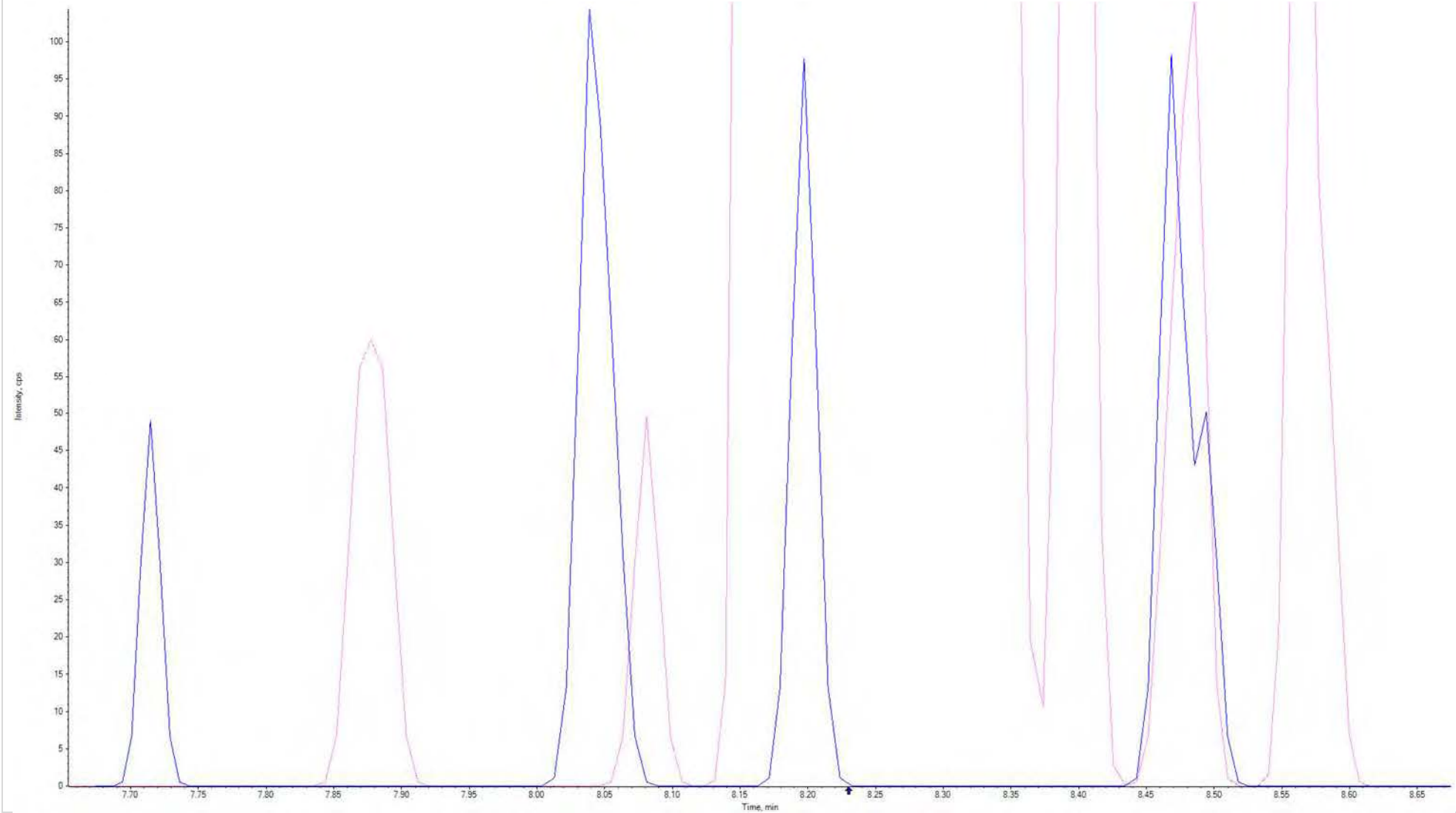

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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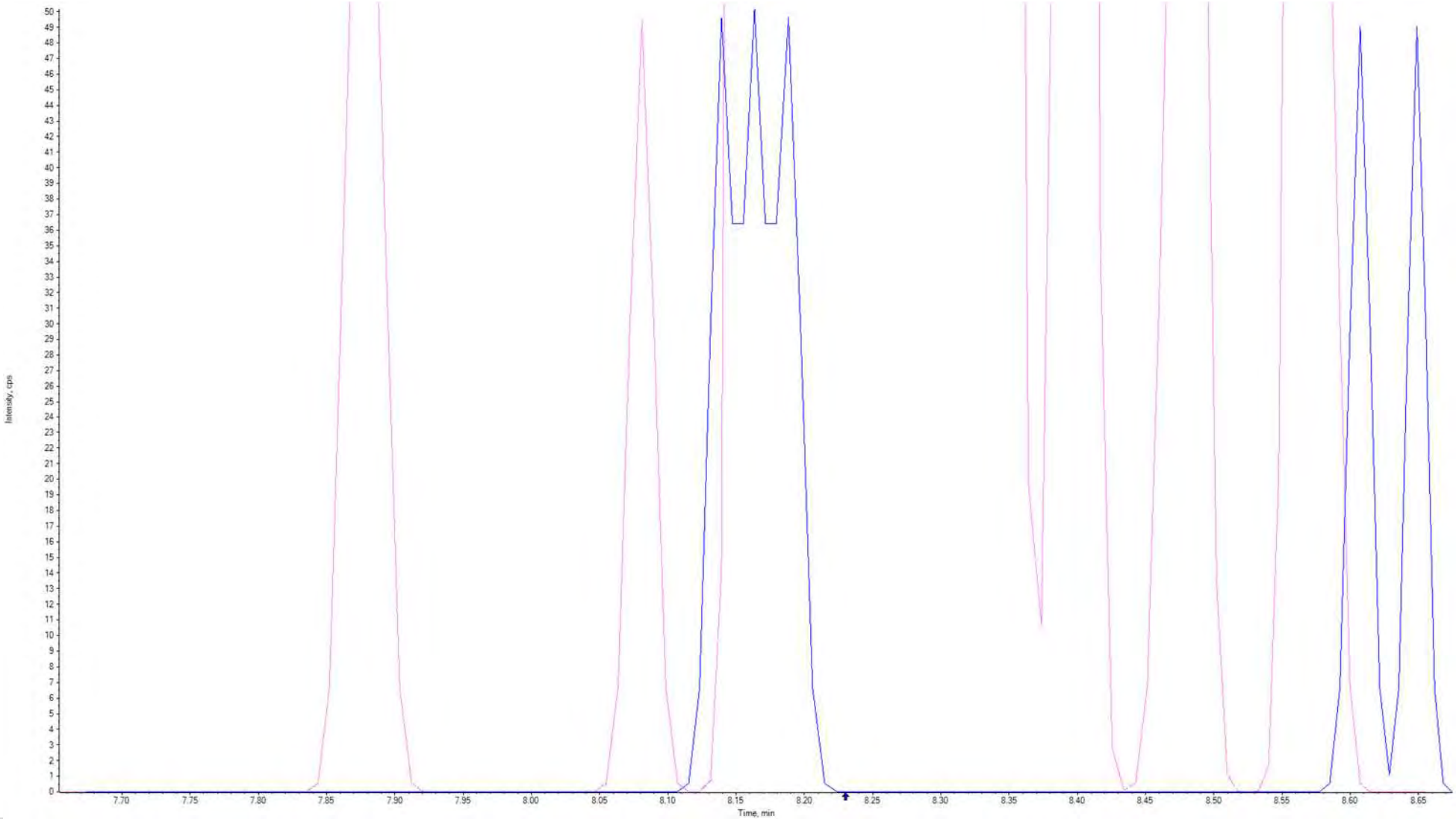

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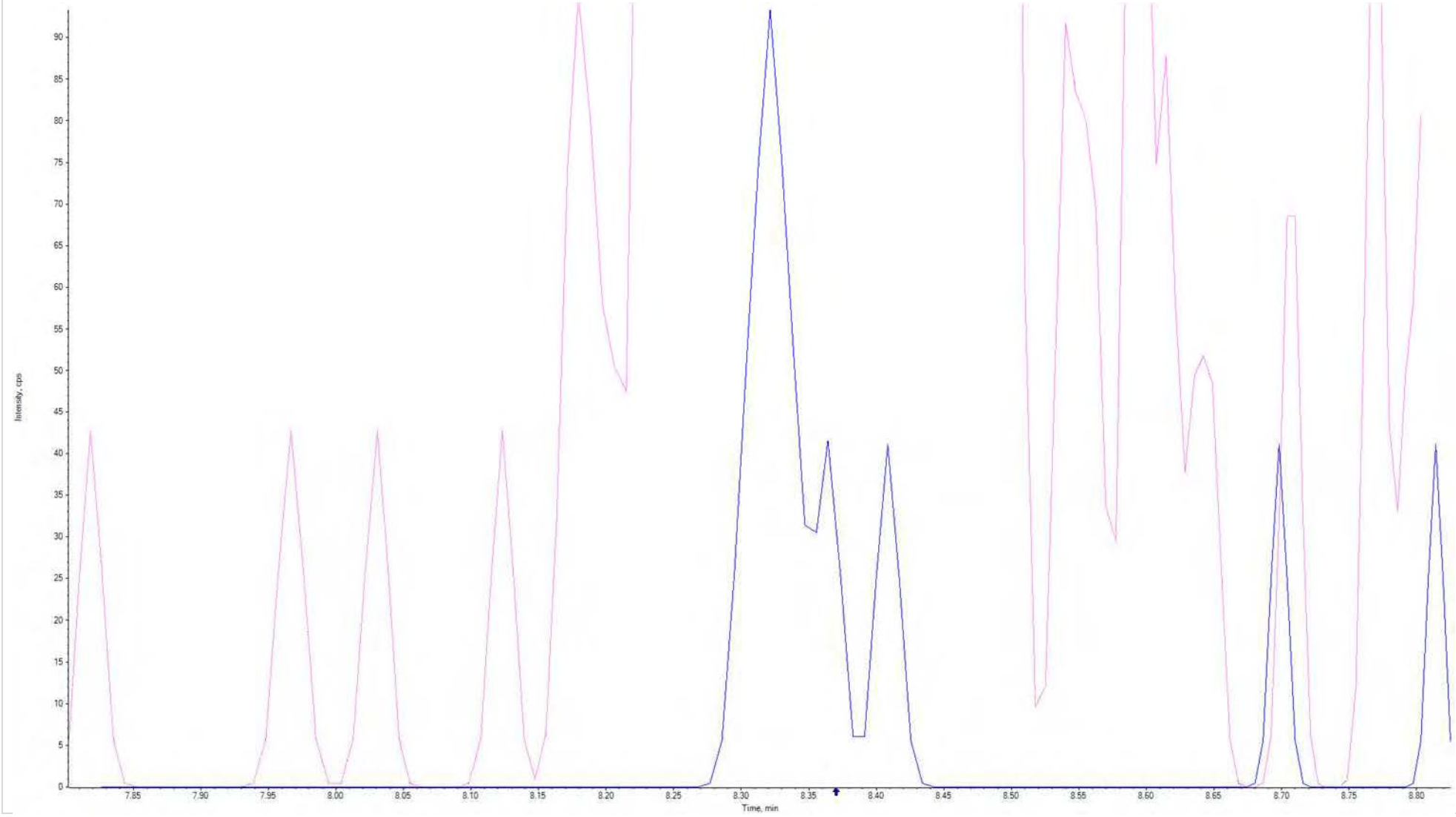

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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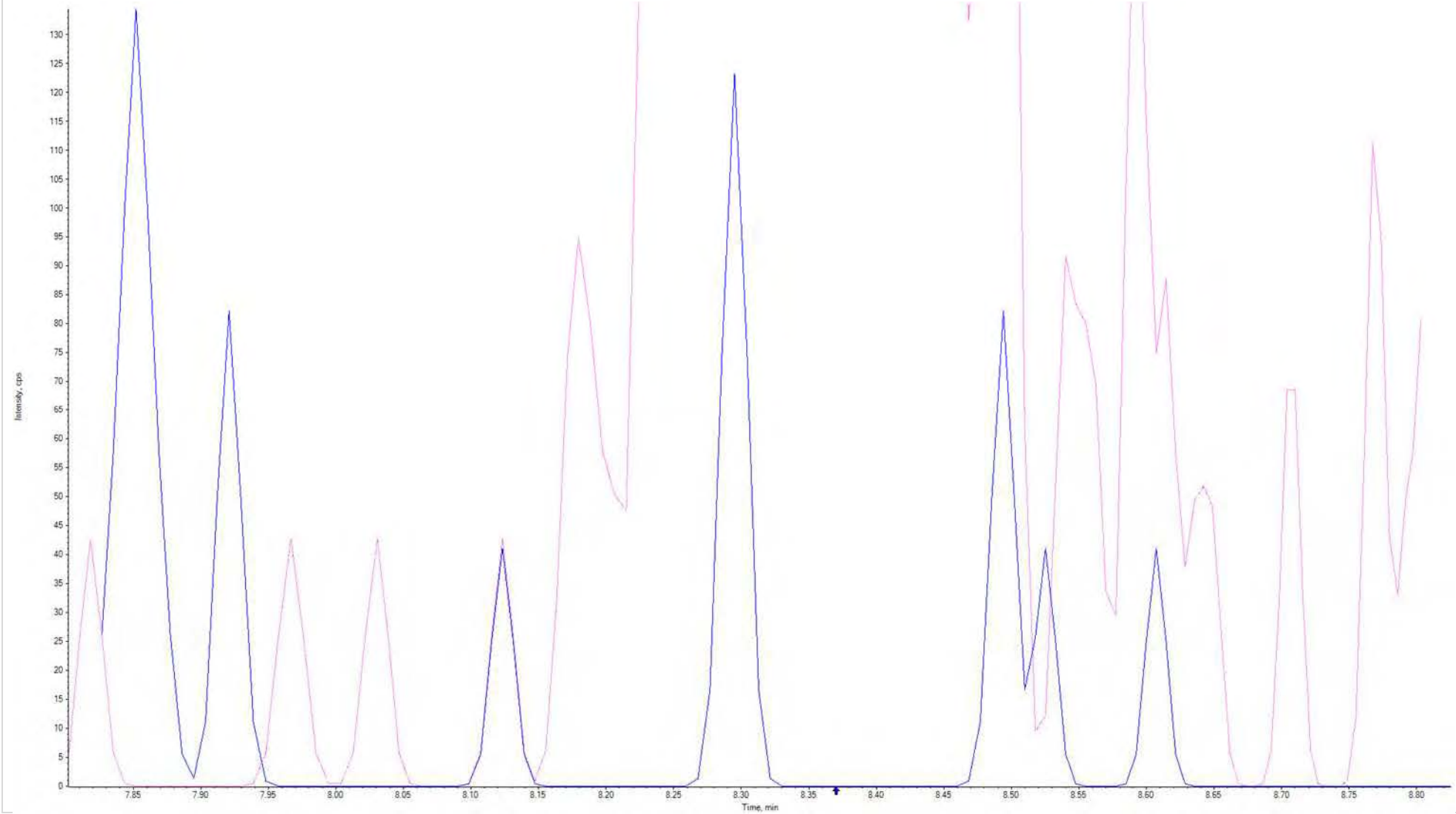

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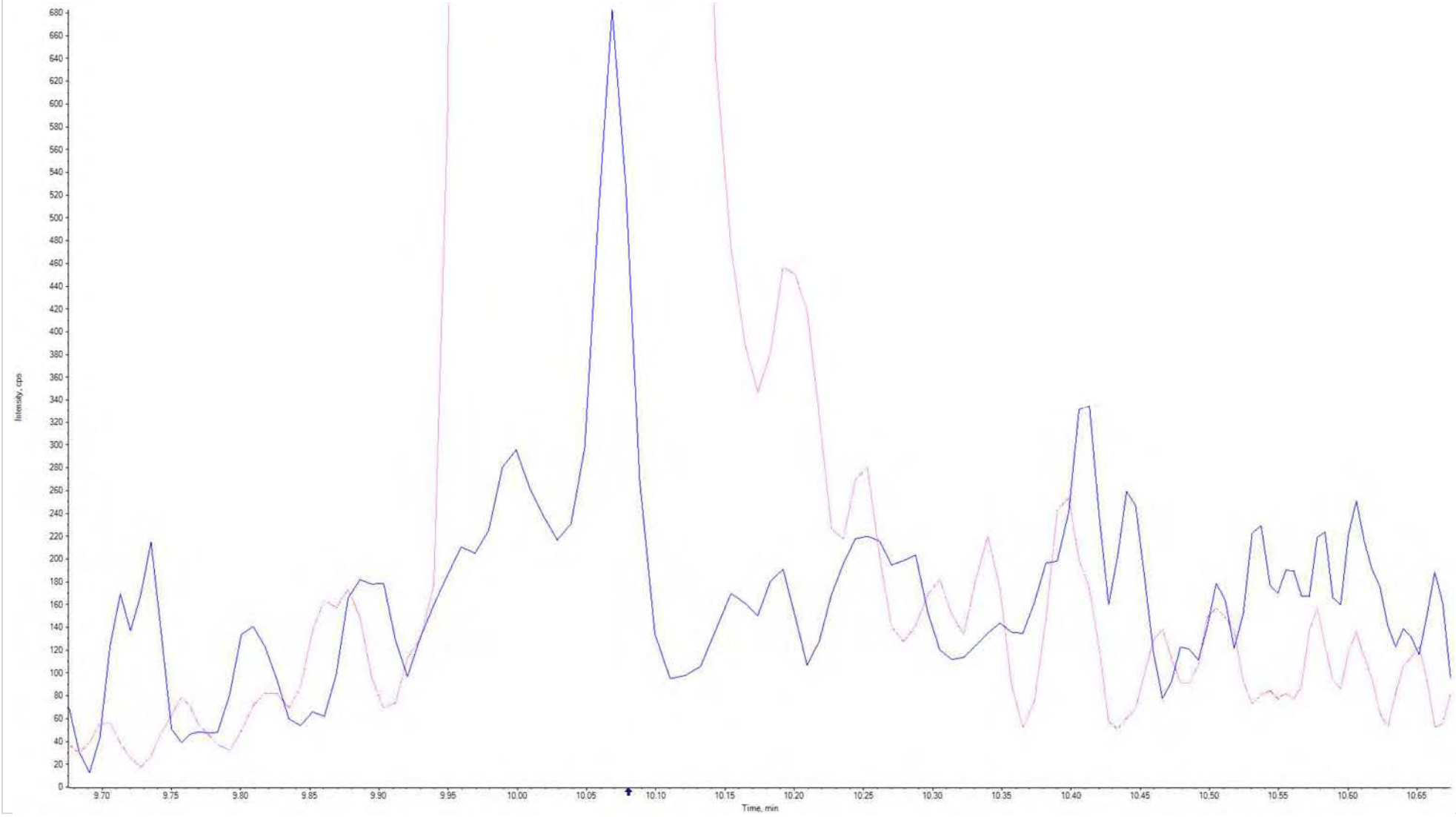

NEtFOSE
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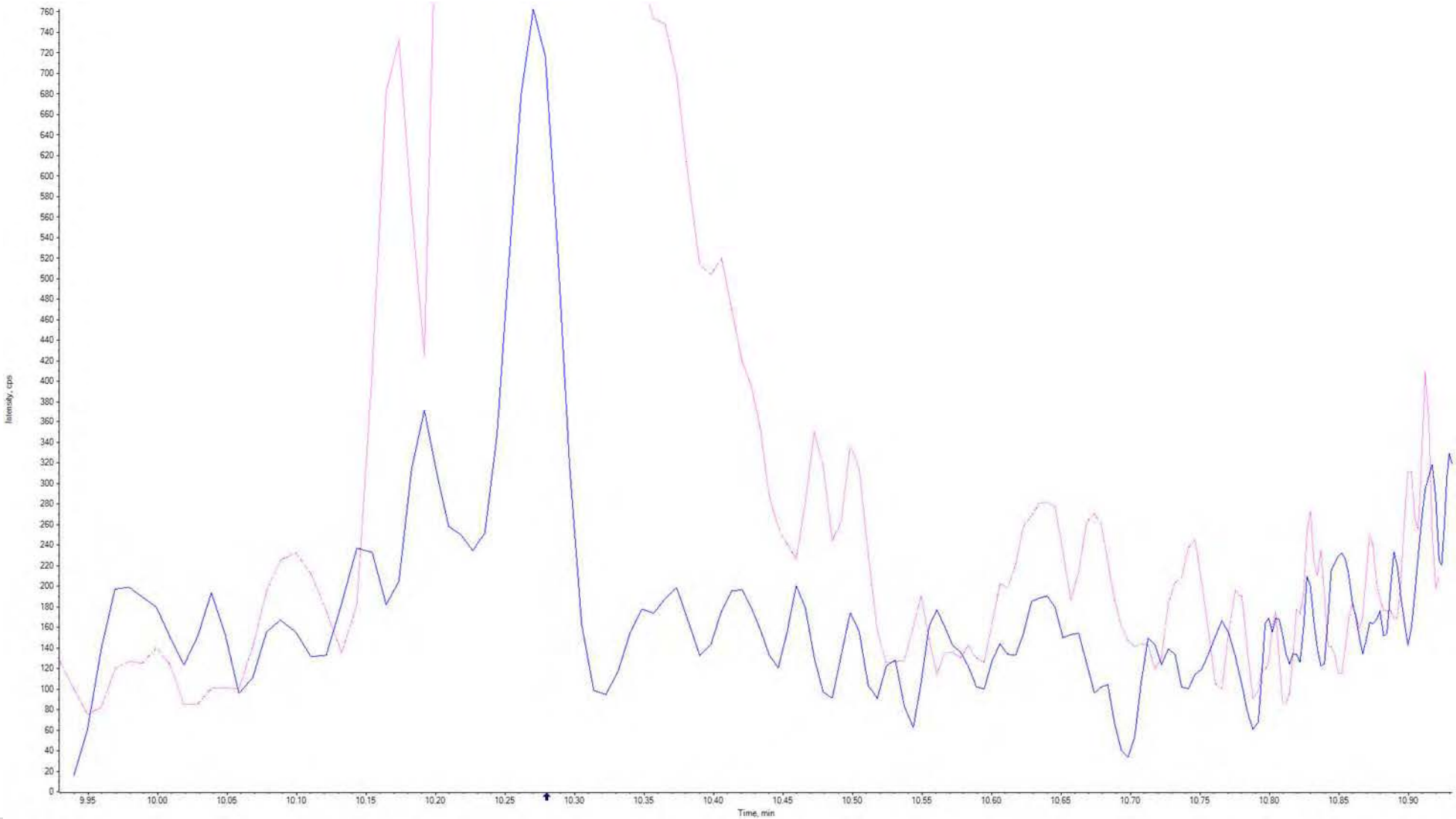

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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HFPO-DA
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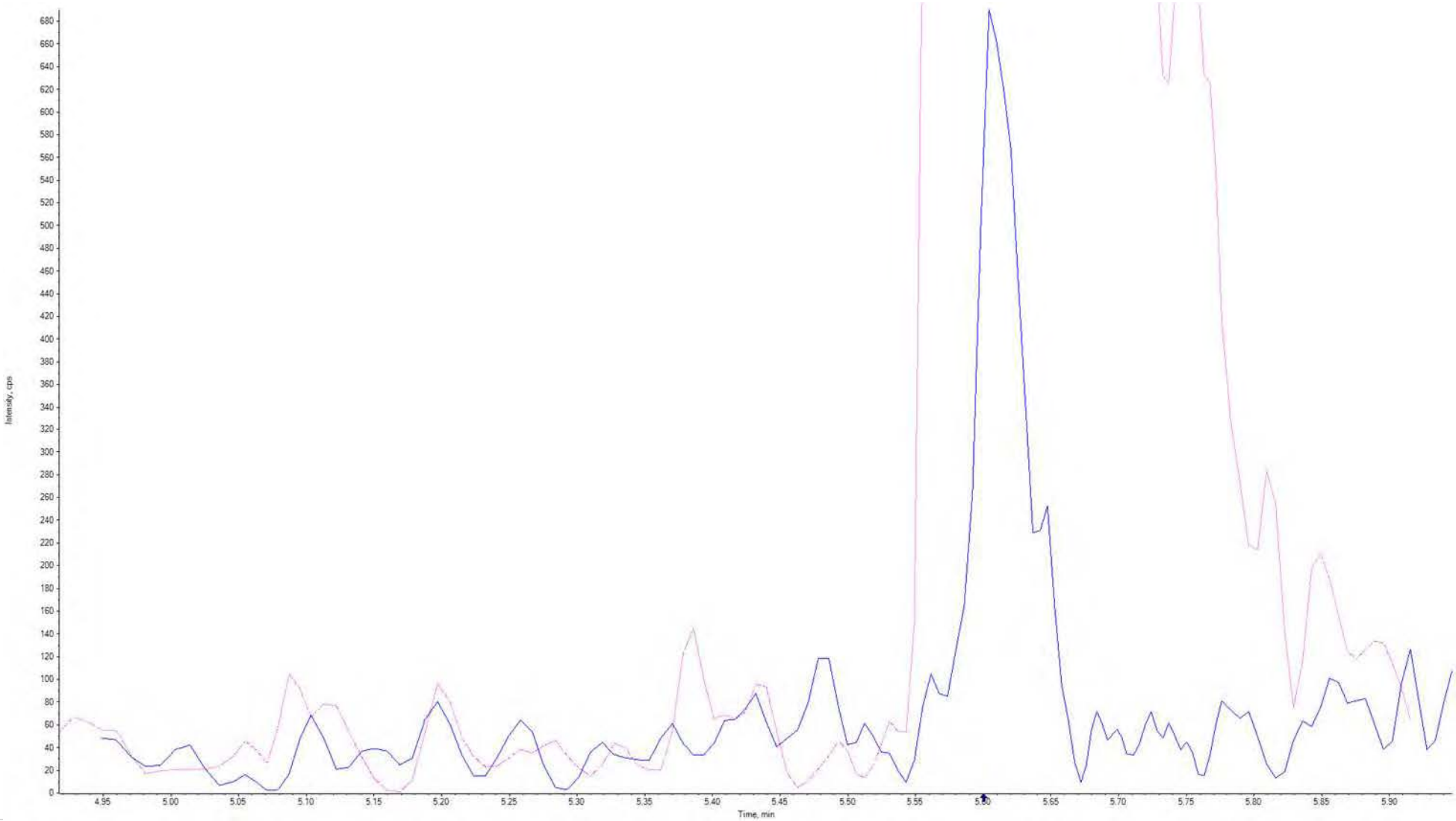

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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HFPO-DA_2
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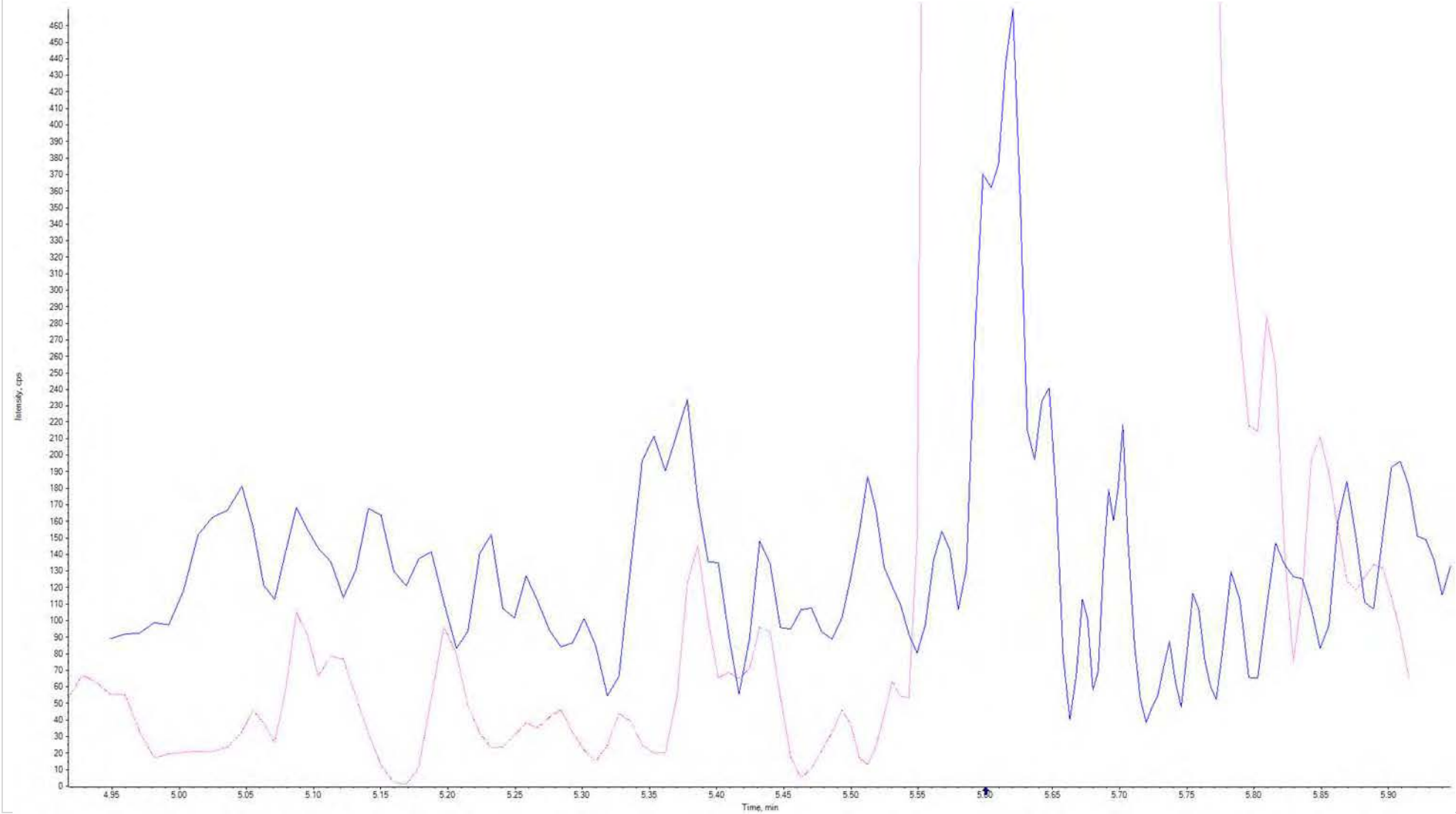

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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ADONA
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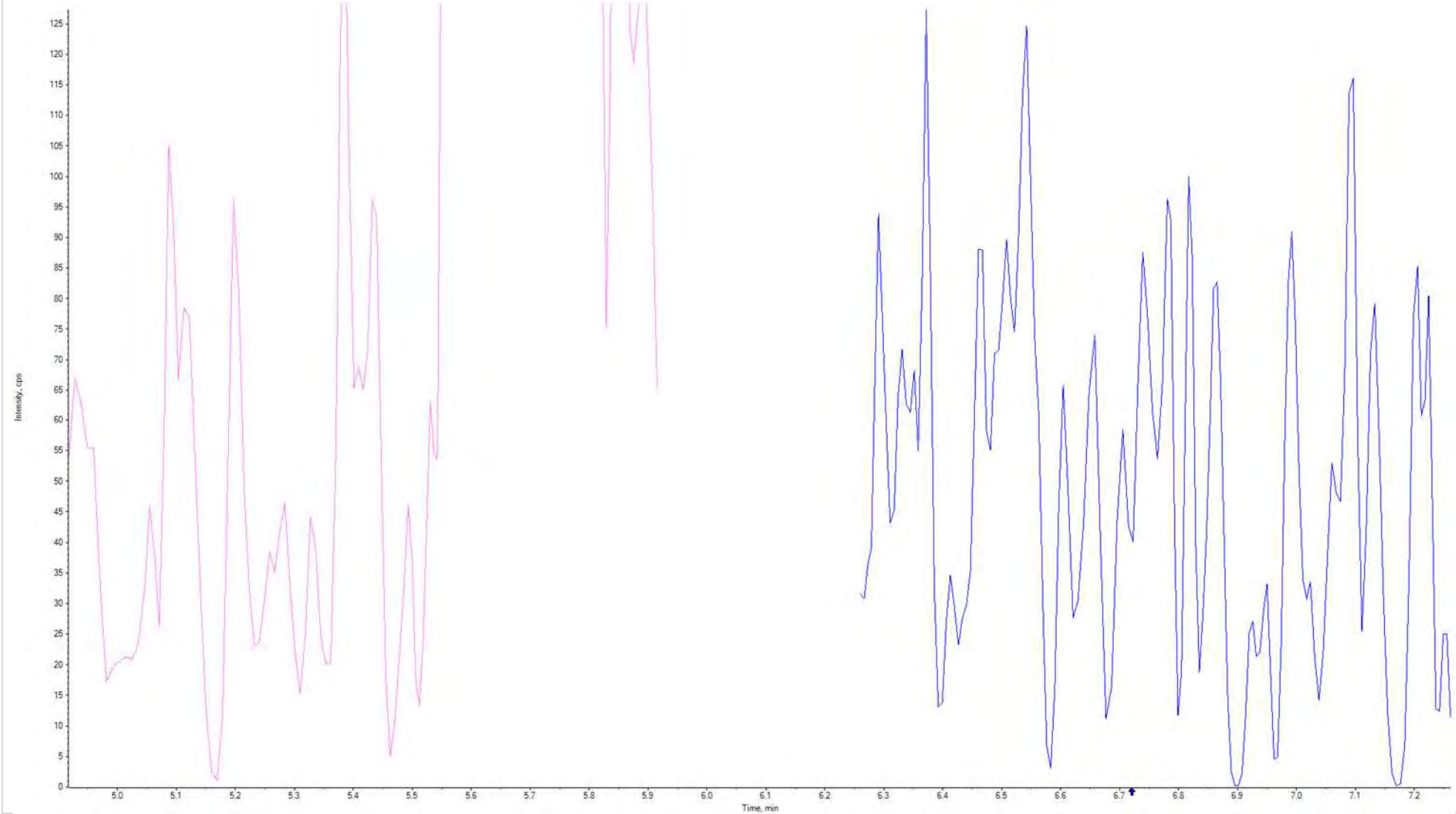

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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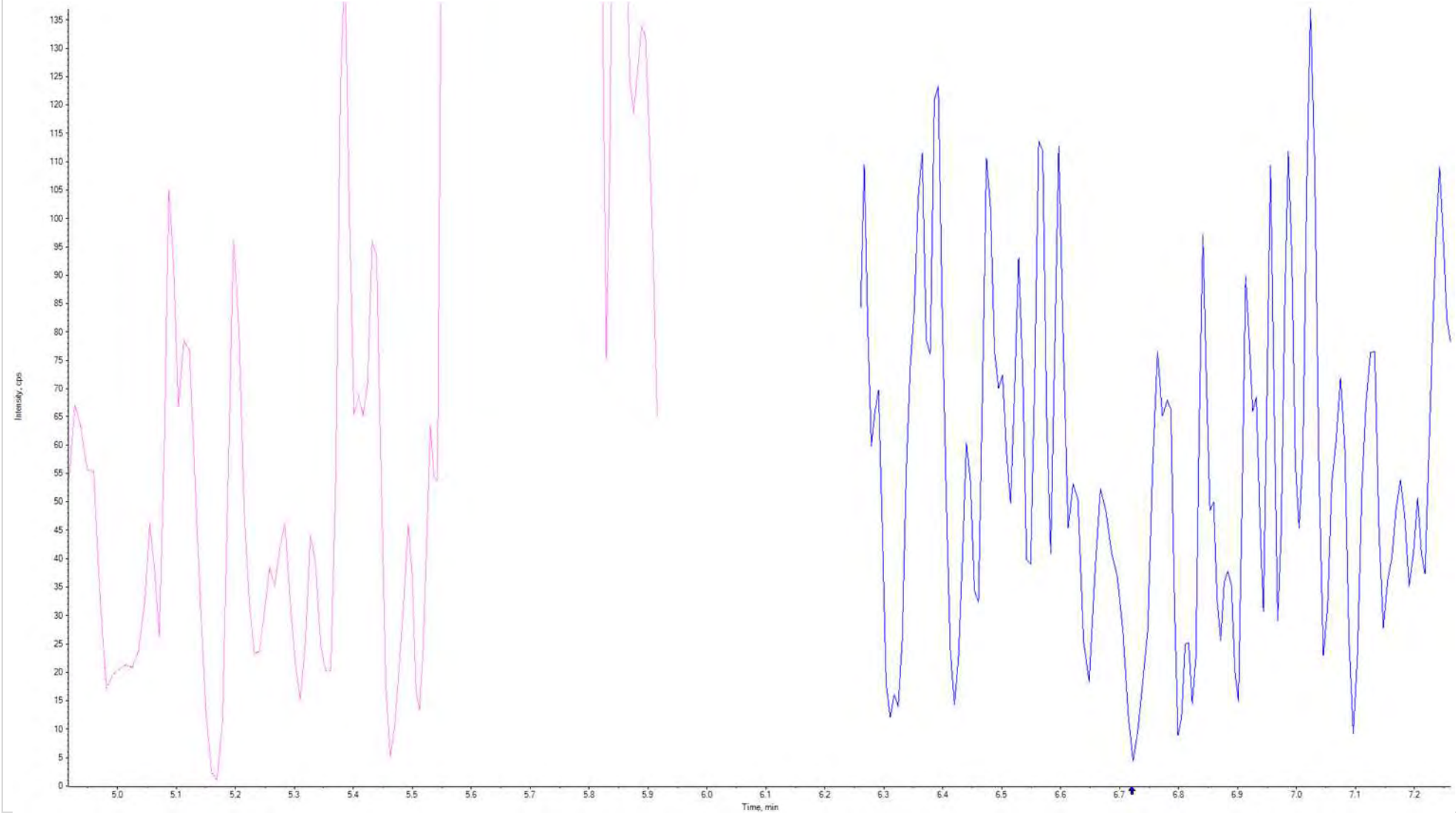

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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9Cl-PF3ONS
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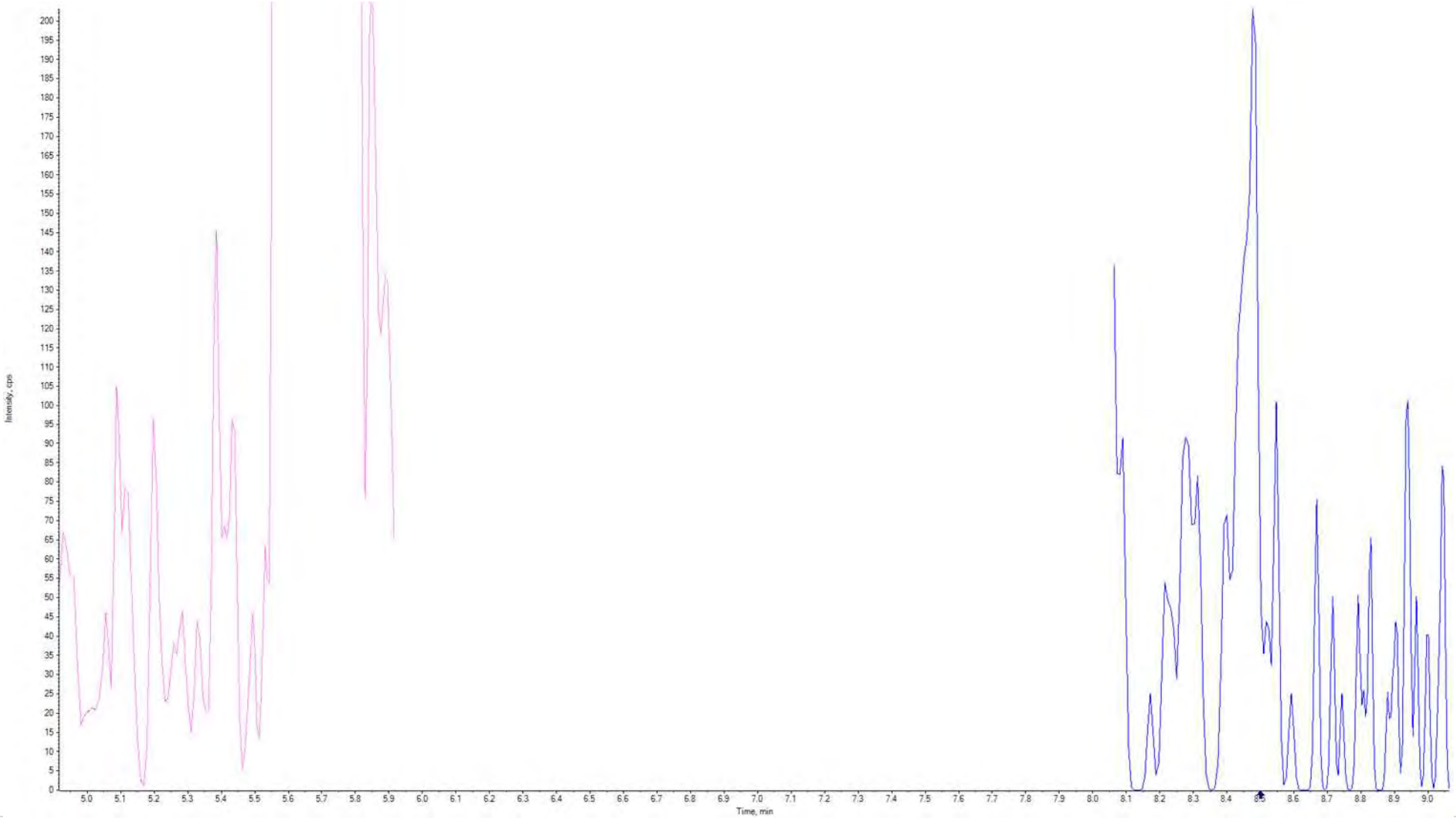

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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9Cl-PF3ONS_2
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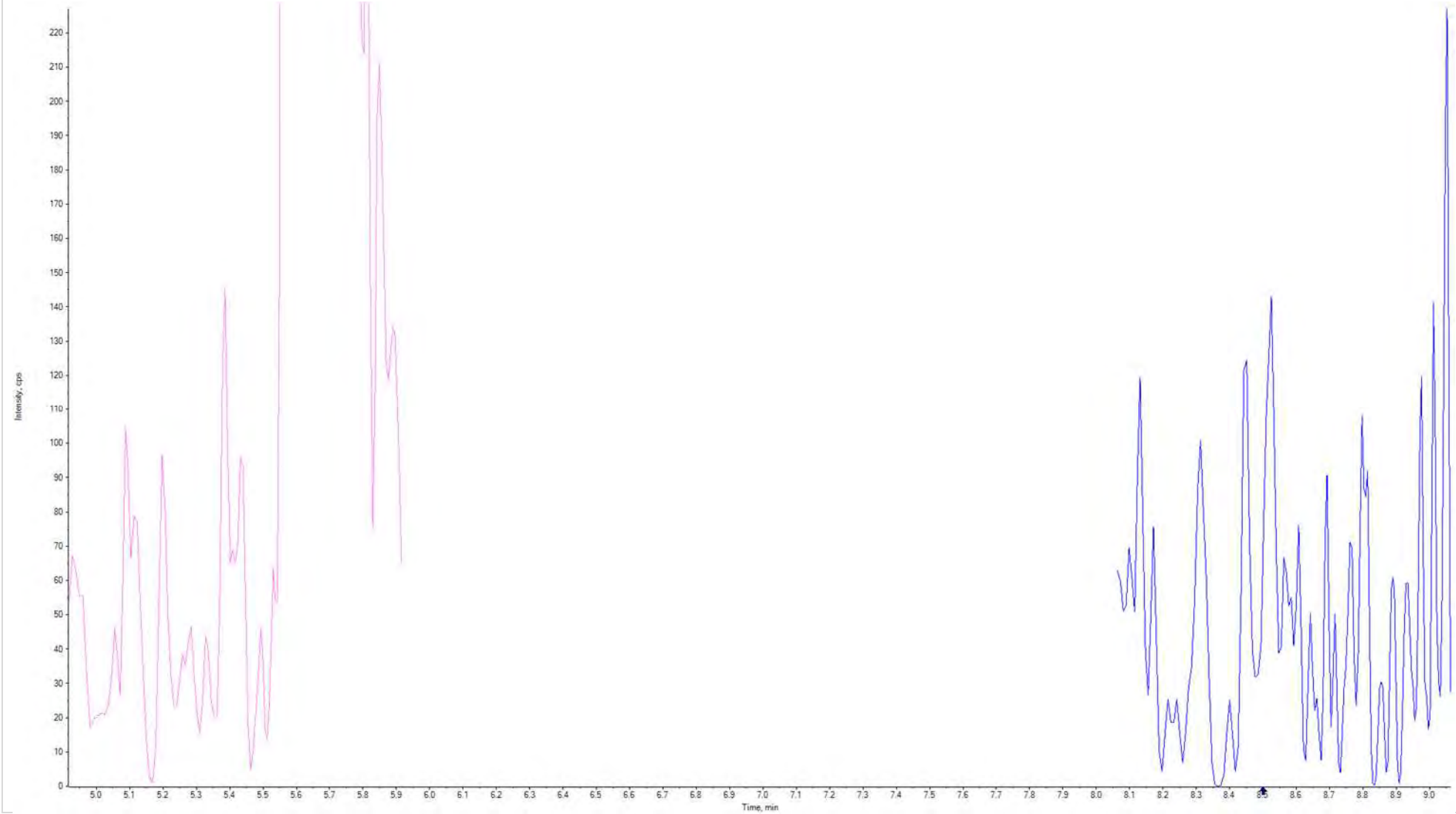

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Generated: 9/19/2024 8:04:31 AM

11Cl-PF3OUdS
Sample: L2450786-09 S/N:N/A Points Across peak:N/A

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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11Cl-PF3OUdS_2
Sample: L2450786-09 S/N:N/A Points Across peak:N/A

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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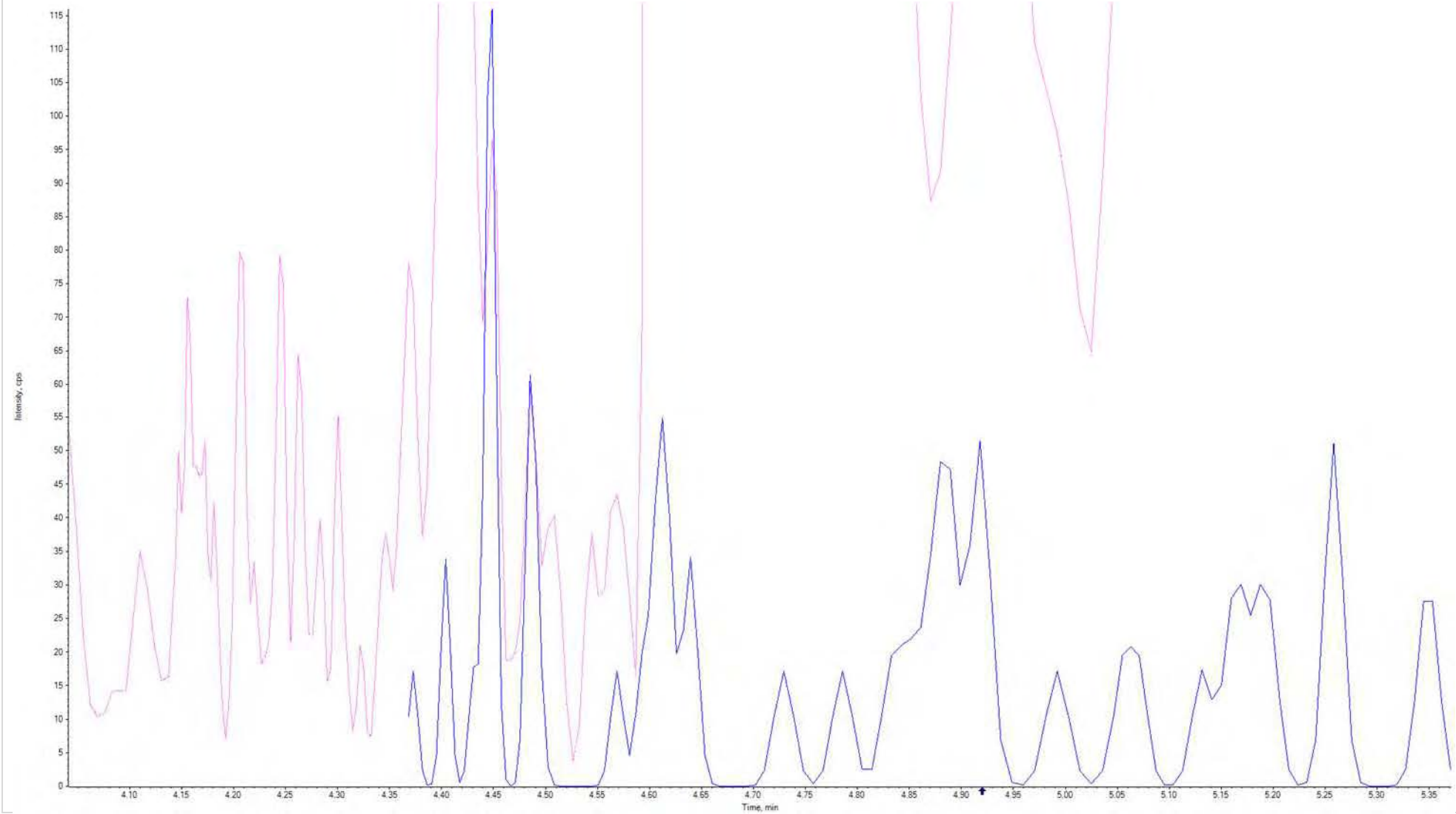

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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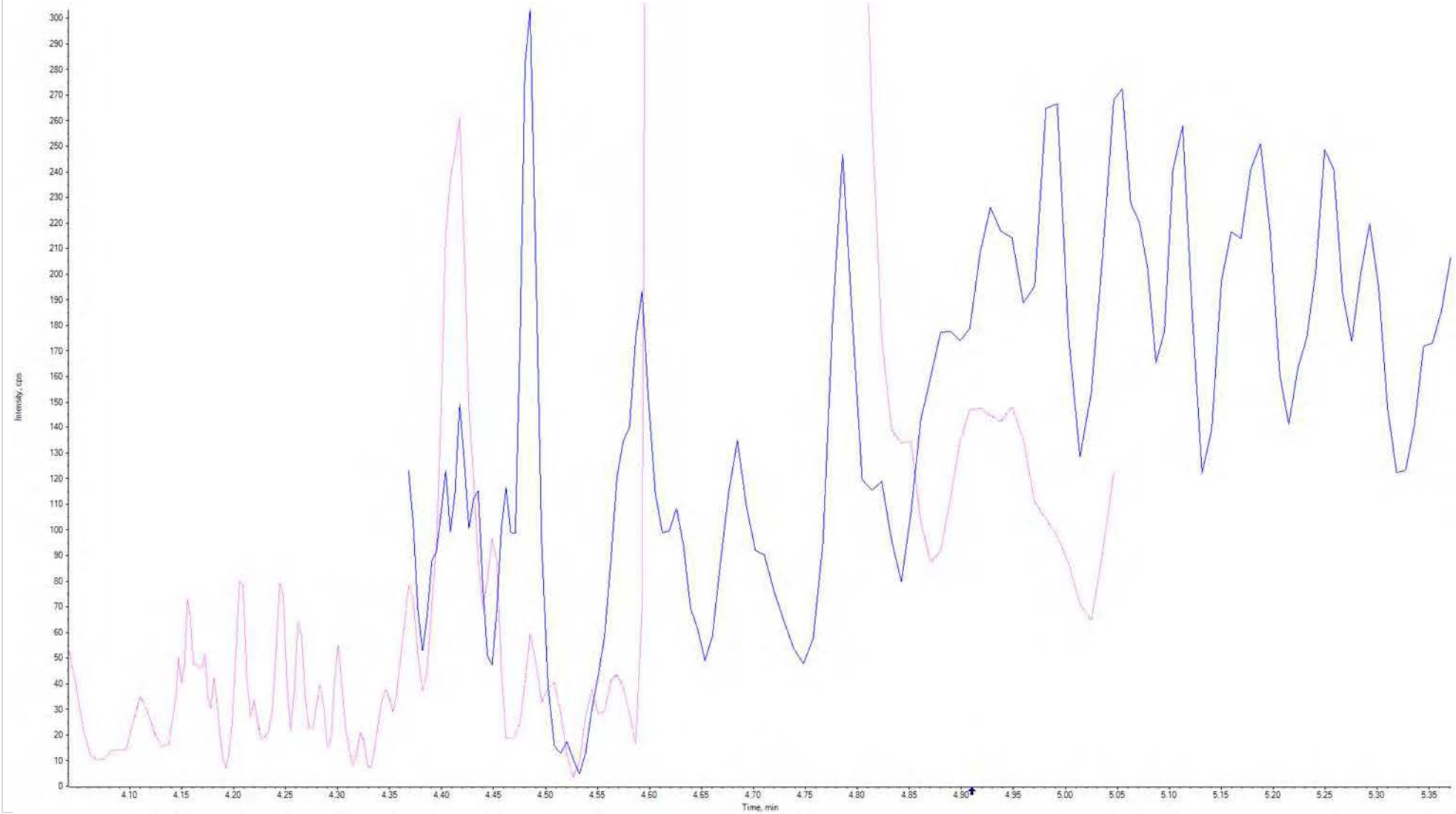

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5:3FTCA
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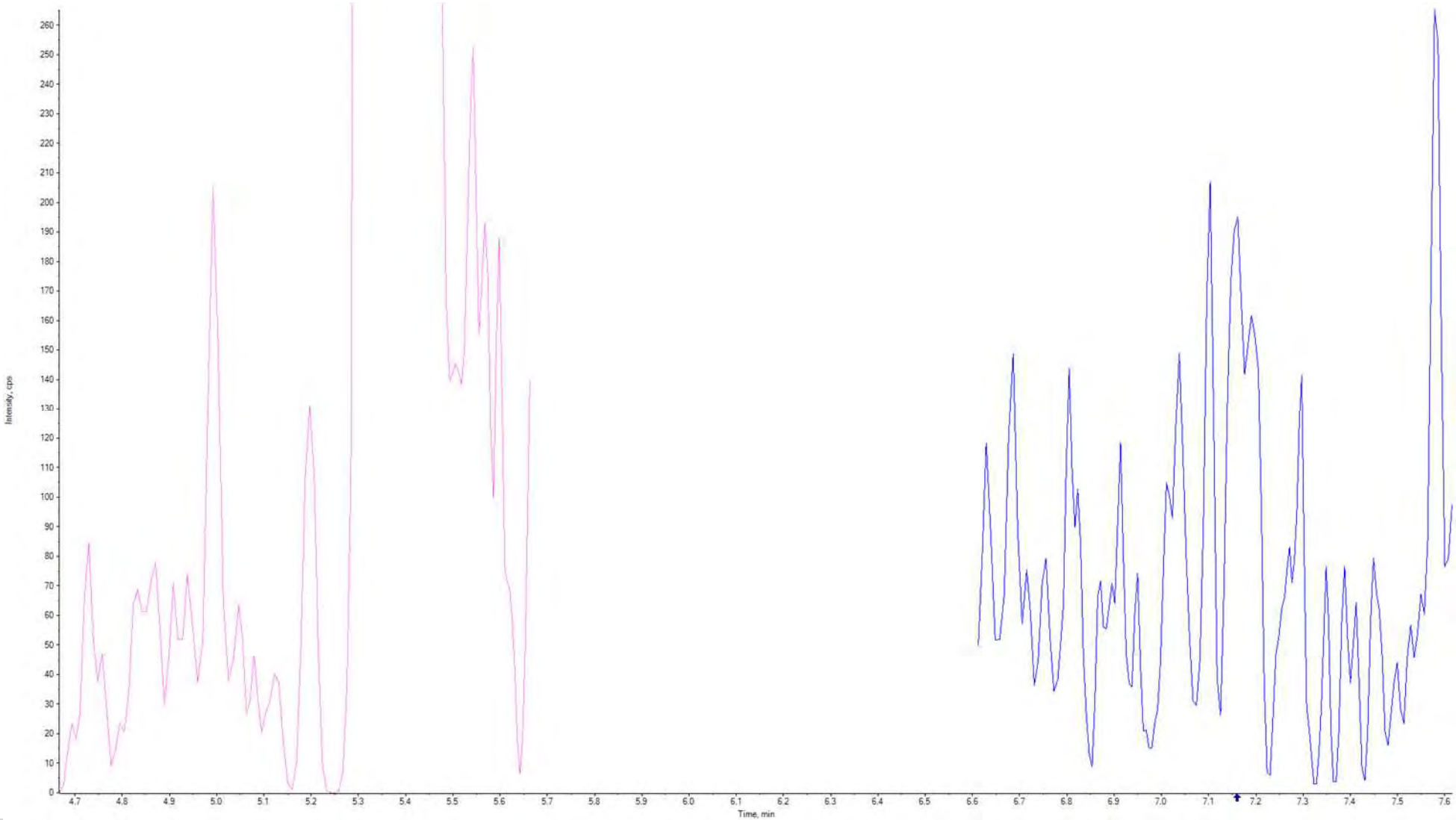

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Generated: 9/19/2024 8:04:31 AM

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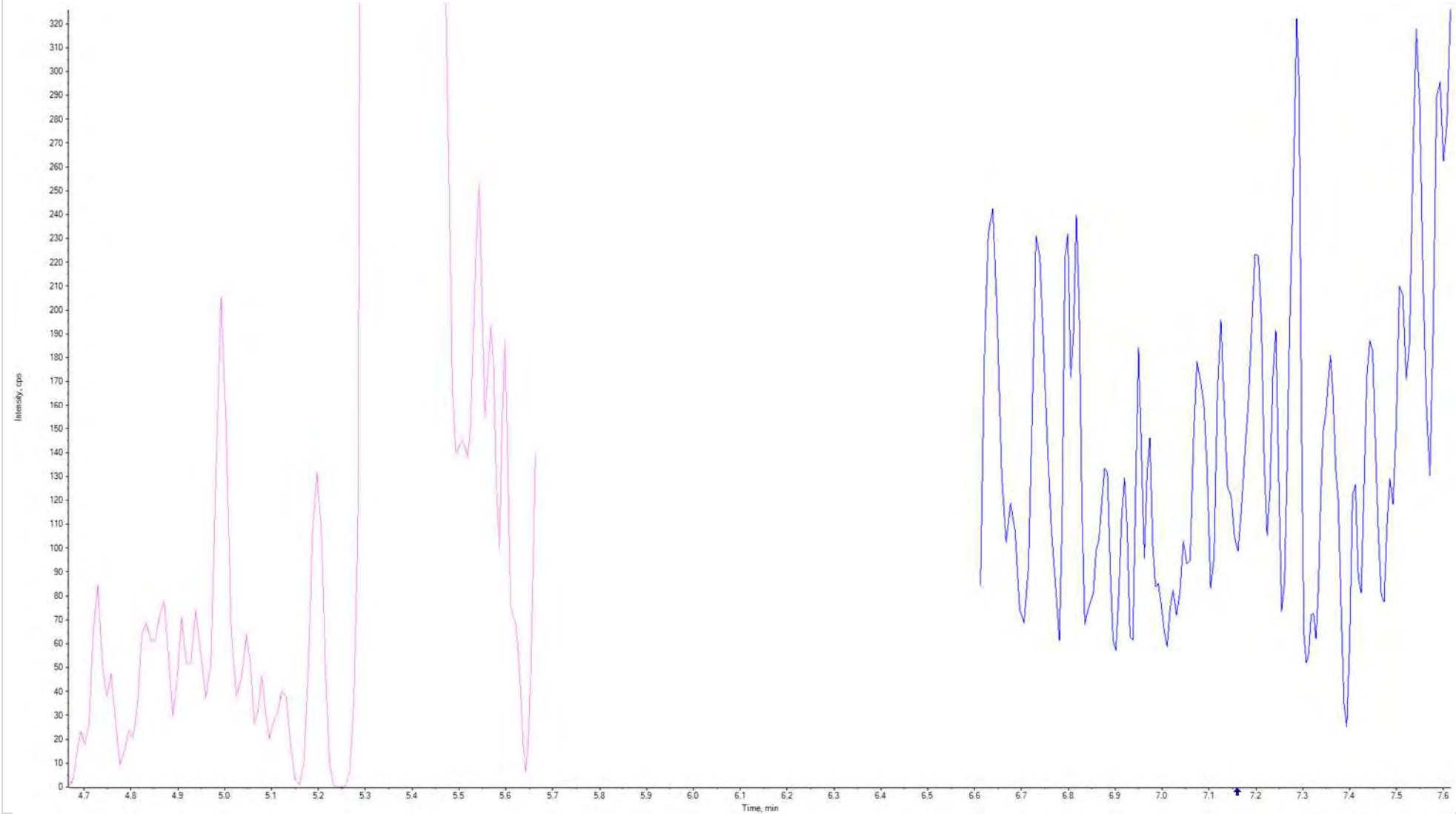

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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7:3FTCA
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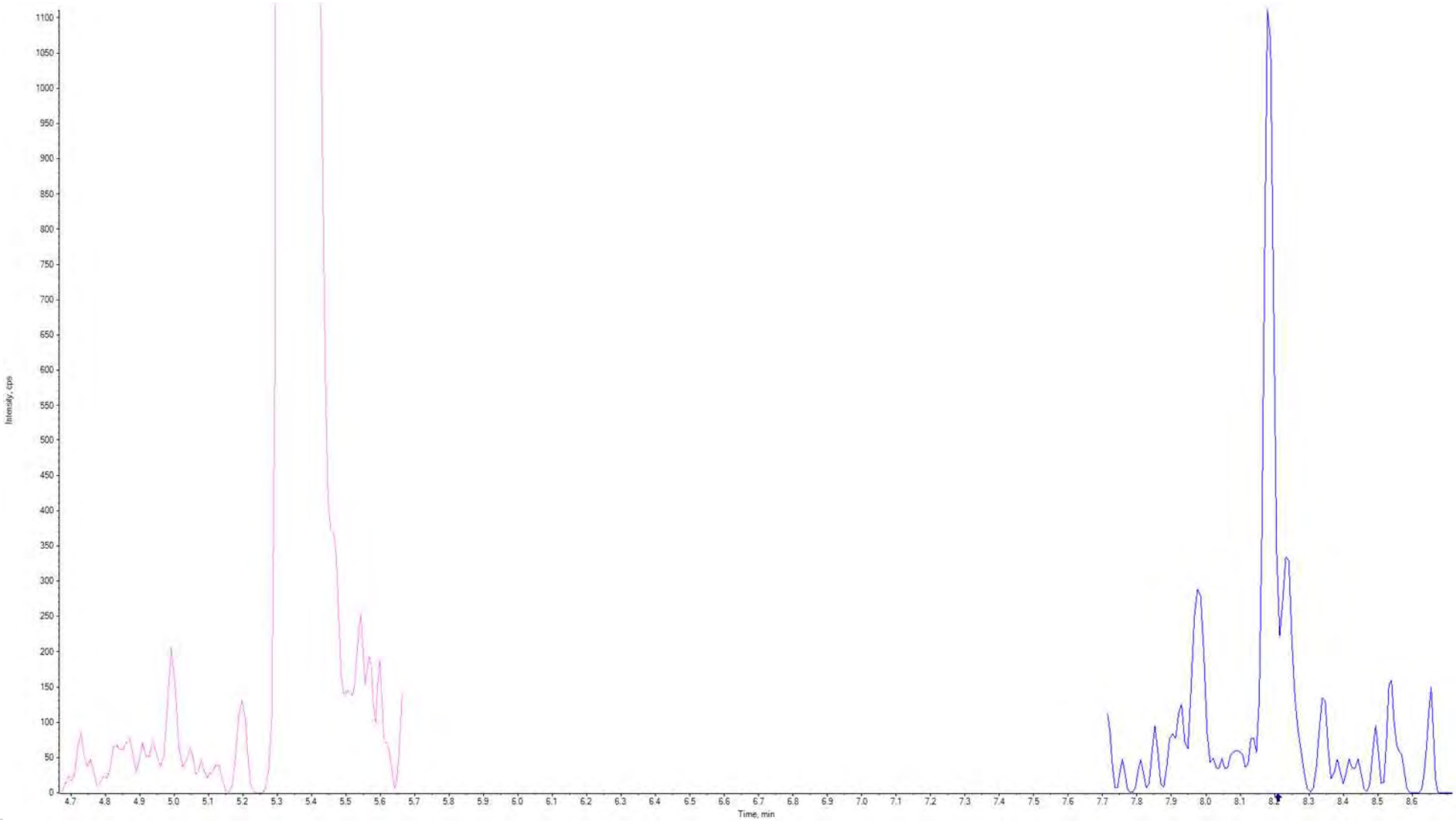

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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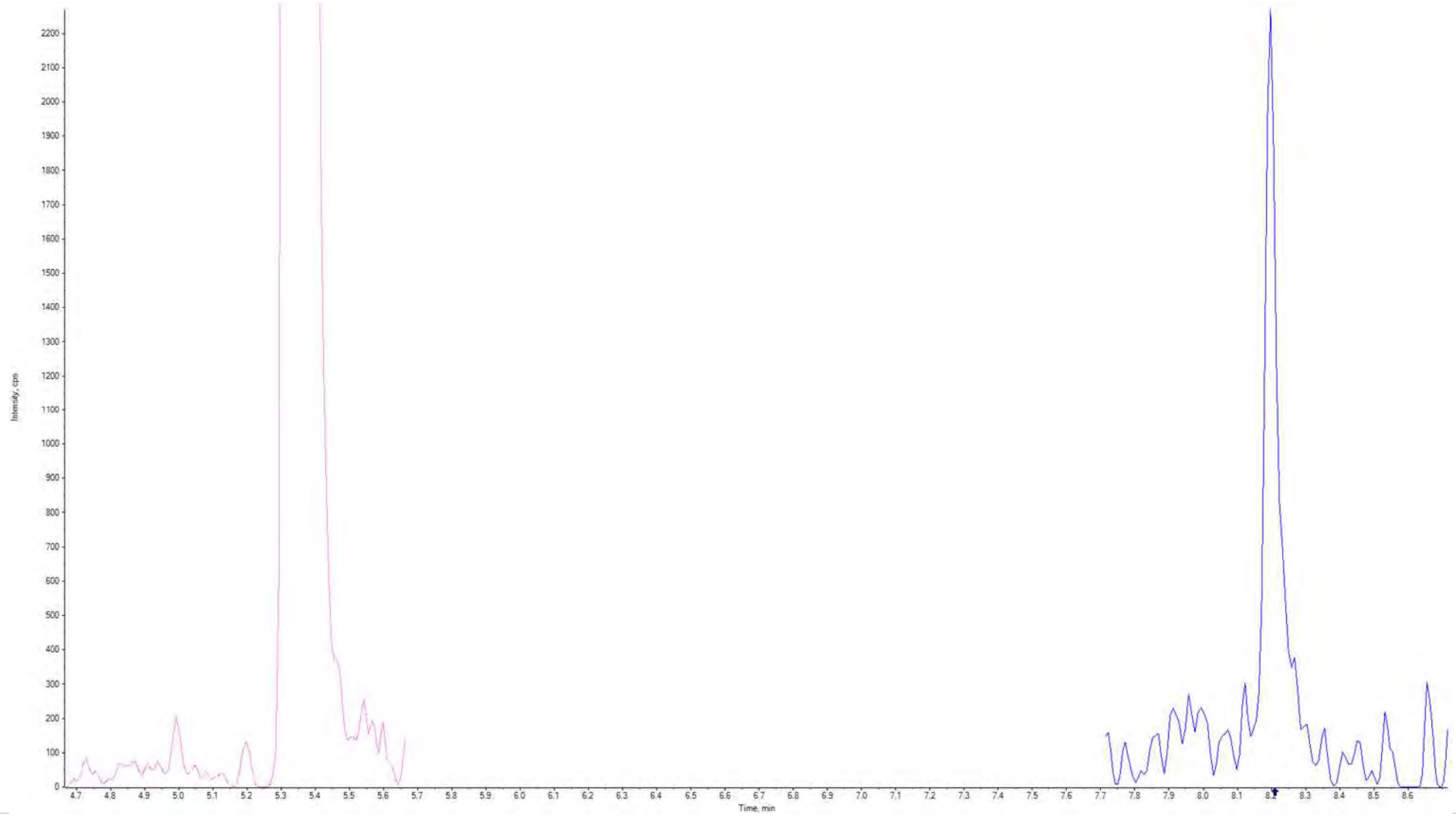

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFEESA
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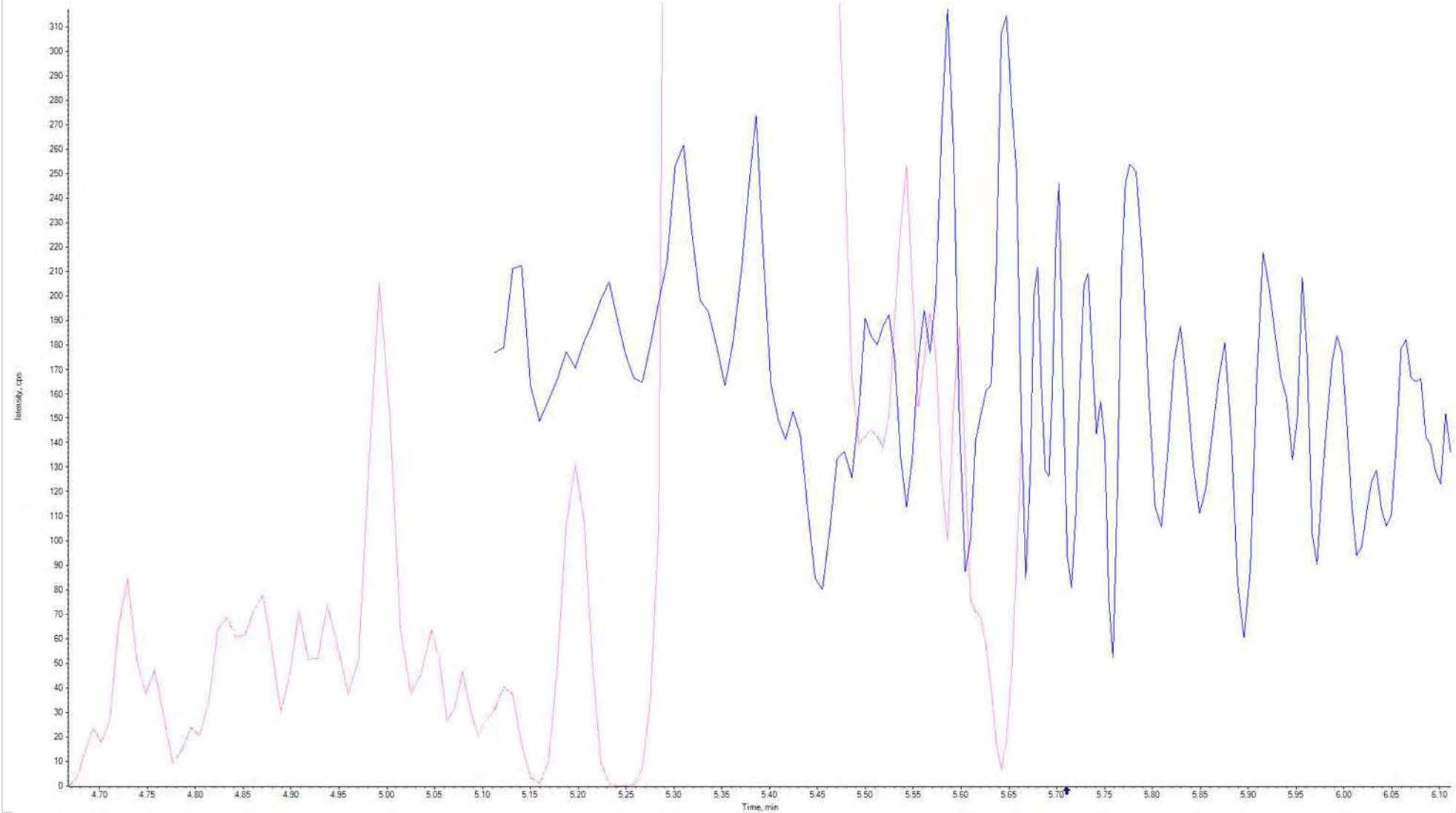

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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PFEESA_2
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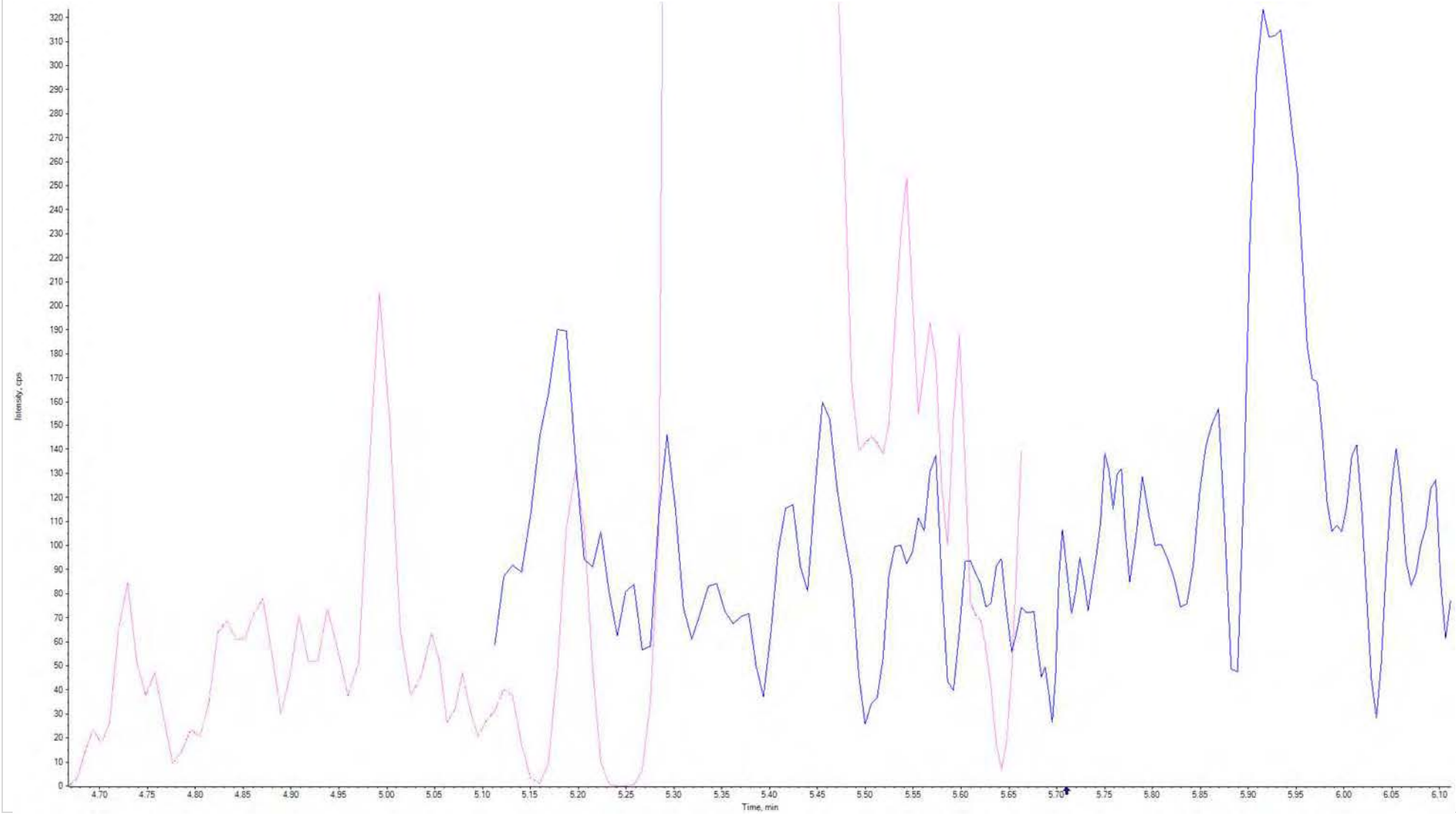

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Generated: 9/19/2024 8:04:31 AM

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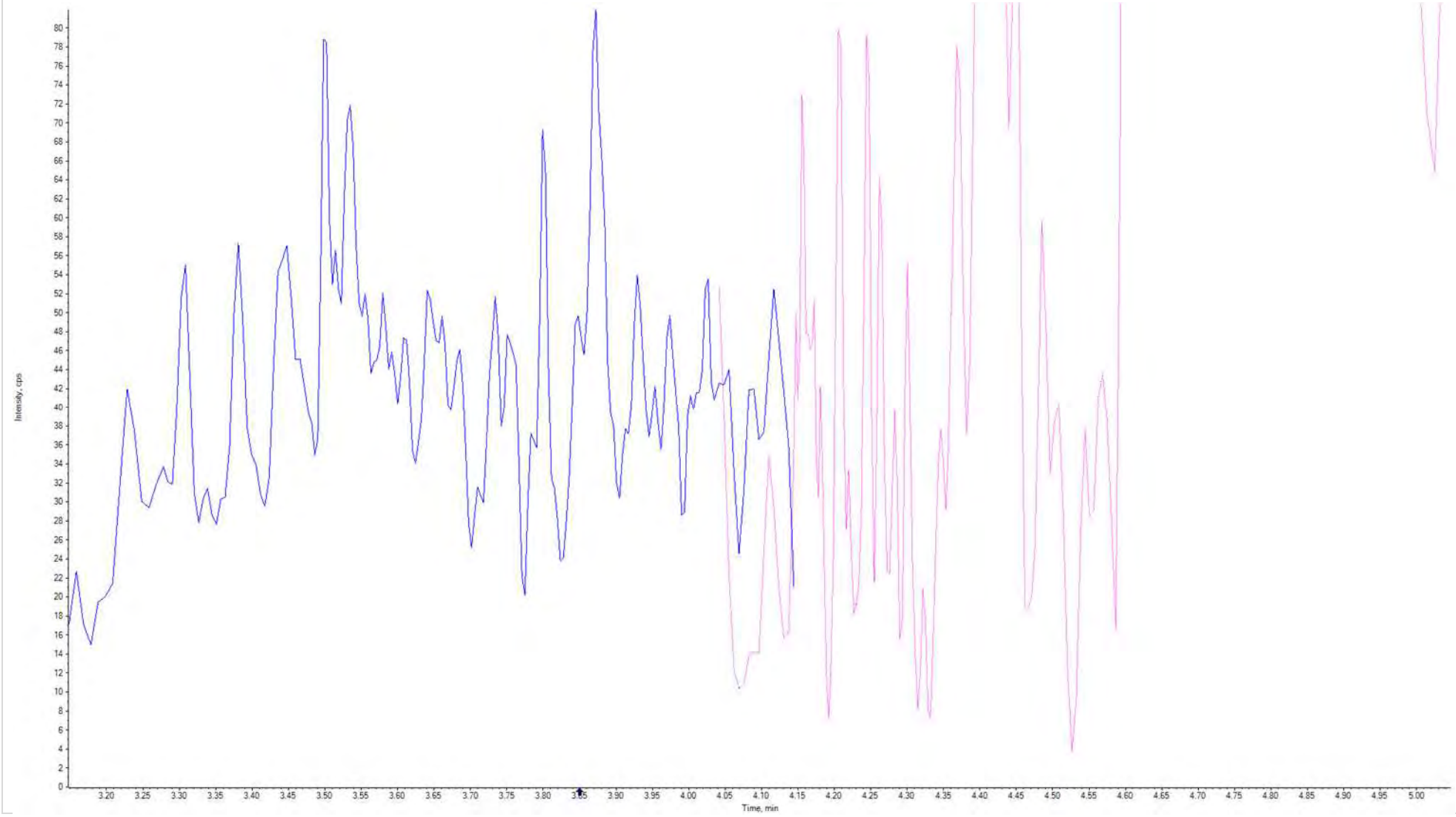

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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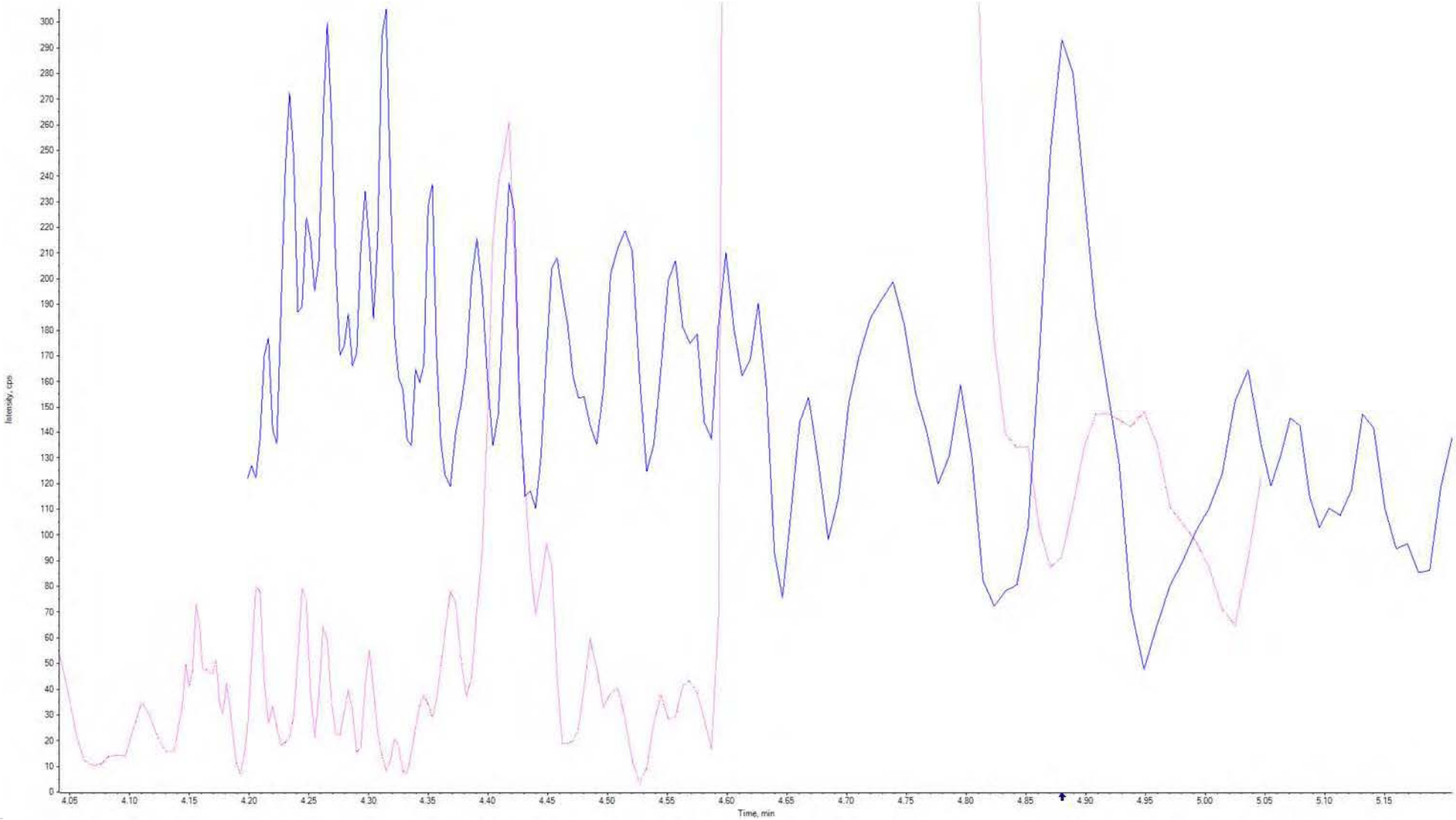
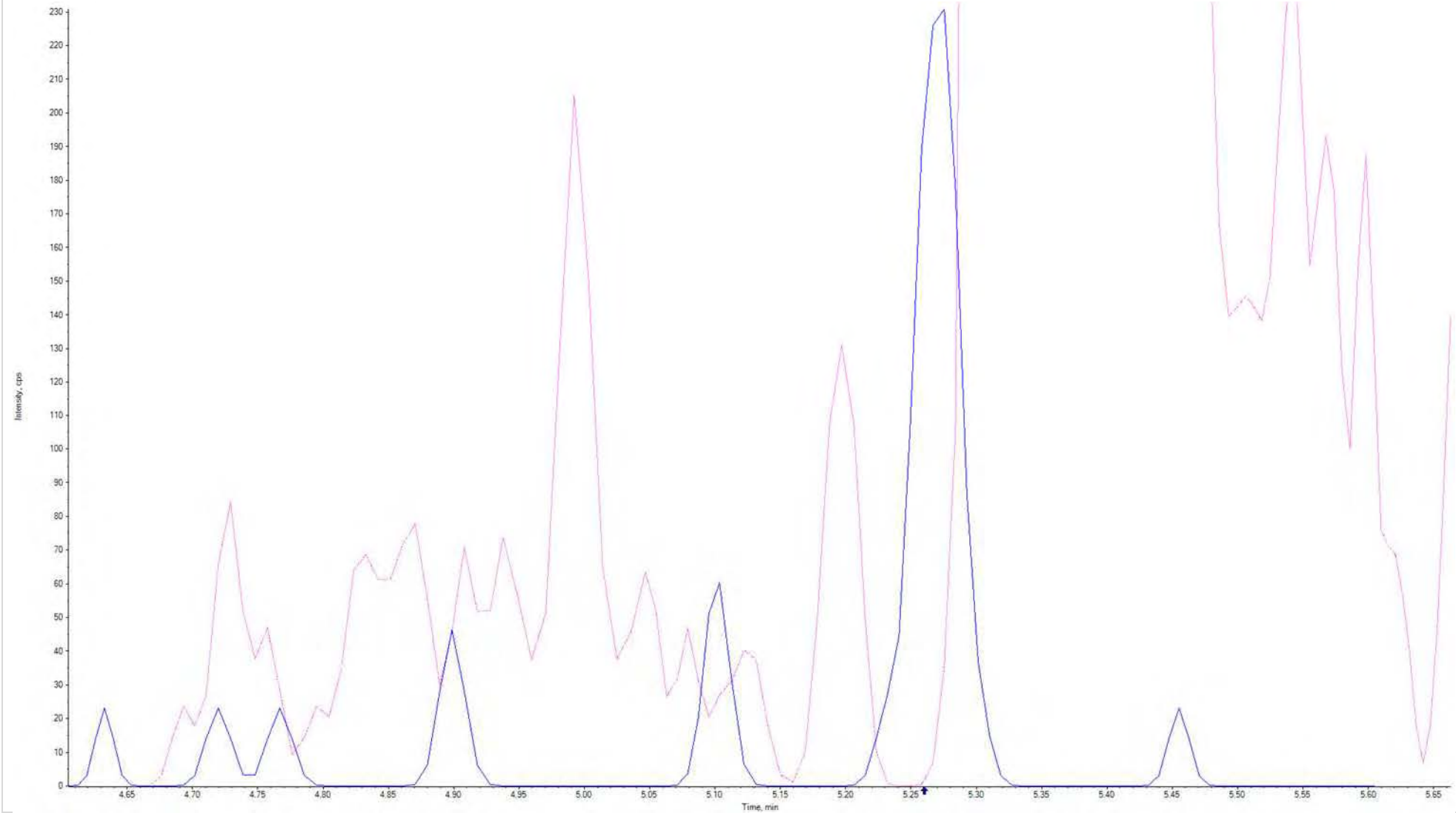
PFMBA
Sample: L2450786-09 S/N:N/A Points Across peak:N/A

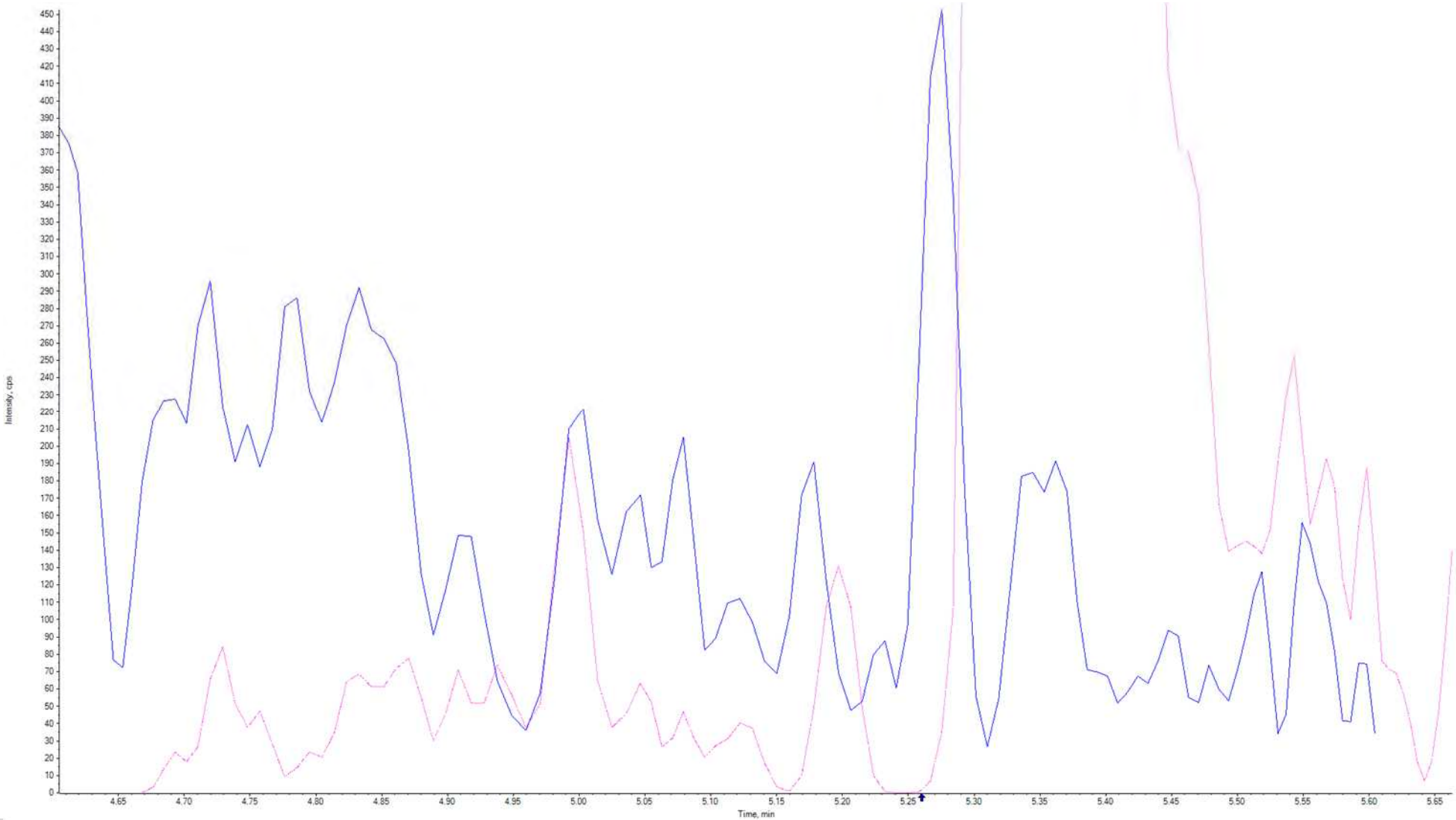


NFDHA
Sample: L2450786-09 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NFDHA_2
Sample: L2450786-09 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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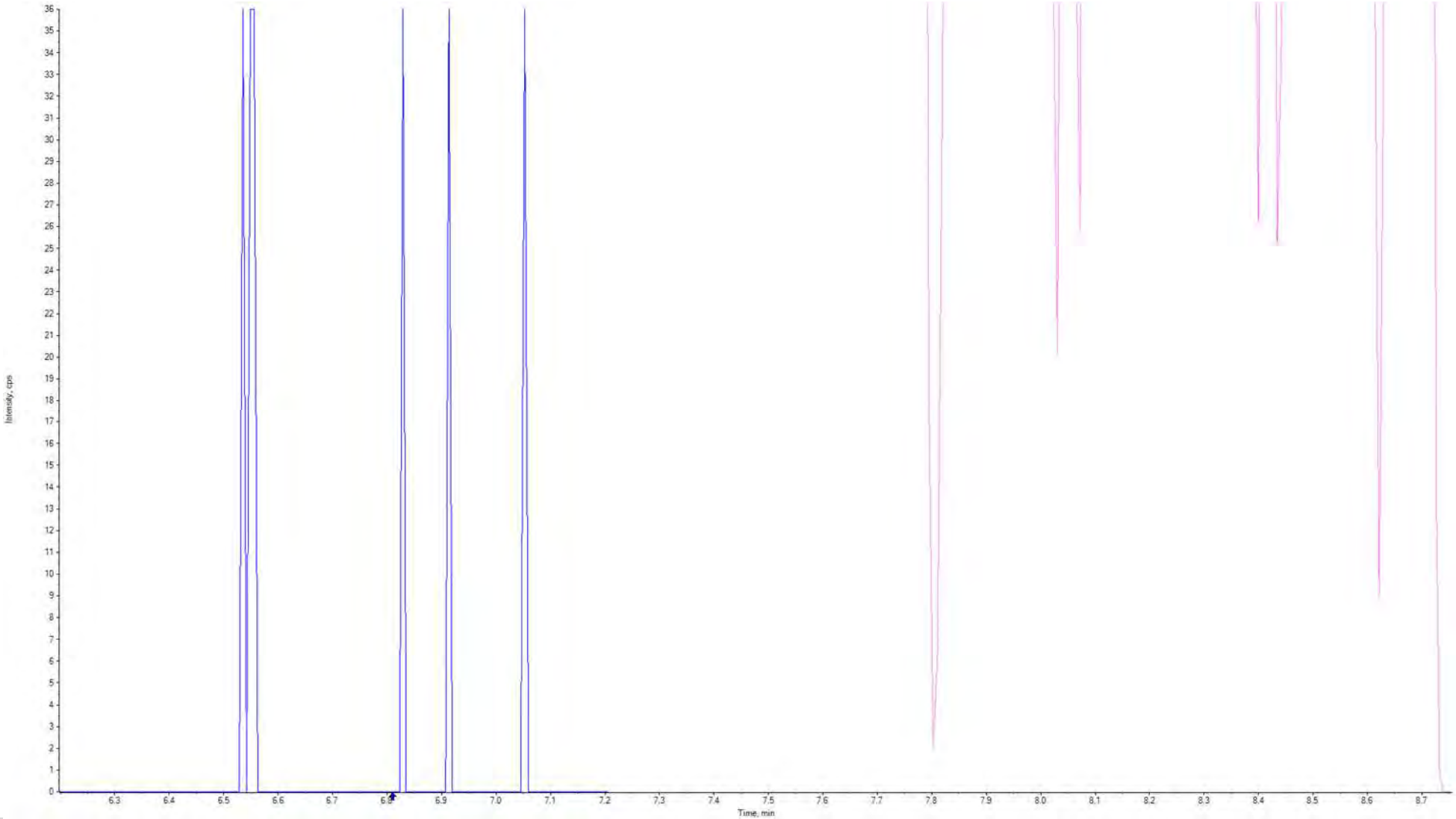
TDCA
Sample: L2450786-09 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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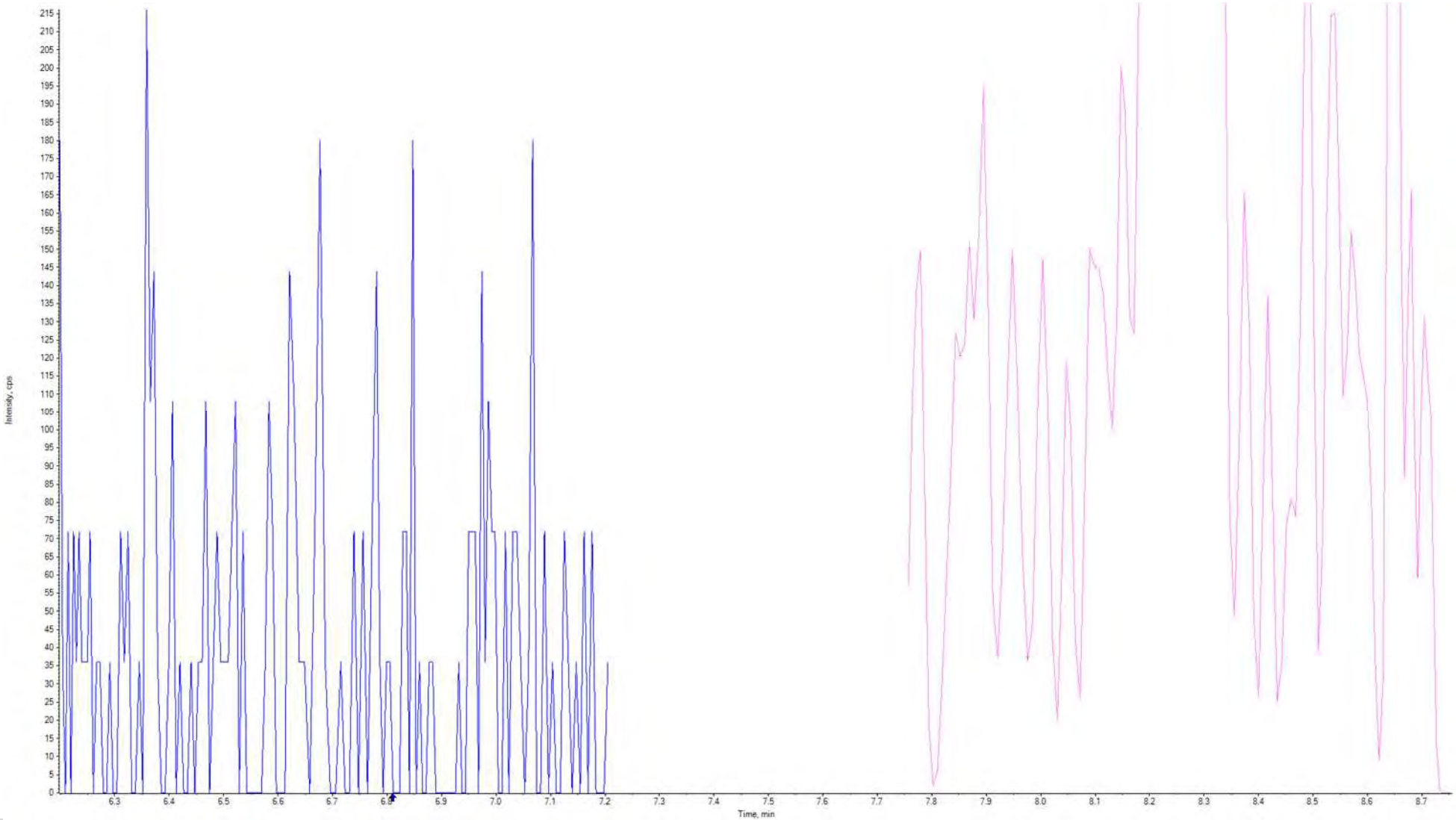
TDCA_2
Sample: L2450786-09 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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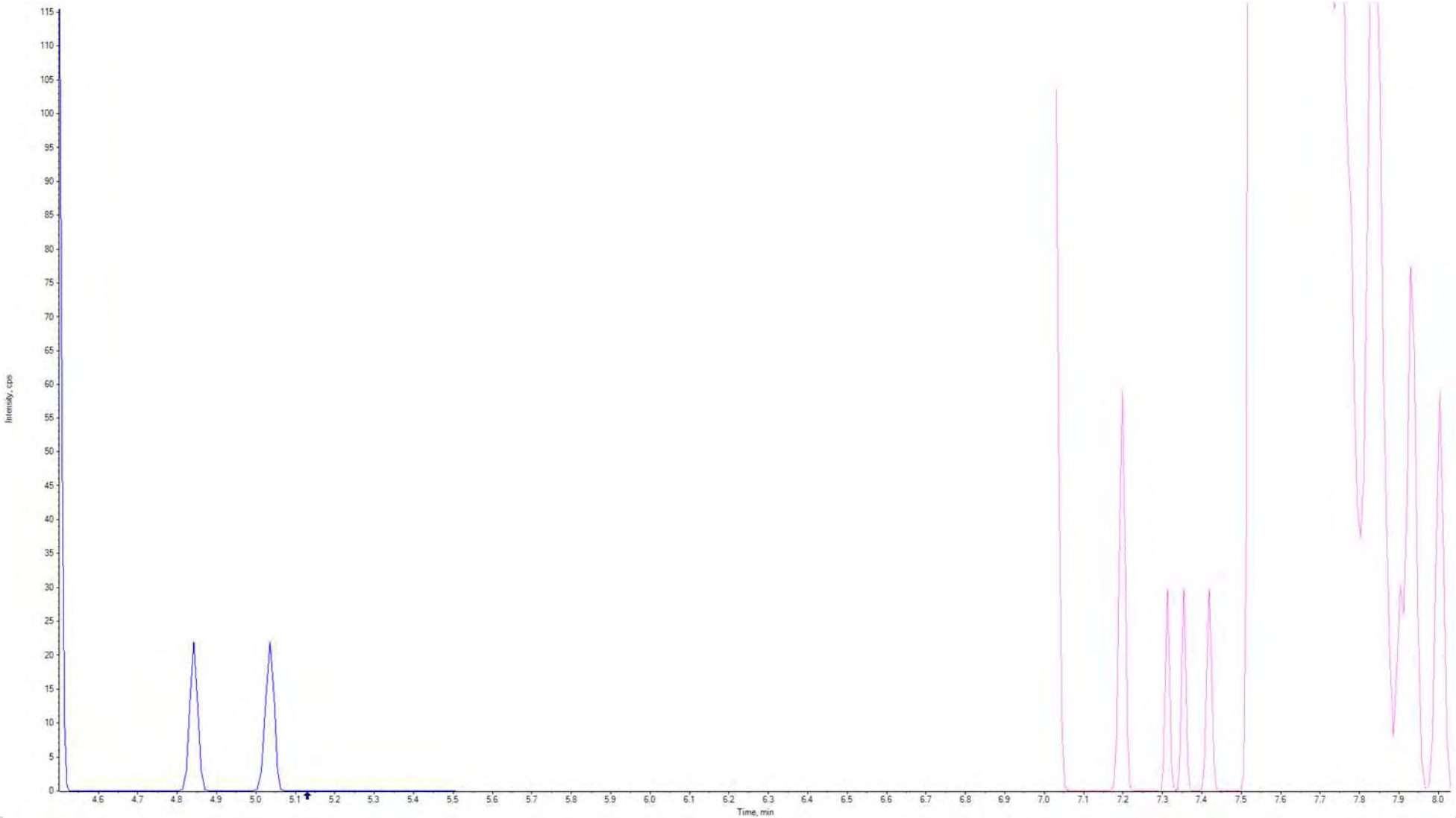
Generated: 9/19/2024 8:04:31 AM

13C2D4-4:2FTS
Sample: L2450786-09 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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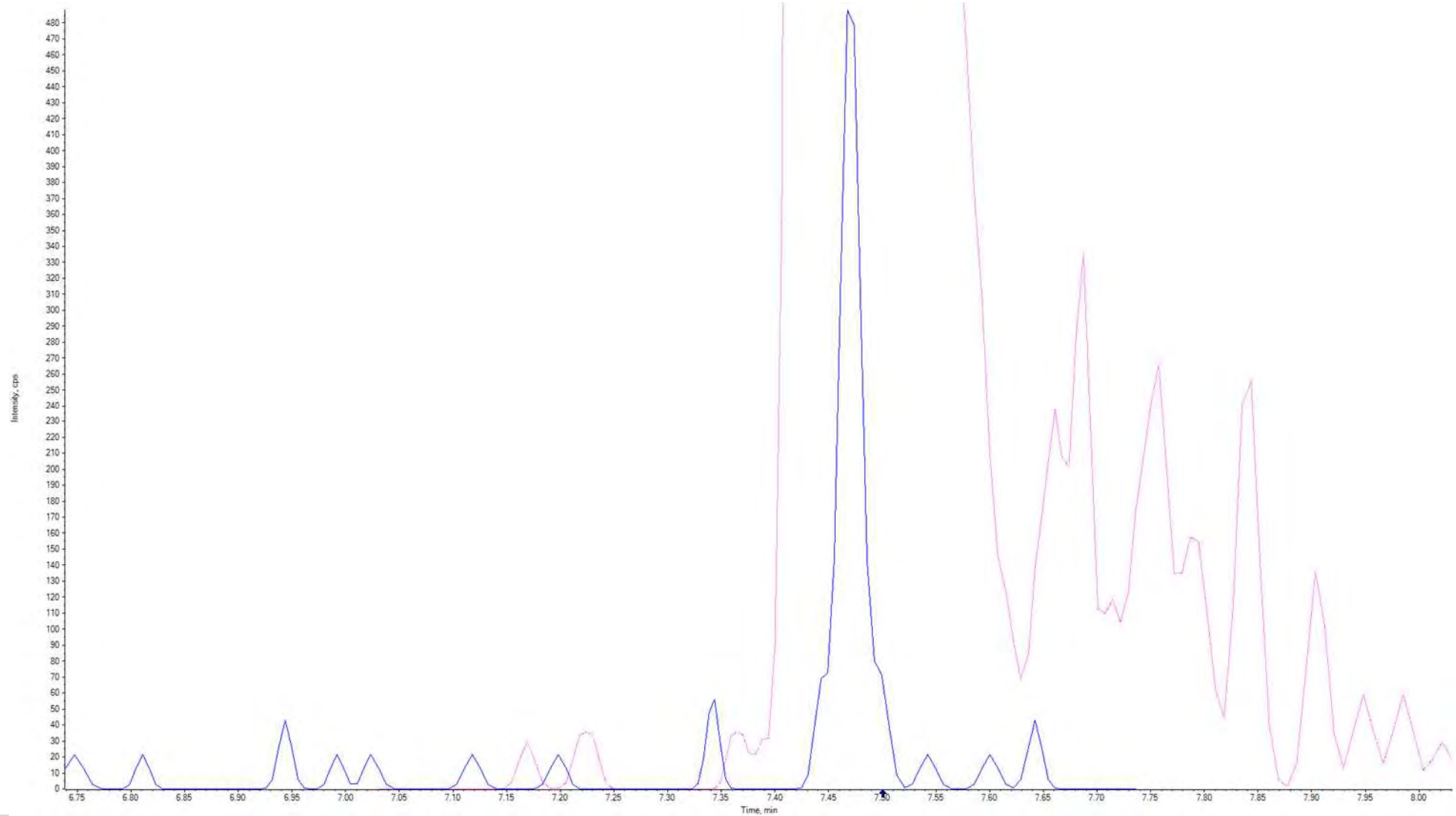
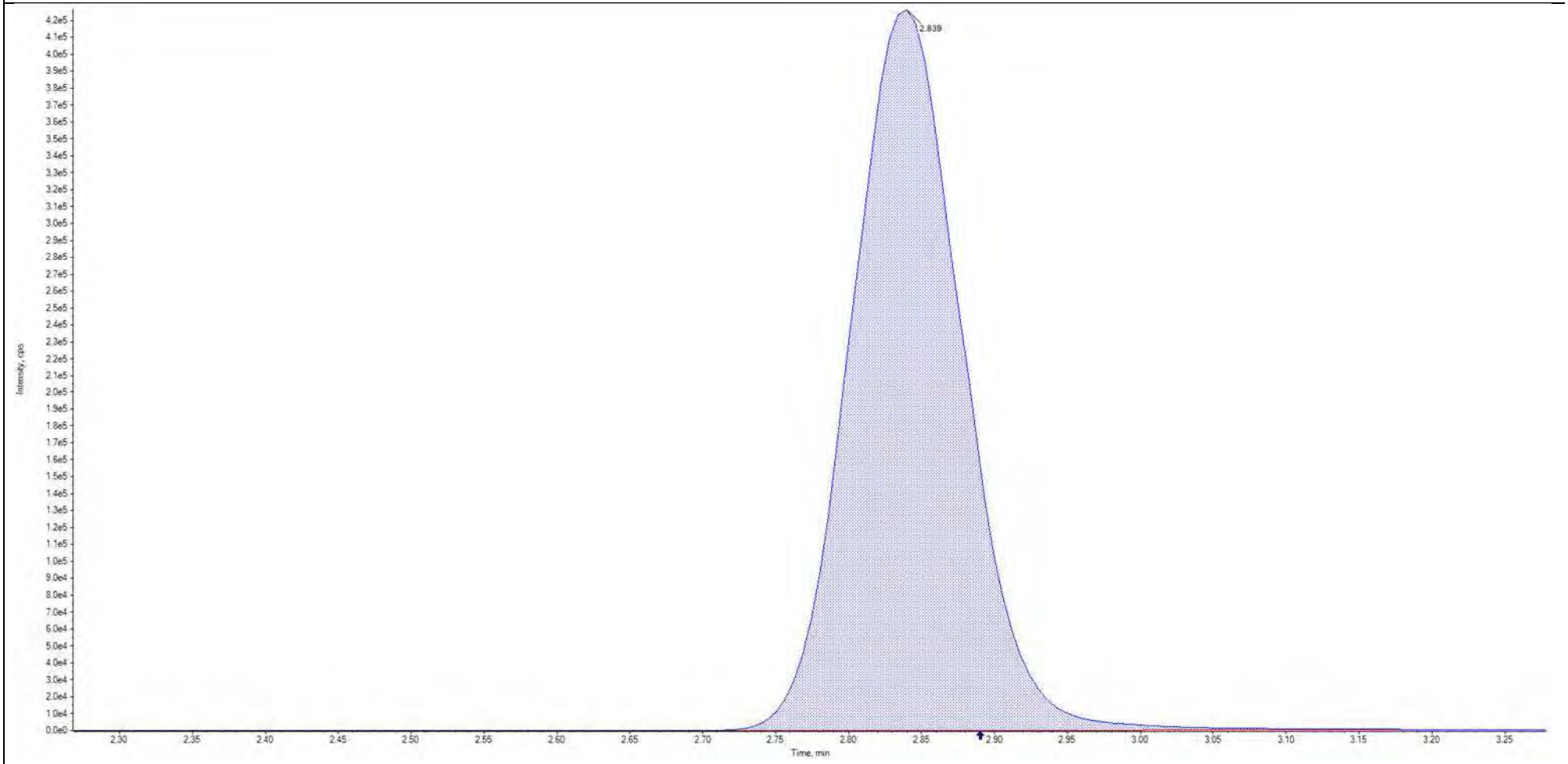
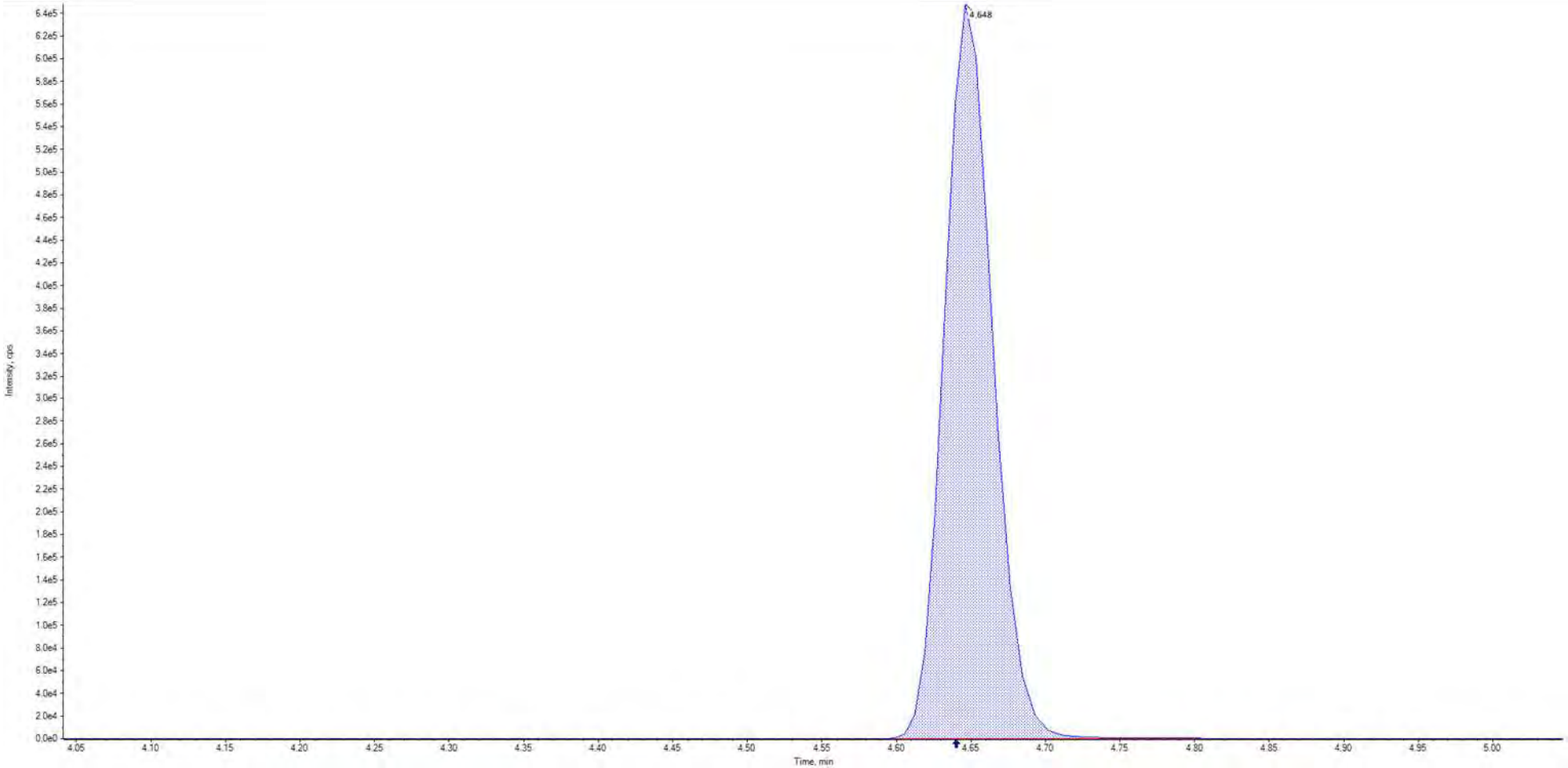
13C2-PFOA
Sample: L2450786-09 S/N:N/A Points Across peak:N/A



13C4-PFBA
Sample: L2450786-09



13C5-PFPeA
Sample: L2450786-09



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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13C5-PFHxA
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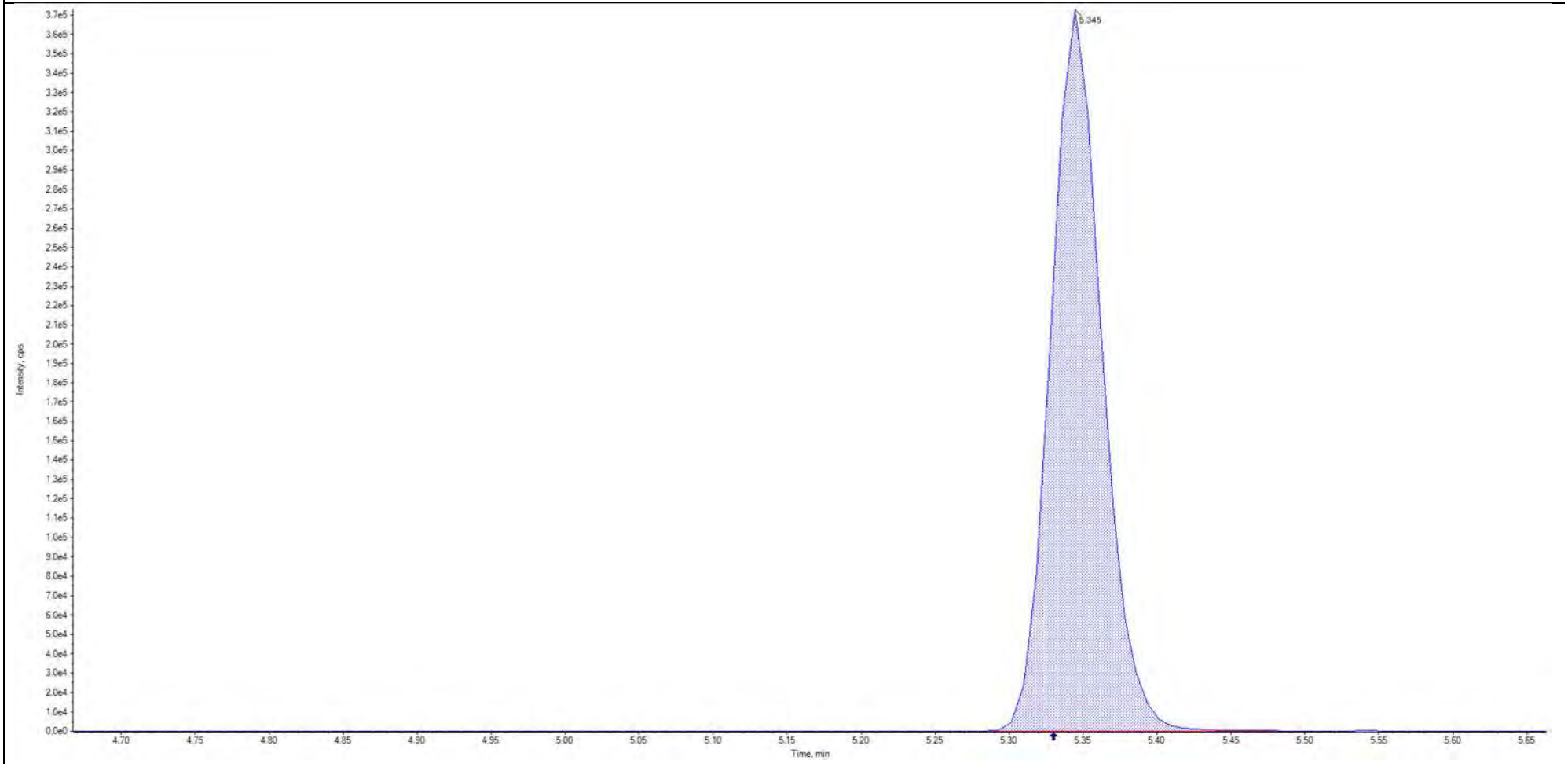
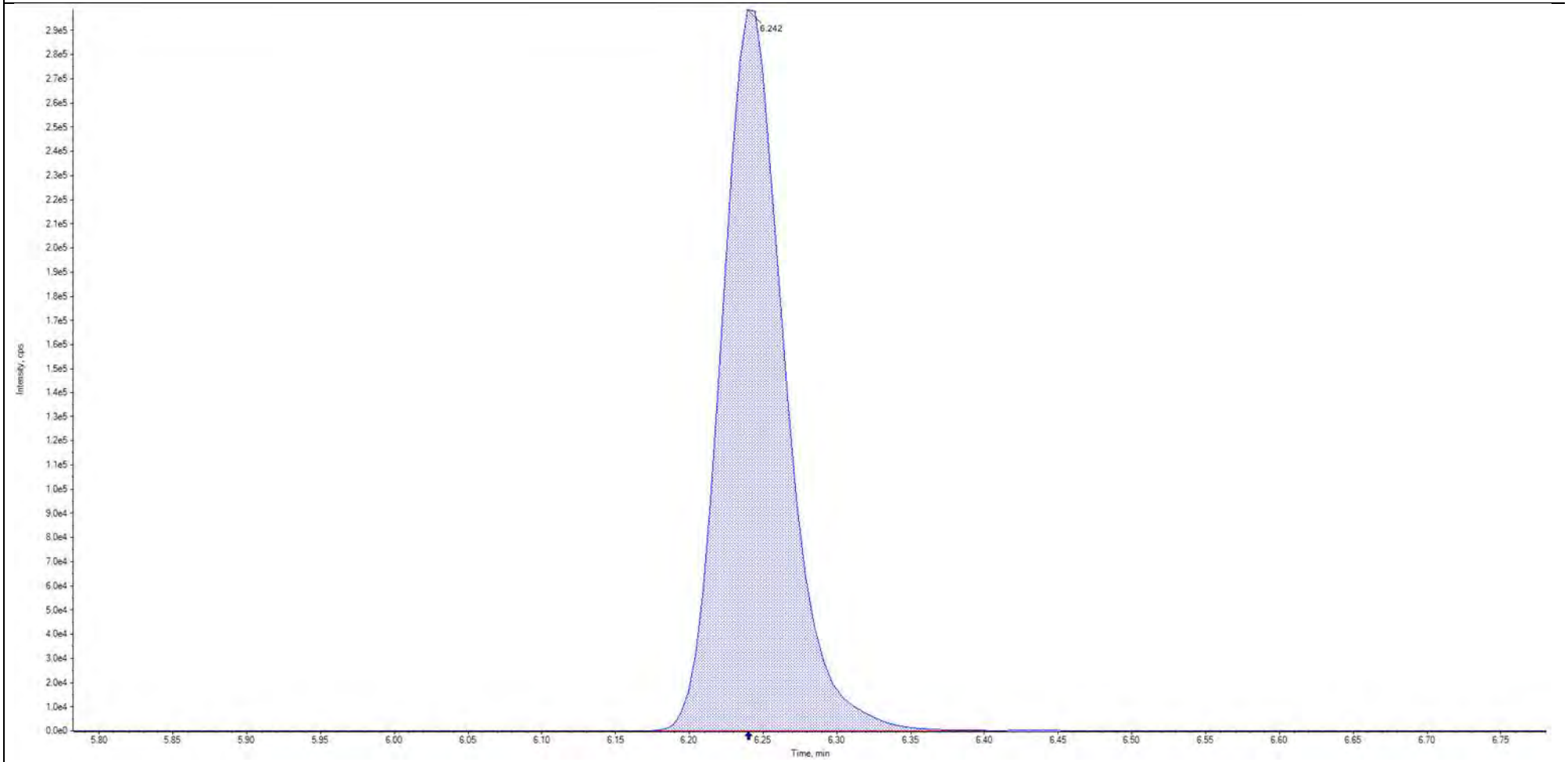
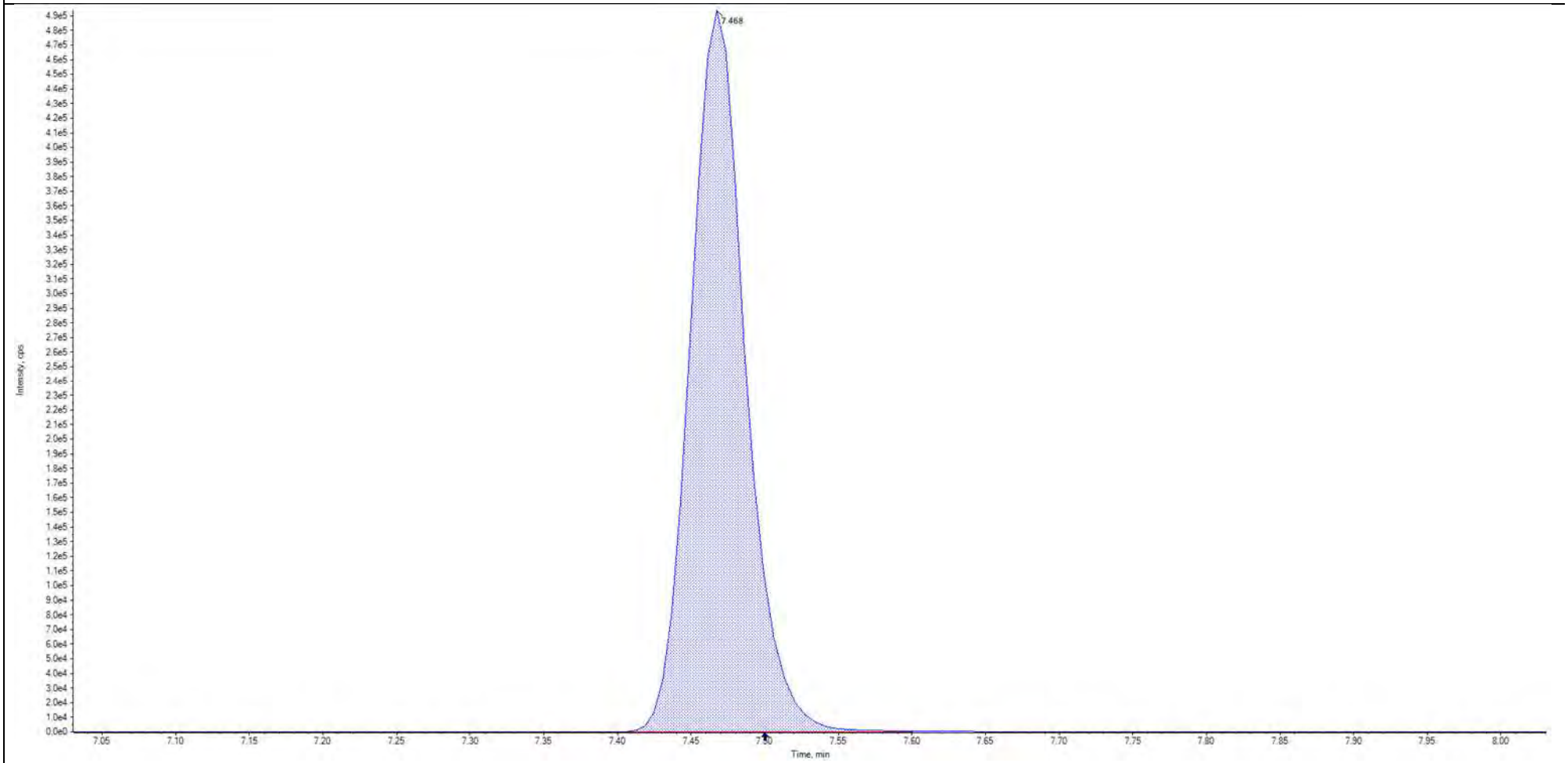


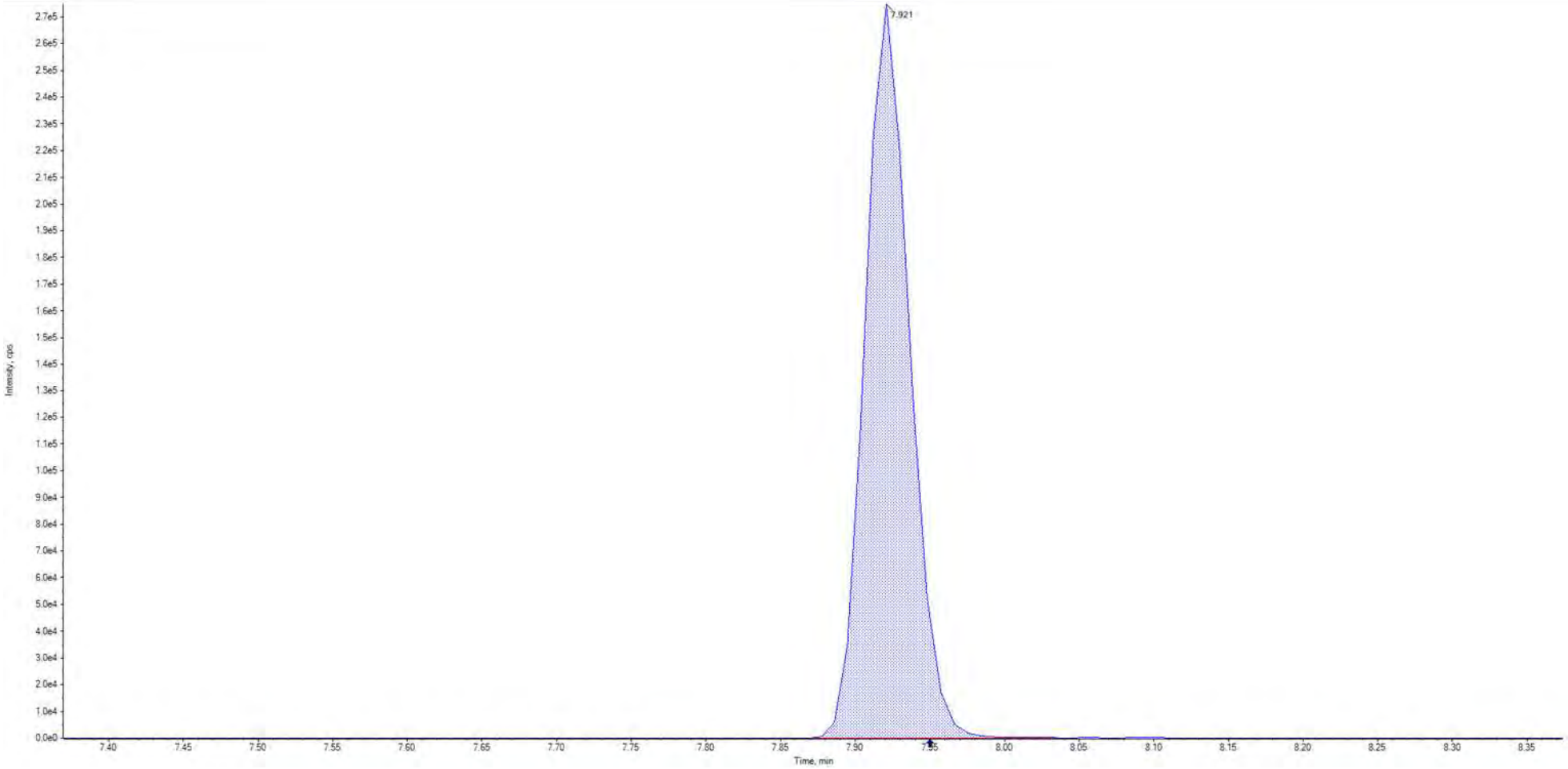
13C4-PFHpA
Sample: L2450786-09



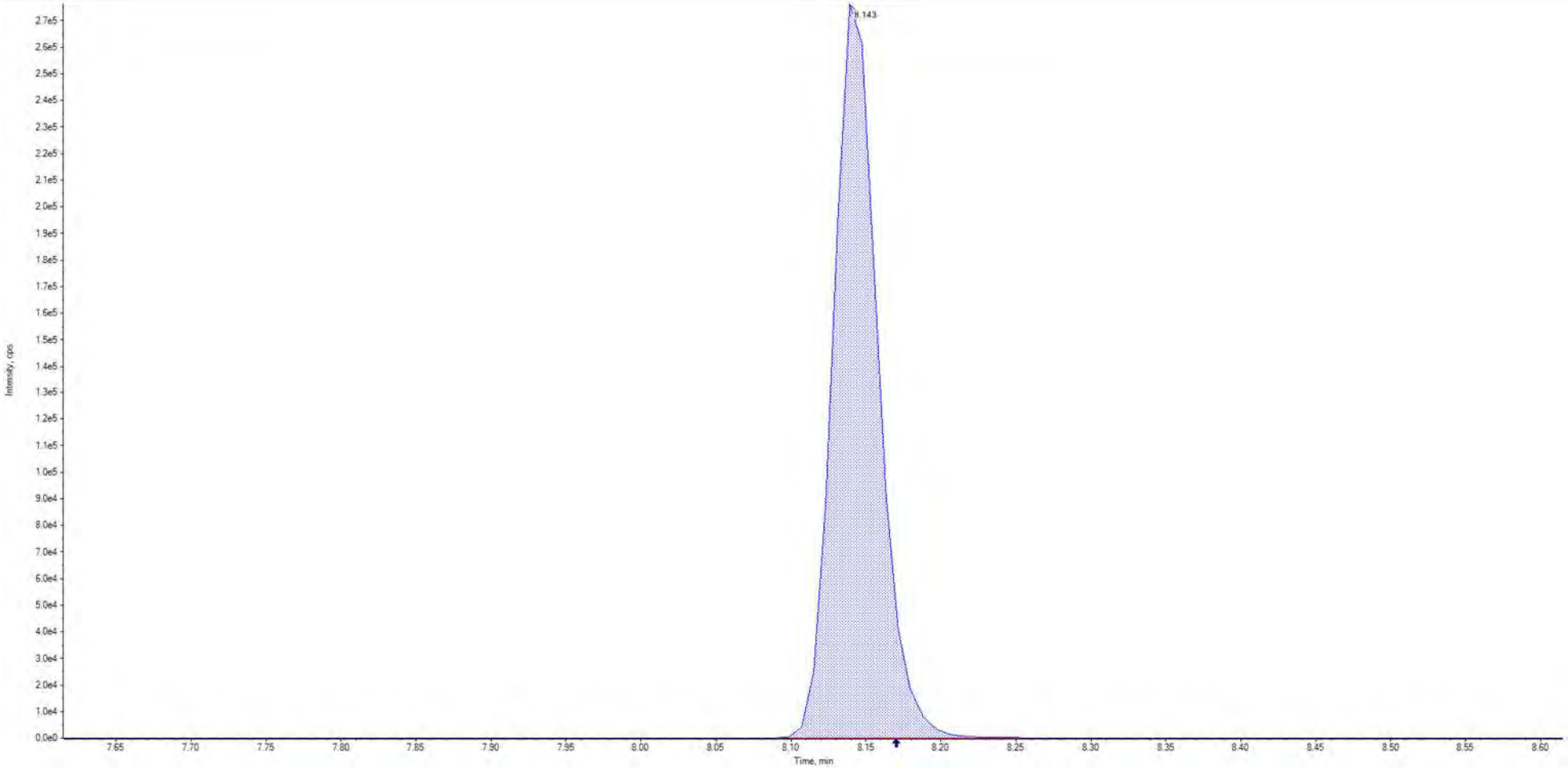
13C8-PFOA
Sample: L2450786-09



13C9-PFNA
Sample: L2450786-09



13C6-PFDA
Sample: L2450786-09



13C7-PFUnA
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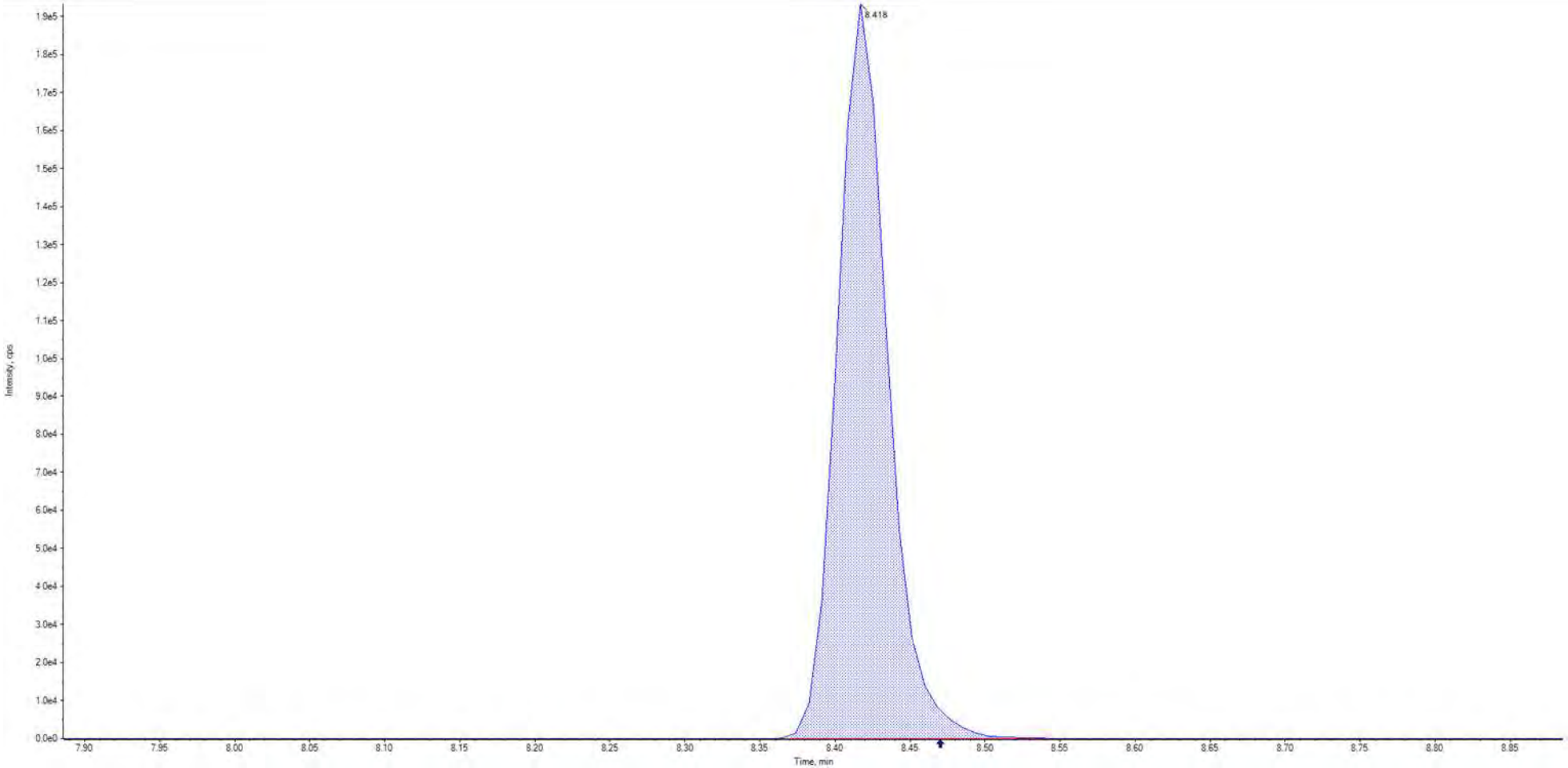

13C2-PFDoA
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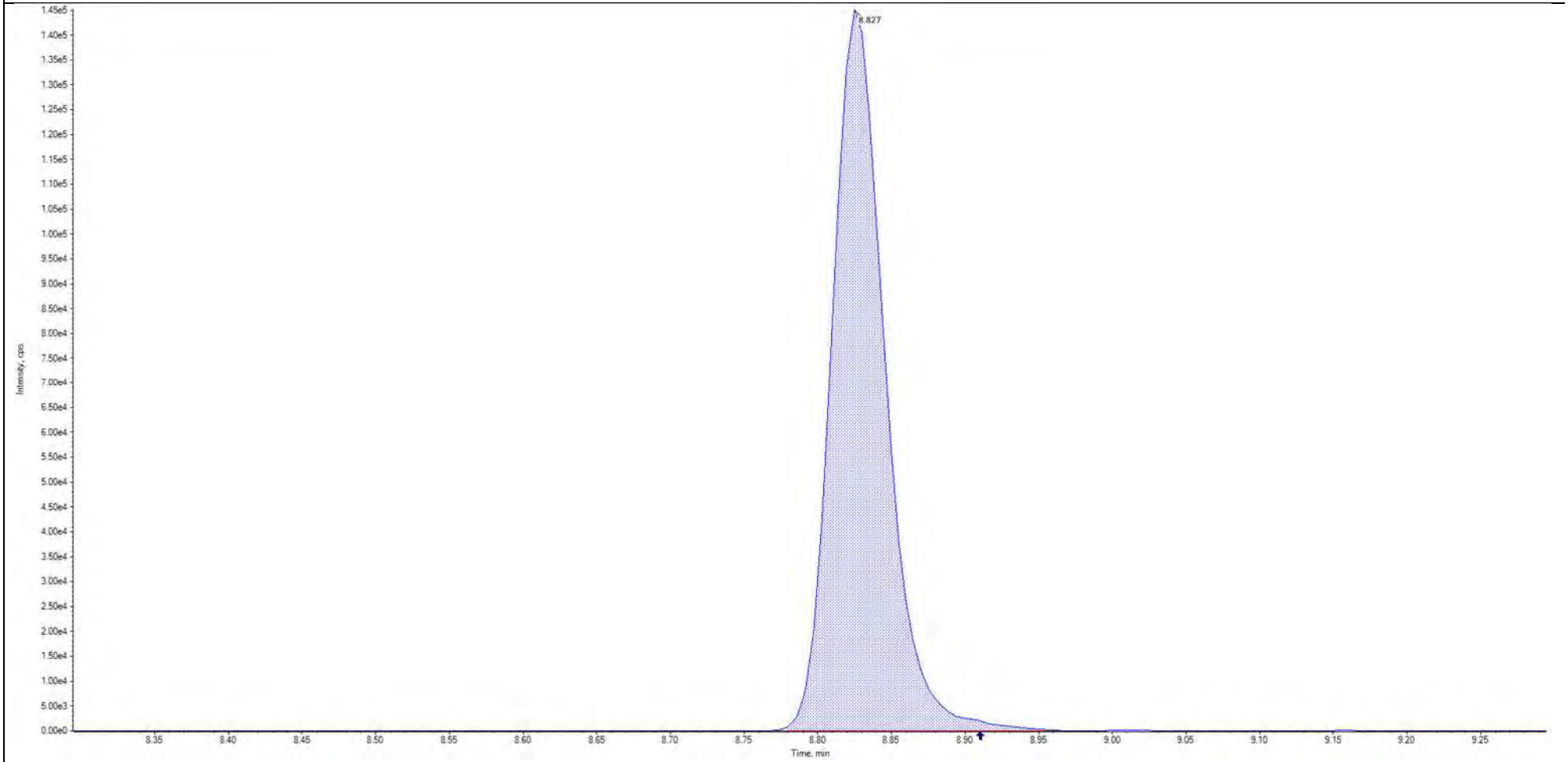

13C2-PFTeDA
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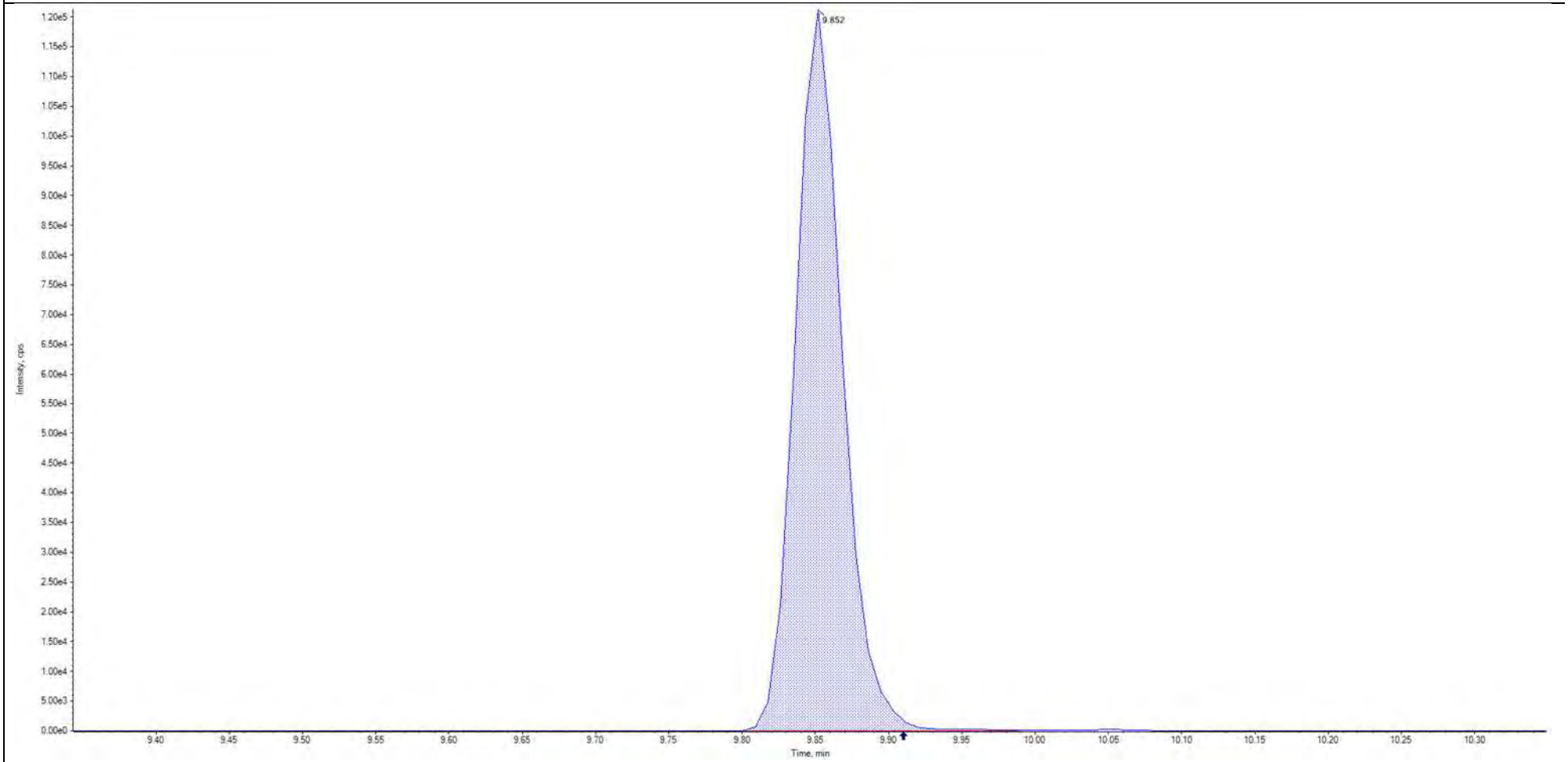
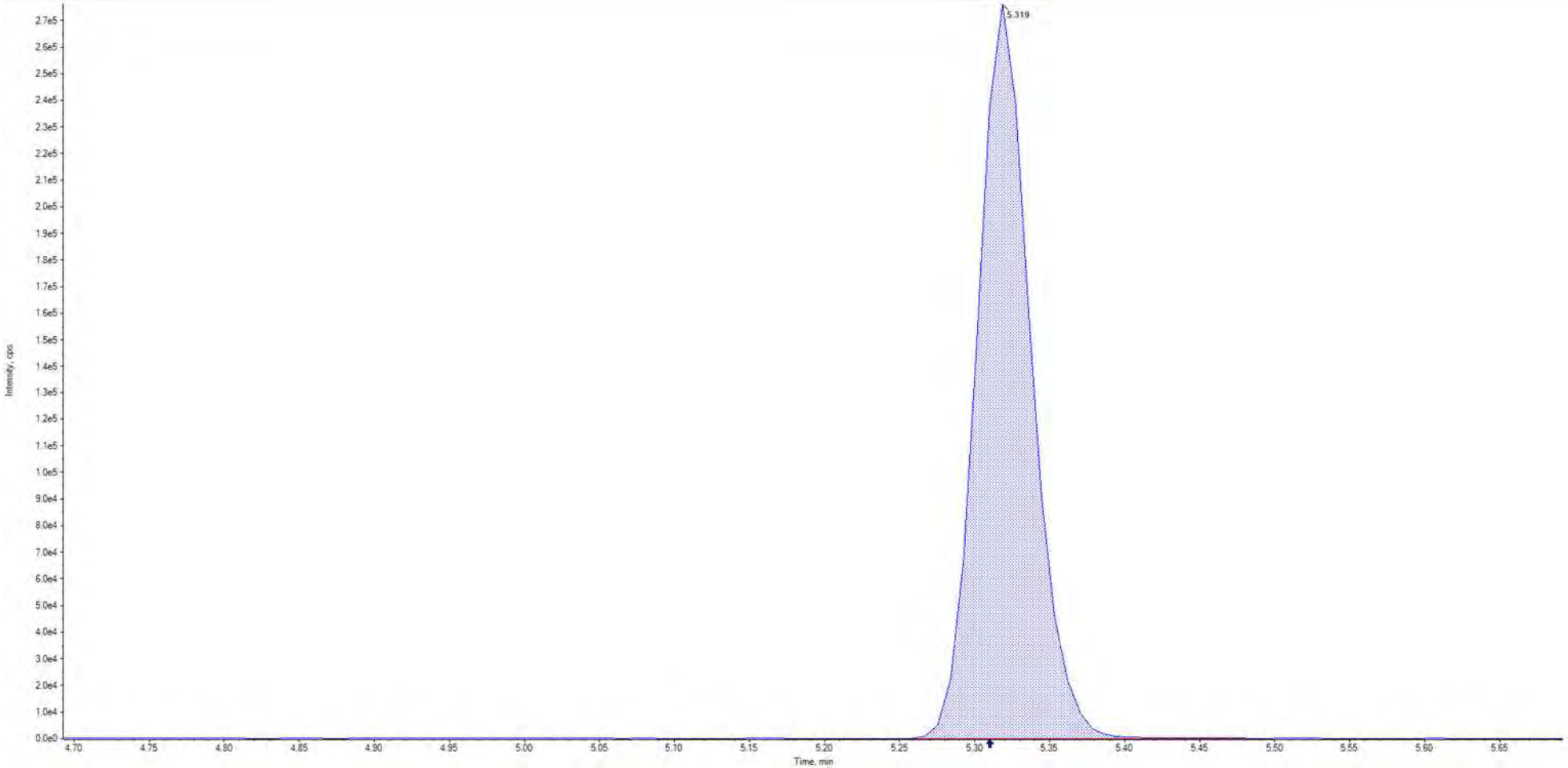


13C3-PFBS
Sample: L2450786-09



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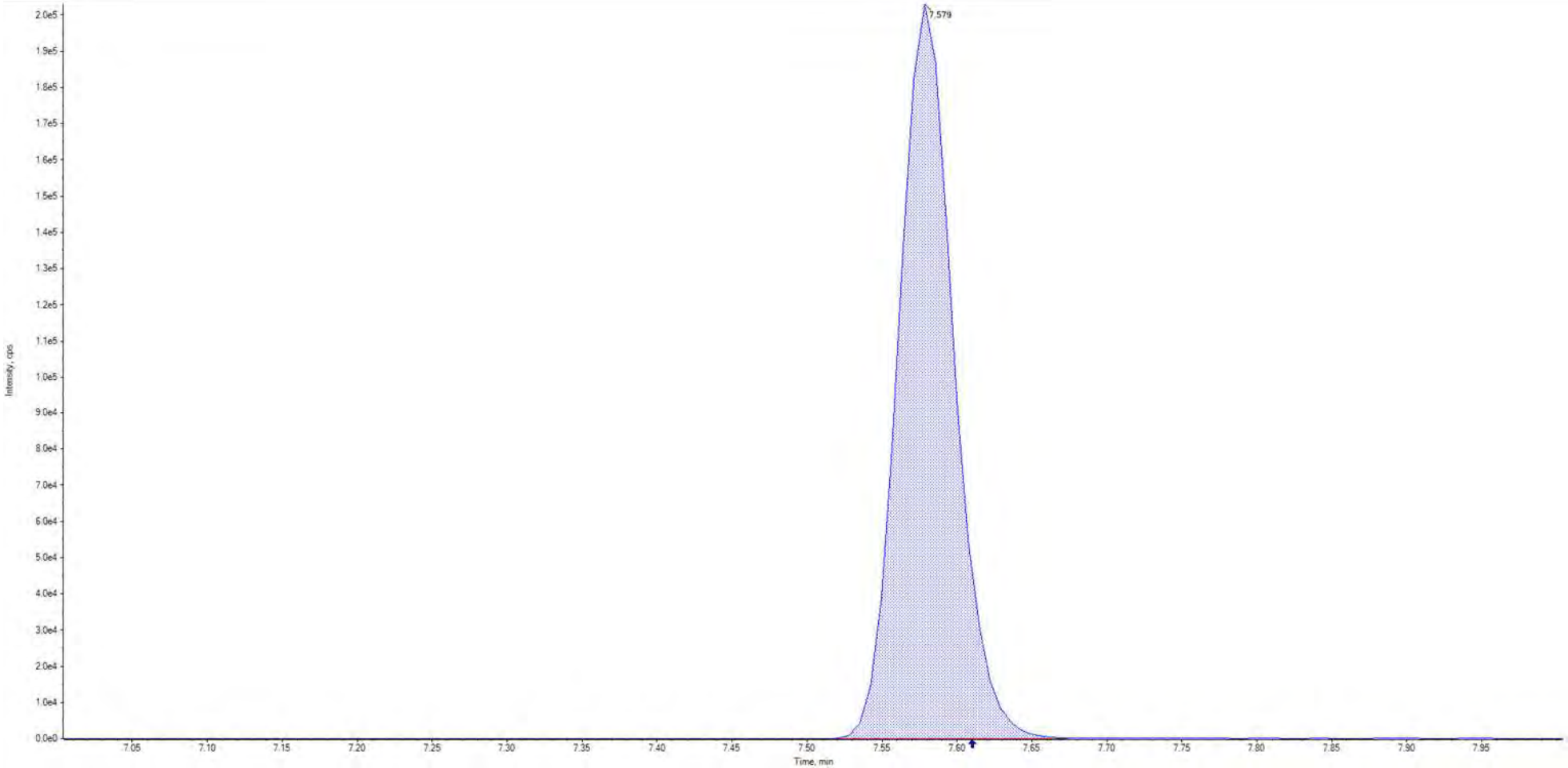
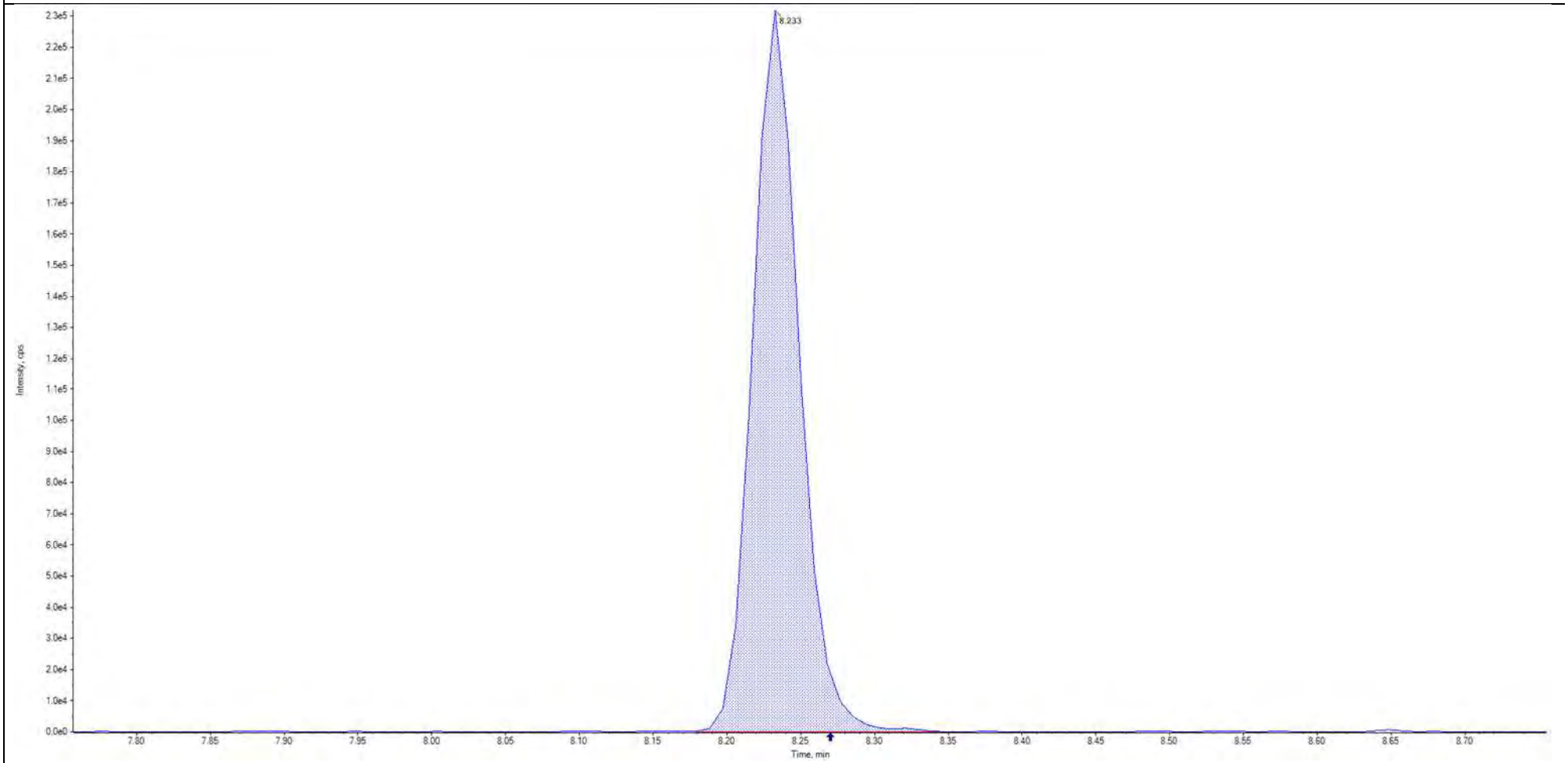
Generated: 9/19/2024 8:04:31 AM

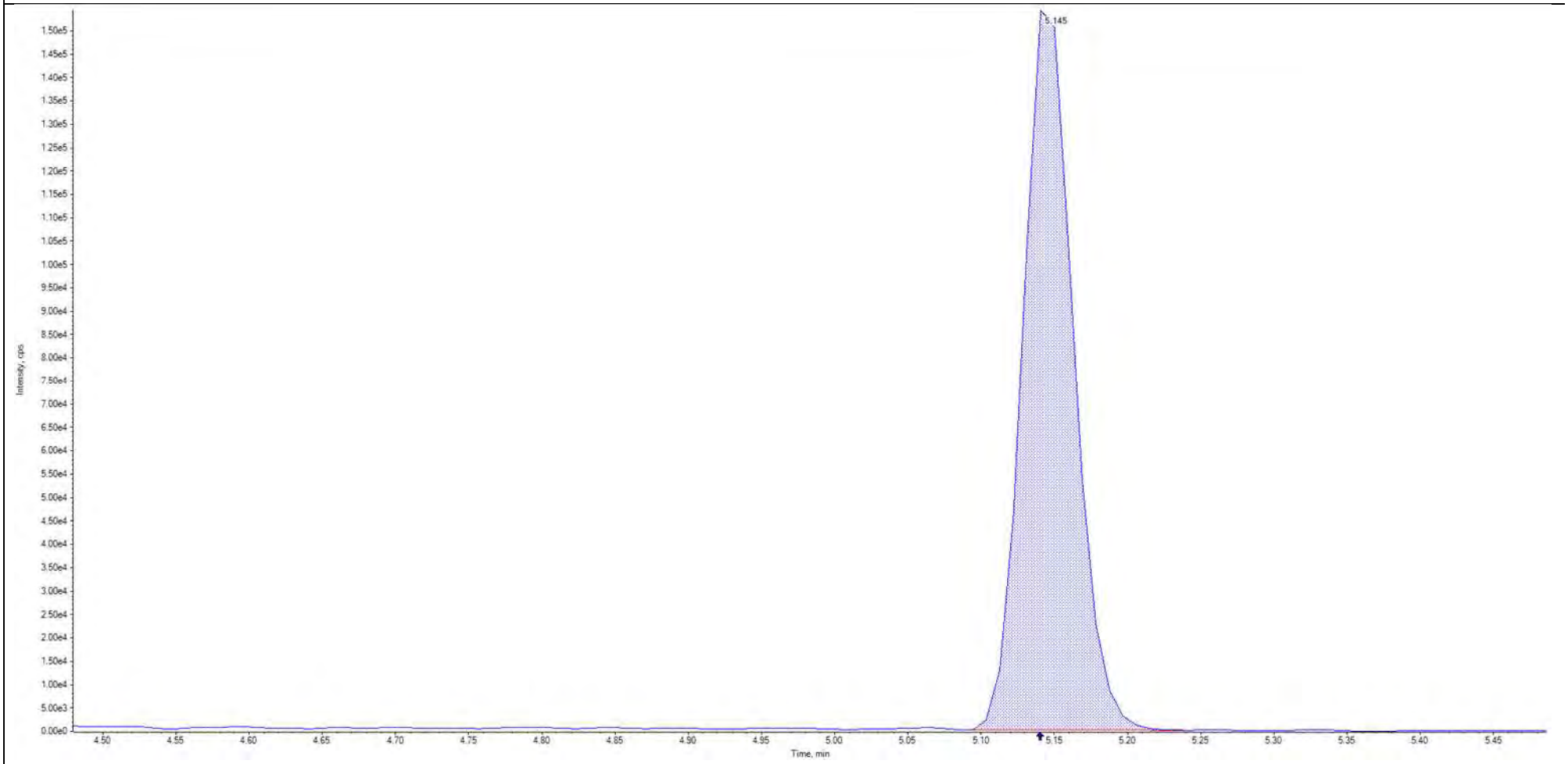
13C3-PFHxS
Sample: L2450786-09



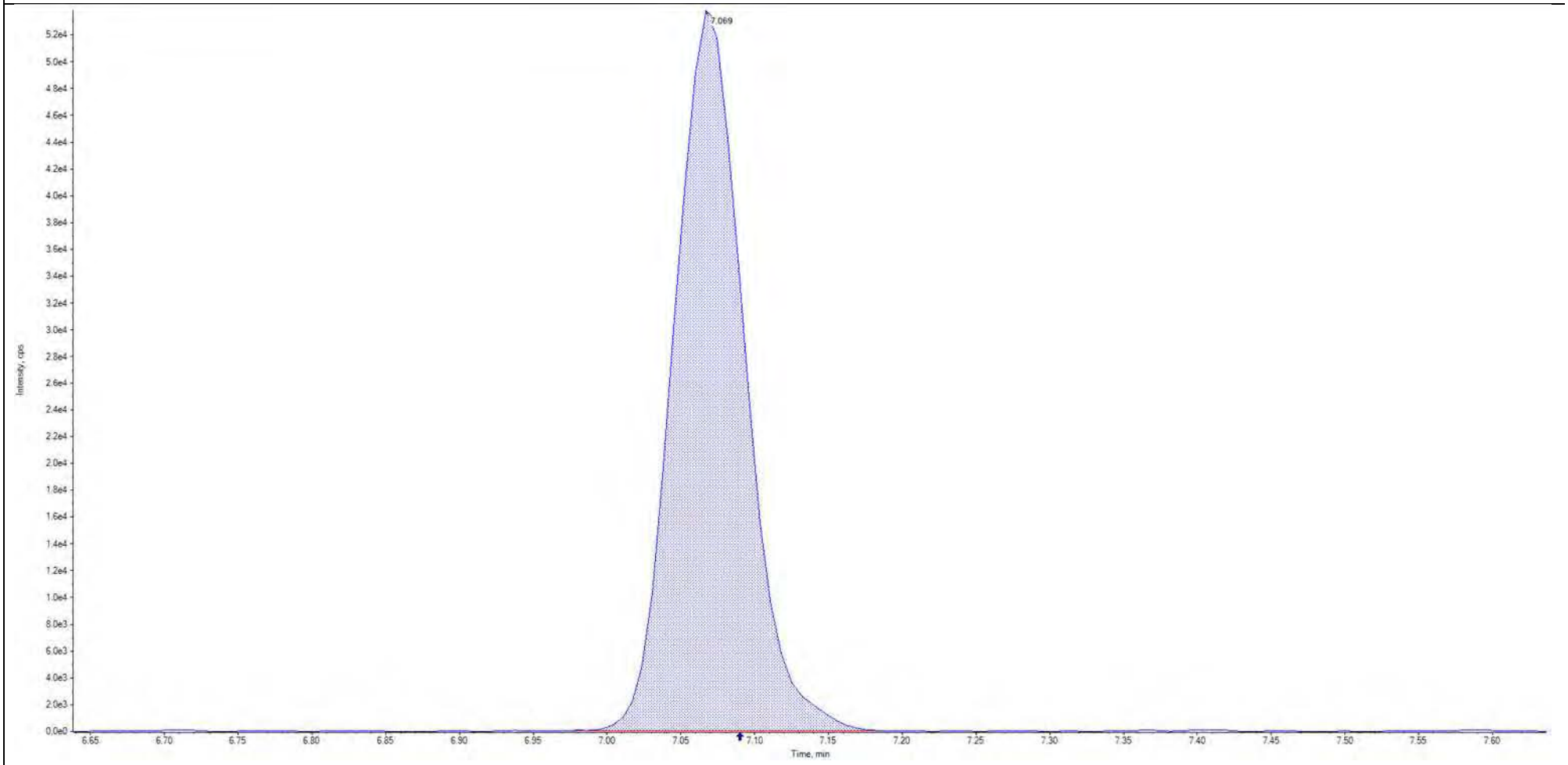
13C8-PFOS
Sample: L2450786-09



13C2-4:2FTS
Sample: L2450786-09



13C2-6:2FTS
Sample: L2450786-09



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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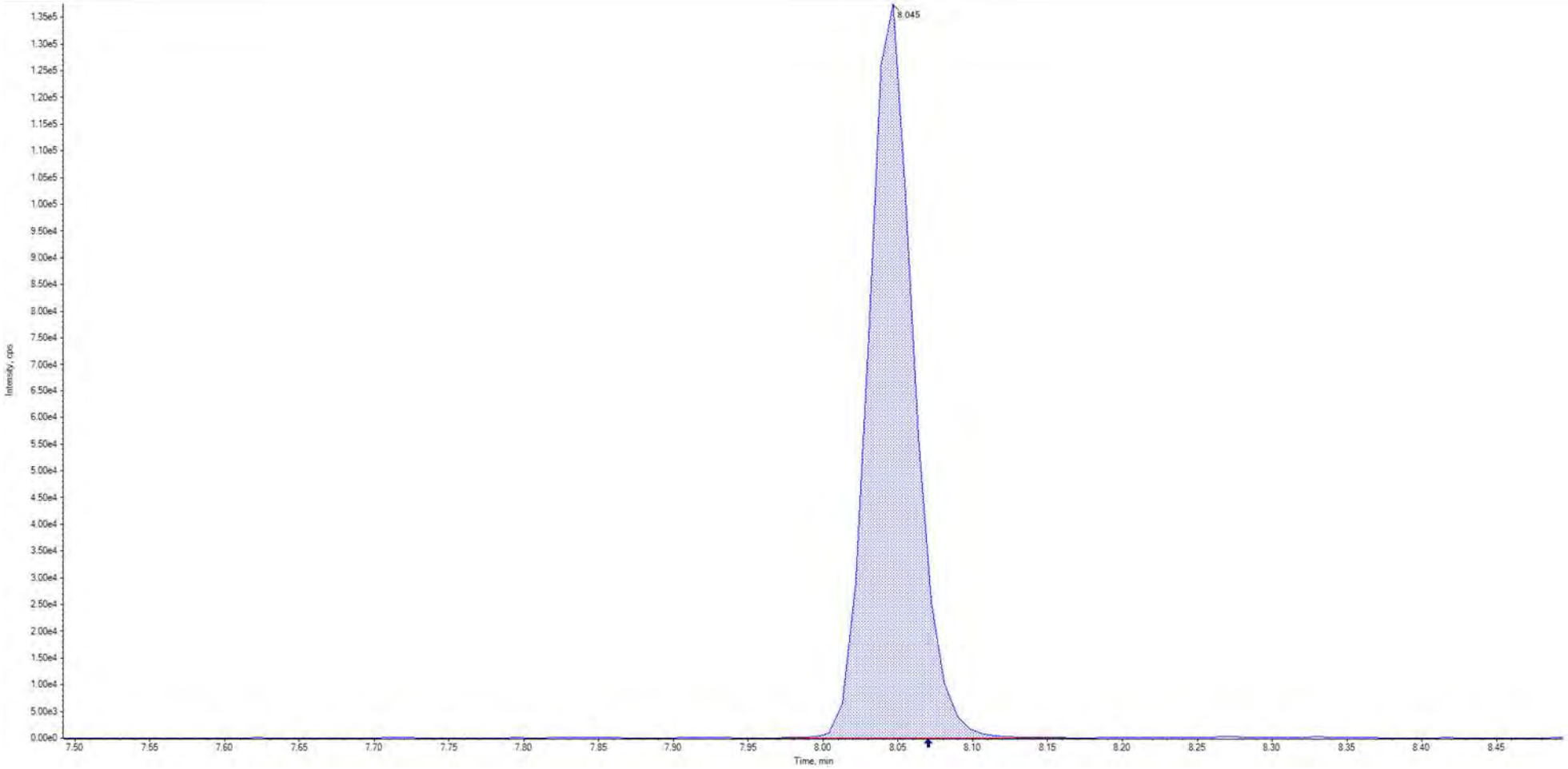
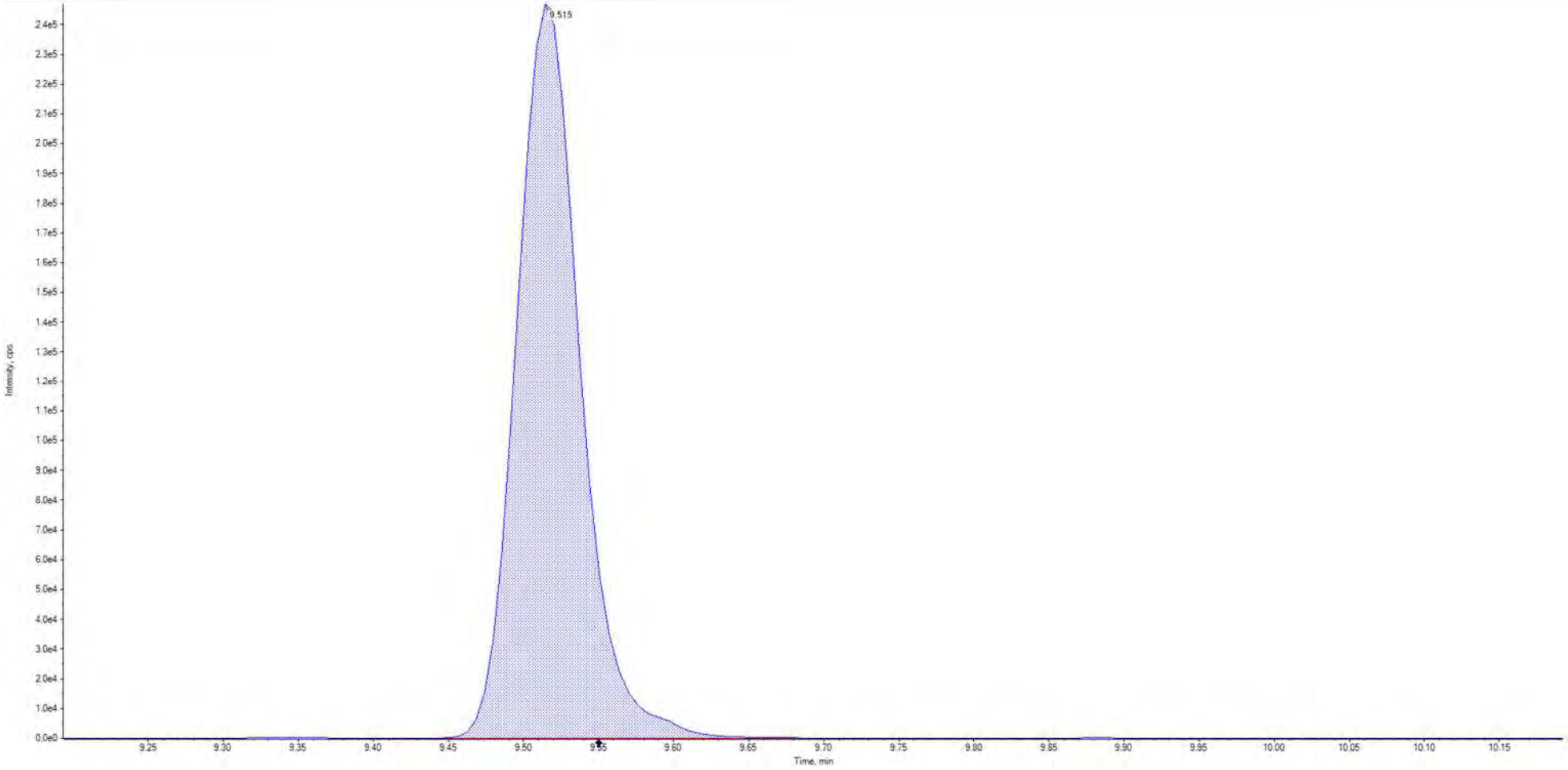
Generated: 9/19/2024 8:04:31 AM

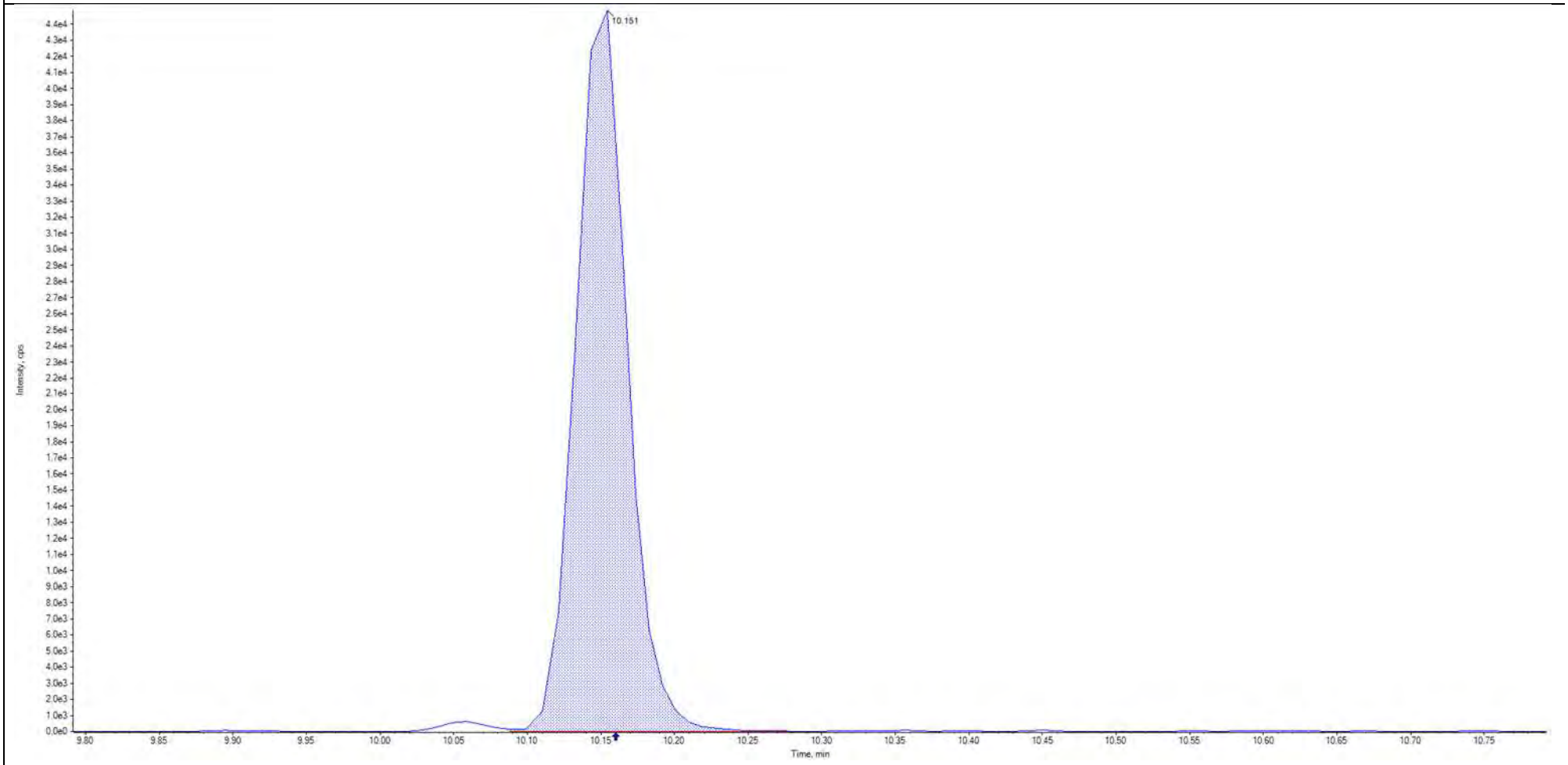
13C2-8:2FTS
Sample: L2450786-09



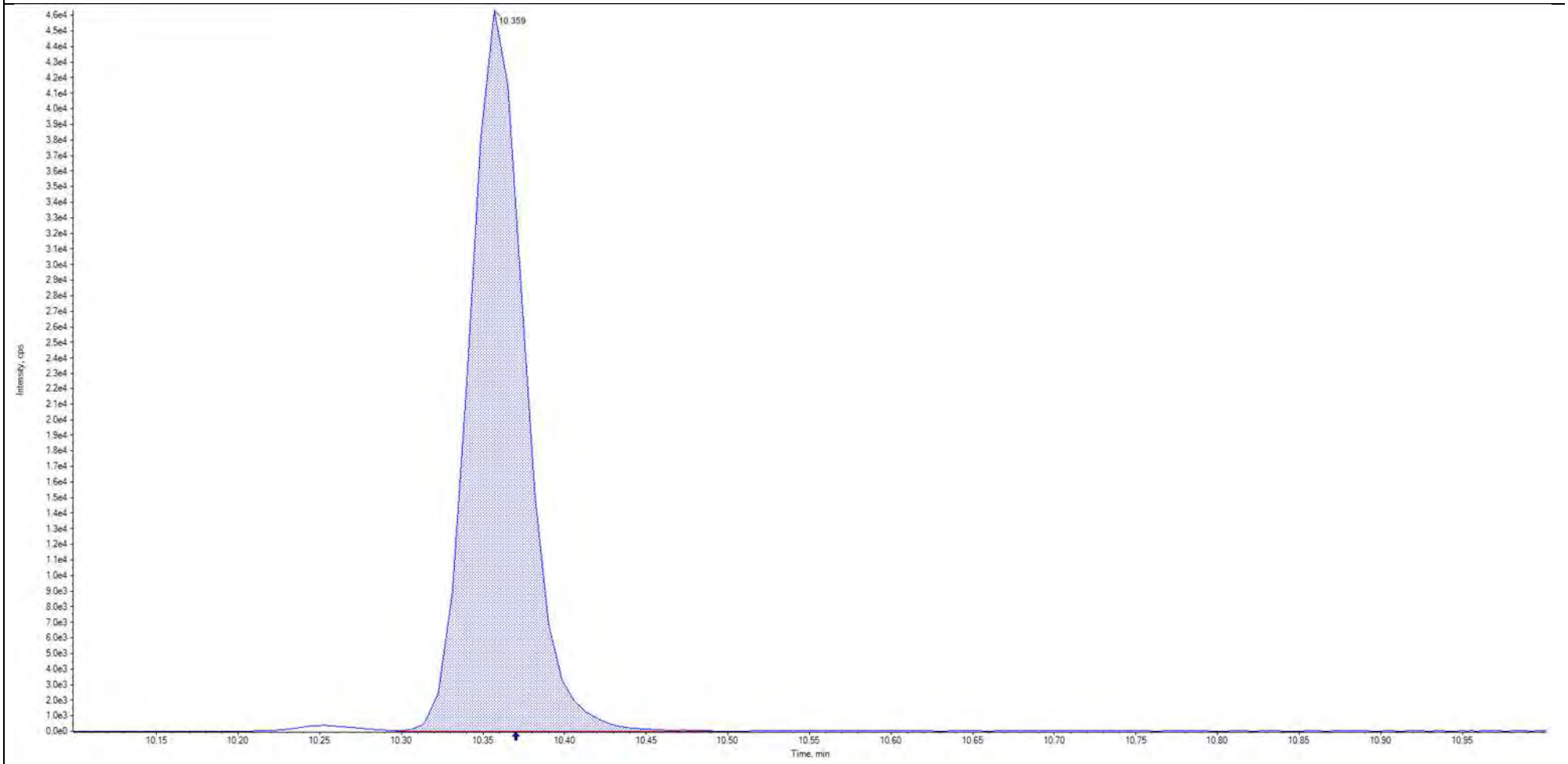
13C8-PFOSA
Sample: L2450786-09



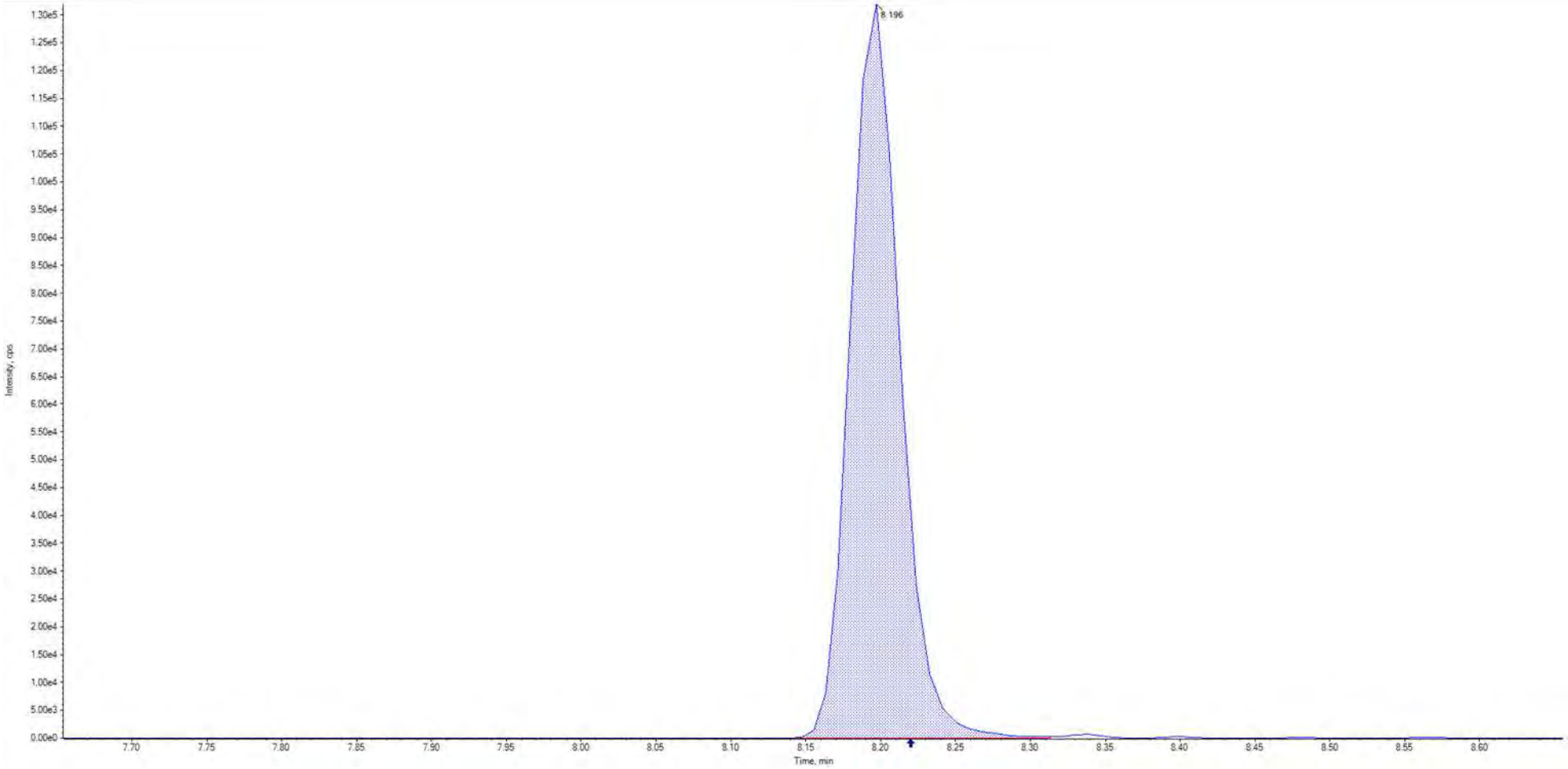
d3-NMeFOSA
Sample: L2450786-09



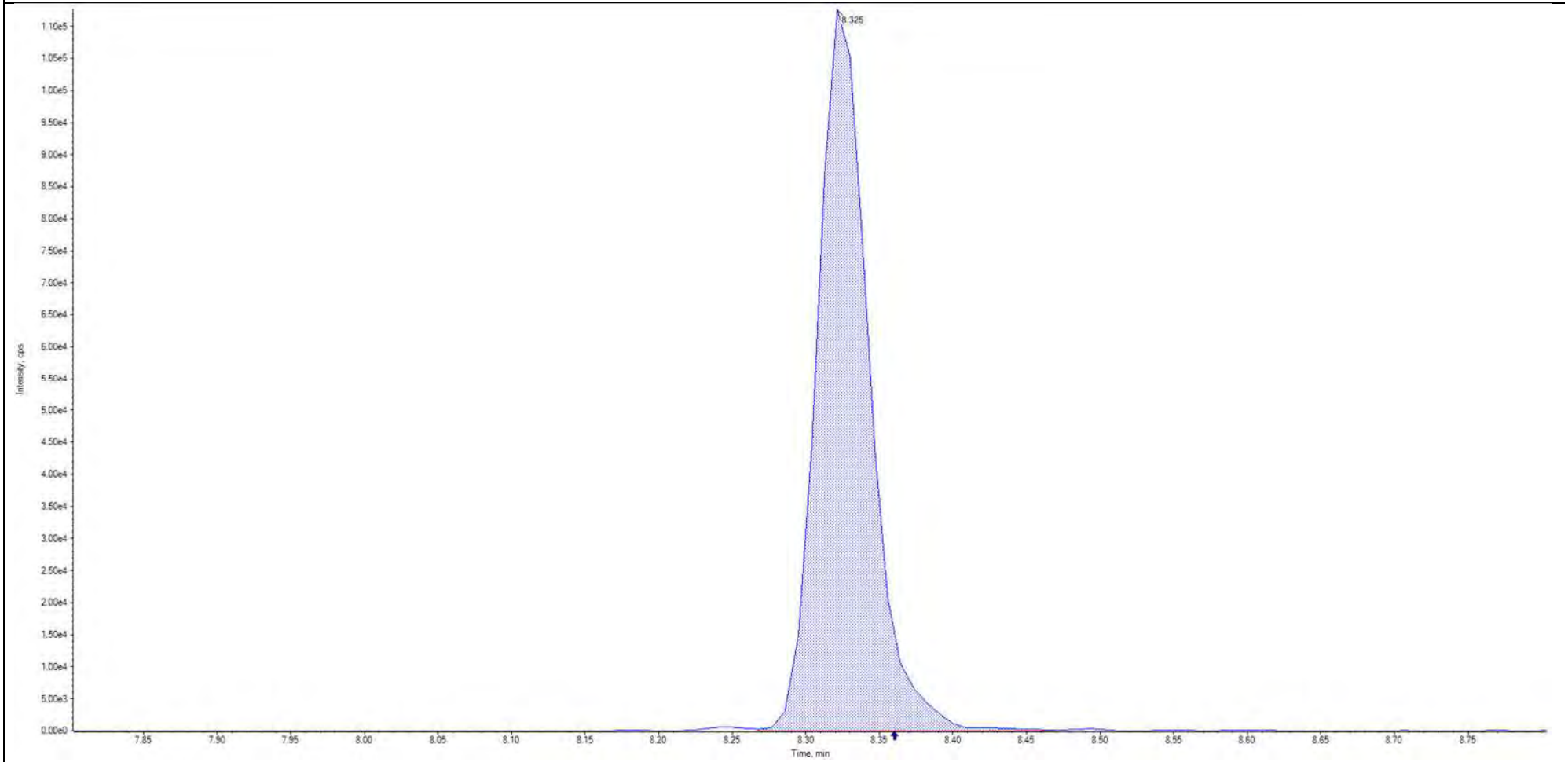
d5-NEtFOSA
Sample: L2450786-09



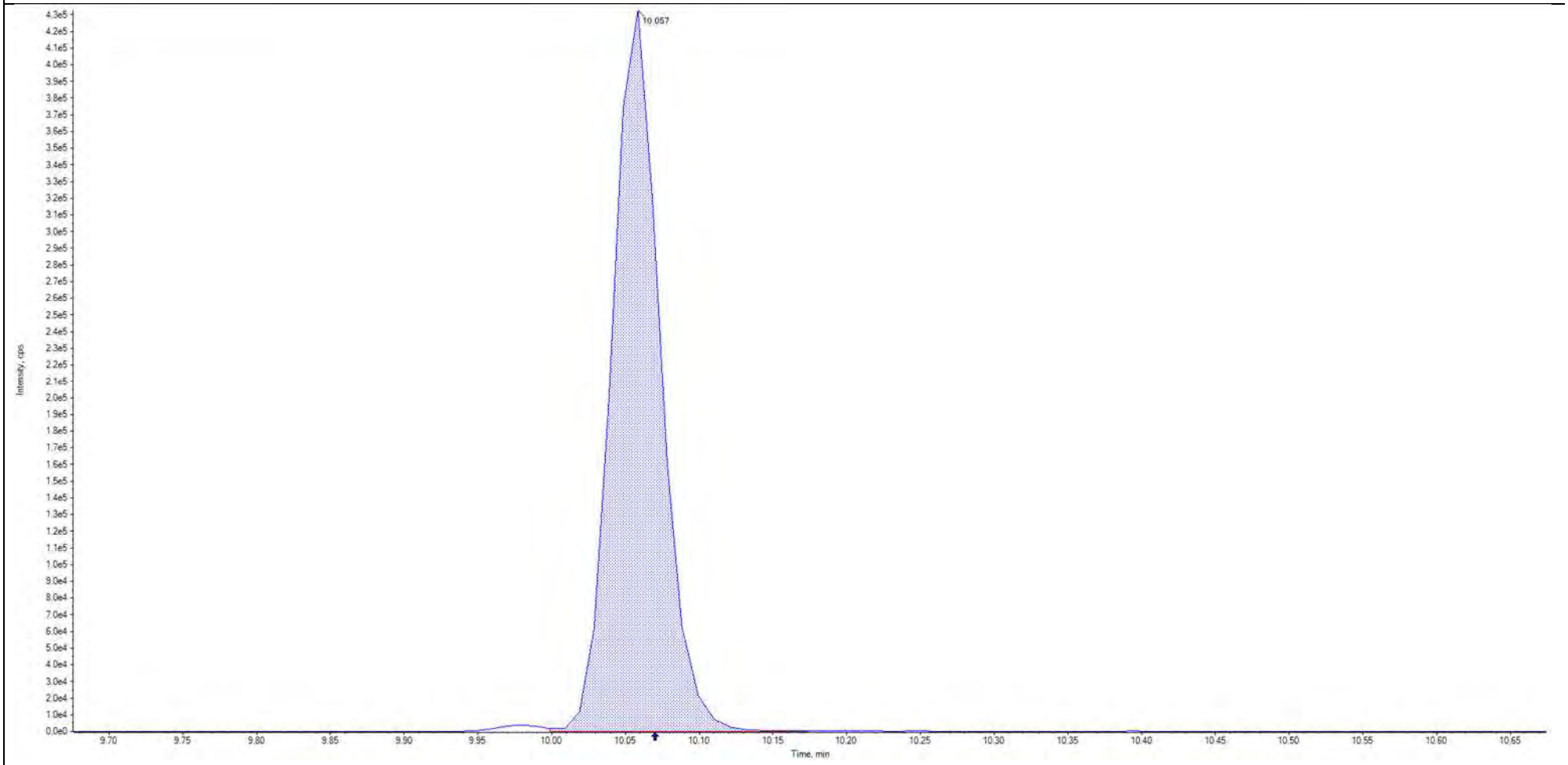
d3-NMeFOSAA
Sample: L2450786-09



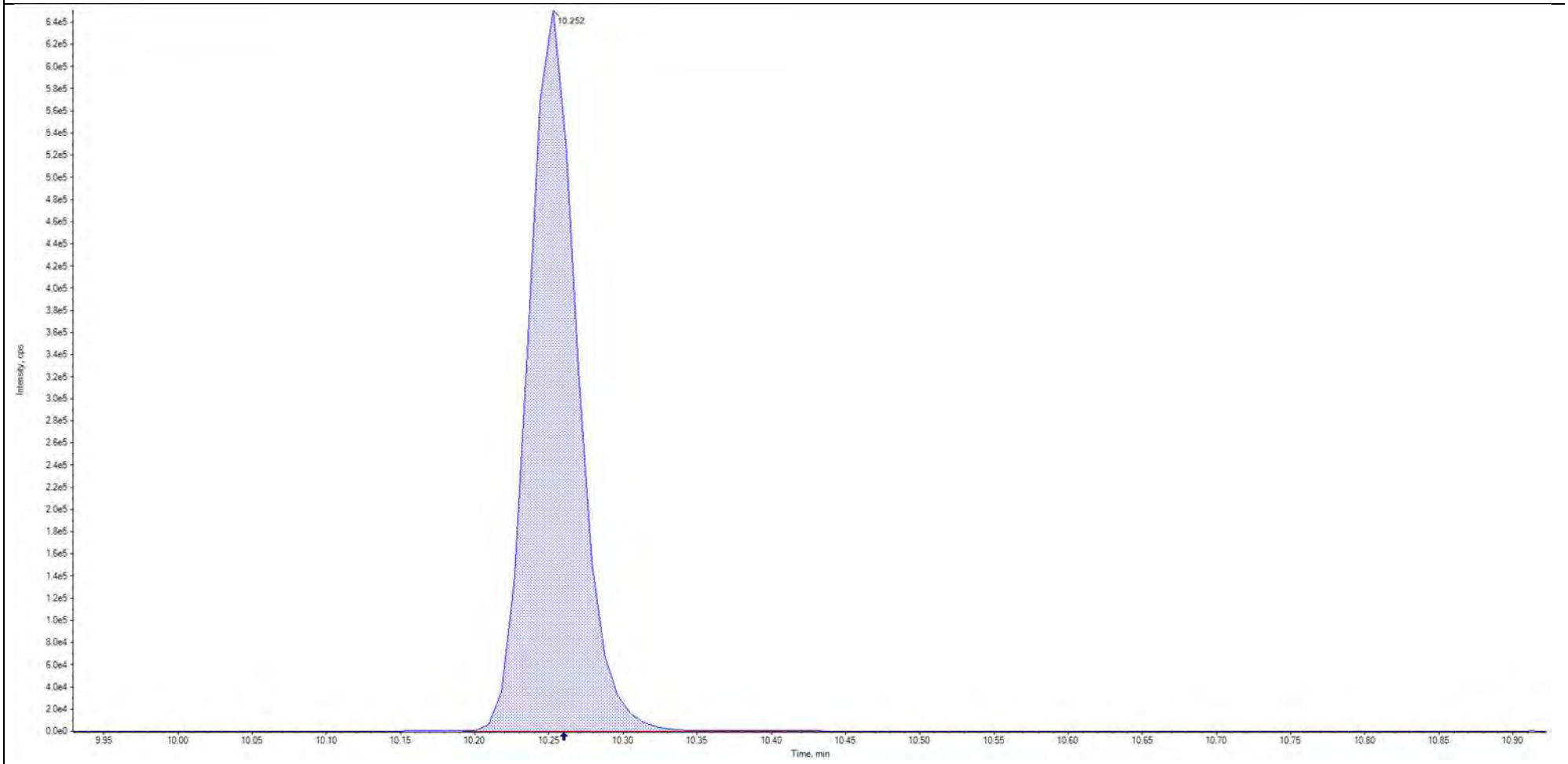
d5-NEtFOSAA
Sample: L2450786-09



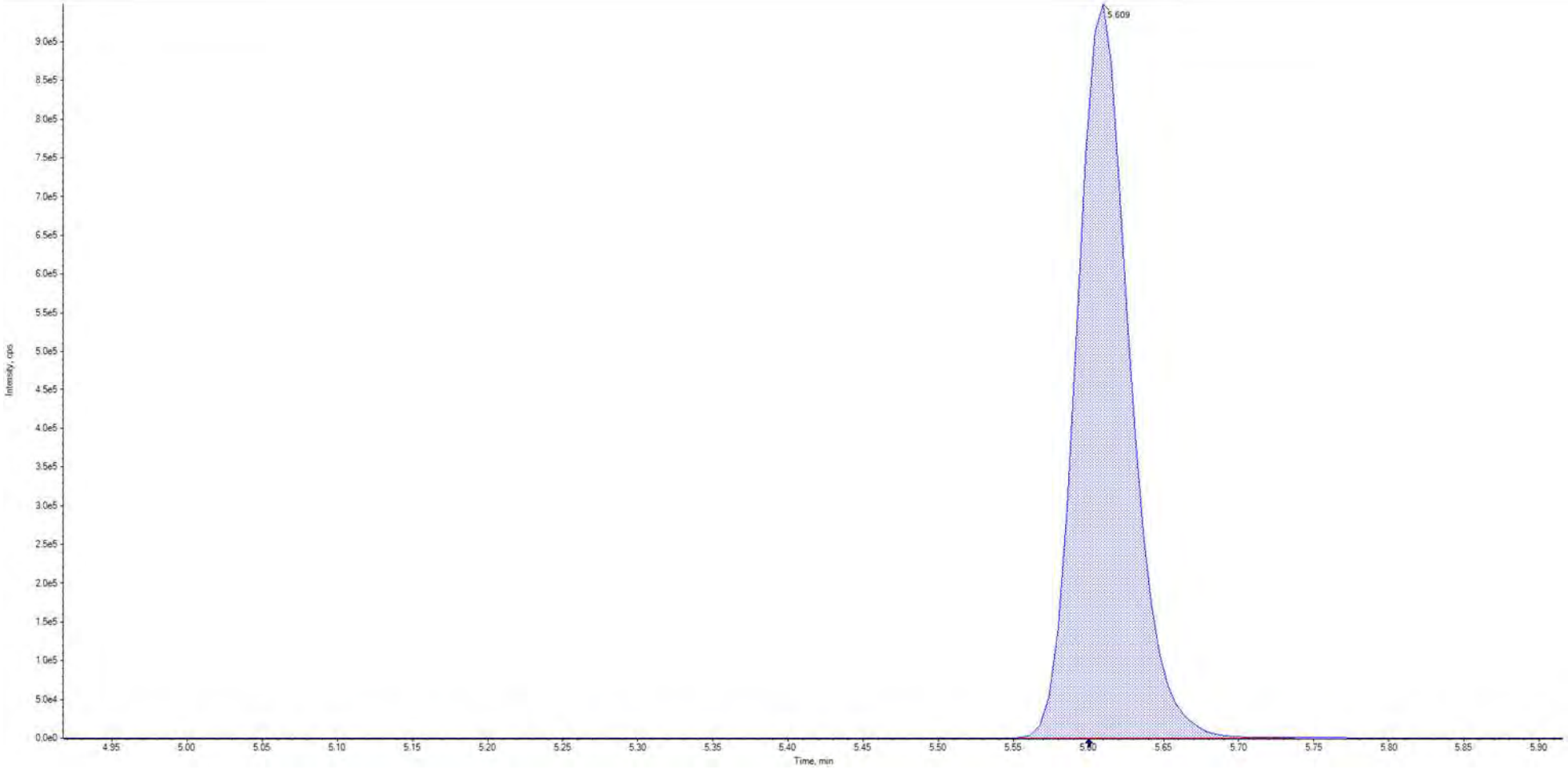
d7-NMeFOSE
Sample: L2450786-09



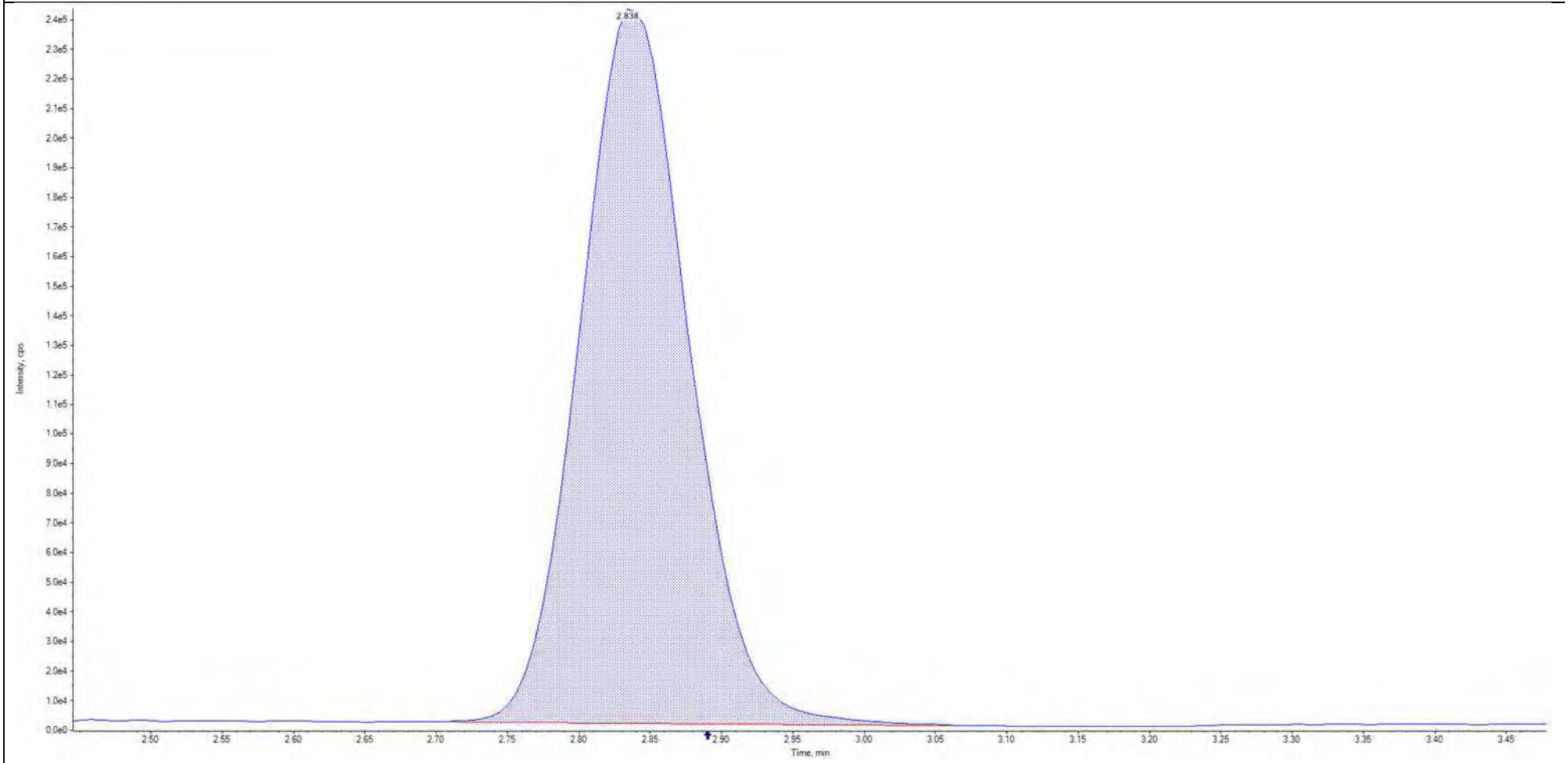
d9-NEtFOSE
Sample: L2450786-09



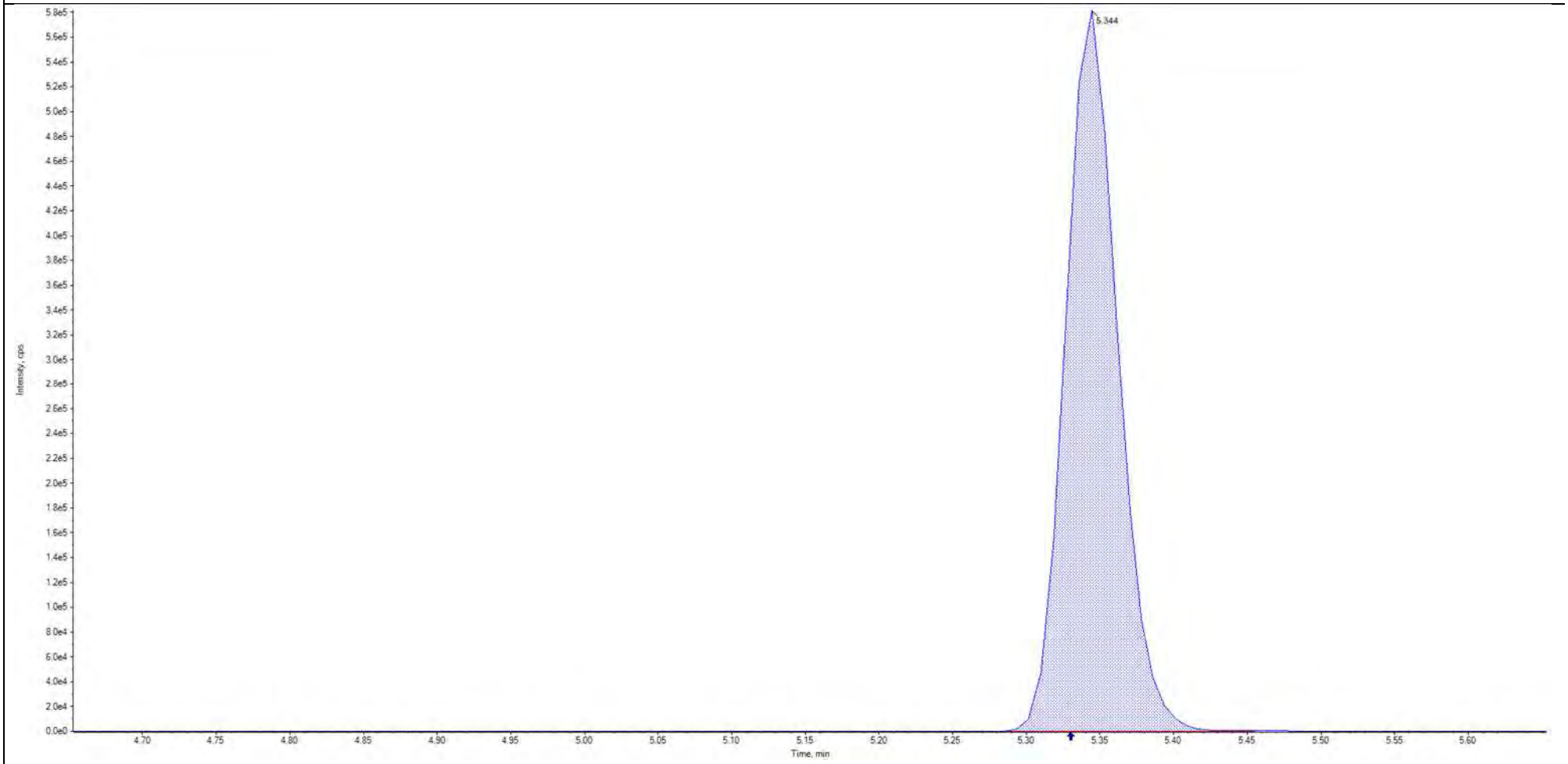
13C3-HFPO-DA
Sample: L2450786-09



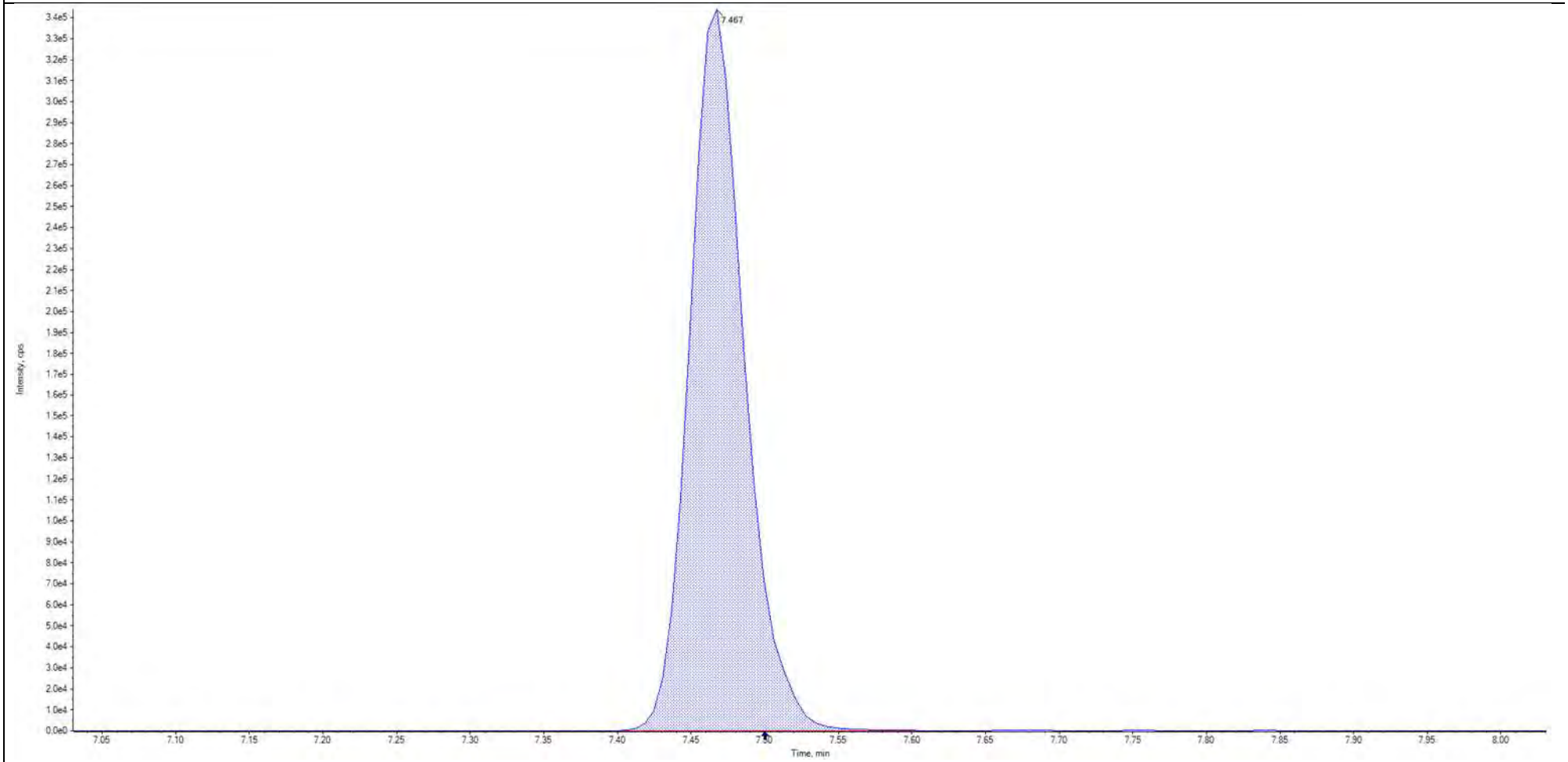
13C3-PFBA
Sample: L2450786-09



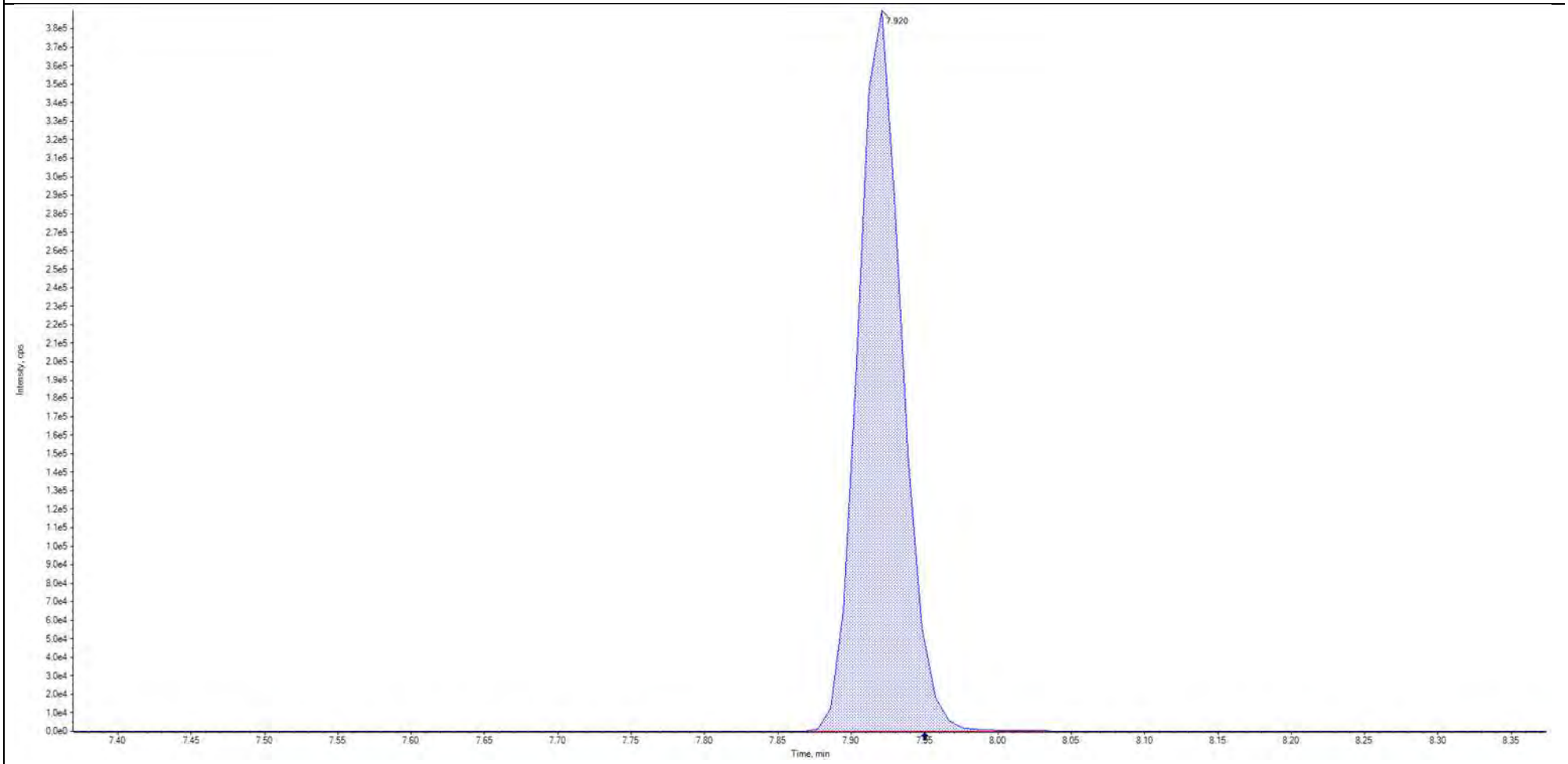
13C2-PFHxA
Sample: L2450786-09



13C4-PFOA
Sample: L2450786-09



13C5-PFNA
Sample: L2450786-09



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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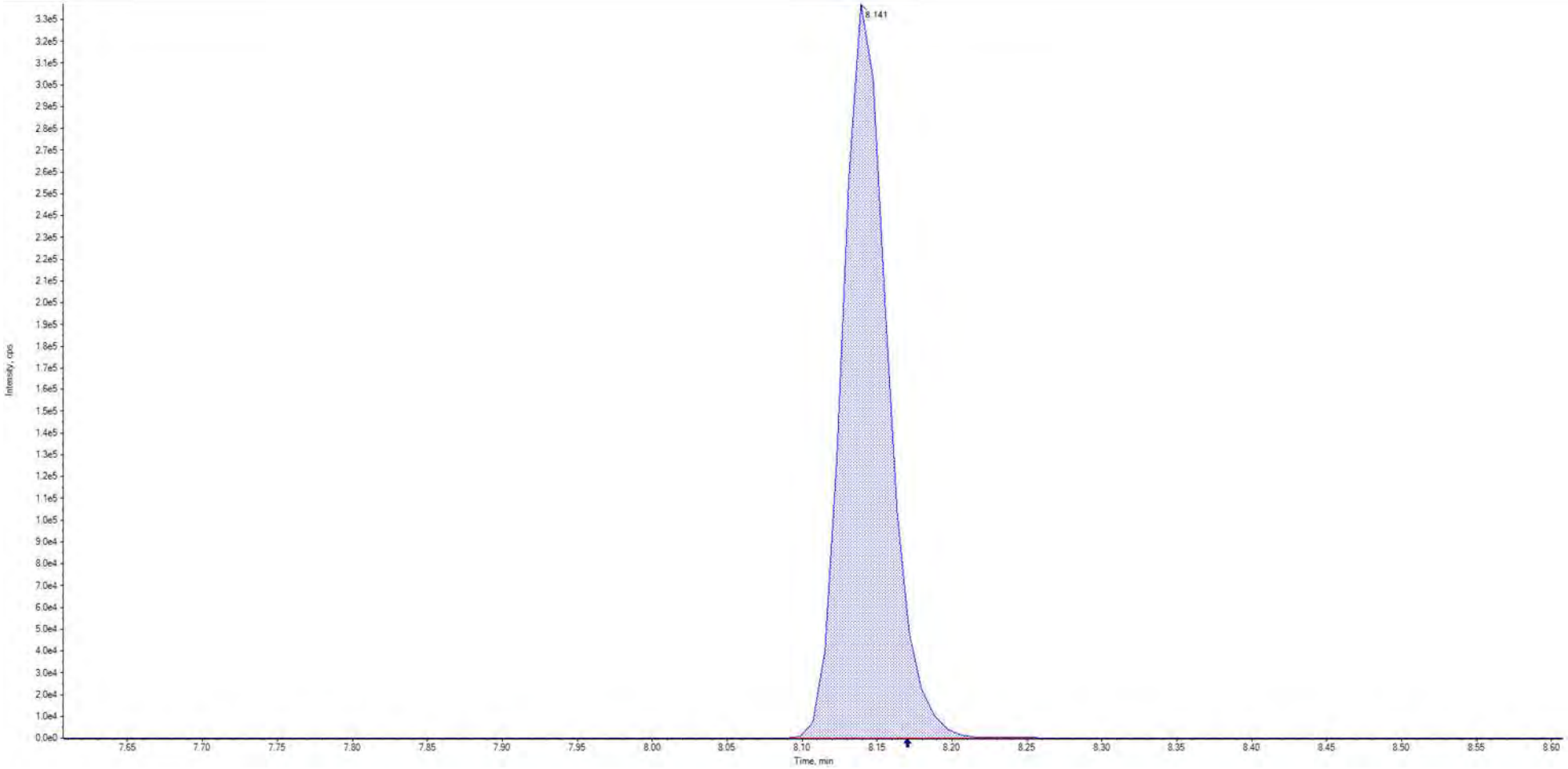
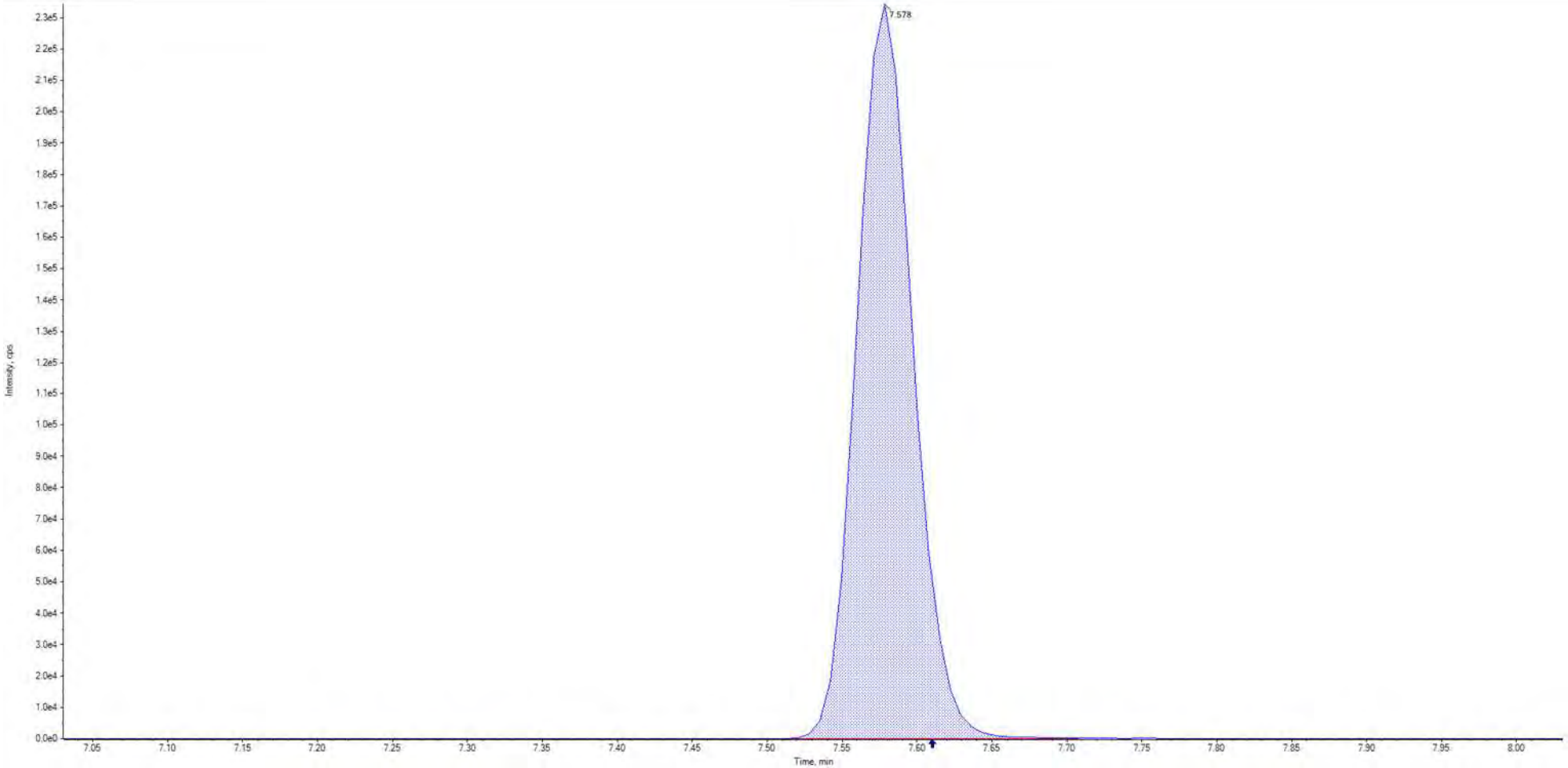
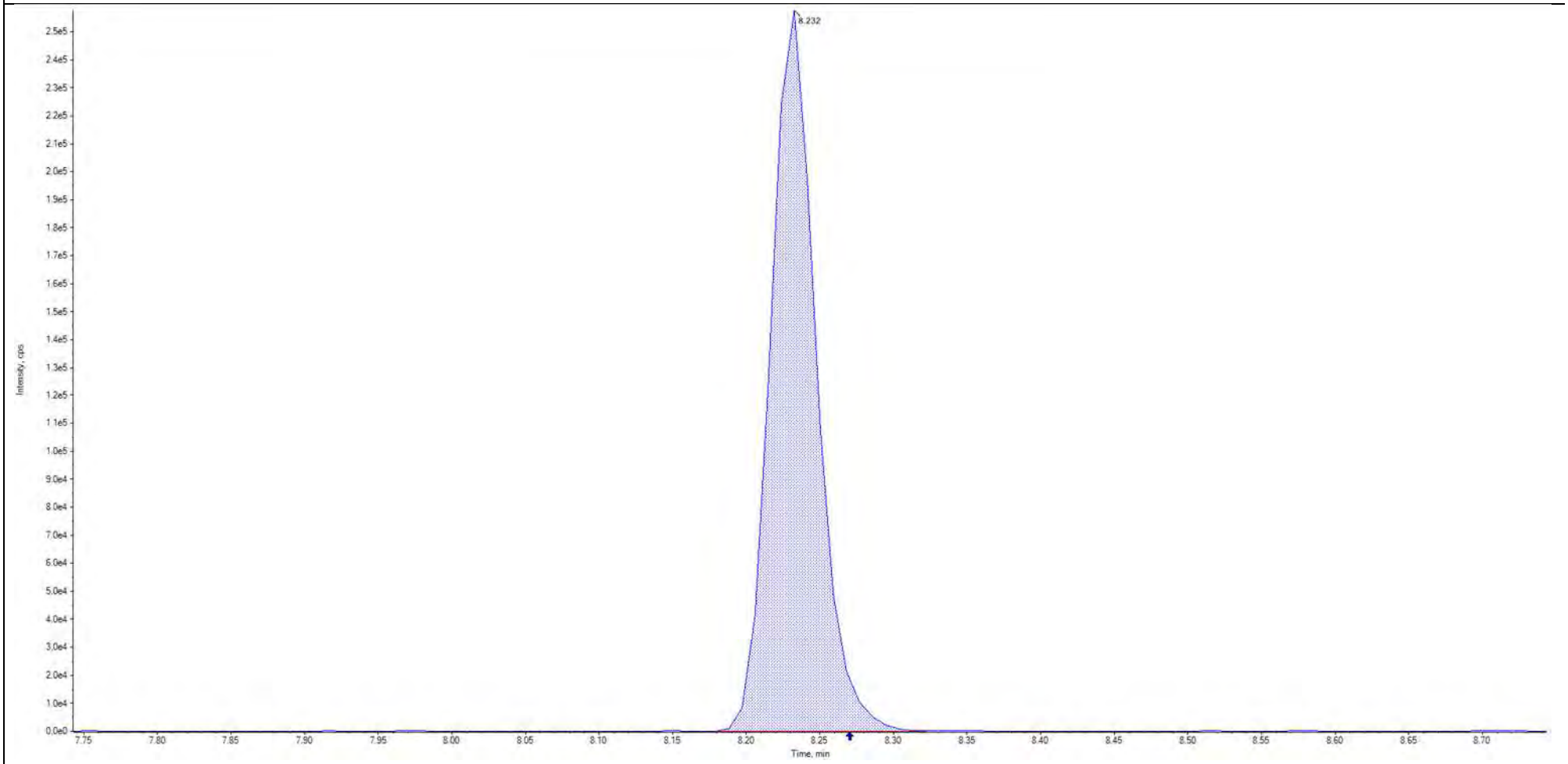
13C2-PFDA
Sample: L2450786-09



18O2-PFHxS
Sample: L2450786-09



13C4-PFOS
Sample: L2450786-09



Quantity Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_21.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

Method: EPA1633_NIS_CALC.qmethod
Calibration: 240813_1633_ICAL

ID: L2450786-11
Name: SCI05_240919_22.wiff
Date & Time: 2024-09-19T09:49:24
Description: WG1973506,WG1973357,ICAL21391
Instrument: Triple Quad 5500+
User: LCMS05:AC

LC/MS-MS Method:EPA_1633.dam

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
1	PFBA	375-22-4	N/A	213.0 / 169.0	N/A		N/A	N/A	N/A	N/A	N/A
2	PFPeA	2706-90-3	N/A	263.0 / 219.0	N/A		N/A	N/A	0.007	N/A	N/A
3	PFPeA_2	2706-90-3	N/A	263.0 / 68.9	N/A		N/A	N/A	0.007	N/A	N/A
4	PFHxA	307-24-4	N/A	313.0 / 269.0	N/A		N/A	N/A	0.072	N/A	N/A
5	PFHxA_2	307-24-4	N/A	313.0 / 119.0	N/A		N/A	N/A	0.072	N/A	N/A
6	PFHpA	375-85-9	N/A	363.1 / 319.0	N/A		N/A	N/A	0.297	N/A	N/A
7	PFHpA_2	375-85-9	N/A	363.1 / 169.0	N/A		N/A	N/A	0.297	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
8	PFOA	335-67-1	N/A	413.1 / 369.1	N/A		N/A	N/A	0.586	N/A	N/A
9	PFOA_2	335-67-1	N/A	413.1 / 169.0	N/A		N/A	N/A	0.586	N/A	N/A
10	PFNA	375-95-1	N/A	462.8 / 418.9	N/A		N/A	N/A	0.313	N/A	N/A
11	PFNA_2	375-95-1	N/A	462.8 / 218.9	N/A		N/A	N/A	0.313	N/A	N/A
12	PFDA	335-76-2	N/A	513.1 / 469.1	N/A		N/A	N/A	0.142	N/A	N/A
13	PFDA_2	335-76-2	N/A	513.1 / 219.0	N/A		N/A	N/A	0.142	N/A	N/A
14	PFUnA	2058-94-8	N/A	563.1 / 519.1	N/A		N/A	N/A	0.194	N/A	N/A
15	PFUnA_2	2058-94-8	N/A	563.1 / 269.0	N/A		N/A	N/A	0.194	N/A	N/A
16	PFDoA	307-55-1	N/A	613.1 / 569.1	N/A		N/A	N/A	0.167	N/A	N/A
17	PFDoA_2	307-55-1	N/A	613.1 / 319.0	N/A		N/A	N/A	0.167	N/A	N/A
18	PFTrDA	72629-94-8	N/A	663.1 / 619.1	N/A		N/A	N/A	0.228	N/A	N/A
19	PFTrDA_2	72629-94-8	N/A	663.1 / 169.0	N/A		N/A	N/A	0.228	N/A	N/A
20	PFTeDA	376-06-7	N/A	713.1 / 669.1	N/A		N/A	N/A	0.137	N/A	N/A
21	PFTeDA_2	376-06-7	N/A	713.1 / 169.0	N/A		N/A	N/A	0.137	N/A	N/A
22	PFBS	375-73-5	N/A	299.1 / 80.1	N/A		N/A	N/A	0.396	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
23	PFBS_2	375-73-5	N/A	299.1 / 99.1	N/A		N/A	N/A	0.396	N/A	N/A
24	PFPeS	2706-91-4	N/A	349.1 / 80.1	N/A		N/A	N/A	0.299	N/A	N/A
25	PFPeS_2	2706-91-4	N/A	349.1 / 99.1	N/A		N/A	N/A	0.299	N/A	N/A
26	PFHxS	355-46-4	N/A	399.1 / 80.1	N/A		N/A	N/A	0.315	N/A	N/A
27	PFHxS_2	355-46-4	N/A	399.1 / 99.1	N/A		N/A	N/A	0.315	N/A	N/A
28	PFHpS	375-92-8	N/A	449.1 / 80.1	N/A		N/A	N/A	0.287	N/A	N/A
29	PFHpS_2	375-92-8	N/A	449.1 / 99.1	N/A		N/A	N/A	0.287	N/A	N/A
30	PFOS	1763-23-1	N/A	499.1 / 80.1	N/A		N/A	N/A	0.238	N/A	N/A
31	PFOS_2	1763-23-1	N/A	499.1 / 99.1	N/A		N/A	N/A	0.238	N/A	N/A
32	PFNS	68259-12-1	N/A	549.1 / 80.1	N/A		N/A	N/A	0.301	N/A	N/A
33	PFNS_2	68259-12-1	N/A	549.1 / 99.1	N/A		N/A	N/A	0.301	N/A	N/A
34	PFDS	335-77-3	N/A	599.1 / 80.1	N/A		N/A	N/A	0.275	N/A	N/A
35	PFDS_2	335-77-3	N/A	599.1 / 99.1	N/A		N/A	N/A	0.275	N/A	N/A
36	PFDoS	79780-39-5	N/A	699.2 / 80.1	N/A		N/A	N/A	0.274	N/A	N/A
37	PFDoS_2	79780-39-5	N/A	699.2 / 99.1	N/A		N/A	N/A	0.274	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
38	4:2FTS	757124-72-4	N/A	327.1 / 307.1	N/A		N/A	N/A	0.516	N/A	N/A
39	4:2FTS_2	757124-72-4	N/A	327.1 / 81.1	N/A		N/A	N/A	0.516	N/A	N/A
40	6:2FTS	27619-97-2	N/A	427.2 / 407.2	N/A		N/A	N/A	0.565	N/A	N/A
41	6:2FTS_2	27619-97-2	N/A	427.2 / 81.1	N/A		N/A	N/A	0.565	N/A	N/A
42	8:2FTS	39108-34-4	N/A	527.2 / 507.2	N/A		N/A	N/A	0.662	N/A	N/A
43	8:2FTS_2	39108-34-4	N/A	527.2 / 81.1	N/A		N/A	N/A	0.662	N/A	N/A
44	PFOSA	754-91-6	N/A	498.1 / 78.1	N/A		N/A	N/A	0.025	N/A	N/A
45	PFOSA_2	754-91-6	N/A	498.1 / 478.0	N/A		N/A	N/A	0.025	N/A	N/A
46	NMeFOSA	31506-32-8	N/A	512.2 / 219.0	N/A		N/A	N/A	1.551	N/A	N/A
47	NMeFOSA_2	31506-32-8	N/A	512.2 / 169.0	N/A		N/A	N/A	1.551	N/A	N/A
48	NEtFOSA	4151-50-2	N/A	526.2 / 219.0	N/A		N/A	N/A	1.285	N/A	N/A
49	NEtFOSA_2	4151-50-2	N/A	526.2 / 169.0	N/A		N/A	N/A	1.285	N/A	N/A
50	NMeFOSAA	2355-31-9	N/A	570.2 / 419.1	N/A		N/A	N/A	0.700	N/A	N/A
51	NMeFOSAA_2	2355-31-9	N/A	570.2 / 483.0	N/A		N/A	N/A	0.700	N/A	N/A
52	NEtFOSAA	2991-50-6	N/A	584.2 / 419.1	N/A		N/A	N/A	0.487	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
53	NEtFOSAA_2	2991-50-6	N/A	584.2 / 526.2	N/A		N/A	N/A	0.487	N/A	N/A
54	NMeFOSE	24448-09-7	N/A	616.1 / 58.9	N/A		N/A	N/A	N/A	N/A	N/A
55	NEtFOSE	1691-99-2	N/A	630.0 / 58.9	N/A		N/A	N/A	N/A	N/A	N/A
56	HFPO-DA	13252-13-6	N/A	285.0 / 169.0	N/A		N/A	N/A	0.464	N/A	N/A
57	HFPO-DA_2	13252-13-6	N/A	285.0 / 184.9	N/A		N/A	N/A	0.464	N/A	N/A
58	ADONA	919005-14-4	N/A	377.1 / 251.0	N/A		N/A	N/A	0.634	N/A	N/A
59	ADONA_2	919005-14-4	N/A	377.1 / 84.8	N/A		N/A	N/A	0.634	N/A	N/A
60	9Cl-PF3ONS	756426-58-1	N/A	530.8 / 351.1	N/A		N/A	N/A	0.322	N/A	N/A
61	9Cl-PF3ONS_2	756426-58-1	N/A	532.8 / 353.0	N/A		N/A	N/A	0.322	N/A	N/A
62	11Cl-PF3OUdS	763051-92-9	N/A	630.9 / 451.0	N/A		N/A	N/A	0.331	N/A	N/A
63	11Cl-PF3OUdS_2	763051-92-9	N/A	632.9 / 452.9	N/A		N/A	N/A	0.331	N/A	N/A
64	3:3FTCA	356-02-5	N/A	241.1 / 177.1	N/A		N/A	N/A	1.074	N/A	N/A
65	3:3FTCA_2	356-02-5	N/A	241.1 / 117.0	N/A		N/A	N/A	1.074	N/A	N/A
66	5:3FTCA	914637-49-3	N/A	341.1 / 237.1	N/A		N/A	N/A	0.953	N/A	N/A
67	5:3FTCA_2	914637-49-3	N/A	341.1 / 217.0	N/A		N/A	N/A	0.953	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
68	7:3FTCA	812-70-4	N/A	441.1 / 316.9	N/A		N/A	N/A	1.558	N/A	N/A
69	7:3FTCA_2	812-70-4	N/A	441.1 / 337.1	N/A		N/A	N/A	1.558	N/A	N/A
70	PFEESA	113507-82-7	N/A	315.1 / 135.0	N/A		N/A	N/A	0.087	N/A	N/A
71	PFEESA_2	113507-82-7	N/A	315.1 / 82.9	N/A		N/A	N/A	0.087	N/A	N/A
72	PFMPA	377-73-1	N/A	229.0 / 85.0	N/A		N/A	N/A	N/A	N/A	N/A
73	PFMBA	863090-89-5	N/A	279.0 / 85.0	N/A		N/A	N/A	N/A	N/A	N/A
74	NFDHA	151772-58-6	N/A	295.0 / 201.0	N/A		N/A	N/A	0.910	N/A	N/A
75	NFDHA_2	151772-58-6	N/A	295.0 / 84.9	N/A		N/A	N/A	0.910	N/A	N/A
76	TDCA	516-50-7	N/A	499.1 / 124.1	N/A		N/A	N/A	40.716	N/A	N/A
77	TDCA_2	516-50-7	N/A	499.1 / 79.9	N/A		N/A	N/A	40.716	N/A	N/A
78	13C2D4-4:2FTS	Surr	N/A	333.2 / 312.1	N/A		N/A	N/A	N/A	N/A	N/A
79	13C2-PFOA	Surr	N/A	415.0 / 370.0	N/A		N/A	N/A	N/A	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C4-PFBA	EIS	2.84	217.0 / 172.0	1074320		4.220	NA	NA	NA	42.2

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C5-PFPeA	EIS	4.64	268.0 / 223.0	715338		2.316	NA	NA	NA	46.3
	13C5-PFHxA	EIS	5.34	318.0 / 273.0	404430		0.997	NA	NA	NA	39.9
	13C4-PFHpA	EIS	6.23	367.0 / 322.0	394579		0.971	NA	NA	NA	38.9
	13C8-PFOA	EIS	7.46	421.0 / 376.0	573747		0.992	NA	NA	NA	39.7
	13C9-PFNA	EIS	7.91	472.0 / 427.0	270879		0.473	NA	NA	NA	37.9
	13C6-PFDA	EIS	8.14	519.0 / 474.0	249190		0.478	NA	NA	NA	38.3
	13C7-PFUnA	EIS	8.41	570.0 / 525.0	238489		0.566	NA	NA	NA	45.3

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C2-PFDoA	EIS	8.82	615.1 / 570.0	199940		0.729	NA	NA	NA	58.3
	13C2-PFTeDA	EIS	9.85	715.1 / 670.1	144626		0.486	NA	NA	NA	38.9
	13C3-PFBS	EIS	5.31	302.1 / 80.1	305440		0.930	NA	NA	NA	39.9
	13C3-PFHxS	EIS	7.57	402.1 / 80.1	221390		0.849	NA	NA	NA	35.8
	13C8-PFOS	EIS	8.23	507.1 / 80.1	221207		0.796	NA	NA	NA	33.2
	13C2-4:2FTS	EIS	5.14	329.1 / 81.1	113685		1.940	NA	NA	NA	41.4
	13C2-6:2FTS	EIS	7.06	429.2 / 81.1	71538		1.666	NA	NA	NA	35.0
	13C2-8:2FTS	EIS	8.04	529.2 / 81.1	117125		1.863	NA	NA	NA	38.8

Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
13C8-PFOSA	EIS	9.51	506.1 / 78.1	464363		1.257	NA	NA	NA	50.3
d3-NMeFOSA	EIS	10.14	515.2 / 219.0	59205		0.952	NA	NA	NA	38.1
d5-NEtFOSA	EIS	10.35	531.2 / 219.0	60816		1.001	NA	NA	NA	40.0
d3-NMeFOSAA	EIS	8.19	573.2 / 419.1	163608		1.164	NA	NA	NA	23.3
d5-NEtFOSAA	EIS	8.32	589.3 / 419.1	149771		2.027	NA	NA	NA	40.5
d7-NMeFOSE	EIS	10.05	623.2 / 58.9	602153		12.539	NA	NA	NA	50.2
d9-NEtFOSE	EIS	10.25	639.2 / 58.9	927072		13.094	NA	NA	NA	52.4

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C3-HFPO-DA	EIS	5.60	287.0 / 169.0	1118889		4.161	NA	NA	NA	41.6
	13C3-PFBA	NIS	2.84	216.0 / 172.0	1113627		5.208	NA	NA	NA	104.2
	13C2-PFHxA	NIS	5.33	315.0 / 270.0	1204710		2.460	NA	NA	NA	98.4
	13C4-PFOA	NIS	7.46	417.0 / 372.0	756988		2.418	NA	NA	NA	96.7
	13C5-PFNA	NIS	7.91	468.0 / 423.0	697491		1.273	NA	NA	NA	101.9
	13C2-PFDA	NIS	8.14	515.1 / 470.1	612061		1.194	NA	NA	NA	95.6
	18O2-PFHxS	NIS	7.57	403.1 / 84.1	530181		2.263	NA	NA	NA	95.5
	13C4-PFOS	NIS	8.23	503.1 / 80.1	491500		2.334	NA	NA	NA	97.5

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Generated: 9/19/2024 8:04:31 AM

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec

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PFBA
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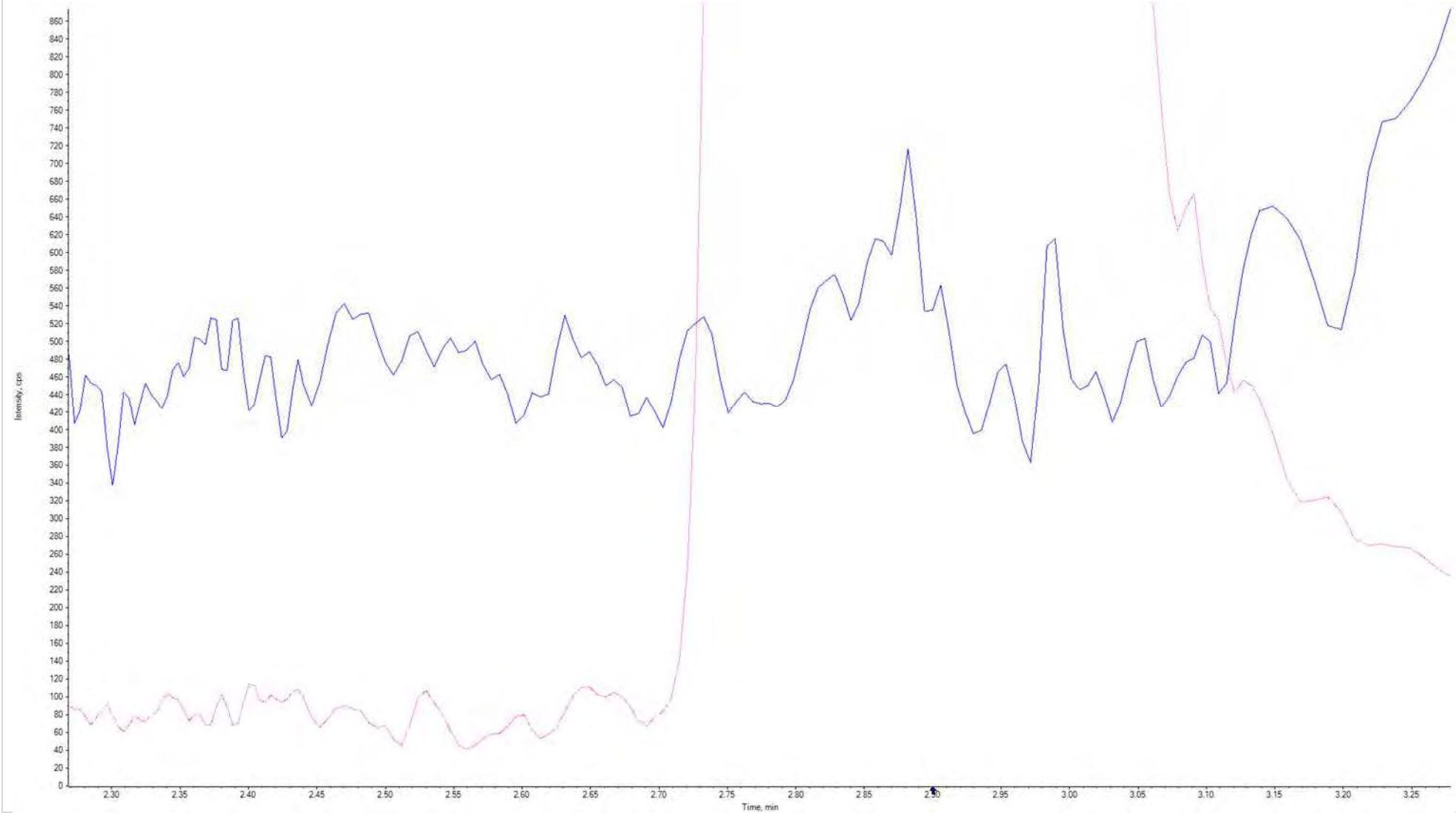

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PFPeA
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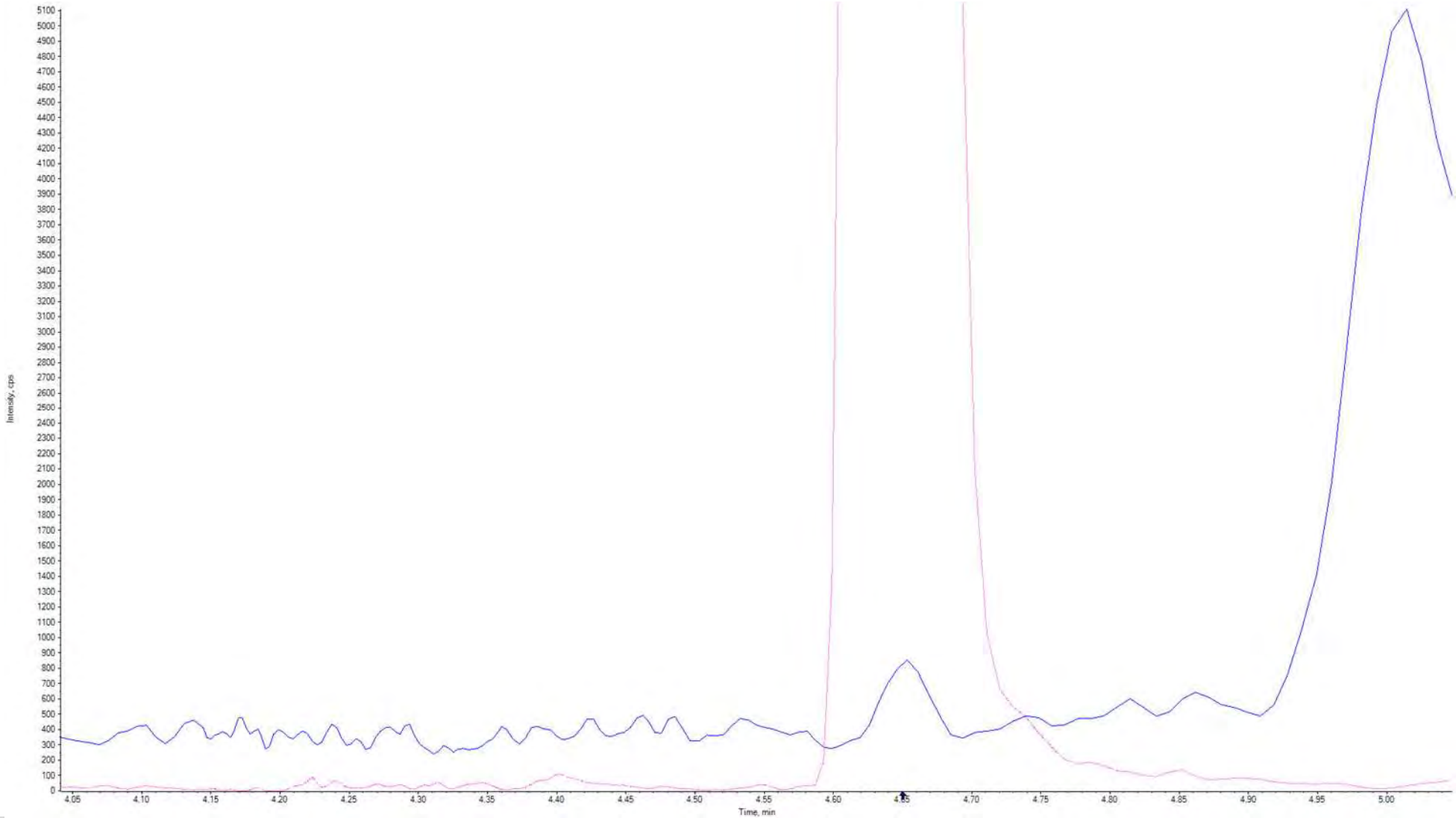

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PFPeA_2
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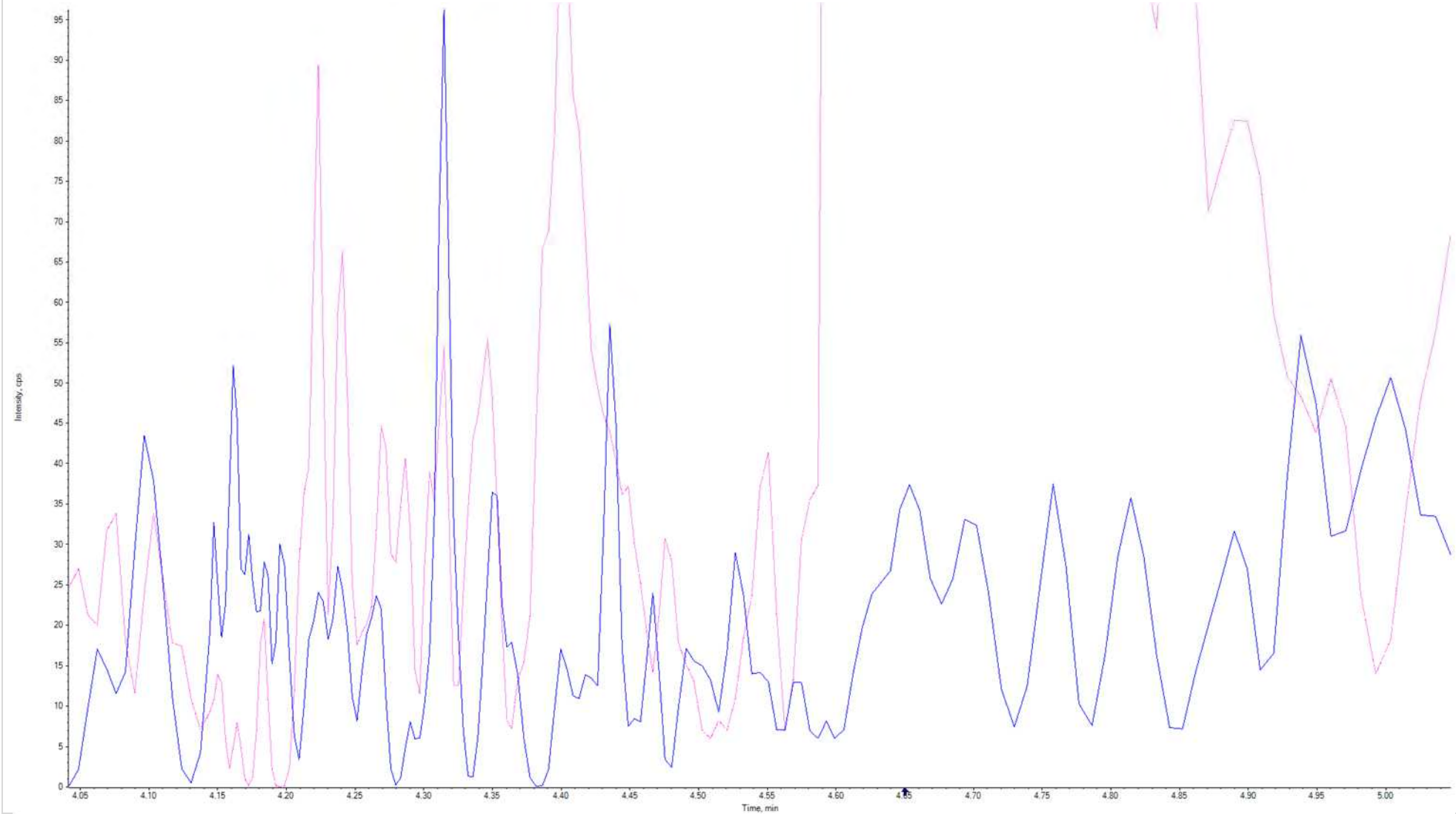

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PFHxA
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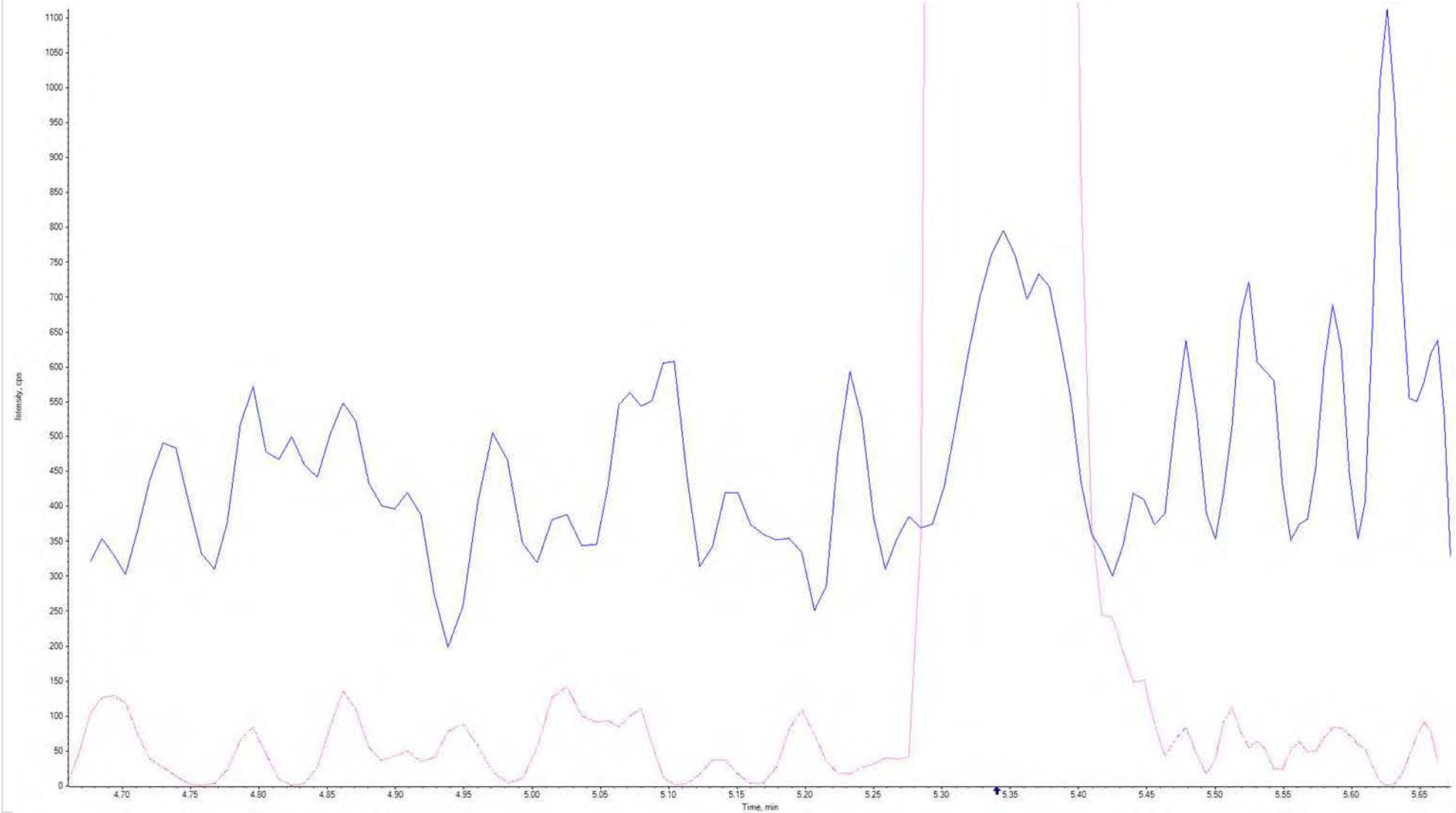

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PFHxA_2
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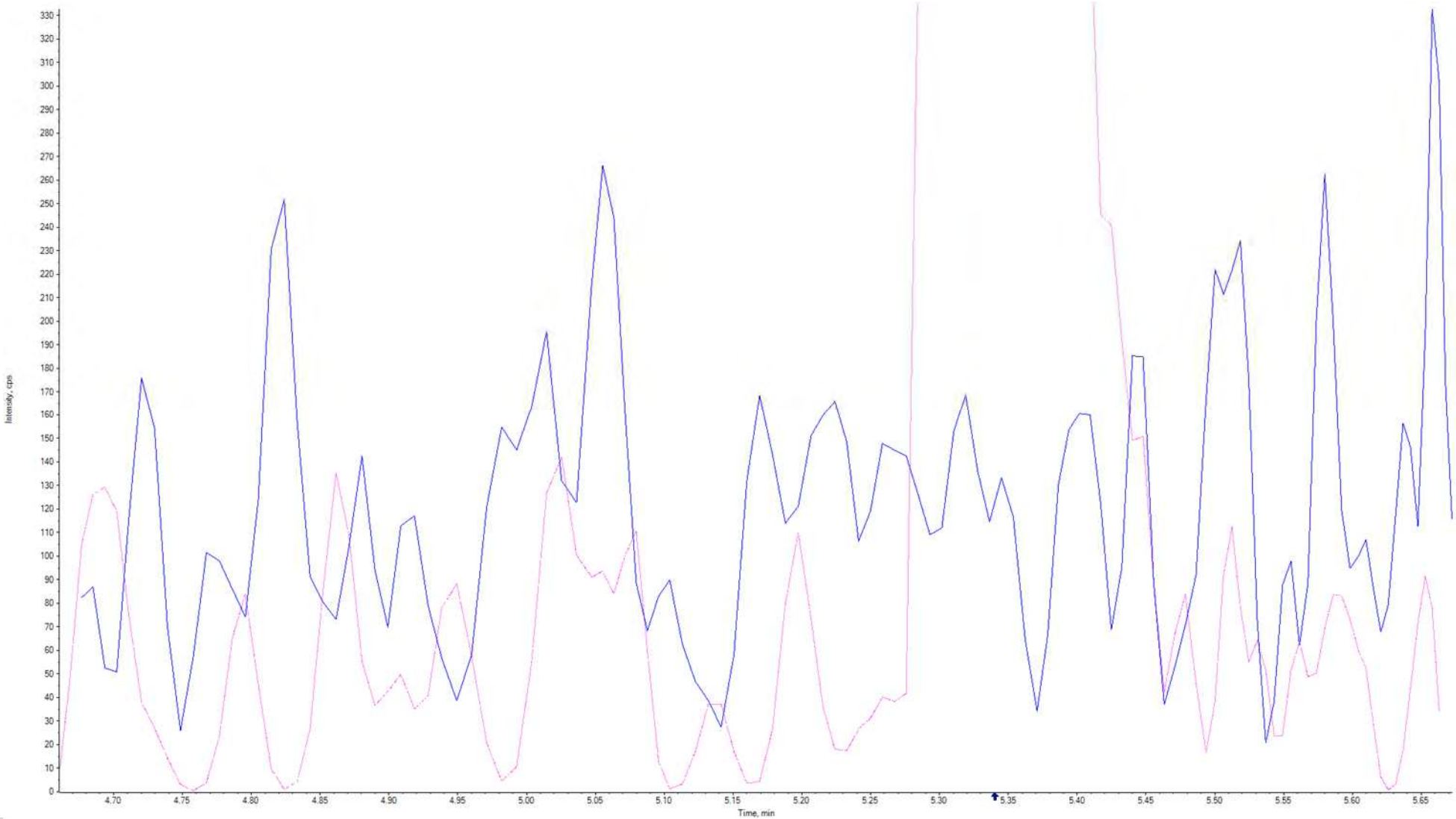

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PFHpA
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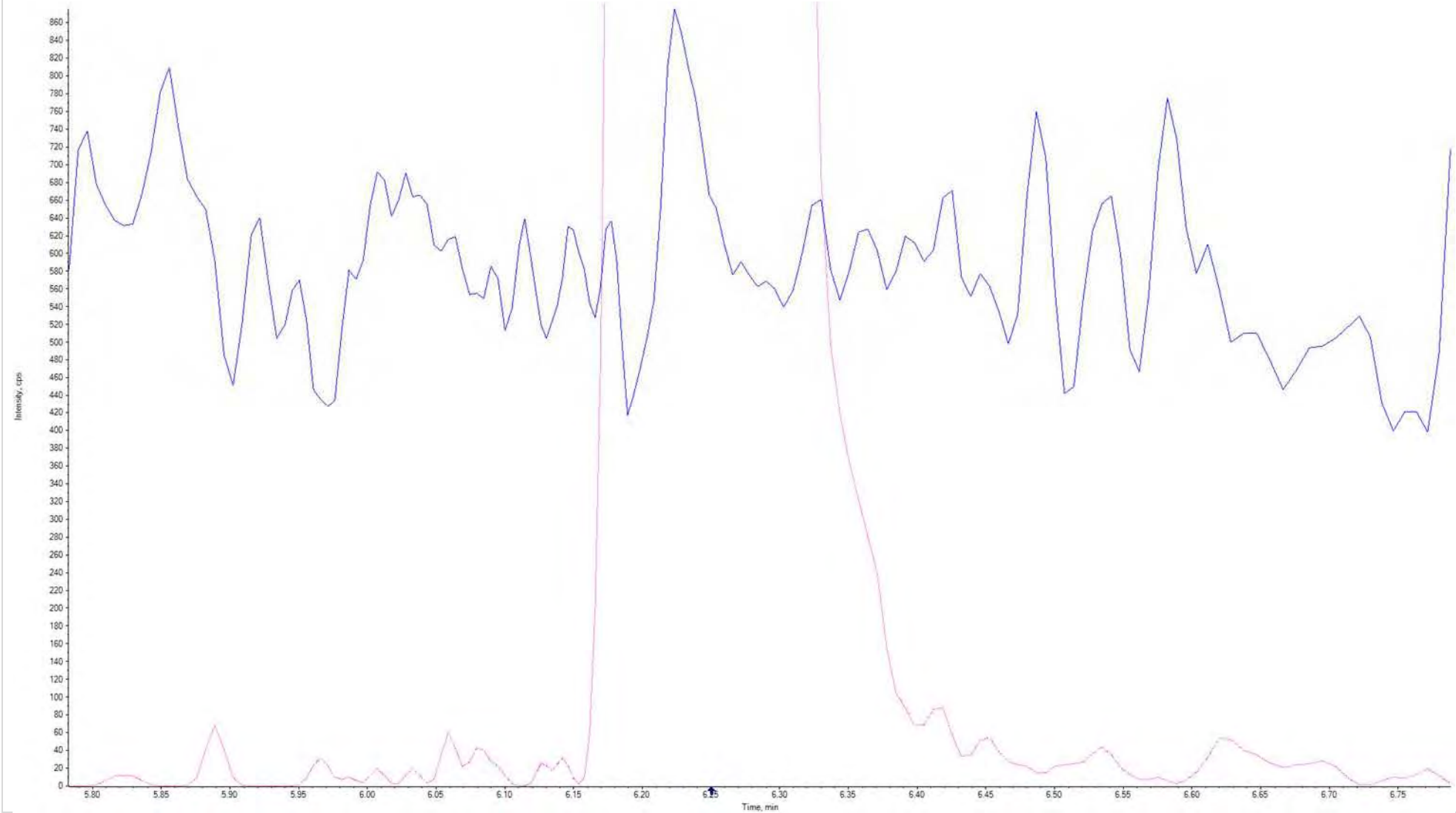

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PFHpA_2
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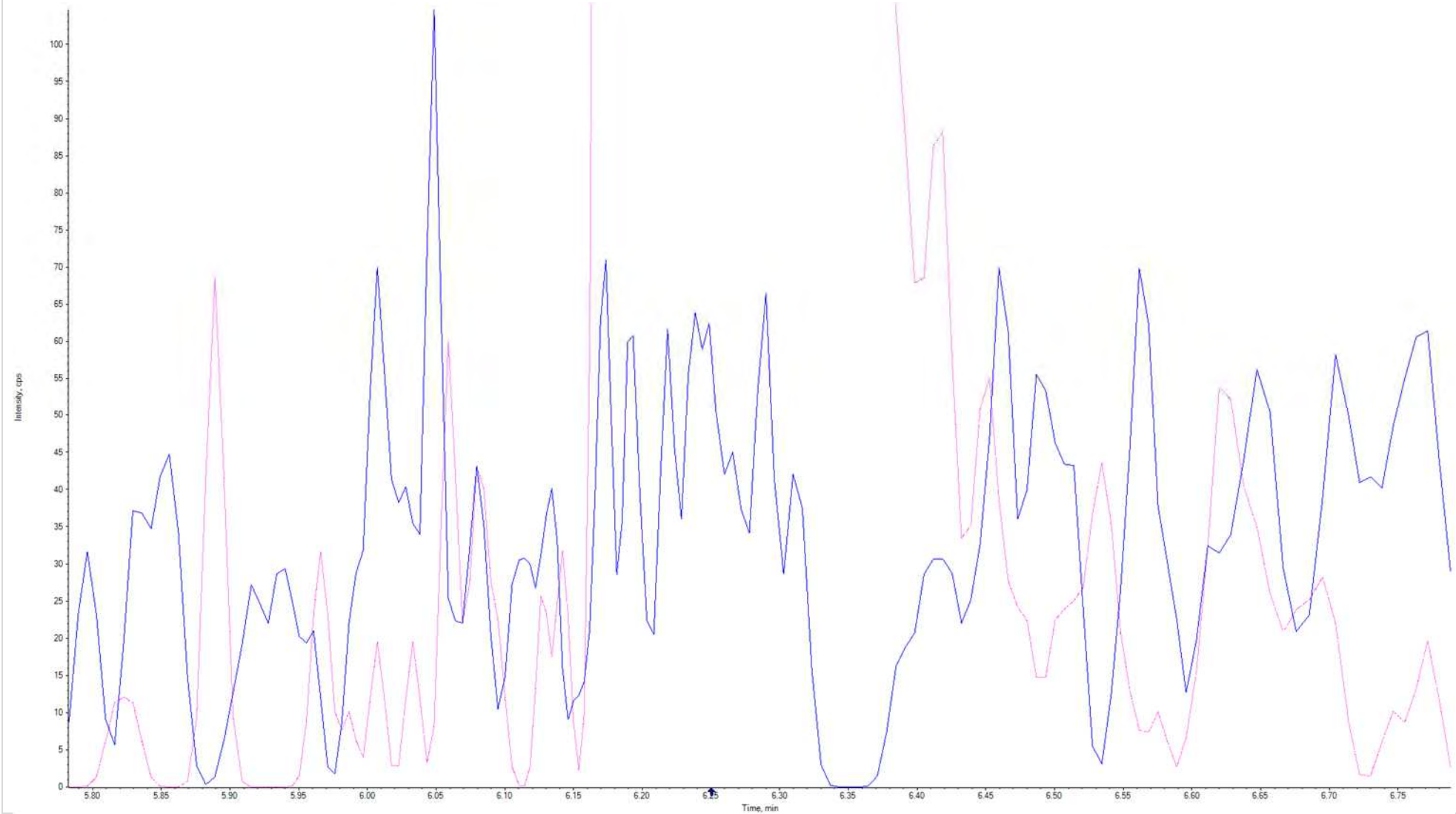

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PFOA
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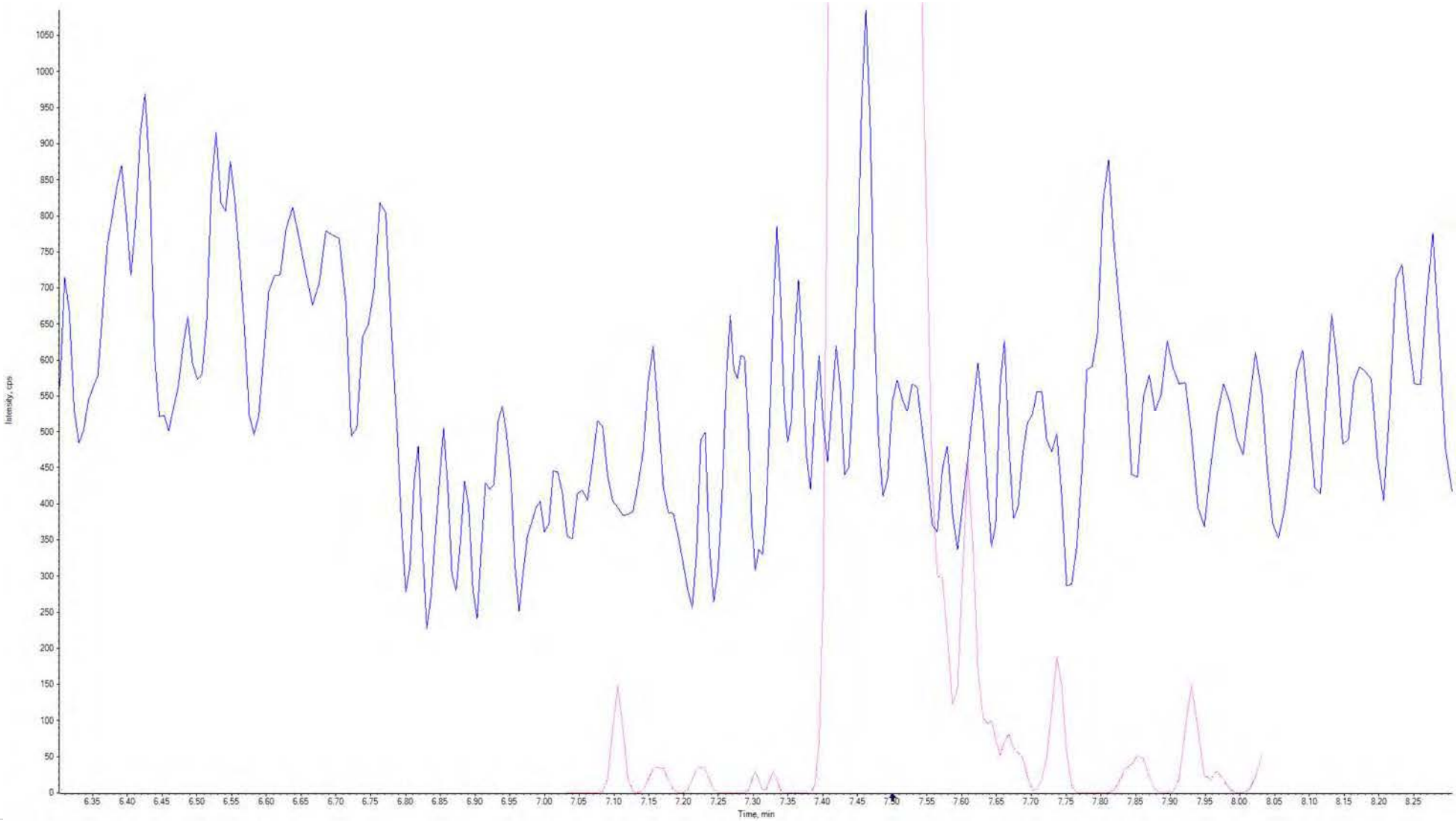

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PFOA_2
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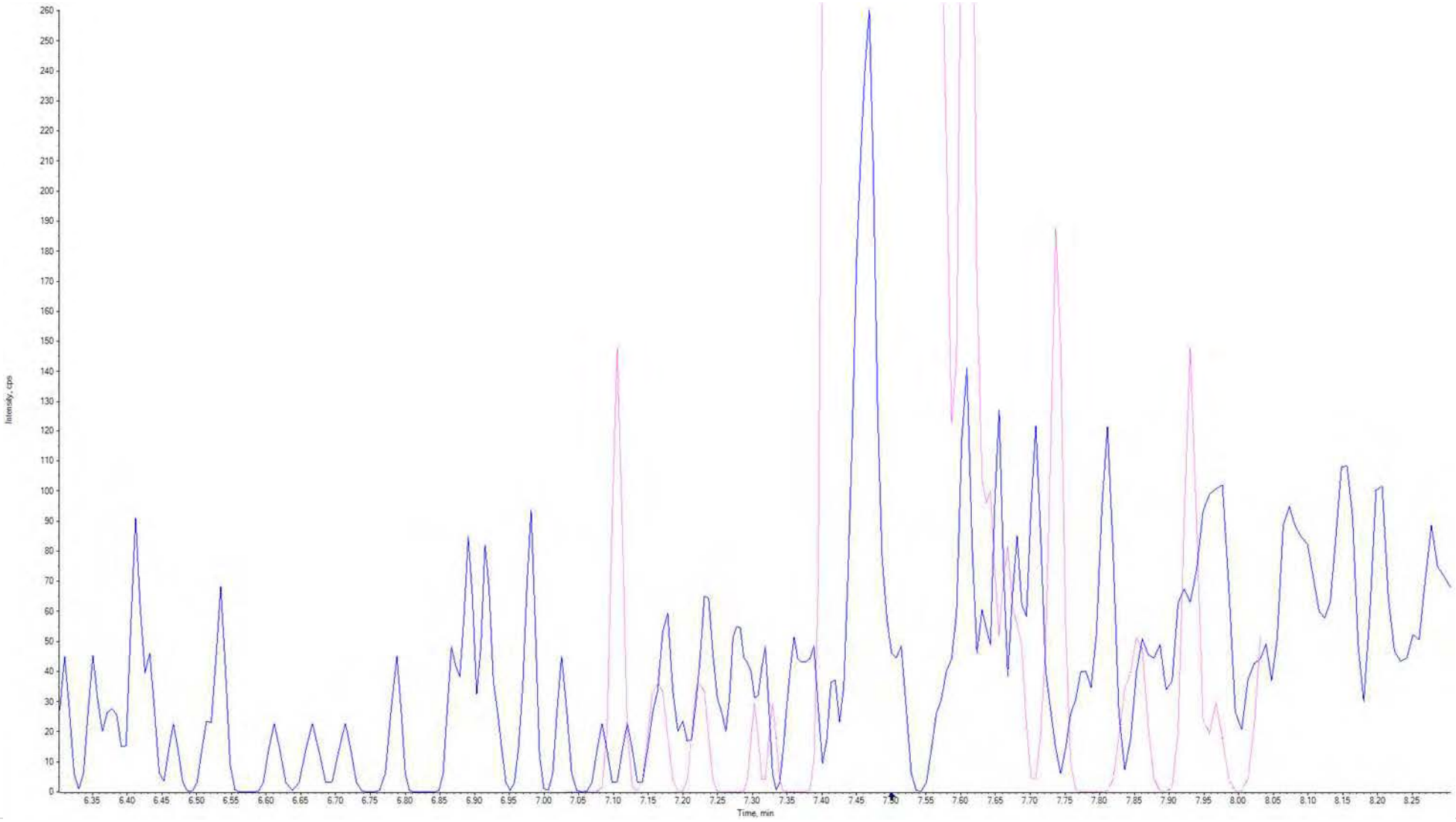

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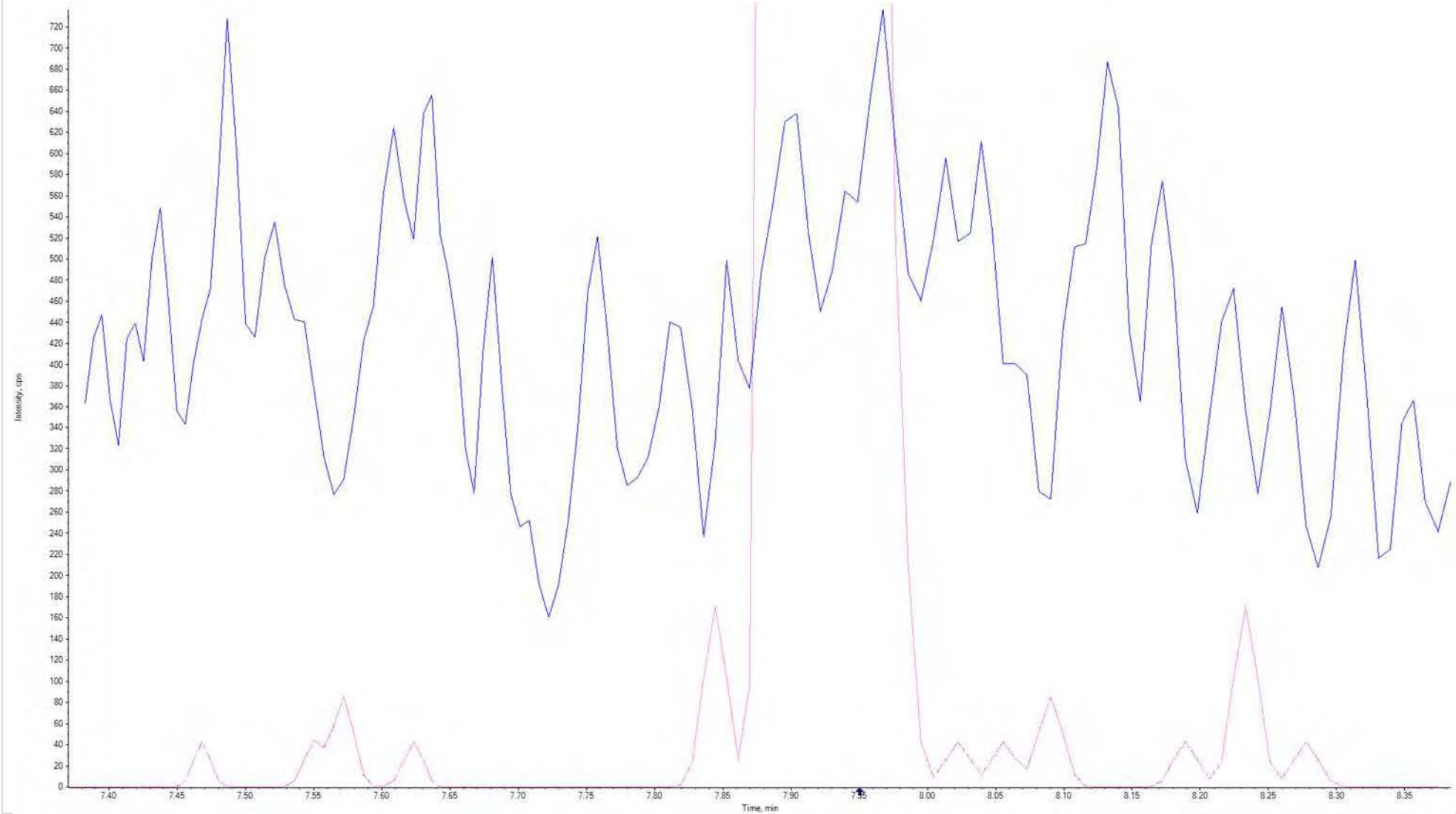

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PFNA_2
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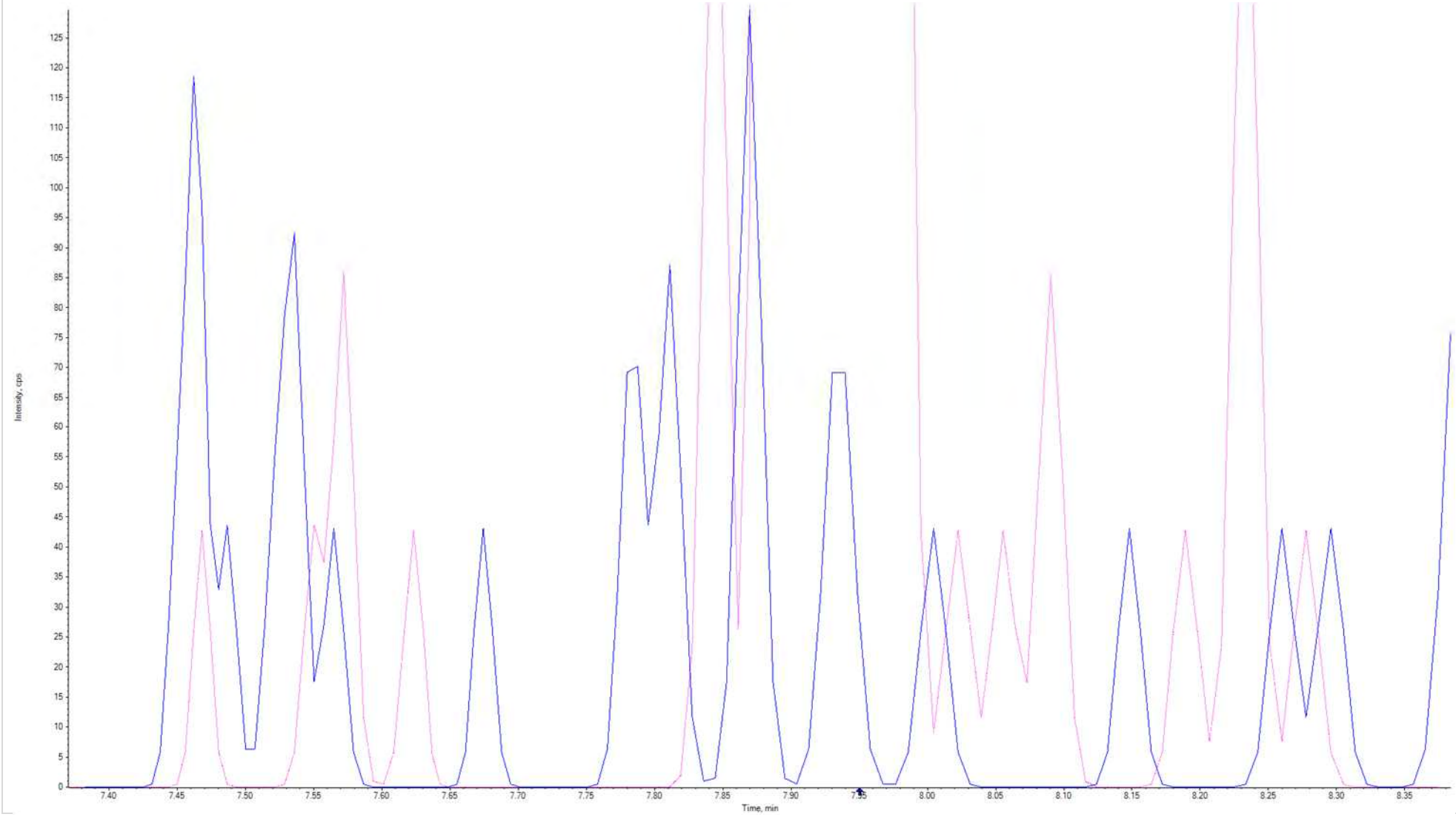
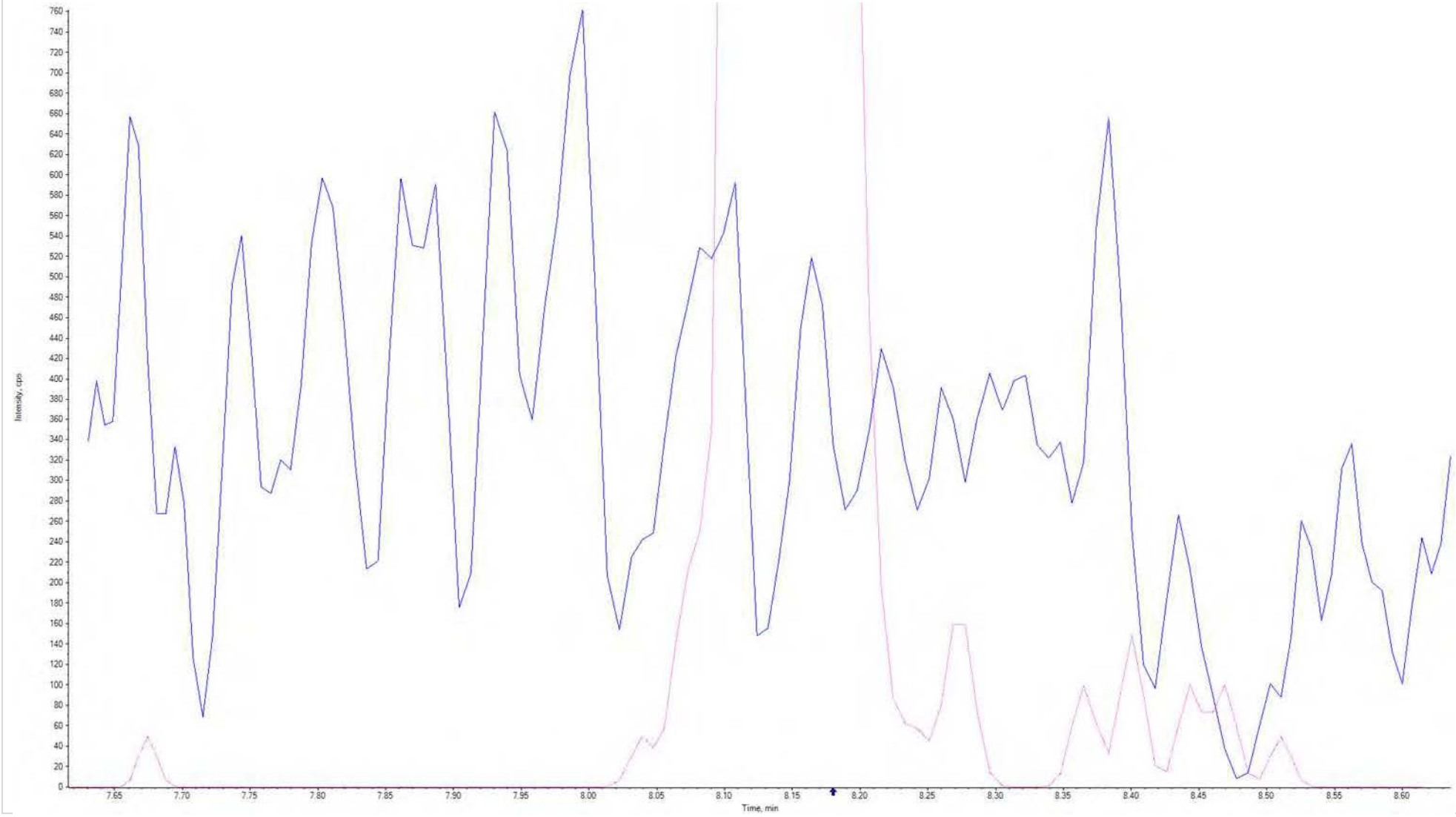


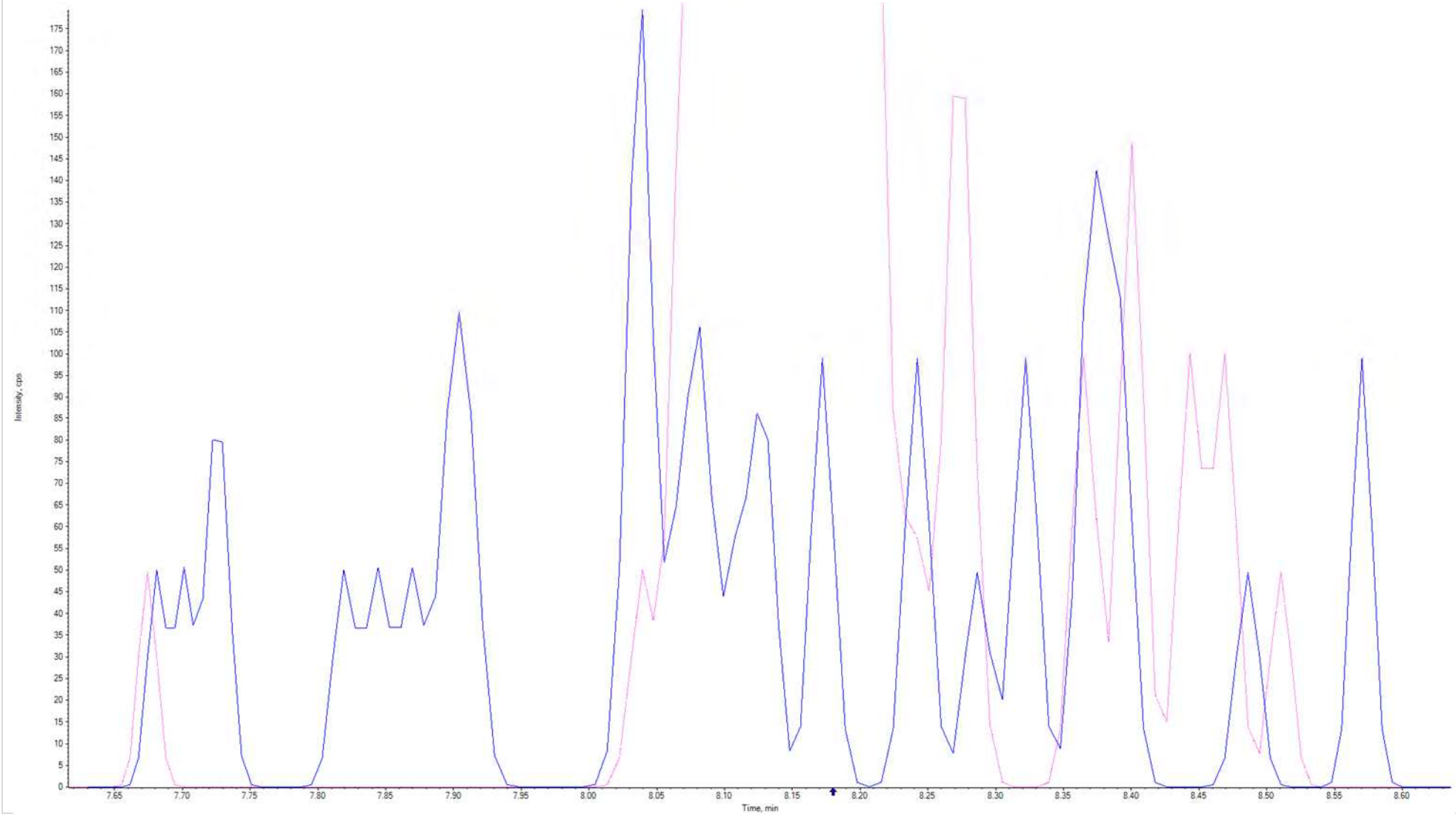
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_22.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDA
Sample: L2450786-11 S/N:N/A Points Across peak:N/A



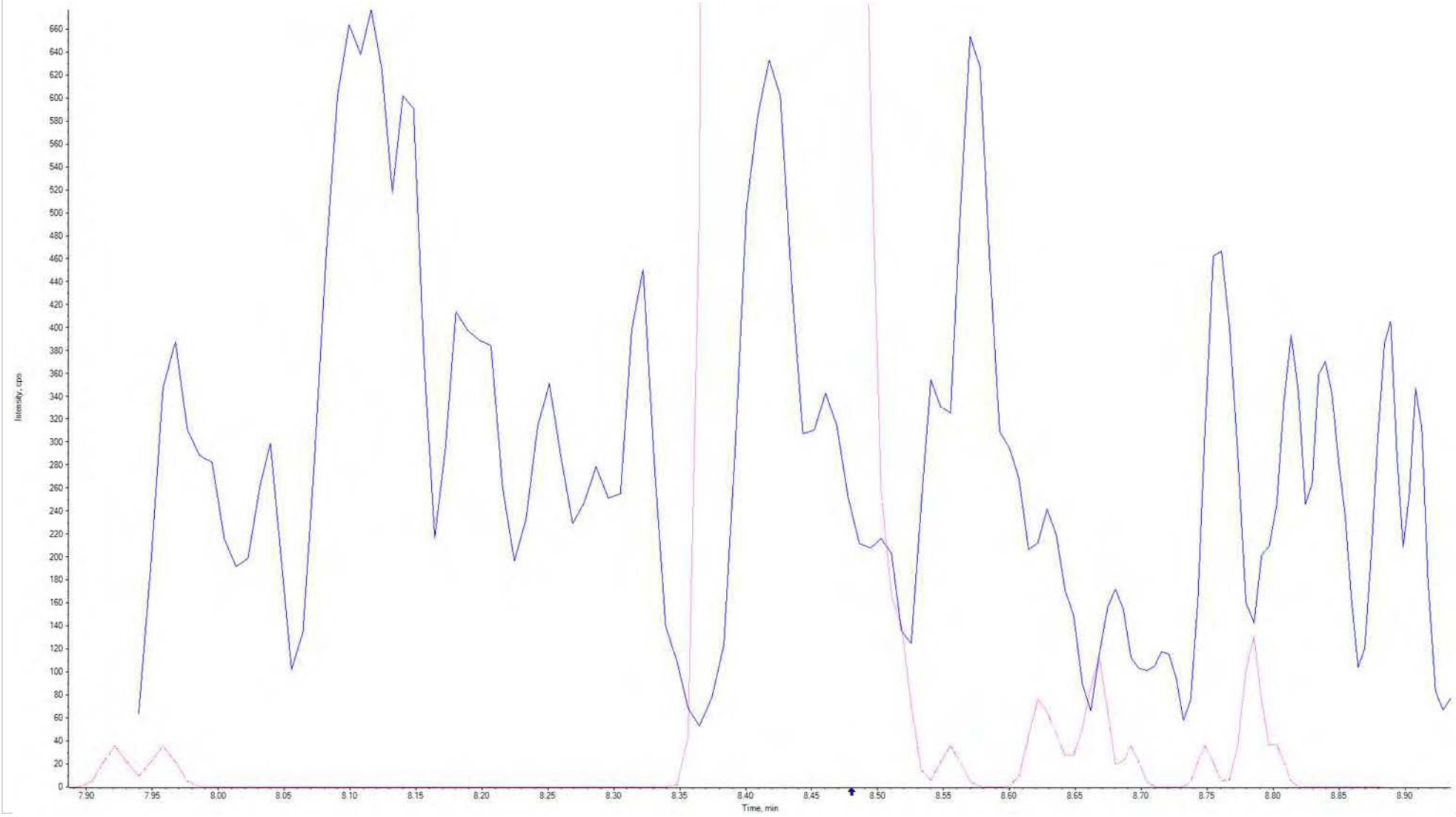
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_22.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDA_2
Sample: L2450786-11 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_22.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFUnA
Sample: L2450786-11 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFUnA_2
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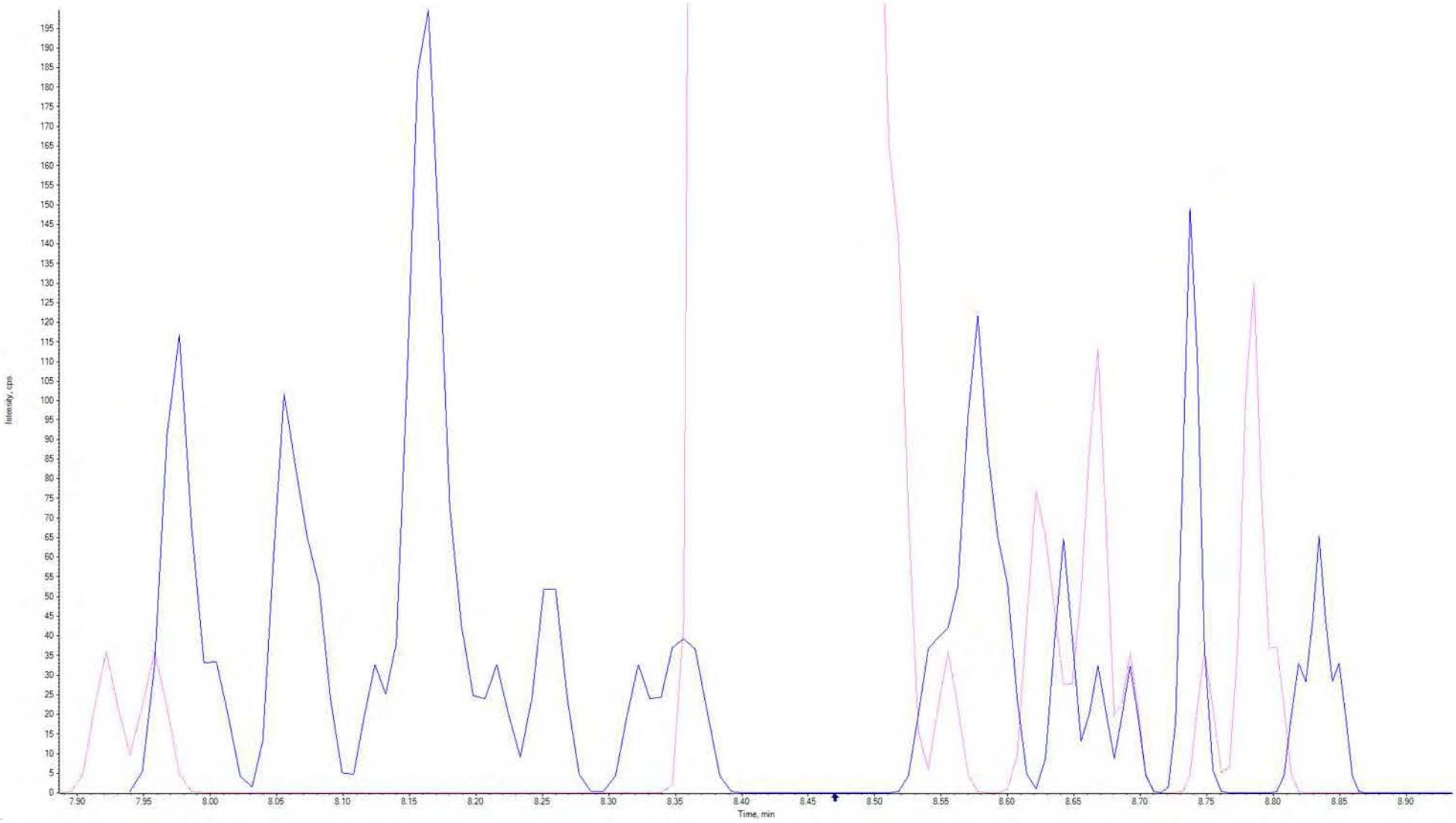

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_22.wiff
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Generated: 9/19/2024 8:04:31 AM

PFDoA
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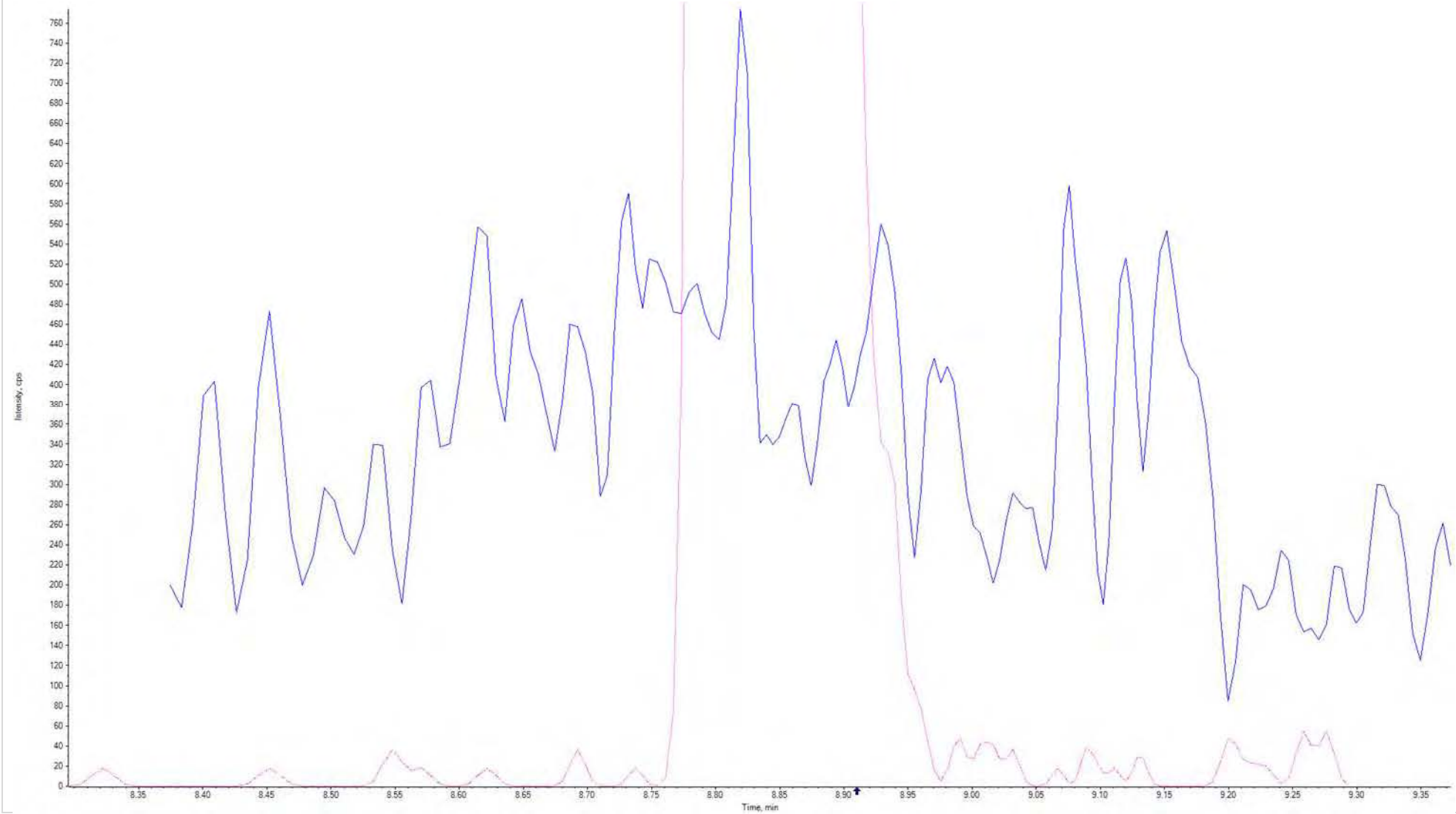

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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PFDoA_2
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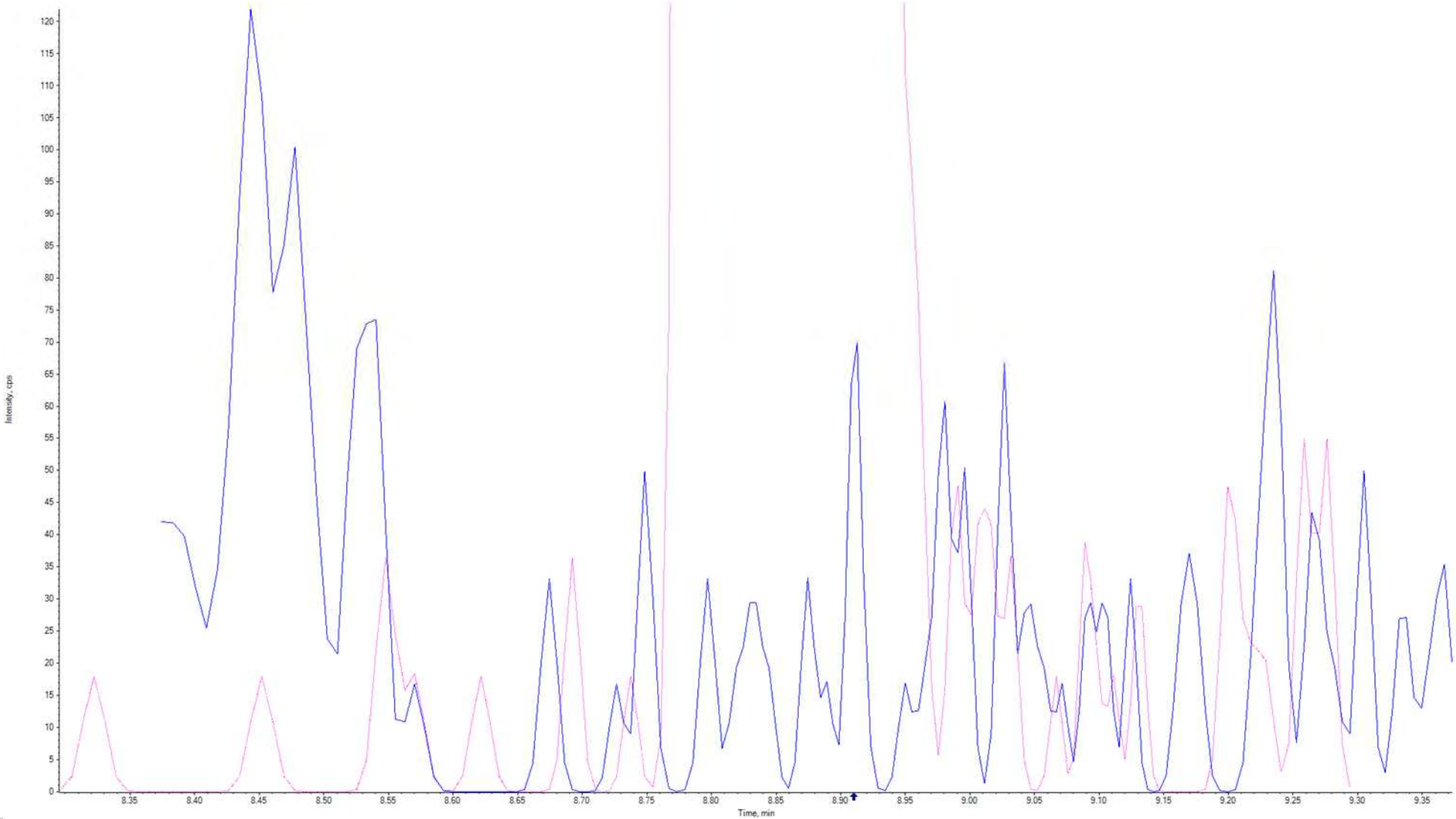

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Alpha Analytical Inc.
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Generated: 9/19/2024 8:04:31 AM

PFTrDA
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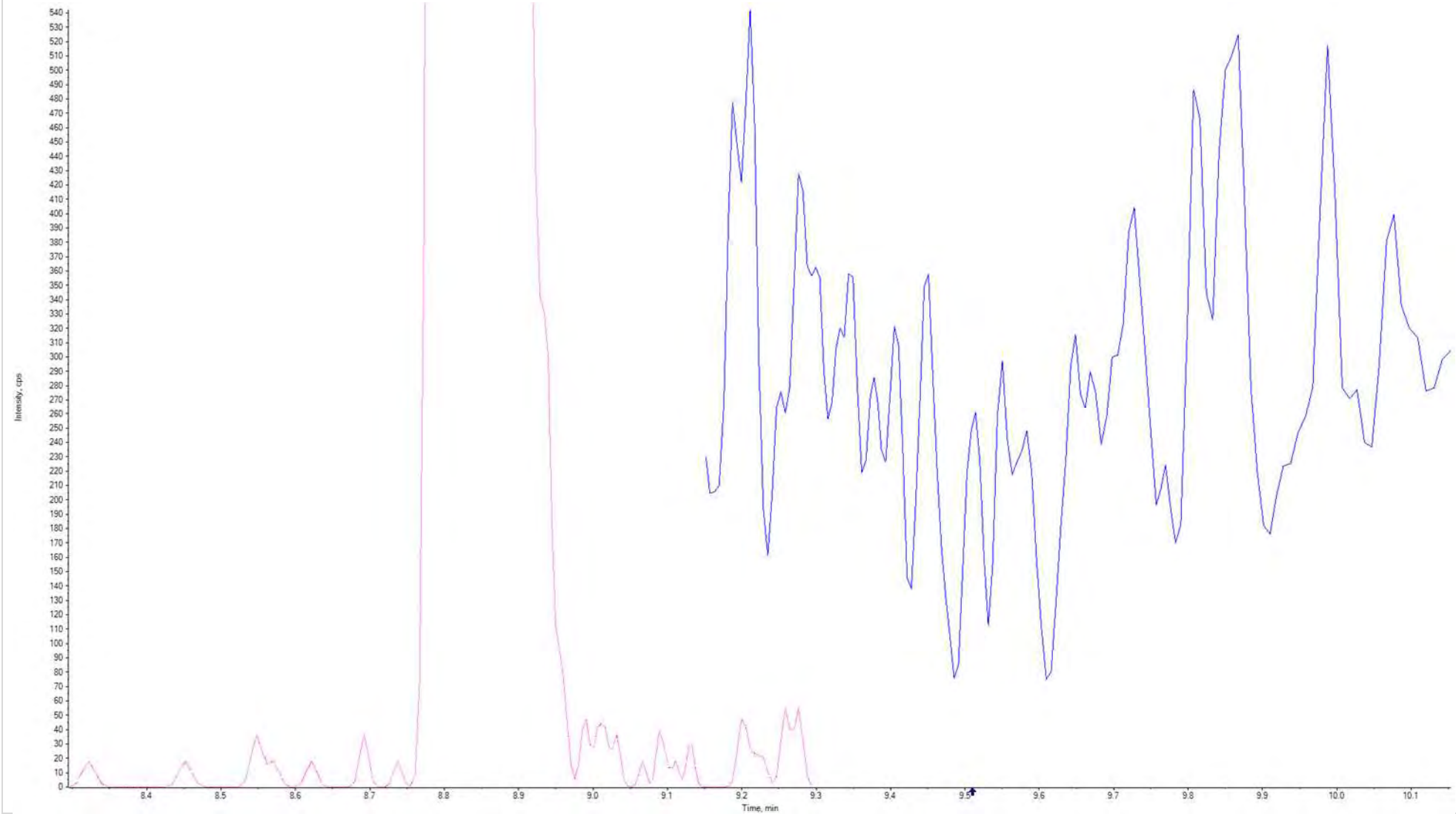

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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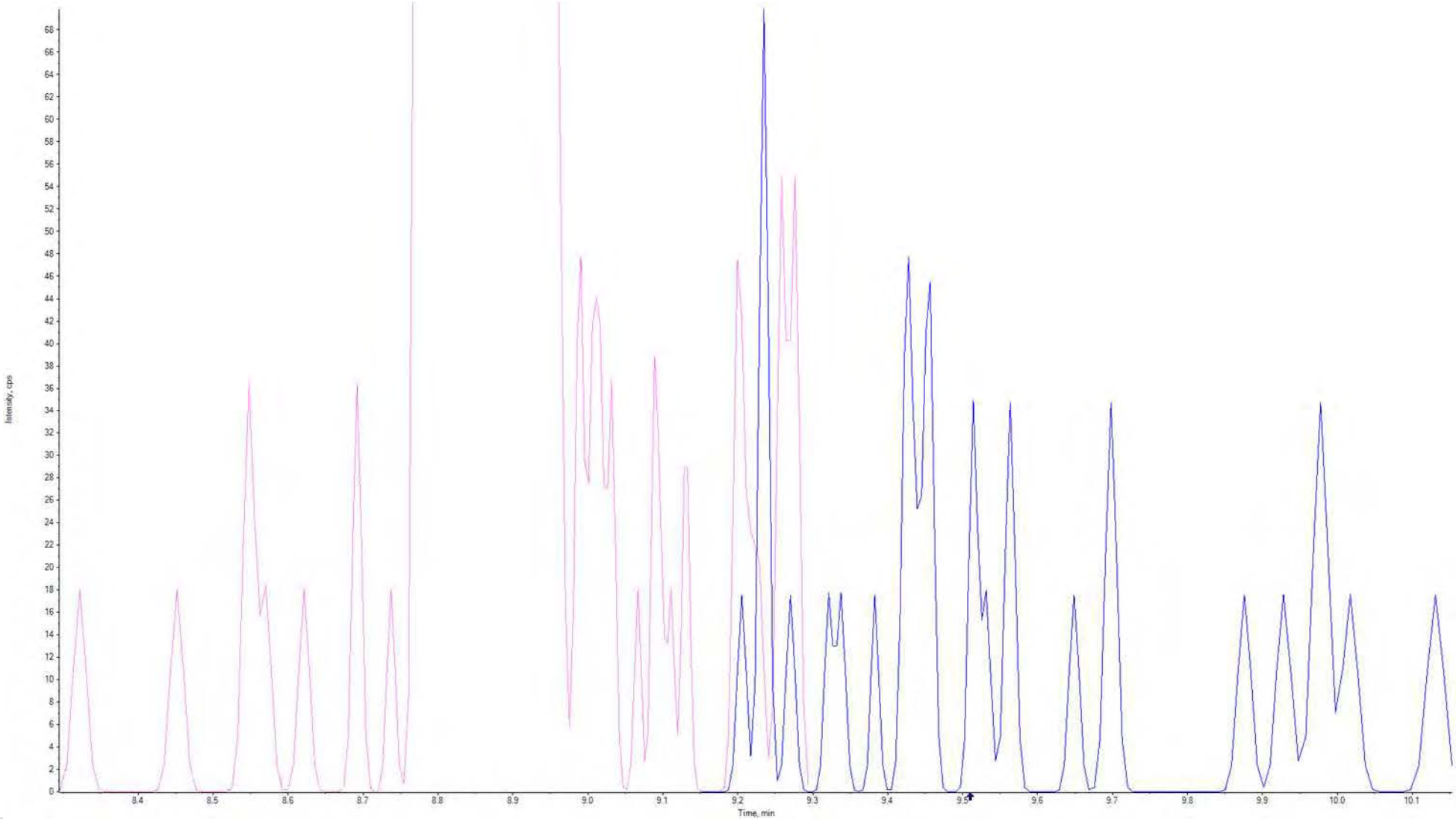
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFTrDA_2
Sample: L2450786-11 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFTeDA
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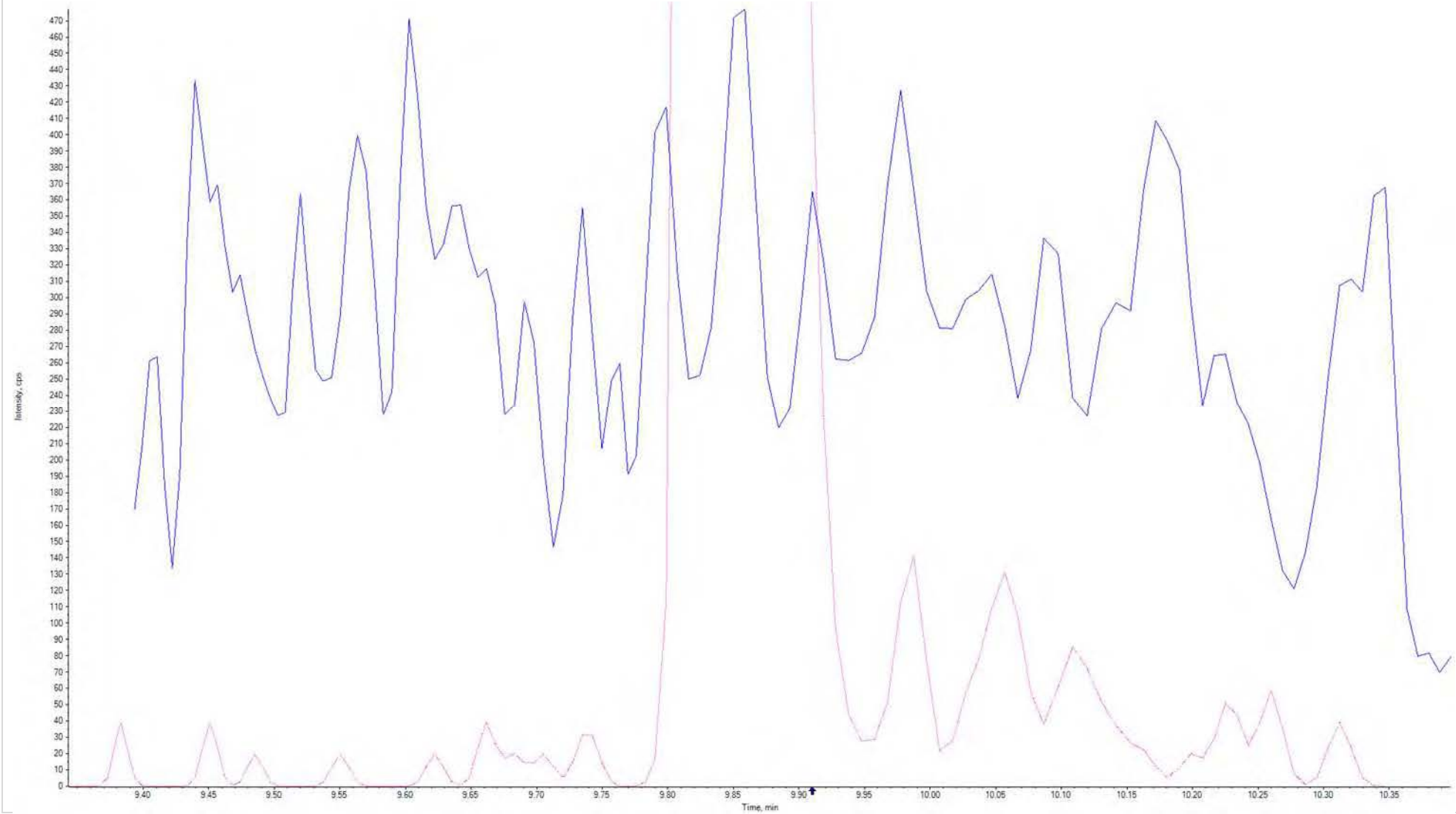

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Generated: 9/19/2024 8:04:31 AM

PFTeDA_2
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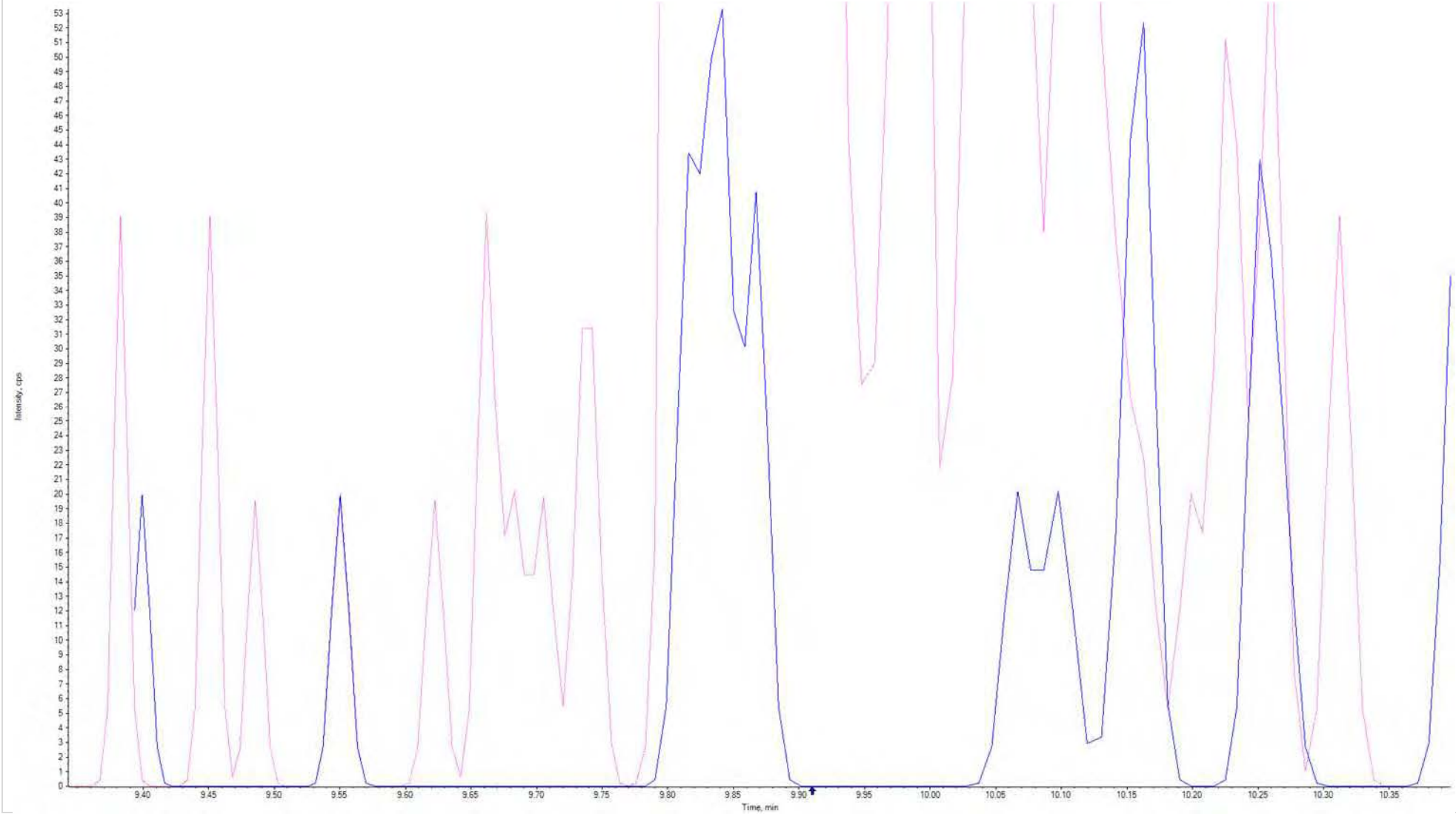

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFBS
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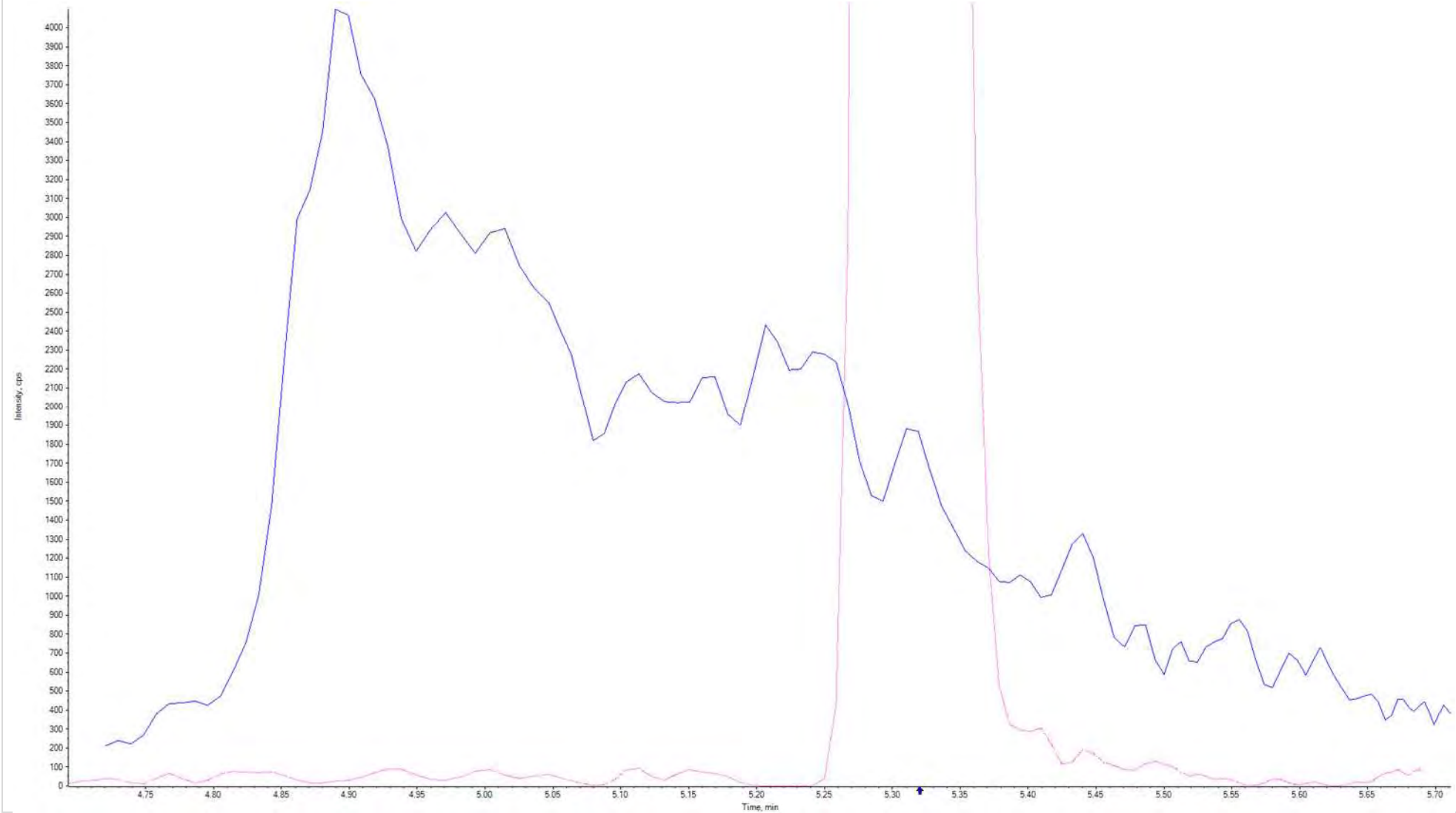

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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PFBS_2
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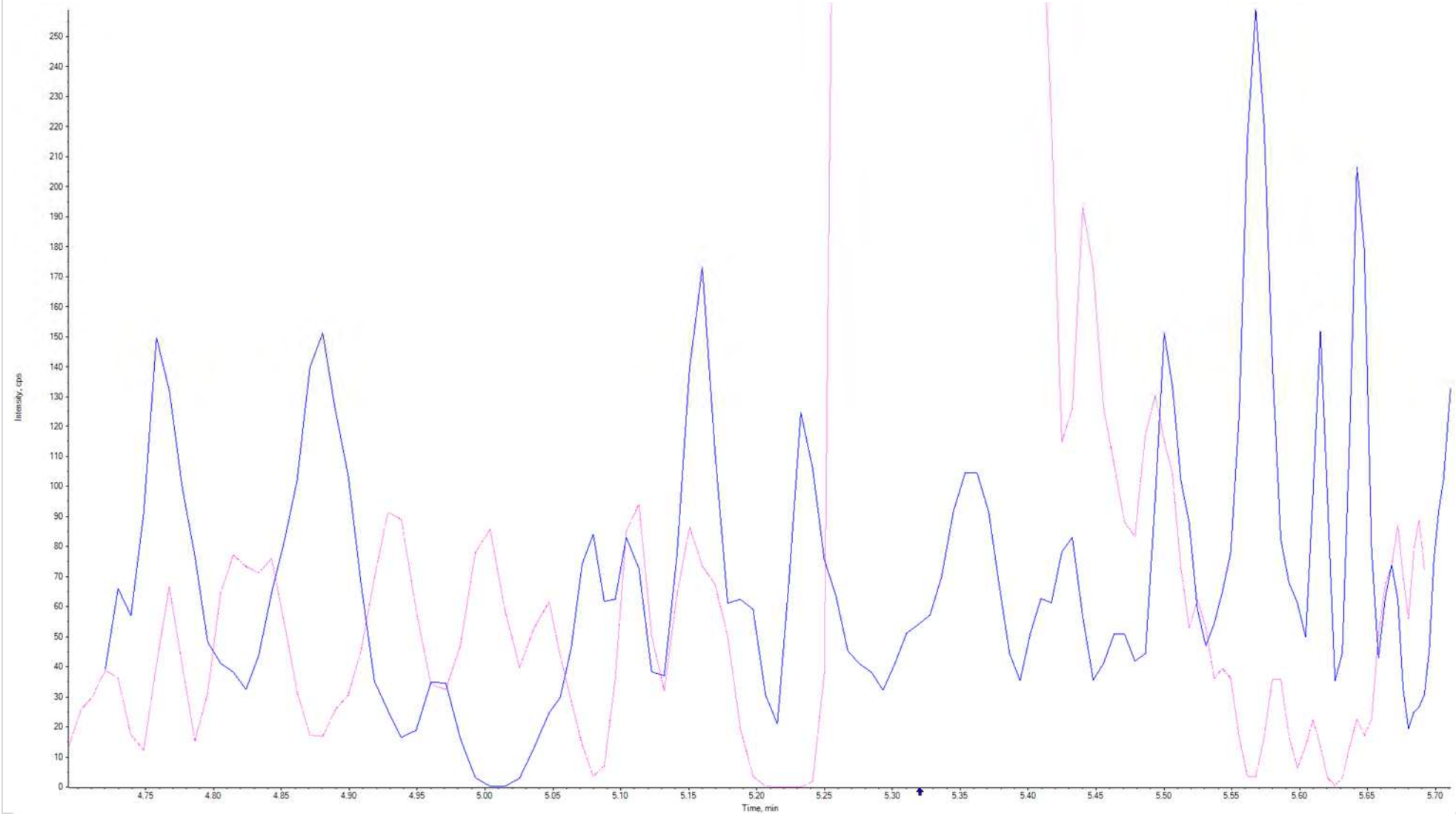

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Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFPeS
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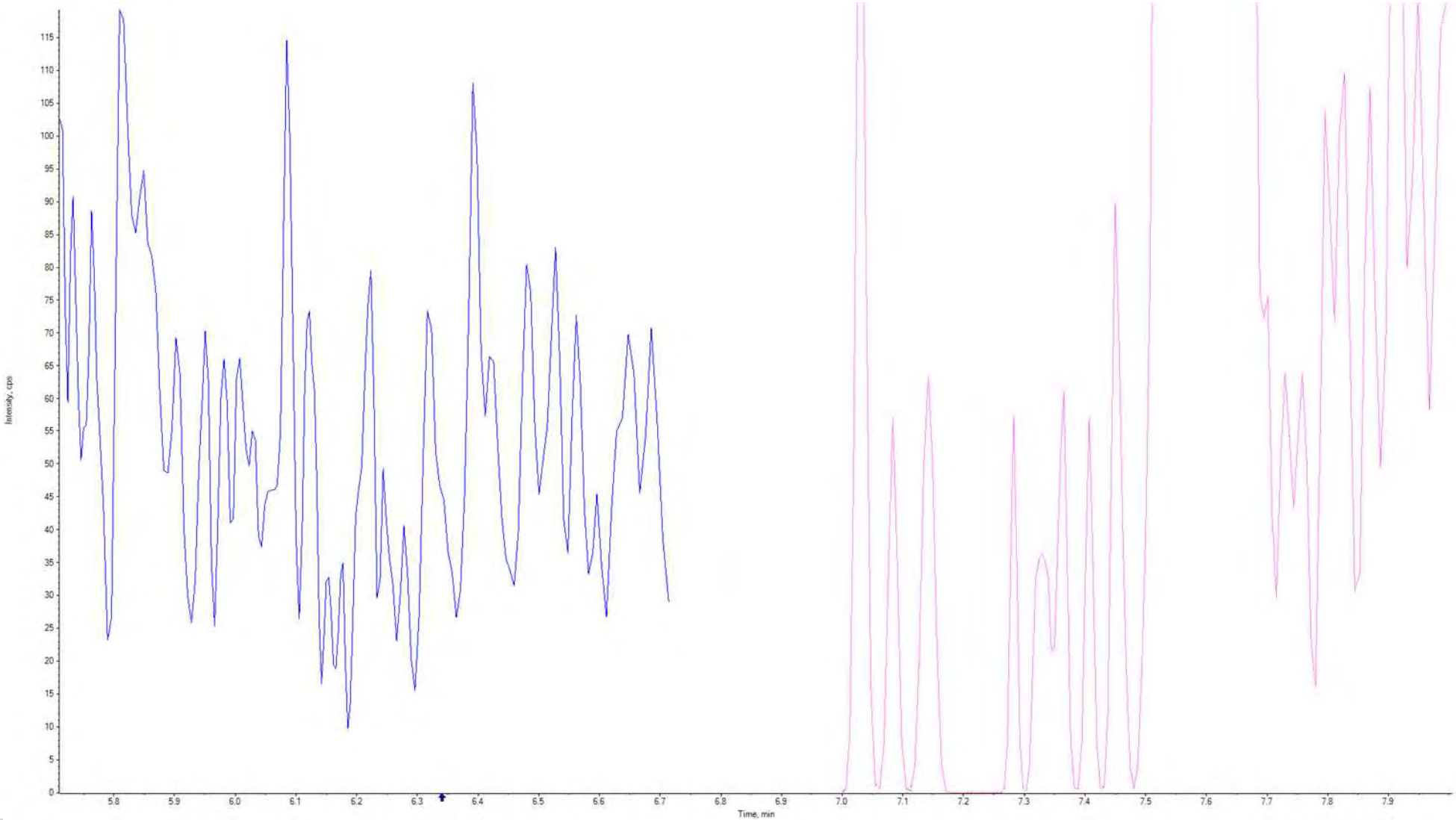

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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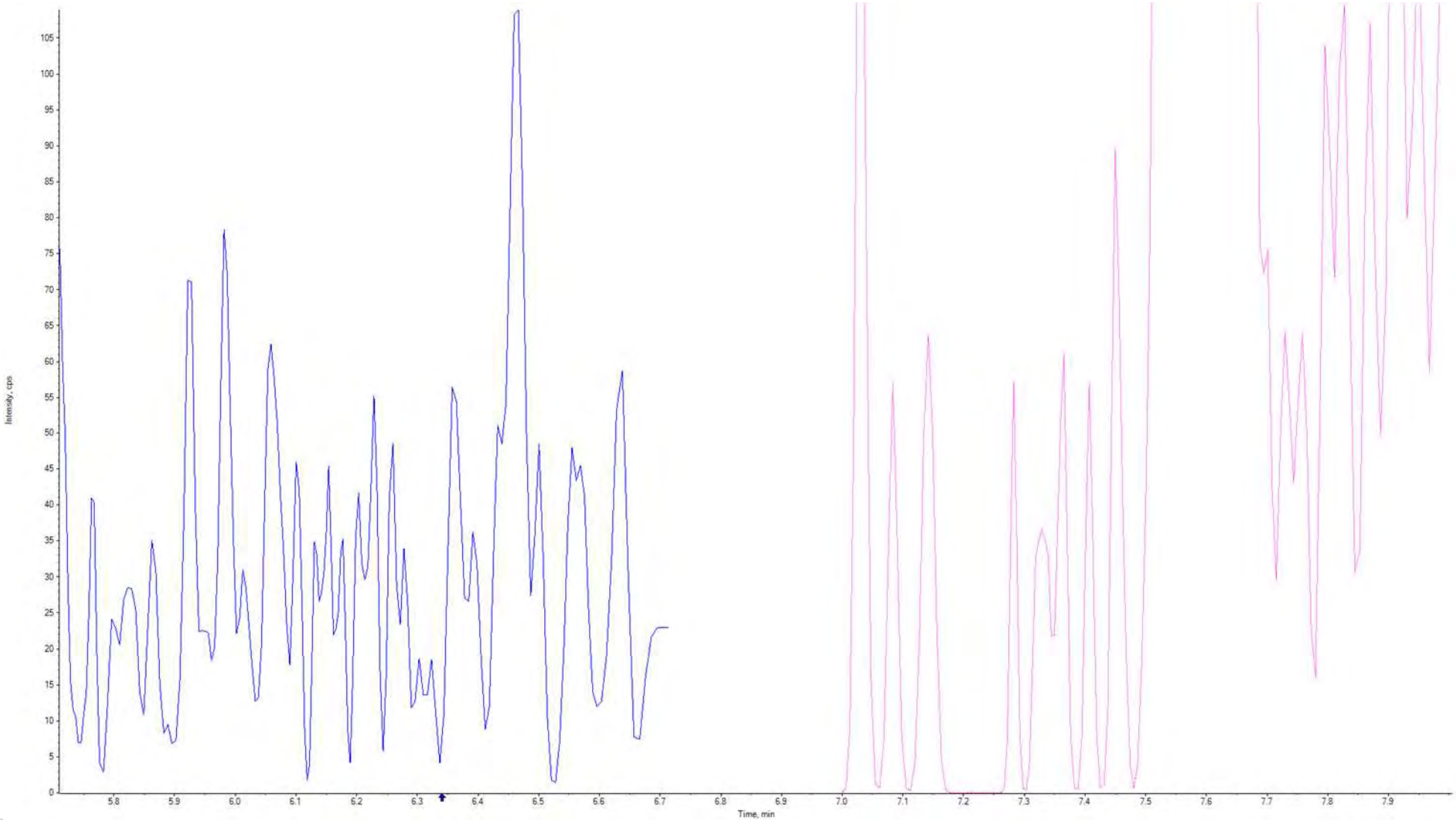
Generated: 9/19/2024 8:04:31 AM

PFPeS_2
Sample: L2450786-11 S/N:N/A Points Across peak:N/A



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Generated: 9/19/2024 8:04:31 AM

PFHxS
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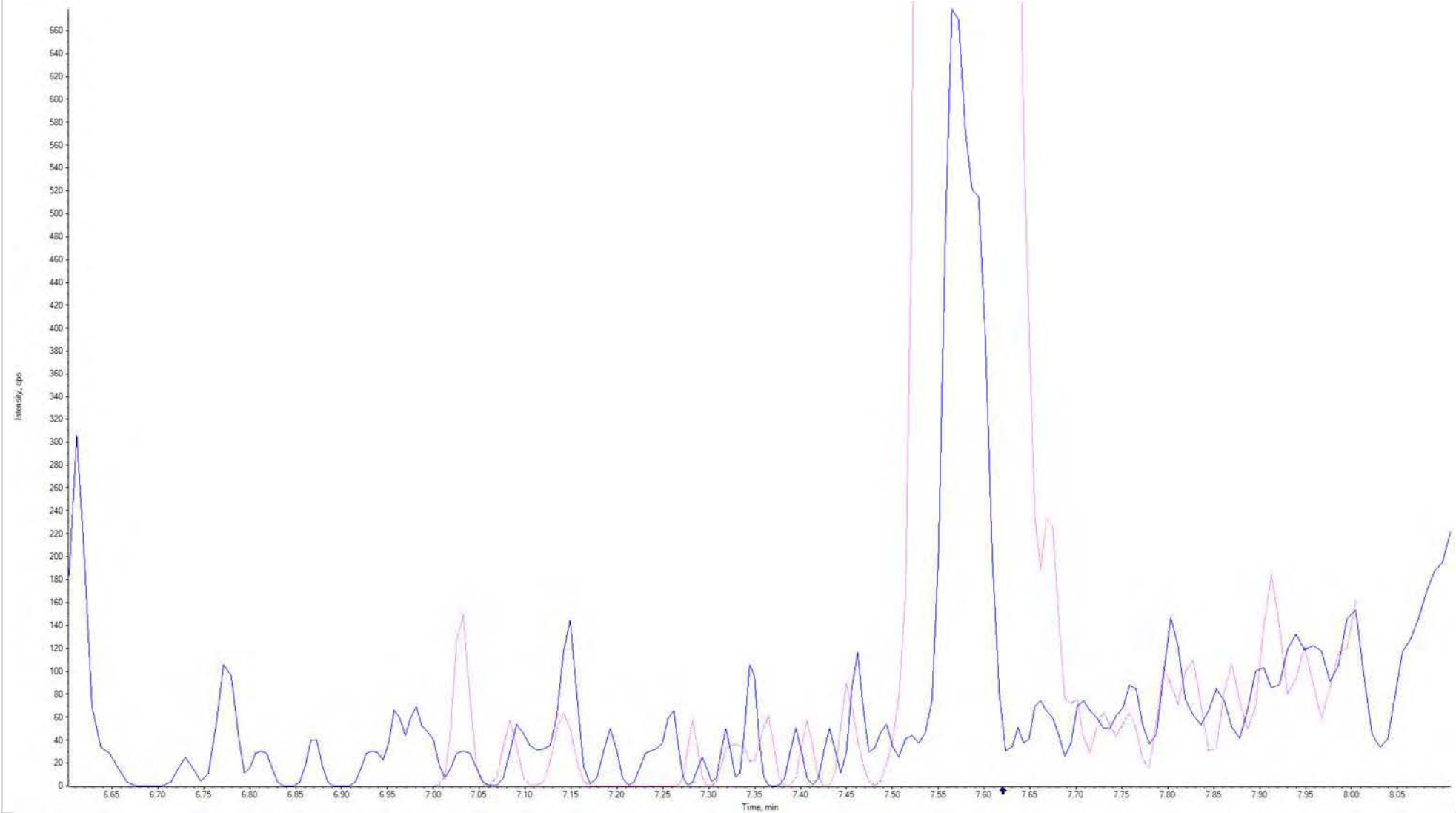

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Last Altered: 9/19/2024 11:40:51 AM
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PFHxS_2
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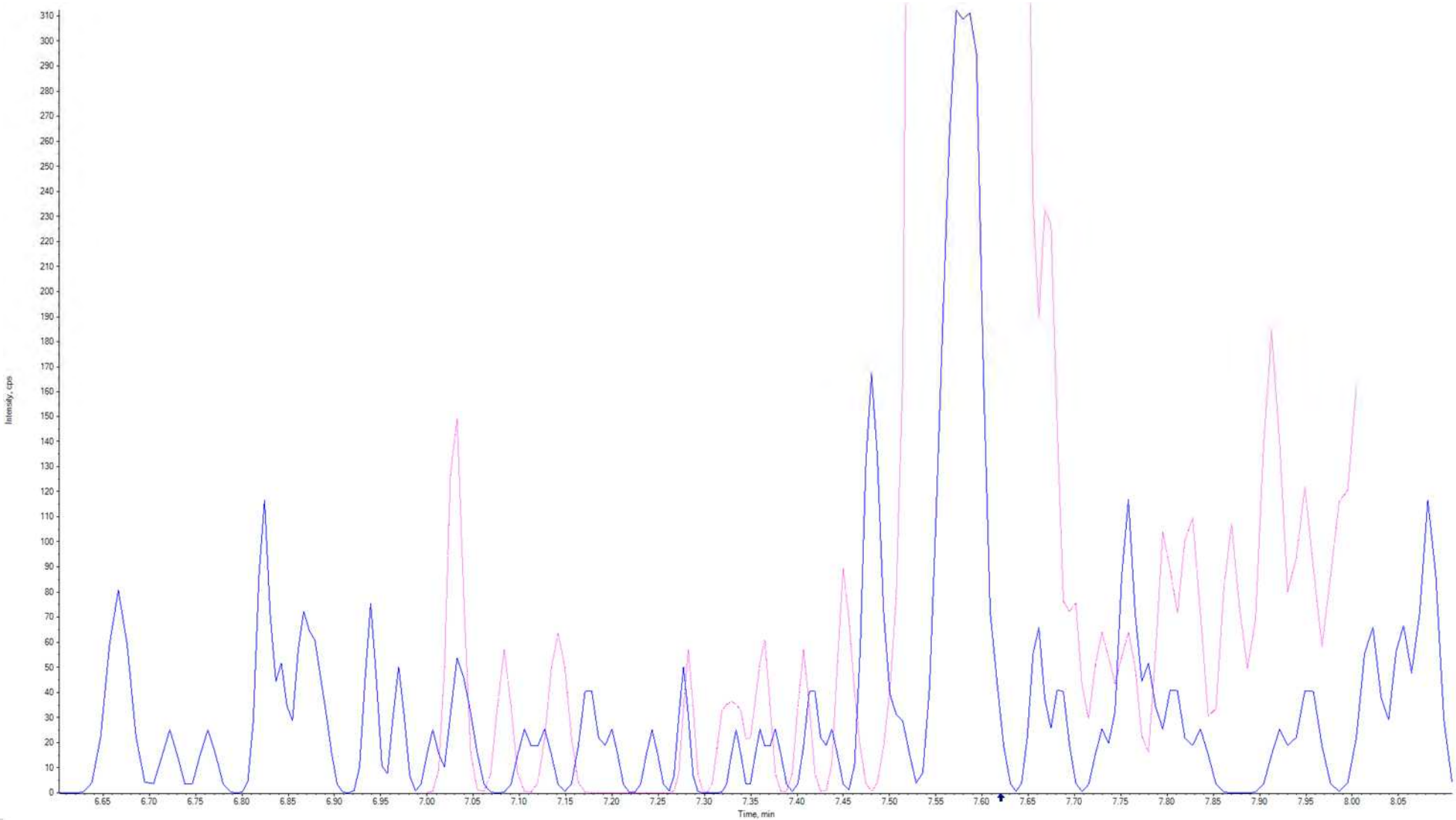

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Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHpS
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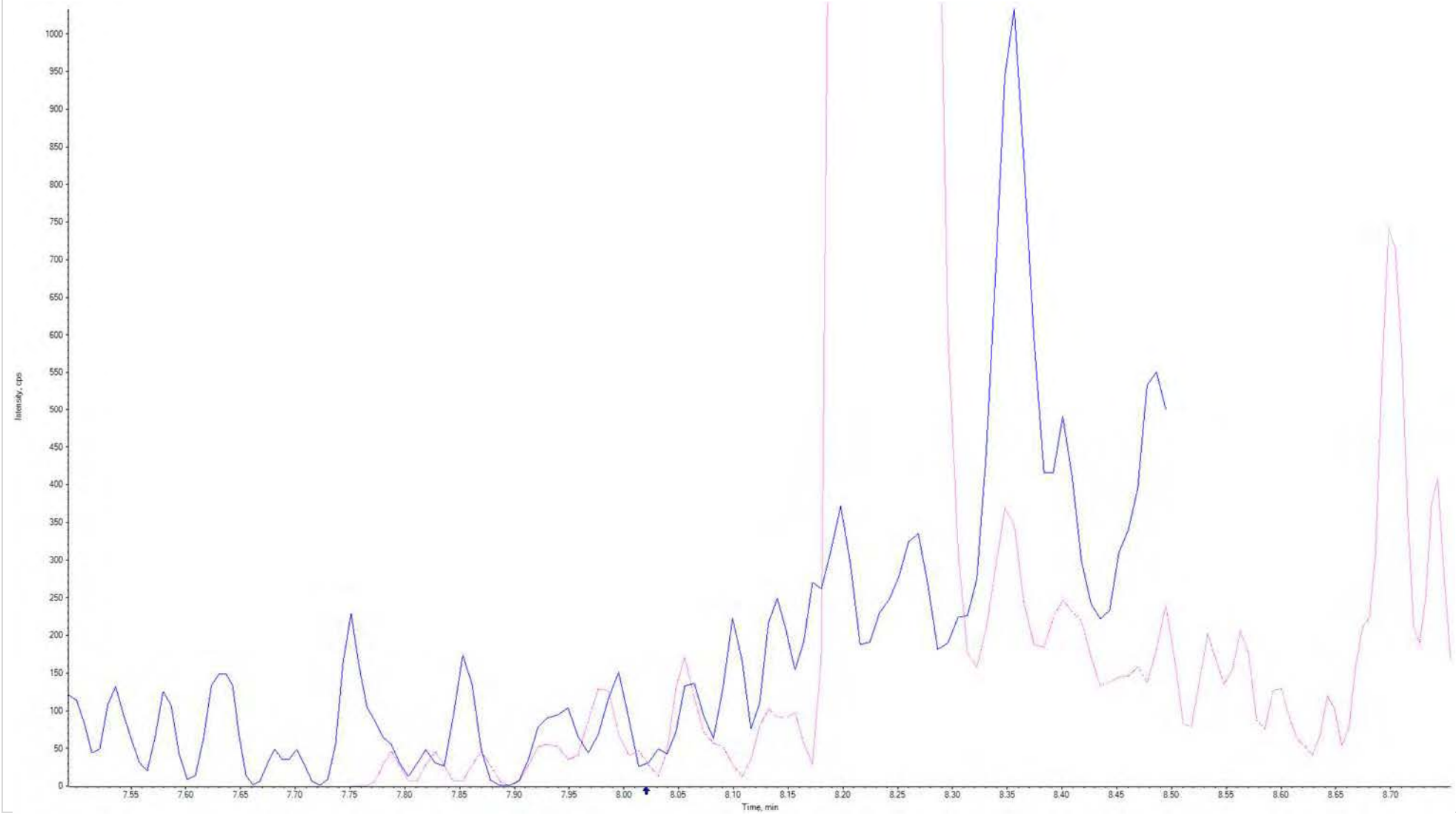

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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PFHpS_2
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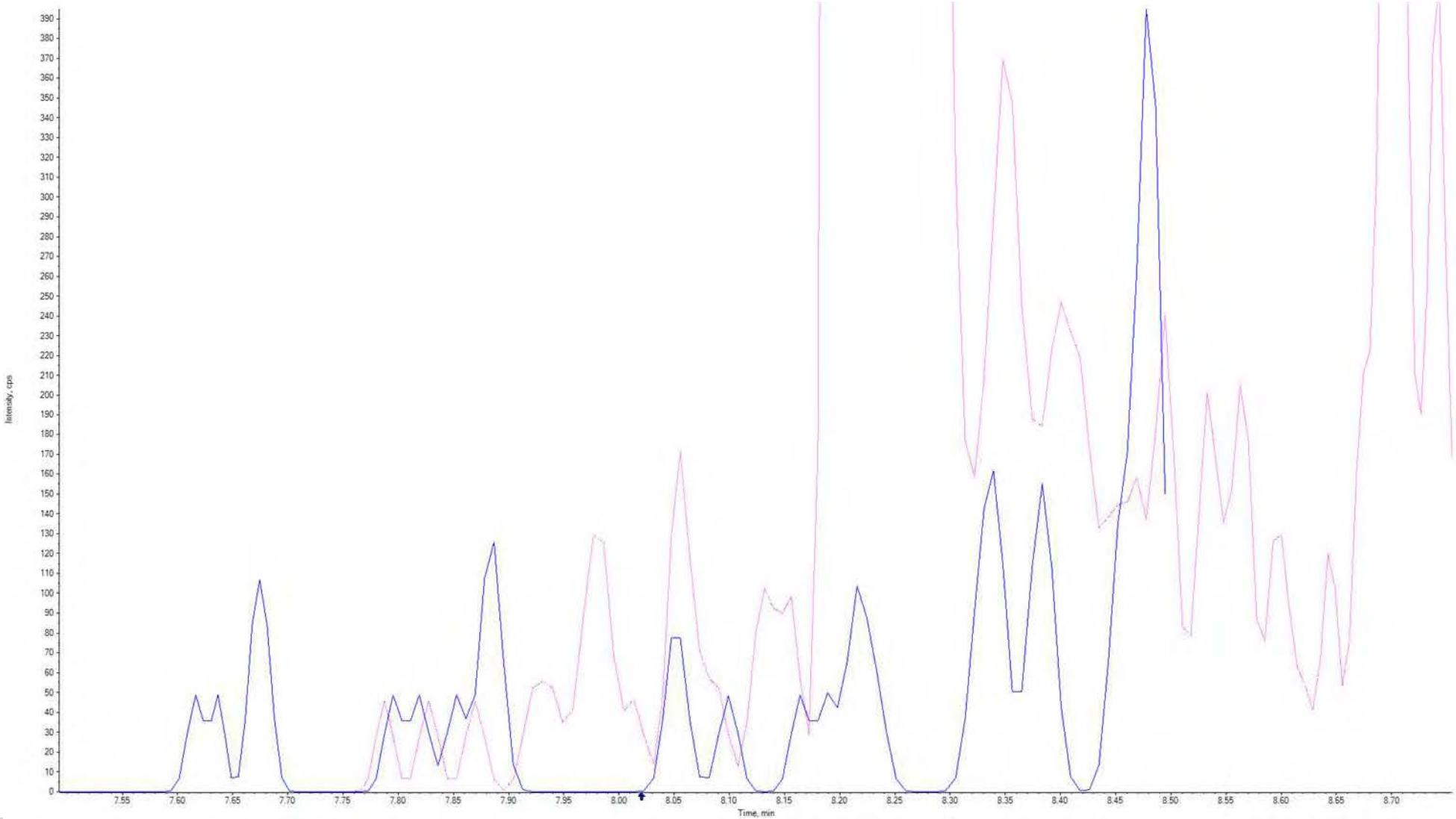

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PFOS
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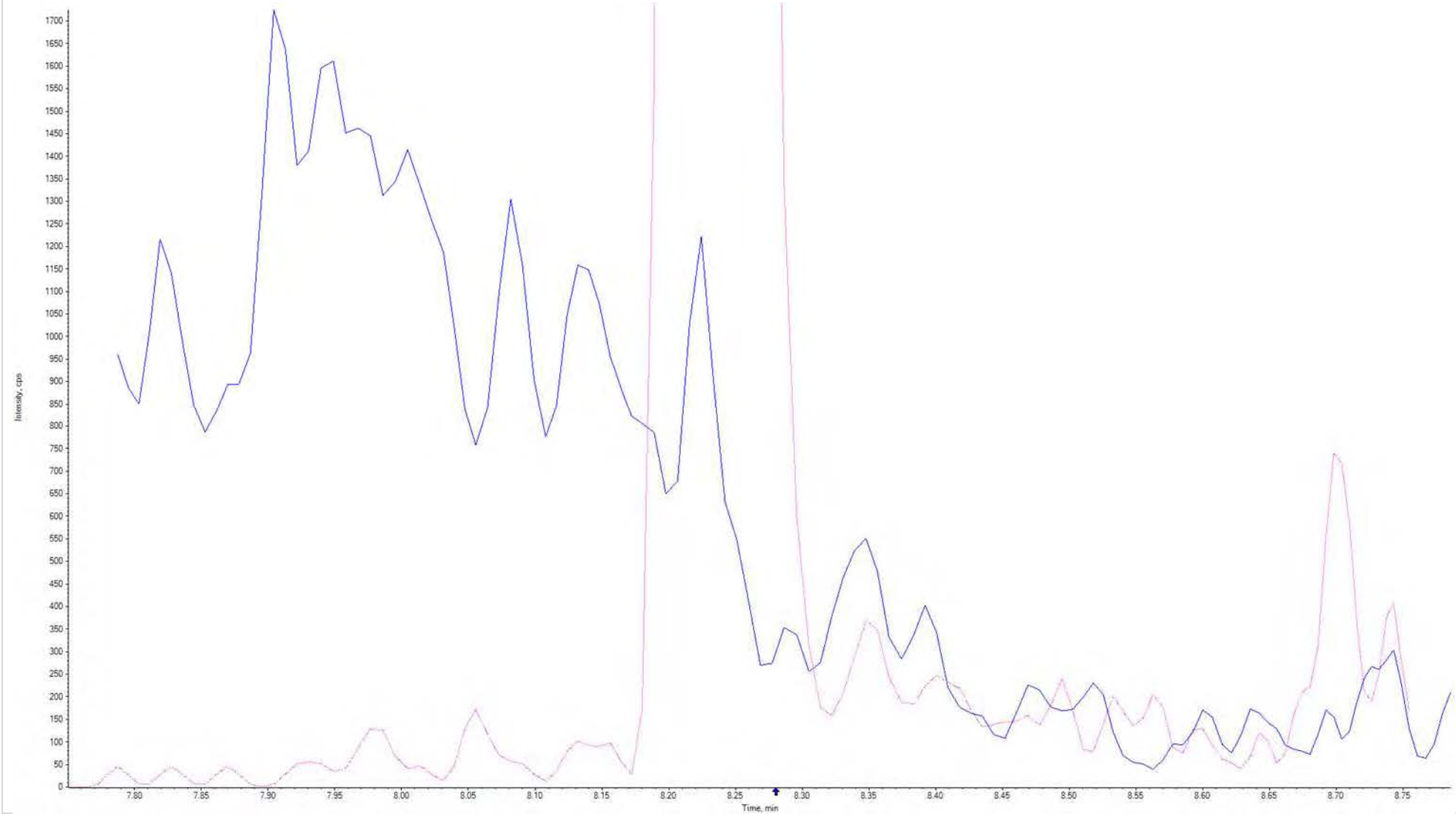

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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PFOS_2
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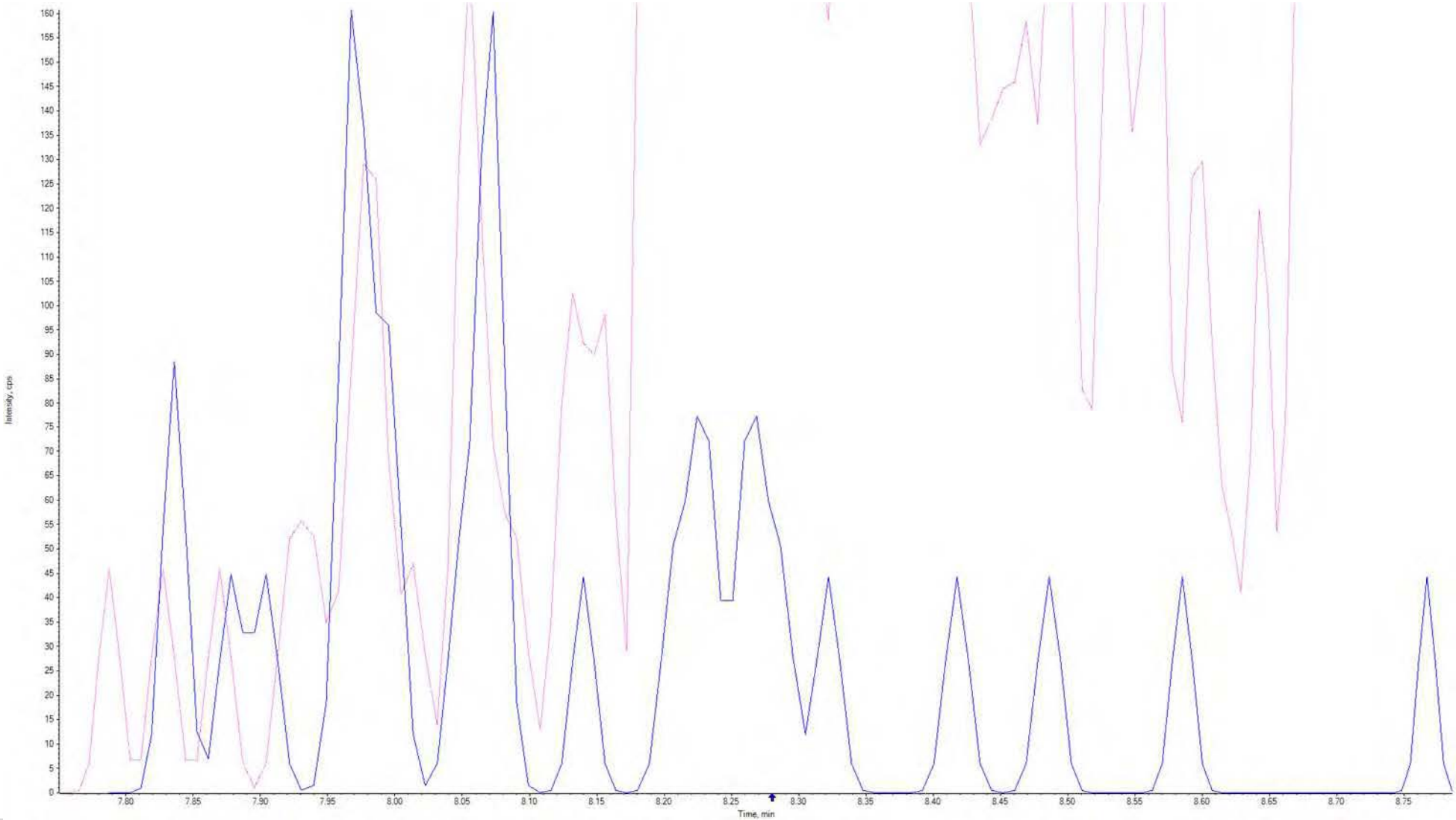

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Generated: 9/19/2024 8:04:31 AM

PFNS
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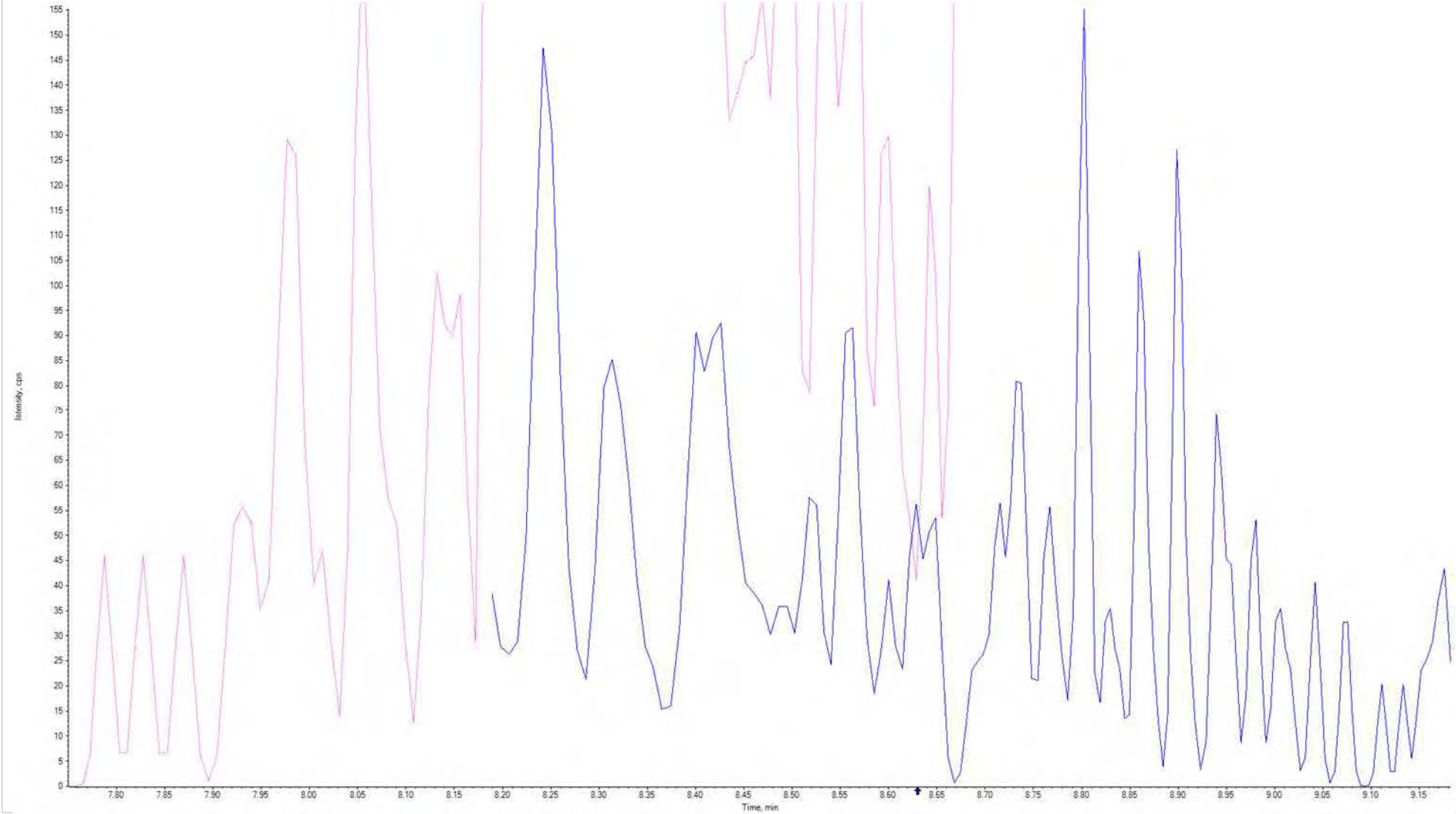

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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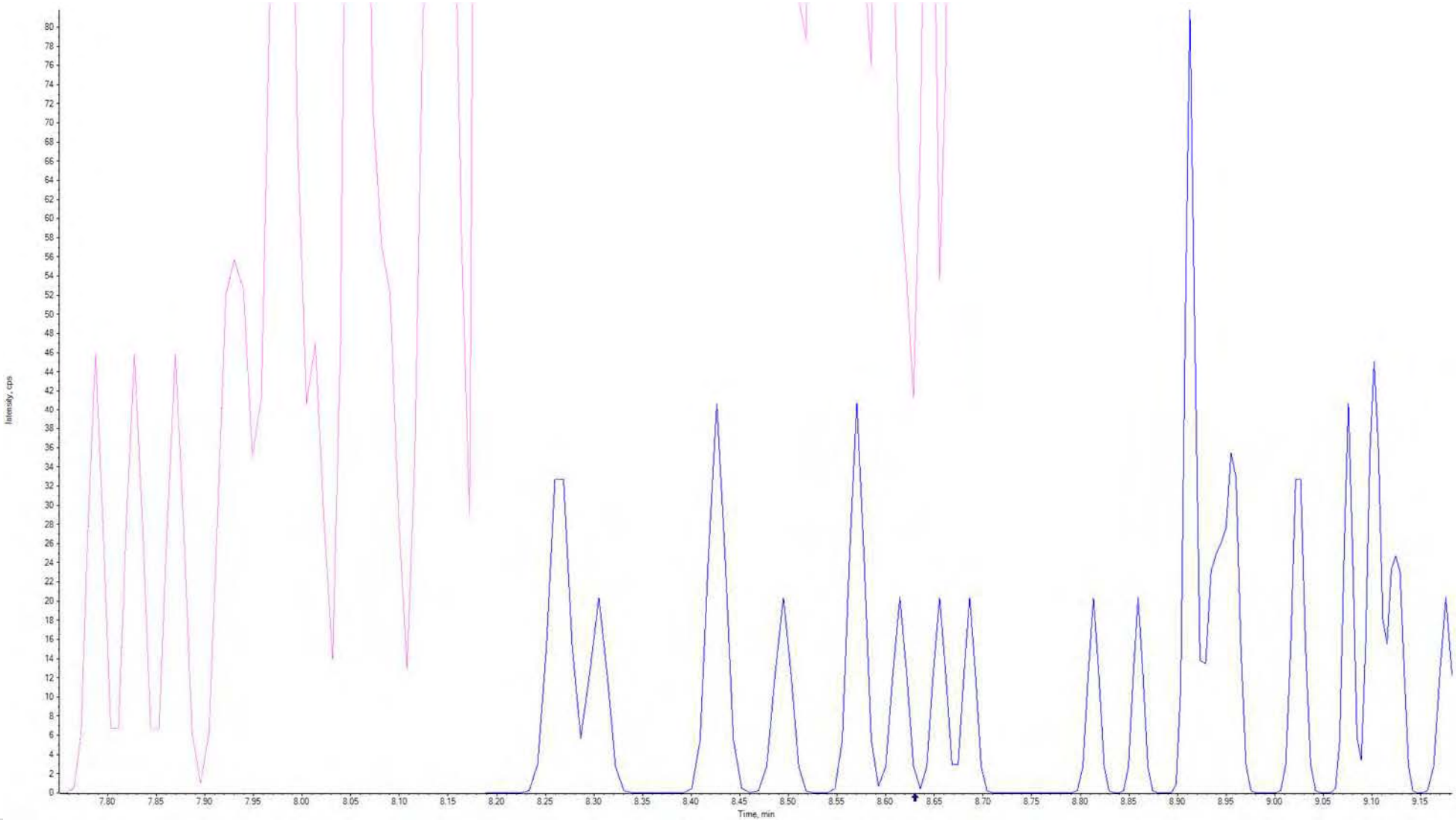

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Generated: 9/19/2024 8:04:31 AM

PFDS
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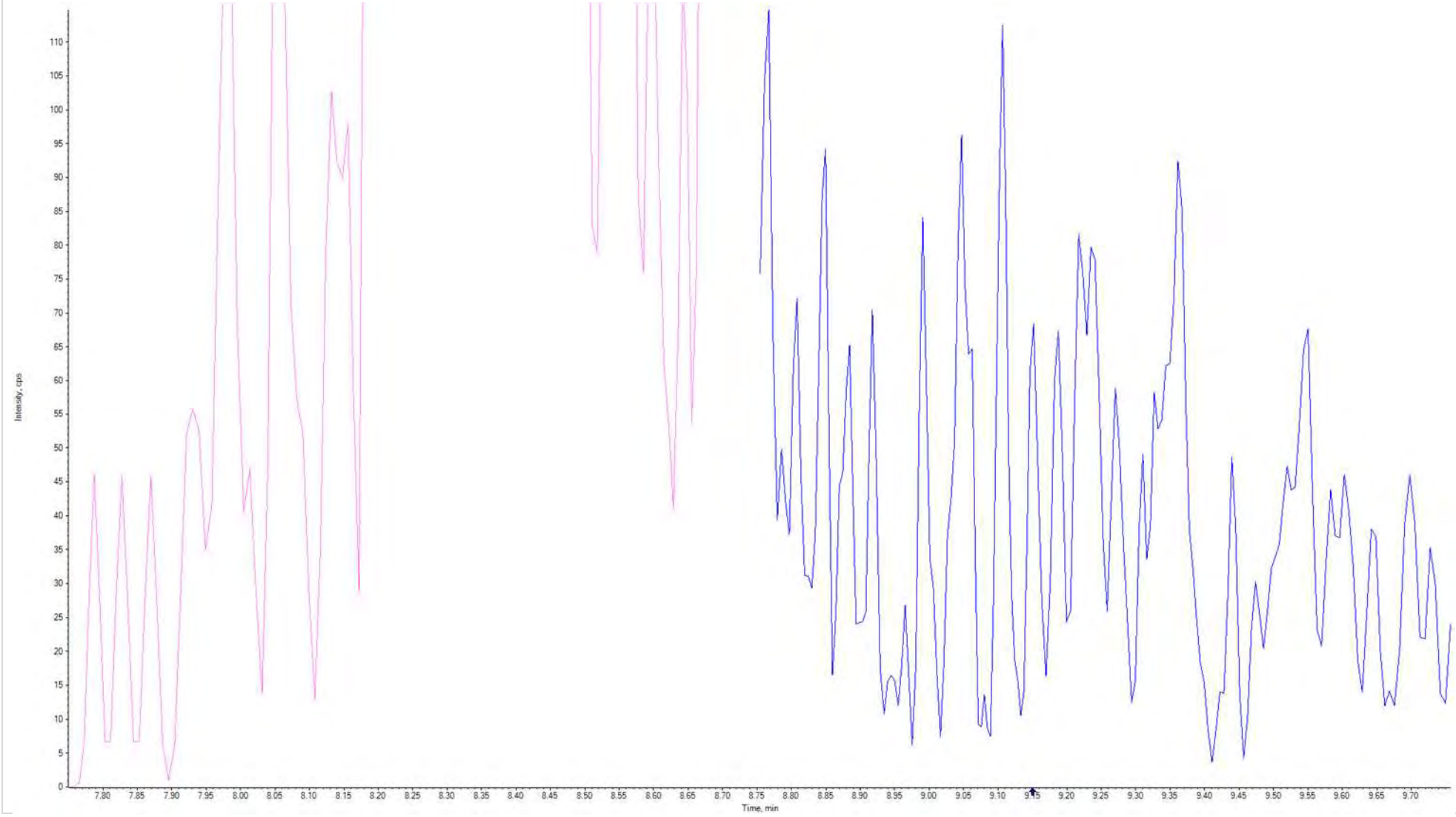

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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PFDS_2
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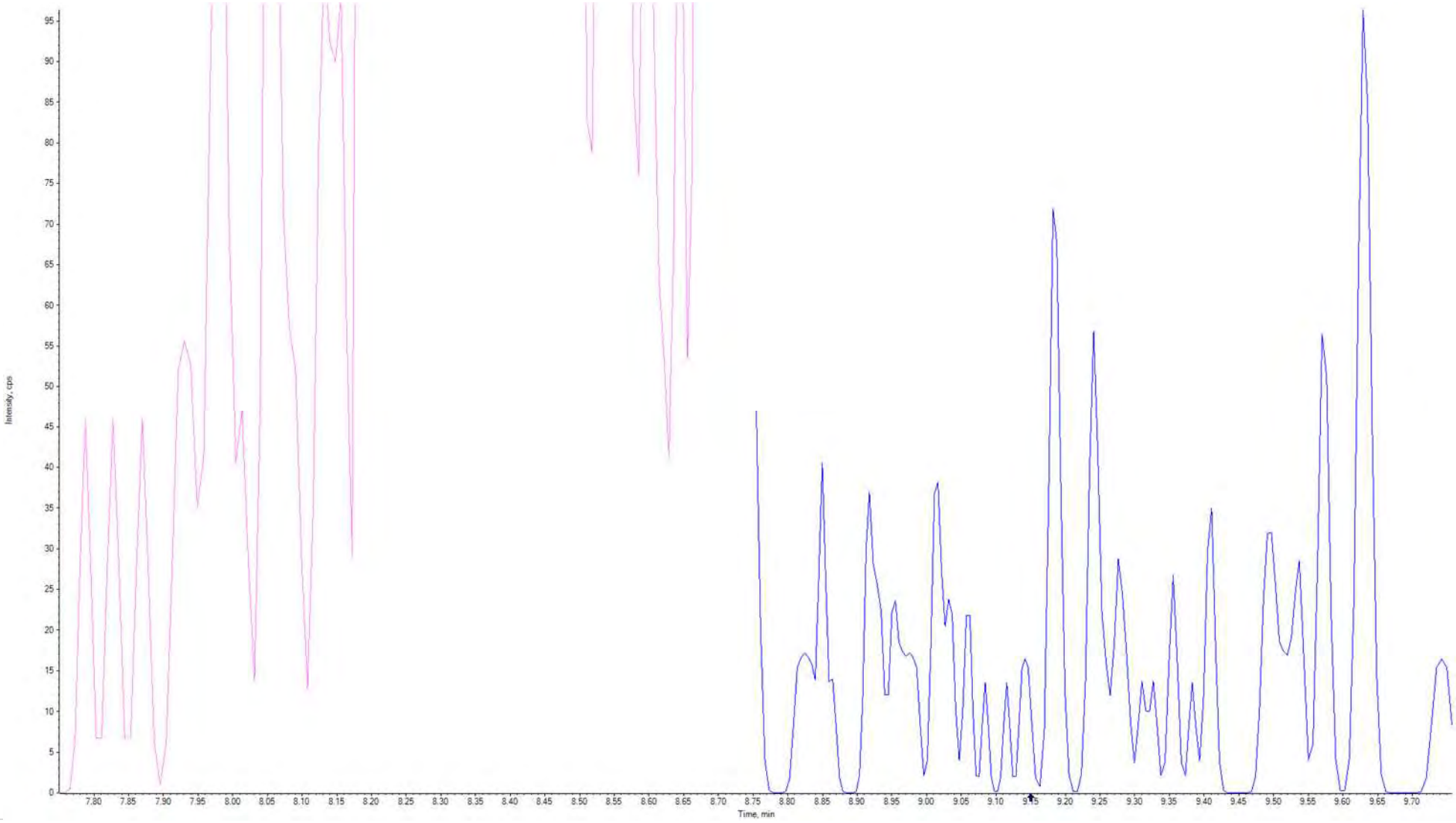

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Generated: 9/19/2024 8:04:31 AM

PFDoS
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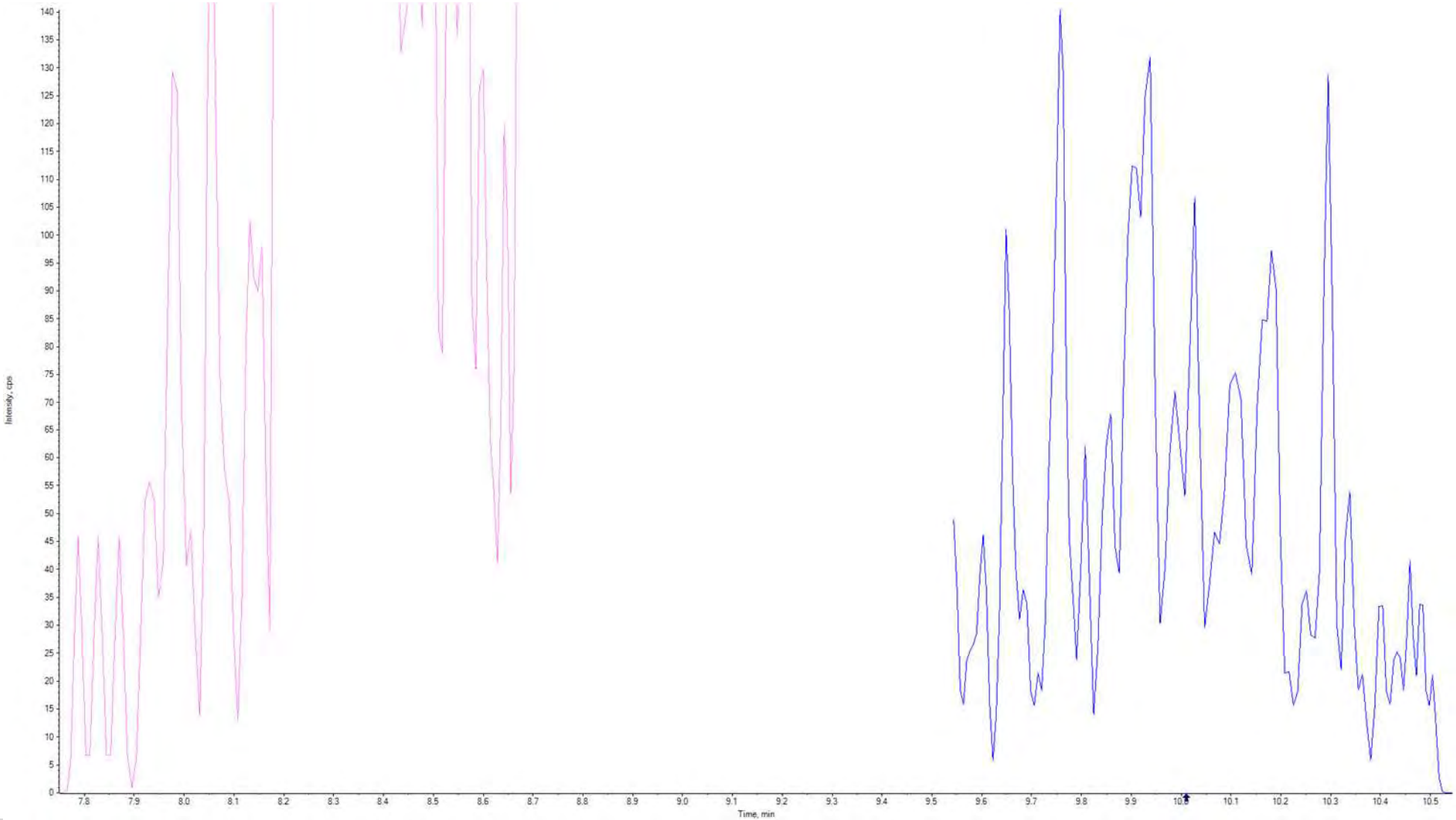

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PFDoS_2
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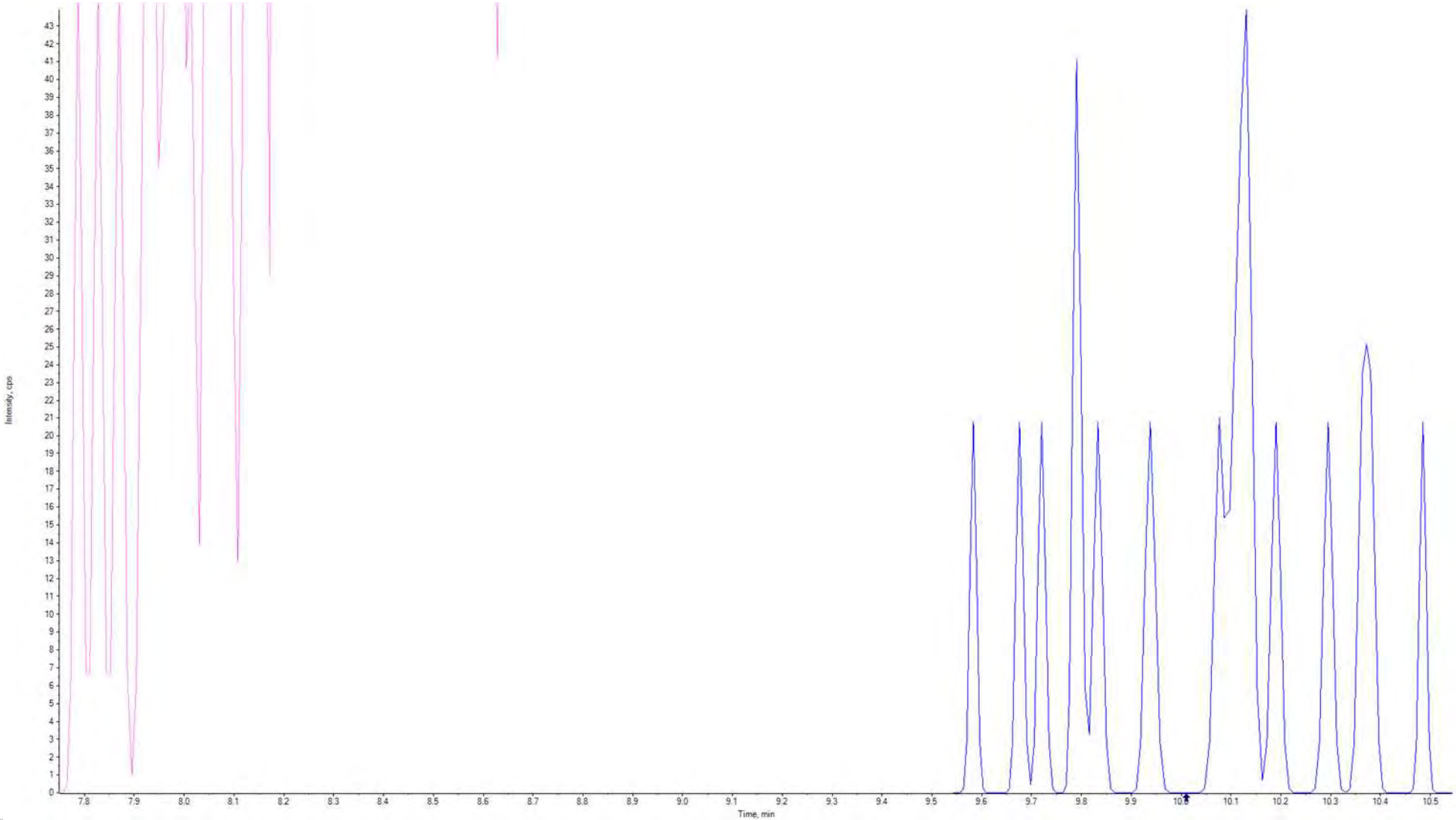

4:2FTS
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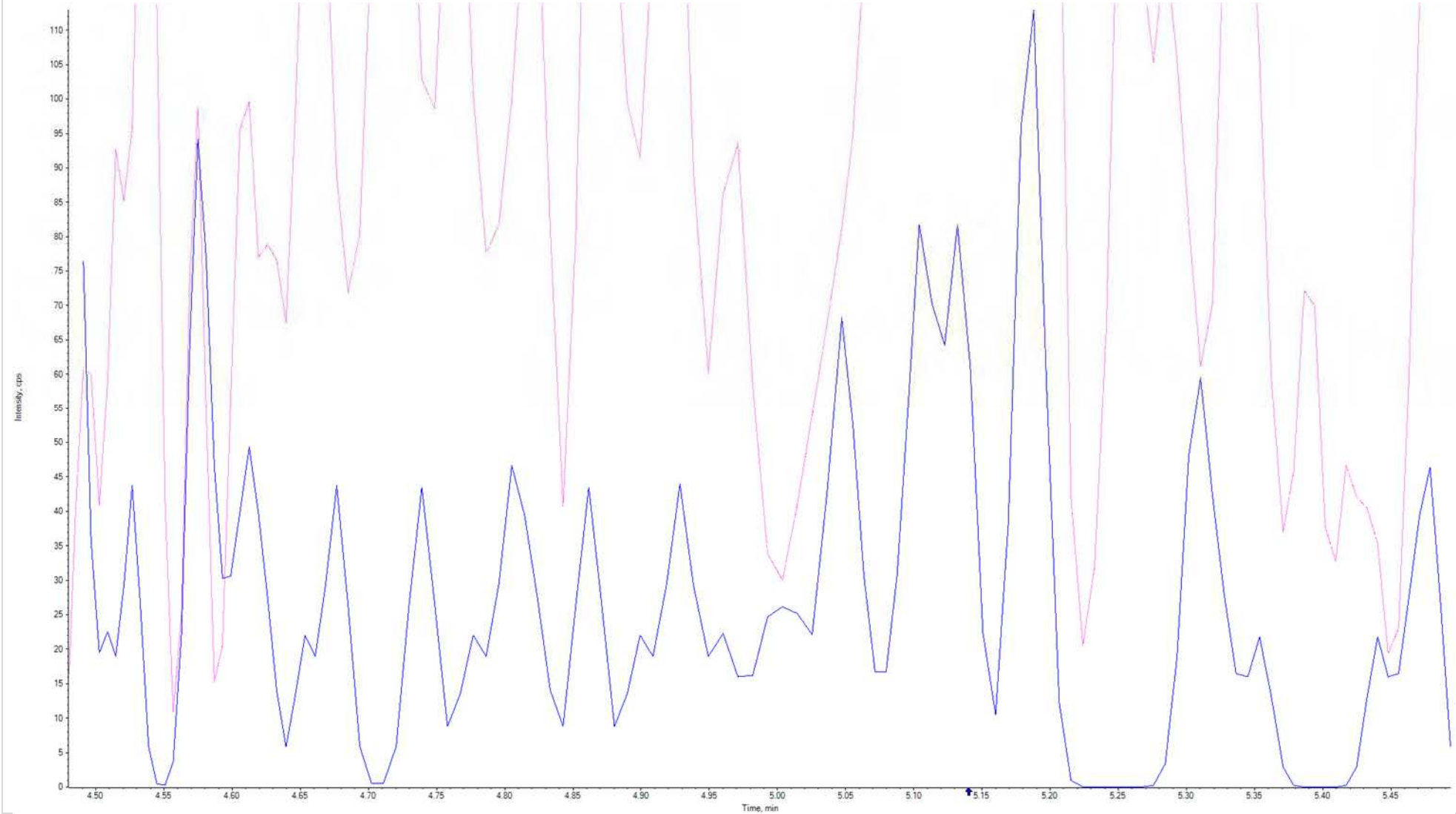

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

4:2FTS_2
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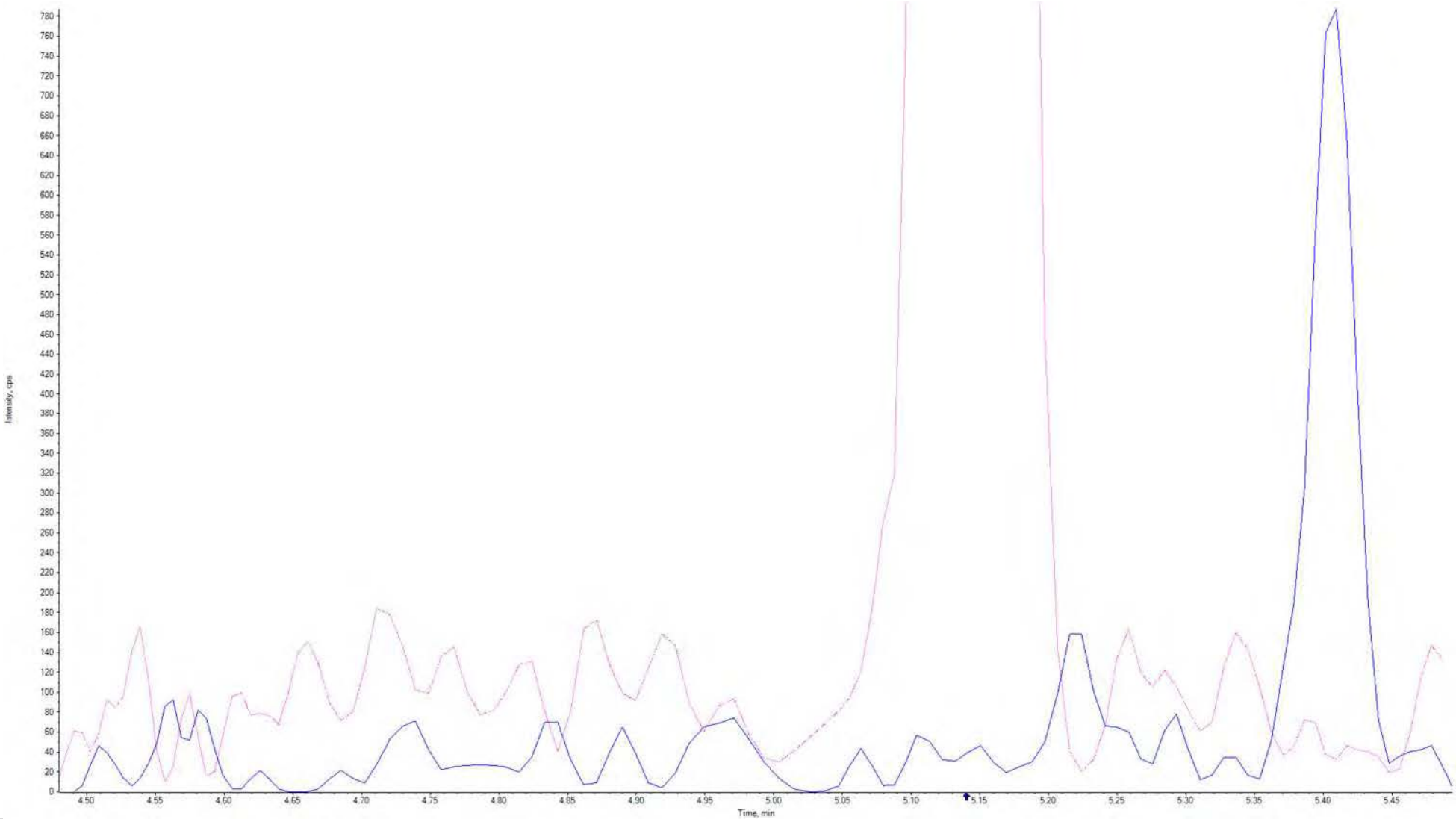

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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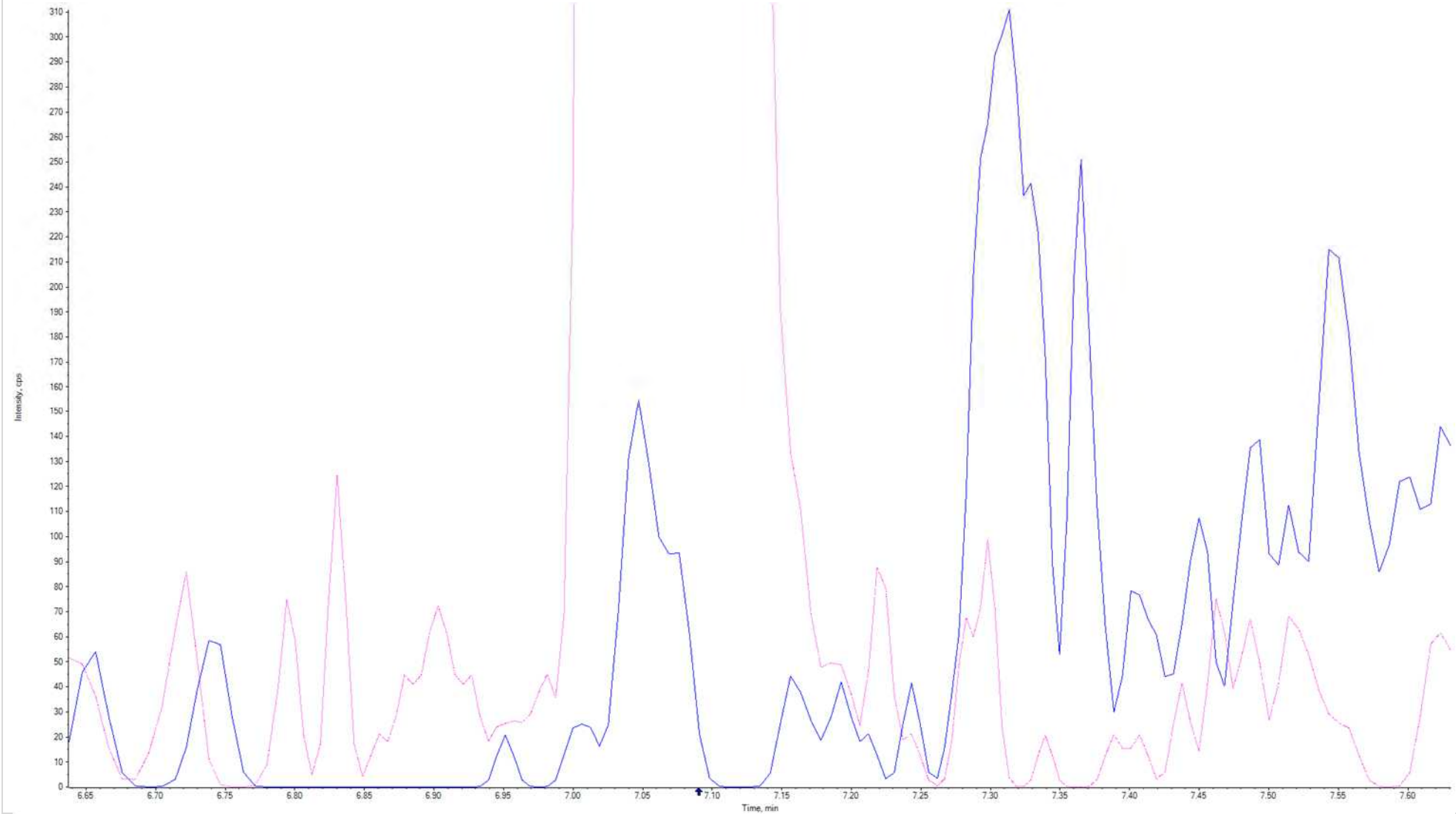
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

6:2FTS
Sample: L2450786-11 S/N:N/A Points Across peak:N/A



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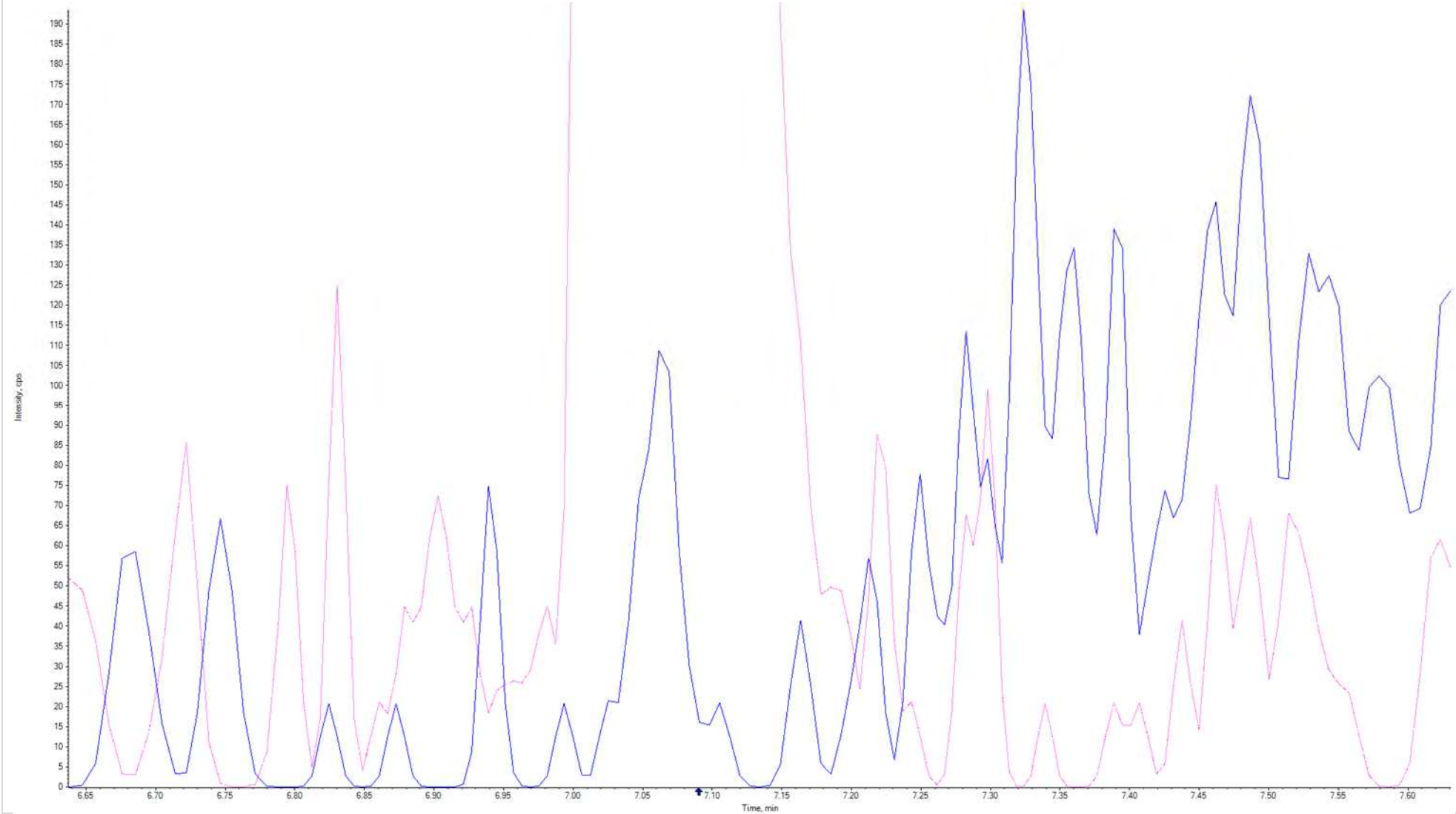

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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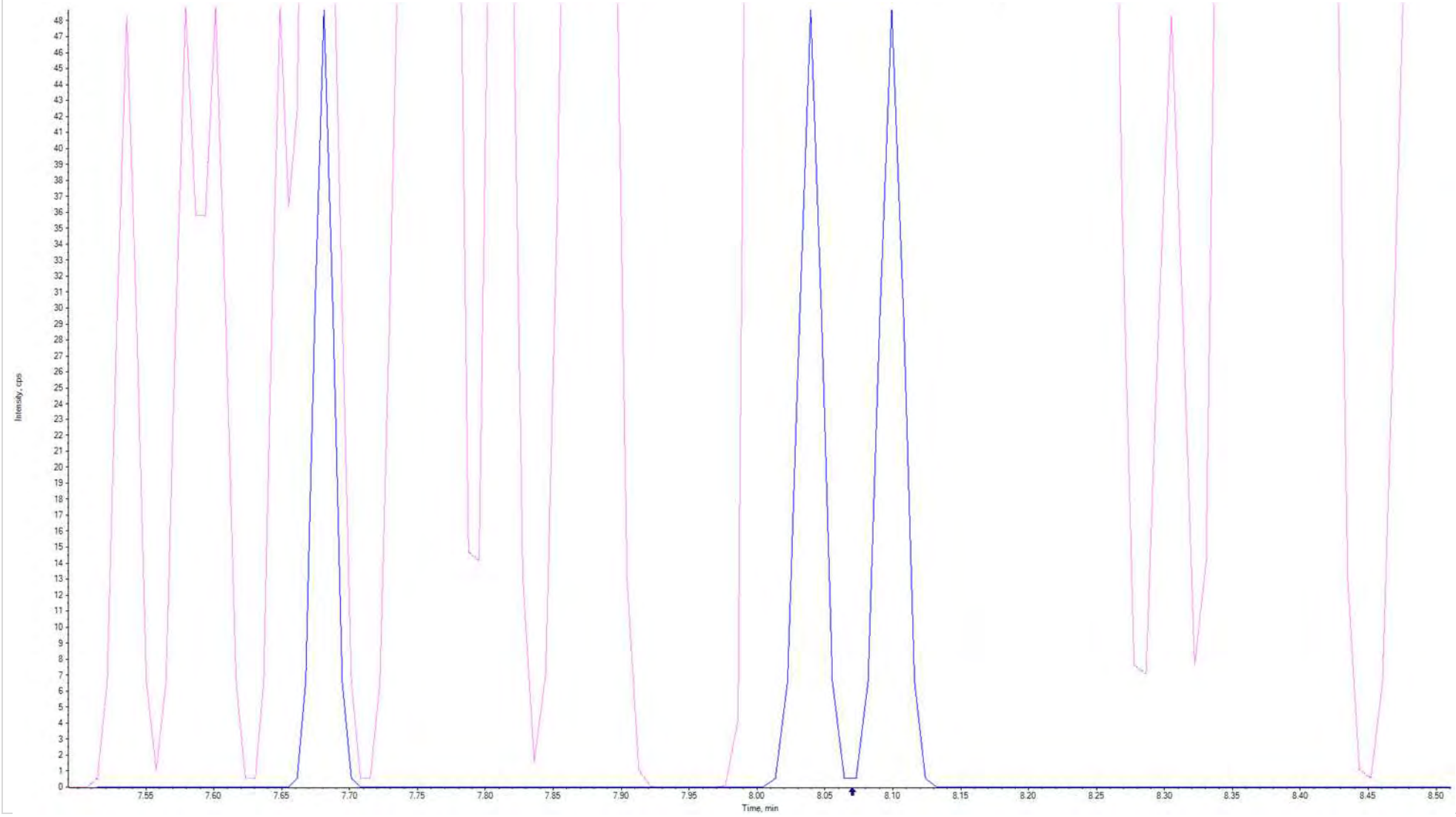
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

8:2FTS
Sample: L2450786-11 S/N:N/A Points Across peak:N/A



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Generated: 9/19/2024 8:04:31 AM

8:2FTS_2
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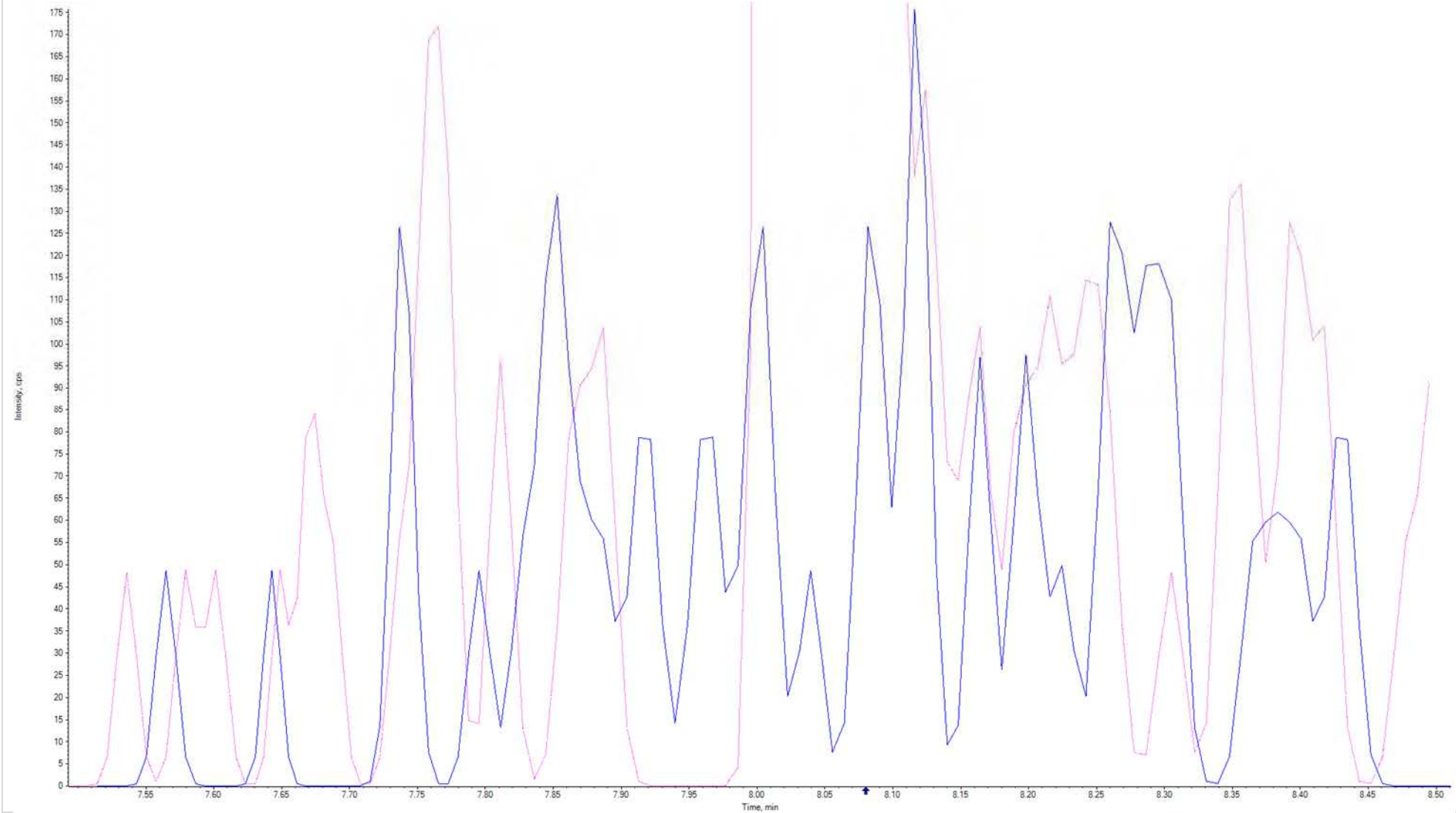

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_22.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOSA
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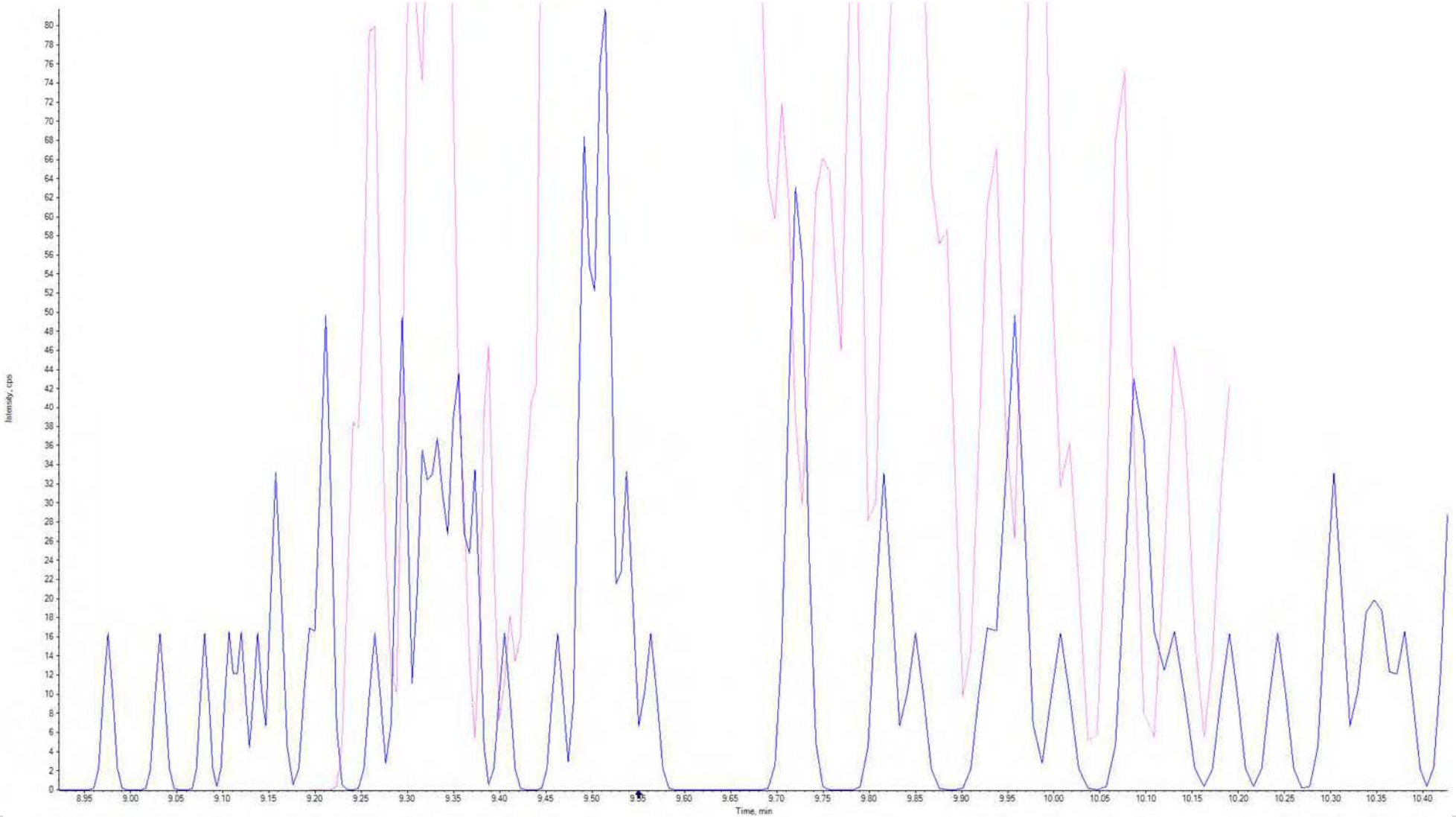

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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PFOSA_2
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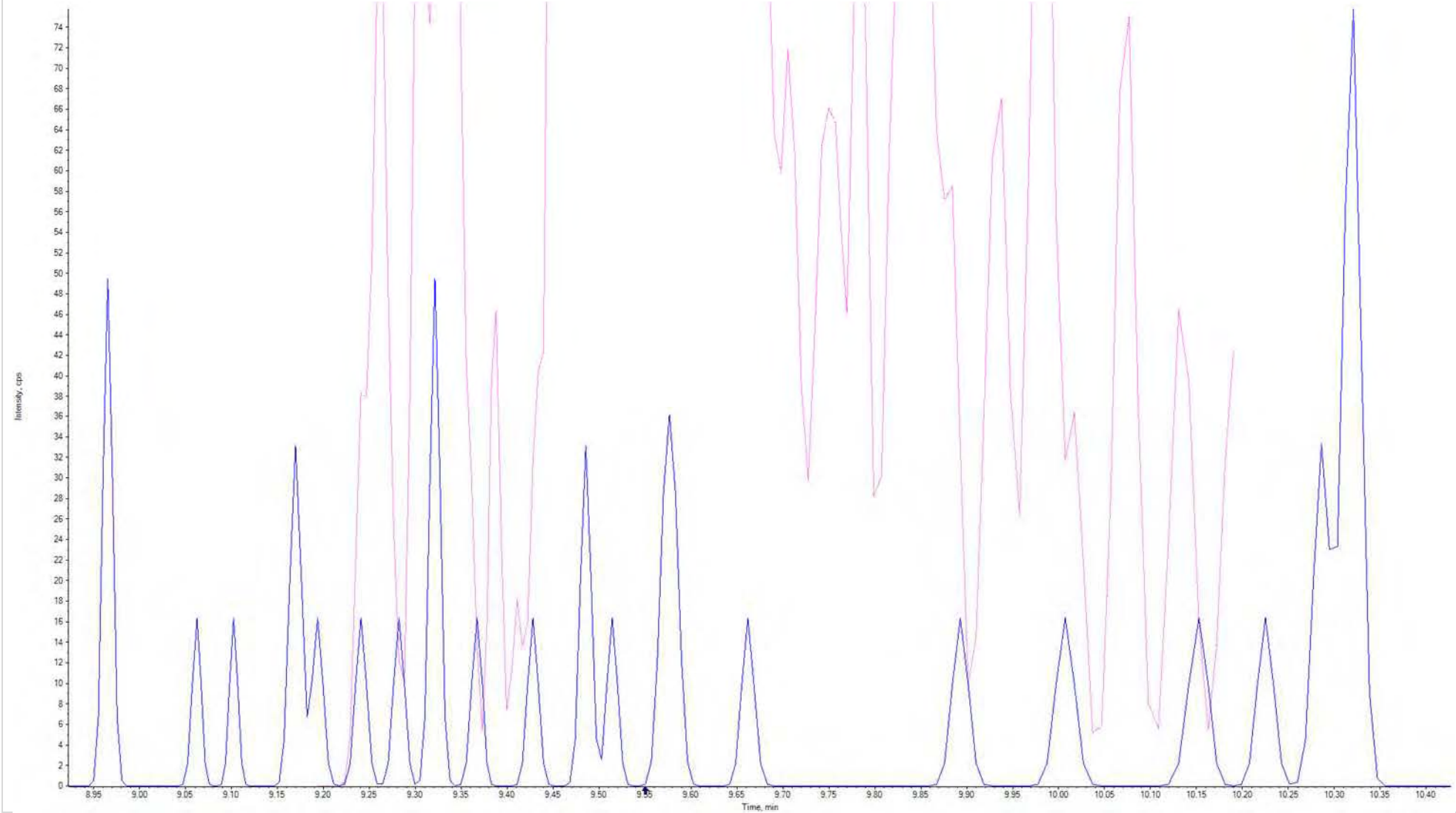

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Generated: 9/19/2024 8:04:31 AM

NMeFOSA
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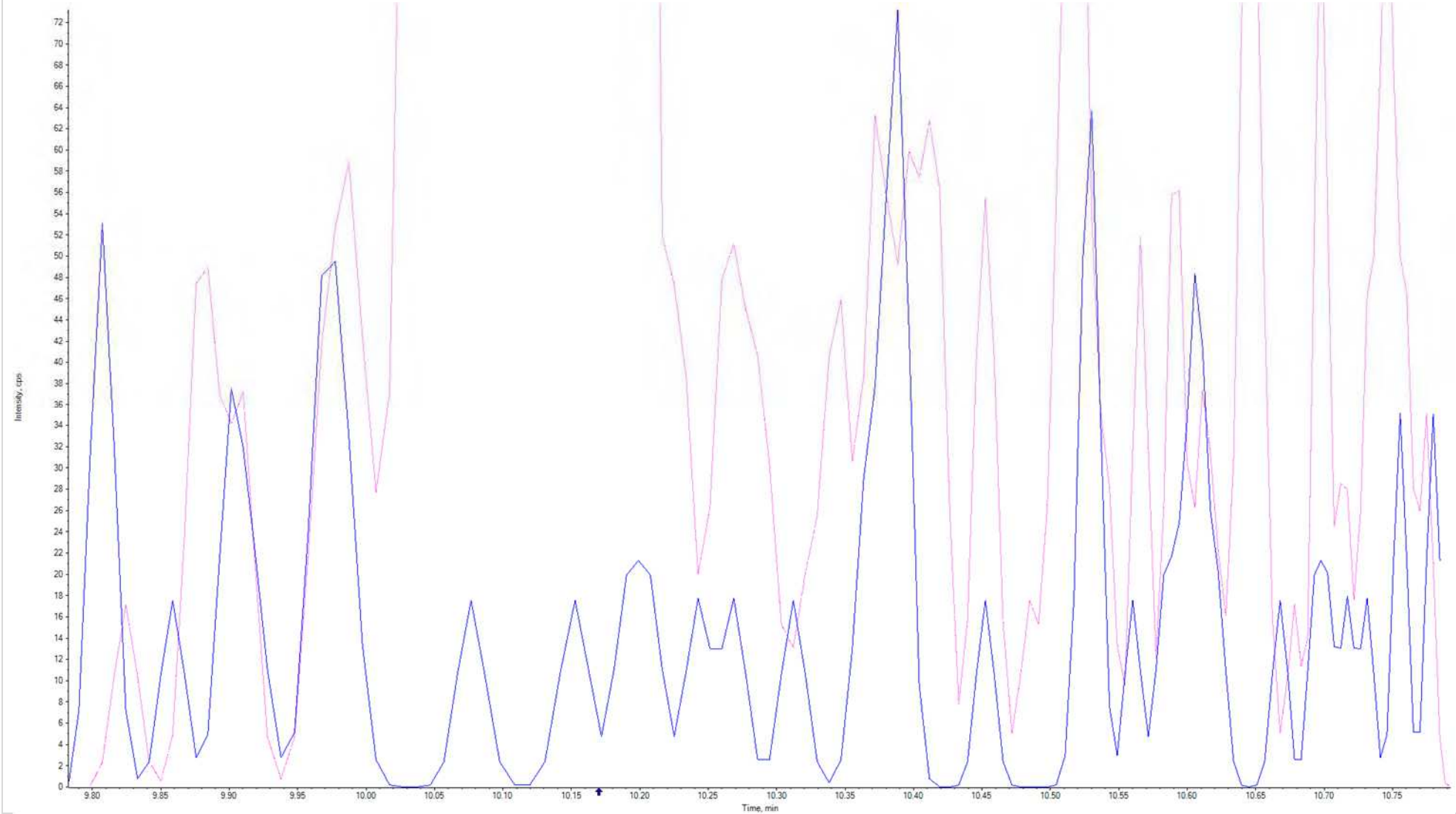

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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NMeFOSA_2
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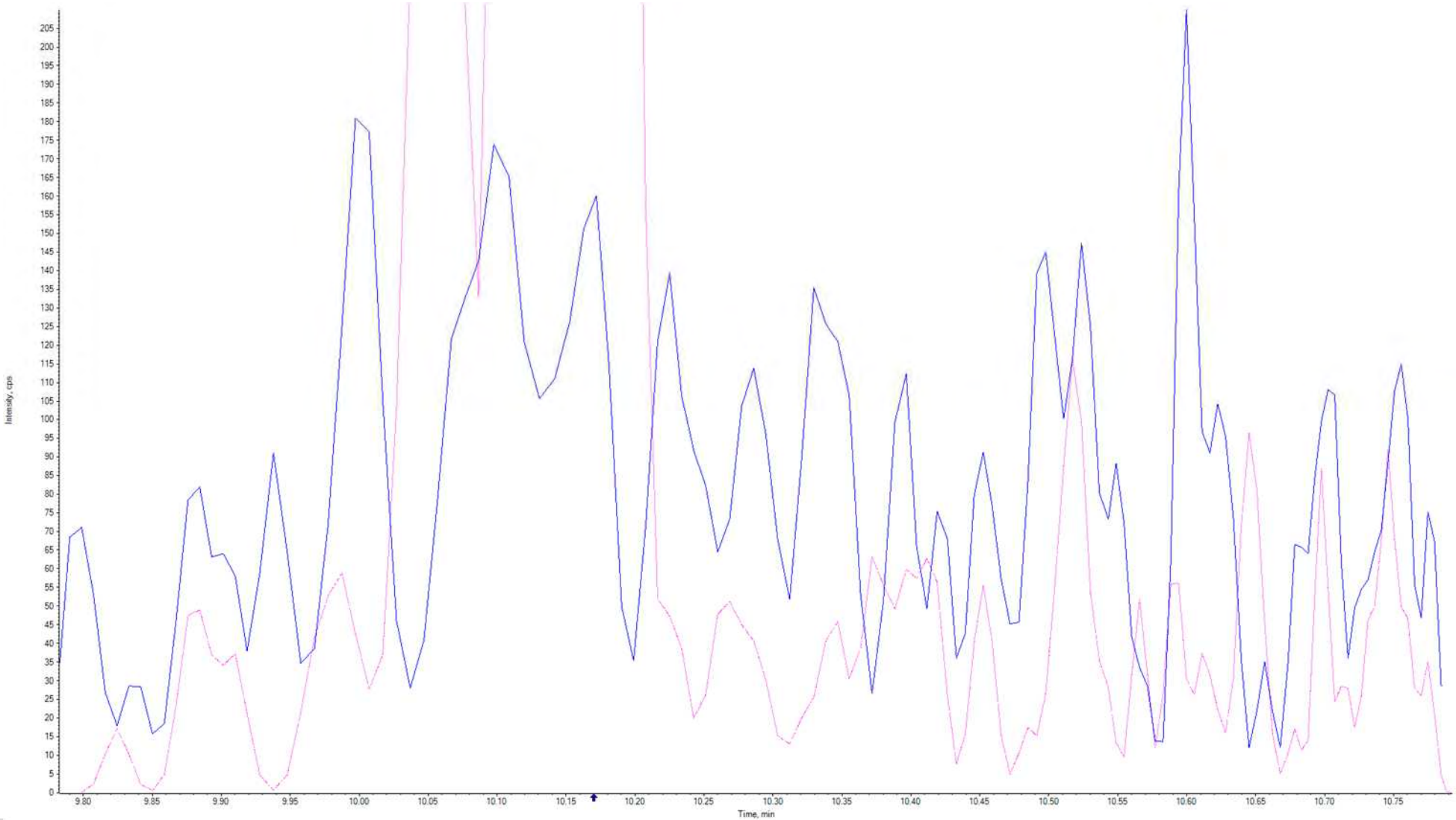

NEtFOSA
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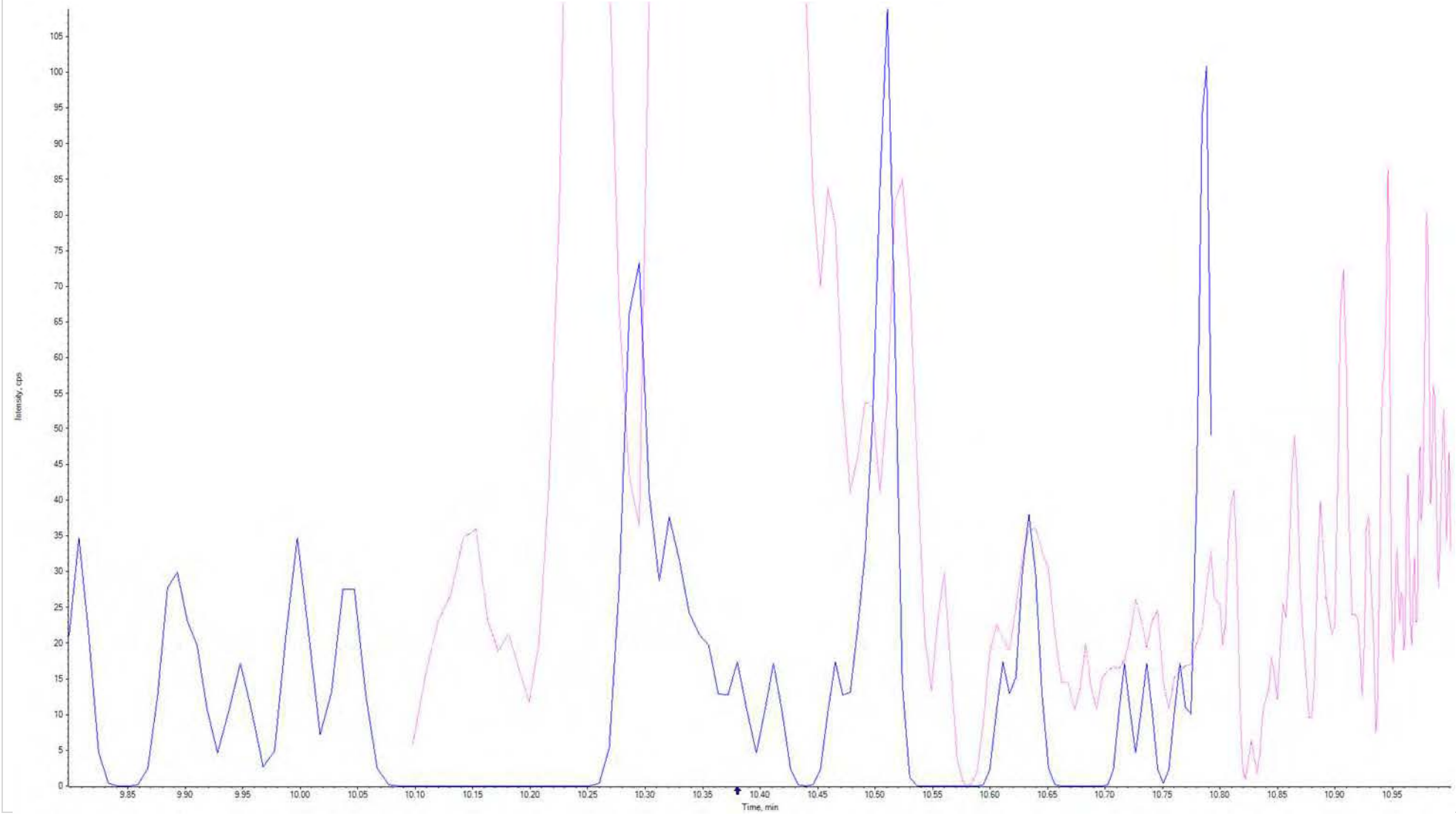

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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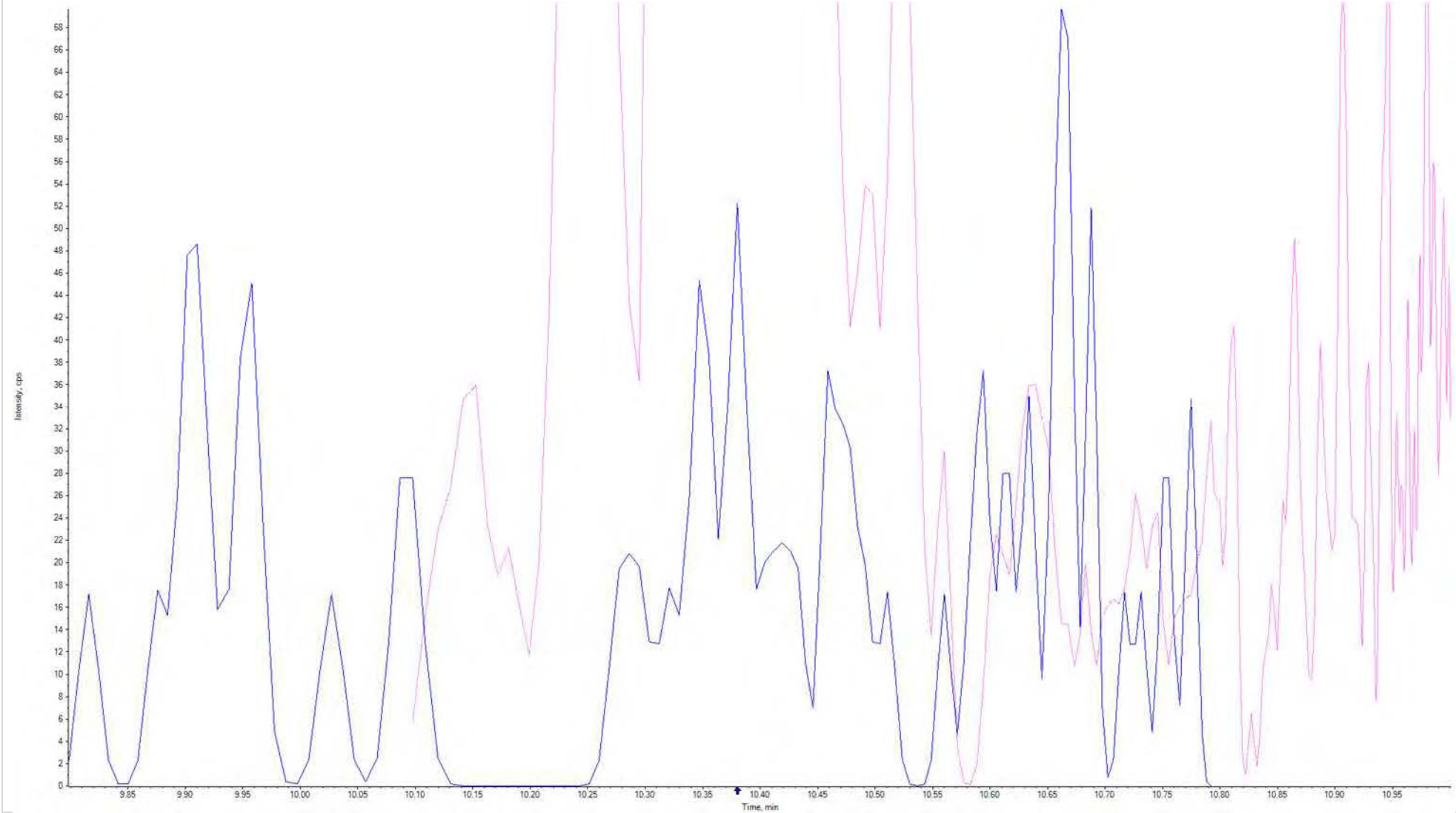

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Generated: 9/19/2024 8:04:31 AM

NMeFOSAA
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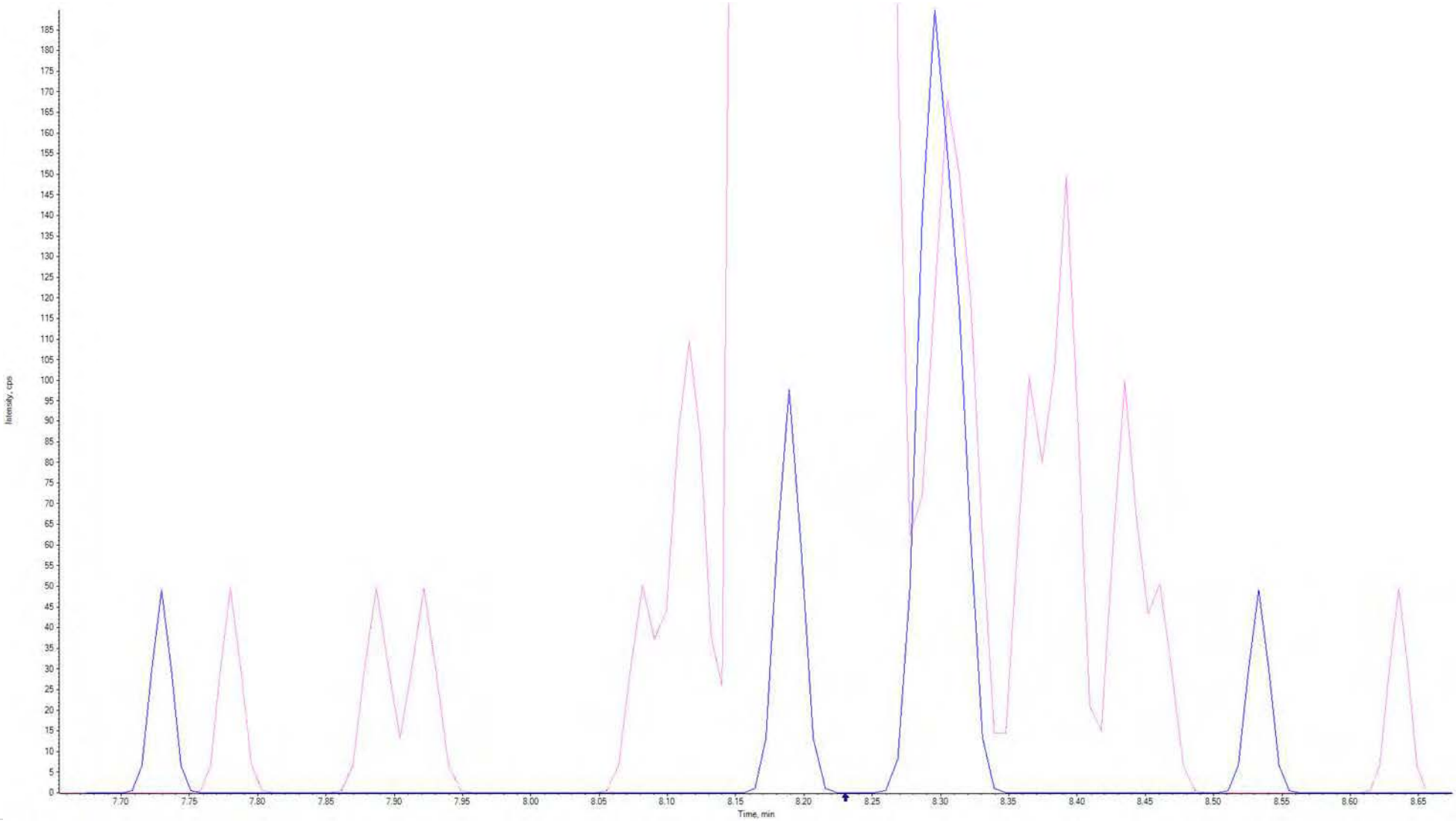

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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NMeFOSAA_2
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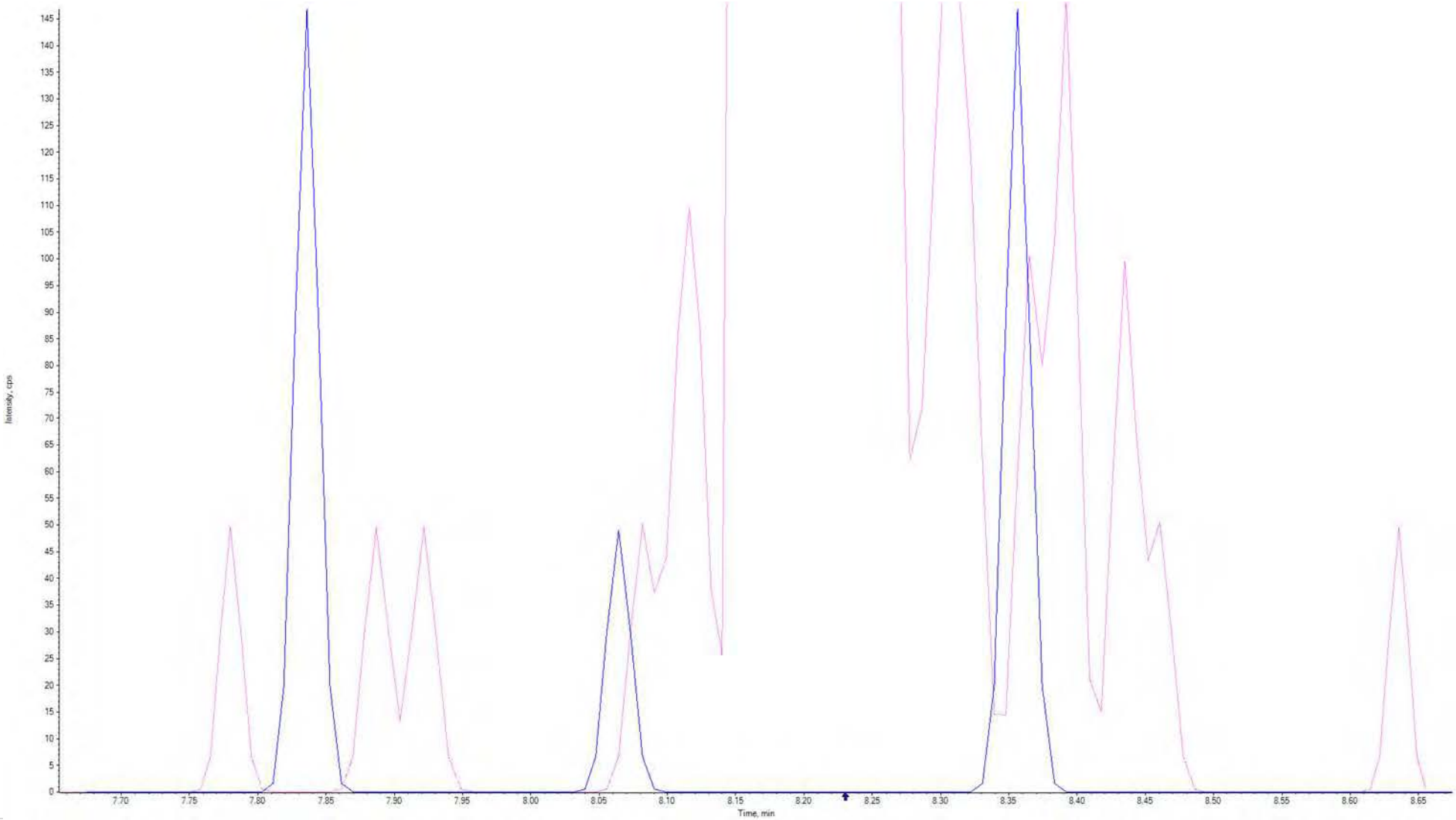

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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NEtFOSAA
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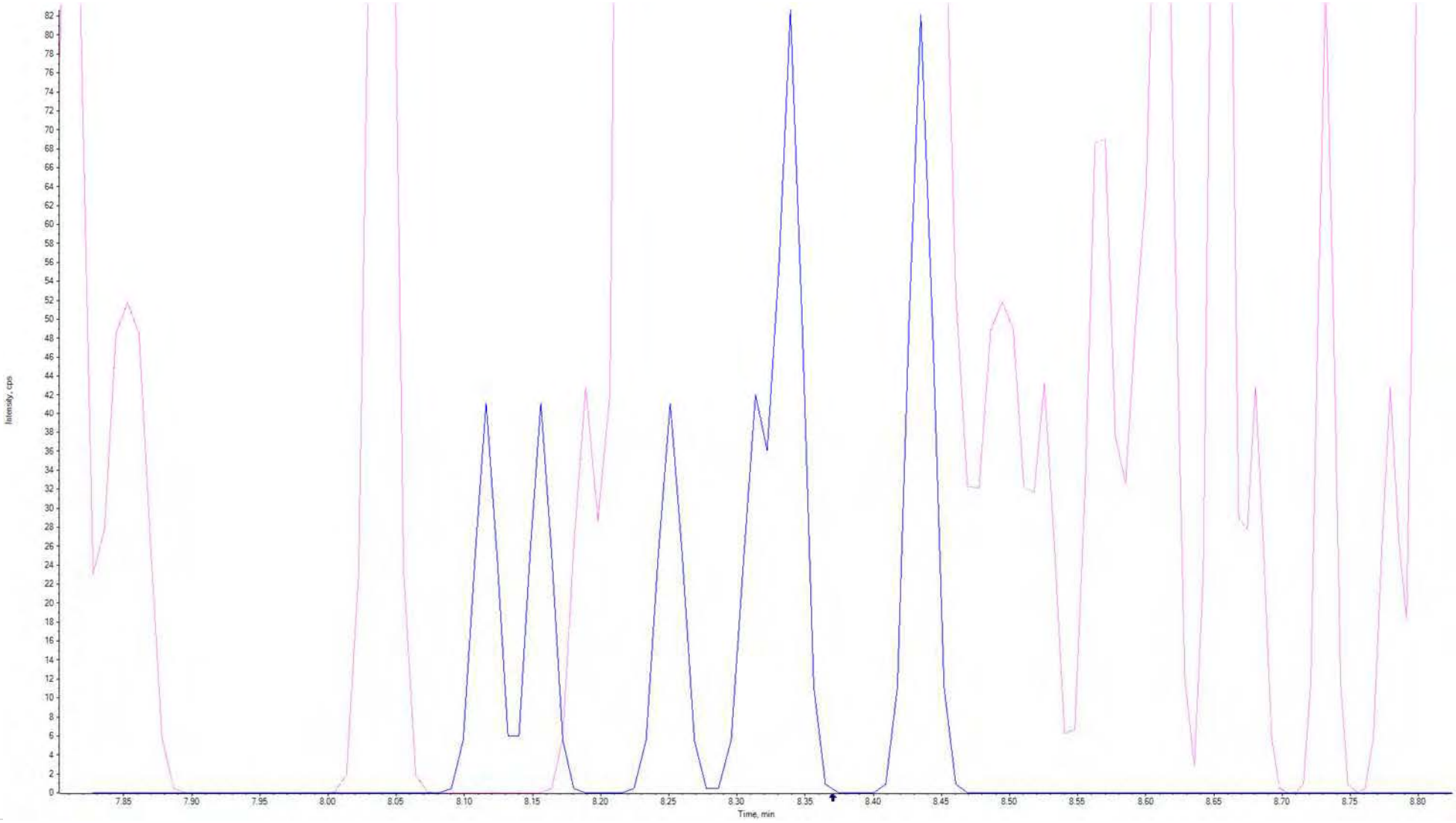

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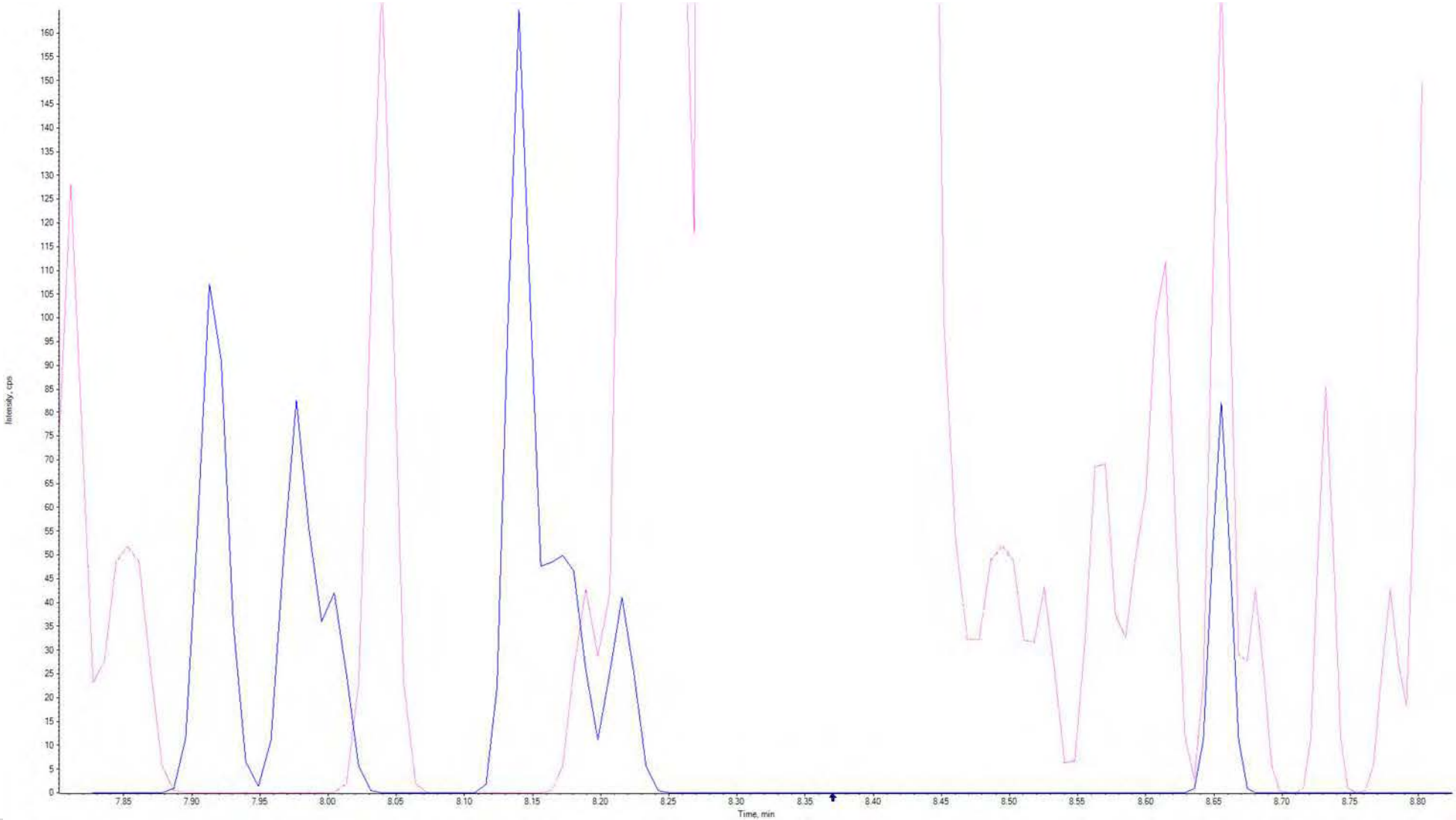

NMeFOSE
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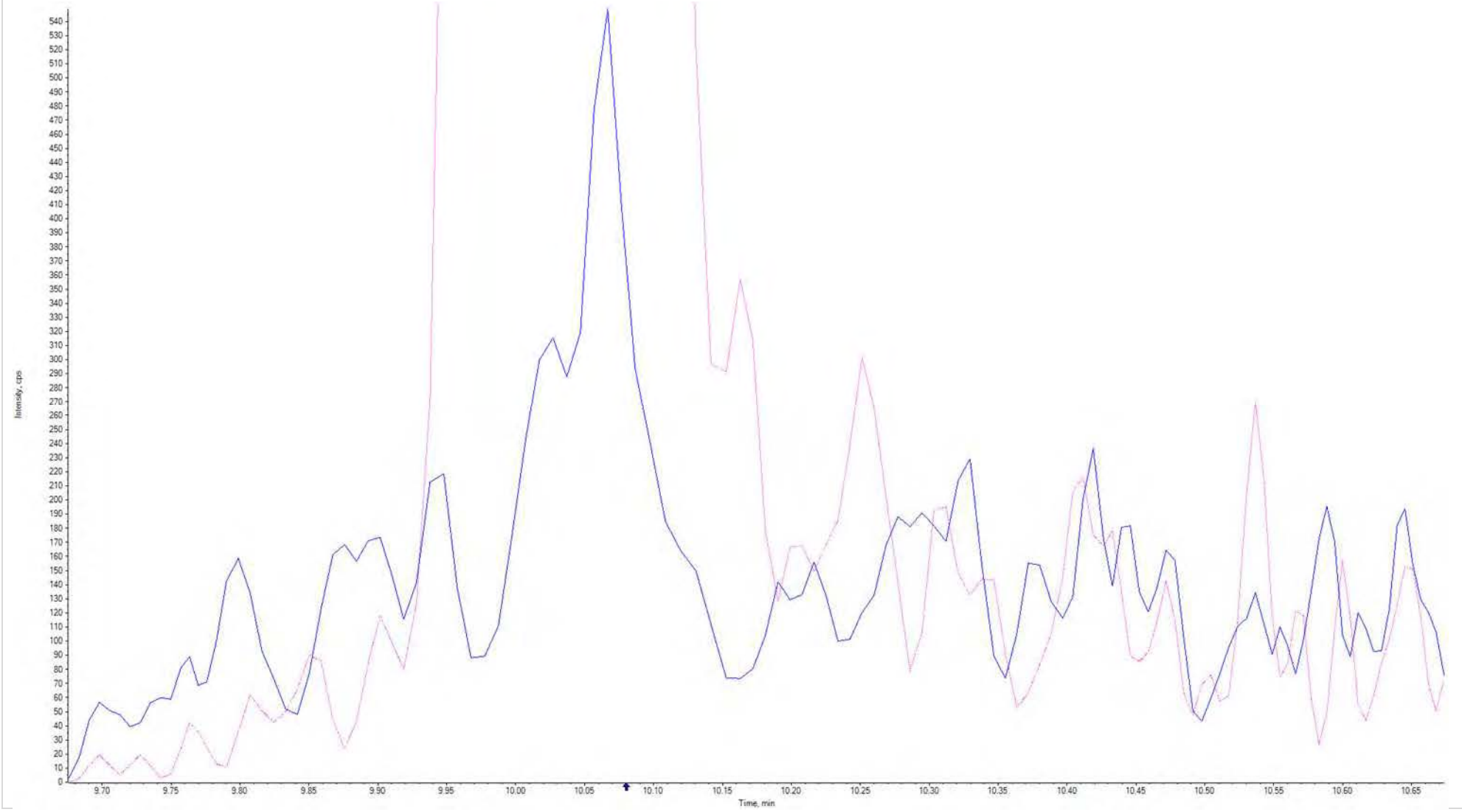

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSE
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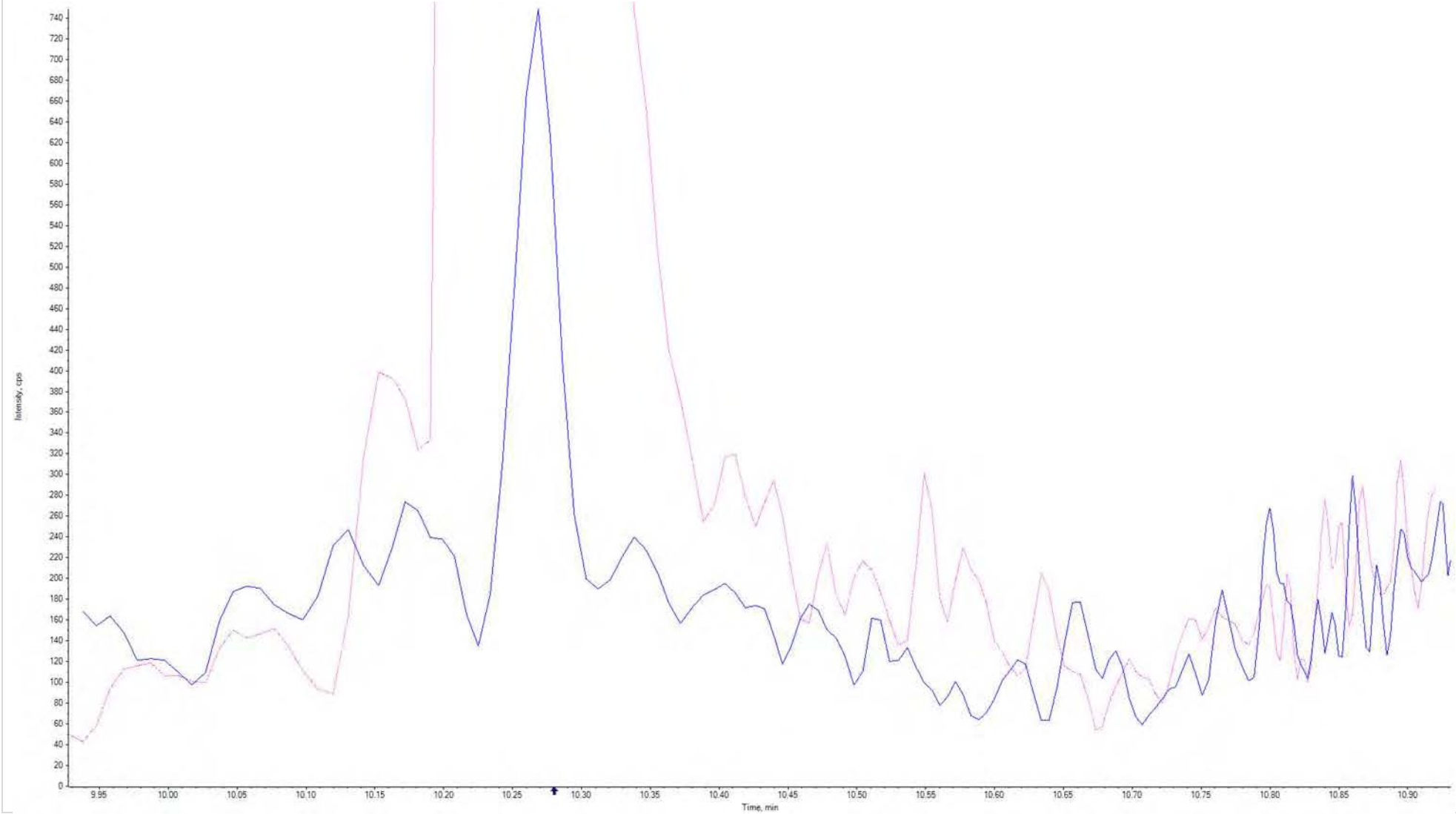

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

HFPO-DA
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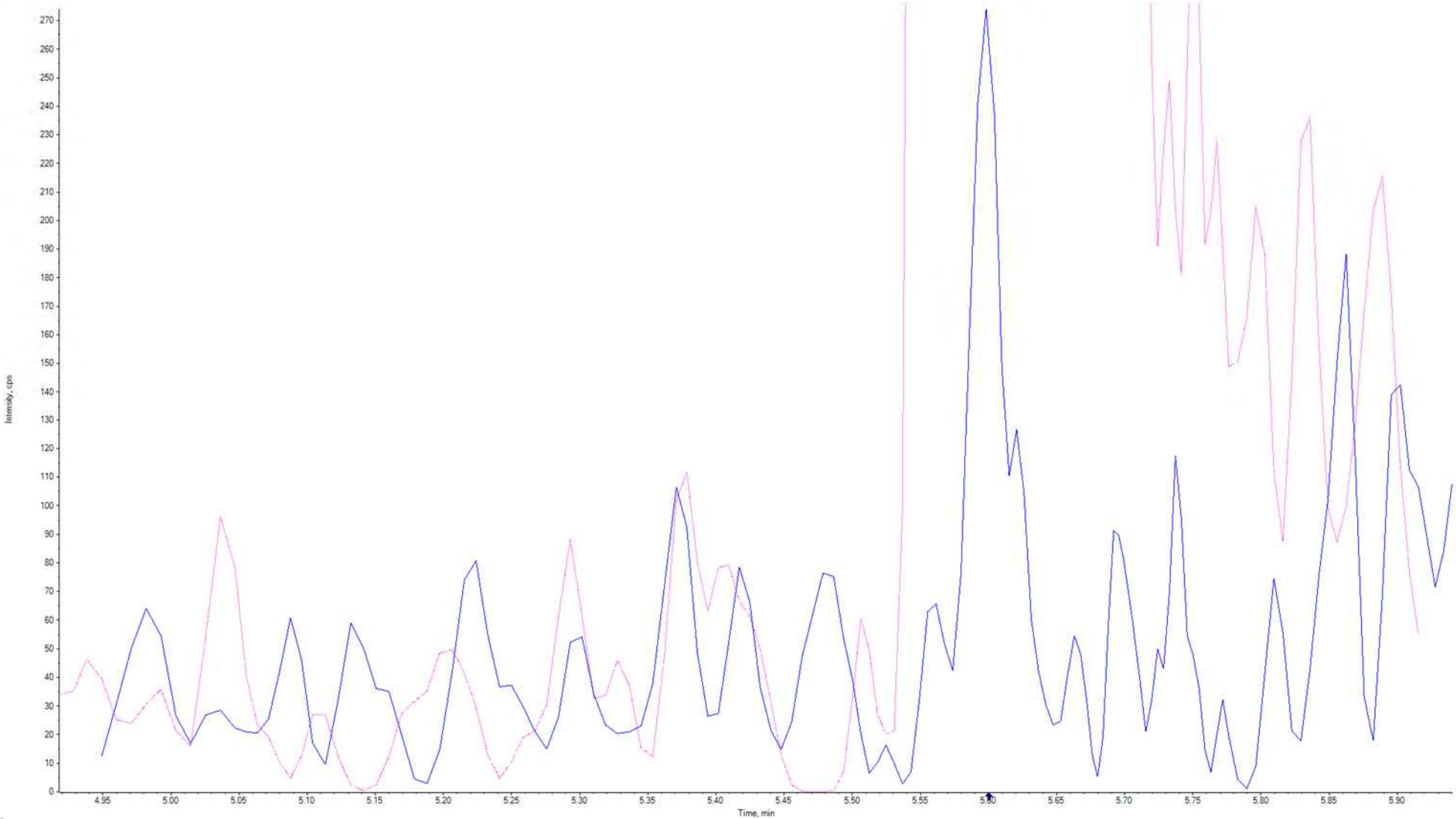

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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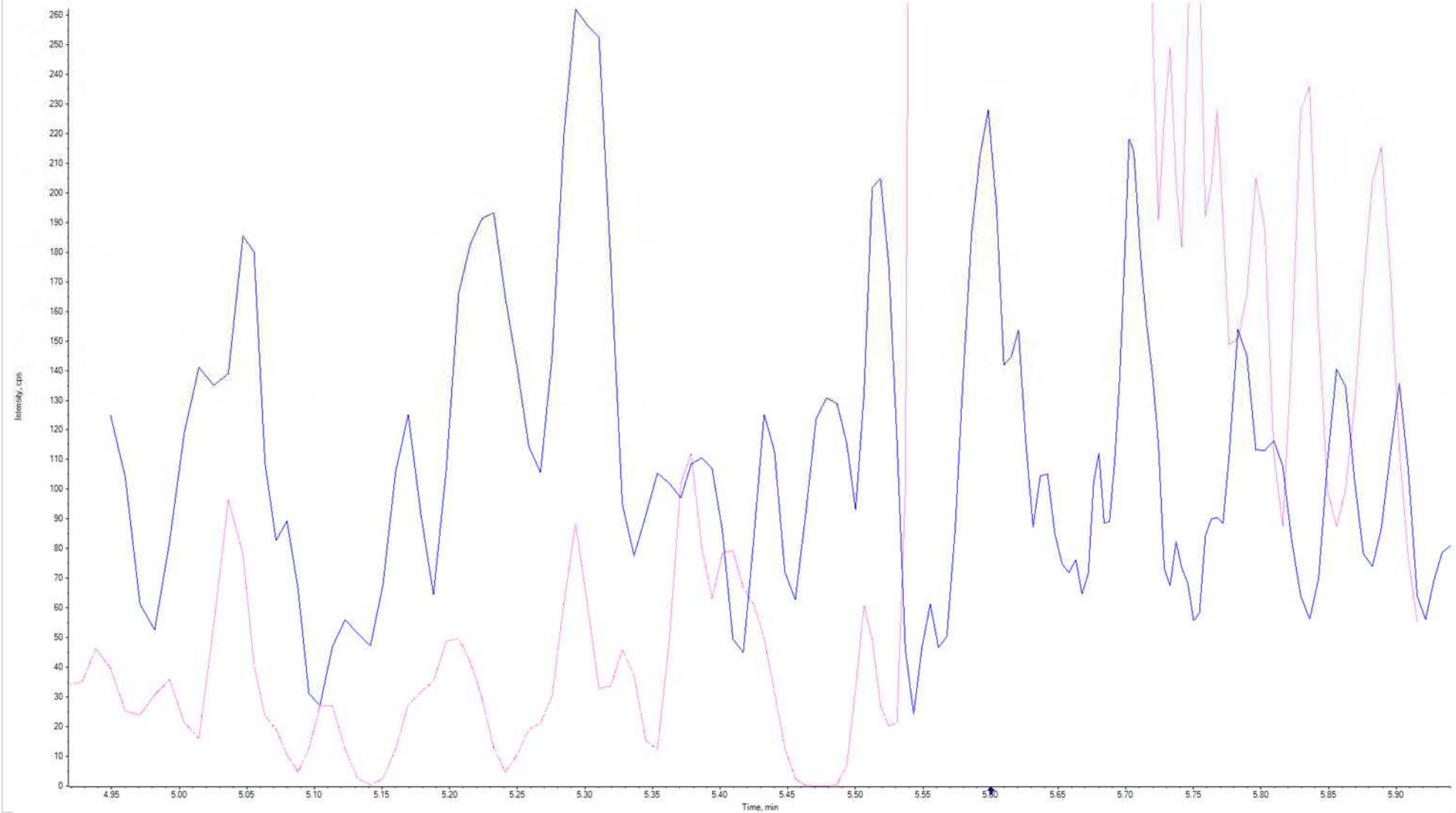
HFPO-DA_2
Sample: L2450786-11 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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ADONA
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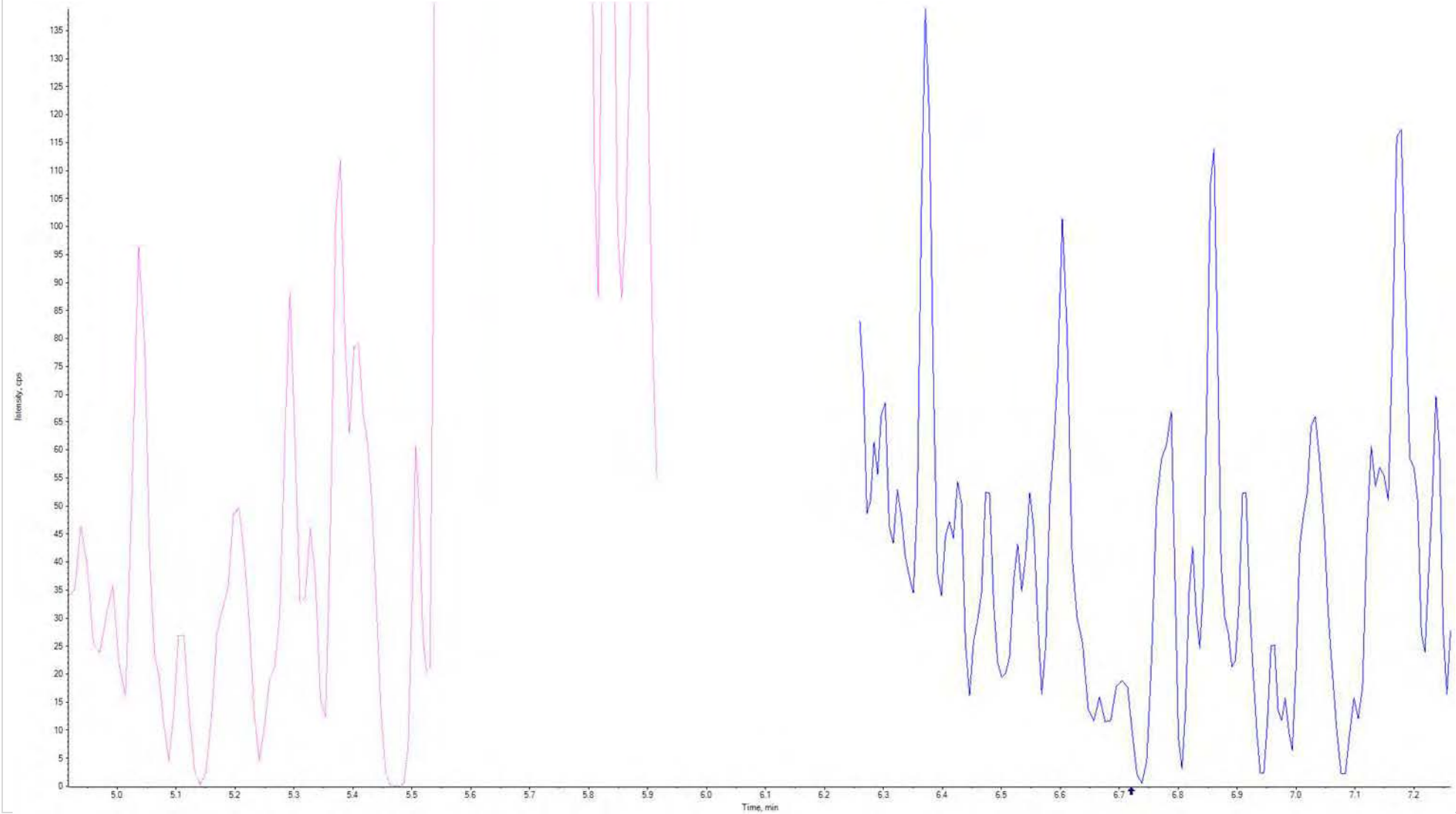

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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ADONA_2
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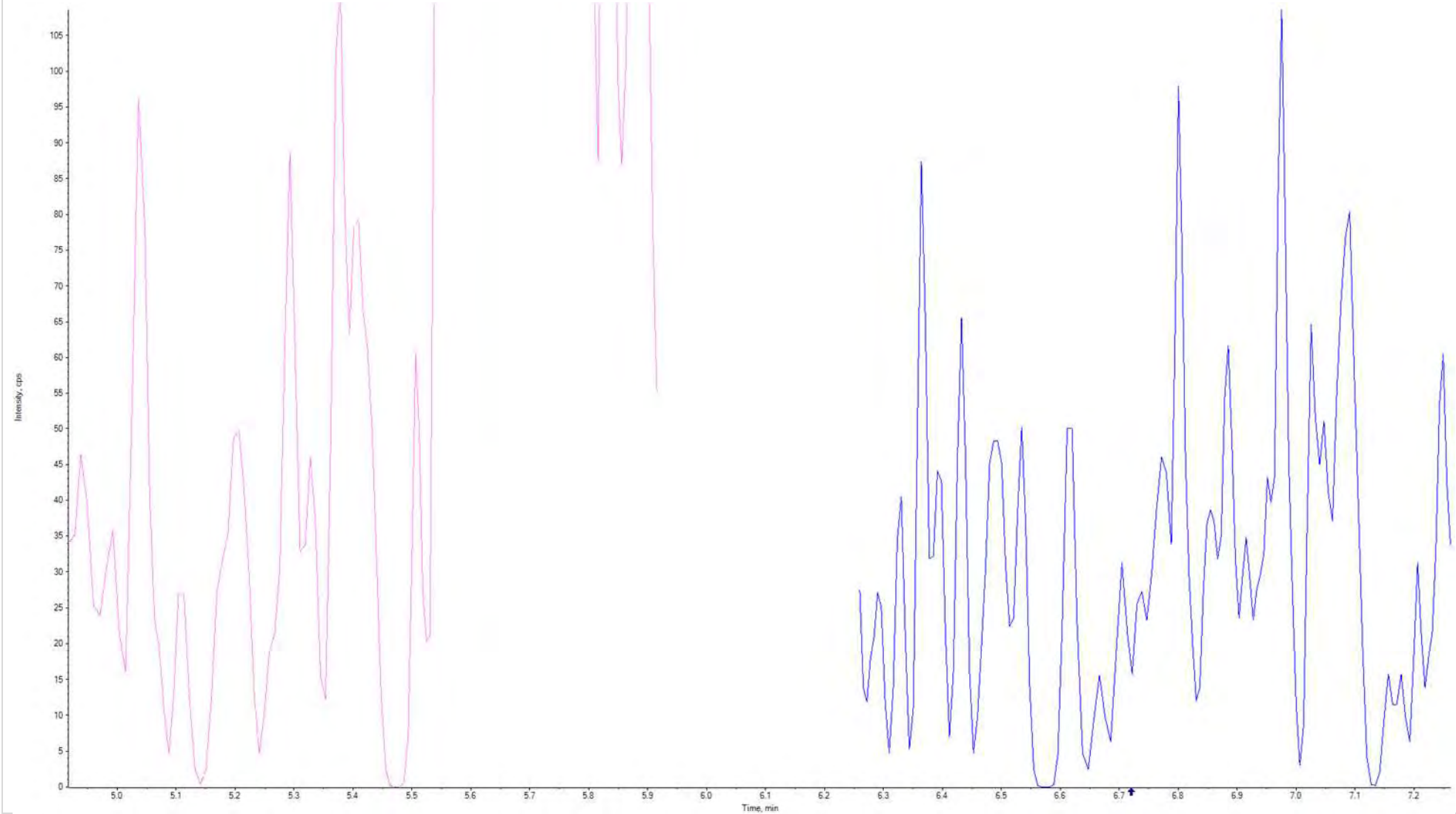

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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9Cl-PF3ONS
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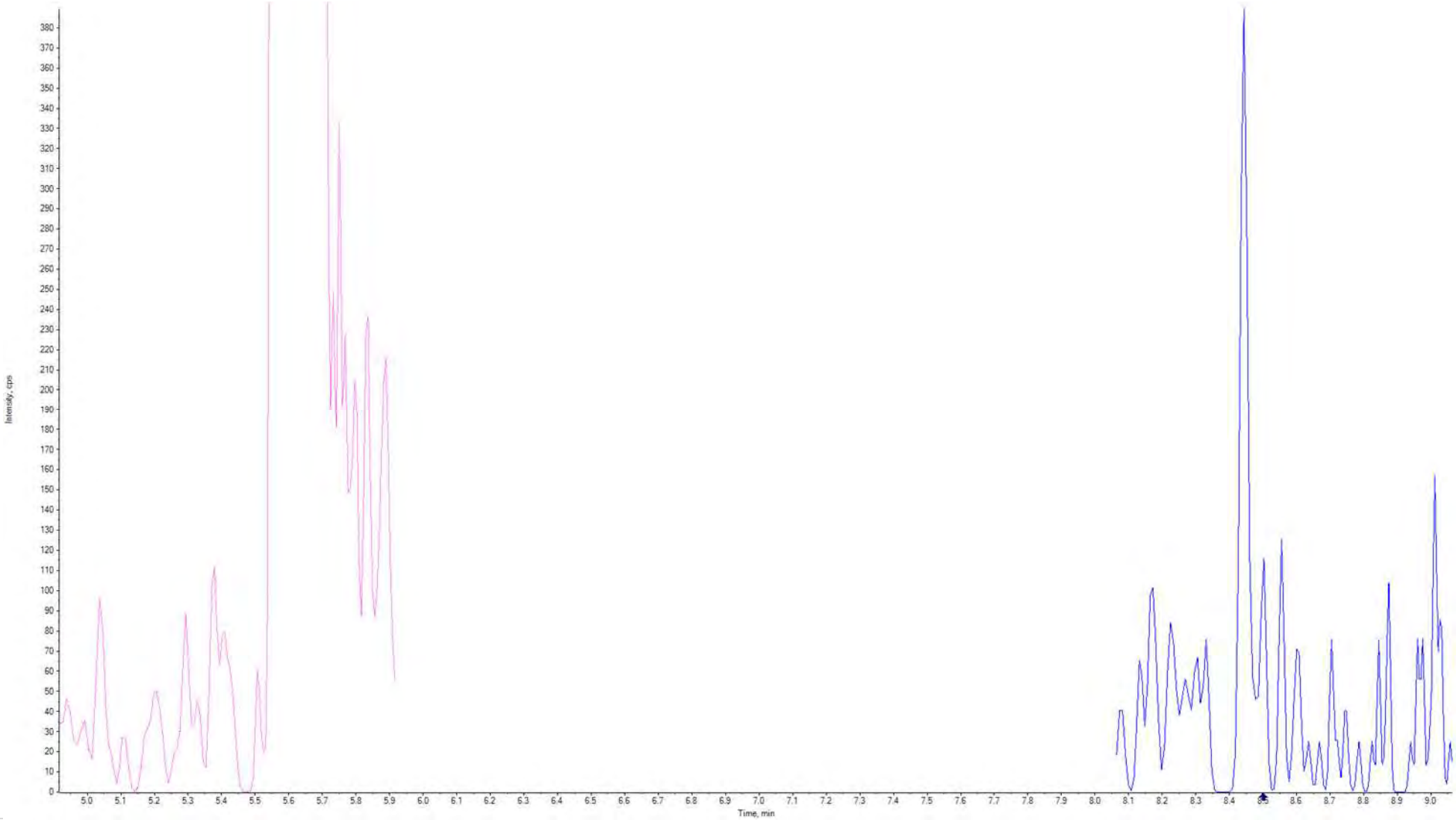

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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9Cl-PF3ONS_2
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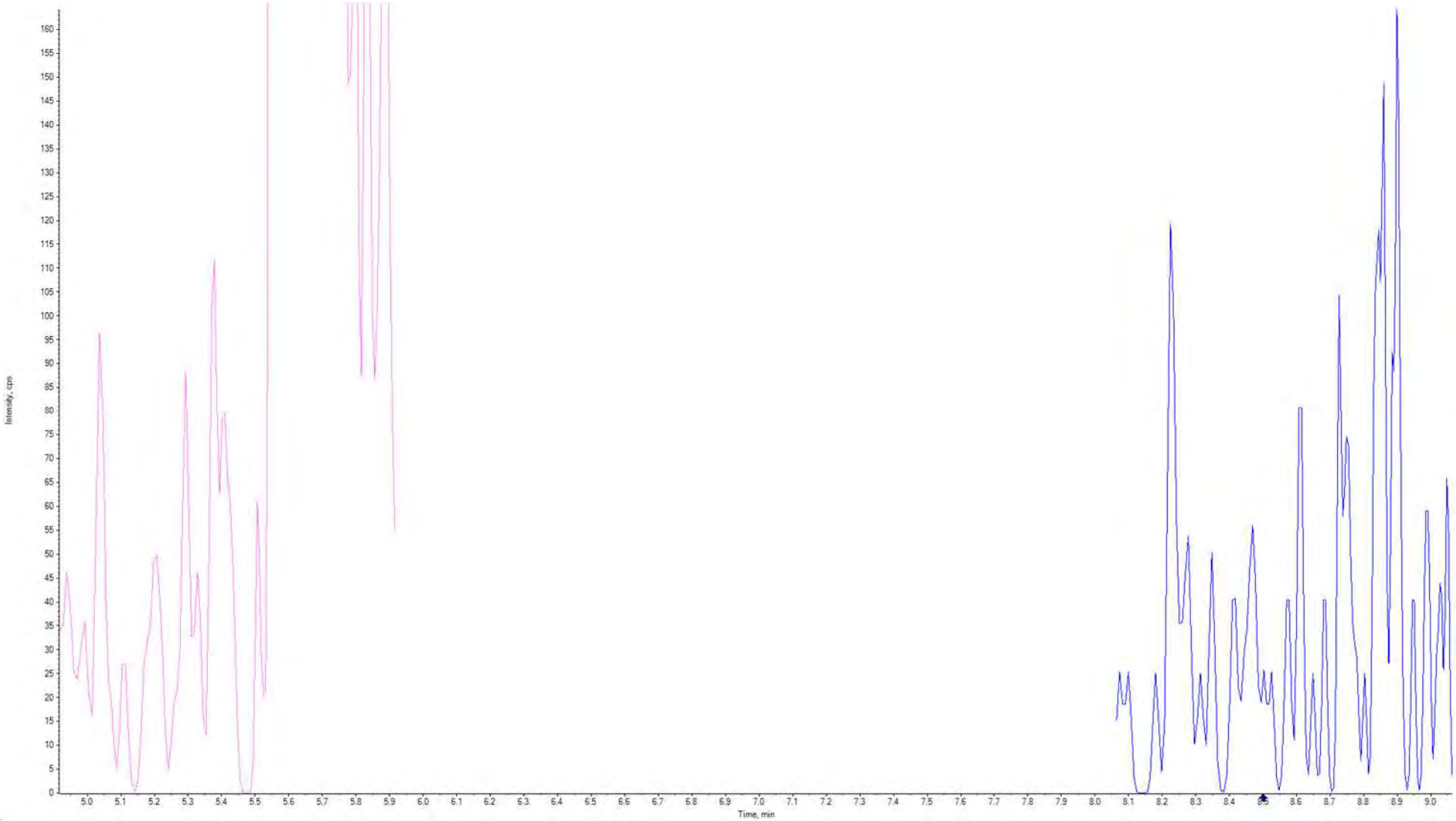

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Generated: 9/19/2024 8:04:31 AM

11Cl-PF3OUdS
Sample: L2450786-11 S/N:N/A Points Across peak:N/A

11Cl-PF3OUdS_2
Sample: L2450786-11 S/N:N/A Points Across peak:N/A

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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3:3FTCA
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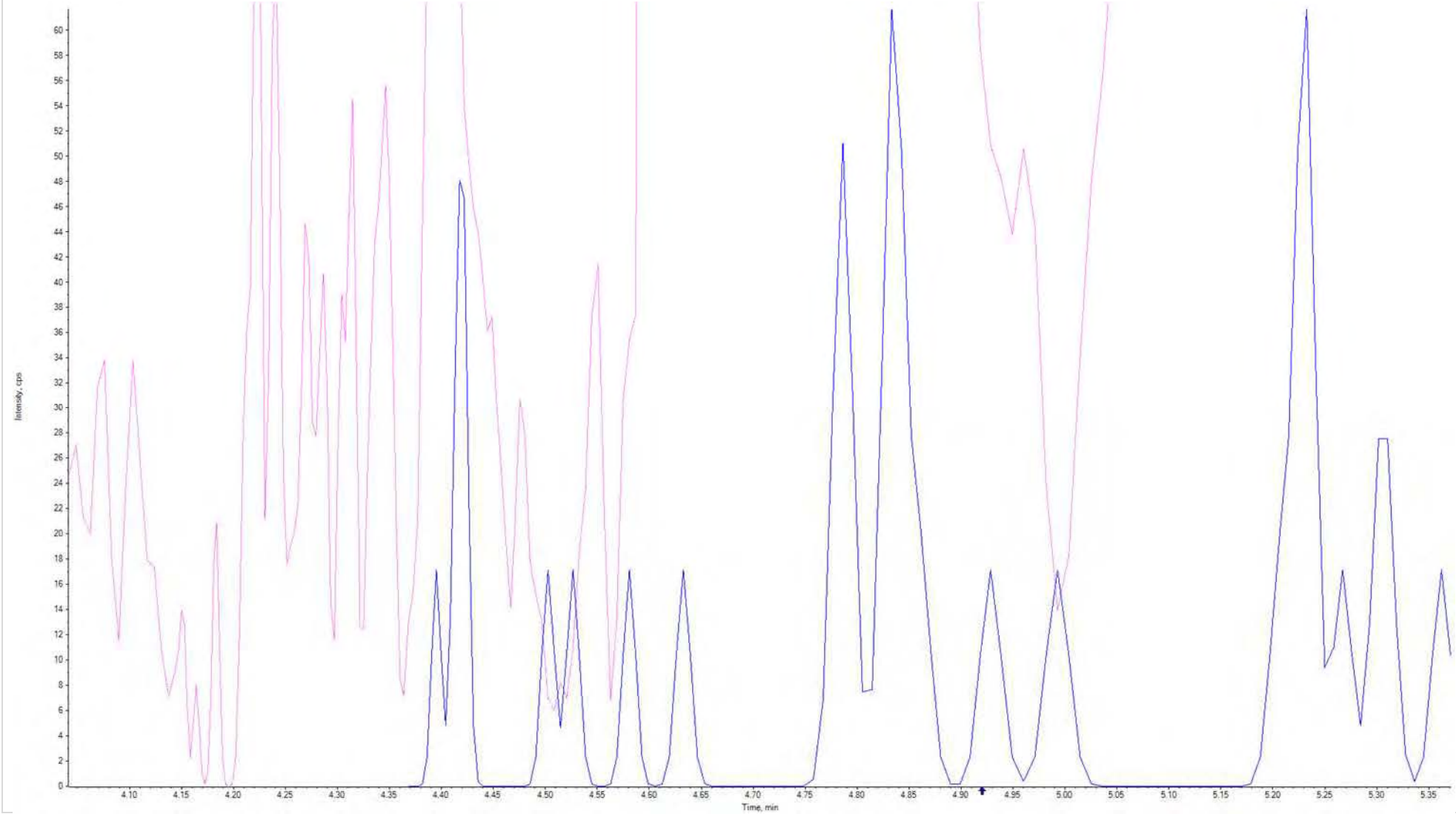

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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3:3FTCA_2
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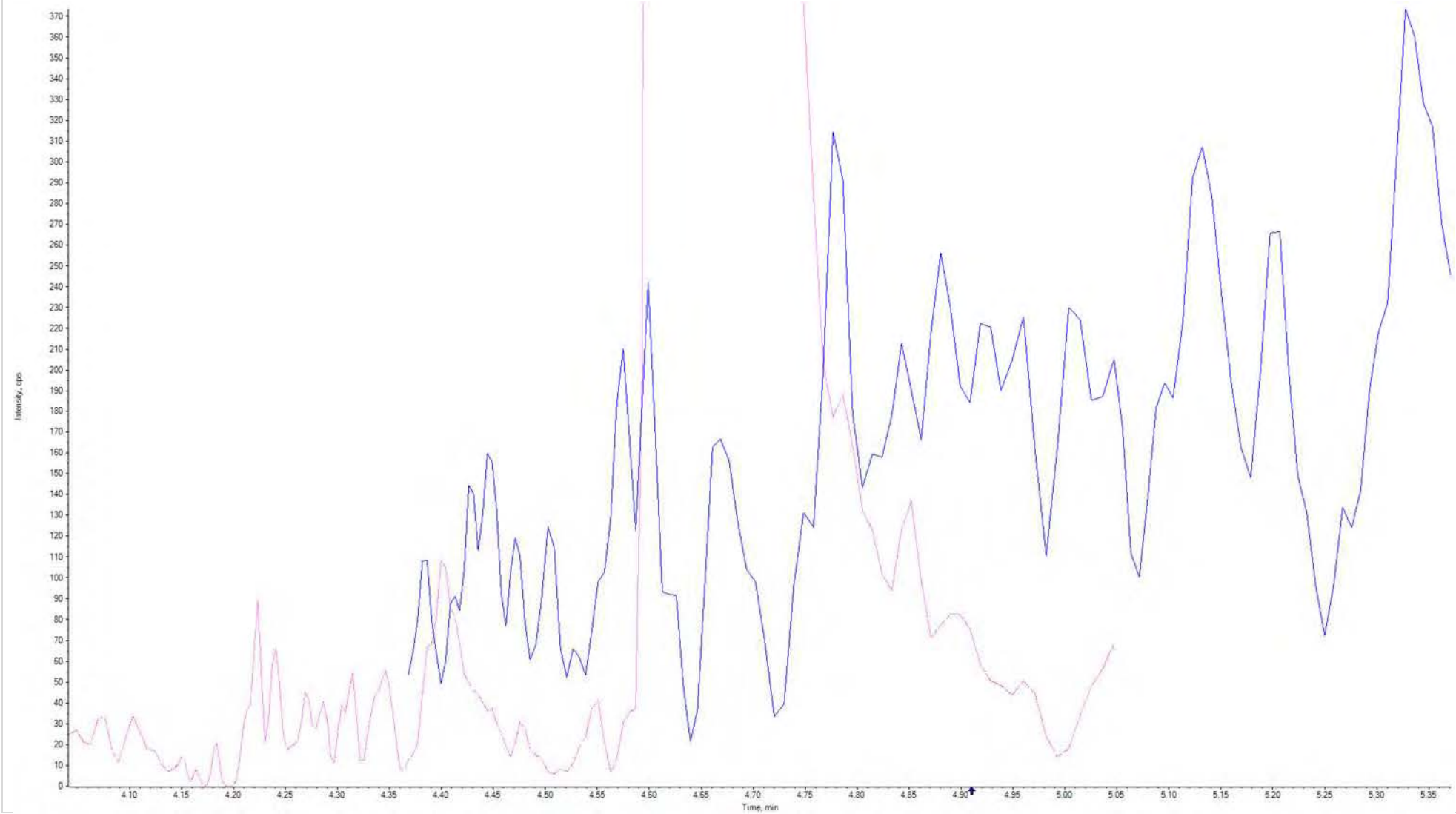

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5:3FTCA
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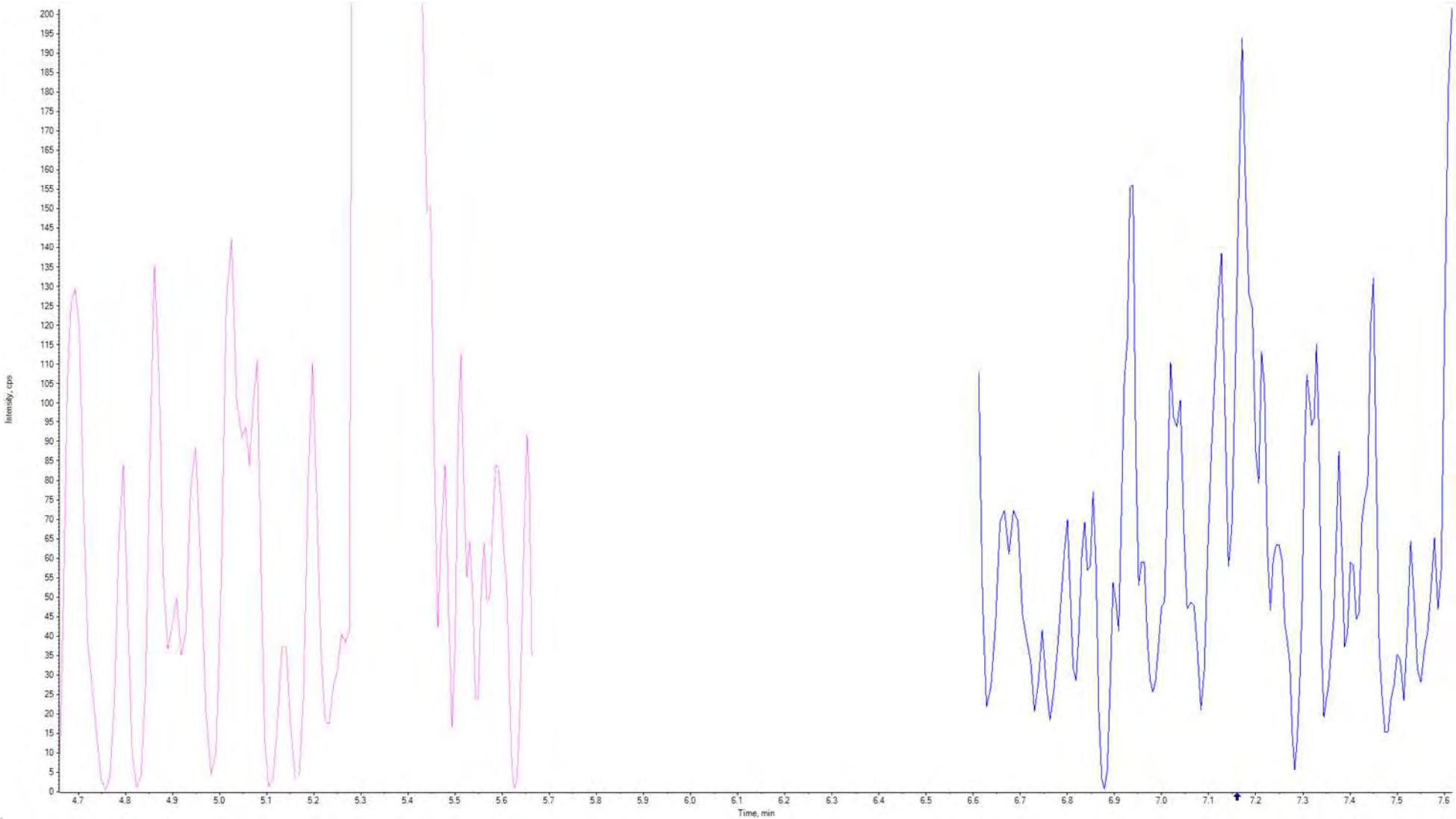

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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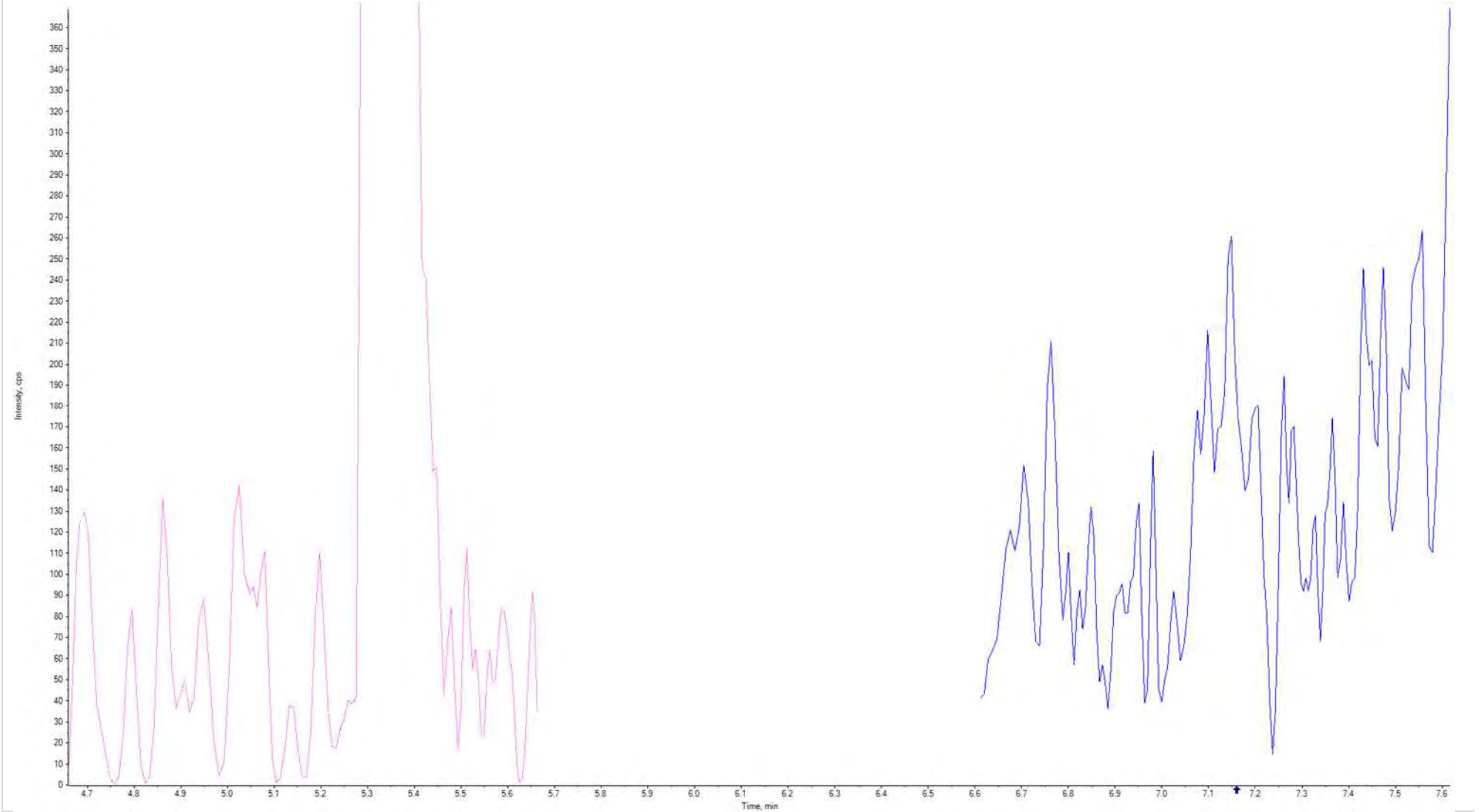

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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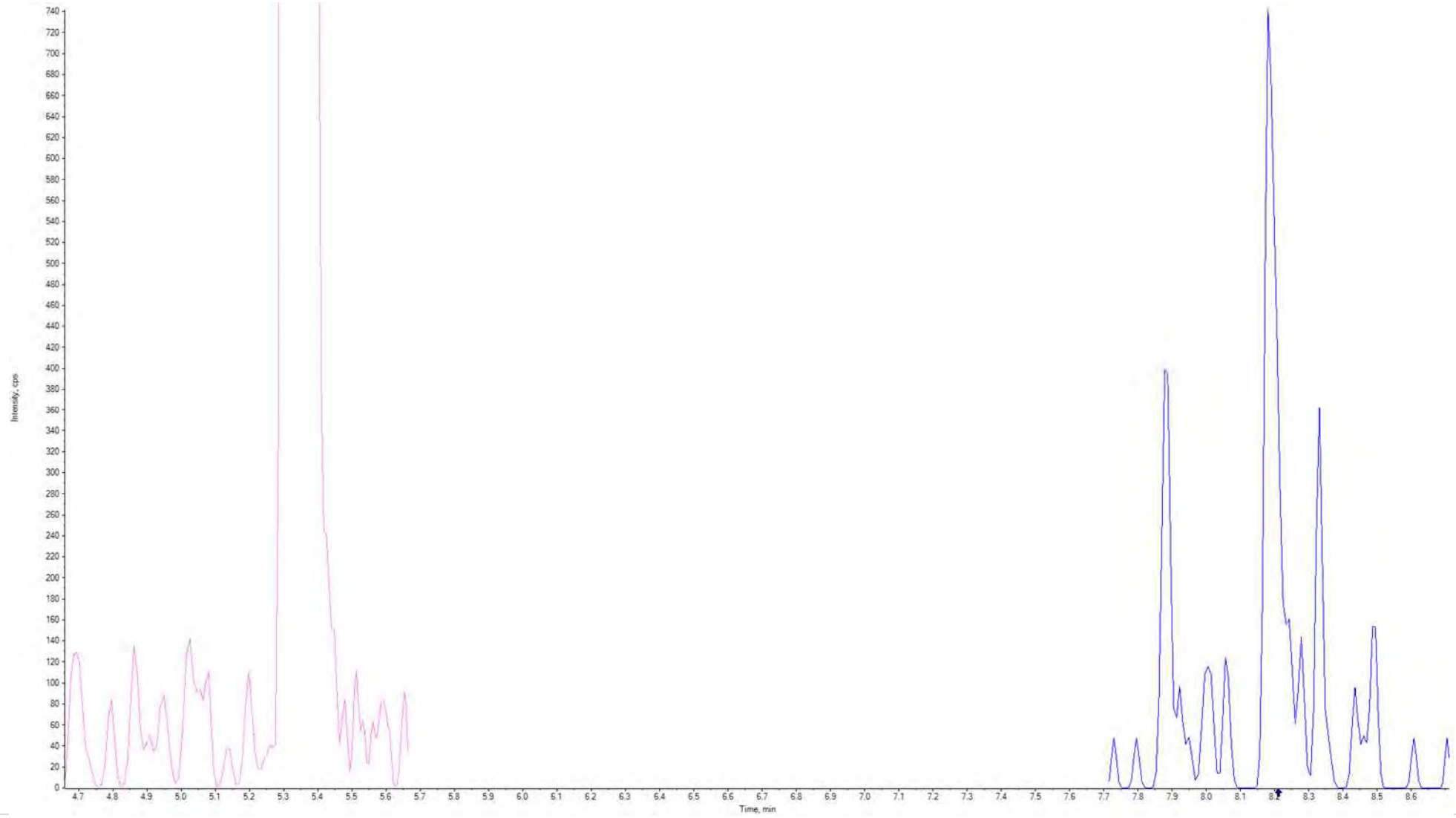

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7:3FTCA_2
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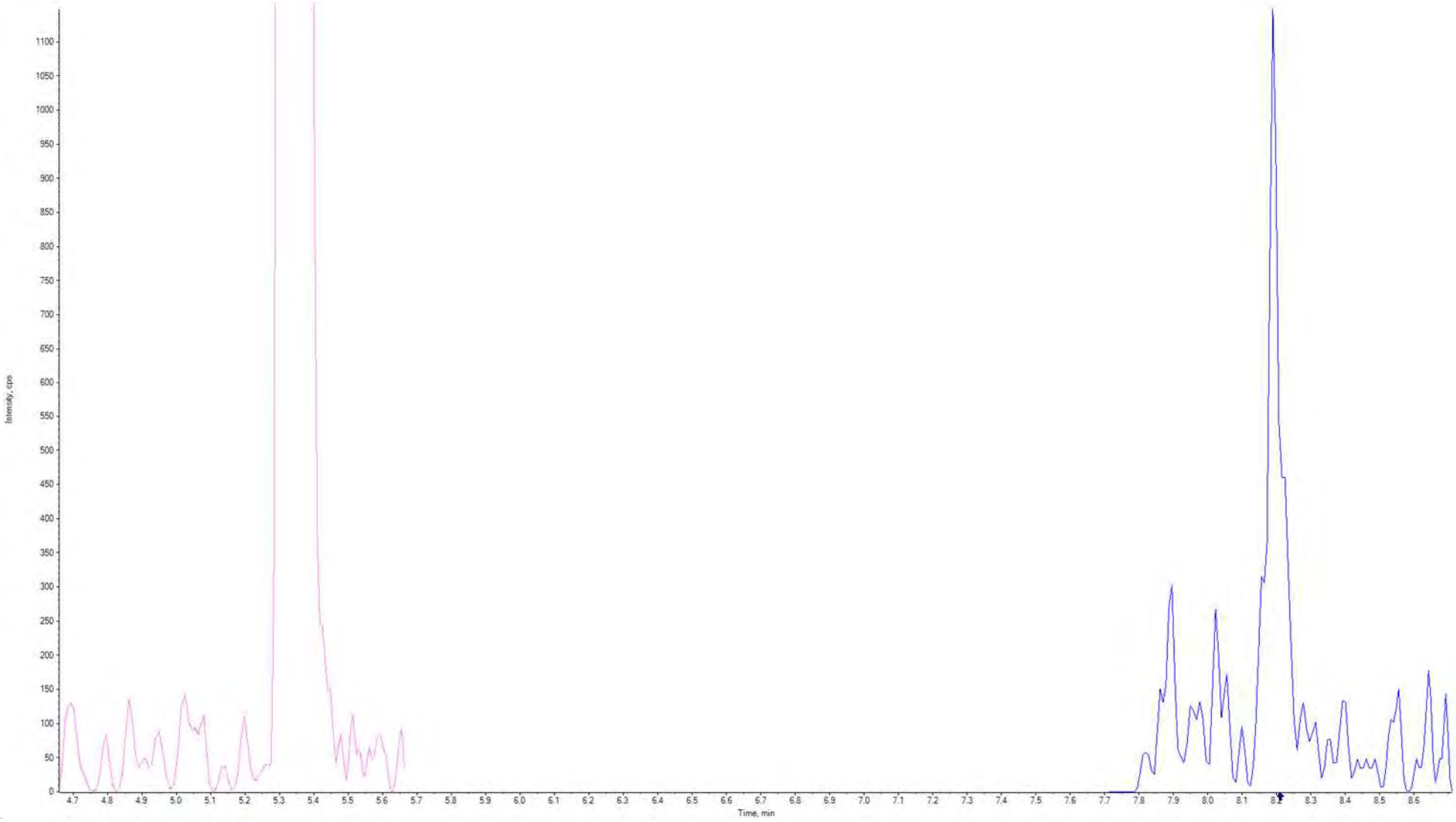

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Last Altered: 9/19/2024 11:40:51 AM
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PFEESA
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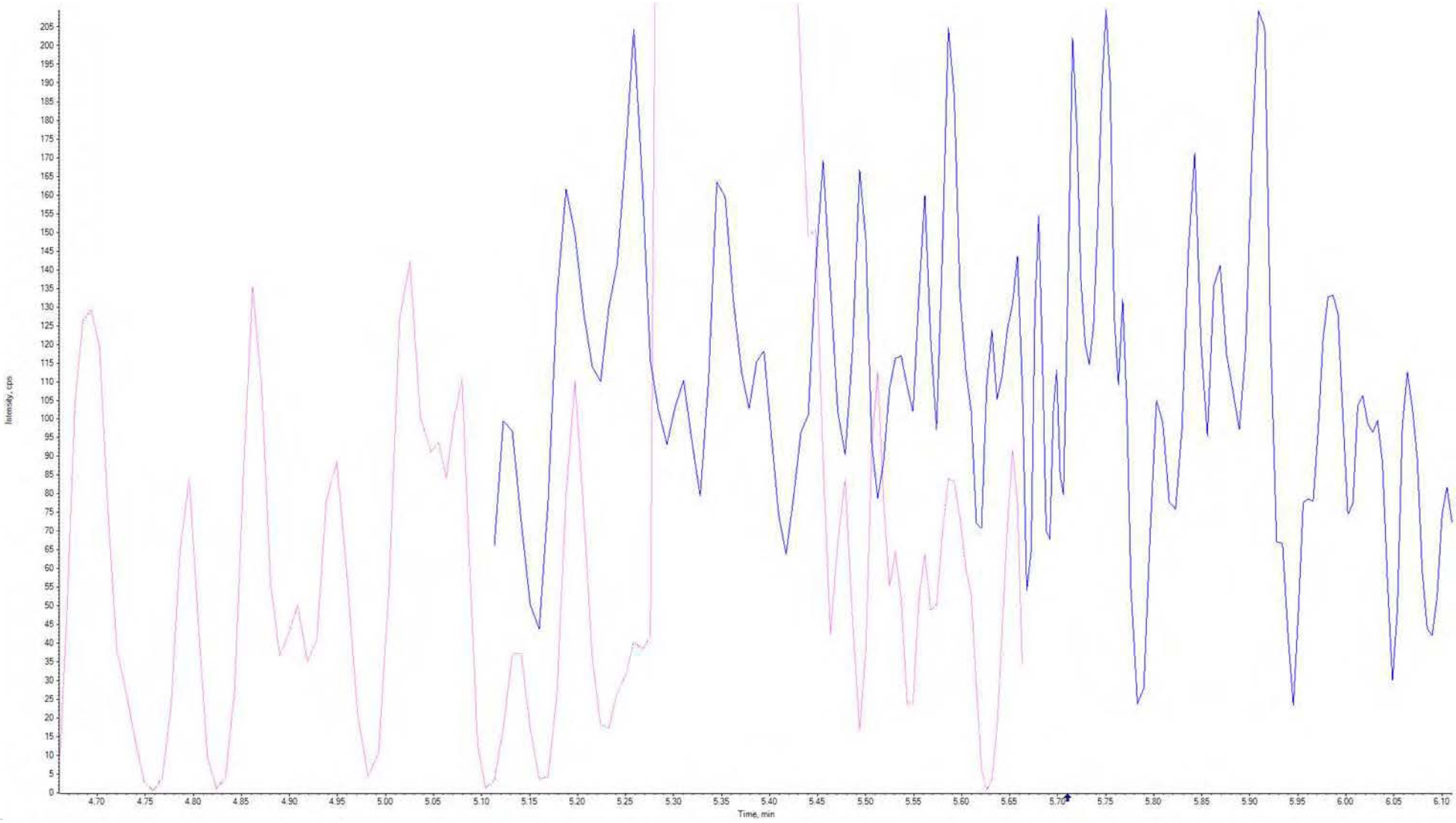

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PFEESA_2
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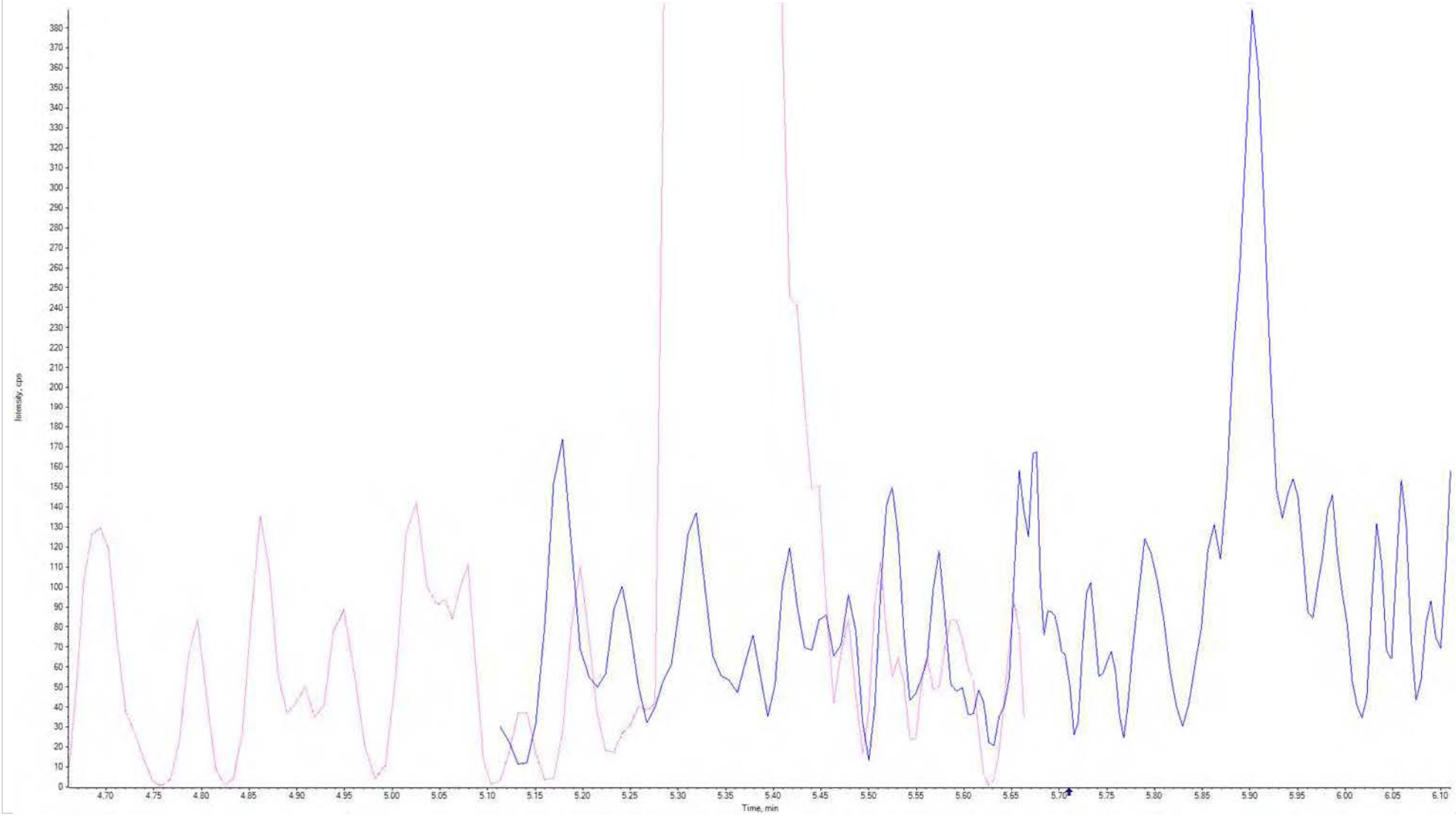

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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFMPA
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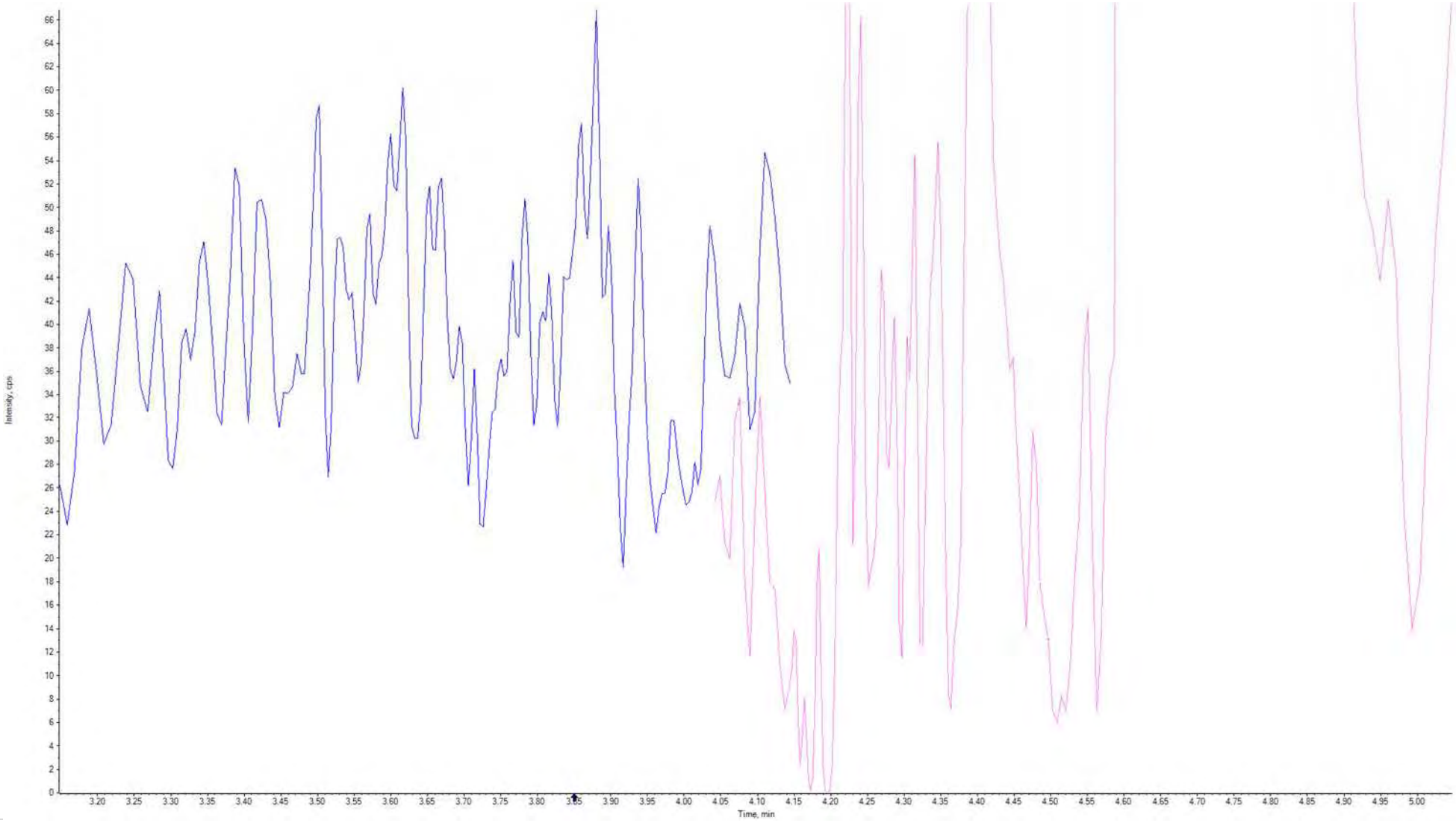

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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PFMBA
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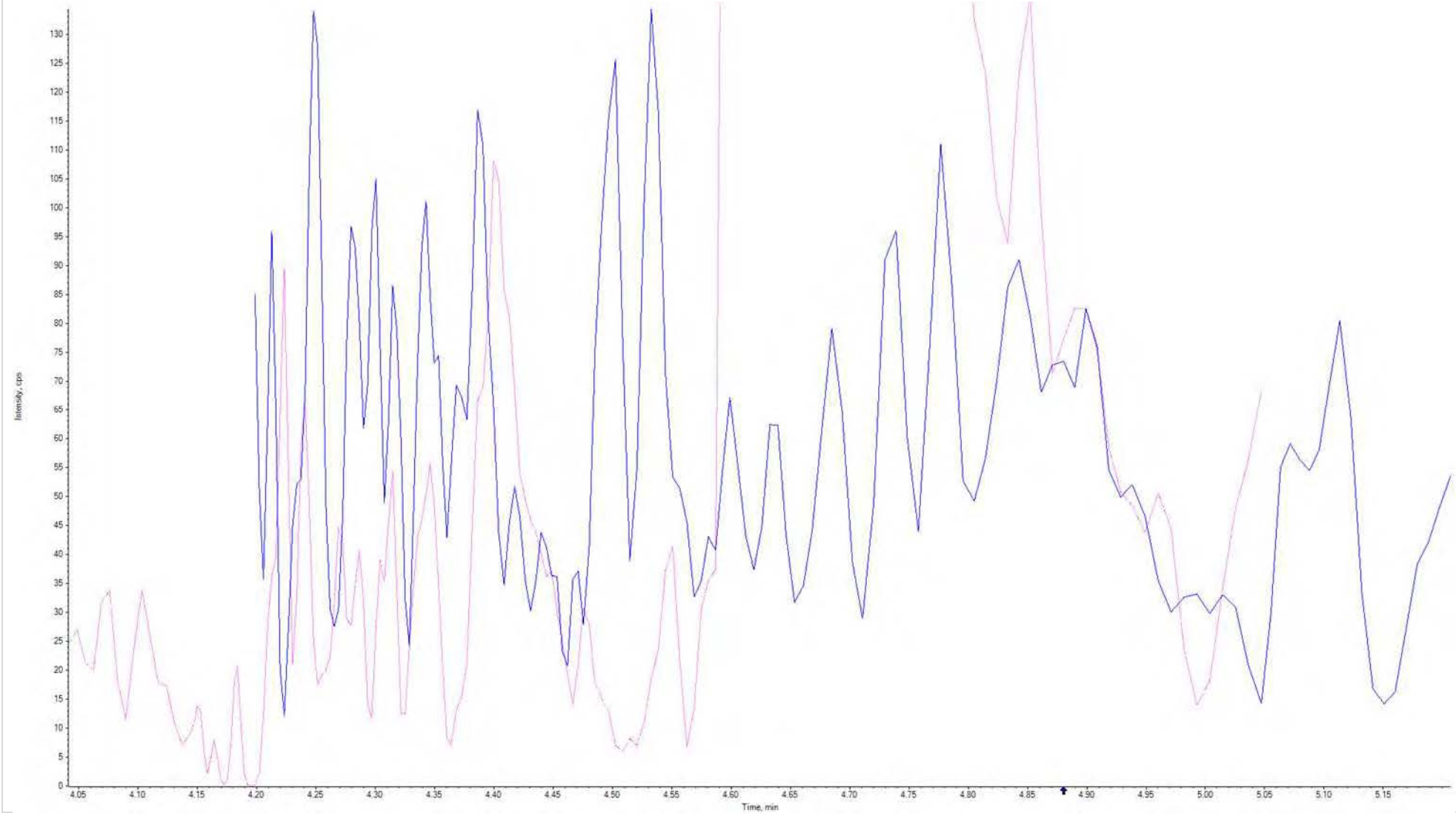

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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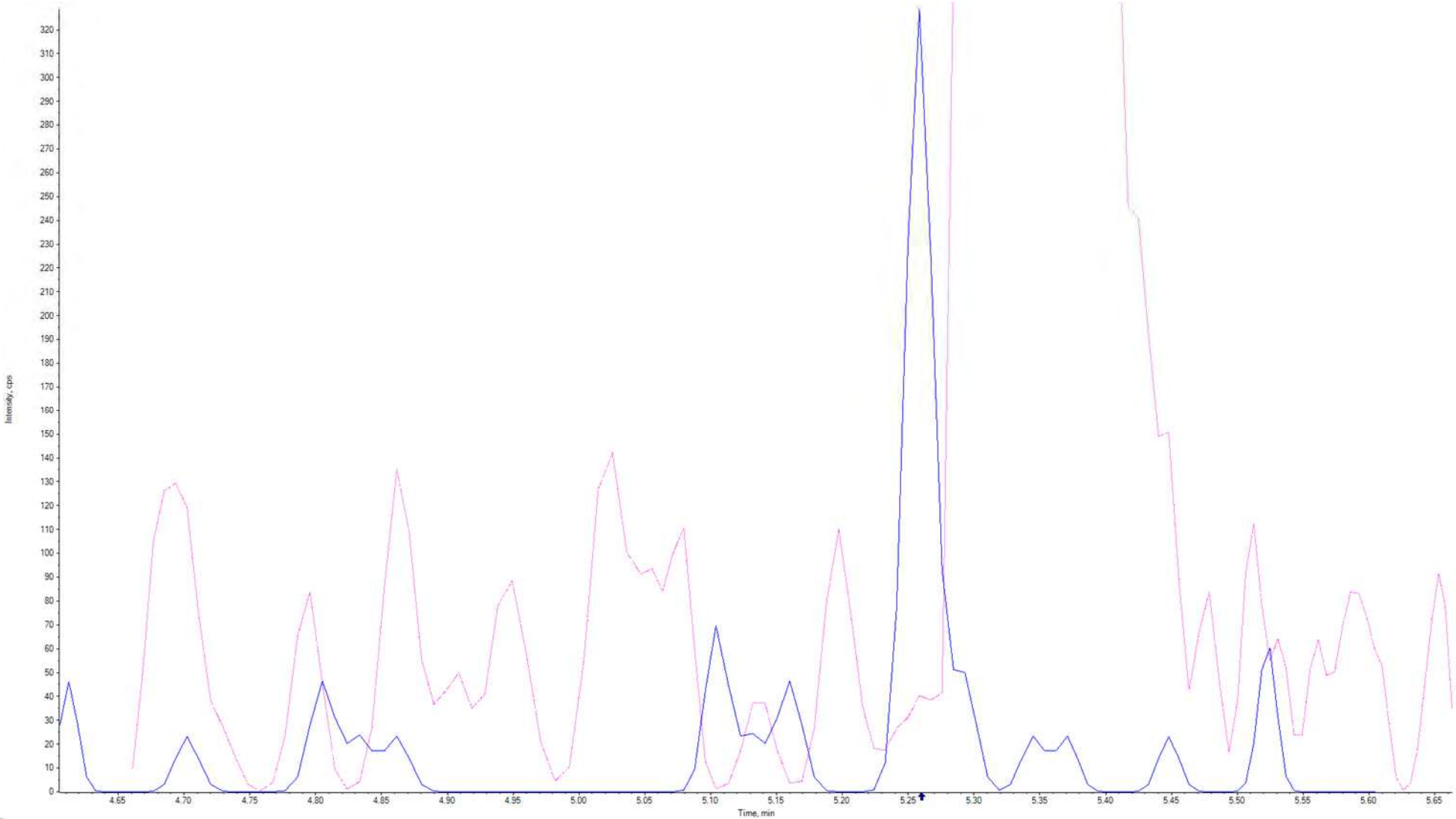
Generated: 9/19/2024 8:04:31 AM

NFDHA
Sample: L2450786-11 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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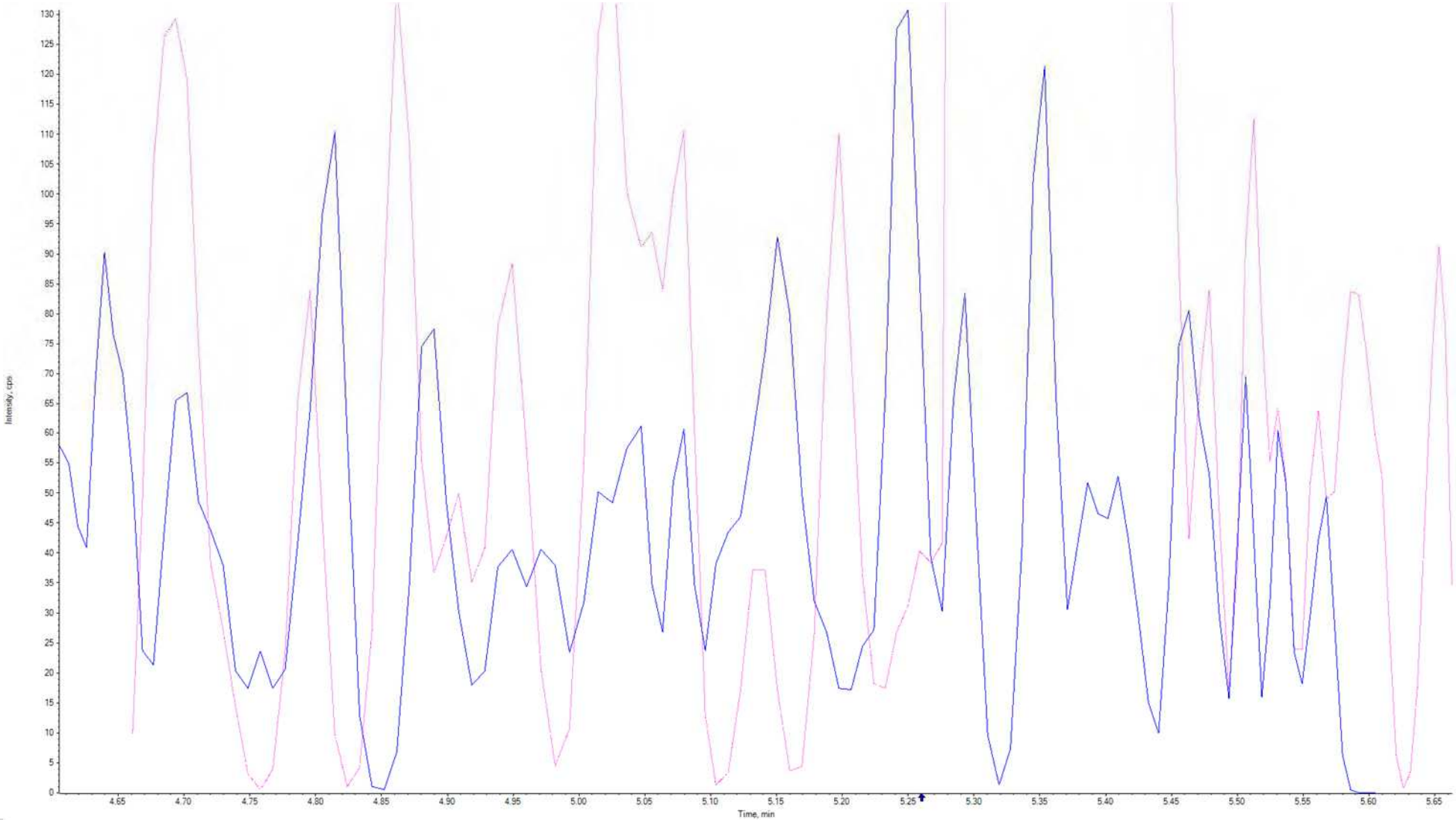
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NFDHA_2
Sample: L2450786-11 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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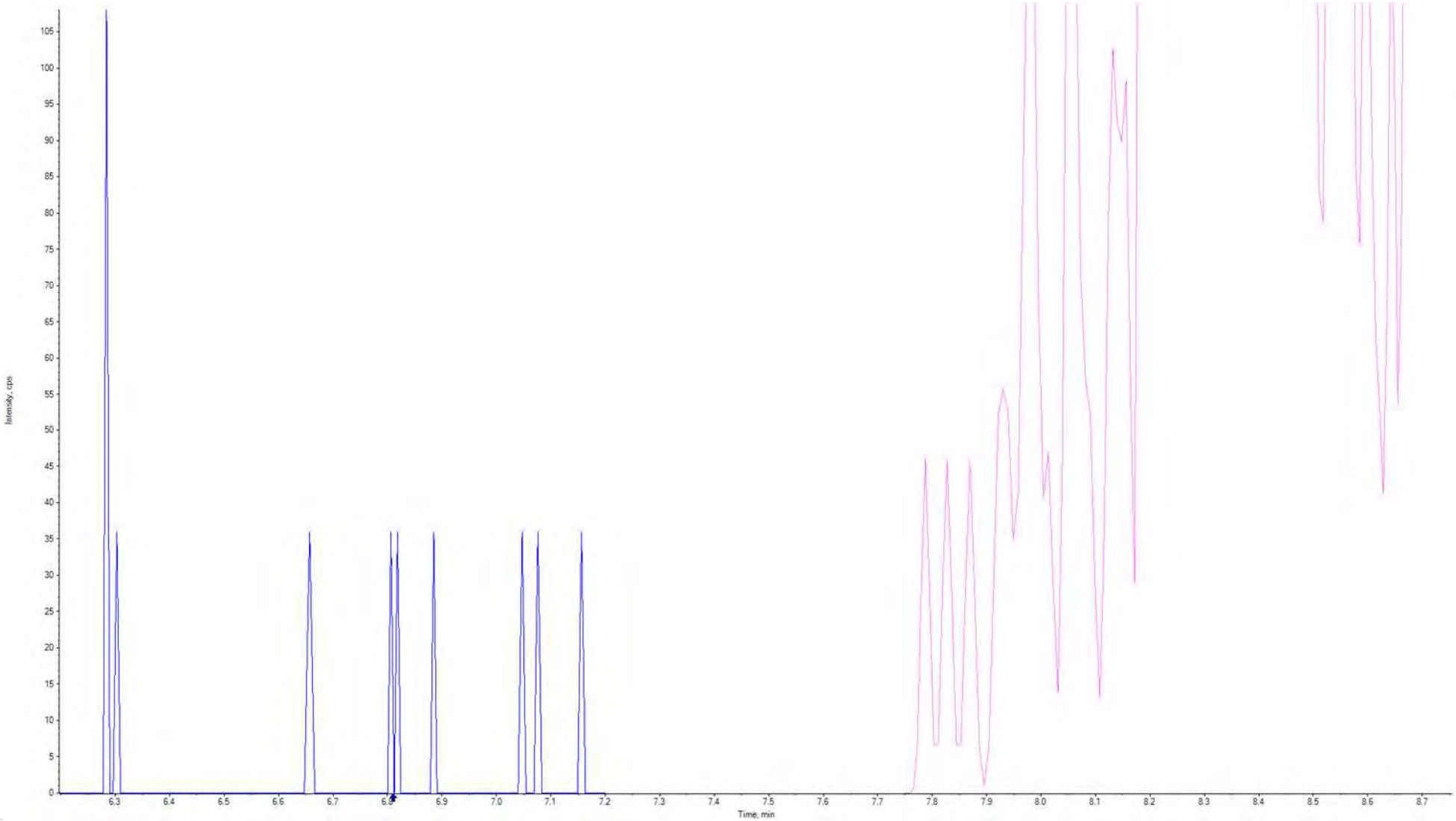
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

TDCA
Sample: L2450786-11 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

TDCA_2
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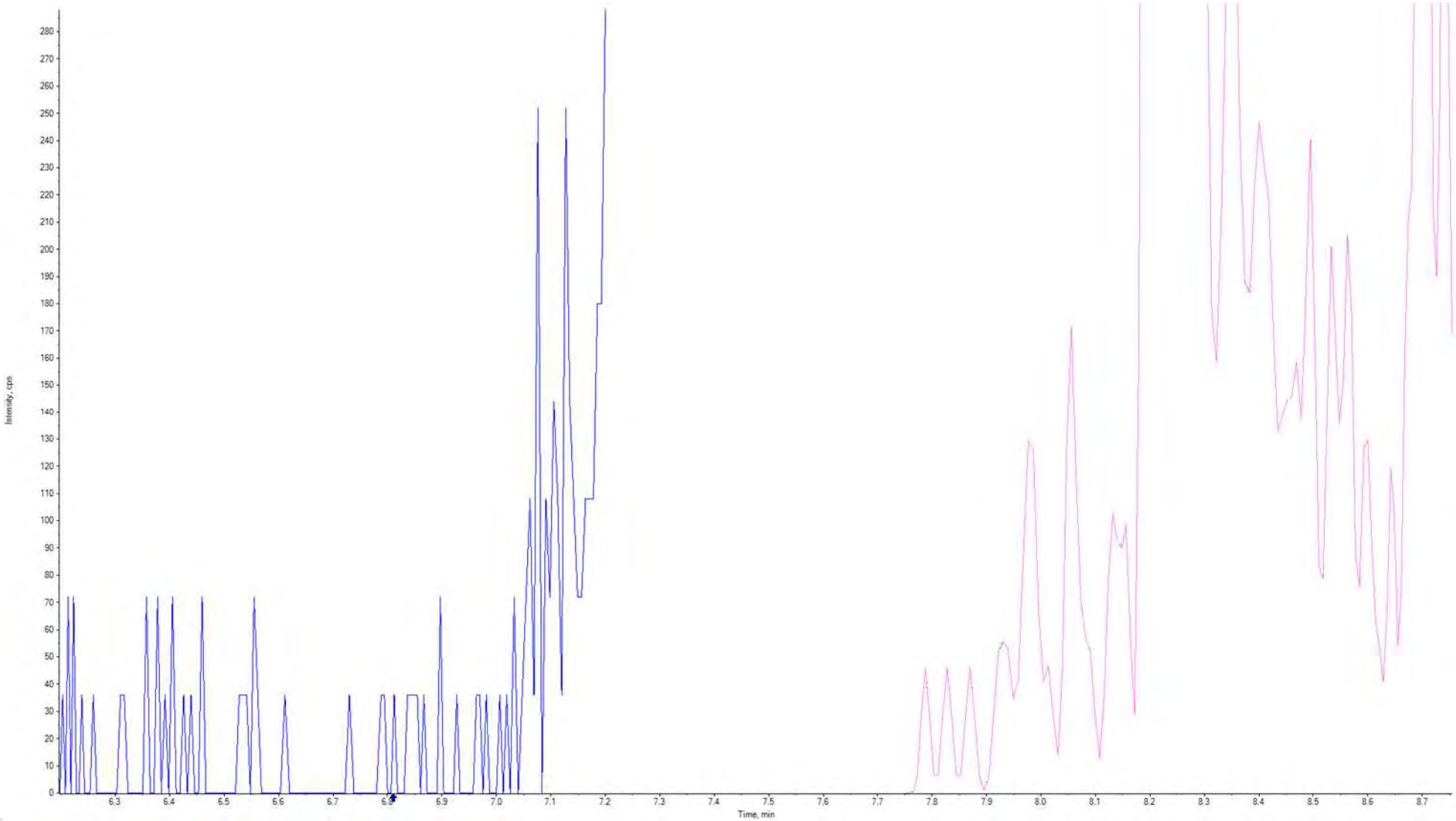

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Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C2D4-4:2FTS
Sample: L2450786-11 S/N:N/A Points Across peak:N/A

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_22.wiff
Last Altered: 9/19/2024 11:40:51 AM
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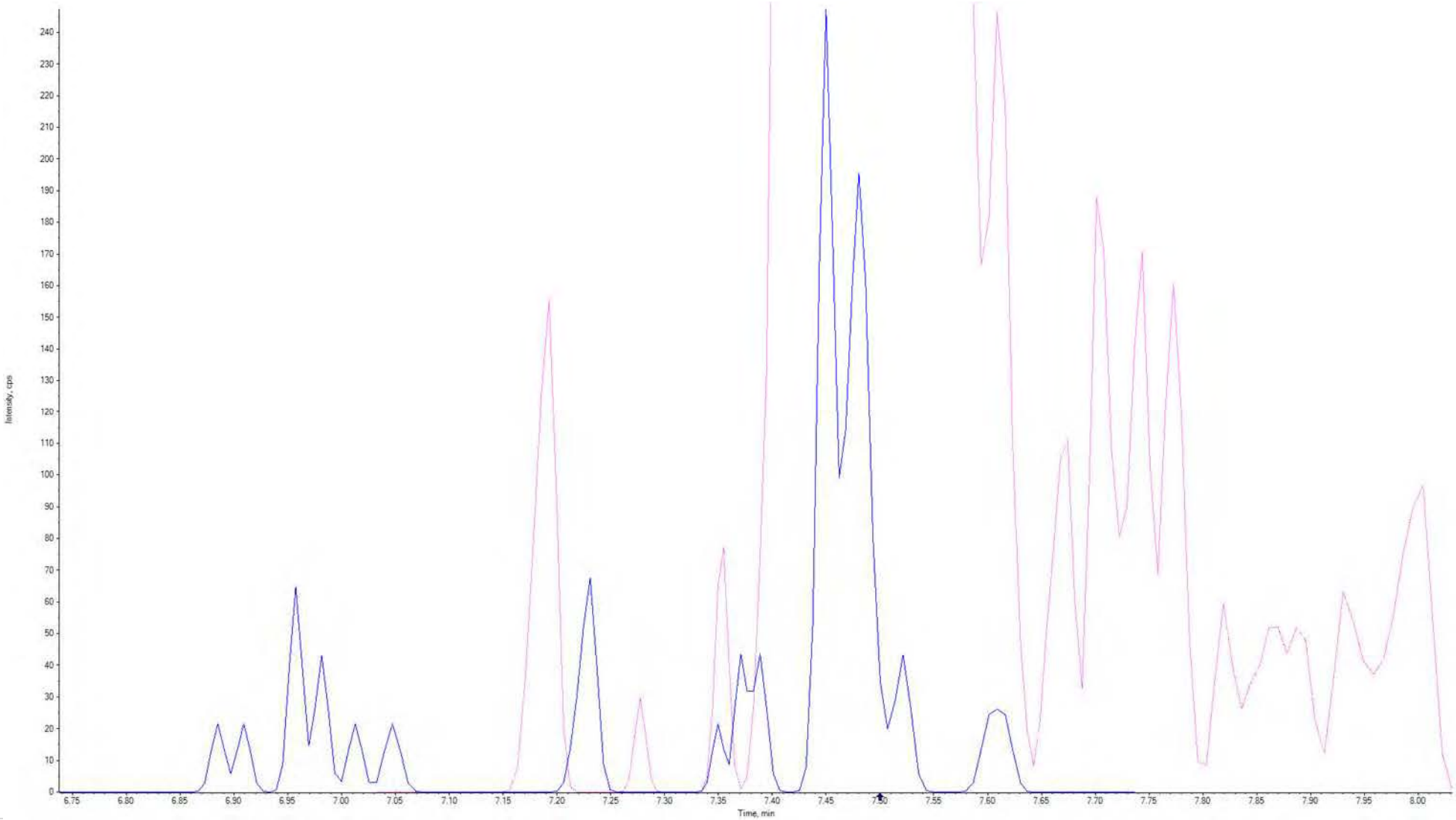
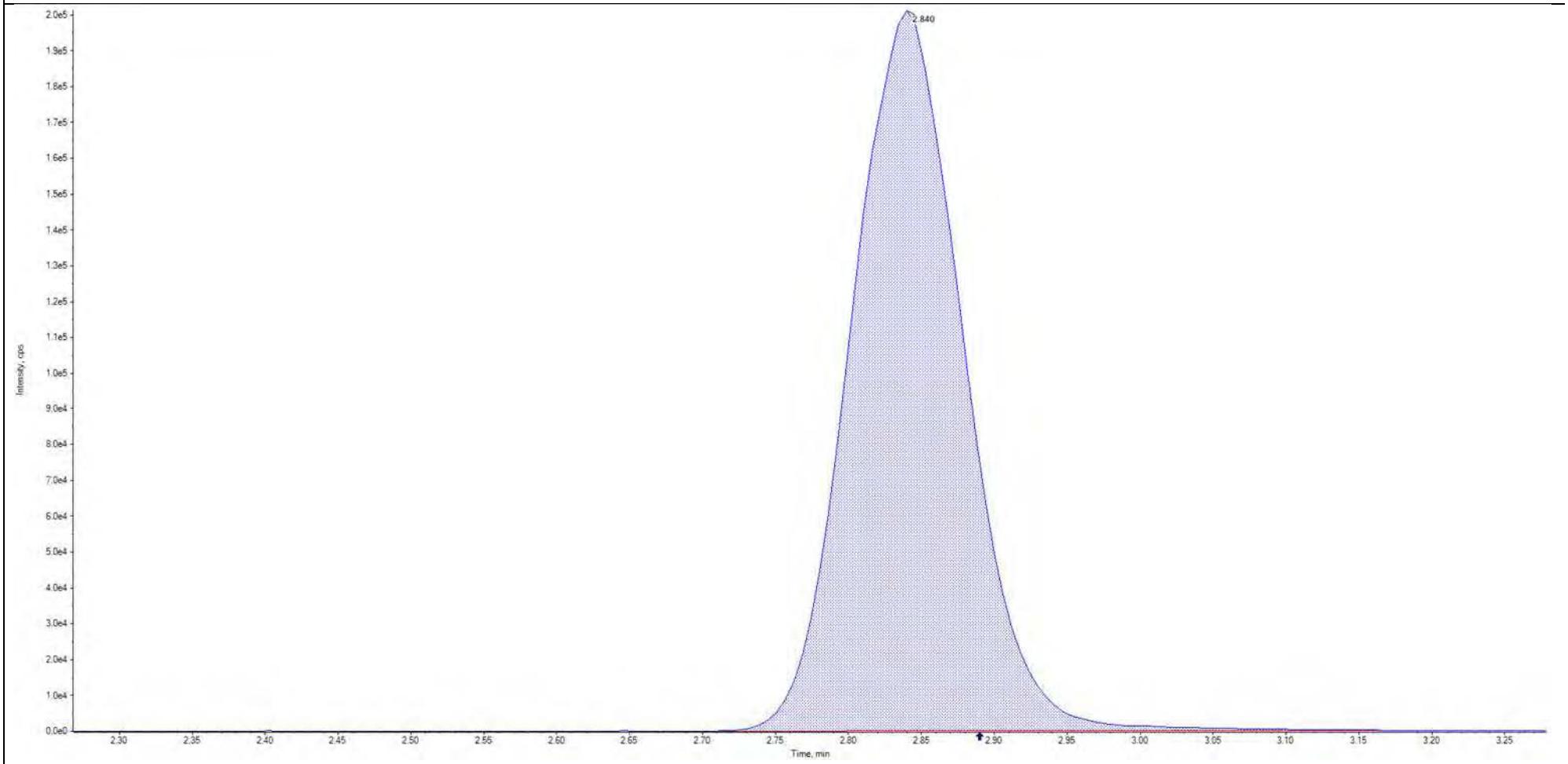
13C2-PFOA
Sample: L2450786-11 S/N:N/A Points Across peak:N/A



13C4-PFBA
Sample: L2450786-11



13C5-PFPeA
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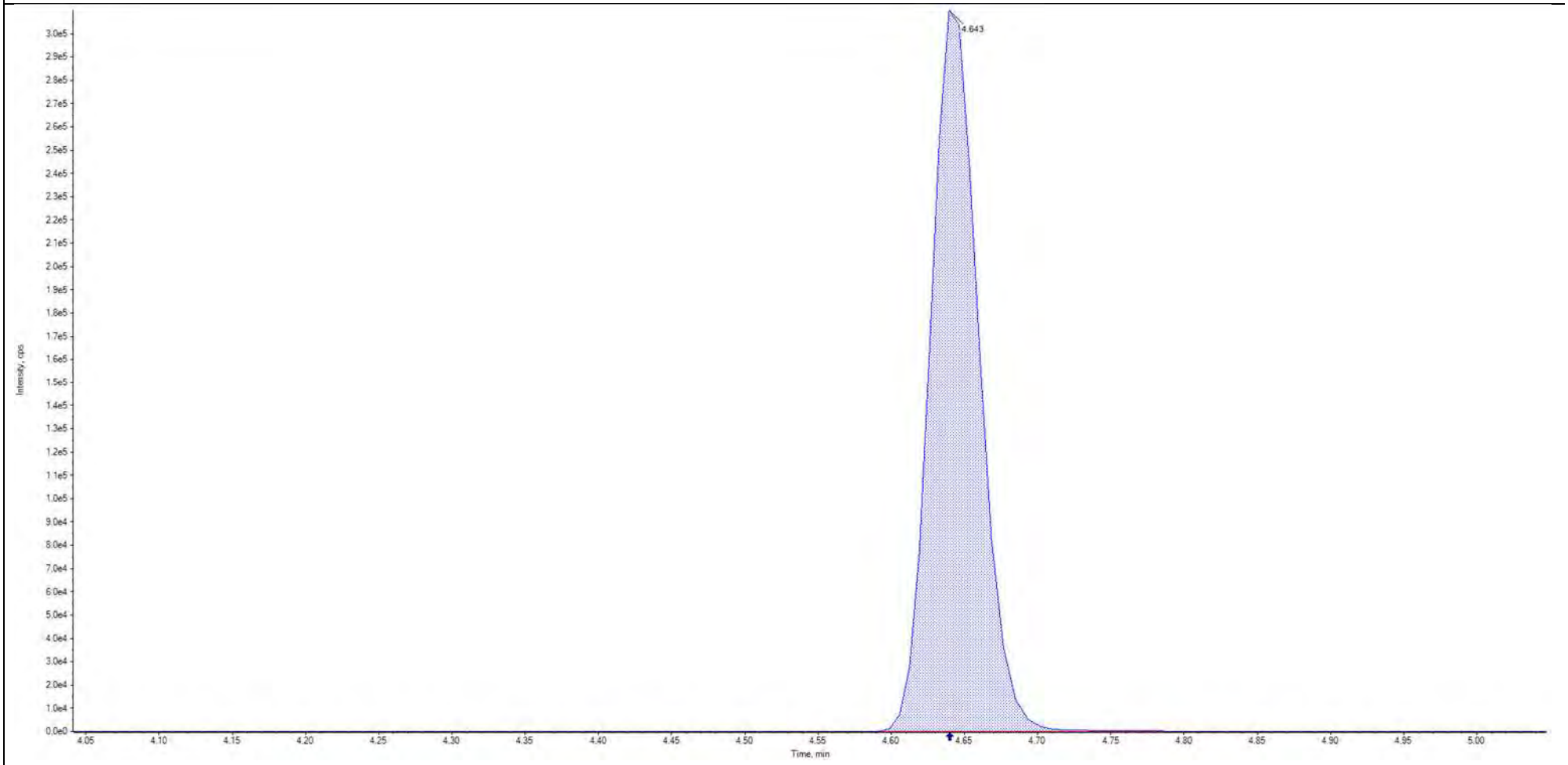

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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13C5-PFHxA
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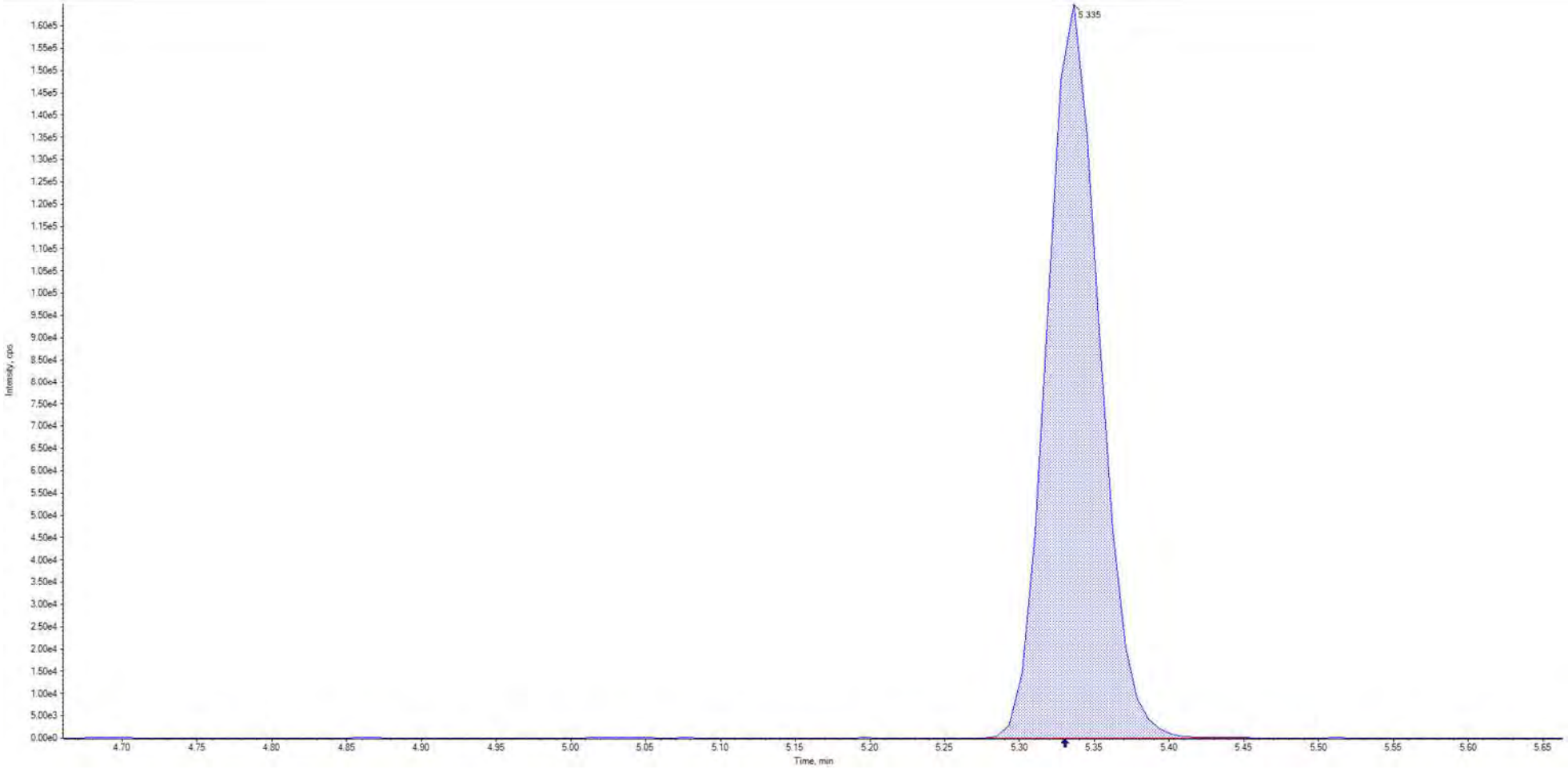
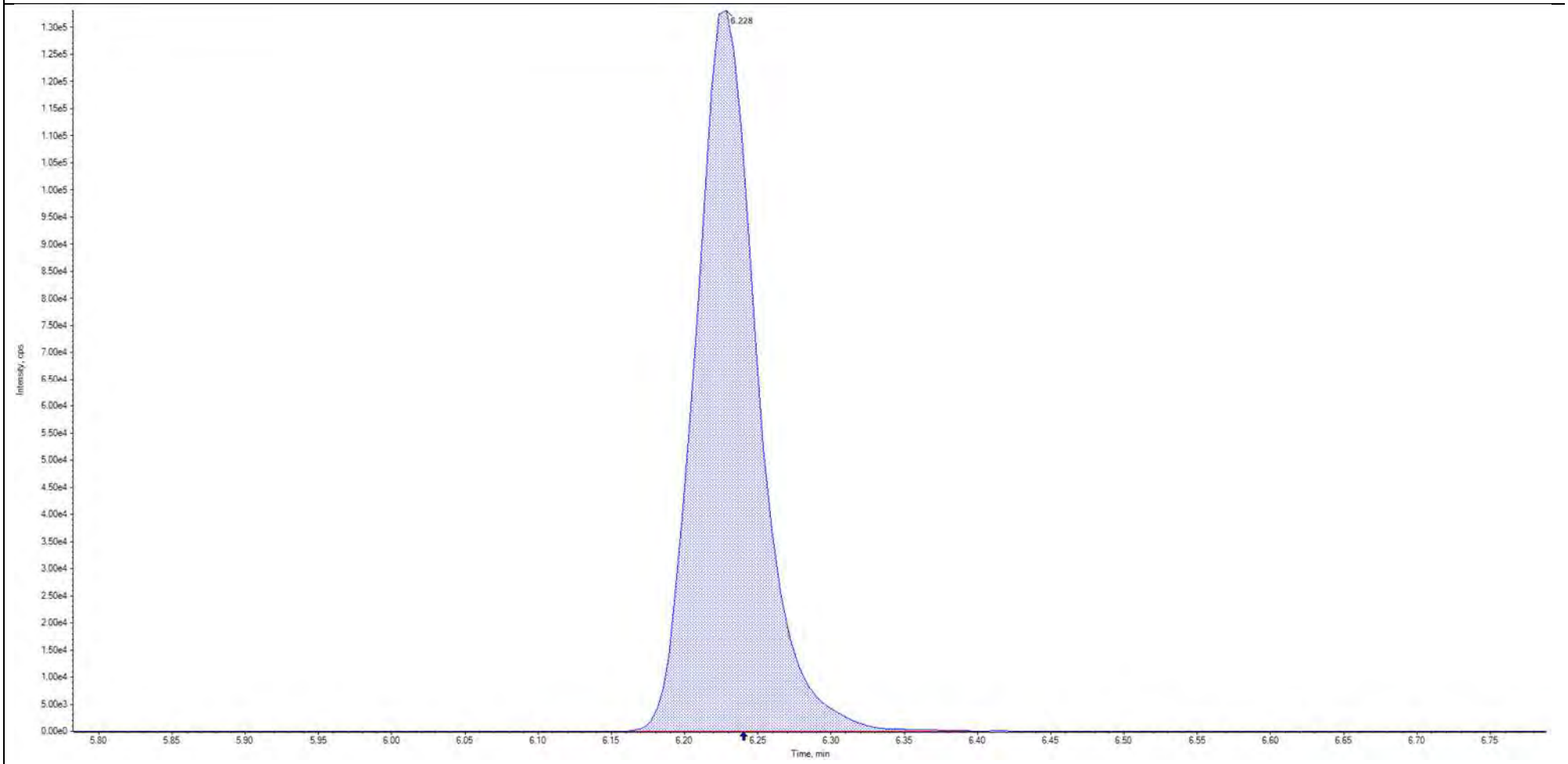
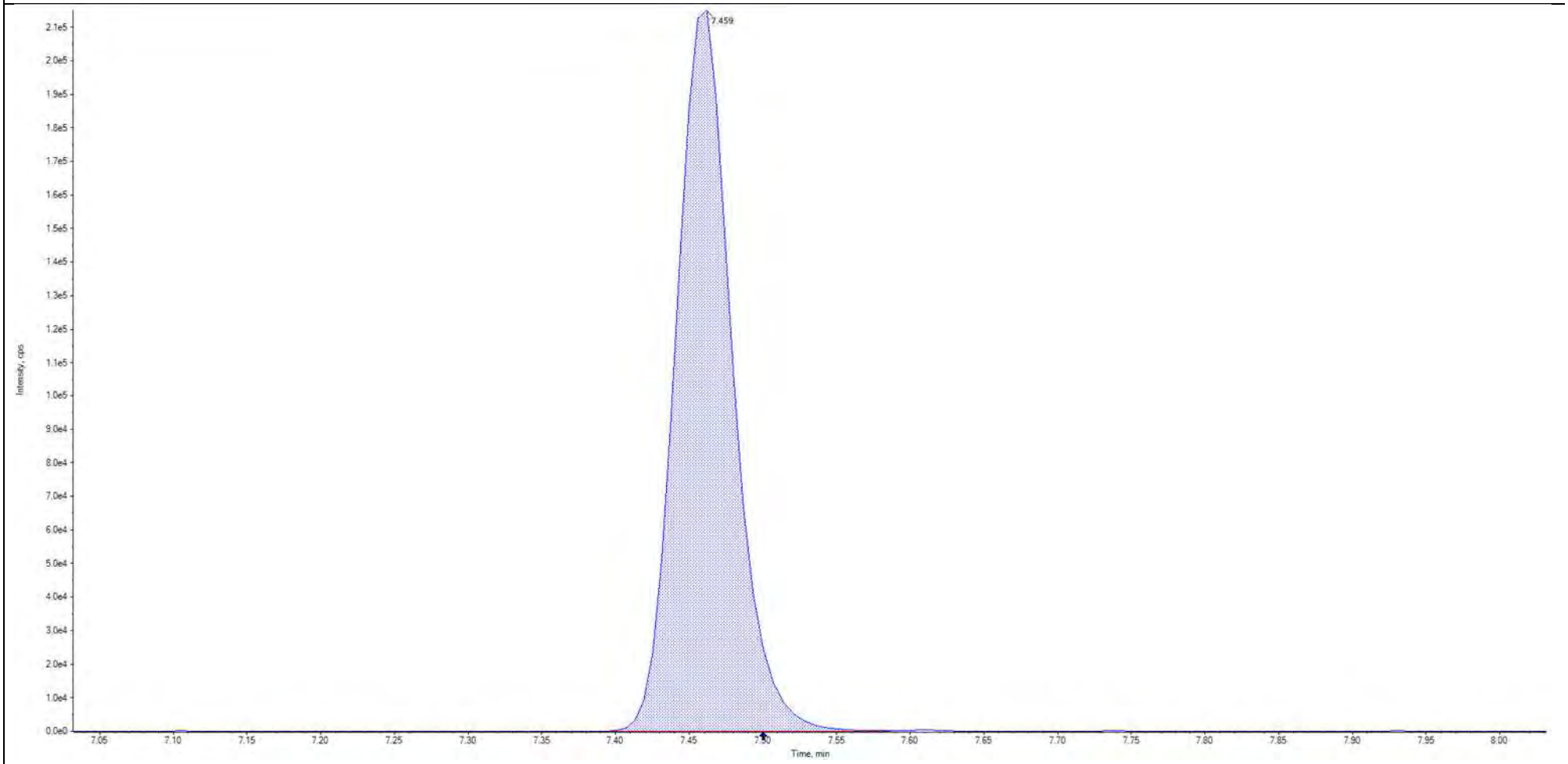


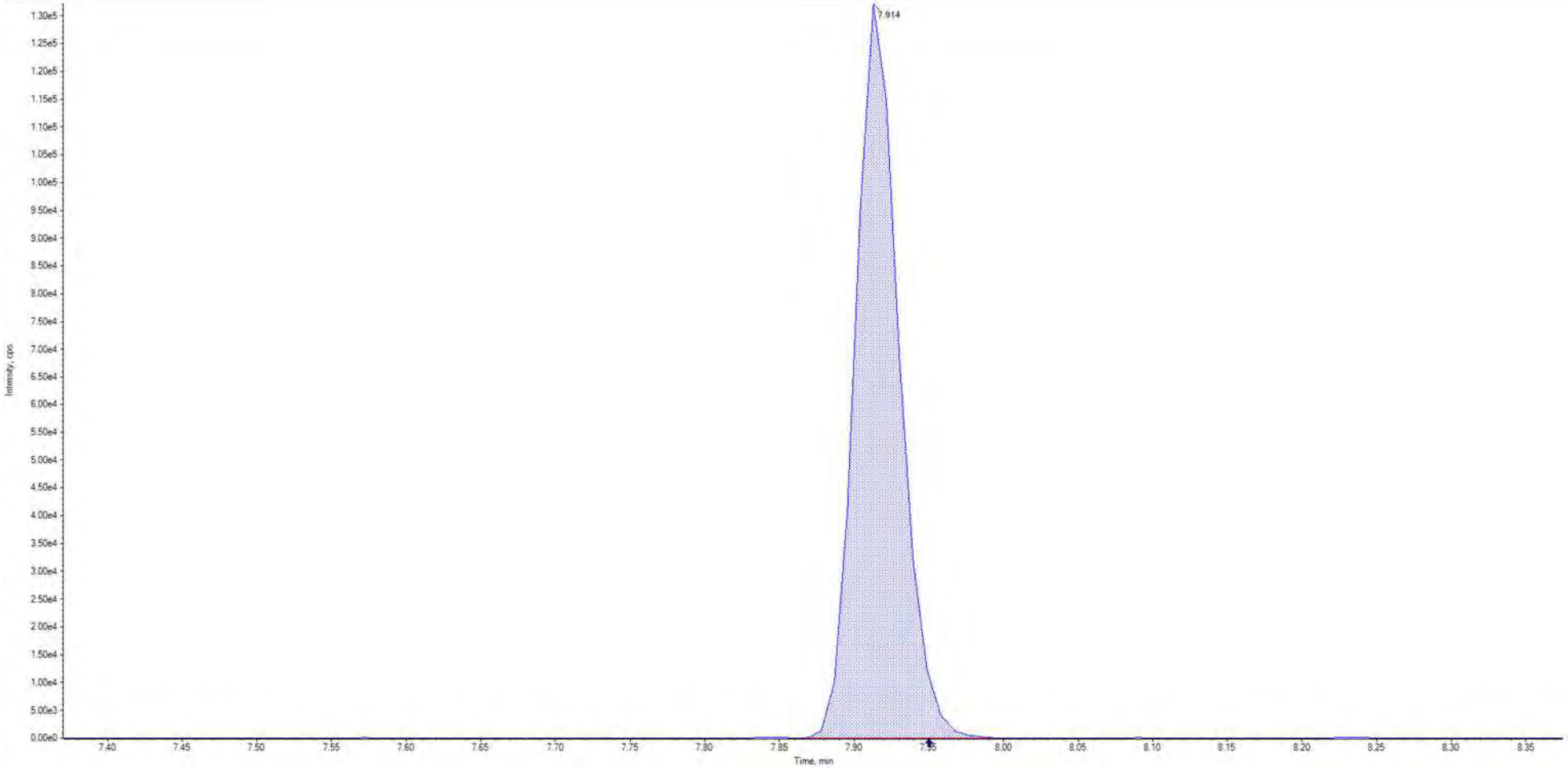
13C4-PFHpA
Sample: L2450786-11



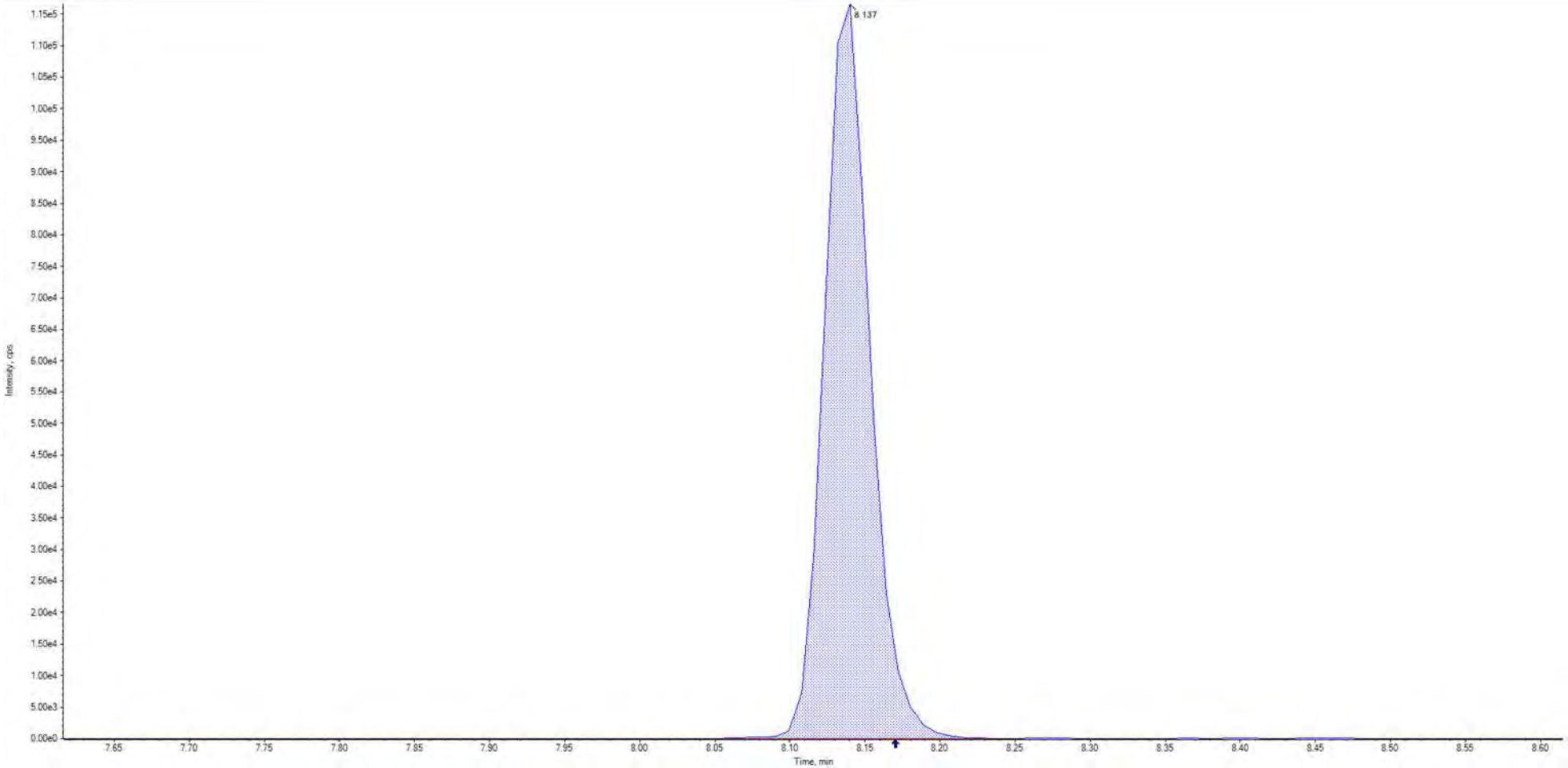
13C8-PFOA
Sample: L2450786-11



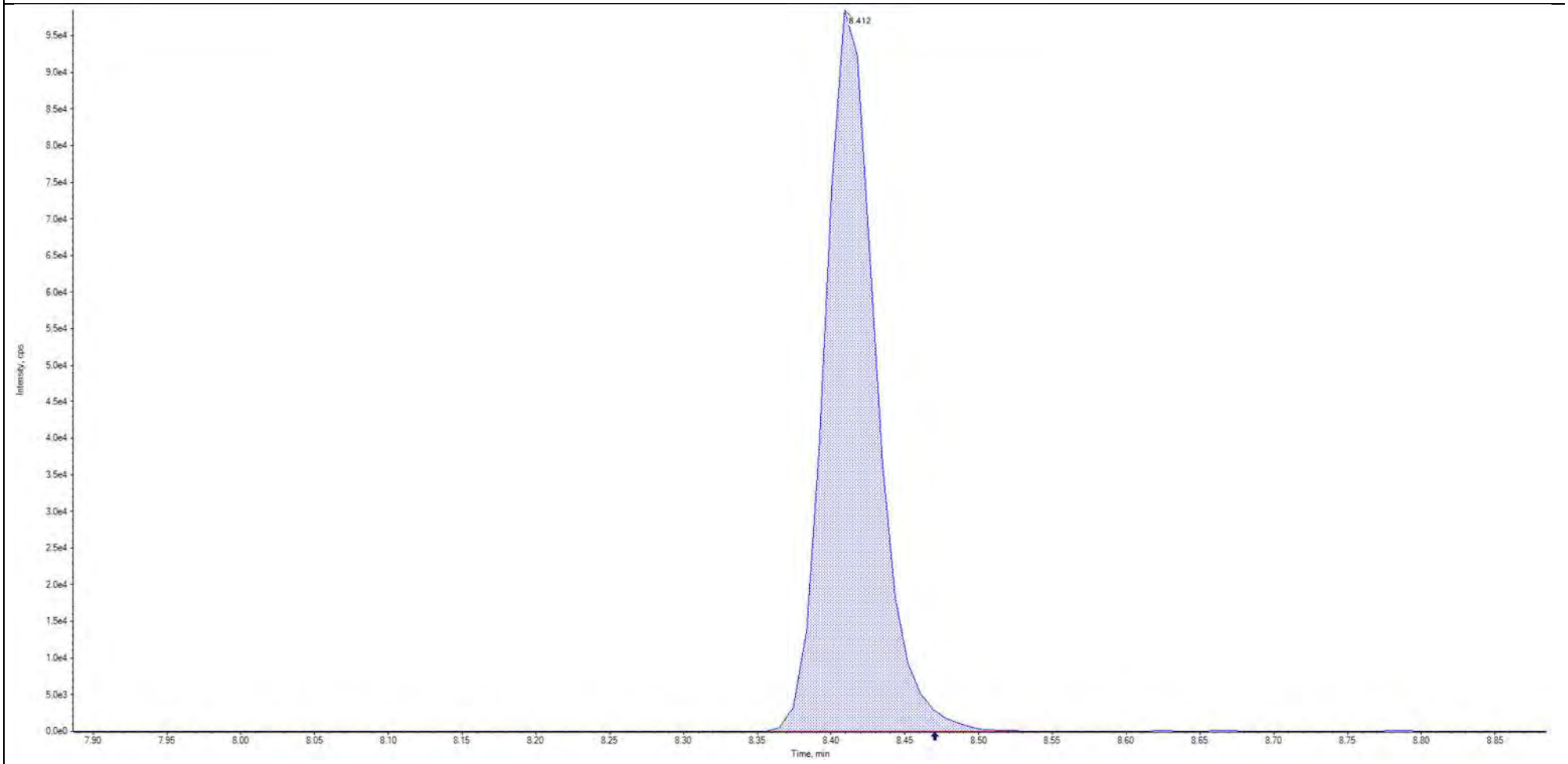
13C9-PFNA
Sample: L2450786-11



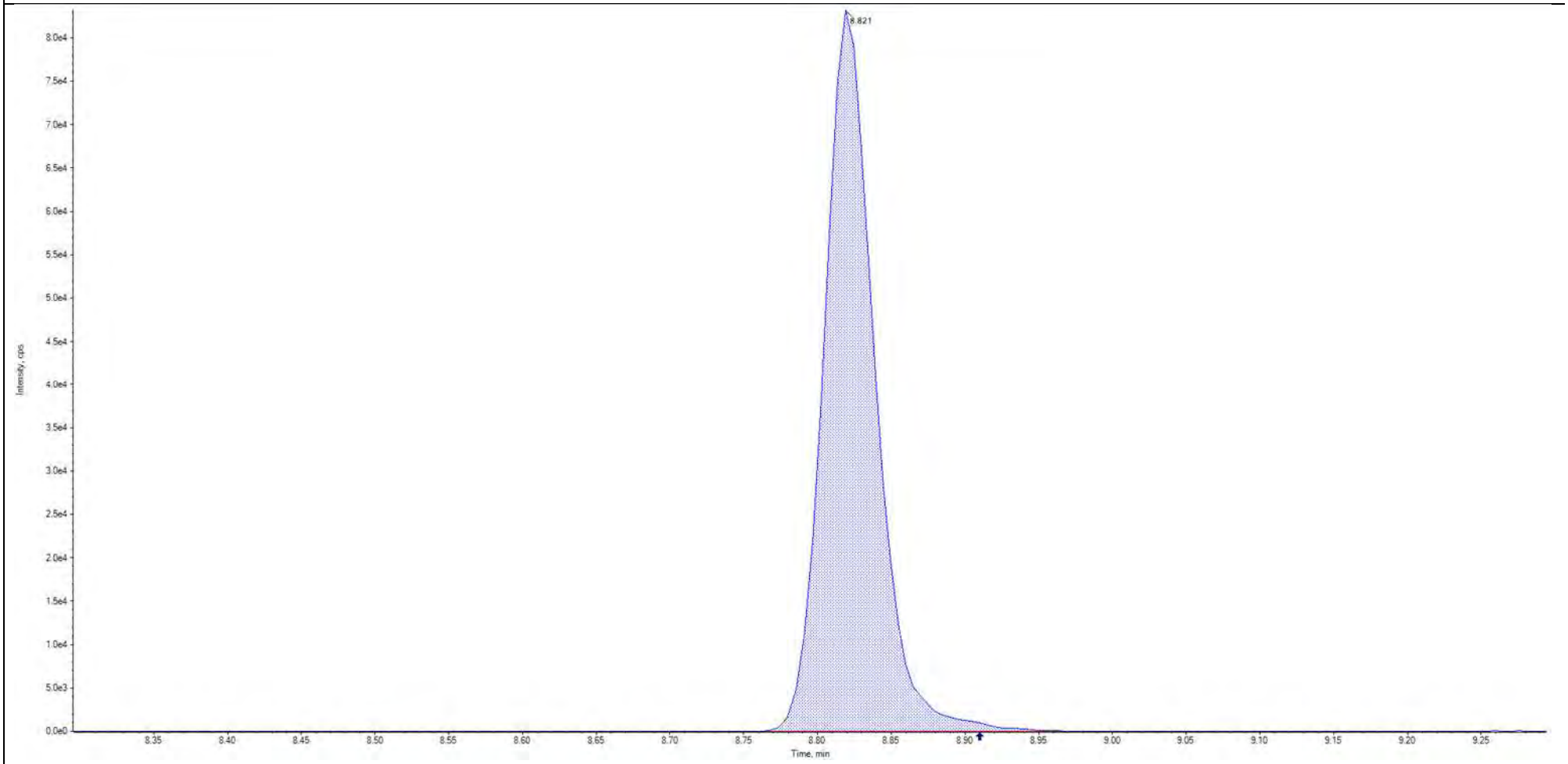
13C6-PFDA
Sample: L2450786-11



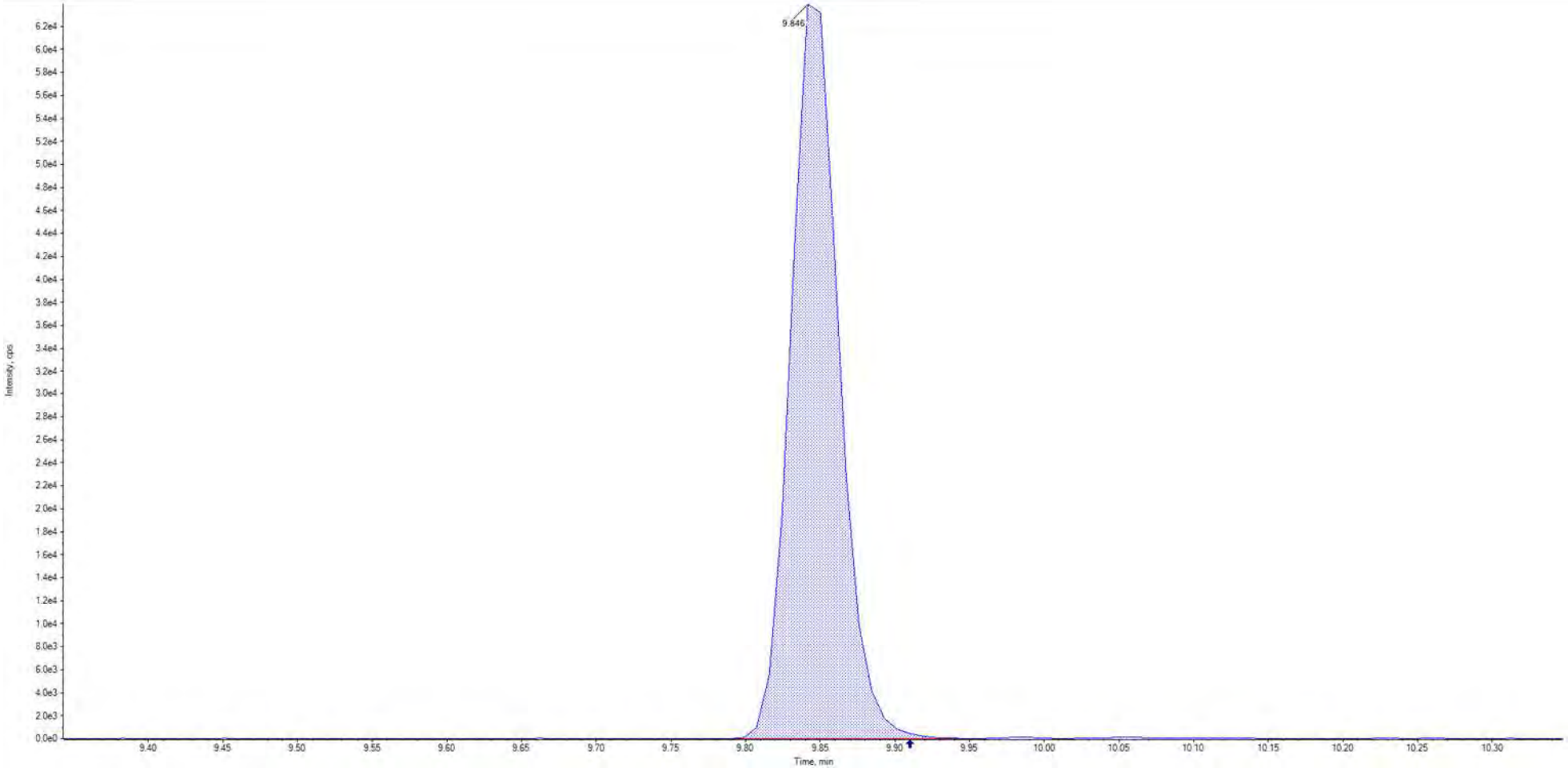
13C7-PFUnA
Sample: L2450786-11



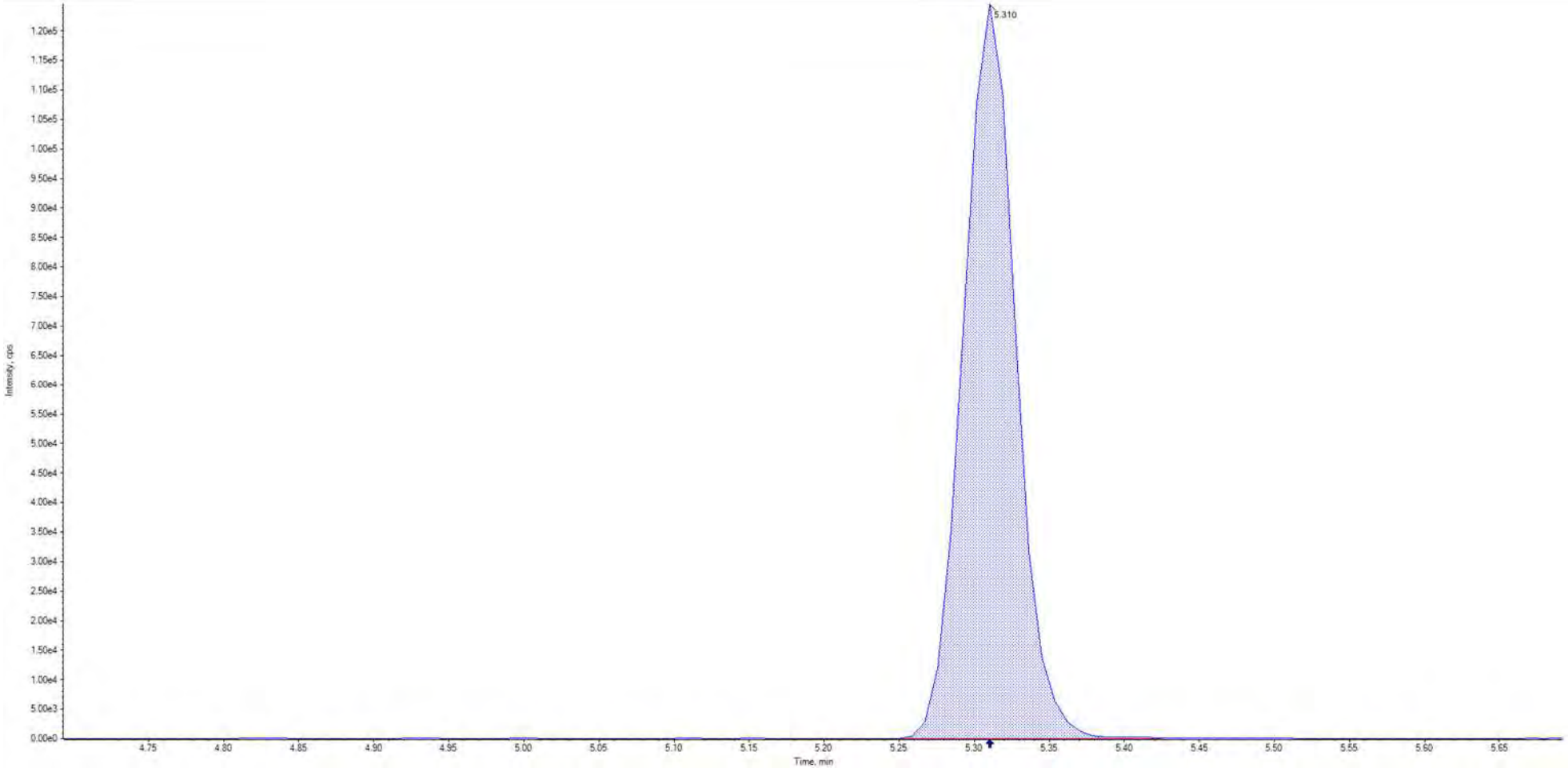
13C2-PFDoA
Sample: L2450786-11



13C2-PFTeDA
Sample: L2450786-11



13C3-PFBS
Sample: L2450786-11



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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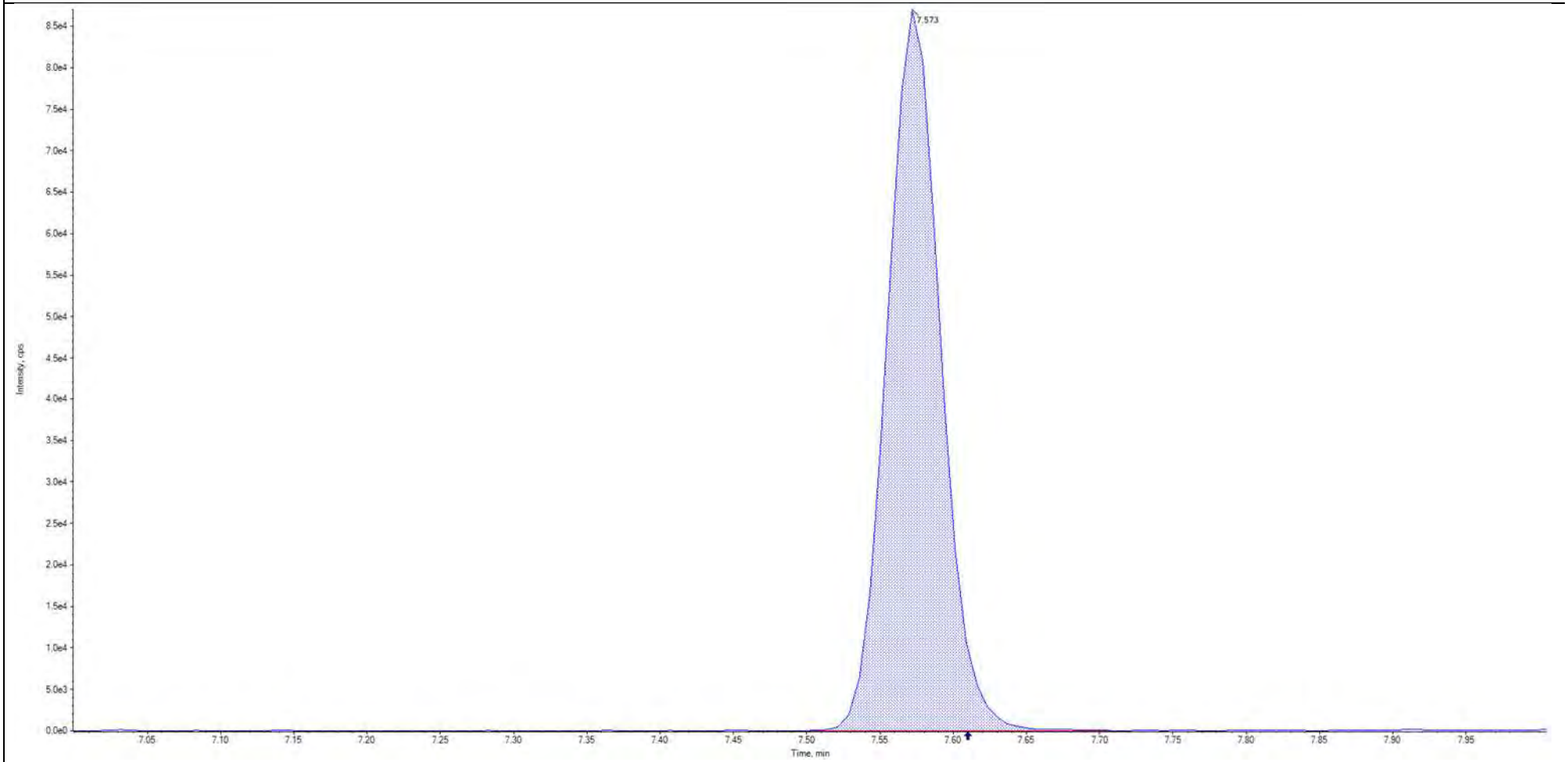
Generated: 9/19/2024 8:04:31 AM

13C3-PFHxS
Sample: L2450786-11



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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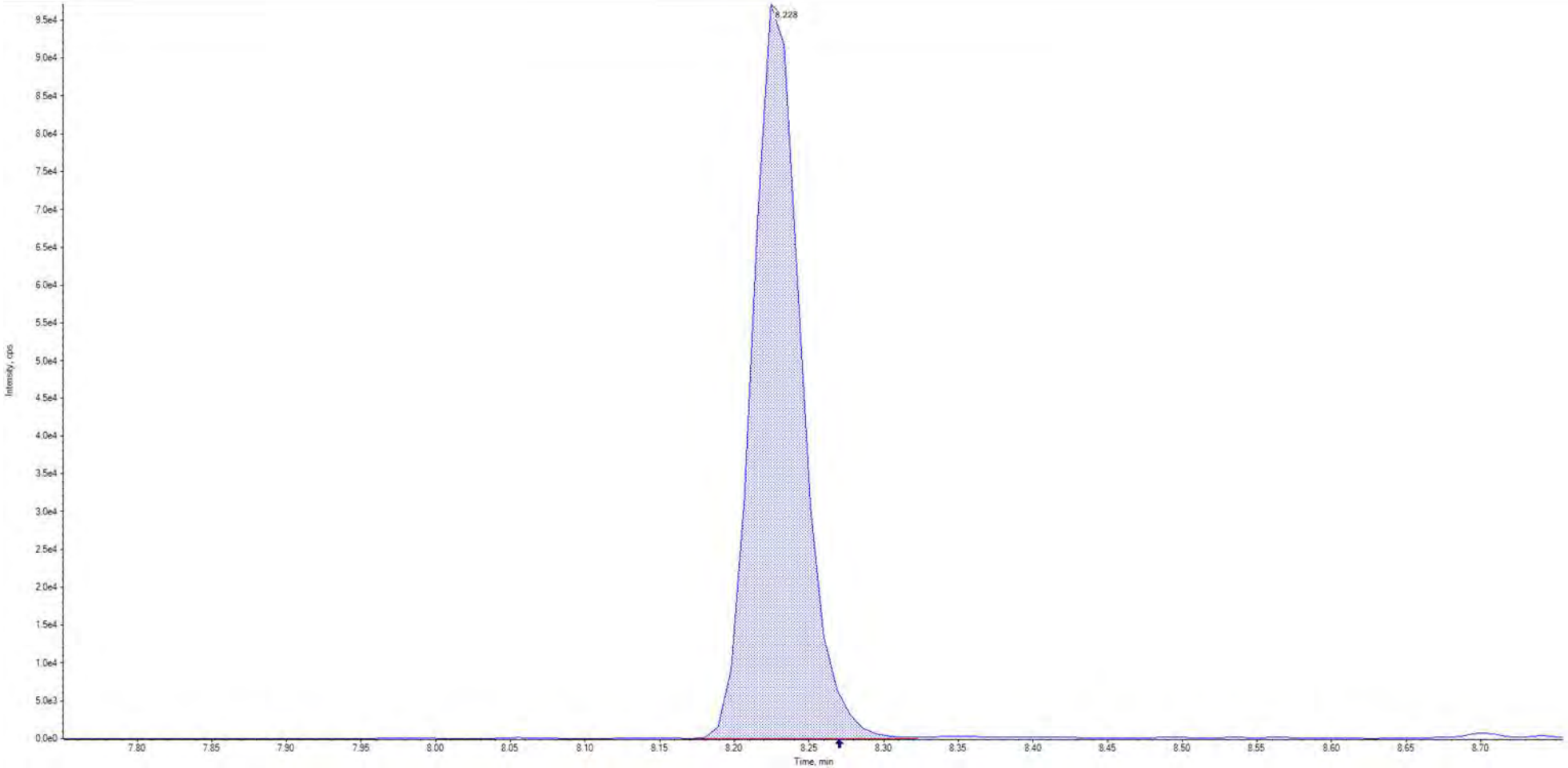
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C8-PFOS
Sample: L2450786-11



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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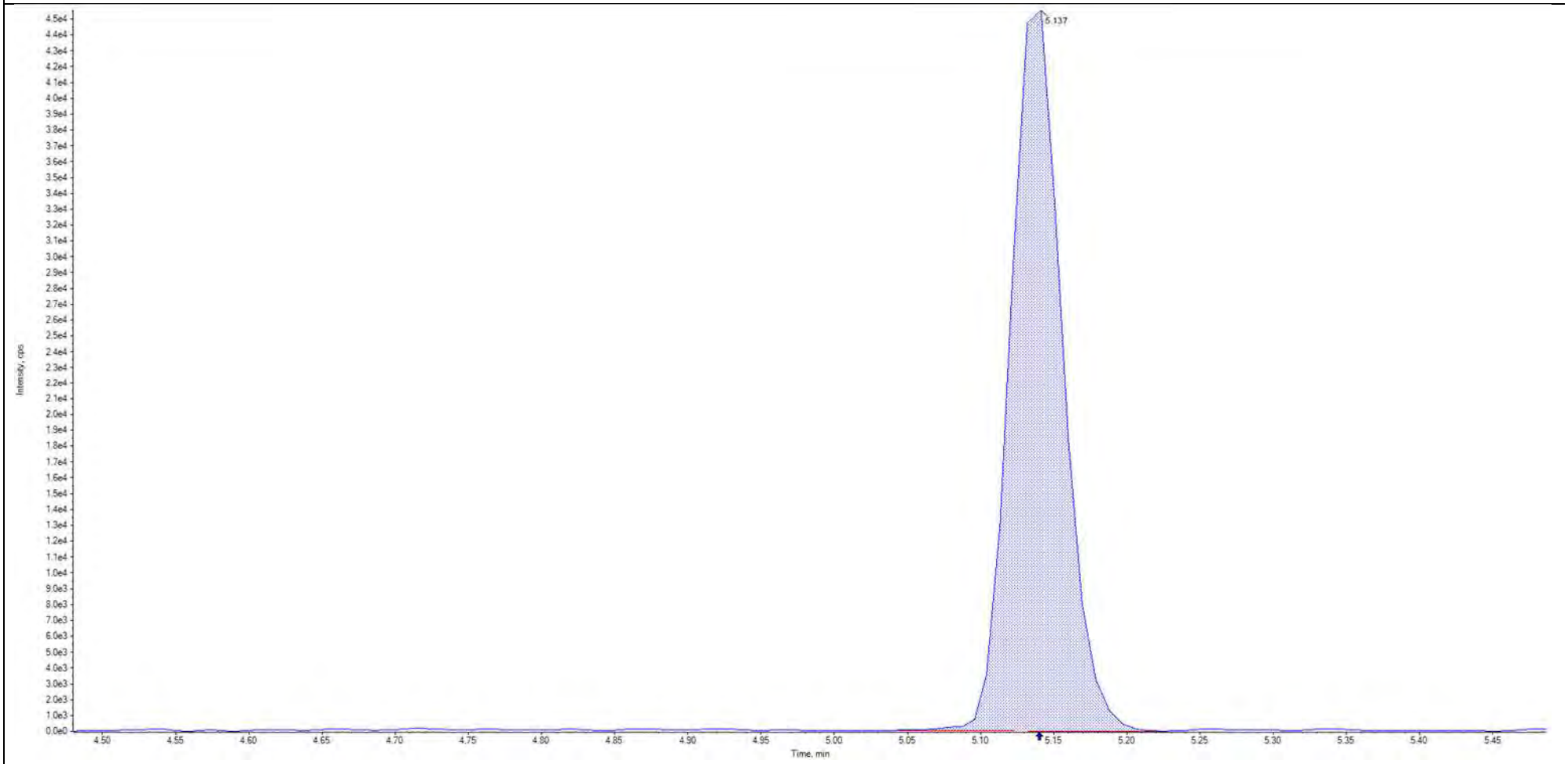
Generated: 9/19/2024 8:04:31 AM

13C2-4:2FTS
Sample: L2450786-11



13C2-6:2FTS
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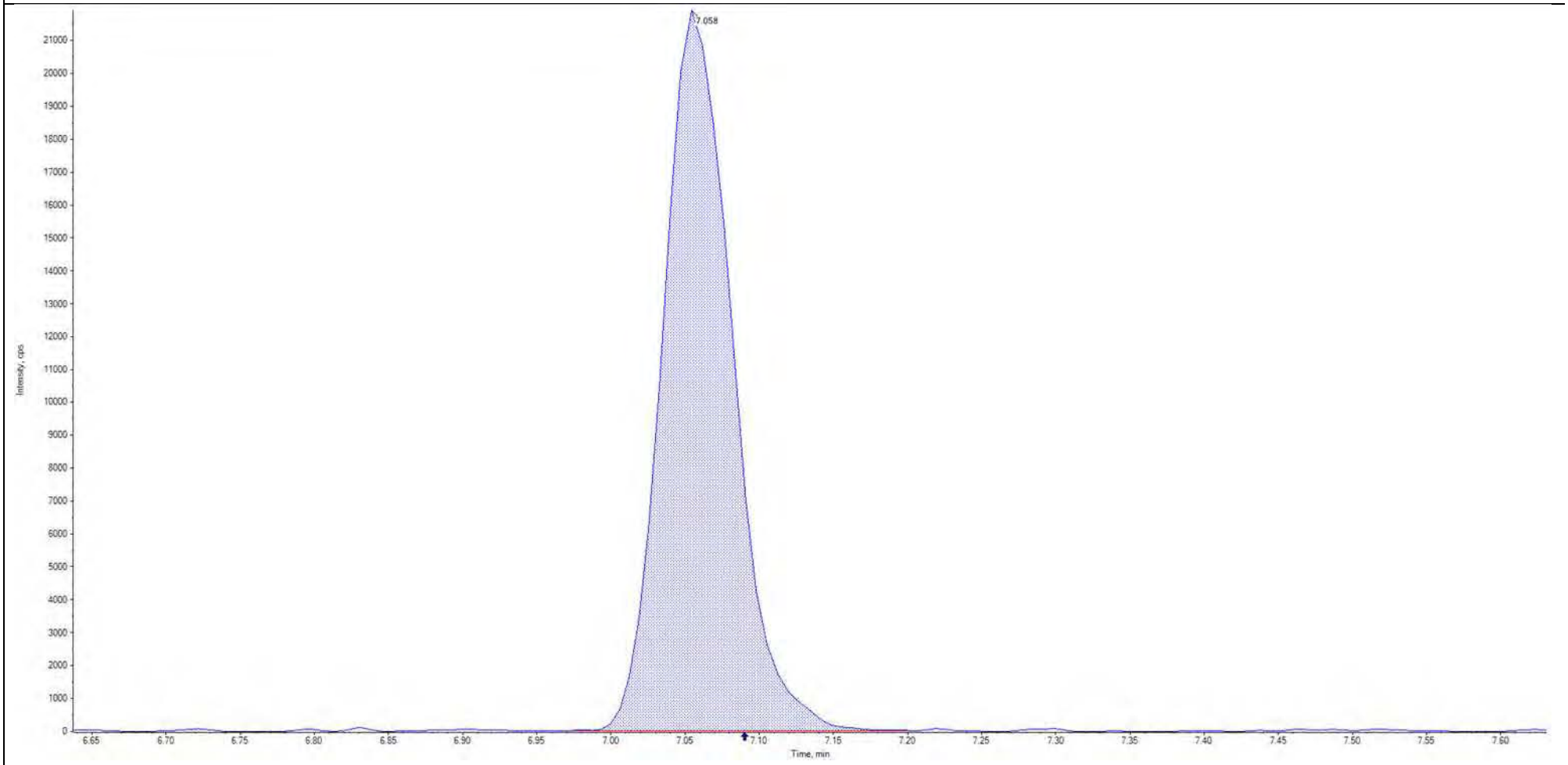

13C2-8:2FTS
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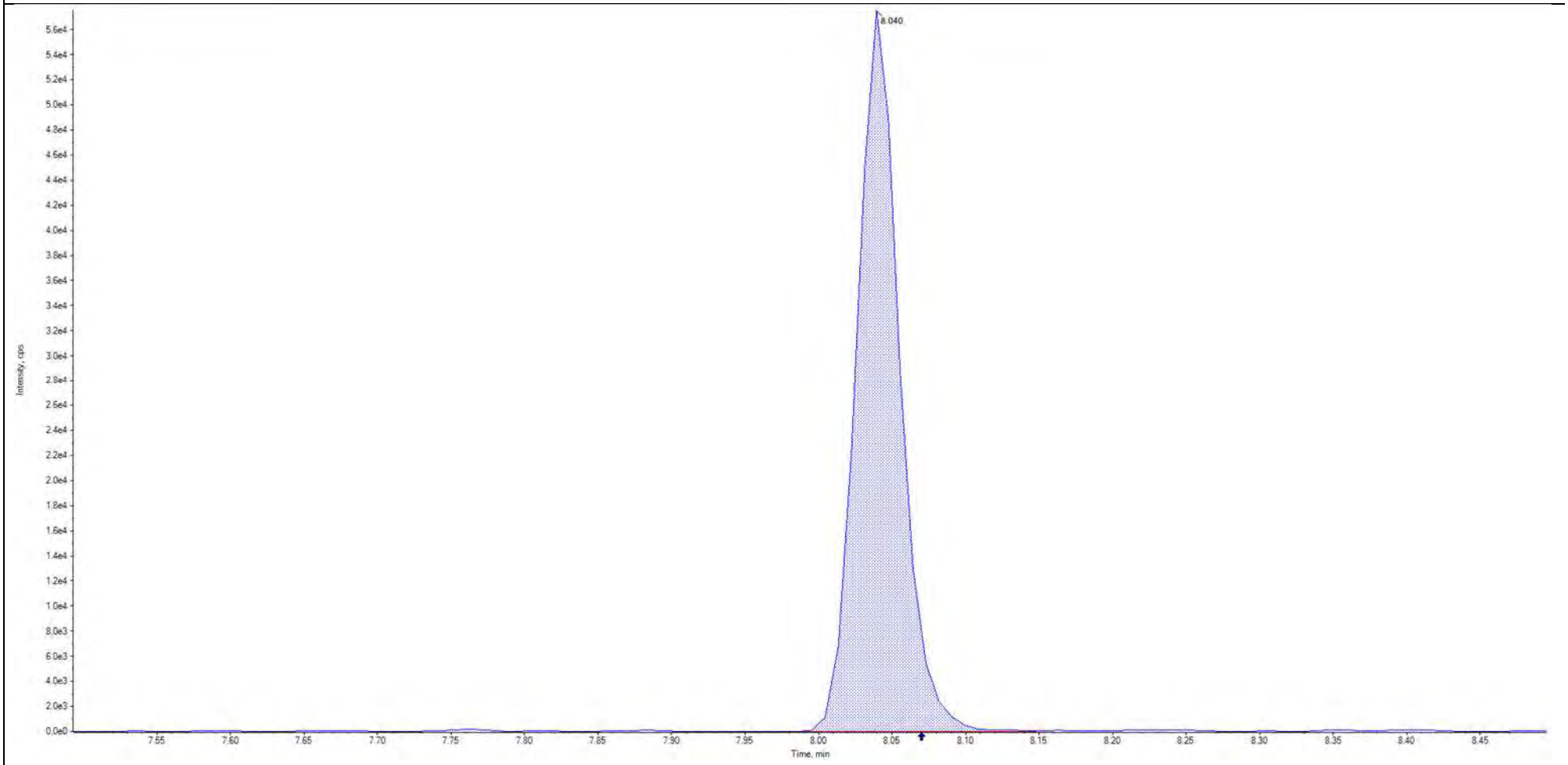

13C8-PFOSA
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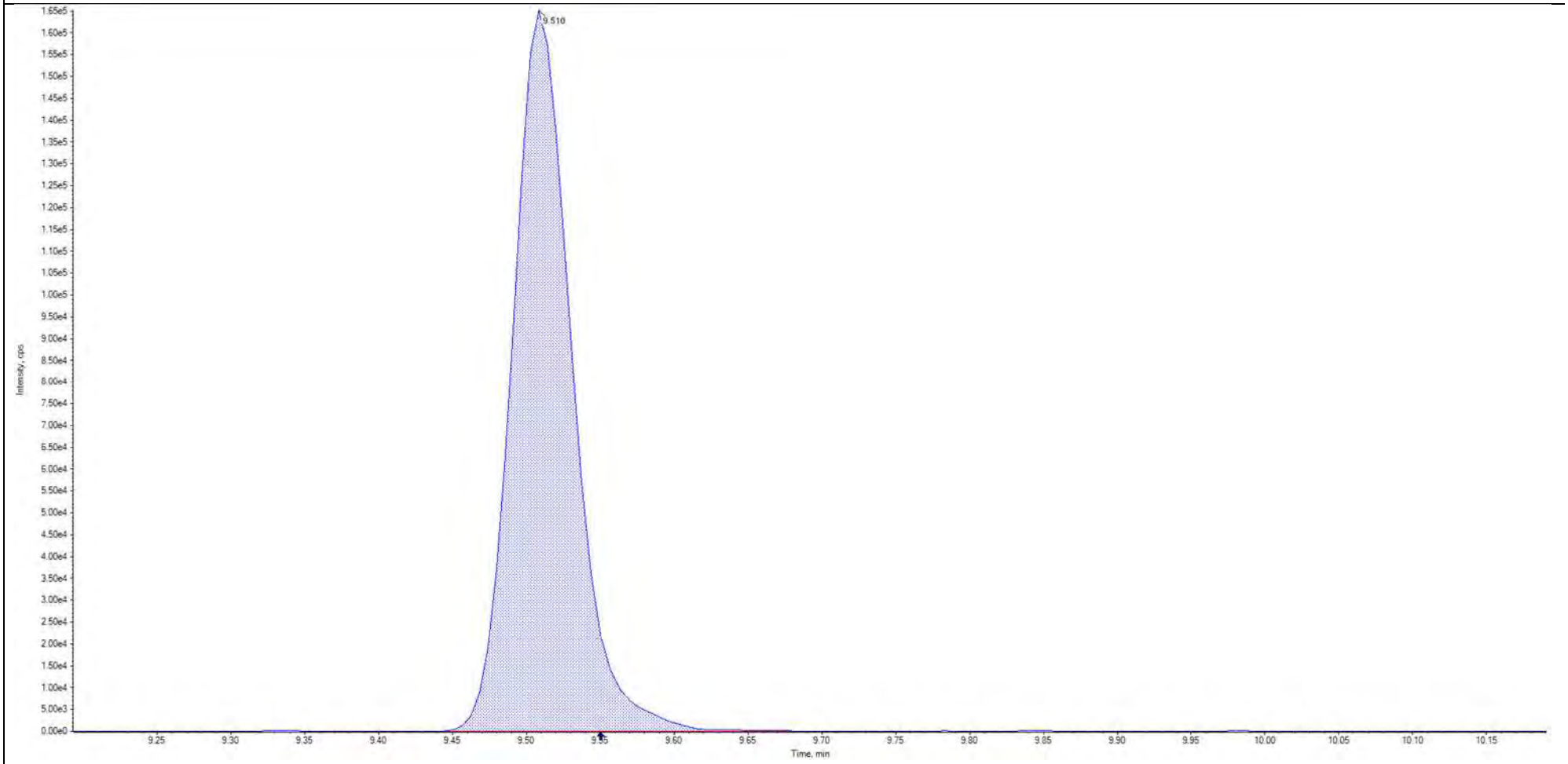
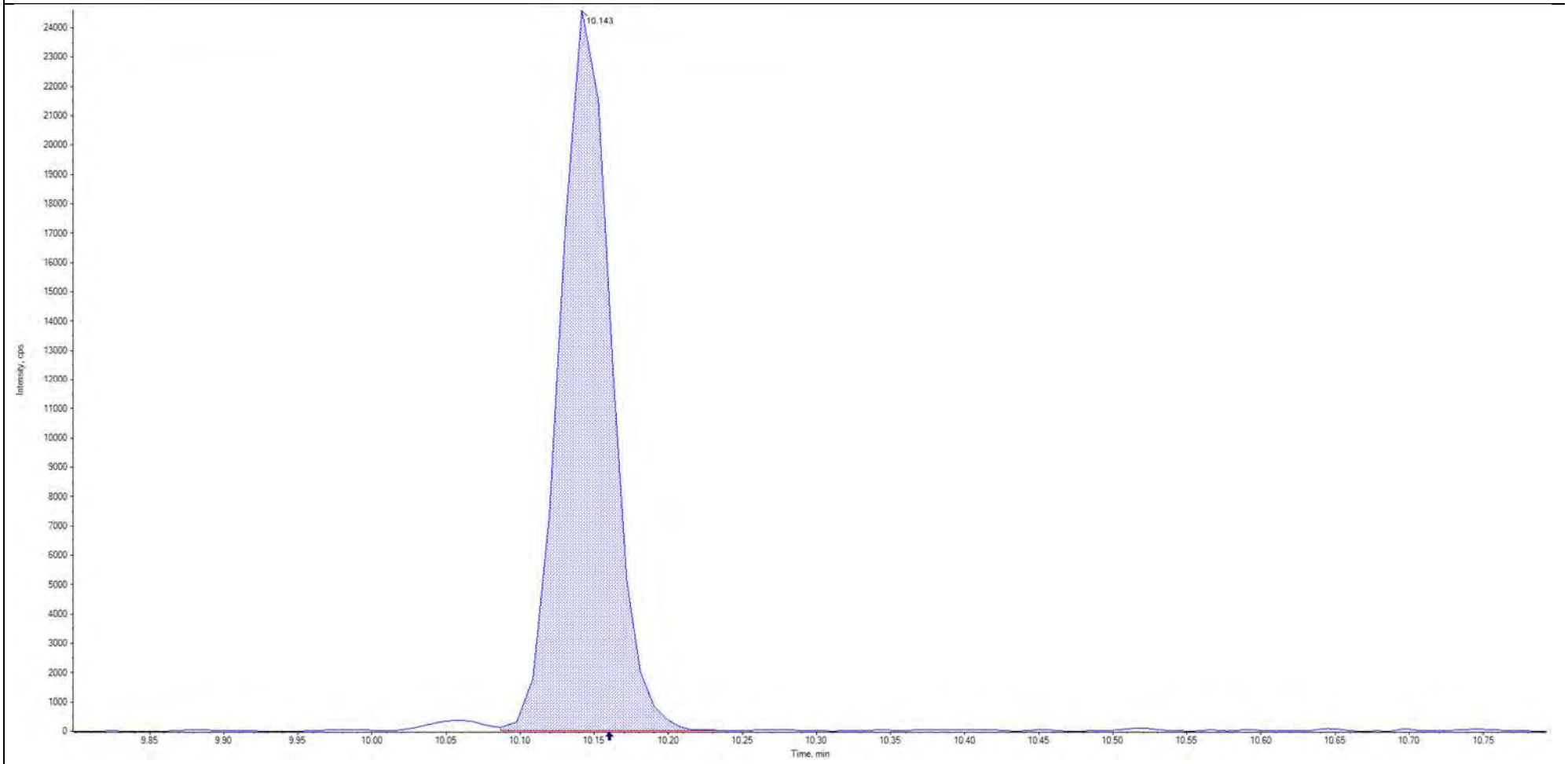
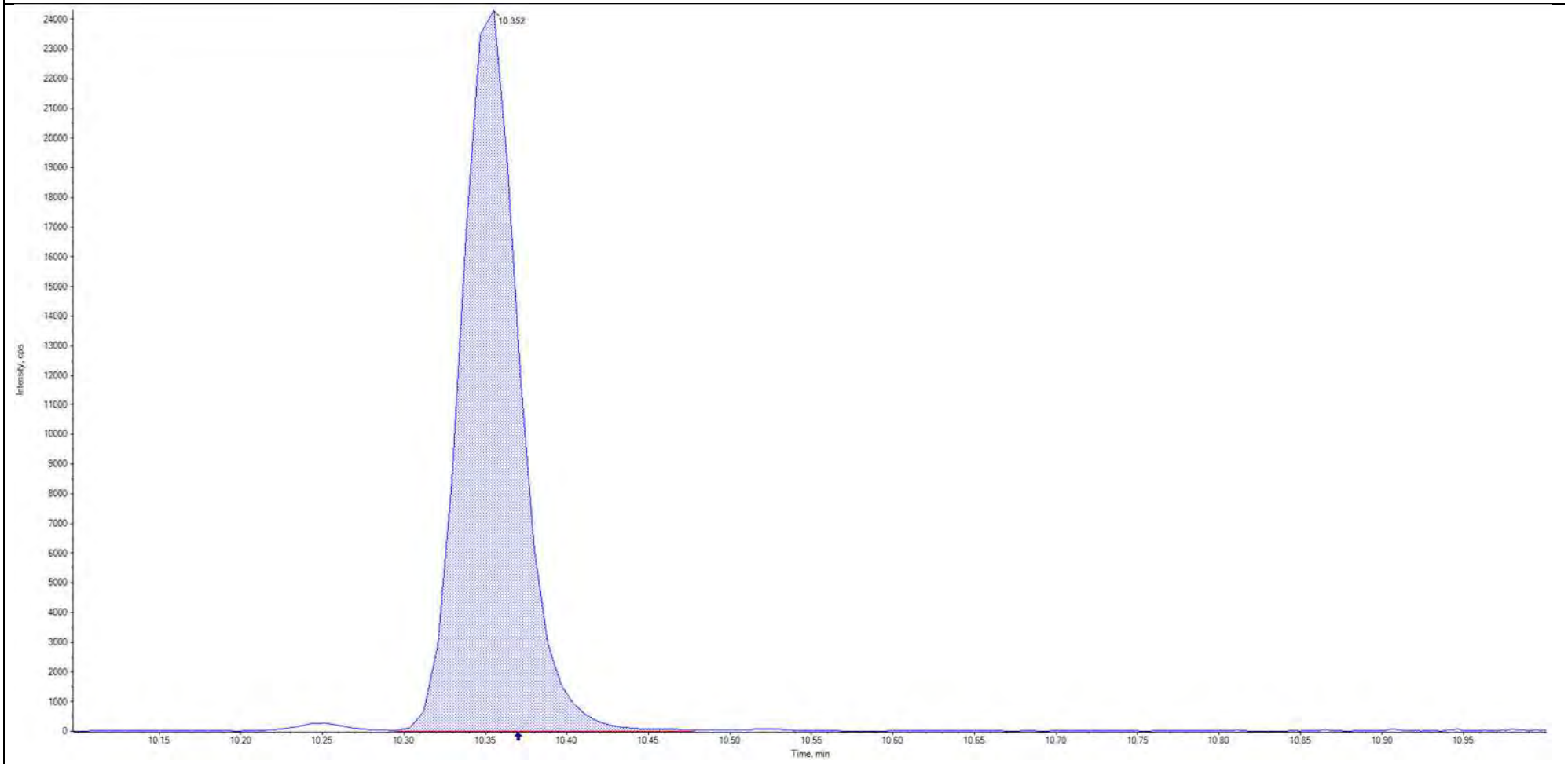


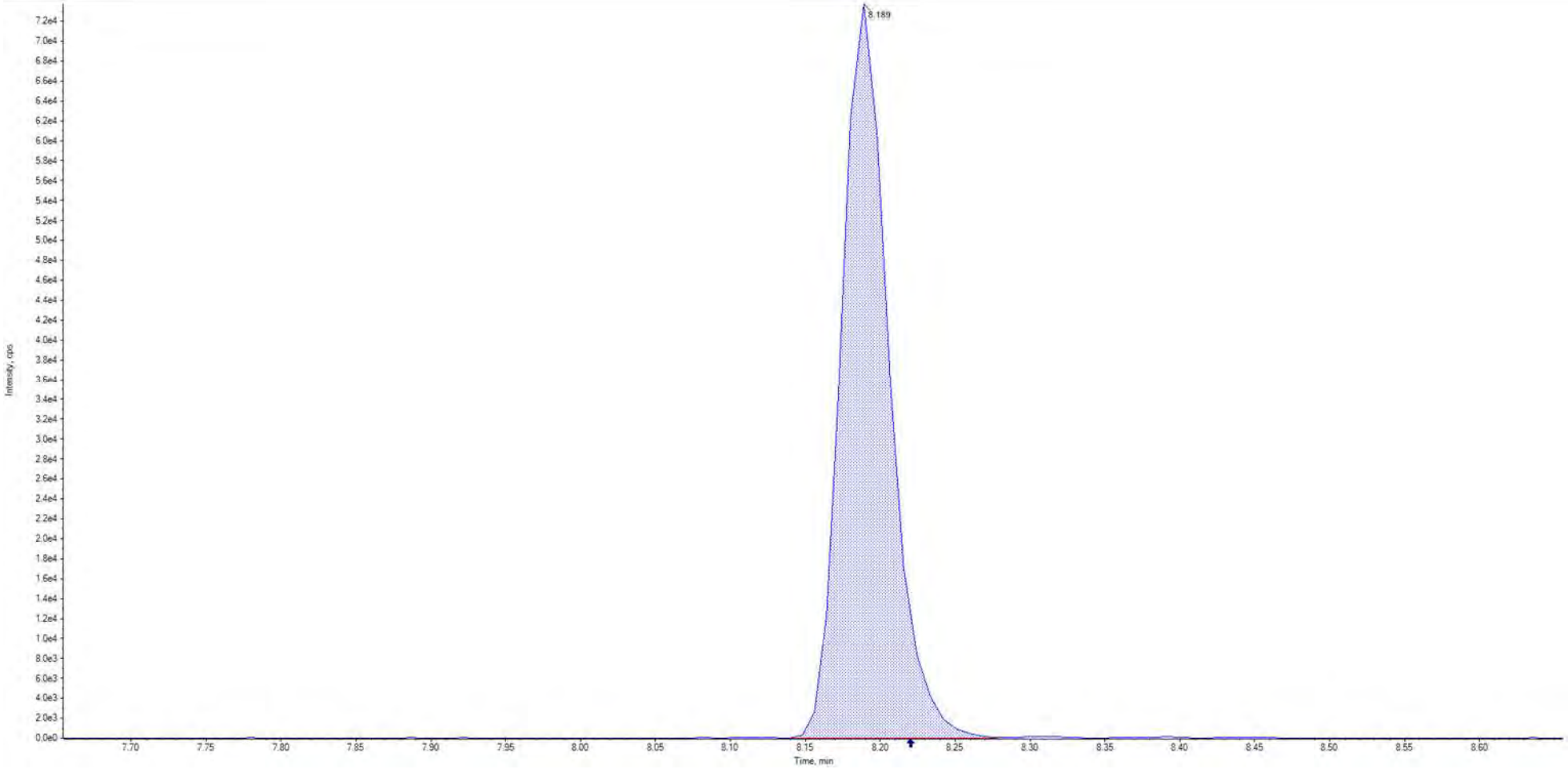
d3-NMeFOSA
Sample: L2450786-11



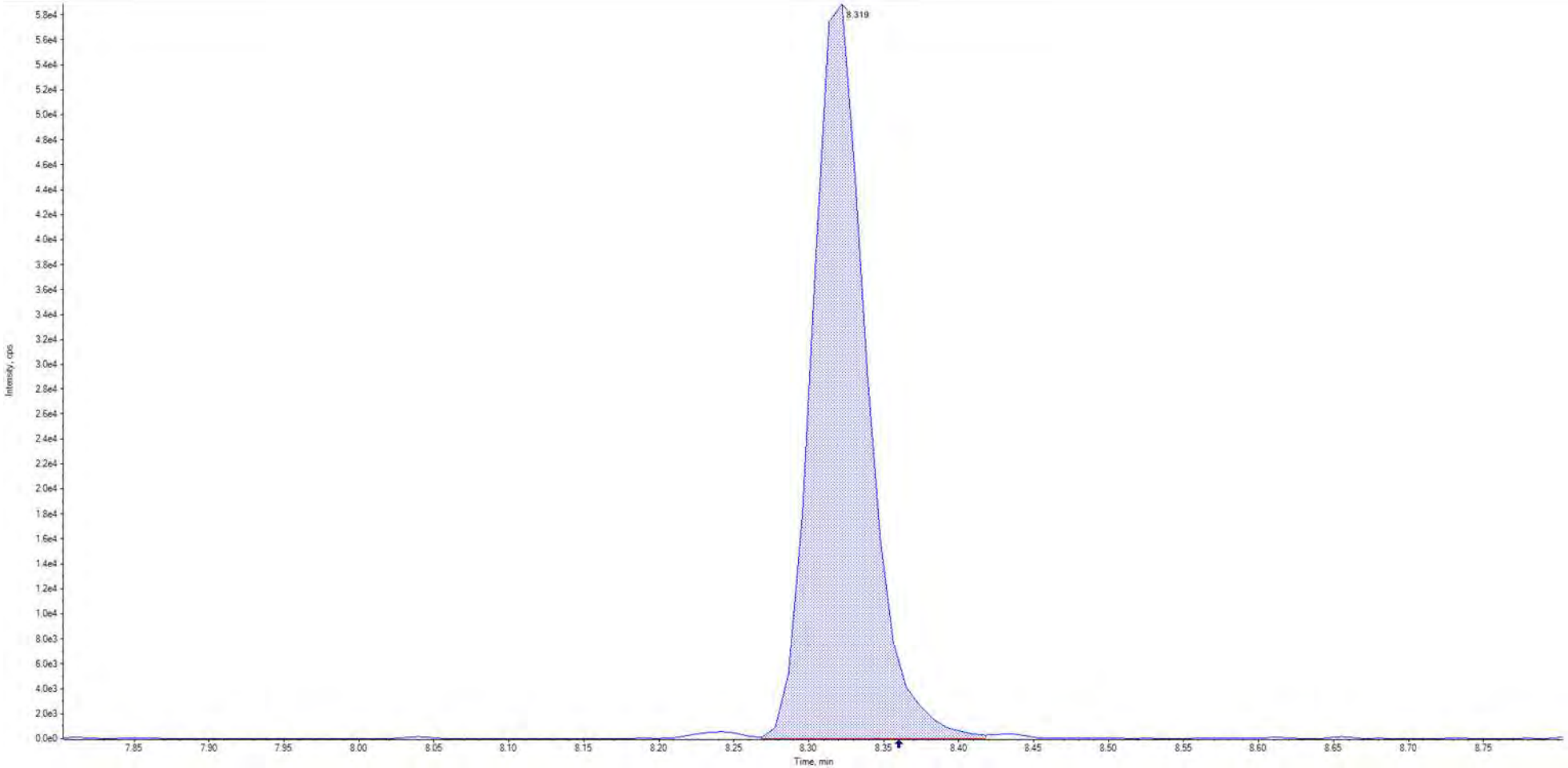
d5-NEtFOSA
Sample: L2450786-11



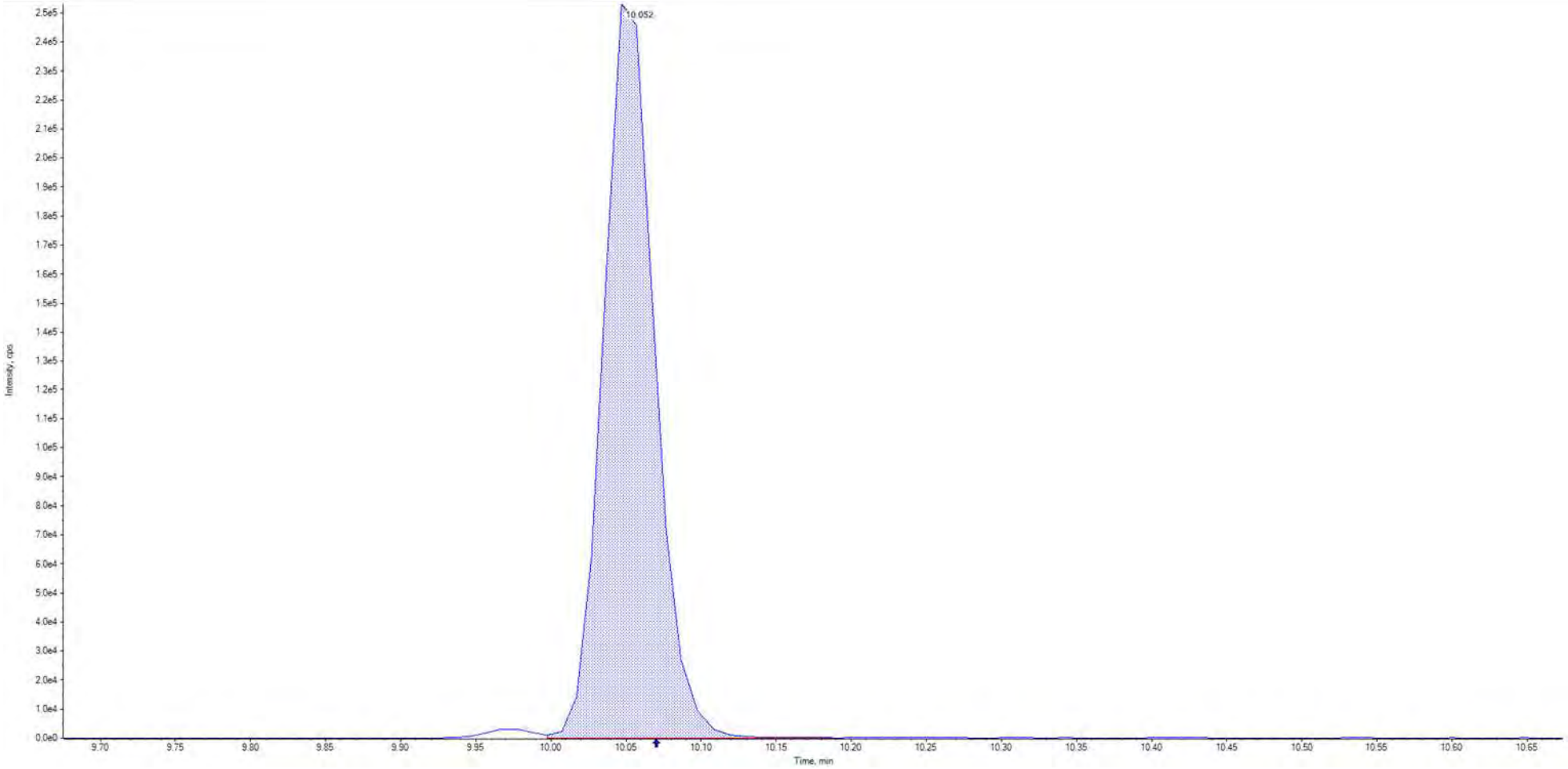
d3-NMeFOSAA
Sample: L2450786-11



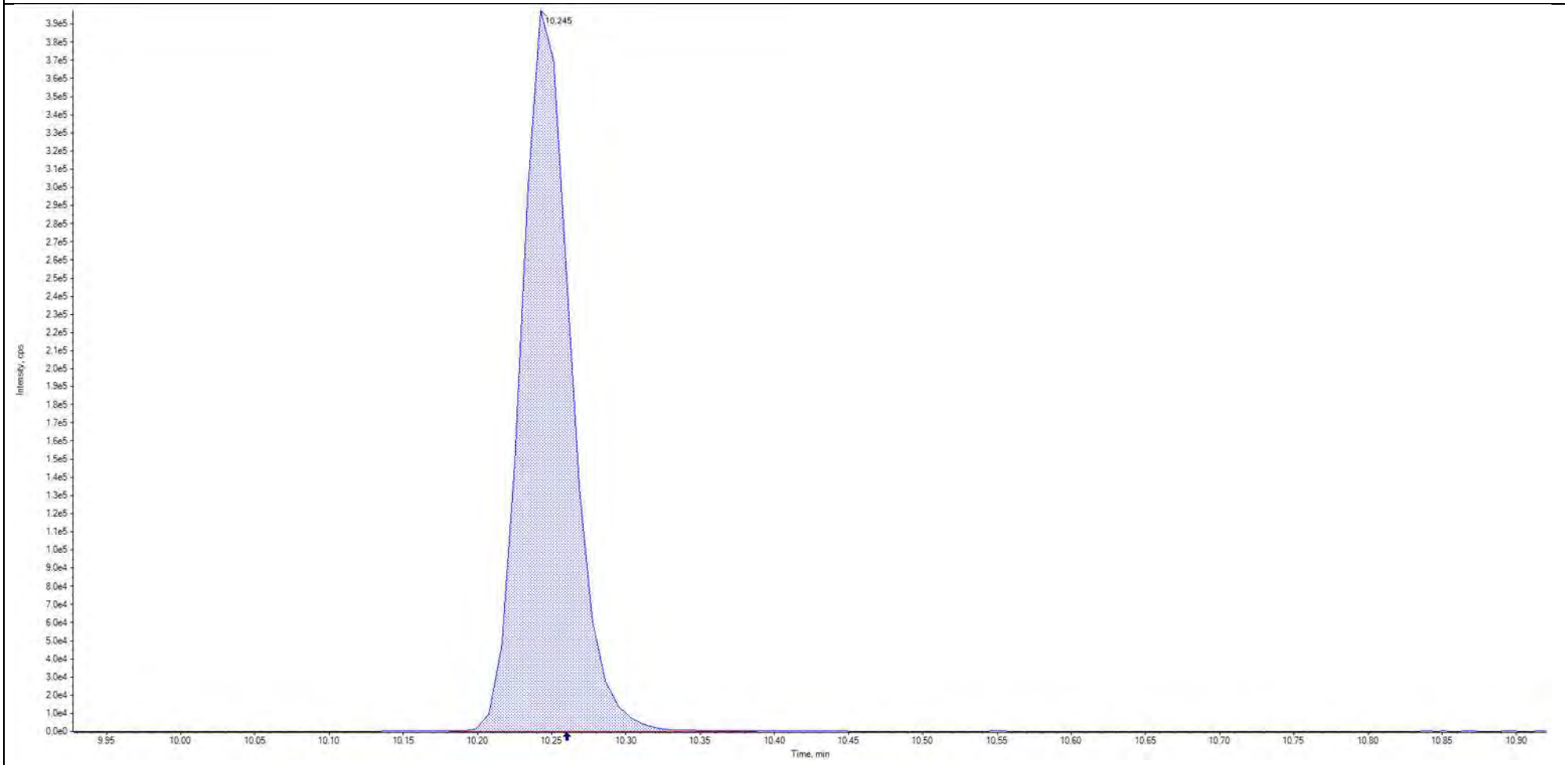
d5-NEtFOSAA
Sample: L2450786-11



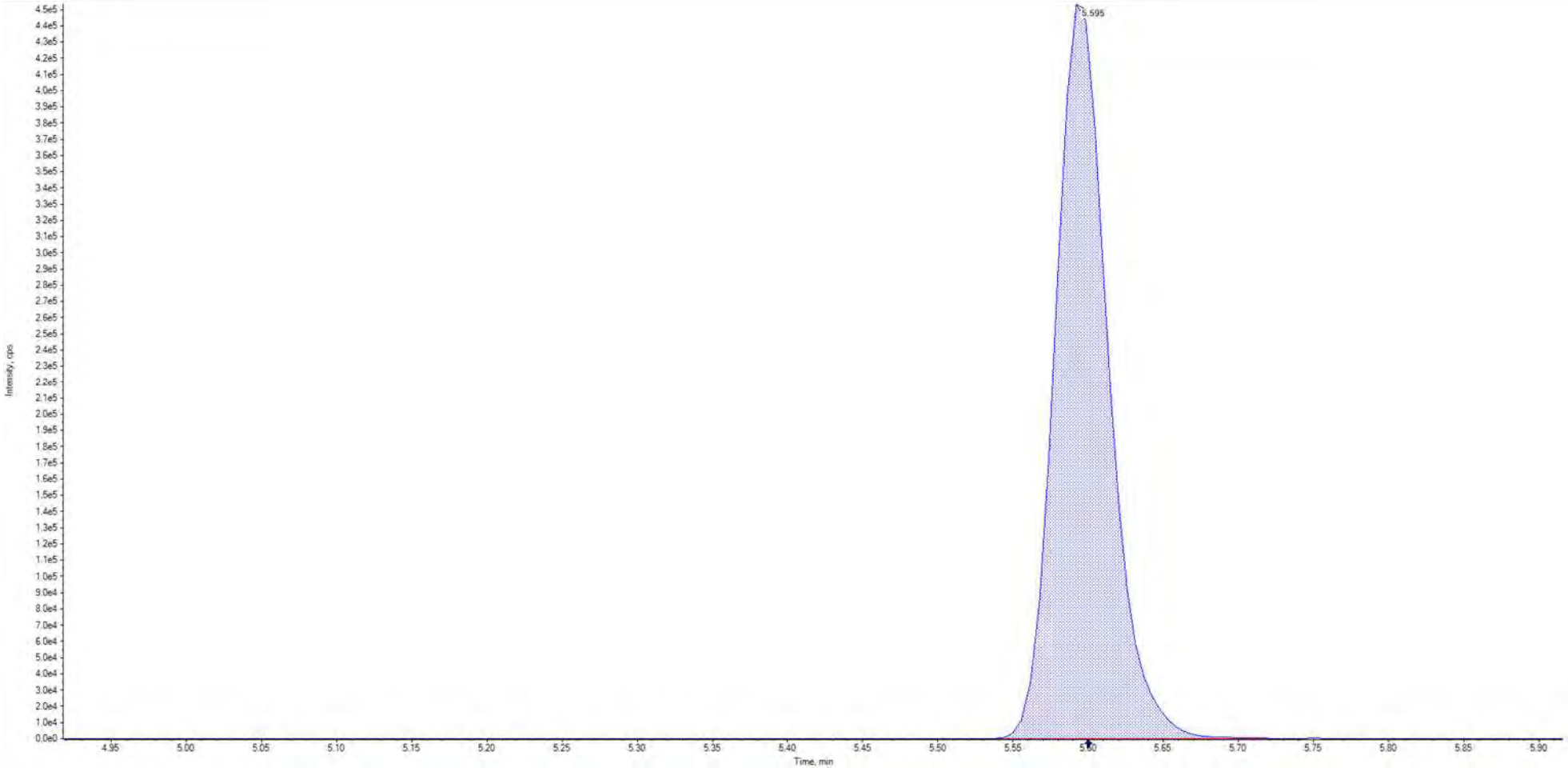
d7-NMeFOSE
Sample: L2450786-11



d9-NEtFOSE
Sample: L2450786-11



13C3-HFPO-DA
Sample: L2450786-11



13C3-PFBA
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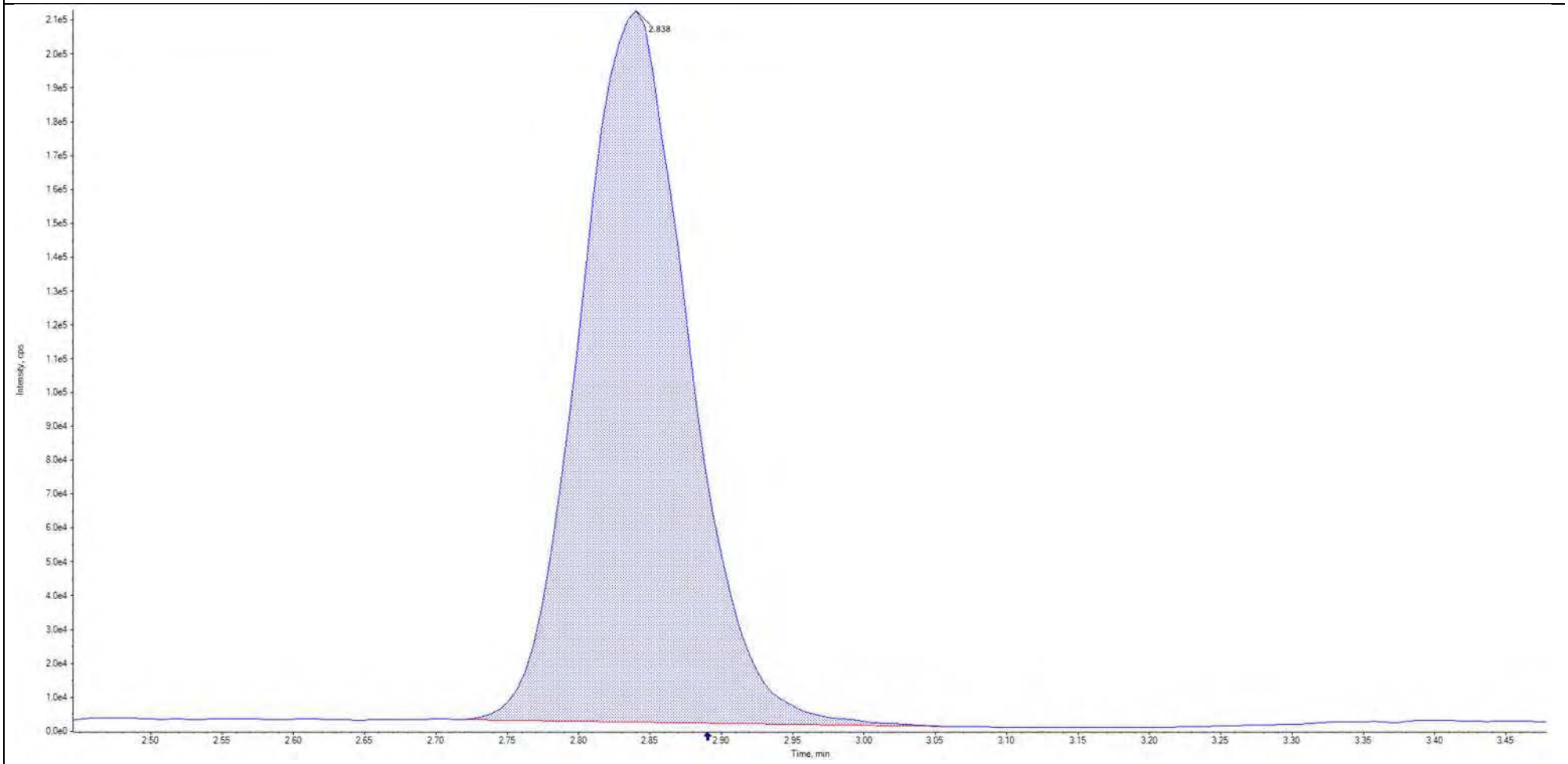

13C2-PFHxA
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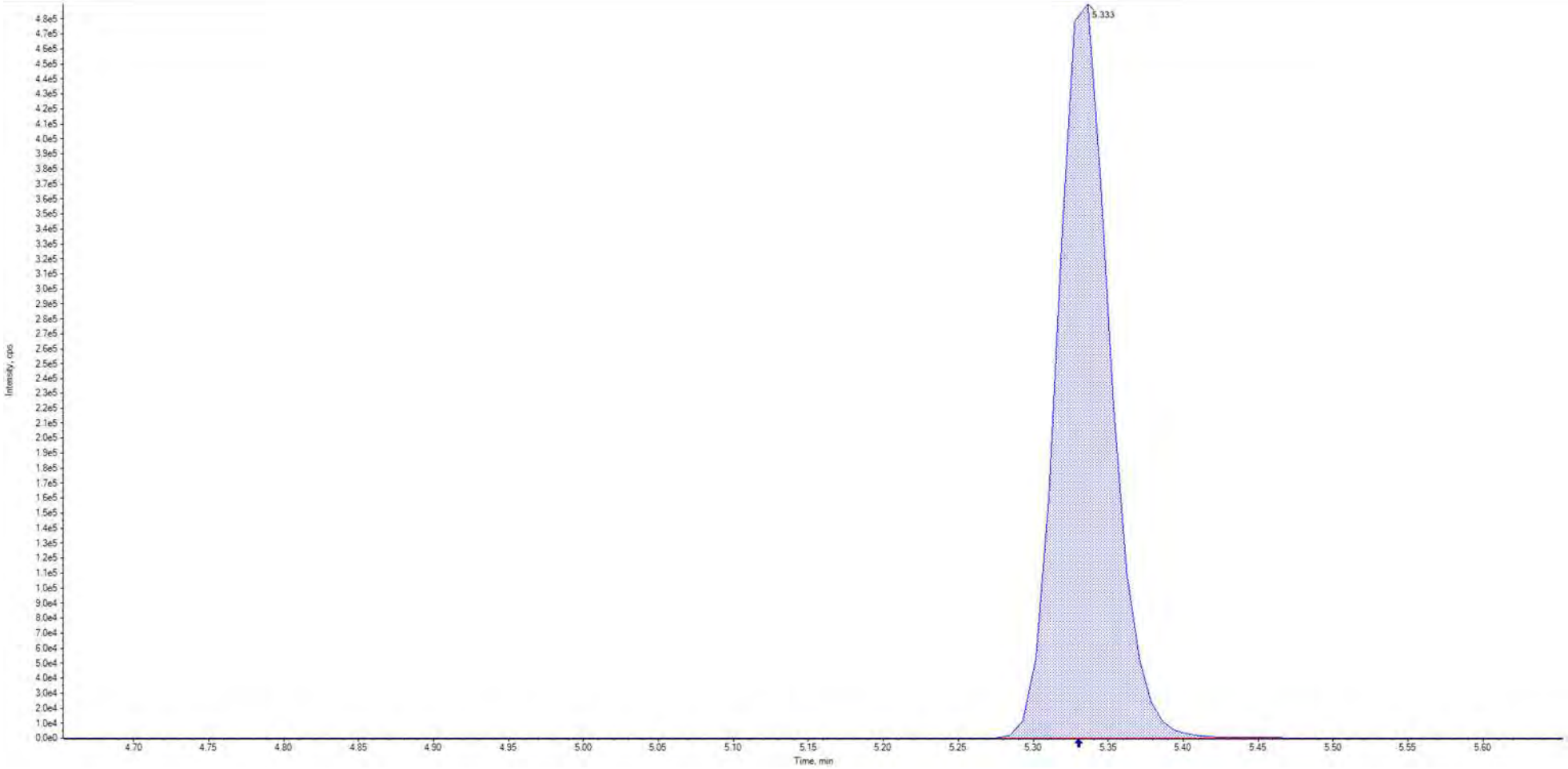
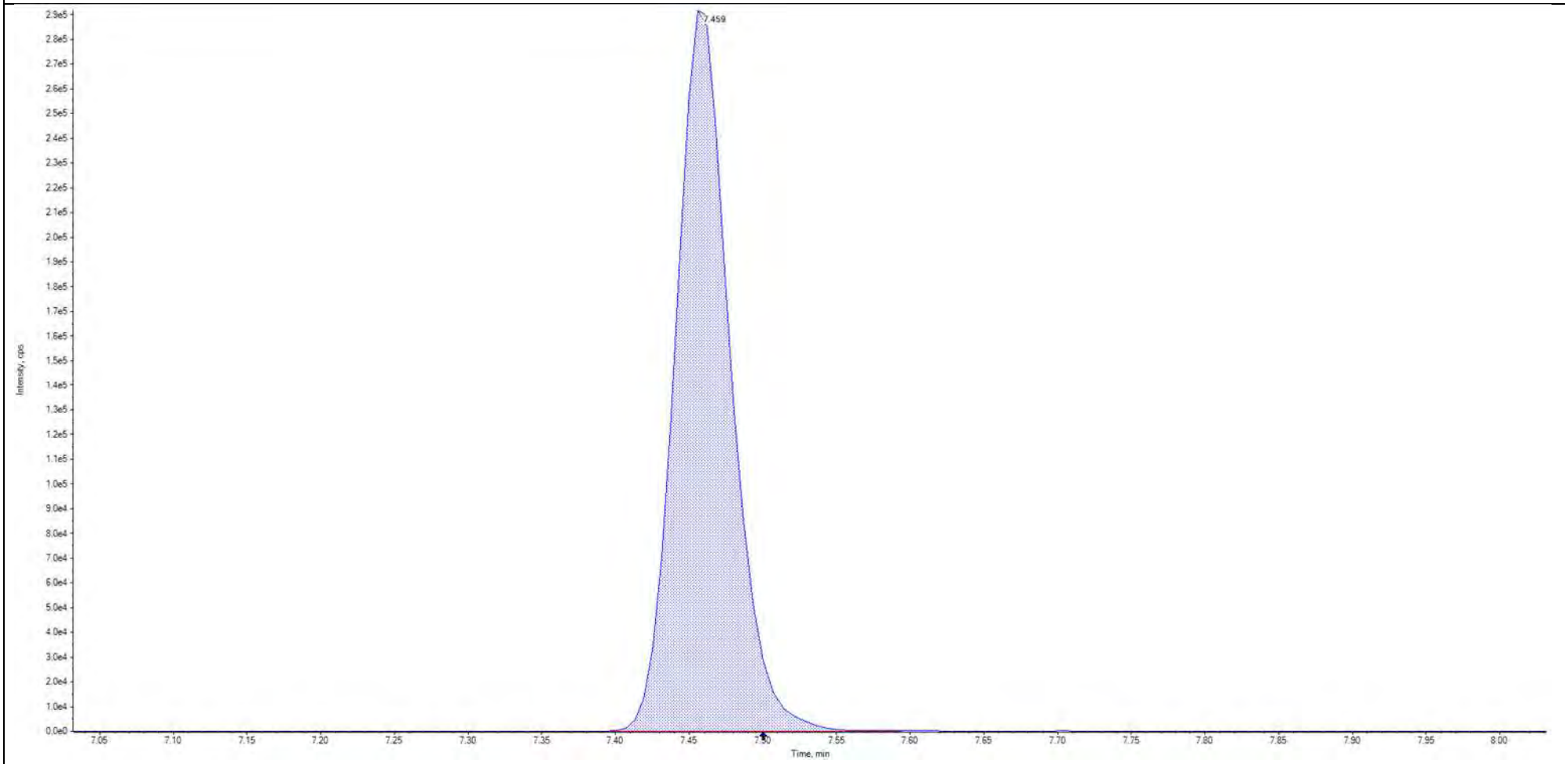


13C4-PFOA
Sample: L2450786-11



13C5-PFNA
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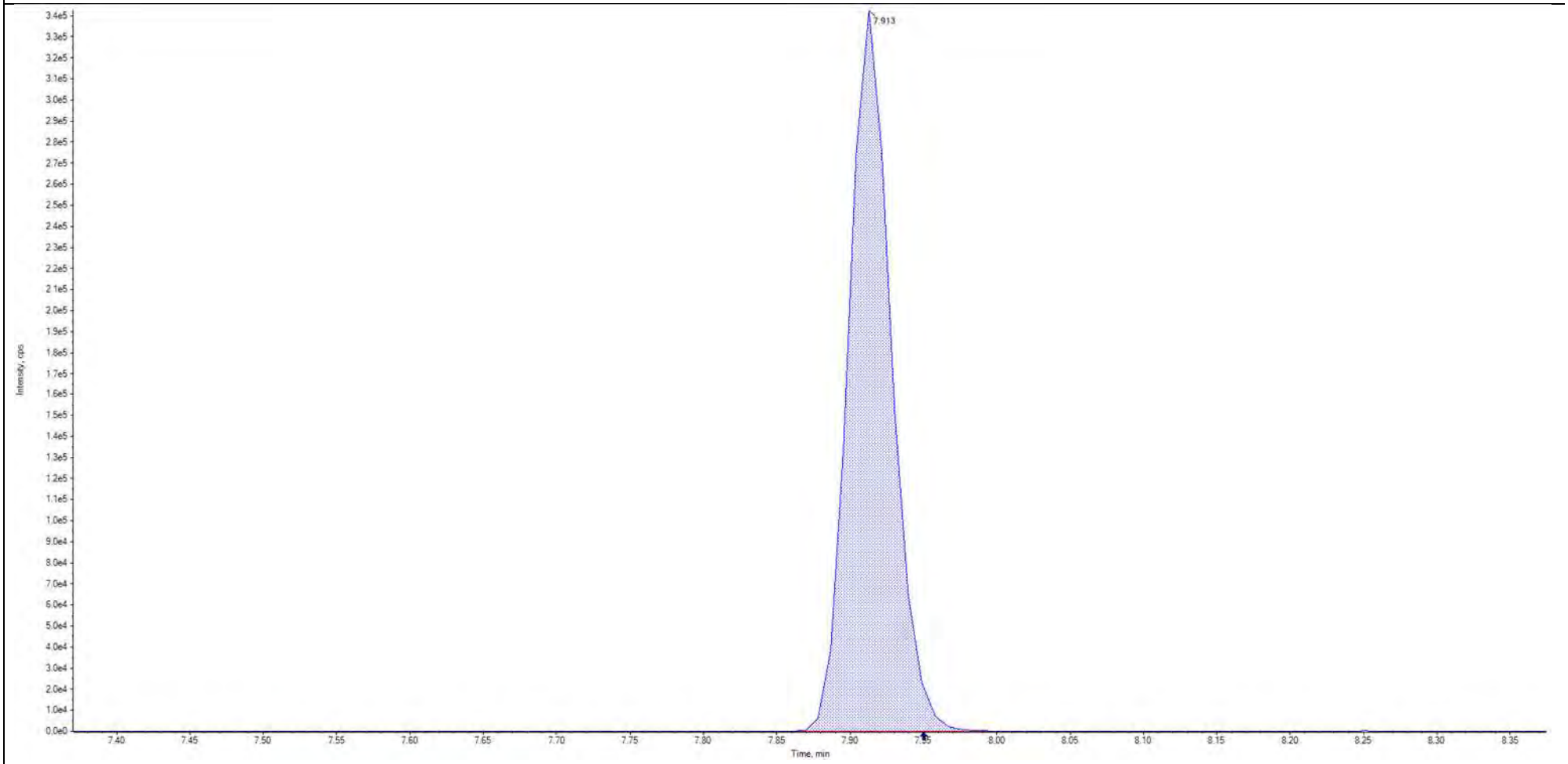
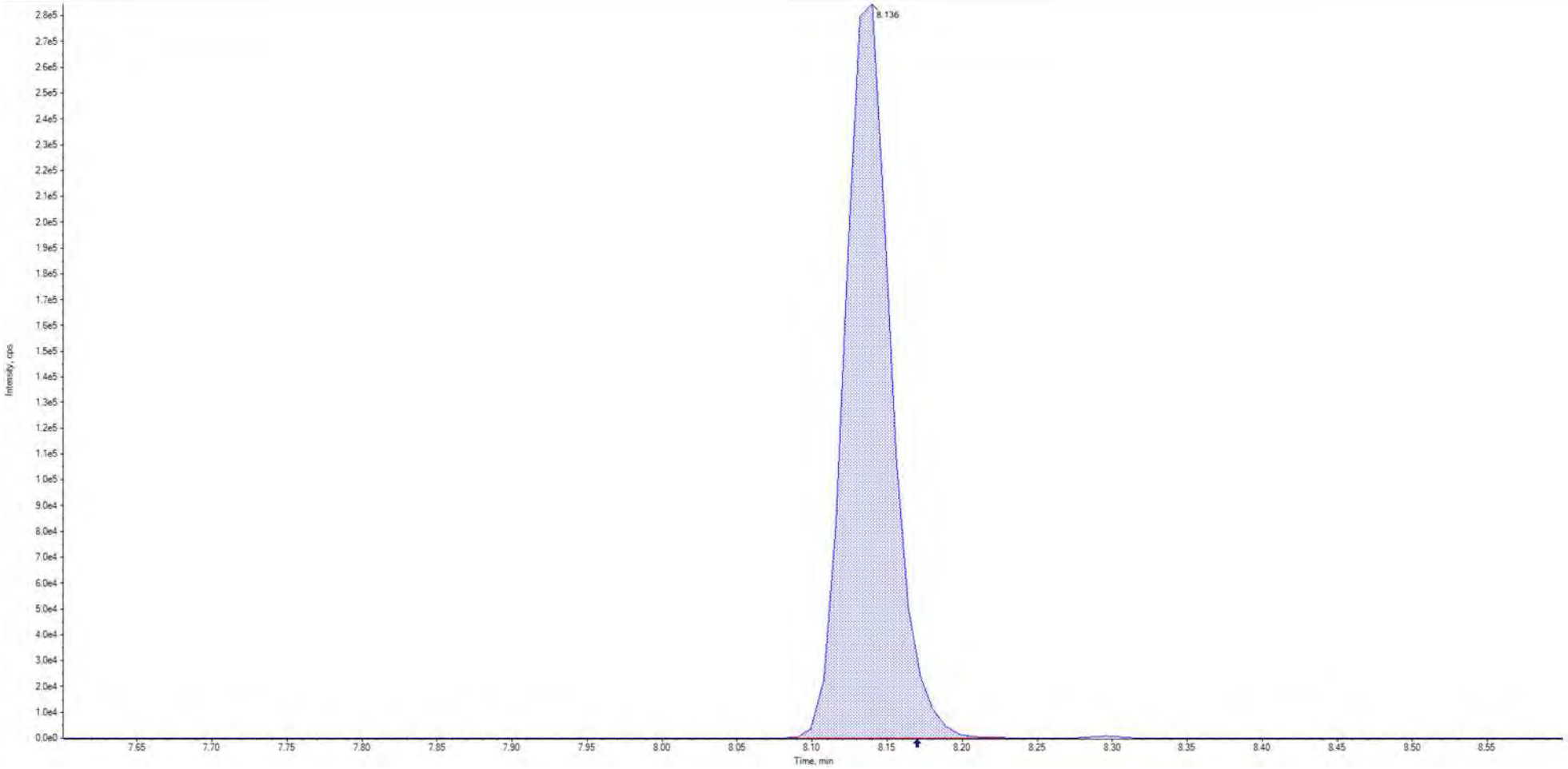
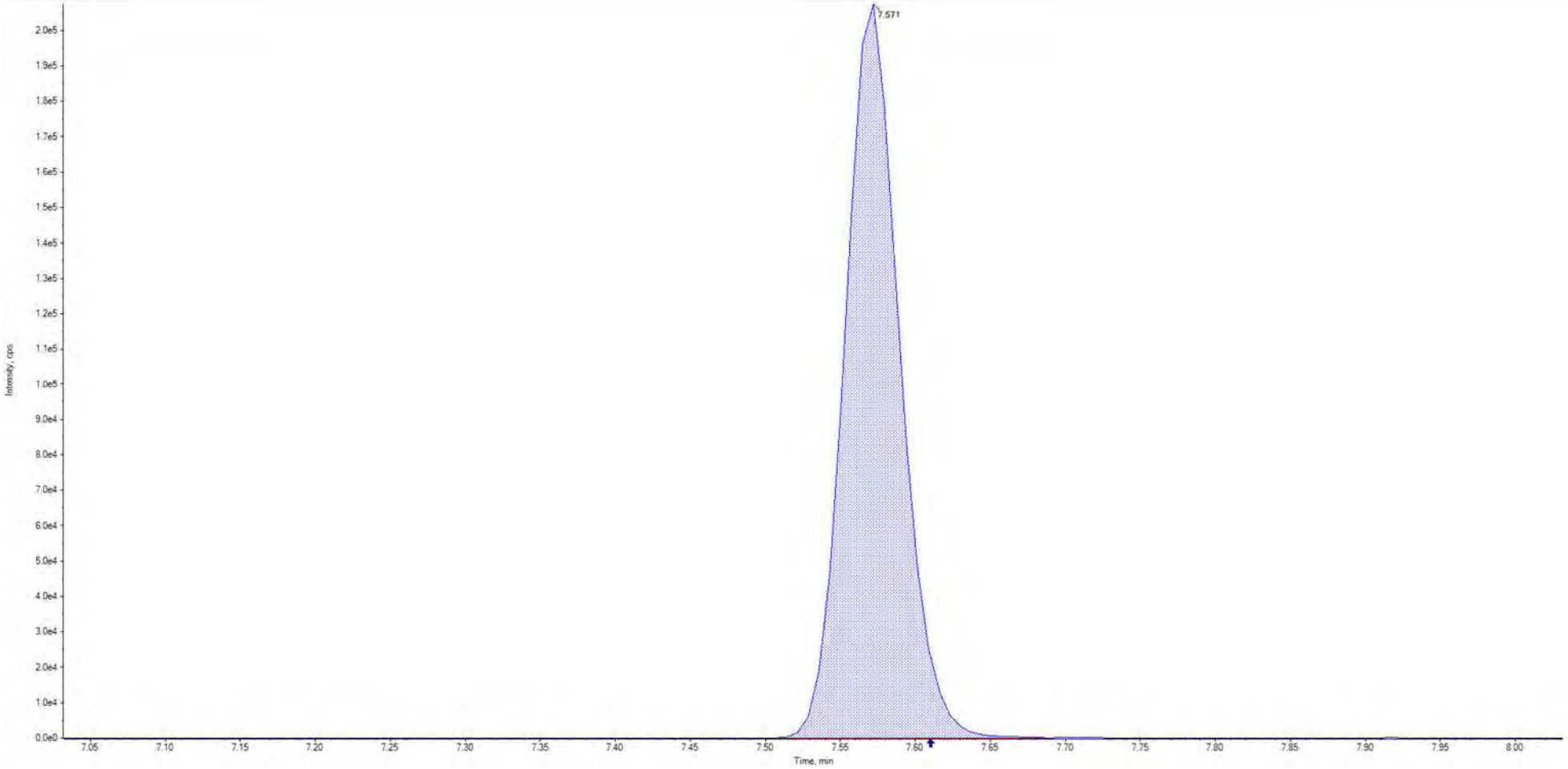


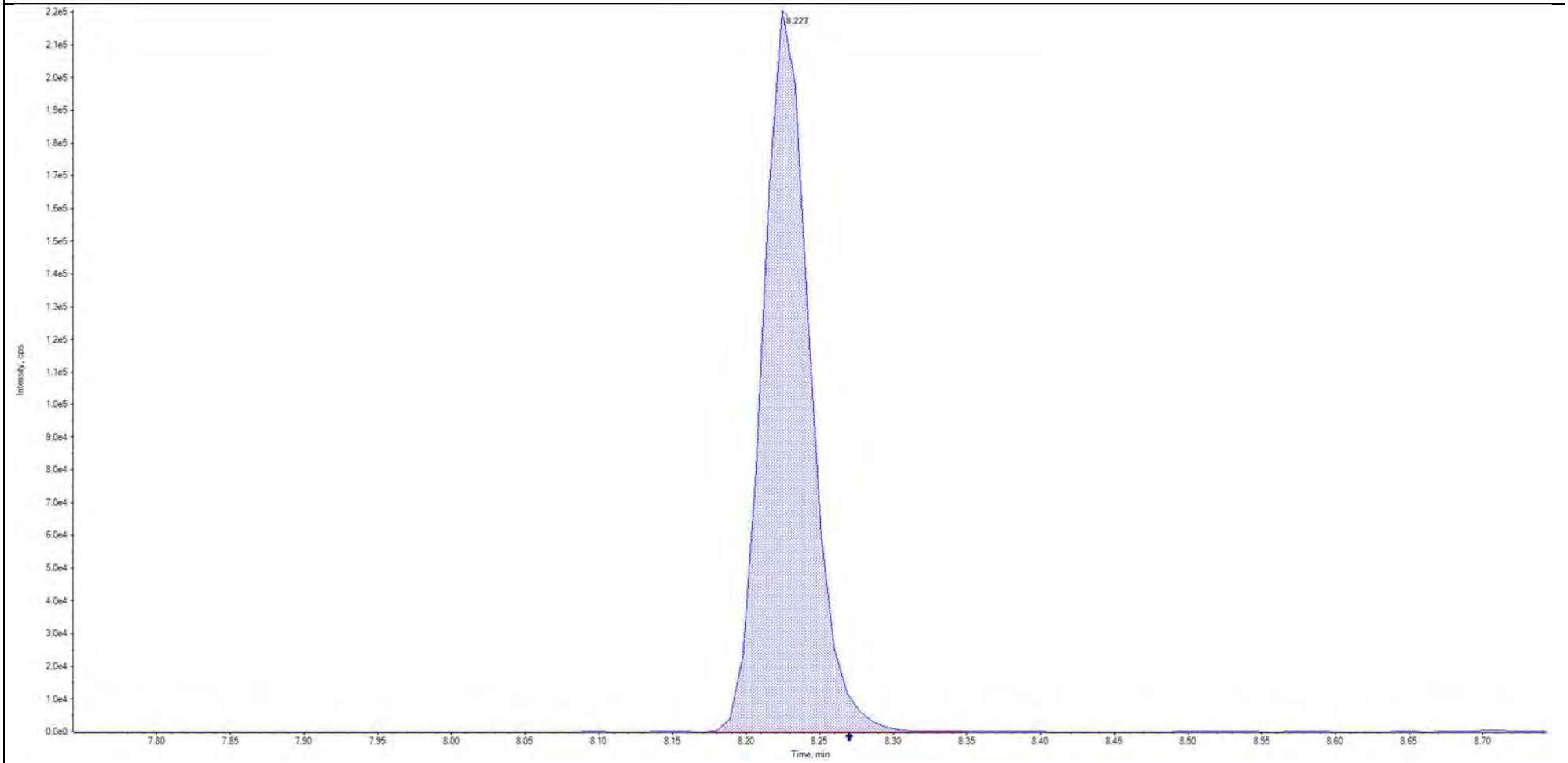
13C2-PFDA
Sample: L2450786-11



18O2-PFHxS
Sample: L2450786-11



13C4-PFOS
Sample: L2450786-11



Quantity Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_22.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

Method: EPA1633_NIS_CALC.qmethod
Calibration: 240813_1633_ICAL

ID: L2450786-13
Name: SCI05_240919_23.wiff
Date & Time: 2024-09-19T10:02:09
Description: WG1973506,WG1973357,ICAL21391
Instrument: Triple Quad 5500+
User: LCMS05:AC

LC/MS-MS Method:EPA_1633.dam

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
1	PFBA	375-22-4	2.84	213.0 / 169.0	74527		0.401	N/A	N/A	N/A	N/A
2	PFPeA	2706-90-3	4.66	263.0 / 219.0	97973		0.358	0.010	0.007	N/A	N/A
3	PFPeA_2	2706-90-3	4.65	263.0 / 68.9	1000		0.517	0.010	0.007	N/A	N/A
4	PFHxA	307-24-4	5.35	313.0 / 269.0	143919		0.348	0.067	0.072	Pass	N/A
5	PFHxA_2	307-24-4	5.35	313.0 / 119.0	9673	M7	0.316	0.067	0.072	Pass	N/A
6	PFHpA	375-85-9	6.25	363.1 / 319.0	115937		0.288	0.302	0.297	Pass	N/A
7	PFHpA_2	375-85-9	6.25	363.1 / 169.0	34996		0.284	0.302	0.297	Pass	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
8	PFOA	335-67-1	7.48	413.1 / 369.1	203747	M5	0.758	0.529	0.586	Pass	N/A
9	PFOA_2	335-67-1	7.47	413.1 / 169.0	107854	M7	0.732	0.529	0.586	Pass	N/A
10	PFNA	375-95-1	7.93	462.8 / 418.9	371659	M5	1.081	0.259	0.313	Pass	N/A
11	PFNA_2	375-95-1	7.93	462.8 / 218.9	96419	M7	0.918	0.259	0.313	Pass	N/A
12	PFDA	335-76-2	8.15	513.1 / 469.1	22563	M4	0.058	0.162	0.142	Pass	N/A
13	PFDA_2	335-76-2	8.15	513.1 / 219.0	3660		0.063	0.162	0.142	Pass	N/A
14	PFUnA	2058-94-8	N/A	563.1 / 519.1	N/A		N/A	N/A	0.194	N/A	N/A
15	PFUnA_2	2058-94-8	N/A	563.1 / 269.0	N/A		N/A	N/A	0.194	N/A	N/A
16	PFDoA	307-55-1	N/A	613.1 / 569.1	N/A		N/A	N/A	0.167	N/A	N/A
17	PFDoA_2	307-55-1	N/A	613.1 / 319.0	N/A		N/A	N/A	0.167	N/A	N/A
18	PFTrDA	72629-94-8	N/A	663.1 / 619.1	N/A		N/A	N/A	0.228	N/A	N/A
19	PFTrDA_2	72629-94-8	N/A	663.1 / 169.0	N/A		N/A	N/A	0.228	N/A	N/A
20	PFTeDA	376-06-7	N/A	713.1 / 669.1	N/A		N/A	N/A	0.137	N/A	N/A
21	PFTeDA_2	376-06-7	N/A	713.1 / 169.0	N/A		N/A	N/A	0.137	N/A	N/A
22	PFBS	375-73-5	5.32	299.1 / 80.1	43433		0.153	0.431	0.396	Pass	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
23	PFBS_2	375-73-5	5.32	299.1 / 99.1	18719		0.166	0.431	0.396	Pass	N/A
24	PFPeS	2706-91-4	6.33	349.1 / 80.1	6306	M2	0.028	0.287	0.299	Pass	N/A
25	PFPeS_2	2706-91-4	6.33	349.1 / 99.1	1813	M7	0.027	0.287	0.299	Pass	N/A
26	PFHxS	355-46-4	7.59	399.1 / 80.1	55093	M5	0.265	0.284	0.315	Pass	N/A
27	PFHxS_2	355-46-4	7.59	399.1 / 99.1	15625	M7	0.242	0.284	0.315	Pass	N/A
28	PFHpS	375-92-8	N/A	449.1 / 80.1	N/A		N/A	N/A	0.287	N/A	N/A
29	PFHpS_2	375-92-8	N/A	449.1 / 99.1	N/A		N/A	N/A	0.287	N/A	N/A
30	PFOS	1763-23-1	8.24	499.1 / 80.1	699793	M5	3.345	0.258	0.238	Pass	N/A
31	PFOS_2	1763-23-1	8.24	499.1 / 99.1	180237	M7	3.517	0.258	0.238	Pass	N/A
32	PFNS	68259-12-1	N/A	549.1 / 80.1	N/A		N/A	N/A	0.301	N/A	N/A
33	PFNS_2	68259-12-1	N/A	549.1 / 99.1	N/A		N/A	N/A	0.301	N/A	N/A
34	PFDS	335-77-3	N/A	599.1 / 80.1	N/A		N/A	N/A	0.275	N/A	N/A
35	PFDS_2	335-77-3	N/A	599.1 / 99.1	N/A		N/A	N/A	0.275	N/A	N/A
36	PFDoS	79780-39-5	N/A	699.2 / 80.1	N/A		N/A	N/A	0.274	N/A	N/A
37	PFDoS_2	79780-39-5	N/A	699.2 / 99.1	N/A		N/A	N/A	0.274	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
38	4:2FTS	757124-72-4	N/A	327.1 / 307.1	N/A		N/A	N/A	0.516	N/A	N/A
39	4:2FTS_2	757124-72-4	N/A	327.1 / 81.1	N/A		N/A	N/A	0.516	N/A	N/A
40	6:2FTS	27619-97-2	N/A	427.2 / 407.2	N/A		N/A	N/A	0.565	N/A	N/A
41	6:2FTS_2	27619-97-2	N/A	427.2 / 81.1	N/A		N/A	N/A	0.565	N/A	N/A
42	8:2FTS	39108-34-4	N/A	527.2 / 507.2	N/A		N/A	N/A	0.662	N/A	N/A
43	8:2FTS_2	39108-34-4	N/A	527.2 / 81.1	N/A		N/A	N/A	0.662	N/A	N/A
44	PFOSA	754-91-6	N/A	498.1 / 78.1	N/A		N/A	N/A	0.025	N/A	N/A
45	PFOSA_2	754-91-6	N/A	498.1 / 478.0	N/A		N/A	N/A	0.025	N/A	N/A
46	NMeFOSA	31506-32-8	N/A	512.2 / 219.0	N/A		N/A	N/A	1.551	N/A	N/A
47	NMeFOSA_2	31506-32-8	N/A	512.2 / 169.0	N/A		N/A	N/A	1.551	N/A	N/A
48	NEtFOSA	4151-50-2	N/A	526.2 / 219.0	N/A		N/A	N/A	1.285	N/A	N/A
49	NEtFOSA_2	4151-50-2	N/A	526.2 / 169.0	N/A		N/A	N/A	1.285	N/A	N/A
50	NMeFOSAA	2355-31-9	N/A	570.2 / 419.1	N/A		N/A	N/A	0.700	N/A	N/A
51	NMeFOSAA_2	2355-31-9	N/A	570.2 / 483.0	N/A		N/A	N/A	0.700	N/A	N/A
52	NEtFOSAA	2991-50-6	N/A	584.2 / 419.1	N/A		N/A	N/A	0.487	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
53	NEtFOSAA_2	2991-50-6	N/A	584.2 / 526.2	N/A		N/A	N/A	0.487	N/A	N/A
54	NMeFOSE	24448-09-7	N/A	616.1 / 58.9	N/A		N/A	N/A	N/A	N/A	N/A
55	NEtFOSE	1691-99-2	N/A	630.0 / 58.9	N/A		N/A	N/A	N/A	N/A	N/A
56	HFPO-DA	13252-13-6	5.61	285.0 / 169.0	8243		0.039	0.450	0.464	Pass	N/A
57	HFPO-DA_2	13252-13-6	5.61	285.0 / 184.9	3706	M7	0.037	0.450	0.464	Pass	N/A
58	ADONA	919005-14-4	N/A	377.1 / 251.0	N/A		N/A	N/A	0.634	N/A	N/A
59	ADONA_2	919005-14-4	N/A	377.1 / 84.8	N/A		N/A	N/A	0.634	N/A	N/A
60	9Cl-PF3ONS	756426-58-1	N/A	530.8 / 351.1	N/A		N/A	N/A	0.322	N/A	N/A
61	9Cl-PF3ONS_2	756426-58-1	N/A	532.8 / 353.0	N/A		N/A	N/A	0.322	N/A	N/A
62	11Cl-PF3OUdS	763051-92-9	N/A	630.9 / 451.0	N/A		N/A	N/A	0.331	N/A	N/A
63	11Cl-PF3OUdS_2	763051-92-9	N/A	632.9 / 452.9	N/A		N/A	N/A	0.331	N/A	N/A
64	3:3FTCA	356-02-5	N/A	241.1 / 177.1	N/A		N/A	N/A	1.074	N/A	N/A
65	3:3FTCA_2	356-02-5	N/A	241.1 / 117.0	N/A		N/A	N/A	1.074	N/A	N/A
66	5:3FTCA	914637-49-3	N/A	341.1 / 237.1	N/A		N/A	N/A	0.953	N/A	N/A
67	5:3FTCA_2	914637-49-3	N/A	341.1 / 217.0	N/A		N/A	N/A	0.953	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
68	7:3FTCA	812-70-4	N/A	441.1 / 316.9	N/A		N/A	N/A	1.558	N/A	N/A
69	7:3FTCA_2	812-70-4	N/A	441.1 / 337.1	N/A		N/A	N/A	1.558	N/A	N/A
70	PFEESA	113507-82-7	N/A	315.1 / 135.0	N/A		N/A	N/A	0.087	N/A	N/A
71	PFEESA_2	113507-82-7	N/A	315.1 / 82.9	N/A		N/A	N/A	0.087	N/A	N/A
72	PFMPA	377-73-1	N/A	229.0 / 85.0	N/A		N/A	N/A	N/A	N/A	N/A
73	PFMBA	863090-89-5	N/A	279.0 / 85.0	N/A		N/A	N/A	N/A	N/A	N/A
74	NFDHA	151772-58-6	N/A	295.0 / 201.0	N/A		N/A	N/A	0.910	N/A	N/A
75	NFDHA_2	151772-58-6	N/A	295.0 / 84.9	N/A		N/A	N/A	0.910	N/A	N/A
76	TDCA	516-50-7	N/A	499.1 / 124.1	N/A		N/A	N/A	40.716	N/A	N/A
77	TDCA_2	516-50-7	N/A	499.1 / 79.9	N/A		N/A	N/A	40.716	N/A	N/A
78	13C2D4-4:2FTS	Surr	N/A	333.2 / 312.1	N/A		N/A	N/A	N/A	N/A	N/A
79	13C2-PFOA	Surr	N/A	415.0 / 370.0	N/A		N/A	N/A	N/A	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C4-PFBA	EIS	2.83	217.0 / 172.0	2292234		7.977	NA	NA	NA	79.8

Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
13C5-PFPeA	EIS	4.65	268.0 / 223.0	1484914		4.369	NA	NA	NA	87.4
13C5-PFHxA	EIS	5.34	318.0 / 273.0	849573		1.903	NA	NA	NA	76.1
13C4-PFHpA	EIS	6.24	367.0 / 322.0	859310		1.923	NA	NA	NA	76.9
13C8-PFOA	EIS	7.47	421.0 / 376.0	1291340		1.949	NA	NA	NA	78.0
13C9-PFNA	EIS	7.92	472.0 / 427.0	586920		0.955	NA	NA	NA	76.4
13C6-PFDA	EIS	8.14	519.0 / 474.0	564564		0.946	NA	NA	NA	75.7
13C7-PFUnA	EIS	8.42	570.0 / 525.0	446575		0.925	NA	NA	NA	74.0

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C2-PFDoA	EIS	8.82	615.1 / 570.0	347884		1.108	NA	NA	NA	88.6
	13C2-PFTeDA	EIS	9.85	715.1 / 670.1	264970		0.777	NA	NA	NA	62.2
	13C3-PFBS	EIS	5.32	302.1 / 80.1	676013		1.801	NA	NA	NA	77.3
	13C3-PFHxS	EIS	7.58	402.1 / 80.1	519977		1.744	NA	NA	NA	73.6
	13C8-PFOS	EIS	8.23	507.1 / 80.1	509248		1.670	NA	NA	NA	69.7
	13C2-4:2FTS	EIS	5.14	329.1 / 81.1	320829		4.790	NA	NA	NA	102.1
	13C2-6:2FTS	EIS	7.07	429.2 / 81.1	179527		3.657	NA	NA	NA	76.9
	13C2-8:2FTS	EIS	8.05	529.2 / 81.1	268240		3.734	NA	NA	NA	77.8

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C8-PFOSA	EIS	9.51	506.1 / 78.1	727321		1.794	NA	NA	NA	71.8
	d3-NMeFOSA	EIS	10.15	515.2 / 219.0	107998		1.582	NA	NA	NA	63.3
	d5-NEtFOSA	EIS	10.36	531.2 / 219.0	116164		1.742	NA	NA	NA	69.7
	d3-NMeFOSAA	EIS	8.19	573.2 / 419.1	302511		1.961	NA	NA	NA	39.2
	d5-NEtFOSAA	EIS	8.32	589.3 / 419.1	268374		3.310	NA	NA	NA	66.2
	d7-NMeFOSE	EIS	10.06	623.2 / 58.9	967848		18.363	NA	NA	NA	73.5
	d9-NEtFOSE	EIS	10.25	639.2 / 58.9	1494109		19.227	NA	NA	NA	76.9

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C3-HFPO-DA	EIS	5.61	287.0 / 169.0	2322428		7.850	NA	NA	NA	78.5
	13C3-PFBA	NIS	2.83	216.0 / 172.0	1257076		5.879	NA	NA	NA	117.6
	13C2-PFHxA	NIS	5.34	315.0 / 270.0	1325463		2.707	NA	NA	NA	108.3
	13C4-PFOA	NIS	7.47	417.0 / 372.0	866665		2.768	NA	NA	NA	110.7
	13C5-PFNA	NIS	7.92	468.0 / 423.0	748481		1.367	NA	NA	NA	109.3
	13C2-PFDA	NIS	8.14	515.1 / 470.1	700929		1.368	NA	NA	NA	109.4
	18O2-PFHxS	NIS	7.58	403.1 / 84.1	605906		2.586	NA	NA	NA	109.1
	13C4-PFOS	NIS	8.23	503.1 / 80.1	539444		2.562	NA	NA	NA	107.0

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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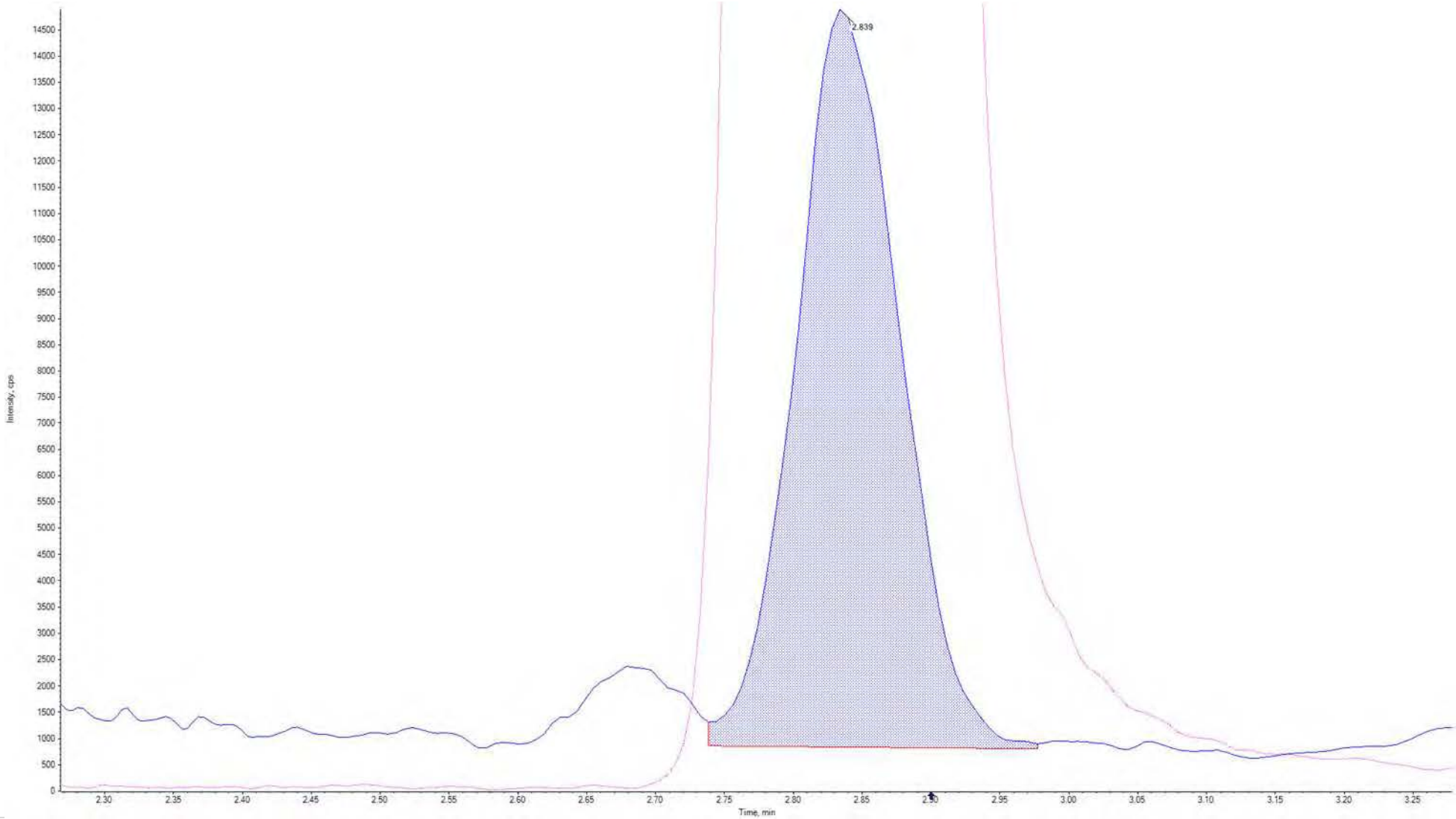
Generated: 9/19/2024 8:04:31 AM

PFBA
Sample: L2450786-13 S/N:342.7 Points Across peak:41



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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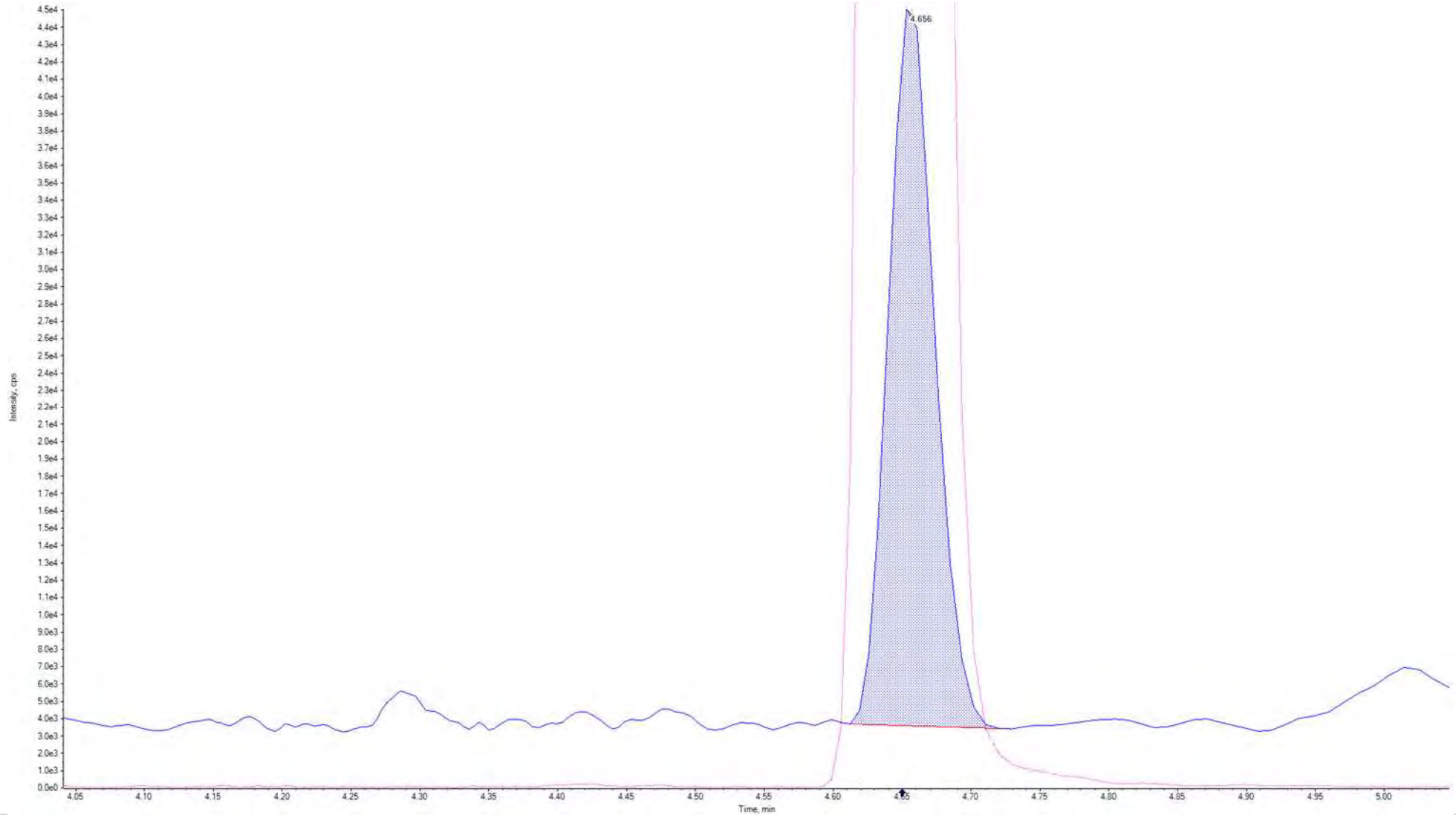
Generated: 9/19/2024 8:04:31 AM

PFPeA
Sample: L2450786-13 S/N:149.8 Points Across peak:16



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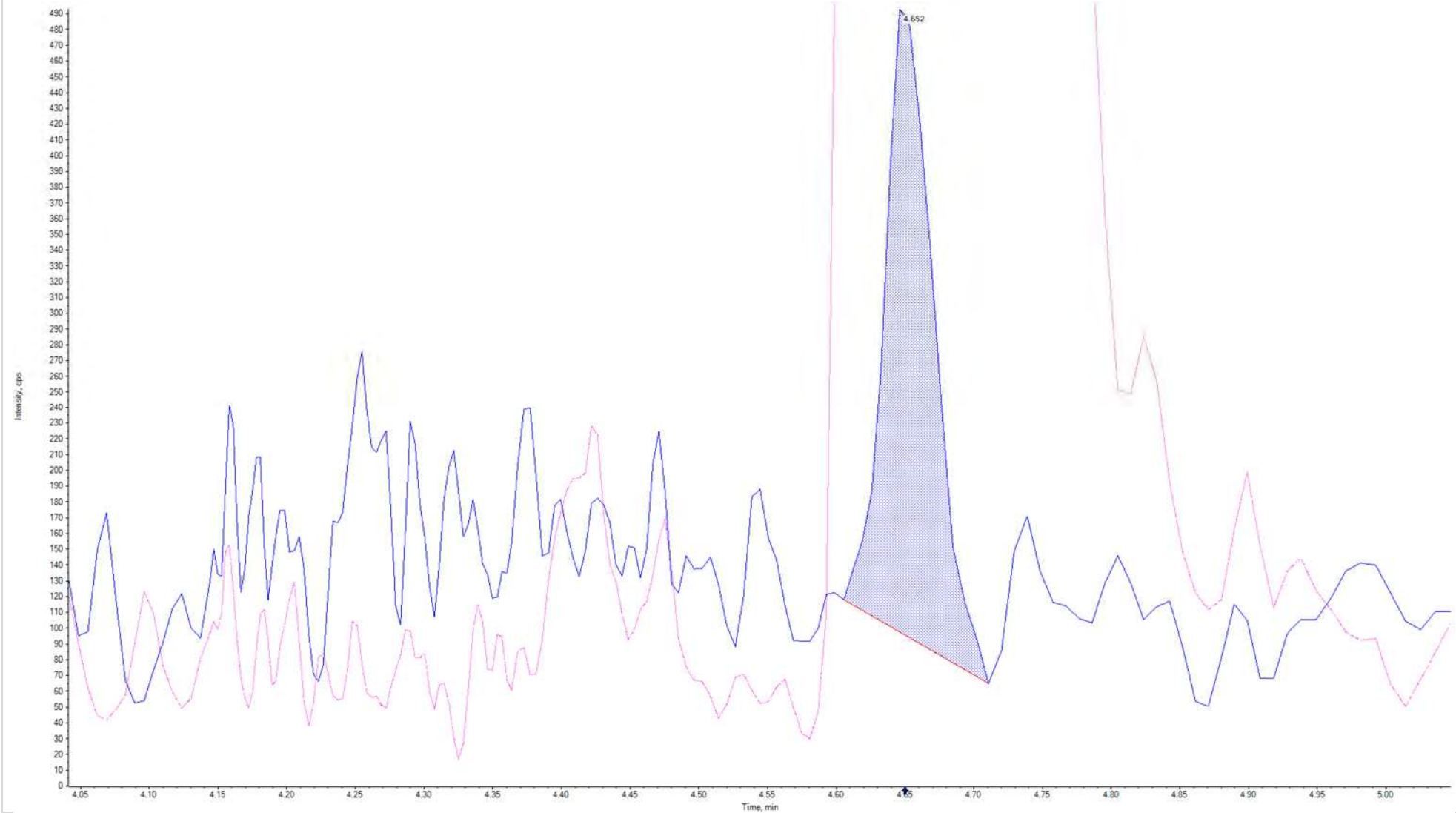
Generated: 9/19/2024 8:04:31 AM

PFPeA_2
Sample: L2450786-13 S/N:31.3 Points Across peak:15



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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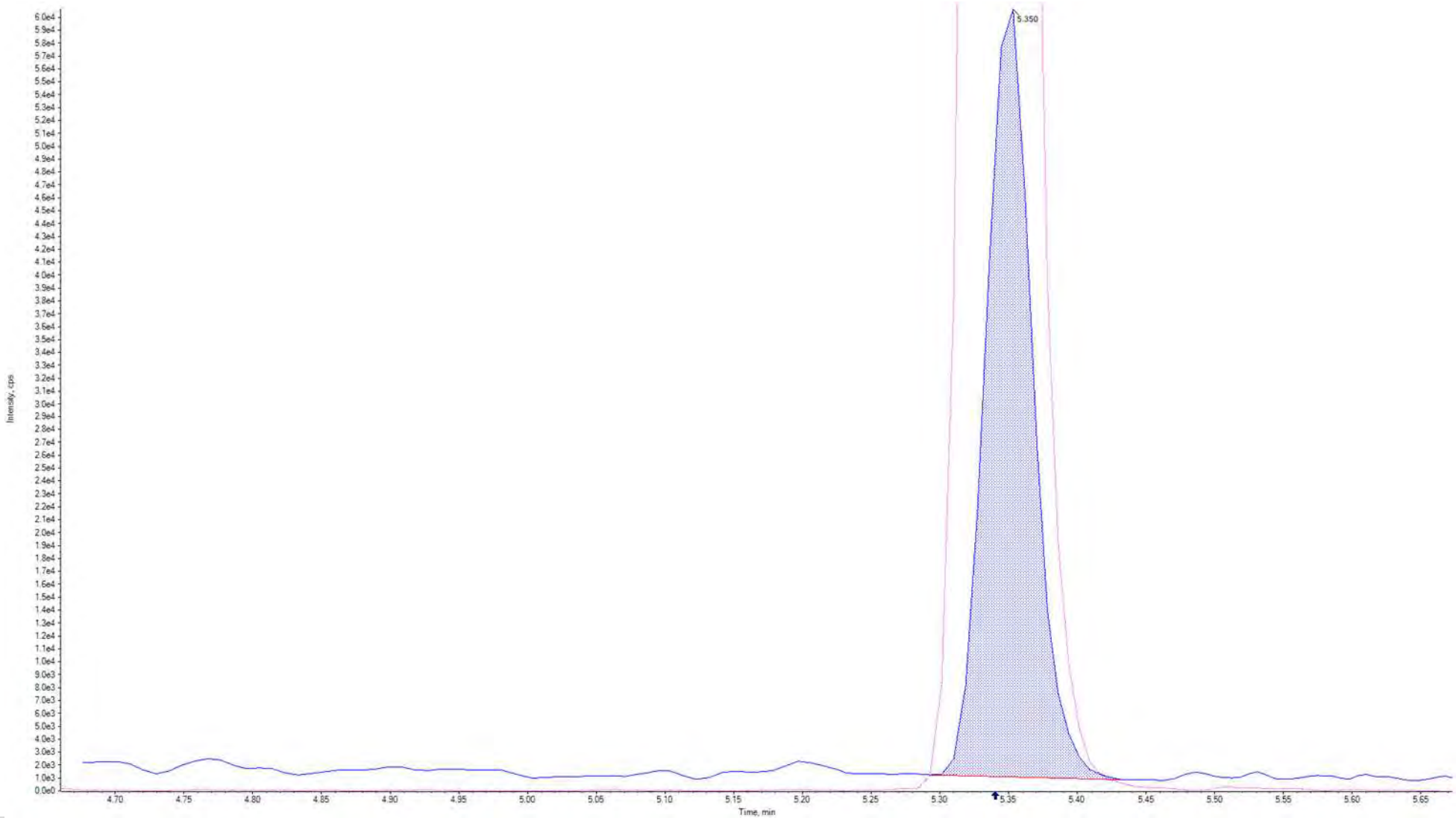
Generated: 9/19/2024 8:04:31 AM

PFHxA
Sample: L2450786-13 S/N:275.9 Points Across peak:19



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Alpha Analytical Inc.
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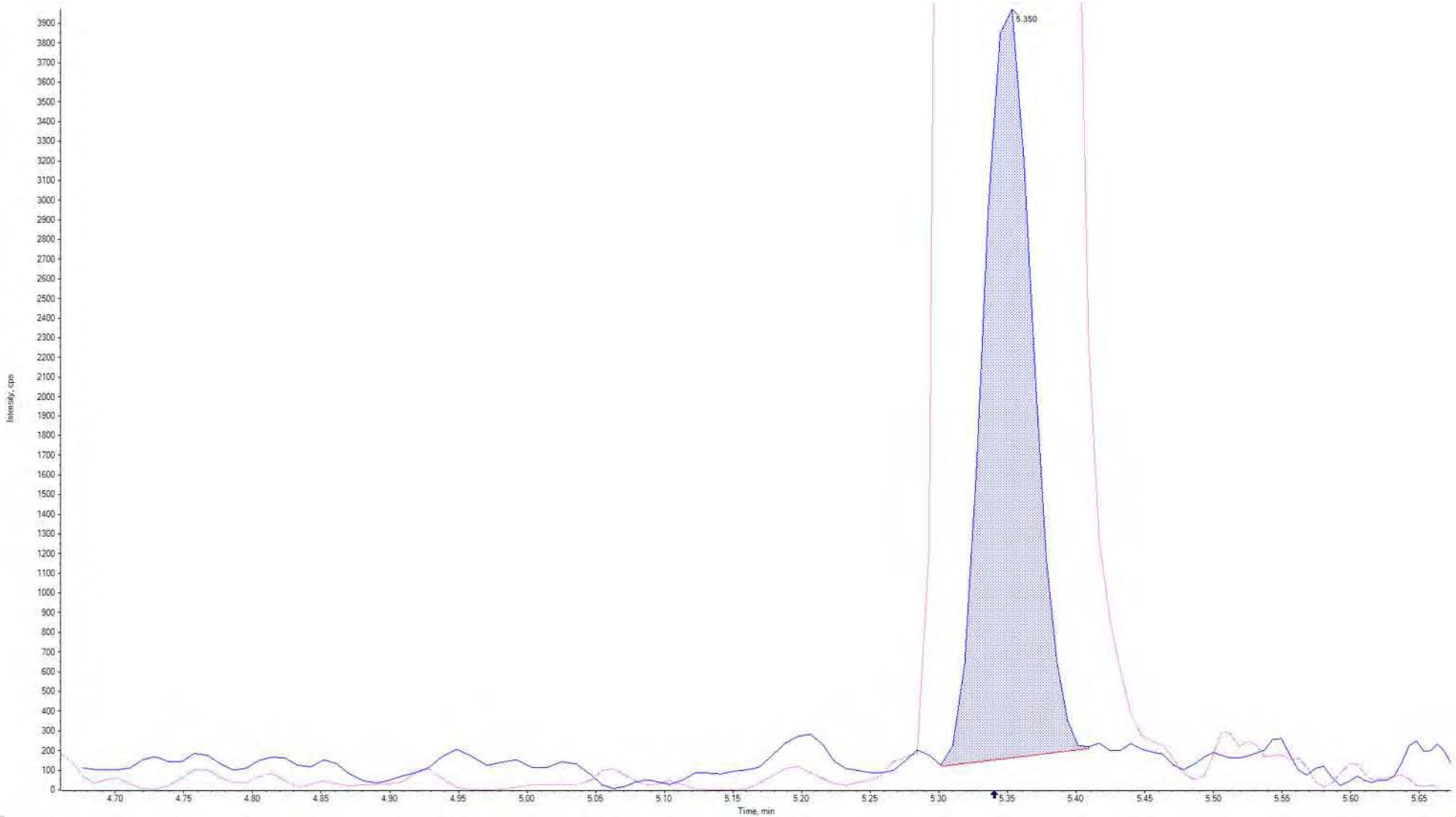
Generated: 9/19/2024 8:04:31 AM

PFHxA_2
Sample: L2450786-13 S/N:332.9 Points Across peak:15



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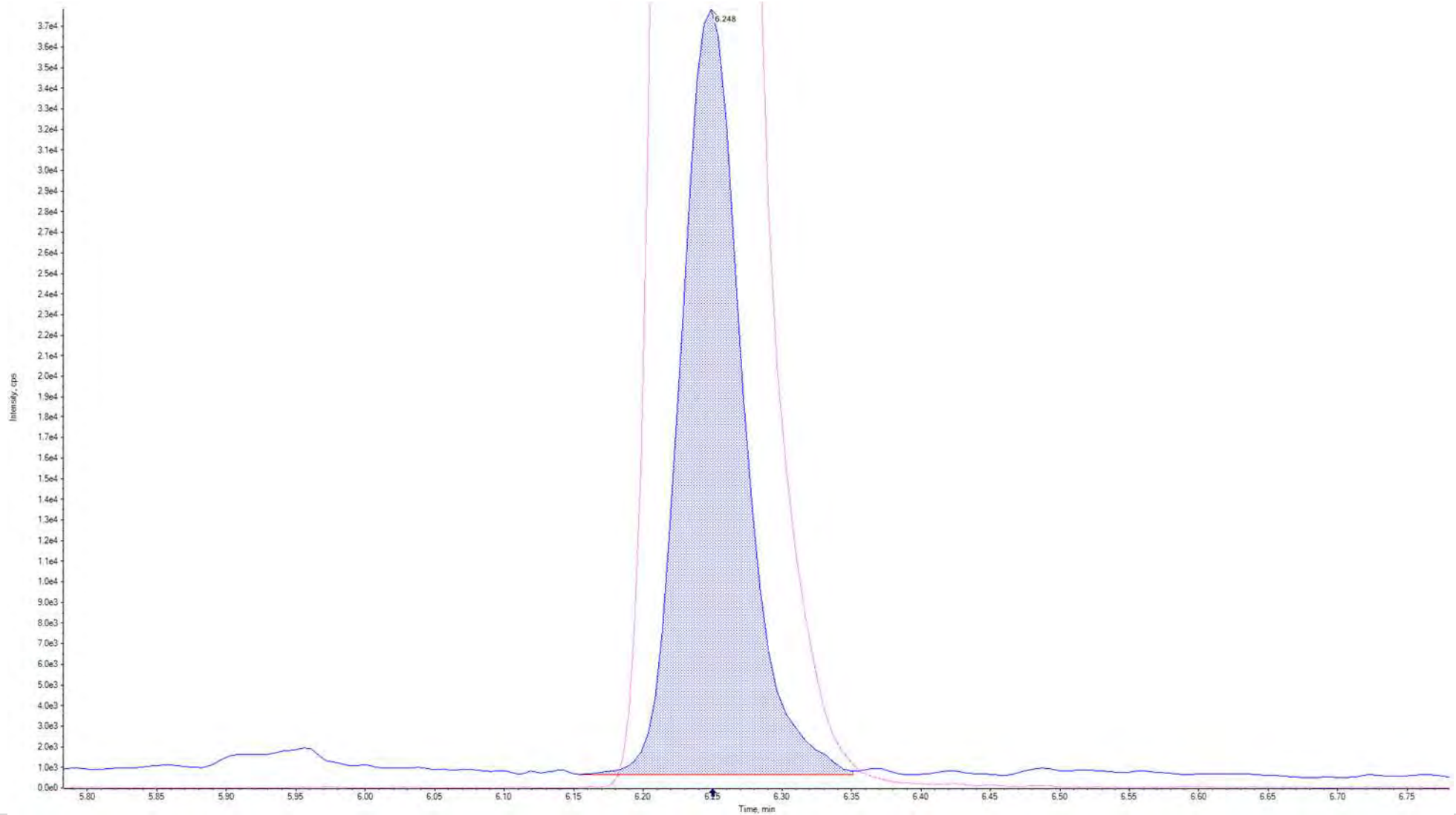
Generated: 9/19/2024 8:04:31 AM

PFHpA
Sample: L2450786-13 S/N:536.7 Points Across peak:38



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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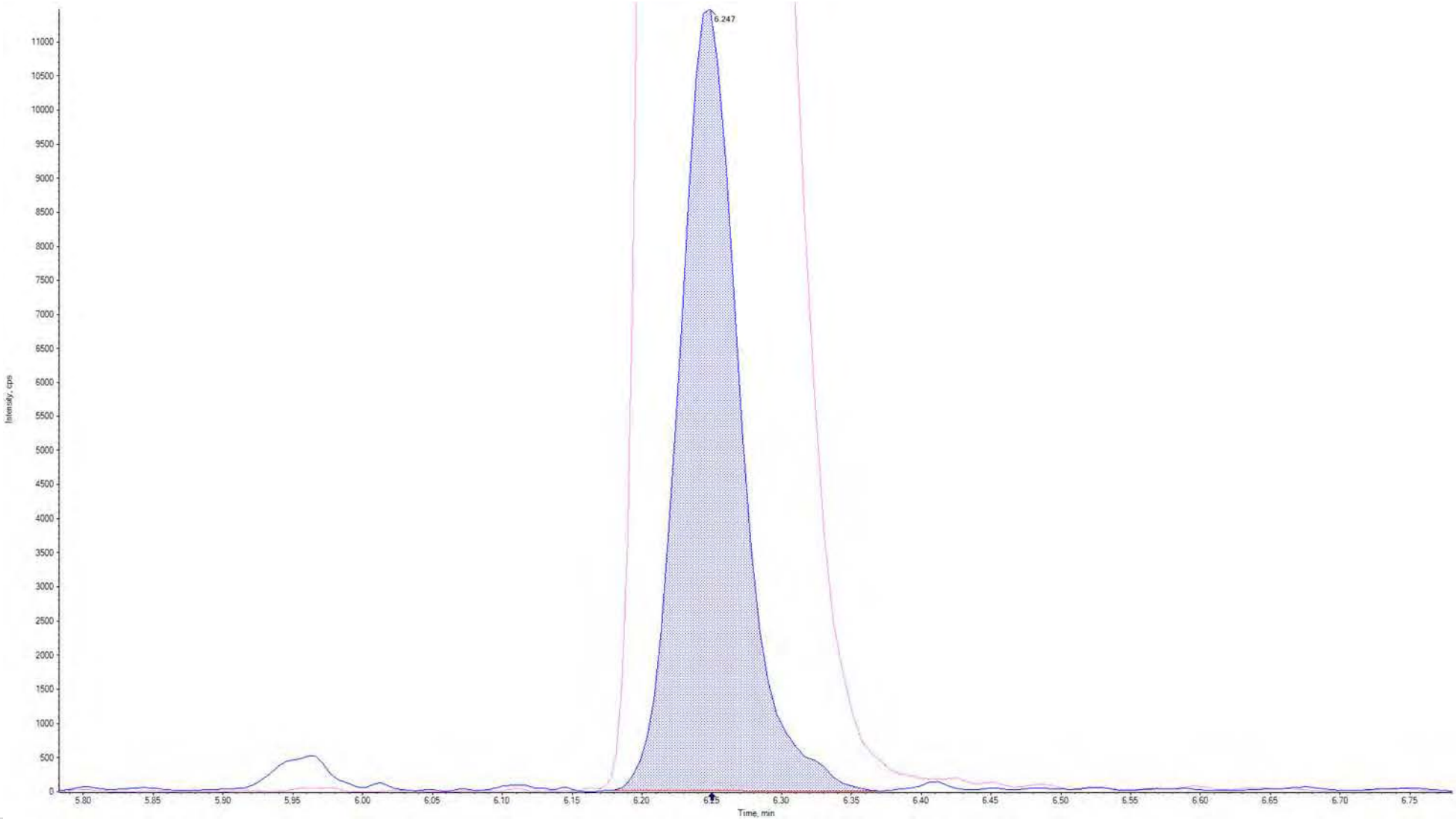
PFHpA_2
Sample: L2450786-13 S/N:2709.1 Points Across peak:35



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Alpha Analytical Inc.
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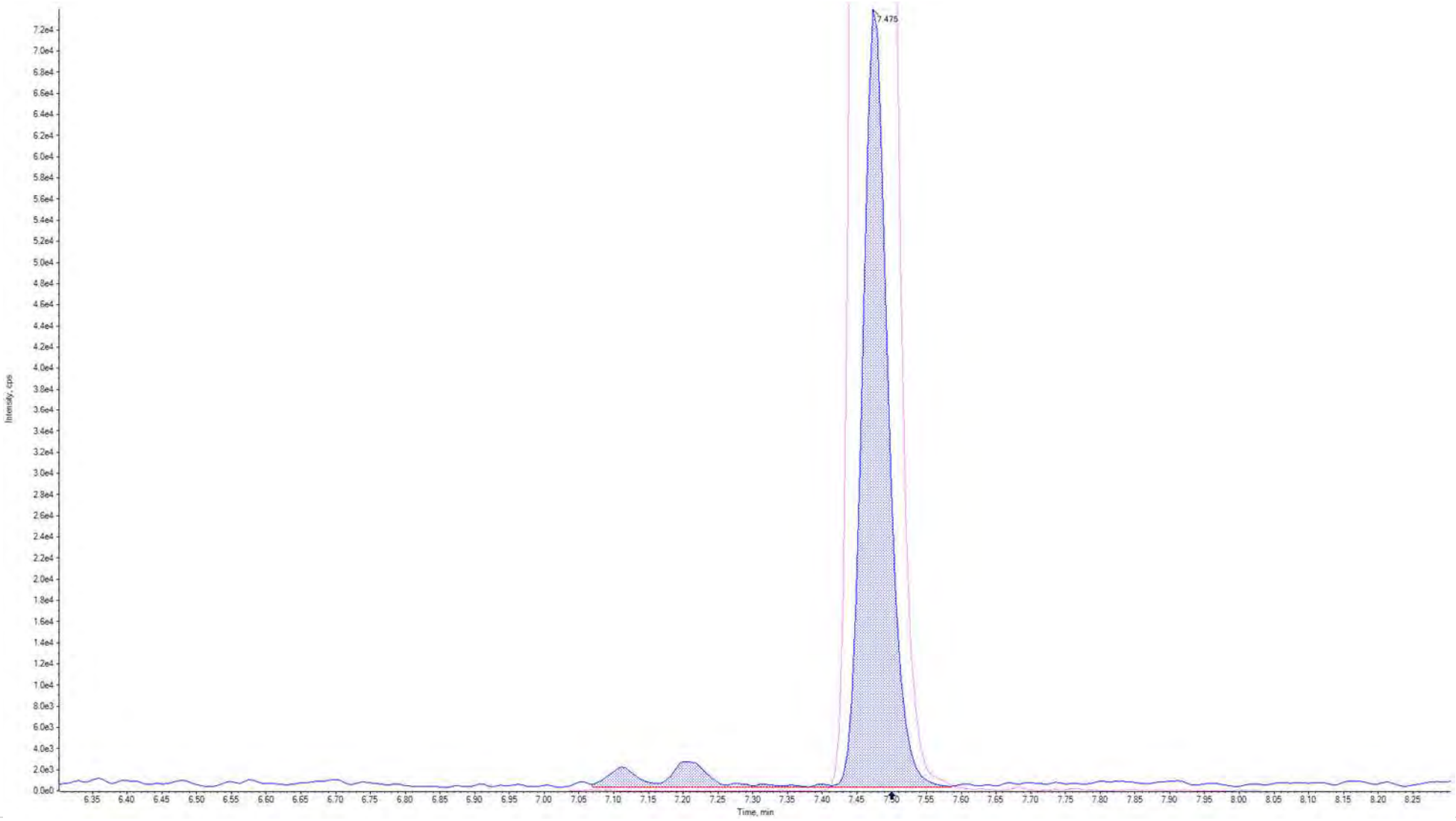
Generated: 9/19/2024 8:04:31 AM

PFOA
Sample: L2450786-13 S/N:883.7 Points Across peak:84



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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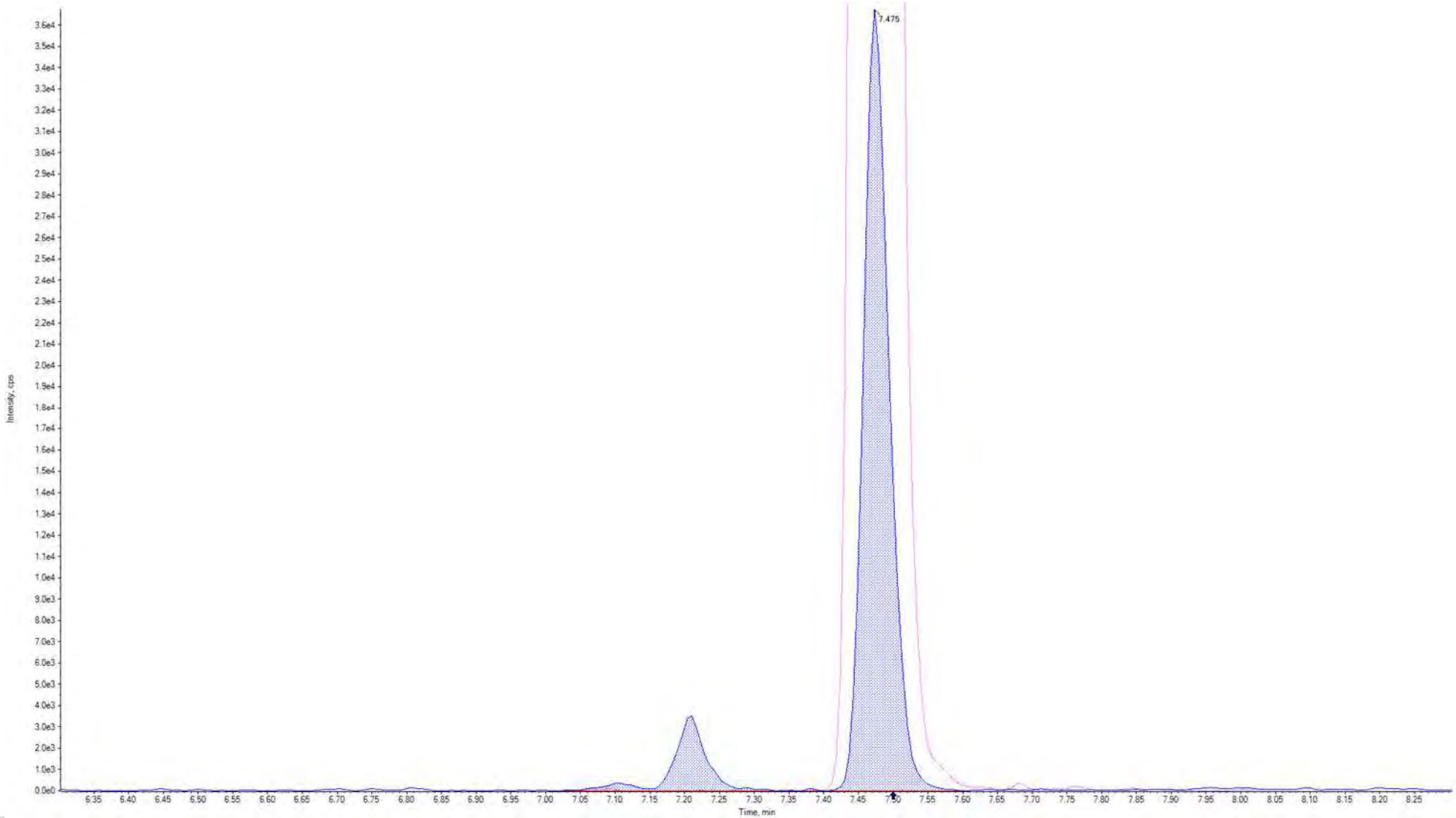
Generated: 9/19/2024 8:04:31 AM

PFOA_2
Sample: L2450786-13 S/N:85578.1 Points Across peak:93



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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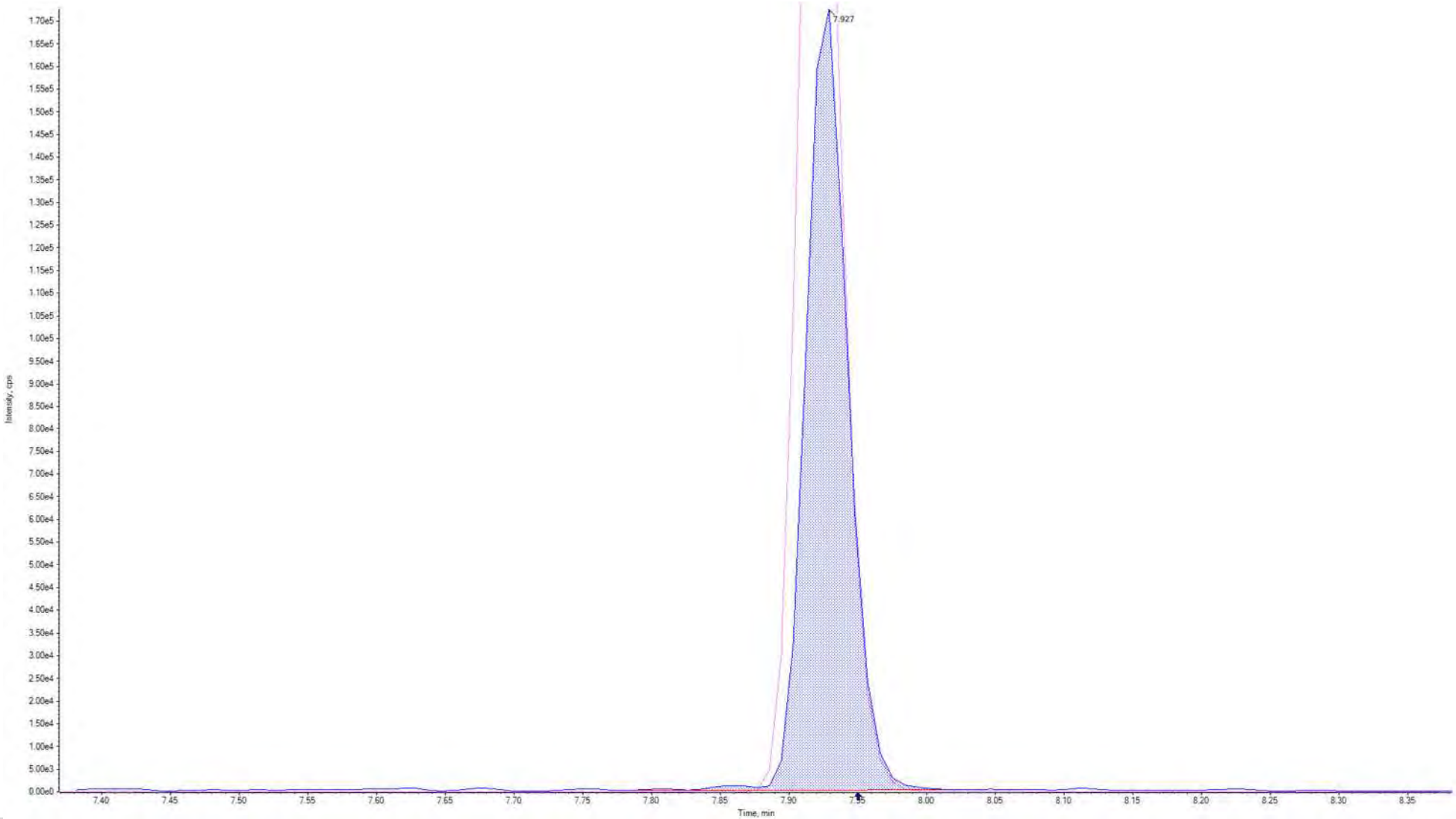
Generated: 9/19/2024 8:04:31 AM

PFNA
Sample: L2450786-13 S/N:1460.9 Points Across peak:31



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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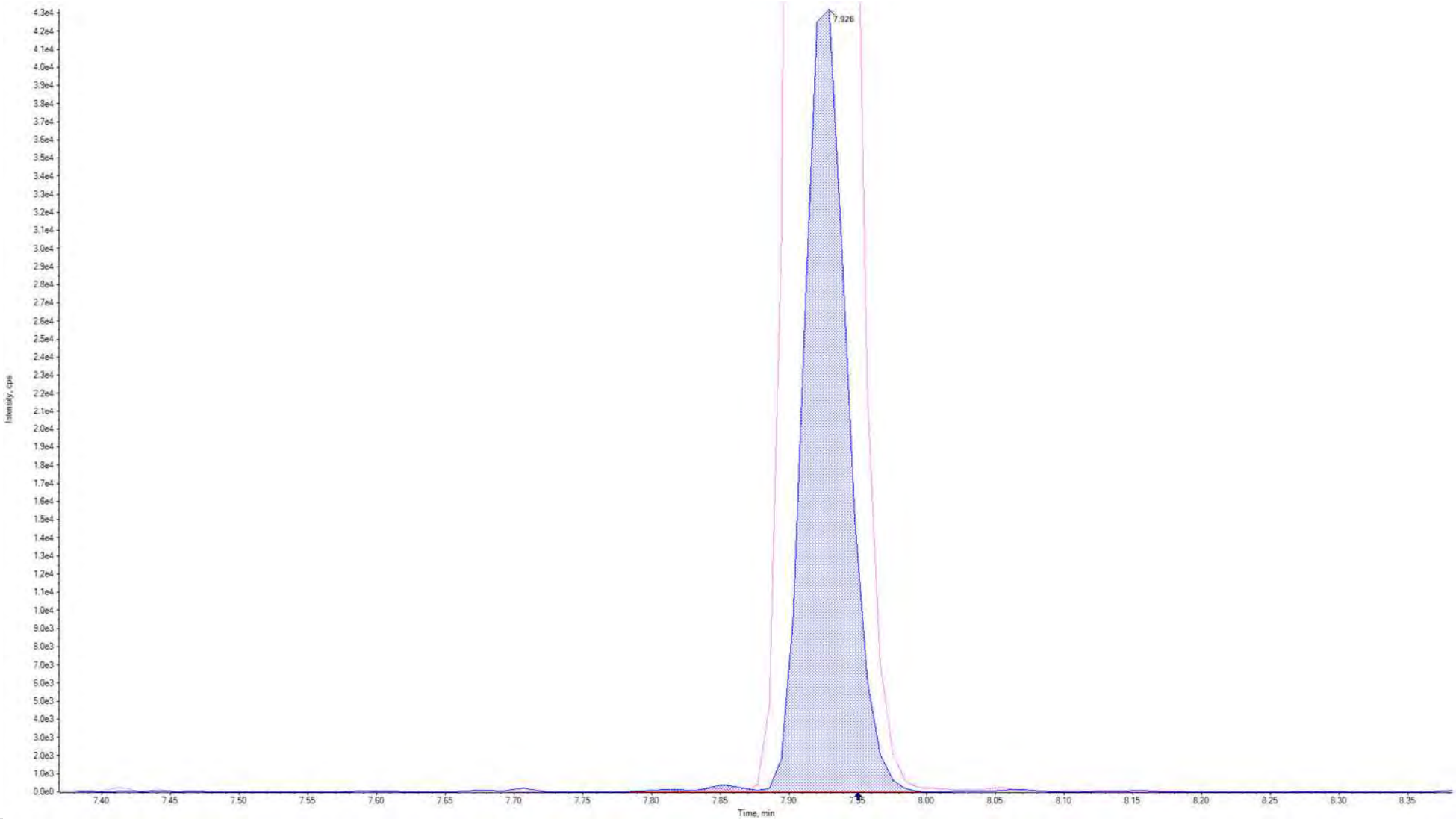
PFNA_2
Sample: L2450786-13 S/N:1335.5 Points Across peak:28



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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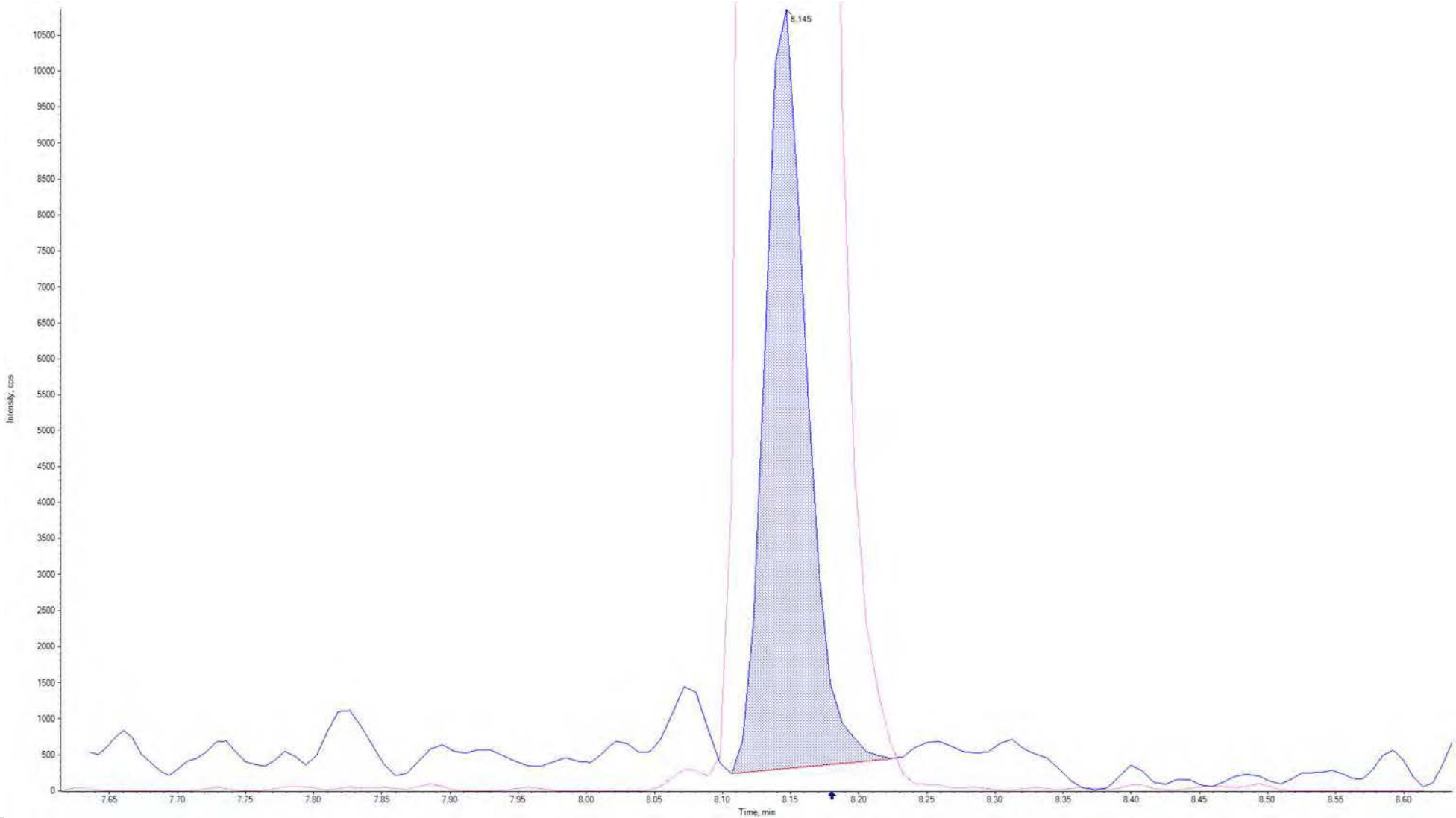
PFDA
Sample: L2450786-13 S/N:281.5 Points Across peak:16



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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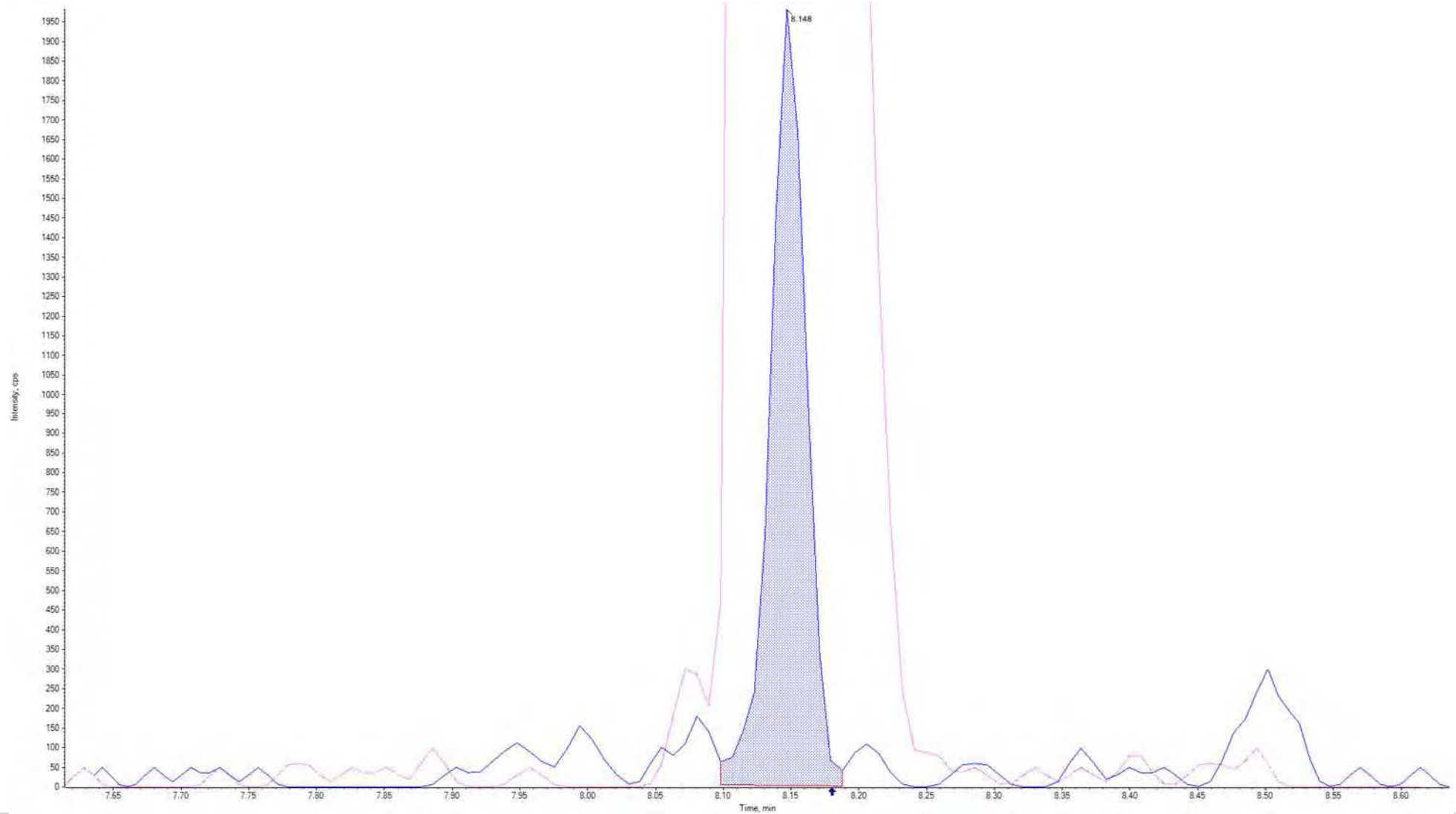
Generated: 9/19/2024 8:04:31 AM

PFDA_2
Sample: L2450786-13 S/N:102.4 Points Across peak:12



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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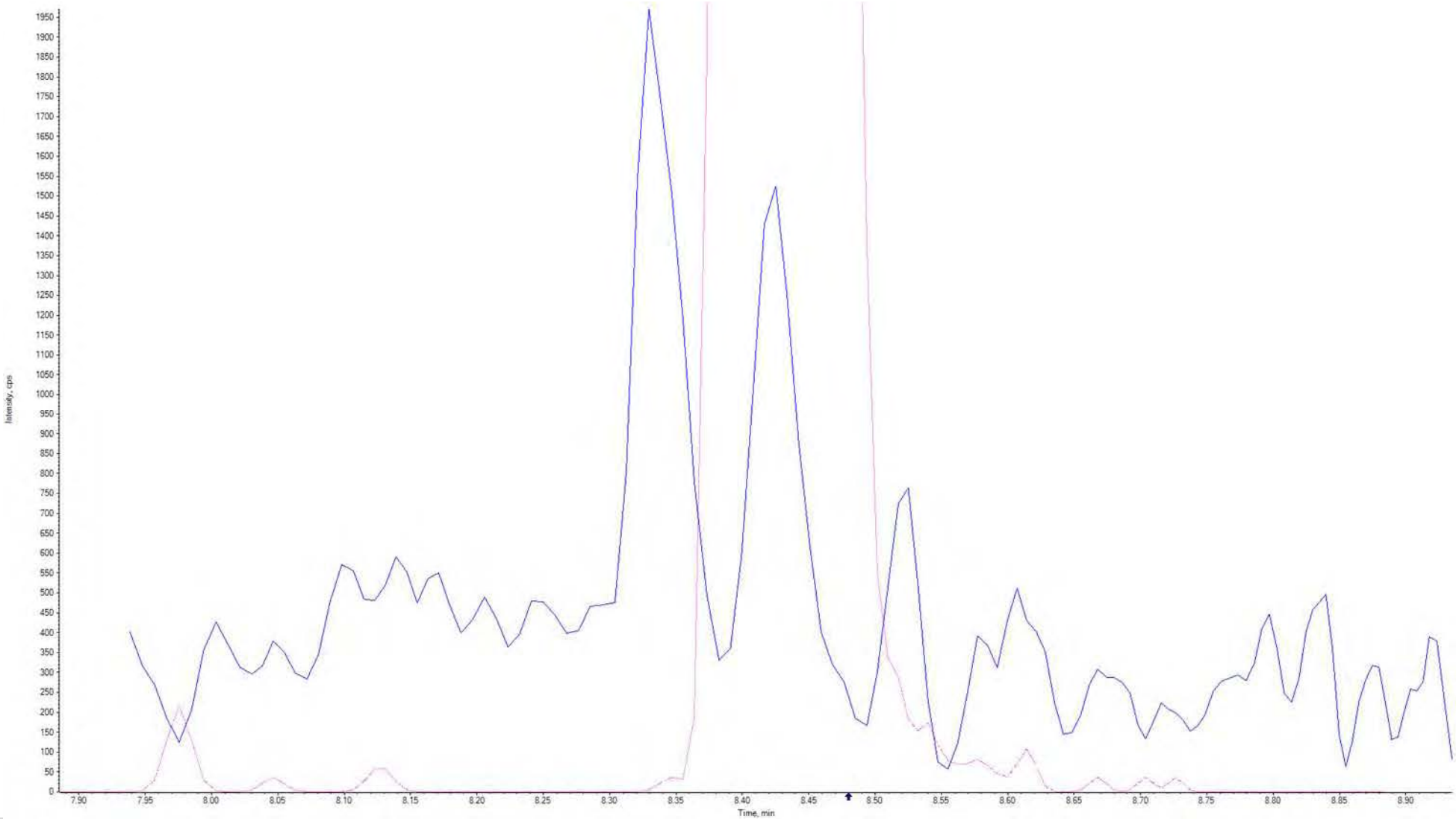
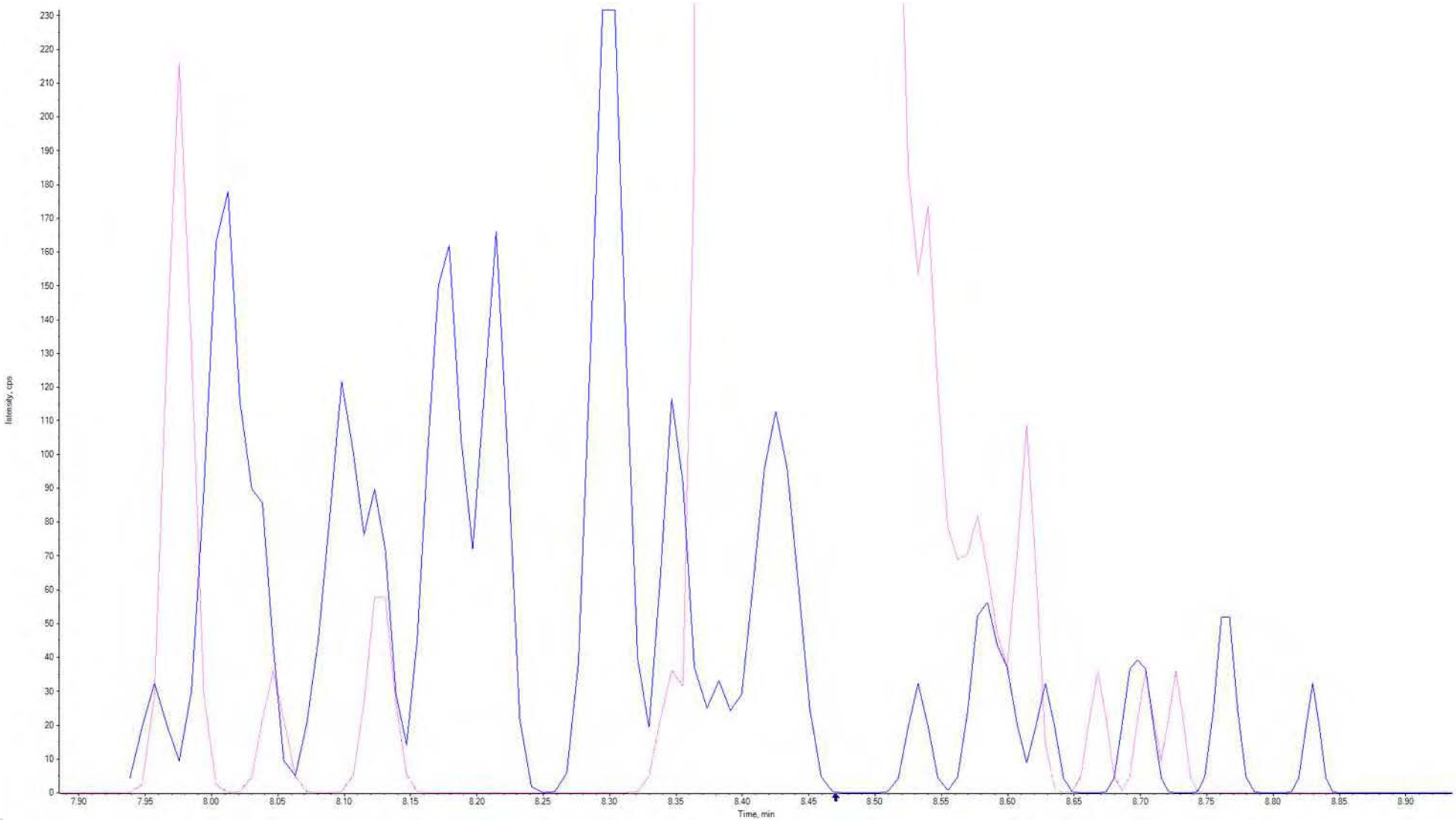
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFUnA
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



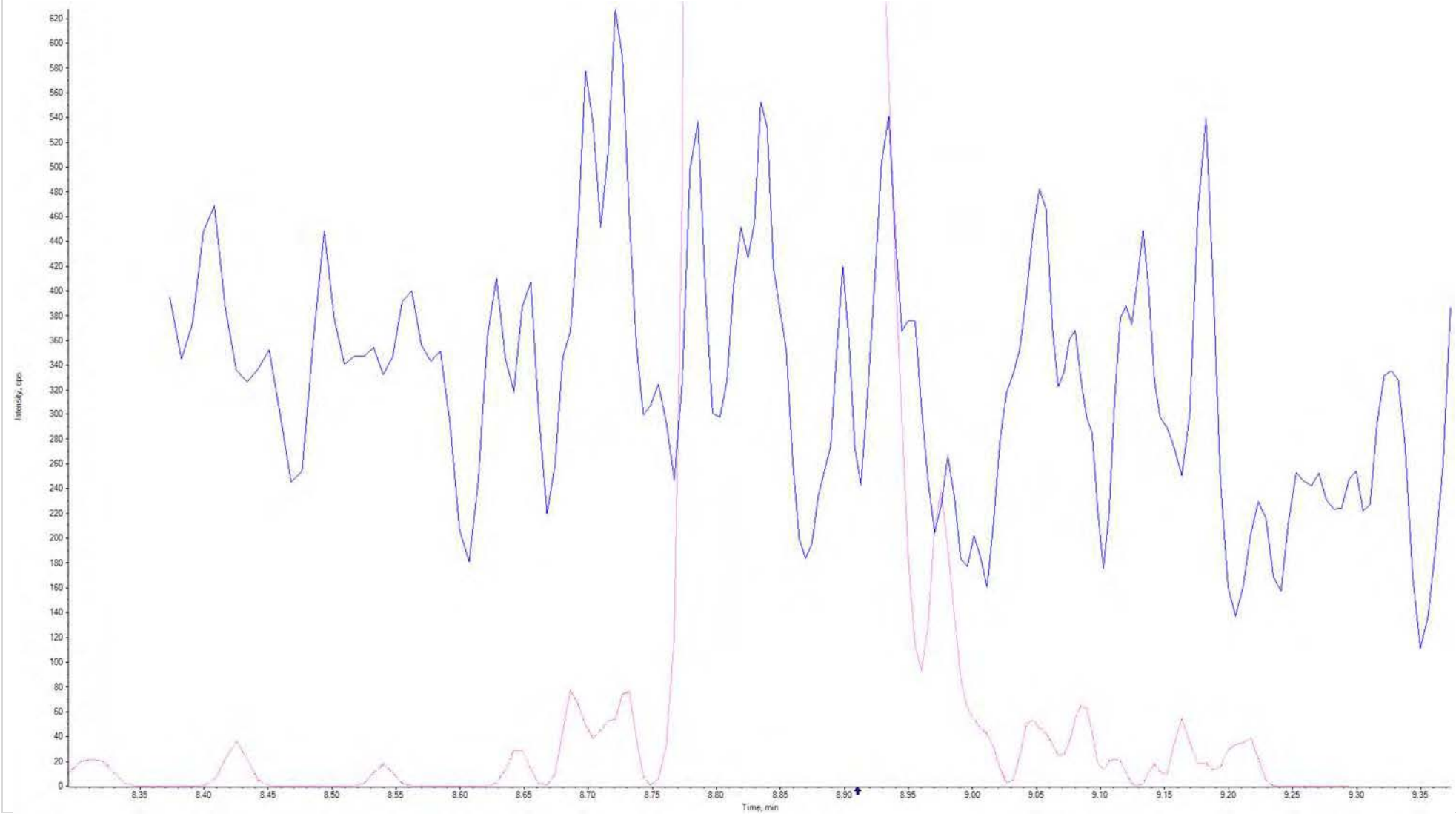
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFUnA_2
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



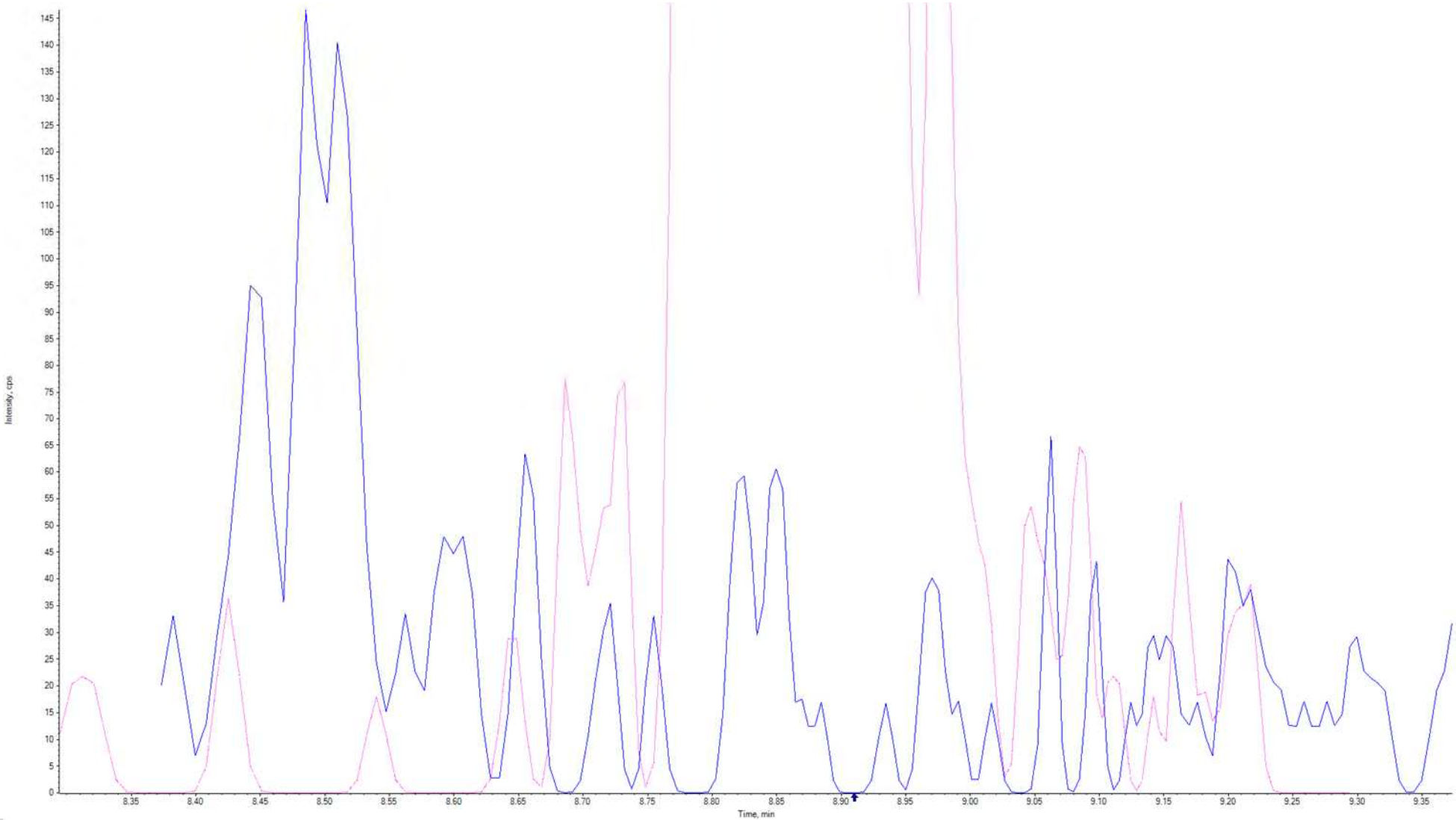
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoA
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



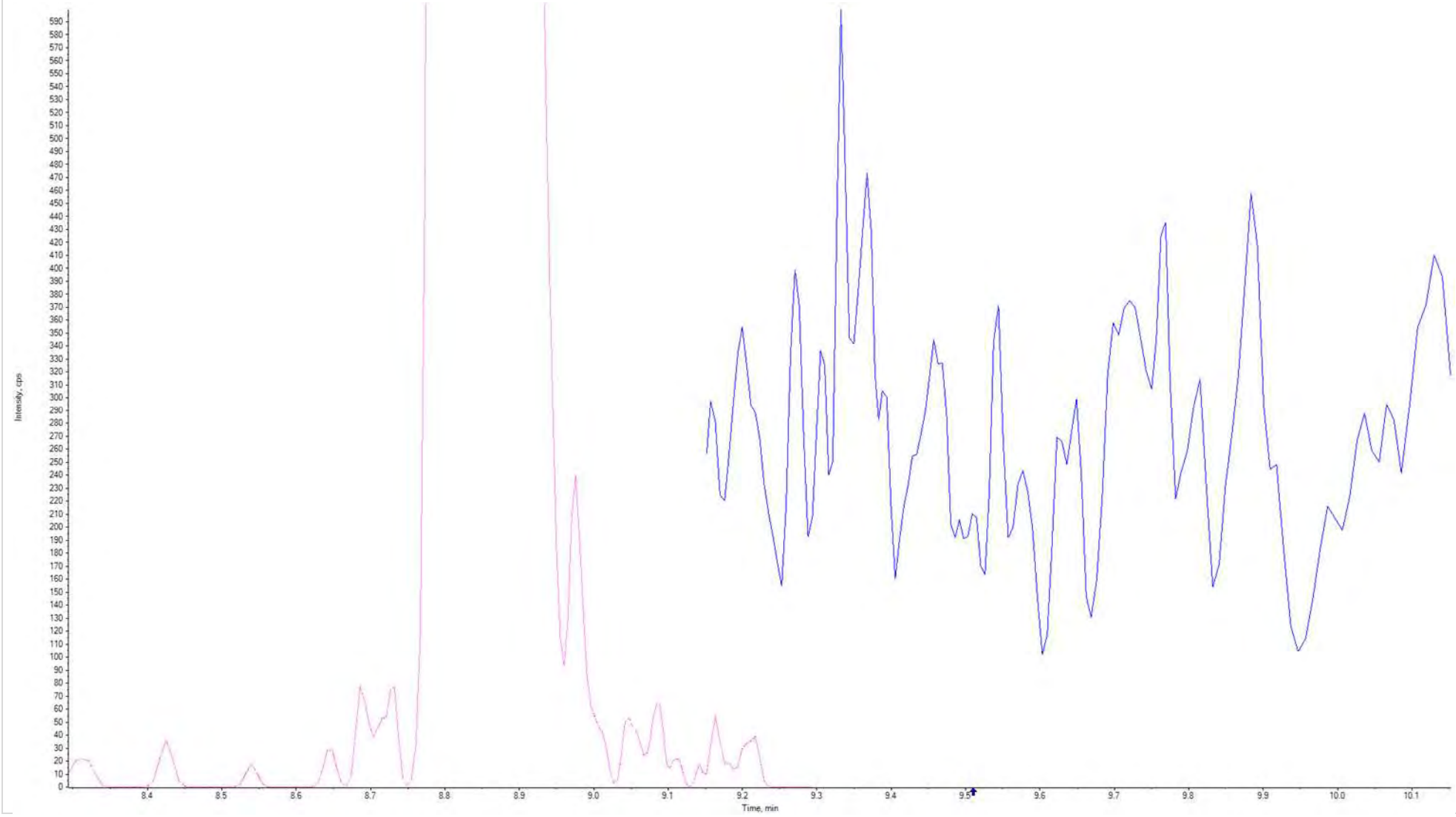
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoA_2
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



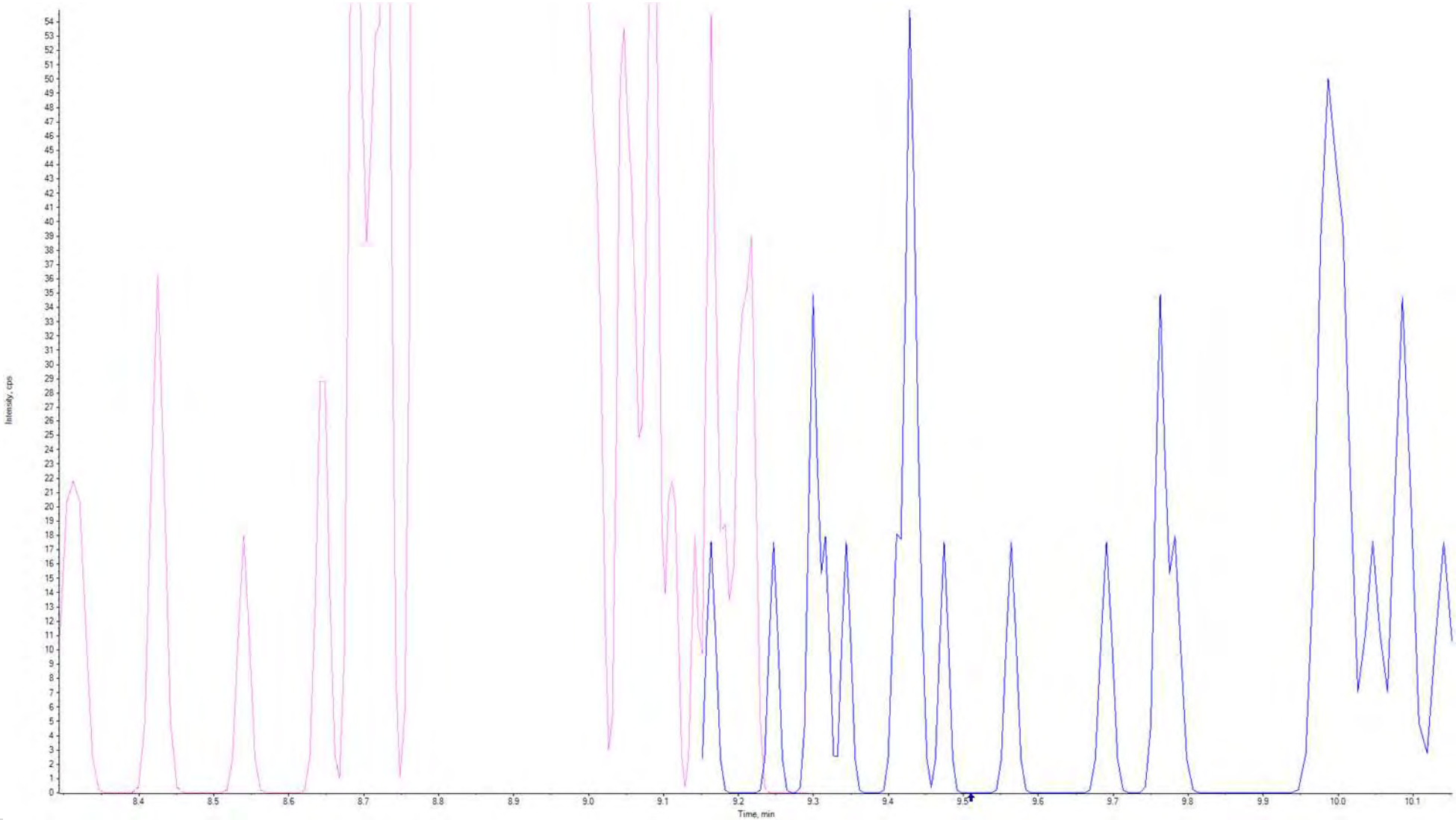
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFTrDA
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFTrDA_2
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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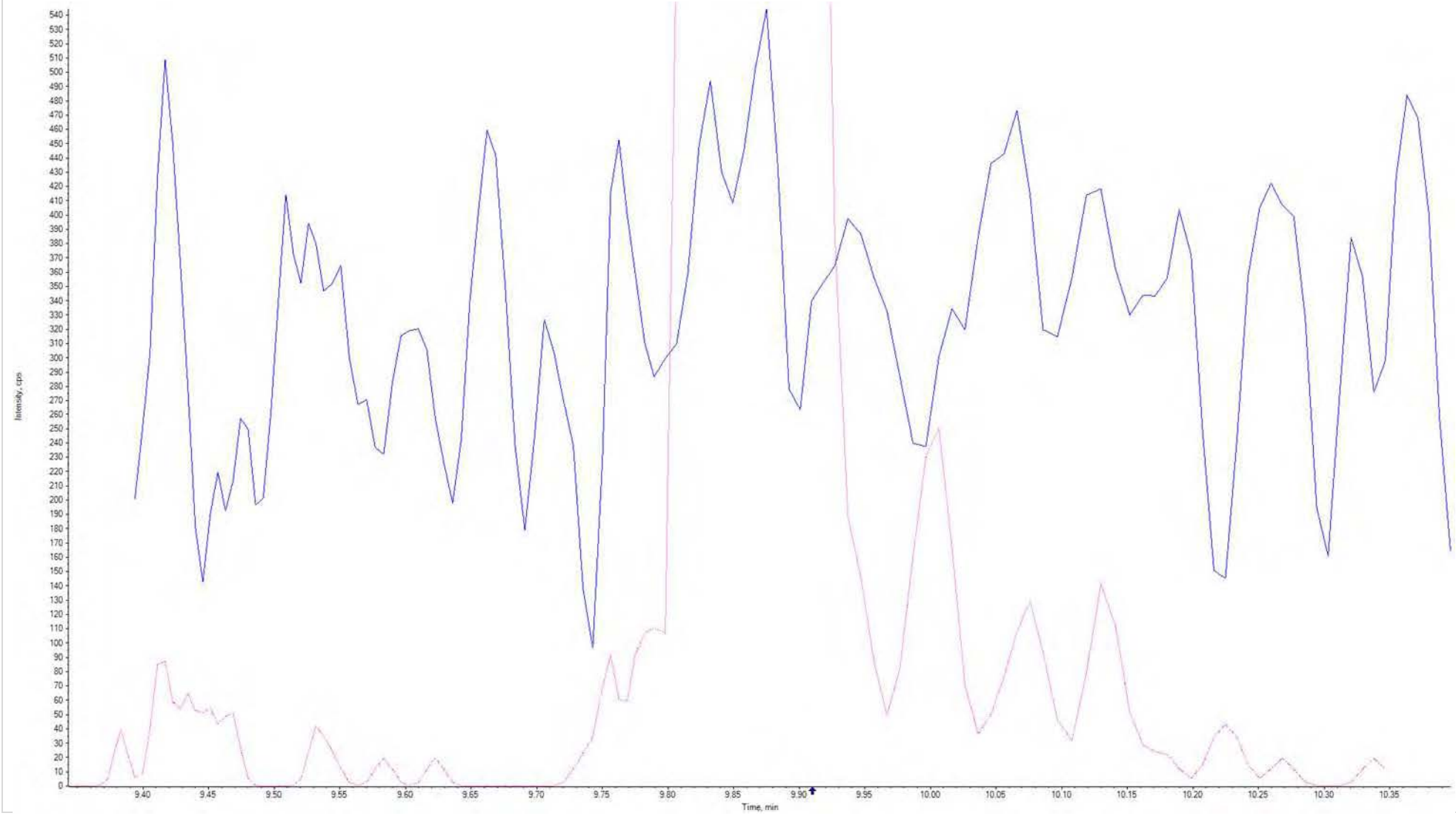
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFTeDA
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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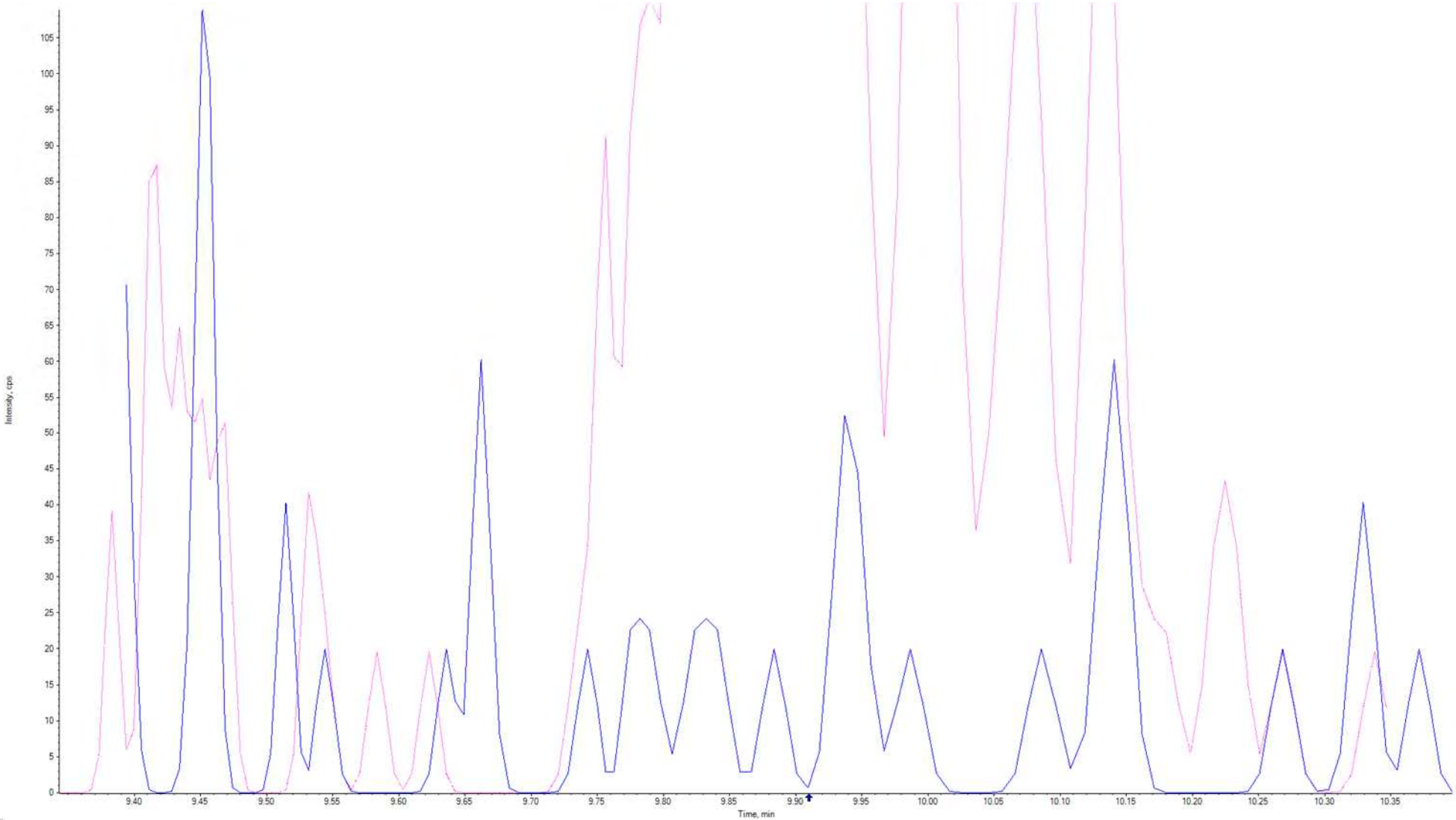
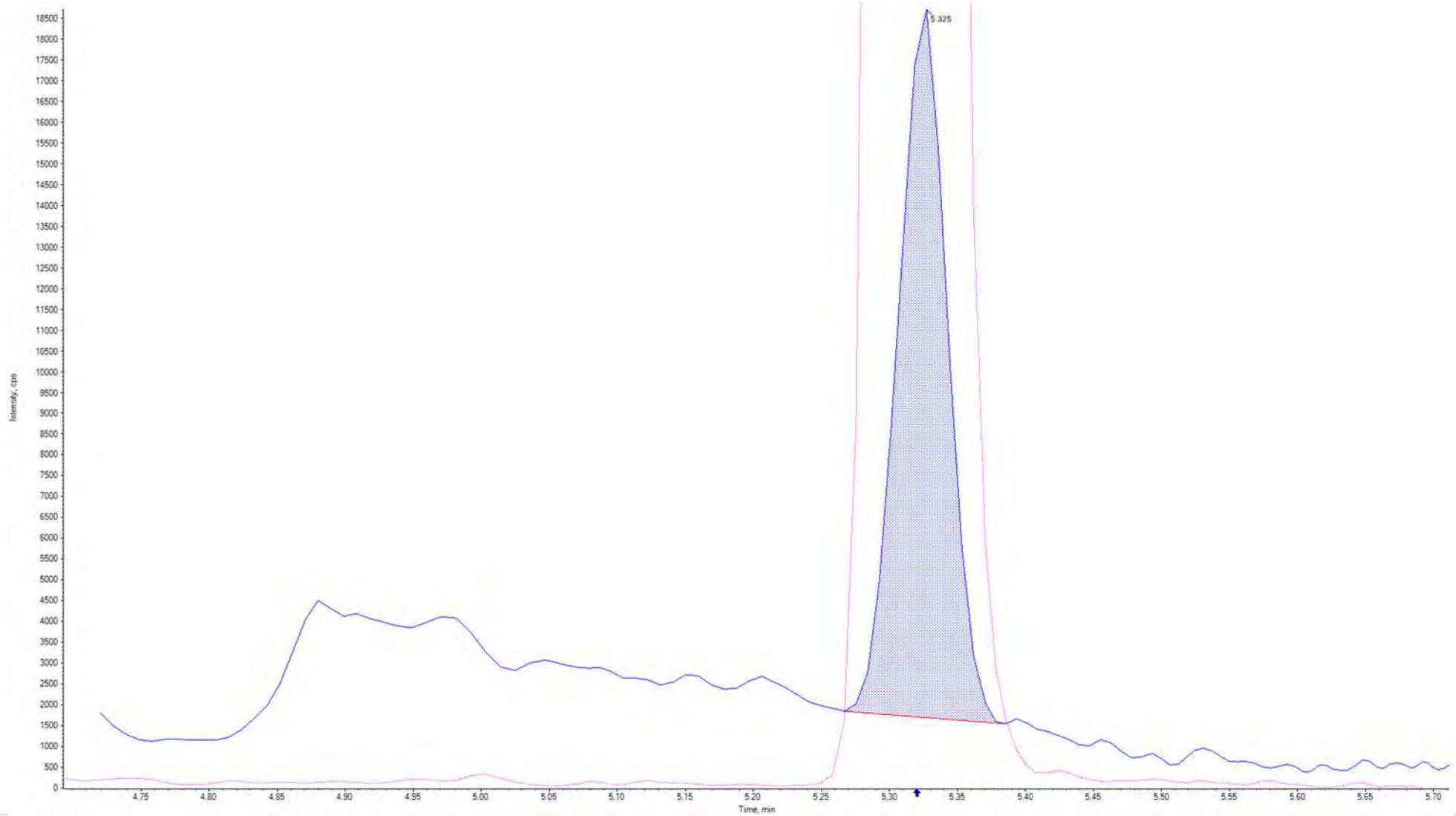
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFTeDA_2
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



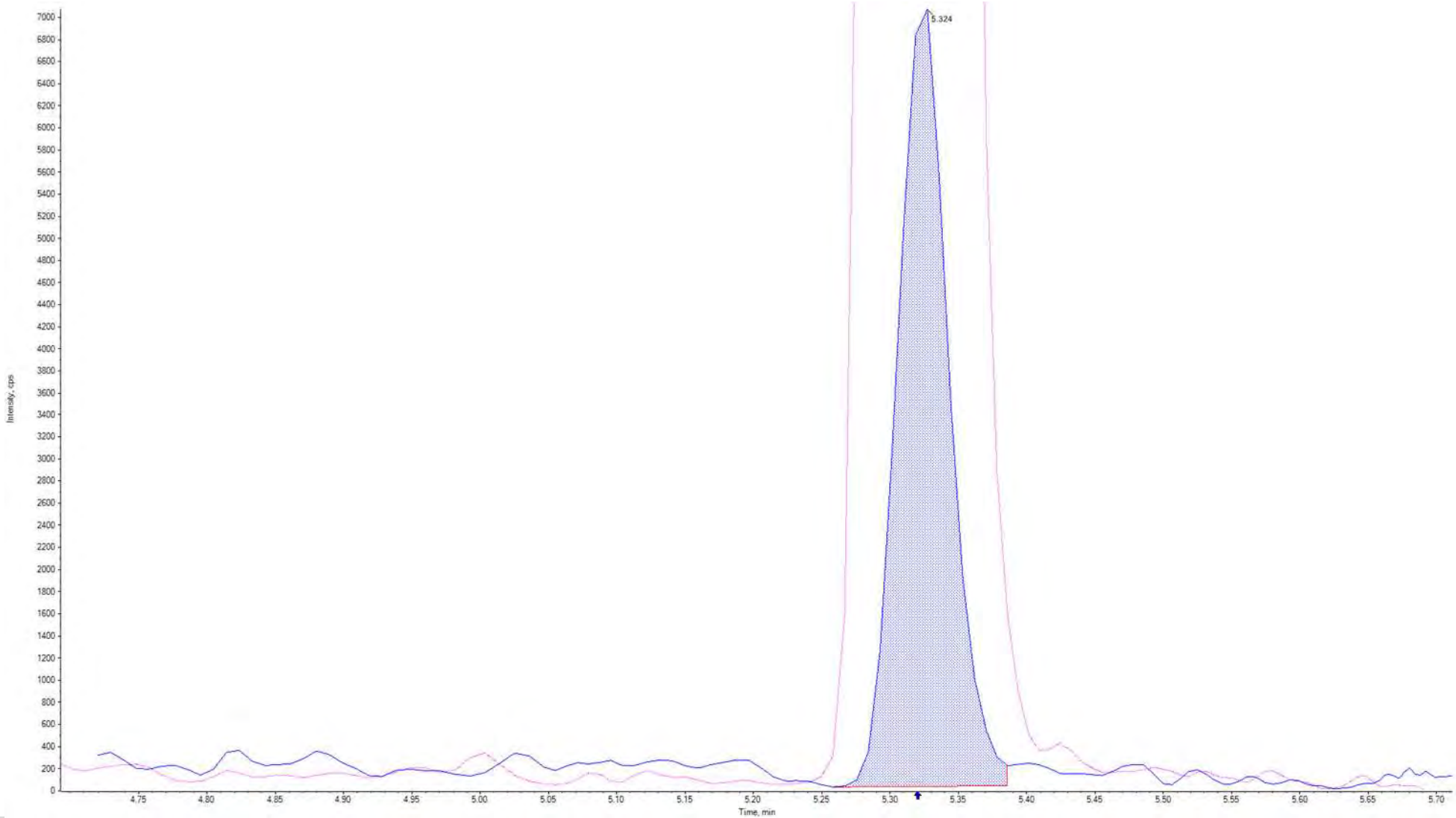
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFBS
Sample: L2450786-13 S/N:64.3 Points Across peak:15



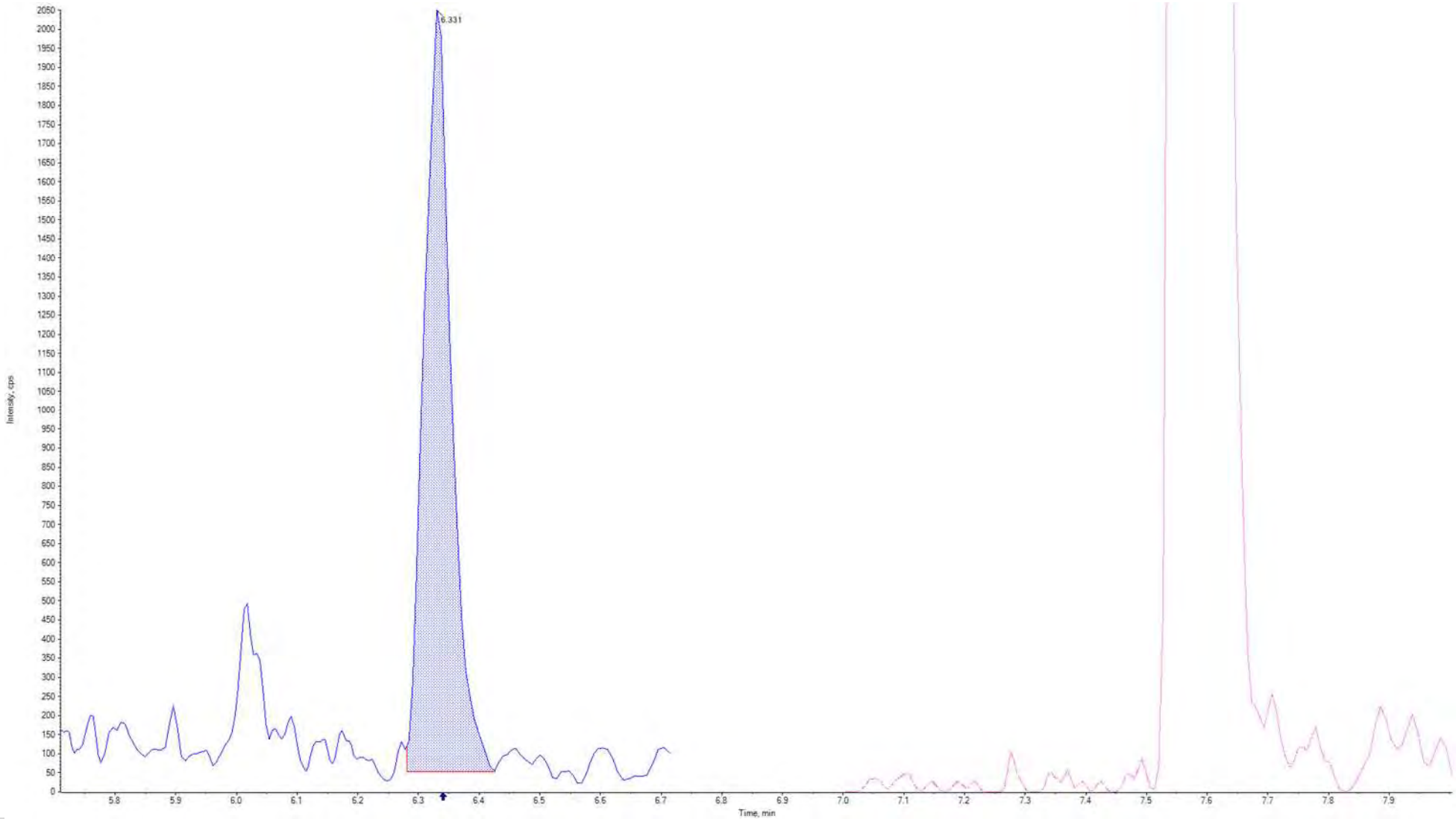
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFBS_2
Sample: L2450786-13 S/N:431.2 Points Across peak:16



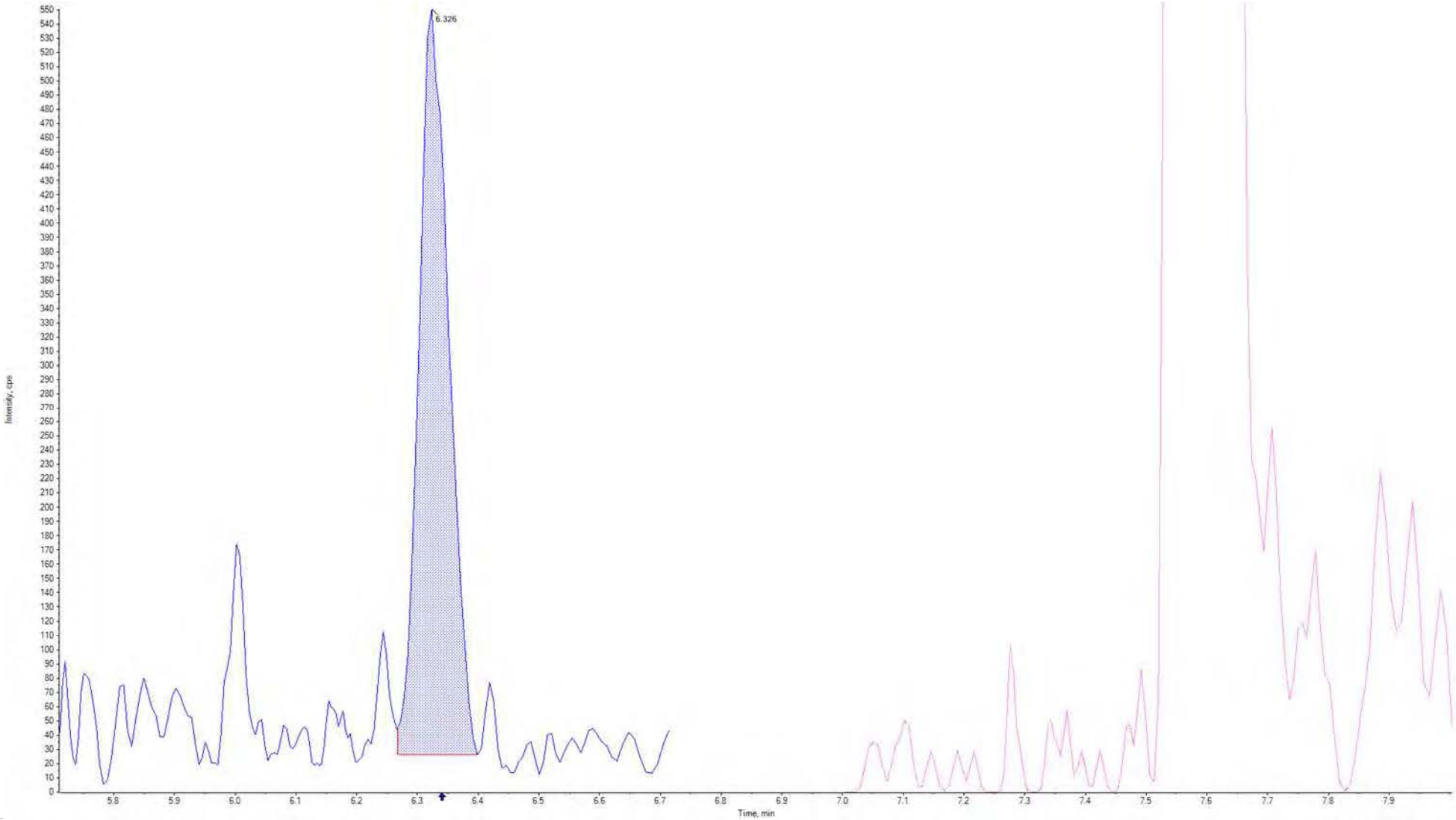
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFPeS
Sample: L2450786-13 S/N:223.1 Points Across peak:24



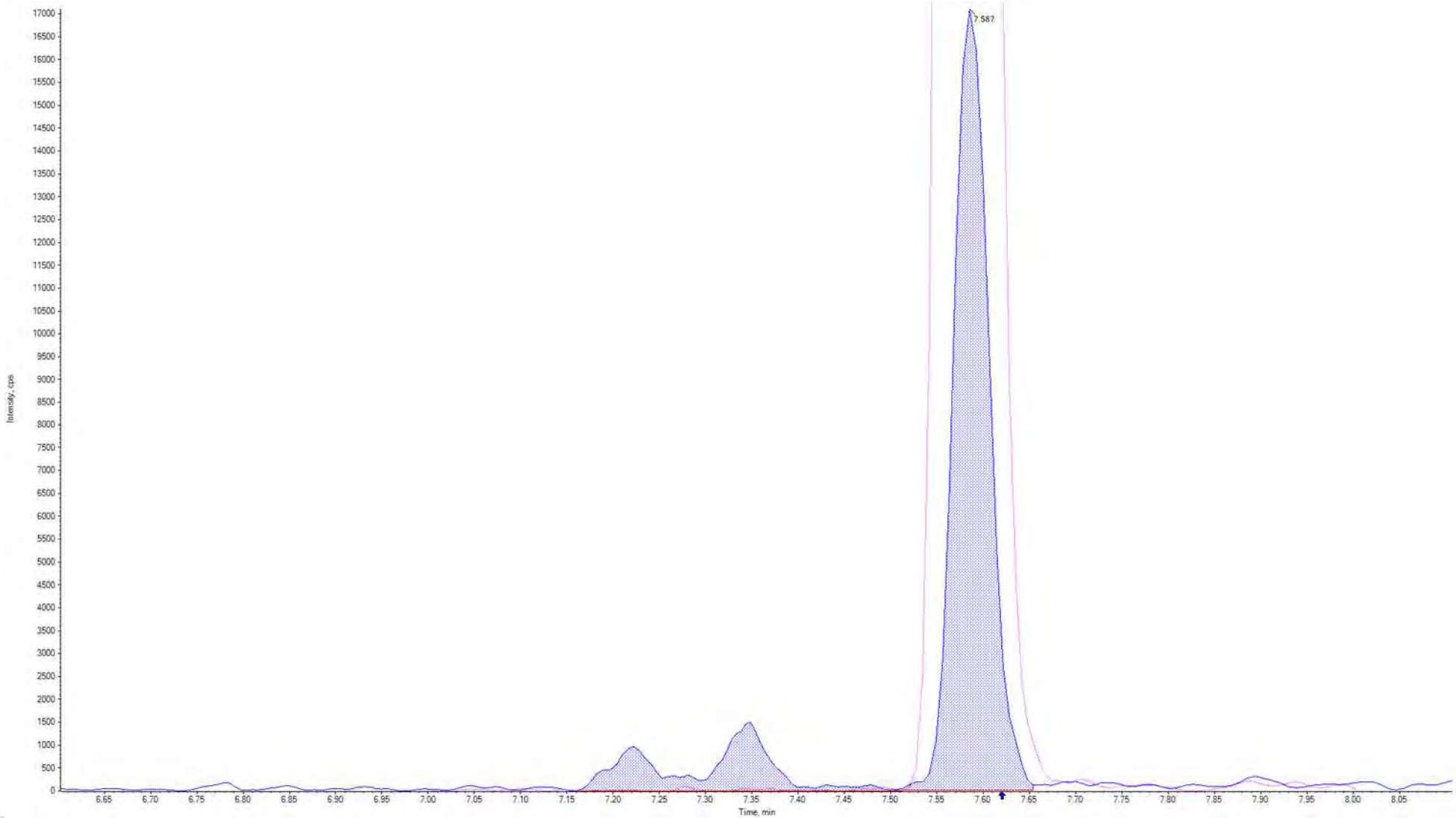
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFPeS_2
Sample: L2450786-13 S/N:122.2 Points Across peak:22



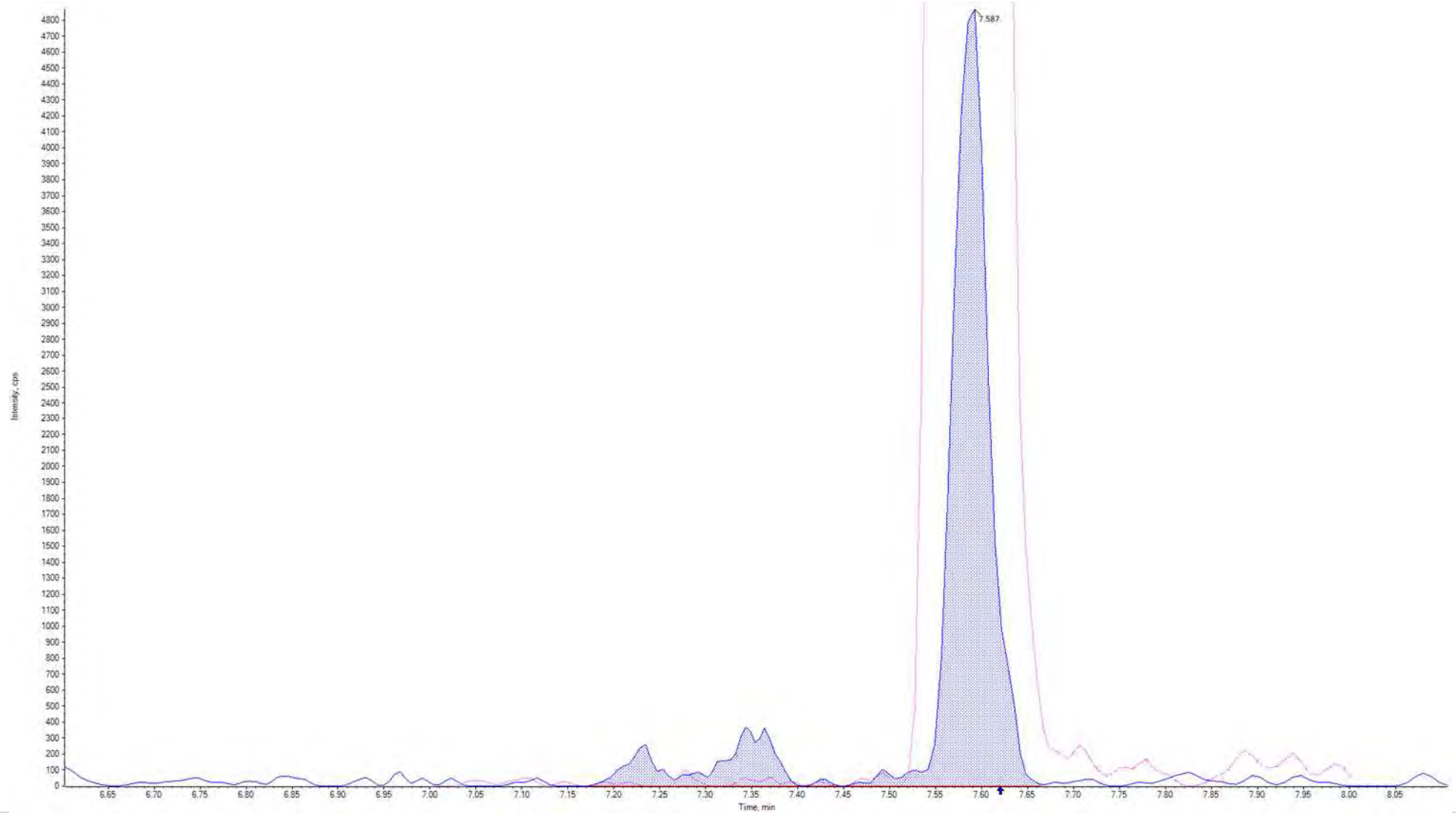
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHxS
Sample: L2450786-13 S/N:2466.4 Points Across peak:80



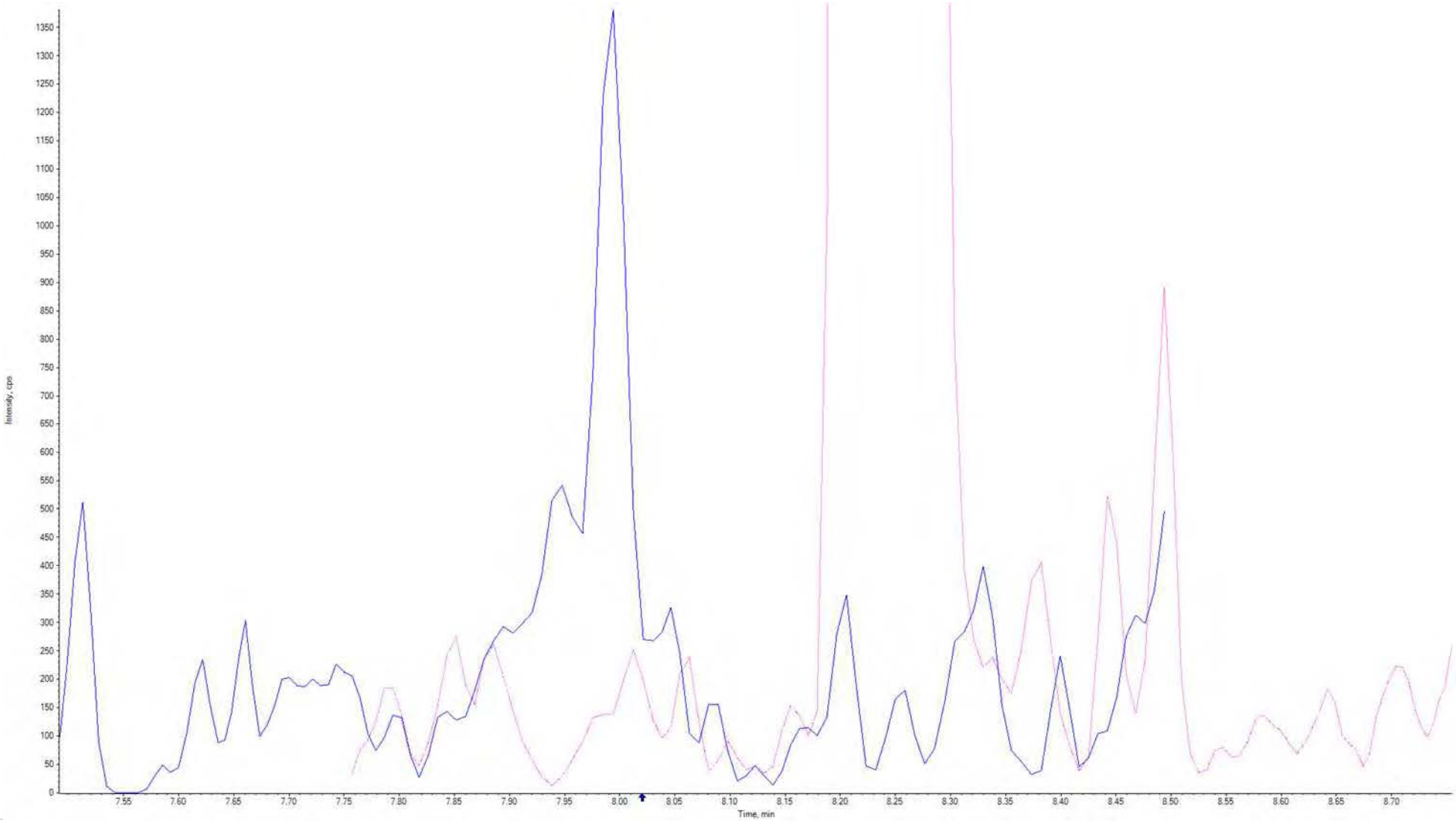
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHxS_2
Sample: L2450786-13 S/N:110022.9 Points Across peak:81



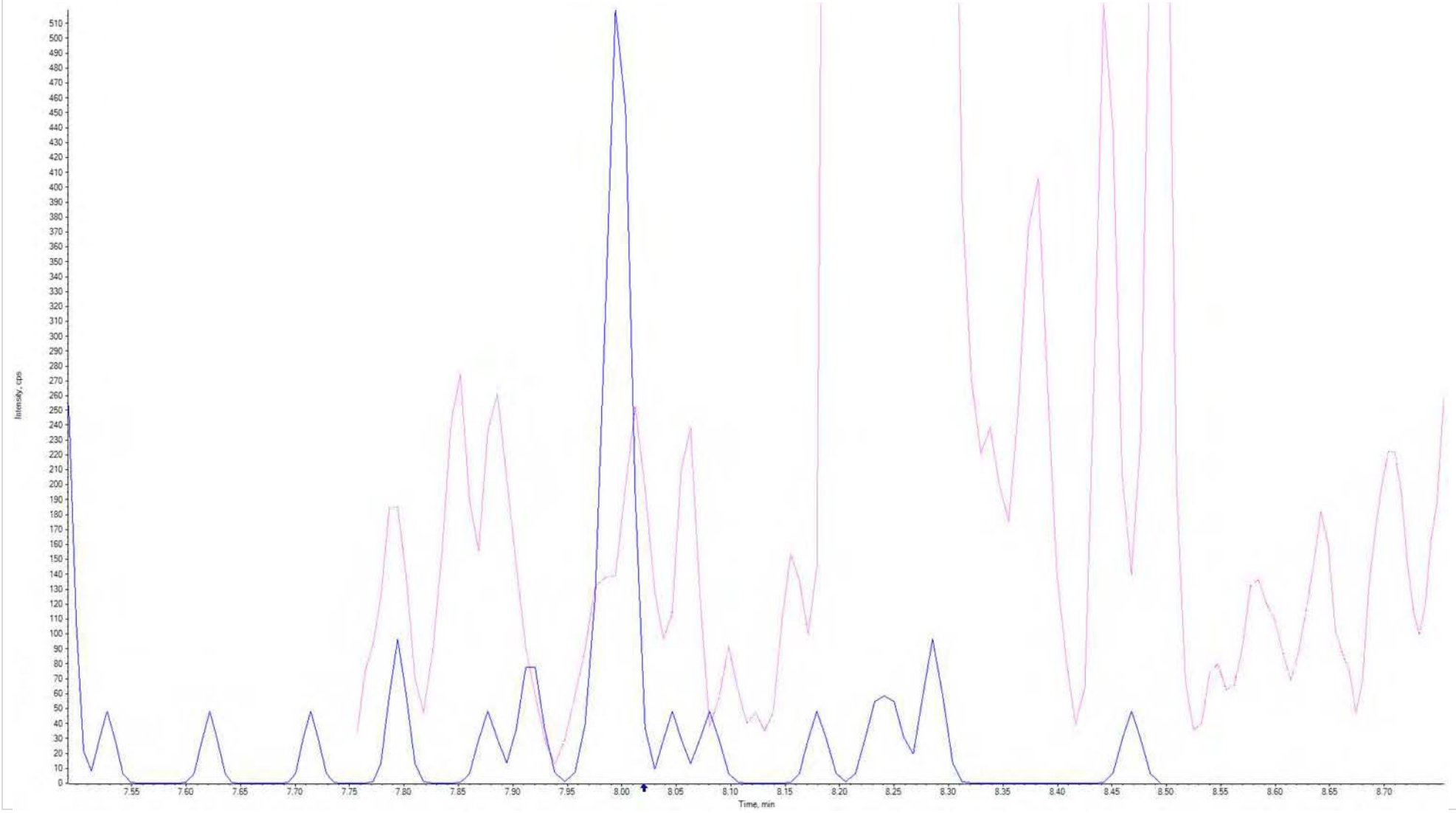
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHpS
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



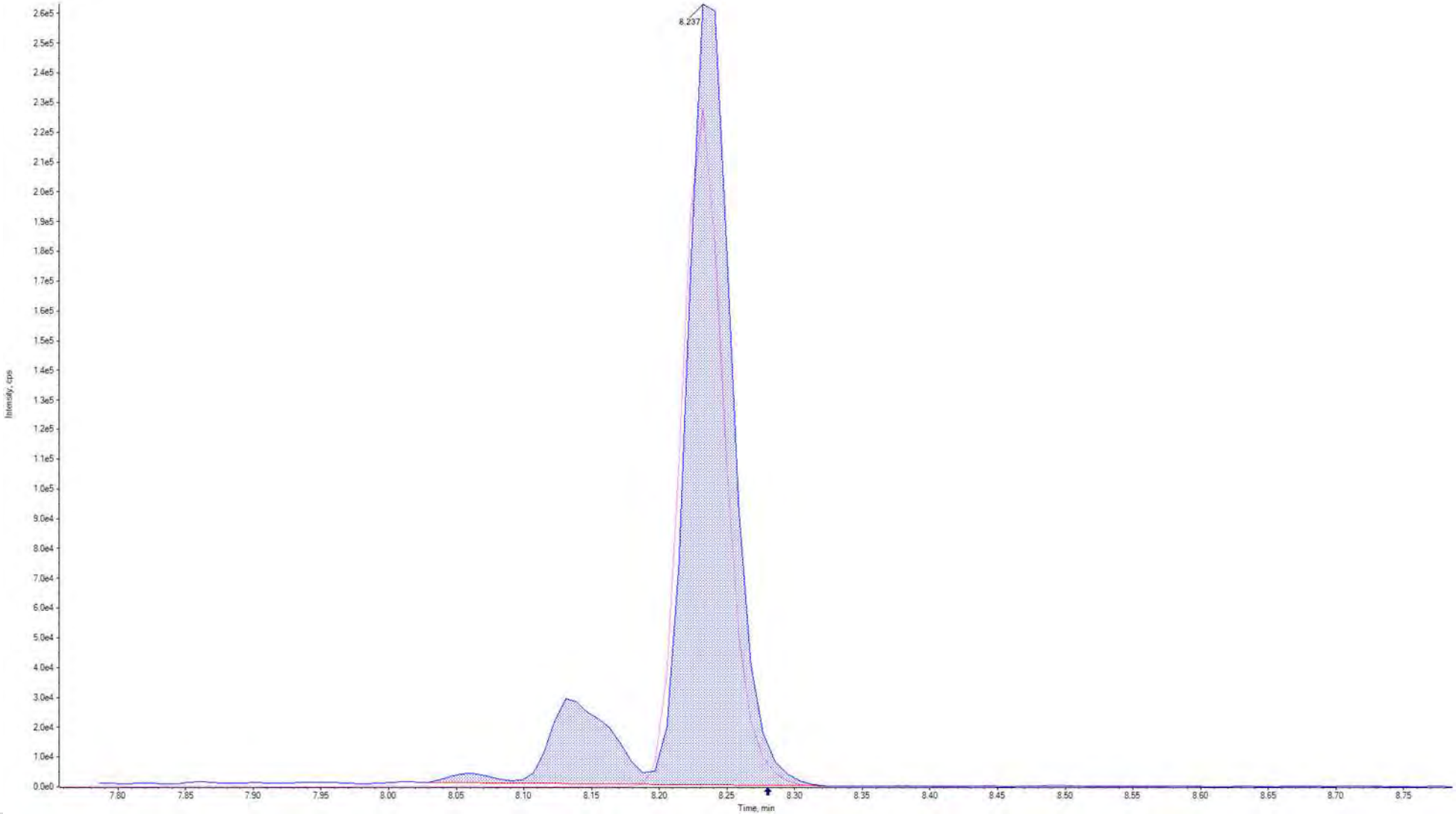
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHpS_2
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



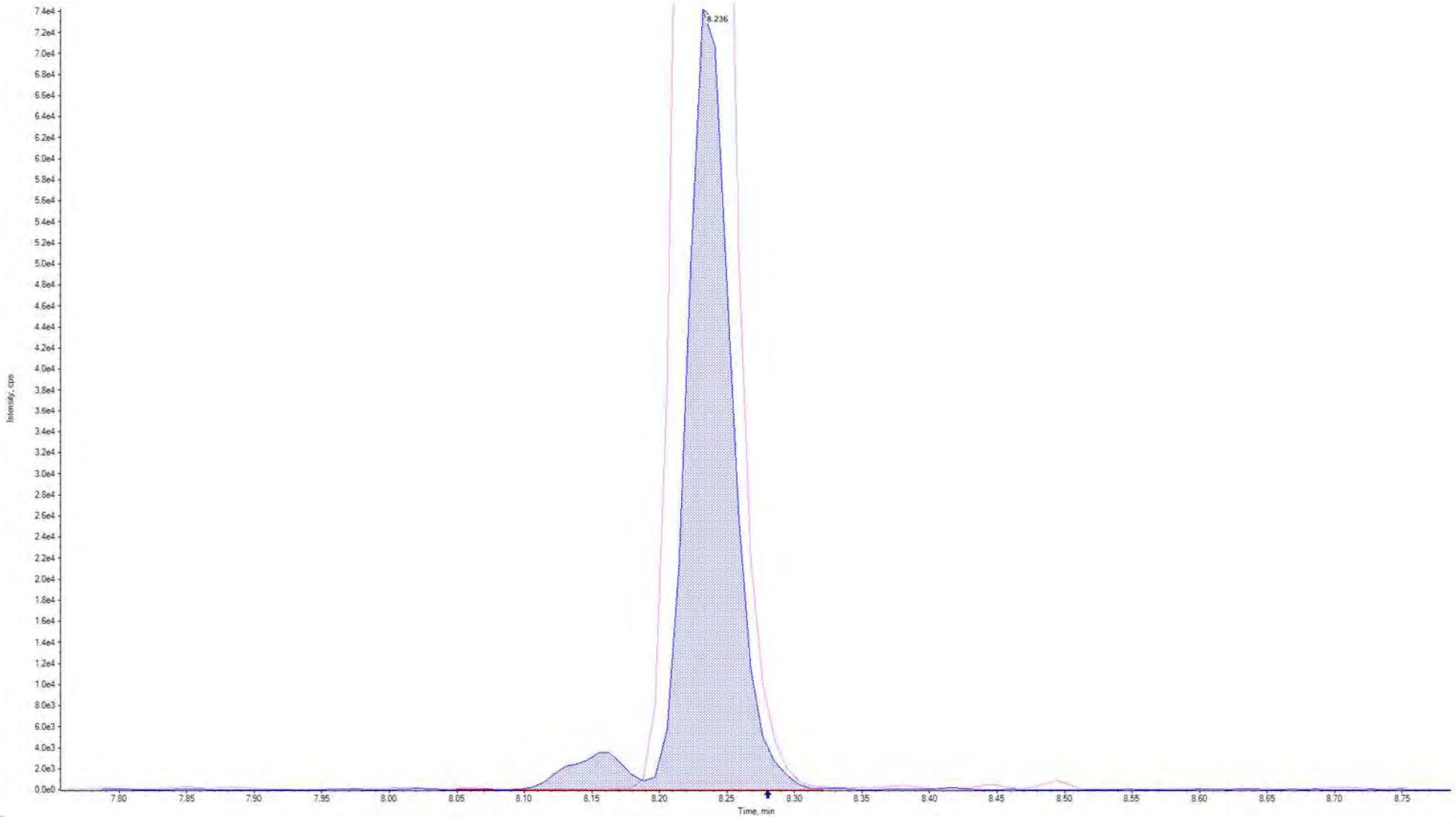
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOS
Sample: L2450786-13 S/N:1683.5 Points Across peak:37

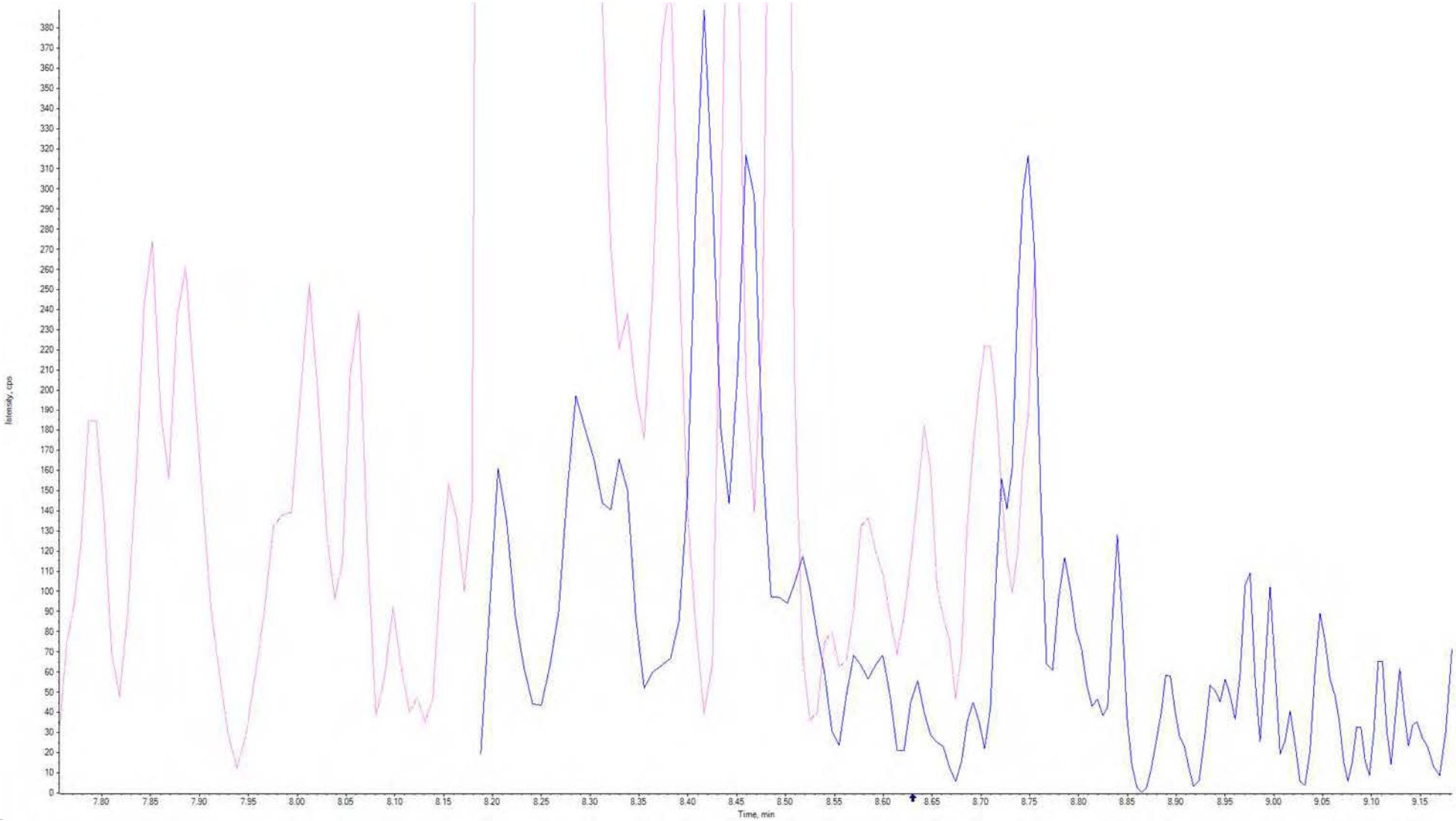


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOS_2
Sample: L2450786-13 S/N:6150993.4 Points Across peak:34

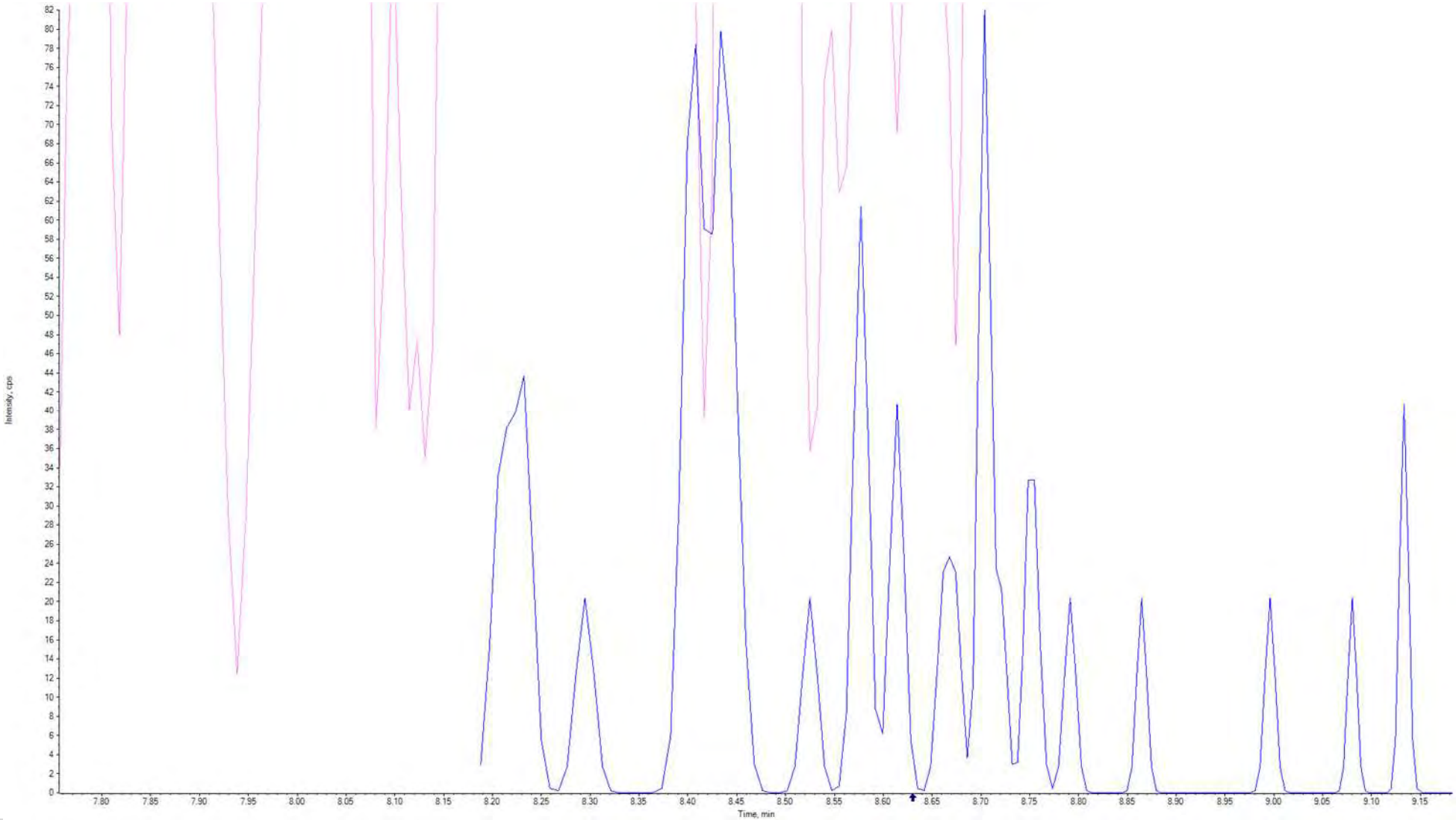


PFNS
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFNS_2
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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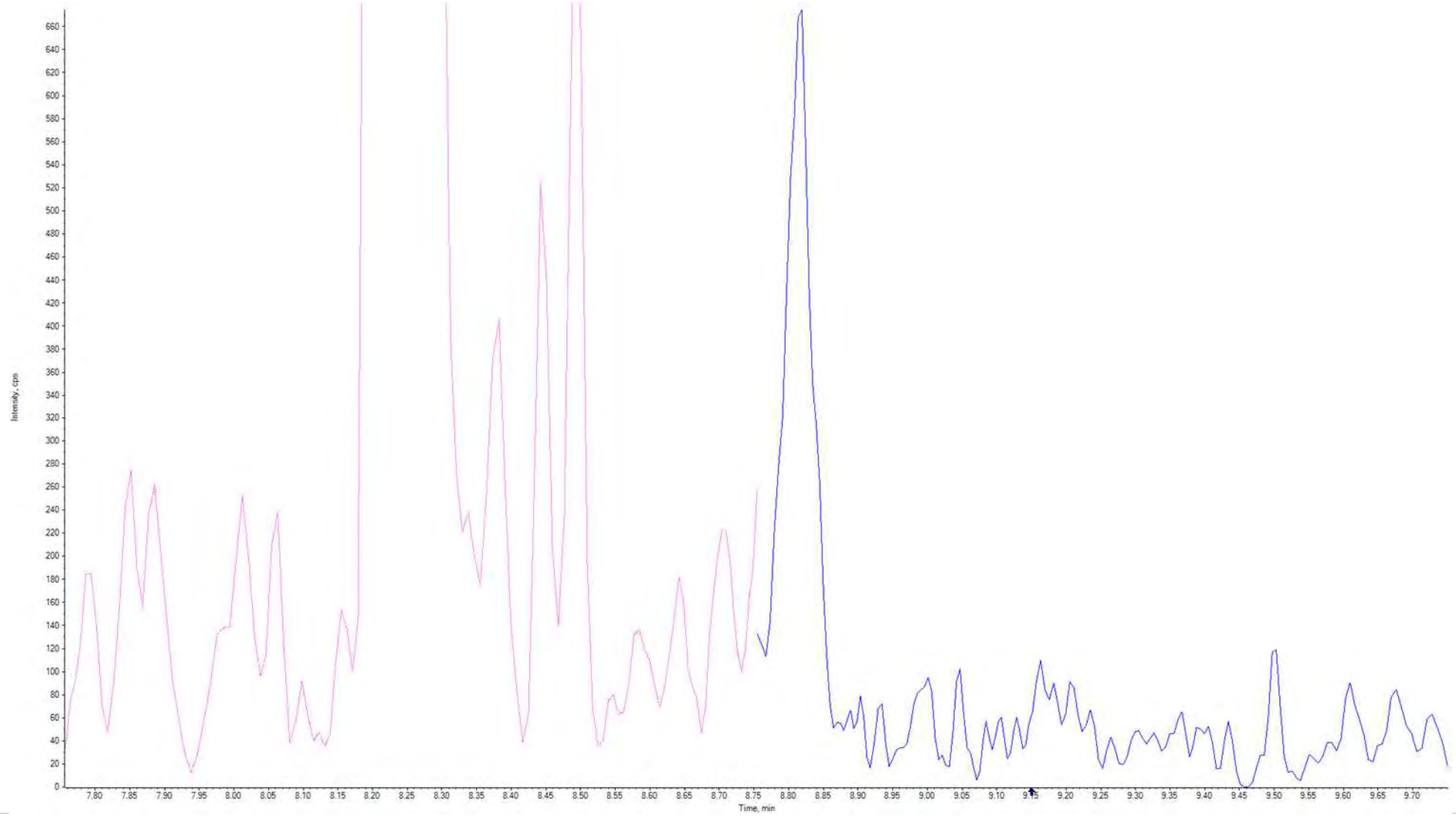
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDS
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Generated: 9/19/2024 8:04:31 AM

PFDS_2
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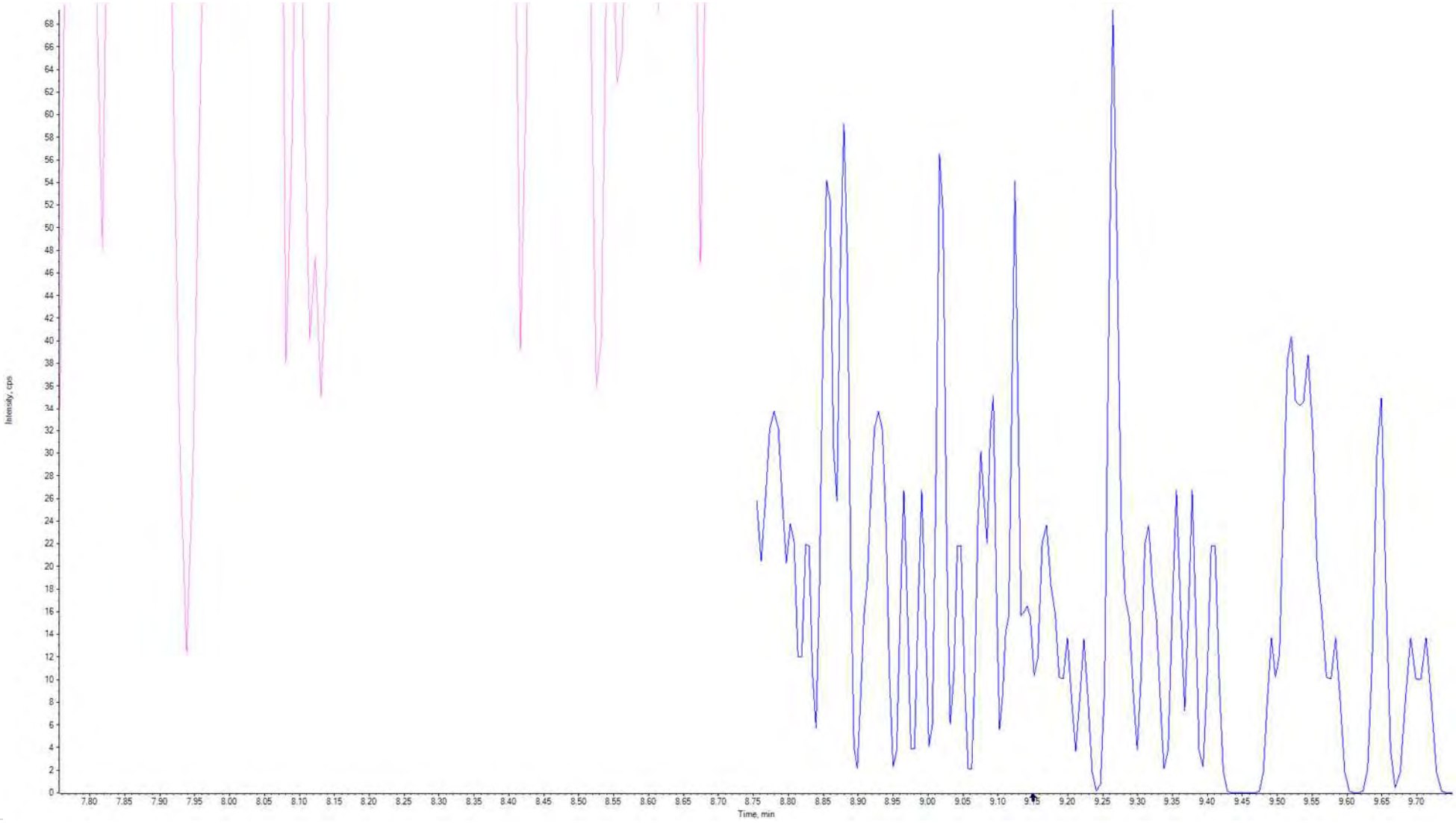

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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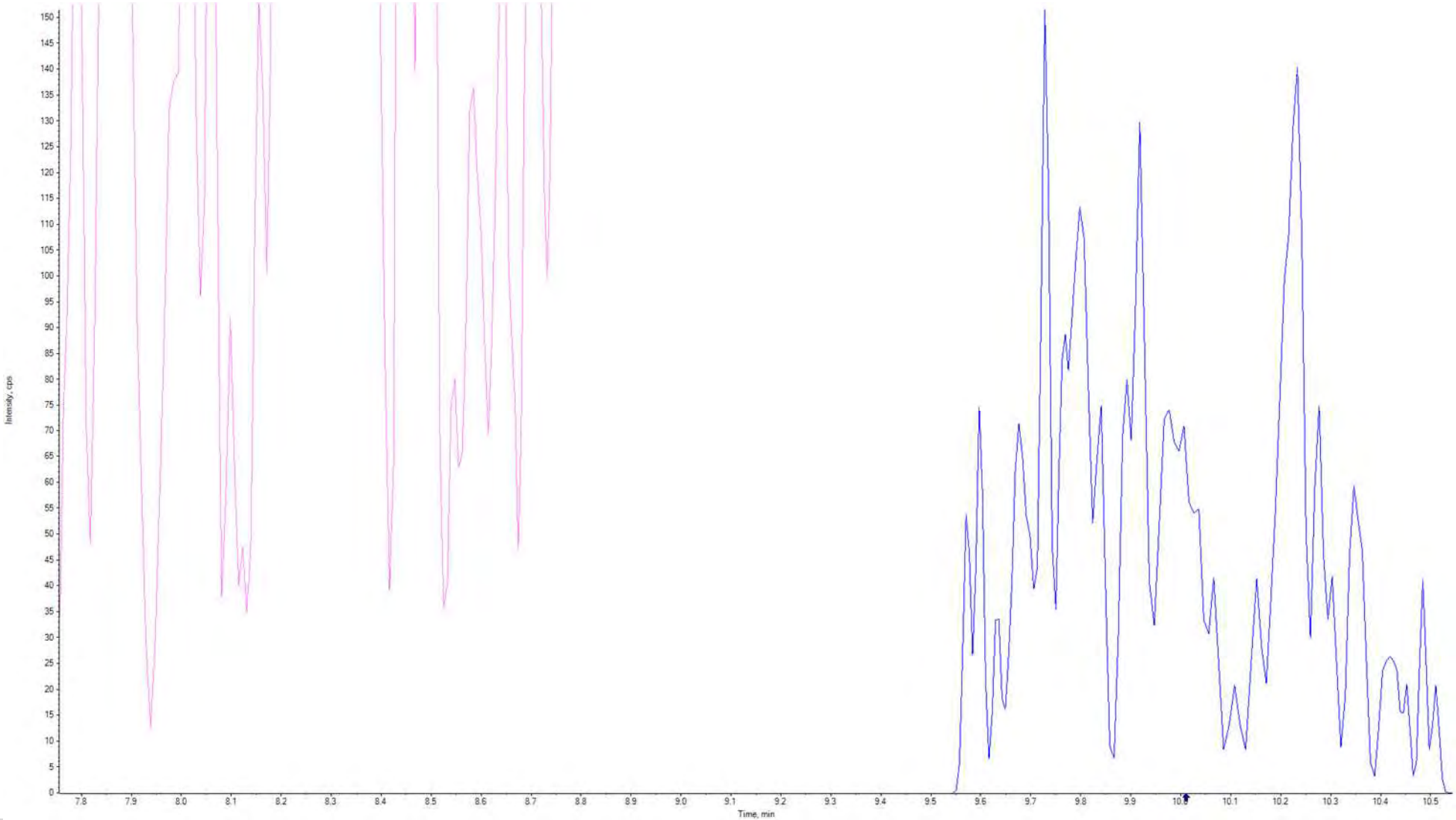
Generated: 9/19/2024 8:04:31 AM

PFDoS
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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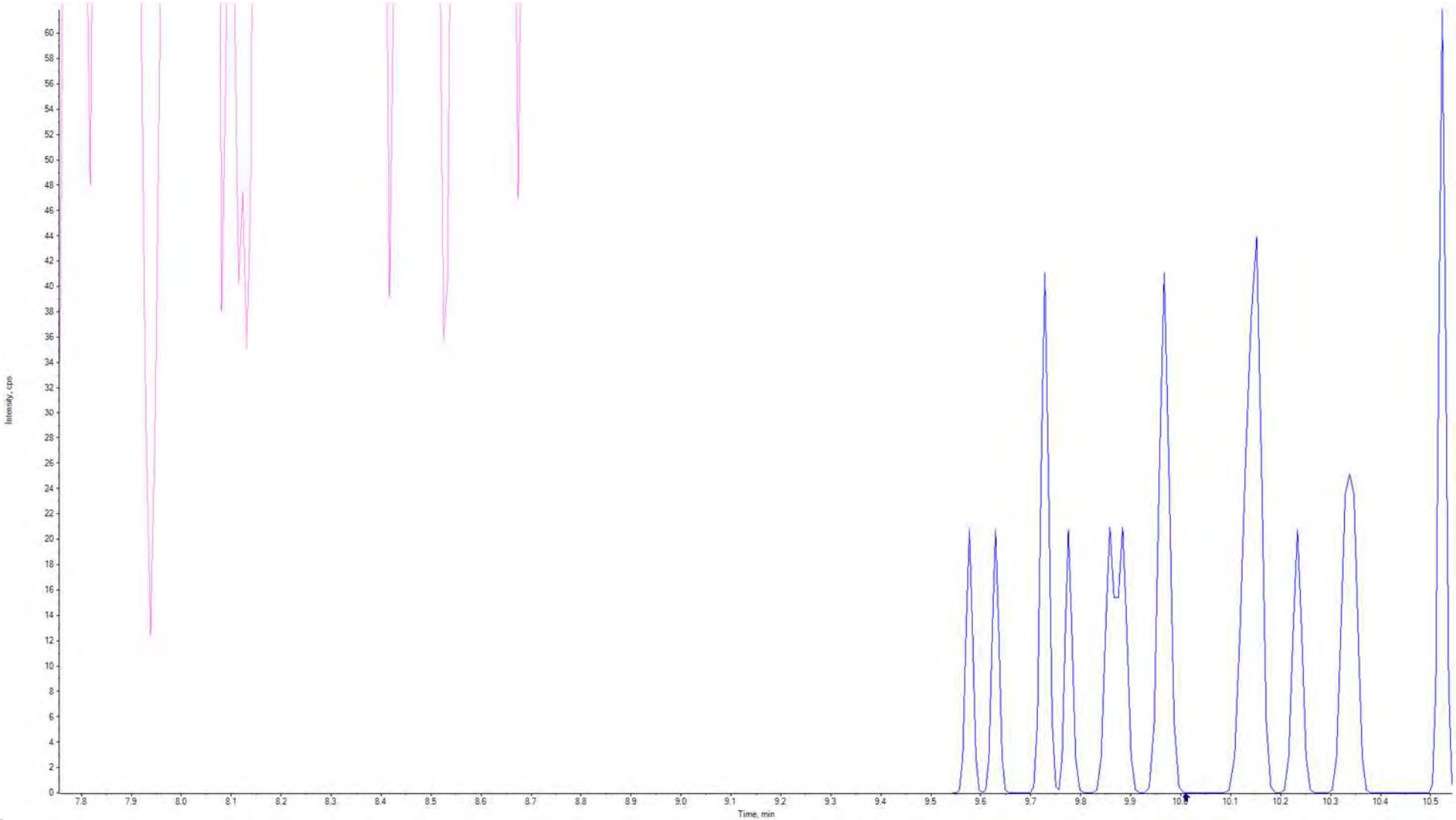
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoS_2
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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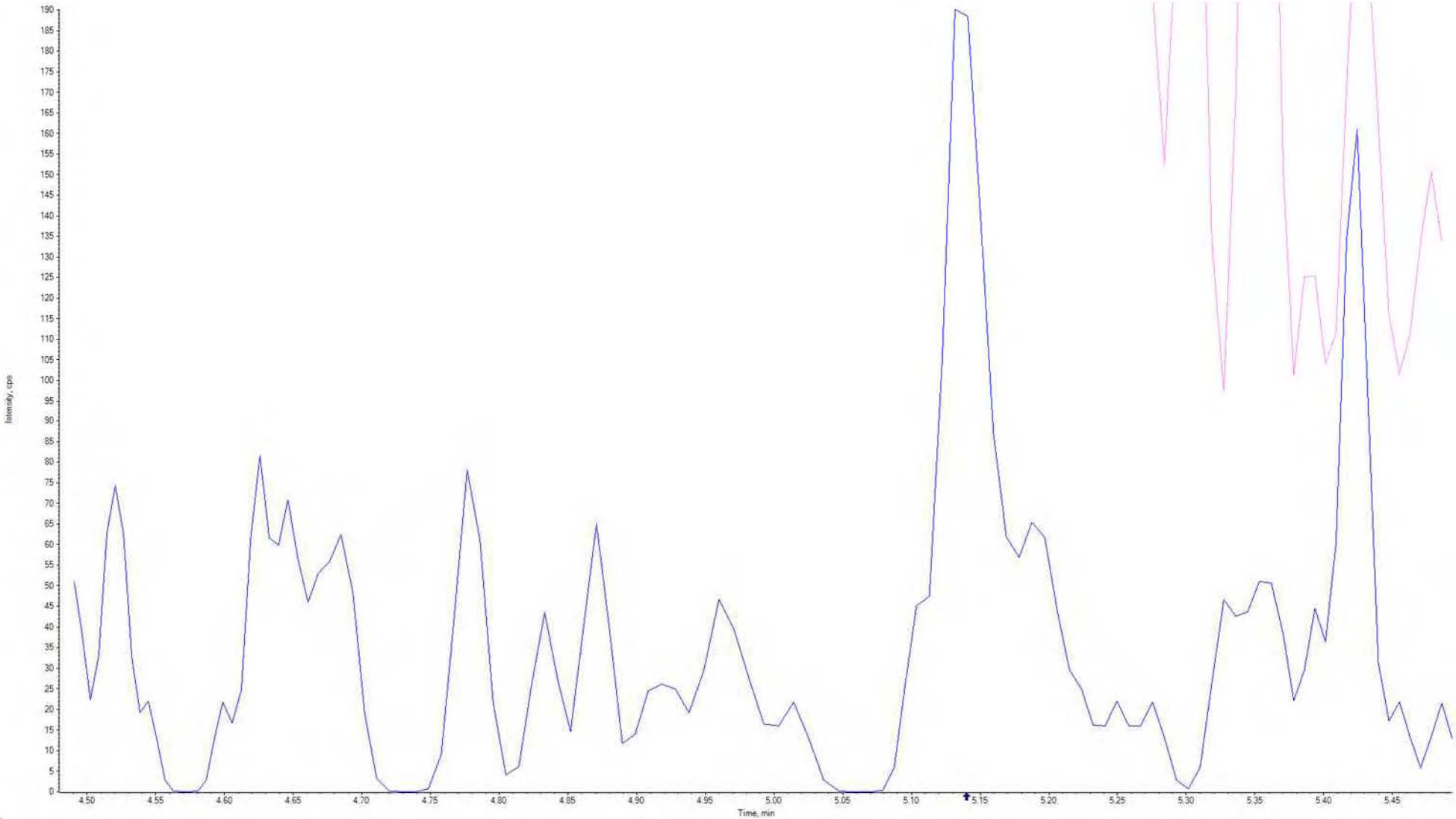
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

4:2FTS
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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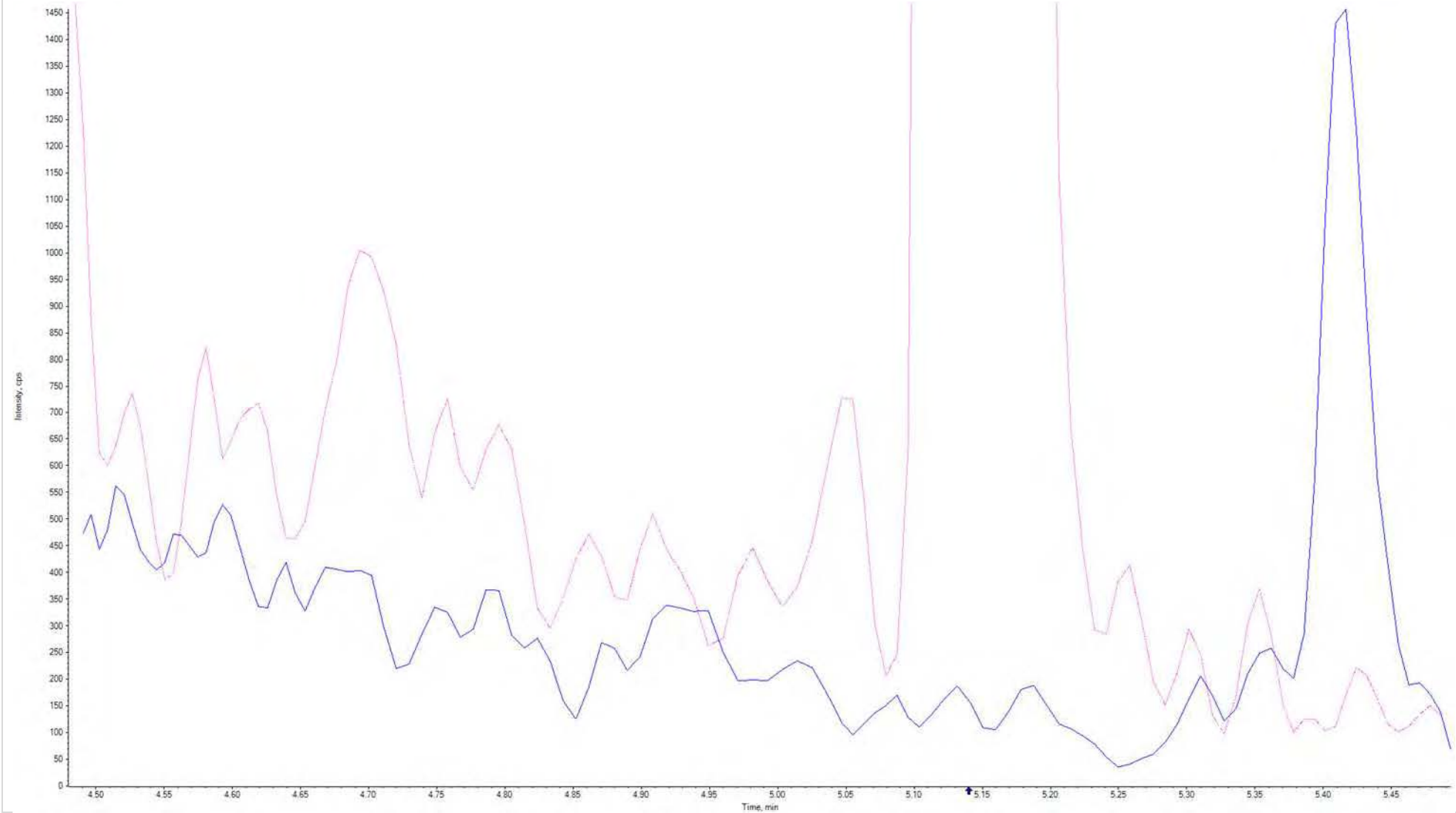
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

4:2FTS_2
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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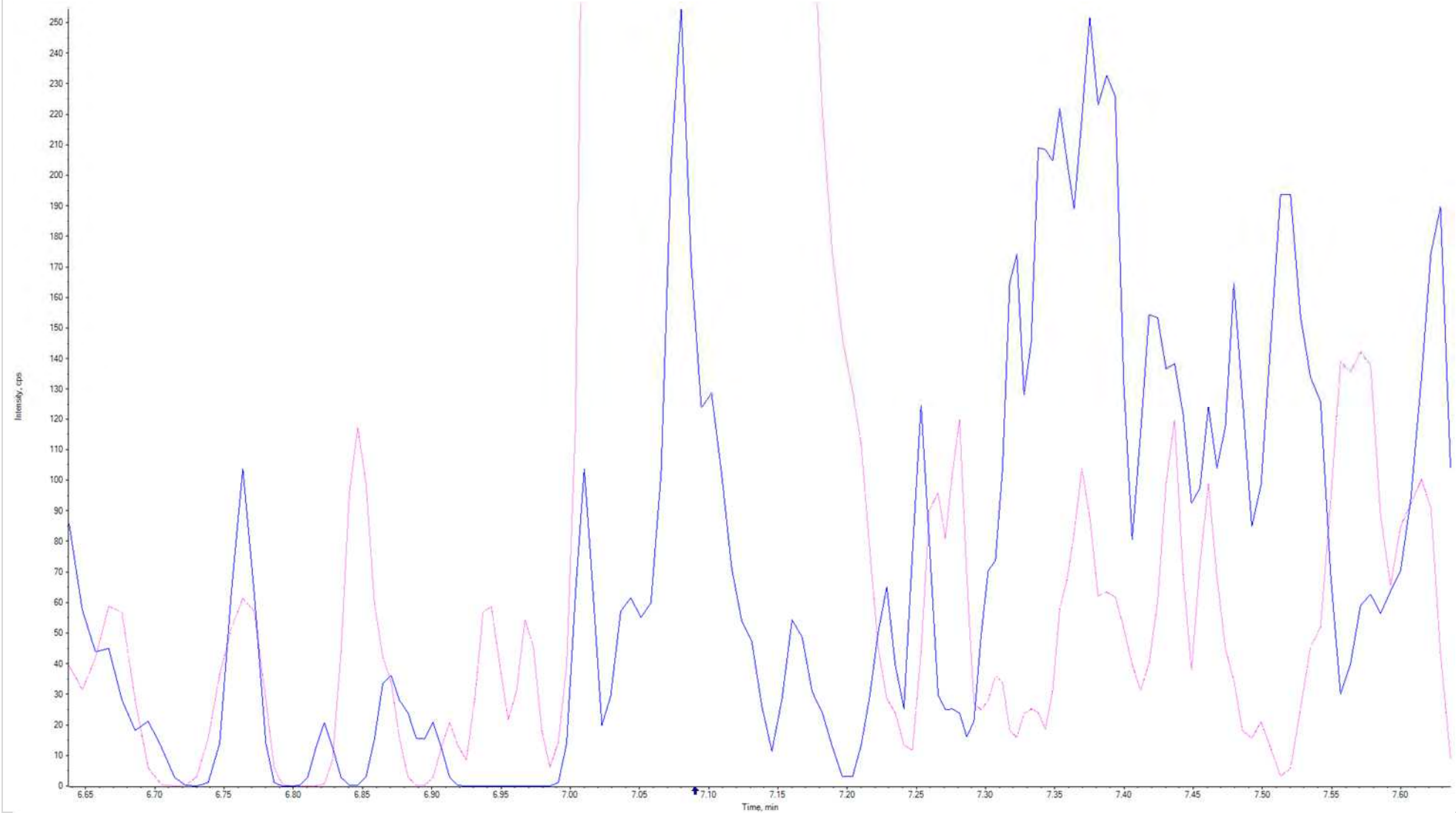
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

6:2FTS
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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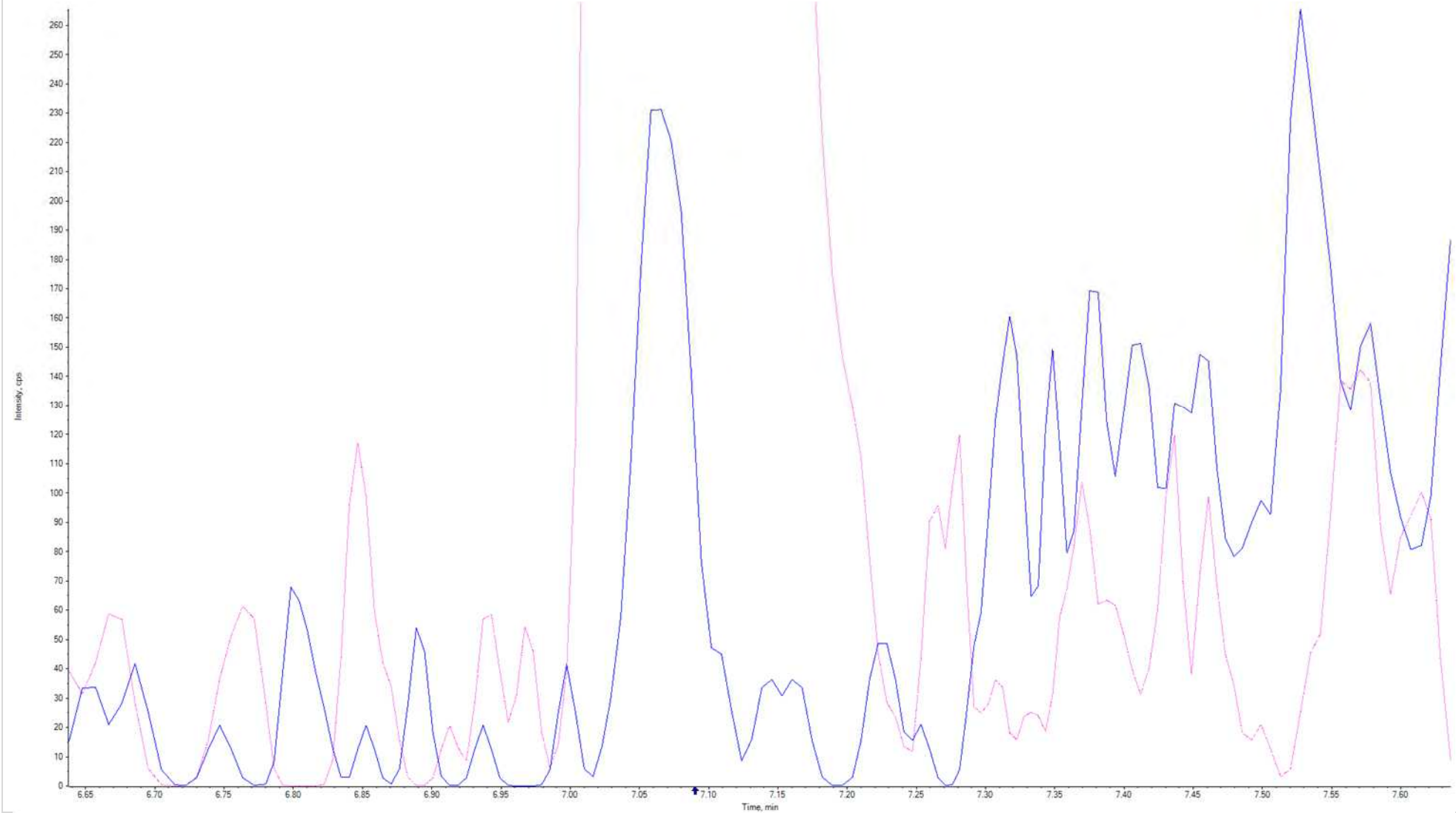
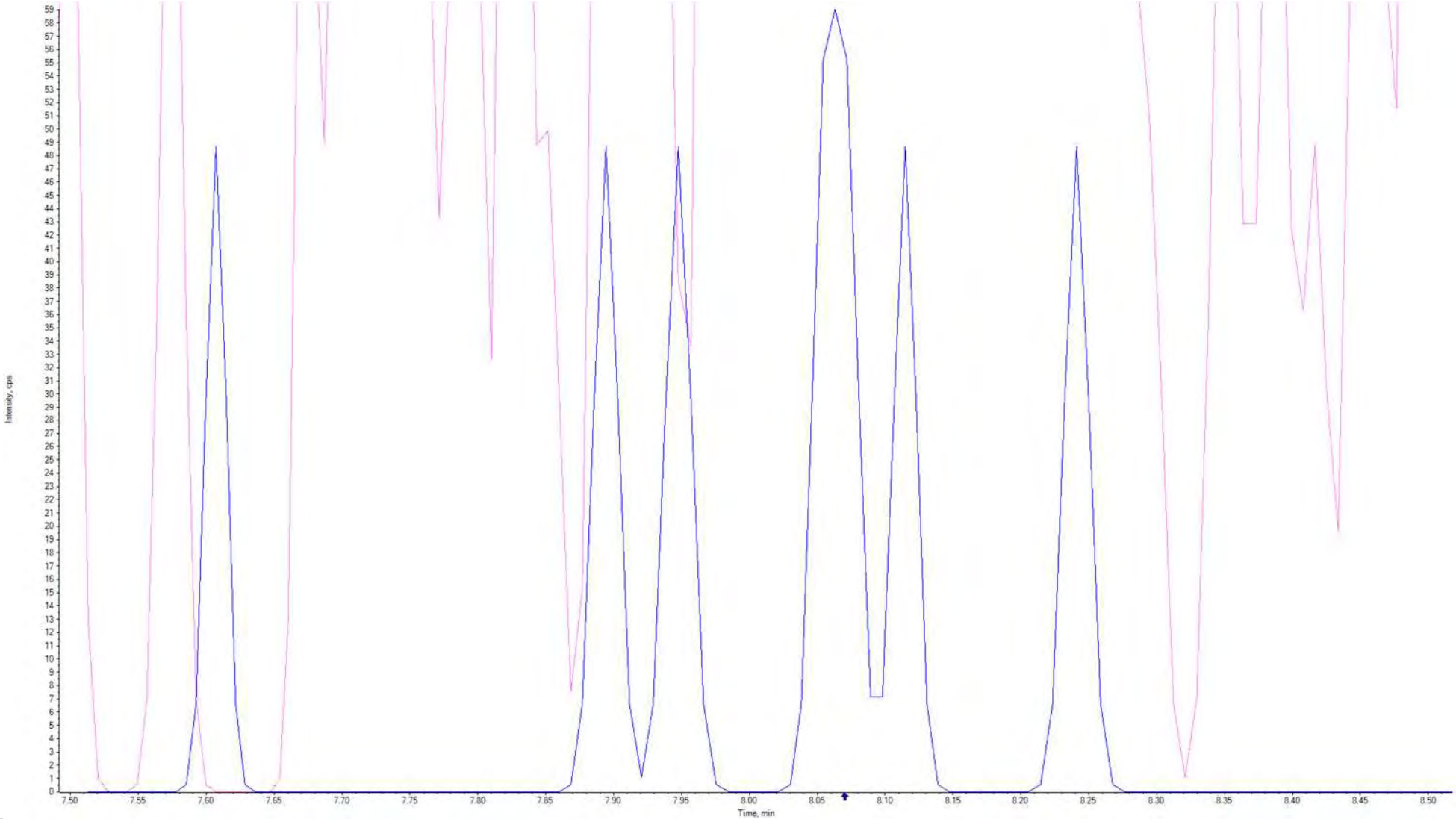
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

6:2FTS_2
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



8:2FTS
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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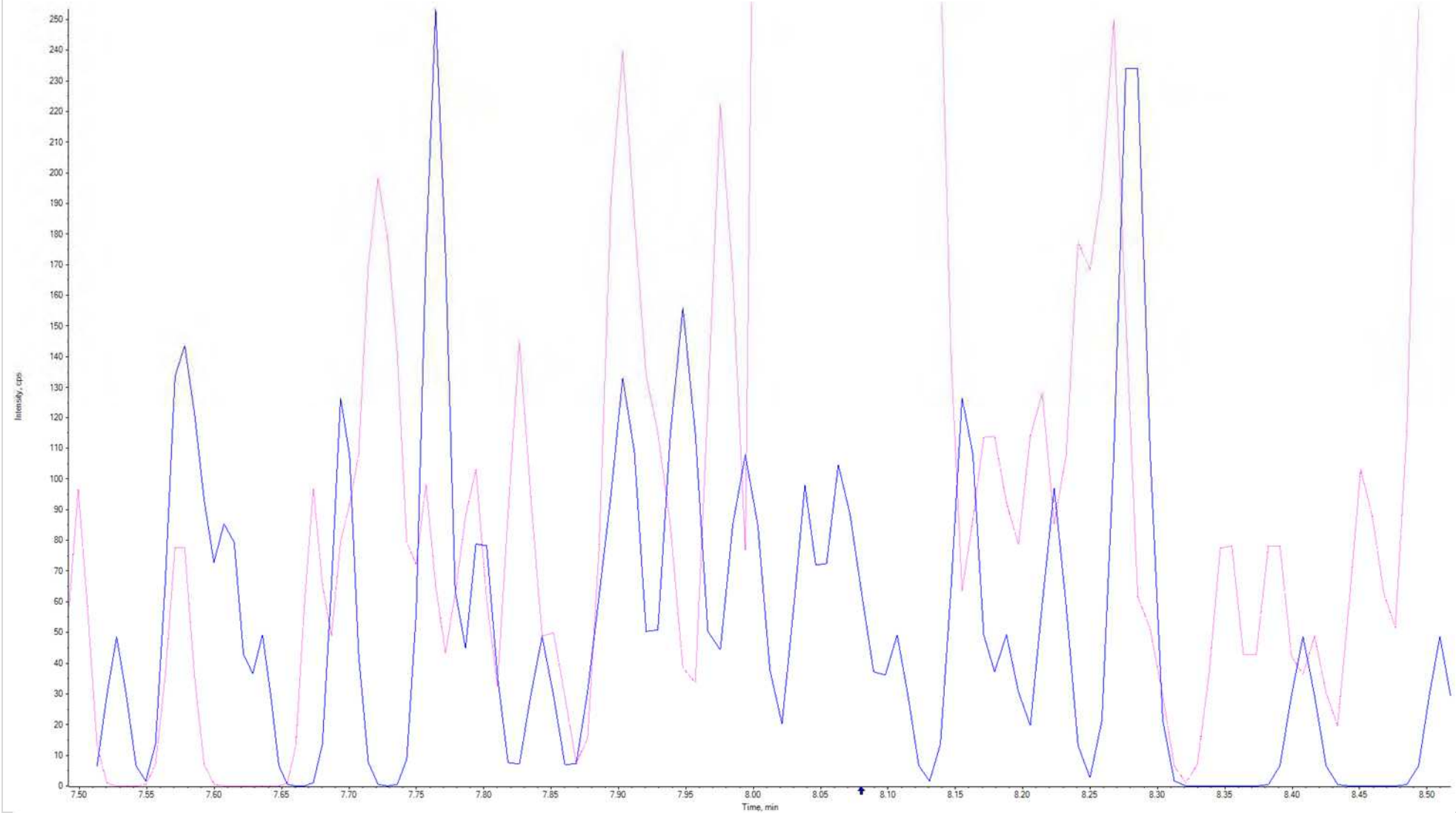
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

8:2FTS_2
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



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Alpha Analytical Inc.
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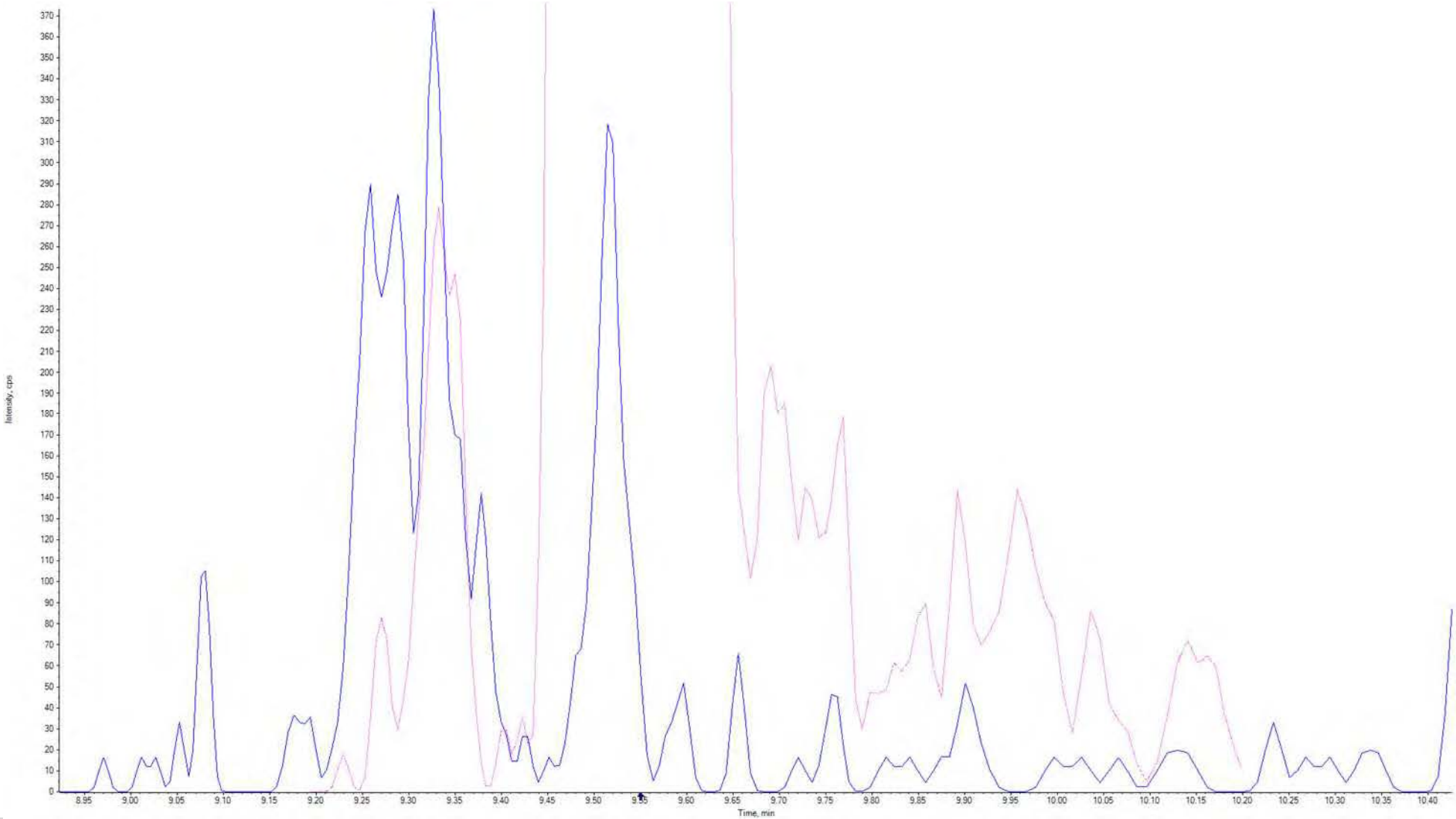
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOSA
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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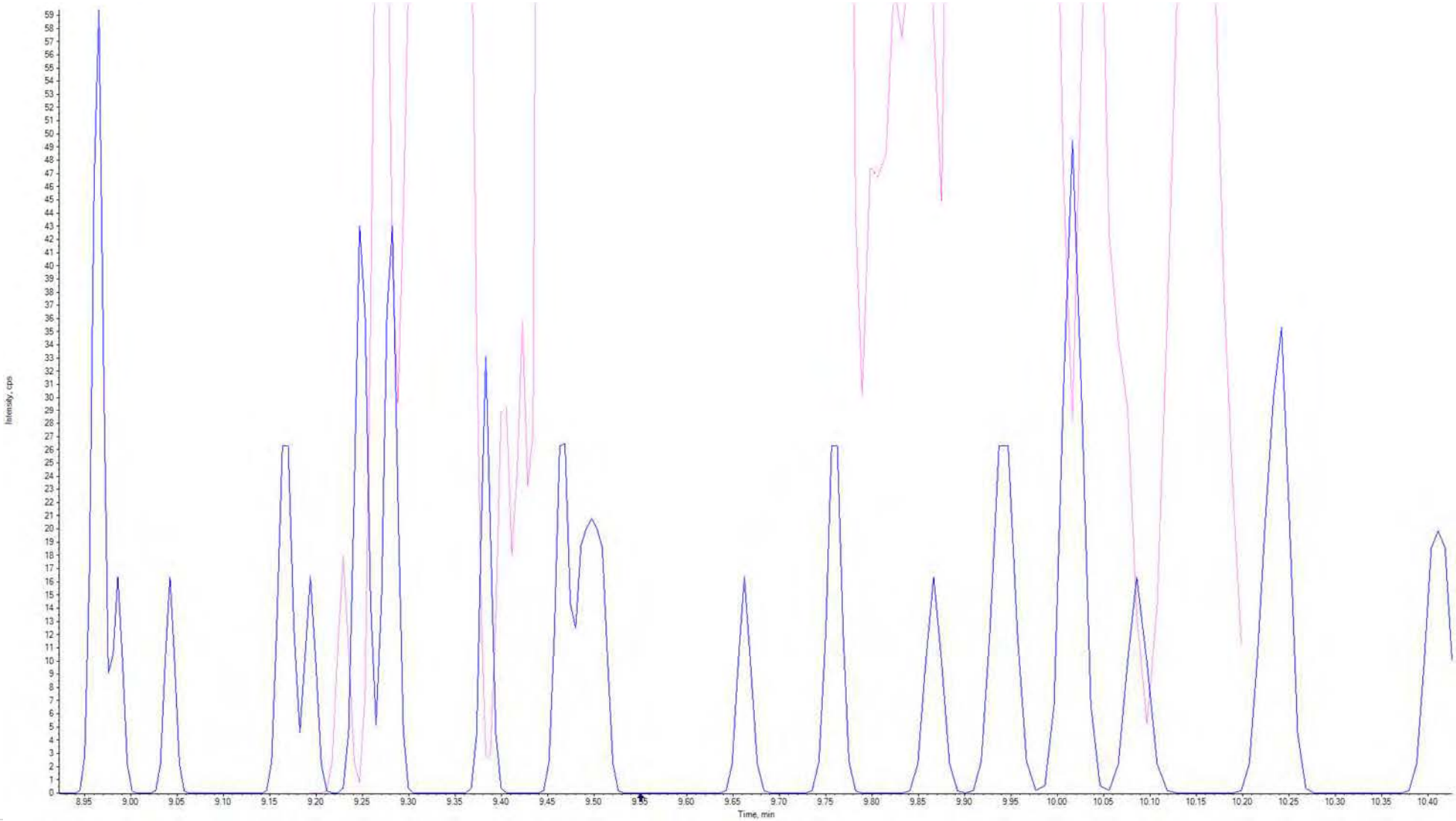
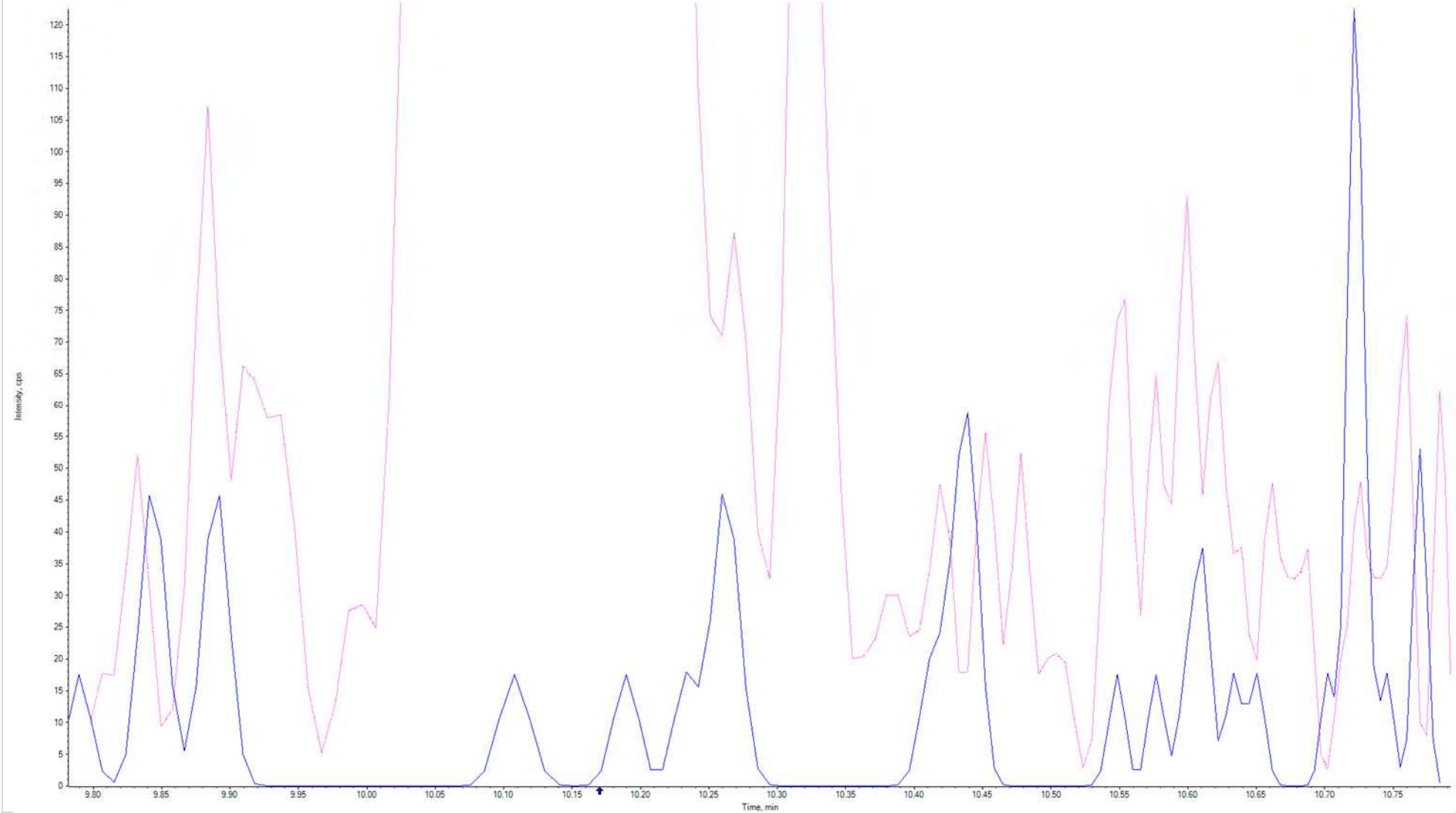
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

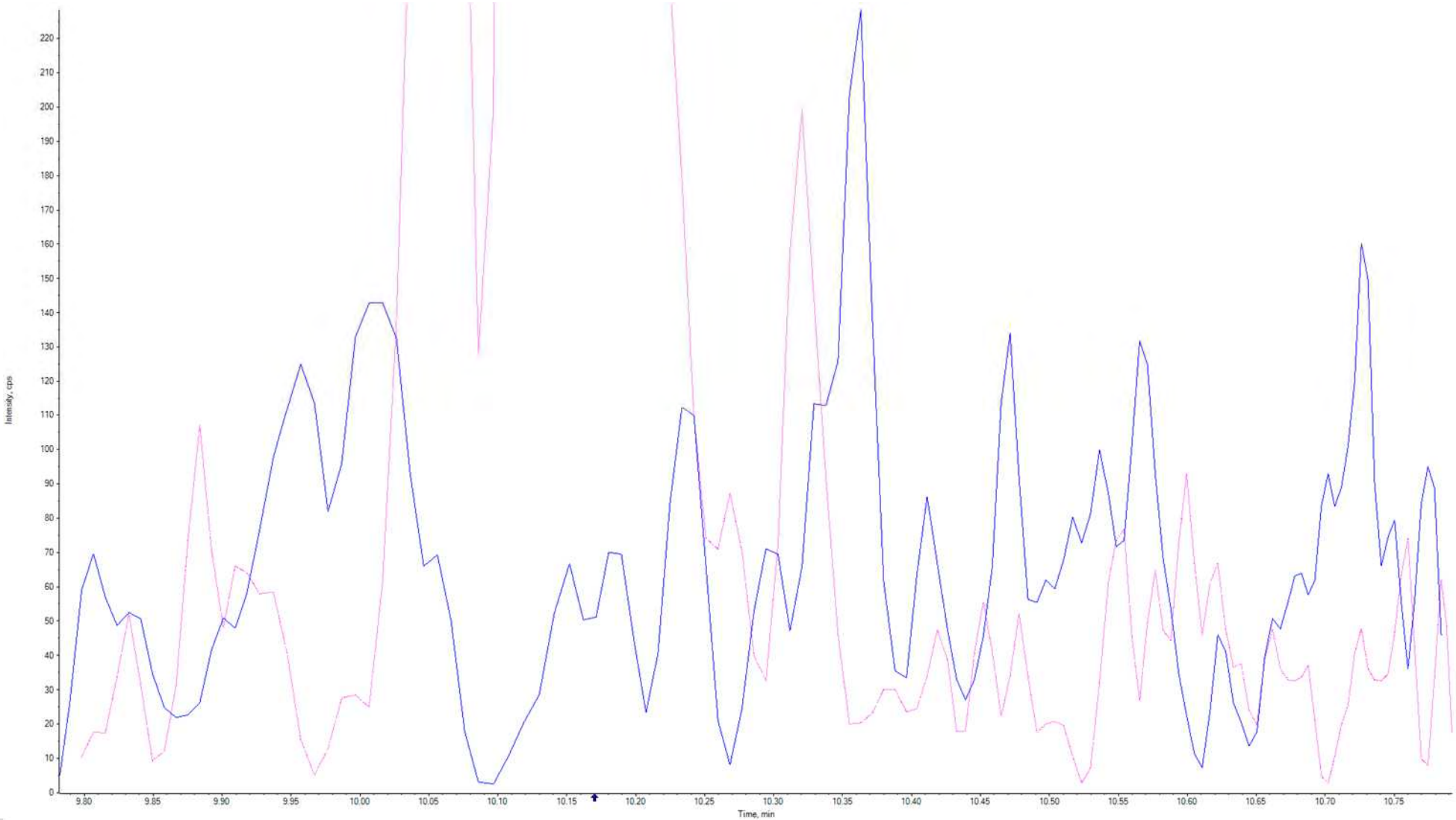
PFOSA_2
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



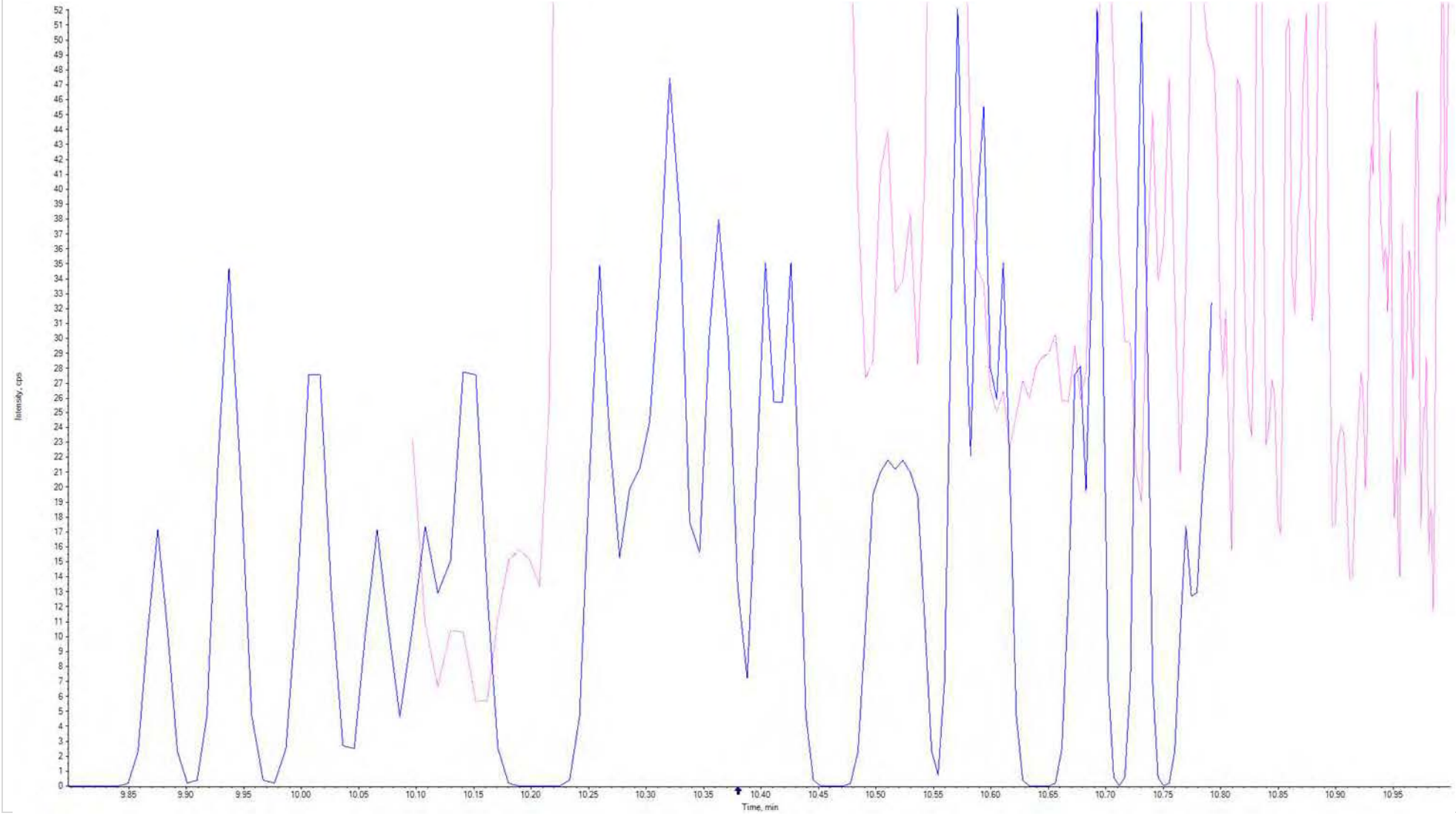
NMeFOSA
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



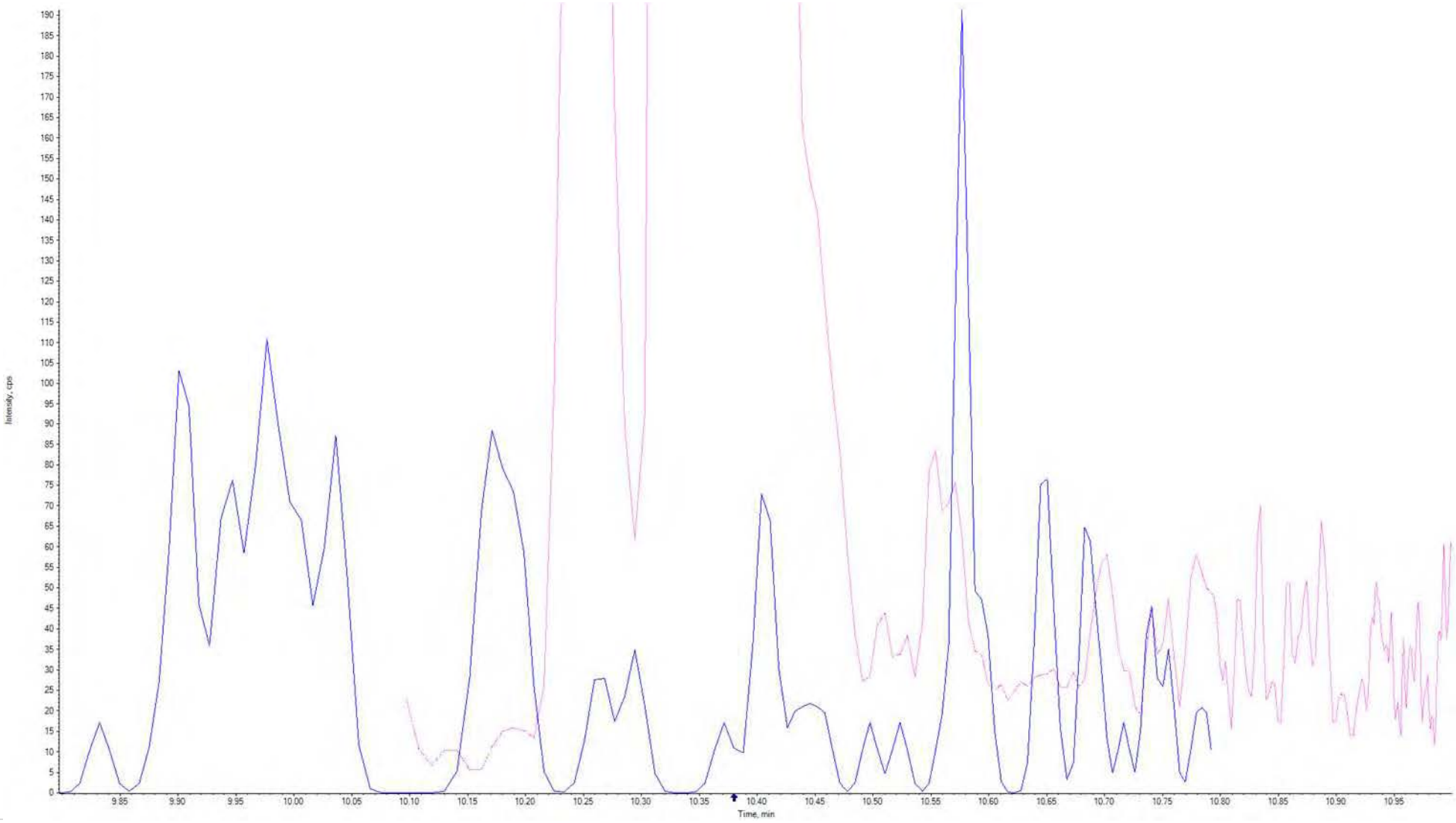
NMeFOSA_2
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



NEtFOSA
Sample: L2450786-13 S/N:N/A Points Across peak:N/A

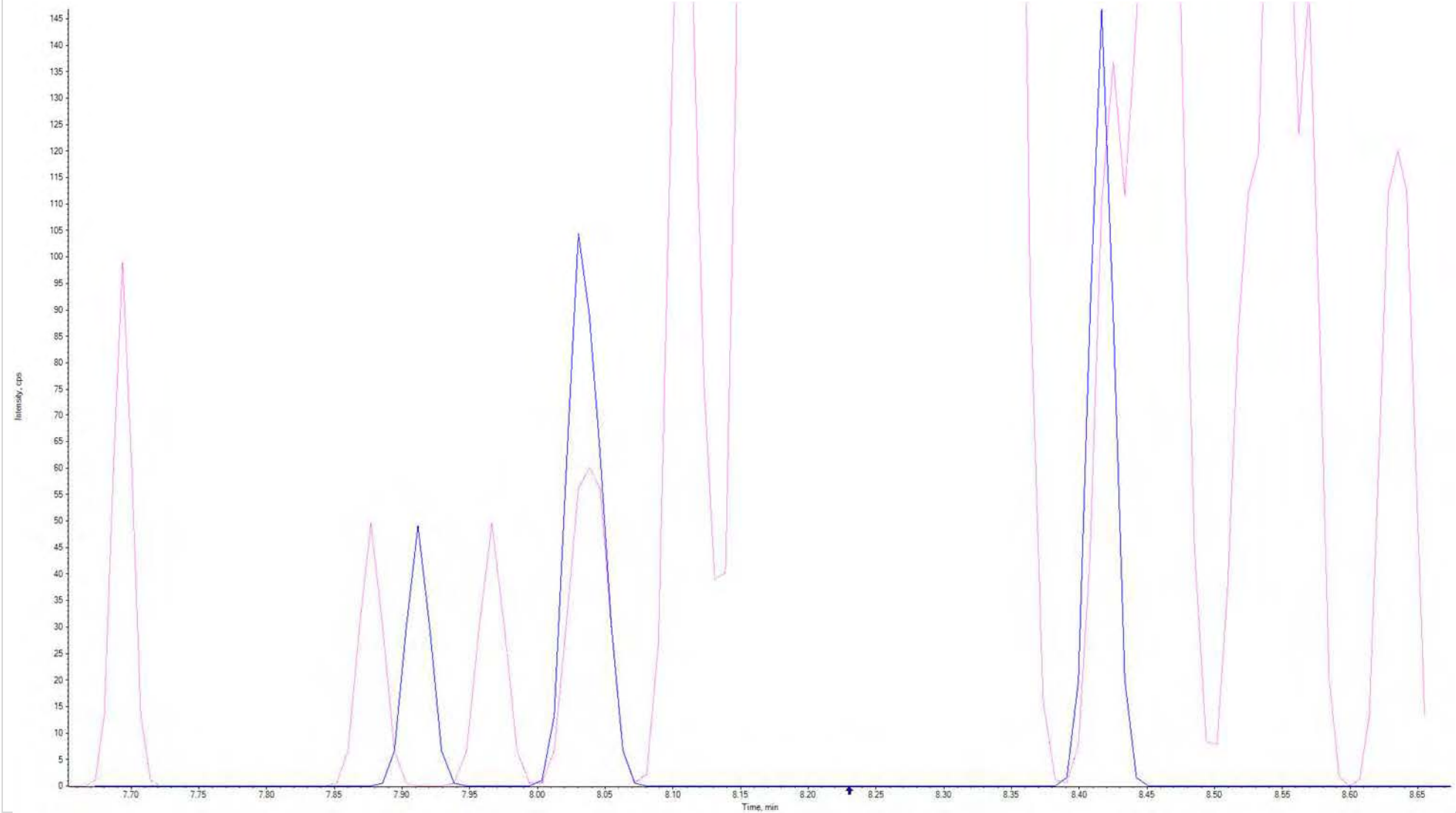


NEtFOSA_2
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



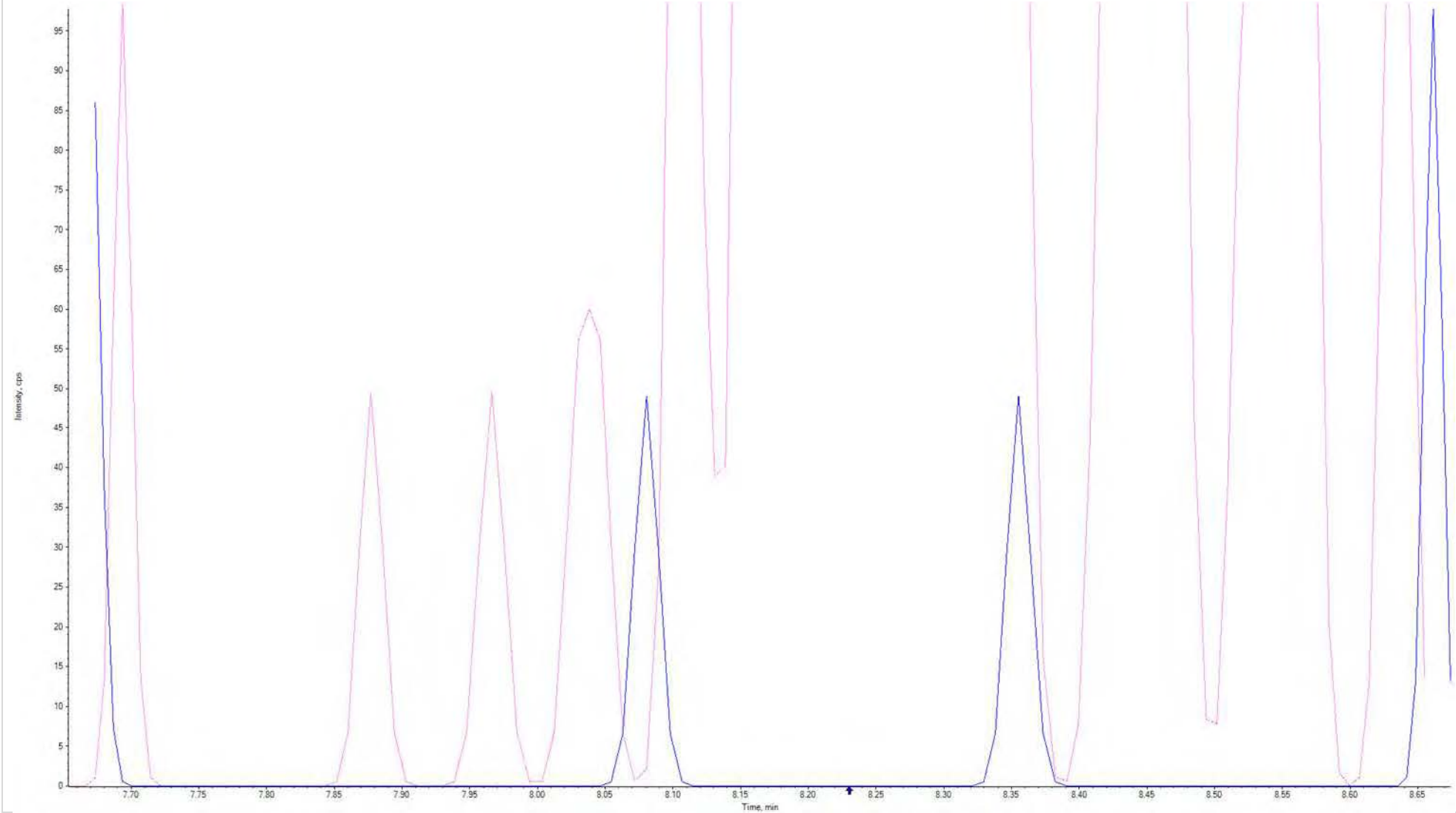
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSAA
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSAA_2
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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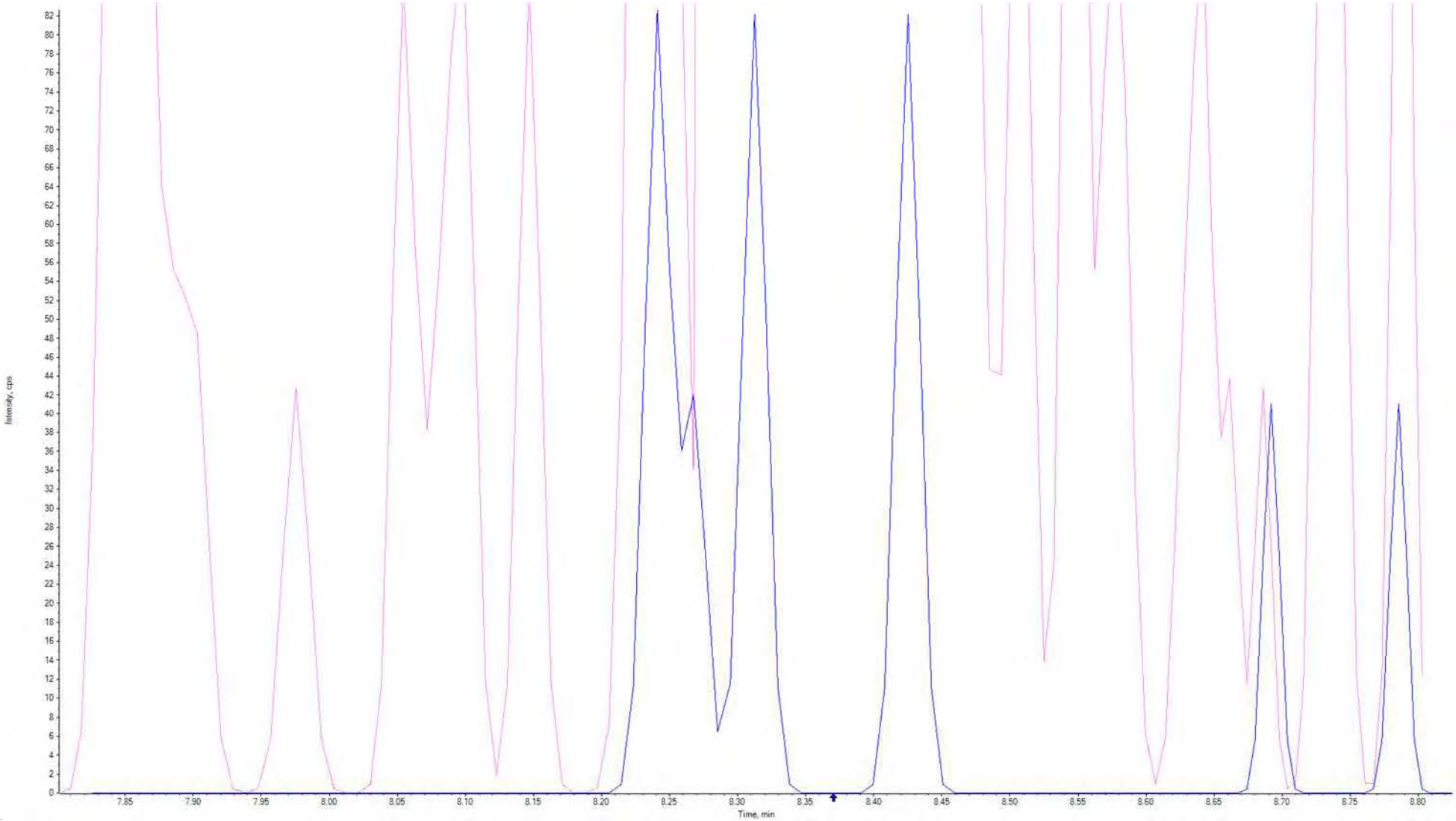
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSAA
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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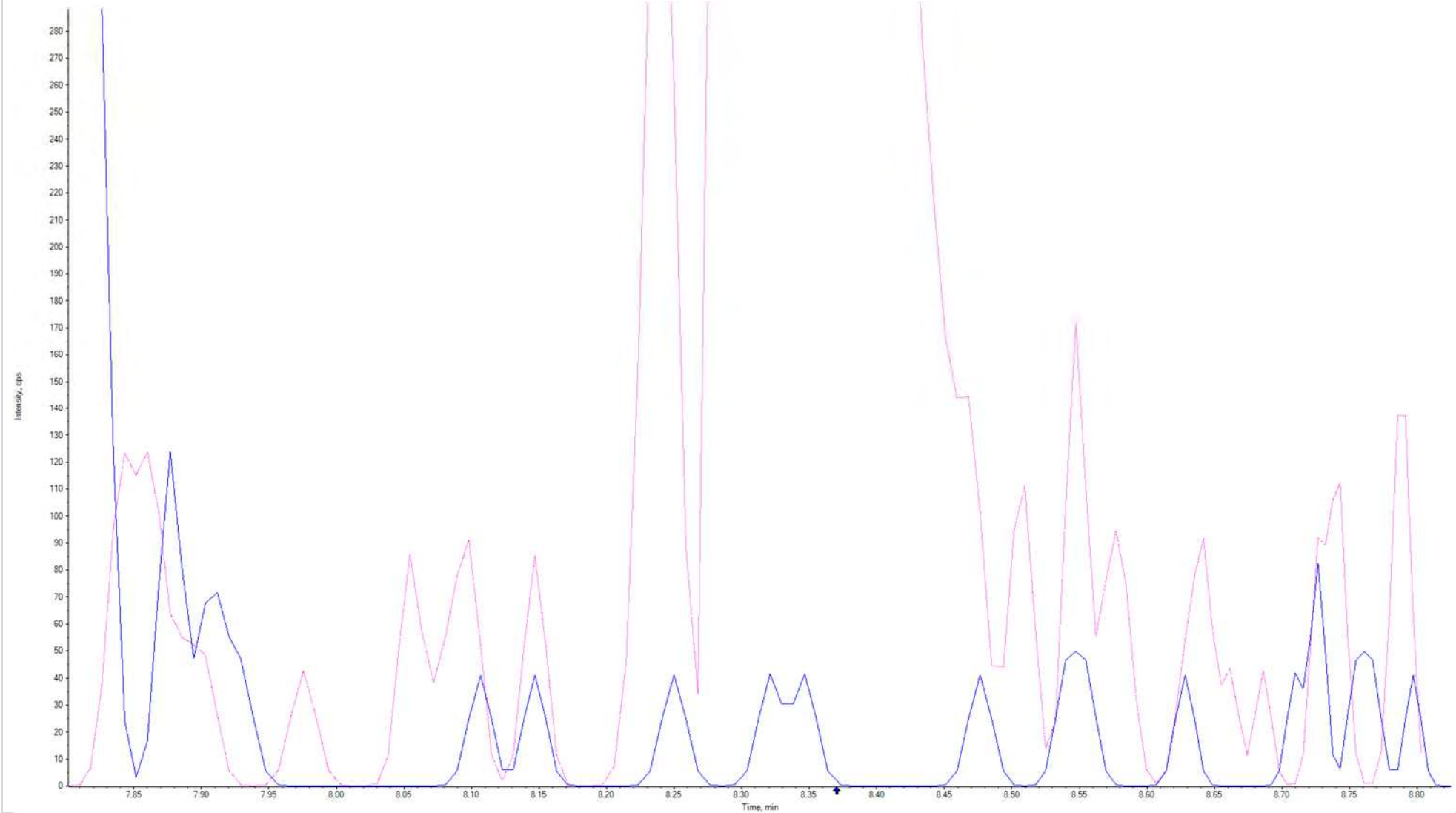
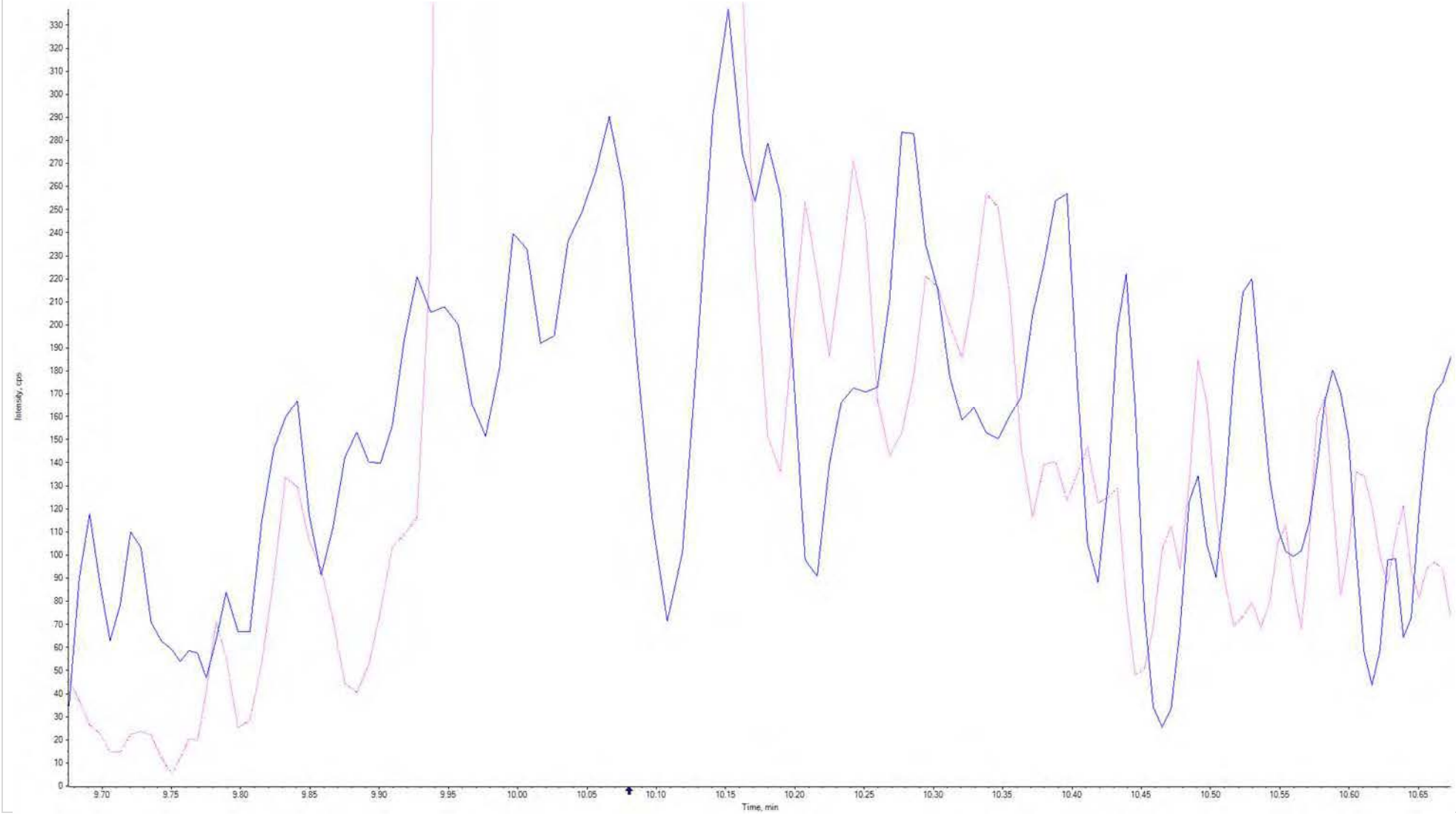
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

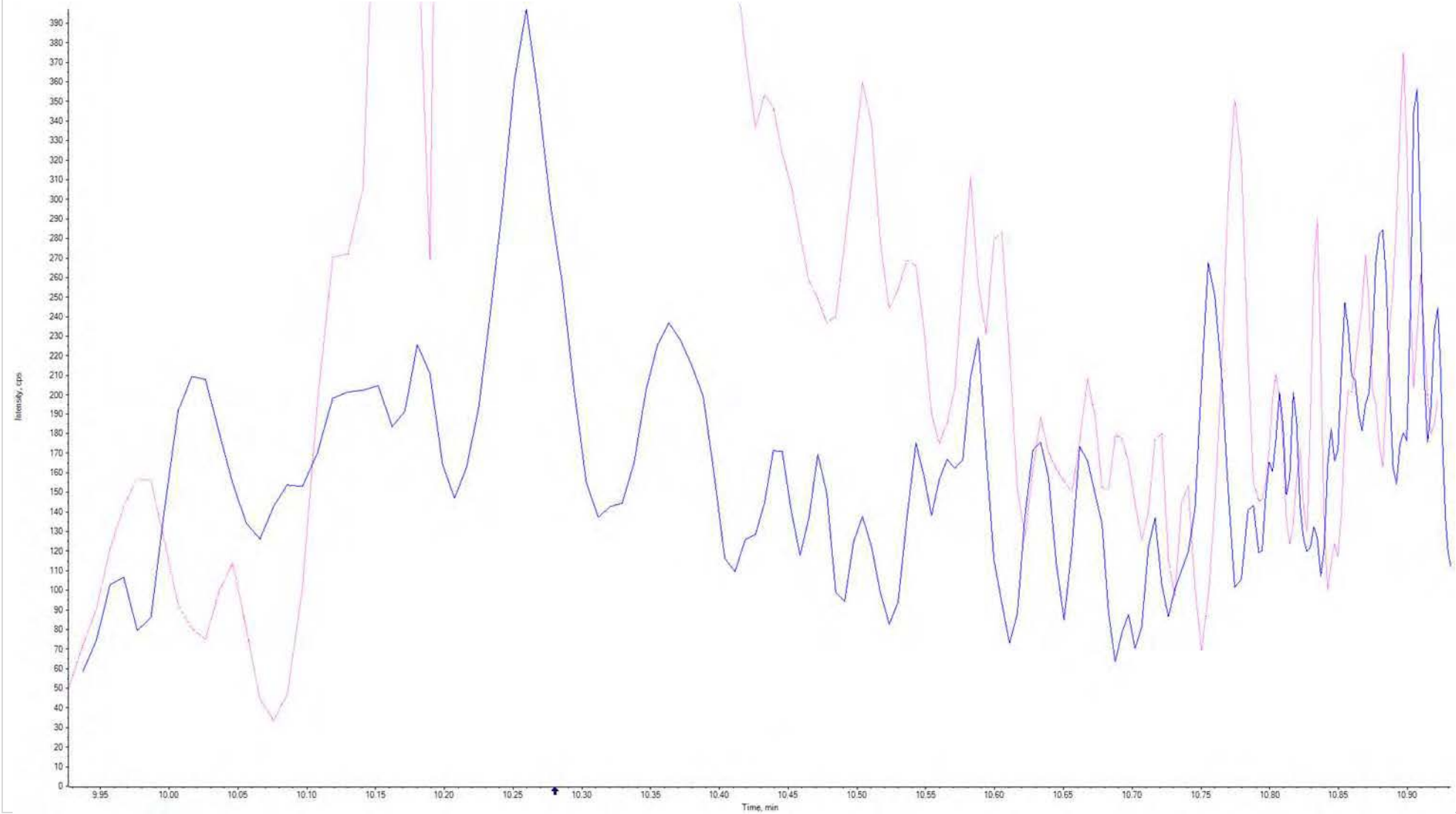
NEtFOSAA_2
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



NMeFOSE
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



NEtFOSE
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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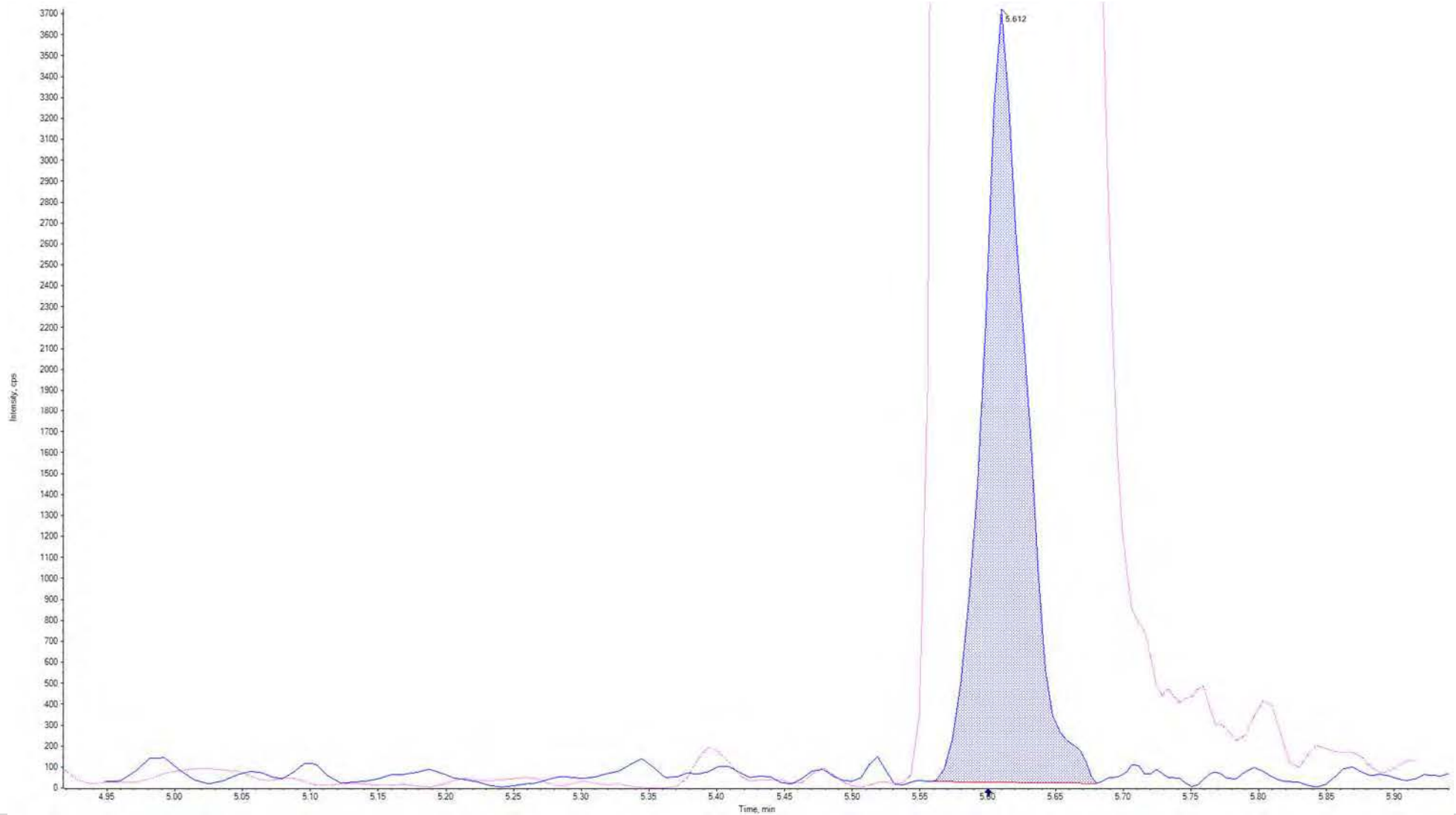
Generated: 9/19/2024 8:04:31 AM

HFPO-DA
Sample: L2450786-13 S/N:632.1 Points Across peak:24



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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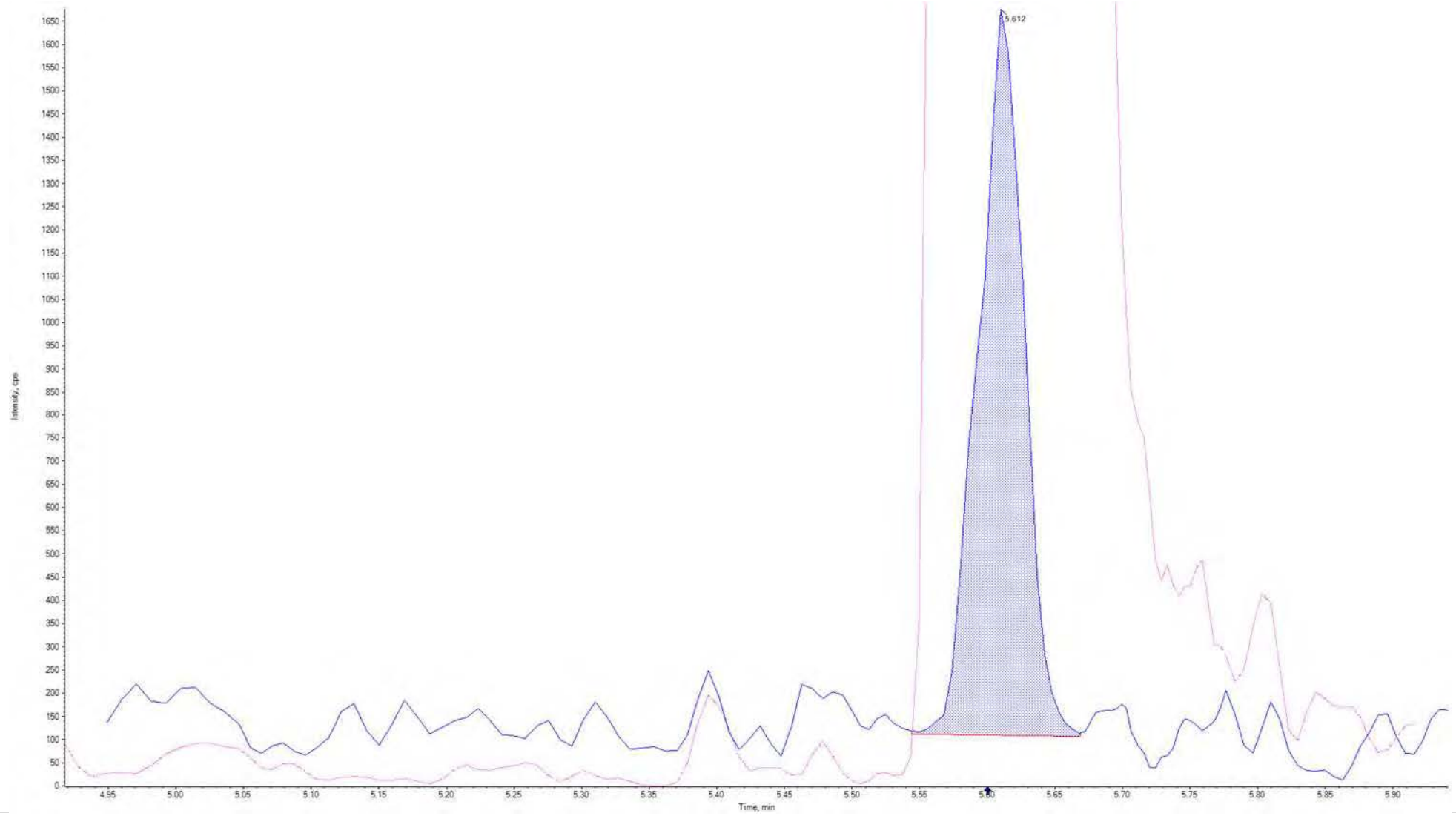
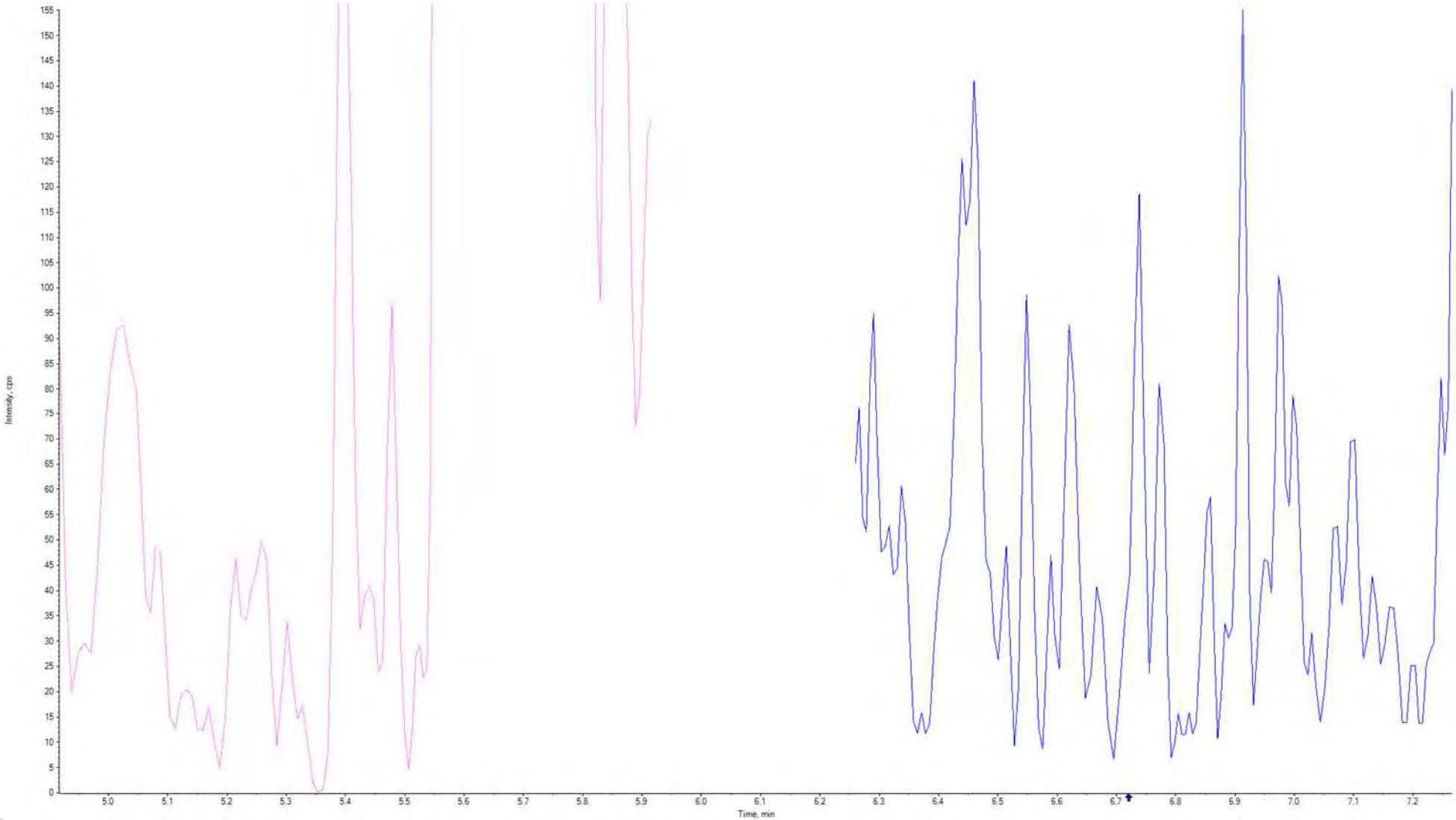
Generated: 9/19/2024 8:04:31 AM

HFPO-DA_2
Sample: L2450786-13 S/N:153.3 Points Across peak:24

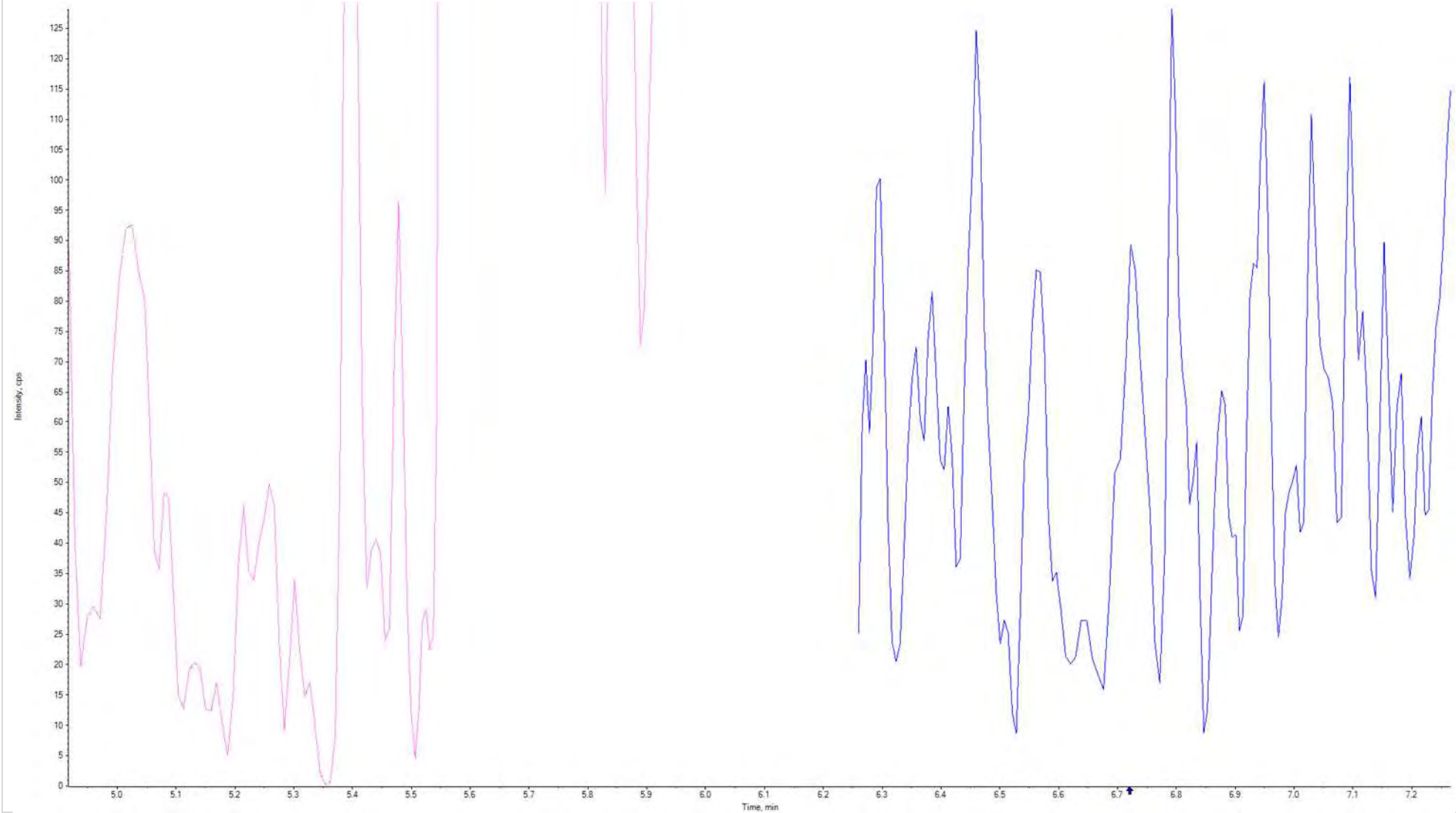


ADONA
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



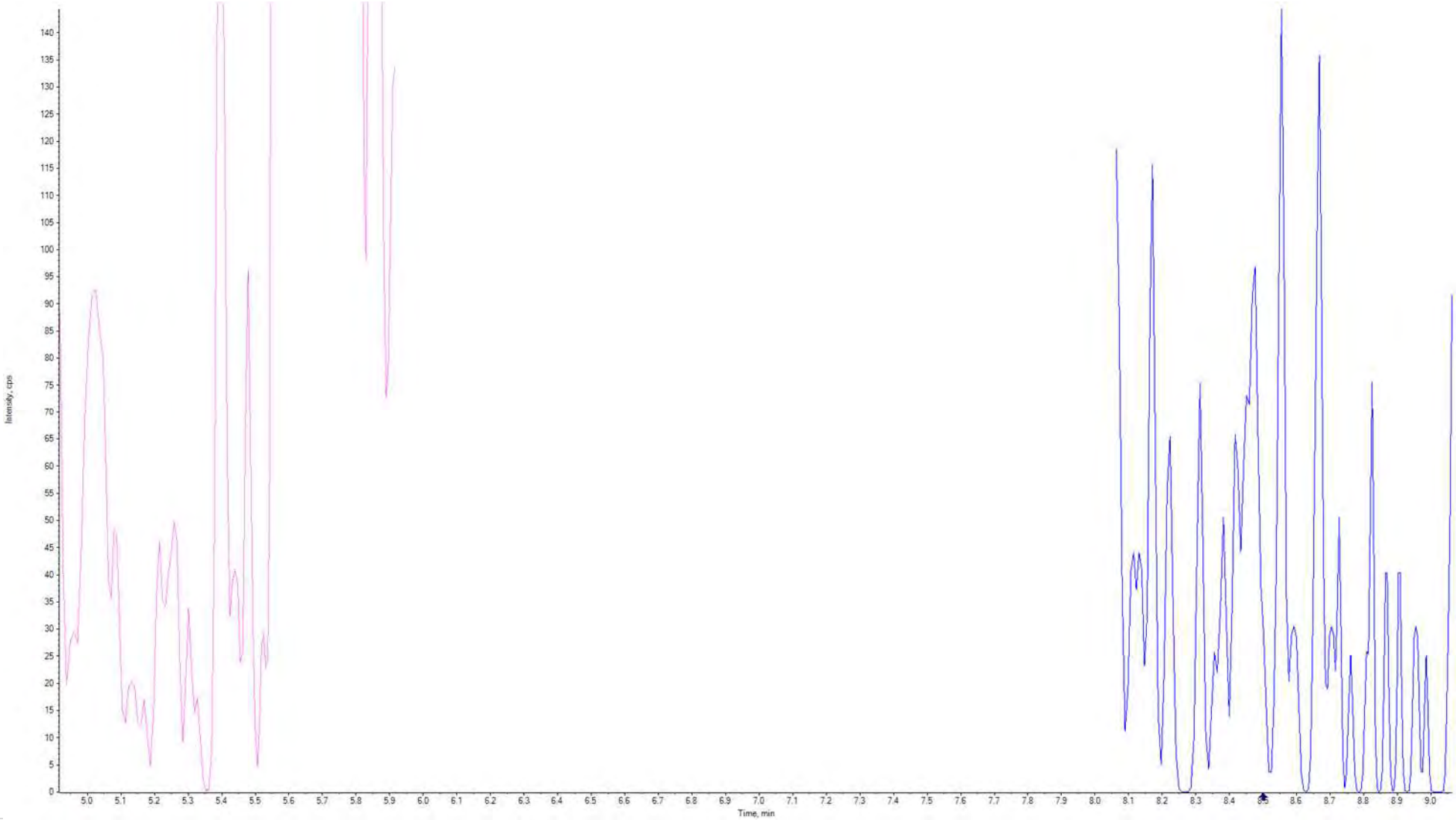
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

ADONA_2
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

9Cl-PF3ONS
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

9Cl-PF3ONS_2
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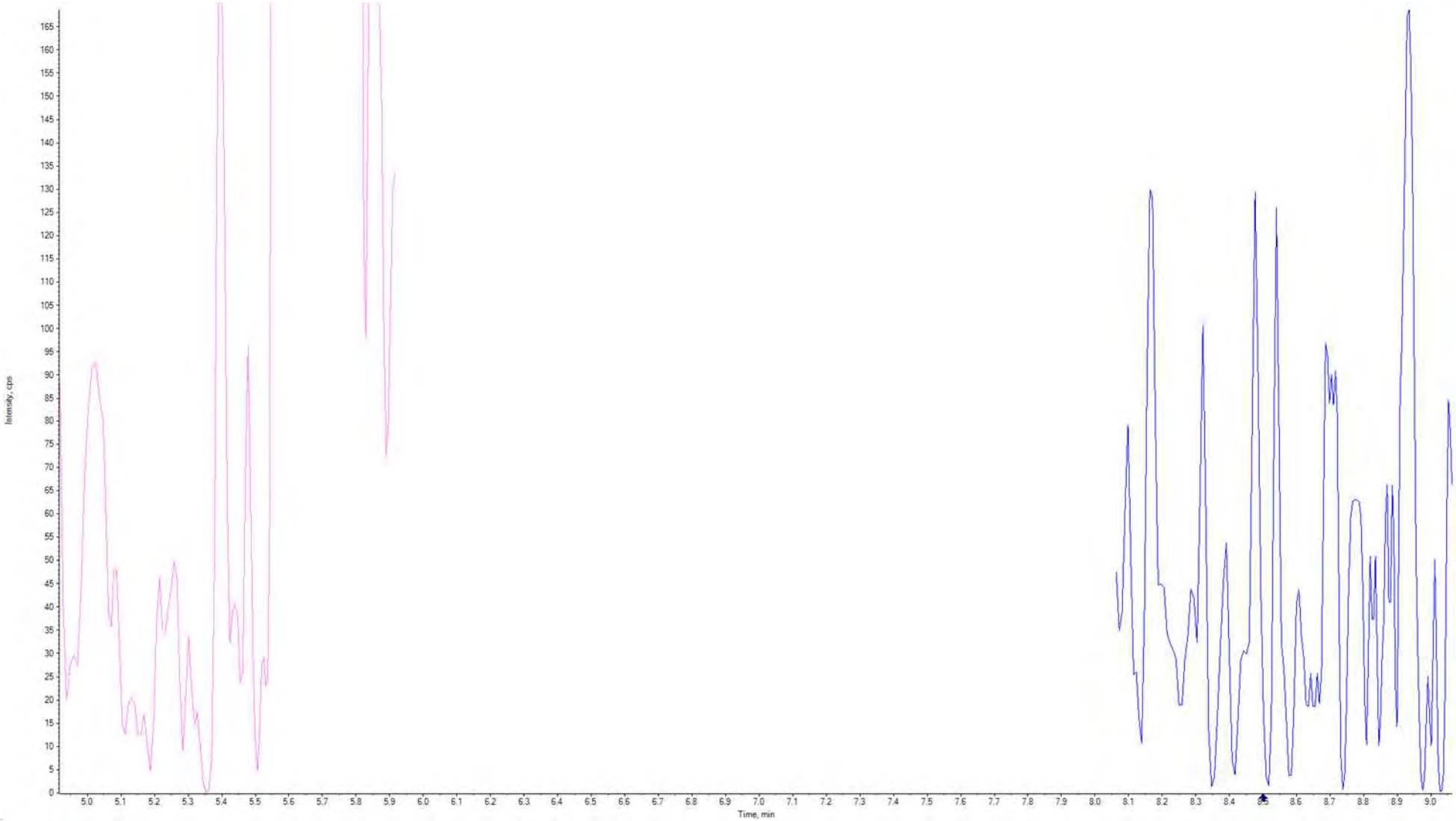

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

11Cl-PF3OUdS
Sample: L2450786-13 S/N:N/A Points Across peak:N/A

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

11Cl-PF3OUdS_2
Sample: L2450786-13 S/N:N/A Points Across peak:N/A

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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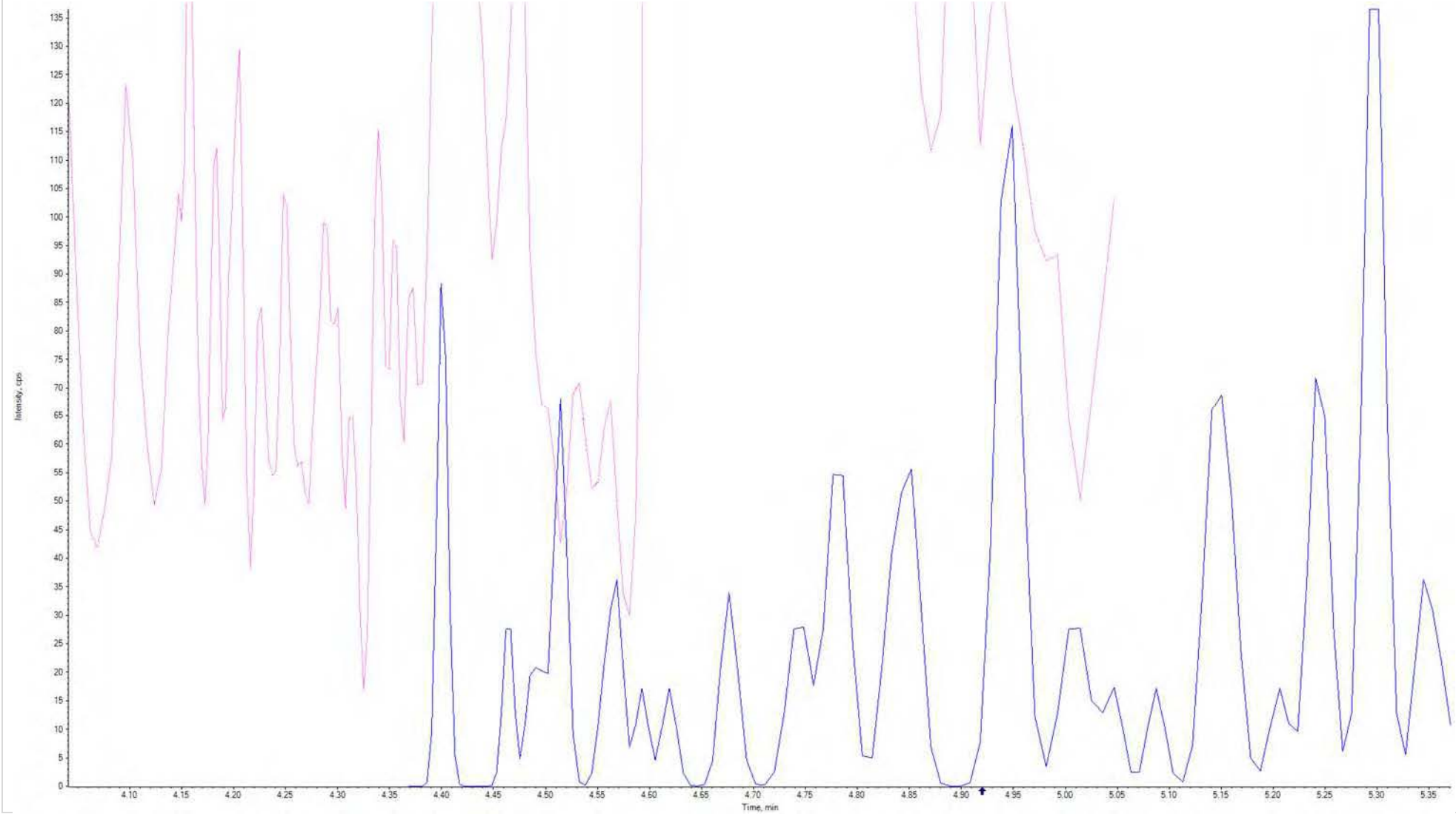
3:3FTCA
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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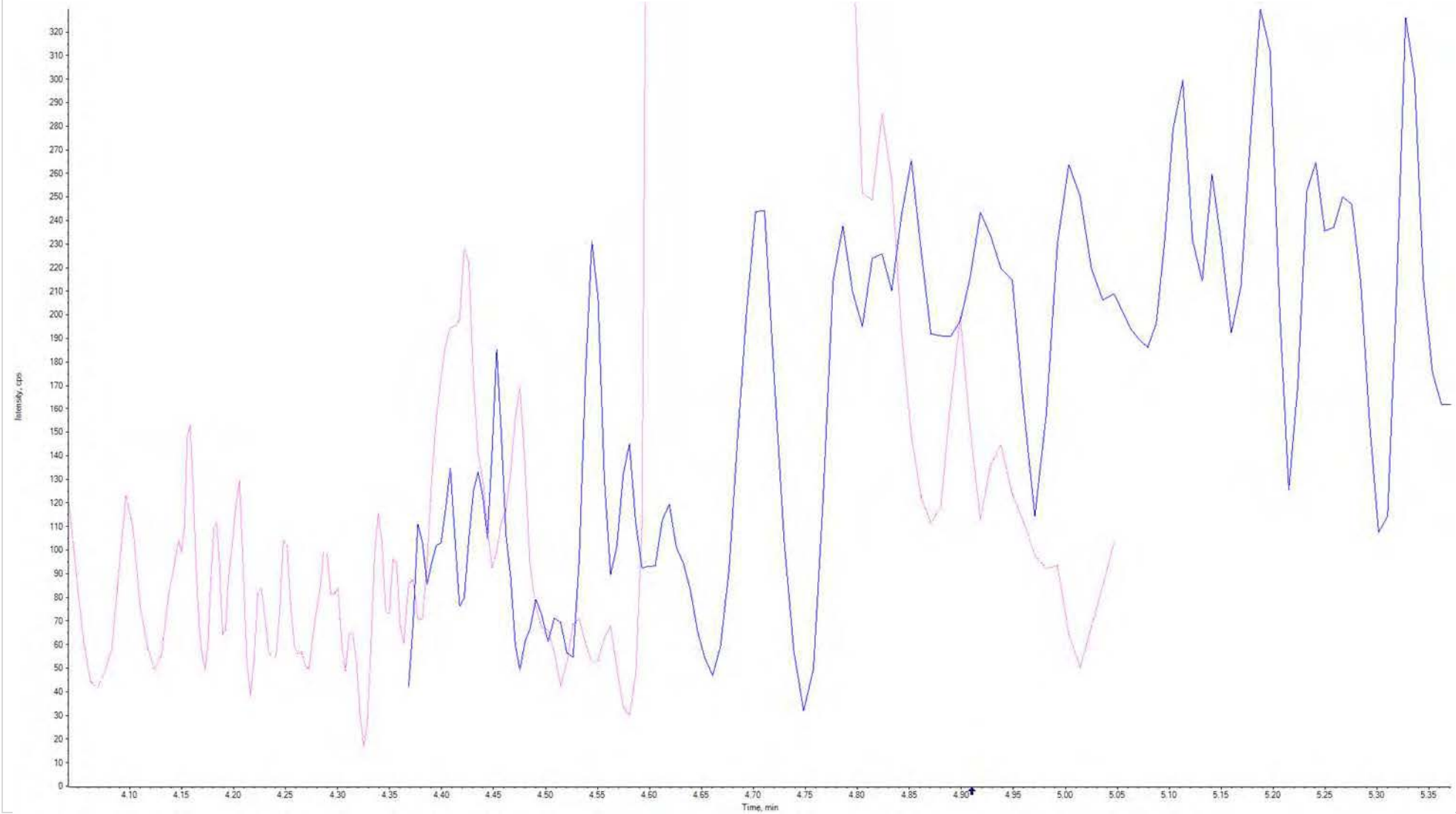
3:3FTCA_2
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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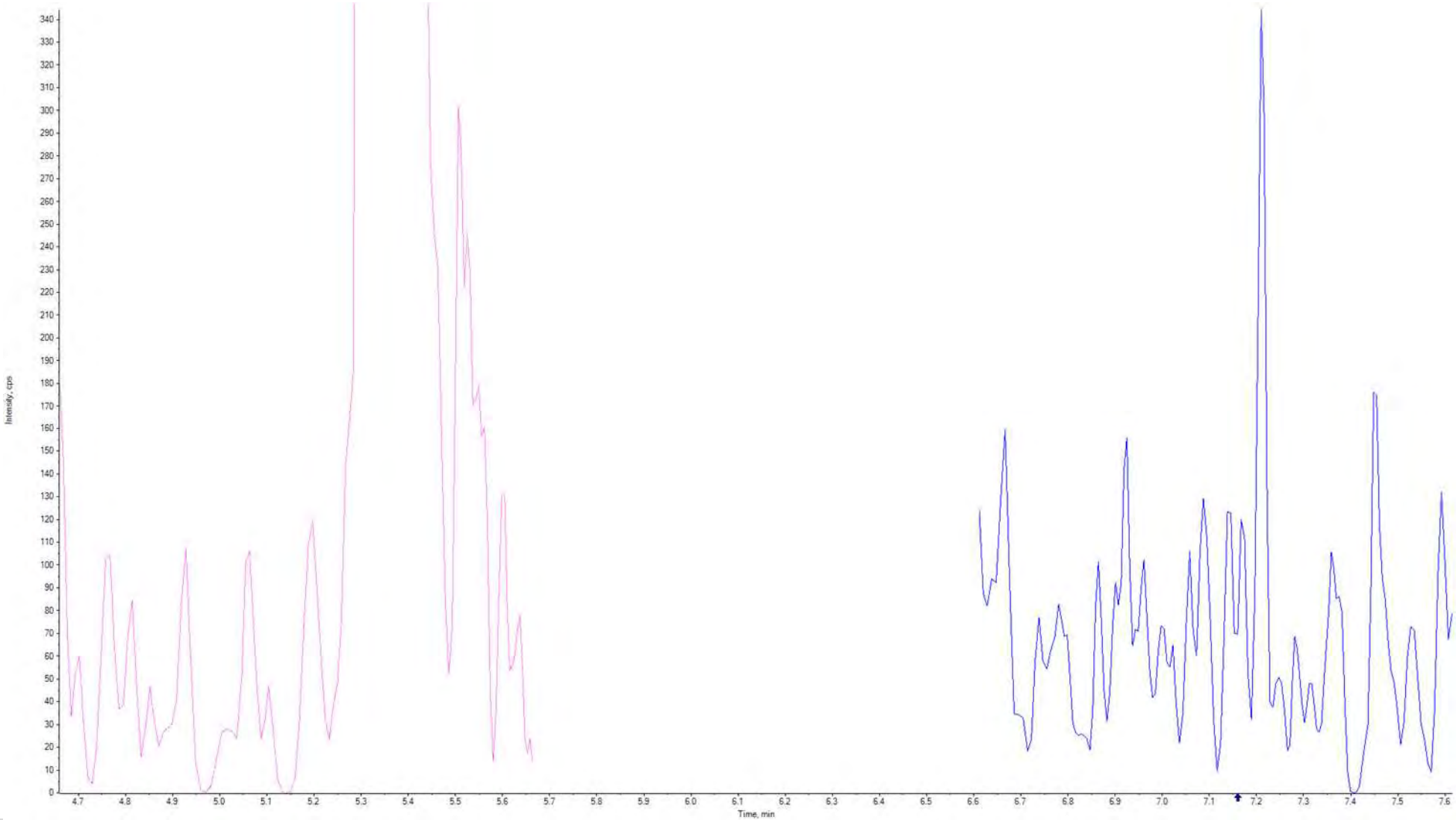
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

5:3FTCA
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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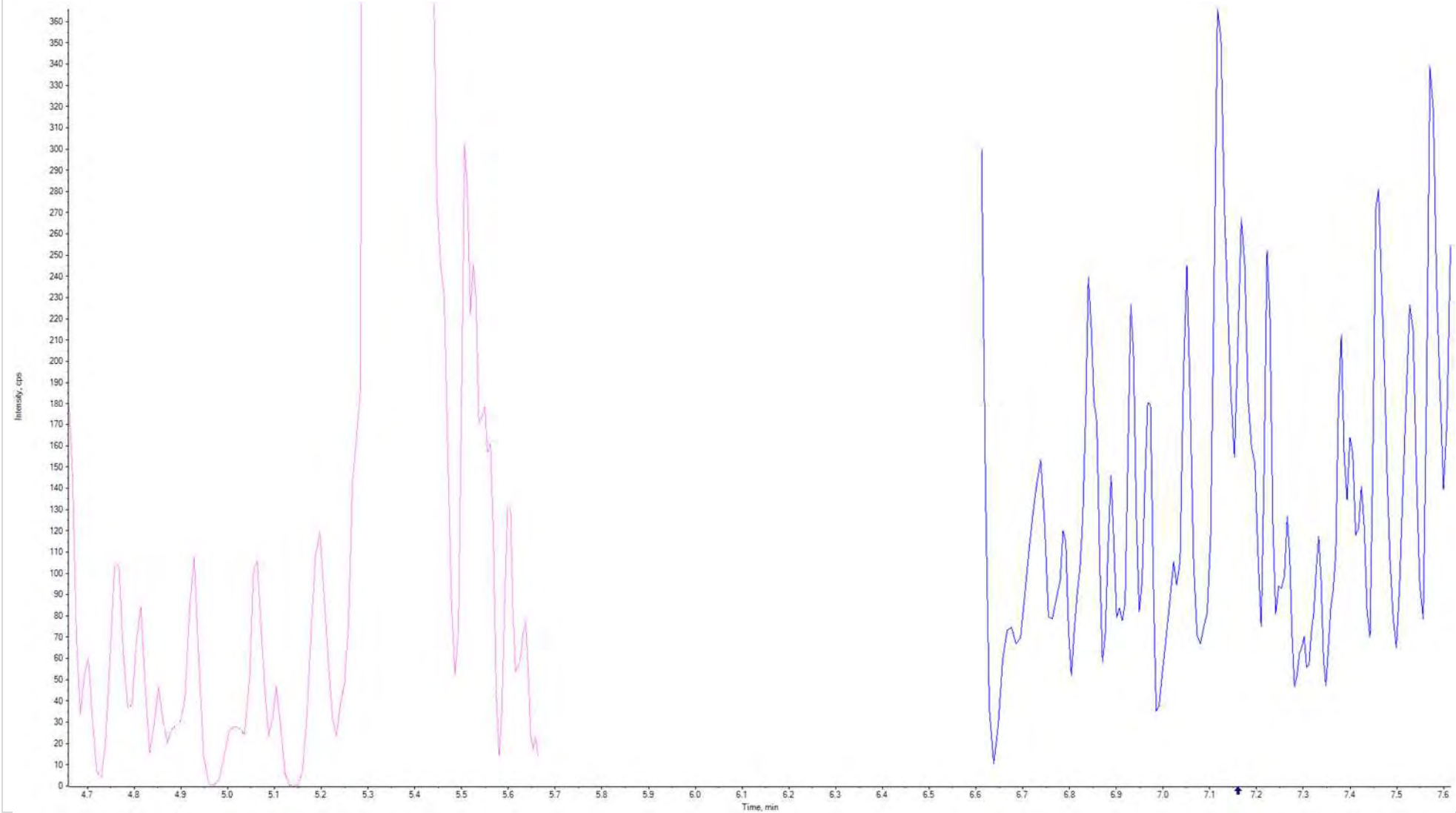
5:3FTCA_2
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Last Altered: 9/19/2024 11:40:51 AM
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7:3FTCA
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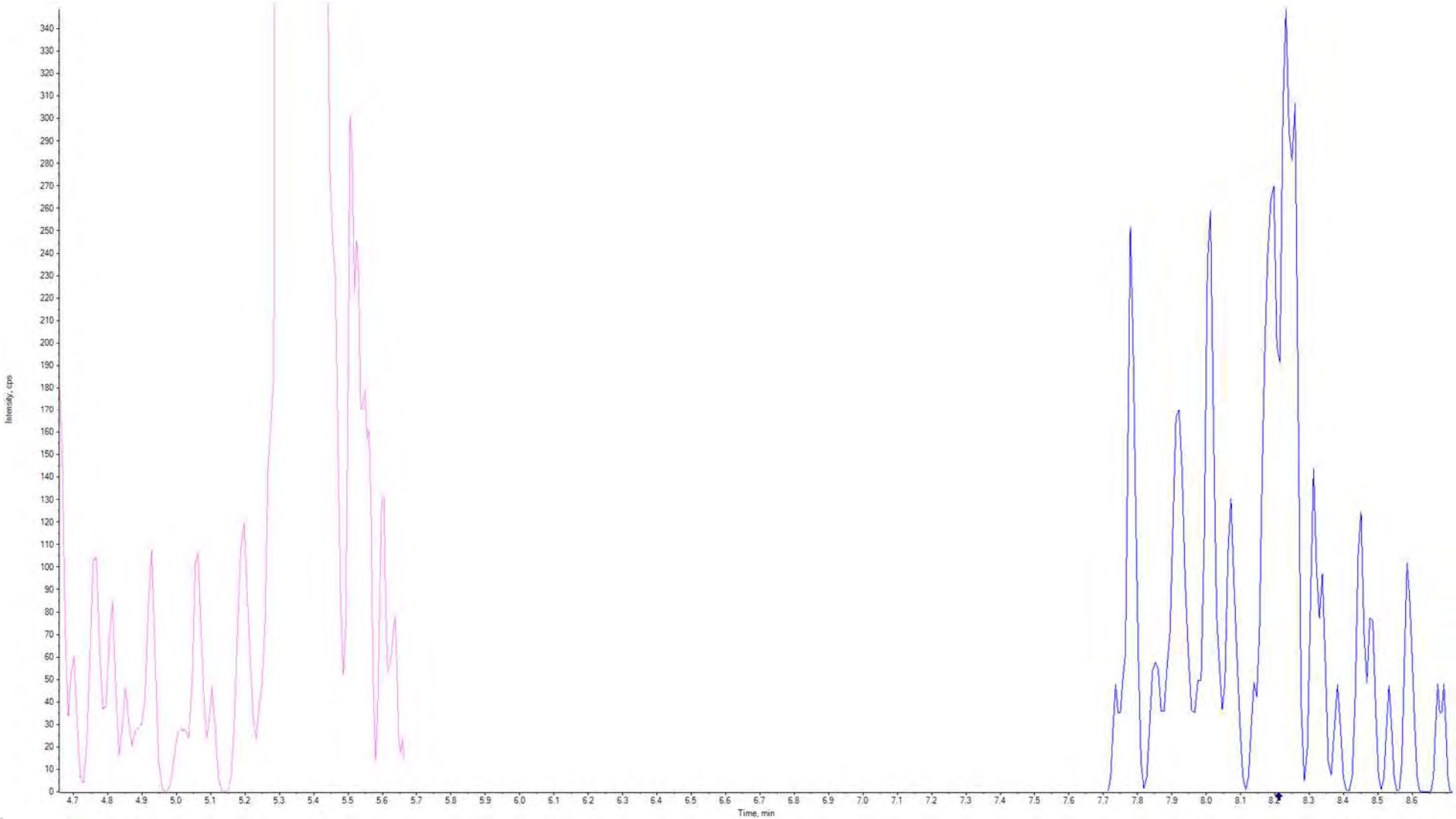

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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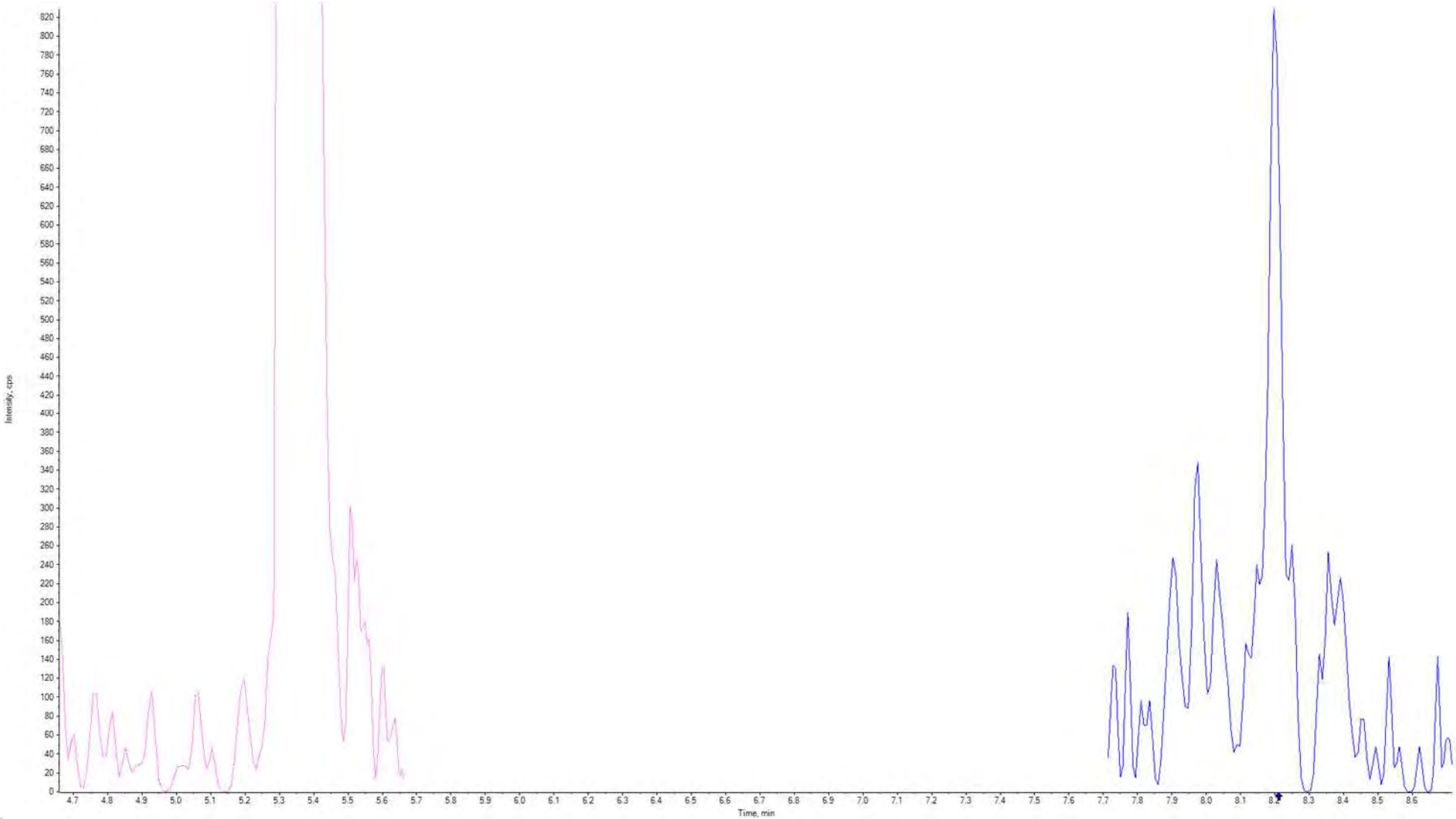
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

7:3FTCA_2
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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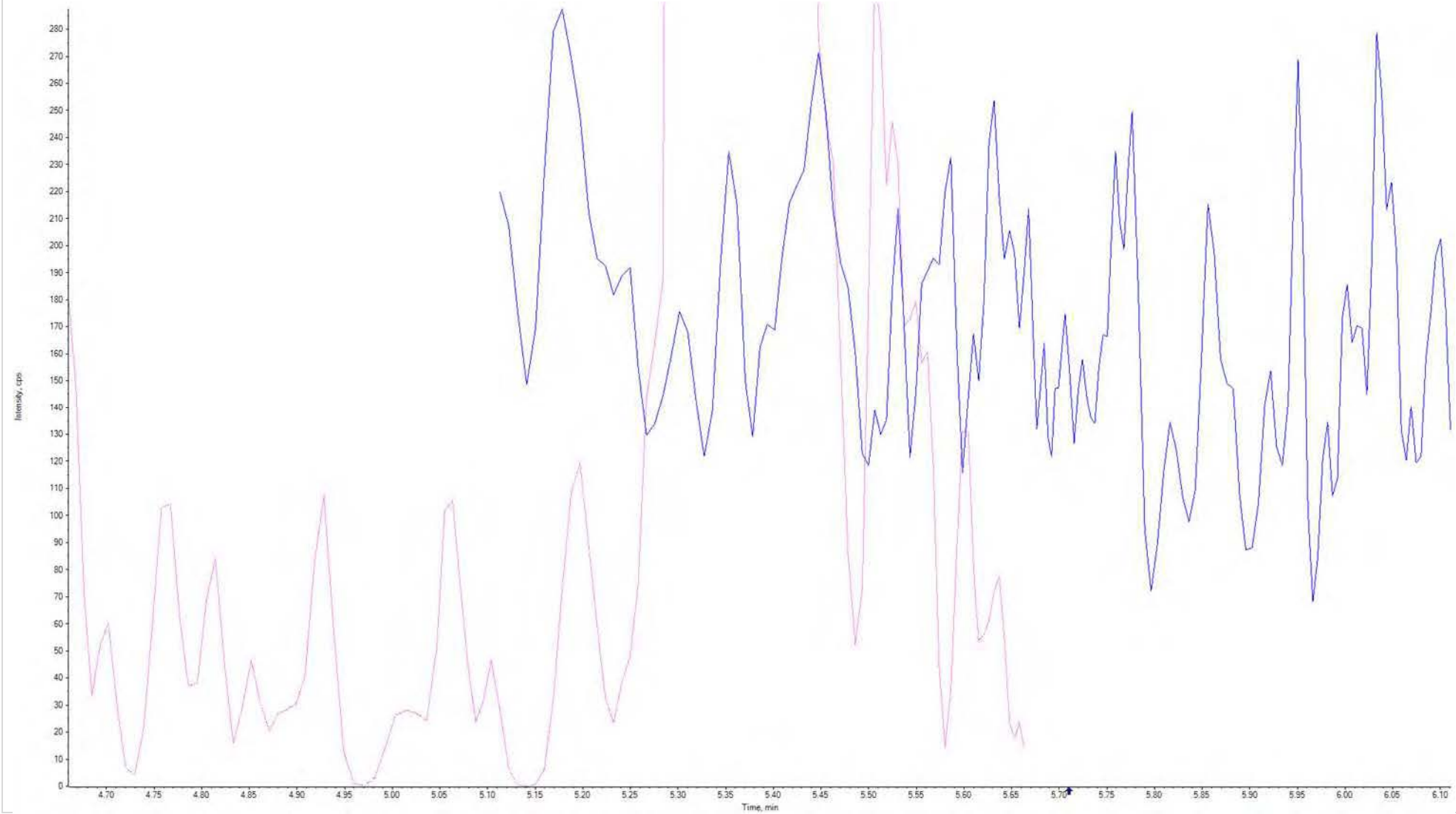
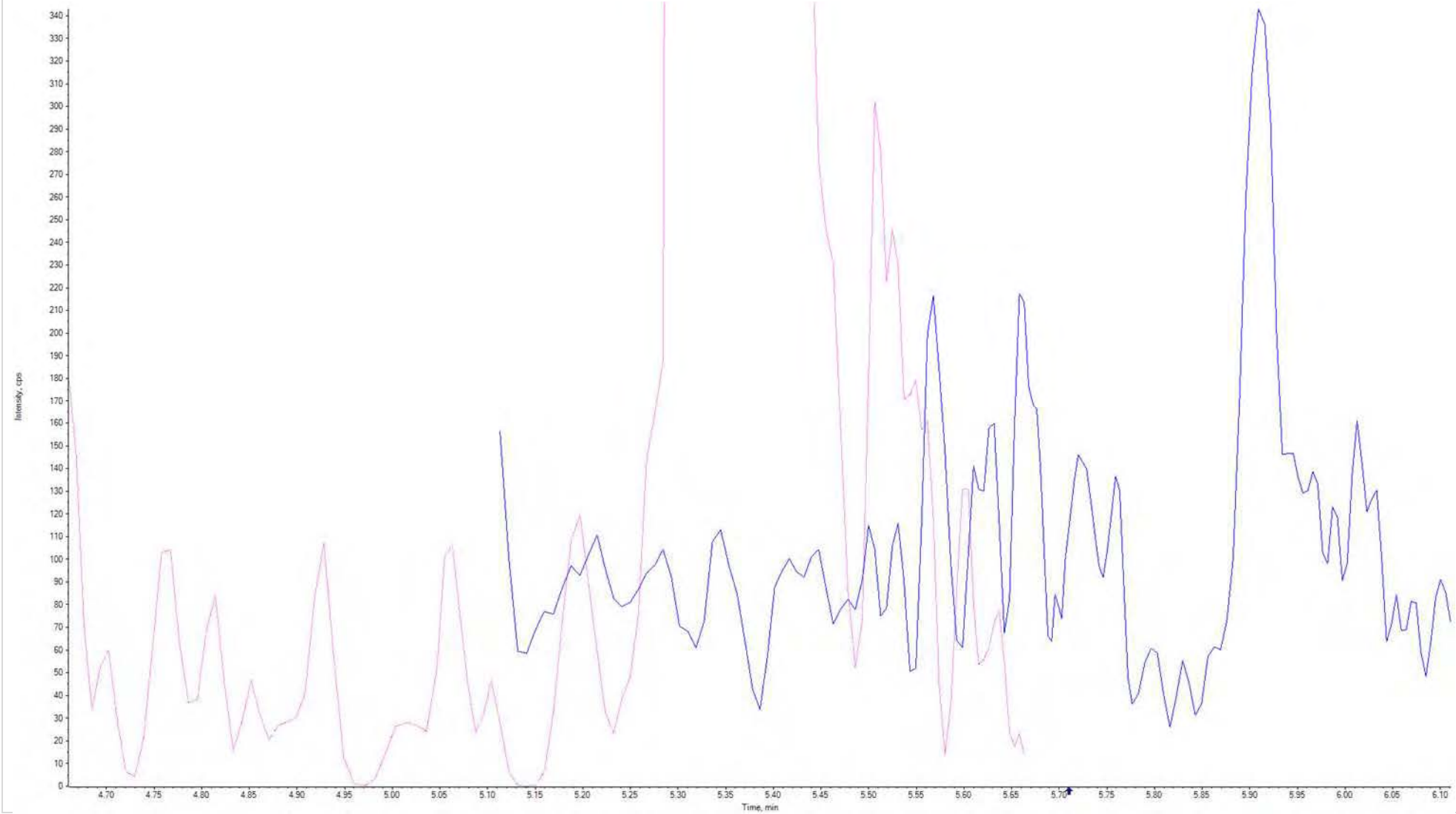
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFEESA
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



PFEESA_2
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Generated: 9/19/2024 8:04:31 AM

PFMPA
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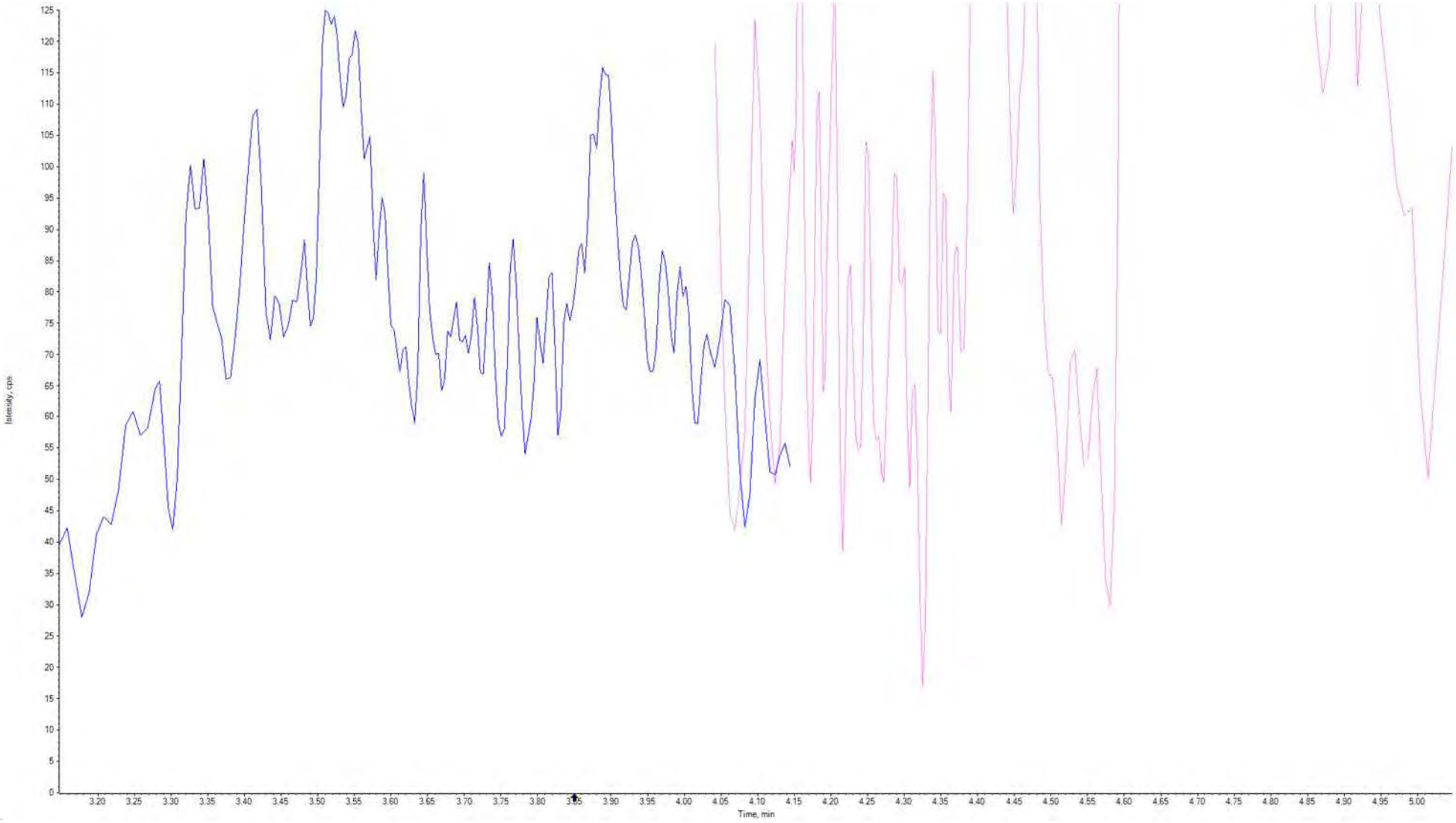

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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PFMBA
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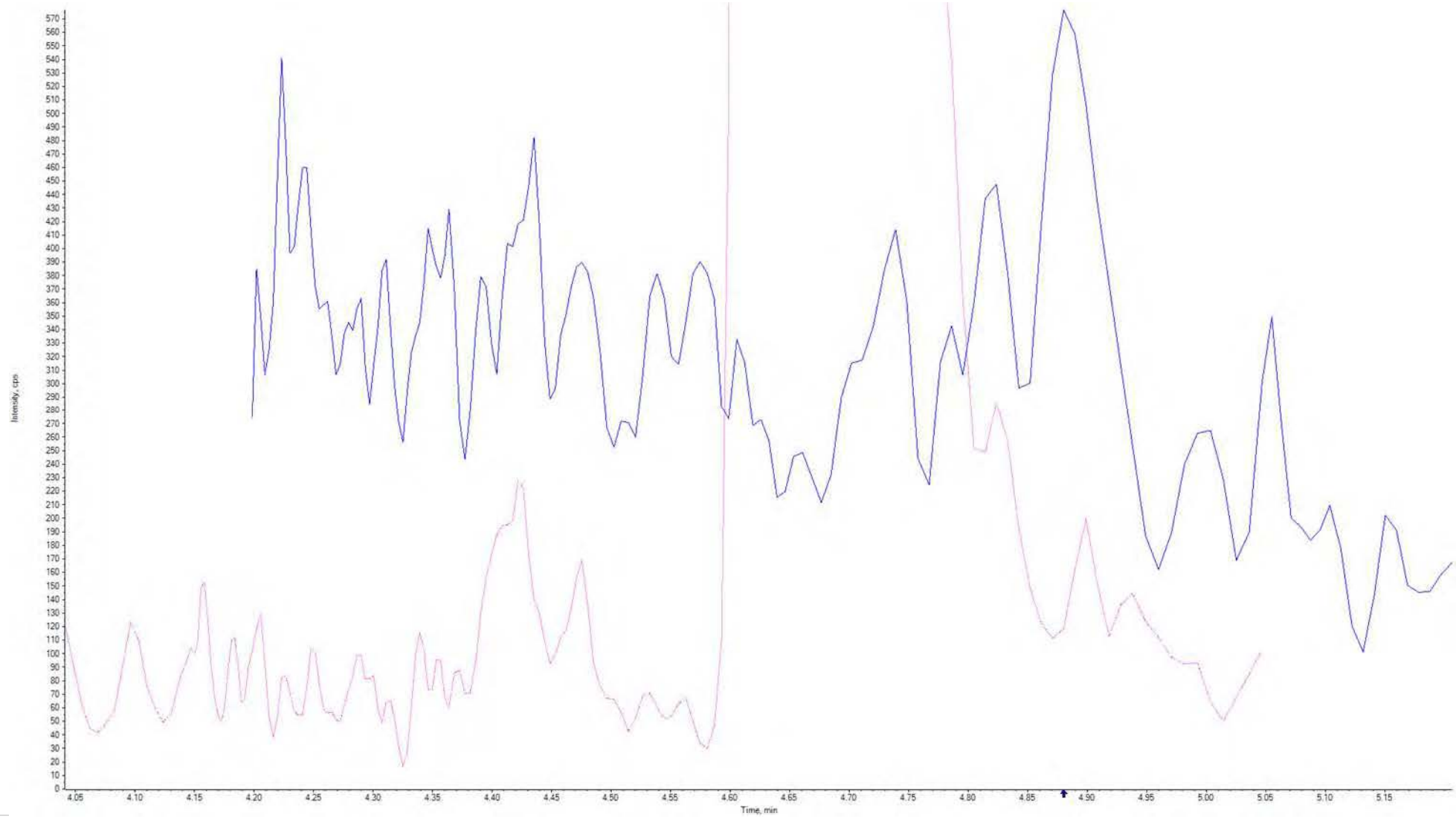
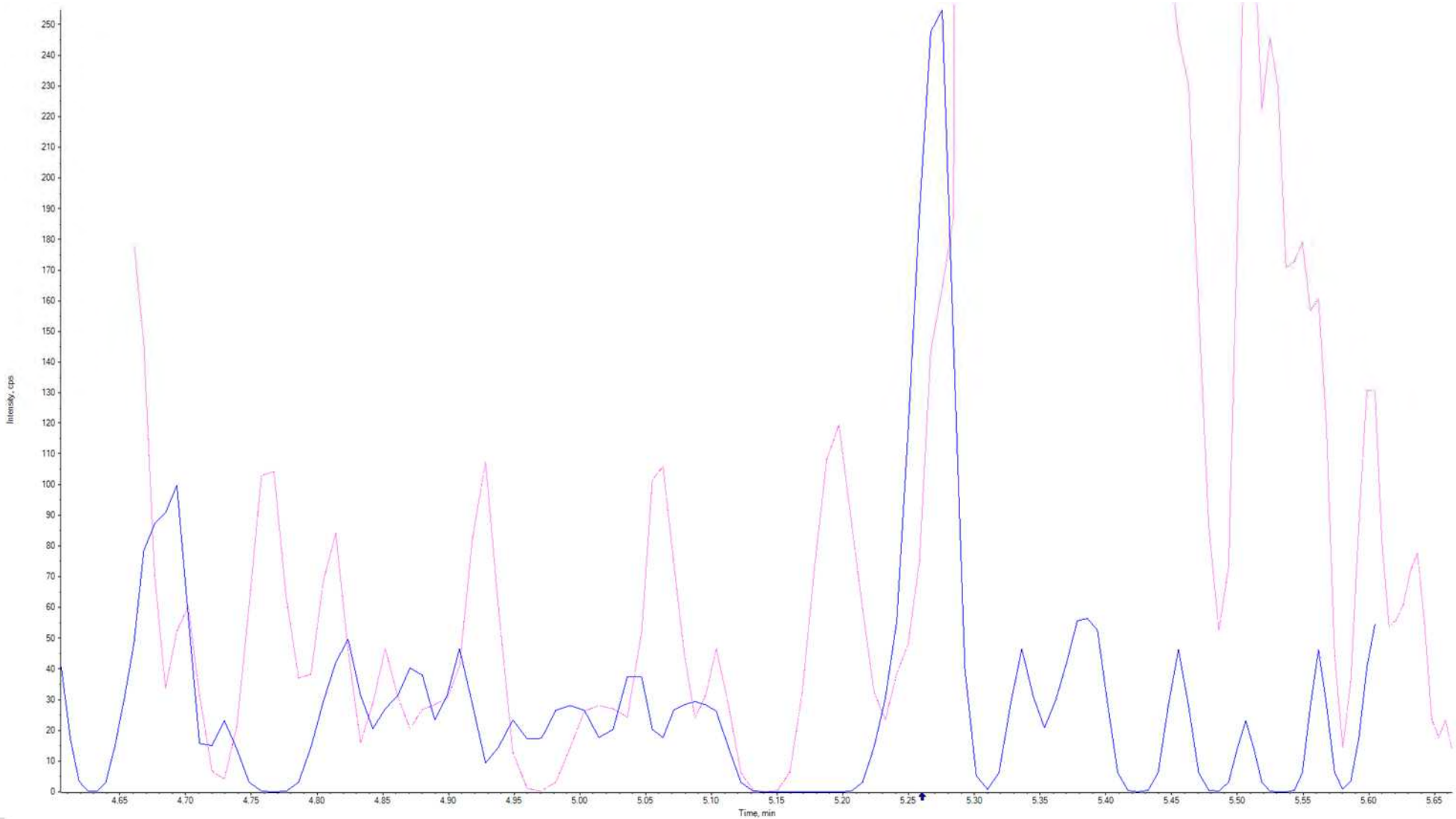


NFDHA
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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NFDHA_2
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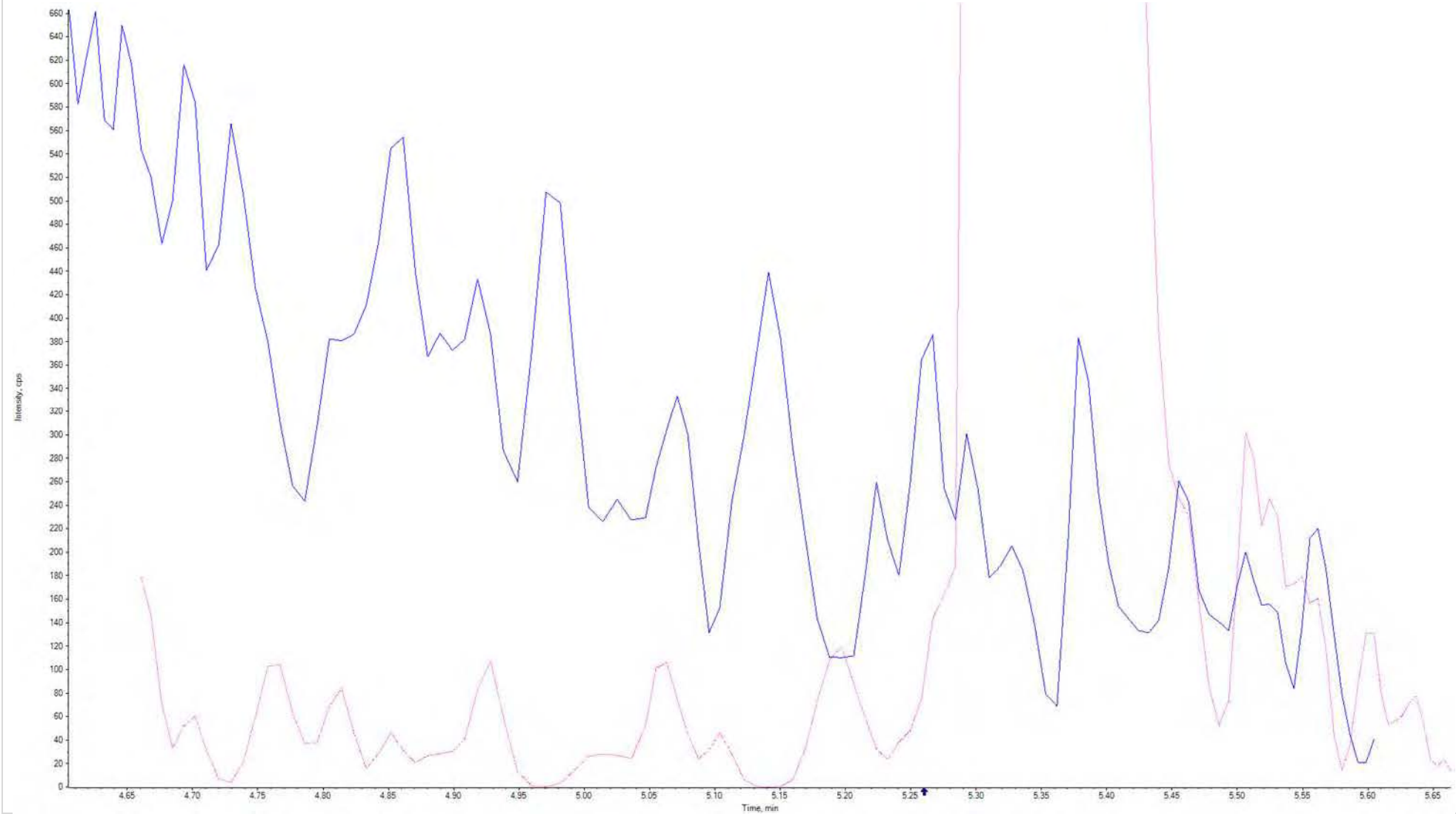

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Generated: 9/19/2024 8:04:31 AM

TDCA
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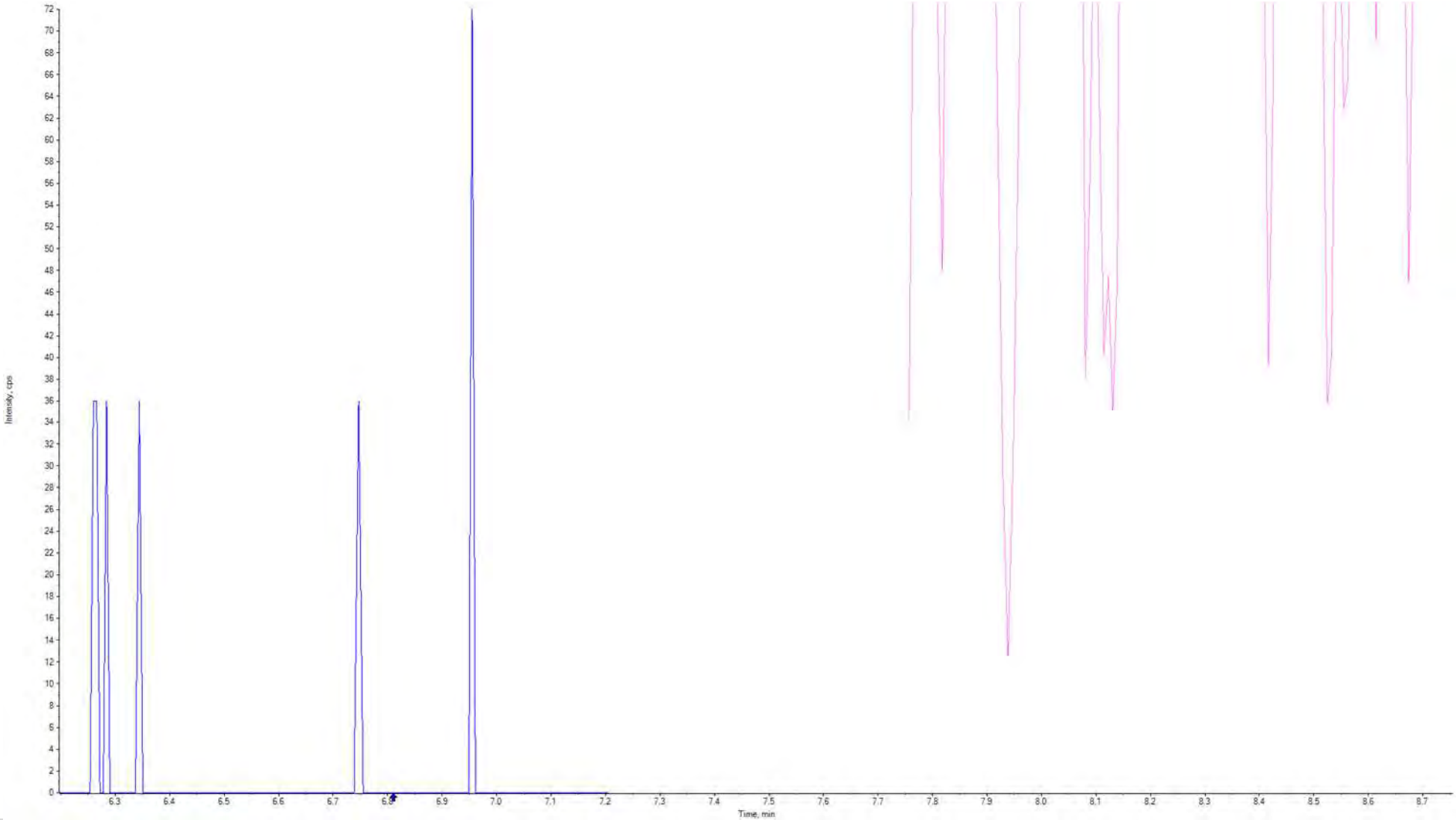

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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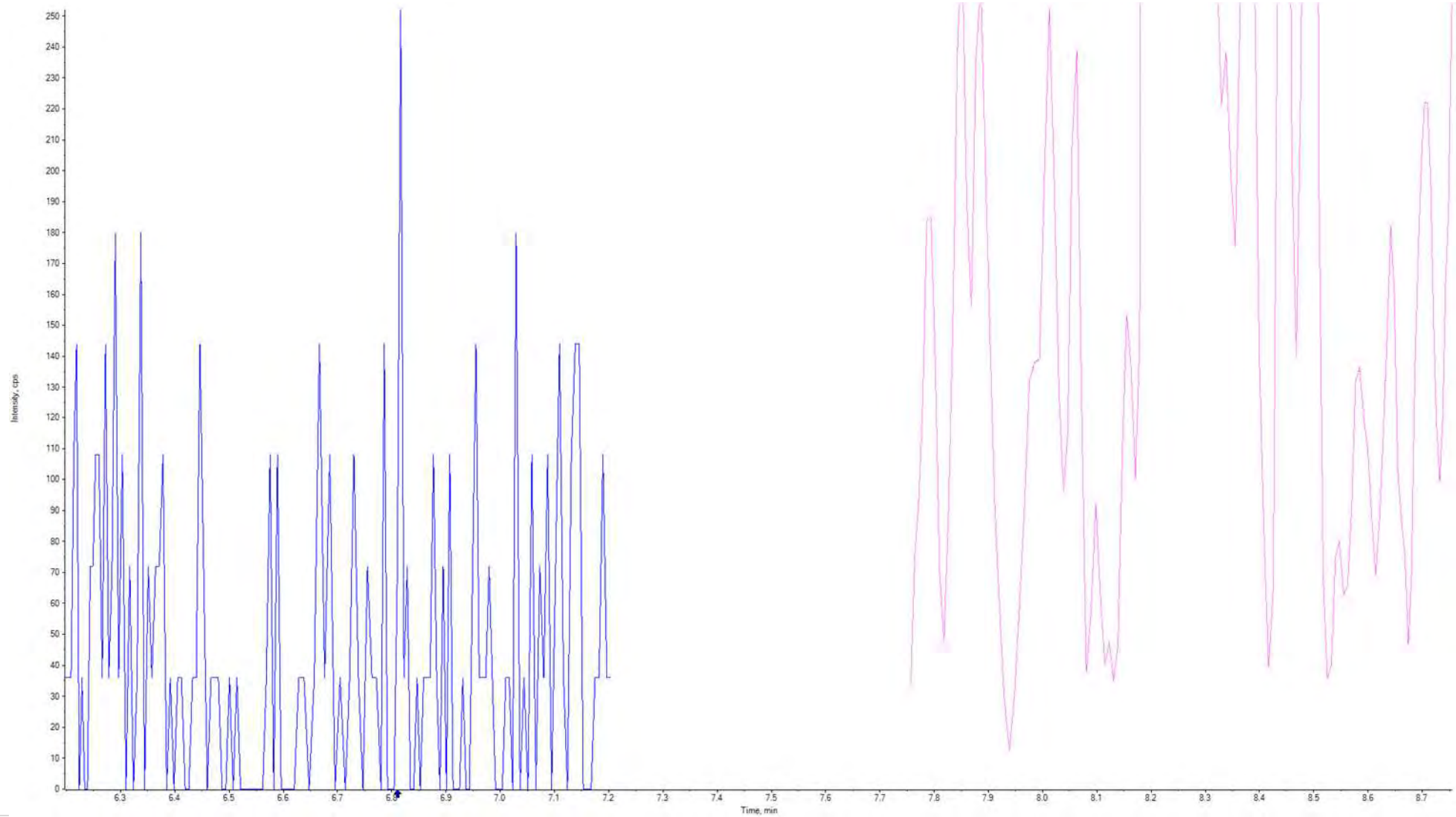
Generated: 9/19/2024 8:04:31 AM

TDCA_2
Sample: L2450786-13 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Generated: 9/19/2024 8:04:31 AM

13C2D4-4:2FTS
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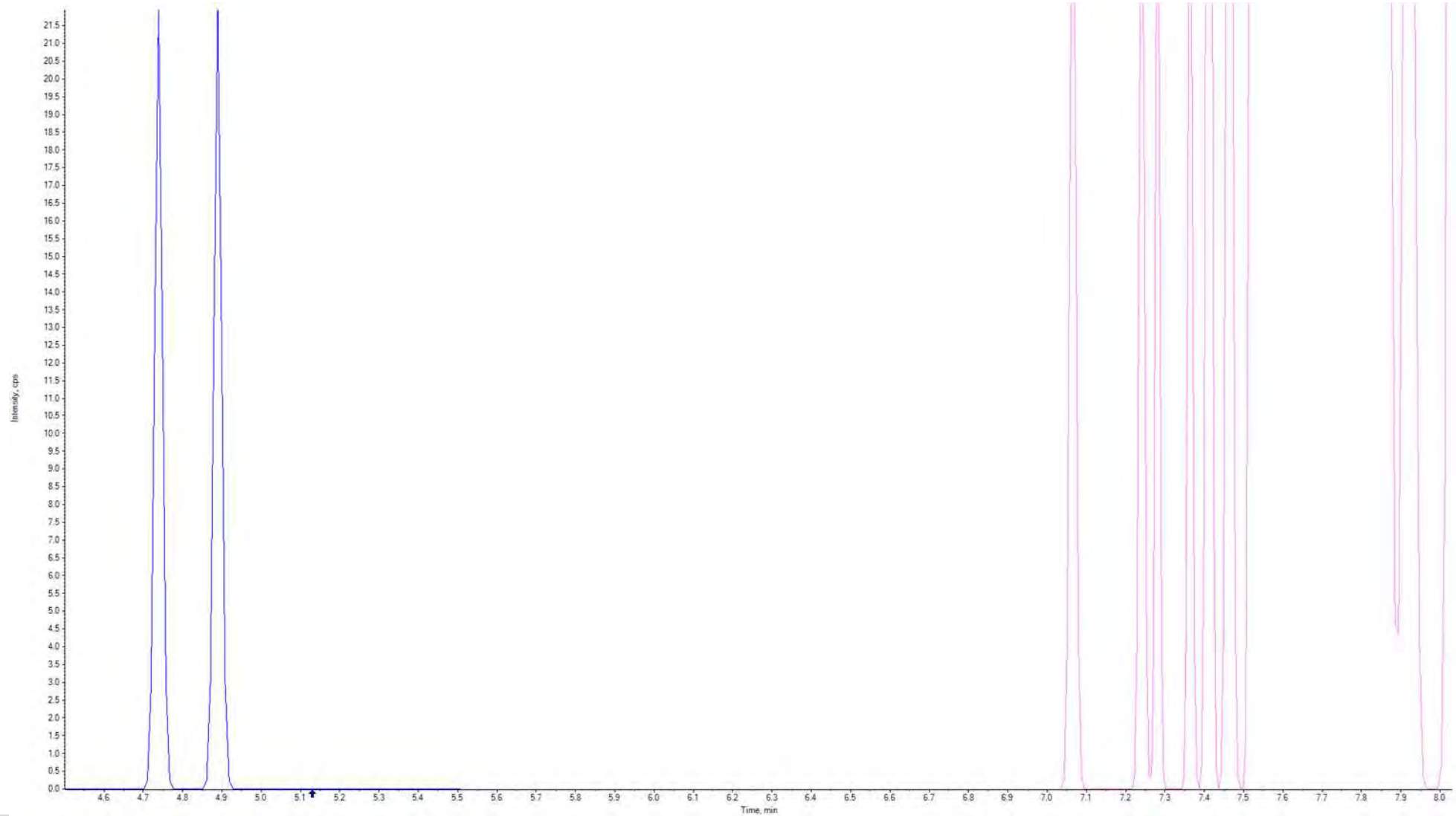

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C2-PFOA
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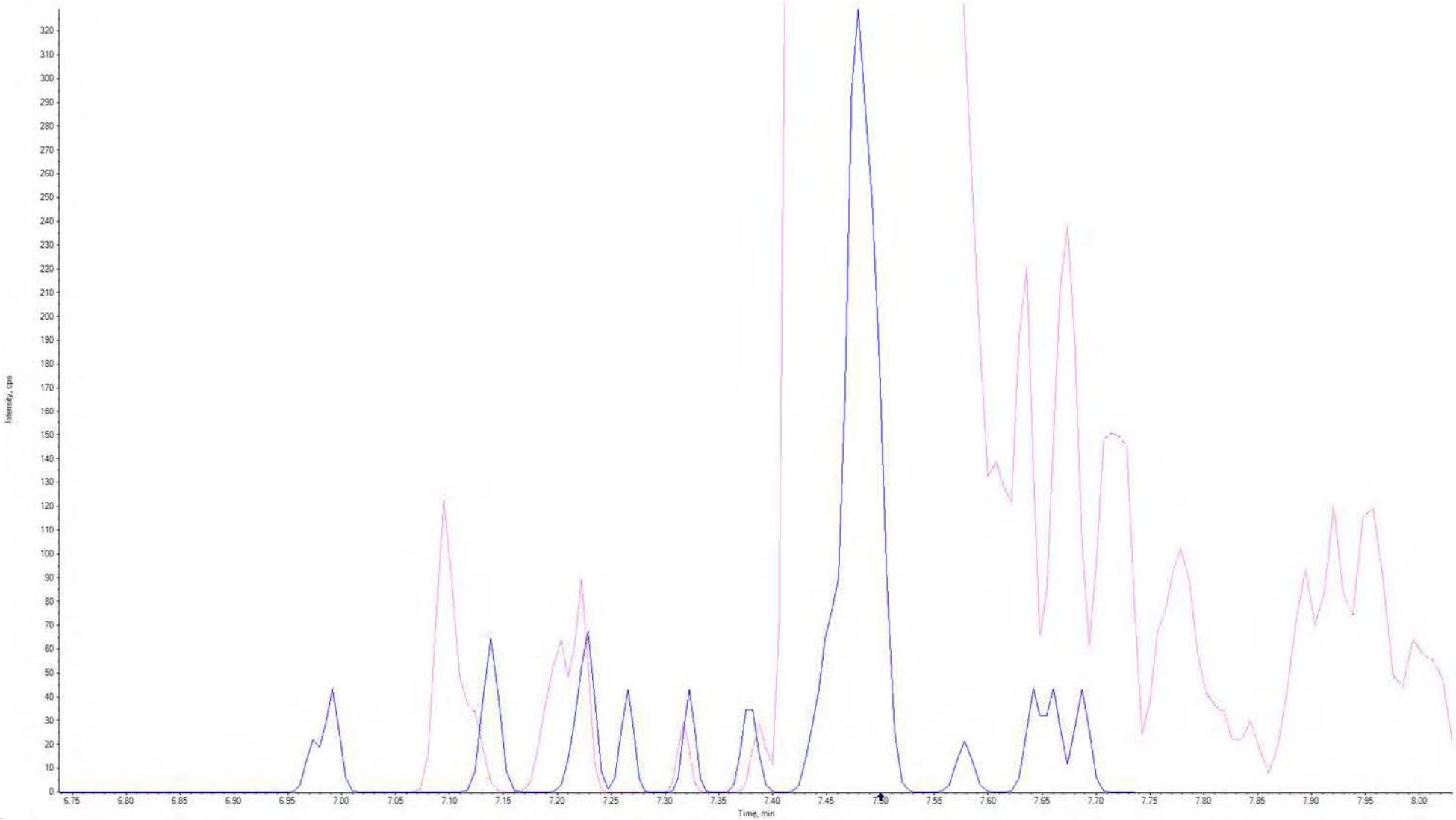
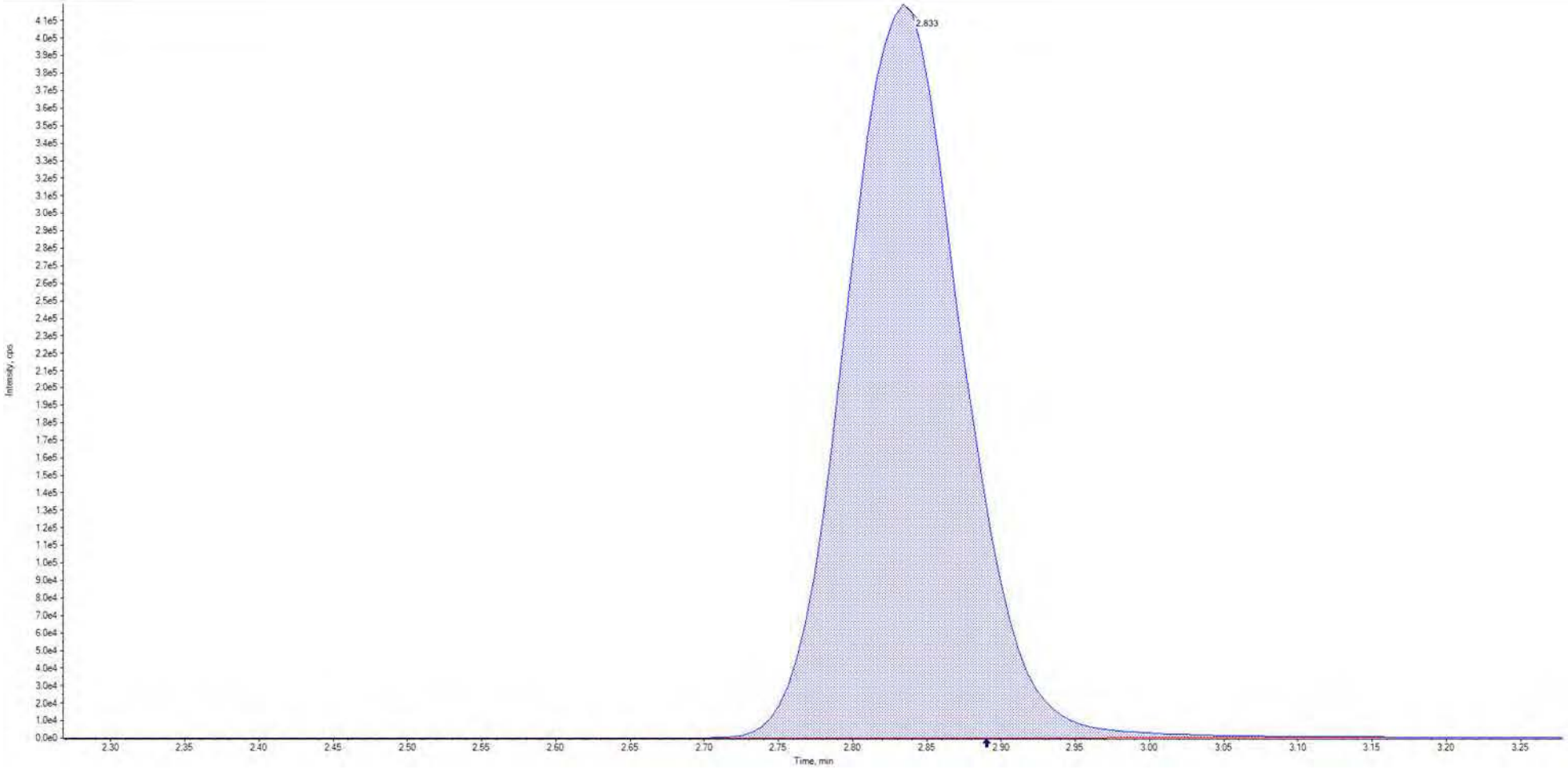
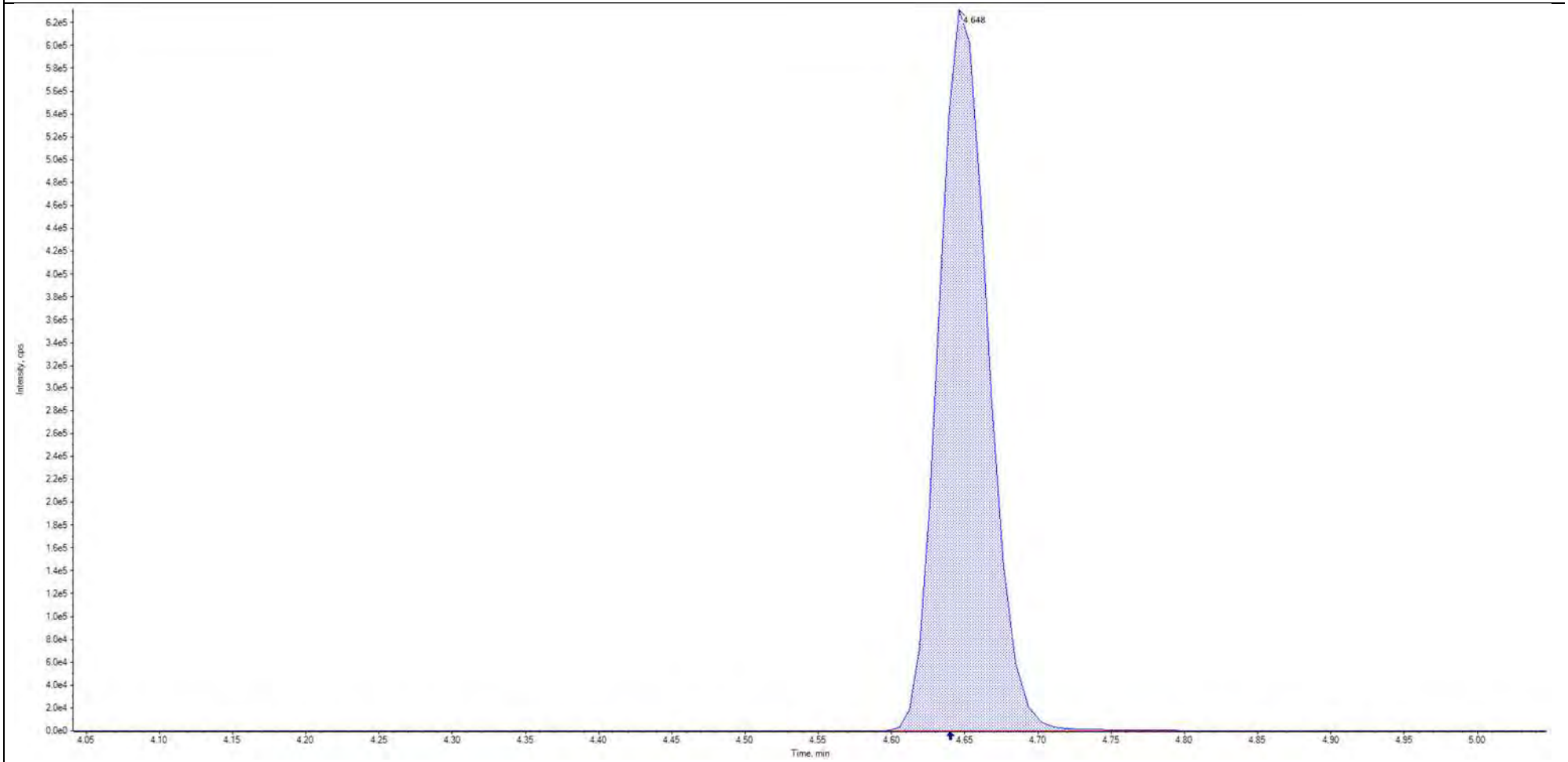


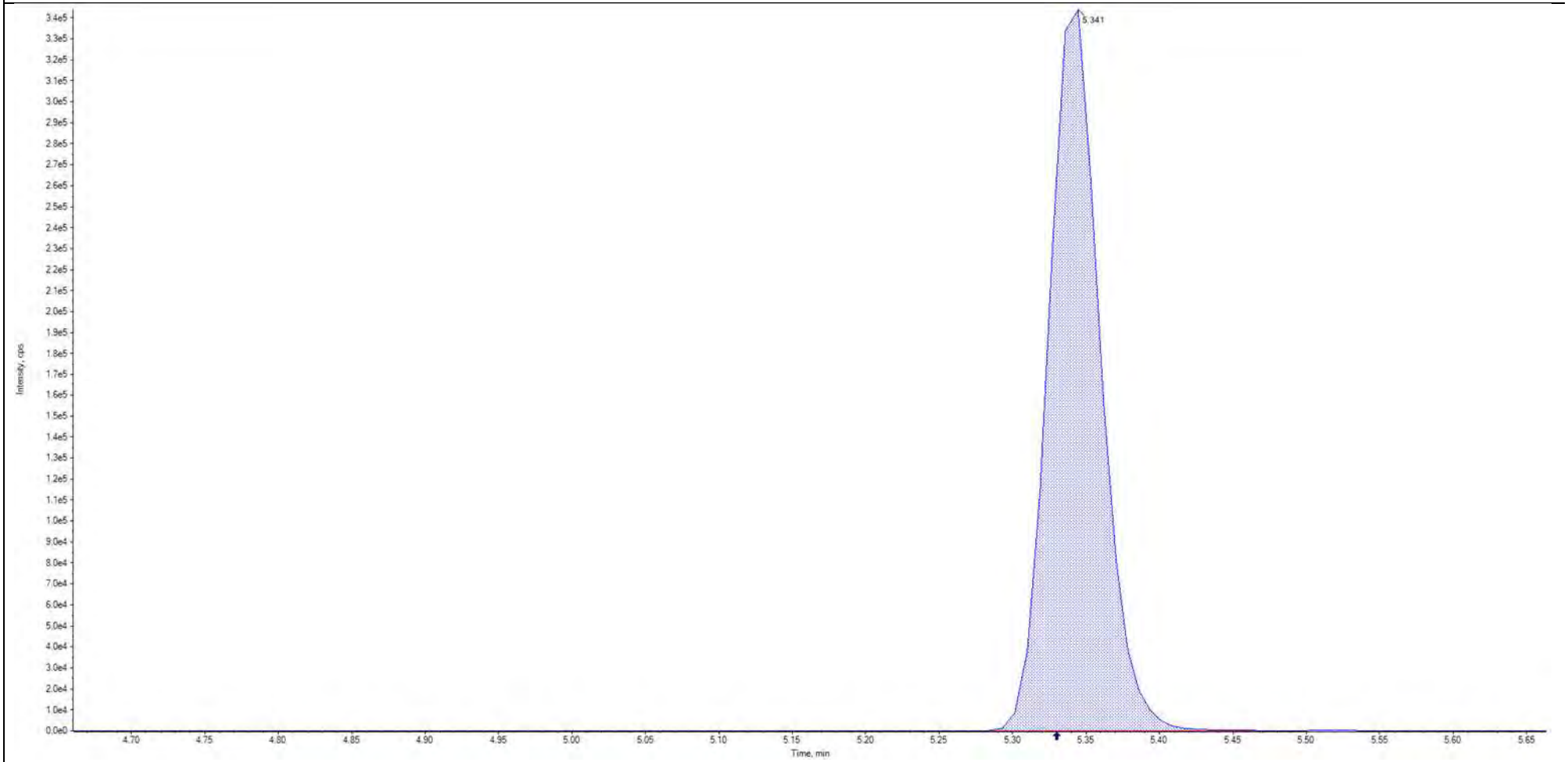
13C4-PFBA
Sample: L2450786-13



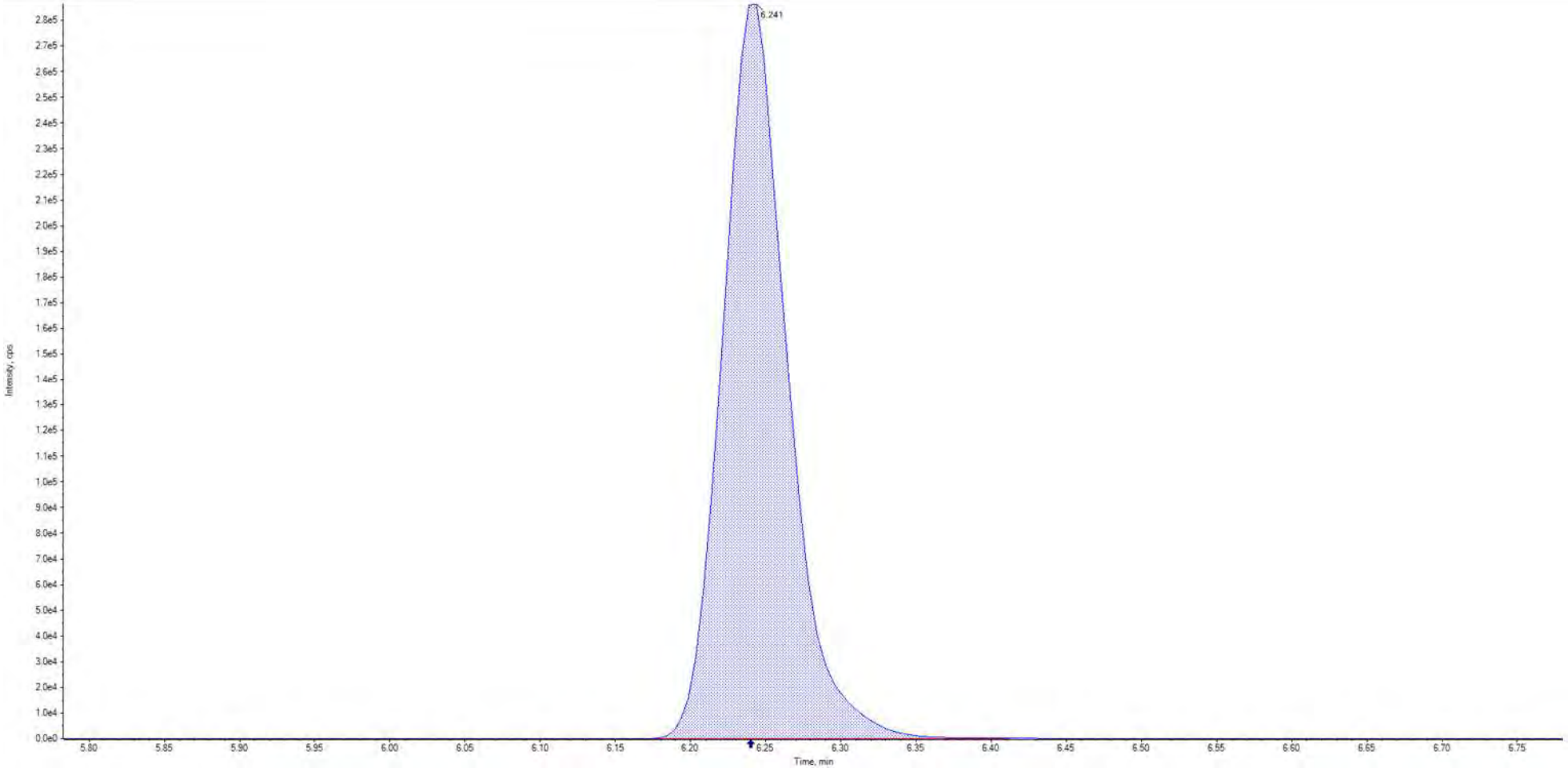
13C5-PFPeA
Sample: L2450786-13



13C5-PFHxA
Sample: L2450786-13

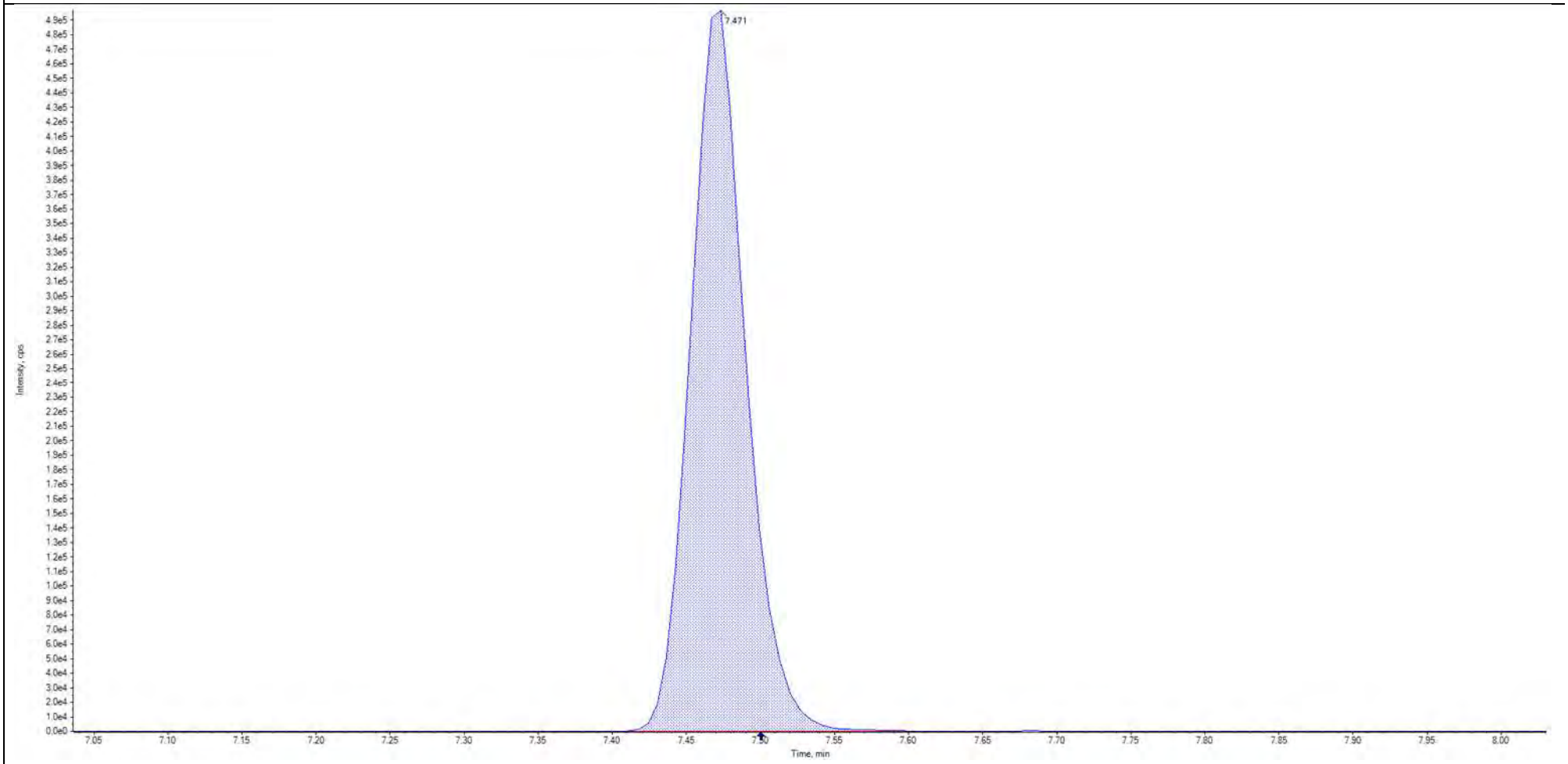


13C4-PFHpA
Sample: L2450786-13

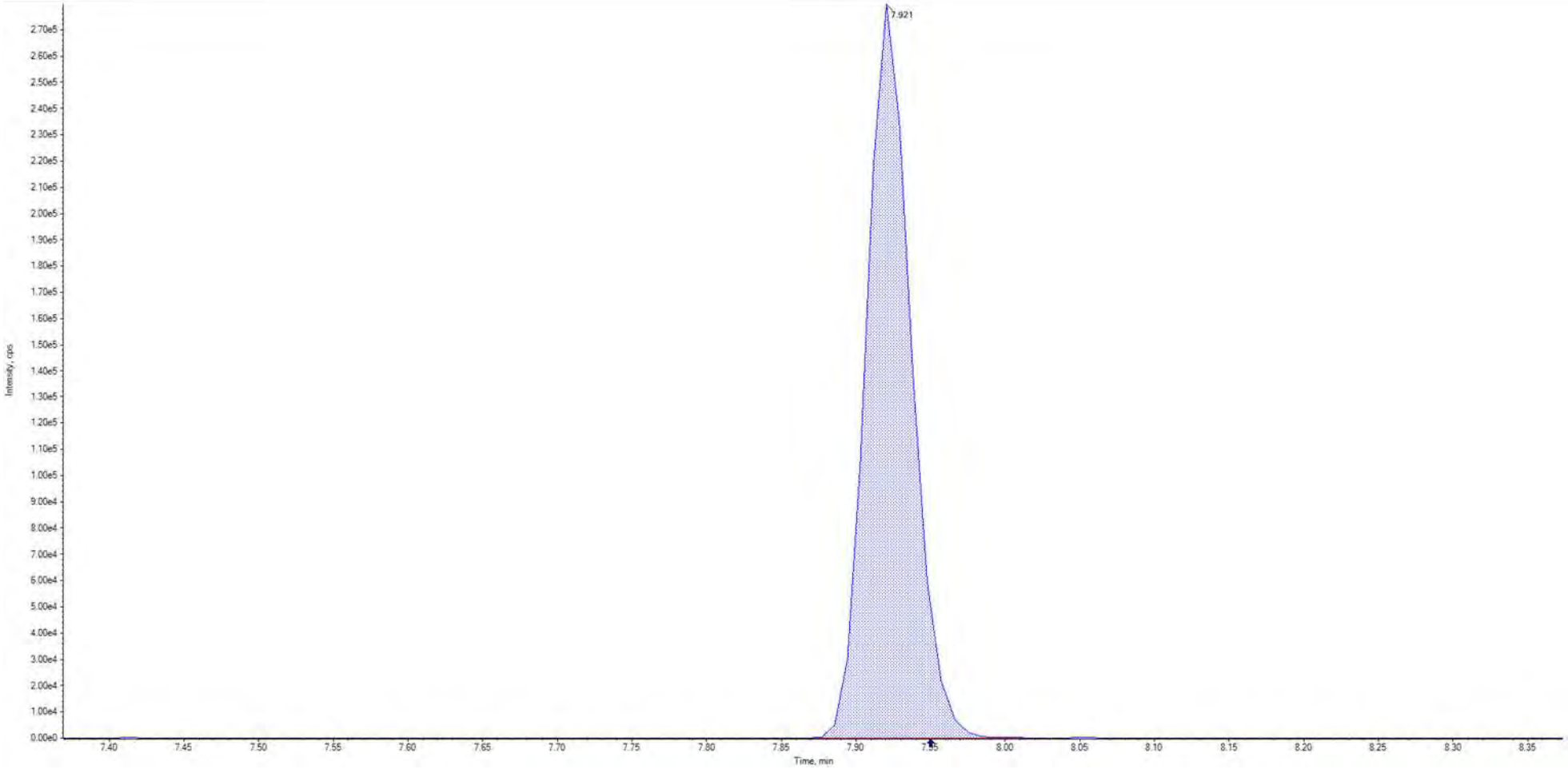


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

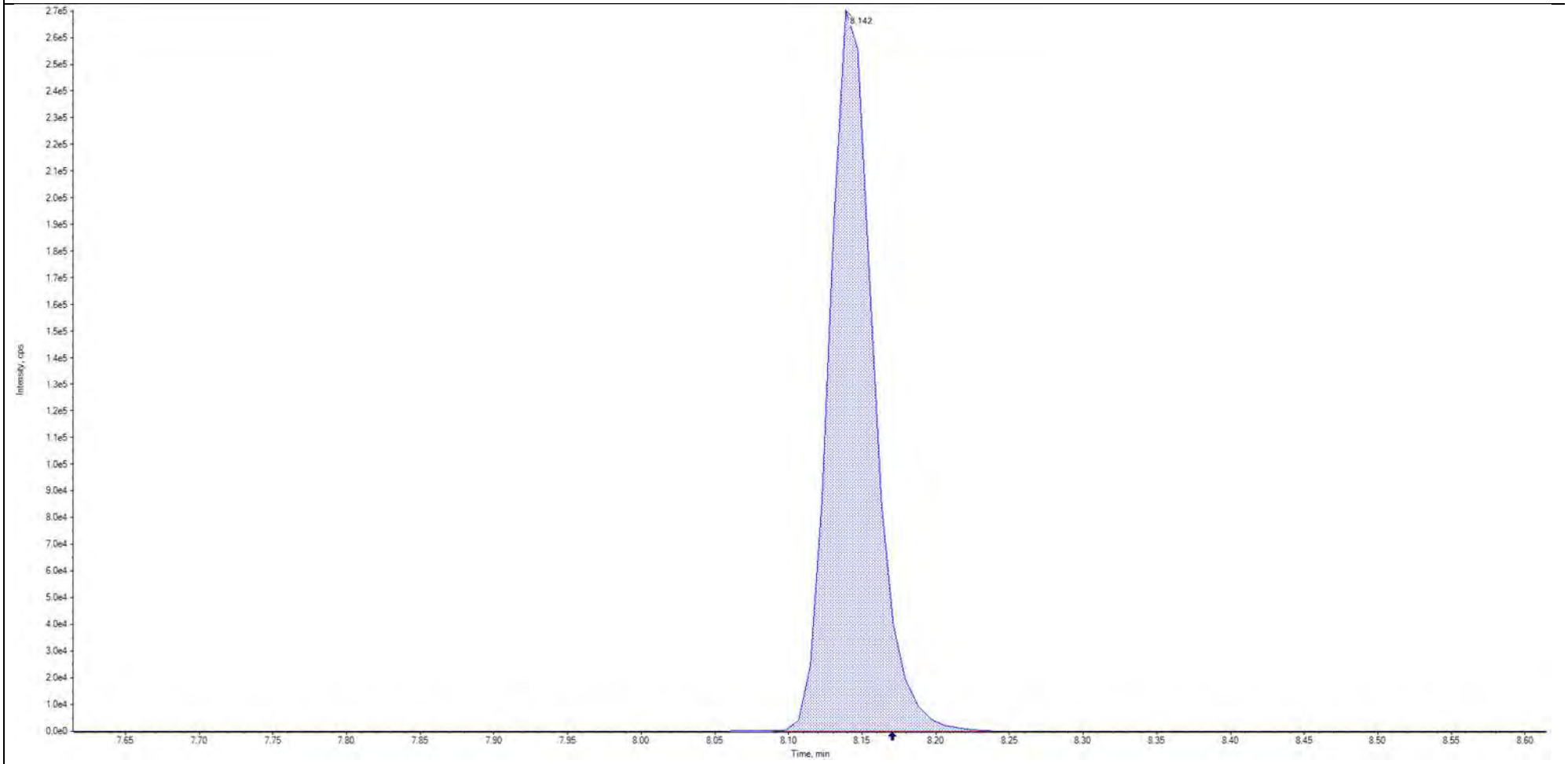
13C8-PFOA
Sample: L2450786-13



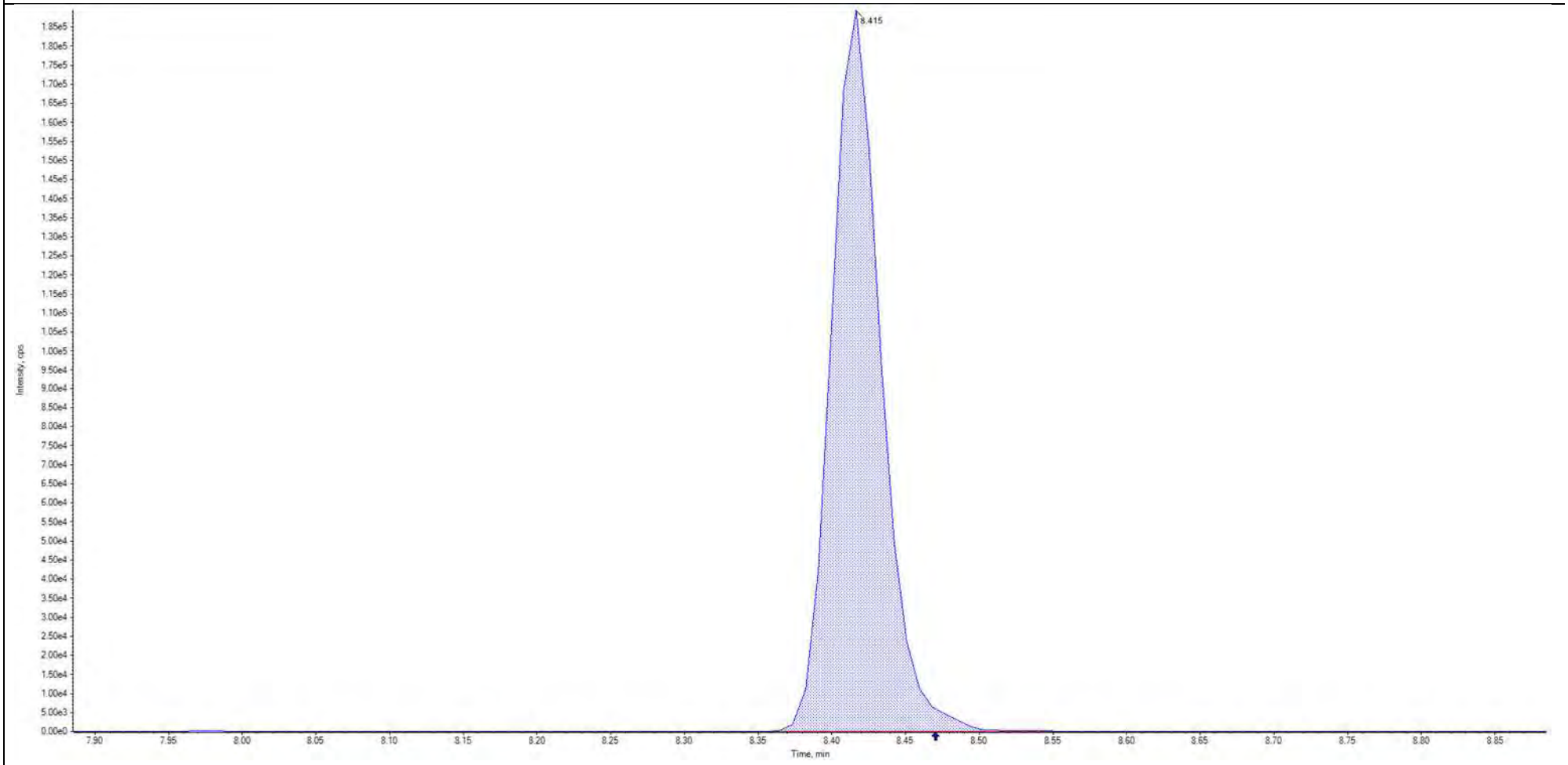
13C9-PFNA
Sample: L2450786-13



13C6-PFDA
Sample: L2450786-13

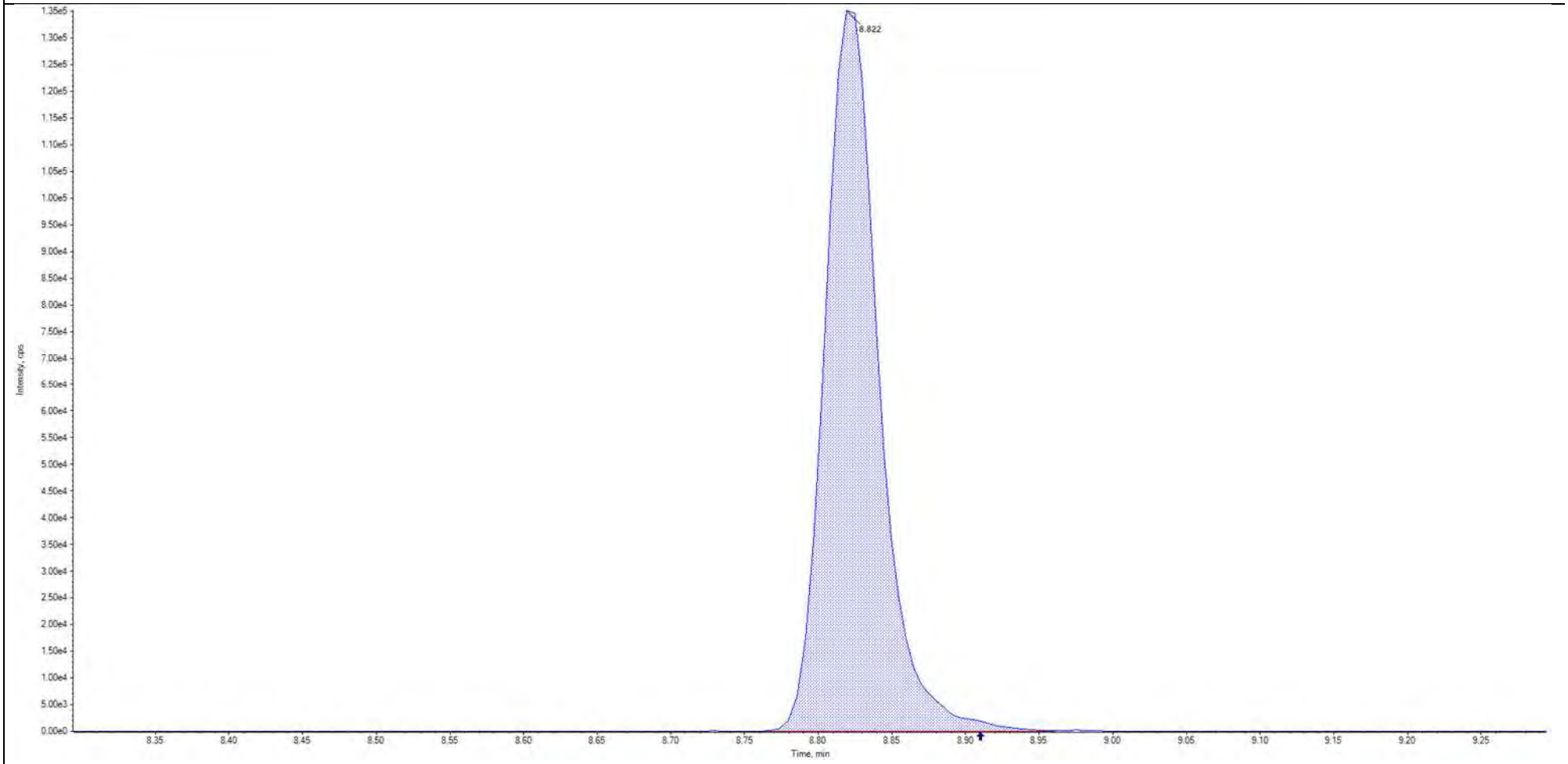


13C7-PFUnA
Sample: L2450786-13

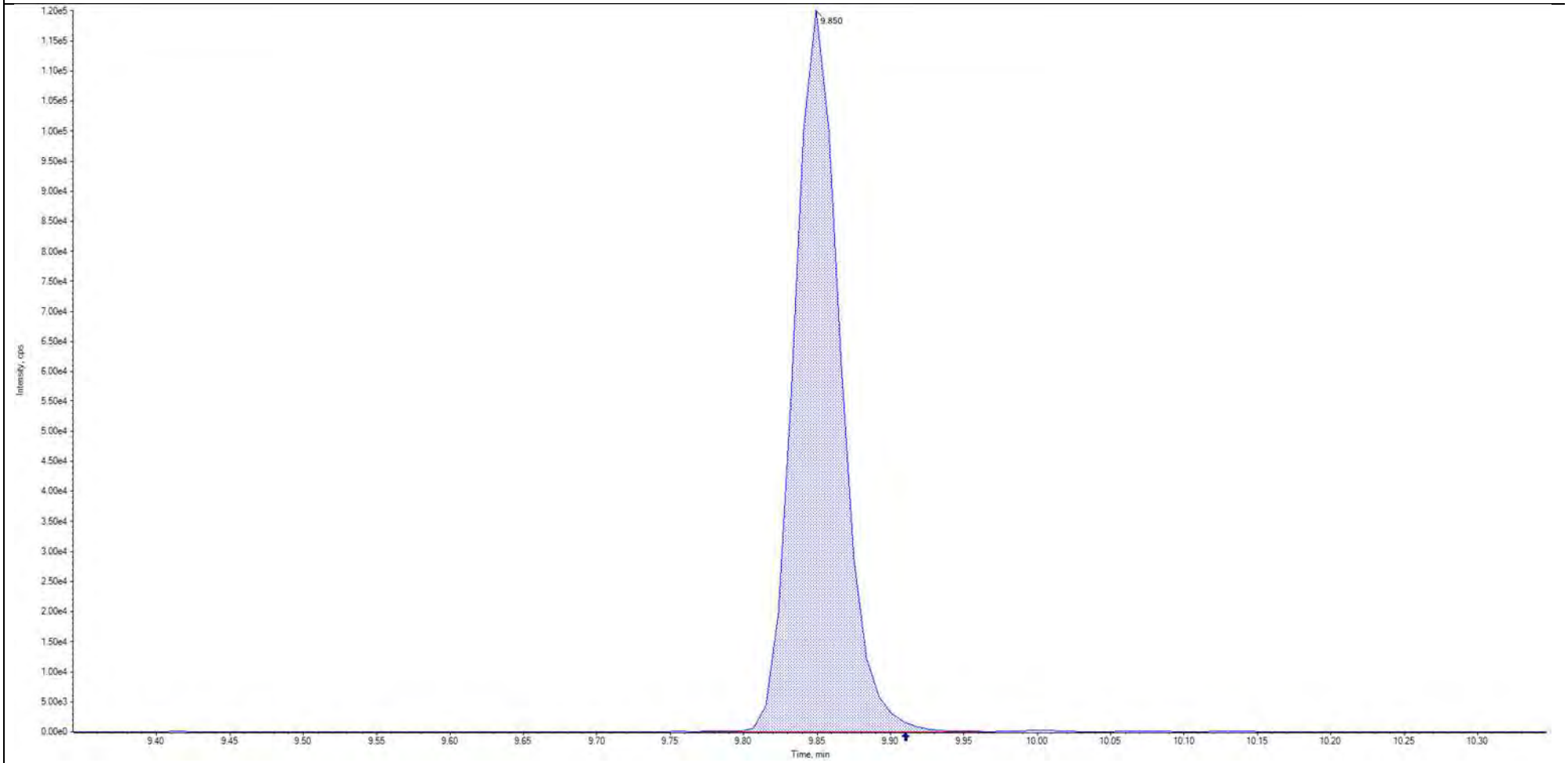


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

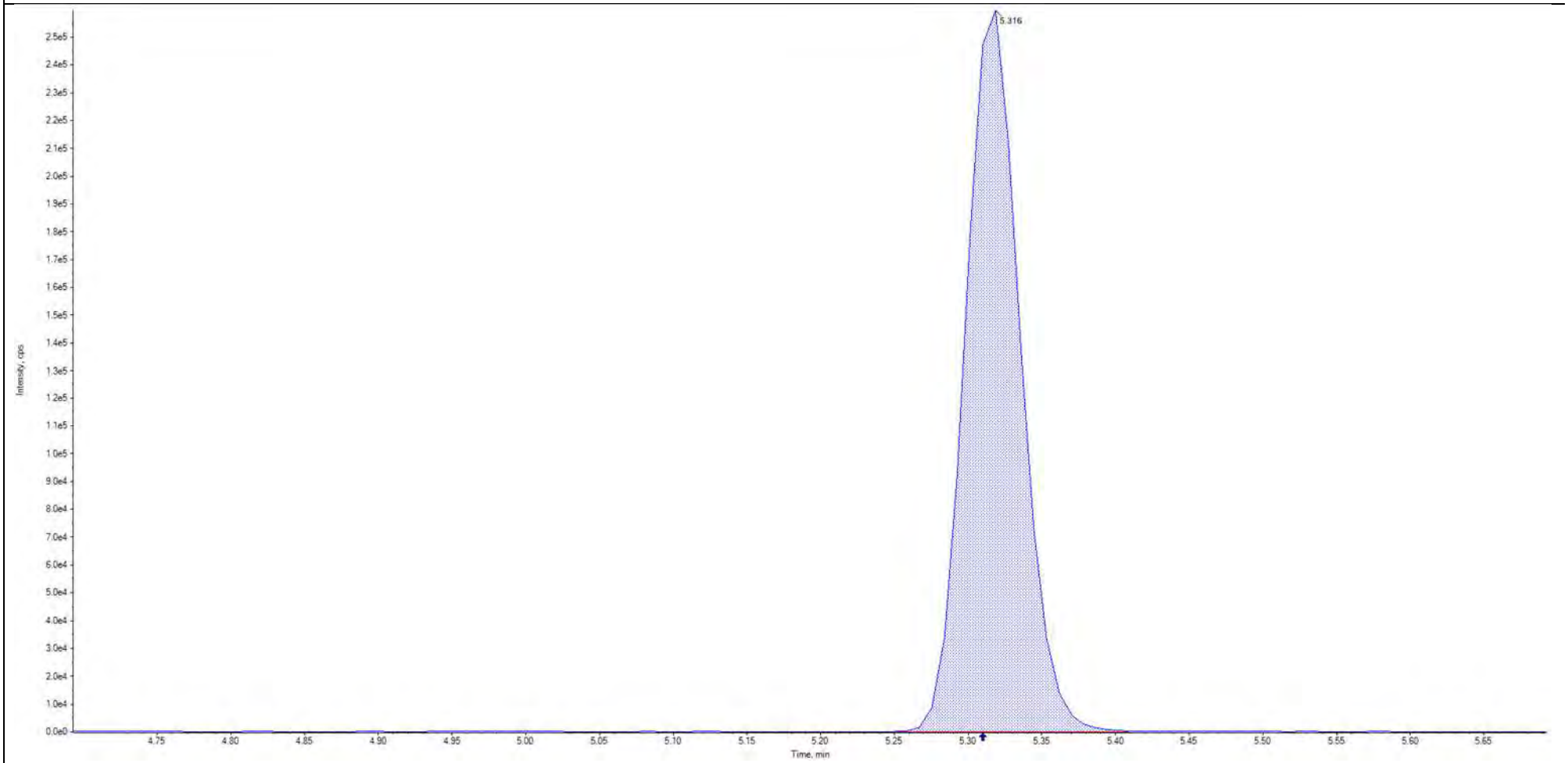
13C2-PFDoA
Sample: L2450786-13



13C2-PFTeDA
Sample: L2450786-13

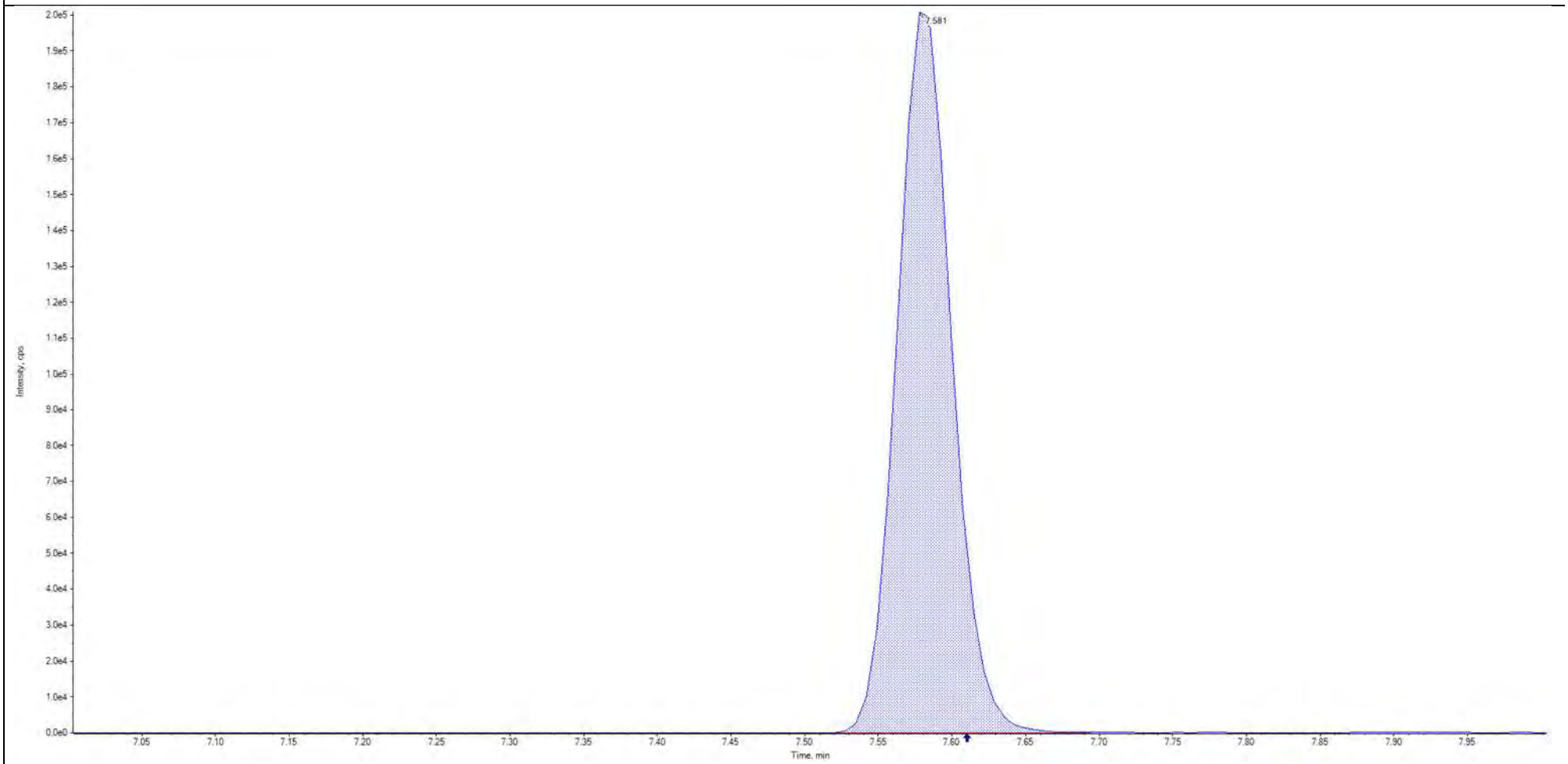


13C3-PFBS
Sample: L2450786-13

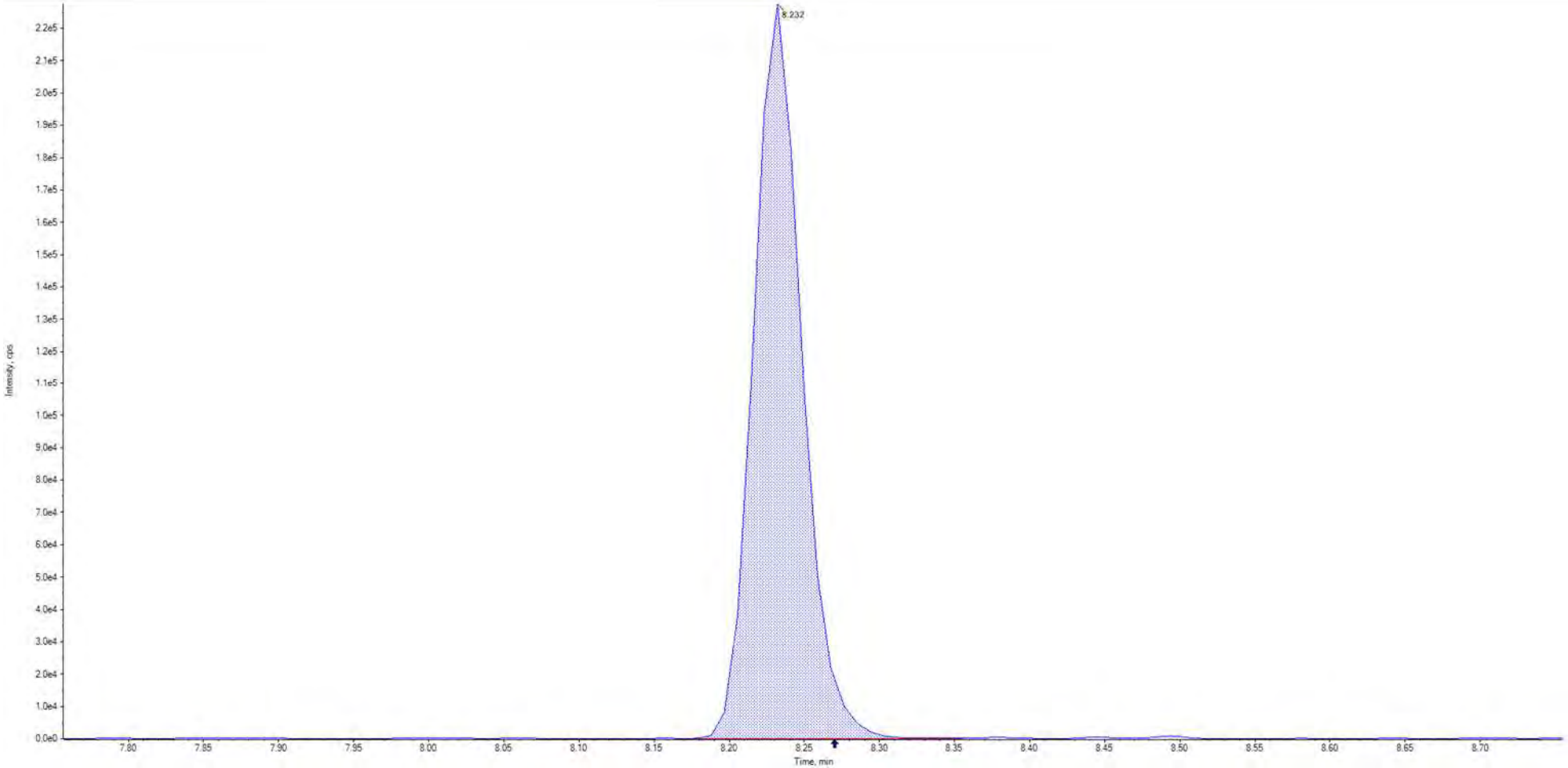


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

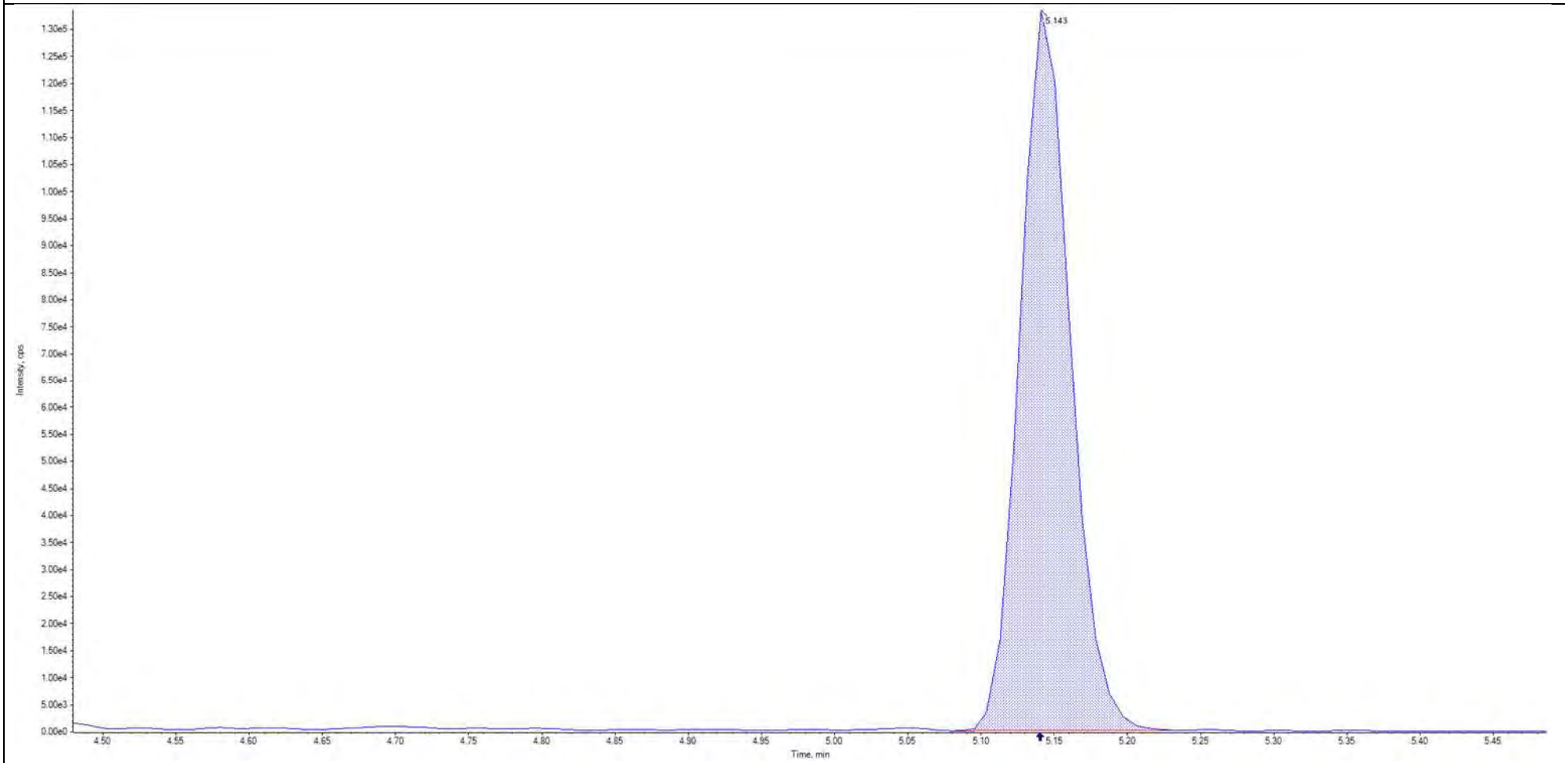
13C3-PFHxS
Sample: L2450786-13



13C8-PFOS
Sample: L2450786-13

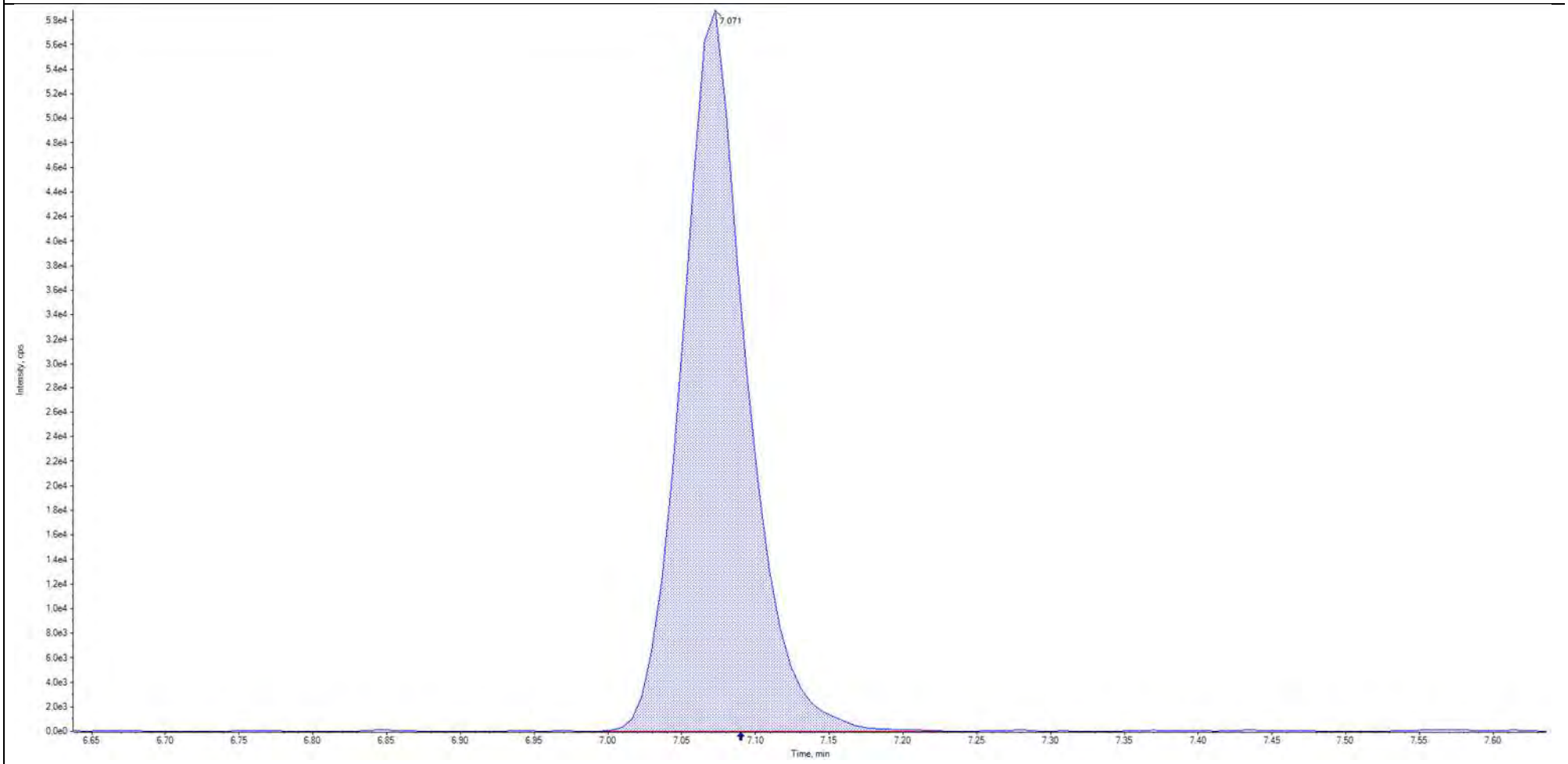


13C2-4:2FTS
Sample: L2450786-13

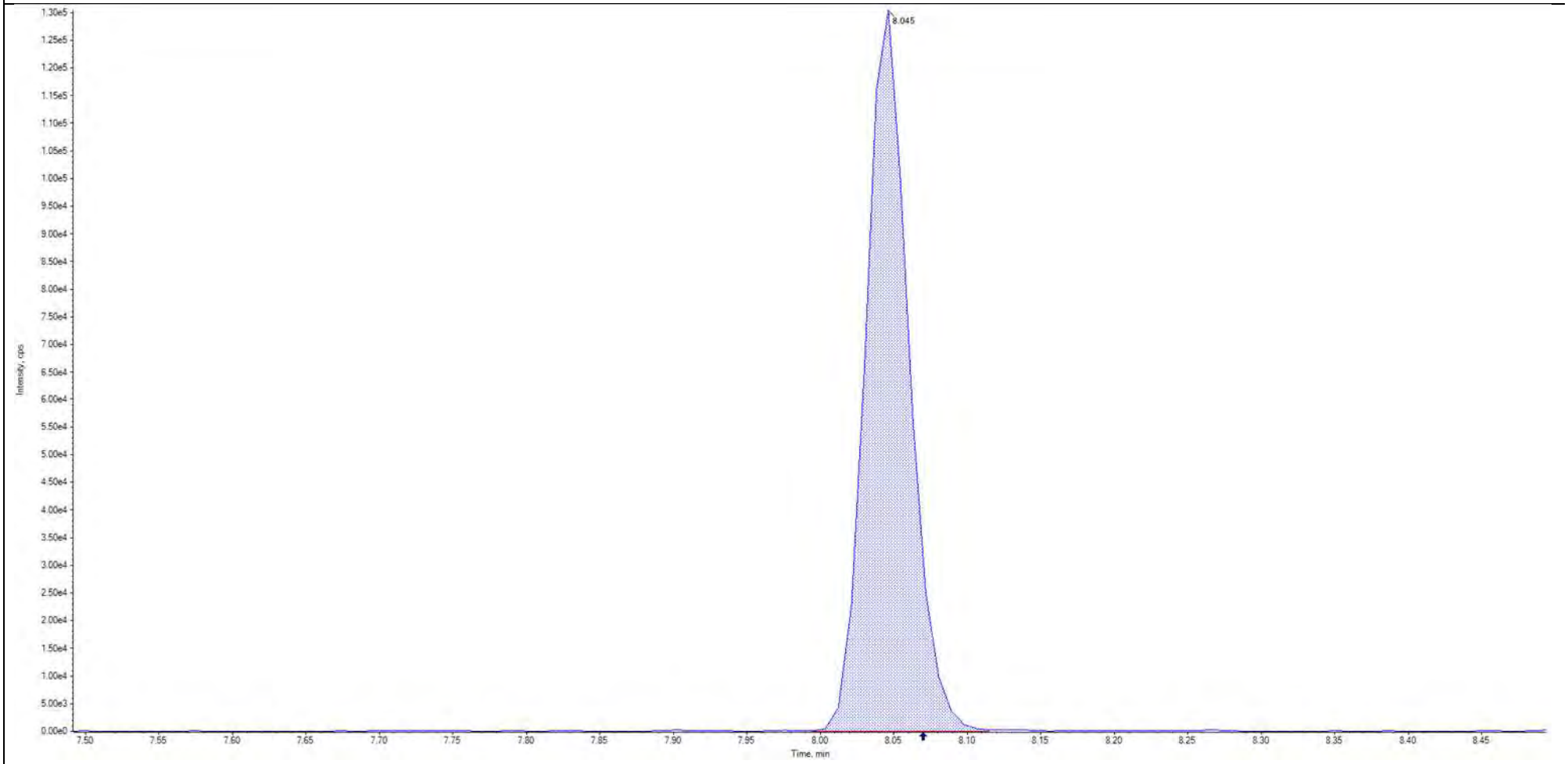


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

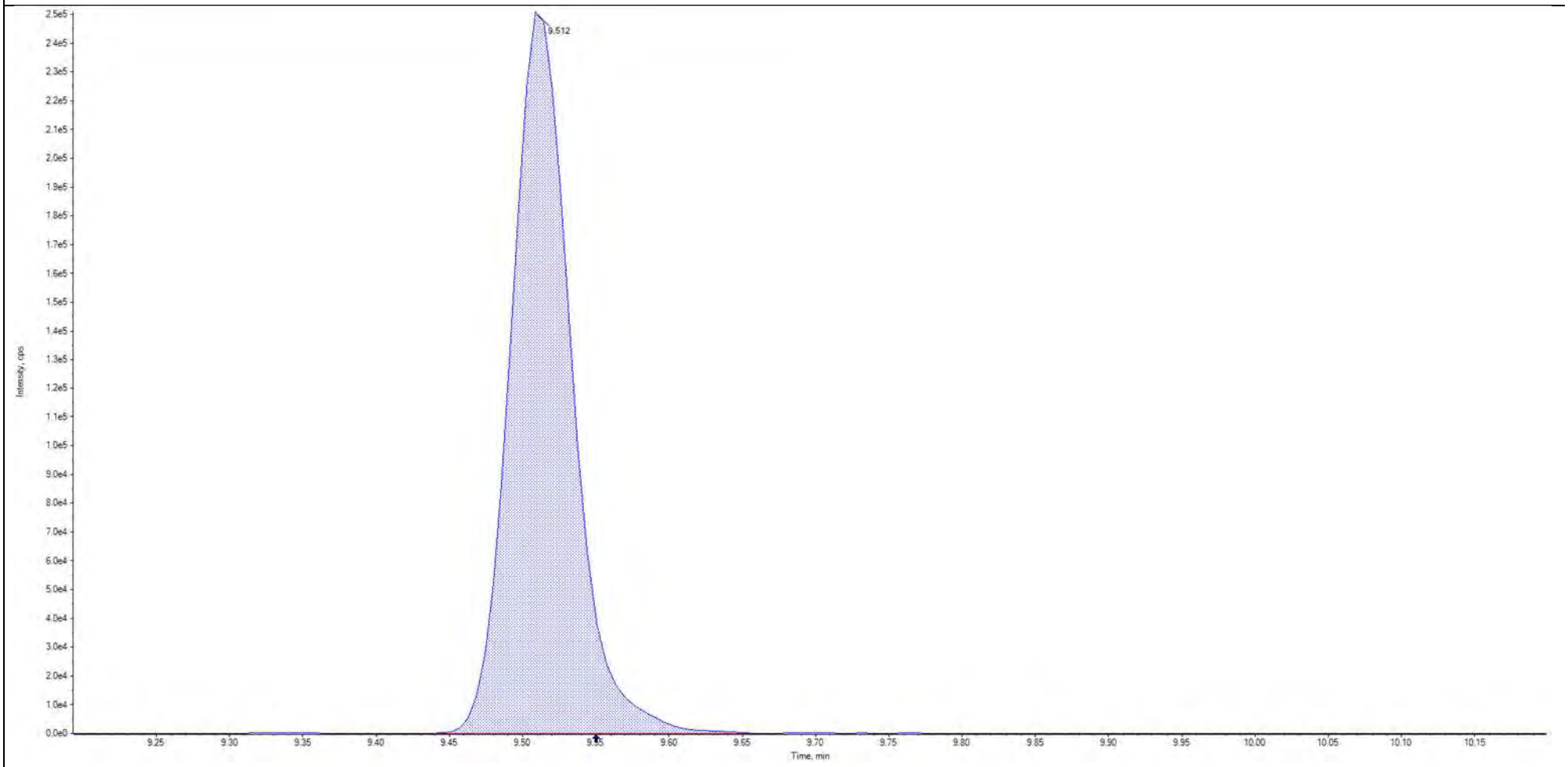
13C2-6:2FTS
Sample: L2450786-13



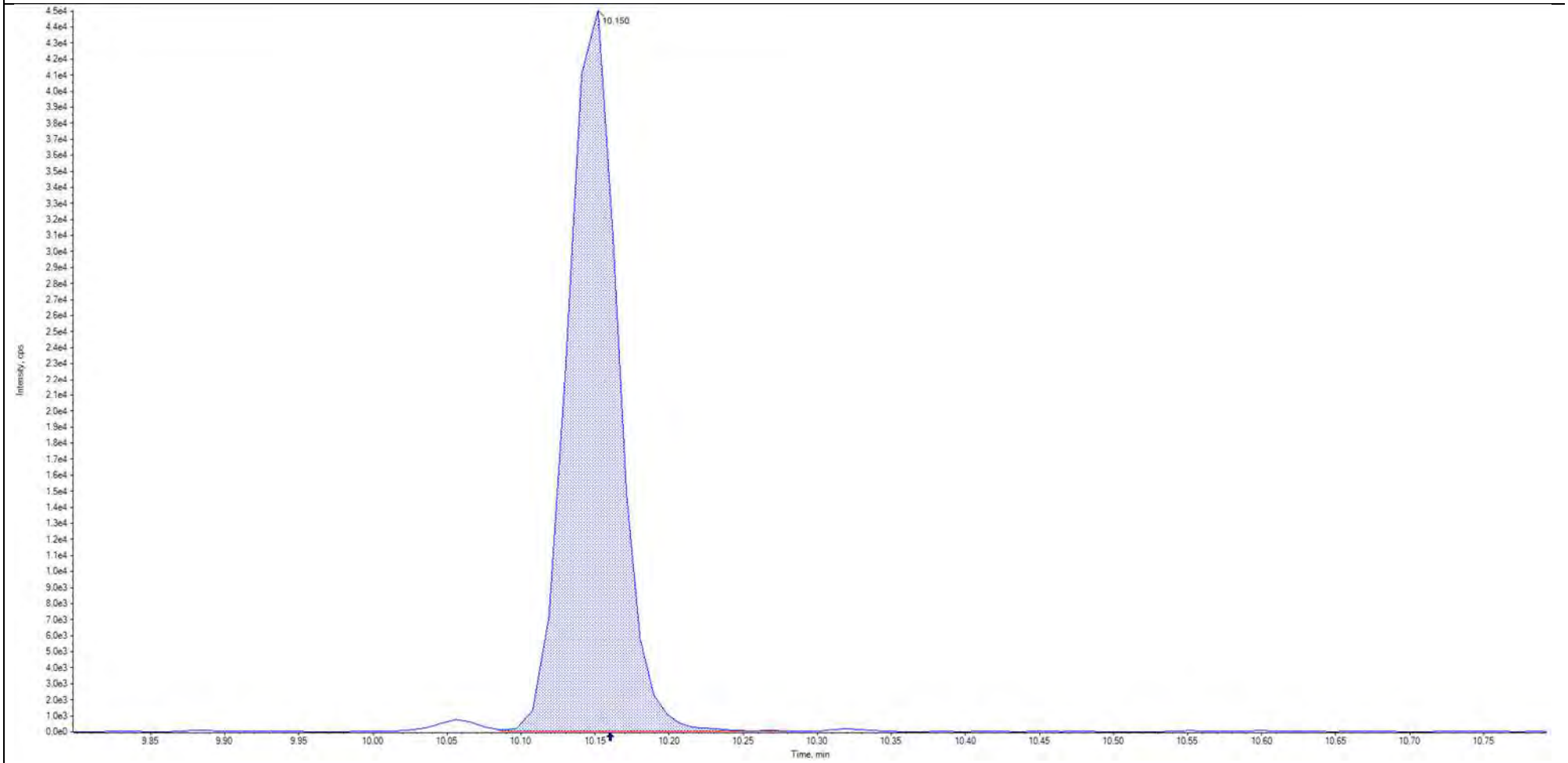
13C2-8:2FTS
Sample: L2450786-13



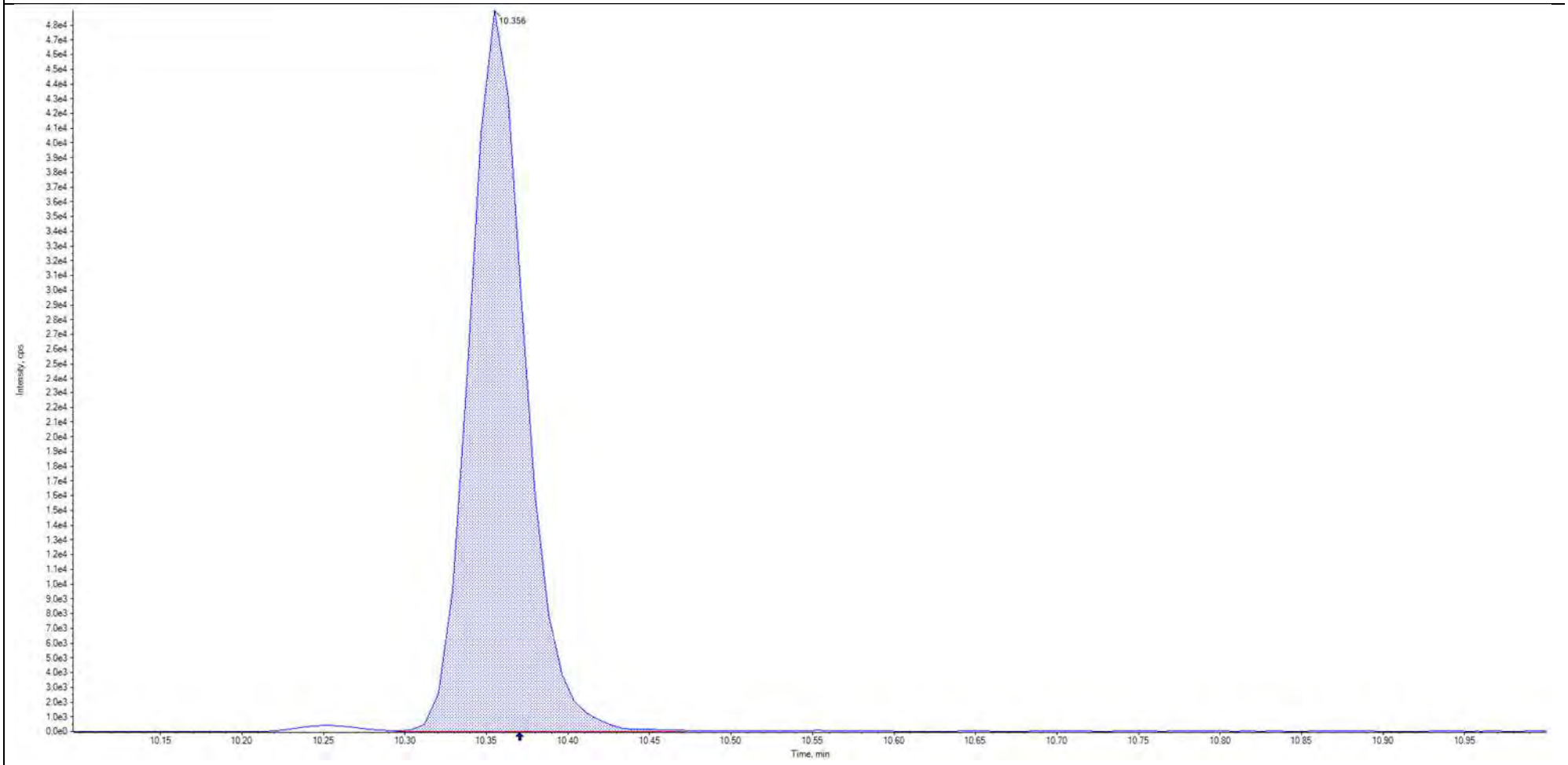
13C8-PFOSA
Sample: L2450786-13



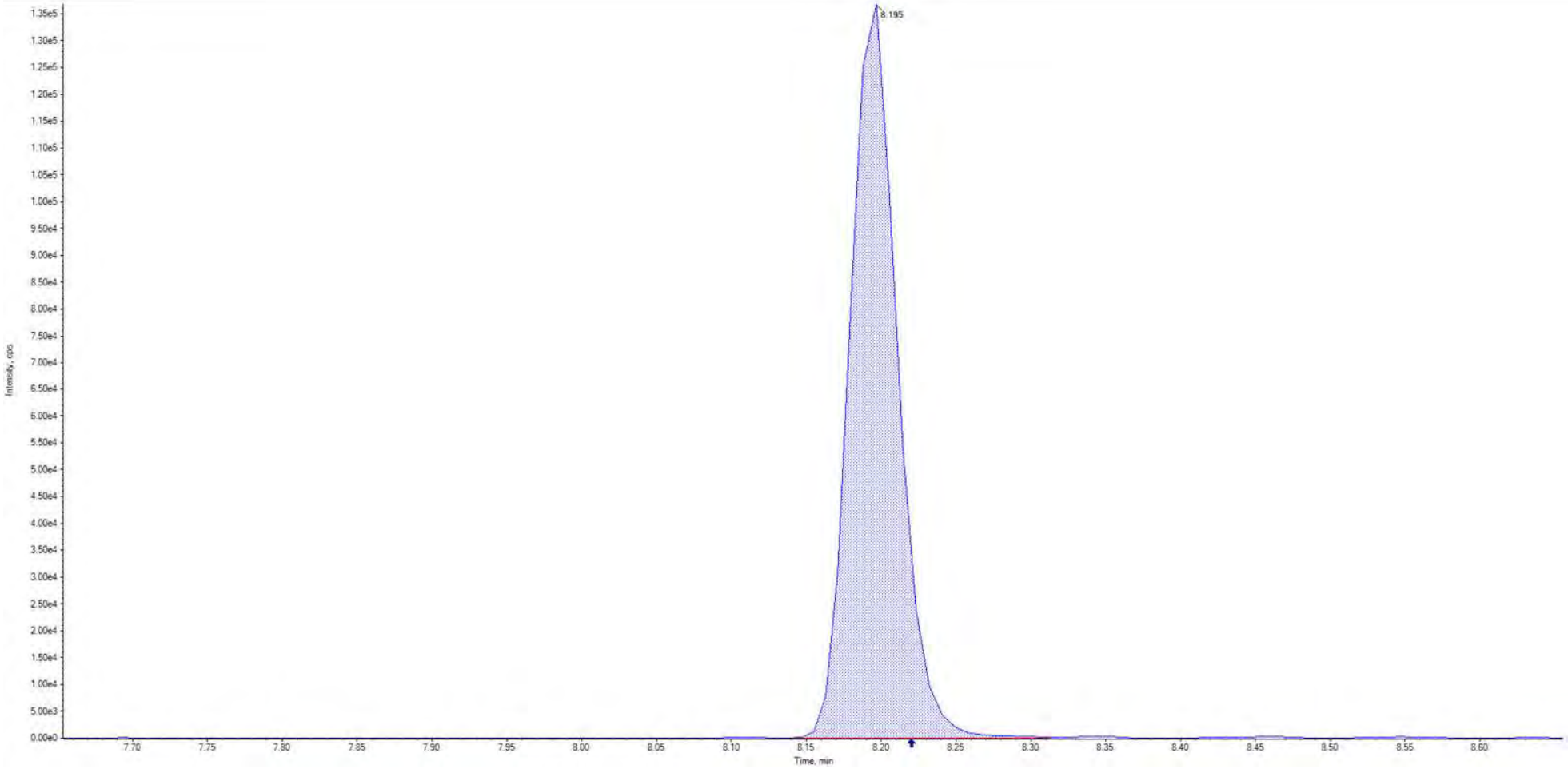
d3-NMeFOSA
Sample: L2450786-13



d5-NEtFOSA
Sample: L2450786-13

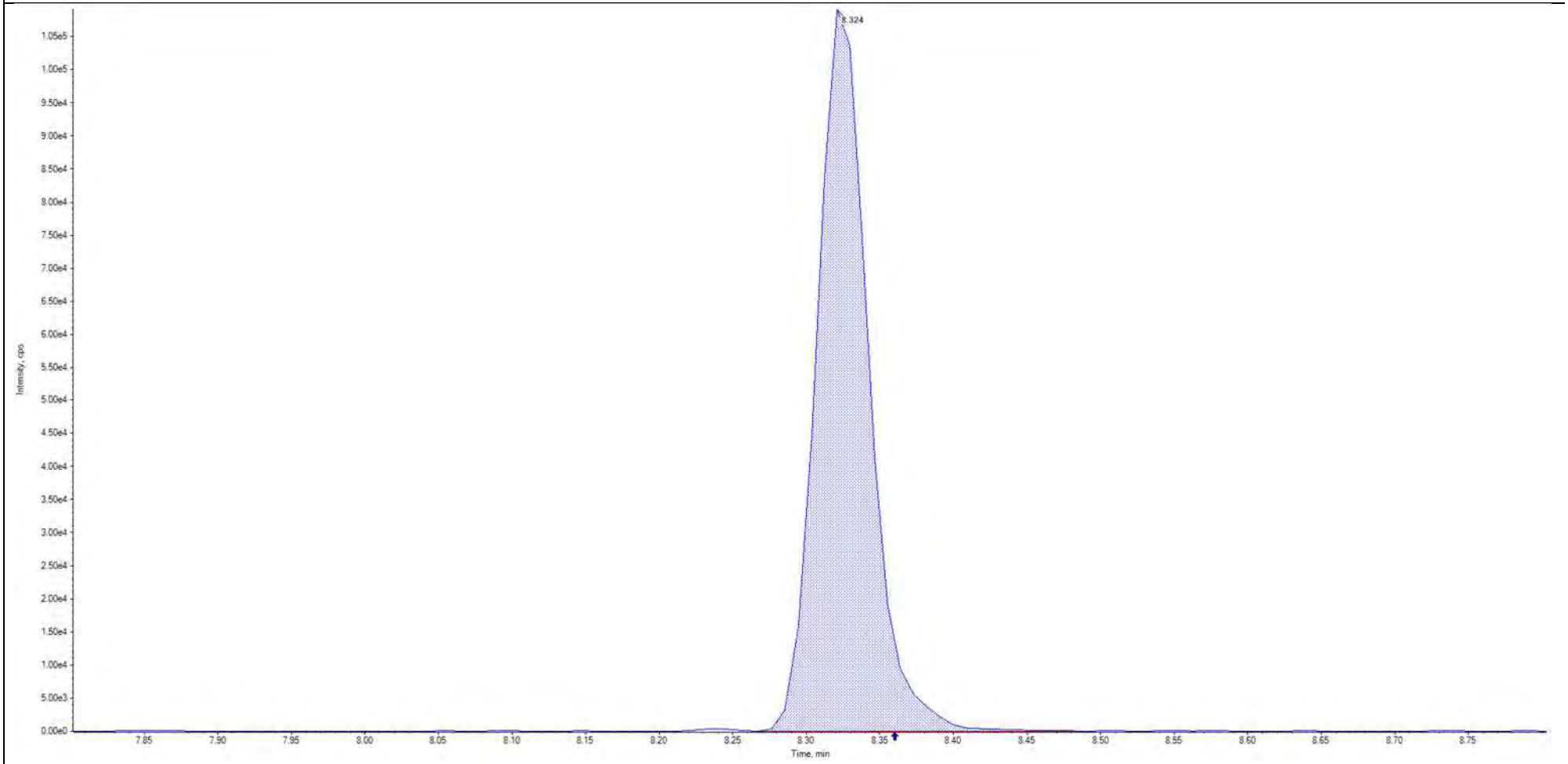


d3-NMeFOSAA
Sample: L2450786-13



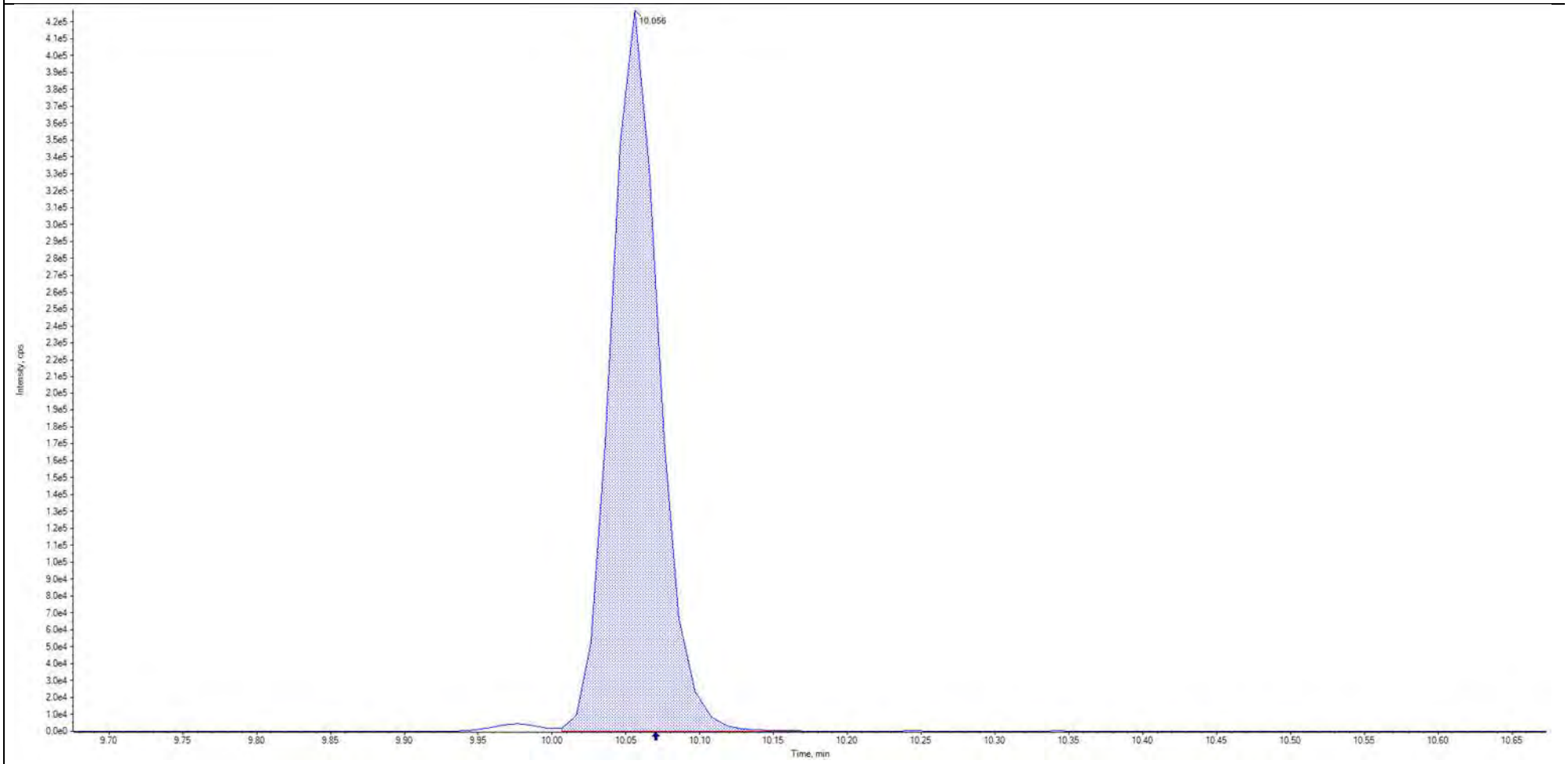
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

d5-NEtFOSAA
Sample: L2450786-13

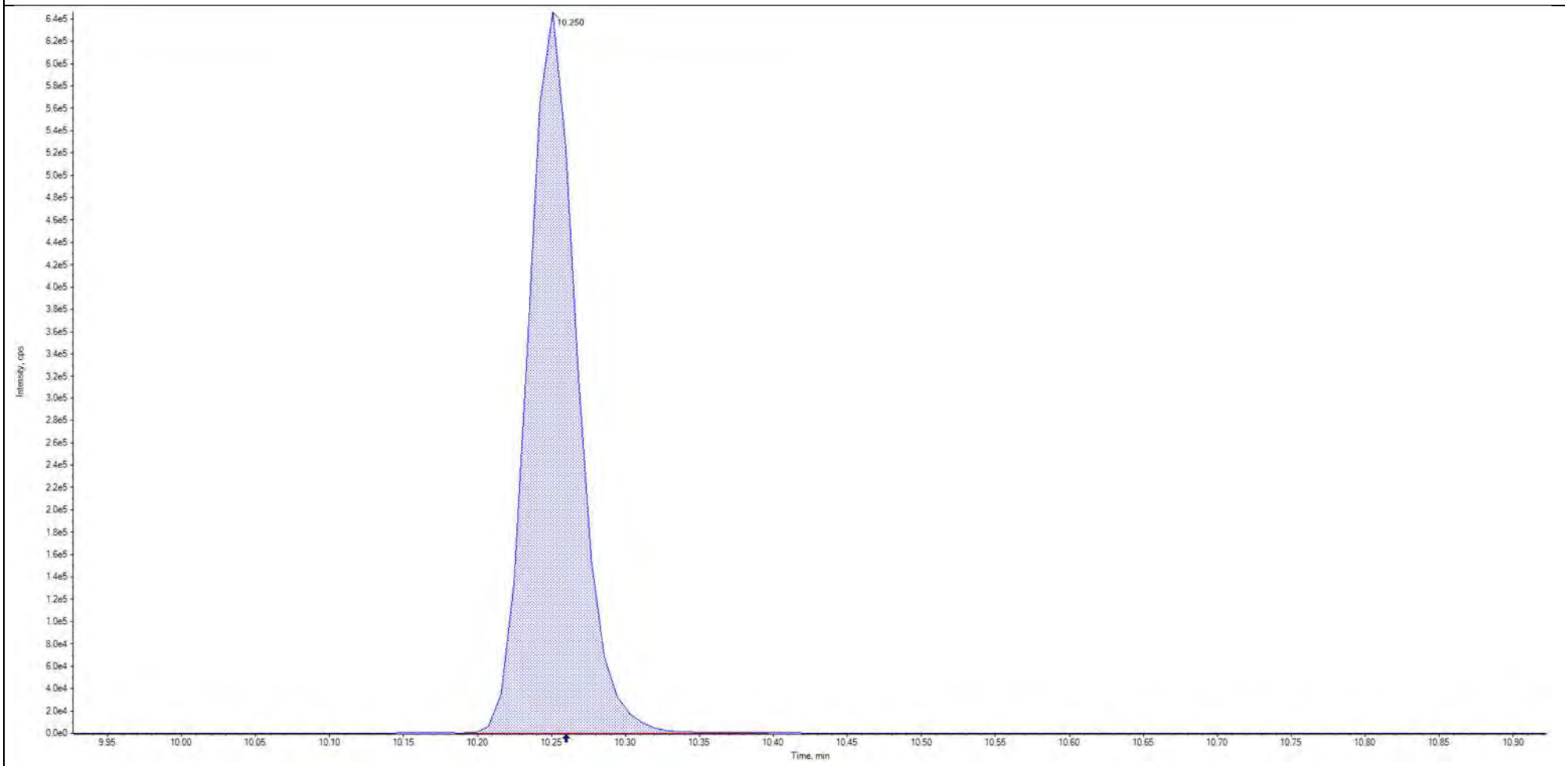


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

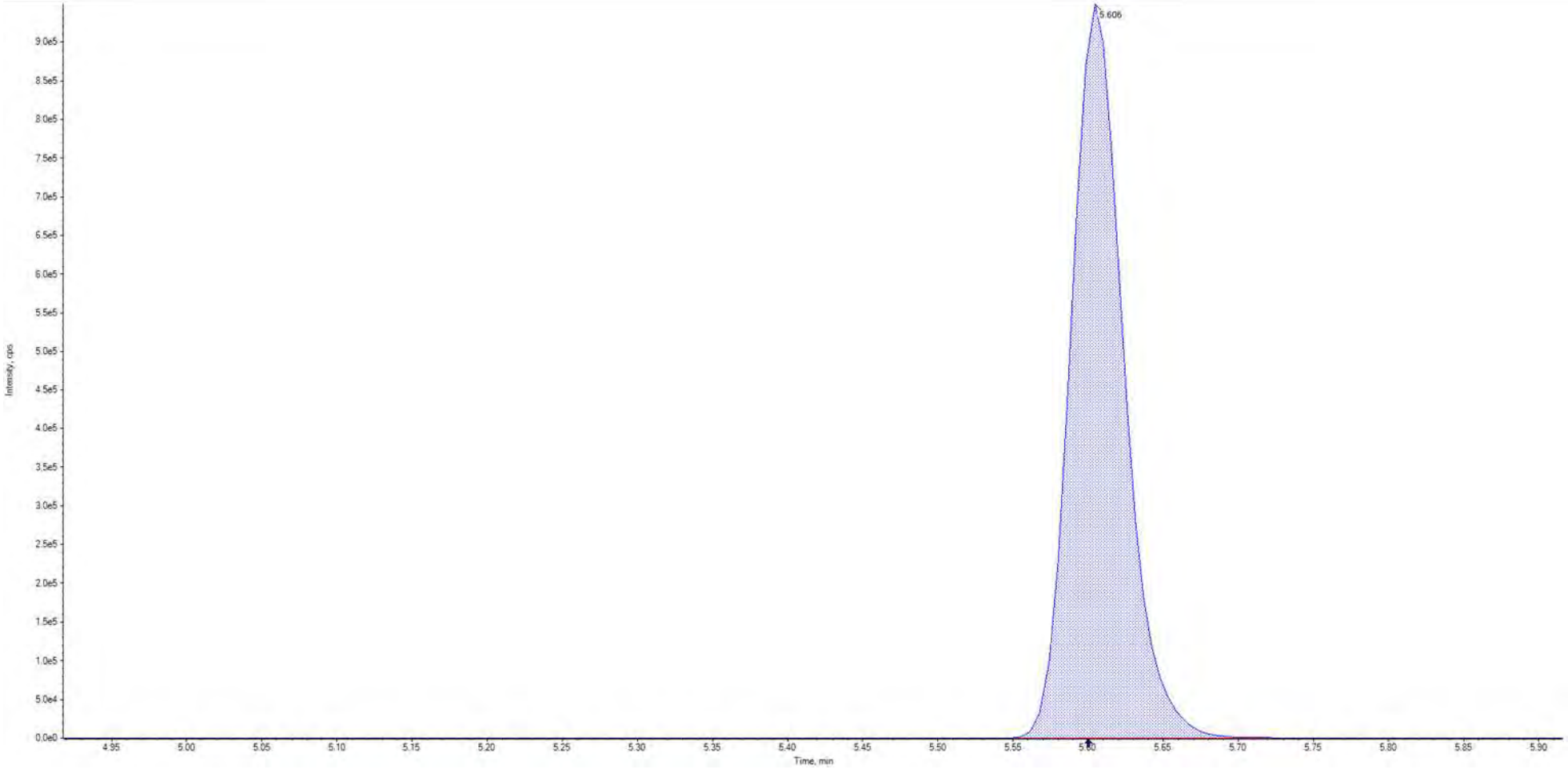
d7-NMeFOSE
Sample: L2450786-13



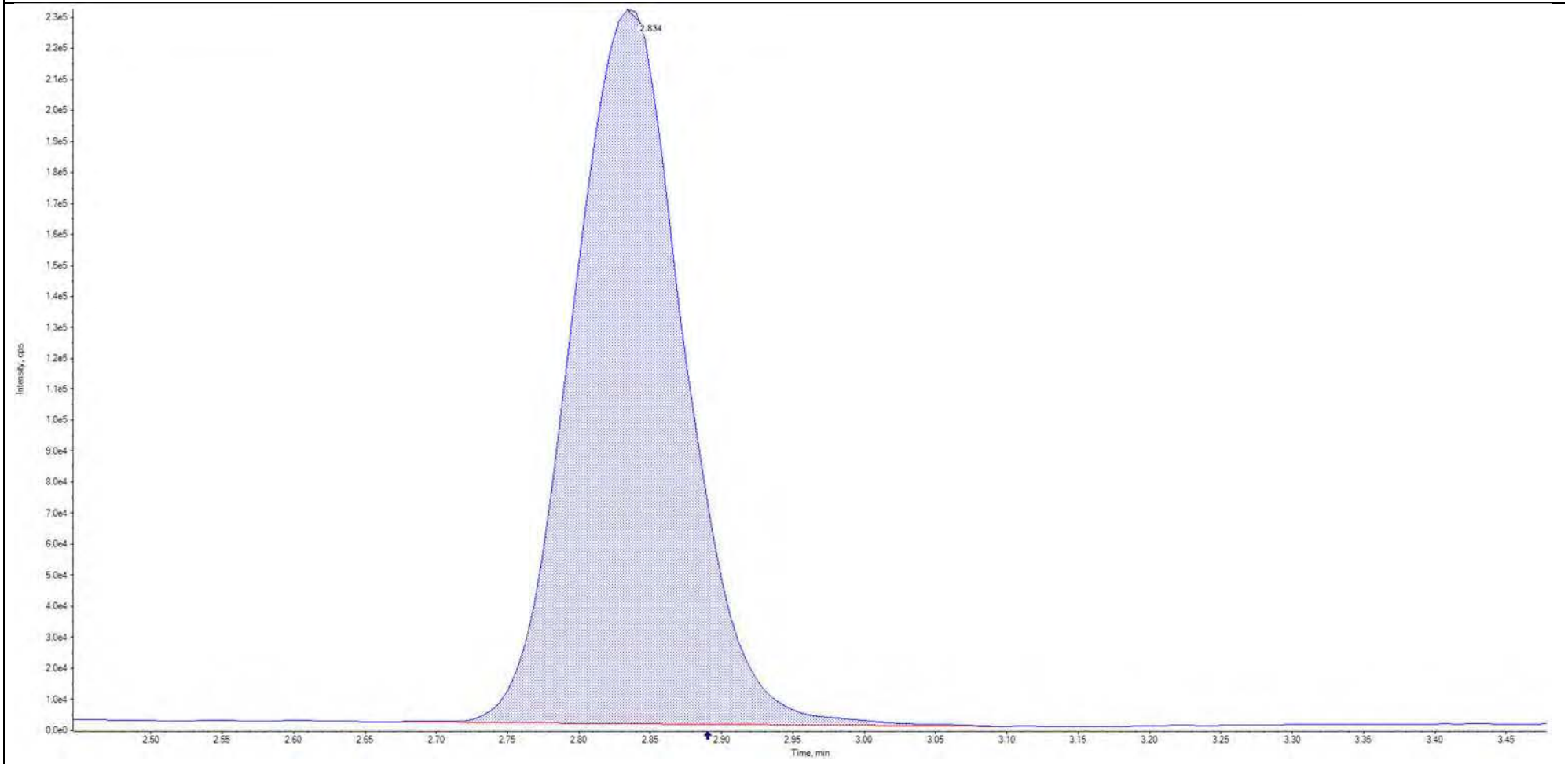
d9-NEtFOSE
Sample: L2450786-13



13C3-HFPO-DA
Sample: L2450786-13

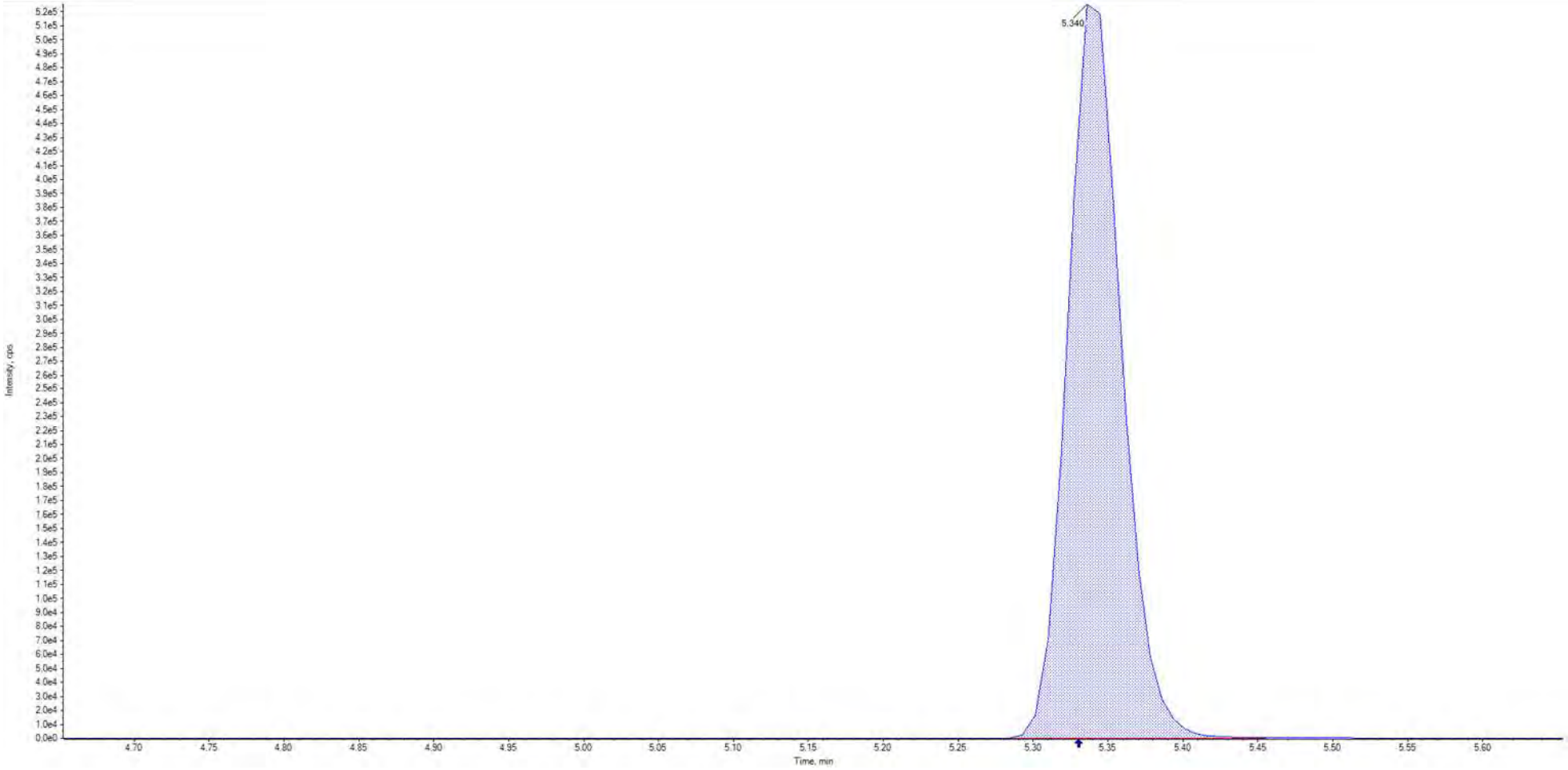


13C3-PFBA
Sample: L2450786-13



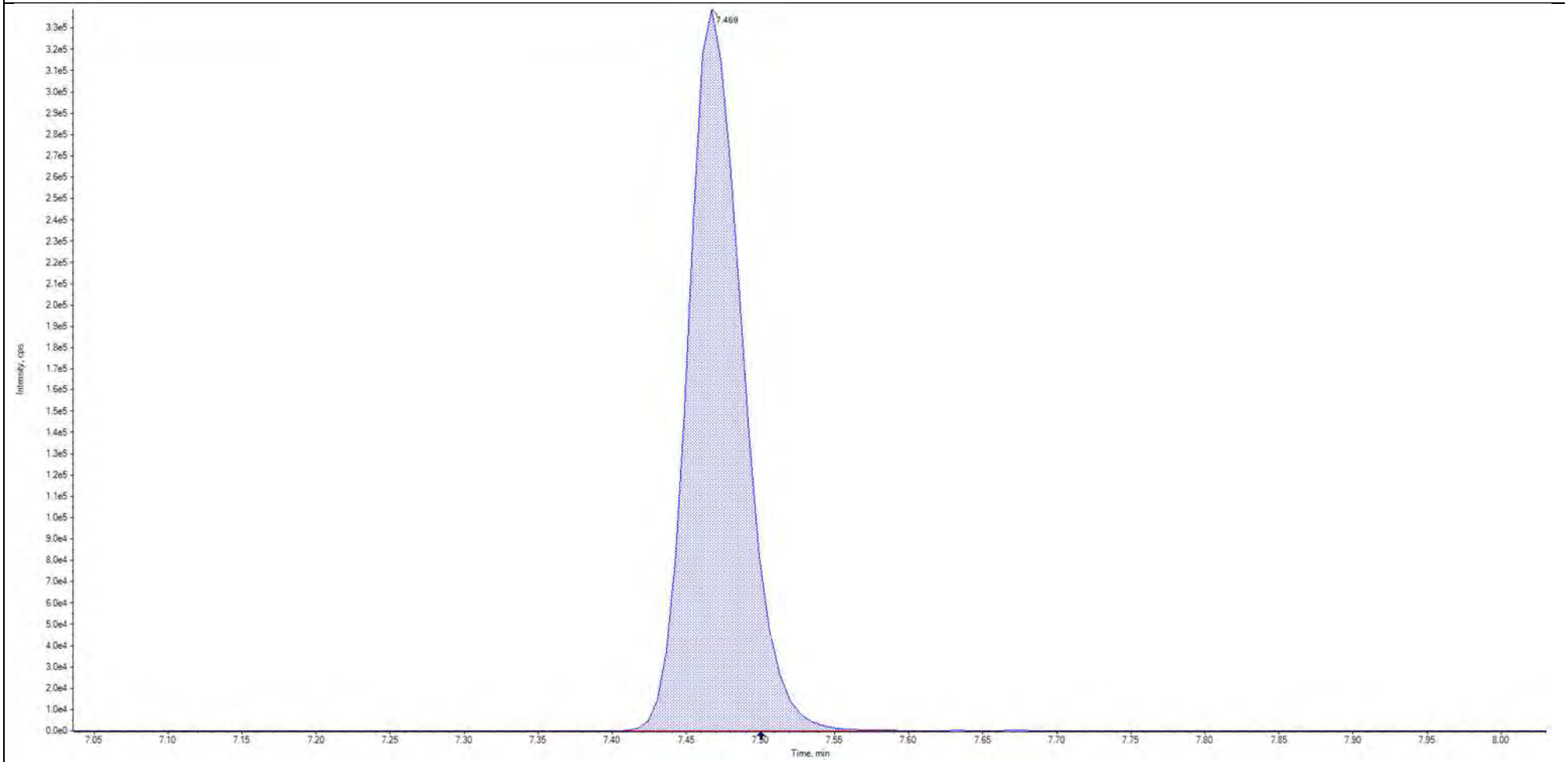
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C2-PFHxA
Sample: L2450786-13

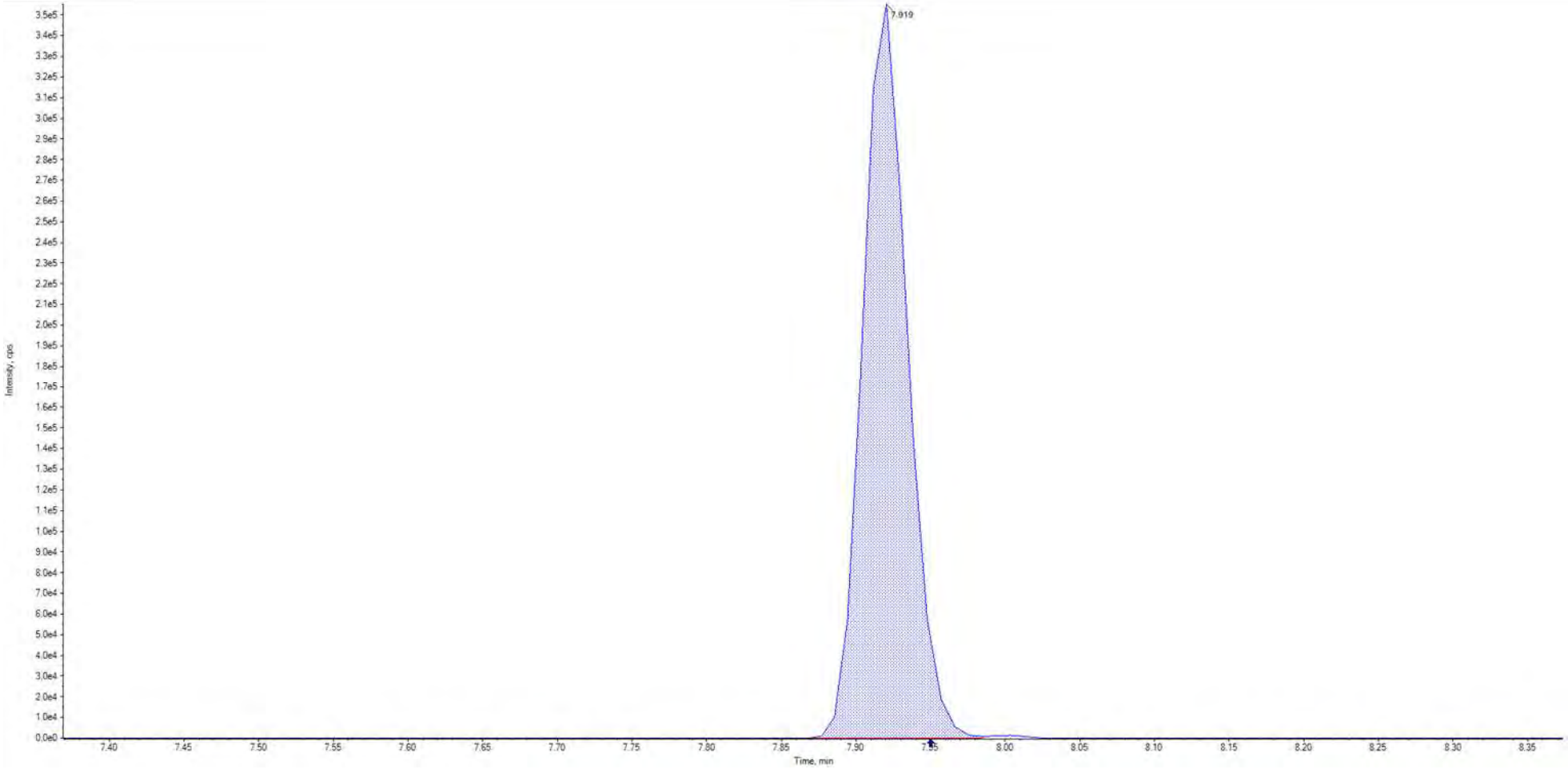


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

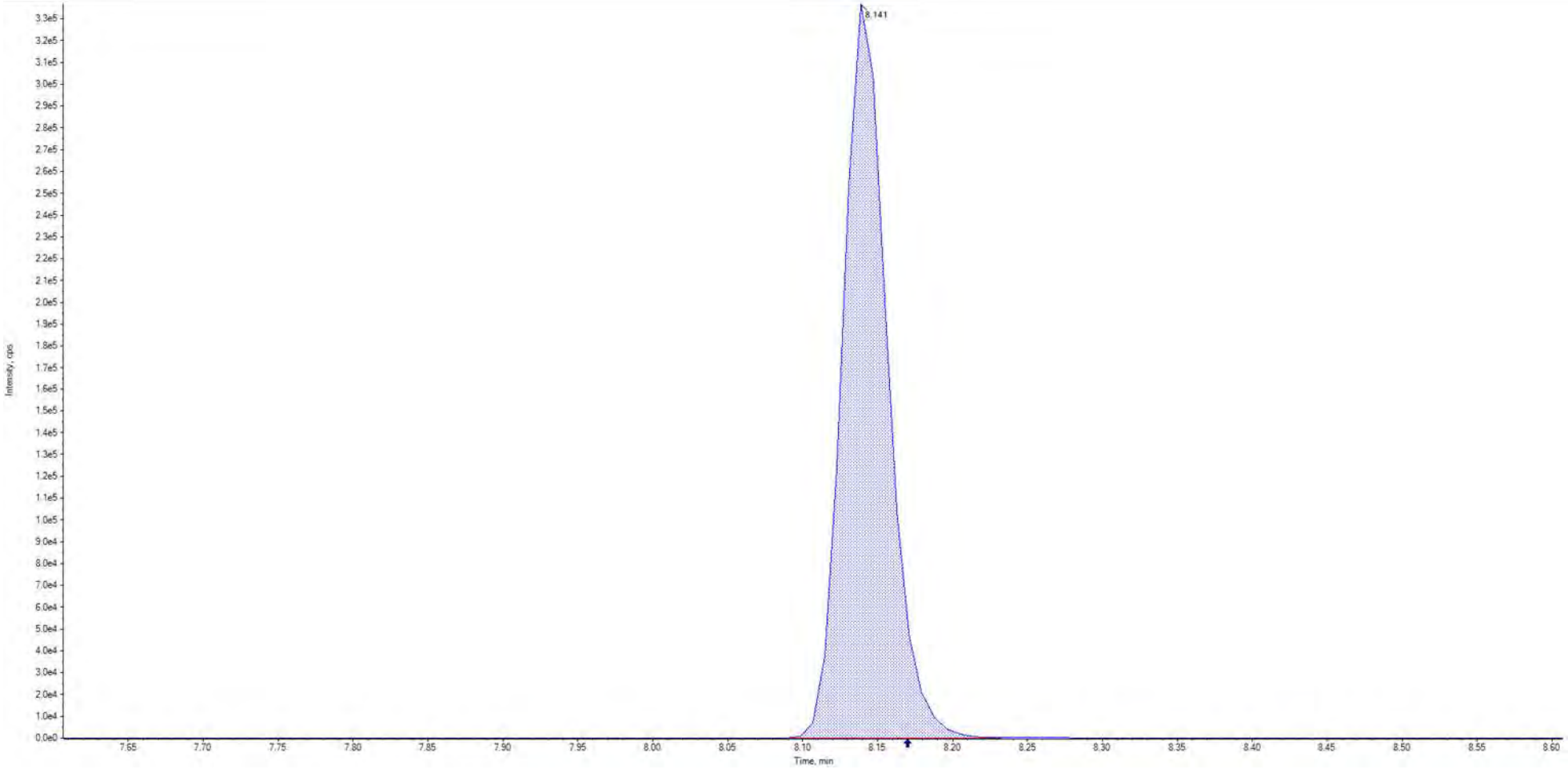
13C4-PFOA
Sample: L2450786-13



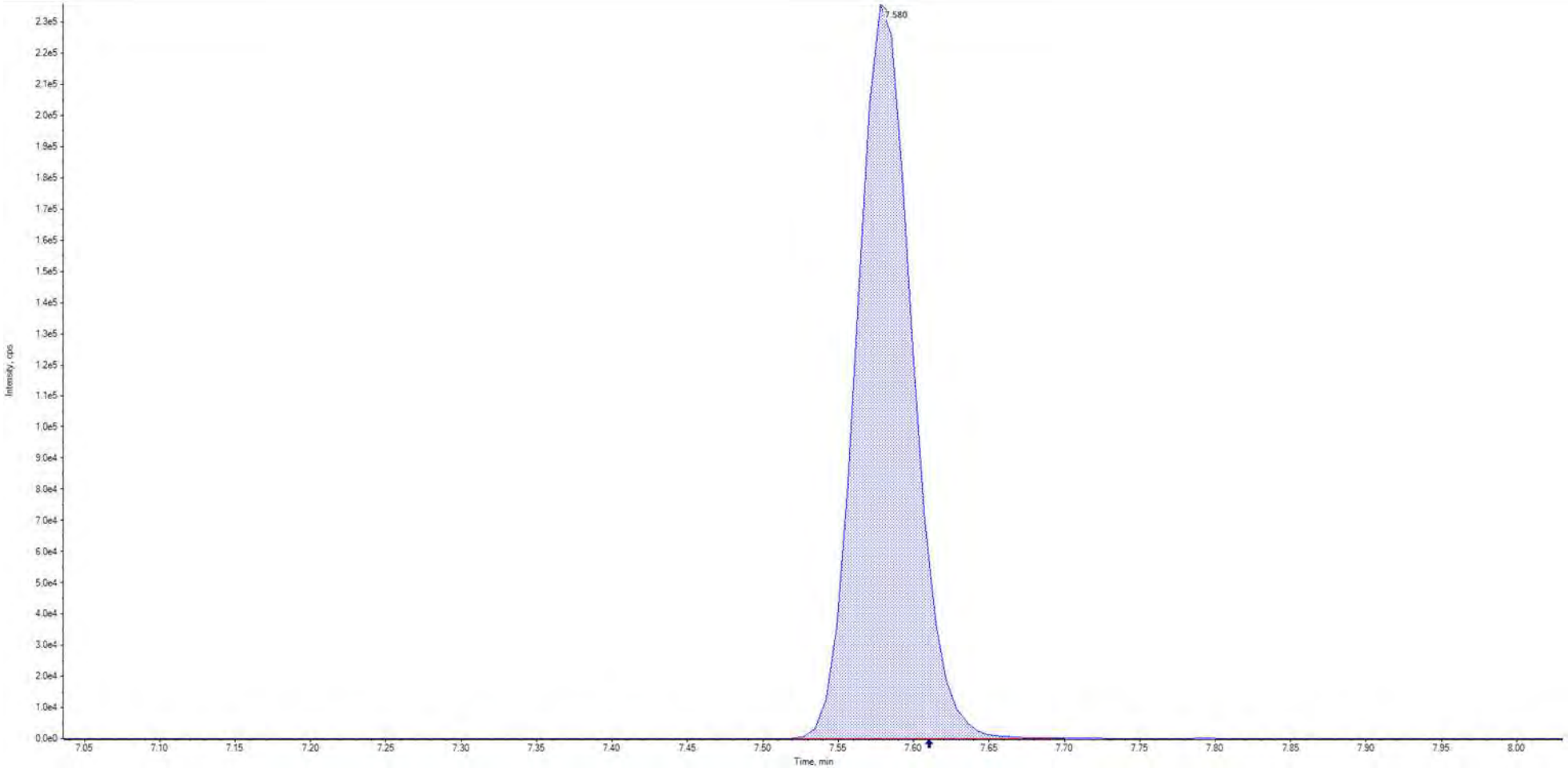
13C5-PFNA
Sample: L2450786-13



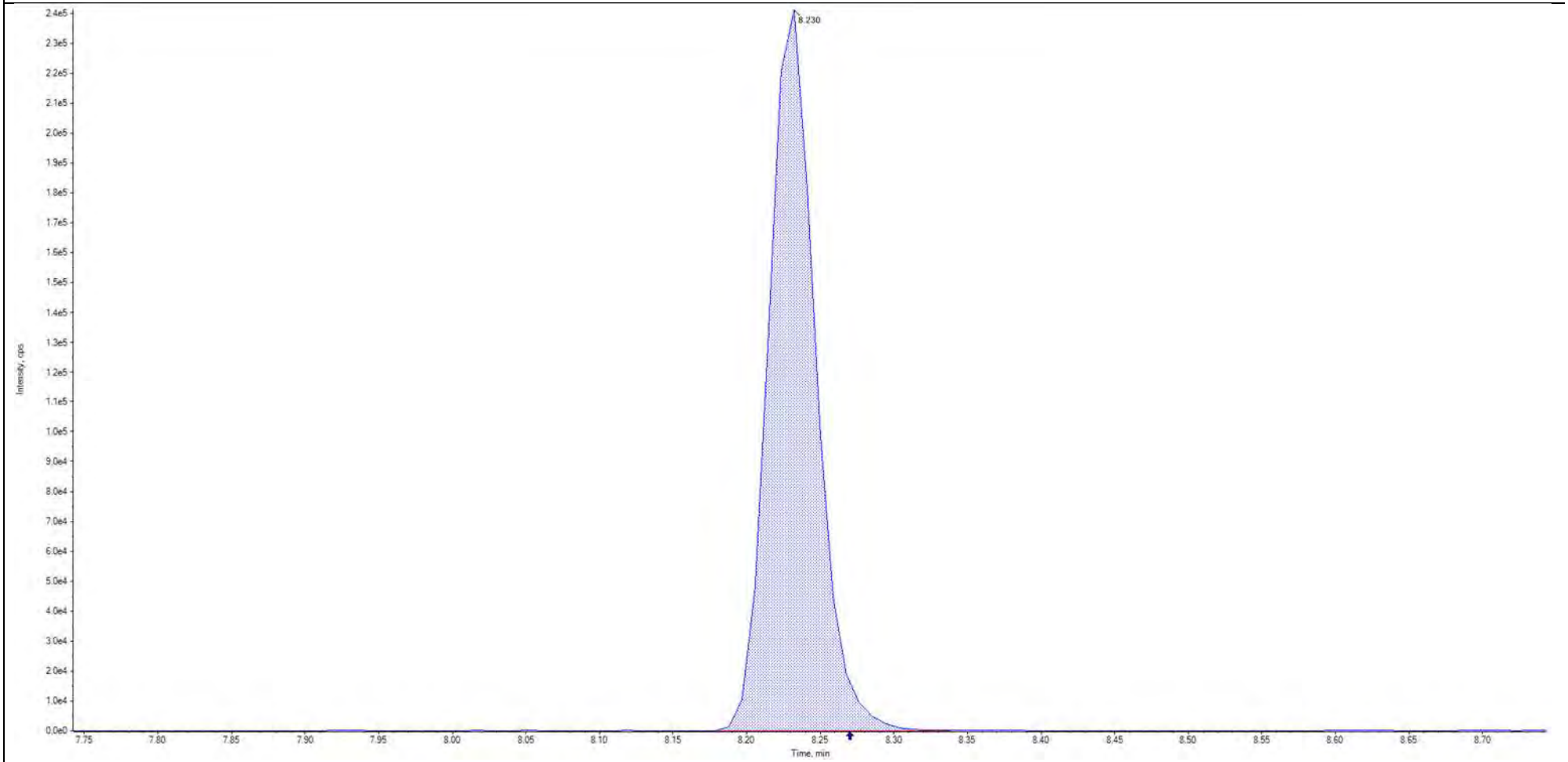
13C2-PFDA
Sample: L2450786-13



18O2-PFHxS
Sample: L2450786-13



13C4-PFOS
Sample: L2450786-13



Quantity Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_23.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

Semivolatiles Standards Data

Initial Calibration

Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

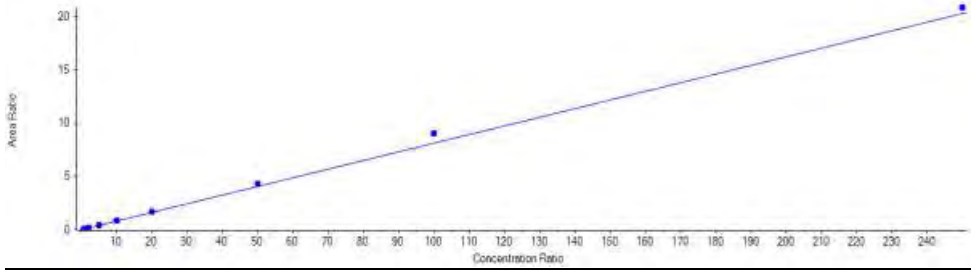
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFBA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	2.90	2709000	76984	0.35	87.6	0.71	323	True	0.96
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	2.90	2592000	159293	0.76	94.7	0.77	548	True	0.96
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	2.89	2519000	392007	1.92	95.9	0.78	791	True	0.94
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	2.90	2585000	1039126	4.96	99.1	0.80	1468	True	0.98
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	2.90	2681000	2162387	9.95	99.5	0.81	2017	True	1.16
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	2.89	2451000	4086434	20.56	102.8	0.83	2618	True	1.06
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	2.89	2355000	10163727	53.21	106.4	0.86	4525	True	1.08
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	2.89	2151000	19372954	111.06	111.1	0.90	6259	True	1.07
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	2.89	1978000	41238756	257.04	102.8	0.83	7593	True	1.35

Analyte Name: PFBA
Regression Equation: y = 0.811 x (std. dev. = 0.006) (weighting: None)
Calibration Fit: RSD = 6.87 RSE = 6.87
Average RF:0.811 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

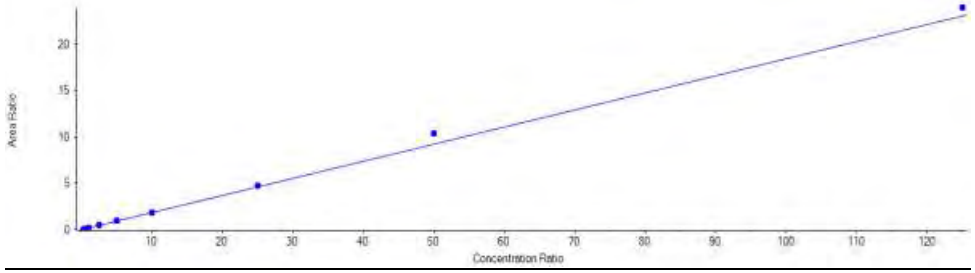
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFPeA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	4.64	1742000	58992	0.18	91.8	0.85	359	True	1.60
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	4.64	1675000	115247	0.37	93.3	0.86	387	True	1.34
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	4.64	1617000	285758	0.96	95.8	0.88	1221	True	1.55
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	4.65	1673000	782592	2.54	101.5	0.94	1886	True	1.05
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	4.65	1701000	1580428	5.04	100.8	0.93	1993	True	1.29
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	4.64	1593000	2862778	9.74	97.4	0.90	4666	True	1.45
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	4.64	1536000	7315685	25.84	103.4	0.95	4328	True	1.41
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	4.65	1347000	13922796	56.05	112.1	1.03	8593	True	1.46
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	4.65	1241000	29743263	129.97	104.0	0.96	9629	True	1.09

Analyte Name: PFPeA
Regression Equation: y = 0.922 x (std. dev. = 0.012) (weighting: None)
Calibration Fit: RSD = 6.25 RSE = 6.25
Average RF:0.922 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

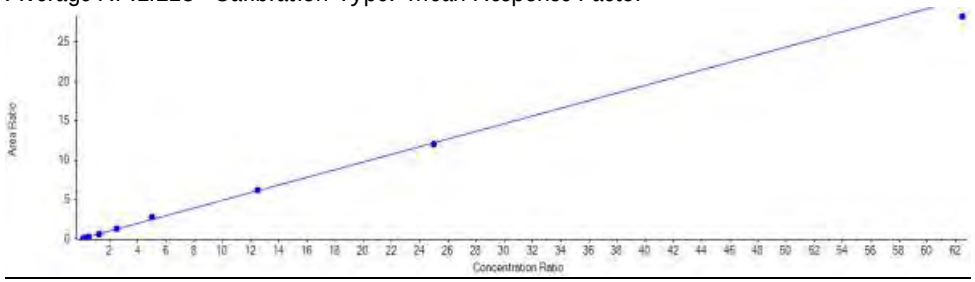
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFHxA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	5.34	1043000	53455	0.11	105.2	1.28	266	True	1.48
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	5.34	1082000	99881	0.19	94.7	1.15	307	True	1.47
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	5.34	1035000	234525	0.47	93.0	1.13	716	True	1.25
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	5.34	1088000	643791	1.21	97.1	1.18	1119	True	1.18
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	5.34	1067000	1354168	2.60	104.2	1.27	1122	True	1.00
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	5.34	995300	2736579	5.64	112.8	1.38	2013	True	1.44
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	5.34	1062000	6556474	12.67	101.4	1.24	2673	True	1.28
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	5.34	952600	11476754	24.72	98.9	1.21	4199	True	1.41
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	5.34	942500	26624209	57.96	92.7	1.13	4600	True	1.13

Analyte Name: PFHxA
Regression Equation: y = 1.218 x (std. dev. = 0.032) (weighting: None)
Calibration Fit: RSD = 6.61 RSE = 6.61
Average RF:1.218 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

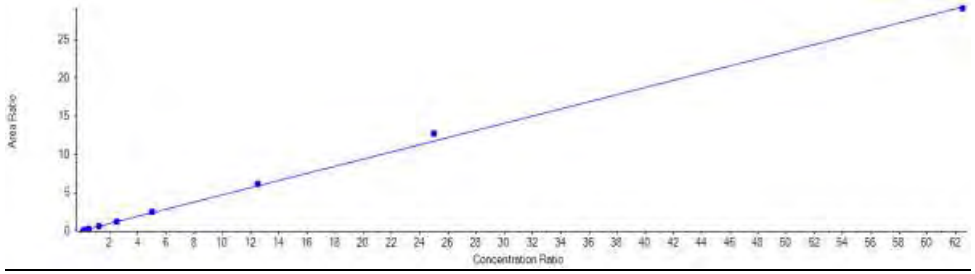
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFHpA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	6.25	1100000	47414	0.09	92.0	1.08	332	True	1.31
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	6.25	1063000	96463	0.19	96.9	1.13	557	True	1.47
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	6.25	1030000	227673	0.47	94.3	1.11	1128	True	1.42
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	6.25	1052000	614946	1.25	99.8	1.17	1930	True	1.22
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	6.25	1102000	1316642	2.55	102.0	1.20	2287	True	1.33
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	6.25	1011000	2442453	5.16	103.2	1.21	3033	True	1.36
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	6.25	1027000	6242426	12.97	103.8	1.22	4597	True	1.36
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	6.25	948500	12077750	27.18	108.7	1.27	6436	True	1.32
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	6.25	941100	27365507	62.08	99.3	1.16	9844	True	1.26

Analyte Name: PFHpA
Regression Equation: y = 1.171 x (std. dev. = 0.024) (weighting: None)
Calibration Fit: RSD = 5.14 RSE = 5.14
Average RF:1.171 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

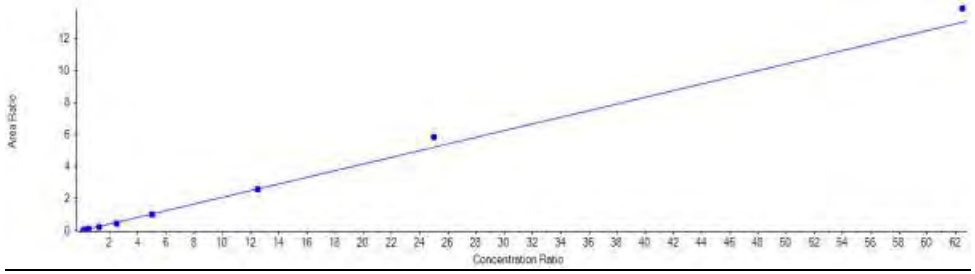
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFOA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	7.50	1630000	36354	0.11	107.1	0.56	198	True	0.10
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	7.50	1558000	61419	0.19	94.7	0.49	276	True	0.11
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	7.50	1455000	152387	0.50	100.6	0.52	595	True	0.16
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	7.51	1574000	383547	1.17	93.7	0.49	950	True	0.16
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	7.50	1615000	762266	2.27	90.7	0.47	1608	True	0.14
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	7.50	1464000	1457619	4.79	95.7	0.50	2159	True	0.16
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	7.50	1477000	3795945	12.35	98.8	0.51	3257	True	0.14
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	7.51	1332000	7765819	28.01	112.1	0.58	4787	True	0.11
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	7.50	1314000	18218936	66.64	106.6	0.56	6395	True	0.12

Analyte Name: PFOA
Regression Equation: y = 0.520 x (std. dev. = 0.015) (weighting: None)
Calibration Fit: RSD = 7.20 RSE = 7.20
Average RF:0.520 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

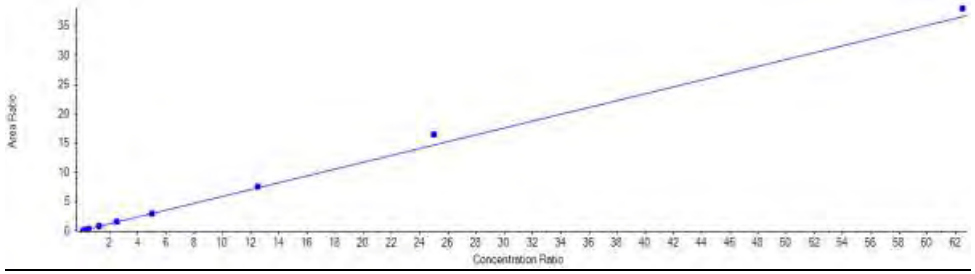
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFNA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	7.95	750800	37224	0.09	84.7	0.62	285	True	0.29
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	7.95	758100	81852	0.18	92.2	0.68	518	True	0.40
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	7.95	707900	203035	0.49	98.0	0.72	709	True	0.39
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	7.95	745800	540767	1.24	99.1	0.73	1132	True	0.40
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	7.95	718900	1108082	2.63	105.3	0.77	1389	True	0.39
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	7.95	713200	2096579	5.02	100.4	0.74	2134	True	0.33
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	7.95	714000	5432775	12.99	104.0	0.76	3350	True	0.35
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	7.95	621400	10245828	28.16	112.6	0.82	5226	True	0.31
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	7.95	598800	22763835	64.92	103.9	0.76	5978	True	0.29

Analyte Name: PFNA
Regression Equation: y = 0.732 x (std. dev. = 0.047) (weighting: None)
Calibration Fit: RSD = 8.06 RSE = 8.06
Average RF:0.732 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

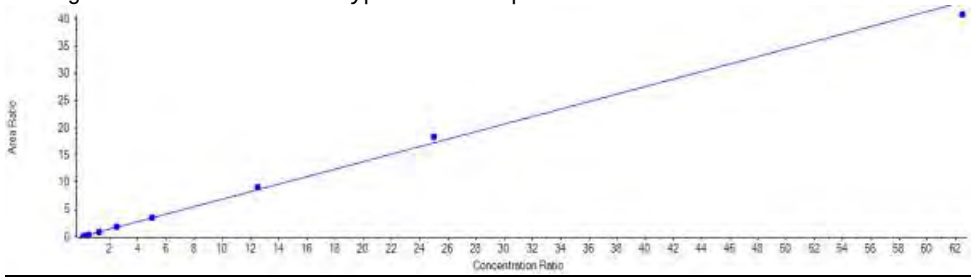
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFDA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	8.18	755900	52636	0.10	101.0	0.87	434	True	1.16
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	8.18	745000	96779	0.19	94.2	0.81	980	True	1.35
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	8.17	709400	227128	0.46	92.9	0.80	1669	True	1.25
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	8.18	725600	639422	1.28	102.3	0.88	2620	True	1.27
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	8.18	724500	1298863	2.60	104.0	0.90	3531	True	1.21
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	8.18	696100	2380952	4.96	99.2	0.86	3502	True	1.64
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	8.18	655800	5967617	13.20	105.6	0.91	5677	True	1.70
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	8.18	601100	10987417	26.51	106.1	0.91	7896	True	1.49
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	8.18	533200	21763691	59.21	94.7	0.82	10646	True	1.32

Analyte Name: PFDA
Regression Equation: y = 0.862 x (std. dev. = 0.035) (weighting: None)
Calibration Fit: RSD = 5.03 RSE = 5.03
Average RF:0.862 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

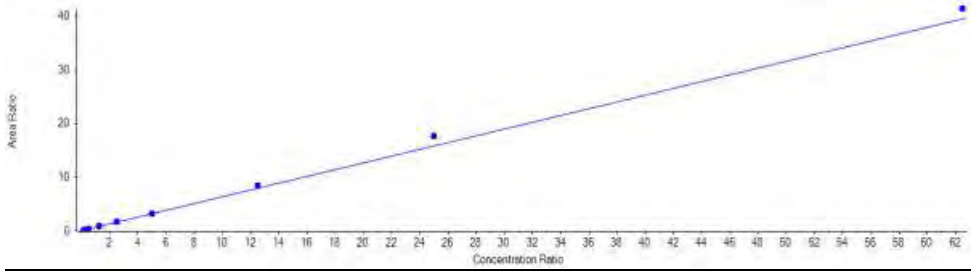
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFUnA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	8.47	669300	35228	0.08	83.3	0.66	372	True	1.38
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	8.47	601600	70846	0.19	93.2	0.74	704	True	0.96
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	8.47	556900	174087	0.49	98.9	0.78	1324	True	0.96
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	8.47	575300	462255	1.27	101.7	0.80	2055	True	0.99
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	8.48	594700	954021	2.54	101.5	0.80	2597	True	0.97
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	8.47	582400	1816864	4.94	98.7	0.78	7886	True	1.11
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	8.47	523200	4390261	13.27	106.2	0.84	7069	True	1.20
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	8.47	464500	8197525	27.92	111.7	0.88	6315	True	0.96
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	8.47	410100	17004399	65.60	105.0	0.83	10439	True	1.28

Analyte Name: PFUnA
Regression Equation: y = 0.790 x (std. dev. = 0.052) (weighting: None)
Calibration Fit: RSD = 8.17 RSE = 8.17
Average RF:0.790 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

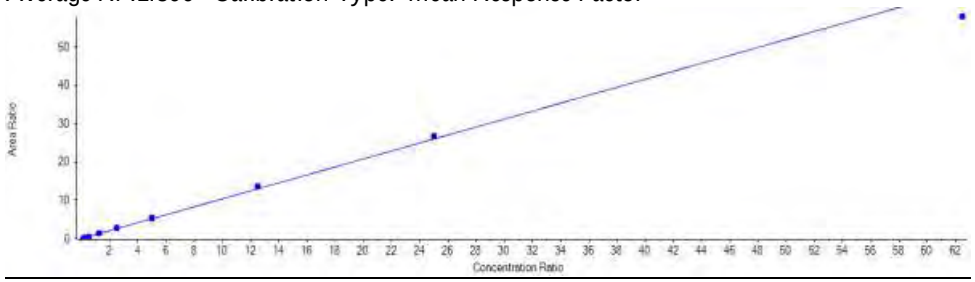
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFDoA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	8.91	366900	35360	0.09	92.7	1.21	743	True	1.26
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	8.91	361600	71799	0.19	95.4	1.24	924	True	1.16
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	8.90	351500	178586	0.49	97.7	1.27	1604	True	1.26
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	8.91	351900	489922	1.34	107.1	1.39	2740	True	1.39
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	8.91	364500	1010590	2.67	106.6	1.39	4572	True	1.11
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	8.91	357300	1927599	5.19	103.7	1.35	6964	True	1.40
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	8.90	355200	4823549	13.05	104.4	1.36	8753	True	1.32
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	8.91	350000	9400002	25.82	103.3	1.34	11451	True	1.29
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	8.90	356000	20644301	55.75	89.2	1.16	13675	True	1.46

Analyte Name: PFDoA
Regression Equation: y = 1.300 x (std. dev. = 0.067) (weighting: None)
Calibration Fit: RSD = 6.47 RSE = 6.47
Average RF:1.300 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

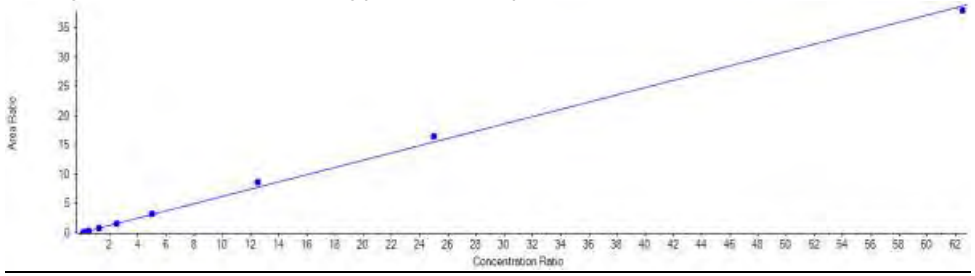
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFTrDA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	9.50	366900	19413	0.09	85.4	0.66	232	True	1.53
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	9.50	361600	41986	0.19	93.7	0.73	420	True	1.21
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	9.50	351500	105929	0.49	97.2	0.75	965	True	1.06
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	9.51	351900	277739	1.27	101.9	0.79	1363	True	1.21
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	9.51	364500	588063	2.60	104.1	0.81	1854	True	1.30
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	9.50	357300	1141052	5.15	103.0	0.80	2531	True	1.30
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	9.50	355200	3032059	13.77	110.2	0.85	3644	True	1.35
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	9.50	350000	5780095	26.64	106.6	0.83	4417	True	1.26
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	9.50	356000	13521775	61.28	98.1	0.76	5537	True	1.19

Analyte Name: PFTrDA
Regression Equation: y = 0.775 x (std. dev. = 0.046) (weighting: None)
Calibration Fit: RSD = 7.43 RSE = 7.43
Average RF:0.775 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

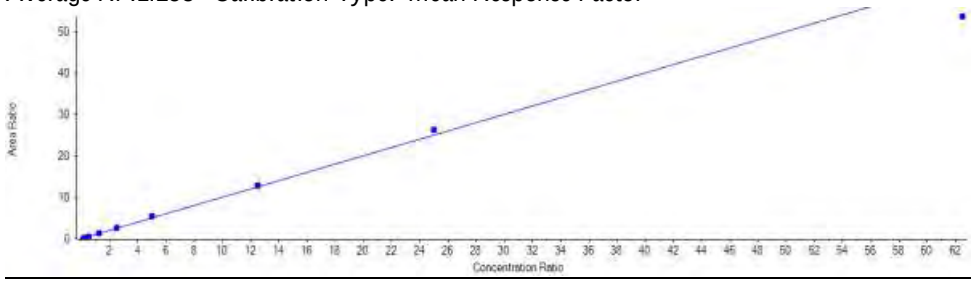
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFTeDA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	9.91	383300	39916	0.10	103.9	1.30	389	True	1.58
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	9.91	412200	75539	0.18	91.4	1.15	567	True	1.18
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	9.91	380500	186633	0.49	97.9	1.23	1068	True	1.21
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	9.92	392800	504145	1.28	102.4	1.28	1719	True	1.15
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	9.91	398400	1023758	2.56	102.6	1.29	2236	True	1.20
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	9.91	382500	2070325	5.40	108.0	1.35	2545	True	1.53
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	9.91	393600	5094568	12.91	103.3	1.30	6011	True	1.21
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	9.91	363900	9555438	26.19	104.8	1.31	6583	True	1.67
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	9.91	385100	20696767	53.62	85.8	1.08	6738	True	1.44

Analyte Name: PFTeDA
Regression Equation: y = 1.253 x (std. dev. = 0.071) (weighting: None)
Calibration Fit: RSD = 7.12 RSE = 7.12
Average RF:1.253 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

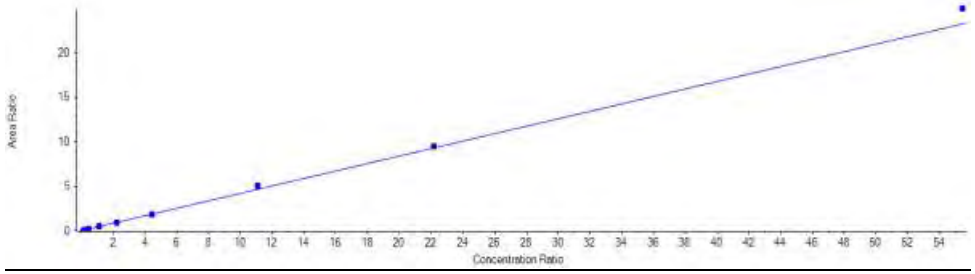
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFBS

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	5.32	856300	29114	0.08	91.4	0.89	34	True	0.81
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	5.31	812400	57514	0.17	95.1	0.93	63	True	1.36
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	5.31	813200	146551	0.43	96.9	0.95	72	True	1.36
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	5.32	811200	378090	1.11	100.2	0.98	82	True	1.37
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	5.32	853200	786438	2.20	99.1	0.97	70	True	1.14
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	5.32	809900	1500220	4.42	99.6	0.97	103	True	0.97
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	5.31	781300	3919451	11.96	107.8	1.05	87	True	1.35
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	5.32	773600	7381223	22.74	102.6	1.00	75	True	1.05
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	5.32	699200	17476522	59.58	107.5	1.05	61	True	1.17

Analyte Name: PFBS
Regression Equation: y = 0.978 x (std. dev. = 0.023) (weighting: None)
Calibration Fit: RSD = 5.40 RSE = 5.40
Average RF:0.978 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

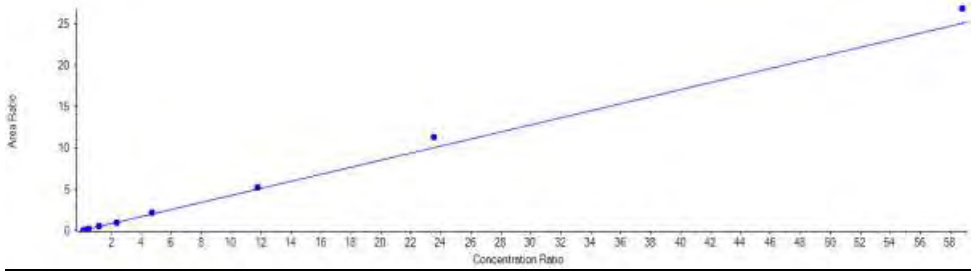
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFPeS

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	6.34	705600	24008	0.08	84.8	0.86	751	True	1.03
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	6.34	681100	49418	0.17	90.4	0.91	1408	True	1.29
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	6.34	639900	120878	0.44	94.1	0.95	2430	True	1.22
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	6.34	661300	332690	1.18	100.3	1.01	4866	True	1.17
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	6.34	688800	680161	2.32	98.4	1.00	5997	True	1.39
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	6.34	610000	1312585	5.05	107.2	1.08	8414	True	1.15
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	6.34	650600	3422752	12.34	104.9	1.06	16269	True	1.14
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	6.34	597600	6765018	26.54	112.8	1.14	18343	True	1.29
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	6.34	590500	15870136	63.01	107.1	1.08	27047	True	1.26

Analyte Name: PFPeS
Regression Equation: y = 1.011 x (std. dev. = 0.039) (weighting: None)
Calibration Fit: RSD = 9.03 RSE = 9.03
Average RF:1.011 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

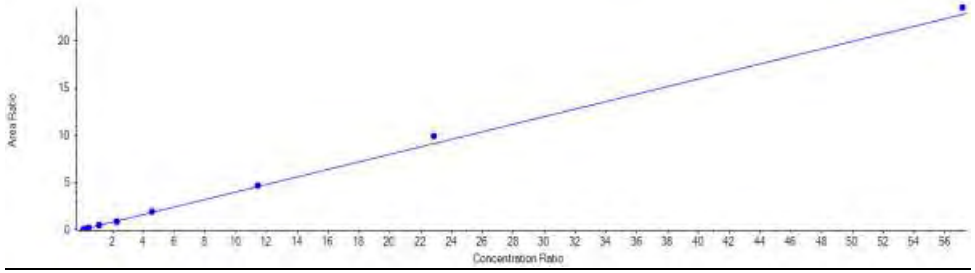
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFHxS

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	7.62	705600	25007	0.09	97.1	0.92	32741	True	0.17
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	7.61	681100	50270	0.19	101.2	0.96	9073	True	1.24
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	7.61	639900	110263	0.43	94.5	0.89	9640	True	0.17
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	7.62	661300	286954	1.09	95.2	0.90	27806	True	1.04
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	7.62	688800	599989	2.18	95.5	0.90	40481	True	0.16
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	7.62	610000	1147248	4.71	103.1	0.98	42905	True	1.02
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	7.61	650600	3015740	11.61	101.7	0.96	20017	True	1.16
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	7.62	597600	5917905	24.81	108.6	1.03	40237	True	1.16
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	7.62	590500	13905841	59.00	103.3	0.98	848848	True	0.15

Analyte Name: PFHxS
Regression Equation: y = 0.946 x (std. dev. = 0.019) (weighting: None)
Calibration Fit: RSD = 4.75 RSE = 4.75
Average RF:0.946 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

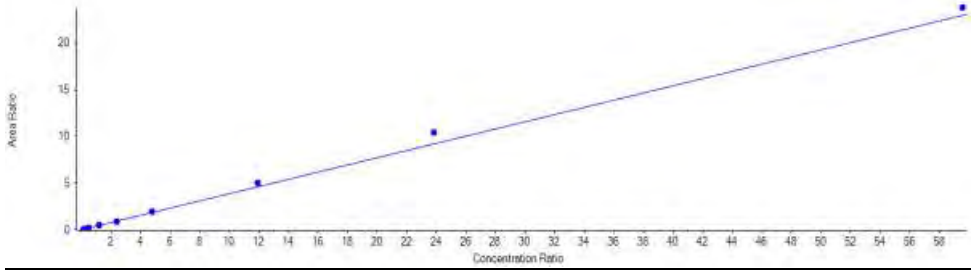
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFHpS

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	8.02	732200	22616	0.08	84.0	0.78	3220	True	1.25
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	8.01	723500	48727	0.18	91.6	0.85	4477	True	0.81
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	8.01	677200	122492	0.47	98.4	0.91	2653	True	1.51
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	8.02	681900	306646	1.17	97.9	0.90	60036	True	1.46
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	8.02	747800	649407	2.25	94.5	0.87	1174053	True	1.35
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	8.02	667800	1320608	5.13	107.6	0.99	23379142	True	1.02
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	8.01	666100	3346971	13.02	109.3	1.01	17356	True	1.18
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	8.02	620600	6449656	26.94	113.1	1.05	22541	True	1.00
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	8.02	614900	14651286	61.77	103.7	0.96	113644652	True	0.95

Analyte Name: PFHpS
Regression Equation: y = 0.924 x (std. dev. = 0.036) (weighting: None)
Calibration Fit: RSD = 9.31 RSE = 9.31
Average RF:0.924 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

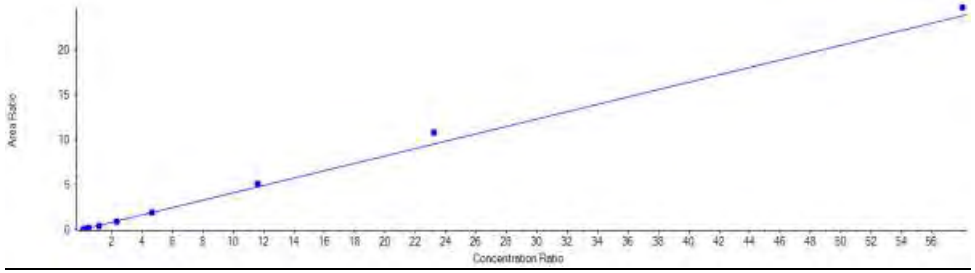
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFOS

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	8.28	732200	25837	0.09	92.6	0.91	180	True	0.75
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	8.27	723500	52468	0.18	95.1	0.94	461	True	0.23
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	8.27	677200	128413	0.46	99.5	0.98	1030	True	0.27
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	8.28	681900	306039	1.09	94.2	0.93	1470	True	0.27
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	8.28	747800	668069	2.18	93.8	0.92	1870	True	0.27
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	8.27	667800	1290080	4.70	101.4	1.00	1963	True	0.29
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	8.27	666100	3372642	12.33	106.3	1.05	3548	True	0.33
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	8.28	620600	6704354	26.30	113.4	1.12	4128	True	0.30
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	8.27	614900	15218317	60.26	103.9	1.02	4971	True	0.28

Analyte Name: PFOS
Regression Equation: y = 0.984 x (std. dev. = 0.029) (weighting: None)
Calibration Fit: RSD = 6.95 RSE = 6.95
Average RF:0.984 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

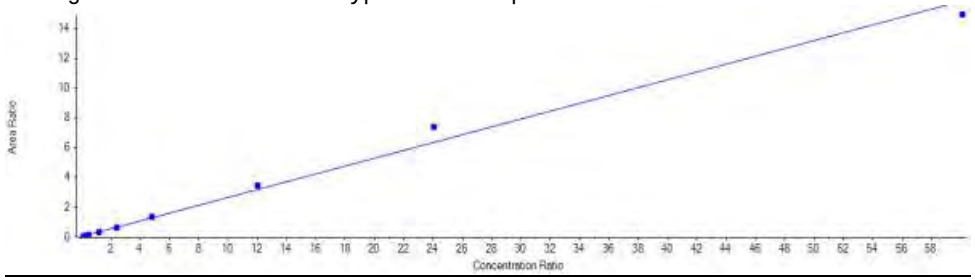
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFNS

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	8.63	732200	15906	0.08	85.6	0.54	347	True	1.10
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	8.63	723500	34346	0.18	93.6	0.59	7658	True	1.34
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	8.62	677200	84849	0.48	98.8	0.62	11144	True	1.21
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	8.63	681900	220414	1.23	101.9	0.64	10074	True	1.32
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	8.63	747800	452953	2.30	95.5	0.60	13160	True	1.36
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	8.63	667800	887318	5.04	104.8	0.66	8484	True	1.45
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	8.63	666100	2304611	13.12	109.1	0.69	8538	True	1.02
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	8.63	620600	4586269	28.02	116.5	0.74	18061	True	0.96
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	8.63	614900	9187351	56.66	94.2	0.60	16737	True	1.14

Analyte Name: PFNS
Regression Equation: y = 0.632 x (std. dev. = 0.024) (weighting: None)
Calibration Fit: RSD = 9.25 RSE = 9.25
Average RF:0.632 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

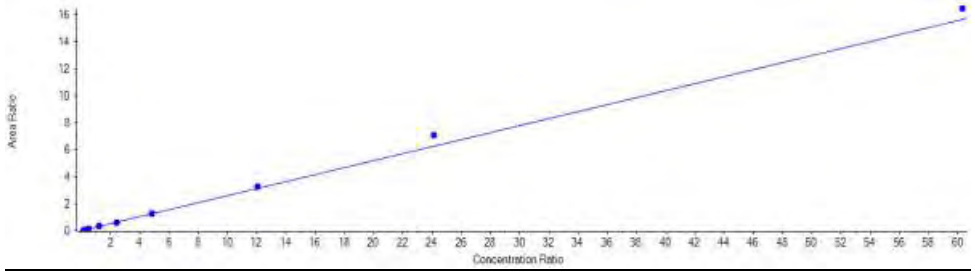
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFDS

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	9.15	732200	16034	0.08	87.4	0.54	1465	True	1.21
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	9.15	723500	33457	0.18	92.2	0.57	3522	True	1.19
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	9.14	677200	79503	0.45	93.7	0.58	7344	True	1.33
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	9.15	681900	224077	1.27	104.9	0.65	14605	True	1.19
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	9.15	747800	450279	2.32	96.1	0.60	10431	True	1.22
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	9.15	667800	862876	4.97	103.1	0.64	100447	True	1.11
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	9.14	666100	2184110	12.62	104.6	0.65	33767	True	1.42
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	9.14	620600	4389768	27.23	112.9	0.70	27975	True	1.30
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	9.14	614900	10136479	63.46	105.2	0.66	29238	True	1.23

Analyte Name: PFDS
Regression Equation: y = 0.622 x (std. dev. = 0.021) (weighting: None)
Calibration Fit: RSD = 8.09 RSE = 8.09
Average RF:0.622 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

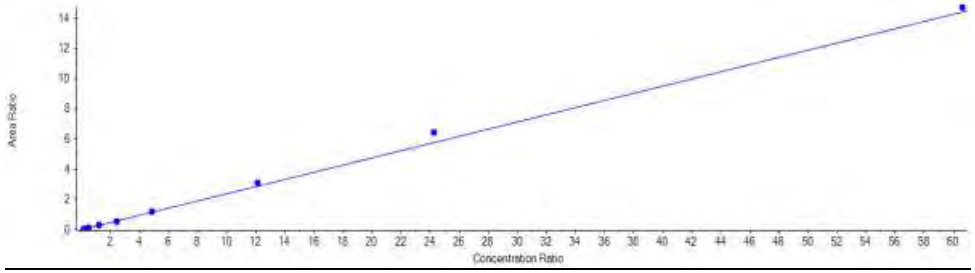
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFDoS

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	10.01	732200	14889	0.09	88.1	0.50	28946	True	1.15
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	10.00	723500	31280	0.18	93.7	0.53	3800	True	0.82
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	10.00	677200	76105	0.47	97.4	0.56	6785	True	0.84
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	10.01	681900	199205	1.23	101.3	0.58	130155	True	1.39
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	10.01	747800	418271	2.35	96.9	0.55	22261	True	1.43
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	10.00	667800	781329	4.92	101.4	0.58	184218	True	1.08
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	10.00	666100	2057796	12.98	107.1	0.61	10089	True	0.85
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	10.01	620600	4012335	27.17	112.1	0.64	102420	True	1.15
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	10.00	614900	9057070	61.91	102.1	0.58	18400	True	1.07

Analyte Name: PFDoS
Regression Equation: y = 0.570 x (std. dev. = 0.017) (weighting: None)
Calibration Fit: RSD = 7.08 RSE = 7.08
Average RF:0.570 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

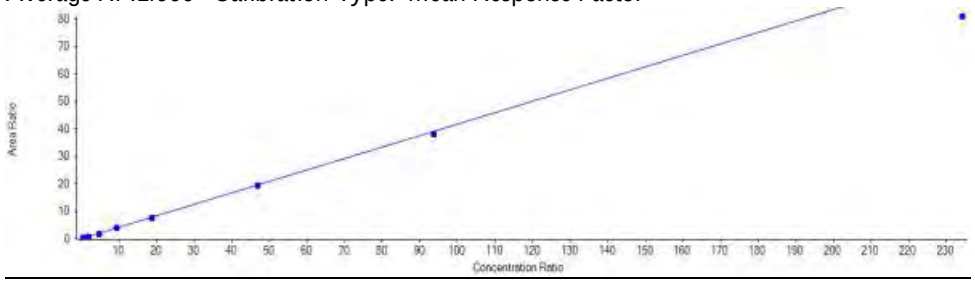
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: 4:2FTS

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	5.14	316000	63237	0.48	127.7	2.50	933	True	0.97
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	5.13	292500	102451	0.84	111.8	2.19	491983	True	1.48
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	5.14	284100	214011	1.80	96.2	1.88	1806	True	1.57
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	5.14	293700	502551	4.10	87.4	1.71	29167999	True	1.29
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	5.14	296100	1152996	9.32	99.4	1.95	4172	True	1.09
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	5.14	279400	2150596	18.42	98.2	1.93	4758	True	1.53
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	5.13	271600	5291738	46.63	99.5	1.95	2568647	True	1.45
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	5.14	270900	10310809	91.08	97.2	1.90	5795546	True	0.96
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	5.14	285500	23137425	193.97	82.8	1.62	171109961	True	1.04

Analyte Name: 4:2FTS
Regression Equation: y = 1.960 x (std. dev. = 0.055) (weighting: None)
Calibration Fit: RSD = 13.18 RSE = 13.18
Average RF:1.960 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

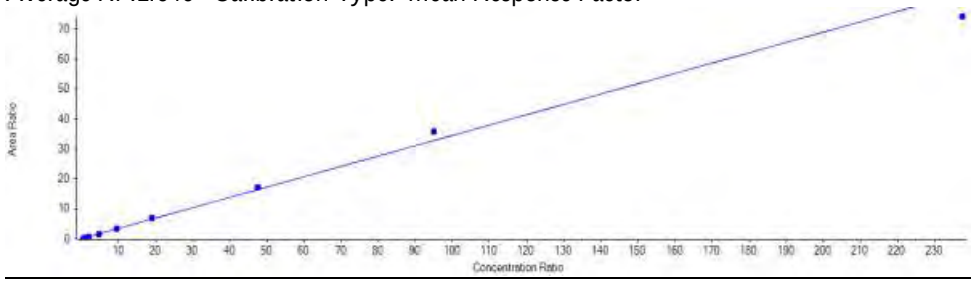
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: 6:2FTS

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	7.09	238700	29652	0.36	94.8	1.55	5755123	True	1.28
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	7.09	214800	54403	0.73	96.6	1.59	672	True	0.95
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	7.09	212200	134548	1.84	96.7	1.59	2075	True	1.04
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	7.10	208800	344993	4.79	100.8	1.65	3309	True	1.13
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	7.09	217600	731187	9.74	102.5	1.68	47100004	True	1.15
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	7.09	207100	1415815	19.81	104.3	1.71	4100892	True	1.45
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	7.09	208600	3565584	49.53	104.3	1.71	120969116	True	1.38
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	7.09	200500	7191794	103.98	109.5	1.80	4944	True	1.19
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	7.09	218700	16231198	215.16	90.6	1.49	1168487	True	1.39

Analyte Name: 6:2FTS
Regression Equation: y = 1.640 x (std. dev. = 0.020) (weighting: None)
Calibration Fit: RSD = 5.82 RSE = 5.82
Average RF:1.640 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

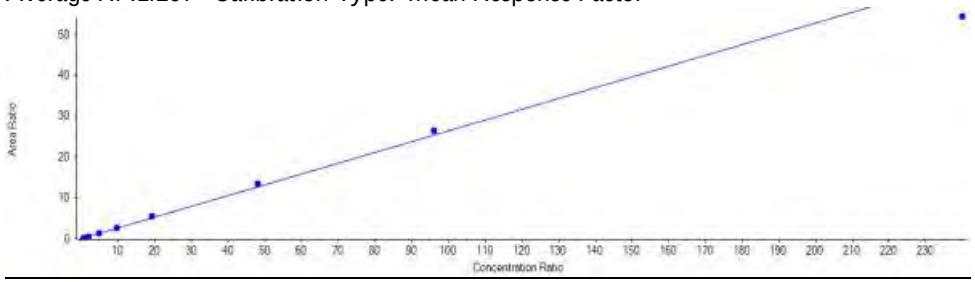
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: 8:2FTS

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	8.07	355700	32302	0.34	89.6	1.14	1120	True	1.05
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	8.07	350100	67583	0.73	95.2	1.21	39273	True	1.57
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	8.07	314700	160030	1.93	100.3	1.27	370097	True	1.56
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	8.08	324500	432638	5.05	105.2	1.33	4642	True	1.42
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	8.07	341500	910884	10.10	105.2	1.33	4008	True	1.30
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	8.07	309400	1682010	20.59	107.2	1.36	5550	True	1.02
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	8.07	298200	4038399	51.28	106.8	1.35	5812	True	1.15
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	8.08	271800	7209364	100.44	104.6	1.33	7027	True	1.03
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	8.07	278600	15163258	206.09	85.9	1.09	9396	True	1.68

Analyte Name: 8:2FTS
Regression Equation: y = 1.267 x (std. dev. = 0.021) (weighting: None)
Calibration Fit: RSD = 7.96 RSE = 7.96
Average RF:1.267 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

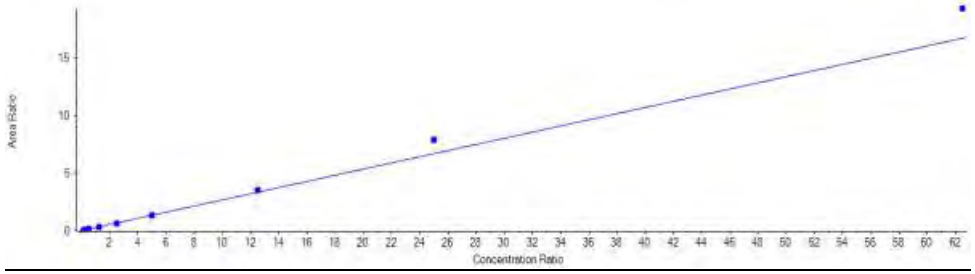
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFOSA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	9.55	1055000	25409	0.09	90.1	0.60	480	True	0.16
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	9.54	1009000	48458	0.18	89.8	0.60	664	True	0.18
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	9.54	992200	119348	0.45	90.0	0.60	872	True	0.17
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	9.55	1001000	319396	1.19	95.5	0.64	22824431	True	0.17
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	9.55	1011000	658264	2.44	97.4	0.65	38374	True	0.18
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	9.55	938700	1244740	4.96	99.2	0.66	2974031	True	0.16
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	9.54	902700	3171379	13.14	105.1	0.70	1226	True	0.17
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	9.55	820100	6437202	29.36	117.4	0.79	86873	True	0.15
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	9.54	780100	15046966	72.14	115.4	0.77	22190	True	0.18

Analyte Name: PFOSA
Regression Equation: y = 0.668 x (std. dev. = 0.028) (weighting: None)
Calibration Fit: RSD = 10.60 RSE = 10.60
Average RF:0.668 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

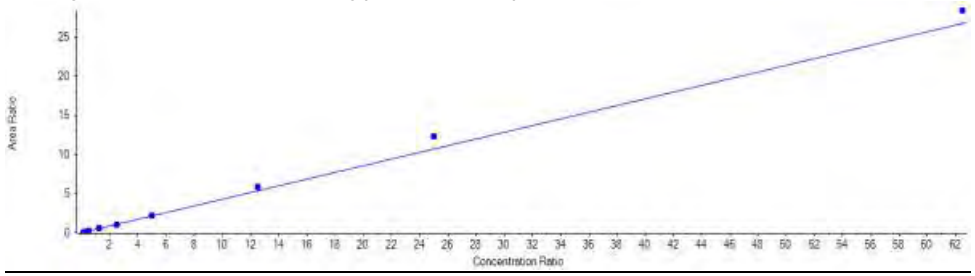
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: NMeFOSA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	10.17	174700	5812	0.08	77.7	0.83	598555	True	0.26
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	10.16	155700	13659	0.21	102.4	1.10	233	True	0.29
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	10.16	159200	30885	0.45	90.6	0.97	23430	True	0.31
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	10.17	162800	85925	1.23	98.6	1.06	22807	True	0.28
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	10.17	166900	173879	2.43	97.3	1.04	610172	True	0.28
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	10.17	153200	337828	5.15	103.0	1.10	11133	True	0.24
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	10.17	153000	895612	13.67	109.4	1.17	6479	True	0.31
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	10.17	148600	1828142	28.71	114.9	1.23	4490	True	0.25
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	10.17	155900	4433790	66.40	106.2	1.14	8489	True	0.25

Analyte Name: NMeFOSA
Regression Equation: y = 1.071 x (std. dev. = 0.047) (weighting: None)
Calibration Fit: RSD = 10.94 RSE = 10.94
Average RF:1.071 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

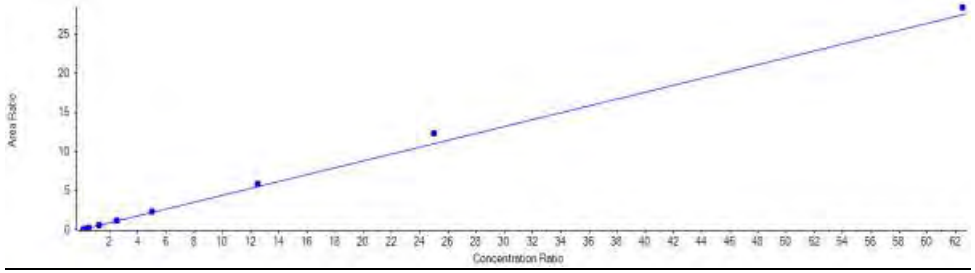
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: NEtFOSA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	10.38	167500	6309	0.09	85.7	0.94	8149	True	0.31
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	10.38	167100	12795	0.17	87.2	0.96	74730	True	0.27
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	10.37	153300	31911	0.47	94.8	1.04	227762	True	0.27
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	10.38	158000	90396	1.30	104.2	1.14	39369	True	0.27
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	10.38	160700	181221	2.57	102.7	1.13	6895810	True	0.23
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	10.38	151400	342011	5.14	102.9	1.13	9106041	True	0.25
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	10.38	150300	887257	13.44	107.5	1.18	6668	True	0.23
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	10.38	142000	1739926	27.89	111.6	1.23	203912	True	0.25
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	10.38	149000	4230356	64.65	103.4	1.14	26257	True	0.27

Analyte Name: NEtFOSA
Regression Equation: y = 1.098 x (std. dev. = 0.039) (weighting: None)
Calibration Fit: RSD = 8.88 RSE = 8.88
Average RF:1.098 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

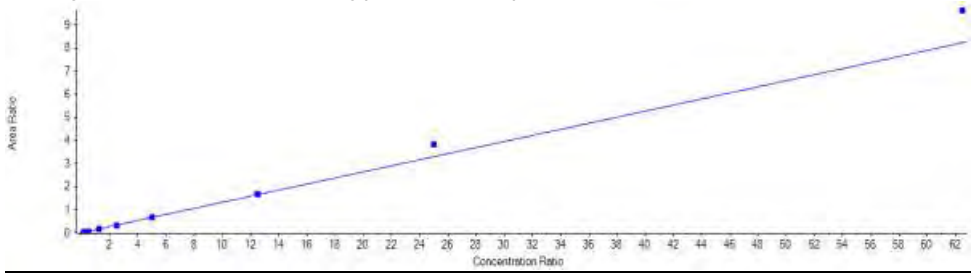
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: NMeFOSAA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	8.22	873200	10089	0.09	87.8	0.58	29422	True	0.89
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	8.22	828200	19476	0.18	89.4	0.59	335	True	1.27
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	8.22	649400	36814	0.43	86.2	0.57	811	True	1.48
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	8.23	839100	138283	1.25	100.2	0.66	1949	True	1.44
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	8.23	700000	231441	2.51	100.5	0.66	1249	True	1.42
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	8.23	693300	460043	5.04	100.9	0.66	2090	True	1.03
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	8.22	693500	1169398	12.81	102.5	0.67	1742	True	1.19
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	8.23	679700	2587090	28.92	115.7	0.76	1459	True	1.00
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	8.23	532600	5124216	73.11	117.0	0.77	1402	True	0.93

Analyte Name: NMeFOSAA
Regression Equation: y = 0.658 x (std. dev. = 0.015) (weighting: None)
Calibration Fit: RSD = 11.16 RSE = 11.16
Average RF:0.658 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

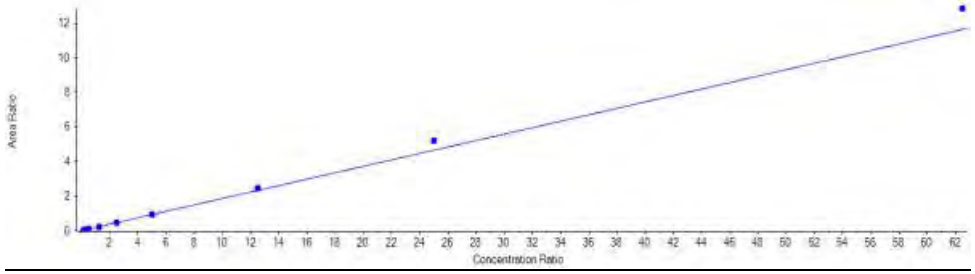
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: NEtFOSAA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	8.36	401500	6220	0.08	83.1	0.77	349	True	1.29
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	8.37	384200	14442	0.20	100.8	0.94	328	True	1.00
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	8.36	377500	35871	0.51	101.9	0.95	455	True	0.51
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	8.37	387000	84369	1.17	93.5	0.87	622	True	0.47
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	8.37	404700	180301	2.39	95.6	0.89	564	True	0.50
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	8.37	385700	356003	4.95	99.0	0.92	889	True	0.43
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	8.36	368700	895167	13.02	104.2	0.97	781	True	0.48
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	8.37	359800	1868827	27.86	111.4	1.04	1062	True	1.13
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	8.37	340800	4386182	69.03	110.4	1.03	911	True	1.58

Analyte Name: NEtFOSAA
Regression Equation: y = 0.932 x (std. dev. = 0.016) (weighting: None)
Calibration Fit: RSD = 8.73 RSE = 8.73
Average RF:0.932 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

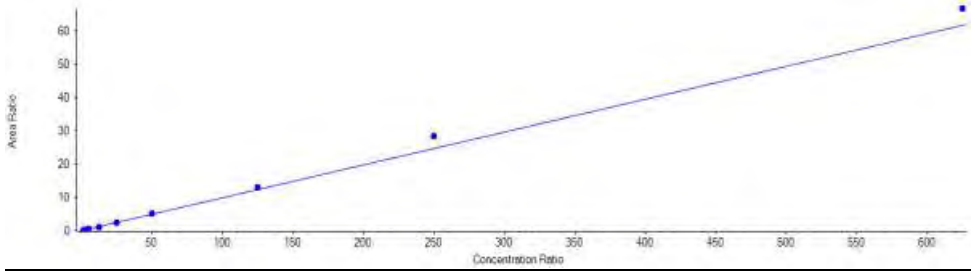
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: NMeFOSE

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	10.08	1247000	109398	0.89	88.9	2.19	1787	True	0.26
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	10.08	1181000	220343	1.89	94.5	2.33	1918	True	0.31
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	10.08	1164000	543241	4.73	94.6	2.33	4149	True	0.32
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	10.08	1228000	1480904	12.22	97.8	2.41	3172	True	0.30
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	10.08	1289000	2982647	23.45	93.8	2.31	13701	True	0.30
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	10.08	1204000	6081925	51.19	102.4	2.53	17397	True	0.25
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	10.08	1269000	16436198	131.22	105.0	2.59	6722	True	0.32
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	10.08	1205000	34160374	287.20	114.9	2.83	10771	True	0.25
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	10.08	1259000	84038487	676.35	108.2	2.67	9664	True	0.25

Analyte Name: NMeFOSE
Regression Equation: y = 2.467 x (std. dev. = 0.008) (weighting: None)
Calibration Fit: RSD = 8.26 RSE = 8.26
Average RF:2.467 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

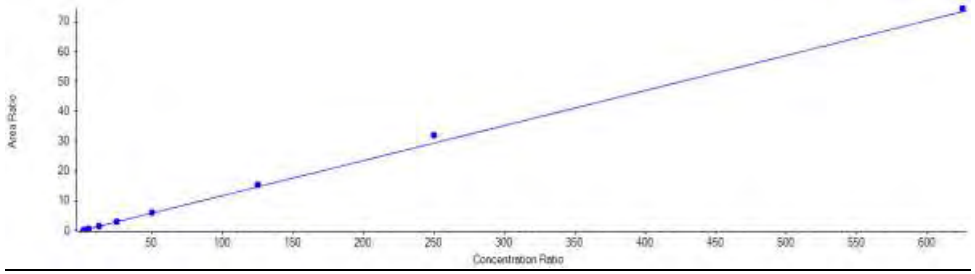
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: NEtFOSE

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	10.28	1961000	200381	0.87	87.1	2.56	1226	True	0.29
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	10.28	1862000	414400	1.90	94.8	2.78	1083	True	0.25
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	10.27	1797000	1009032	4.78	95.6	2.81	2095	True	0.25
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	10.28	1877000	2767938	12.56	100.5	2.95	2771	True	0.24
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	10.28	1859000	5649756	25.89	103.6	3.04	3392	True	0.26
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	10.28	1796000	10881697	51.62	103.3	3.03	4693	True	0.28
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	10.28	1794000	27604824	131.07	104.9	3.08	4266	True	0.28
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	10.28	1689000	53947112	272.13	108.9	3.19	4972	True	0.30
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	10.28	1668000	124215059	634.26	101.5	2.98	5049	True	0.23

Analyte Name: NEtFOSE
Regression Equation: y = 2.935 x (std. dev. = 0.008) (weighting: None)
Calibration Fit: RSD = 6.53 RSE = 6.53
Average RF:2.935 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

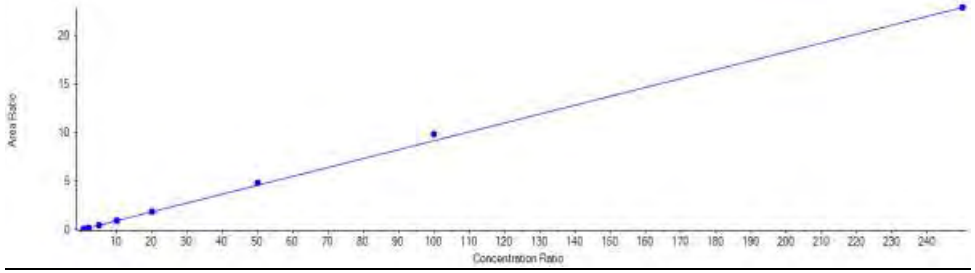
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: HFPO-DA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	5.61	2886000	92315	0.35	87.2	0.80	20279	True	1.21
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	5.60	2757000	196682	0.78	97.3	0.89	2485	True	1.08
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	5.60	2653000	500246	2.06	102.8	0.94	7412	True	1.25
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	5.60	2847000	1288956	4.94	98.8	0.91	62161	True	1.35
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	5.60	3027000	2739320	9.87	98.7	0.91	18258	True	1.14
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	5.60	2725000	5113517	20.47	102.3	0.94	27944	True	1.20
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	5.60	2718000	13116686	52.65	105.3	0.97	25693	True	1.20
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	5.60	2507000	24712719	107.52	107.5	0.99	38611	True	1.08
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	5.60	2454000	56235106	249.99	100.0	0.92	44180	True	1.21

Analyte Name: HFPO-DA
Regression Equation: y = 0.917 x (std. dev. = 0.005) (weighting: None)
Calibration Fit: RSD = 5.83 RSE = 5.83
Average RF:0.917 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

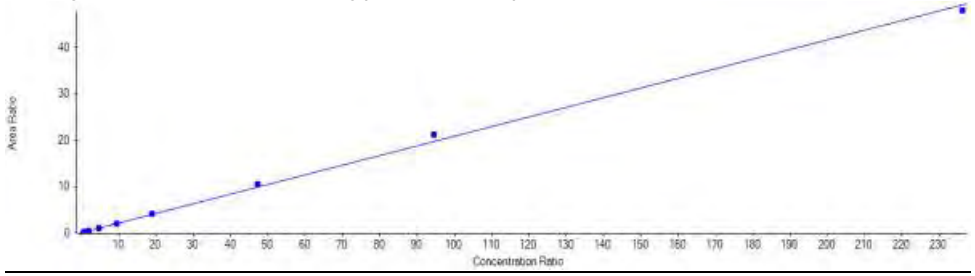
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: ADONA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	6.72	2886000	201429	0.34	88.6	1.85	25325	True	1.16
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	6.72	2757000	425384	0.74	97.9	2.04	44579	True	1.11
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	6.72	2653000	1036431	1.87	99.1	2.07	341420	True	1.01
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	6.72	2847000	2822750	4.76	100.7	2.10	15753	True	1.32
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	6.72	3027000	5872996	9.31	98.5	2.05	15728	True	1.09
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	6.72	2725000	11102447	19.54	103.4	2.16	13709	True	1.07
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	6.71	2718000	28514834	50.33	106.5	2.22	30974	True	1.30
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	6.72	2507000	53256061	101.89	107.8	2.25	25828	True	1.05
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	6.72	2454000	117900625	230.46	97.6	2.03	28418	True	1.36

Analyte Name: ADONA
Regression Equation: y = 2.085 x (std. dev. = 0.012) (weighting: None)
Calibration Fit: RSD = 5.70 RSE = 5.70
Average RF:2.085 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

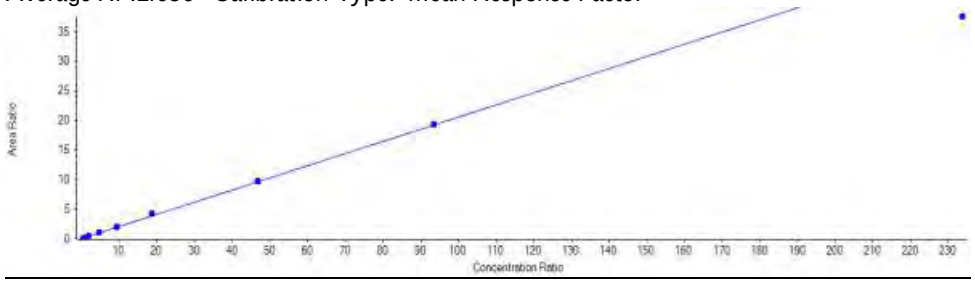
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: 9Cl-PF3ONS

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	8.50	2886000	195597	0.33	88.2	1.81	856461	True	0.86
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	8.50	2757000	444386	0.78	104.8	2.16	1583171	True	1.10
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	8.49	2653000	1064499	1.95	104.4	2.15	2862685	True	1.03
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	8.50	2847000	2946988	5.04	107.7	2.21	88586	True	1.05
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	8.50	3027000	6066657	9.75	104.3	2.14	6318	True	1.08
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	8.50	2725000	11512976	20.55	109.9	2.26	1142992	True	1.17
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	8.50	2718000	26617233	47.64	101.9	2.10	80345	True	1.37
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	8.50	2507000	48493859	94.09	100.6	2.07	96371	True	1.29
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	8.50	2454000	92226023	182.83	78.2	1.61	119953	True	1.15

Analyte Name: 9Cl-PF3ONS
Regression Equation: y = 2.056 x (std. dev. = 0.021) (weighting: None)
Calibration Fit: RSD = 10.23 RSE = 10.23
Average RF:2.056 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

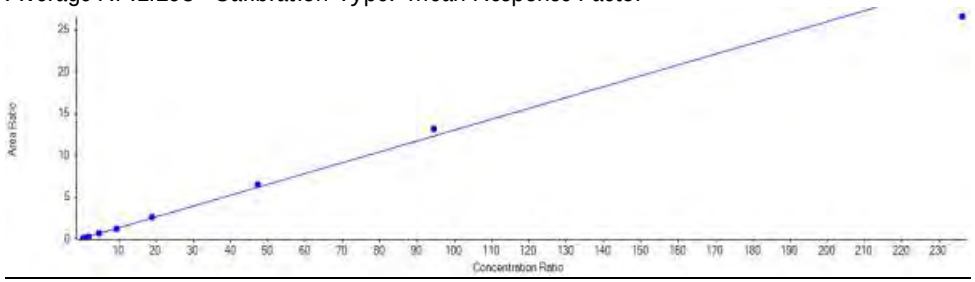
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: 11Cl-PF3OUdS

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	9.57	2886000	136607	0.37	96.4	1.25	1958	True	1.05
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	9.57	2757000	265657	0.74	98.2	1.27	3313	True	0.91
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	9.57	2653000	665847	1.93	102.3	1.33	3193	True	1.11
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	9.58	2847000	1734547	4.69	99.3	1.29	4468	True	1.28
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	9.58	3027000	3680248	9.37	99.1	1.29	549080	True	1.32
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	9.57	2725000	7082207	20.01	105.9	1.38	186177	True	0.98
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	9.57	2718000	17563776	49.77	105.3	1.37	1838742	True	1.10
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	9.57	2507000	32877183	100.99	106.9	1.39	101214	True	1.38
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	9.57	2454000	65219566	204.69	86.6	1.13	53514	True	1.33

Analyte Name: 11Cl-PF3OUdS
Regression Equation: y = 1.298 x (std. dev. = 0.008) (weighting: None)
Calibration Fit: RSD = 6.24 RSE = 6.24
Average RF:1.298 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

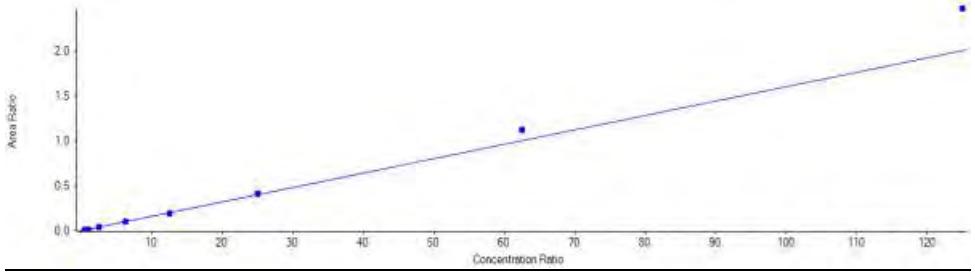
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: 3:3FTCA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	4.91	1742000	11661	0.42	83.7	0.07	549	True	1.14
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	4.91	1675000	23352	0.87	87.2	0.07	6376312	True	1.13
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	4.91	1617000	61750	2.39	95.5	0.08	652224	True	1.33
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	4.92	1673000	162277	6.06	97.0	0.08	2725	True	1.14
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	4.92	1701000	330654	12.15	97.2	0.08	1464	True	1.68
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	4.91	1593000	659551	25.88	103.5	0.08	4667	True	1.23
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	4.91	1536000	1725859	70.27	112.4	0.09	551294	True	1.22
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	4.91	1347000	3325237	154.34	123.5	0.10	480675	True	1.55
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	N/A	1241000	N/A	N/A	N/A	N/A	N/A	False	N/A

Analyte Name: 3:3FTCA
Regression Equation: y = 0.080 x (std. dev. = 0.002) (weighting: None)
Calibration Fit: RSD = 13.02 RSE = 13.02
Average RF:0.080 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

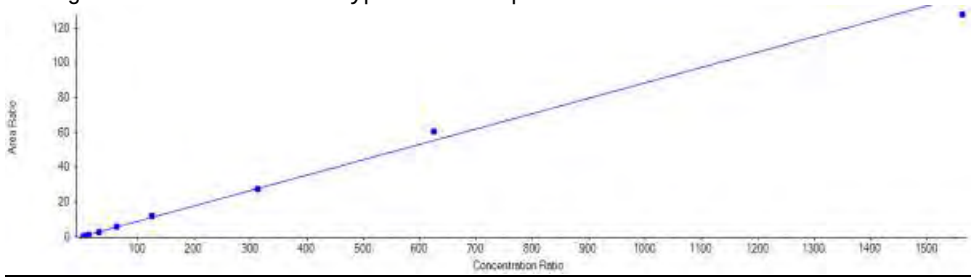
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: 5:3FTCA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	7.16	1043000	225324	2.44	97.8	0.22	7438	True	1.27
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	7.16	1082000	457091	4.78	95.6	0.21	4516	True	1.28
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	7.16	1035000	1109466	12.13	97.0	0.21	17454	True	1.13
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	7.17	1088000	2908807	30.24	96.8	0.21	26902	True	1.53
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	7.16	1067000	6221772	65.95	105.5	0.23	21075	True	1.27
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	7.16	995300	11672941	132.65	106.1	0.24	30755	True	1.19
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	7.16	1062000	29042126	309.44	99.0	0.22	26557	True	1.18
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	7.16	952600	57800169	686.27	109.8	0.24	27228	True	1.32
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	7.16	942500	120353707	1444.28	92.4	0.20	34647	True	1.20

Analyte Name: 5:3FTCA
Regression Equation: y = 0.221 x (std. dev. = 0.005) (weighting: None)
Calibration Fit: RSD = 5.77 RSE = 5.77
Average RF:0.221 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

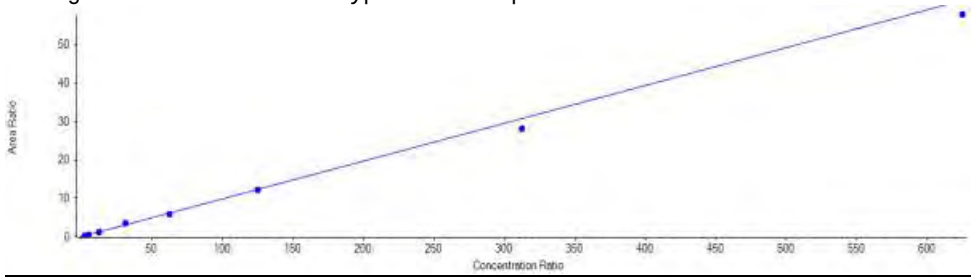
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: 7:3FTCA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	8.21	1043000	272814	2.66	106.3	0.26	816972	True	1.42
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	8.21	1082000	583552	5.48	109.6	0.27	883473	True	1.02
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	8.21	1035000	1148521	11.28	90.2	0.22	1064938	True	1.11
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	8.22	1088000	3798713	35.47	113.5	0.28	3323	True	1.07
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	8.21	1067000	6248141	59.49	95.2	0.23	522134	True	1.03
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	8.21	995300	12166666	124.20	99.4	0.24	14783	True	1.27
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	8.21	1062000	29960681	286.75	91.8	0.23	24002	True	1.50
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	8.21	952600	55121038	587.88	94.1	0.23	38567	True	1.31
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	N/A	942500	N/A	N/A	N/A	N/A	N/A	False	N/A

Analyte Name: 7:3FTCA
Regression Equation: y = 0.246 x (std. dev. = 0.009) (weighting: None)
Calibration Fit: RSD = 8.76 RSE = 8.76
Average RF:0.246 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

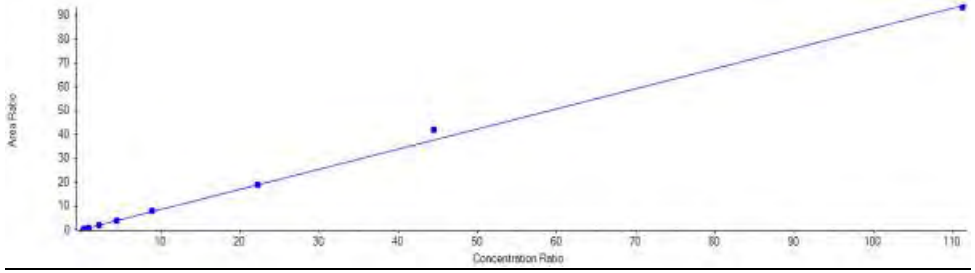
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFEESA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	5.71	1043000	150155	0.17	95.7	2.02	3071	True	1.18
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	5.71	1082000	304483	0.33	93.5	1.98	5410	True	1.33
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	5.71	1035000	748553	0.86	96.1	2.03	5953	True	1.19
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	5.71	1088000	1967602	2.14	96.1	2.03	12486	True	1.24
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	5.71	1067000	4052494	4.49	100.9	2.13	13782	True	1.49
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	5.71	995300	7928840	9.42	105.9	2.24	17439	True	1.40
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	5.71	1062000	20195715	22.50	101.1	2.14	34835	True	1.42
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	5.71	952600	39950589	49.60	111.5	2.36	44053	True	1.37
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	5.71	942500	87964966	110.38	99.2	2.10	58046	True	1.19

Analyte Name: PFEESA
Regression Equation: y = 2.114 x (std. dev. = 0.048) (weighting: None)
Calibration Fit: RSD = 5.70 RSE = 5.70
Average RF:2.114 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

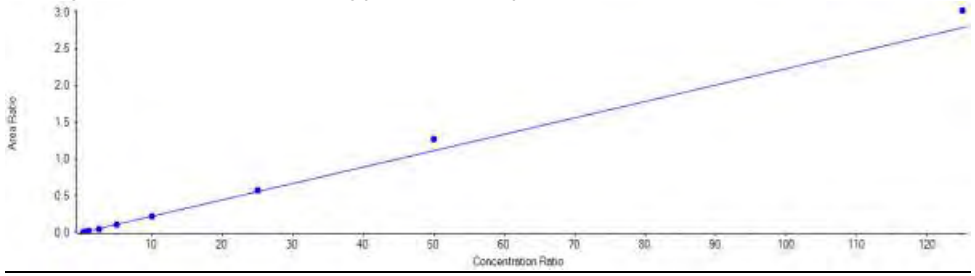
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFMPA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	3.85	1742000	7169	0.18	92.2	0.10	497	True	1.15
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	3.85	1675000	14165	0.38	94.7	0.11	787	True	1.16
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	3.85	1617000	33877	0.94	93.9	0.11	1334	True	1.35
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	3.86	1673000	90755	2.43	97.2	0.11	2435	True	1.13
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	3.85	1701000	186580	4.91	98.3	0.11	3255	True	0.99
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	3.85	1593000	351979	9.90	99.0	0.11	4883	True	1.28
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	3.84	1536000	875313	25.54	102.2	0.11	6361	True	1.20
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	3.85	1347000	1717029	57.11	114.2	0.13	10711	True	1.12
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	3.86	1241000	3753262	135.50	108.4	0.12	12755	True	1.08

Analyte Name: PFMPA
Regression Equation: y = 0.112 x (std. dev. = 0.002) (weighting: None)
Calibration Fit: RSD = 7.21 RSE = 7.21
Average RF:0.112 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

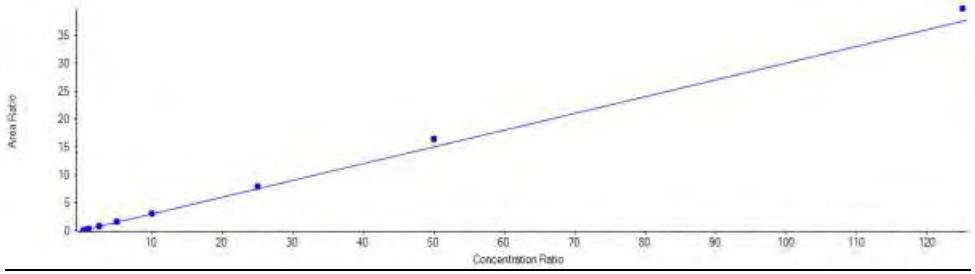
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFMBA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	4.88	1742000	93621	0.18	89.3	1.34	1504	True	1.37
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	4.87	1675000	191221	0.38	94.8	1.43	1959	True	1.25
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	4.87	1617000	470133	0.97	96.6	1.45	2484	True	1.36
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	4.88	1673000	1223138	2.43	97.2	1.46	13679	True	1.14
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	4.88	1701000	2617337	5.11	102.2	1.54	9691	True	0.97
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	4.88	1593000	4778782	9.97	99.7	1.50	12087	True	1.31
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	4.87	1536000	12117026	26.22	104.9	1.58	17509	True	1.33
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	4.88	1347000	22136596	54.61	109.2	1.64	18616	True	0.93
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	4.88	1241000	49534492	132.63	106.1	1.60	27796	True	1.04

Analyte Name: PFMBA
Regression Equation: y = 1.505 x (std. dev. = 0.019) (weighting: None)
Calibration Fit: RSD = 6.25 RSE = 6.25
Average RF:1.505 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

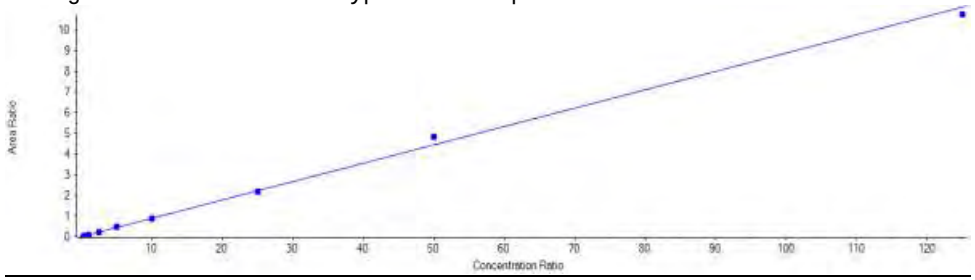
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: NFDHA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	5.26	1043000	19368	0.21	104.3	0.23	1279	True	1.04
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	5.26	1082000	37544	0.39	97.4	0.22	1999	True	0.95
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	5.25	1035000	88598	0.96	96.2	0.21	3362	True	0.88
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	5.26	1088000	227164	2.35	93.8	0.21	5793	True	1.43
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	5.26	1067000	496414	5.23	104.5	0.23	3450	True	1.24
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	5.26	995300	880207	9.94	99.4	0.22	5007	True	0.98
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	5.25	1062000	2327402	24.63	98.5	0.22	5012	True	1.42
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	5.25	952600	4623243	54.52	109.0	0.24	6055	True	1.09
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	5.26	942500	10150512	120.98	96.8	0.22	9101	True	1.20

Analyte Name: NFDHA
Regression Equation: y = 0.223 x (std. dev. = 0.004) (weighting: None)
Calibration Fit: RSD = 4.91 RSE = 4.91
Average RF:0.223 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

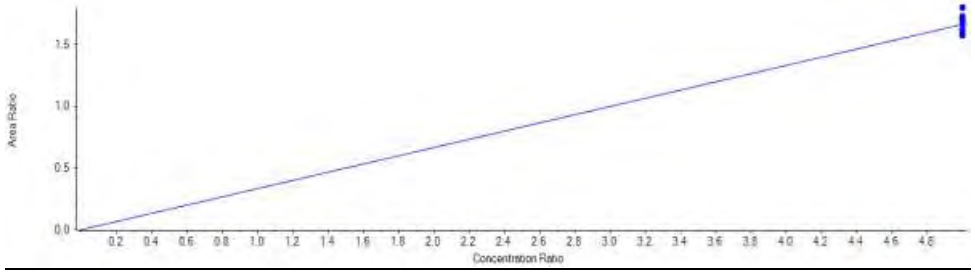
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: 13C2D4-4:2FTS

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	5.13	547400	984958	5.41	108.3	0.85	38881	True	1.42
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	5.12	547700	946281	5.20	103.9	0.82	20779	True	1.22
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	5.12	546900	866893	4.77	95.4	0.75	2402	True	1.32
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	5.13	586500	924127	4.74	94.8	0.75	178277	True	1.11
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	5.13	571000	972080	5.12	102.4	0.81	13709	True	0.99
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	5.13	551900	919882	5.01	100.3	0.79	5794	True	1.29
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	5.12	570800	967104	5.10	101.9	0.80	1842	True	1.18
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	5.13	550300	889831	4.86	97.3	0.77	10886	True	1.48
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	5.13	524700	835350	4.79	95.8	0.76	7630	True	1.57

Analyte Name: 13C2D4-4:2FTS
Regression Equation: y = 0.788 x (std. dev. = 0.015) (weighting: None)
Calibration Fit: RSD = 4.57 RSE = 0.00
Average RF:0.788 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

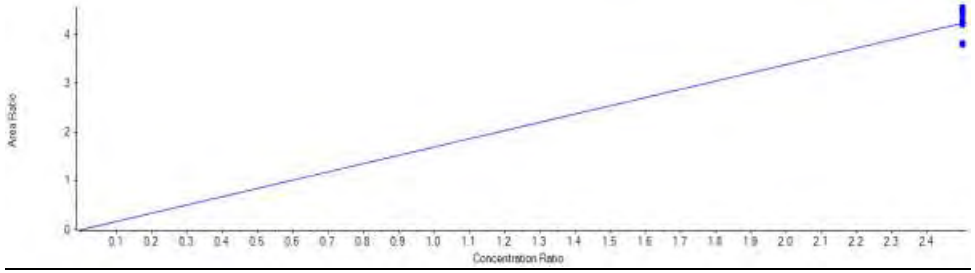
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: 13C2-PFOA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	7.50	753400	3409390	2.67	106.9	4.53	687912	True	1.21
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	7.49	761500	3366661	2.61	104.5	4.42	108677677	True	1.26
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	7.49	762900	3205026	2.48	99.3	4.20	11159	True	1.36
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	7.50	783100	3340729	2.52	100.8	4.27	92469373	True	1.09
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	7.50	764800	3484143	2.69	107.7	4.56	12952	True	1.22
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	7.50	771600	3324516	2.55	101.8	4.31	6630373	True	1.11
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	7.50	810200	3402324	2.48	99.2	4.20	7632	True	1.20
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	7.50	834400	3163005	2.24	89.6	3.79	9612	True	1.21
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	7.50	801800	3061091	2.26	90.2	3.82	5355	True	1.44

Analyte Name: 13C2-PFOA
Regression Equation: y = 4.232 x (std. dev. = 0.110) (weighting: None)
Calibration Fit: RSD = 6.48 RSE = 0.00
Average RF:4.232 Calibration Type: Mean Response Factor



Initial Calibration Summary
Form 6
Semivolatiles

Client	: P. W. Grosser	Lab Number	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	Project Number	: BSD1504
Instrument ID	: LCMS05	Ical Ref	: ICAL21391
Calibration dates	: 08/13/24 21:50 08/13/24 23:32		

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

WG	1958909													
Date	8/13/2024													
EIS	**IA1633STD-.1**	**IA1633STD-.2**	**IA1633STD-.5**	**IA1633STD-1.25**	**IA1633STD-2.5**	**IA1633STD-5**	**IA1633STD-12.5**	**IA1633STD-25**	**IA1633STD-62.5**	**AVG RF**	**RSD Calc**		**AVG RF**	**RSD**
13C4-PFBA	1.257	1.193	1.161	1.126	1.199	1.103	1.102	1.050	1.094	1.143	5.7%		1.143	5.669
13C5-PFPeA	0.739	0.695	0.632	0.649	0.691	0.634	0.612	0.541	0.574	0.641	9.6%		0.641	9.634
13C5-PFHxA	0.885	0.898	0.809	0.845	0.867	0.793	0.846	0.766	0.872	0.842	5.3%		0.842	5.289
13C4-PFHpA	0.934	0.882	0.806	0.817	0.895	0.805	0.819	0.762	0.871	0.843	6.5%		0.843	6.476
13C8-PFOA	2.164	2.046	1.908	2.010	2.112	1.897	1.824	1.596	1.639	1.911	10.4%		1.911	10.36
13C9-PFNA	1.093	1.104	1.023	1.041	1.048	1.041	0.998	0.934	0.955	1.026	5.5%		1.026	5.537
13C6-PFDA	1.203	1.114	1.090	1.076	1.082	1.050	1.006	0.982	0.977	1.064	6.7%		1.064	6.718
13C7-PFUnA	1.065	0.899	0.856	0.853	0.888	0.879	0.802	0.759	0.751	0.861	10.9%		0.861	10.876
13C2-PFDoA	0.584	0.541	0.540	0.522	0.544	0.539	0.545	0.572	0.652	0.560	7.0%		0.560	7.008
13C2-PFTeDA	0.610	0.616	0.585	0.582	0.595	0.577	0.604	0.595	0.705	0.608	6.4%		0.608	6.387
13C3-PFBS	1.591	1.509	1.512	1.407	1.520	1.493	1.392	1.430	1.356	1.468	5.1%		1.468	5.147
13C3-PFHxS	1.289	1.244	1.170	1.128	1.206	1.105	1.140	1.086	1.126	1.166	5.8%		1.166	5.81
13C8-PFOS	1.534	1.440	1.407	1.304	1.472	1.284	1.264	1.189	1.289	1.354	8.4%		1.354	8.401
13C2-4:2FTS	0.292	0.270	0.262	0.253	0.262	0.256	0.240	0.249	0.275	0.262	5.9%		0.262	5.833
13C2-6:2FTS	0.217	0.195	0.193	0.177	0.190	0.187	0.182	0.182	0.208	0.192	6.7%		0.192	6.74
13C2-8:2FTS	0.321	0.316	0.284	0.273	0.295	0.277	0.258	0.244	0.262	0.281	9.2%		0.281	9.193
13C8-PFOSA	2.117	1.924	1.975	1.833	1.906	1.729	1.641	1.505	1.567	1.800	11.3%		1.800	11.303
d3-NMeFOSA	0.350	0.297	0.317	0.298	0.315	0.282	0.278	0.273	0.313	0.303	8.0%		0.303	8.024
d5-NEtFOSA	0.336	0.319	0.305	0.289	0.303	0.279	0.273	0.261	0.299	0.296	7.9%		0.296	7.902
d3-NMeFOSAA	0.876	0.790	0.646	0.769	0.660	0.639	0.630	0.624	0.535	0.685	15.3%		0.685	15.311
d5-NEtFOSAA	0.403	0.366	0.376	0.355	0.381	0.355	0.335	0.330	0.342	0.360	6.6%		0.360	6.559
d7-NMeFOSE	0.250	0.225	0.232	0.225	0.243	0.222	0.231	0.221	0.253	0.234	5.2%		0.234	5.211
d9-NEtFOSE	0.393	0.355	0.358	0.344	0.351	0.331	0.326	0.310	0.335	0.345	6.9%		0.345	6.906
13C3-HFPO-DA	0.612	0.572	0.519	0.552	0.615	0.543	0.542	0.504	0.568	0.559	6.8%		0.558	6.78
NIS	**IA1633STD-.1**	**IA1633STD-.2**	**IA1633STD-.5**	**IA1633STD-1.25**	**IA1633STD-2.5**	**IA1633STD-5**	**IA1633STD-12.5**	**IA1633STD-25**	**IA1633STD-62.5**	**AVG RF**	**RSD Calc**		**AVG RF**	**RSD**
13C3-PFBA	1.008	1.016	1.015	1.073	1.046	1.039	0.999	0.958	0.846	1.000	6.6%		1	6.628
13C2-PFHxA	0.963	0.984	1.044	1.053	1.006	1.026	1.025	1.017	0.883	1.000	5.2%		1	5.208
13C4-PFOA	0.963	0.973	0.975	1.001	0.977	0.986	1.035	1.066	1.024	1.000	3.5%		1	3.481
13C5-PFNA	1.003	1.003	1.011	1.046	1.002	1.001	1.045	0.972	0.916	1.000	3.9%		1	3.904
13C2-PFDA	0.981	1.044	1.016	1.053	1.046	1.035	1.018	0.955	0.852	1.000	6.4%		1	6.402
18O2-PFHxS	0.986	0.986	0.985	1.056	1.028	0.994	1.028	0.991	0.945	1.000	3.3%		1	3.262
13C4-PFOS	0.947	0.996	0.955	1.037	1.008	1.031	1.045	1.035	0.946	1.000	4.1%		1	4.112

Initial Calibration Report

SCIEX OS Version 3.3.0.12027

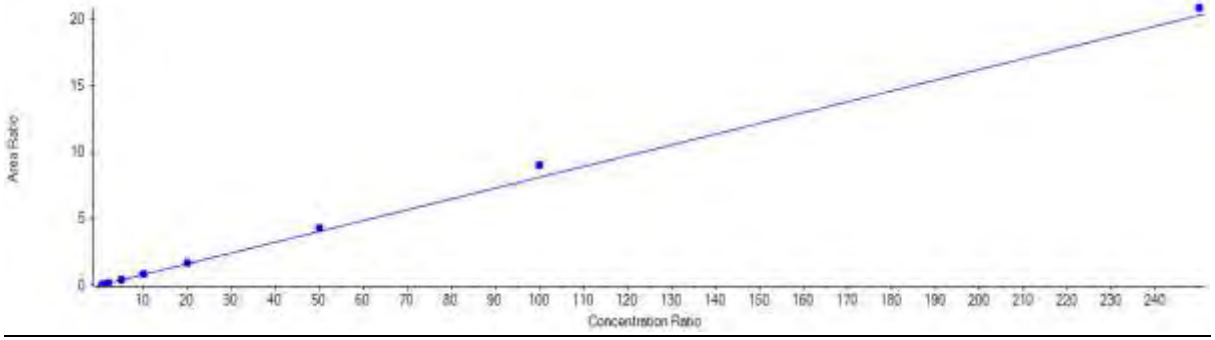
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFBA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	2.90	2709000	76984	0.35	87.6	0.71	323	True	0.96
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	2.90	2592000	159293	0.76	94.7	0.77	548	True	0.96
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	2.89	2519000	392007	1.92	95.9	0.78	791	True	0.94
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	2.90	2585000	1039126	4.96	99.1	0.80	1468	True	0.98
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	2.90	2681000	2162387	9.95	99.5	0.81	2017	True	1.16
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	2.89	2451000	4086434	20.56	102.8	0.83	2618	True	1.06
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	2.89	2355000	10163727	53.21	106.4	0.86	4525	True	1.08
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	2.89	2151000	19372954	111.06	111.1	0.90	6259	True	1.07
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	2.89	1978000	41238756	257.04	102.8	0.83	7593	True	1.35

Analyte Name: PFBA
Regression Equation: y = 0.811 x (std. dev. = 0.006) (weighting: None)
Calibration Fit: RSD = 6.87 RSE = 6.87
Average RF:0.811 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

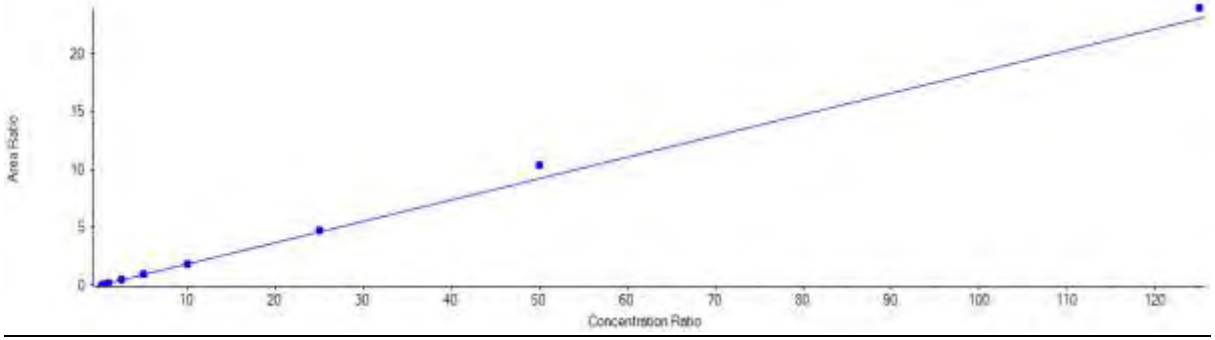
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFPeA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	4.64	1742000	58992	0.18	91.8	0.85	359	True	1.60
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	4.64	1675000	115247	0.37	93.3	0.86	387	True	1.34
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	4.64	1617000	285758	0.96	95.8	0.88	1221	True	1.55
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	4.65	1673000	782592	2.54	101.5	0.94	1886	True	1.05
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	4.65	1701000	1580428	5.04	100.8	0.93	1993	True	1.29
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	4.64	1593000	2862778	9.74	97.4	0.90	4666	True	1.45
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	4.64	1536000	7315685	25.84	103.4	0.95	4328	True	1.41
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	4.65	1347000	13922796	56.05	112.1	1.03	8593	True	1.46
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	4.65	1241000	29743263	129.97	104.0	0.96	9629	True	1.09

Analyte Name: PFPeA
Regression Equation: y = 0.922 x (std. dev. = 0.012) (weighting: None)
Calibration Fit: RSD = 6.25 RSE = 6.25
Average RF:0.922 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

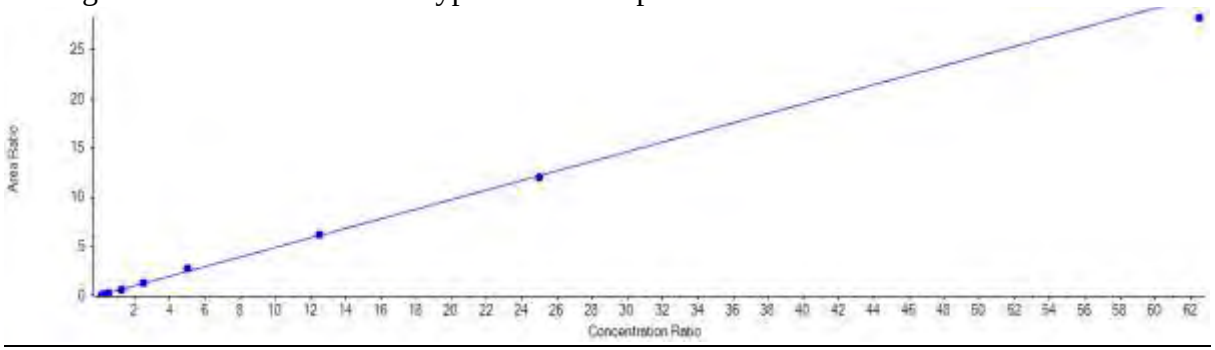
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFHxA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	5.34	1043000	53455	0.11	105.2	1.28	266	True	1.48
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	5.34	1082000	99881	0.19	94.7	1.15	307	True	1.47
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	5.34	1035000	234525	0.47	93.0	1.13	716	True	1.25
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	5.34	1088000	643791	1.21	97.1	1.18	1119	True	1.18
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	5.34	1067000	1354168	2.60	104.2	1.27	1122	True	1.00
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	5.34	995300	2736579	5.64	112.8	1.38	2013	True	1.44
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	5.34	1062000	6556474	12.67	101.4	1.24	2673	True	1.28
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	5.34	952600	11476754	24.72	98.9	1.21	4199	True	1.41
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	5.34	942500	26624209	57.96	92.7	1.13	4600	True	1.13

Analyte Name: PFHxA
Regression Equation: y = 1.218 x (std. dev. = 0.032) (weighting: None)
Calibration Fit: RSD = 6.61 RSE = 6.61
Average RF:1.218 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

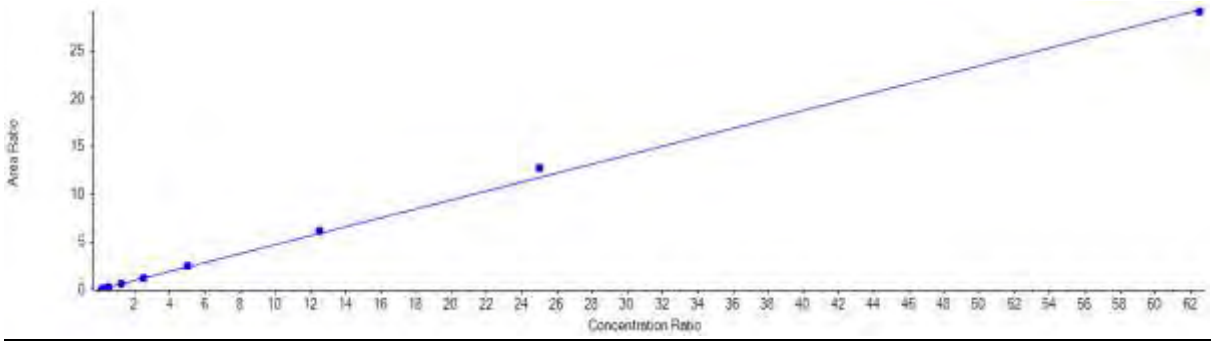
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFHpA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	6.25	1100000	47414	0.09	92.0	1.08	332	True	1.31
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	6.25	1063000	96463	0.19	96.9	1.13	557	True	1.47
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	6.25	1030000	227673	0.47	94.3	1.11	1128	True	1.42
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	6.25	1052000	614946	1.25	99.8	1.17	1930	True	1.22
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	6.25	1102000	1316642	2.55	102.0	1.20	2287	True	1.33
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	6.25	1011000	2442453	5.16	103.2	1.21	3033	True	1.36
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	6.25	1027000	6242426	12.97	103.8	1.22	4597	True	1.36
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	6.25	948500	12077750	27.18	108.7	1.27	6436	True	1.32
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	6.25	941100	27365507	62.08	99.3	1.16	9844	True	1.26

Analyte Name: PFHpA
Regression Equation: y = 1.171 x (std. dev. = 0.024) (weighting: None)
Calibration Fit: RSD = 5.14 RSE = 5.14
Average RF:1.171 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

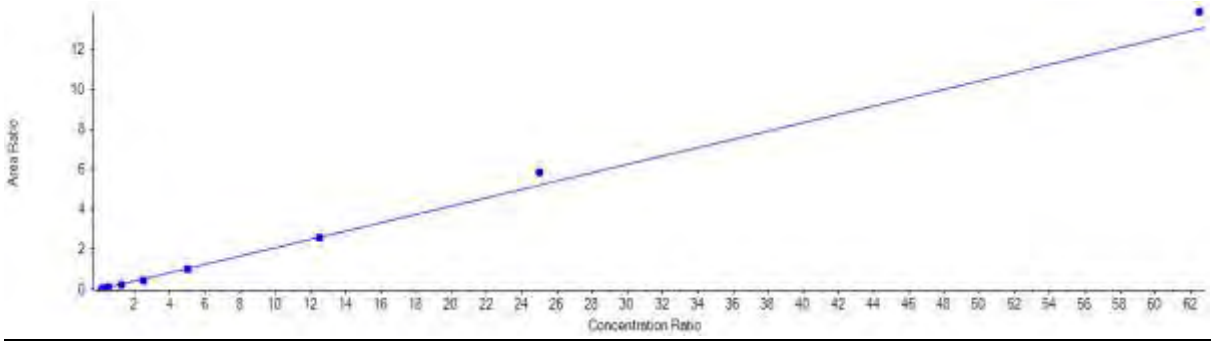
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFOA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	7.50	1630000	36354	0.11	107.1	0.56	198	True	0.10
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	7.50	1558000	61419	0.19	94.7	0.49	276	True	0.11
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	7.50	1455000	152387	0.50	100.6	0.52	595	True	0.16
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	7.51	1574000	383547	1.17	93.7	0.49	950	True	0.16
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	7.50	1615000	762266	2.27	90.7	0.47	1608	True	0.14
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	7.50	1464000	1457619	4.79	95.7	0.50	2159	True	0.16
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	7.50	1477000	3795945	12.35	98.8	0.51	3257	True	0.14
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	7.51	1332000	7765819	28.01	112.1	0.58	4787	True	0.11
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	7.50	1314000	18218936	66.64	106.6	0.56	6395	True	0.12

Analyte Name: PFOA
Regression Equation: y = 0.520 x (std. dev. = 0.015) (weighting: None)
Calibration Fit: RSD = 7.20 RSE = 7.20
Average RF:0.520 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

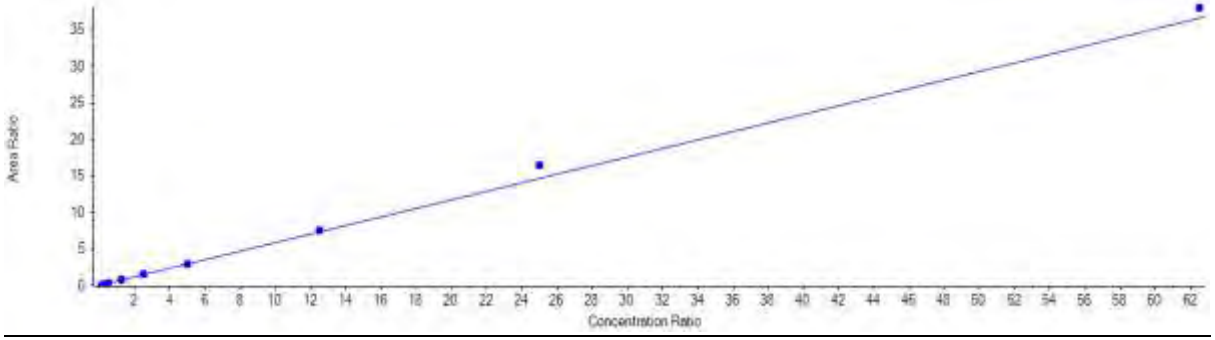
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFNA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	7.95	750800	37224	0.09	84.7	0.62	285	True	0.29
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	7.95	758100	81852	0.18	92.2	0.68	518	True	0.40
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	7.95	707900	203035	0.49	98.0	0.72	709	True	0.39
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	7.95	745800	540767	1.24	99.1	0.73	1132	True	0.40
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	7.95	718900	1108082	2.63	105.3	0.77	1389	True	0.39
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	7.95	713200	2096579	5.02	100.4	0.74	2134	True	0.33
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	7.95	714000	5432775	12.99	104.0	0.76	3350	True	0.35
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	7.95	621400	10245828	28.16	112.6	0.82	5226	True	0.31
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	7.95	598800	22763835	64.92	103.9	0.76	5978	True	0.29

Analyte Name: PFNA
Regression Equation: y = 0.732 x (std. dev. = 0.047) (weighting: None)
Calibration Fit: RSD = 8.06 RSE = 8.06
Average RF:0.732 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

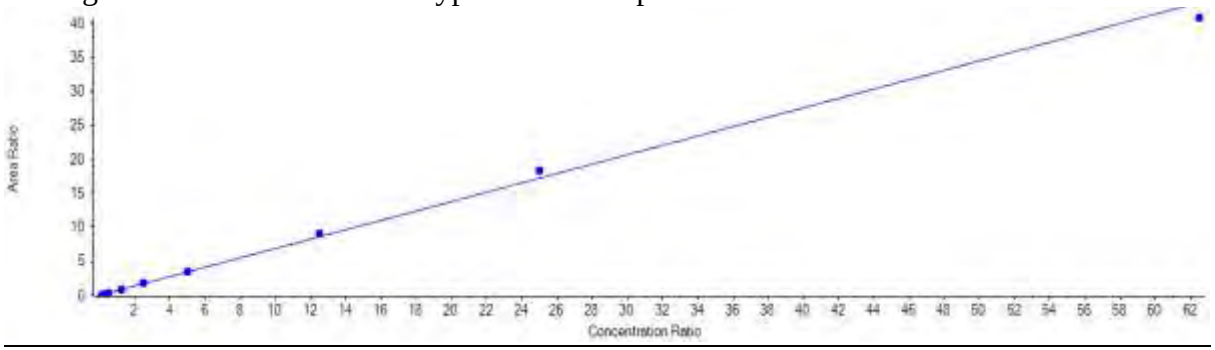
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFDA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	8.18	755900	52636	0.10	101.0	0.87	434	True	1.16
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	8.18	745000	96779	0.19	94.2	0.81	980	True	1.35
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	8.17	709400	227128	0.46	92.9	0.80	1669	True	1.25
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	8.18	725600	639422	1.28	102.3	0.88	2620	True	1.27
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	8.18	724500	1298863	2.60	104.0	0.90	3531	True	1.21
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	8.18	696100	2380952	4.96	99.2	0.86	3502	True	1.64
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	8.18	655800	5967617	13.20	105.6	0.91	5677	True	1.70
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	8.18	601100	10987417	26.51	106.1	0.91	7896	True	1.49
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	8.18	533200	21763691	59.21	94.7	0.82	10646	True	1.32

Analyte Name: PFDA
Regression Equation: y = 0.862 x (std. dev. = 0.035) (weighting: None)
Calibration Fit: RSD = 5.03 RSE = 5.03
Average RF:0.862 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

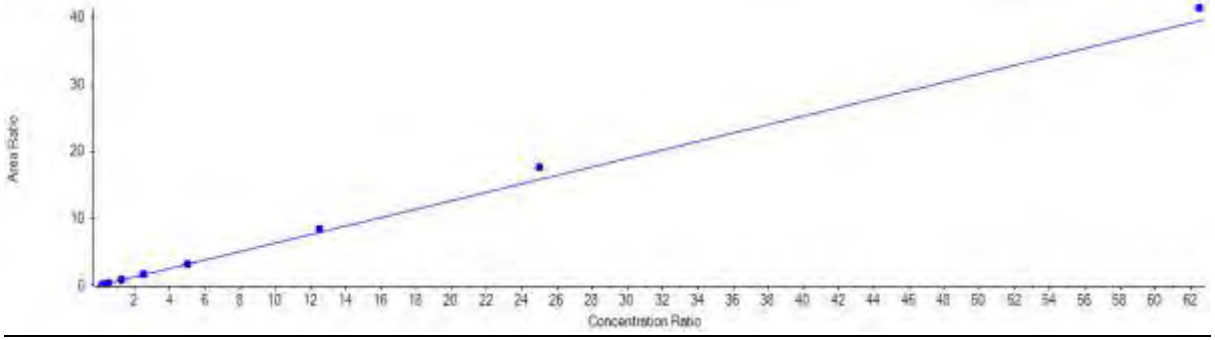
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFUnA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	8.47	669300	35228	0.08	83.3	0.66	372	True	1.38
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	8.47	601600	70846	0.19	93.2	0.74	704	True	0.96
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	8.47	556900	174087	0.49	98.9	0.78	1324	True	0.96
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	8.47	575300	462255	1.27	101.7	0.80	2055	True	0.99
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	8.48	594700	954021	2.54	101.5	0.80	2597	True	0.97
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	8.47	582400	1816864	4.94	98.7	0.78	7886	True	1.11
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	8.47	523200	4390261	13.27	106.2	0.84	7069	True	1.20
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	8.47	464500	8197525	27.92	111.7	0.88	6315	True	0.96
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	8.47	410100	17004399	65.60	105.0	0.83	10439	True	1.28

Analyte Name: PFUnA
Regression Equation: y = 0.790 x (std. dev. = 0.052) (weighting: None)
Calibration Fit: RSD = 8.17 RSE = 8.17
Average RF:0.790 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

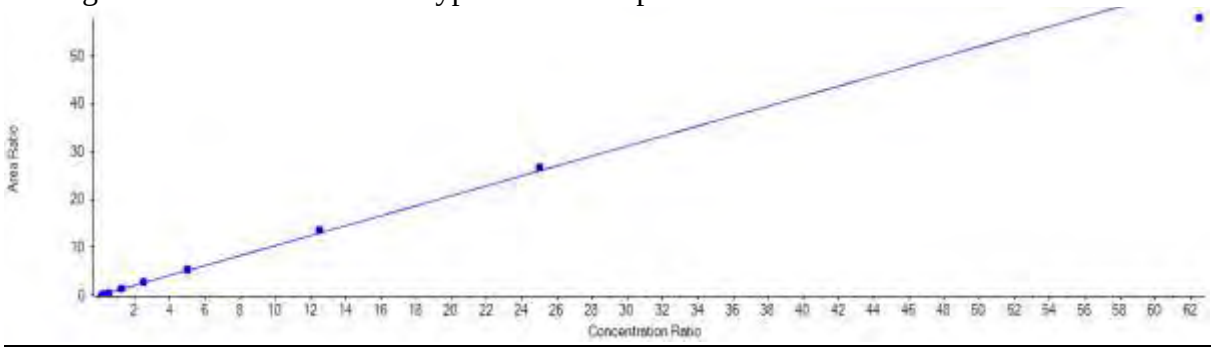
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFDoA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	8.91	366900	35360	0.09	92.7	1.21	743	True	1.26
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	8.91	361600	71799	0.19	95.4	1.24	924	True	1.16
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	8.90	351500	178586	0.49	97.7	1.27	1604	True	1.26
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	8.91	351900	489922	1.34	107.1	1.39	2740	True	1.39
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	8.91	364500	1010590	2.67	106.6	1.39	4572	True	1.11
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	8.91	357300	1927599	5.19	103.7	1.35	6964	True	1.40
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	8.90	355200	4823549	13.05	104.4	1.36	8753	True	1.32
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	8.91	350000	9400002	25.82	103.3	1.34	11451	True	1.29
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	8.90	356000	20644301	55.75	89.2	1.16	13675	True	1.46

Analyte Name: PFDoA
Regression Equation: y = 1.300 x (std. dev. = 0.067) (weighting: None)
Calibration Fit: RSD = 6.47 RSE = 6.47
Average RF:1.300 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

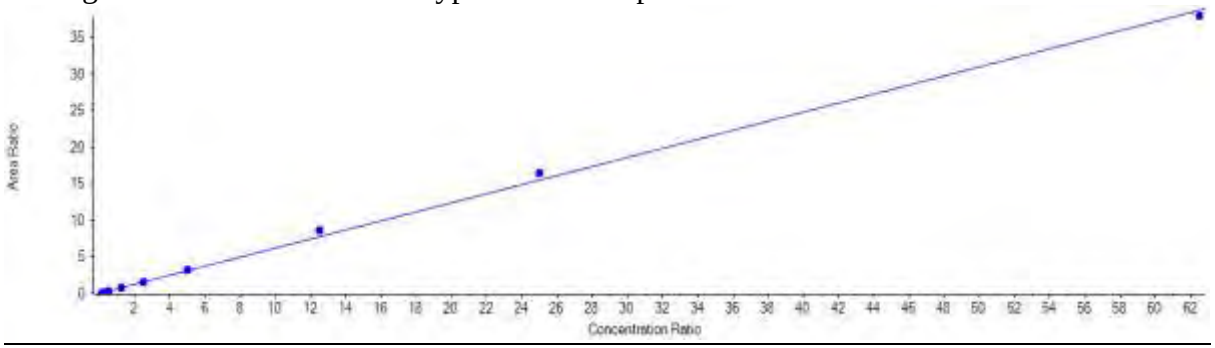
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFTrDA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	9.50	366900	19413	0.09	85.4	0.66	232	True	1.53
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	9.50	361600	41986	0.19	93.7	0.73	420	True	1.21
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	9.50	351500	105929	0.49	97.2	0.75	965	True	1.06
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	9.51	351900	277739	1.27	101.9	0.79	1363	True	1.21
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	9.51	364500	588063	2.60	104.1	0.81	1854	True	1.30
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	9.50	357300	1141052	5.15	103.0	0.80	2531	True	1.30
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	9.50	355200	3032059	13.77	110.2	0.85	3644	True	1.35
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	9.50	350000	5780095	26.64	106.6	0.83	4417	True	1.26
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	9.50	356000	13521775	61.28	98.1	0.76	5537	True	1.19

Analyte Name: PFTrDA
Regression Equation: y = 0.775 x (std. dev. = 0.046) (weighting: None)
Calibration Fit: RSD = 7.43 RSE = 7.43
Average RF:0.775 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

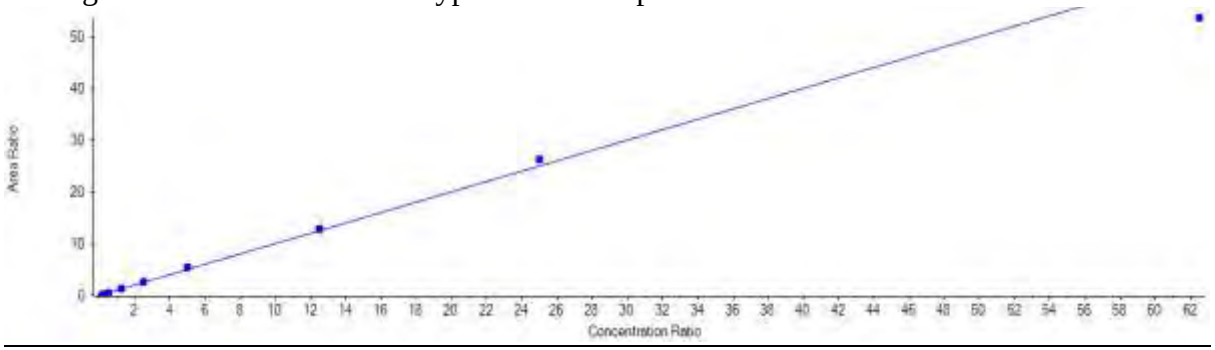
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFTeDA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	9.91	383300	39916	0.10	103.9	1.30	389	True	1.58
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	9.91	412200	75539	0.18	91.4	1.15	567	True	1.18
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	9.91	380500	186633	0.49	97.9	1.23	1068	True	1.21
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	9.92	392800	504145	1.28	102.4	1.28	1719	True	1.15
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	9.91	398400	1023758	2.56	102.6	1.29	2236	True	1.20
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	9.91	382500	2070325	5.40	108.0	1.35	2545	True	1.53
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	9.91	393600	5094568	12.91	103.3	1.30	6011	True	1.21
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	9.91	363900	9555438	26.19	104.8	1.31	6583	True	1.67
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	9.91	385100	20696767	53.62	85.8	1.08	6738	True	1.44

Analyte Name: PFTeDA
Regression Equation: y = 1.253 x (std. dev. = 0.071) (weighting: None)
Calibration Fit: RSD = 7.12 RSE = 7.12
Average RF:1.253 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

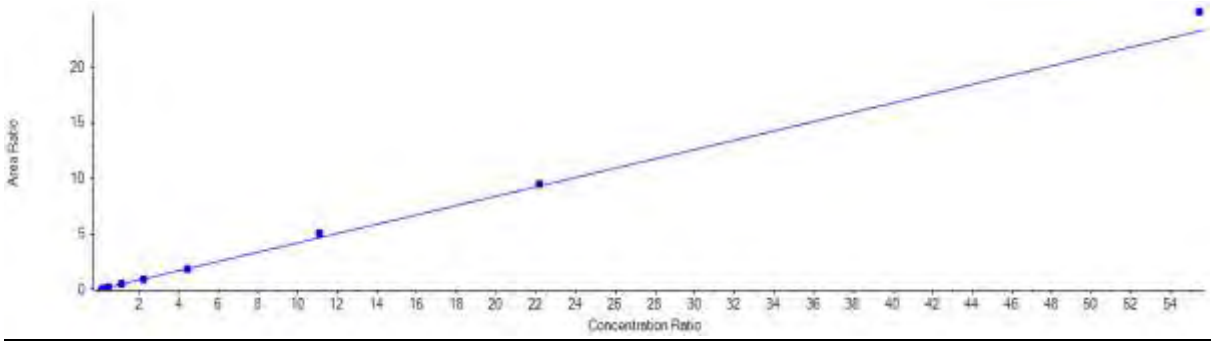
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFBS

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	5.32	856300	29114	0.08	91.4	0.89	34	True	0.81
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	5.31	812400	57514	0.17	95.1	0.93	63	True	1.36
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	5.31	813200	146551	0.43	96.9	0.95	72	True	1.36
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	5.32	811200	378090	1.11	100.2	0.98	82	True	1.37
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	5.32	853200	786438	2.20	99.1	0.97	70	True	1.14
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	5.32	809900	1500220	4.42	99.6	0.97	103	True	0.97
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	5.31	781300	3919451	11.96	107.8	1.05	87	True	1.35
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	5.32	773600	7381223	22.74	102.6	1.00	75	True	1.05
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	5.32	699200	17476522	59.58	107.5	1.05	61	True	1.17

Analyte Name: PFBS
Regression Equation: y = 0.978 x (std. dev. = 0.023) (weighting: None)
Calibration Fit: RSD = 5.40 RSE = 5.40
Average RF:0.978 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

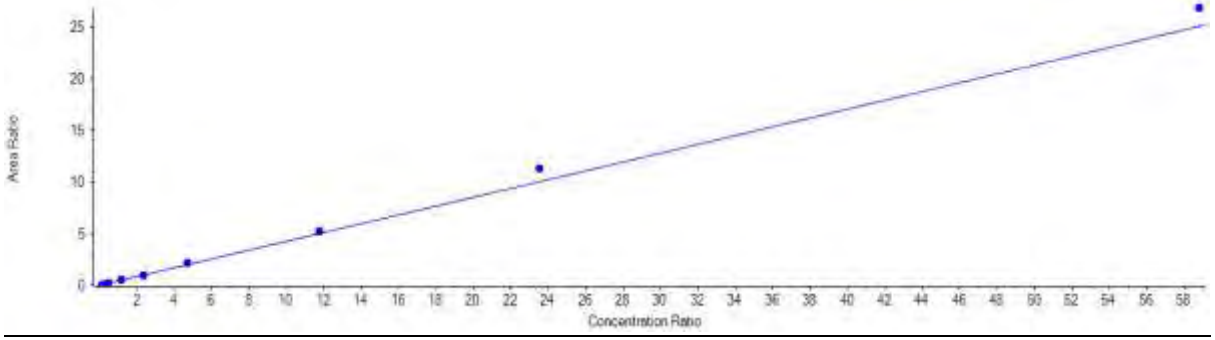
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFPeS

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	6.34	705600	24008	0.08	84.8	0.86	751	True	1.03
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	6.34	681100	49418	0.17	90.4	0.91	1408	True	1.29
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	6.34	639900	120878	0.44	94.1	0.95	2430	True	1.22
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	6.34	661300	332690	1.18	100.3	1.01	4866	True	1.17
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	6.34	688800	680161	2.32	98.4	1.00	5997	True	1.39
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	6.34	610000	1312585	5.05	107.2	1.08	8414	True	1.15
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	6.34	650600	3422752	12.34	104.9	1.06	16269	True	1.14
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	6.34	597600	6765018	26.54	112.8	1.14	18343	True	1.29
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	6.34	590500	15870136	63.01	107.1	1.08	27047	True	1.26

Analyte Name: PFPeS
Regression Equation: y = 1.011 x (std. dev. = 0.039) (weighting: None)
Calibration Fit: RSD = 9.03 RSE = 9.03
Average RF:1.011 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

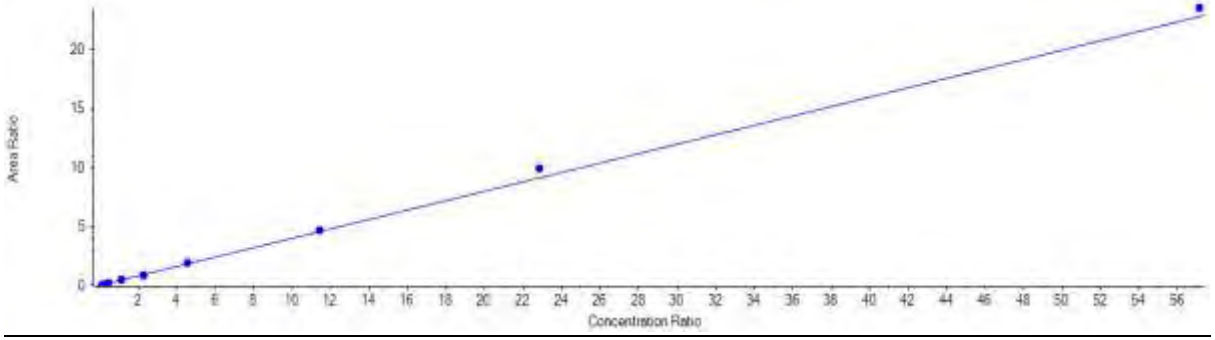
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFHxS

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	7.62	705600	25007	0.09	97.1	0.92	32741	True	0.17
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	7.61	681100	50270	0.19	101.2	0.96	9073	True	1.24
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	7.61	639900	110263	0.43	94.5	0.89	9640	True	0.17
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	7.62	661300	286954	1.09	95.2	0.90	27806	True	1.04
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	7.62	688800	599989	2.18	95.5	0.90	40481	True	0.16
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	7.62	610000	1147248	4.71	103.1	0.98	42905	True	1.02
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	7.61	650600	3015740	11.61	101.7	0.96	20017	True	1.16
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	7.62	597600	5917905	24.81	108.6	1.03	40237	True	1.16
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	7.62	590500	13905841	59.00	103.3	0.98	848848	True	0.15

Analyte Name: PFHxS
Regression Equation: y = 0.946 x (std. dev. = 0.019) (weighting: None)
Calibration Fit: RSD = 4.75 RSE = 4.75
Average RF:0.946 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

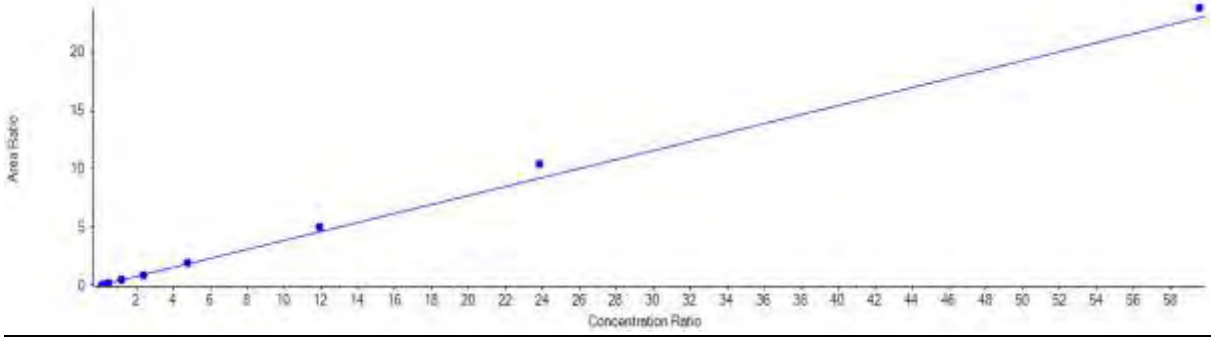
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFHpS

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	8.02	732200	22616	0.08	84.0	0.78	3220	True	1.25
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	8.01	723500	48727	0.18	91.6	0.85	4477	True	0.81
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	8.01	677200	122492	0.47	98.4	0.91	2653	True	1.51
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	8.02	681900	306646	1.17	97.9	0.90	60036	True	1.46
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	8.02	747800	649407	2.25	94.5	0.87	1174053	True	1.35
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	8.02	667800	1320608	5.13	107.6	0.99	23379142	True	1.02
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	8.01	666100	3346971	13.02	109.3	1.01	17356	True	1.18
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	8.02	620600	6449656	26.94	113.1	1.05	22541	True	1.00
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	8.02	614900	14651286	61.77	103.7	0.96	113644652	True	0.95

Analyte Name: PFHpS
Regression Equation: y = 0.924 x (std. dev. = 0.036) (weighting: None)
Calibration Fit: RSD = 9.31 RSE = 9.31
Average RF:0.924 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

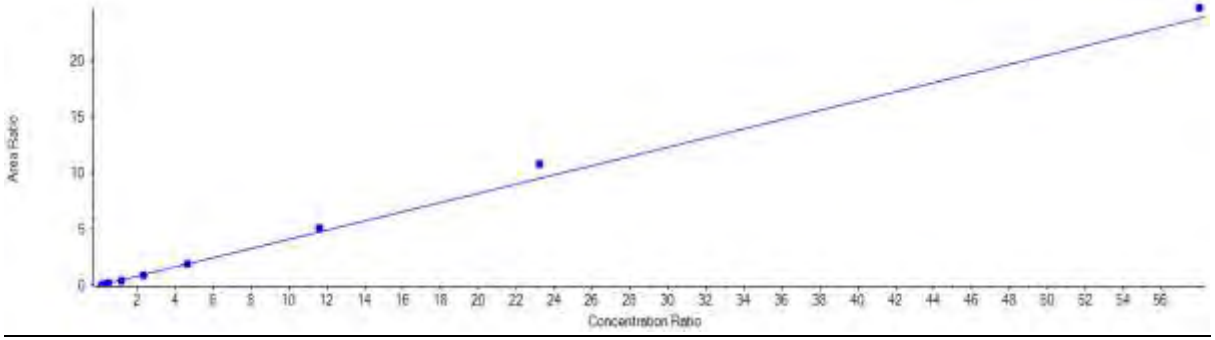
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFOS

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	8.28	732200	25837	0.09	92.6	0.91	180	True	0.75
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	8.27	723500	52468	0.18	95.1	0.94	461	True	0.23
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	8.27	677200	128413	0.46	99.5	0.98	1030	True	0.27
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	8.28	681900	306039	1.09	94.2	0.93	1470	True	0.27
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	8.28	747800	668069	2.18	93.8	0.92	1870	True	0.27
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	8.27	667800	1290080	4.70	101.4	1.00	1963	True	0.29
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	8.27	666100	3372642	12.33	106.3	1.05	3548	True	0.33
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	8.28	620600	6704354	26.30	113.4	1.12	4128	True	0.30
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	8.27	614900	15218317	60.26	103.9	1.02	4971	True	0.28

Analyte Name: PFOS
Regression Equation: y = 0.984 x (std. dev. = 0.029) (weighting: None)
Calibration Fit: RSD = 6.95 RSE = 6.95
Average RF:0.984 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

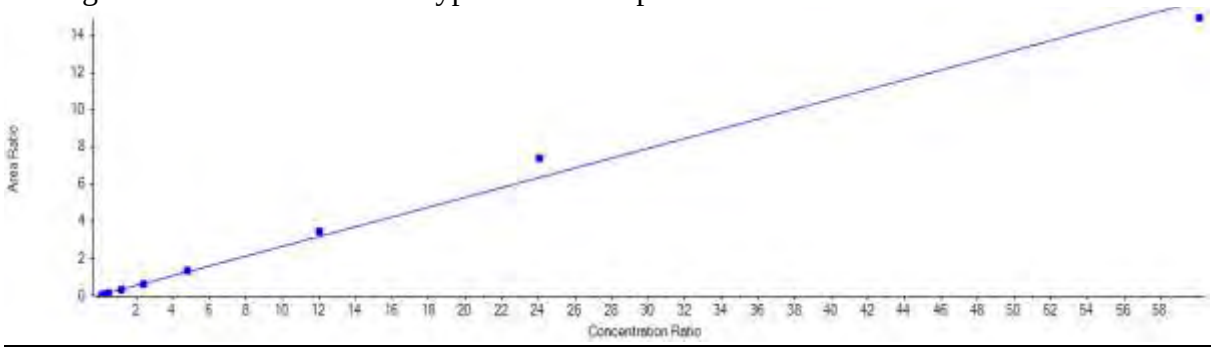
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFNS

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	8.63	732200	15906	0.08	85.6	0.54	347	True	1.10
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	8.63	723500	34346	0.18	93.6	0.59	7658	True	1.34
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	8.62	677200	84849	0.48	98.8	0.62	11144	True	1.21
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	8.63	681900	220414	1.23	101.9	0.64	10074	True	1.32
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	8.63	747800	452953	2.30	95.5	0.60	13160	True	1.36
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	8.63	667800	887318	5.04	104.8	0.66	8484	True	1.45
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	8.63	666100	2304611	13.12	109.1	0.69	8538	True	1.02
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	8.63	620600	4586269	28.02	116.5	0.74	18061	True	0.96
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	8.63	614900	9187351	56.66	94.2	0.60	16737	True	1.14

Analyte Name: PFNS
Regression Equation: y = 0.632 x (std. dev. = 0.024) (weighting: None)
Calibration Fit: RSD = 9.25 RSE = 9.25
Average RF:0.632 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

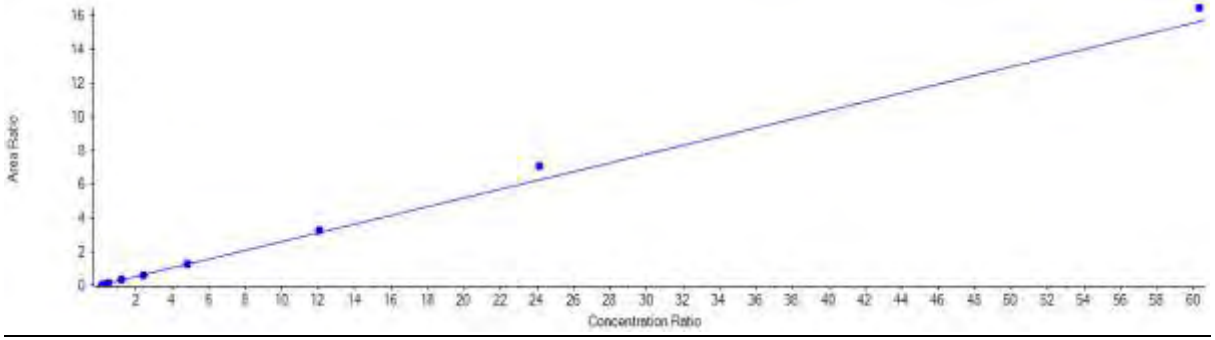
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFDS

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	9.15	732200	16034	0.08	87.4	0.54	1465	True	1.21
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	9.15	723500	33457	0.18	92.2	0.57	3522	True	1.19
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	9.14	677200	79503	0.45	93.7	0.58	7344	True	1.33
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	9.15	681900	224077	1.27	104.9	0.65	14605	True	1.19
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	9.15	747800	450279	2.32	96.1	0.60	10431	True	1.22
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	9.15	667800	862876	4.97	103.1	0.64	100447	True	1.11
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	9.14	666100	2184110	12.62	104.6	0.65	33767	True	1.42
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	9.14	620600	4389768	27.23	112.9	0.70	27975	True	1.30
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	9.14	614900	10136479	63.46	105.2	0.66	29238	True	1.23

Analyte Name: PFDS
Regression Equation: y = 0.622 x (std. dev. = 0.021) (weighting: None)
Calibration Fit: RSD = 8.09 RSE = 8.09
Average RF:0.622 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

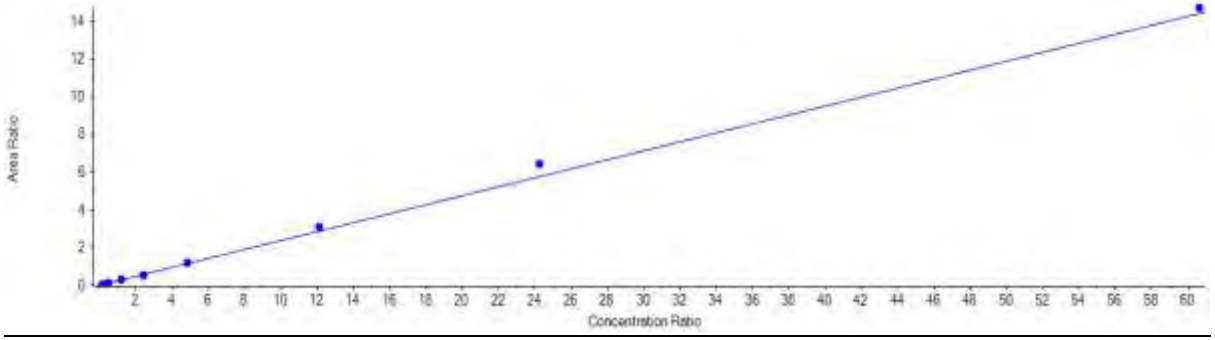
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFDoS

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	10.01	732200	14889	0.09	88.1	0.50	28946	True	1.15
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	10.00	723500	31280	0.18	93.7	0.53	3800	True	0.82
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	10.00	677200	76105	0.47	97.4	0.56	6785	True	0.84
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	10.01	681900	199205	1.23	101.3	0.58	130155	True	1.39
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	10.01	747800	418271	2.35	96.9	0.55	22261	True	1.43
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	10.00	667800	781329	4.92	101.4	0.58	184218	True	1.08
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	10.00	666100	2057796	12.98	107.1	0.61	10089	True	0.85
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	10.01	620600	4012335	27.17	112.1	0.64	102420	True	1.15
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	10.00	614900	9057070	61.91	102.1	0.58	18400	True	1.07

Analyte Name: PFDoS
Regression Equation: y = 0.570 x (std. dev. = 0.017) (weighting: None)
Calibration Fit: RSD = 7.08 RSE = 7.08
Average RF:0.570 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

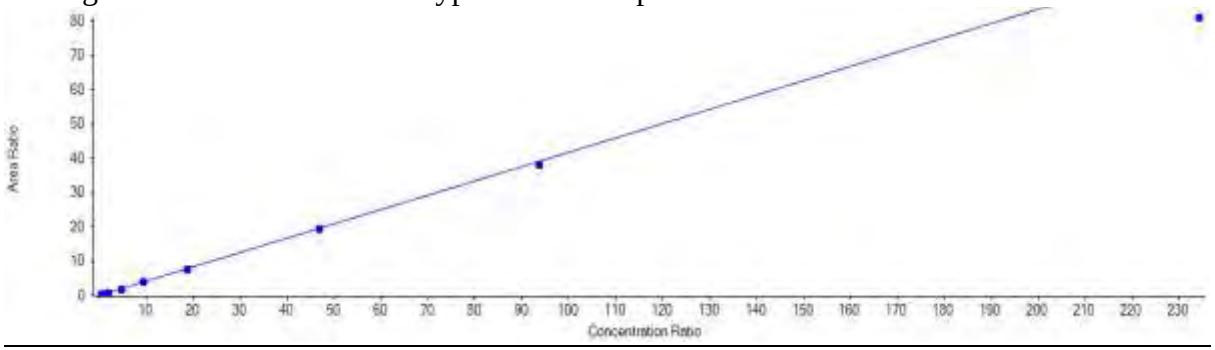
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: 4:2FTS

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	5.14	316000	63237	0.48	127.7	2.50	933	True	0.97
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	5.13	292500	102451	0.84	111.8	2.19	491983	True	1.48
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	5.14	284100	214011	1.80	96.2	1.88	1806	True	1.57
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	5.14	293700	502551	4.10	87.4	1.71	29167999	True	1.29
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	5.14	296100	1152996	9.32	99.4	1.95	4172	True	1.09
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	5.14	279400	2150596	18.42	98.2	1.93	4758	True	1.53
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	5.13	271600	5291738	46.63	99.5	1.95	2568647	True	1.45
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	5.14	270900	10310809	91.08	97.2	1.90	5795546	True	0.96
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	5.14	285500	23137425	193.97	82.8	1.62	171109961	True	1.04

Analyte Name: 4:2FTS
Regression Equation: y = 1.960 x (std. dev. = 0.055) (weighting: None)
Calibration Fit: RSD = 13.18 RSE = 13.18
Average RF:1.960 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

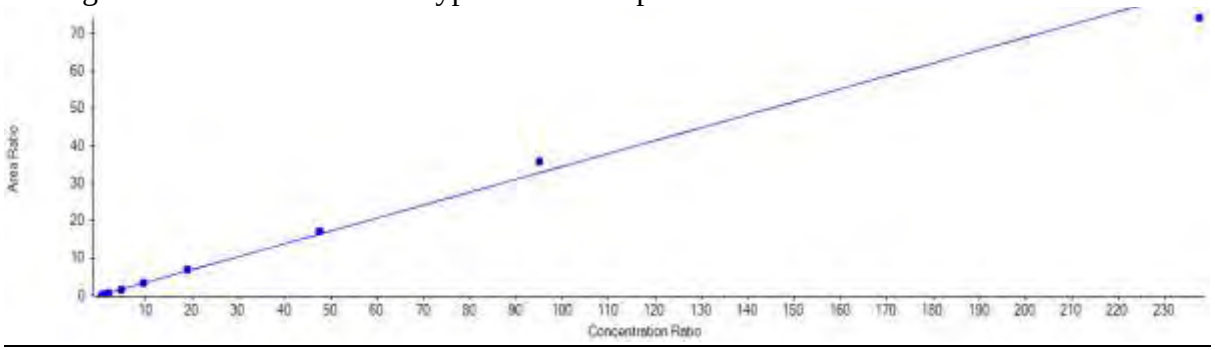
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: 6:2FTS

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	7.09	238700	29652	0.36	94.8	1.55	5755123	True	1.28
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	7.09	214800	54403	0.73	96.6	1.59	672	True	0.95
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	7.09	212200	134548	1.84	96.7	1.59	2075	True	1.04
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	7.10	208800	344993	4.79	100.8	1.65	3309	True	1.13
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	7.09	217600	731187	9.74	102.5	1.68	47100004	True	1.15
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	7.09	207100	1415815	19.81	104.3	1.71	4100892	True	1.45
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	7.09	208600	3565584	49.53	104.3	1.71	120969116	True	1.38
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	7.09	200500	7191794	103.98	109.5	1.80	4944	True	1.19
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	7.09	218700	16231198	215.16	90.6	1.49	1168487	True	1.39

Analyte Name: 6:2FTS
Regression Equation: y = 1.640 x (std. dev. = 0.020) (weighting: None)
Calibration Fit: RSD = 5.82 RSE = 5.82
Average RF:1.640 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

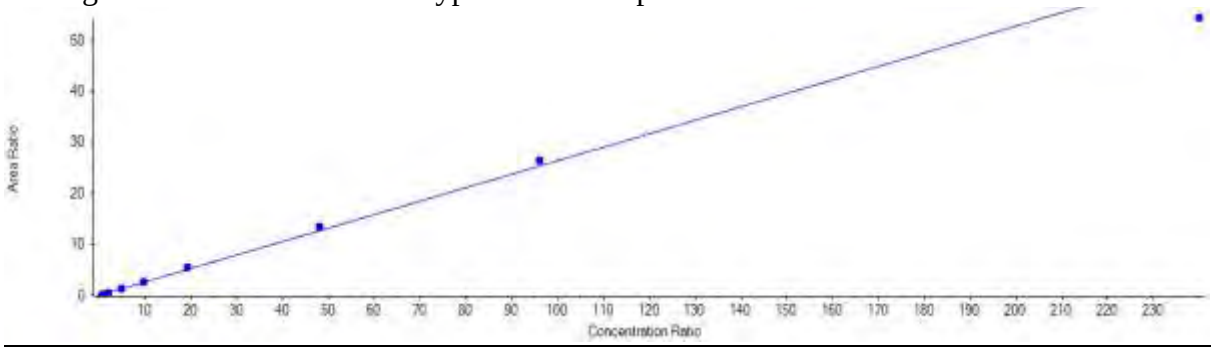
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: 8:2FTS

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	8.07	355700	32302	0.34	89.6	1.14	1120	True	1.05
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	8.07	350100	67583	0.73	95.2	1.21	39273	True	1.57
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	8.07	314700	160030	1.93	100.3	1.27	370097	True	1.56
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	8.08	324500	432638	5.05	105.2	1.33	4642	True	1.42
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	8.07	341500	910884	10.10	105.2	1.33	4008	True	1.30
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	8.07	309400	1682010	20.59	107.2	1.36	5550	True	1.02
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	8.07	298200	4038399	51.28	106.8	1.35	5812	True	1.15
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	8.08	271800	7209364	100.44	104.6	1.33	7027	True	1.03
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	8.07	278600	15163258	206.09	85.9	1.09	9396	True	1.68

Analyte Name: 8:2FTS
Regression Equation: y = 1.267 x (std. dev. = 0.021) (weighting: None)
Calibration Fit: RSD = 7.96 RSE = 7.96
Average RF:1.267 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

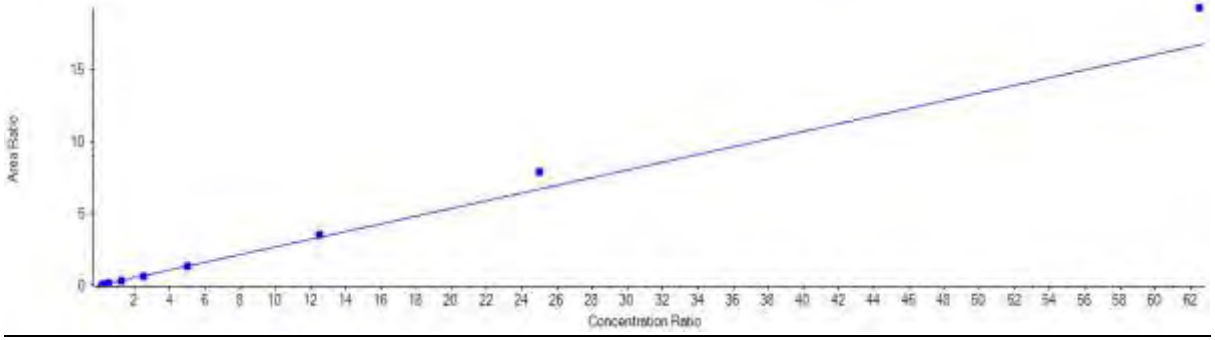
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFOSA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	9.55	1055000	25409	0.09	90.1	0.60	480	True	0.16
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	9.54	1009000	48458	0.18	89.8	0.60	664	True	0.18
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	9.54	992200	119348	0.45	90.0	0.60	872	True	0.17
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	9.55	1001000	319396	1.19	95.5	0.64	22824431	True	0.17
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	9.55	1011000	658264	2.44	97.4	0.65	38374	True	0.18
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	9.55	938700	1244740	4.96	99.2	0.66	2974031	True	0.16
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	9.54	902700	3171379	13.14	105.1	0.70	1226	True	0.17
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	9.55	820100	6437202	29.36	117.4	0.79	86873	True	0.15
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	9.54	780100	15046966	72.14	115.4	0.77	22190	True	0.18

Analyte Name: PFOSA
Regression Equation: y = 0.668 x (std. dev. = 0.028) (weighting: None)
Calibration Fit: RSD = 10.60 RSE = 10.60
Average RF:0.668 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

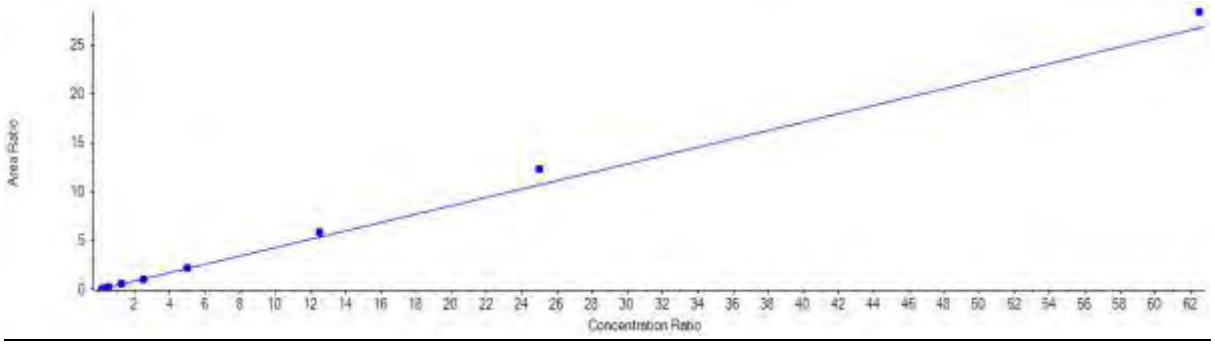
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: NMeFOSA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	10.17	174700	5812	0.08	77.7	0.83	598555	True	0.26
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	10.16	155700	13659	0.21	102.4	1.10	233	True	0.29
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	10.16	159200	30885	0.45	90.6	0.97	23430	True	0.31
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	10.17	162800	85925	1.23	98.6	1.06	22807	True	0.28
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	10.17	166900	173879	2.43	97.3	1.04	610172	True	0.28
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	10.17	153200	337828	5.15	103.0	1.10	11133	True	0.24
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	10.17	153000	895612	13.67	109.4	1.17	6479	True	0.31
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	10.17	148600	1828142	28.71	114.9	1.23	4490	True	0.25
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	10.17	155900	4433790	66.40	106.2	1.14	8489	True	0.25

Analyte Name: NMeFOSA
Regression Equation: y = 1.071 x (std. dev. = 0.047) (weighting: None)
Calibration Fit: RSD = 10.94 RSE = 10.94
Average RF:1.071 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

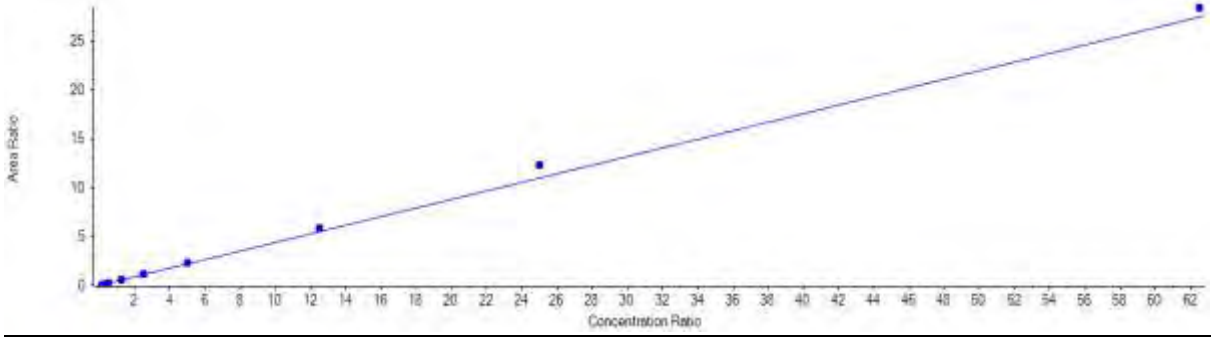
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: NEtFOSA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	10.38	167500	6309	0.09	85.7	0.94	8149	True	0.31
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	10.38	167100	12795	0.17	87.2	0.96	74730	True	0.27
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	10.37	153300	31911	0.47	94.8	1.04	227762	True	0.27
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	10.38	158000	90396	1.30	104.2	1.14	39369	True	0.27
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	10.38	160700	181221	2.57	102.7	1.13	6895810	True	0.23
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	10.38	151400	342011	5.14	102.9	1.13	9106041	True	0.25
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	10.38	150300	887257	13.44	107.5	1.18	6668	True	0.23
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	10.38	142000	1739926	27.89	111.6	1.23	203912	True	0.25
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	10.38	149000	4230356	64.65	103.4	1.14	26257	True	0.27

Analyte Name: NEtFOSA
Regression Equation: y = 1.098 x (std. dev. = 0.039) (weighting: None)
Calibration Fit: RSD = 8.88 RSE = 8.88
Average RF:1.098 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

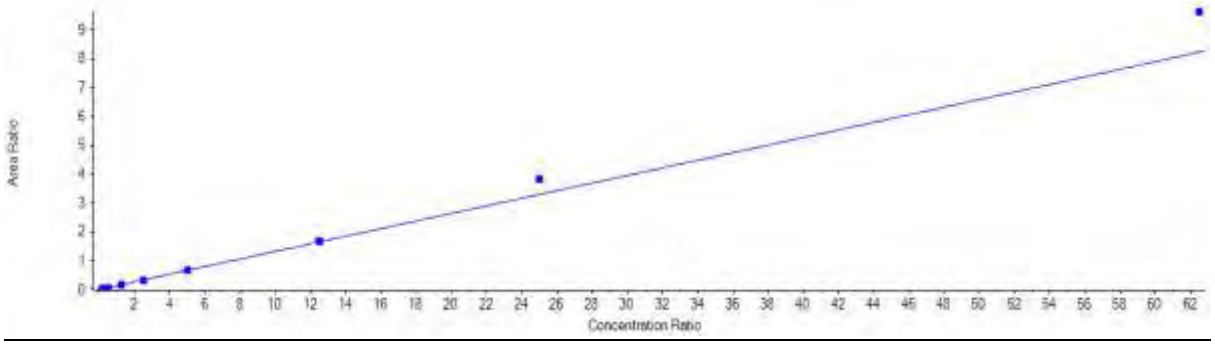
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: NMeFOSAA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	8.22	873200	10089	0.09	87.8	0.58	29422	True	0.89
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	8.22	828200	19476	0.18	89.4	0.59	335	True	1.27
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	8.22	649400	36814	0.43	86.2	0.57	811	True	1.48
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	8.23	839100	138283	1.25	100.2	0.66	1949	True	1.44
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	8.23	700000	231441	2.51	100.5	0.66	1249	True	1.42
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	8.23	693300	460043	5.04	100.9	0.66	2090	True	1.03
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	8.22	693500	1169398	12.81	102.5	0.67	1742	True	1.19
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	8.23	679700	2587090	28.92	115.7	0.76	1459	True	1.00
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	8.23	532600	5124216	73.11	117.0	0.77	1402	True	0.93

Analyte Name: NMeFOSAA
Regression Equation: y = 0.658 x (std. dev. = 0.015) (weighting: None)
Calibration Fit: RSD = 11.16 RSE = 11.16
Average RF:0.658 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

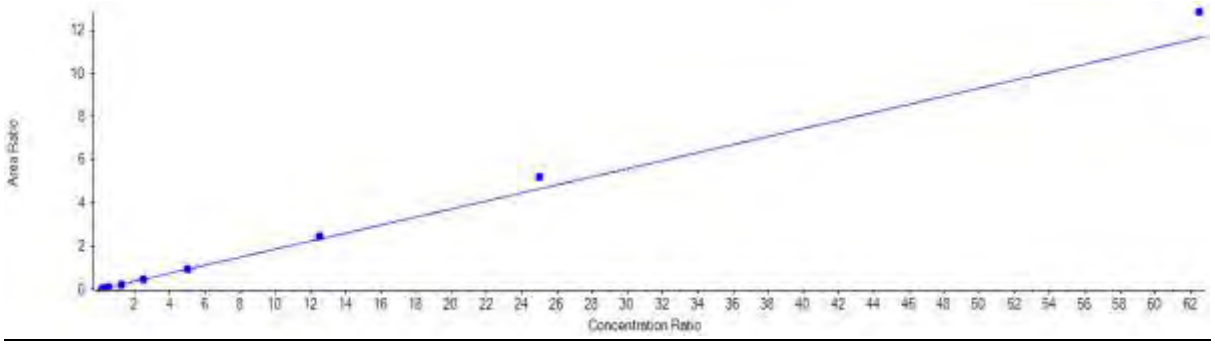
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: NEtFOSAA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	8.36	401500	6220	0.08	83.1	0.77	349	True	1.29
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	8.37	384200	14442	0.20	100.8	0.94	328	True	1.00
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	8.36	377500	35871	0.51	101.9	0.95	455	True	0.51
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	8.37	387000	84369	1.17	93.5	0.87	622	True	0.47
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	8.37	404700	180301	2.39	95.6	0.89	564	True	0.50
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	8.37	385700	356003	4.95	99.0	0.92	889	True	0.43
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	8.36	368700	895167	13.02	104.2	0.97	781	True	0.48
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	8.37	359800	1868827	27.86	111.4	1.04	1062	True	1.13
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	8.37	340800	4386182	69.03	110.4	1.03	911	True	1.58

Analyte Name: NEtFOSAA
Regression Equation: y = 0.932 x (std. dev. = 0.016) (weighting: None)
Calibration Fit: RSD = 8.73 RSE = 8.73
Average RF:0.932 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

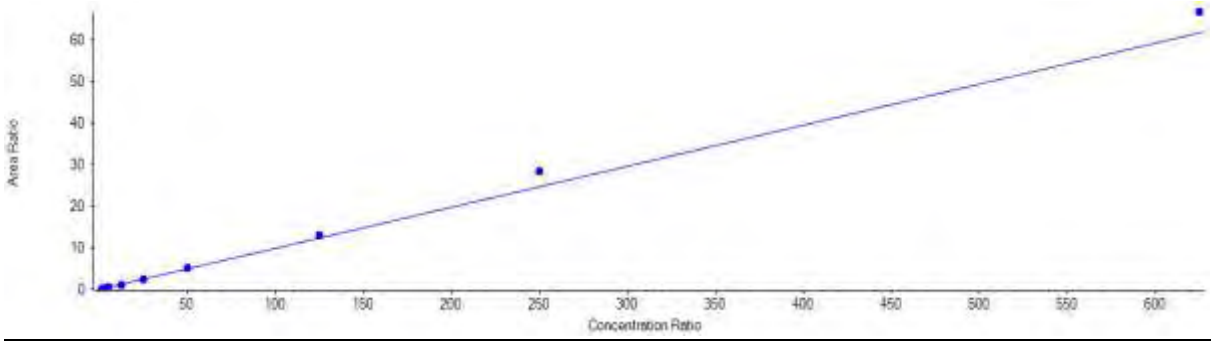
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: NMeFOSE

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	10.08	1247000	109398	0.89	88.9	2.19	1787	True	0.26
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	10.08	1181000	220343	1.89	94.5	2.33	1918	True	0.31
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	10.08	1164000	543241	4.73	94.6	2.33	4149	True	0.32
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	10.08	1228000	1480904	12.22	97.8	2.41	3172	True	0.30
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	10.08	1289000	2982647	23.45	93.8	2.31	13701	True	0.30
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	10.08	1204000	6081925	51.19	102.4	2.53	17397	True	0.25
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	10.08	1269000	16436198	131.22	105.0	2.59	6722	True	0.32
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	10.08	1205000	34160374	287.20	114.9	2.83	10771	True	0.25
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	10.08	1259000	84038487	676.35	108.2	2.67	9664	True	0.25

Analyte Name: NMeFOSE
Regression Equation: y = 2.467 x (std. dev. = 0.008) (weighting: None)
Calibration Fit: RSD = 8.26 RSE = 8.26
Average RF:2.467 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

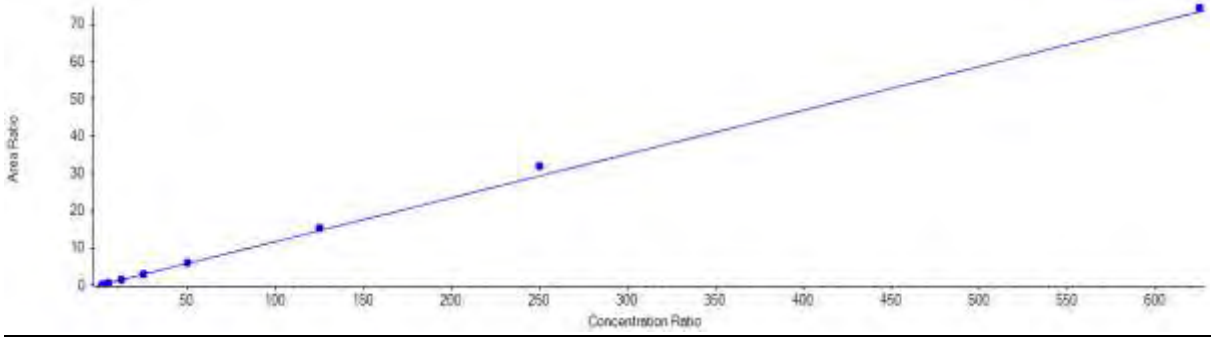
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: NEtFOSE

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	10.28	1961000	200381	0.87	87.1	2.56	1226	True	0.29
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	10.28	1862000	414400	1.90	94.8	2.78	1083	True	0.25
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	10.27	1797000	1009032	4.78	95.6	2.81	2095	True	0.25
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	10.28	1877000	2767938	12.56	100.5	2.95	2771	True	0.24
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	10.28	1859000	5649756	25.89	103.6	3.04	3392	True	0.26
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	10.28	1796000	10881697	51.62	103.3	3.03	4693	True	0.28
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	10.28	1794000	27604824	131.07	104.9	3.08	4266	True	0.28
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	10.28	1689000	53947112	272.13	108.9	3.19	4972	True	0.30
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	10.28	1668000	124215059	634.26	101.5	2.98	5049	True	0.23

Analyte Name: NEtFOSE
Regression Equation: y = 2.935 x (std. dev. = 0.008) (weighting: None)
Calibration Fit: RSD = 6.53 RSE = 6.53
Average RF:2.935 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

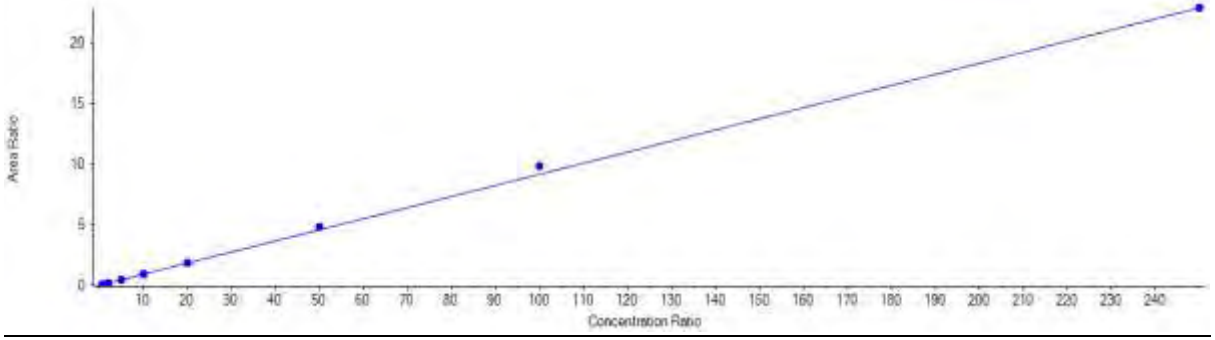
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: HFPO-DA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	5.61	2886000	92315	0.35	87.2	0.80	20279	True	1.21
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	5.60	2757000	196682	0.78	97.3	0.89	2485	True	1.08
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	5.60	2653000	500246	2.06	102.8	0.94	7412	True	1.25
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	5.60	2847000	1288956	4.94	98.8	0.91	62161	True	1.35
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	5.60	3027000	2739320	9.87	98.7	0.91	18258	True	1.14
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	5.60	2725000	5113517	20.47	102.3	0.94	27944	True	1.20
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	5.60	2718000	13116686	52.65	105.3	0.97	25693	True	1.20
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	5.60	2507000	24712719	107.52	107.5	0.99	38611	True	1.08
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	5.60	2454000	56235106	249.99	100.0	0.92	44180	True	1.21

Analyte Name: HFPO-DA
Regression Equation: y = 0.917 x (std. dev. = 0.005) (weighting: None)
Calibration Fit: RSD = 5.83 RSE = 5.83
Average RF:0.917 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

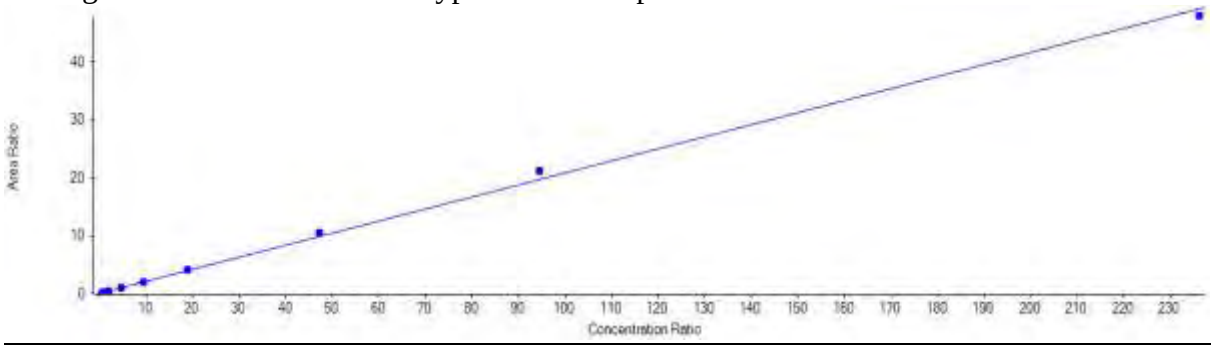
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: ADONA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	6.72	2886000	201429	0.34	88.6	1.85	25325	True	1.16
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	6.72	2757000	425384	0.74	97.9	2.04	44579	True	1.11
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	6.72	2653000	1036431	1.87	99.1	2.07	341420	True	1.01
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	6.72	2847000	2822750	4.76	100.7	2.10	15753	True	1.32
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	6.72	3027000	5872996	9.31	98.5	2.05	15728	True	1.09
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	6.72	2725000	11102447	19.54	103.4	2.16	13709	True	1.07
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	6.71	2718000	28514834	50.33	106.5	2.22	30974	True	1.30
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	6.72	2507000	53256061	101.89	107.8	2.25	25828	True	1.05
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	6.72	2454000	117900625	230.46	97.6	2.03	28418	True	1.36

Analyte Name: ADONA
Regression Equation: y = 2.085 x (std. dev. = 0.012) (weighting: None)
Calibration Fit: RSD = 5.70 RSE = 5.70
Average RF:2.085 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

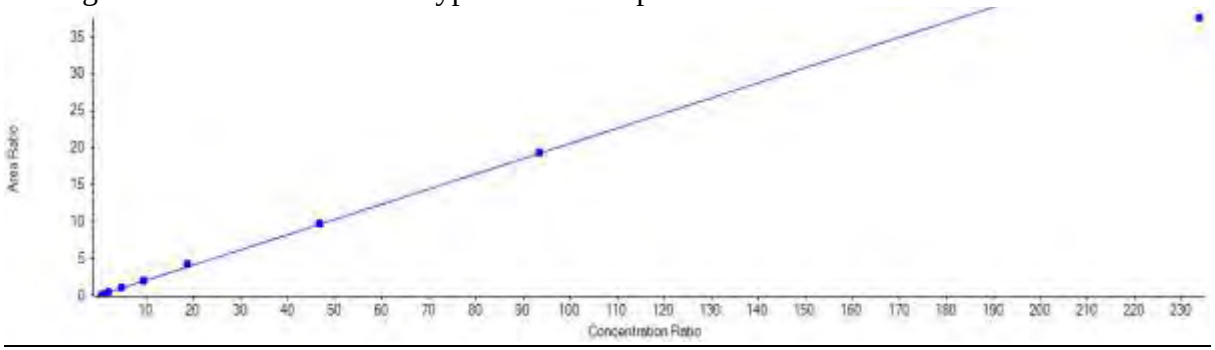
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: 9Cl-PF3ONS

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	8.50	2886000	195597	0.33	88.2	1.81	856461	True	0.86
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	8.50	2757000	444386	0.78	104.8	2.16	1583171	True	1.10
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	8.49	2653000	1064499	1.95	104.4	2.15	2862685	True	1.03
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	8.50	2847000	2946988	5.04	107.7	2.21	88586	True	1.05
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	8.50	3027000	6066657	9.75	104.3	2.14	6318	True	1.08
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	8.50	2725000	11512976	20.55	109.9	2.26	1142992	True	1.17
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	8.50	2718000	26617233	47.64	101.9	2.10	80345	True	1.37
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	8.50	2507000	48493859	94.09	100.6	2.07	96371	True	1.29
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	8.50	2454000	92226023	182.83	78.2	1.61	119953	True	1.15

Analyte Name: 9Cl-PF3ONS
Regression Equation: y = 2.056 x (std. dev. = 0.021) (weighting: None)
Calibration Fit: RSD = 10.23 RSE = 10.23
Average RF:2.056 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

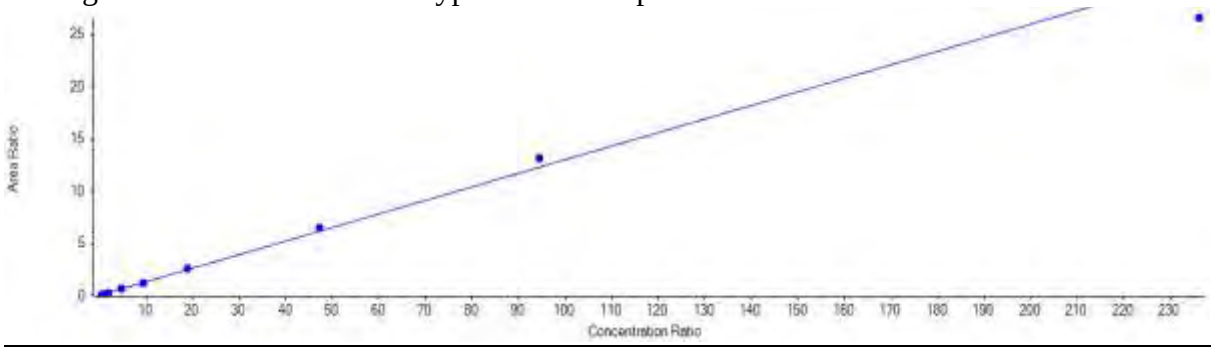
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: 11Cl-PF3OUdS

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	9.57	2886000	136607	0.37	96.4	1.25	1958	True	1.05
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	9.57	2757000	265657	0.74	98.2	1.27	3313	True	0.91
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	9.57	2653000	665847	1.93	102.3	1.33	3193	True	1.11
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	9.58	2847000	1734547	4.69	99.3	1.29	4468	True	1.28
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	9.58	3027000	3680248	9.37	99.1	1.29	549080	True	1.32
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	9.57	2725000	7082207	20.01	105.9	1.38	186177	True	0.98
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	9.57	2718000	17563776	49.77	105.3	1.37	1838742	True	1.10
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	9.57	2507000	32877183	100.99	106.9	1.39	101214	True	1.38
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	9.57	2454000	65219566	204.69	86.6	1.13	53514	True	1.33

Analyte Name: 11Cl-PF3OUdS
Regression Equation: y = 1.298 x (std. dev. = 0.008) (weighting: None)
Calibration Fit: RSD = 6.24 RSE = 6.24
Average RF:1.298 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

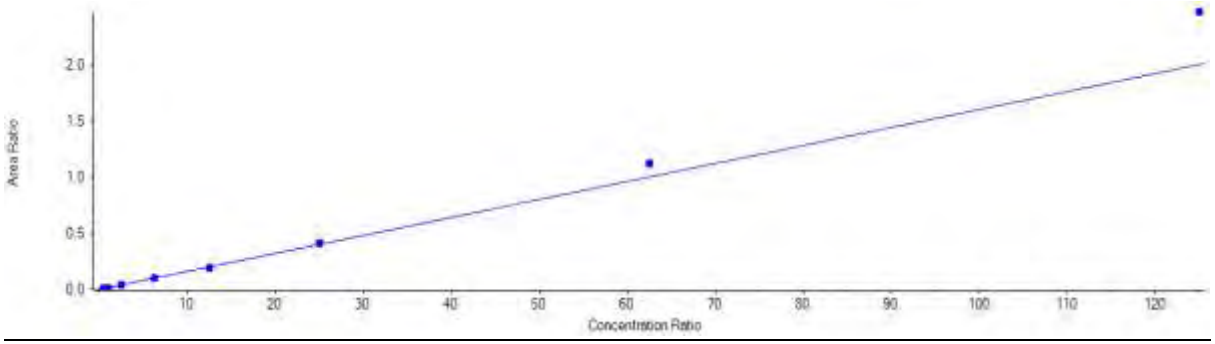
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: 3:3FTCA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	4.91	1742000	11661	0.42	83.7	0.07	549	True	1.14
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	4.91	1675000	23352	0.87	87.2	0.07	6376312	True	1.13
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	4.91	1617000	61750	2.39	95.5	0.08	652224	True	1.33
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	4.92	1673000	162277	6.06	97.0	0.08	2725	True	1.14
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	4.92	1701000	330654	12.15	97.2	0.08	1464	True	1.68
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	4.91	1593000	659551	25.88	103.5	0.08	4667	True	1.23
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	4.91	1536000	1725859	70.27	112.4	0.09	551294	True	1.22
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	4.91	1347000	3325237	154.34	123.5	0.10	480675	True	1.55
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	N/A	1241000	N/A	N/A	N/A	N/A	N/A	False	N/A

Analyte Name: 3:3FTCA
Regression Equation: y = 0.080 x (std. dev. = 0.002) (weighting: None)
Calibration Fit: RSD = 13.02 RSE = 13.02
Average RF:0.080 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

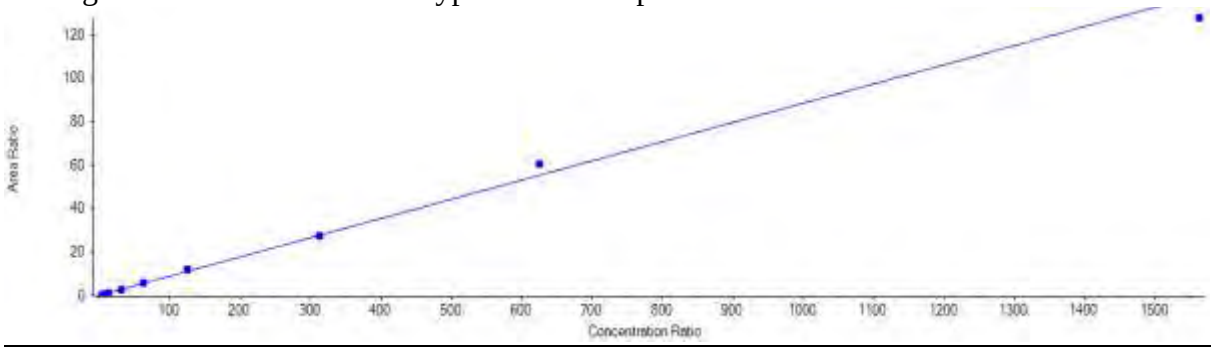
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: 5:3FTCA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	7.16	1043000	225324	2.44	97.8	0.22	7438	True	1.27
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	7.16	1082000	457091	4.78	95.6	0.21	4516	True	1.28
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	7.16	1035000	1109466	12.13	97.0	0.21	17454	True	1.13
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	7.17	1088000	2908807	30.24	96.8	0.21	26902	True	1.53
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	7.16	1067000	6221772	65.95	105.5	0.23	21075	True	1.27
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	7.16	995300	11672941	132.65	106.1	0.24	30755	True	1.19
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	7.16	1062000	29042126	309.44	99.0	0.22	26557	True	1.18
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	7.16	952600	57800169	686.27	109.8	0.24	27228	True	1.32
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	7.16	942500	120353707	1444.28	92.4	0.20	34647	True	1.20

Analyte Name: 5:3FTCA
Regression Equation: y = 0.221 x (std. dev. = 0.005) (weighting: None)
Calibration Fit: RSD = 5.77 RSE = 5.77
Average RF:0.221 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

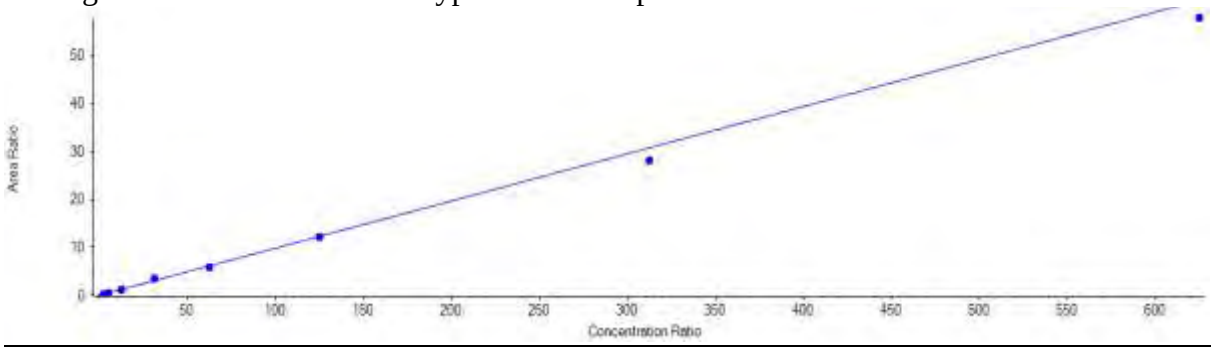
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: 7:3FTCA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	8.21	1043000	272814	2.66	106.3	0.26	816972	True	1.42
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	8.21	1082000	583552	5.48	109.6	0.27	883473	True	1.02
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	8.21	1035000	1148521	11.28	90.2	0.22	1064938	True	1.11
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	8.22	1088000	3798713	35.47	113.5	0.28	3323	True	1.07
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	8.21	1067000	6248141	59.49	95.2	0.23	522134	True	1.03
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	8.21	995300	12166666	124.20	99.4	0.24	14783	True	1.27
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	8.21	1062000	29960681	286.75	91.8	0.23	24002	True	1.50
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	8.21	952600	55121038	587.88	94.1	0.23	38567	True	1.31
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	N/A	942500	N/A	N/A	N/A	N/A	N/A	False	N/A

Analyte Name: 7:3FTCA
Regression Equation: y = 0.246 x (std. dev. = 0.009) (weighting: None)
Calibration Fit: RSD = 8.76 RSE = 8.76
Average RF:0.246 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

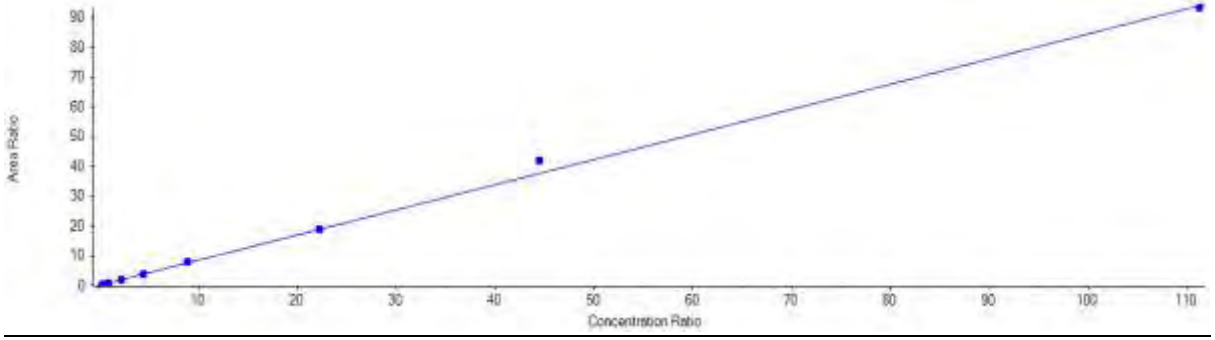
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFEESA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	5.71	1043000	150155	0.17	95.7	2.02	3071	True	1.18
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	5.71	1082000	304483	0.33	93.5	1.98	5410	True	1.33
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	5.71	1035000	748553	0.86	96.1	2.03	5953	True	1.19
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	5.71	1088000	1967602	2.14	96.1	2.03	12486	True	1.24
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	5.71	1067000	4052494	4.49	100.9	2.13	13782	True	1.49
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	5.71	995300	7928840	9.42	105.9	2.24	17439	True	1.40
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	5.71	1062000	20195715	22.50	101.1	2.14	34835	True	1.42
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	5.71	952600	39950589	49.60	111.5	2.36	44053	True	1.37
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	5.71	942500	87964966	110.38	99.2	2.10	58046	True	1.19

Analyte Name: PFEESA
Regression Equation: y = 2.114 x (std. dev. = 0.048) (weighting: None)
Calibration Fit: RSD = 5.70 RSE = 5.70
Average RF:2.114 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

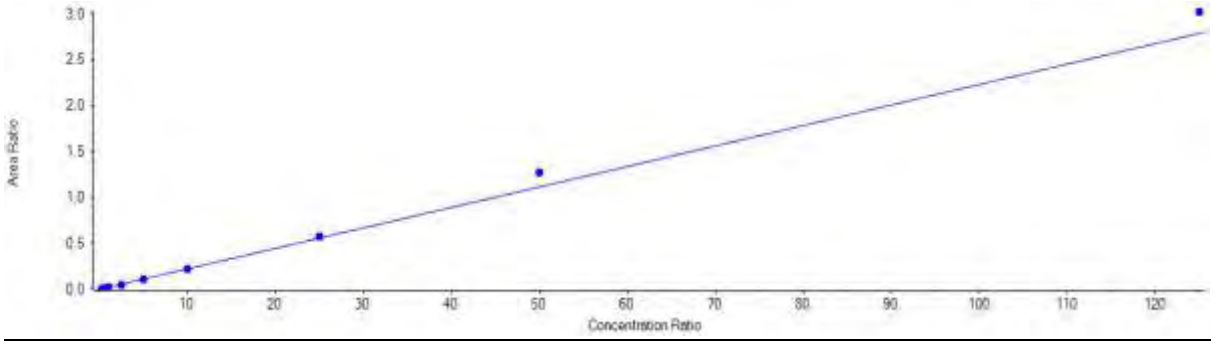
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFMPA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	3.85	1742000	7169	0.18	92.2	0.10	497	True	1.15
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	3.85	1675000	14165	0.38	94.7	0.11	787	True	1.16
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	3.85	1617000	33877	0.94	93.9	0.11	1334	True	1.35
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	3.86	1673000	90755	2.43	97.2	0.11	2435	True	1.13
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	3.85	1701000	186580	4.91	98.3	0.11	3255	True	0.99
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	3.85	1593000	351979	9.90	99.0	0.11	4883	True	1.28
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	3.84	1536000	875313	25.54	102.2	0.11	6361	True	1.20
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	3.85	1347000	1717029	57.11	114.2	0.13	10711	True	1.12
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	3.86	1241000	3753262	135.50	108.4	0.12	12755	True	1.08

Analyte Name: PFMPA
Regression Equation: y = 0.112 x (std. dev. = 0.002) (weighting: None)
Calibration Fit: RSD = 7.21 RSE = 7.21
Average RF:0.112 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

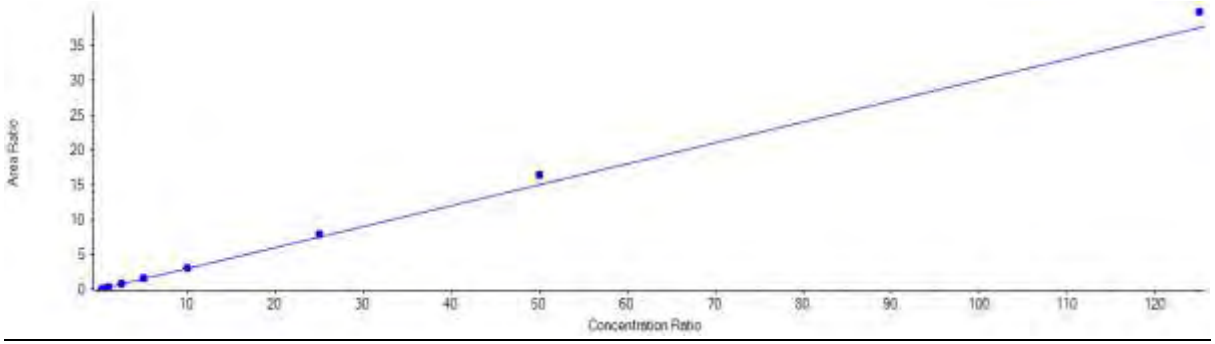
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: PFMBA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	4.88	1742000	93621	0.18	89.3	1.34	1504	True	1.37
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	4.87	1675000	191221	0.38	94.8	1.43	1959	True	1.25
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	4.87	1617000	470133	0.97	96.6	1.45	2484	True	1.36
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	4.88	1673000	1223138	2.43	97.2	1.46	13679	True	1.14
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	4.88	1701000	2617337	5.11	102.2	1.54	9691	True	0.97
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	4.88	1593000	4778782	9.97	99.7	1.50	12087	True	1.31
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	4.87	1536000	12117026	26.22	104.9	1.58	17509	True	1.33
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	4.88	1347000	22136596	54.61	109.2	1.64	18616	True	0.93
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	4.88	1241000	49534492	132.63	106.1	1.60	27796	True	1.04

Analyte Name: PFMBA
Regression Equation: y = 1.505 x (std. dev. = 0.019) (weighting: None)
Calibration Fit: RSD = 6.25 RSE = 6.25
Average RF:1.505 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

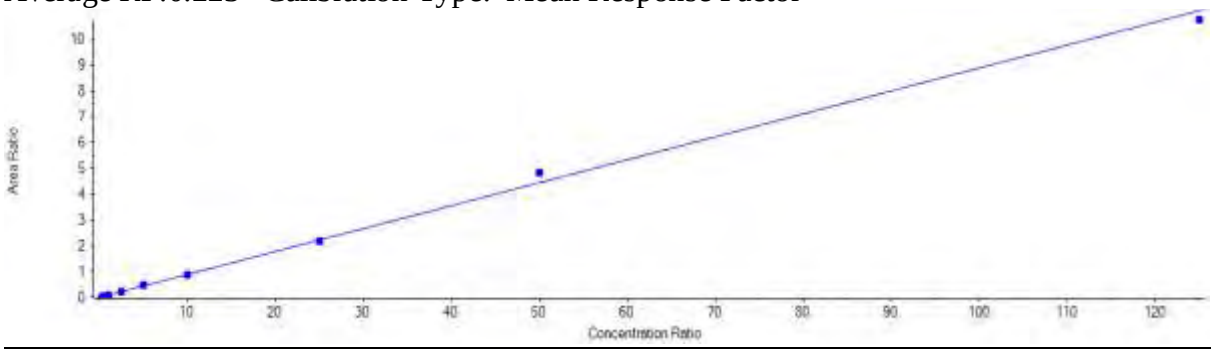
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: NFDHA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	5.26	1043000	19368	0.21	104.3	0.23	1279	True	1.04
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	5.26	1082000	37544	0.39	97.4	0.22	1999	True	0.95
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	5.25	1035000	88598	0.96	96.2	0.21	3362	True	0.88
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	5.26	1088000	227164	2.35	93.8	0.21	5793	True	1.43
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	5.26	1067000	496414	5.23	104.5	0.23	3450	True	1.24
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	5.26	995300	880207	9.94	99.4	0.22	5007	True	0.98
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	5.25	1062000	2327402	24.63	98.5	0.22	5012	True	1.42
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	5.25	952600	4623243	54.52	109.0	0.24	6055	True	1.09
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	5.26	942500	10150512	120.98	96.8	0.22	9101	True	1.20

Analyte Name: NFDHA
Regression Equation: y = 0.223 x (std. dev. = 0.004) (weighting: None)
Calibration Fit: RSD = 4.91 RSE = 4.91
Average RF:0.223 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

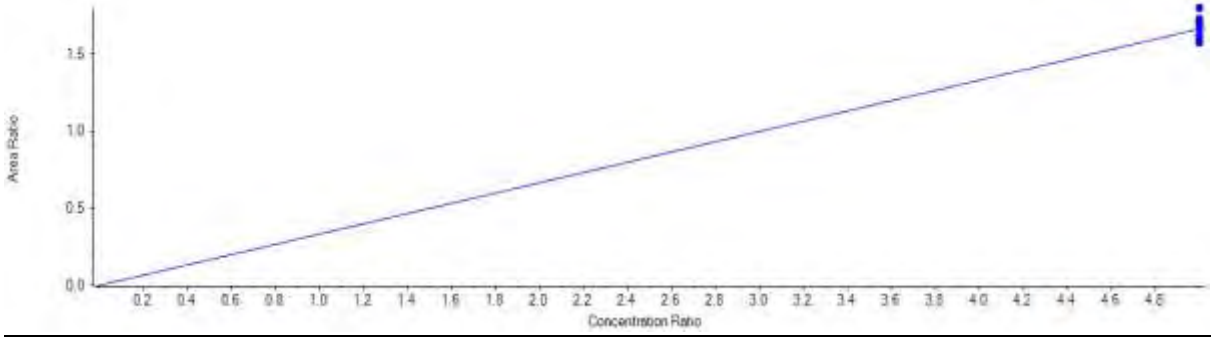
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: 13C2D4-4:2FTS

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	5.13	547400	984958	5.41	108.3	0.85	38881	True	1.42
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	5.12	547700	946281	5.20	103.9	0.82	20779	True	1.22
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	5.12	546900	866893	4.77	95.4	0.75	2402	True	1.32
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	5.13	586500	924127	4.74	94.8	0.75	178277	True	1.11
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	5.13	571000	972080	5.12	102.4	0.81	13709	True	0.99
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	5.13	551900	919882	5.01	100.3	0.79	5794	True	1.29
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	5.12	570800	967104	5.10	101.9	0.80	1842	True	1.18
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	5.13	550300	889831	4.86	97.3	0.77	10886	True	1.48
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	5.13	524700	835350	4.79	95.8	0.76	7630	True	1.57

Analyte Name: 13C2D4-4:2FTS
Regression Equation: y = 0.788 x (std. dev. = 0.015) (weighting: None)
Calibration Fit: RSD = 4.57 RSE = 0.00
Average RF:0.788 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

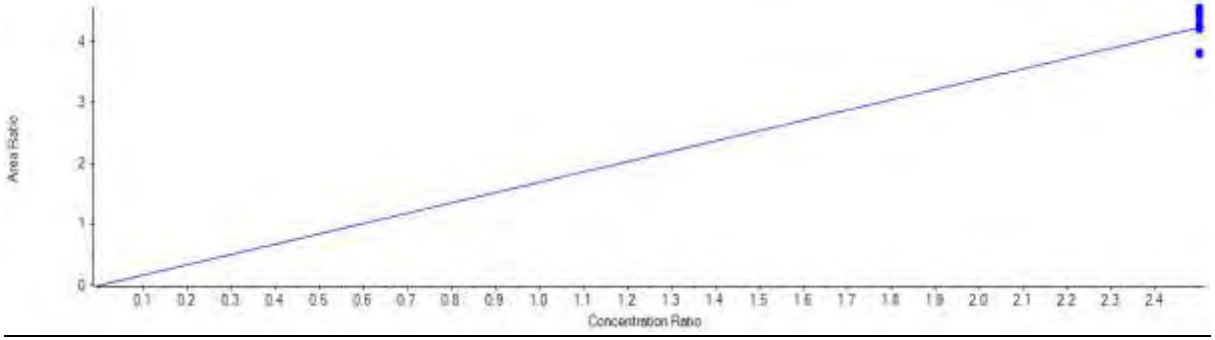
Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

Acquisition Method	EPA_1633.dam
Processing Method	EPA1633_NIS_CALC.qmethod
Calibration	240813_1633_ICAL

Compound Name: 13C2-PFOA

Sample File	Sample ID	Acquisition Date and Time	RT	IS Peak Area	Peak Area	Calc. Conc. (ng/ml)	Percent Recovery	RRF	Signal to Noise	Used	b/a
SCI05_240813_71.wiff	IA1633STD-.1	8/13/2024 9:50:25 PM	7.50	753400	3409390	2.67	106.9	4.53	687912	True	1.21
SCI05_240813_72.wiff	IA1633STD-.2	8/13/2024 10:03:10 PM	7.49	761500	3366661	2.61	104.5	4.42	108677677	True	1.26
SCI05_240813_73.wiff	IA1633STD-.5	8/13/2024 10:15:52 PM	7.49	762900	3205026	2.48	99.3	4.20	11159	True	1.36
SCI05_240813_74.wiff	IA1633STD-1.25	8/13/2024 10:28:38 PM	7.50	783100	3340729	2.52	100.8	4.27	92469373	True	1.09
SCI05_240813_75.wiff	IA1633STD-2.5	8/13/2024 10:41:23 PM	7.50	764800	3484143	2.69	107.7	4.56	12952	True	1.22
SCI05_240813_76.wiff	IA1633STD-5	8/13/2024 10:54:05 PM	7.50	771600	3324516	2.55	101.8	4.31	6630373	True	1.11
SCI05_240813_77.wiff	IA1633STD-12.5	8/13/2024 11:06:47 PM	7.50	810200	3402324	2.48	99.2	4.20	7632	True	1.20
SCI05_240813_78.wiff	IA1633STD-25	8/13/2024 11:19:32 PM	7.50	834400	3163005	2.24	89.6	3.79	9612	True	1.21
SCI05_240813_79.wiff	IA1633STD-62.5	8/13/2024 11:32:17 PM	7.50	801800	3061091	2.26	90.2	3.82	5355	True	1.44

Analyte Name: 13C2-PFOA
Regression Equation: y = 4.232 x (std. dev. = 0.110) (weighting: None)
Calibration Fit: RSD = 6.48 RSE = 0.00
Average RF:4.232 Calibration Type: Mean Response Factor



Initial Calibration Report

SCIEX OS Version 3.3.0.12027

Alpha Analytical Inc.
Dataset: Default
Last Altered: 8/14/2024 9:34:22 AM
Generated: 8/14/2024 6:27:11 AM

WG	1958909													
Date	8/13/2024													
EIS	**IA1633STD-.1**	**IA1633STD-.2**	**IA1633STD-.5**	**IA1633STD-1.25**	**IA1633STD-2.5**	**IA1633STD-5**	**IA1633STD-12.5**	**IA1633STD-25**	**IA1633STD-62.5**	**AVG RF**	**RSD Calc**		**AVG RF**	**RSD**
13C4-PFBA	1.257	1.193	1.161	1.126	1.199	1.103	1.102	1.050	1.094	1.143	5.7%		1.143	5.669
13C5-PFPeA	0.739	0.695	0.632	0.649	0.691	0.634	0.612	0.541	0.574	0.641	9.6%		0.641	9.634
13C5-PFHxA	0.885	0.898	0.809	0.845	0.867	0.793	0.846	0.766	0.872	0.842	5.3%		0.842	5.289
13C4-PFHpA	0.934	0.882	0.806	0.817	0.895	0.805	0.819	0.762	0.871	0.843	6.5%		0.843	6.476
13C8-PFOA	2.164	2.046	1.908	2.010	2.112	1.897	1.824	1.596	1.639	1.911	10.4%		1.911	10.36
13C9-PFNA	1.093	1.104	1.023	1.041	1.048	1.041	0.998	0.934	0.955	1.026	5.5%		1.026	5.537
13C6-PFDA	1.203	1.114	1.090	1.076	1.082	1.050	1.006	0.982	0.977	1.064	6.7%		1.064	6.718
13C7-PFUnA	1.065	0.899	0.856	0.853	0.888	0.879	0.802	0.759	0.751	0.861	10.9%		0.861	10.876
13C2-PFDoA	0.584	0.541	0.540	0.522	0.544	0.539	0.545	0.572	0.652	0.560	7.0%		0.560	7.008
13C2-PFTeDA	0.610	0.616	0.585	0.582	0.595	0.577	0.604	0.595	0.705	0.608	6.4%		0.608	6.387
13C3-PFBS	1.591	1.509	1.512	1.407	1.520	1.493	1.392	1.430	1.356	1.468	5.1%		1.468	5.147
13C3-PFHxS	1.289	1.244	1.170	1.128	1.206	1.105	1.140	1.086	1.126	1.166	5.8%		1.166	5.81
13C8-PFOS	1.534	1.440	1.407	1.304	1.472	1.284	1.264	1.189	1.289	1.354	8.4%		1.354	8.401
13C2-4:2FTS	0.292	0.270	0.262	0.253	0.262	0.256	0.240	0.249	0.275	0.262	5.9%		0.262	5.833
13C2-6:2FTS	0.217	0.195	0.193	0.177	0.190	0.187	0.182	0.182	0.208	0.192	6.7%		0.192	6.74
13C2-8:2FTS	0.321	0.316	0.284	0.273	0.295	0.277	0.258	0.244	0.262	0.281	9.2%		0.281	9.193
13C8-PFOSA	2.117	1.924	1.975	1.833	1.906	1.729	1.641	1.505	1.567	1.800	11.3%		1.800	11.303
d3-NMeFOSA	0.350	0.297	0.317	0.298	0.315	0.282	0.278	0.273	0.313	0.303	8.0%		0.303	8.024
d5-NEtFOSA	0.336	0.319	0.305	0.289	0.303	0.279	0.273	0.261	0.299	0.296	7.9%		0.296	7.902
d3-NMeFOSAA	0.876	0.790	0.646	0.769	0.660	0.639	0.630	0.624	0.535	0.685	15.3%		0.685	15.311
d5-NEtFOSAA	0.403	0.366	0.376	0.355	0.381	0.355	0.335	0.330	0.342	0.360	6.6%		0.360	6.559
d7-NMeFOSE	0.250	0.225	0.232	0.225	0.243	0.222	0.231	0.221	0.253	0.234	5.2%		0.234	5.211
d9-NEtFOSE	0.393	0.355	0.358	0.344	0.351	0.331	0.326	0.310	0.335	0.345	6.9%		0.345	6.906
13C3-HFPO-DA	0.612	0.572	0.519	0.552	0.615	0.543	0.542	0.504	0.568	0.559	6.8%		0.558	6.78
NIS	**IA1633STD-.1**	**IA1633STD-.2**	**IA1633STD-.5**	**IA1633STD-1.25**	**IA1633STD-2.5**	**IA1633STD-5**	**IA1633STD-12.5**	**IA1633STD-25**	**IA1633STD-62.5**	**AVG RF**	**RSD Calc**		**AVG RF**	**RSD**
13C3-PFBA	1.008	1.016	1.015	1.073	1.046	1.039	0.999	0.958	0.846	1.000	6.6%		1	6.628
13C2-PFHxA	0.963	0.984	1.044	1.053	1.006	1.026	1.025	1.017	0.883	1.000	5.2%		1	5.208
13C4-PFOA	0.963	0.973	0.975	1.001	0.977	0.986	1.035	1.066	1.024	1.000	3.5%		1	3.481
13C5-PFNA	1.003	1.003	1.011	1.046	1.002	1.001	1.045	0.972	0.916	1.000	3.9%		1	3.904
13C2-PFDA	0.981	1.044	1.016	1.053	1.046	1.035	1.018	0.955	0.852	1.000	6.4%		1	6.402
18O2-PFHxS	0.986	0.986	0.985	1.056	1.028	0.994	1.028	0.991	0.945	1.000	3.3%		1	3.262
13C4-PFOS	0.947	0.996	0.955	1.037	1.008	1.031	1.045	1.035	0.946	1.000	4.1%		1	4.112

State Parameter Editor

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Ion Source:                 Turbo Spray
Ion Source Temperature Reached
Curtain Gas (CUR):          20.0
IonSpray Voltage (IS):      -4500.0
Temperature (TEM):          0.0
Ion Source Gas 1 (GS1):     10.0
Ion Source Gas 2 (GS2):     0.0

Entrance Potential (EP):            -10.0

Q1 Resolution:              Unit
Ion Energy 1 (IE1):         -1.5

CEM (CEM):                  2450.0
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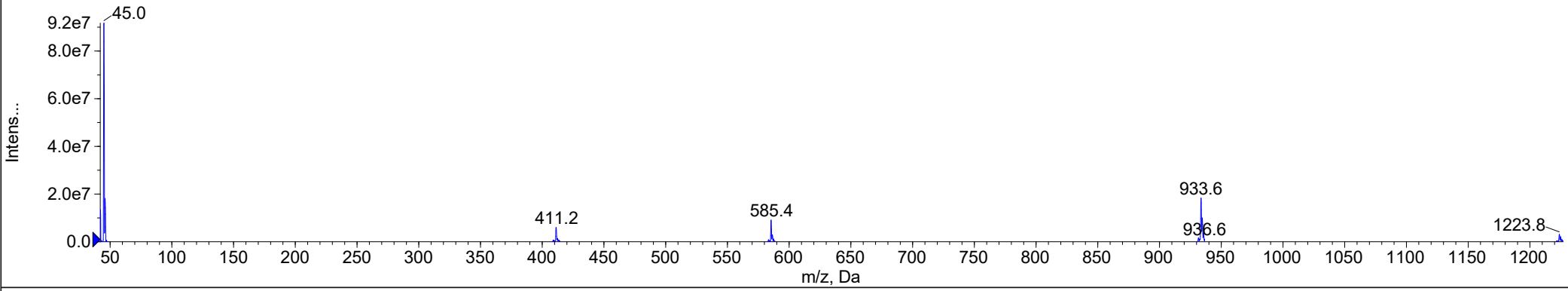
Mass Spectrometer Method Properties

```
Period 1:
---------------
Scans in Period:            10
Relative Start Time:        0.00 msec
Scheduled Ionization:       Off
Experiments in Period:      1

Period 1  Experiment  1:
----------------------------
Scan Type:                  Q1 MS (Q1)
Polarity:                   Negative
Scan Mode:                  Profile
Ion Source:                 Turbo Spray
```

-Q1: 10 MCA scans from Sample 1 (TuneSampleID) of MT20240813201851.wiff (Turbo Spray)

Max. 9.2e7 cps.



Peak List for " -Q1: 10 MCA scans from Sample 1 (TuneSampleID) of MT20240813201851.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	44.9980	45.0023	9.1729e7	0.6724	-4.3048e-3
2	411.2590	411.2691	5.9850e6	0.7191	-0.0101
3	585.3850	585.3820	9.1098e6	0.6497	2.9902e-3
4	933.6360	933.6465	1.8330e7	0.7431	-0.0105
5	1223.8450	1223.8607	3.1224e6	0.6944	-0.0157
6	1572.0970	n/a	n/a	n/a	n/a
7	1863.3060	n/a	n/a	n/a	n/a
8	1979.3890	n/a	n/a	n/a	n/a

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

Method: EPA1633_NIS_CALC.qmethod
Calibration: 240813_1633_ICAL

ID: IA1633STD-.1
Name: SCI05_240813_71.wiff
Date & Time: 2024-08-13T21:50:25
Description: WG1958909,,,80ul IA1633STD-1.25
Instrument: Triple Quad 5500+
User: LCMS05:SL

LC/MS-MS Method:EPA_1633.dam

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
1	PFBA	375-22-4	2.90	213.0 / 169.0	76984		0.350	N/A	N/A	N/A	87.6
2	PFPeA	2706-90-3	4.64	263.0 / 219.0	58992		0.184	0.008	0.007	N/A	91.8
3	PFPeA_2	2706-90-3	4.64	263.0 / 68.9	500		0.220	0.008	0.007	N/A	110.1
4	PFHxA	307-24-4	5.34	313.0 / 269.0	53455		0.105	0.075	0.072	Pass	105.2
5	PFHxA_2	307-24-4	5.34	313.0 / 119.0	3983	M7	0.106	0.075	0.072	Pass	106.1
6	PFHpA	375-85-9	6.25	363.1 / 319.0	47414		0.092	0.312	0.297	Pass	92.0
7	PFHpA_2	375-85-9	6.25	363.1 / 169.0	14815		0.094	0.312	0.297	Pass	93.9

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
8	PFOA	335-67-1	7.50	413.1 / 369.1	36354	M5	0.107	0.473	0.586	Pass	107.1
9	PFOA_2	335-67-1	7.50	413.1 / 169.0	17203	M7	0.093	0.473	0.586	Pass	92.5
10	PFNA	375-95-1	7.95	462.8 / 418.9	37224	M5	0.085	0.317	0.313	Pass	84.7
11	PFNA_2	375-95-1	7.95	462.8 / 218.9	11794	M7	0.088	0.317	0.313	Pass	87.8
12	PFDA	335-76-2	8.18	513.1 / 469.1	52636		0.101	0.130	0.142	Pass	101.0
13	PFDA_2	335-76-2	8.18	513.1 / 219.0	6836		0.088	0.130	0.142	Pass	87.5
14	PFUnA	2058-94-8	8.47	563.1 / 519.1	35228		0.083	0.232	0.194	Pass	83.3
15	PFUnA_2	2058-94-8	8.47	563.1 / 269.0	8165		0.100	0.232	0.194	Pass	99.6
16	PFDoA	307-55-1	8.91	613.1 / 569.1	35360		0.093	0.160	0.167	Pass	92.7
17	PFDoA_2	307-55-1	8.91	613.1 / 319.0	5641		0.087	0.160	0.167	Pass	87.5
18	PFTrDA	72629-94-8	9.50	663.1 / 619.1	19413		0.085	0.243	0.228	Pass	85.4
19	PFTrDA_2	72629-94-8	9.50	663.1 / 169.0	4713		0.093	0.243	0.228	Pass	93.0
20	PFTeDA	376-06-7	9.91	713.1 / 669.1	39916		0.104	0.122	0.137	Pass	103.9
21	PFTeDA_2	376-06-7	9.91	713.1 / 169.0	4867		0.093	0.122	0.137	Pass	92.6
22	PFBS	375-73-5	5.32	299.1 / 80.1	29114		0.081	0.429	0.396	Pass	91.4

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
23	PFBS_2	375-73-5	5.32	299.1 / 99.1	12490		0.087	0.429	0.396	Pass	98.3
24	PFPeS	2706-91-4	6.34	349.1 / 80.1	24008		0.080	0.315	0.299	Pass	84.8
25	PFPeS_2	2706-91-4	6.34	349.1 / 99.1	7551		0.083	0.315	0.299	Pass	88.4
26	PFHxS	355-46-4	7.62	399.1 / 80.1	25007	M5	0.089	0.299	0.315	Pass	97.1
27	PFHxS_2	355-46-4	7.62	399.1 / 99.1	7473	M7	0.085	0.299	0.315	Pass	93.5
28	PFHpS	375-92-8	8.02	449.1 / 80.1	22616		0.080	0.353	0.287	Pass	84.0
29	PFHpS_2	375-92-8	8.02	449.1 / 99.1	7986		0.096	0.353	0.287	Pass	101.2
30	PFOS	1763-23-1	8.28	499.1 / 80.1	25837	M5	0.086	0.229	0.238	Pass	92.6
31	PFOS_2	1763-23-1	8.28	499.1 / 99.1	5919		0.080	0.229	0.238	Pass	86.6
32	PFNS	68259-12-1	8.63	549.1 / 80.1	15906		0.082	0.373	0.301	Pass	85.6
33	PFNS_2	68259-12-1	8.63	549.1 / 99.1	5934		0.101	0.373	0.301	Pass	105.5
34	PFDS	335-77-3	9.15	599.1 / 80.1	16034		0.084	0.272	0.275	Pass	87.4
35	PFDS_2	335-77-3	9.15	599.1 / 99.1	4357		0.083	0.272	0.275	Pass	86.1
36	PFDoS	79780-39-5	10.01	699.2 / 80.1	14889		0.085	0.229	0.274	Pass	88.1
37	PFDoS_2	79780-39-5	10.00	699.2 / 99.1	3413		0.071	0.229	0.274	Pass	73.5

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
38	4:2FTS	757124-72-4	5.14	327.1 / 307.1	63237		0.479	0.520	0.516	Pass	127.7
39	4:2FTS_2	757124-72-4	5.14	327.1 / 81.1	32903		0.466	0.520	0.516	Pass	124.2
40	6:2FTS	27619-97-2	7.09	427.2 / 407.2	29652		0.360	0.467	0.565	Pass	94.8
41	6:2FTS_2	27619-97-2	7.09	427.2 / 81.1	13840		0.311	0.467	0.565	Pass	81.8
42	8:2FTS	39108-34-4	8.07	527.2 / 507.2	32302		0.344	0.762	0.662	Pass	89.6
43	8:2FTS_2	39108-34-4	8.07	527.2 / 81.1	24601		0.386	0.762	0.662	Pass	100.6
44	PFOSA	754-91-6	9.55	498.1 / 78.1	25409	M5	0.090	0.028	0.025	Pass	90.1
45	PFOSA_2	754-91-6	9.53	498.1 / 478.0	701	M7	0.095	0.028	0.025	Pass	94.7
46	NMeFOSA	31506-32-8	10.17	512.2 / 219.0	5812	M5	0.078	1.876	1.551	Pass	77.7
47	NMeFOSA_2	31506-32-8	10.12	512.2 / 169.0	10902	M7	0.094	1.876	1.551	Pass	94.1
48	NEtFOSA	4151-50-2	10.38	526.2 / 219.0	6309	M5	0.086	1.687	1.285	Pass	85.7
49	NEtFOSA_2	4151-50-2	10.33	526.2 / 169.0	10641	M7	0.108	1.687	1.285	Pass	108.0
50	NMeFOSAA	2355-31-9	8.22	570.2 / 419.1	10089	M4	0.088	0.468	0.700	Pass	87.8
51	NMeFOSAA_2	2355-31-9	8.23	570.2 / 483.0	4721		0.065	0.468	0.700	Pass	64.6
52	NEtFOSAA	2991-50-6	8.36	584.2 / 419.1	6220	M5	0.083	0.529	0.487	Pass	83.1

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
53	NEtFOSAA_2	2991-50-6	8.37	584.2 / 526.2	3290	M7	0.095	0.529	0.487	Pass	95.5
54	NMeFOSE	24448-09-7	10.08	616.1 / 58.9	109398	M5	0.889	N/A	N/A	N/A	88.9
55	NEtFOSE	1691-99-2	10.28	630.0 / 58.9	200381	M5	0.871	N/A	N/A	N/A	87.1
56	HFPO-DA	13252-13-6	5.61	285.0 / 169.0	92315		0.349	0.519	0.464	Pass	87.2
57	HFPO-DA_2	13252-13-6	5.60	285.0 / 184.9	47872		0.389	0.519	0.464	Pass	97.3
58	ADONA	919005-14-4	6.72	377.1 / 251.0	201429		0.335	0.718	0.634	Pass	88.6
59	ADONA_2	919005-14-4	6.72	377.1 / 84.8	144579		0.371	0.718	0.634	Pass	98.2
60	9Cl-PF3ONS	756426-58-1	8.50	530.8 / 351.1	195597		0.330	0.323	0.322	Pass	88.2
61	9Cl-PF3ONS_2	756426-58-1	8.50	532.8 / 353.0	63224		0.327	0.323	0.322	Pass	87.5
62	11Cl-PF3OUdS	763051-92-9	9.57	630.9 / 451.0	136607		0.365	0.324	0.331	Pass	96.4
63	11Cl-PF3OUdS_2	763051-92-9	9.57	632.9 / 452.9	44210	M7	0.351	0.324	0.331	Pass	92.7
64	3:3FTCA	356-02-5	4.91	241.1 / 177.1	11661		0.418	1.061	1.074	Pass	83.7
65	3:3FTCA_2	356-02-5	4.91	241.1 / 117.0	12367		0.443	1.061	1.074	Pass	88.6
66	5:3FTCA	914637-49-3	7.16	341.1 / 237.1	225324		2.444	0.929	0.953	Pass	97.8
67	5:3FTCA_2	914637-49-3	7.16	341.1 / 217.0	209354		2.400	0.929	0.953	Pass	96.0

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
68	7:3FTCA	812-70-4	8.21	441.1 / 316.9	272814		2.658	1.500	1.558	Pass	106.3
69	7:3FTCA_2	812-70-4	8.21	441.1 / 337.1	409174		2.747	1.500	1.558	Pass	109.9
70	PFEESA	113507-82-7	5.71	315.1 / 135.0	150155		0.170	0.091	0.087	Pass	95.7
71	PFEESA_2	113507-82-7	5.71	315.1 / 82.9	13656		0.179	0.091	0.087	Pass	100.7
72	PFMPA	377-73-1	3.85	229.0 / 85.0	7169		0.184	N/A	N/A	N/A	92.2
73	PFMBA	863090-89-5	4.88	279.0 / 85.0	93621		0.179	N/A	N/A	N/A	89.3
74	NFDHA	151772-58-6	5.26	295.0 / 201.0	19368		0.209	0.861	0.910	Pass	104.3
75	NFDHA_2	151772-58-6	5.26	295.0 / 84.9	16677		0.196	0.861	0.910	Pass	98.0
76	TDCA	516-50-7	N/A	499.1 / 124.1	N/A		N/A	N/A	40.716	N/A	N/A
77	TDCA_2	516-50-7	N/A	499.1 / 79.9	N/A		N/A	N/A	40.716	N/A	N/A
78	13C2D4-4:2FTS	Surr	5.13	333.2 / 312.1	984958		5.412	N/A	N/A	N/A	108.3
79	13C2-PFOA	Surr	7.50	415.0 / 370.0	3409390		2.673	N/A	N/A	N/A	106.9

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C4-PFBA	EIS	2.89	217.0 / 172.0	2708656		10.998	NA	NA	NA	110.0

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C5-PFPeA	EIS	4.64	268.0 / 223.0	1742118		5.766	NA	NA	NA	115.3
	13C5-PFHxA	EIS	5.33	318.0 / 273.0	1042718		2.627	NA	NA	NA	105.1
	13C4-PFHpA	EIS	6.24	367.0 / 322.0	1100341		2.769	NA	NA	NA	110.8
	13C8-PFOA	EIS	7.50	421.0 / 376.0	1630422		2.831	NA	NA	NA	113.2
	13C9-PFNA	EIS	7.94	472.0 / 427.0	750799		1.332	NA	NA	NA	106.5
	13C6-PFDA	EIS	8.17	519.0 / 474.0	755939		1.414	NA	NA	NA	113.1
	13C7-PFUnA	EIS	8.47	570.0 / 525.0	669288		1.547	NA	NA	NA	123.7

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C2-PFDoA	EIS	8.90	615.1 / 570.0	366858		1.303	NA	NA	NA	104.3
	13C2-PFTeDA	EIS	9.91	715.1 / 670.1	383275		1.254	NA	NA	NA	100.3
	13C3-PFBS	EIS	5.31	302.1 / 80.1	856295		2.525	NA	NA	NA	108.4
	13C3-PFHxS	EIS	7.61	402.1 / 80.1	705640		2.620	NA	NA	NA	110.6
	13C8-PFOS	EIS	8.27	507.1 / 80.1	732197		2.713	NA	NA	NA	113.3
	13C2-4:2FTS	EIS	5.13	329.1 / 81.1	316009		5.222	NA	NA	NA	111.3
	13C2-6:2FTS	EIS	7.09	429.2 / 81.1	238701		5.383	NA	NA	NA	113.2
	13C2-8:2FTS	EIS	8.07	529.2 / 81.1	355718		5.481	NA	NA	NA	114.2

Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
13C8-PFOSA	EIS	9.54	506.1 / 78.1	1055140		2.941	NA	NA	NA	117.6
d3-NMeFOSA	EIS	10.16	515.2 / 219.0	174652		2.892	NA	NA	NA	115.7
d5-NEtFOSA	EIS	10.37	531.2 / 219.0	167531		2.840	NA	NA	NA	113.6
d3-NMeFOSAA	EIS	8.22	573.2 / 419.1	873152		6.395	NA	NA	NA	127.9
d5-NEtFOSAA	EIS	8.36	589.3 / 419.1	401545		5.596	NA	NA	NA	111.9
d7-NMeFOSE	EIS	10.07	623.2 / 58.9	1246722		26.730	NA	NA	NA	106.9
d9-NEtFOSE	EIS	10.26	639.2 / 58.9	1960553		28.510	NA	NA	NA	114.0

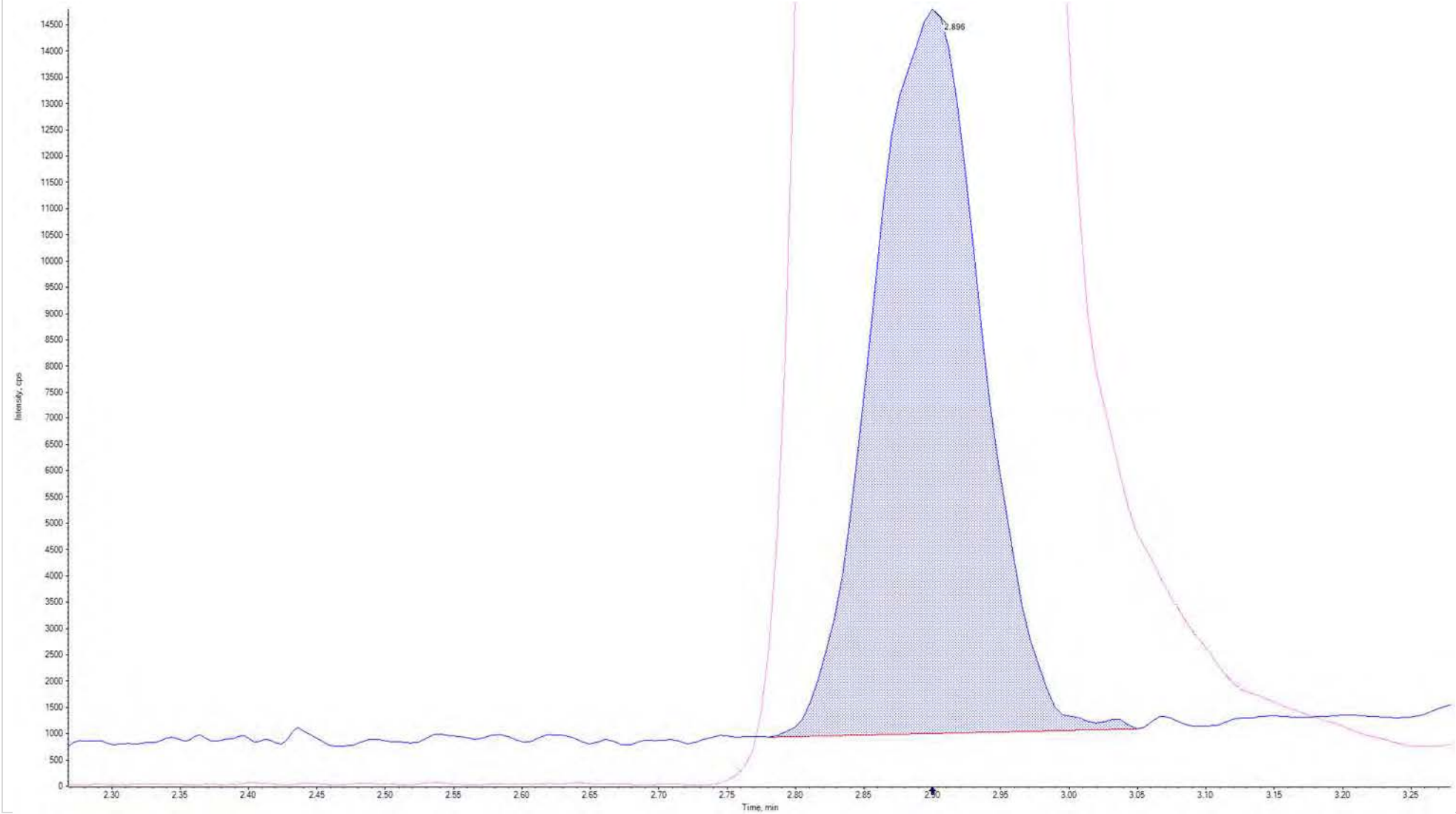
	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C3-HFPO-DA	EIS	5.60	287.0 / 169.0	2886138		10.973	NA	NA	NA	109.7
	13C3-PFBA	NIS	2.89	216.0 / 172.0	1077413		5.039	NA	NA	NA	100.8
	13C2-PFHxA	NIS	5.33	315.0 / 270.0	1178397		2.407	NA	NA	NA	96.3
	13C4-PFOA	NIS	7.49	417.0 / 372.0	753439		2.407	NA	NA	NA	96.3
	13C5-PFNA	NIS	7.94	468.0 / 423.0	686816		1.254	NA	NA	NA	100.3
	13C2-PFDA	NIS	8.17	515.1 / 470.1	628251		1.226	NA	NA	NA	98.1
	18O2-PFHxS	NIS	7.61	403.1 / 84.1	547400		2.337	NA	NA	NA	98.6
	13C4-PFOS	NIS	8.27	503.1 / 80.1	477378		2.267	NA	NA	NA	94.7

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec

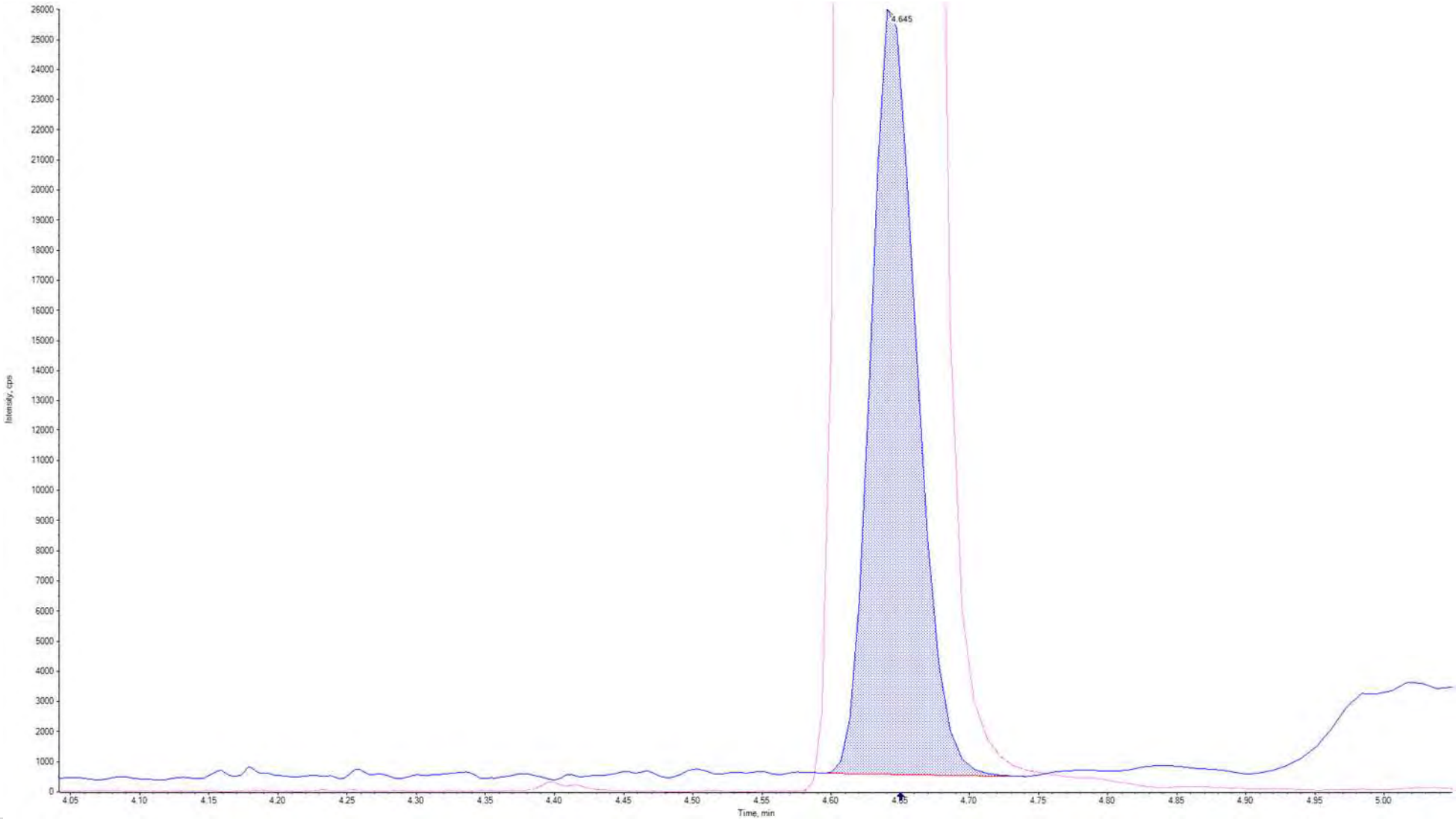
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFBA
Sample: IA1633STD-.1 S/N:322.6 Points Across peak:46



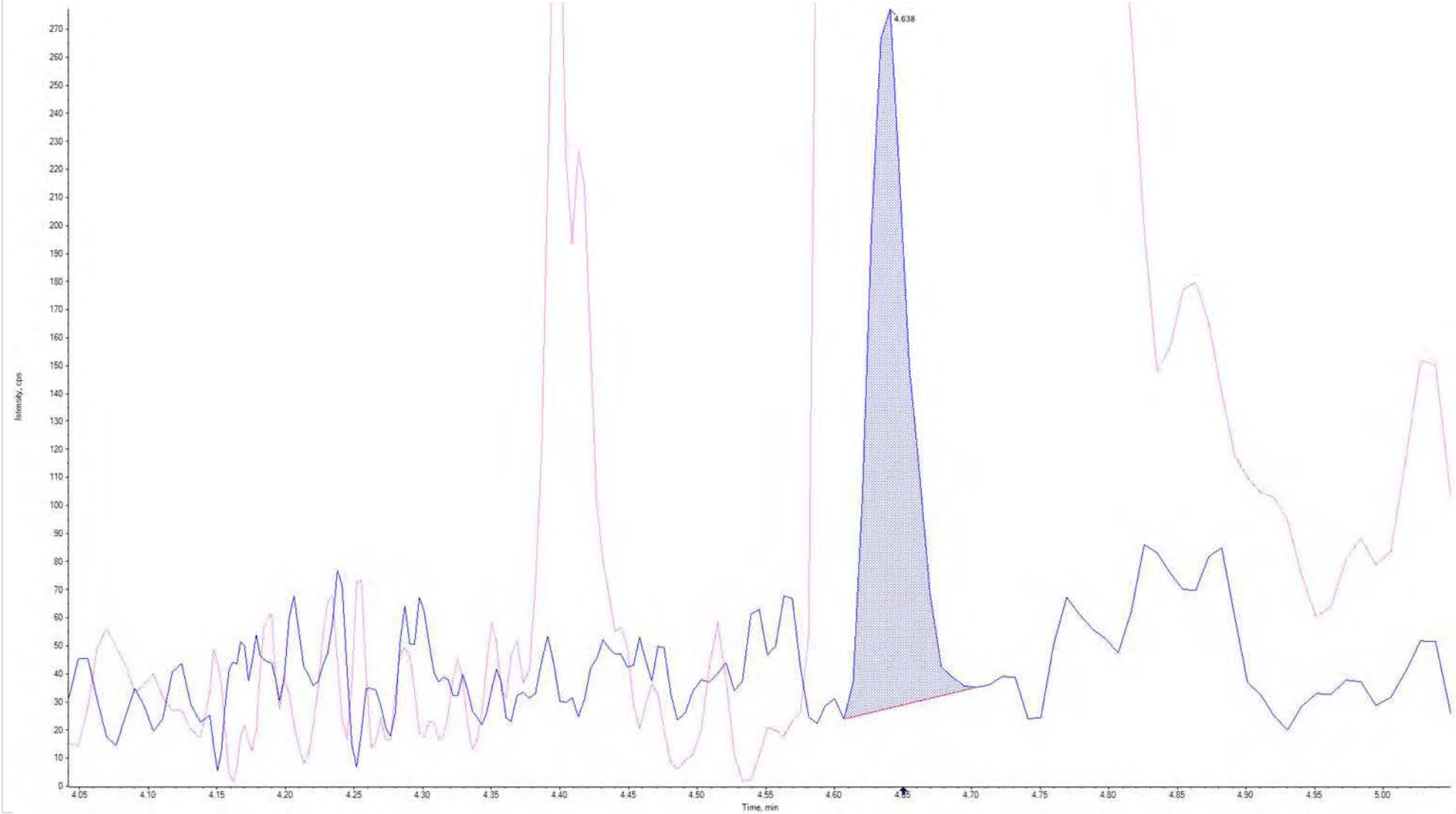
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFPeA
Sample: IA1633STD-.1 S/N:359.3 Points Across peak:20



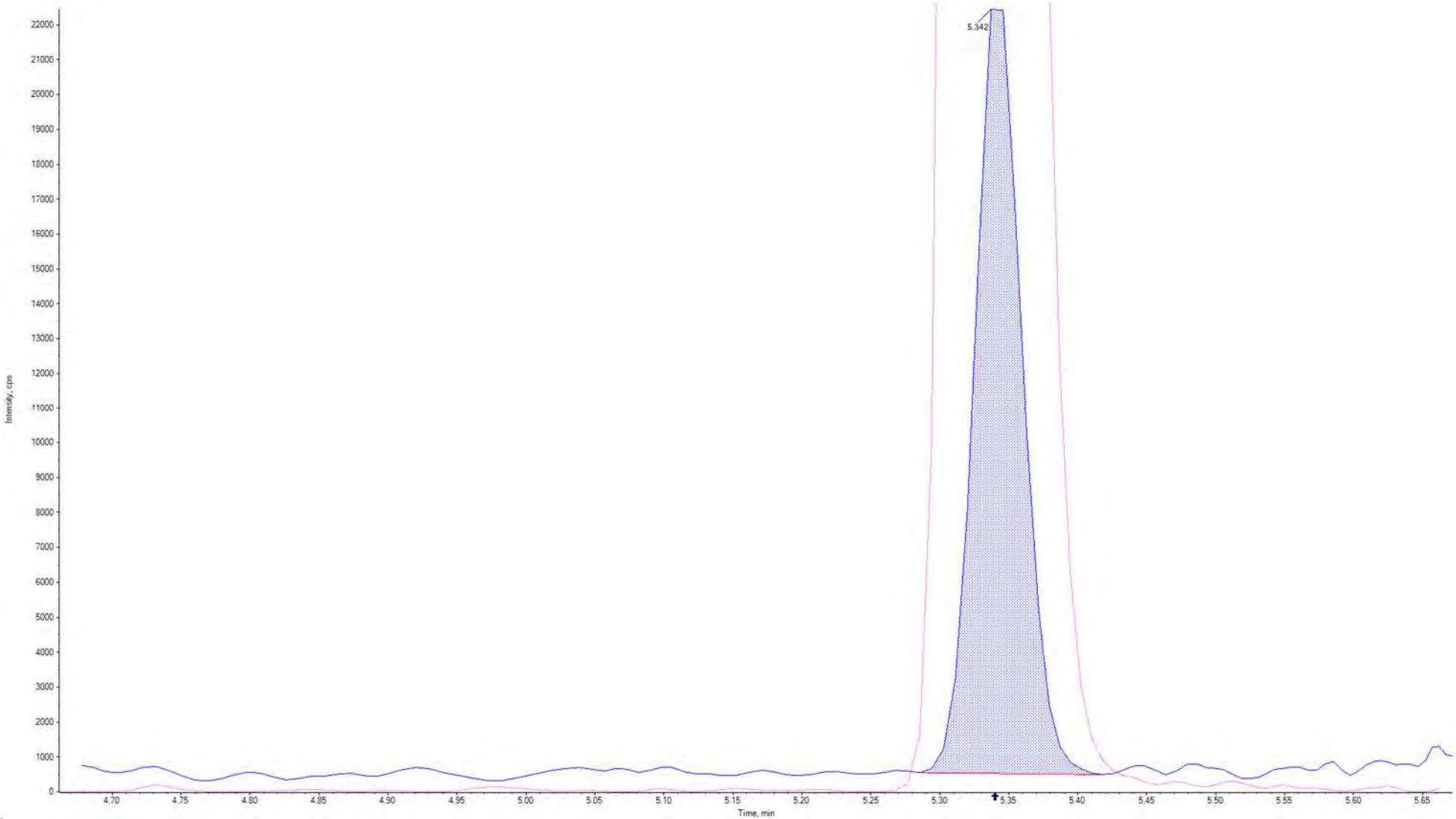
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFPeA_2
Sample: IA1633STD-.1 S/N:78.4 Points Across peak:14



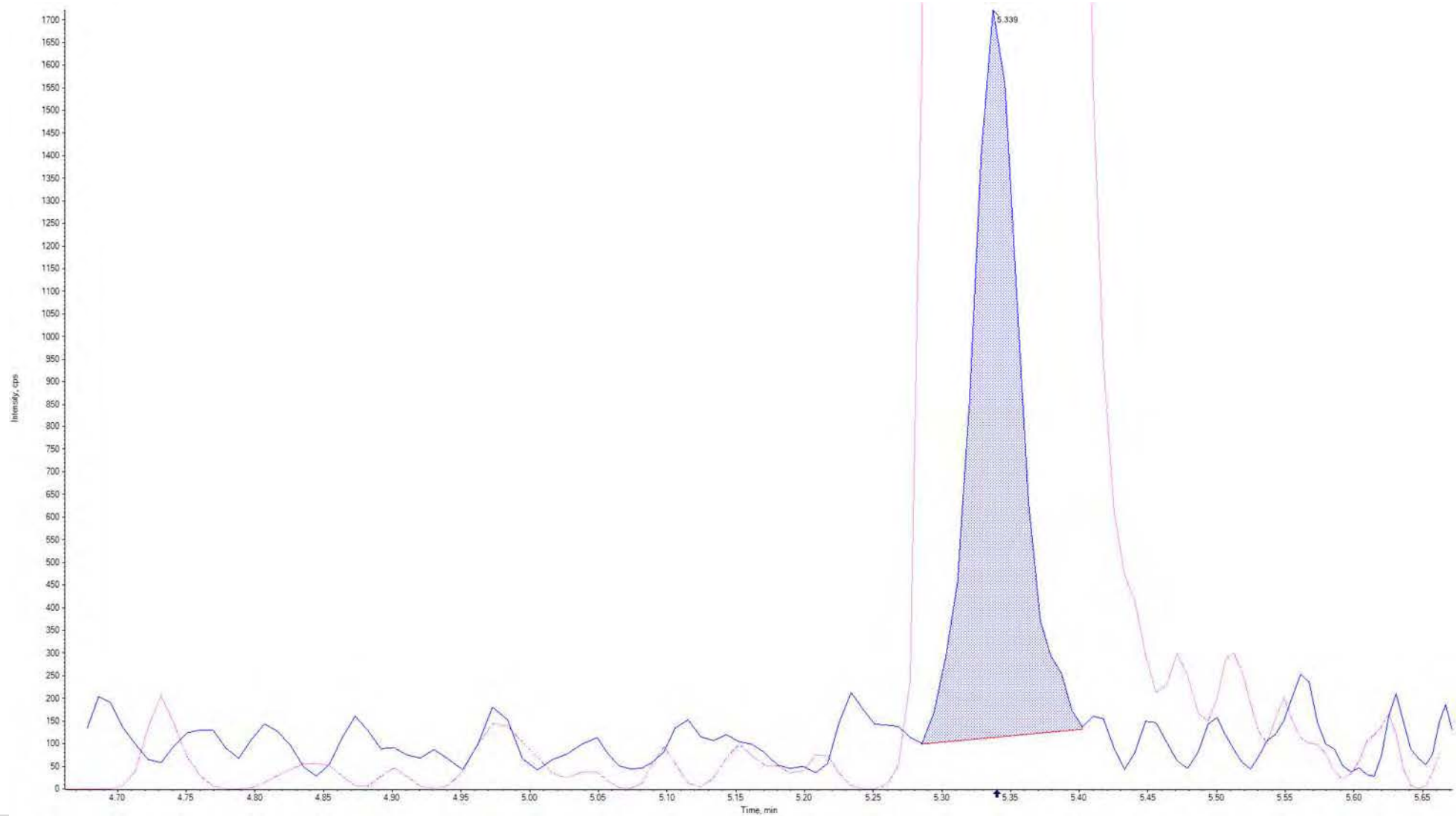
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFHxA
Sample: IA1633STD-.1 S/N:266.4 Points Across peak:17



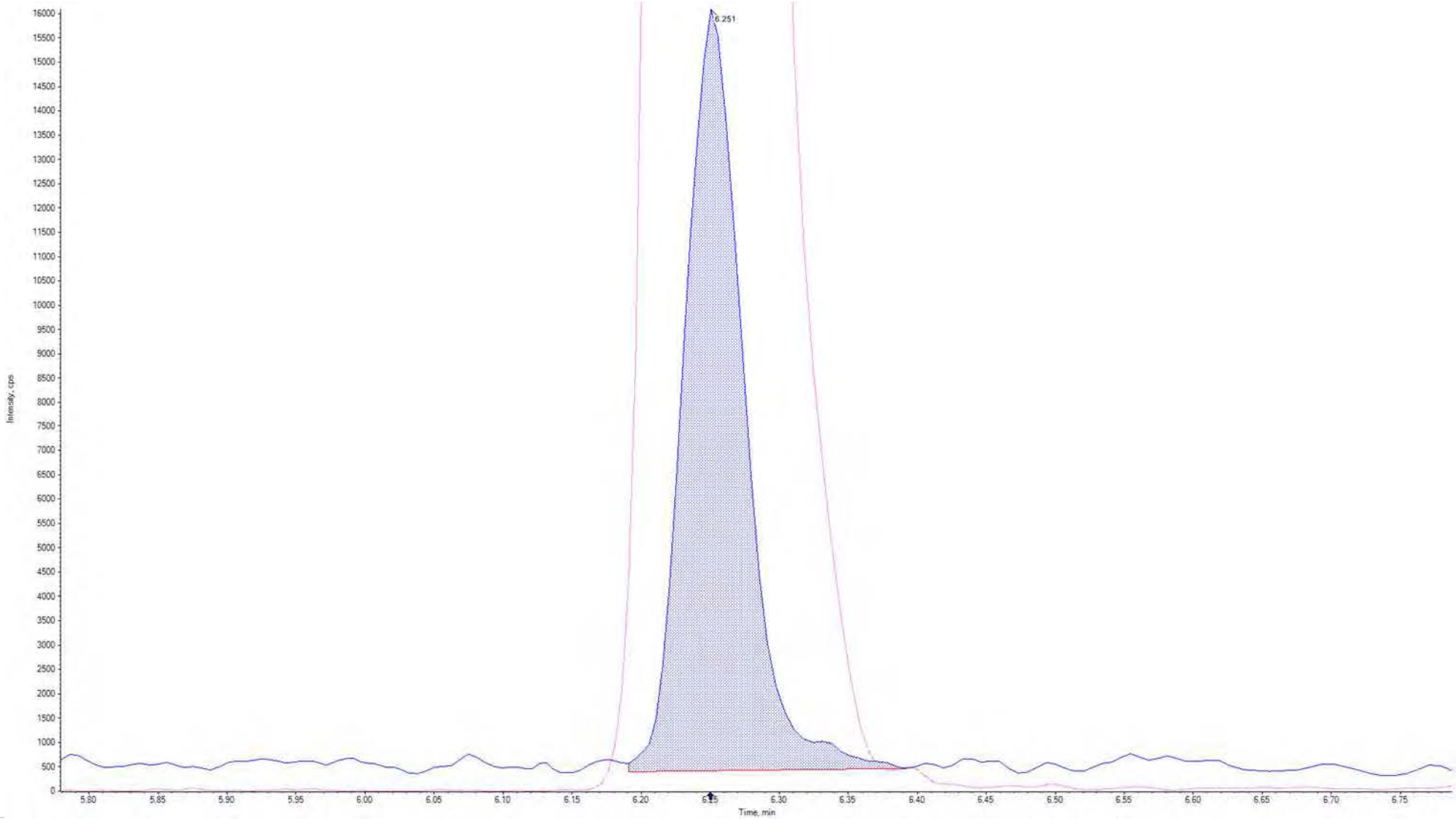
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFHxA_2
Sample: IA1633STD-.1 S/N:94.6 Points Across peak:16



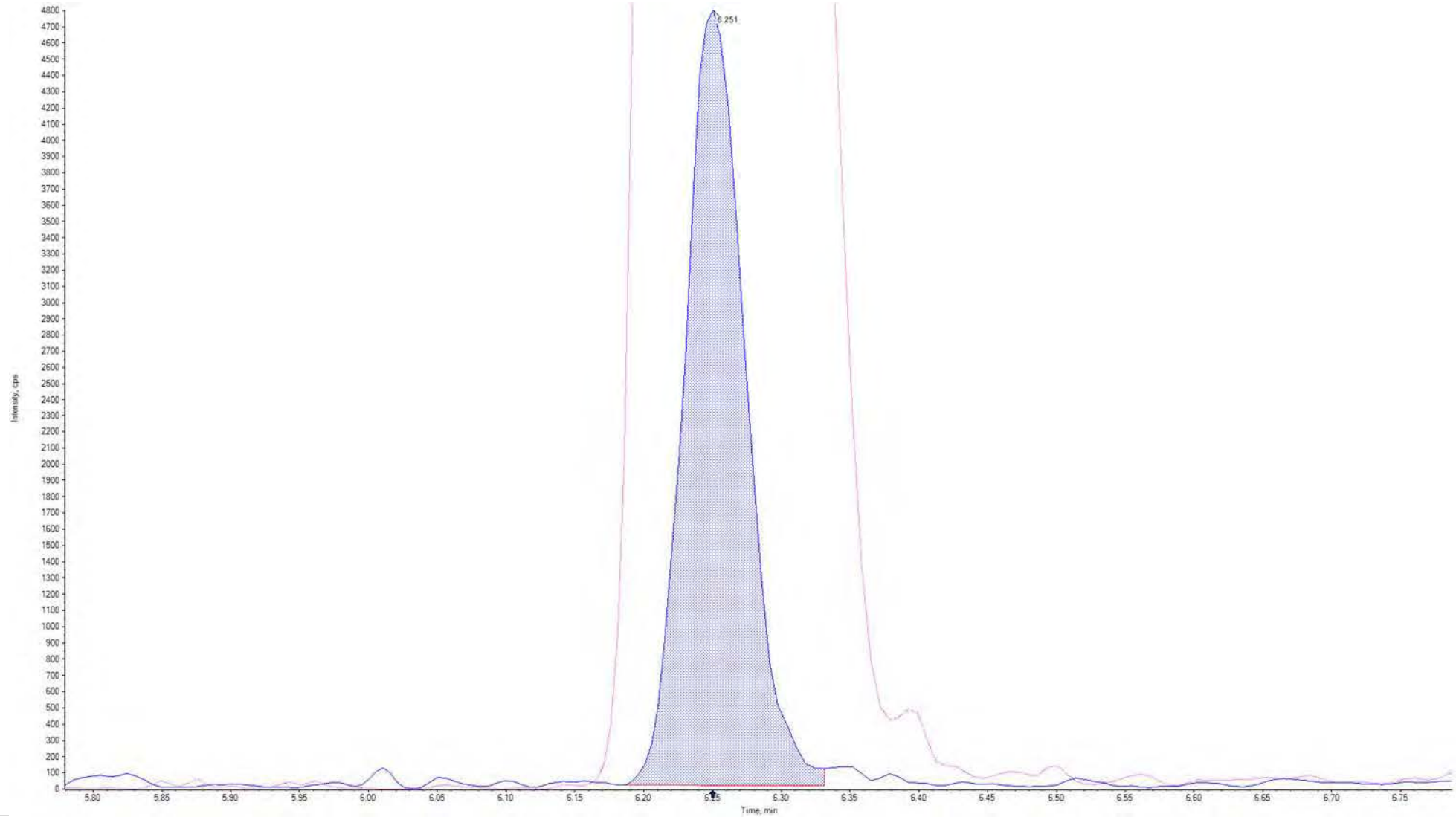
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFHpA
Sample: IA1633STD-.1 S/N:331.9 Points Across peak:35



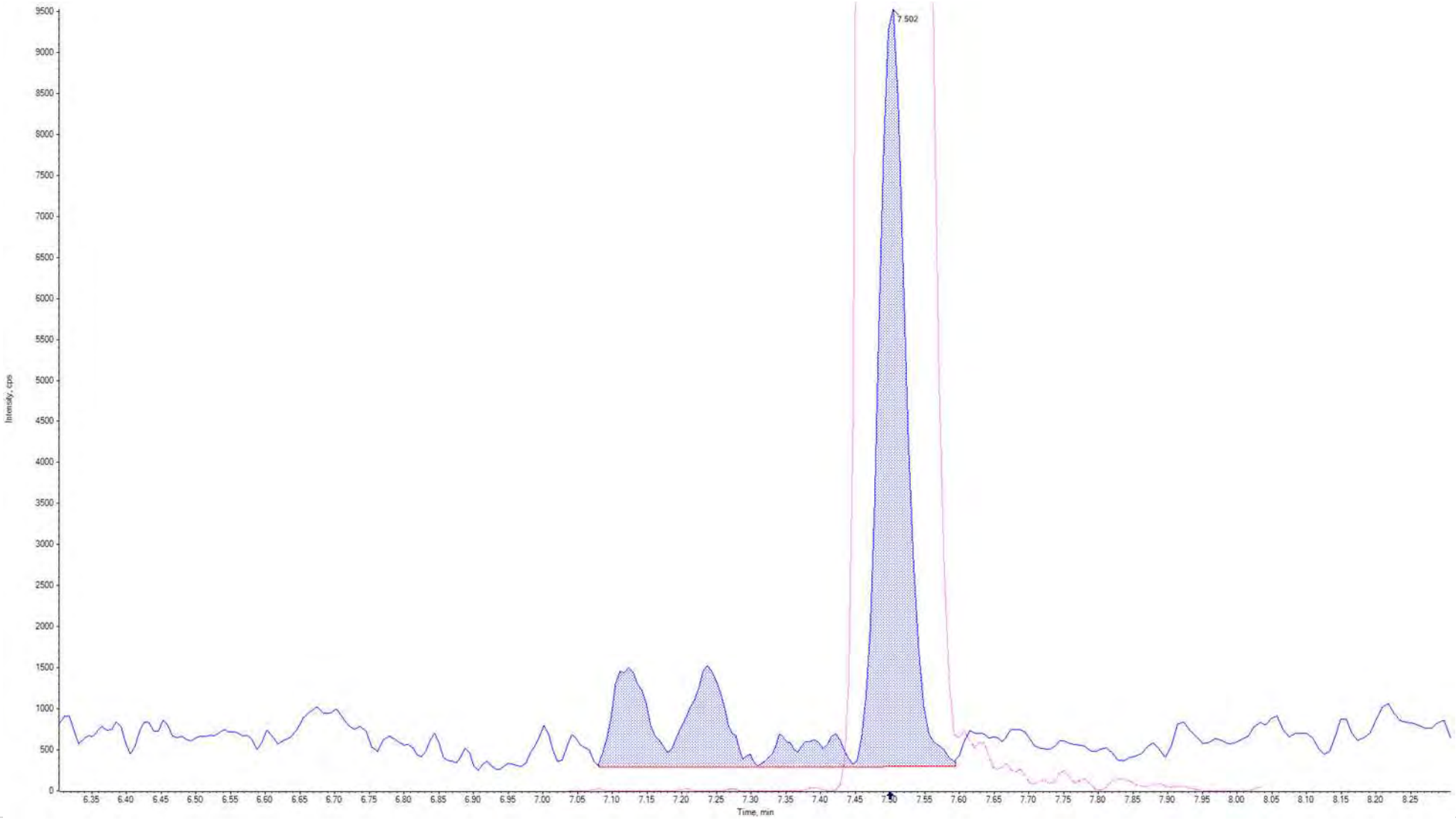
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFHpA_2
Sample: IA1633STD-.1 S/N:758.0 Points Across peak:27



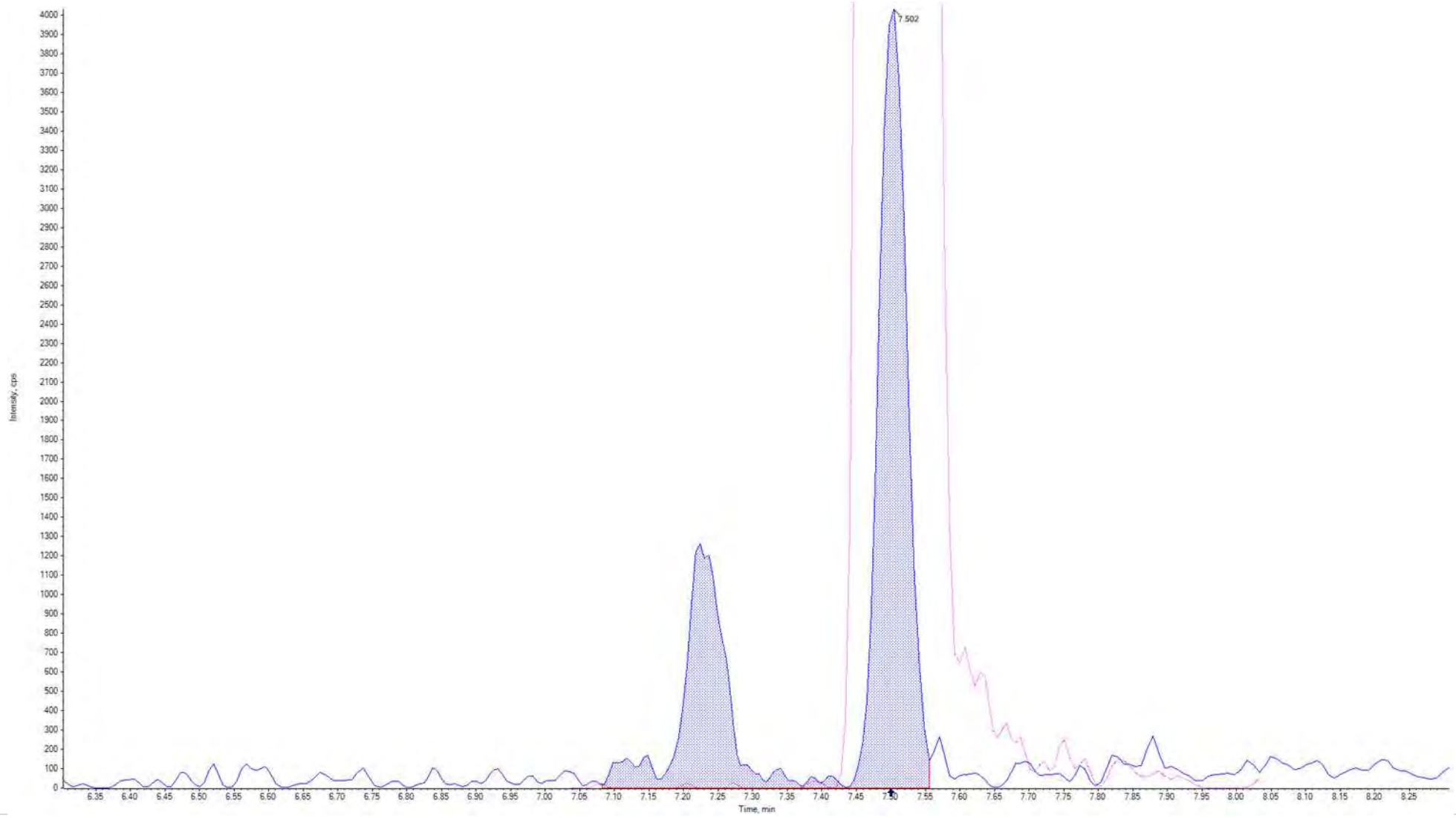
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFOA
Sample: IA1633STD-.1 S/N:197.7 Points Across peak:85



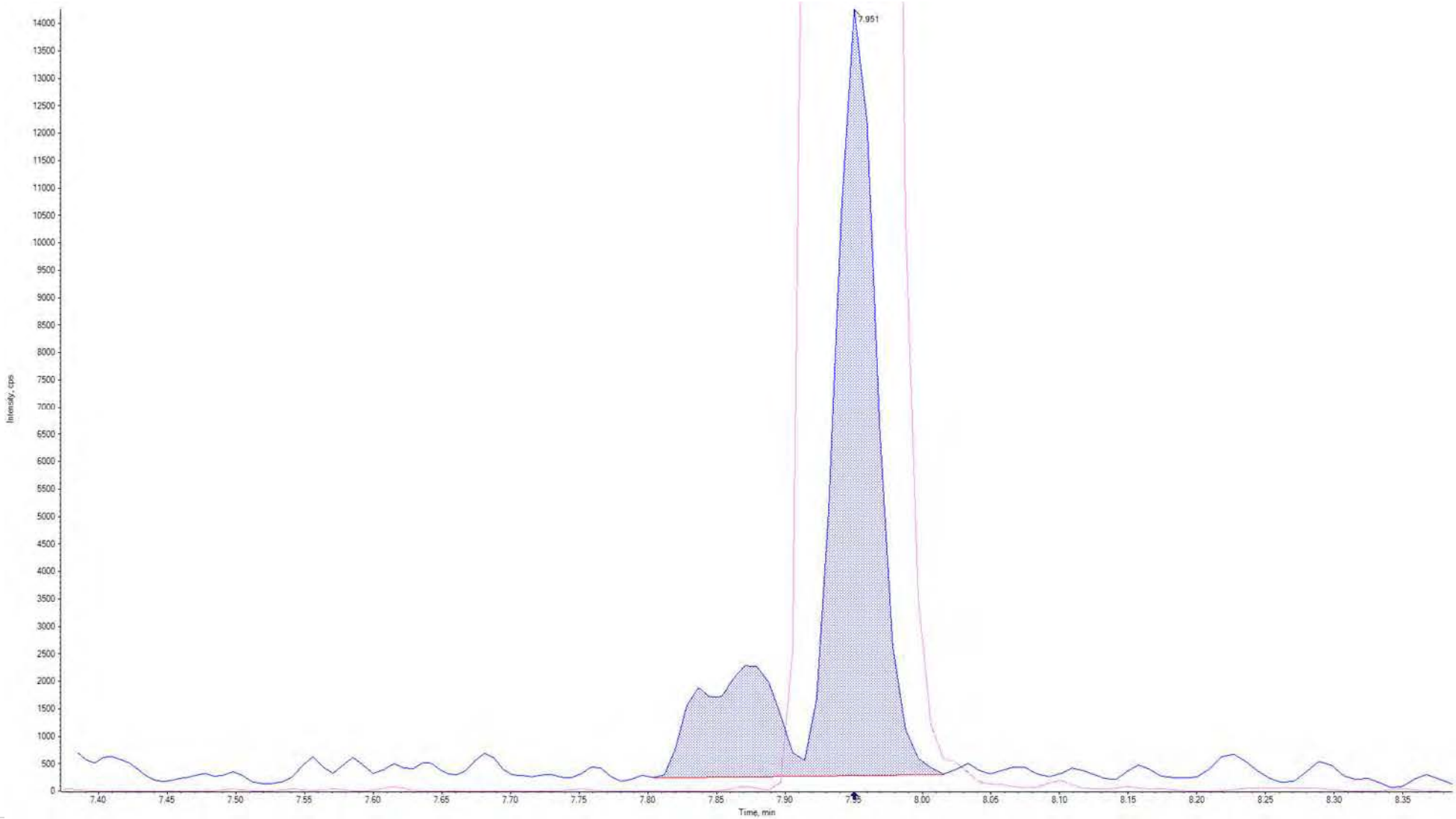
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFOA_2
Sample: IA1633STD-.1 S/N:2880.0 Points Across peak:79



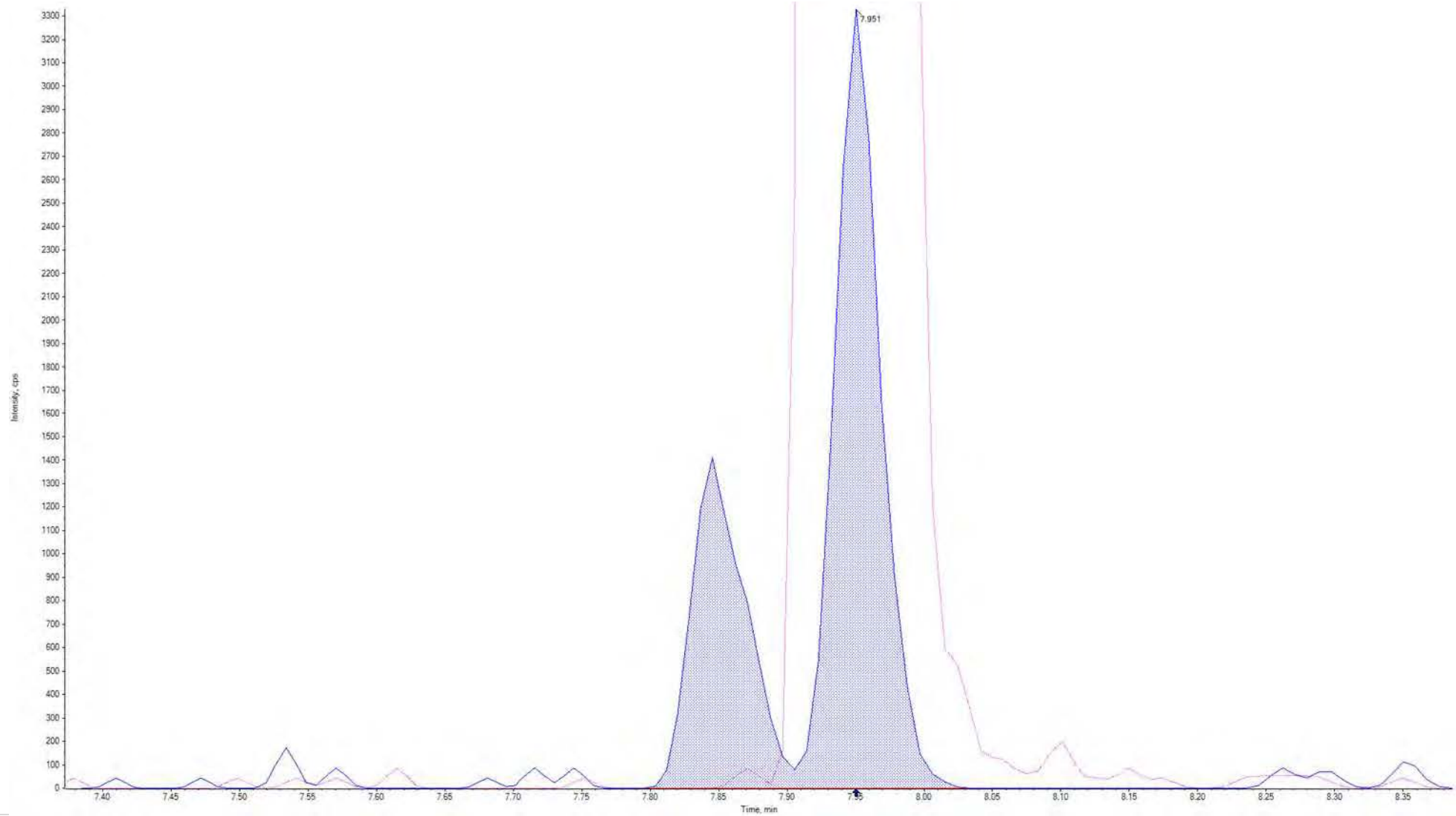
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFNA
Sample: IA1633STD-.1 S/N:284.9 Points Across peak:26



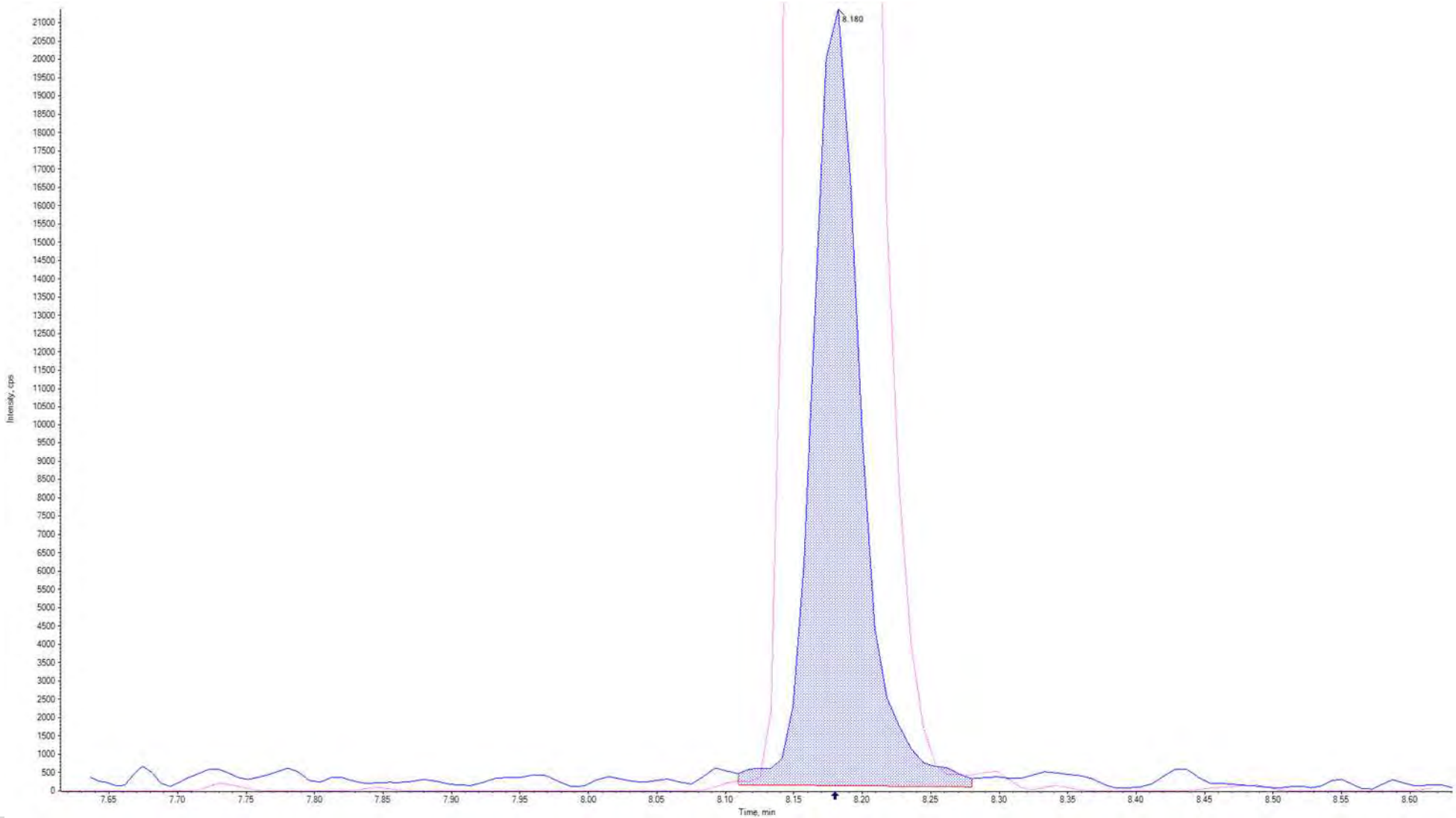
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFNA_2
Sample: IA1633STD-.1 S/N:235.6 Points Across peak:28



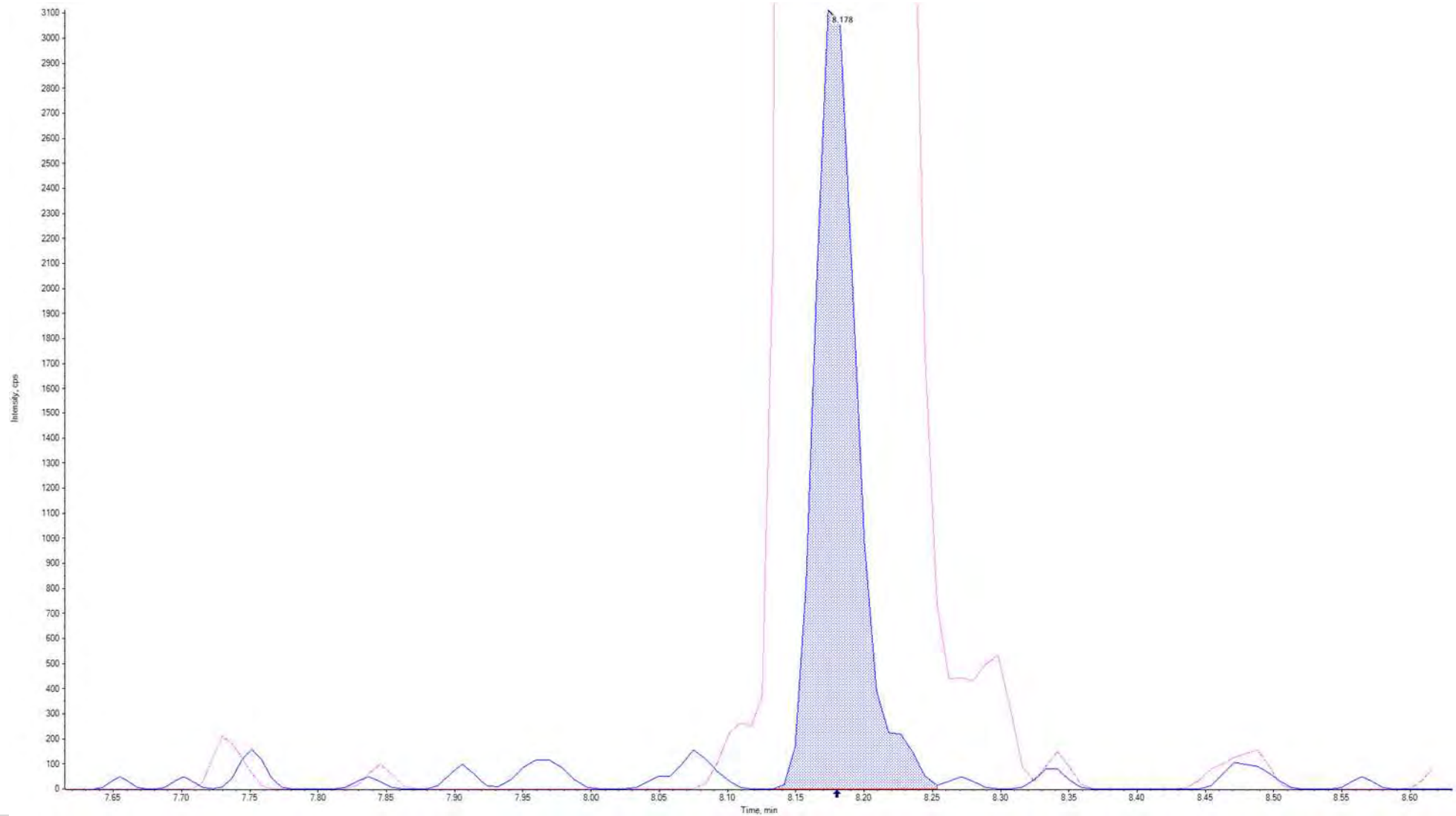
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFDA
Sample: IA1633STD-.1 S/N:434.1 Points Across peak:21



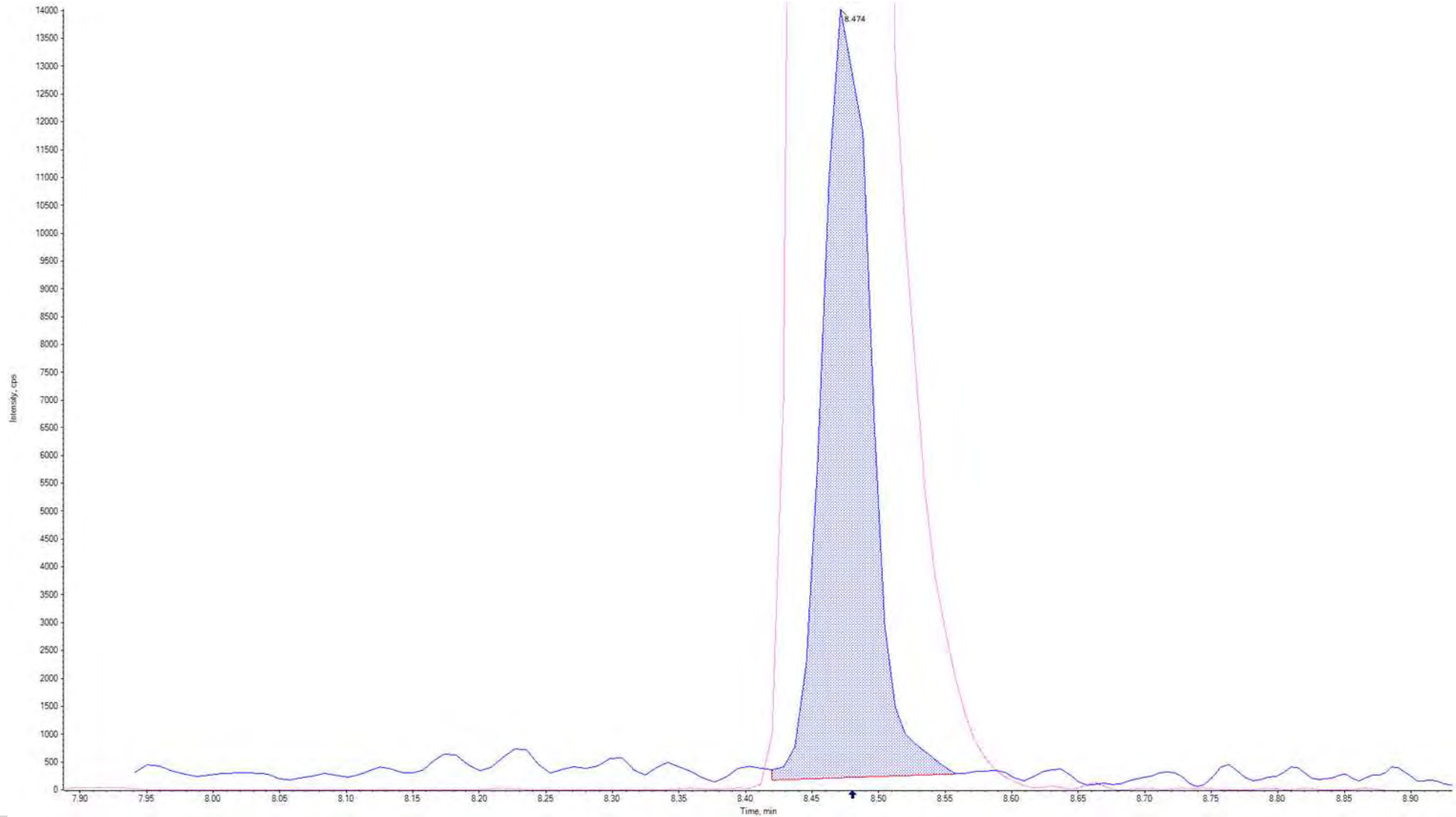
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFDA_2
Sample: IA1633STD-.1 S/N:208.0 Points Across peak:16



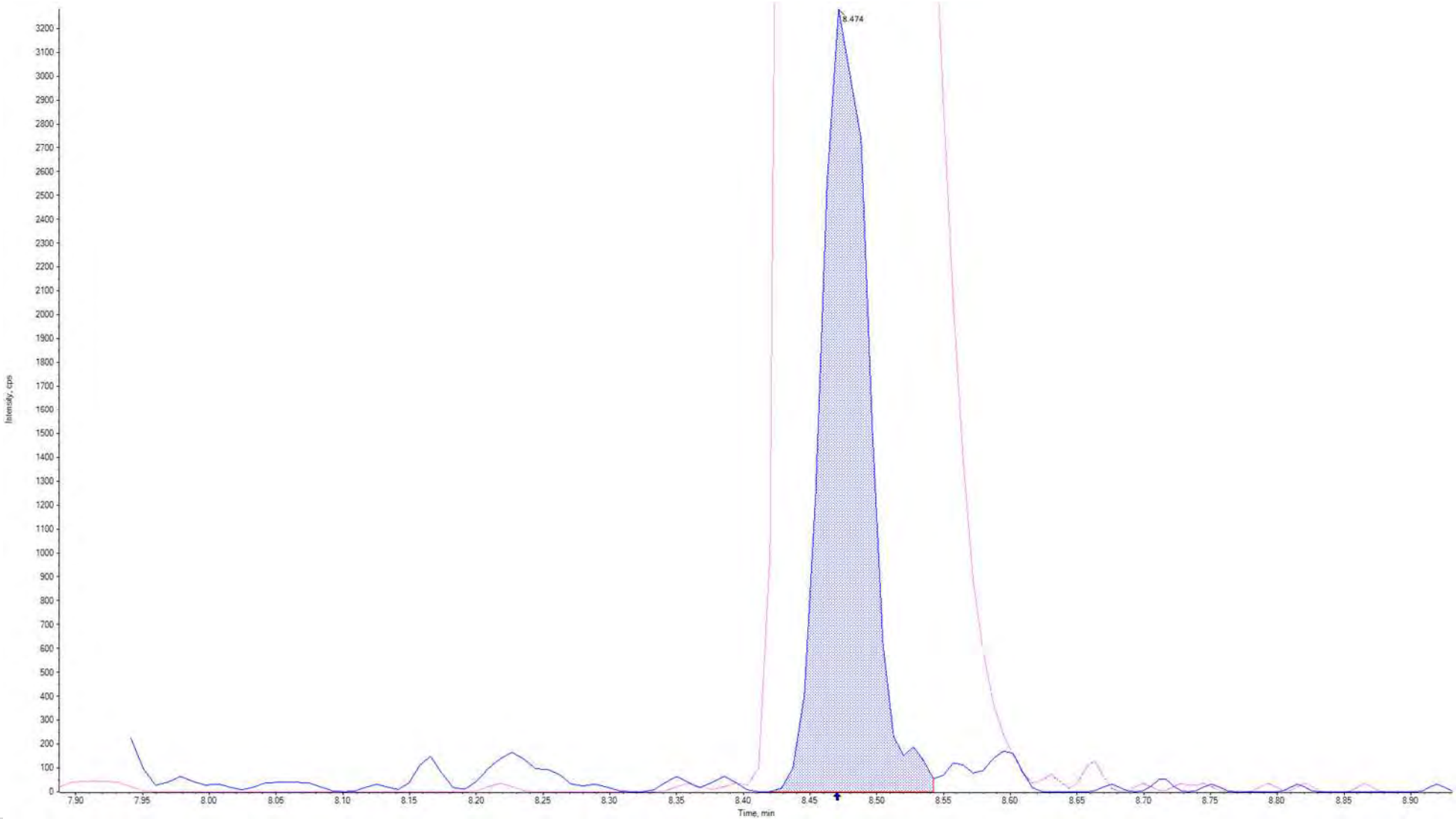
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFUnA
Sample: IA1633STD-.1 S/N:372.2 Points Across peak:18



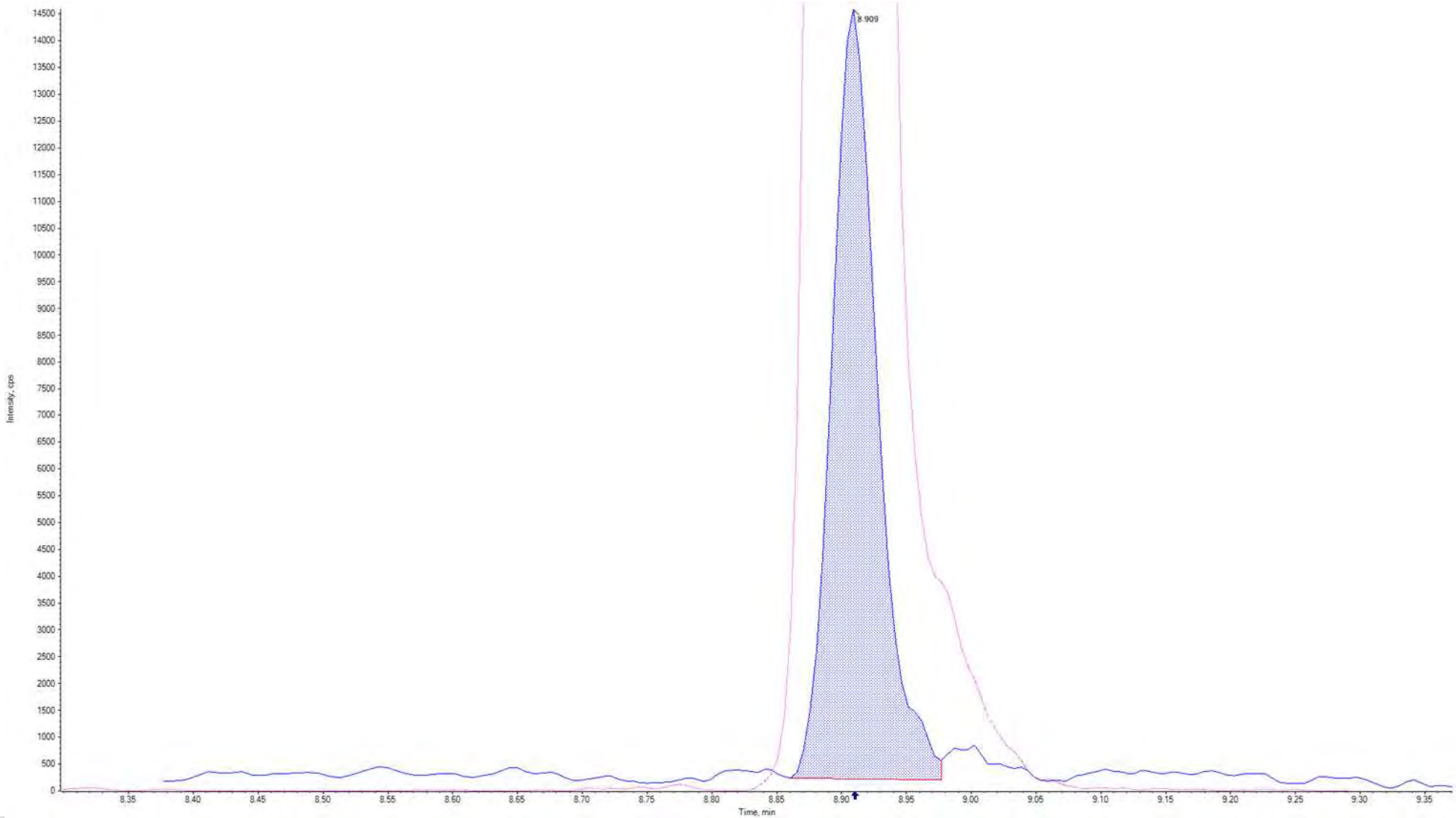
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFUnA_2
Sample: IA1633STD-.1 S/N:243.5 Points Across peak:16



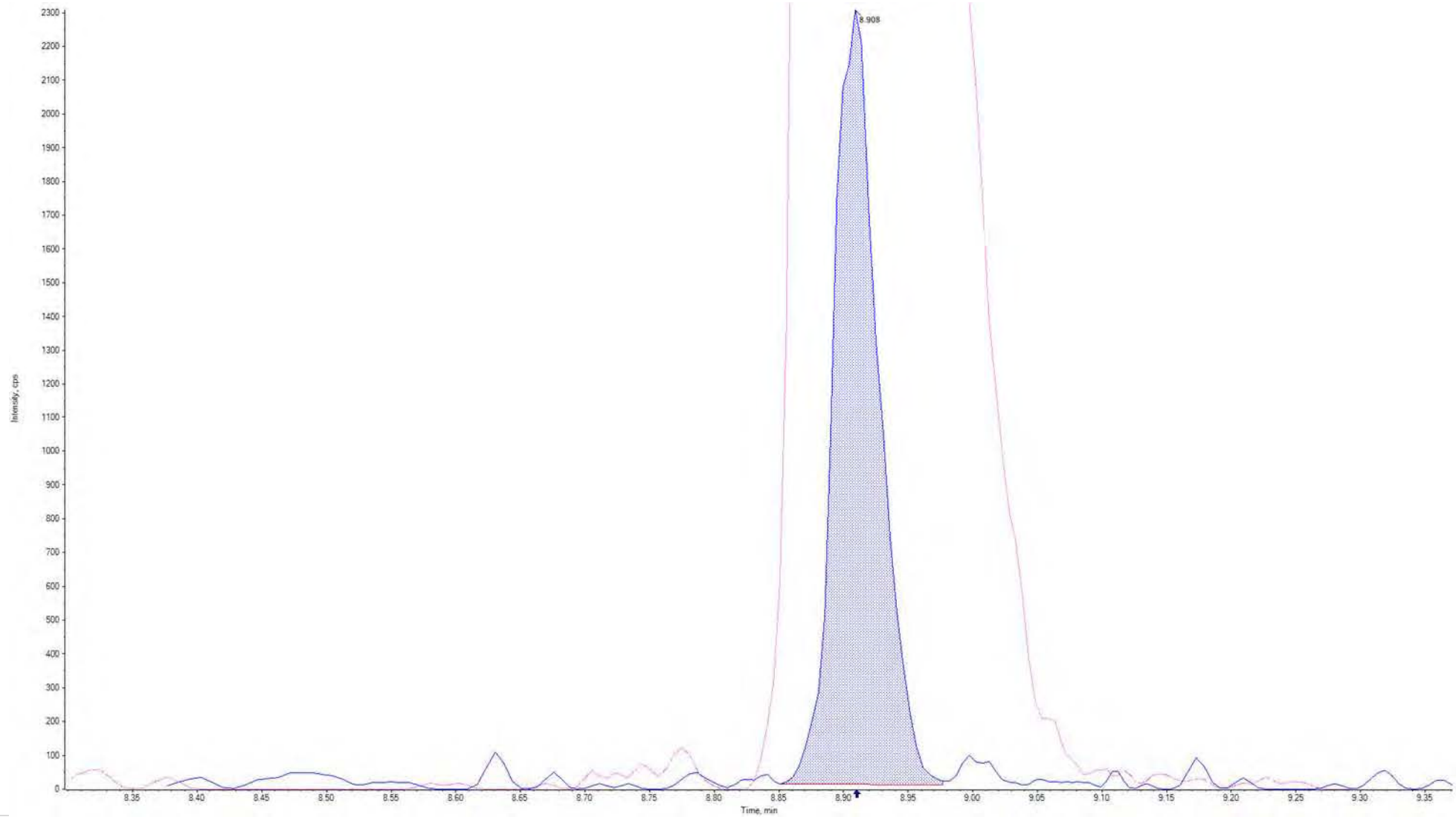
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFDoA
Sample: IA1633STD-.1 S/N:743.2 Points Across peak:24



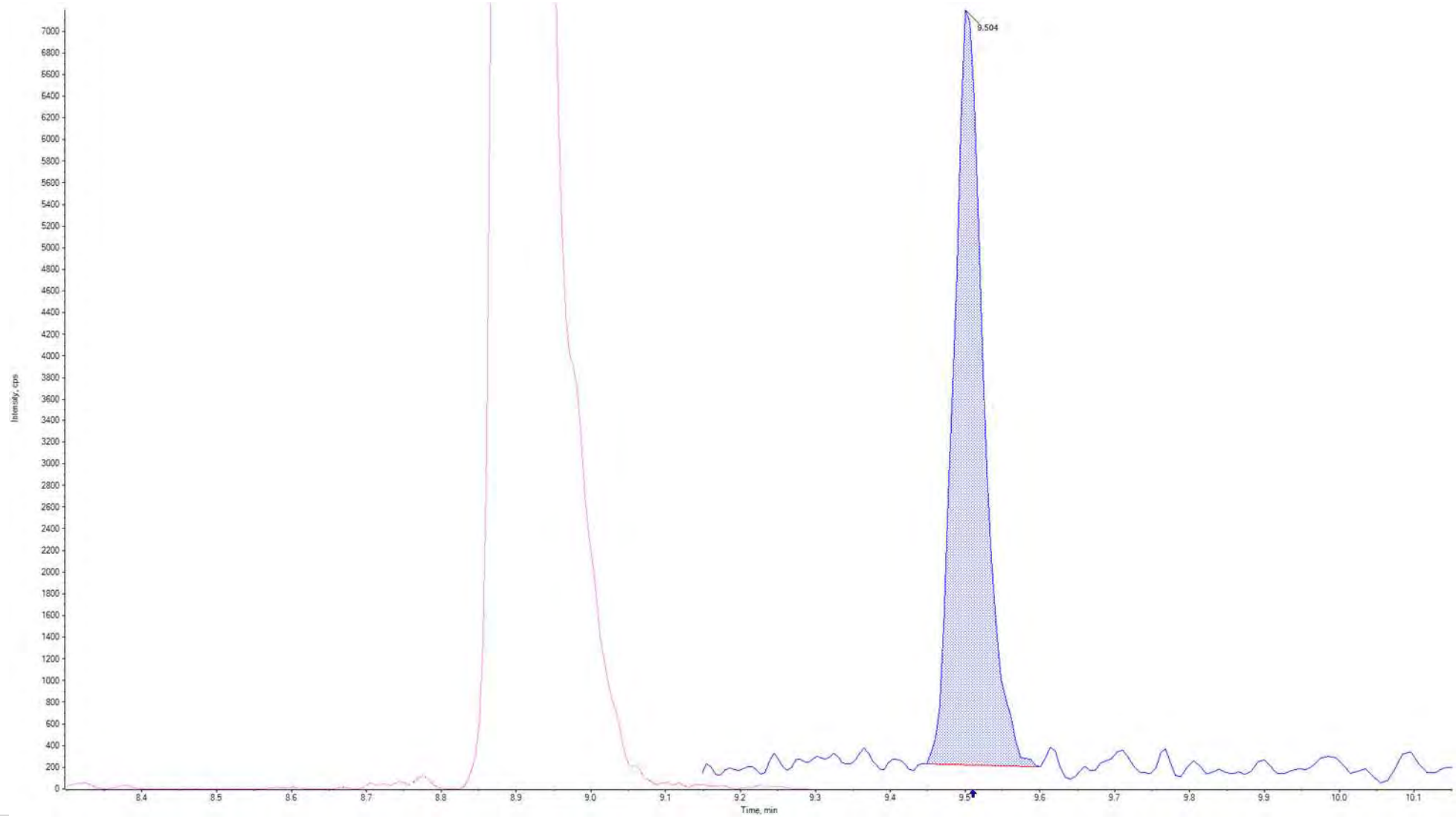
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFDoA_2
Sample: IA1633STD-.1 S/N:124169.9 Points Across peak:26



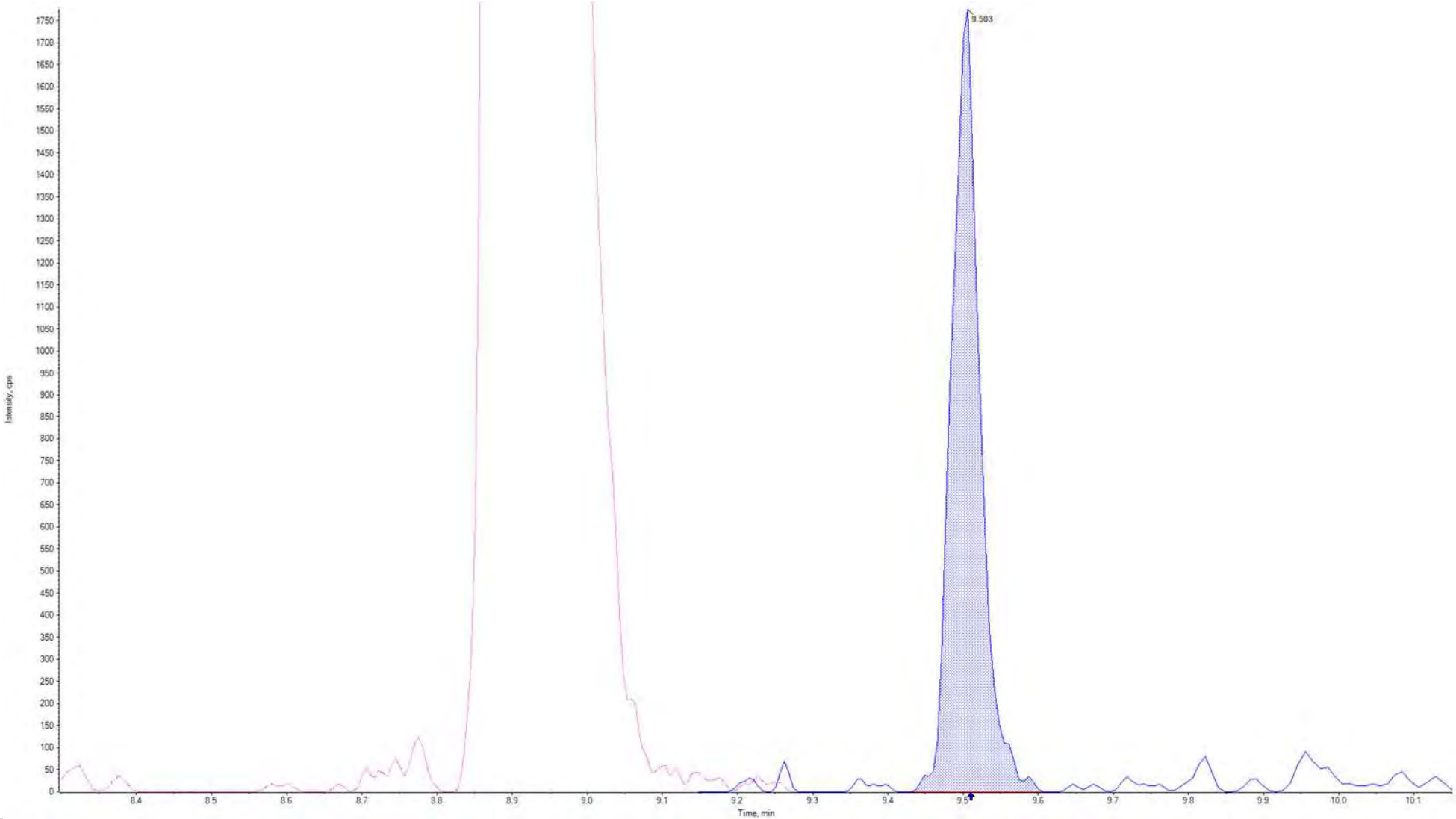
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFTrDA
Sample: IA1633STD-.1 S/N:232.3 Points Across peak:26



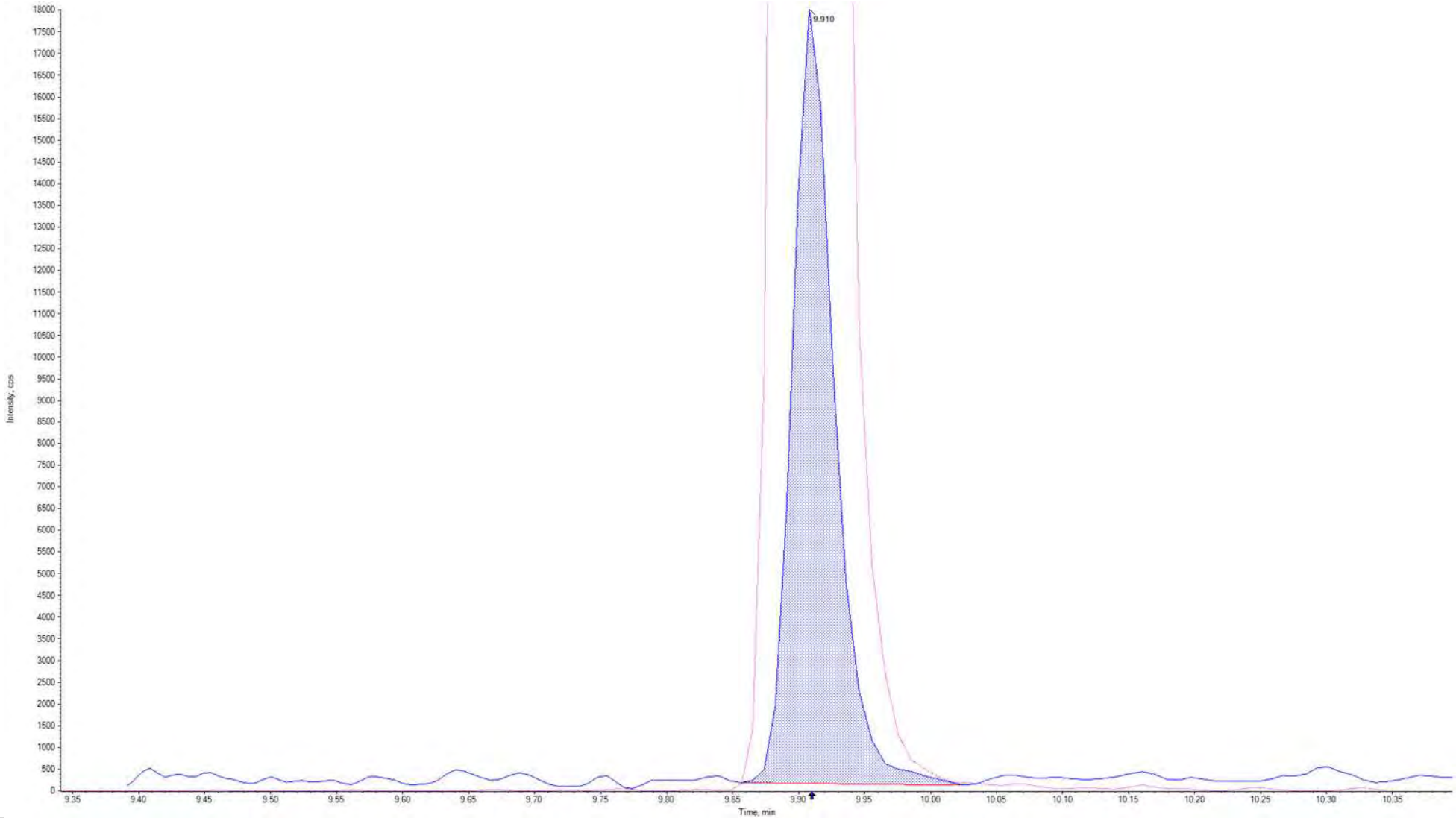
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFTrDA_2
Sample: IA1633STD-.1 S/N:225.5 Points Across peak:34



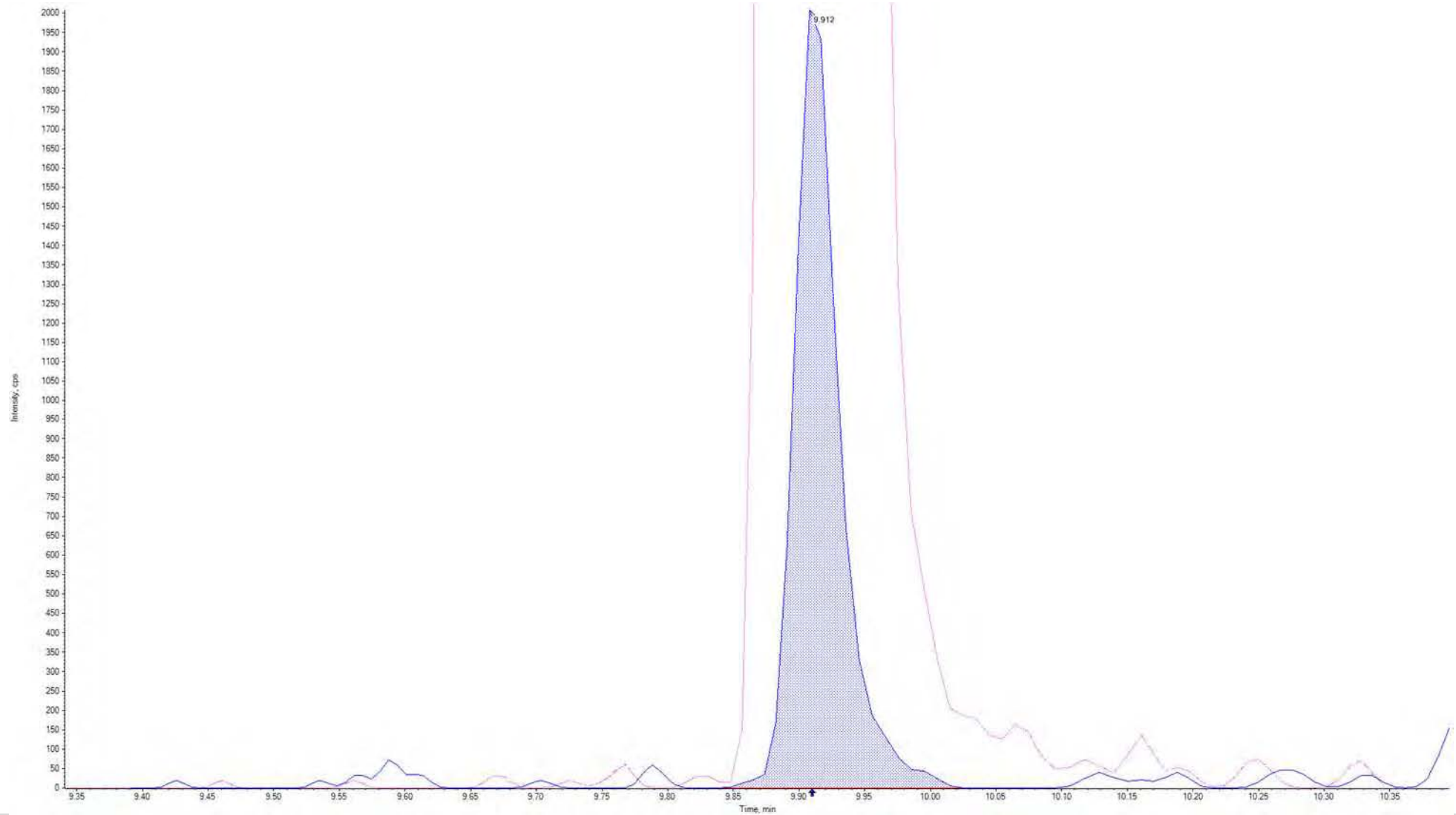
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFTeDA
Sample: IA1633STD-.1 S/N:388.9 Points Across peak:19



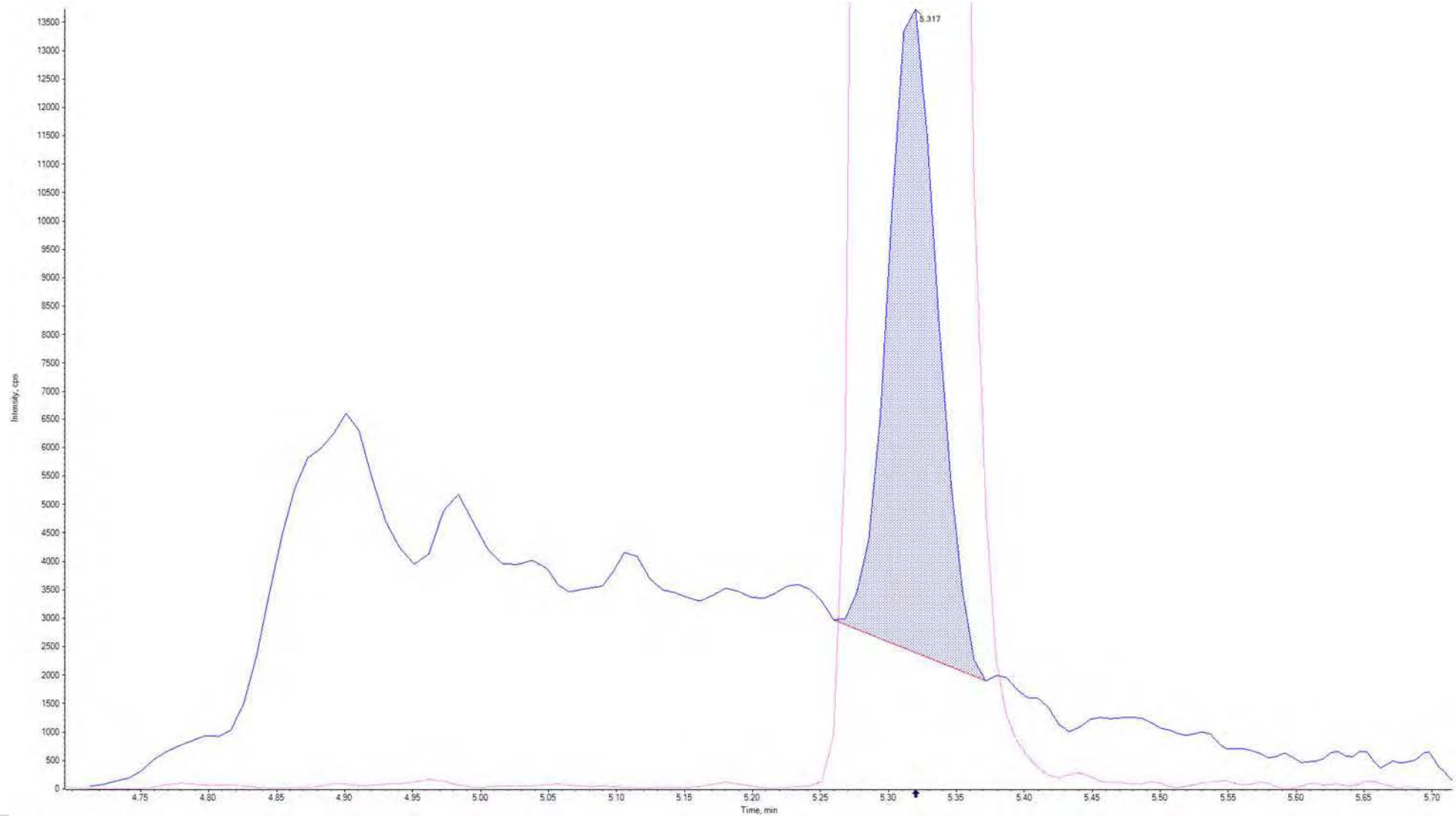
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFTeDA_2
Sample: IA1633STD-.1 S/N:296.8 Points Across peak:24



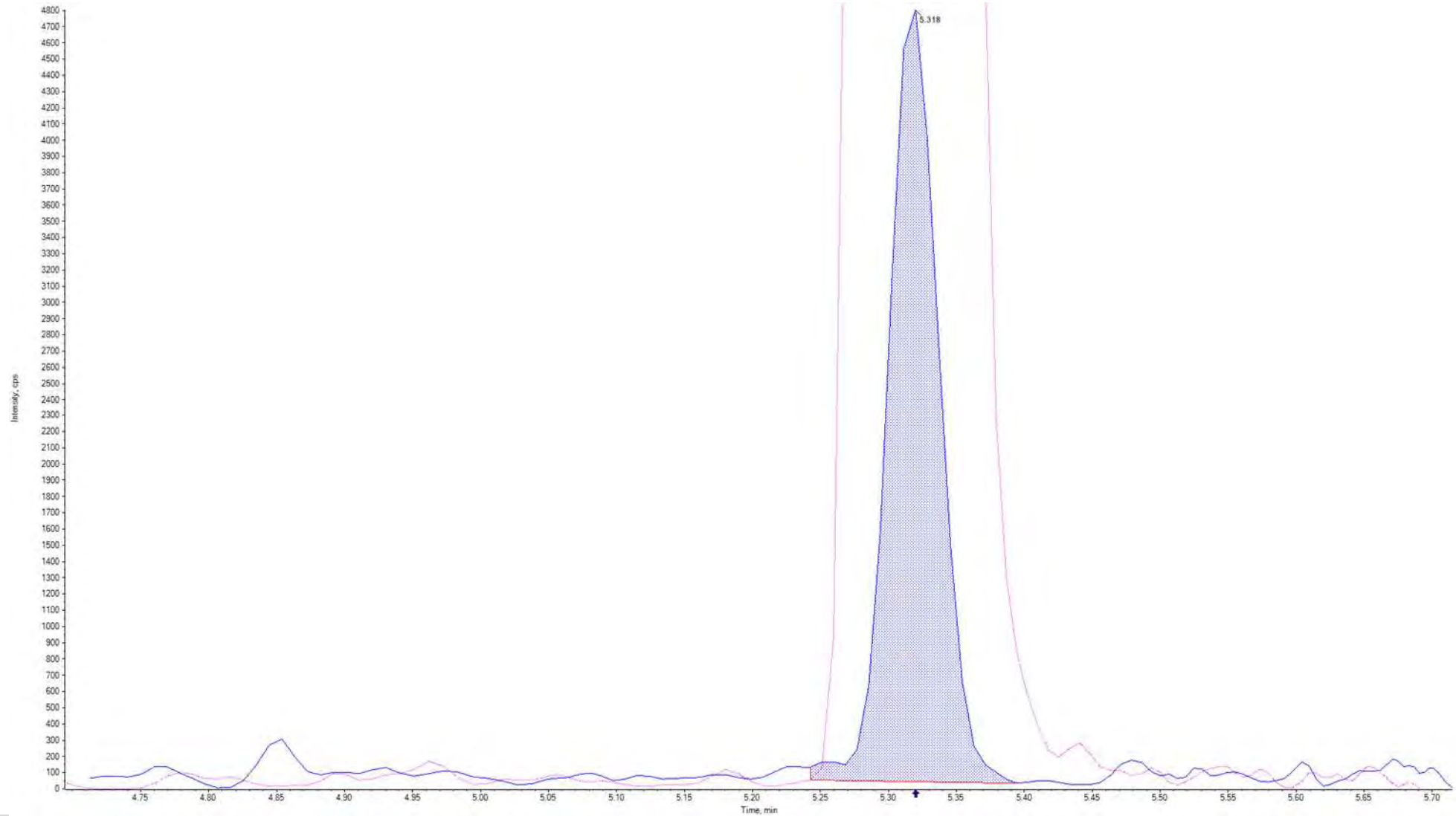
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFBS
Sample: IA1633STD-.1 S/N:33.7 Points Across peak:14



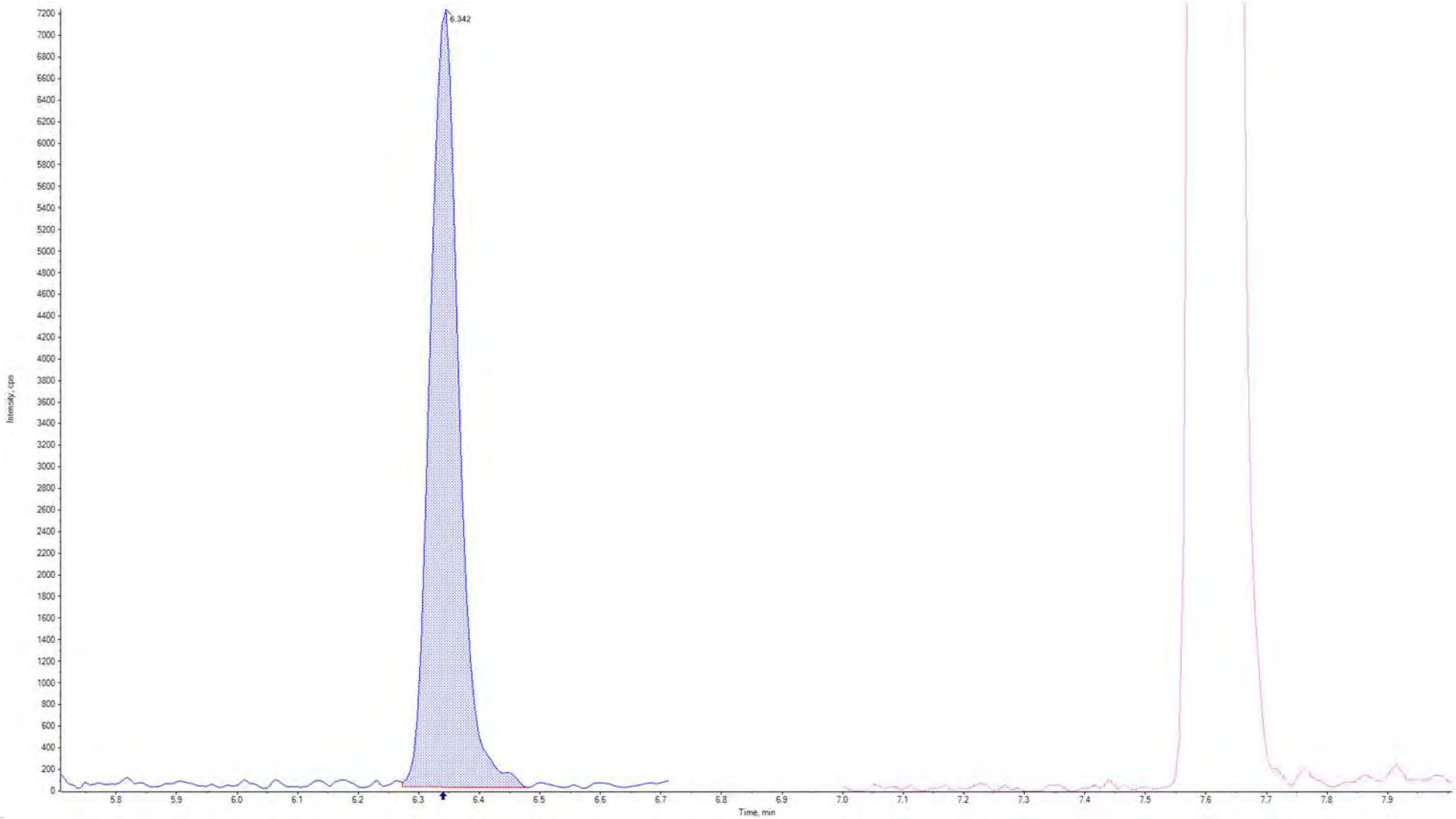
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFBS_2
Sample: IA1633STD-.1 S/N:511.4 Points Across peak:19



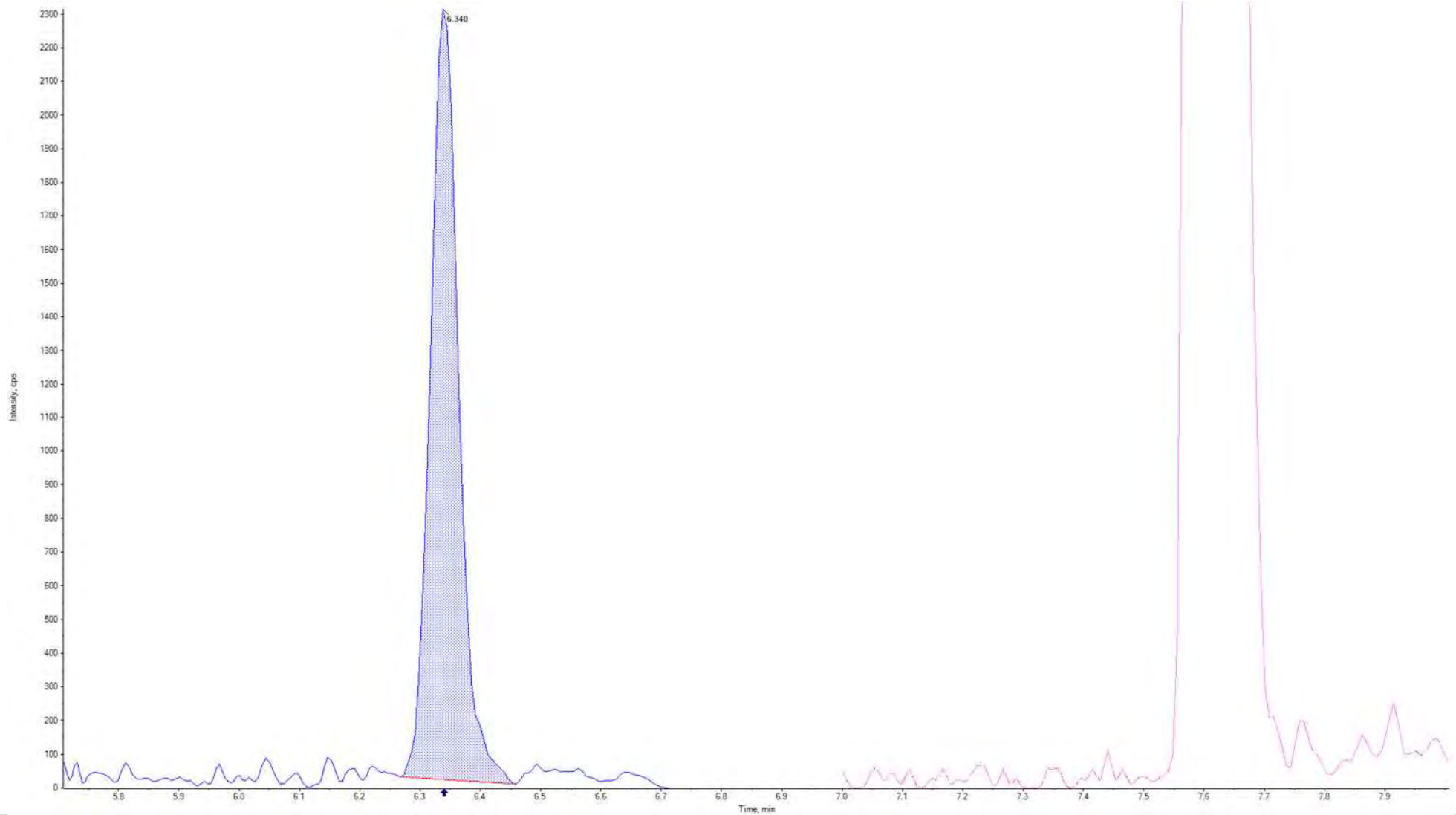
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFPeS
Sample: IA1633STD-.1 S/N:751.2 Points Across peak:32



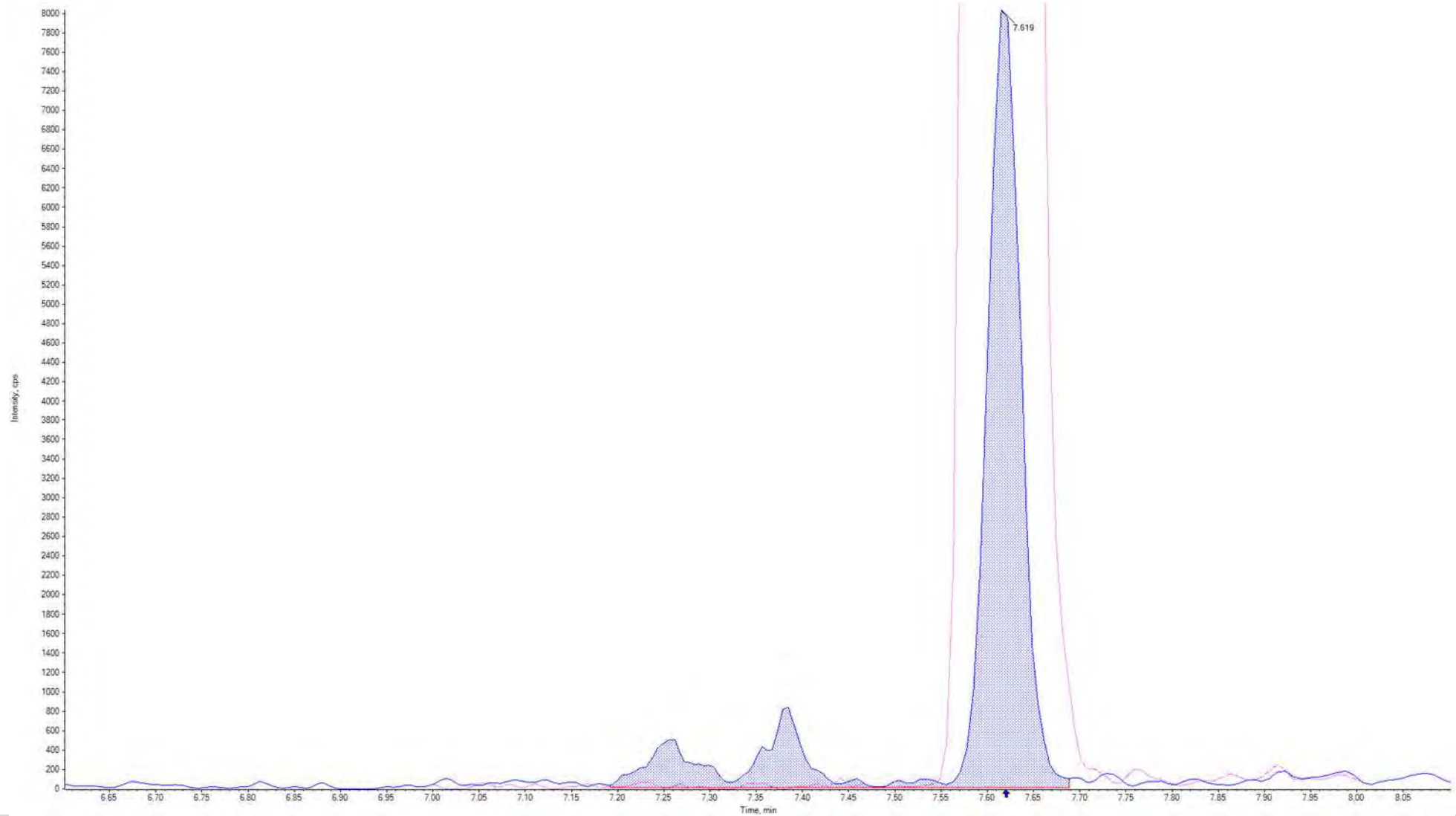
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFPeS_2
Sample: IA1633STD-.1 S/N:1018.7 Points Across peak:30



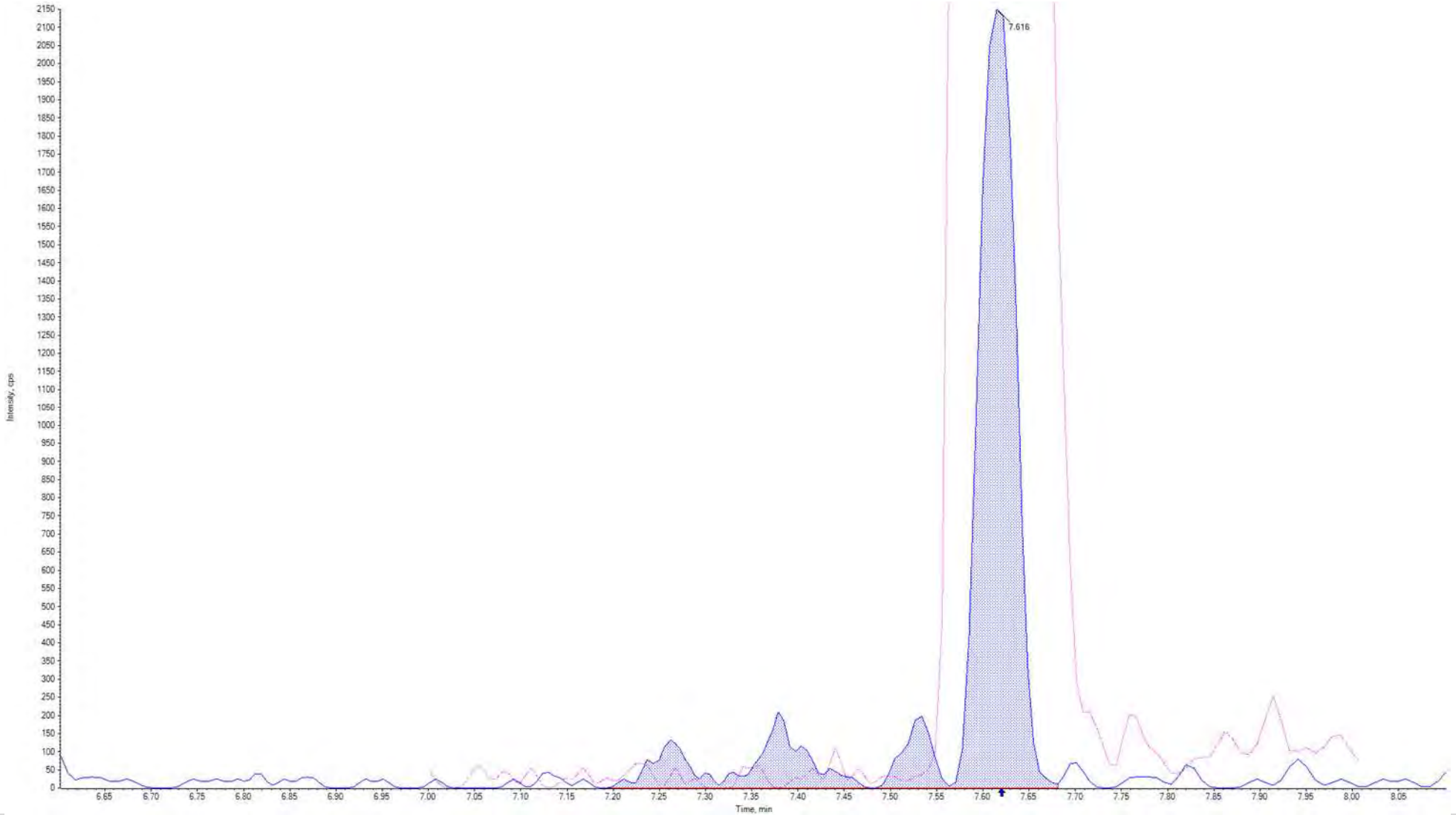
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFHxS
Sample: IA1633STD-.1 S/N:32741.3 Points Across peak:82



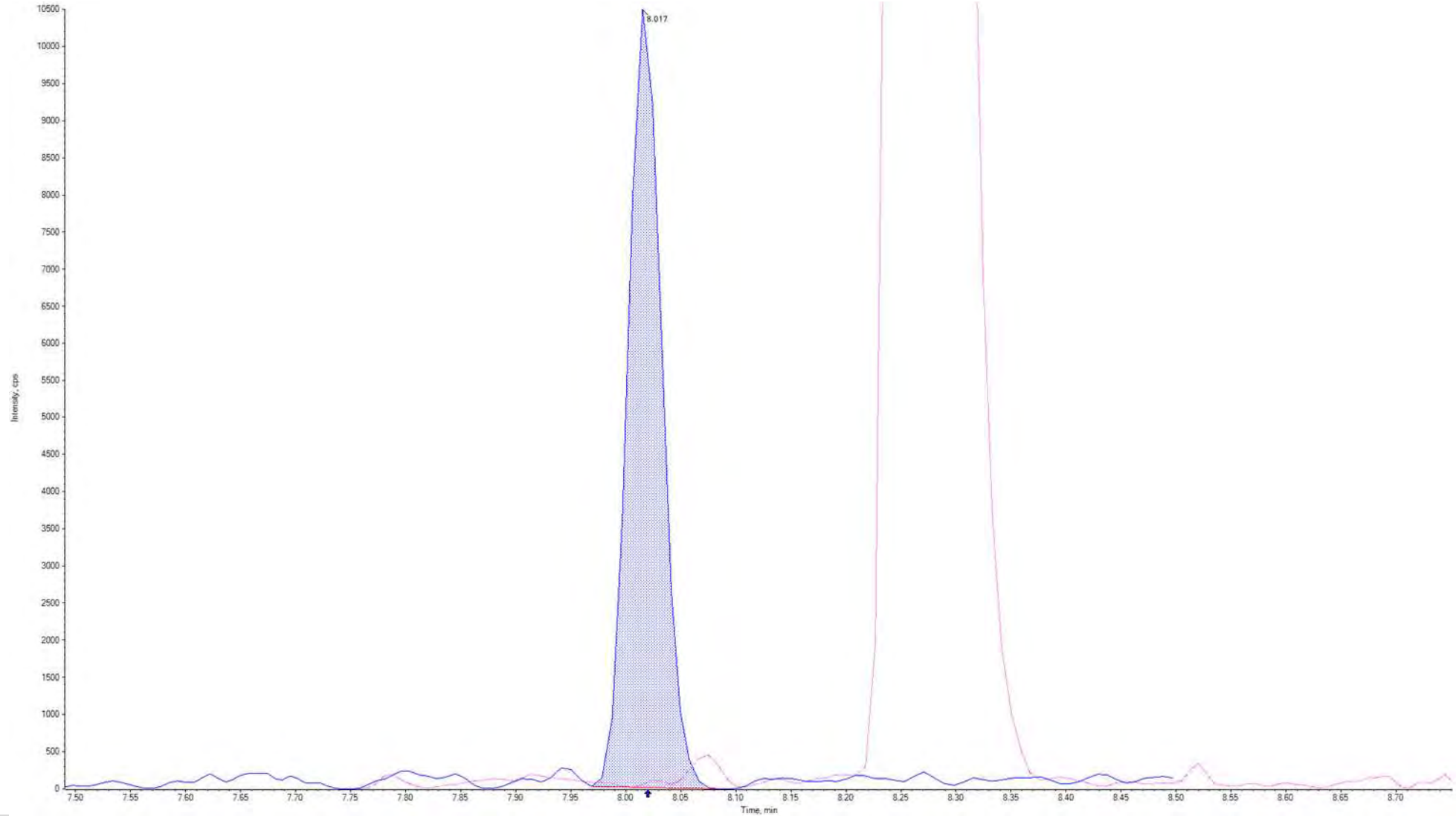
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFHxS_2
Sample: IA1633STD-.1 S/N:100463.6 Points Across peak:81



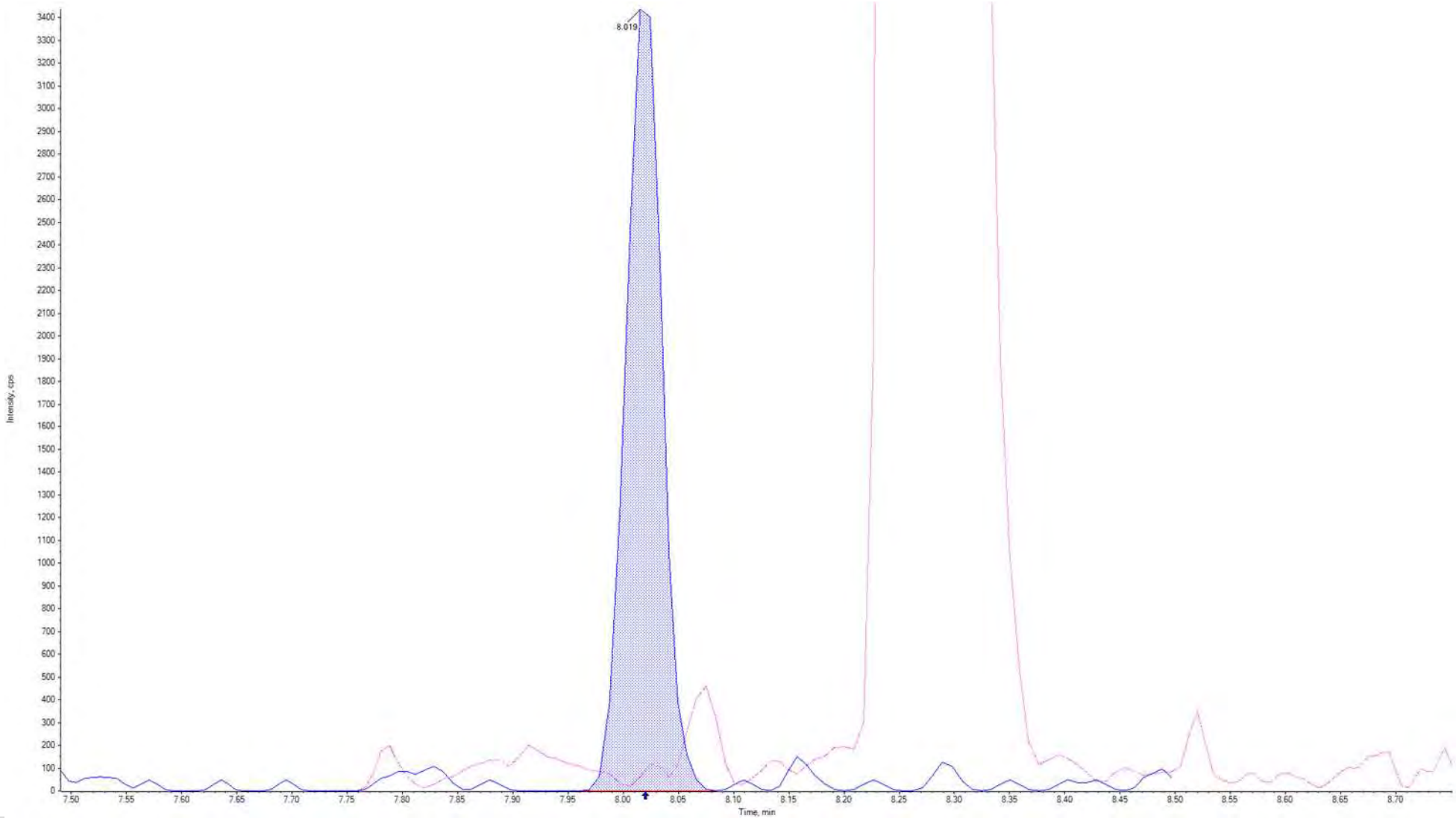
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFHpS
Sample: IA1633STD-.1 S/N:3220.2 Points Across peak:14



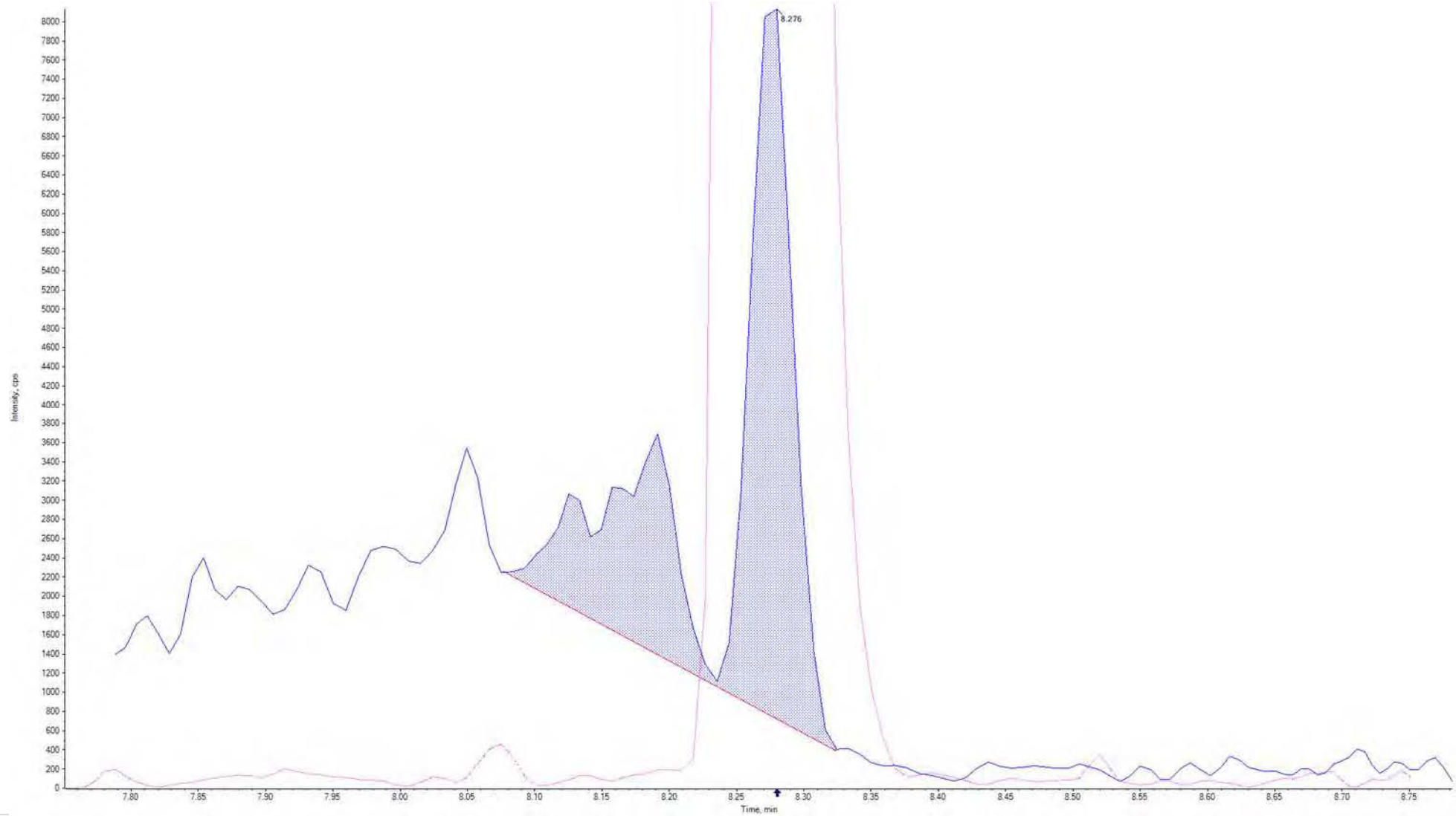
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFHpS_2
Sample: IA1633STD-.1 S/N:744829.2 Points Across peak:16



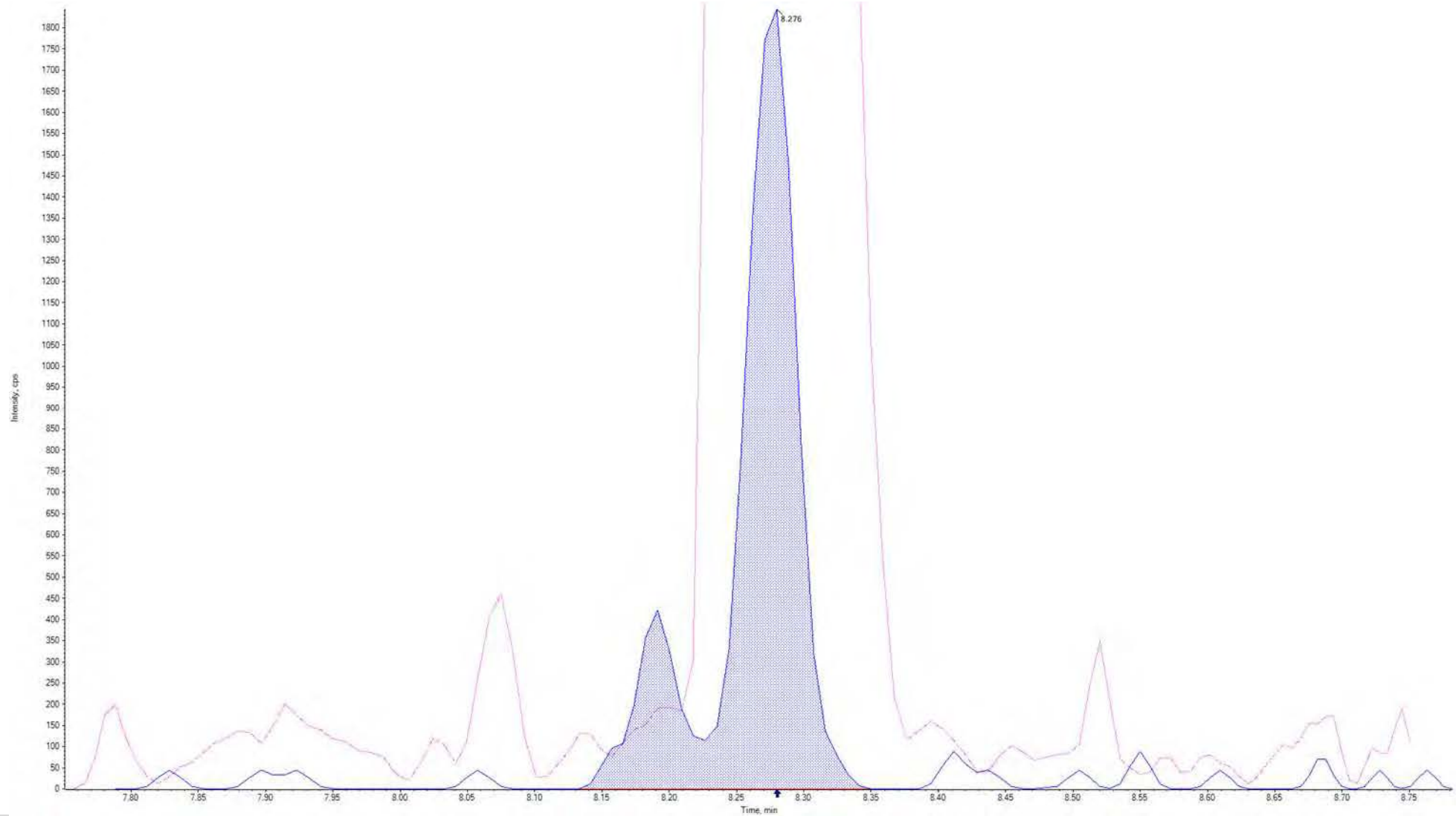
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFOS
Sample: IA1633STD-.1 S/N:180.0 Points Across peak:30



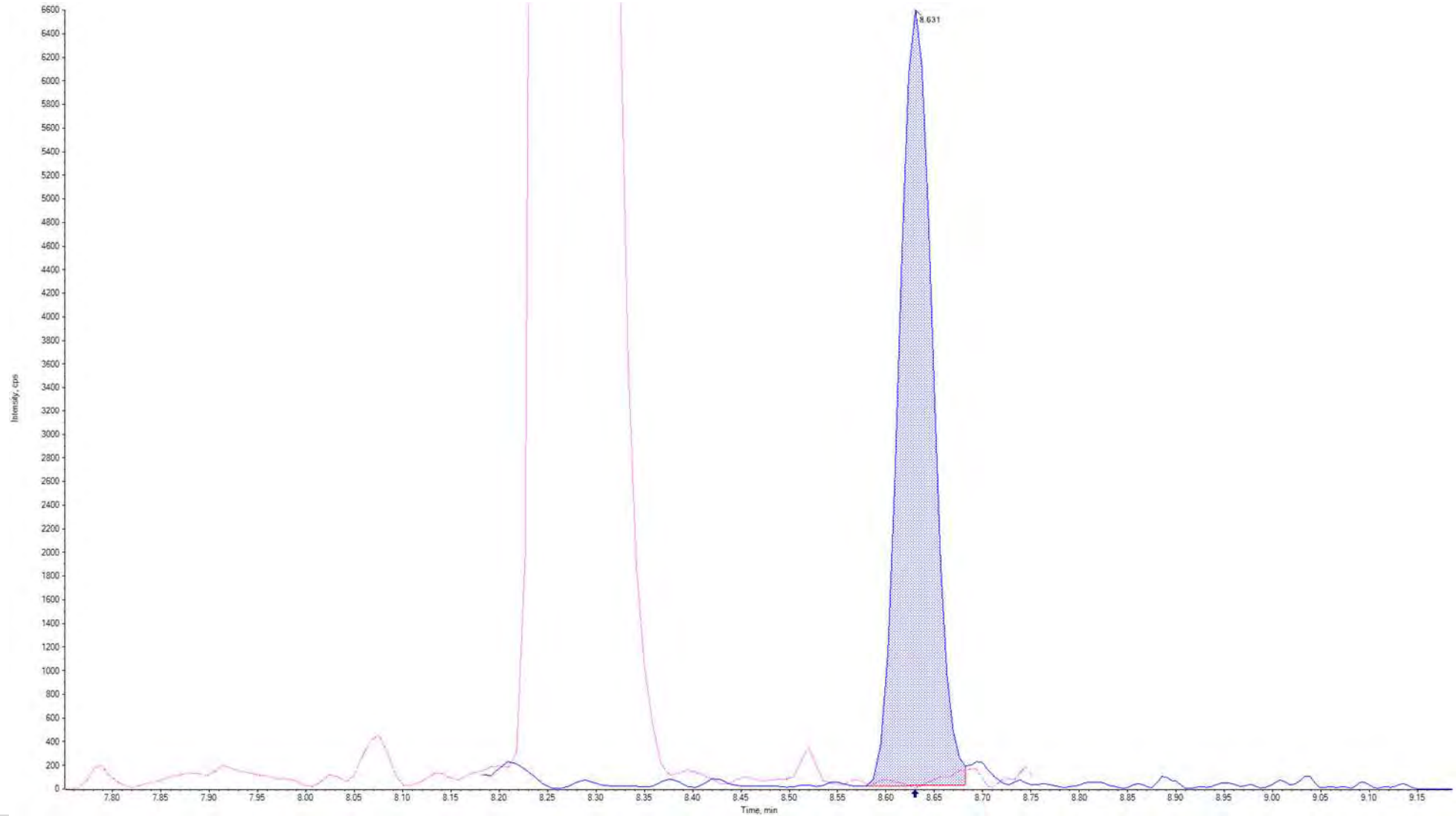
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFOS_2
Sample: IA1633STD-.1 S/N:166.1 Points Across peak:31



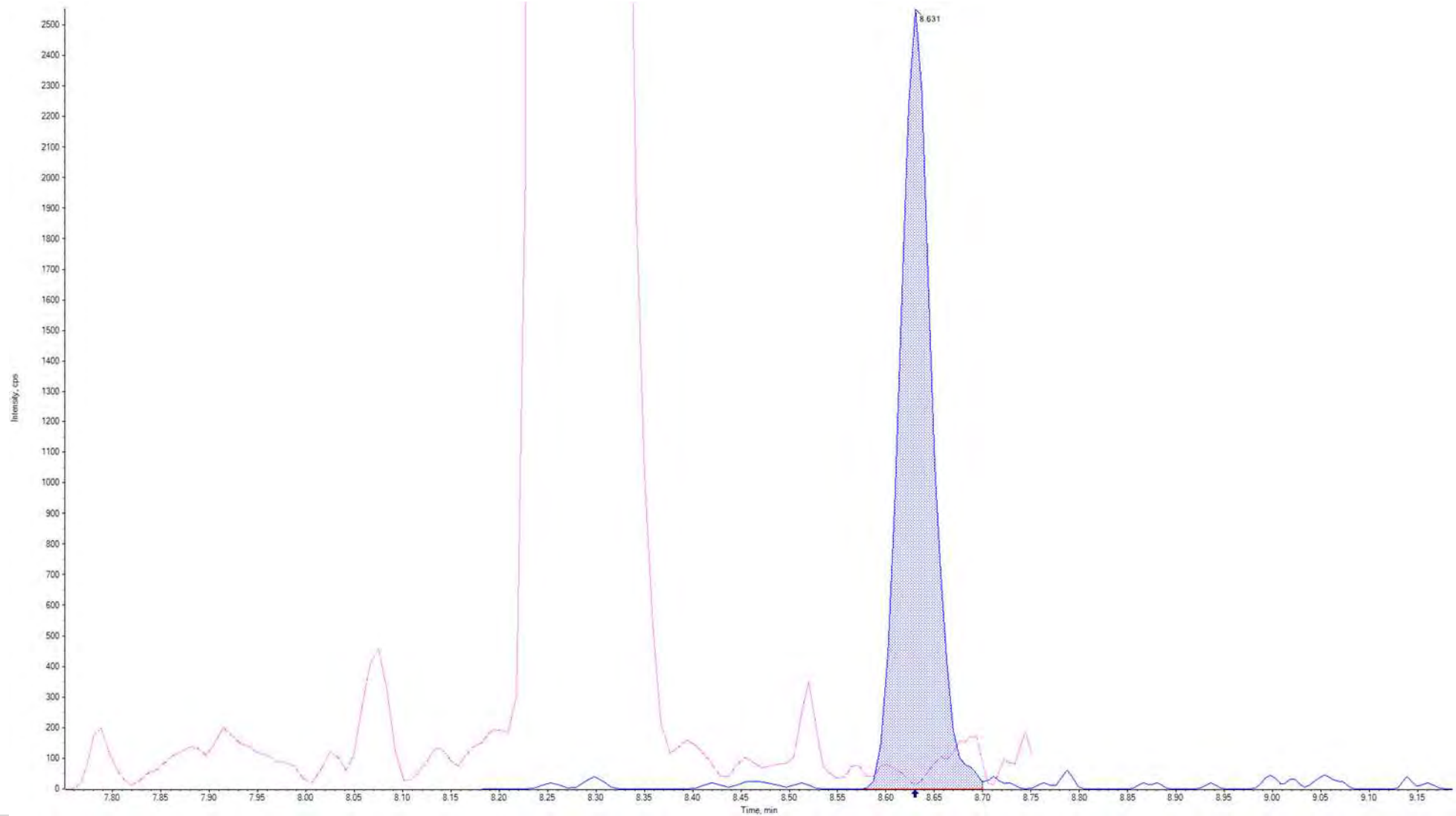
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFNS
Sample: IA1633STD-.1 S/N:346.8 Points Across peak:16



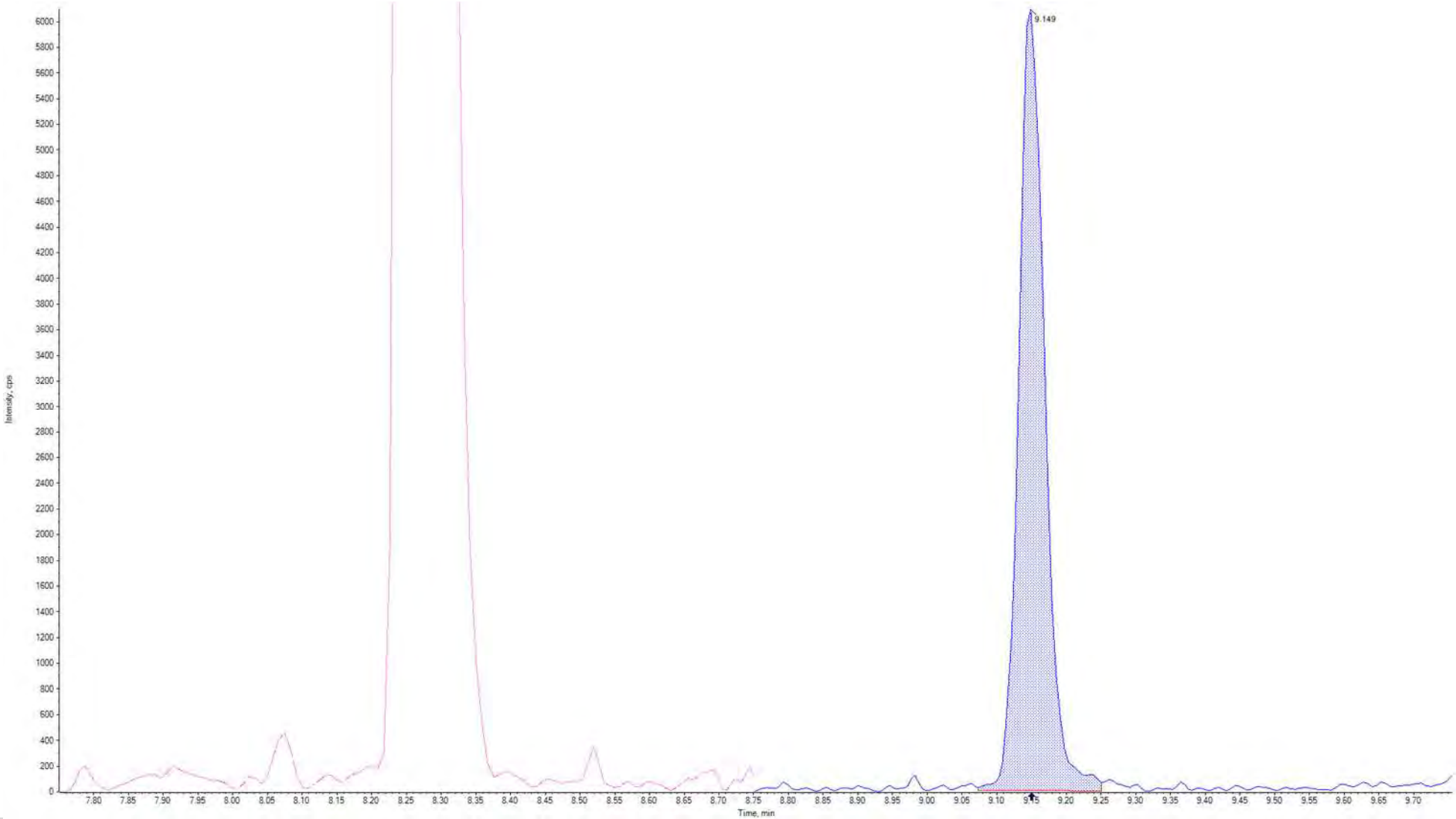
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFNS_2
Sample: IA1633STD-.1 S/N:352.3 Points Across peak:21



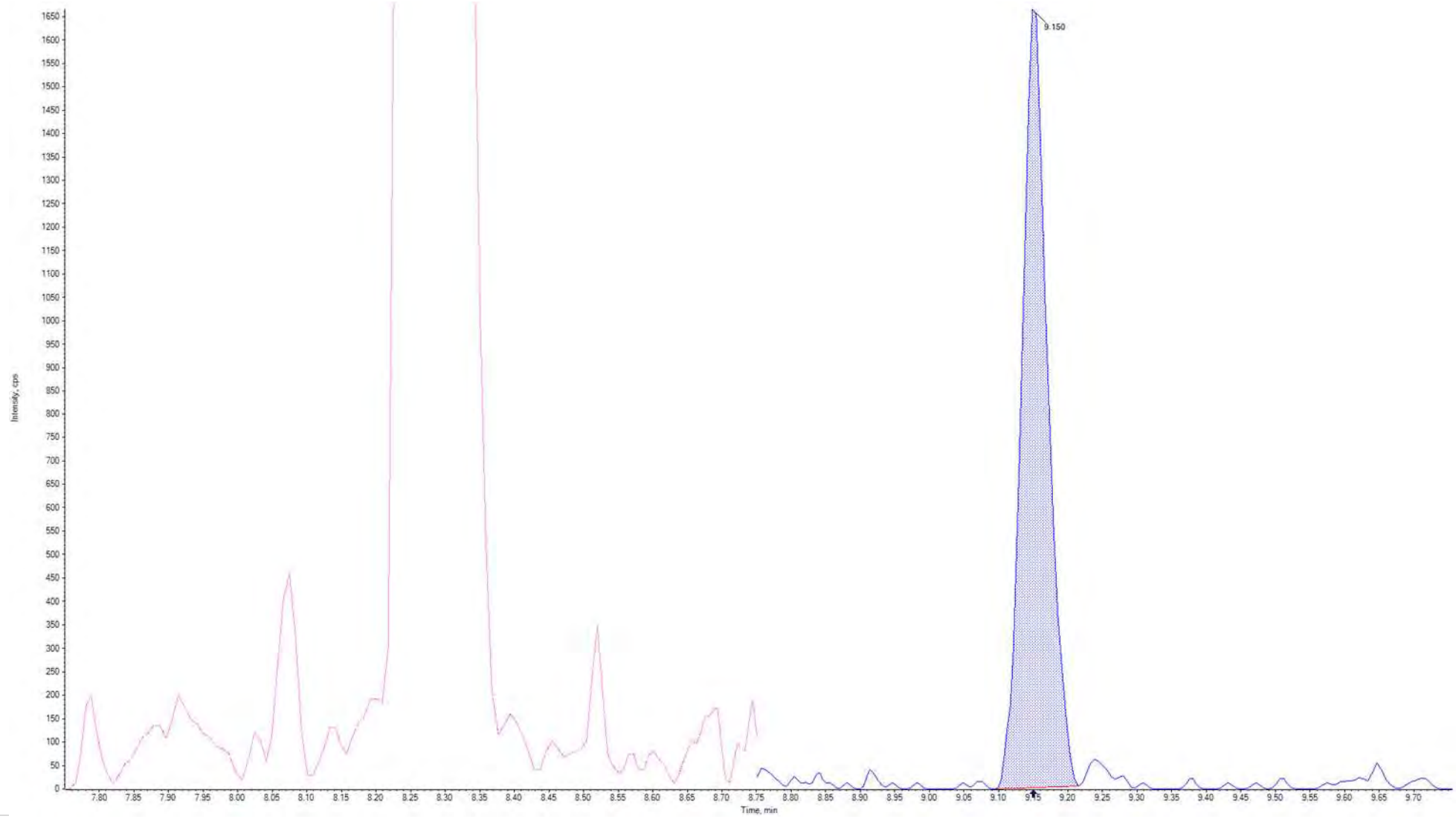
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFDS
Sample: IA1633STD-.1 S/N:1464.7 Points Across peak:35



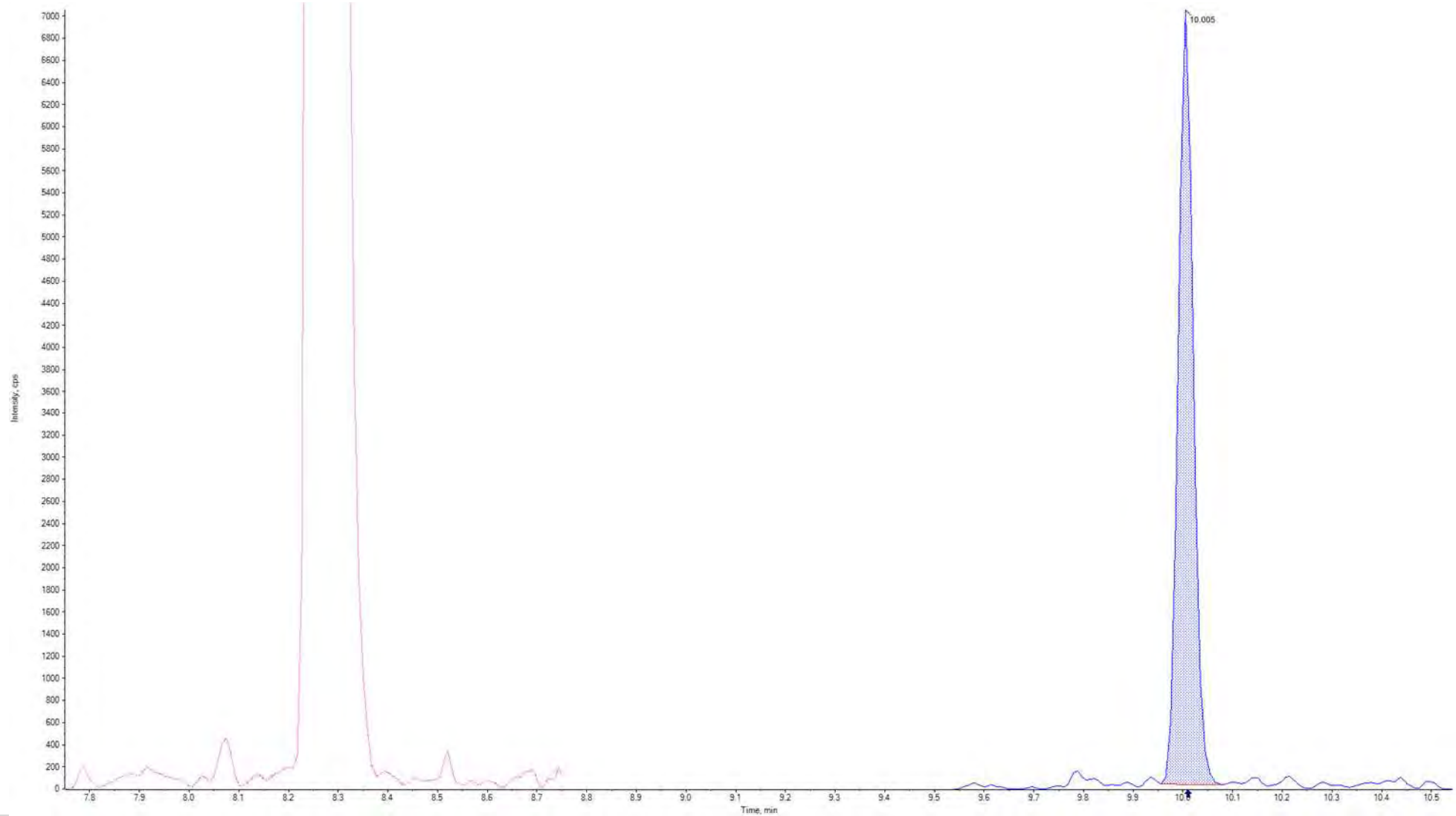
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFDS_2
Sample: IA1633STD-.1 S/N:2138863.8 Points Across peak:24



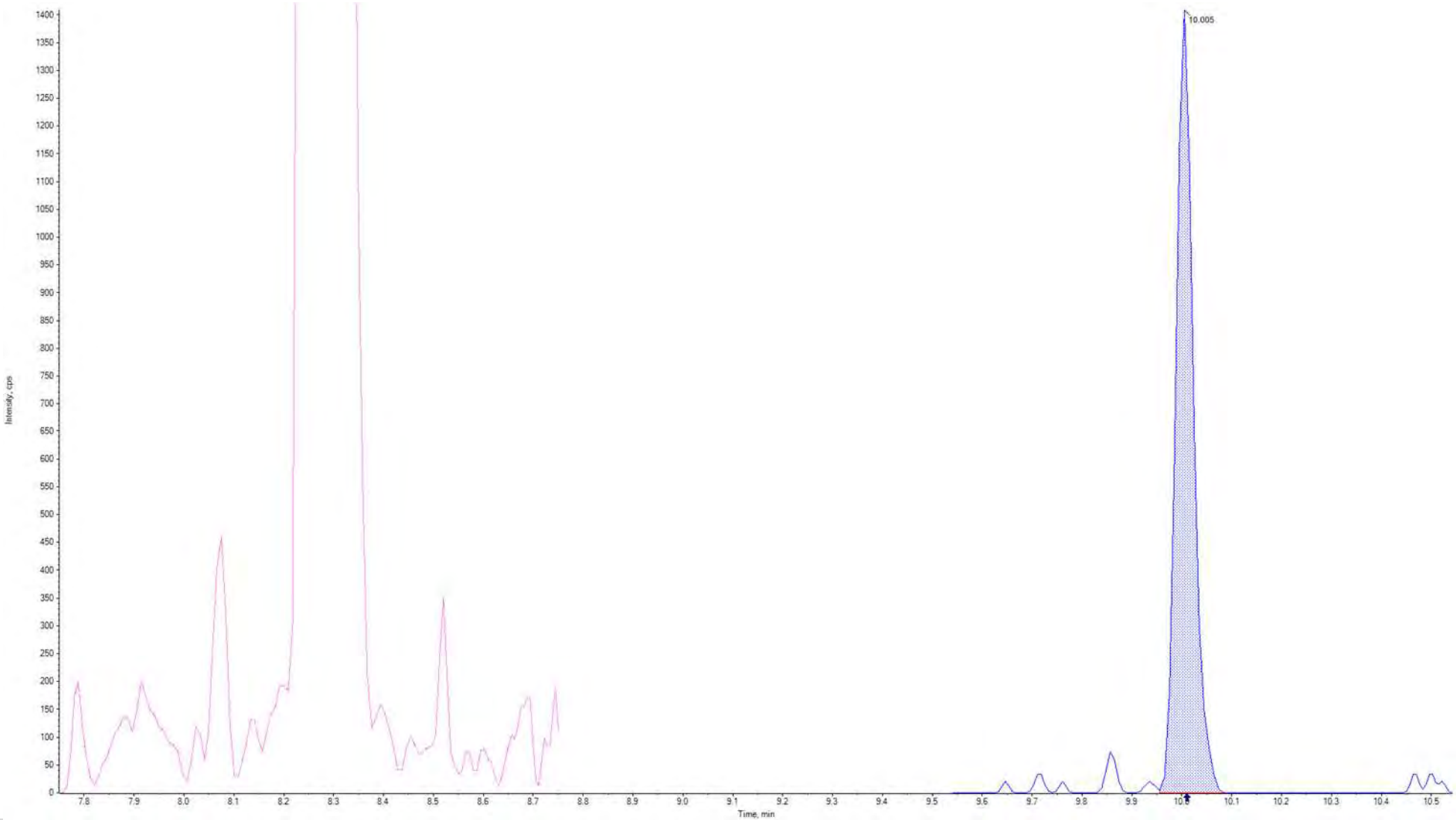
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFDoS
Sample: IA1633STD-.1 S/N:28946.3 Points Across peak:13



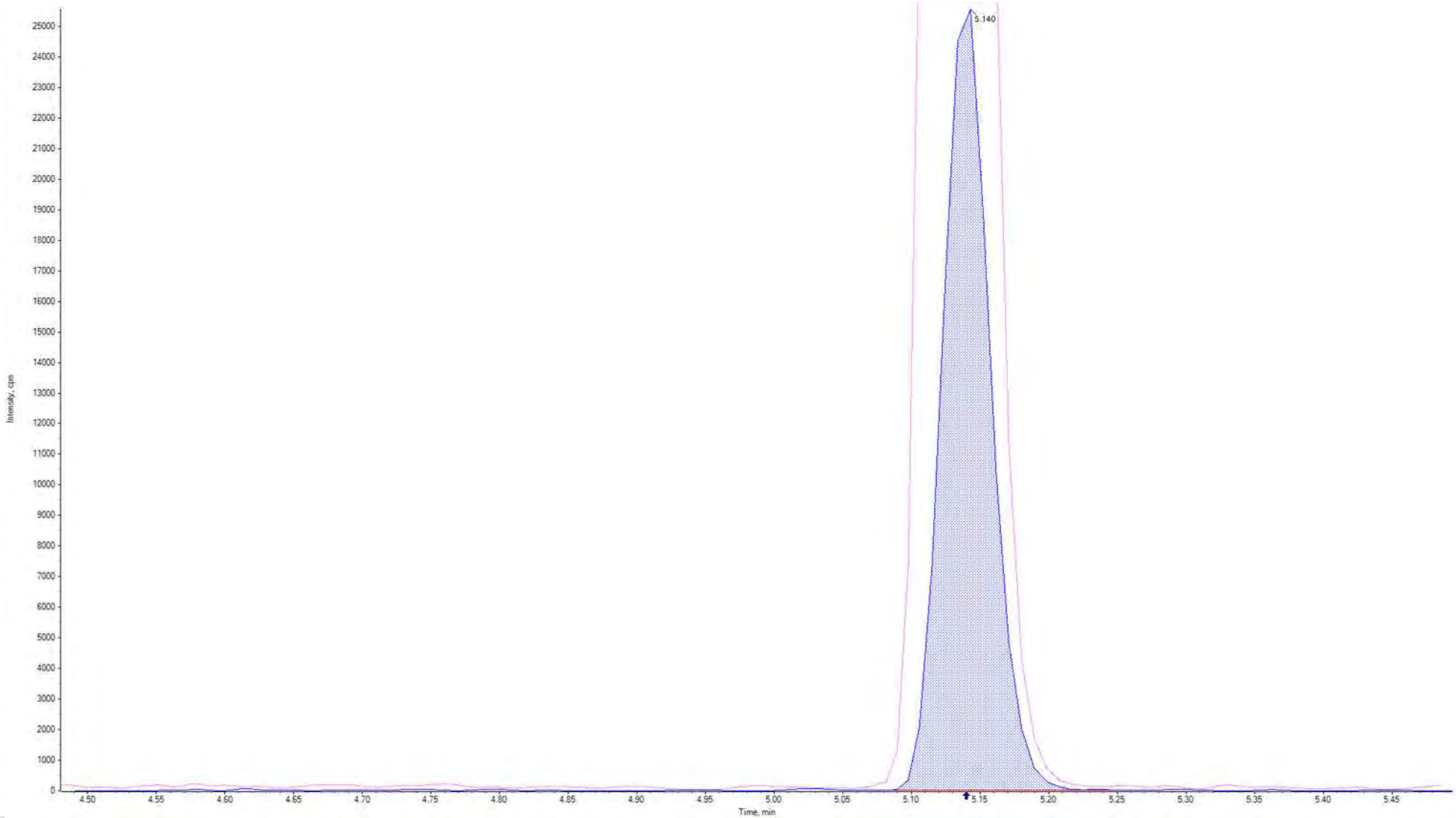
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFDoS_2
Sample: IA1633STD-.1 S/N:1454.1 Points Across peak:16



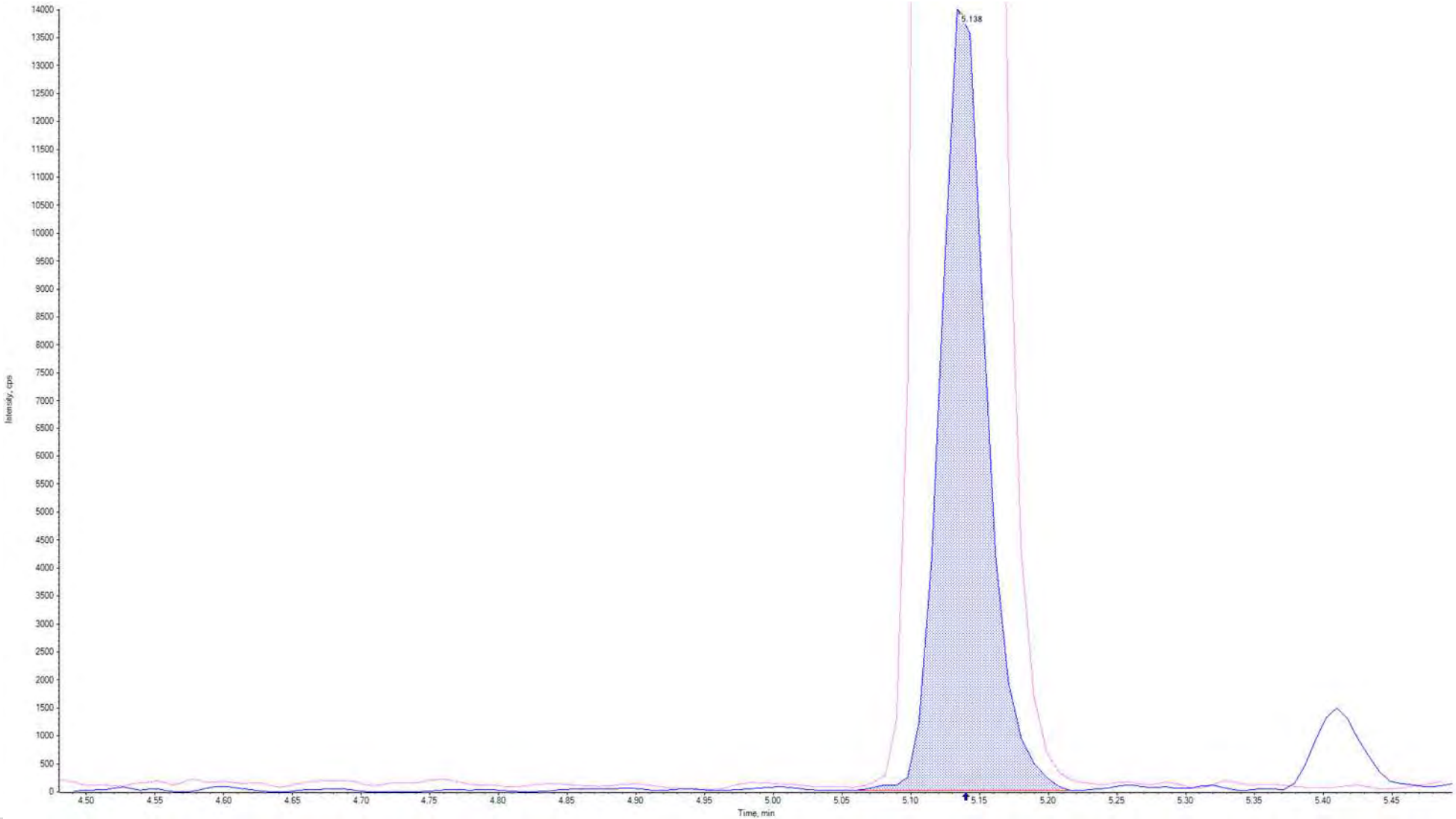
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

4:2FTS
Sample: IA1633STD-.1 S/N:933.4 Points Across peak:21



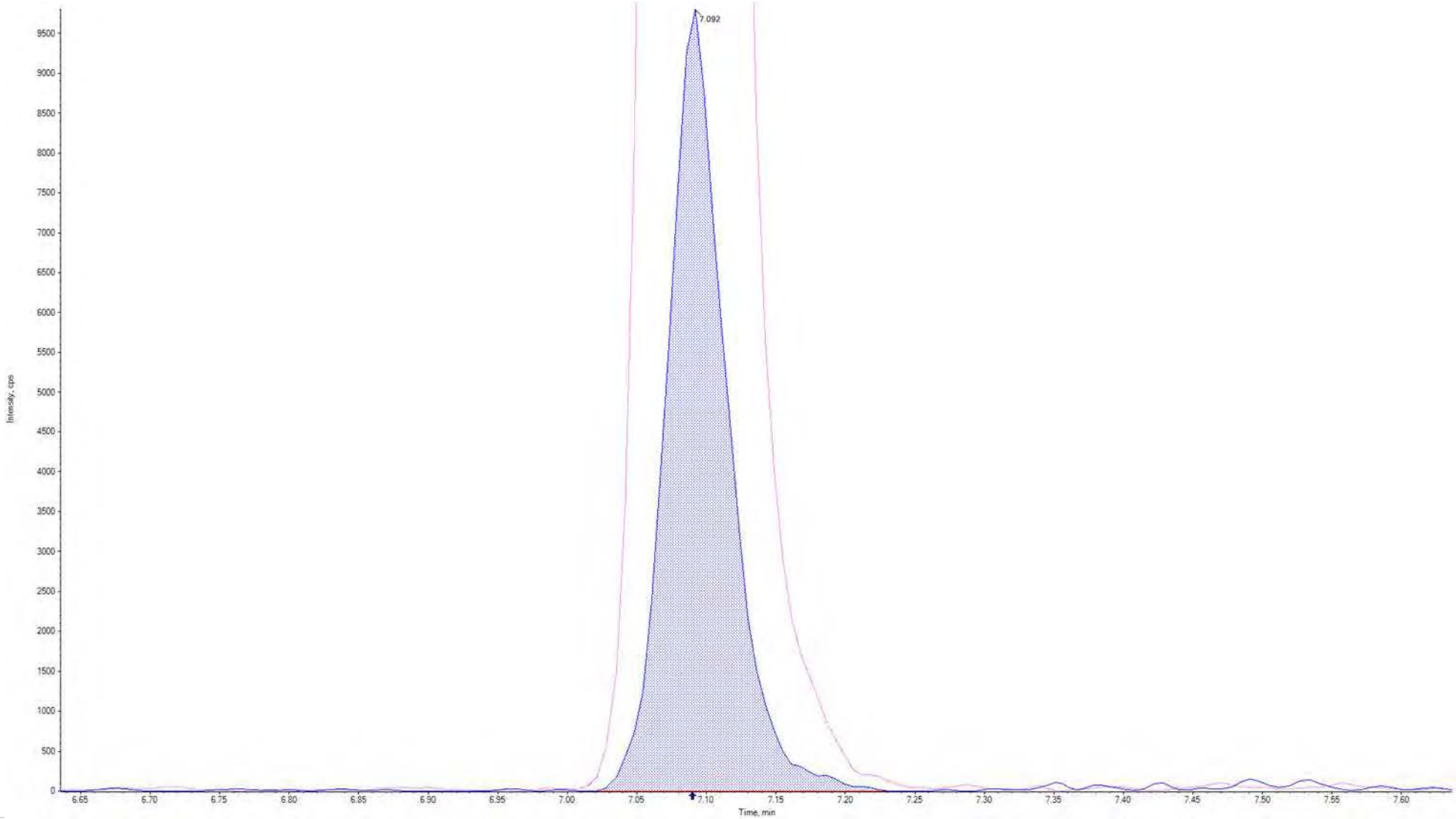
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

4:2FTS_2
Sample: IA1633STD-.1 S/N:5252.7 Points Across peak:20



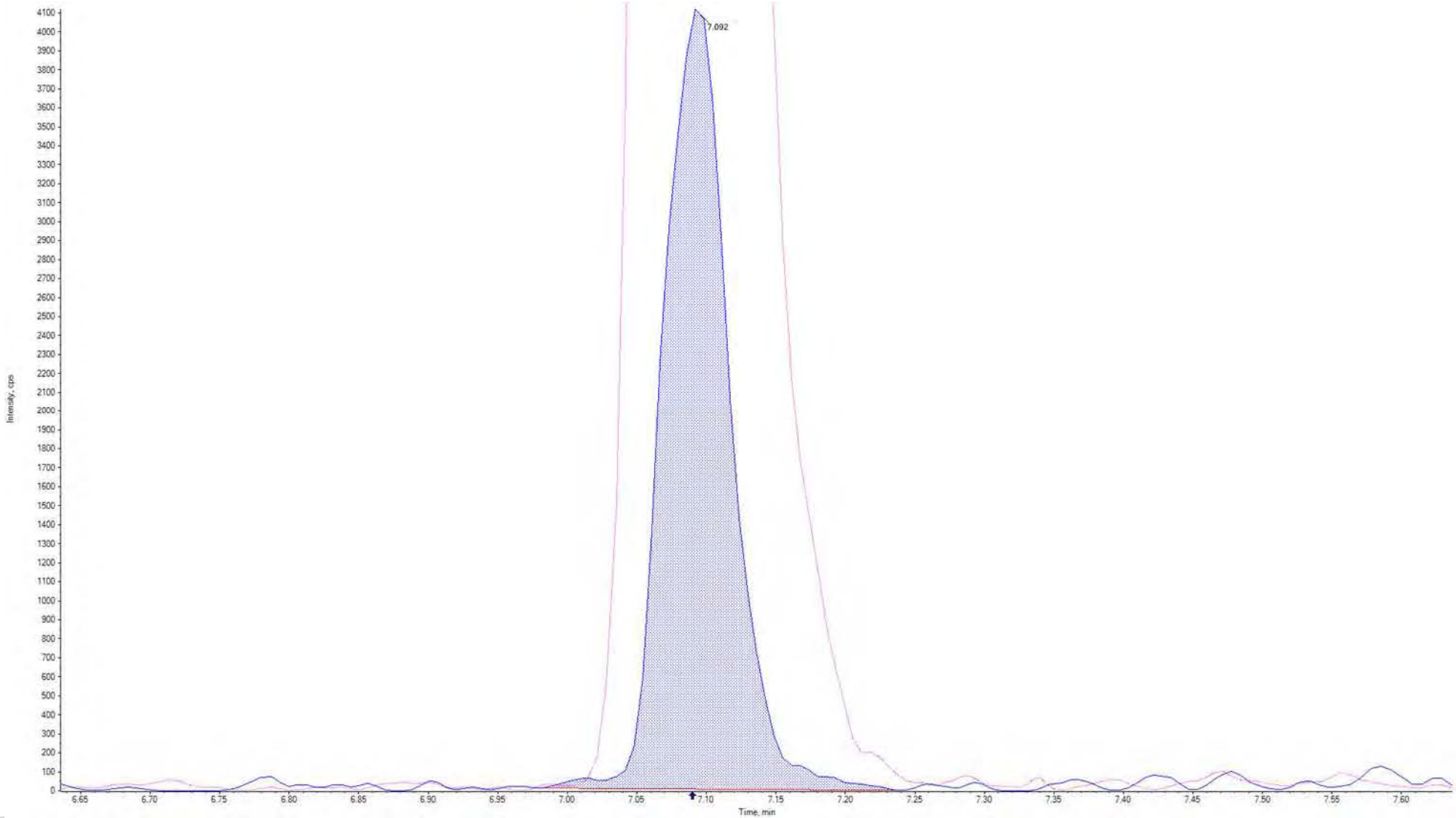
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

6:2FTS
Sample: IA1633STD-.1 S/N:5755122.8 Points Across peak:37



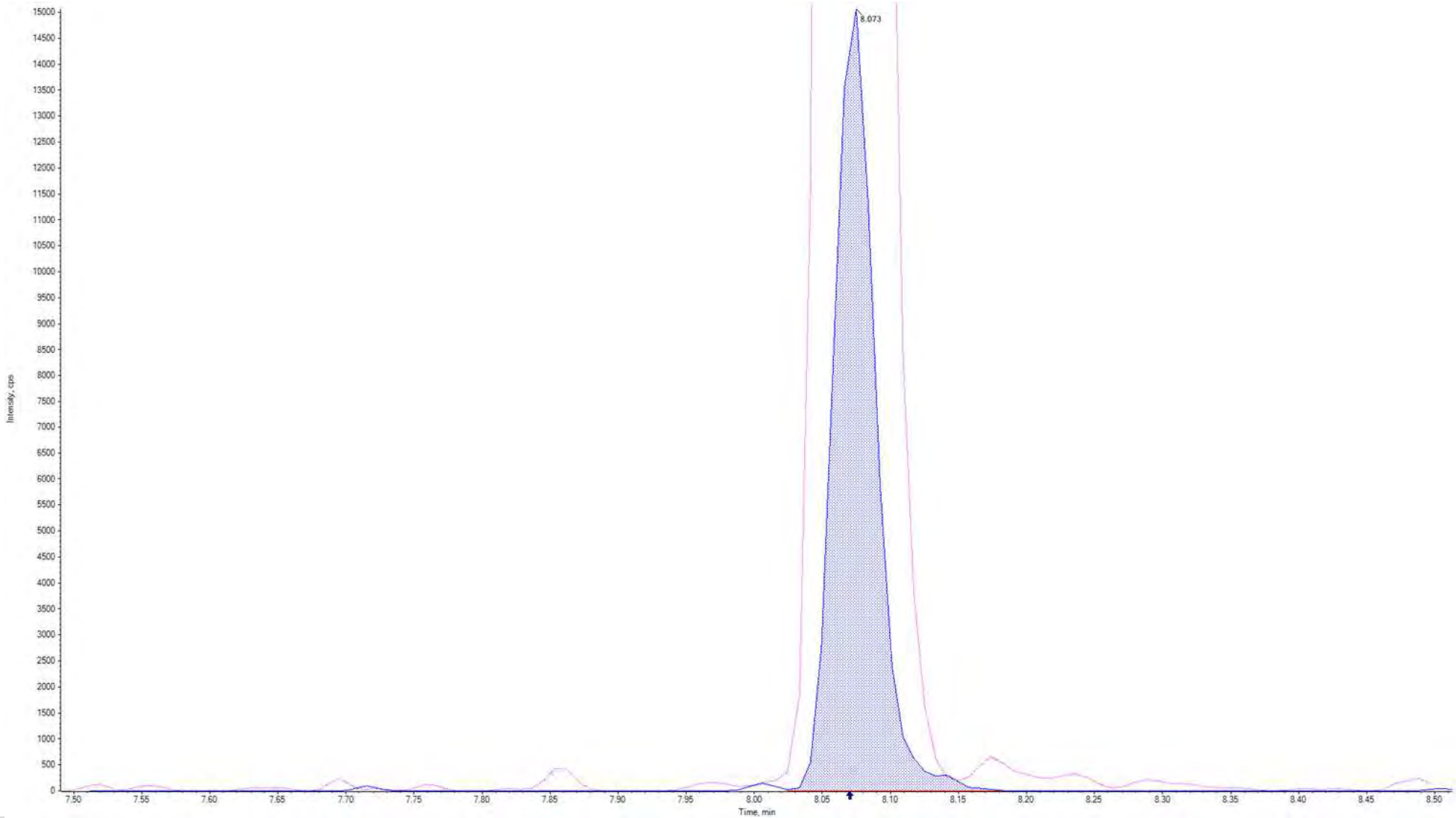
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

6:2FTS_2
Sample: IA1633STD-.1 S/N:18957.3 Points Across peak:42



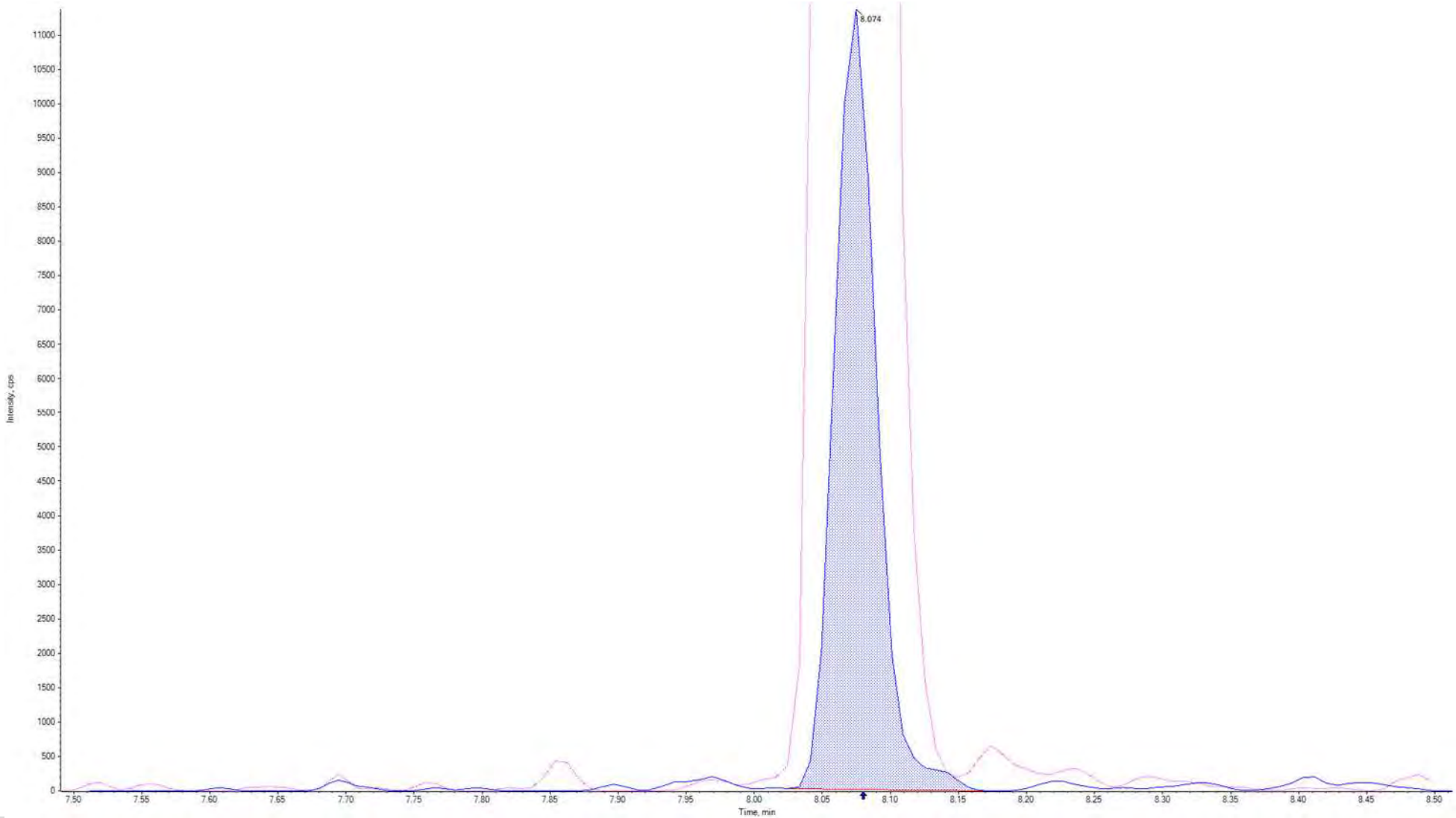
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

8:2FTS
Sample: IA1633STD-.1 S/N:1120.0 Points Across peak:26



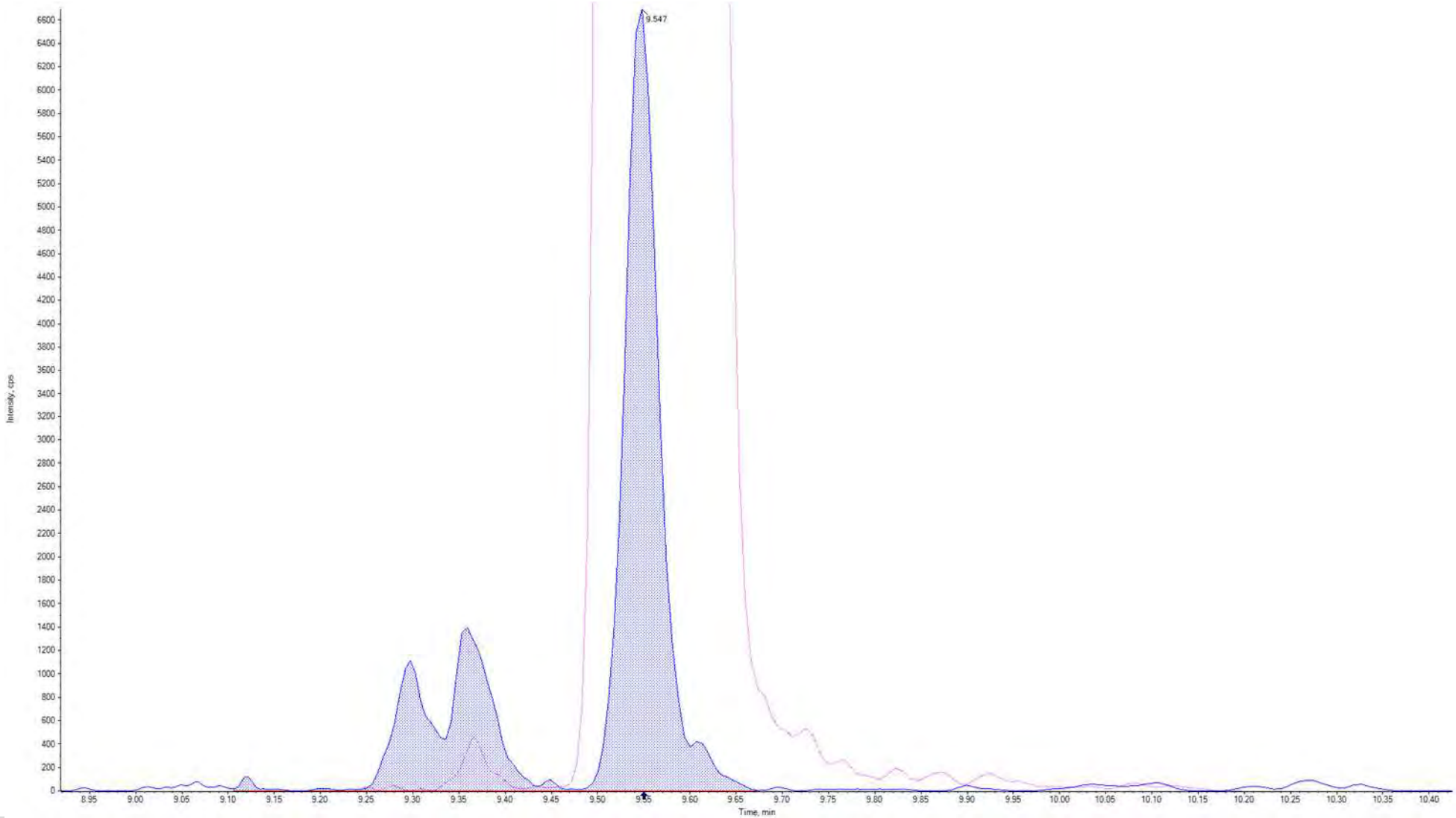
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

8:2FTS_2
Sample: IA1633STD-.1 S/N:466.5 Points Across peak:19



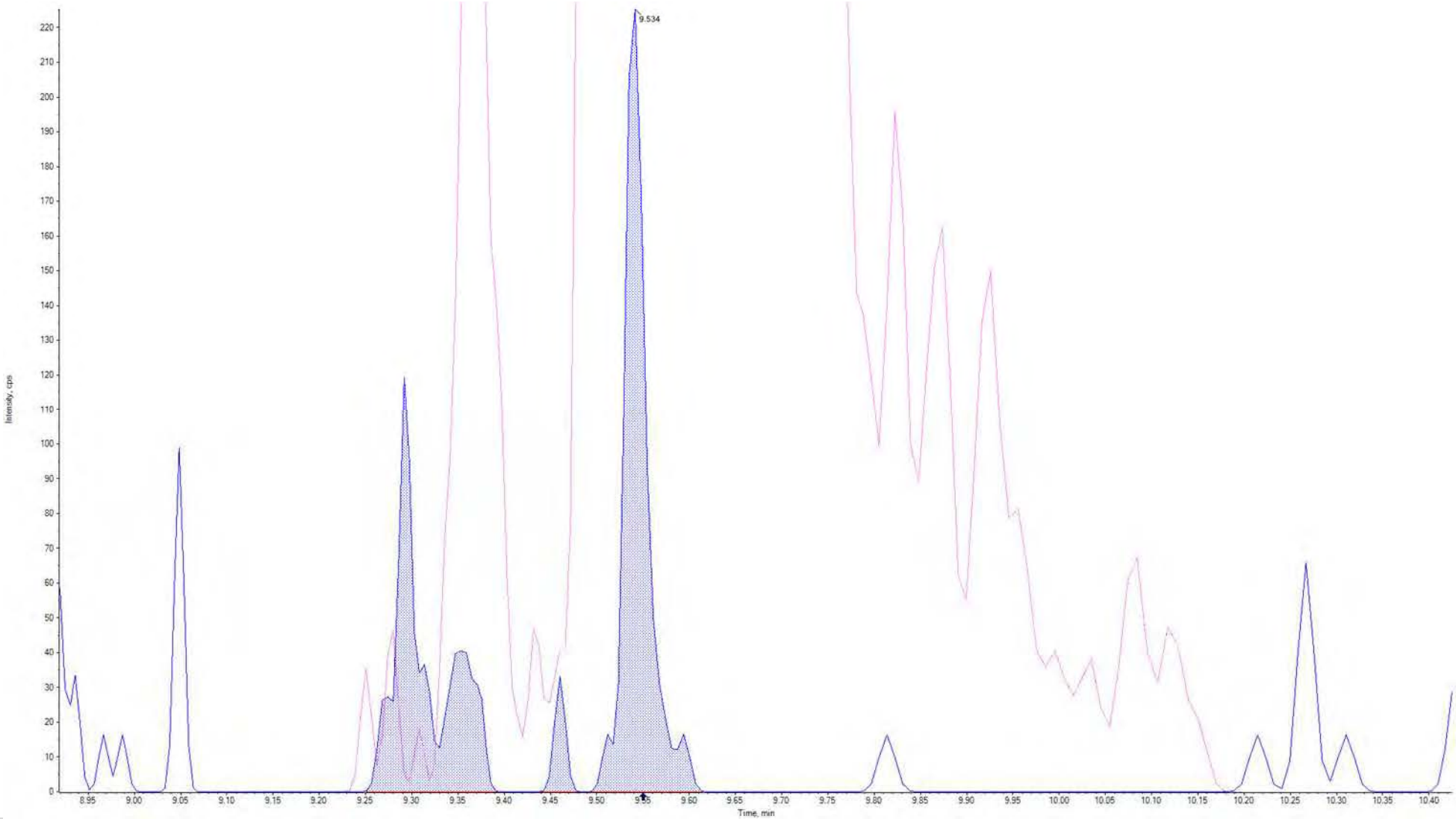
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFOSA
Sample: IA1633STD-.1 S/N:479.8 Points Across peak:99



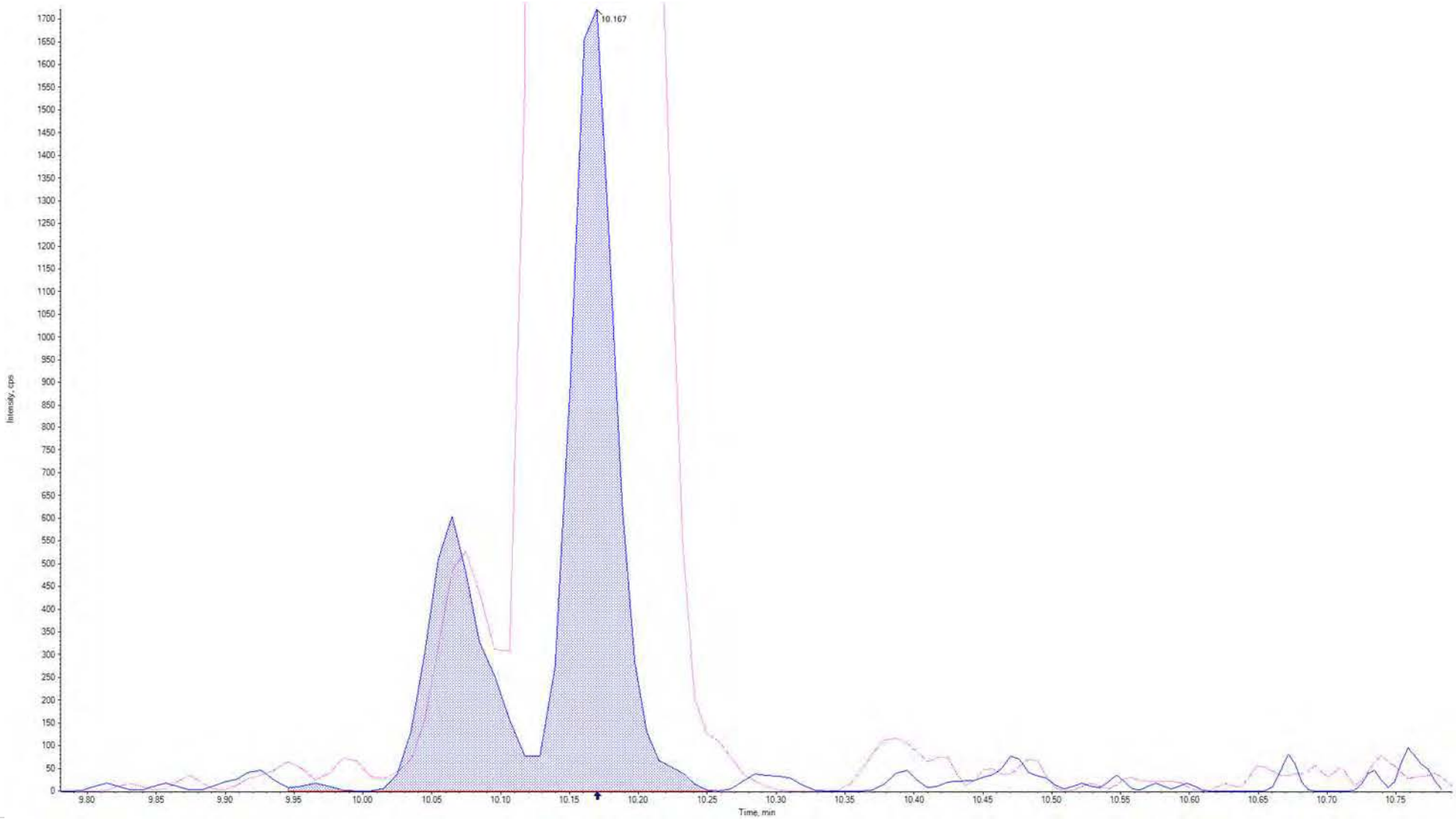
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFOSA_2
Sample: IA1633STD-.1 S/N:1643.3 Points Across peak:64



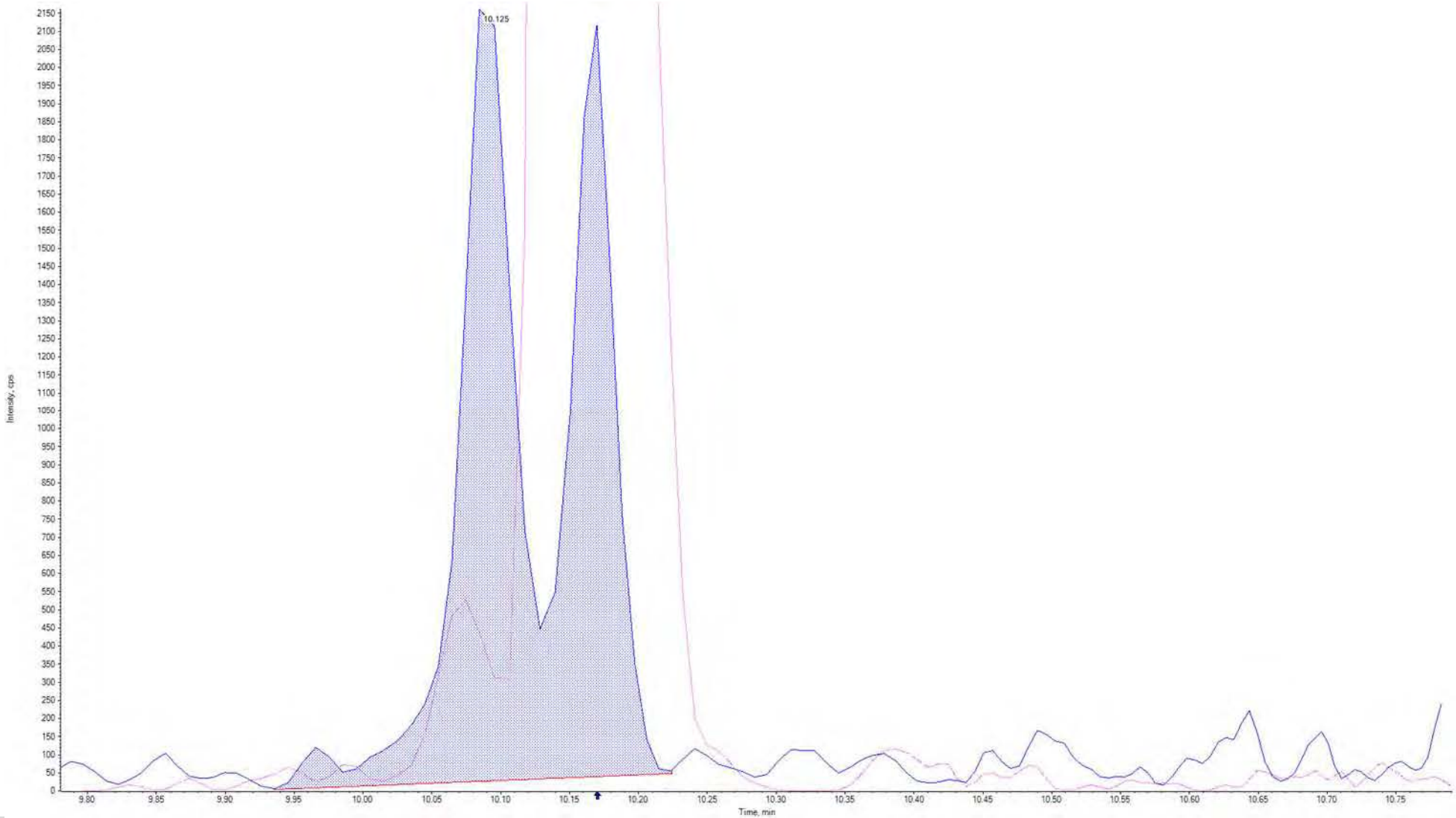
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSA
Sample: IA1633STD-.1 S/N:598554.5 Points Across peak:34

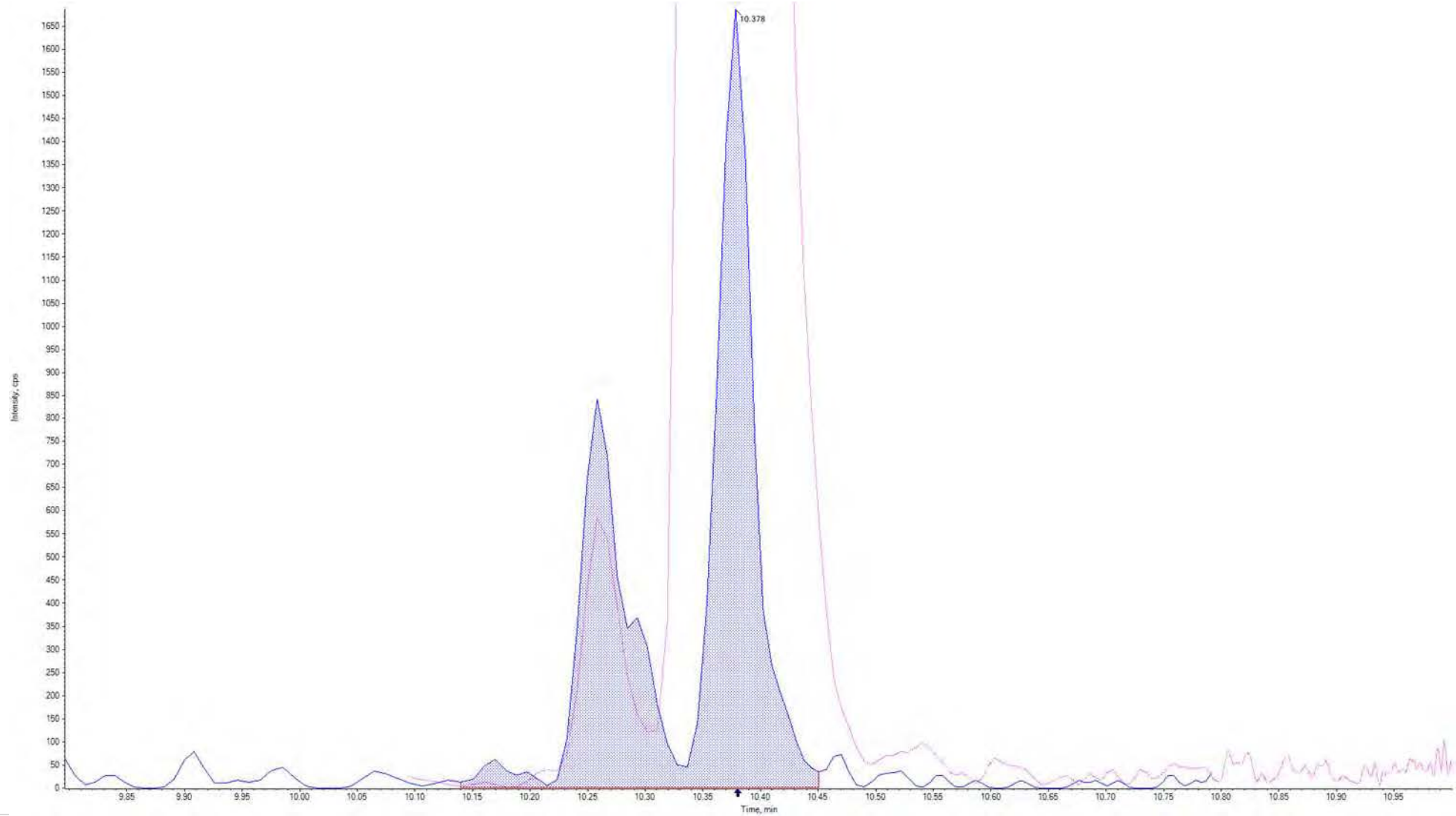


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSA_2
Sample: IA1633STD-.1 S/N:182.7 Points Across peak:32

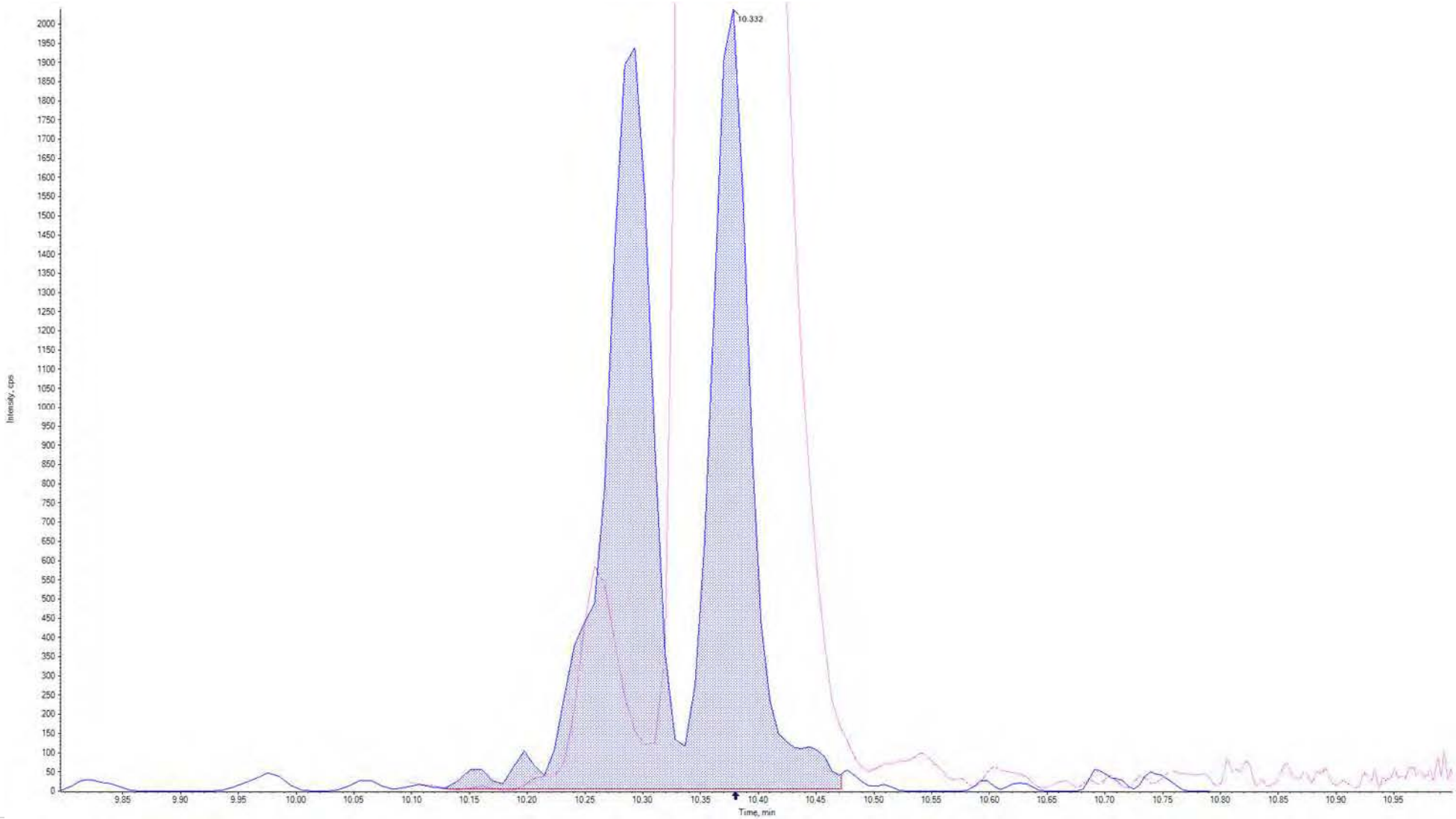


NEtFOSA
Sample: IA1633STD-.1 S/N:8148.5 Points Across peak:39



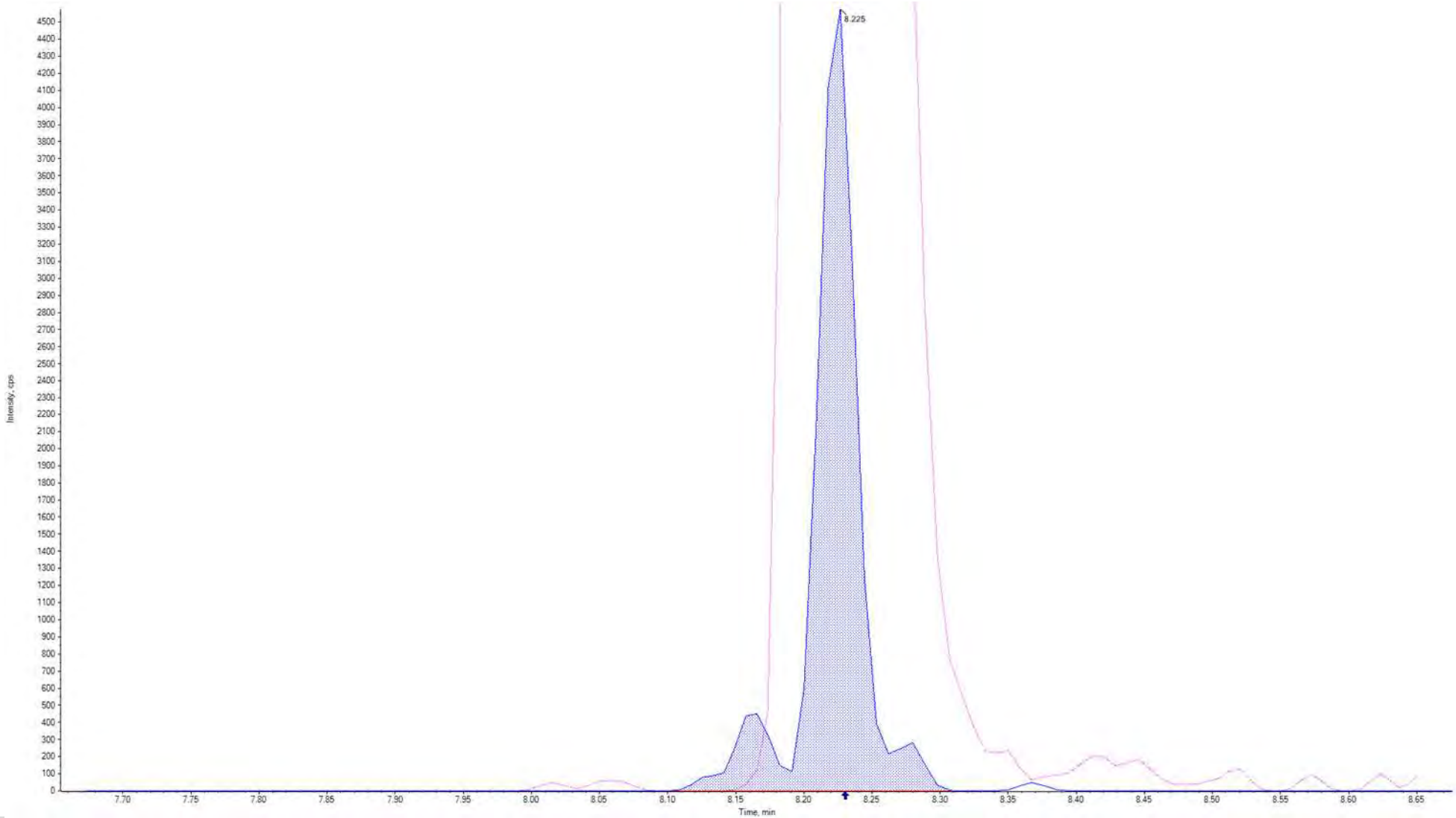
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSA_2
Sample: IA1633STD-.1 S/N:171.8 Points Across peak:44



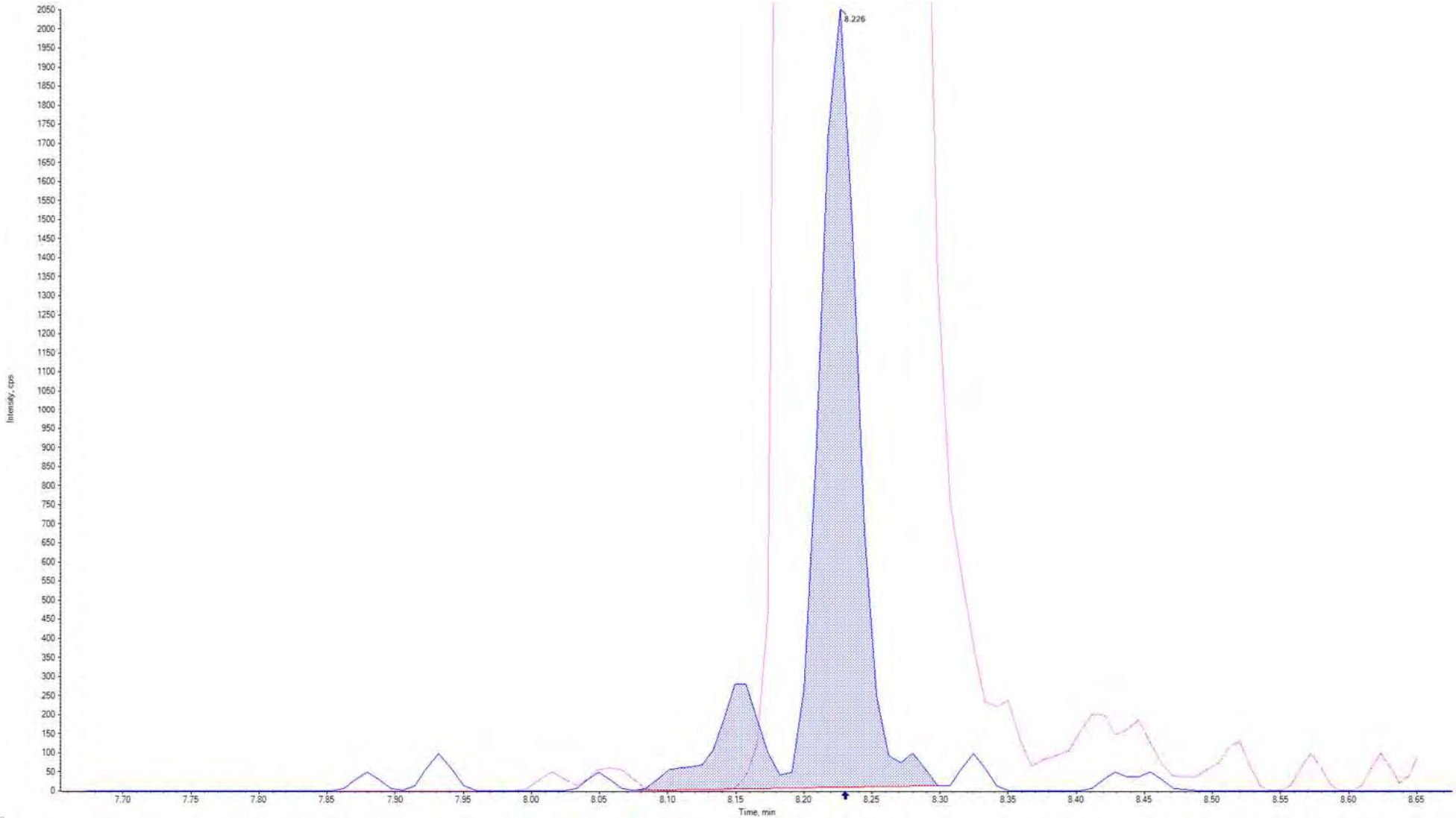
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSAA
Sample: IA1633STD-.1 S/N:29422.4 Points Across peak:27



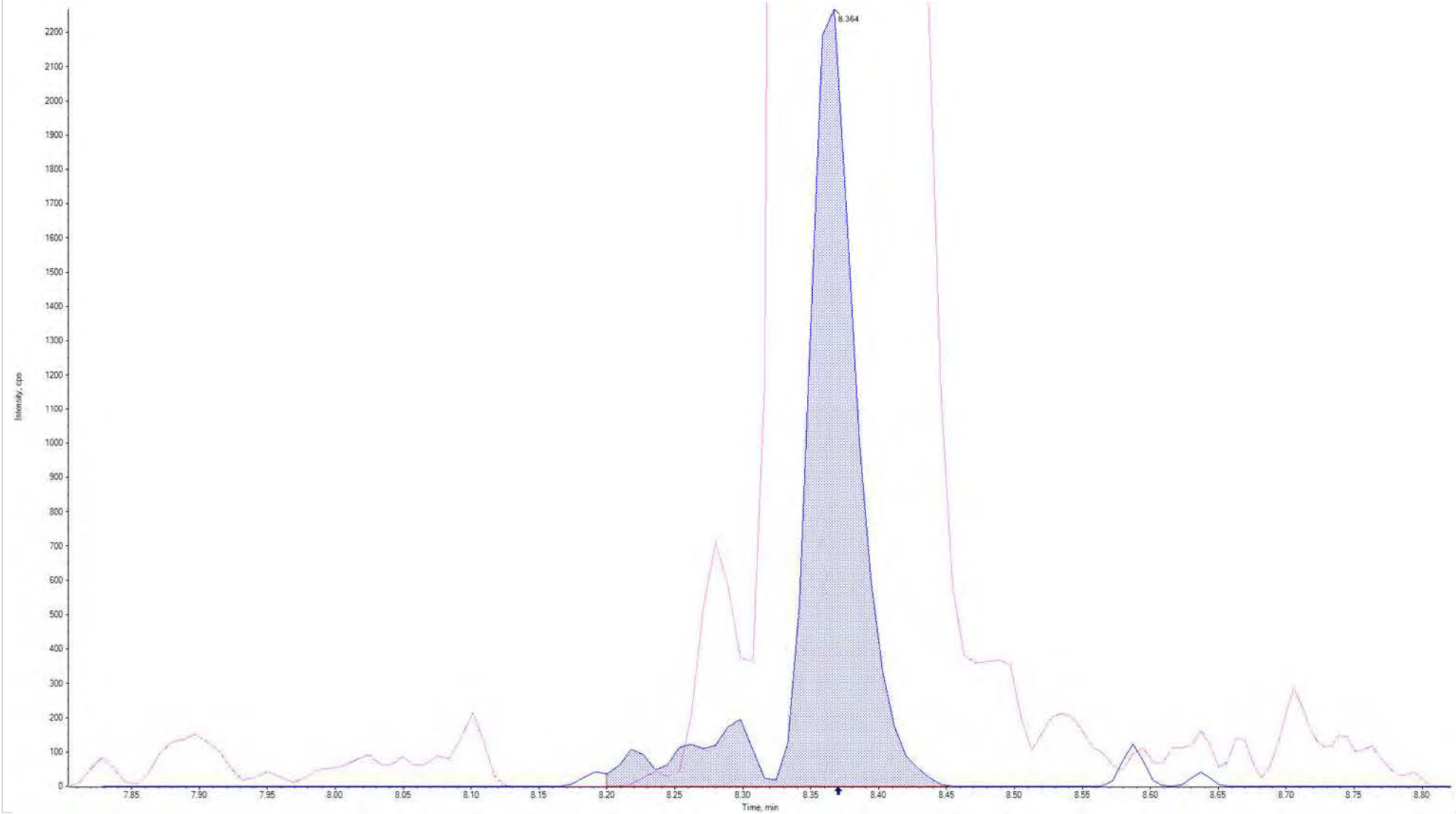
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSAA_2
Sample: IA1633STD-.1 S/N:134.7 Points Across peak:28



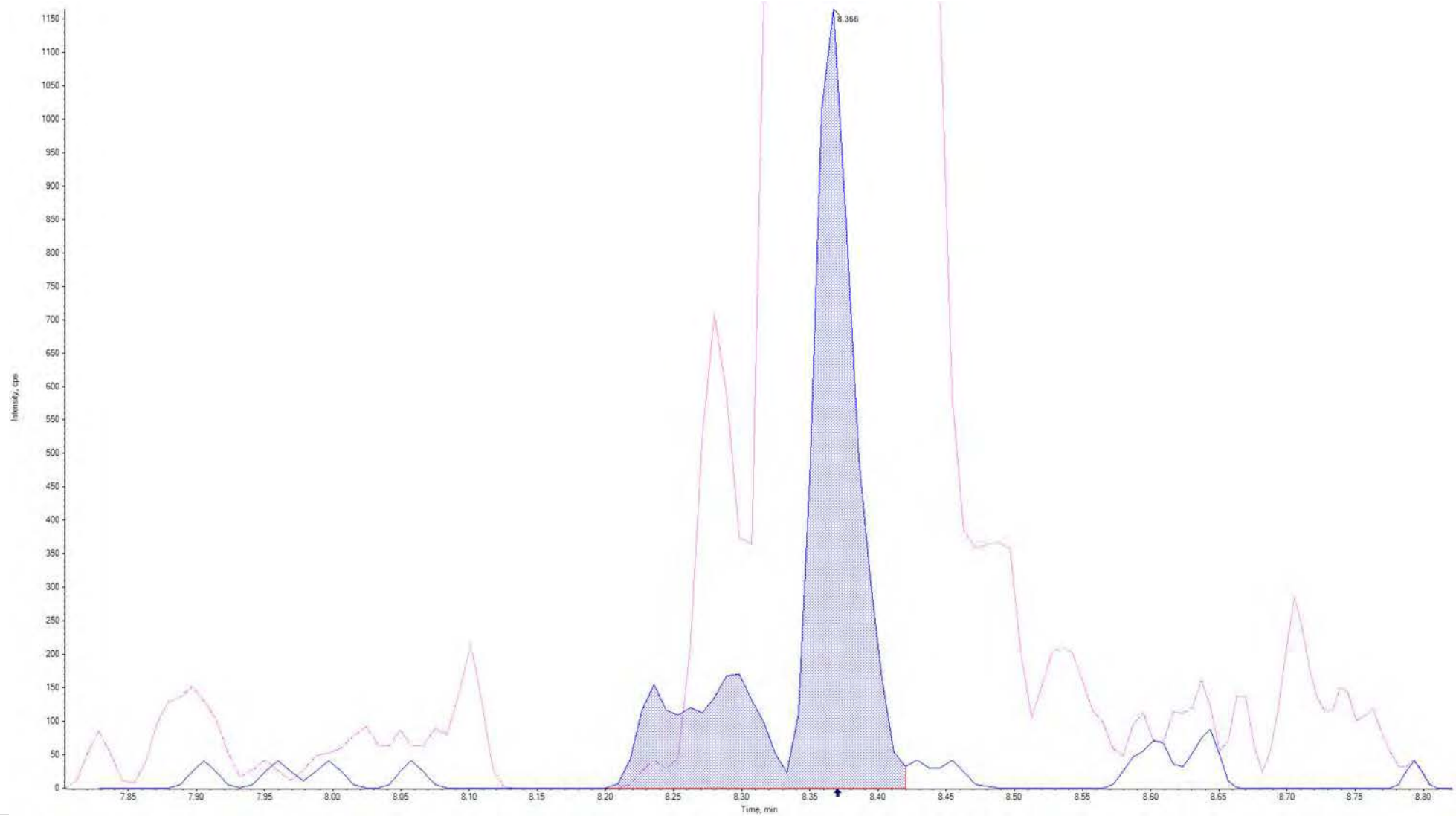
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSAA
Sample: IA1633STD-.1 S/N:349.4 Points Across peak:31



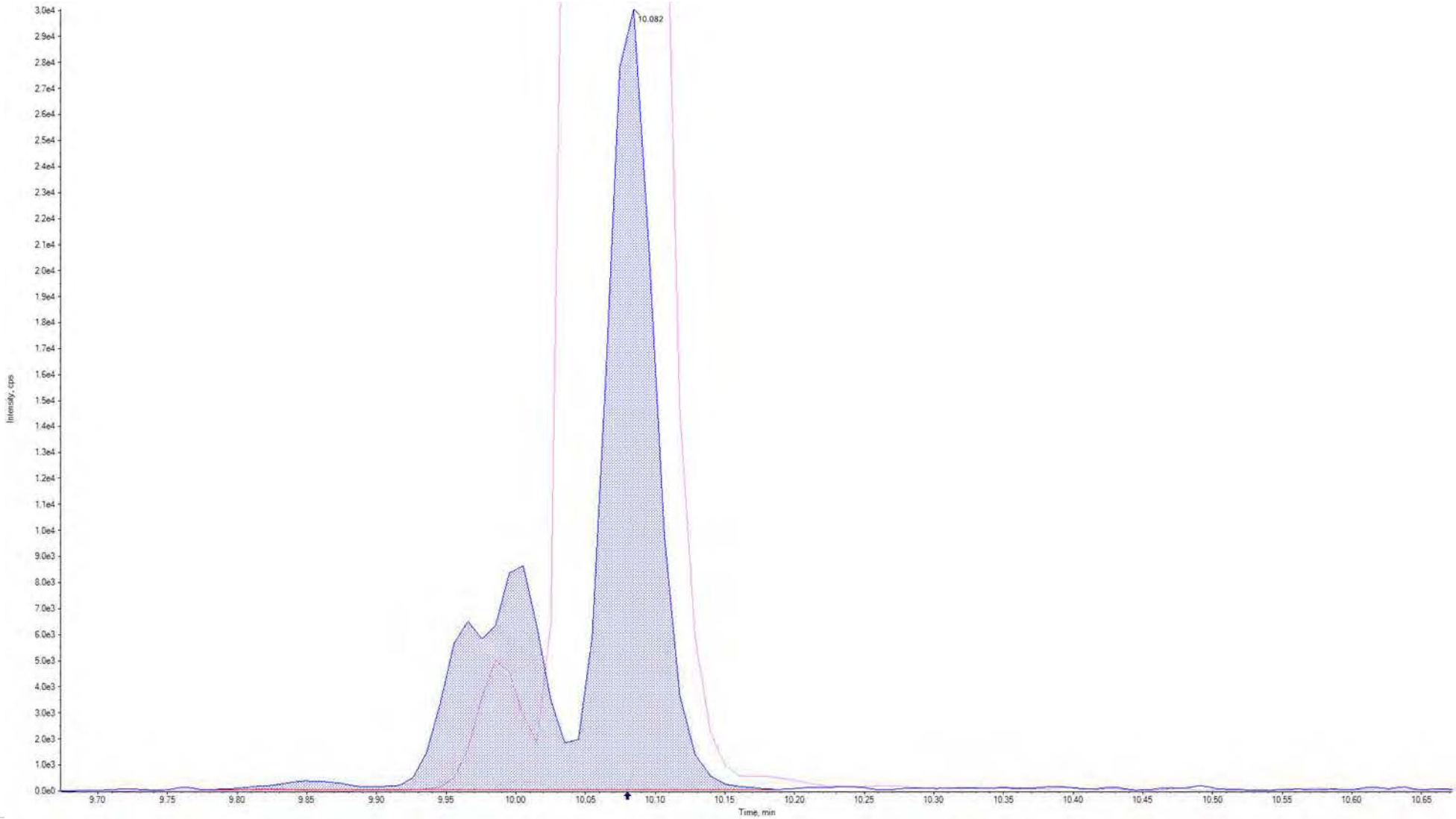
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSAA_2
Sample: IA1633STD-.1 S/N:90.1 Points Across peak:27



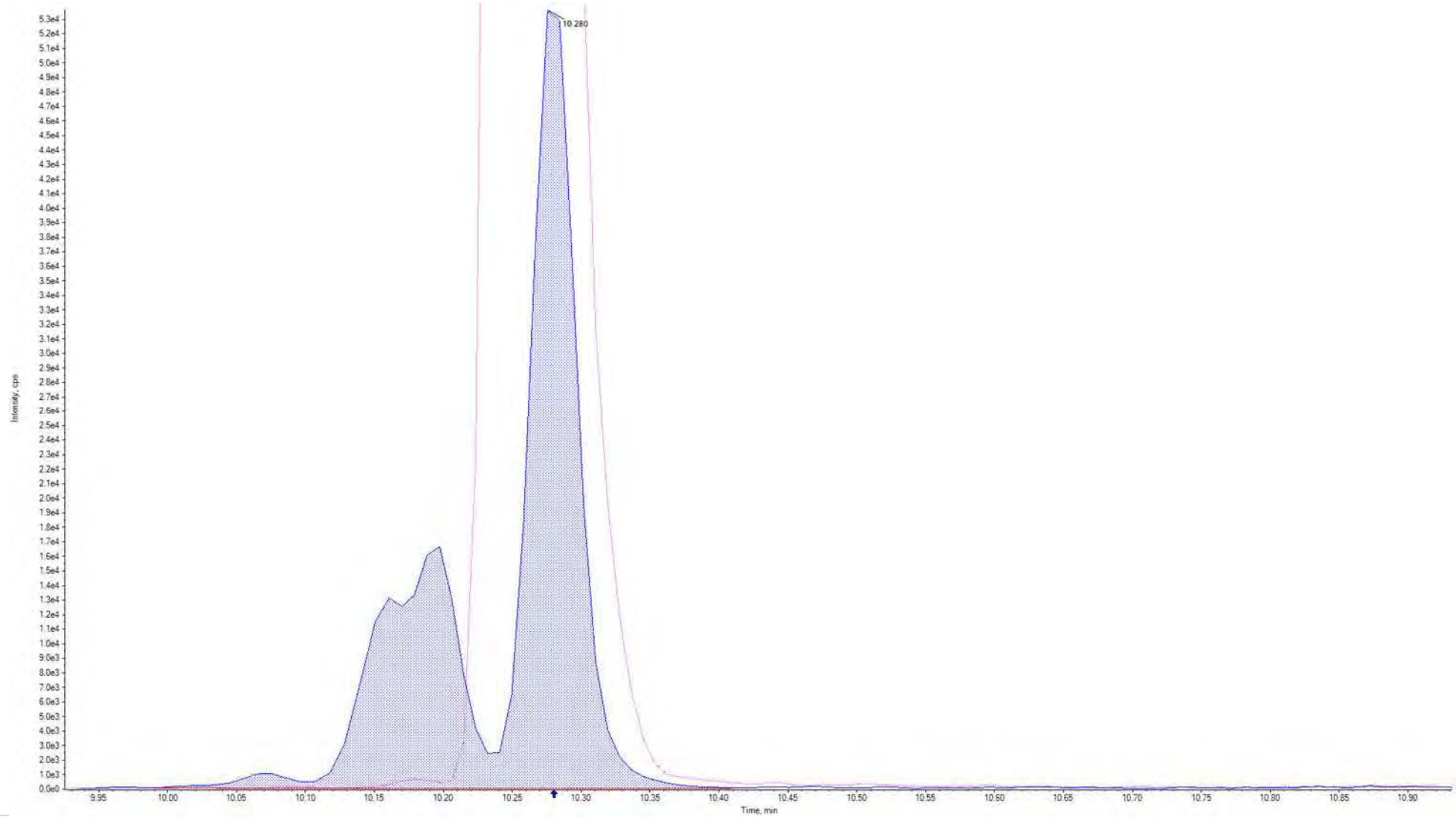
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSE
Sample: IA1633STD-.1 S/N:1786.9 Points Across peak:45



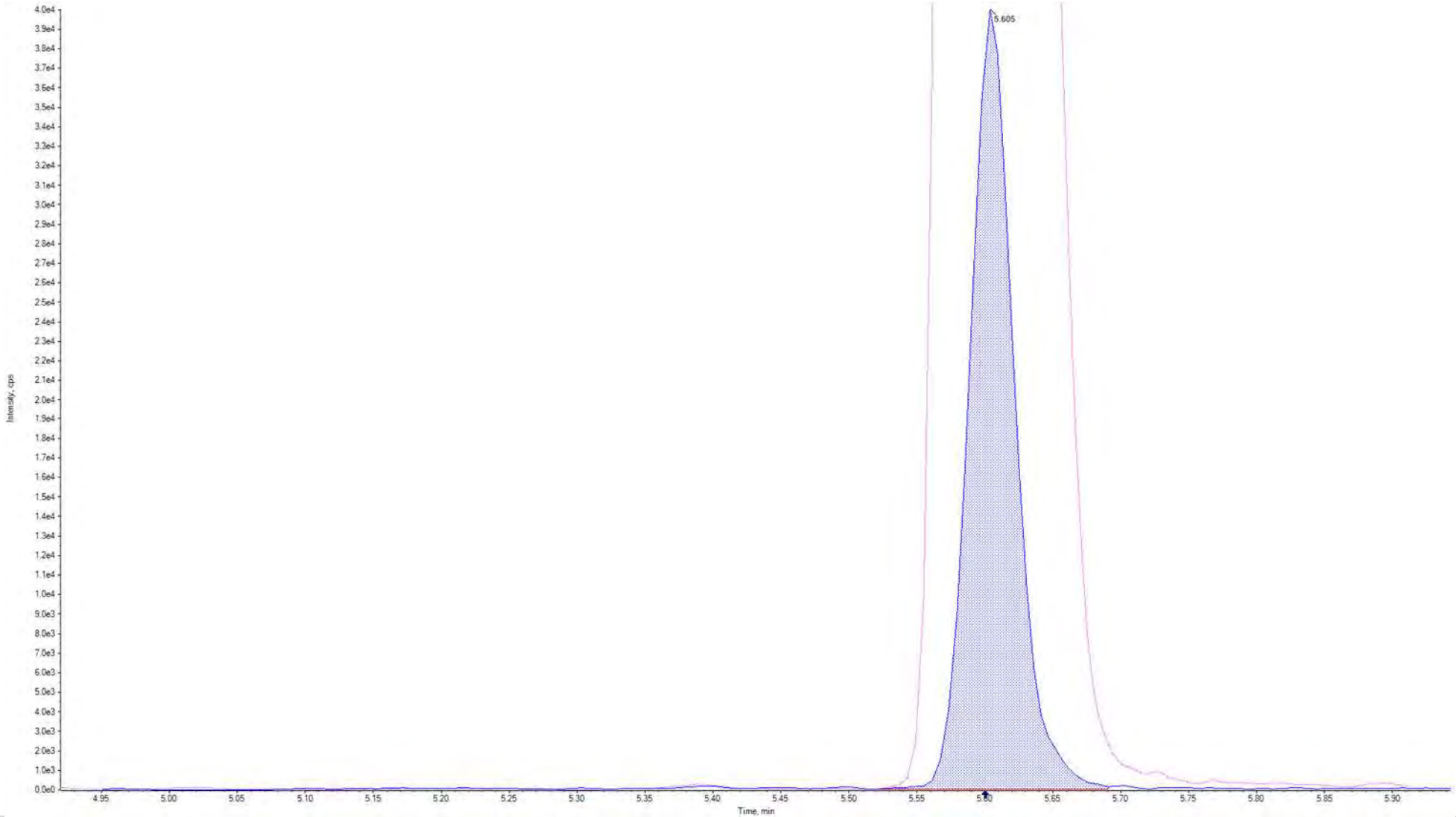
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSE
Sample: IA1633STD-.1 S/N:1226.2 Points Across peak:47



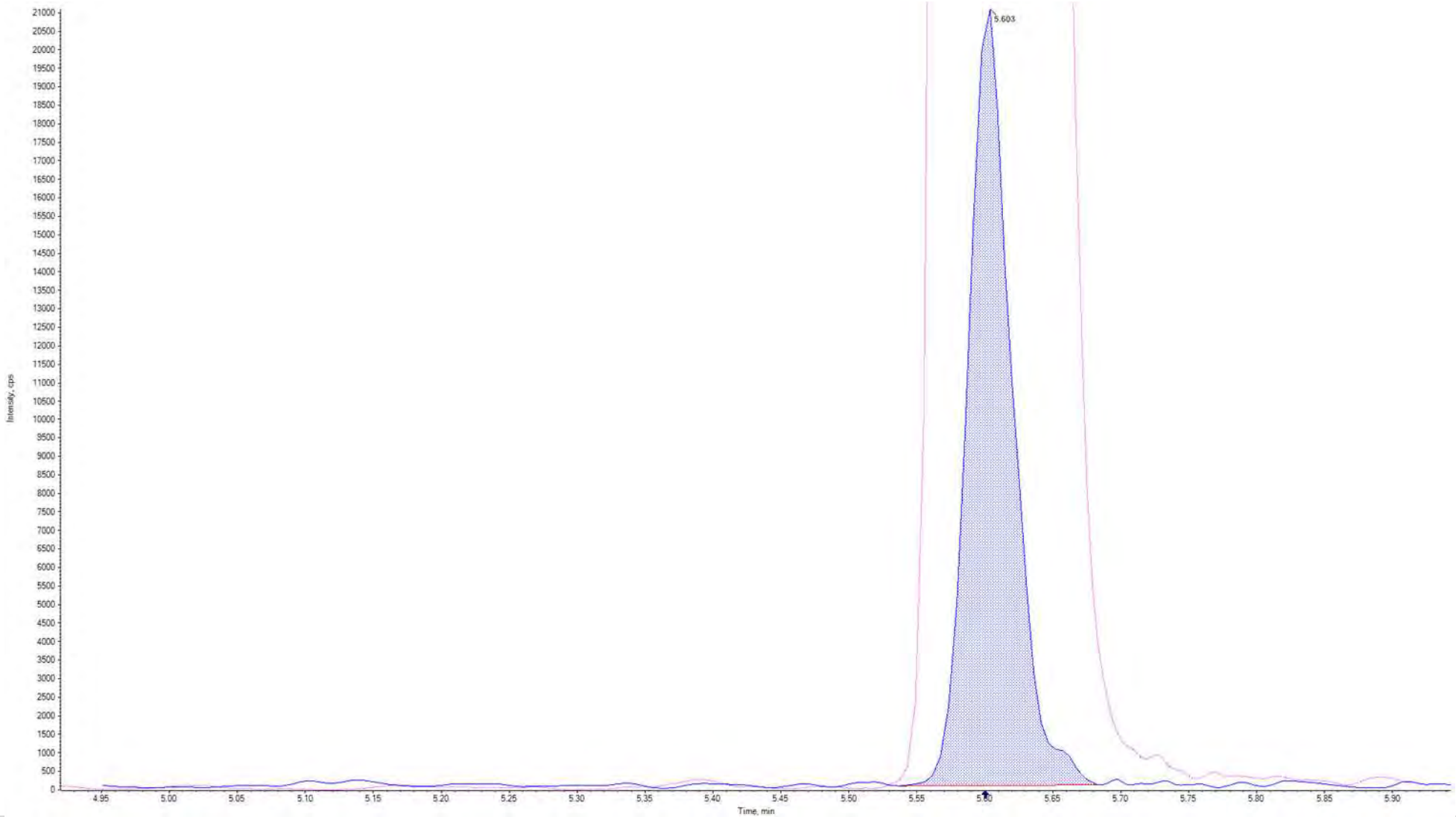
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

HFPO-DA
Sample: IA1633STD-.1 S/N:20278.9 Points Across peak:33



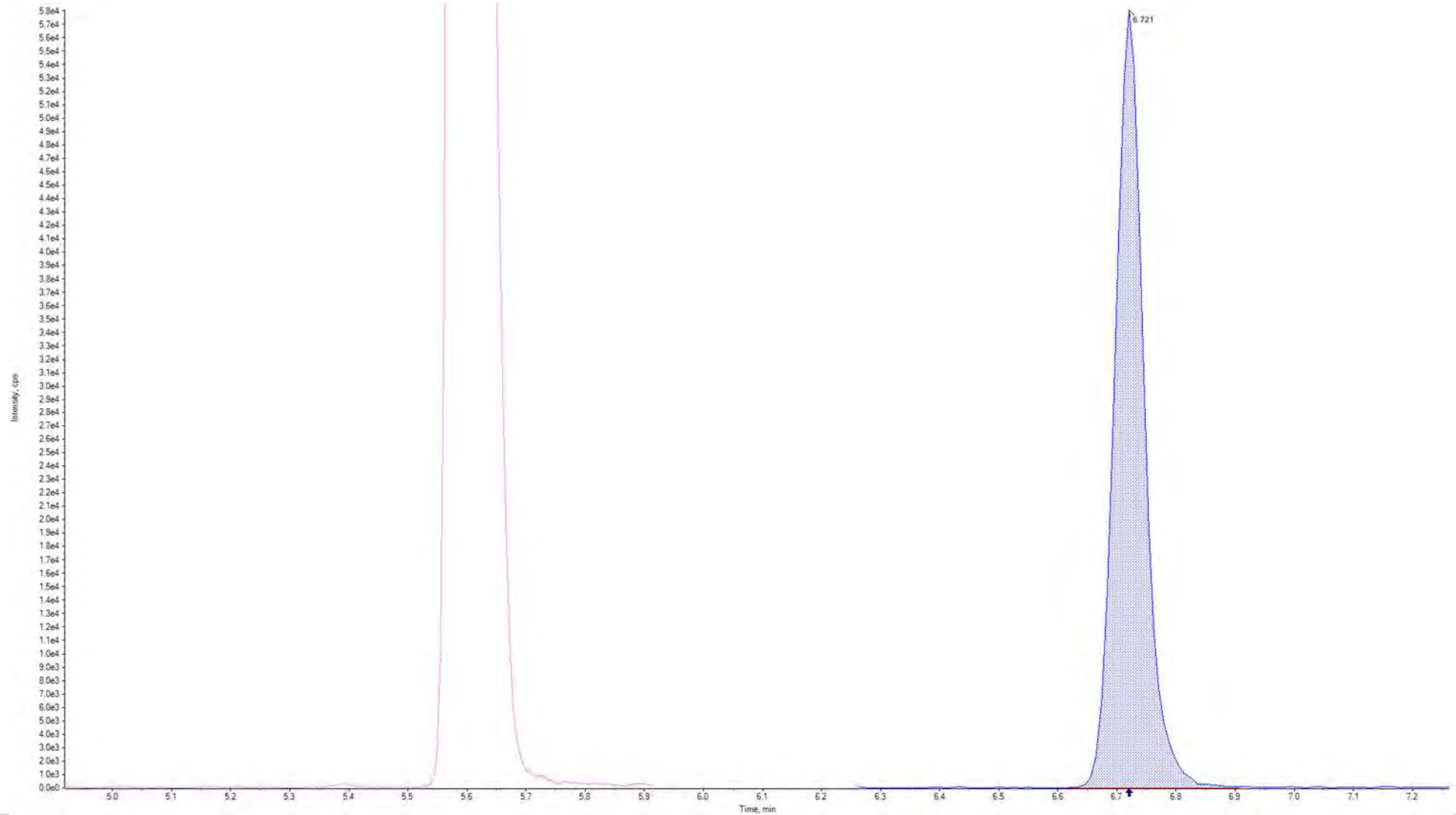
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

HFPO-DA_2
Sample: IA1633STD-.1 S/N:955.7 Points Across peak:29



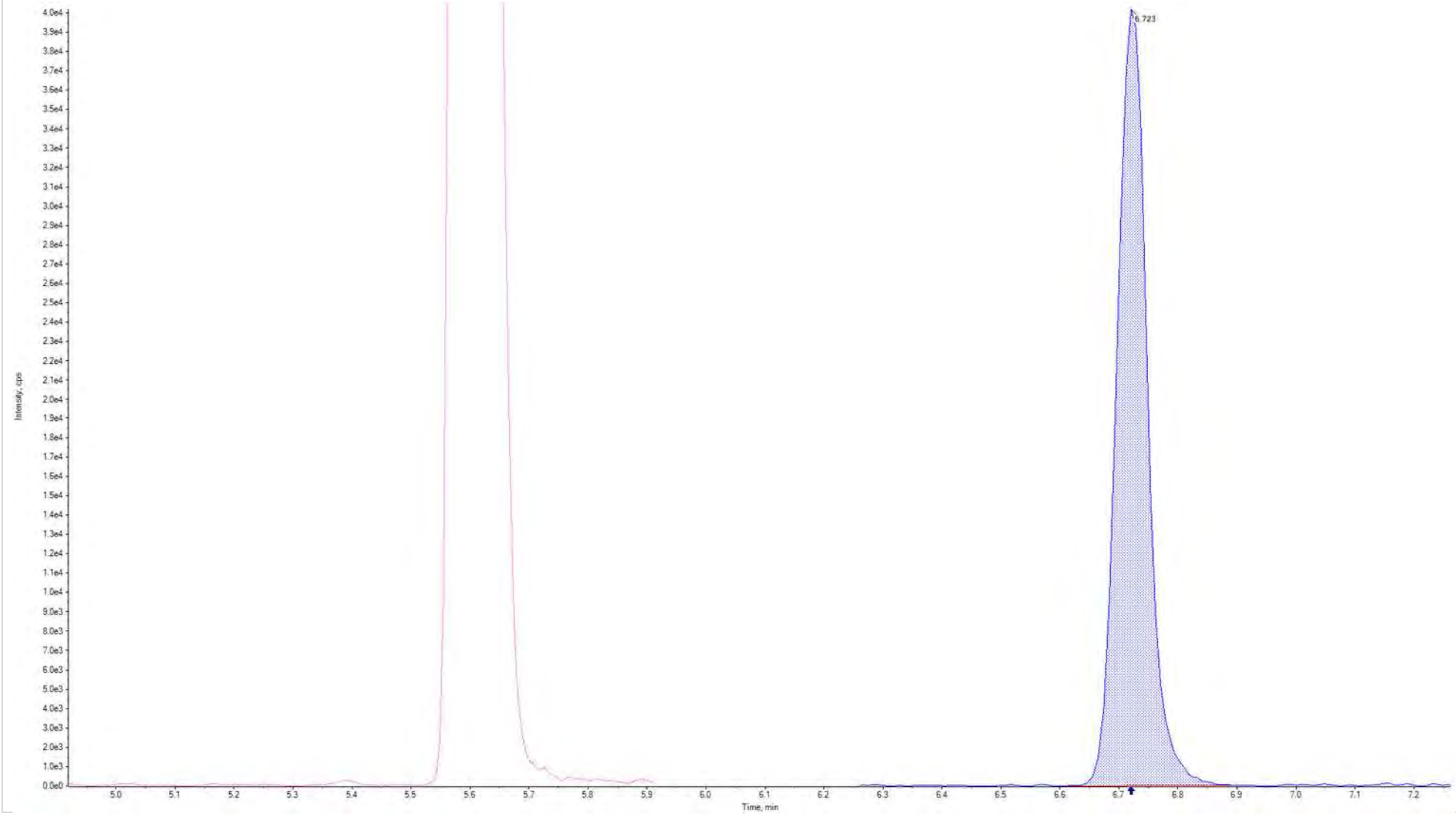
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

ADONA
Sample: IA1633STD-.1 S/N:25324.8 Points Across peak:41



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

ADONA_2
Sample: IA1633STD-.1 S/N:16174.6 Points Across peak:41

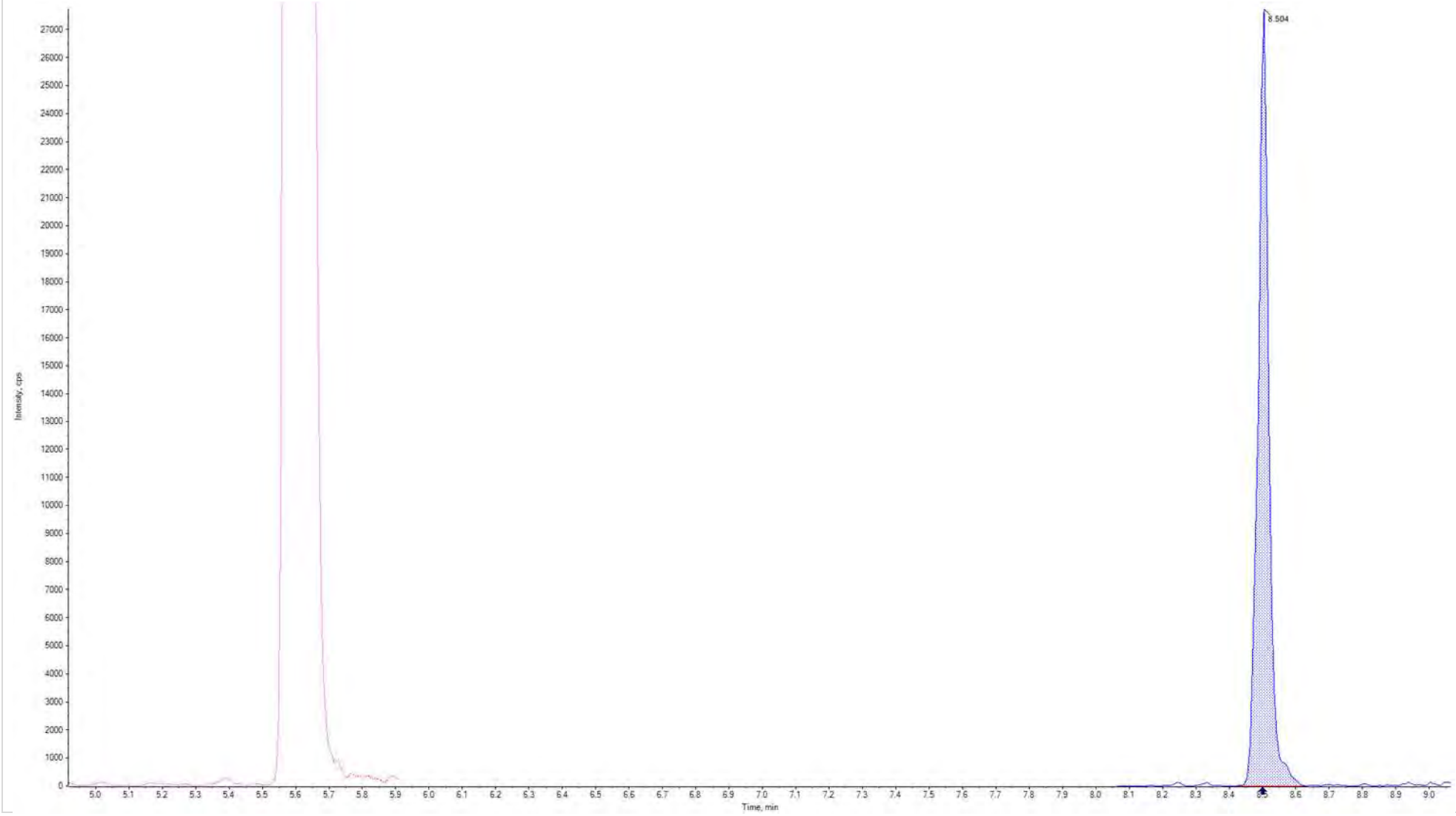


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

9Cl-PF3ONS
Sample: IA1633STD-.1 S/N:856461.0 Points Across peak:24

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

9Cl-PF3ONS_2
Sample: IA1633STD-.1 S/N:1231.7 Points Across peak:29



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

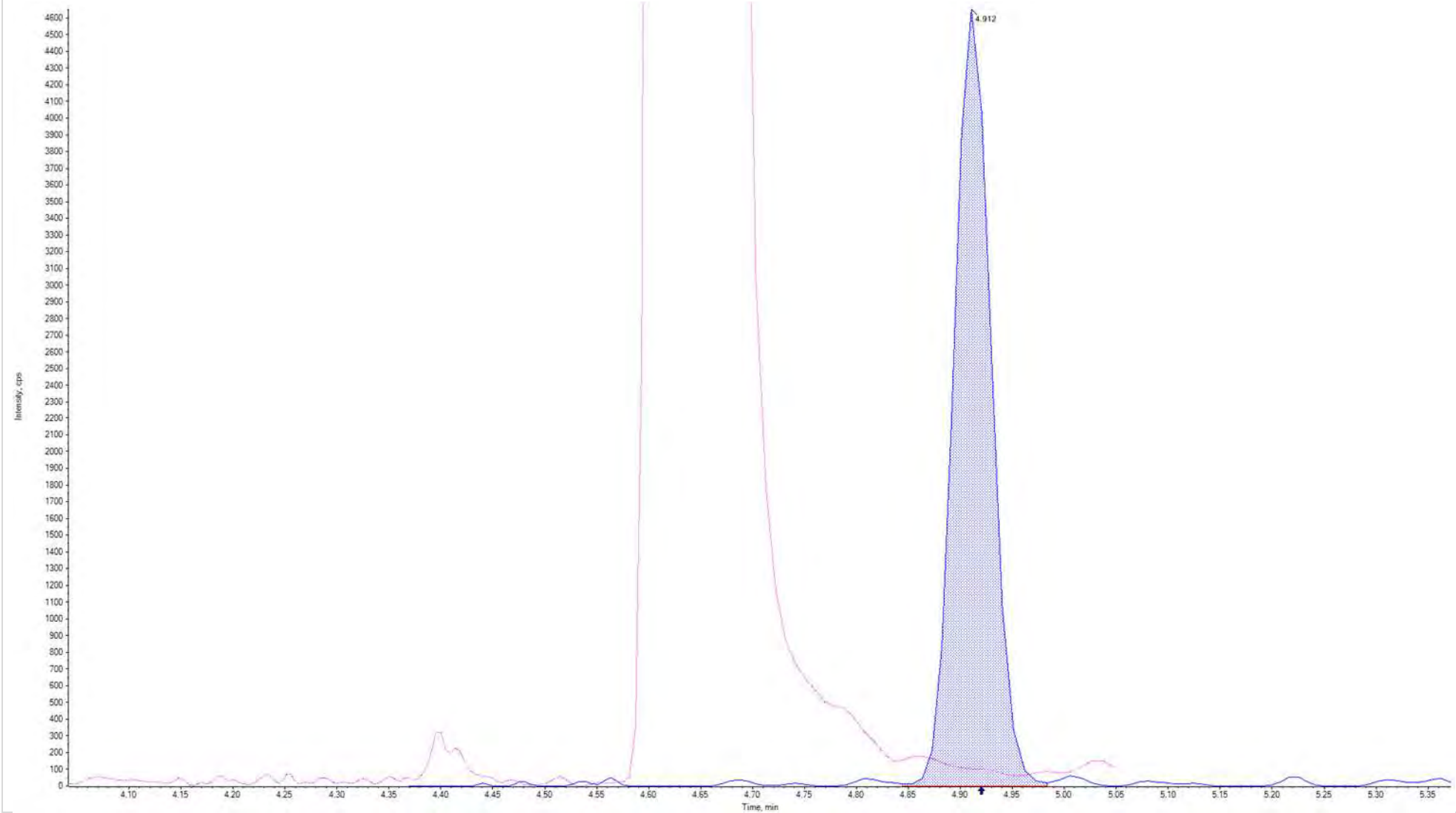
11Cl-PF3OUdS
Sample: IA1633STD-.1 S/N:1958.1 Points Across peak:31

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

11Cl-PF3OUdS_2
Sample: IA1633STD-.1 S/N:512052.5 Points Across peak:36

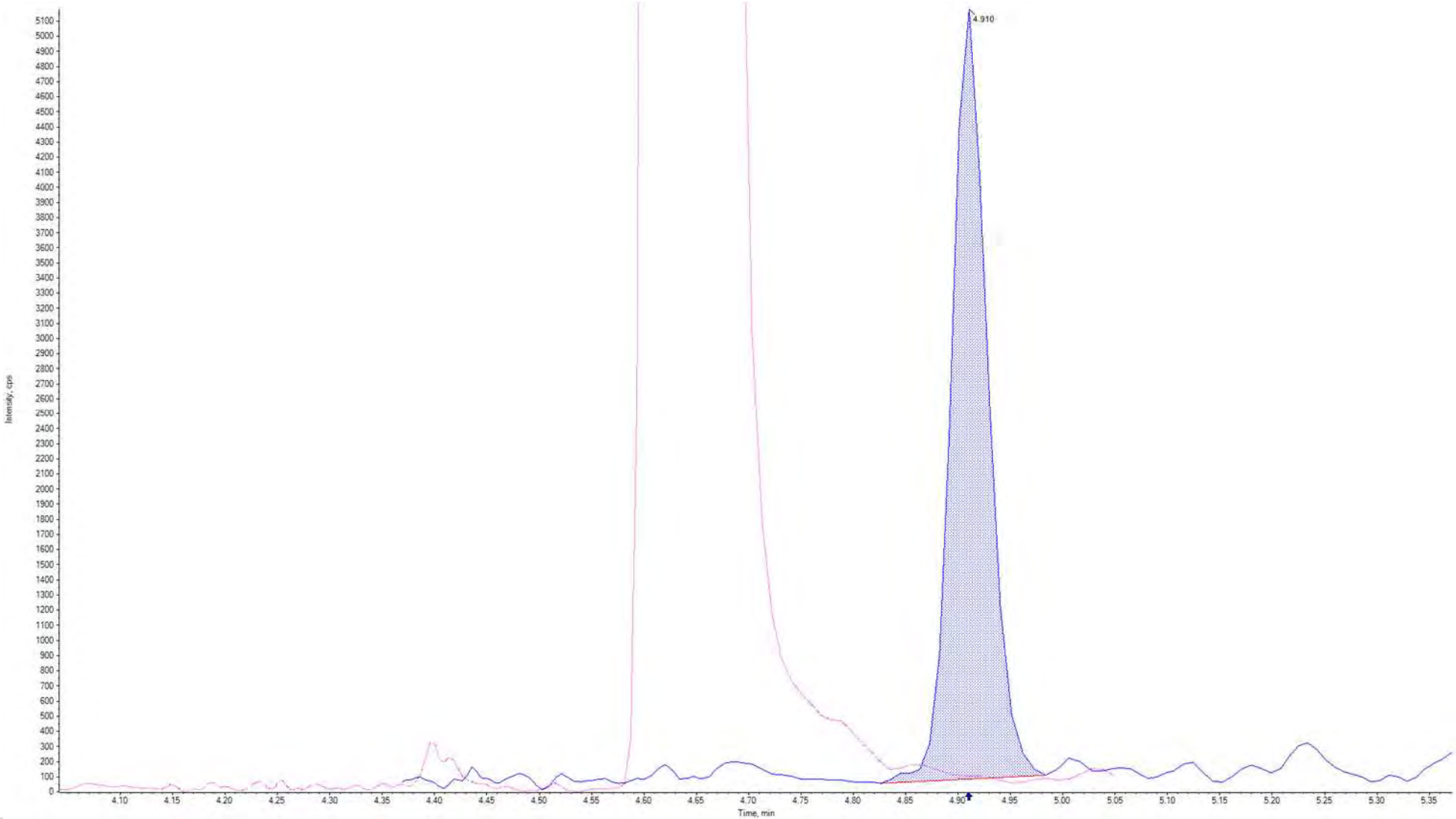
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

3:3FTCA
Sample: IA1633STD-.1 S/N:548.7 Points Across peak:15



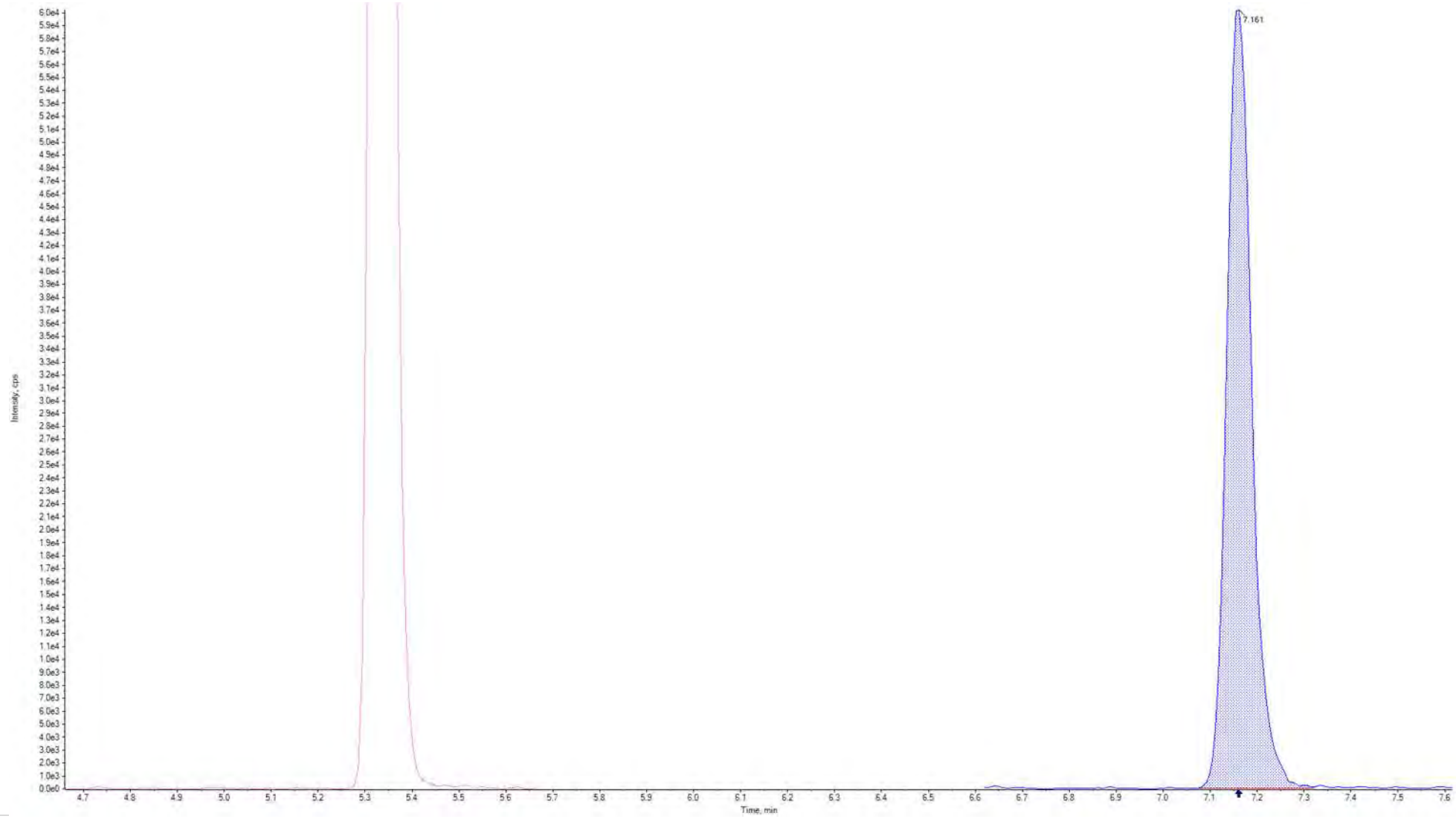
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

3:3FTCA_2
Sample: IA1633STD-.1 S/N:401.8 Points Across peak:17



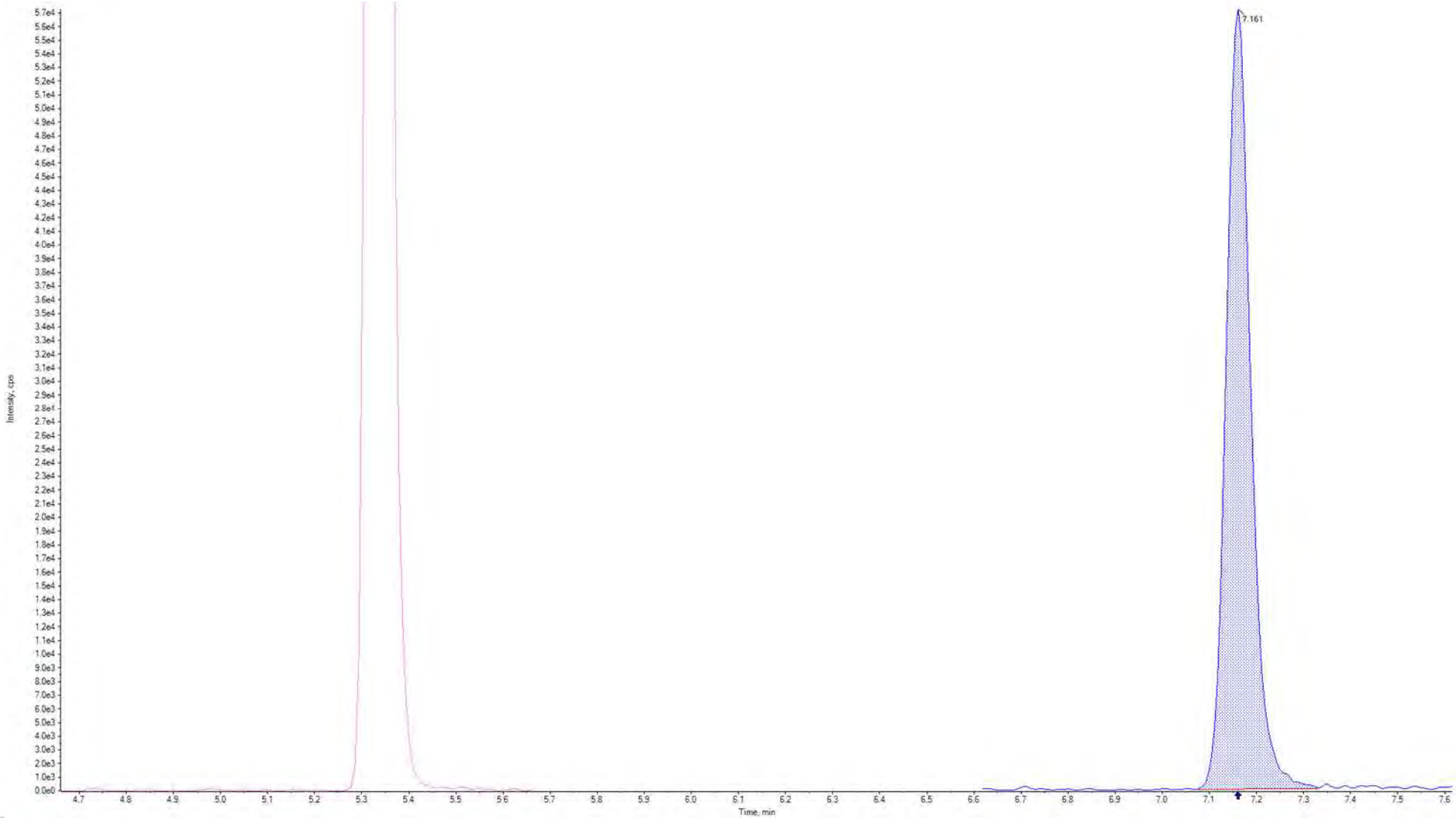
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

5:3FTCA
Sample: IA1633STD-.1 S/N:7438.4 Points Across peak:43



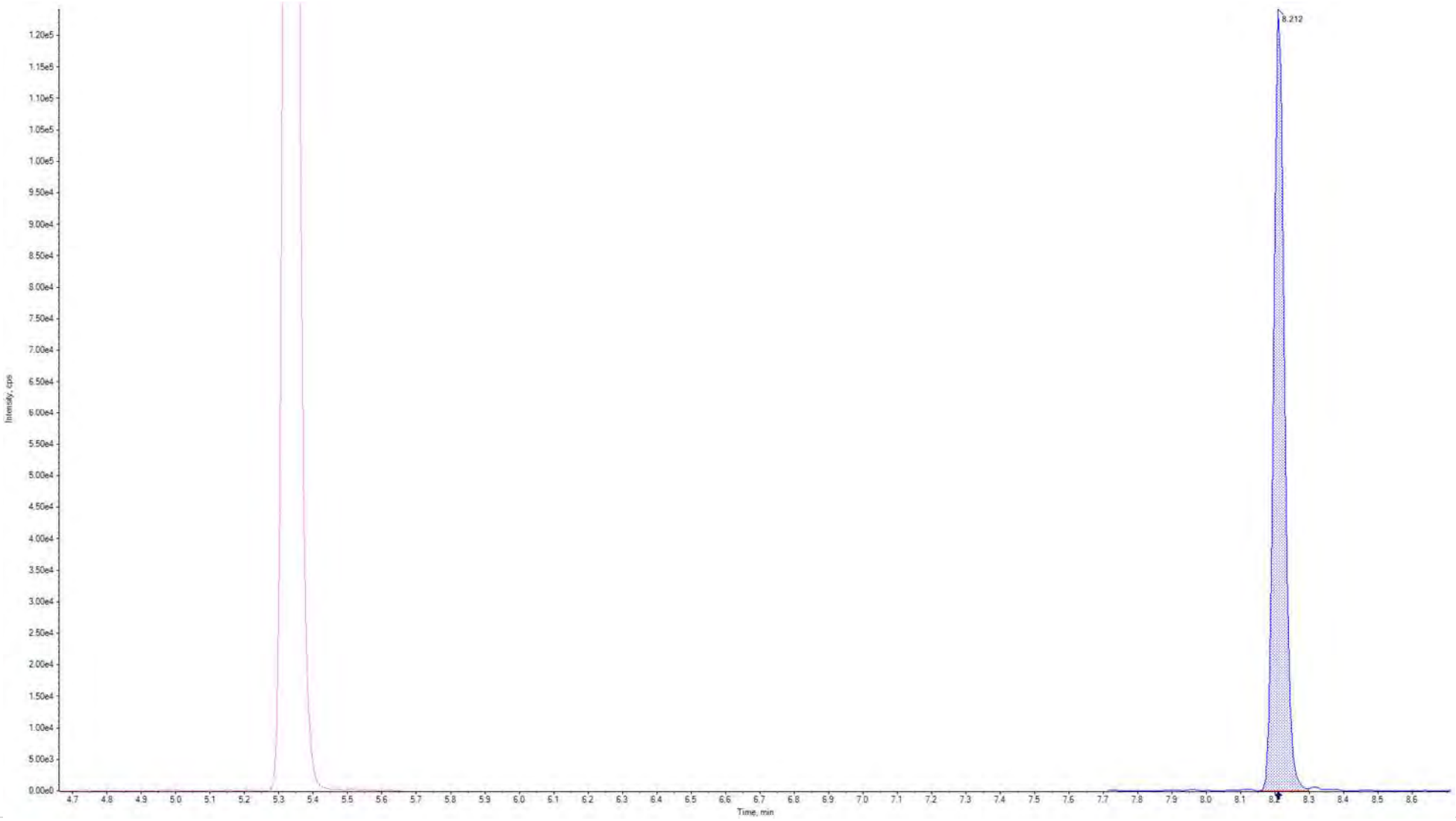
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

5:3FTCA_2
Sample: IA1633STD-.1 S/N:2008.3 Points Across peak:45



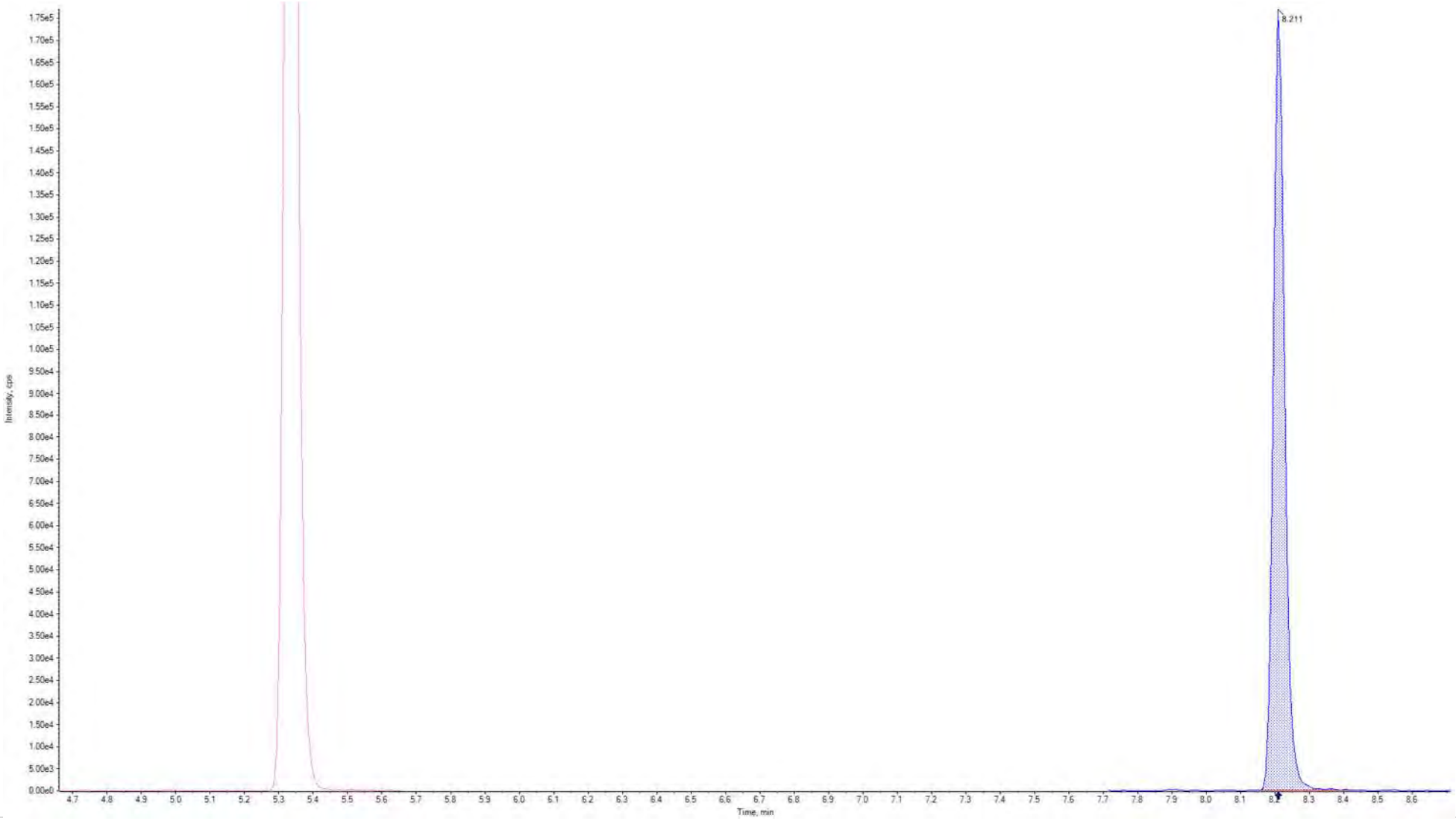
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

7:3FTCA
Sample: IA1633STD-.1 S/N:816971.6 Points Across peak:18



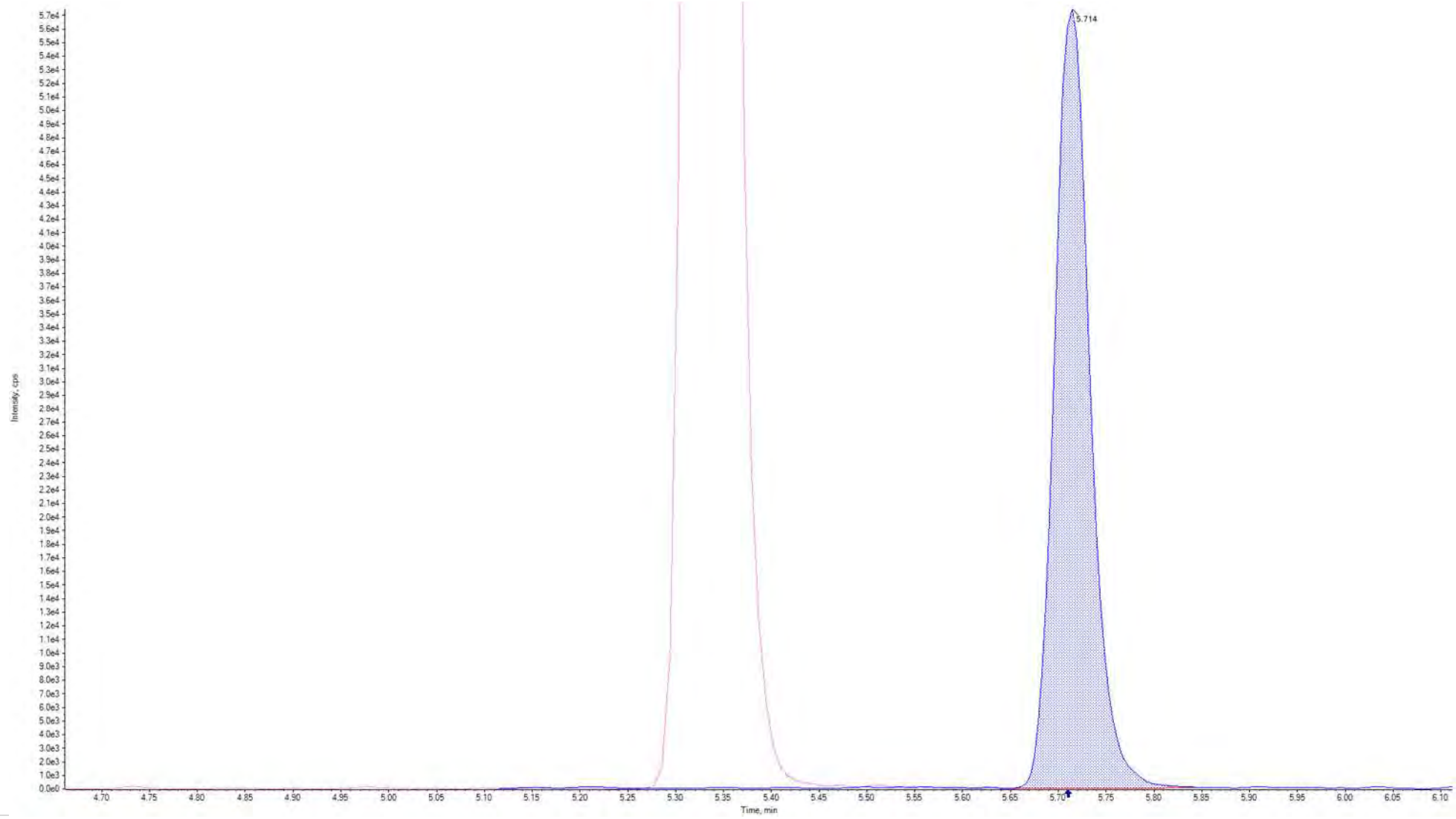
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

7:3FTCA_2
Sample: IA1633STD-.1 S/N:8313.5 Points Across peak:34



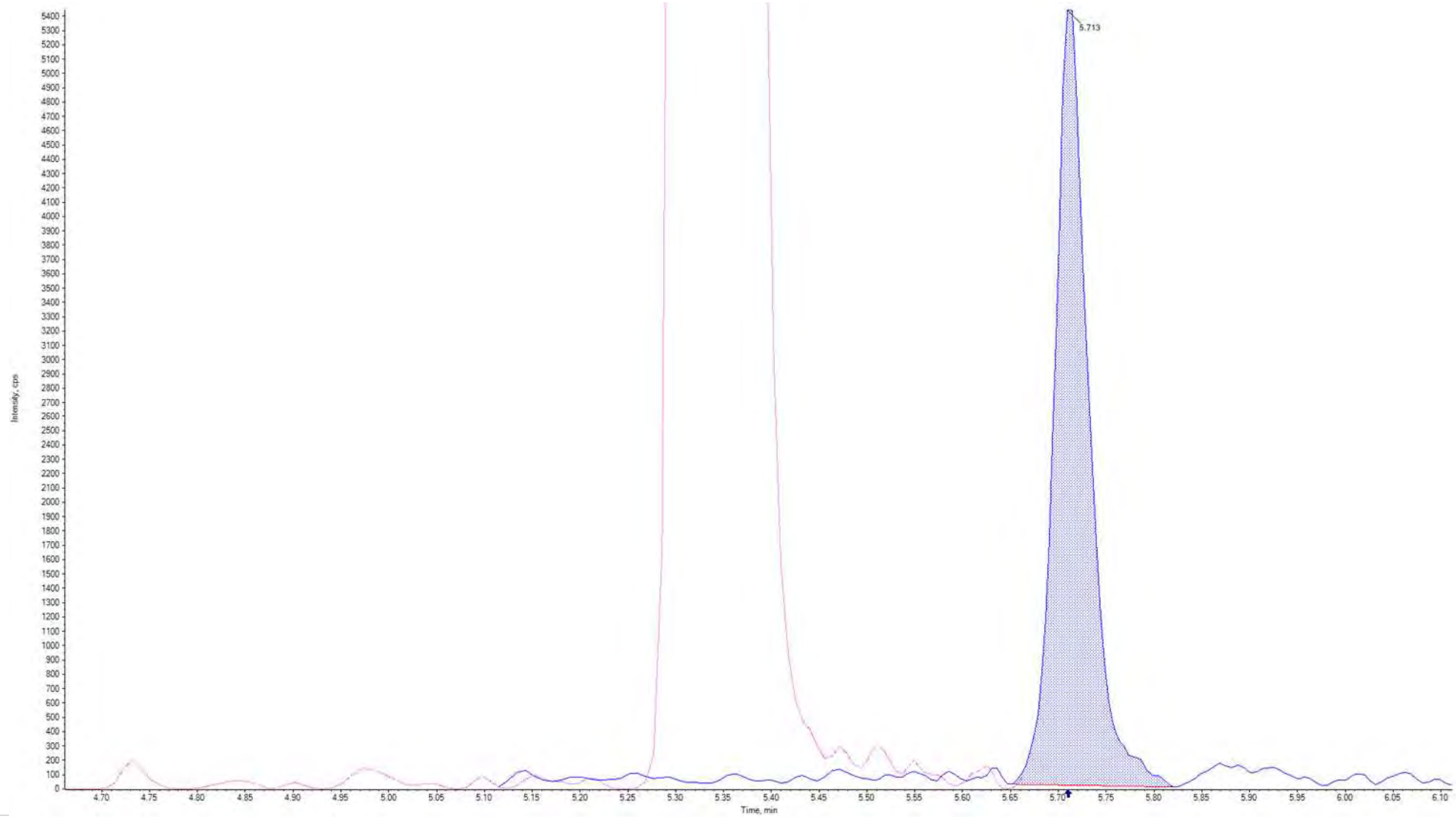
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFEESA
Sample: IA1633STD-.1 S/N:3071.2 Points Across peak:44



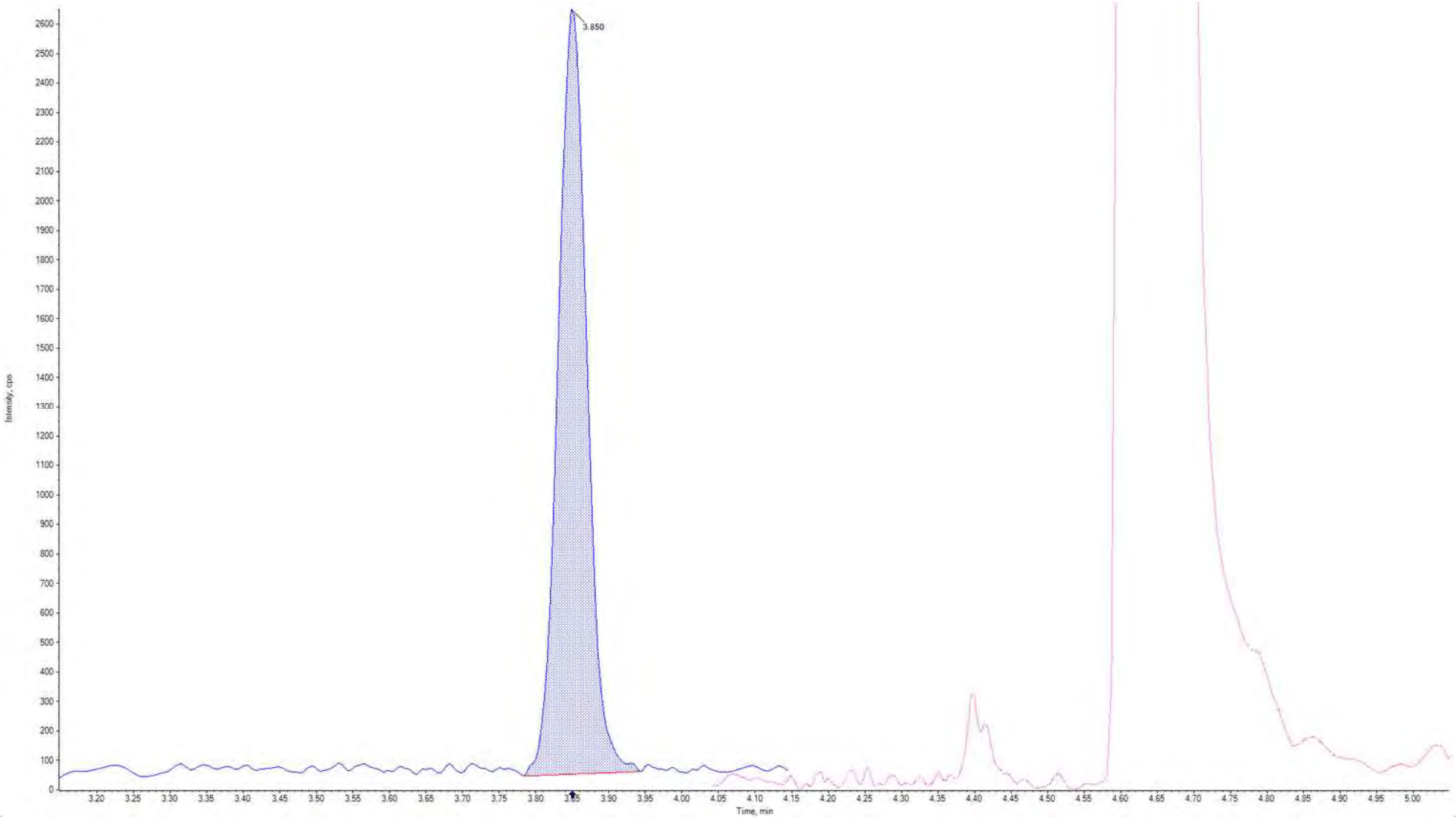
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFEESA_2
Sample: IA1633STD-.1 S/N:604.0 Points Across peak:38



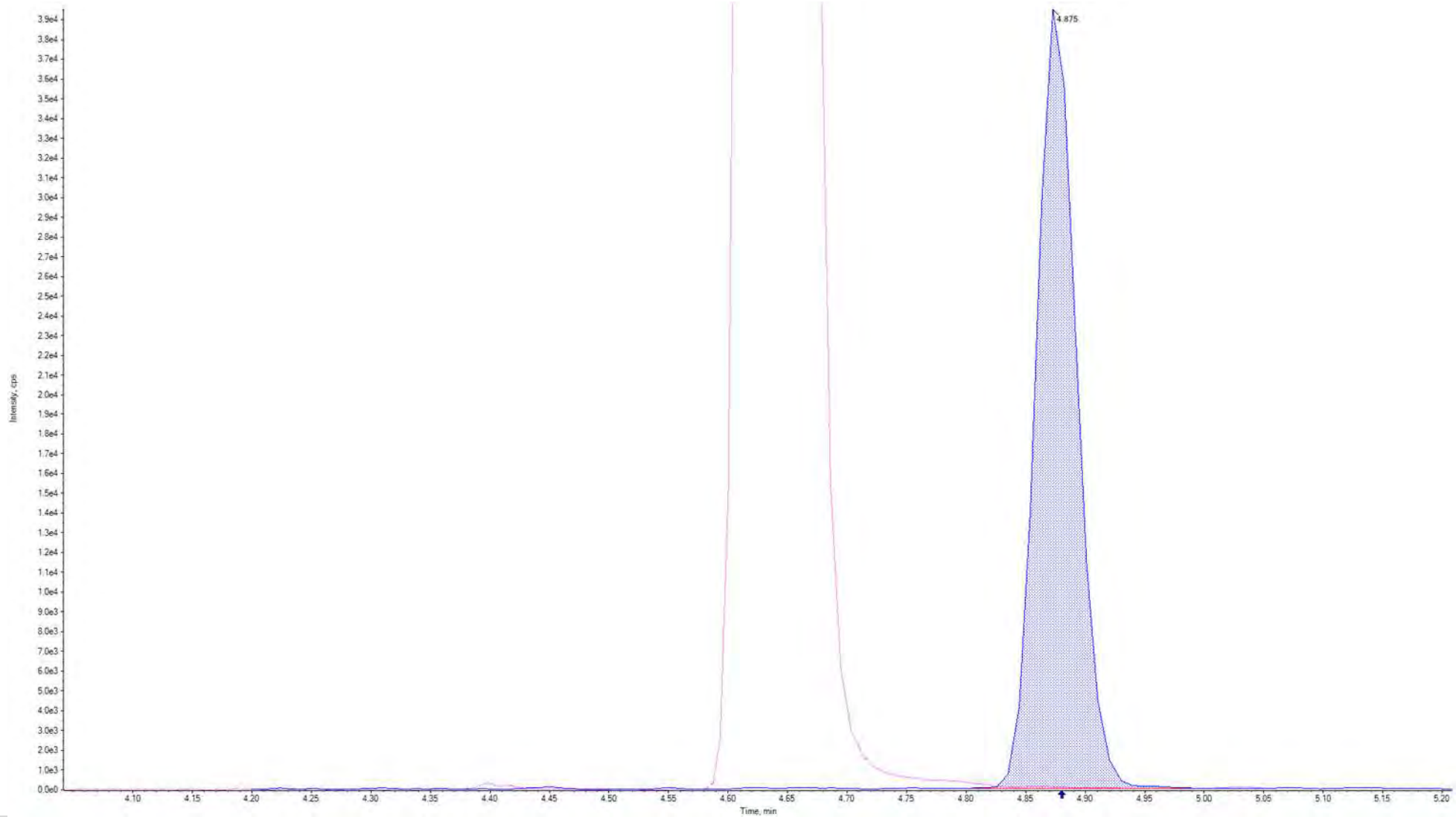
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFMPA
Sample: IA1633STD-.1 S/N:497.1 Points Across peak:40



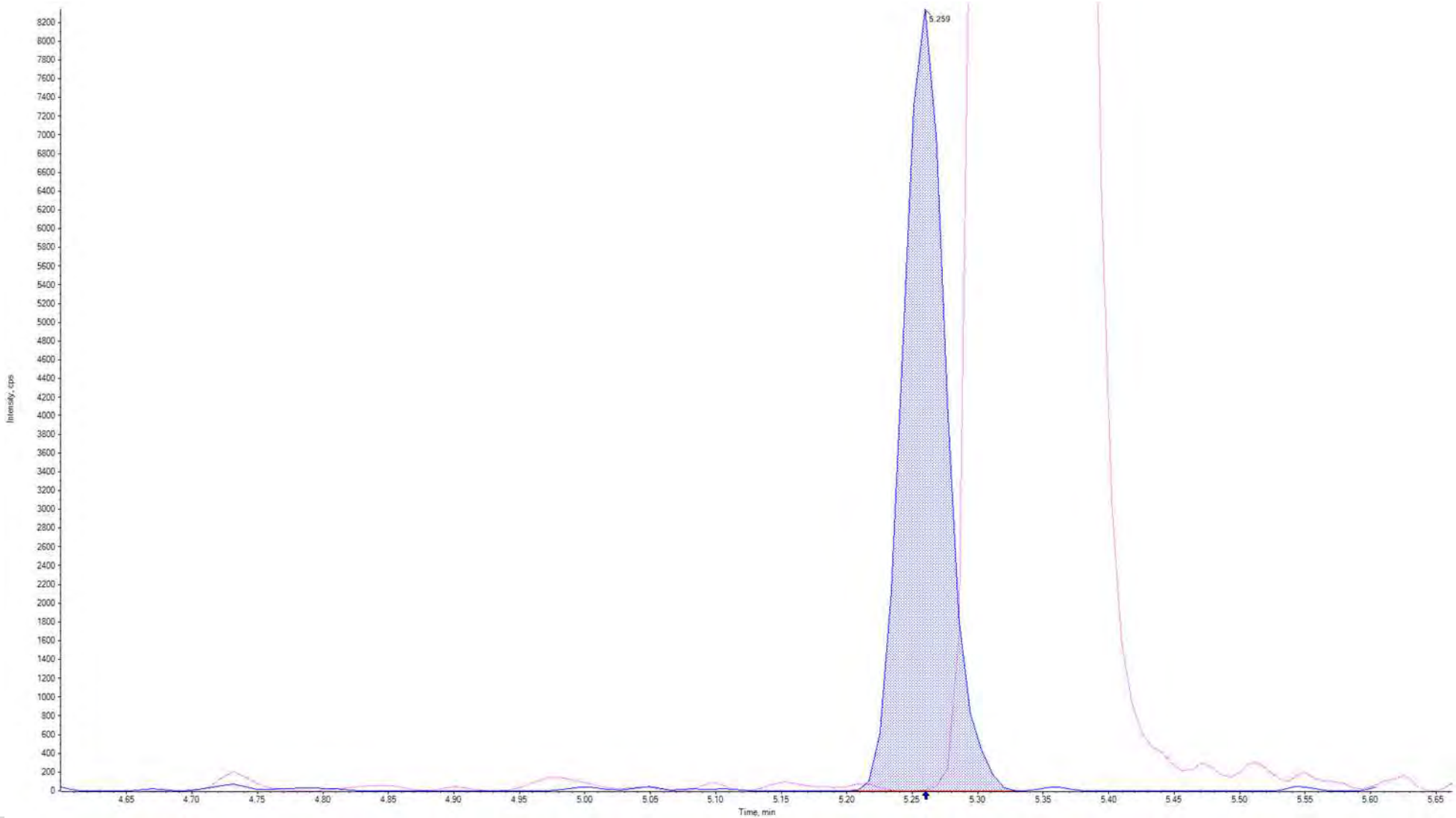
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

PFMBA
Sample: IA1633STD-.1 S/N:1504.0 Points Across peak:25



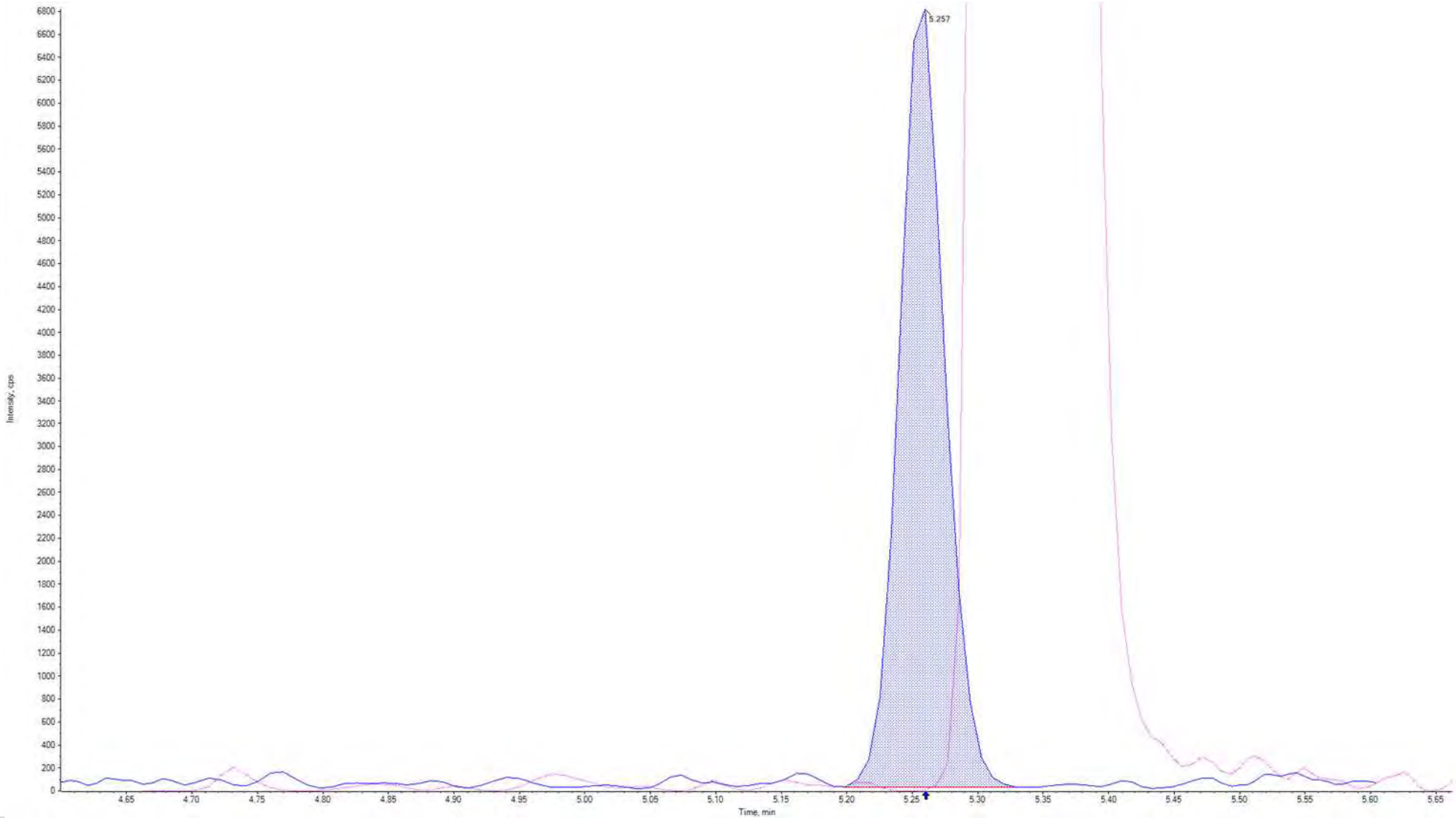
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

NFDHA
Sample: IA1633STD-.1 S/N:1279.4 Points Across peak:19



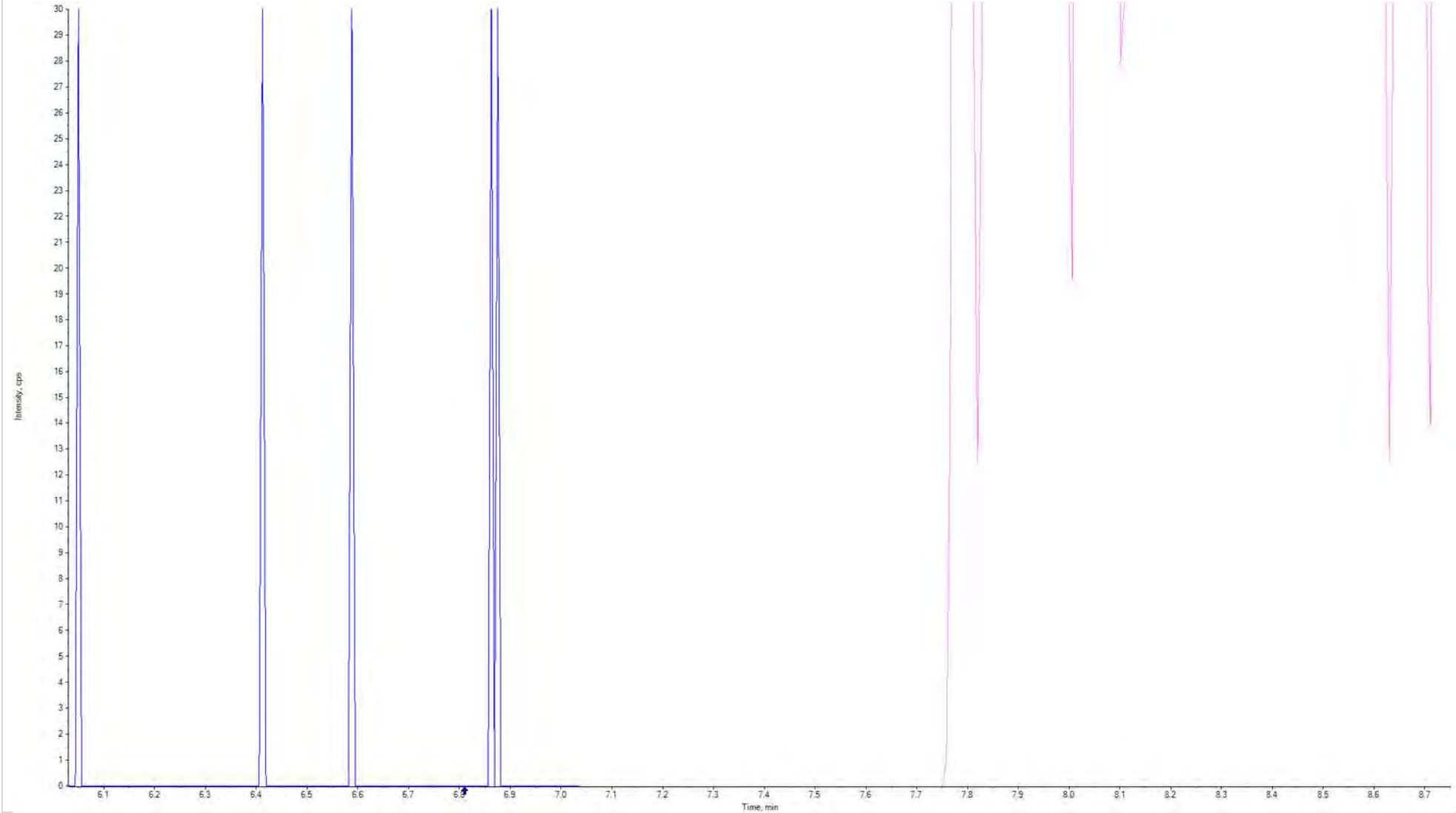
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

NFDHA_2
Sample: IA1633STD-.1 S/N:409.4 Points Across peak:17



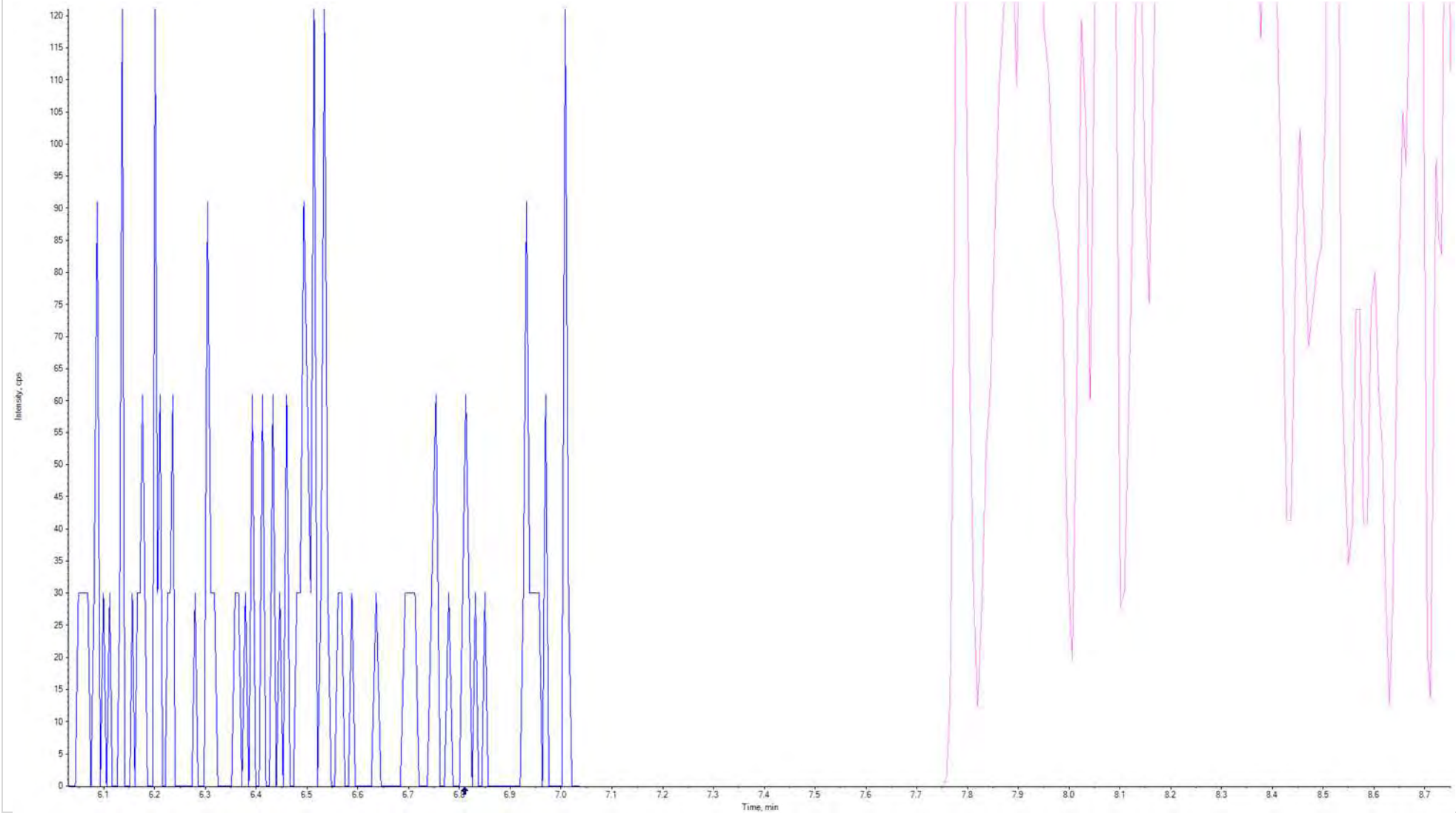
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

TDCA
Sample: IA1633STD-.1 S/N:N/A Points Across peak:N/A



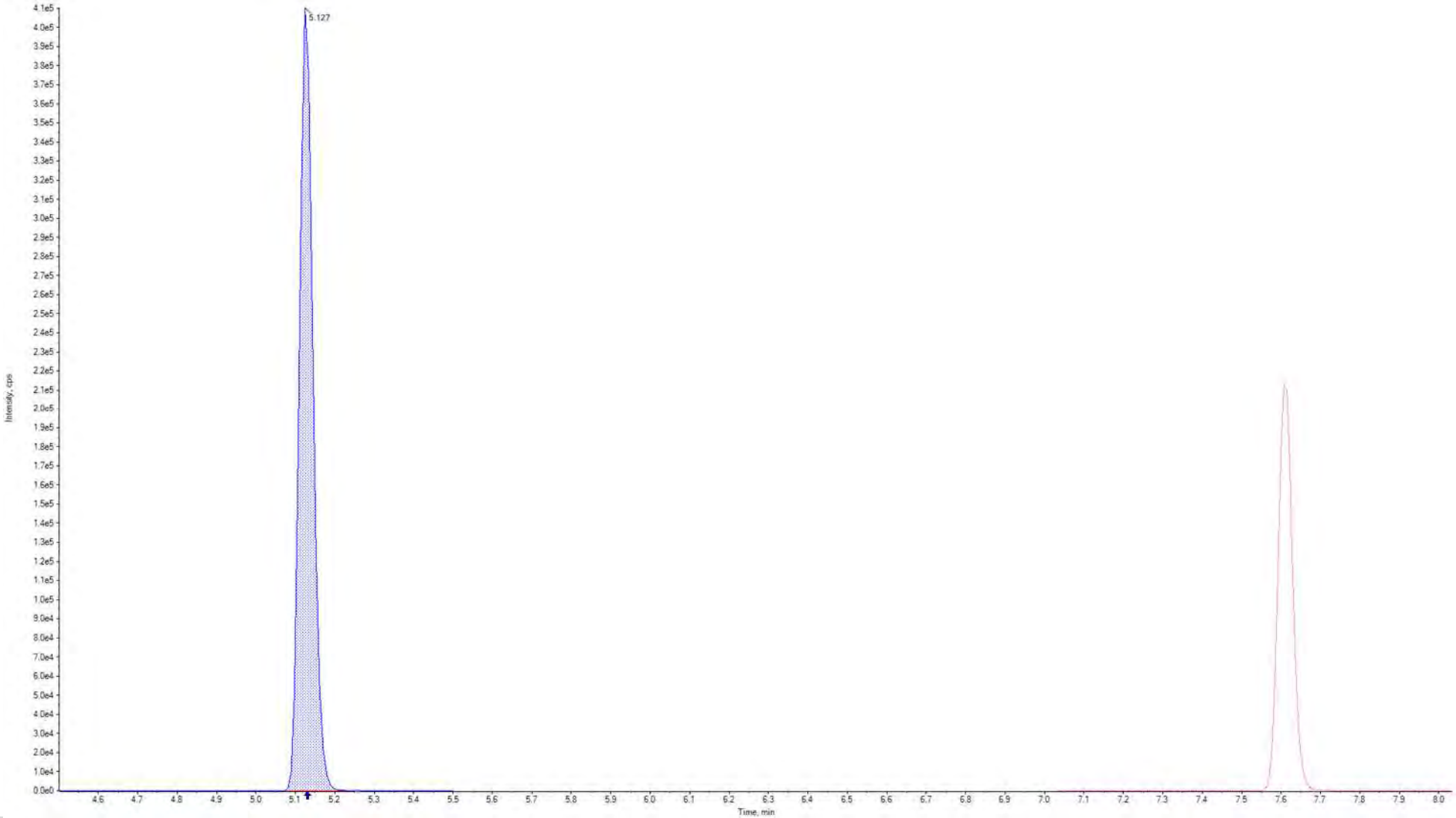
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

TDCA_2
Sample: IA1633STD-.1 S/N:N/A Points Across peak:N/A



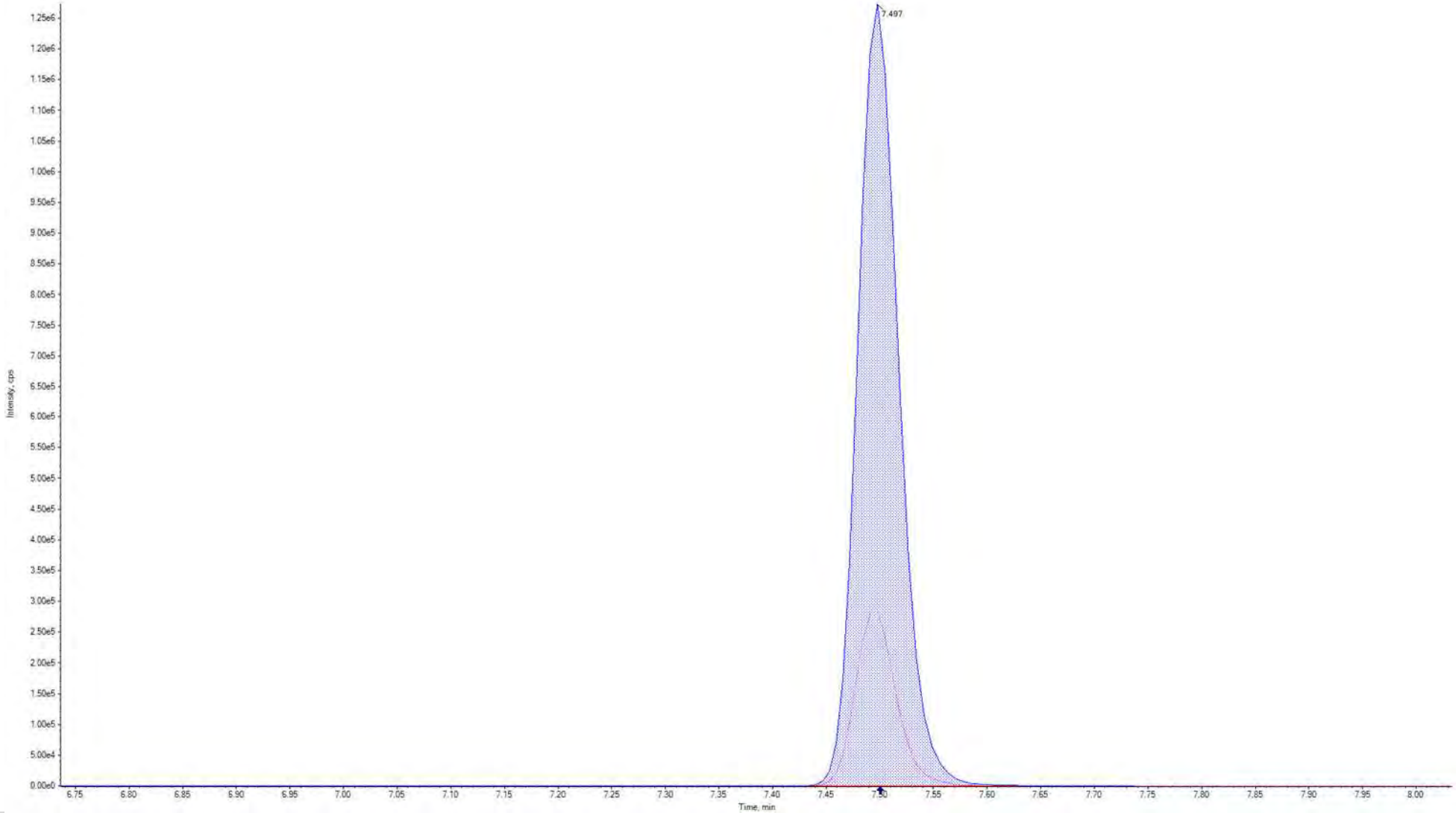
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

13C2D4-4:2FTS
Sample: IA1633STD-.1 S/N:38881.1 Points Across peak:22



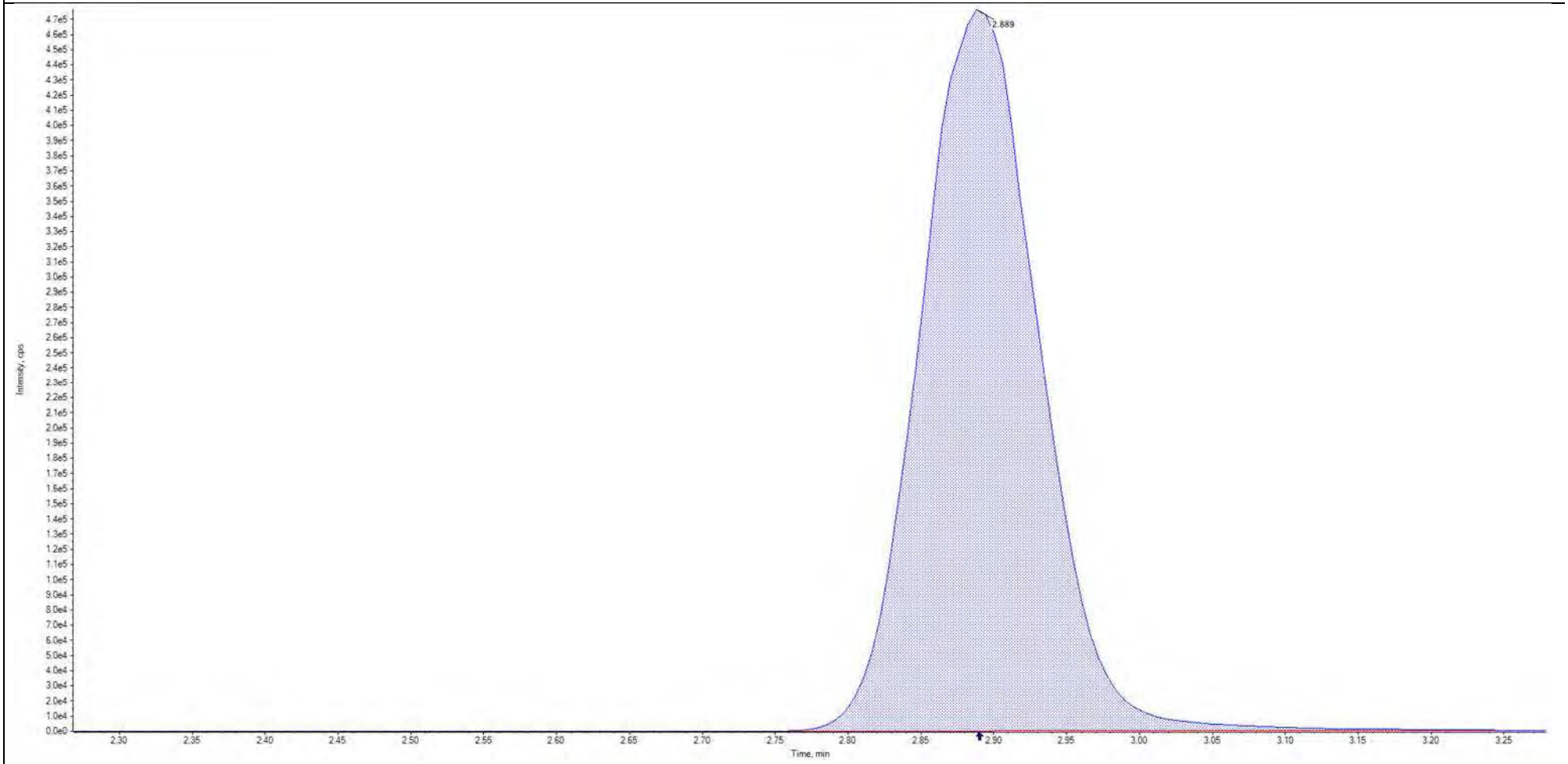
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

13C2-PFOA
Sample: IA1633STD-.1 S/N:687912.4 Points Across peak:35

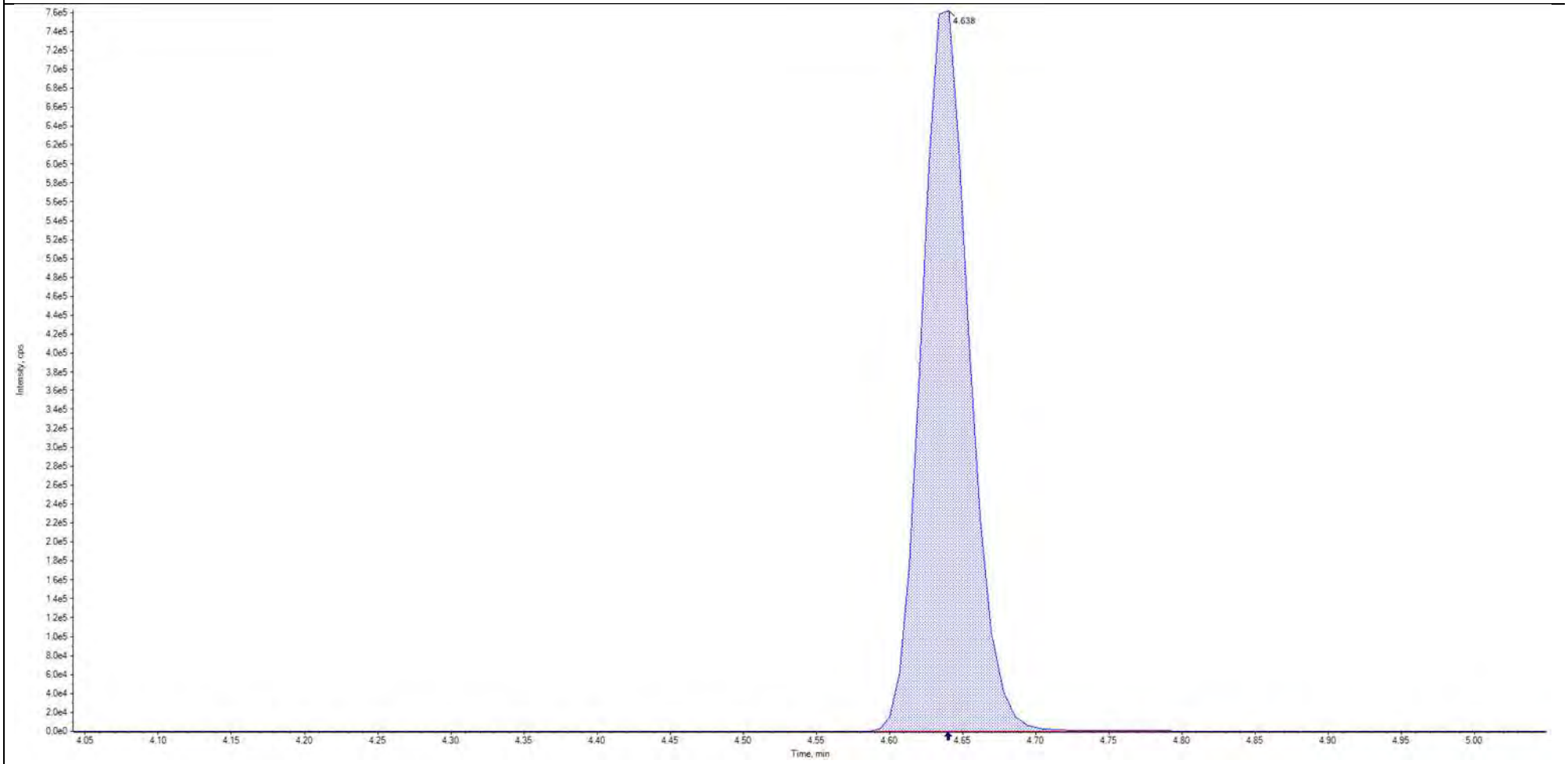


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

13C4-PFBA
Sample: IA1633STD-.1

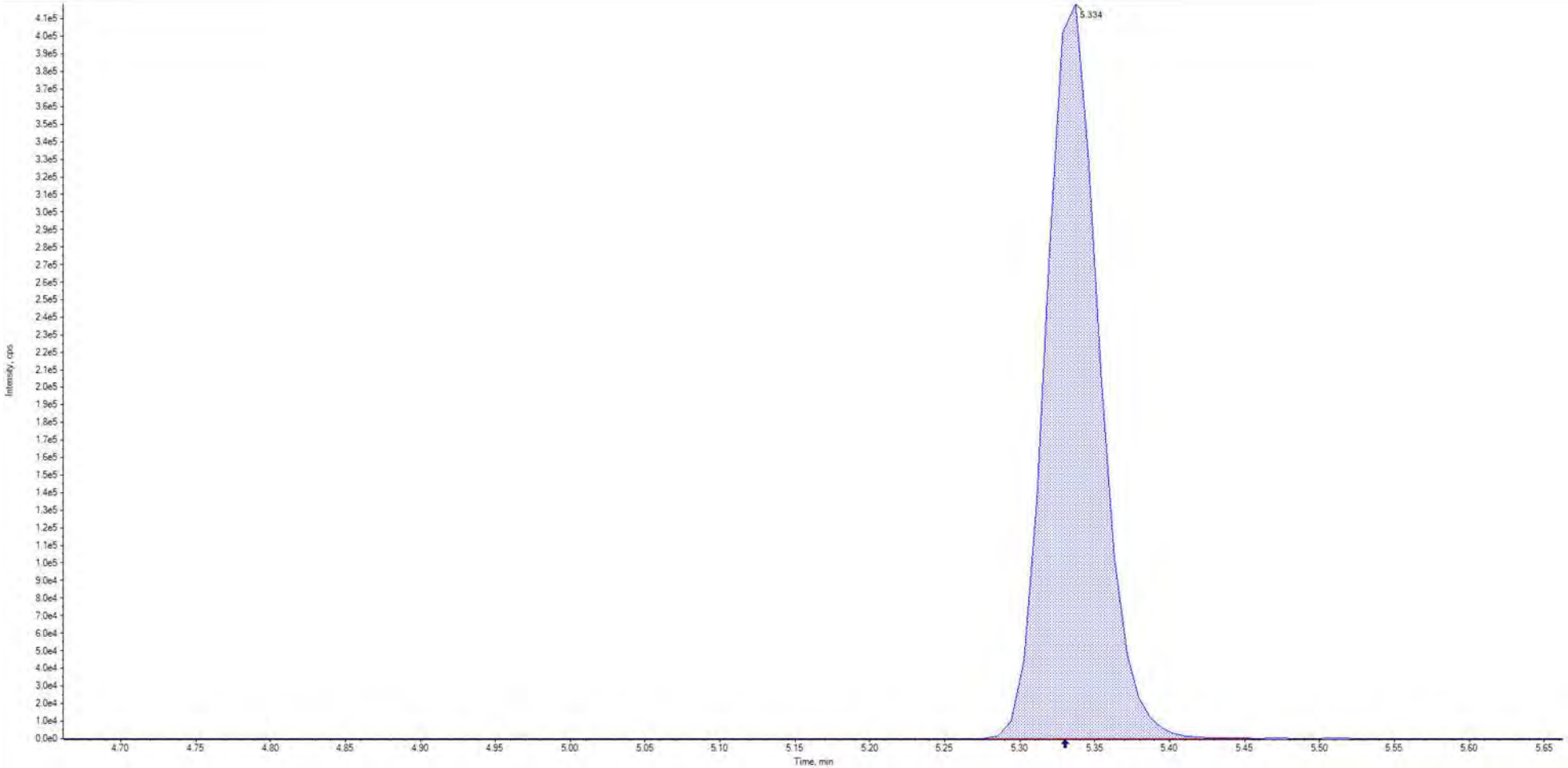


13C5-PFPeA
Sample: IA1633STD-.1

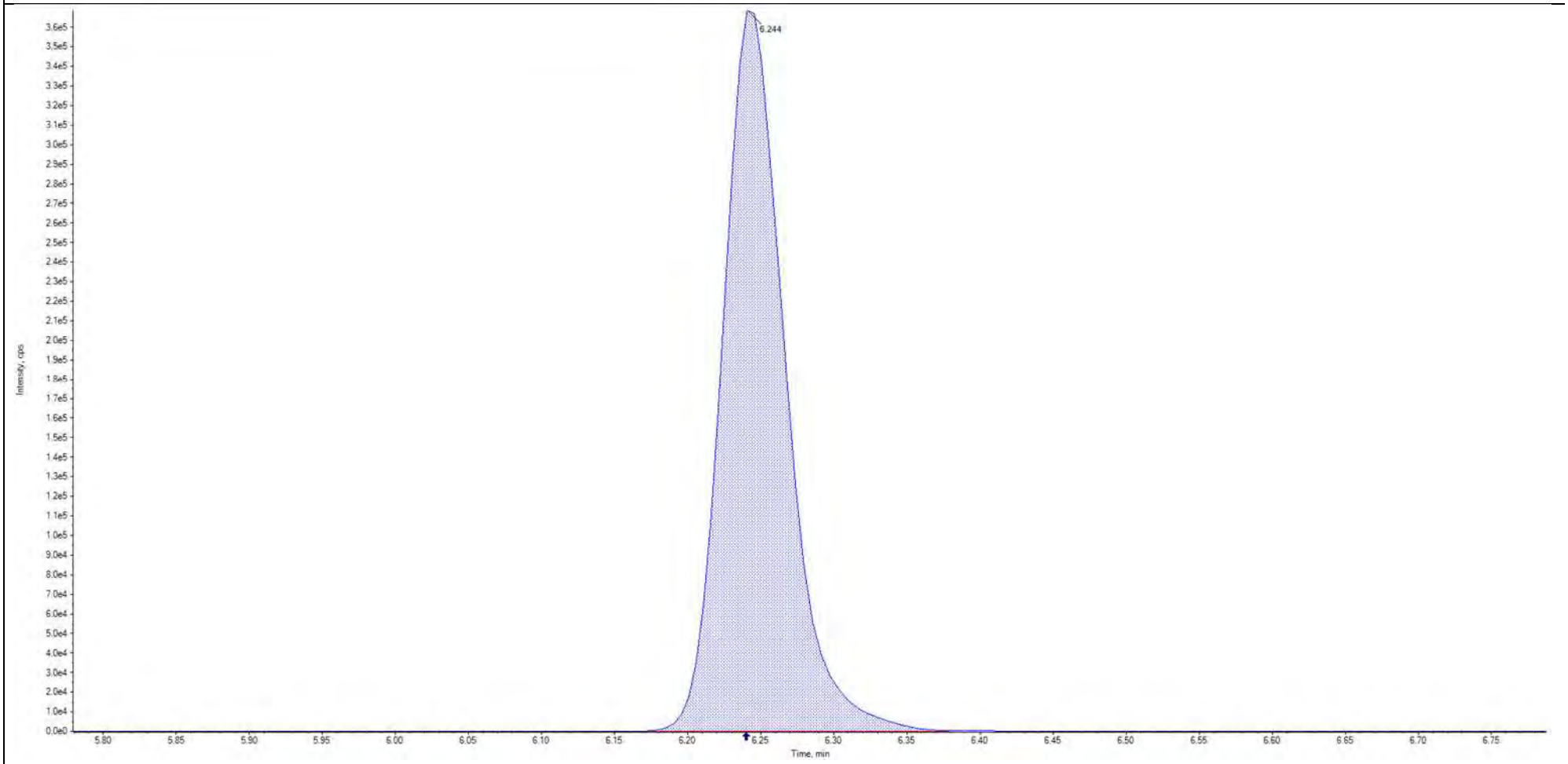


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

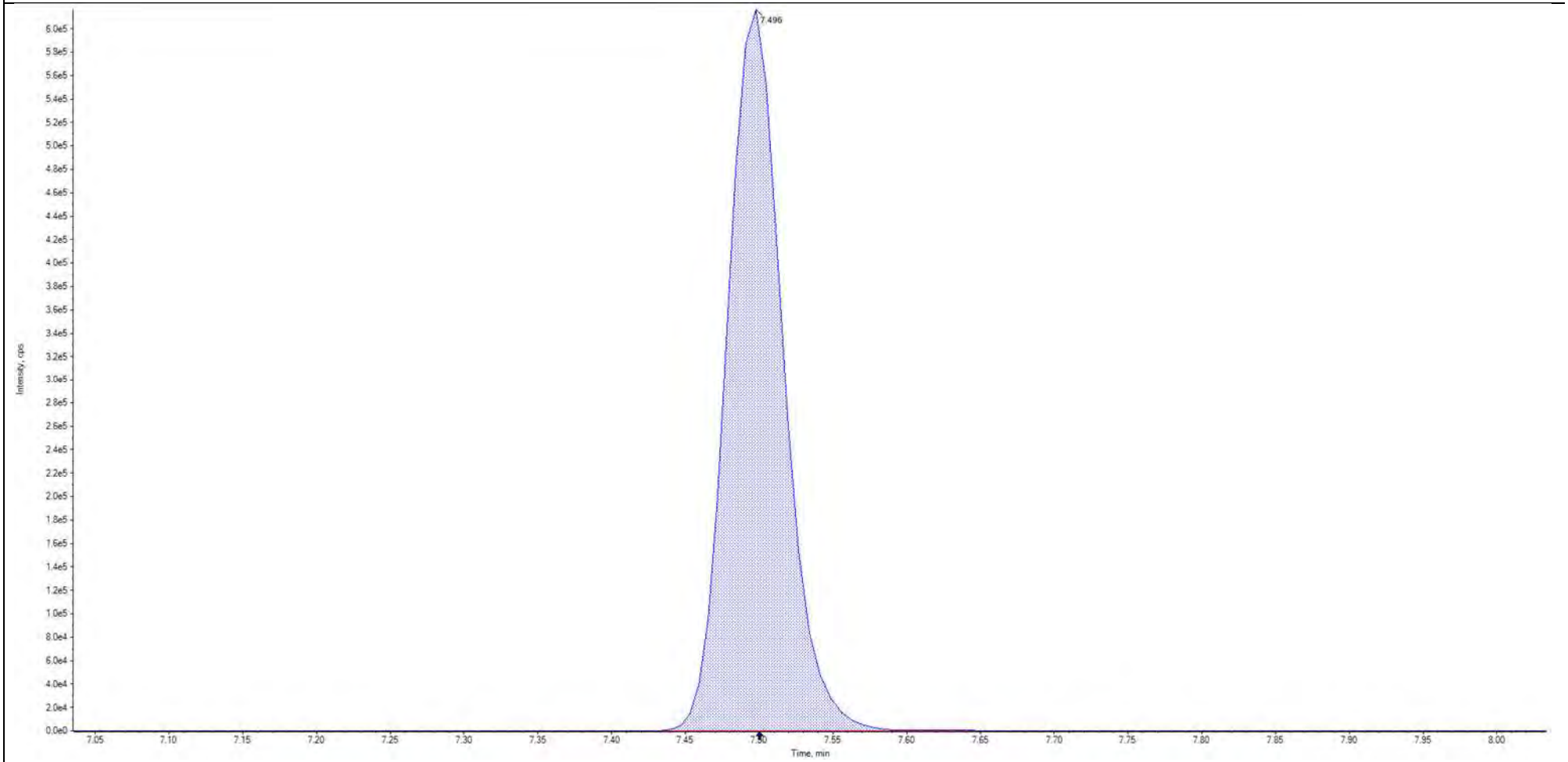
13C5-PFHxA
Sample: IA1633STD-.1



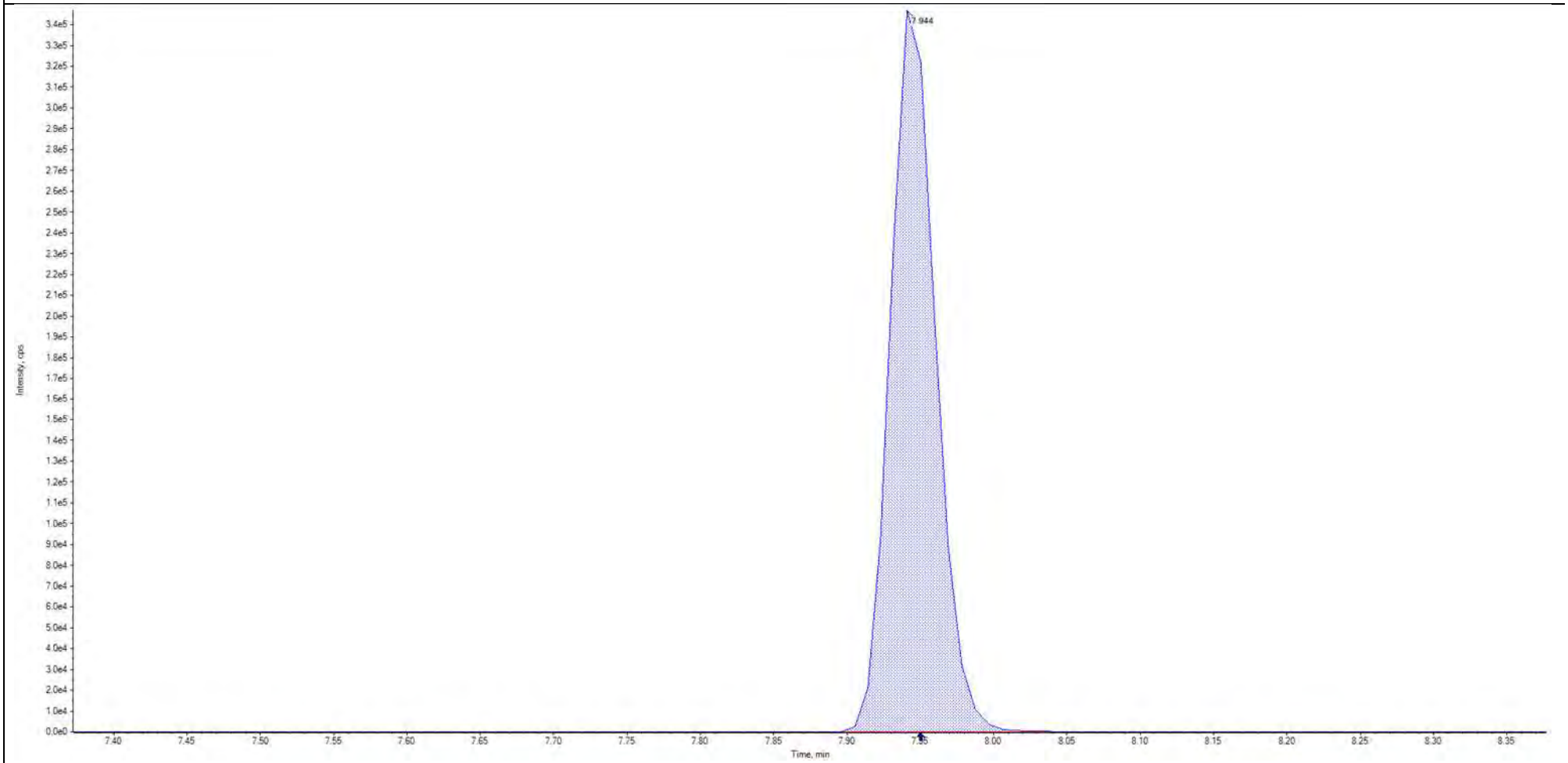
13C4-PFHpA
Sample: IA1633STD-.1



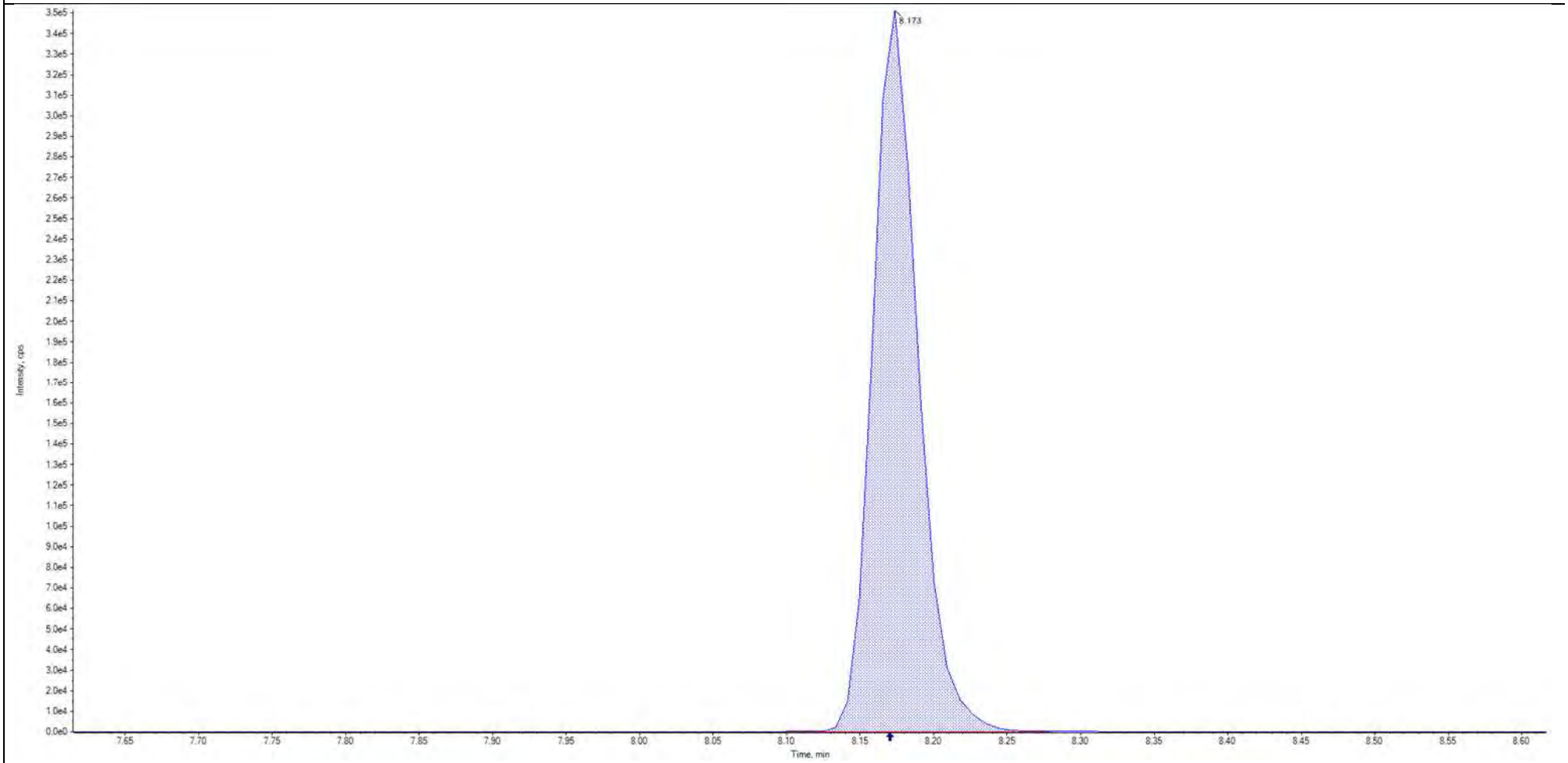
13C8-PFOA
Sample: IA1633STD-.1



13C9-PFNA
Sample: IA1633STD-.1

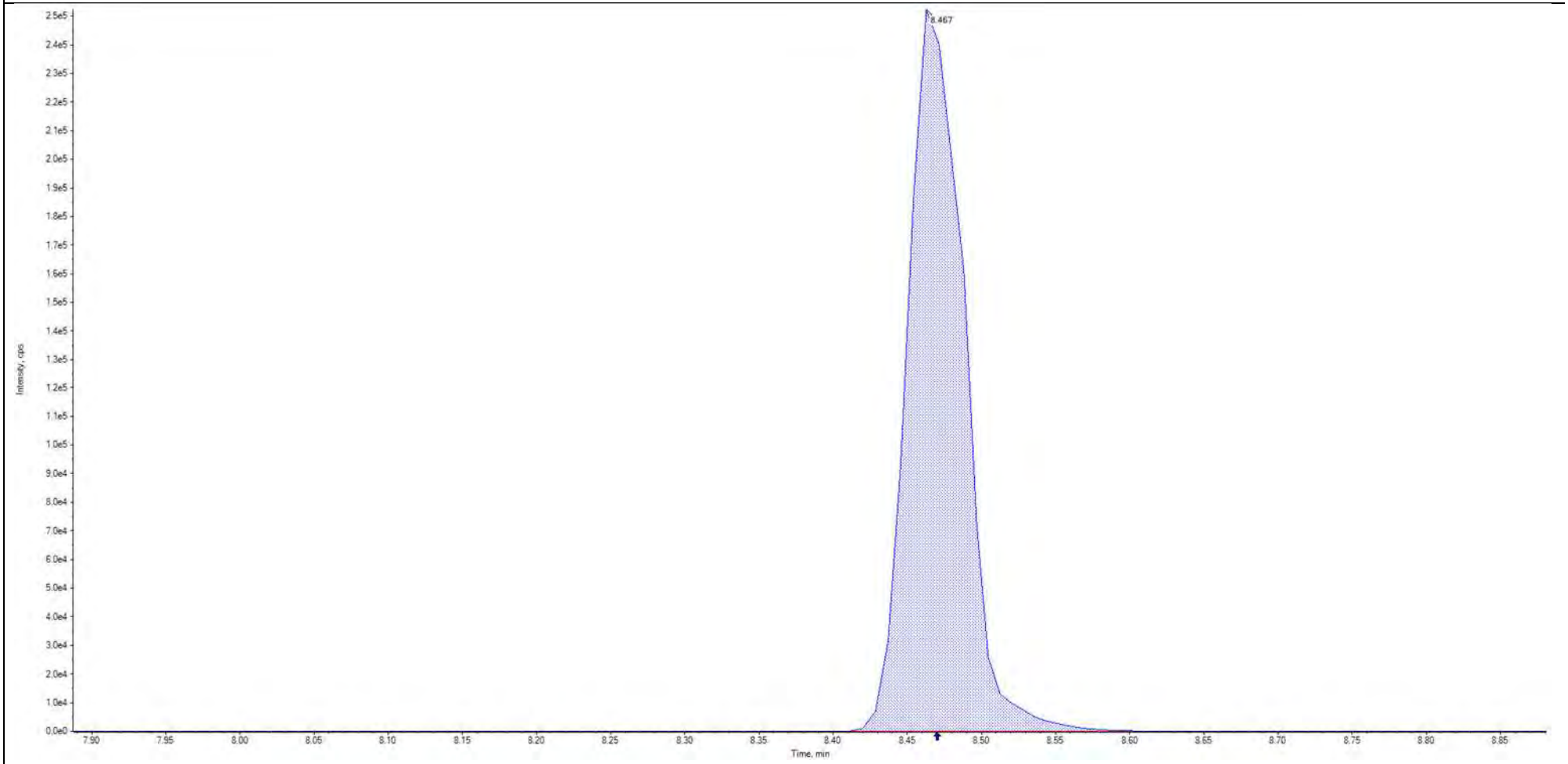


13C6-PFDA
Sample: IA1633STD-.1



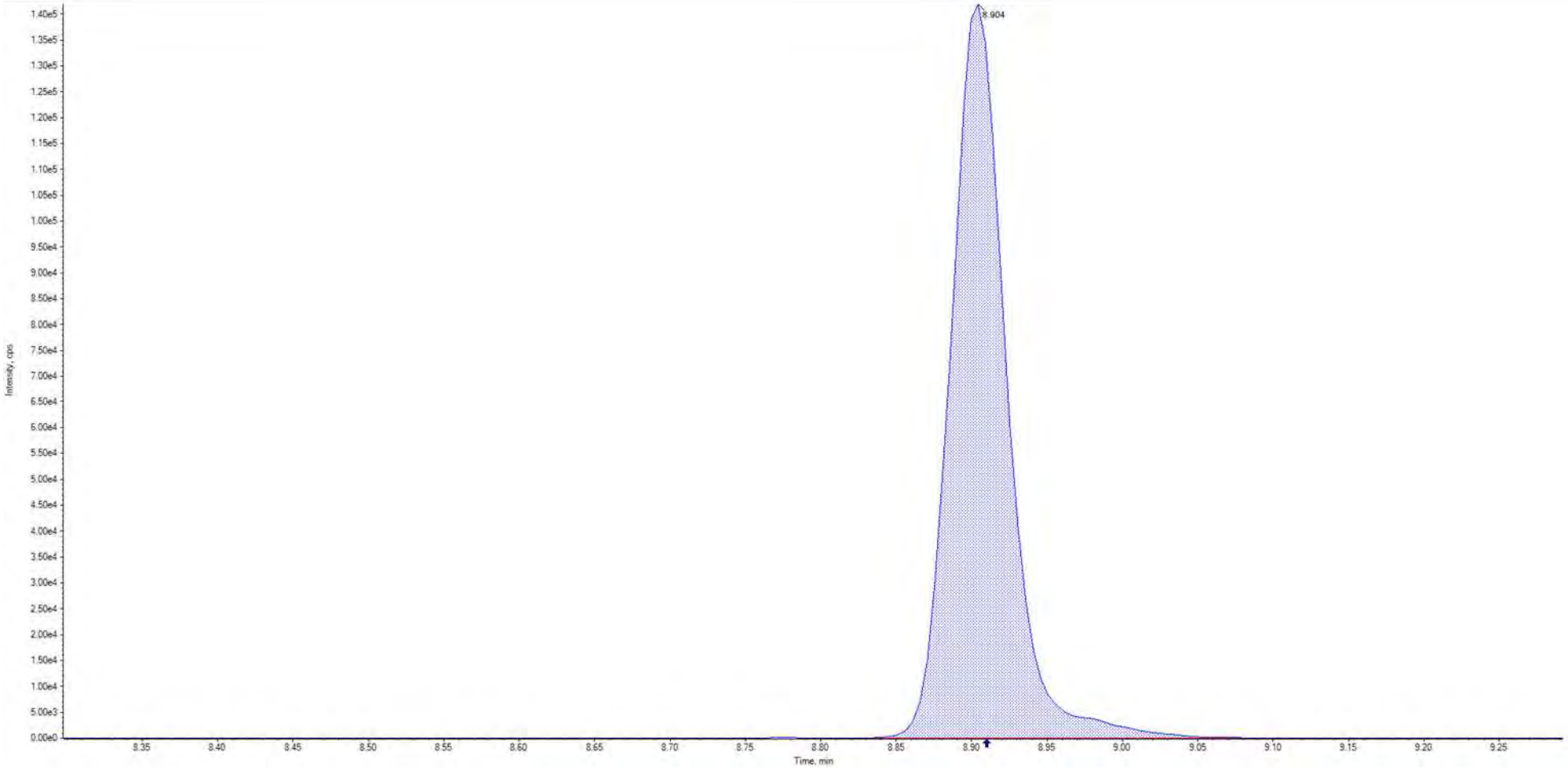
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

13C7-PFUnA
Sample: IA1633STD-.1

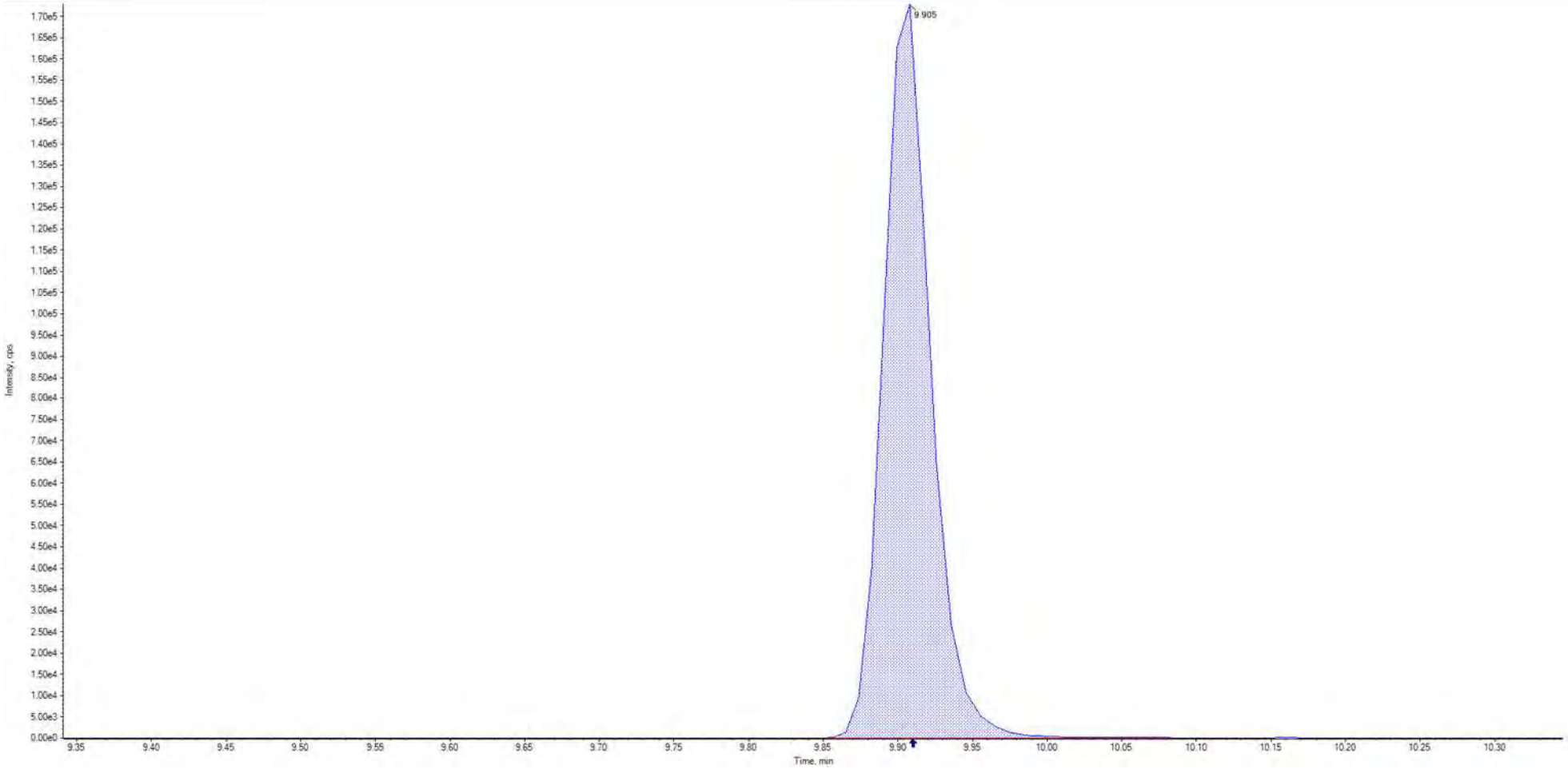


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_71.wiff
Last Altered: 8/14/2024 9:35:14 AM
Generated: 8/14/2024 6:27:11 AM

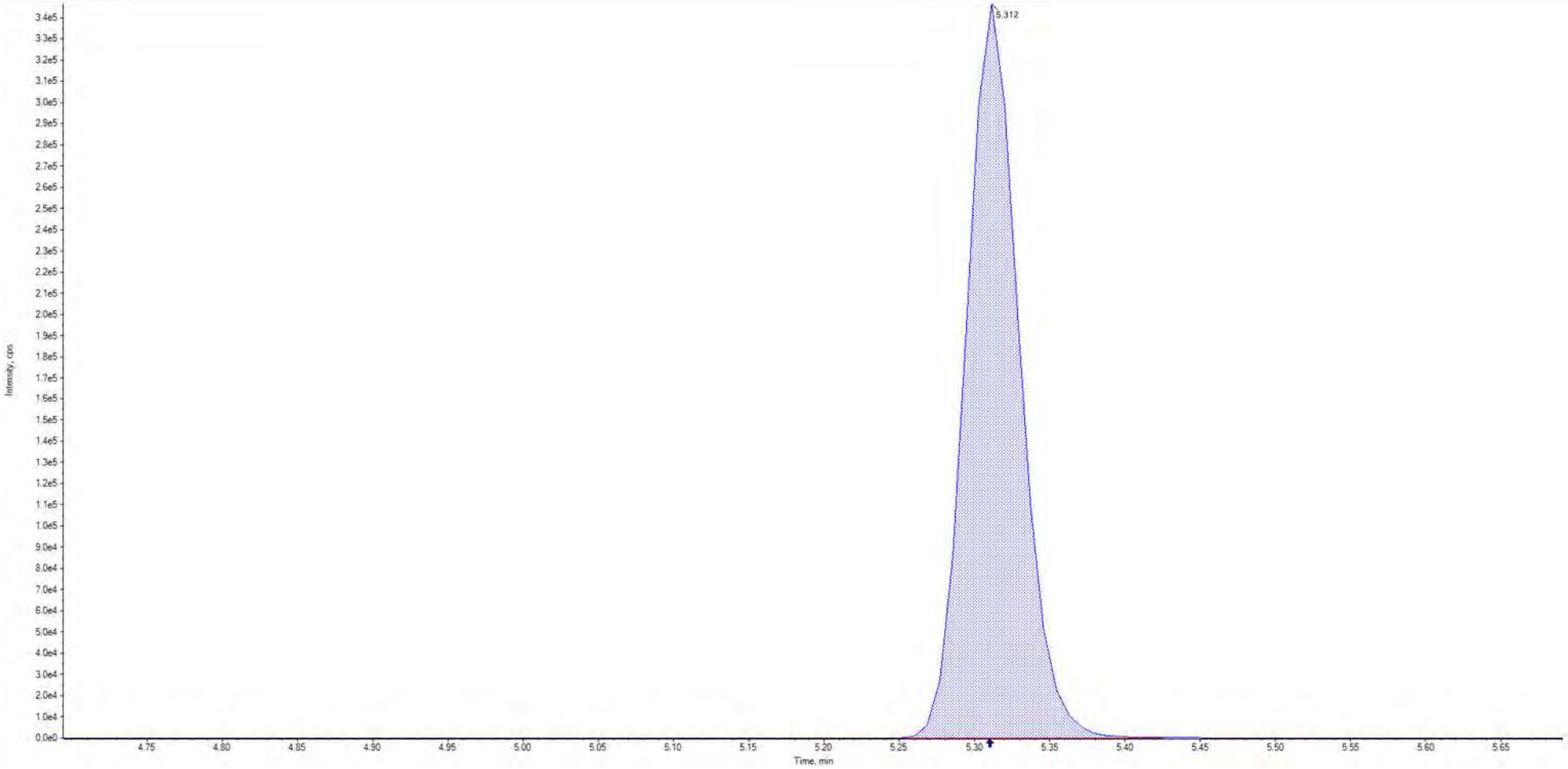
13C2-PFDoA
Sample: IA1633STD-.1



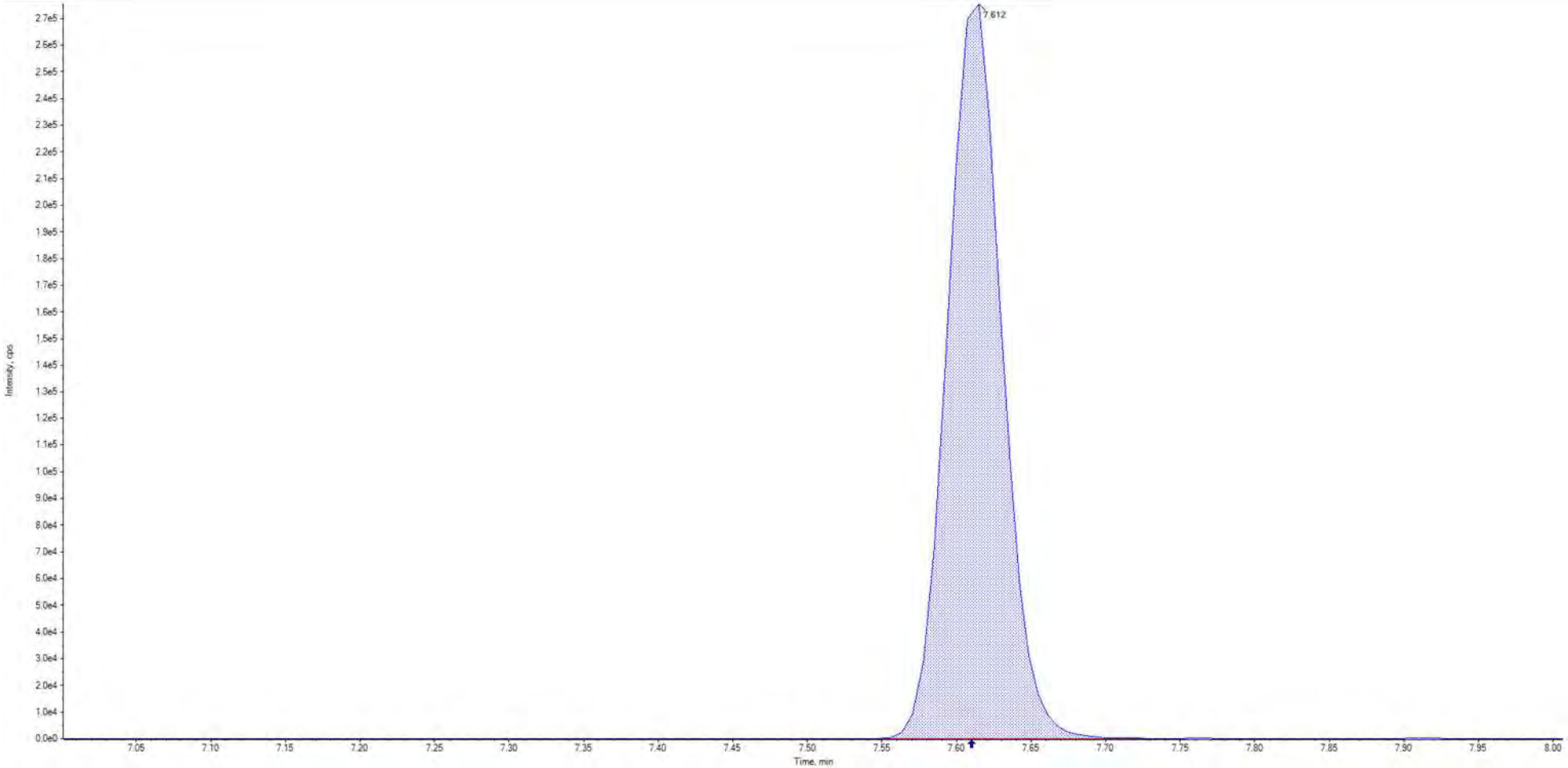
13C2-PFTeDA
Sample: IA1633STD-.1



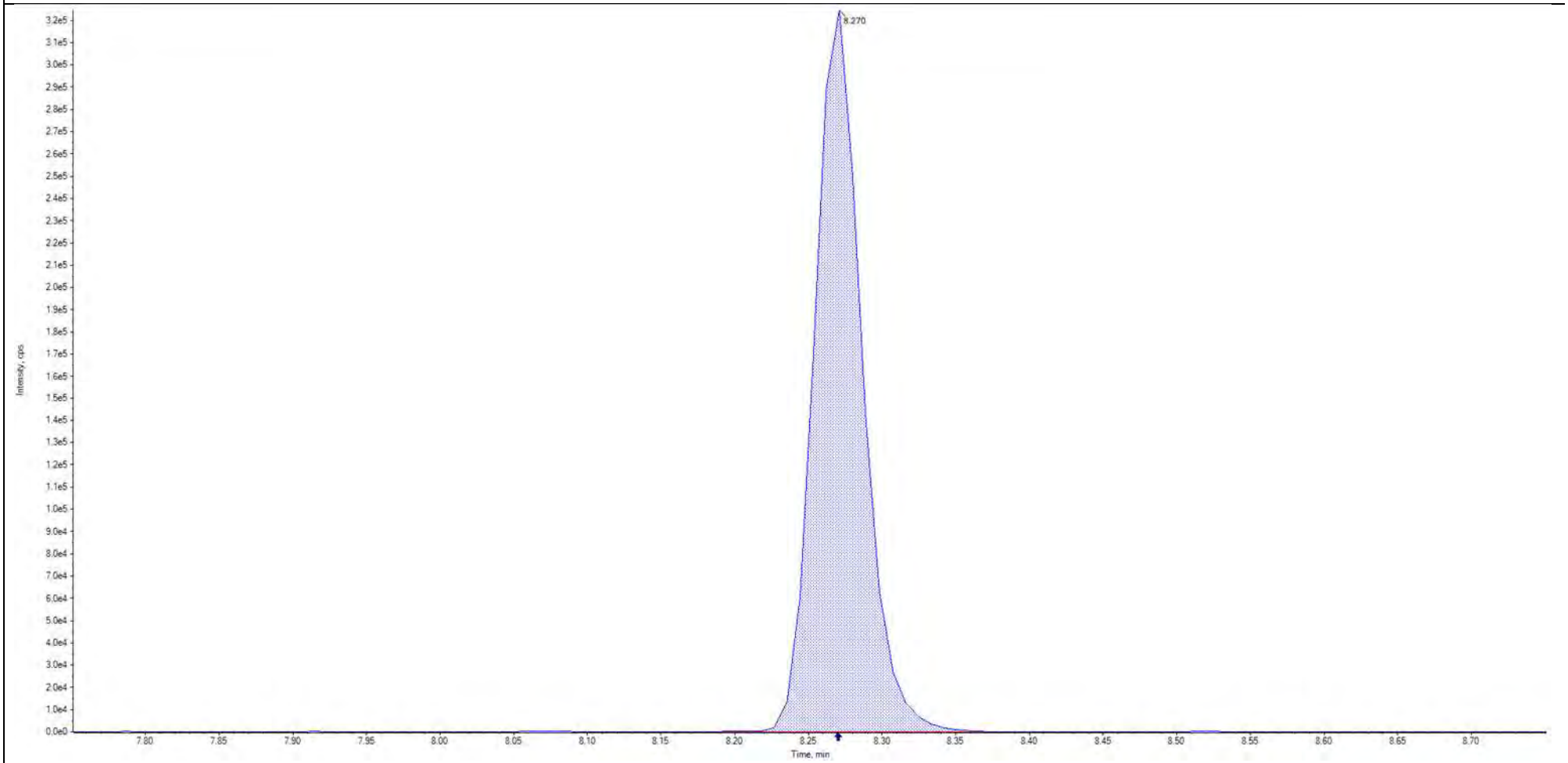
13C3-PFBS
Sample: IA1633STD-.1



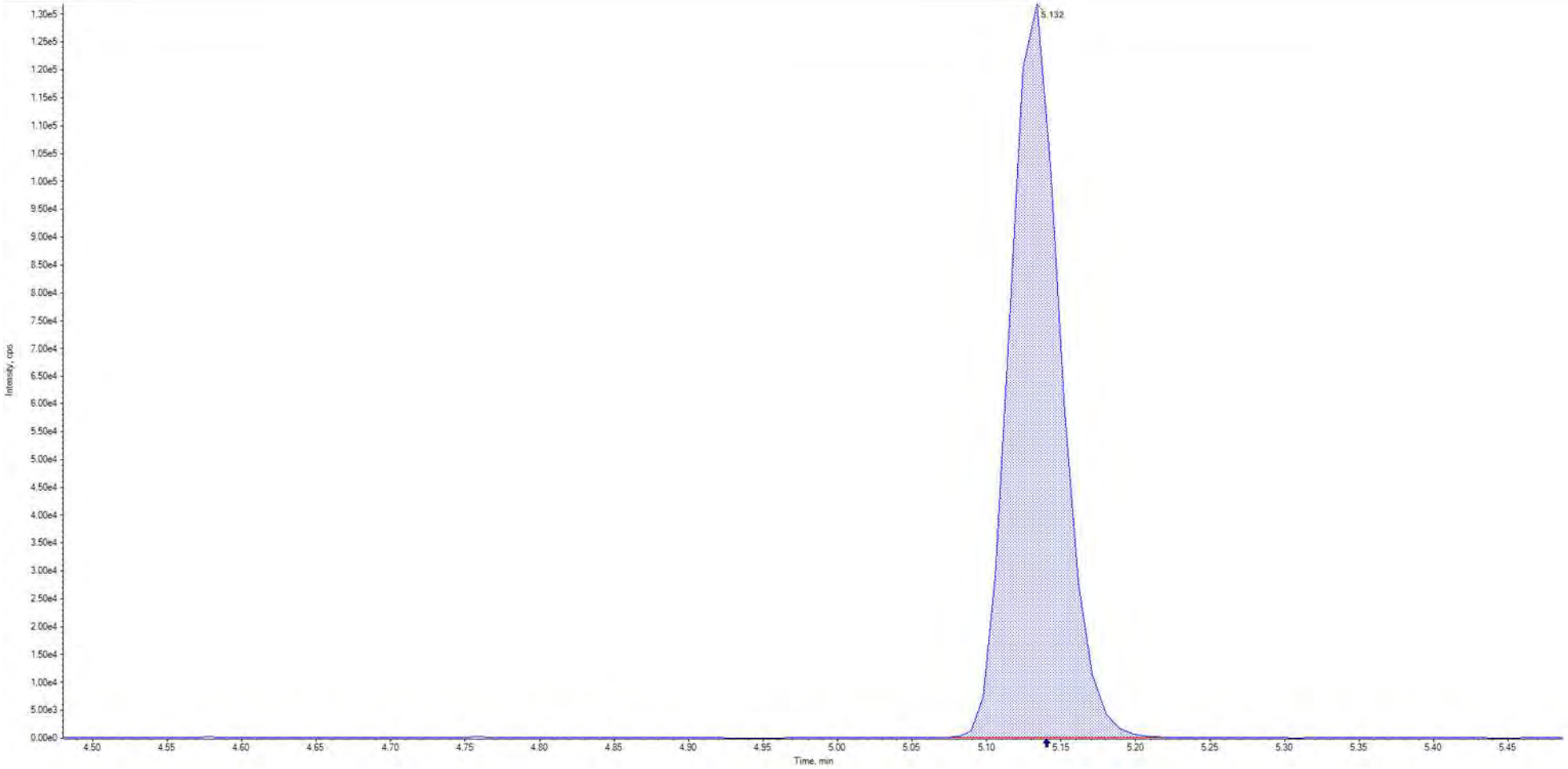
13C3-PFHxS
Sample: IA1633STD-.1



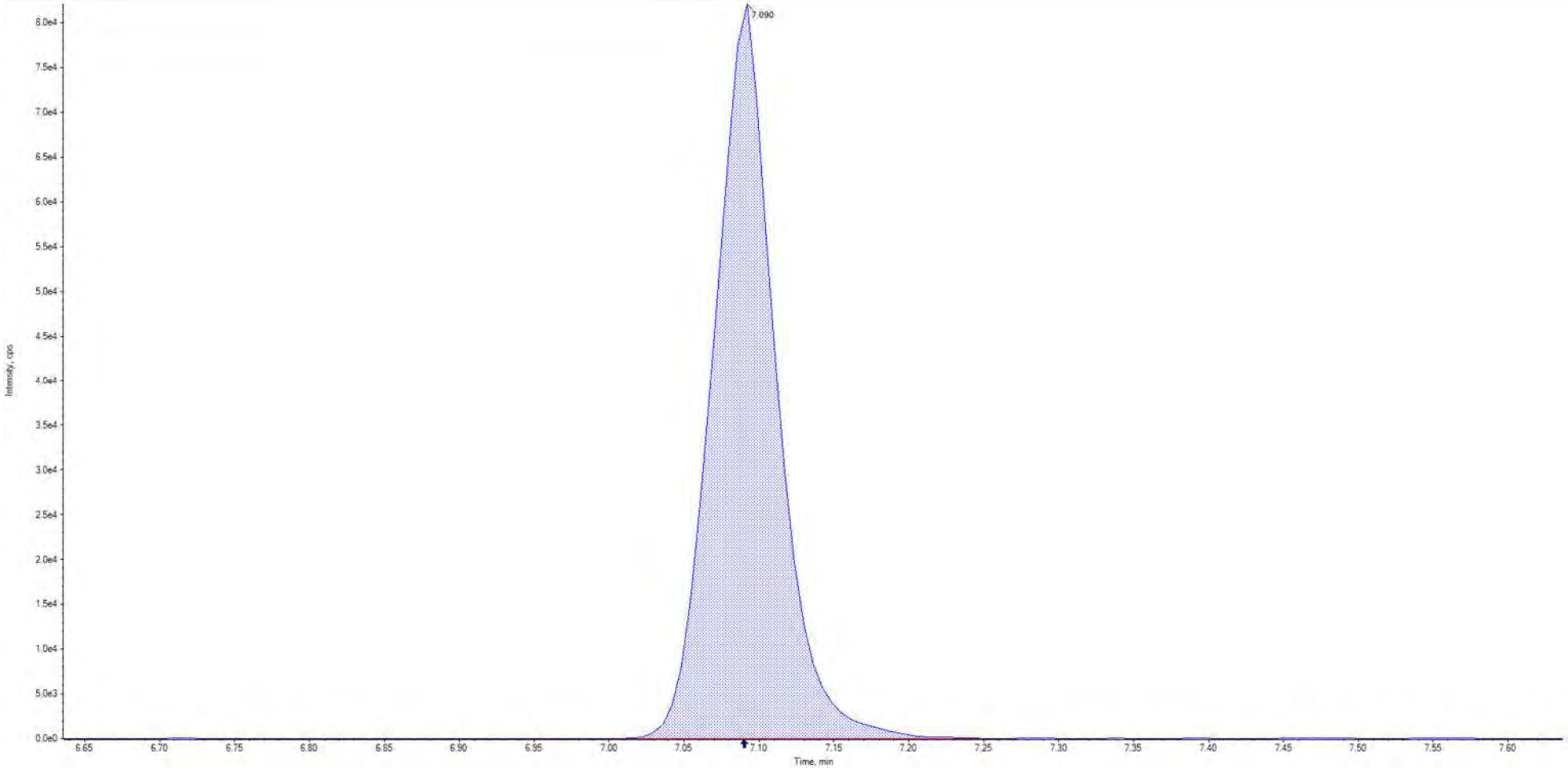
13C8-PFOS
Sample: IA1633STD-.1



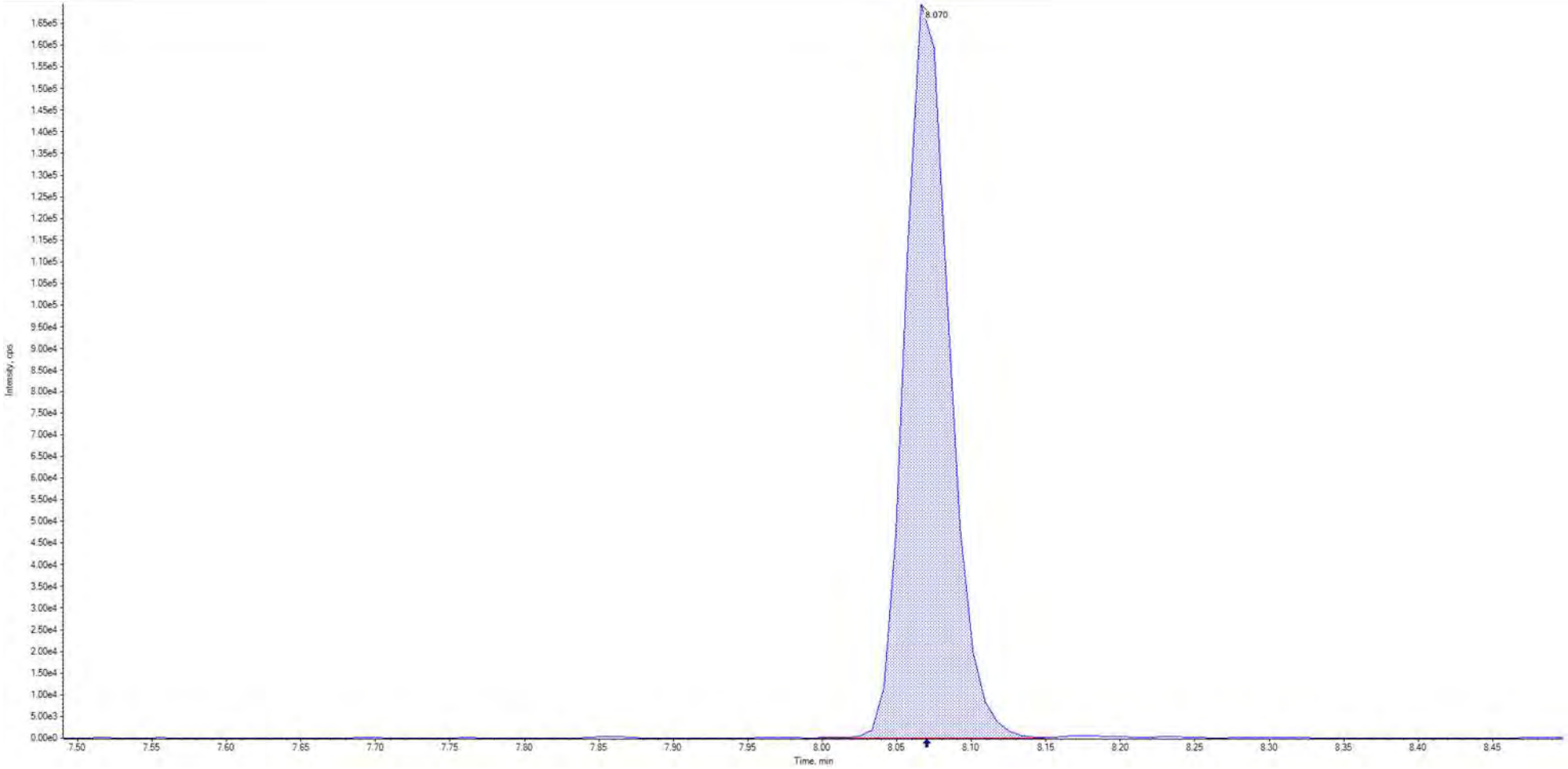
13C2-4:2FTS
Sample: IA1633STD-.1



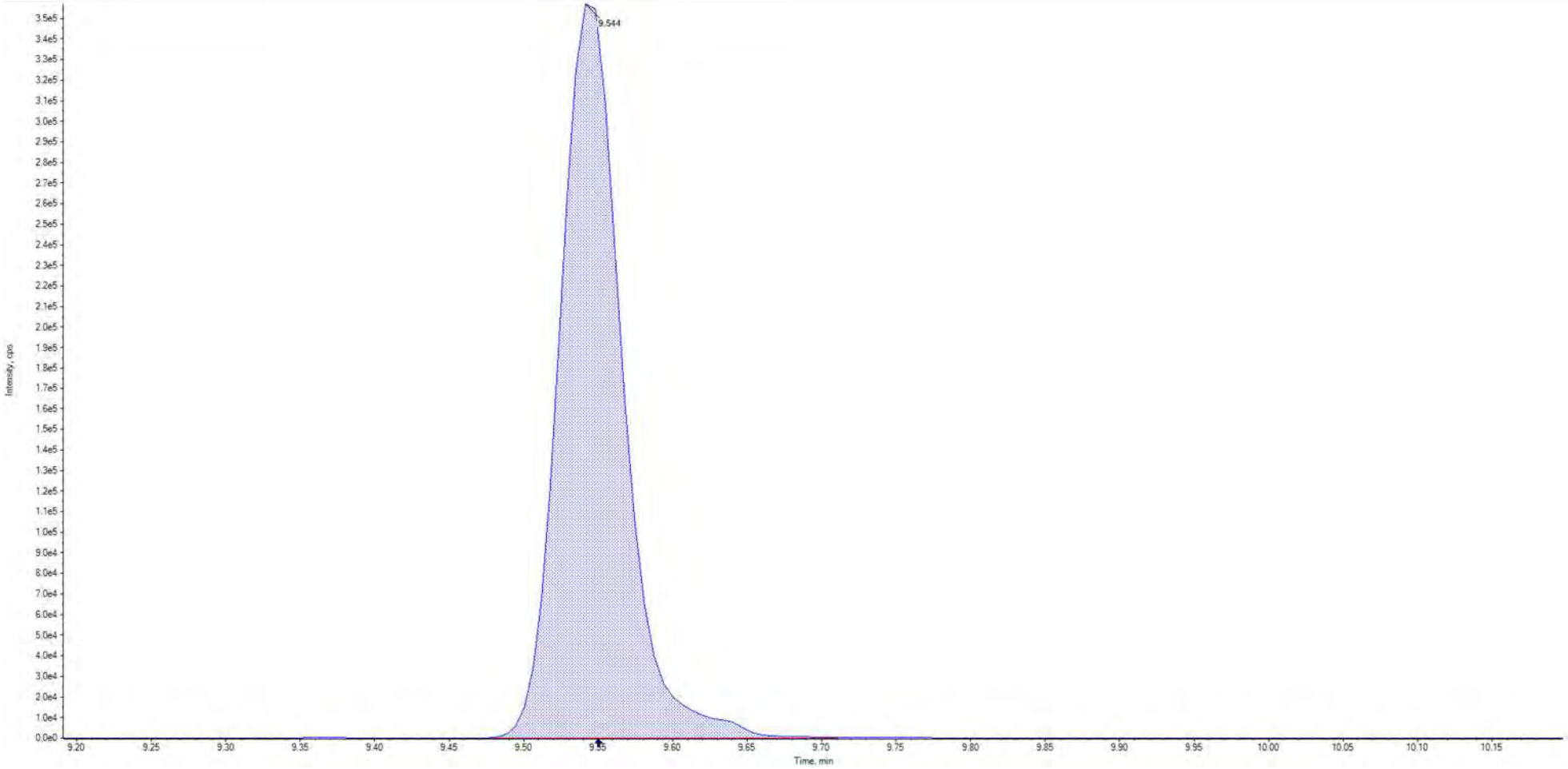
13C2-6:2FTS
Sample: IA1633STD-.1



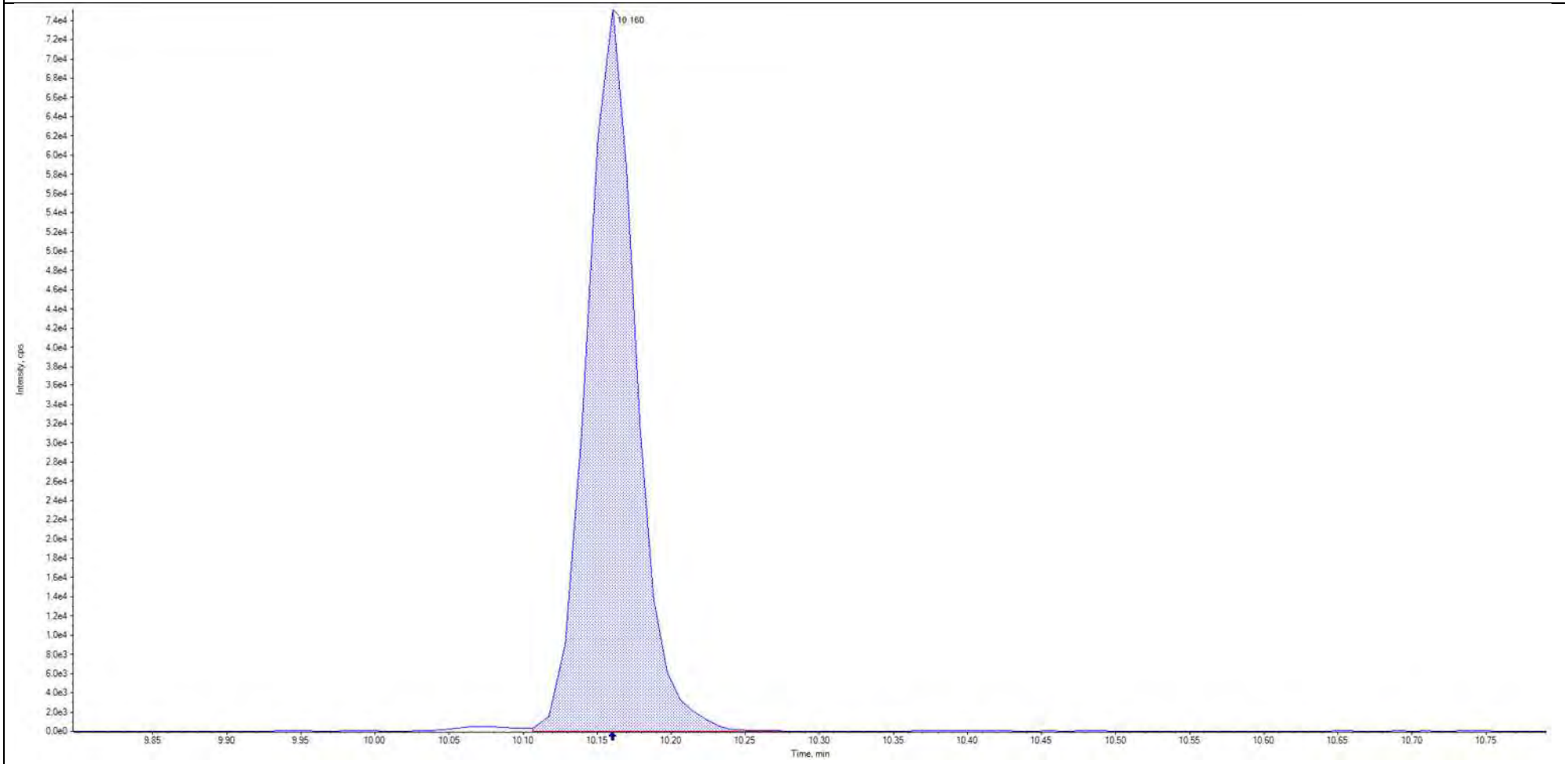
13C2-8:2FTS
Sample: IA1633STD-.1



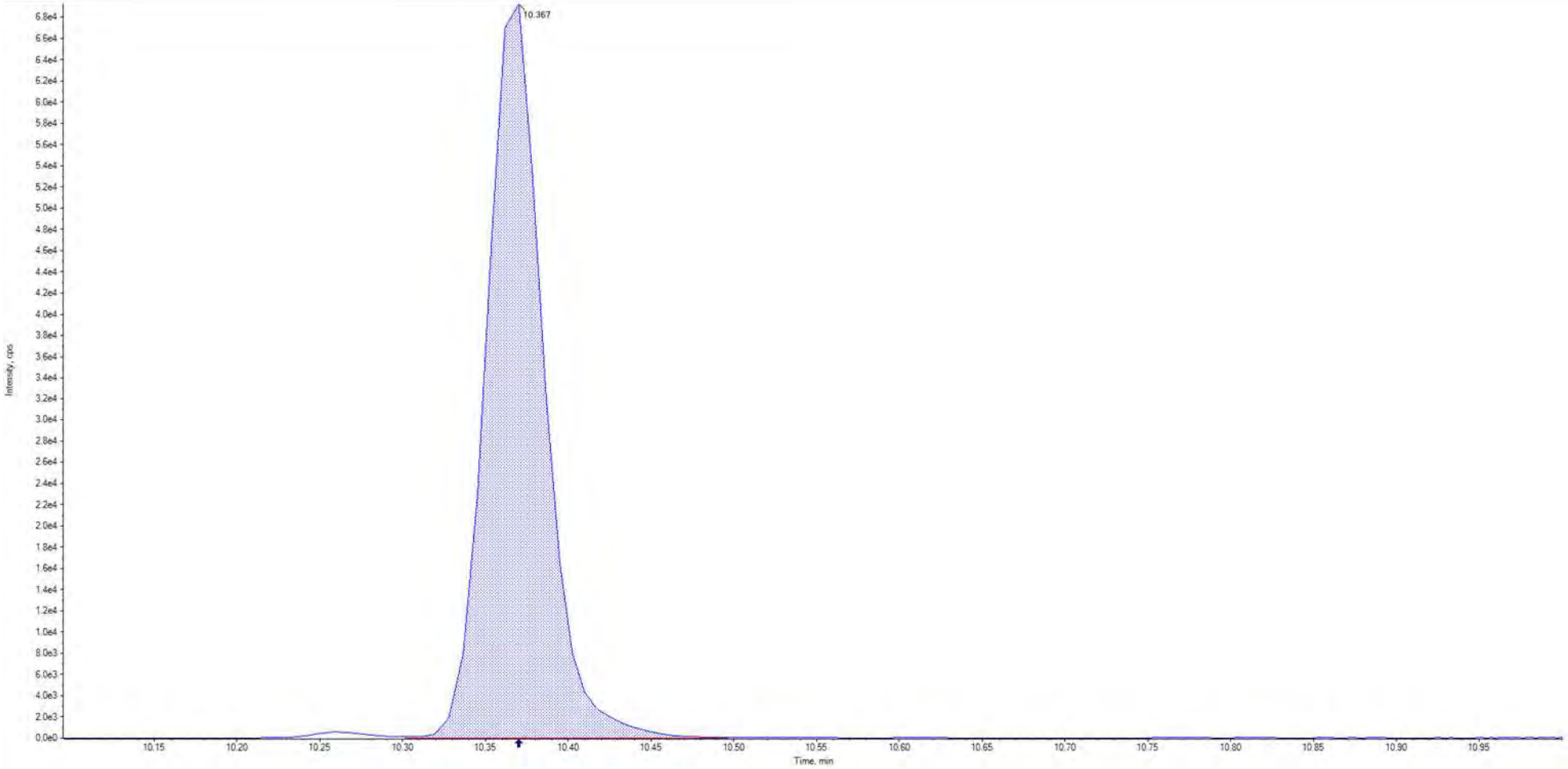
13C8-PFOSA
Sample: IA1633STD-.1



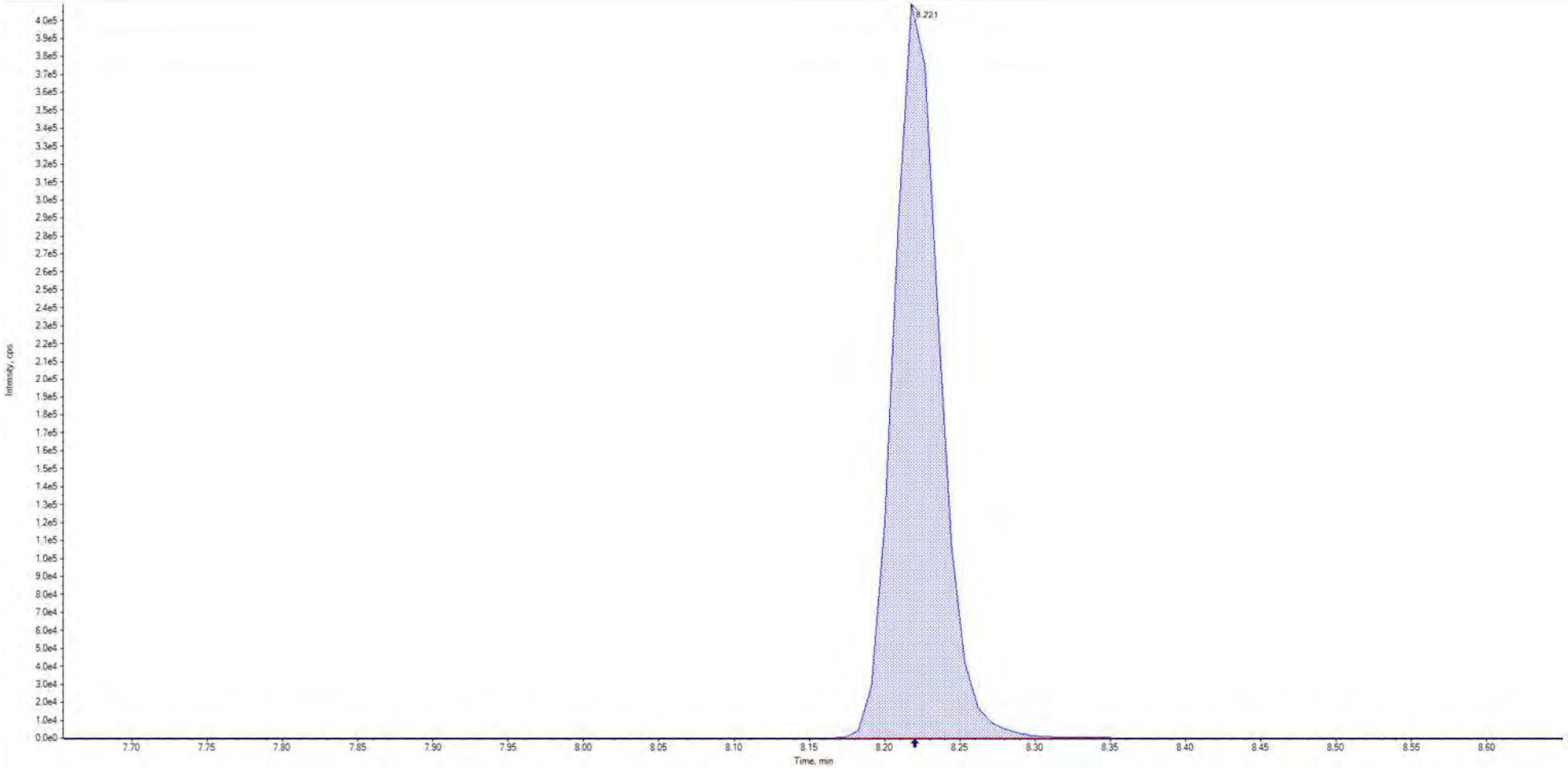
d3-NMeFOSA
Sample: IA1633STD-.1



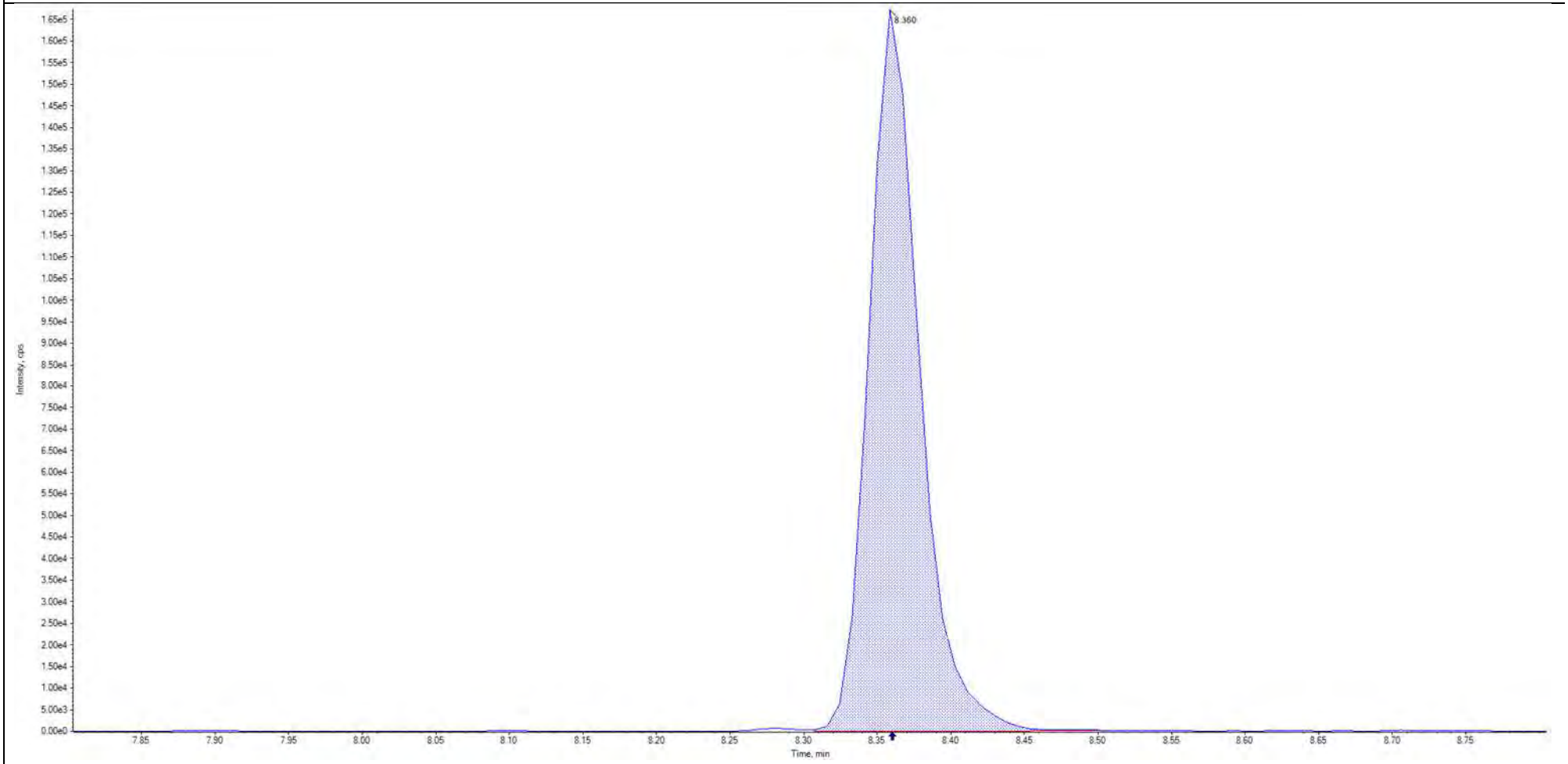
d5-NEtFOSA
Sample: IA1633STD-.1



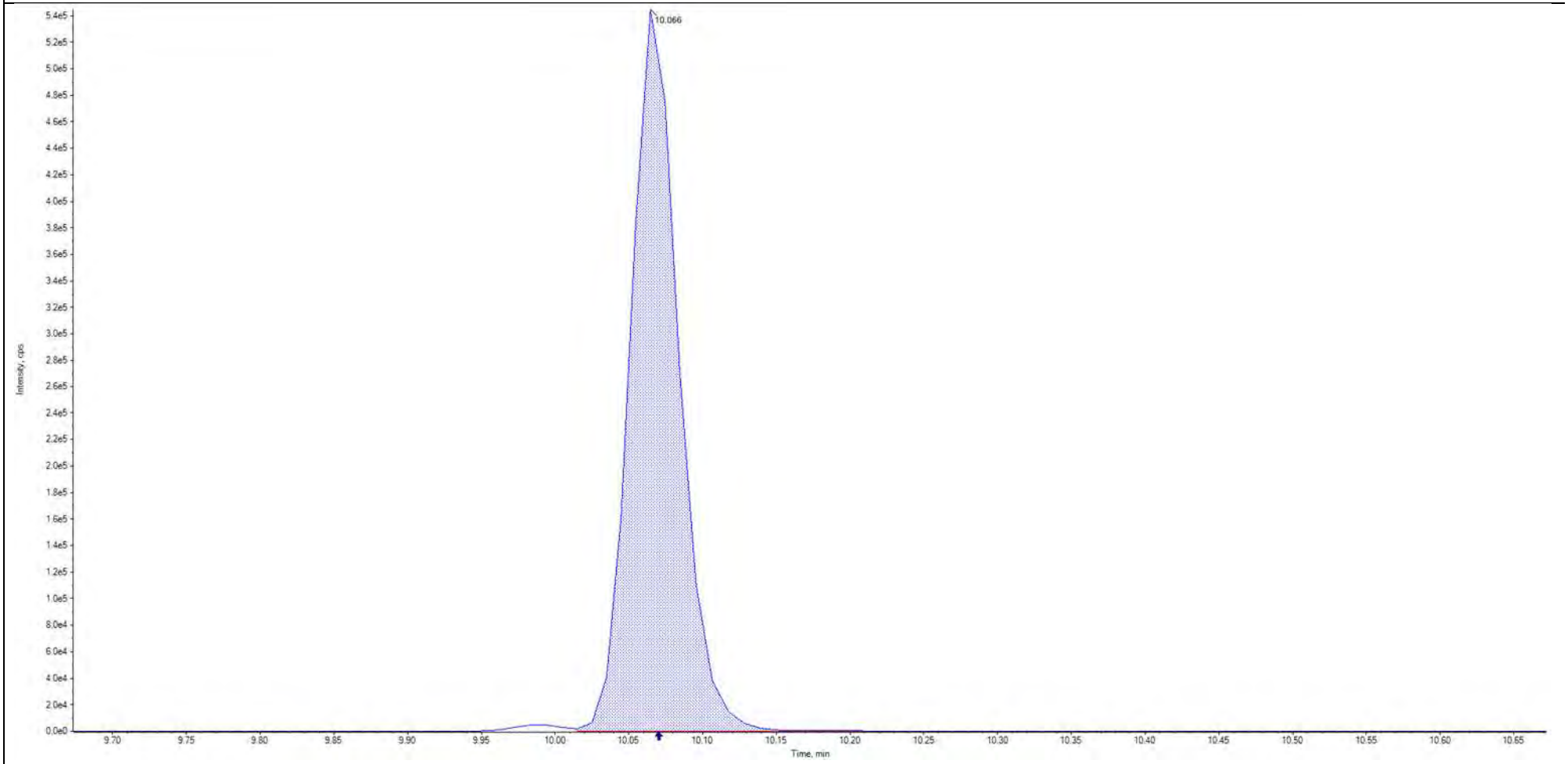
d3-NMeFOSAA
Sample: IA1633STD-.1



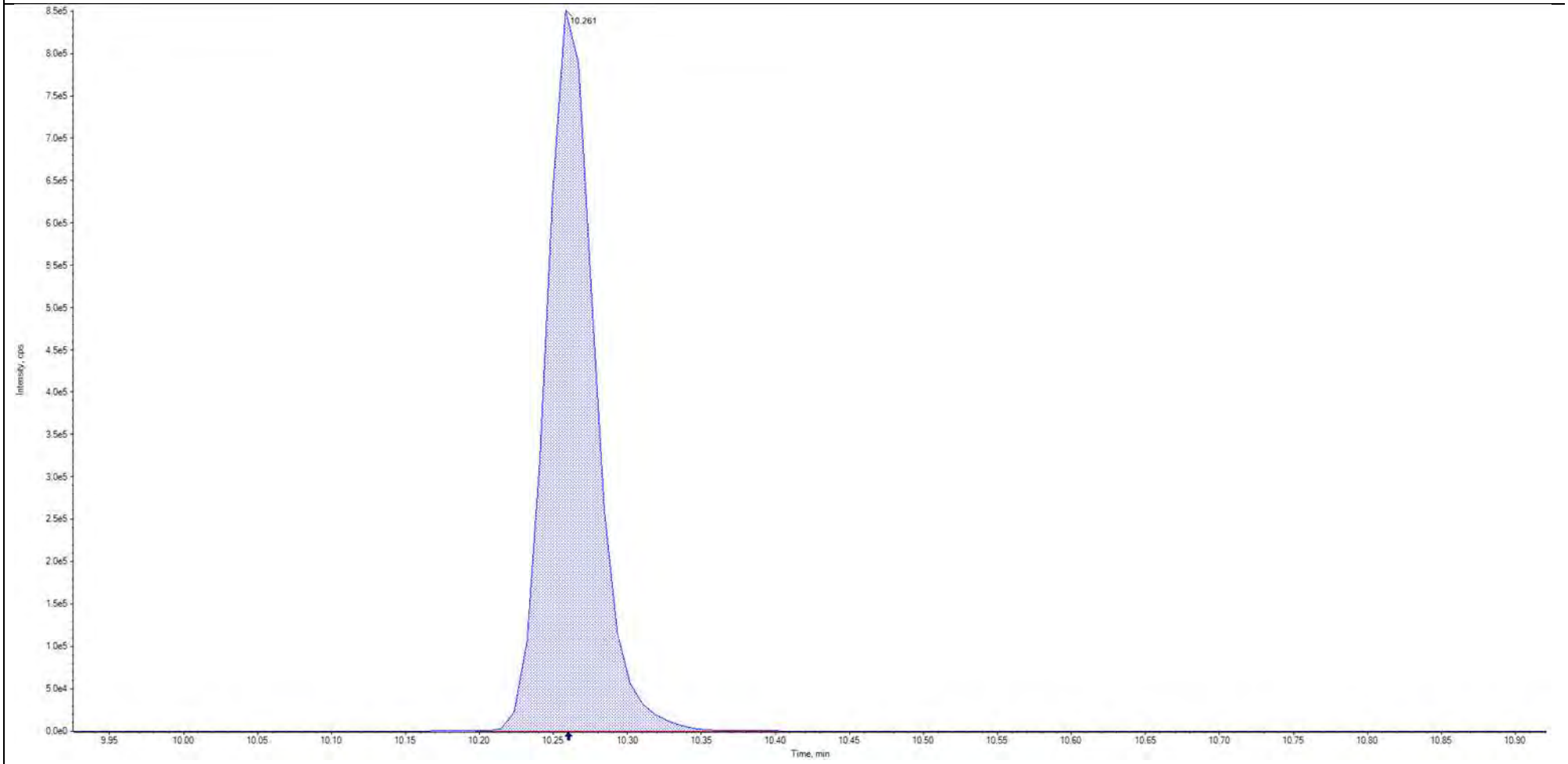
d5-NEtFOSAA
Sample: IA1633STD-.1



d7-NMeFOSE
Sample: IA1633STD-.1



d9-NEtFOSE
Sample: IA1633STD-.1



13C3-HFPO-DA
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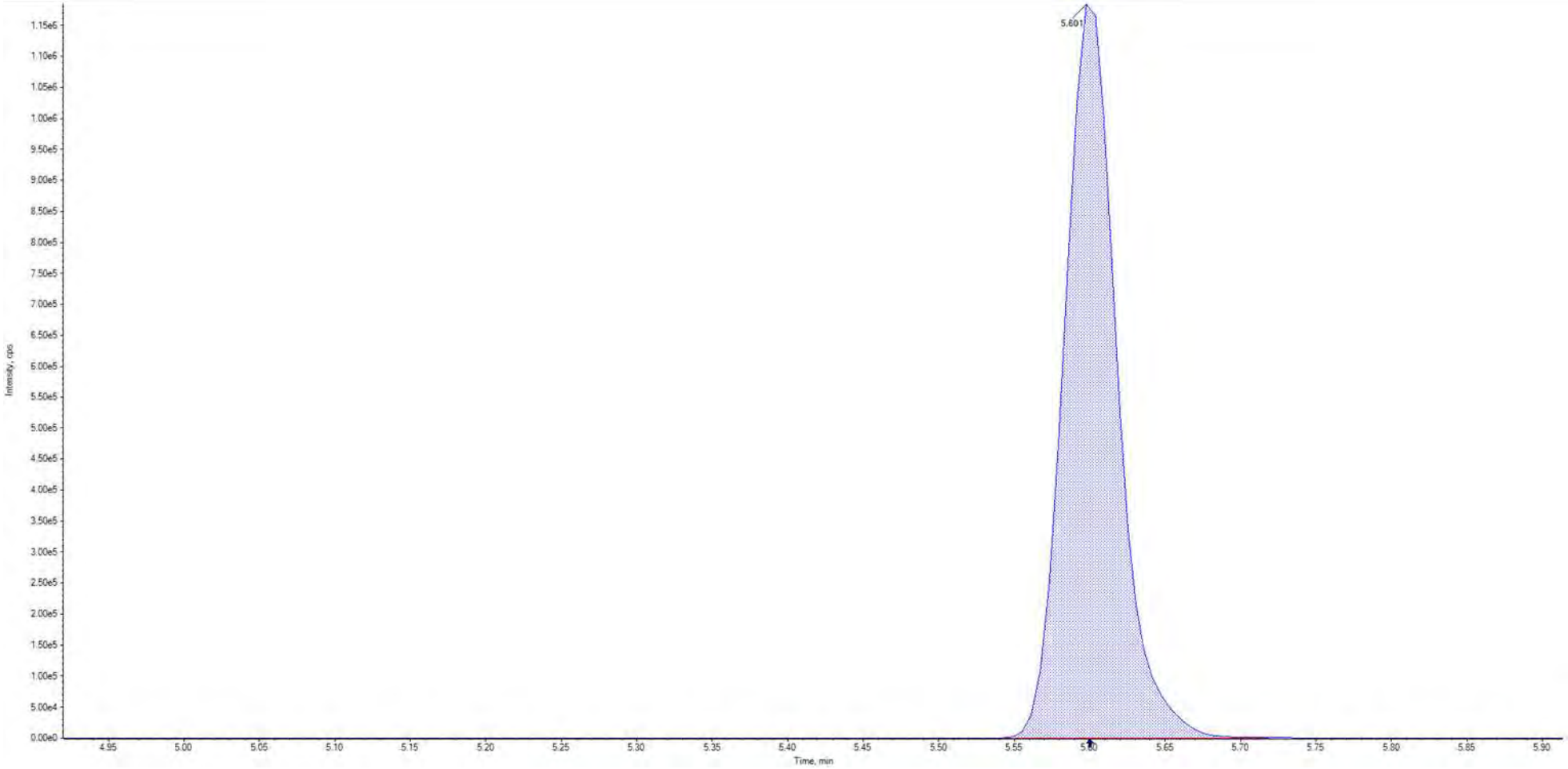

13C3-PFBA
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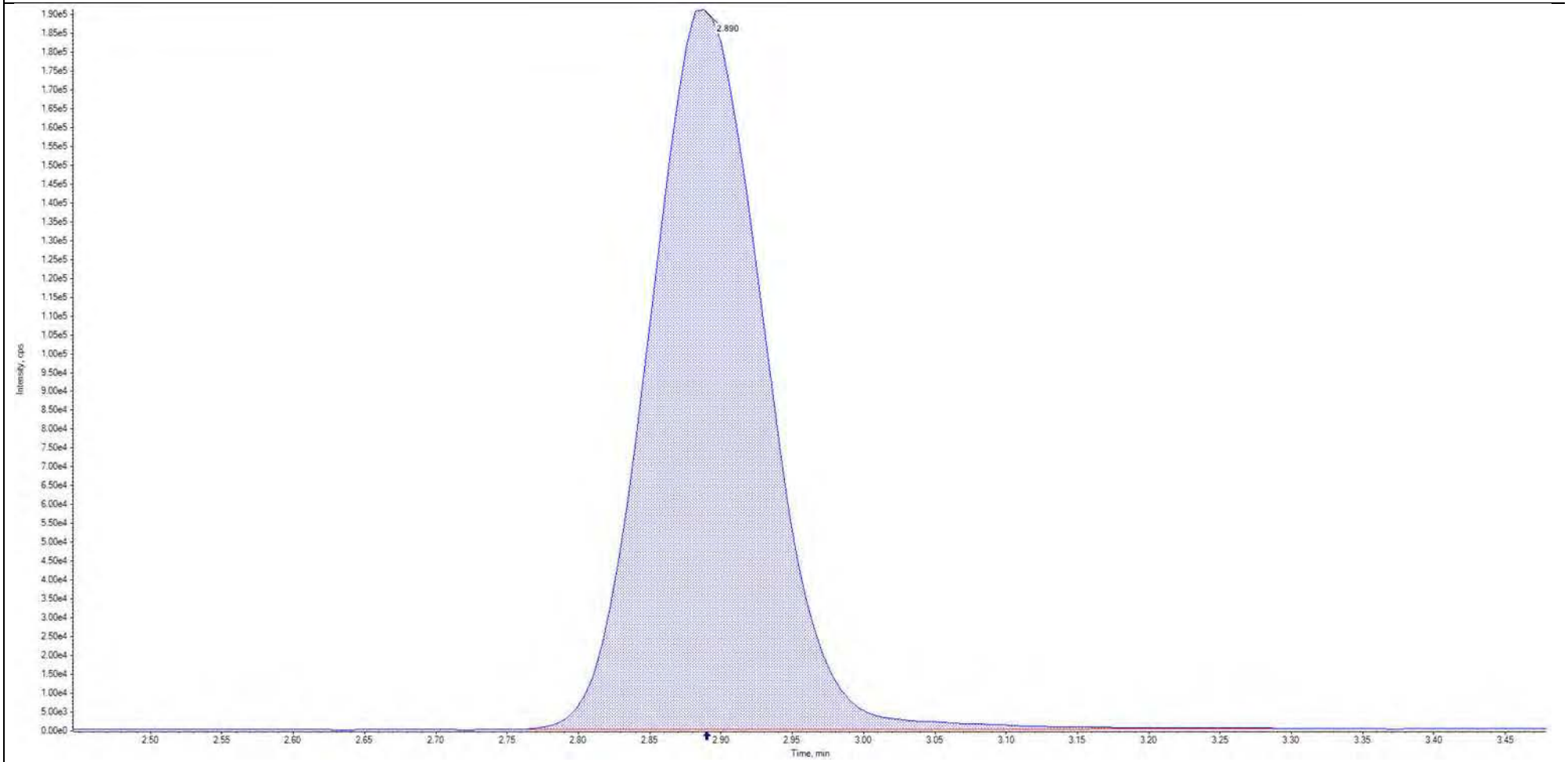
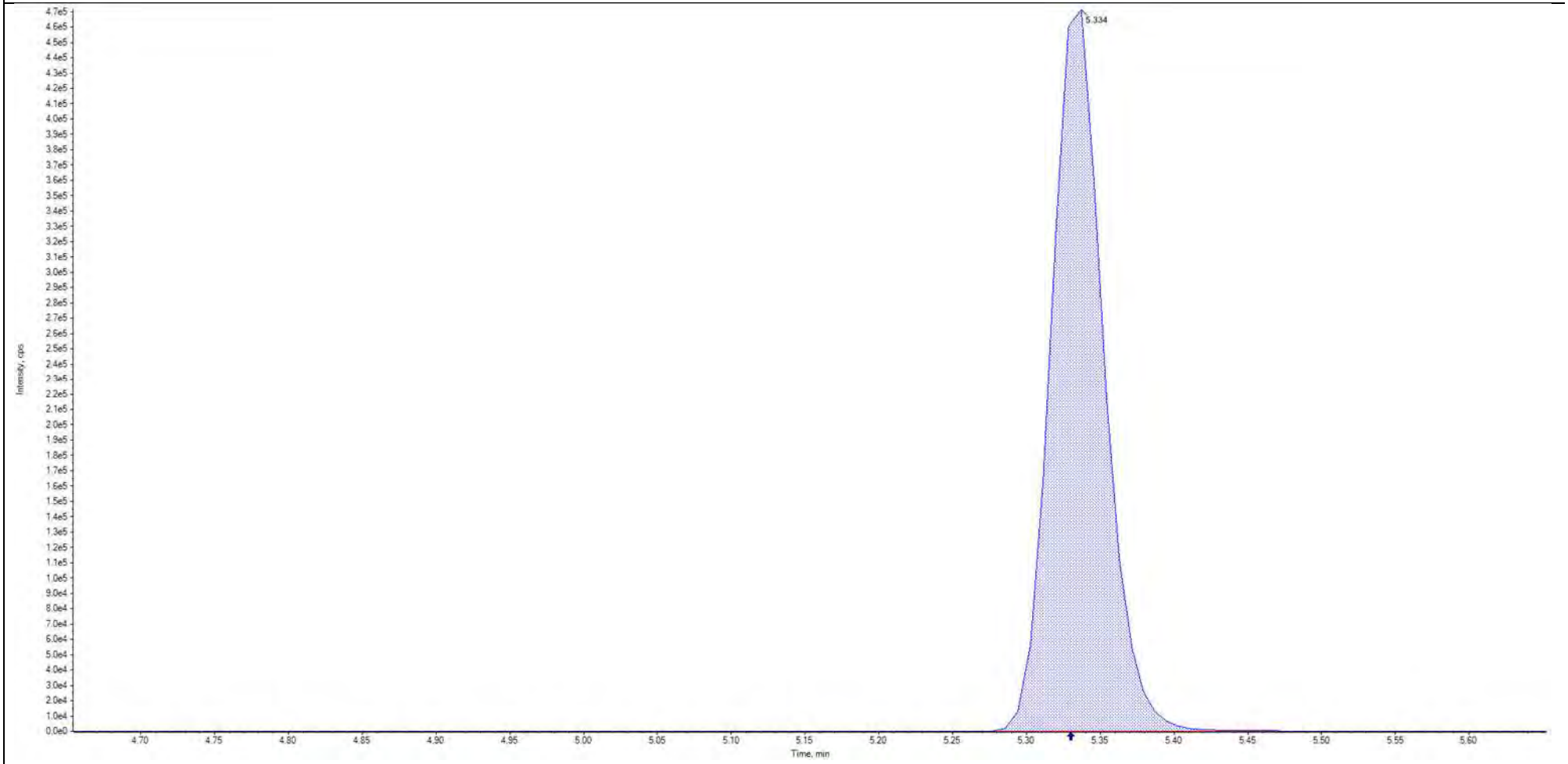


13C2-PFHxA
Sample: IA1633STD-.1



13C4-PFOA
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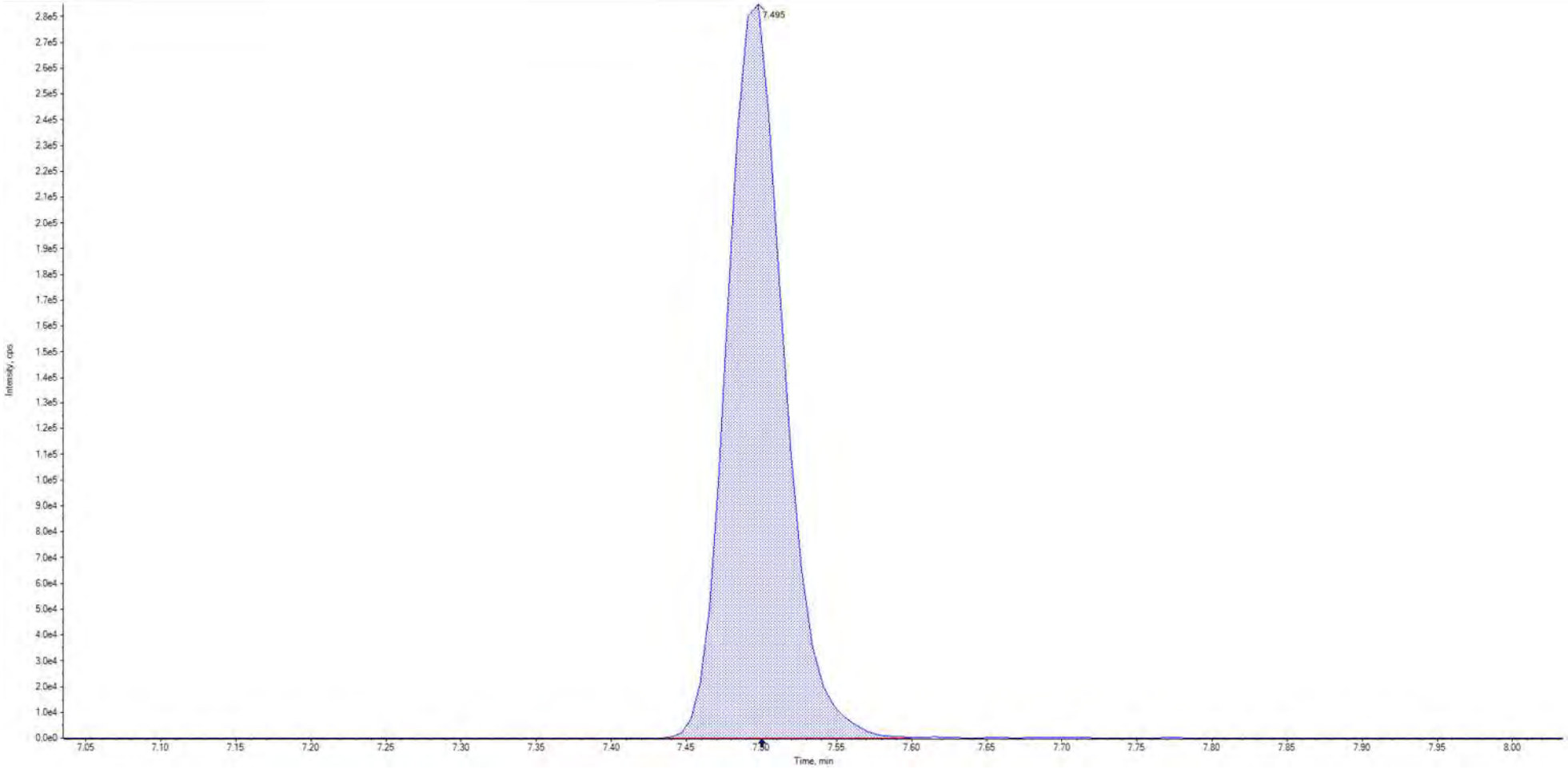

13C5-PFNA
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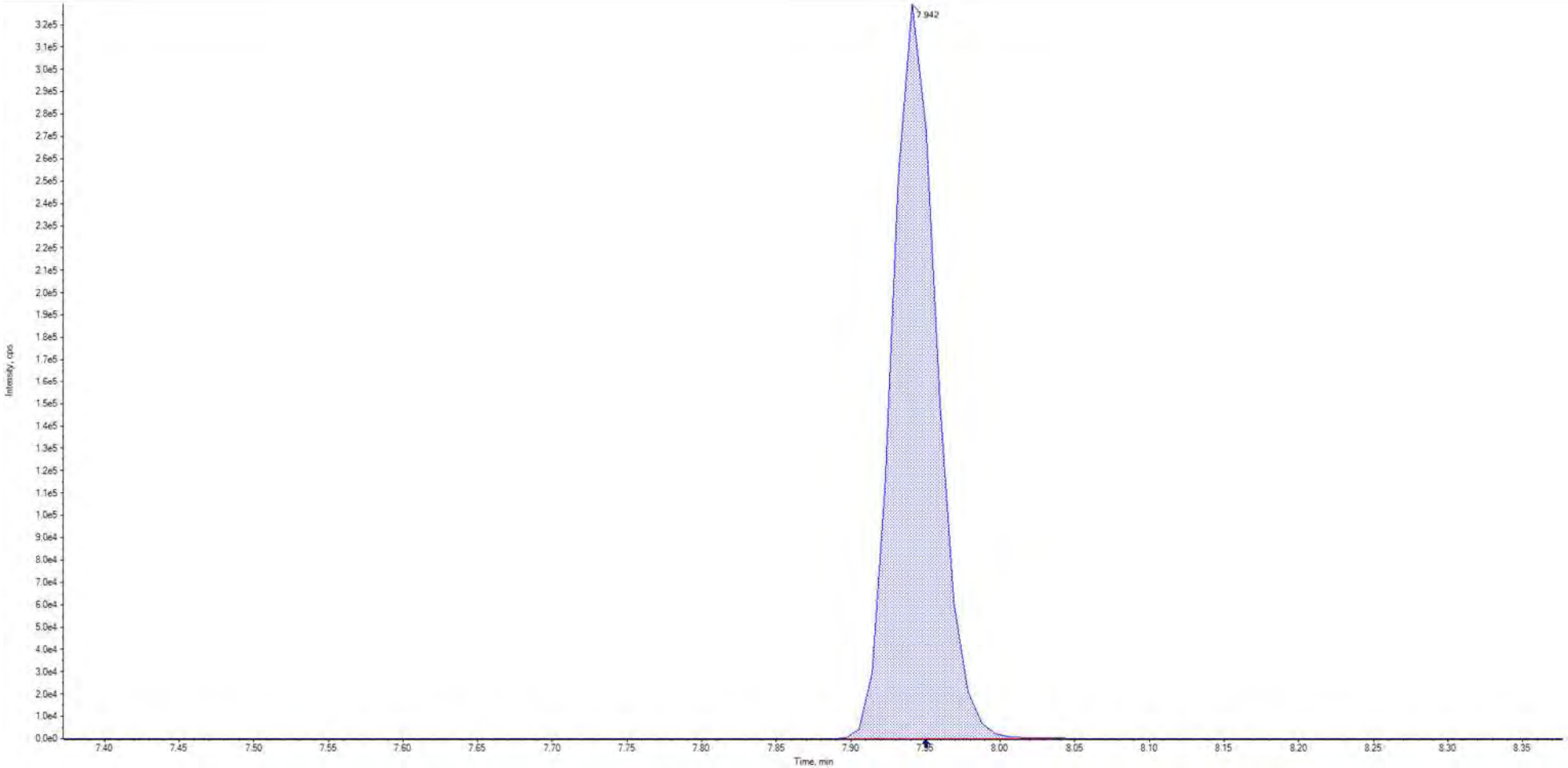

13C2-PFDA
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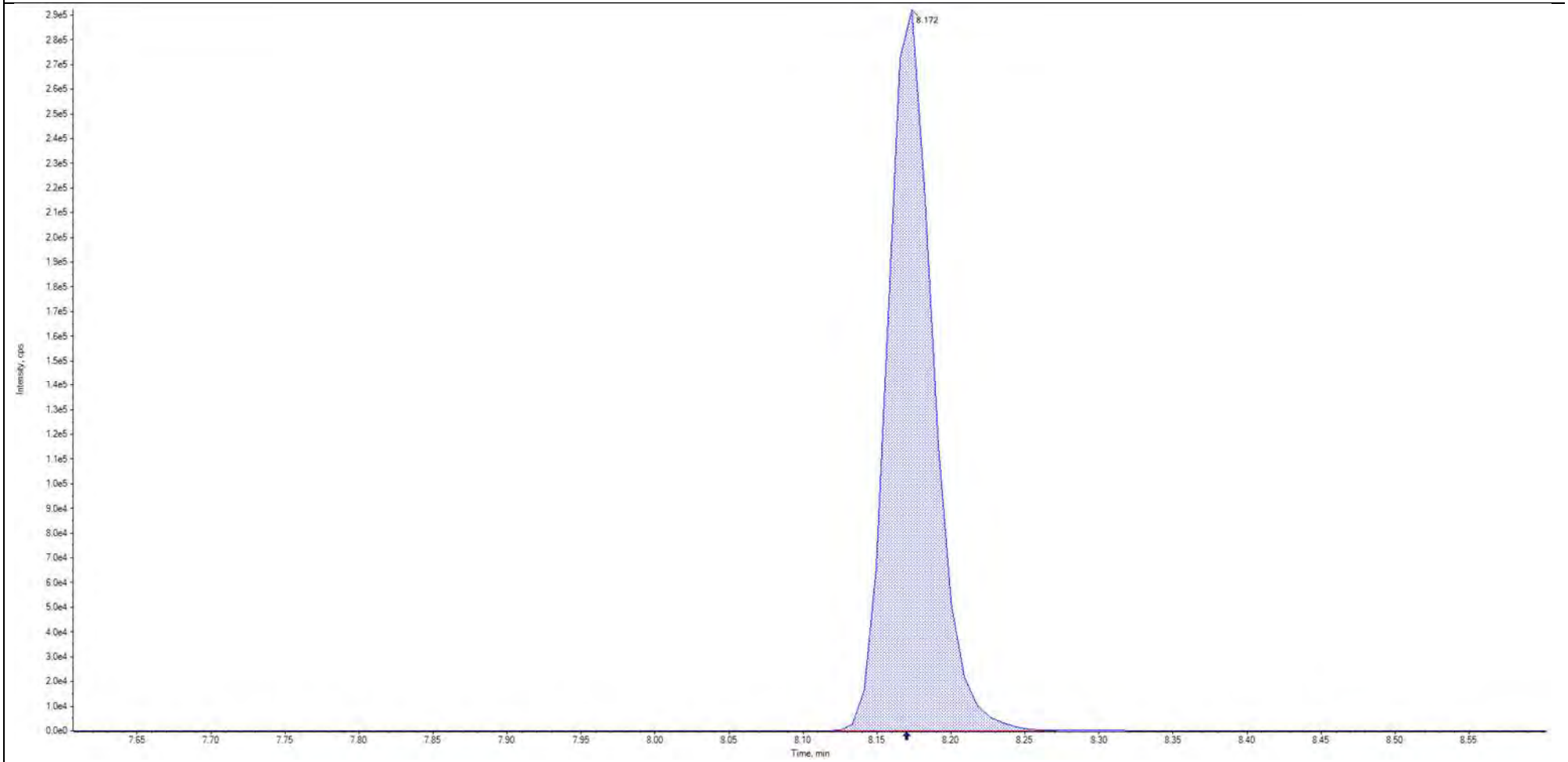

18O2-PFHxS
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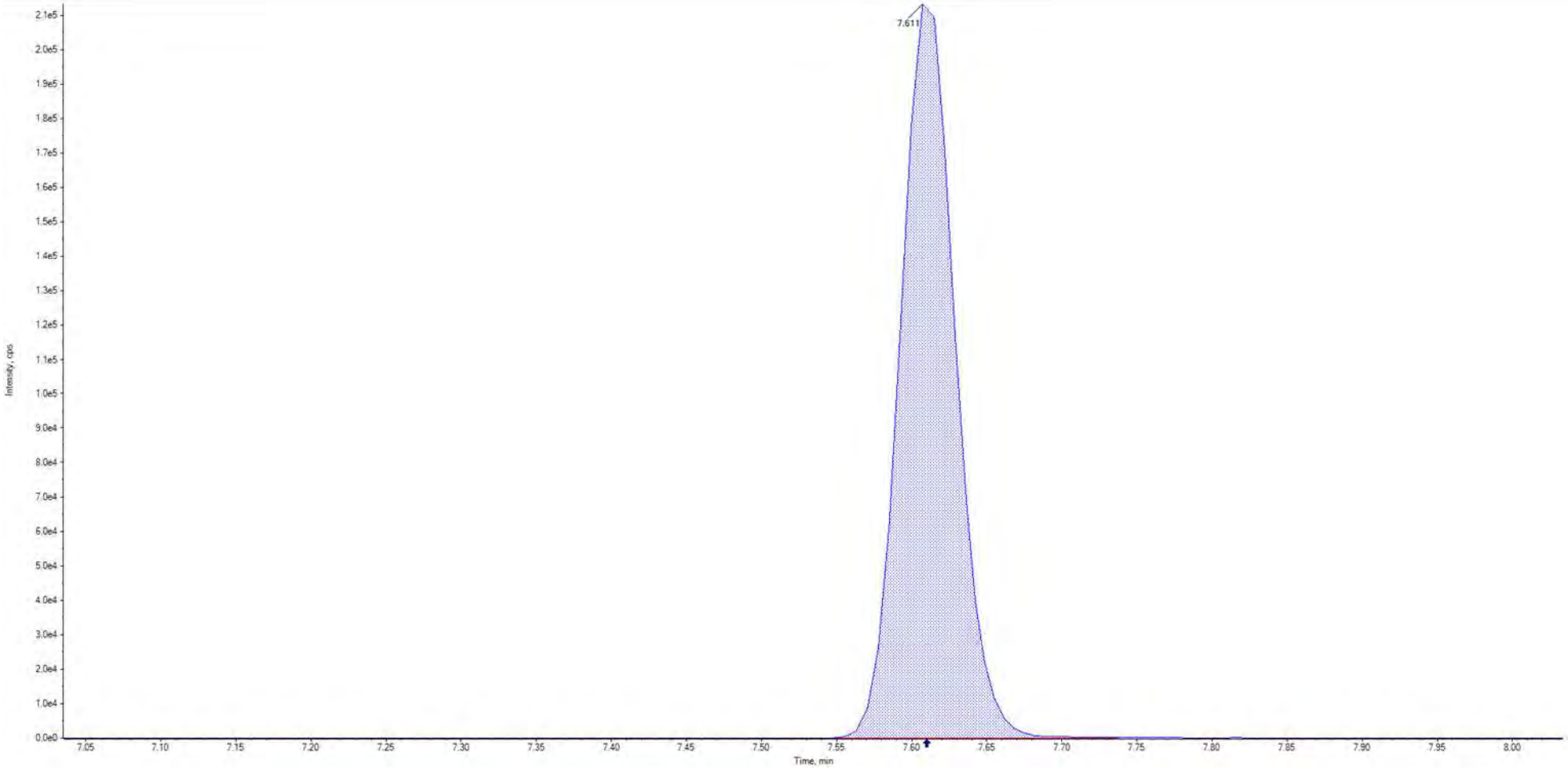

13C4-PFOS
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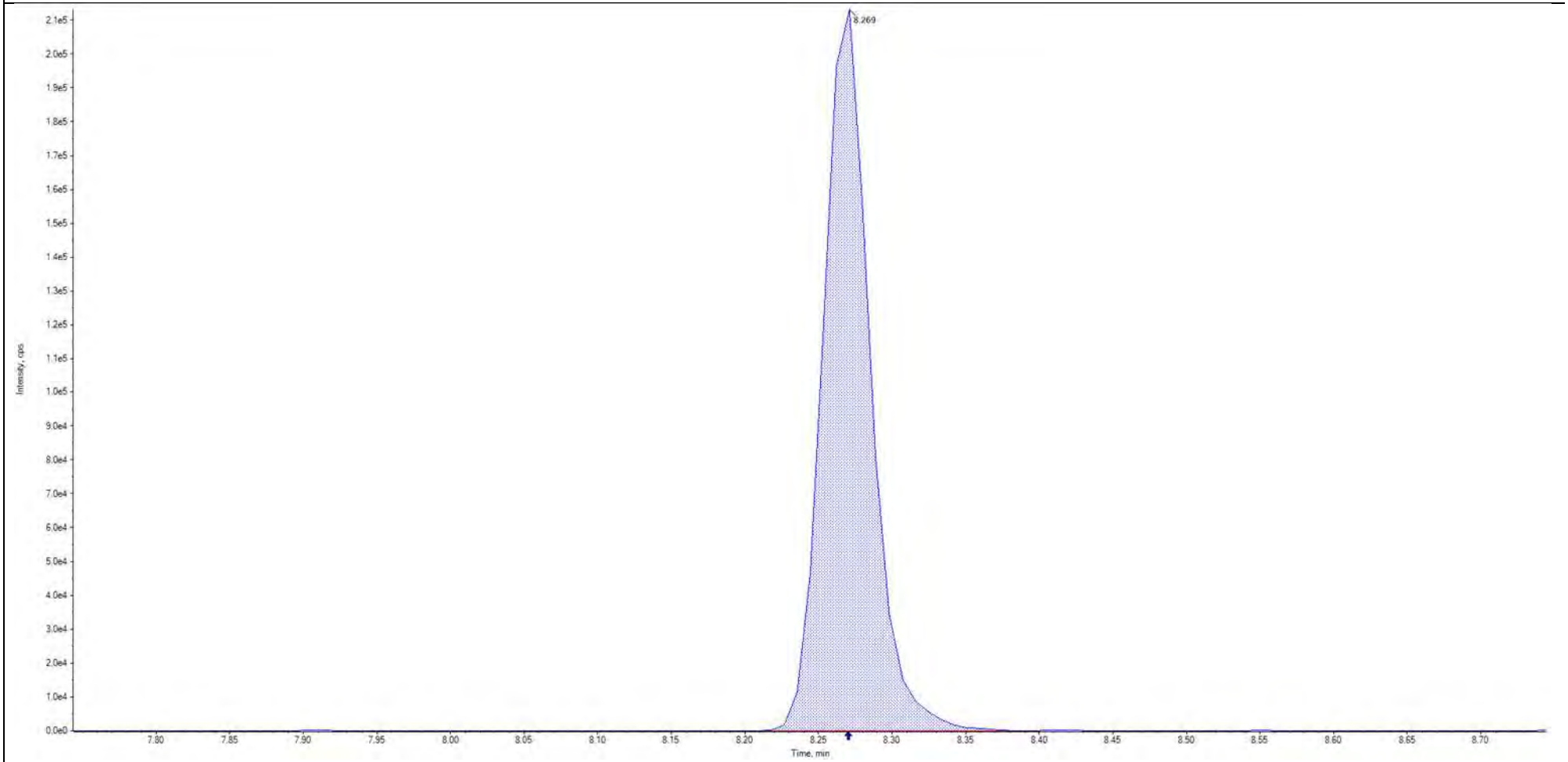

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Generated: 8/14/2024 6:27:11 AM

Method: EPA1633_NIS_CALC.qmethod
Calibration: 240813_1633_ICAL

ID: IA1633STD-.2
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Description: WG1958909,,,80 ul IA1633STD-2.5
Instrument: Triple Quad 5500+
User: LCMS05:SL

LC/MS-MS Method:EPA_1633.dam

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
1	PFBA	375-22-4	2.90	213.0 / 169.0	159293		0.758	N/A	N/A	N/A	94.7
2	PFPeA	2706-90-3	4.64	263.0 / 219.0	115247		0.373	0.007	0.007	N/A	93.3
3	PFPeA_2	2706-90-3	4.64	263.0 / 68.9	814		0.373	0.007	0.007	N/A	93.3
4	PFHxA	307-24-4	5.34	313.0 / 269.0	99881		0.189	0.073	0.072	Pass	94.7
5	PFHxA_2	307-24-4	5.34	313.0 / 119.0	7259		0.186	0.073	0.072	Pass	93.2
6	PFHpA	375-85-9	6.25	363.1 / 319.0	96463		0.194	0.304	0.297	Pass	96.9
7	PFHpA_2	375-85-9	6.24	363.1 / 169.0	29309		0.192	0.304	0.297	Pass	96.2

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
8	PFOA	335-67-1	7.50	413.1 / 369.1	61419	M5	0.189	0.551	0.586	Pass	94.7
9	PFOA_2	335-67-1	7.50	413.1 / 169.0	33854	M7	0.191	0.551	0.586	Pass	95.3
10	PFNA	375-95-1	7.95	462.8 / 418.9	81852	M5	0.184	0.299	0.313	Pass	92.2
11	PFNA_2	375-95-1	7.95	462.8 / 218.9	24484	M7	0.180	0.299	0.313	Pass	90.2
12	PFDA	335-76-2	8.18	513.1 / 469.1	96779		0.188	0.144	0.142	Pass	94.2
13	PFDA_2	335-76-2	8.18	513.1 / 219.0	13960		0.181	0.144	0.142	Pass	90.7
14	PFUnA	2058-94-8	8.47	563.1 / 519.1	70846		0.186	0.184	0.194	Pass	93.2
15	PFUnA_2	2058-94-8	8.47	563.1 / 269.0	13047		0.177	0.184	0.194	Pass	88.6
16	PFDoA	307-55-1	8.91	613.1 / 569.1	71799		0.191	0.161	0.167	Pass	95.4
17	PFDoA_2	307-55-1	8.91	613.1 / 319.0	11588		0.182	0.161	0.167	Pass	91.2
18	PFTrDA	72629-94-8	9.50	663.1 / 619.1	41986		0.187	0.210	0.228	Pass	93.7
19	PFTrDA_2	72629-94-8	9.50	663.1 / 169.0	8820		0.177	0.210	0.228	Pass	88.3
20	PFTeDA	376-06-7	9.91	713.1 / 669.1	75539		0.183	0.149	0.137	Pass	91.4
21	PFTeDA_2	376-06-7	9.91	713.1 / 169.0	11287		0.200	0.149	0.137	Pass	99.9
22	PFBS	375-73-5	5.31	299.1 / 80.1	57514		0.169	0.418	0.396	Pass	95.1

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
23	PFBS_2	375-73-5	5.31	299.1 / 99.1	24034		0.177	0.418	0.396	Pass	99.7
24	PFPeS	2706-91-4	6.34	349.1 / 80.1	49418		0.170	0.315	0.299	Pass	90.4
25	PFPeS_2	2706-91-4	6.34	349.1 / 99.1	15586		0.178	0.315	0.299	Pass	94.5
26	PFHxS	355-46-4	7.61	399.1 / 80.1	50270	M5	0.185	0.324	0.315	Pass	101.2
27	PFHxS_2	355-46-4	7.61	399.1 / 99.1	16272	M7	0.193	0.324	0.315	Pass	105.4
28	PFHpS	375-92-8	8.01	449.1 / 80.1	48727		0.175	0.290	0.287	Pass	91.6
29	PFHpS_2	375-92-8	8.01	449.1 / 99.1	14135		0.173	0.290	0.287	Pass	90.7
30	PFOS	1763-23-1	8.27	499.1 / 80.1	52468	M5	0.177	0.277	0.238	Pass	95.1
31	PFOS_2	1763-23-1	8.27	499.1 / 99.1	14513		0.199	0.277	0.238	Pass	107.4
32	PFNS	68259-12-1	8.63	549.1 / 80.1	34346		0.180	0.272	0.301	Pass	93.6
33	PFNS_2	68259-12-1	8.63	549.1 / 99.1	9345		0.162	0.272	0.301	Pass	84.1
34	PFDS	335-77-3	9.15	599.1 / 80.1	33457	M4	0.178	0.277	0.275	Pass	92.2
35	PFDS_2	335-77-3	9.15	599.1 / 99.1	9268	M7	0.179	0.277	0.275	Pass	92.7
36	PFDoS	79780-39-5	10.00	699.2 / 80.1	31280		0.182	0.273	0.274	Pass	93.7
37	PFDoS_2	79780-39-5	10.00	699.2 / 99.1	8548		0.181	0.273	0.274	Pass	93.2

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
38	4:2FTS	757124-72-4	5.13	327.1 / 307.1	102451		0.838	0.509	0.516	Pass	111.8
39	4:2FTS_2	757124-72-4	5.13	327.1 / 81.1	52133		0.797	0.509	0.516	Pass	106.3
40	6:2FTS	27619-97-2	7.09	427.2 / 407.2	54403		0.734	0.550	0.565	Pass	96.6
41	6:2FTS_2	27619-97-2	7.09	427.2 / 81.1	29907		0.746	0.550	0.565	Pass	98.2
42	8:2FTS	39108-34-4	8.07	527.2 / 507.2	67583		0.731	0.689	0.662	Pass	95.2
43	8:2FTS_2	39108-34-4	8.07	527.2 / 81.1	46542		0.742	0.689	0.662	Pass	96.6
44	PFOSA	754-91-6	9.54	498.1 / 78.1	48458	M5	0.180	0.031	0.025	Pass	89.8
45	PFOSA_2	754-91-6	9.55	498.1 / 478.0	1478	M7	0.209	0.031	0.025	Pass	104.4
46	NMeFOSA	31506-32-8	10.16	512.2 / 219.0	13659	M5	0.205	1.640	1.551	Pass	102.4
47	NMeFOSA_2	31506-32-8	10.14	512.2 / 169.0	22396	M7	0.217	1.640	1.551	Pass	108.4
48	NEtFOSA	4151-50-2	10.38	526.2 / 219.0	12795	M5	0.174	1.323	1.285	Pass	87.2
49	NEtFOSA_2	4151-50-2	10.35	526.2 / 169.0	16933	M7	0.172	1.323	1.285	Pass	86.2
50	NMeFOSAA	2355-31-9	8.22	570.2 / 419.1	19476		0.179	0.684	0.700	Pass	89.4
51	NMeFOSAA_2	2355-31-9	8.23	570.2 / 483.0	13326	M7	0.192	0.684	0.700	Pass	96.1
52	NEtFOSAA	2991-50-6	8.37	584.2 / 419.1	14442		0.202	0.335	0.487	Pass	100.8

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
53	NEtFOSAA_2	2991-50-6	8.37	584.2 / 526.2	4835		0.147	0.335	0.487	Pass	73.3
54	NMeFOSE	24448-09-7	10.08	616.1 / 58.9	220343	M5	1.890	N/A	N/A	N/A	94.5
55	NEtFOSE	1691-99-2	10.28	630.0 / 58.9	414400	M5	1.896	N/A	N/A	N/A	94.8
56	HFPO-DA	13252-13-6	5.60	285.0 / 169.0	196682		0.778	0.490	0.464	Pass	97.3
57	HFPO-DA_2	13252-13-6	5.60	285.0 / 184.9	96318		0.819	0.490	0.464	Pass	102.4
58	ADONA	919005-14-4	6.72	377.1 / 251.0	425384		0.740	0.661	0.634	Pass	97.9
59	ADONA_2	919005-14-4	6.72	377.1 / 84.8	281078		0.756	0.661	0.634	Pass	100.0
60	9Cl-PF3ONS	756426-58-1	8.50	530.8 / 351.1	444386		0.784	0.324	0.322	Pass	104.8
61	9Cl-PF3ONS_2	756426-58-1	8.50	532.8 / 353.0	143827		0.779	0.324	0.322	Pass	104.2
62	11Cl-PF3OUdS	763051-92-9	9.57	630.9 / 451.0	265657		0.742	0.344	0.331	Pass	98.2
63	11Cl-PF3OUdS_2	763051-92-9	9.57	632.9 / 452.9	91393		0.759	0.344	0.331	Pass	100.3
64	3:3FTCA	356-02-5	4.91	241.1 / 177.1	23352	M4	0.872	1.109	1.074	Pass	87.2
65	3:3FTCA_2	356-02-5	4.91	241.1 / 117.0	25907	M7	0.965	1.109	1.074	Pass	96.5
66	5:3FTCA	914637-49-3	7.16	341.1 / 237.1	457091		4.778	0.926	0.953	Pass	95.6
67	5:3FTCA_2	914637-49-3	7.16	341.1 / 217.0	423321		4.676	0.926	0.953	Pass	93.5

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
68	7:3FTCA	812-70-4	8.21	441.1 / 316.9	583552		5.479	1.499	1.558	Pass	109.6
69	7:3FTCA_2	812-70-4	8.21	441.1 / 337.1	874662		5.659	1.499	1.558	Pass	113.2
70	PFEESA	113507-82-7	5.71	315.1 / 135.0	304483		0.333	0.084	0.087	Pass	93.5
71	PFEESA_2	113507-82-7	5.71	315.1 / 82.9	25431		0.322	0.084	0.087	Pass	90.4
72	PFMPA	377-73-1	3.85	229.0 / 85.0	14165		0.379	N/A	N/A	N/A	94.7
73	PFMBA	863090-89-5	4.87	279.0 / 85.0	191221		0.379	N/A	N/A	N/A	94.8
74	NFDHA	151772-58-6	5.26	295.0 / 201.0	37544		0.390	1.025	0.910	Pass	97.4
75	NFDHA_2	151772-58-6	5.25	295.0 / 84.9	38493		0.436	1.025	0.910	Pass	109.0
76	TDCA	516-50-7	N/A	499.1 / 124.1	N/A		N/A	N/A	40.716	N/A	N/A
77	TDCA_2	516-50-7	N/A	499.1 / 79.9	N/A		N/A	N/A	40.716	N/A	N/A
78	13C2D4-4:2FTS	Surr	5.12	333.2 / 312.1	946281		5.197	N/A	N/A	N/A	103.9
79	13C2-PFOA	Surr	7.49	415.0 / 370.0	3366661		2.612	N/A	N/A	N/A	104.5

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C4-PFBA	EIS	2.89	217.0 / 172.0	2591876		10.436	NA	NA	NA	104.4

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C5-PFPeA	EIS	4.63	268.0 / 223.0	1675260		5.422	NA	NA	NA	108.4
	13C5-PFHxA	EIS	5.33	318.0 / 273.0	1082049		2.666	NA	NA	NA	106.6
	13C4-PFHpA	EIS	6.24	367.0 / 322.0	1063160		2.616	NA	NA	NA	104.7
	13C8-PFOA	EIS	7.49	421.0 / 376.0	1558358		2.677	NA	NA	NA	107.1
	13C9-PFNA	EIS	7.94	472.0 / 427.0	758091		1.344	NA	NA	NA	107.6
	13C6-PFDA	EIS	8.17	519.0 / 474.0	744977		1.308	NA	NA	NA	104.7
	13C7-PFUnA	EIS	8.46	570.0 / 525.0	601558		1.306	NA	NA	NA	104.4

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C2-PFDoA	EIS	8.90	615.1 / 570.0	361624		1.207	NA	NA	NA	96.5
	13C2-PFTeDA	EIS	9.90	715.1 / 670.1	412218		1.267	NA	NA	NA	101.4
	13C3-PFBS	EIS	5.31	302.1 / 80.1	812389		2.395	NA	NA	NA	102.8
	13C3-PFHxS	EIS	7.61	402.1 / 80.1	681091		2.528	NA	NA	NA	106.7
	13C8-PFOS	EIS	8.27	507.1 / 80.1	723513		2.547	NA	NA	NA	106.4
	13C2-4:2FTS	EIS	5.13	329.1 / 81.1	292510		4.831	NA	NA	NA	103.0
	13C2-6:2FTS	EIS	7.08	429.2 / 81.1	214797		4.841	NA	NA	NA	101.8
	13C2-8:2FTS	EIS	8.07	529.2 / 81.1	350131		5.392	NA	NA	NA	112.3

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C8-PFOSA	EIS	9.54	506.1 / 78.1	1009281		2.673	NA	NA	NA	106.9
	d3-NMeFOSA	EIS	10.16	515.2 / 219.0	155680		2.449	NA	NA	NA	98.0
	d5-NEtFOSA	EIS	10.37	531.2 / 219.0	167060		2.690	NA	NA	NA	107.6
	d3-NMeFOSAA	EIS	8.22	573.2 / 419.1	828197		5.763	NA	NA	NA	115.3
	d5-NEtFOSAA	EIS	8.36	589.3 / 419.1	384156		5.087	NA	NA	NA	101.7
	d7-NMeFOSE	EIS	10.07	623.2 / 58.9	1181472		24.067	NA	NA	NA	96.3
	d9-NEtFOSE	EIS	10.26	639.2 / 58.9	1862081		25.728	NA	NA	NA	102.9

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C3-HFPO-DA	EIS	5.60	287.0 / 169.0	2757253		10.251	NA	NA	NA	102.5
	13C3-PFBA	NIS	2.89	216.0 / 172.0	1086405		5.081	NA	NA	NA	101.6
	13C2-PFHxA	NIS	5.33	315.0 / 270.0	1205069		2.461	NA	NA	NA	98.4
	13C4-PFOA	NIS	7.49	417.0 / 372.0	761506		2.433	NA	NA	NA	97.3
	13C5-PFNA	NIS	7.94	468.0 / 423.0	686977		1.254	NA	NA	NA	100.3
	13C2-PFDA	NIS	8.17	515.1 / 470.1	668959		1.306	NA	NA	NA	104.4
	18O2-PFHxS	NIS	7.61	403.1 / 84.1	547668		2.338	NA	NA	NA	98.6
	13C4-PFOS	NIS	8.27	503.1 / 80.1	502439		2.386	NA	NA	NA	99.6

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	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
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PFBA
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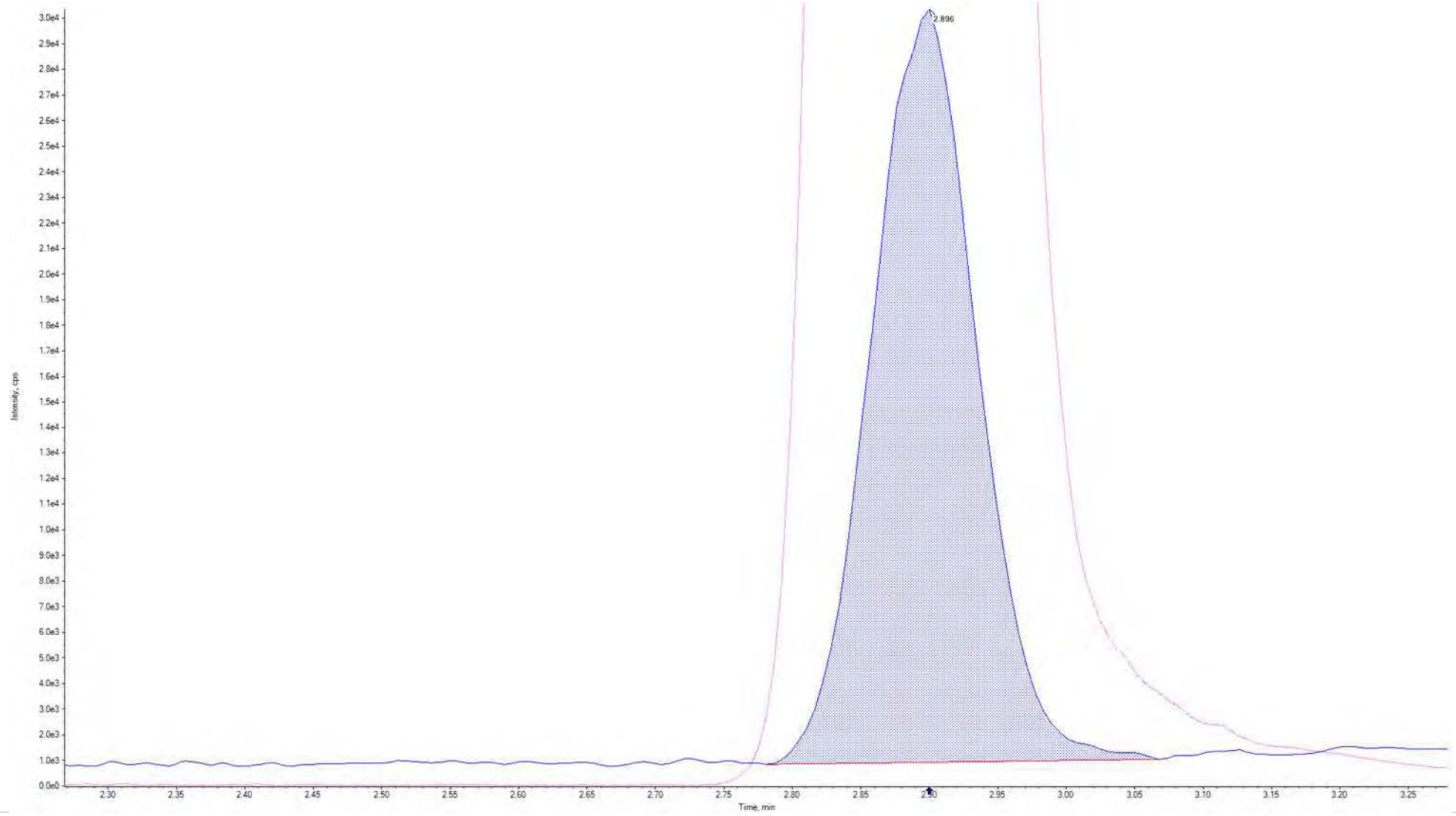

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PFPeA
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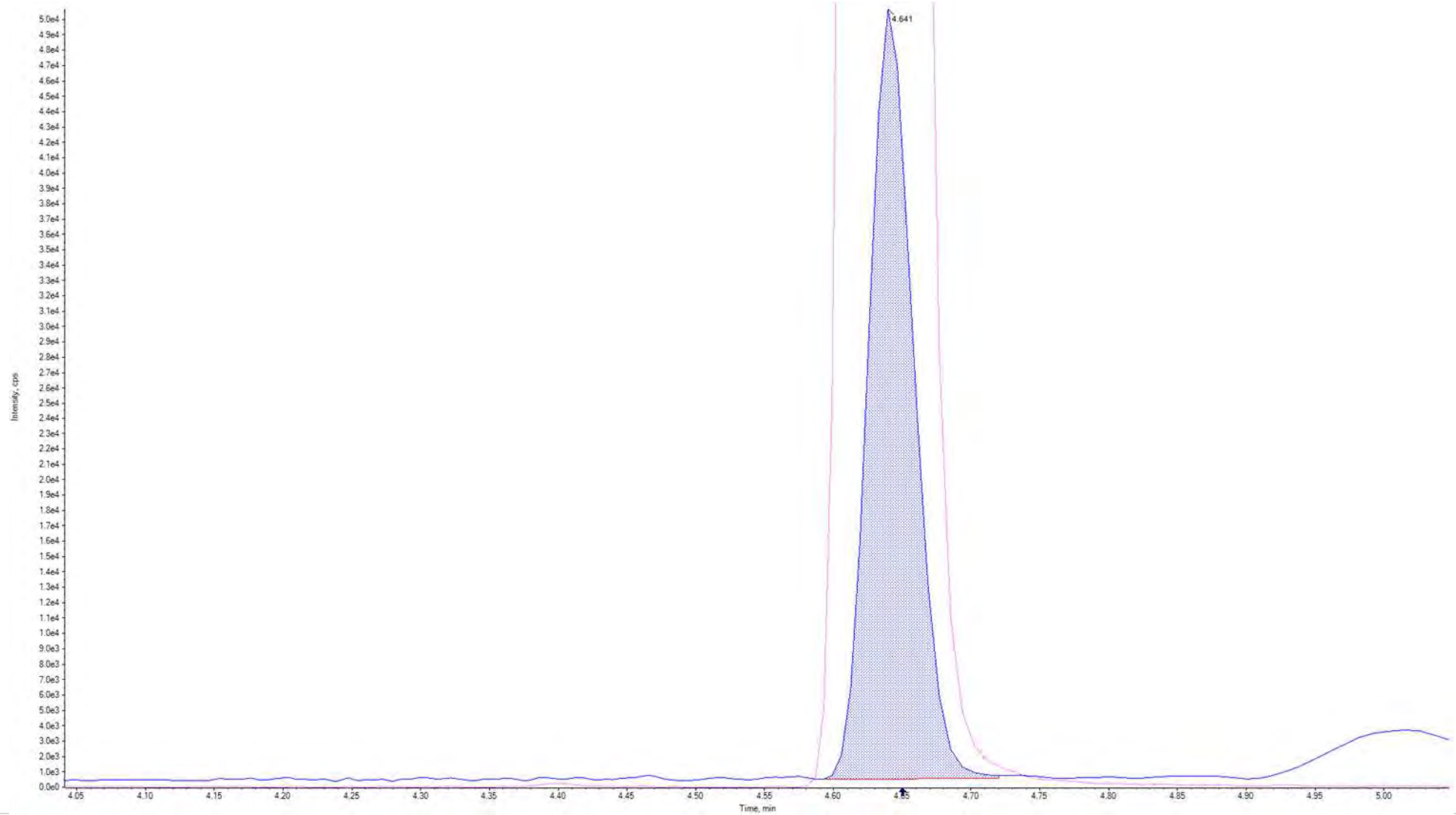

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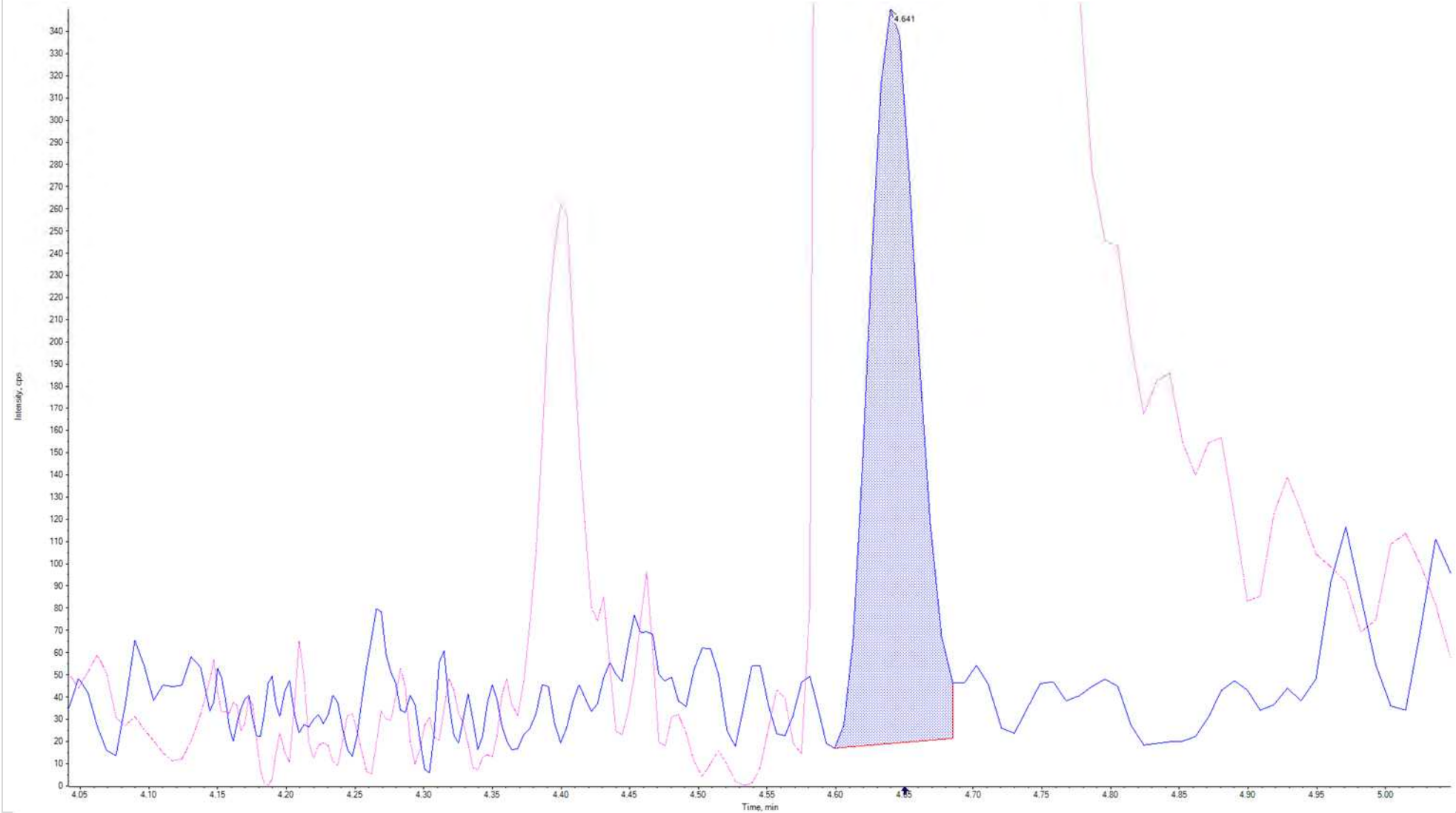
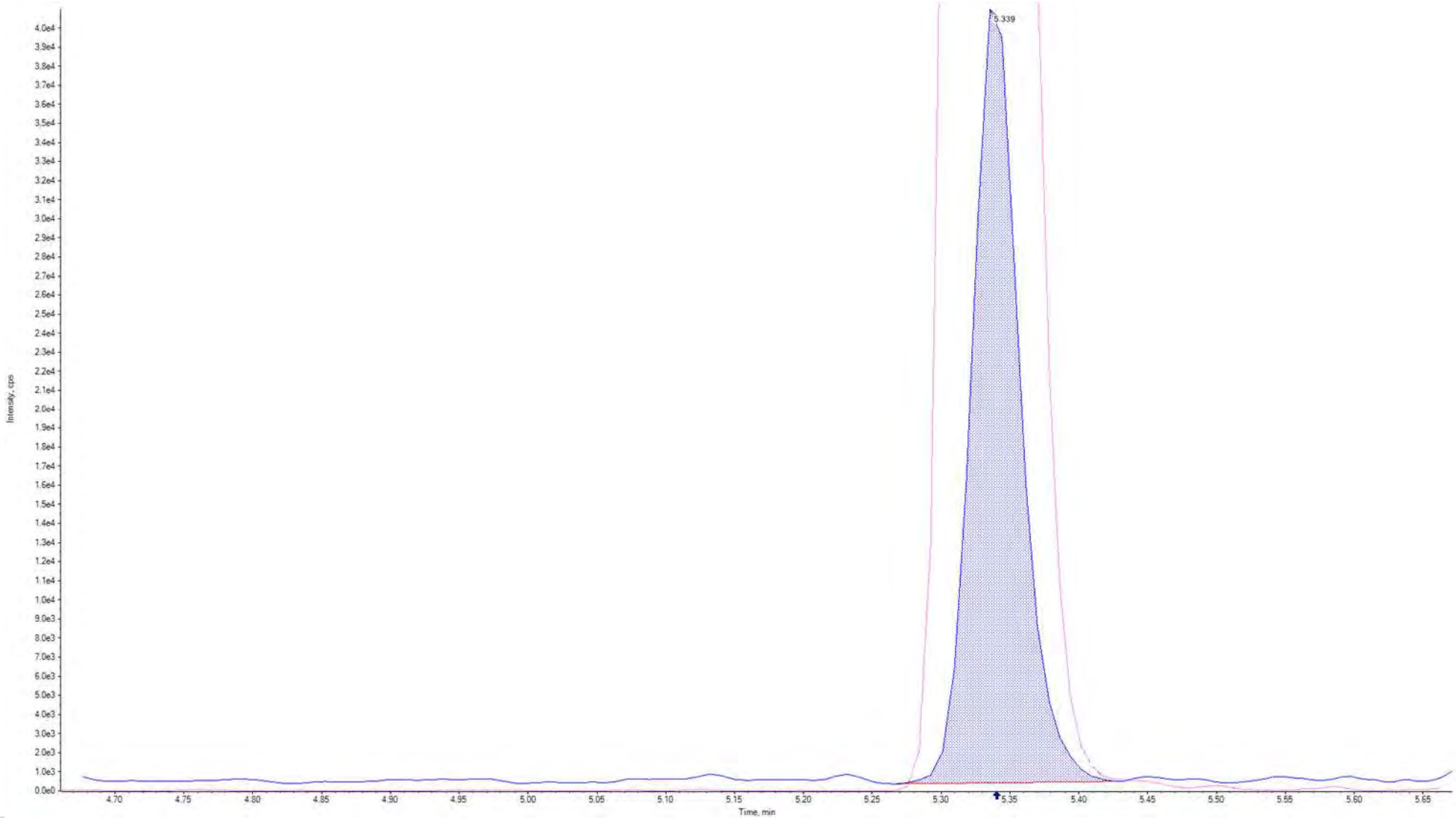
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFPeA_2
Sample: IA1633STD-.2 S/N:76.5 Points Across peak:13



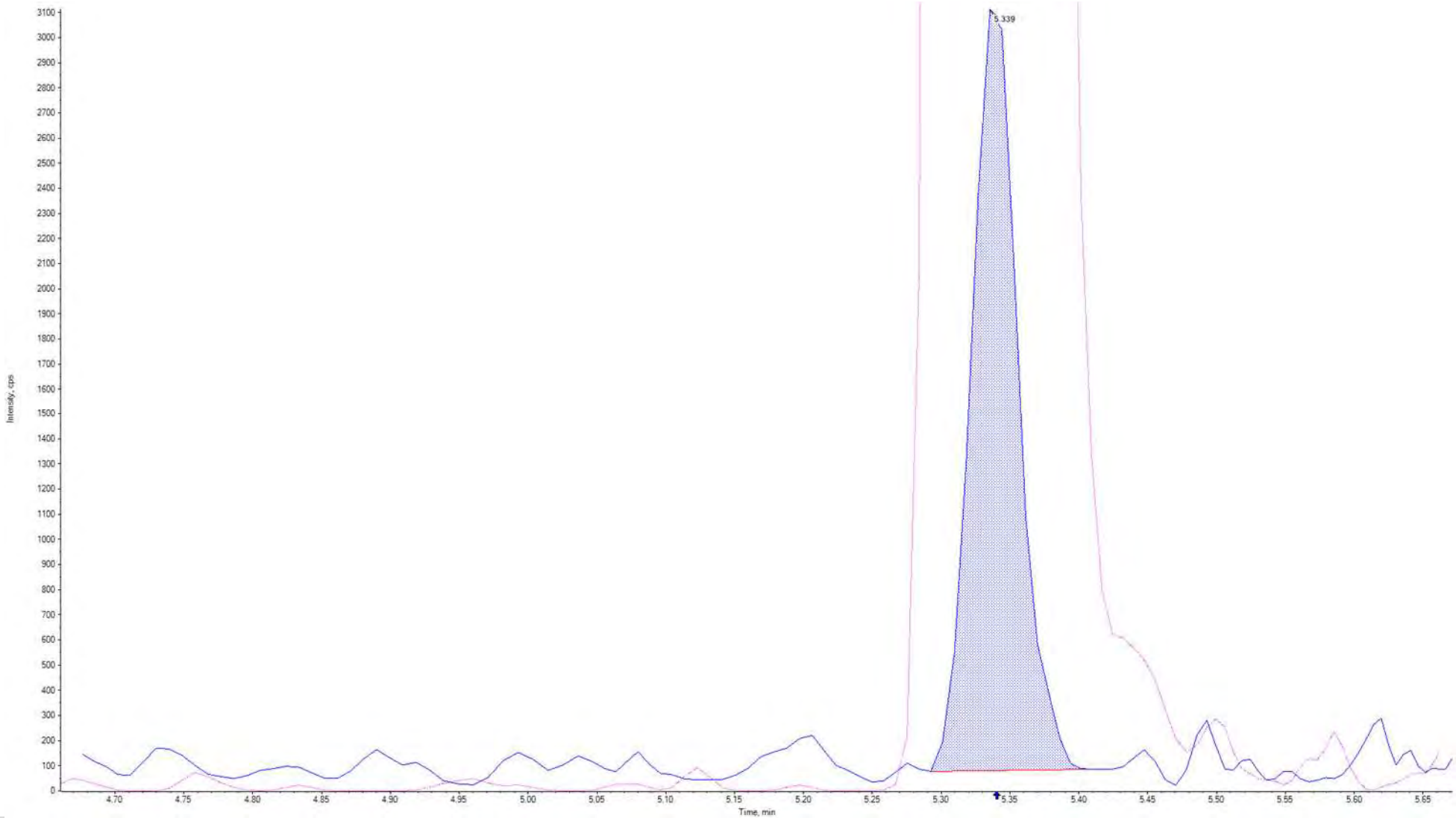
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFHxA
Sample: IA1633STD-.2 S/N:306.5 Points Across peak:21



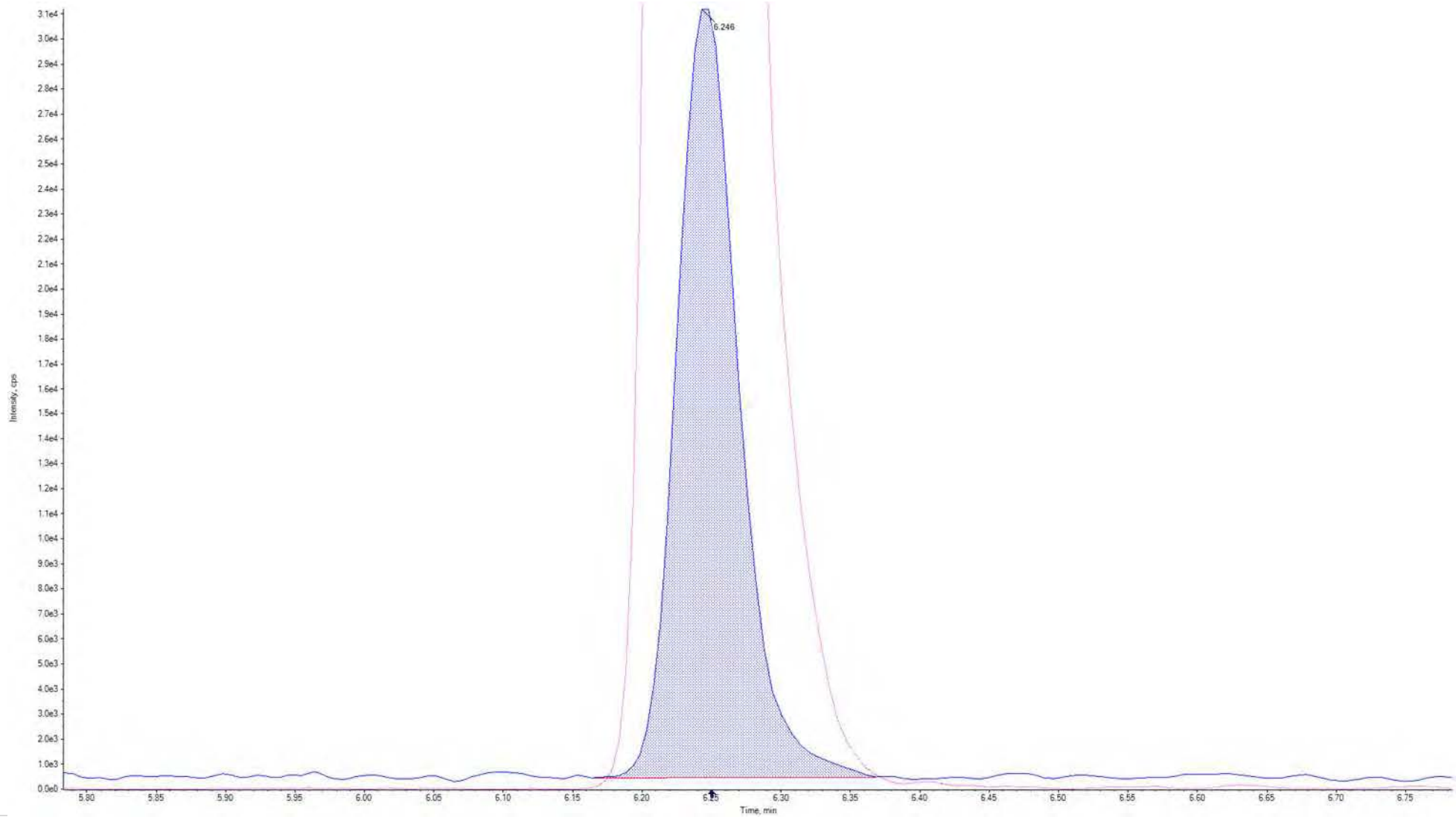
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFHxA_2
Sample: IA1633STD-.2 S/N:184.7 Points Across peak:15



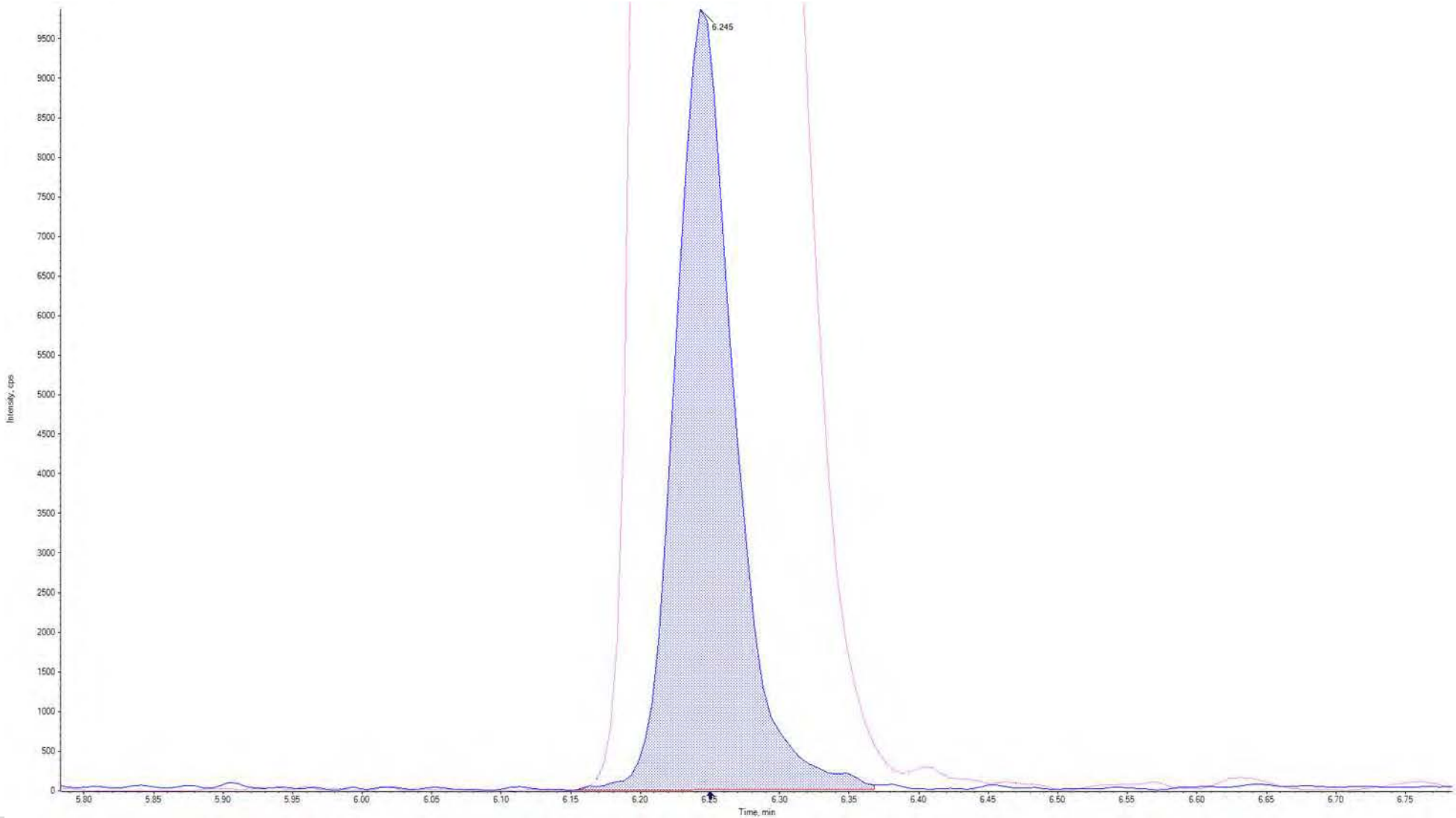
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFHpA
Sample: IA1633STD-.2 S/N:556.7 Points Across peak:37



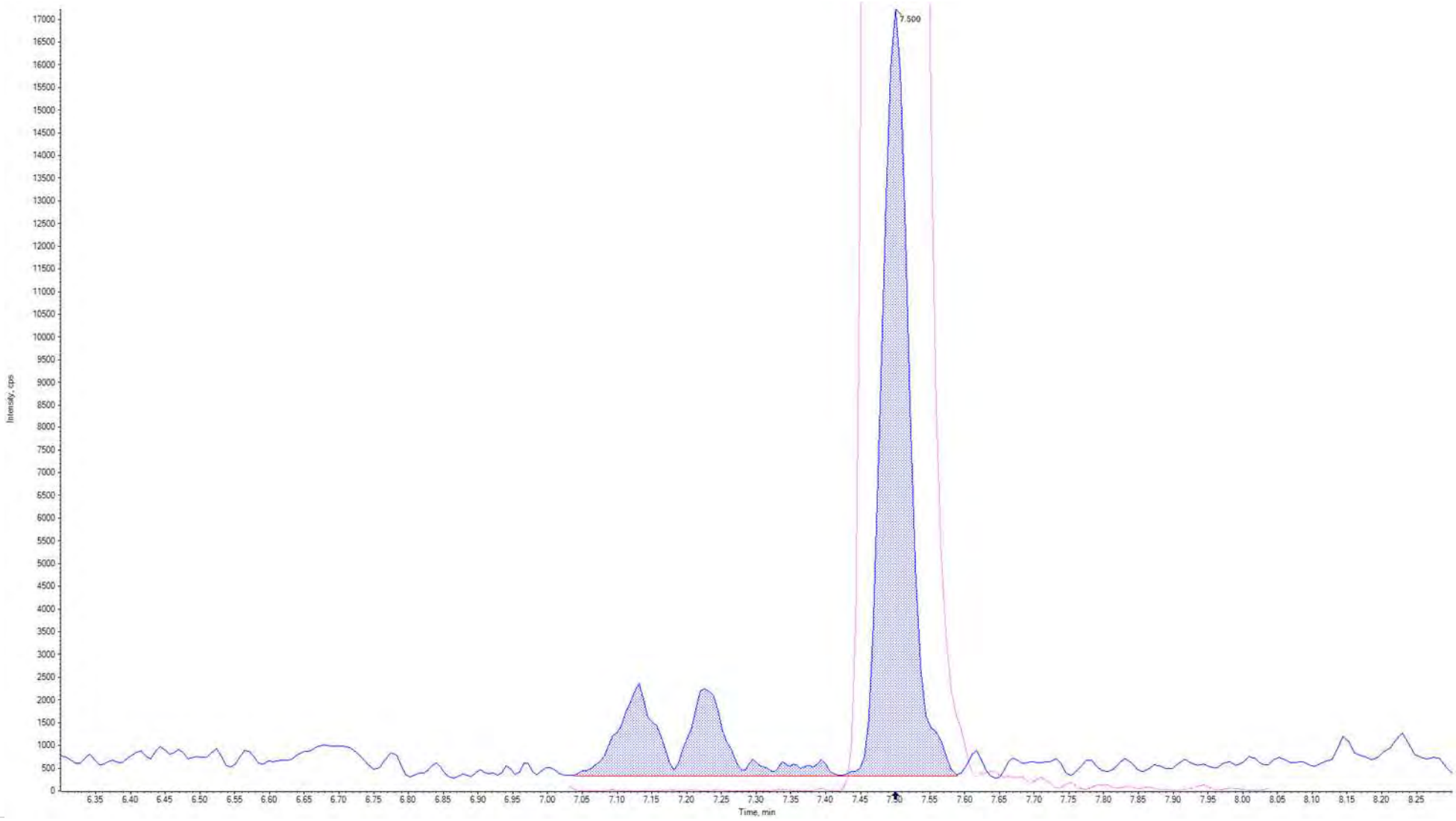
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFHpA_2
Sample: IA1633STD-.2 S/N:1481.4 Points Across peak:40



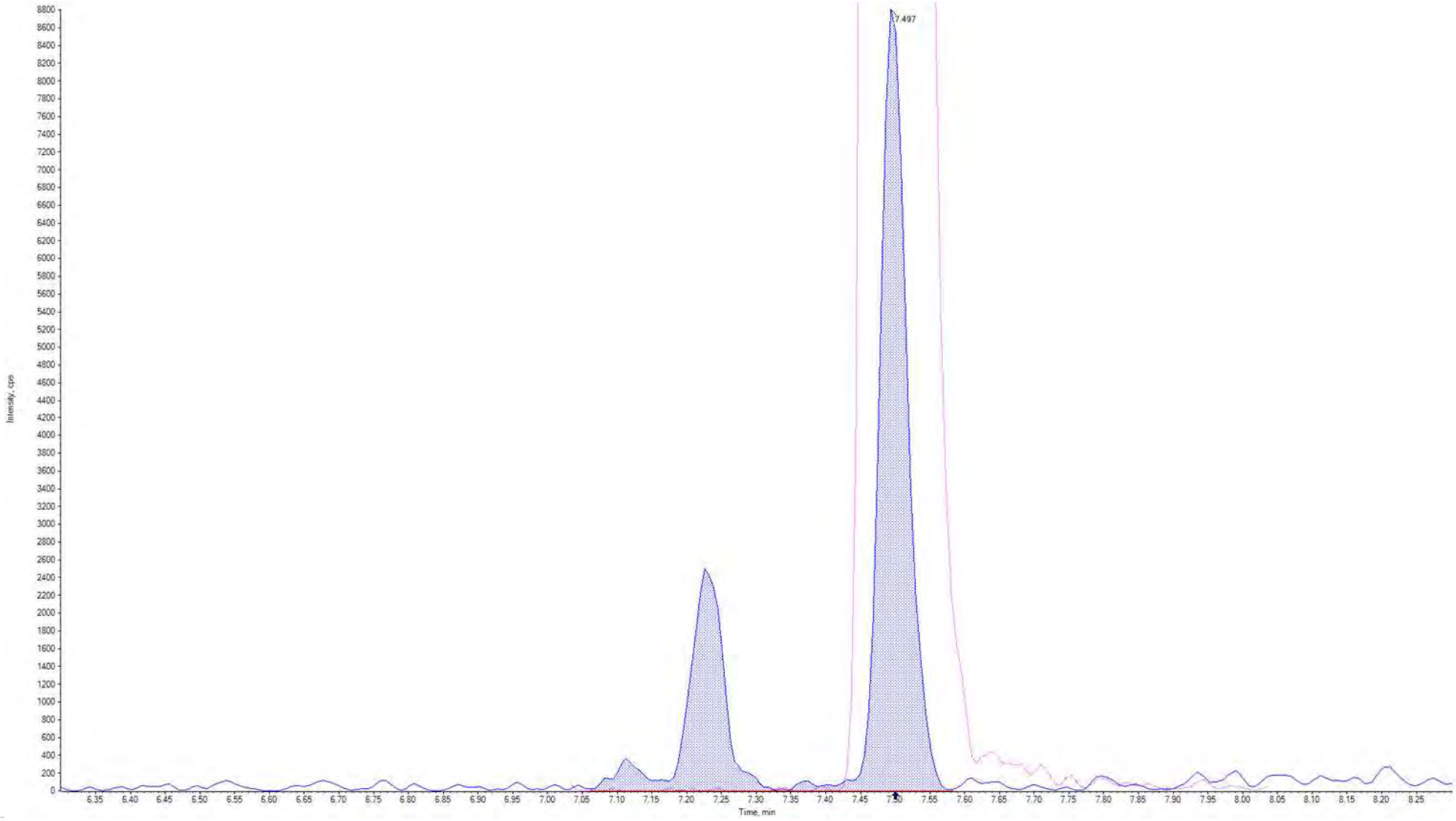
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFOA
Sample: IA1633STD-.2 S/N:276.3 Points Across peak:91



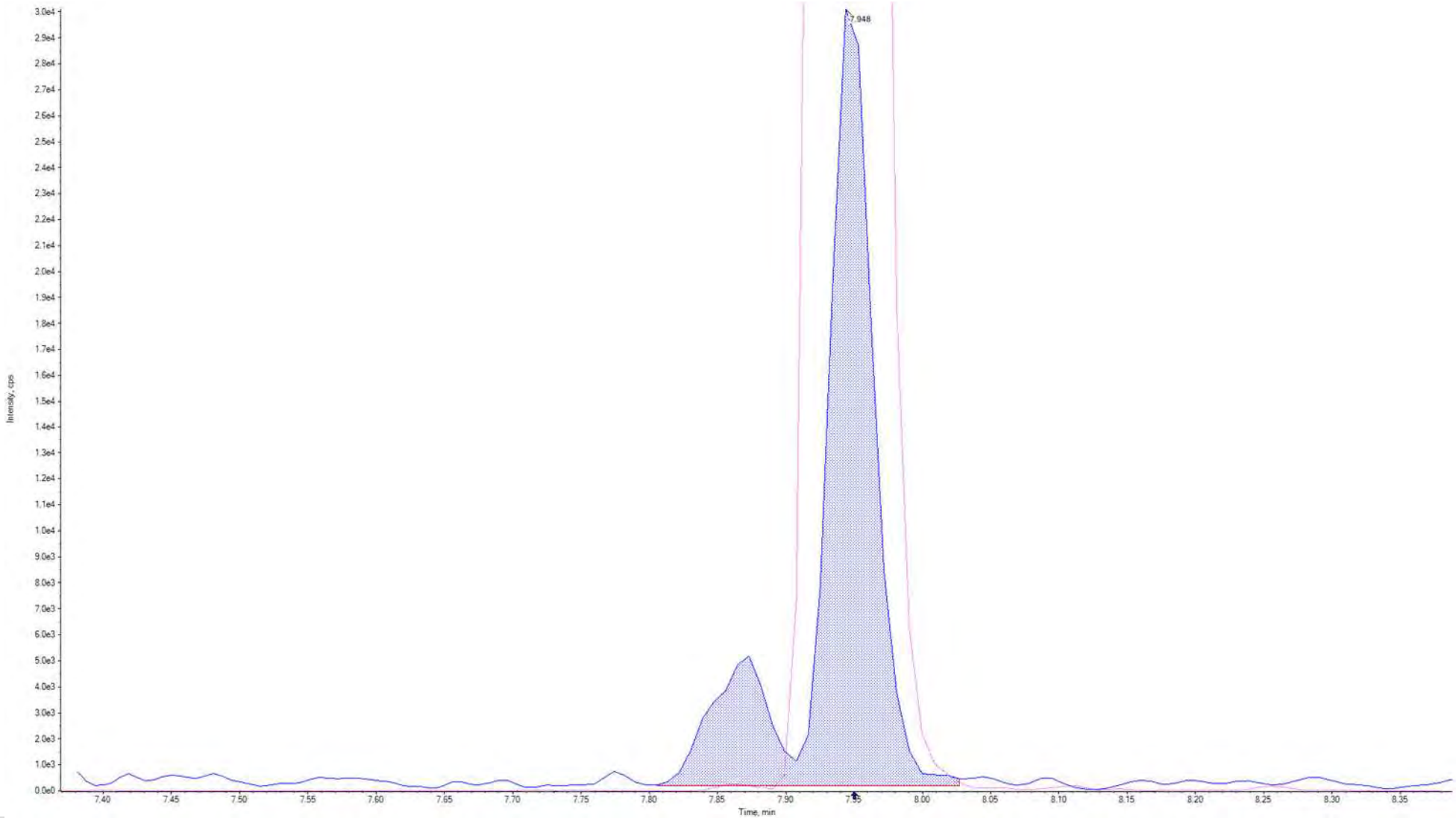
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFOA_2
Sample: IA1633STD-.2 S/N:3851.6 Points Across peak:87



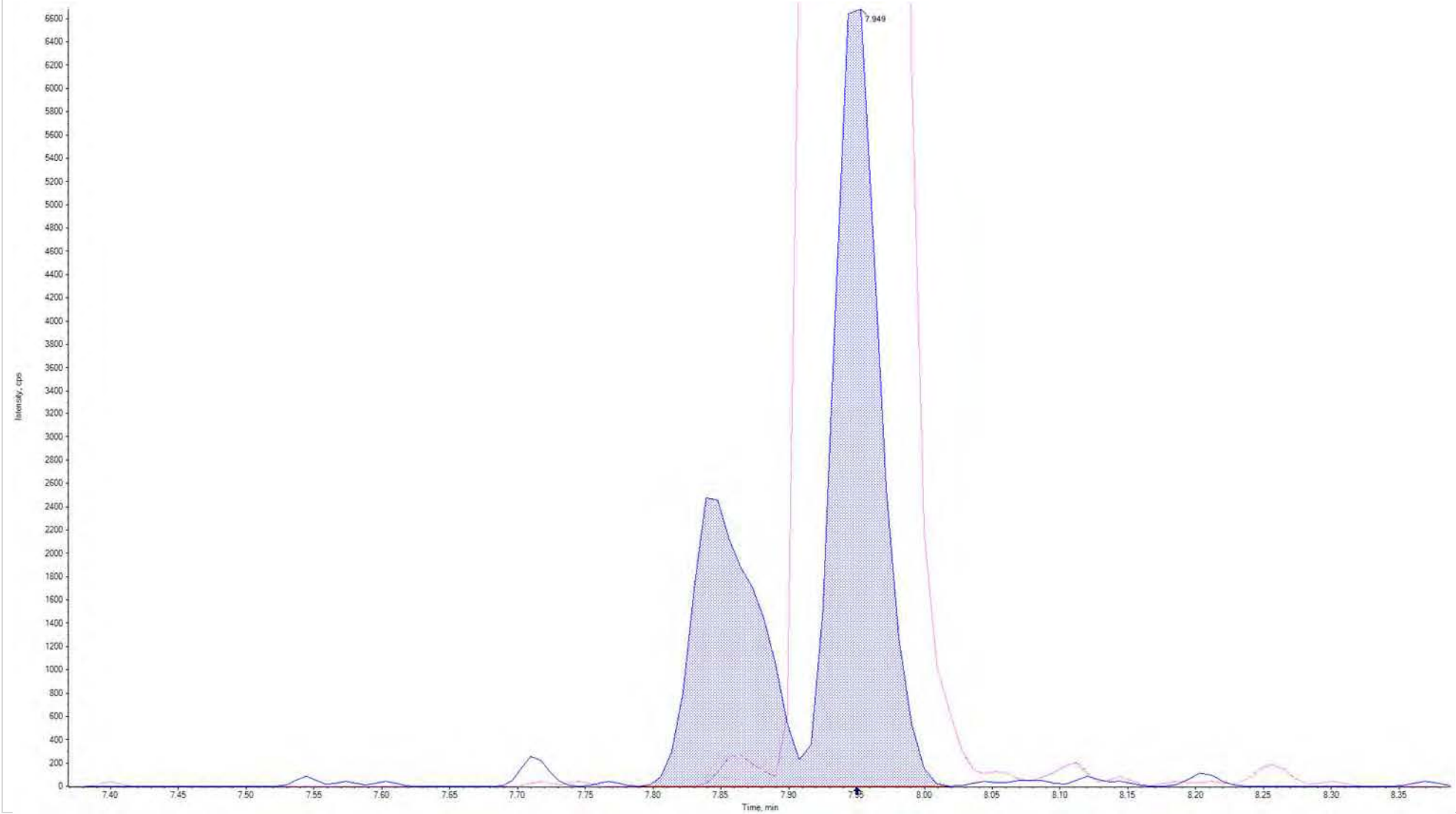
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFNA
Sample: IA1633STD-.2 S/N:518.4 Points Across peak:28



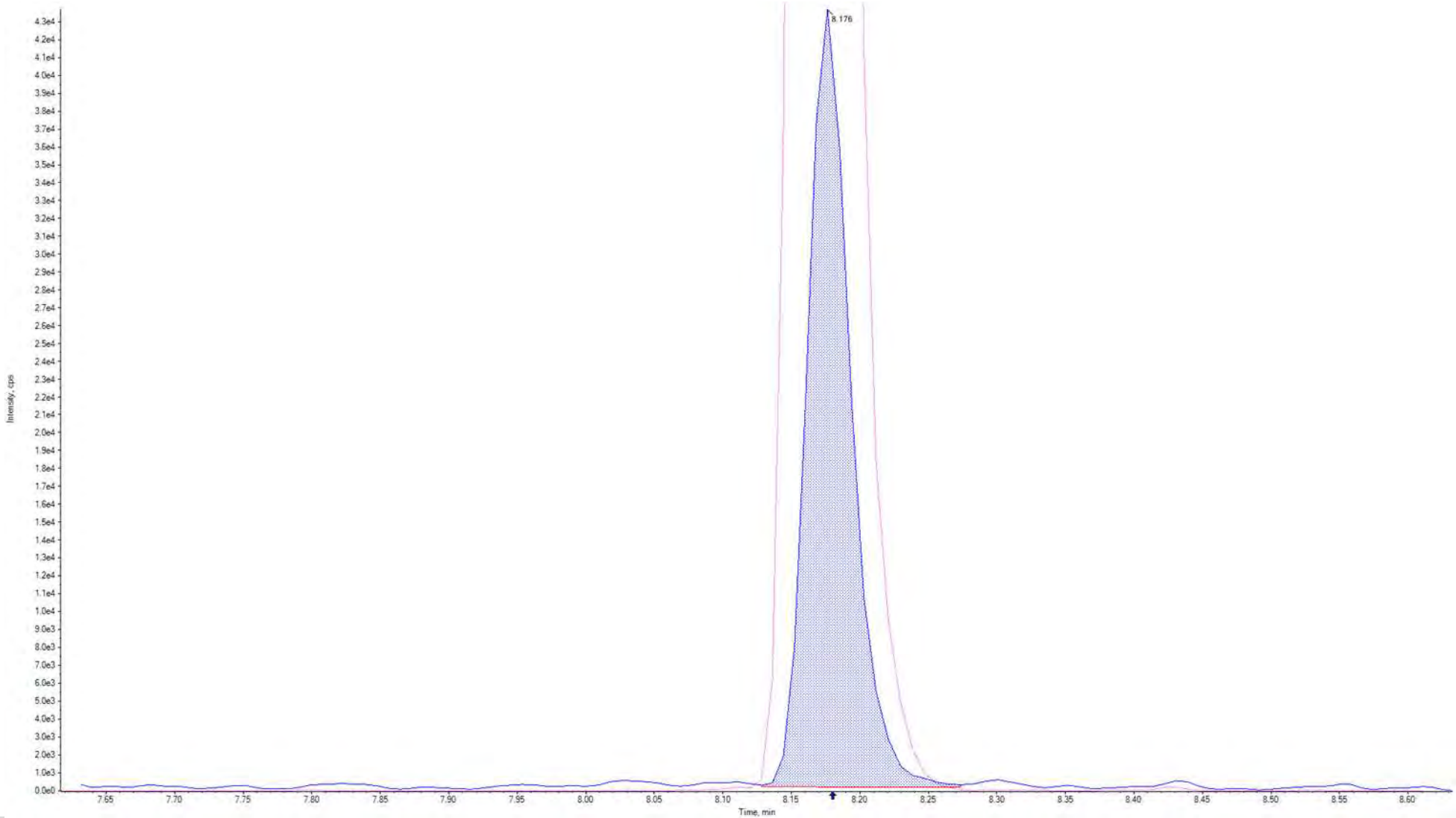
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFNA_2
Sample: IA1633STD-.2 S/N:316.3 Points Across peak:29



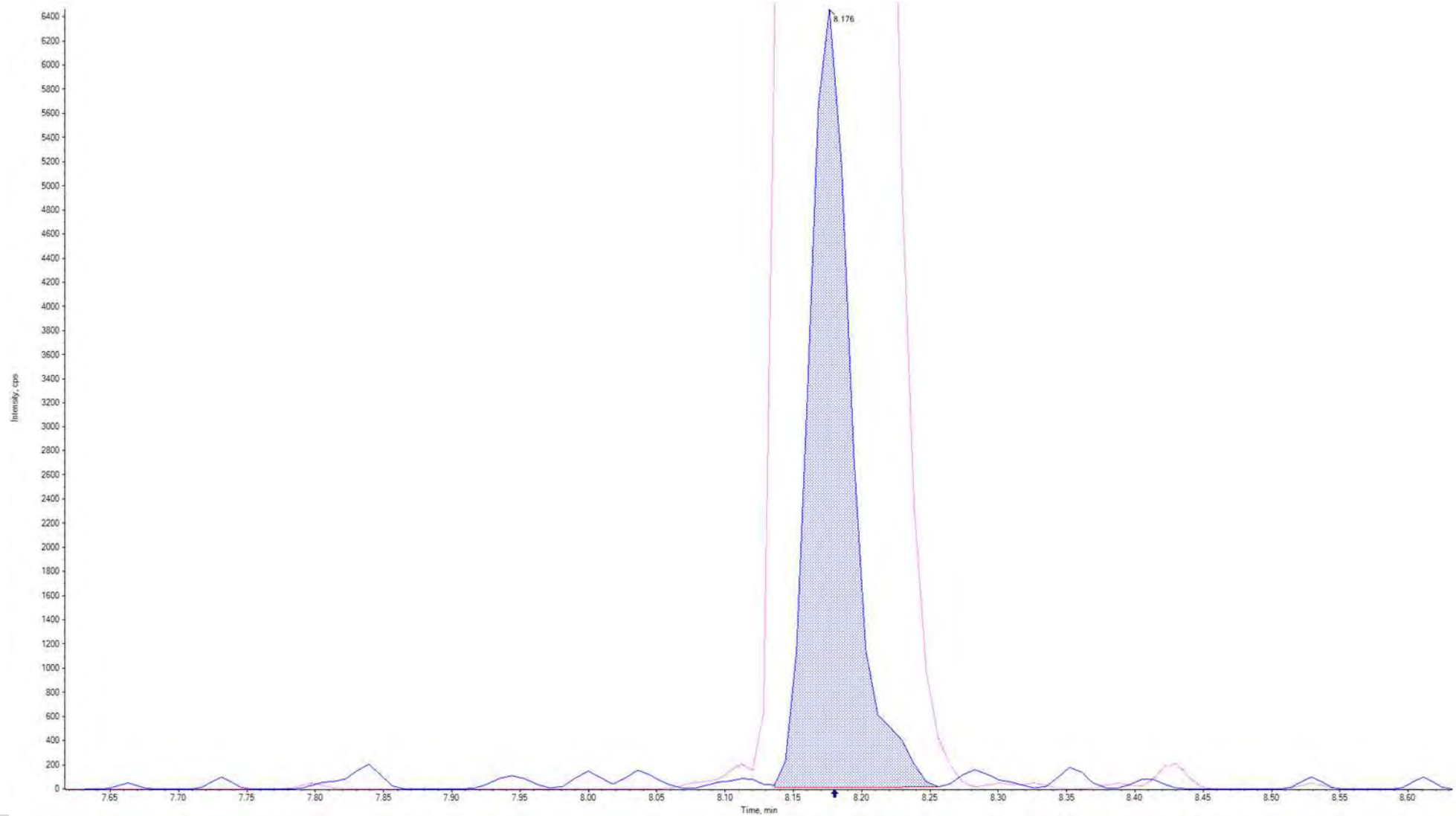
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFDA
Sample: IA1633STD-.2 S/N:979.9 Points Across peak:18



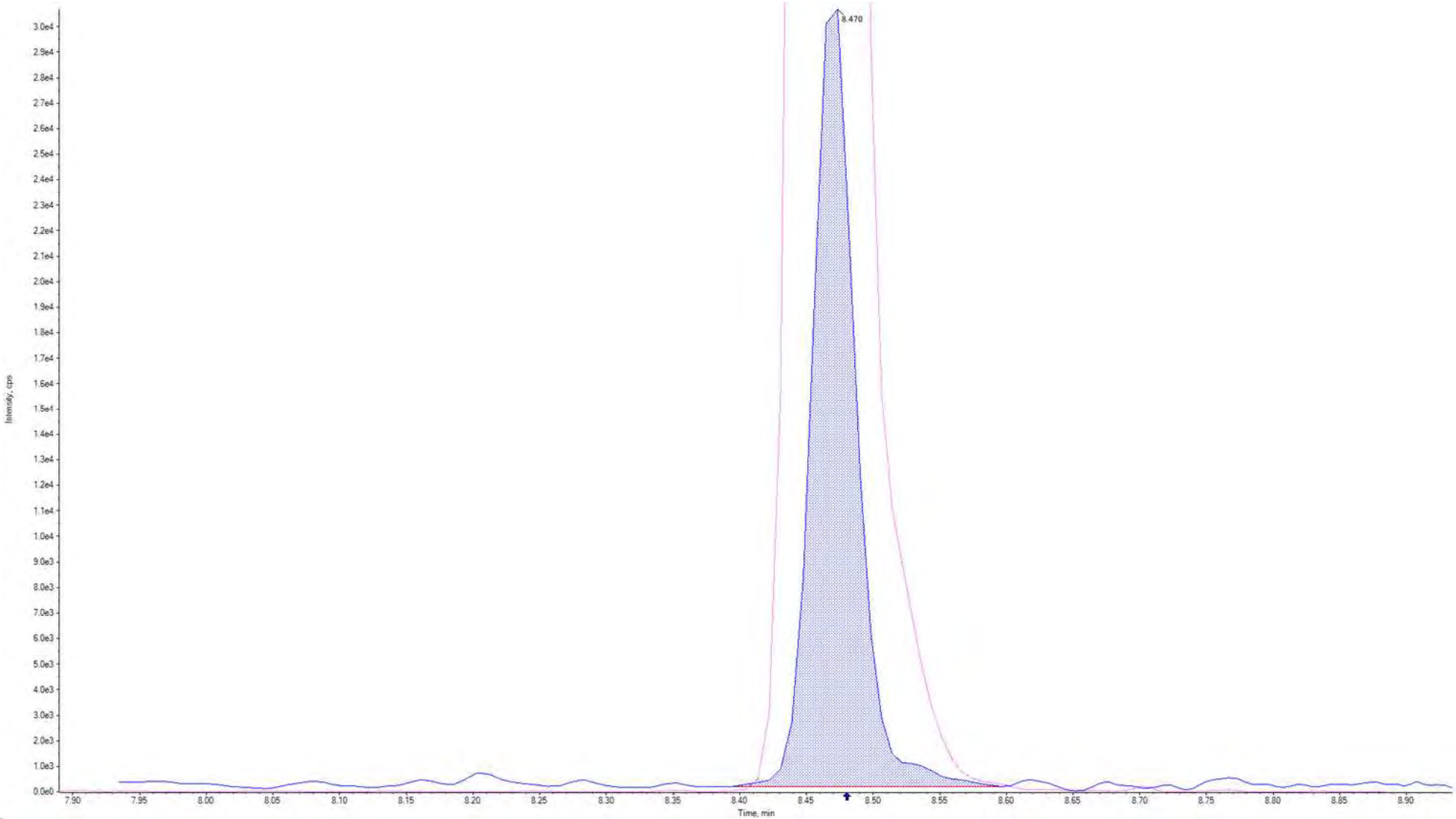
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFDA_2
Sample: IA1633STD-.2 S/N:1730538.9 Points Across peak:15



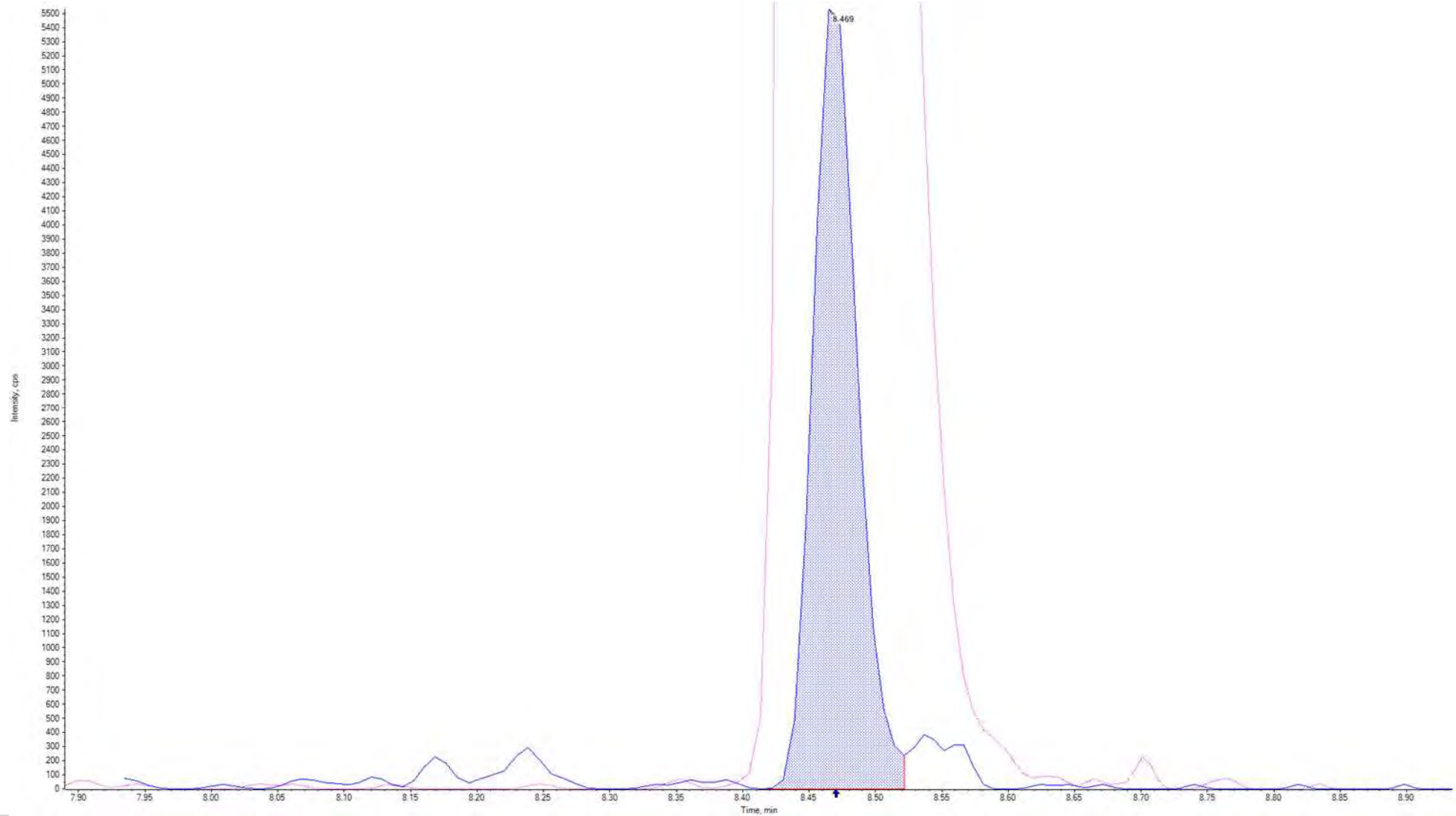
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFUnA
Sample: IA1633STD-.2 S/N:703.8 Points Across peak:27



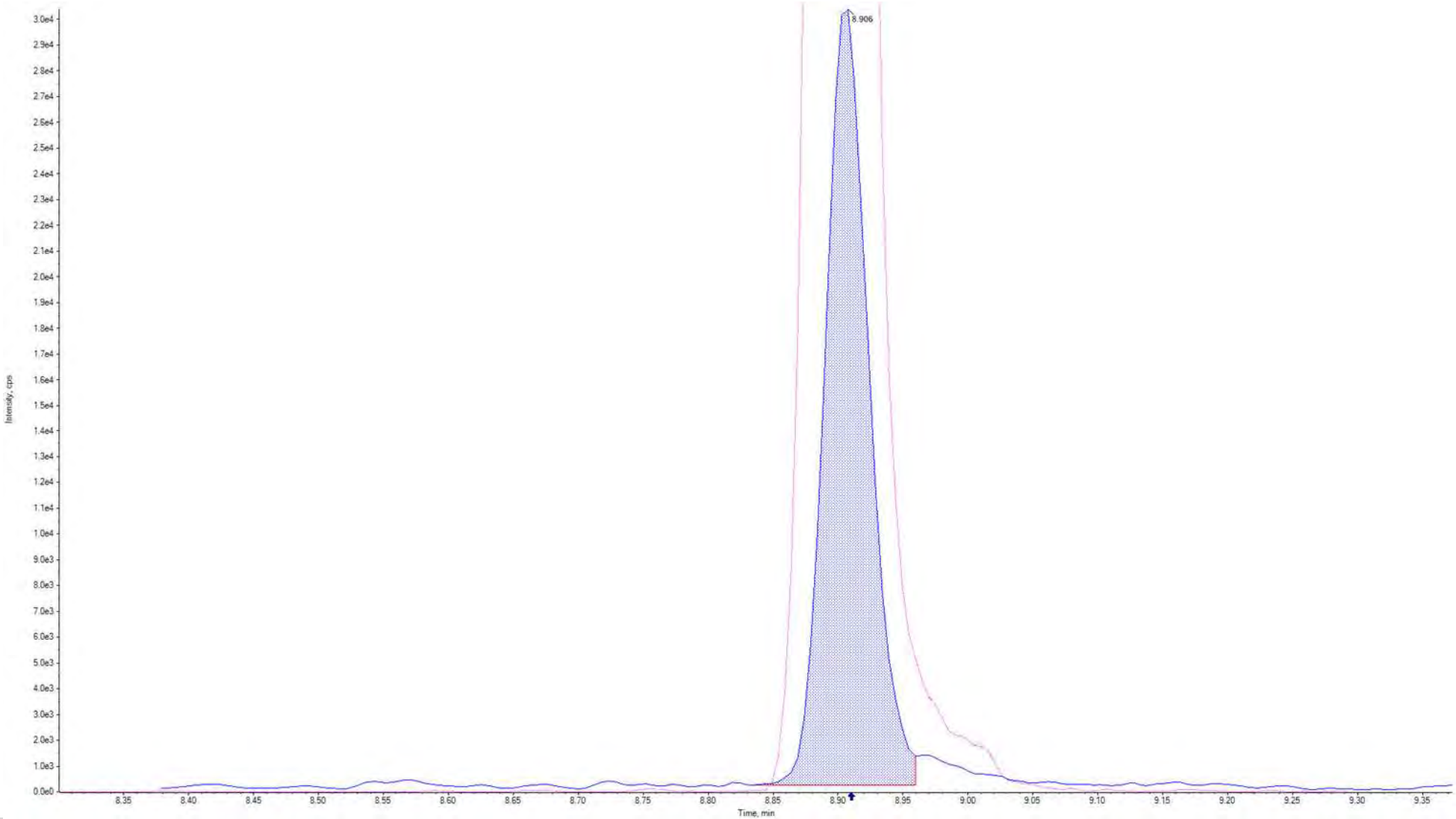
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFUnA_2
Sample: IA1633STD-.2 S/N:349.7 Points Across peak:14



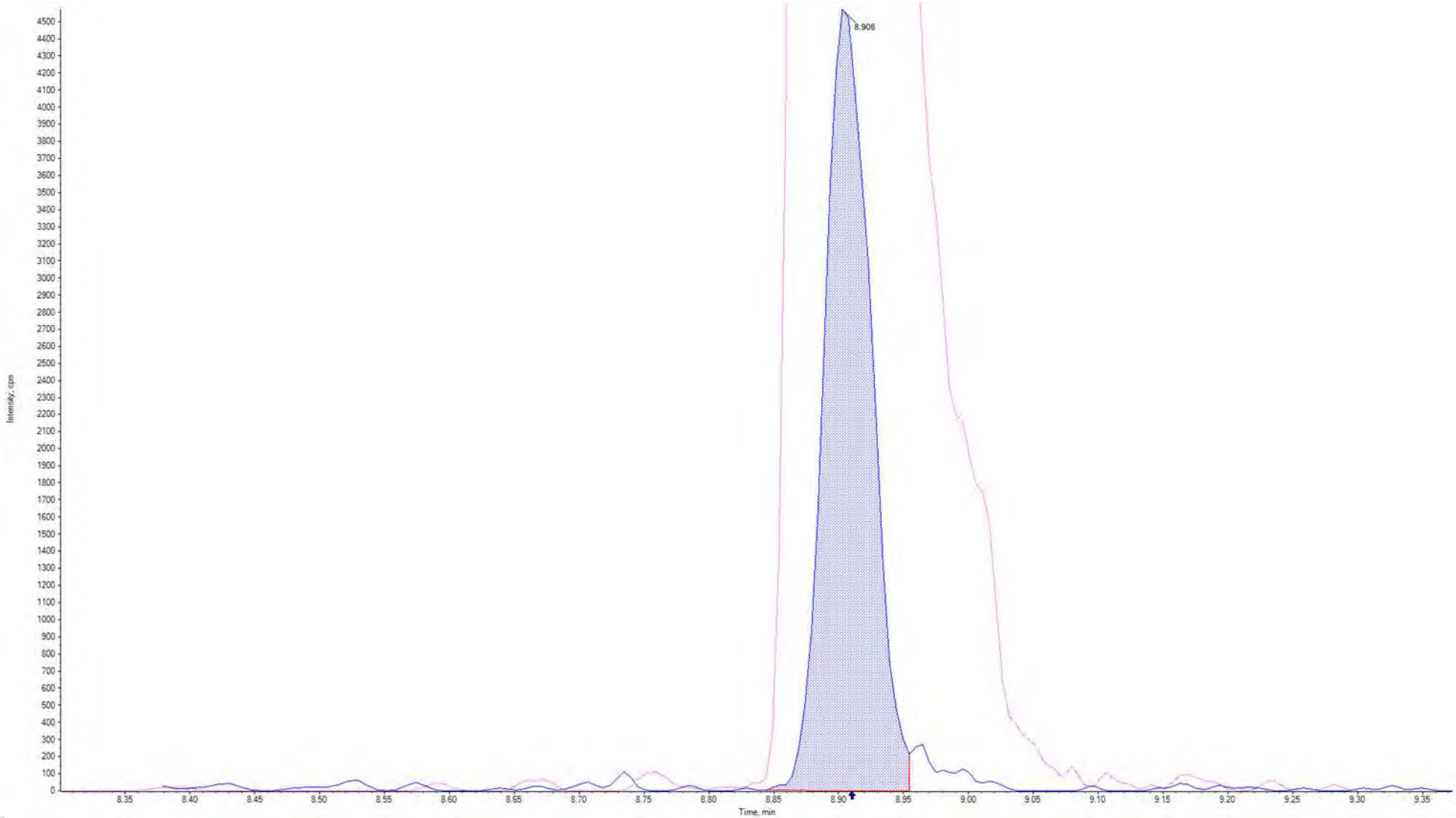
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFDoA
Sample: IA1633STD-.2 S/N:923.8 Points Across peak:26



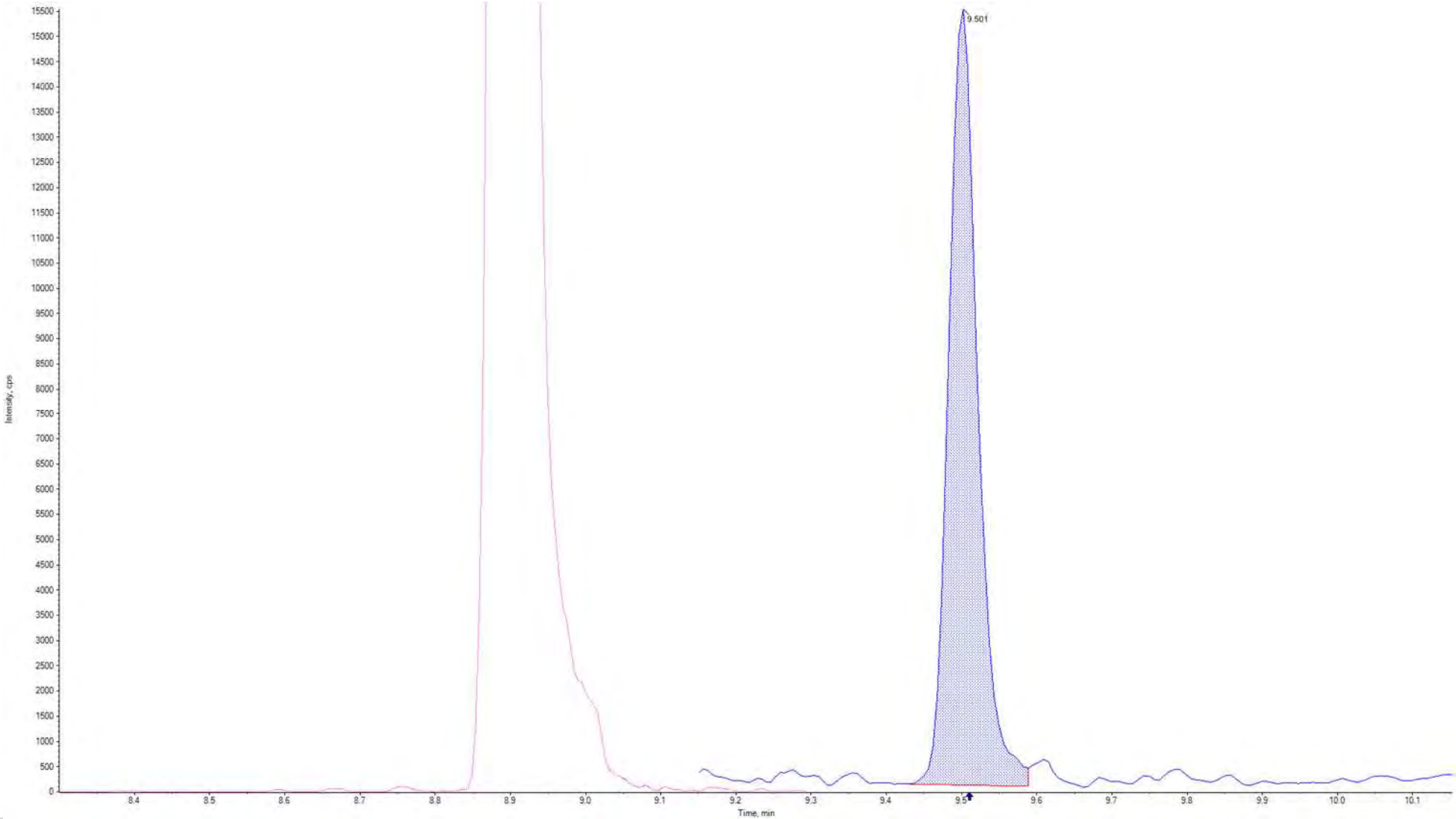
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFDoA_2
Sample: IA1633STD-.2 S/N:3907304.1 Points Across peak:24



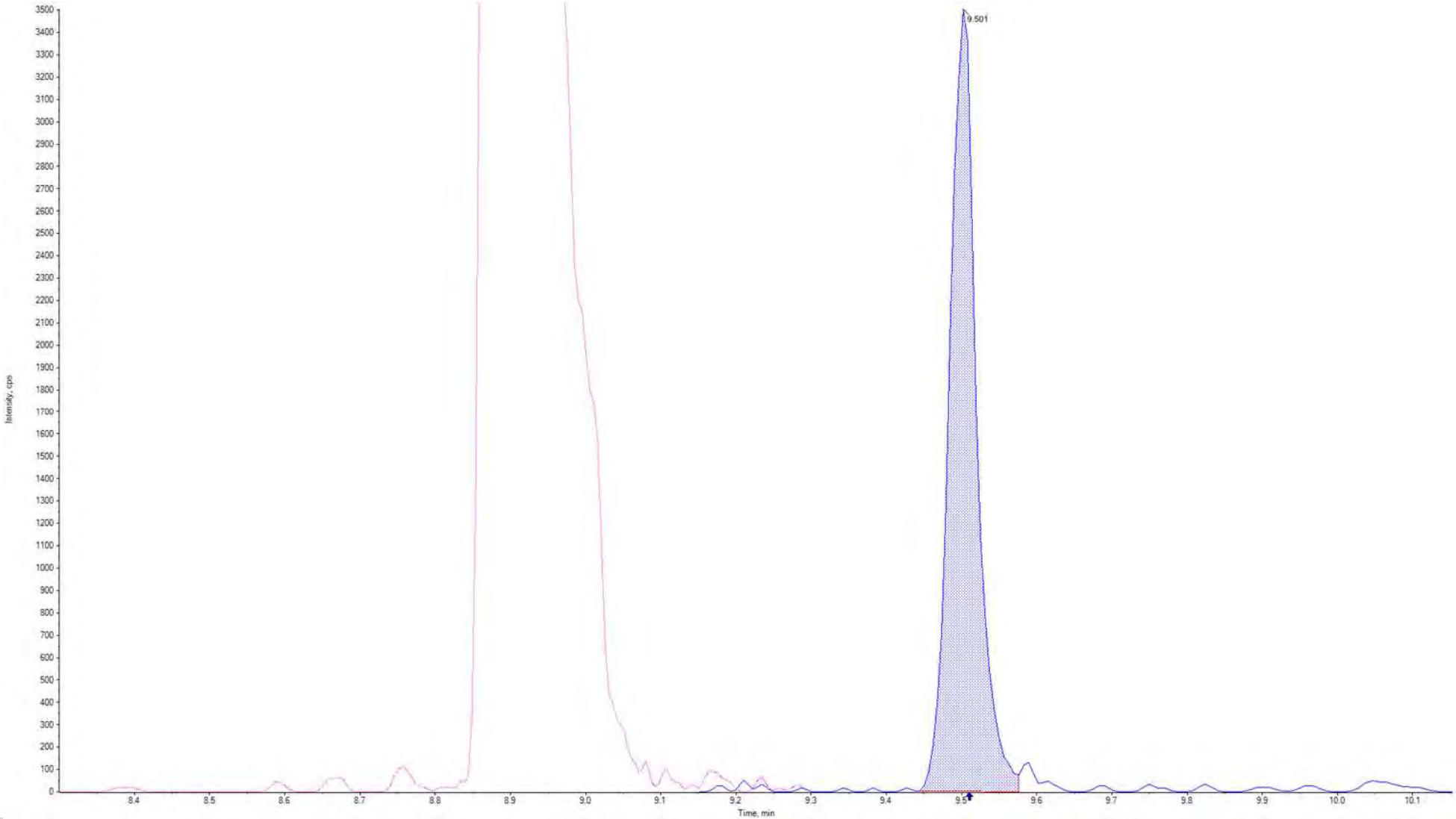
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFTrDA
Sample: IA1633STD-.2 S/N:420.0 Points Across peak:28



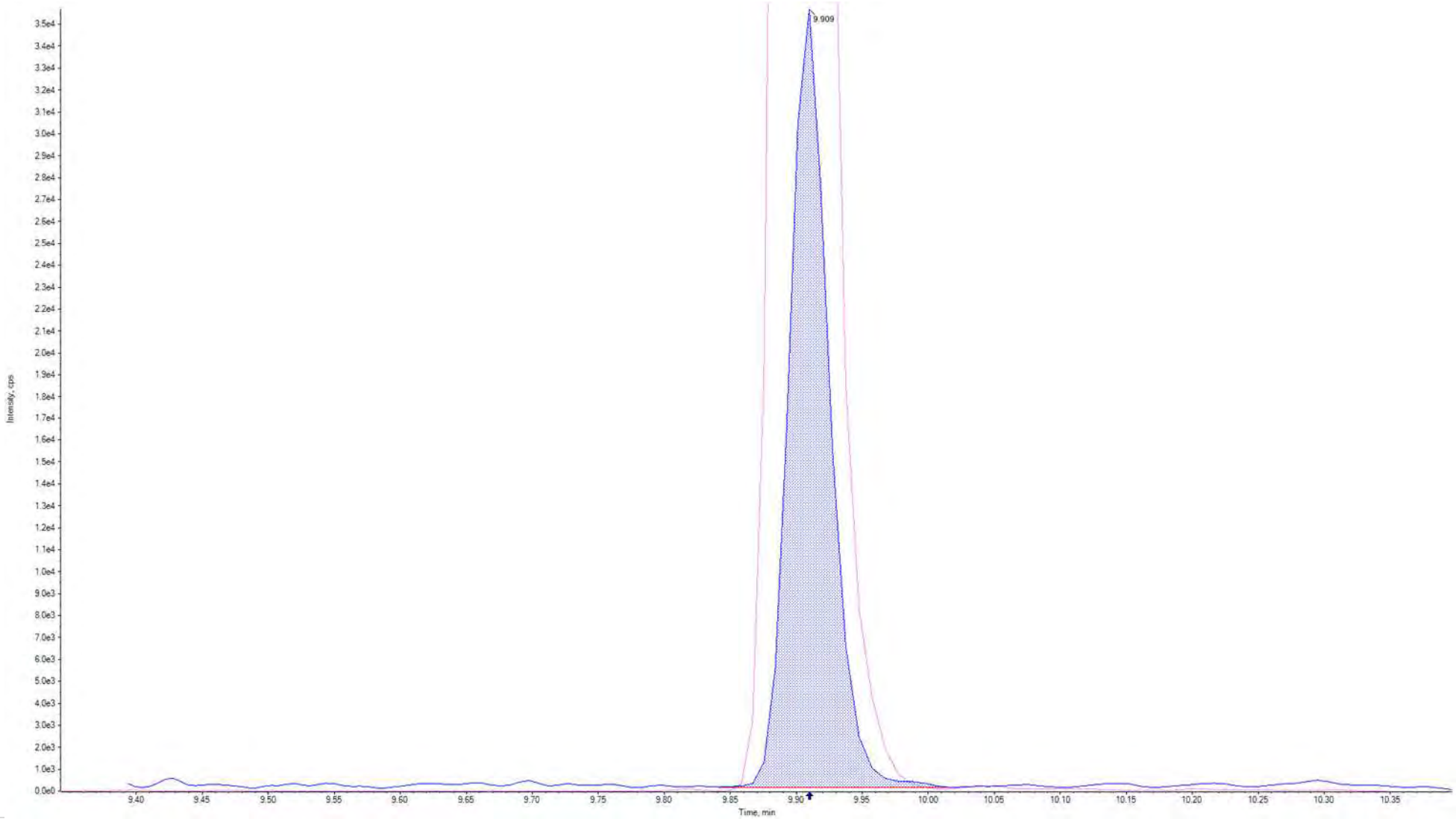
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFTrDA_2
Sample: IA1633STD-.2 S/N:18118.9 Points Across peak:24



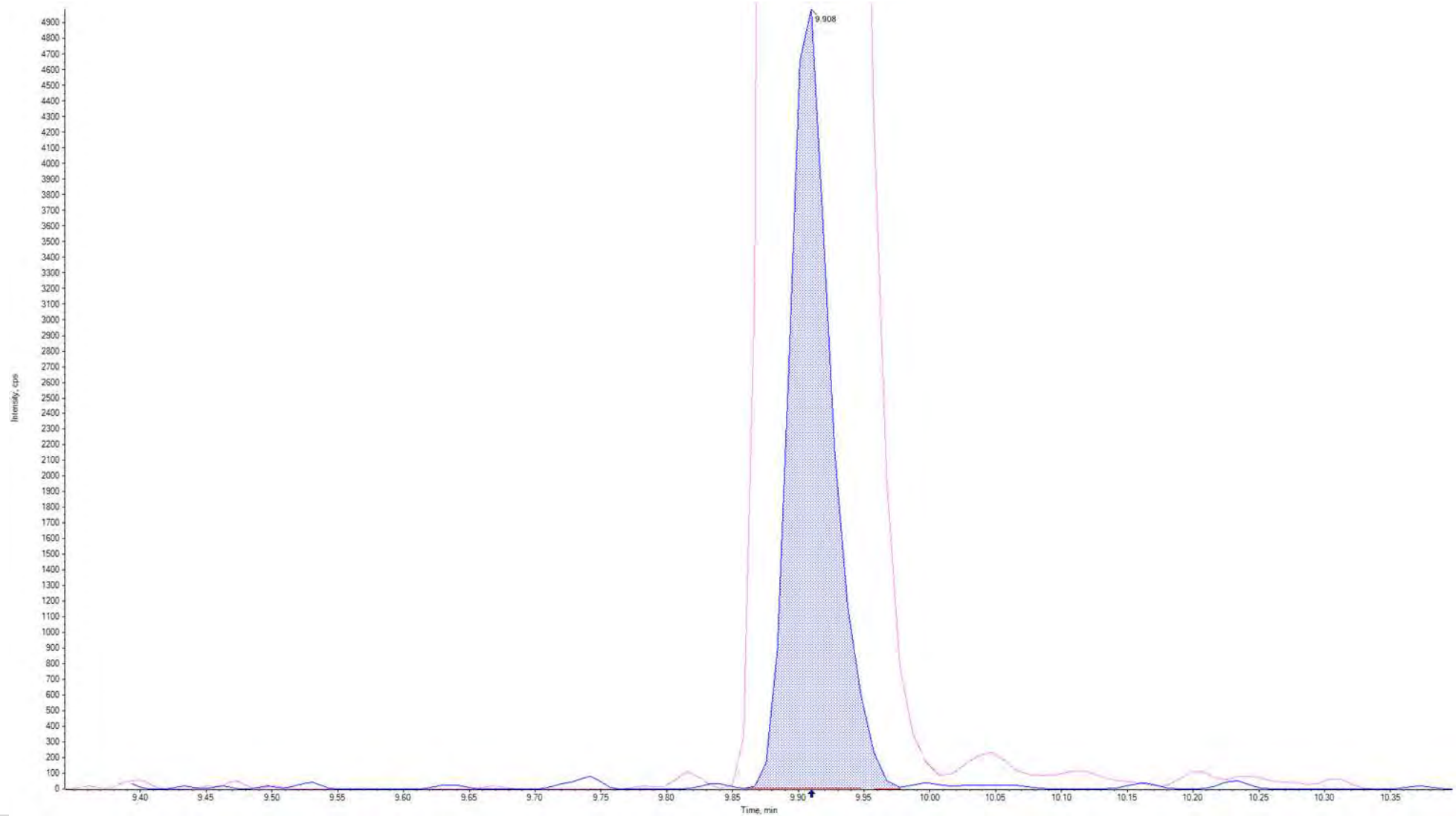
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFTeDA
Sample: IA1633STD-.2 S/N:567.1 Points Across peak:20



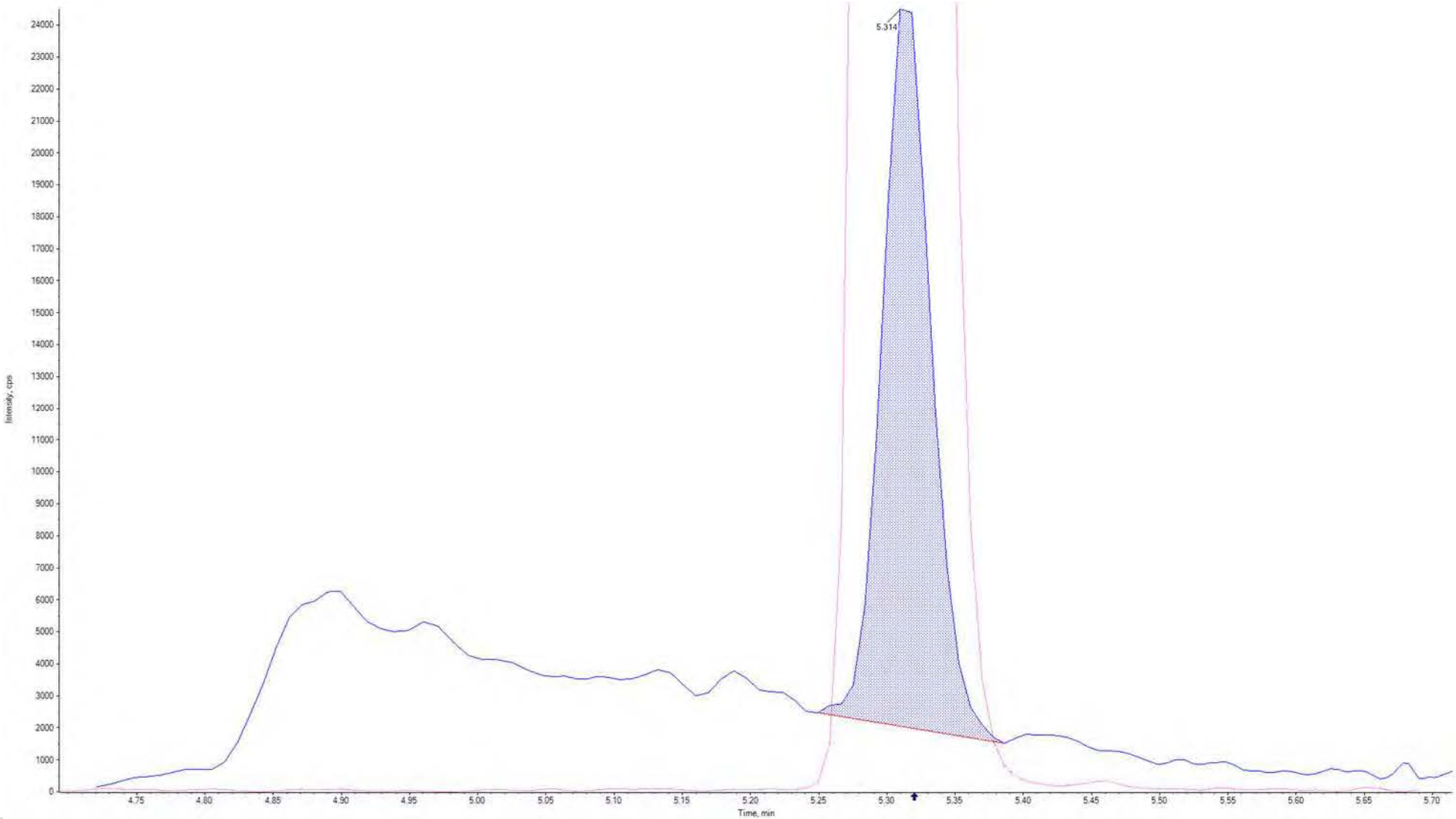
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFTeDA_2
Sample: IA1633STD-.2 S/N:508.2 Points Across peak:14



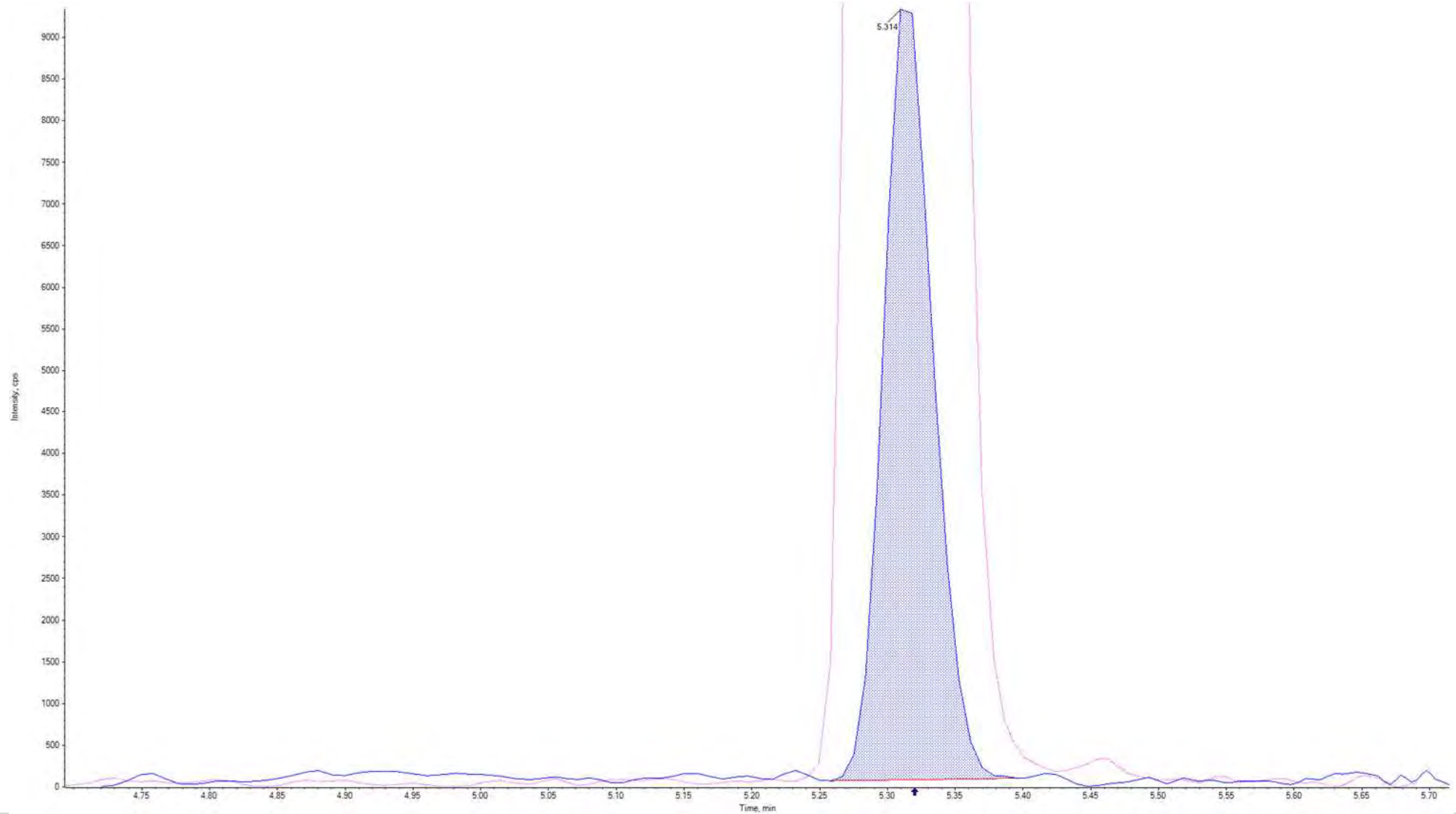
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFBS
Sample: IA1633STD-.2 S/N:63.0 Points Across peak:17



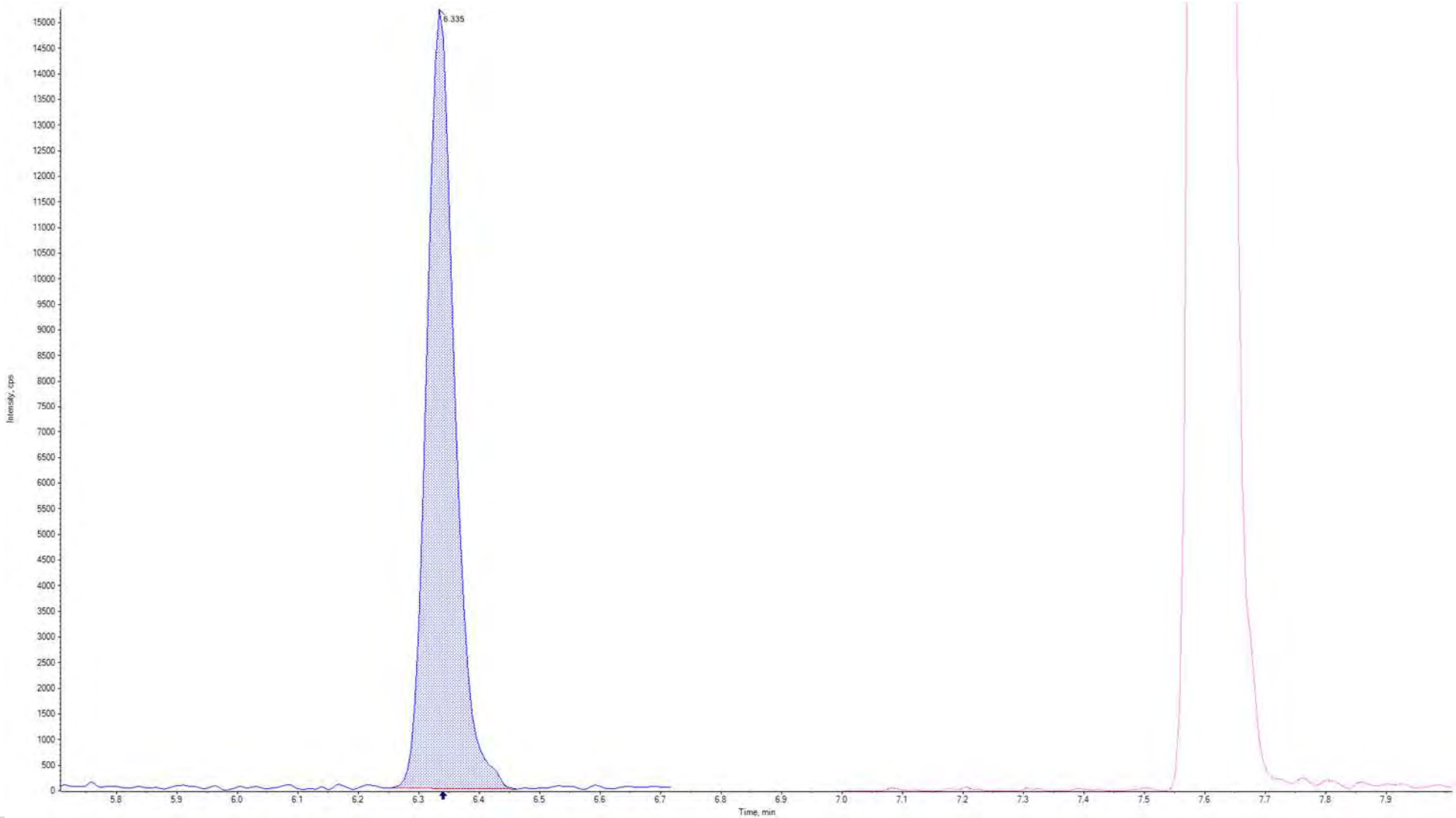
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFBS_2
Sample: IA1633STD-.2 S/N:837.1 Points Across peak:18



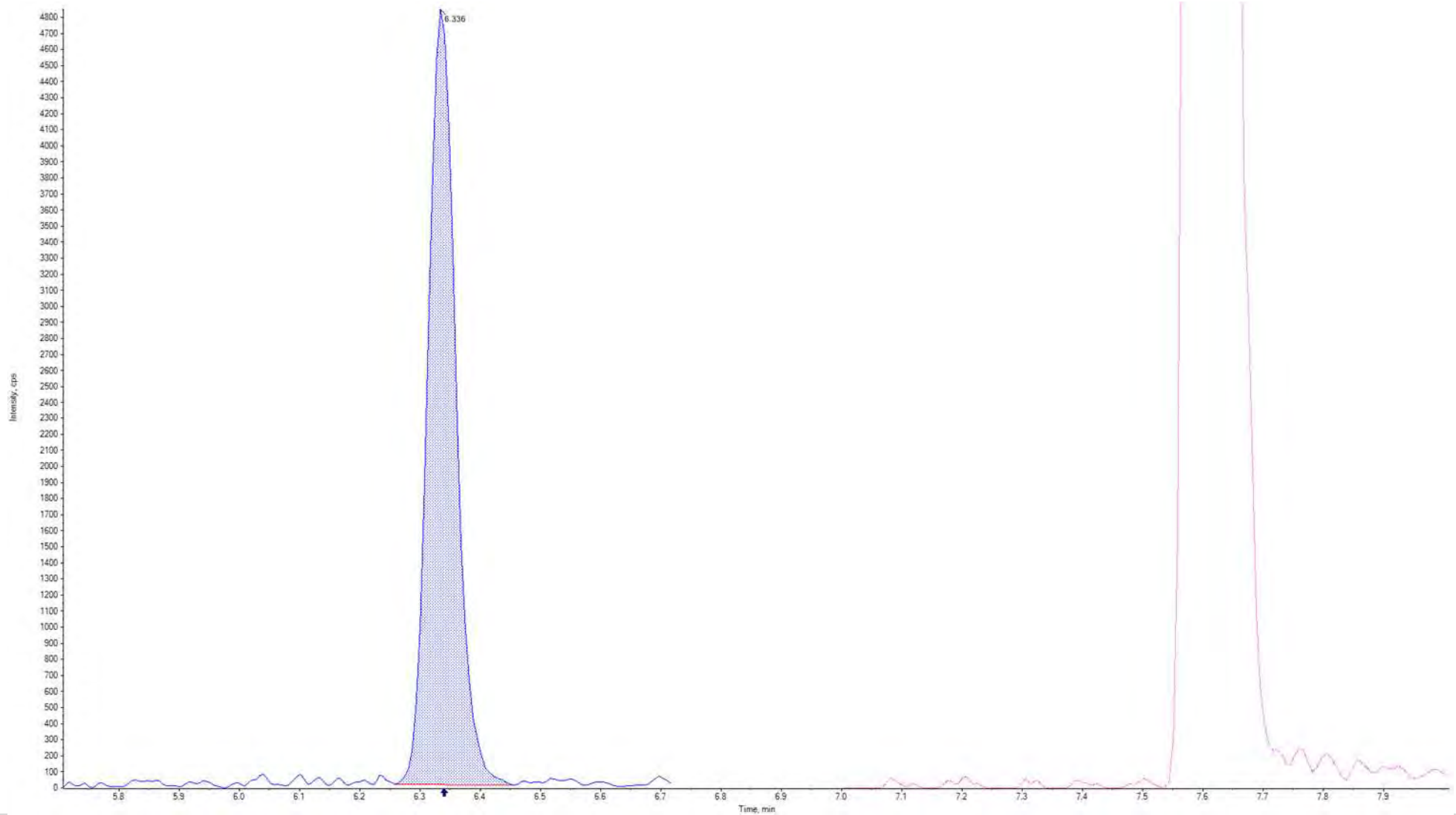
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFPeS
Sample: IA1633STD-.2 S/N:1407.9 Points Across peak:33



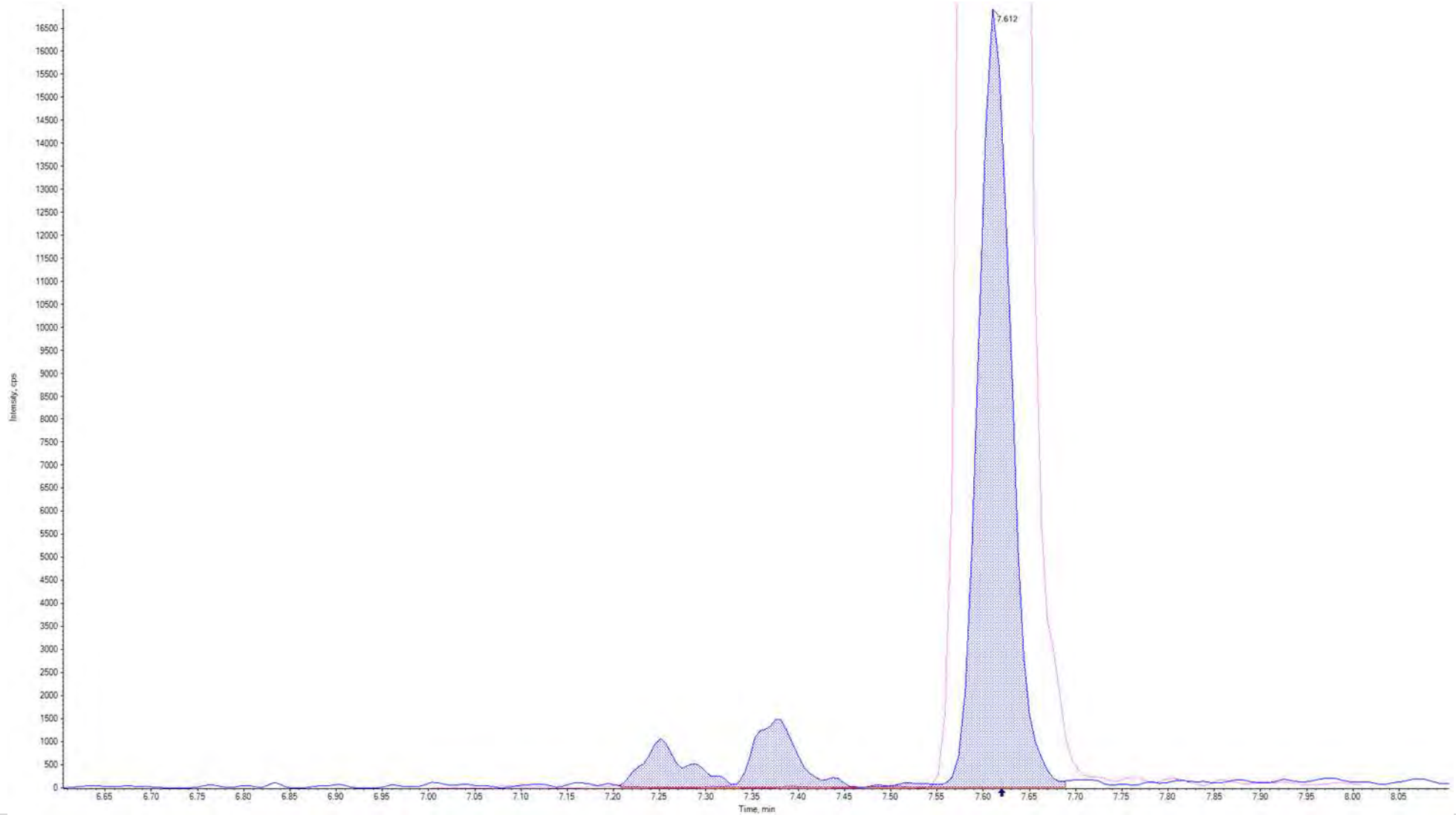
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFPeS_2
Sample: IA1633STD-.2 S/N:1699.2 Points Across peak:31



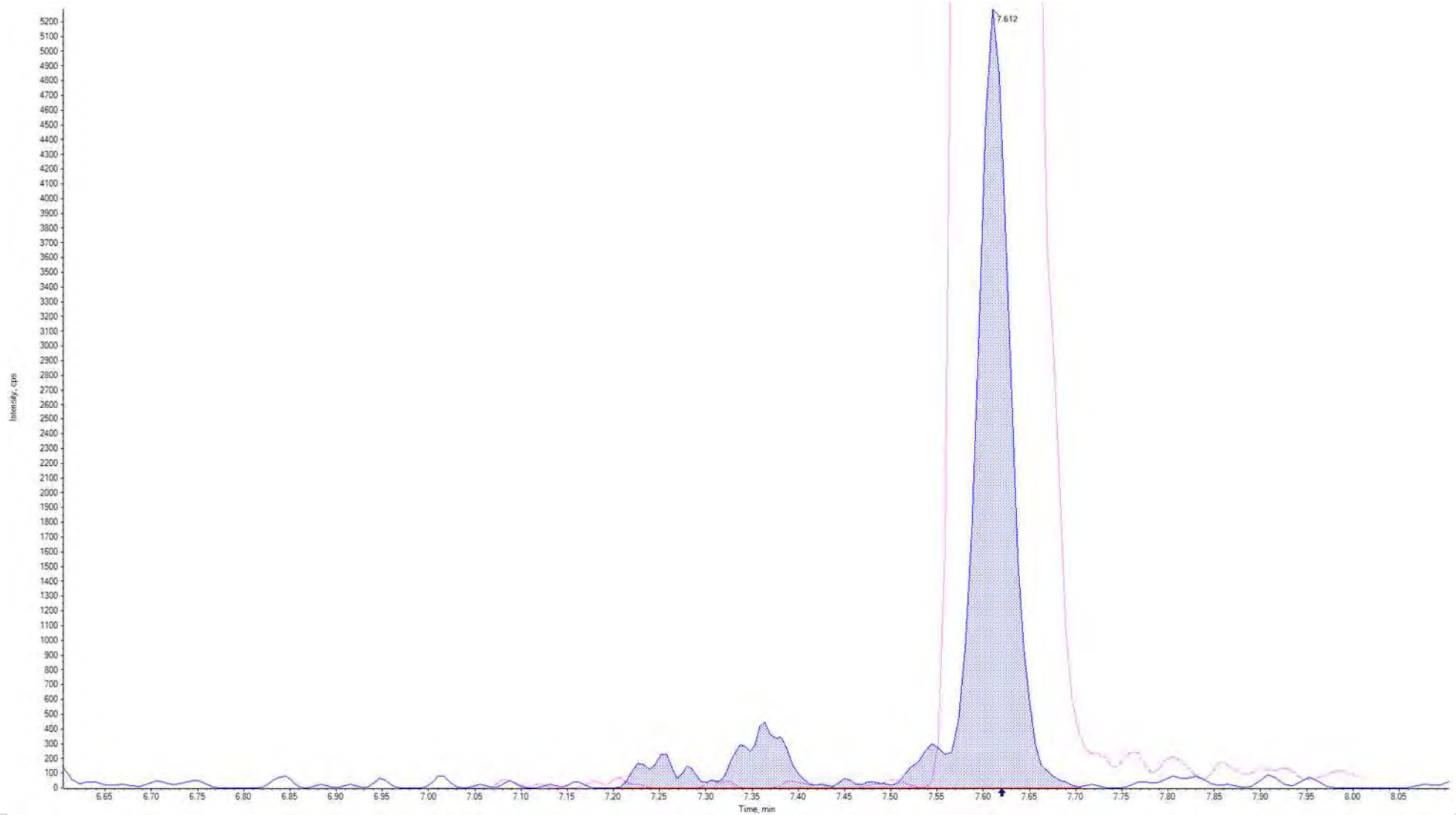
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFHxS
Sample: IA1633STD-.2 S/N:9073.1 Points Across peak:78



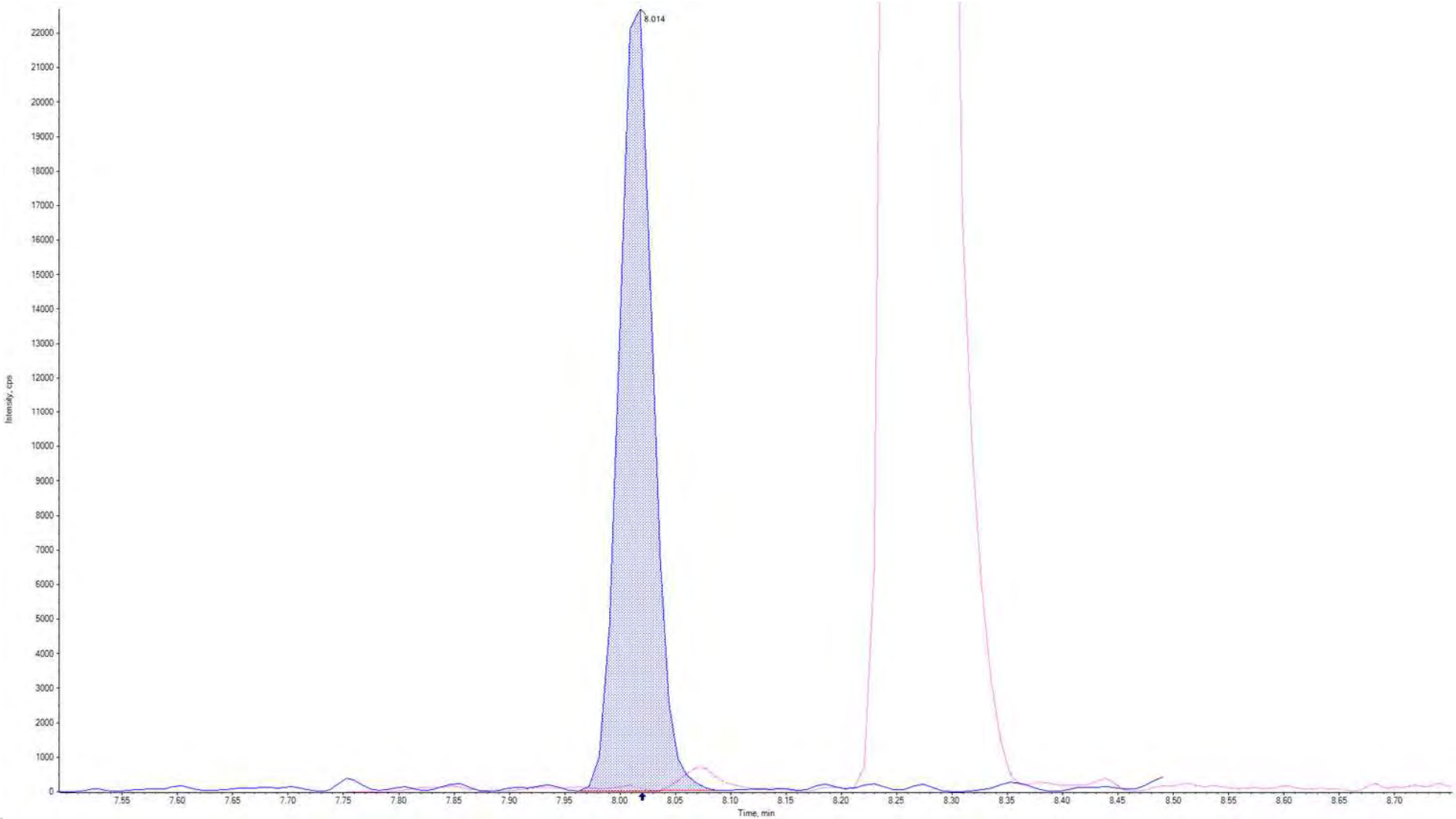
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFHxS_2
Sample: IA1633STD-.2 S/N:1794713.1 Points Across peak:82



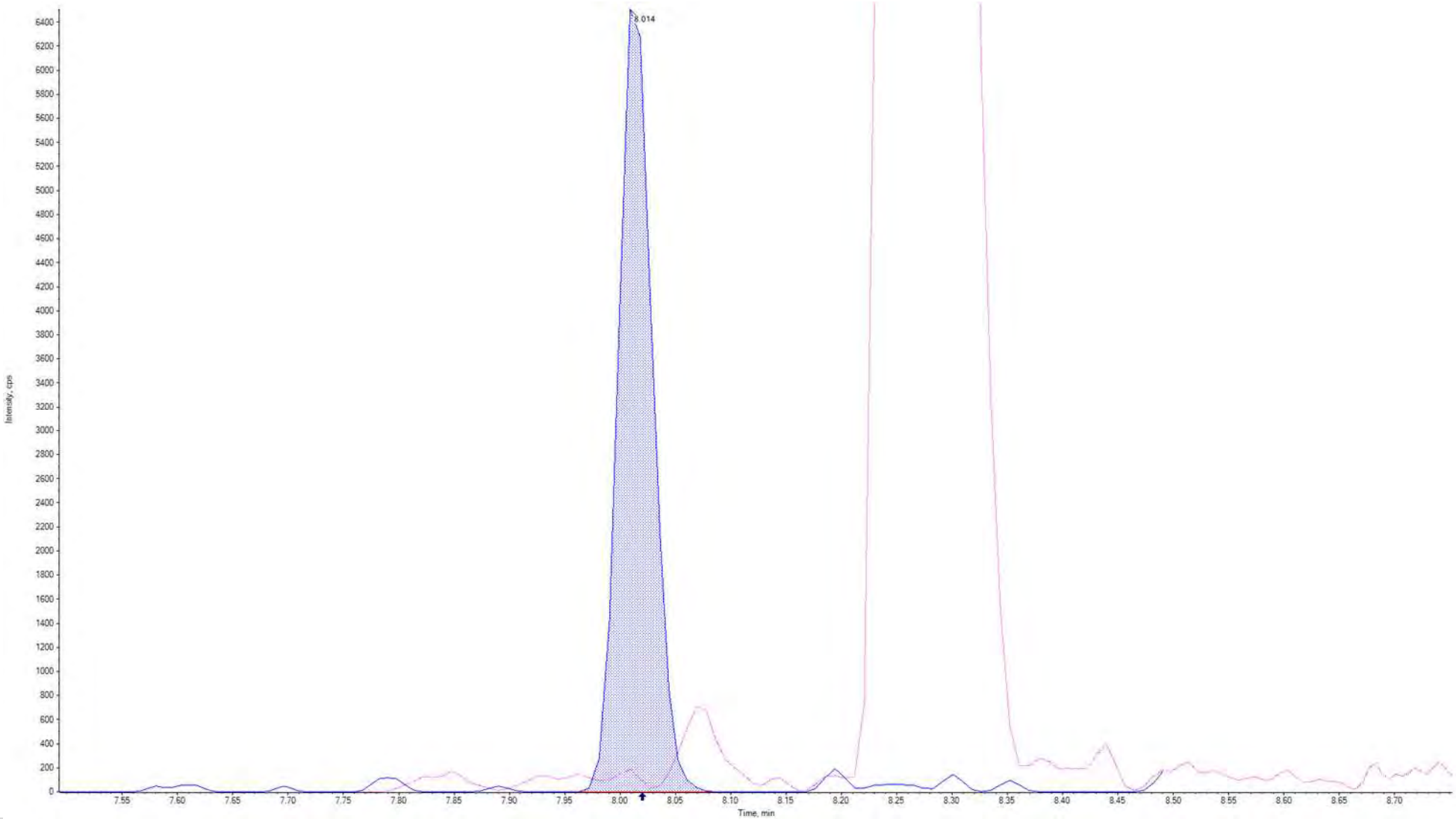
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFHpS
Sample: IA1633STD-.2 S/N:4476.7 Points Across peak:16



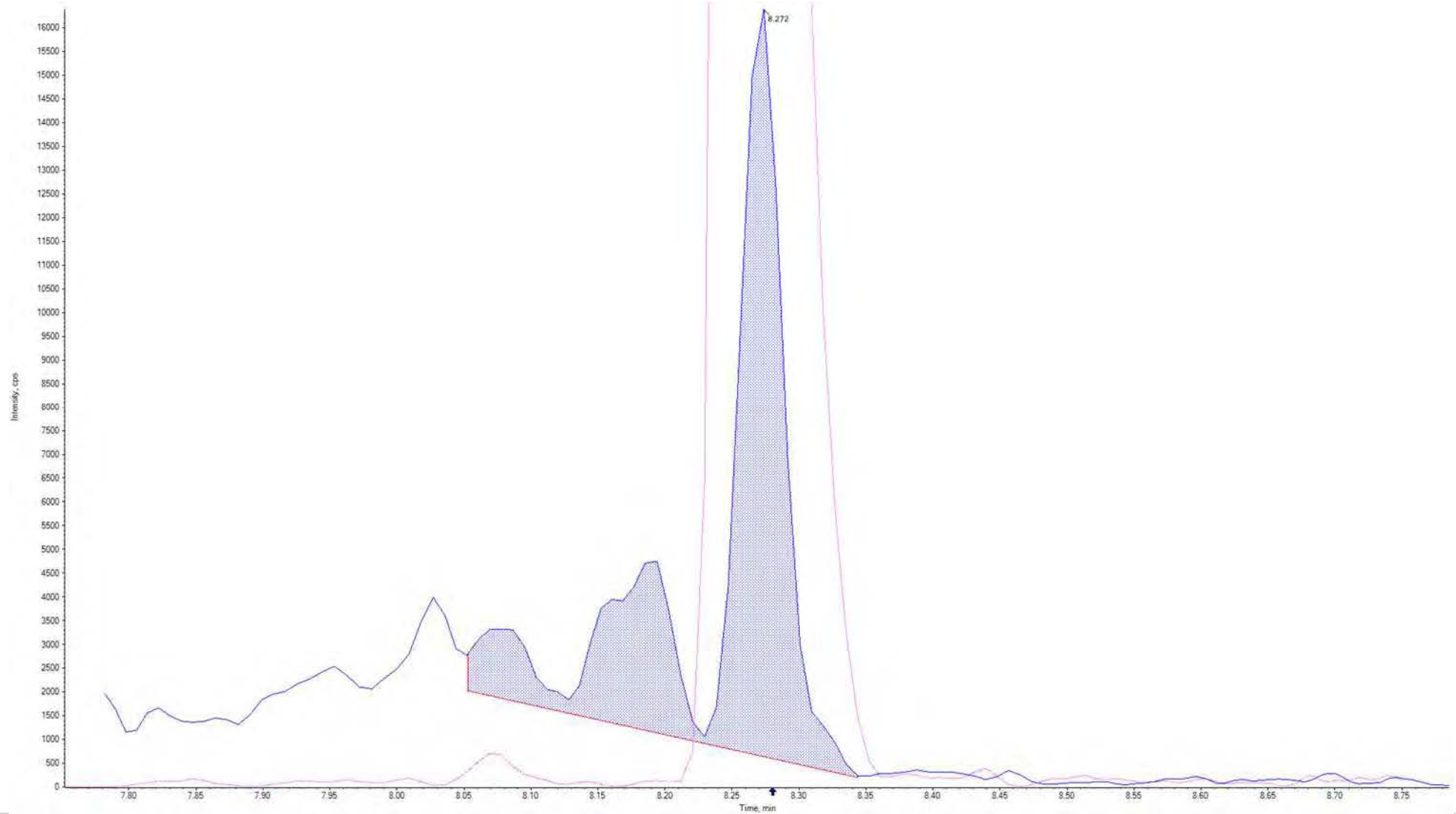
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFHpS_2
Sample: IA1633STD-.2 S/N:605.6 Points Across peak:21



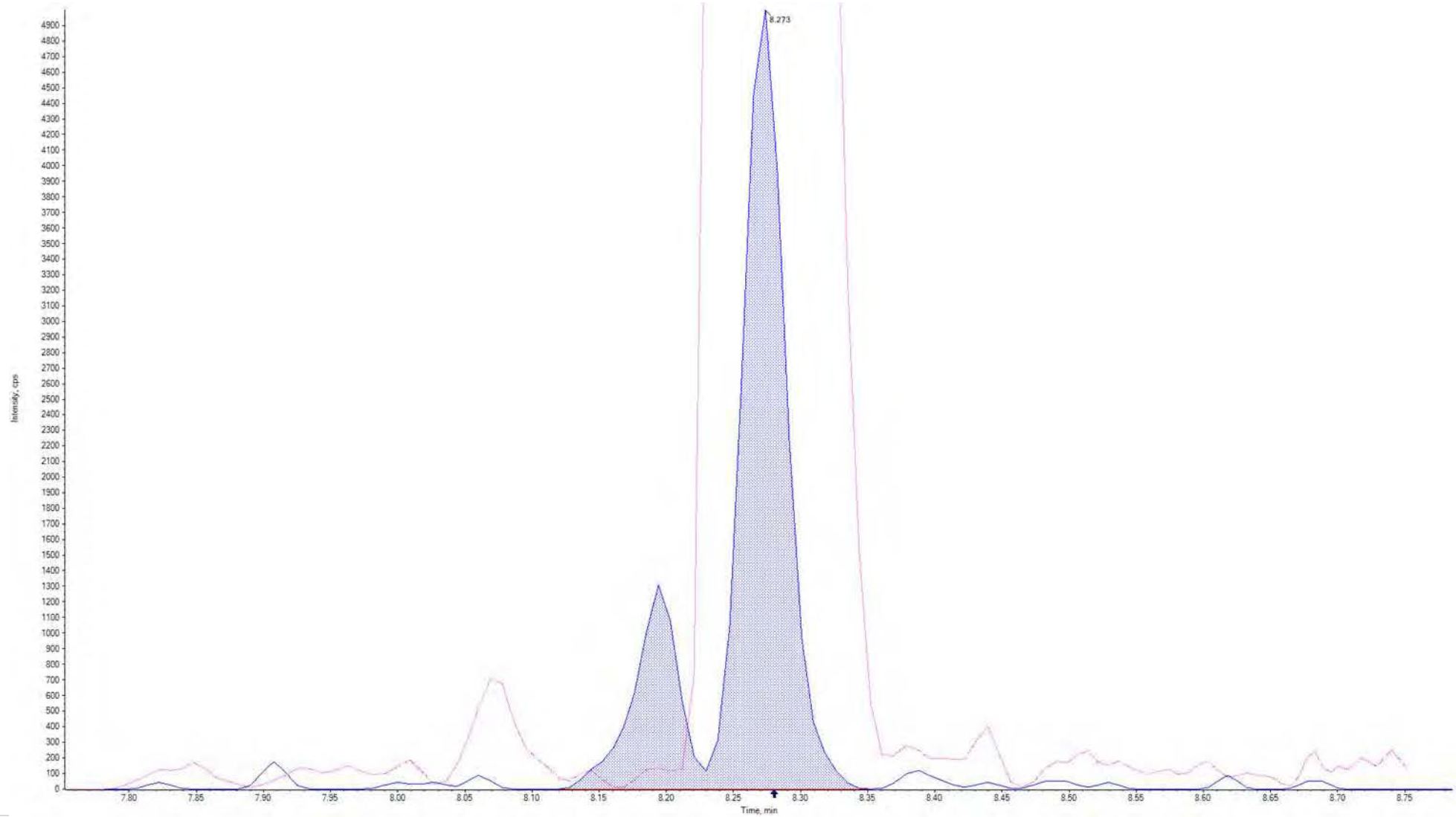
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFOS
Sample: IA1633STD-.2 S/N:461.4 Points Across peak:36



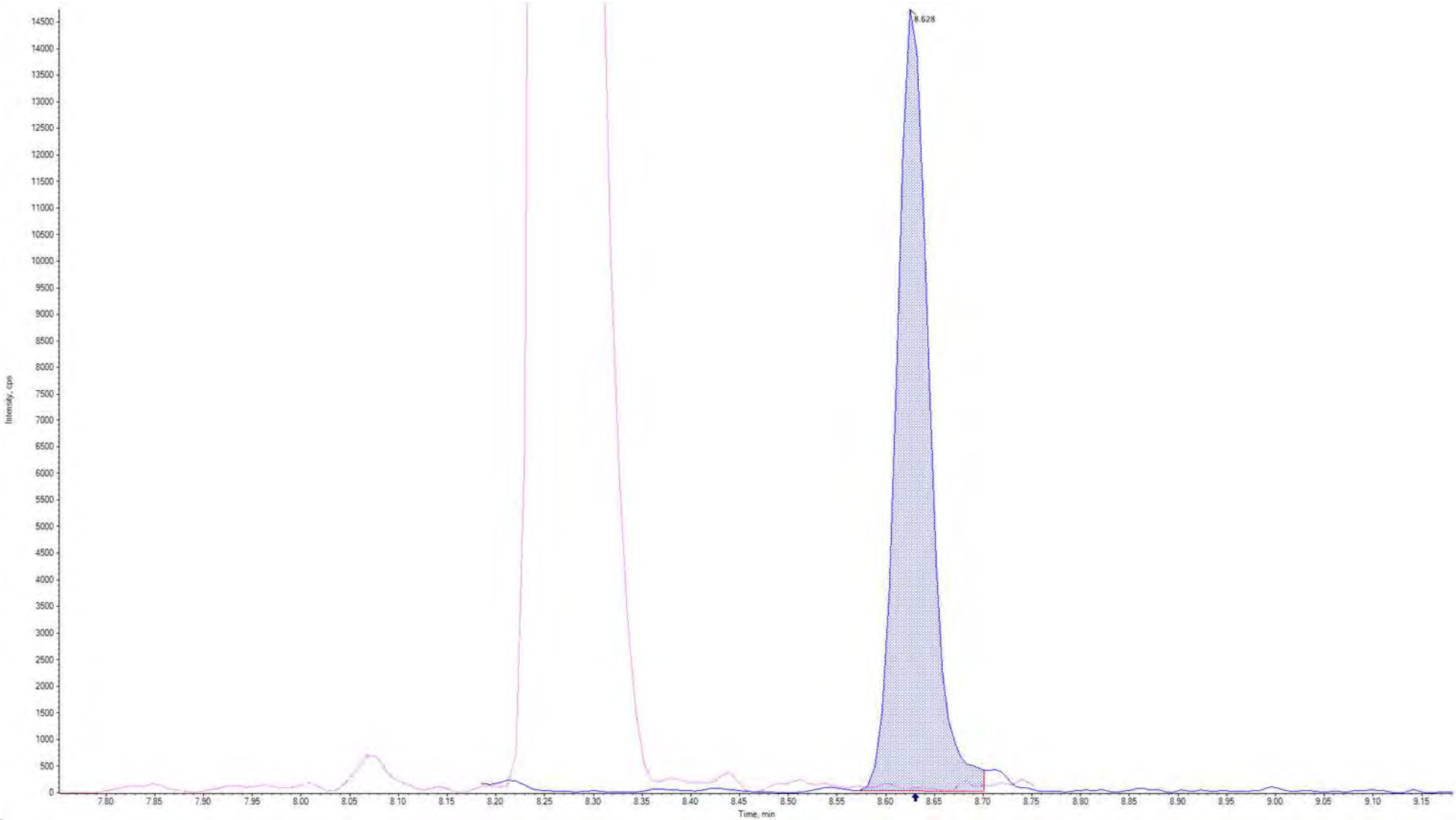
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFOS_2
Sample: IA1633STD-.2 S/N:253.1 Points Across peak:29



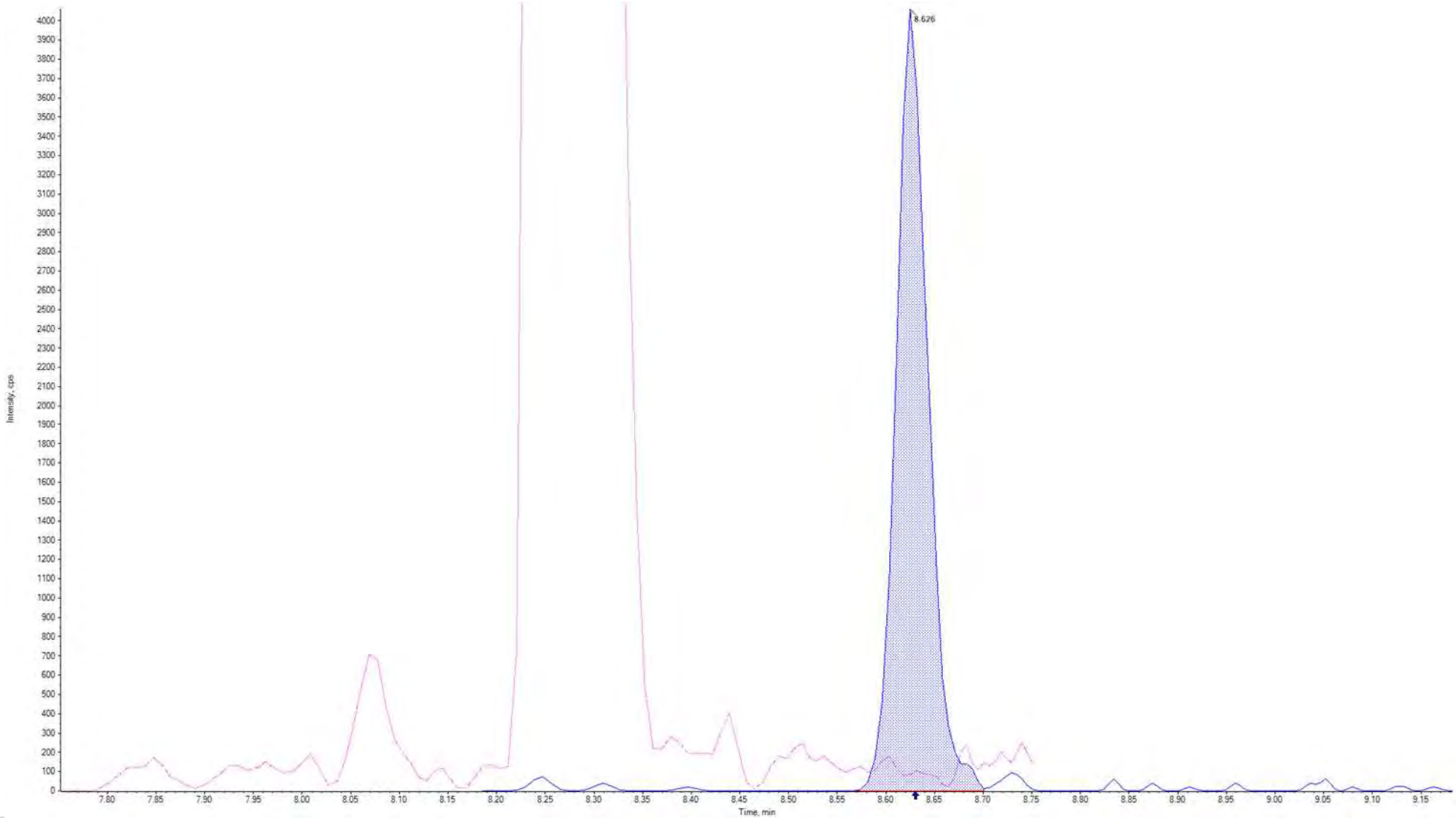
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFNS
Sample: IA1633STD-.2 S/N:7657.7 Points Across peak:21



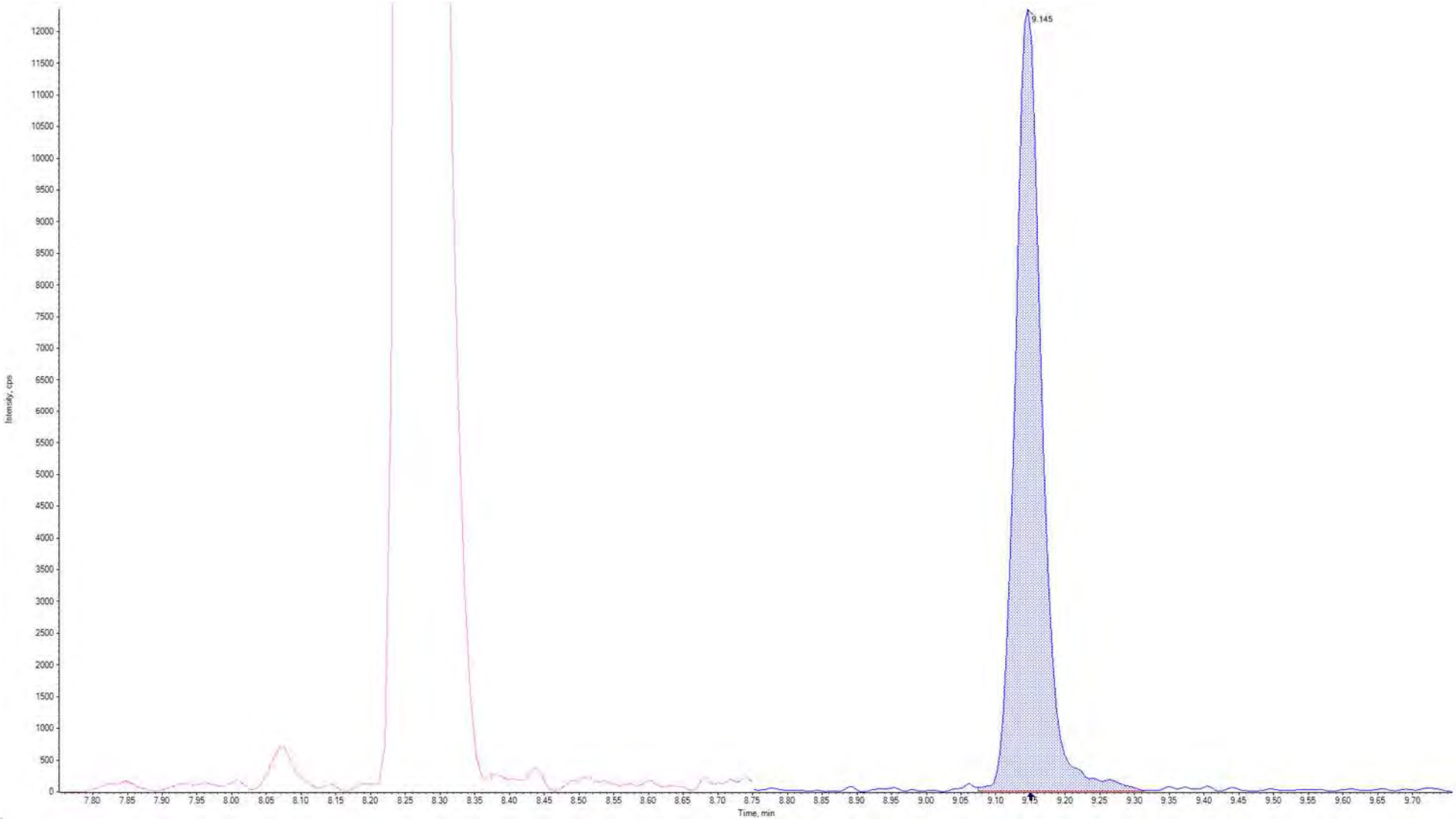
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFNS_2
Sample: IA1633STD-.2 S/N:673.1 Points Across peak:26



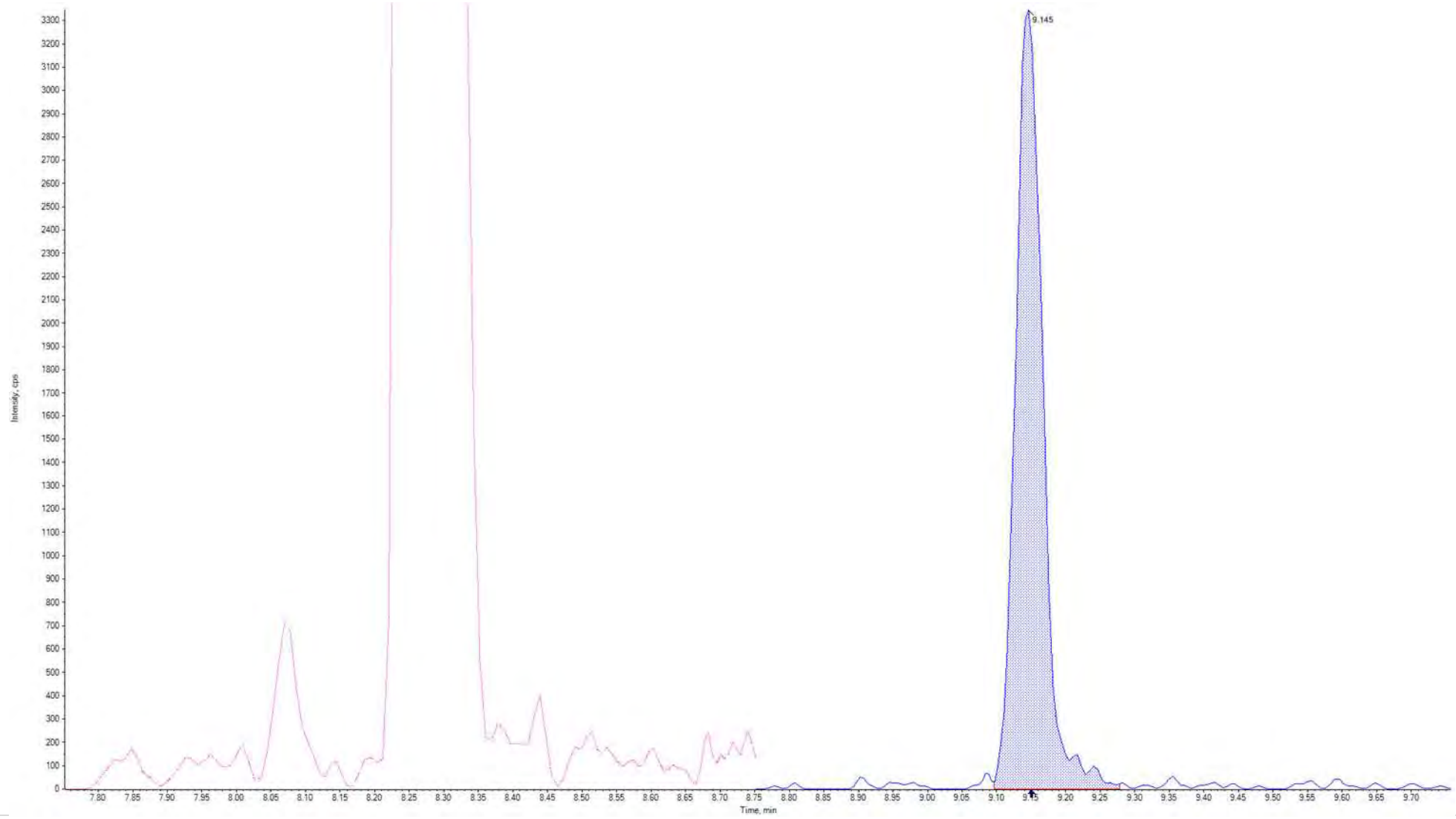
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFDS
Sample: IA1633STD-.2 S/N:3521.8 Points Across peak:47



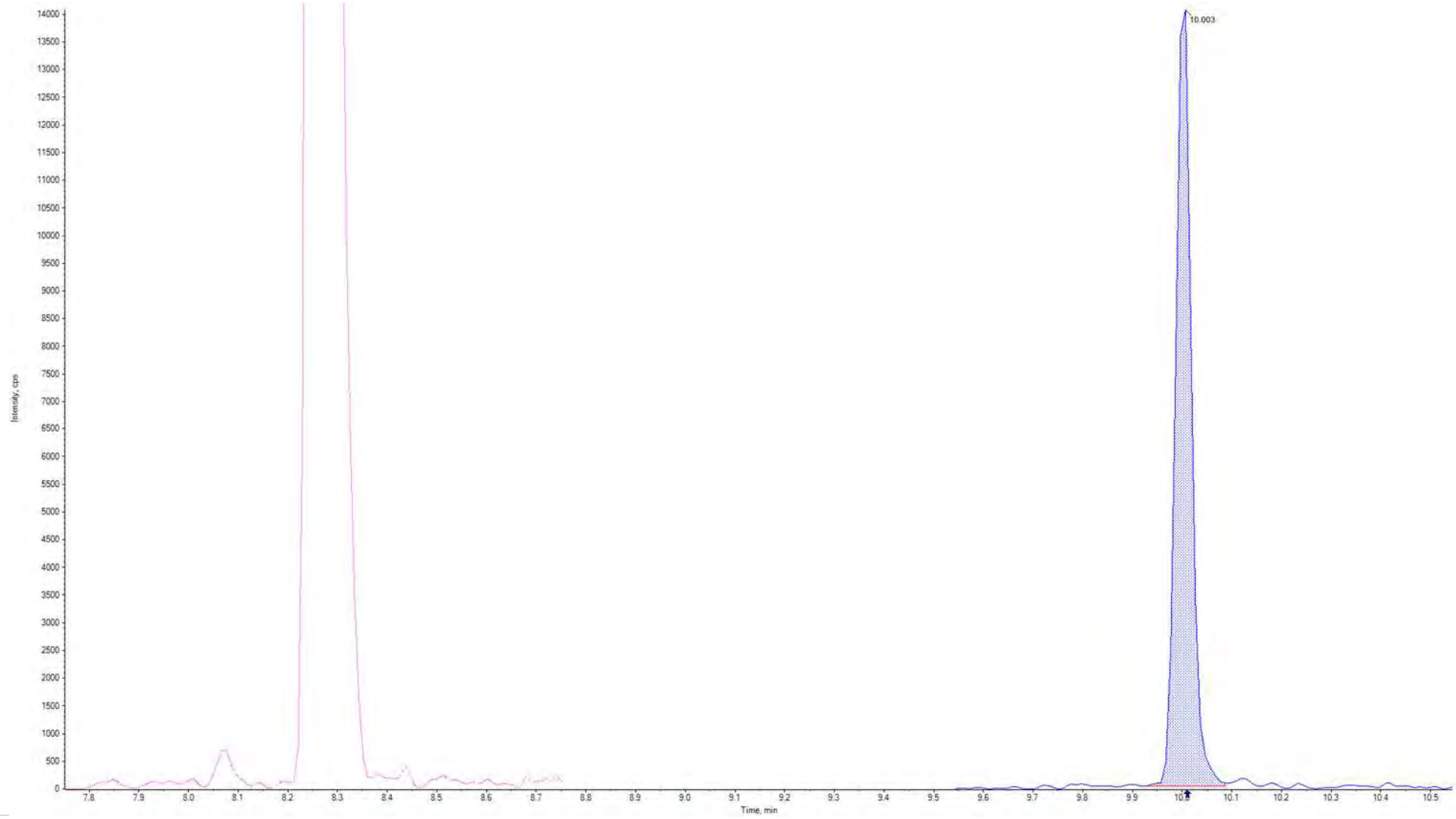
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFDS_2
Sample: IA1633STD-.2 S/N:448.0 Points Across peak:36



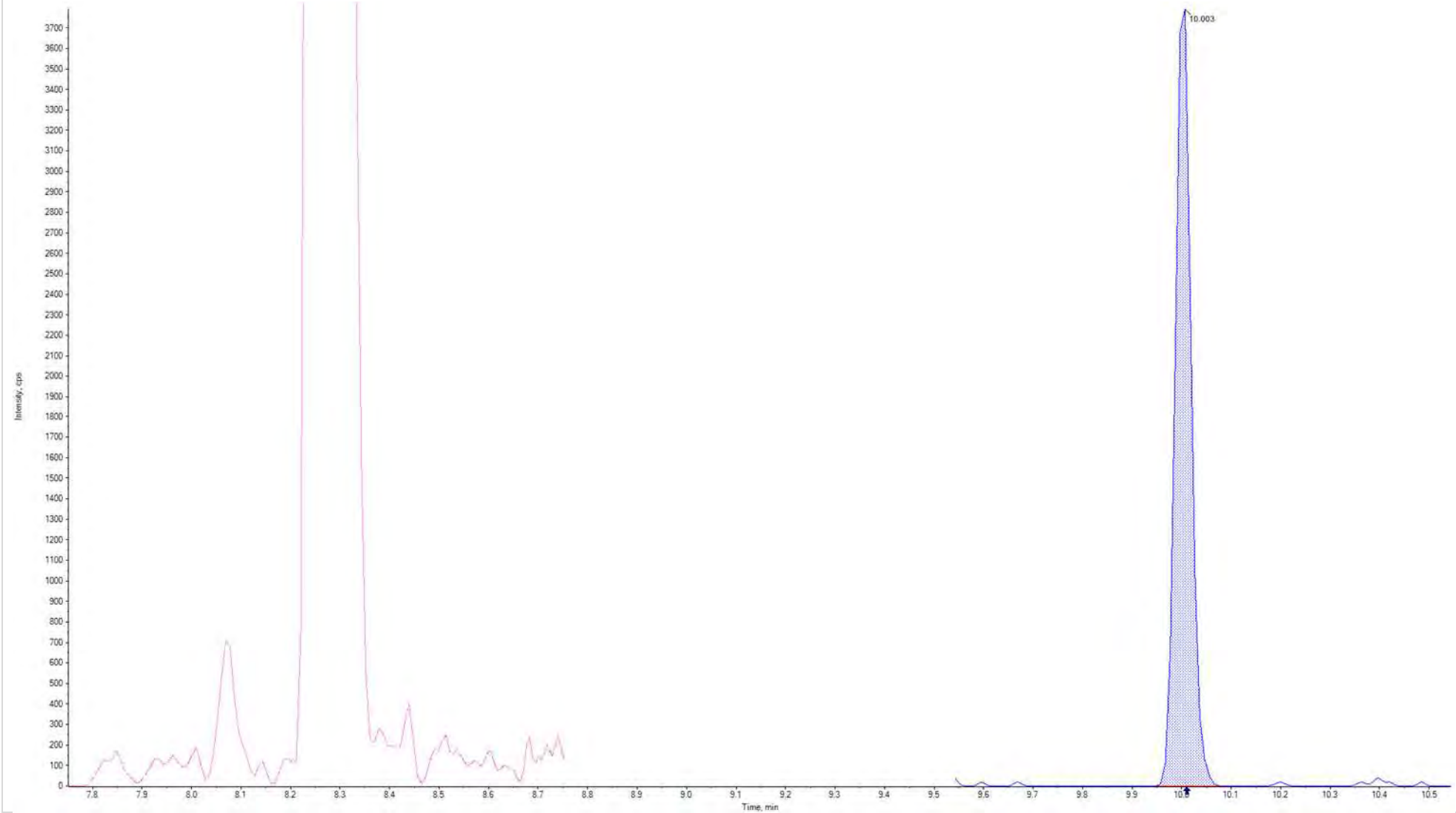
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFDoS
Sample: IA1633STD-.2 S/N:3800.1 Points Across peak:18



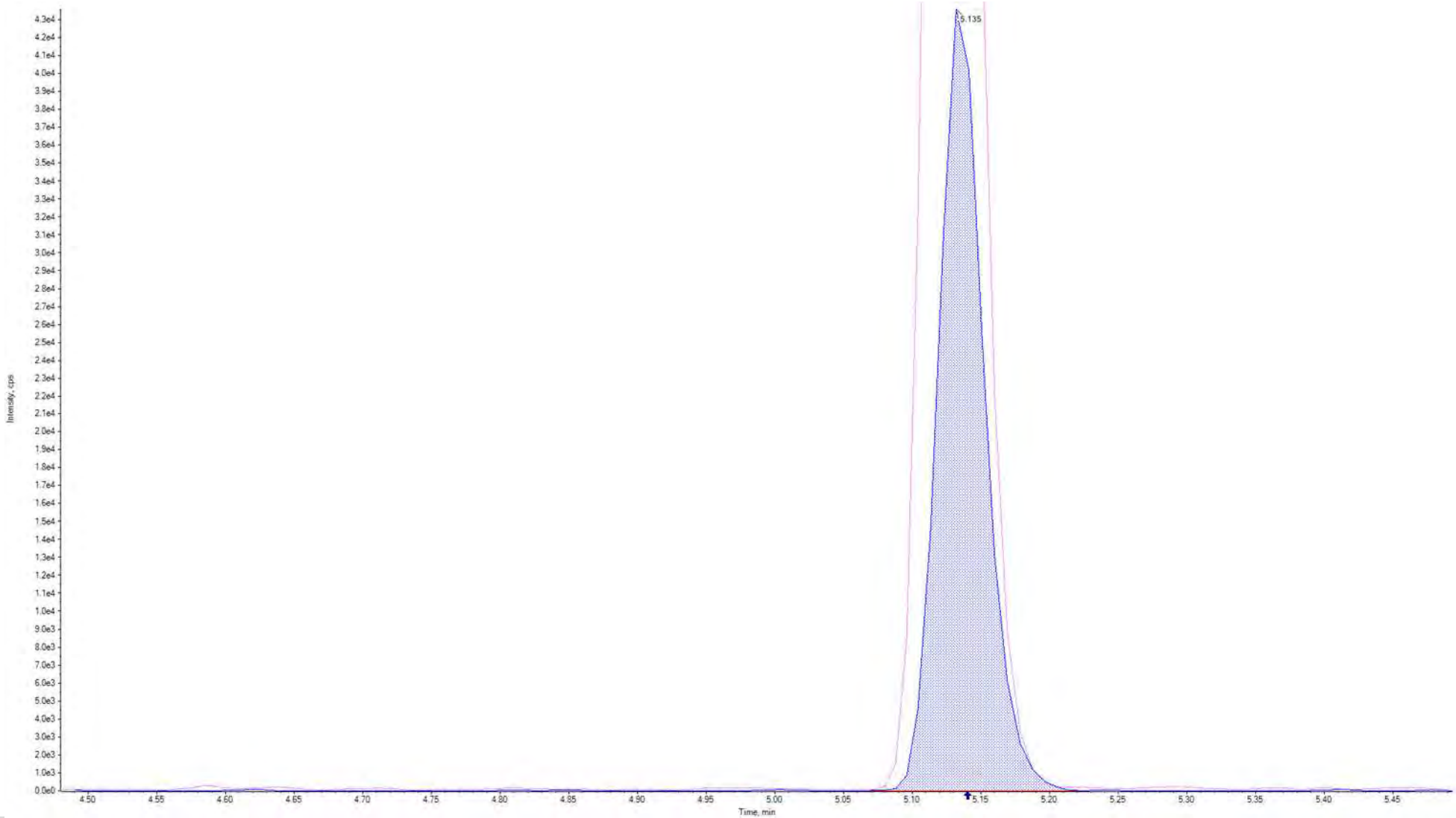
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFDoS_2
Sample: IA1633STD-.2 S/N:11205.2 Points Across peak:24



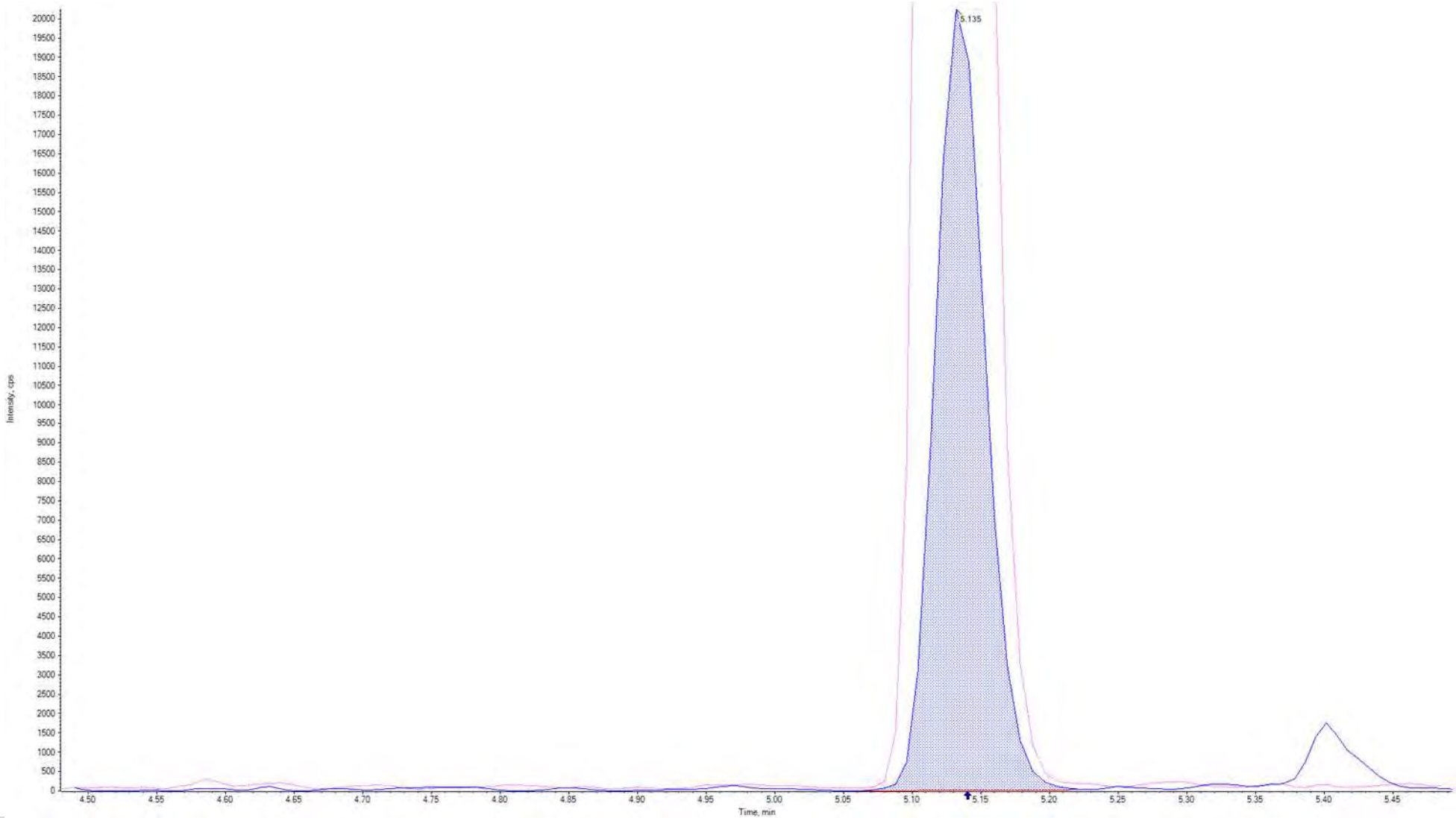
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

4:2FTS
Sample: IA1633STD-.2 S/N:491982.5 Points Across peak:20



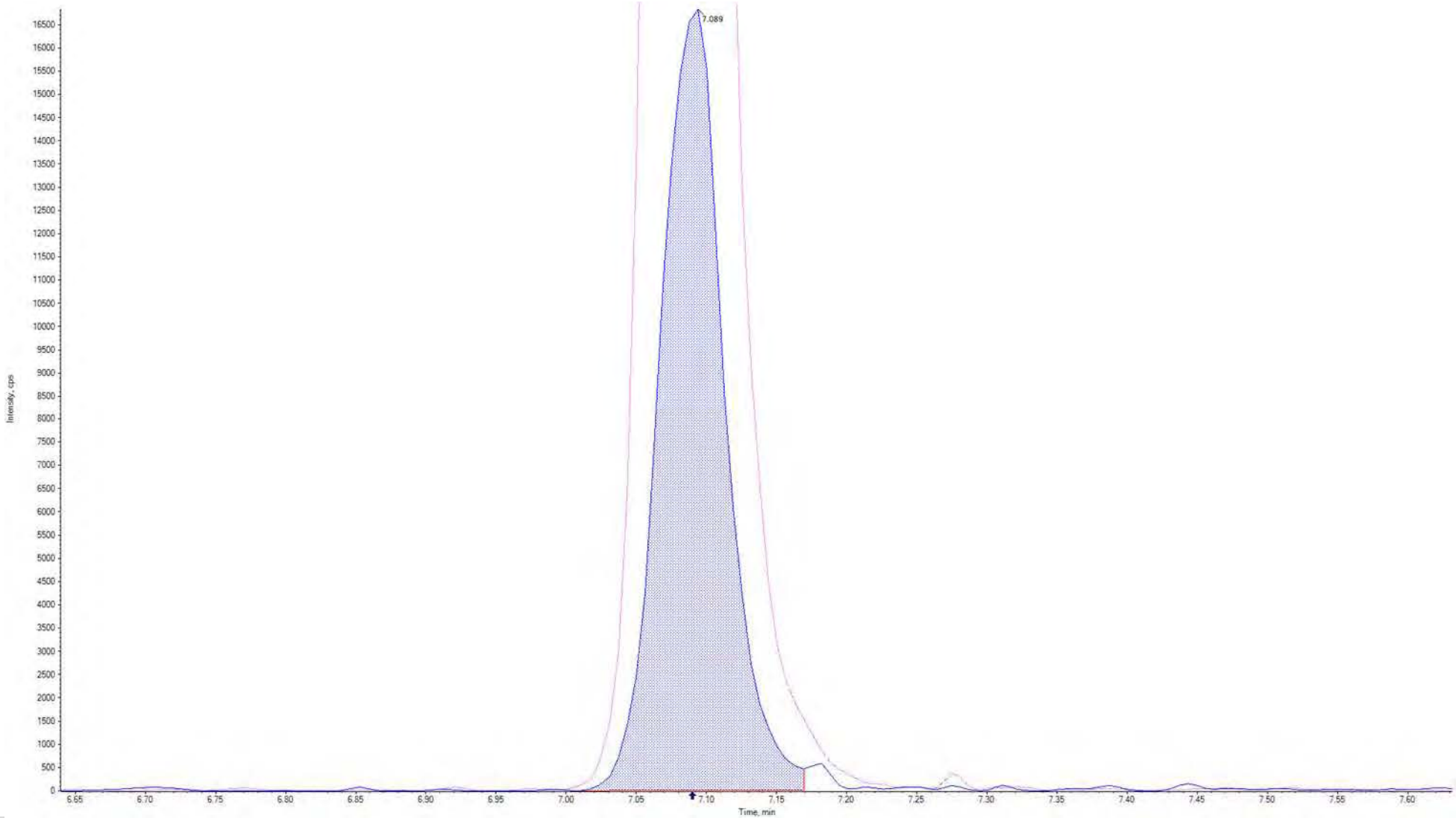
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

4:2FTS_2
Sample: IA1633STD-.2 S/N:28540.2 Points Across peak:21



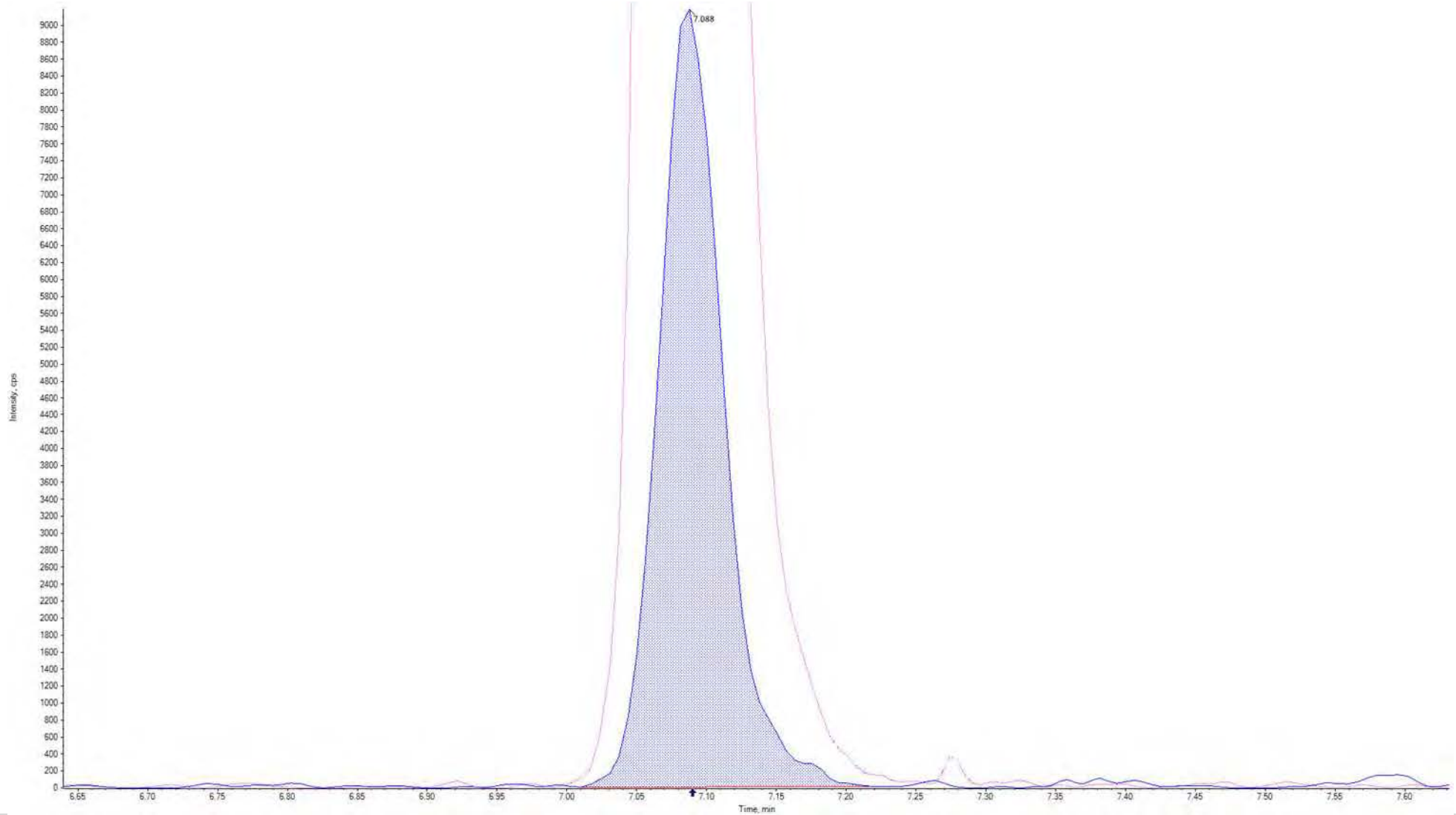
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

6:2FTS
Sample: IA1633STD-.2 S/N:672.0 Points Across peak:27



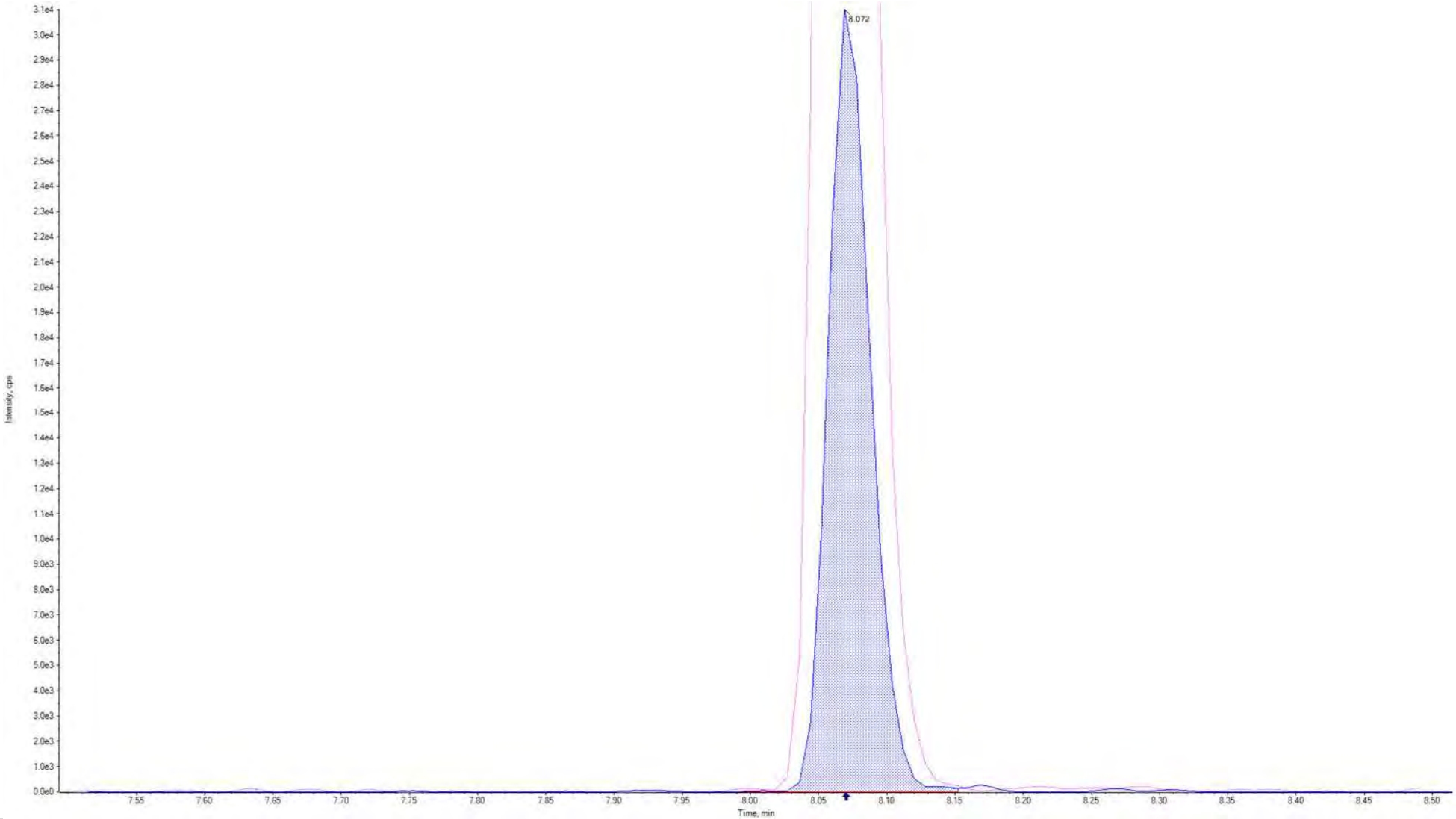
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

6:2FTS_2
Sample: IA1633STD-.2 S/N:40299.4 Points Across peak:35



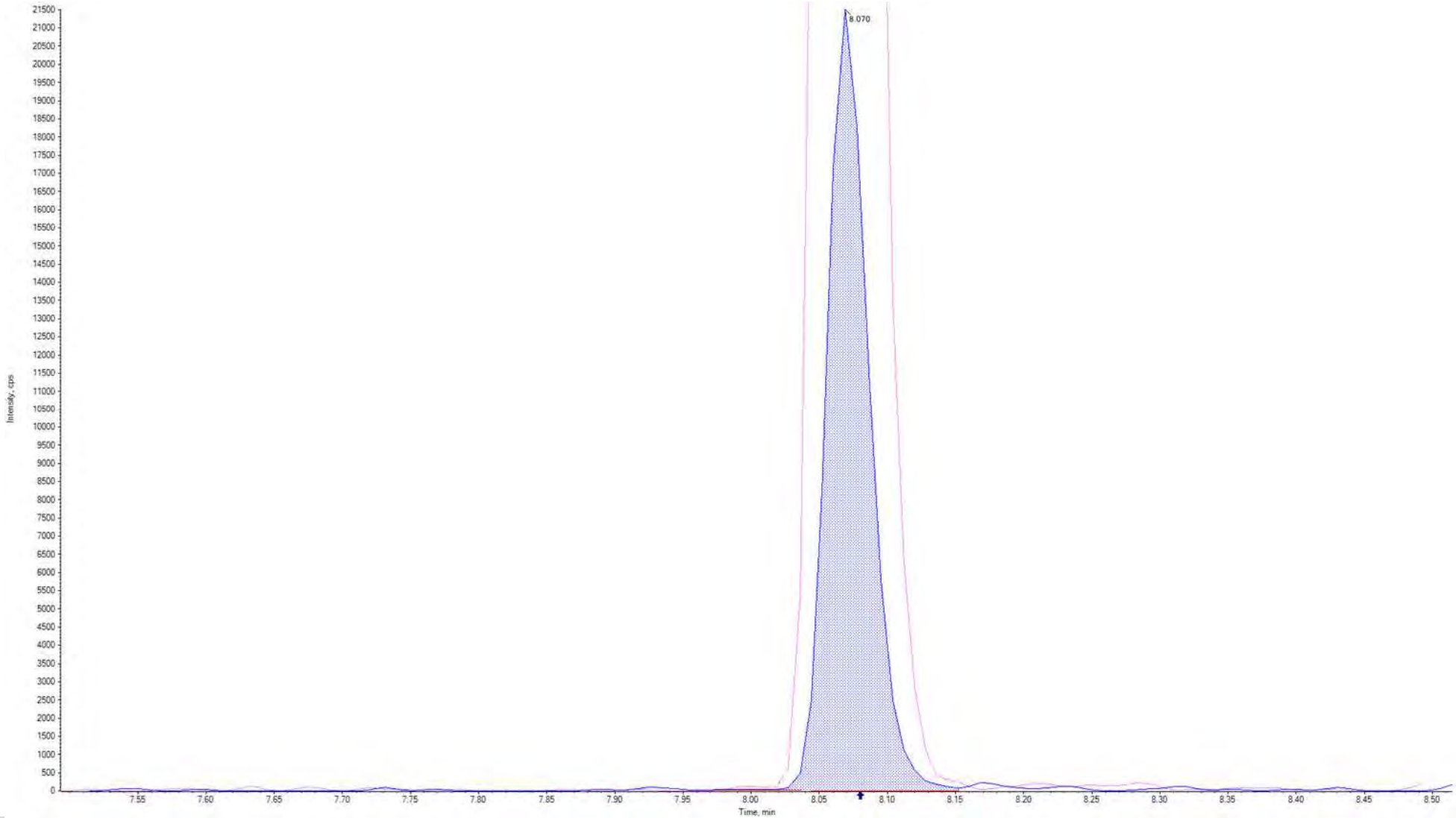
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

8:2FTS
Sample: IA1633STD-.2 S/N:39272.8 Points Across peak:22



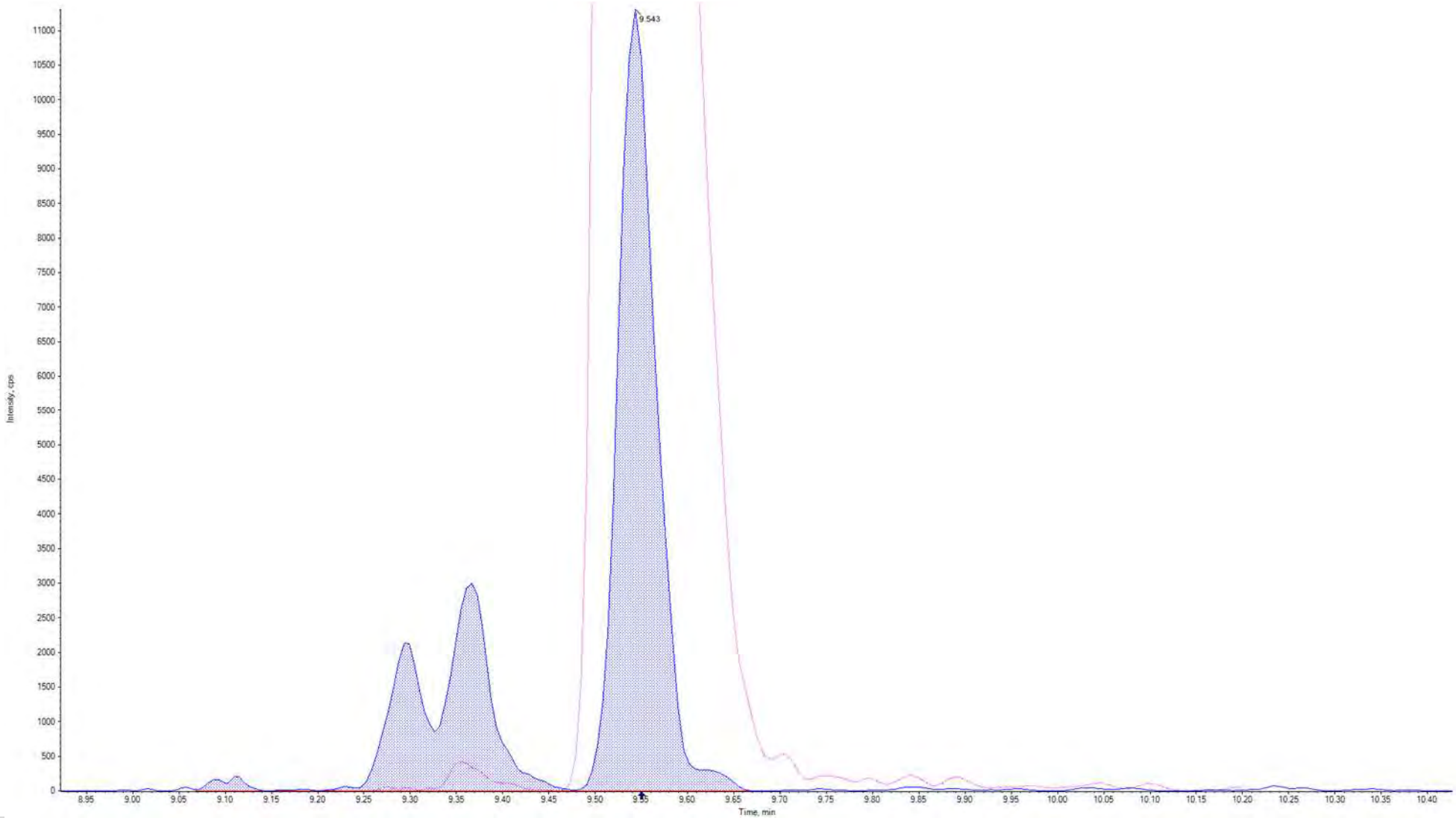
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

8:2FTS_2
Sample: IA1633STD-.2 S/N:711.3 Points Across peak:23



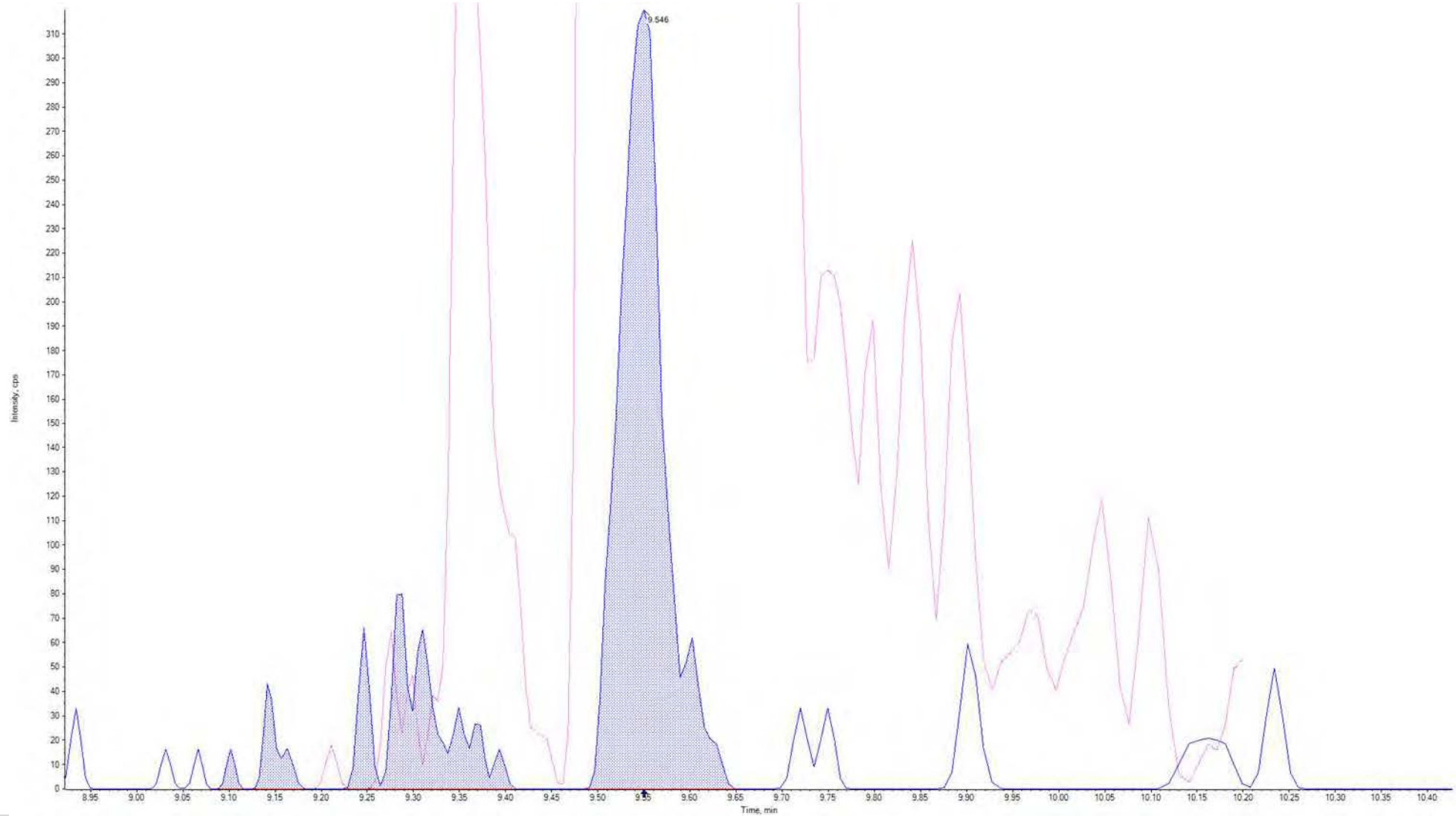
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFOSA
Sample: IA1633STD-.2 S/N:663.8 Points Across peak:108



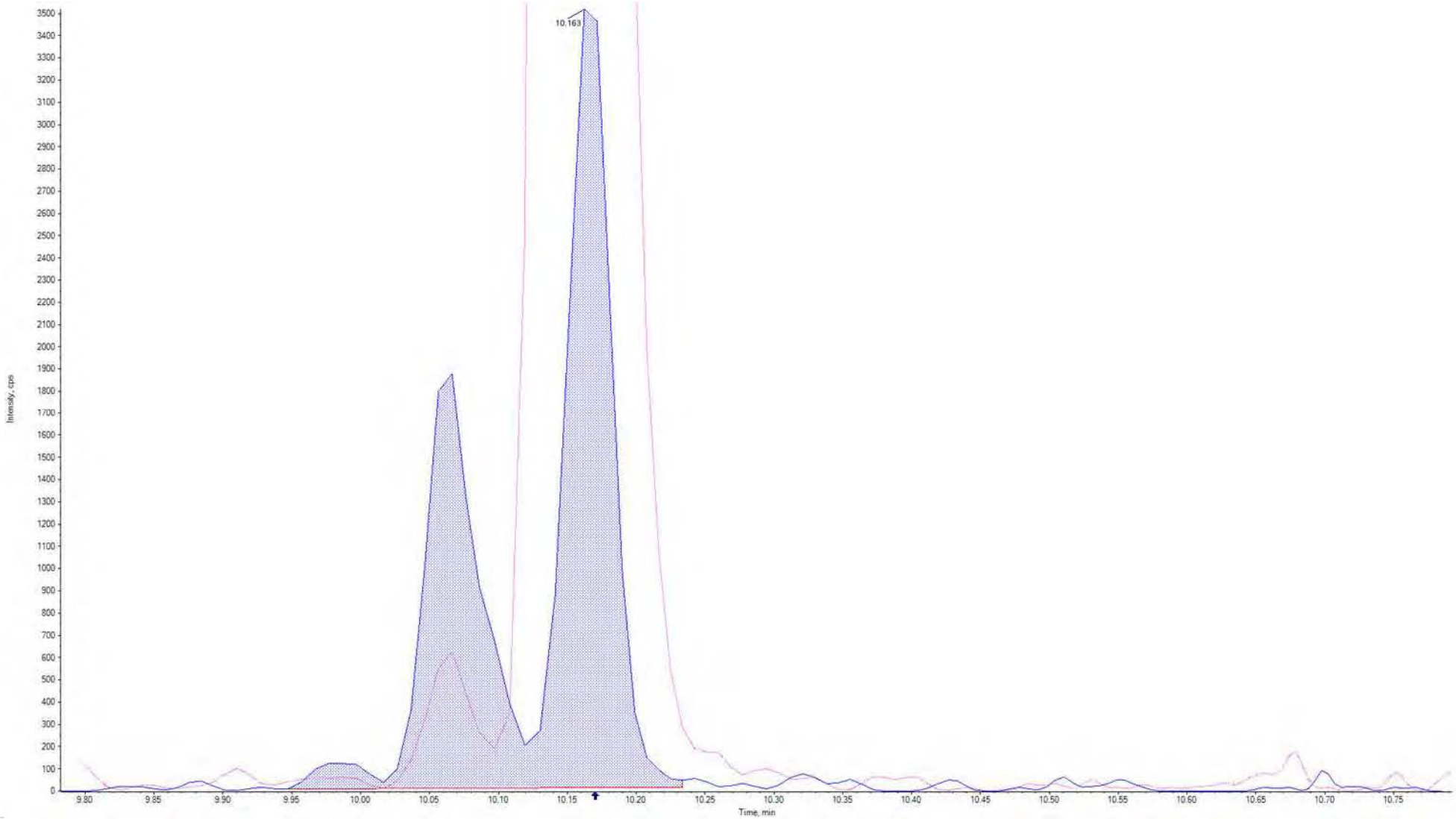
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFOSA_2
Sample: IA1633STD-.2 S/N:149.5 Points Across peak:101



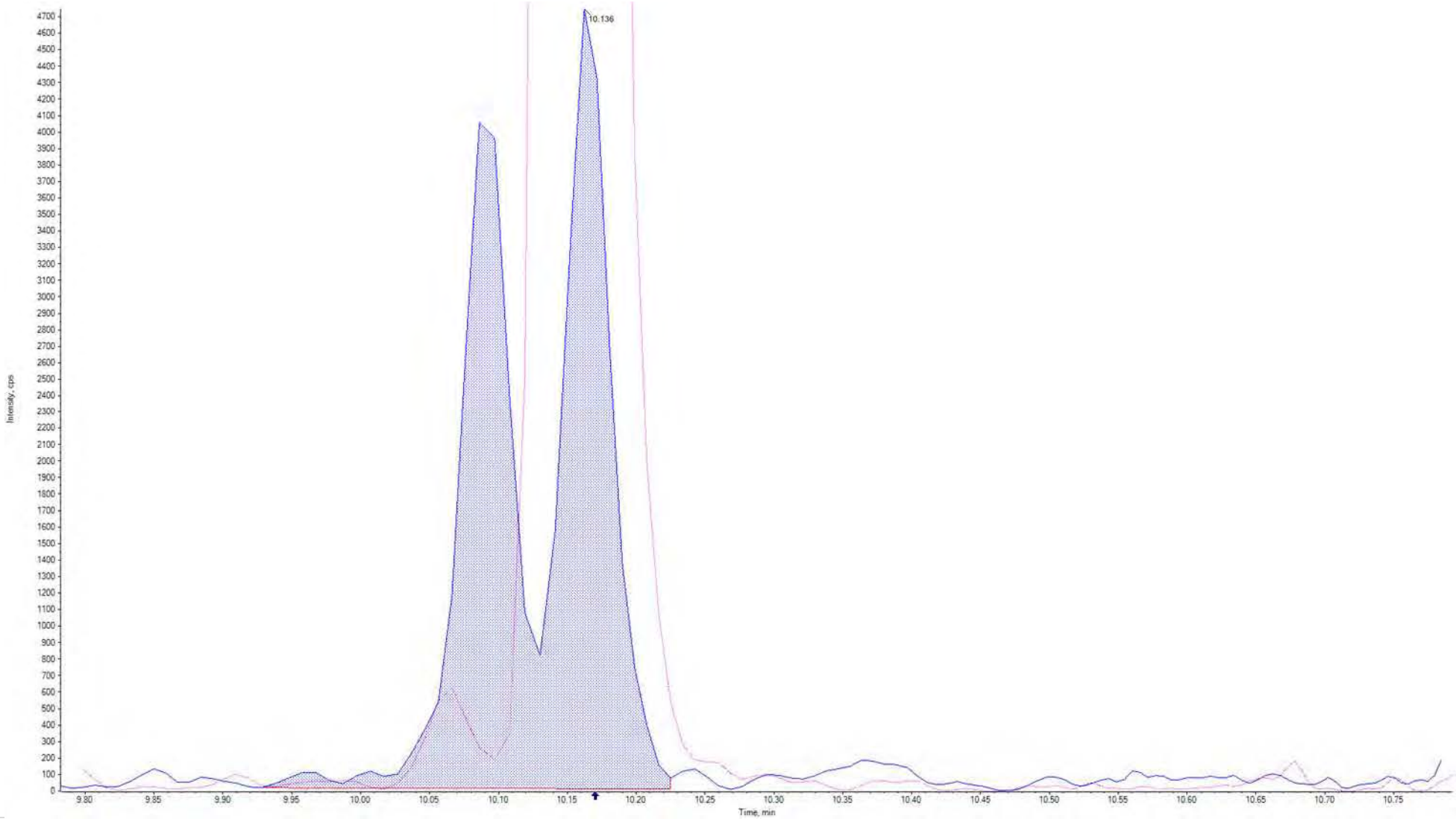
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSA
Sample: IA1633STD-.2 S/N:233.2 Points Across peak:31



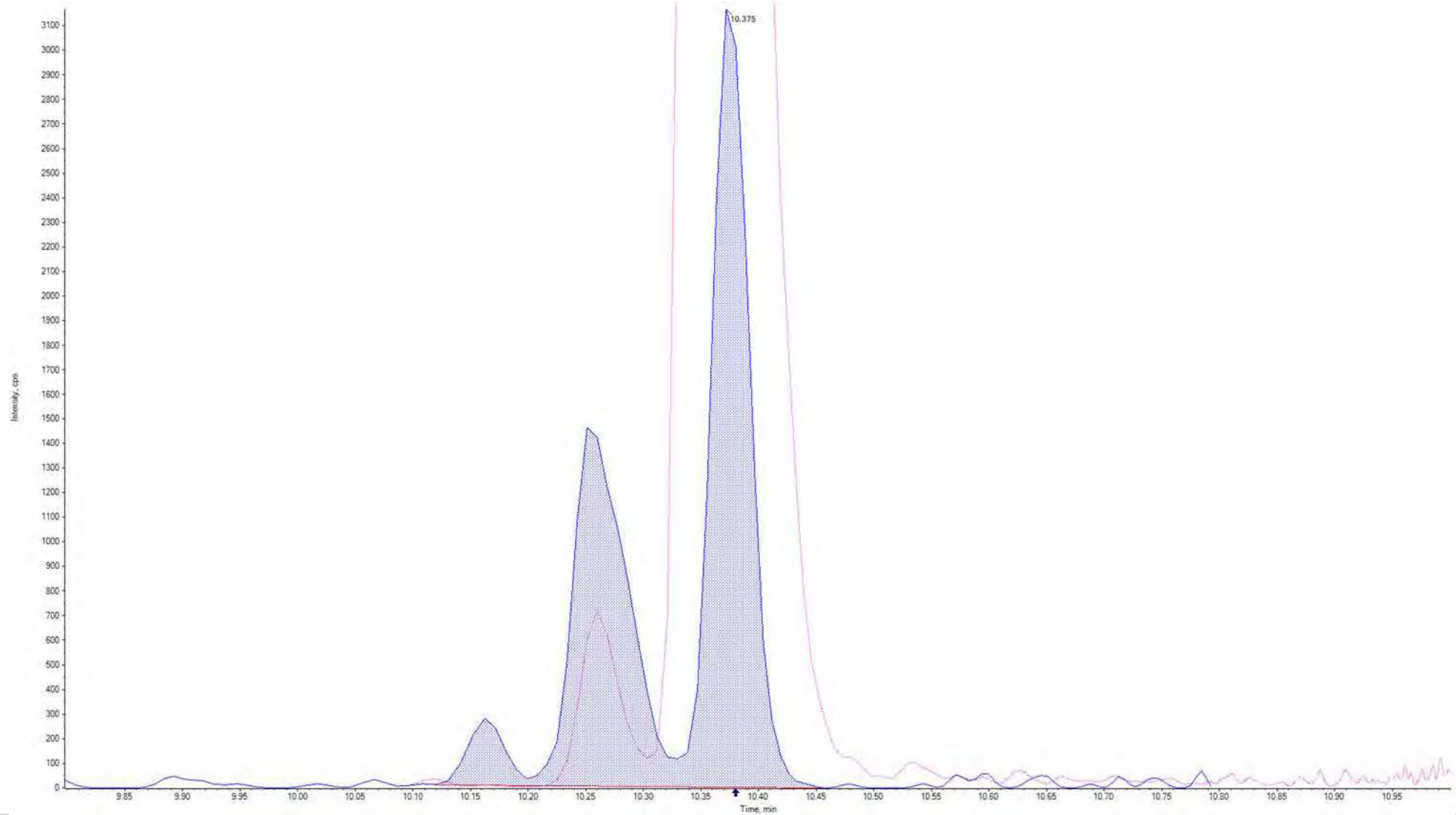
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSA_2
Sample: IA1633STD-.2 S/N:722.5 Points Across peak:32



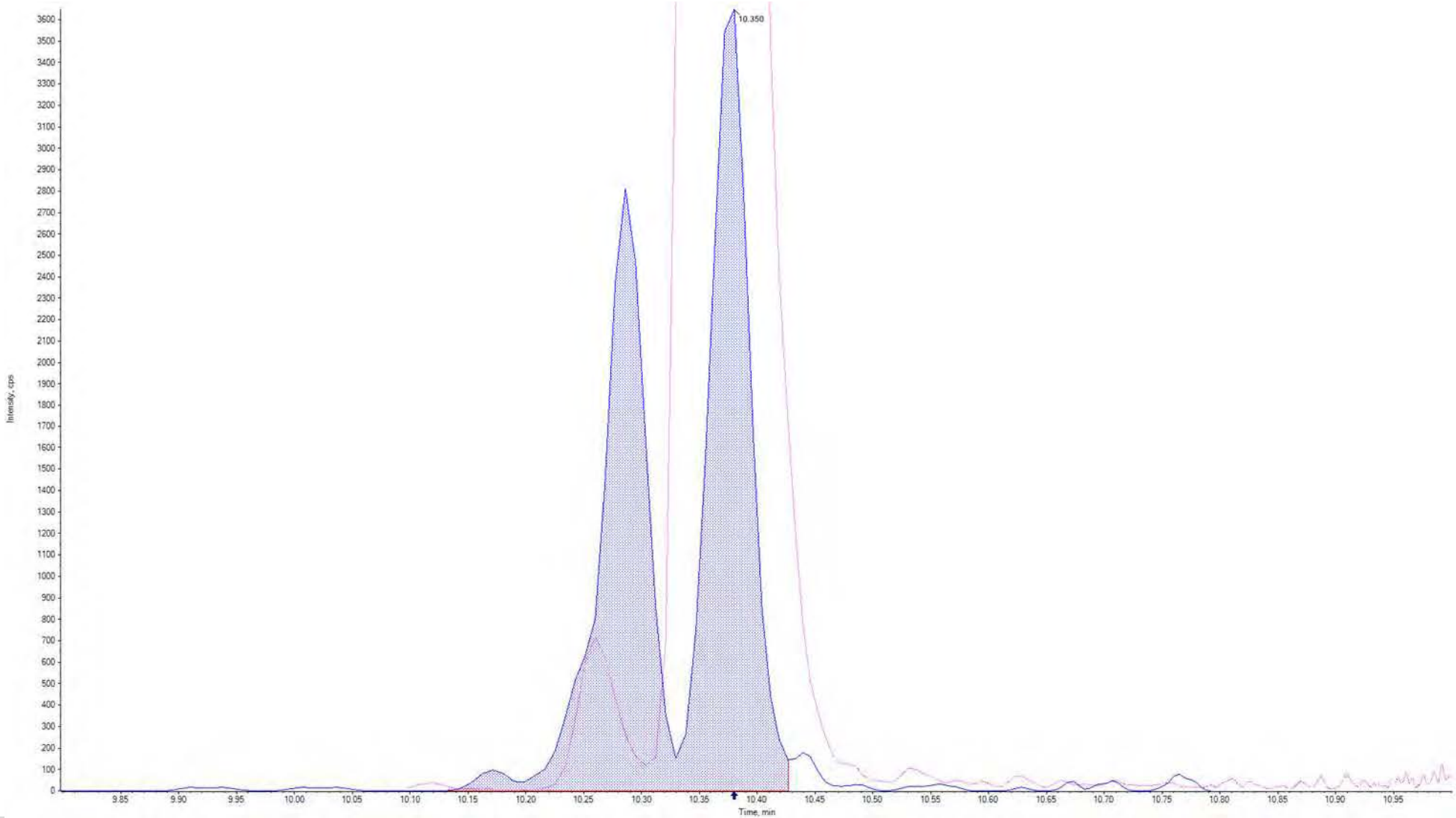
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSA
Sample: IA1633STD-.2 S/N:74730.4 Points Across peak:42



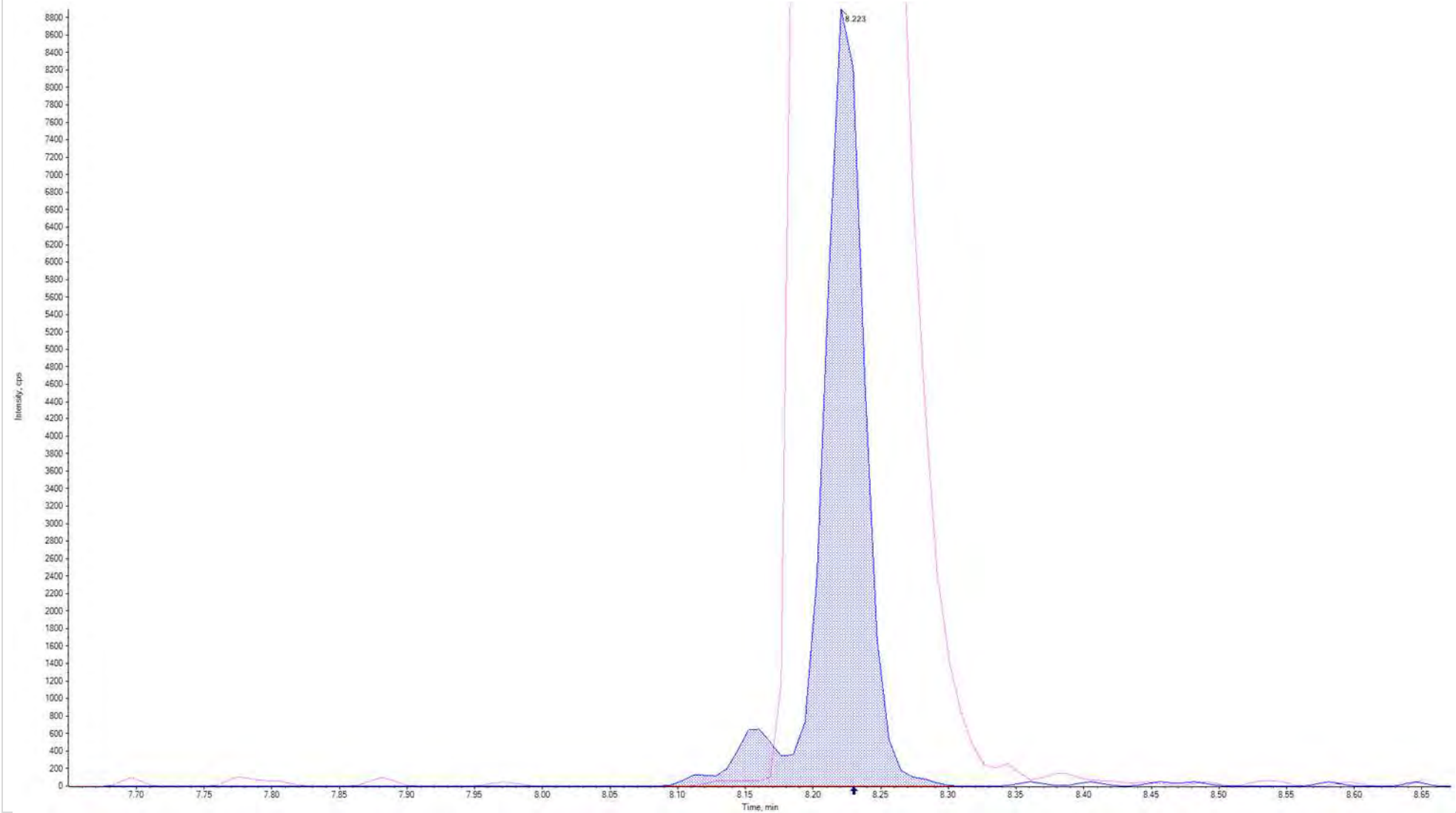
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSA_2
Sample: IA1633STD-.2 S/N:276.3 Points Across peak:36



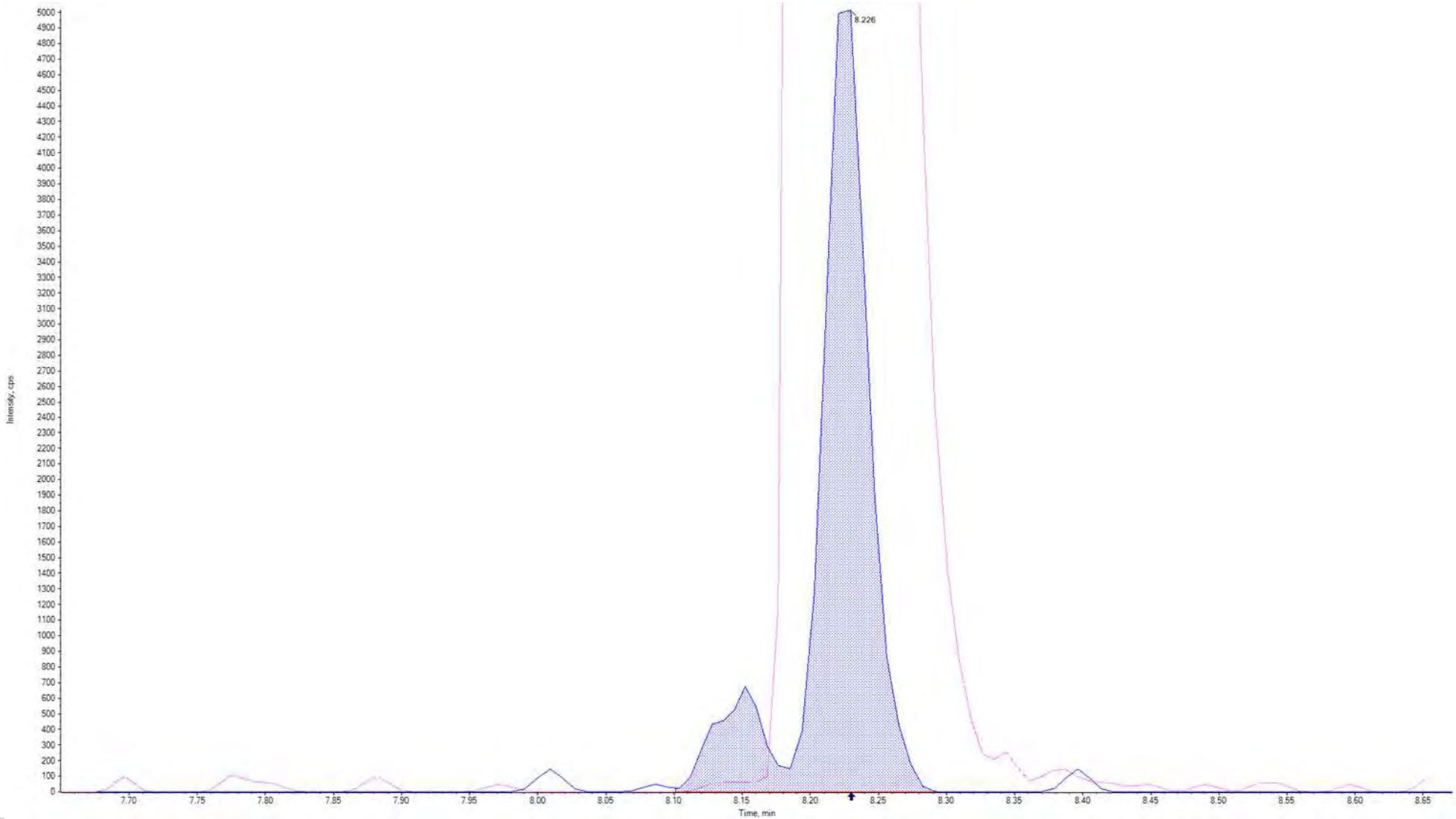
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSAA
Sample: IA1633STD-.2 S/N:335.4 Points Across peak:31



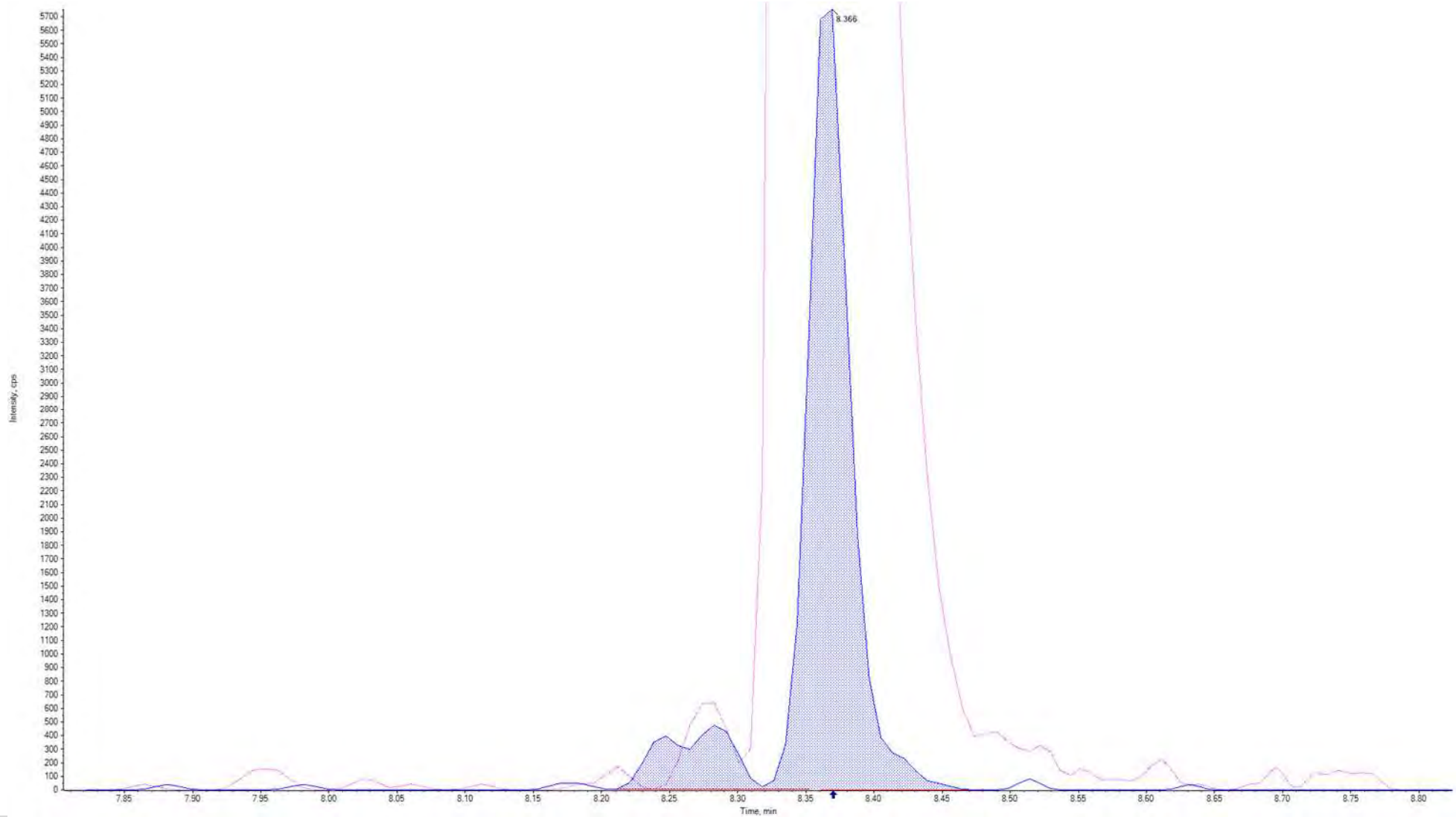
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSAA_2
Sample: IA1633STD-.2 S/N:559.1 Points Across peak:25



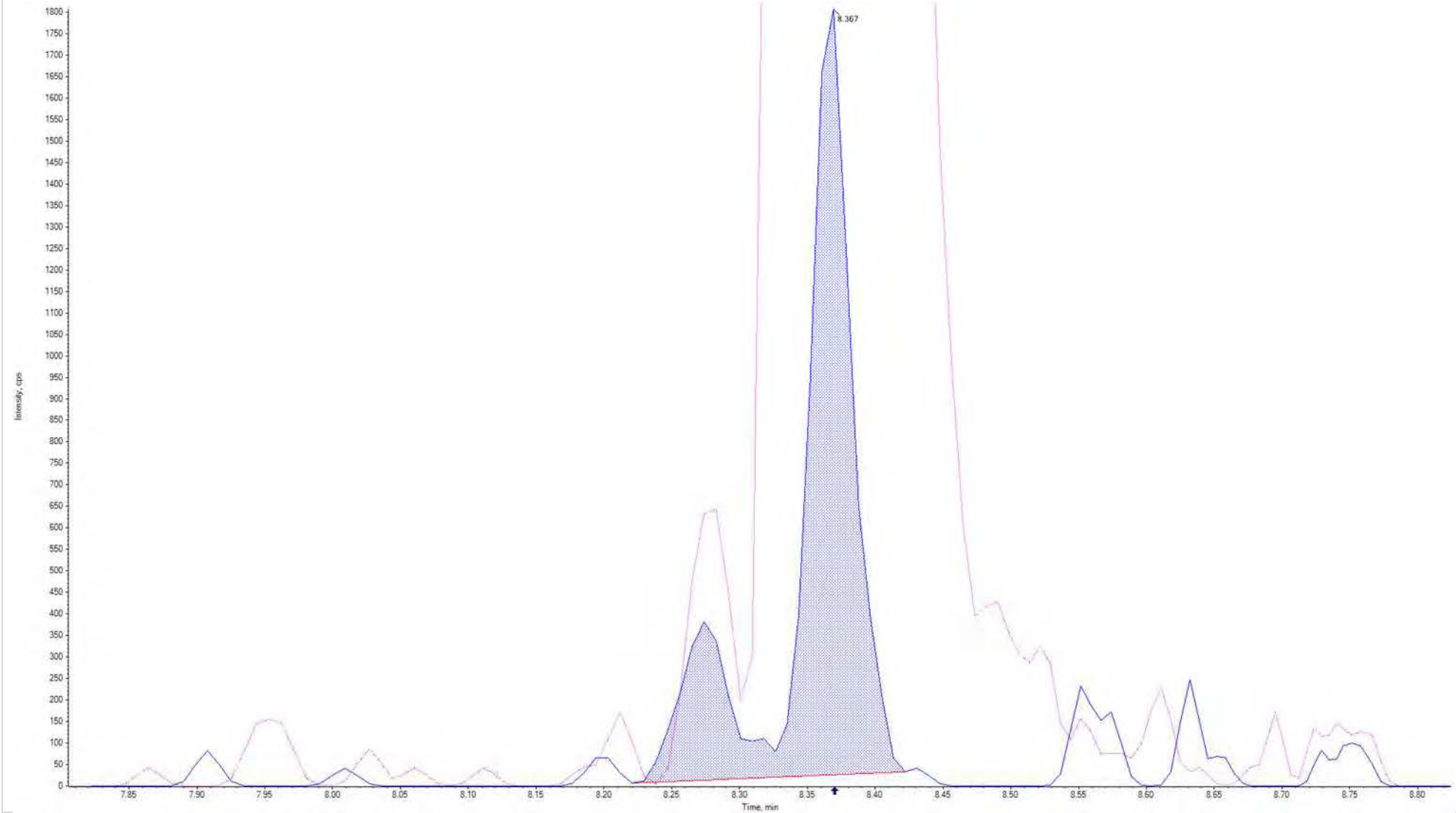
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSAA
Sample: IA1633STD-.2 S/N:328.2 Points Across peak:33



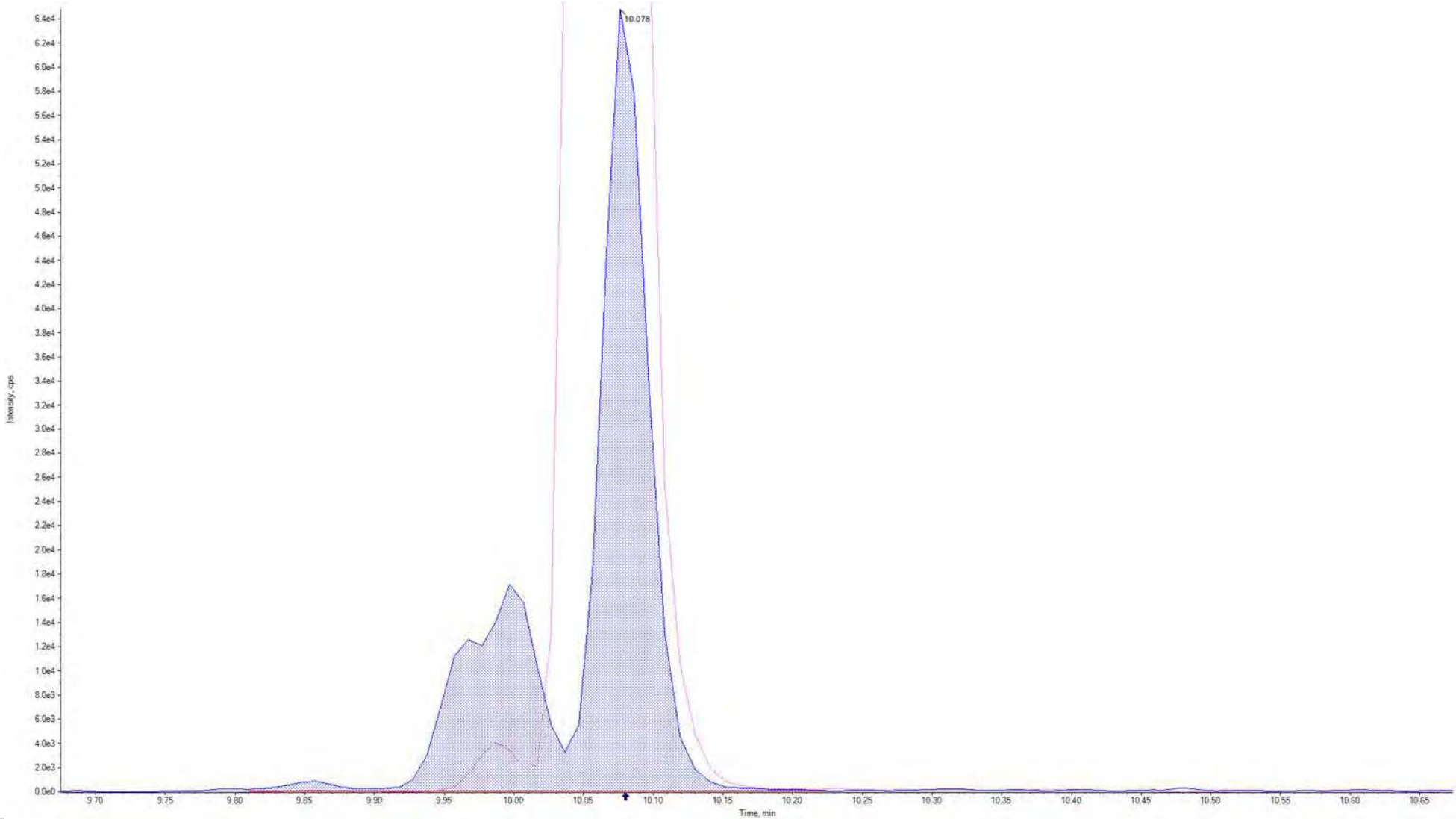
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSAA_2
Sample: IA1633STD-.2 S/N:65.3 Points Across peak:24



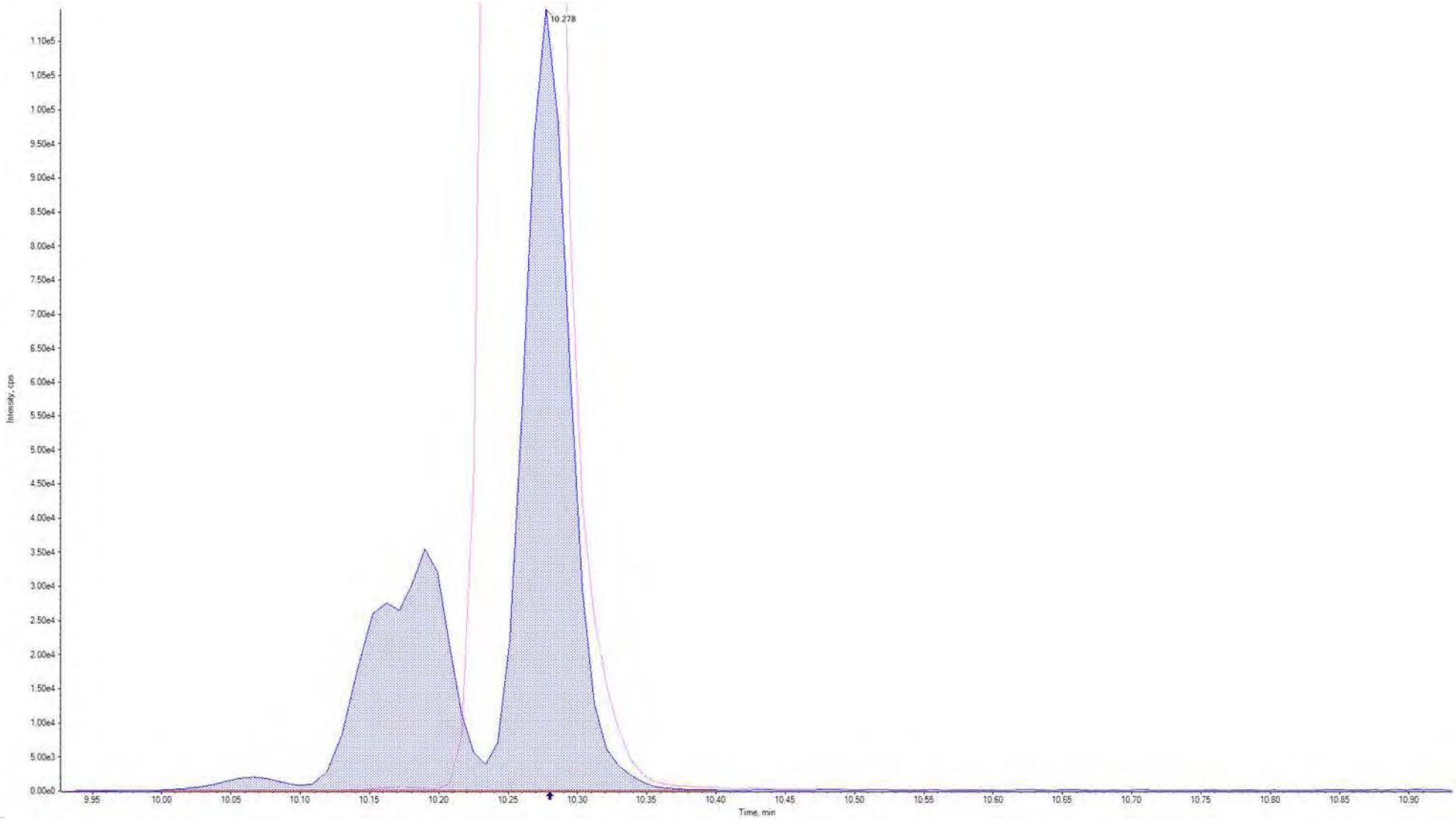
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSE
Sample: IA1633STD-.2 S/N:1918.1 Points Across peak:46



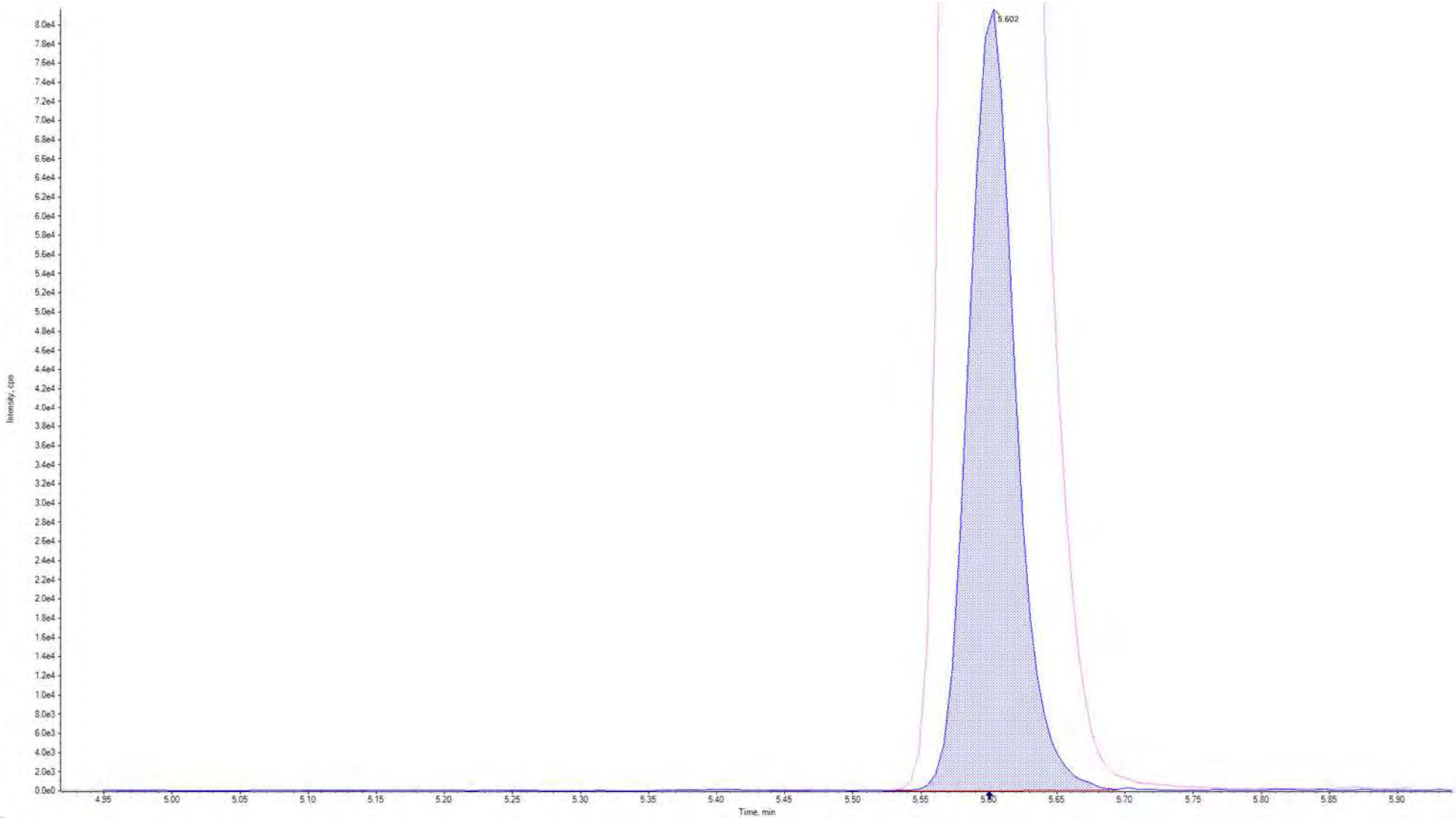
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSE
Sample: IA1633STD-.2 S/N:1082.9 Points Across peak:47



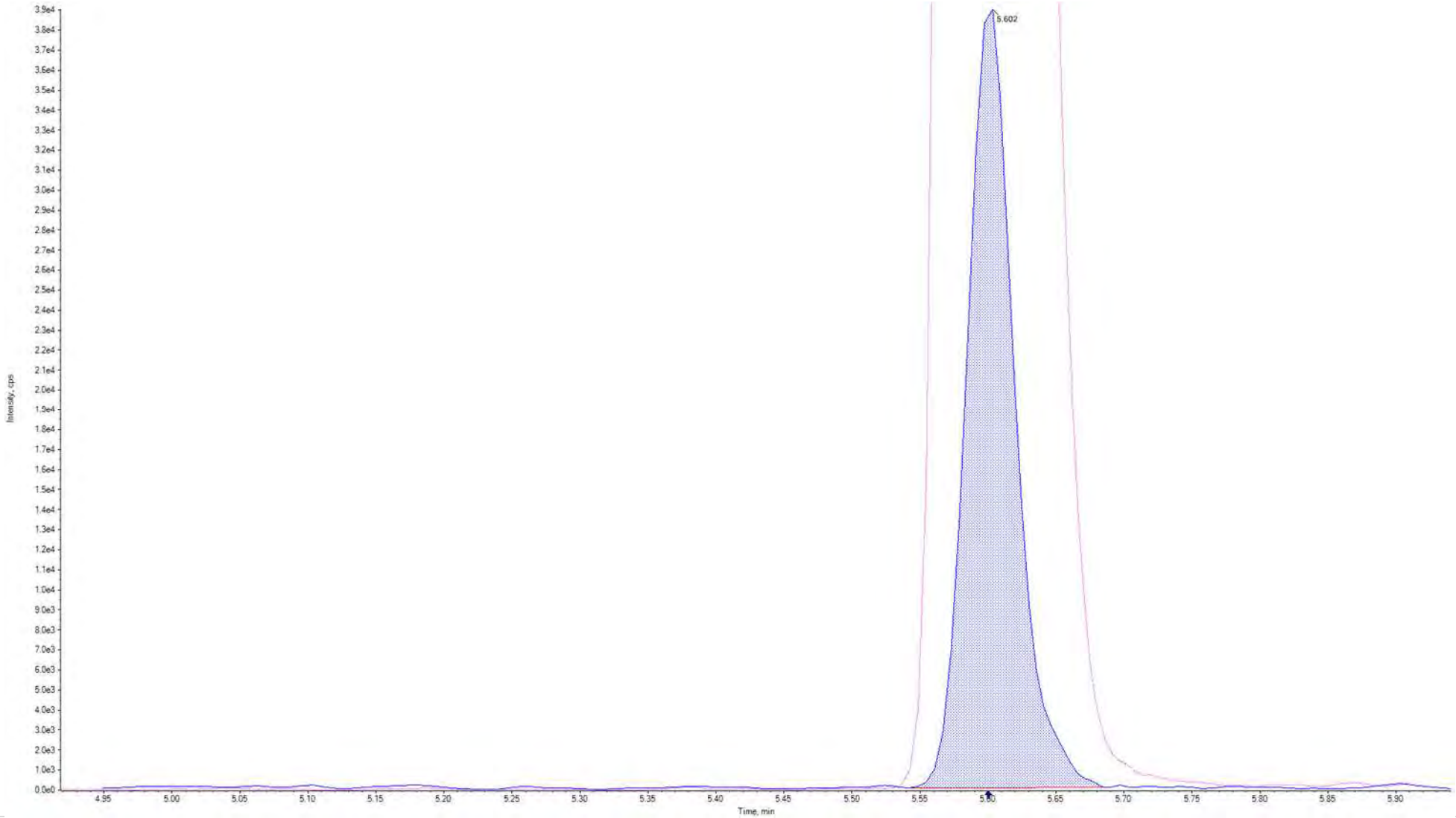
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

HFPO-DA
Sample: IA1633STD-.2 S/N:2485.2 Points Across peak:33



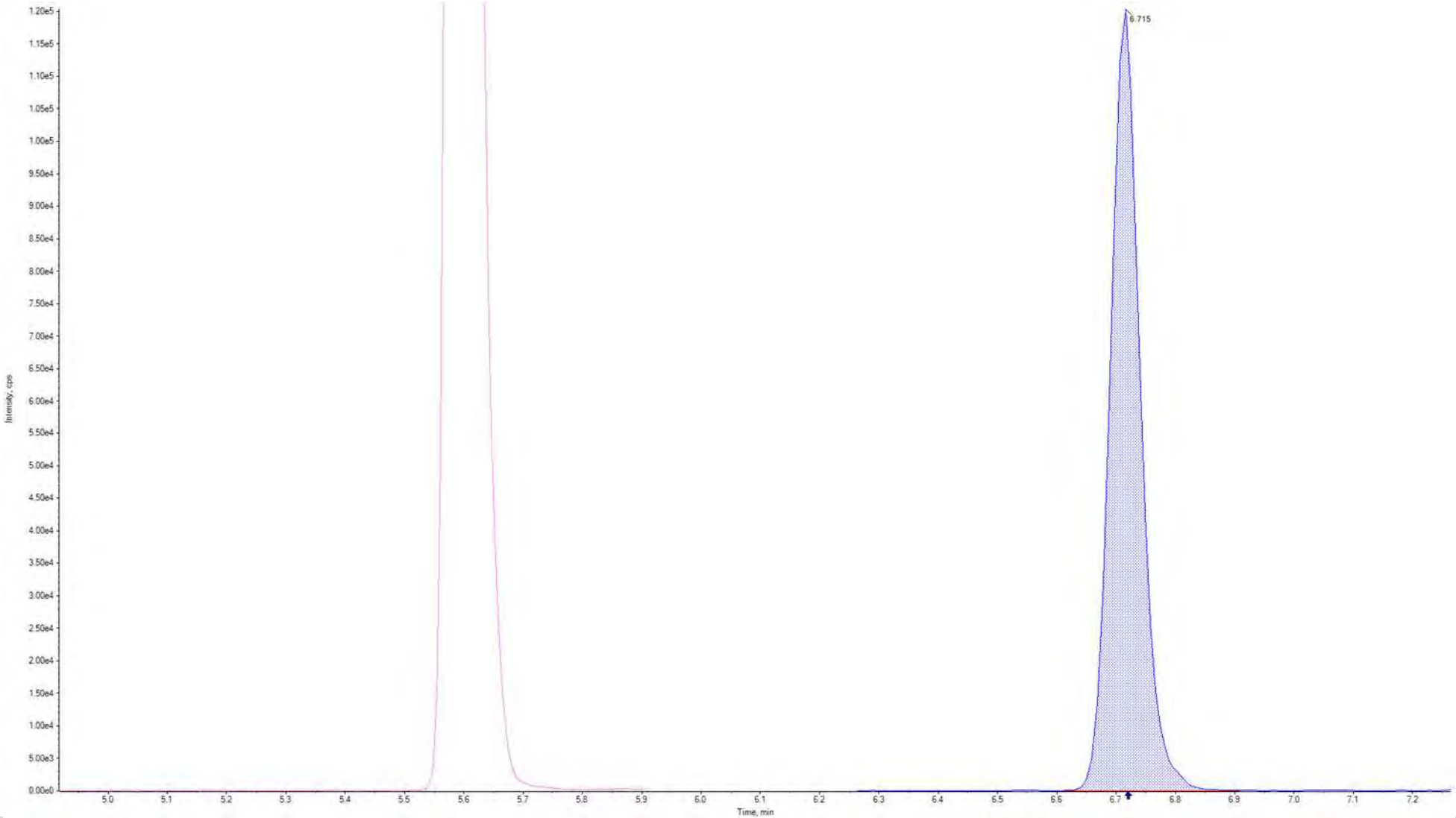
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

HFPO-DA_2
Sample: IA1633STD-.2 S/N:1396.2 Points Across peak:28



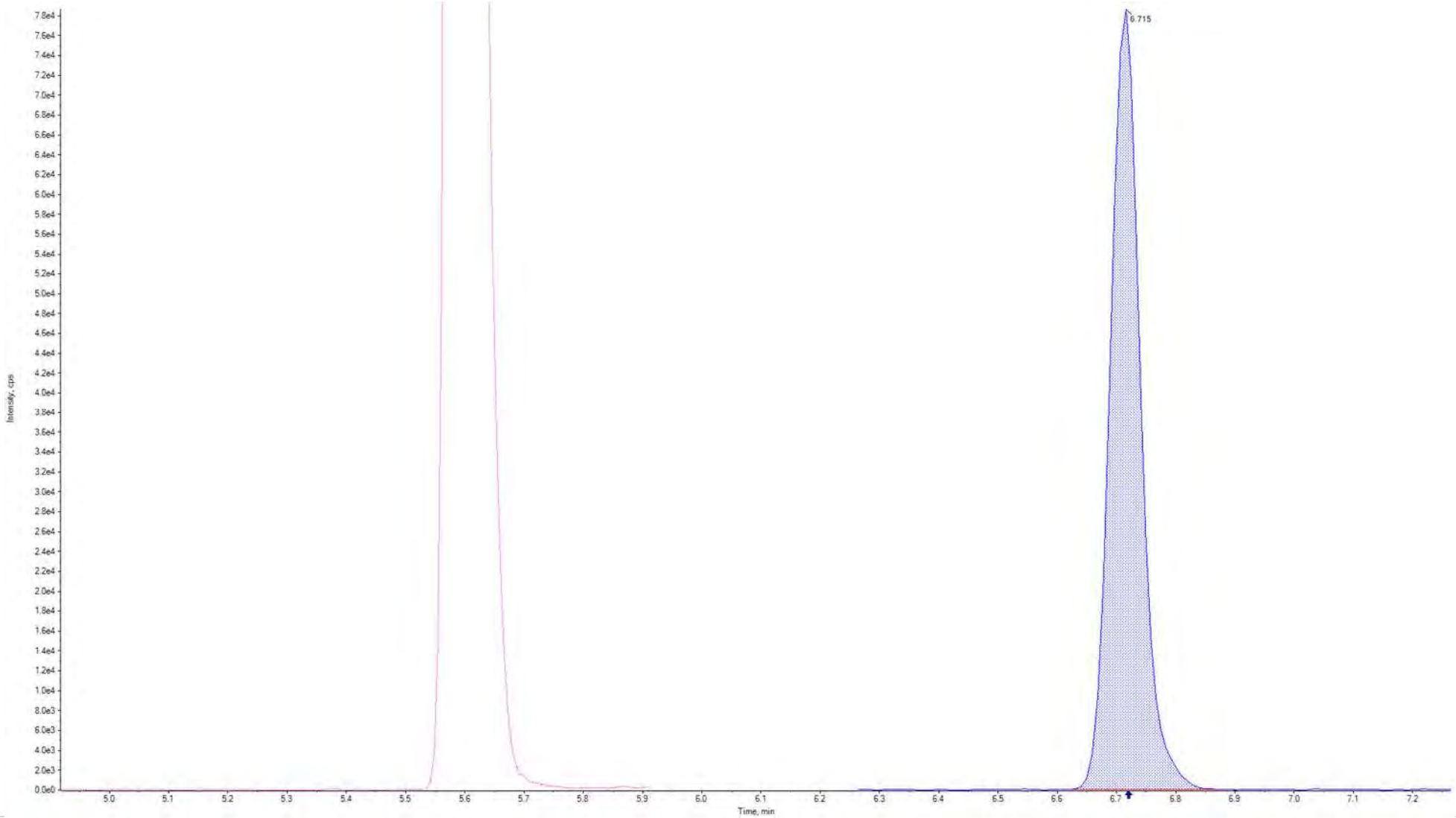
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

ADONA
Sample: IA1633STD-.2 S/N:44579.4 Points Across peak:41



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

ADONA_2
Sample: IA1633STD-.2 S/N:6495.7 Points Across peak:41

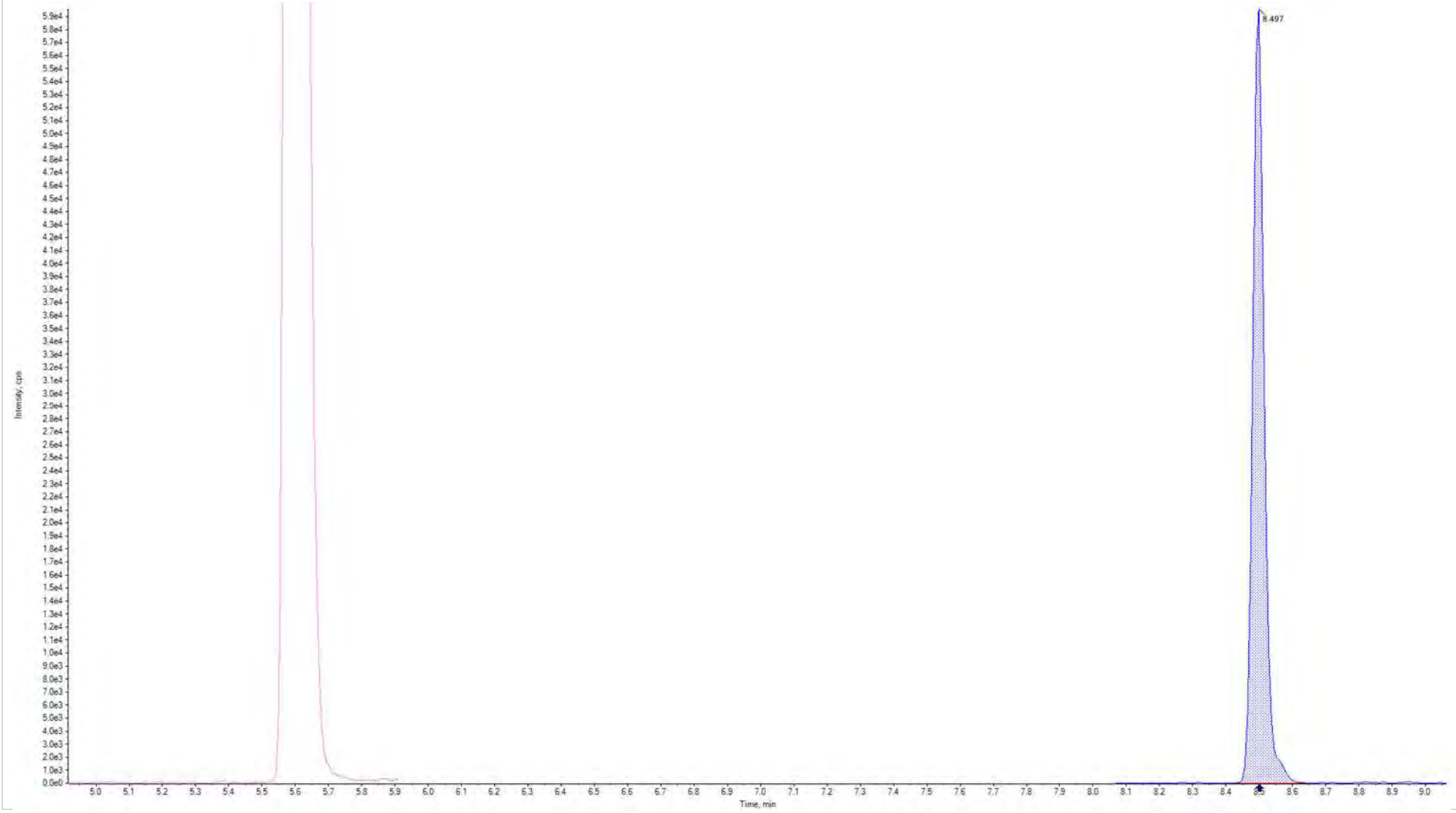


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

9Cl-PF3ONS
Sample: IA1633STD-.2 S/N:1583170.7 Points Across peak:32

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

9Cl-PF3ONS_2
Sample: IA1633STD-.2 S/N:984415.5 Points Across peak:32



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

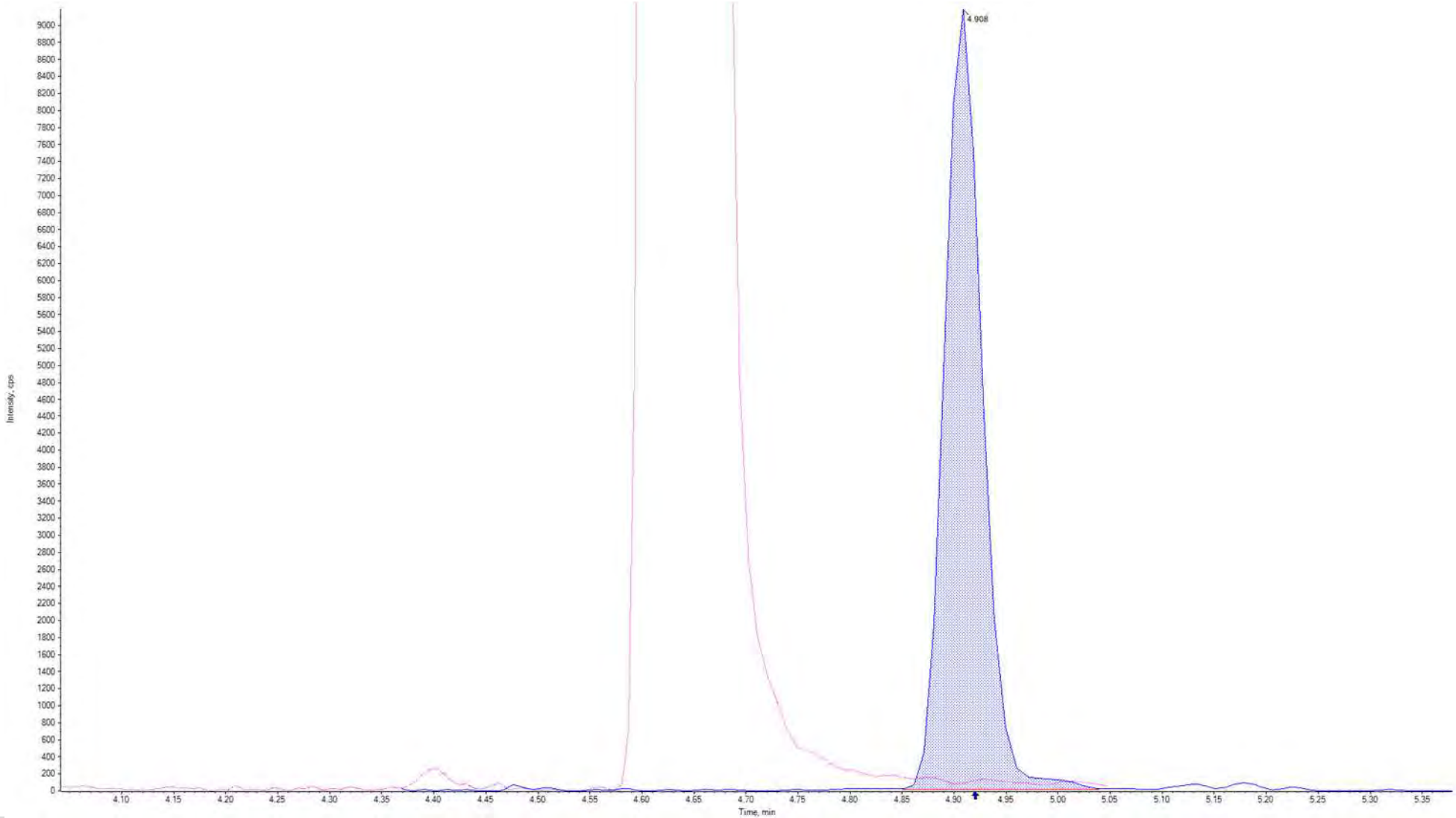
11Cl-PF3OUdS
Sample: IA1633STD-.2 S/N:3312.8 Points Across peak:41

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

11Cl-PF3OUdS_2
Sample: IA1633STD-.2 S/N:2375.5 Points Across peak:35

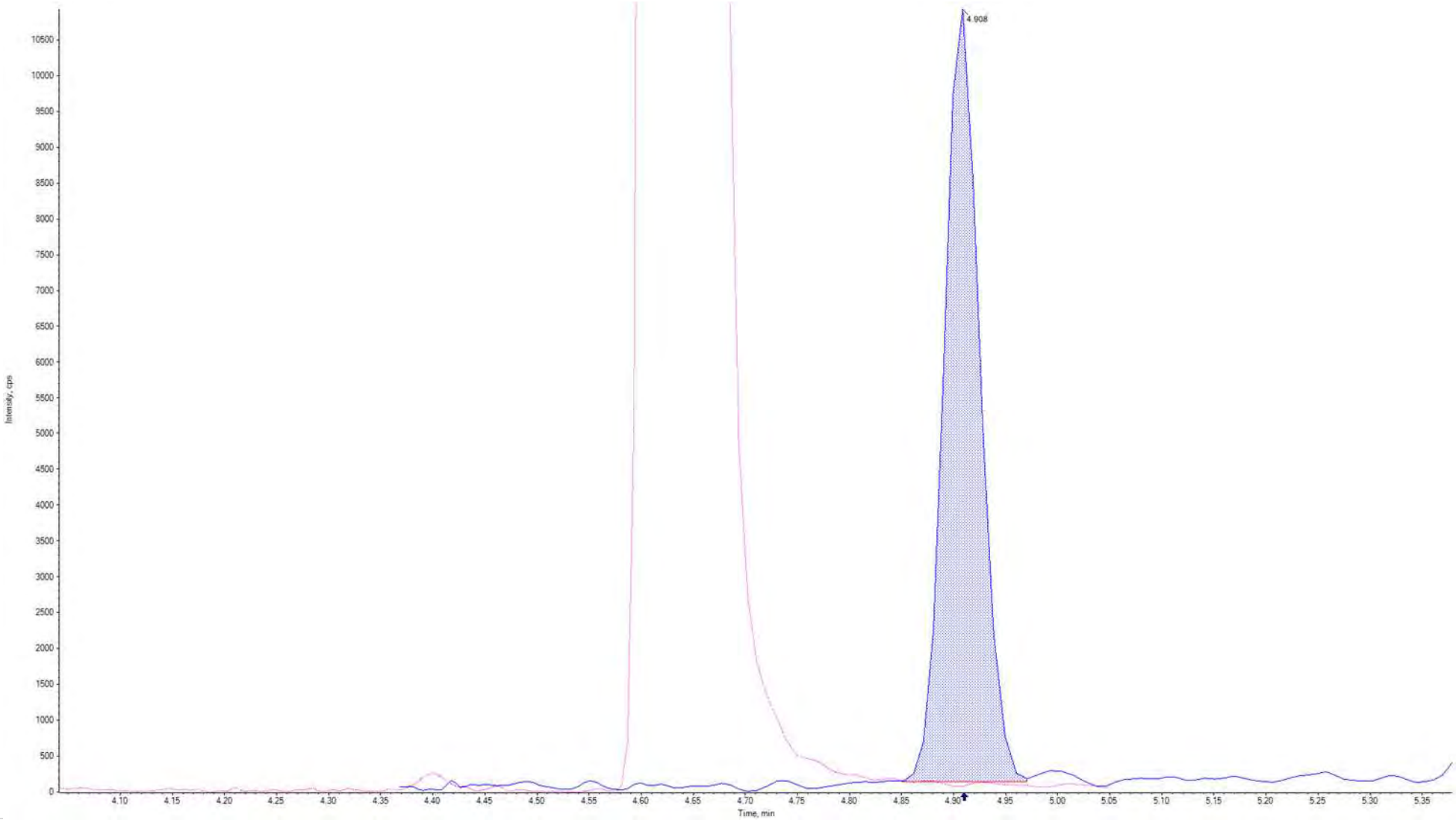
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

3:3FTCA
Sample: IA1633STD-.2 S/N:6376312.2 Points Across peak:21



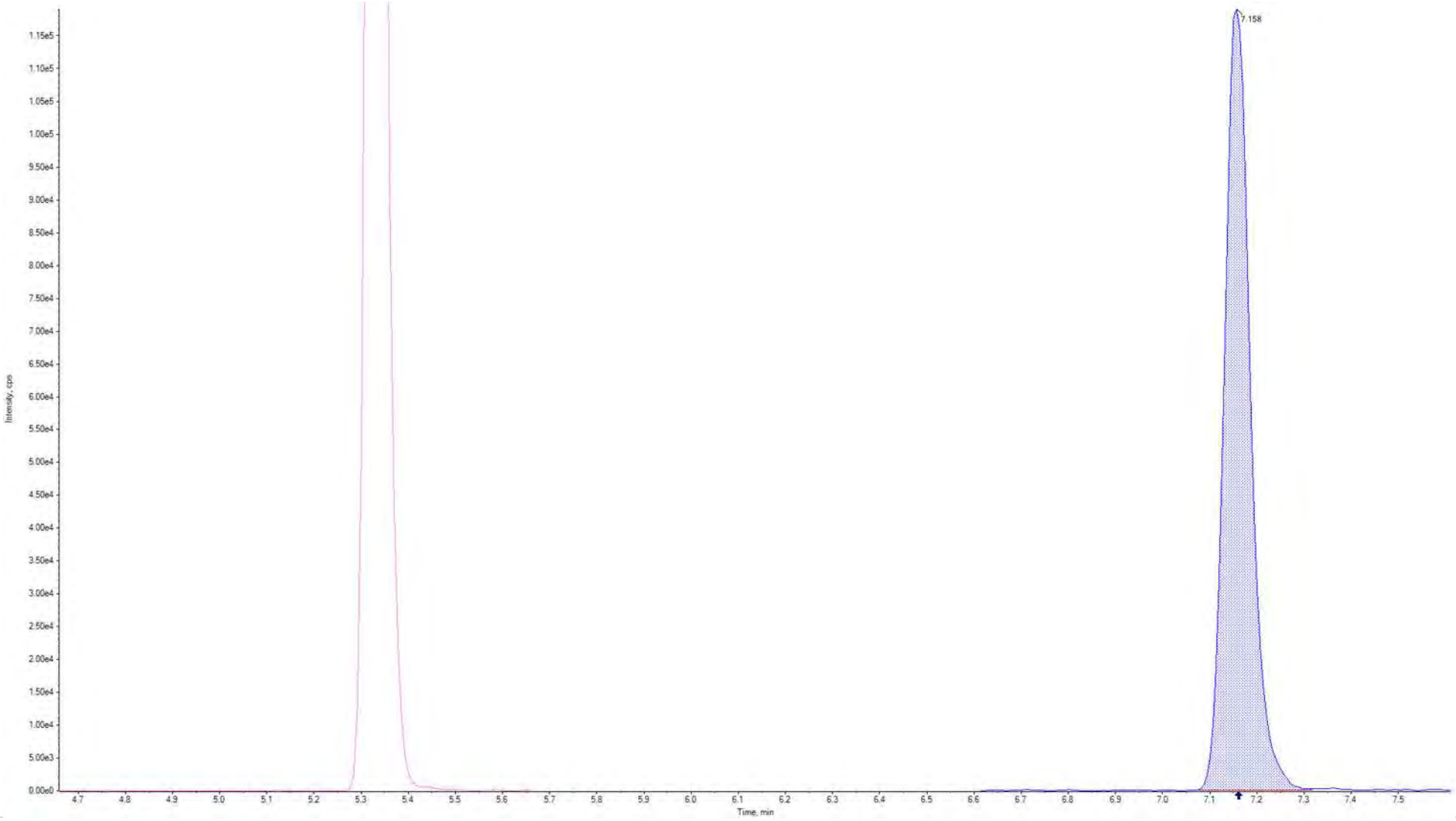
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

3:3FTCA_2
Sample: IA1633STD-.2 S/N:628.2 Points Across peak:14



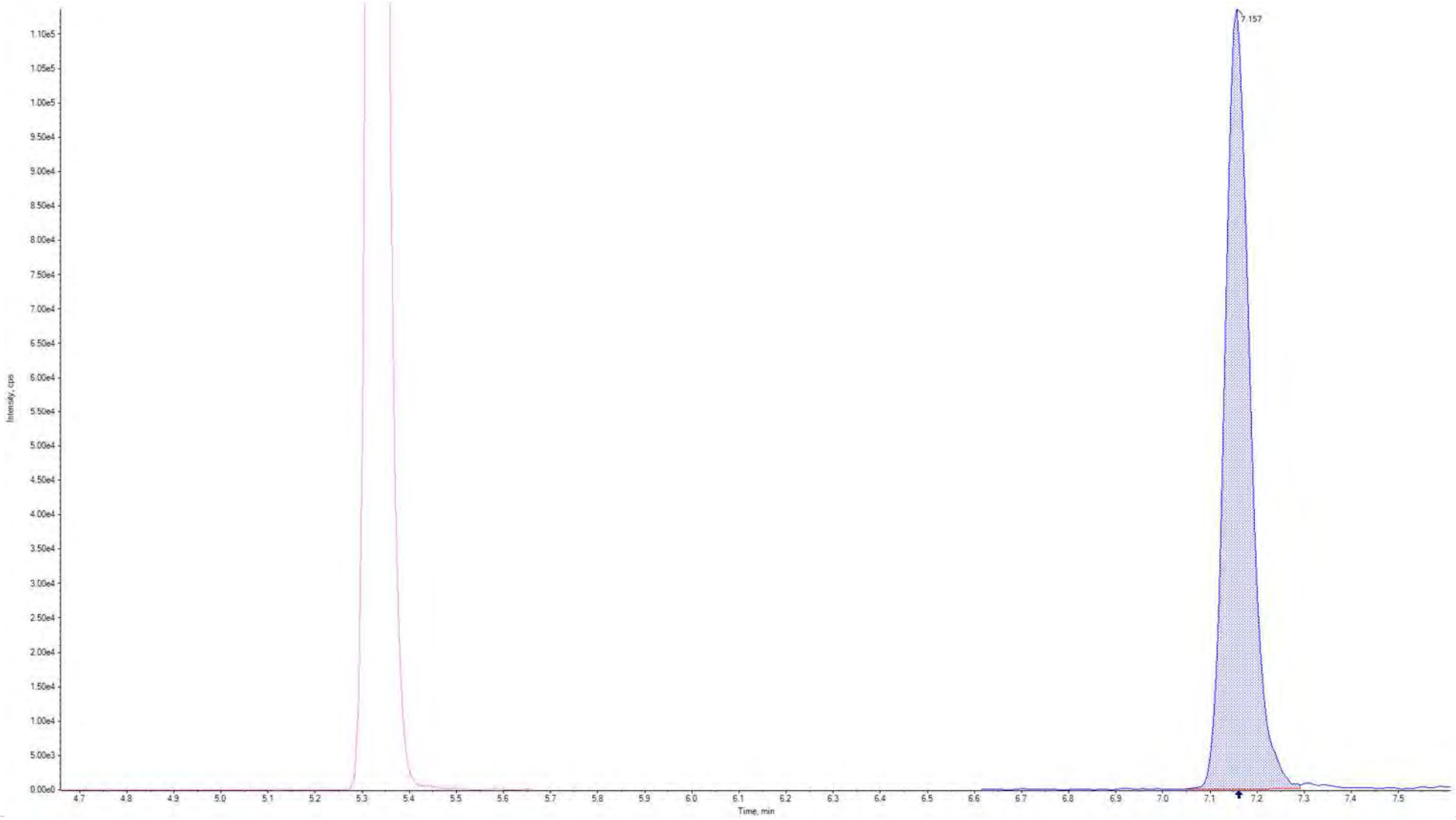
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

5:3FTCA
Sample: IA1633STD-.2 S/N:4515.9 Points Across peak:43



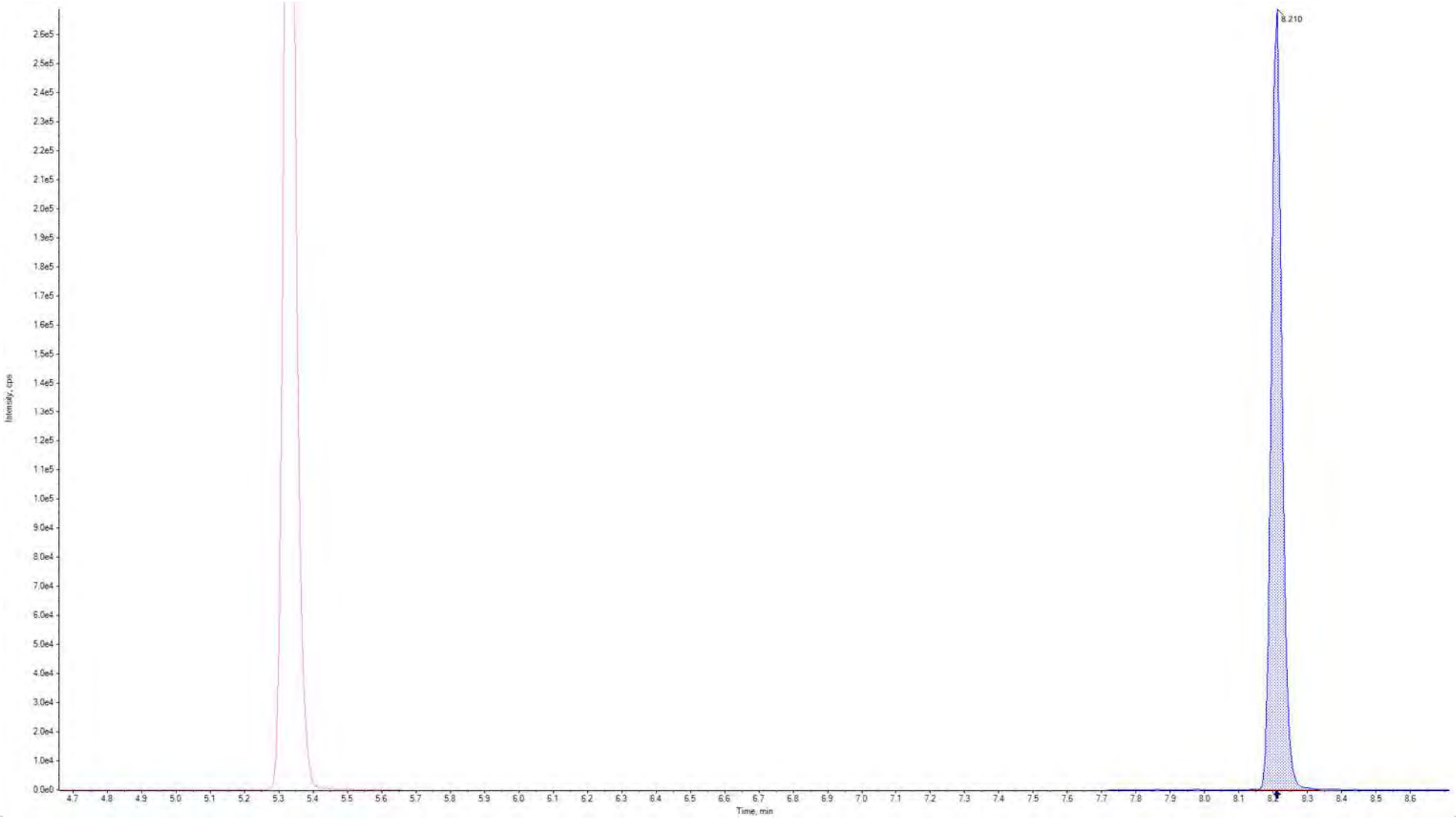
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

5:3FTCA_2
Sample: IA1633STD-.2 S/N:3418.8 Points Across peak:42



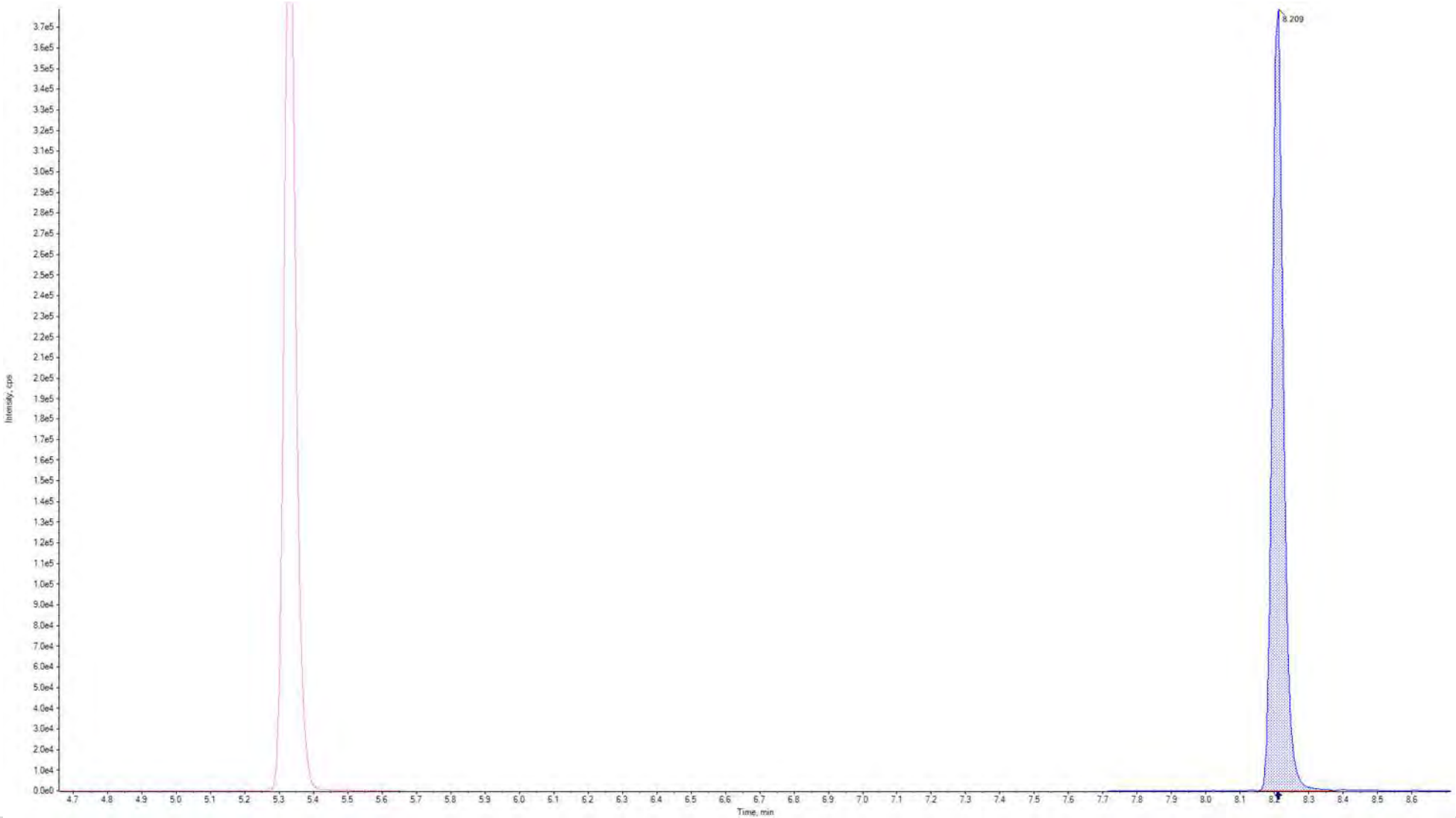
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

7:3FTCA
Sample: IA1633STD-.2 S/N:883473.4 Points Across peak:27



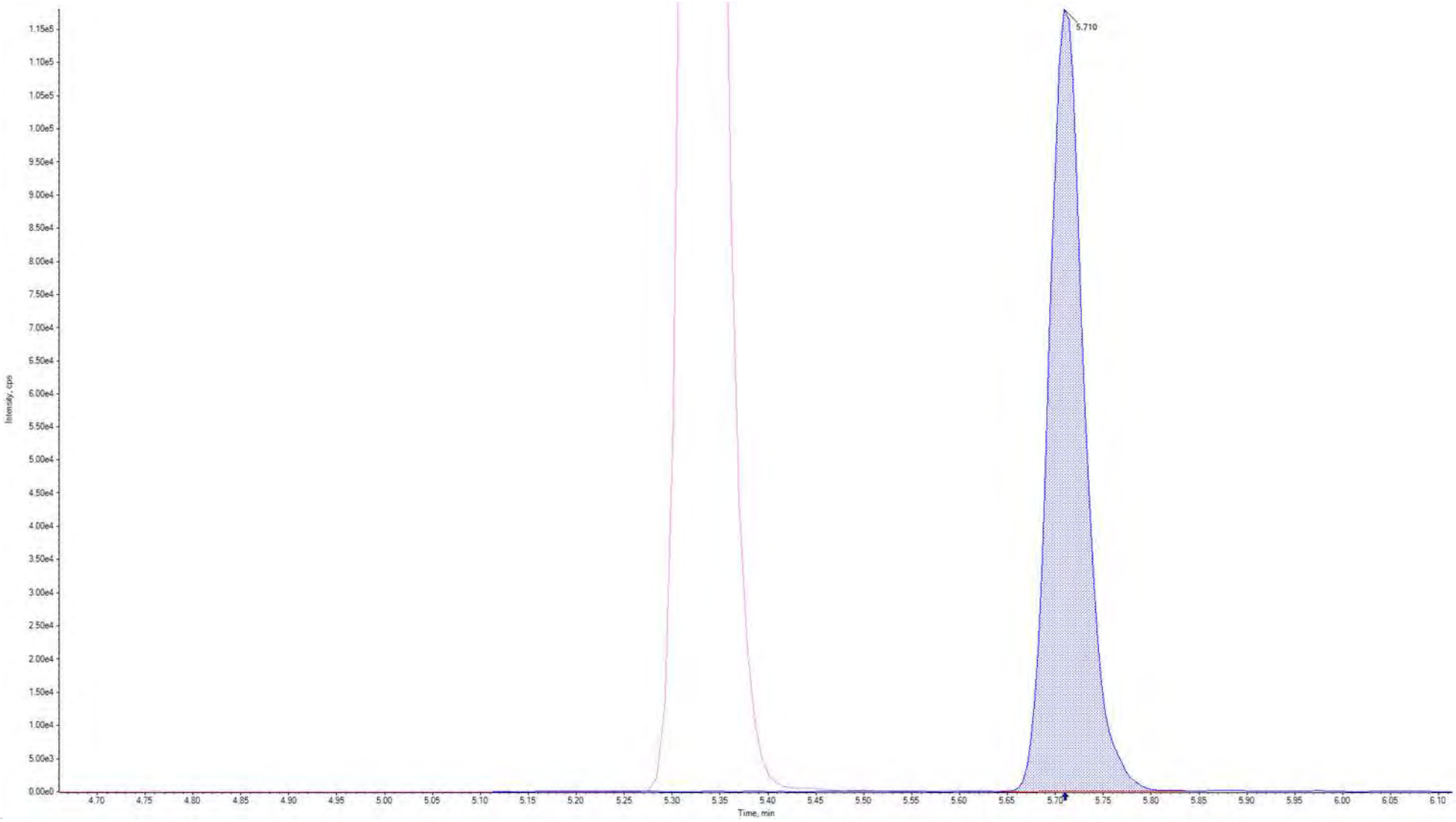
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

7:3FTCA_2
Sample: IA1633STD-.2 S/N:9104.4 Points Across peak:27



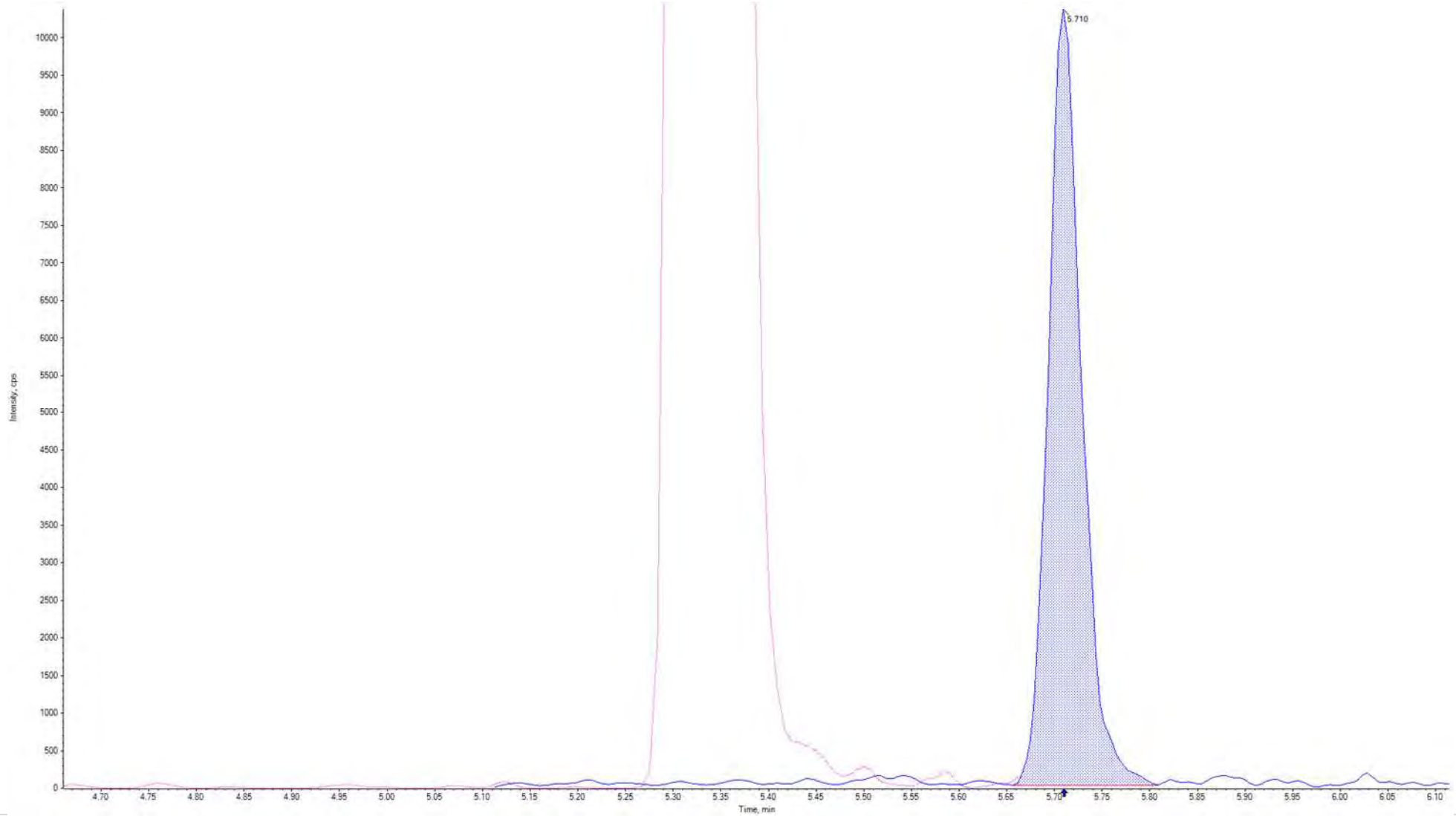
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFEESA
Sample: IA1633STD-.2 S/N:5409.5 Points Across peak:44



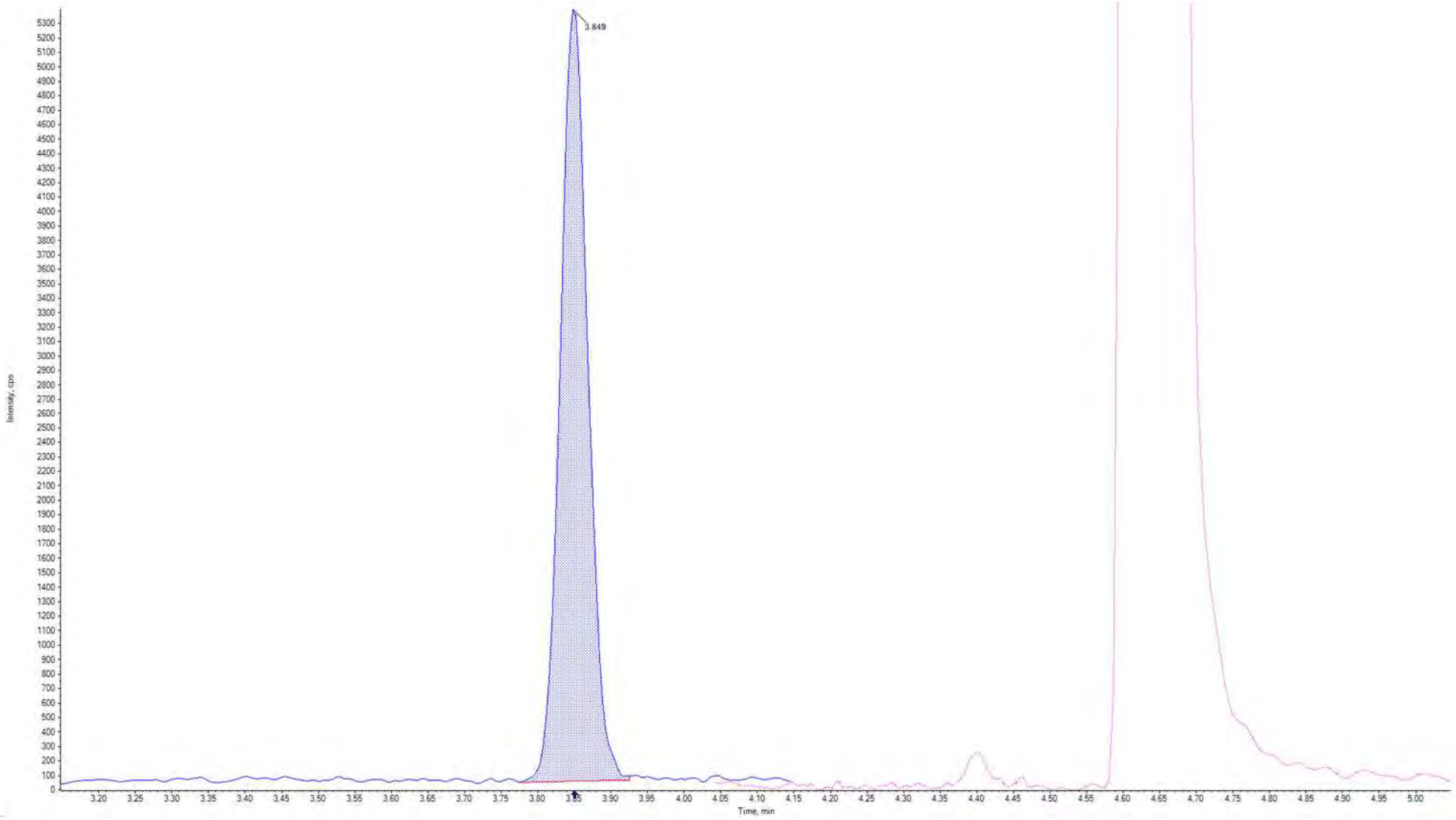
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFEESA_2
Sample: IA1633STD-.2 S/N:1031.8 Points Across peak:35



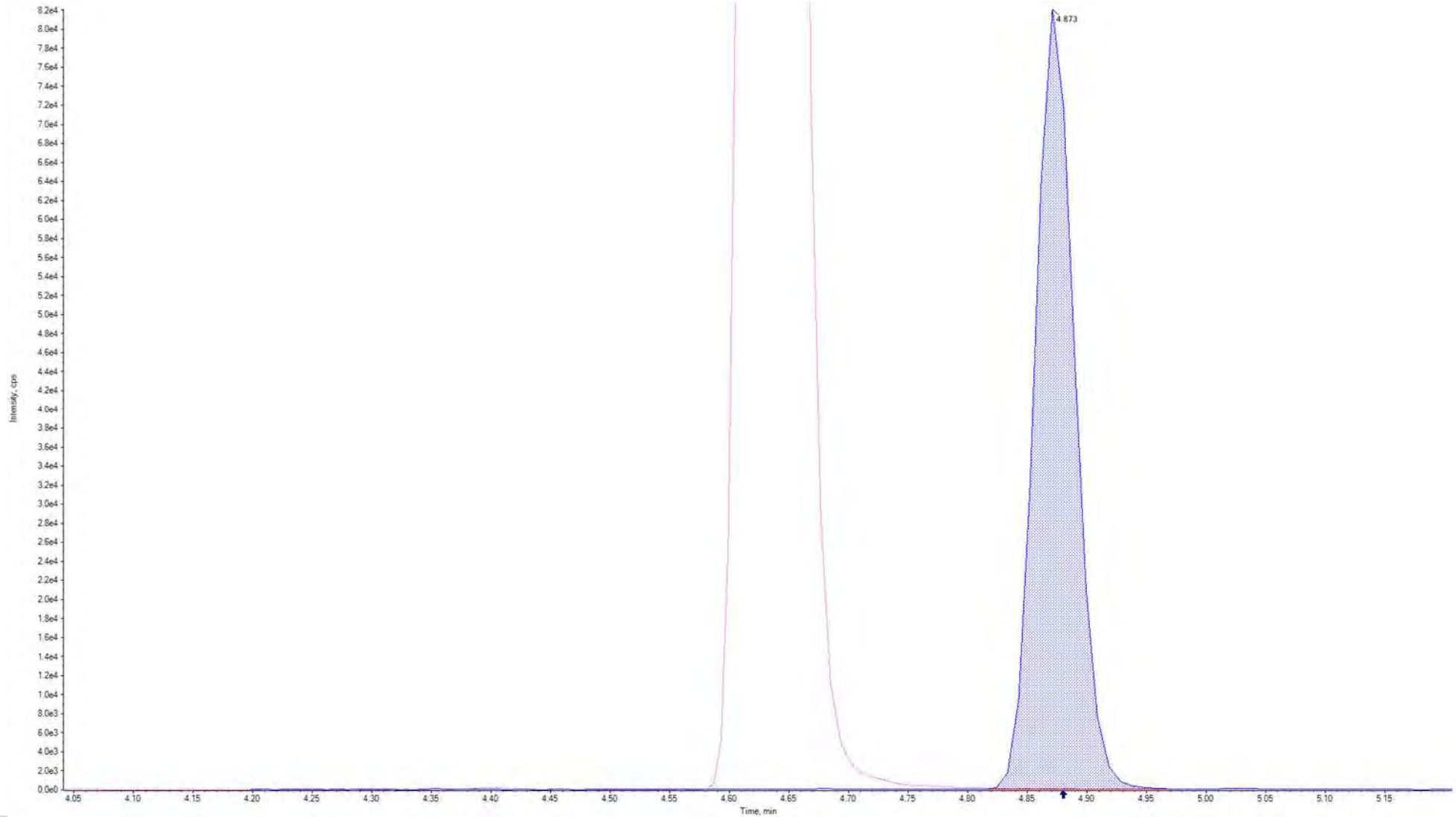
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFMPA
Sample: IA1633STD-.2 S/N:787.1 Points Across peak:38



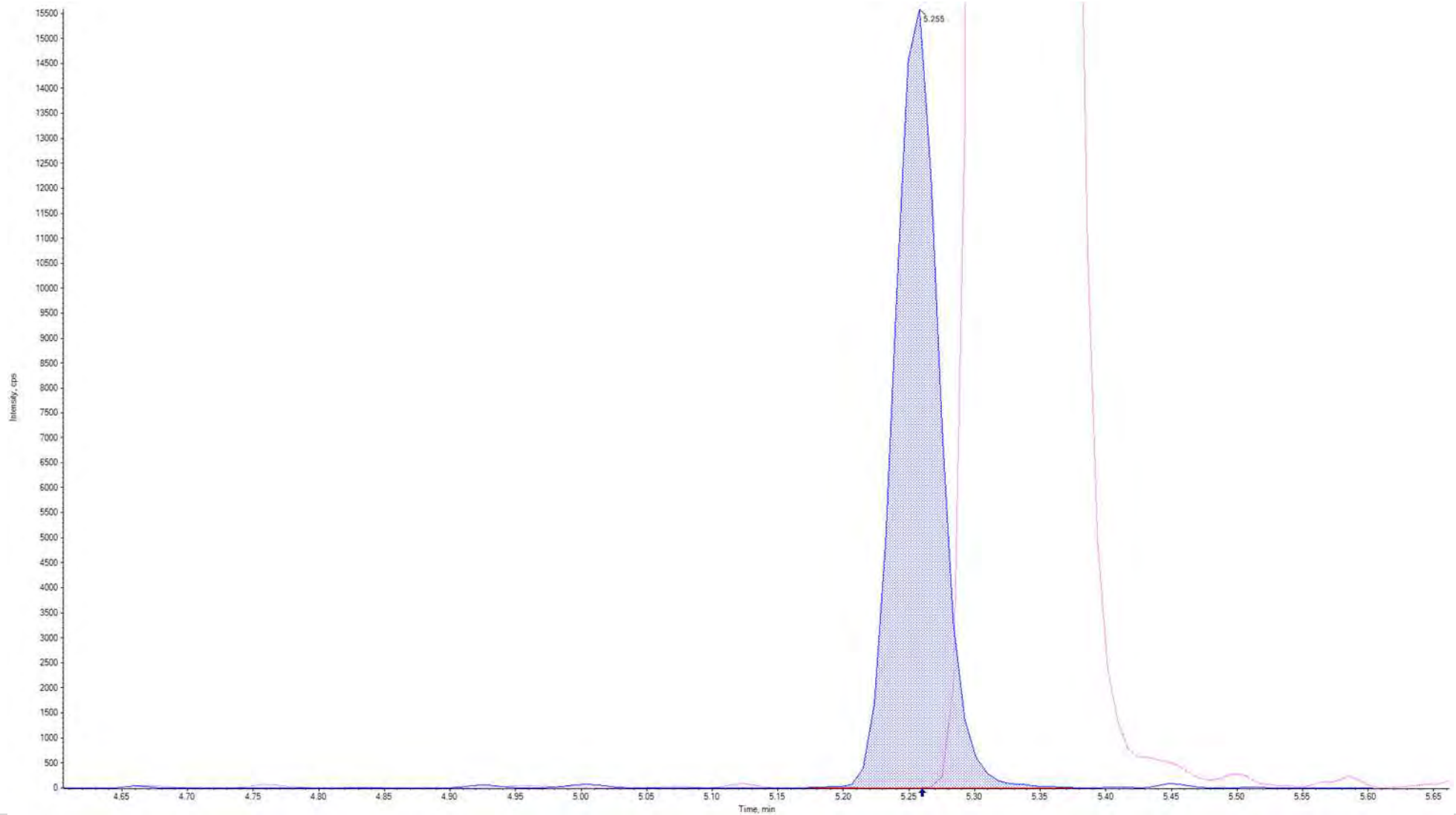
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFMBA
Sample: IA1633STD-.2 S/N:1958.5 Points Across peak:20



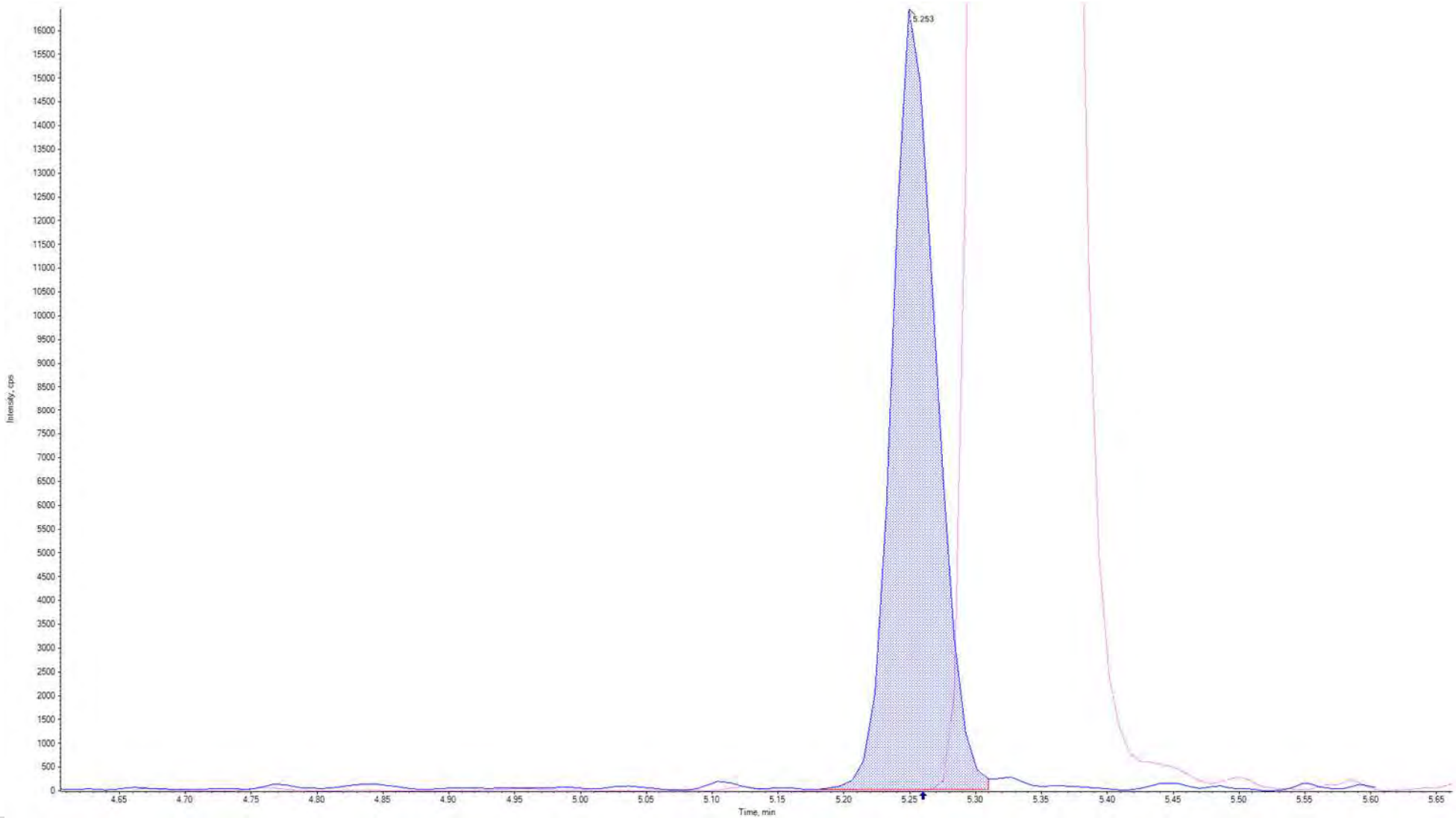
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

NFDHA
Sample: IA1633STD-.2 S/N:1998.7 Points Across peak:28



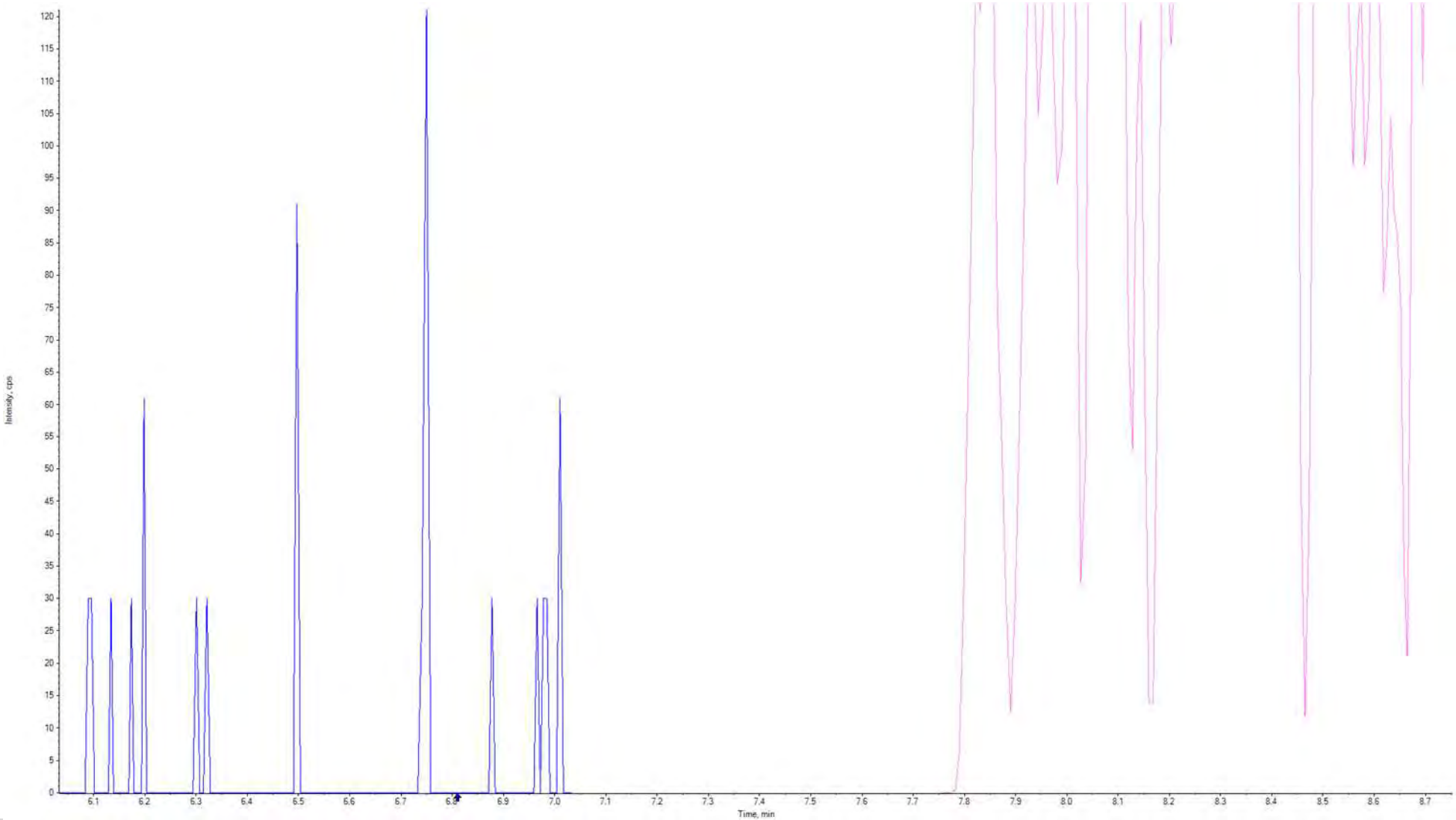
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

NFDHA_2
Sample: IA1633STD-.2 S/N:1396.6 Points Across peak:16

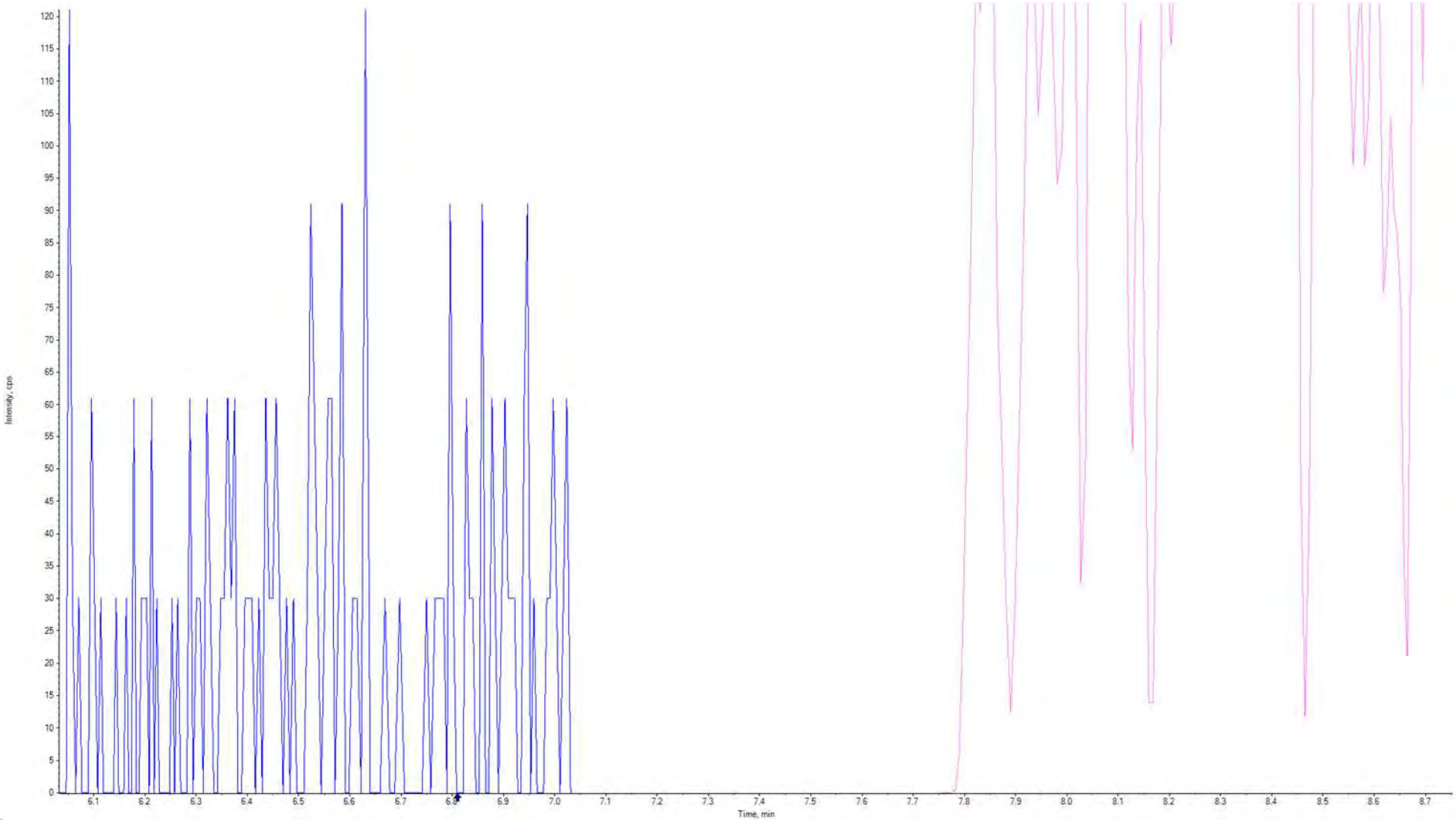


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

TDCA
Sample: IA1633STD-.2 S/N:N/A Points Across peak:N/A

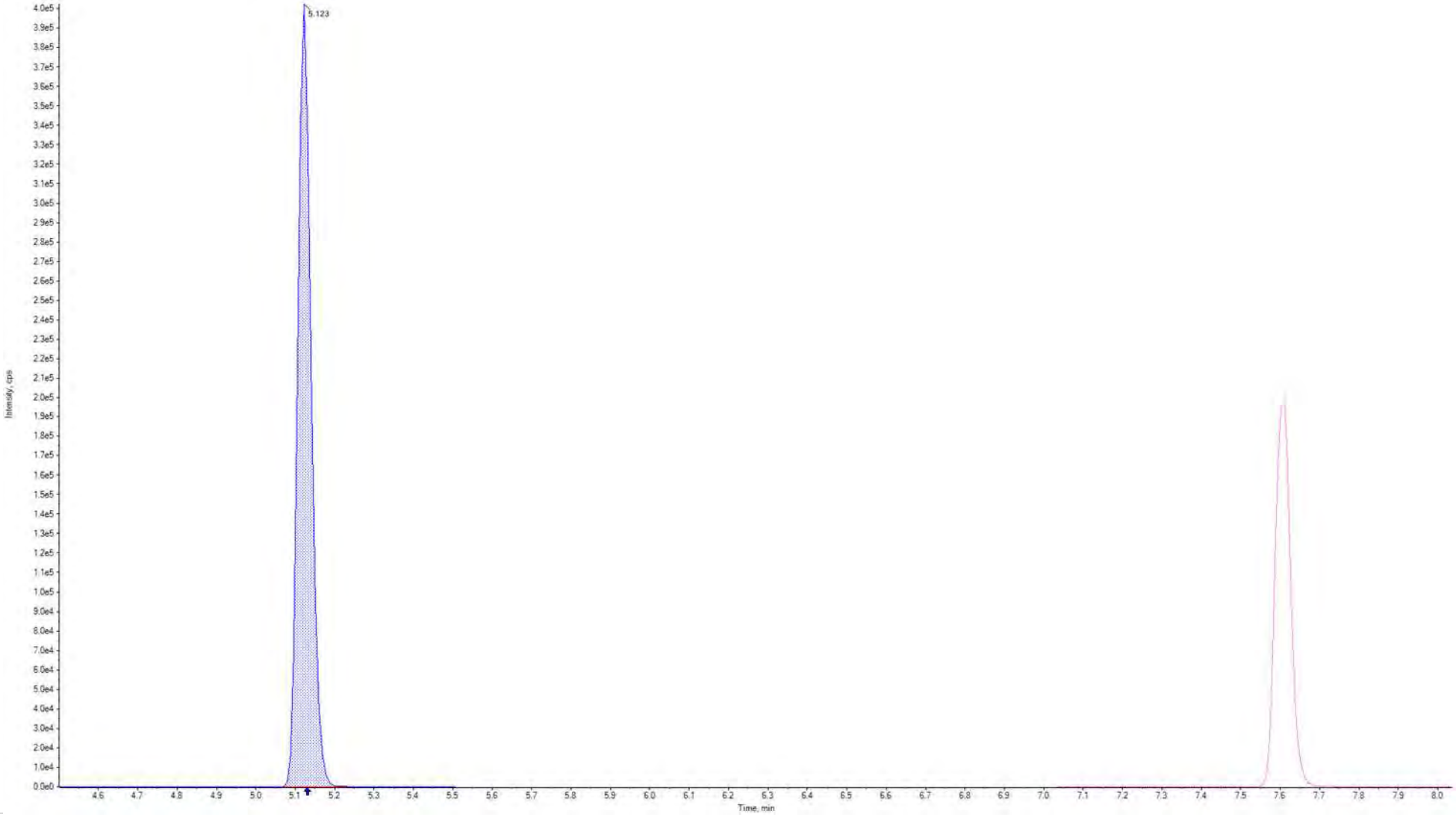


TDCA_2
Sample: IA1633STD-.2 S/N:N/A Points Across peak:N/A



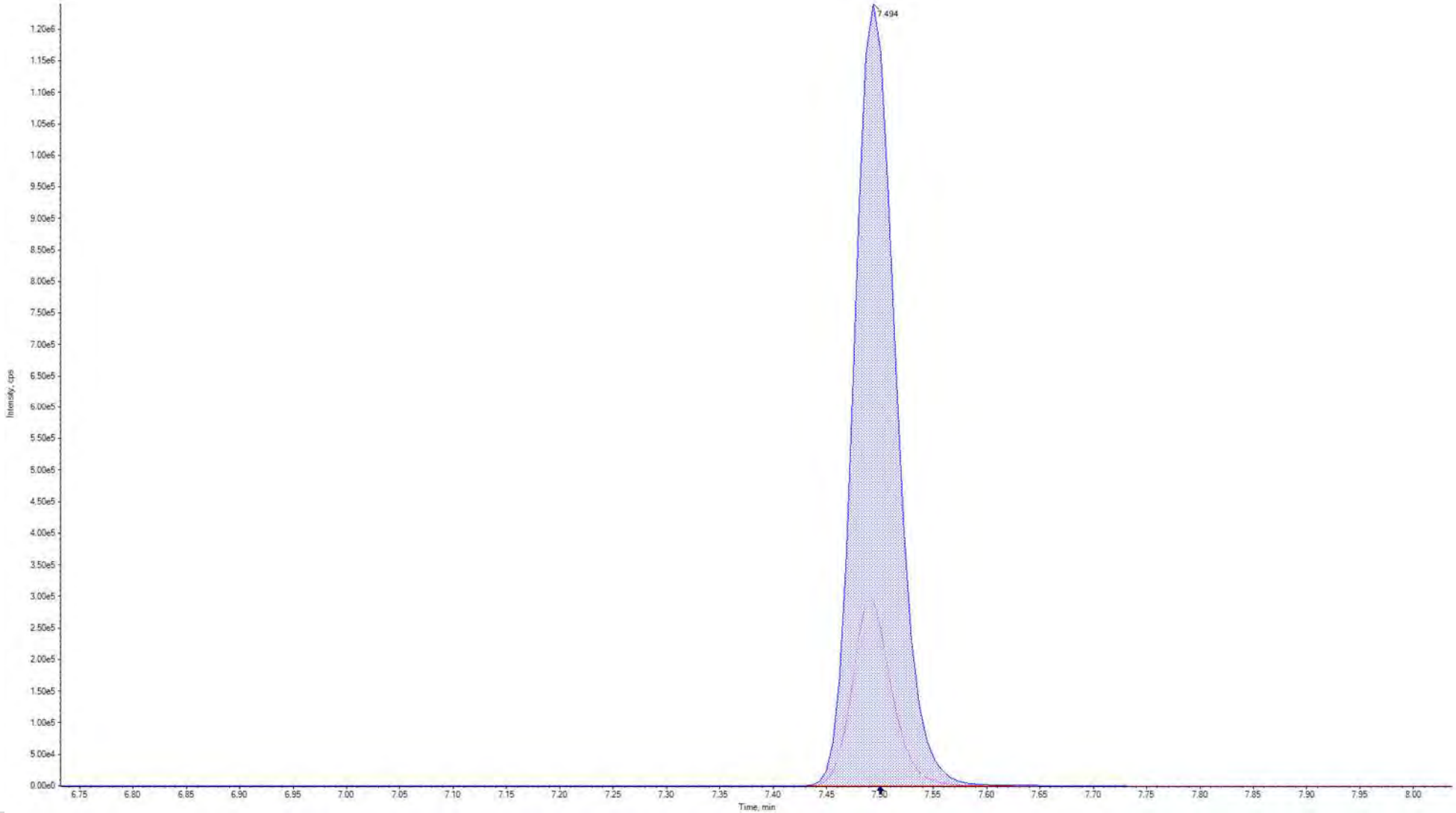
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

13C2D4-4:2FTS
Sample: IA1633STD-.2 S/N:20779.3 Points Across peak:28

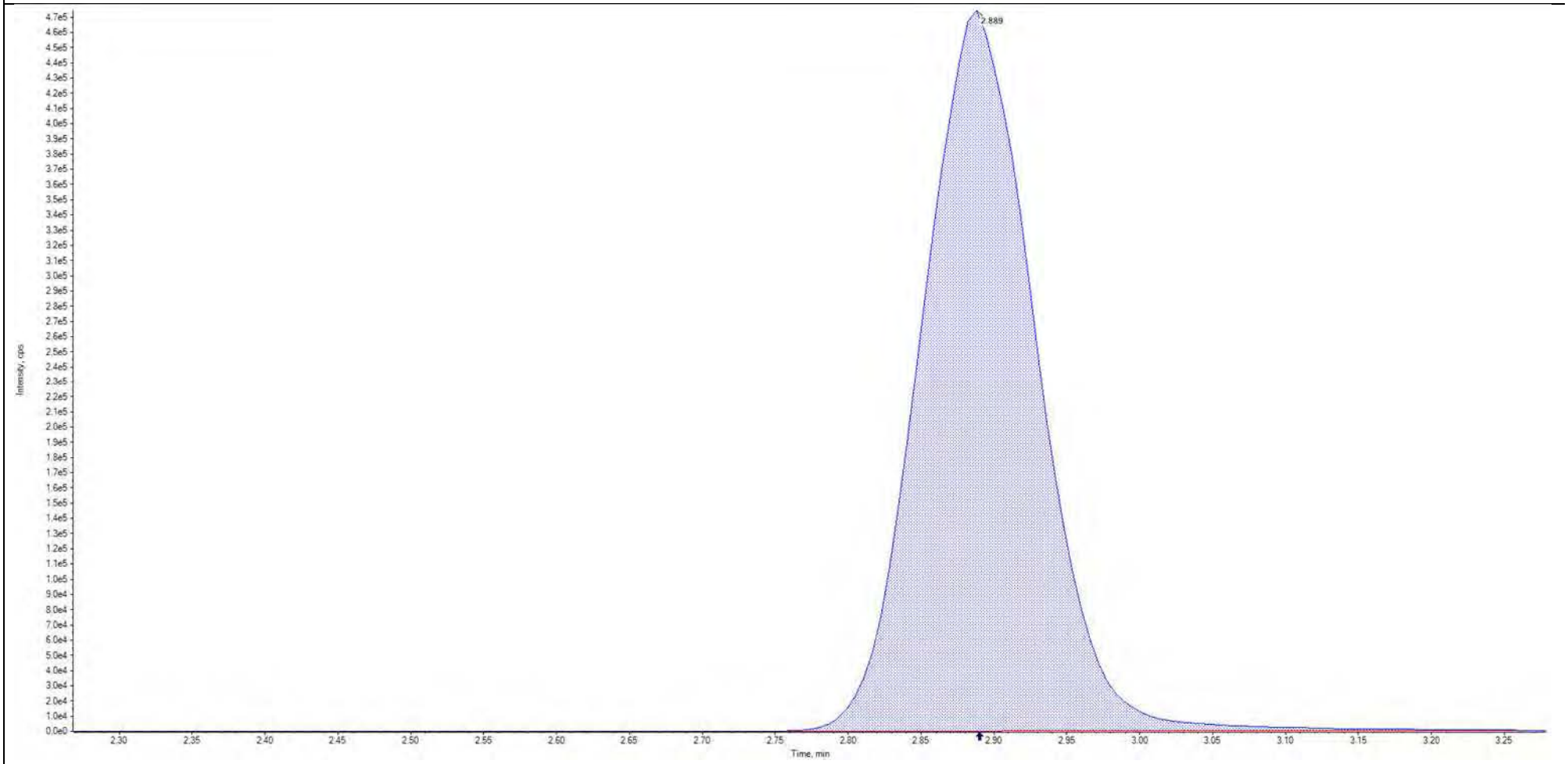


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

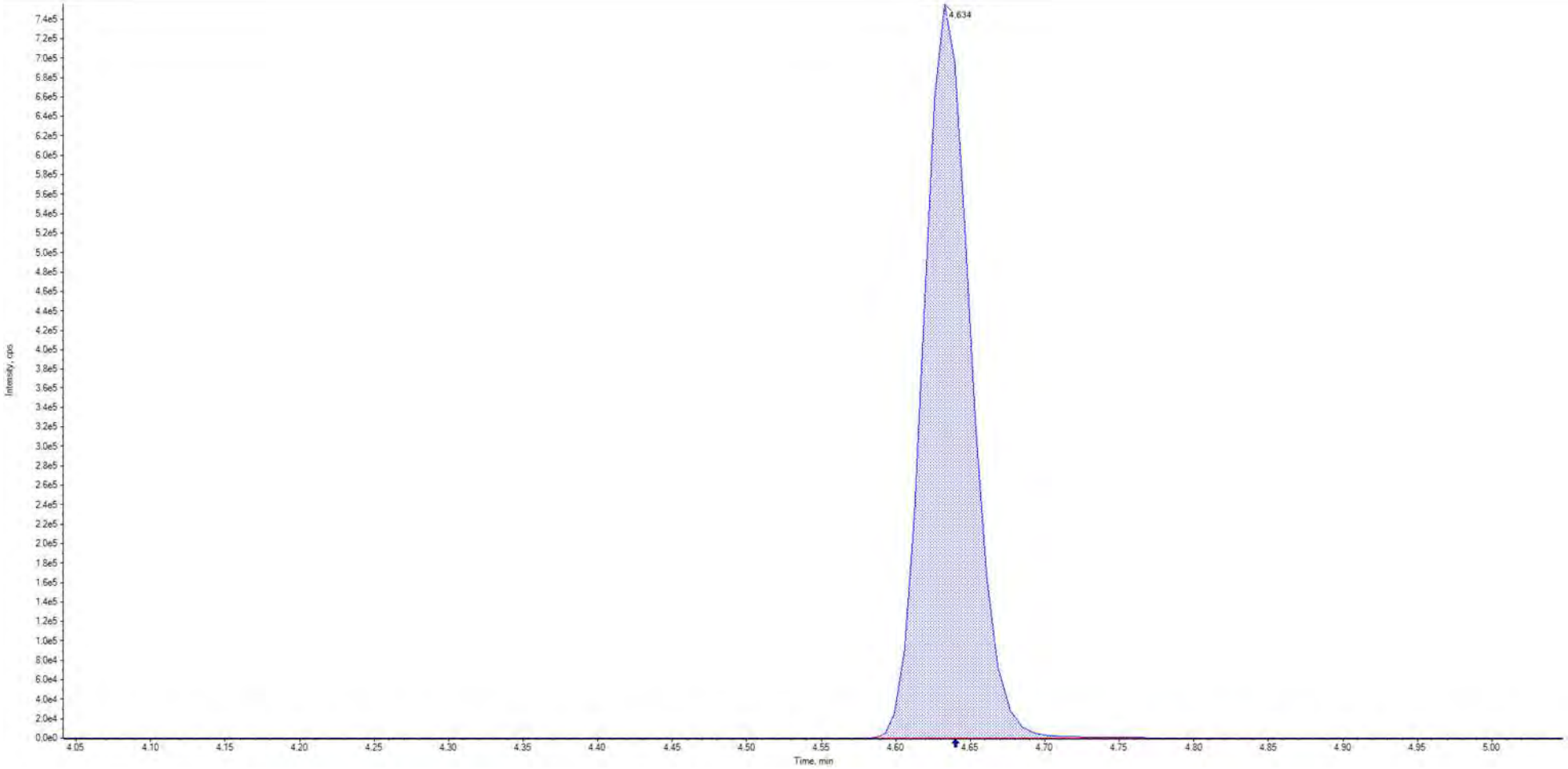
13C2-PFOA
Sample: IA1633STD-.2 S/N:108677677.1 Points Across peak:32



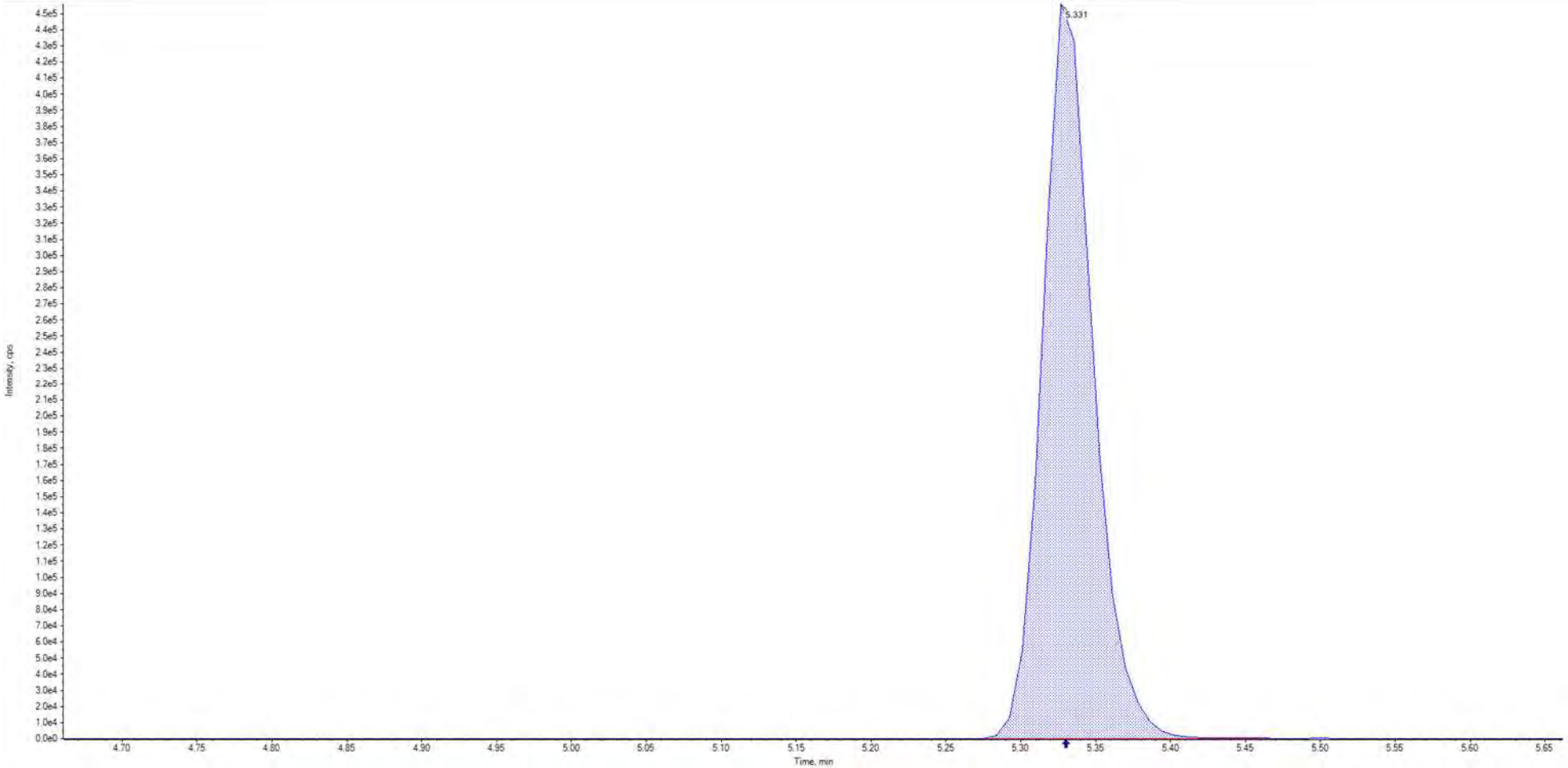
13C4-PFBA
Sample: IA1633STD-.2



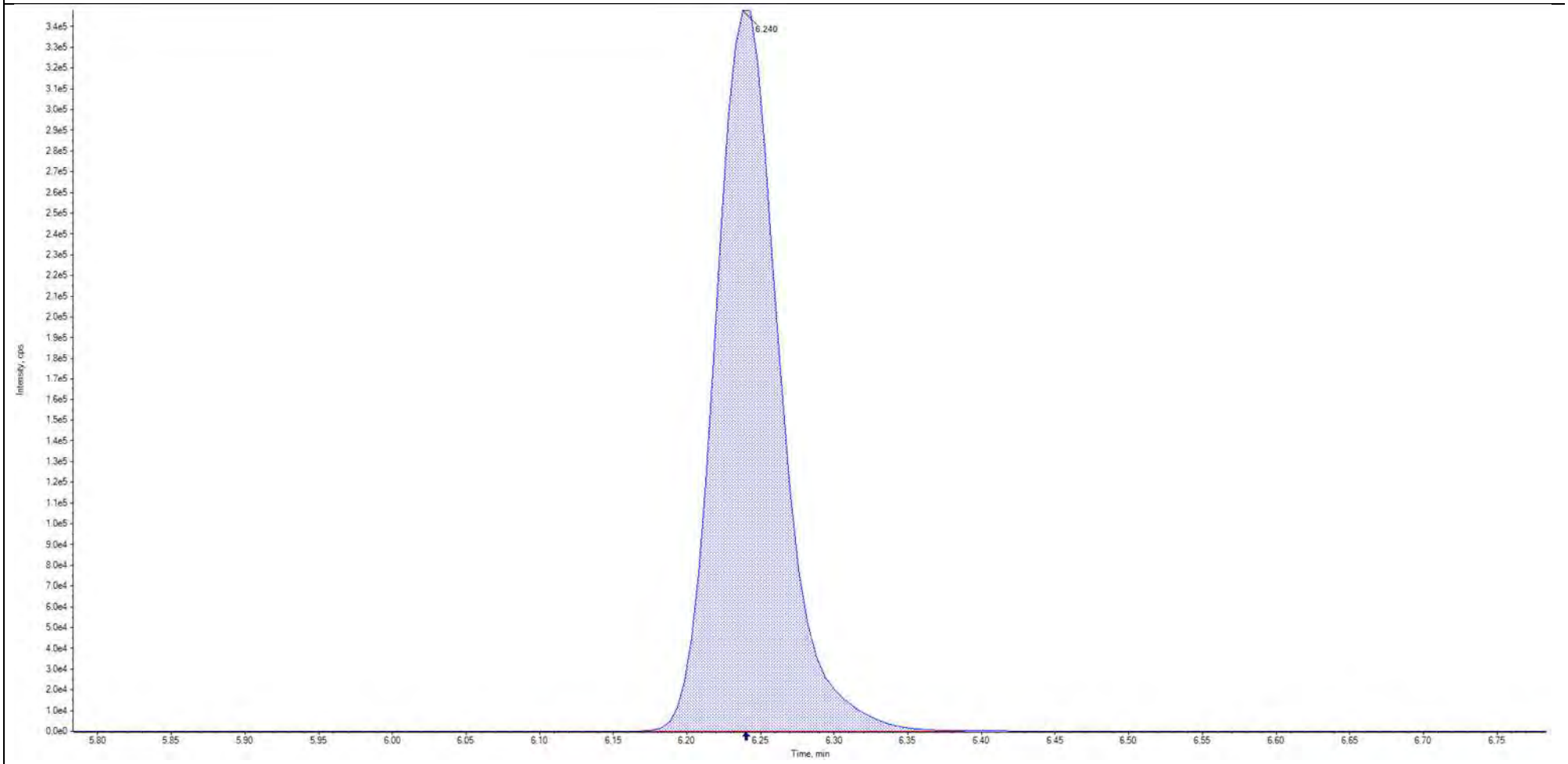
13C5-PFPeA
Sample: IA1633STD-.2



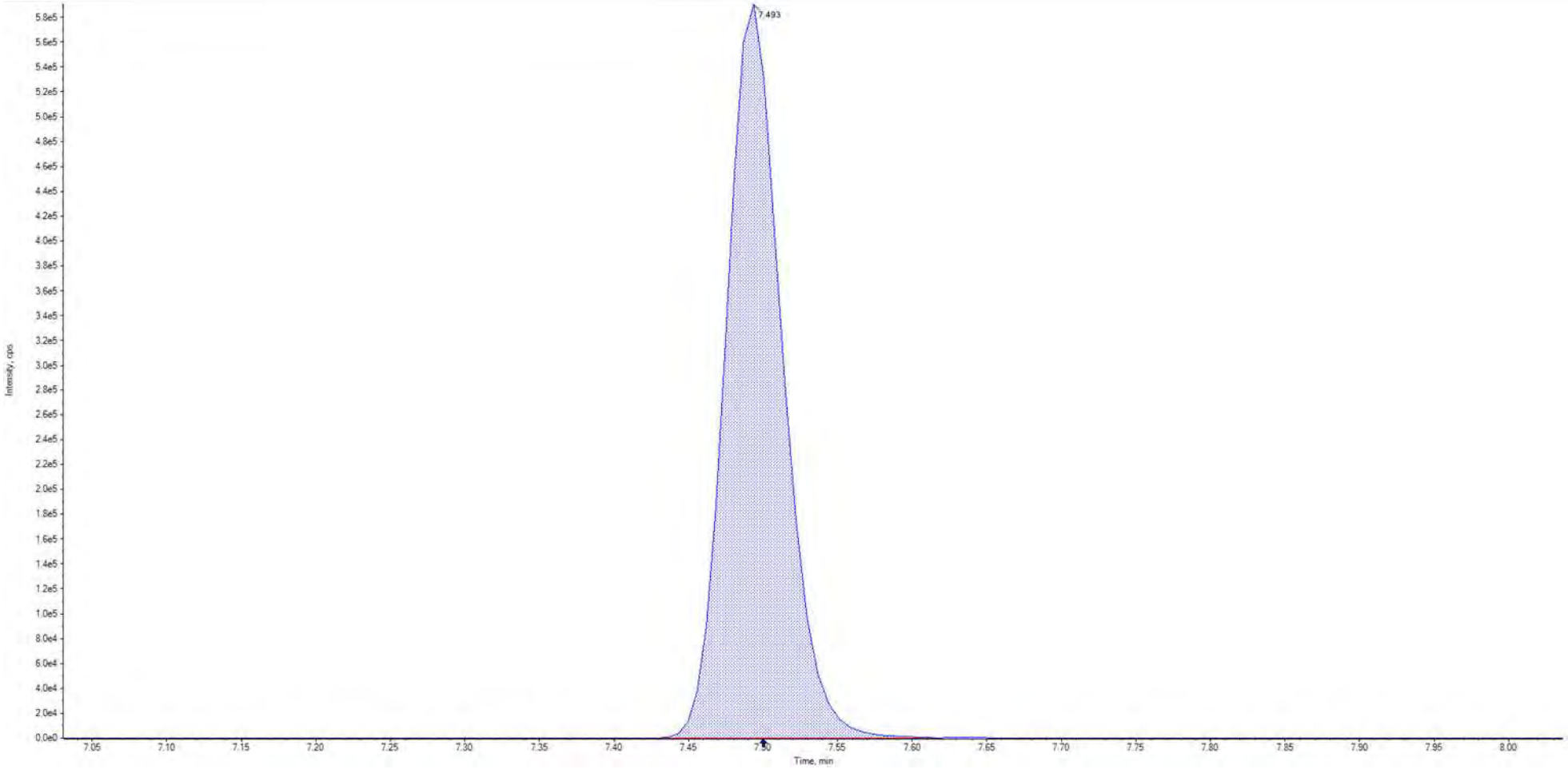
13C5-PFHxA
Sample: IA1633STD-.2



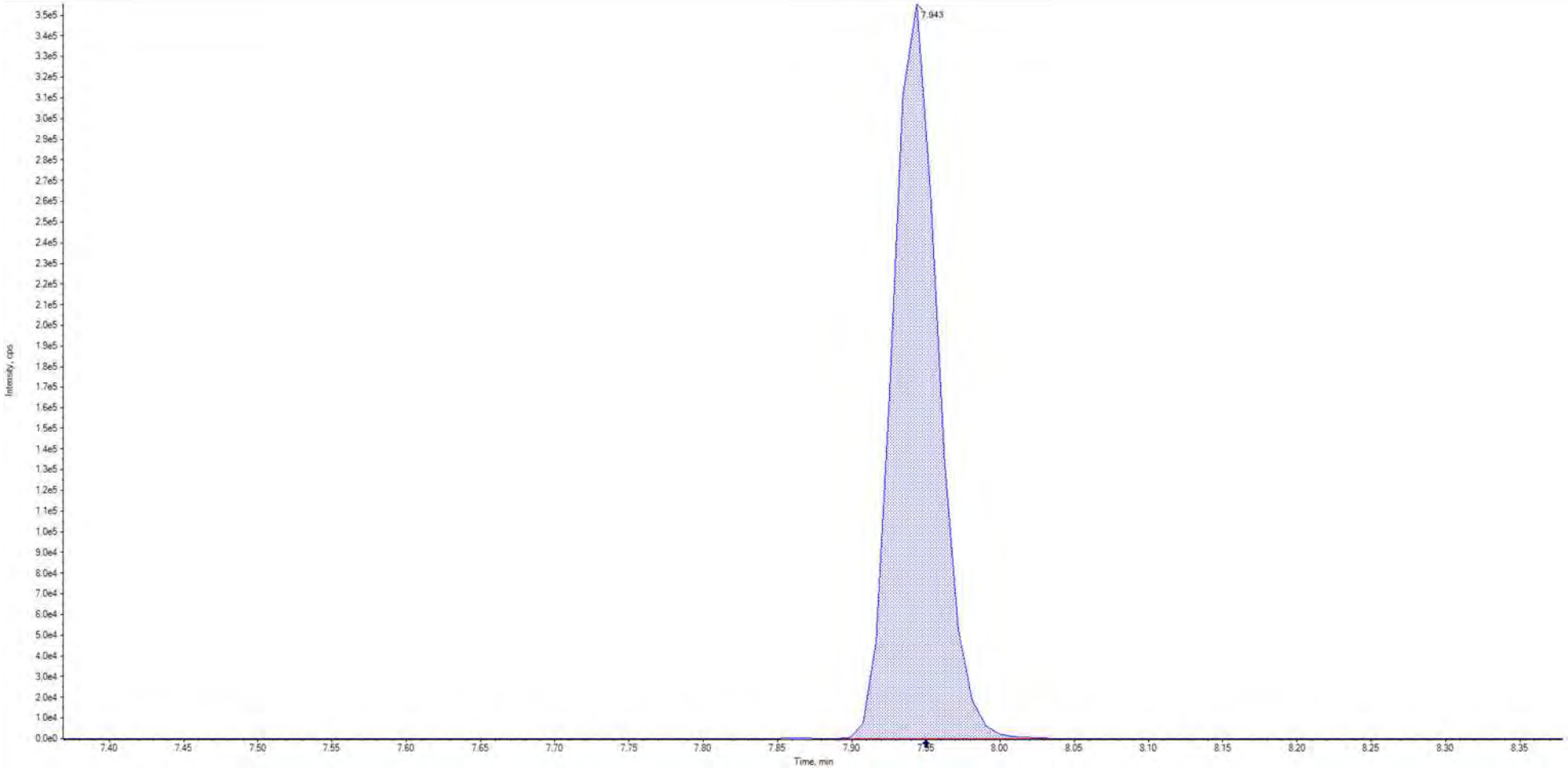
13C4-PFHpA
Sample: IA1633STD-.2



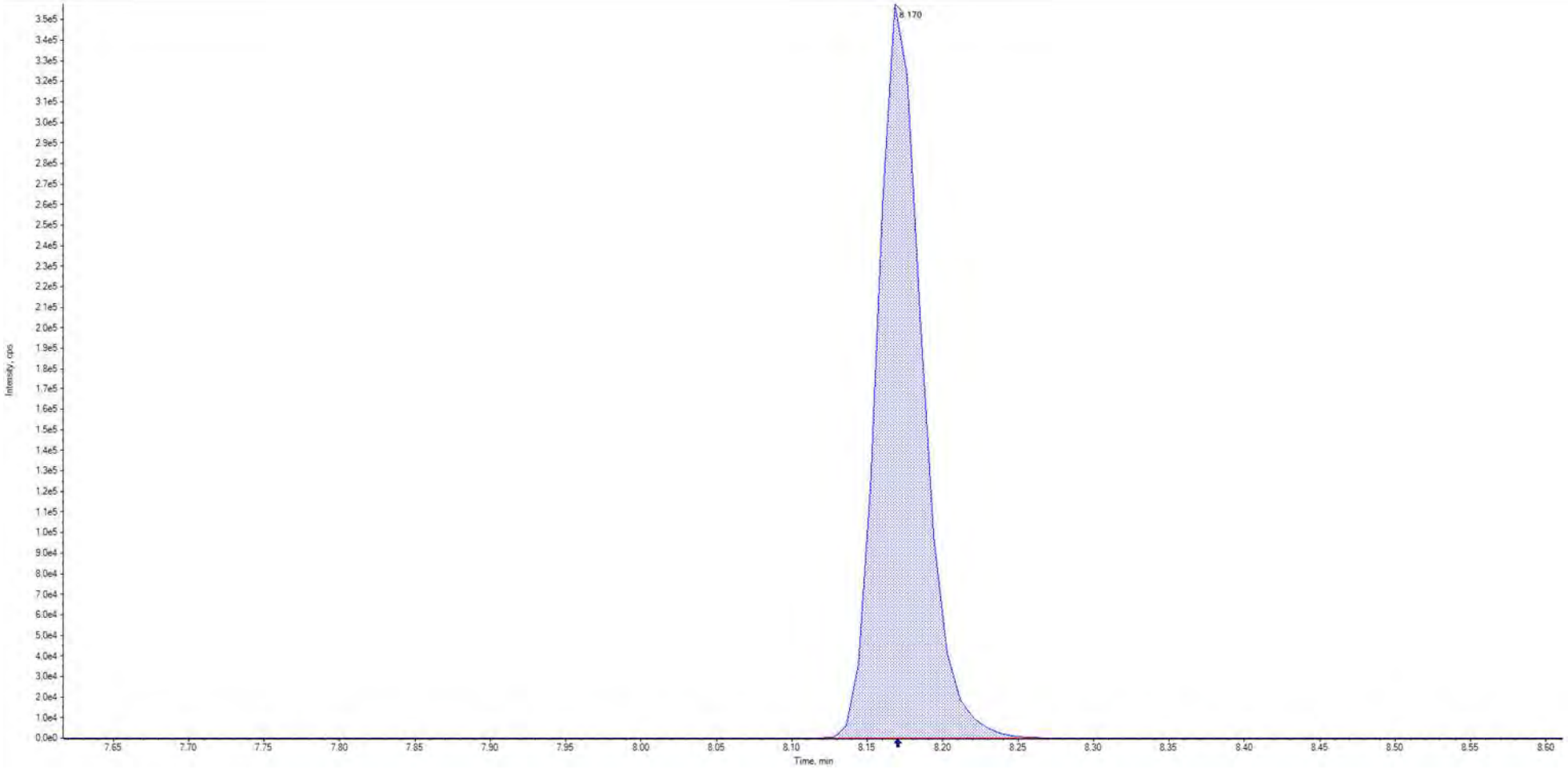
13C8-PFOA
Sample: IA1633STD-.2



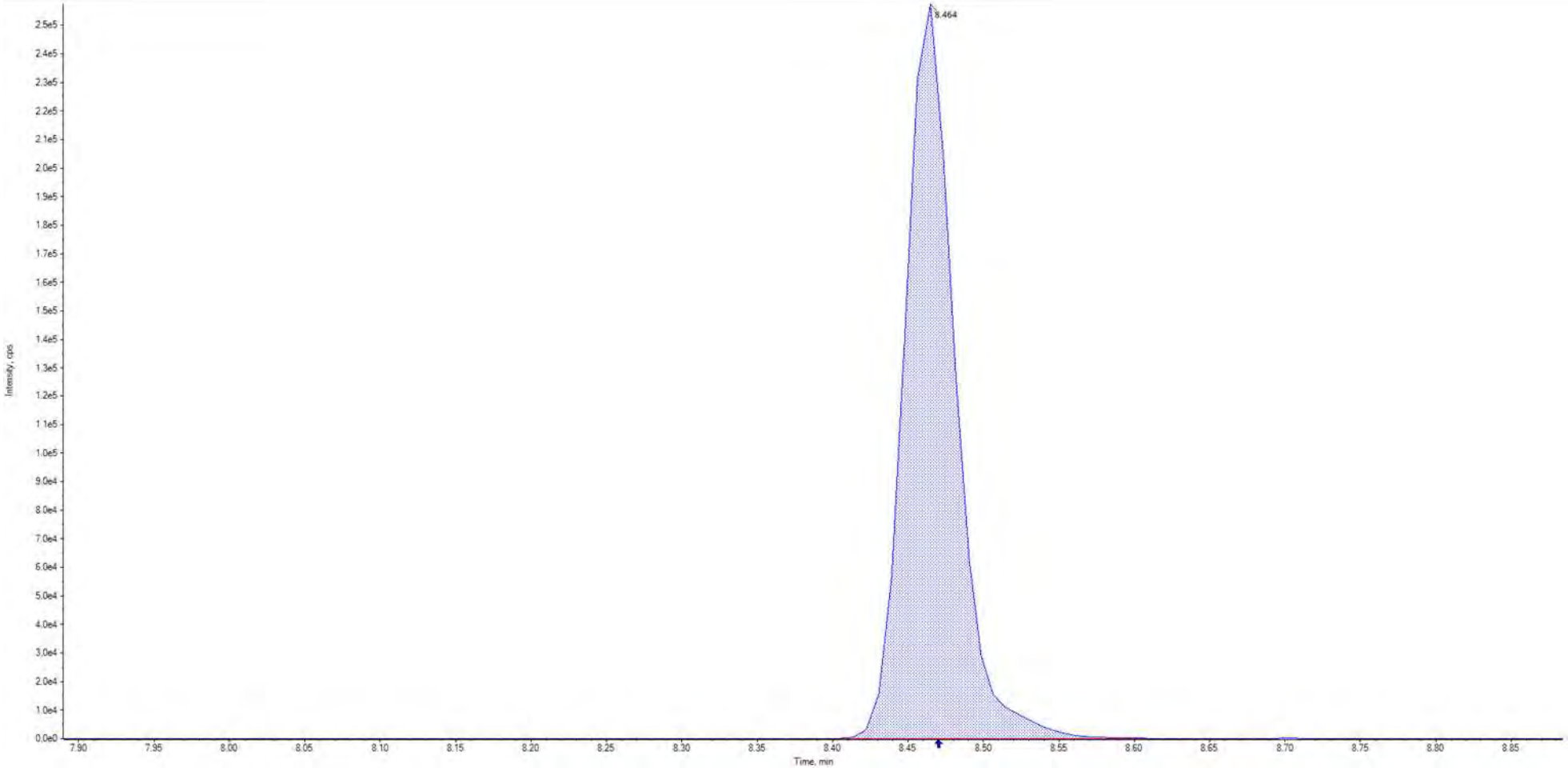
13C9-PFNA
Sample: IA1633STD-.2



13C6-PFDA
Sample: IA1633STD-.2

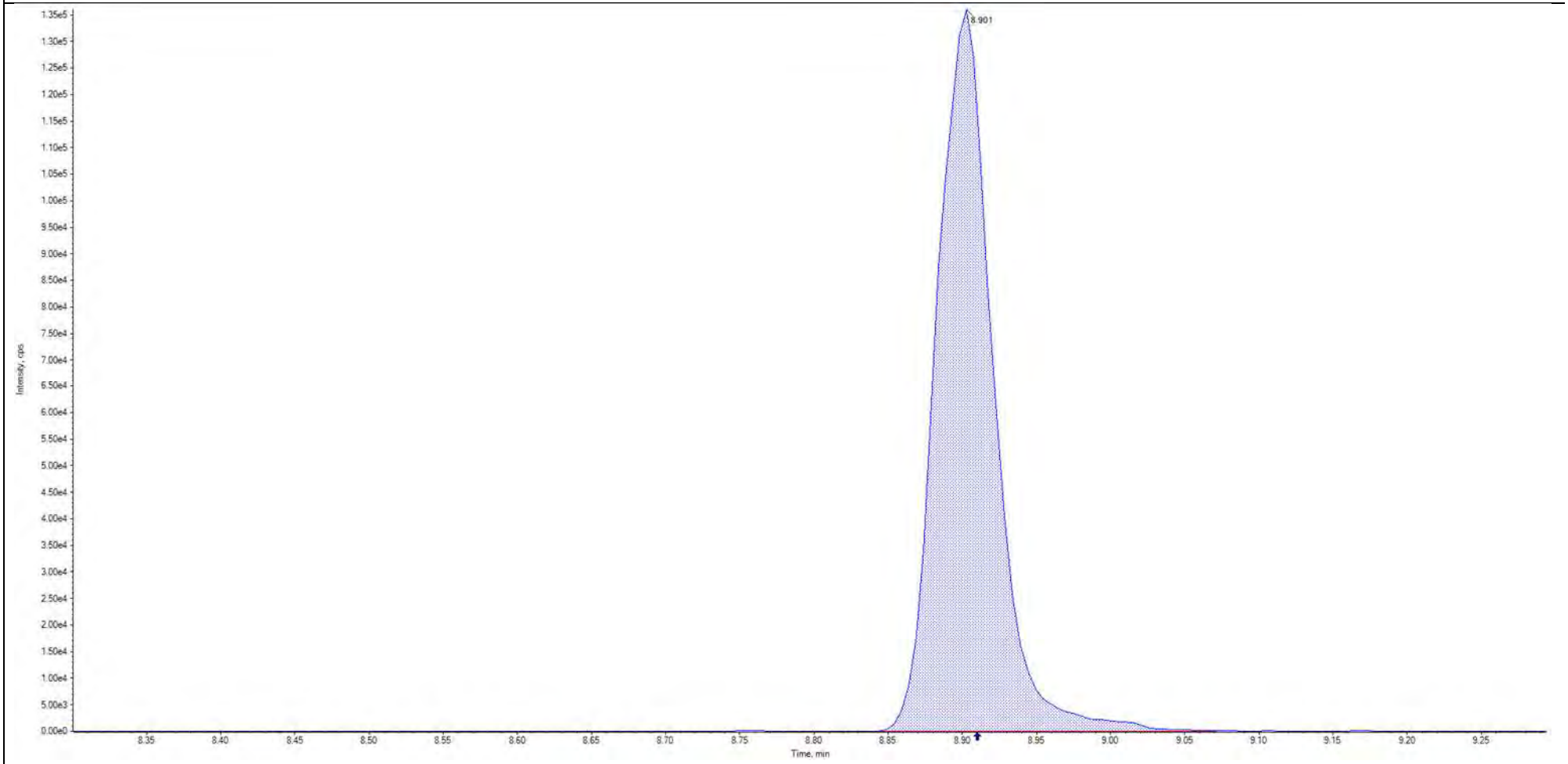


13C7-PFUnA
Sample: IA1633STD-.2

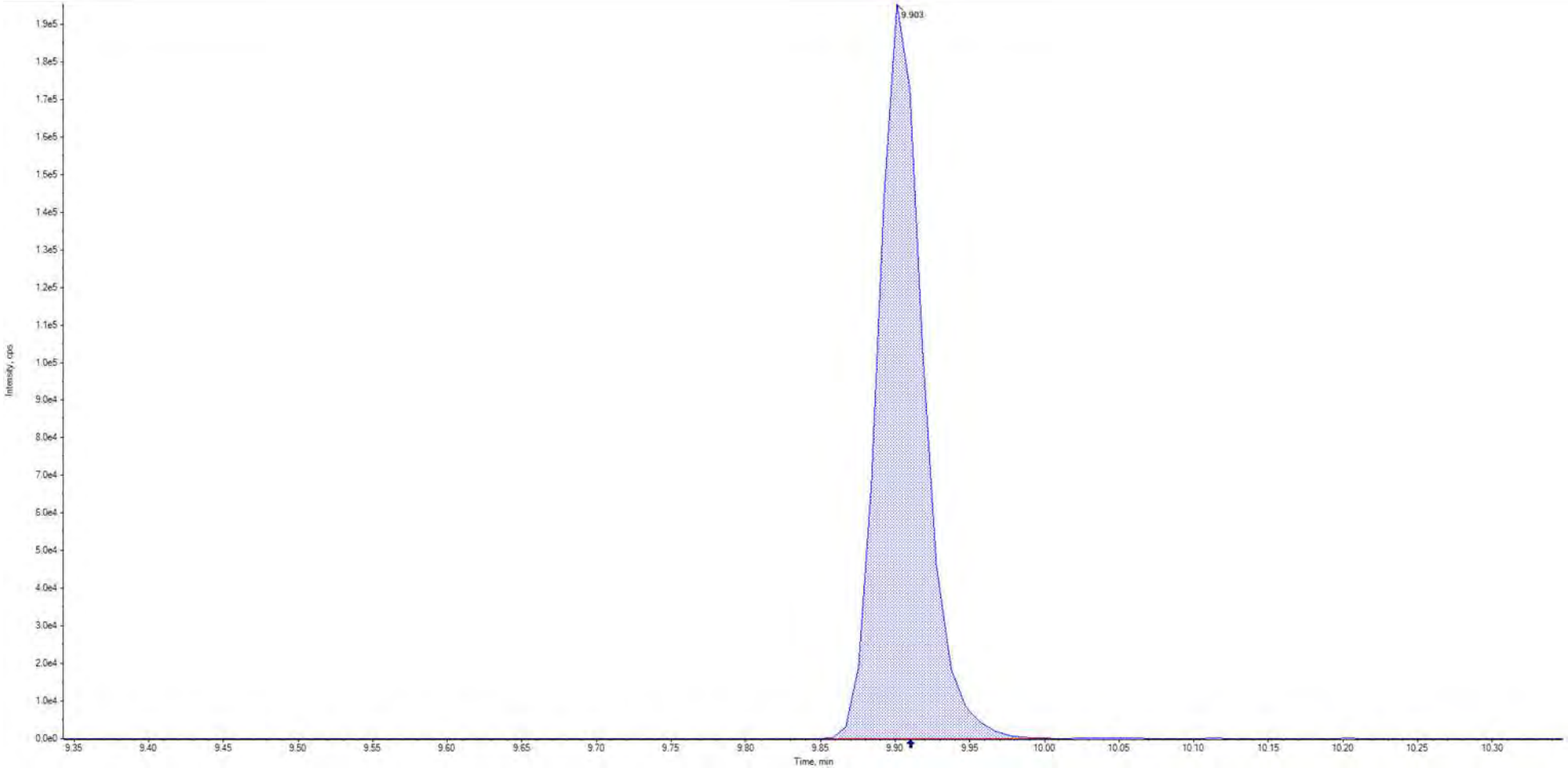


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

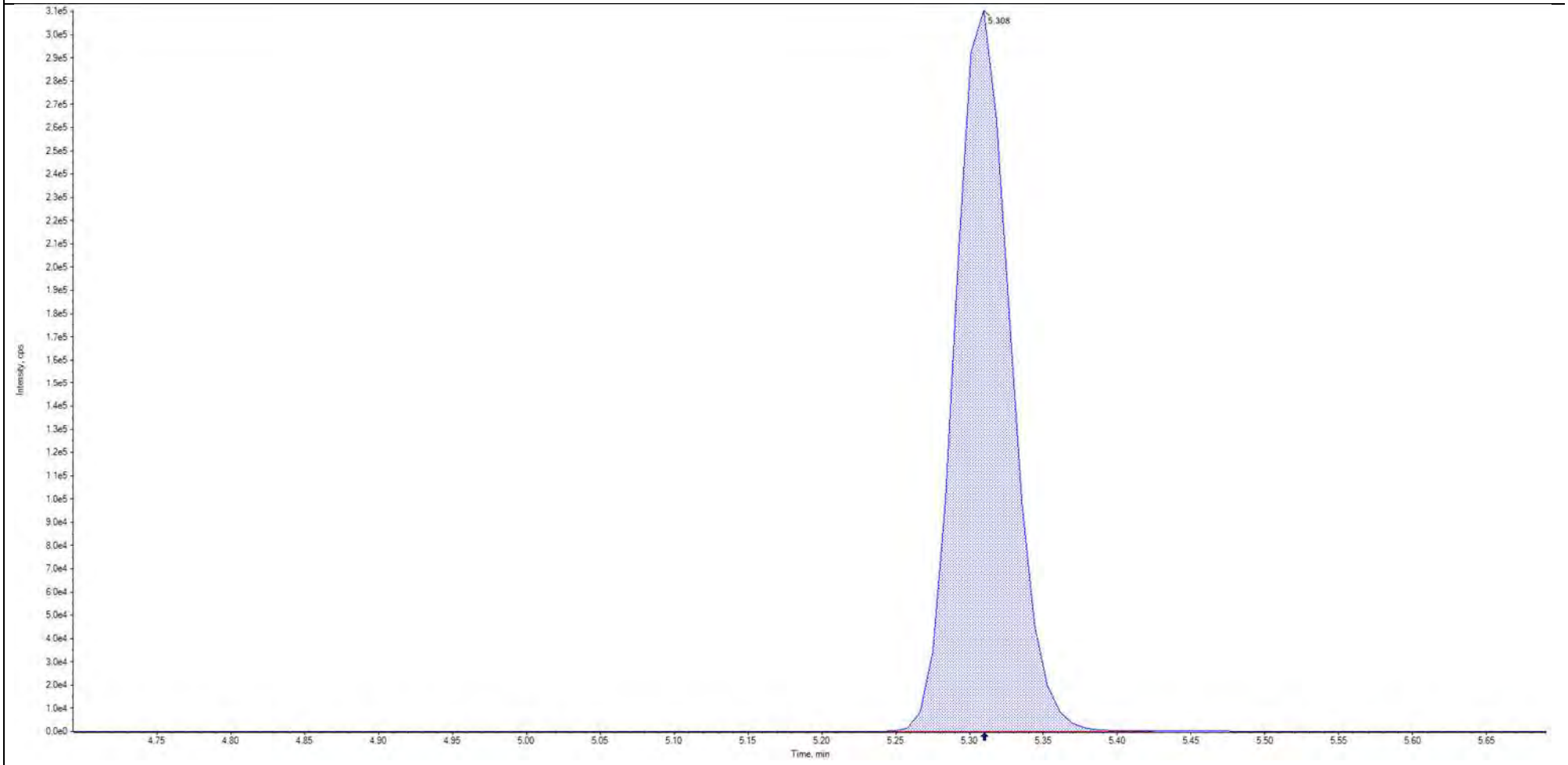
13C2-PFDoA
Sample: IA1633STD-.2



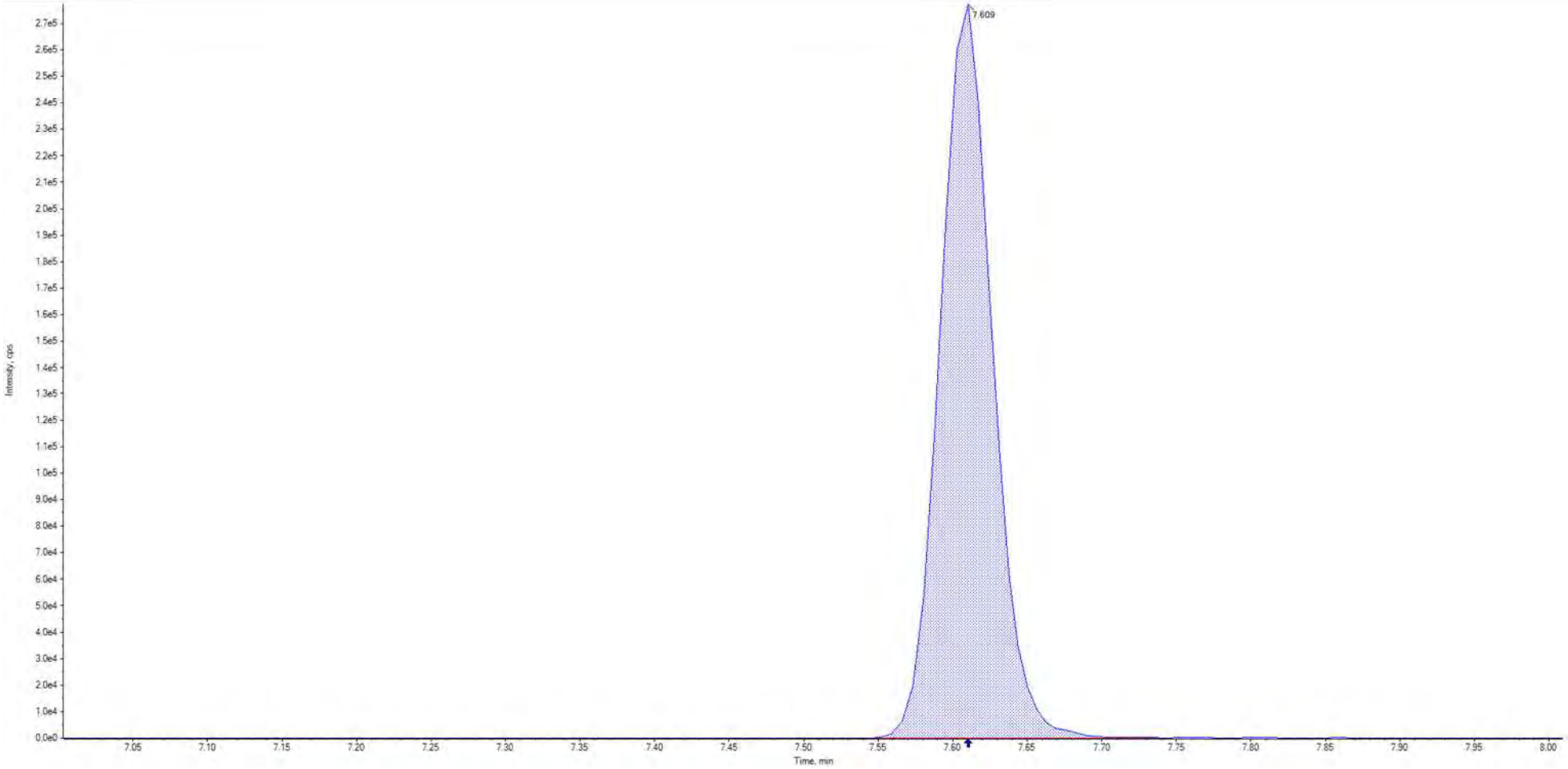
13C2-PFTeDA
Sample: IA1633STD-.2



13C3-PFBS
Sample: IA1633STD-.2

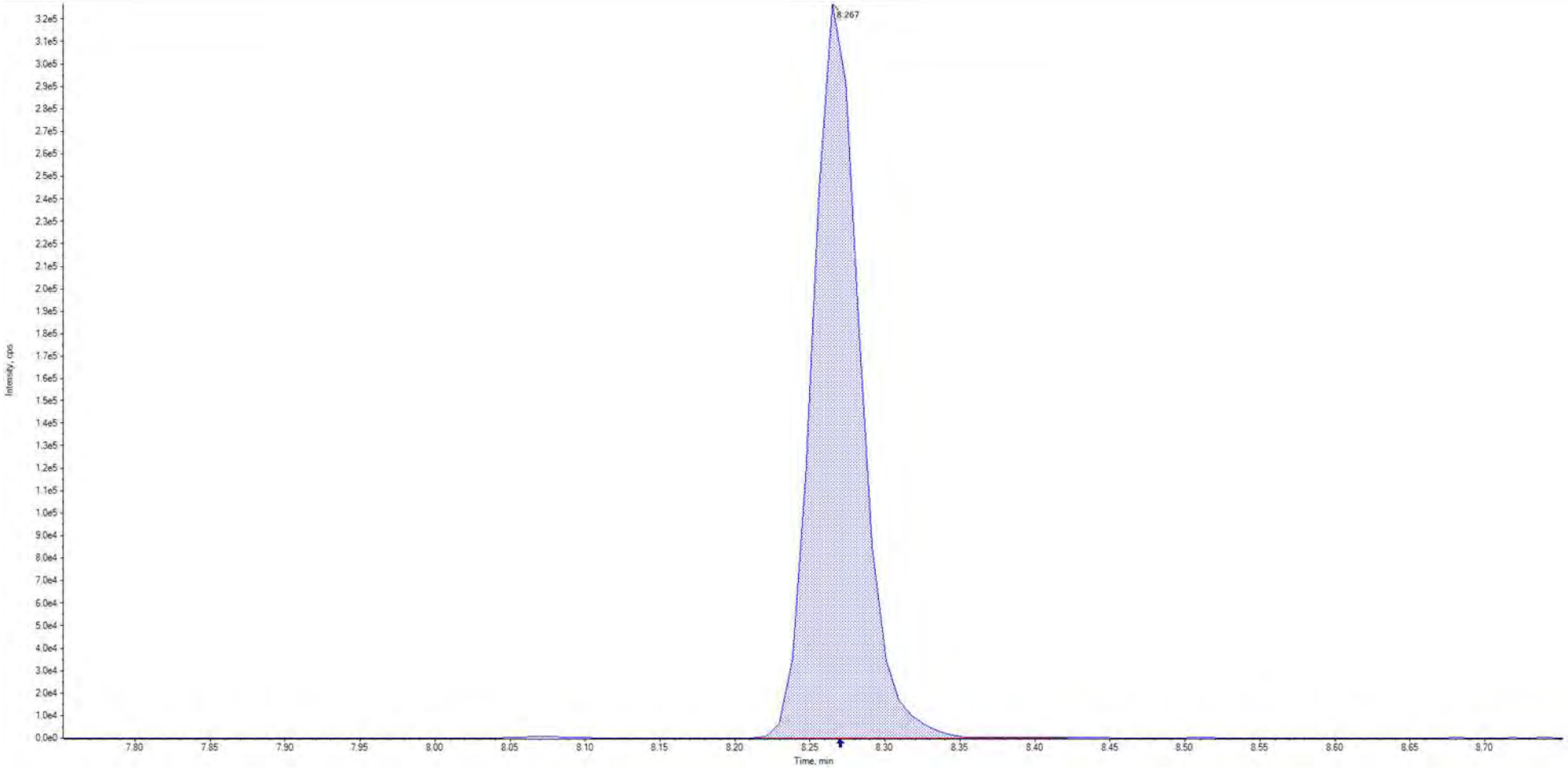


13C3-PFHxS
Sample: IA1633STD-.2

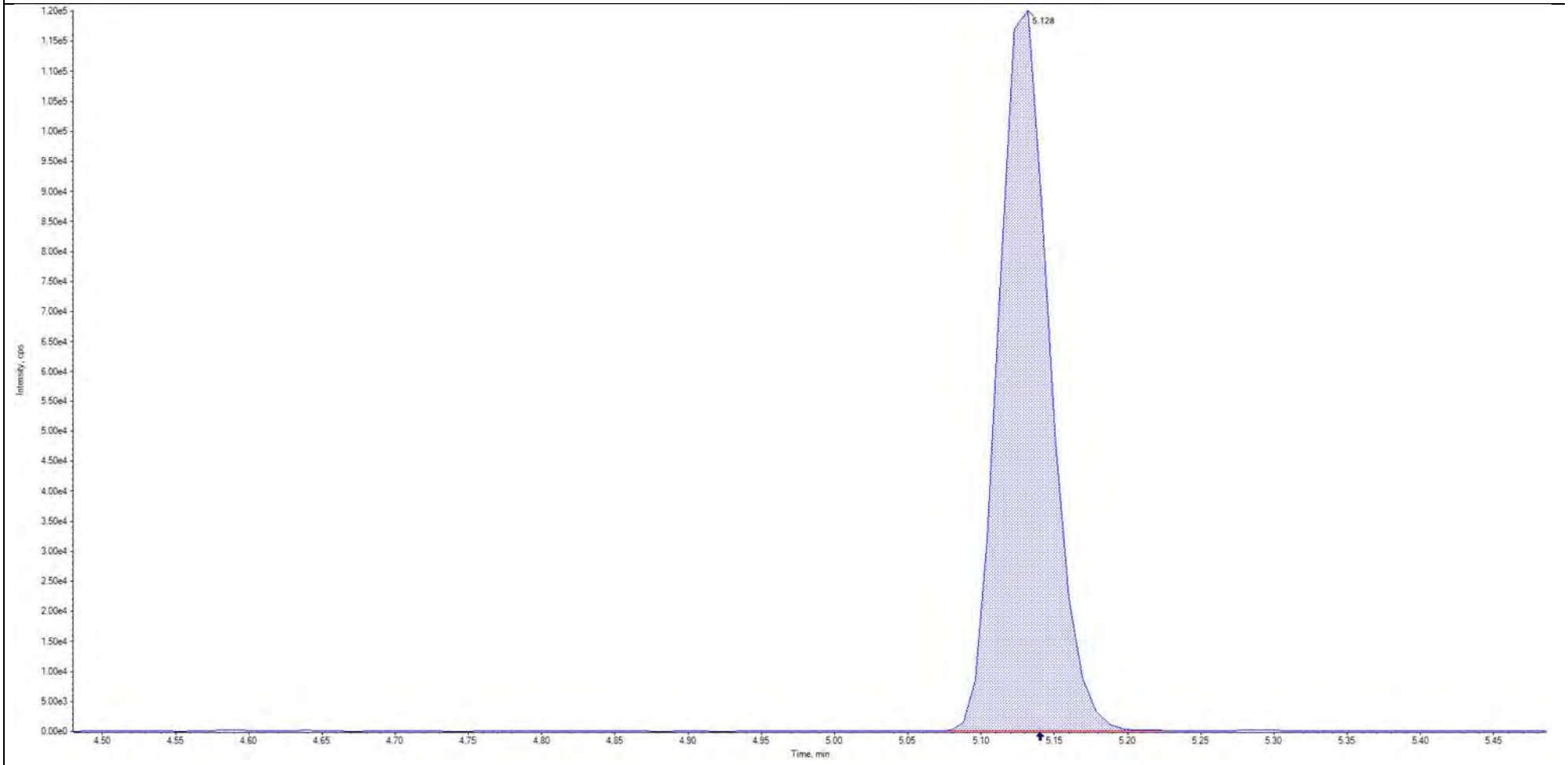


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

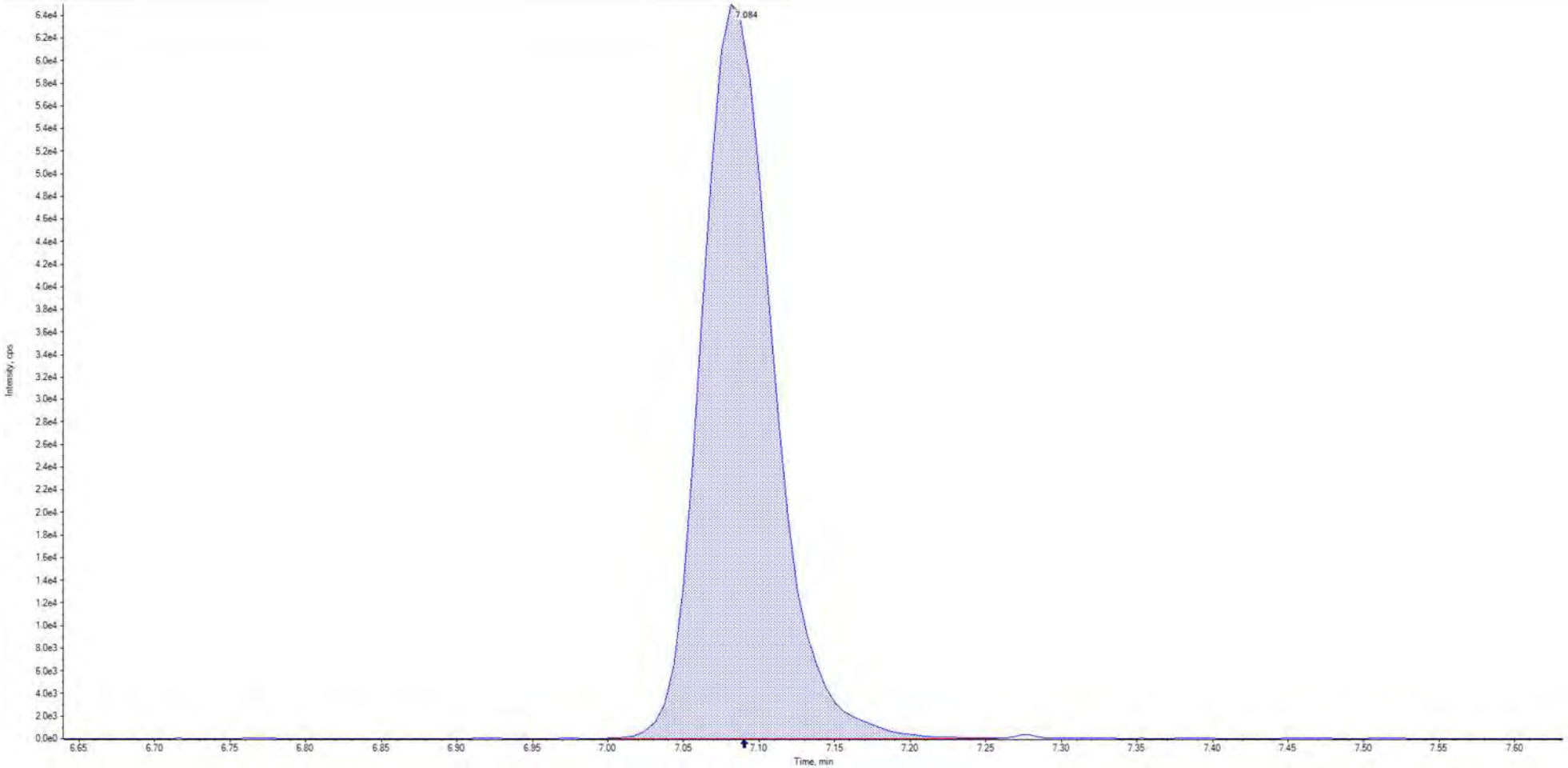
13C8-PFOS
Sample: IA1633STD-.2



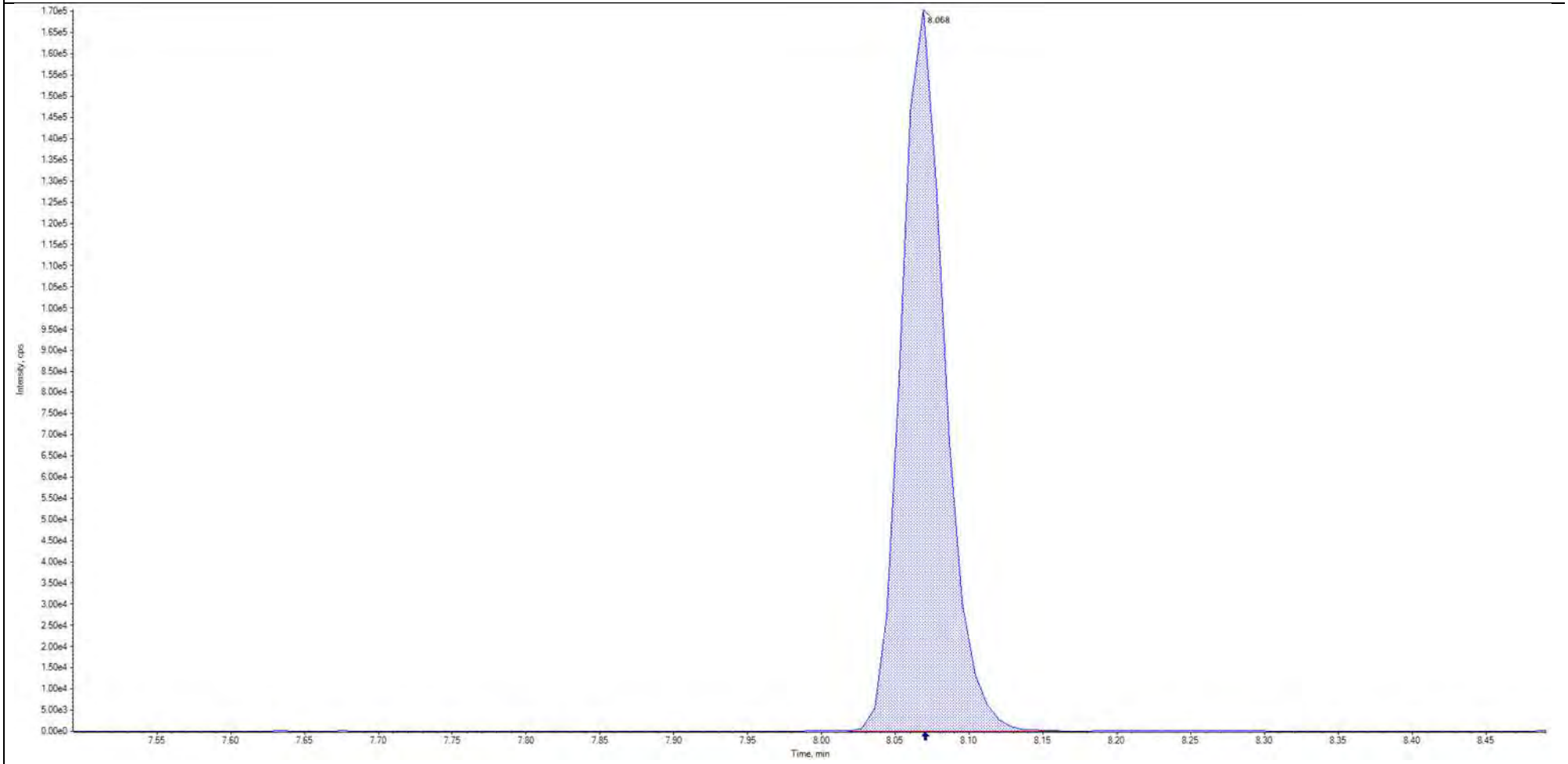
13C2-4:2FTS
Sample: IA1633STD-.2



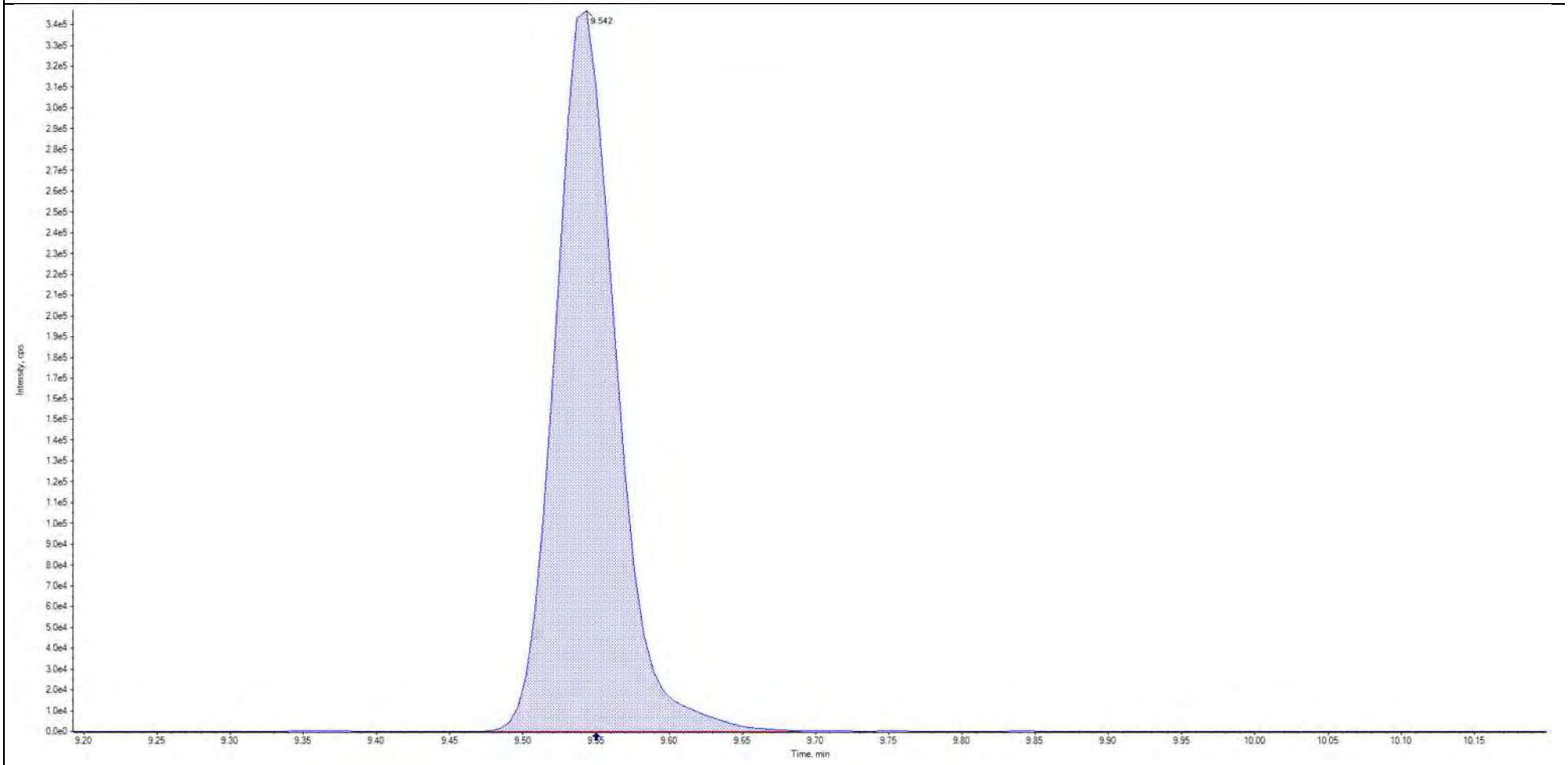
13C2-6:2FTS
Sample: IA1633STD-.2



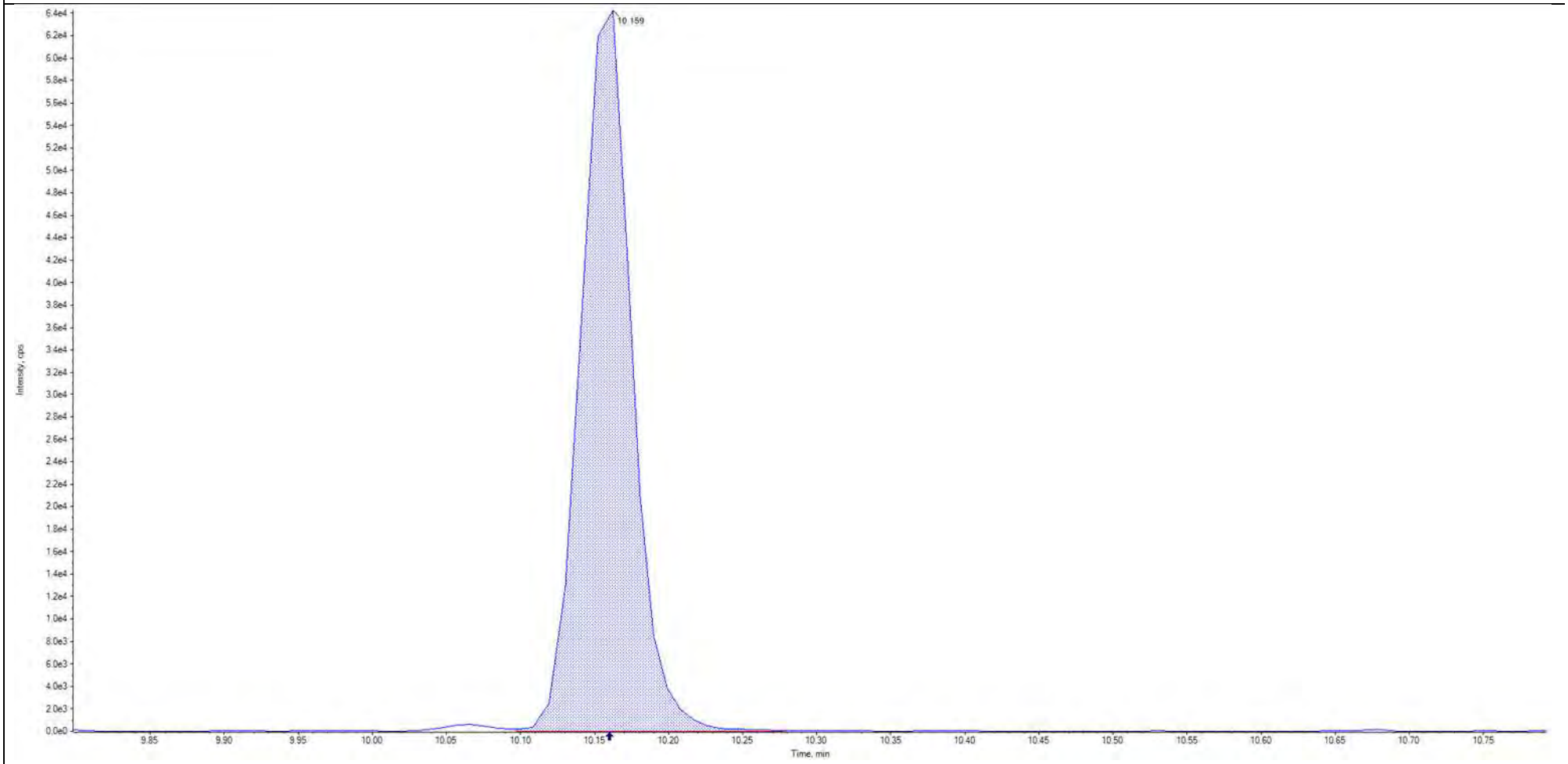
13C2-8:2FTS
Sample: IA1633STD-.2



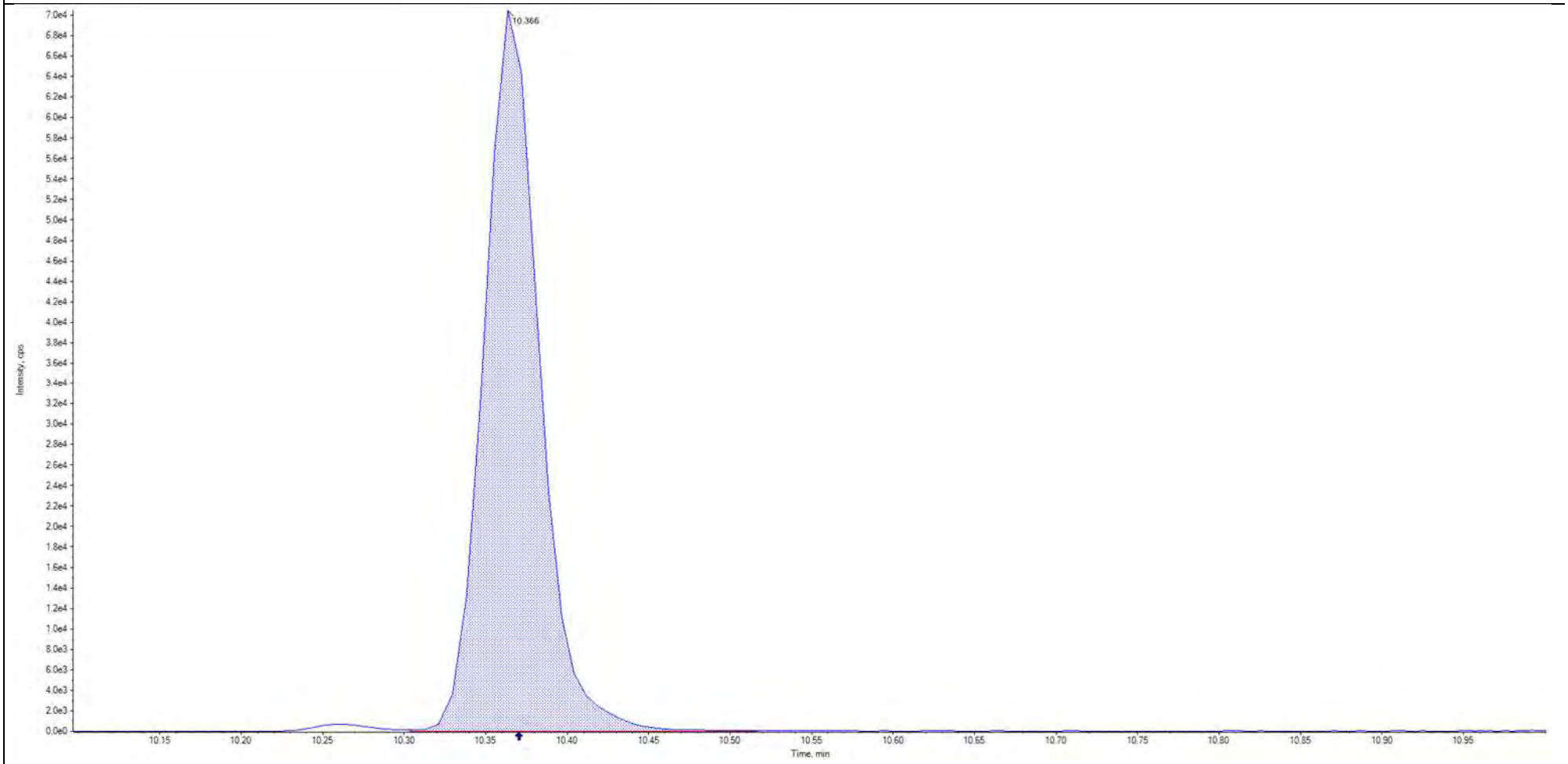
13C8-PFOSA
Sample: IA1633STD-.2



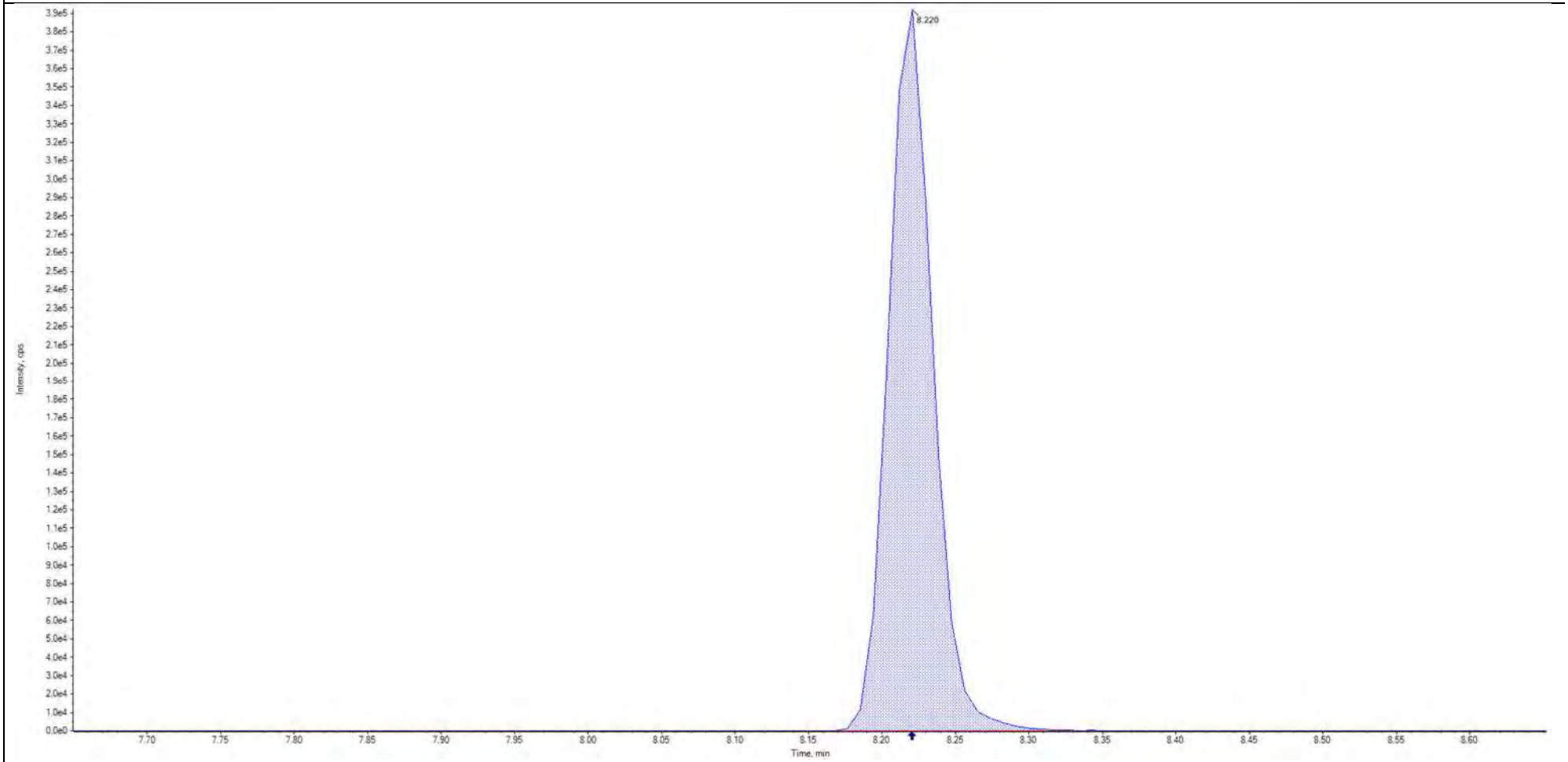
d3-NMeFOSA
Sample: IA1633STD-.2



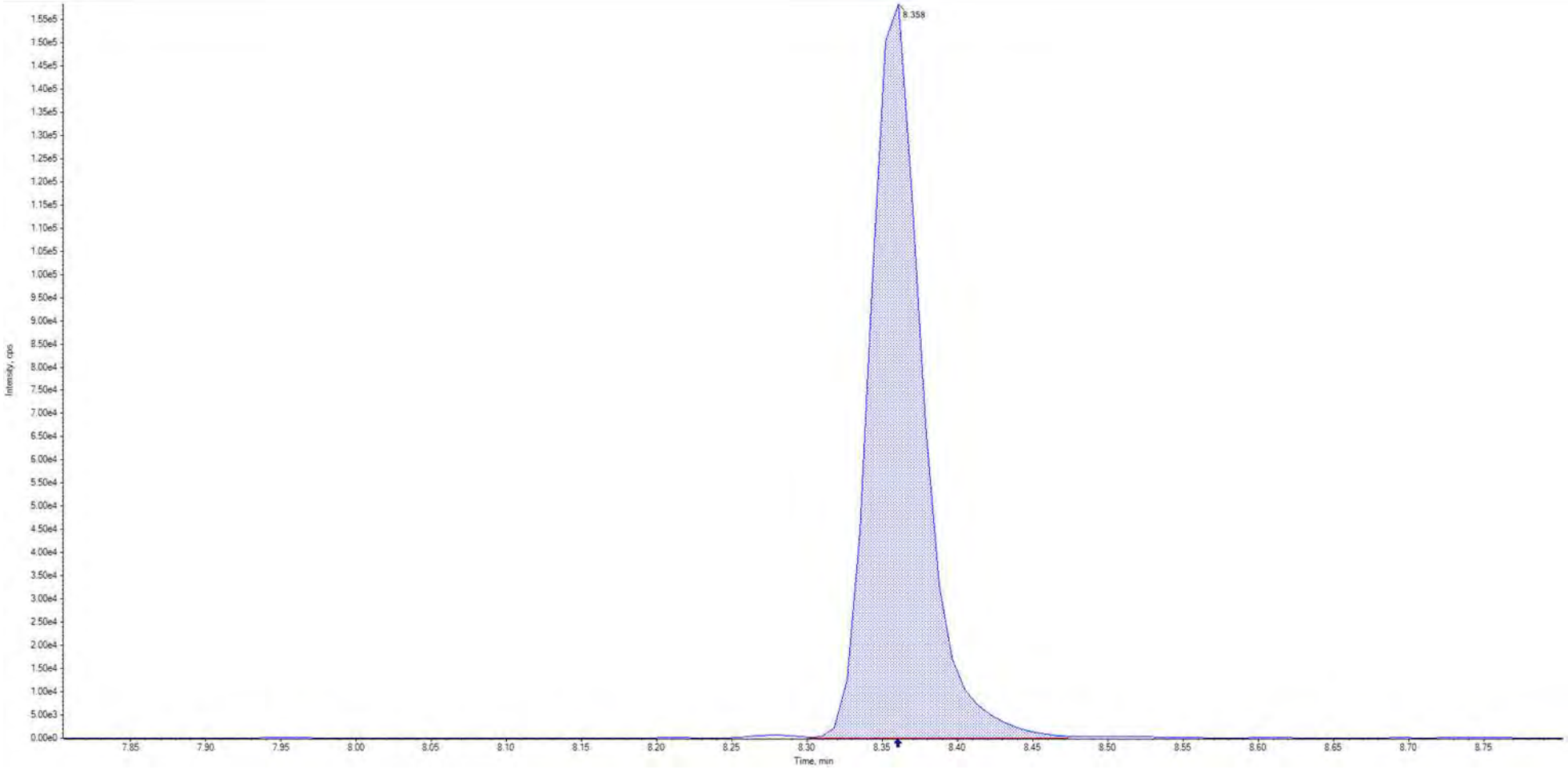
d5-NEtFOSA
Sample: IA1633STD-.2



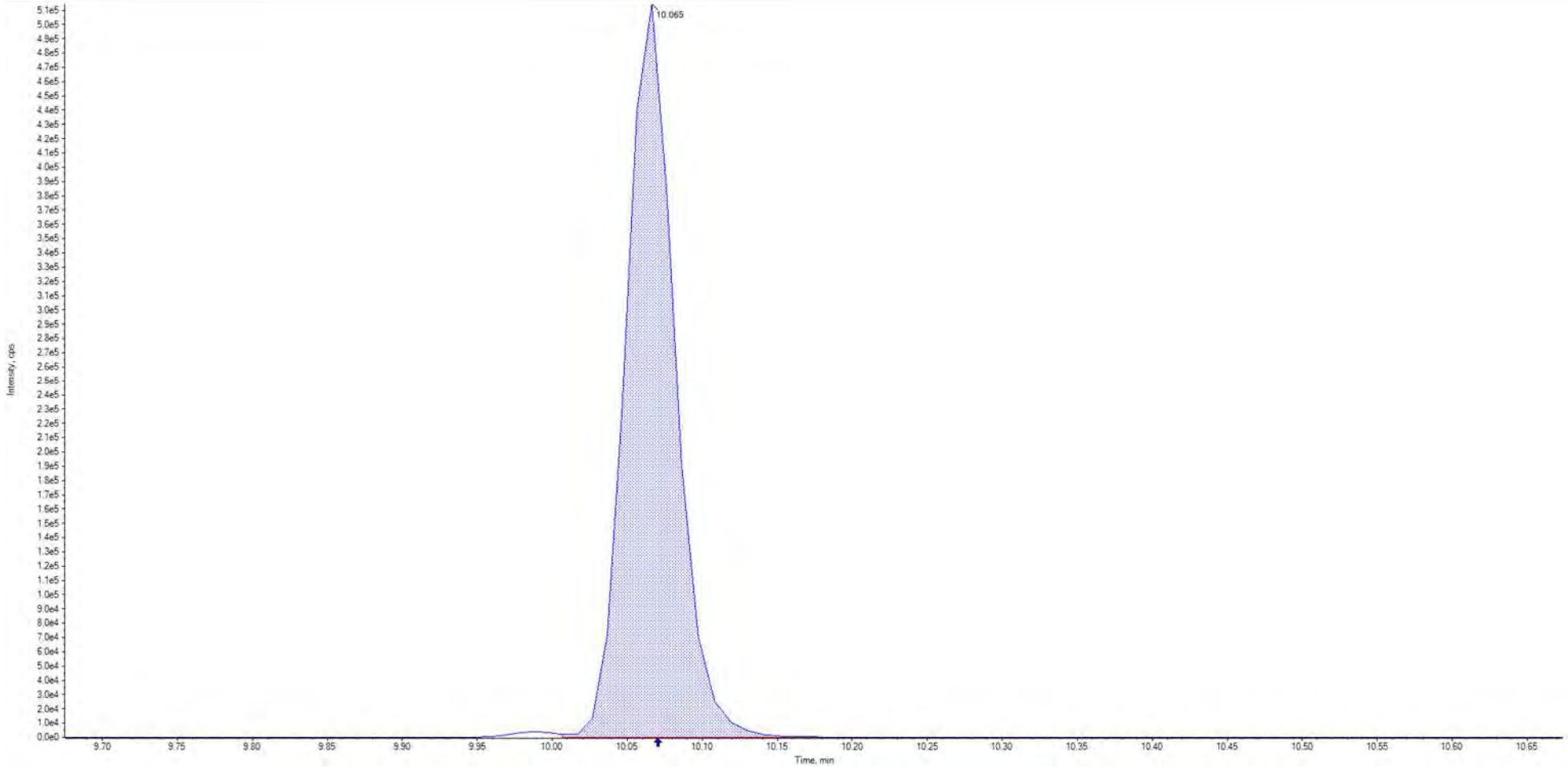
d3-NMeFOSAA
Sample: IA1633STD-.2



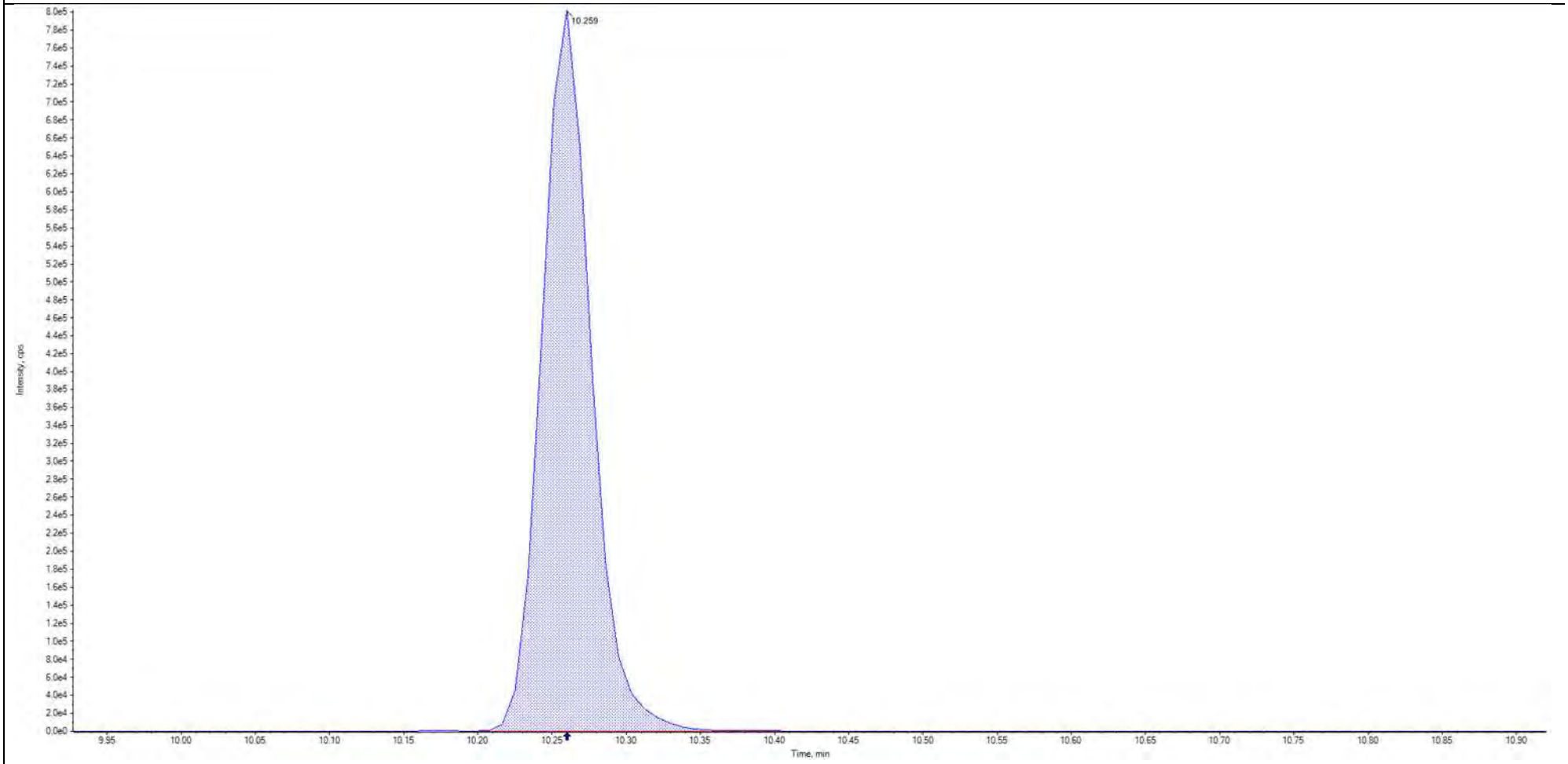
d5-NEtFOSAA
Sample: IA1633STD-.2



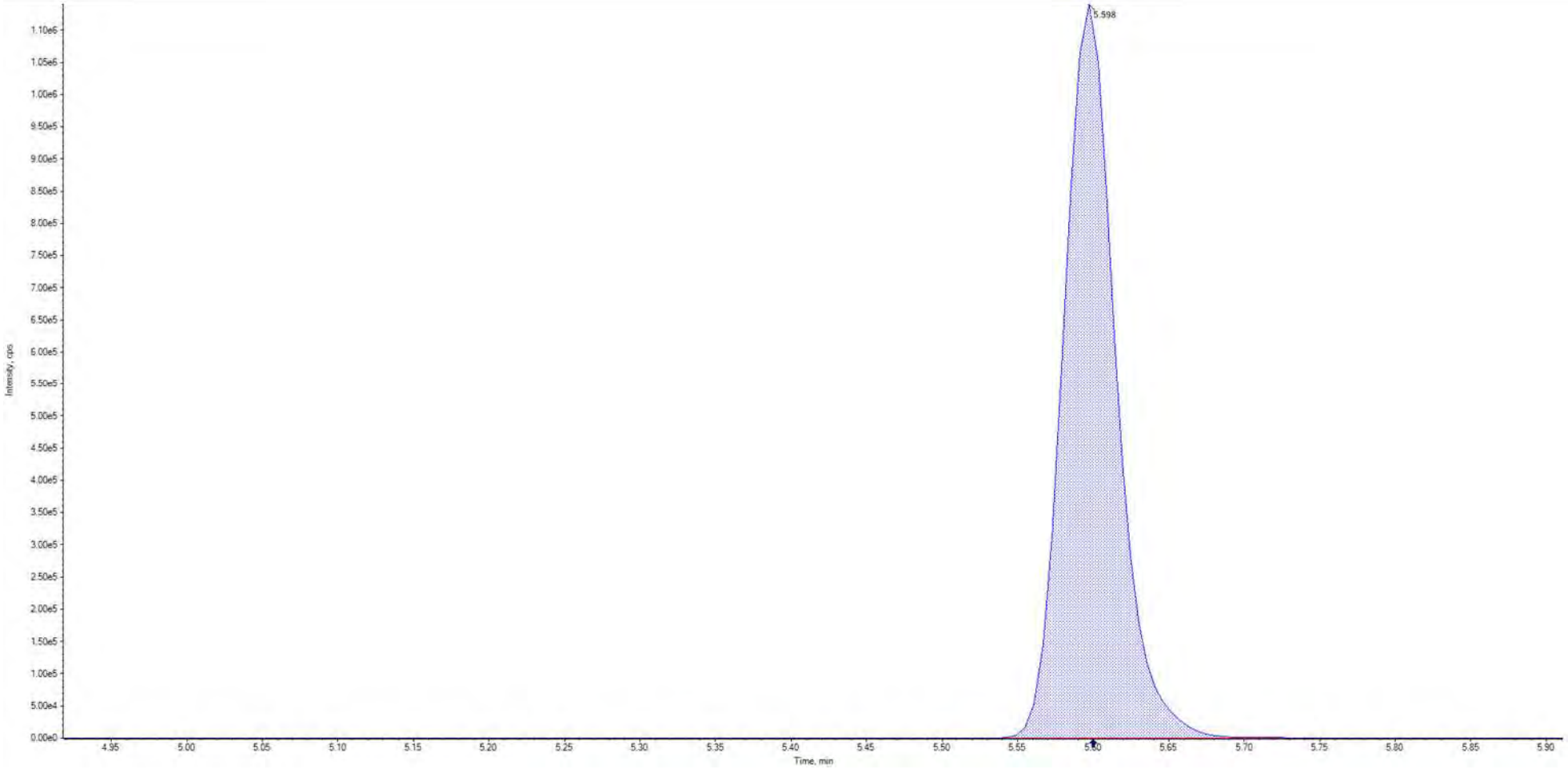
d7-NMeFOSE
Sample: IA1633STD-.2



d9-NEtFOSE
Sample: IA1633STD-.2

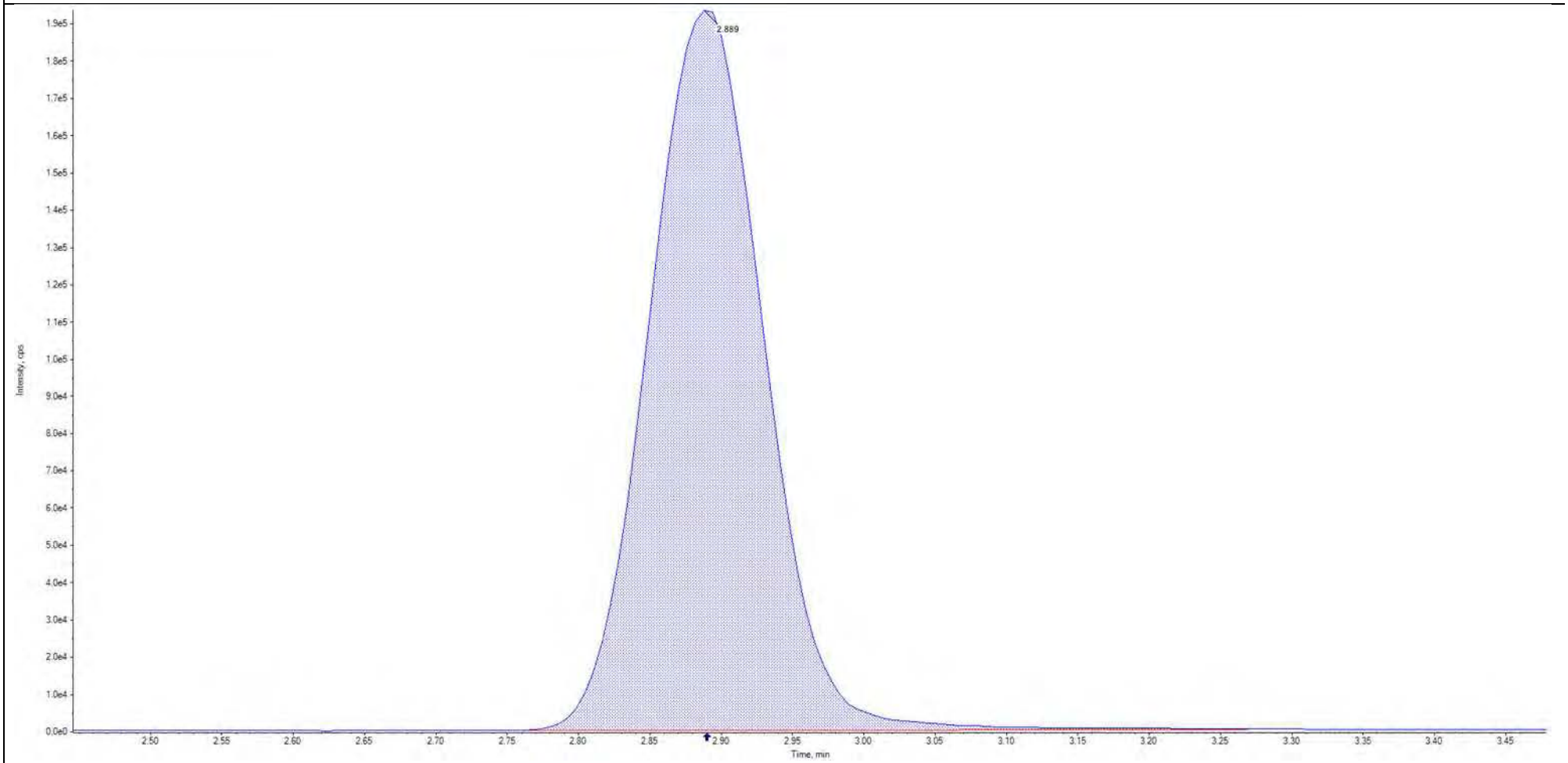


13C3-HFPO-DA
Sample: IA1633STD-.2

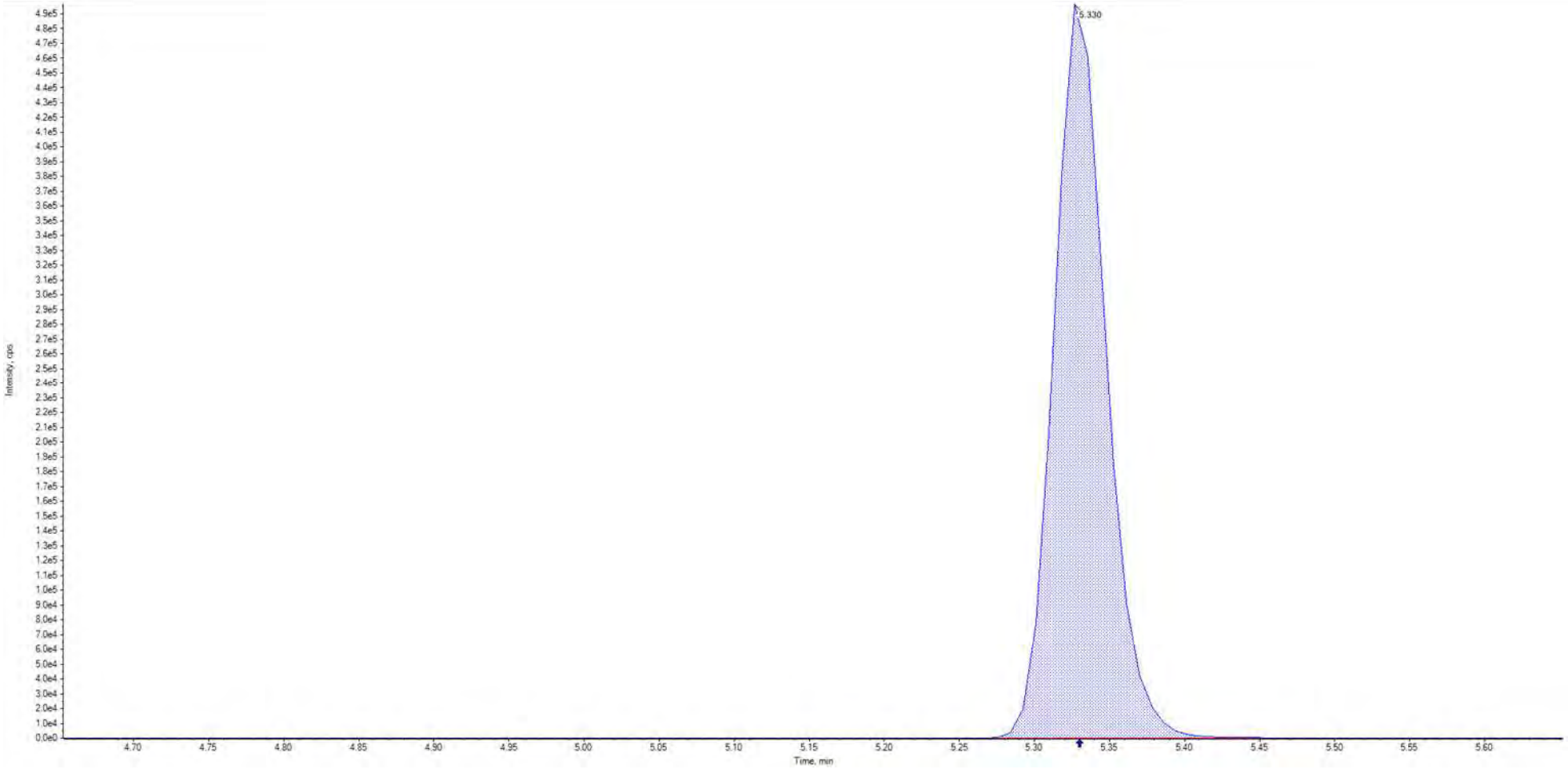


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_72.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

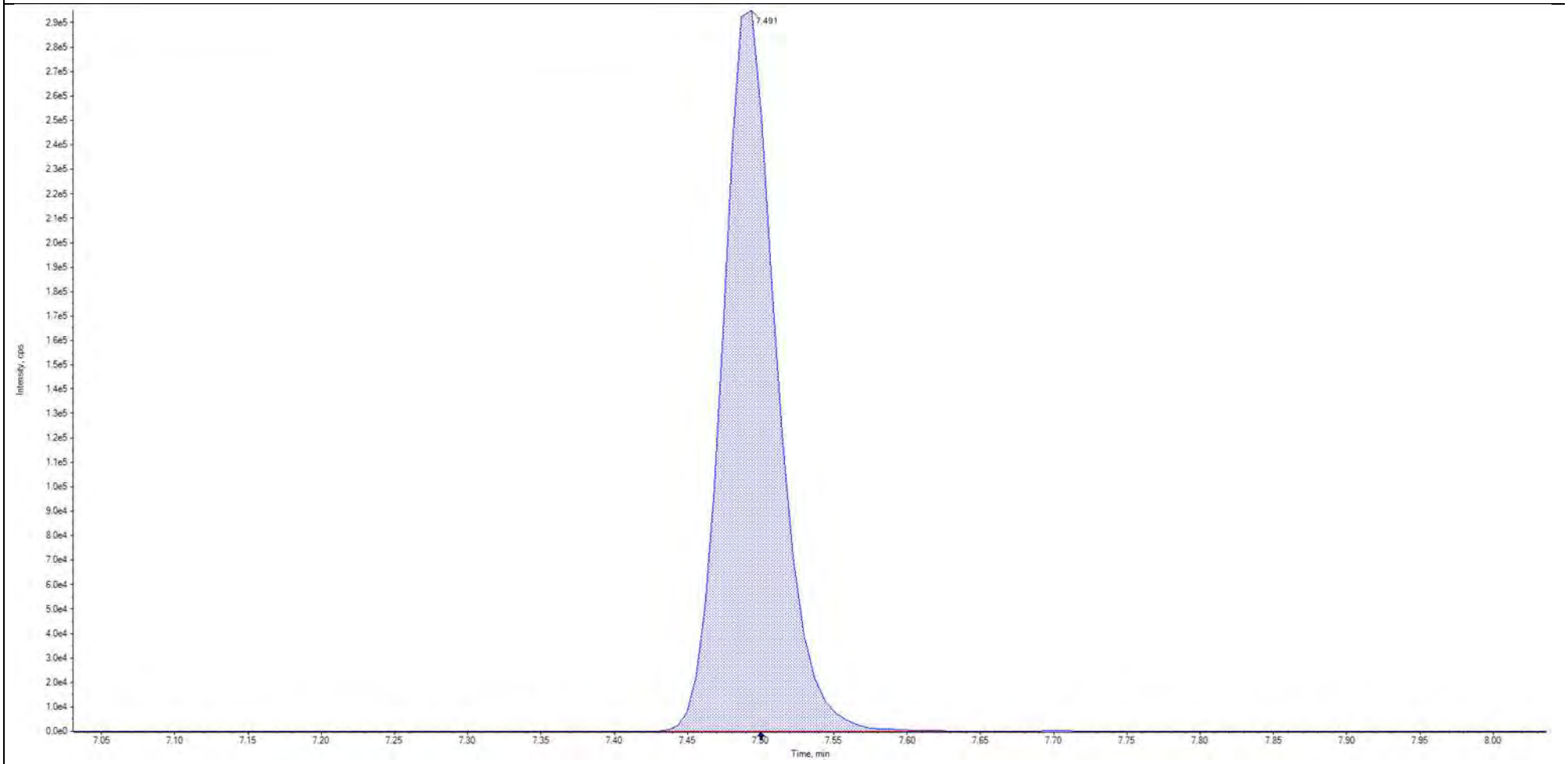
13C3-PFBA
Sample: IA1633STD-.2



13C2-PFHxA
Sample: IA1633STD-.2



13C4-PFOA
Sample: IA1633STD-.2



13C5-PFNA
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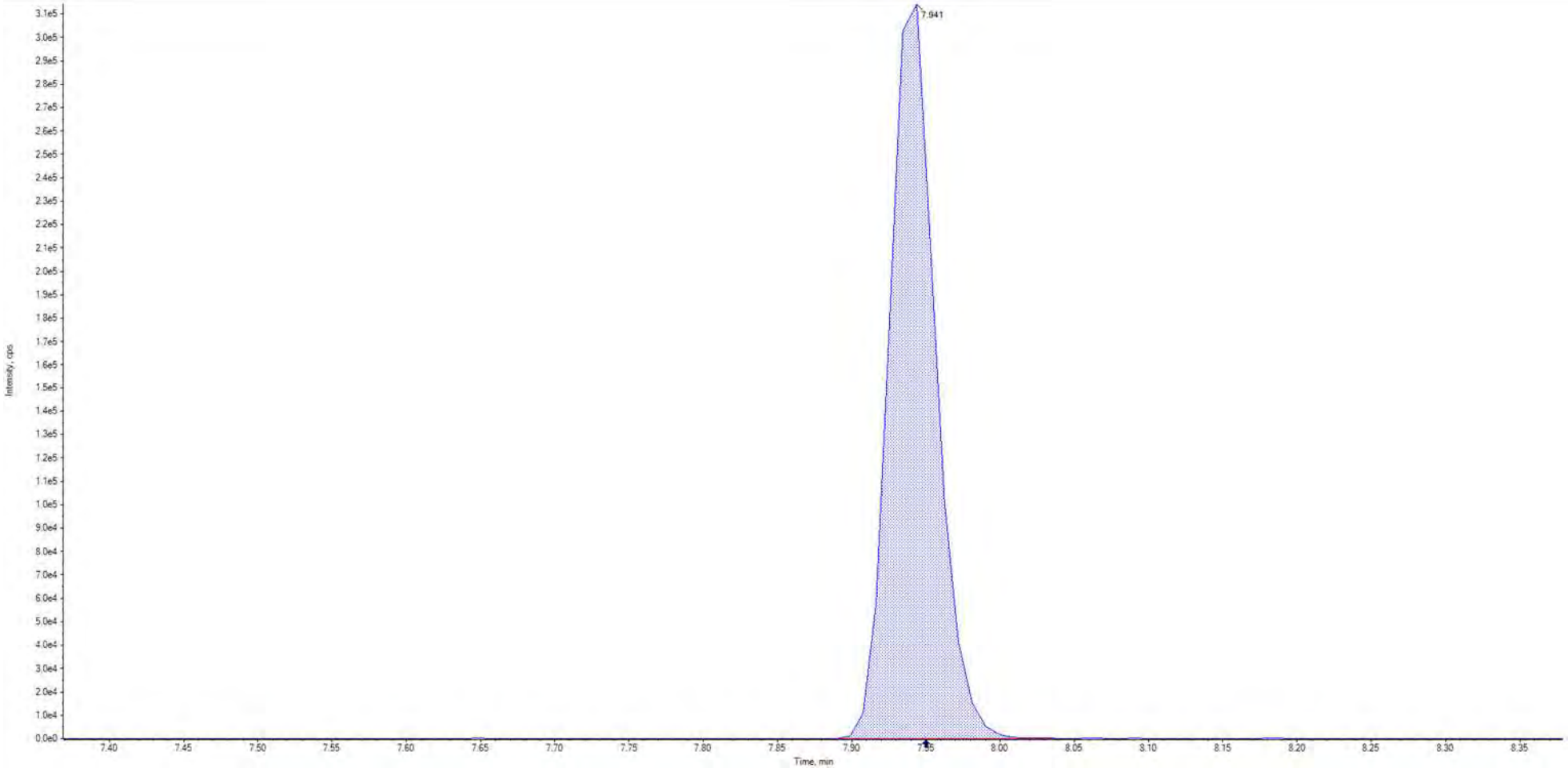

13C2-PFDA
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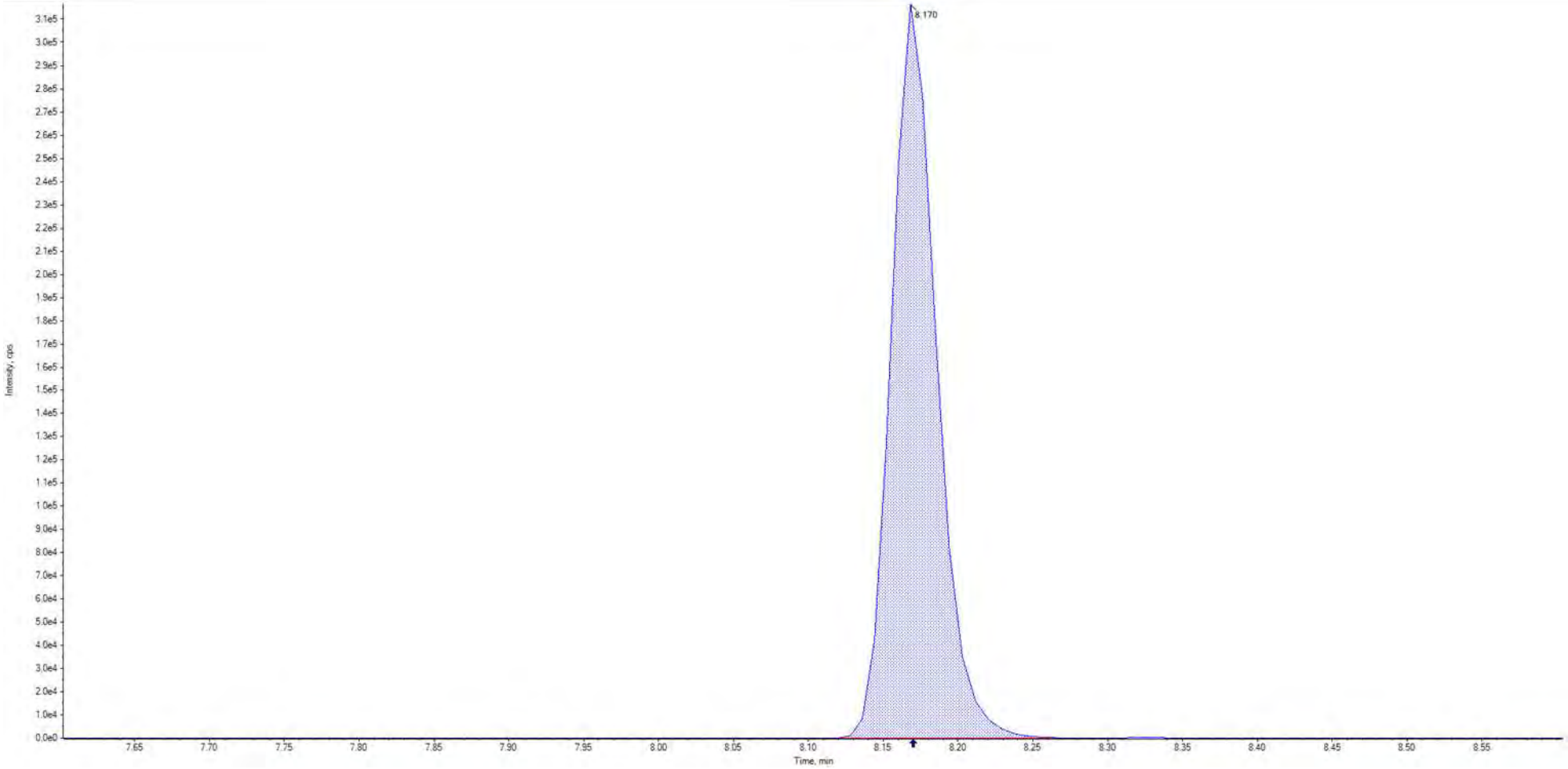

18O2-PFHxS
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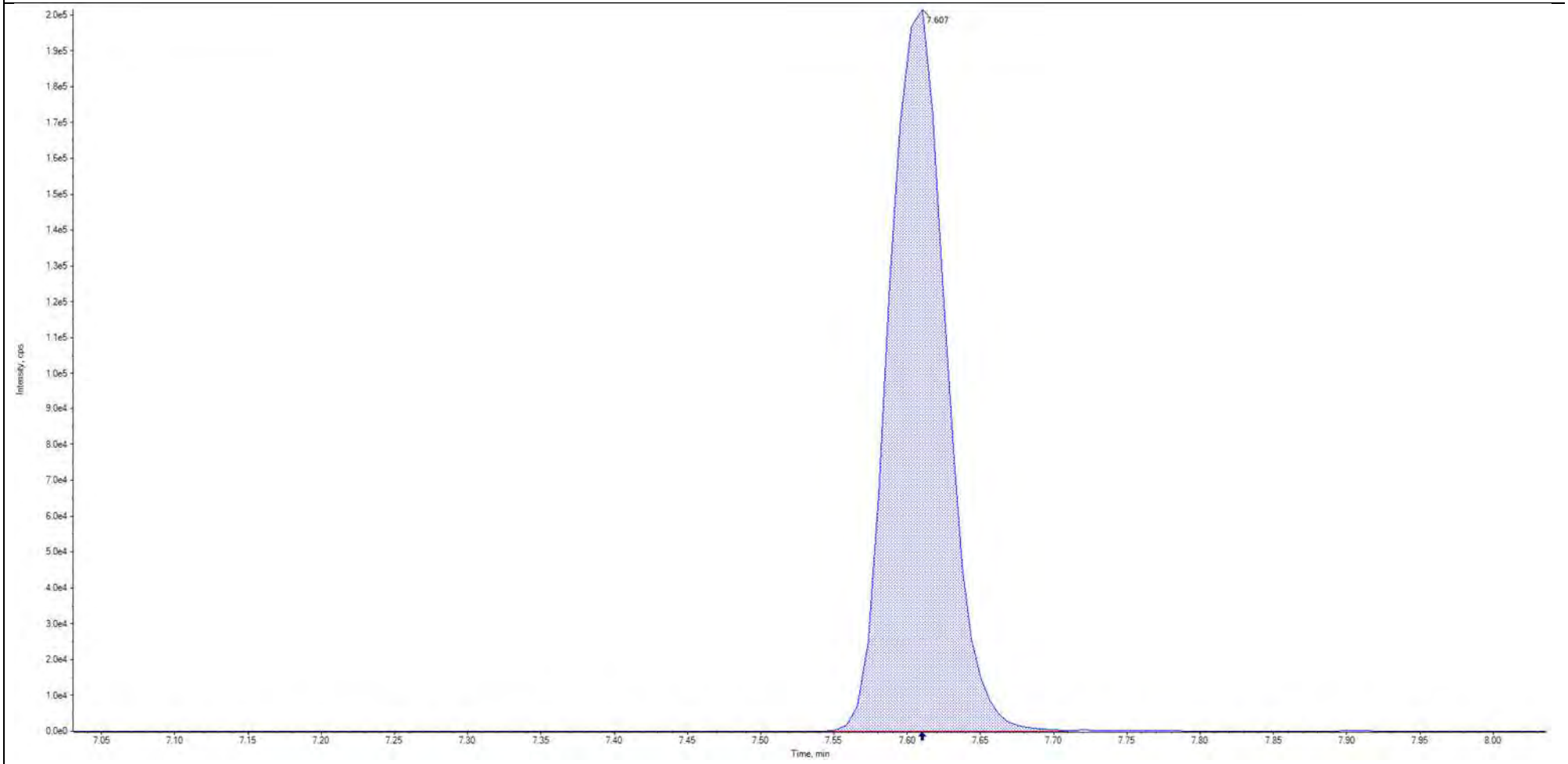

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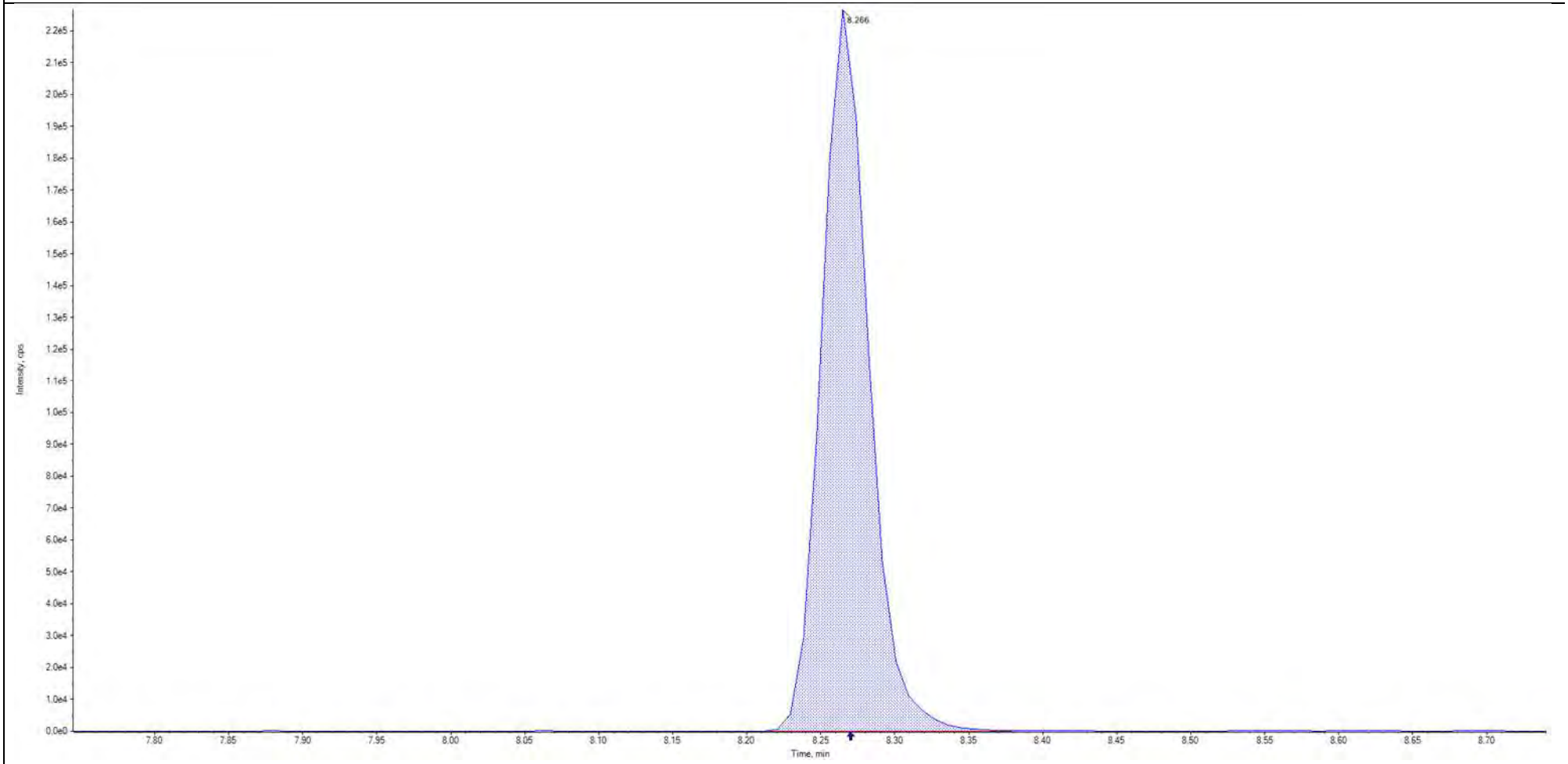
13C4-PFOS
Sample: IA1633STD-.2



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Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Method: EPA1633_NIS_CALC.qmethod
Calibration: 240813_1633_ICAL

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Description: WG1958909,,,100 ul IA1633STD-5
Instrument: Triple Quad 5500+
User: LCMS05:SL

LC/MS-MS Method:EPA_1633.dam

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
1	PFBA	375-22-4	2.89	213.0 / 169.0	392007		1.919	N/A	N/A	N/A	95.9
2	PFPeA	2706-90-3	4.64	263.0 / 219.0	285758		0.958	0.007	0.007	N/A	95.8
3	PFPeA_2	2706-90-3	4.64	263.0 / 68.9	2019		0.959	0.007	0.007	N/A	95.9
4	PFHxA	307-24-4	5.34	313.0 / 269.0	234525		0.465	0.076	0.072	Pass	93.0
5	PFHxA_2	307-24-4	5.34	313.0 / 119.0	17747		0.476	0.076	0.072	Pass	95.3
6	PFHpA	375-85-9	6.25	363.1 / 319.0	227673		0.472	0.306	0.297	Pass	94.3
7	PFHpA_2	375-85-9	6.25	363.1 / 169.0	69647		0.471	0.306	0.297	Pass	94.3

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
8	PFOA	335-67-1	7.50	413.1 / 369.1	152387	M5	0.503	0.545	0.586	Pass	100.6
9	PFOA_2	335-67-1	7.50	413.1 / 169.0	83089	M7	0.501	0.545	0.586	Pass	100.1
10	PFNA	375-95-1	7.95	462.8 / 418.9	203035	M5	0.490	0.287	0.313	Pass	98.0
11	PFNA_2	375-95-1	7.95	462.8 / 218.9	58235	M7	0.460	0.287	0.313	Pass	91.9
12	PFDA	335-76-2	8.17	513.1 / 469.1	227128		0.464	0.165	0.142	Pass	92.9
13	PFDA_2	335-76-2	8.17	513.1 / 219.0	37449		0.511	0.165	0.142	Pass	102.2
14	PFUnA	2058-94-8	8.47	563.1 / 519.1	174087		0.494	0.188	0.194	Pass	98.9
15	PFUnA_2	2058-94-8	8.47	563.1 / 269.0	32692		0.479	0.188	0.194	Pass	95.9
16	PFDoA	307-55-1	8.90	613.1 / 569.1	178586		0.488	0.171	0.167	Pass	97.7
17	PFDoA_2	307-55-1	8.90	613.1 / 319.0	30494	M7	0.494	0.171	0.167	Pass	98.7
18	PFTrDA	72629-94-8	9.50	663.1 / 619.1	105929		0.486	0.231	0.228	Pass	97.2
19	PFTrDA_2	72629-94-8	9.50	663.1 / 169.0	24469		0.504	0.231	0.228	Pass	100.8
20	PFTeDA	376-06-7	9.91	713.1 / 669.1	186633		0.489	0.141	0.137	Pass	97.9
21	PFTeDA_2	376-06-7	9.90	713.1 / 169.0	26269	M7	0.504	0.141	0.137	Pass	100.7
22	PFBS	375-73-5	5.31	299.1 / 80.1	146551		0.430	0.397	0.396	Pass	96.9

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
23	PFBS_2	375-73-5	5.31	299.1 / 99.1	58232		0.428	0.397	0.396	Pass	96.5
24	PFPeS	2706-91-4	6.34	349.1 / 80.1	120878		0.443	0.299	0.299	Pass	94.1
25	PFPeS_2	2706-91-4	6.34	349.1 / 99.1	36115		0.439	0.299	0.299	Pass	93.2
26	PFHxS	355-46-4	7.61	399.1 / 80.1	110263	M5	0.432	0.315	0.315	Pass	94.5
27	PFHxS_2	355-46-4	7.61	399.1 / 99.1	34678	M7	0.437	0.315	0.315	Pass	95.7
28	PFHpS	375-92-8	8.01	449.1 / 80.1	122492		0.469	0.277	0.287	Pass	98.4
29	PFHpS_2	375-92-8	8.01	449.1 / 99.1	33989		0.444	0.277	0.287	Pass	93.2
30	PFOS	1763-23-1	8.27	499.1 / 80.1	128413	M5	0.462	0.245	0.238	Pass	99.5
31	PFOS_2	1763-23-1	8.27	499.1 / 99.1	31451	M7	0.461	0.245	0.238	Pass	99.5
32	PFNS	68259-12-1	8.62	549.1 / 80.1	84849	M4	0.475	0.302	0.301	Pass	98.8
33	PFNS_2	68259-12-1	8.62	549.1 / 99.1	25659	M7	0.474	0.302	0.301	Pass	98.6
34	PFDS	335-77-3	9.14	599.1 / 80.1	79503	M7	0.452	0.275	0.275	Pass	93.7
35	PFDS_2	335-77-3	9.14	599.1 / 99.1	21897		0.452	0.275	0.275	Pass	93.6
36	PFDoS	79780-39-5	10.00	699.2 / 80.1	76105	M4	0.472	0.287	0.274	Pass	97.4
37	PFDoS_2	79780-39-5	10.00	699.2 / 99.1	21807	M7	0.493	0.287	0.274	Pass	101.6

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
38	4:2FTS	757124-72-4	5.14	327.1 / 307.1	214011		1.803	0.554	0.516	Pass	96.2
39	4:2FTS_2	757124-72-4	5.14	327.1 / 81.1	118560	M4	1.867	0.554	0.516	Pass	99.6
40	6:2FTS	27619-97-2	7.09	427.2 / 407.2	134548		1.838	0.533	0.565	Pass	96.7
41	6:2FTS_2	27619-97-2	7.09	427.2 / 81.1	71664		1.809	0.533	0.565	Pass	95.2
42	8:2FTS	39108-34-4	8.07	527.2 / 507.2	160030		1.926	0.685	0.662	Pass	100.3
43	8:2FTS_2	39108-34-4	8.07	527.2 / 81.1	109691		1.946	0.685	0.662	Pass	101.4
44	PFOSA	754-91-6	9.54	498.1 / 78.1	119348	M5	0.450	0.029	0.025	Pass	90.0
45	PFOSA_2	754-91-6	9.53	498.1 / 478.0	3448	M7	0.495	0.029	0.025	Pass	99.1
46	NMeFOSA	31506-32-8	10.16	512.2 / 219.0	30885	M5	0.453	1.577	1.551	Pass	90.6
47	NMeFOSA_2	31506-32-8	10.12	512.2 / 169.0	48697	M7	0.461	1.577	1.551	Pass	92.2
48	NEtFOSA	4151-50-2	10.37	526.2 / 219.0	31911	M5	0.474	1.358	1.285	Pass	94.8
49	NEtFOSA_2	4151-50-2	10.33	526.2 / 169.0	43351	M7	0.481	1.358	1.285	Pass	96.2
50	NMeFOSAA	2355-31-9	8.22	570.2 / 419.1	36814	M4	0.431	0.869	0.700	Pass	86.2
51	NMeFOSAA_2	2355-31-9	8.22	570.2 / 483.0	31999	M7	0.589	0.869	0.700	Pass	117.7
52	NEtFOSAA	2991-50-6	8.36	584.2 / 419.1	35871		0.510	0.399	0.487	Pass	101.9

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
53	NEtFOSAA_2	2991-50-6	8.36	584.2 / 526.2	14324		0.442	0.399	0.487	Pass	88.5
54	NMeFOSE	24448-09-7	10.08	616.1 / 58.9	543241	M5	4.729	N/A	N/A	N/A	94.6
55	NEtFOSE	1691-99-2	10.27	630.0 / 58.9	1009032	M5	4.782	N/A	N/A	N/A	95.6
56	HFPO-DA	13252-13-6	5.60	285.0 / 169.0	500246		2.057	0.433	0.464	Pass	102.8
57	HFPO-DA_2	13252-13-6	5.60	285.0 / 184.9	216697	M7	1.916	0.433	0.464	Pass	95.8
58	ADONA	919005-14-4	6.72	377.1 / 251.0	1036431		1.874	0.656	0.634	Pass	99.1
59	ADONA_2	919005-14-4	6.72	377.1 / 84.8	680001		1.900	0.656	0.634	Pass	100.5
60	9Cl-PF3ONS	756426-58-1	8.49	530.8 / 351.1	1064499		1.952	0.335	0.322	Pass	104.4
61	9Cl-PF3ONS_2	756426-58-1	8.49	532.8 / 353.0	356553		2.008	0.335	0.322	Pass	107.4
62	11Cl-PF3OUdS	763051-92-9	9.57	630.9 / 451.0	665847		1.933	0.328	0.331	Pass	102.3
63	11Cl-PF3OUdS_2	763051-92-9	9.57	632.9 / 452.9	218497		1.885	0.328	0.331	Pass	99.7
64	3:3FTCA	356-02-5	4.91	241.1 / 177.1	61750		2.387	1.043	1.074	Pass	95.5
65	3:3FTCA_2	356-02-5	4.91	241.1 / 117.0	64385		2.486	1.043	1.074	Pass	99.4
66	5:3FTCA	914637-49-3	7.16	341.1 / 237.1	1109466		12.128	0.945	0.953	Pass	97.0
67	5:3FTCA_2	914637-49-3	7.16	341.1 / 217.0	1047917		12.106	0.945	0.953	Pass	96.9

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
68	7:3FTCA	812-70-4	8.21	441.1 / 316.9	1148521		11.278	1.617	1.558	Pass	90.2
69	7:3FTCA_2	812-70-4	8.21	441.1 / 337.1	1857506		12.569	1.617	1.558	Pass	100.6
70	PFEESA	113507-82-7	5.71	315.1 / 135.0	748553		0.856	0.088	0.087	Pass	96.1
71	PFEESA_2	113507-82-7	5.71	315.1 / 82.9	65578		0.868	0.088	0.087	Pass	97.5
72	PFMPA	377-73-1	3.85	229.0 / 85.0	33877		0.939	N/A	N/A	N/A	93.9
73	PFMBA	863090-89-5	4.87	279.0 / 85.0	470133		0.966	N/A	N/A	N/A	96.6
74	NFDHA	151772-58-6	5.25	295.0 / 201.0	88598		0.962	0.958	0.910	Pass	96.2
75	NFDHA_2	151772-58-6	5.25	295.0 / 84.9	84861		1.005	0.958	0.910	Pass	100.5
76	TDCA	516-50-7	N/A	499.1 / 124.1	N/A		N/A	N/A	40.716	N/A	N/A
77	TDCA_2	516-50-7	N/A	499.1 / 79.9	N/A		N/A	N/A	40.716	N/A	N/A
78	13C2D4-4:2FTS	Surr	5.12	333.2 / 312.1	866893		4.768	N/A	N/A	N/A	95.4
79	13C2-PFOA	Surr	7.49	415.0 / 370.0	3205026		2.482	N/A	N/A	N/A	99.3

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C4-PFBA	EIS	2.89	217.0 / 172.0	2519393		10.159	NA	NA	NA	101.6

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C5-PFPeA	EIS	4.64	268.0 / 223.0	1617019		4.933	NA	NA	NA	98.7
	13C5-PFHxA	EIS	5.33	318.0 / 273.0	1034641		2.403	NA	NA	NA	96.1
	13C4-PFHpA	EIS	6.24	367.0 / 322.0	1030480		2.390	NA	NA	NA	95.6
	13C8-PFOA	EIS	7.49	421.0 / 376.0	1455337		2.496	NA	NA	NA	99.8
	13C9-PFNA	EIS	7.94	472.0 / 427.0	707850		1.246	NA	NA	NA	99.7
	13C6-PFDA	EIS	8.17	519.0 / 474.0	709382		1.281	NA	NA	NA	102.5
	13C7-PFUnA	EIS	8.46	570.0 / 525.0	556914		1.243	NA	NA	NA	99.4

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C2-PFDoA	EIS	8.89	615.1 / 570.0	351491		1.206	NA	NA	NA	96.5
	13C2-PFTeDA	EIS	9.90	715.1 / 670.1	380510		1.202	NA	NA	NA	96.2
	13C3-PFBS	EIS	5.31	302.1 / 80.1	813176		2.400	NA	NA	NA	103.0
	13C3-PFHxS	EIS	7.61	402.1 / 80.1	639932		2.378	NA	NA	NA	100.4
	13C8-PFOS	EIS	8.26	507.1 / 80.1	677209		2.489	NA	NA	NA	103.9
	13C2-4:2FTS	EIS	5.13	329.1 / 81.1	284068		4.698	NA	NA	NA	100.2
	13C2-6:2FTS	EIS	7.09	429.2 / 81.1	212236		4.790	NA	NA	NA	100.7
	13C2-8:2FTS	EIS	8.07	529.2 / 81.1	314742		4.854	NA	NA	NA	101.1

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C8-PFOSA	EIS	9.54	506.1 / 78.1	992163		2.743	NA	NA	NA	109.7
	d3-NMeFOSA	EIS	10.15	515.2 / 219.0	159207		2.615	NA	NA	NA	104.6
	d5-NEtFOSA	EIS	10.36	531.2 / 219.0	153264		2.576	NA	NA	NA	103.1
	d3-NMeFOSAA	EIS	8.22	573.2 / 419.1	649448		4.718	NA	NA	NA	94.4
	d5-NEtFOSAA	EIS	8.35	589.3 / 419.1	377461		5.217	NA	NA	NA	104.3
	d7-NMeFOSE	EIS	10.06	623.2 / 58.9	1164100		24.754	NA	NA	NA	99.0
	d9-NEtFOSE	EIS	10.26	639.2 / 58.9	1797462		25.924	NA	NA	NA	103.7

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C3-HFPO-DA	EIS	5.59	287.0 / 169.0	2653121		9.297	NA	NA	NA	93.0
	13C3-PFBA	NIS	2.89	216.0 / 172.0	1084806		5.073	NA	NA	NA	101.5
	13C2-PFHxA	NIS	5.33	315.0 / 270.0	1278491		2.611	NA	NA	NA	104.4
	13C4-PFOA	NIS	7.49	417.0 / 372.0	762872		2.437	NA	NA	NA	97.5
	13C5-PFNA	NIS	7.94	468.0 / 423.0	692195		1.264	NA	NA	NA	101.1
	13C2-PFDA	NIS	8.17	515.1 / 470.1	650593		1.270	NA	NA	NA	101.6
	18O2-PFHxS	NIS	7.61	403.1 / 84.1	546904		2.334	NA	NA	NA	98.5
	13C4-PFOS	NIS	8.26	503.1 / 80.1	481323		2.286	NA	NA	NA	95.5

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	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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PFBA
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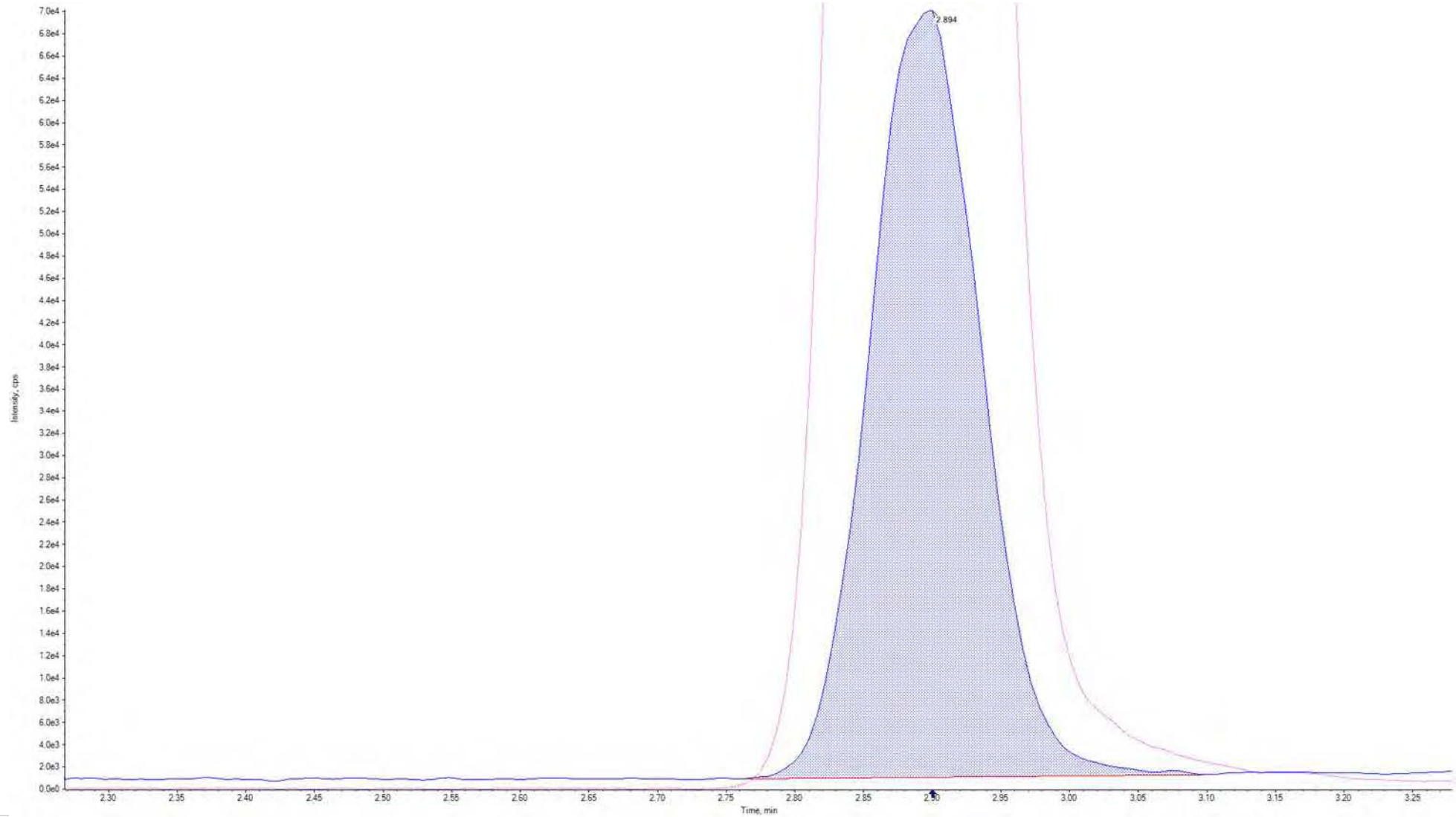

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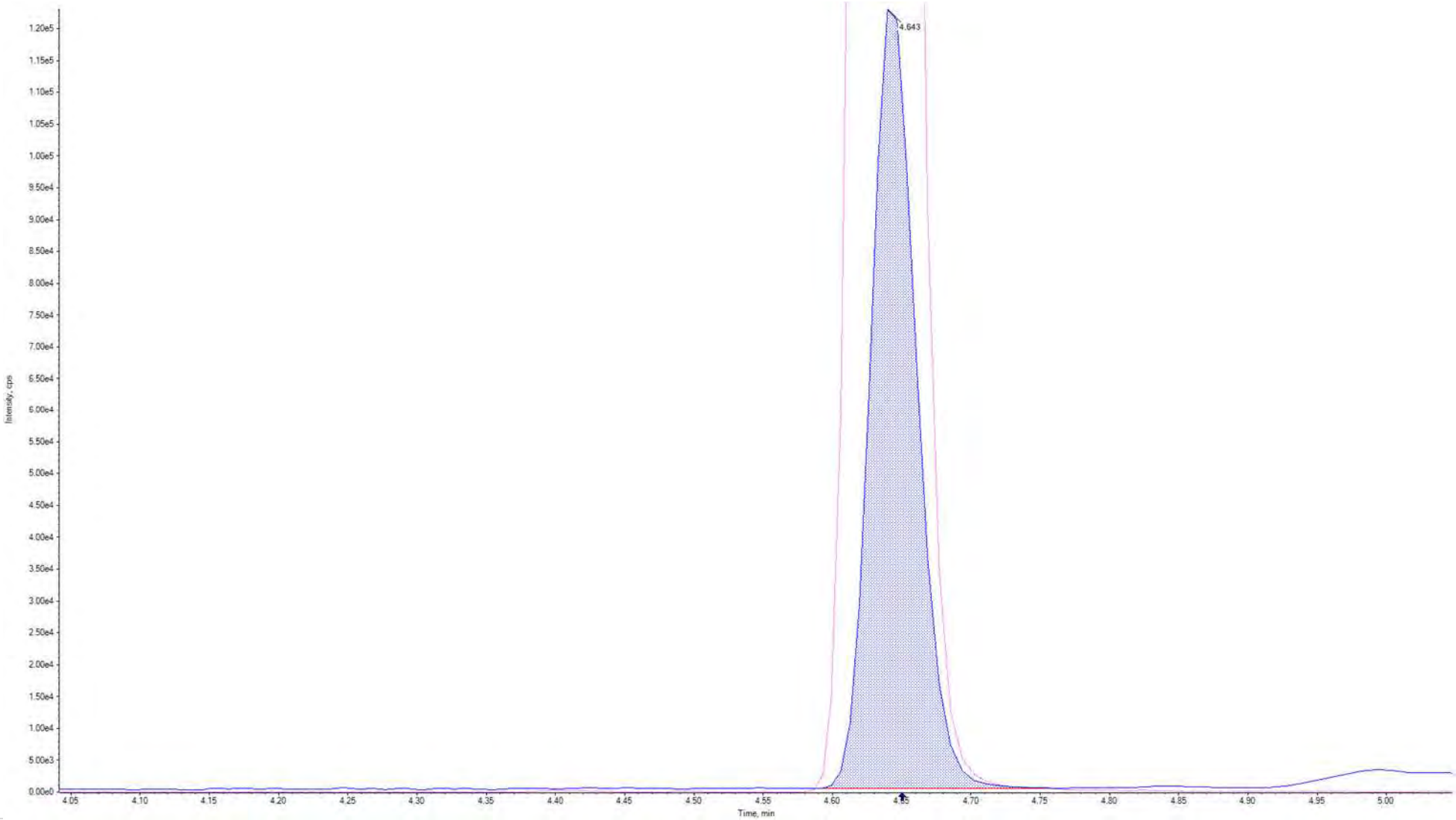
PFPeA
Sample: IA1633STD-.5 S/N:1220.7 Points Across peak:26



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PFPeA_2
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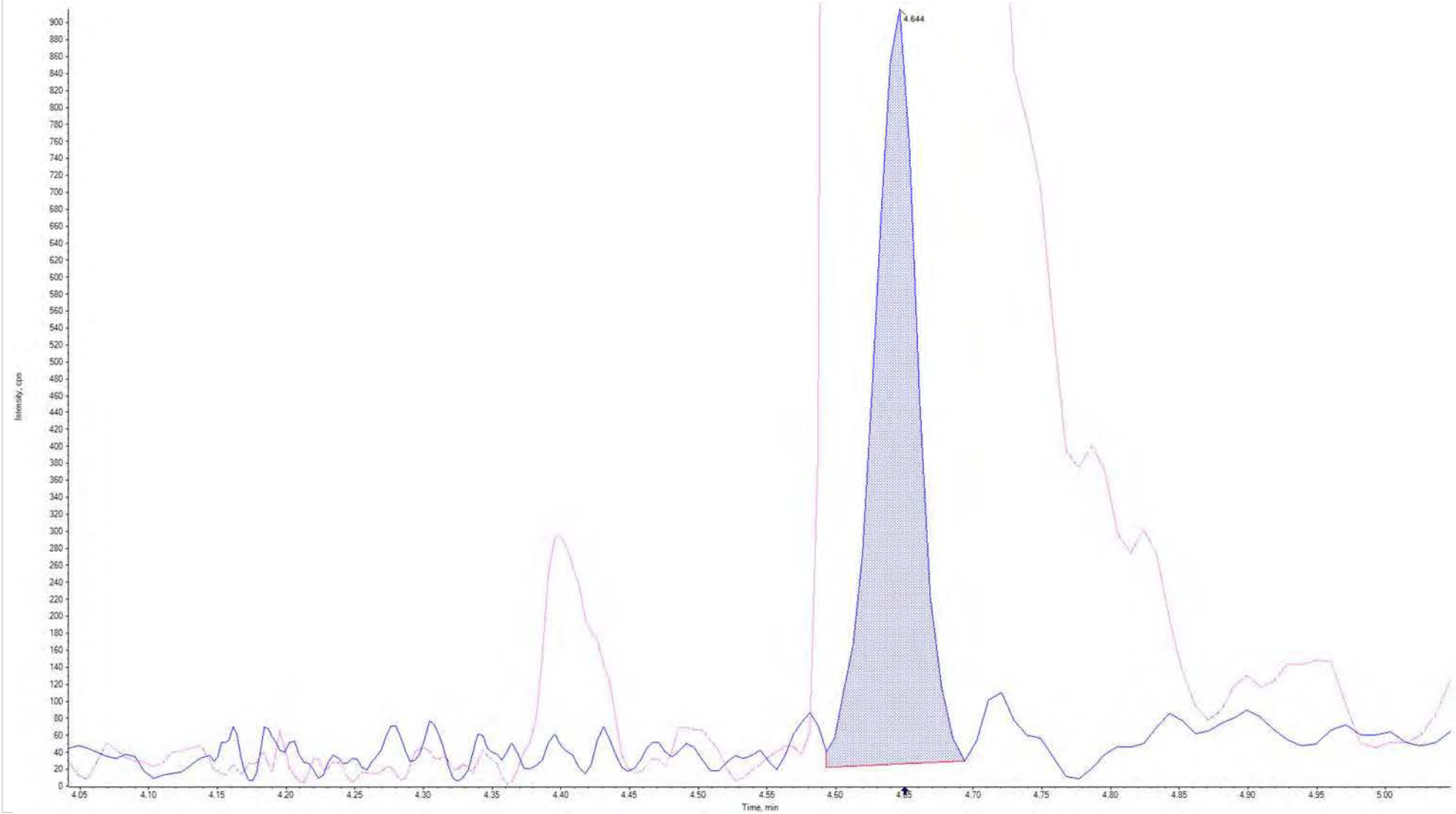

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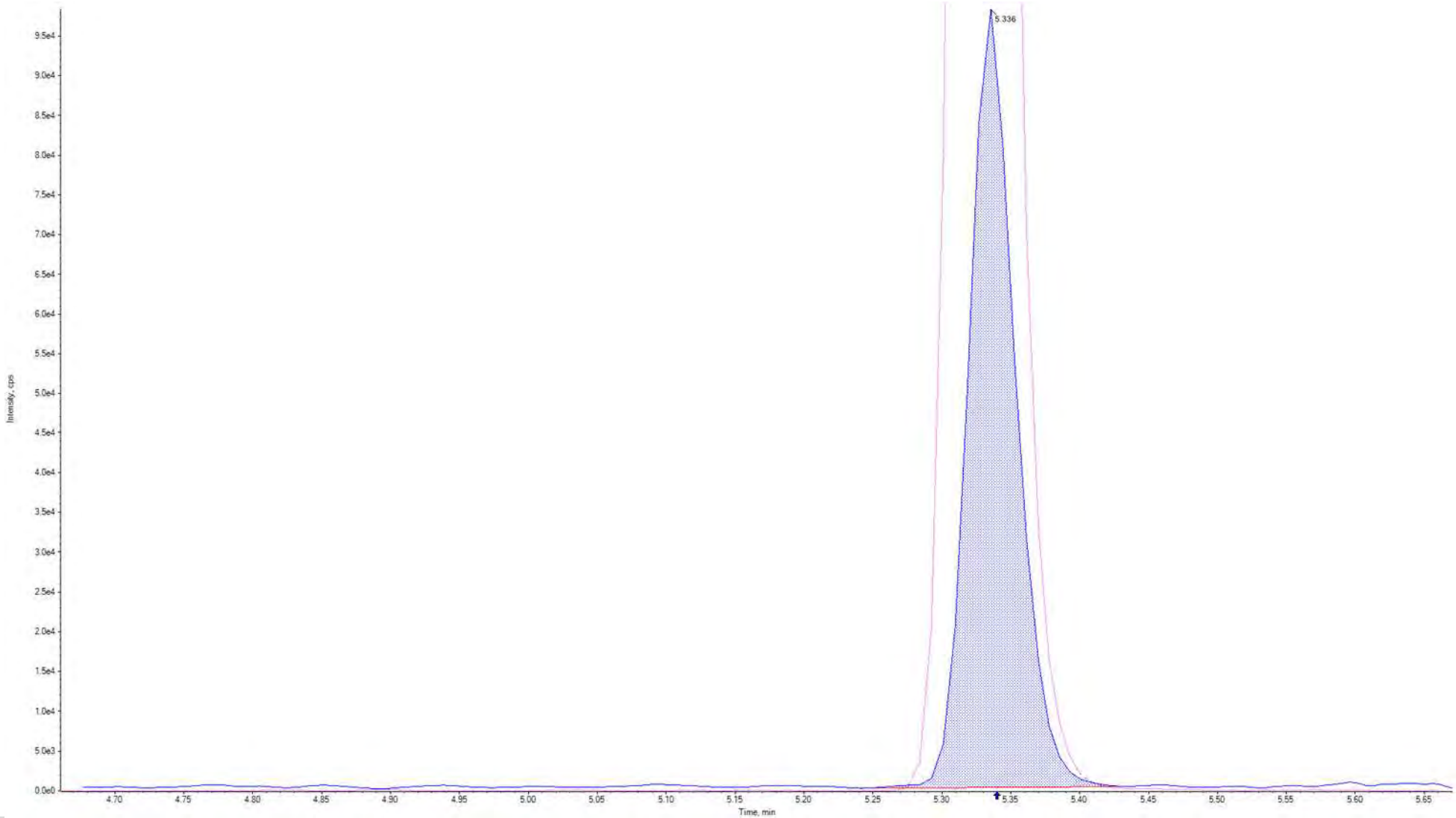
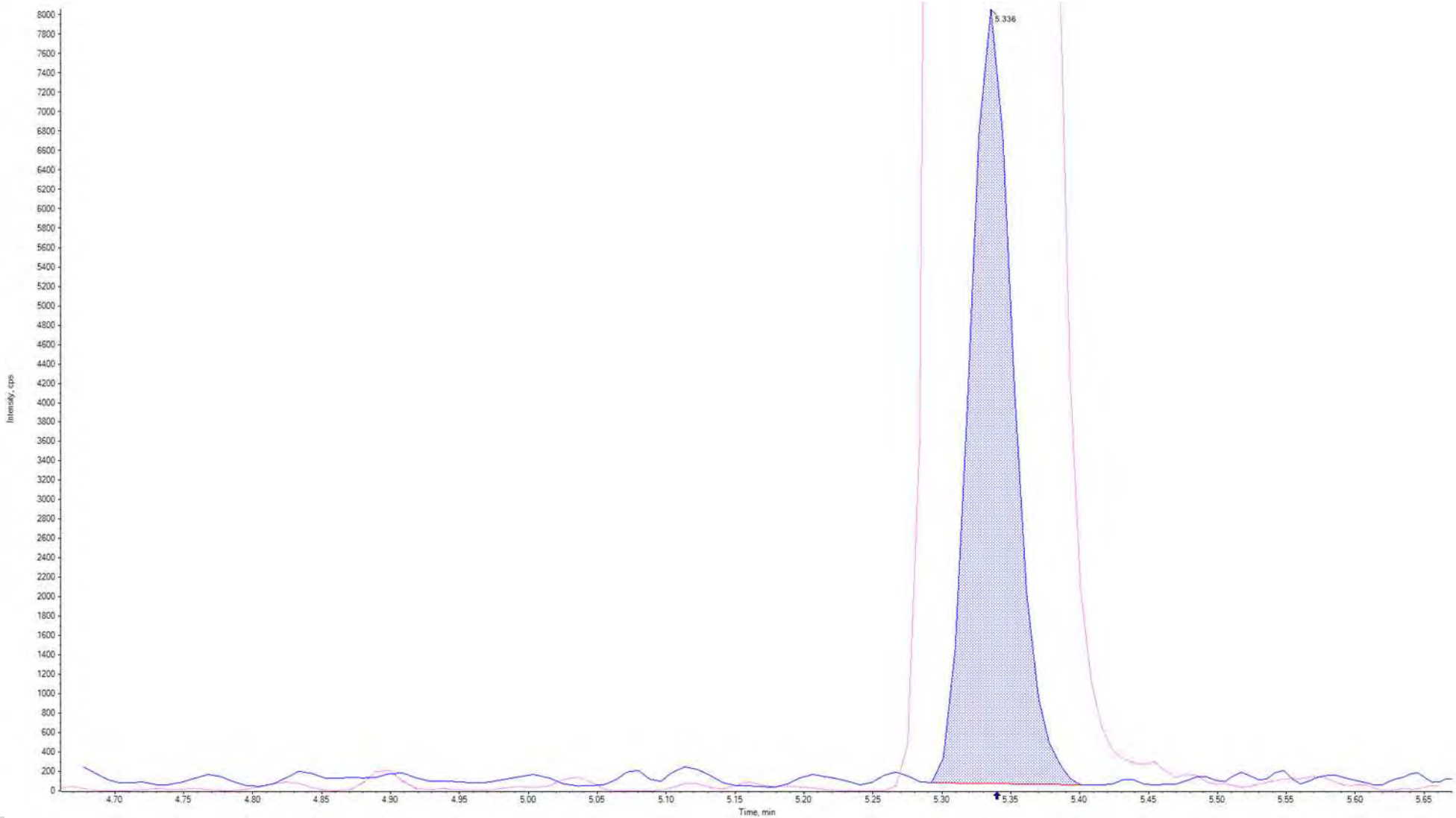
PFHxA
Sample: IA1633STD-.5 S/N:715.9 Points Across peak:24



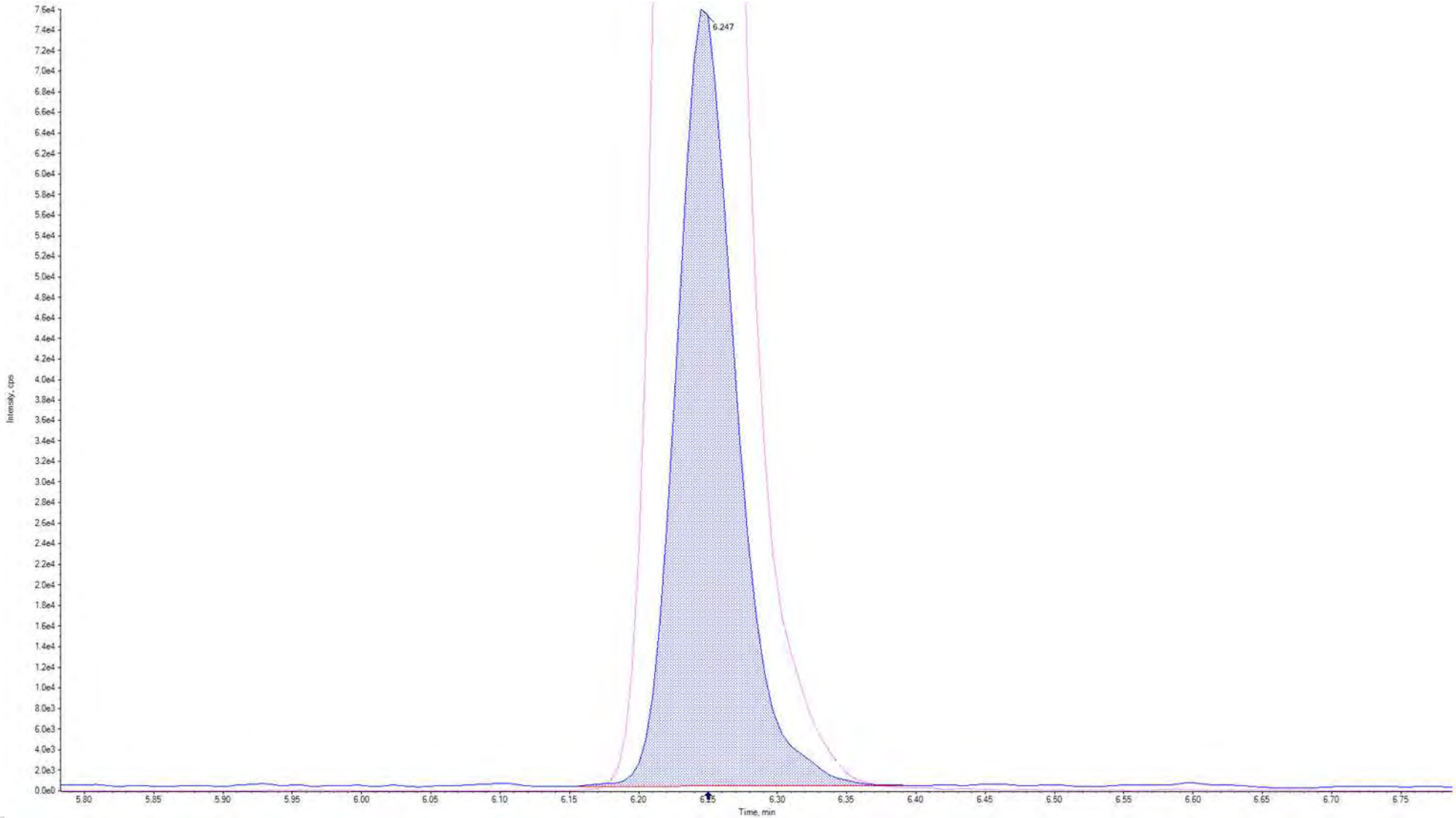
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFHxA_2
Sample: IA1633STD-.5 S/N:312.1 Points Across peak:14



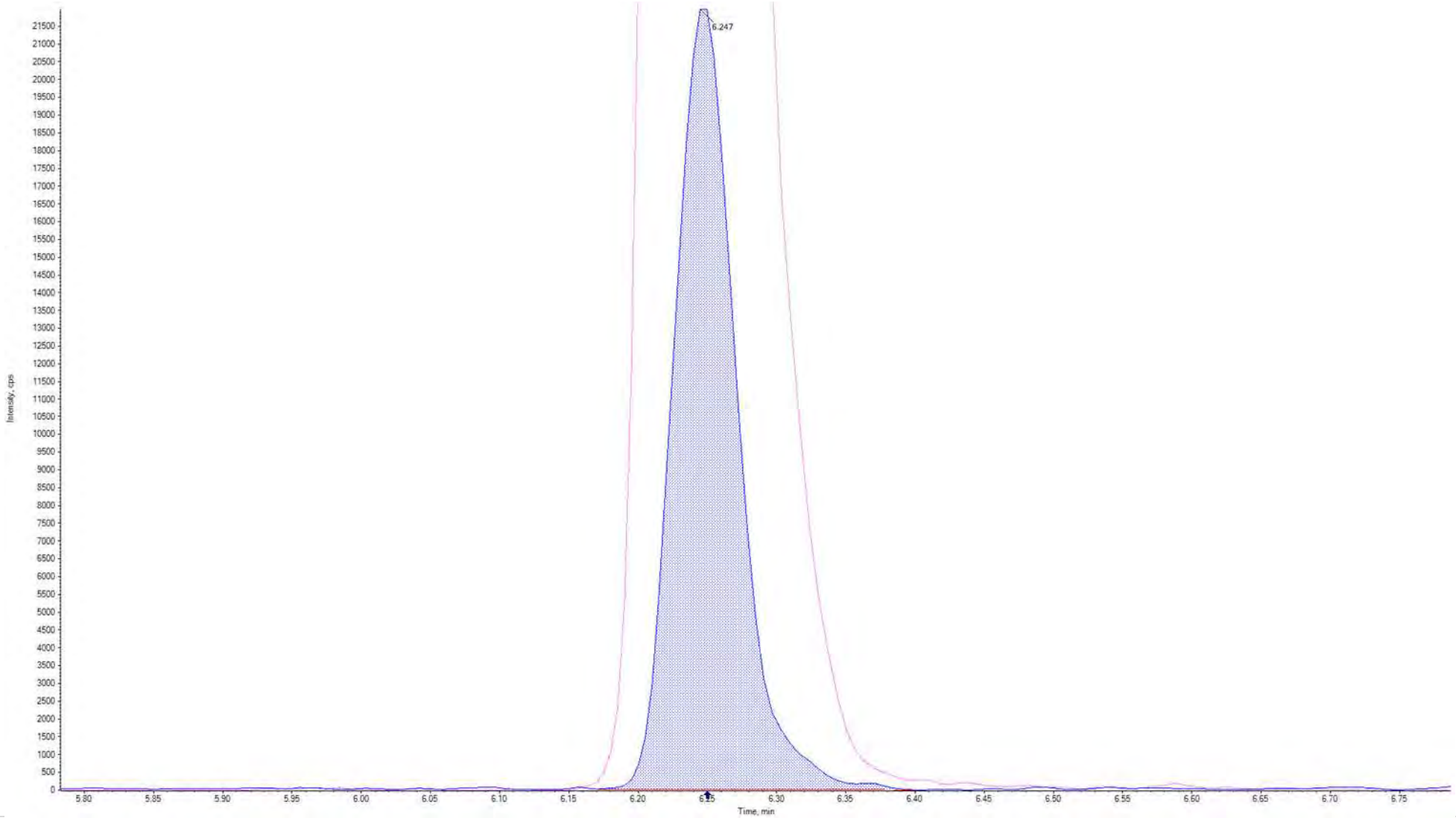
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFHpA
Sample: IA1633STD-.5 S/N:1127.8 Points Across peak:45



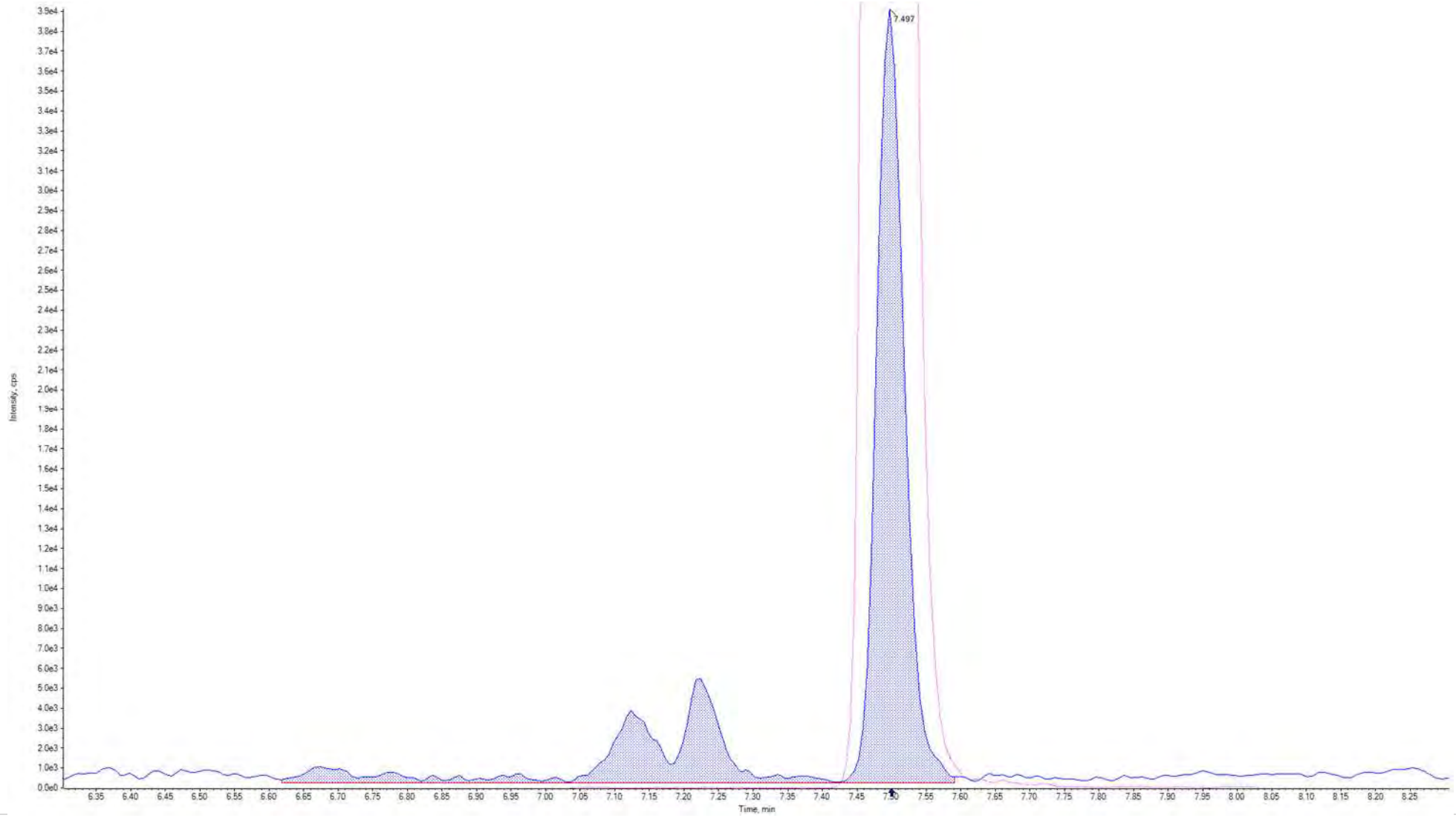
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFHpA_2
Sample: IA1633STD-.5 S/N:2667.2 Points Across peak:41



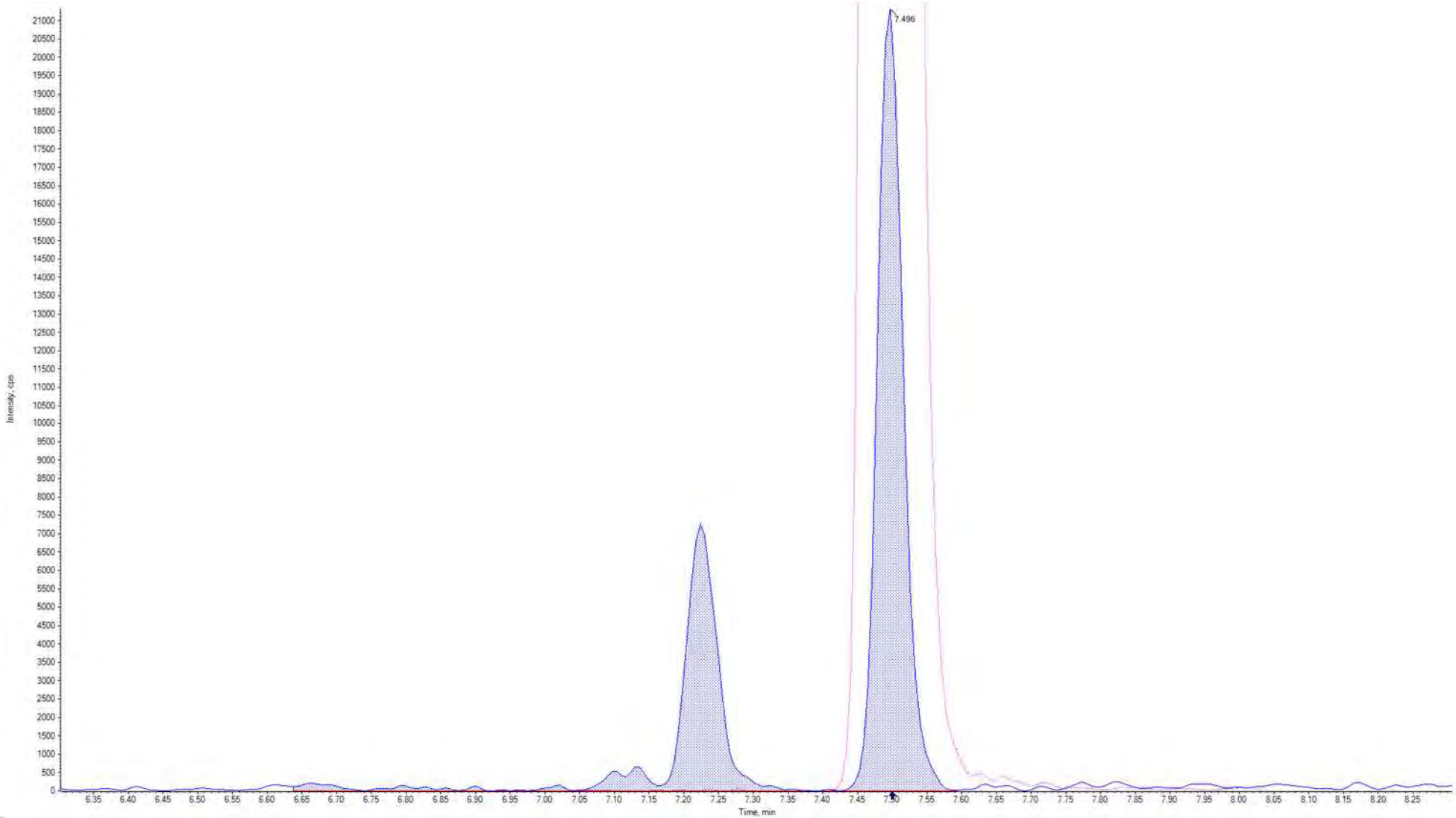
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFOA
Sample: IA1633STD-.5 S/N:595.2 Points Across peak:149



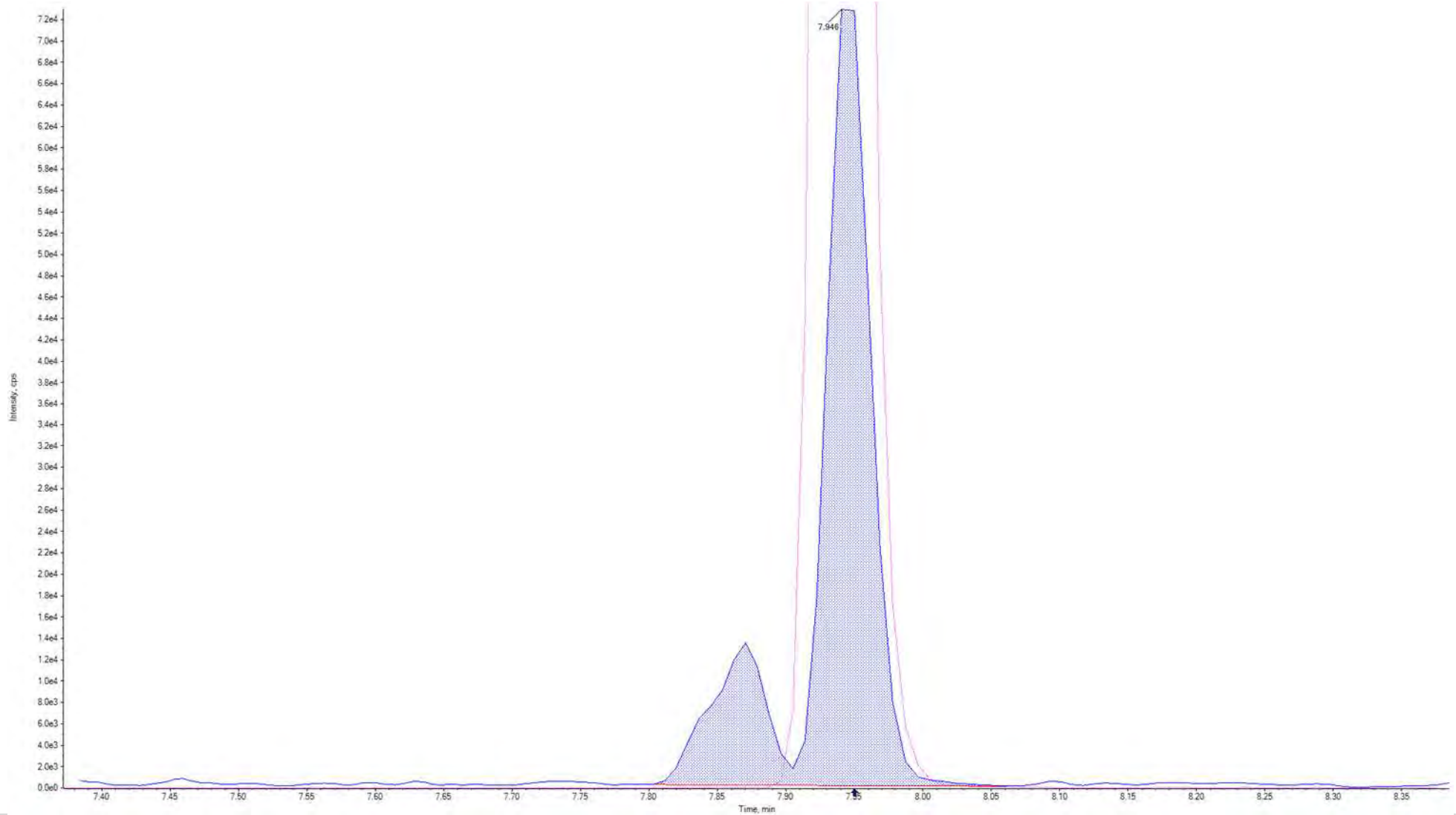
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFOA_2
Sample: IA1633STD-.5 S/N:7540.9 Points Across peak:148



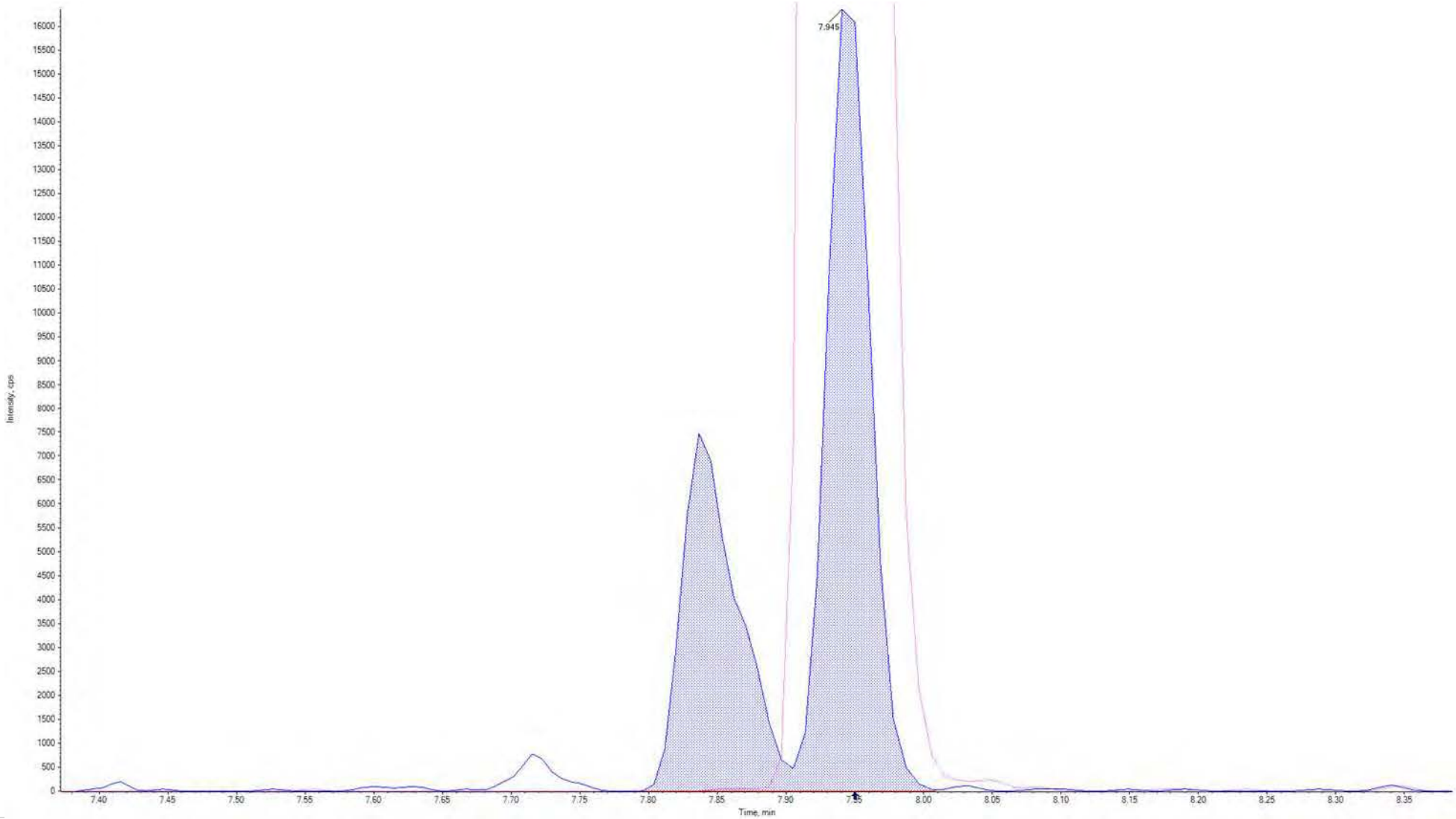
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFNA
Sample: IA1633STD-.5 S/N:709.4 Points Across peak:32



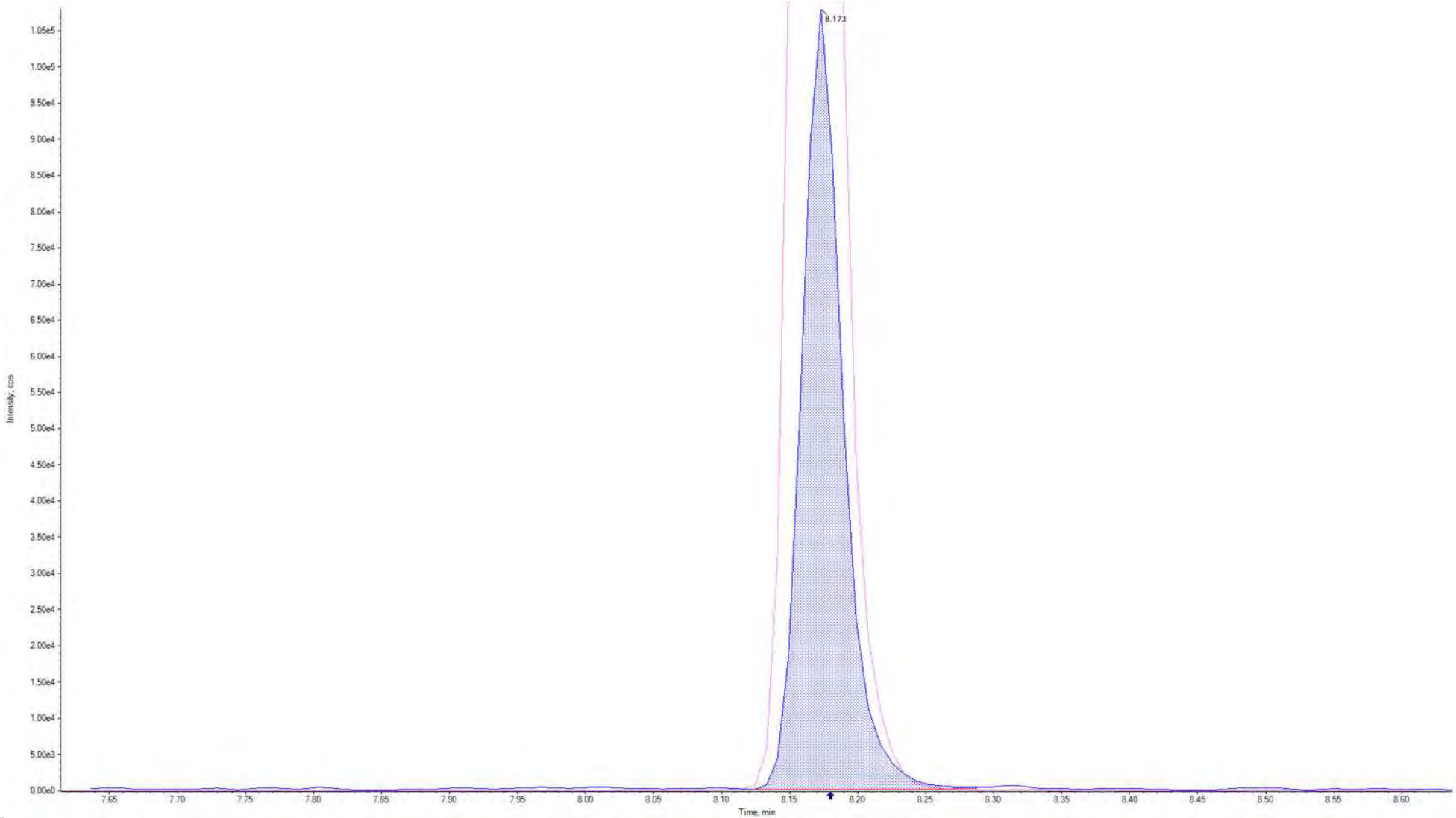
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFNA_2
Sample: IA1633STD-.5 S/N:163954.4 Points Across peak:27



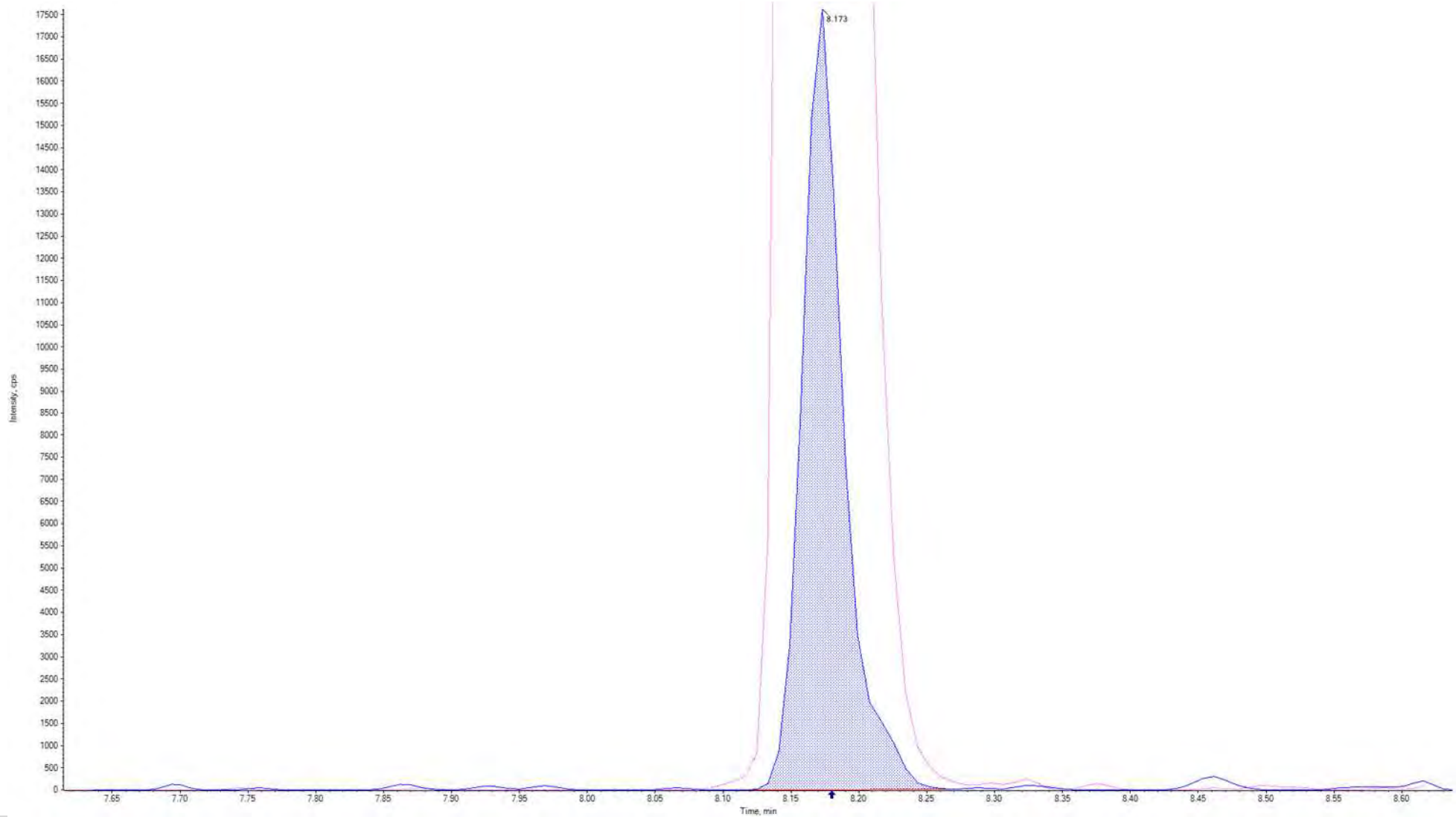
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFDA
Sample: IA1633STD-.5 S/N:1669.0 Points Across peak:21



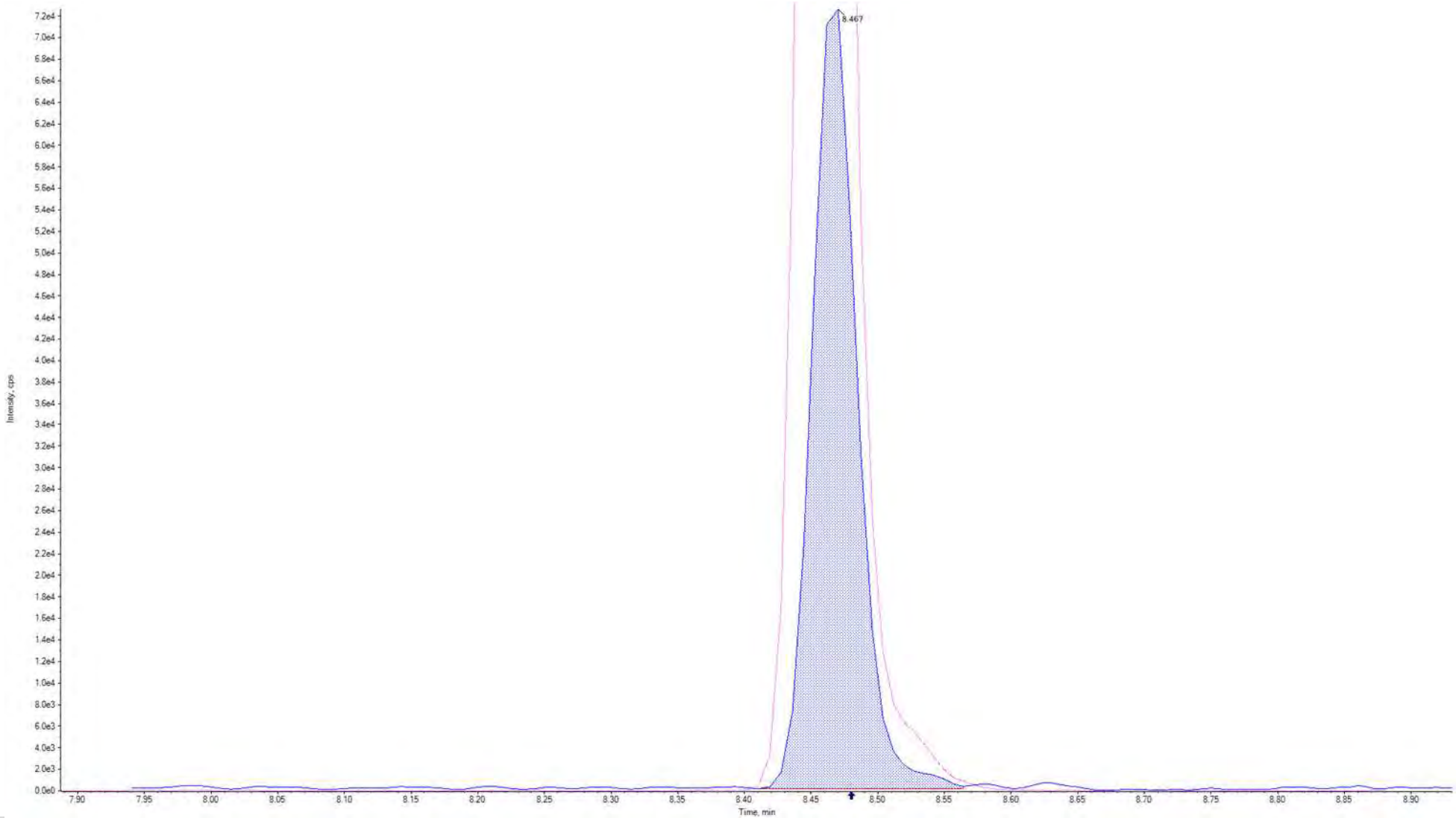
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFDA_2
Sample: IA1633STD-.5 S/N:678.1 Points Across peak:20



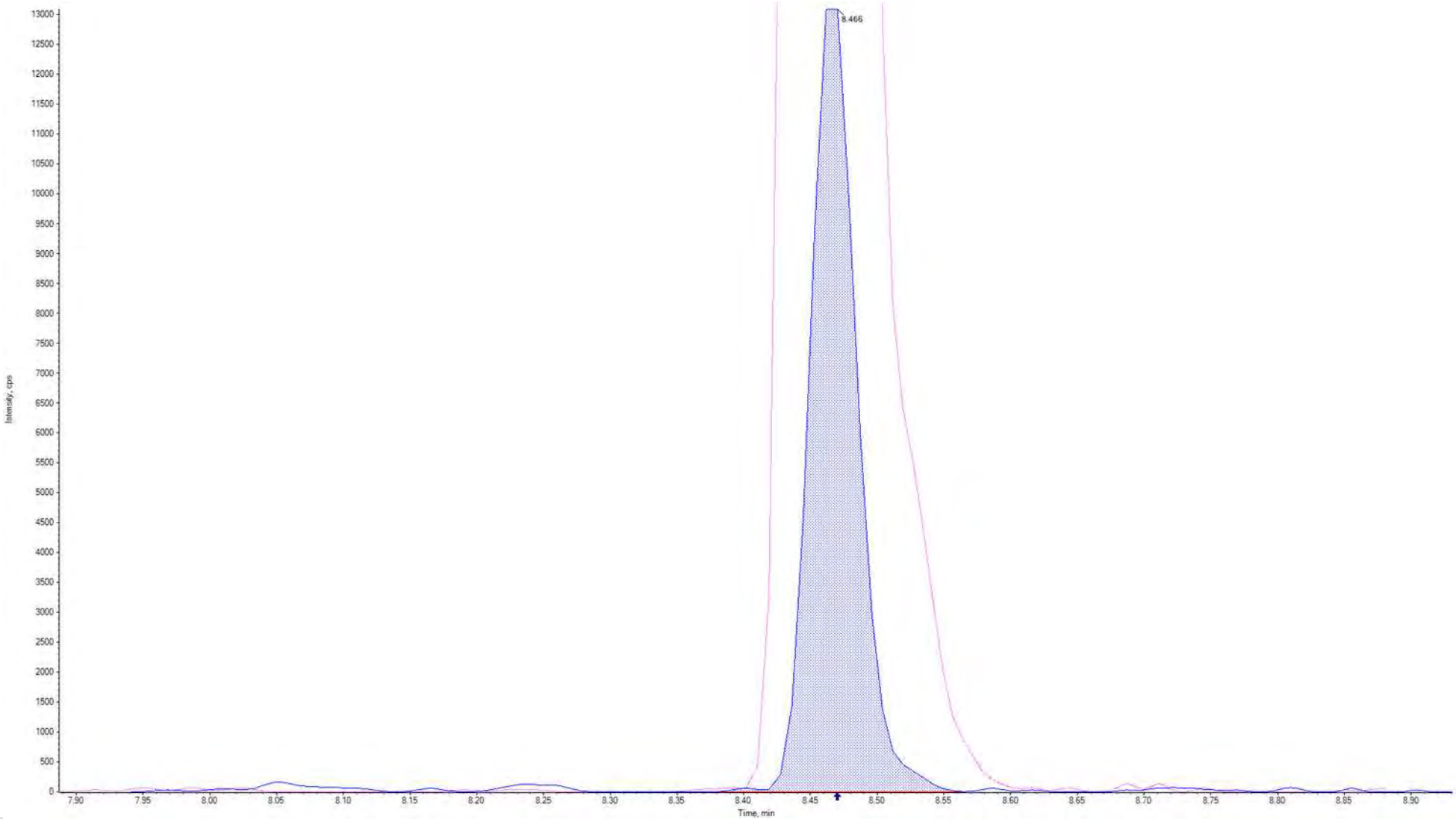
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFUnA
Sample: IA1633STD-.5 S/N:1324.0 Points Across peak:20



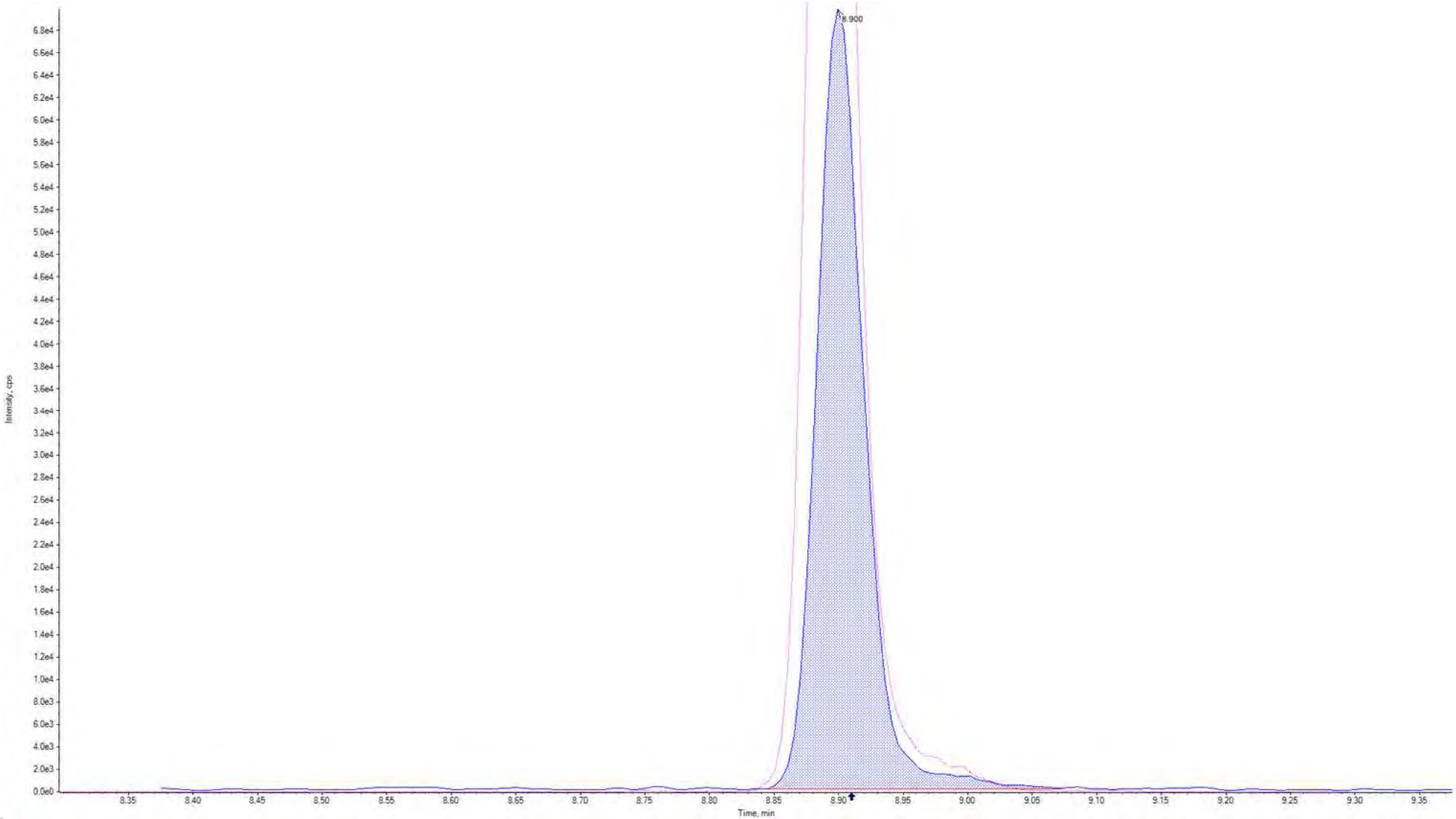
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFUnA_2
Sample: IA1633STD-.5 S/N:679.0 Points Across peak:25



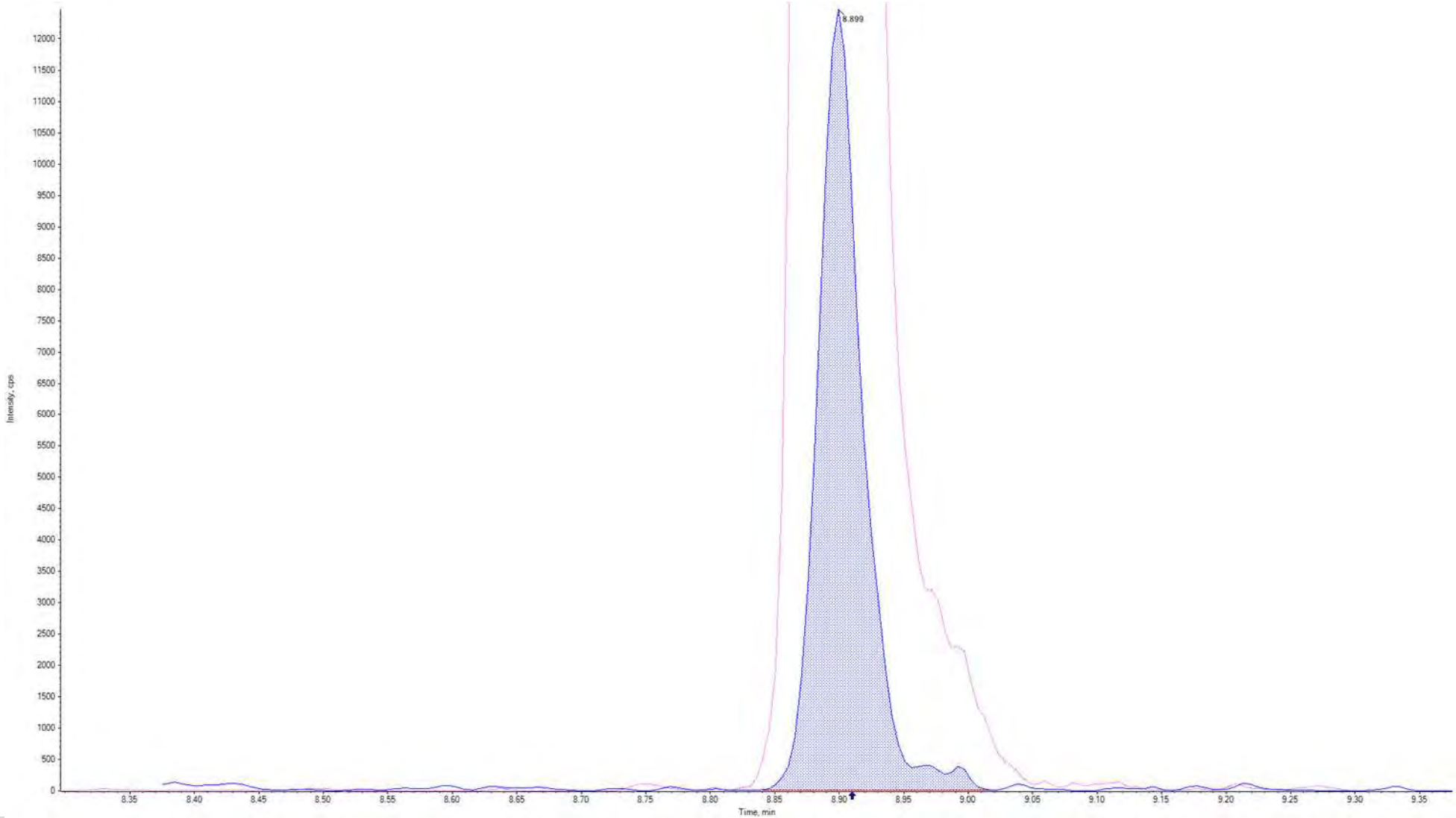
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFDoA
Sample: IA1633STD-.5 S/N:1604.2 Points Across peak:47



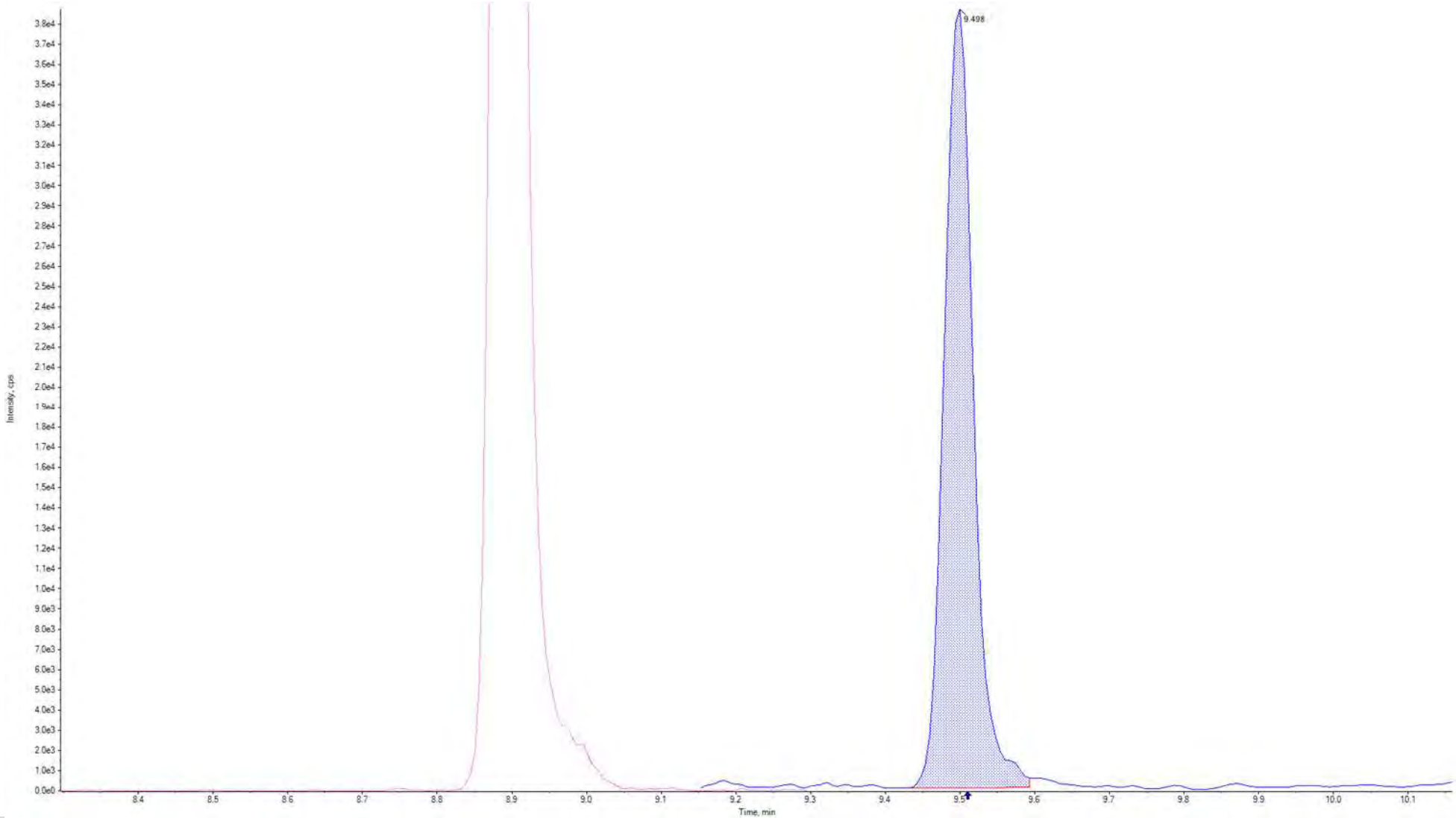
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFDoA_2
Sample: IA1633STD-.5 S/N:4508689.1 Points Across peak:37



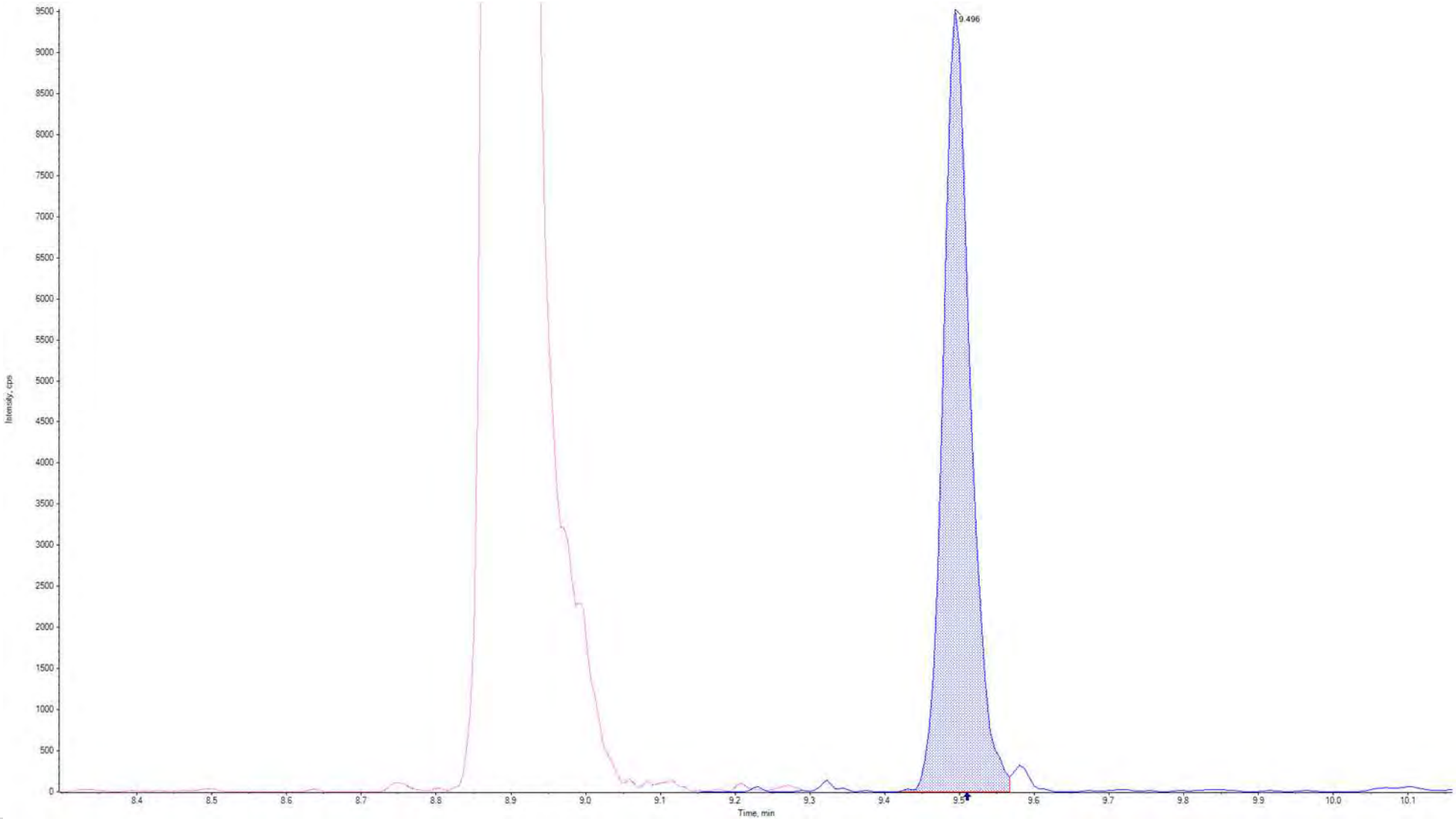
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFTrDA
Sample: IA1633STD-.5 S/N:965.3 Points Across peak:28



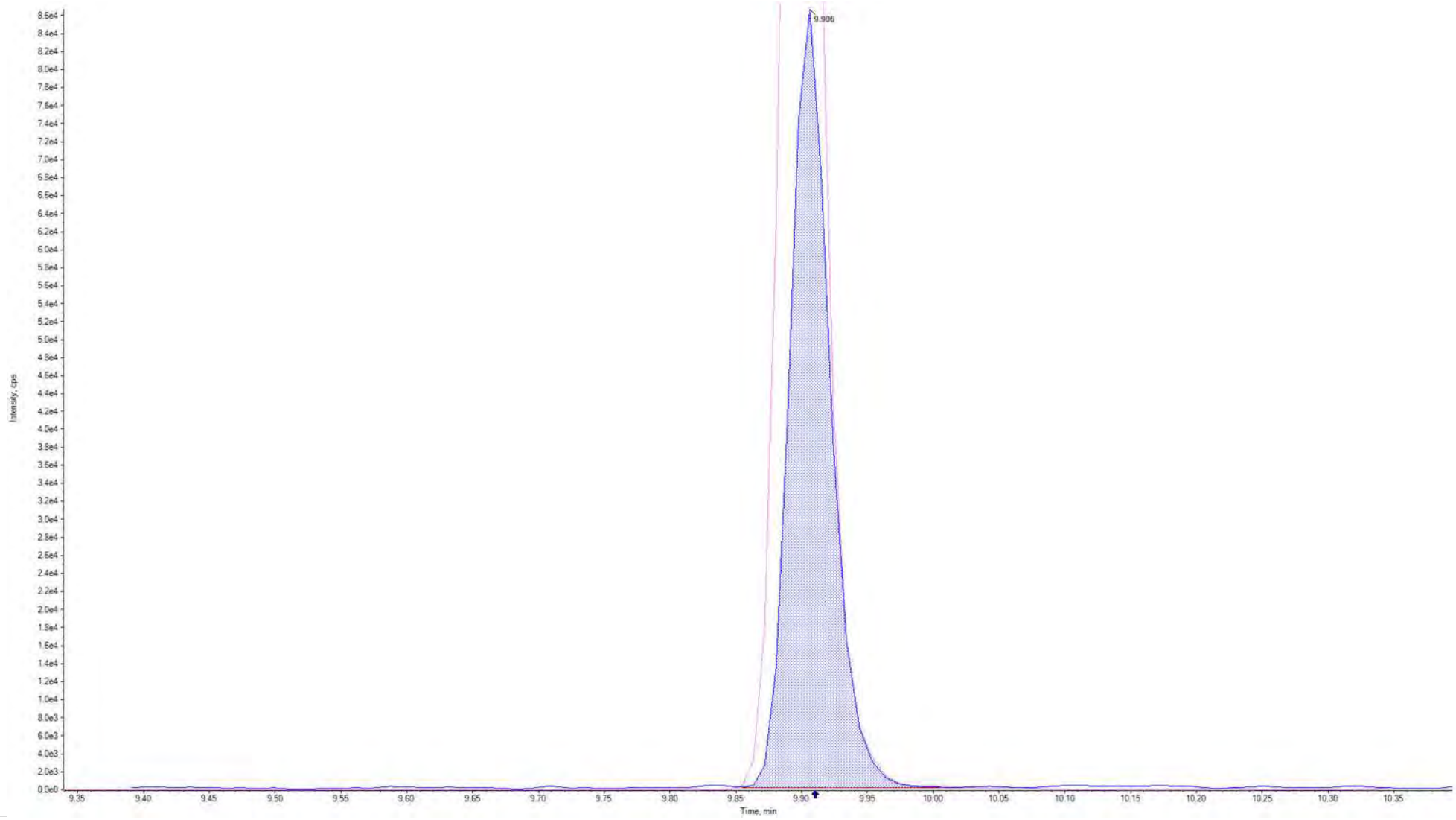
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFTrDA_2
Sample: IA1633STD-.5 S/N:760.0 Points Across peak:29



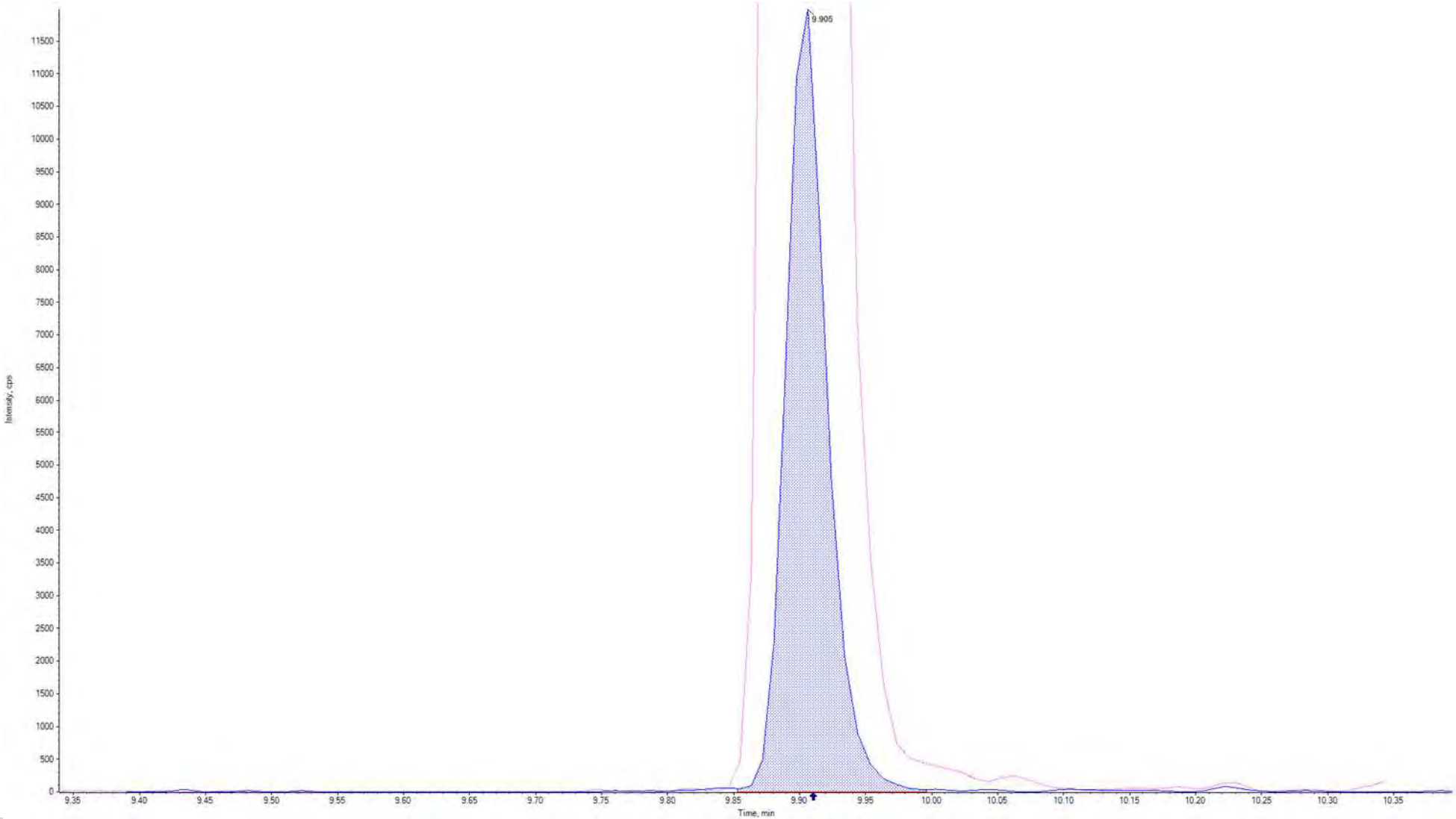
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFTeDA
Sample: IA1633STD-.5 S/N:1068.3 Points Across peak:18



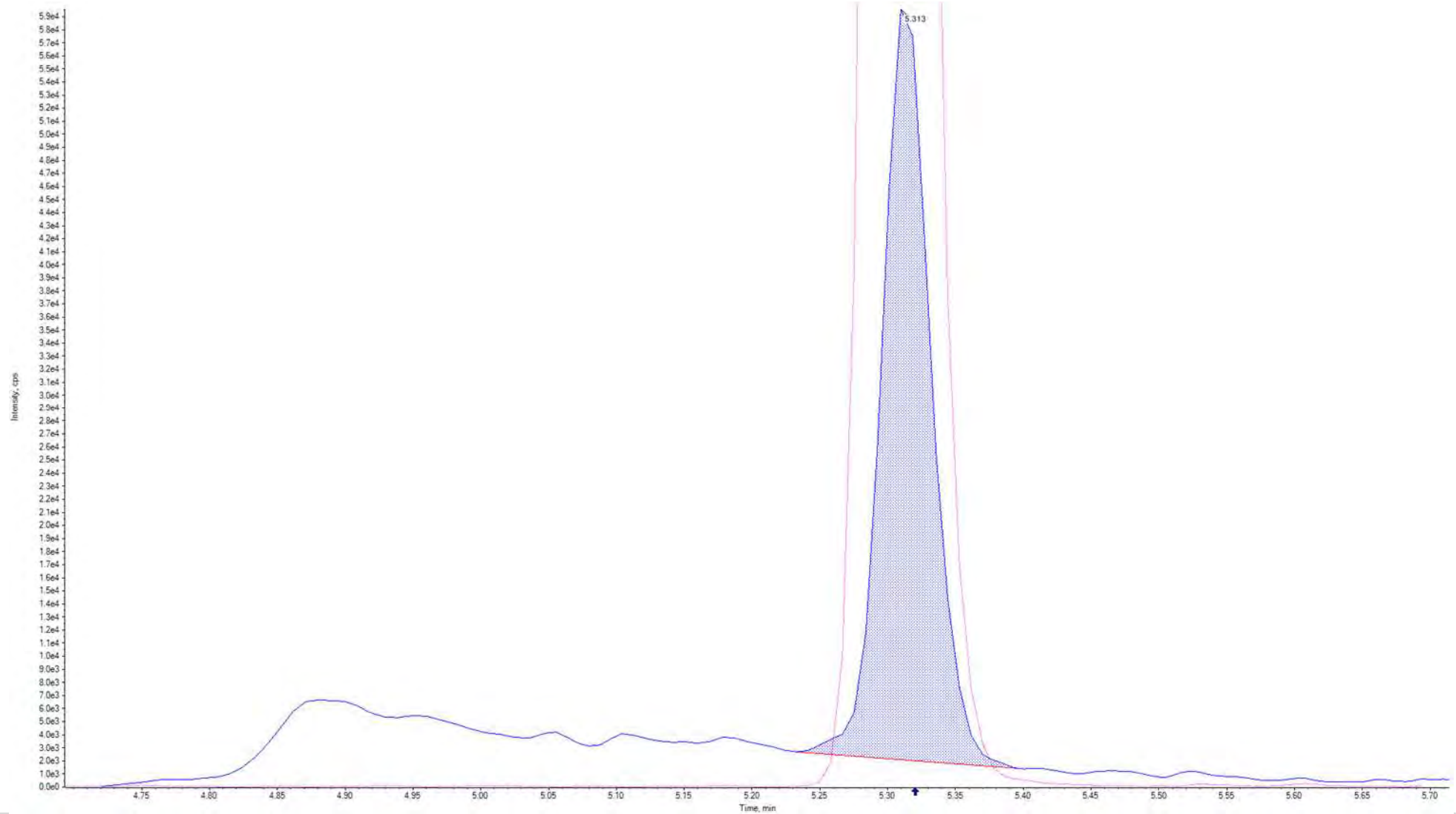
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFTeDA_2
Sample: IA1633STD-.5 S/N:1206.6 Points Across peak:18



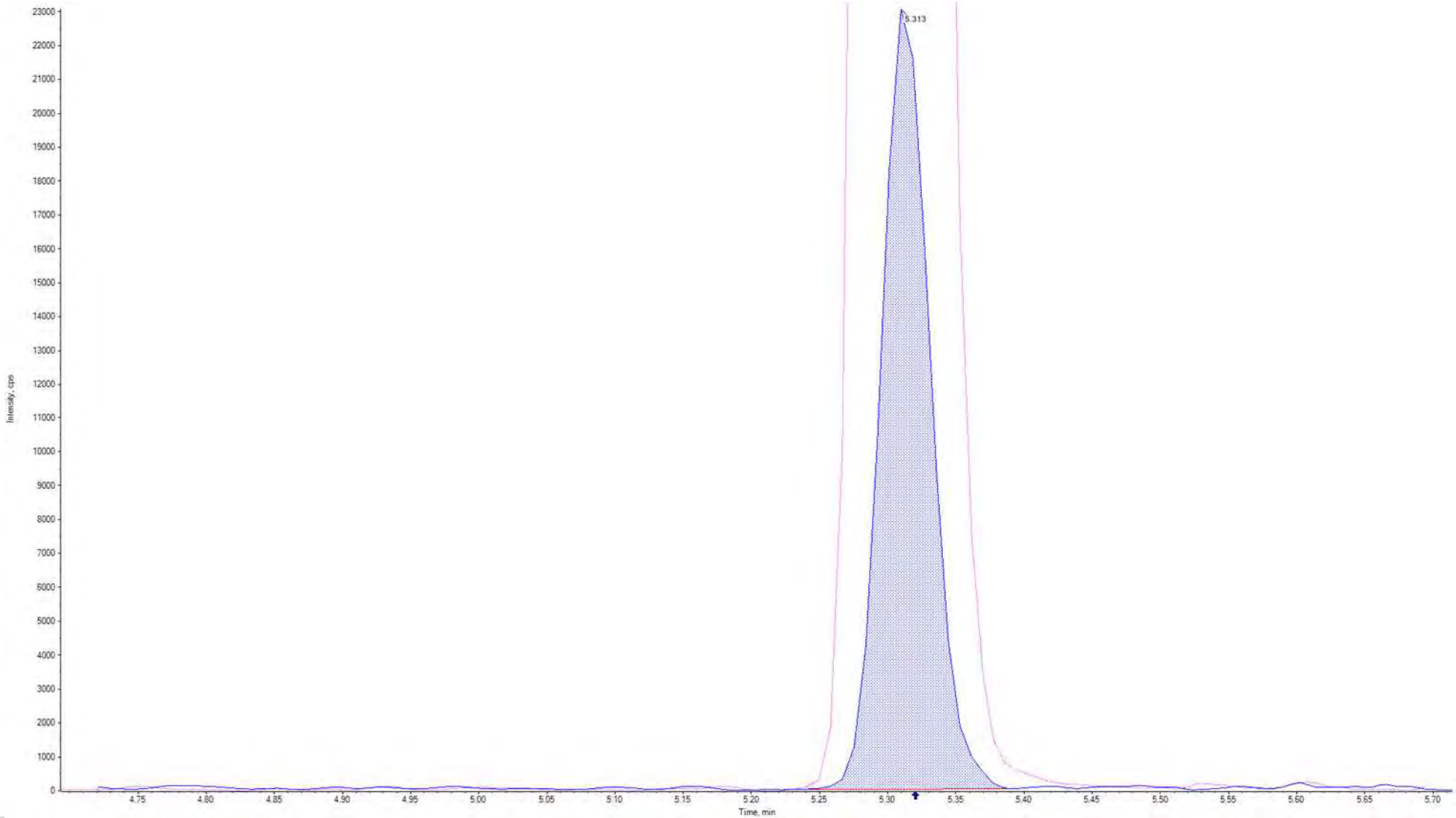
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFBS
Sample: IA1633STD-.5 S/N:71.8 Points Across peak:21



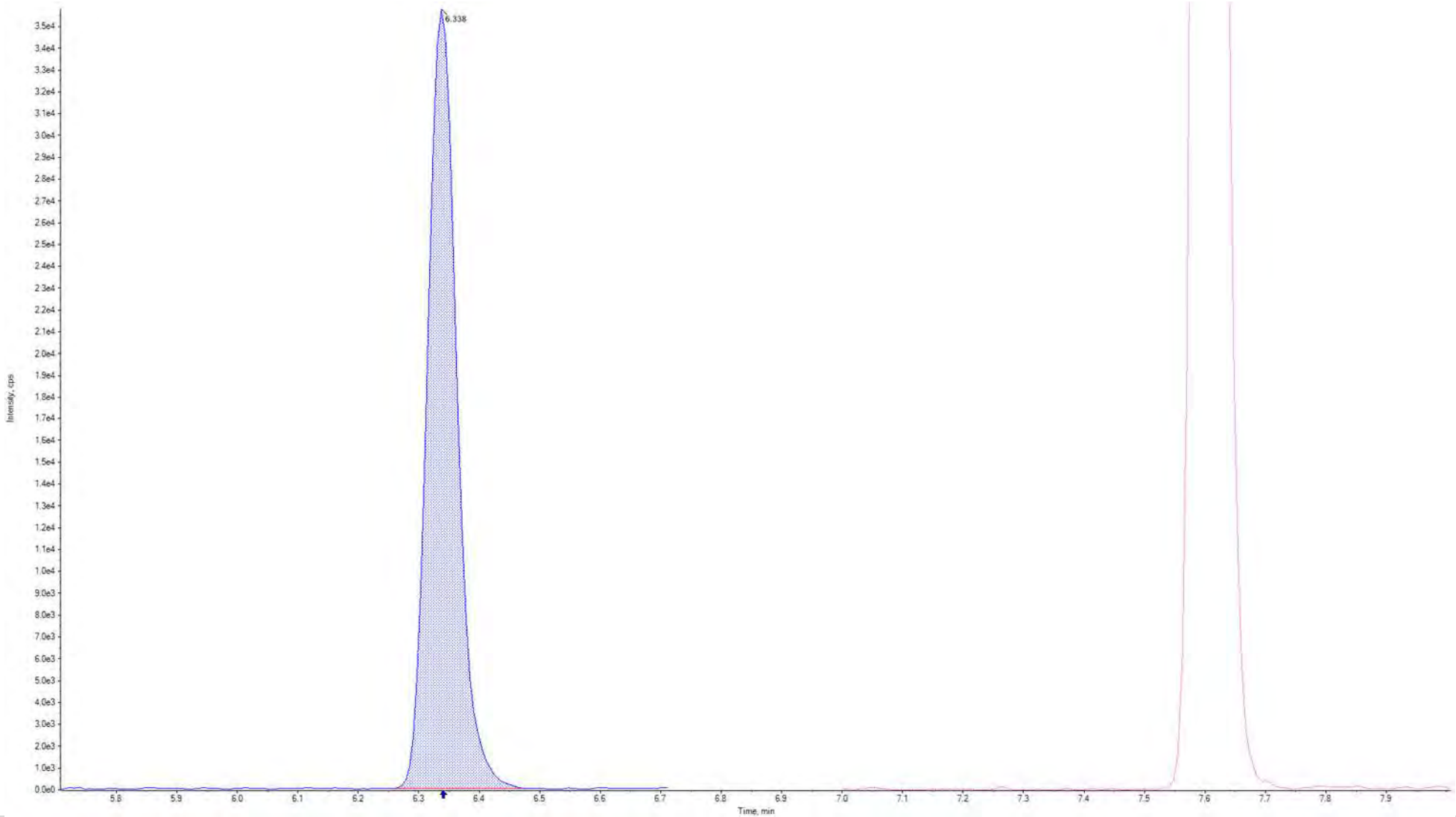
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFBS_2
Sample: IA1633STD-.5 S/N:1370.9 Points Across peak:21



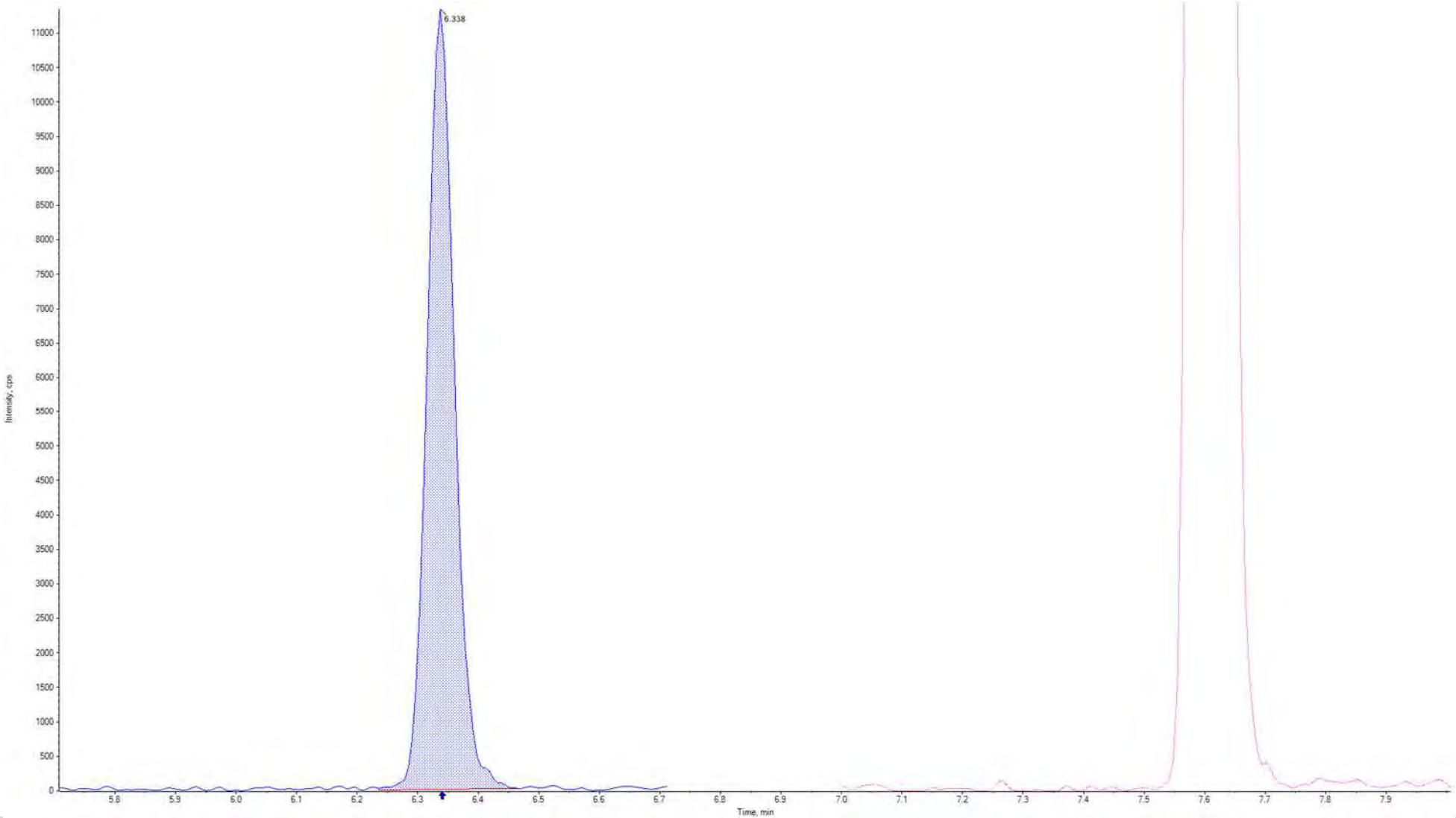
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFPeS
Sample: IA1633STD-.5 S/N:2430.4 Points Across peak:34



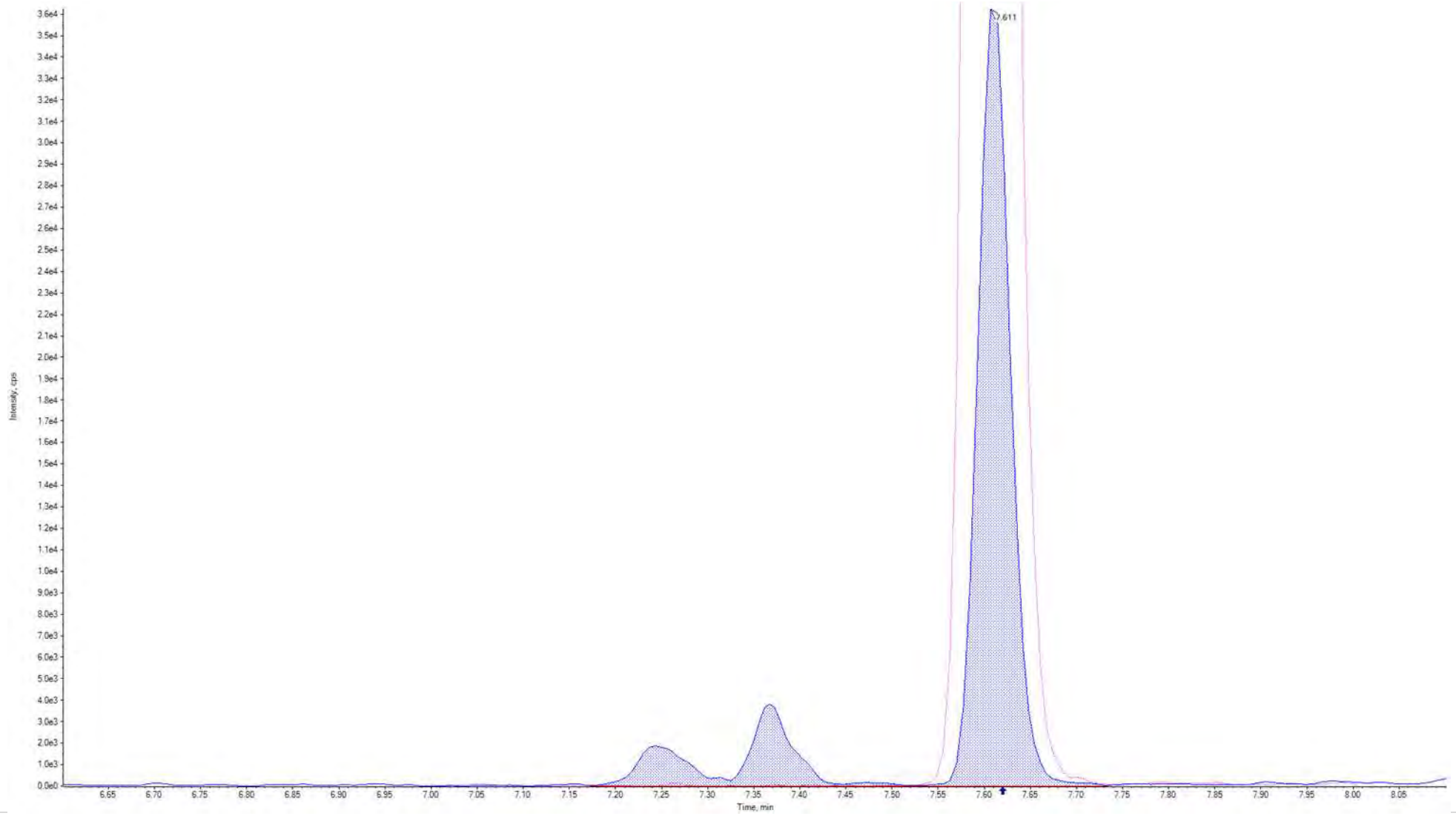
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFPeS_2
Sample: IA1633STD-.5 S/N:3128.2 Points Across peak:37



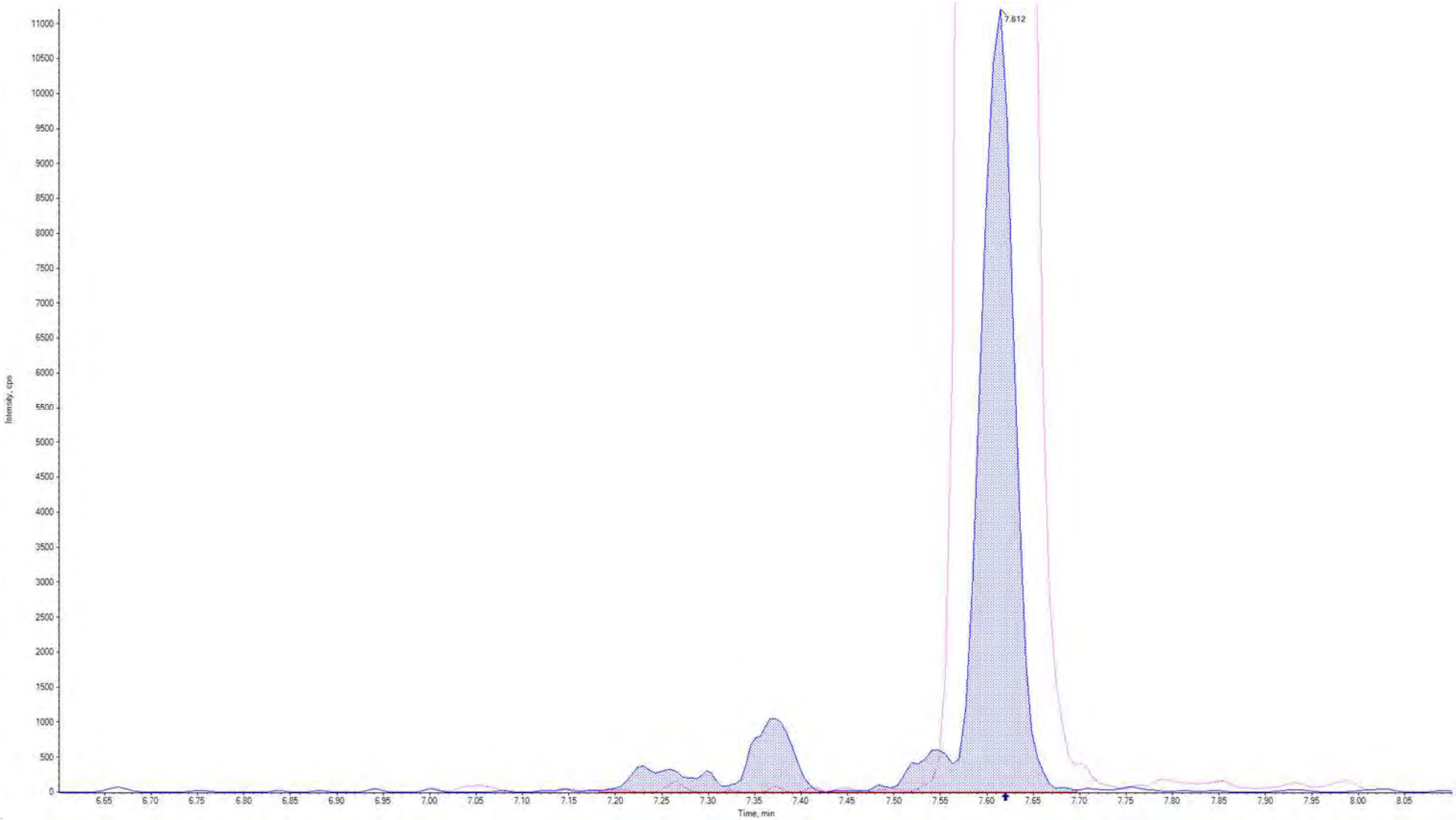
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFHxS
Sample: IA1633STD-.5 S/N:9640.4 Points Across peak:91



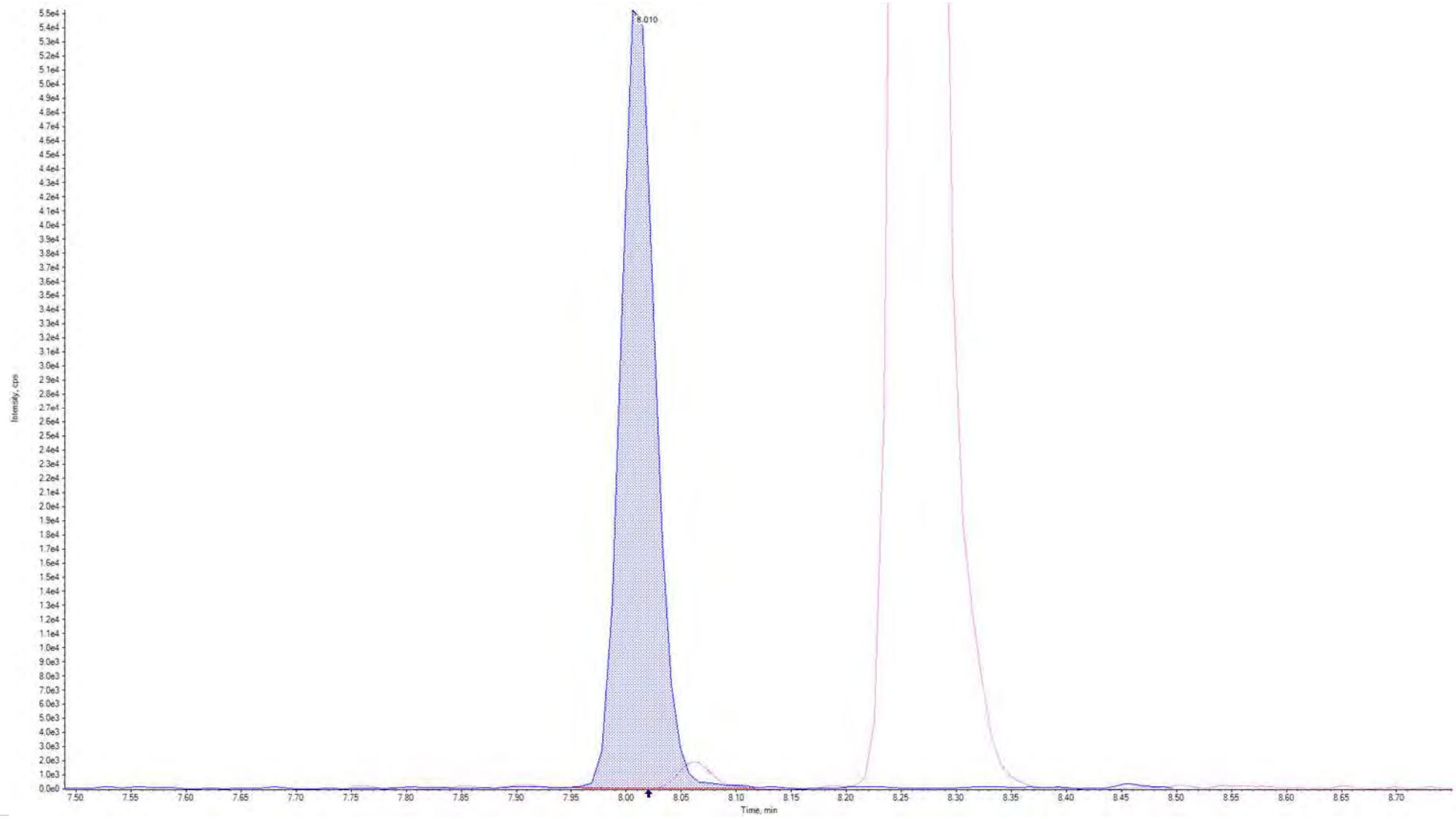
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFHxS_2
Sample: IA1633STD-.5 S/N:3419231.4 Points Across peak:84



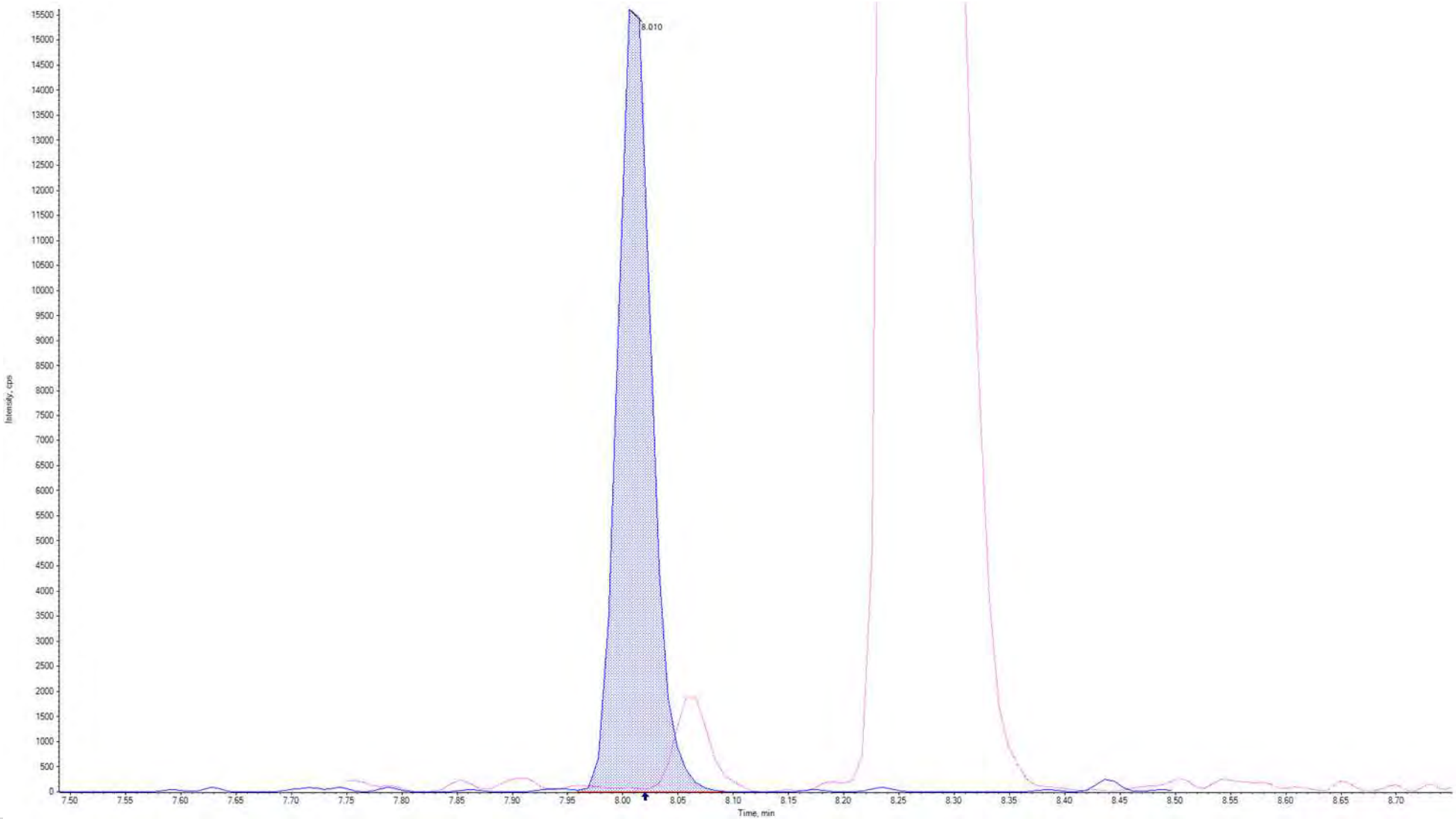
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFHpS
Sample: IA1633STD-.5 S/N:2652.9 Points Across peak:21



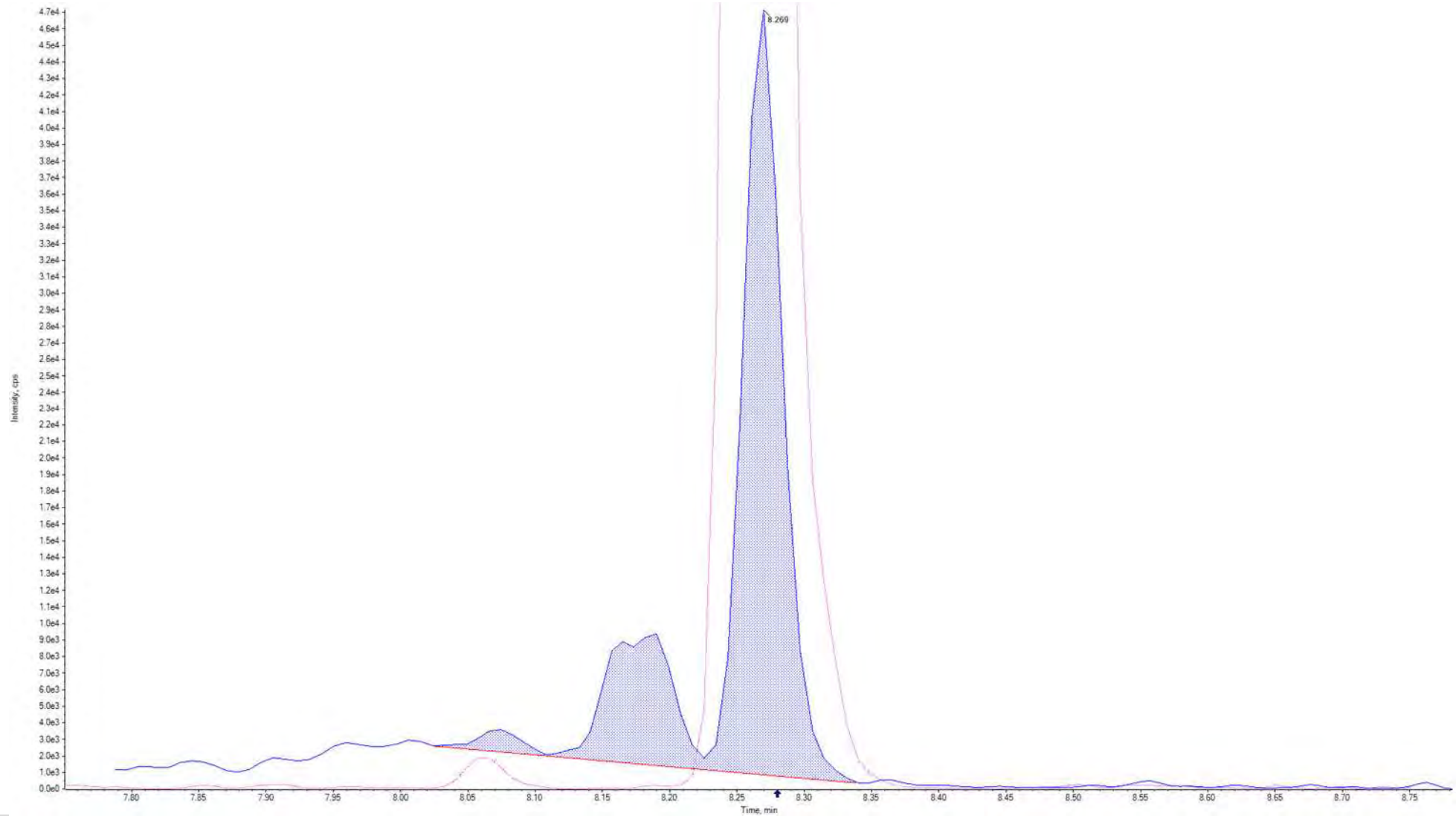
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFHpS_2
Sample: IA1633STD-.5 S/N:783.3 Points Across peak:19



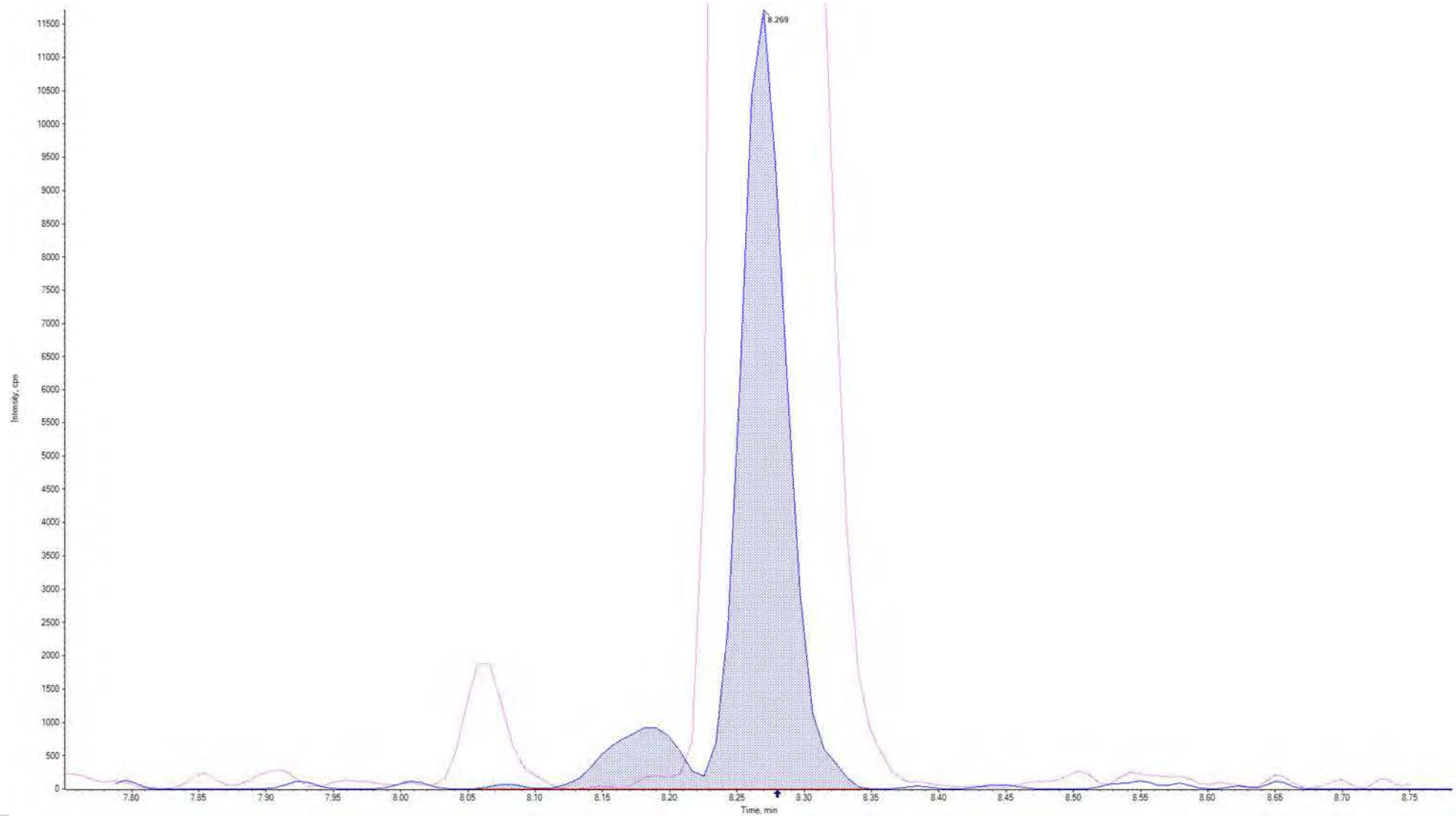
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFOS
Sample: IA1633STD-.5 S/N:1030.1 Points Across peak:38



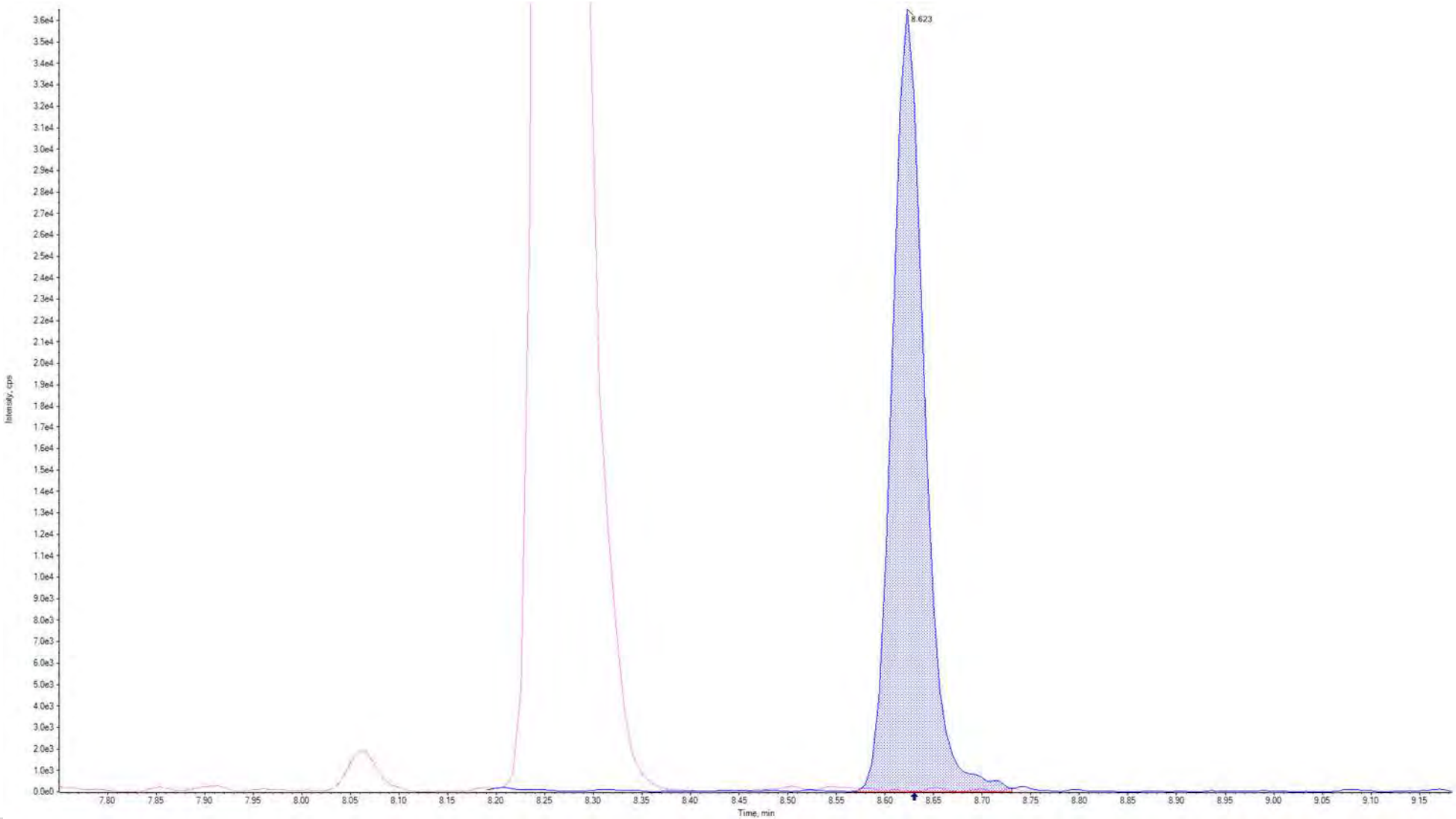
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFOS_2
Sample: IA1633STD-.5 S/N:522.8 Points Across peak:37



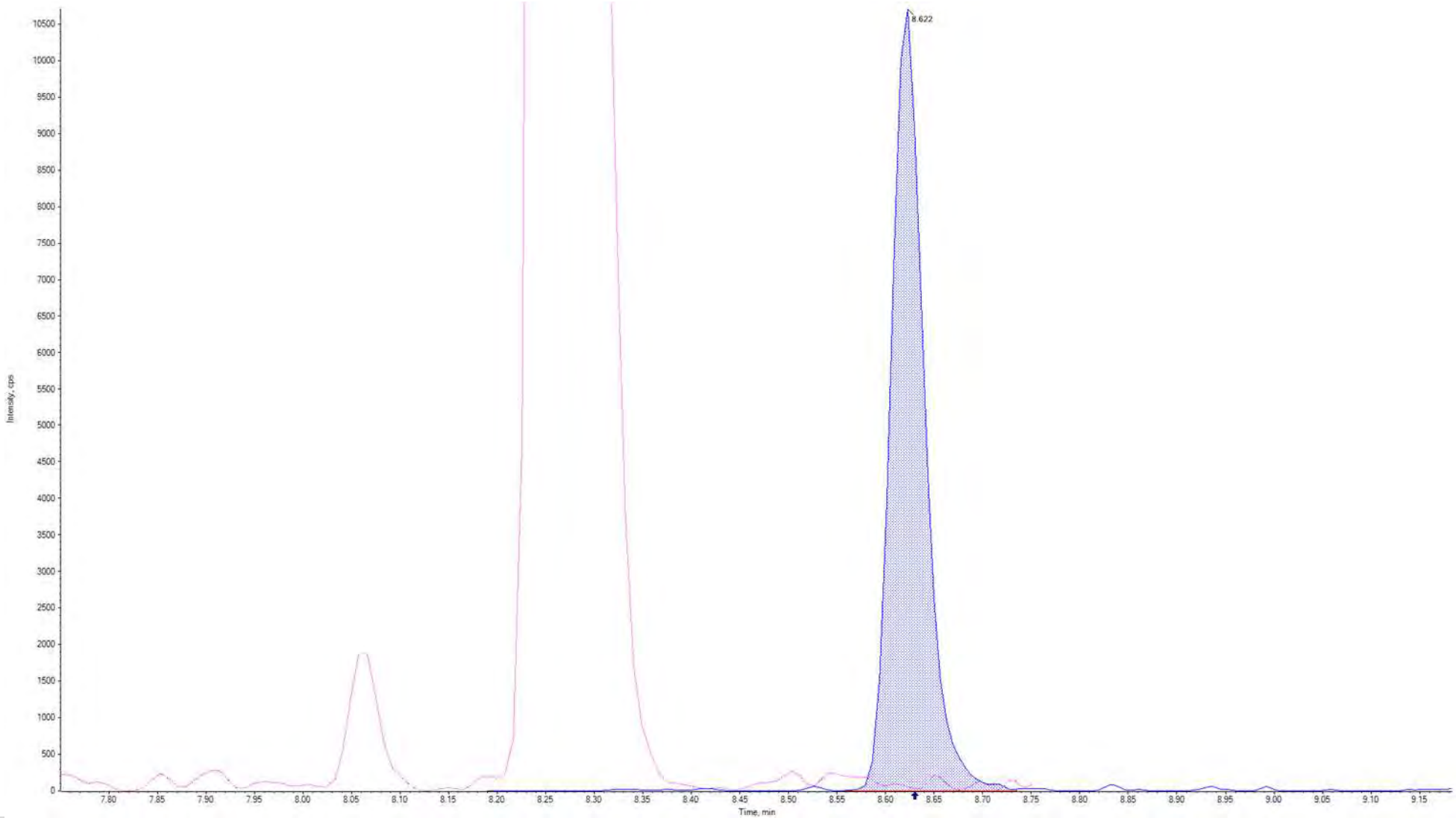
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFNS
Sample: IA1633STD-.5 S/N:11144.4 Points Across peak:27



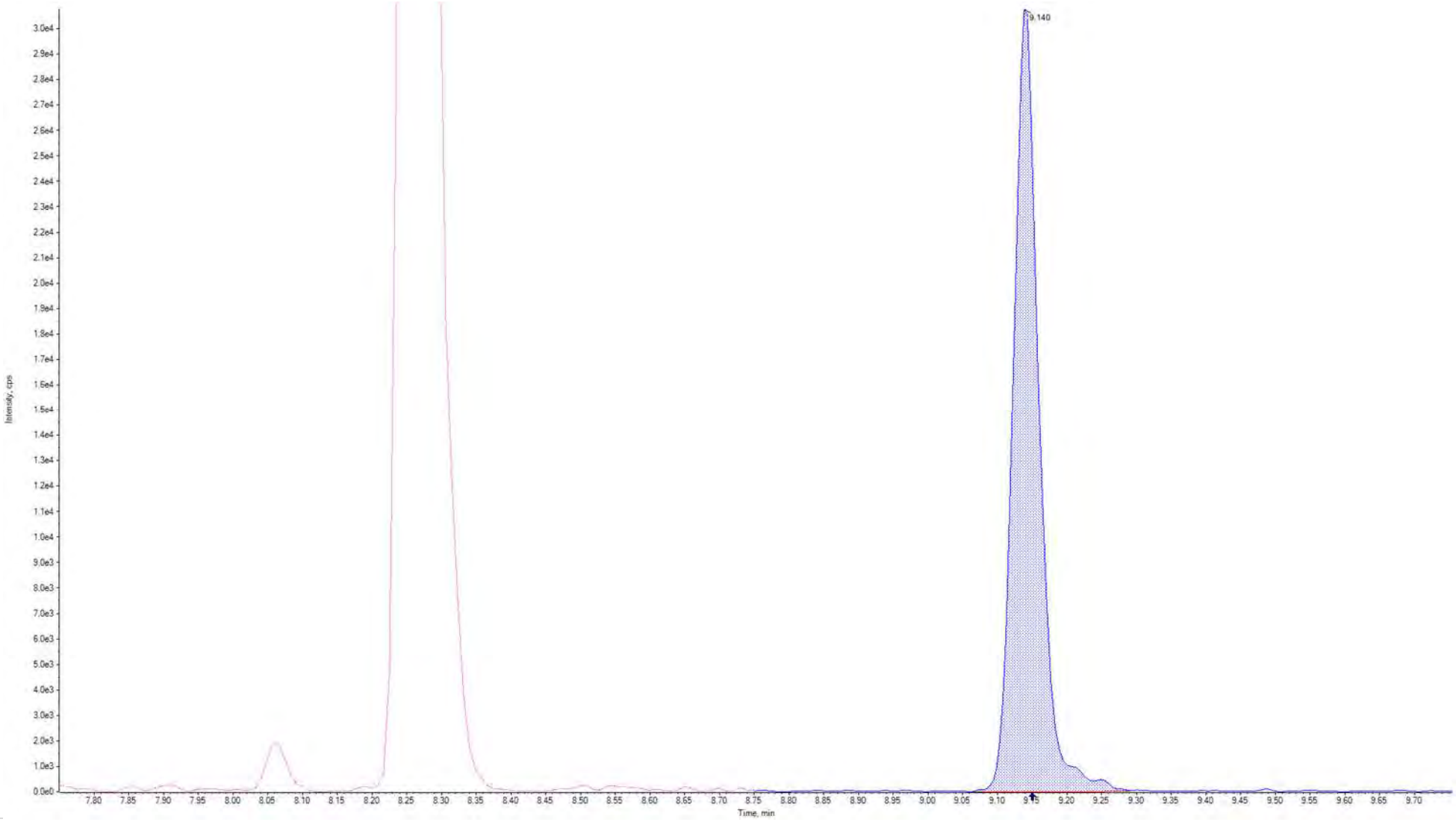
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFNS_2
Sample: IA1633STD-.5 S/N:1154.6 Points Across peak:30



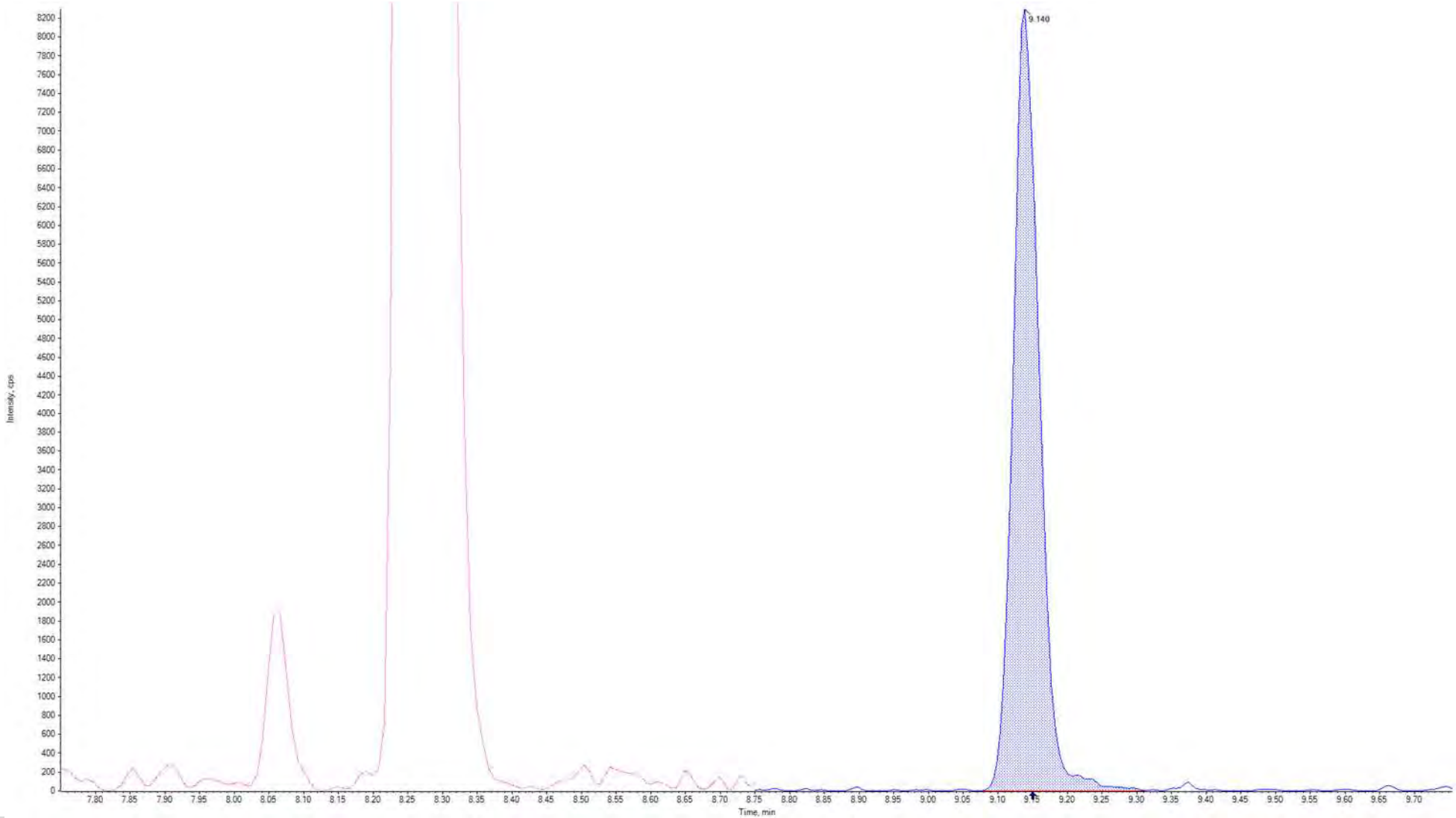
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFDS
Sample: IA1633STD-.5 S/N:7343.5 Points Across peak:45



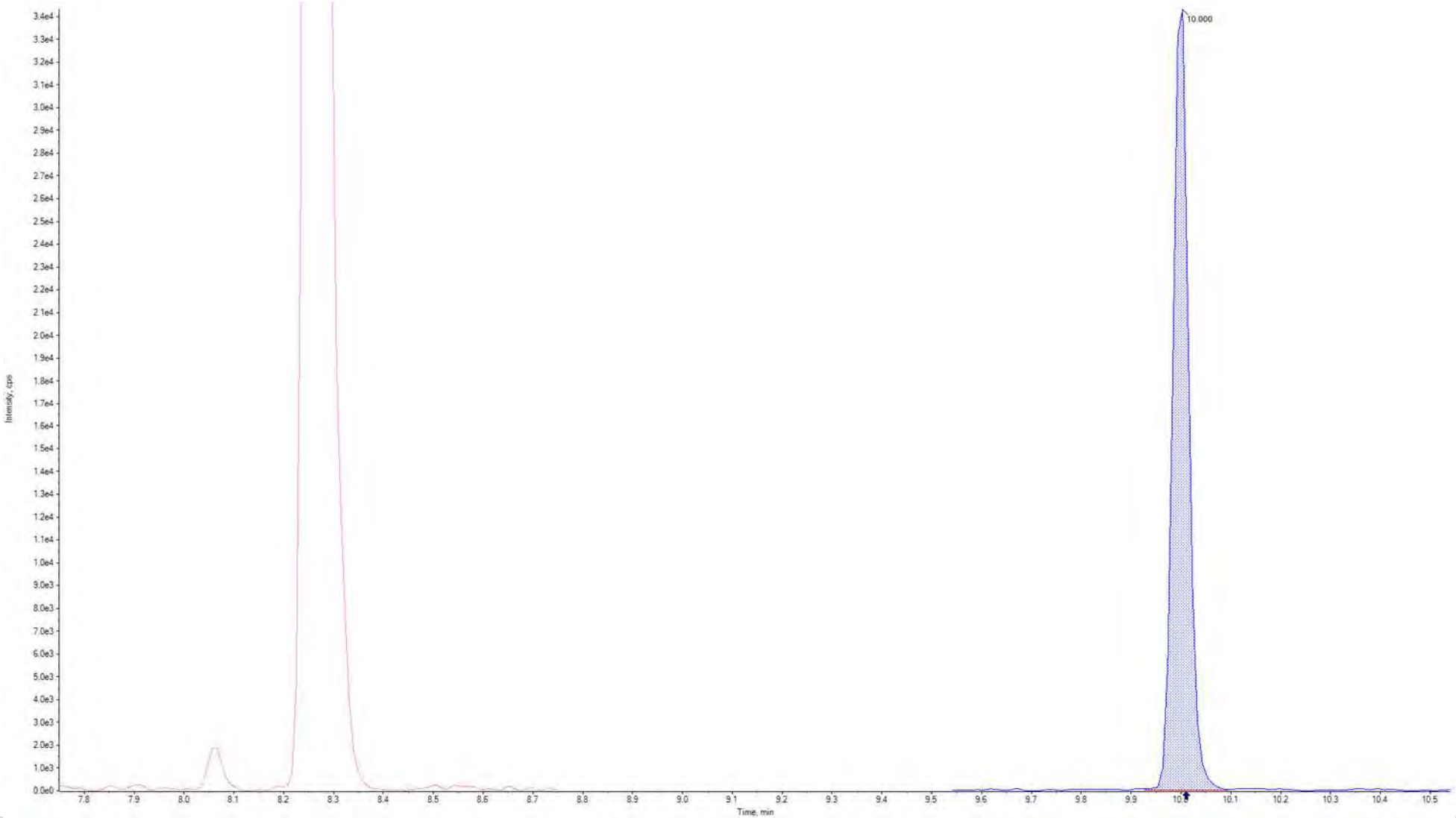
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFDS_2
Sample: IA1633STD-.5 S/N:565731.9 Points Across peak:46



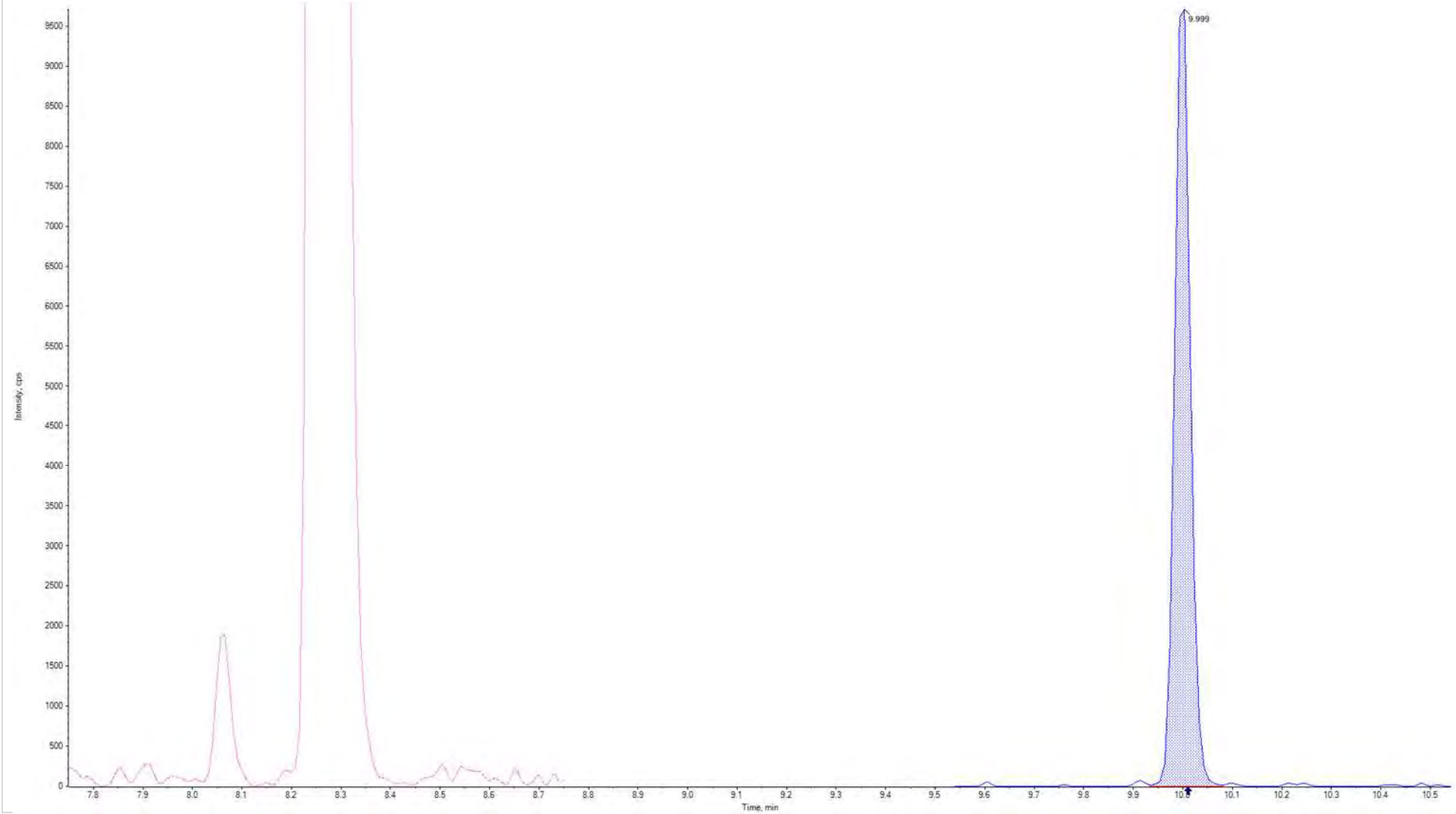
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFDoS
Sample: IA1633STD-.5 S/N:6785.0 Points Across peak:19



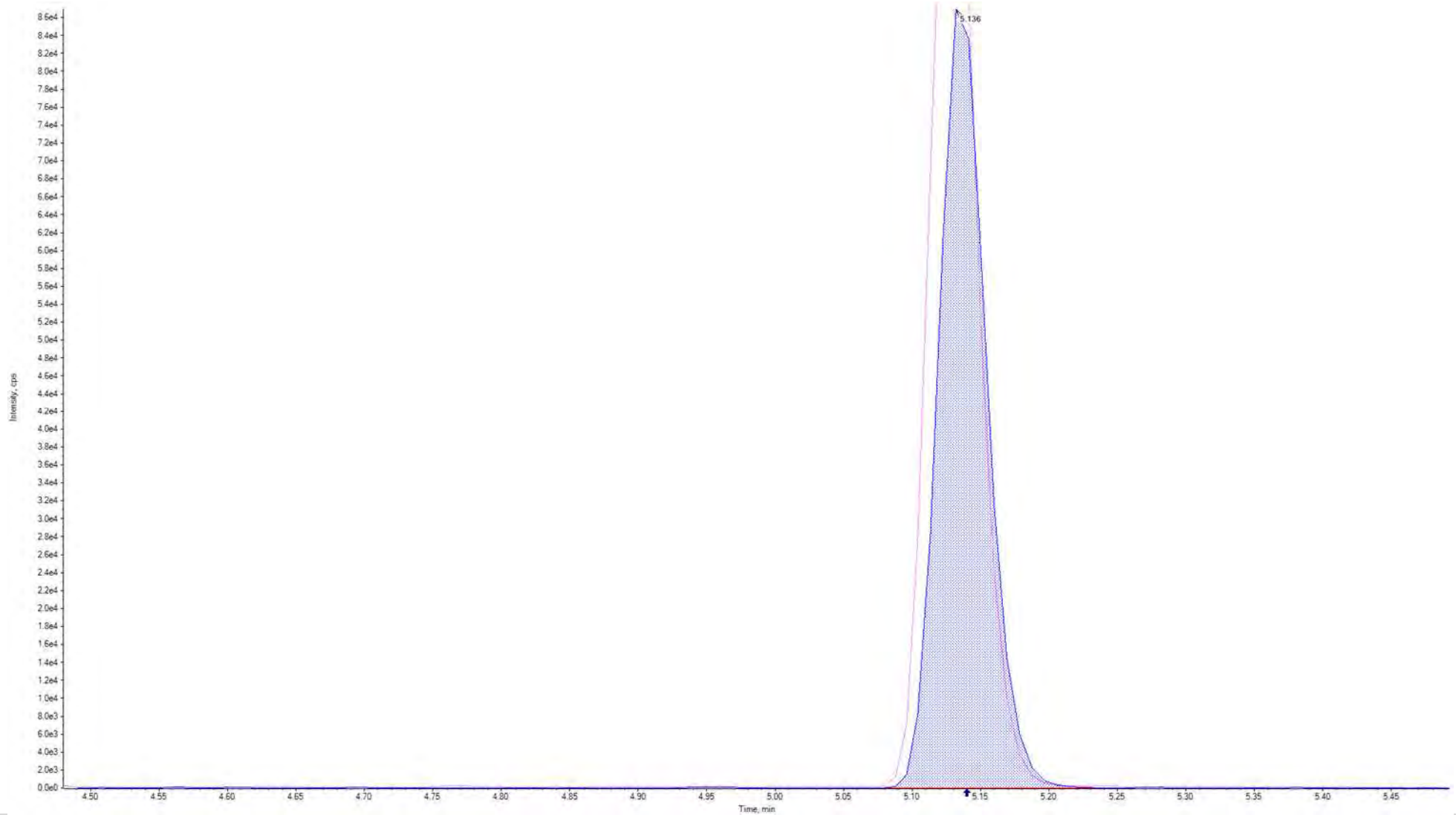
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFDoS_2
Sample: IA1633STD-.5 S/N:1486.6 Points Across peak:17



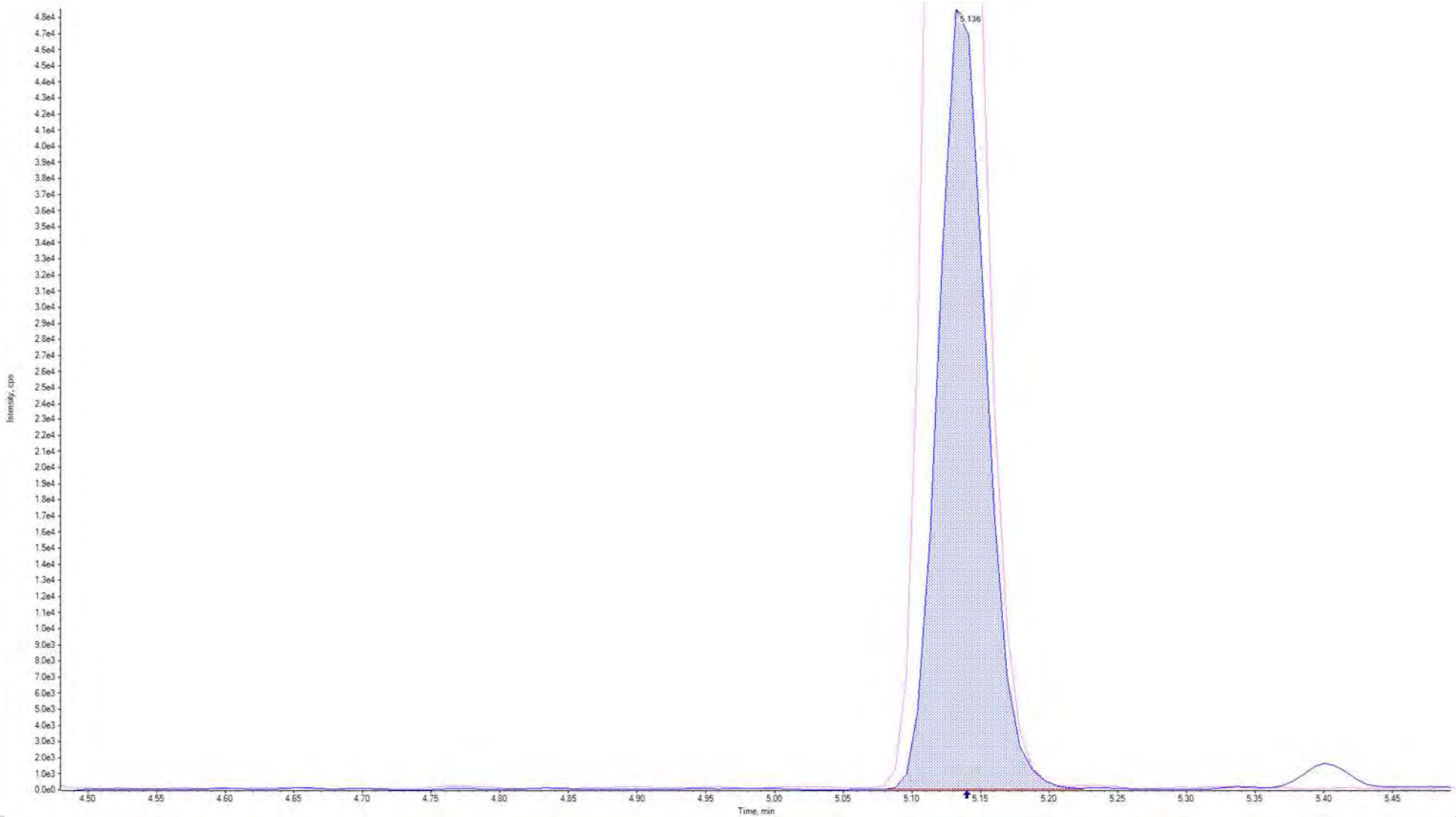
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

4:2FTS
Sample: IA1633STD-.5 S/N:1806.0 Points Across peak:22



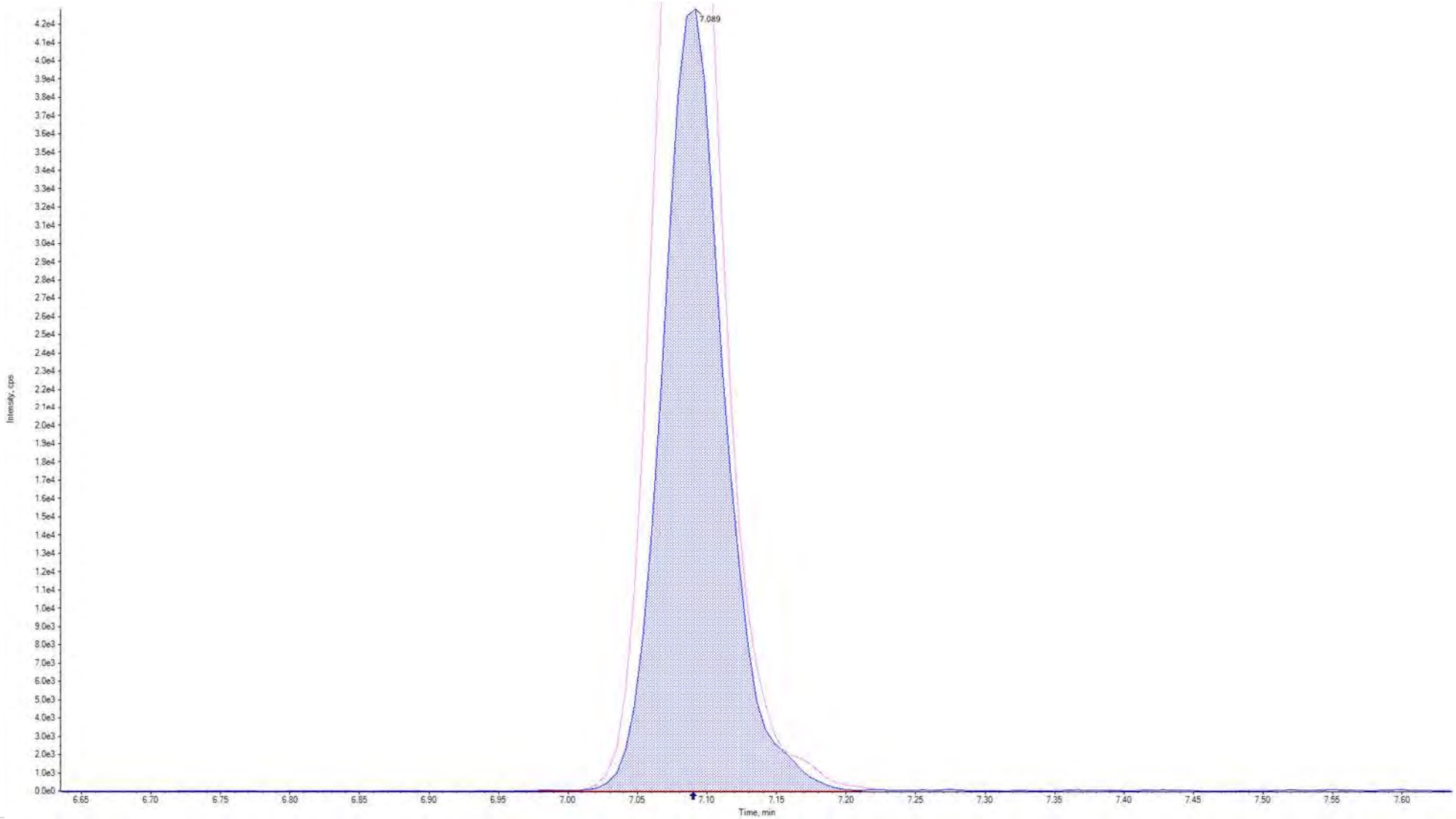
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

4:2FTS_2
Sample: IA1633STD-.5 S/N:2485.1 Points Across peak:19



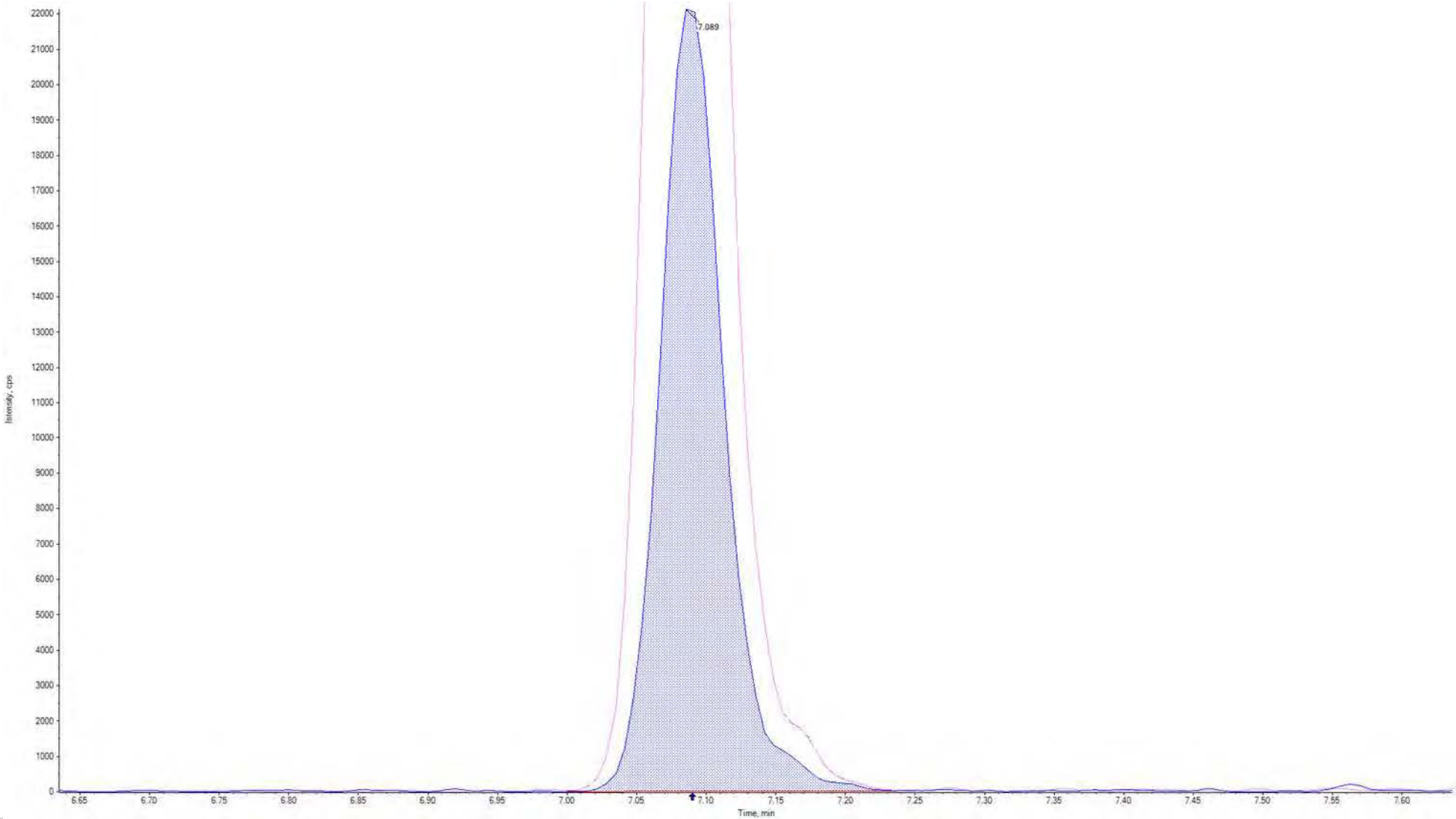
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

6:2FTS
Sample: IA1633STD-.5 S/N:2074.8 Points Across peak:40



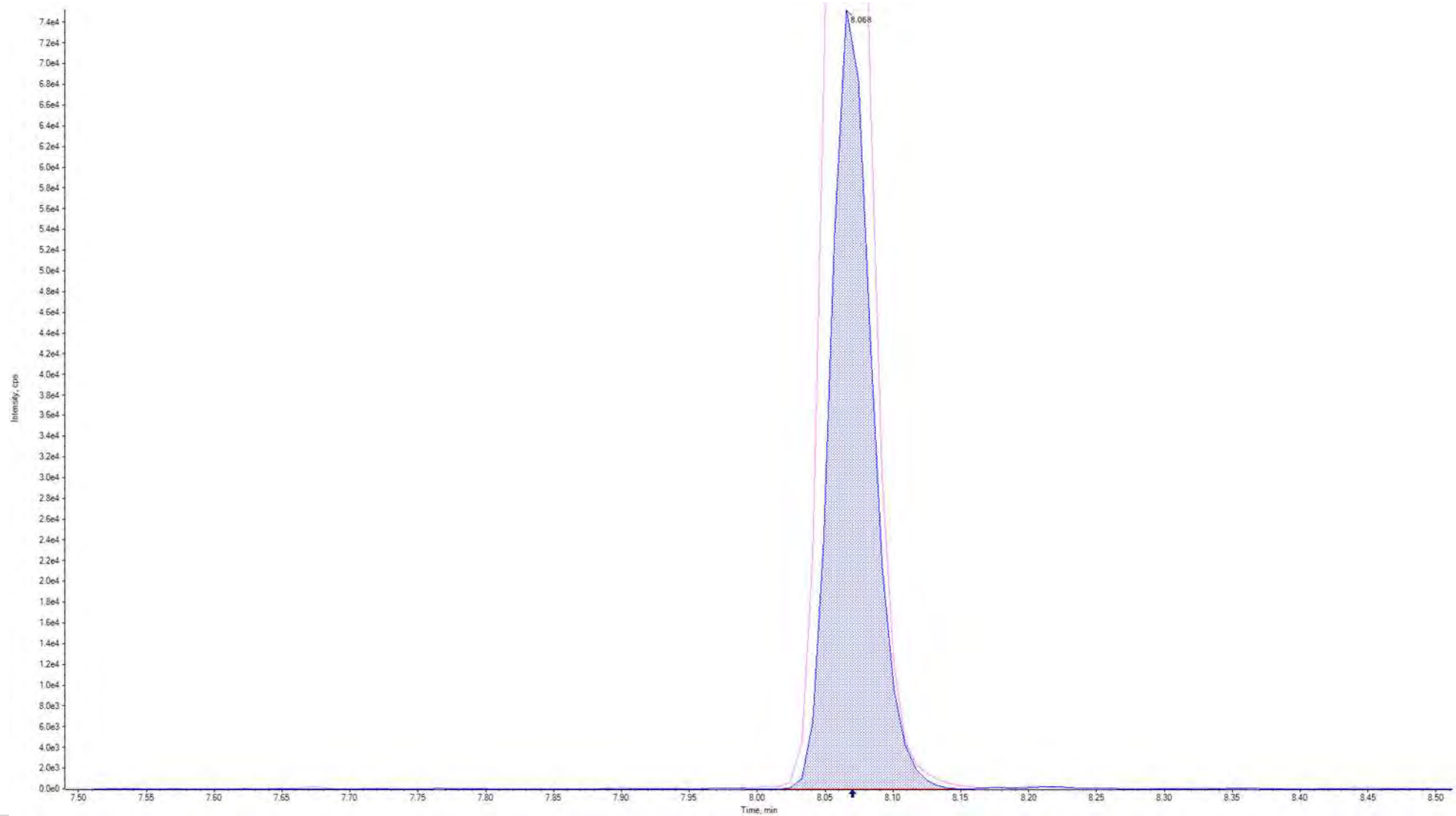
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

6:2FTS_2
Sample: IA1633STD-.5 S/N:13560.3 Points Across peak:39



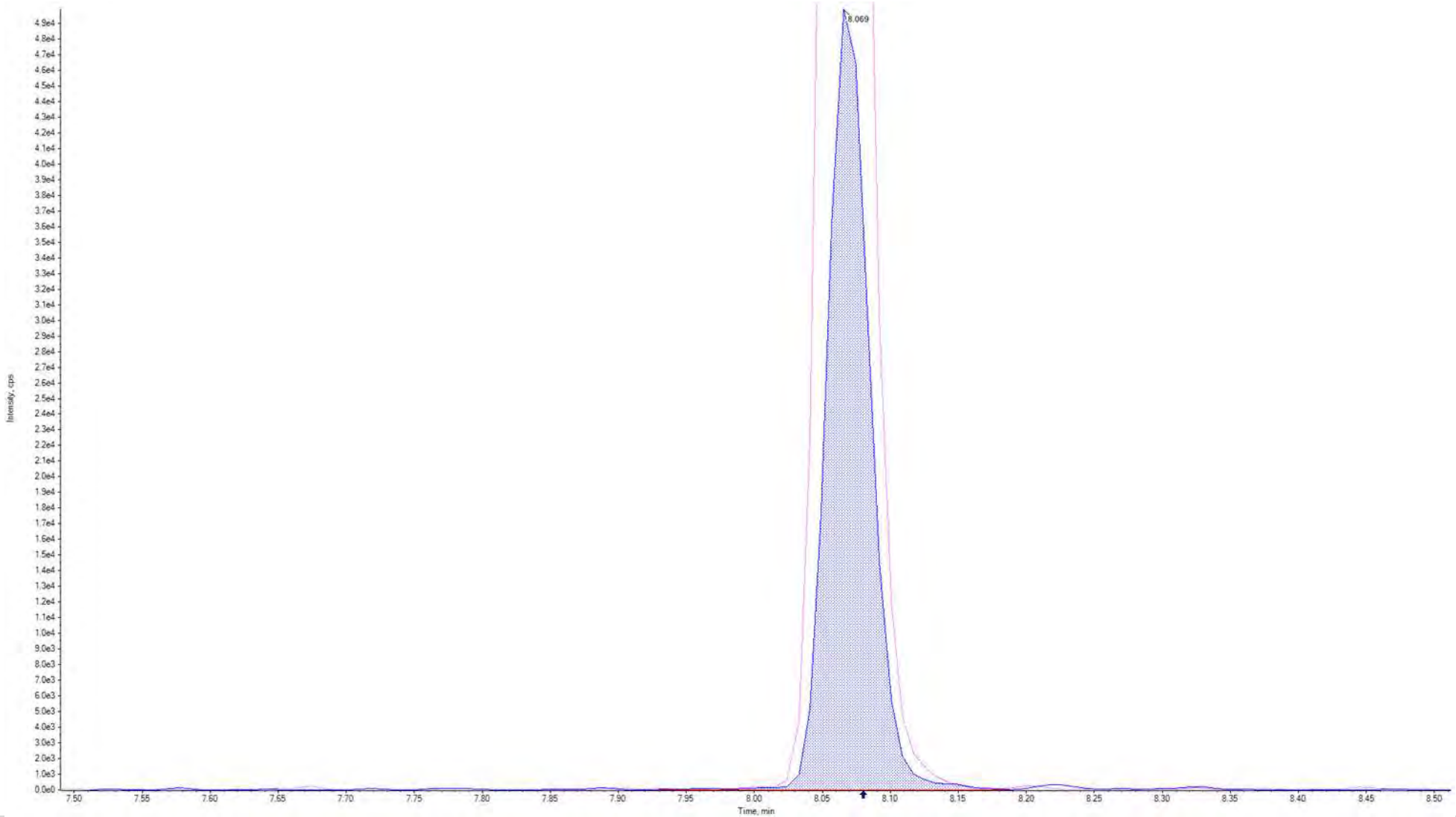
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

8:2FTS
Sample: IA1633STD-.5 S/N:370097.1 Points Across peak:18



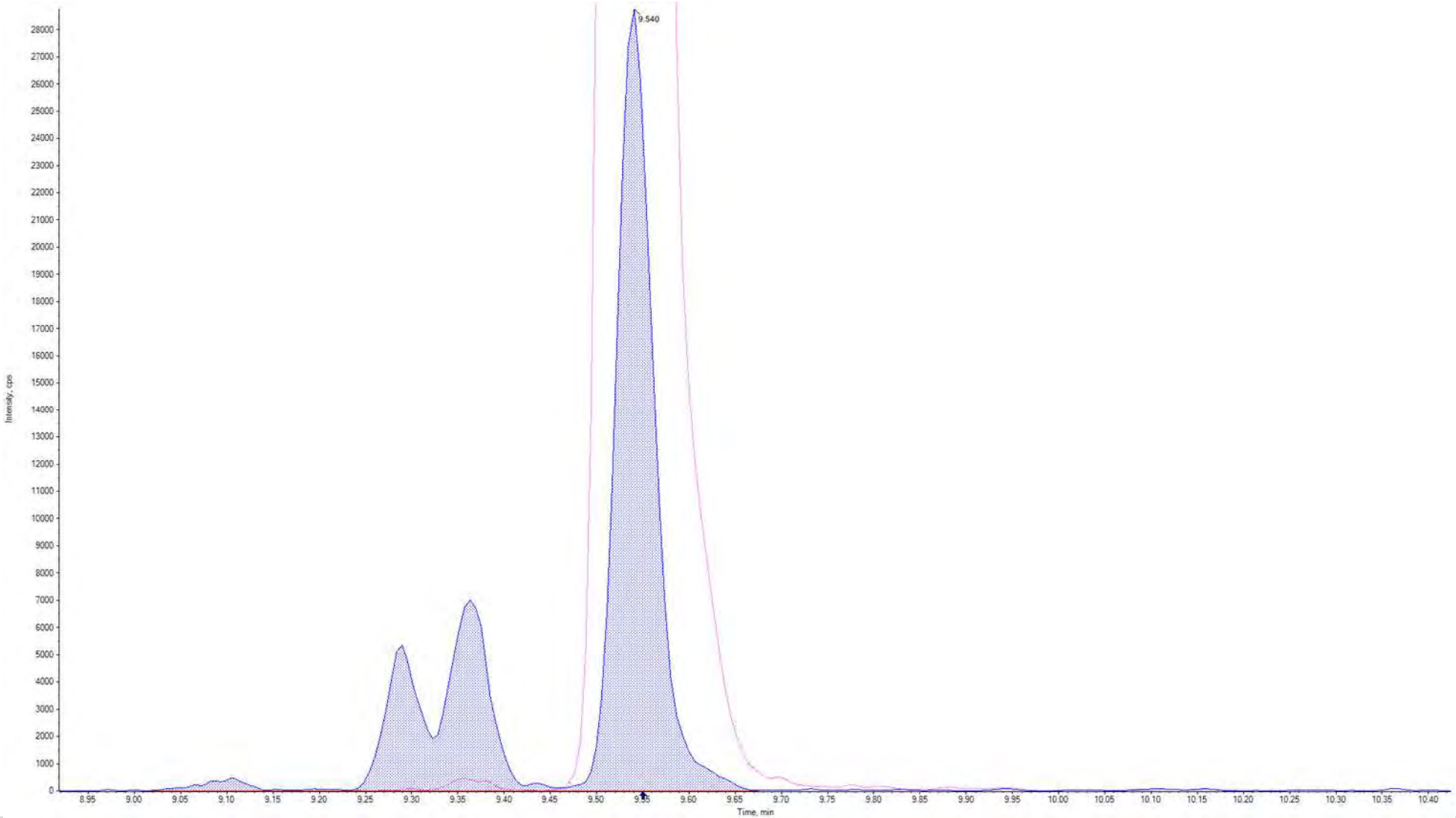
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

8:2FTS_2
Sample: IA1633STD-.5 S/N:7875084.0 Points Across peak:33



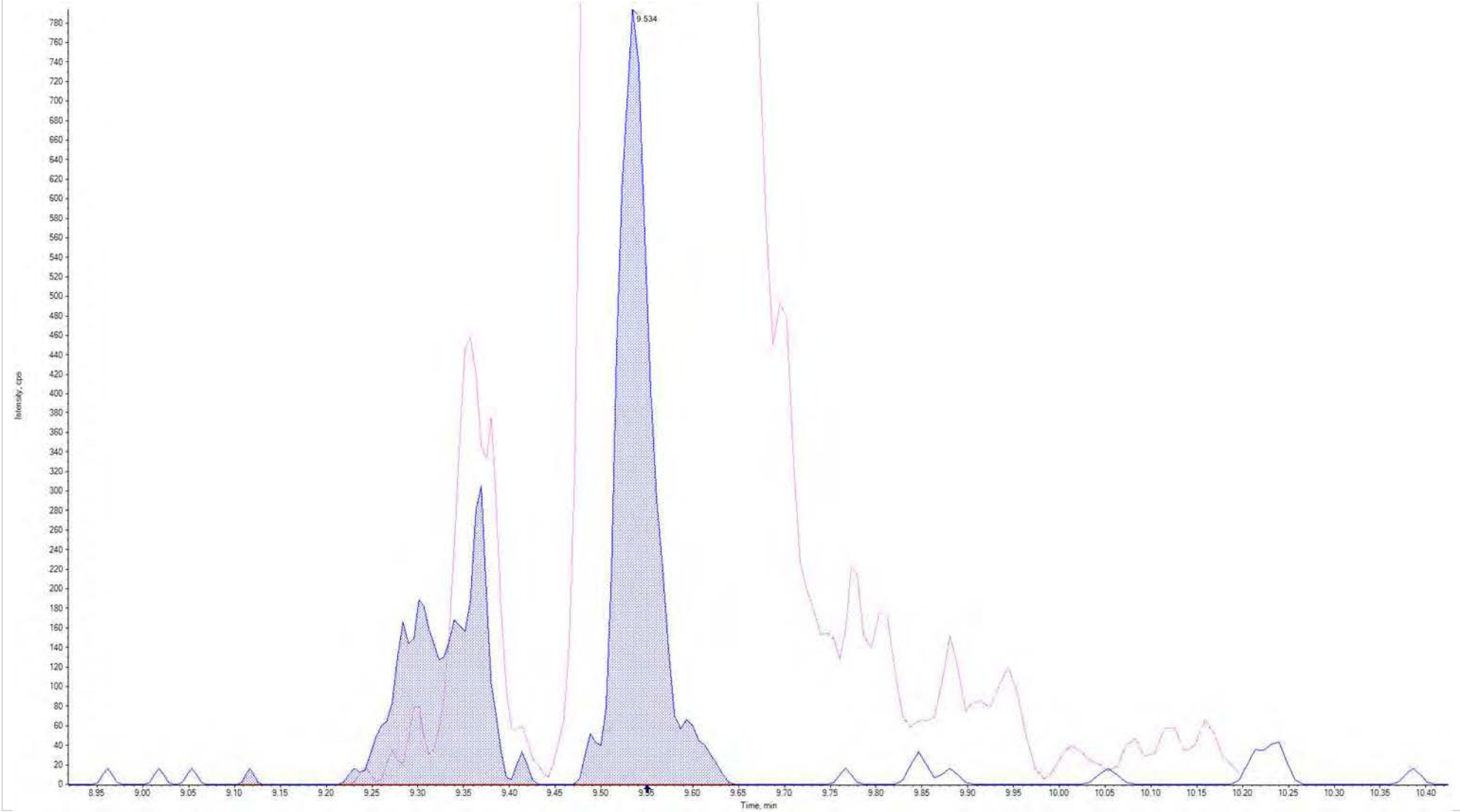
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFOSA
Sample: IA1633STD-.5 S/N:872.1 Points Across peak:119



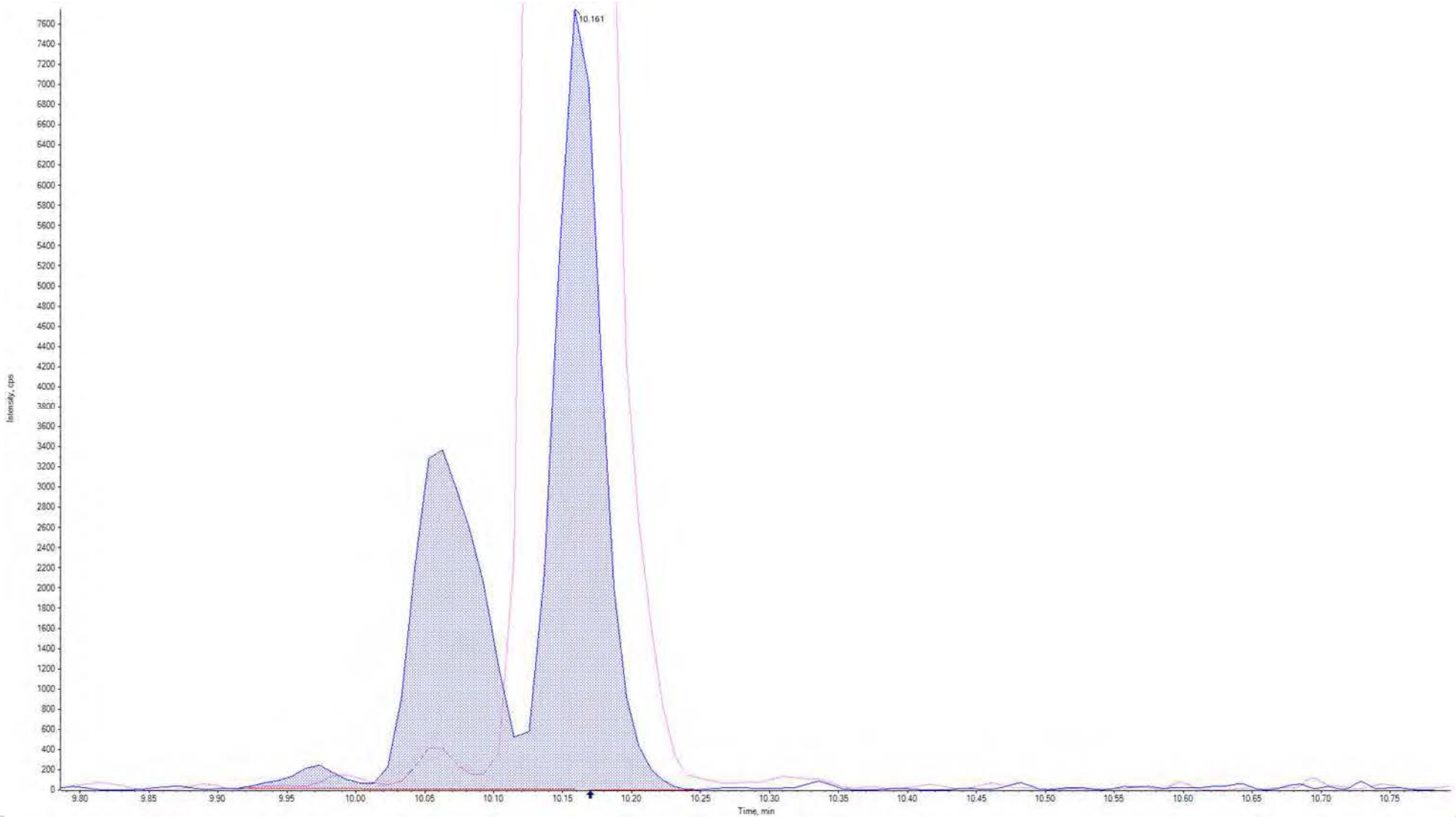
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFOSA_2
Sample: IA1633STD-.5 S/N:379.9 Points Across peak:97



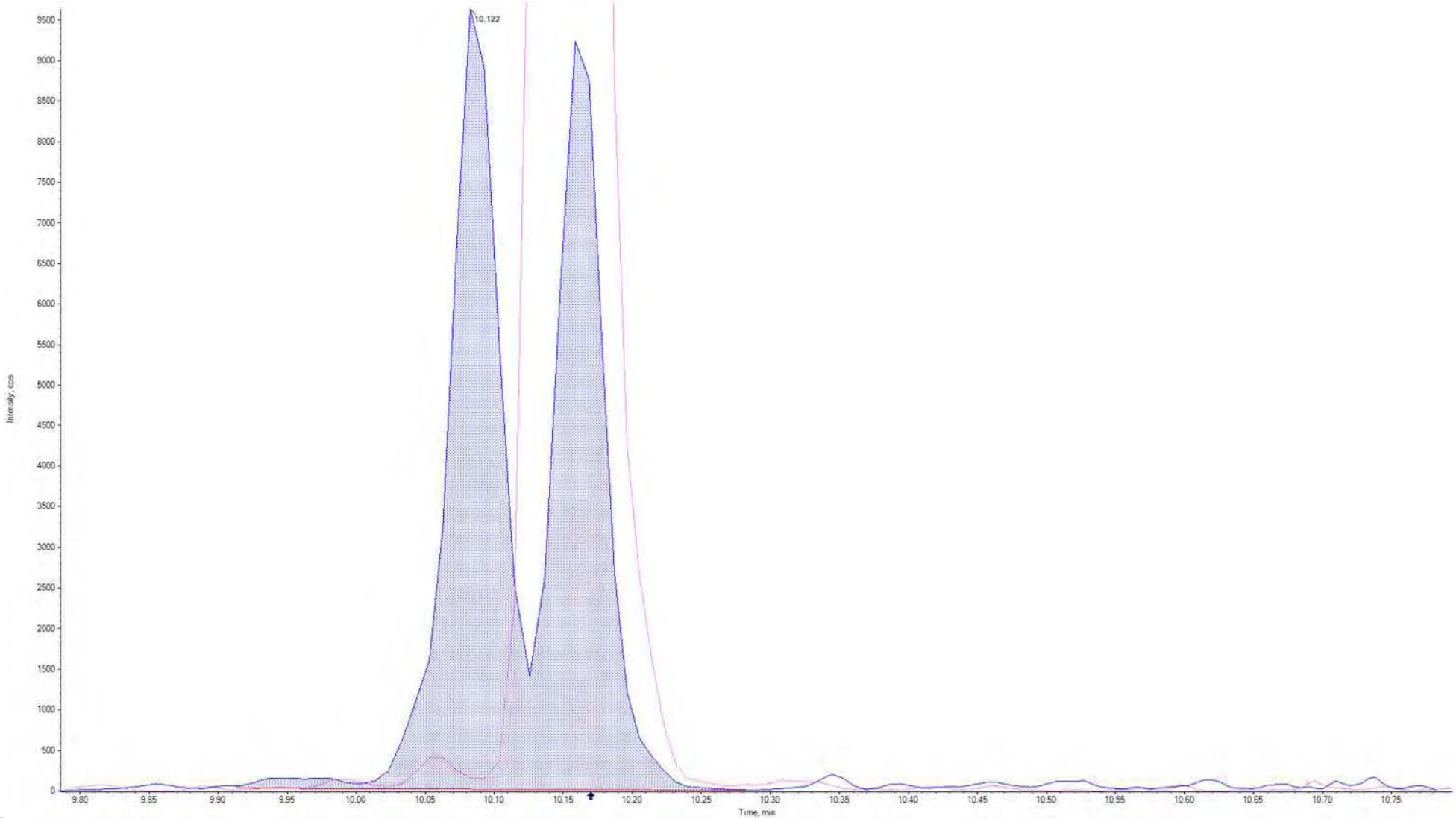
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSA
Sample: IA1633STD-.5 S/N:23429.5 Points Across peak:36



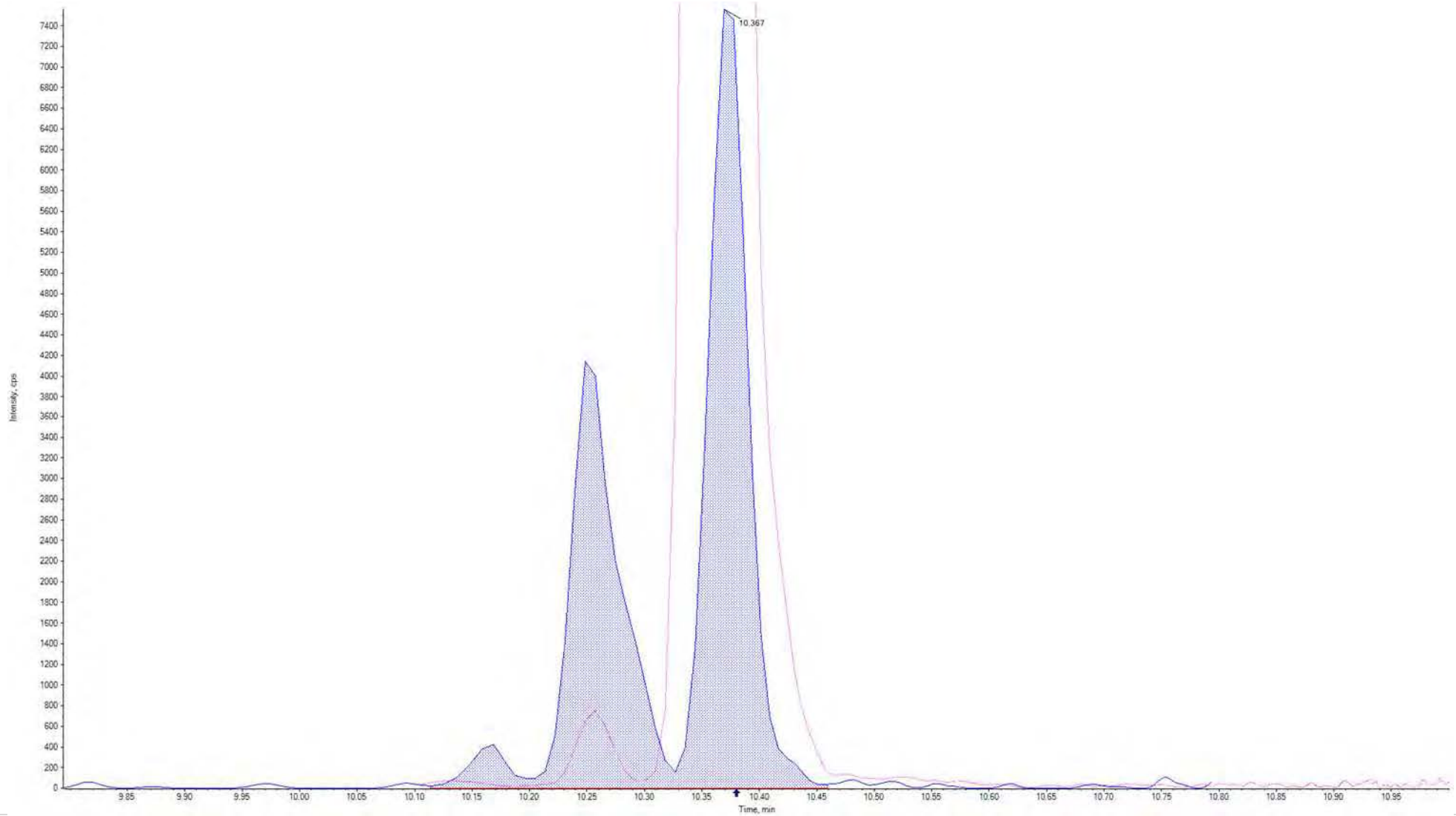
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSA_2
Sample: IA1633STD-.5 S/N:571.6 Points Across peak:41



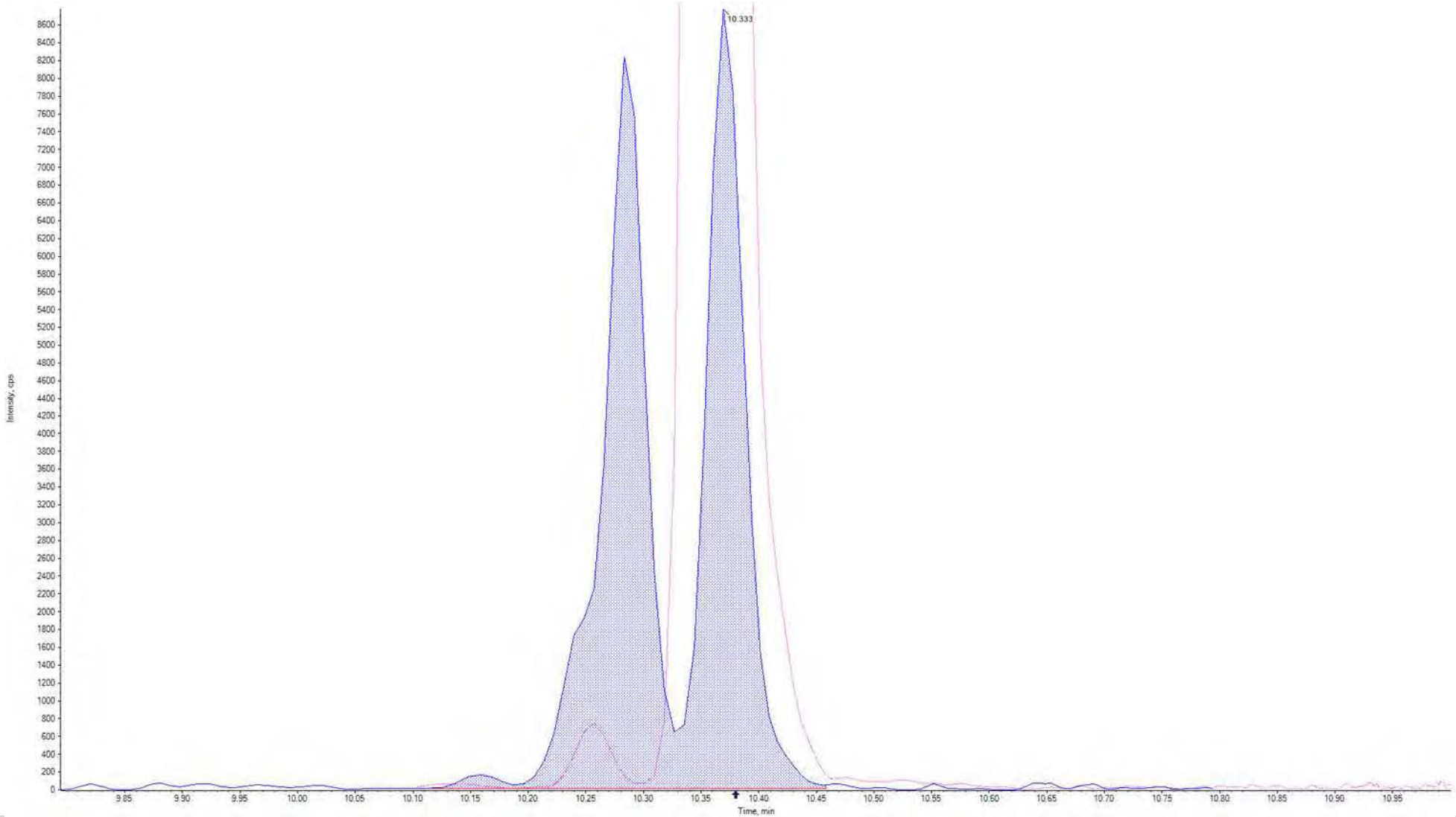
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSA
Sample: IA1633STD-.5 S/N:227761.7 Points Across peak:43



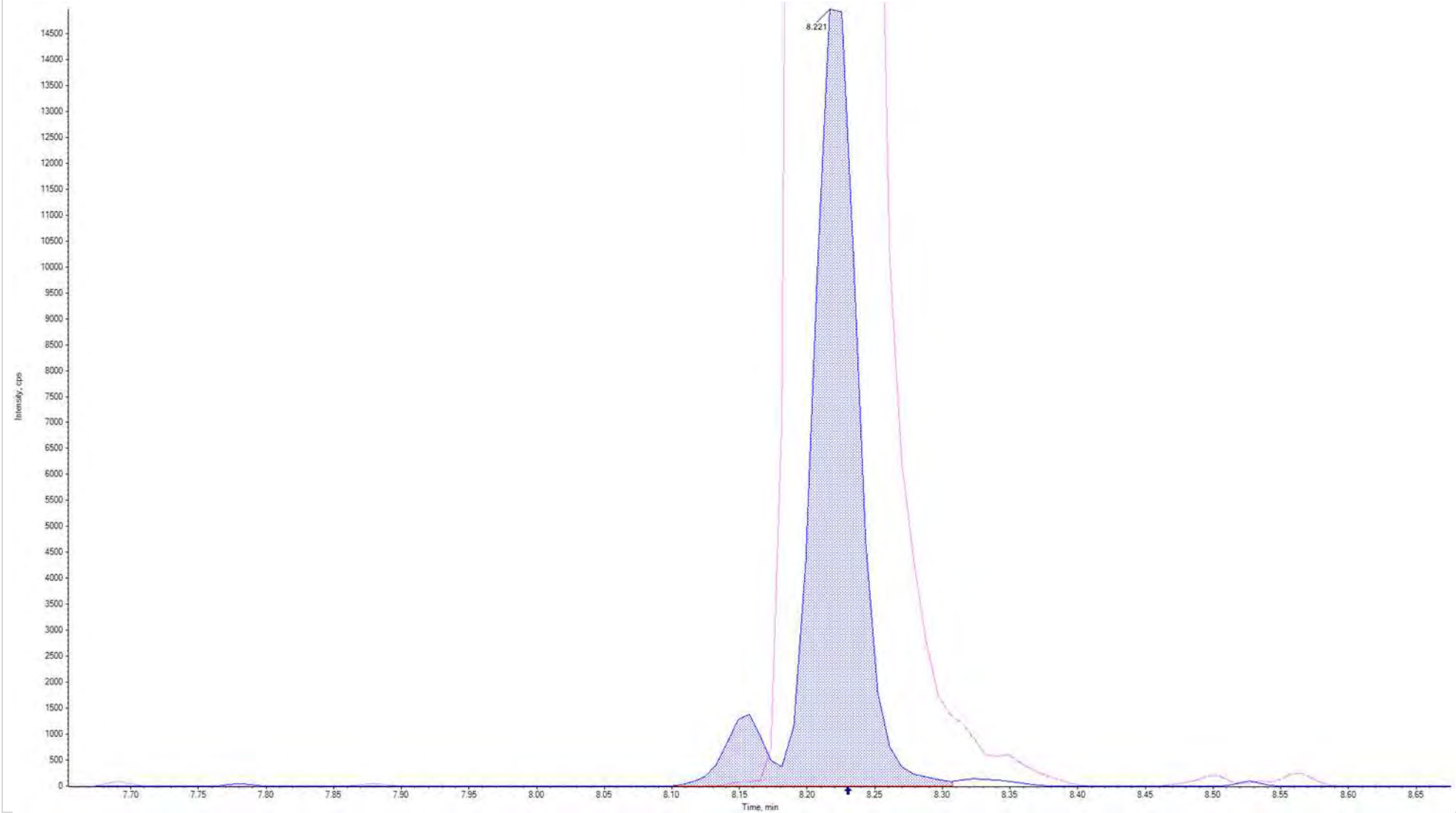
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSA_2
Sample: IA1633STD-.5 S/N:4219.1 Points Across peak:43



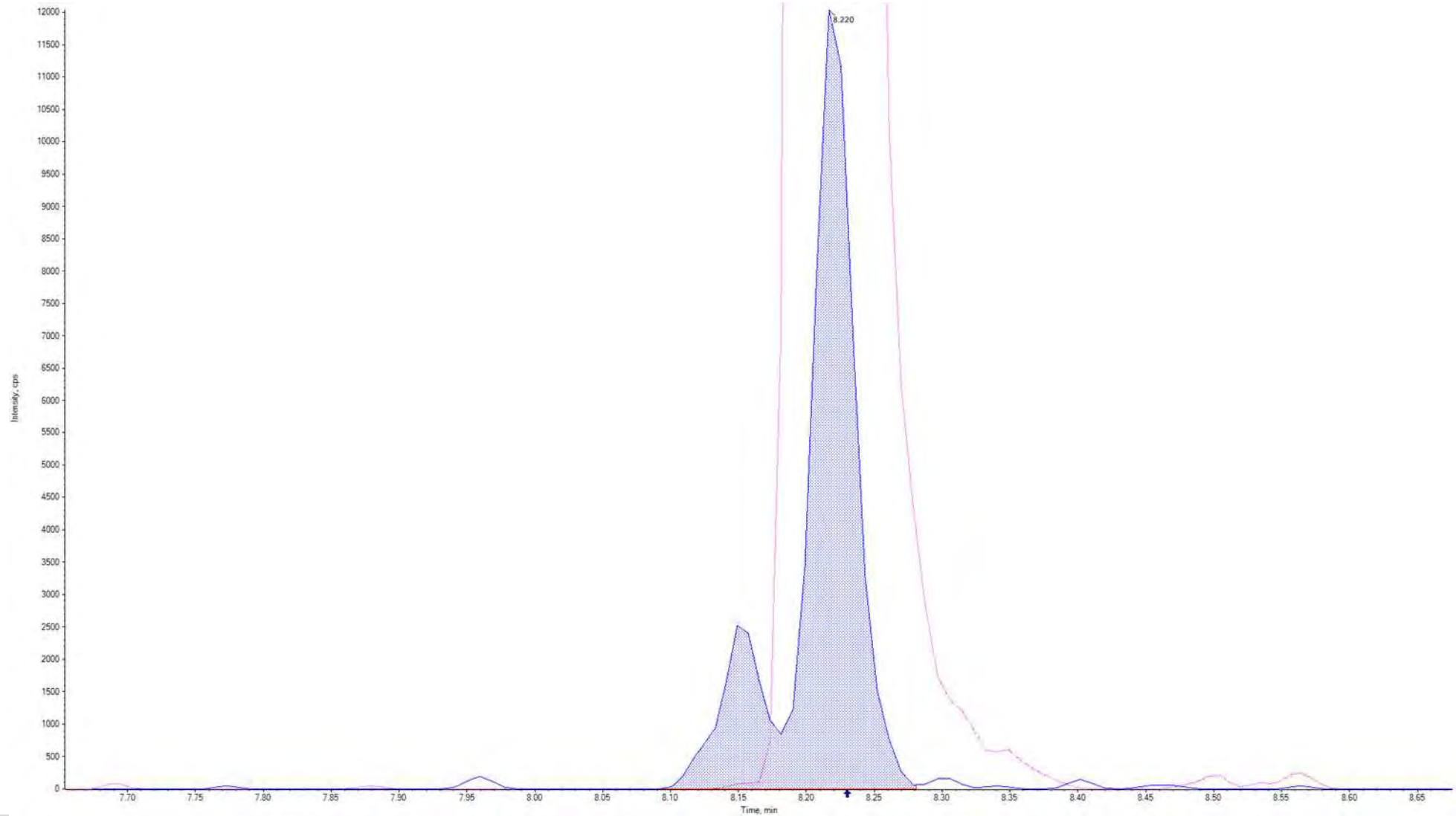
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSAA
Sample: IA1633STD-.5 S/N:810.5 Points Across peak:27



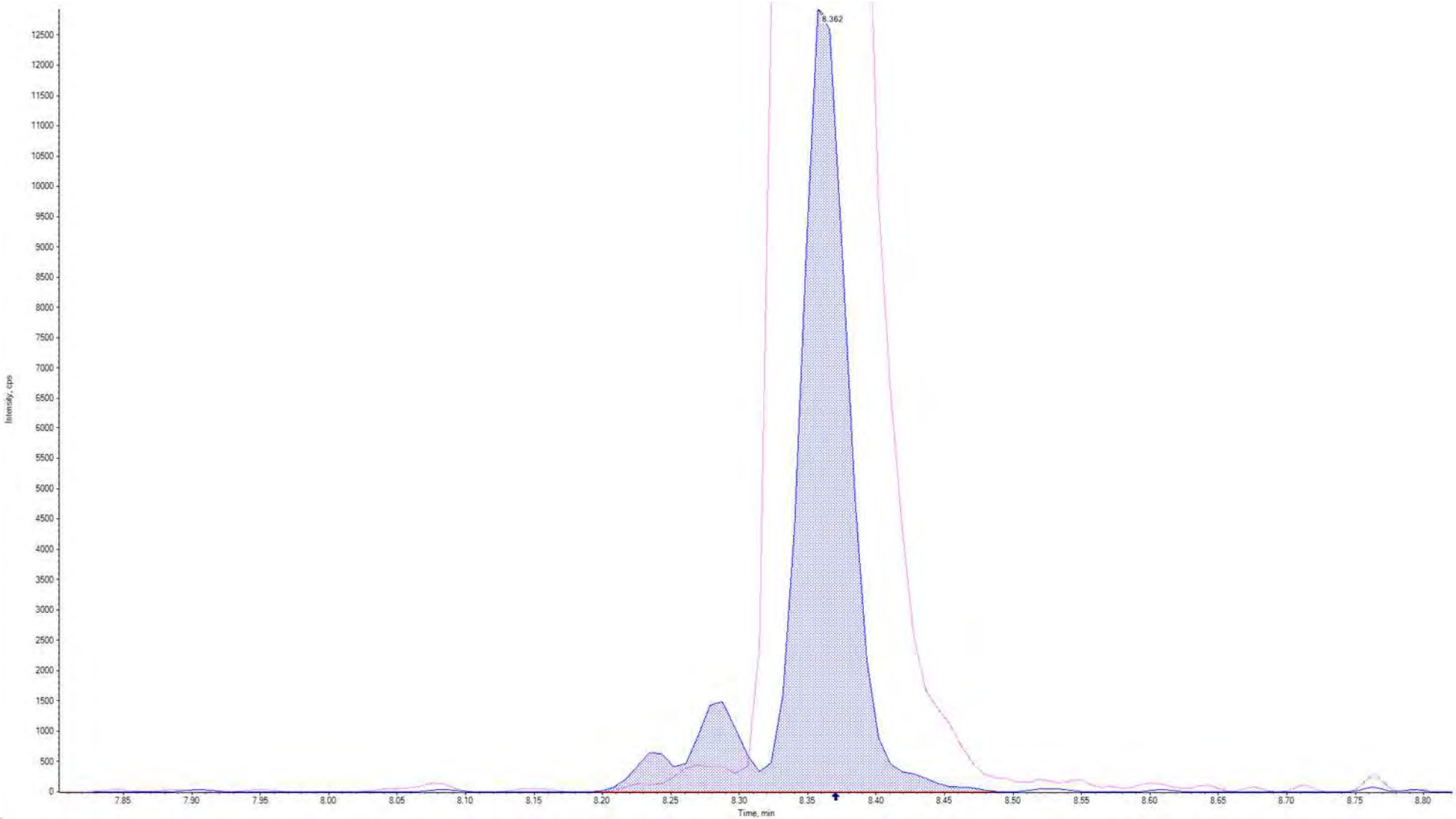
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSAA_2
Sample: IA1633STD-.5 S/N:362.0 Points Across peak:25



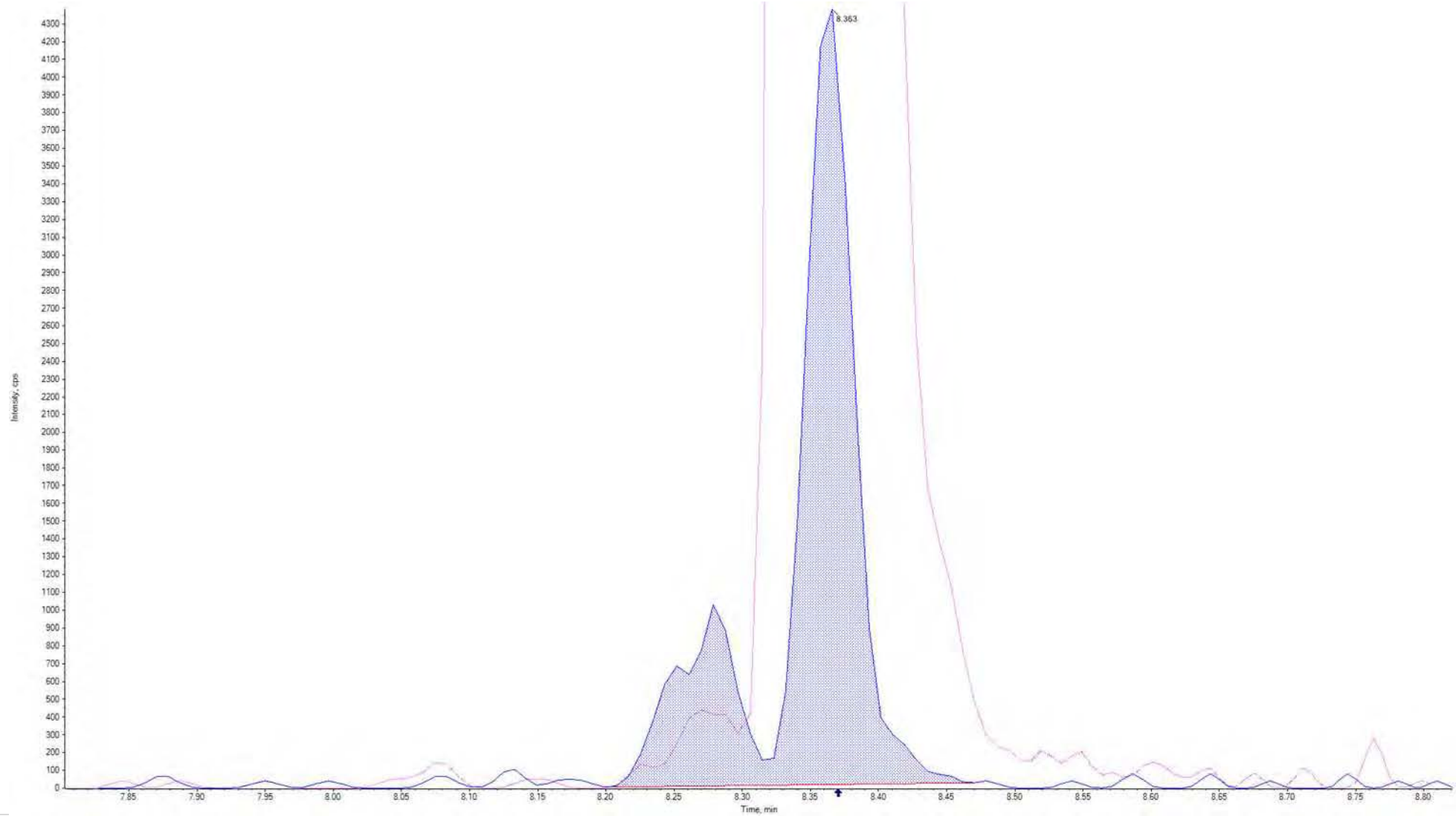
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSAA
Sample: IA1633STD-.5 S/N:455.0 Points Across peak:38



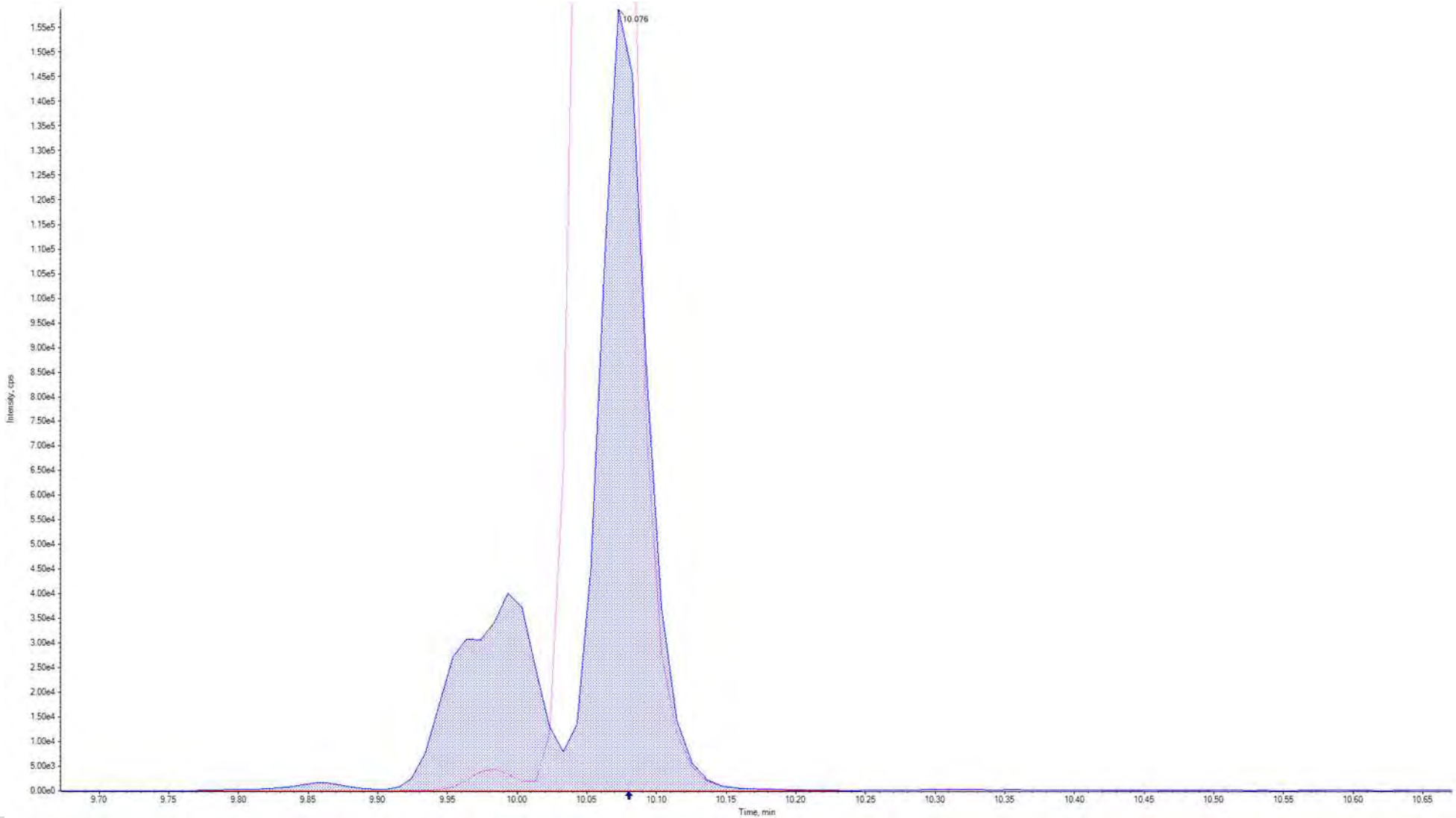
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSAA_2
Sample: IA1633STD-.5 S/N:155.3 Points Across peak:32



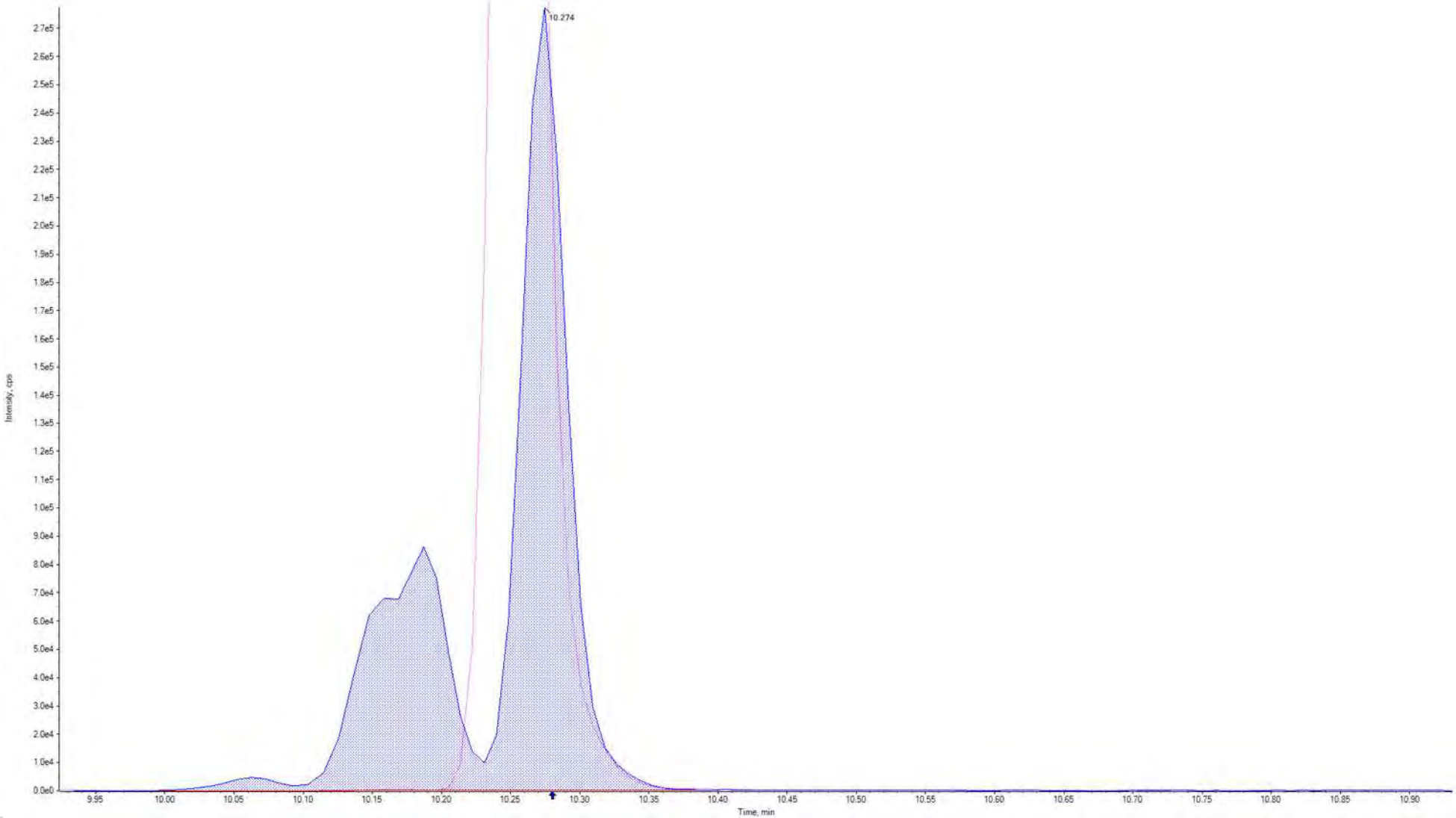
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSE
Sample: IA1633STD-.5 S/N:4149.2 Points Across peak:52



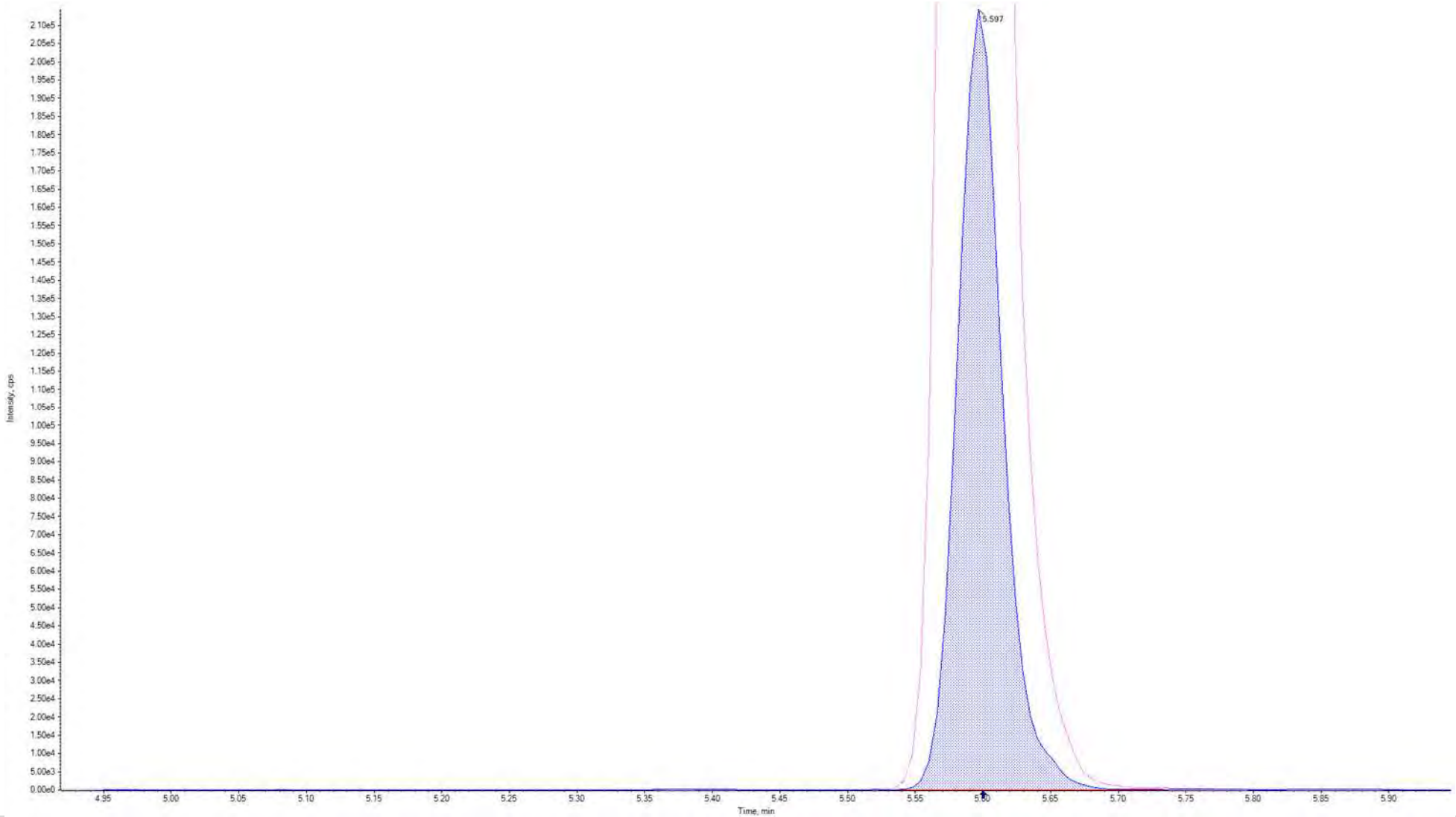
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSE
Sample: IA1633STD-.5 S/N:2095.0 Points Across peak:45



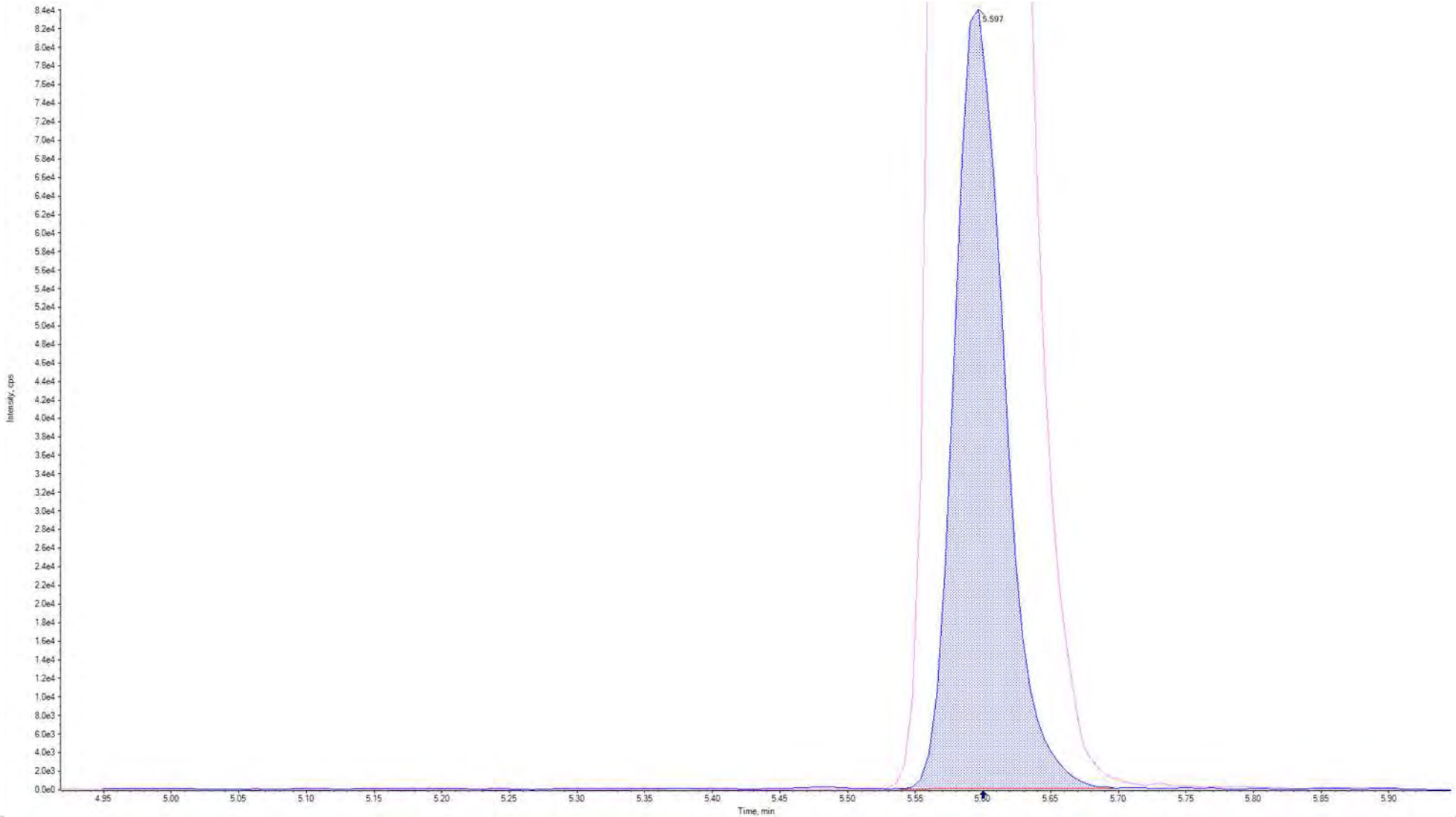
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

HFPO-DA
Sample: IA1633STD-.5 S/N:7412.2 Points Across peak:41



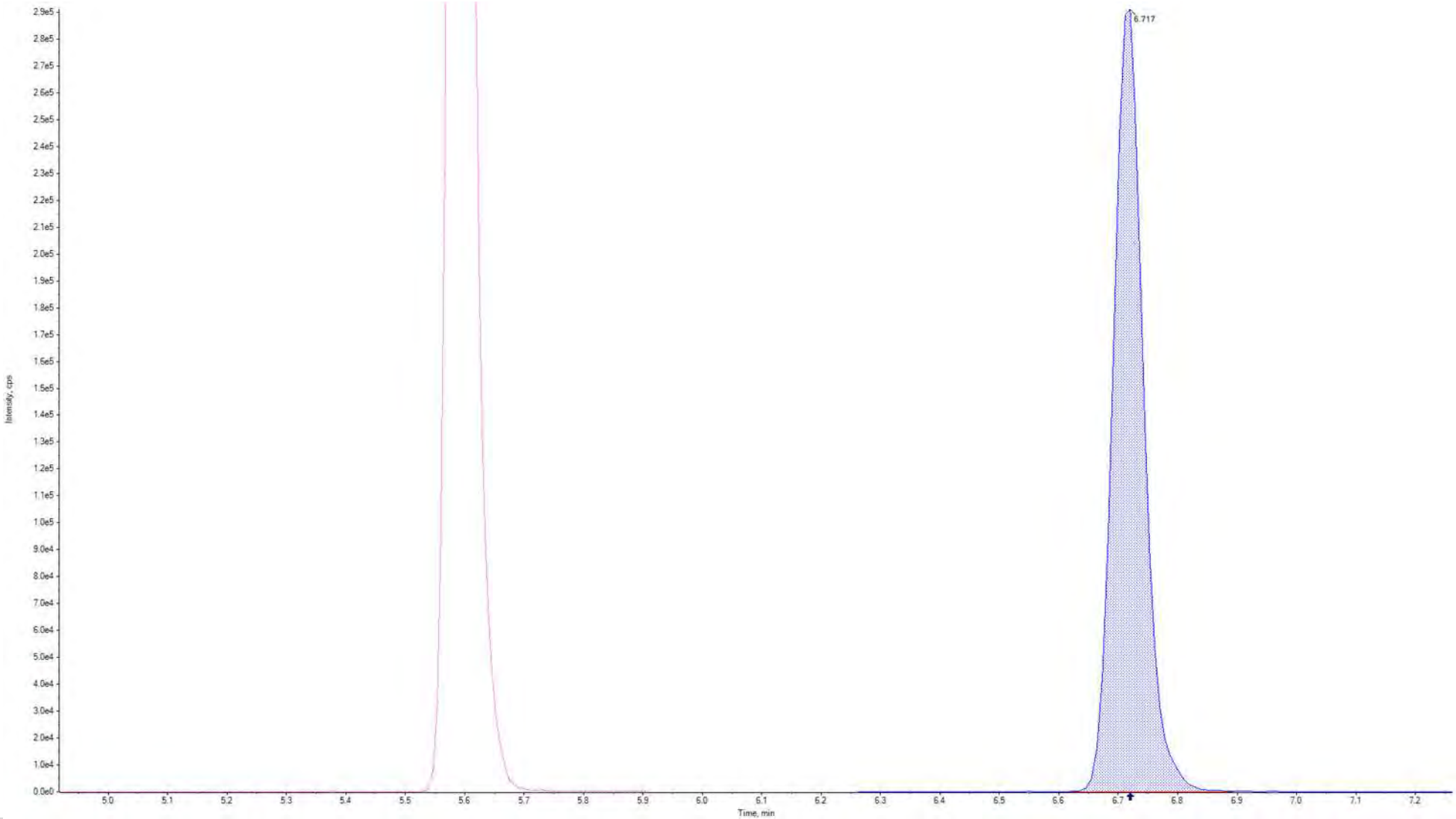
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

HFPO-DA_2
Sample: IA1633STD-.5 S/N:2439.8 Points Across peak:33



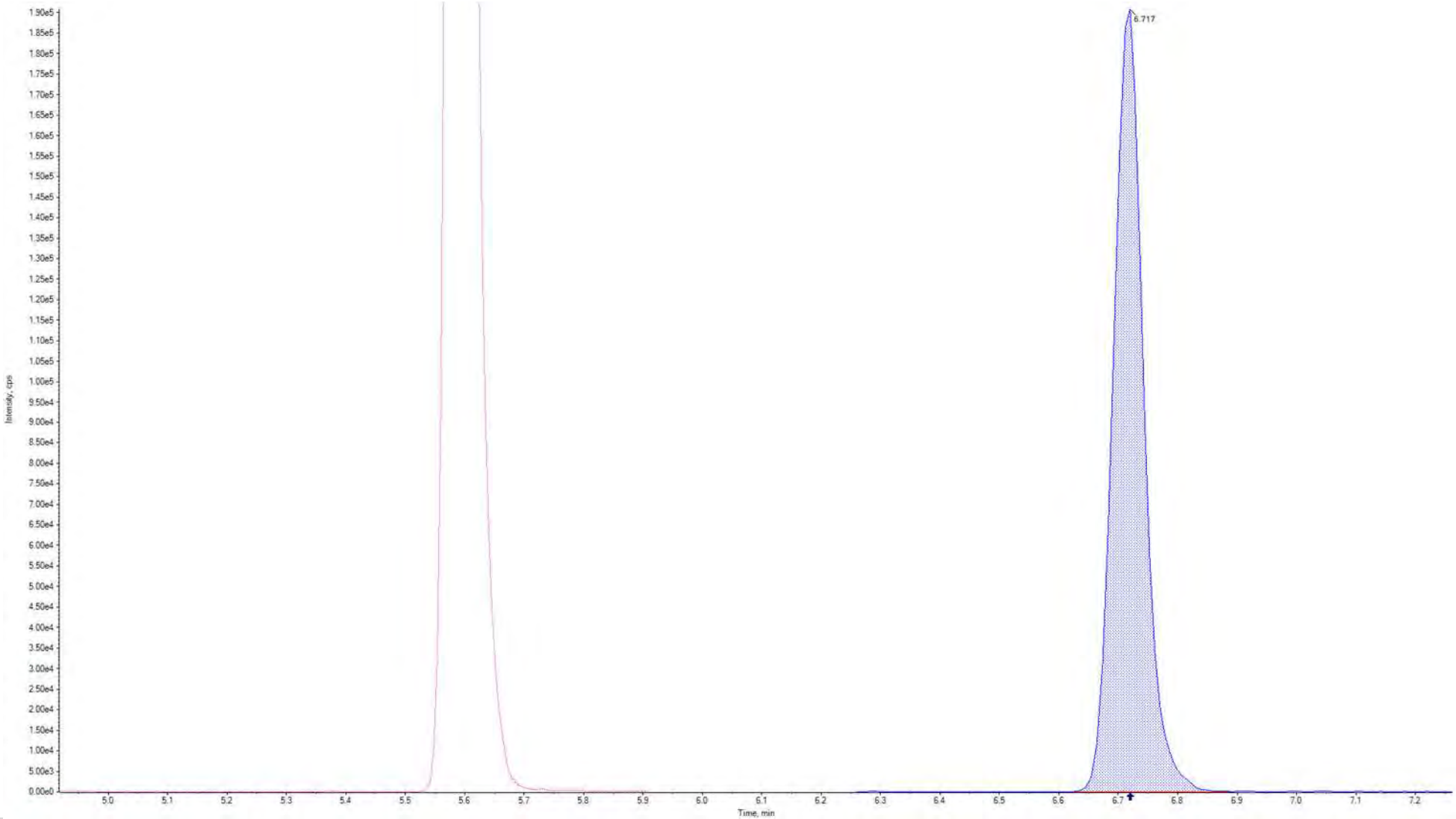
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

ADONA
Sample: IA1633STD-.5 S/N:341419.7 Points Across peak:39



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

ADONA_2
Sample: IA1633STD-.5 S/N:13260.6 Points Across peak:38



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

9Cl-PF3ONS
Sample: IA1633STD-.5 S/N:2862684.6 Points Across peak:28

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

9Cl-PF3ONS_2
Sample: IA1633STD-.5 S/N:25976.2 Points Across peak:29

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

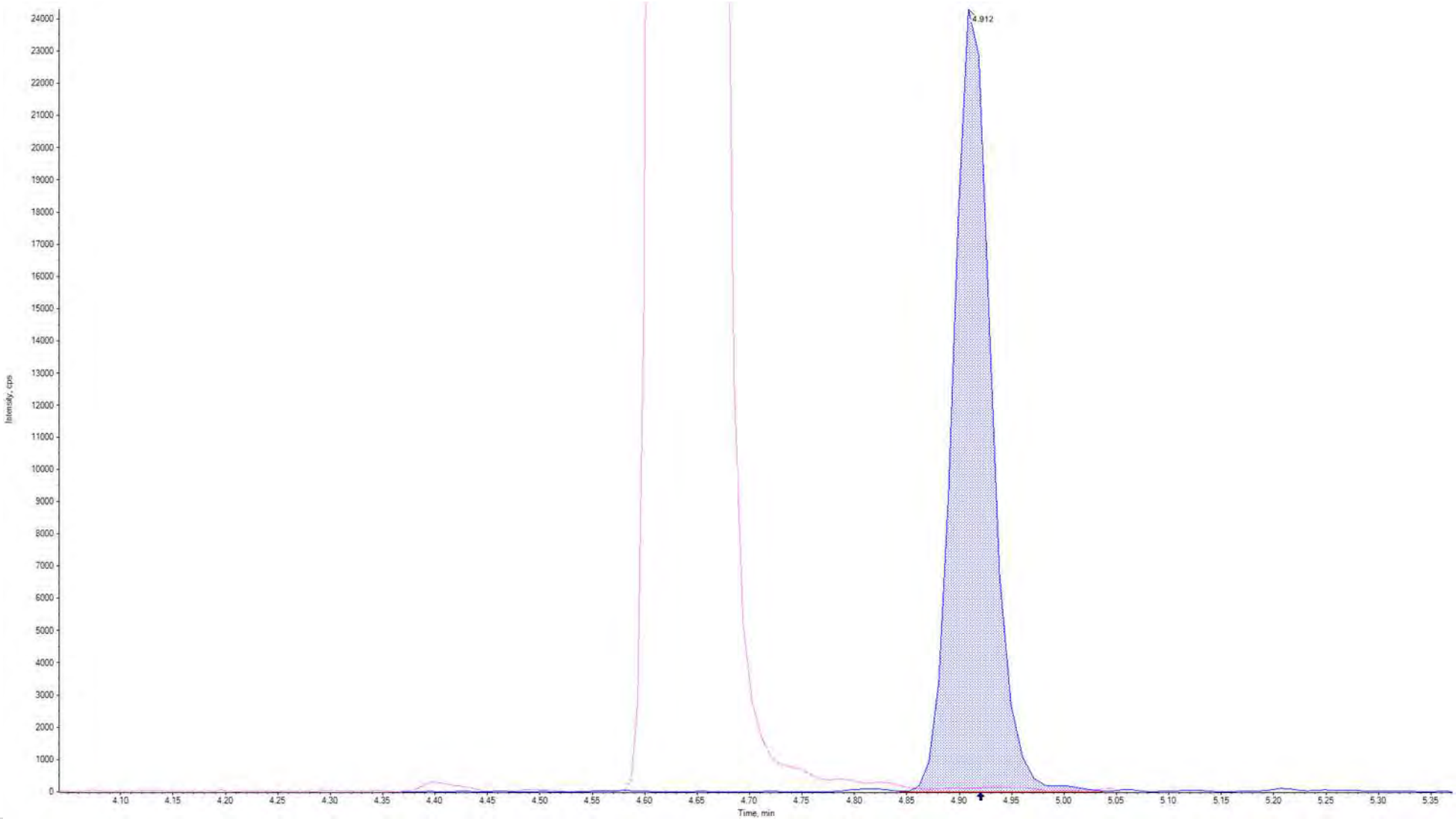
11Cl-PF3OUdS
Sample: IA1633STD-.5 S/N:3192.8 Points Across peak:45

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

11Cl-PF3OUdS_2
Sample: IA1633STD-.5 S/N:14923487.0 Points Across peak:36

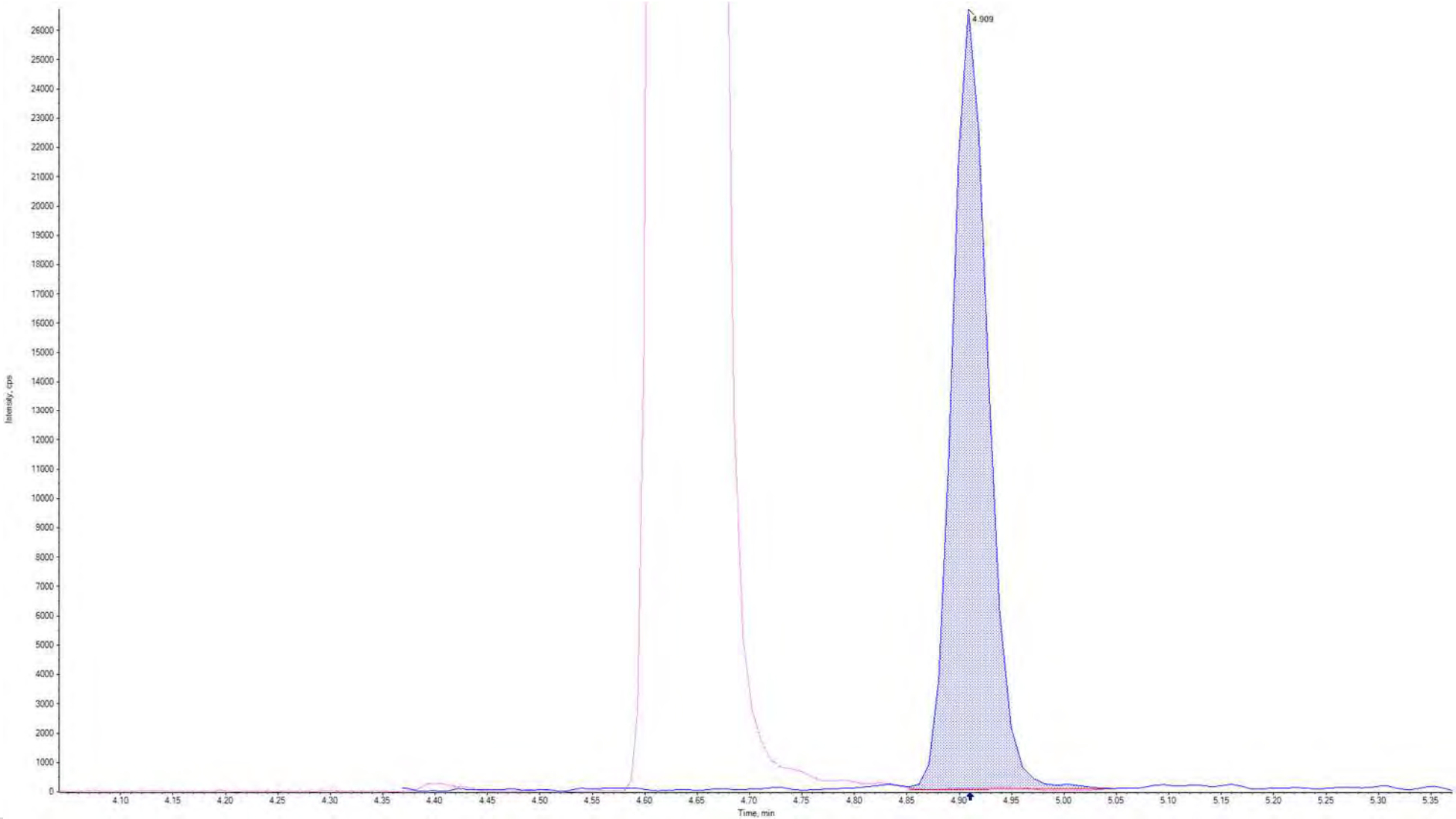
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

3:3FTCA
Sample: IA1633STD-.5 S/N:652224.2 Points Across peak:20



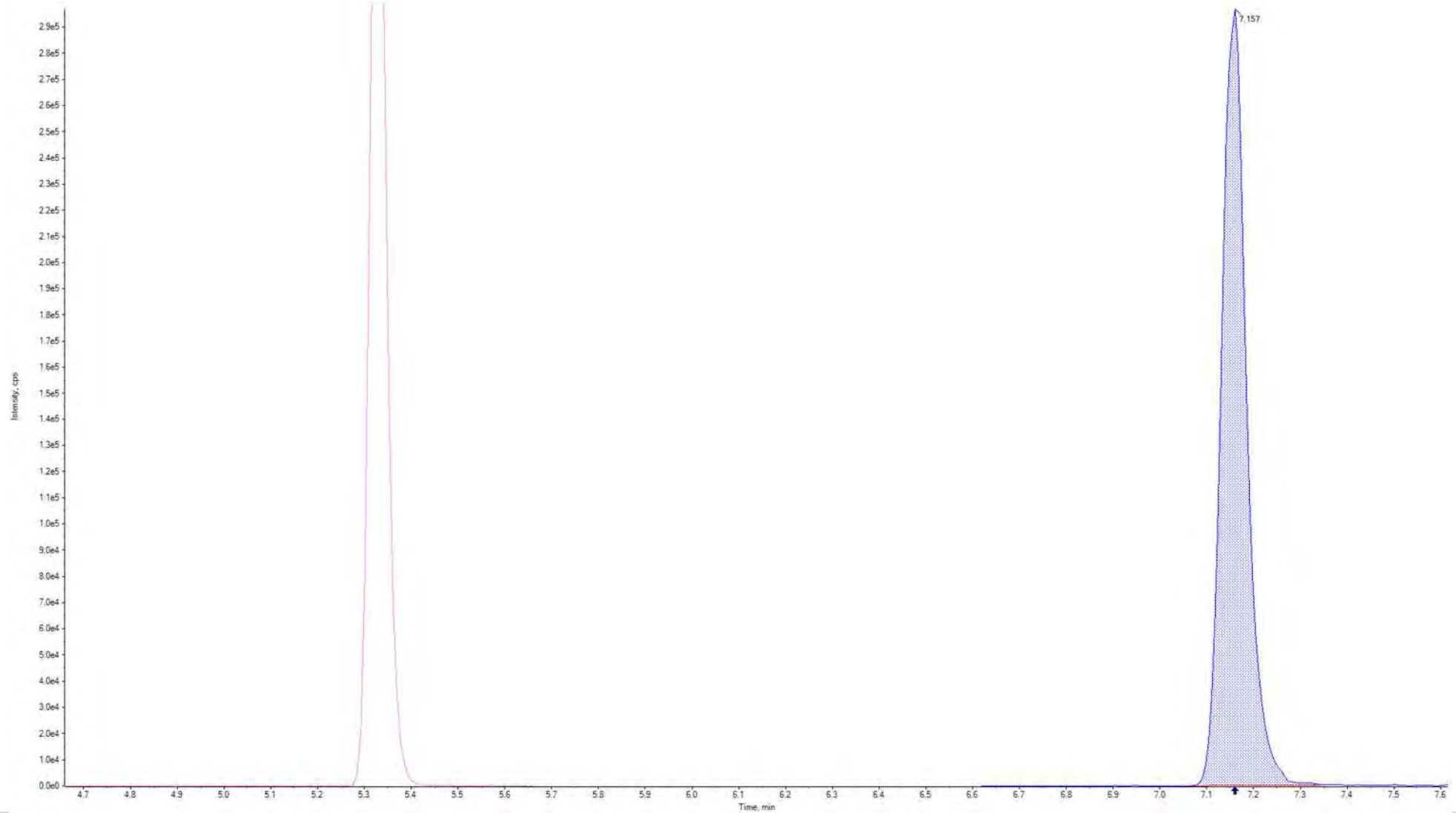
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

3:3FTCA_2
Sample: IA1633STD-.5 S/N:1084.6 Points Across peak:20



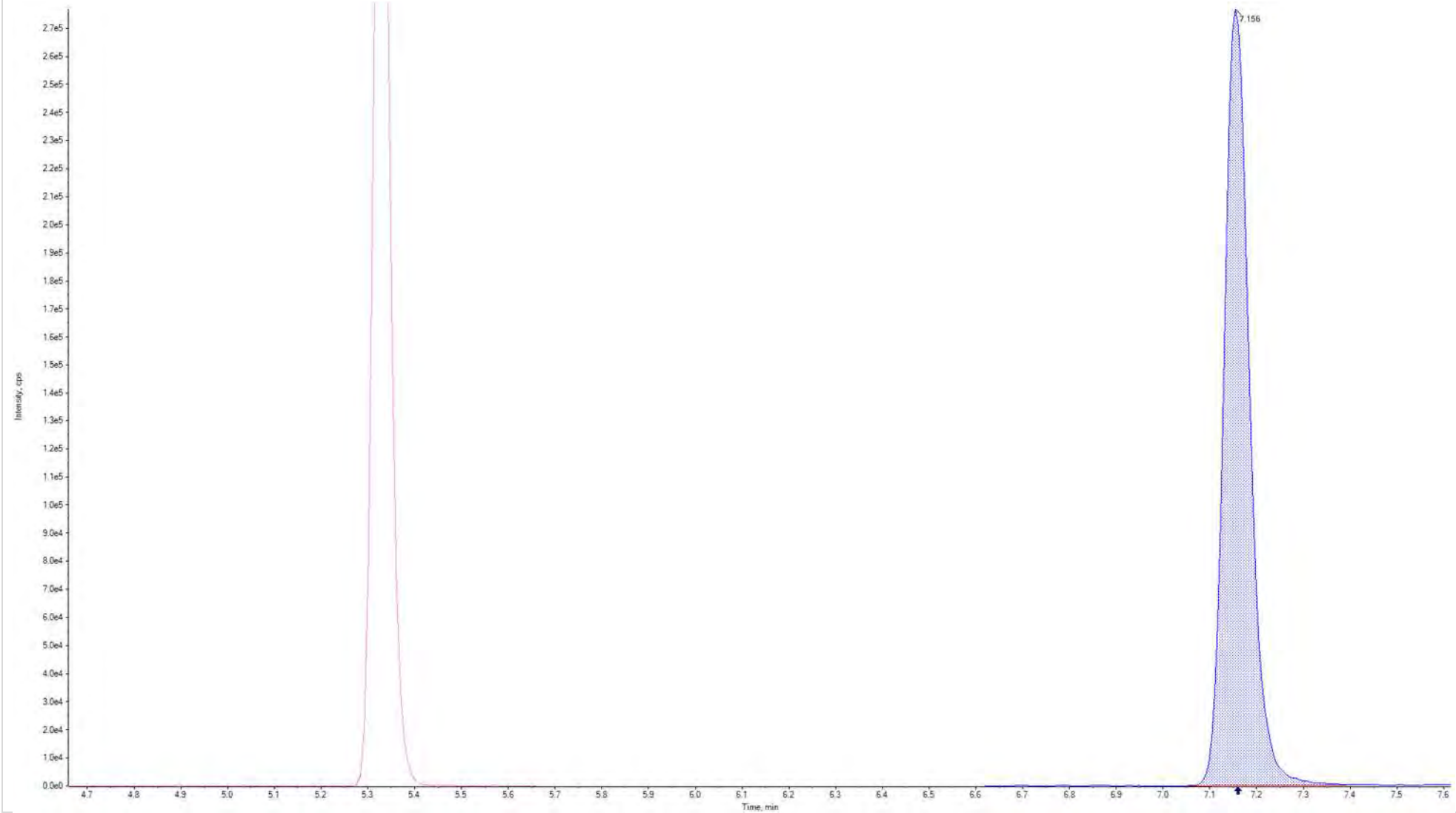
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

5:3FTCA
Sample: IA1633STD-.5 S/N:17454.2 Points Across peak:47



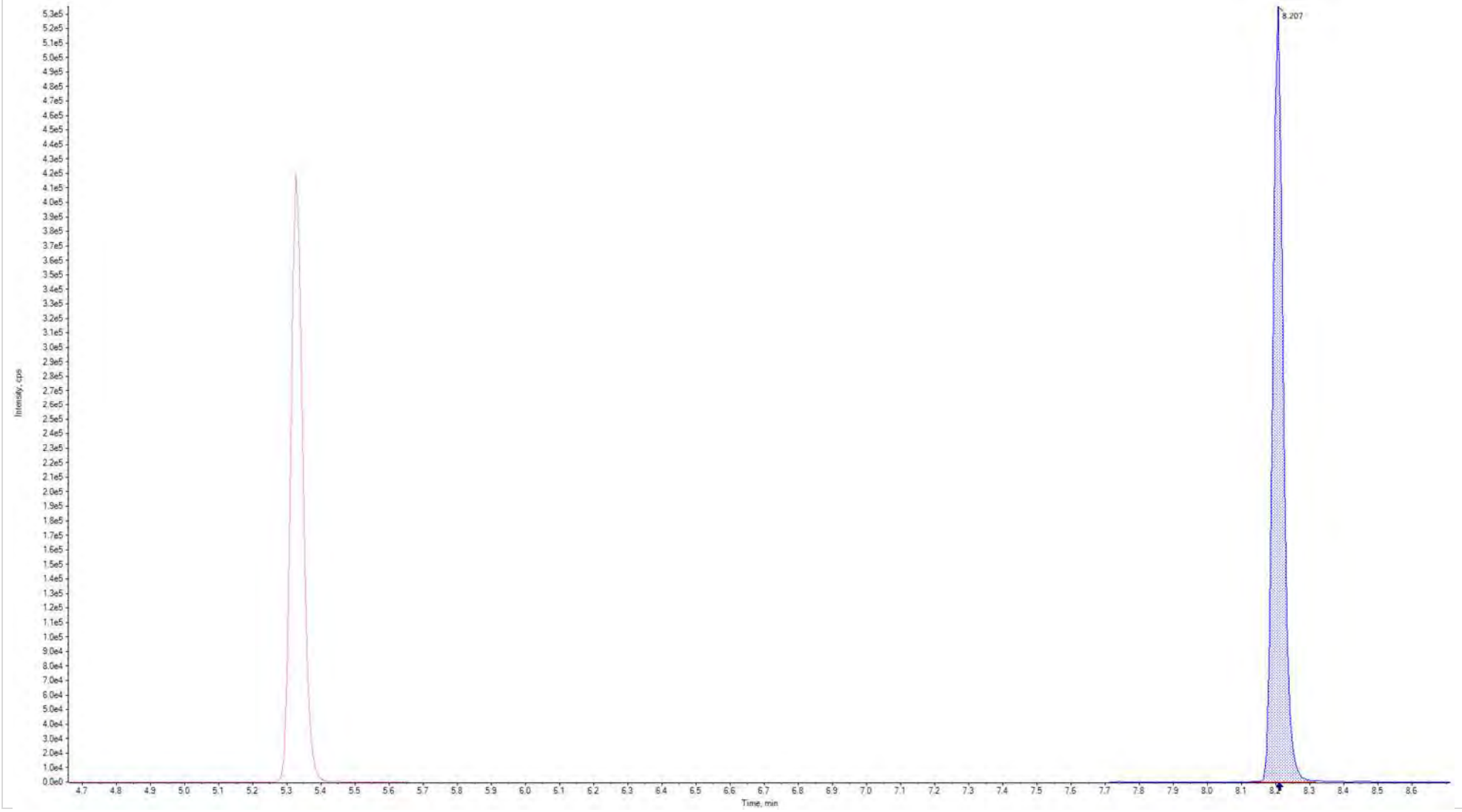
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

5:3FTCA_2
Sample: IA1633STD-.5 S/N:6149.3 Points Across peak:59



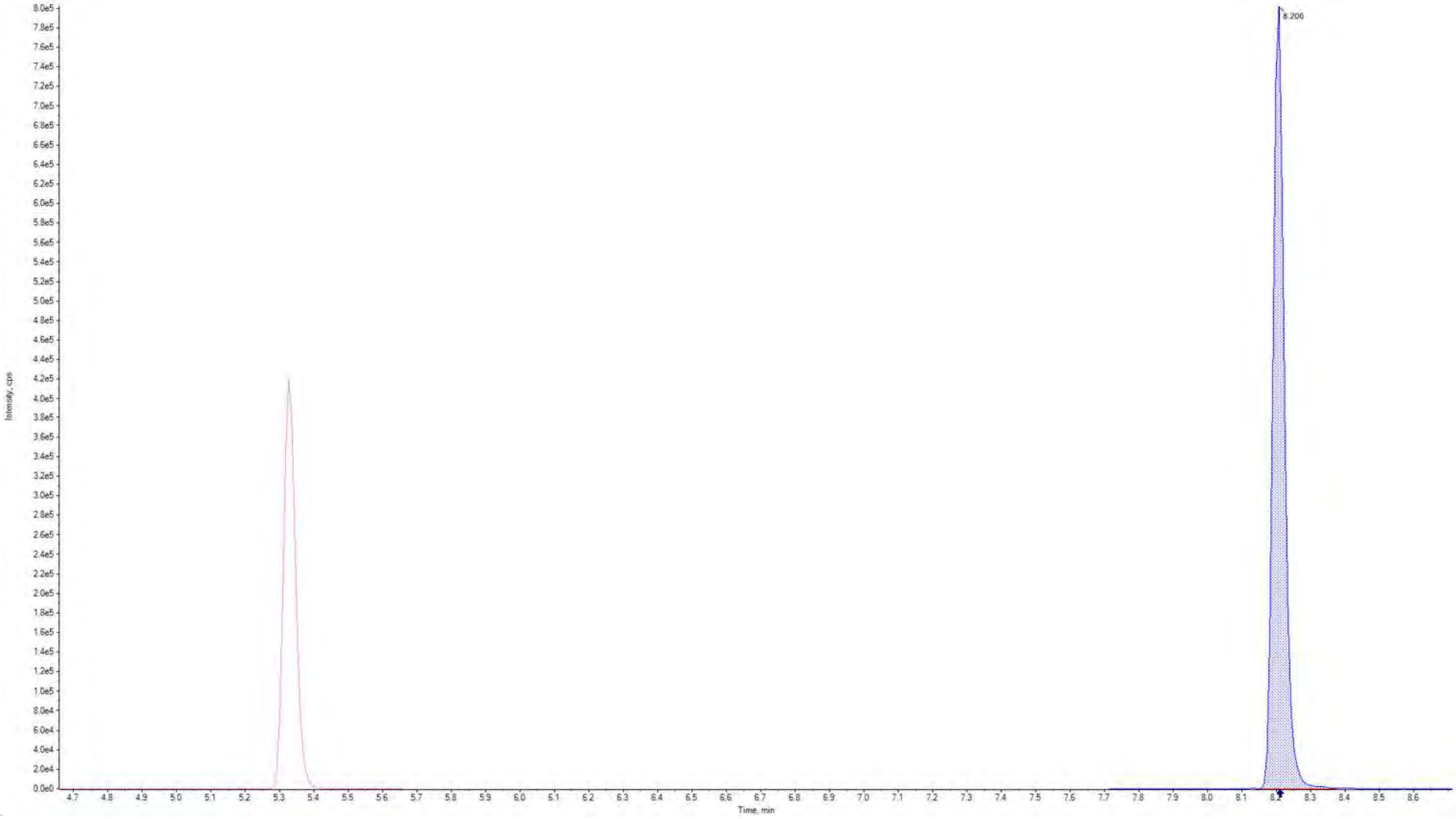
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

7:3FTCA
Sample: IA1633STD-.5 S/N:1064937.9 Points Across peak:28



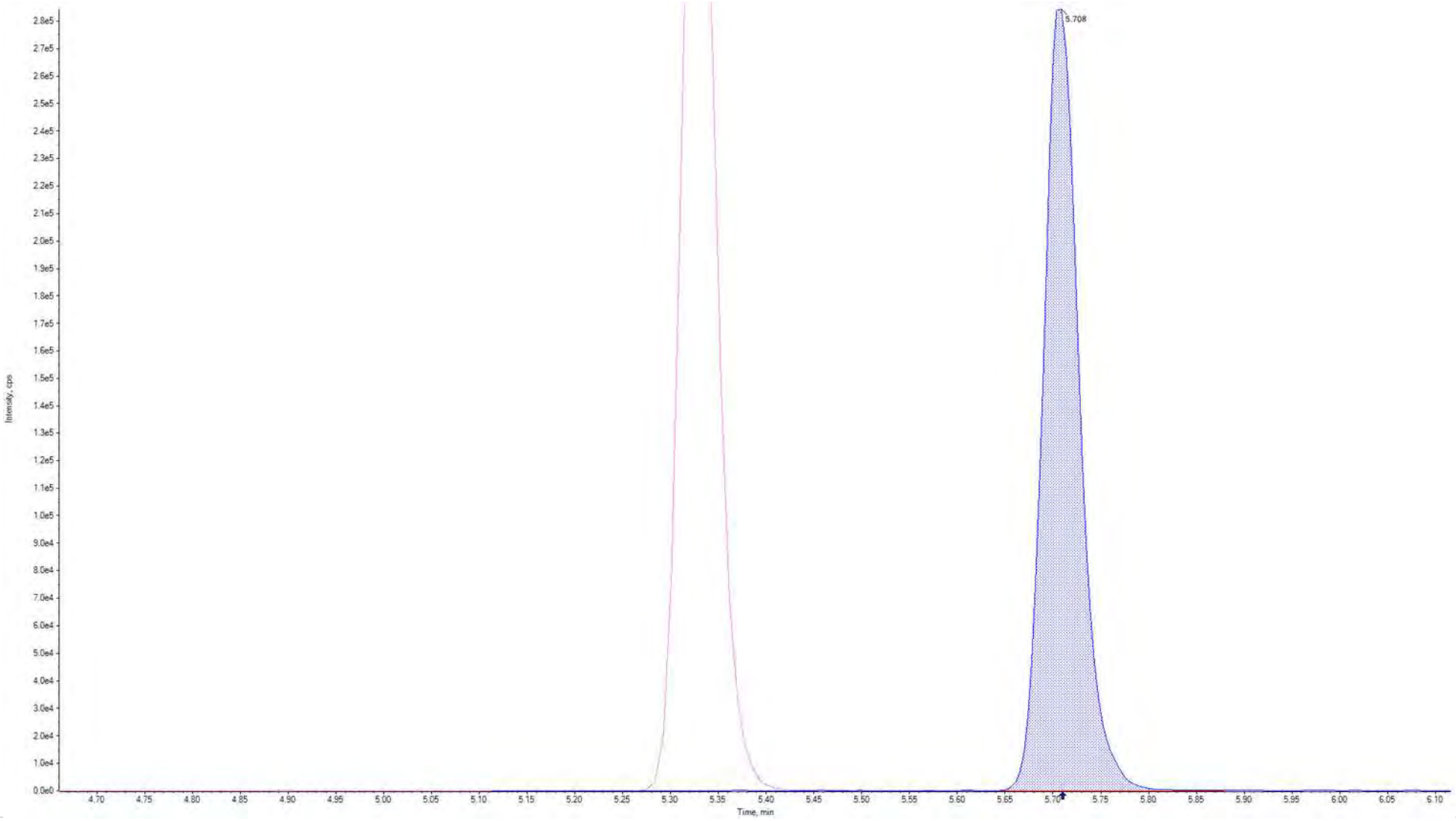
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

7:3FTCA_2
Sample: IA1633STD-.5 S/N:14103.0 Points Across peak:27



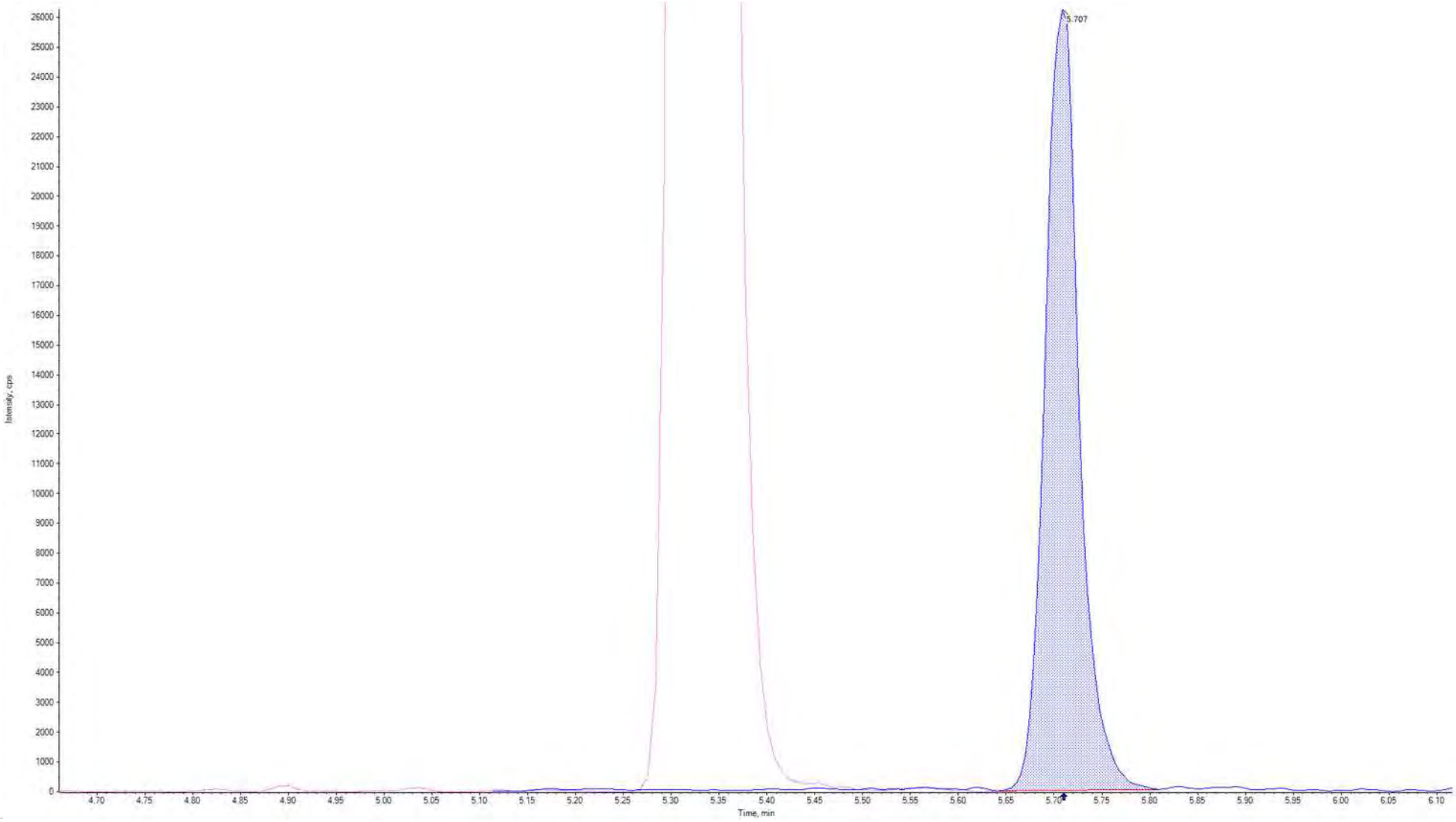
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFEESA
Sample: IA1633STD-.5 S/N:5953.4 Points Across peak:49



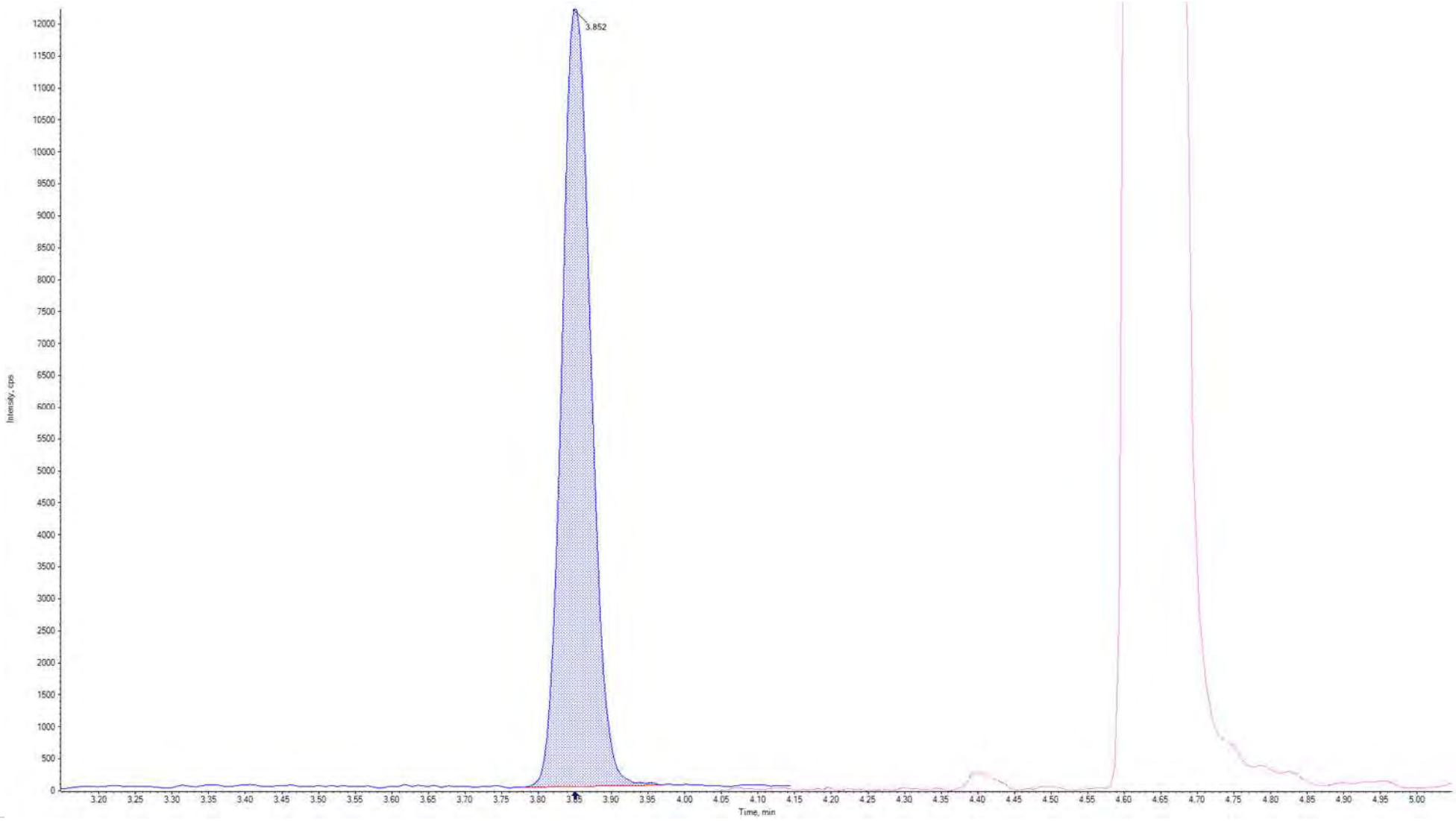
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFEESA_2
Sample: IA1633STD-.5 S/N:2071.5 Points Across peak:38



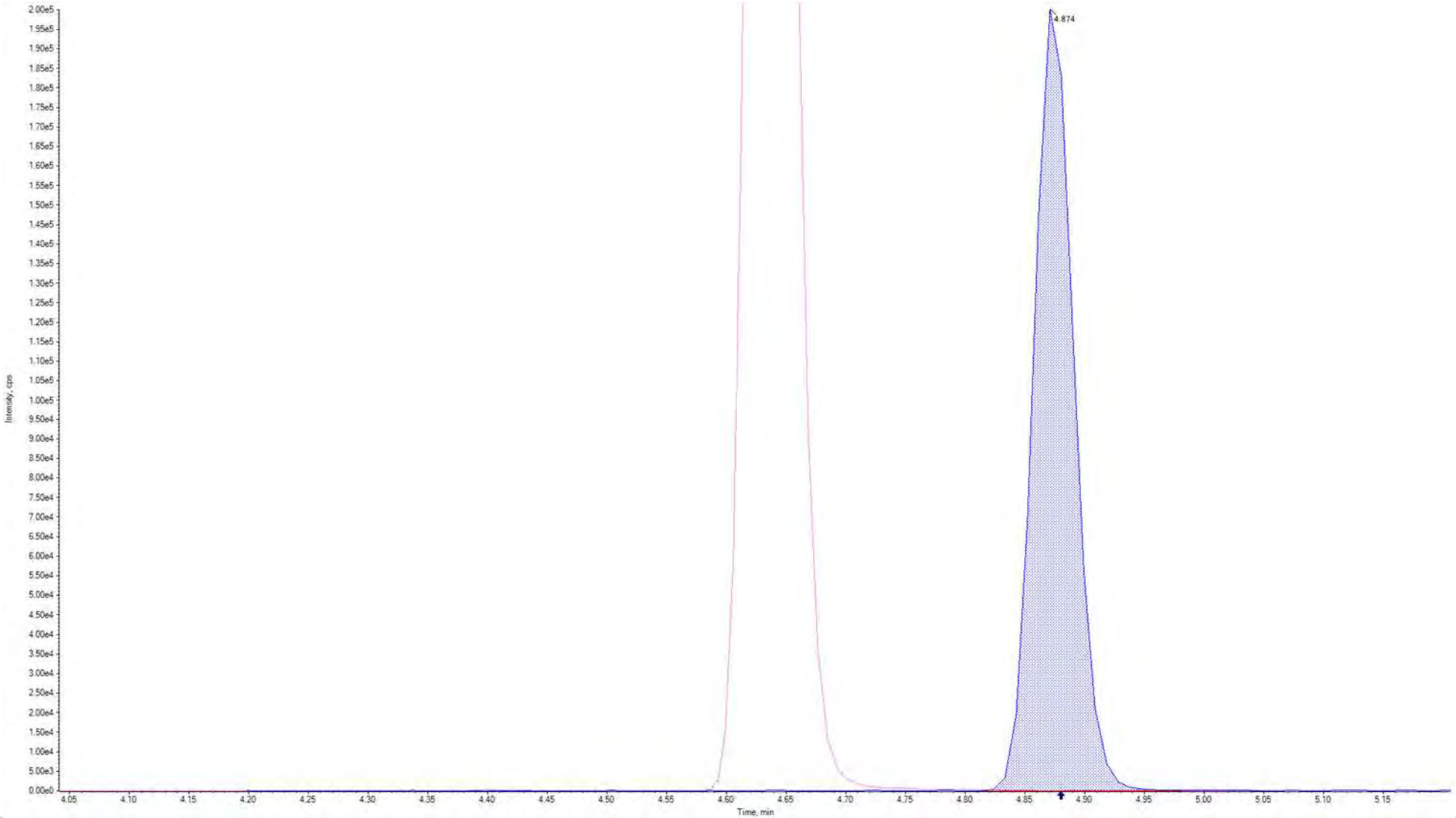
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFMPA
Sample: IA1633STD-.5 S/N:1333.6 Points Across peak:48



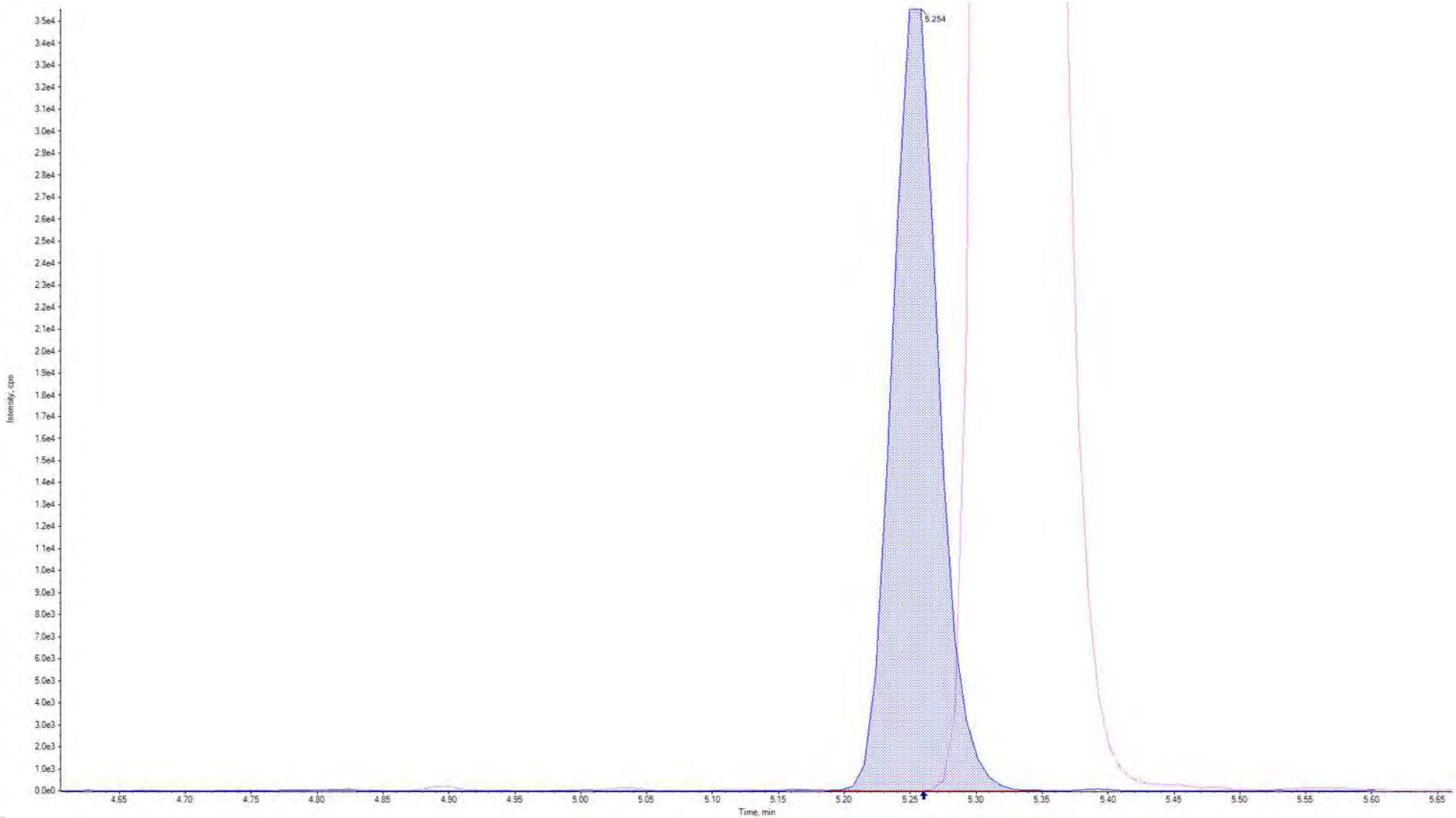
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

PFMBA
Sample: IA1633STD-.5 S/N:2484.4 Points Across peak:19



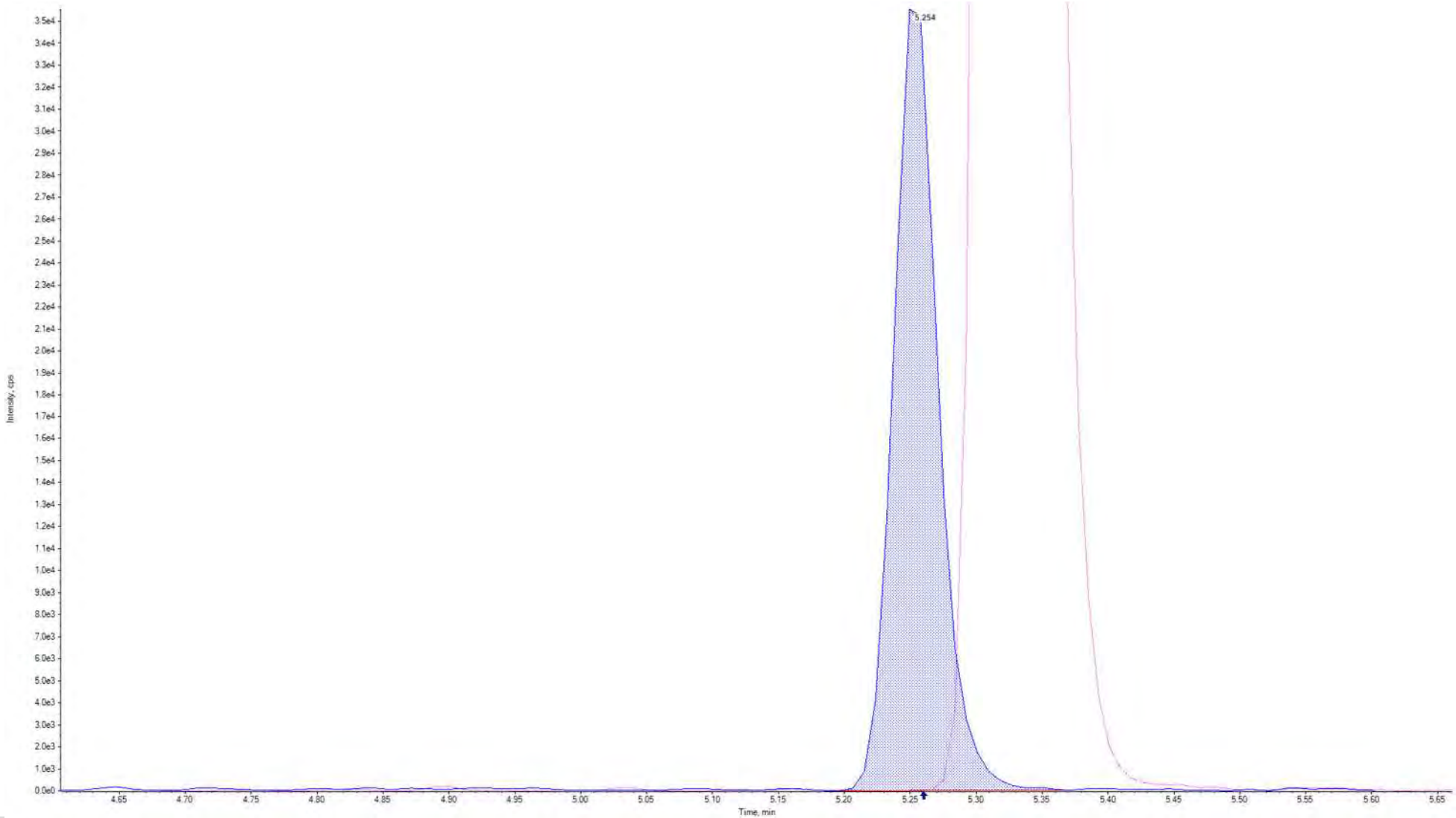
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

NFDHA
Sample: IA1633STD-.5 S/N:3361.9 Points Across peak:21



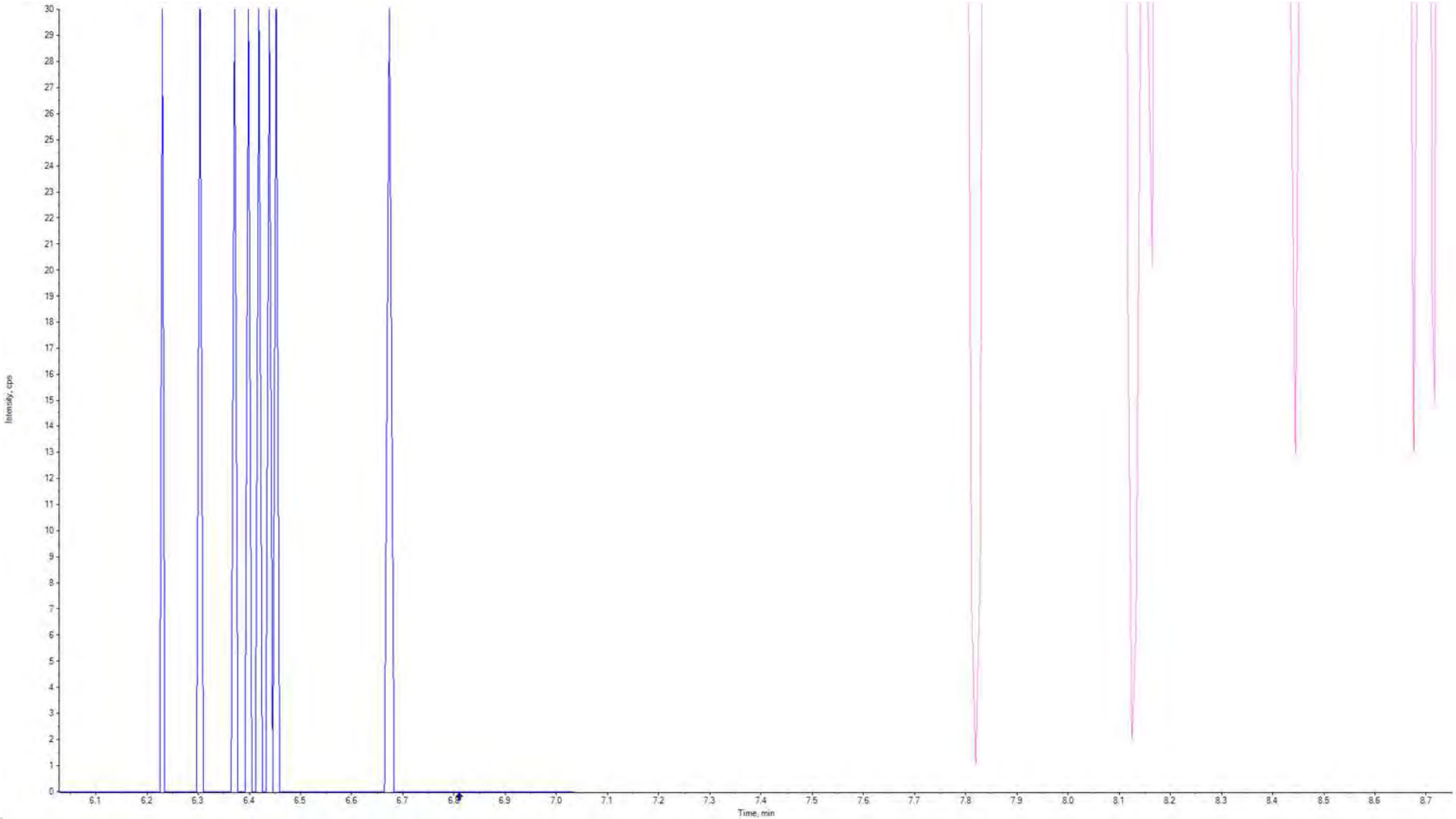
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

NFDHA_2
Sample: IA1633STD-.5 S/N:1529.0 Points Across peak:22



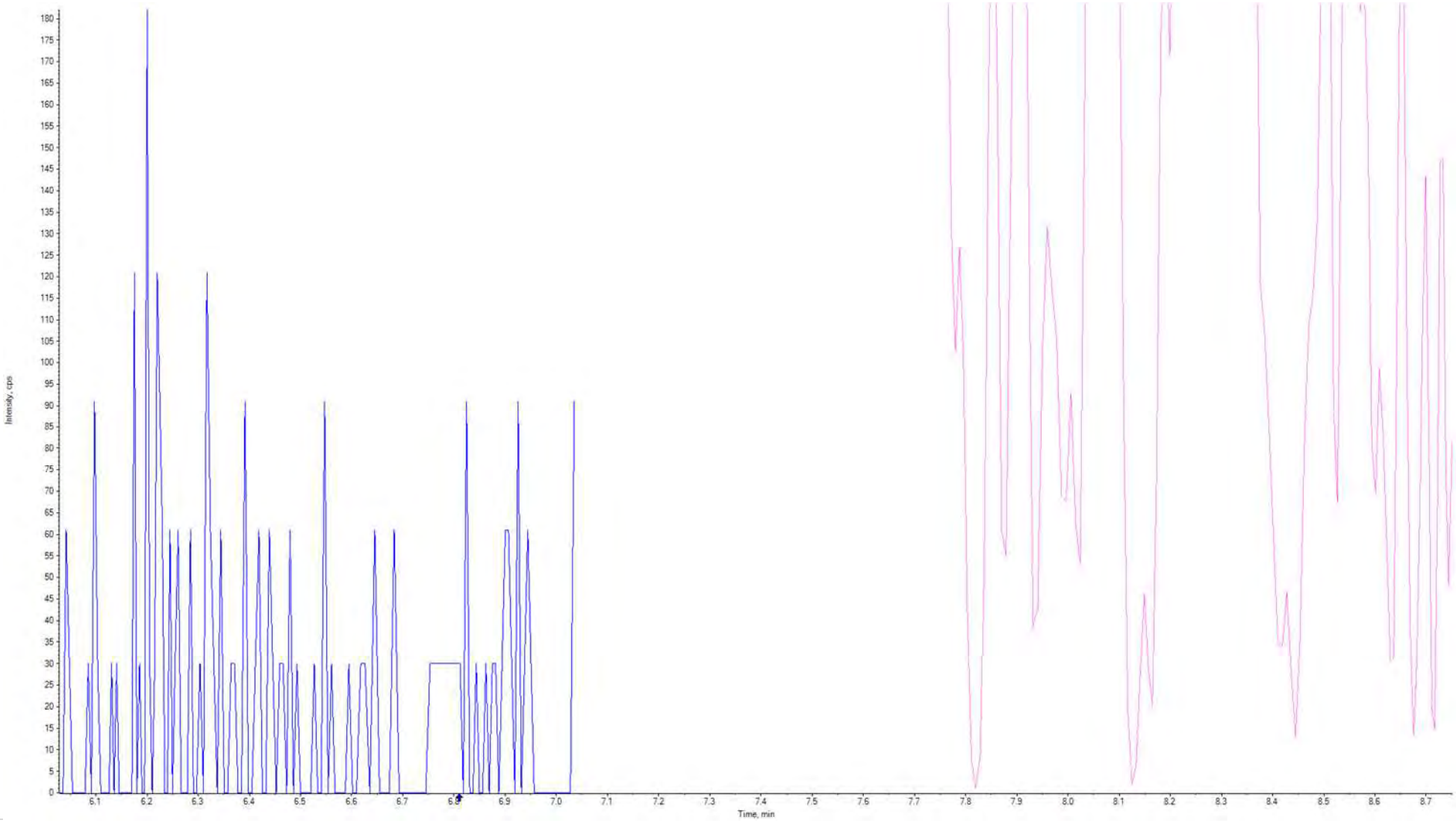
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

TDCA
Sample: IA1633STD-.5 S/N:N/A Points Across peak:N/A



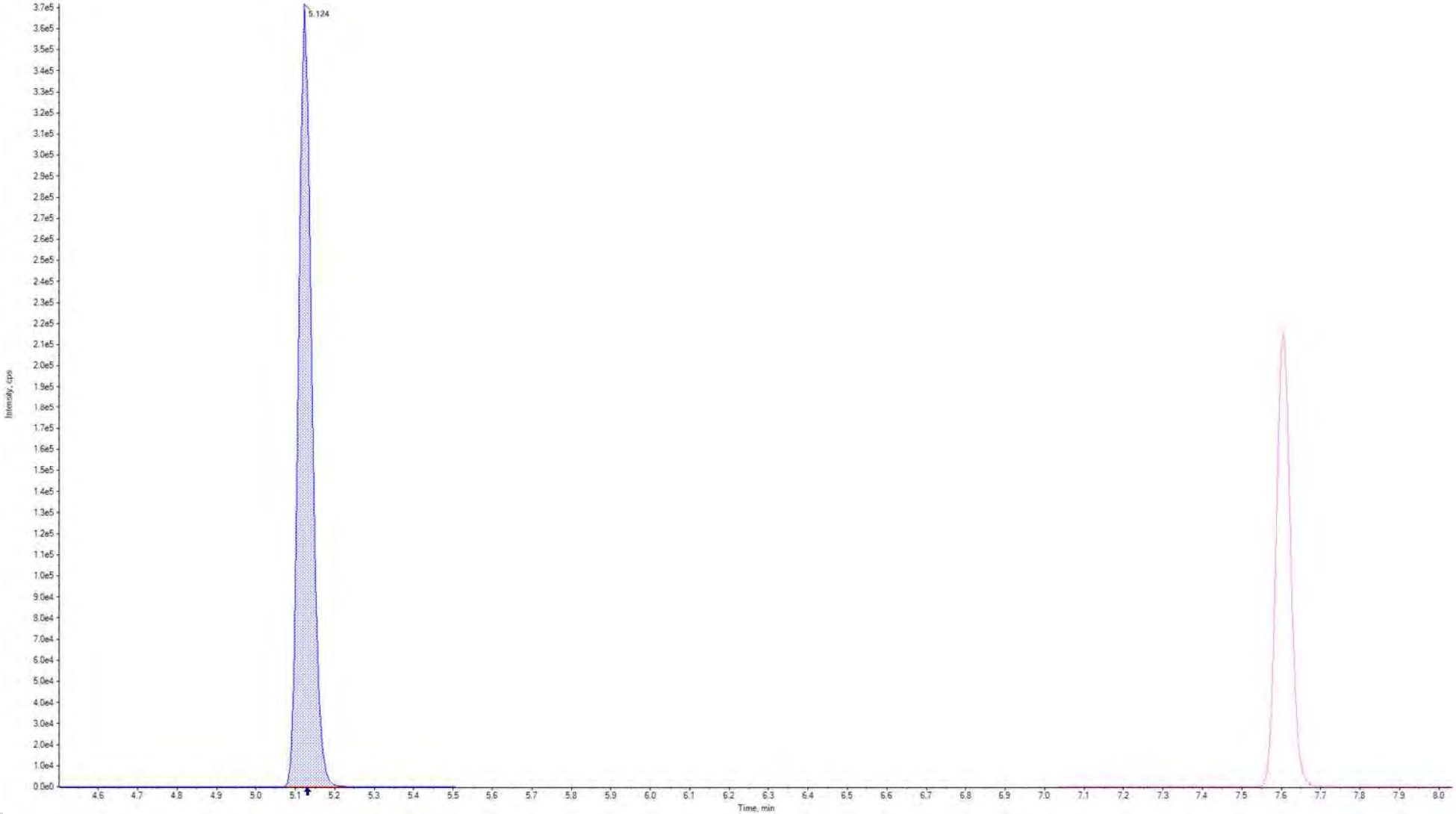
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

TDCA_2
Sample: IA1633STD-.5 S/N:N/A Points Across peak:N/A



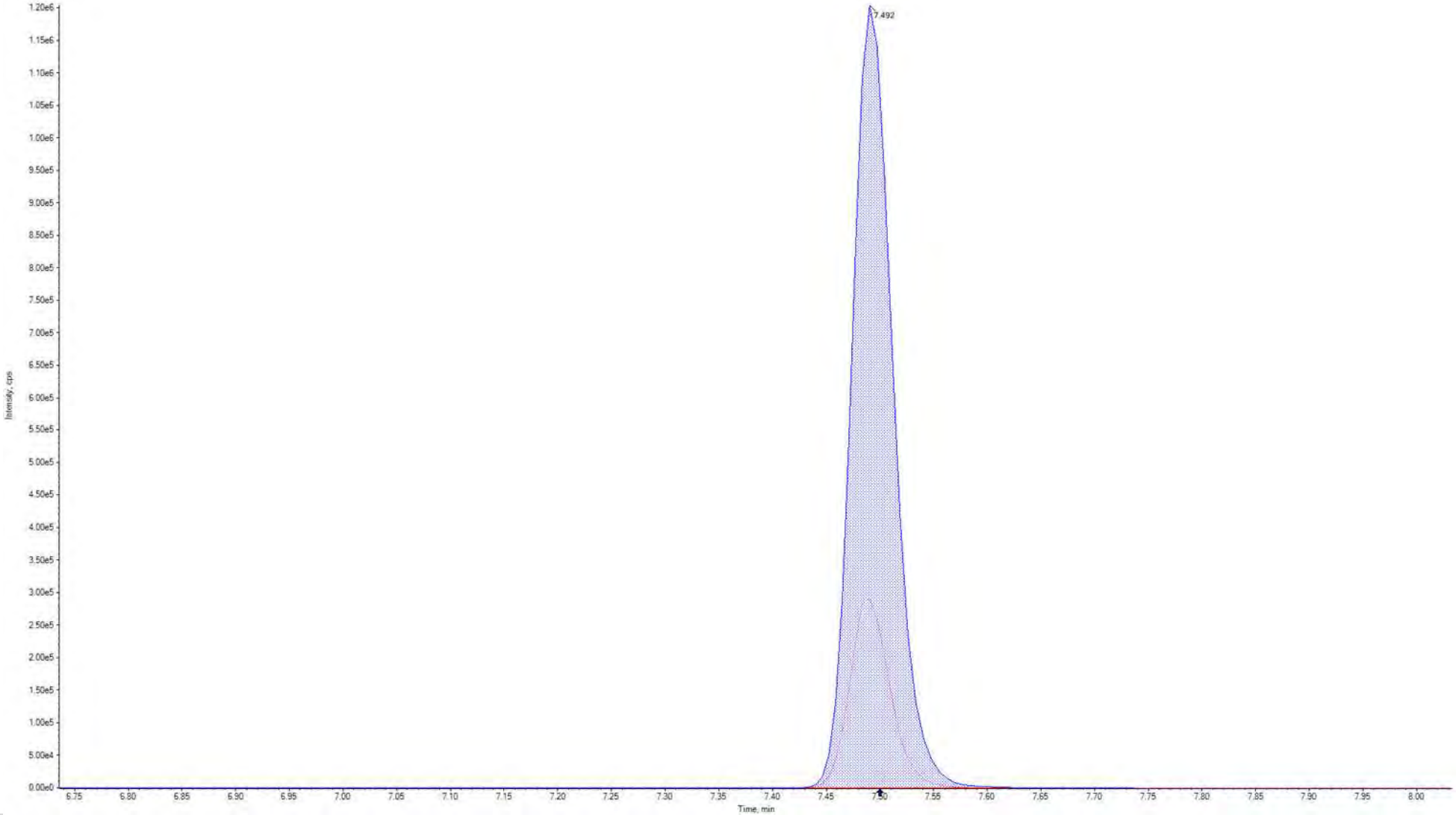
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

13C2D4-4:2FTS
Sample: IA1633STD-.5 S/N:2401.7 Points Across peak:24

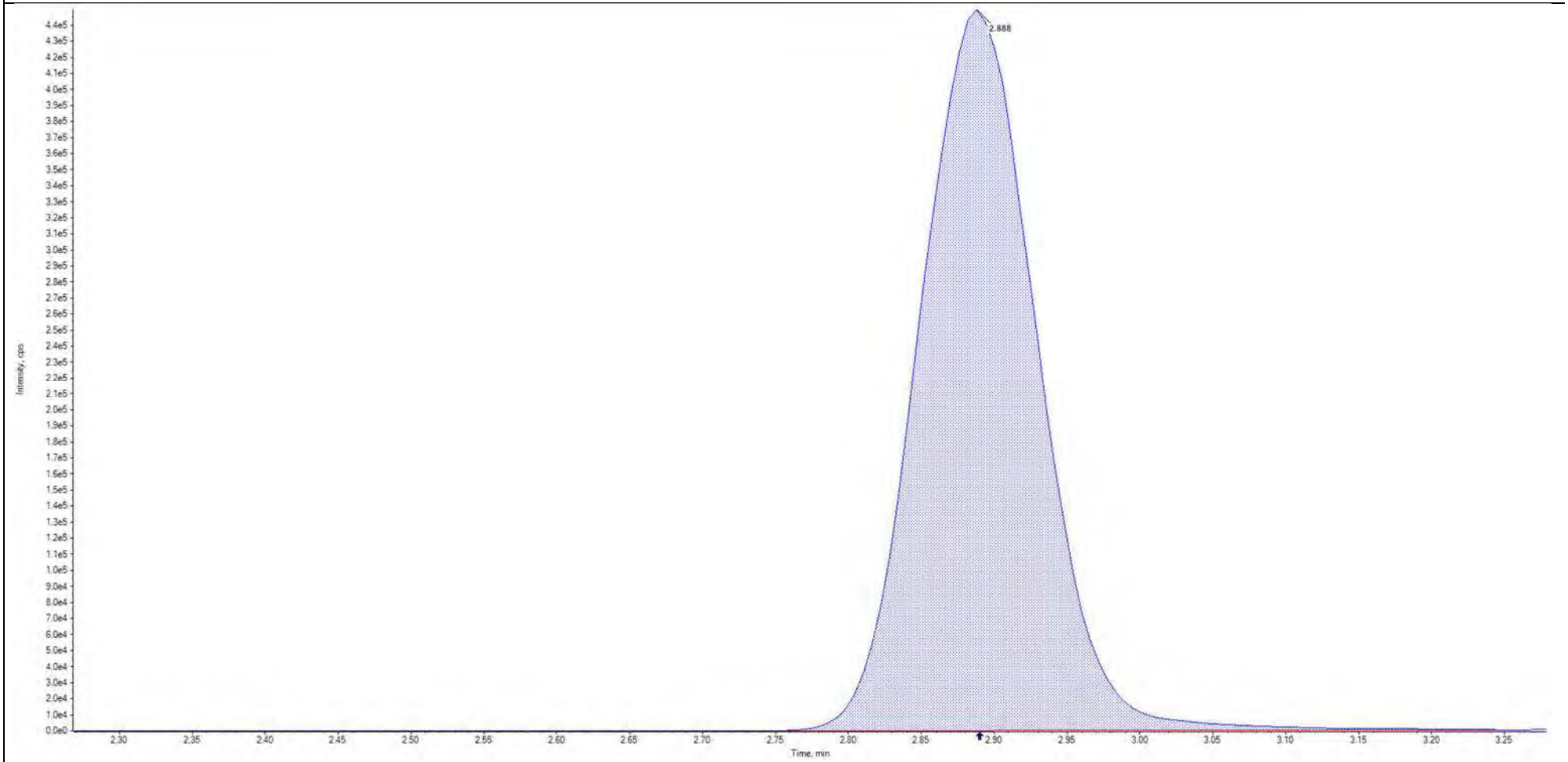


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

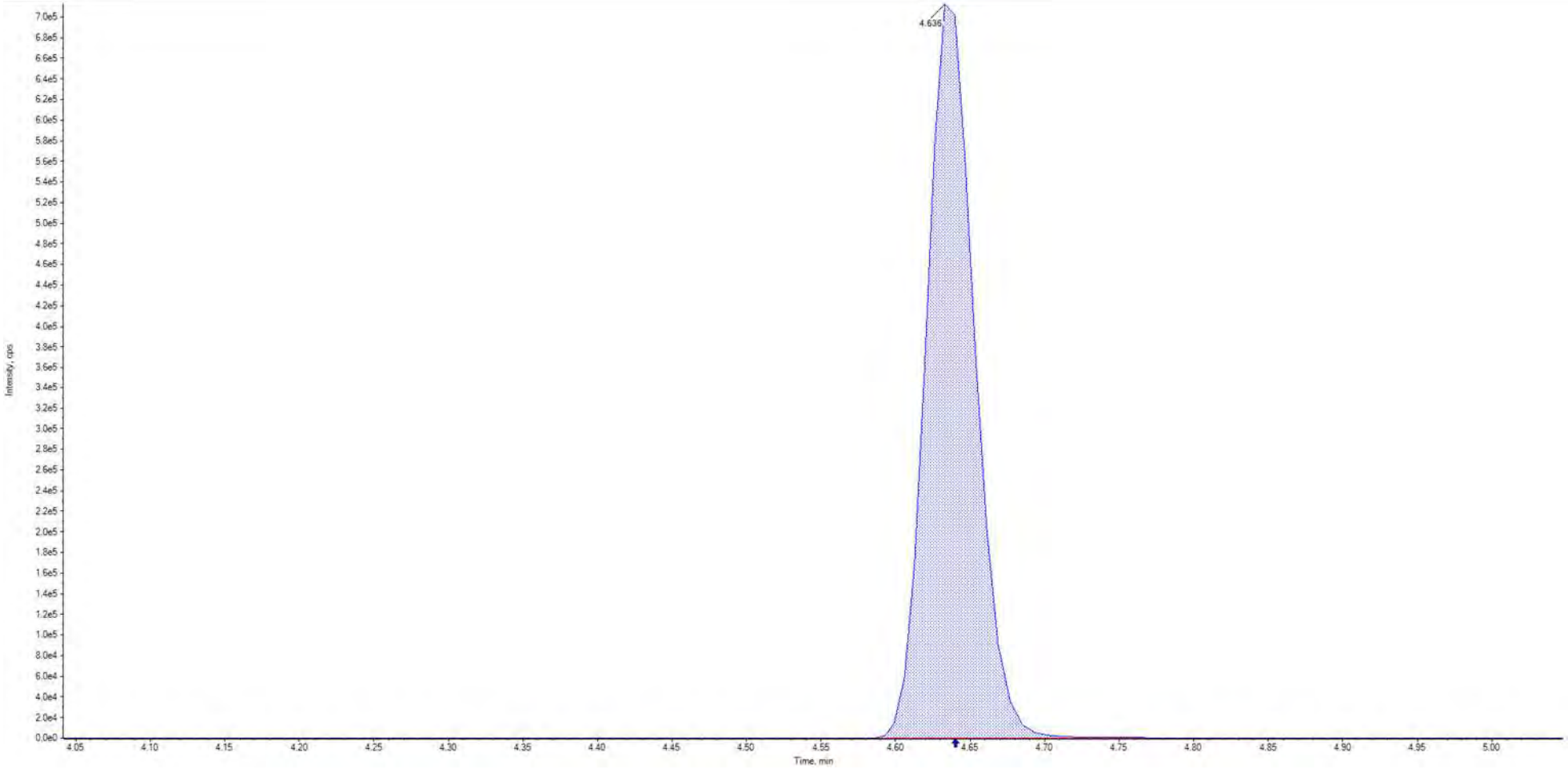
13C2-PFOA
Sample: IA1633STD-.5 S/N:11159.4 Points Across peak:34



13C4-PFBA
Sample: IA1633STD-.5

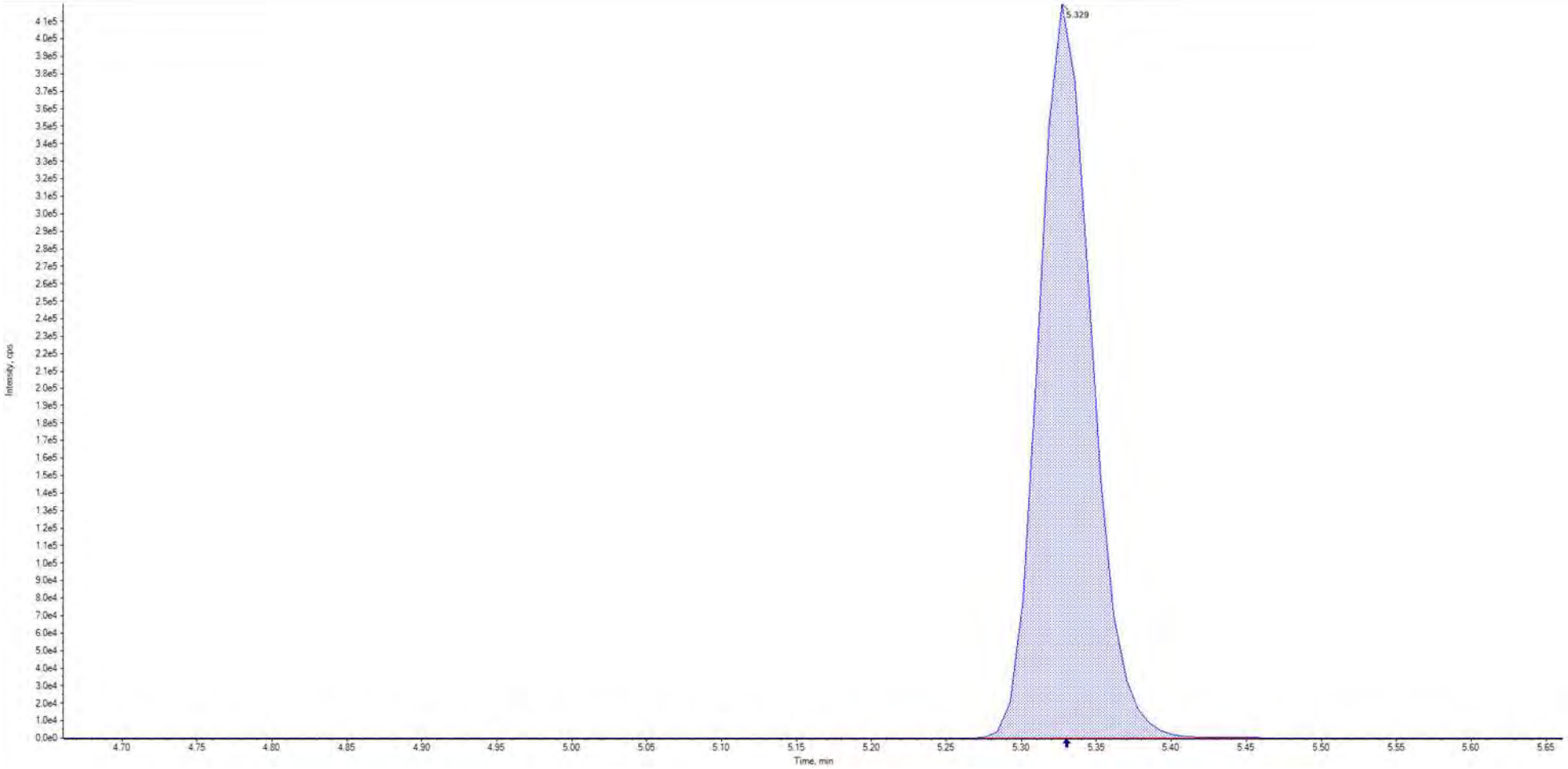


13C5-PFPeA
Sample: IA1633STD-.5

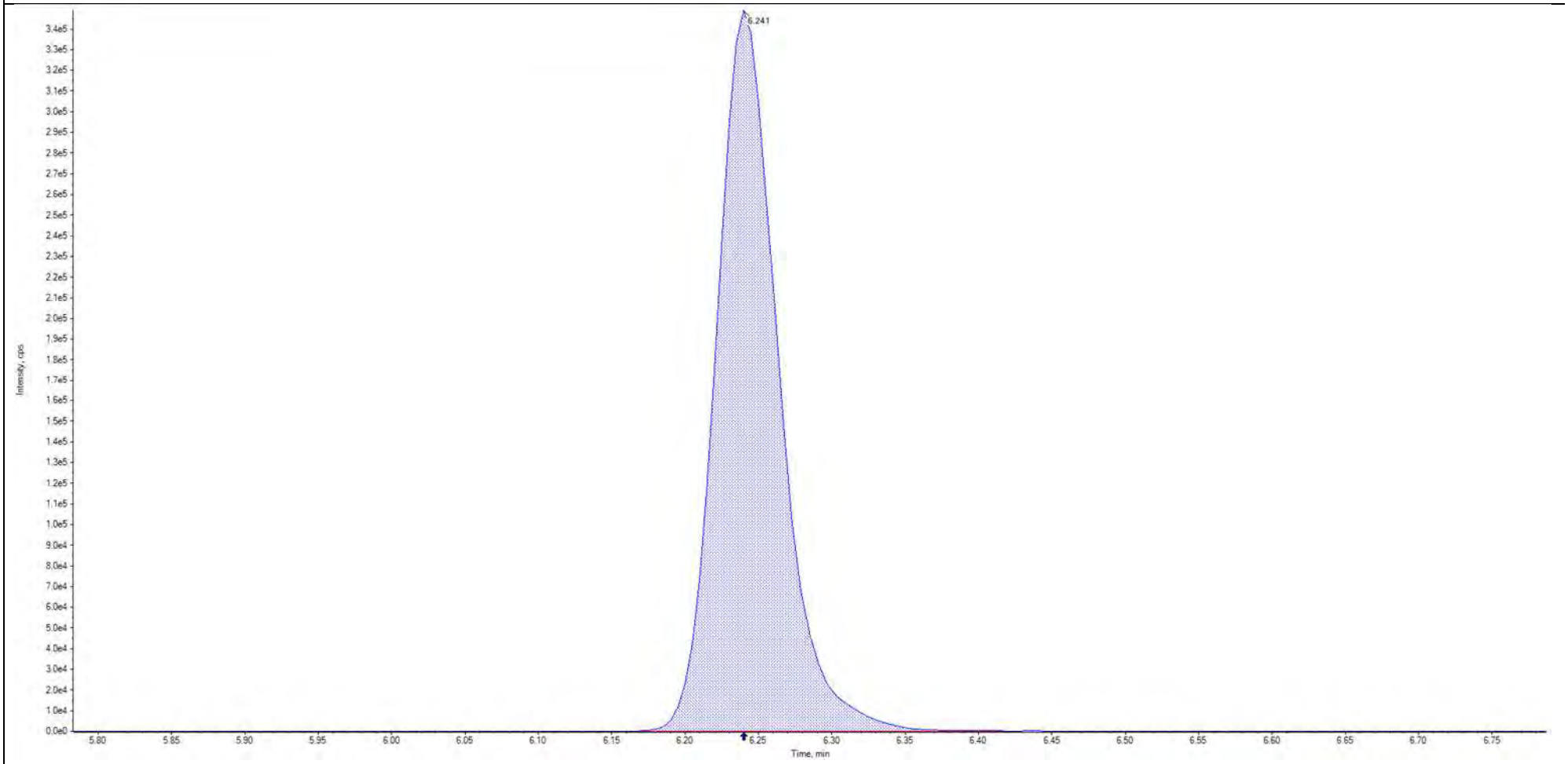


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

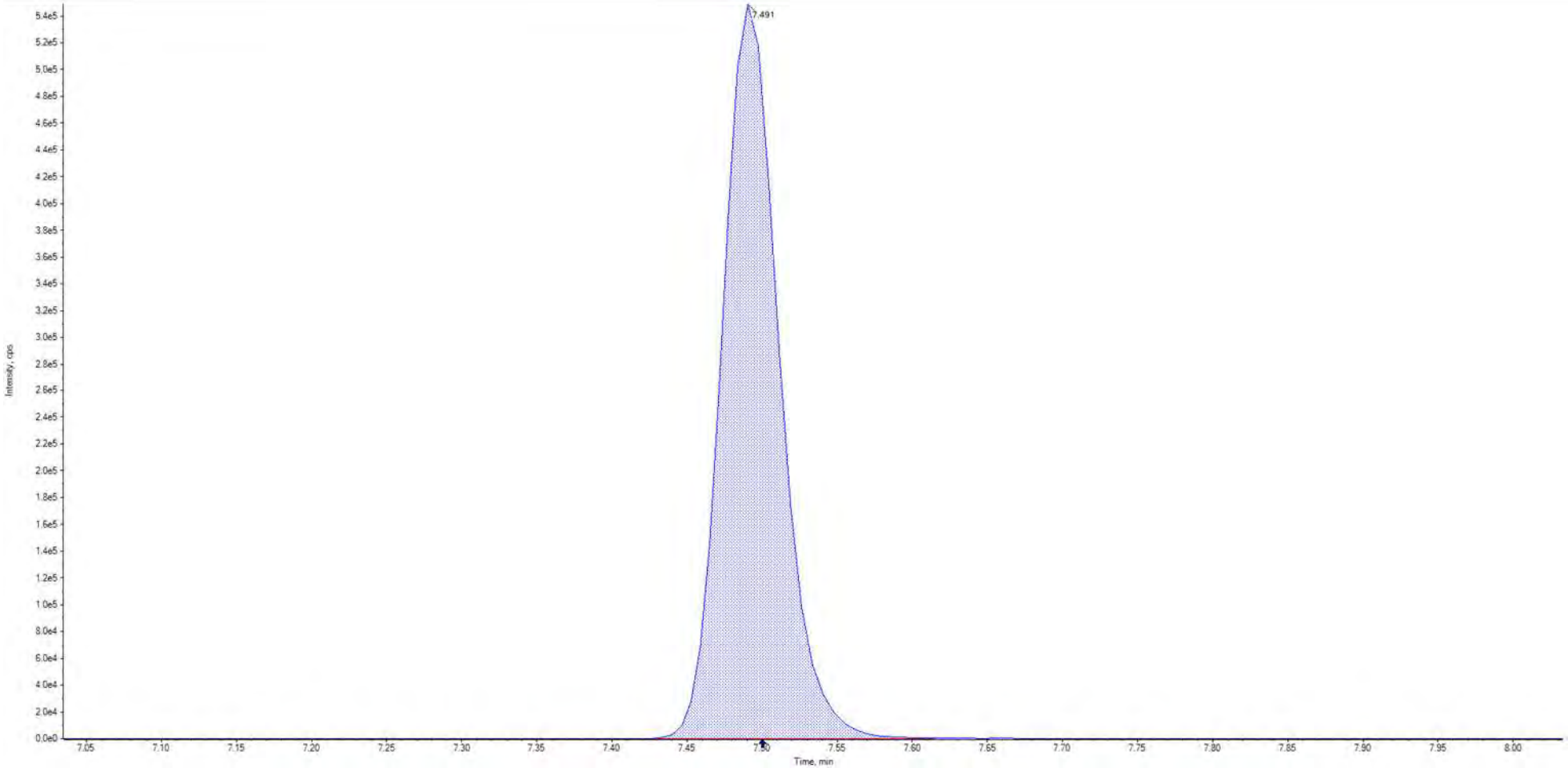
13C5-PFHxA
Sample: IA1633STD-.5



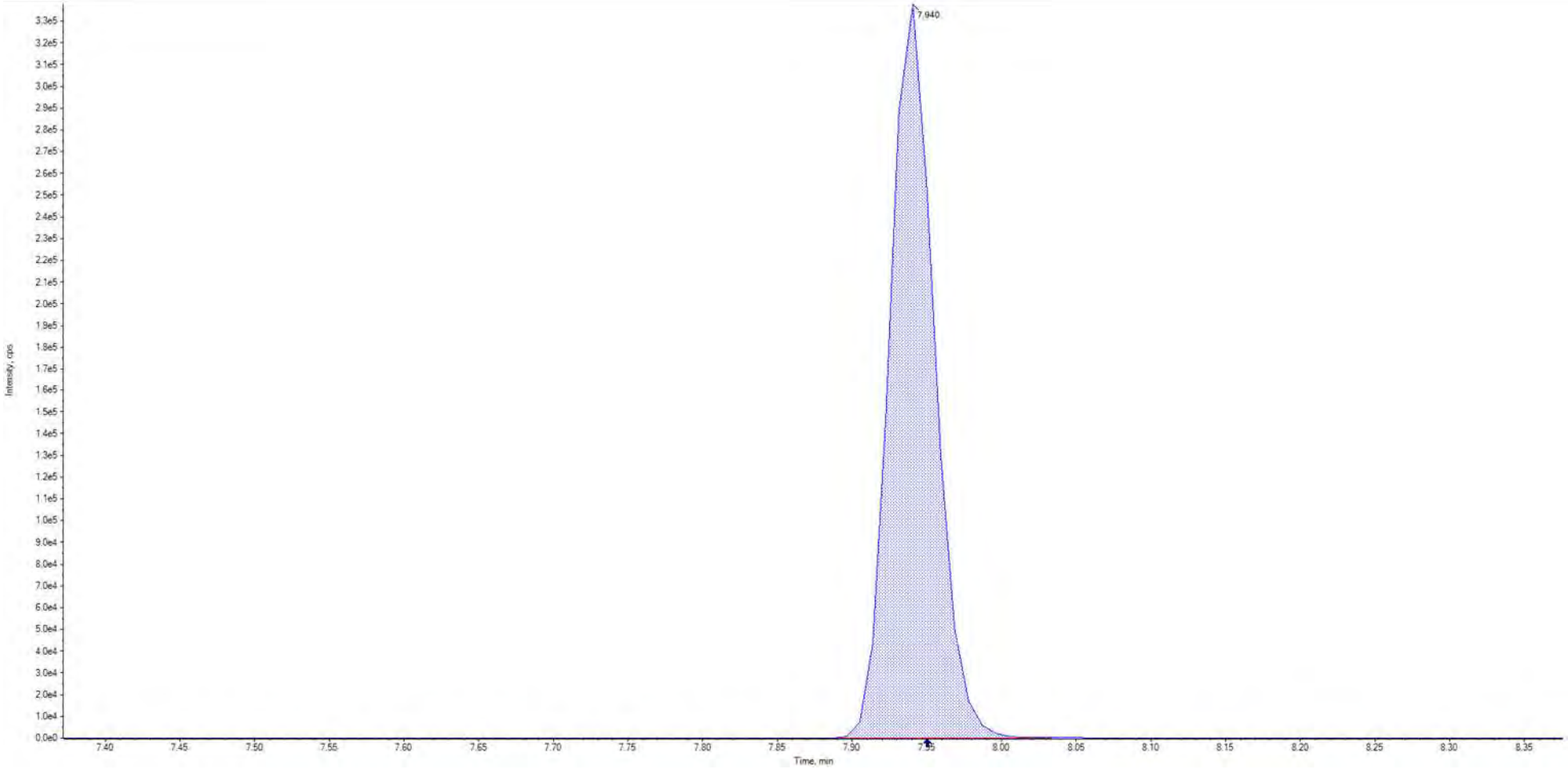
13C4-PFHpA
Sample: IA1633STD-.5



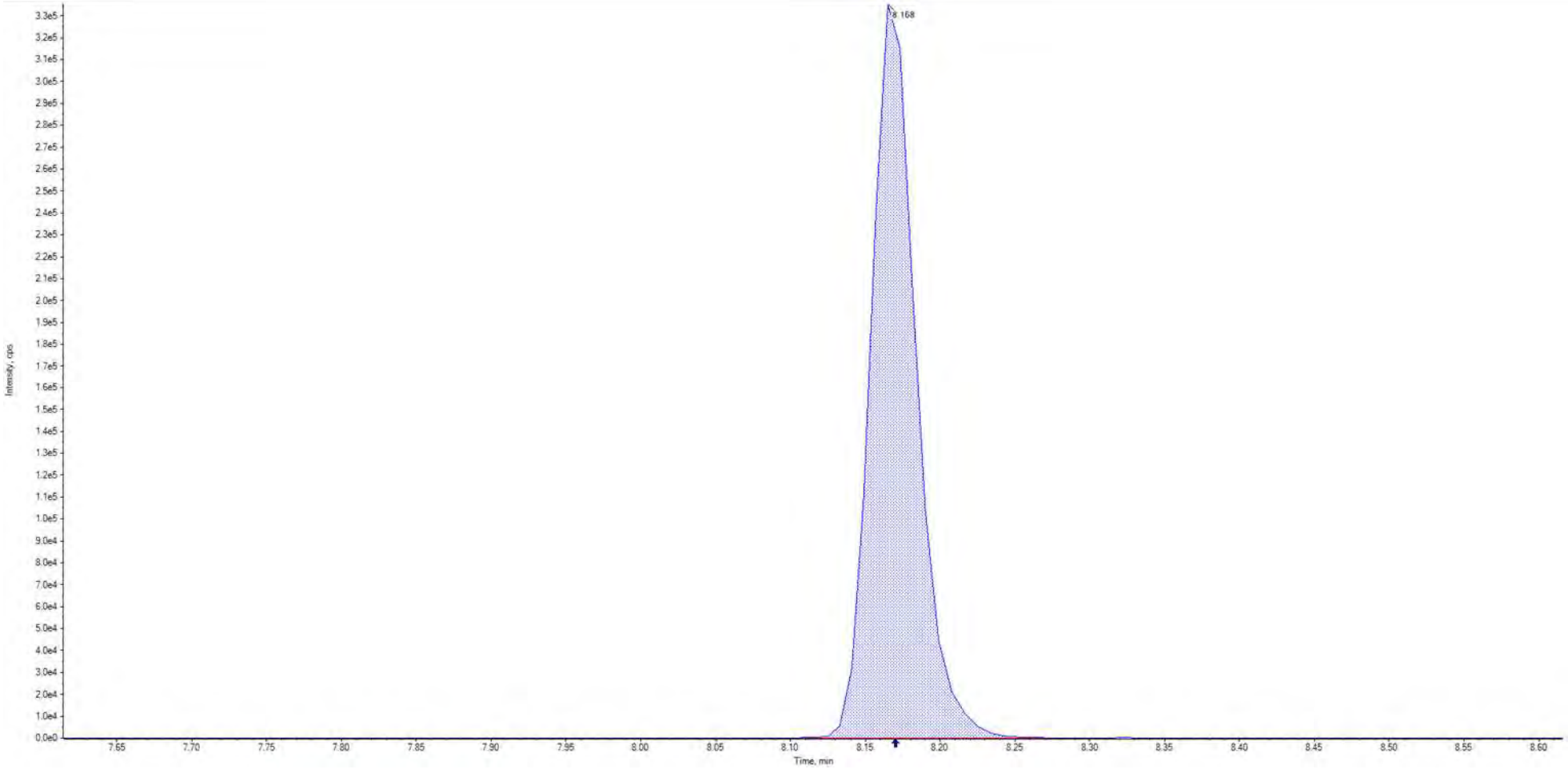
13C8-PFOA
Sample: IA1633STD-.5



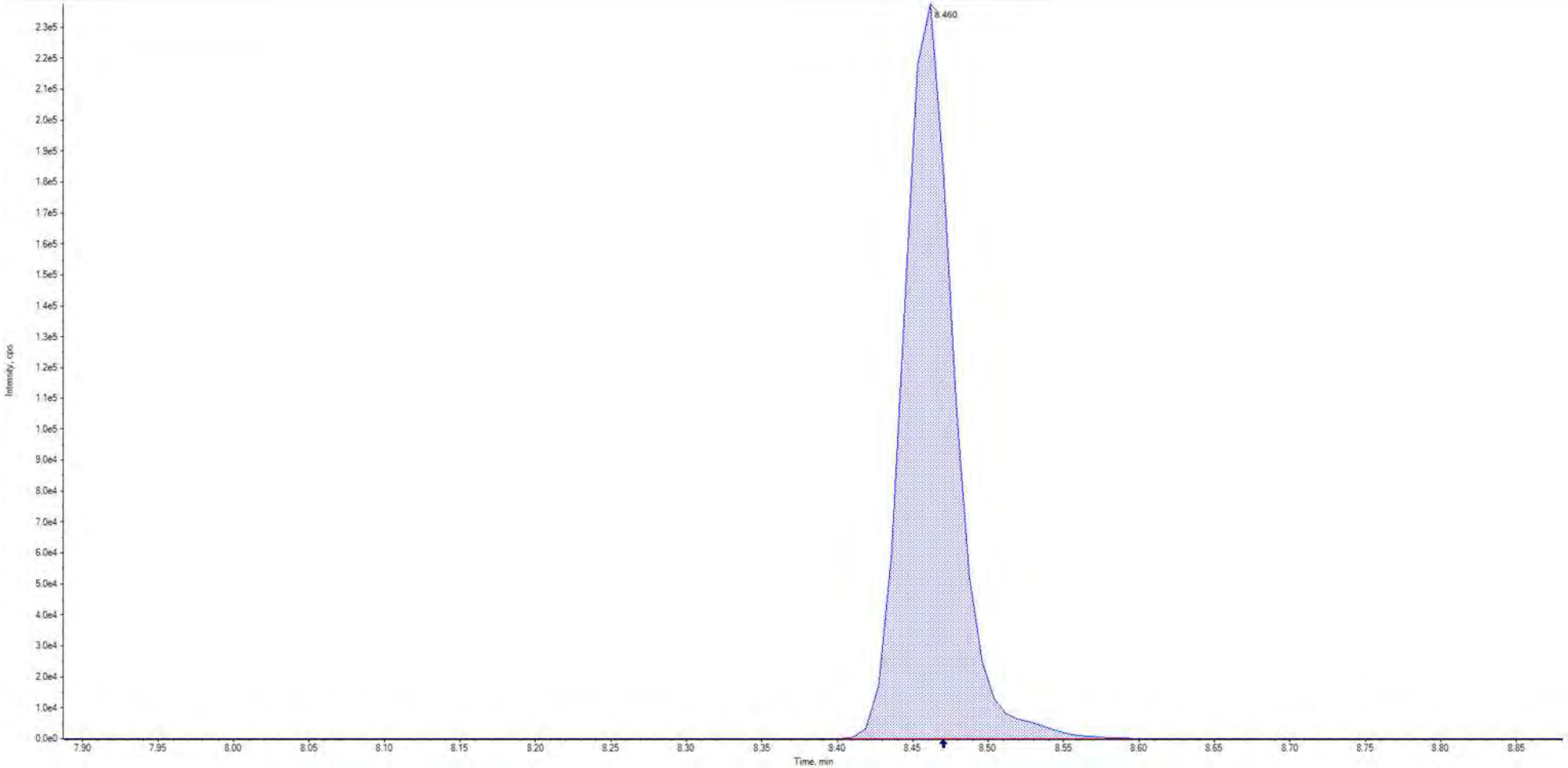
13C9-PFNA
Sample: IA1633STD-.5



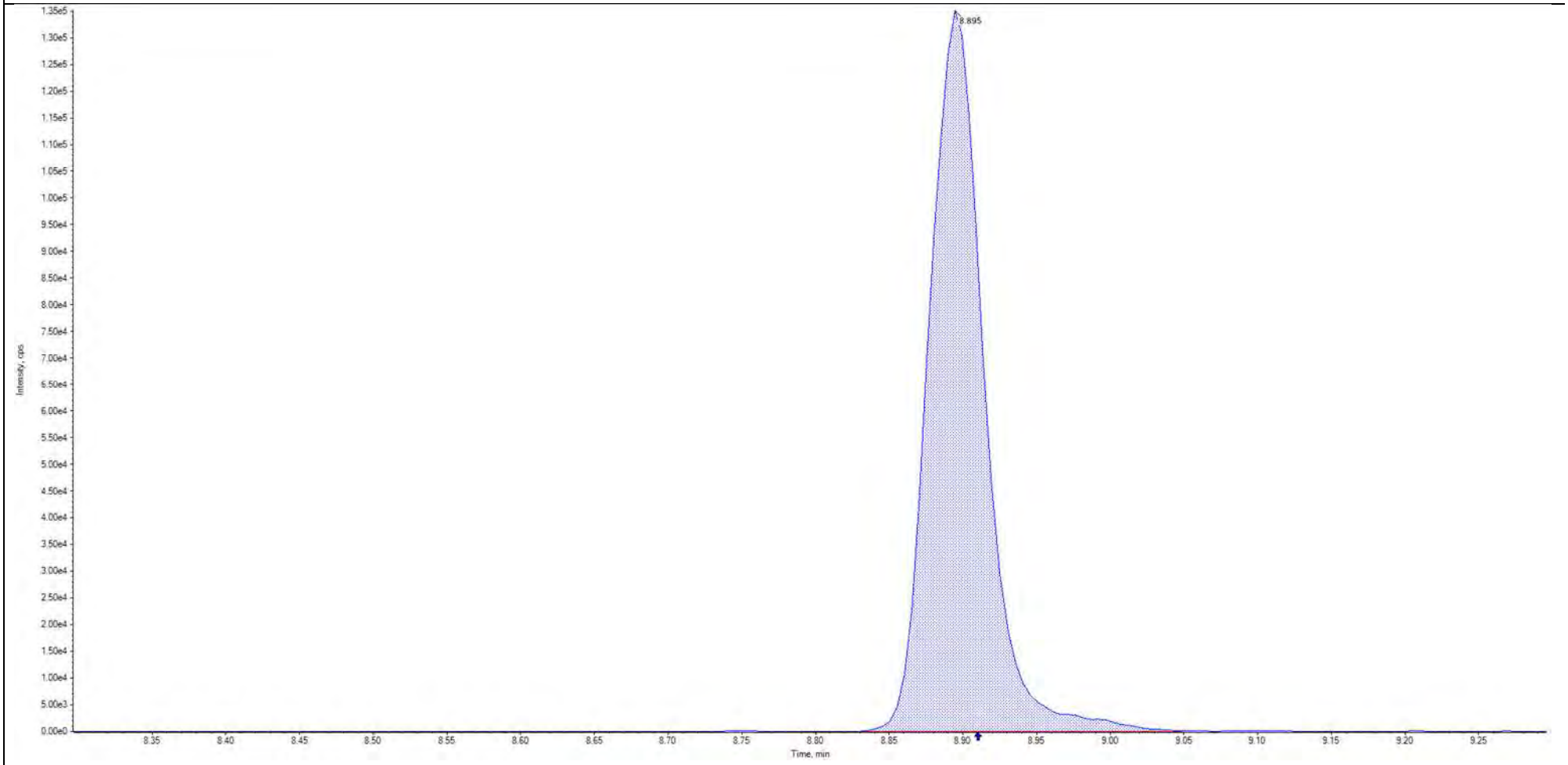
13C6-PFDA
Sample: IA1633STD-.5



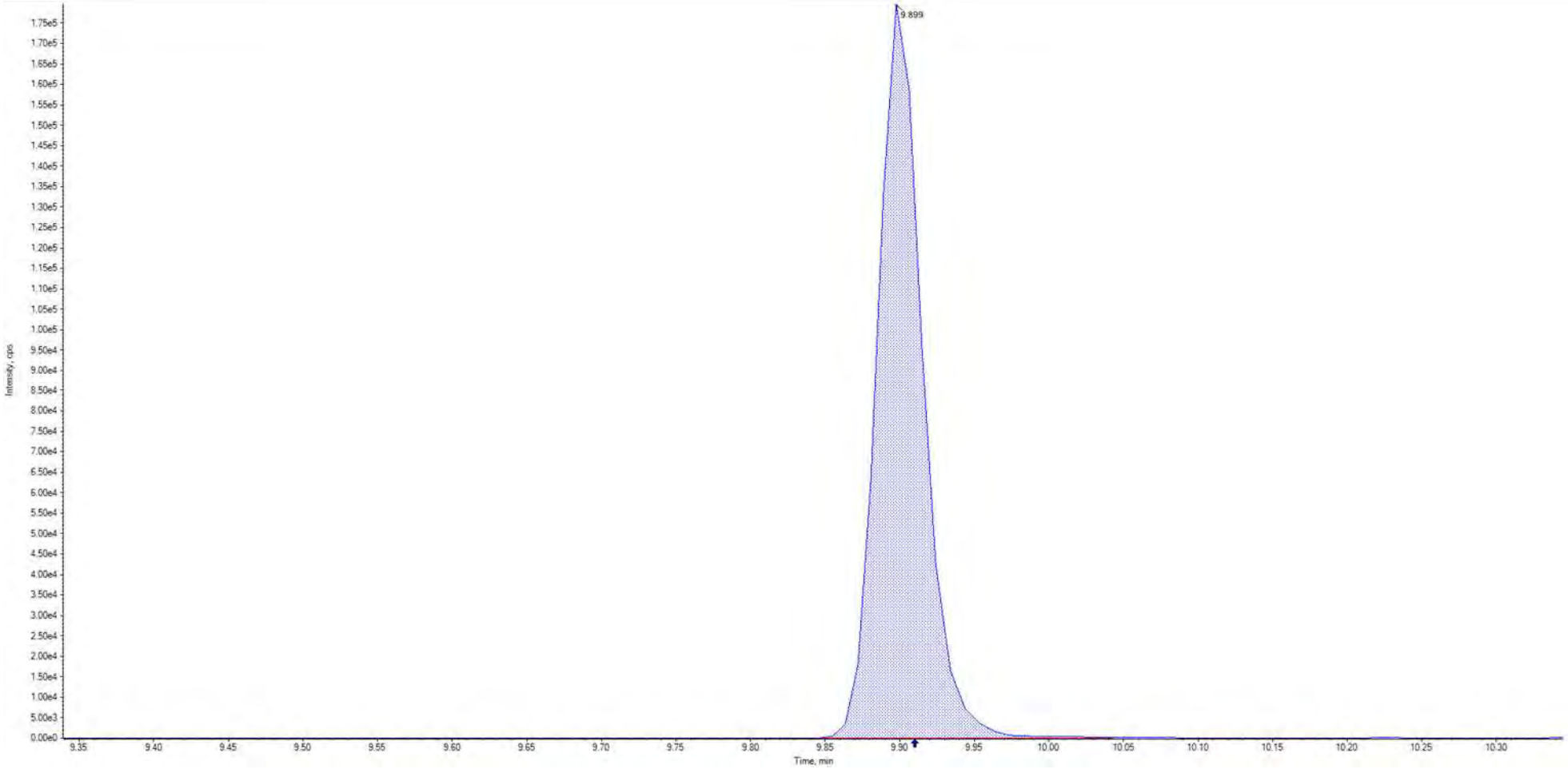
13C7-PFUnA
Sample: IA1633STD-.5



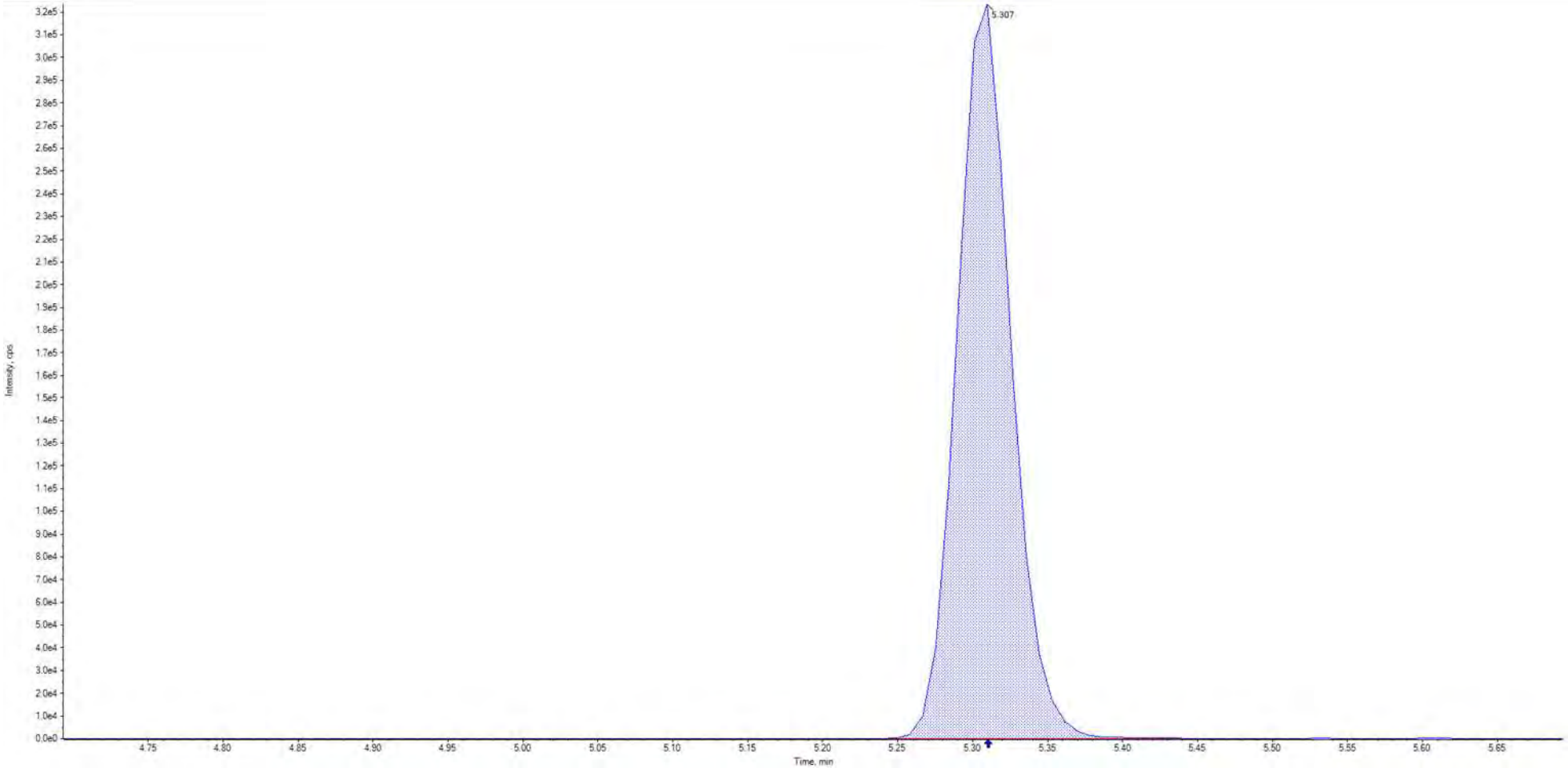
13C2-PFDoA
Sample: IA1633STD-.5



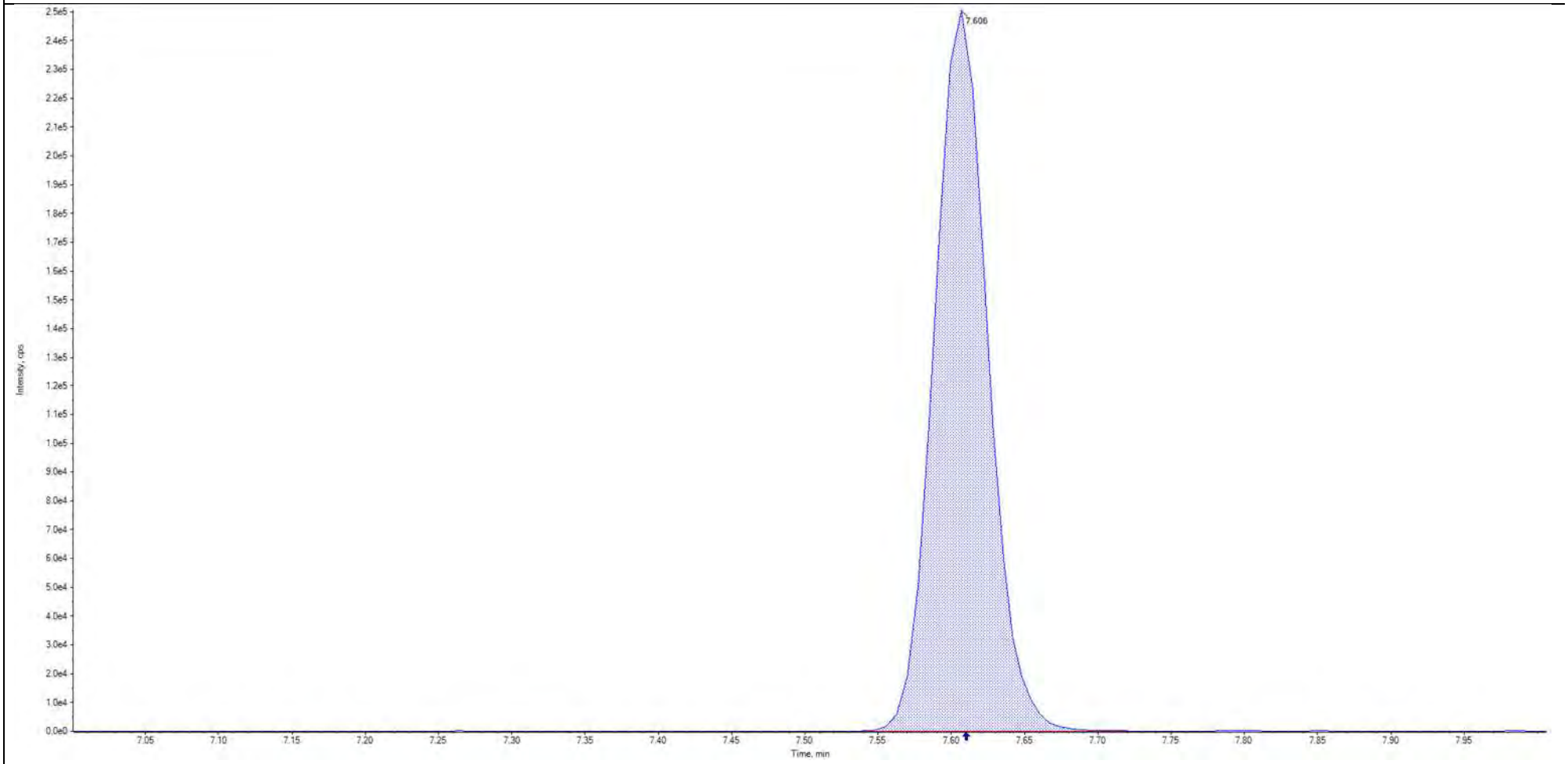
13C2-PFTeDA
Sample: IA1633STD-.5



13C3-PFBS
Sample: IA1633STD-.5

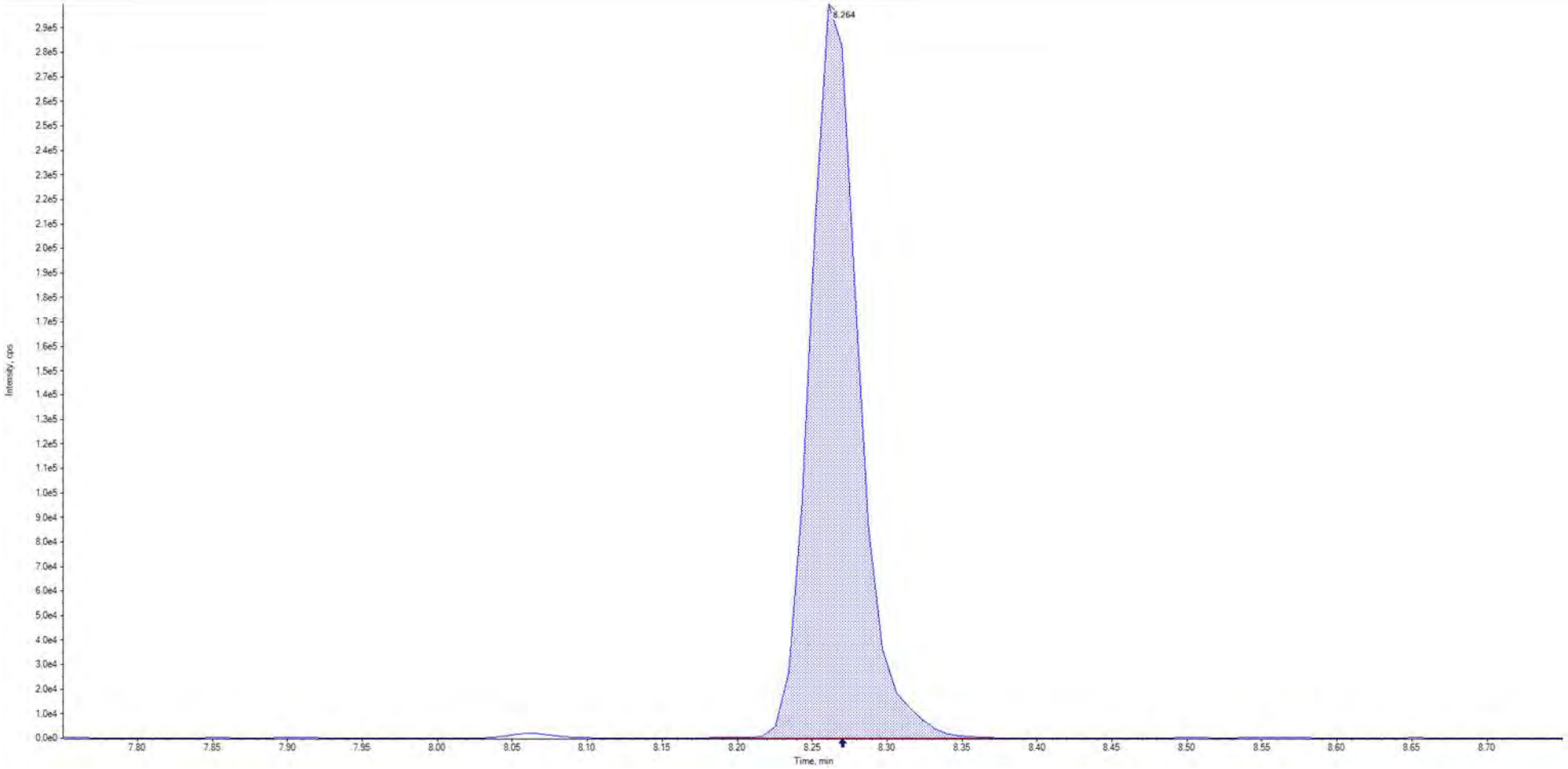


13C3-PFHxS
Sample: IA1633STD-.5

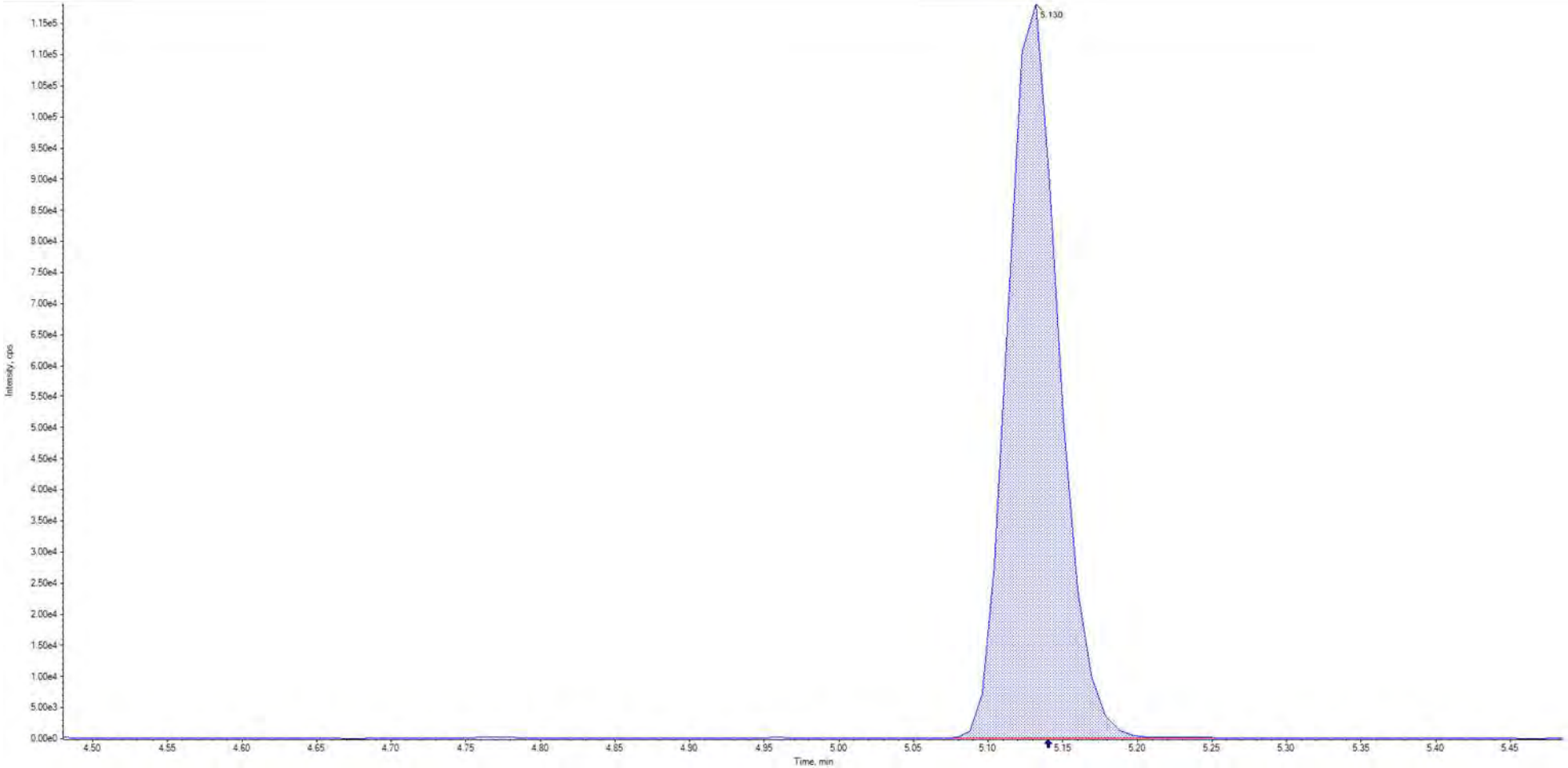


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

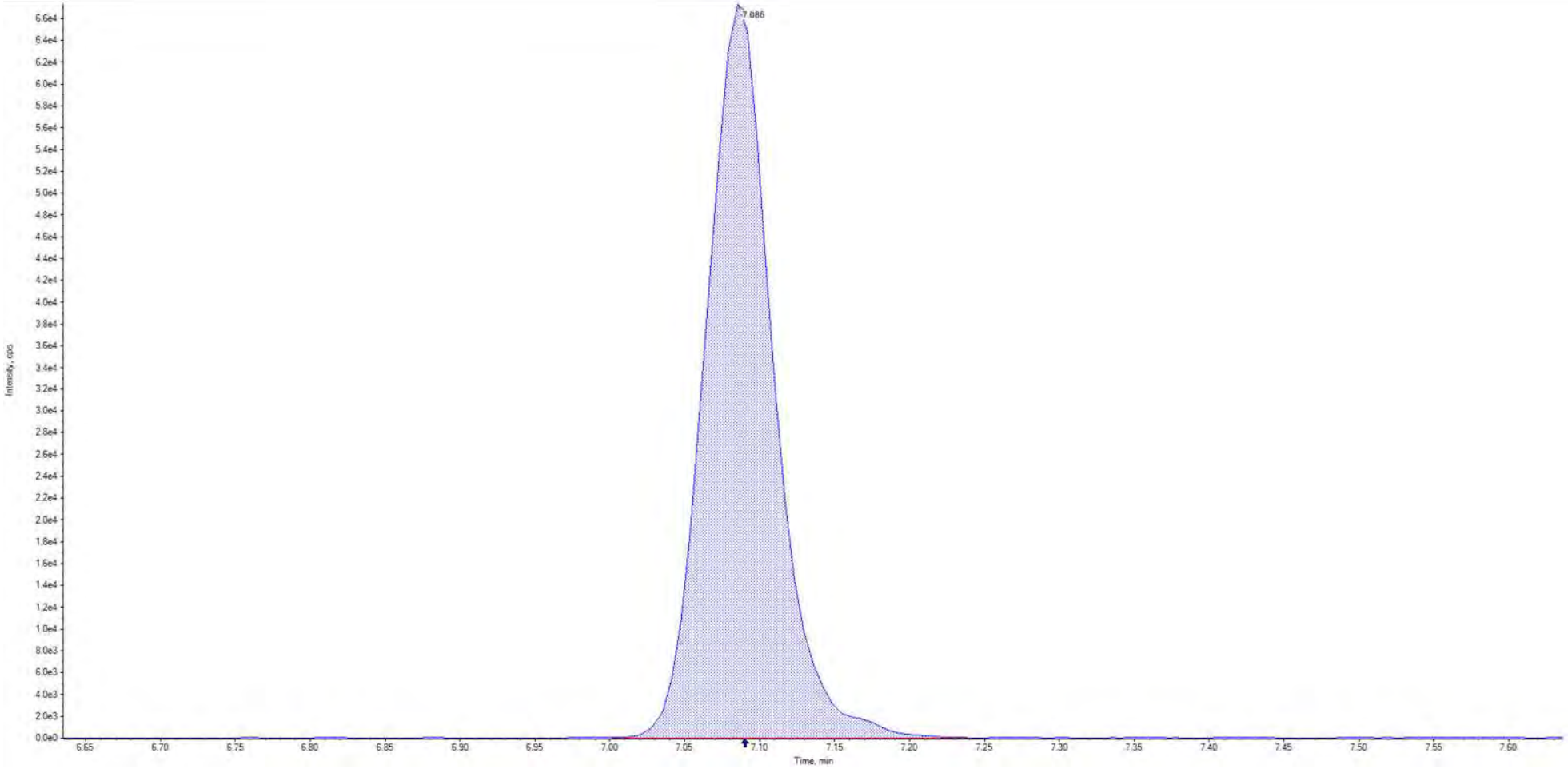
13C8-PFOS
Sample: IA1633STD-.5



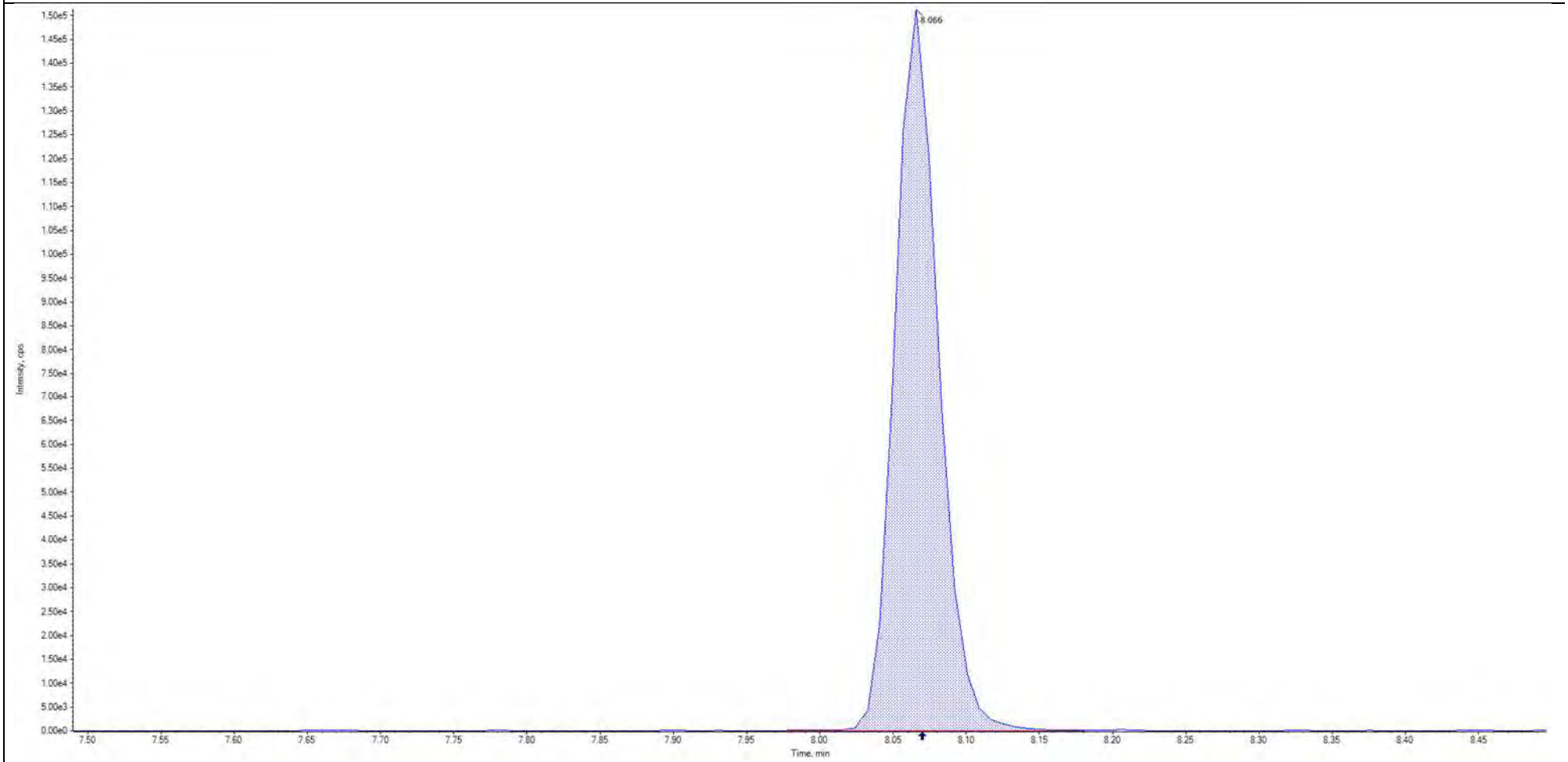
13C2-4:2FTS
Sample: IA1633STD-.5



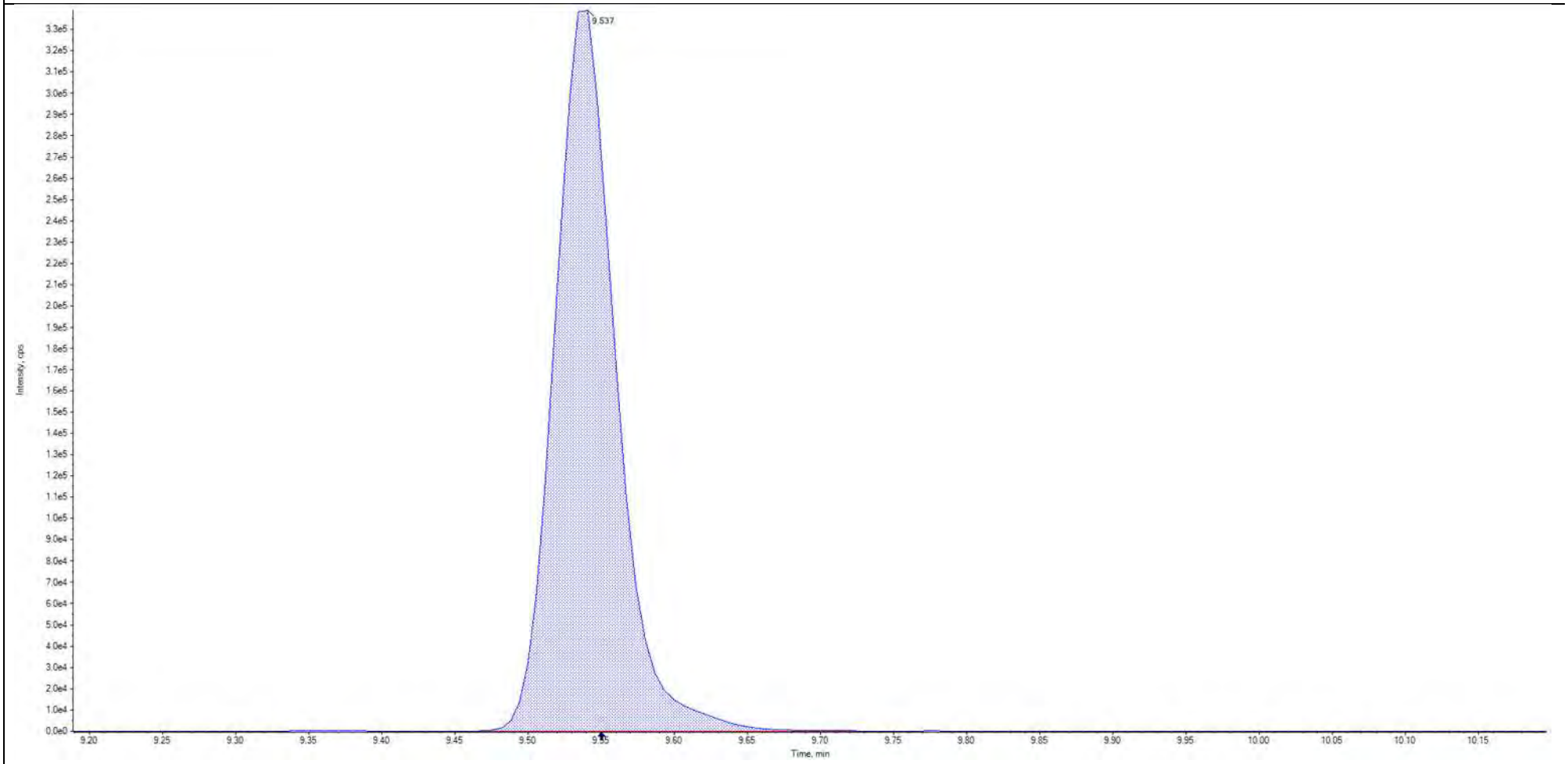
13C2-6:2FTS
Sample: IA1633STD-.5



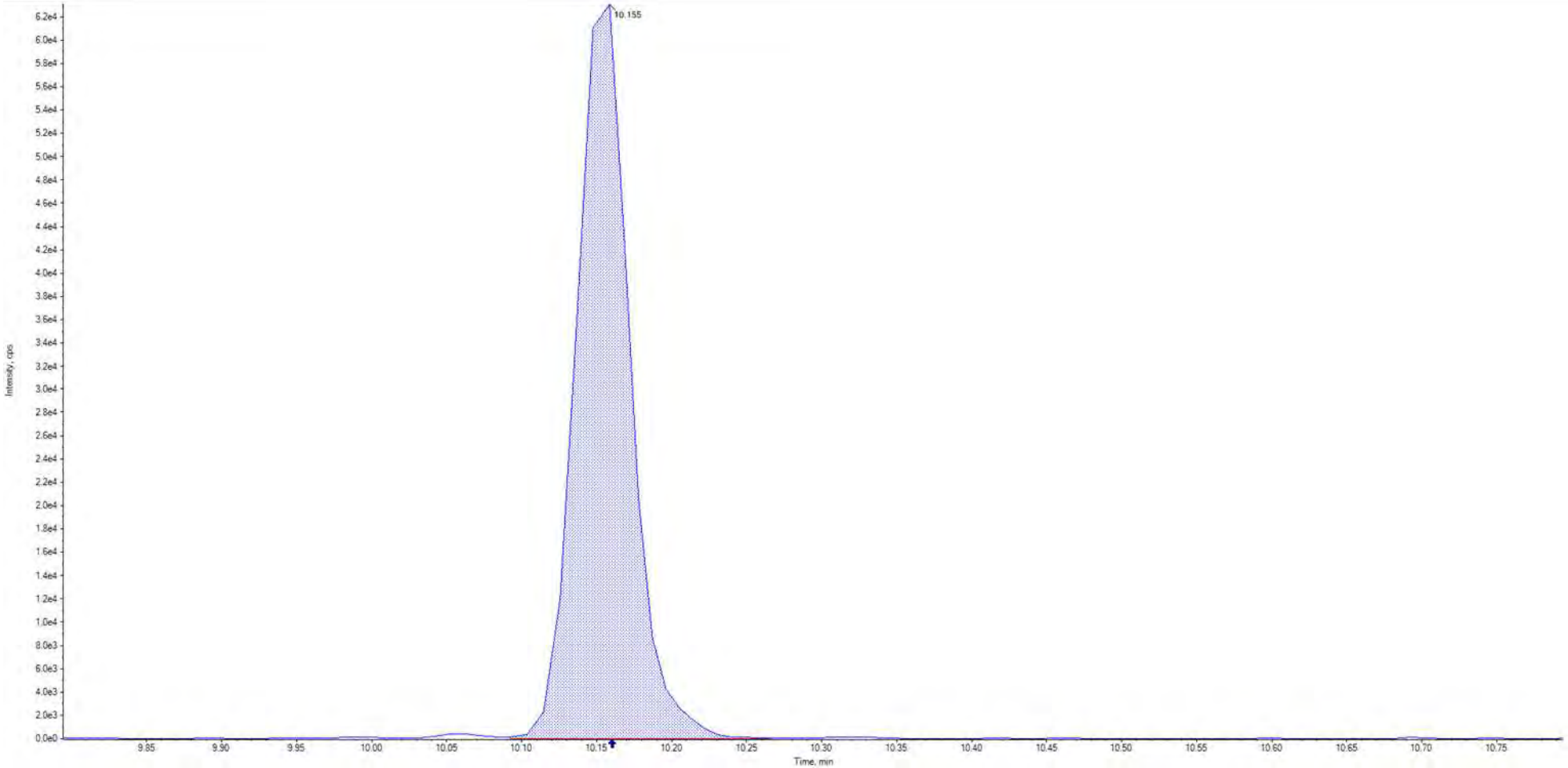
13C2-8:2FTS
Sample: IA1633STD-.5



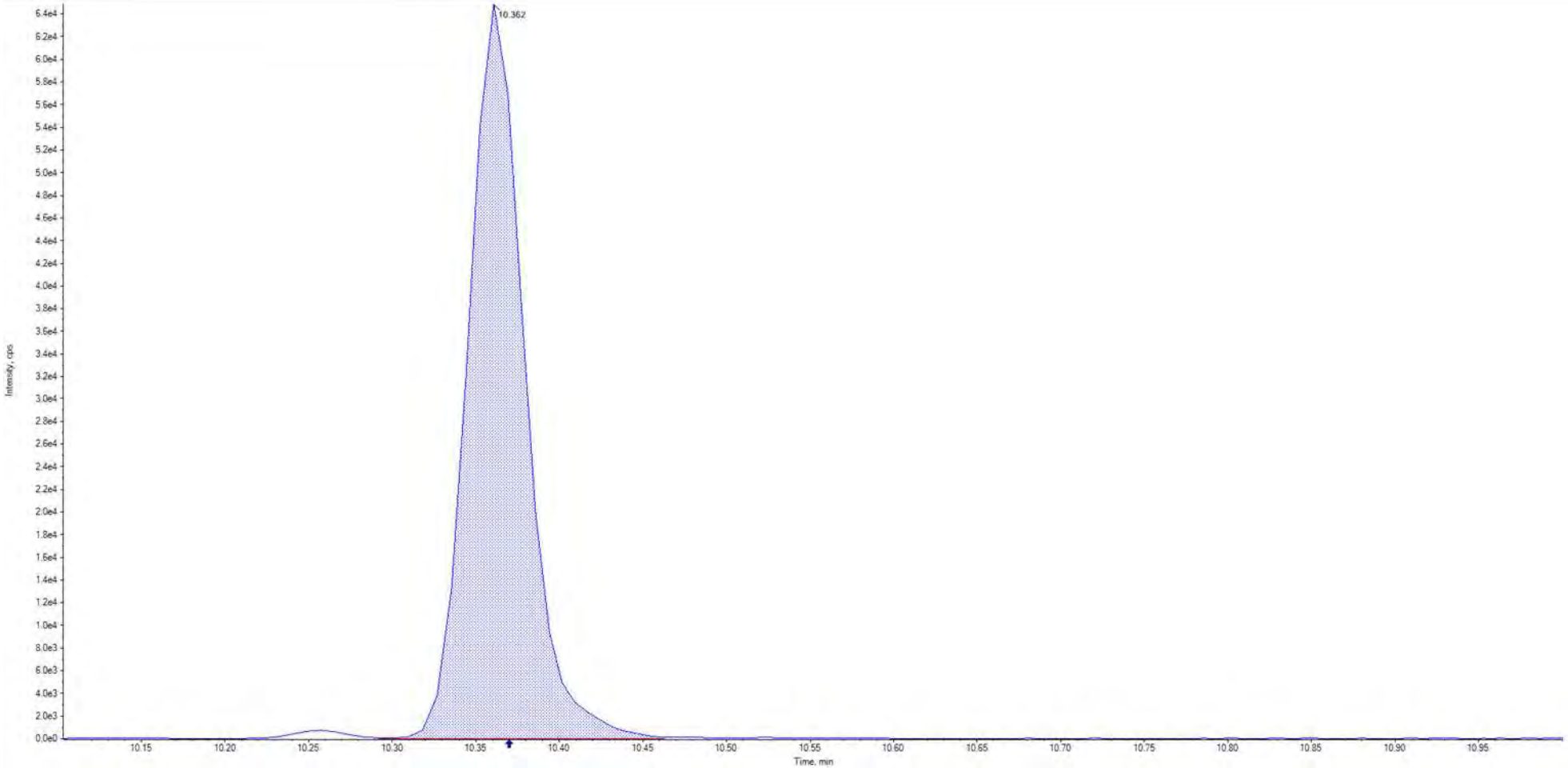
13C8-PFOSA
Sample: IA1633STD-.5



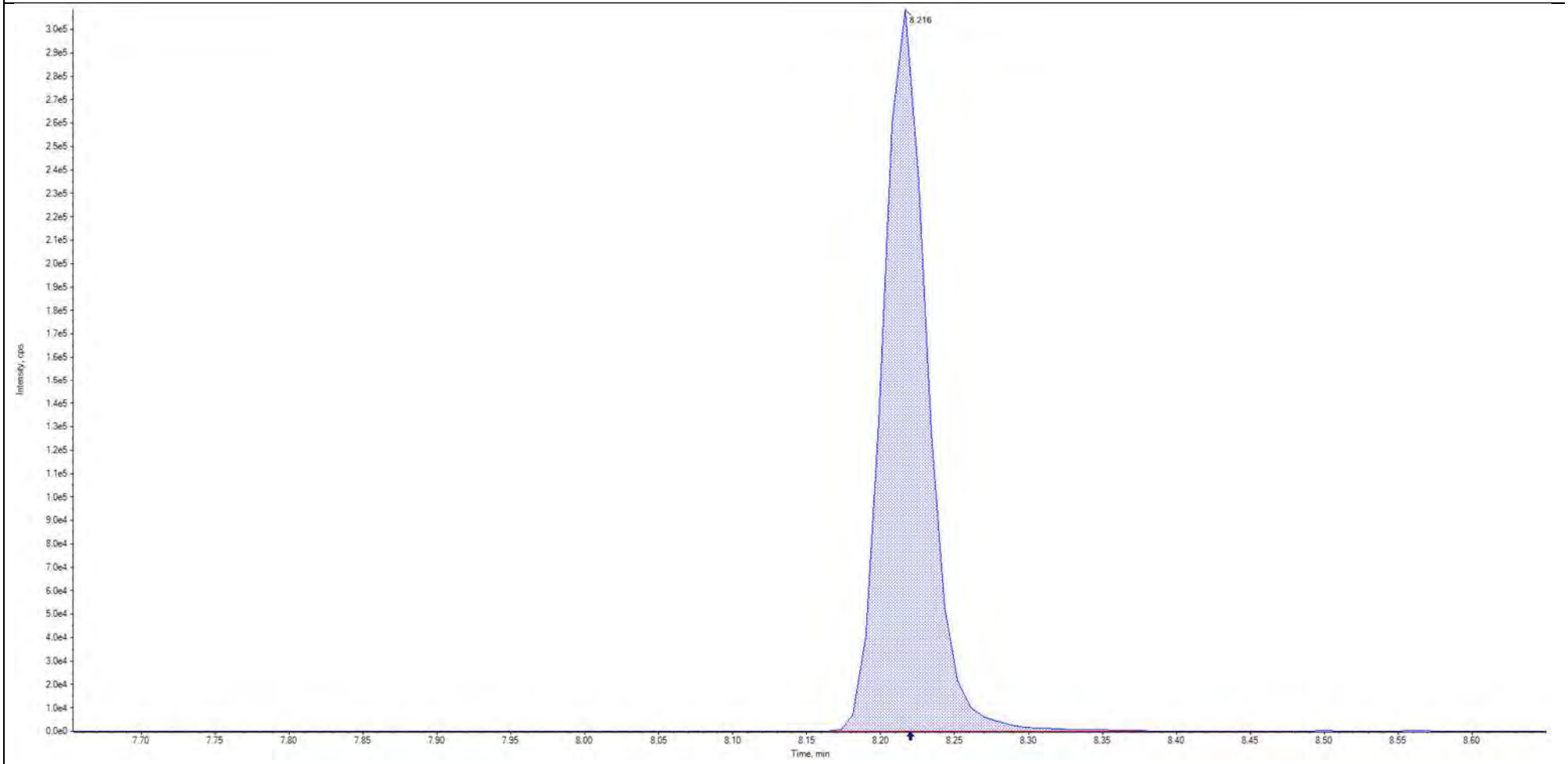
d3-NMeFOSA
Sample: IA1633STD-.5



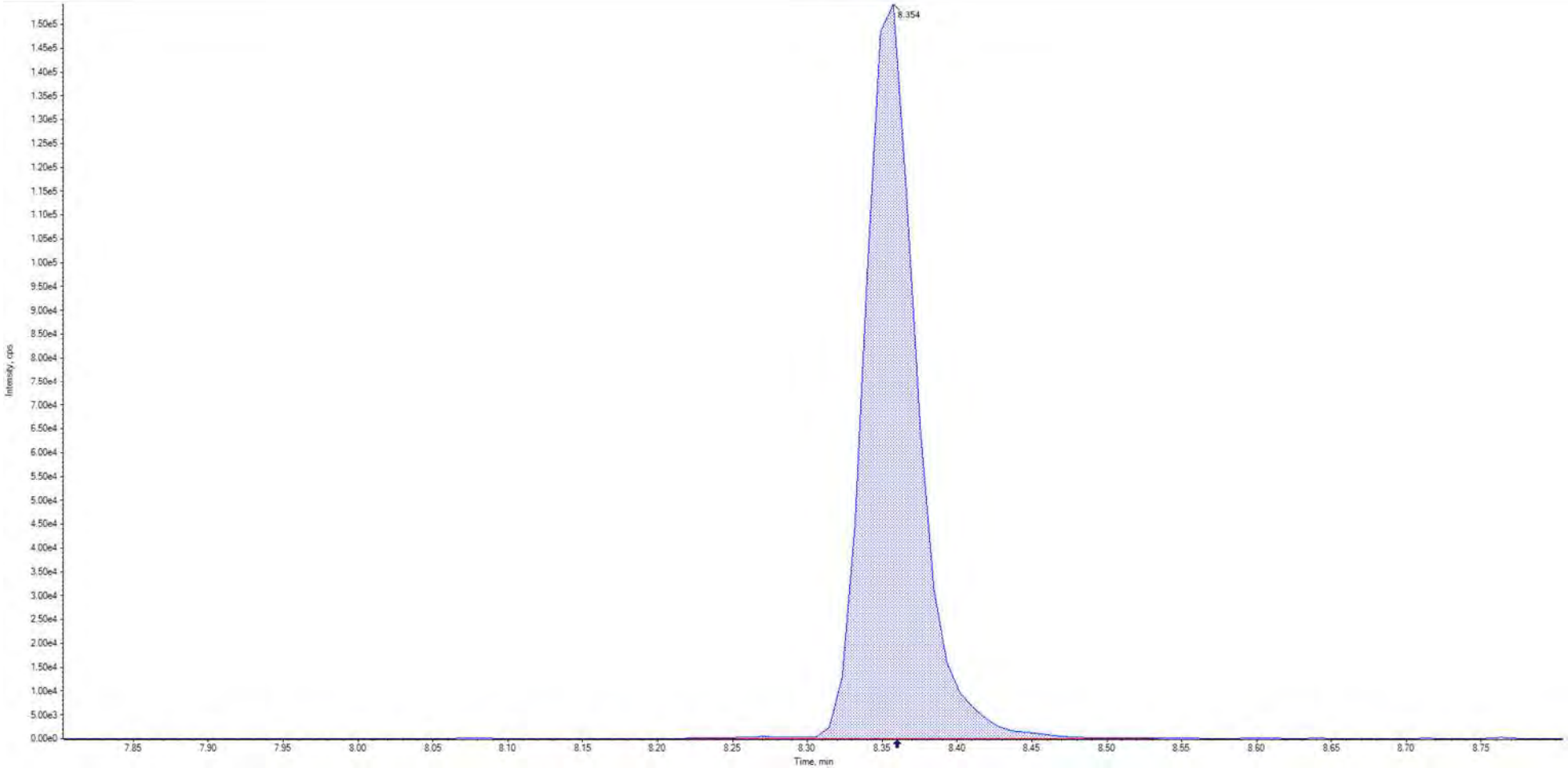
d5-NEtFOSA
Sample: IA1633STD-.5



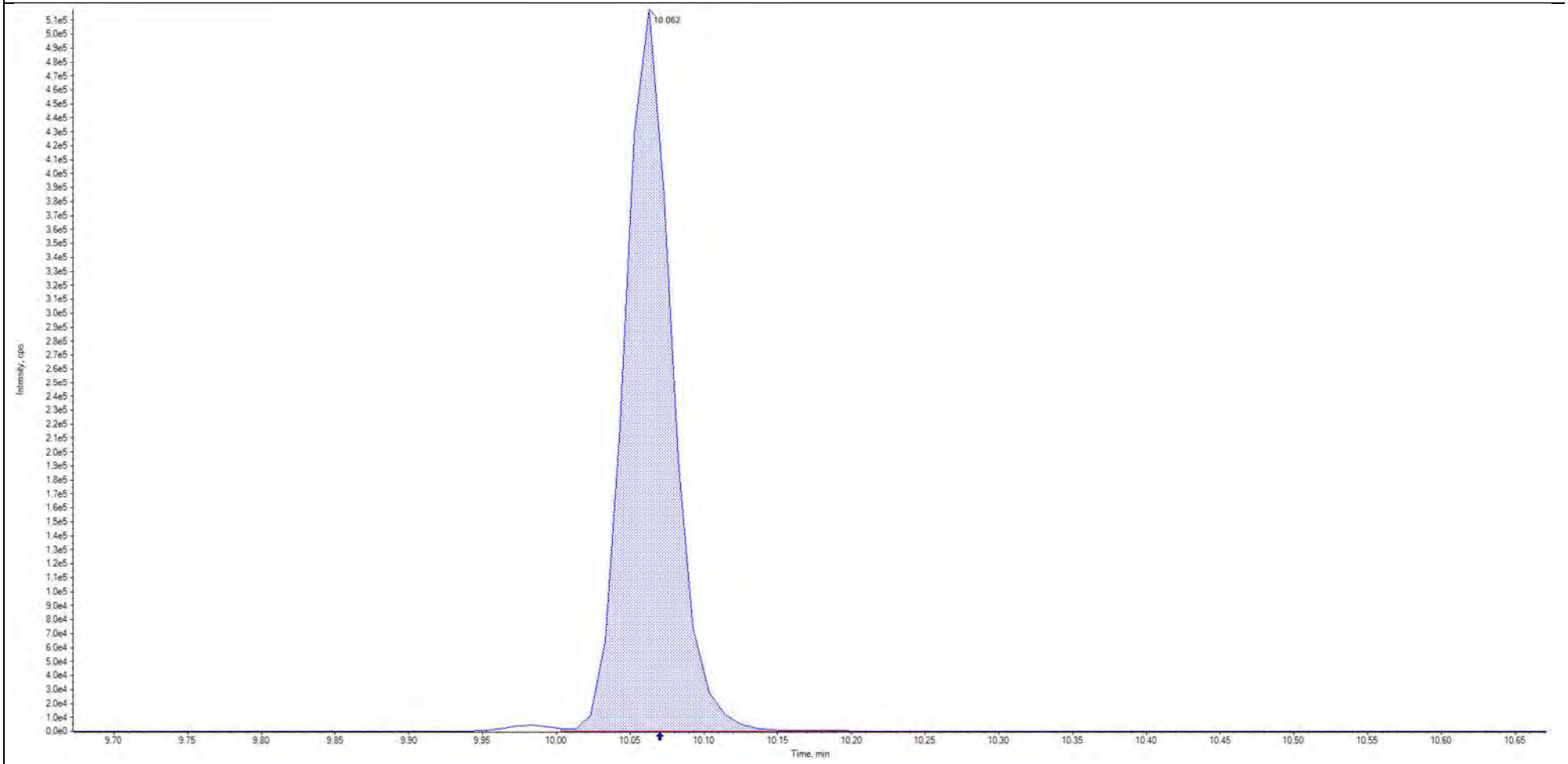
d3-NMeFOSAA
Sample: IA1633STD-.5



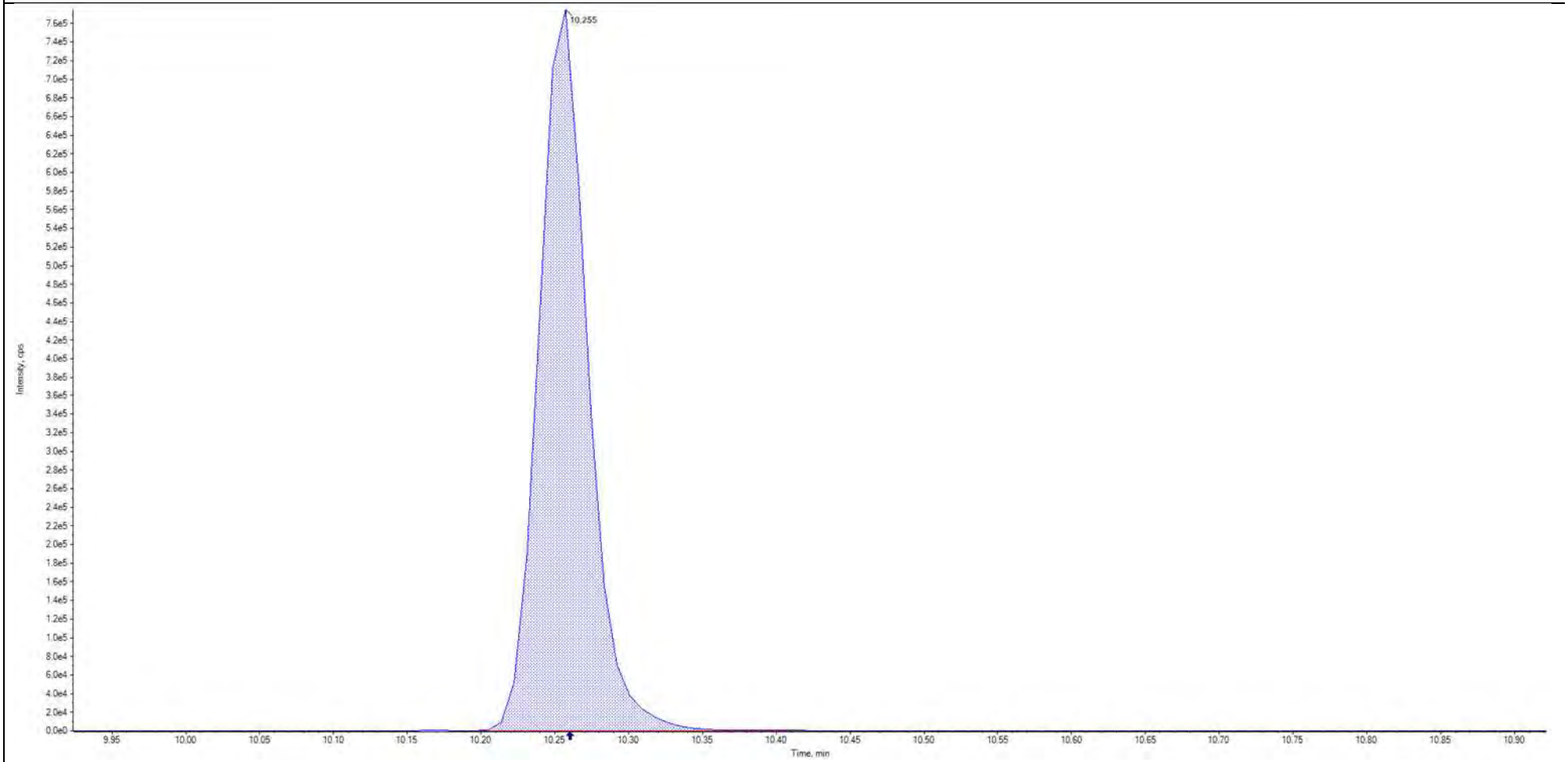
d5-NEtFOSAA
Sample: IA1633STD-.5



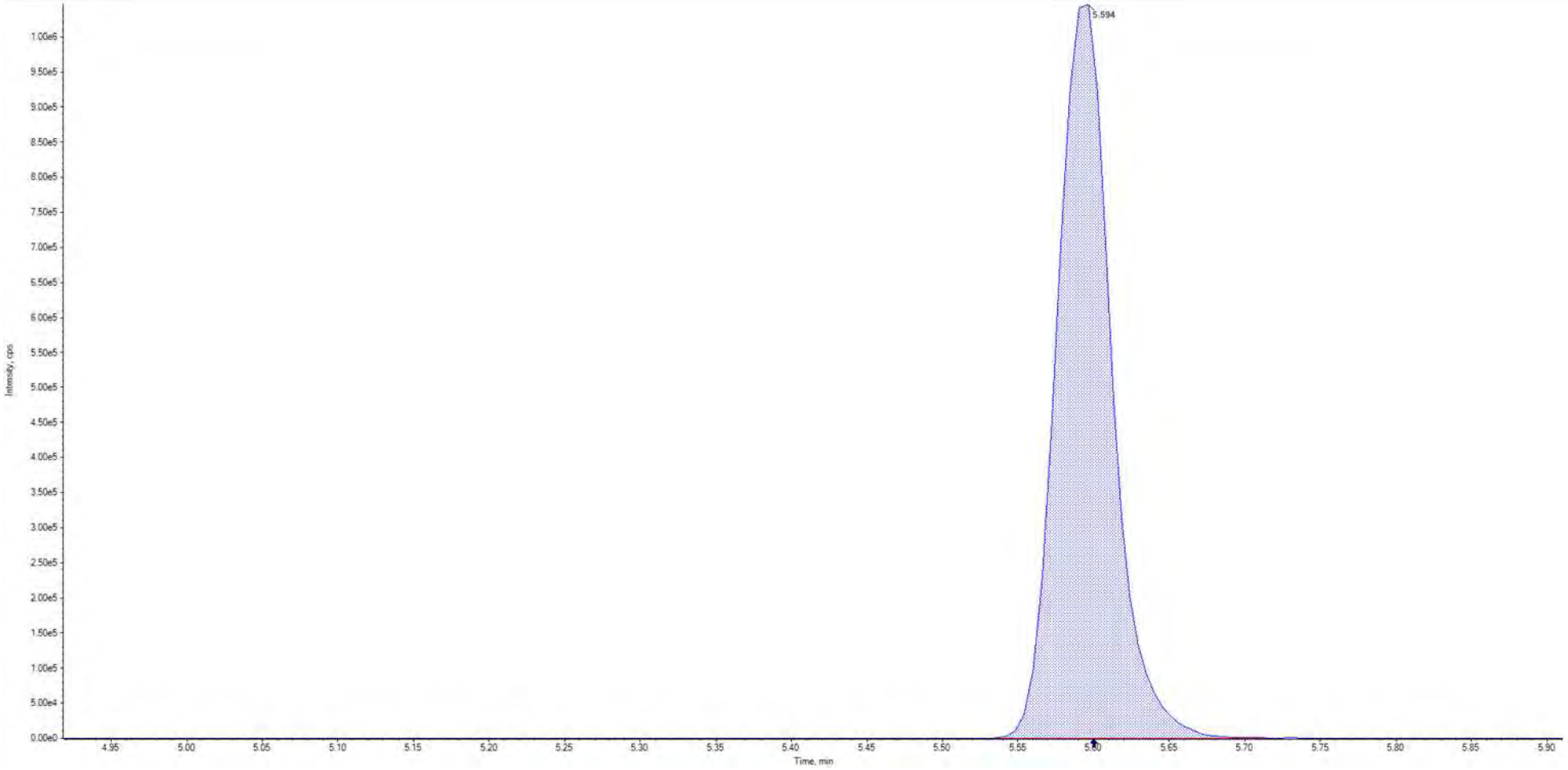
d7-NMeFOSE
Sample: IA1633STD-.5



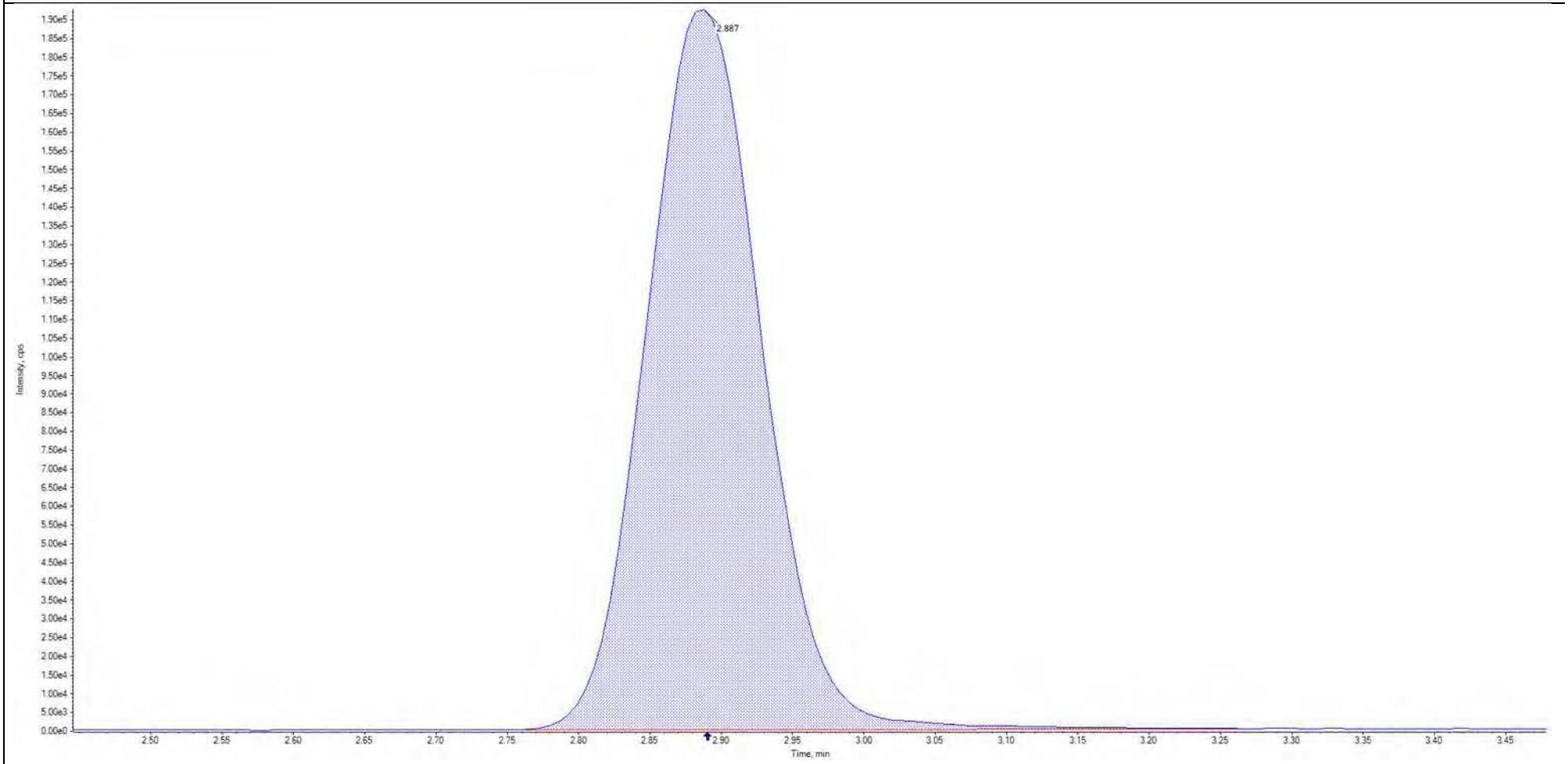
d9-NEtFOSE
Sample: IA1633STD-.5



13C3-HFPO-DA
Sample: IA1633STD-.5

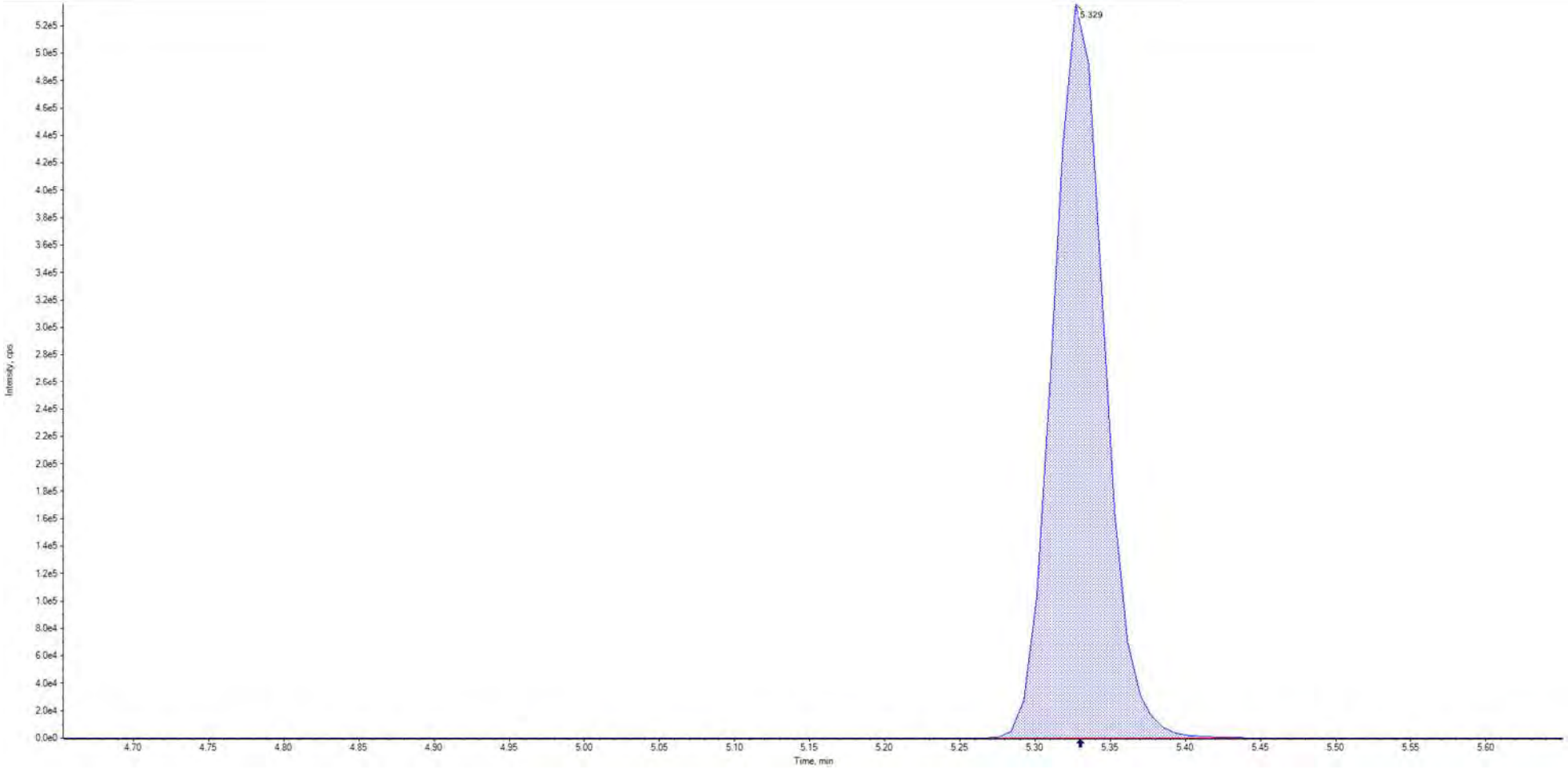


13C3-PFBA
Sample: IA1633STD-.5

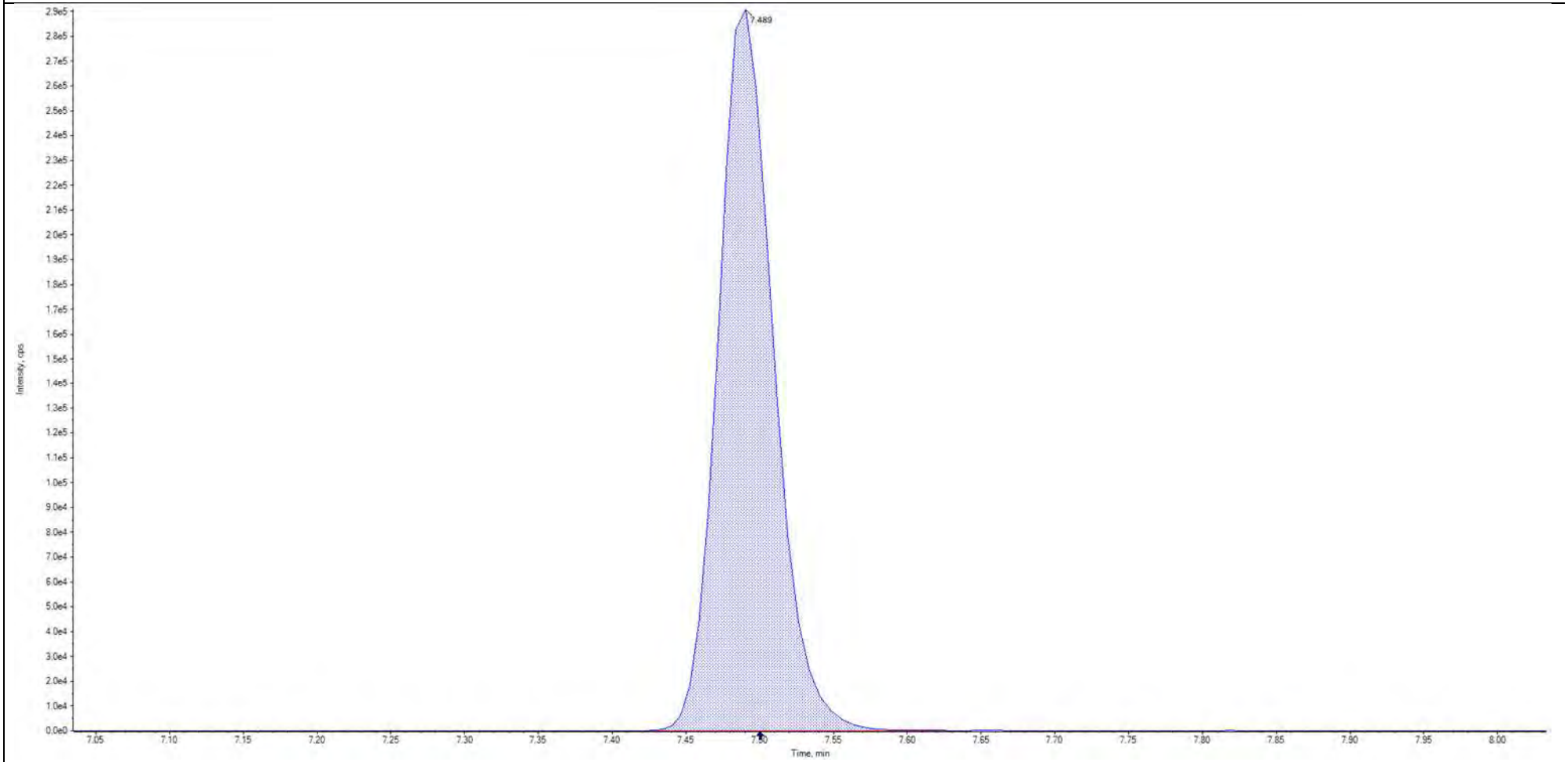


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_73.wiff
Last Altered: 8/14/2024 9:59:30 AM
Generated: 8/14/2024 6:27:11 AM

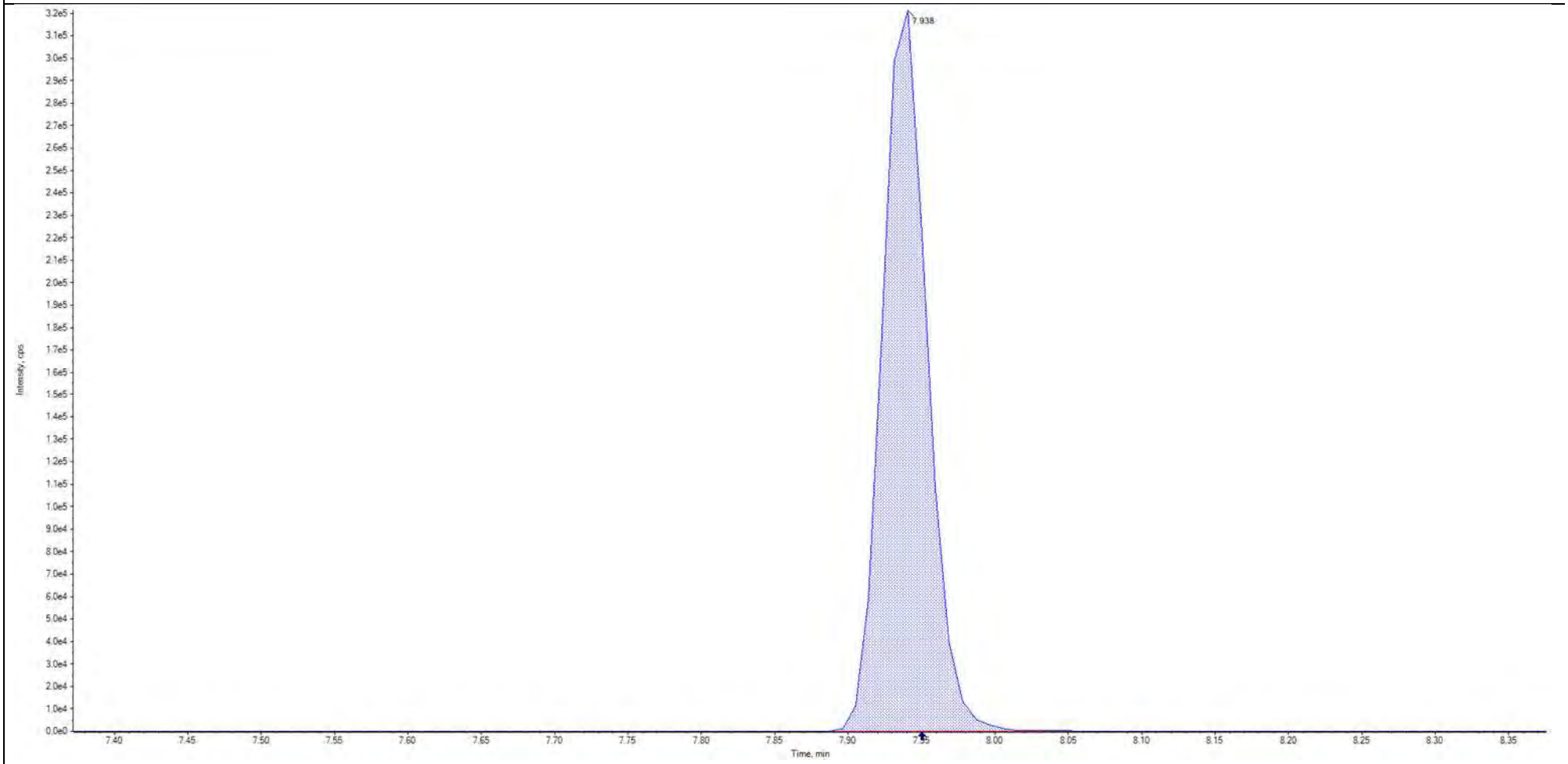
13C2-PFHxA
Sample: IA1633STD-.5



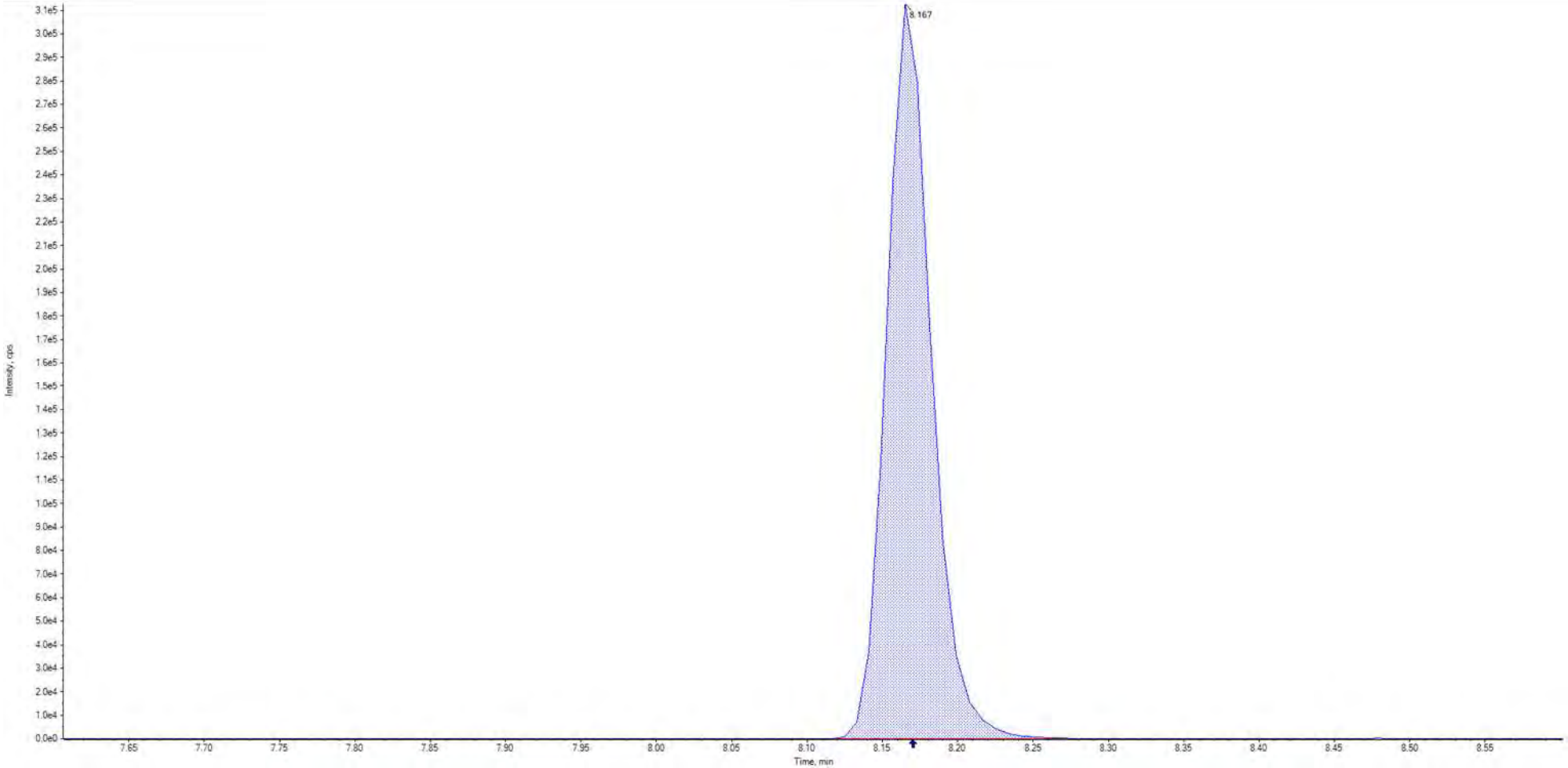
13C4-PFOA
Sample: IA1633STD-.5



13C5-PFNA
Sample: IA1633STD-.5



13C2-PFDA
Sample: IA1633STD-.5



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18O2-PFHxS
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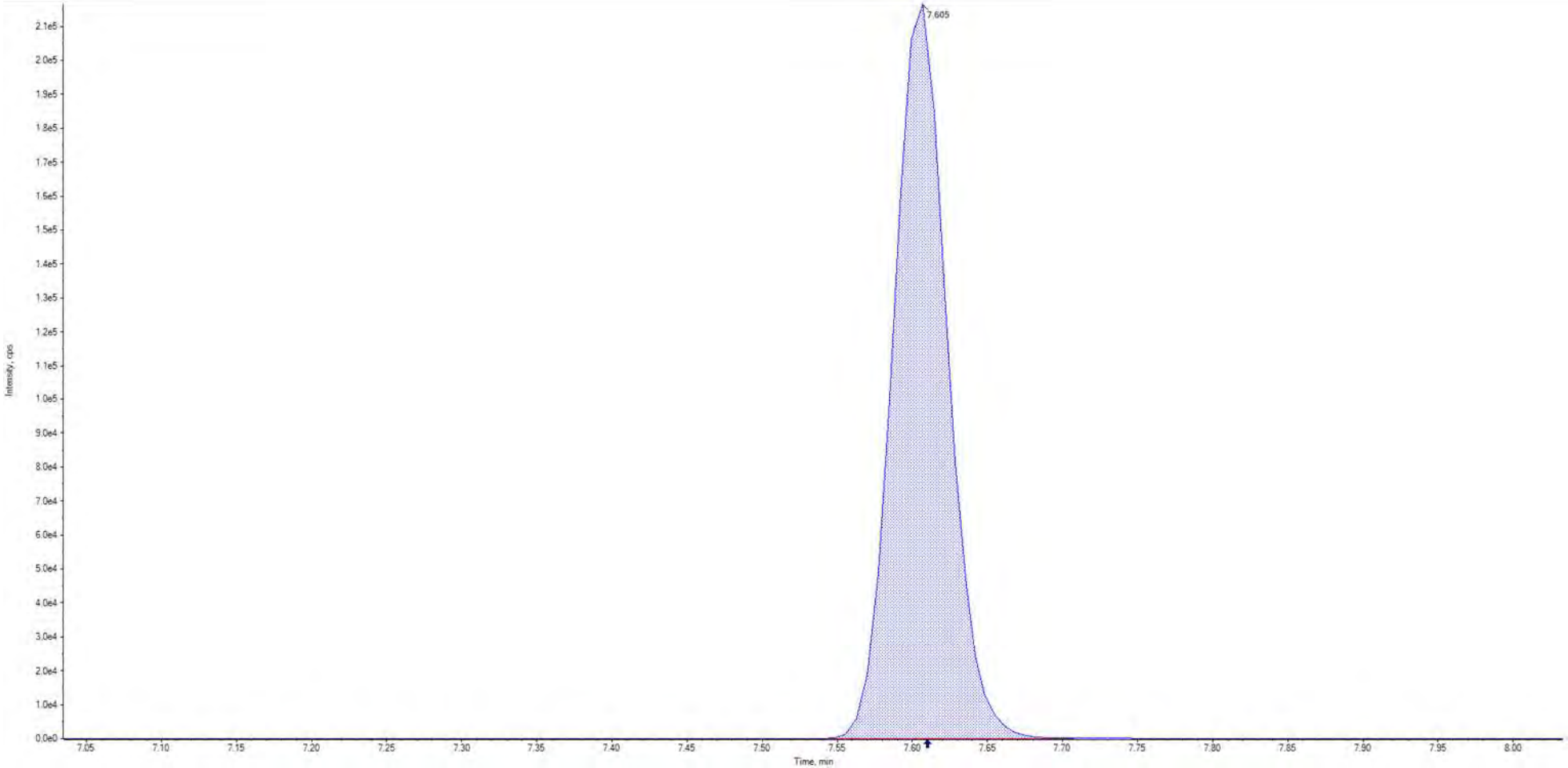

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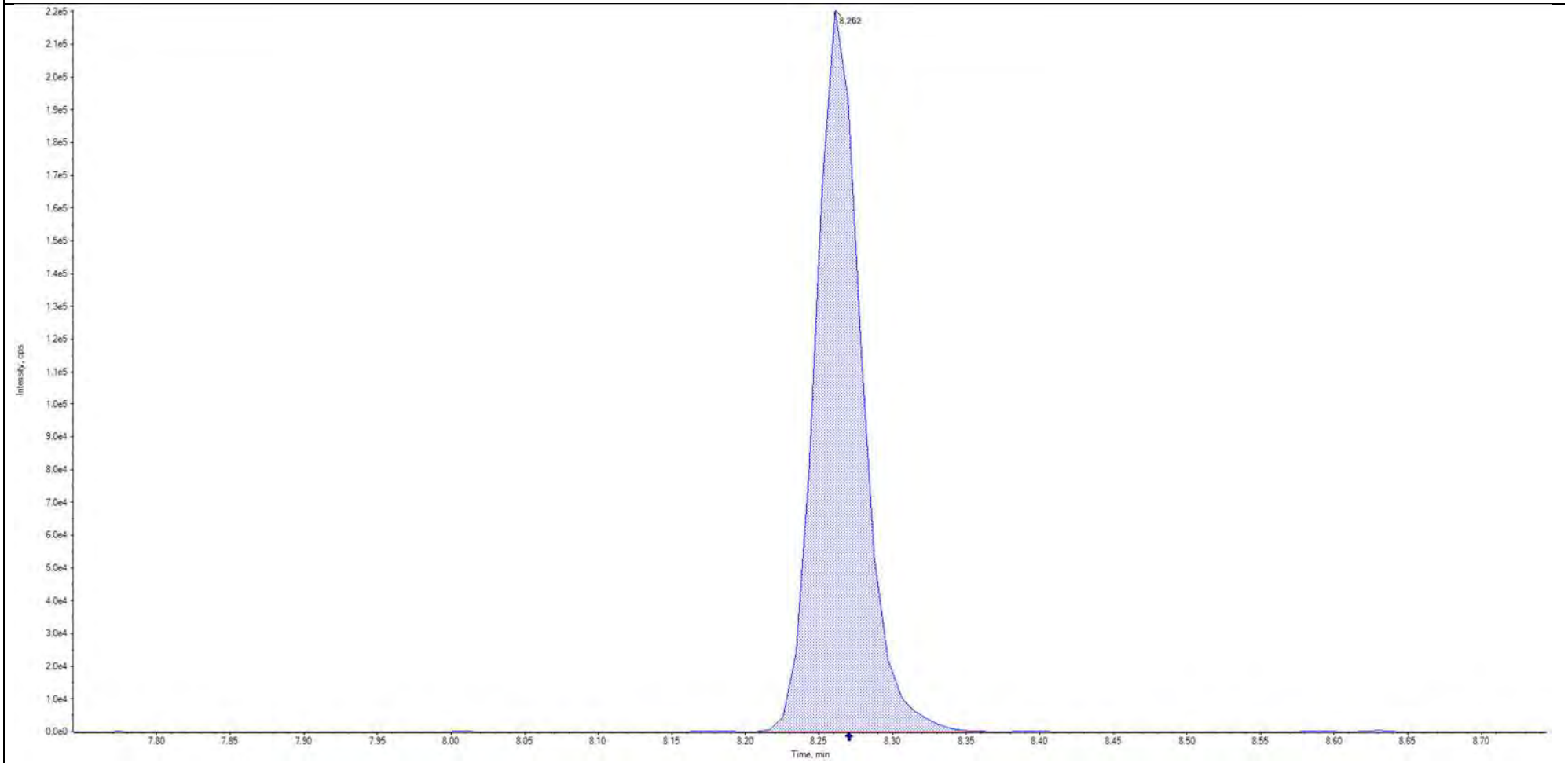

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Method: EPA1633_NIS_CALC.qmethod
Calibration: 240813_1633_ICAL

ID: IA1633STD-1.25
Name: SCI05_240813_74.wiff
Date & Time: 2024-08-13T22:28:38
Description: WG1958909,,,12.5 ul EPA1633_240813_CAL
Instrument: Triple Quad 5500+
User: LCMS05:SL

LC/MS-MS Method:EPA_1633.dam

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
1	PFBA	375-22-4	2.90	213.0 / 169.0	1039126		4.957	N/A	N/A	N/A	99.1
2	PFPeA	2706-90-3	4.65	263.0 / 219.0	782592		2.537	0.007	0.007	N/A	101.5
3	PFPeA_2	2706-90-3	4.65	263.0 / 68.9	5344		2.453	0.007	0.007	N/A	98.1
4	PFHxA	307-24-4	5.34	313.0 / 269.0	643791		1.214	0.076	0.072	Pass	97.1
5	PFHxA_2	307-24-4	5.34	313.0 / 119.0	48667		1.242	0.076	0.072	Pass	99.4
6	PFHpA	375-85-9	6.25	363.1 / 319.0	614946		1.247	0.312	0.297	Pass	99.8
7	PFHpA_2	375-85-9	6.25	363.1 / 169.0	191961		1.272	0.312	0.297	Pass	101.8

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
8	PFOA	335-67-1	7.51	413.1 / 369.1	383547	M5	1.171	0.547	0.586	Pass	93.7
9	PFOA_2	335-67-1	7.51	413.1 / 169.0	209629	M7	1.168	0.547	0.586	Pass	93.5
10	PFNA	375-95-1	7.95	462.8 / 418.9	540767	M5	1.238	0.297	0.313	Pass	99.1
11	PFNA_2	375-95-1	7.95	462.8 / 218.9	160518	M7	1.203	0.297	0.313	Pass	96.2
12	PFDA	335-76-2	8.18	513.1 / 469.1	639422		1.278	0.148	0.142	Pass	102.3
13	PFDA_2	335-76-2	8.18	513.1 / 219.0	94660		1.263	0.148	0.142	Pass	101.0
14	PFUnA	2058-94-8	8.47	563.1 / 519.1	462255		1.271	0.190	0.194	Pass	101.7
15	PFUnA_2	2058-94-8	8.48	563.1 / 269.0	87775		1.246	0.190	0.194	Pass	99.7
16	PFDoA	307-55-1	8.91	613.1 / 569.1	489922		1.338	0.171	0.167	Pass	107.1
17	PFDoA_2	307-55-1	8.91	613.1 / 319.0	83644		1.352	0.171	0.167	Pass	108.2
18	PFTrDA	72629-94-8	9.51	663.1 / 619.1	277739		1.273	0.230	0.228	Pass	101.9
19	PFTrDA_2	72629-94-8	9.51	663.1 / 169.0	63956		1.316	0.230	0.228	Pass	105.3
20	PFTeDA	376-06-7	9.92	713.1 / 669.1	504145		1.280	0.141	0.137	Pass	102.4
21	PFTeDA_2	376-06-7	9.91	713.1 / 169.0	70969		1.318	0.141	0.137	Pass	105.4
22	PFBS	375-73-5	5.32	299.1 / 80.1	378090		1.111	0.382	0.396	Pass	100.2

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
23	PFBS_2	375-73-5	5.32	299.1 / 99.1	144396		1.064	0.382	0.396	Pass	96.0
24	PFPeS	2706-91-4	6.34	349.1 / 80.1	332690		1.179	0.295	0.299	Pass	100.3
25	PFPeS_2	2706-91-4	6.34	349.1 / 99.1	98129		1.153	0.295	0.299	Pass	98.1
26	PFHxS	355-46-4	7.62	399.1 / 80.1	286954	M5	1.087	0.314	0.315	Pass	95.2
27	PFHxS_2	355-46-4	7.62	399.1 / 99.1	90237	M7	1.101	0.314	0.315	Pass	96.3
28	PFHpS	375-92-8	8.02	449.1 / 80.1	306646		1.166	0.303	0.287	Pass	97.9
29	PFHpS_2	375-92-8	8.02	449.1 / 99.1	92989		1.206	0.303	0.287	Pass	101.2
30	PFOS	1763-23-1	8.28	499.1 / 80.1	306039	M5	1.093	0.264	0.238	Pass	94.2
31	PFOS_2	1763-23-1	8.28	499.1 / 99.1	80734		1.176	0.264	0.238	Pass	101.4
32	PFNS	68259-12-1	8.63	549.1 / 80.1	220414		1.226	0.298	0.301	Pass	101.9
33	PFNS_2	68259-12-1	8.63	549.1 / 99.1	65593		1.204	0.298	0.301	Pass	100.2
34	PFDS	335-77-3	9.15	599.1 / 80.1	224077		1.265	0.262	0.275	Pass	104.9
35	PFDS_2	335-77-3	9.15	599.1 / 99.1	58788	M7	1.204	0.262	0.275	Pass	99.8
36	PFDoS	79780-39-5	10.01	699.2 / 80.1	199205		1.228	0.279	0.274	Pass	101.3
37	PFDoS_2	79780-39-5	10.01	699.2 / 99.1	55495		1.245	0.279	0.274	Pass	102.7

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
38	4:2FTS	757124-72-4	5.14	327.1 / 307.1	502551		4.095	0.606	0.516	Pass	87.4
39	4:2FTS_2	757124-72-4	5.14	327.1 / 81.1	304528		4.638	0.606	0.516	Pass	99.0
40	6:2FTS	27619-97-2	7.10	427.2 / 407.2	344993		4.789	0.551	0.565	Pass	100.8
41	6:2FTS_2	27619-97-2	7.10	427.2 / 81.1	190246		4.882	0.551	0.565	Pass	102.8
42	8:2FTS	39108-34-4	8.08	527.2 / 507.2	432638		5.049	0.635	0.662	Pass	105.2
43	8:2FTS_2	39108-34-4	8.08	527.2 / 81.1	274856		4.729	0.635	0.662	Pass	98.5
44	PFOSA	754-91-6	9.55	498.1 / 78.1	319396	M5	1.194	0.027	0.025	Pass	95.5
45	PFOSA_2	754-91-6	9.55	498.1 / 478.0	8652	M7	1.233	0.027	0.025	Pass	98.6
46	NMeFOSA	31506-32-8	10.17	512.2 / 219.0	85925	M5	1.232	1.542	1.551	Pass	98.6
47	NMeFOSA_2	31506-32-8	10.14	512.2 / 169.0	132512	M7	1.226	1.542	1.551	Pass	98.1
48	NEtFOSA	4151-50-2	10.38	526.2 / 219.0	90396	M5	1.303	1.223	1.285	Pass	104.2
49	NEtFOSA_2	4151-50-2	10.35	526.2 / 169.0	110532	M7	1.190	1.223	1.285	Pass	95.2
50	NMeFOSAA	2355-31-9	8.23	570.2 / 419.1	138283		1.252	0.590	0.700	Pass	100.2
51	NMeFOSAA_2	2355-31-9	8.23	570.2 / 483.0	81519		1.161	0.590	0.700	Pass	92.9
52	NEtFOSAA	2991-50-6	8.37	584.2 / 419.1	84369		1.169	0.514	0.487	Pass	93.5

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
53	NEtFOSAA_2	2991-50-6	8.37	584.2 / 526.2	43370		1.306	0.514	0.487	Pass	104.5
54	NMeFOSE	24448-09-7	10.08	616.1 / 58.9	1480904	M5	12.221	N/A	N/A	N/A	97.8
55	NEtFOSE	1691-99-2	10.28	630.0 / 58.9	2767938	M5	12.564	N/A	N/A	N/A	100.5
56	HFPO-DA	13252-13-6	5.60	285.0 / 169.0	1288956		4.939	0.469	0.464	Pass	98.8
57	HFPO-DA_2	13252-13-6	5.60	285.0 / 184.9	604453		4.981	0.469	0.464	Pass	99.6
58	ADONA	919005-14-4	6.72	377.1 / 251.0	2822750		4.756	0.650	0.634	Pass	100.7
59	ADONA_2	919005-14-4	6.72	377.1 / 84.8	1835980		4.781	0.650	0.634	Pass	101.2
60	9Cl-PF3ONS	756426-58-1	8.50	530.8 / 351.1	2946988		5.036	0.322	0.322	Pass	107.7
61	9Cl-PF3ONS_2	756426-58-1	8.50	532.8 / 353.0	948754		4.978	0.322	0.322	Pass	106.5
62	11Cl-PF3OUdS	763051-92-9	9.58	630.9 / 451.0	1734547		4.693	0.341	0.331	Pass	99.3
63	11Cl-PF3OUdS_2	763051-92-9	9.58	632.9 / 452.9	591328		4.753	0.341	0.331	Pass	100.6
64	3:3FTCA	356-02-5	4.92	241.1 / 177.1	162277		6.064	1.046	1.074	Pass	97.0
65	3:3FTCA_2	356-02-5	4.92	241.1 / 117.0	169763		6.334	1.046	1.074	Pass	101.3
66	5:3FTCA	914637-49-3	7.17	341.1 / 237.1	2908807		30.238	0.966	0.953	Pass	96.8
67	5:3FTCA_2	914637-49-3	7.16	341.1 / 217.0	2808872		30.858	0.966	0.953	Pass	98.8

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
68	7:3FTCA	812-70-4	8.22	441.1 / 316.9	3798713		35.472	1.438	1.558	Pass	113.5
69	7:3FTCA_2	812-70-4	8.21	441.1 / 337.1	5461619		35.145	1.438	1.558	Pass	112.5
70	PFEESA	113507-82-7	5.71	315.1 / 135.0	1967602		2.139	0.087	0.087	Pass	96.1
71	PFEESA_2	113507-82-7	5.71	315.1 / 82.9	170520		2.145	0.087	0.087	Pass	96.4
72	PFMPA	377-73-1	3.86	229.0 / 85.0	90755		2.430	N/A	N/A	N/A	97.2
73	PFMBA	863090-89-5	4.88	279.0 / 85.0	1223138		2.429	N/A	N/A	N/A	97.2
74	NFDHA	151772-58-6	5.26	295.0 / 201.0	227164		2.345	0.993	0.910	Pass	93.8
75	NFDHA_2	151772-58-6	5.26	295.0 / 84.9	225686		2.542	0.993	0.910	Pass	101.7
76	TDCA	516-50-7	N/A	499.1 / 124.1	N/A		N/A	N/A	40.716	N/A	N/A
77	TDCA_2	516-50-7	N/A	499.1 / 79.9	N/A		N/A	N/A	40.716	N/A	N/A
78	13C2D4-4:2FTS	Surr	5.13	333.2 / 312.1	924127		4.740	N/A	N/A	N/A	94.8
79	13C2-PFOA	Surr	7.50	415.0 / 370.0	3340729		2.520	N/A	N/A	N/A	100.8

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C4-PFBA	EIS	2.89	217.0 / 172.0	2584883		9.853	NA	NA	NA	98.5

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C5-PFPeA	EIS	4.64	268.0 / 223.0	1673101		5.065	NA	NA	NA	101.3
	13C5-PFHxA	EIS	5.34	318.0 / 273.0	1088024		2.507	NA	NA	NA	100.3
	13C4-PFHpA	EIS	6.25	367.0 / 322.0	1052479		2.423	NA	NA	NA	96.9
	13C8-PFOA	EIS	7.50	421.0 / 376.0	1573759		2.629	NA	NA	NA	105.2
	13C9-PFNA	EIS	7.95	472.0 / 427.0	745840		1.268	NA	NA	NA	101.5
	13C6-PFDA	EIS	8.18	519.0 / 474.0	725556		1.264	NA	NA	NA	101.1
	13C7-PFUnA	EIS	8.47	570.0 / 525.0	575301		1.238	NA	NA	NA	99.1

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C2-PFDoA	EIS	8.91	615.1 / 570.0	351913		1.165	NA	NA	NA	93.2
	13C2-PFTeDA	EIS	9.91	715.1 / 670.1	392782		1.197	NA	NA	NA	95.8
	13C3-PFBS	EIS	5.31	302.1 / 80.1	811249		2.233	NA	NA	NA	95.8
	13C3-PFHxS	EIS	7.62	402.1 / 80.1	661309		2.292	NA	NA	NA	96.7
	13C8-PFOS	EIS	8.27	507.1 / 80.1	681932		2.307	NA	NA	NA	96.3
	13C2-4:2FTS	EIS	5.14	329.1 / 81.1	293698		4.530	NA	NA	NA	96.6
	13C2-6:2FTS	EIS	7.09	429.2 / 81.1	208826		4.395	NA	NA	NA	92.4
	13C2-8:2FTS	EIS	8.07	529.2 / 81.1	324531		4.667	NA	NA	NA	97.2

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C8-PFOSA	EIS	9.55	506.1 / 78.1	1000714		2.546	NA	NA	NA	101.9
	d3-NMeFOSA	EIS	10.16	515.2 / 219.0	162799		2.461	NA	NA	NA	98.4
	d5-NEtFOSA	EIS	10.37	531.2 / 219.0	157977		2.445	NA	NA	NA	97.8
	d3-NMeFOSAA	EIS	8.22	573.2 / 419.1	839143		5.611	NA	NA	NA	112.2
	d5-NEtFOSAA	EIS	8.36	589.3 / 419.1	386999		4.924	NA	NA	NA	98.5
	d7-NMeFOSE	EIS	10.07	623.2 / 58.9	1227980		24.037	NA	NA	NA	96.1
	d9-NEtFOSE	EIS	10.26	639.2 / 58.9	1876709		24.916	NA	NA	NA	99.7

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C3-HFPO-DA	EIS	5.60	287.0 / 169.0	2846811		9.900	NA	NA	NA	99.0
	13C3-PFBA	NIS	2.89	216.0 / 172.0	1147644		5.367	NA	NA	NA	107.3
	13C2-PFHxA	NIS	5.34	315.0 / 270.0	1288338		2.631	NA	NA	NA	105.3
	13C4-PFOA	NIS	7.50	417.0 / 372.0	783096		2.501	NA	NA	NA	100.1
	13C5-PFNA	NIS	7.95	468.0 / 423.0	716354		1.308	NA	NA	NA	104.6
	13C2-PFDA	NIS	8.17	515.1 / 470.1	674386		1.316	NA	NA	NA	105.3
	18O2-PFHxS	NIS	7.61	403.1 / 84.1	586465		2.503	NA	NA	NA	105.6
	13C4-PFOS	NIS	8.27	503.1 / 80.1	522882		2.483	NA	NA	NA	103.7

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	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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PFBA
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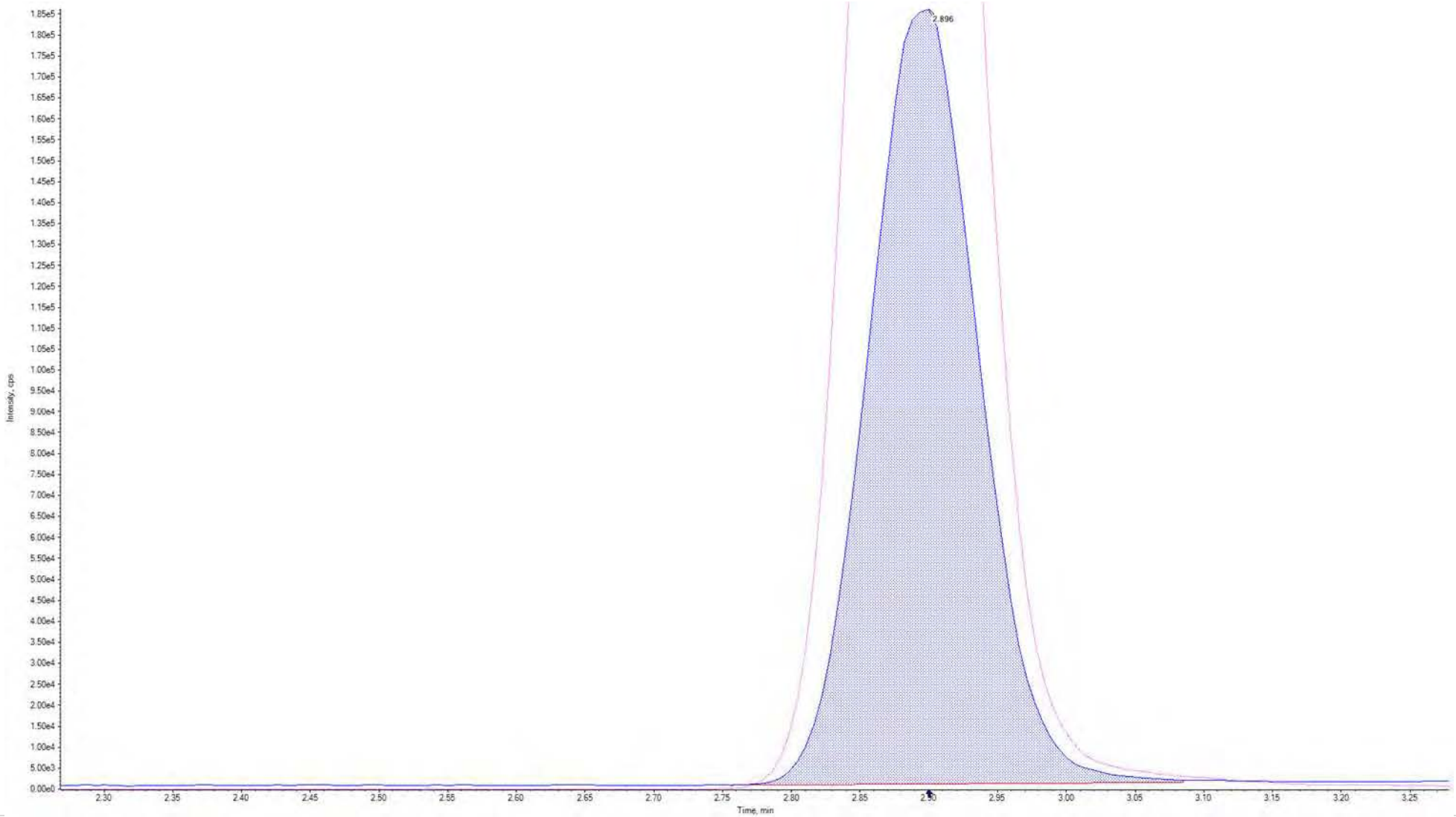

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PFPeA
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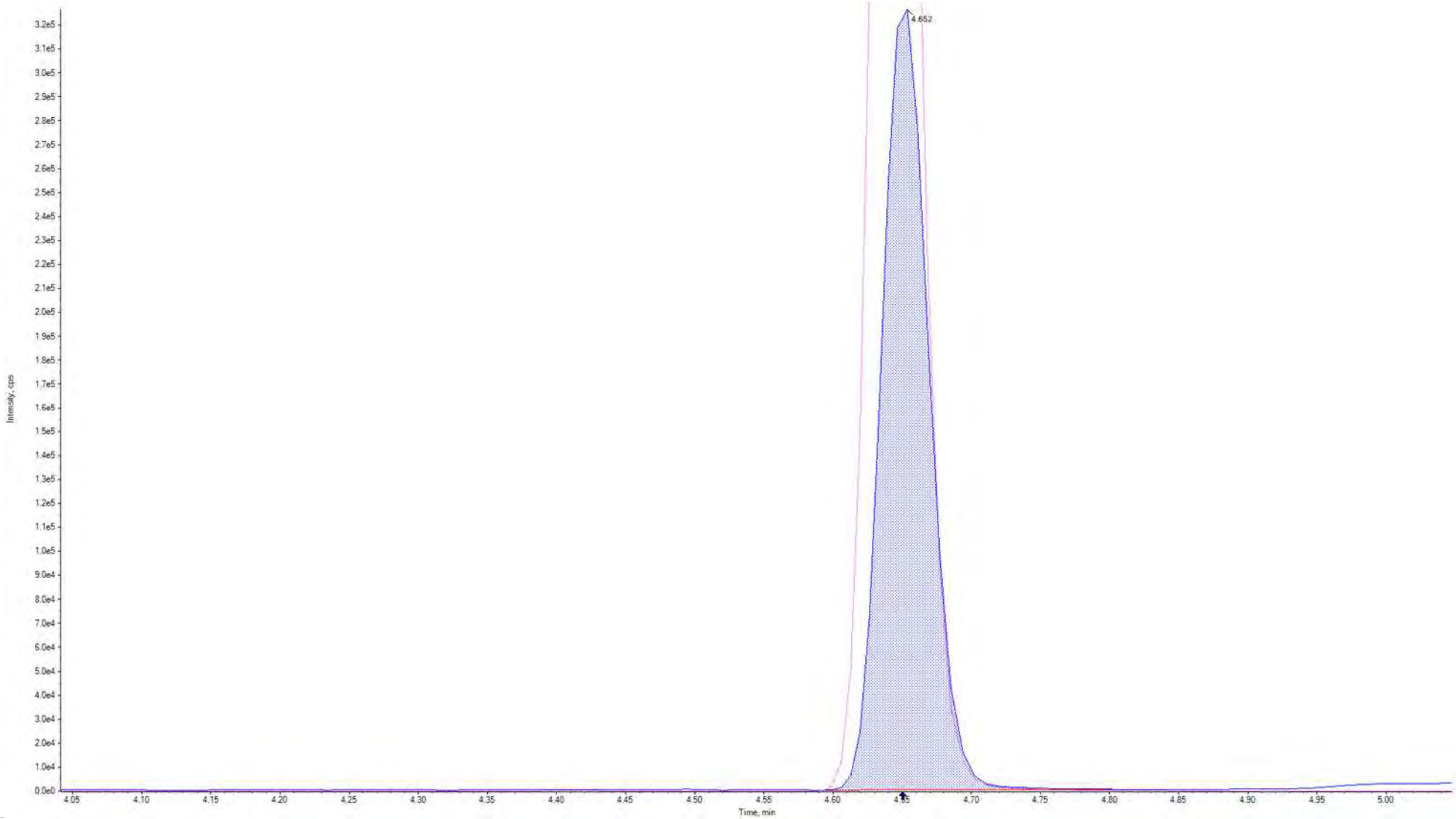

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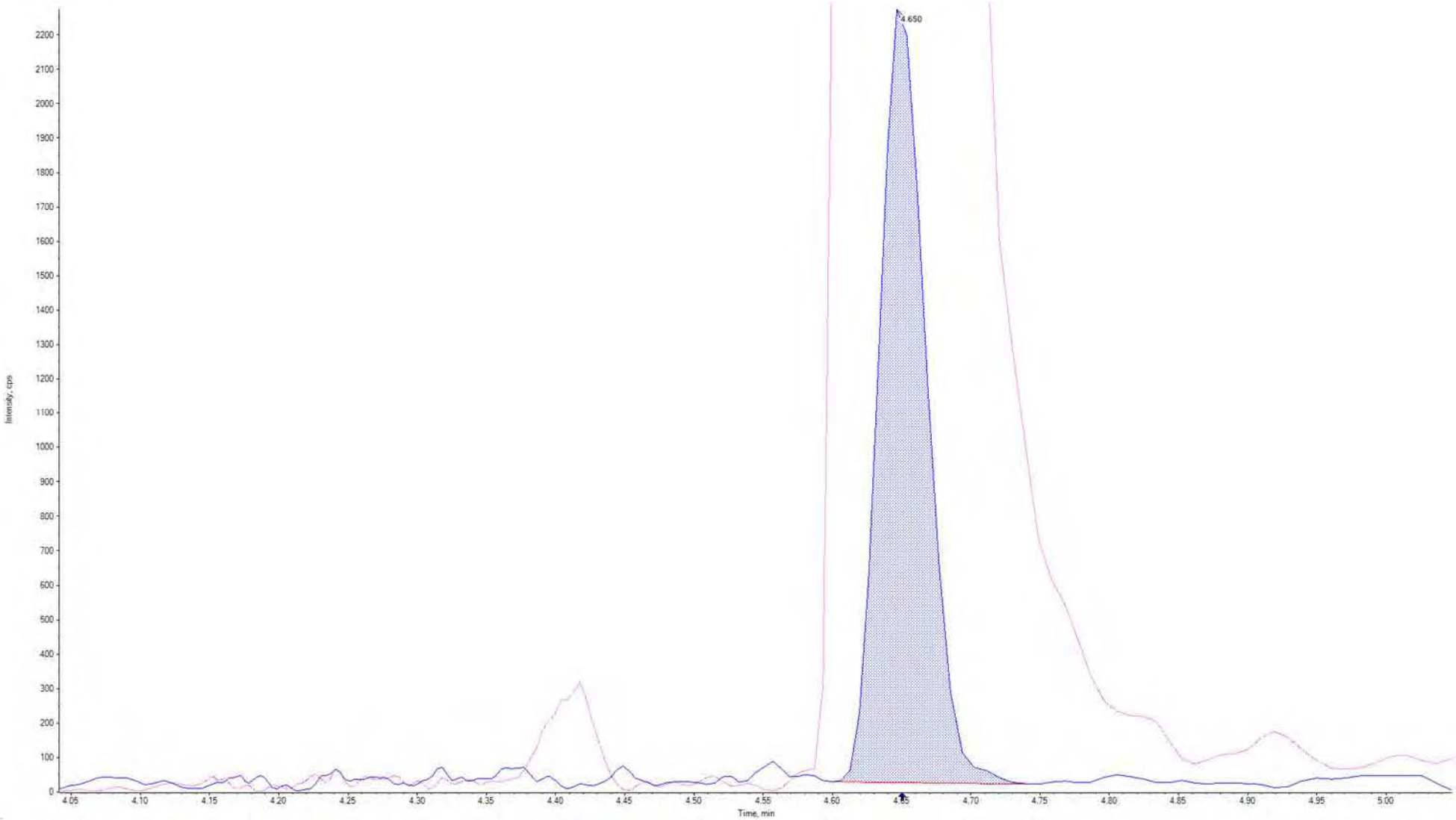
PFPeA_2
Sample: IA1633STD-1.25 S/N:664.7 Points Across peak:20



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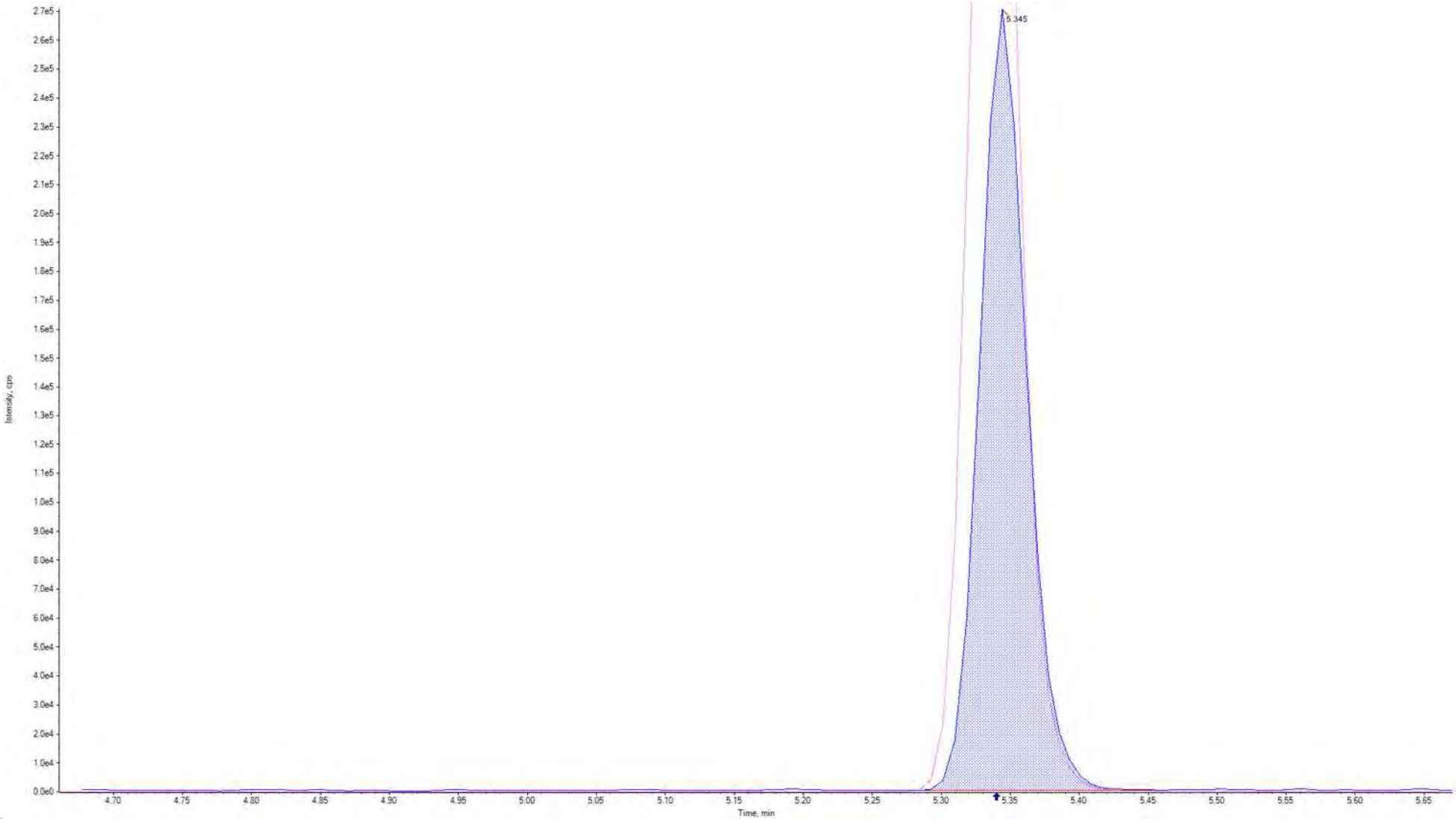
PFHxA
Sample: IA1633STD-1.25 S/N:1118.7 Points Across peak:23



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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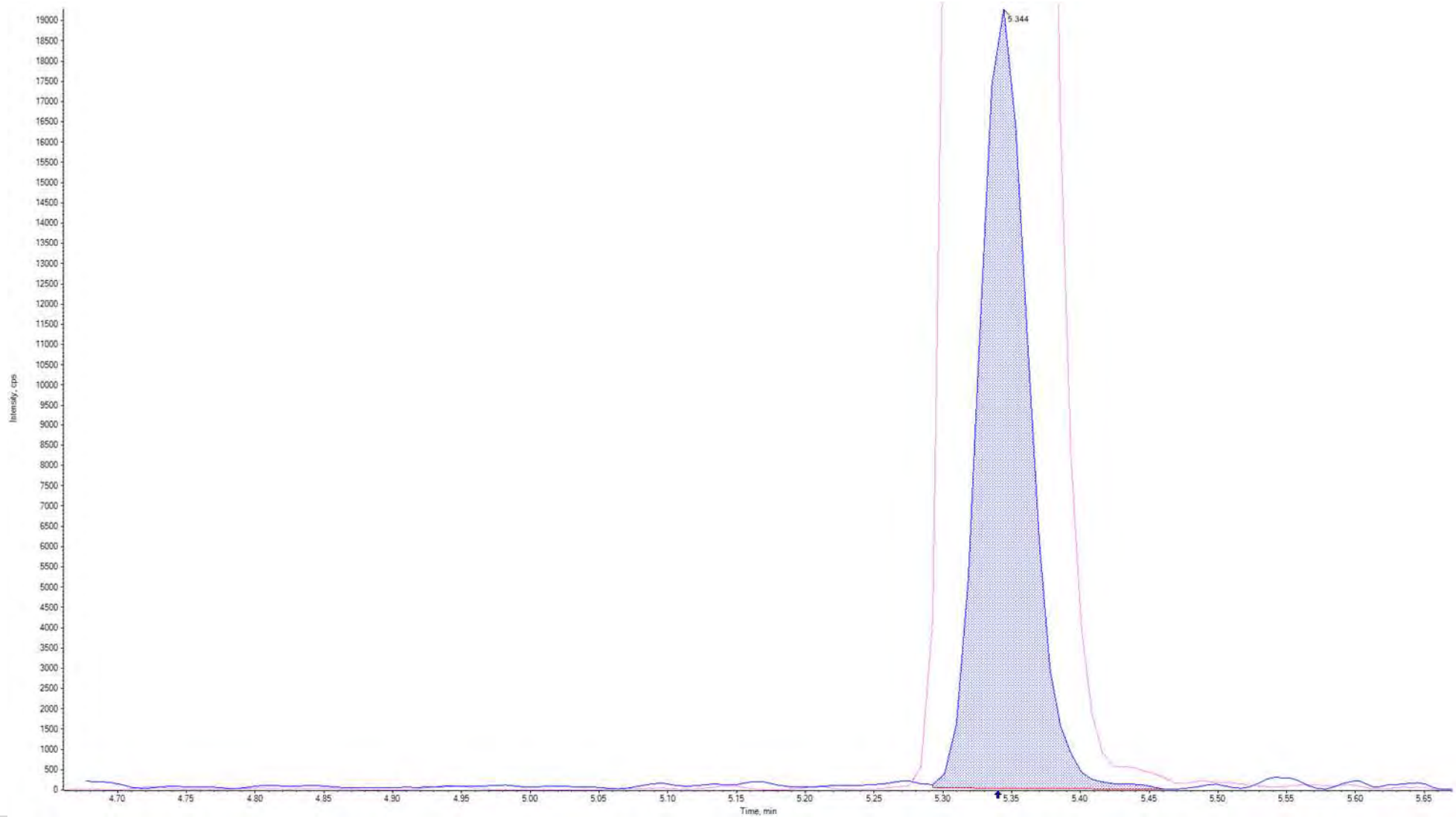
PFHxA_2
Sample: IA1633STD-1.25 S/N:991.5 Points Across peak:22



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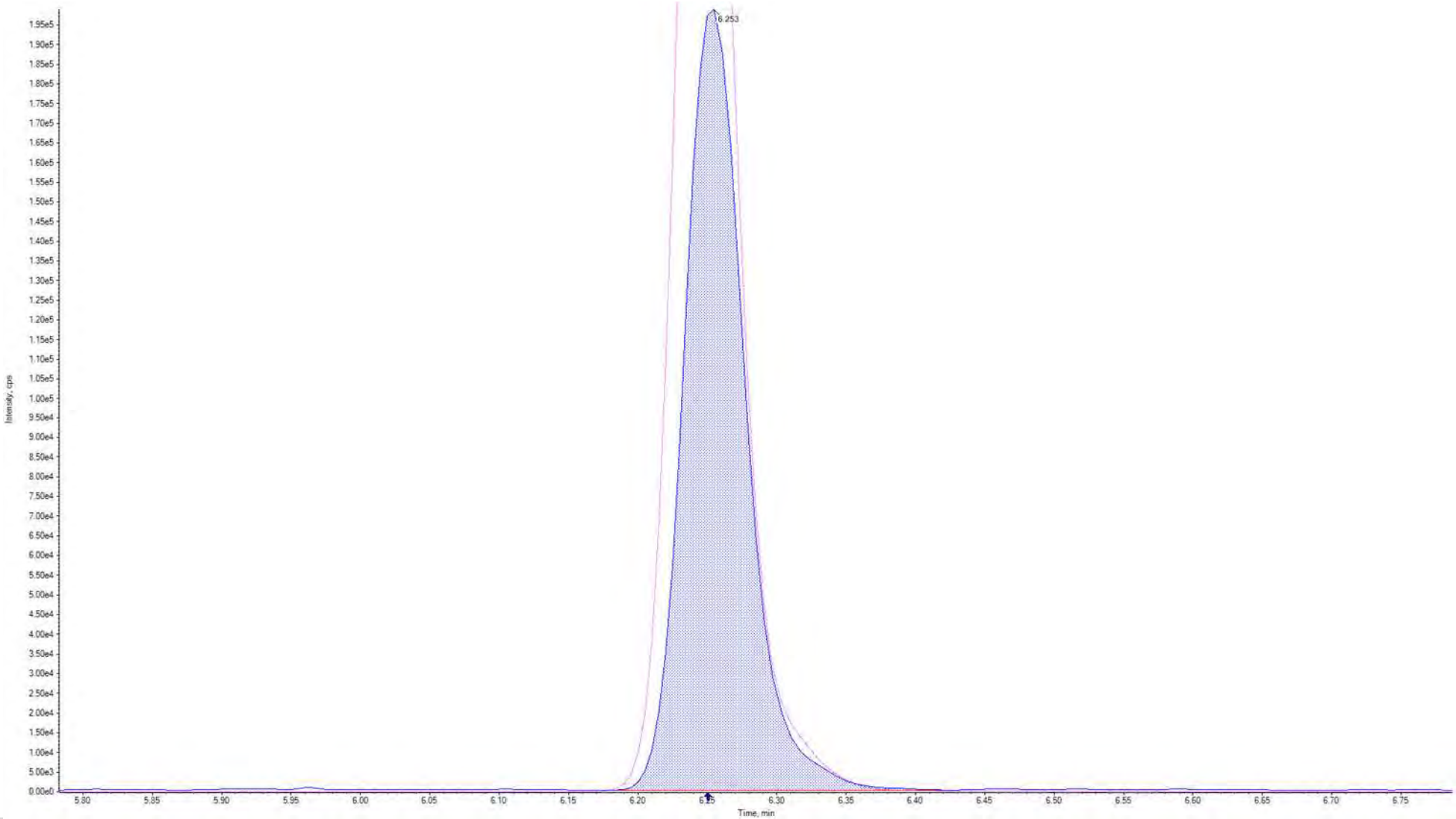
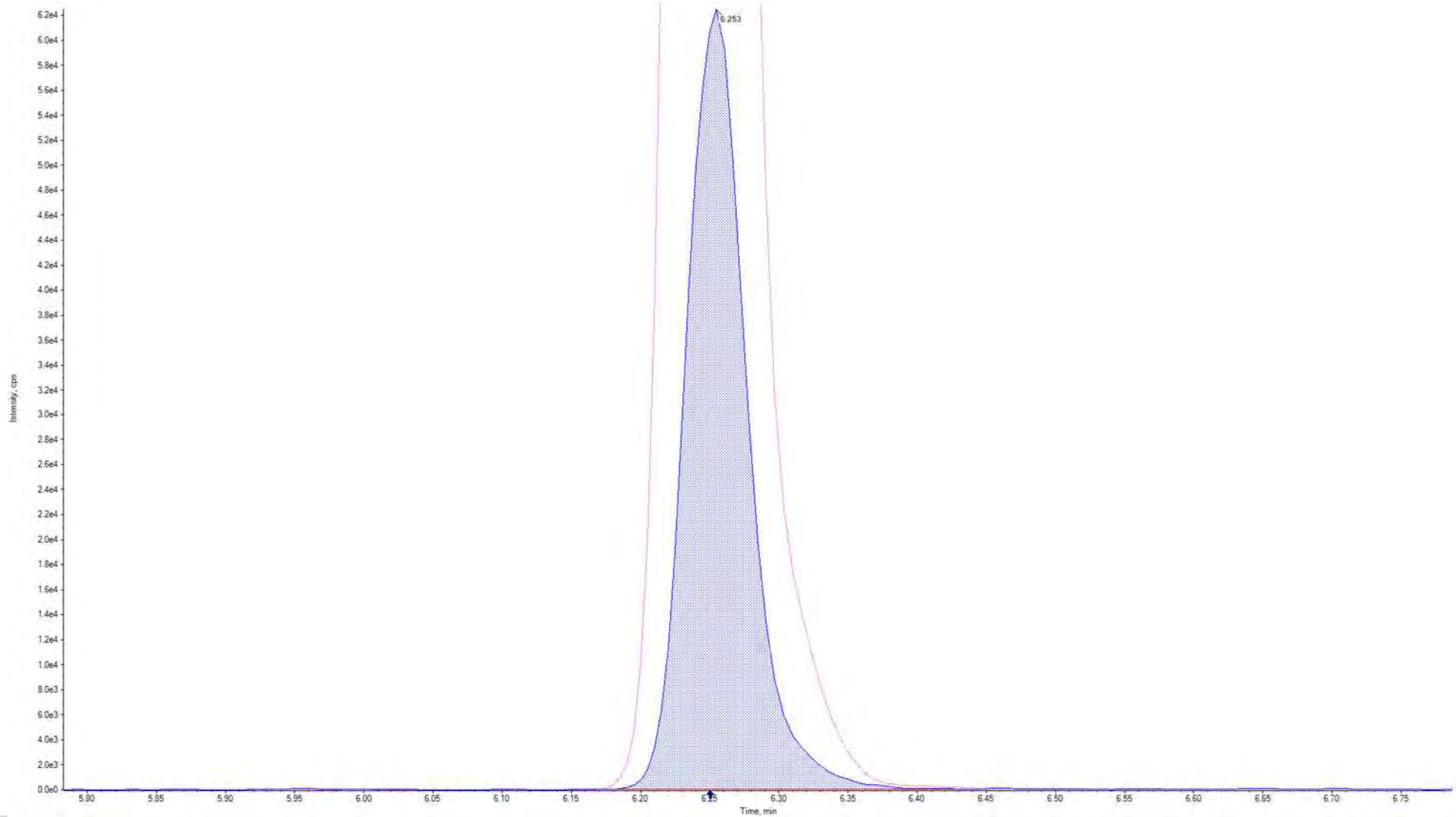
Generated: 8/14/2024 6:27:11 AM

PFHpA
Sample: IA1633STD-1.25 S/N:1929.5 Points Across peak:45



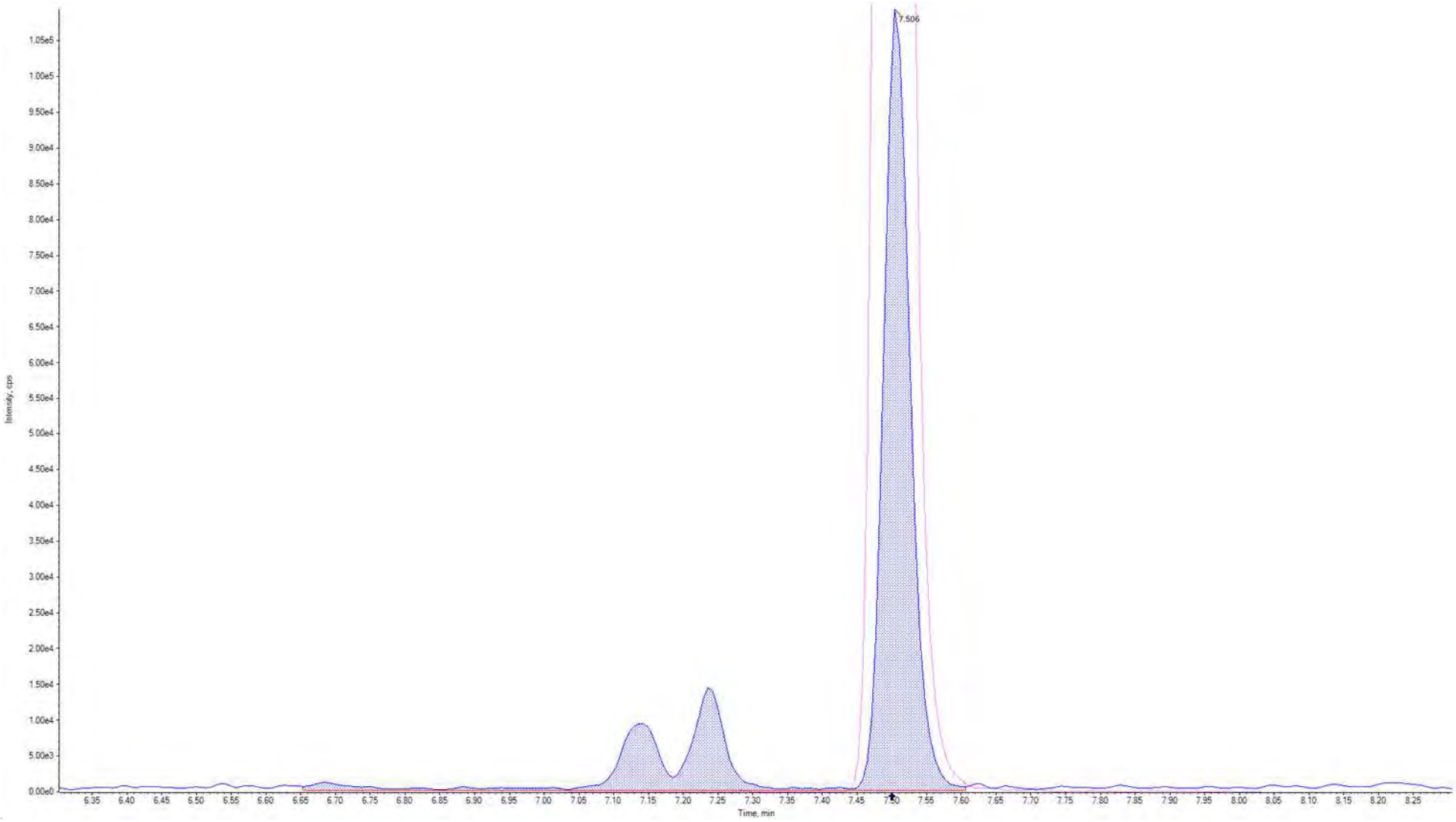
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFHpA_2
Sample: IA1633STD-1.25 S/N:13190.9 Points Across peak:44



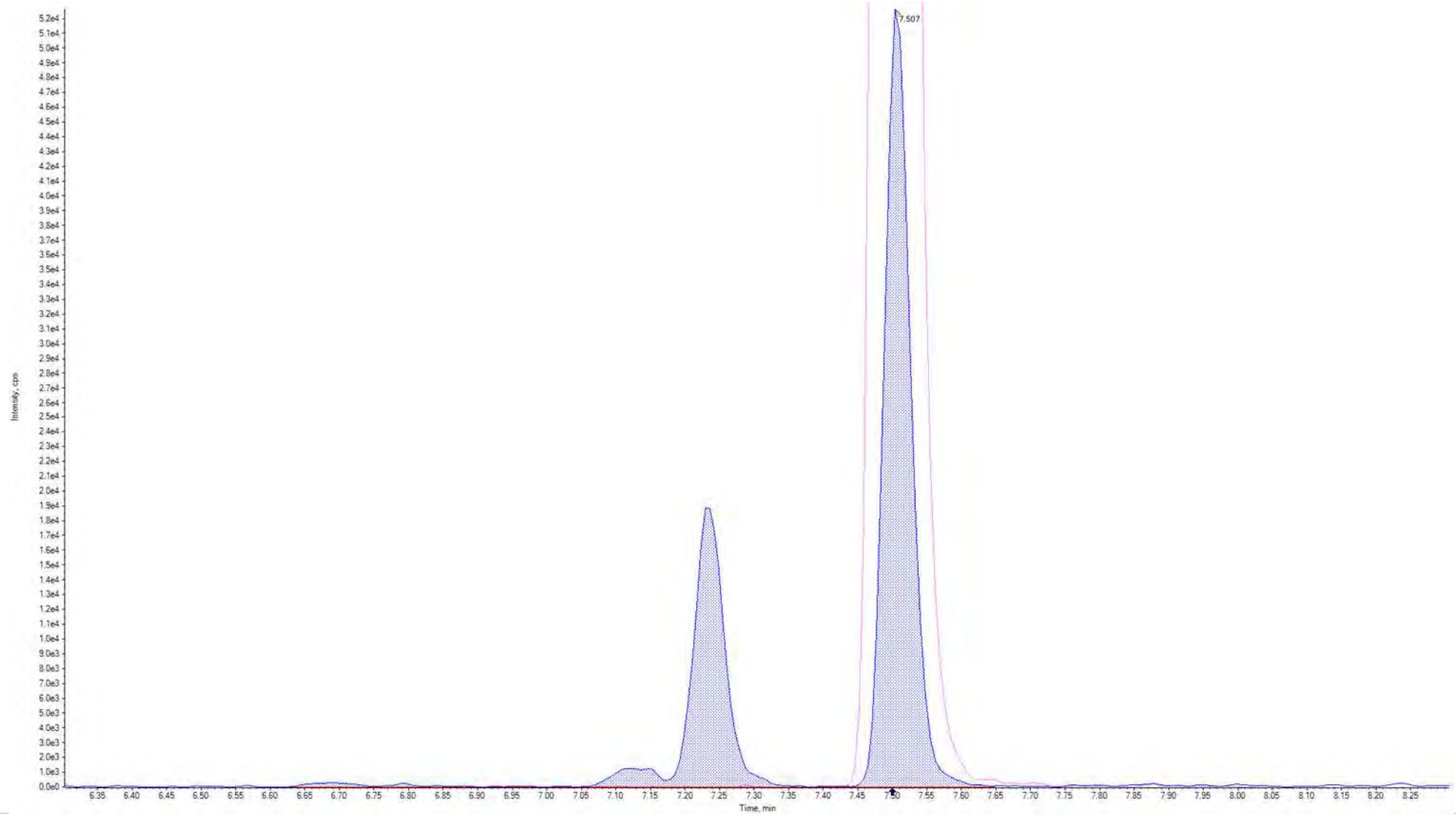
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOA
Sample: IA1633STD-1.25 S/N:949.6 Points Across peak:148



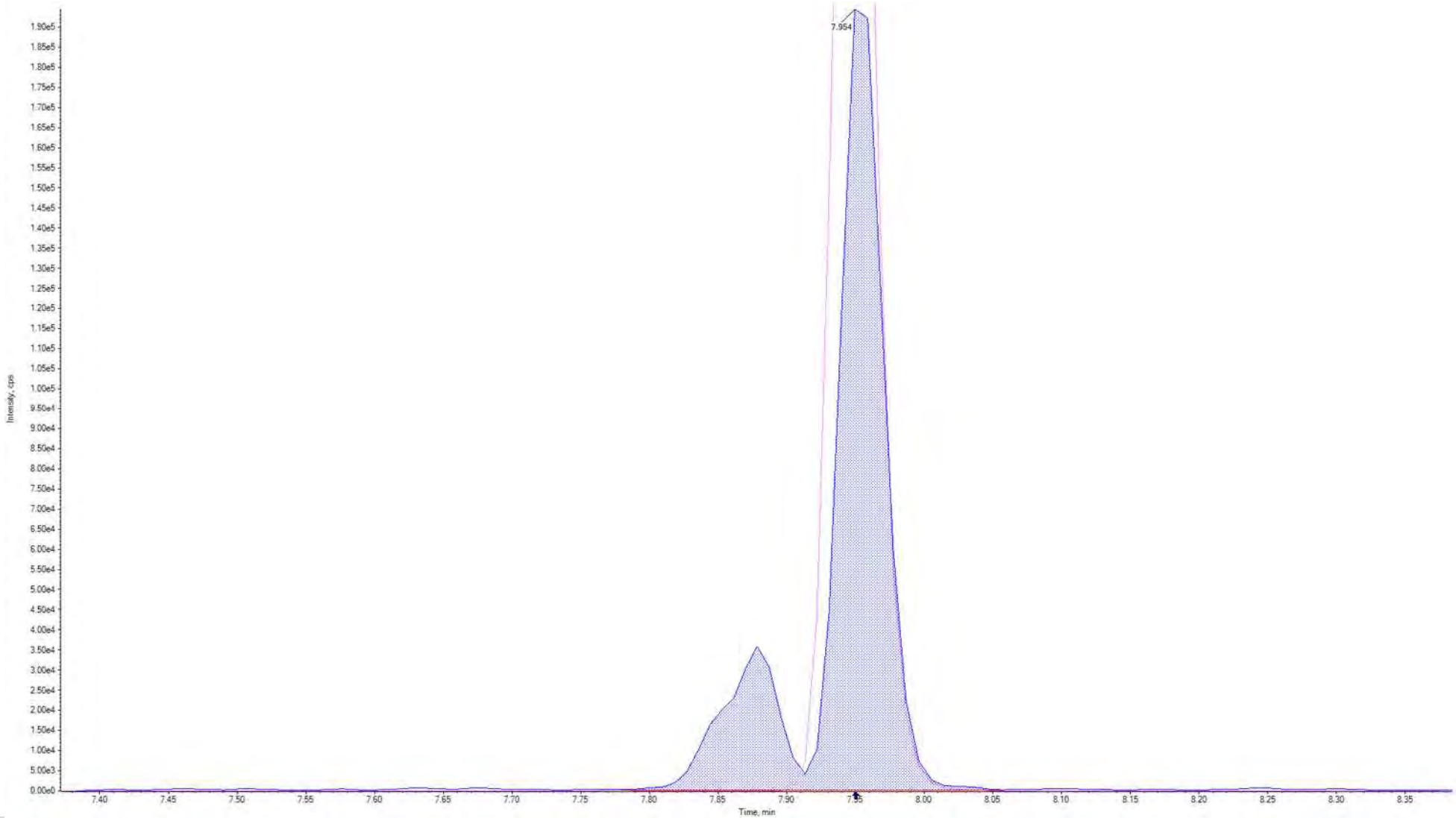
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOA_2
Sample: IA1633STD-1.25 S/N:58125.7 Points Across peak:157



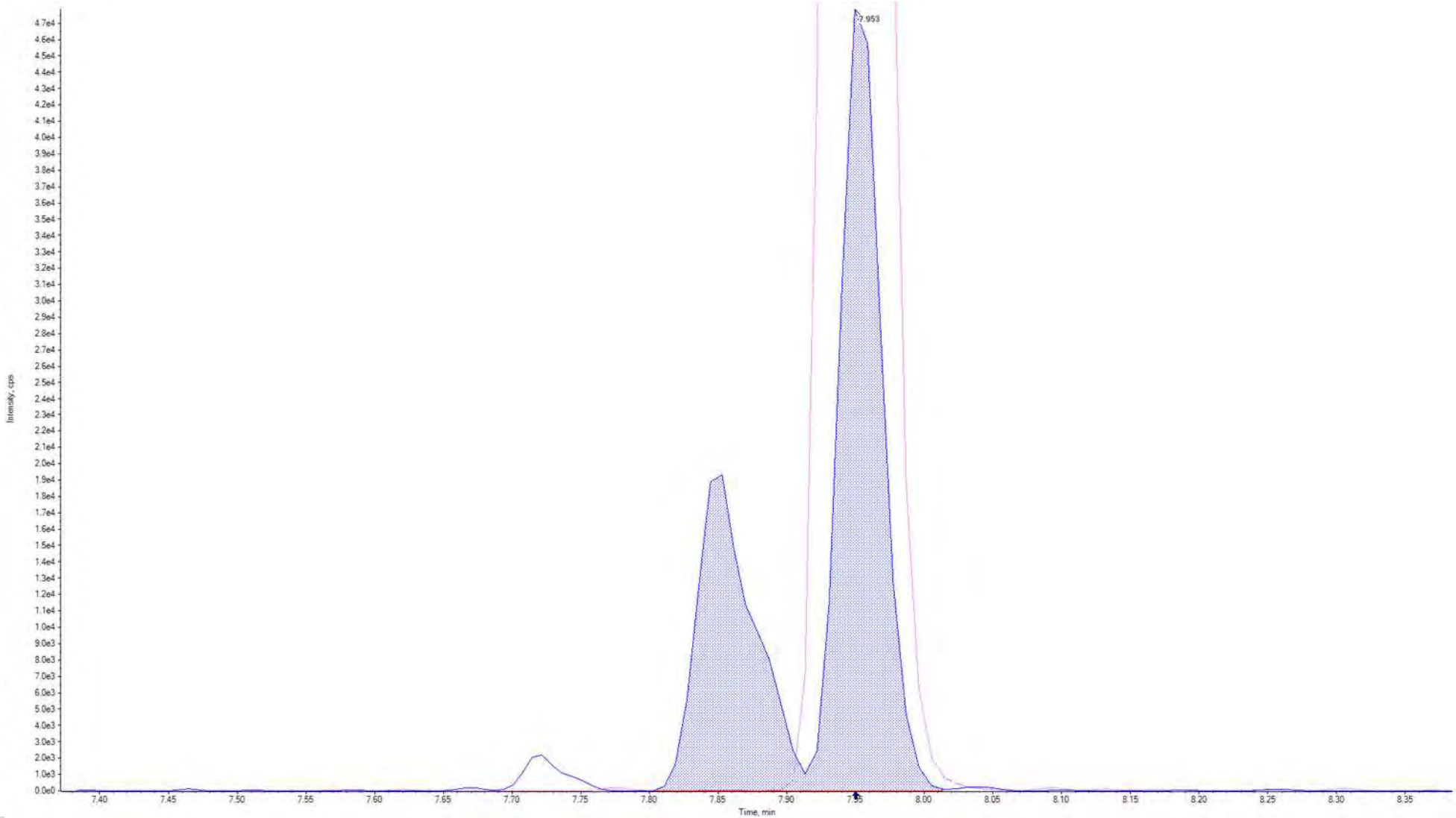
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFNA
Sample: IA1633STD-1.25 S/N:1131.5 Points Across peak:34



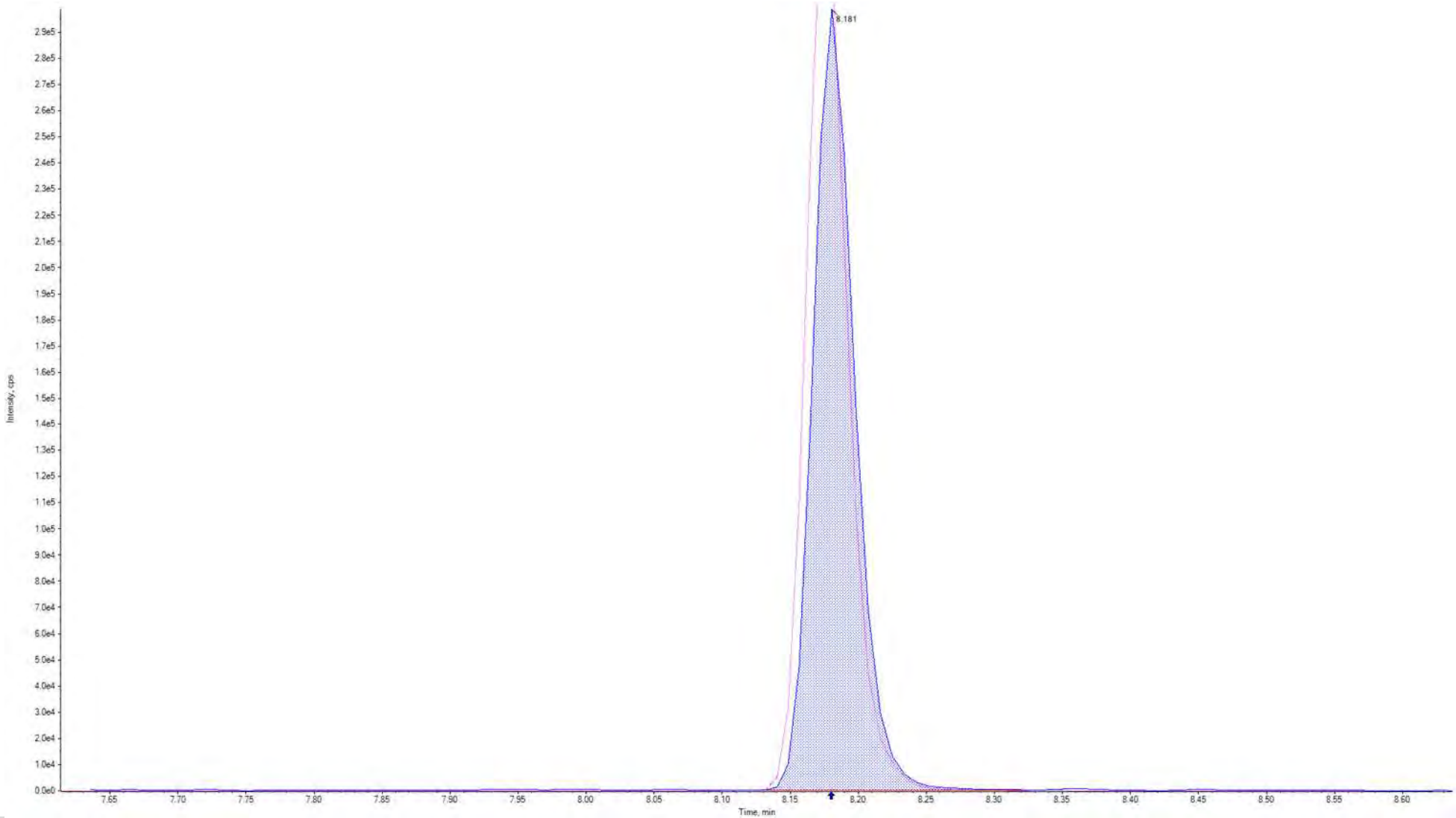
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFNA_2
Sample: IA1633STD-1.25 S/N:754.6 Points Across peak:26



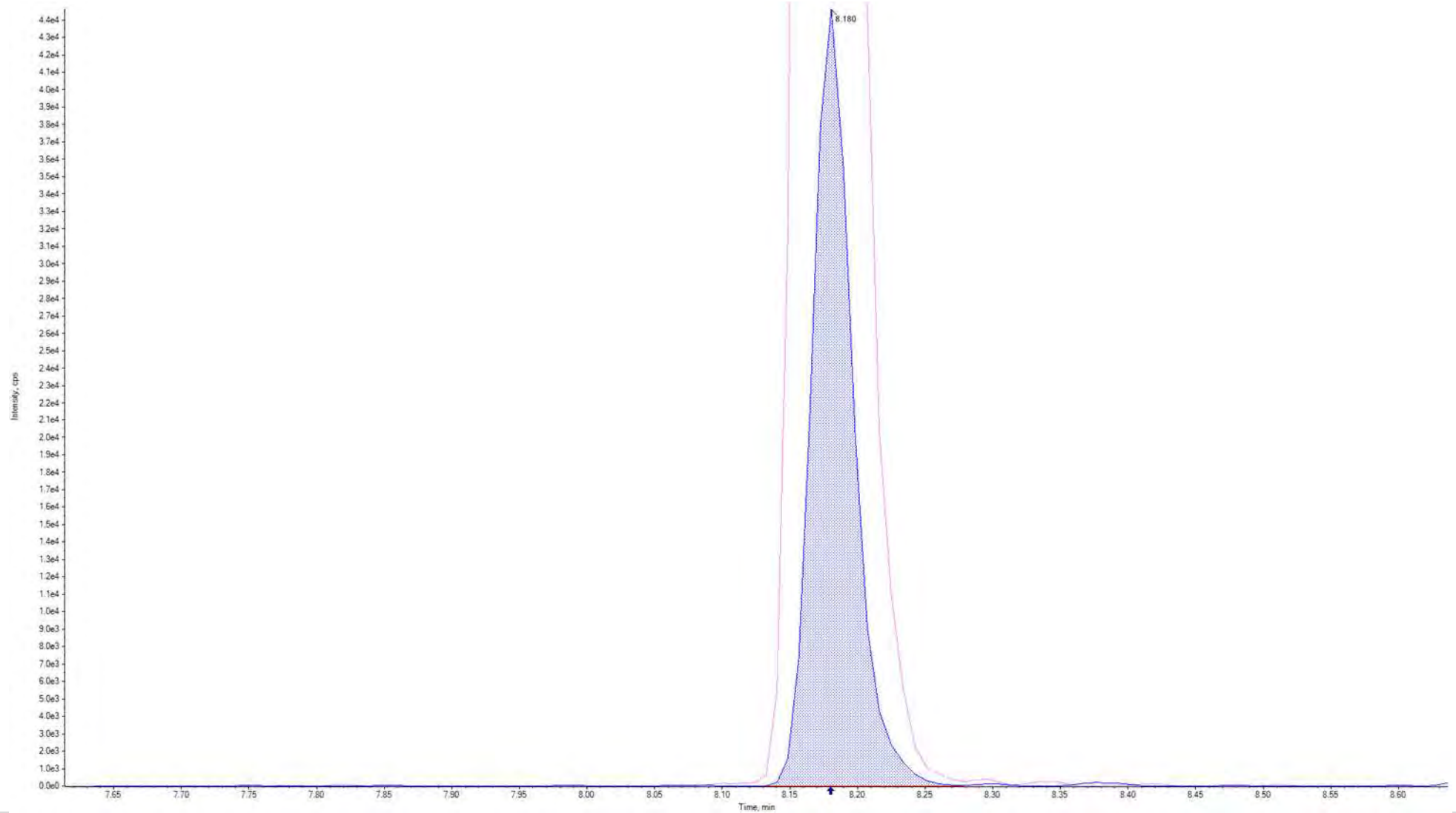
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDA
Sample: IA1633STD-1.25 S/N:2620.3 Points Across peak:27



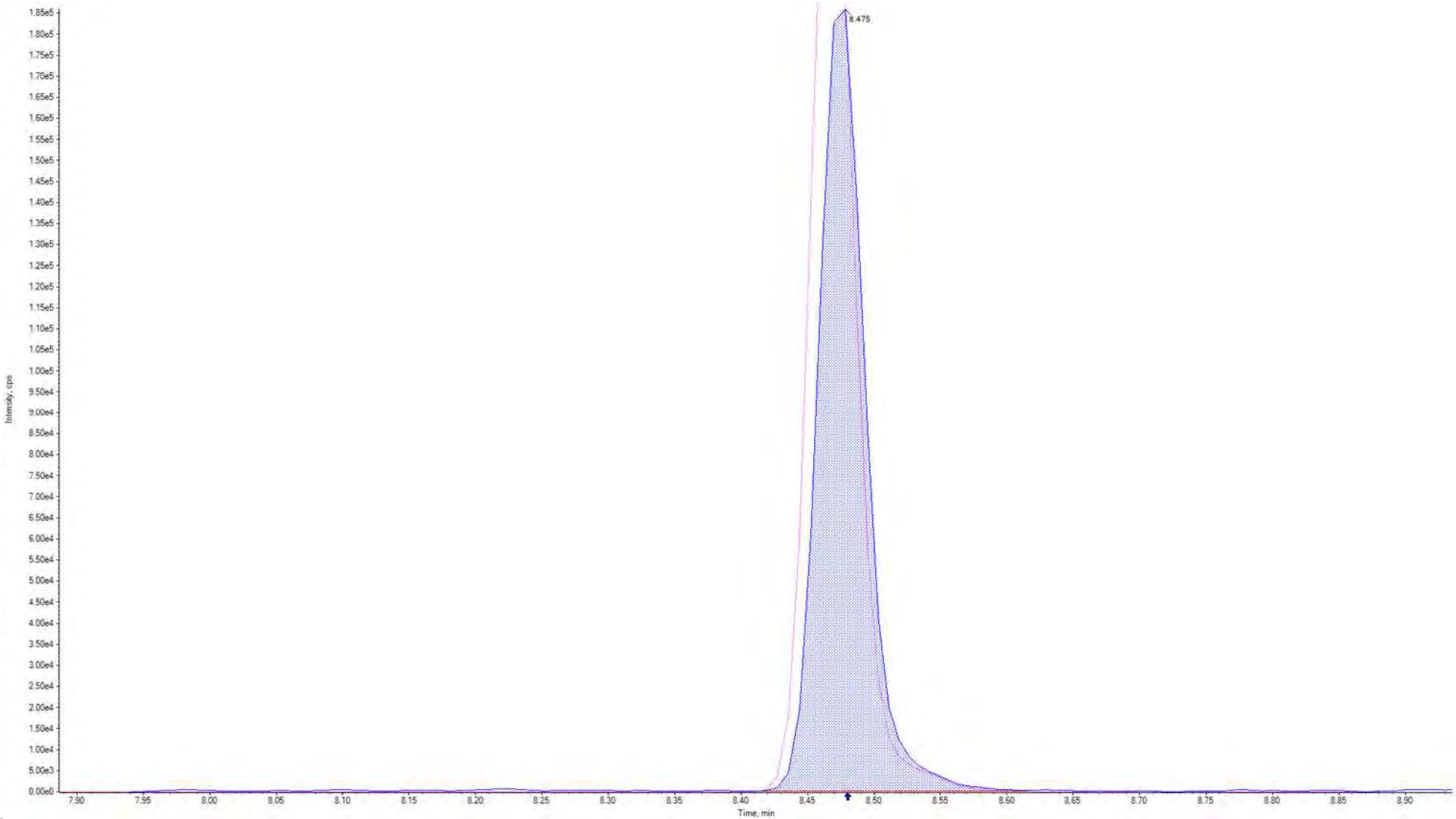
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDA_2
Sample: IA1633STD-1.25 S/N:3150.5 Points Across peak:20



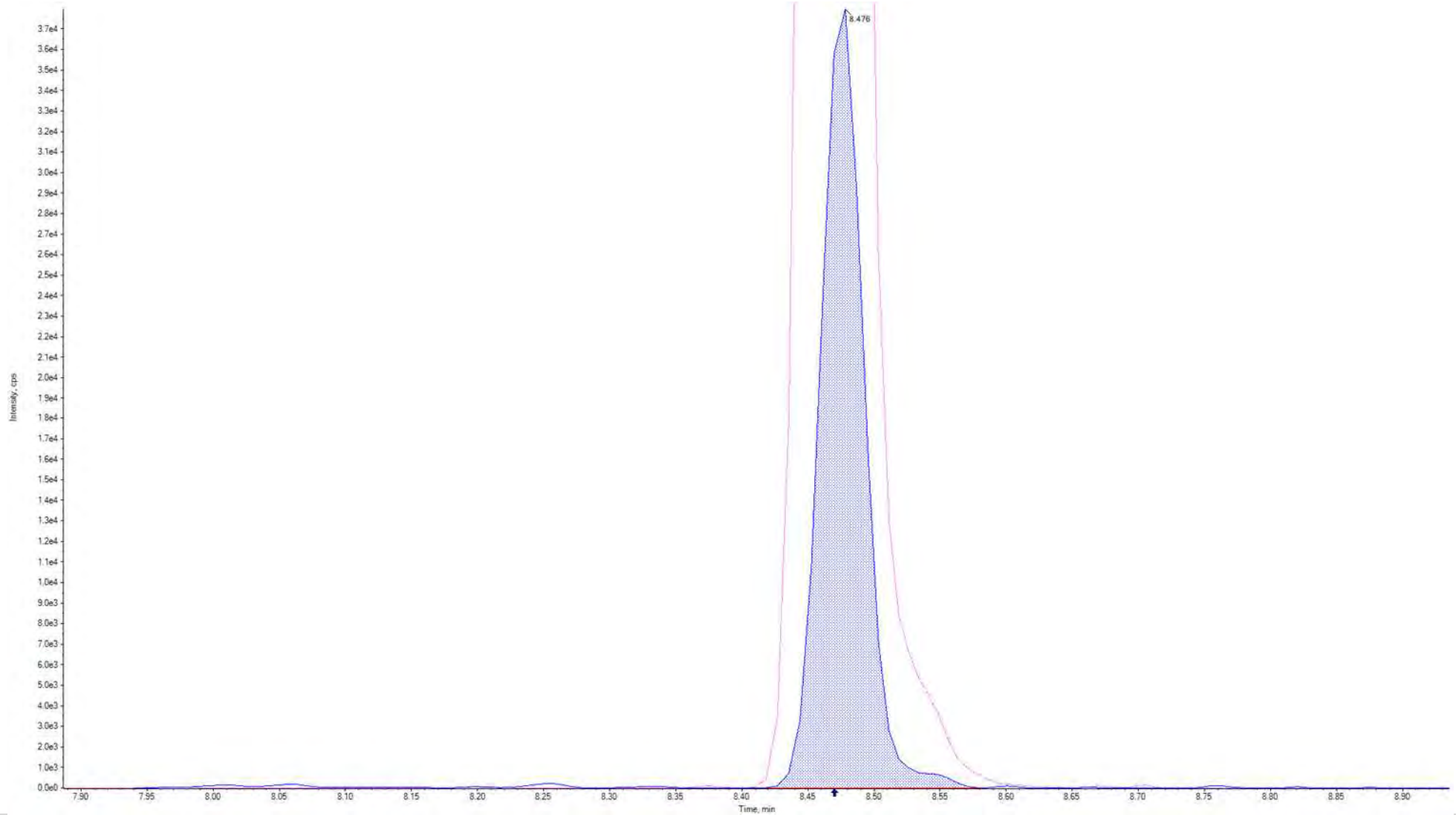
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFUnA
Sample: IA1633STD-1.25 S/N:2055.4 Points Across peak:27



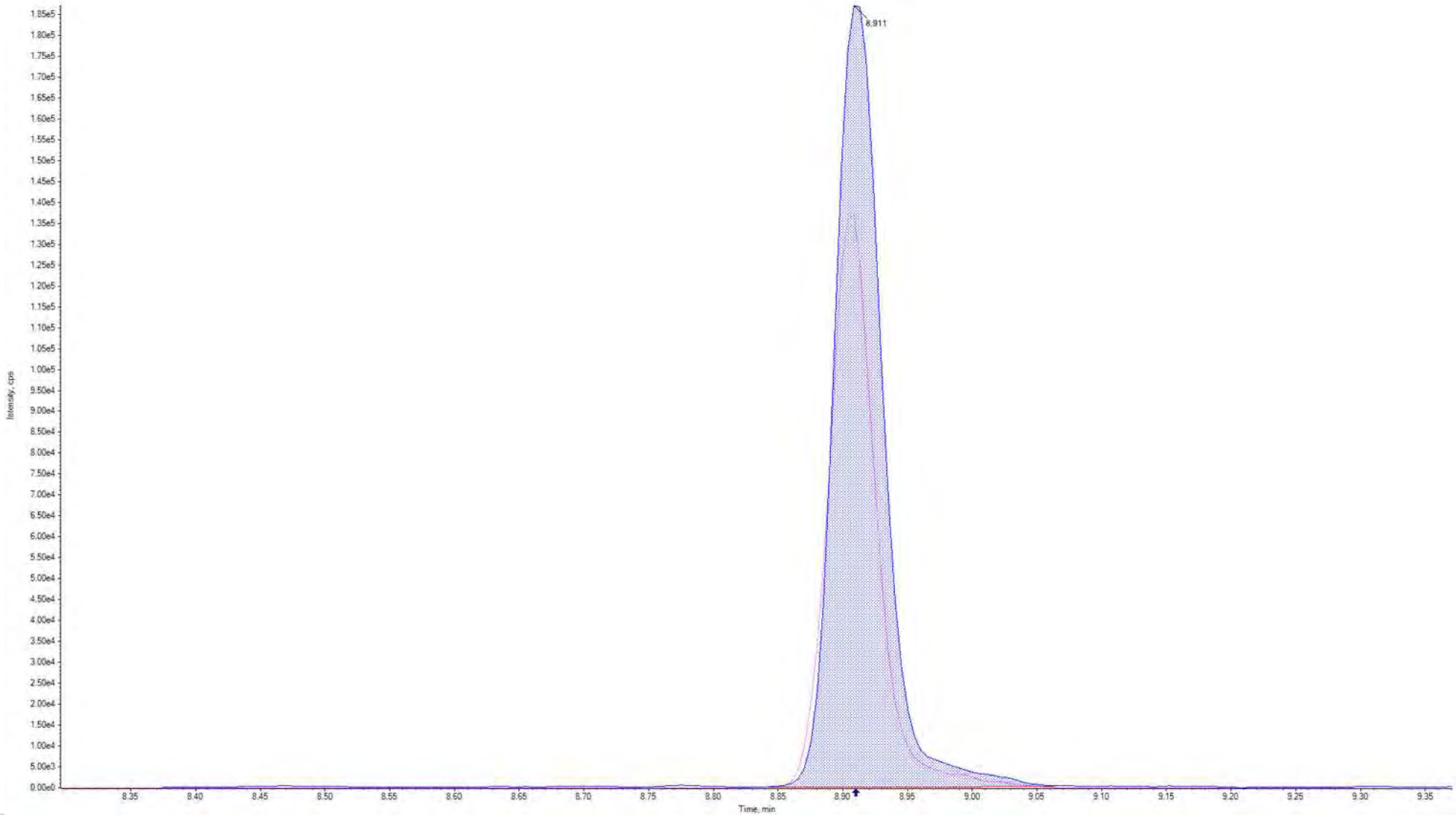
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFUnA_2
Sample: IA1633STD-1.25 S/N:1230.1 Points Across peak:22



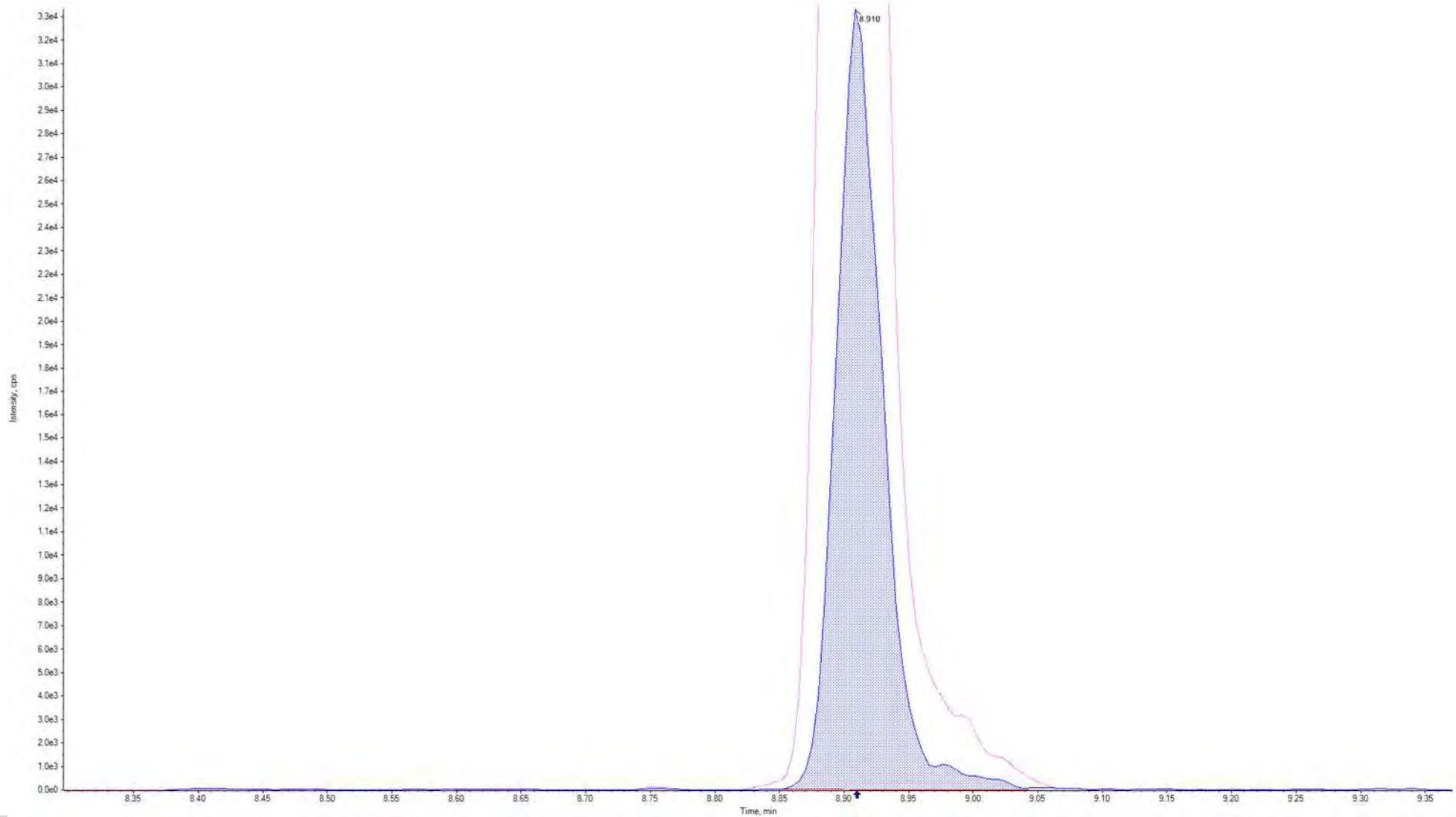
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDoA
Sample: IA1633STD-1.25 S/N:2740.2 Points Across peak:47



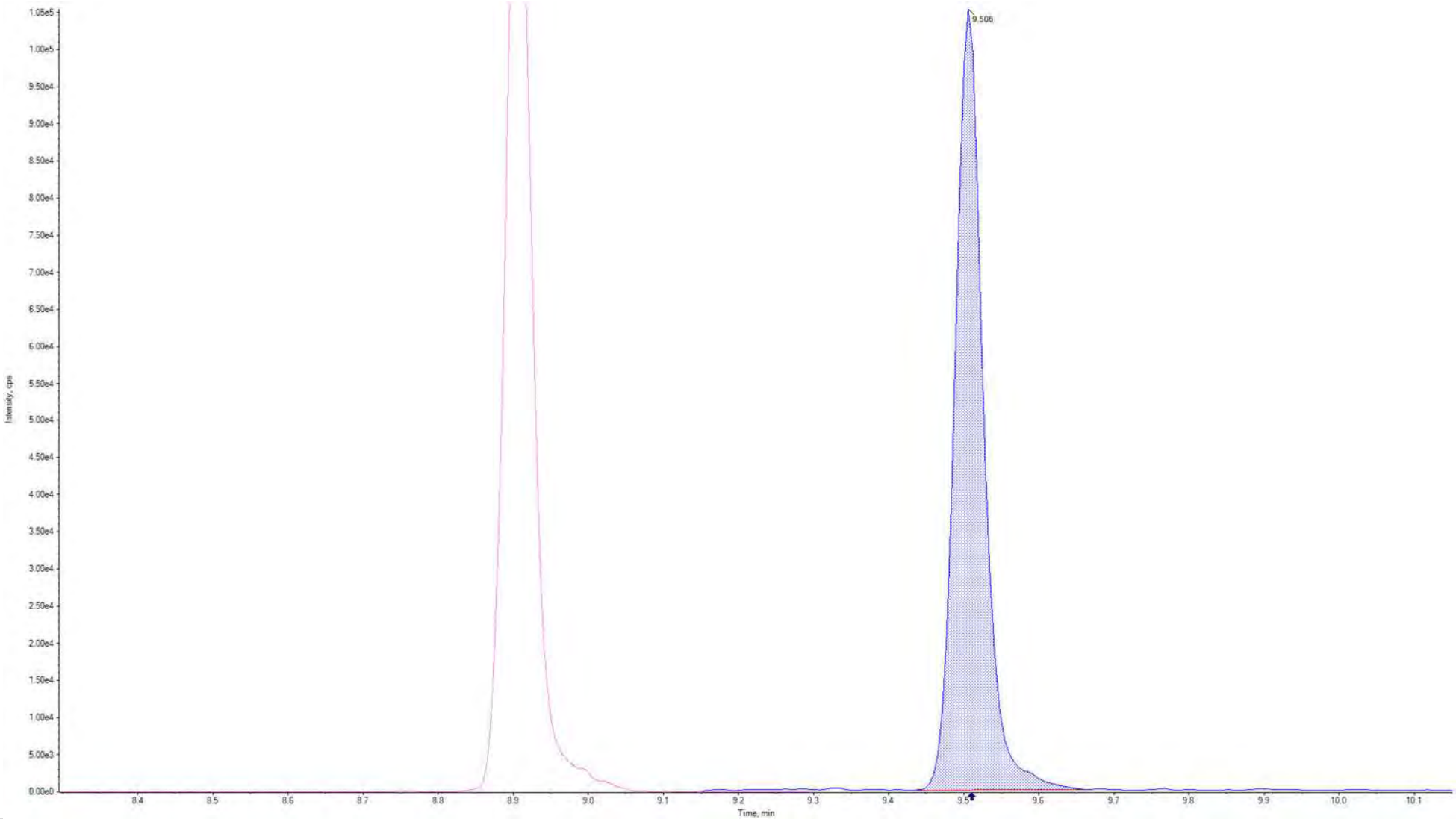
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDoA_2
Sample: IA1633STD-1.25 S/N:1128310.2 Points Across peak:39



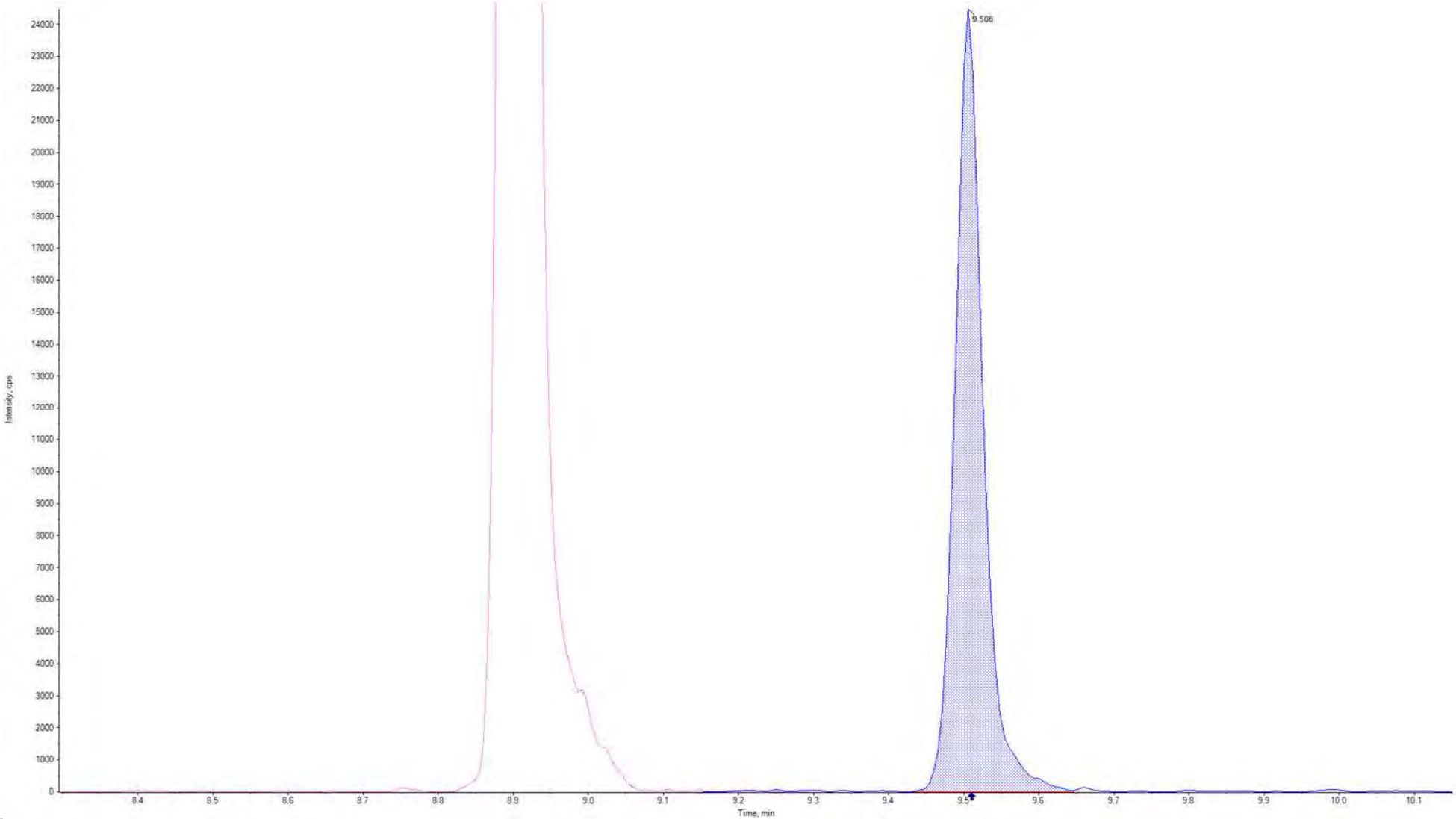
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFTrDA
Sample: IA1633STD-1.25 S/N:1362.8 Points Across peak:39



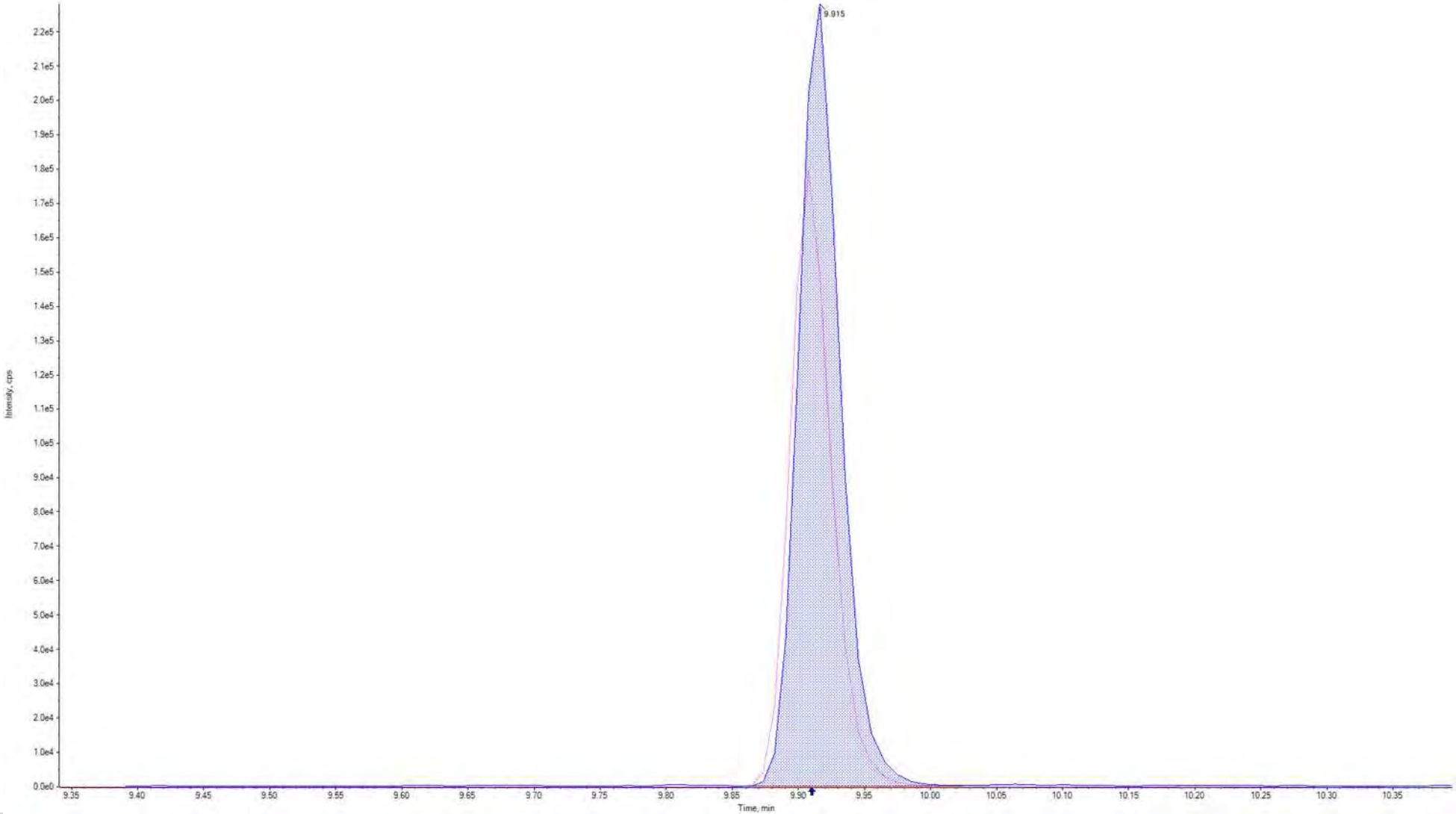
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFTrDA_2
Sample: IA1633STD-1.25 S/N:821986.9 Points Across peak:37



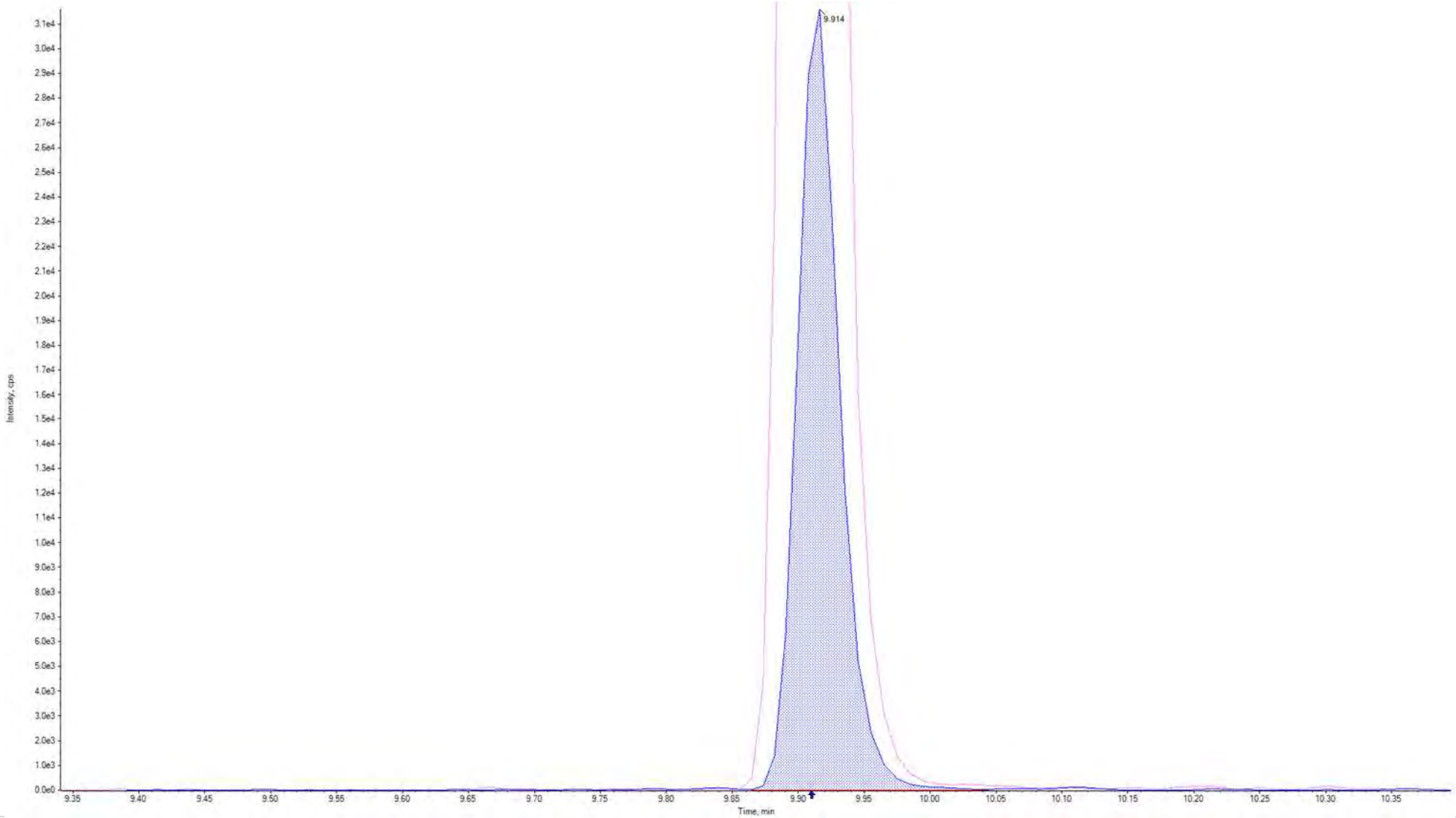
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFTeDA
Sample: IA1633STD-1.25 S/N:1719.3 Points Across peak:19



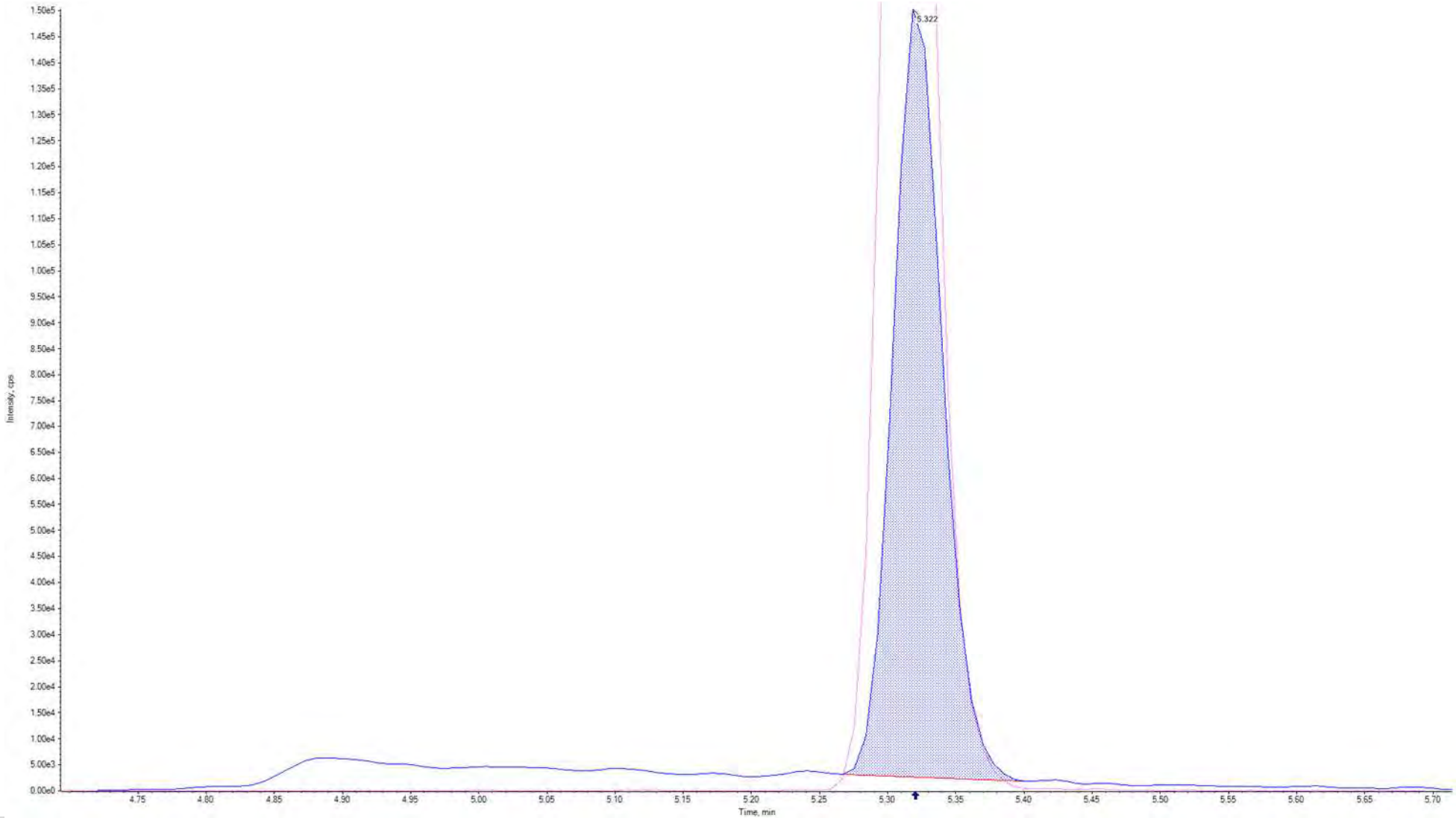
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFTeDA_2
Sample: IA1633STD-1.25 S/N:1463.9 Points Across peak:20



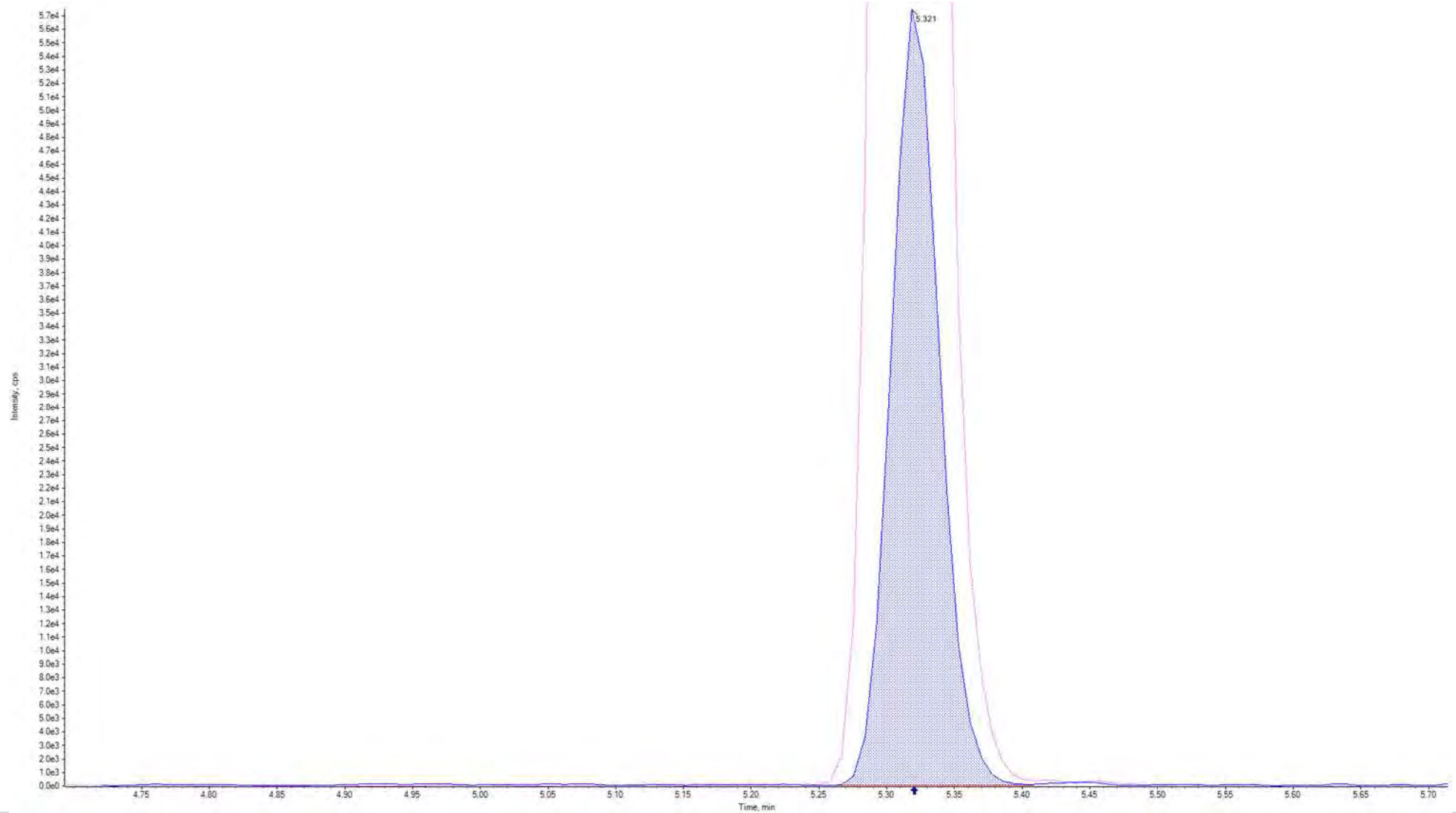
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFBS
Sample: IA1633STD-1.25 S/N:82.0 Points Across peak:17



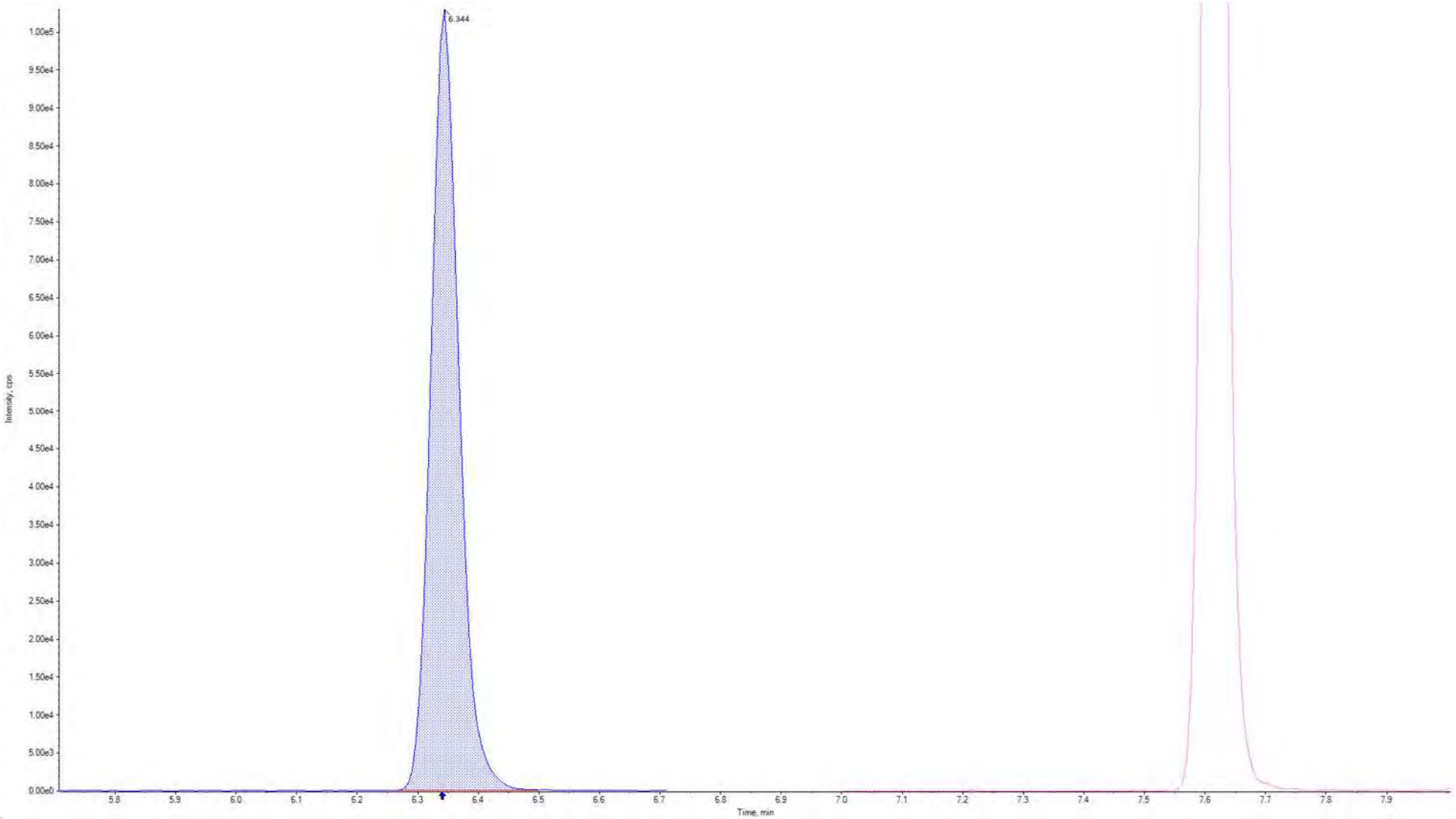
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFBS_2
Sample: IA1633STD-1.25 S/N:1708.8 Points Across peak:19



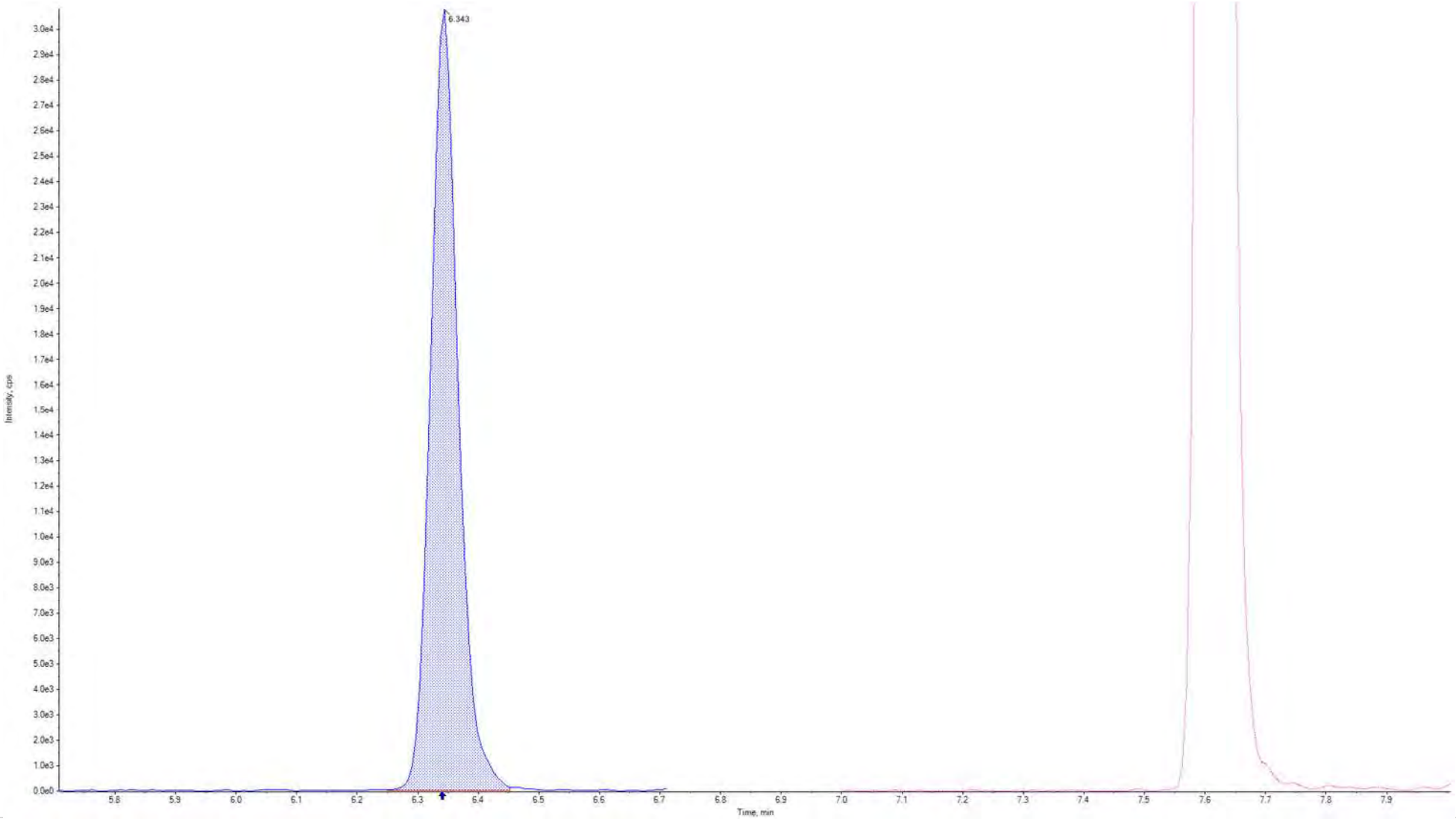
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFPeS
Sample: IA1633STD-1.25 S/N:4866.4 Points Across peak:38



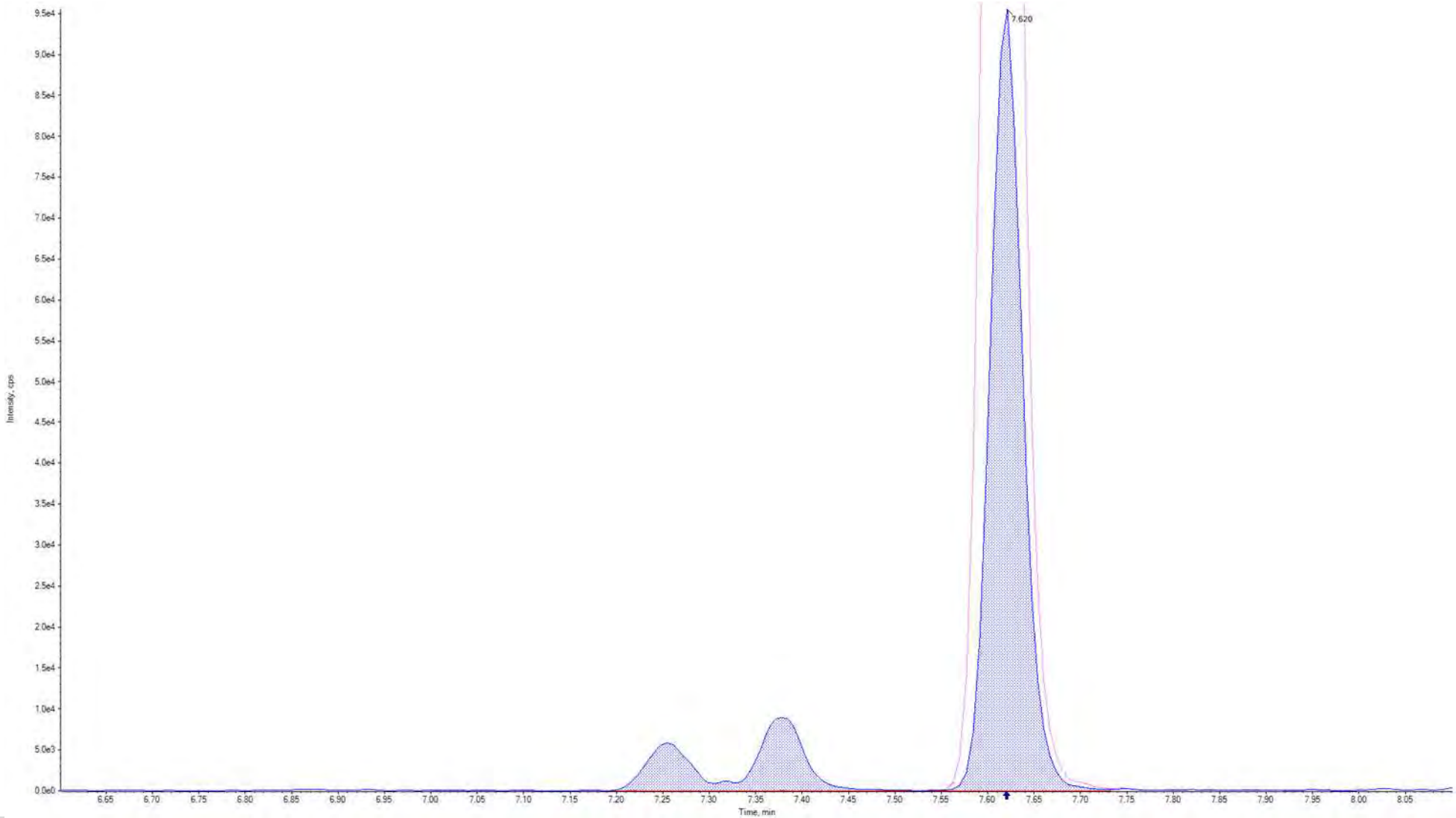
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFPeS_2
Sample: IA1633STD-1.25 S/N:7422.6 Points Across peak:32



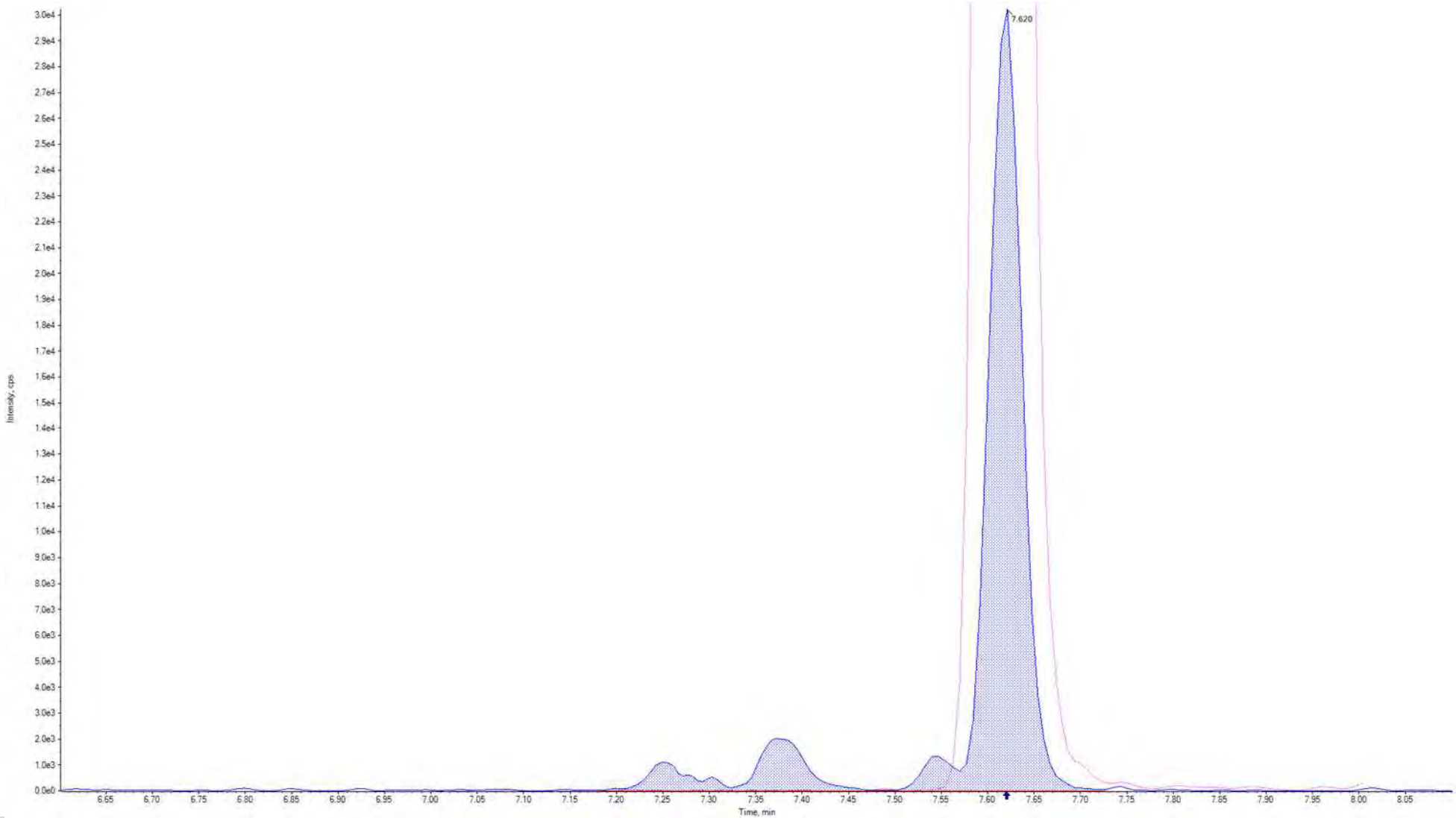
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFHxS
Sample: IA1633STD-1.25 S/N:27805.6 Points Across peak:88



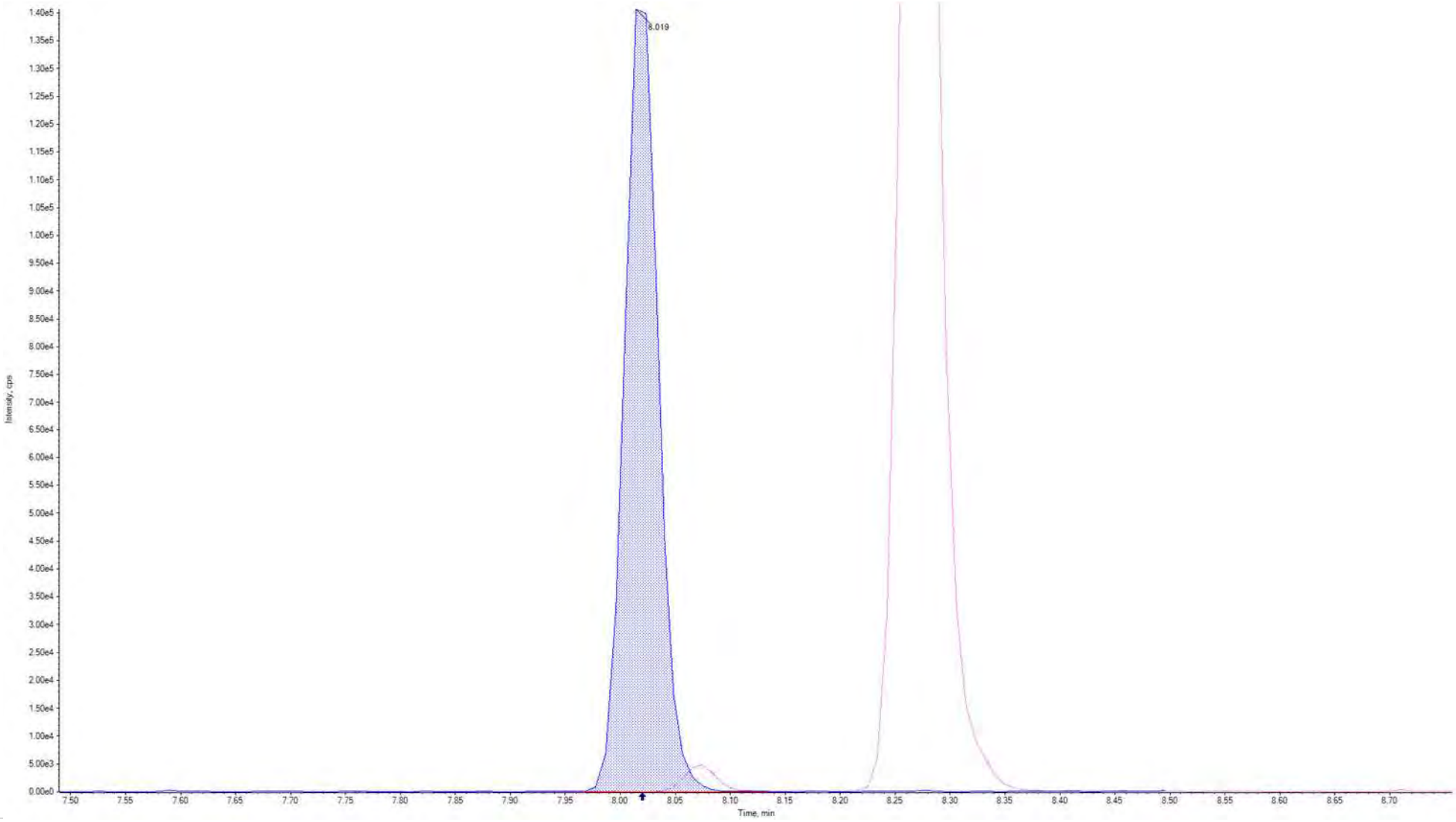
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFHxS_2
Sample: IA1633STD-1.25 S/N:5313019.9 Points Across peak:88



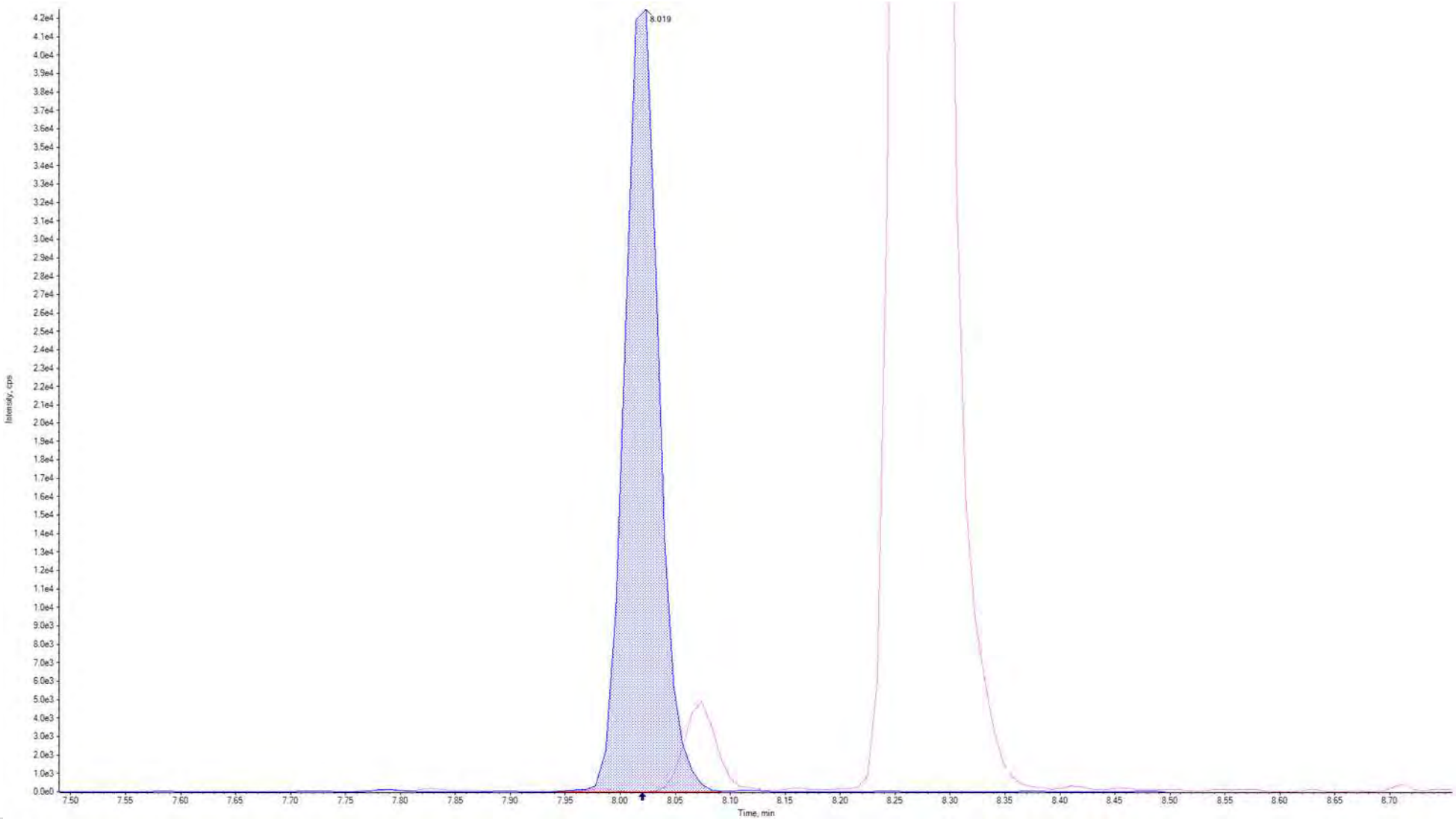
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFHpS
Sample: IA1633STD-1.25 S/N:60036.3 Points Across peak:22



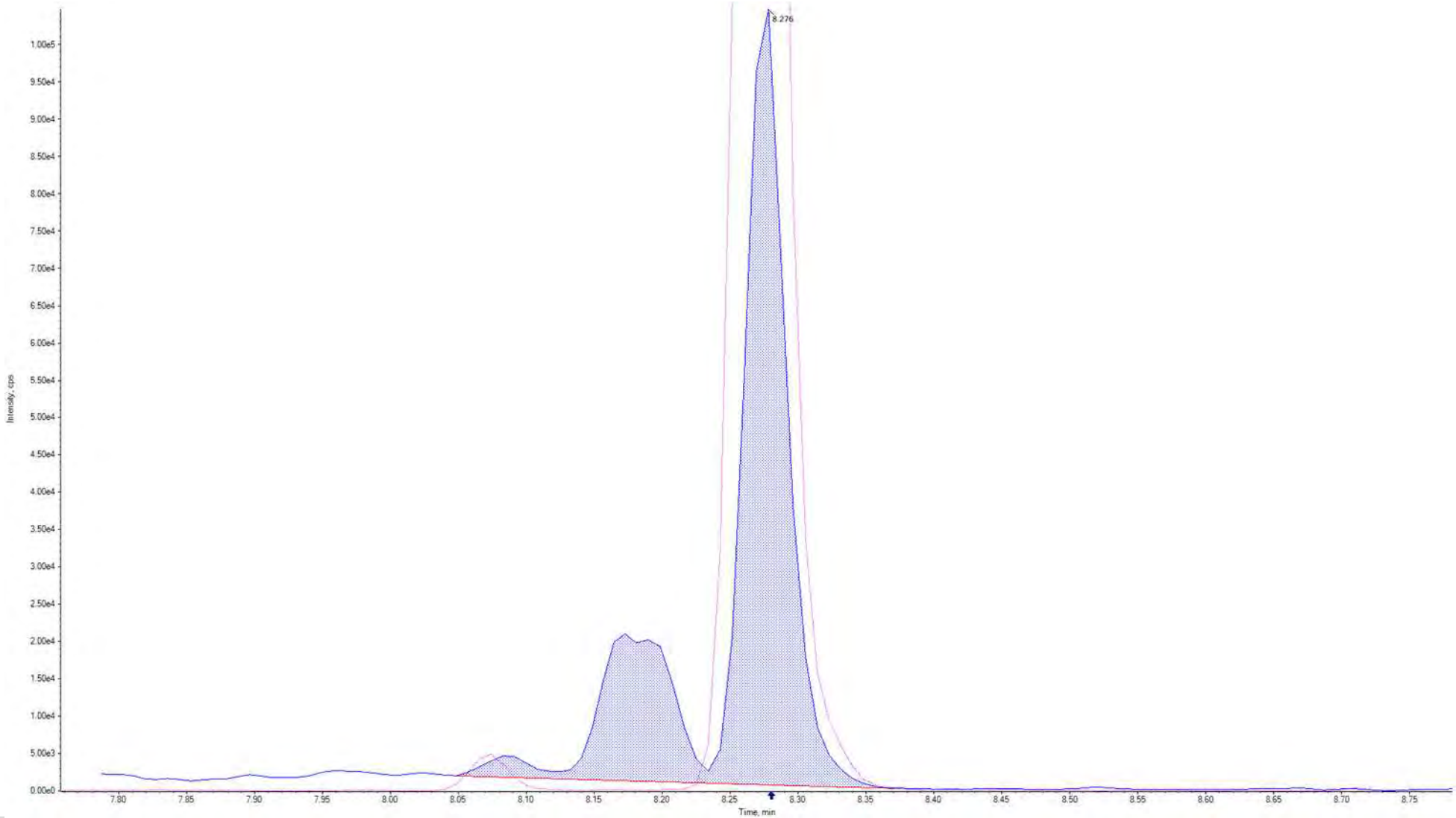
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFHpS_2
Sample: IA1633STD-1.25 S/N:2053.8 Points Across peak:20



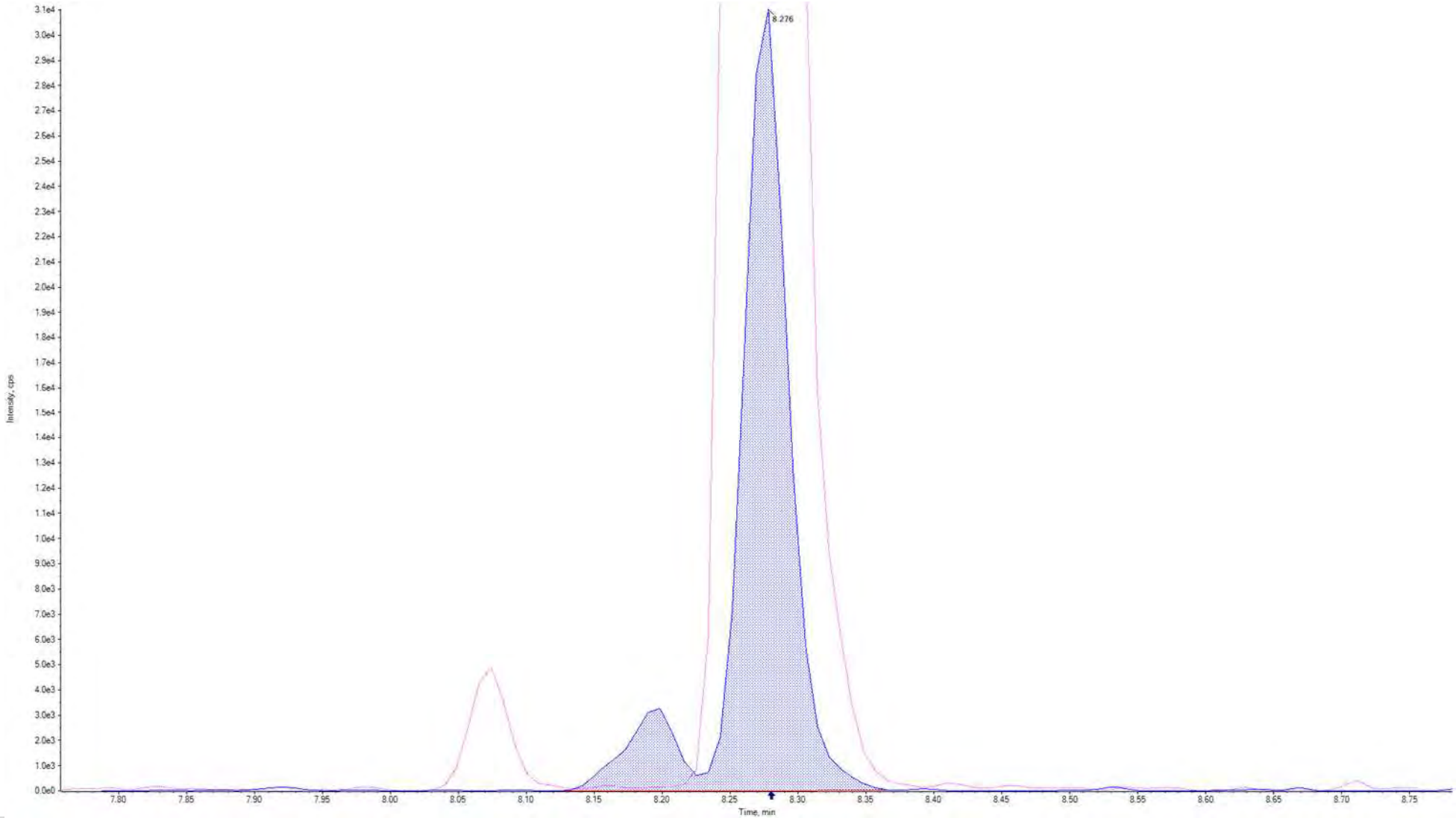
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOS
Sample: IA1633STD-1.25 S/N:1470.1 Points Across peak:40



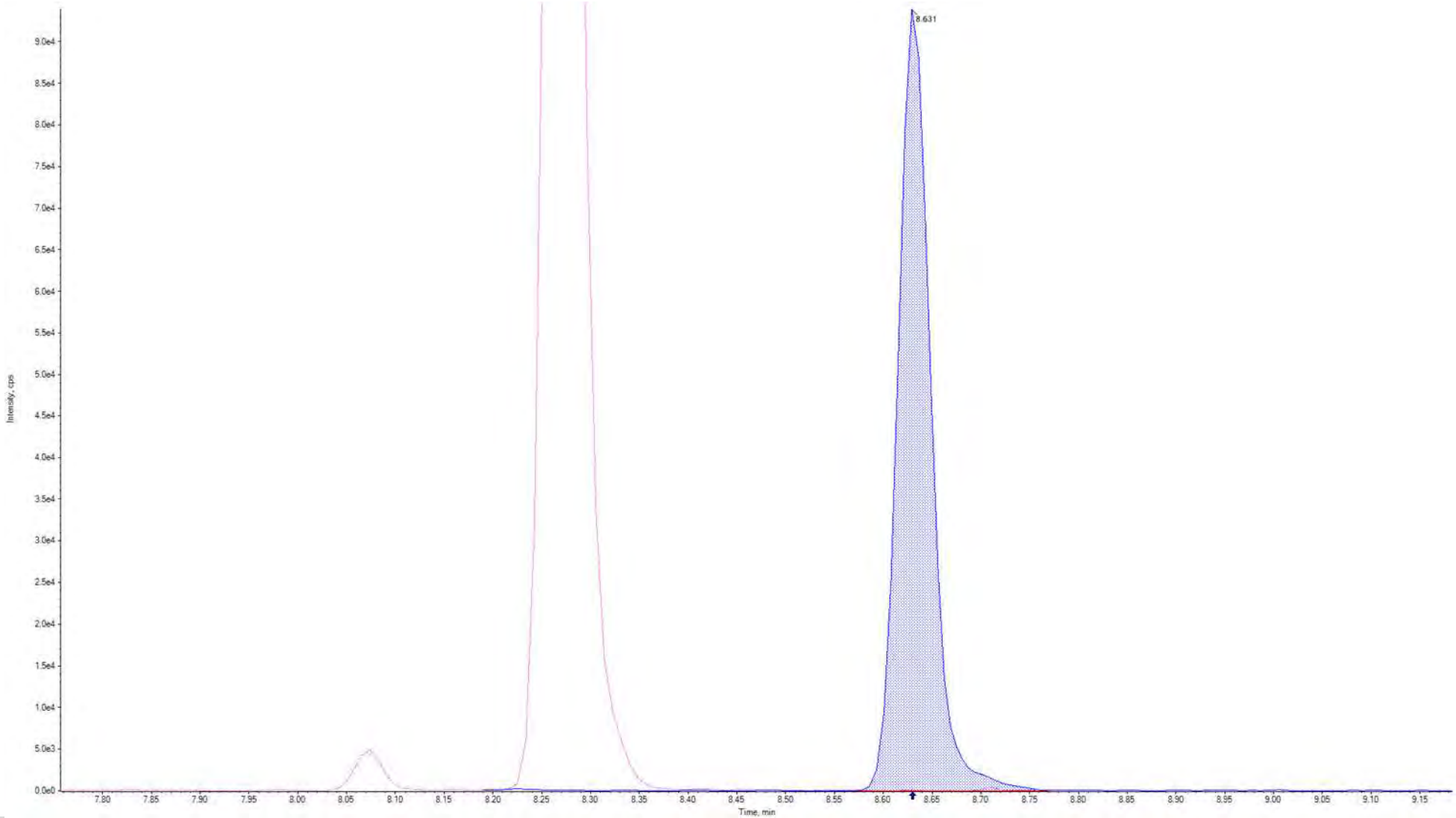
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOS_2
Sample: IA1633STD-1.25 S/N:1046.2 Points Across peak:31



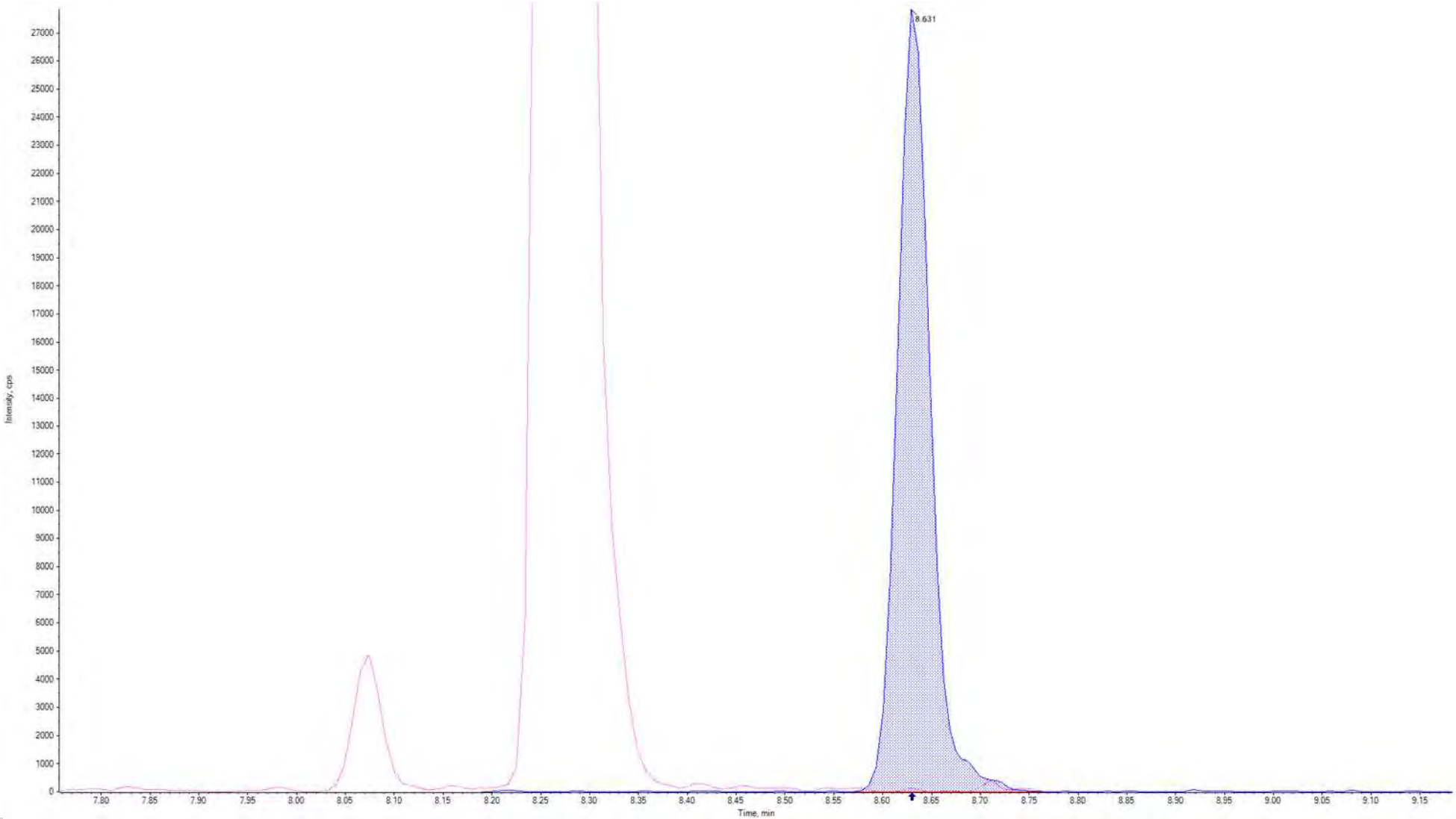
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFNS
Sample: IA1633STD-1.25 S/N:10074.3 Points Across peak:32



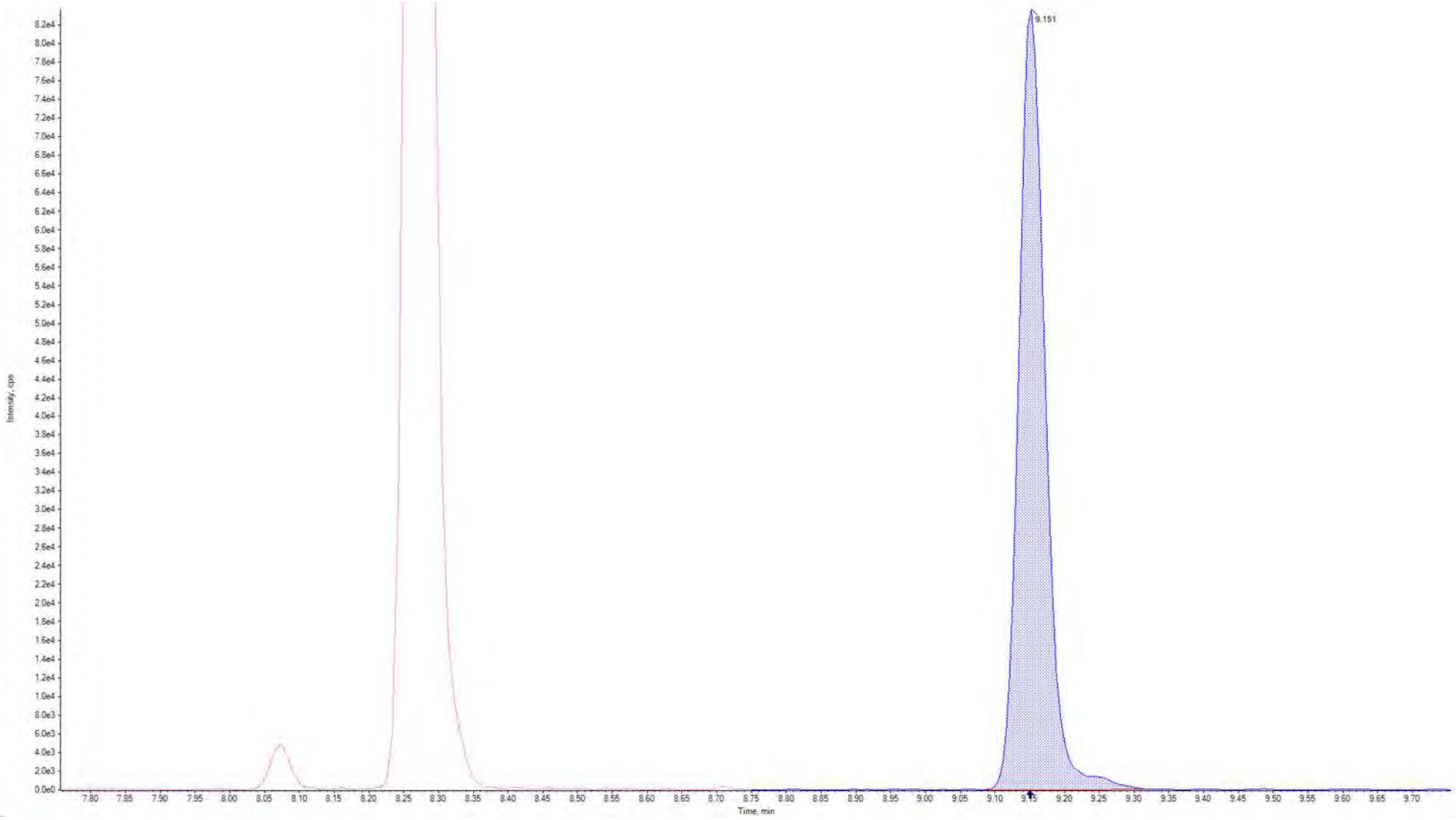
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFNS_2
Sample: IA1633STD-1.25 S/N:16777965.5 Points Across peak:34



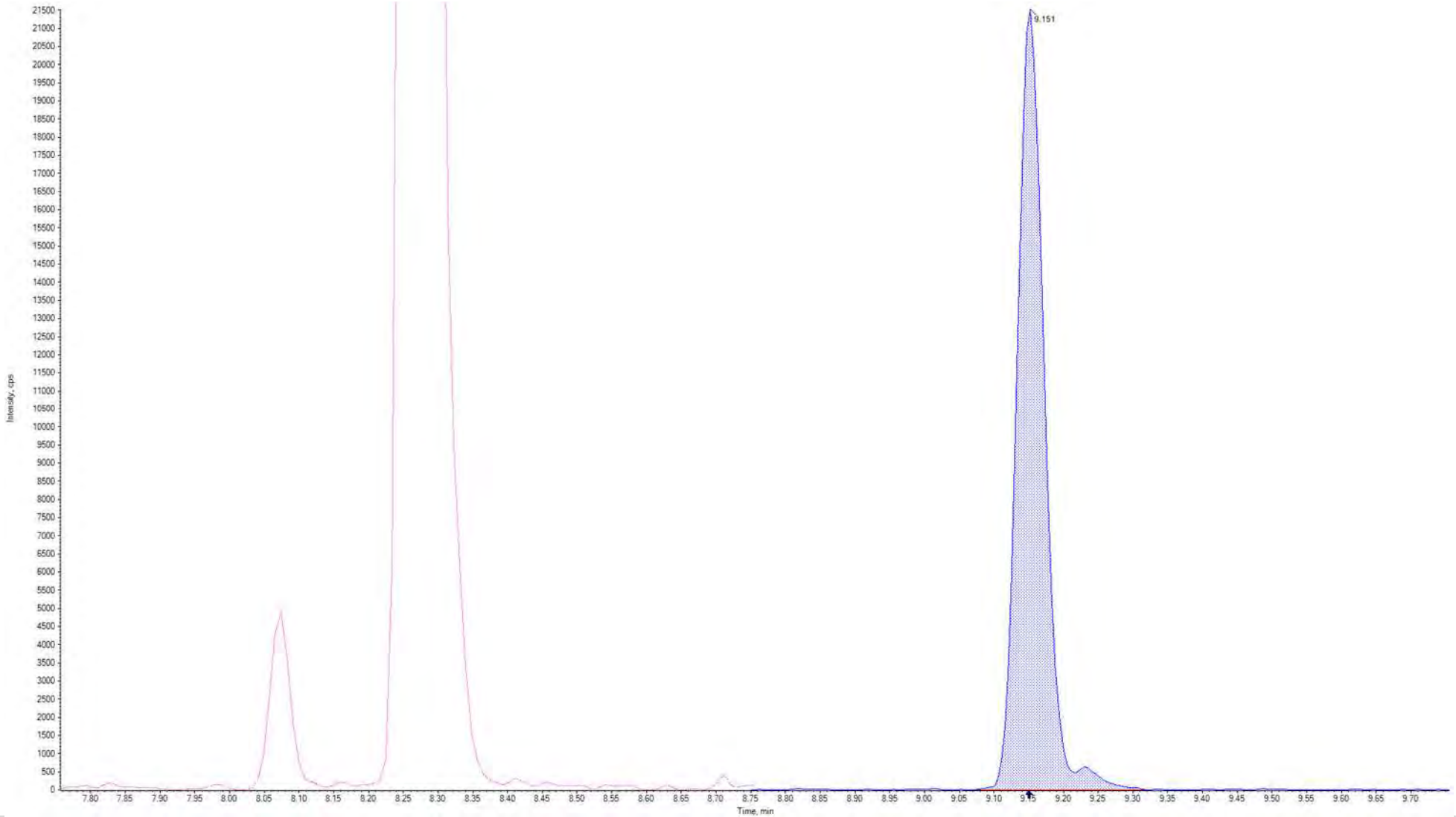
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDS
Sample: IA1633STD-1.25 S/N:14604.9 Points Across peak:46



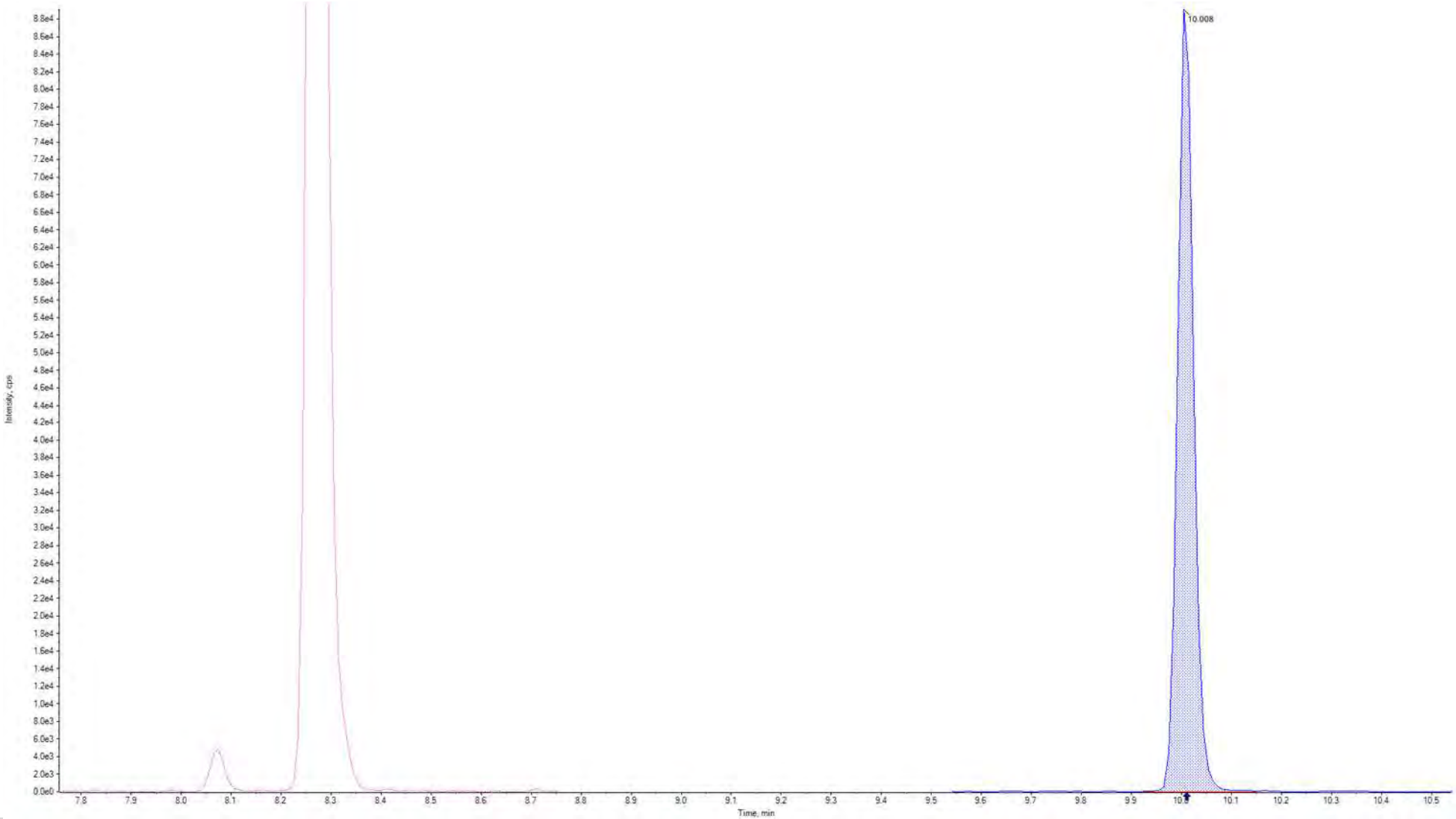
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDS_2
Sample: IA1633STD-1.25 S/N:2392.5 Points Across peak:48



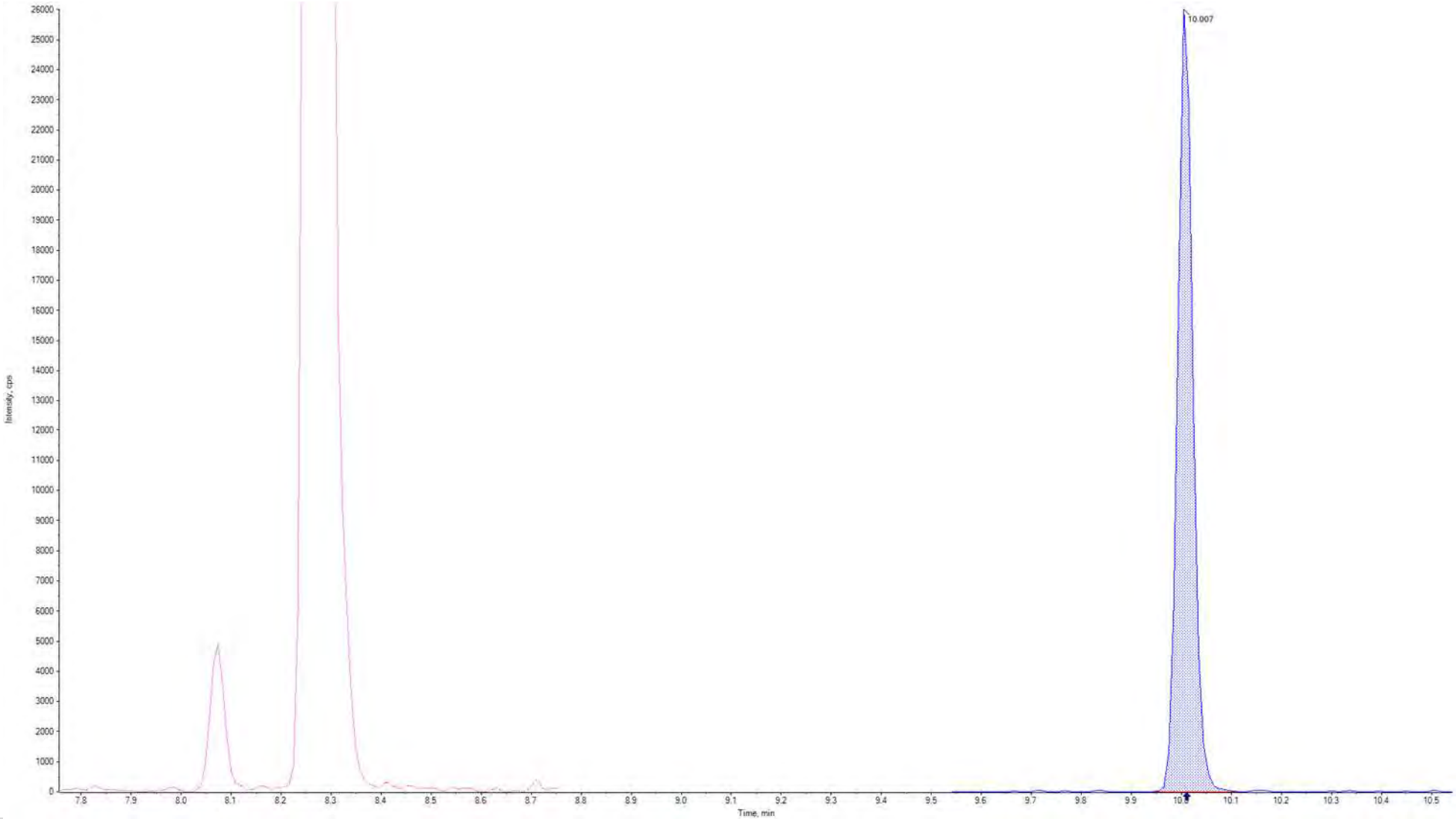
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDoS
Sample: IA1633STD-1.25 S/N:130154.7 Points Across peak:28



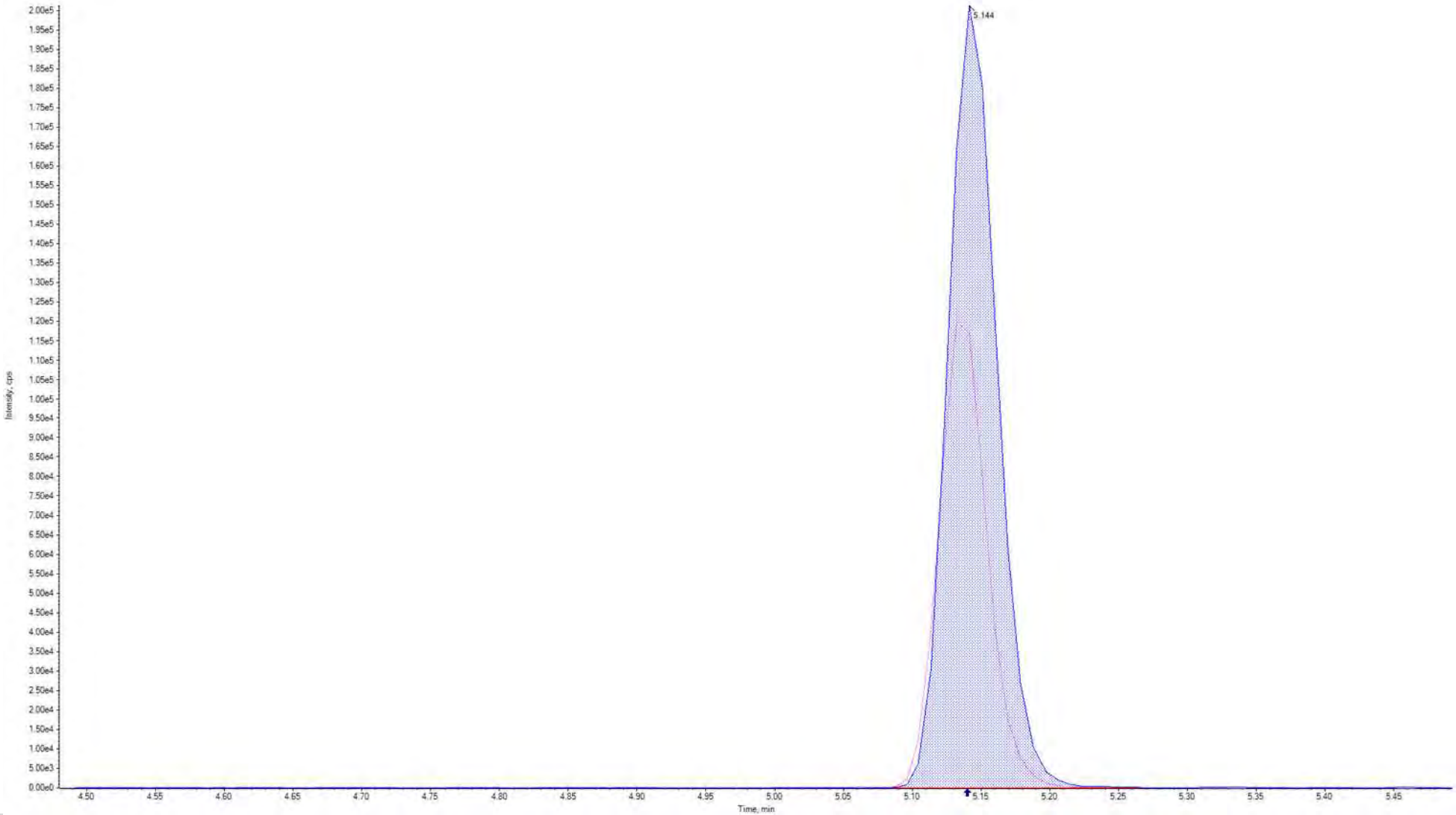
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDoS_2
Sample: IA1633STD-1.25 S/N:2628.4 Points Across peak:23



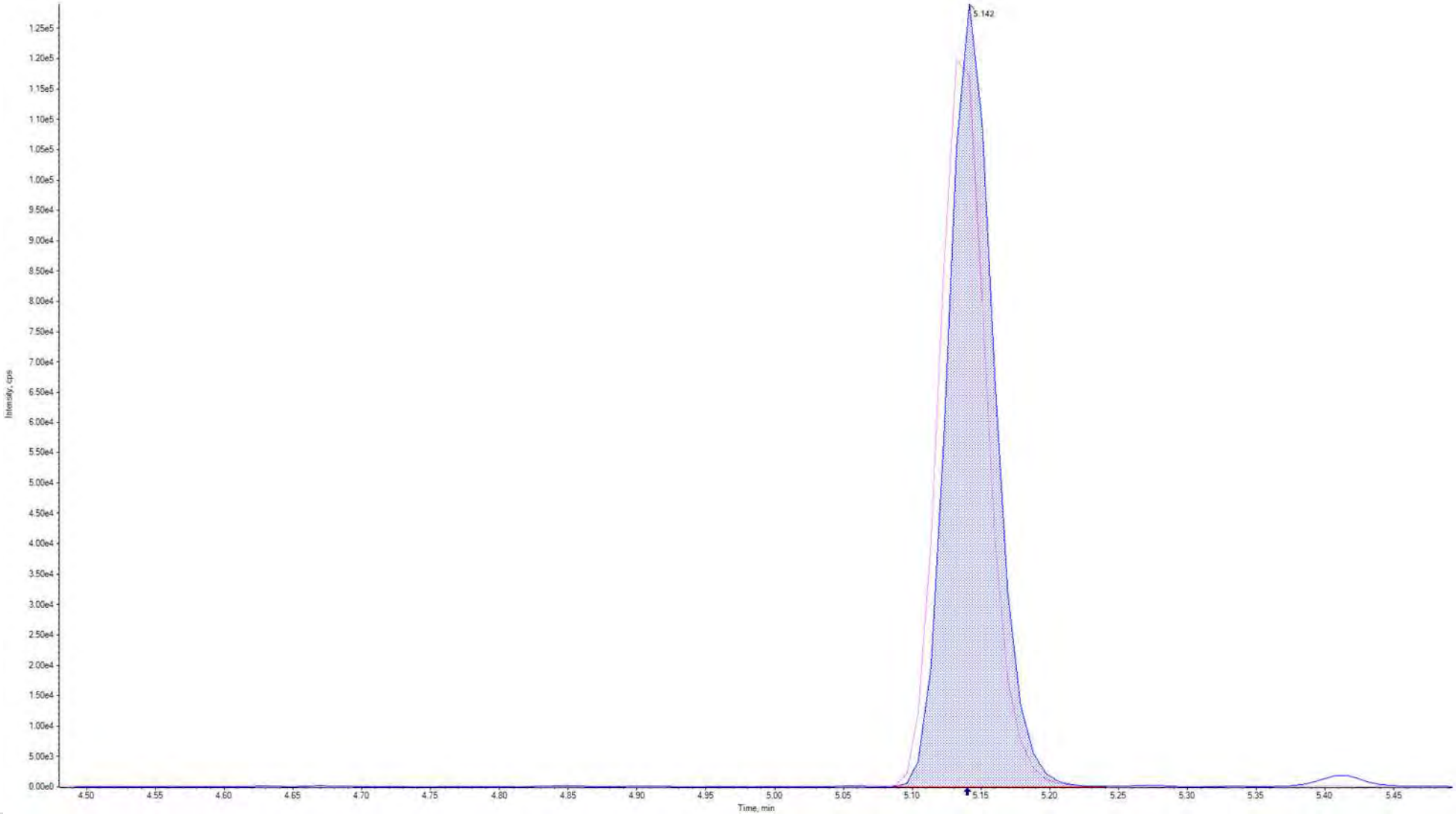
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

4:2FTS
Sample: IA1633STD-1.25 S/N:29167998.8 Points Across peak:28

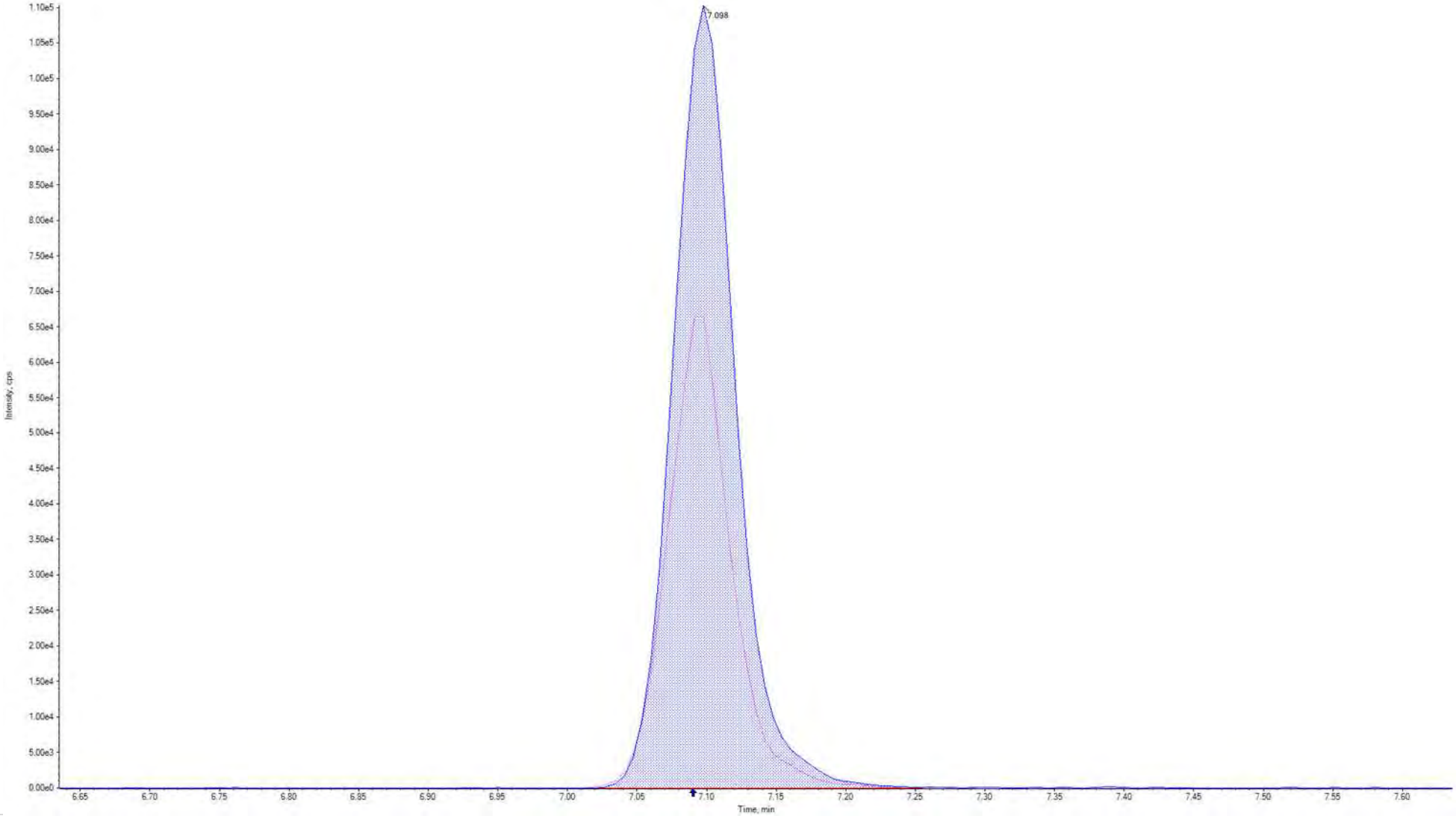


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

4:2FTS_2
Sample: IA1633STD-1.25 S/N:3739.7 Points Across peak:19

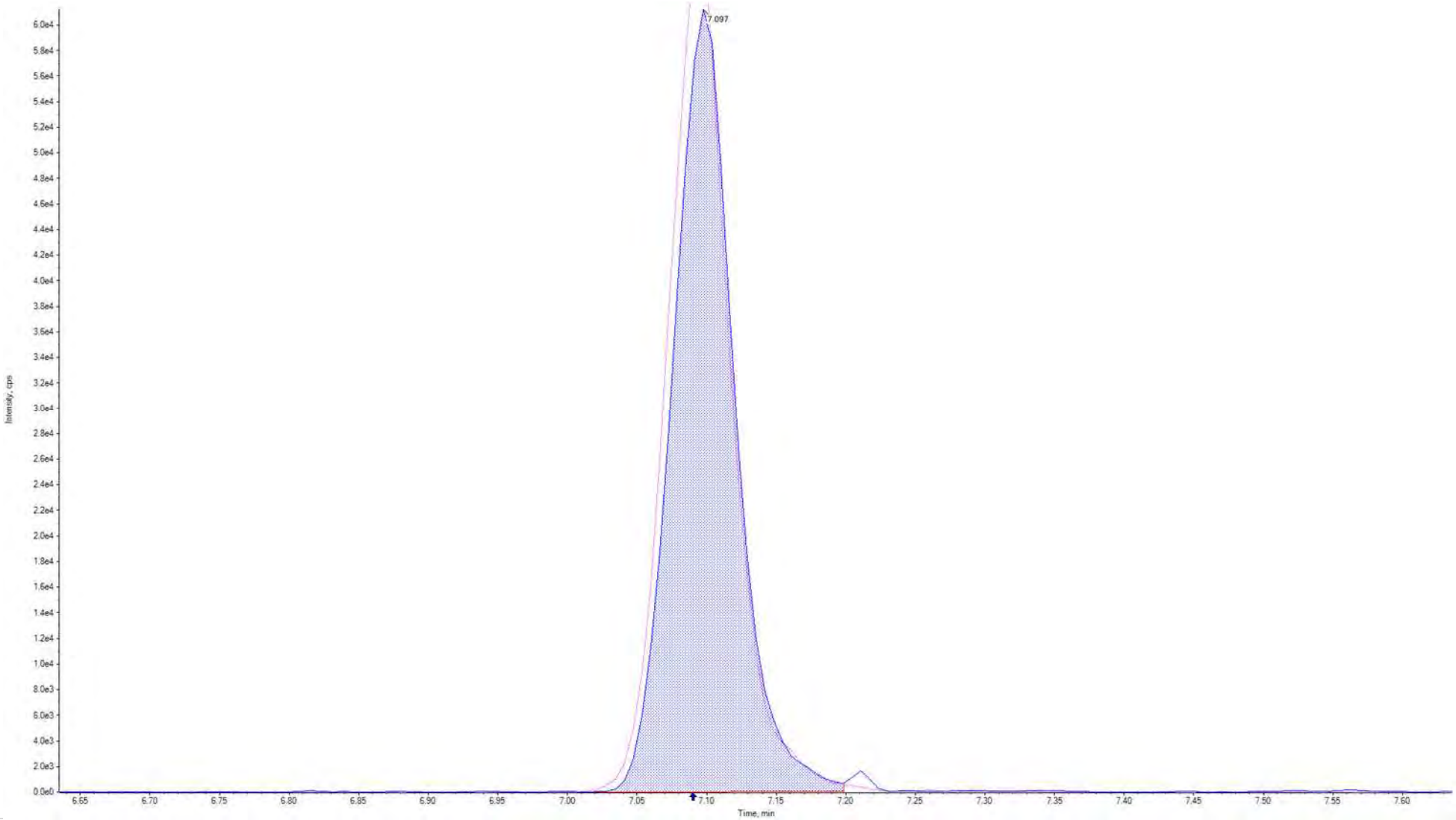


6:2FTS
Sample: IA1633STD-1.25 S/N:3308.7 Points Across peak:40



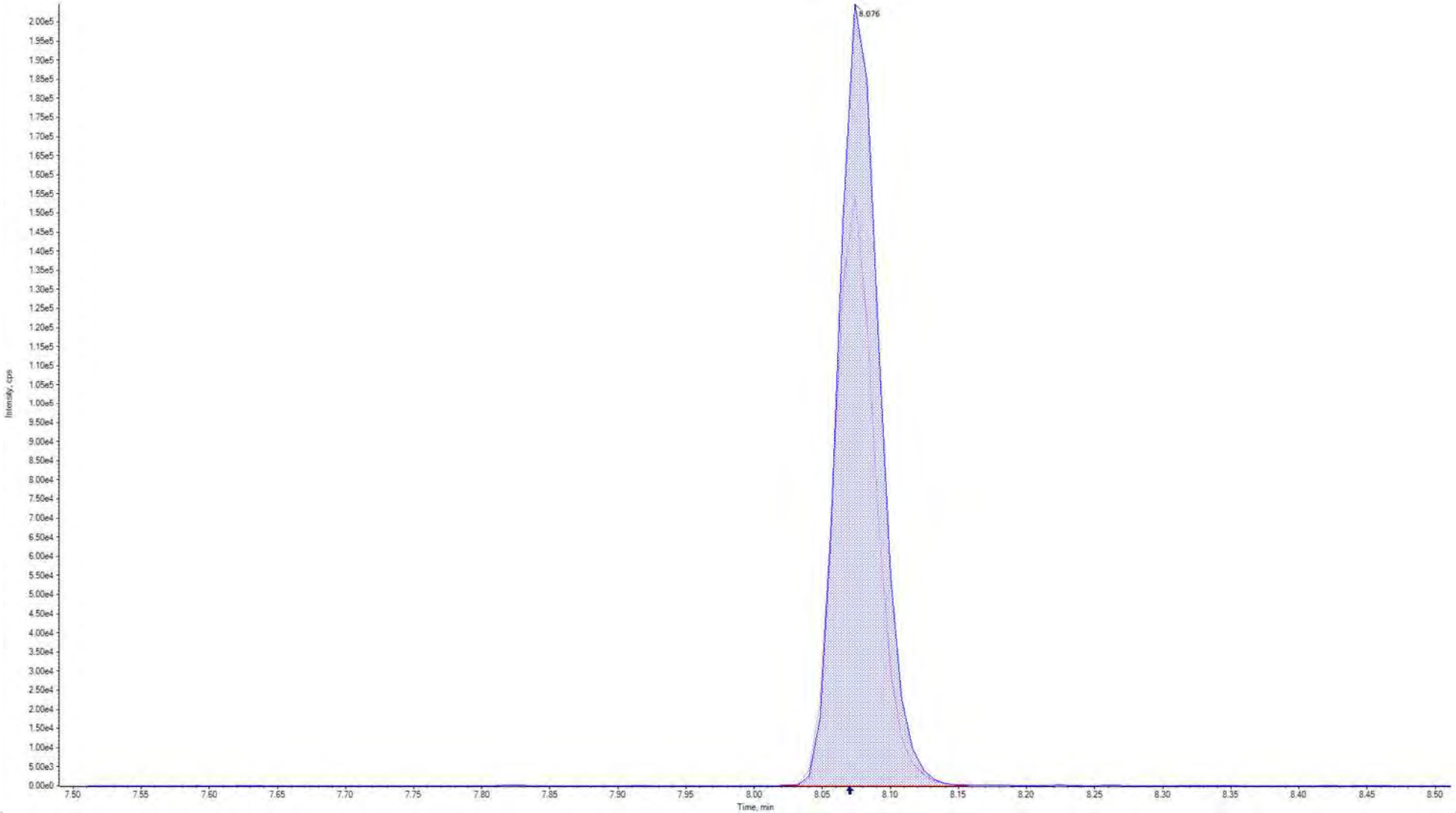
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

6:2FTS_2
Sample: IA1633STD-1.25 S/N:1678.1 Points Across peak:30



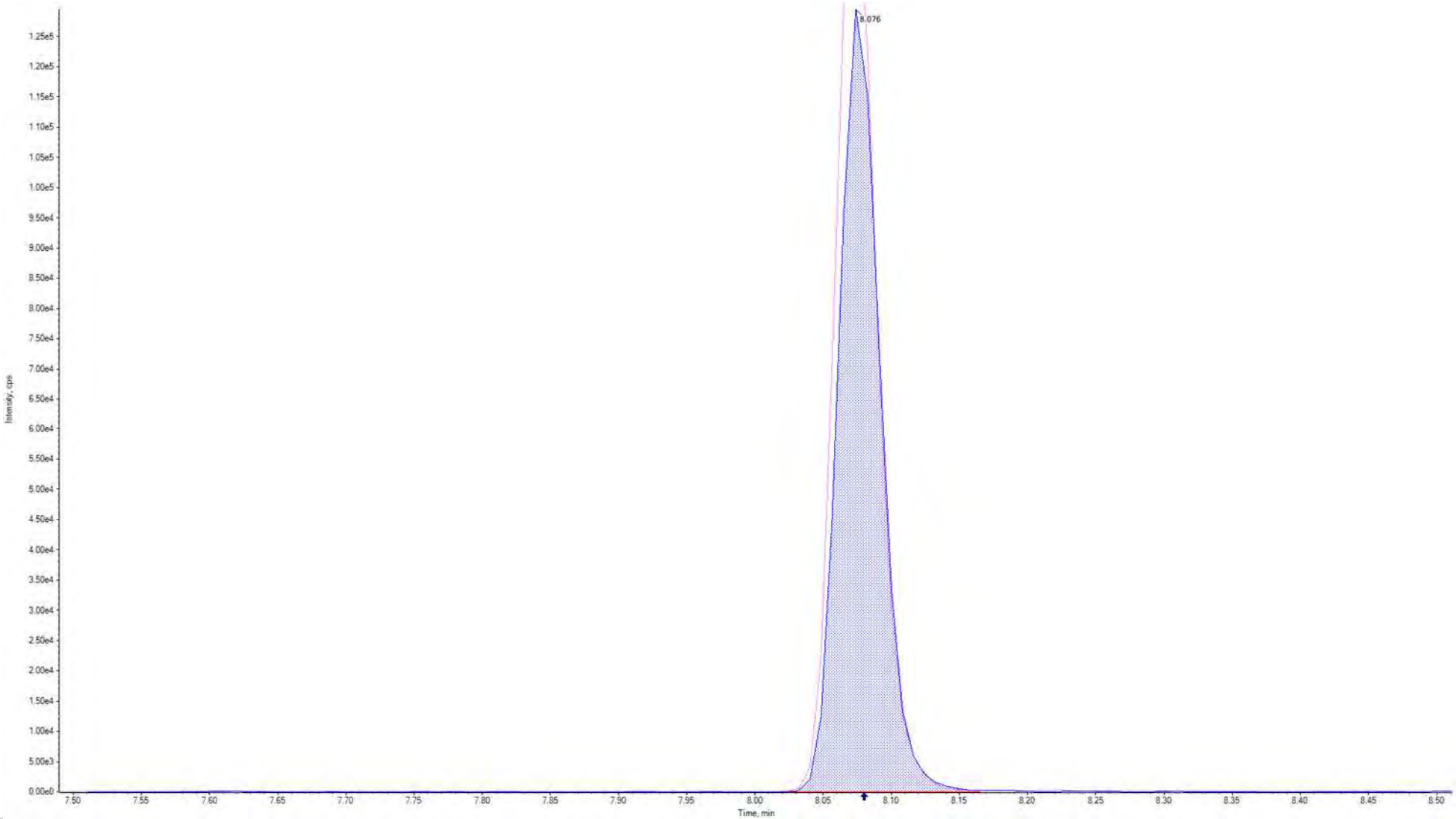
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

8:2FTS
Sample: IA1633STD-1.25 S/N:4641.6 Points Across peak:24



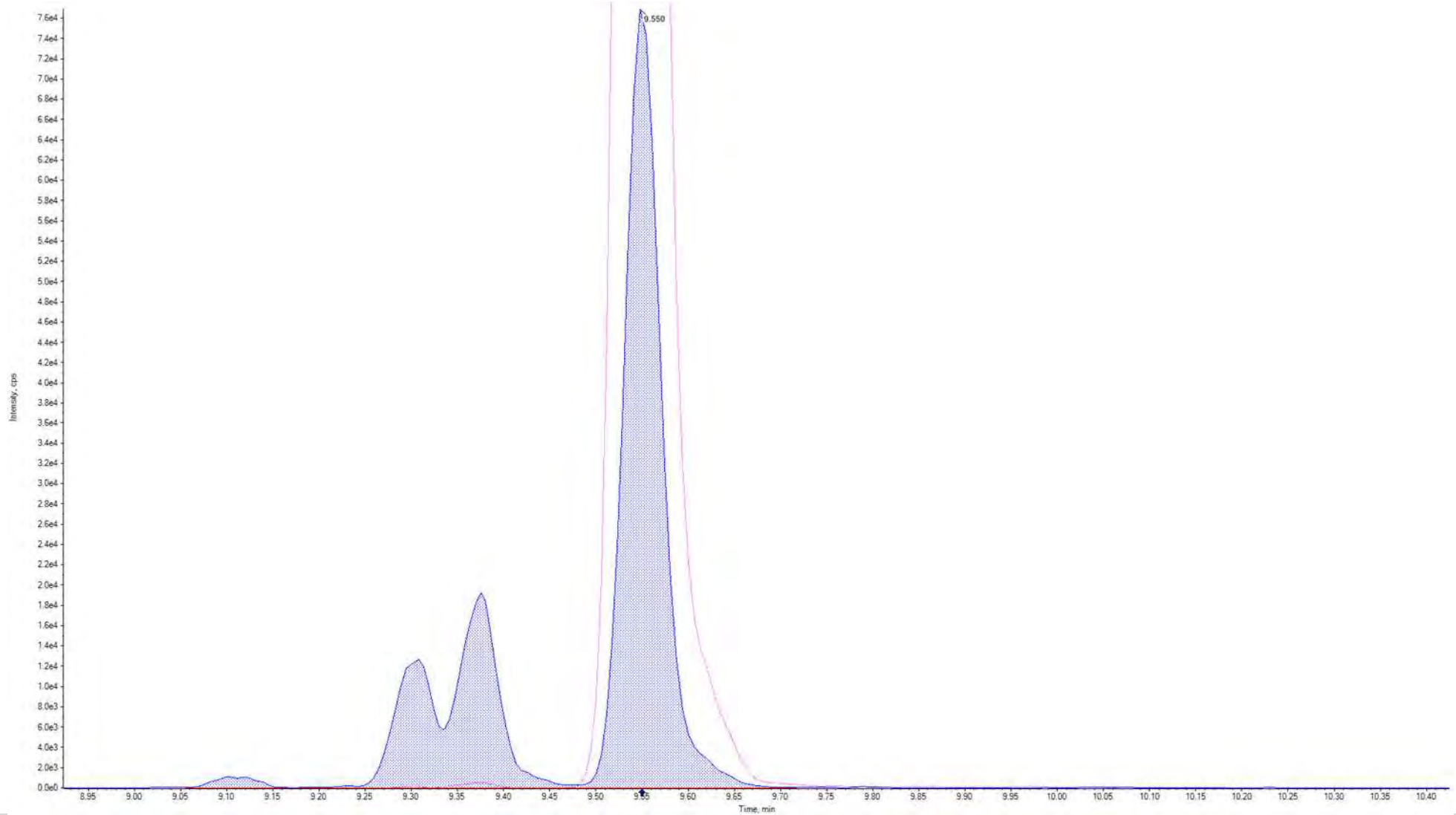
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

8:2FTS_2
Sample: IA1633STD-1.25 S/N:1910.4 Points Across peak:19



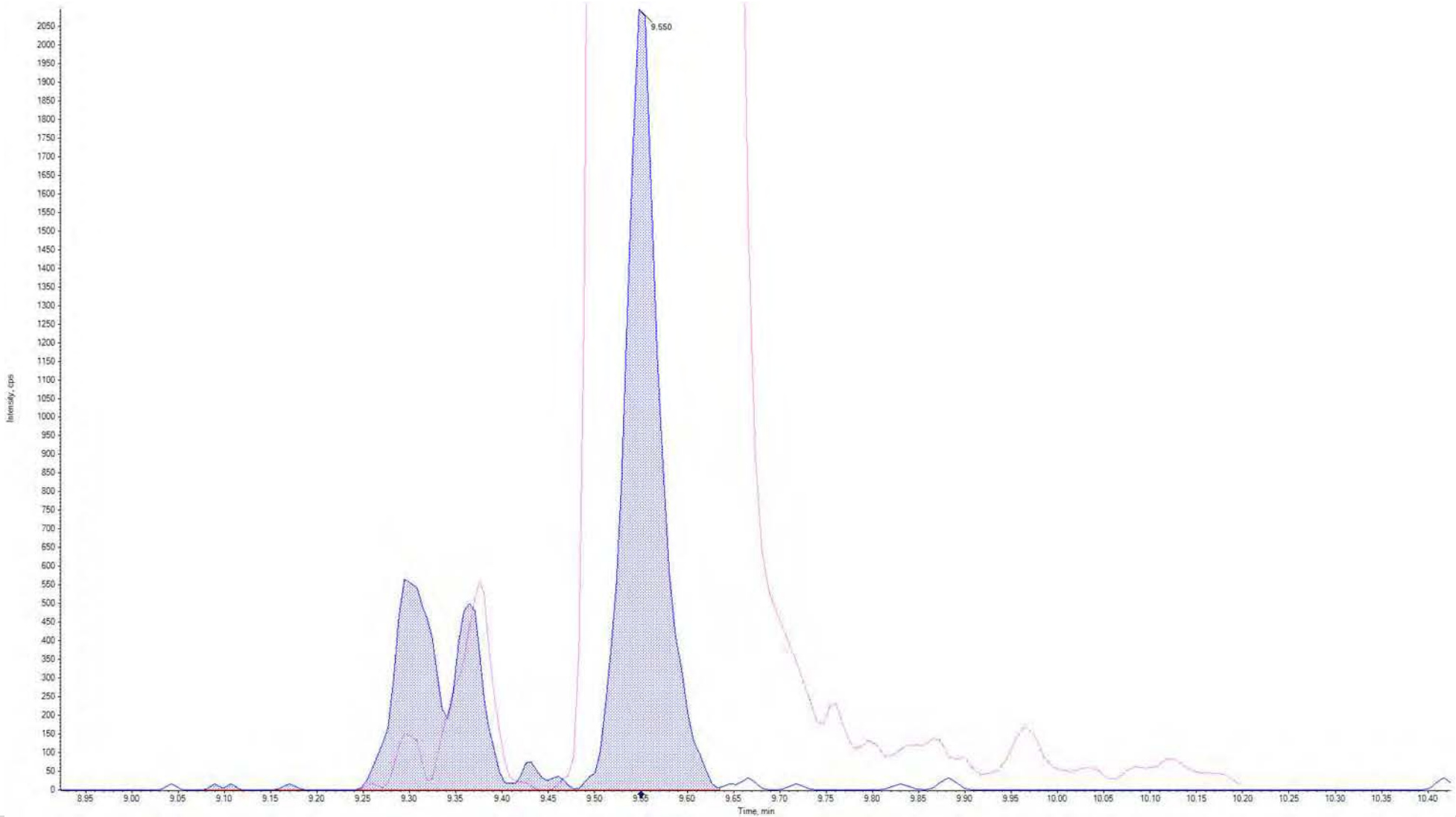
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOSA
Sample: IA1633STD-1.25 S/N:22824430.5 Points Across peak:115



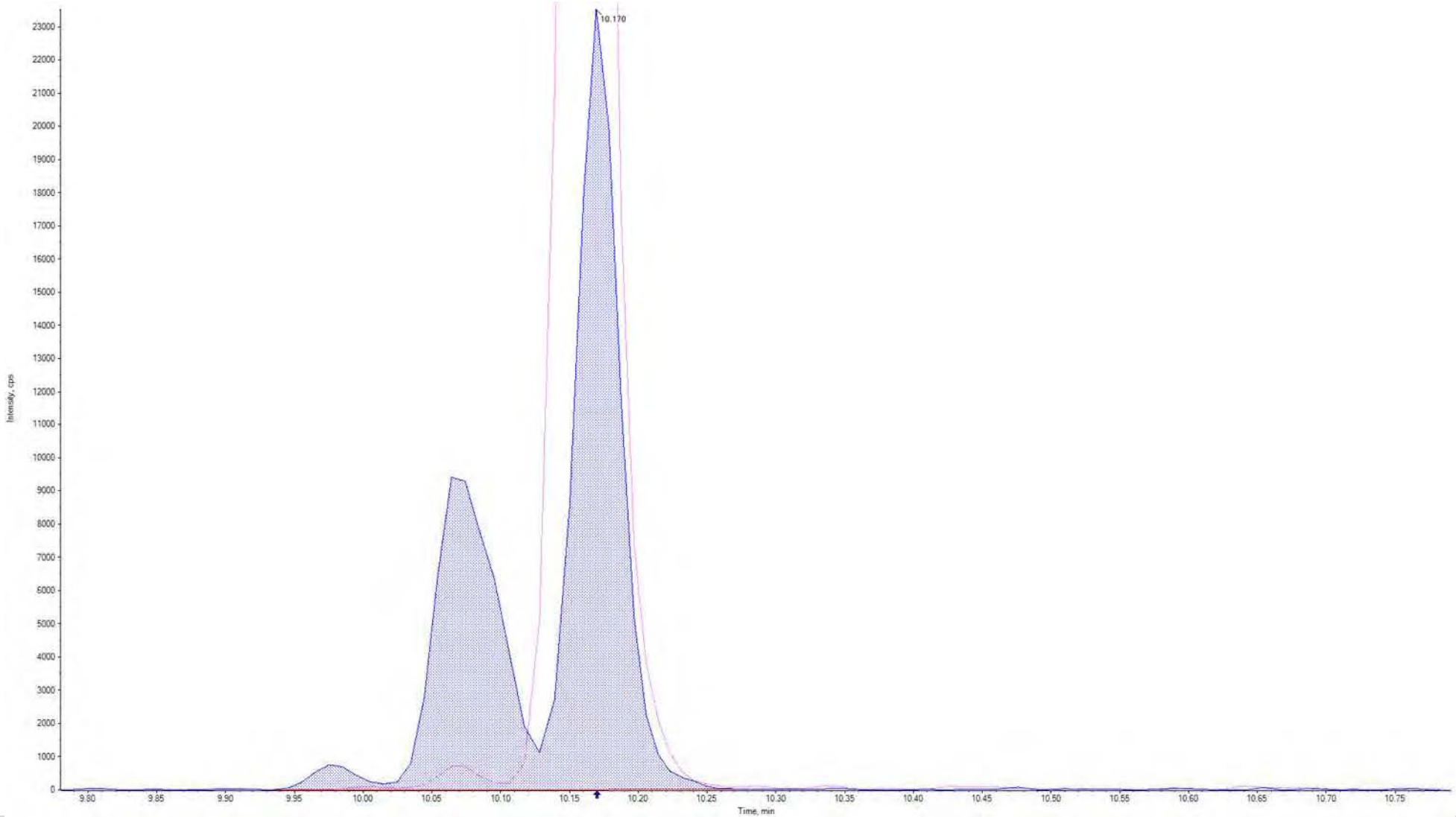
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOSA_2
Sample: IA1633STD-1.25 S/N:720.4 Points Across peak:100



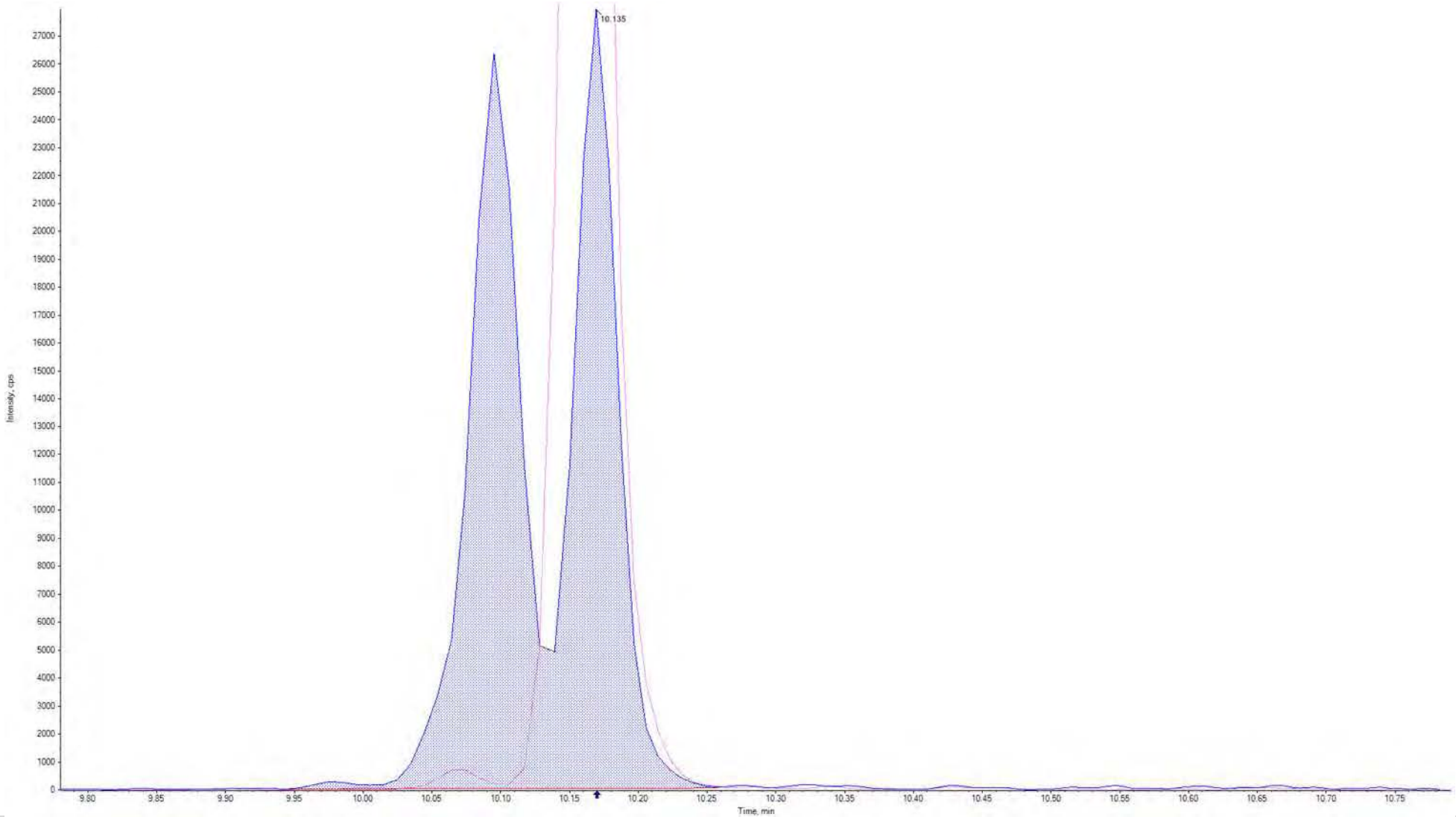
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSA
Sample: IA1633STD-1.25 S/N:22807.3 Points Across peak:37



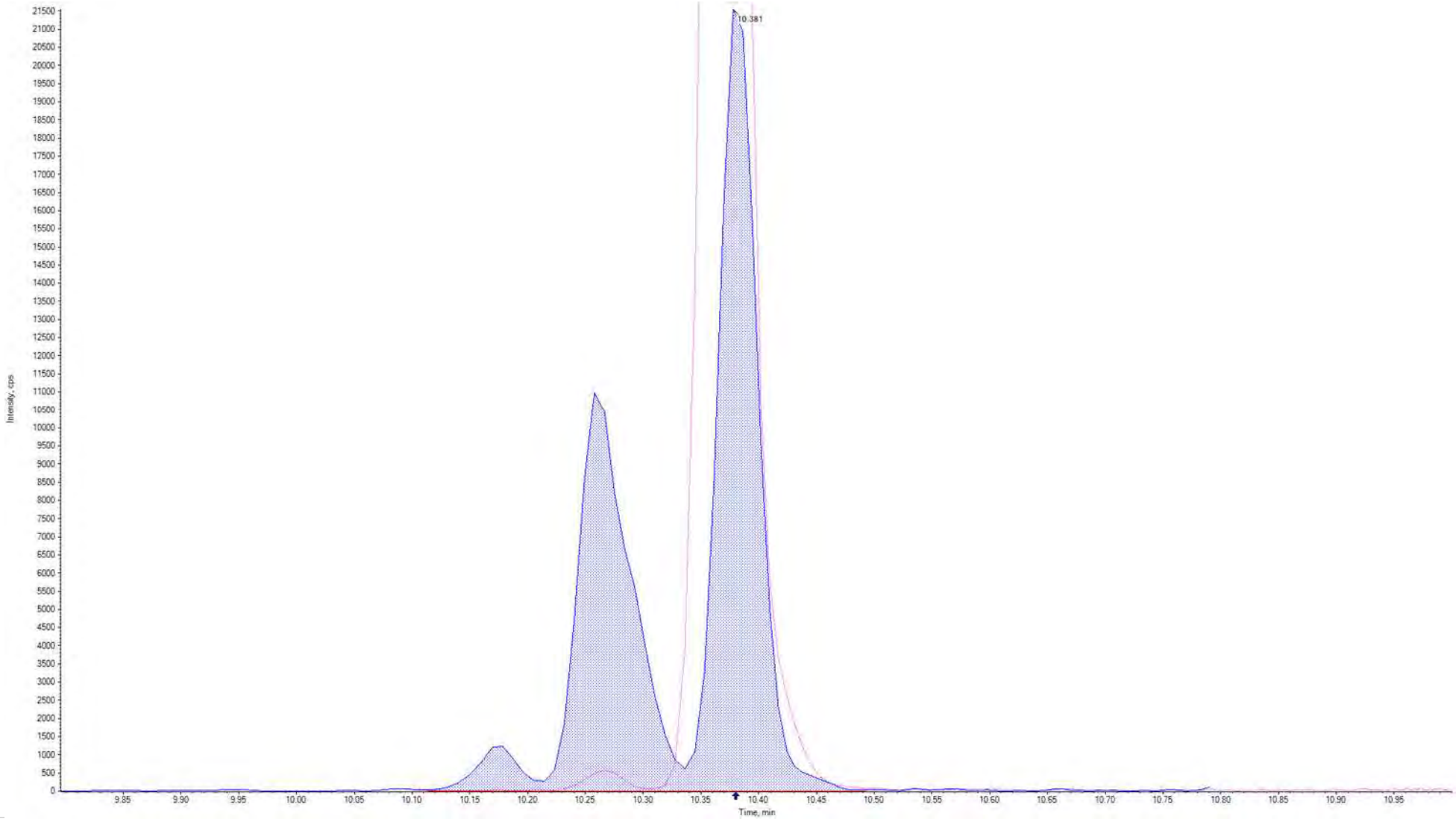
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSA_2
Sample: IA1633STD-1.25 S/N:1316.5 Points Across peak:34



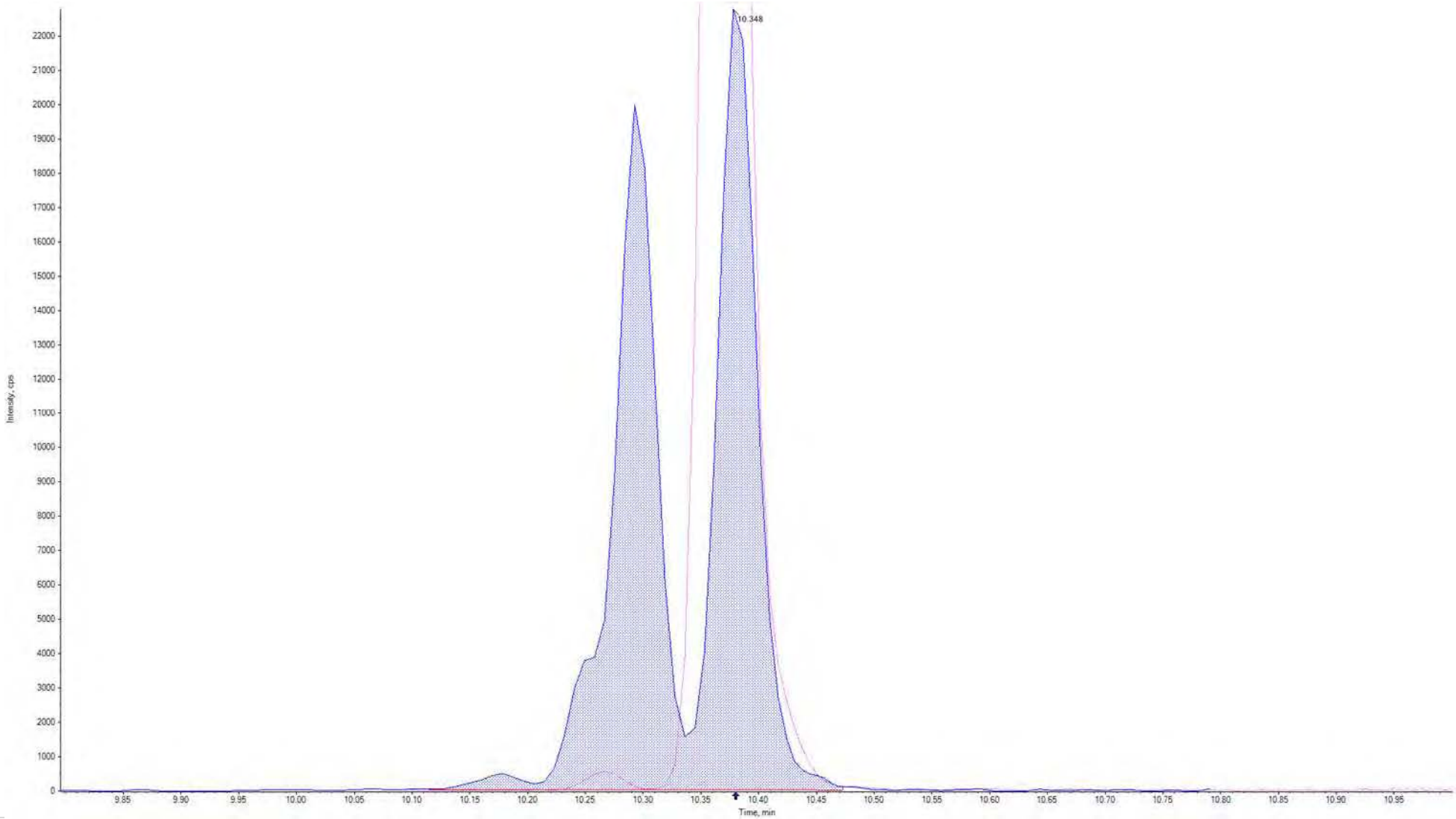
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSA
Sample: IA1633STD-1.25 S/N:39369.2 Points Across peak:48



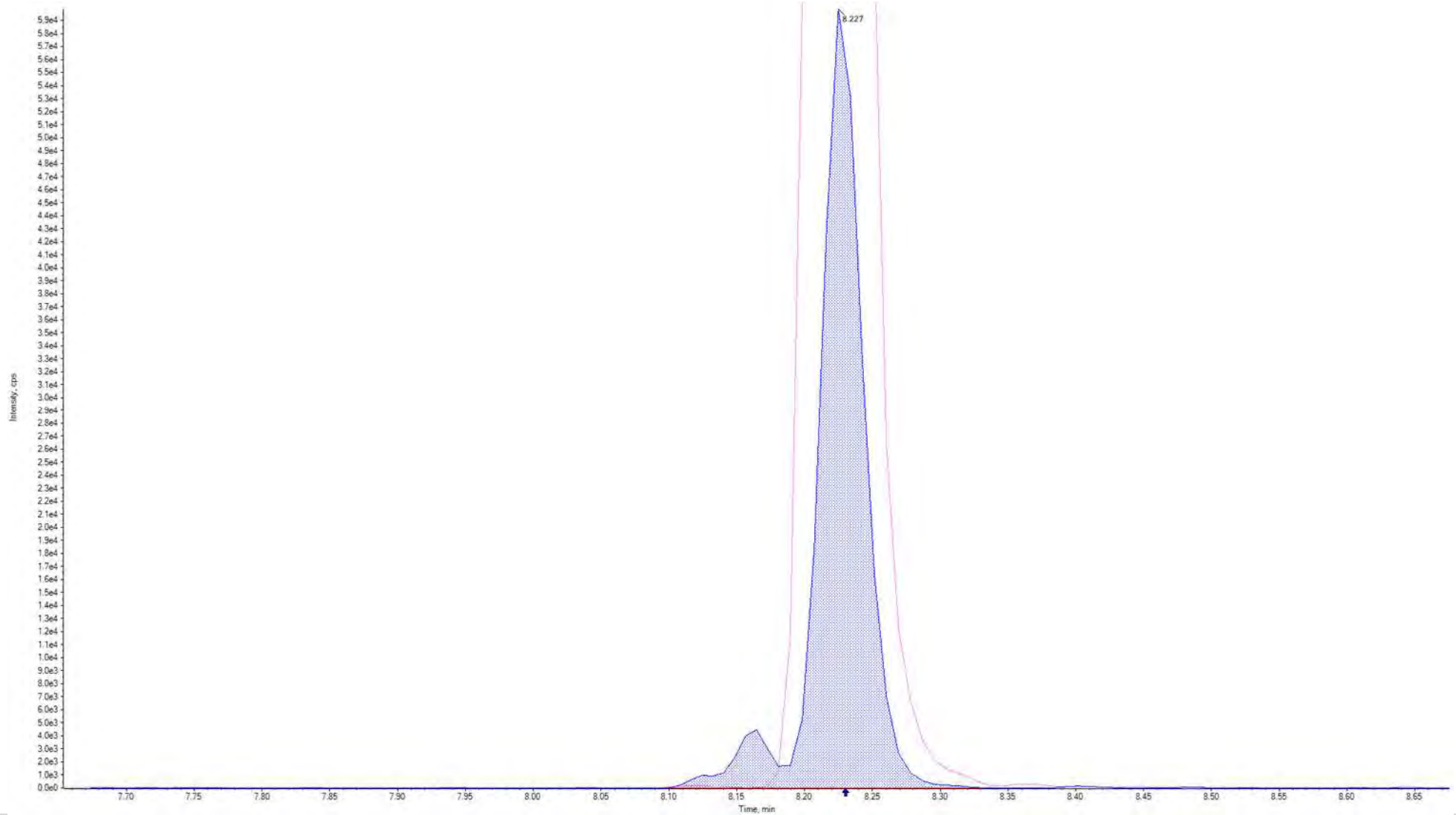
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSA_2
Sample: IA1633STD-1.25 S/N:42195.0 Points Across peak:45



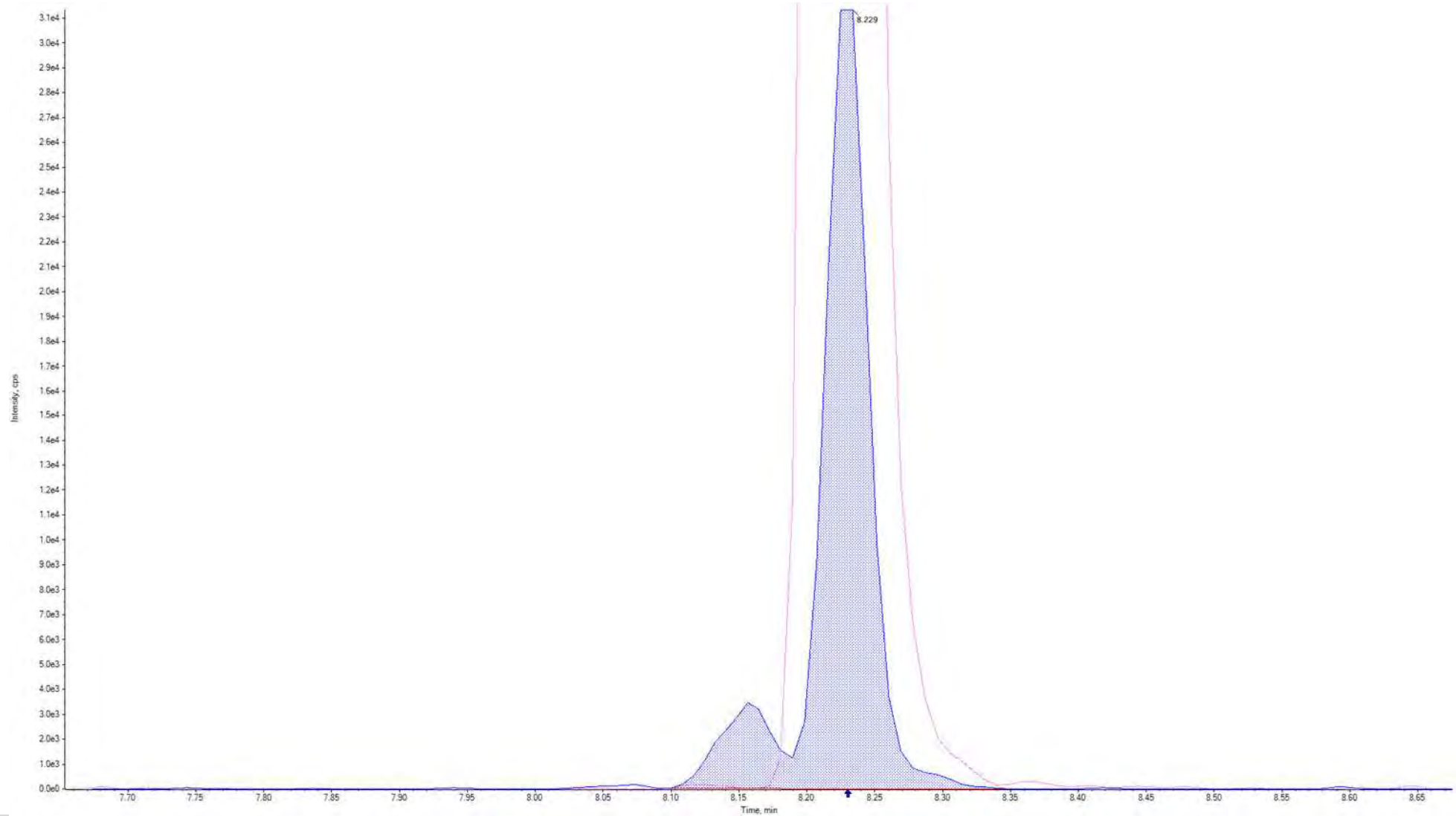
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSAA
Sample: IA1633STD-1.25 S/N:1949.2 Points Across peak:35



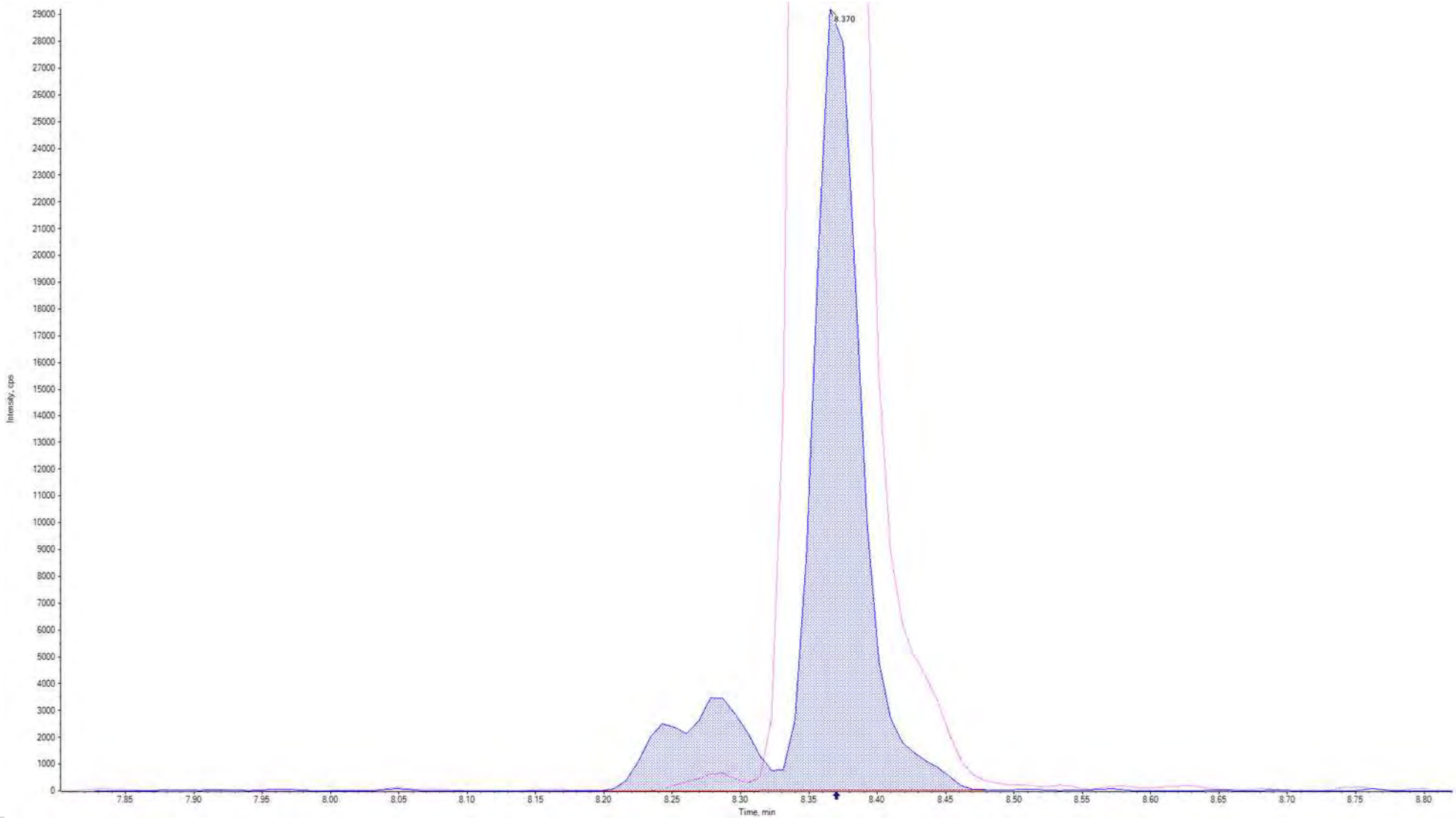
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSAA_2
Sample: IA1633STD-1.25 S/N:589.0 Points Across peak:32



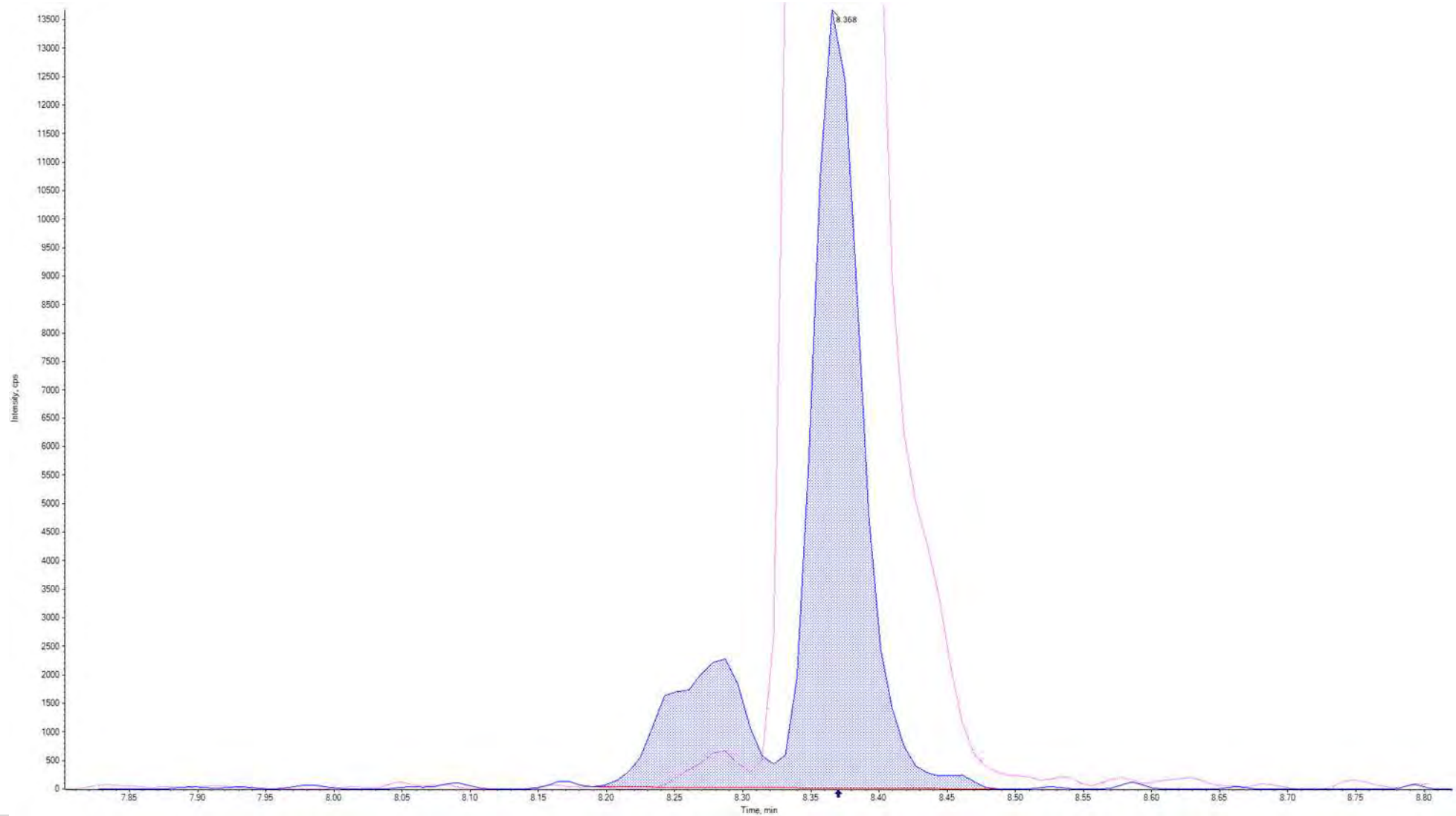
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSAA
Sample: IA1633STD-1.25 S/N:621.6 Points Across peak:35



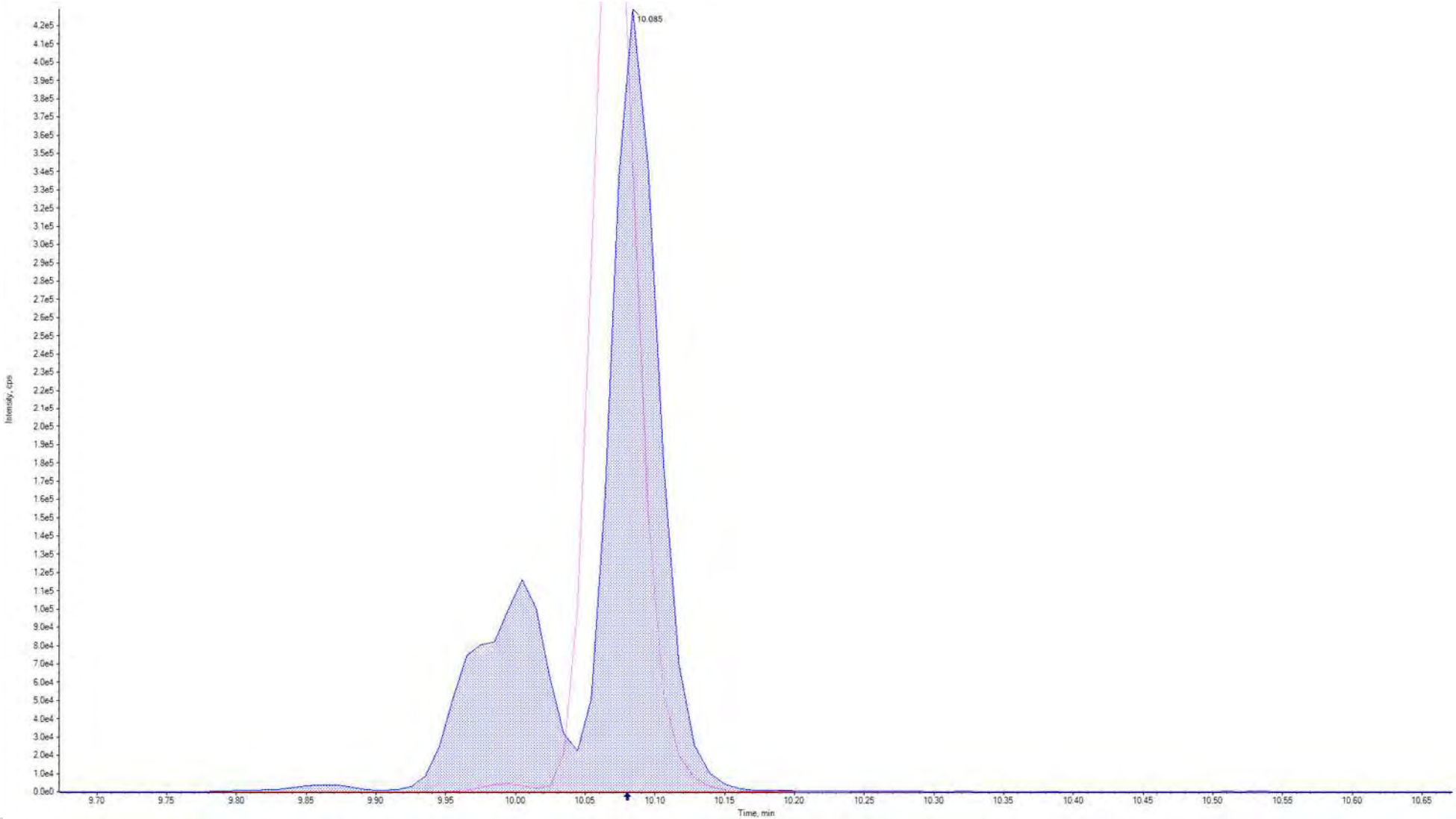
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSAA_2
Sample: IA1633STD-1.25 S/N:306.3 Points Across peak:36

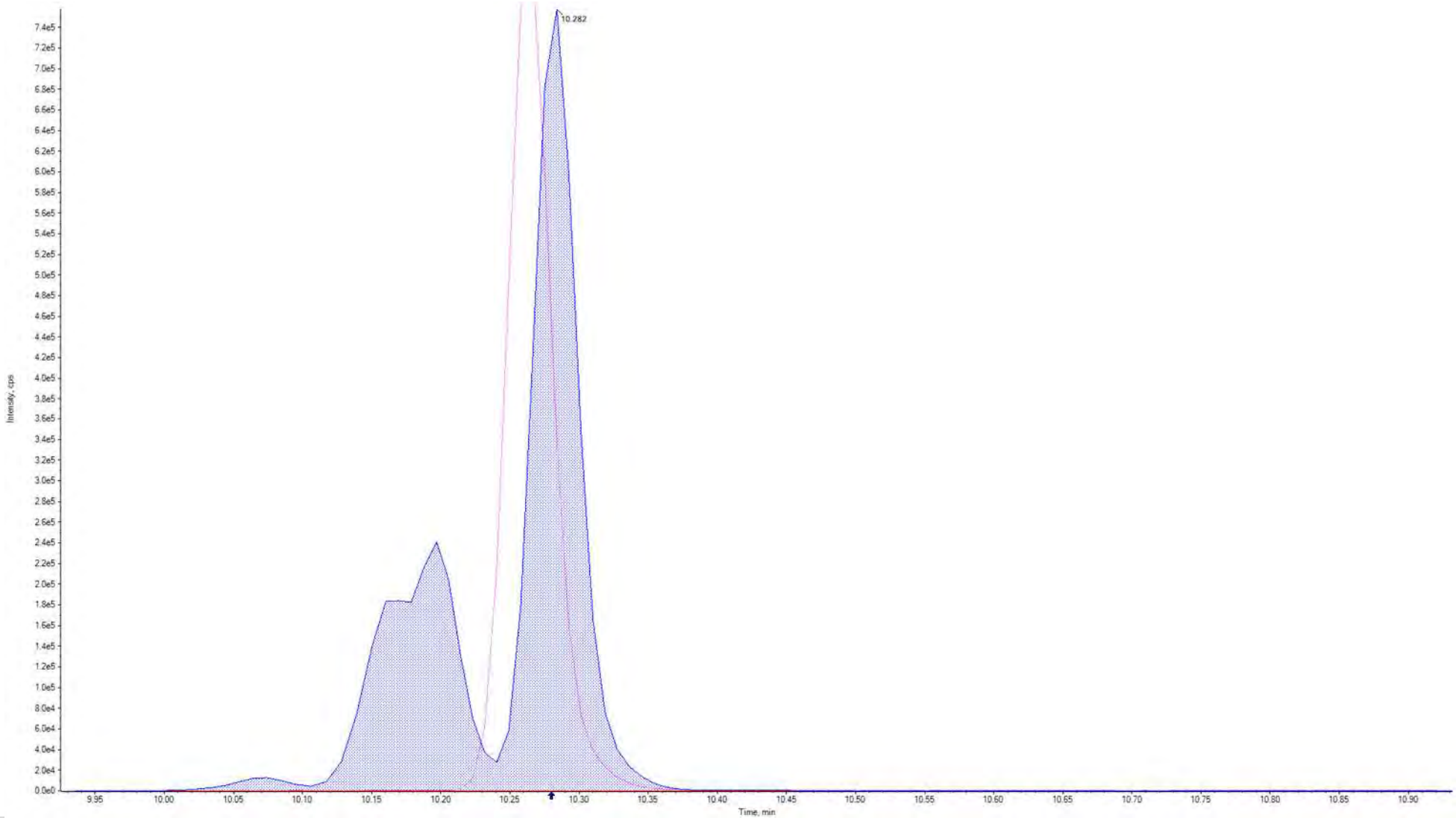


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

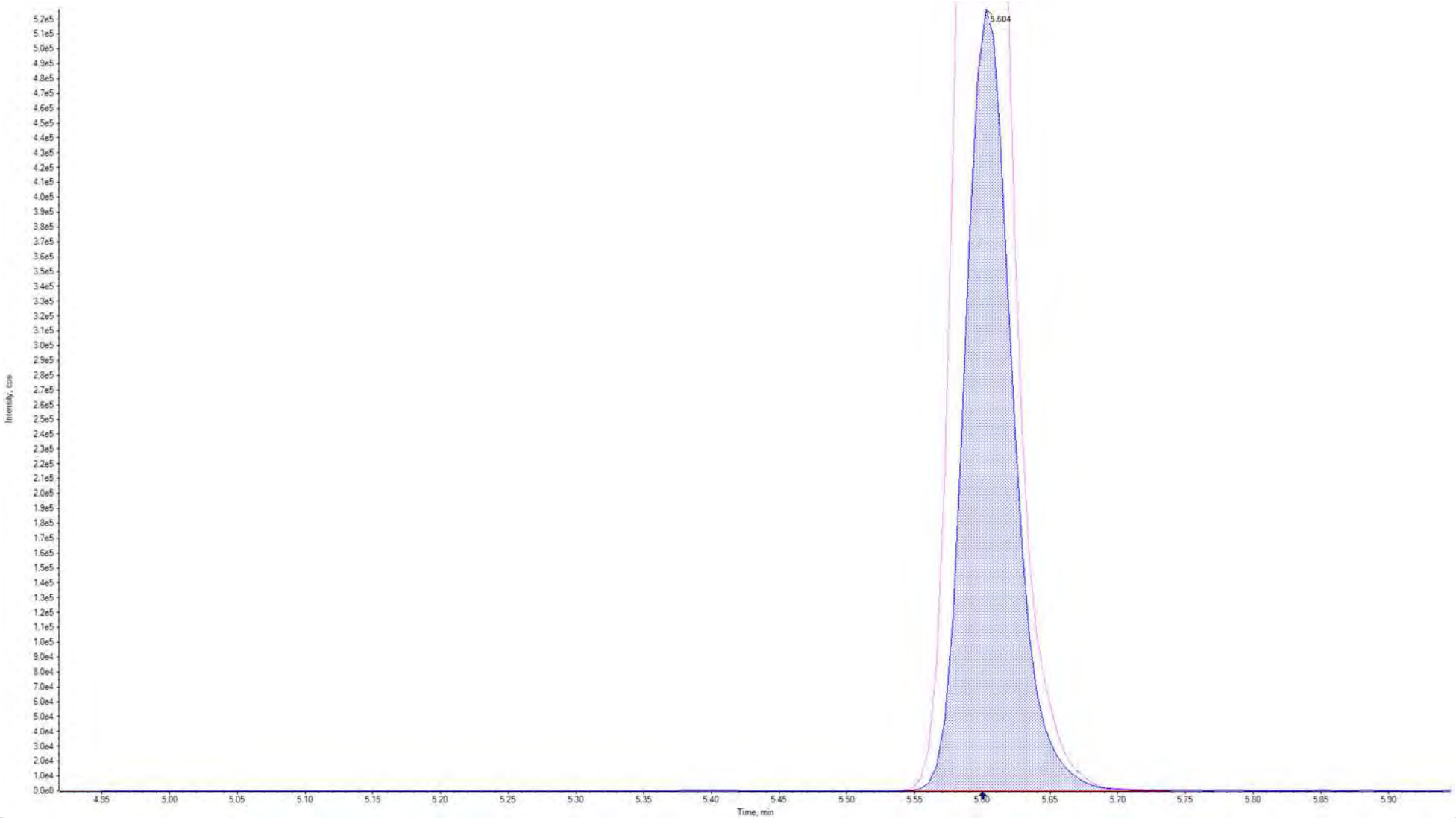
NMeFOSE
Sample: IA1633STD-1.25 S/N:3171.6 Points Across peak:54



NEtFOSE
Sample: IA1633STD-1.25 S/N:2770.6 Points Across peak:56

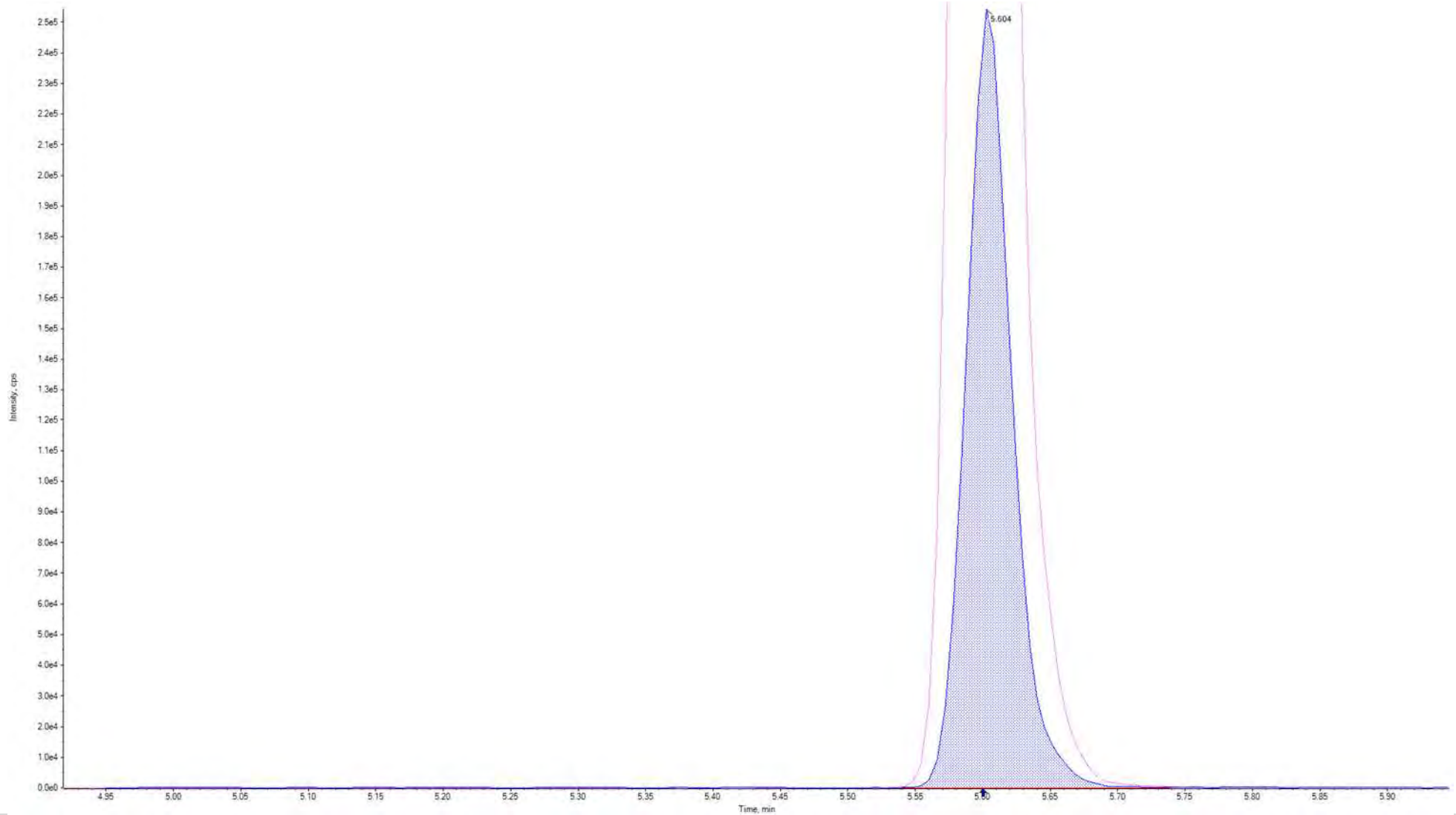


HFPO-DA
Sample: IA1633STD-1.25 S/N:62161.3 Points Across peak:43



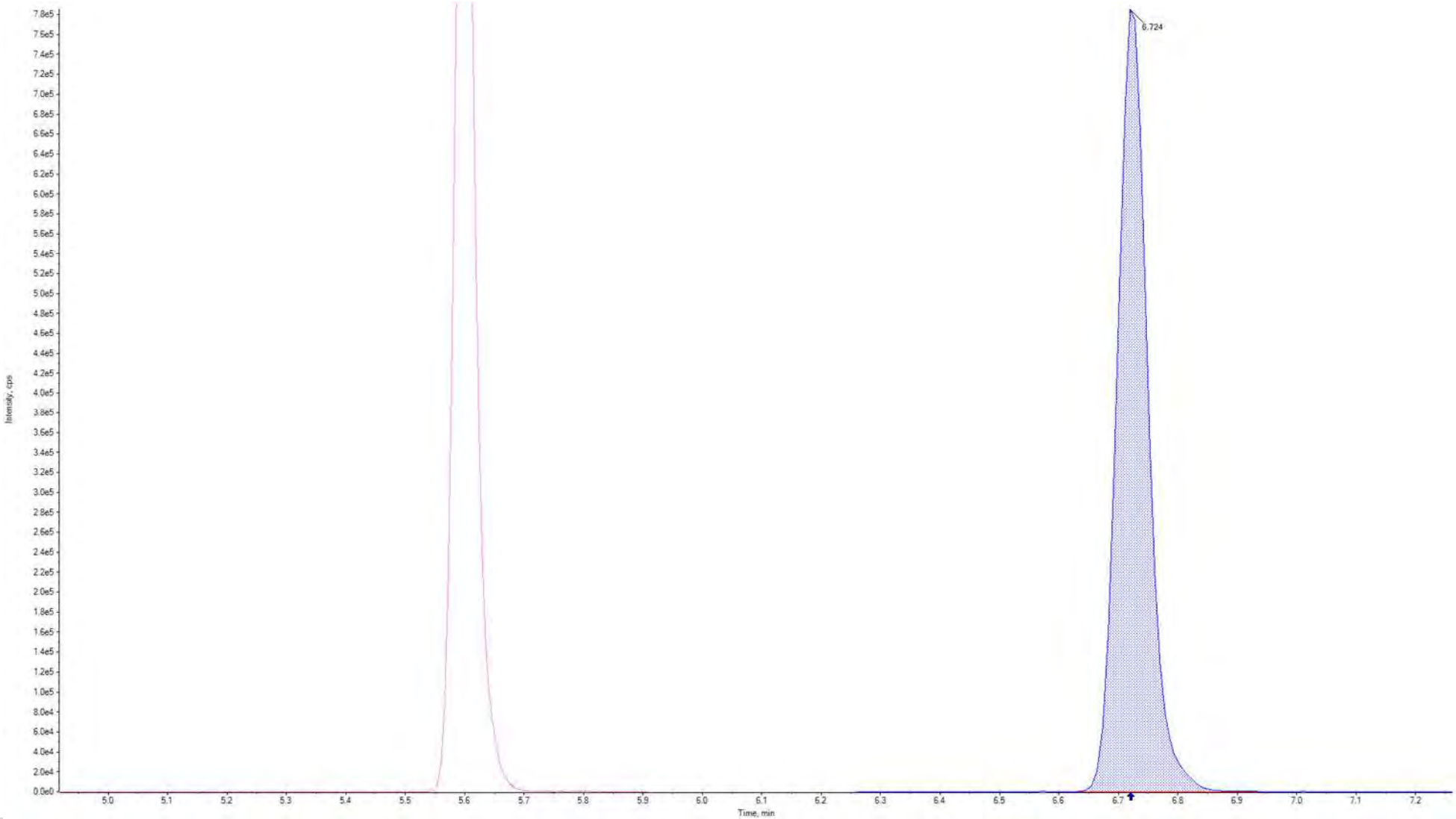
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

HFPO-DA_2
Sample: IA1633STD-1.25 S/N:4616.5 Points Across peak:42



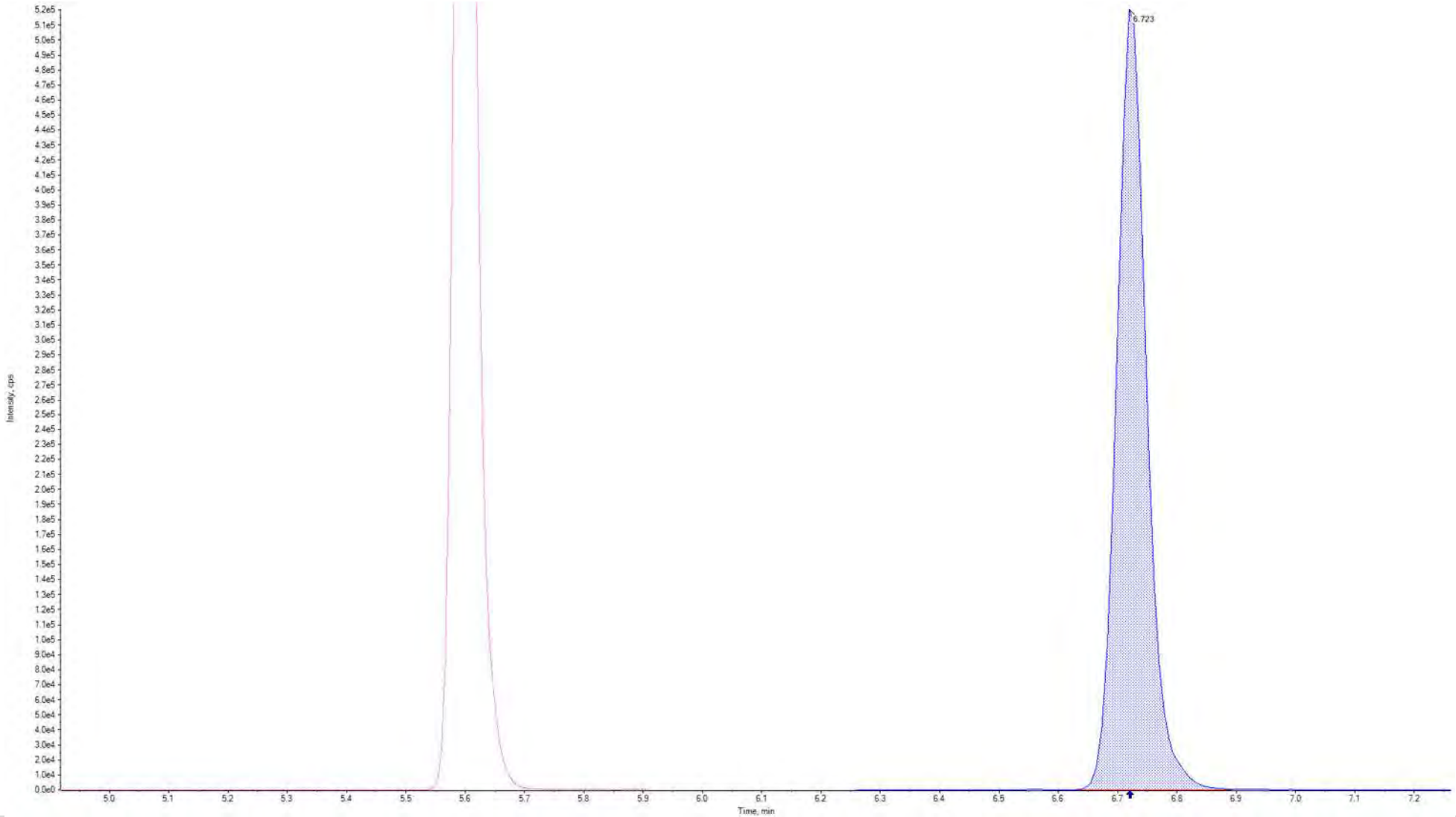
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

ADONA
Sample: IA1633STD-1.25 S/N:15752.7 Points Across peak:47



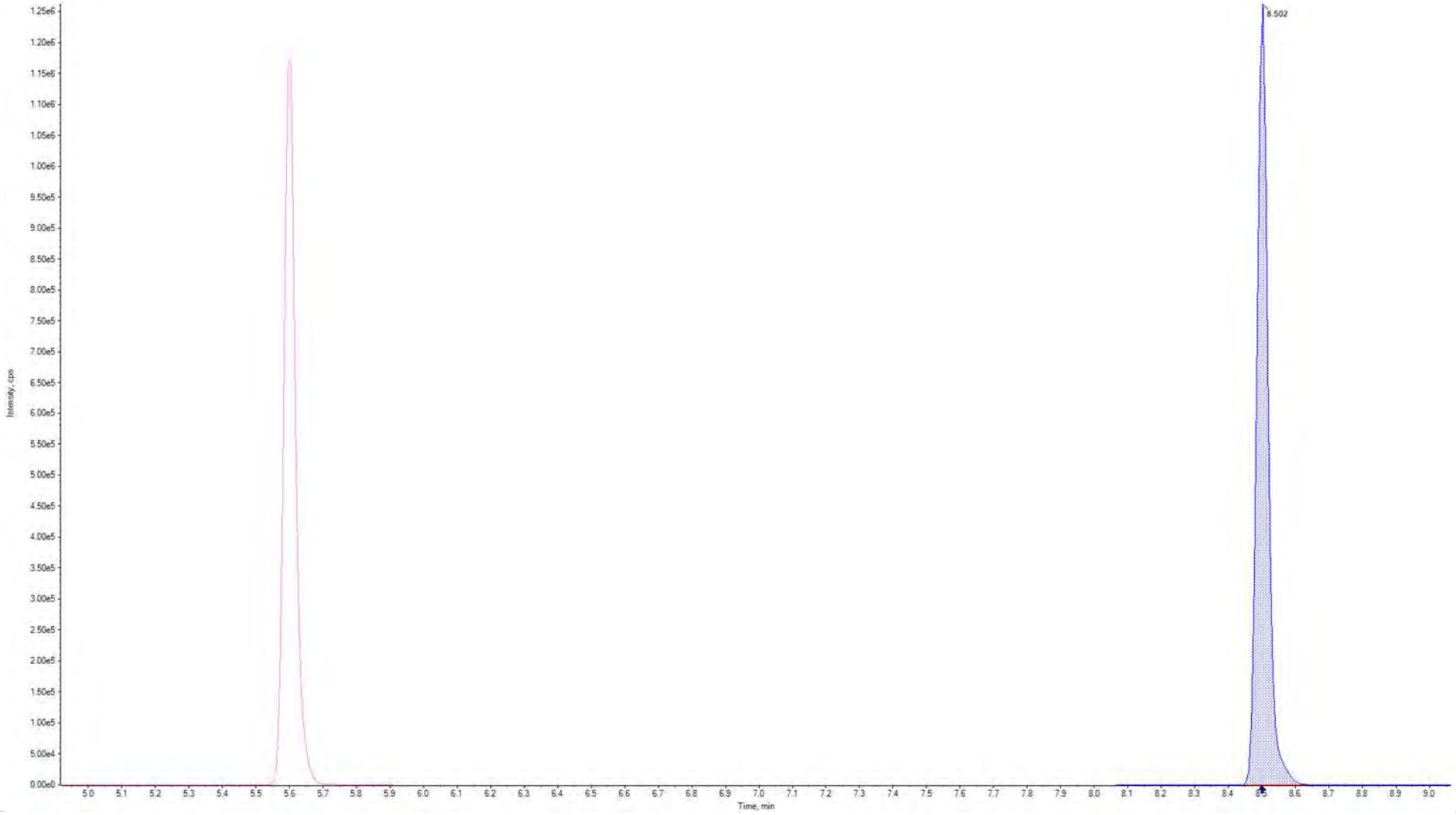
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

ADONA_2
Sample: IA1633STD-1.25 S/N:17264.5 Points Across peak:38



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

9Cl-PF3ONS
Sample: IA1633STD-1.25 S/N:88585.9 Points Across peak:36



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

9Cl-PF3ONS_2
Sample: IA1633STD-1.25 S/N:38926.2 Points Across peak:29

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

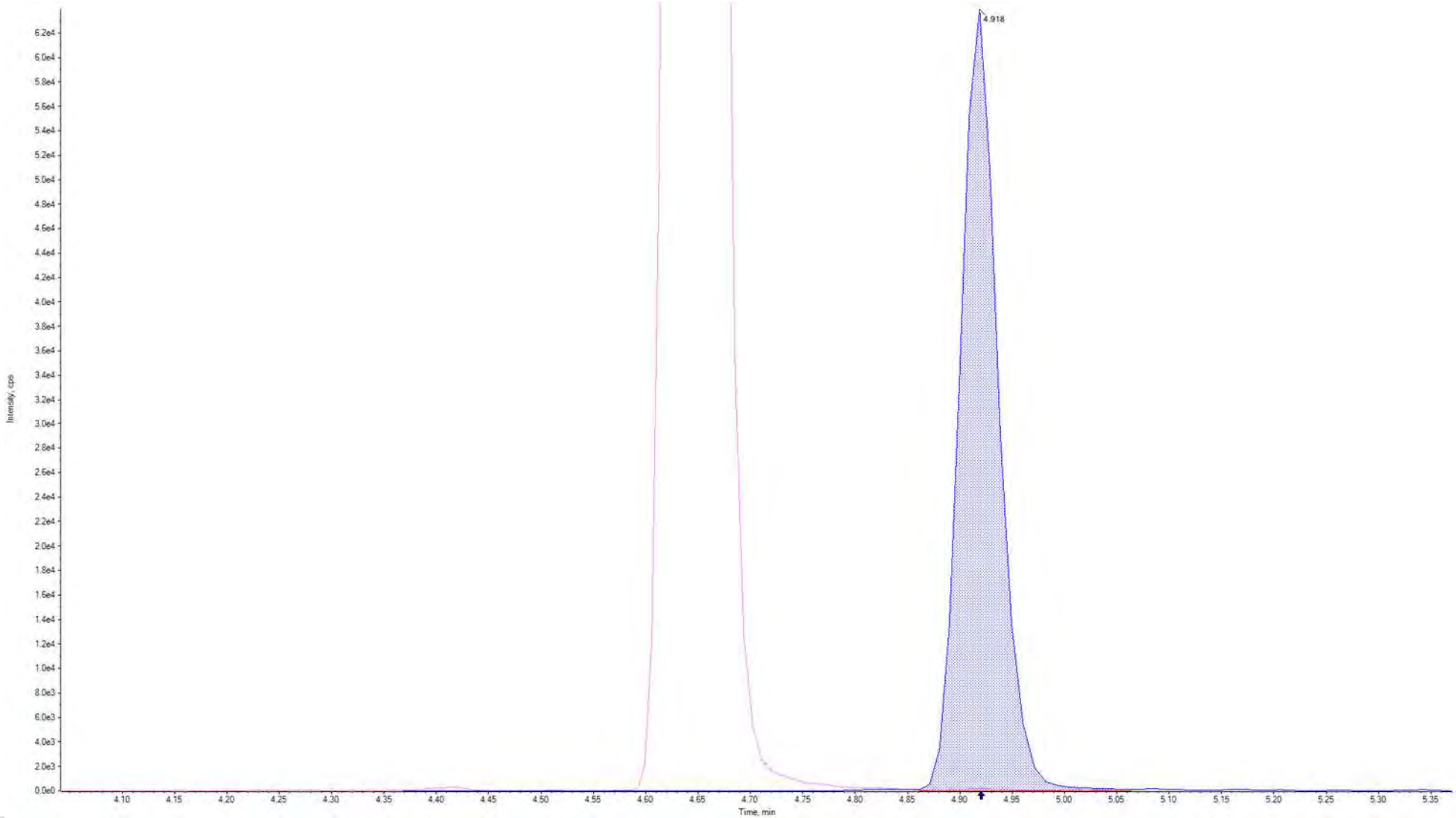
11Cl-PF3OUdS
Sample: IA1633STD-1.25 S/N:4467.9 Points Across peak:43

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

11Cl-PF3OUdS_2
Sample: IA1633STD-1.25 S/N:2872554.2 Points Across peak:36

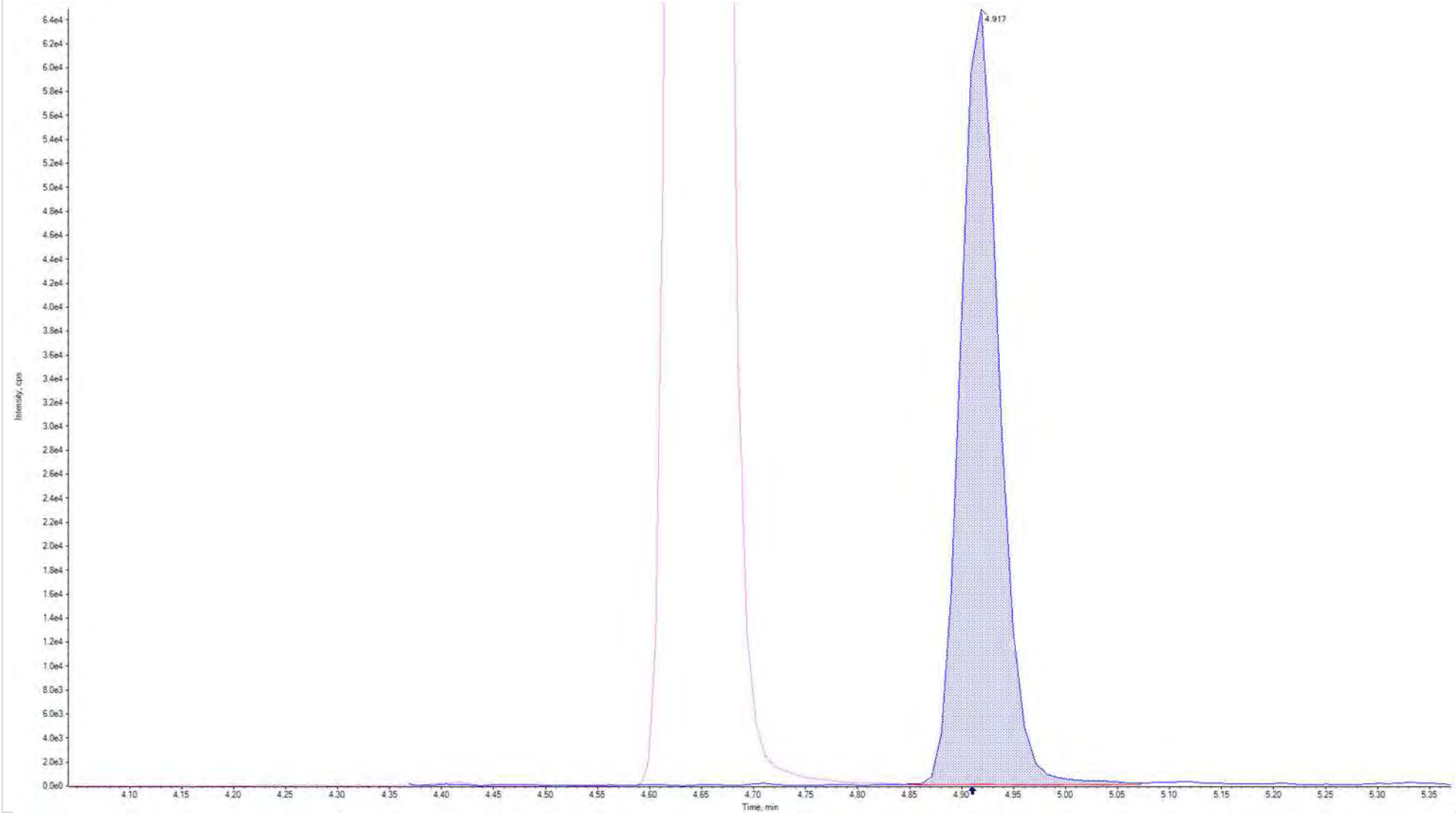
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

3:3FTCA
Sample: IA1633STD-1.25 S/N:2725.2 Points Across peak:21



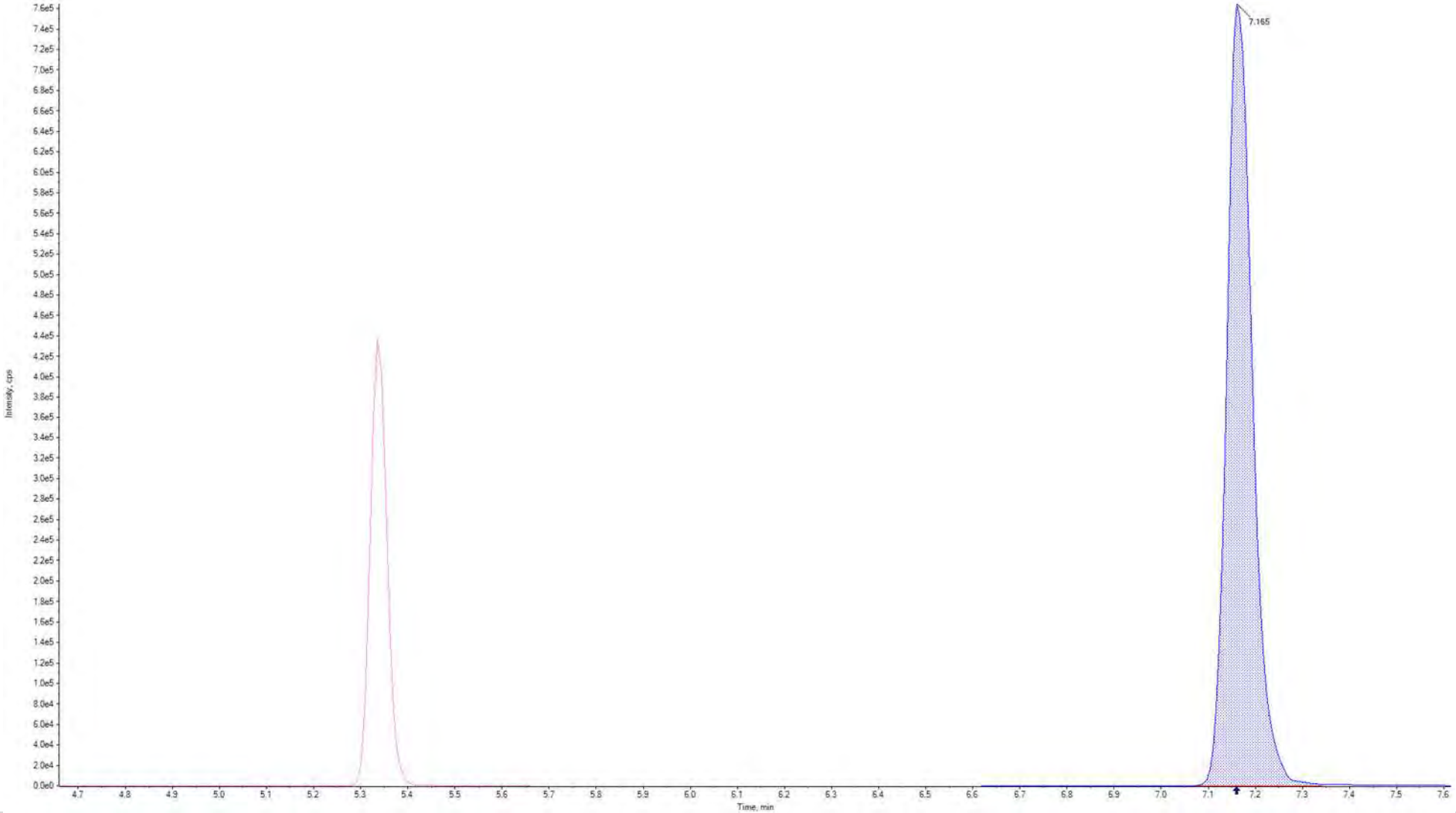
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

3:3FTCA_2
Sample: IA1633STD-1.25 S/N:1779.6 Points Across peak:25



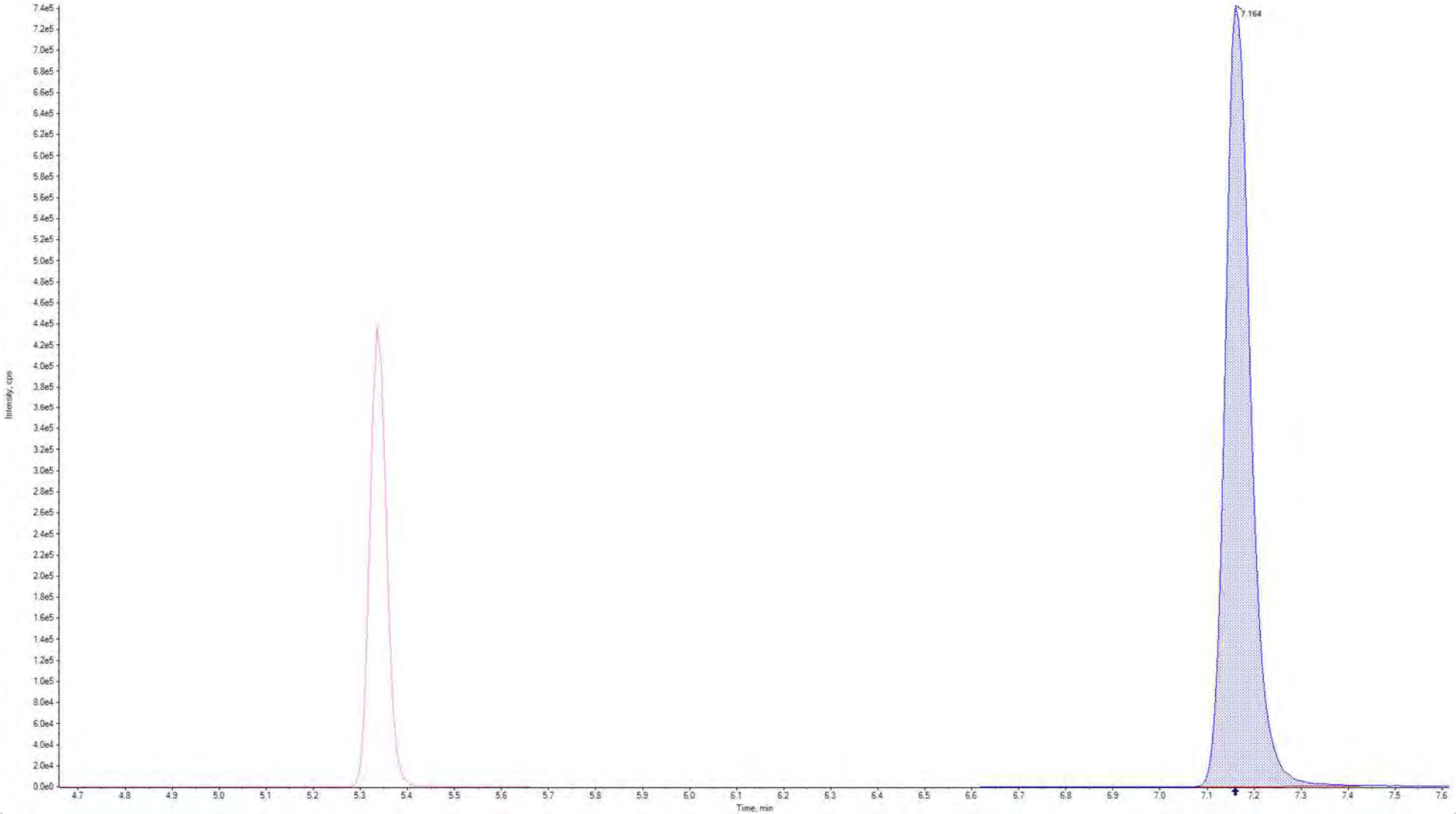
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

5:3FTCA
Sample: IA1633STD-1.25 S/N:26901.5 Points Across peak:53



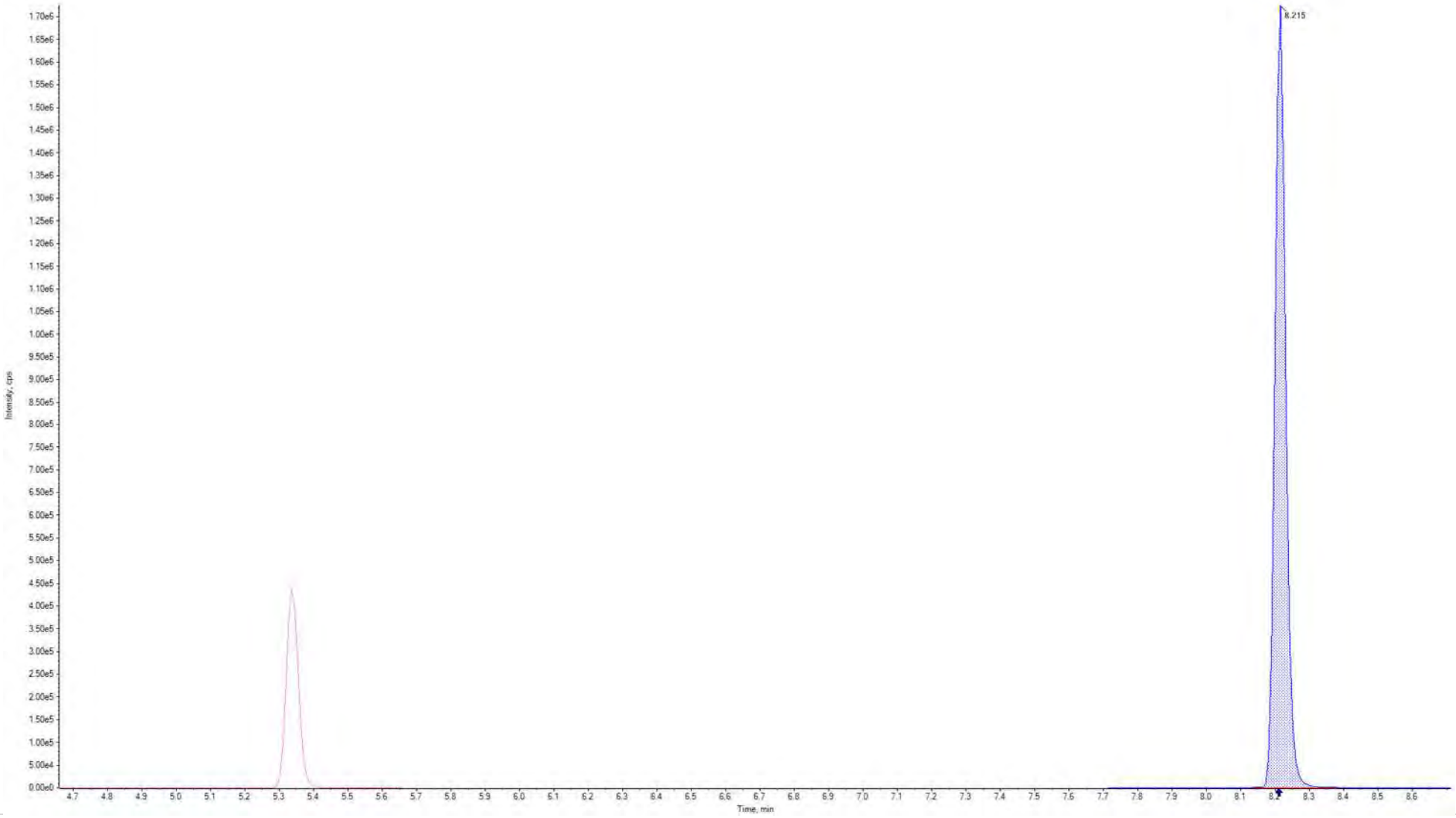
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

5:3FTCA_2
Sample: IA1633STD-1.25 S/N:9692.8 Points Across peak:63



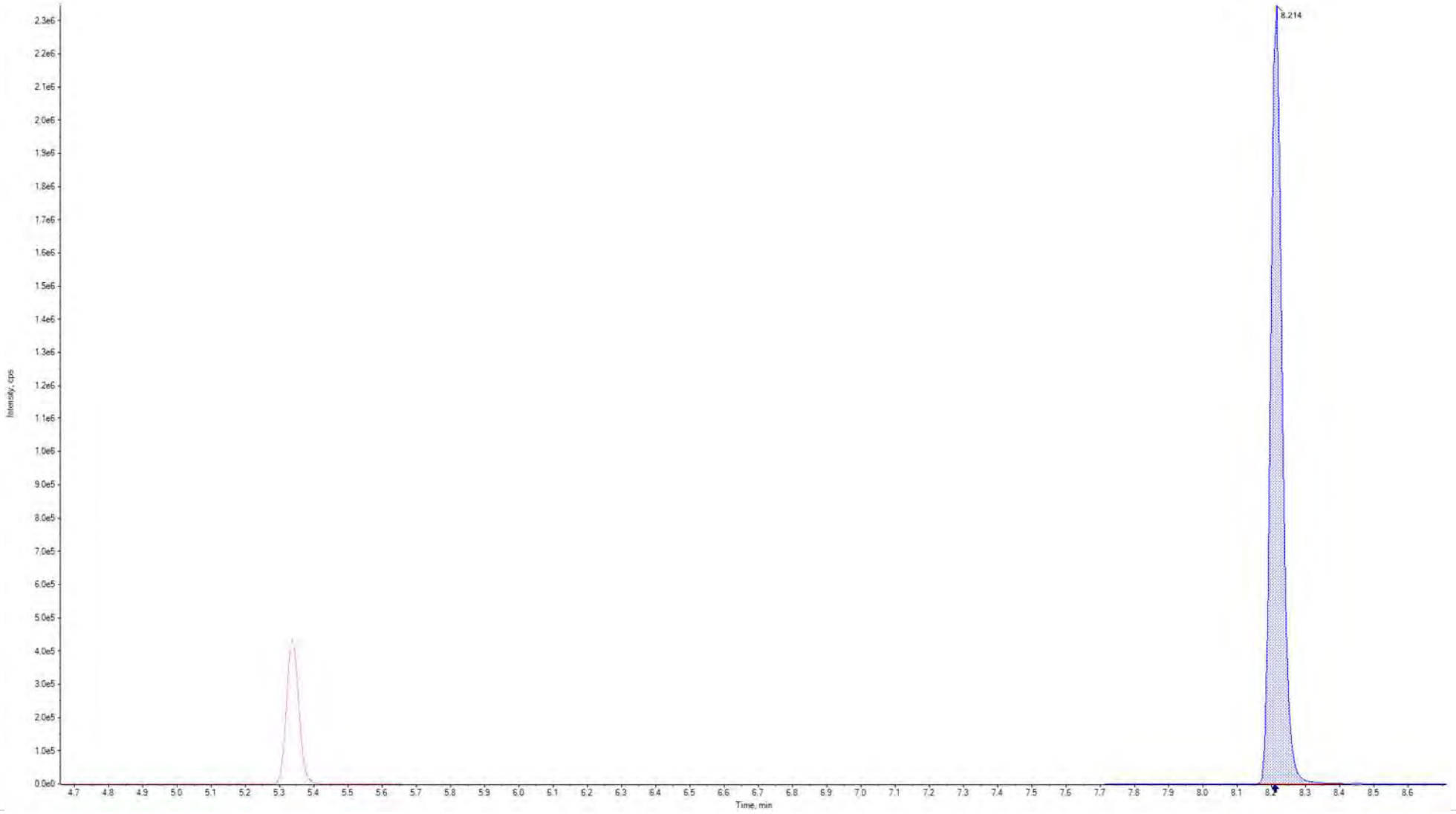
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

7:3FTCA
Sample: IA1633STD-1.25 S/N:3322.5 Points Across peak:44



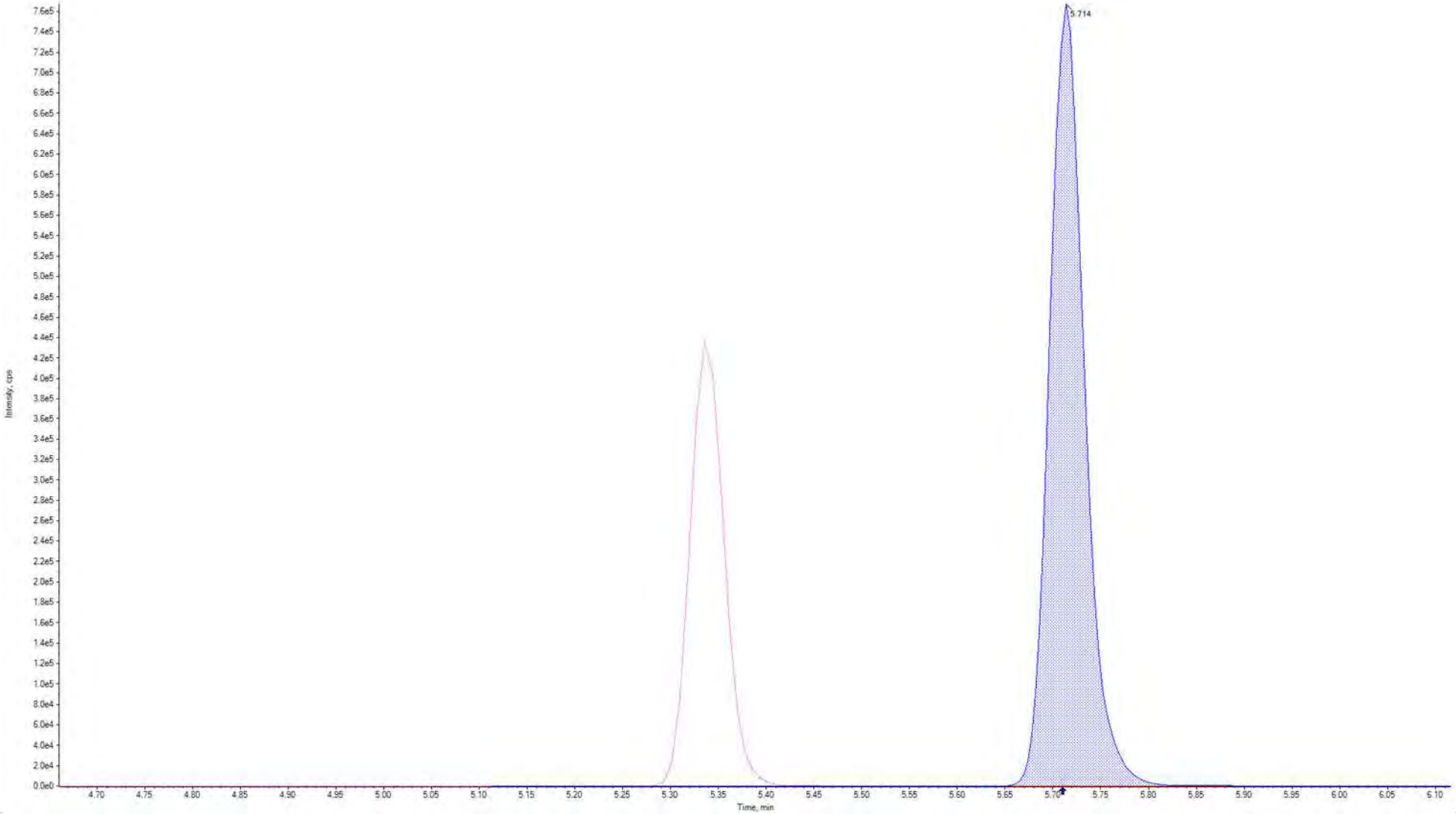
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

7:3FTCA_2
Sample: IA1633STD-1.25 S/N:21145.4 Points Across peak:31



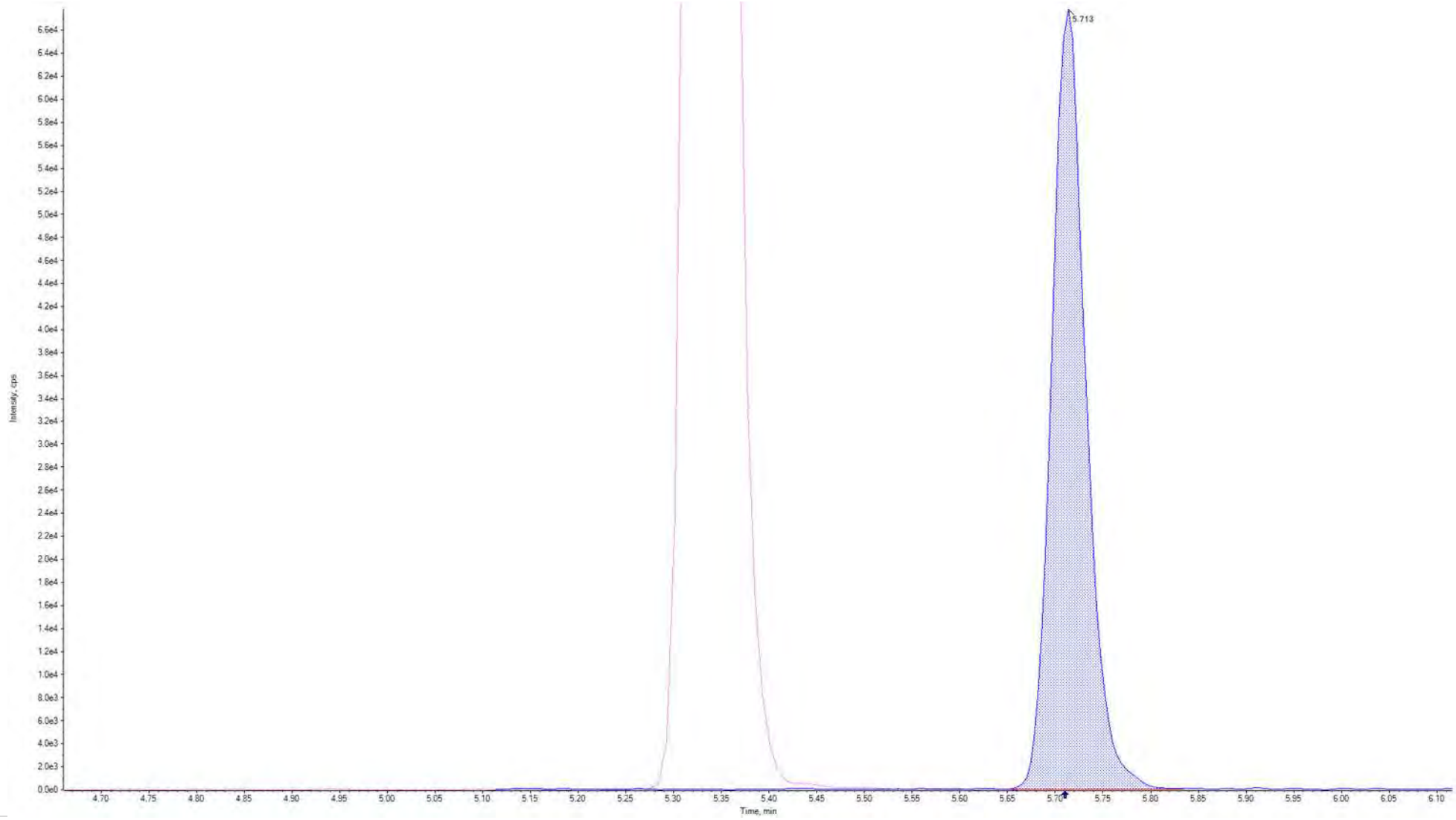
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFEESA
Sample: IA1633STD-1.25 S/N:12486.2 Points Across peak:52



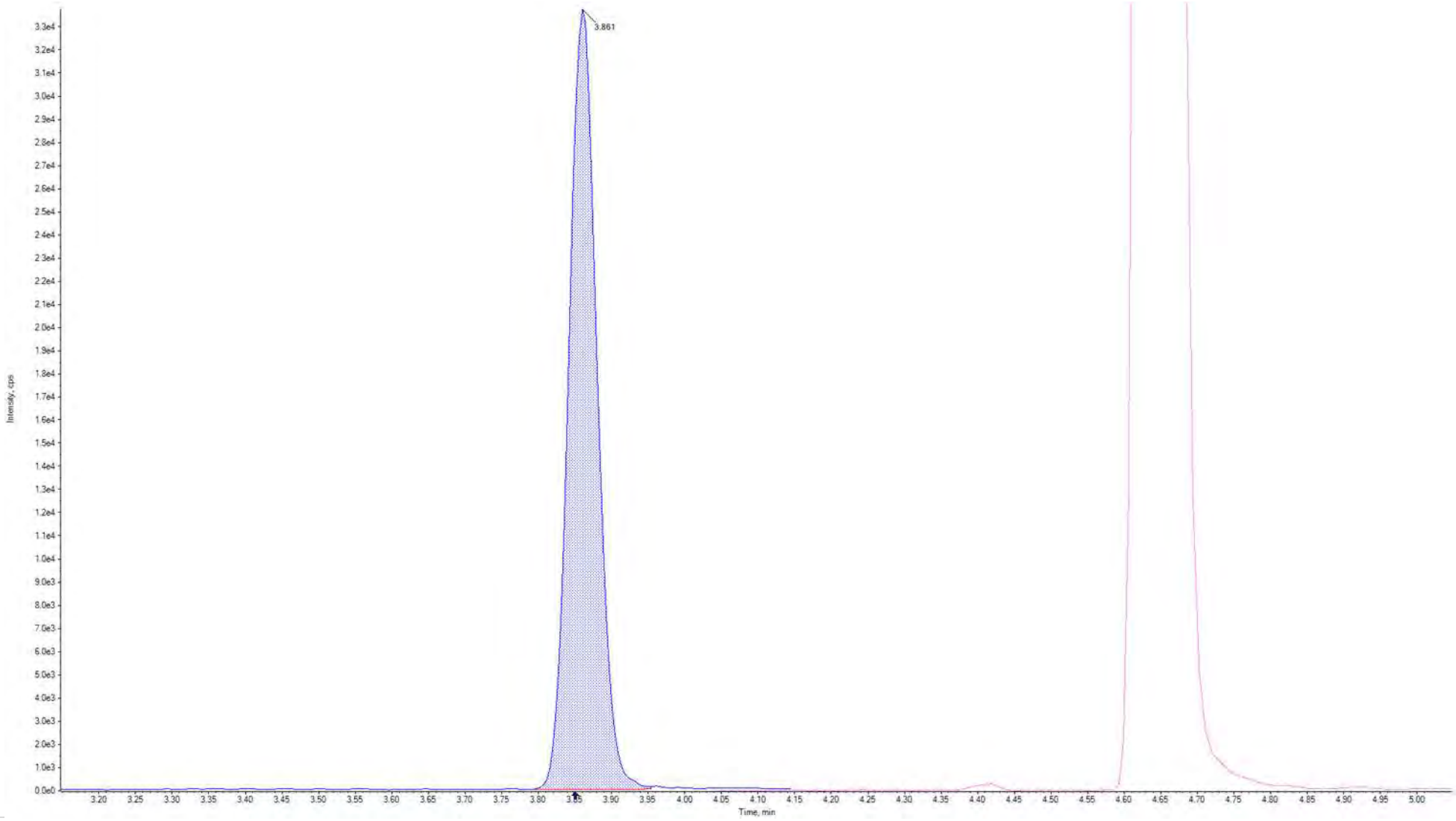
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFEESA_2
Sample: IA1633STD-1.25 S/N:2932.5 Points Across peak:41



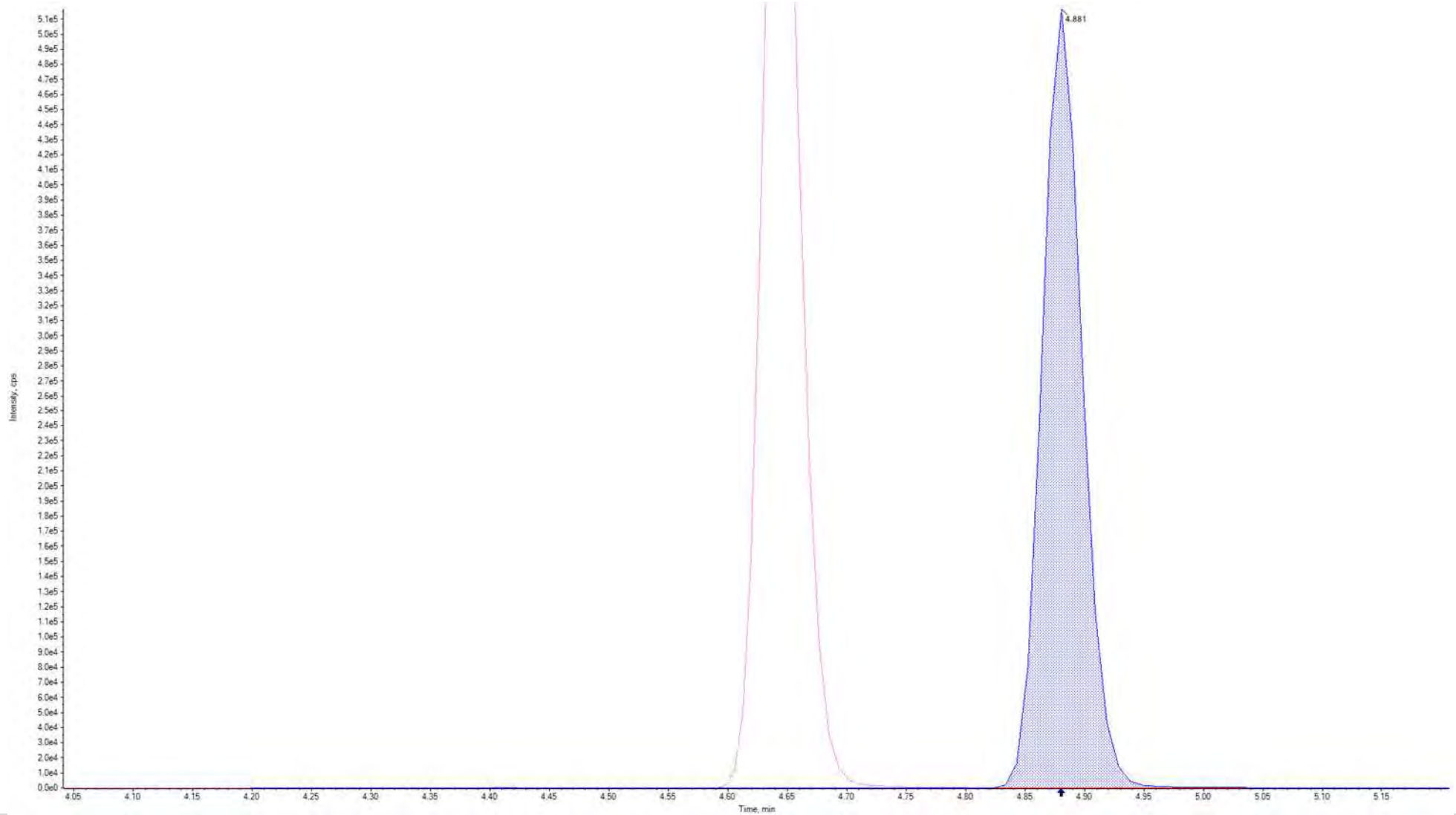
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFMPA
Sample: IA1633STD-1.25 S/N:2435.4 Points Across peak:43



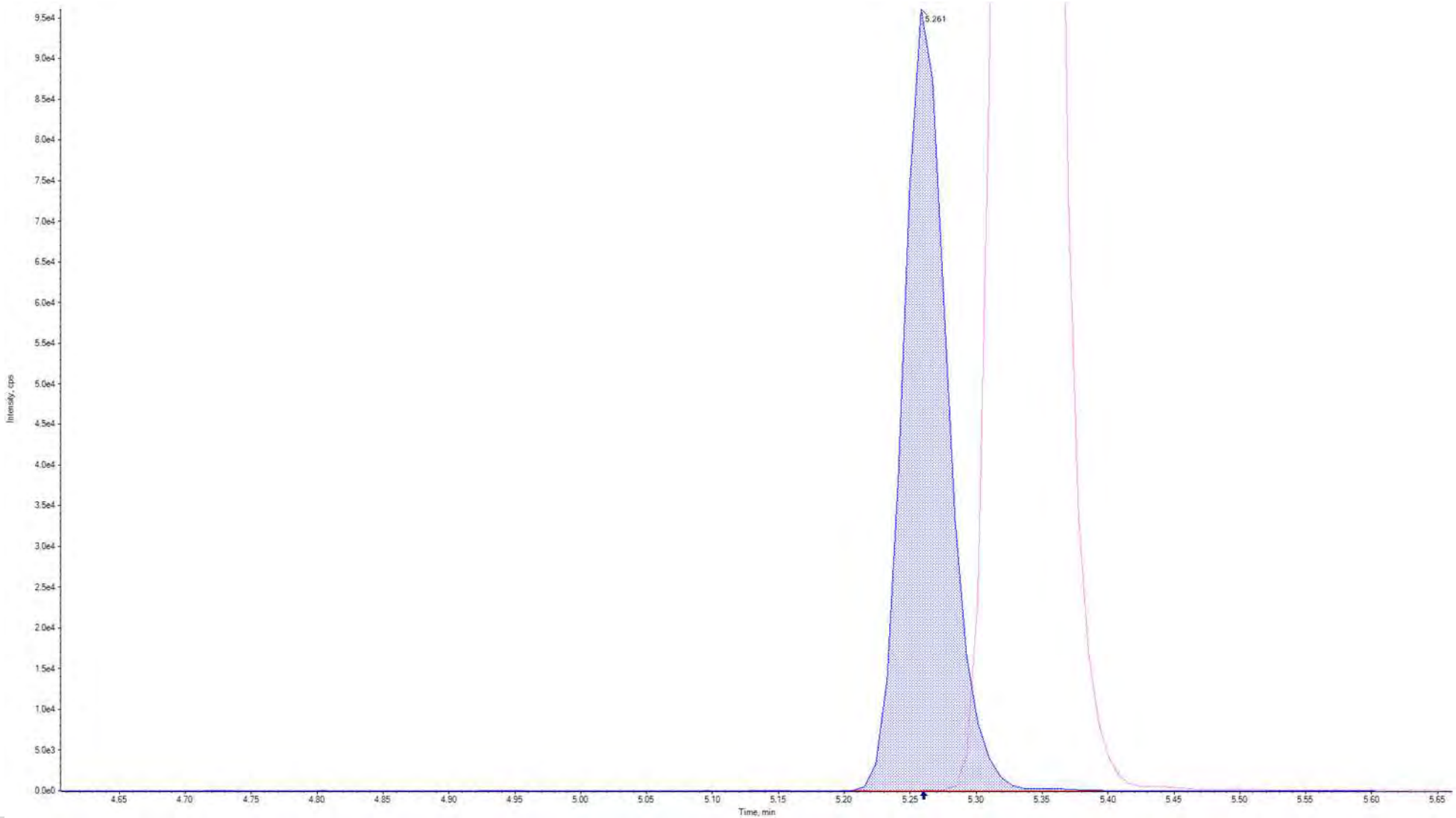
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFMBA
Sample: IA1633STD-1.25 S/N:13678.5 Points Across peak:25



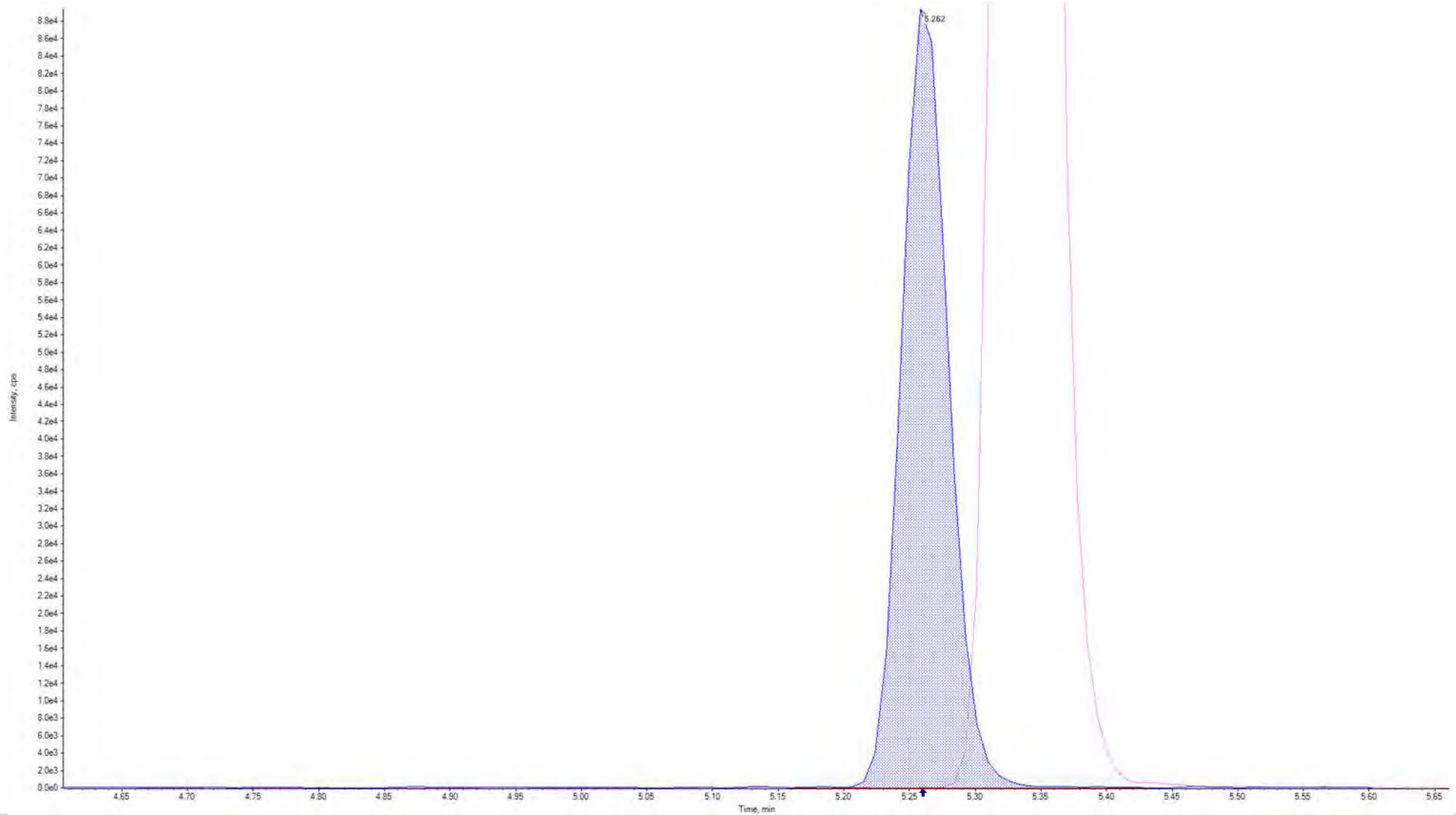
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NFDHA
Sample: IA1633STD-1.25 S/N:5792.7 Points Across peak:30



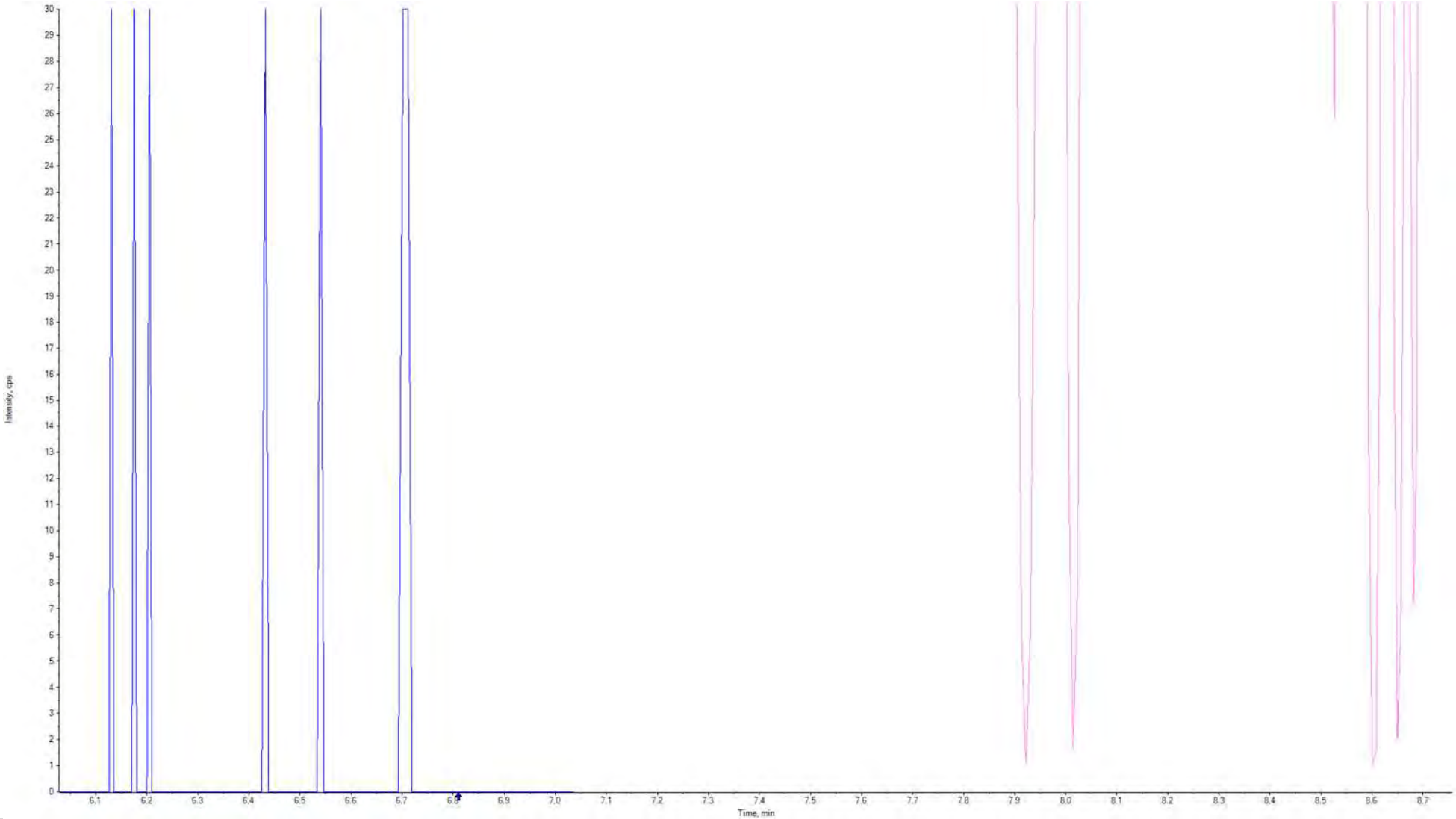
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NFDHA_2
Sample: IA1633STD-1.25 S/N:2858.3 Points Across peak:34



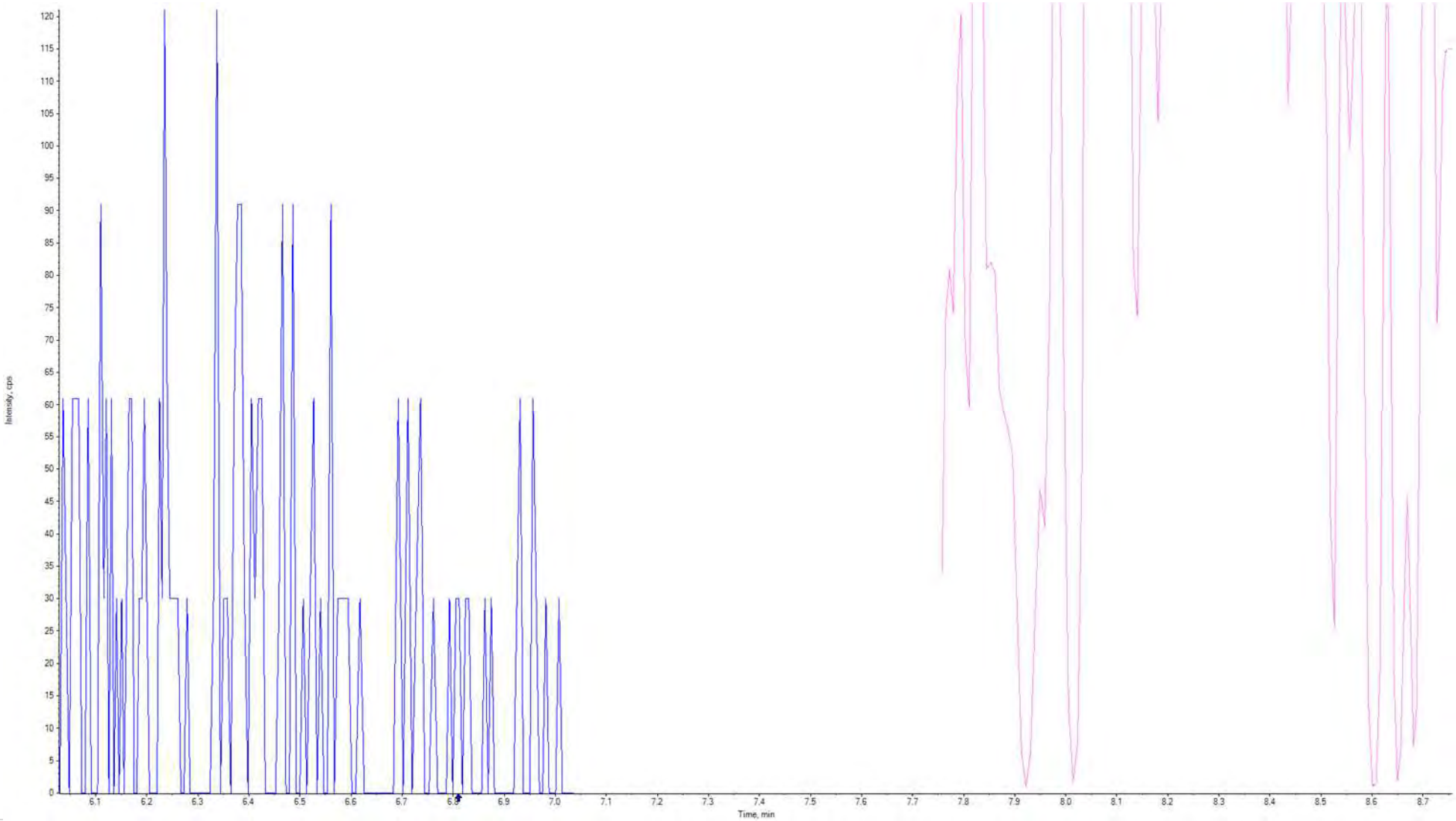
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

TDCA
Sample: IA1633STD-1.25 S/N:N/A Points Across peak:N/A



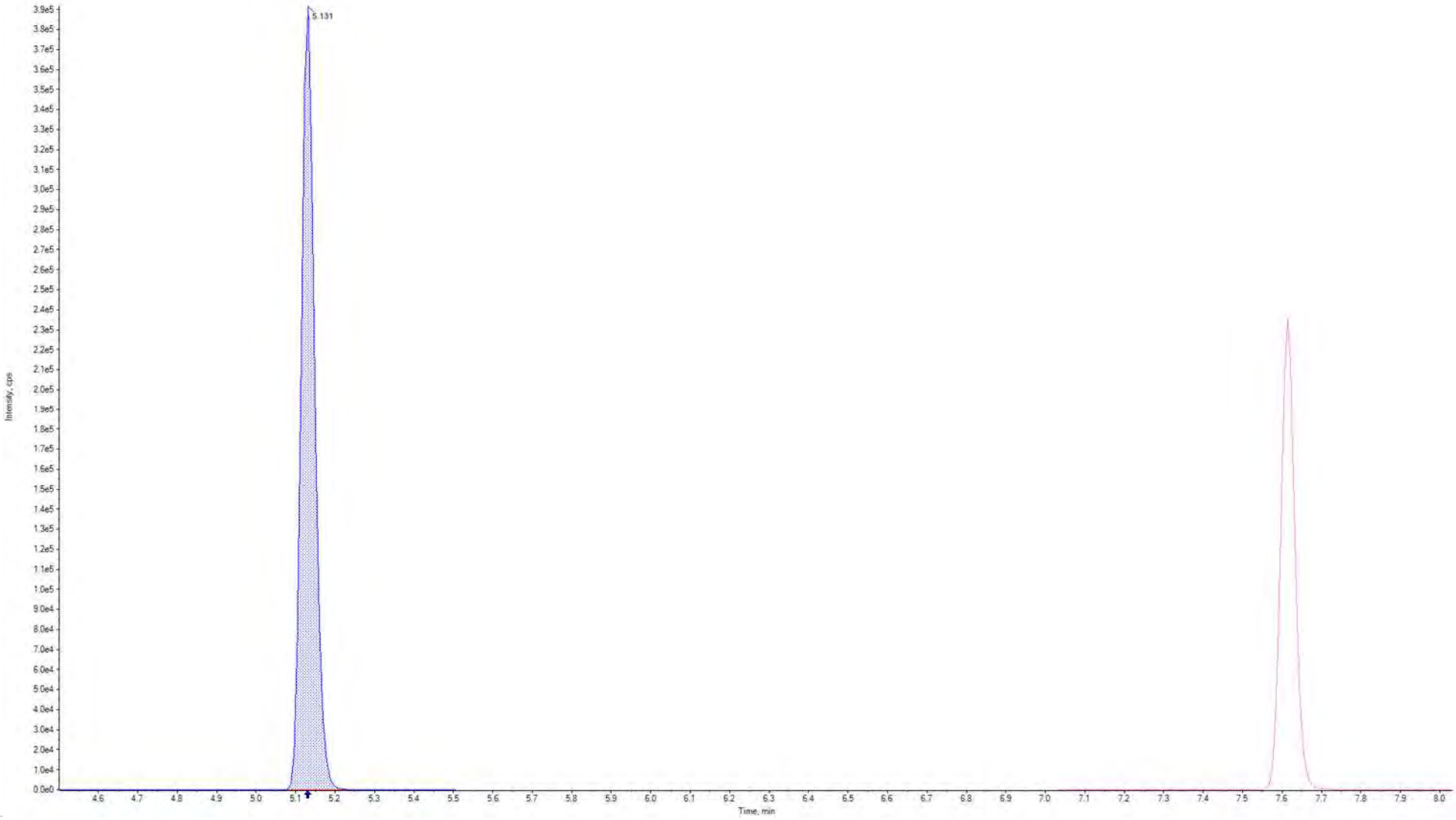
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

TDCA_2
Sample: IA1633STD-1.25 S/N:N/A Points Across peak:N/A



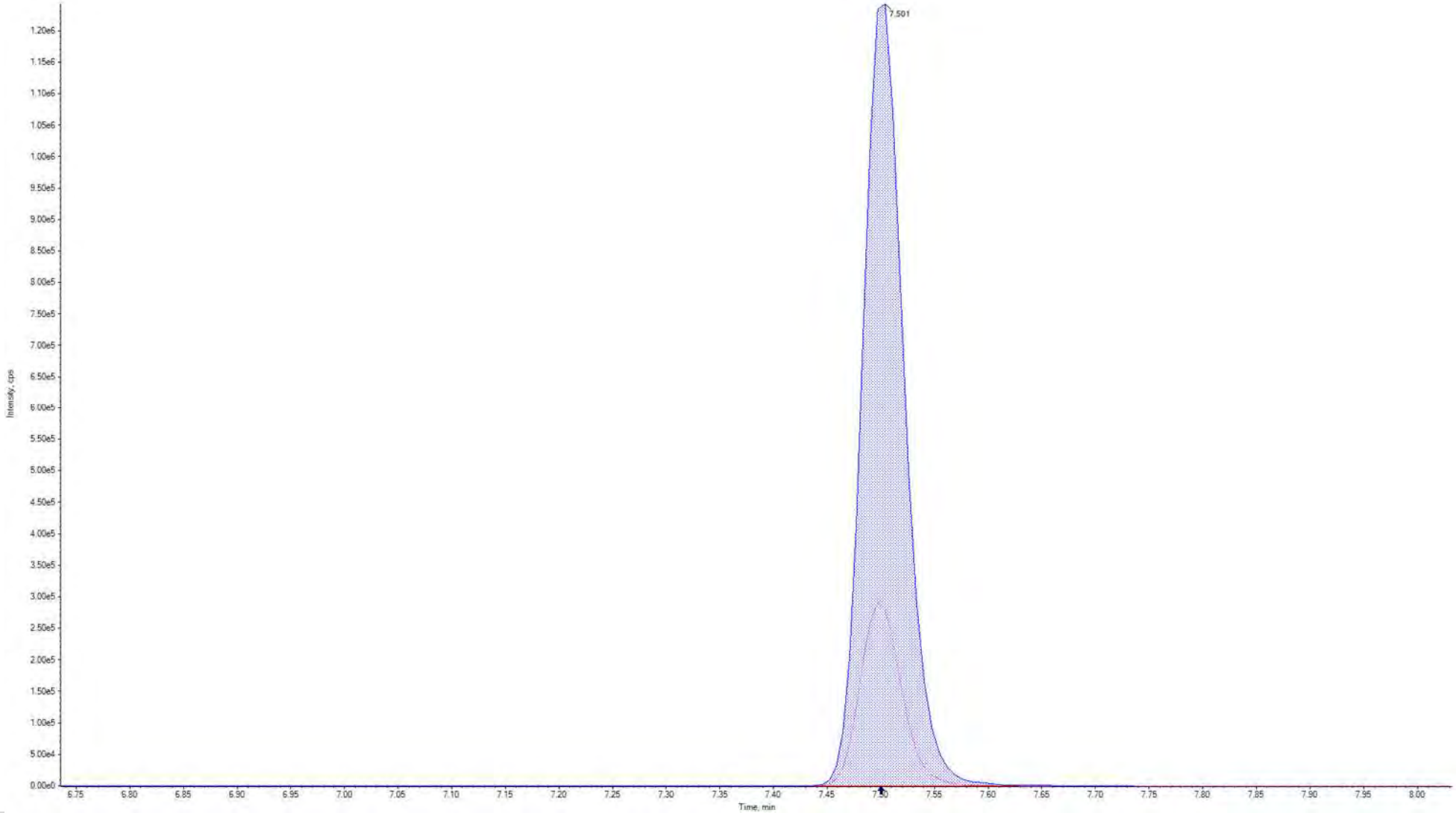
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

13C2D4-4:2FTS
Sample: IA1633STD-1.25 S/N:178276.9 Points Across peak:25

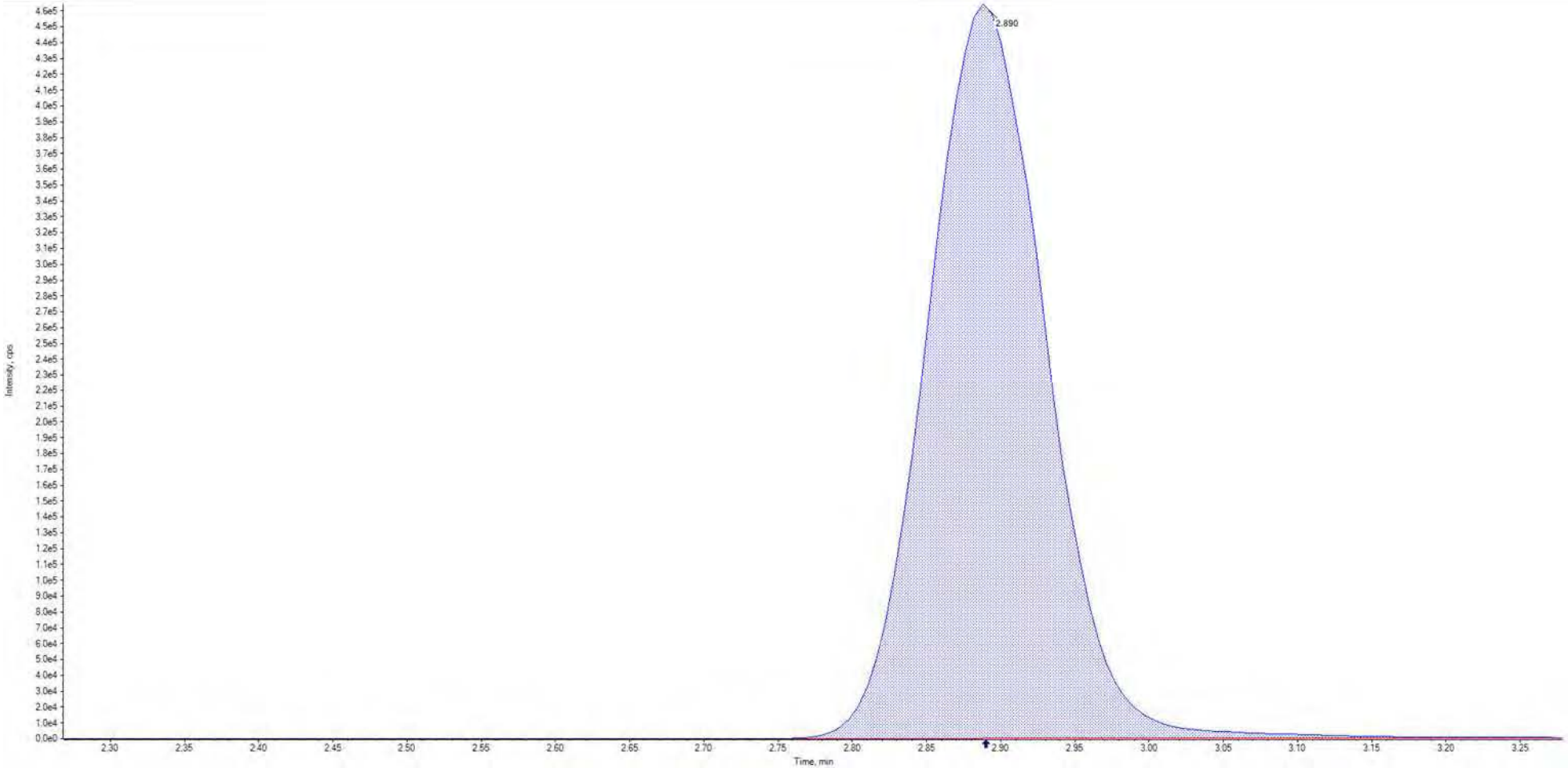


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

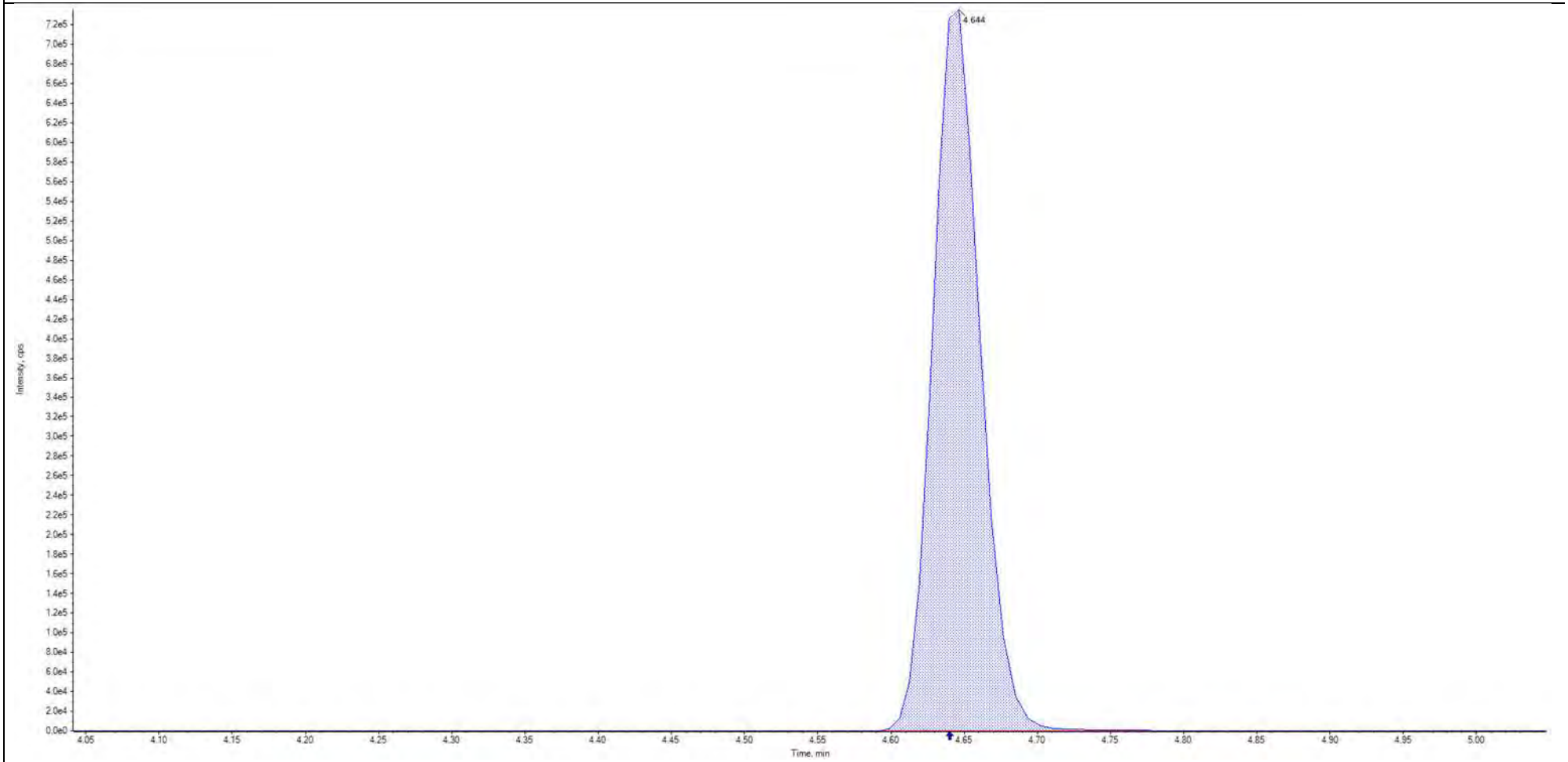
13C2-PFOA
Sample: IA1633STD-1.25 S/N:92469372.6 Points Across peak:33



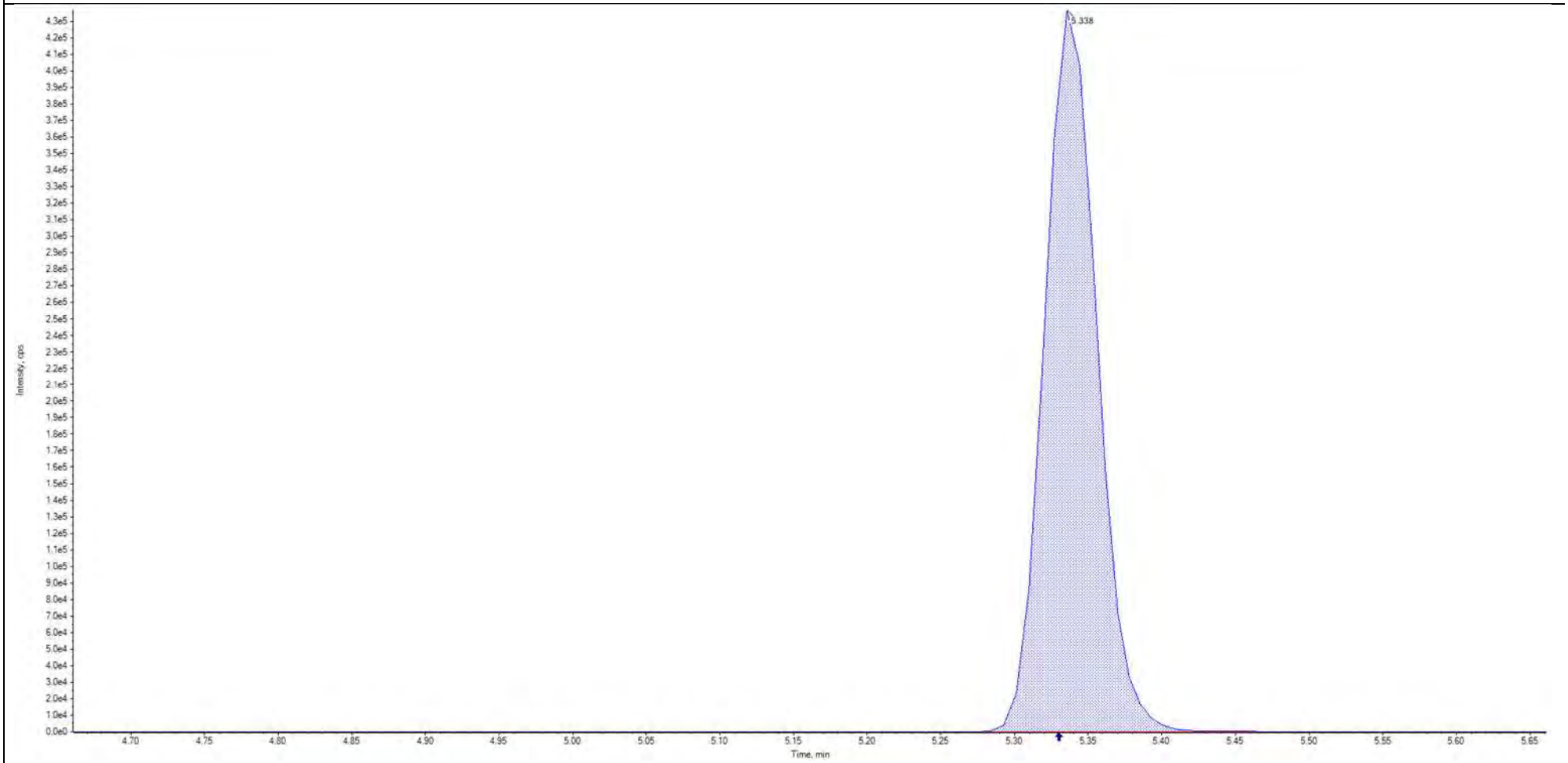
13C4-PFBA
Sample: IA1633STD-1.25



13C5-PFPeA
Sample: IA1633STD-1.25

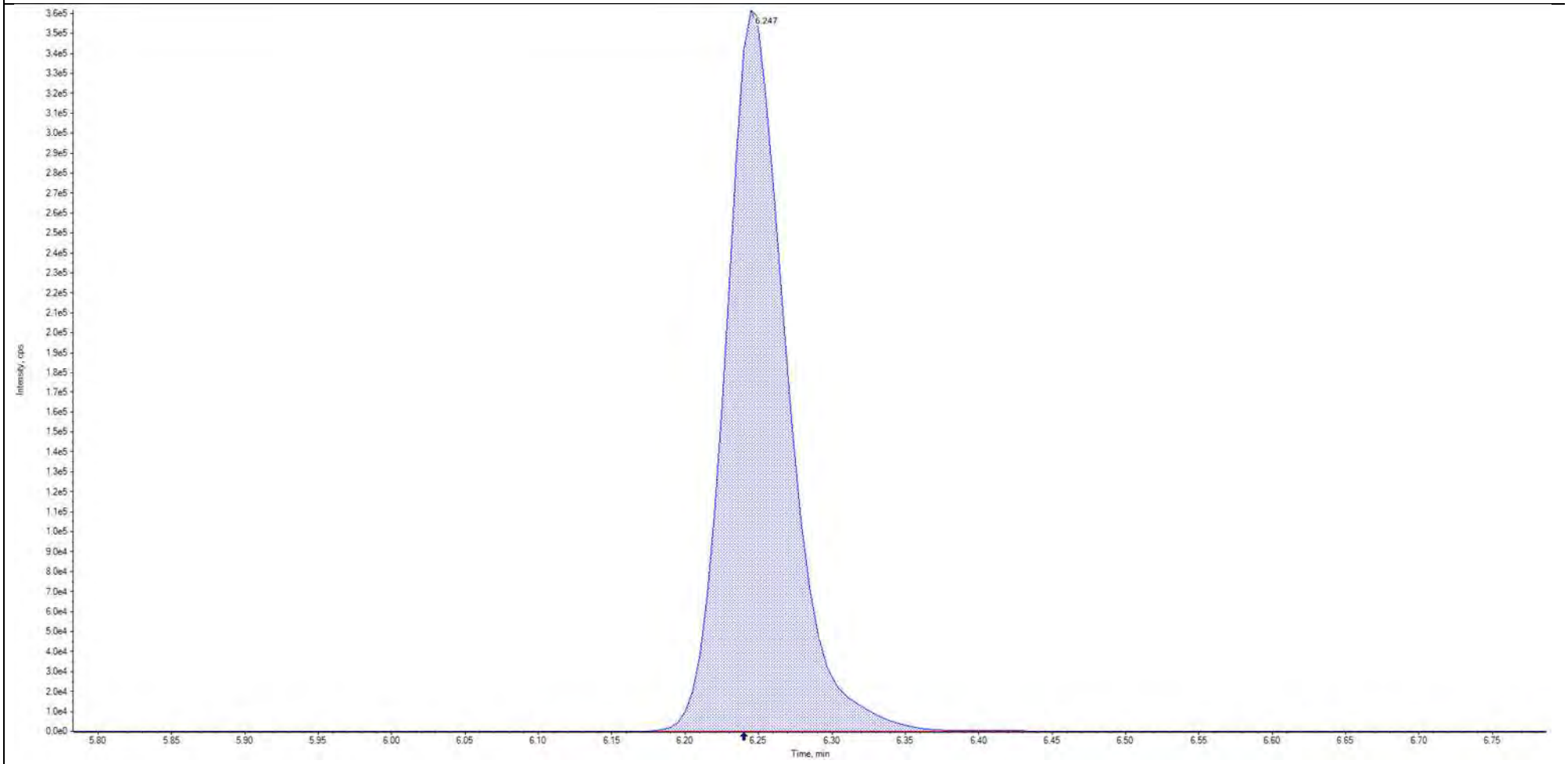


13C5-PFHxA
Sample: IA1633STD-1.25



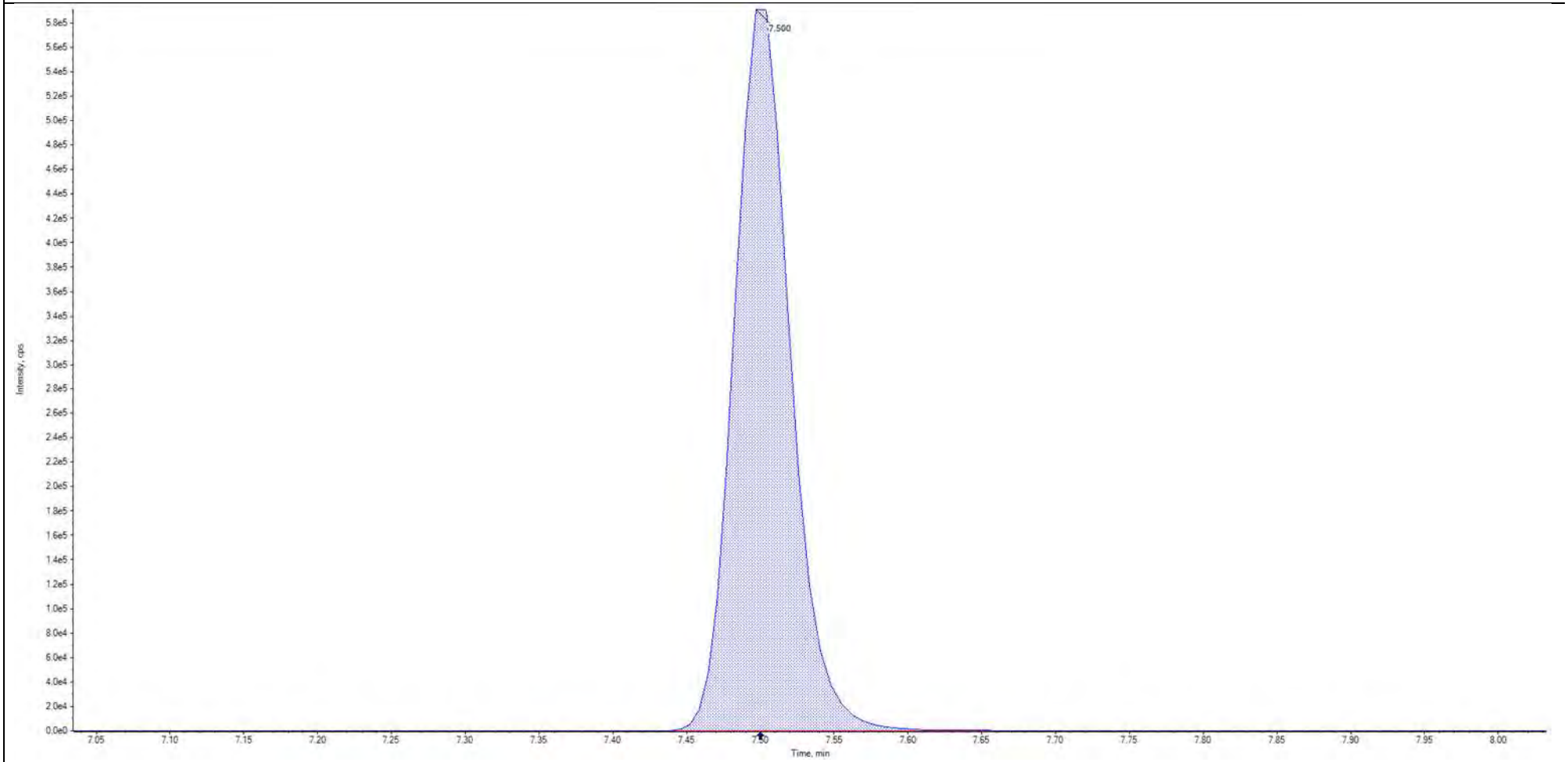
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

13C4-PFHpA
Sample: IA1633STD-1.25

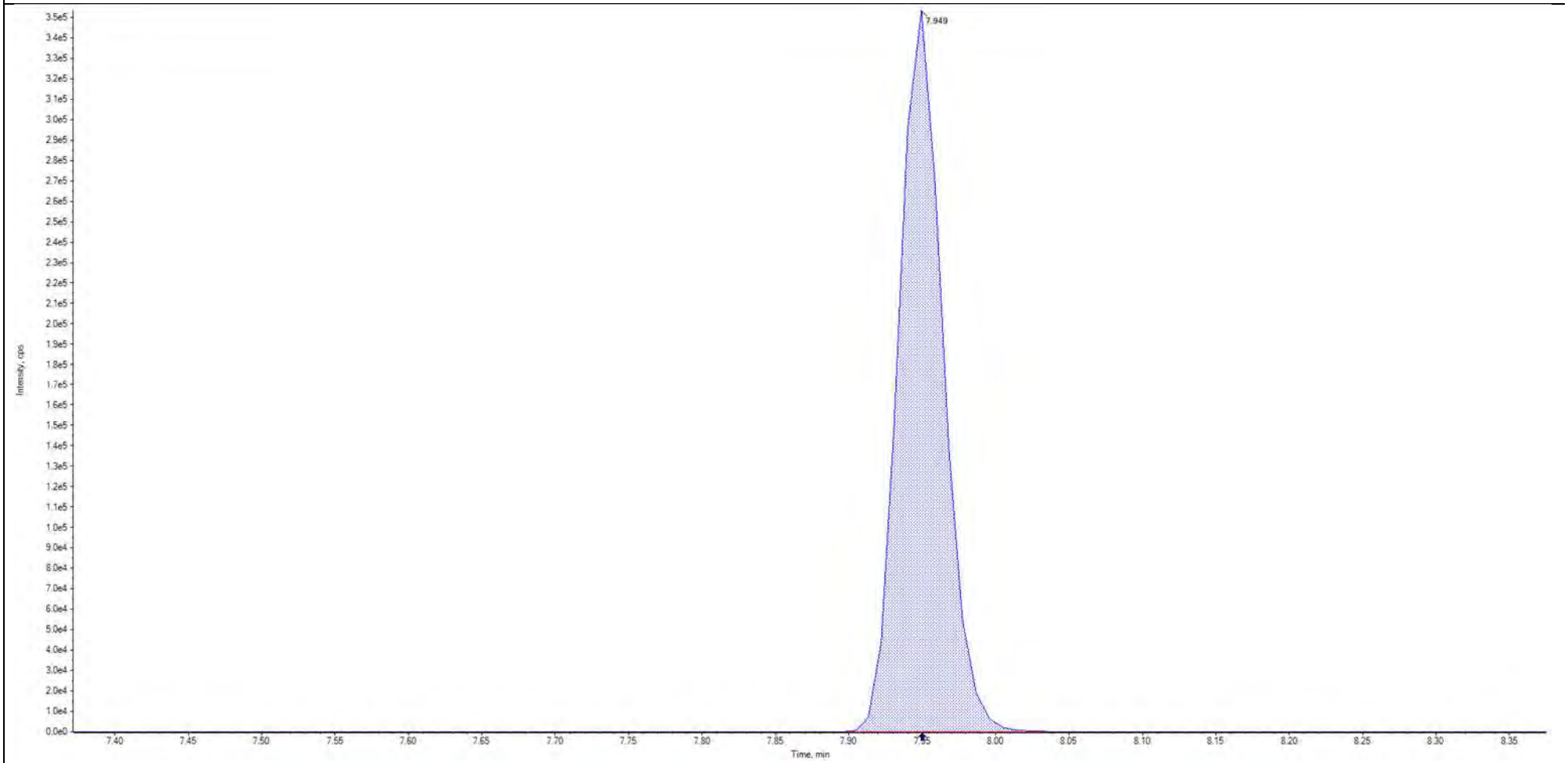


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

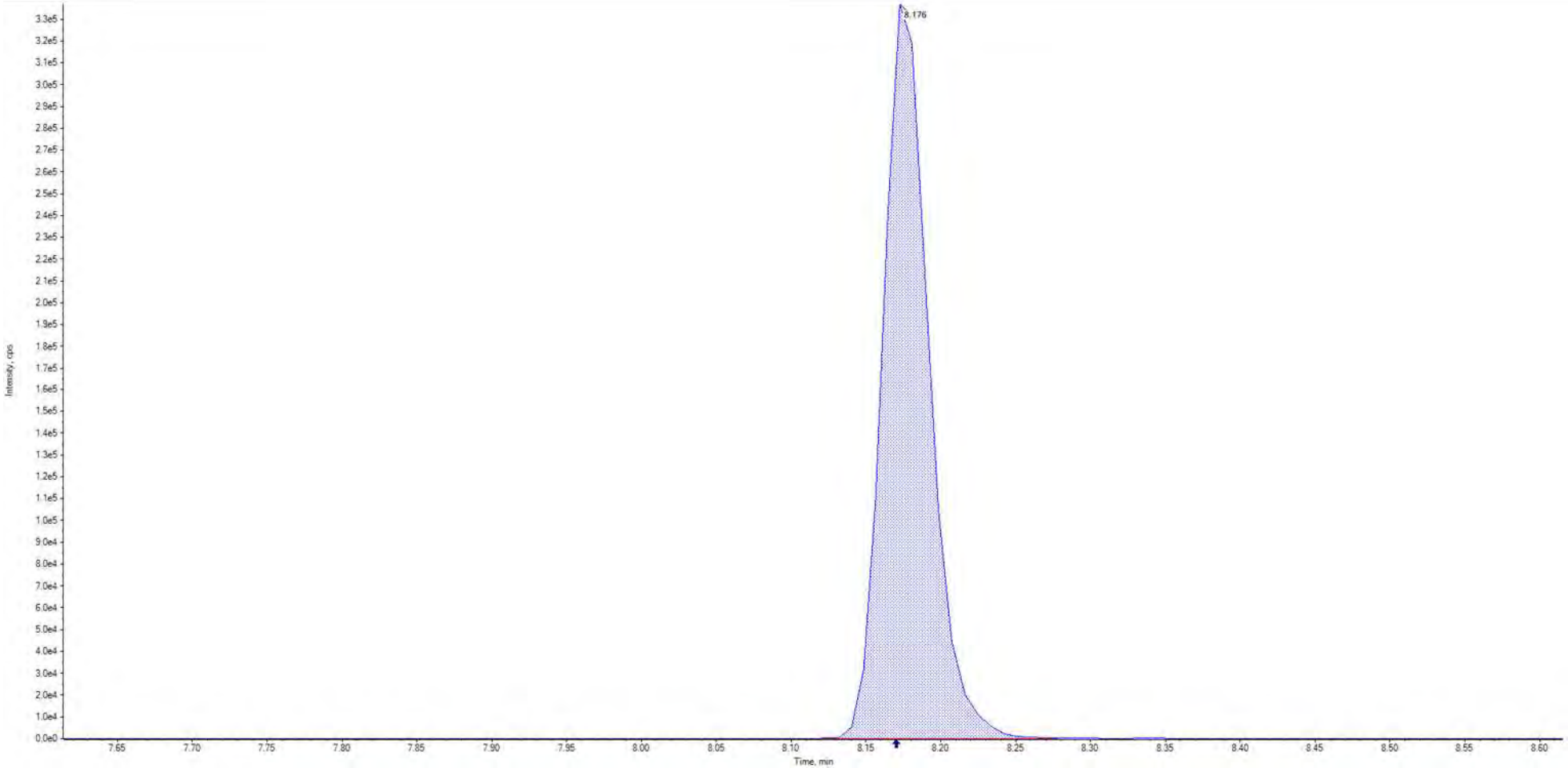
13C8-PFOA
Sample: IA1633STD-1.25



13C9-PFNA
Sample: IA1633STD-1.25

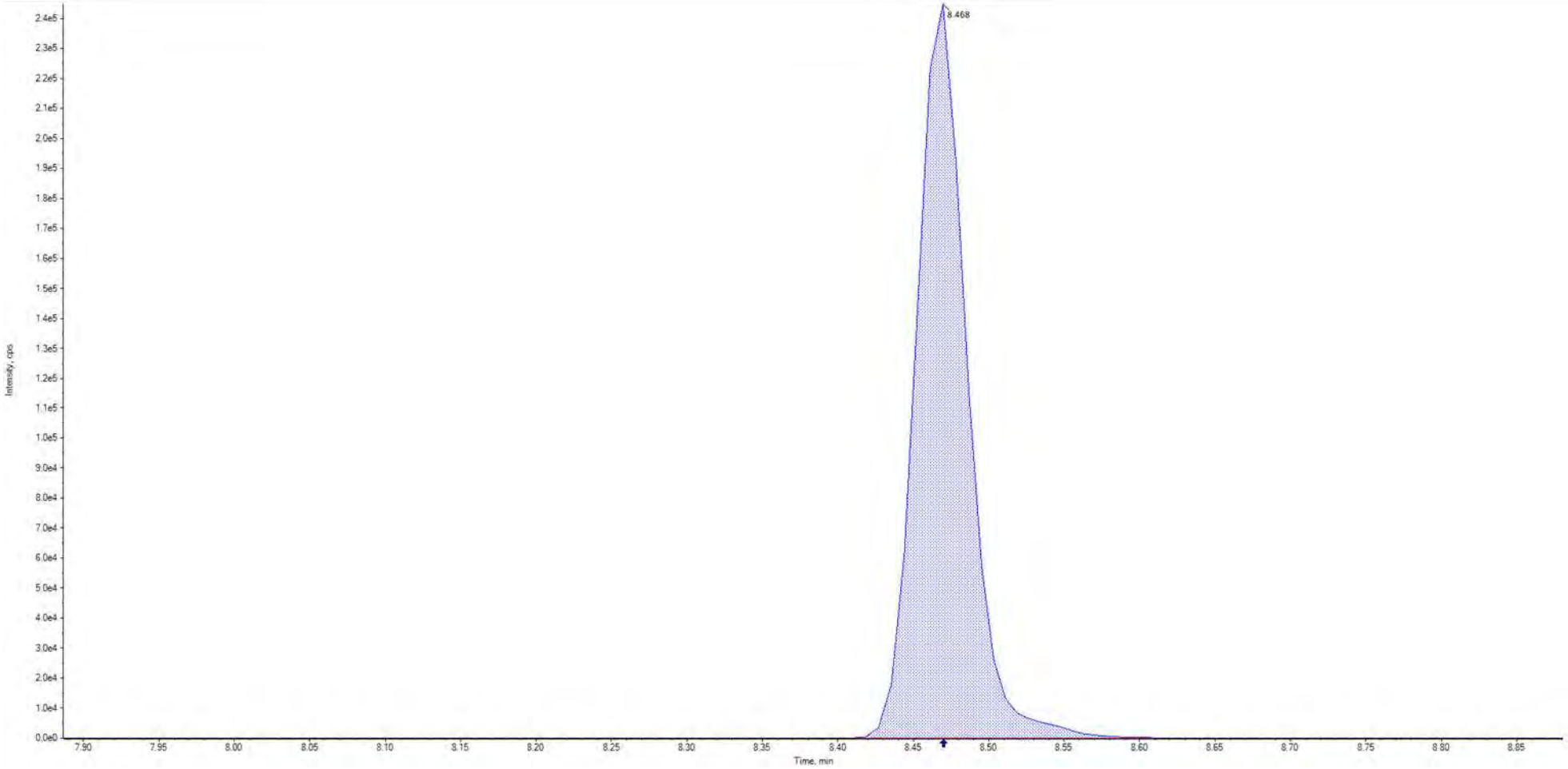


13C6-PFDA
Sample: IA1633STD-1.25



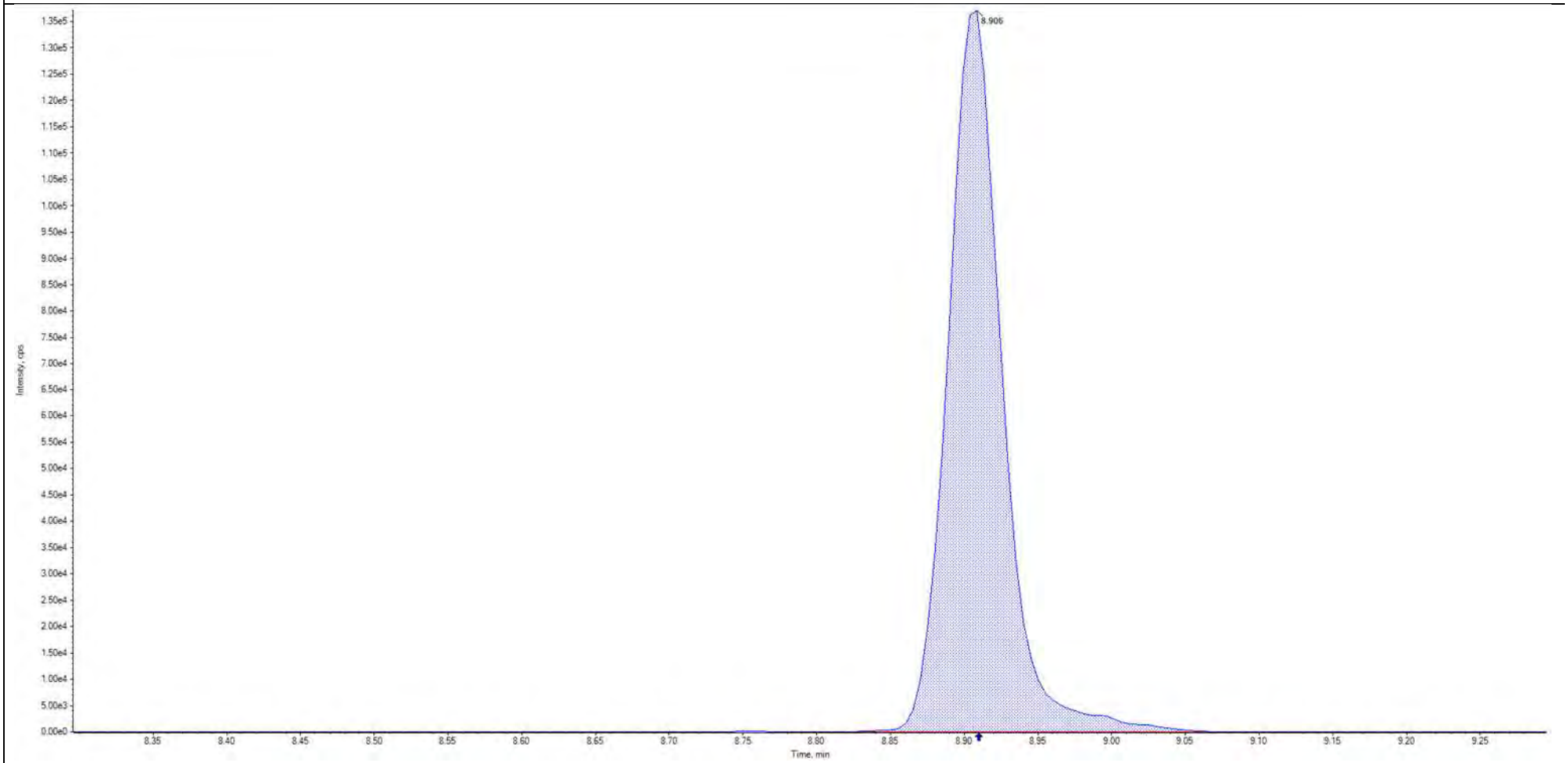
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

13C7-PFUnA
Sample: IA1633STD-1.25

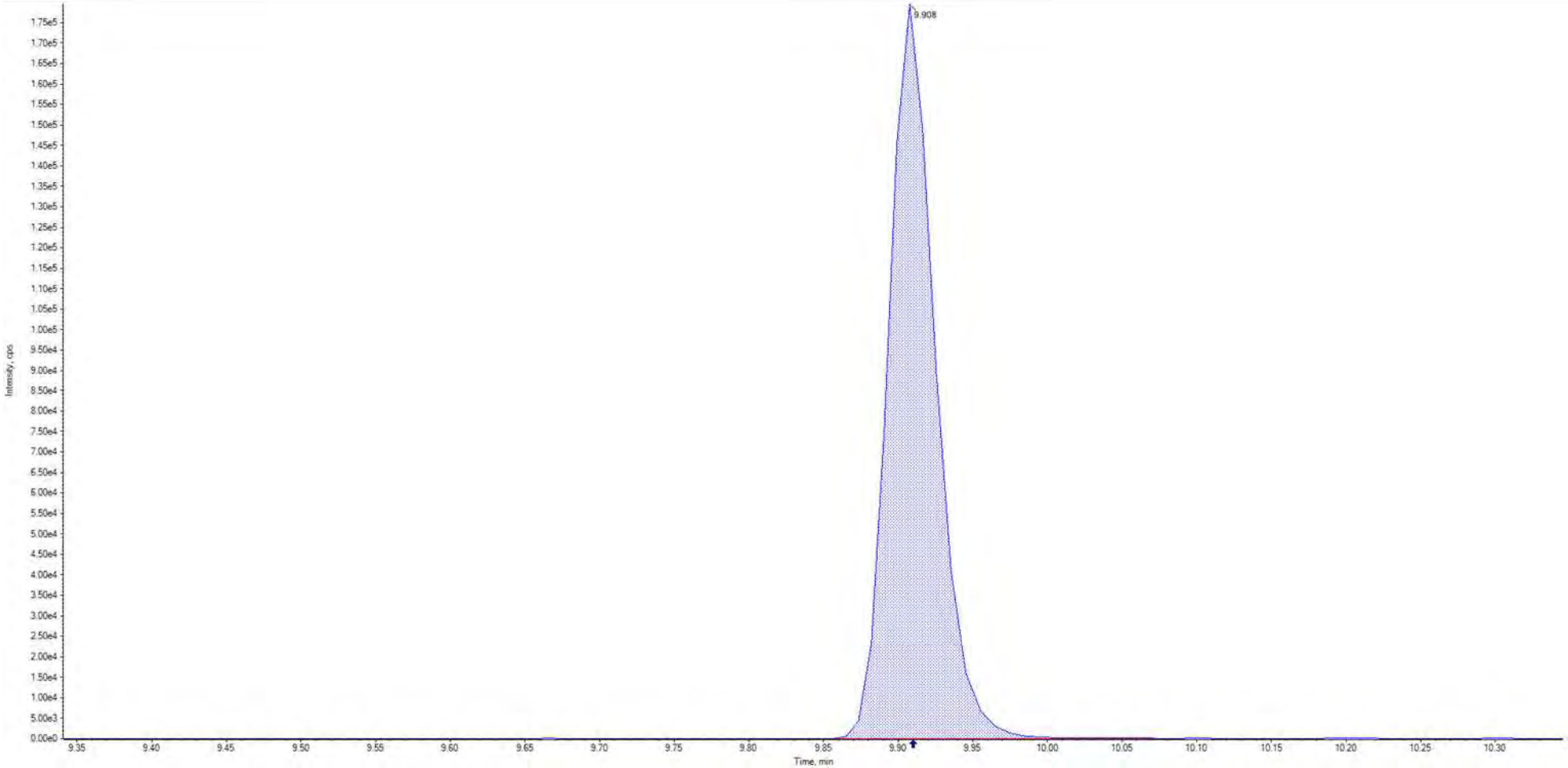


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

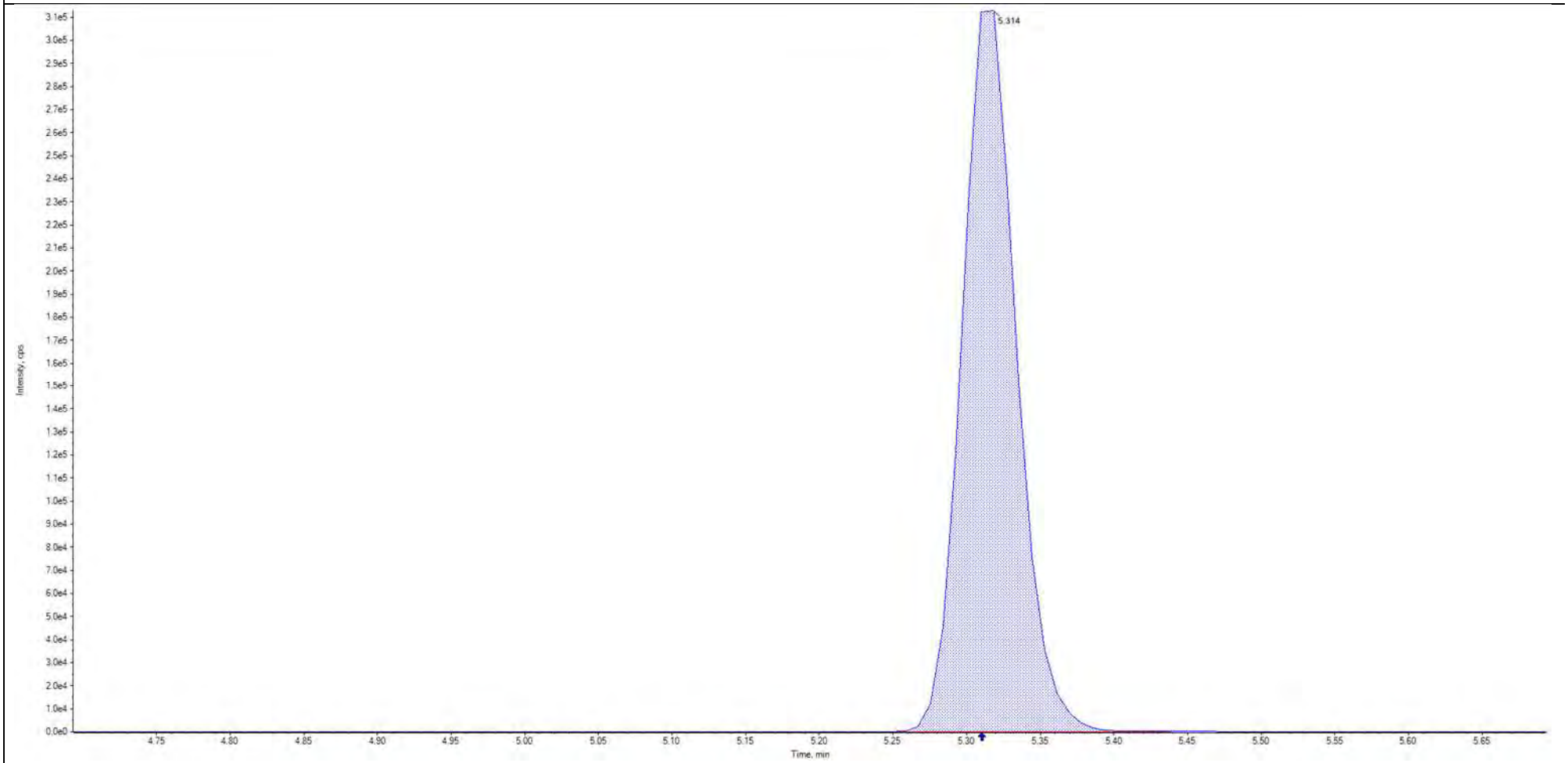
13C2-PFDoA
Sample: IA1633STD-1.25



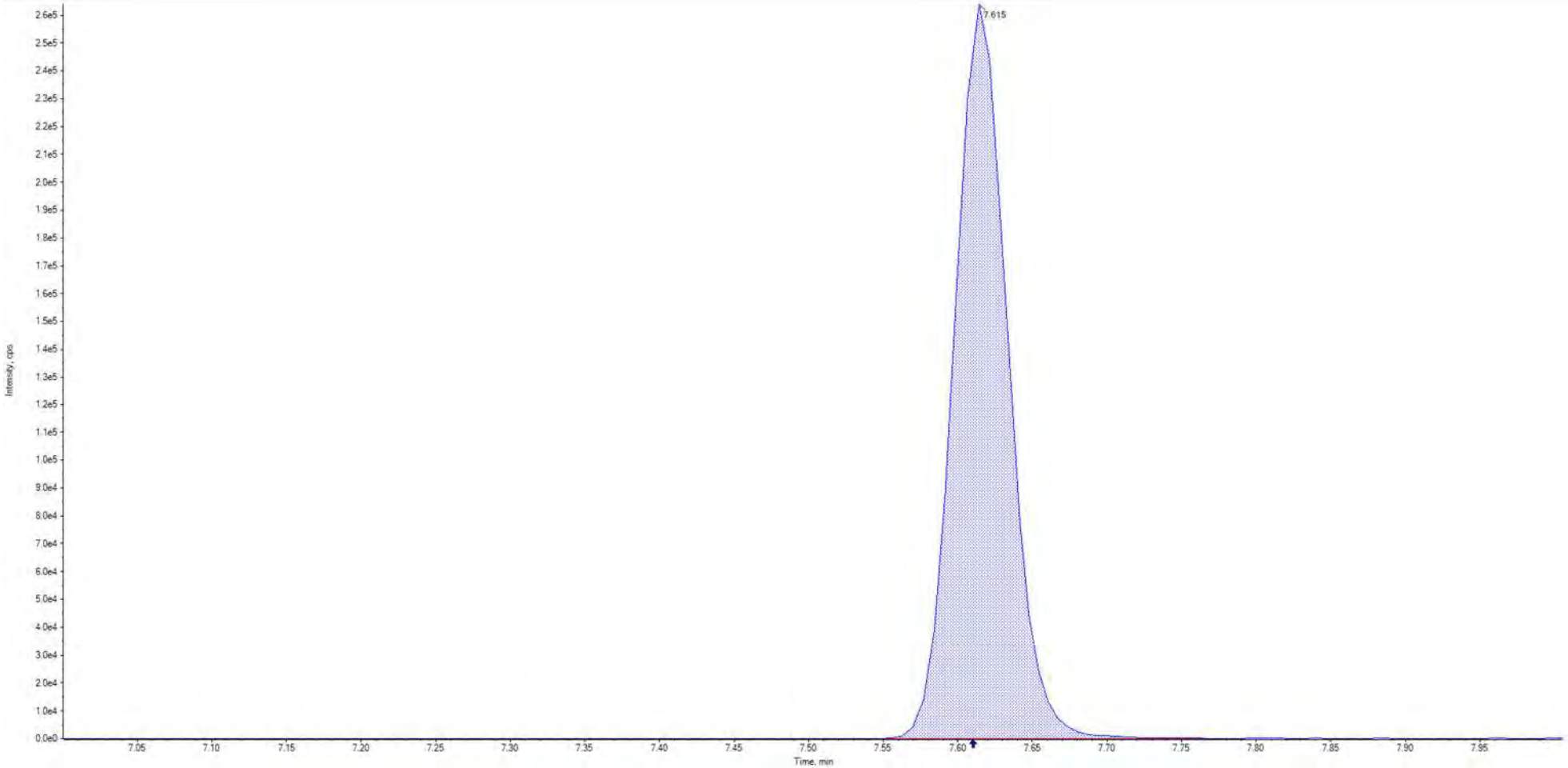
13C2-PFTeDA
Sample: IA1633STD-1.25



13C3-PFBS
Sample: IA1633STD-1.25

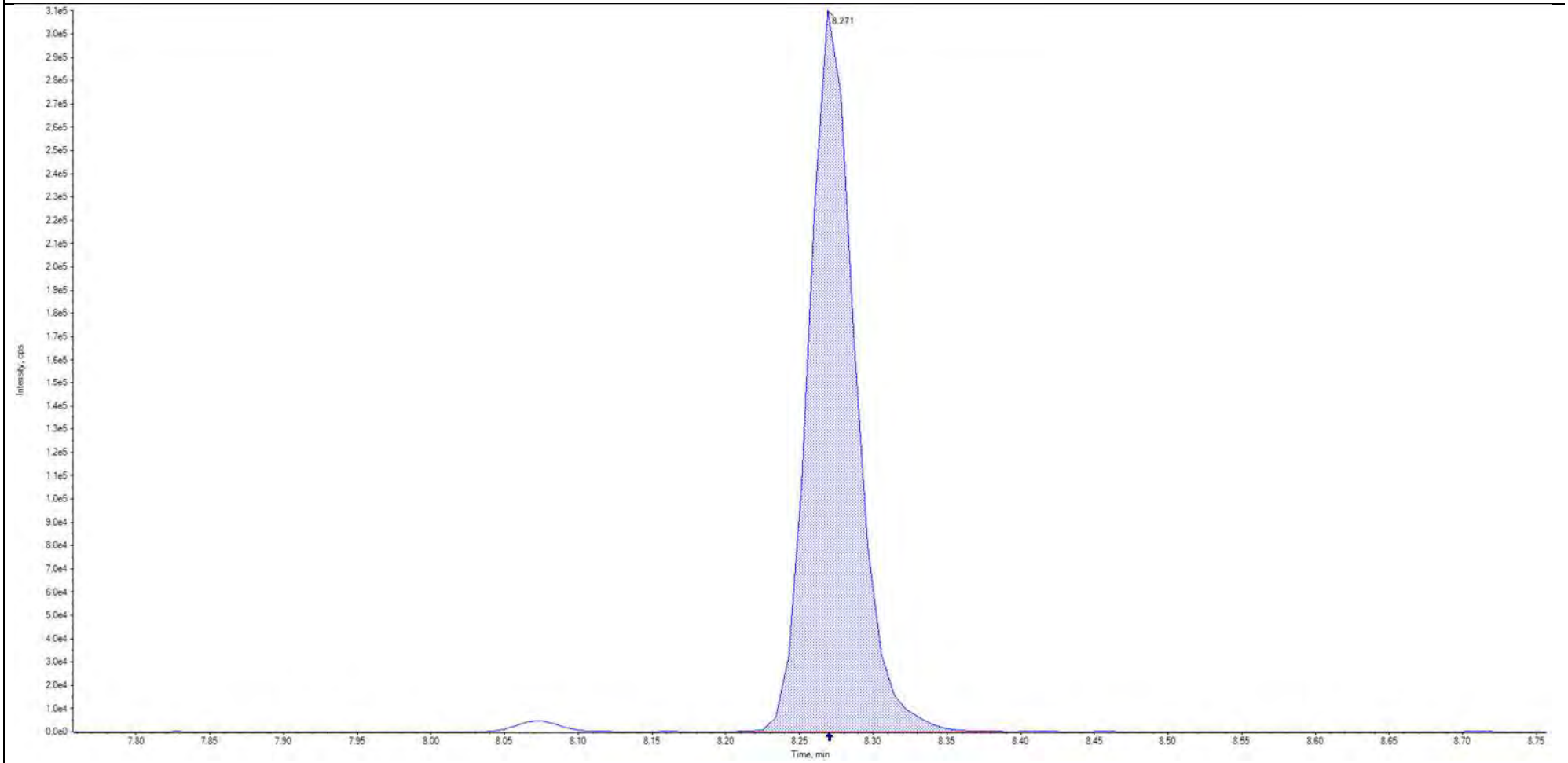


13C3-PFHxS
Sample: IA1633STD-1.25

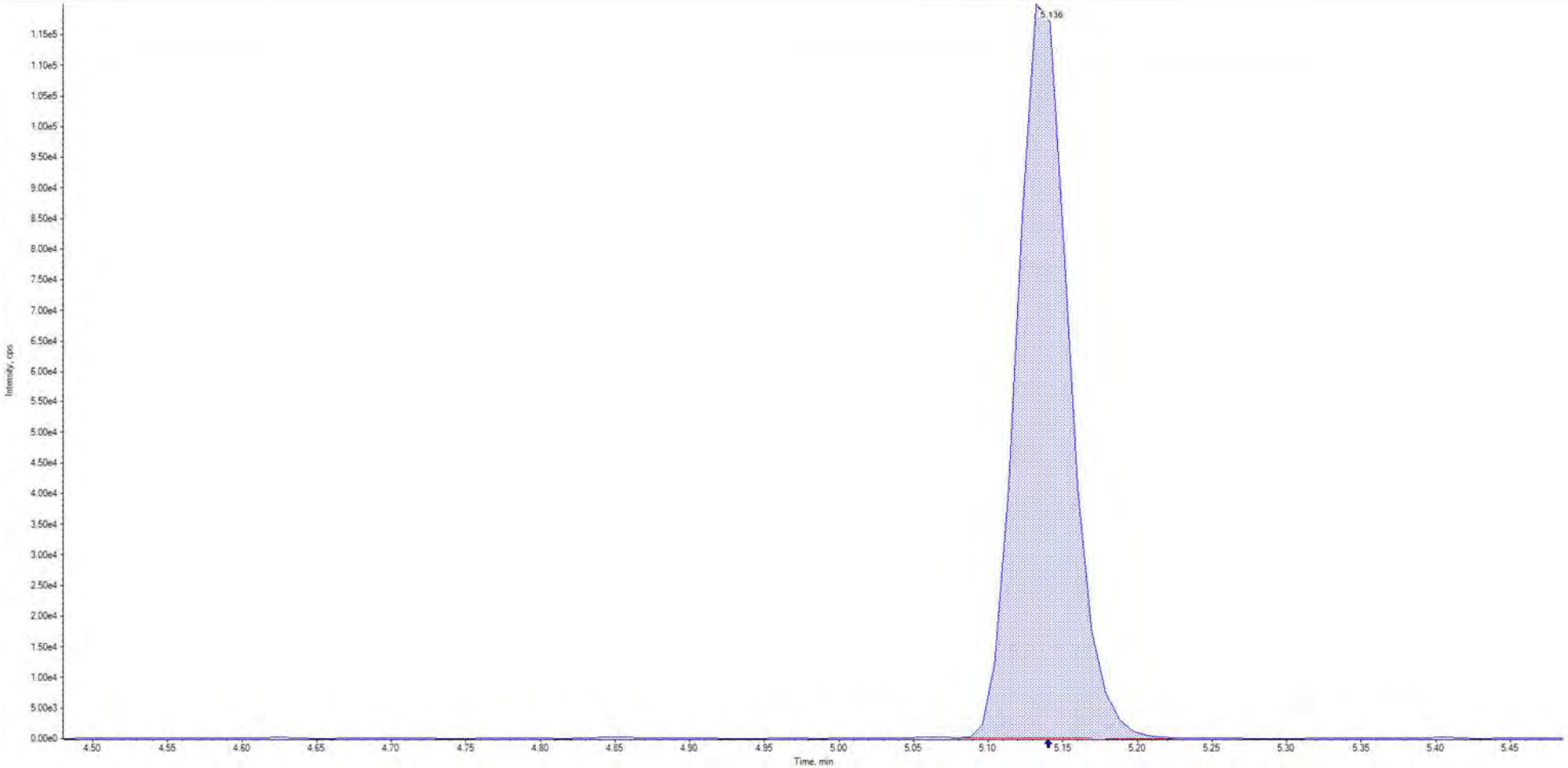


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

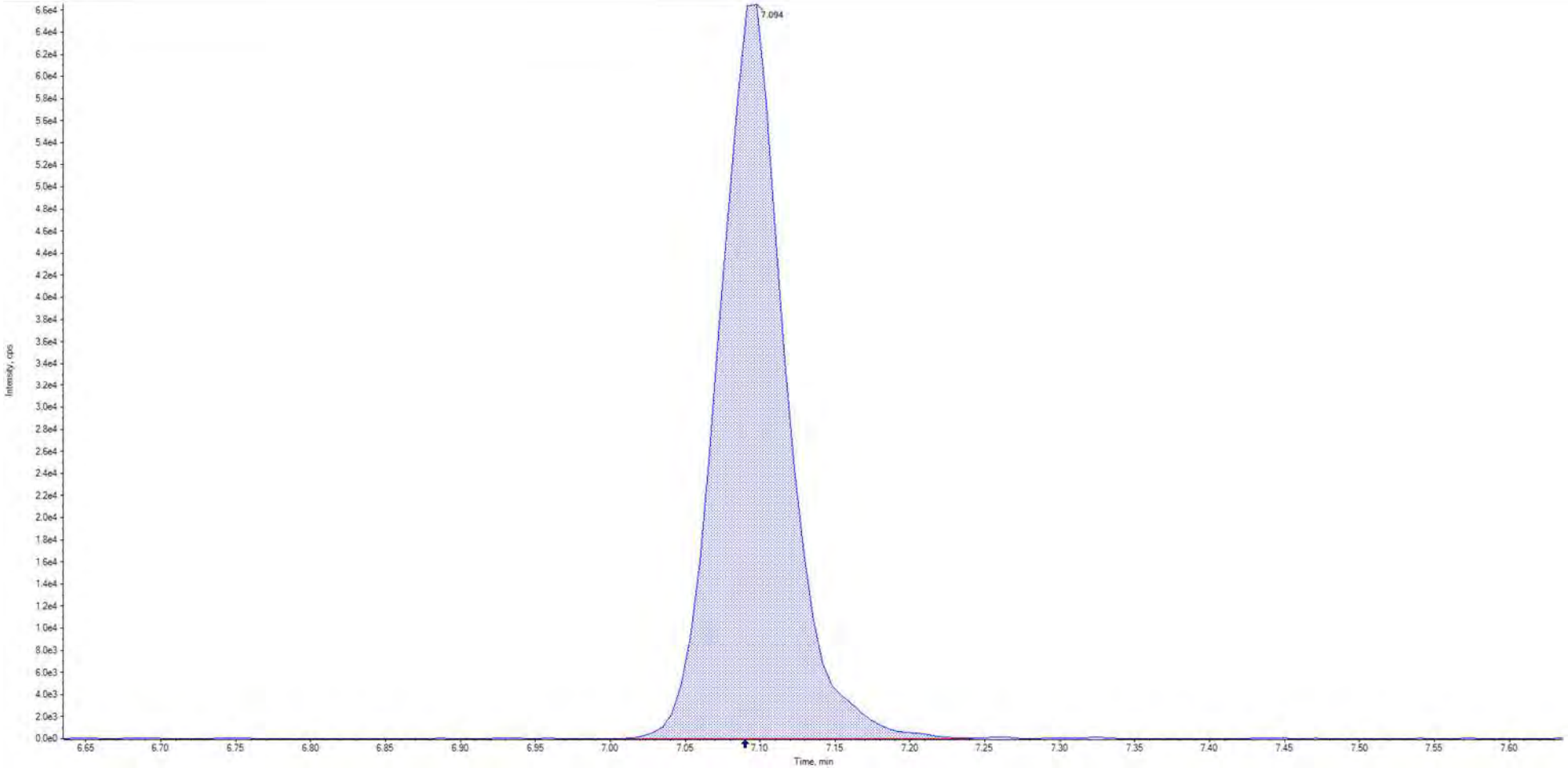
13C8-PFOS
Sample: IA1633STD-1.25



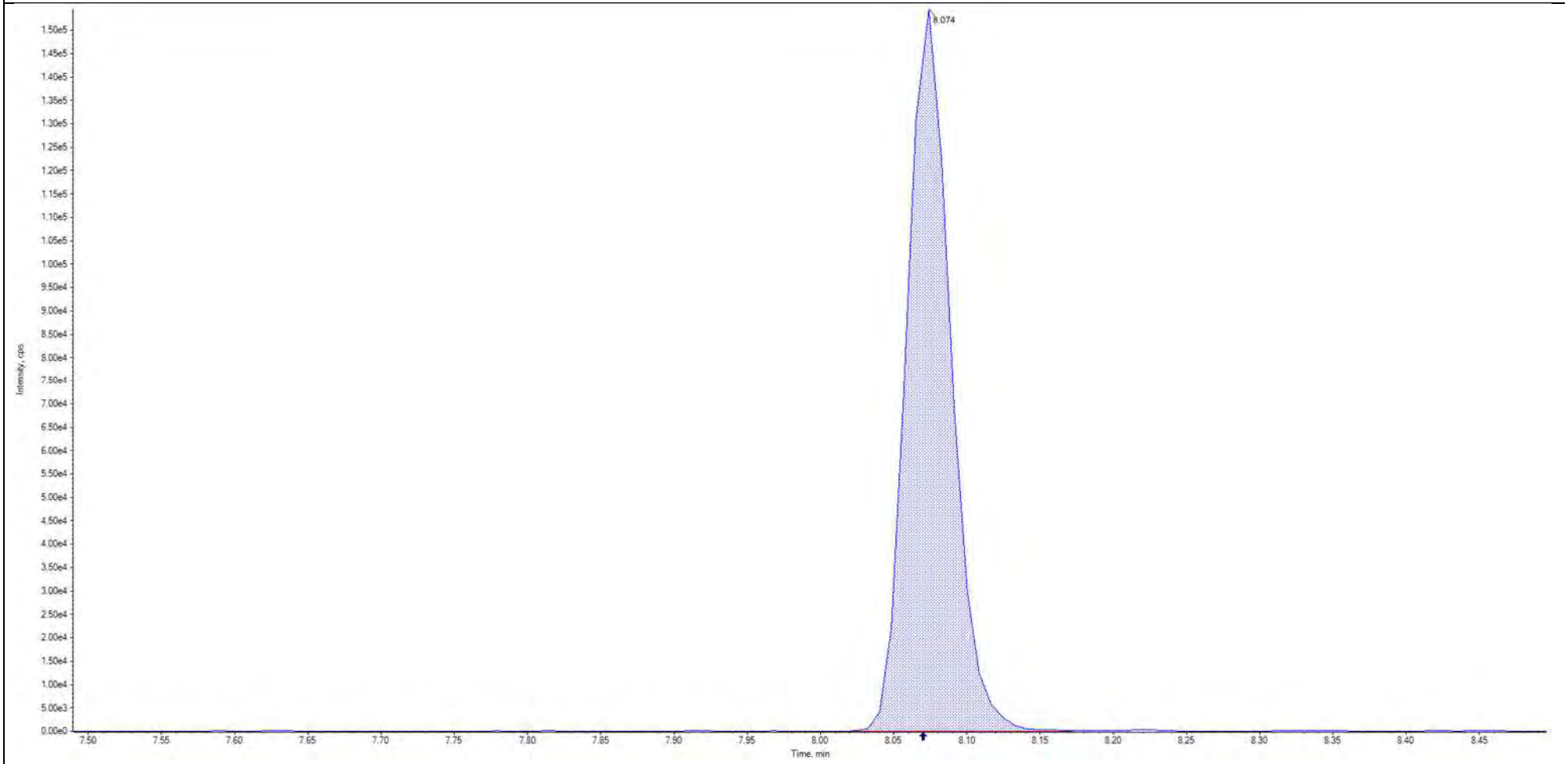
13C2-4:2FTS
Sample: IA1633STD-1.25



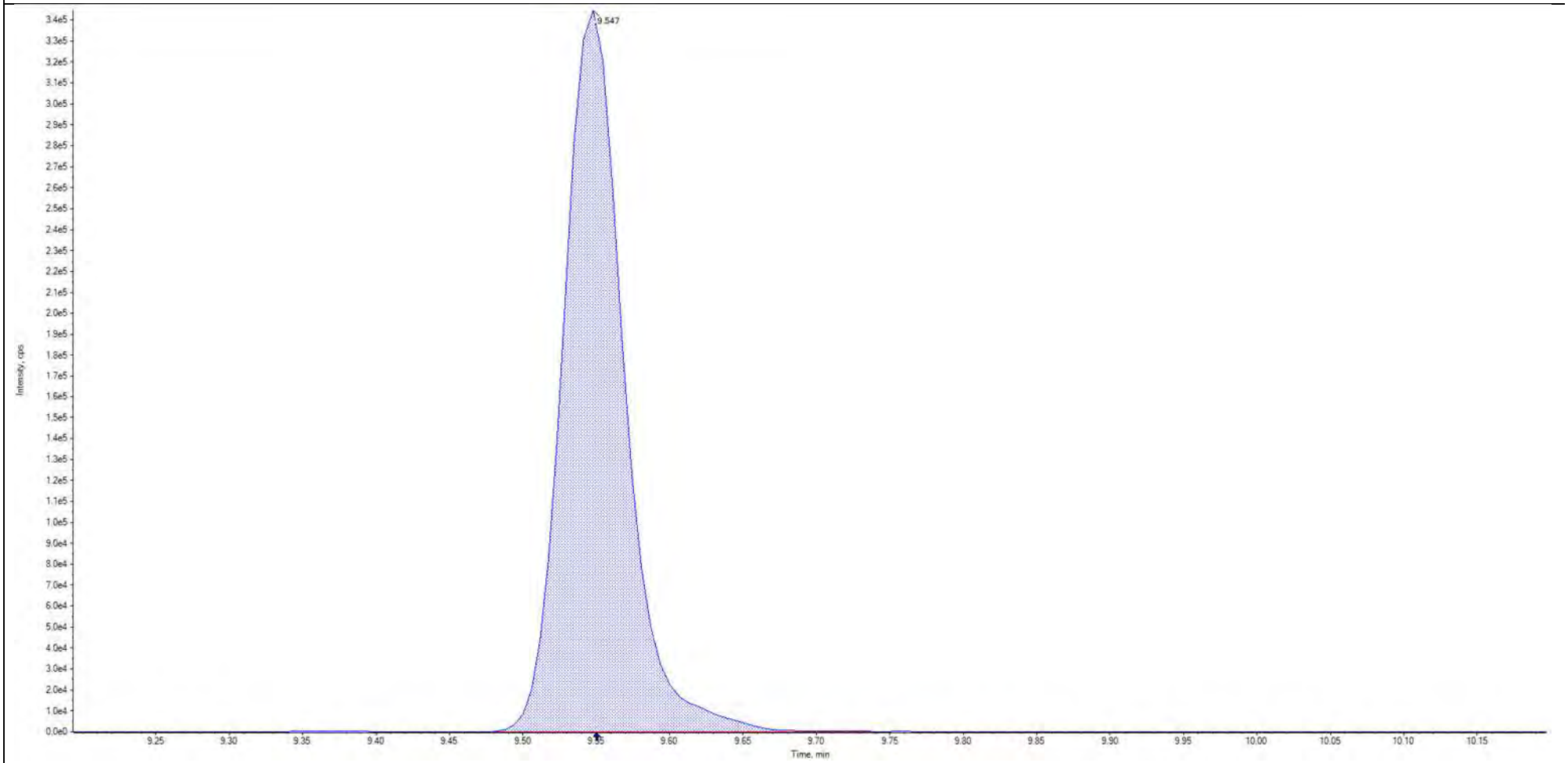
13C2-6:2FTS
Sample: IA1633STD-1.25



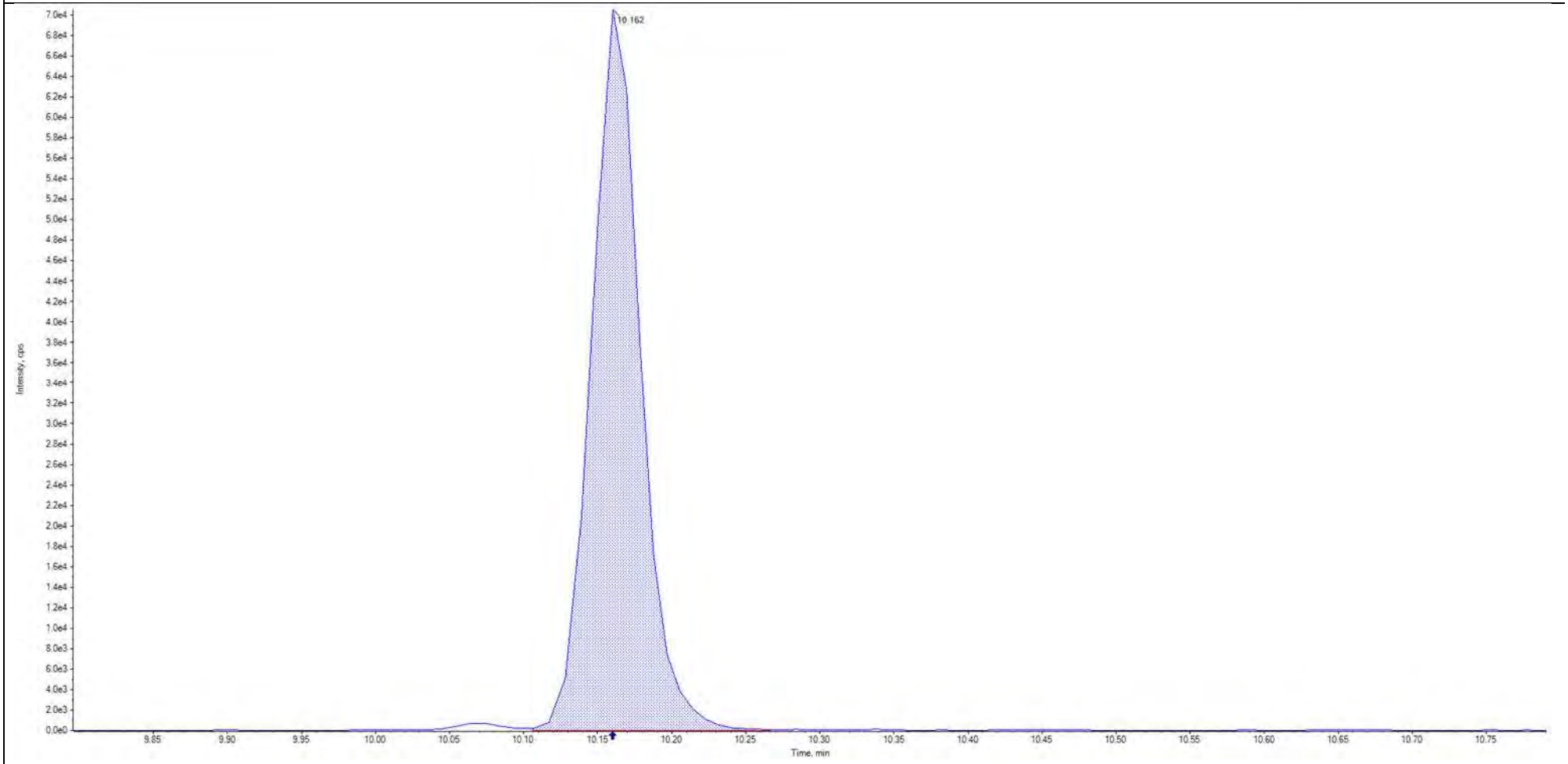
13C2-8:2FTS
Sample: IA1633STD-1.25



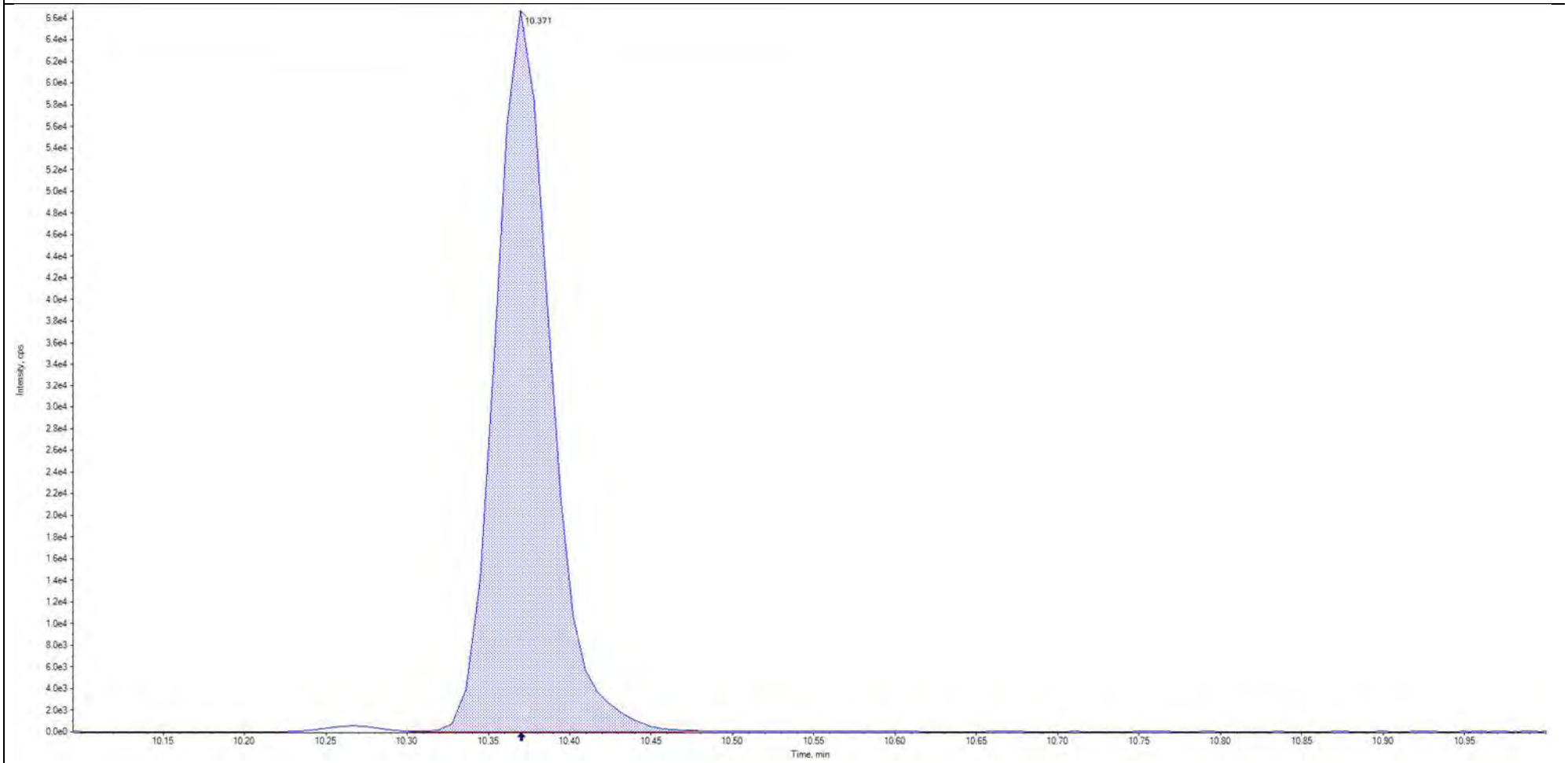
13C8-PFOSA
Sample: IA1633STD-1.25



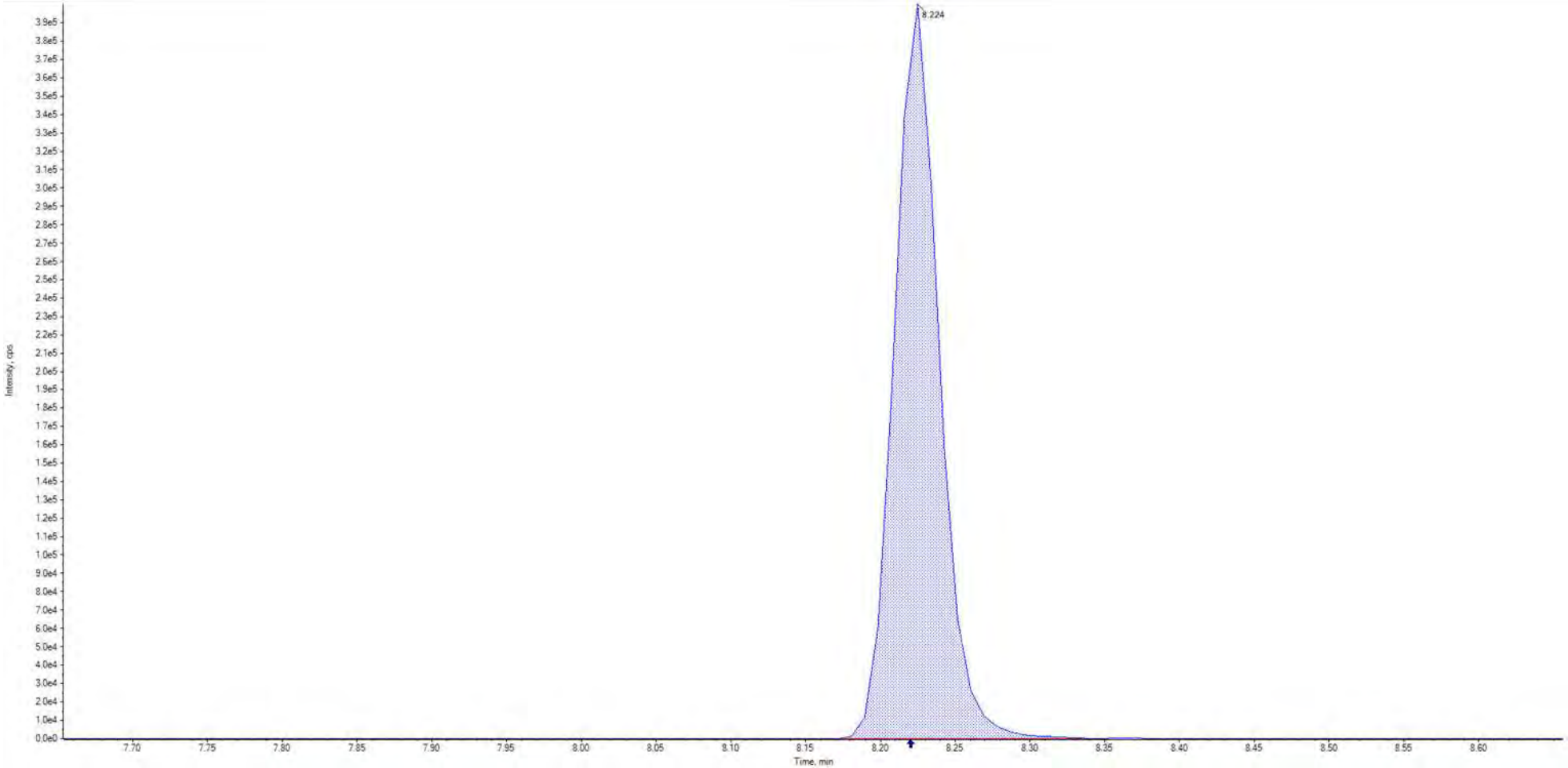
d3-NMeFOSA
Sample: IA1633STD-1.25



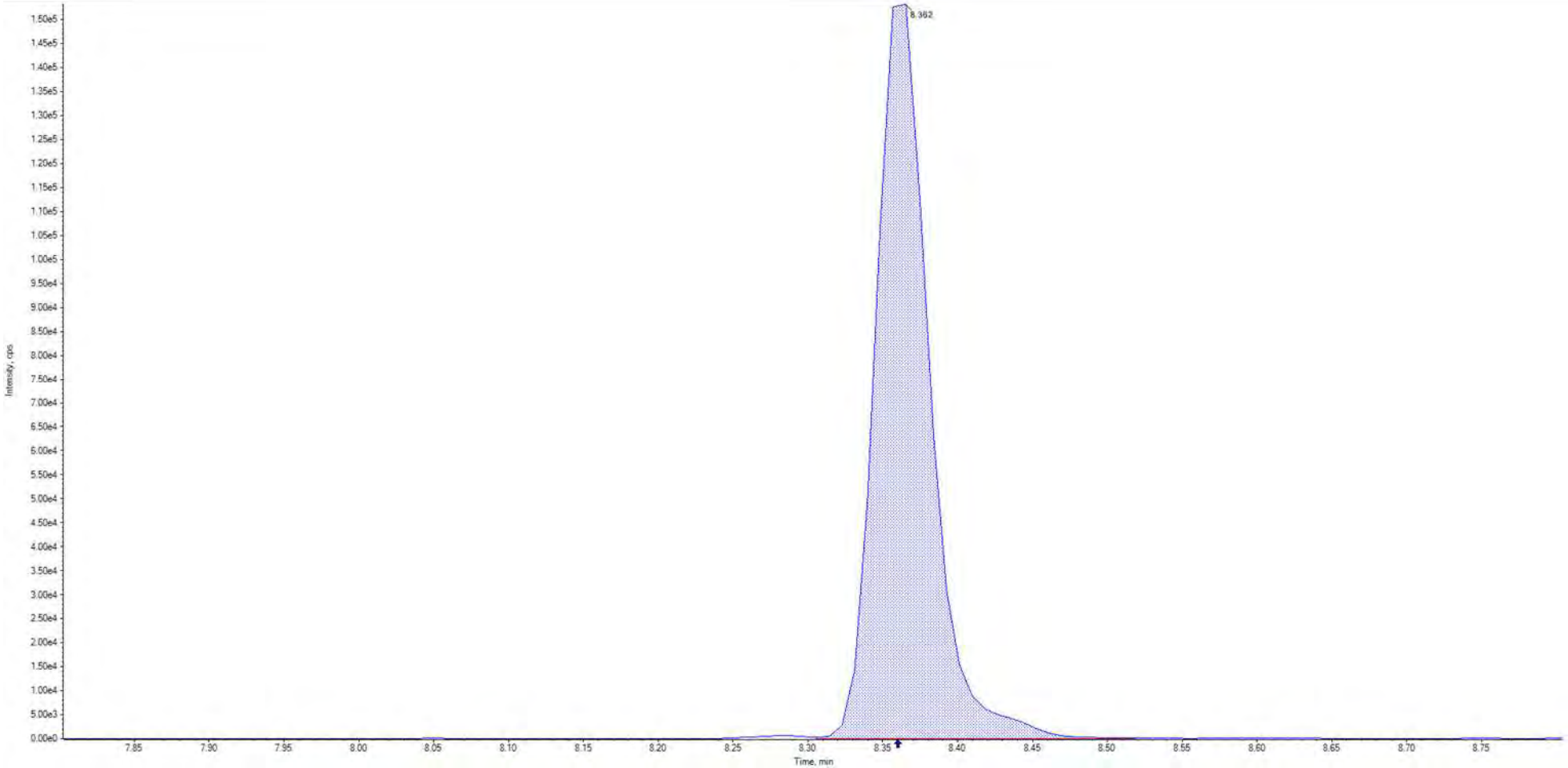
d5-NEtFOSA
Sample: IA1633STD-1.25



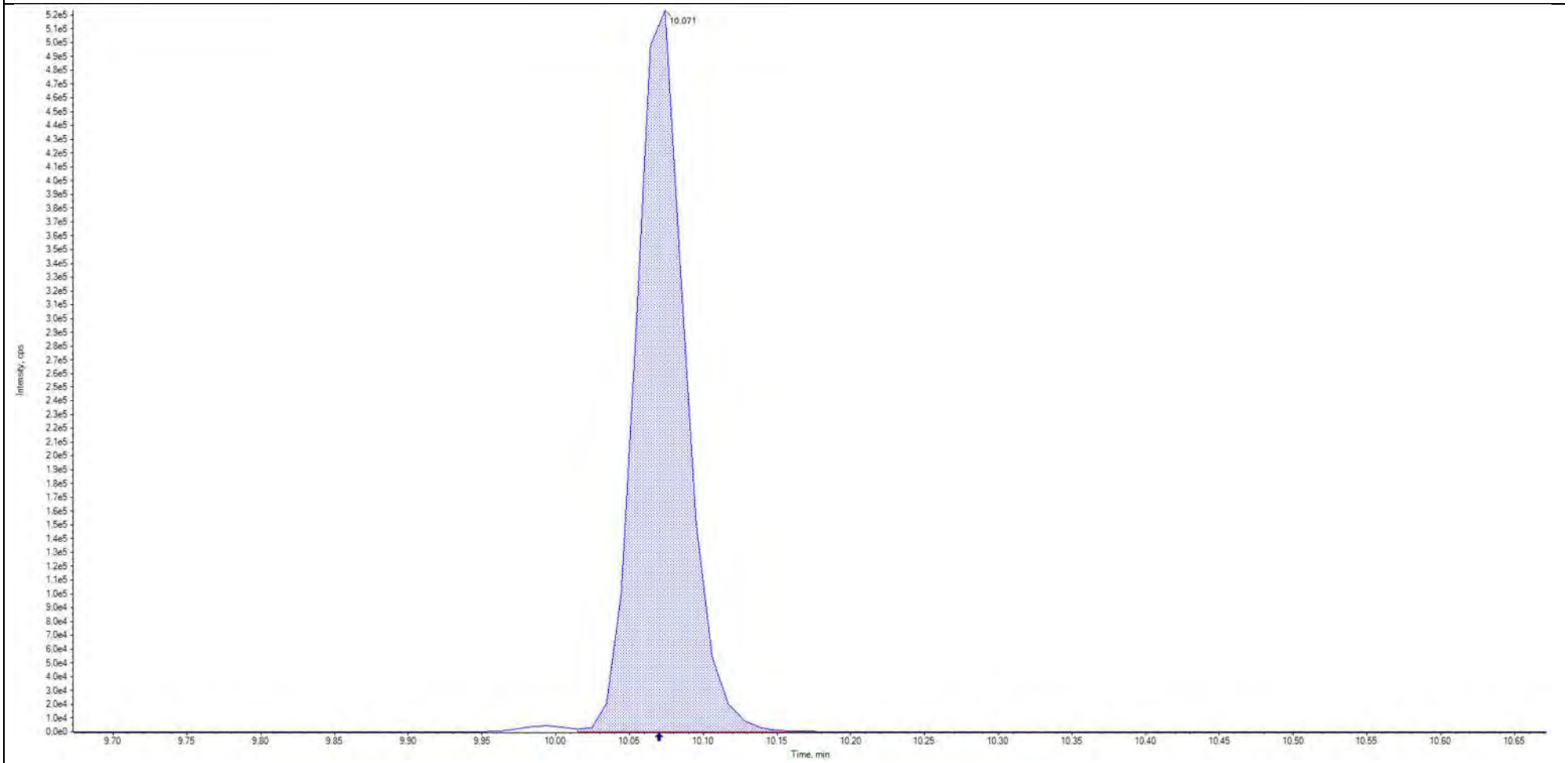
d3-NMeFOSAA
Sample: IA1633STD-1.25



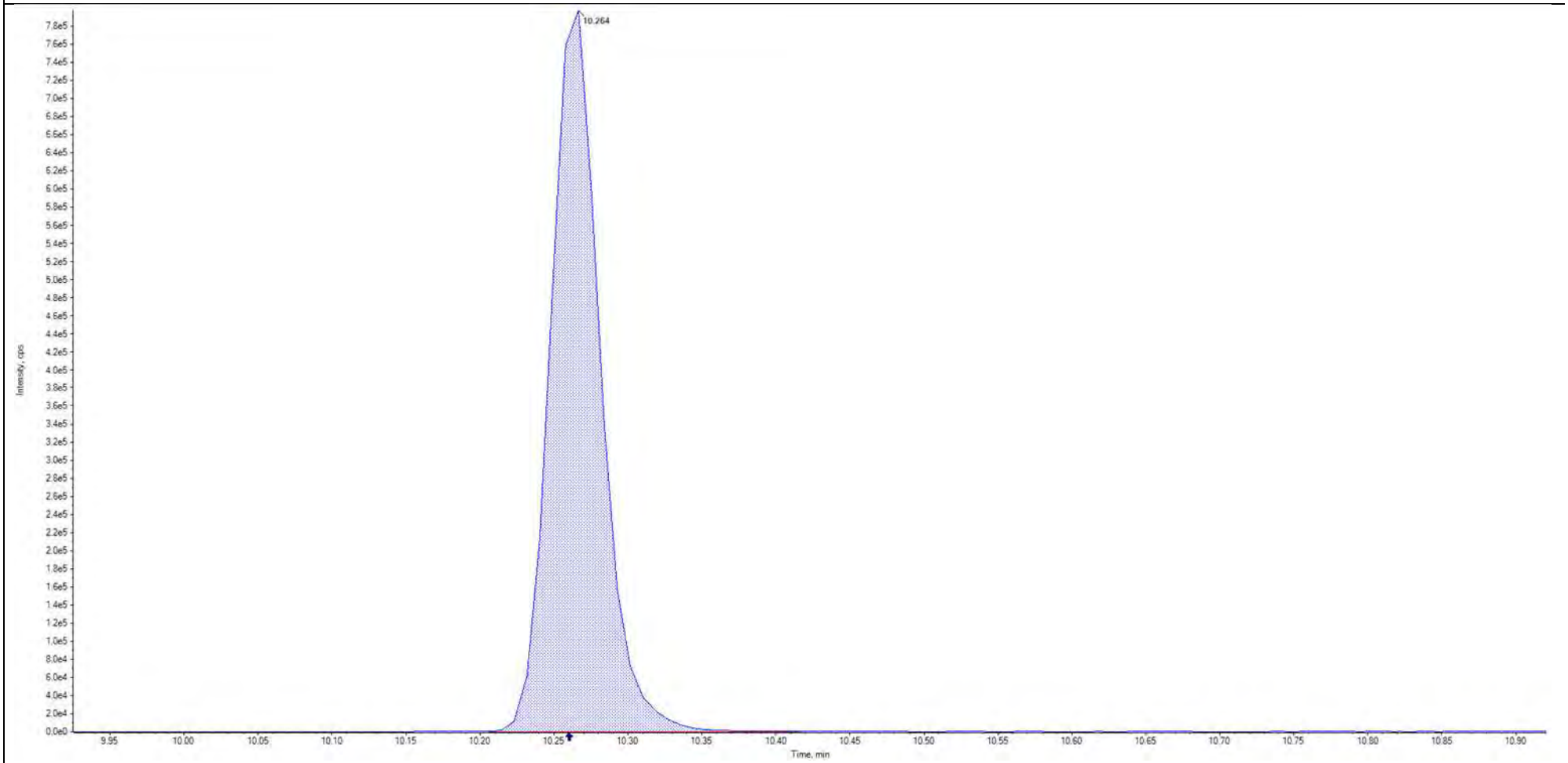
d5-NEtFOSAA
Sample: IA1633STD-1.25



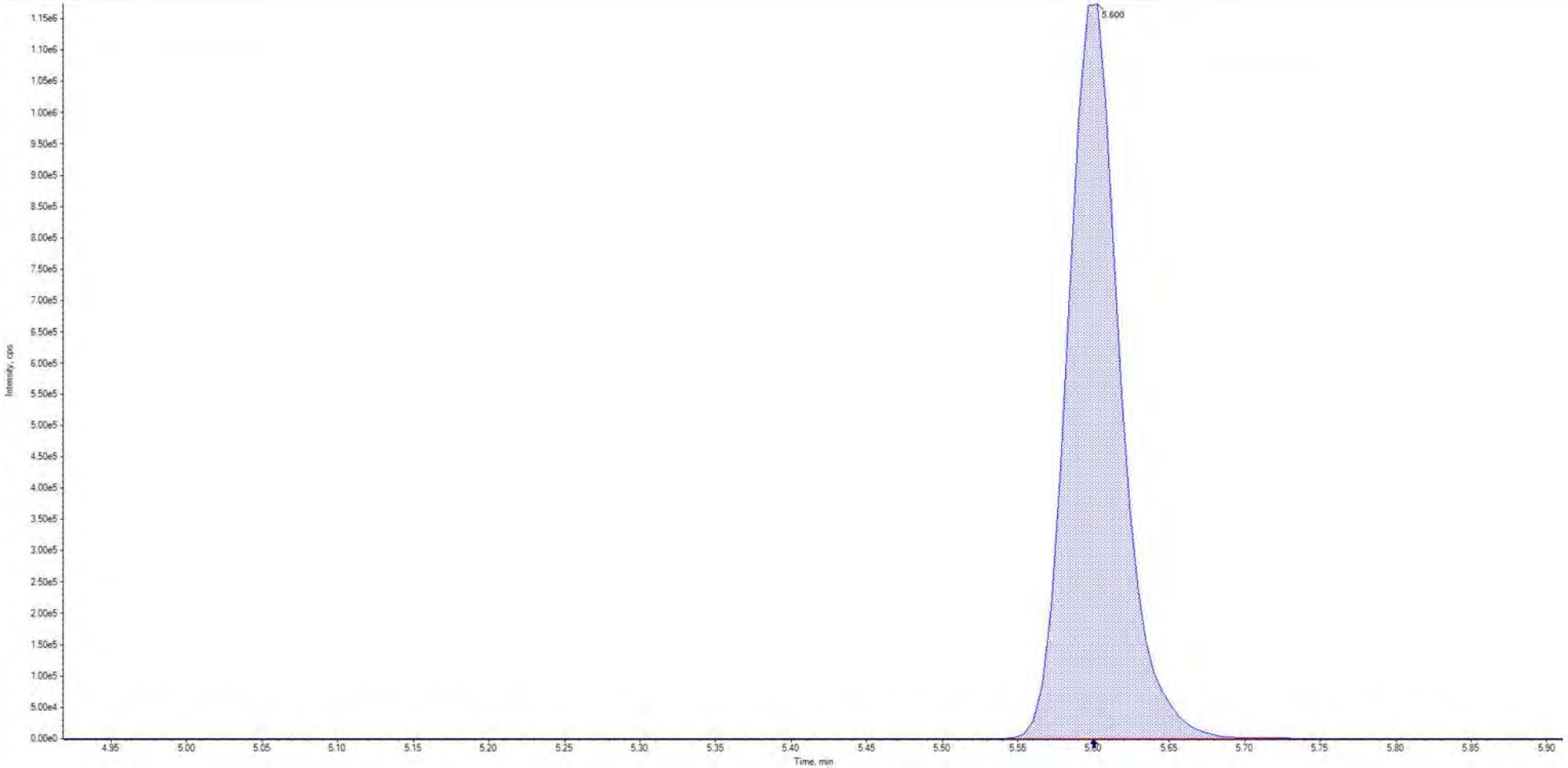
d7-NMeFOSE
Sample: IA1633STD-1.25



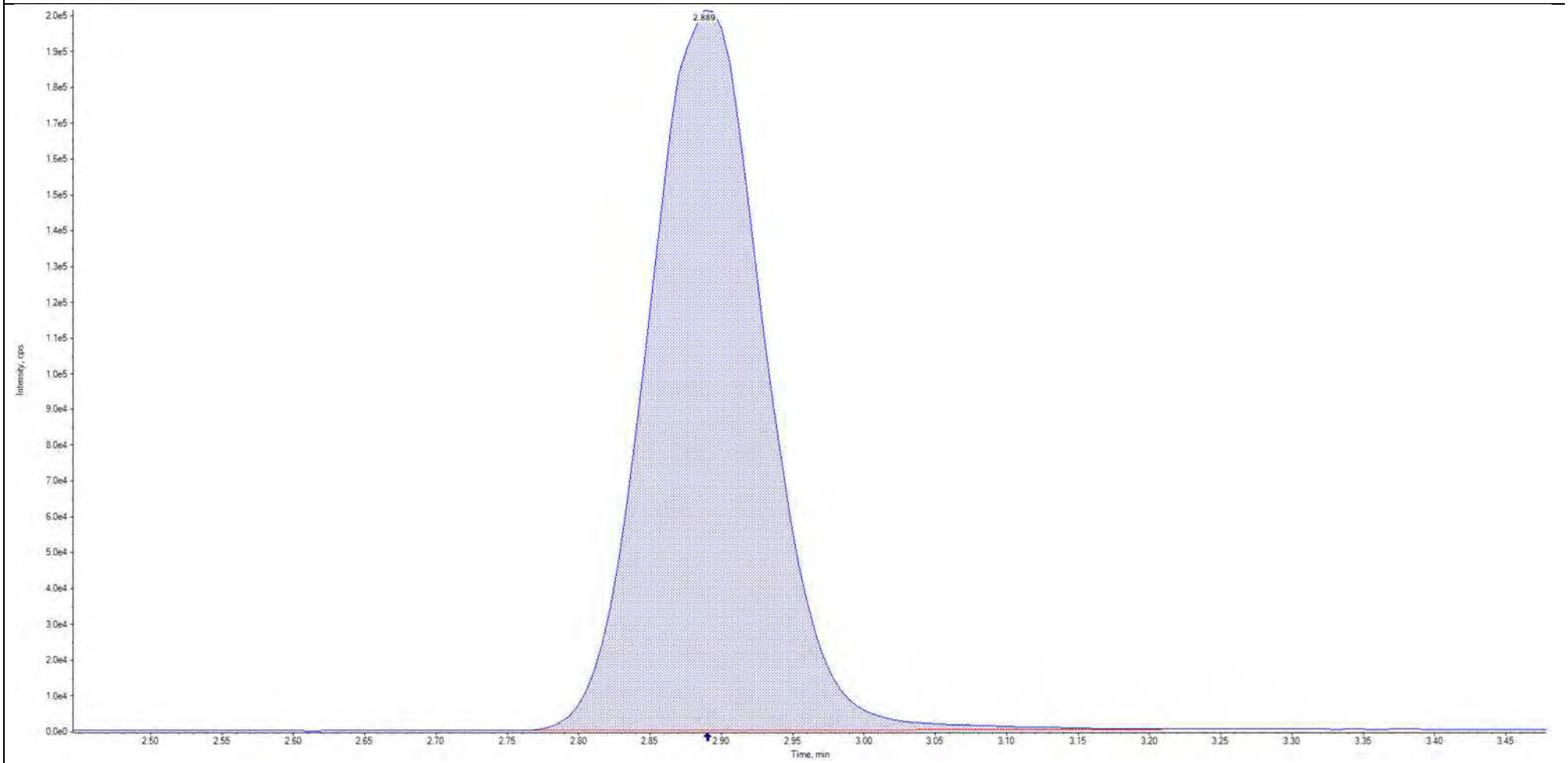
d9-NEtFOSE
Sample: IA1633STD-1.25



13C3-HFPO-DA
Sample: IA1633STD-1.25

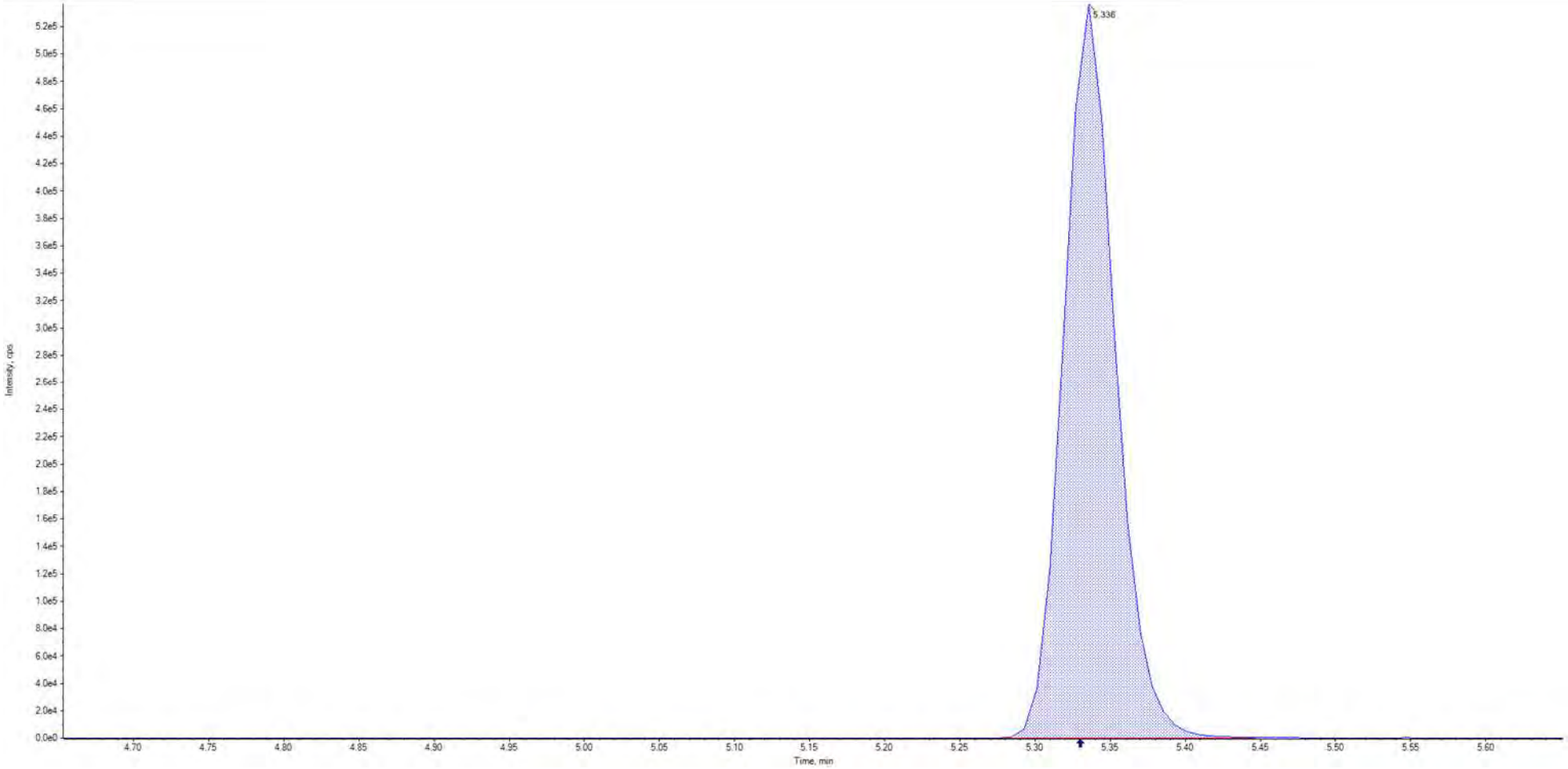


13C3-PFBA
Sample: IA1633STD-1.25

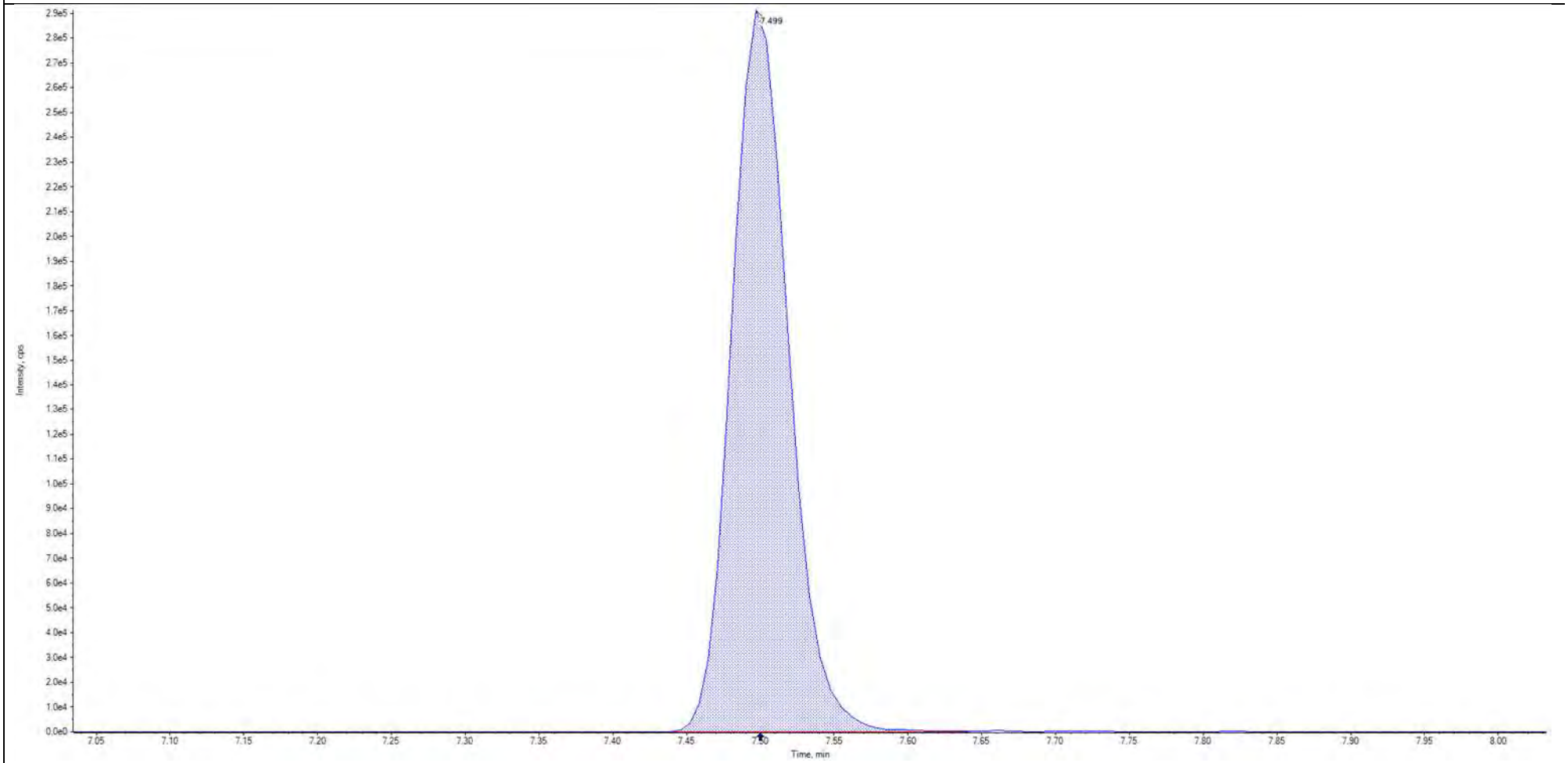


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_74.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

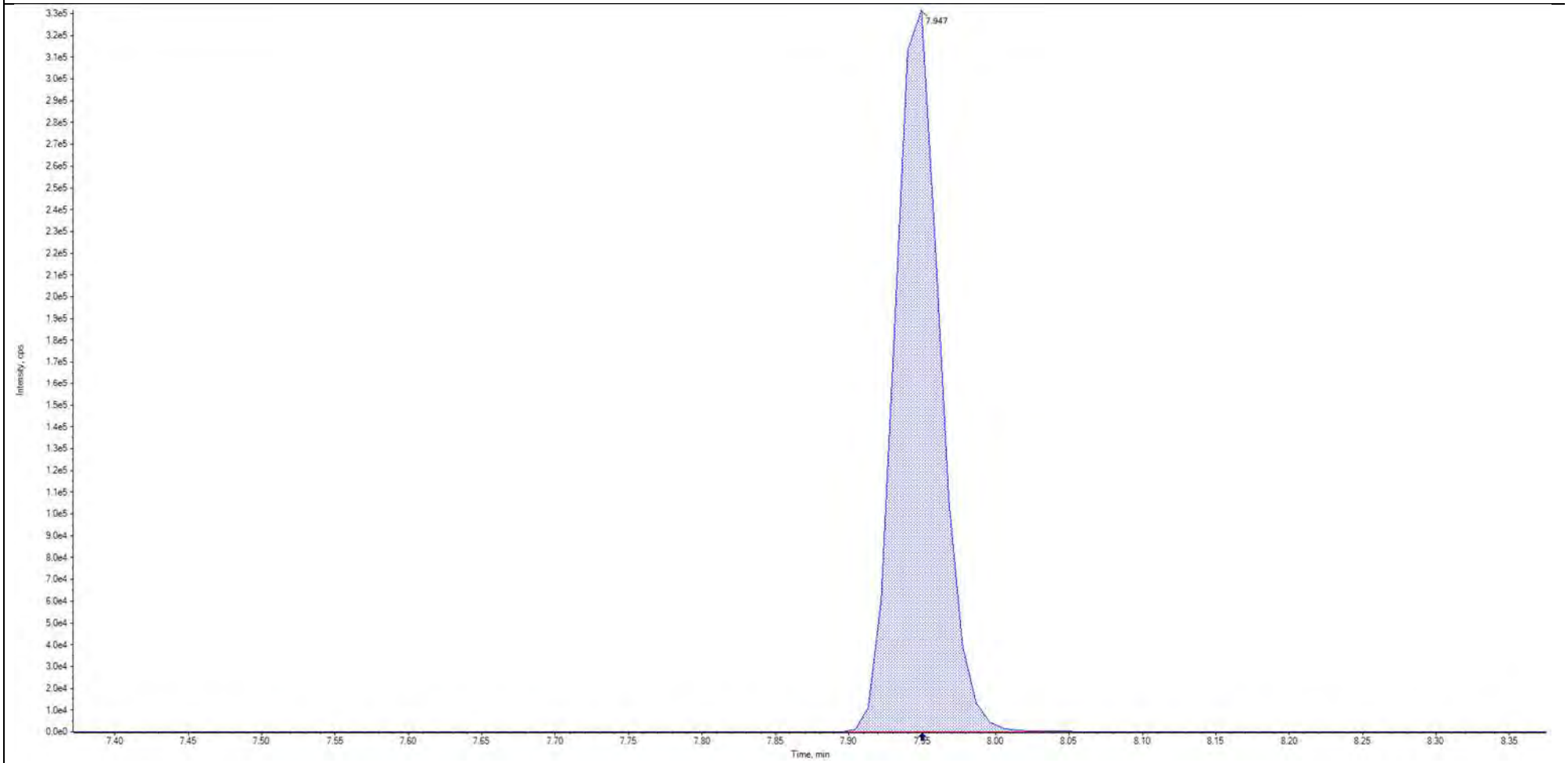
13C2-PFHxA
Sample: IA1633STD-1.25



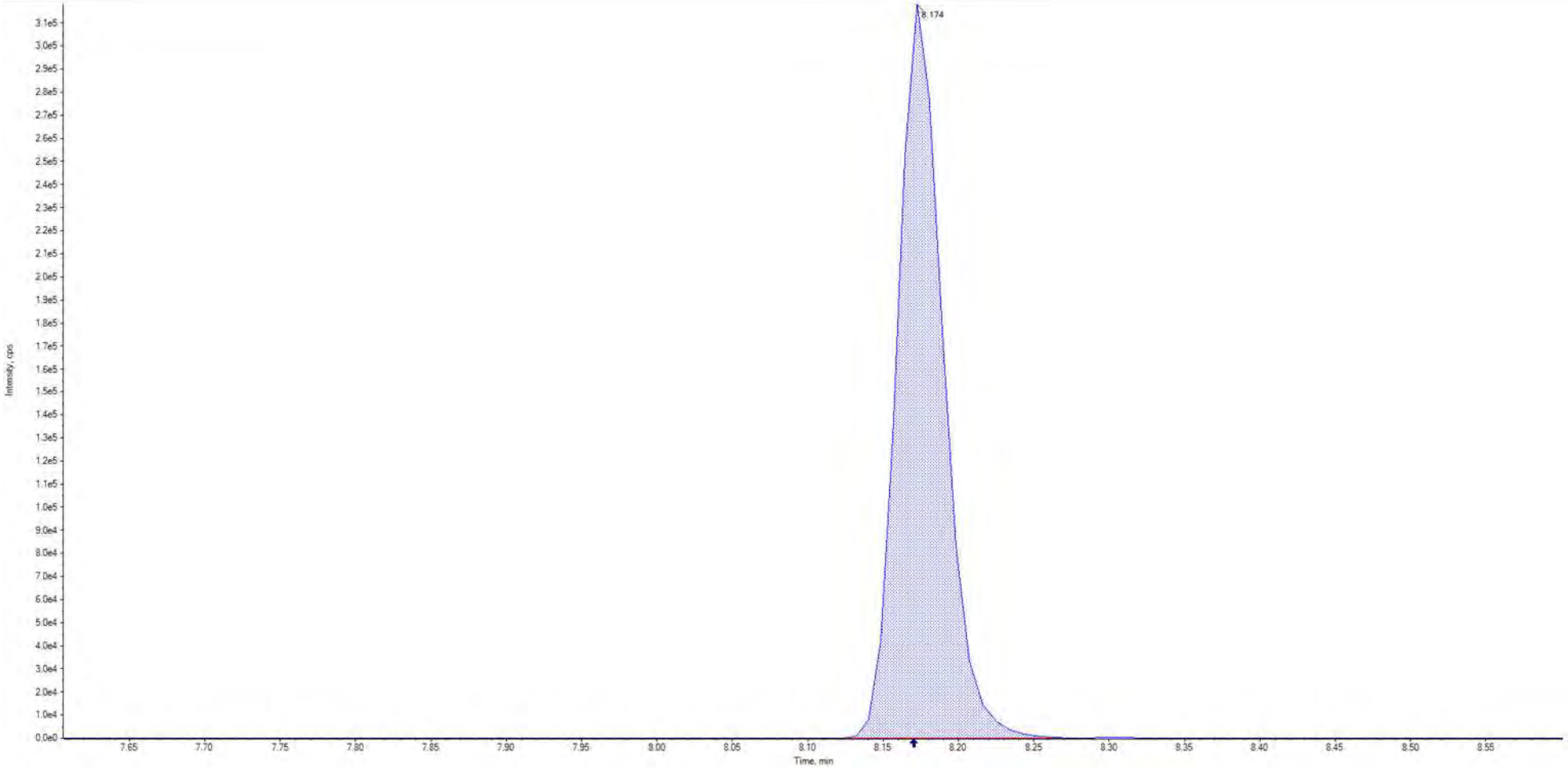
13C4-PFOA
Sample: IA1633STD-1.25



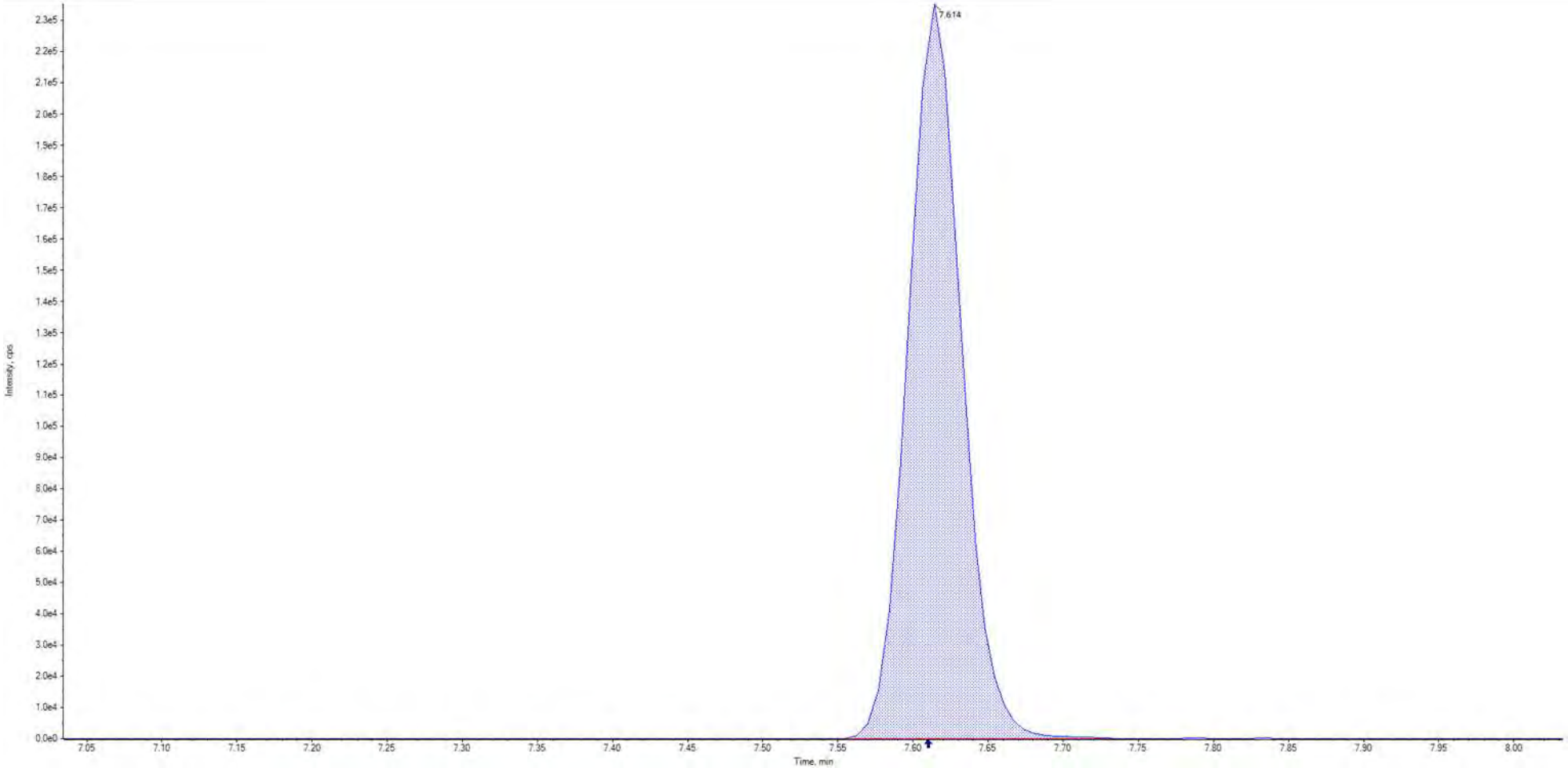
13C5-PFNA
Sample: IA1633STD-1.25



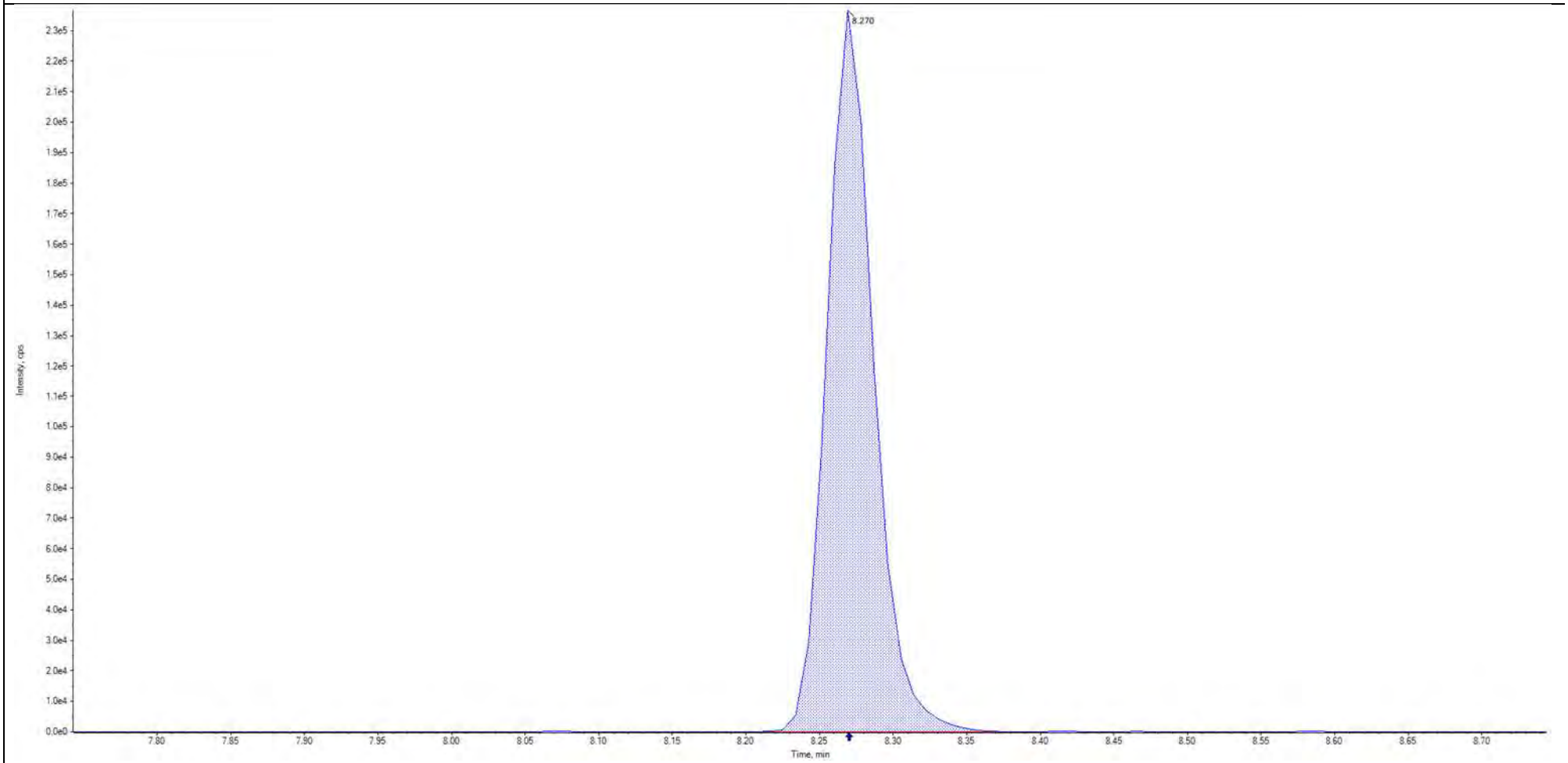
13C2-PFDA
Sample: IA1633STD-1.25



18O2-PFHxS
Sample: IA1633STD-1.25



13C4-PFOS
Sample: IA1633STD-1.25



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Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Method: EPA1633_NIS_CALC.qmethod
Calibration: 240813_1633_ICAL

ID: IA1633STD-2.5
Name: SCI05_240813_75.wiff
Date & Time: 2024-08-13T22:41:23
Description: WG1958909,,,25 ul EPA1633_240813_CAL
Instrument: Triple Quad 5500+
User: LCMS05:SL

LC/MS-MS Method:EPA_1633.dam

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
1	PFBA	375-22-4	2.90	213.0 / 169.0	2162387		9.947	N/A	N/A	N/A	99.5
2	PFPeA	2706-90-3	4.65	263.0 / 219.0	1580428		5.038	0.007	0.007	N/A	100.8
3	PFPeA_2	2706-90-3	4.65	263.0 / 68.9	10709		4.834	0.007	0.007	N/A	96.7
4	PFHxA	307-24-4	5.34	313.0 / 269.0	1354168		2.604	0.072	0.072	Pass	104.2
5	PFHxA_2	307-24-4	5.34	313.0 / 119.0	98060		2.552	0.072	0.072	Pass	102.1
6	PFHpA	375-85-9	6.25	363.1 / 319.0	1316642		2.551	0.297	0.297	Pass	102.0
7	PFHpA_2	375-85-9	6.25	363.1 / 169.0	390701		2.474	0.297	0.297	Pass	99.0

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
8	PFOA	335-67-1	7.50	413.1 / 369.1	762266	M5	2.268	0.586	0.586	Pass	90.7
9	PFOA_2	335-67-1	7.50	413.1 / 169.0	446873	M7	2.427	0.586	0.586	Pass	97.1
10	PFNA	375-95-1	7.95	462.8 / 418.9	1108082	M5	2.632	0.313	0.313	Pass	105.3
11	PFNA_2	375-95-1	7.95	462.8 / 218.9	347374	M7	2.700	0.313	0.313	Pass	108.0
12	PFDA	335-76-2	8.18	513.1 / 469.1	1298863		2.600	0.142	0.142	Pass	104.0
13	PFDA_2	335-76-2	8.18	513.1 / 219.0	184274		2.461	0.142	0.142	Pass	98.5
14	PFUnA	2058-94-8	8.48	563.1 / 519.1	954021		2.537	0.194	0.194	Pass	101.5
15	PFUnA_2	2058-94-8	8.47	563.1 / 269.0	184873		2.538	0.194	0.194	Pass	101.5
16	PFDoA	307-55-1	8.91	613.1 / 569.1	1010590		2.665	0.167	0.167	Pass	106.6
17	PFDoA_2	307-55-1	8.91	613.1 / 319.0	168406	M7	2.629	0.167	0.167	Pass	105.2
18	PFTrDA	72629-94-8	9.51	663.1 / 619.1	588063		2.602	0.228	0.228	Pass	104.1
19	PFTrDA_2	72629-94-8	9.51	663.1 / 169.0	134166		2.666	0.228	0.228	Pass	106.6
20	PFTeDA	376-06-7	9.91	713.1 / 669.1	1023758		2.564	0.137	0.137	Pass	102.6
21	PFTeDA_2	376-06-7	9.91	713.1 / 169.0	140417		2.571	0.137	0.137	Pass	102.8
22	PFBS	375-73-5	5.32	299.1 / 80.1	786438		2.197	0.396	0.396	Pass	99.1

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
23	PFBS_2	375-73-5	5.32	299.1 / 99.1	311660		2.184	0.396	0.396	Pass	98.5
24	PFPeS	2706-91-4	6.34	349.1 / 80.1	680161		2.315	0.299	0.299	Pass	98.4
25	PFPeS_2	2706-91-4	6.34	349.1 / 99.1	203357		2.295	0.299	0.299	Pass	97.6
26	PFHxS	355-46-4	7.62	399.1 / 80.1	599989	M5	2.182	0.315	0.315	Pass	95.5
27	PFHxS_2	355-46-4	7.62	399.1 / 99.1	188915	M7	2.212	0.315	0.315	Pass	96.8
28	PFHpS	375-92-8	8.02	449.1 / 80.1	649407		2.251	0.287	0.287	Pass	94.5
29	PFHpS_2	375-92-8	8.02	449.1 / 99.1	186612		2.207	0.287	0.287	Pass	92.6
30	PFOS	1763-23-1	8.28	499.1 / 80.1	668069	M5	2.175	0.238	0.238	Pass	93.8
31	PFOS_2	1763-23-1	8.28	499.1 / 99.1	159239		2.116	0.238	0.238	Pass	91.2
32	PFNS	68259-12-1	8.63	549.1 / 80.1	452953		2.297	0.301	0.301	Pass	95.5
33	PFNS_2	68259-12-1	8.63	549.1 / 99.1	136274		2.282	0.301	0.301	Pass	94.9
34	PFDS	335-77-3	9.15	599.1 / 80.1	450279		2.318	0.275	0.275	Pass	96.1
35	PFDS_2	335-77-3	9.15	599.1 / 99.1	123991		2.315	0.275	0.275	Pass	96.0
36	PFDoS	79780-39-5	10.01	699.2 / 80.1	418271		2.351	0.274	0.274	Pass	96.9
37	PFDoS_2	79780-39-5	10.01	699.2 / 99.1	114567		2.343	0.274	0.274	Pass	96.6

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
38	4:2FTS	757124-72-4	5.14	327.1 / 307.1	1152996		9.319	0.516	0.516	Pass	99.4
39	4:2FTS_2	757124-72-4	5.14	327.1 / 81.1	595028		8.990	0.516	0.516	Pass	95.9
40	6:2FTS	27619-97-2	7.09	427.2 / 407.2	731187		9.739	0.565	0.565	Pass	102.5
41	6:2FTS_2	27619-97-2	7.09	427.2 / 81.1	413179		10.175	0.565	0.565	Pass	107.1
42	8:2FTS	39108-34-4	8.07	527.2 / 507.2	910884		10.101	0.662	0.662	Pass	105.2
43	8:2FTS_2	39108-34-4	8.08	527.2 / 81.1	602827		9.855	0.662	0.662	Pass	102.7
44	PFOSA	754-91-6	9.55	498.1 / 78.1	658264	M5	2.436	0.025	0.025	Pass	97.4
45	PFOSA_2	754-91-6	9.55	498.1 / 478.0	16621	M7	2.344	0.025	0.025	Pass	93.8
46	NMeFOSA	31506-32-8	10.17	512.2 / 219.0	173879	M5	2.432	1.551	1.551	Pass	97.3
47	NMeFOSA_2	31506-32-8	10.13	512.2 / 169.0	269745	M7	2.435	1.551	1.551	Pass	97.4
48	NEtFOSA	4151-50-2	10.38	526.2 / 219.0	181221	M5	2.568	1.285	1.285	Pass	102.7
49	NEtFOSA_2	4151-50-2	10.35	526.2 / 169.0	232853	M7	2.465	1.285	1.285	Pass	98.6
50	NMeFOSAA	2355-31-9	8.23	570.2 / 419.1	231441		2.512	0.700	0.700	Pass	100.5
51	NMeFOSAA_2	2355-31-9	8.23	570.2 / 483.0	162094		2.767	0.700	0.700	Pass	110.7
52	NEtFOSAA	2991-50-6	8.37	584.2 / 419.1	180301		2.390	0.487	0.487	Pass	95.6

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
53	NEtFOSAA_2	2991-50-6	8.37	584.2 / 526.2	87877	M7	2.531	0.487	0.487	Pass	101.2
54	NMeFOSE	24448-09-7	10.08	616.1 / 58.9	2982647	M5	23.445	N/A	N/A	N/A	93.8
55	NEtFOSE	1691-99-2	10.28	630.0 / 58.9	5649756	M5	25.889	N/A	N/A	N/A	103.6
56	HFPO-DA	13252-13-6	5.60	285.0 / 169.0	2739320		9.873	0.464	0.464	Pass	98.7
57	HFPO-DA_2	13252-13-6	5.60	285.0 / 184.9	1271247		9.853	0.464	0.464	Pass	98.5
58	ADONA	919005-14-4	6.72	377.1 / 251.0	5872996		9.307	0.634	0.634	Pass	98.5
59	ADONA_2	919005-14-4	6.72	377.1 / 84.8	3723629		9.120	0.634	0.634	Pass	96.5
60	9Cl-PF3ONS	756426-58-1	8.50	530.8 / 351.1	6066657		9.751	0.322	0.322	Pass	104.3
61	9Cl-PF3ONS_2	756426-58-1	8.50	532.8 / 353.0	1953306		9.641	0.322	0.322	Pass	103.1
62	11Cl-PF3OUdS	763051-92-9	9.58	630.9 / 451.0	3680248		9.365	0.331	0.331	Pass	99.1
63	11Cl-PF3OUdS_2	763051-92-9	9.58	632.9 / 452.9	1217458		9.205	0.331	0.331	Pass	97.4
64	3:3FTCA	356-02-5	4.92	241.1 / 177.1	330654		12.151	1.074	1.074	Pass	97.2
65	3:3FTCA_2	356-02-5	4.91	241.1 / 117.0	355004		13.026	1.074	1.074	Pass	104.2
66	5:3FTCA	914637-49-3	7.16	341.1 / 237.1	6221772		65.945	0.953	0.953	Pass	105.5
67	5:3FTCA_2	914637-49-3	7.16	341.1 / 217.0	5928139		66.404	0.953	0.953	Pass	106.3

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
68	7:3FTCA	812-70-4	8.21	441.1 / 316.9	6248141		59.488	1.558	1.558	Pass	95.2
69	7:3FTCA_2	812-70-4	8.21	441.1 / 337.1	9732038		63.852	1.558	1.558	Pass	102.2
70	PFEESA	113507-82-7	5.71	315.1 / 135.0	4052494		4.491	0.087	0.087	Pass	100.9
71	PFEESA_2	113507-82-7	5.71	315.1 / 82.9	350780		4.500	0.087	0.087	Pass	101.1
72	PFMPA	377-73-1	3.85	229.0 / 85.0	186580		4.913	N/A	N/A	N/A	98.3
73	PFMBA	863090-89-5	4.88	279.0 / 85.0	2617337		5.112	N/A	N/A	N/A	102.2
74	NFDHA	151772-58-6	5.26	295.0 / 201.0	496414		5.226	0.910	0.910	Pass	104.5
75	NFDHA_2	151772-58-6	5.26	295.0 / 84.9	451759		5.188	0.910	0.910	Pass	103.8
76	TDCA	516-50-7	N/A	499.1 / 124.1	N/A		N/A	N/A	40.716	N/A	N/A
77	TDCA_2	516-50-7	N/A	499.1 / 79.9	N/A		N/A	N/A	40.716	N/A	N/A
78	13C2D4-4:2FTS	Surr	5.13	333.2 / 312.1	972080		5.120	N/A	N/A	N/A	102.4
79	13C2-PFOA	Surr	7.50	415.0 / 370.0	3484143		2.691	N/A	N/A	N/A	107.7

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C4-PFBA	EIS	2.89	217.0 / 172.0	2680753		10.491	NA	NA	NA	104.9

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C5-PFPeA	EIS	4.64	268.0 / 223.0	1701350		5.390	NA	NA	NA	107.8
	13C5-PFHxA	EIS	5.33	318.0 / 273.0	1067103		2.574	NA	NA	NA	102.9
	13C4-PFHpA	EIS	6.24	367.0 / 322.0	1101801		2.654	NA	NA	NA	106.2
	13C8-PFOA	EIS	7.50	421.0 / 376.0	1614994		2.763	NA	NA	NA	110.5
	13C9-PFNA	EIS	7.95	472.0 / 427.0	718933		1.276	NA	NA	NA	102.1
	13C6-PFDA	EIS	8.17	519.0 / 474.0	724541		1.271	NA	NA	NA	101.7
	13C7-PFUnA	EIS	8.47	570.0 / 525.0	594748		1.289	NA	NA	NA	103.1

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C2-PFDoA	EIS	8.91	615.1 / 570.0	364529		1.215	NA	NA	NA	97.2
	13C2-PFTeDA	EIS	9.91	715.1 / 670.1	398378		1.223	NA	NA	NA	97.8
	13C3-PFBS	EIS	5.31	302.1 / 80.1	853240		2.412	NA	NA	NA	103.5
	13C3-PFHxS	EIS	7.61	402.1 / 80.1	688783		2.452	NA	NA	NA	103.4
	13C8-PFOS	EIS	8.27	507.1 / 80.1	747787		2.603	NA	NA	NA	108.7
	13C2-4:2FTS	EIS	5.14	329.1 / 81.1	296089		4.690	NA	NA	NA	100.0
	13C2-6:2FTS	EIS	7.09	429.2 / 81.1	217608		4.704	NA	NA	NA	98.9
	13C2-8:2FTS	EIS	8.07	529.2 / 81.1	341529		5.044	NA	NA	NA	105.1

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C8-PFOSA	EIS	9.55	506.1 / 78.1	1010787		2.647	NA	NA	NA	105.9
	d3-NMeFOSA	EIS	10.16	515.2 / 219.0	166910		2.597	NA	NA	NA	103.9
	d5-NEtFOSA	EIS	10.37	531.2 / 219.0	160654		2.558	NA	NA	NA	102.3
	d3-NMeFOSAA	EIS	8.22	573.2 / 419.1	699978		4.817	NA	NA	NA	96.3
	d5-NEtFOSAA	EIS	8.36	589.3 / 419.1	404655		5.298	NA	NA	NA	106.0
	d7-NMeFOSE	EIS	10.07	623.2 / 58.9	1289212		25.969	NA	NA	NA	103.9
	d9-NEtFOSE	EIS	10.26	639.2 / 58.9	1859032		25.399	NA	NA	NA	101.6

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C3-HFPO-DA	EIS	5.60	287.0 / 169.0	3026681		11.015	NA	NA	NA	110.1
	13C3-PFBA	NIS	2.89	216.0 / 172.0	1117752		5.228	NA	NA	NA	104.6
	13C2-PFHxA	NIS	5.33	315.0 / 270.0	1231115		2.514	NA	NA	NA	100.6
	13C4-PFOA	NIS	7.50	417.0 / 372.0	764758		2.443	NA	NA	NA	97.7
	13C5-PFNA	NIS	7.95	468.0 / 423.0	686184		1.253	NA	NA	NA	100.2
	13C2-PFDA	NIS	8.17	515.1 / 470.1	669739		1.307	NA	NA	NA	104.6
	18O2-PFHxS	NIS	7.61	403.1 / 84.1	571036		2.437	NA	NA	NA	102.8
	13C4-PFOS	NIS	8.27	503.1 / 80.1	508107		2.413	NA	NA	NA	100.8

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	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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PFBA
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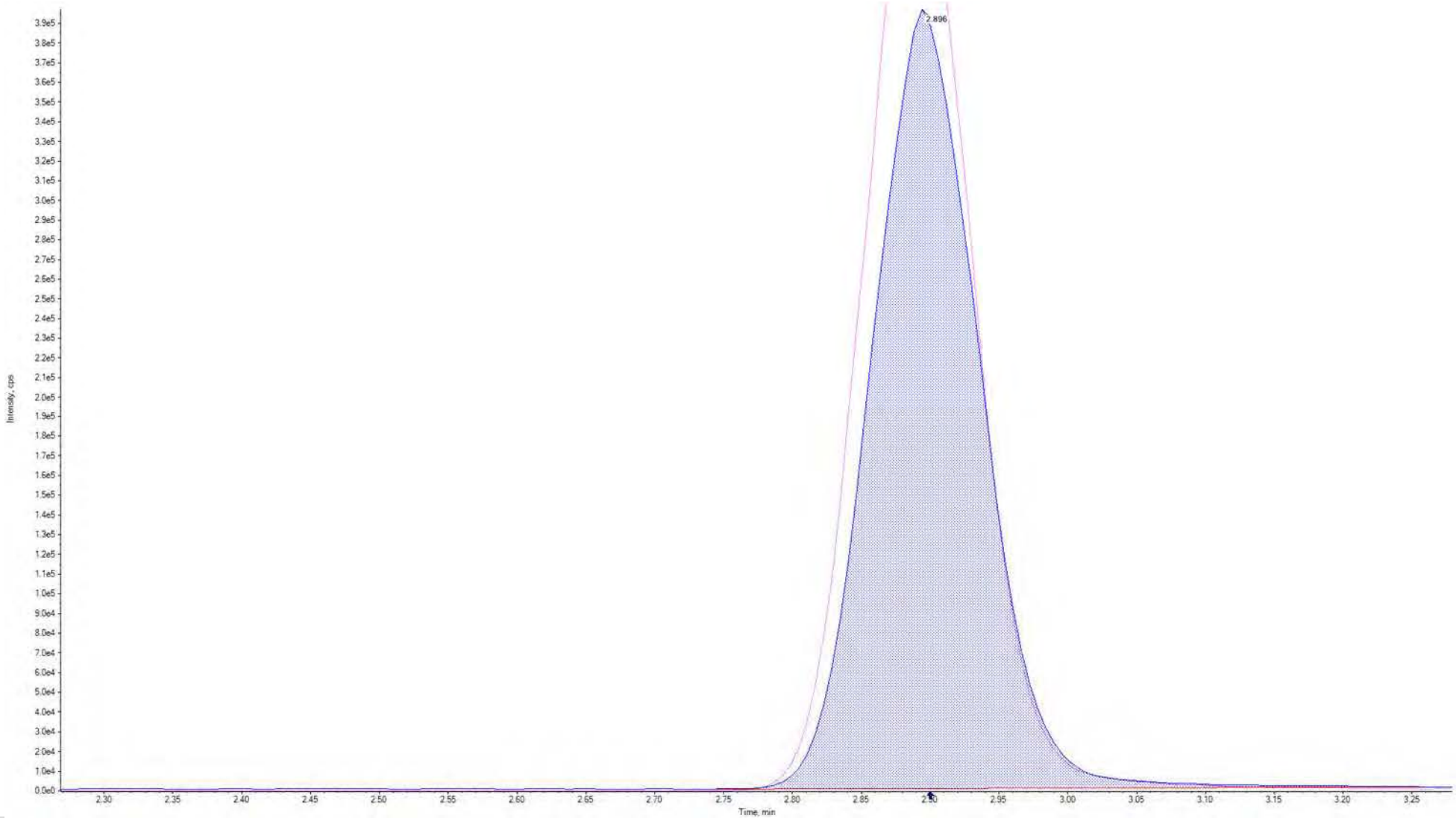

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PFPeA
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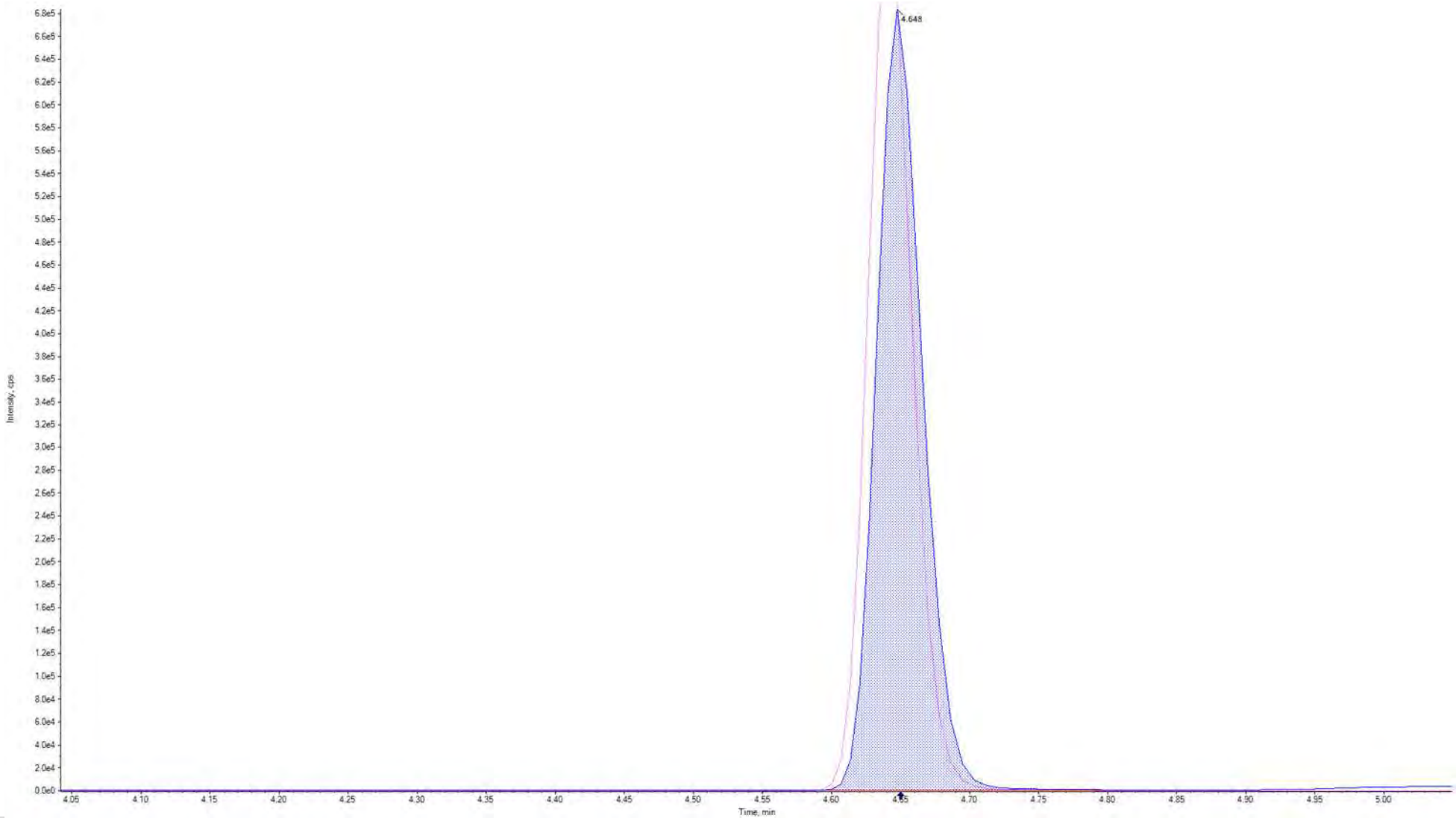

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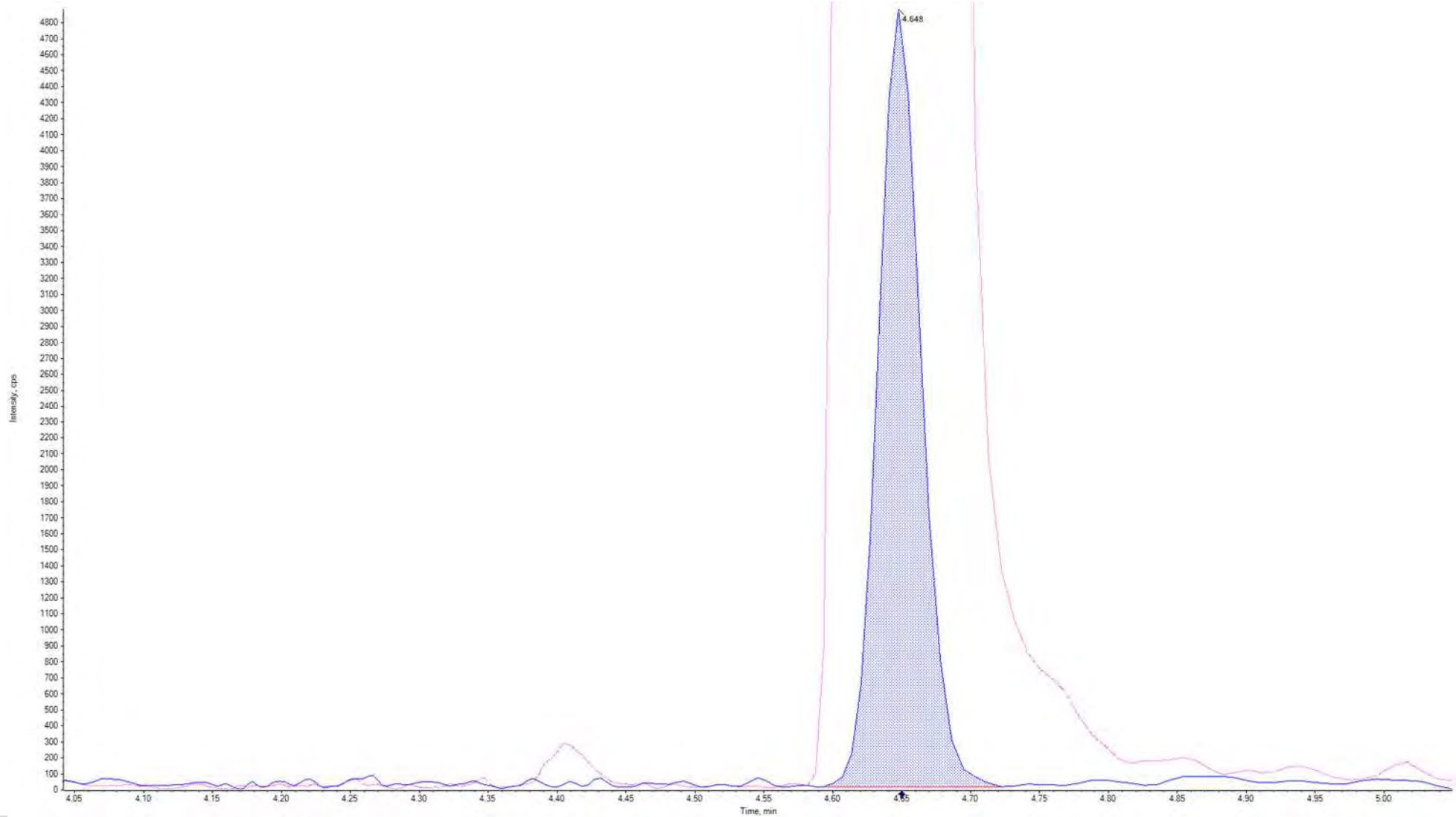
PFPeA_2
Sample: IA1633STD-2.5 S/N:740.2 Points Across peak:19



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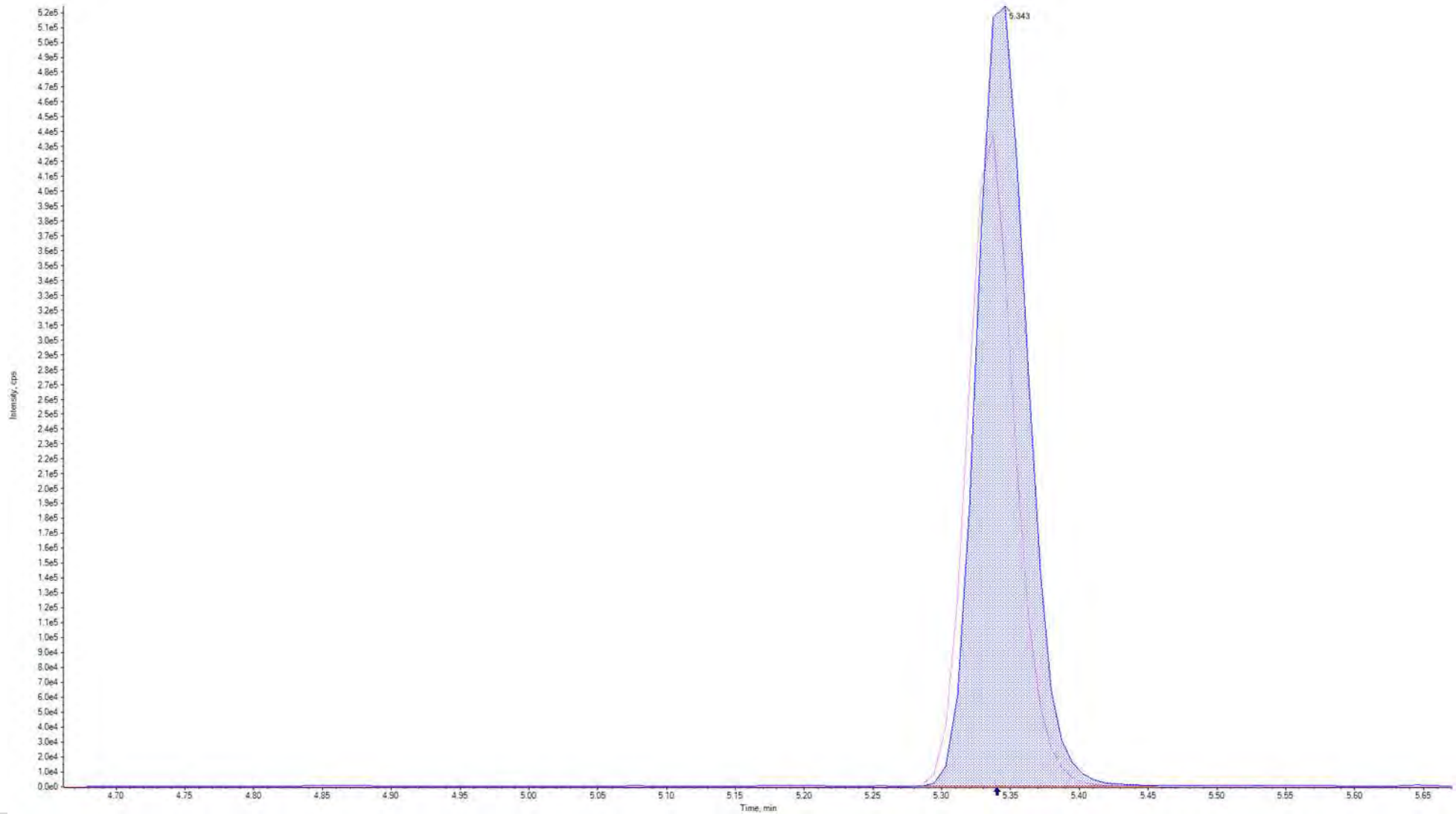
PFHxA
Sample: IA1633STD-2.5 S/N:1122.0 Points Across peak:23



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PFHxA_2
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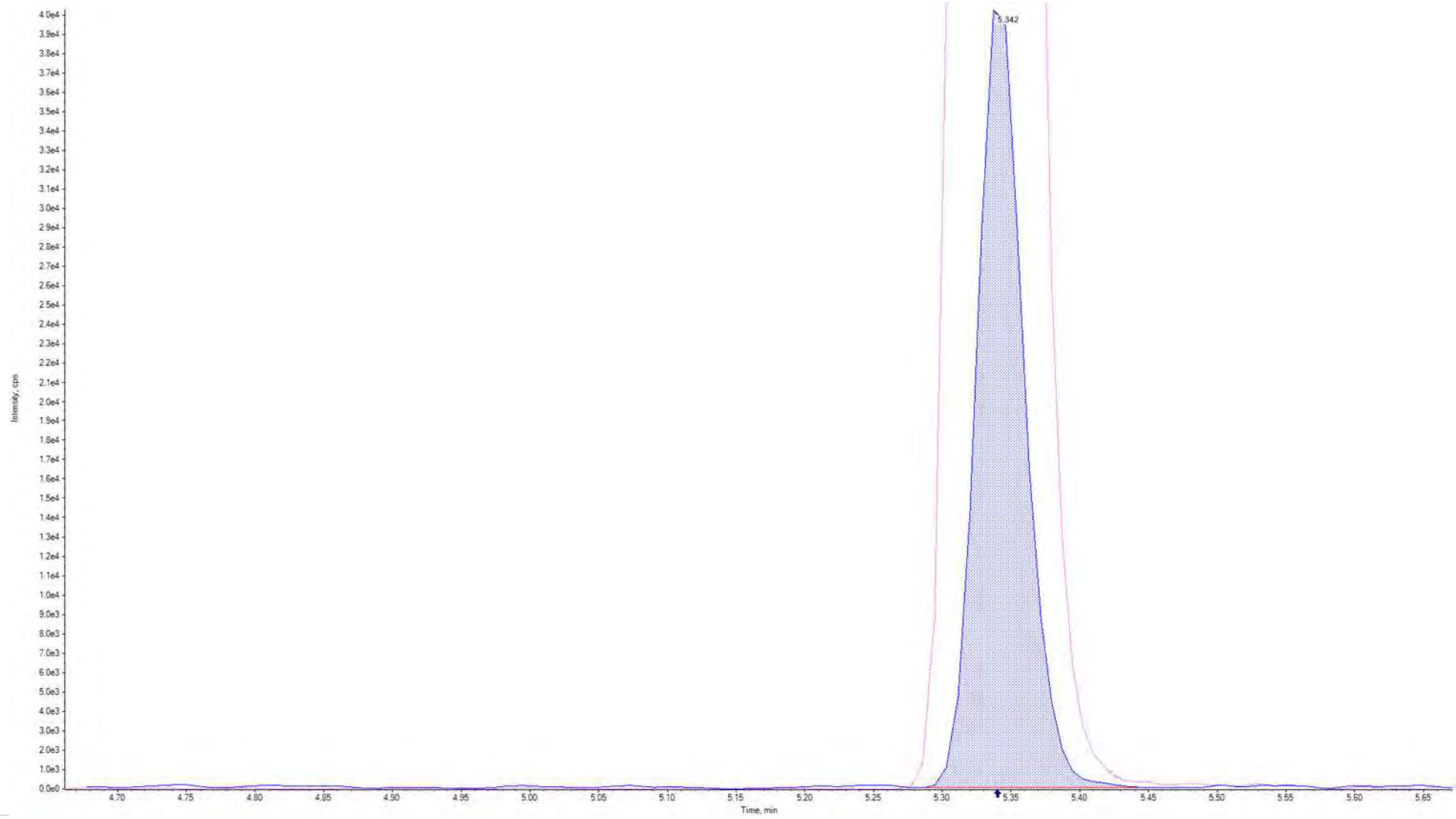

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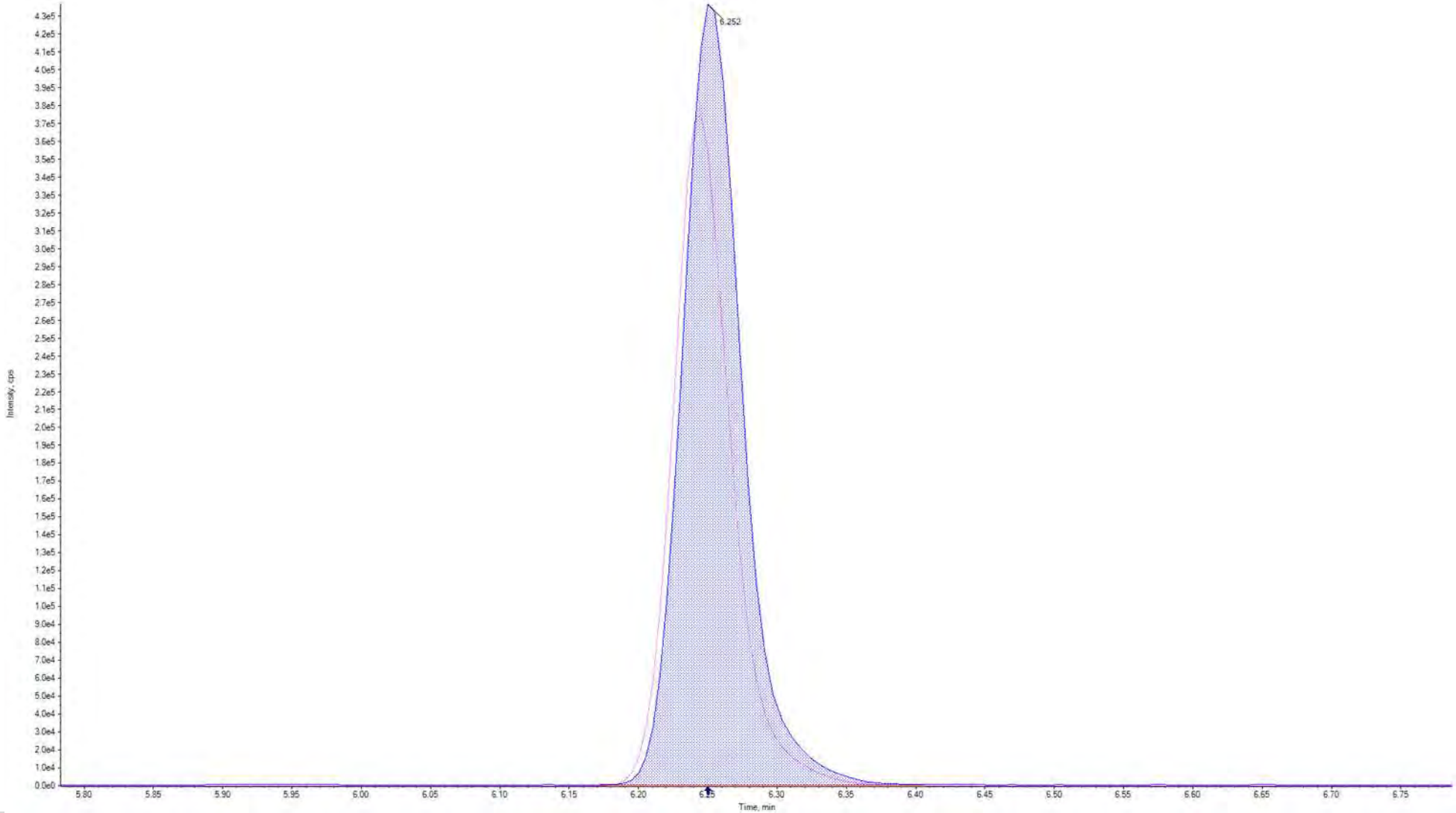
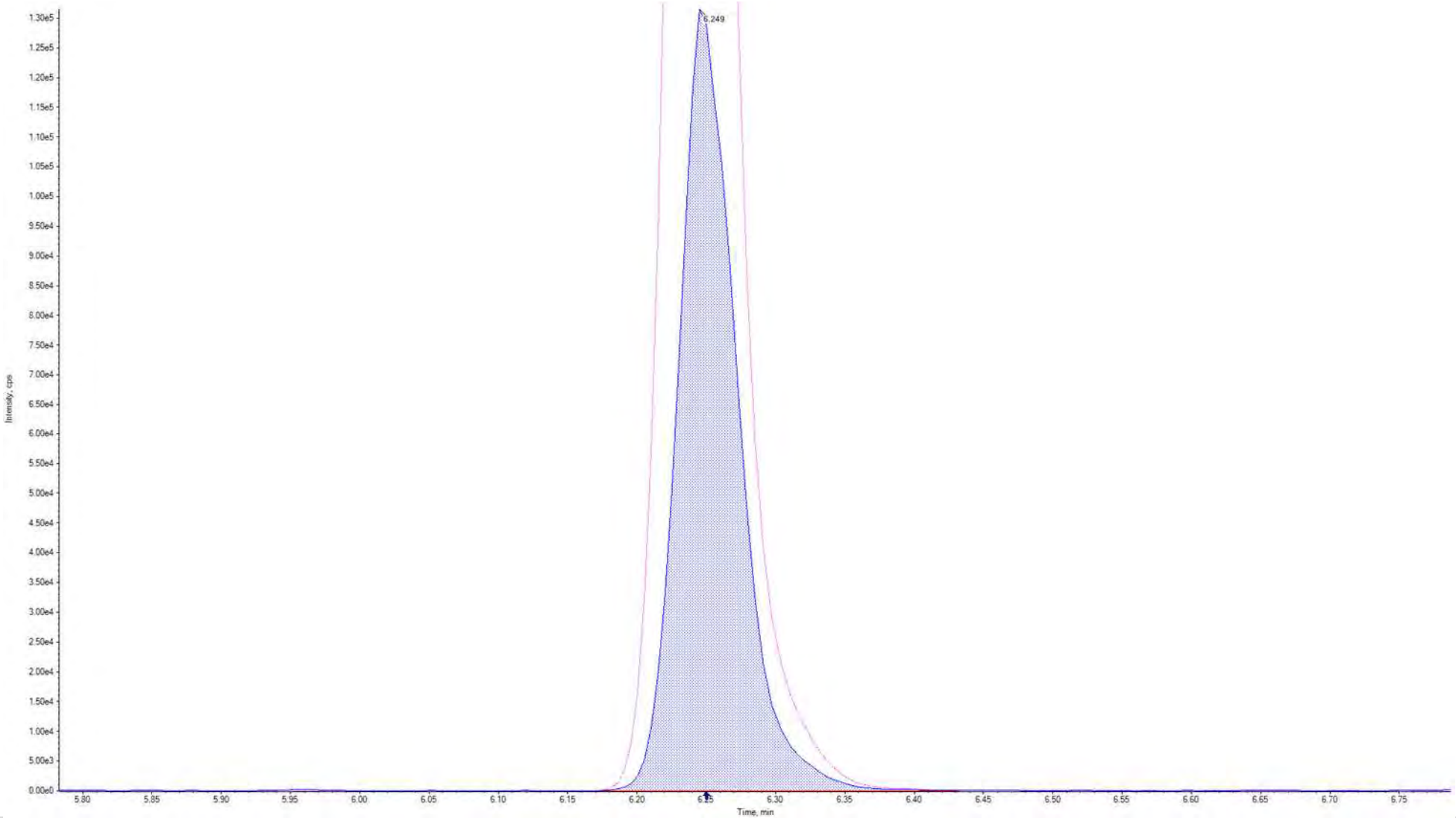
PFHpA
Sample: IA1633STD-2.5 S/N:2287.4 Points Across peak:42



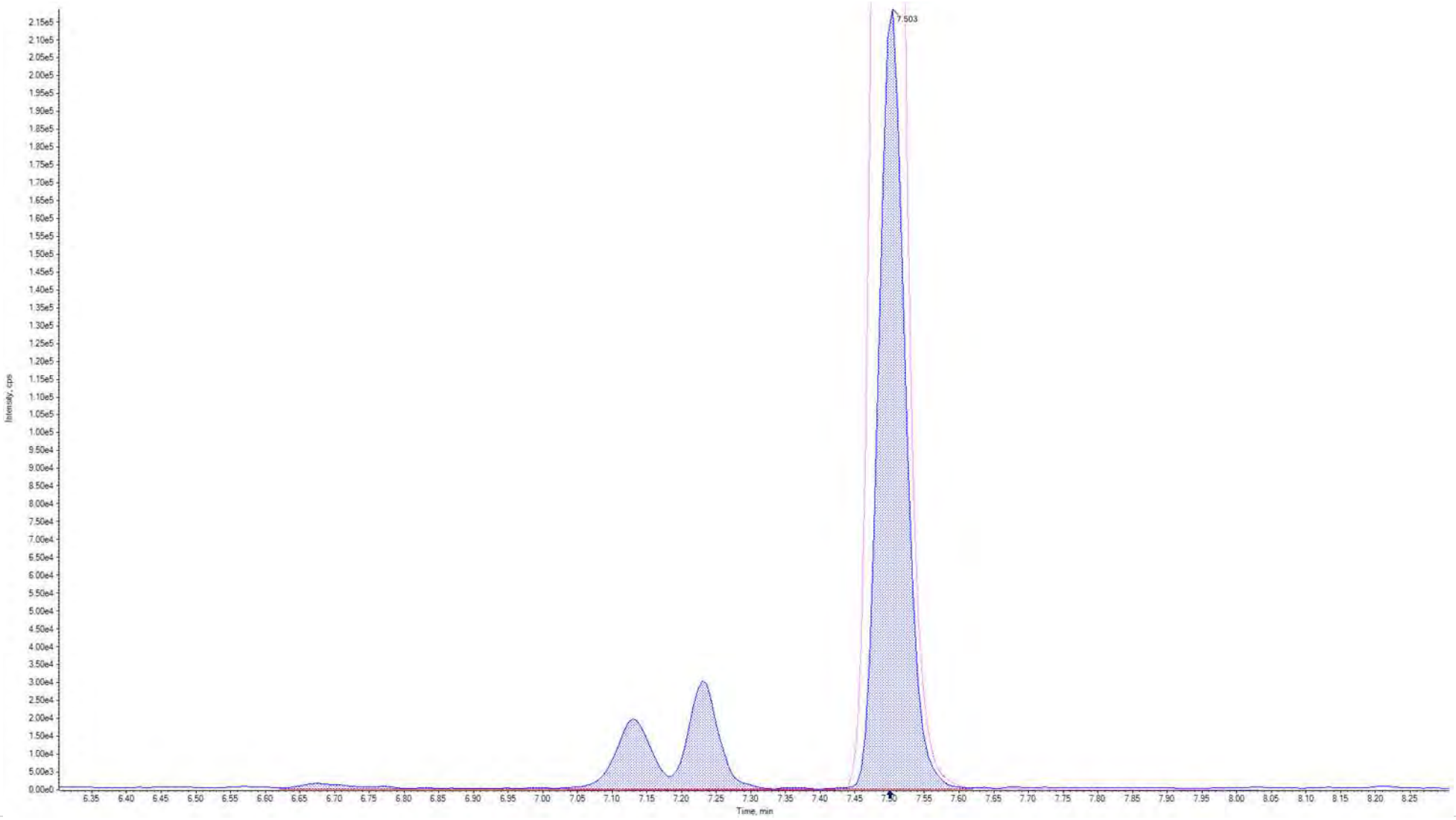
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFHpA_2
Sample: IA1633STD-2.5 S/N:7427.7 Points Across peak:47



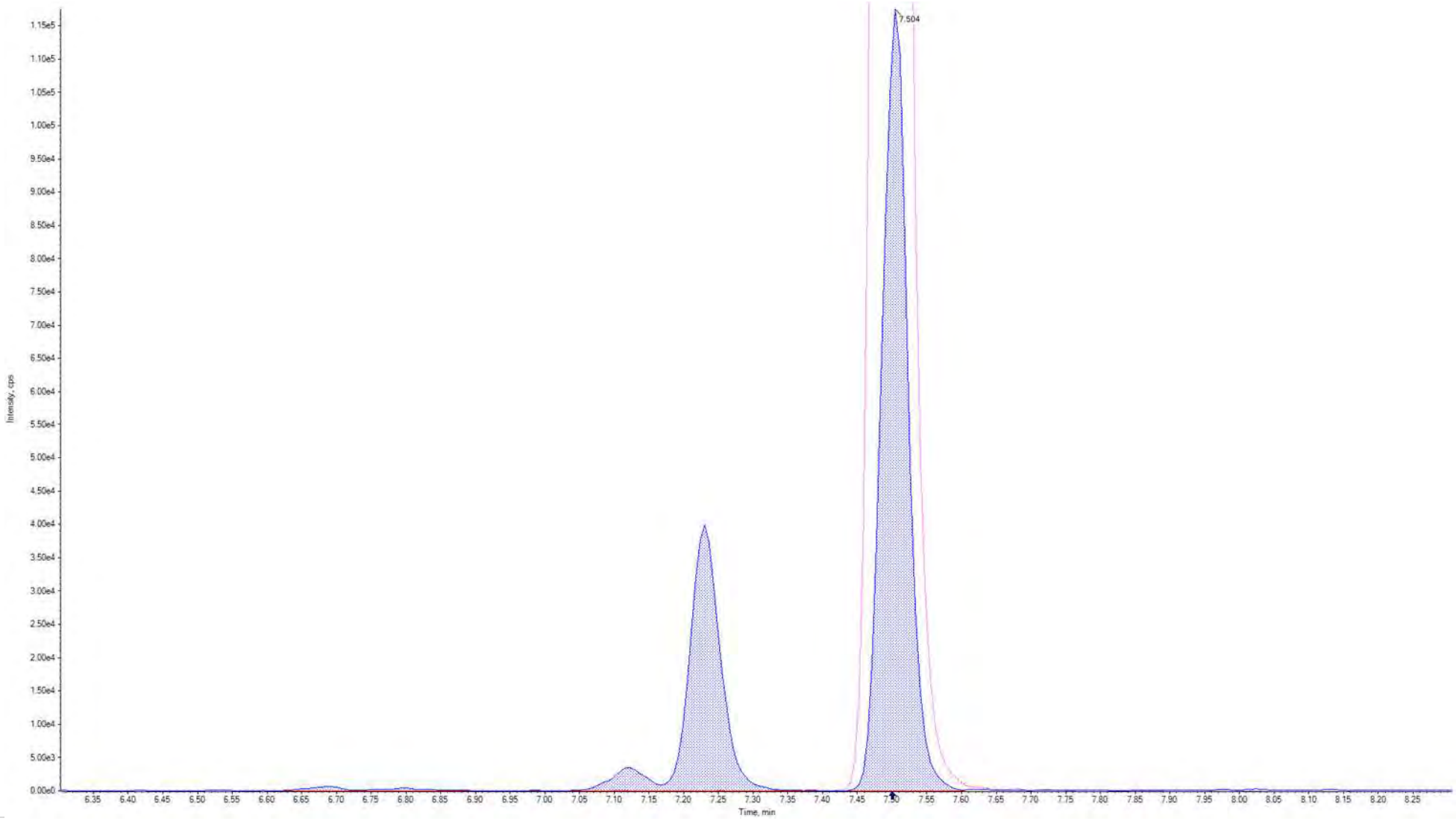
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOA
Sample: IA1633STD-2.5 S/N:1608.3 Points Across peak:153



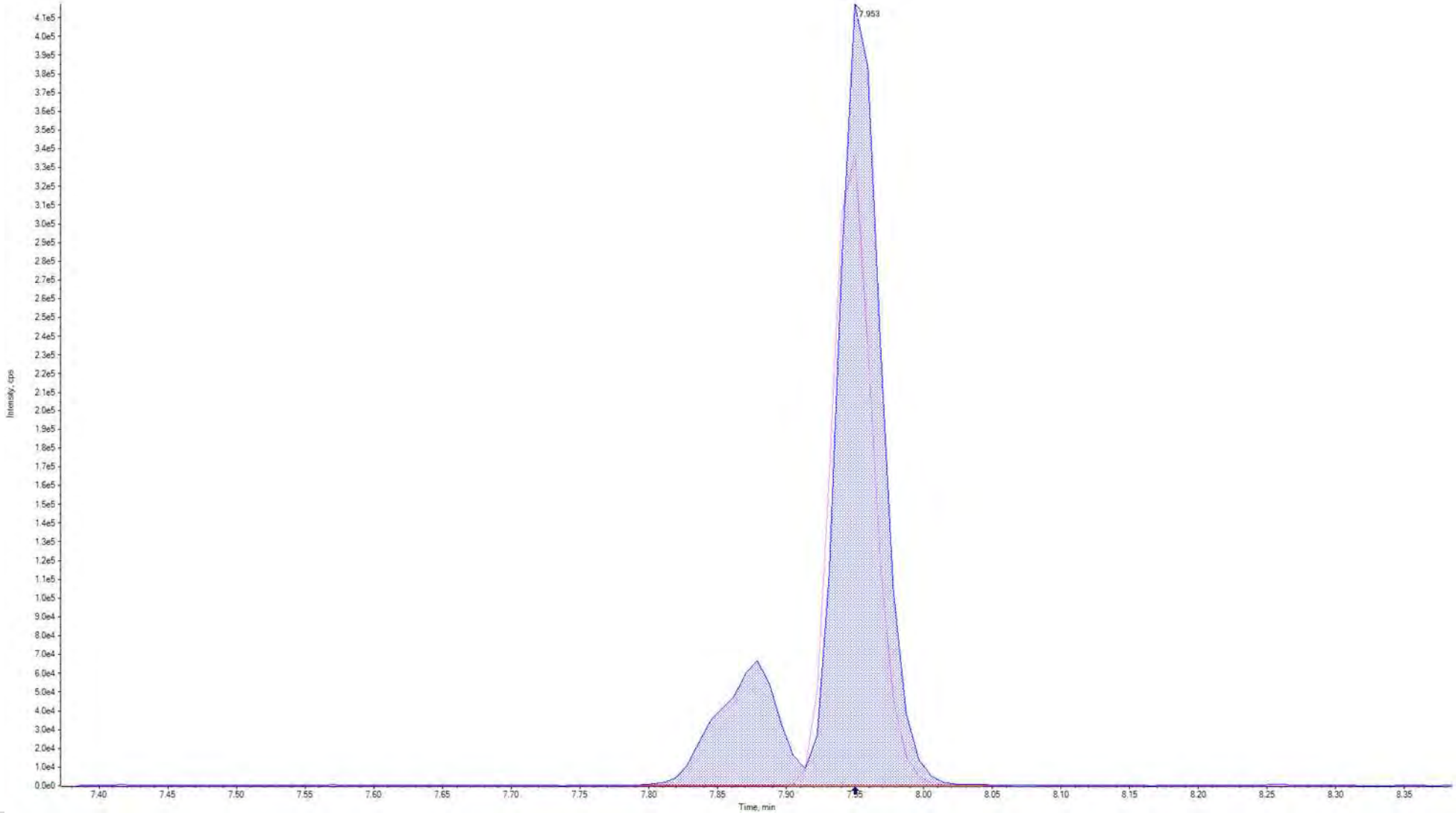
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOA_2
Sample: IA1633STD-2.5 S/N:33021.9 Points Across peak:152



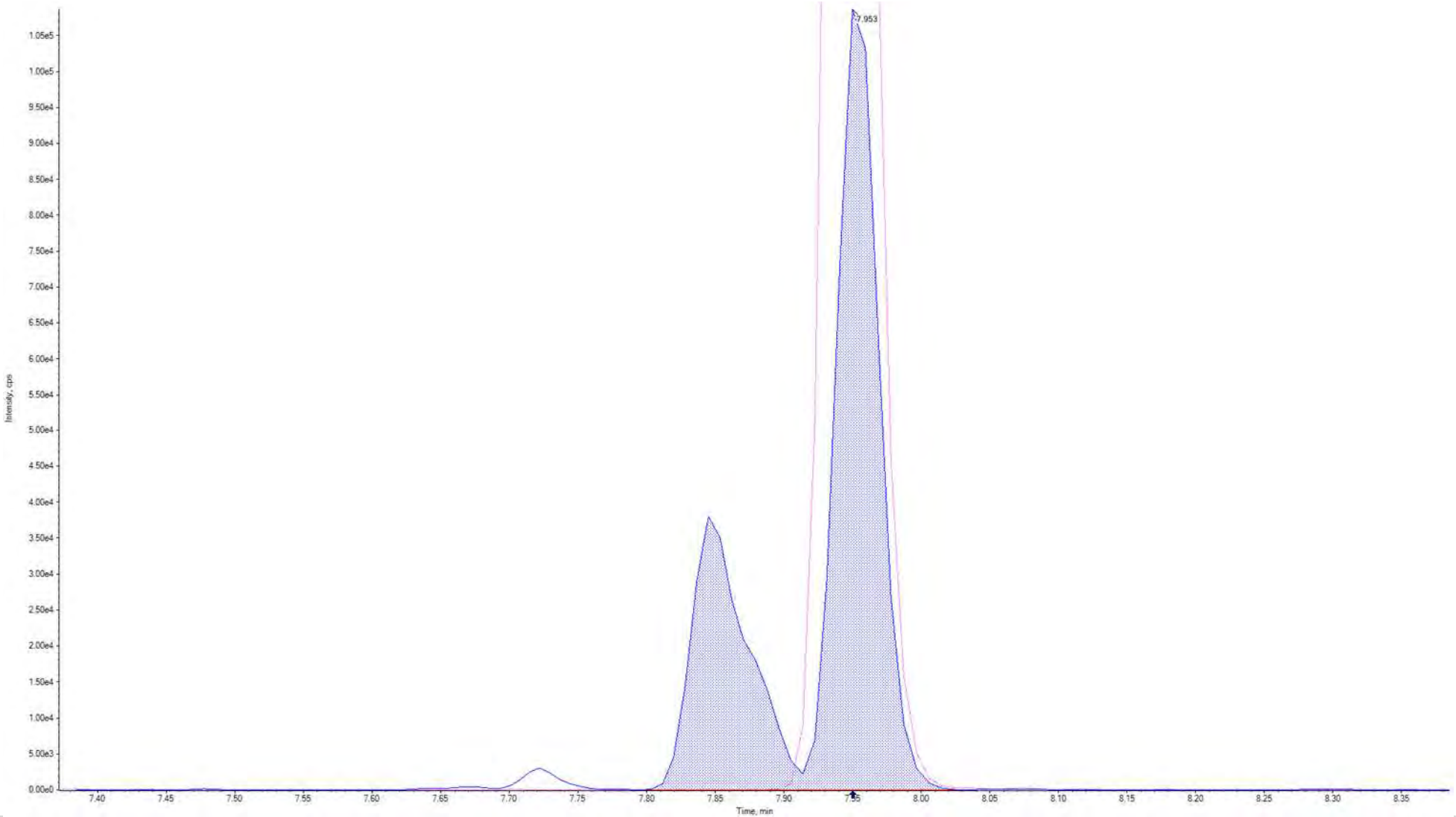
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFNA
Sample: IA1633STD-2.5 S/N:1389.2 Points Across peak:33



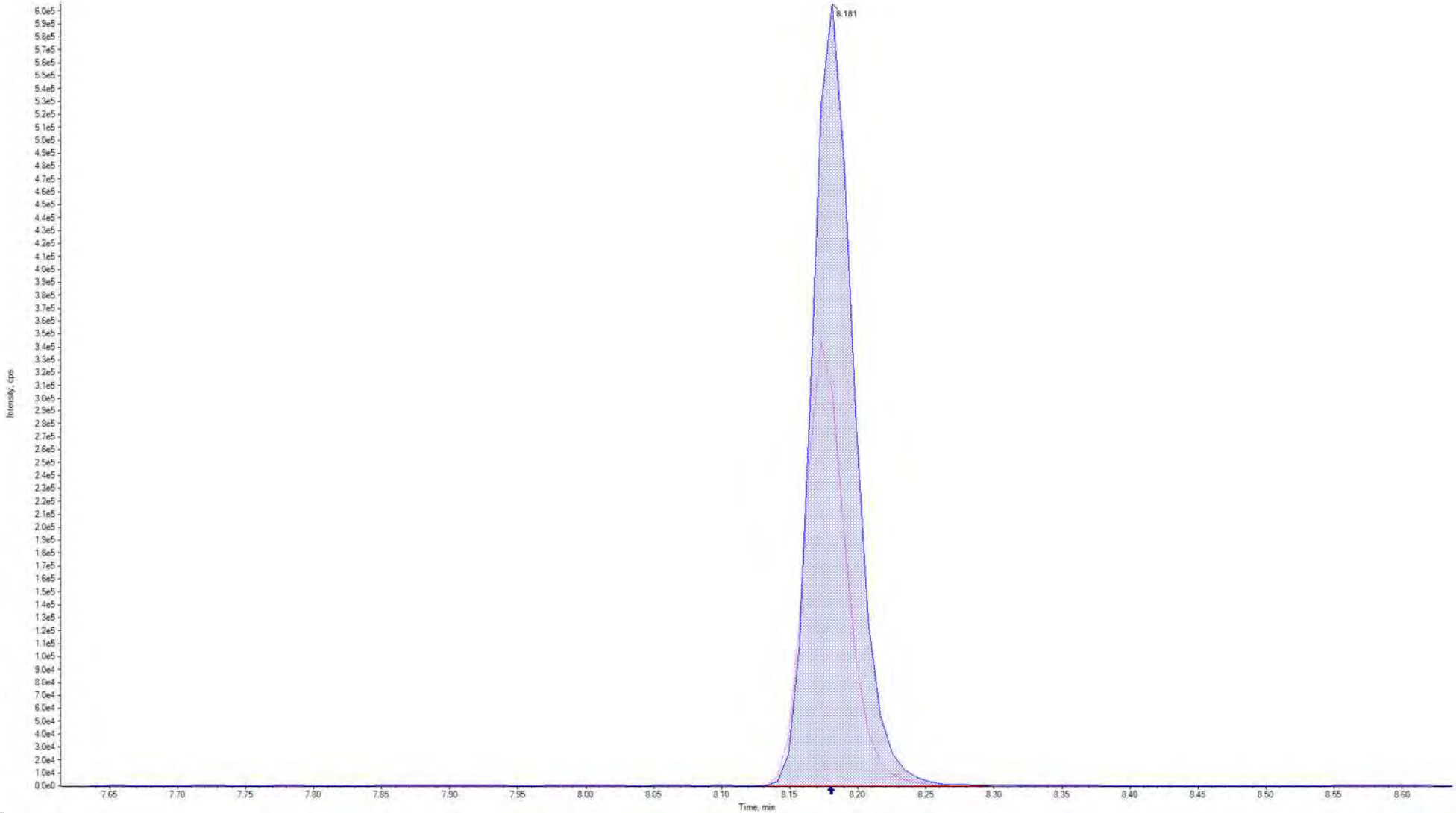
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFNA_2
Sample: IA1633STD-2.5 S/N:851.3 Points Across peak:30



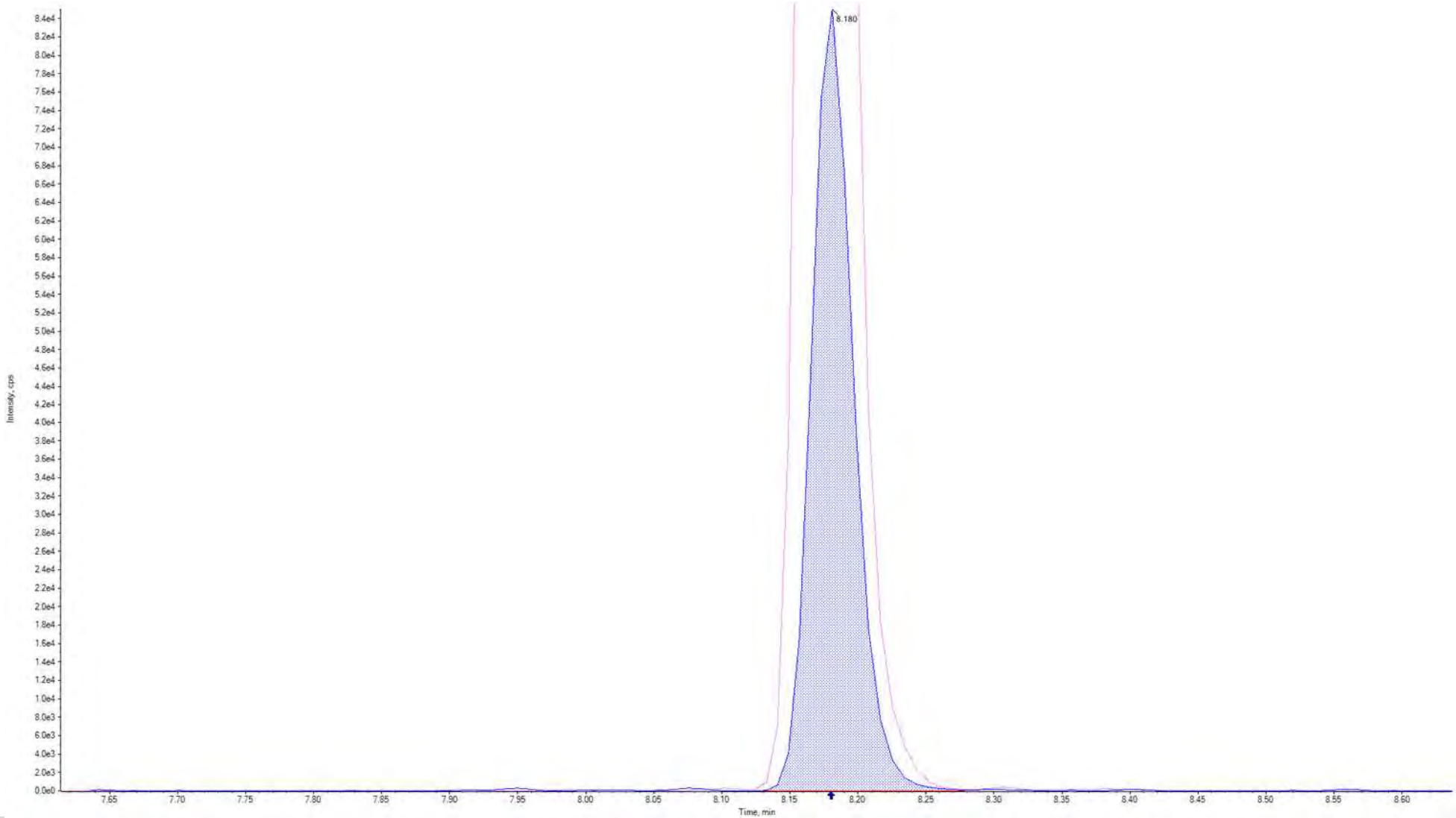
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDA
Sample: IA1633STD-2.5 S/N:3530.9 Points Across peak:21



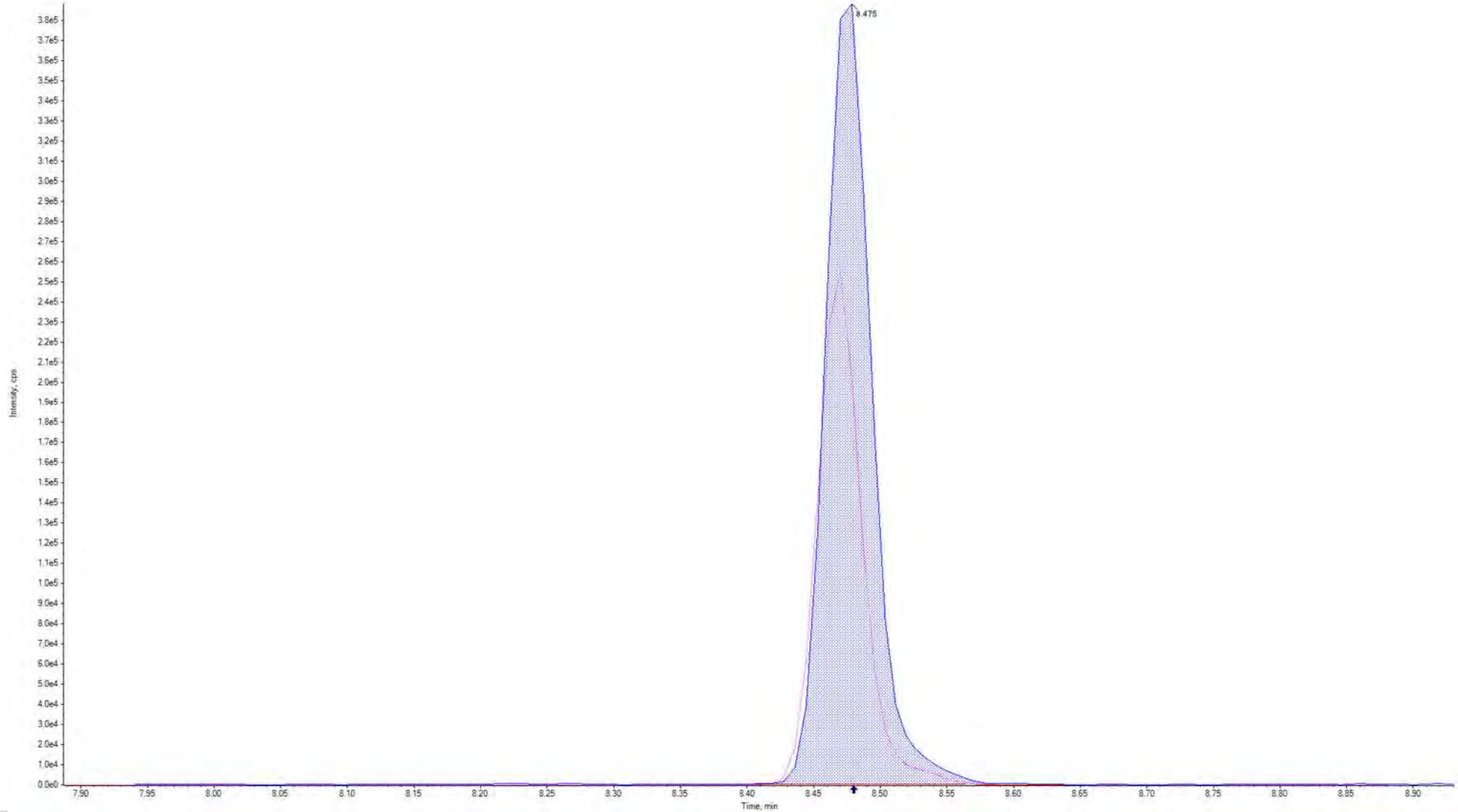
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDA_2
Sample: IA1633STD-2.5 S/N:1863.5 Points Across peak:20



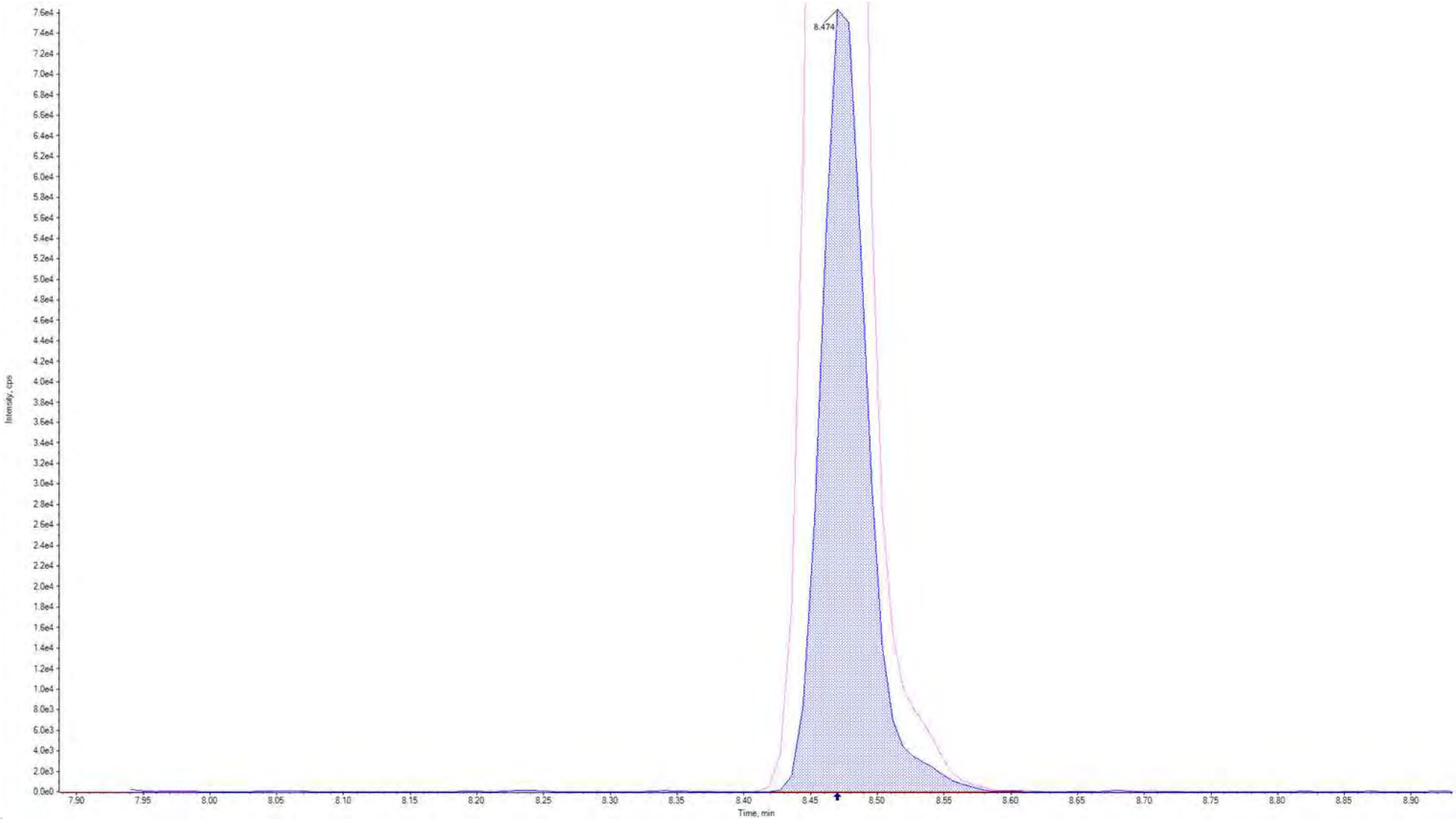
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFUnA
Sample: IA1633STD-2.5 S/N:2597.4 Points Across peak:34



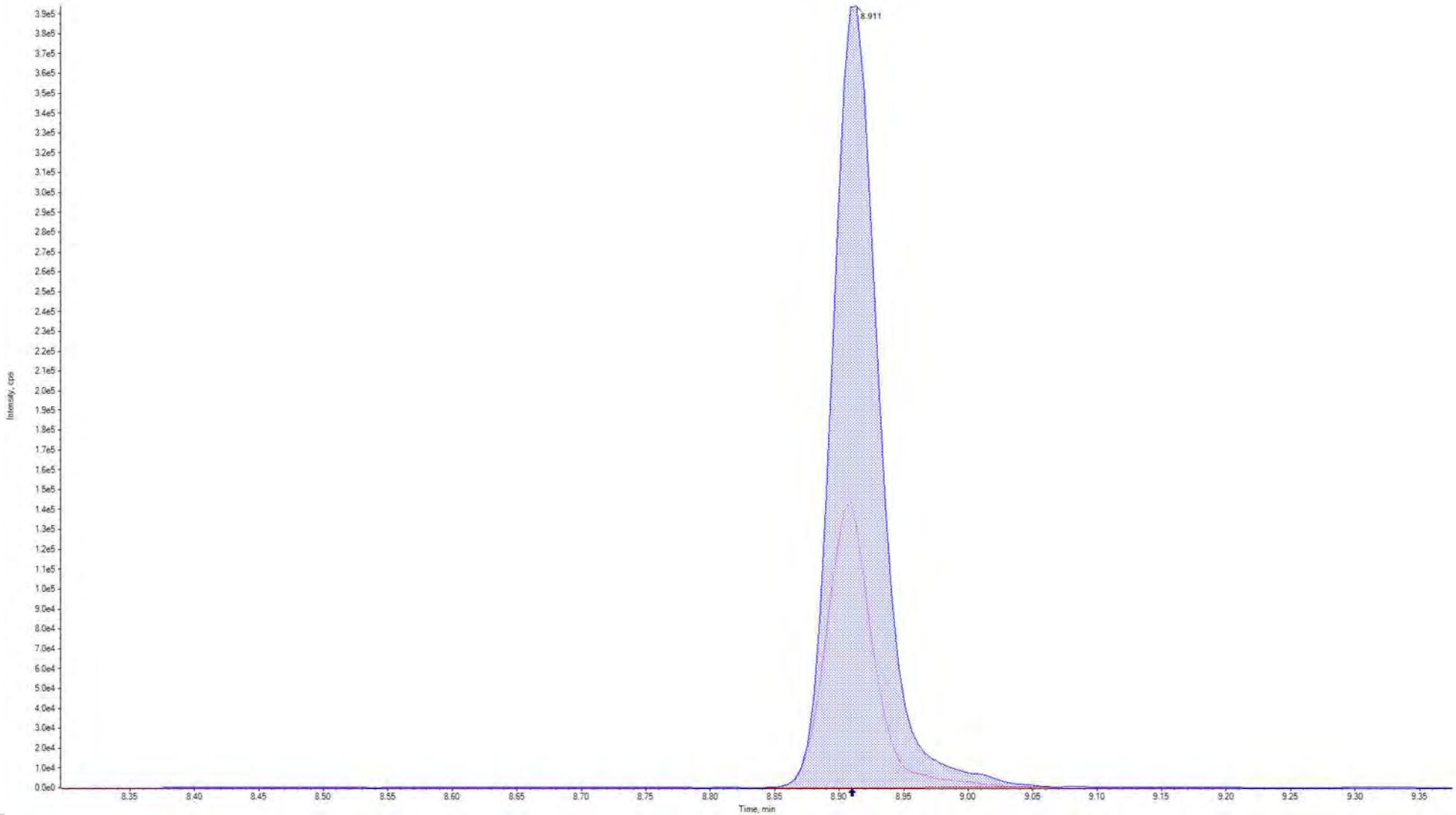
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFUnA_2
Sample: IA1633STD-2.5 S/N:2133.2 Points Across peak:31



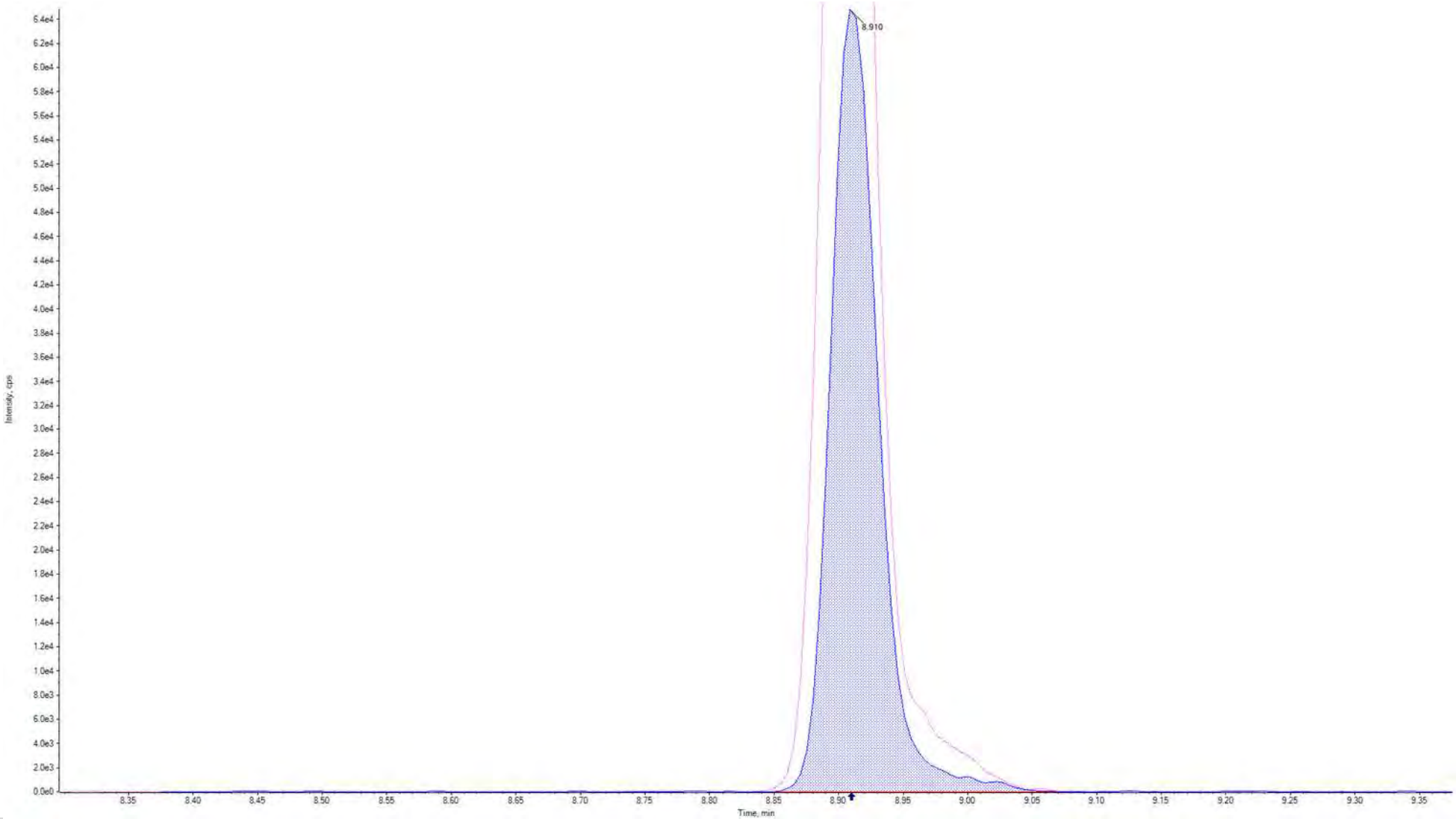
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDoA
Sample: IA1633STD-2.5 S/N:4572.2 Points Across peak:48



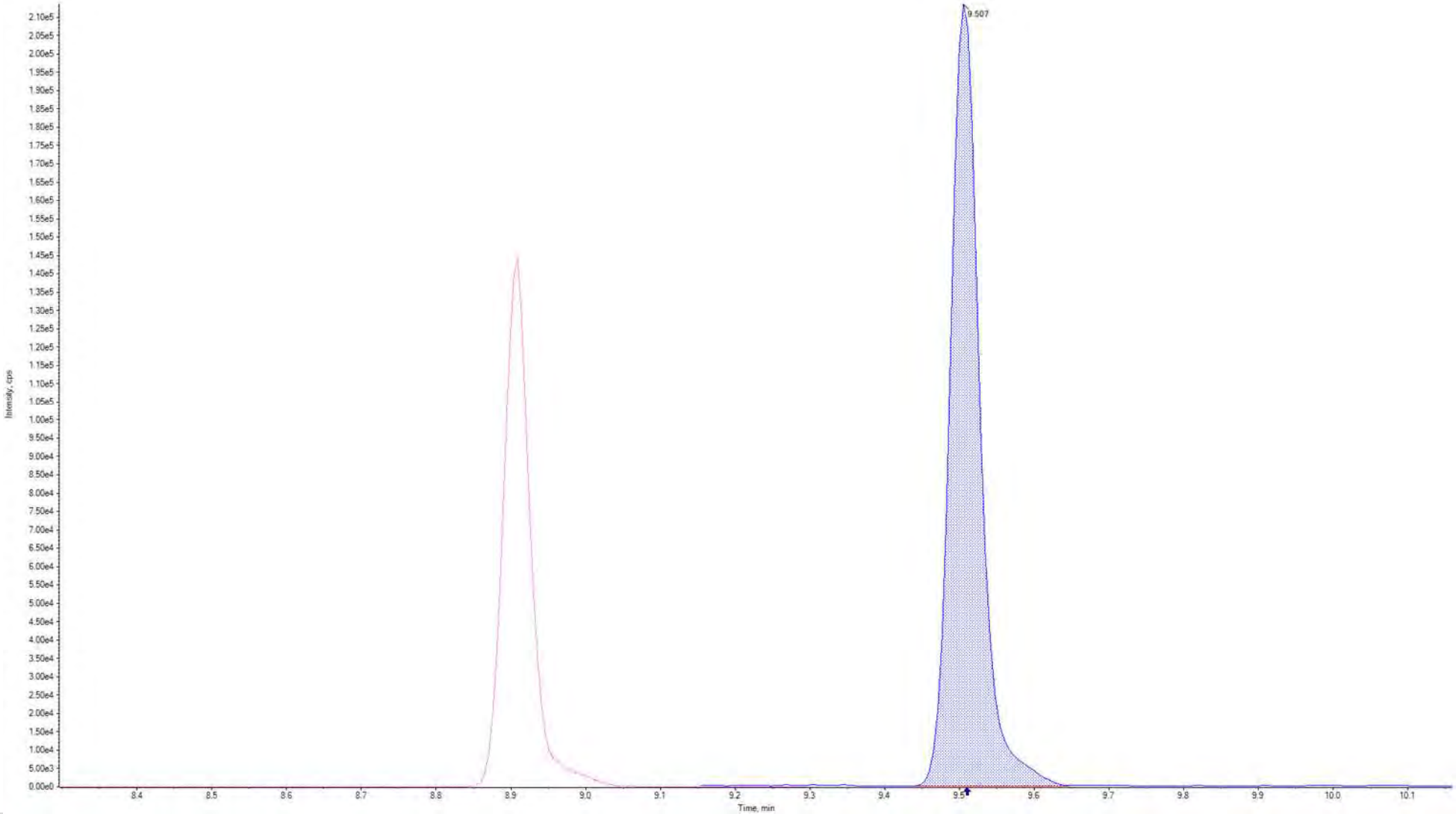
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDoA_2
Sample: IA1633STD-2.5 S/N:81457.4 Points Across peak:48



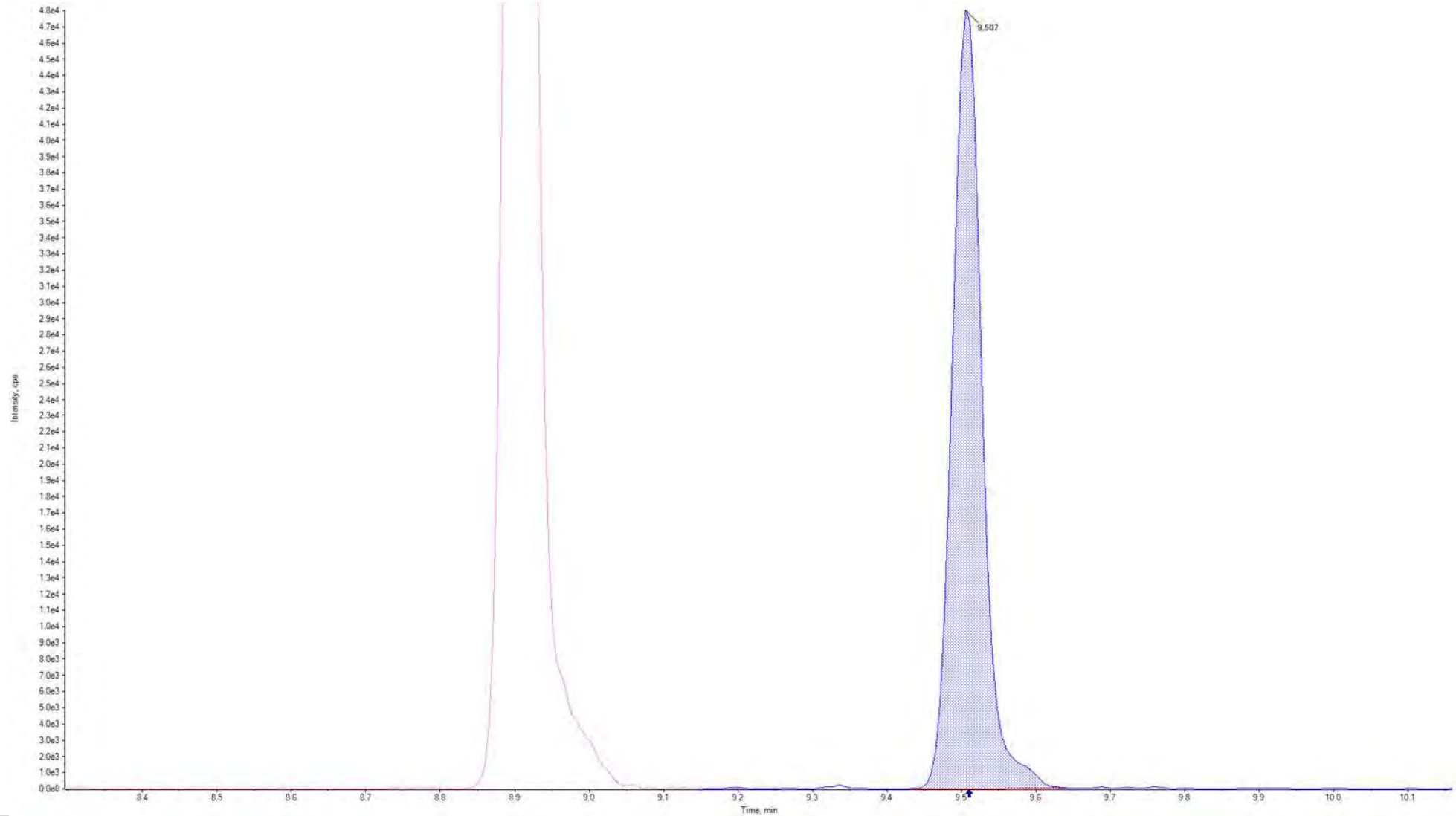
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFTrDA
Sample: IA1633STD-2.5 S/N:1853.5 Points Across peak:35



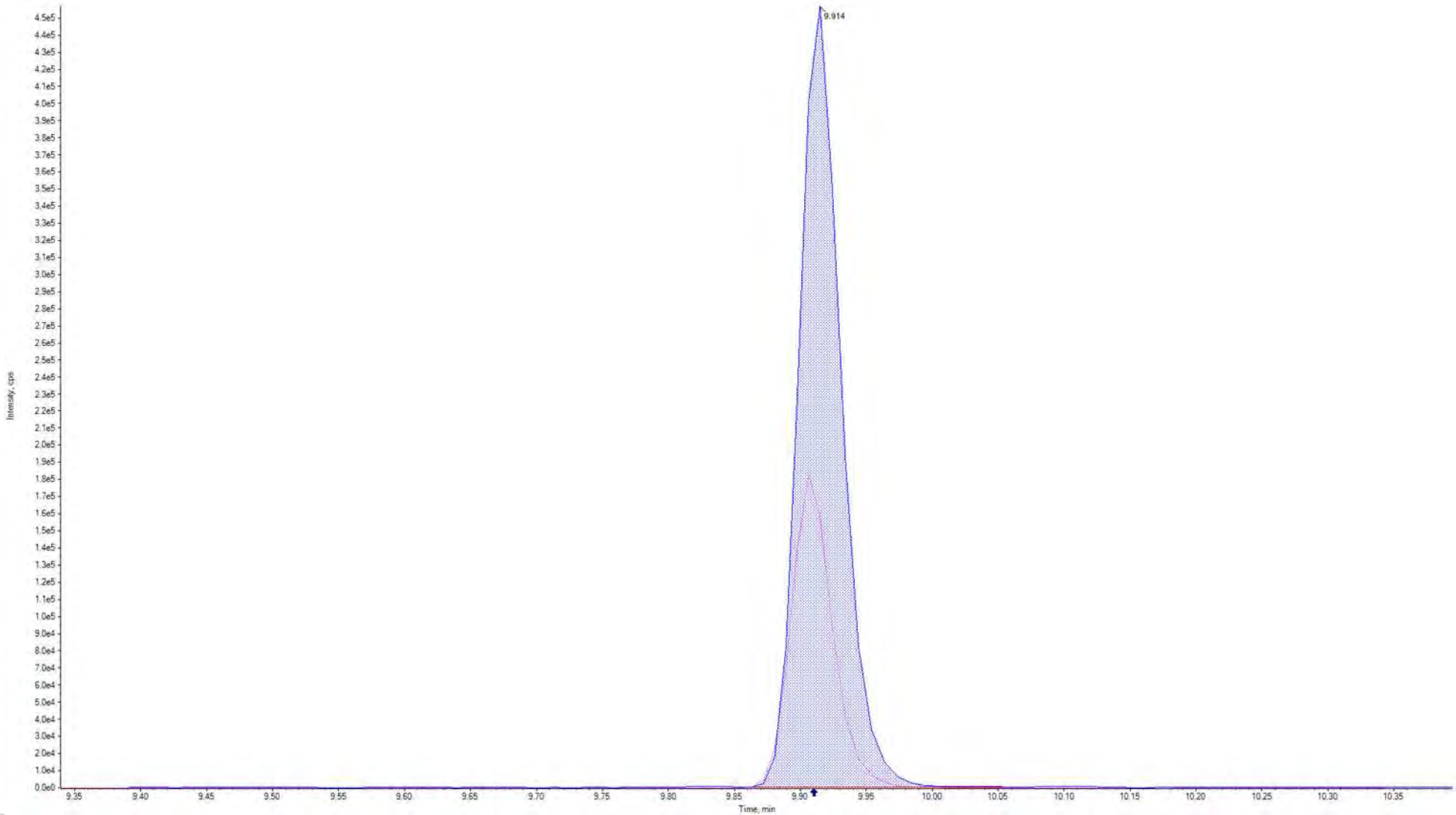
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFTrDA_2
Sample: IA1633STD-2.5 S/N:618684.7 Points Across peak:41



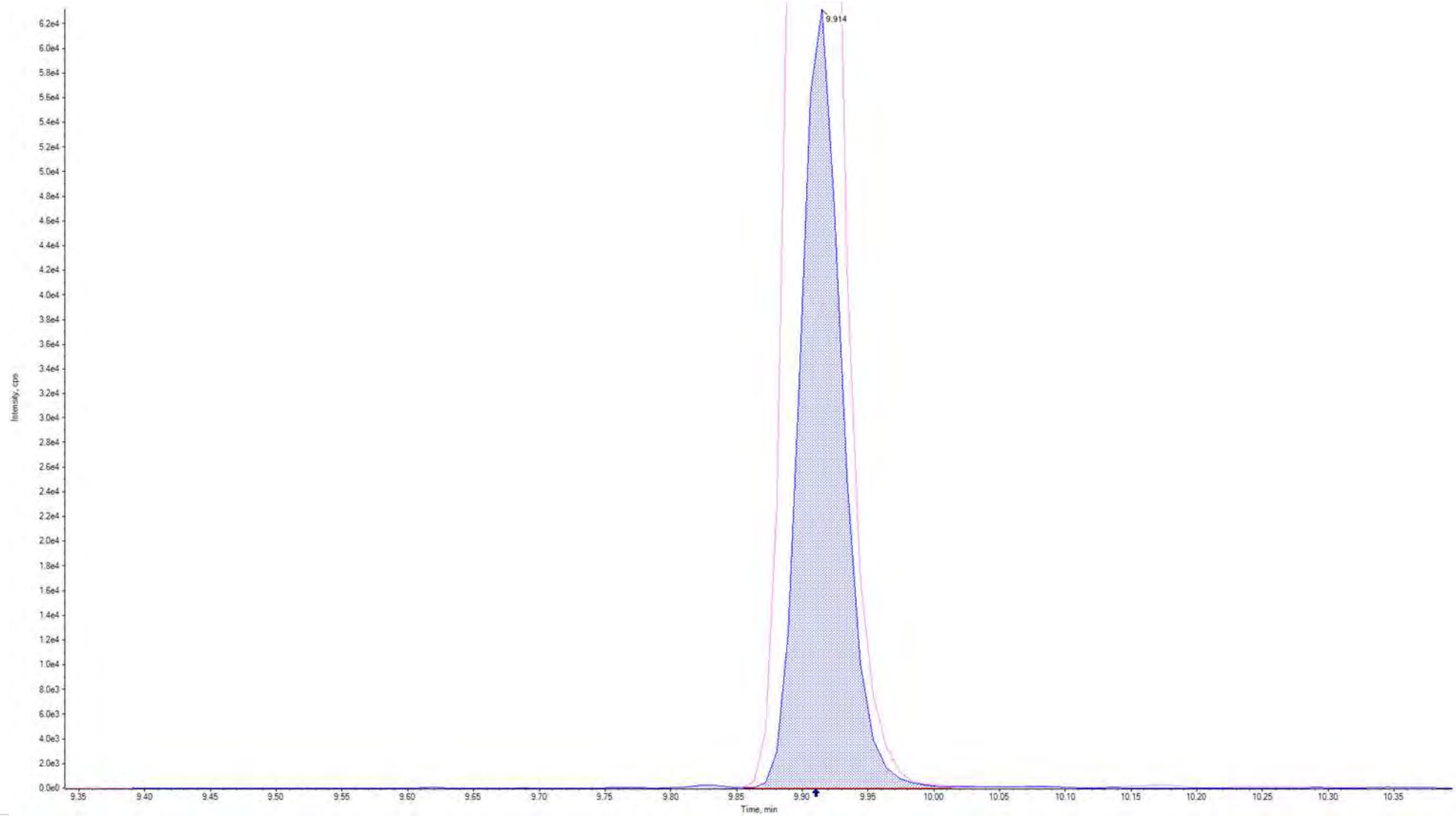
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFTeDA
Sample: IA1633STD-2.5 S/N:2235.9 Points Across peak:22



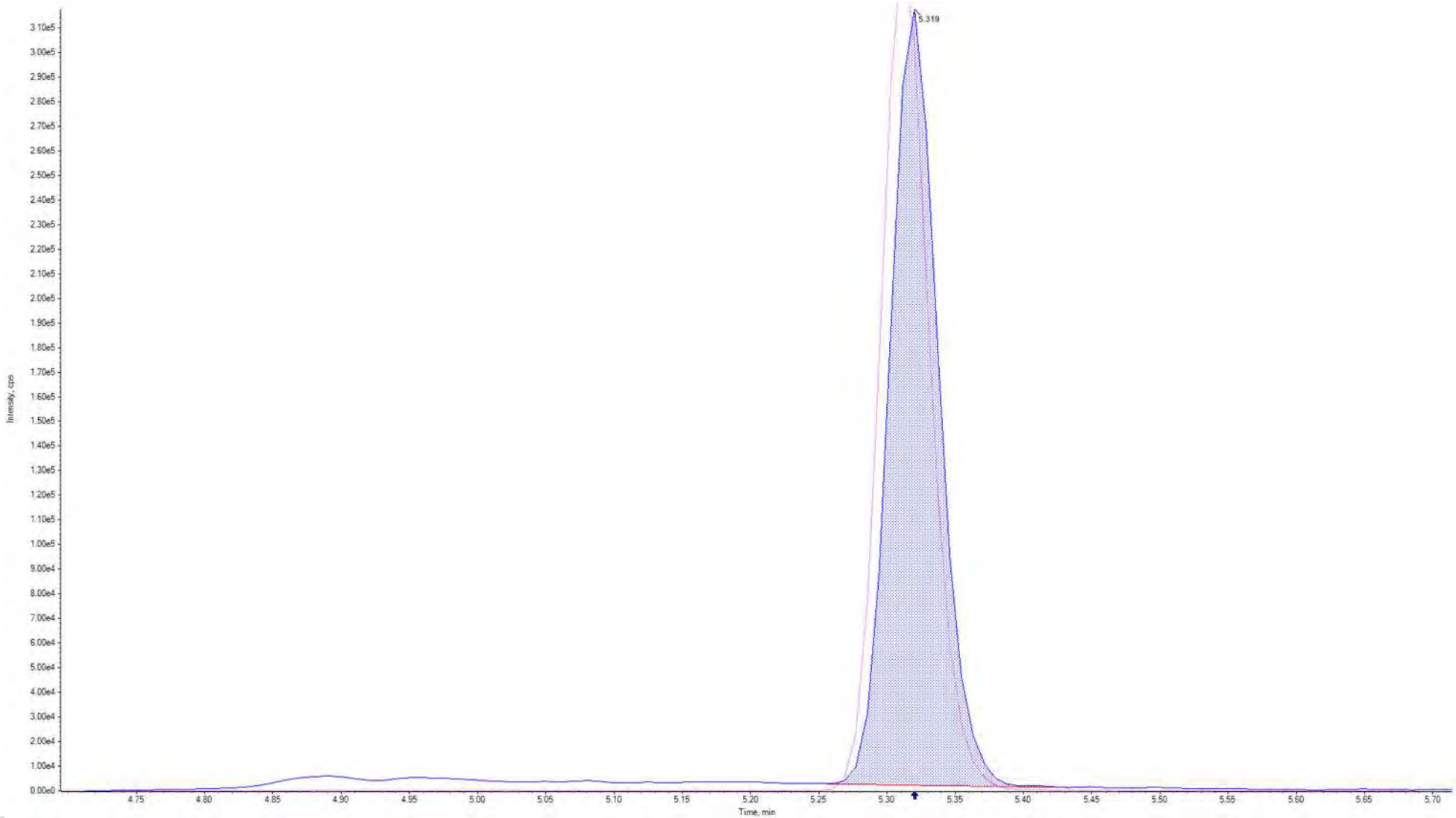
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFTeDA_2
Sample: IA1633STD-2.5 S/N:2344.4 Points Across peak:18



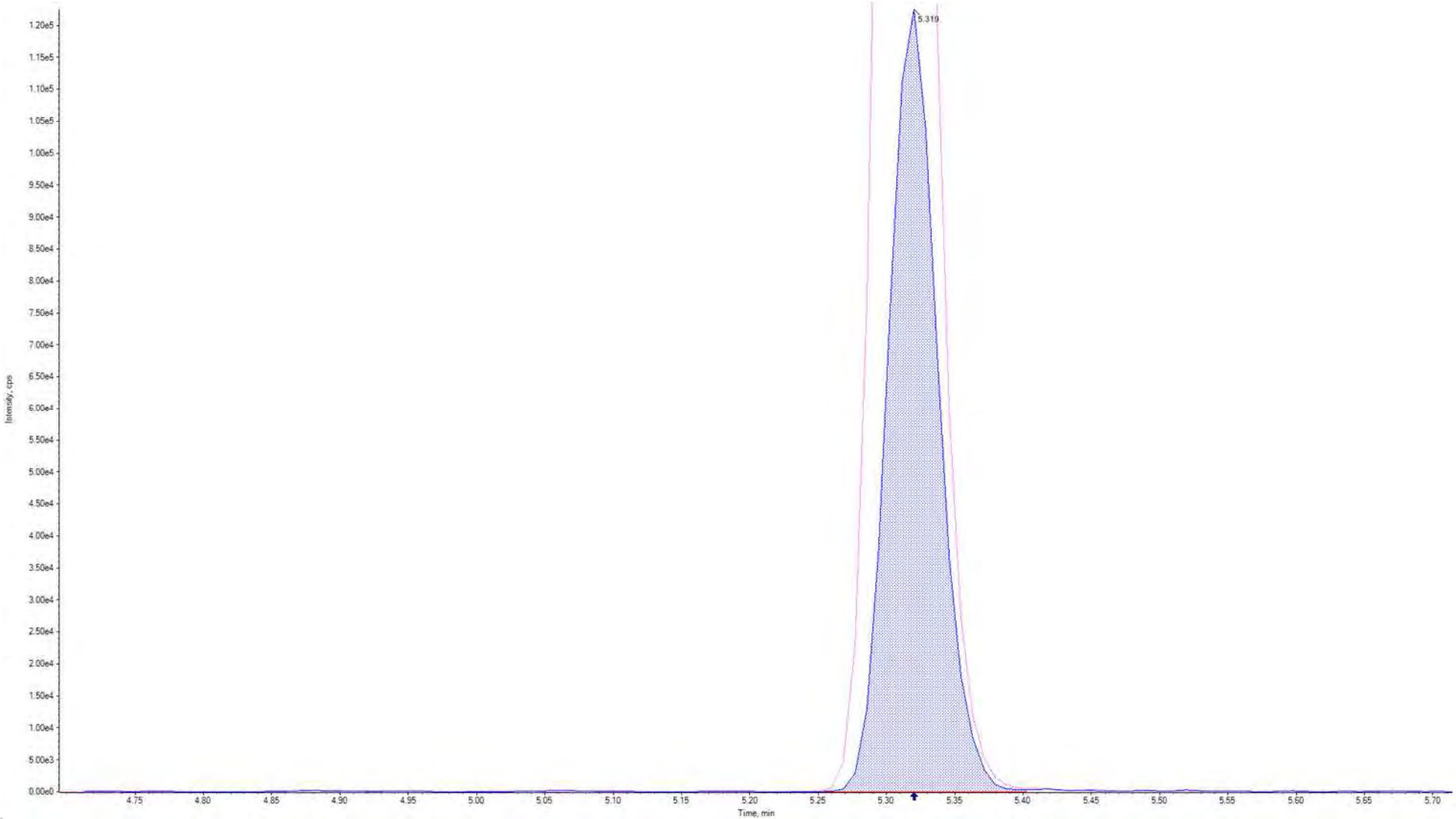
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFBS
Sample: IA1633STD-2.5 S/N:70.1 Points Across peak:23



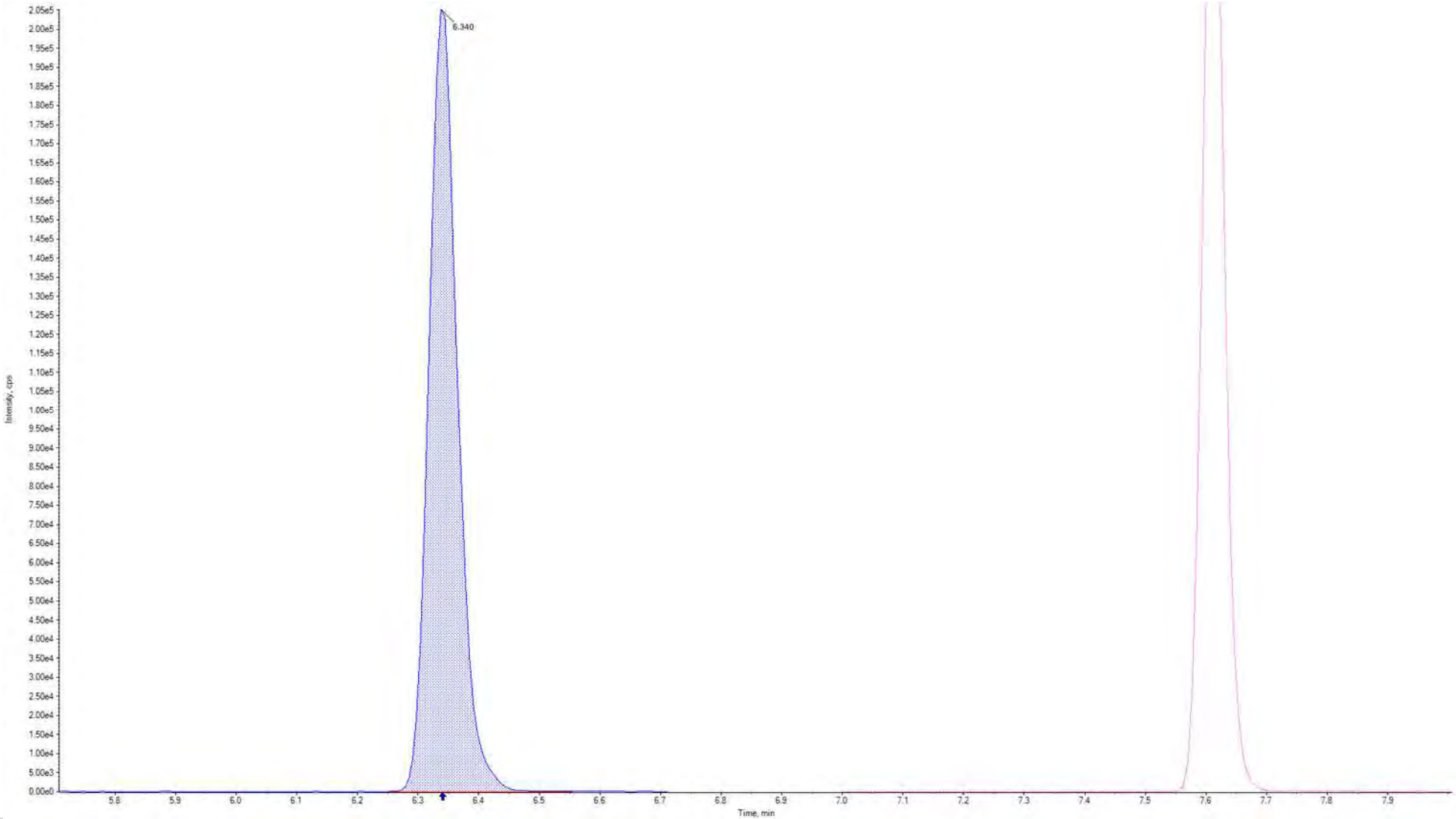
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFBS_2
Sample: IA1633STD-2.5 S/N:2384.1 Points Across peak:19



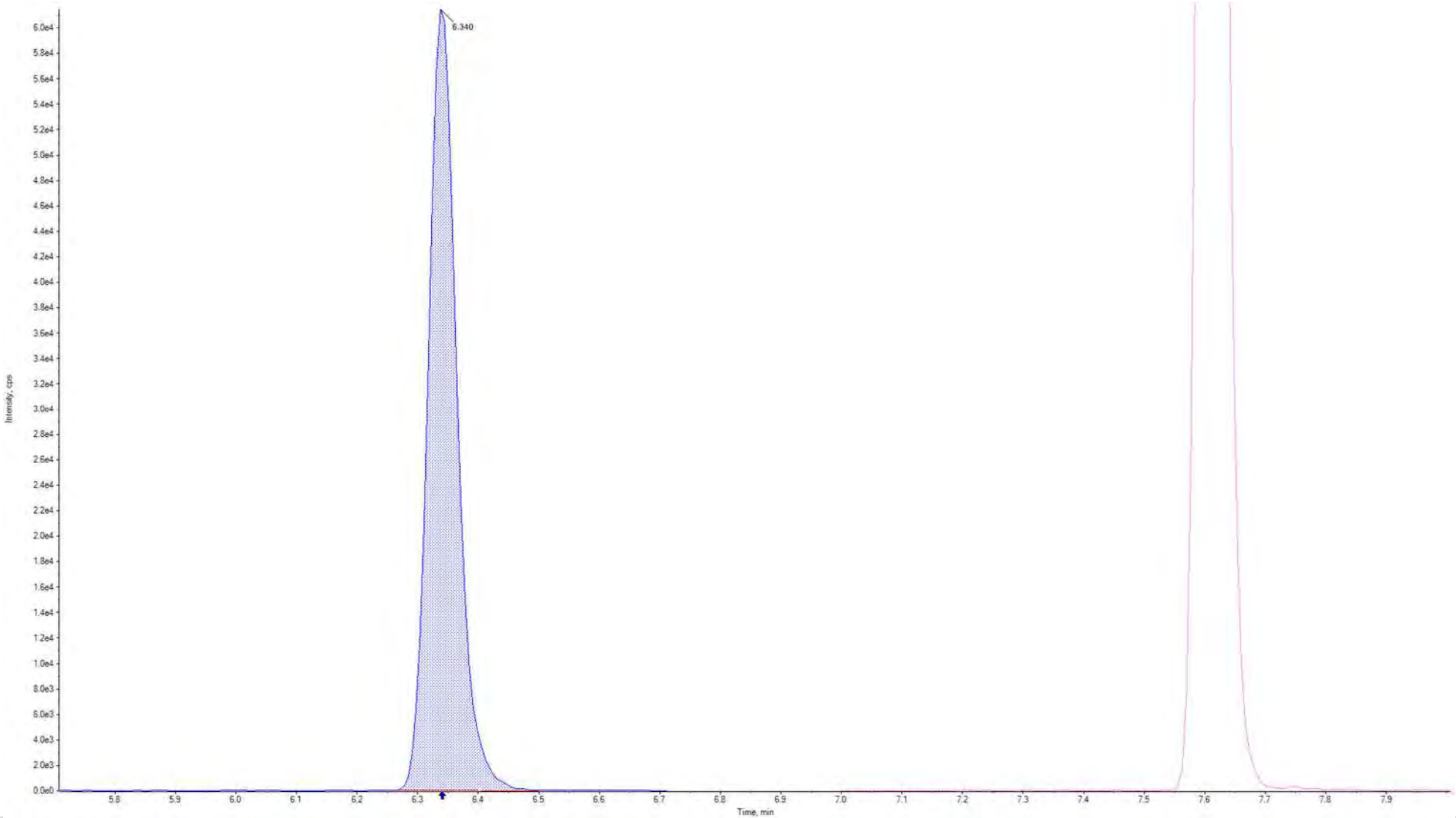
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFPeS
Sample: IA1633STD-2.5 S/N:5997.2 Points Across peak:48



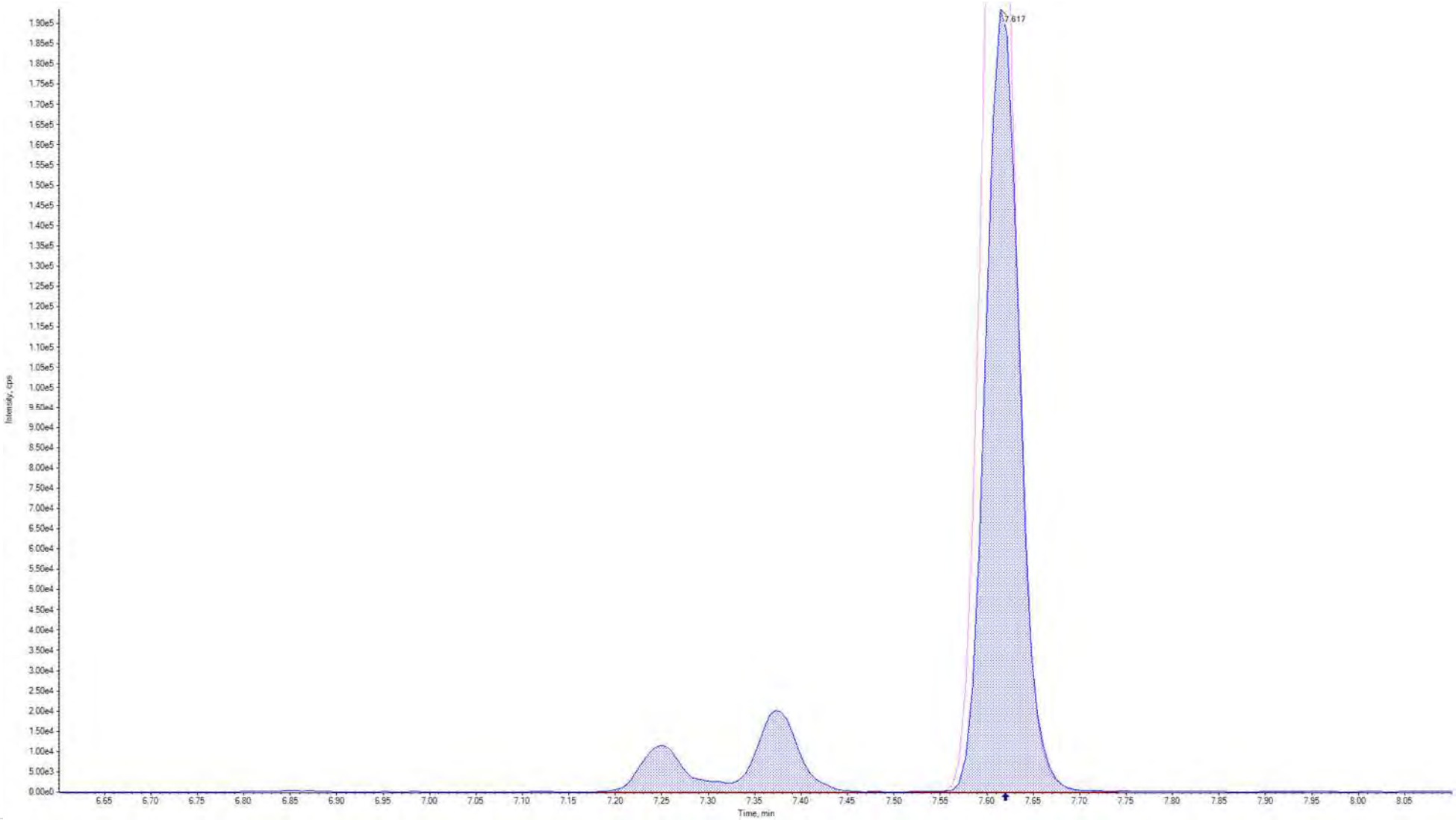
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFPeS_2
Sample: IA1633STD-2.5 S/N:8753.7 Points Across peak:40



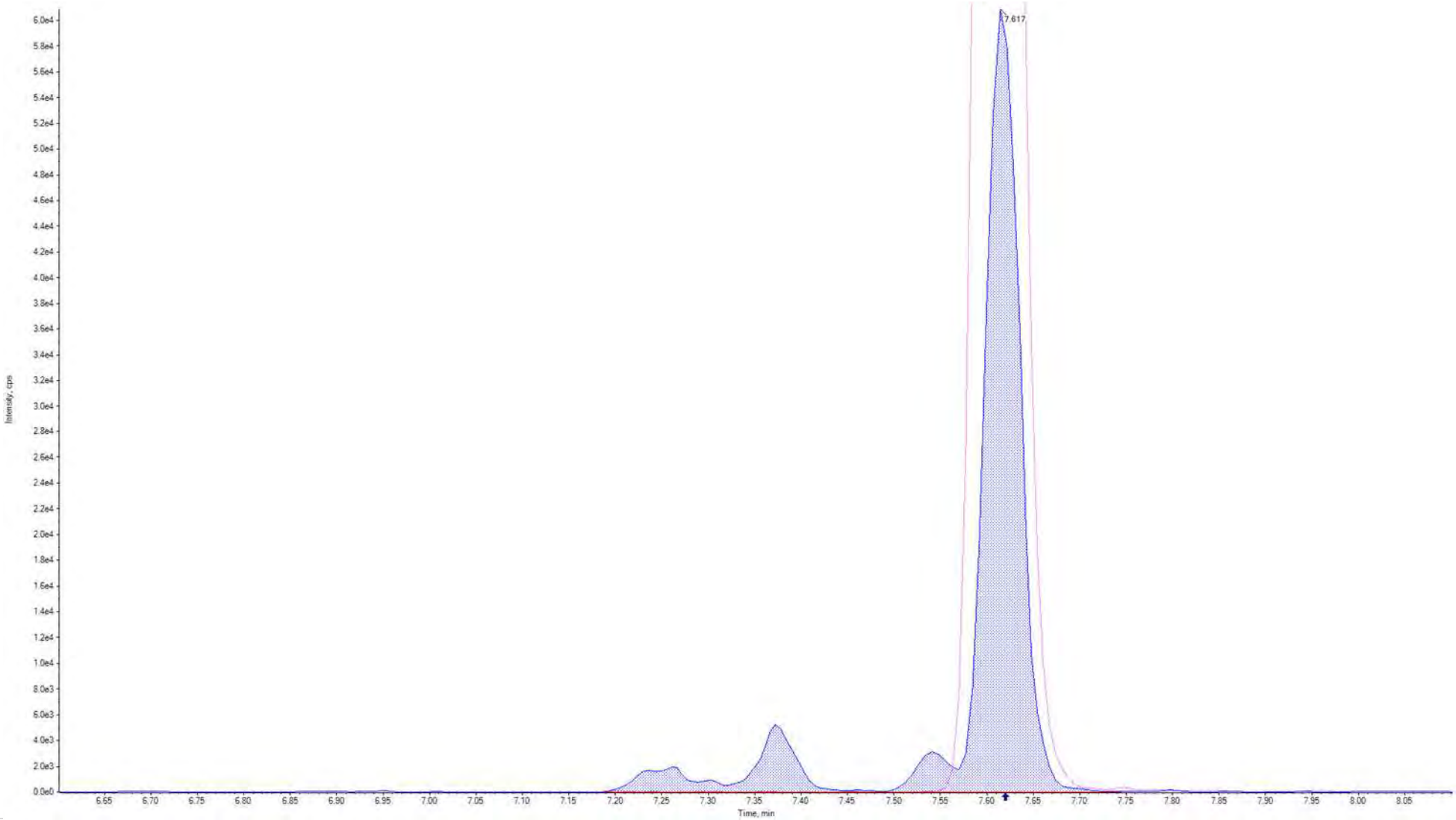
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFHxS
Sample: IA1633STD-2.5 S/N:40481.1 Points Across peak:93



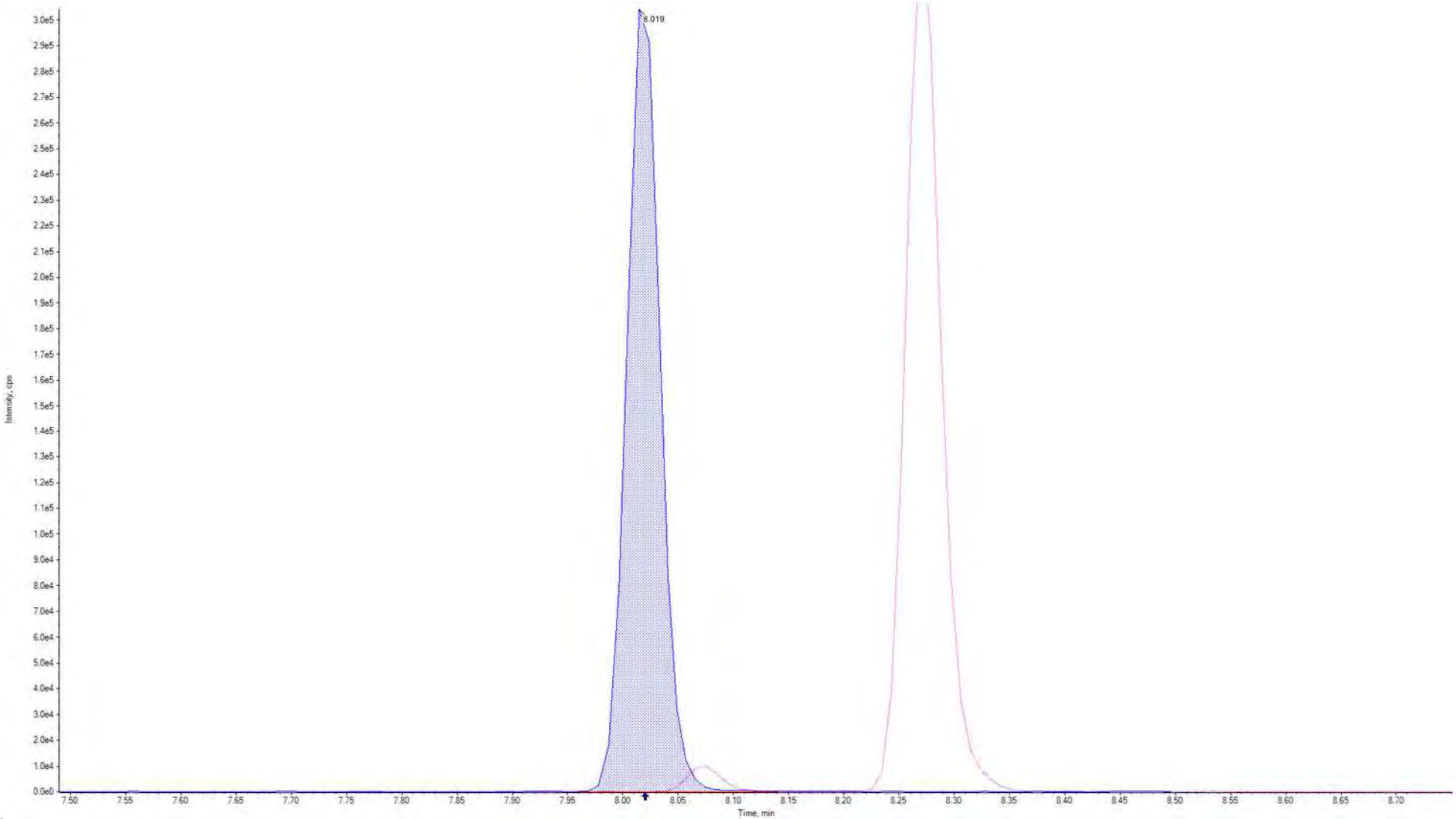
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFHxS_2
Sample: IA1633STD-2.5 S/N:1538.3 Points Across peak:91



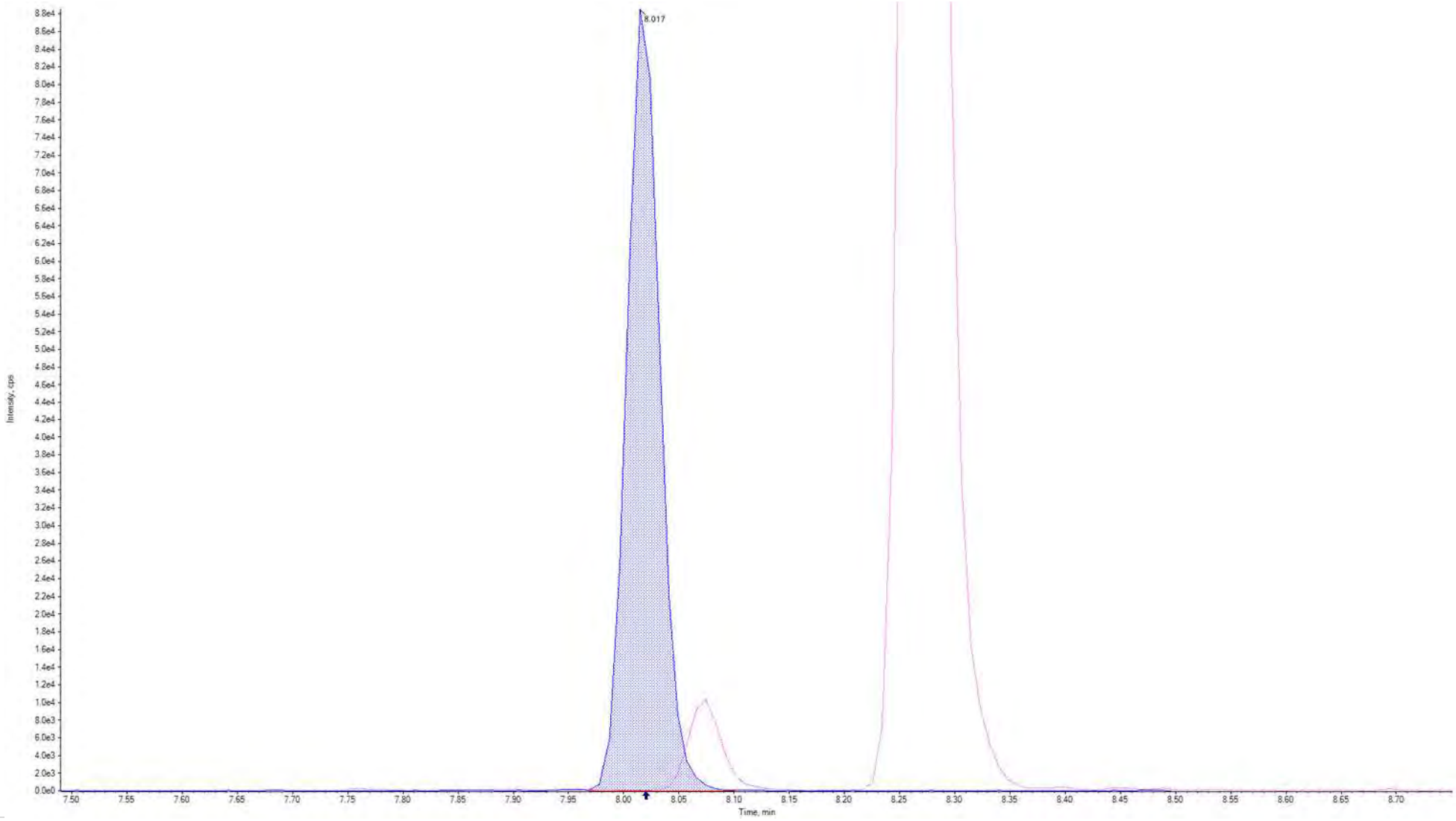
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFHpS
Sample: IA1633STD-2.5 S/N:1174053.3 Points Across peak:23



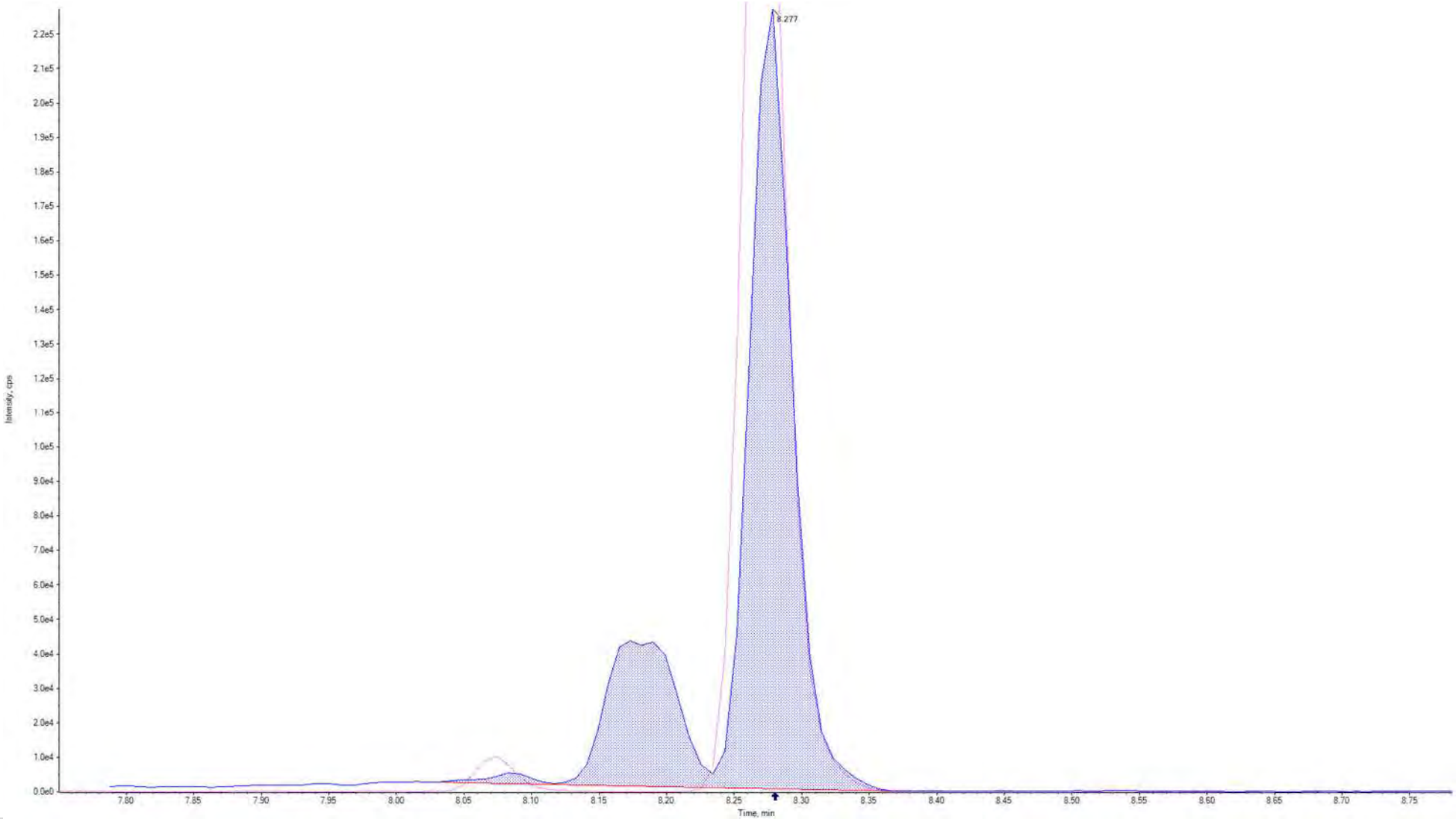
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFHpS_2
Sample: IA1633STD-2.5 S/N:1498.2 Points Across peak:16



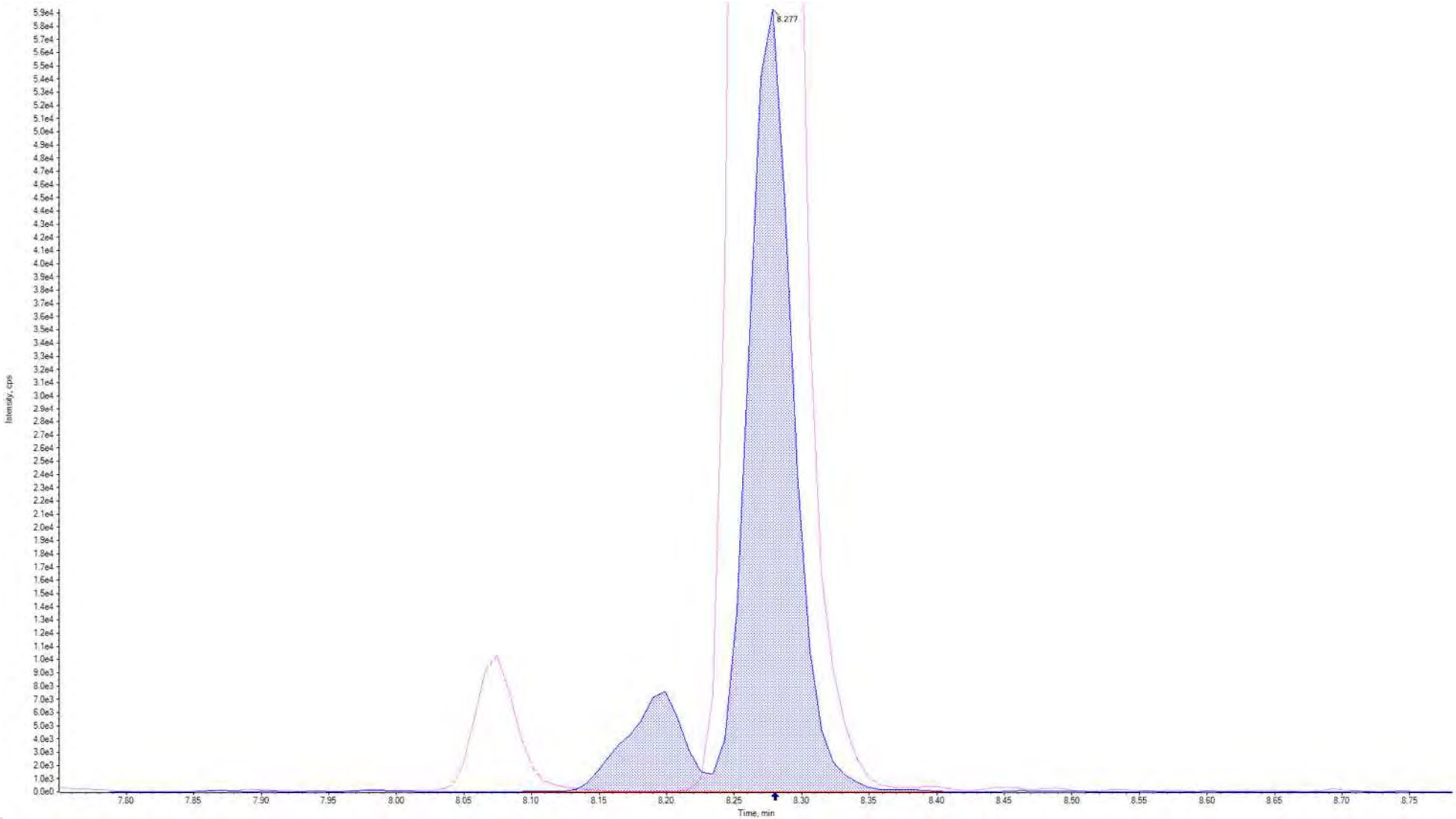
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOS
Sample: IA1633STD-2.5 S/N:1869.6 Points Across peak:42



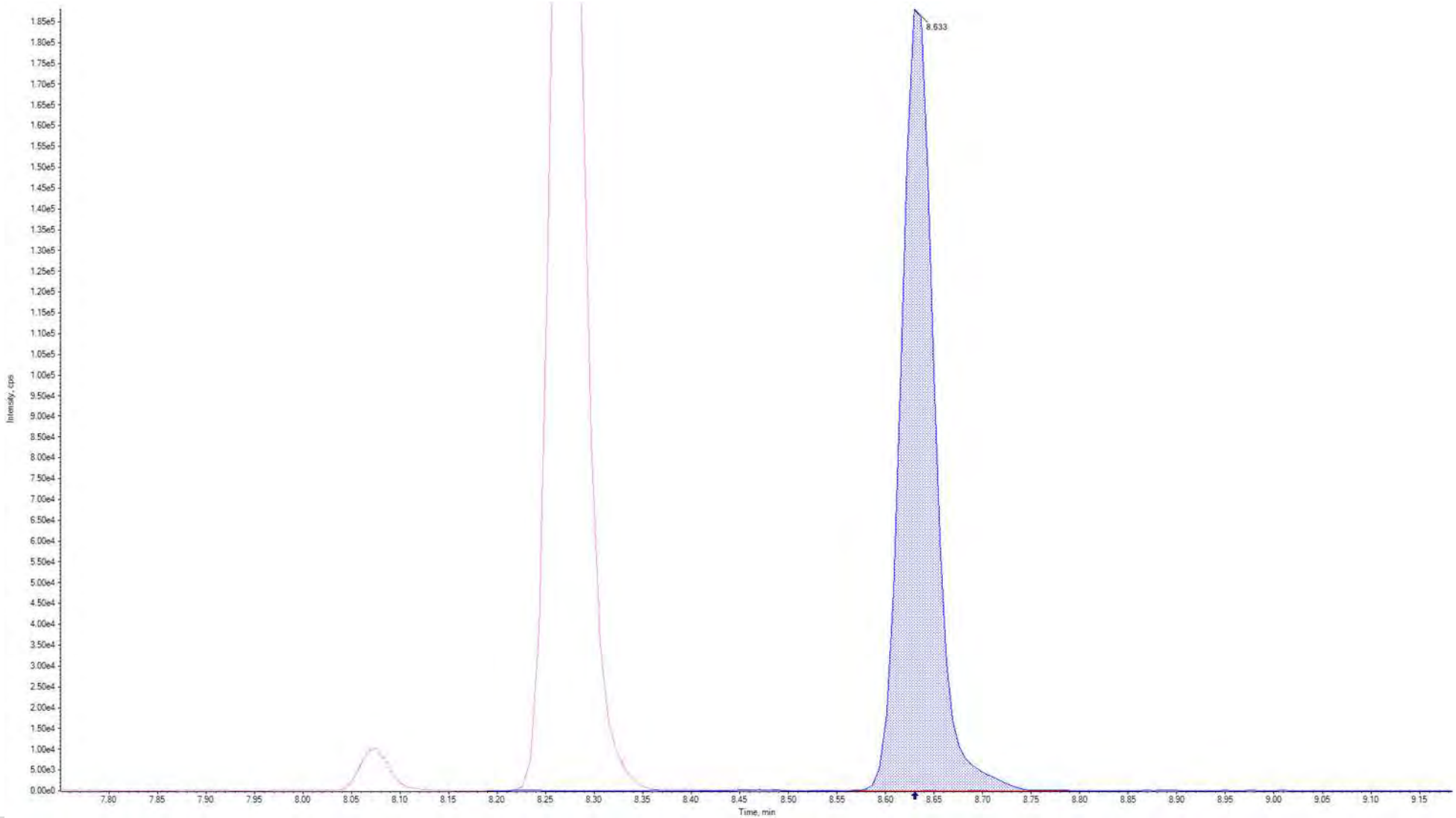
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOS_2
Sample: IA1633STD-2.5 S/N:1521.6 Points Across peak:44



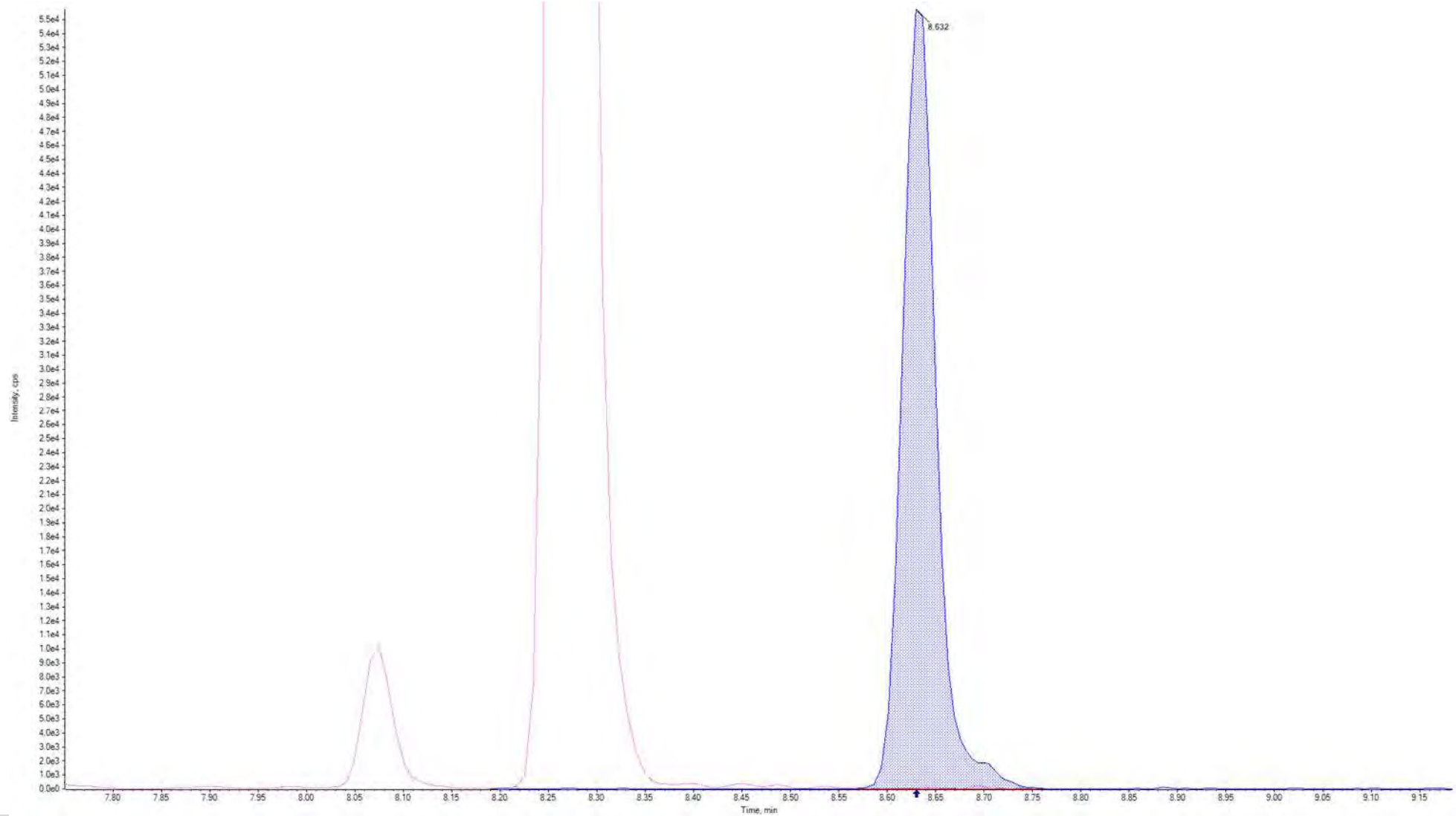
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFNS
Sample: IA1633STD-2.5 S/N:13160.4 Points Across peak:41



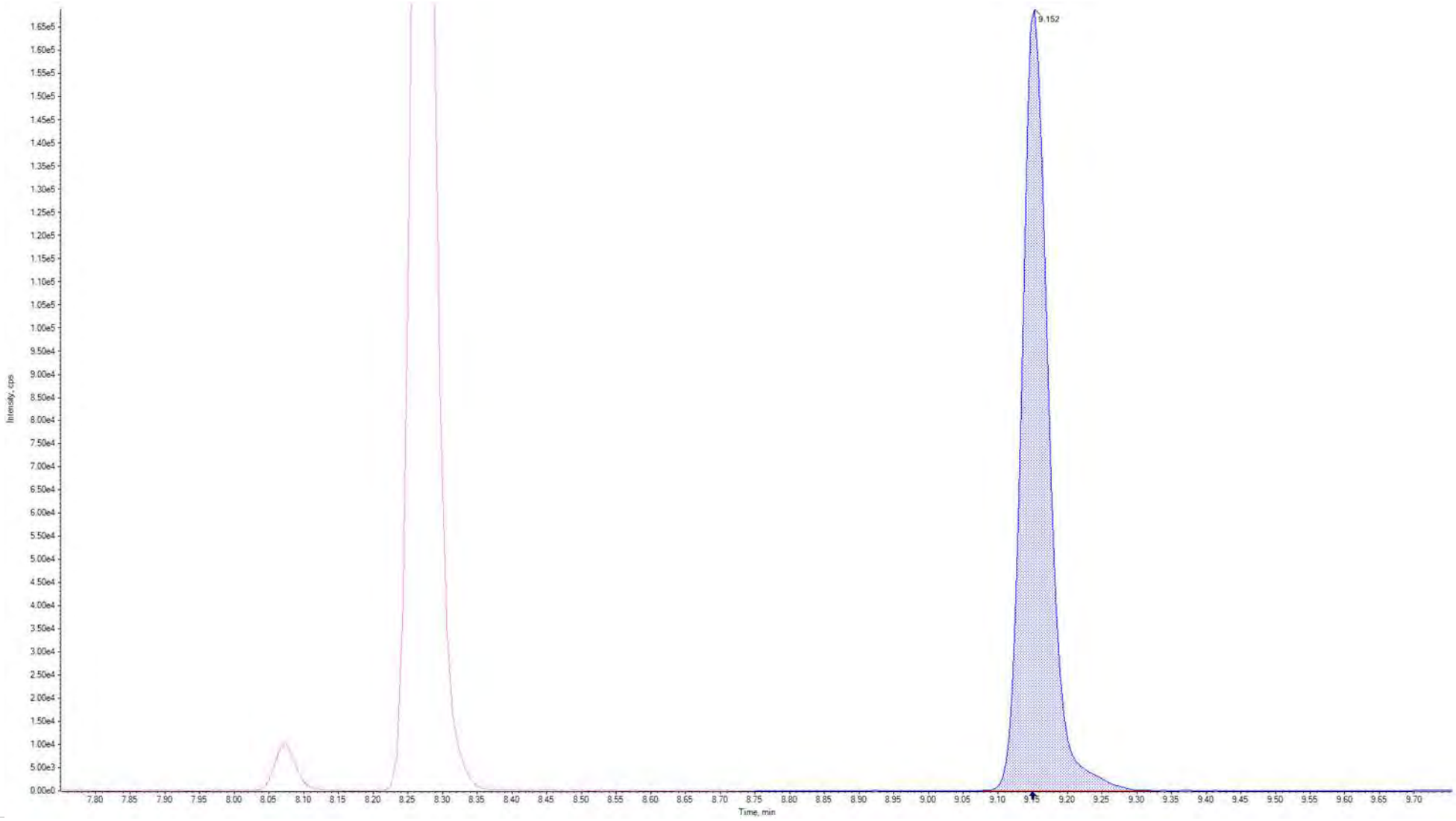
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFNS_2
Sample: IA1633STD-2.5 S/N:2694.8 Points Across peak:36



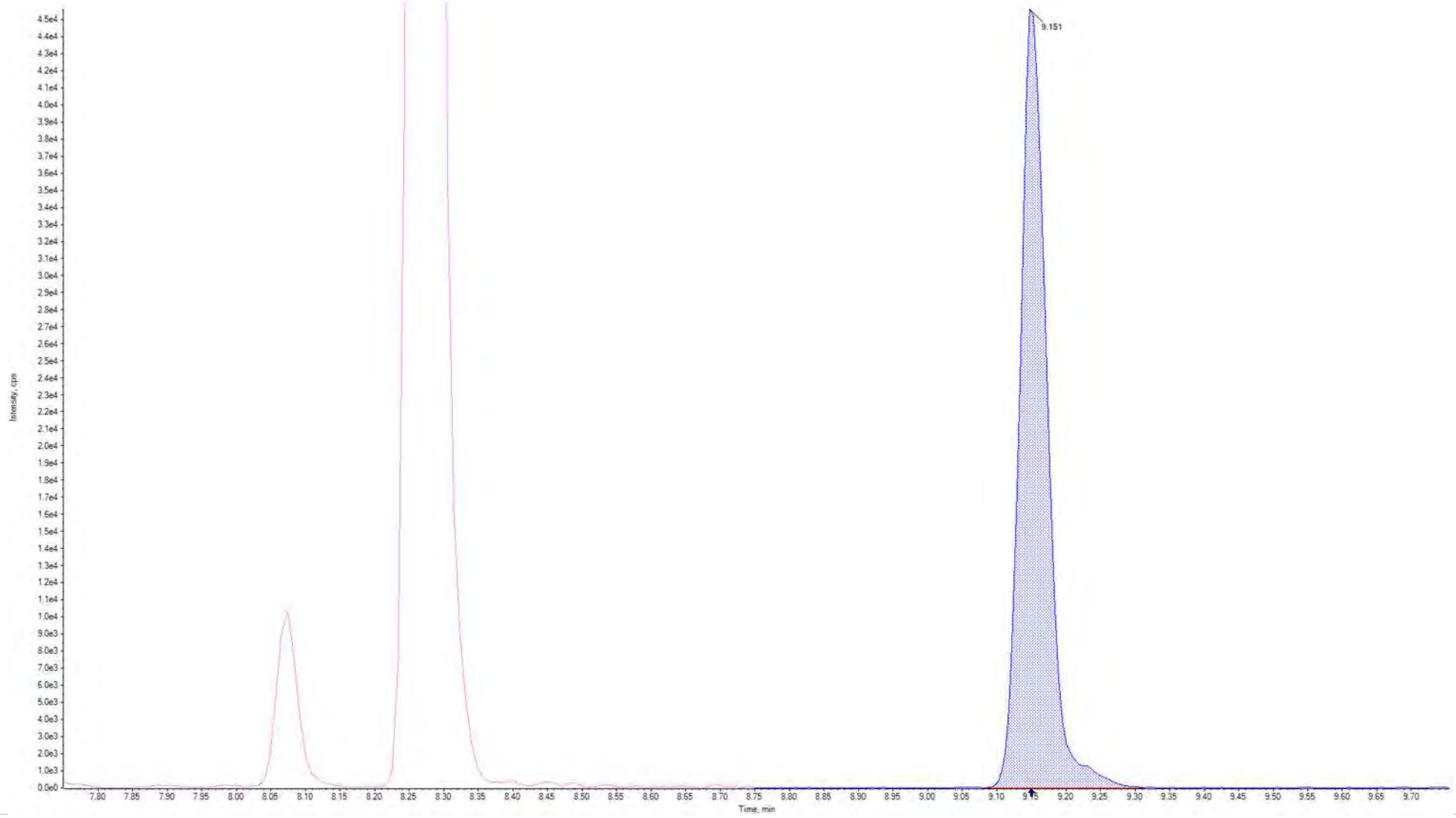
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDS
Sample: IA1633STD-2.5 S/N:10431.2 Points Across peak:49



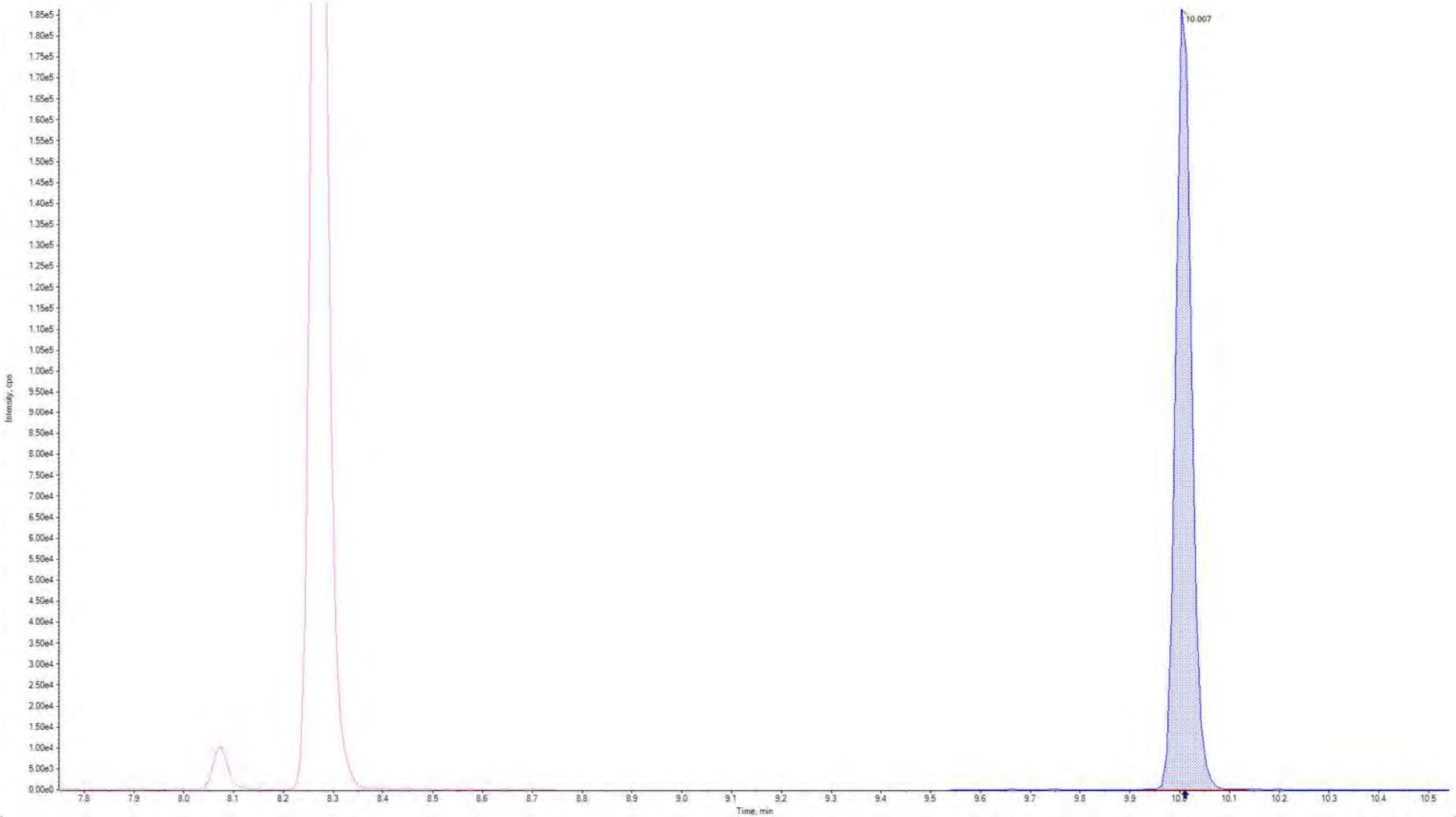
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDS_2
Sample: IA1633STD-2.5 S/N:3096.5 Points Across peak:44



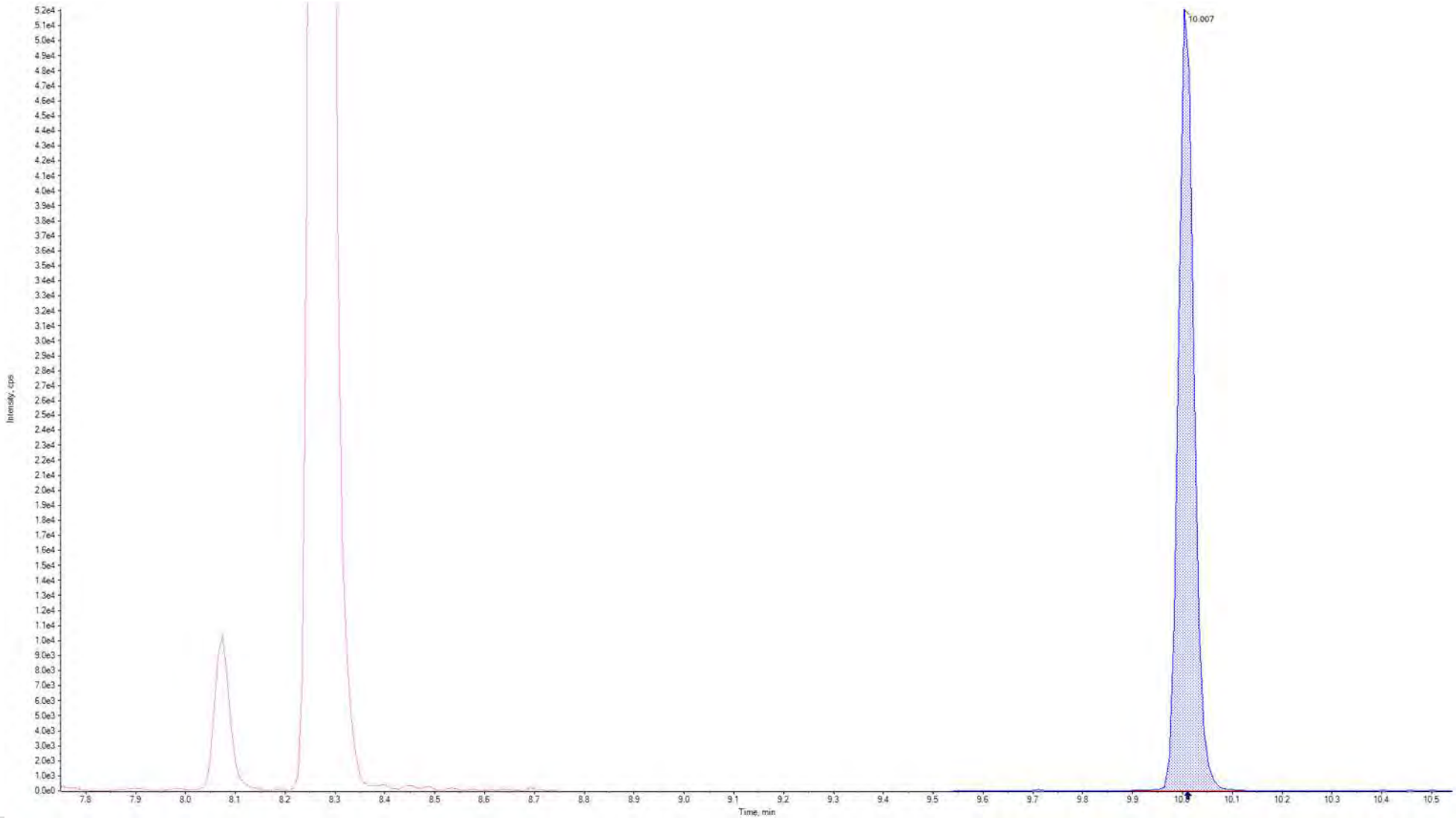
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDoS
Sample: IA1633STD-2.5 S/N:22260.7 Points Across peak:24



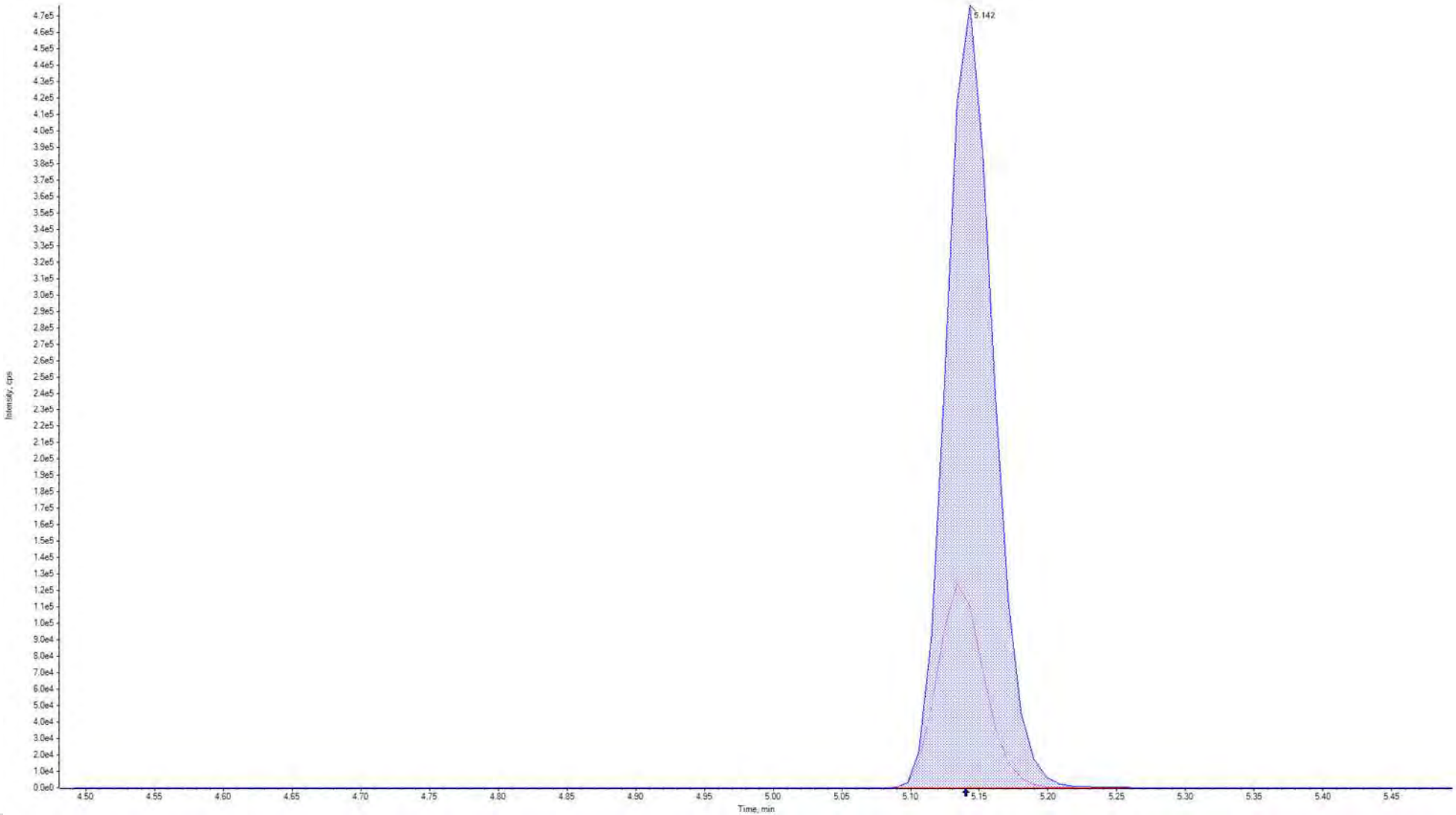
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDoS_2
Sample: IA1633STD-2.5 S/N:2492.1 Points Across peak:29



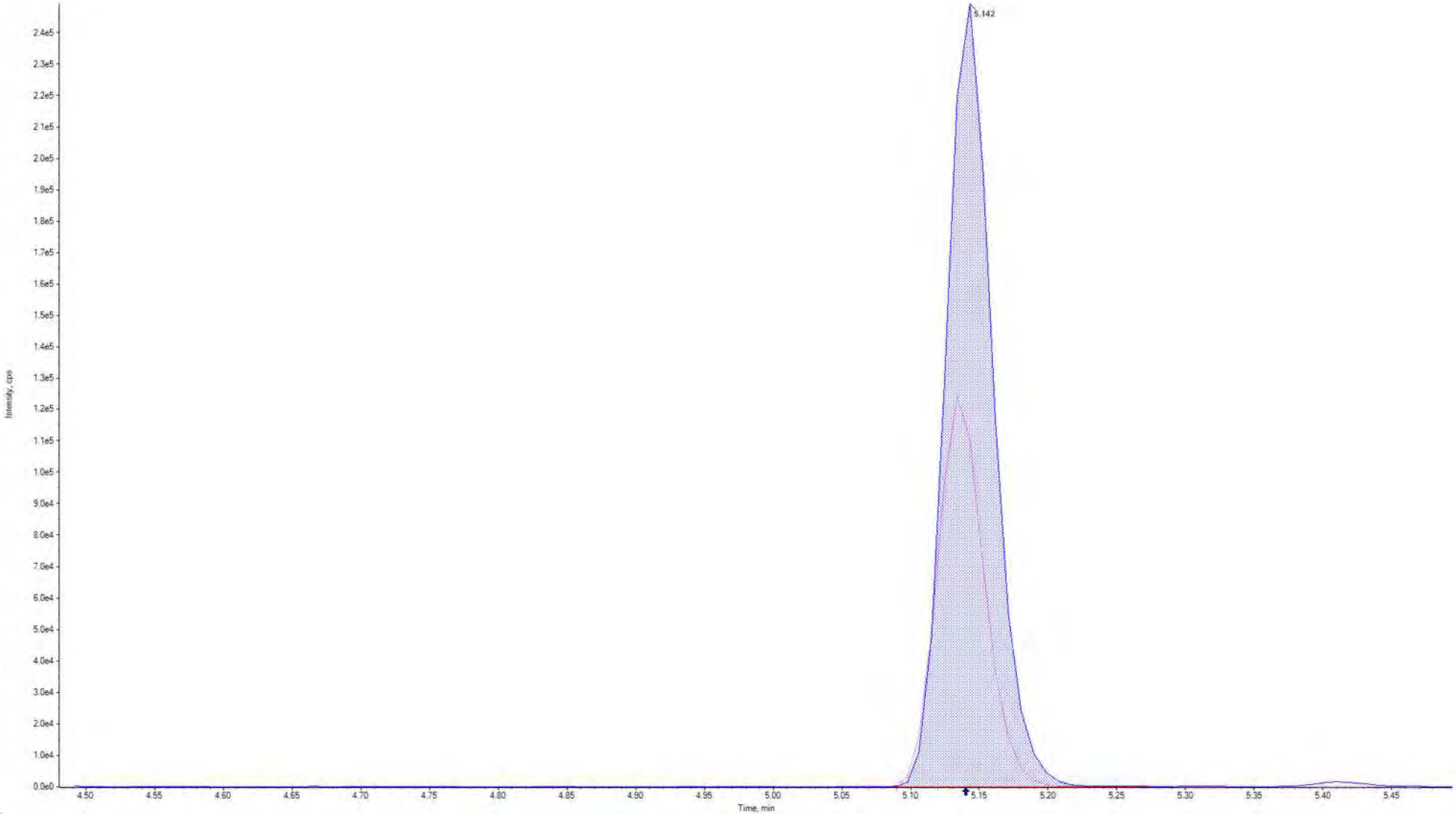
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

4:2FTS
Sample: IA1633STD-2.5 S/N:4171.7 Points Across peak:30



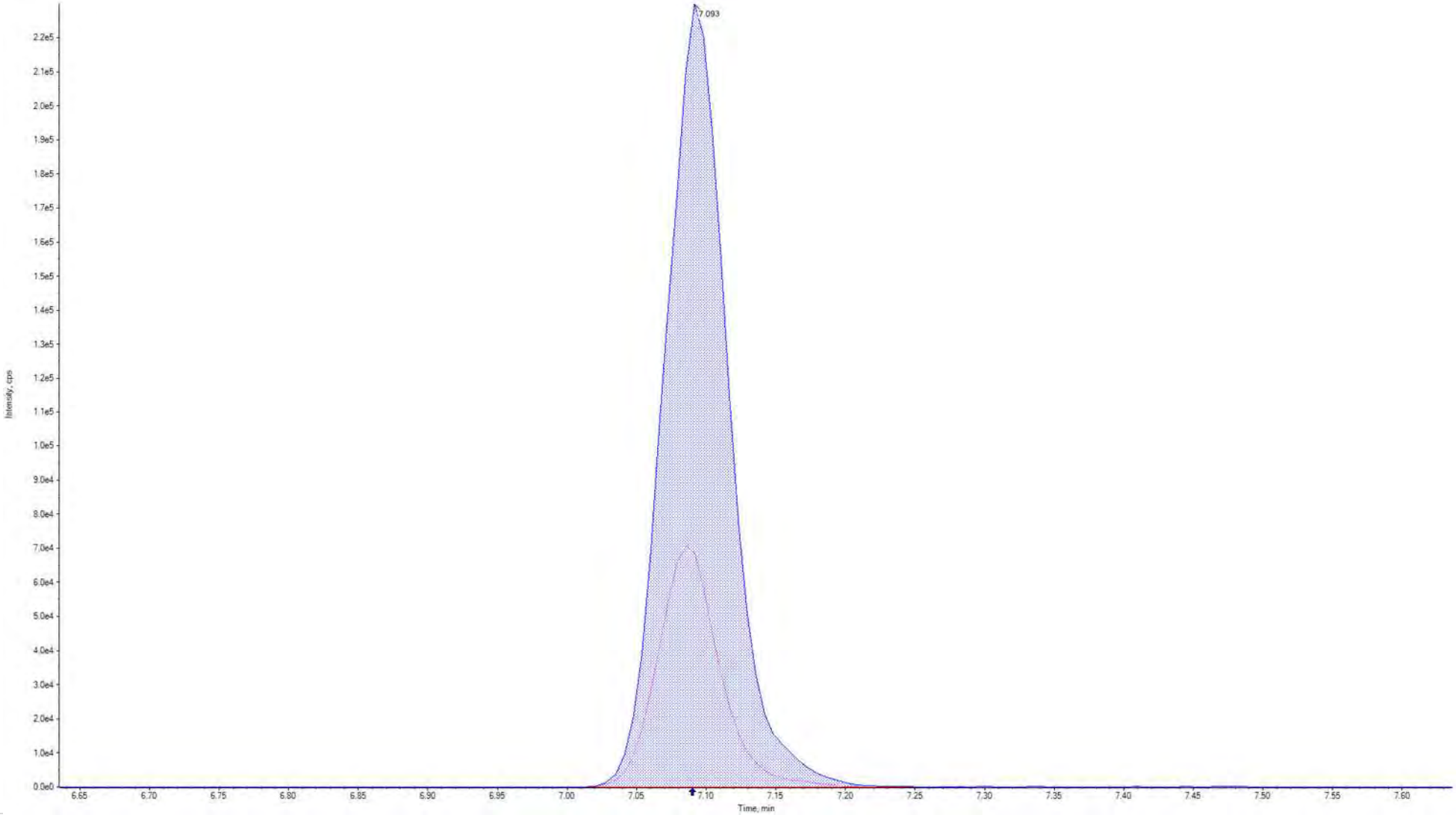
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

4:2FTS_2
Sample: IA1633STD-2.5 S/N:4893.3 Points Across peak:25

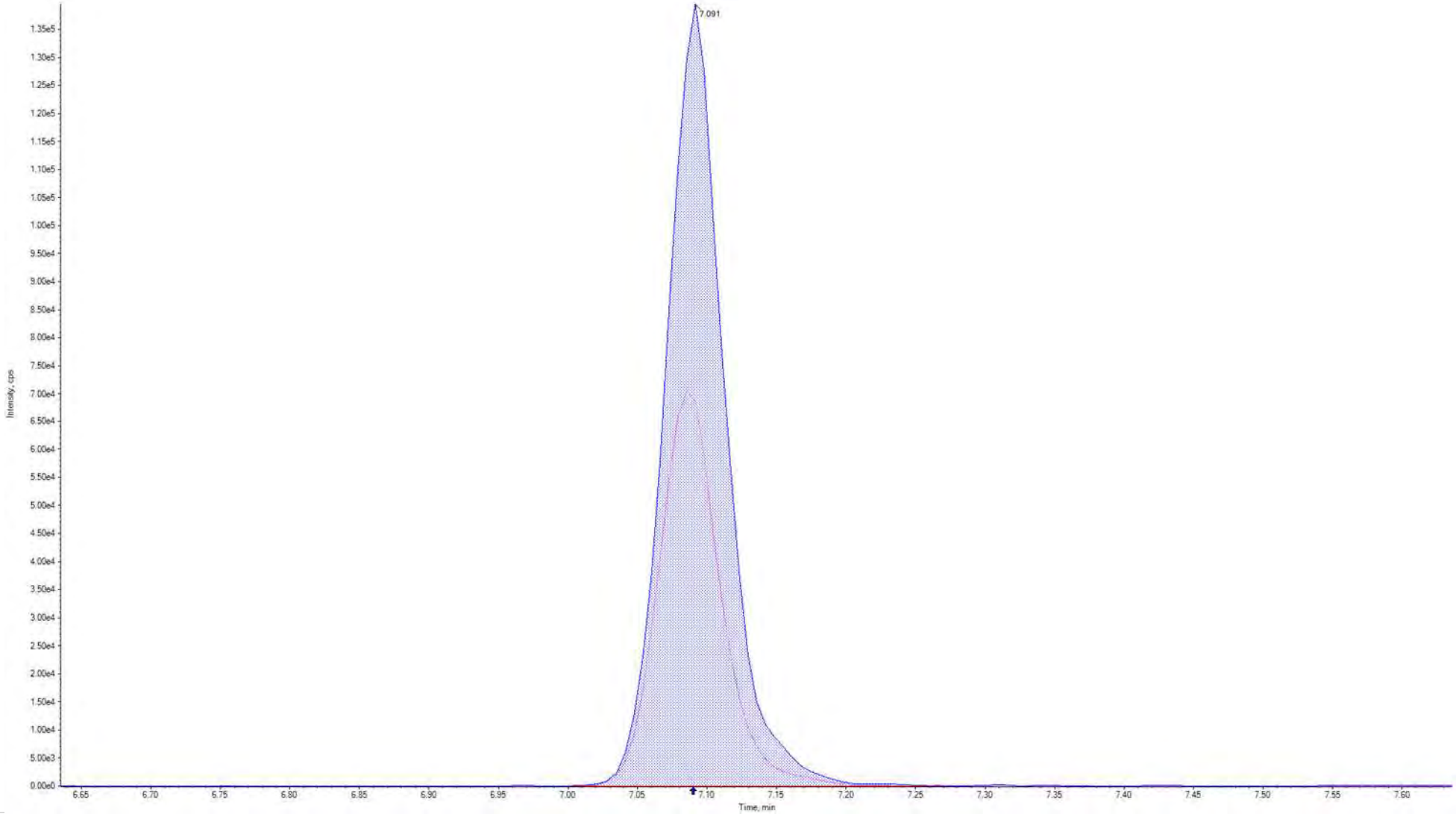


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

6:2FTS
Sample: IA1633STD-2.5 S/N:47100004.0 Points Across peak:43

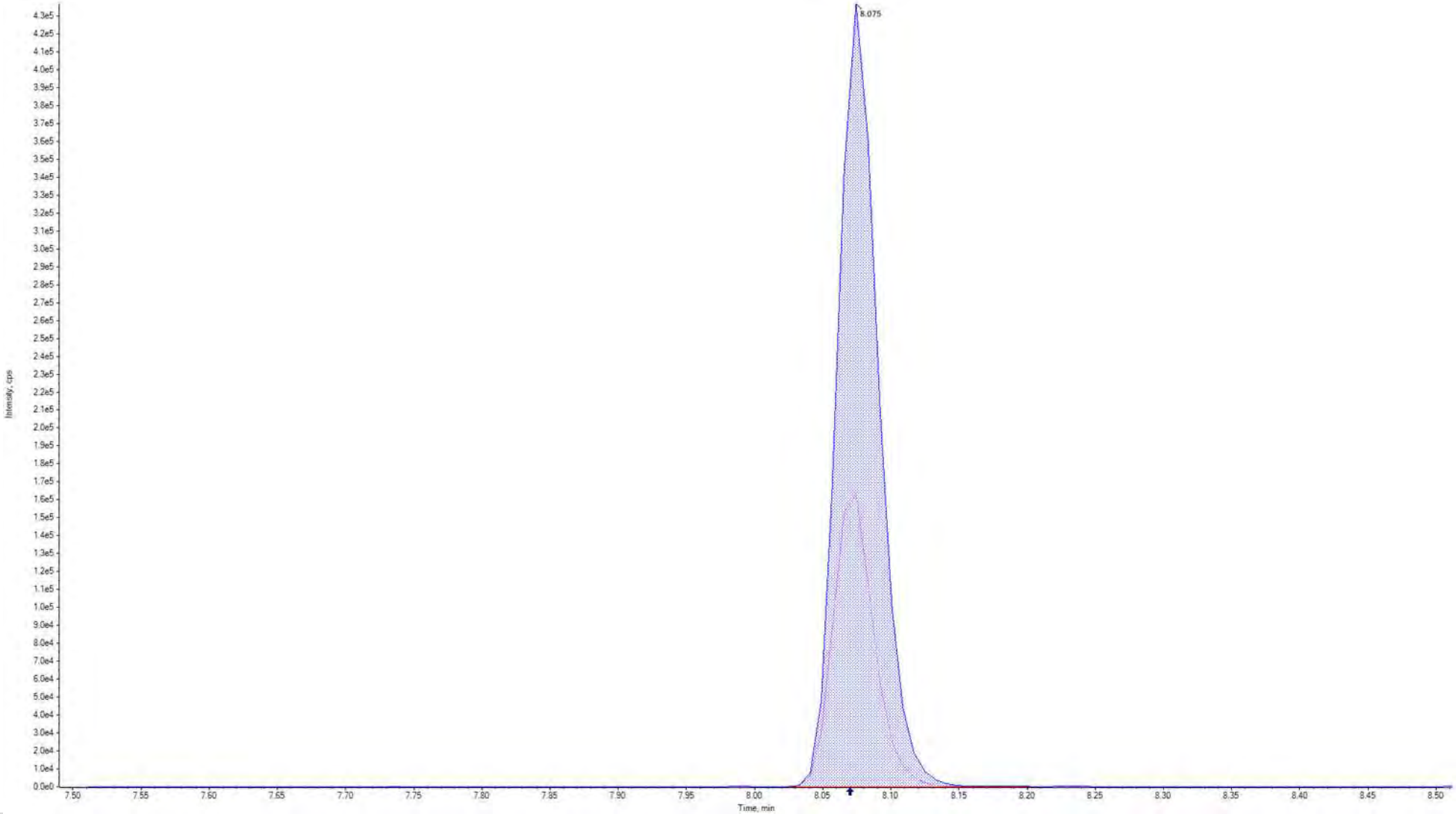


6:2FTS_2
Sample: IA1633STD-2.5 S/N:50740.1 Points Across peak:46



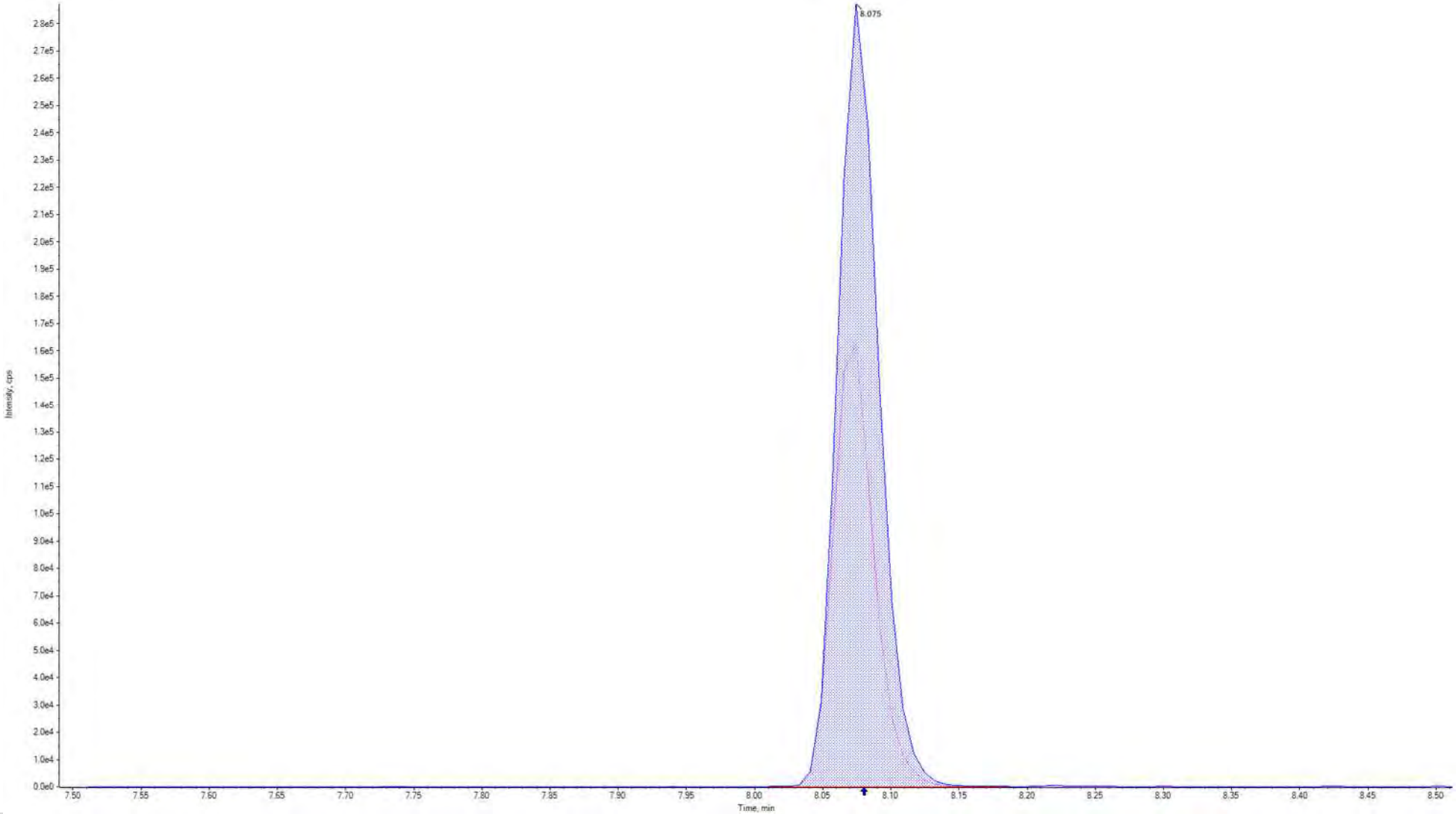
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

8:2FTS
Sample: IA1633STD-2.5 S/N:4008.1 Points Across peak:24



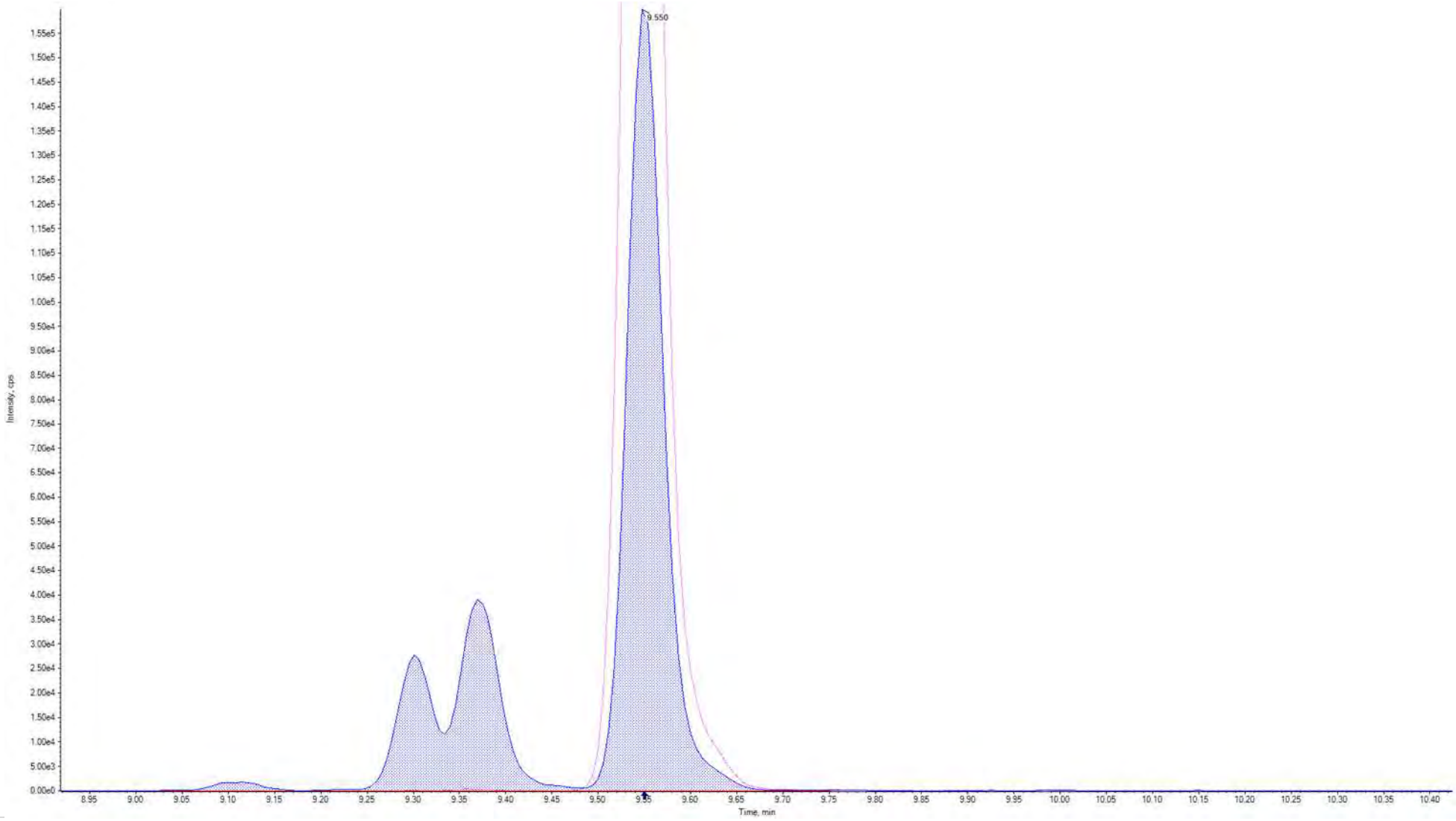
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

8:2FTS_2
Sample: IA1633STD-2.5 S/N:11797239.8 Points Across peak:25



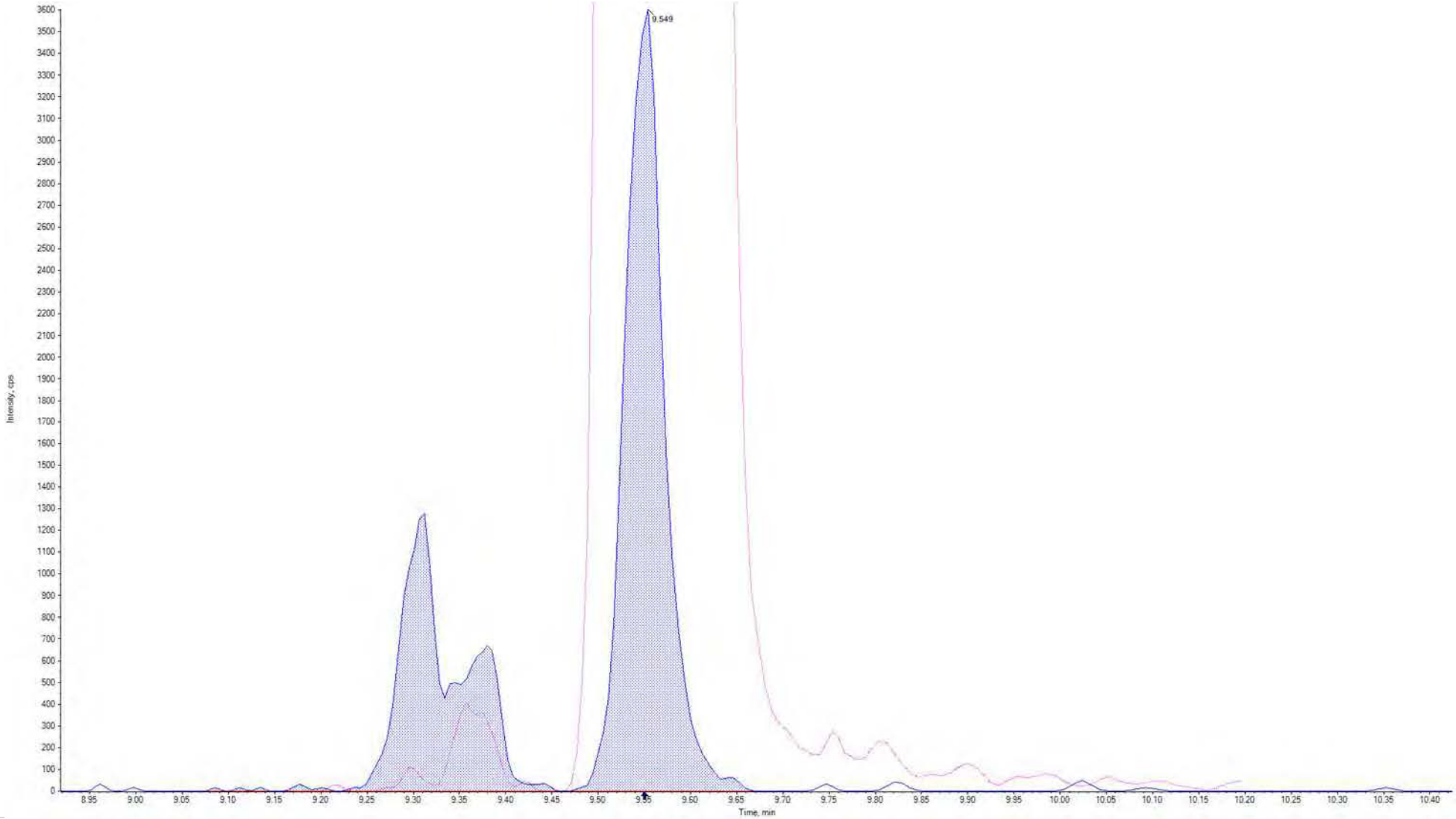
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOSA
Sample: IA1633STD-2.5 S/N:38374.2 Points Across peak:132



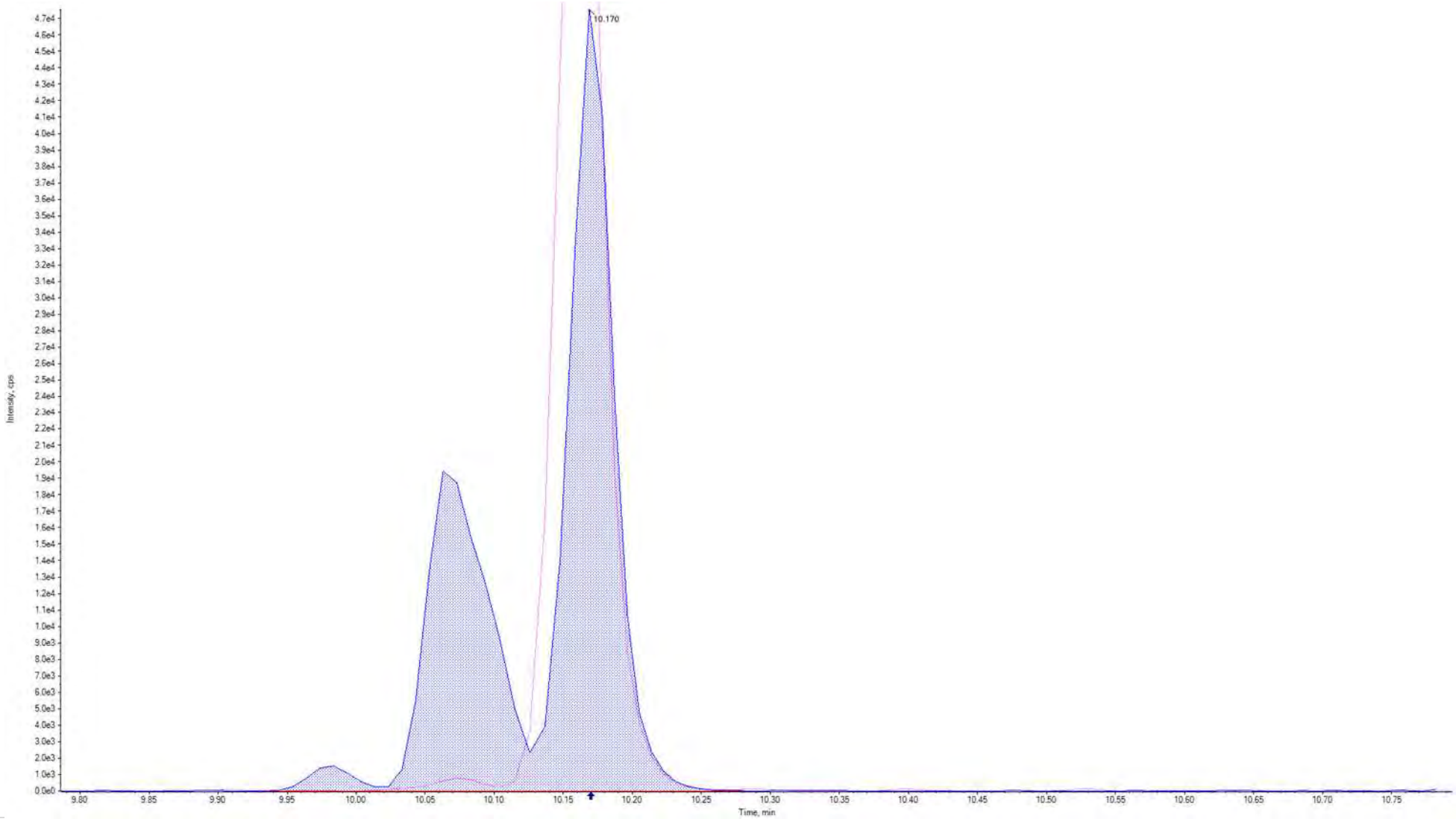
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOSA_2
Sample: IA1633STD-2.5 S/N:738.7 Points Across peak:108



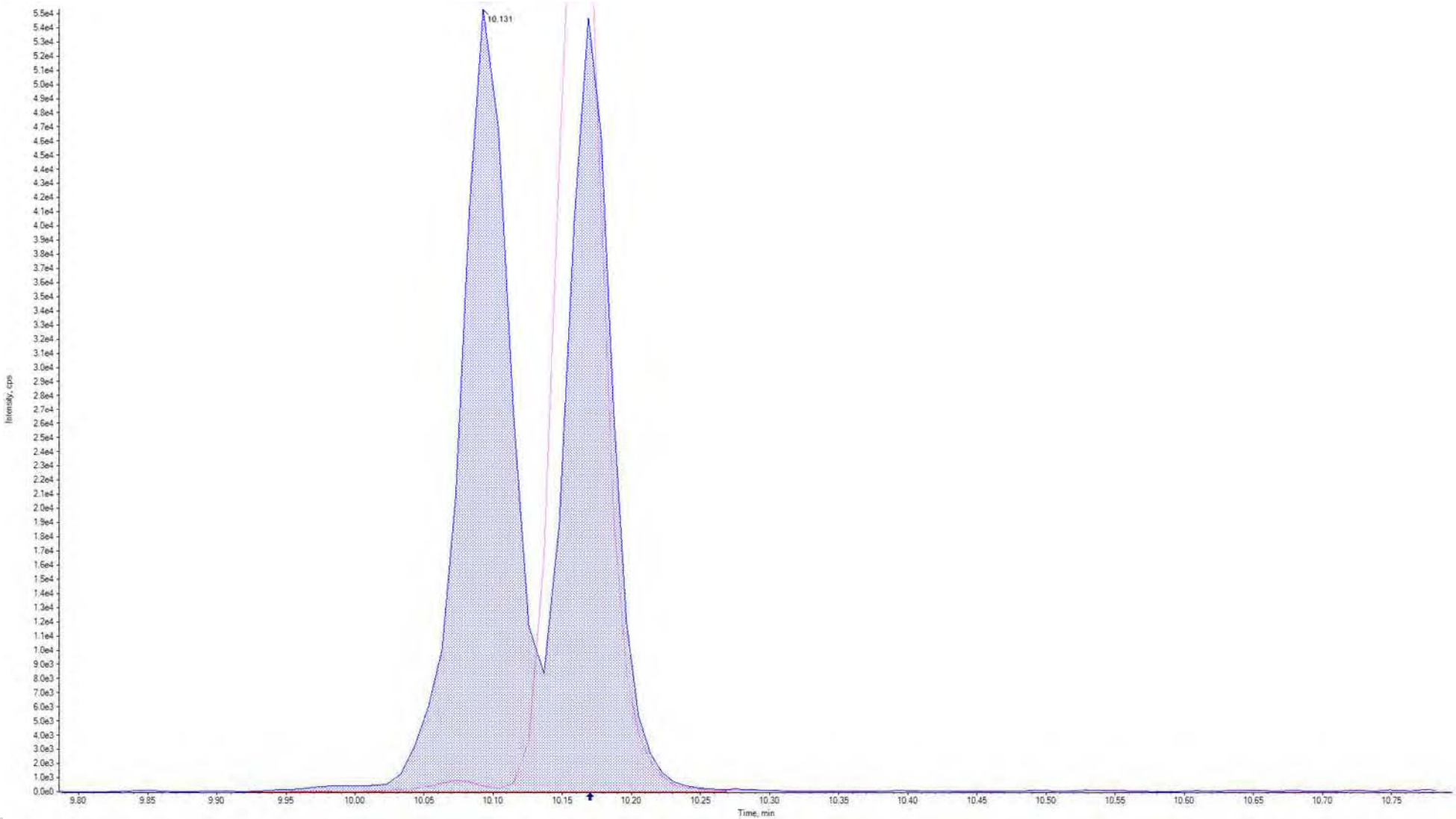
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSA
Sample: IA1633STD-2.5 S/N:610172.0 Points Across peak:39



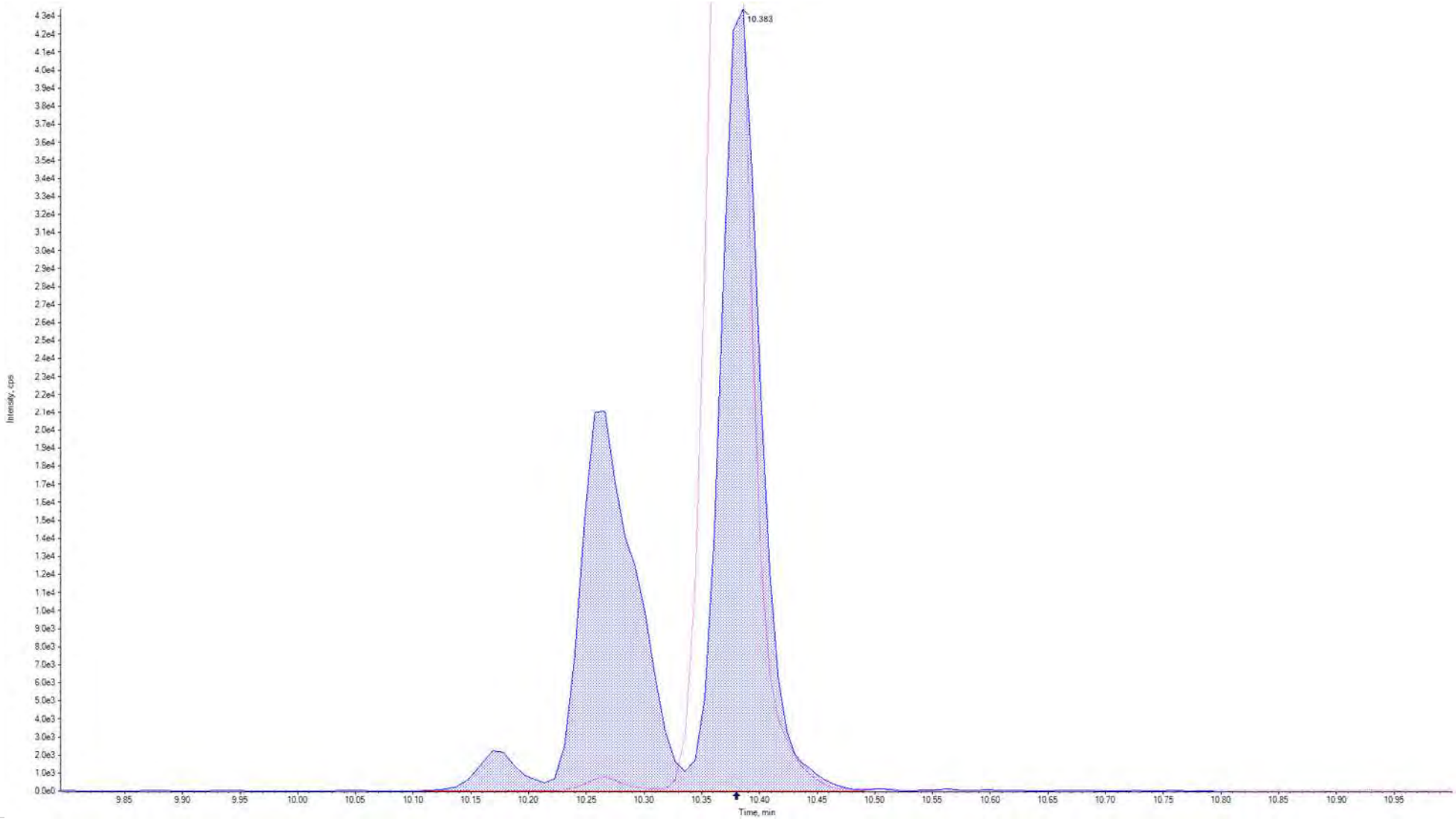
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSA_2
Sample: IA1633STD-2.5 S/N:3225.4 Points Across peak:38

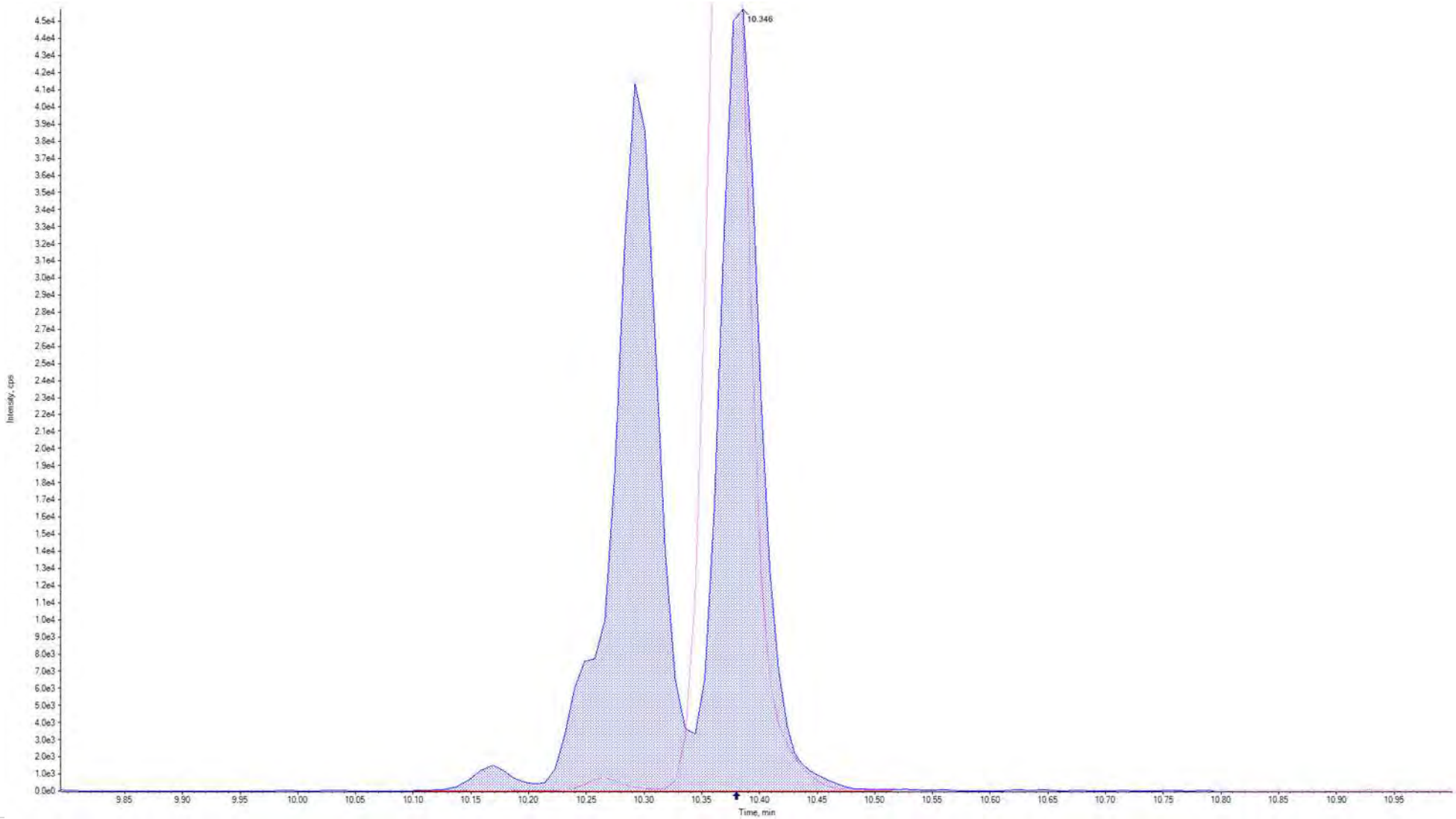


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSA
Sample: IA1633STD-2.5 S/N:6895810.4 Points Across peak:49

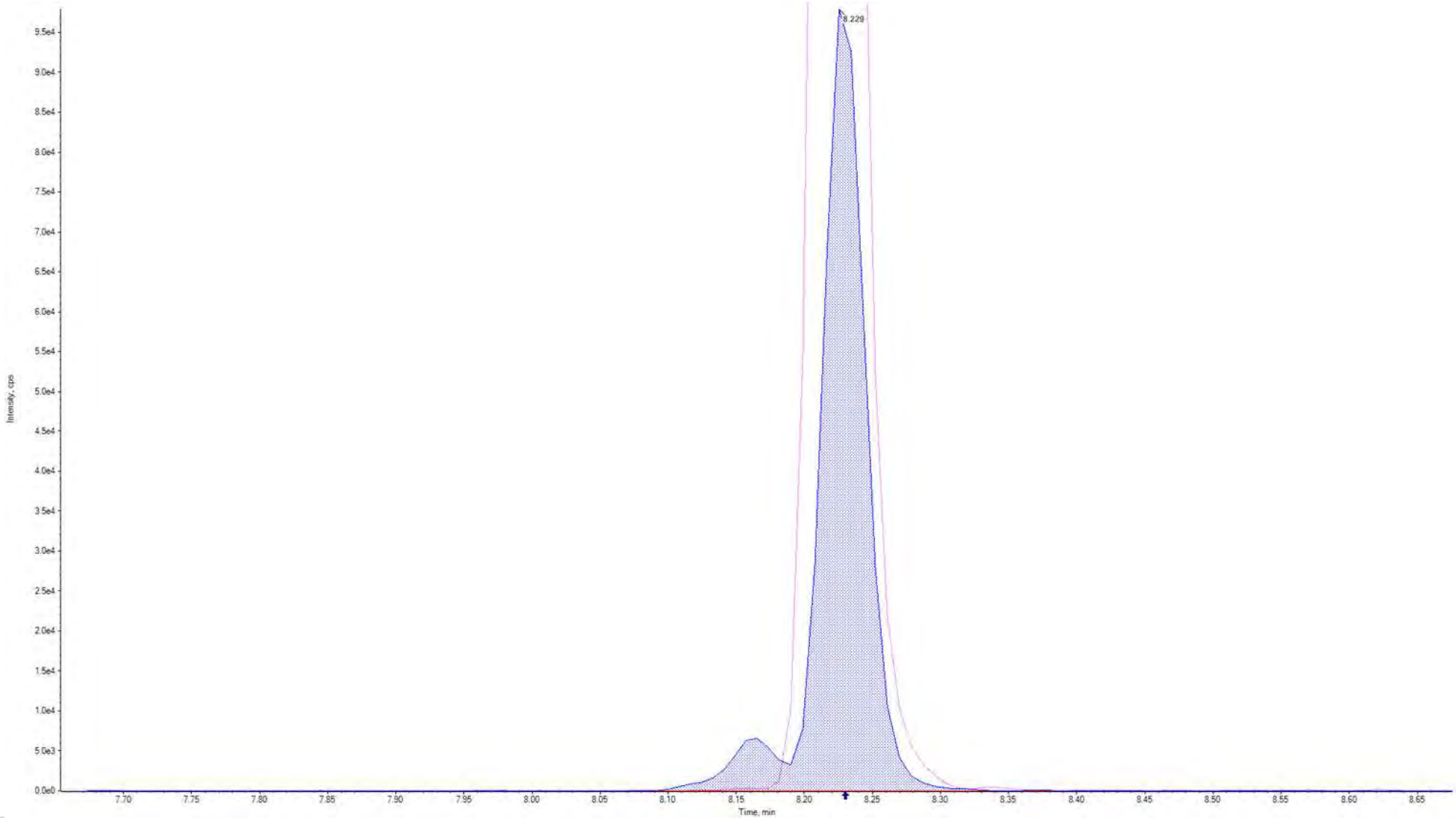


NEtFOSA_2
Sample: IA1633STD-2.5 S/N:8218641.8 Points Across peak:53



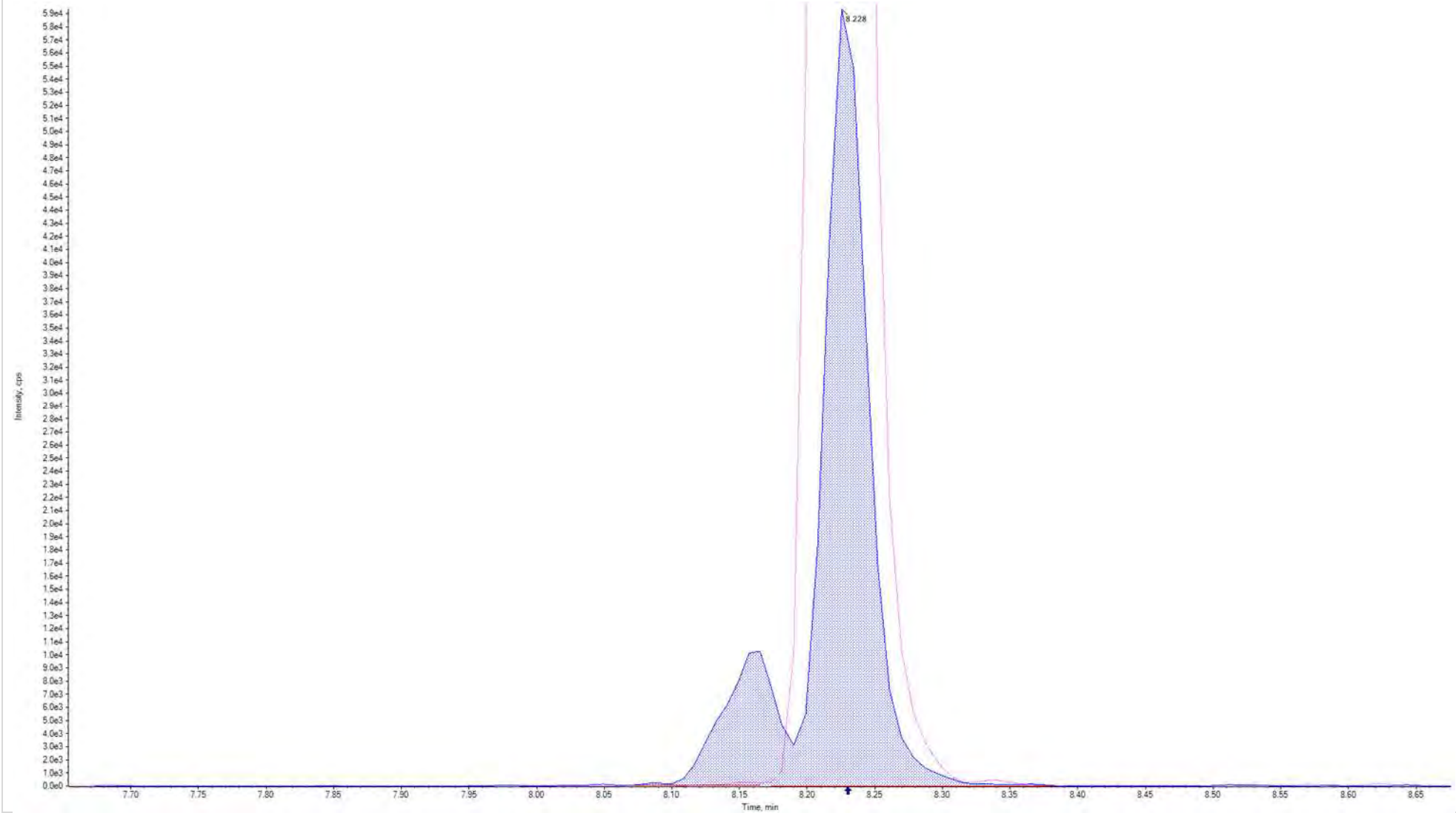
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSAA
Sample: IA1633STD-2.5 S/N:1248.7 Points Across peak:52



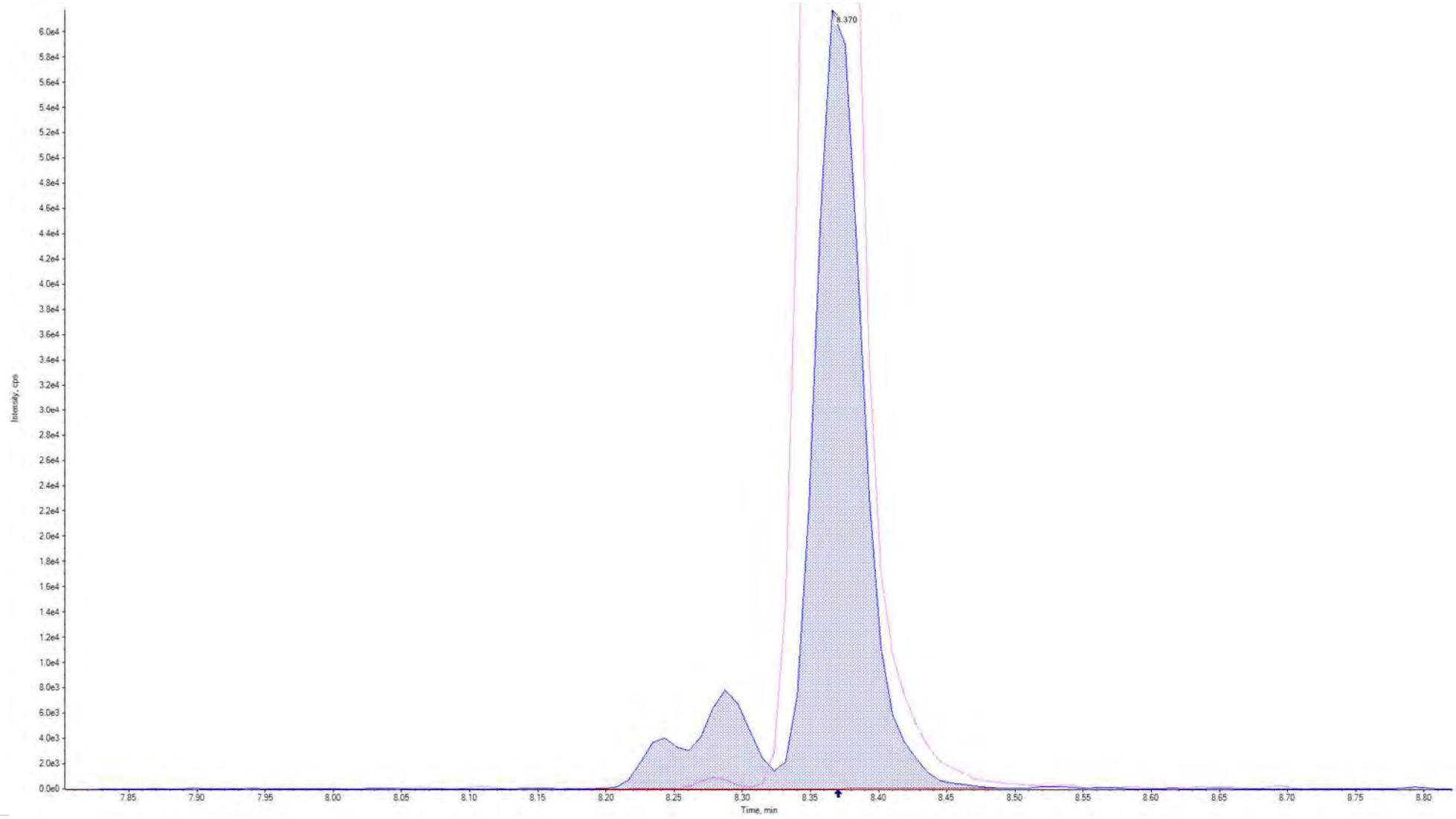
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSAA_2
Sample: IA1633STD-2.5 S/N:560.8 Points Across peak:40



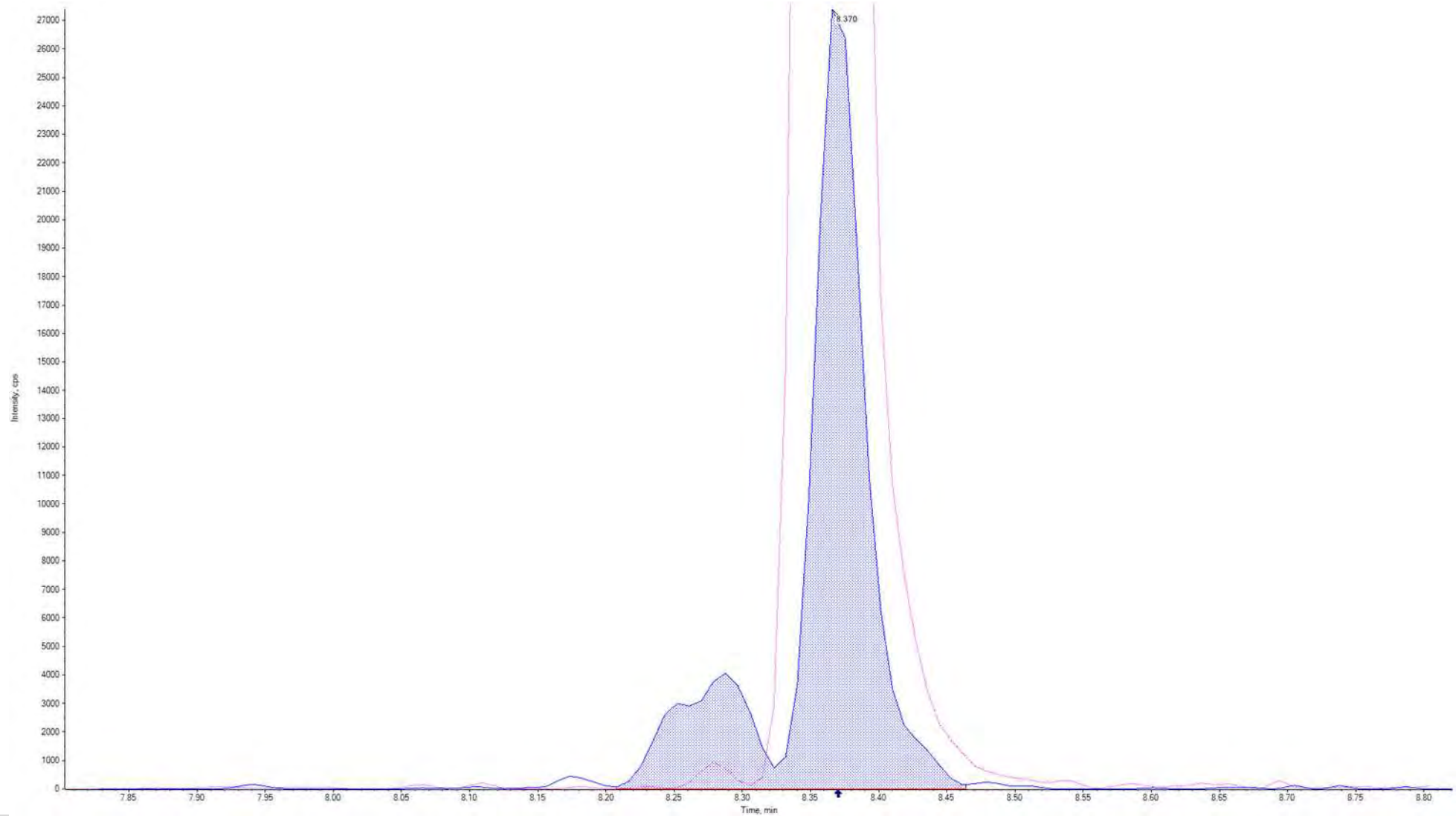
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSAA
Sample: IA1633STD-2.5 S/N:563.9 Points Across peak:38



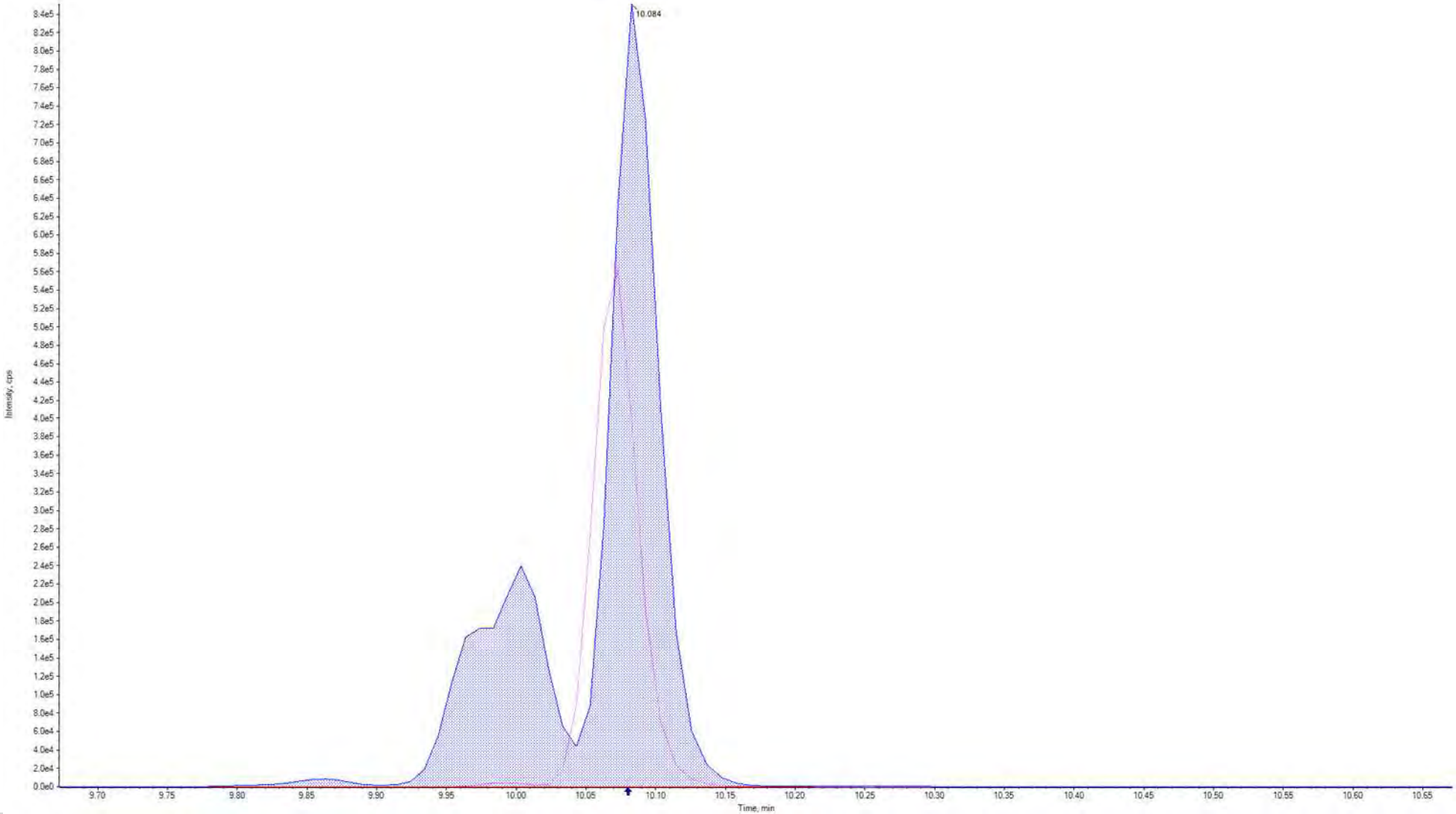
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSAA_2
Sample: IA1633STD-2.5 S/N:370.9 Points Across peak:32



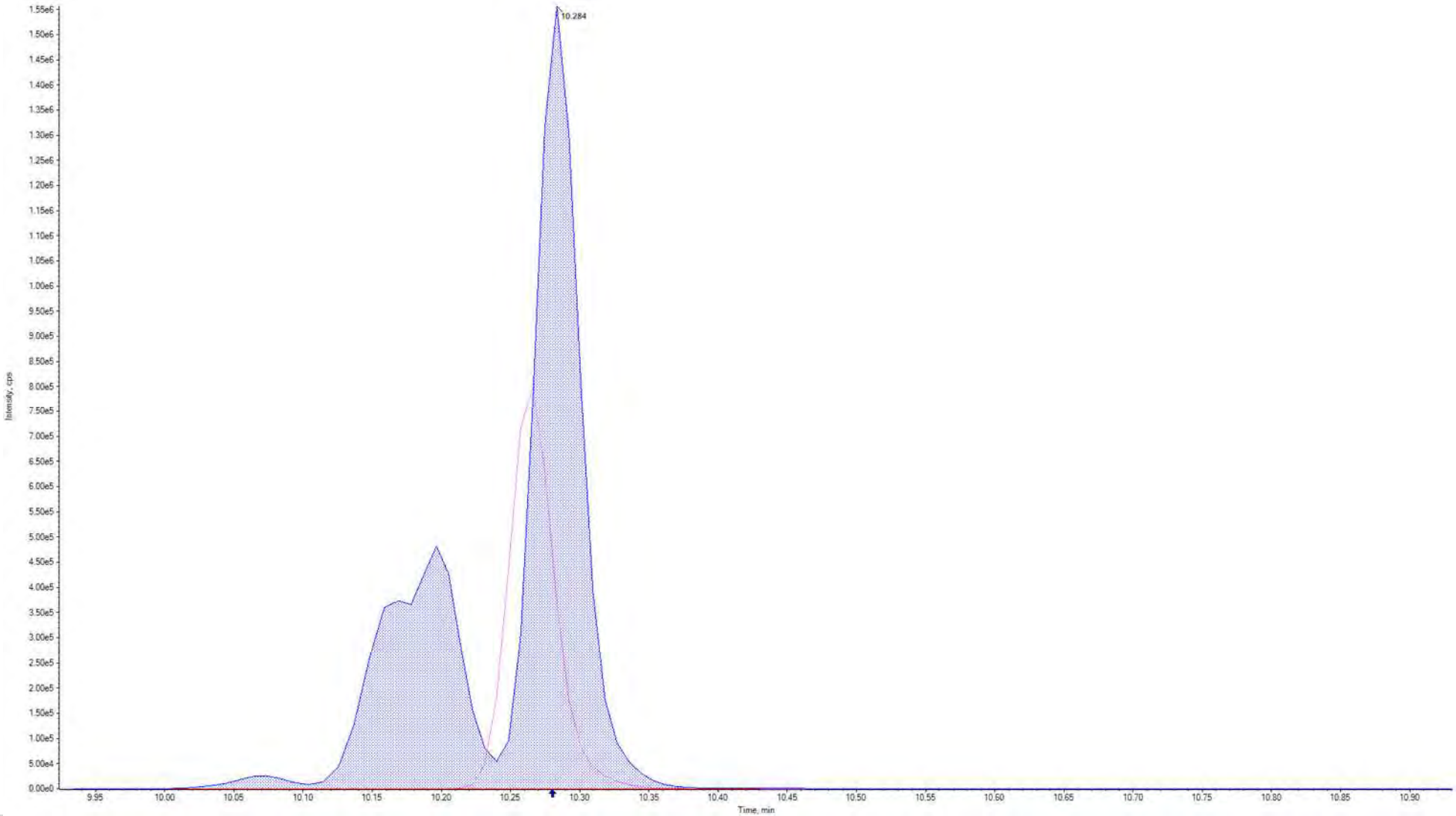
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSE
Sample: IA1633STD-2.5 S/N:13701.2 Points Across peak:51



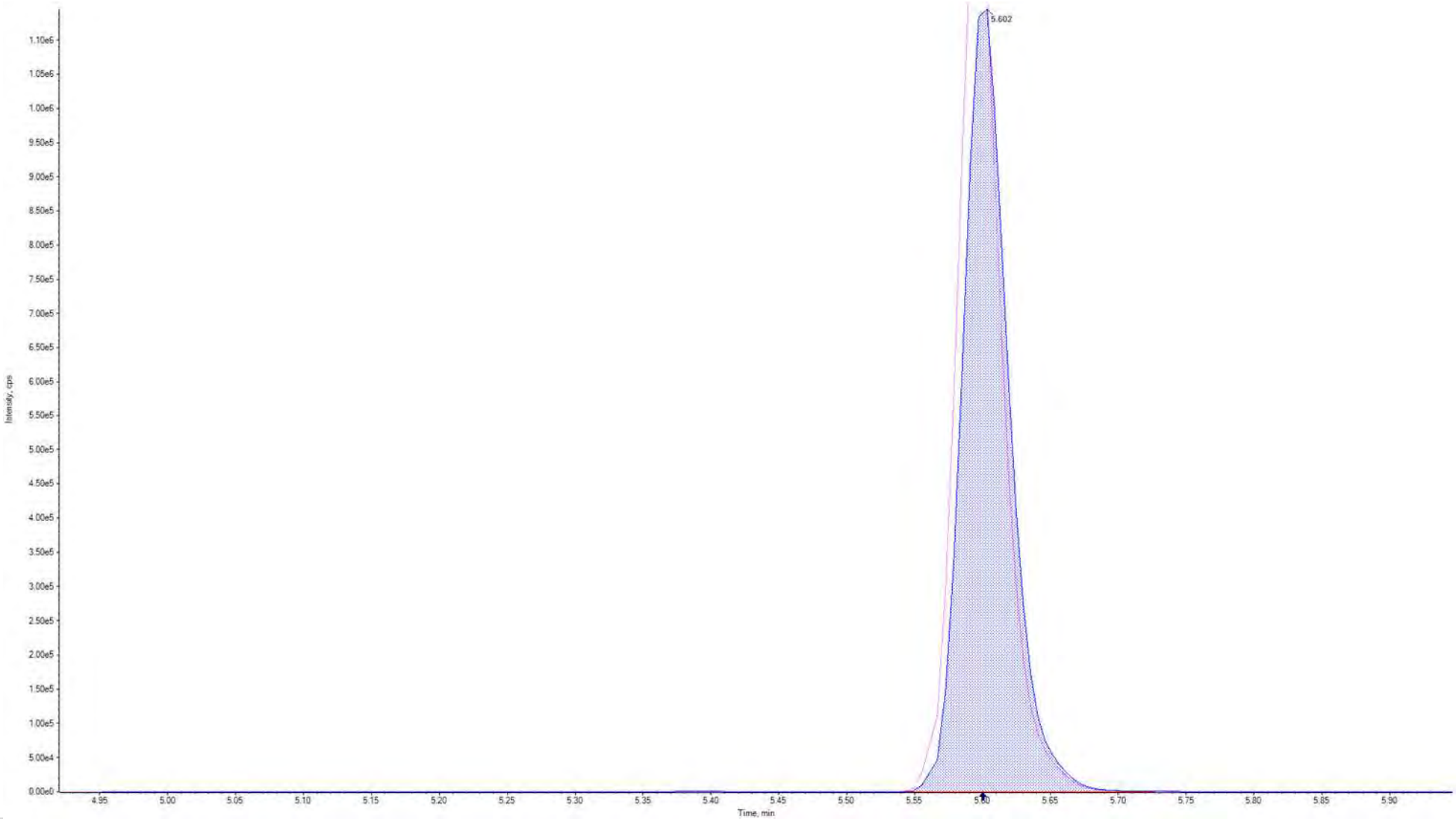
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSE
Sample: IA1633STD-2.5 S/N:3391.6 Points Across peak:51



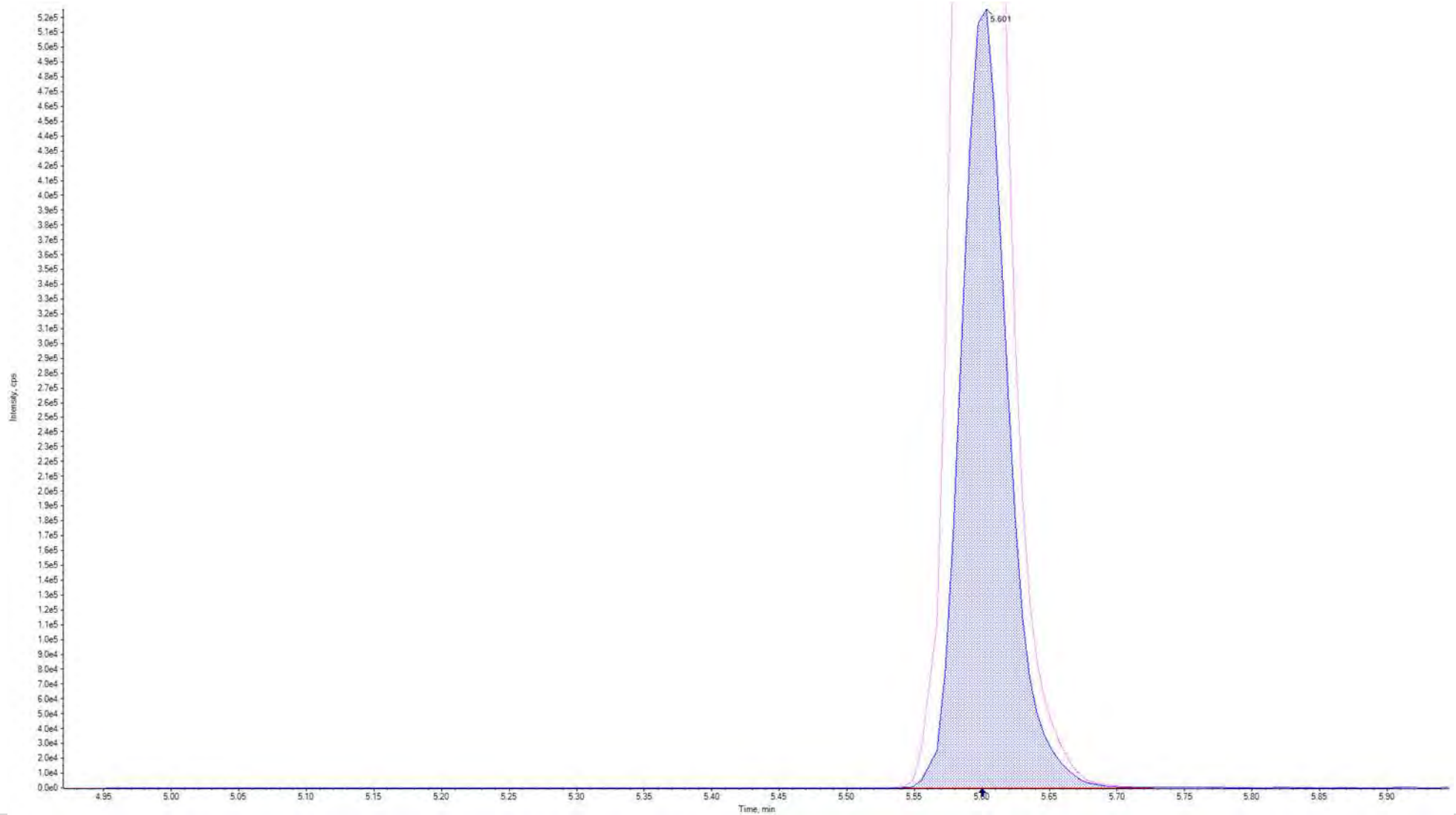
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

HFPO-DA
Sample: IA1633STD-2.5 S/N:18258.1 Points Across peak:39



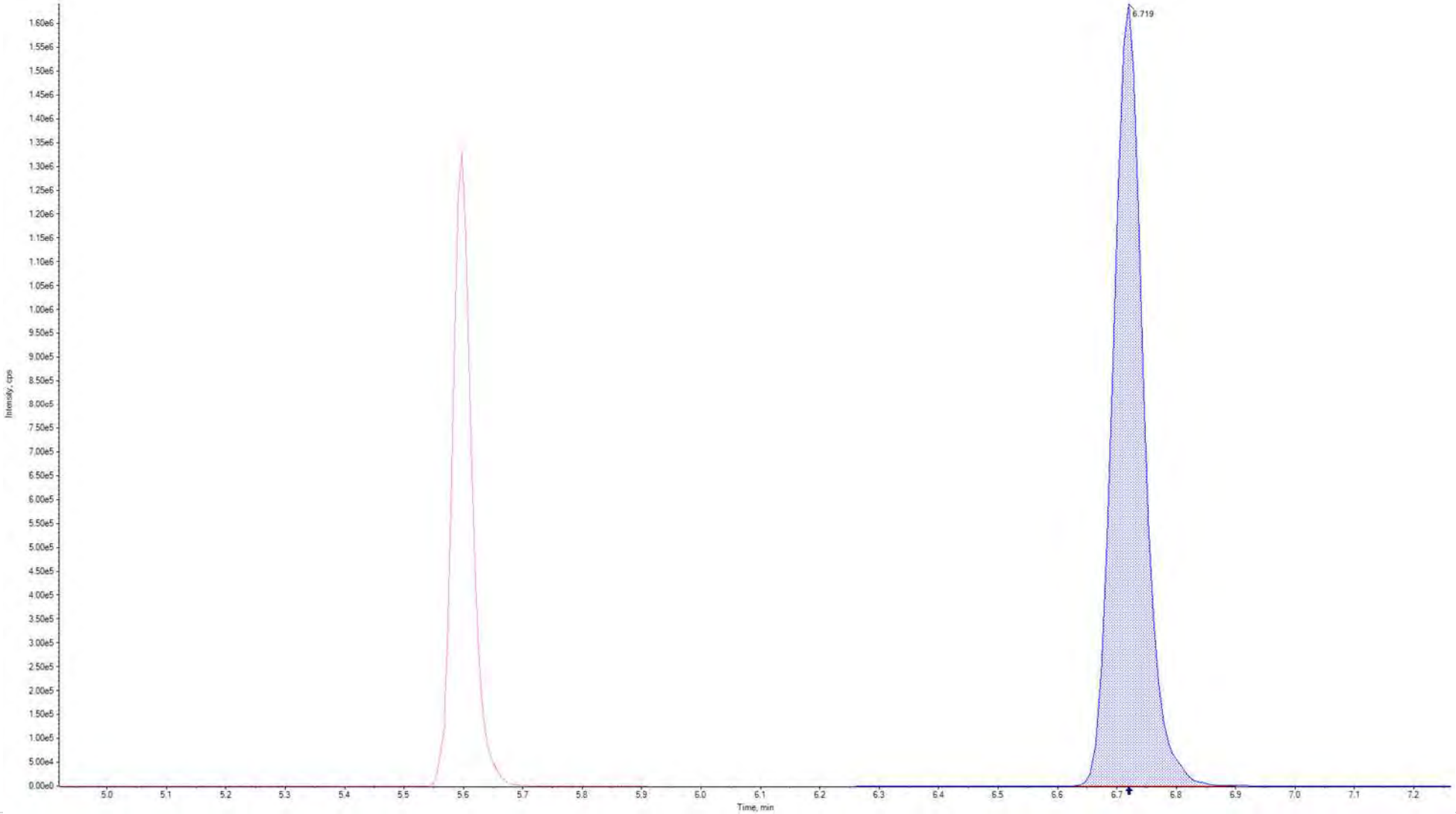
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

HFPO-DA_2
Sample: IA1633STD-2.5 S/N:4130.1 Points Across peak:41



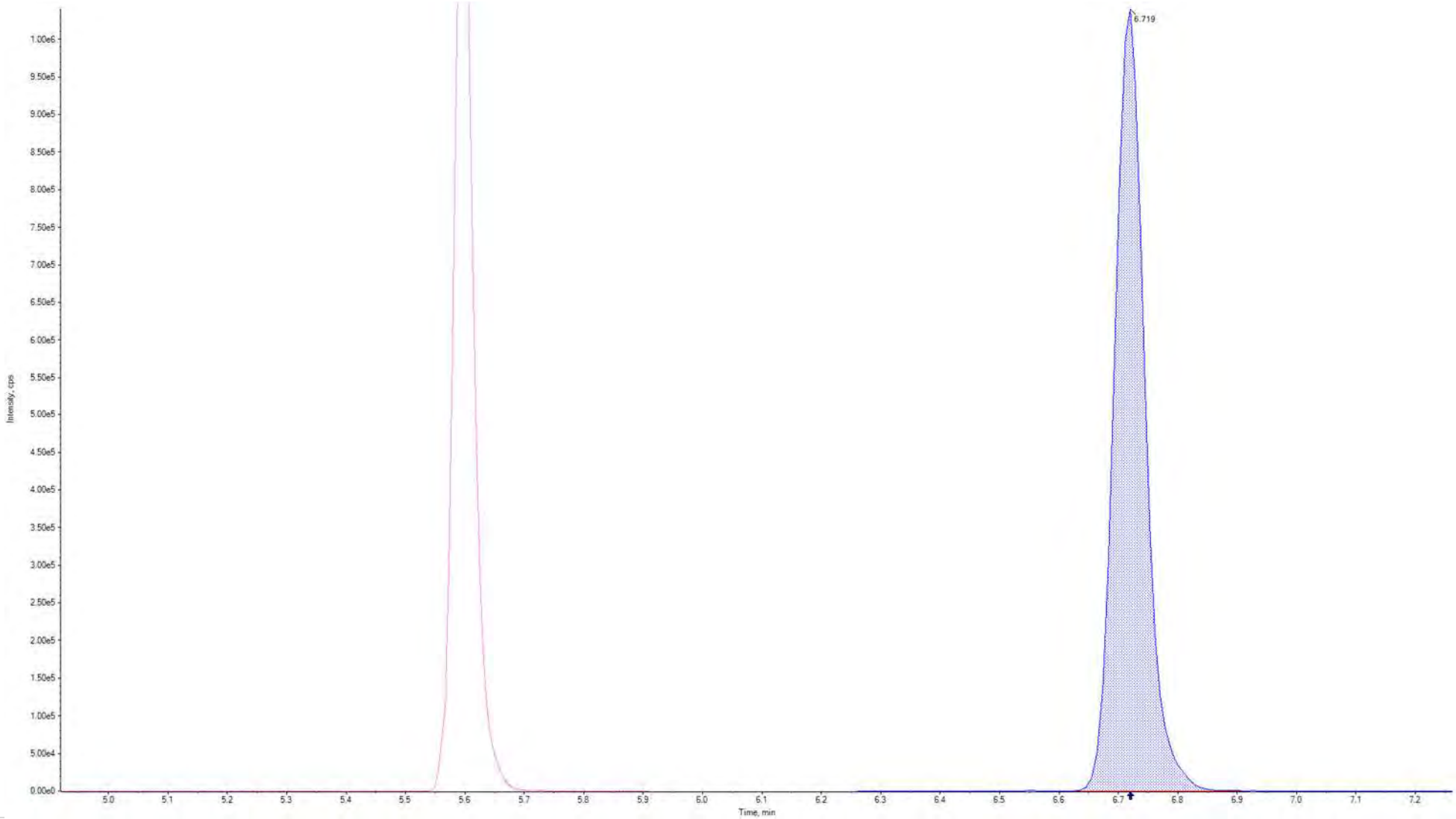
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

ADONA
Sample: IA1633STD-2.5 S/N:15728.1 Points Across peak:40



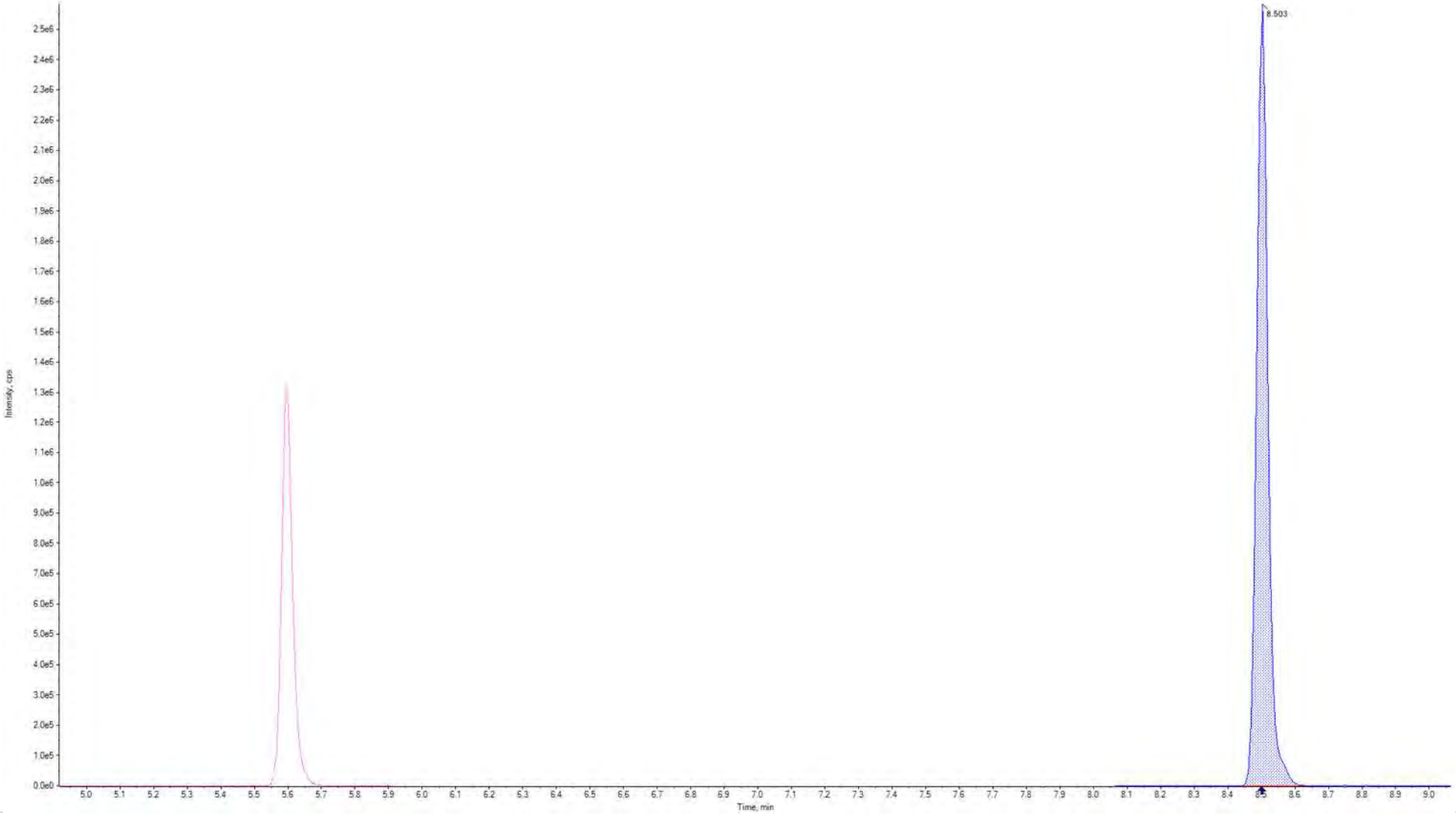
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

ADONA_2
Sample: IA1633STD-2.5 S/N:127491.5 Points Across peak:41



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

9Cl-PF3ONS
Sample: IA1633STD-2.5 S/N:6318.1 Points Across peak:40



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

9Cl-PF3ONS_2
Sample: IA1633STD-2.5 S/N:425058.7 Points Across peak:31

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

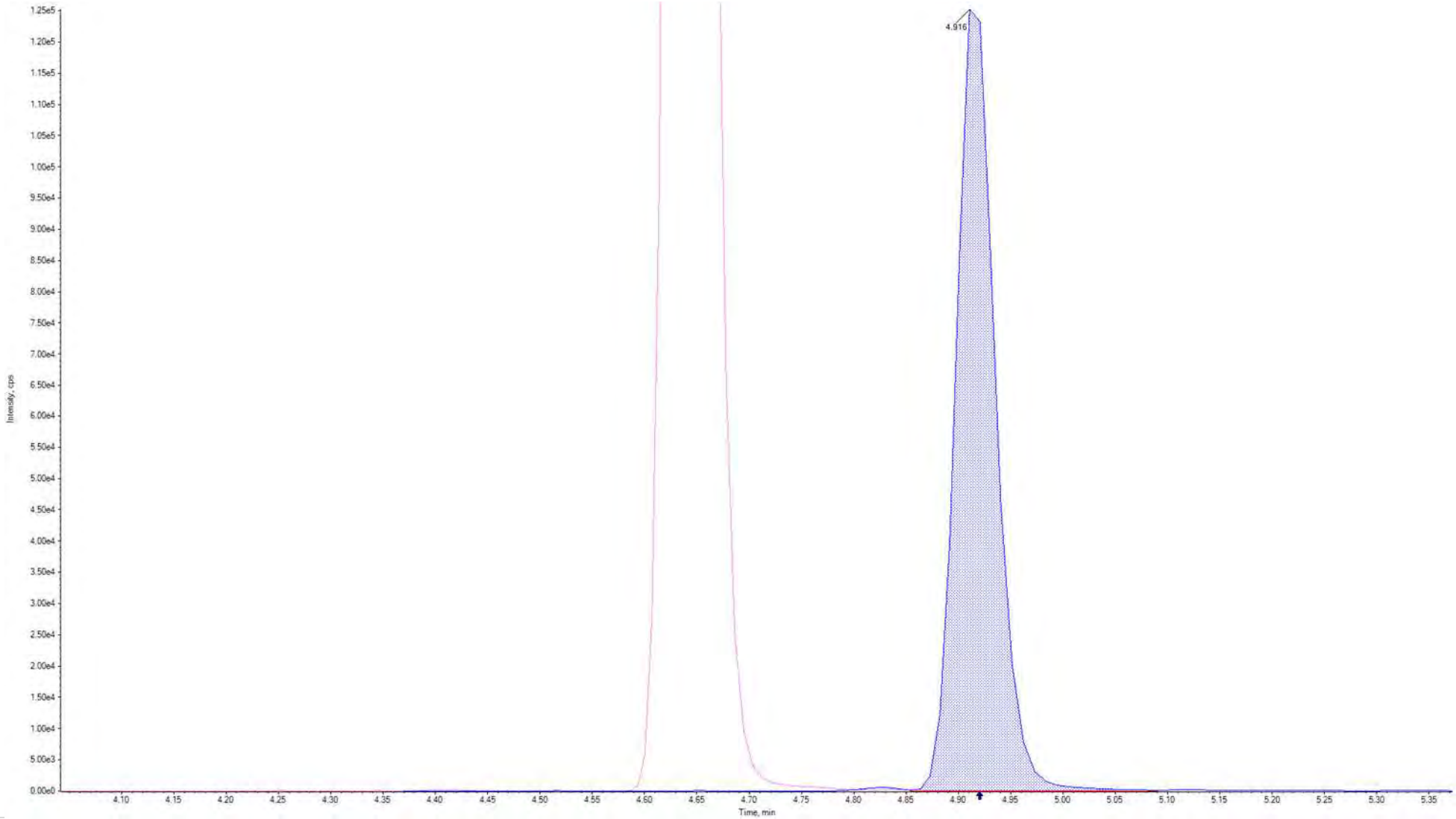
11Cl-PF3OUdS
Sample: IA1633STD-2.5 S/N:549080.4 Points Across peak:43

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

11Cl-PF3OUdS_2
Sample: IA1633STD-2.5 S/N:79273.5 Points Across peak:50

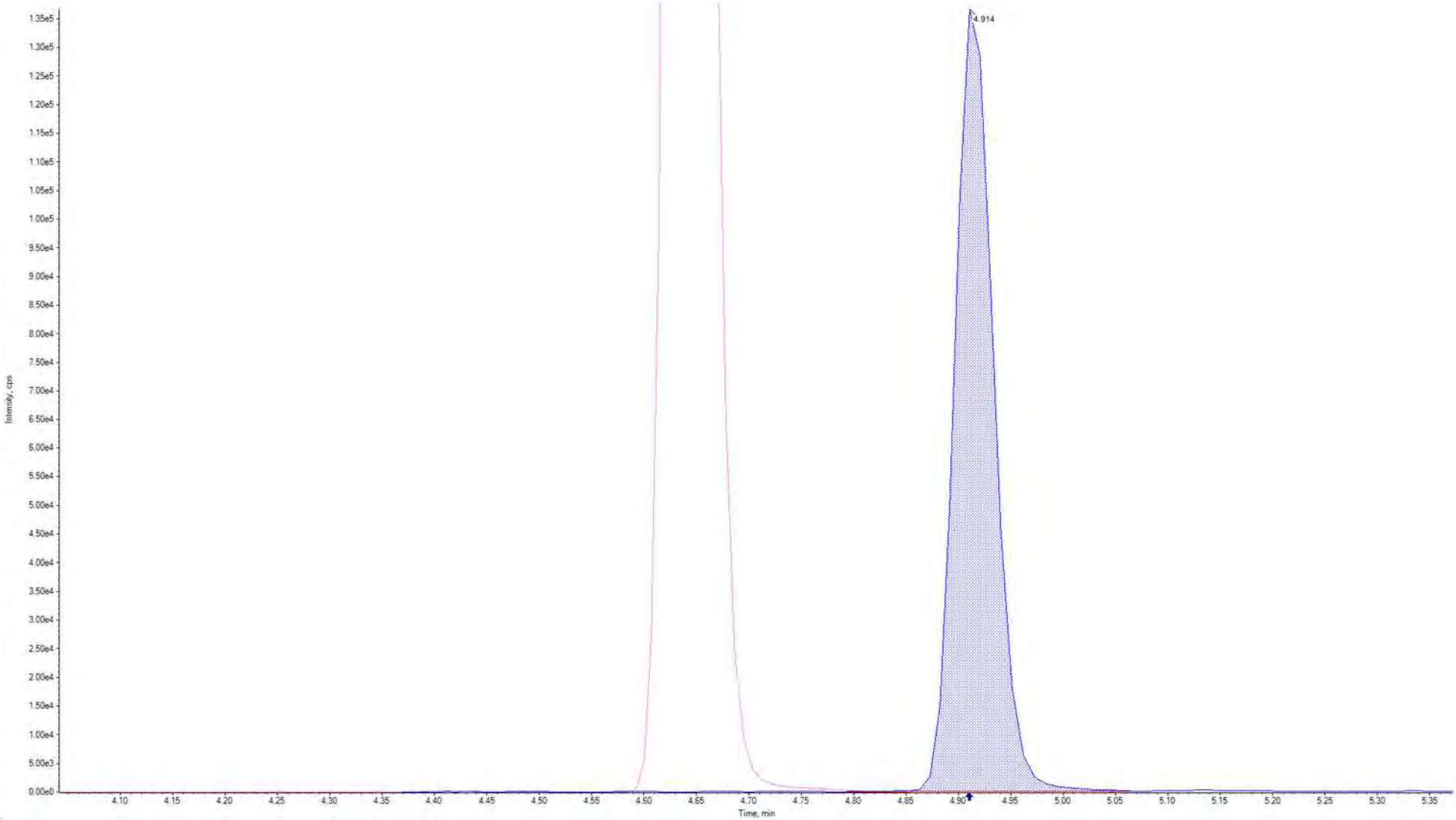
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

3:3FTCA
Sample: IA1633STD-2.5 S/N:1463.7 Points Across peak:25



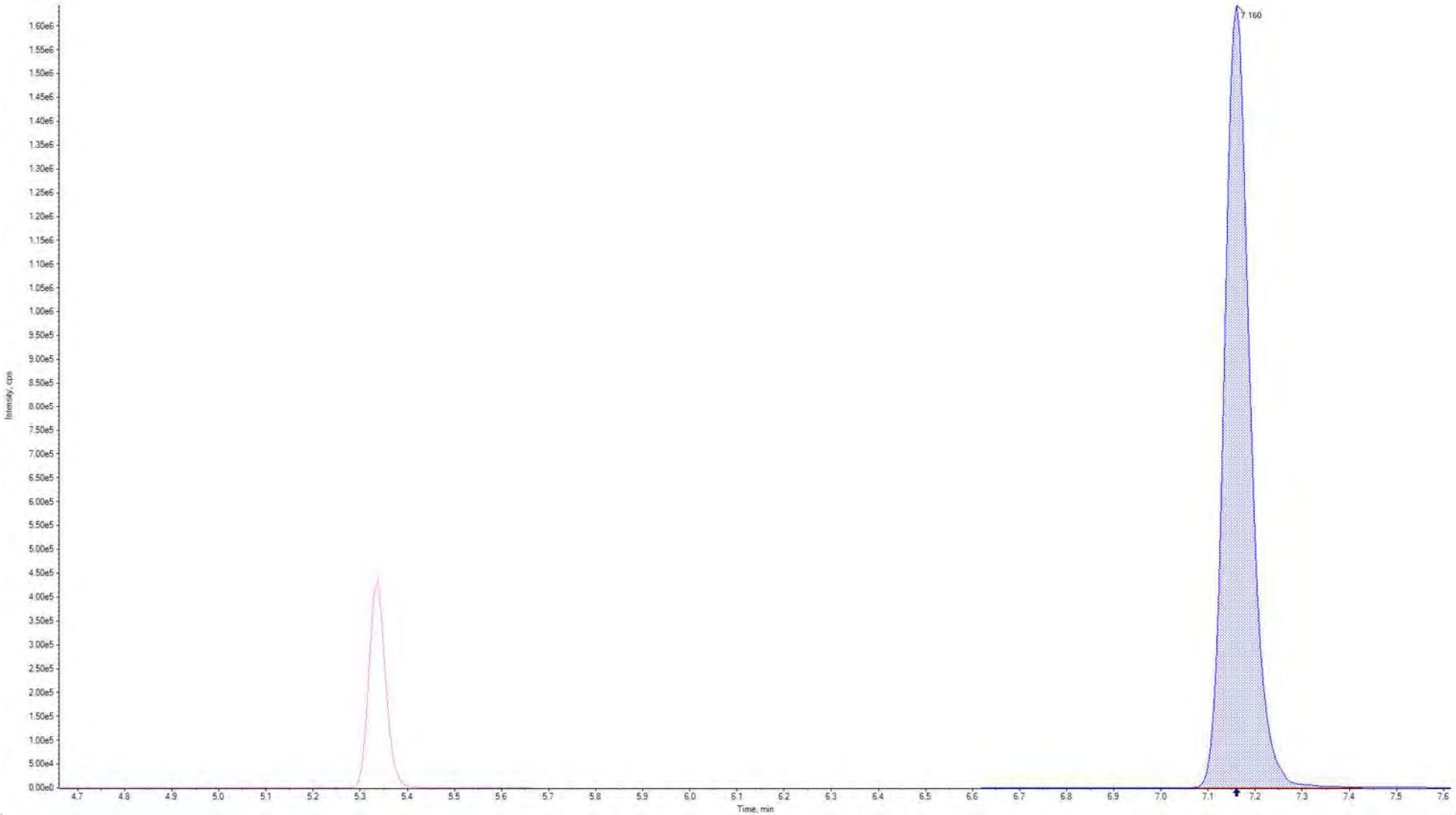
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

3:3FTCA_2
Sample: IA1633STD-2.5 S/N:7579.3 Points Across peak:30



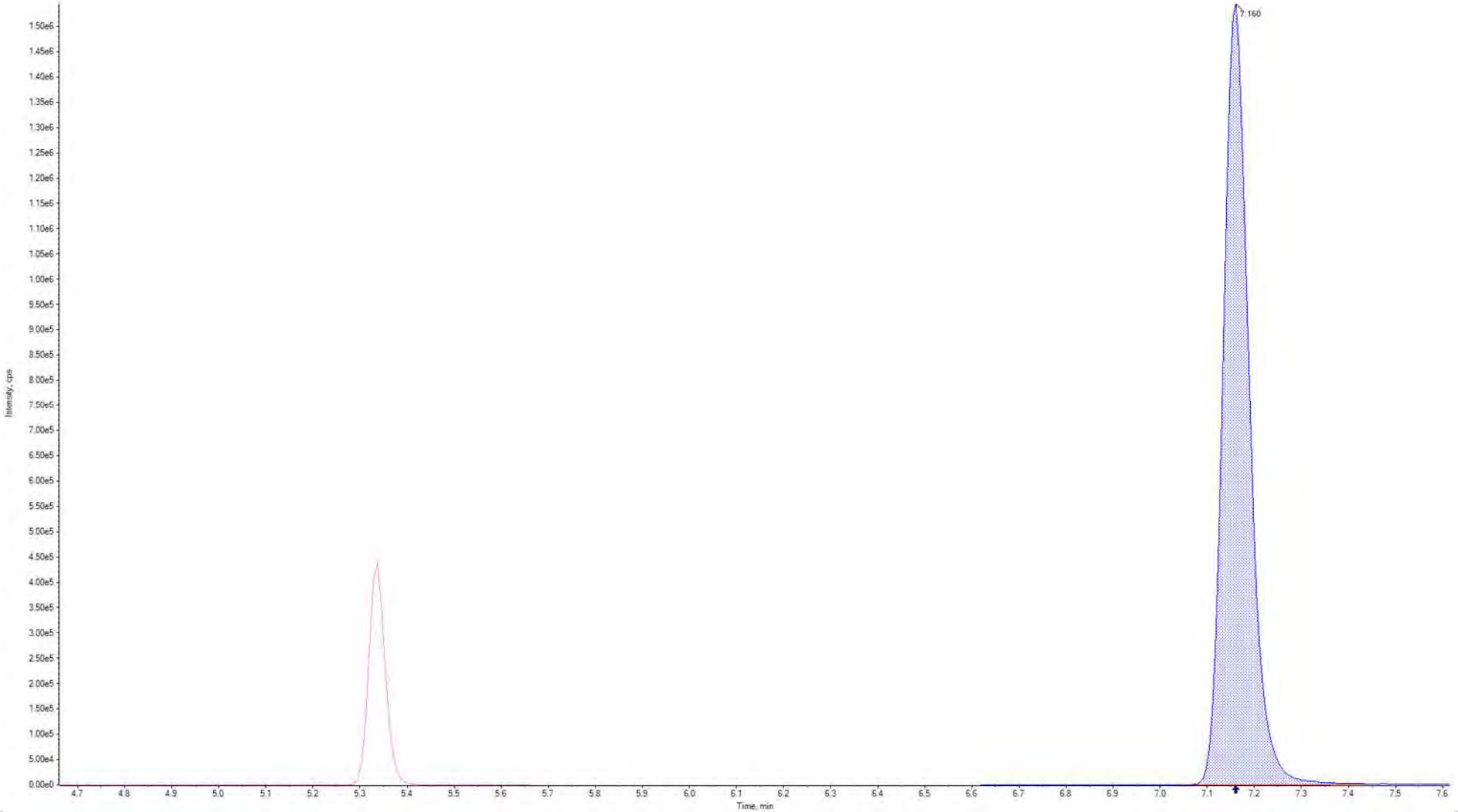
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

5:3FTCA
Sample: IA1633STD-2.5 S/N:21074.7 Points Across peak:65



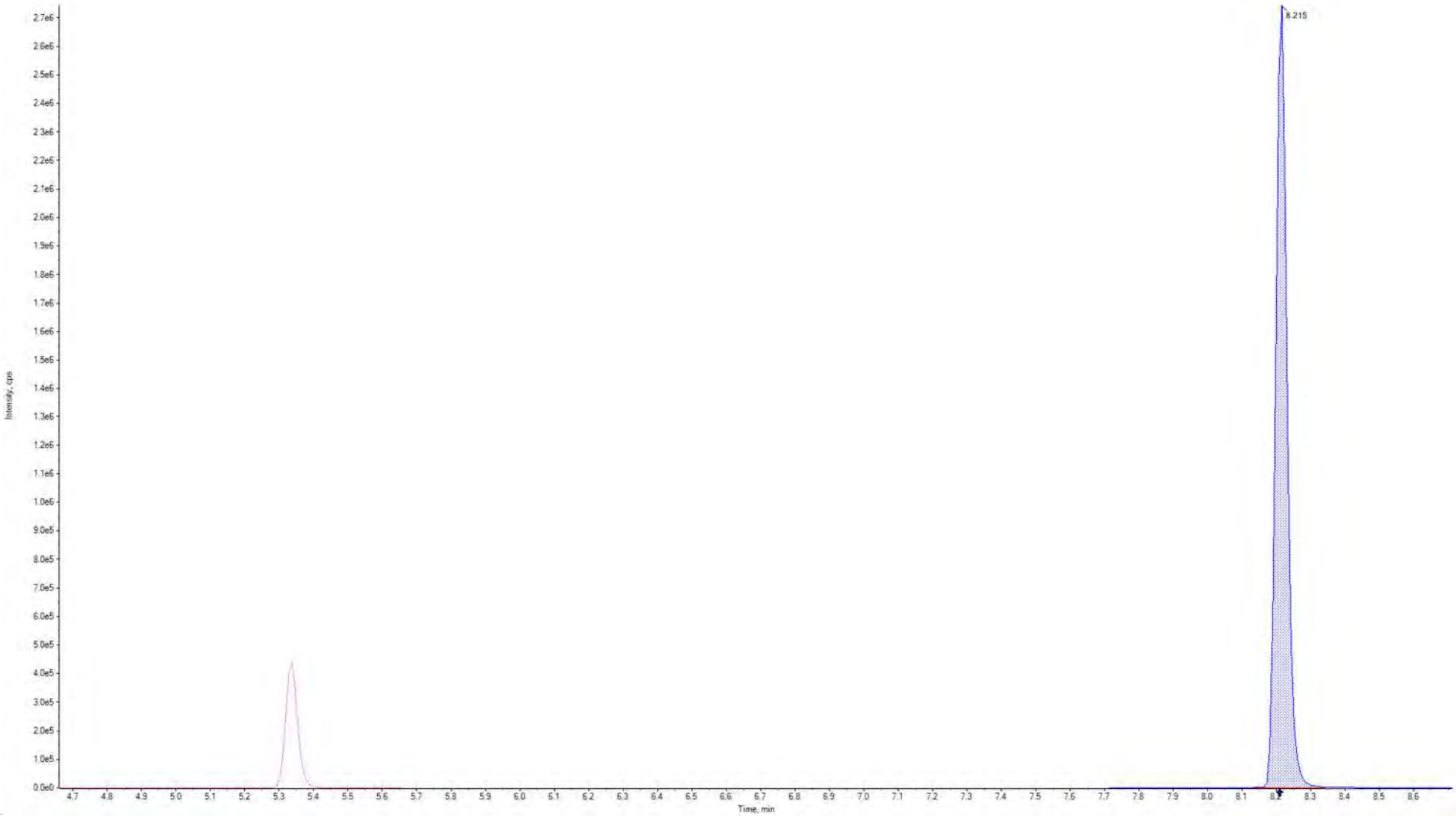
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

5:3FTCA_2
Sample: IA1633STD-2.5 S/N:11249.5 Points Across peak:73



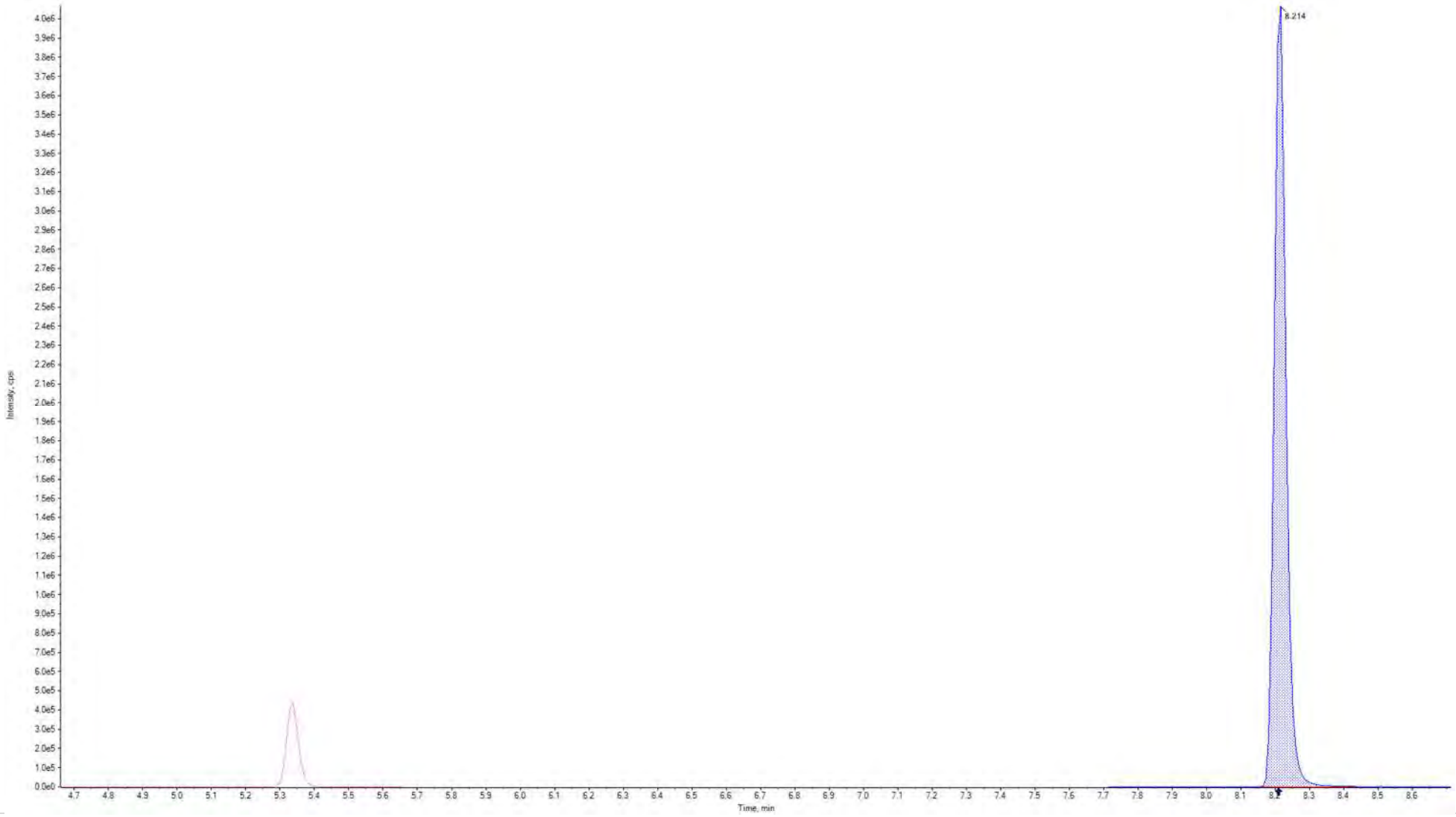
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

7:3FTCA
Sample: IA1633STD-2.5 S/N:522133.7 Points Across peak:28



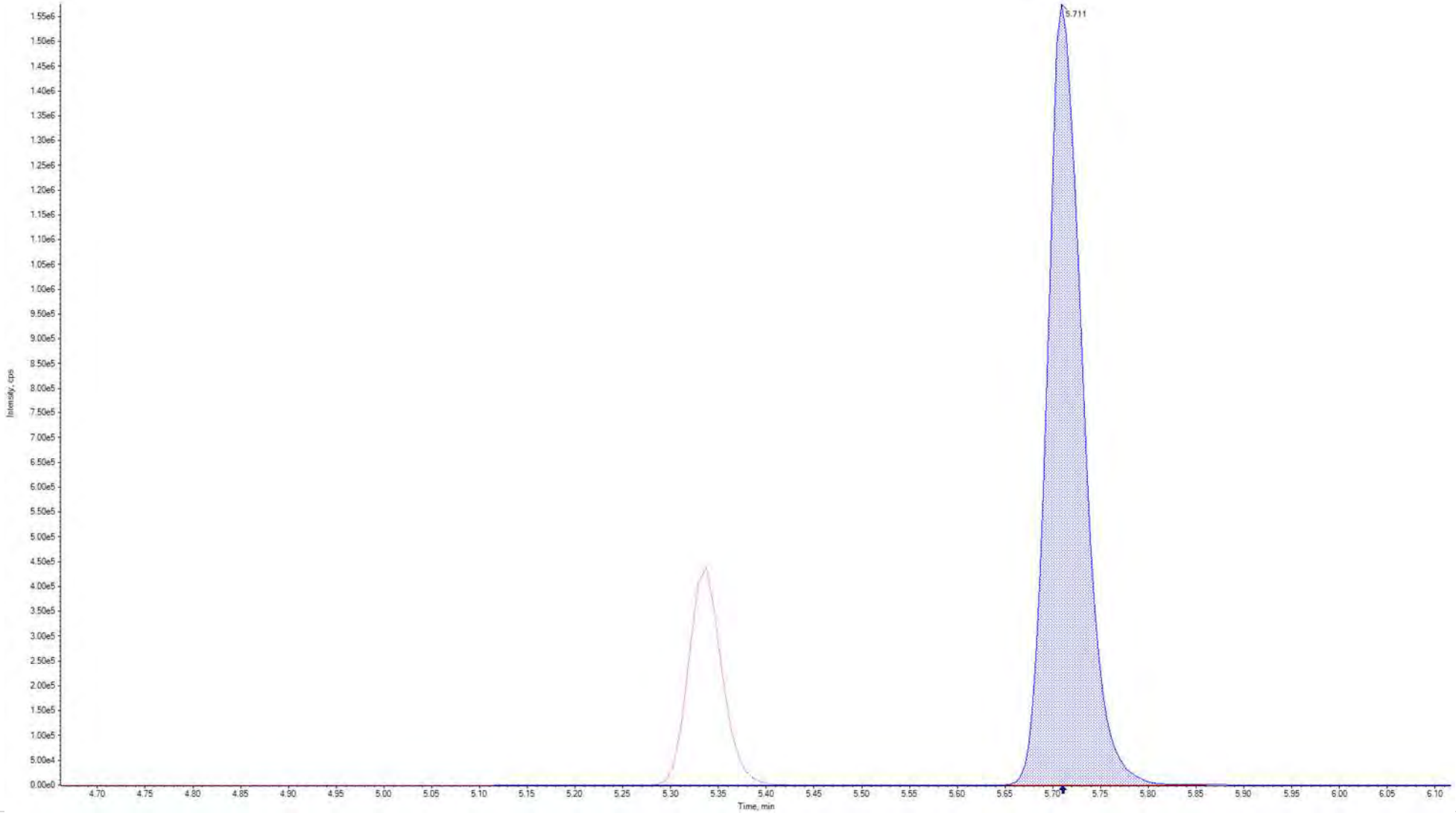
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

7:3FTCA_2
Sample: IA1633STD-2.5 S/N:12414.0 Points Across peak:36



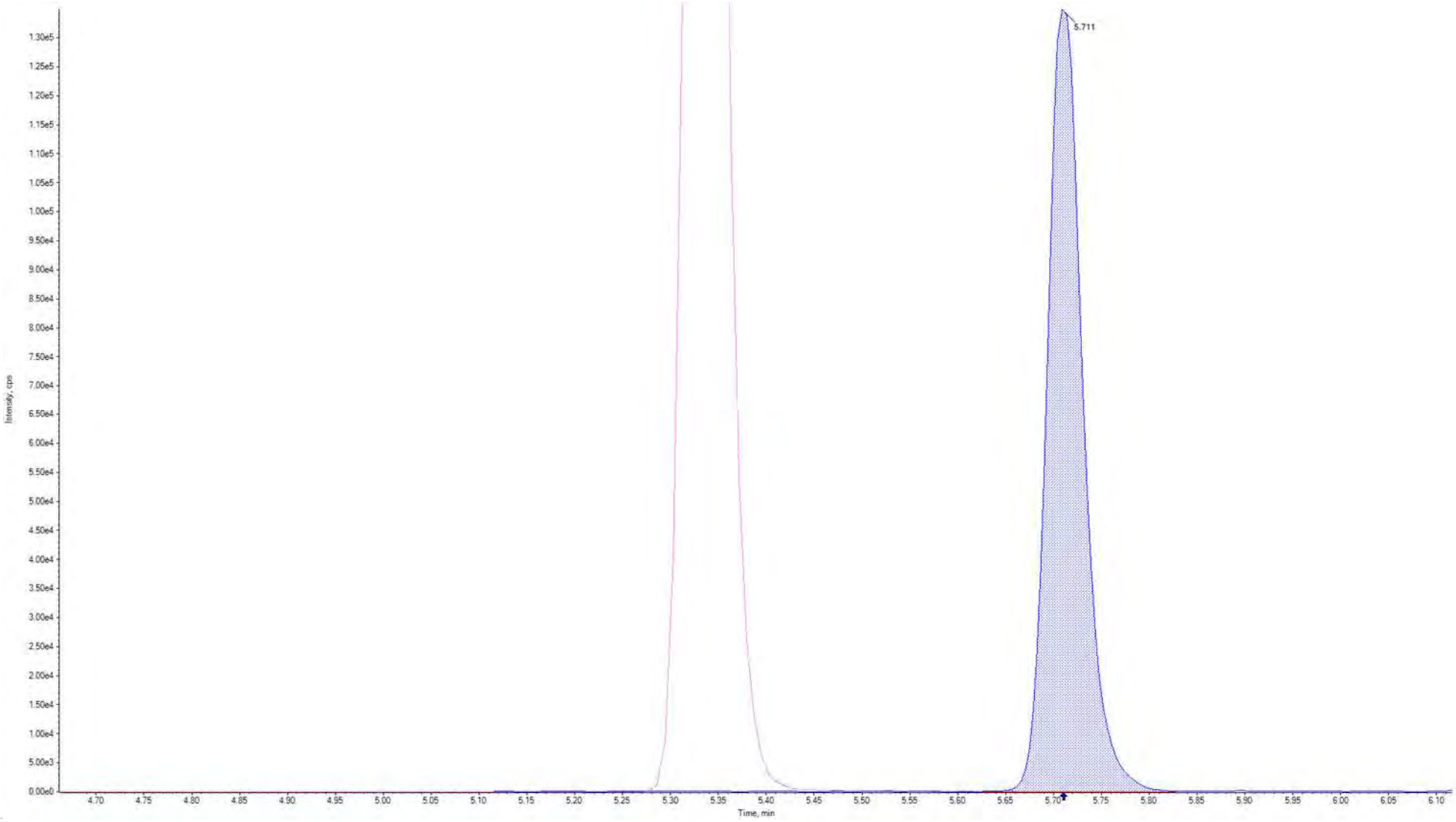
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFEESA
Sample: IA1633STD-2.5 S/N:13782.4 Points Across peak:49



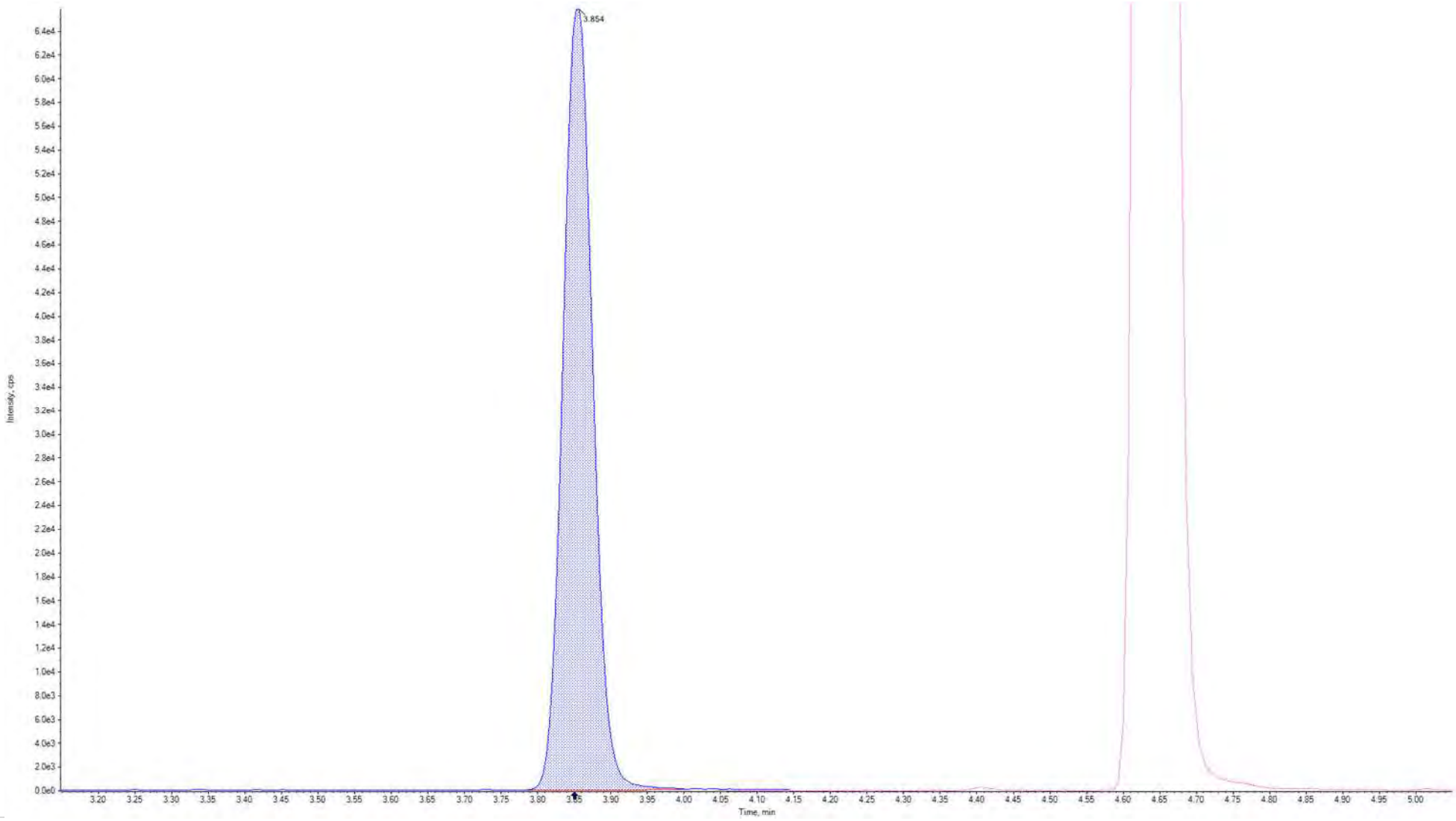
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFEESA_2
Sample: IA1633STD-2.5 S/N:5167.2 Points Across peak:47



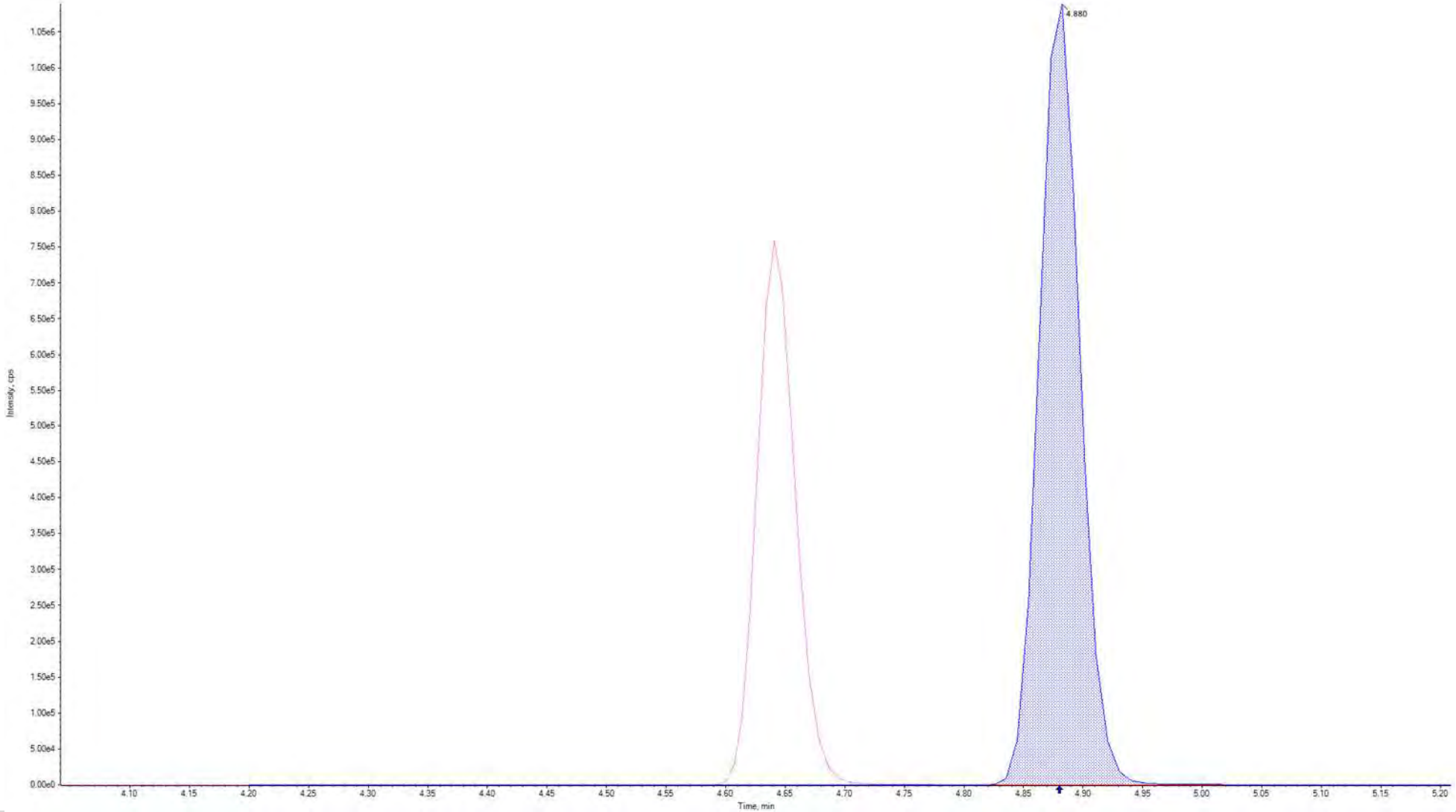
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFMPA
Sample: IA1633STD-2.5 S/N:3254.6 Points Across peak:56



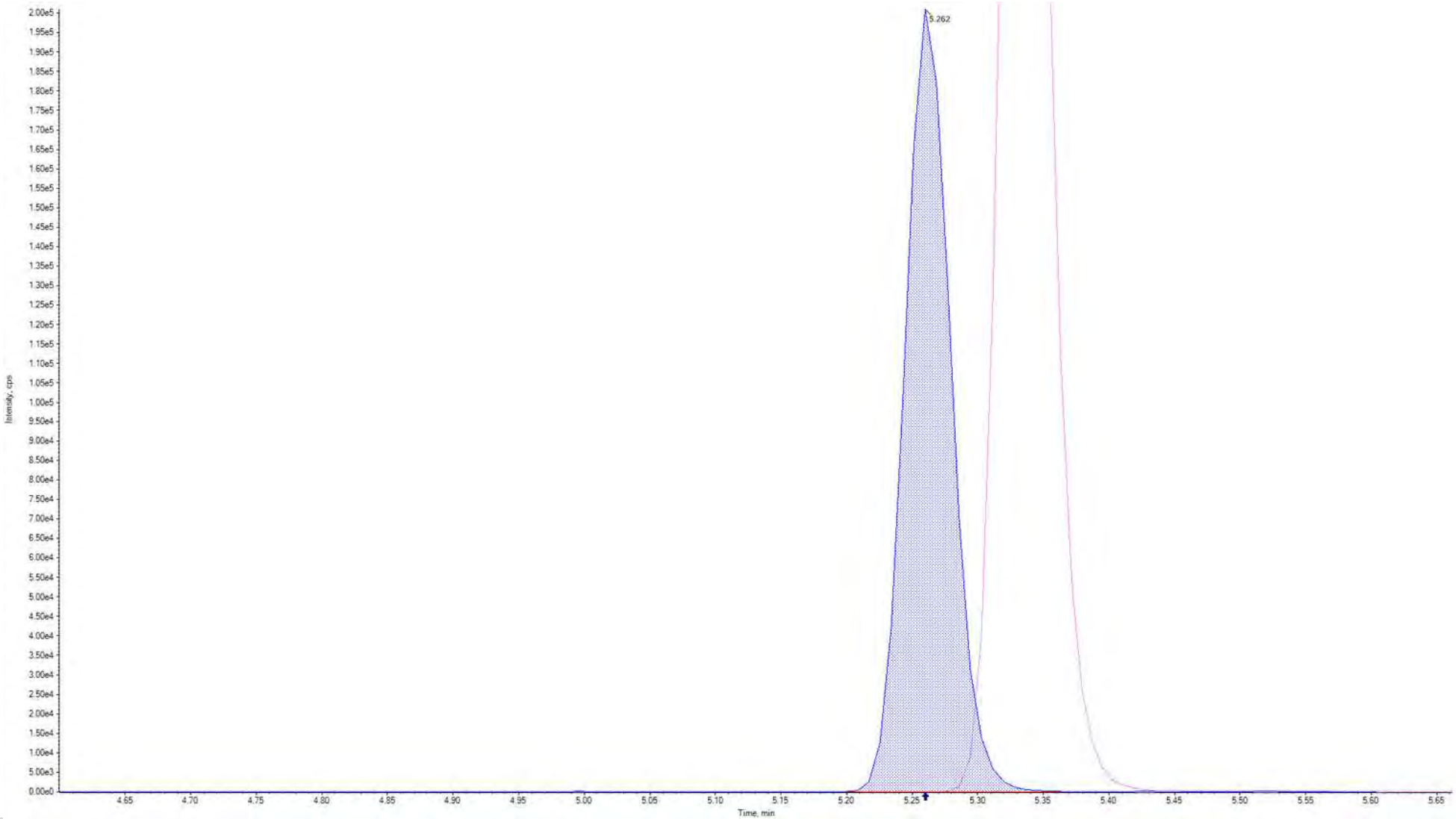
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFMBA
Sample: IA1633STD-2.5 S/N:9690.8 Points Across peak:32



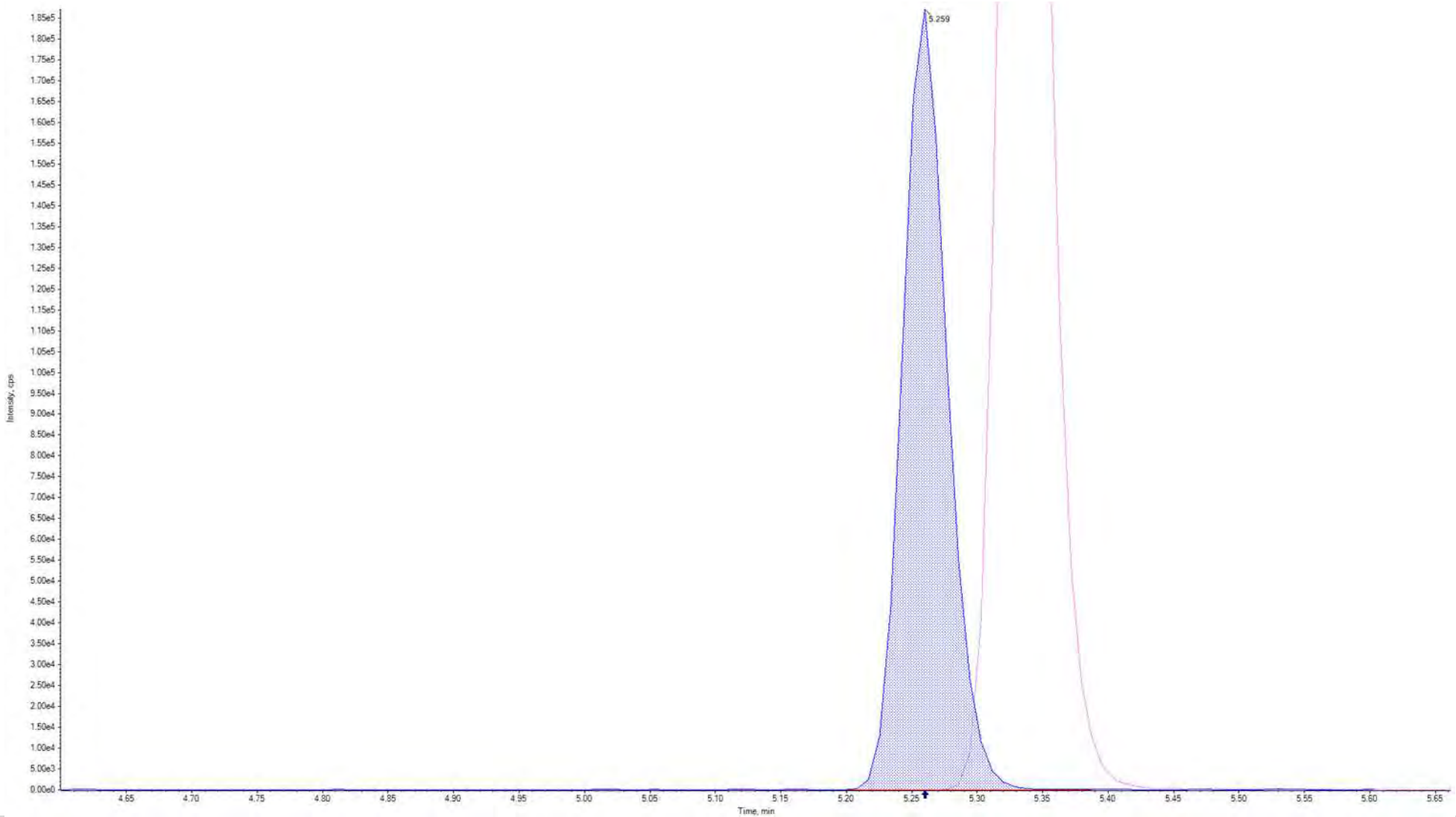
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NFDHA
Sample: IA1633STD-2.5 S/N:3449.7 Points Across peak:23



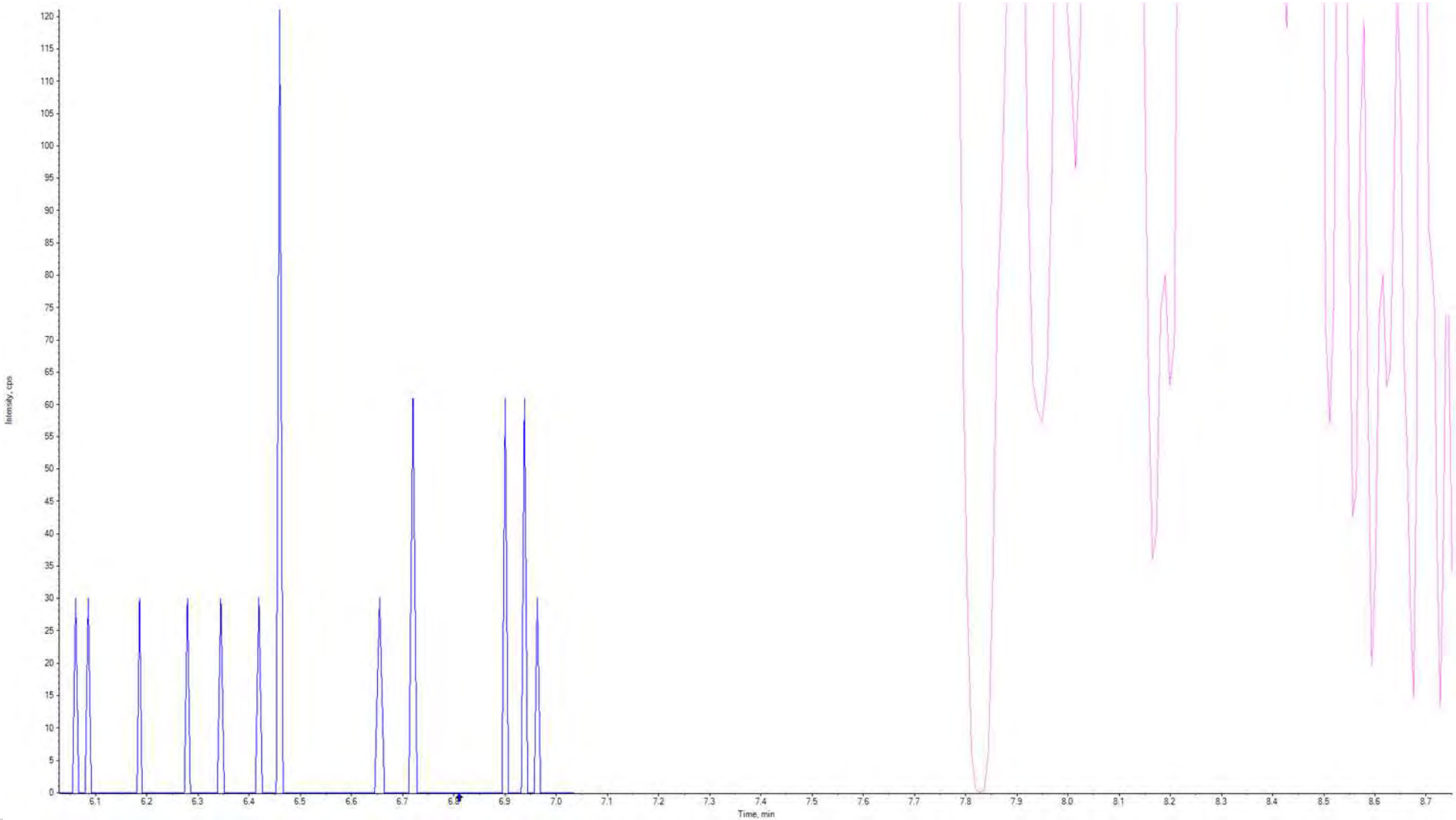
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NFDHA_2
Sample: IA1633STD-2.5 S/N:4615.7 Points Across peak:24



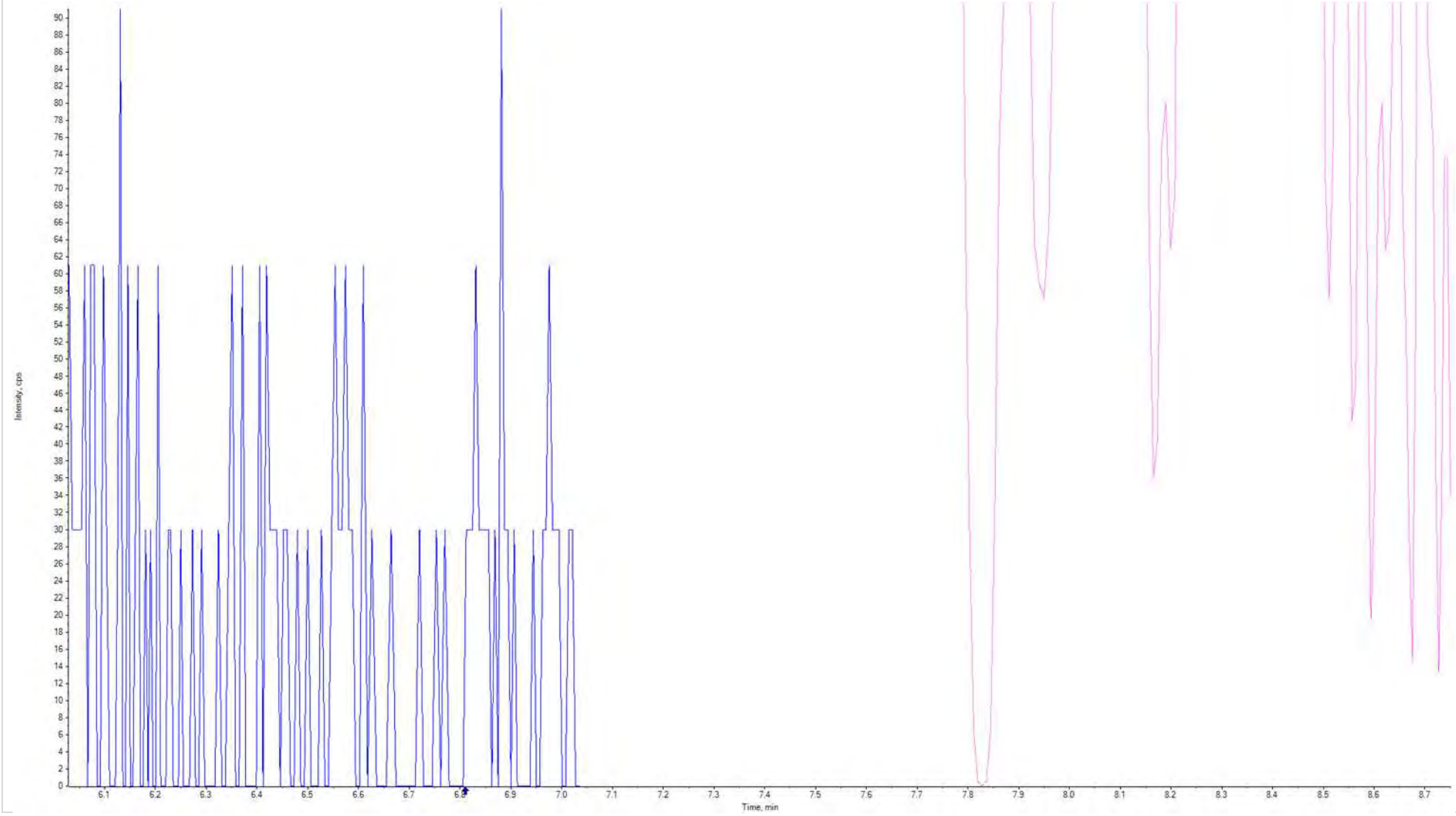
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

TDCA
Sample: IA1633STD-2.5 S/N:N/A Points Across peak:N/A



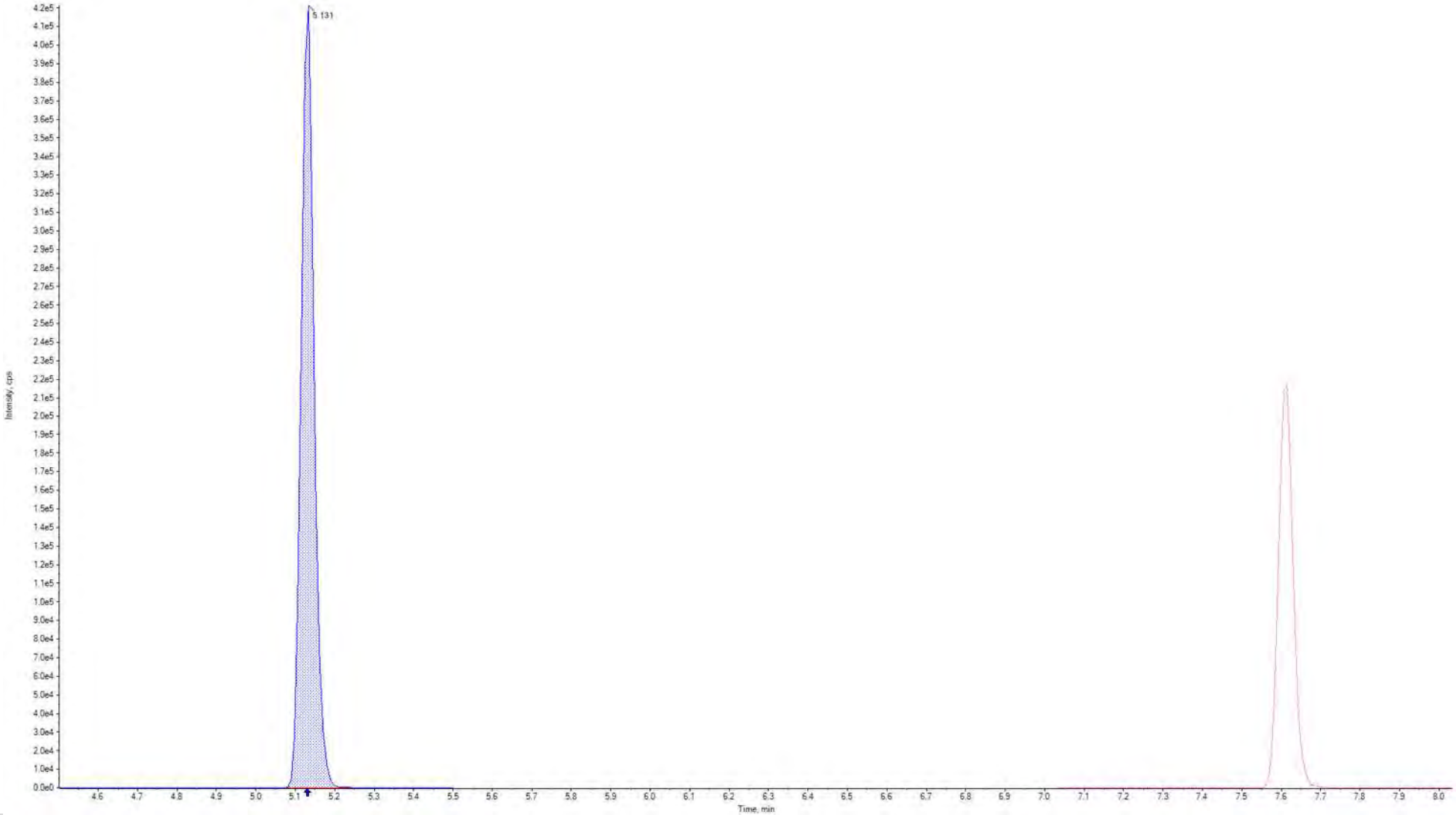
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

TDCA_2
Sample: IA1633STD-2.5 S/N:N/A Points Across peak:N/A



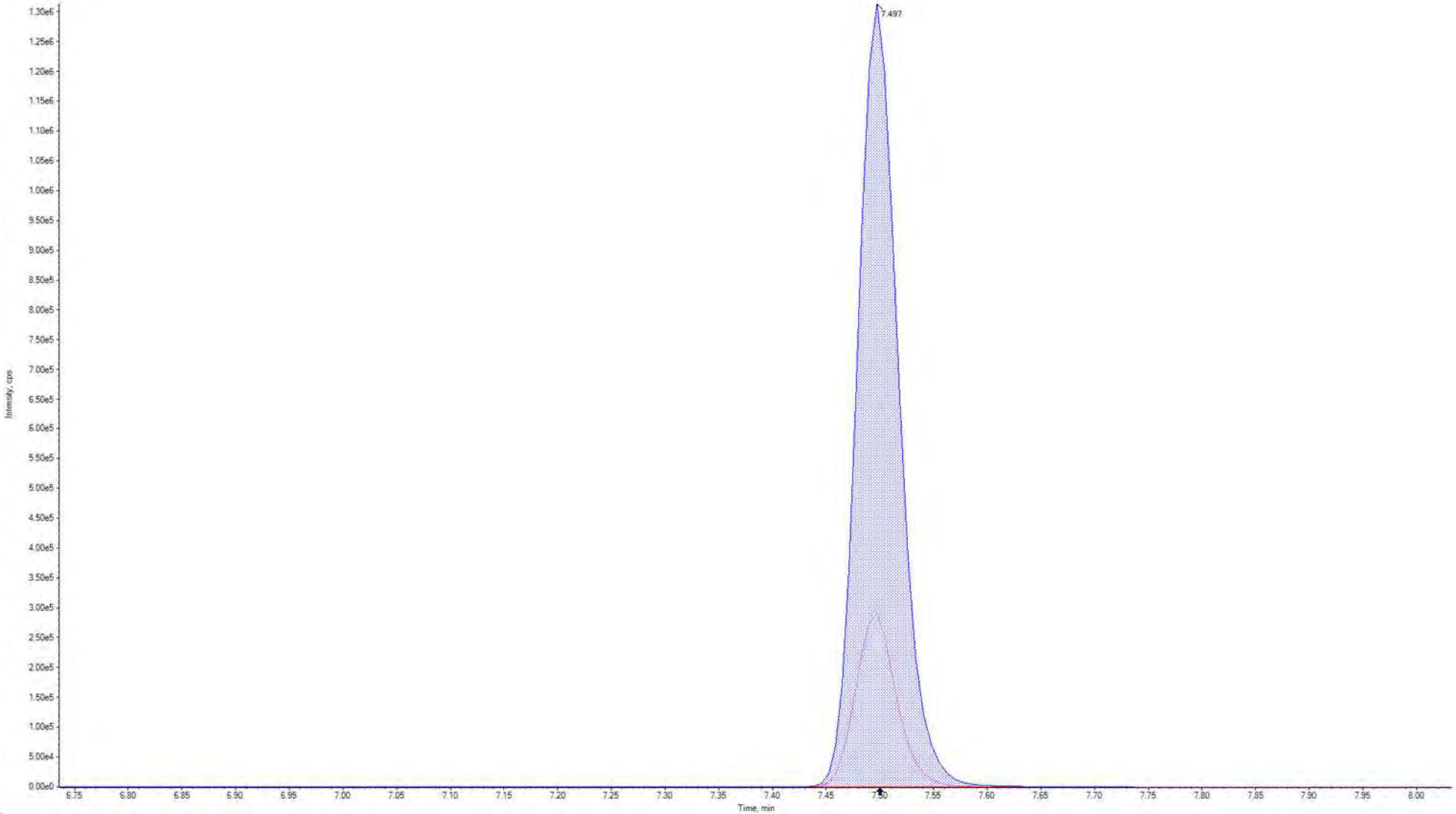
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

13C2D4-4:2FTS
Sample: IA1633STD-2.5 S/N:13708.7 Points Across peak:30

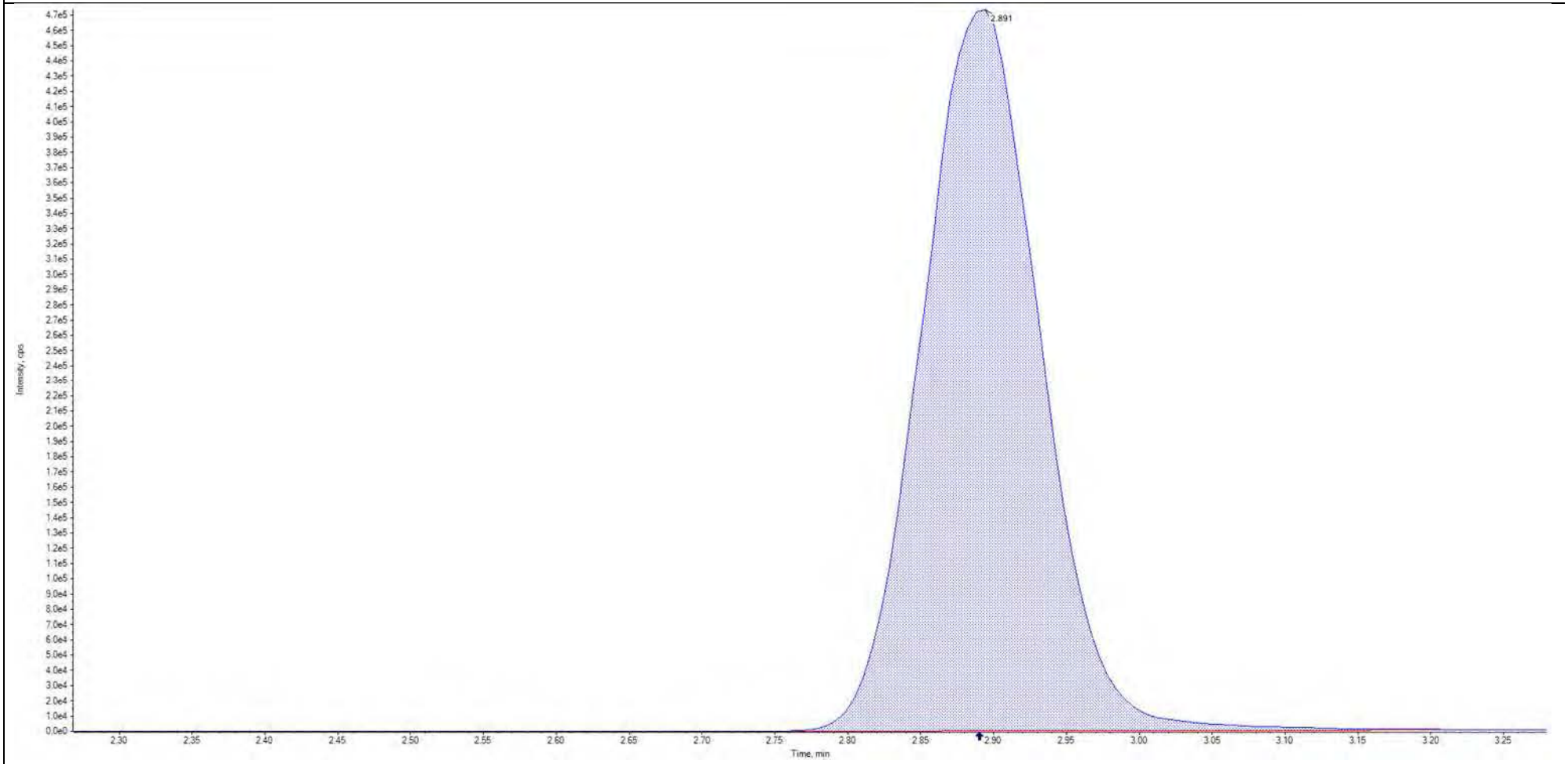


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

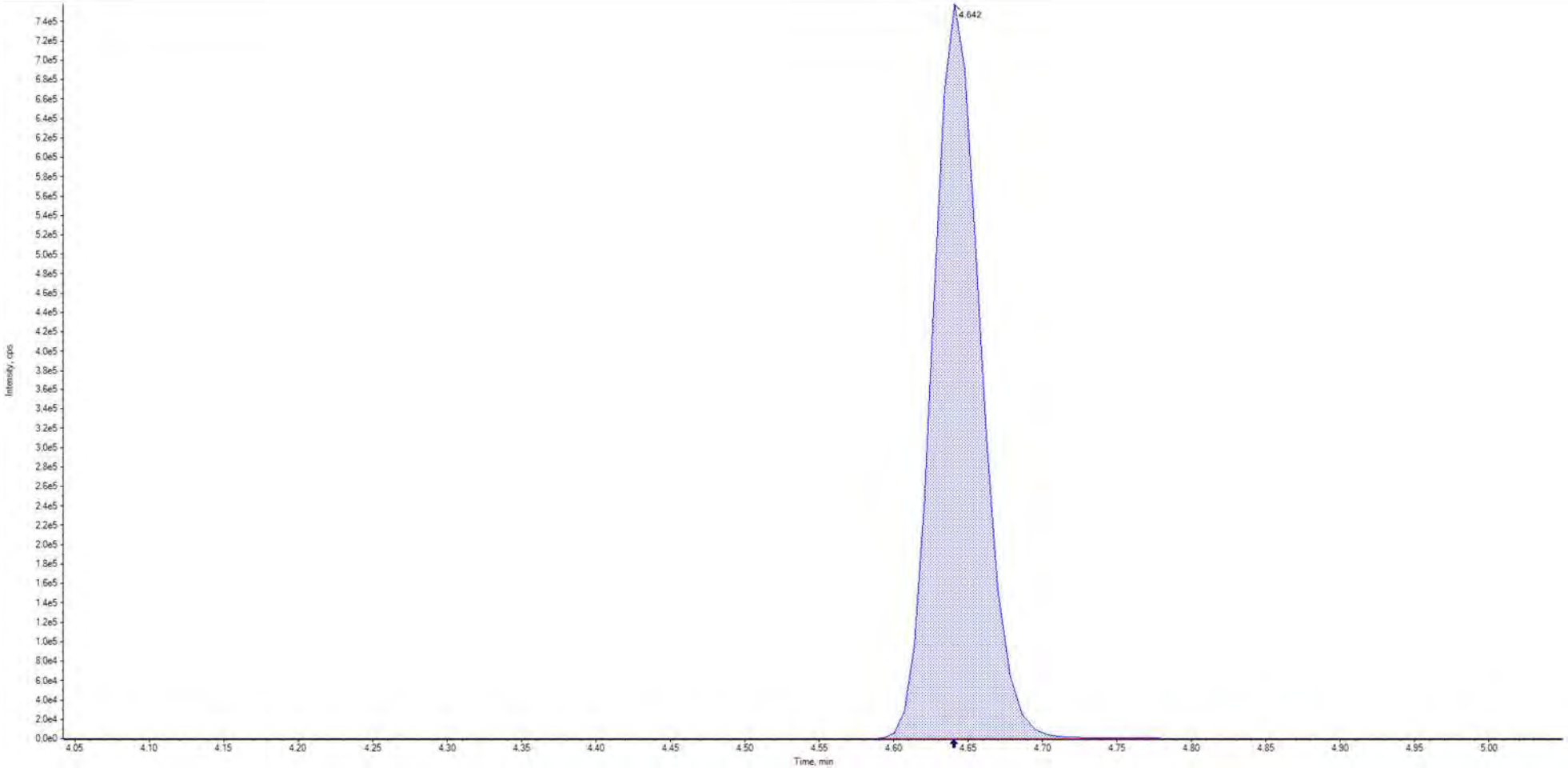
13C2-PFOA
Sample: IA1633STD-2.5 S/N:12951.8 Points Across peak:36



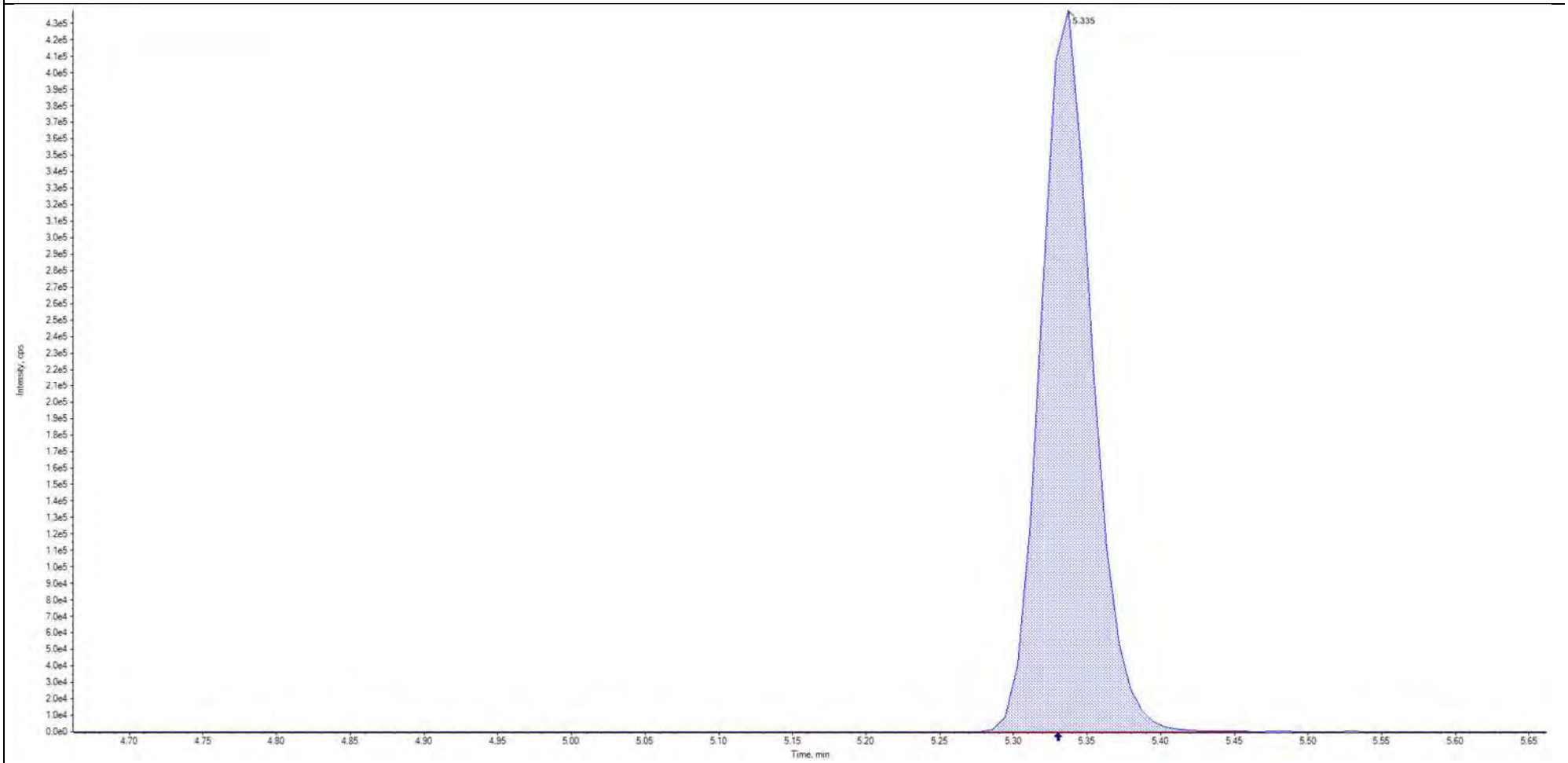
13C4-PFBA
Sample: IA1633STD-2.5



13C5-PFPeA
Sample: IA1633STD-2.5

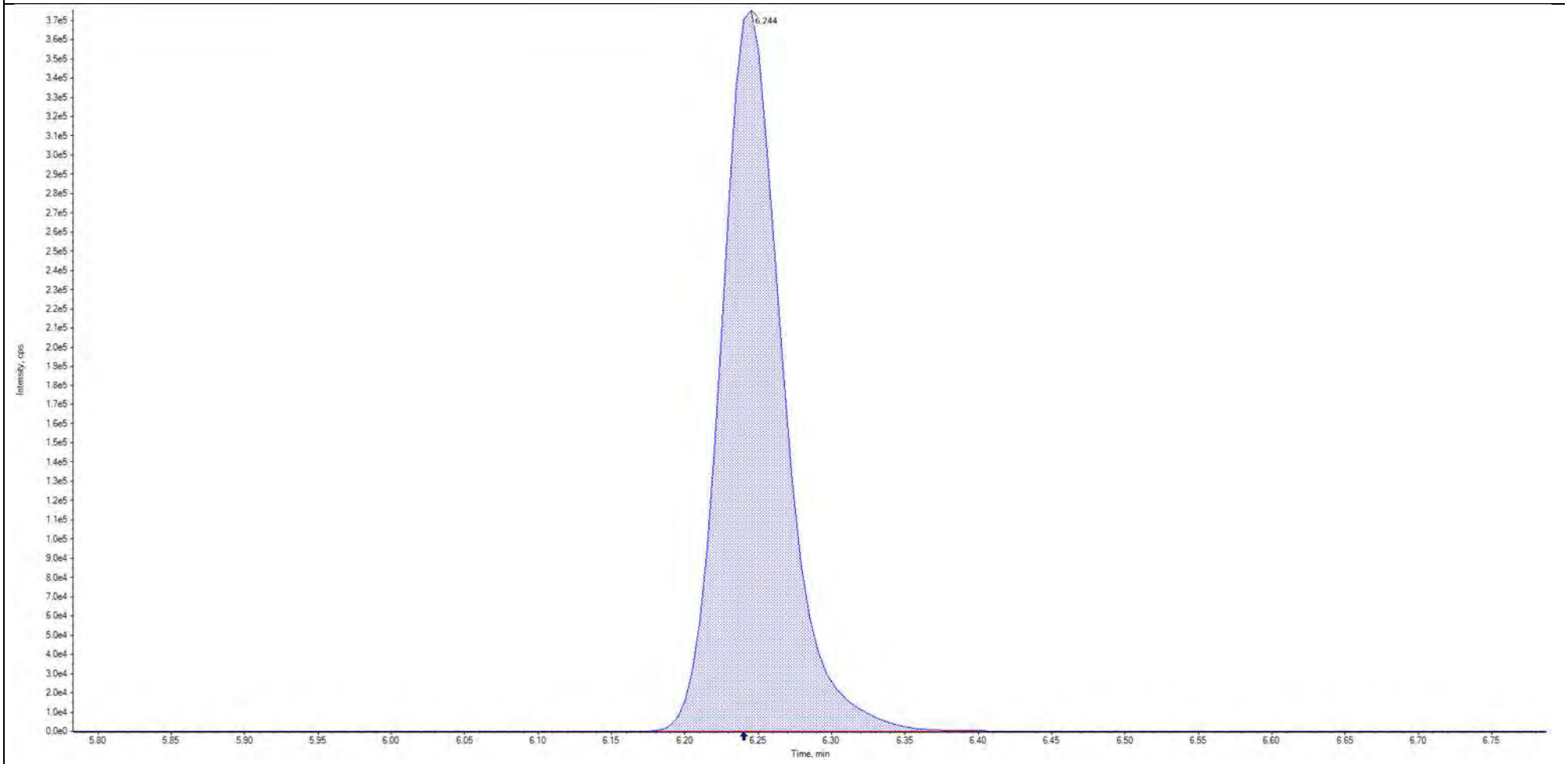


13C5-PFHxA
Sample: IA1633STD-2.5

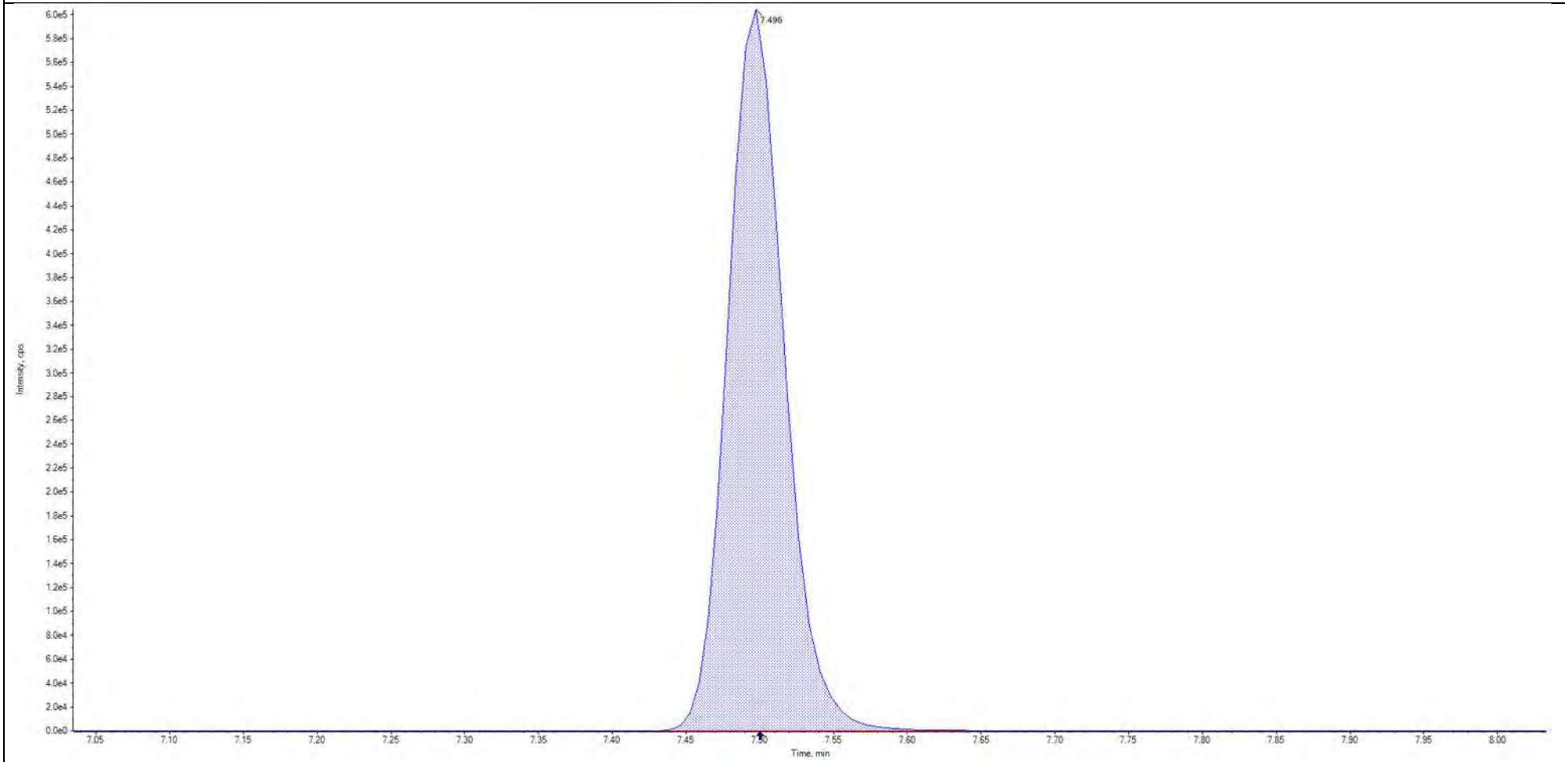


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

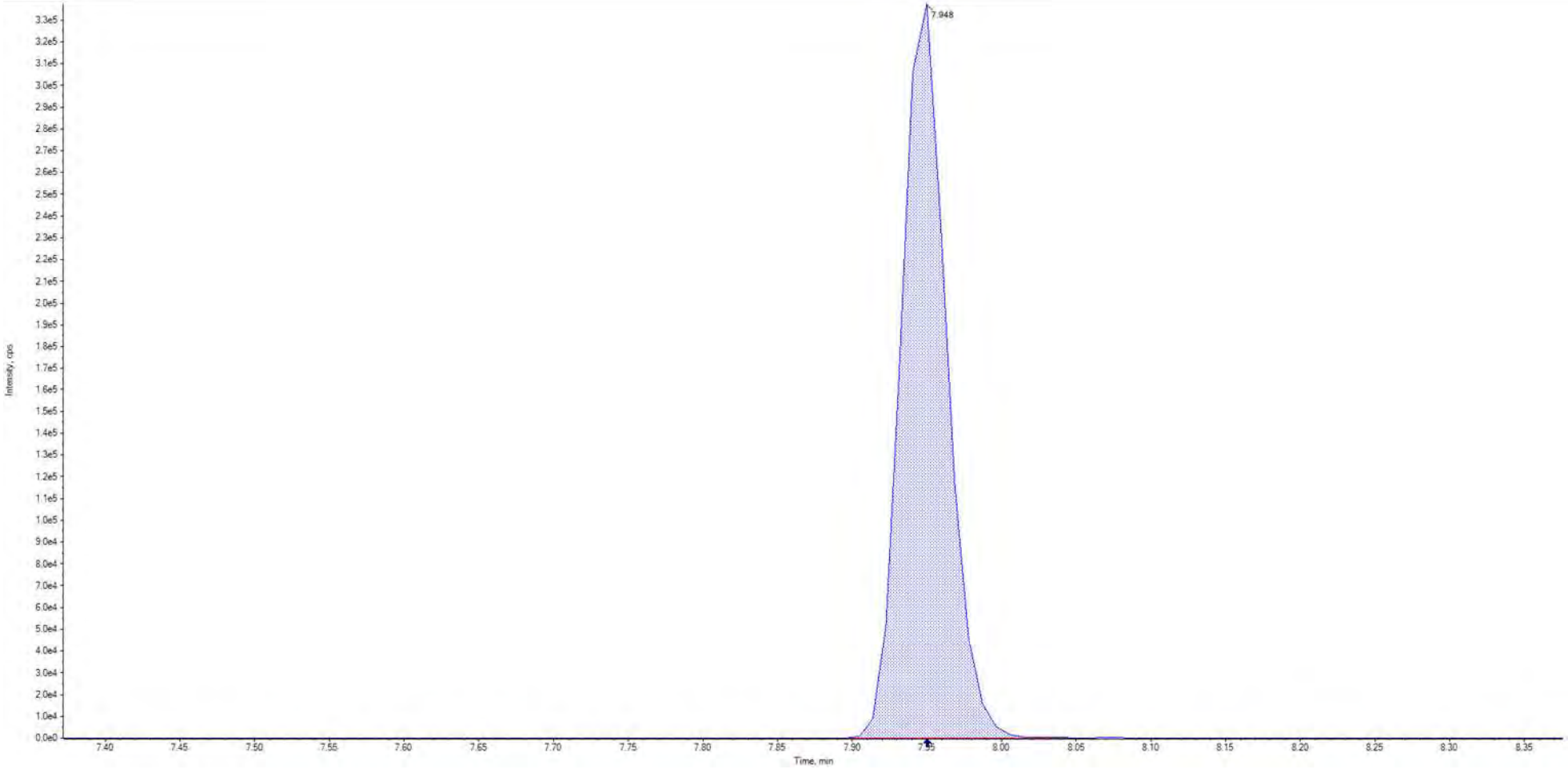
13C4-PFHpA
Sample: IA1633STD-2.5



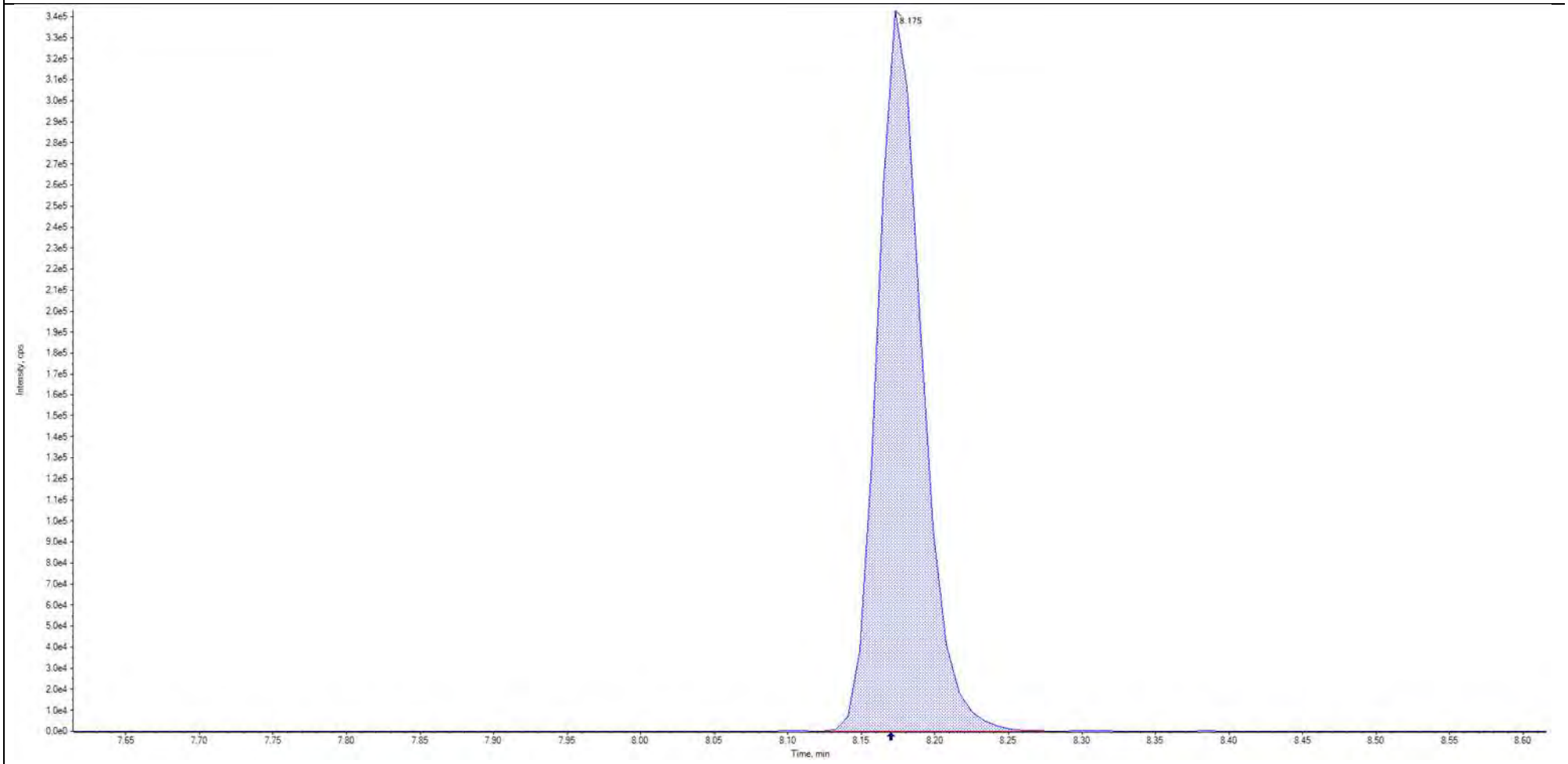
13C8-PFOA
Sample: IA1633STD-2.5



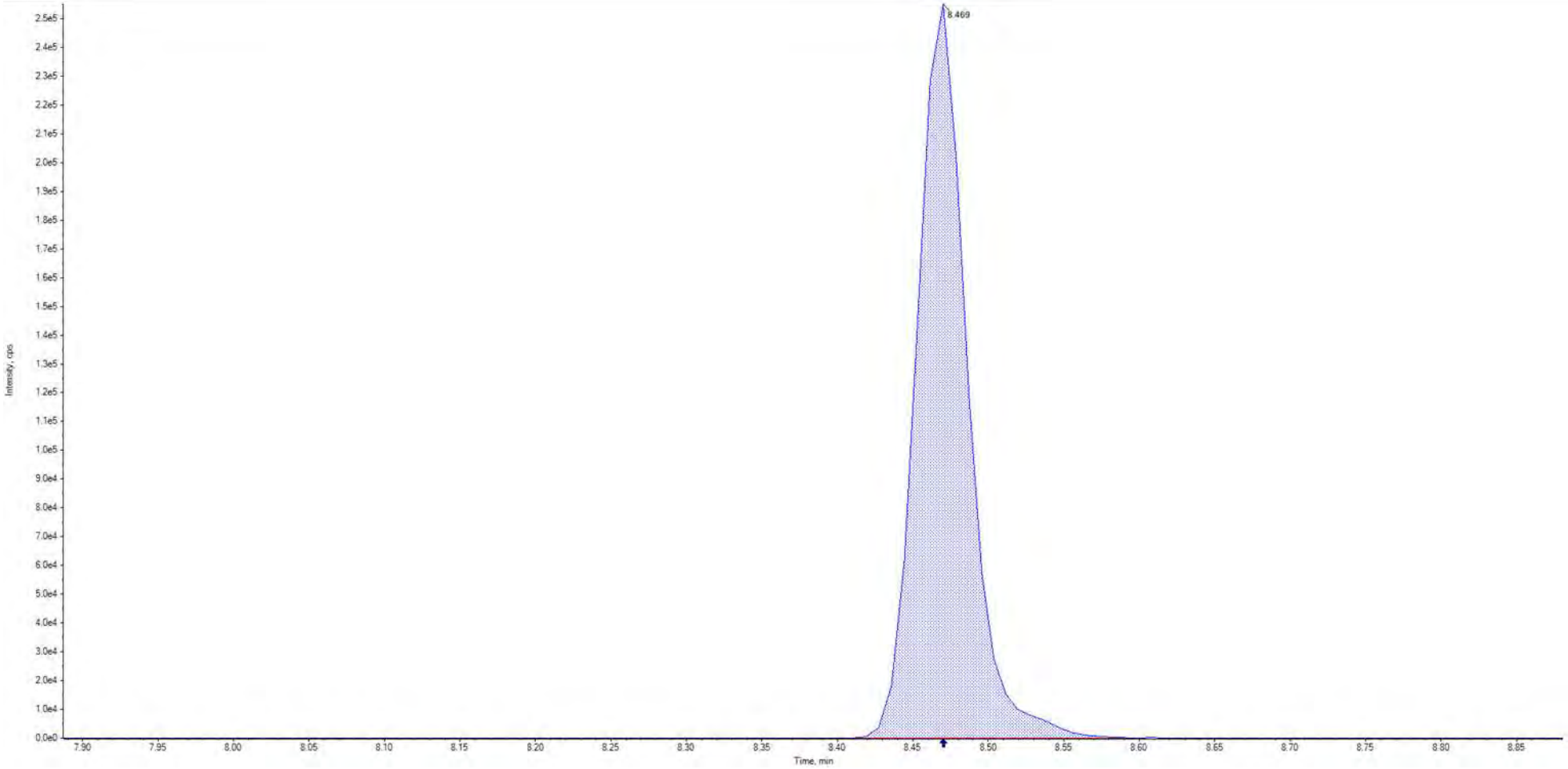
13C9-PFNA
Sample: IA1633STD-2.5



13C6-PFDA
Sample: IA1633STD-2.5

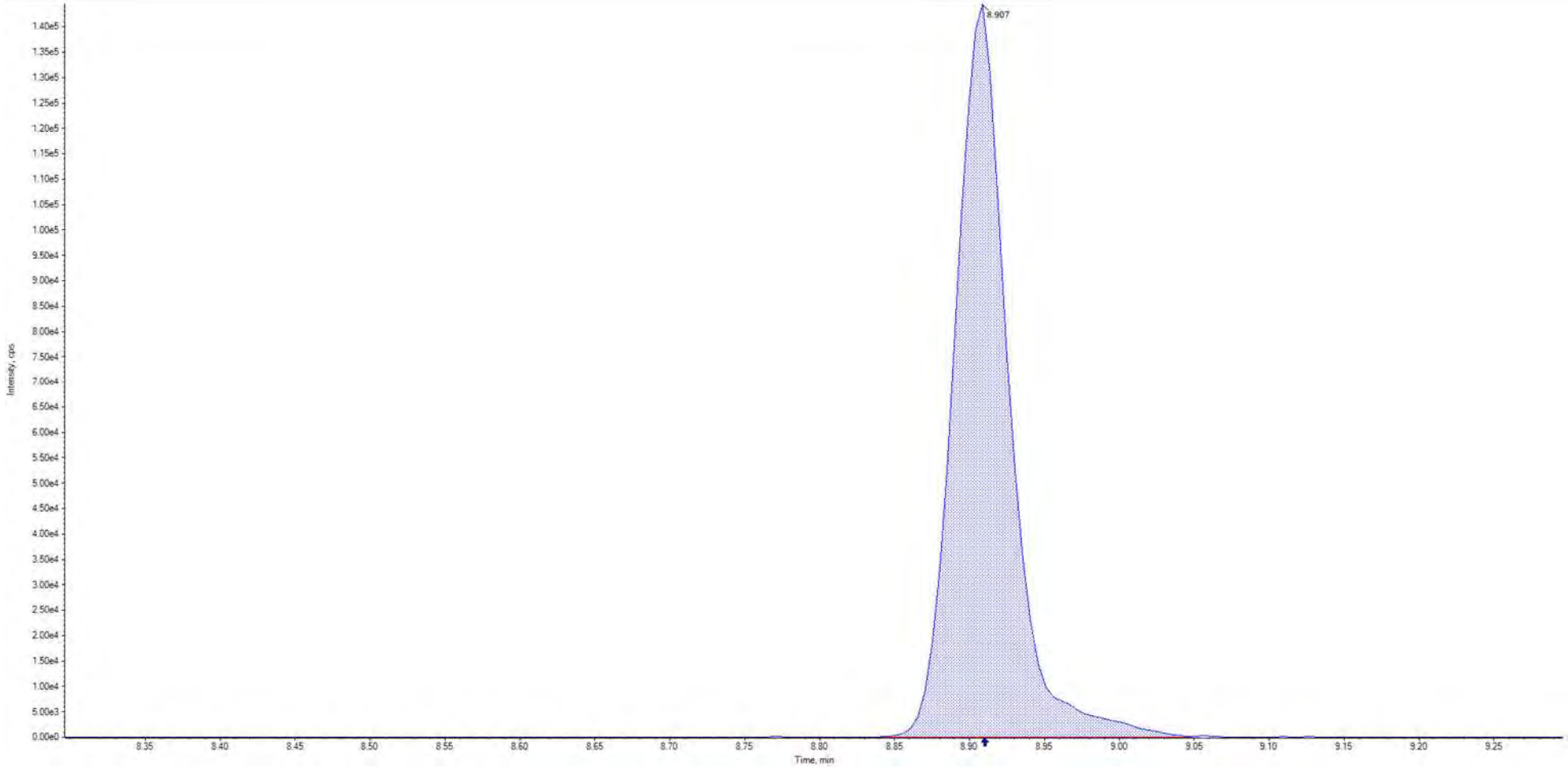


13C7-PFUnA
Sample: IA1633STD-2.5

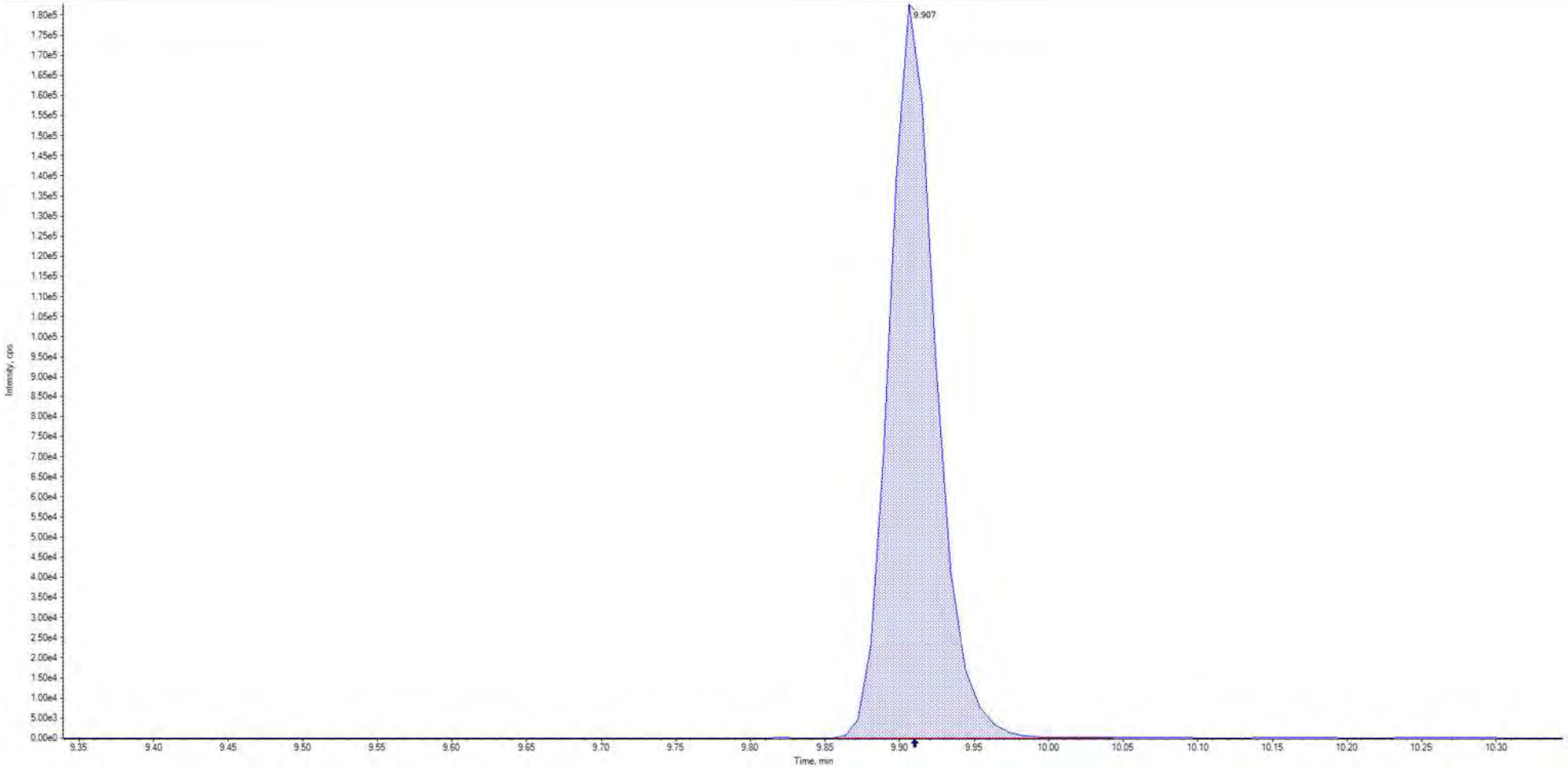


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

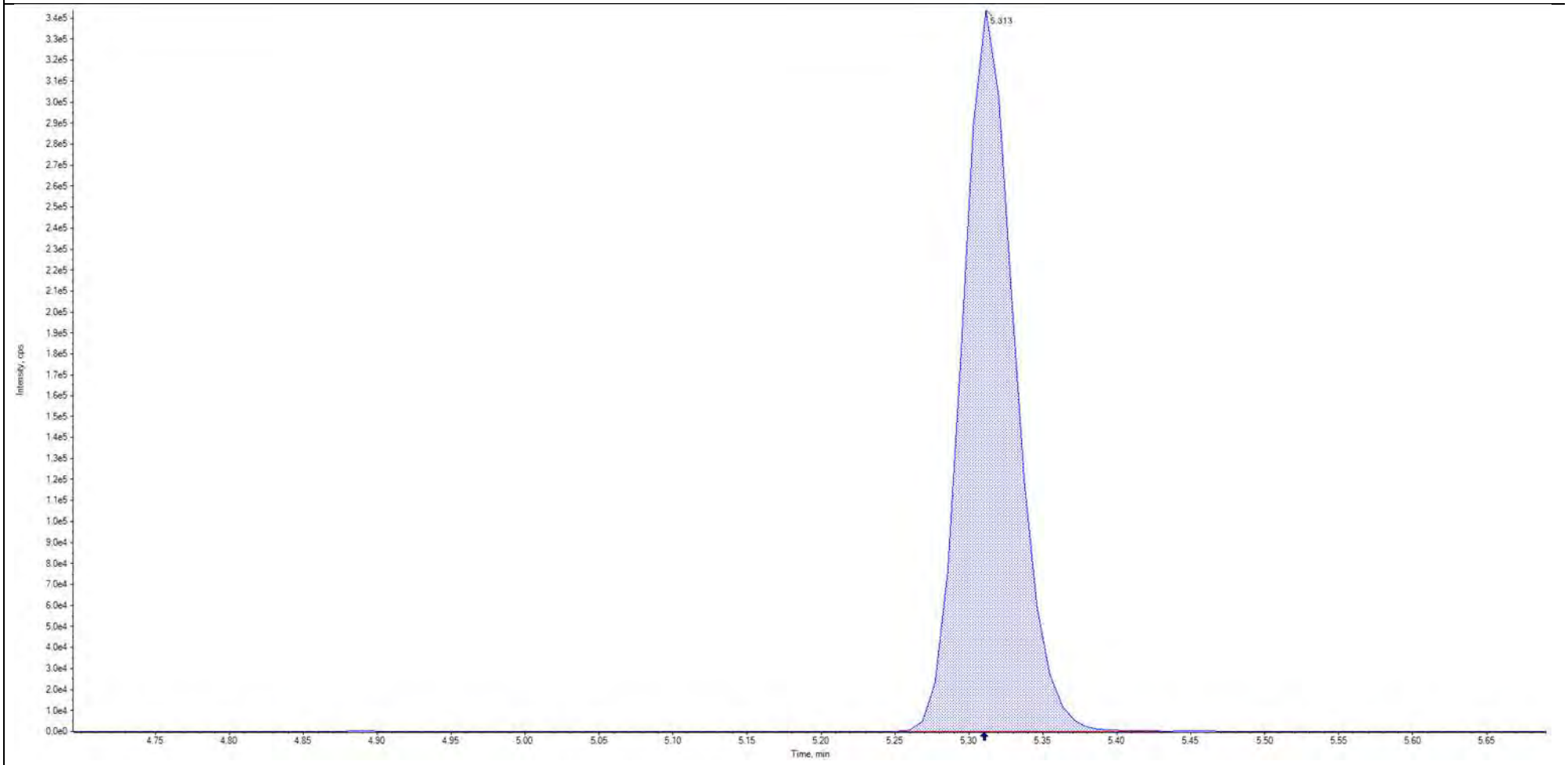
13C2-PFDoA
Sample: IA1633STD-2.5



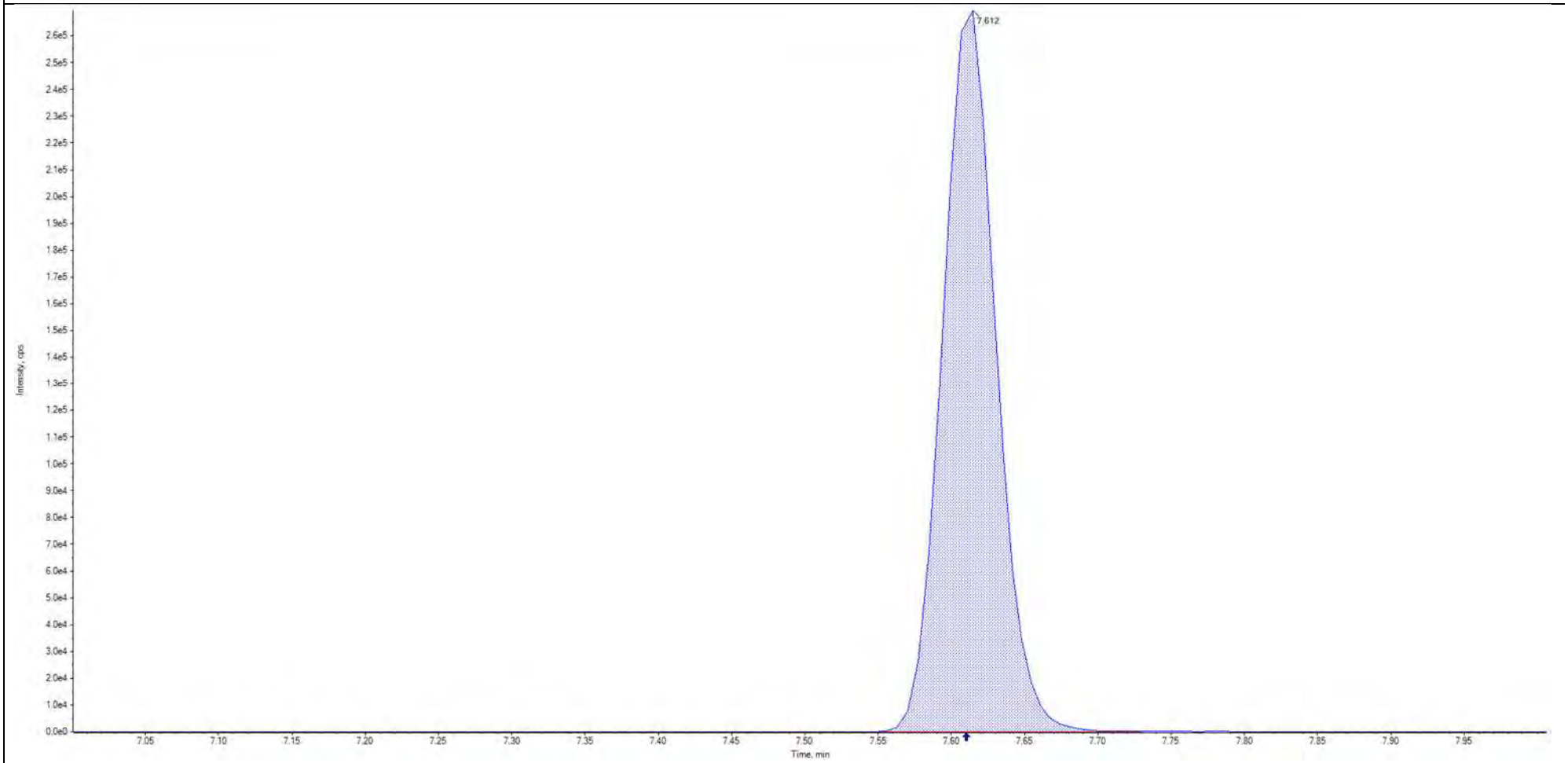
13C2-PFTeDA
Sample: IA1633STD-2.5



13C3-PFBS
Sample: IA1633STD-2.5

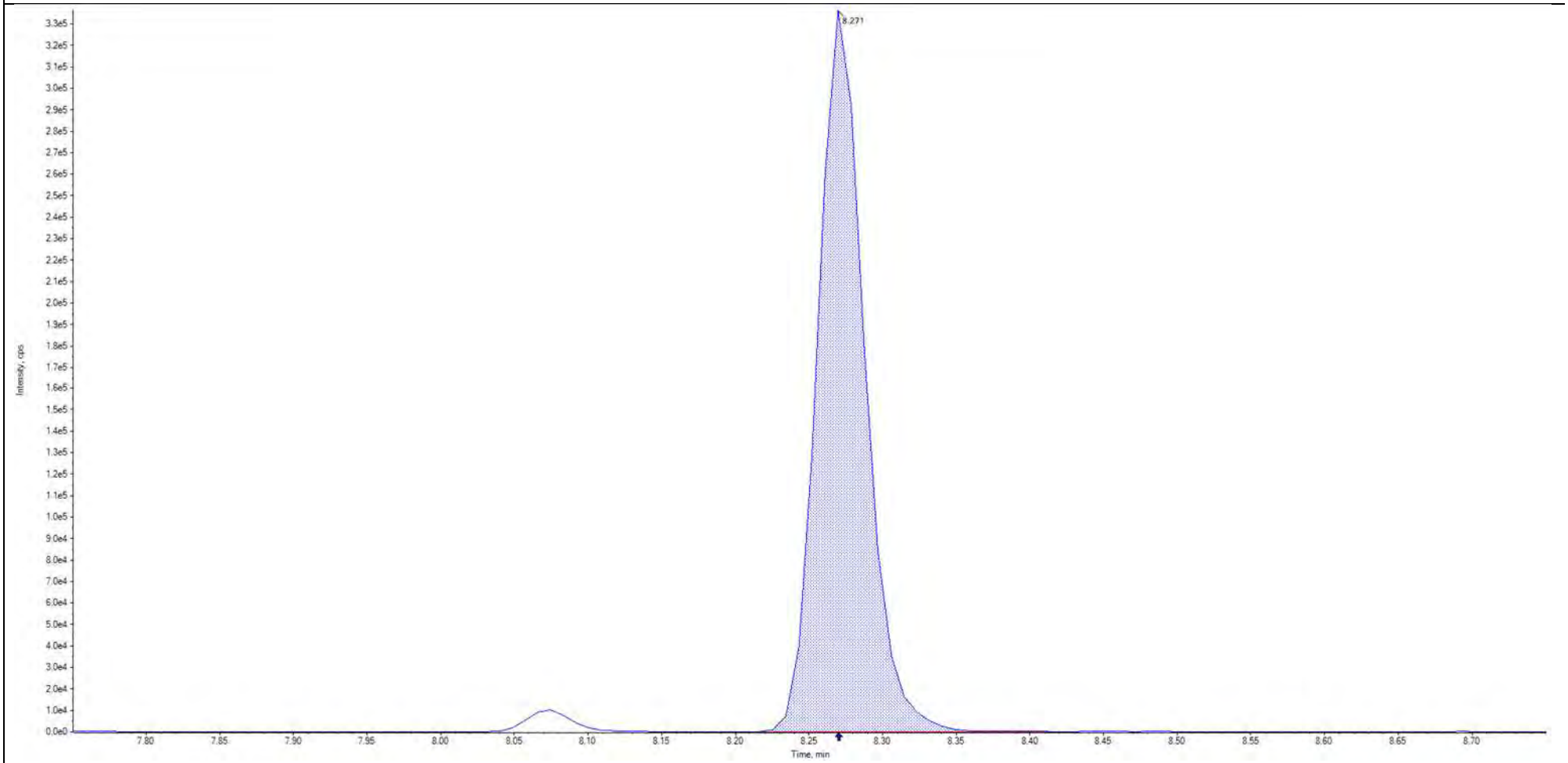


13C3-PFHxS
Sample: IA1633STD-2.5

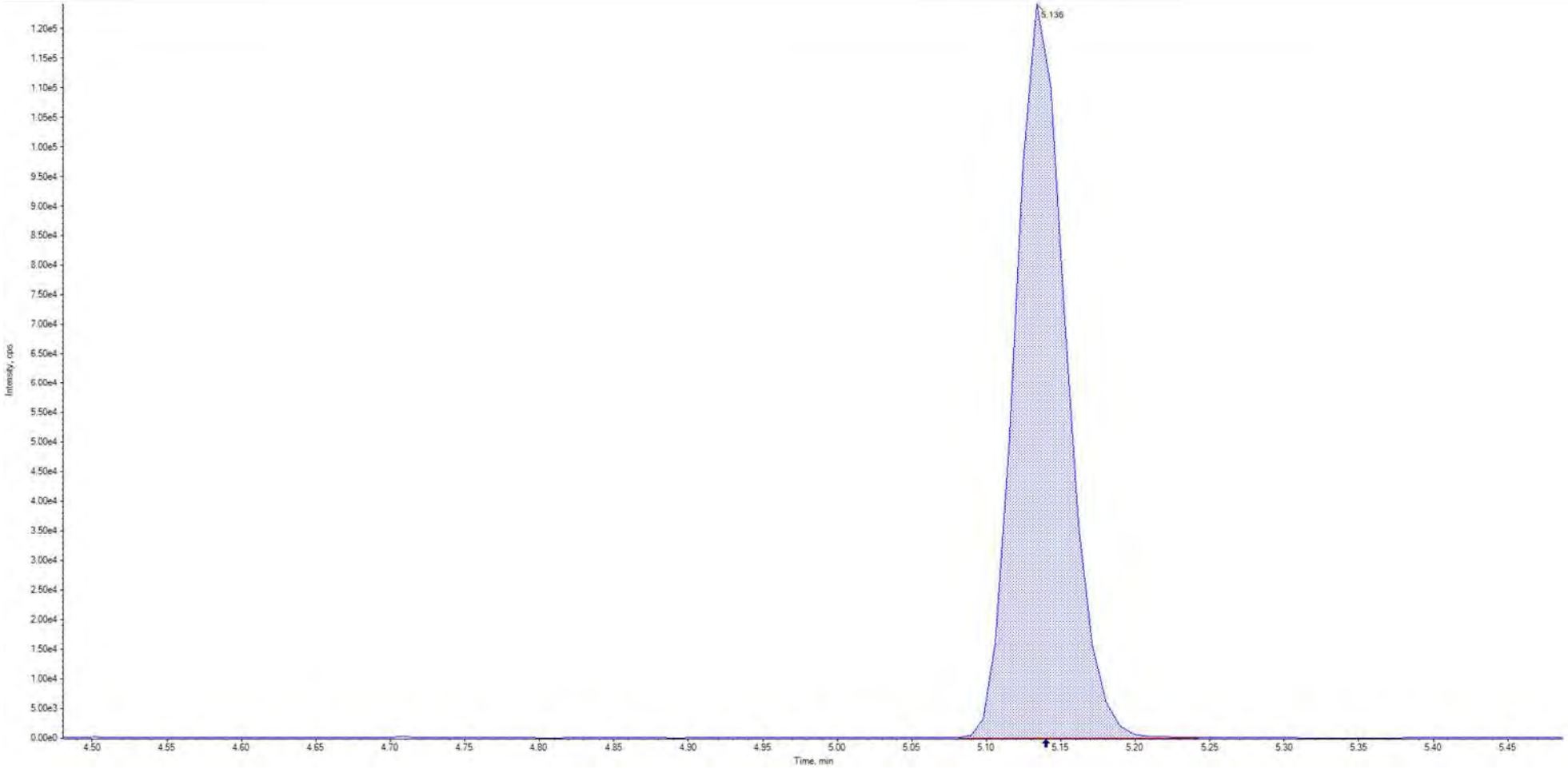


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_75.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

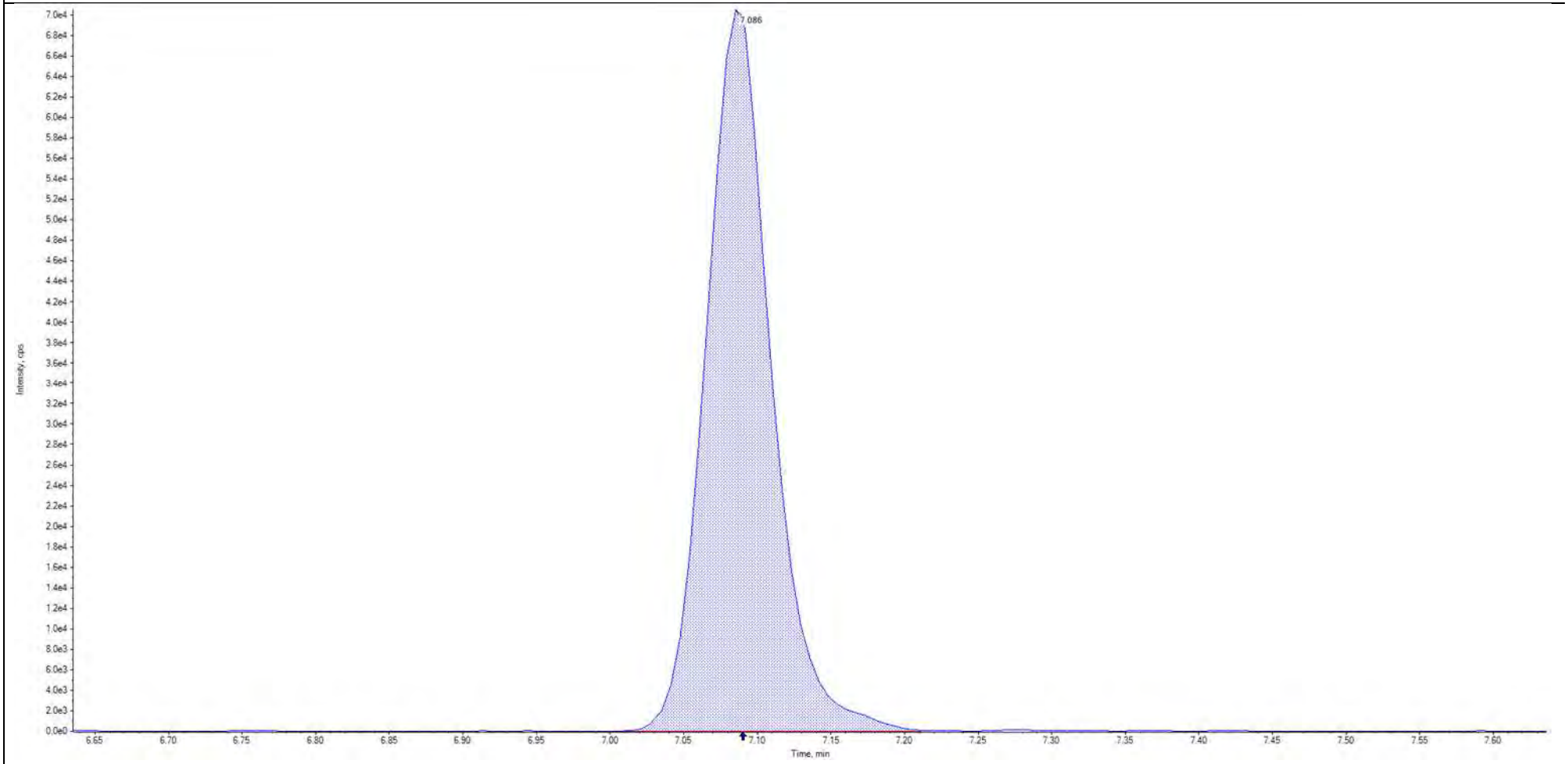
13C8-PFOS
Sample: IA1633STD-2.5



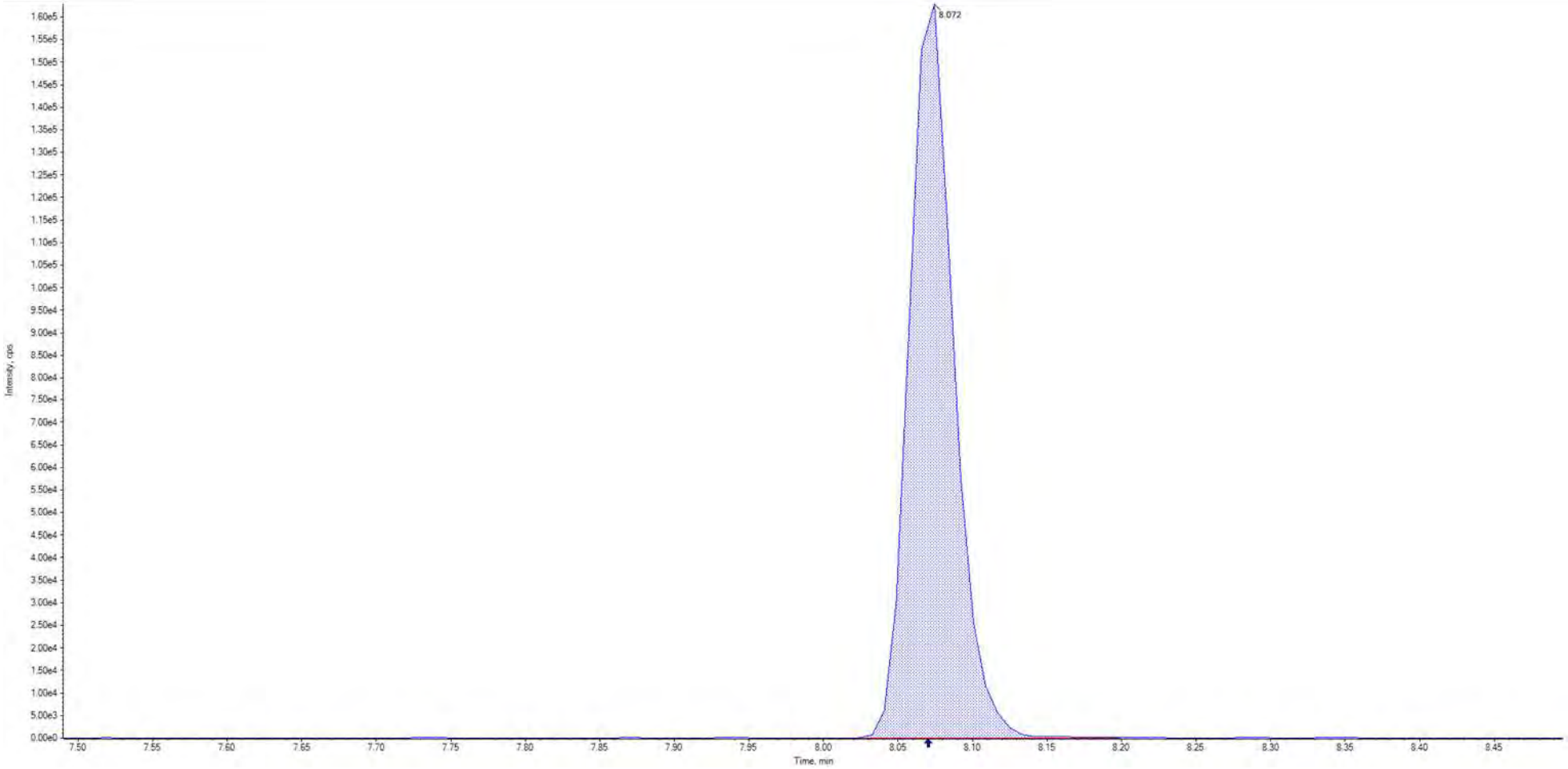
13C2-4:2FTS
Sample: IA1633STD-2.5



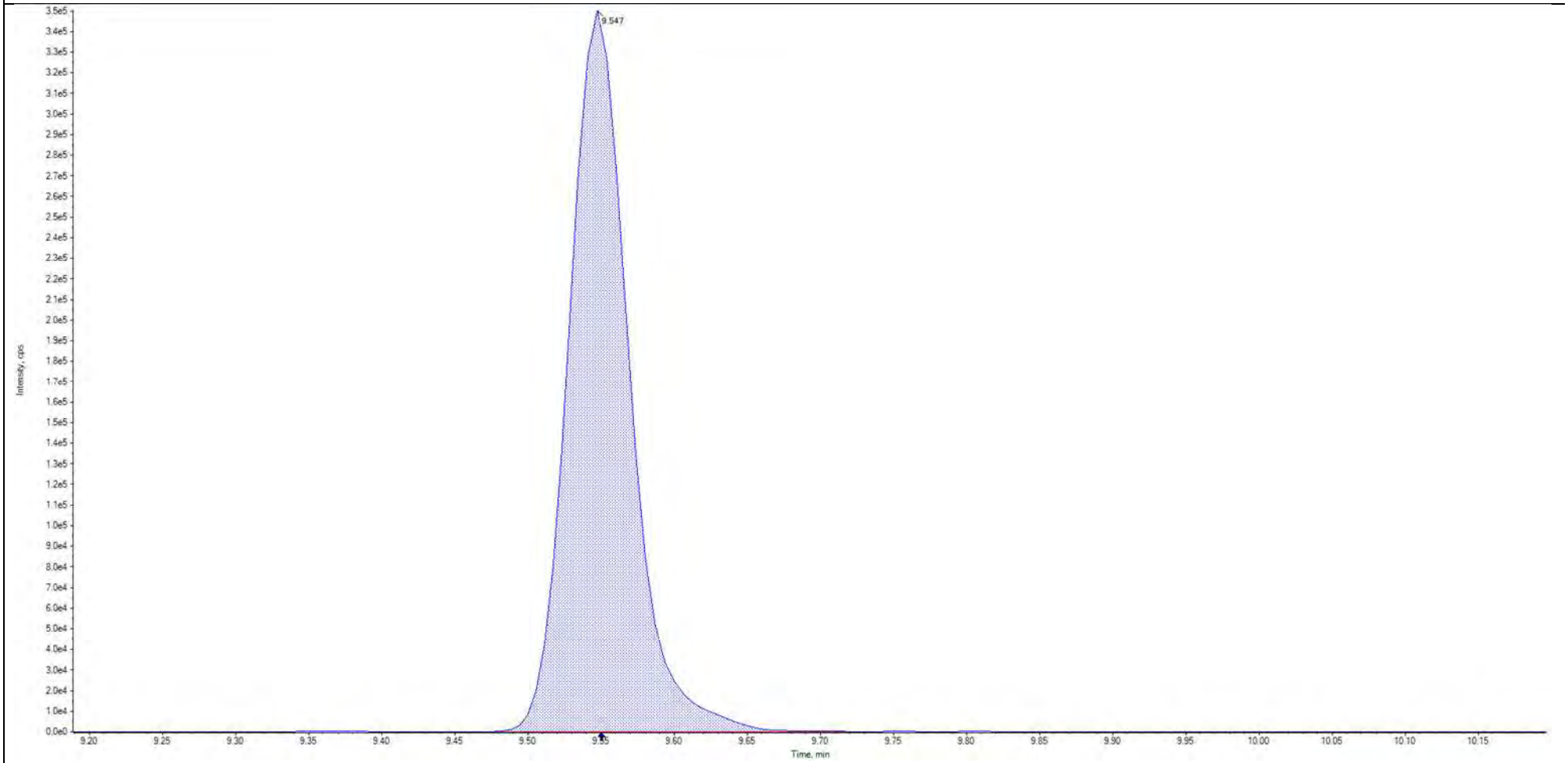
13C2-6:2FTS
Sample: IA1633STD-2.5



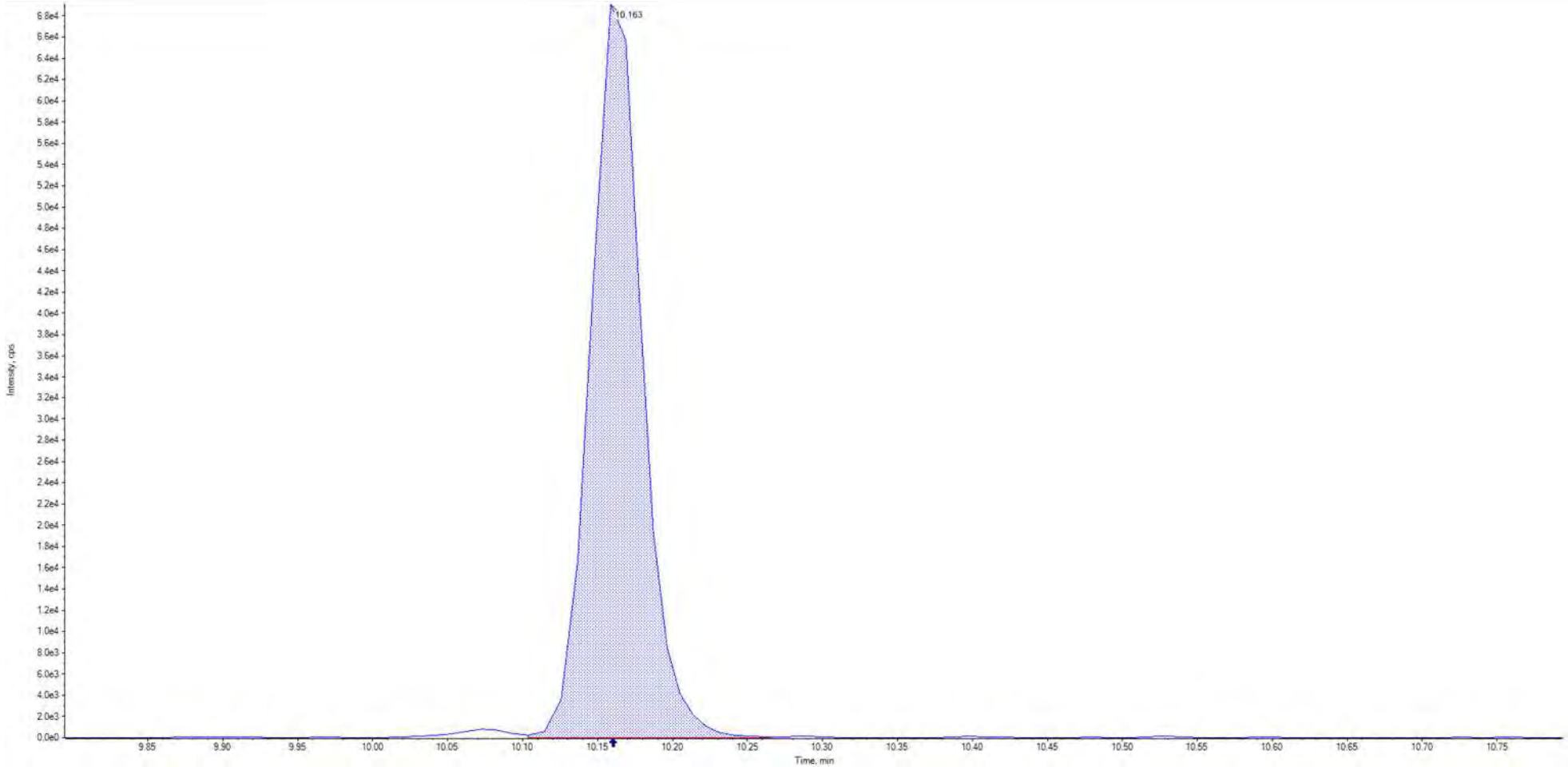
13C2-8:2FTS
Sample: IA1633STD-2.5



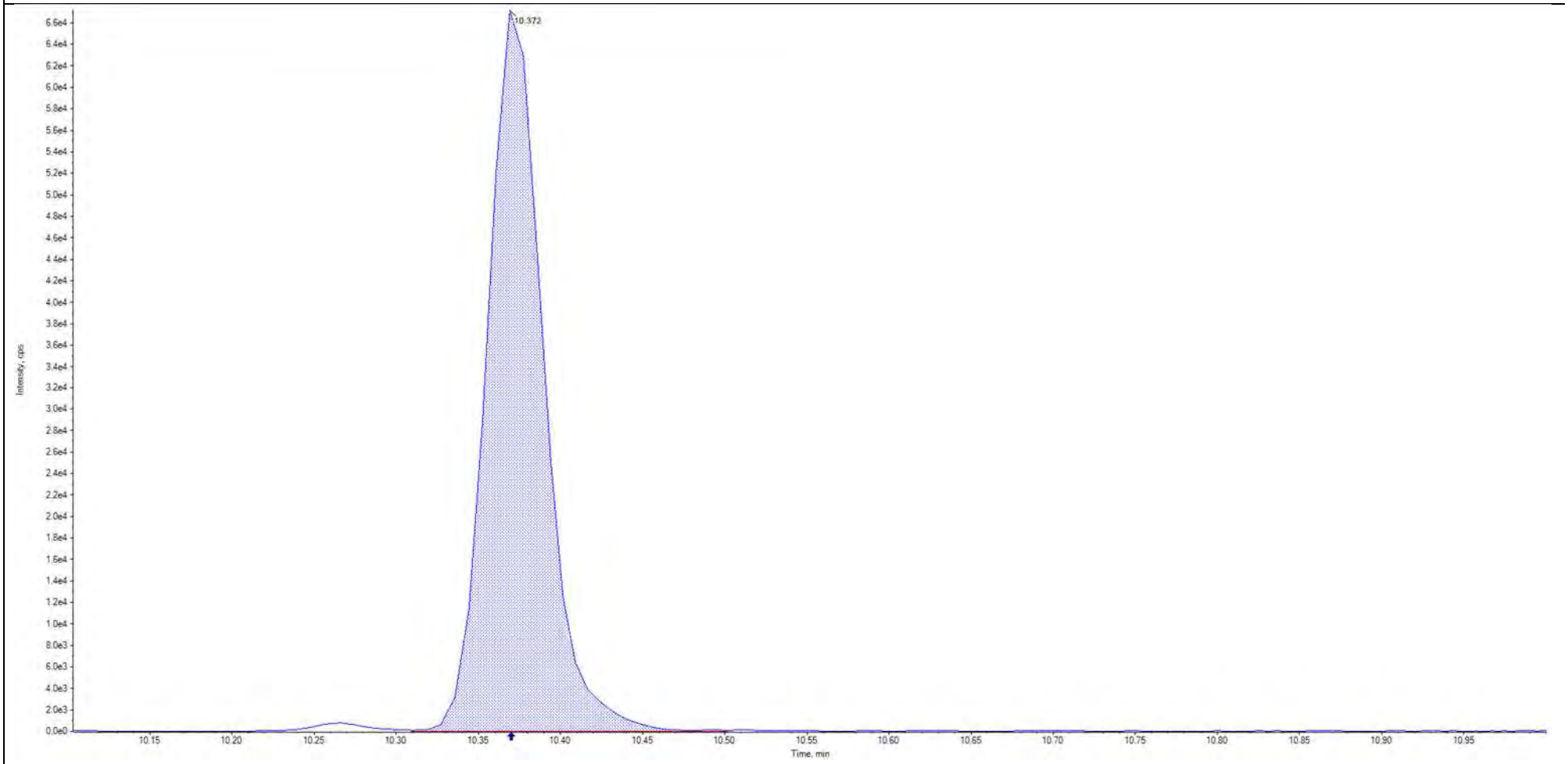
13C8-PFOSA
Sample: IA1633STD-2.5



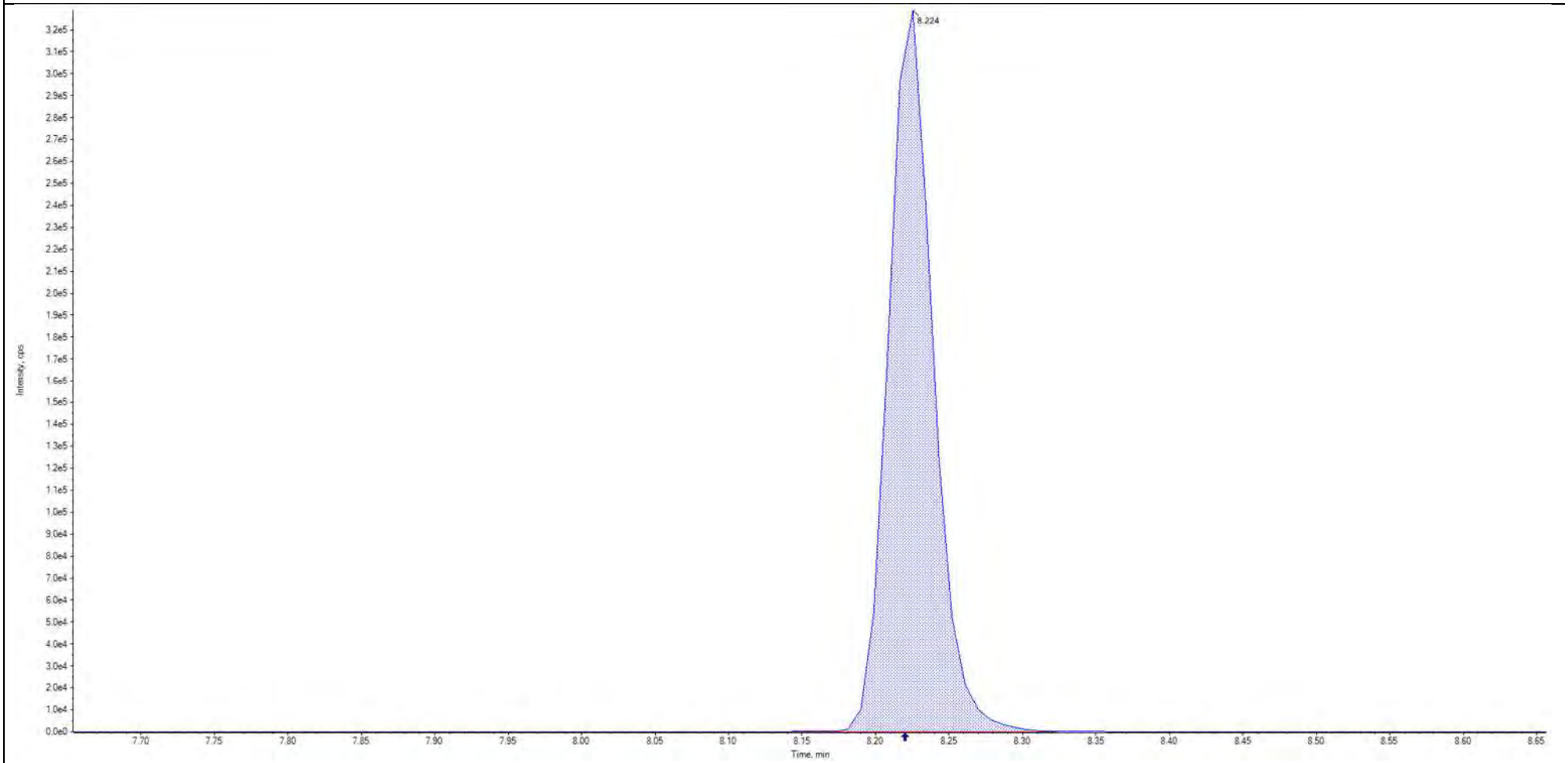
d3-NMeFOSA
Sample: IA1633STD-2.5



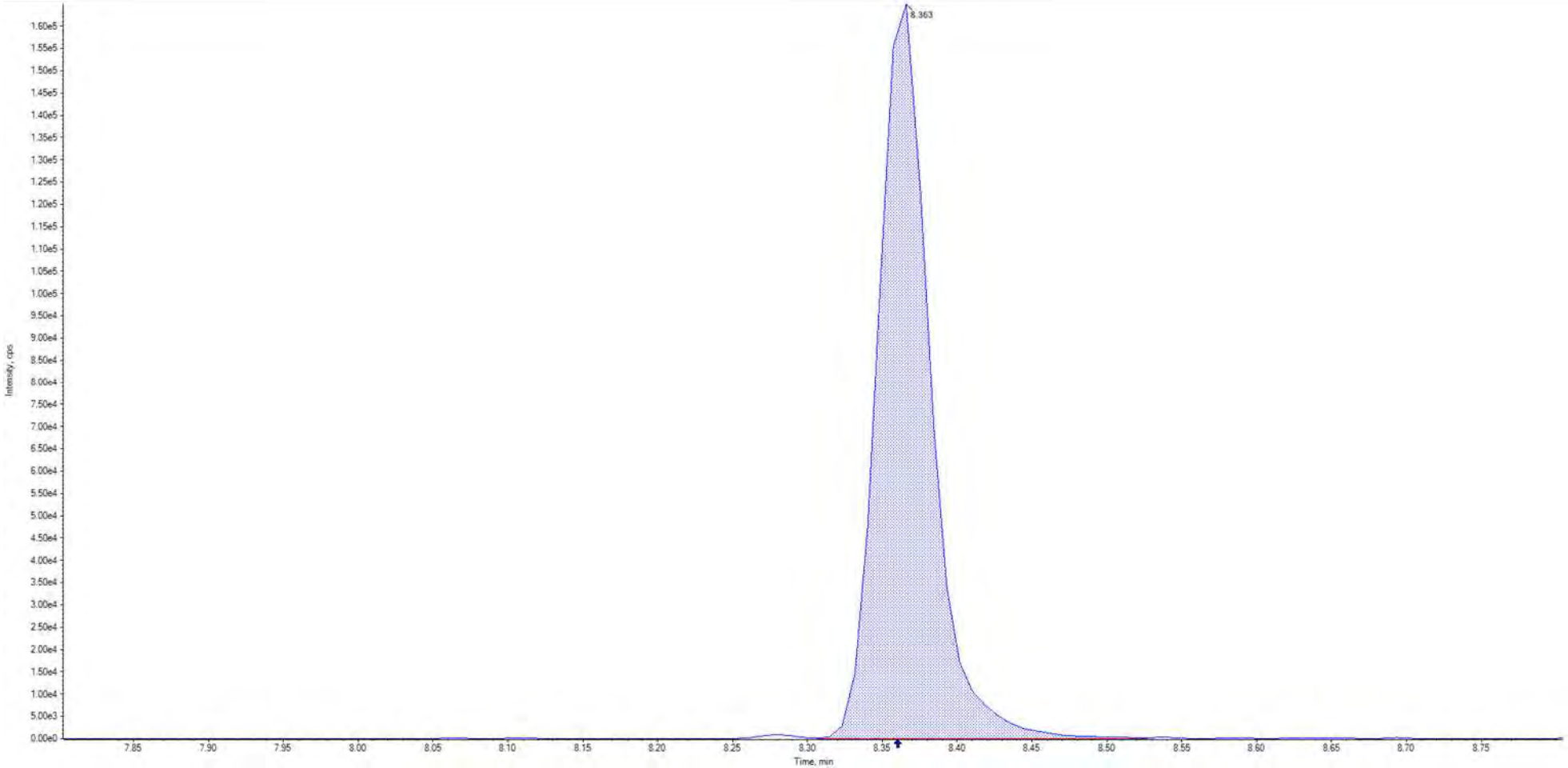
d5-NEtFOSA
Sample: IA1633STD-2.5



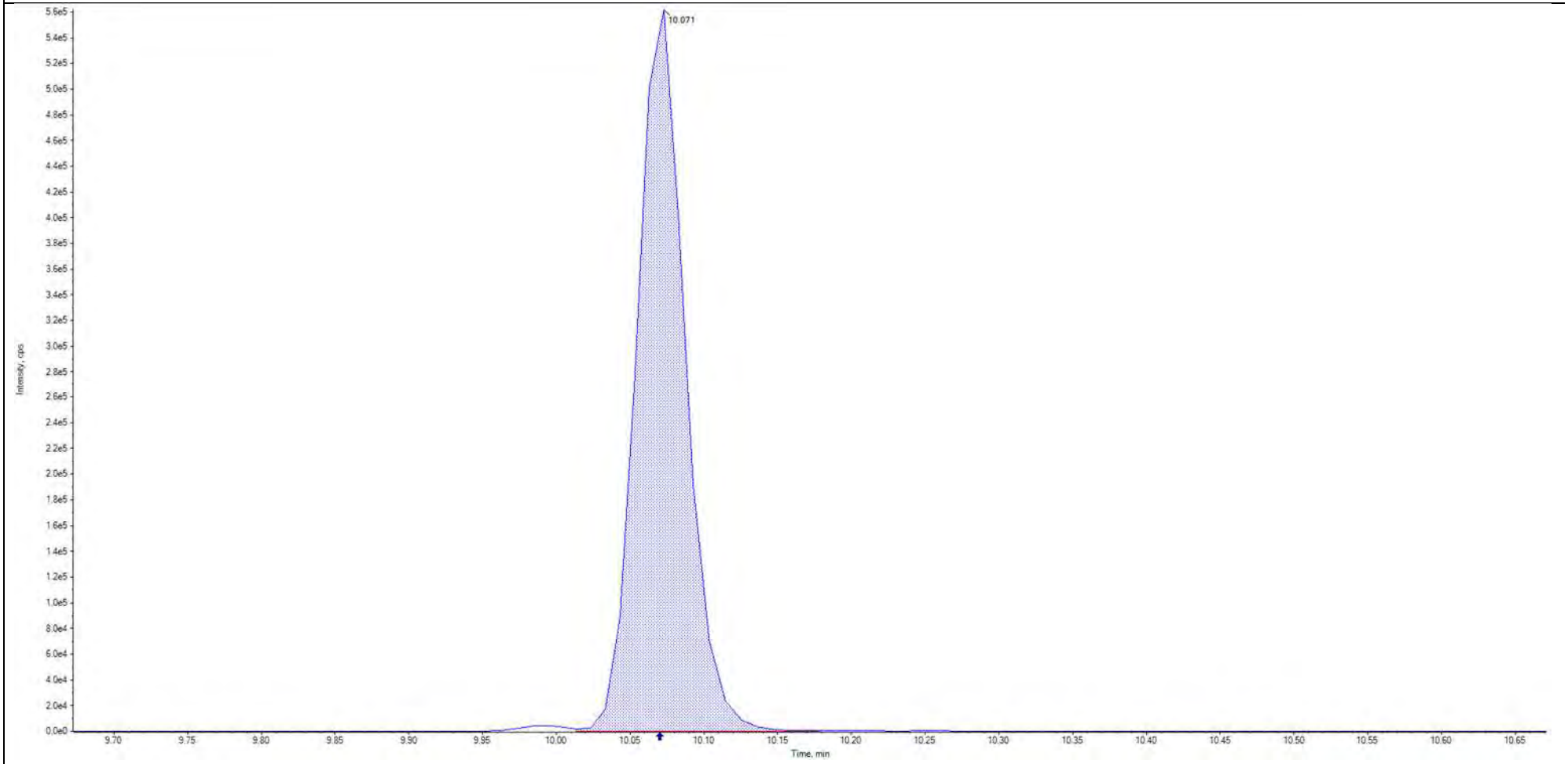
d3-NMeFOSAA
Sample: IA1633STD-2.5



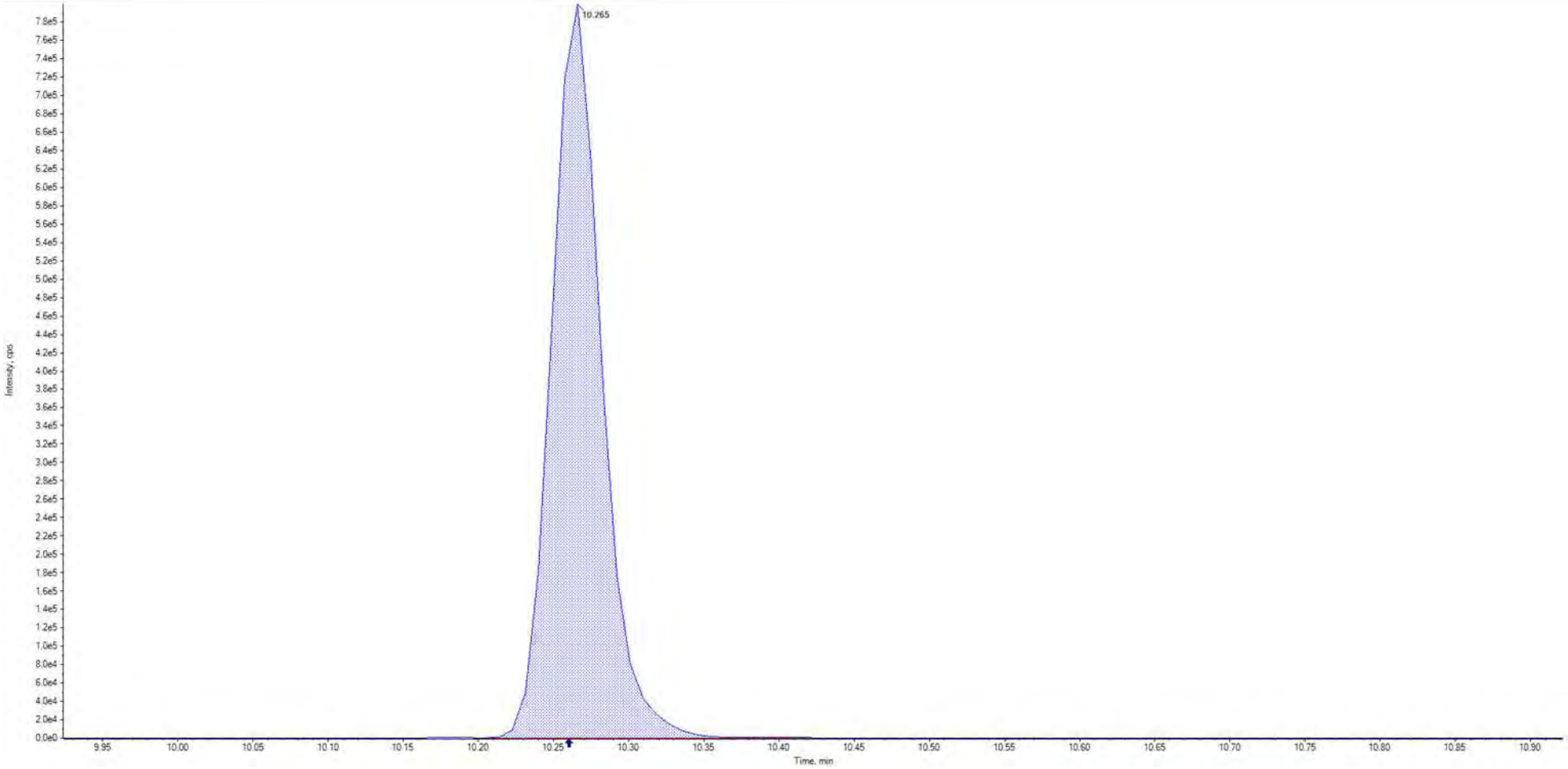
d5-NEtFOSAA
Sample: IA1633STD-2.5



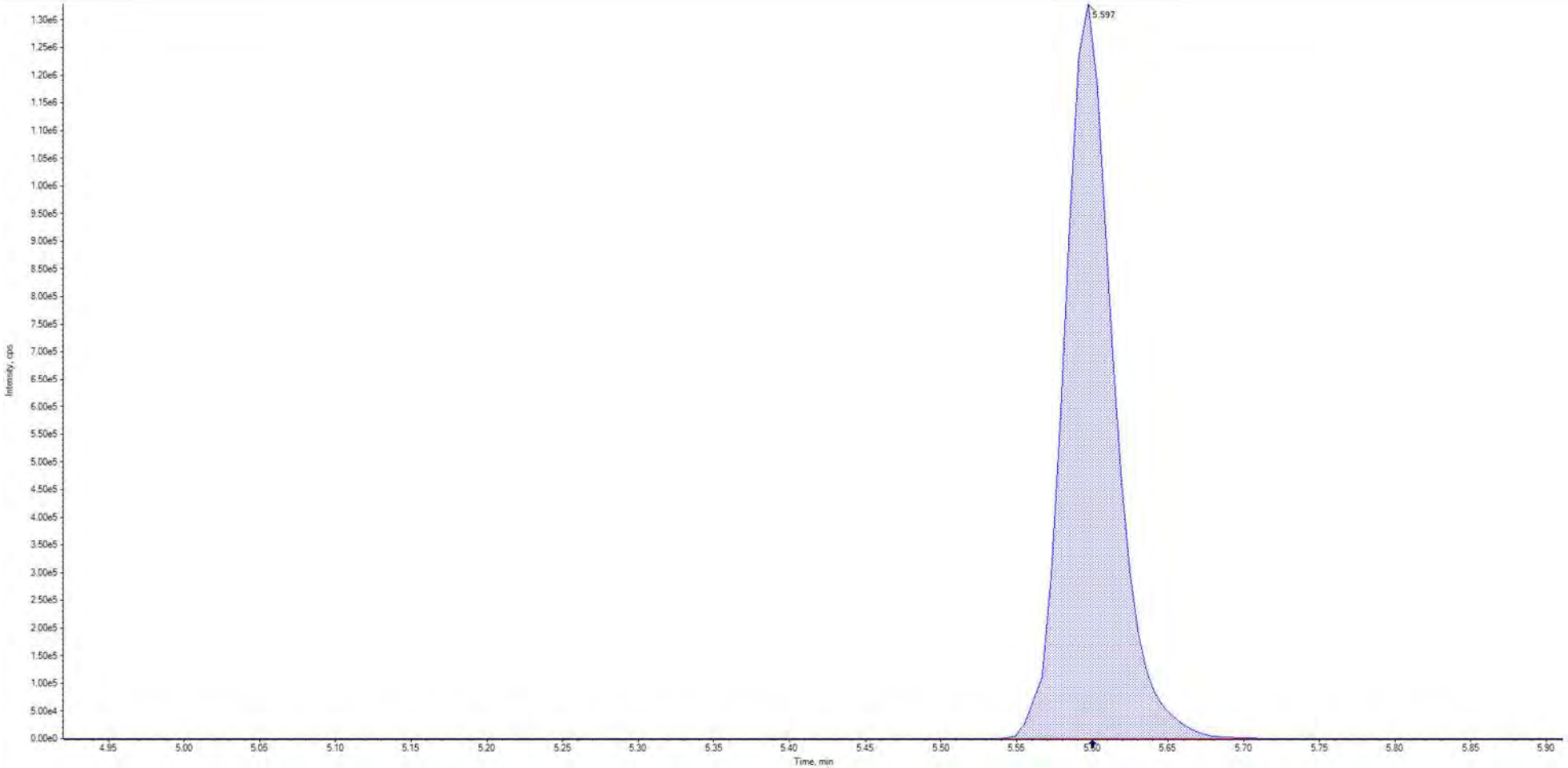
d7-NMeFOSE
Sample: IA1633STD-2.5



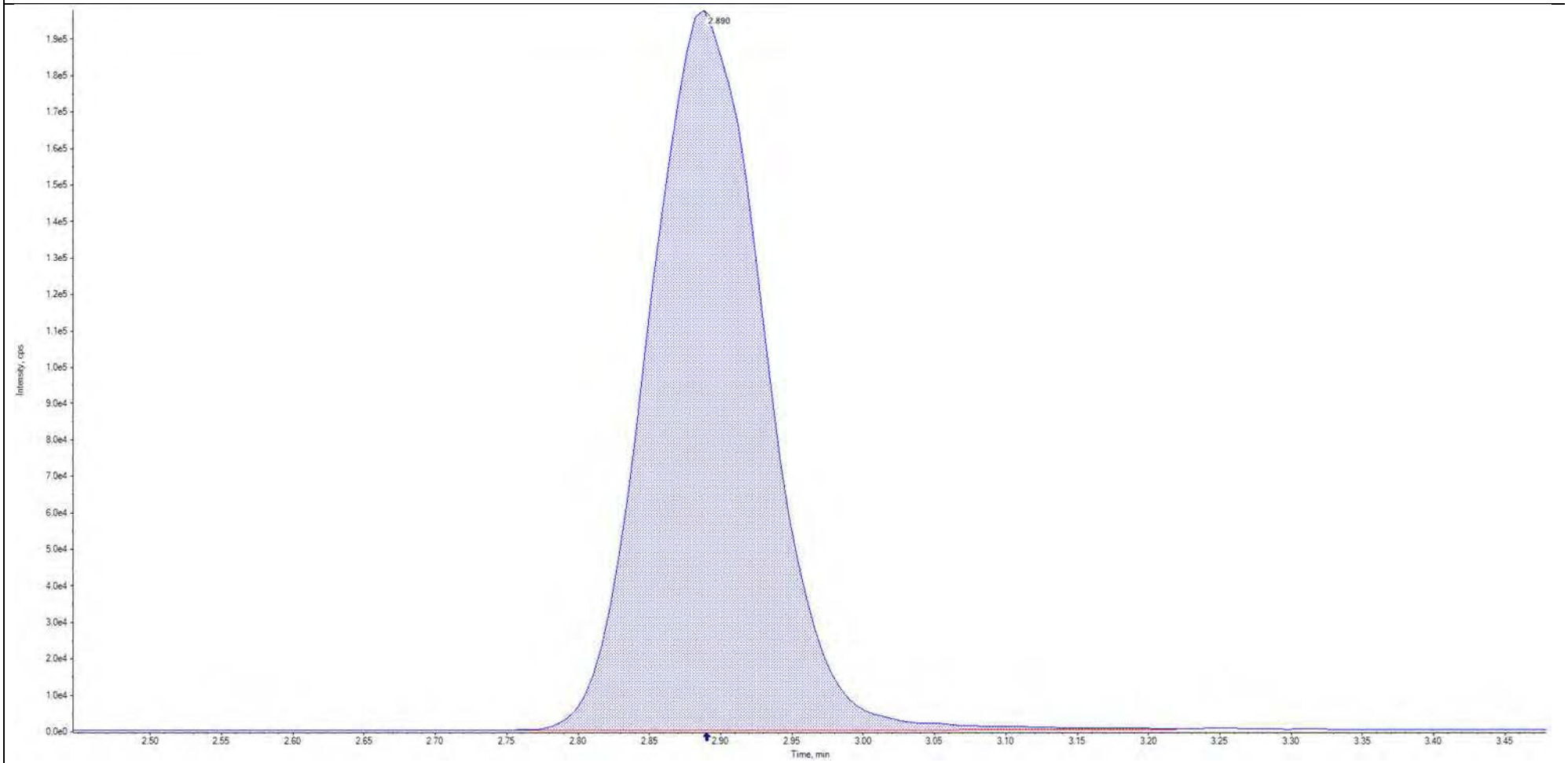
d9-NEtFOSE
Sample: IA1633STD-2.5



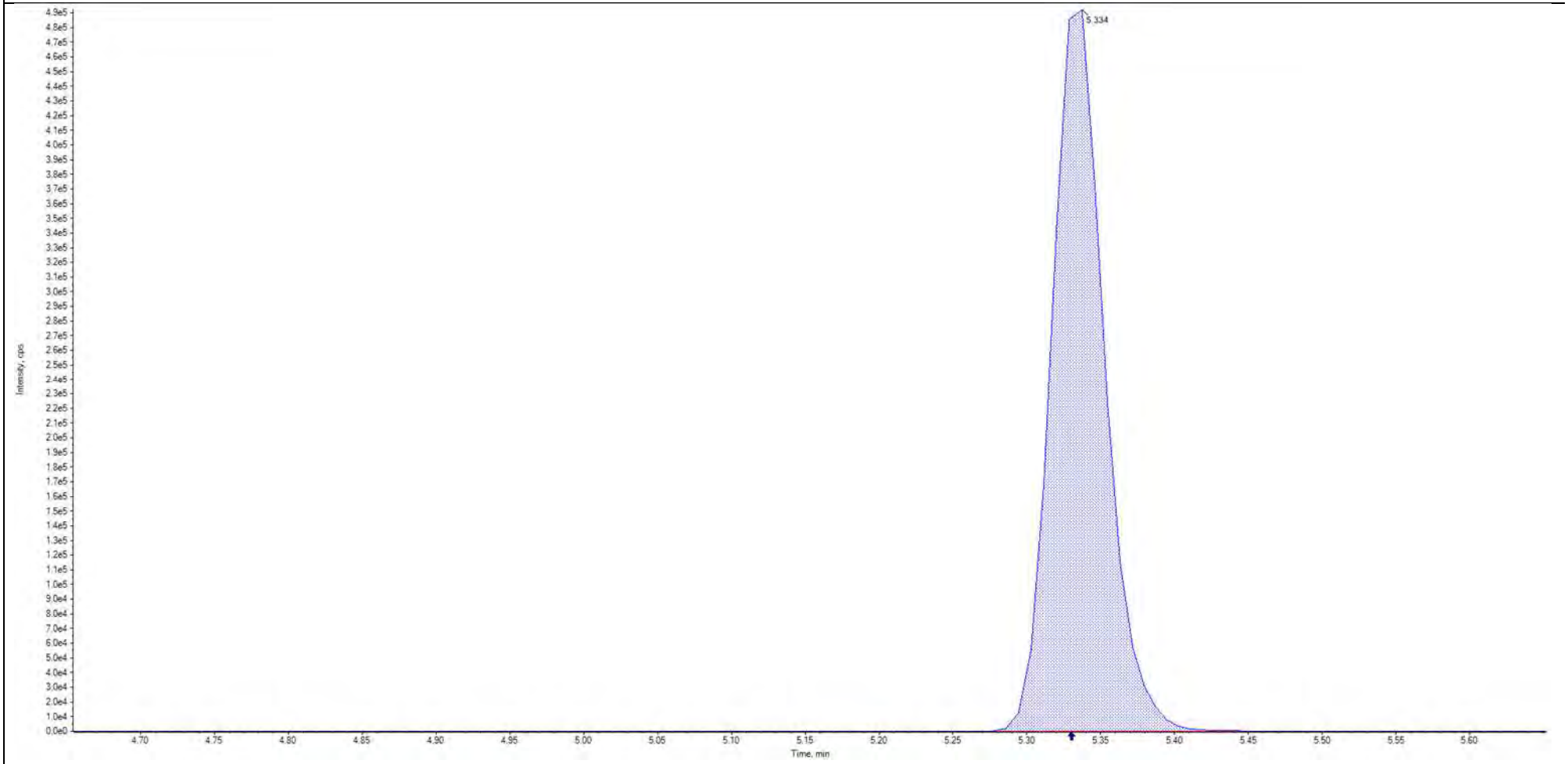
13C3-HFPO-DA
Sample: IA1633STD-2.5



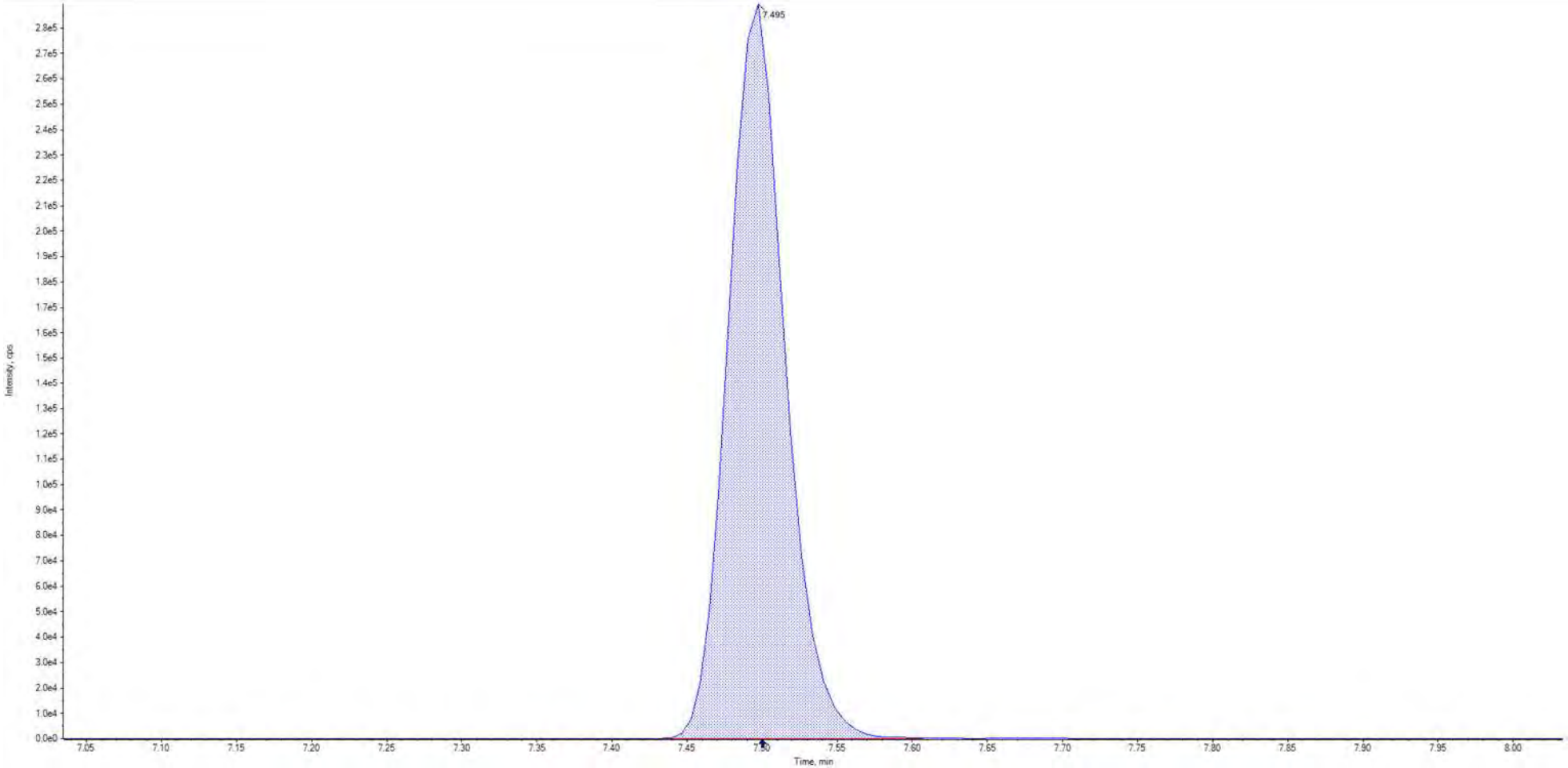
13C3-PFBA
Sample: IA1633STD-2.5



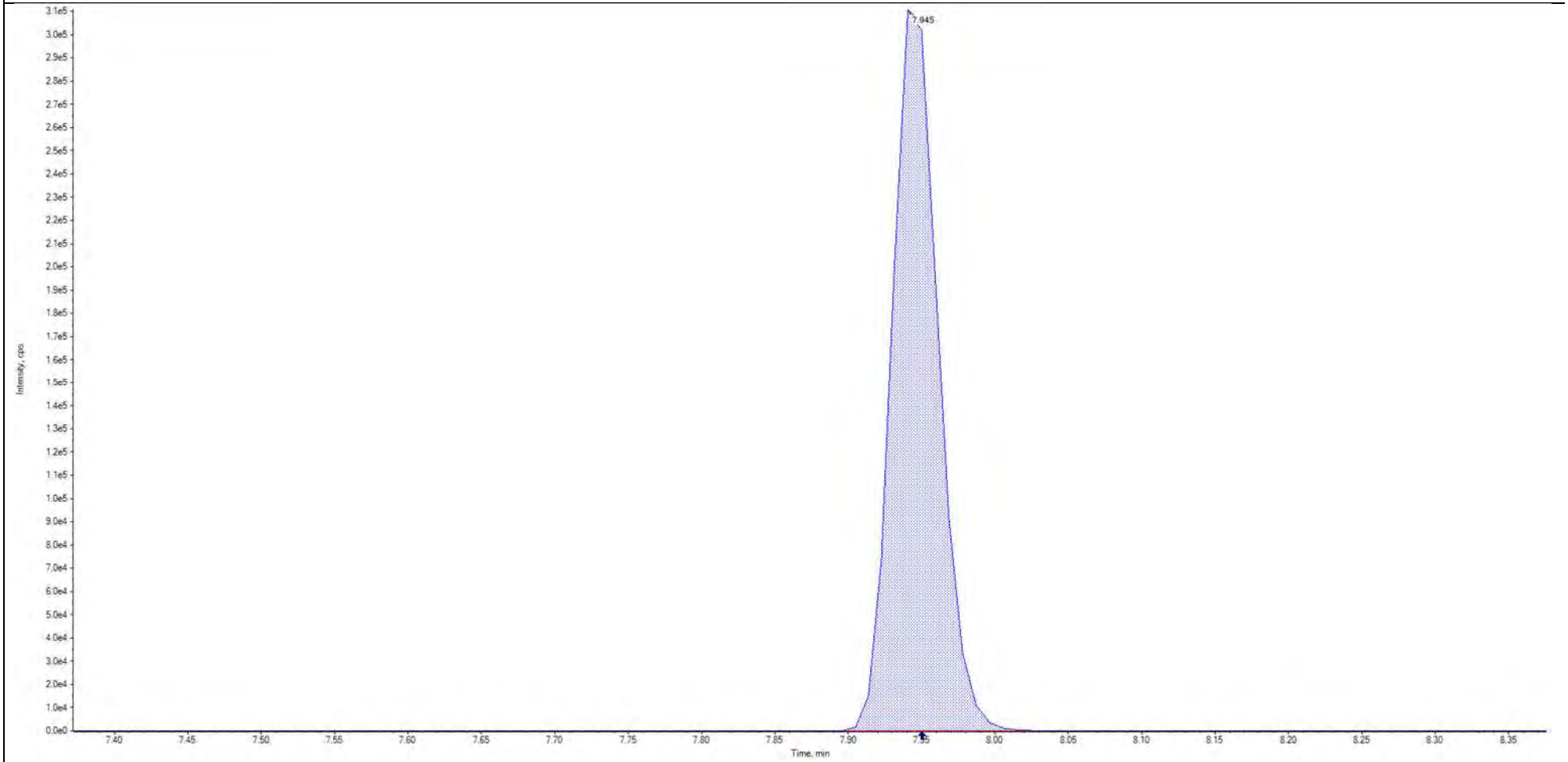
13C2-PFHxA
Sample: IA1633STD-2.5



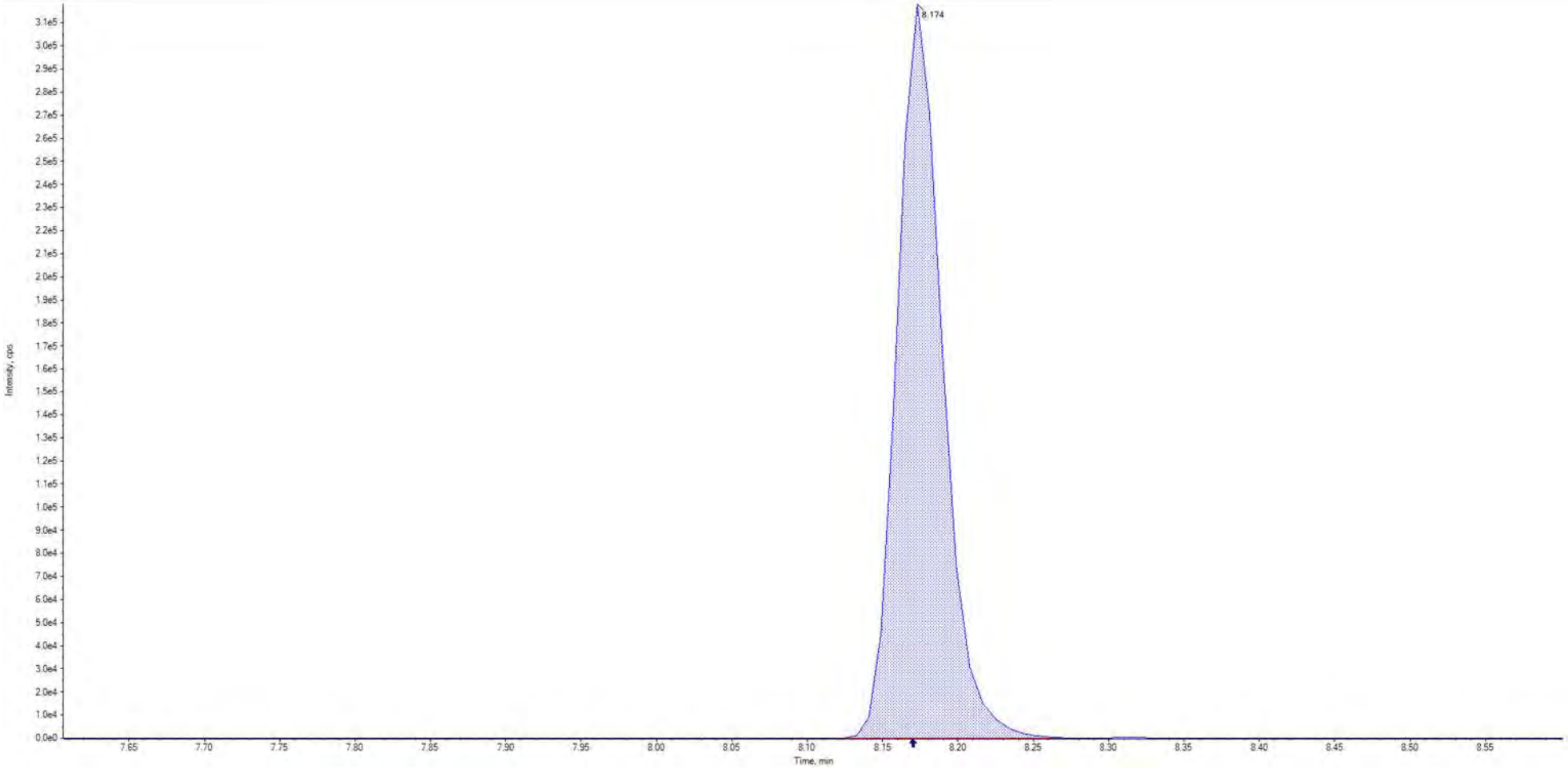
13C4-PFOA
Sample: IA1633STD-2.5



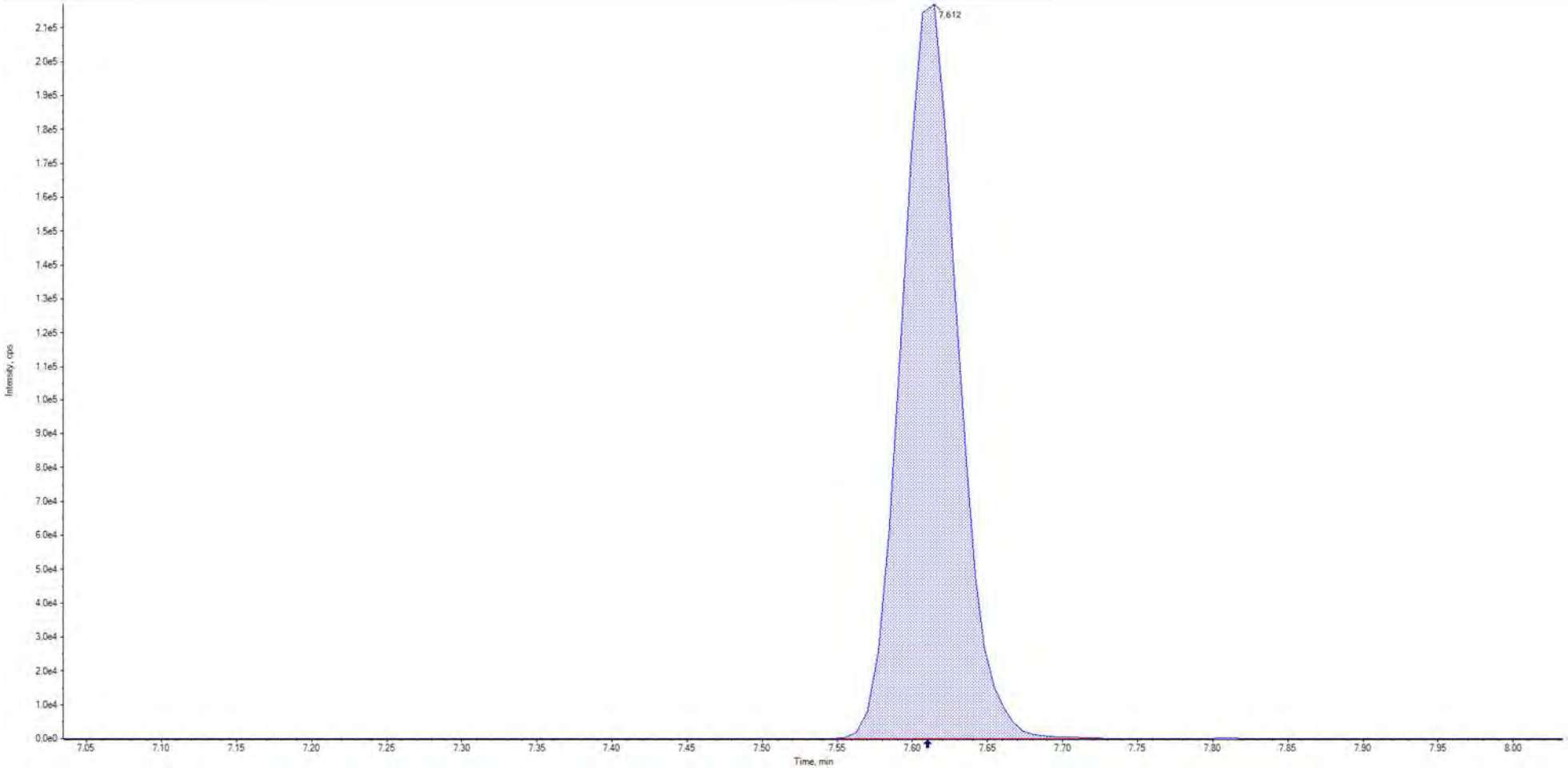
13C5-PFNA
Sample: IA1633STD-2.5



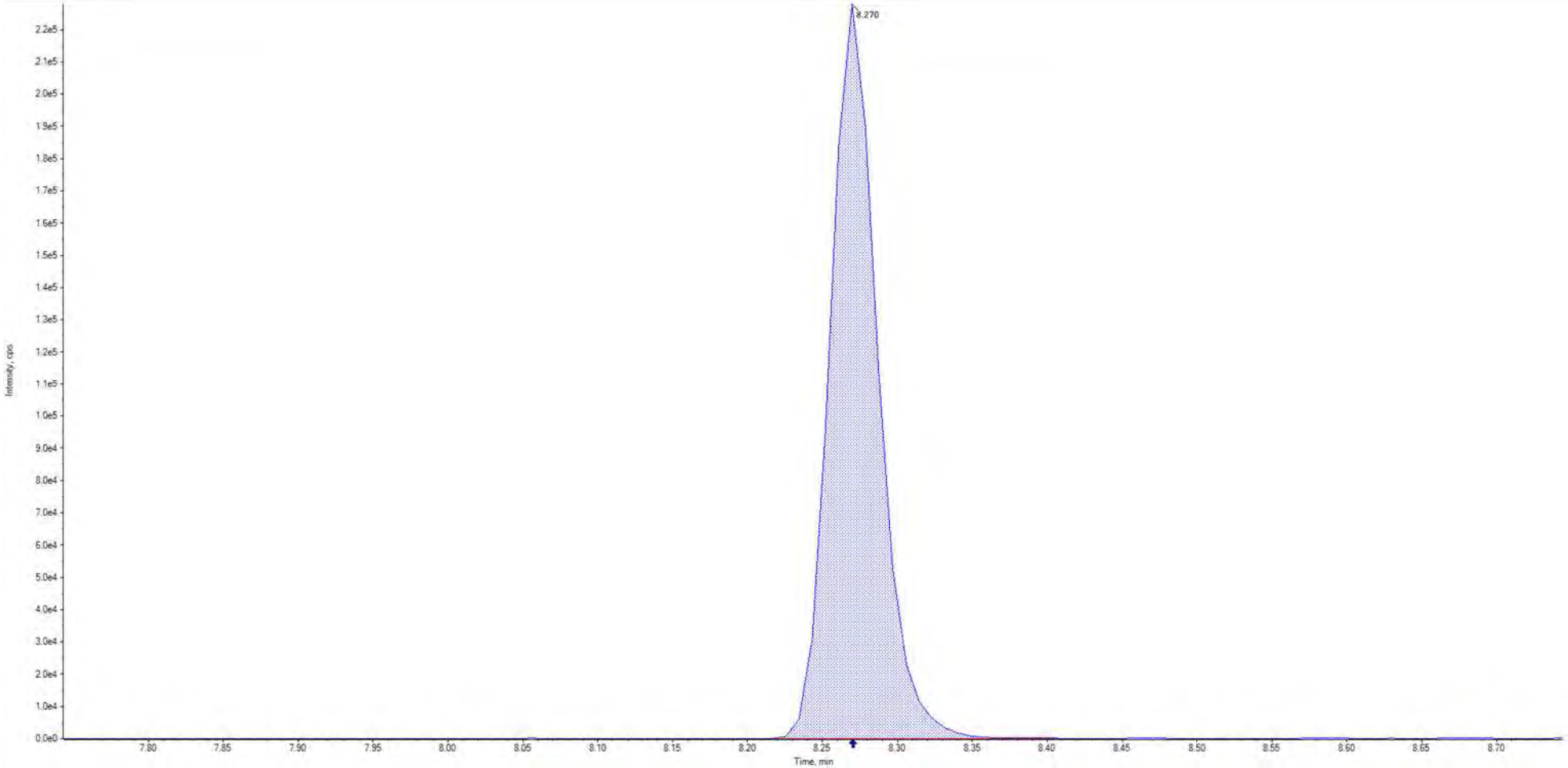
13C2-PFDA
Sample: IA1633STD-2.5



18O2-PFHxS
Sample: IA1633STD-2.5



13C4-PFOS
Sample: IA1633STD-2.5



Quantity Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Method: EPA1633_NIS_CALC.qmethod
Calibration: 240813_1633_ICAL

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Description: WG1958909,,,50 ul EPA1633_240813_CAL
Instrument: Triple Quad 5500+
User: LCMS05:SL

LC/MS-MS Method:EPA_1633.dam

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
1	PFBA	375-22-4	2.89	213.0 / 169.0	4086434		20.562	N/A	N/A	N/A	102.8
2	PFPeA	2706-90-3	4.64	263.0 / 219.0	2862778		9.744	0.007	0.007	N/A	97.4
3	PFPeA_2	2706-90-3	4.64	263.0 / 68.9	19955		9.619	0.007	0.007	N/A	96.2
4	PFHxA	307-24-4	5.34	313.0 / 269.0	2736579		5.641	0.070	0.072	Pass	112.8
5	PFHxA_2	307-24-4	5.34	313.0 / 119.0	192262		5.364	0.070	0.072	Pass	107.3
6	PFHpA	375-85-9	6.25	363.1 / 319.0	2442453		5.159	0.302	0.297	Pass	103.2
7	PFHpA_2	375-85-9	6.25	363.1 / 169.0	736863		5.087	0.302	0.297	Pass	101.7

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
8	PFOA	335-67-1	7.50	413.1 / 369.1	1457619	M5	4.785	0.569	0.586	Pass	95.7
9	PFOA_2	335-67-1	7.50	413.1 / 169.0	829352	M7	4.969	0.569	0.586	Pass	99.4
10	PFNA	375-95-1	7.95	462.8 / 418.9	2096579	M5	5.020	0.308	0.313	Pass	100.4
11	PFNA_2	375-95-1	7.95	462.8 / 218.9	644944	M7	5.053	0.308	0.313	Pass	101.1
12	PFDA	335-76-2	8.18	513.1 / 469.1	2380952		4.962	0.154	0.142	Pass	99.2
13	PFDA_2	335-76-2	8.18	513.1 / 219.0	365639		5.084	0.154	0.142	Pass	101.7
14	PFUnA	2058-94-8	8.47	563.1 / 519.1	1816864		4.935	0.189	0.194	Pass	98.7
15	PFUnA_2	2058-94-8	8.47	563.1 / 269.0	343192		4.812	0.189	0.194	Pass	96.3
16	PFDoA	307-55-1	8.91	613.1 / 569.1	1927599		5.185	0.171	0.167	Pass	103.7
17	PFDoA_2	307-55-1	8.91	613.1 / 319.0	330159		5.257	0.171	0.167	Pass	105.1
18	PFTrDA	72629-94-8	9.50	663.1 / 619.1	1141052		5.151	0.223	0.228	Pass	103.0
19	PFTrDA_2	72629-94-8	9.50	663.1 / 169.0	254394		5.156	0.223	0.228	Pass	103.1
20	PFTeDA	376-06-7	9.91	713.1 / 669.1	2070325		5.399	0.132	0.137	Pass	108.0
21	PFTeDA_2	376-06-7	9.91	713.1 / 169.0	273850		5.221	0.132	0.137	Pass	104.4
22	PFBS	375-73-5	5.32	299.1 / 80.1	1500220		4.415	0.401	0.396	Pass	99.6

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
23	PFBS_2	375-73-5	5.32	299.1 / 99.1	600848		4.435	0.401	0.396	Pass	100.0
24	PFPeS	2706-91-4	6.34	349.1 / 80.1	1312585		5.045	0.304	0.299	Pass	107.2
25	PFPeS_2	2706-91-4	6.34	349.1 / 99.1	398592		5.079	0.304	0.299	Pass	108.0
26	PFHxS	355-46-4	7.62	399.1 / 80.1	1147248	M5	4.712	0.302	0.315	Pass	103.1
27	PFHxS_2	355-46-4	7.61	399.1 / 99.1	346723	M7	4.585	0.302	0.315	Pass	100.3
28	PFHpS	375-92-8	8.02	449.1 / 80.1	1320608		5.126	0.275	0.287	Pass	107.6
29	PFHpS_2	375-92-8	8.02	449.1 / 99.1	363124		4.809	0.275	0.287	Pass	100.9
30	PFOS	1763-23-1	8.27	499.1 / 80.1	1290080	M5	4.703	0.236	0.238	Pass	101.4
31	PFOS_2	1763-23-1	8.27	499.1 / 99.1	303835		4.521	0.236	0.238	Pass	97.4
32	PFNS	68259-12-1	8.63	549.1 / 80.1	887318		5.039	0.302	0.301	Pass	104.8
33	PFNS_2	68259-12-1	8.63	549.1 / 99.1	268114		5.027	0.302	0.301	Pass	104.5
34	PFDS	335-77-3	9.15	599.1 / 80.1	862876		4.974	0.277	0.275	Pass	103.1
35	PFDS_2	335-77-3	9.15	599.1 / 99.1	238813		4.994	0.277	0.275	Pass	103.5
36	PFDoS	79780-39-5	10.00	699.2 / 80.1	781329		4.917	0.286	0.274	Pass	101.4
37	PFDoS_2	79780-39-5	10.00	699.2 / 99.1	223643		5.123	0.286	0.274	Pass	105.6

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
38	4:2FTS	757124-72-4	5.14	327.1 / 307.1	2150596		18.418	0.509	0.516	Pass	98.2
39	4:2FTS_2	757124-72-4	5.14	327.1 / 81.1	1095189		17.532	0.509	0.516	Pass	93.5
40	6:2FTS	27619-97-2	7.09	427.2 / 407.2	1415815		19.813	0.537	0.565	Pass	104.3
41	6:2FTS_2	27619-97-2	7.09	427.2 / 81.1	759626		19.654	0.537	0.565	Pass	103.4
42	8:2FTS	39108-34-4	8.07	527.2 / 507.2	1682010		20.590	0.640	0.662	Pass	107.2
43	8:2FTS_2	39108-34-4	8.07	527.2 / 81.1	1076586		19.430	0.640	0.662	Pass	101.2
44	PFOSA	754-91-6	9.55	498.1 / 78.1	1244740	M5	4.960	0.025	0.025	Pass	99.2
45	PFOSA_2	754-91-6	9.54	498.1 / 478.0	31069	M7	4.719	0.025	0.025	Pass	94.4
46	NMeFOSA	31506-32-8	10.17	512.2 / 219.0	337828	M5	5.149	1.517	1.551	Pass	103.0
47	NMeFOSA_2	31506-32-8	10.13	512.2 / 169.0	512474	M7	5.040	1.517	1.551	Pass	100.8
48	NEtFOSA	4151-50-2	10.38	526.2 / 219.0	342011	M5	5.144	1.289	1.285	Pass	102.9
49	NEtFOSA_2	4151-50-2	10.34	526.2 / 169.0	440762	M7	4.952	1.289	1.285	Pass	99.0
50	NMeFOSAA	2355-31-9	8.23	570.2 / 419.1	460043		5.042	0.617	0.700	Pass	100.9
51	NMeFOSAA_2	2355-31-9	8.23	570.2 / 483.0	283762	M7	4.891	0.617	0.700	Pass	97.8
52	NEtFOSAA	2991-50-6	8.37	584.2 / 419.1	356003		4.951	0.482	0.487	Pass	99.0

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
53	NEtFOSAA_2	2991-50-6	8.37	584.2 / 526.2	171457	M7	5.181	0.482	0.487	Pass	103.6
54	NMeFOSE	24448-09-7	10.08	616.1 / 58.9	6081925	M5	51.188	N/A	N/A	N/A	102.4
55	NEtFOSE	1691-99-2	10.28	630.0 / 58.9	10881697	M5	51.623	N/A	N/A	N/A	103.3
56	HFPO-DA	13252-13-6	5.60	285.0 / 169.0	5113517		20.468	0.465	0.464	Pass	102.3
57	HFPO-DA_2	13252-13-6	5.60	285.0 / 184.9	2377549		20.465	0.465	0.464	Pass	102.3
58	ADONA	919005-14-4	6.72	377.1 / 251.0	11102447		19.540	0.640	0.634	Pass	103.4
59	ADONA_2	919005-14-4	6.72	377.1 / 84.8	7106688		19.331	0.640	0.634	Pass	102.3
60	9Cl-PF3ONS	756426-58-1	8.50	530.8 / 351.1	11512976		20.550	0.312	0.322	Pass	109.9
61	9Cl-PF3ONS_2	756426-58-1	8.50	532.8 / 353.0	3591579		19.686	0.312	0.322	Pass	105.3
62	11Cl-PF3OUdS	763051-92-9	9.57	630.9 / 451.0	7082207		20.013	0.341	0.331	Pass	105.9
63	11Cl-PF3OUdS_2	763051-92-9	9.57	632.9 / 452.9	2417522		20.299	0.341	0.331	Pass	107.4
64	3:3FTCA	356-02-5	4.91	241.1 / 177.1	659551		25.880	0.962	1.074	Pass	103.5
65	3:3FTCA_2	356-02-5	4.91	241.1 / 117.0	634682		24.866	0.962	1.074	Pass	99.5
66	5:3FTCA	914637-49-3	7.16	341.1 / 237.1	11672941		132.650	0.952	0.953	Pass	106.1
67	5:3FTCA_2	914637-49-3	7.16	341.1 / 217.0	11114916		133.486	0.952	0.953	Pass	106.8

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
68	7:3FTCA	812-70-4	8.21	441.1 / 316.9	12166666		124.195	1.435	1.558	Pass	99.4
69	7:3FTCA_2	812-70-4	8.21	441.1 / 337.1	17464827		122.854	1.435	1.558	Pass	98.3
70	PFEESA	113507-82-7	5.71	315.1 / 135.0	7928840		9.421	0.086	0.087	Pass	105.9
71	PFEESA_2	113507-82-7	5.71	315.1 / 82.9	680741		9.363	0.086	0.087	Pass	105.2
72	PFMPA	377-73-1	3.85	229.0 / 85.0	351979		9.897	N/A	N/A	N/A	99.0
73	PFMBA	863090-89-5	4.88	279.0 / 85.0	4778782		9.966	N/A	N/A	N/A	99.7
74	NFDHA	151772-58-6	5.26	295.0 / 201.0	880207		9.935	0.971	0.910	Pass	99.4
75	NFDHA_2	151772-58-6	5.26	295.0 / 84.9	854503		10.521	0.971	0.910	Pass	105.2
76	TDCA	516-50-7	N/A	499.1 / 124.1	N/A		N/A	N/A	40.716	N/A	N/A
77	TDCA_2	516-50-7	N/A	499.1 / 79.9	N/A		N/A	N/A	40.716	N/A	N/A
78	13C2D4-4:2FTS	Surr	5.13	333.2 / 312.1	919882		5.014	N/A	N/A	N/A	100.3
79	13C2-PFOA	Surr	7.50	415.0 / 370.0	3324516		2.545	N/A	N/A	N/A	101.8

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C4-PFBA	EIS	2.89	217.0 / 172.0	2450640		9.648	NA	NA	NA	96.5

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C5-PFPeA	EIS	4.64	268.0 / 223.0	1593343		4.949	NA	NA	NA	99.0
	13C5-PFHxA	EIS	5.33	318.0 / 273.0	995289		2.353	NA	NA	NA	94.1
	13C4-PFHpA	EIS	6.24	367.0 / 322.0	1010573		2.387	NA	NA	NA	95.5
	13C8-PFOA	EIS	7.50	421.0 / 376.0	1463773		2.482	NA	NA	NA	99.3
	13C9-PFNA	EIS	7.94	472.0 / 427.0	713171		1.268	NA	NA	NA	101.5
	13C6-PFDA	EIS	8.17	519.0 / 474.0	696053		1.234	NA	NA	NA	98.7
	13C7-PFUnA	EIS	8.46	570.0 / 525.0	582368		1.276	NA	NA	NA	102.0

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C2-PFDoA	EIS	8.90	615.1 / 570.0	357349		1.203	NA	NA	NA	96.3
	13C2-PFTeDA	EIS	9.90	715.1 / 670.1	382542		1.187	NA	NA	NA	94.9
	13C3-PFBS	EIS	5.31	302.1 / 80.1	809878		2.369	NA	NA	NA	101.7
	13C3-PFHxS	EIS	7.61	402.1 / 80.1	610021		2.247	NA	NA	NA	94.8
	13C8-PFOS	EIS	8.27	507.1 / 80.1	667787		2.272	NA	NA	NA	94.8
	13C2-4:2FTS	EIS	5.13	329.1 / 81.1	279445		4.580	NA	NA	NA	97.7
	13C2-6:2FTS	EIS	7.09	429.2 / 81.1	207125		4.633	NA	NA	NA	97.4
	13C2-8:2FTS	EIS	8.07	529.2 / 81.1	309366		4.728	NA	NA	NA	98.5

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C8-PFOSA	EIS	9.54	506.1 / 78.1	938666		2.402	NA	NA	NA	96.1
	d3-NMeFOSA	EIS	10.16	515.2 / 219.0	153186		2.328	NA	NA	NA	93.1
	d5-NEtFOSA	EIS	10.37	531.2 / 219.0	151356		2.355	NA	NA	NA	94.2
	d3-NMeFOSAA	EIS	8.22	573.2 / 419.1	693269		4.661	NA	NA	NA	93.2
	d5-NEtFOSAA	EIS	8.36	589.3 / 419.1	385664		4.934	NA	NA	NA	98.7
	d7-NMeFOSE	EIS	10.07	623.2 / 58.9	1204068		23.699	NA	NA	NA	94.8
	d9-NEtFOSE	EIS	10.26	639.2 / 58.9	1795666		23.972	NA	NA	NA	95.9

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C3-HFPO-DA	EIS	5.60	287.0 / 169.0	2725359		9.724	NA	NA	NA	97.2
	13C3-PFBA	NIS	2.89	216.0 / 172.0	1111153		5.197	NA	NA	NA	103.9
	13C2-PFHxA	NIS	5.33	315.0 / 270.0	1255642		2.564	NA	NA	NA	102.6
	13C4-PFOA	NIS	7.49	417.0 / 372.0	771592		2.465	NA	NA	NA	98.6
	13C5-PFNA	NIS	7.94	468.0 / 423.0	685134		1.251	NA	NA	NA	100.1
	13C2-PFDA	NIS	8.17	515.1 / 470.1	662819		1.294	NA	NA	NA	103.5
	18O2-PFHxS	NIS	7.61	403.1 / 84.1	551890		2.356	NA	NA	NA	99.4
	13C4-PFOS	NIS	8.27	503.1 / 80.1	520008		2.470	NA	NA	NA	103.1

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	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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PFBA
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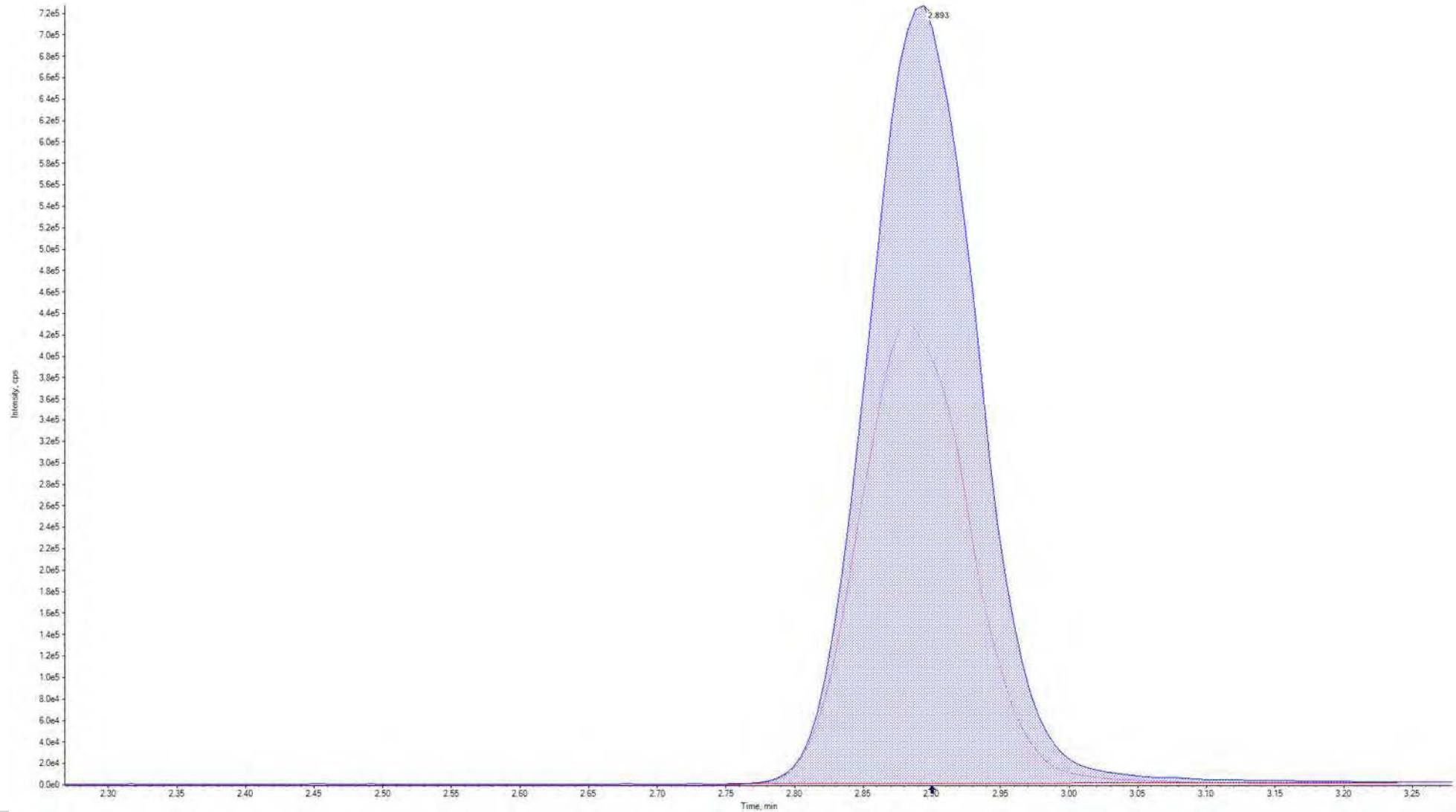

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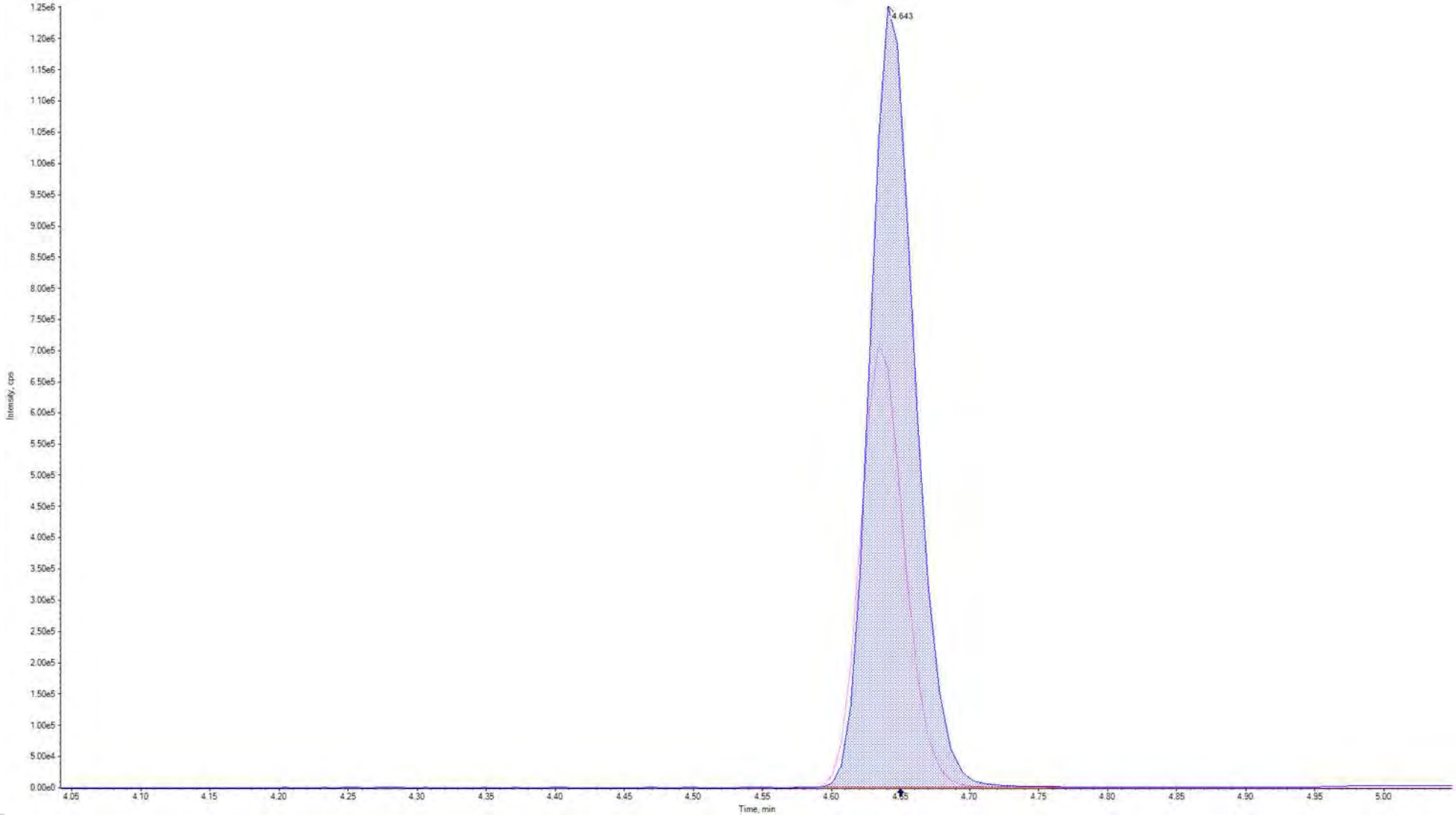
PFPeA
Sample: IA1633STD-5 S/N:4666.0 Points Across peak:29



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PFPeA_2
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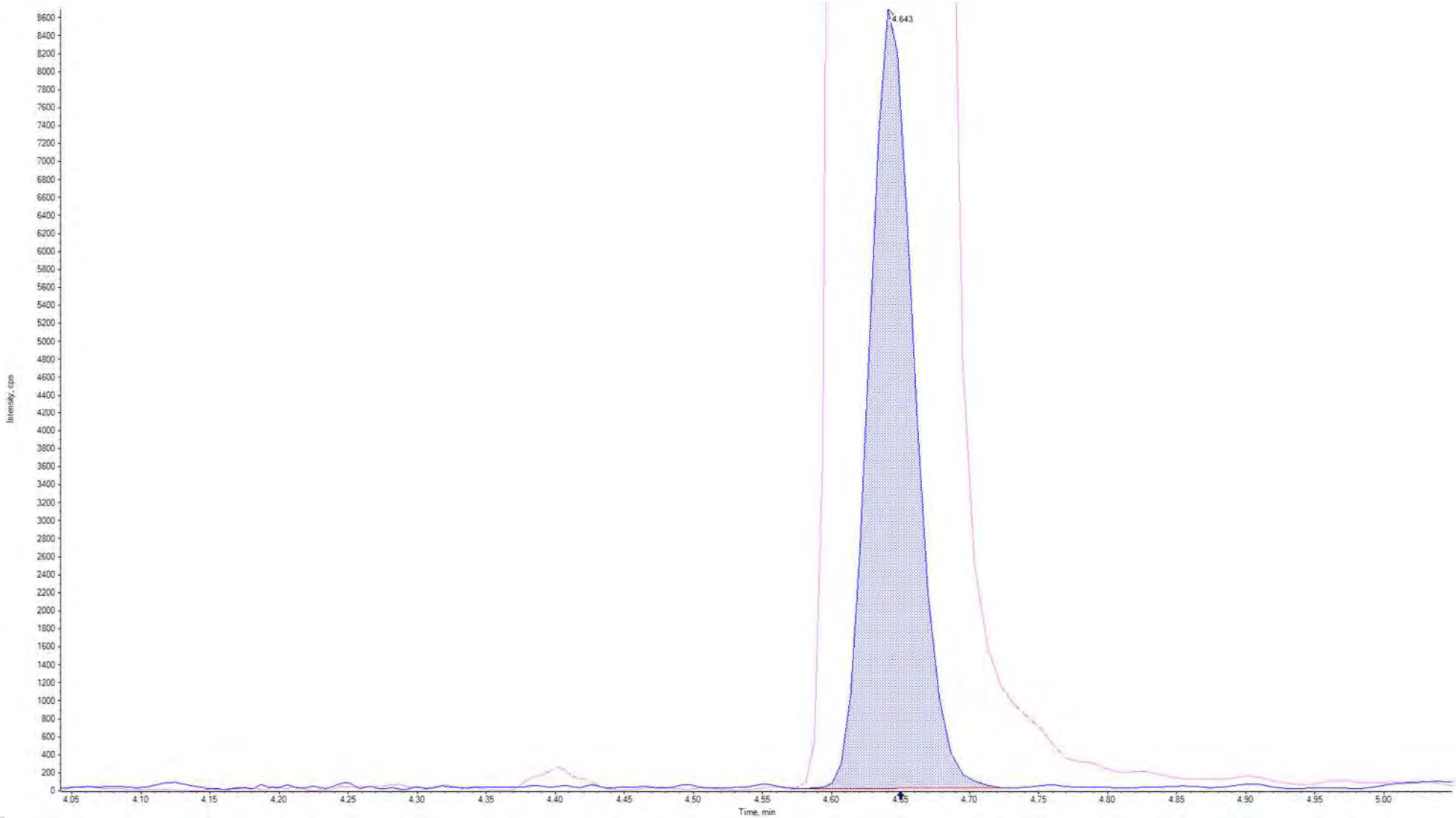

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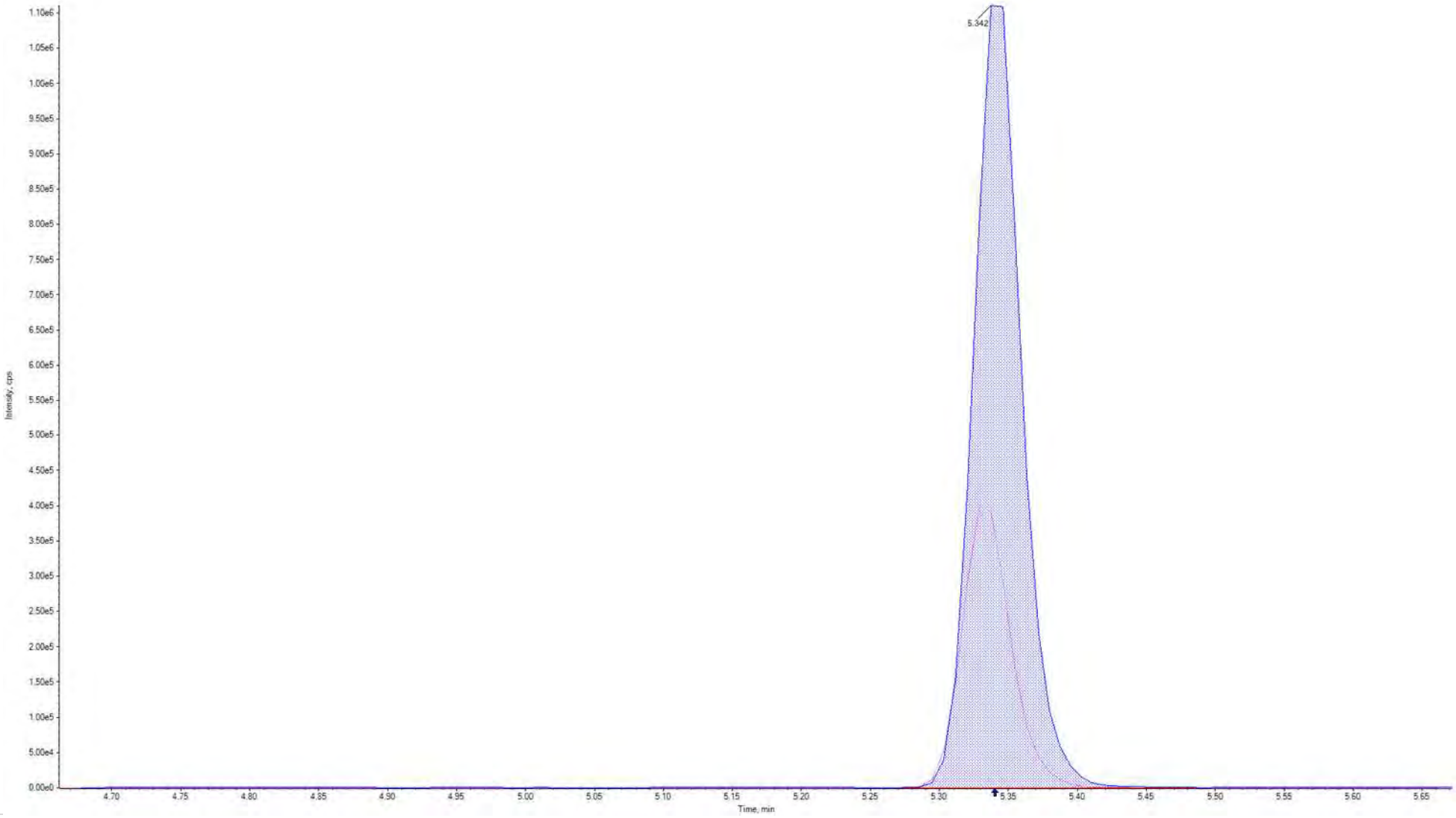
PFHxA
Sample: IA1633STD-5 S/N:2013.3 Points Across peak:31



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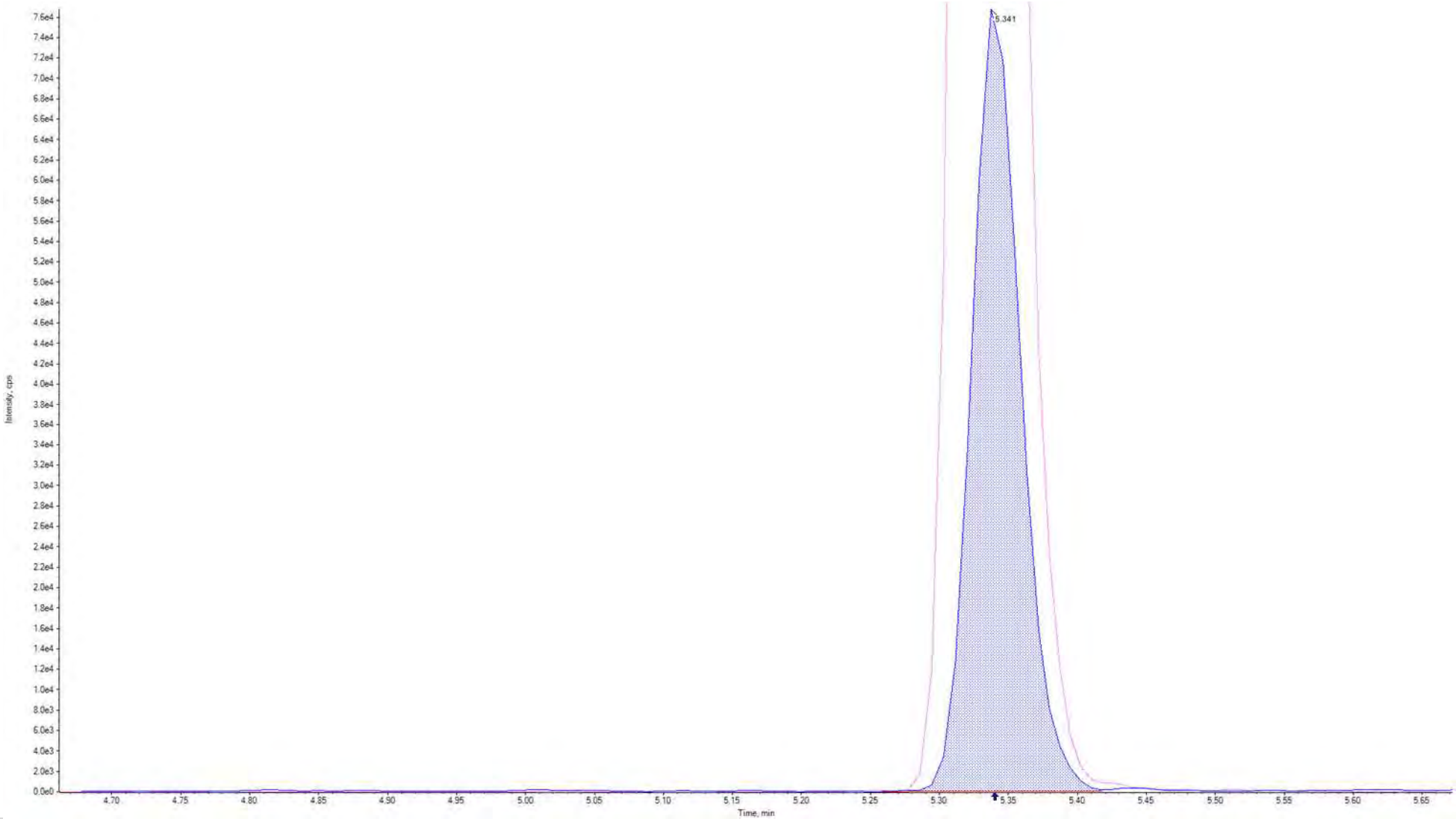
PFHxA_2
Sample: IA1633STD-5 S/N:1766.0 Points Across peak:21



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PFHpA
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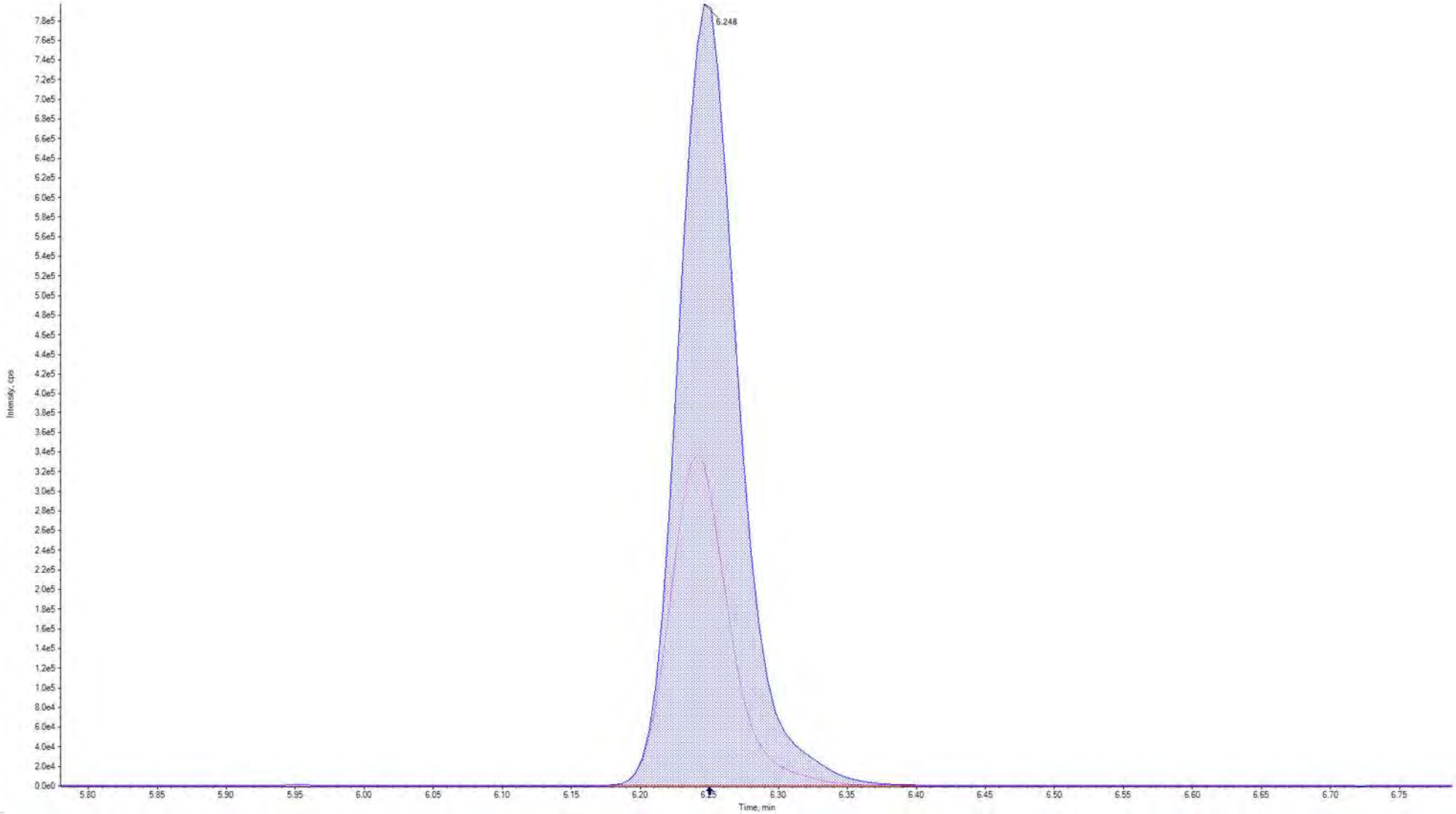

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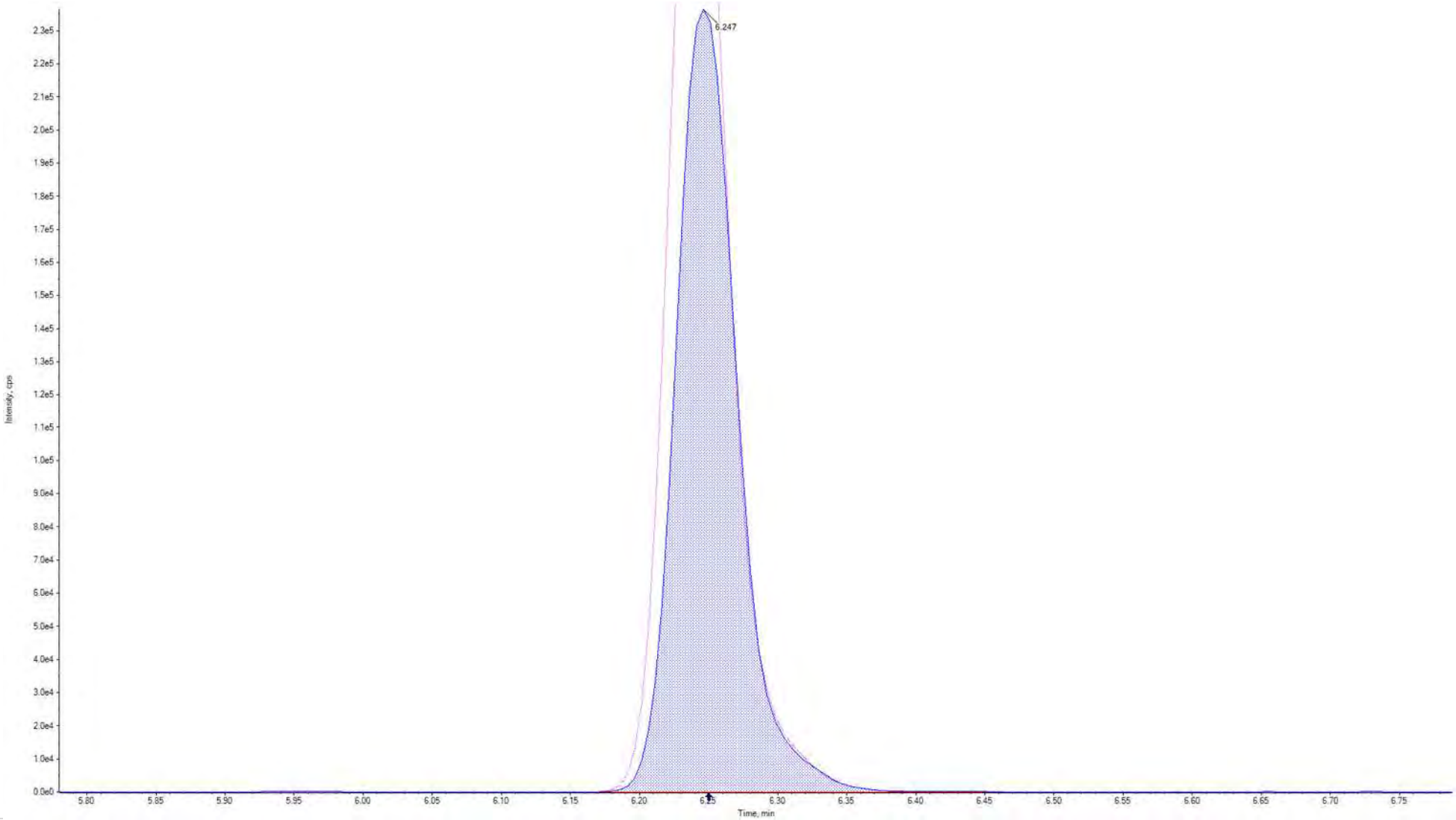
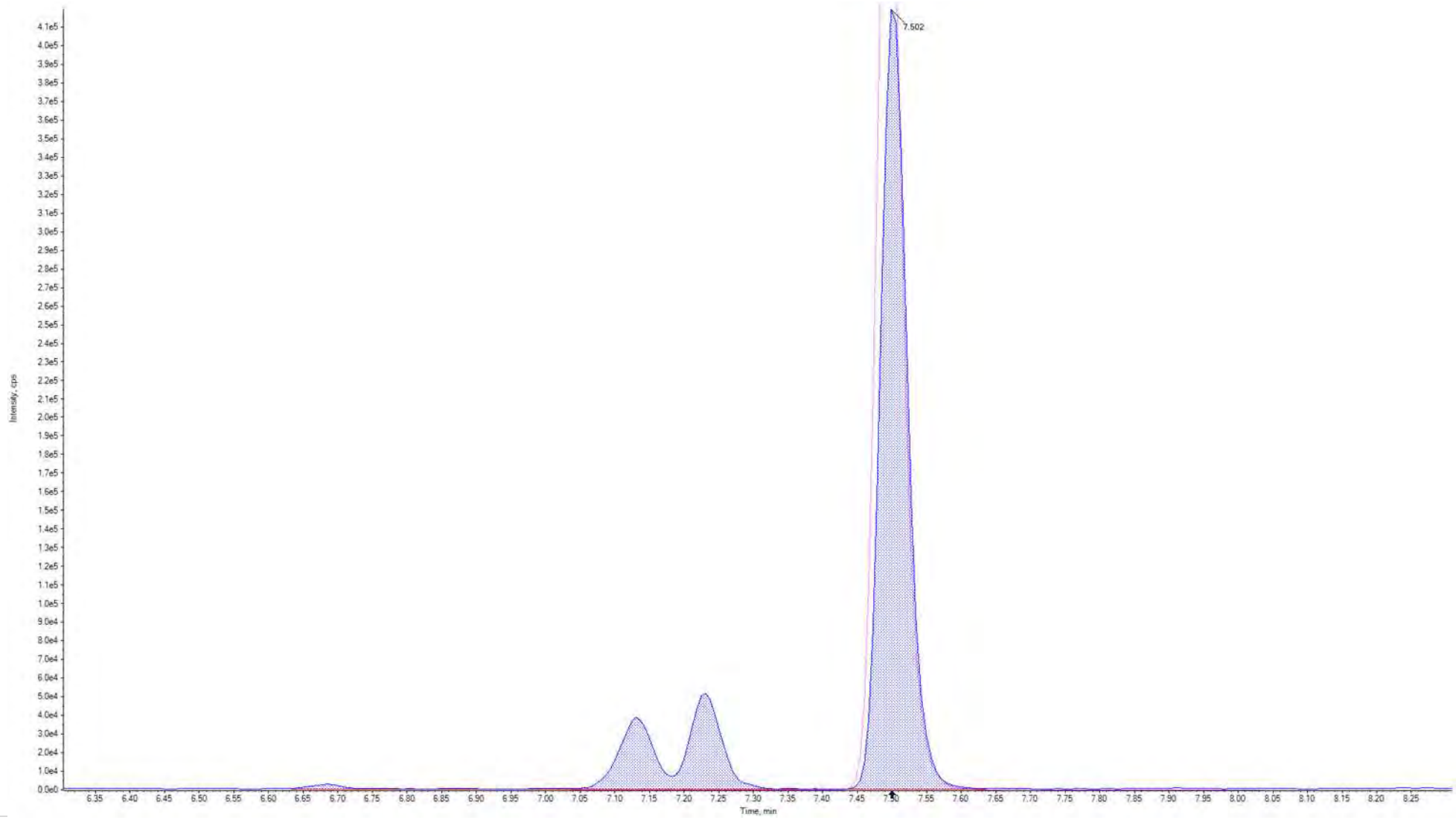
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFHpA_2
Sample: IA1633STD-5 S/N:8665.8 Points Across peak:53



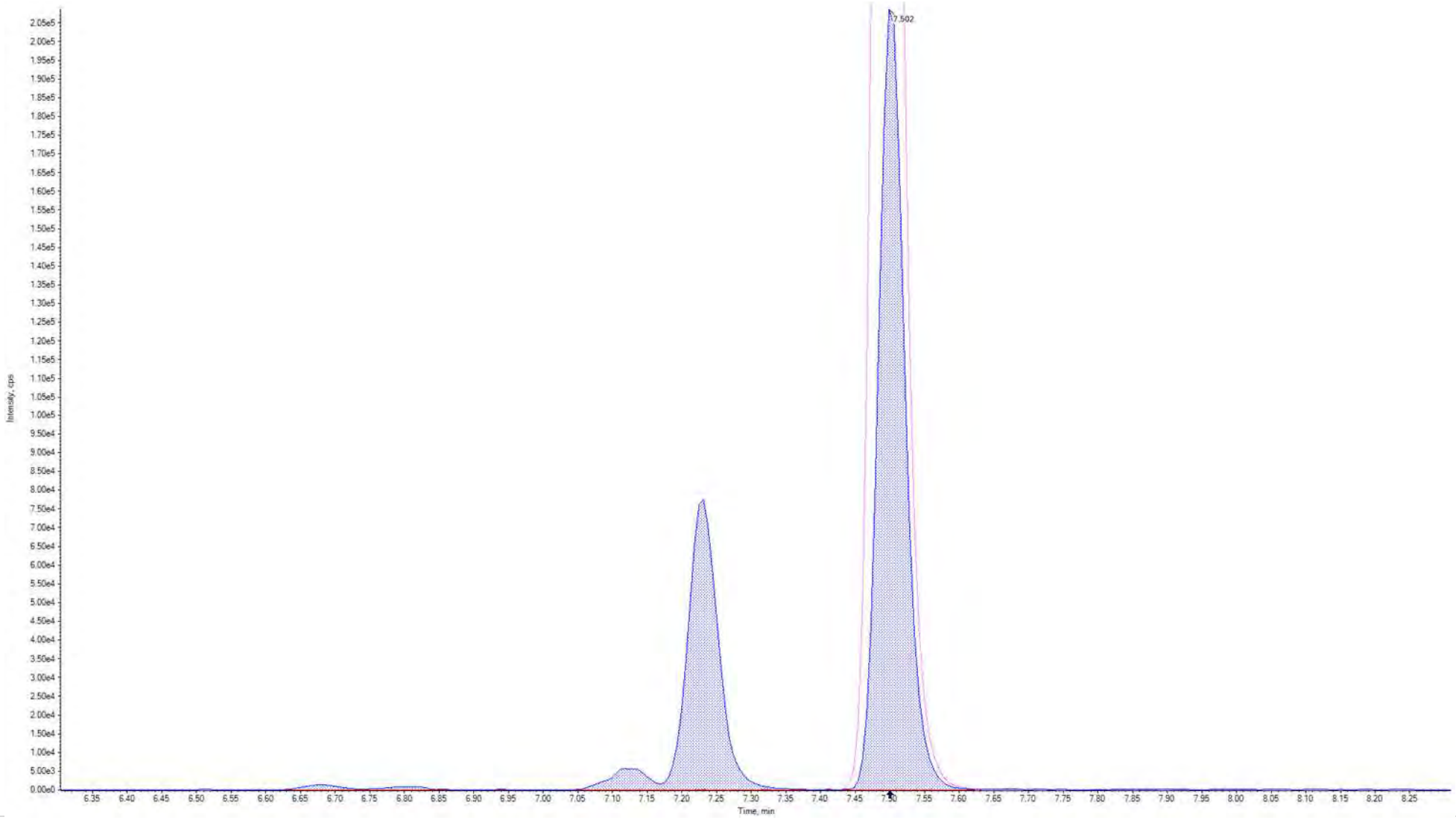
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOA
Sample: IA1633STD-5 S/N:2159.4 Points Across peak:154



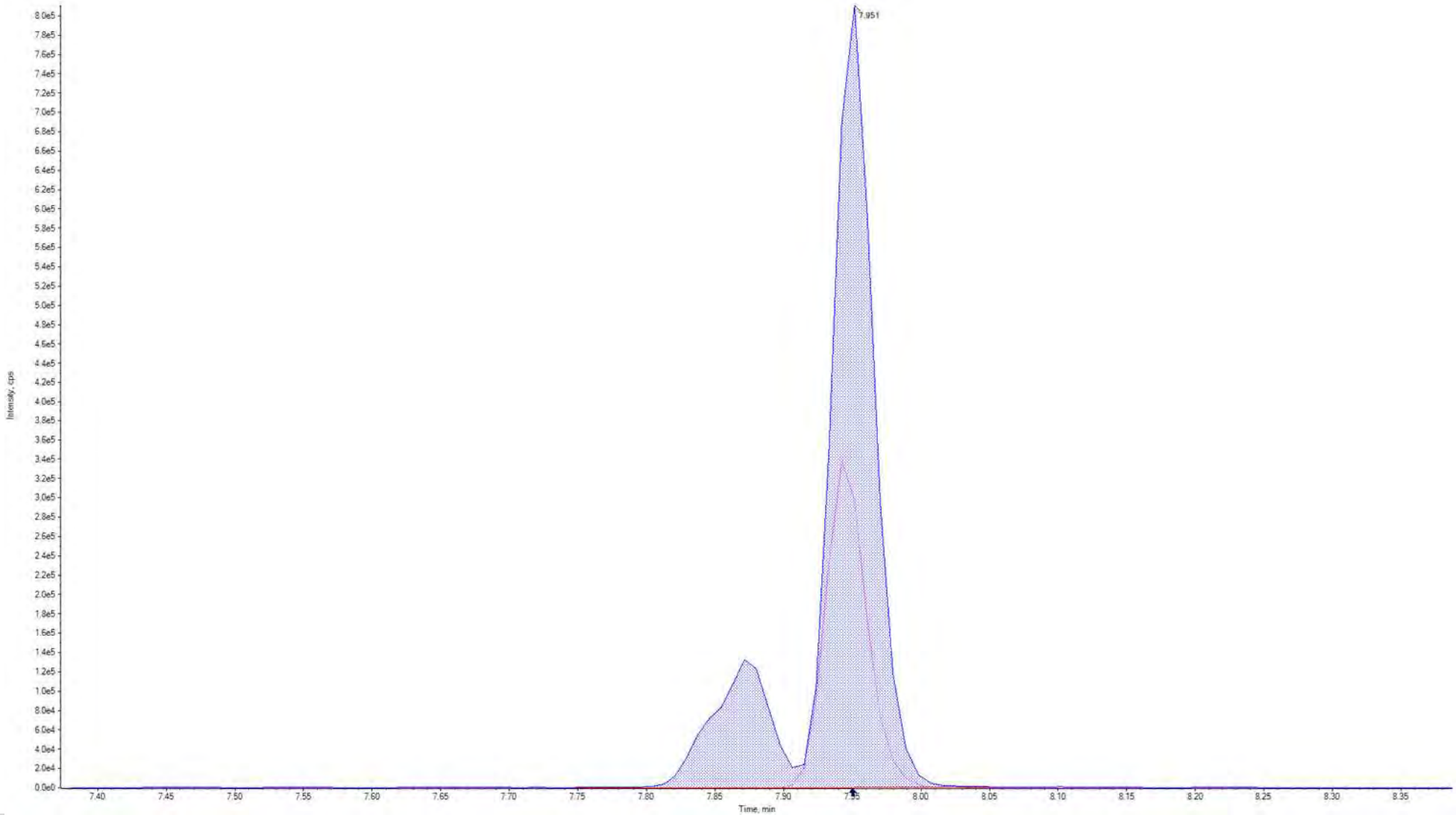
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOA_2
Sample: IA1633STD-5 S/N:41204.2 Points Across peak:153



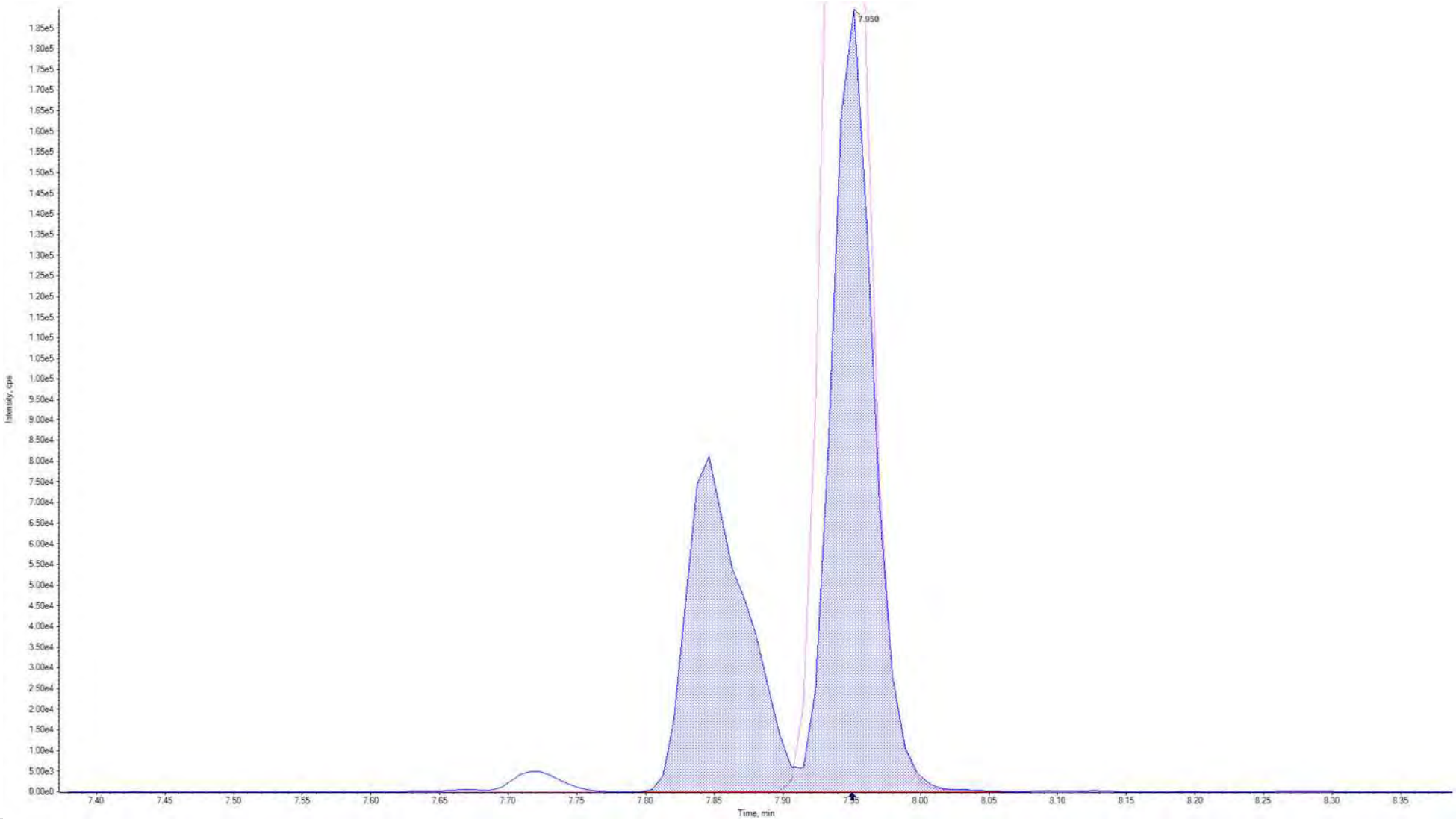
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFNA
Sample: IA1633STD-5 S/N:2134.3 Points Across peak:41



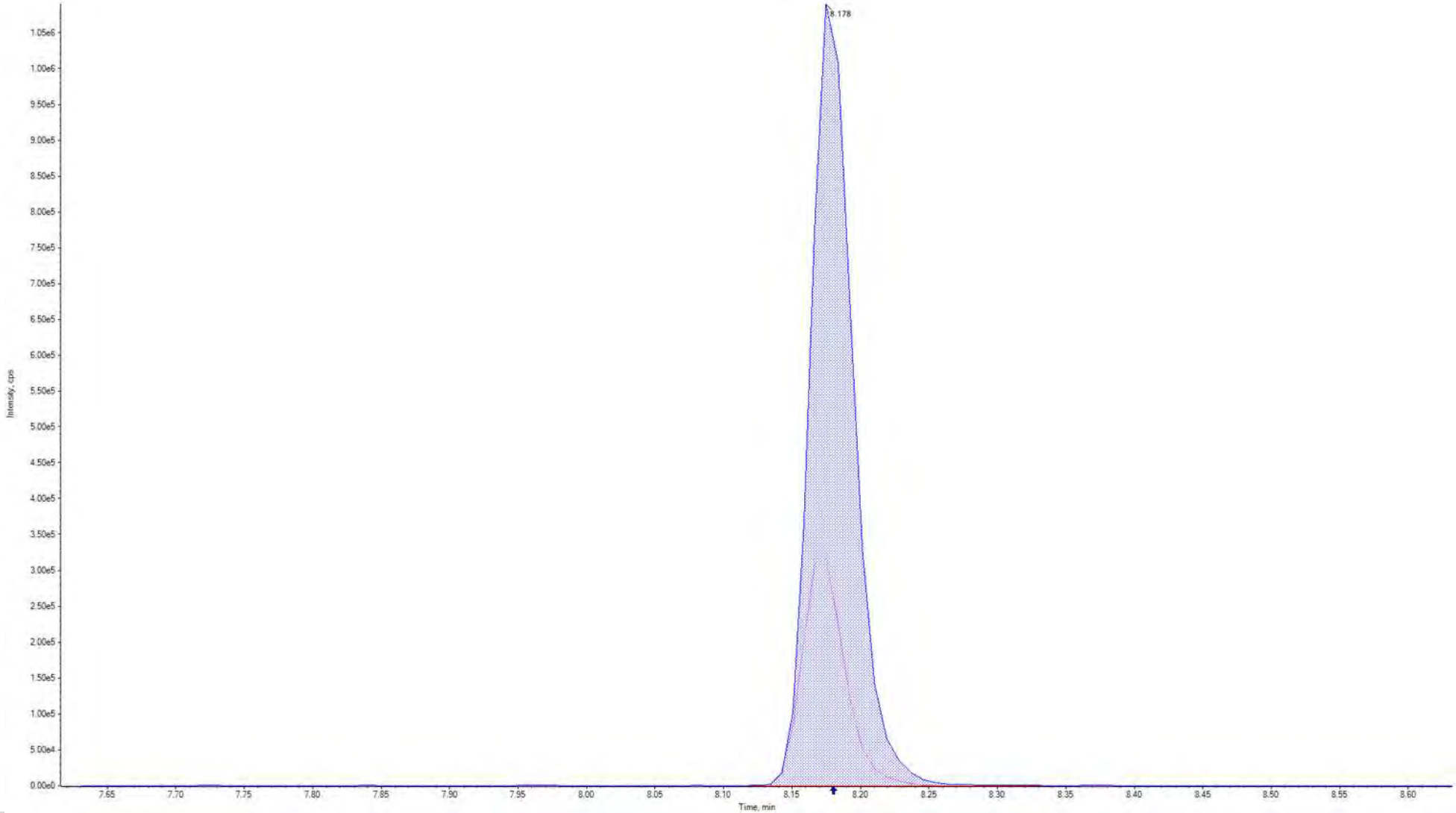
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFNA_2
Sample: IA1633STD-5 S/N:1203.8 Points Across peak:33



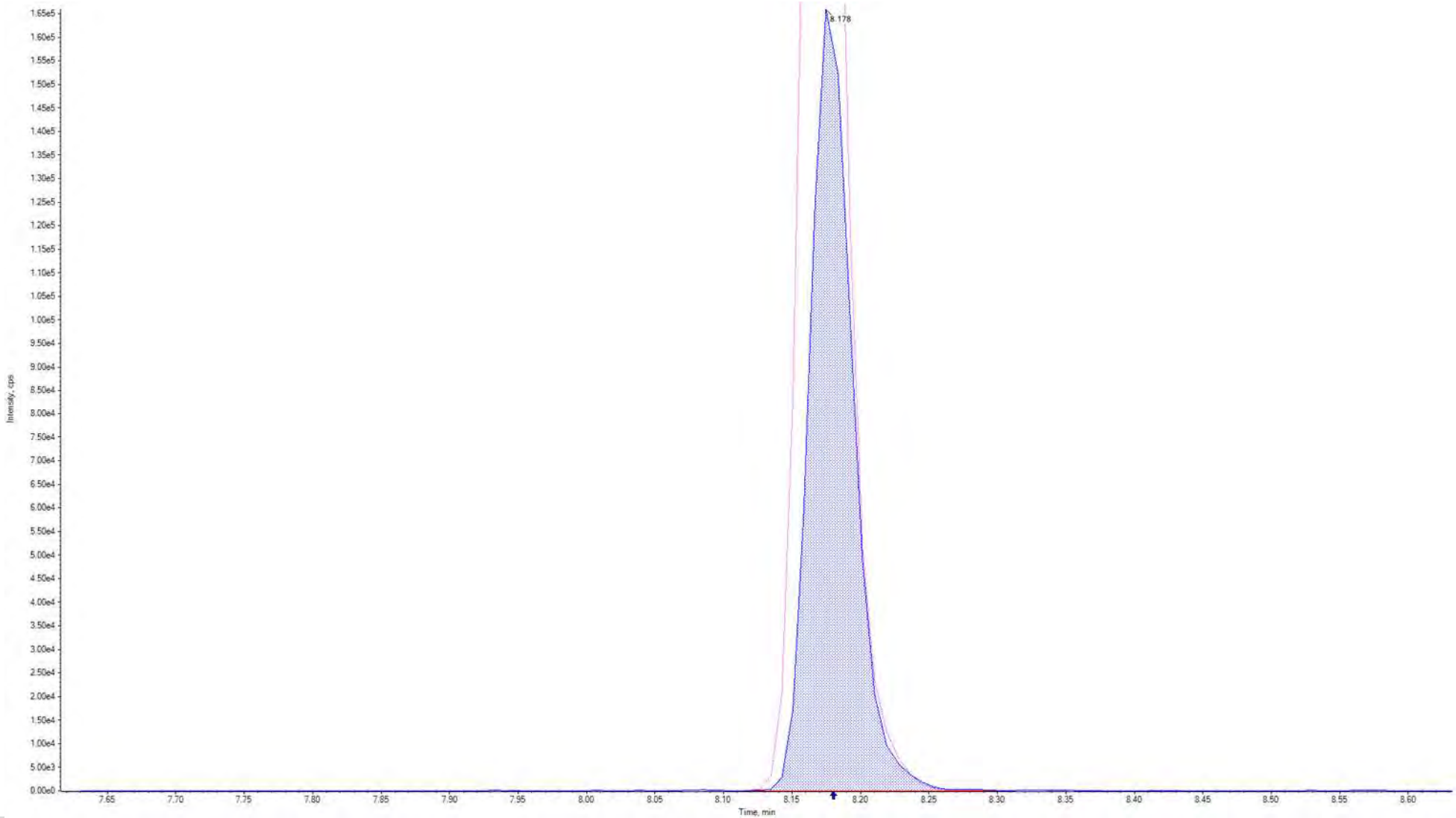
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDA
Sample: IA1633STD-5 S/N:3501.6 Points Across peak:30



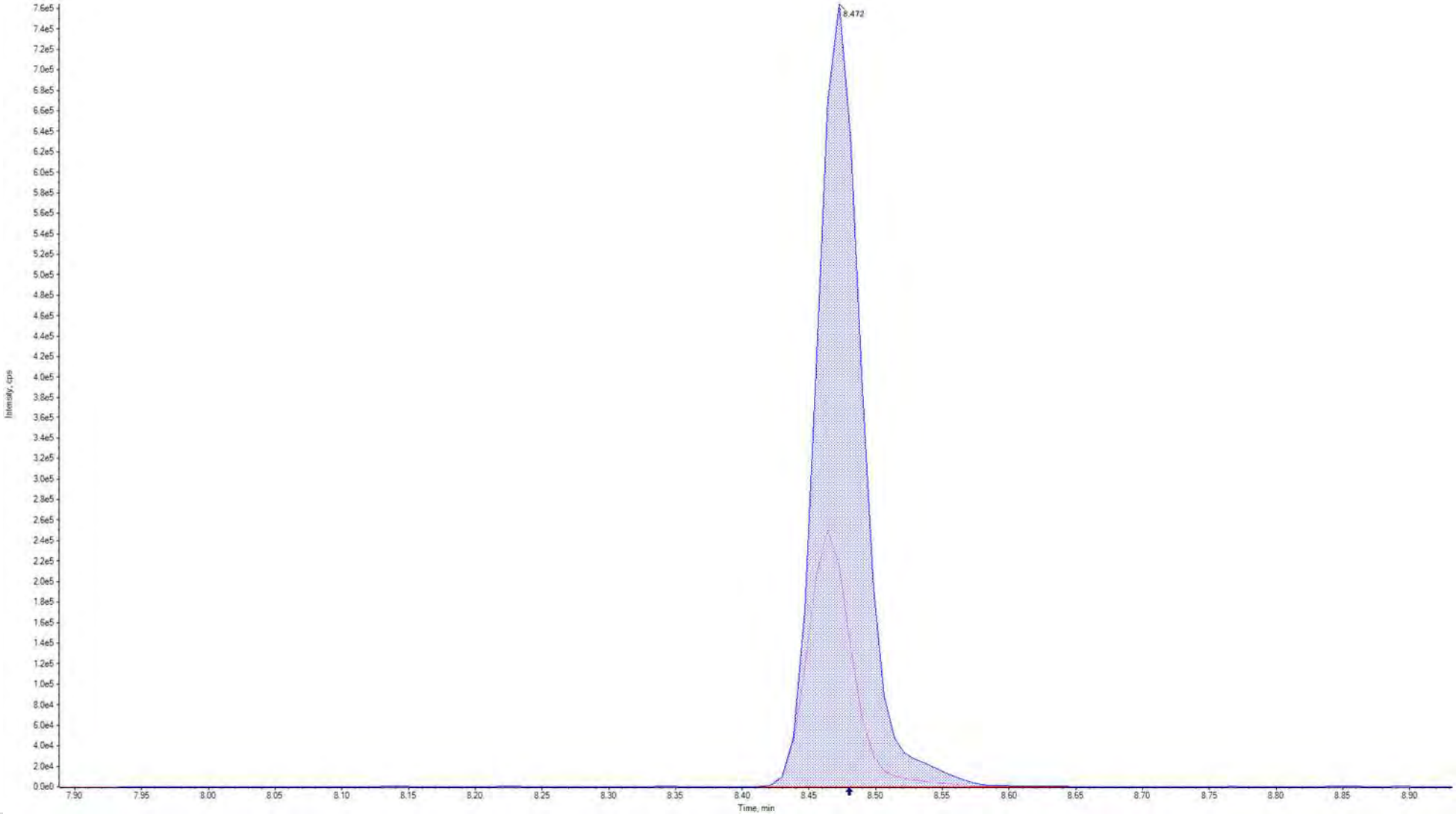
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDA_2
Sample: IA1633STD-5 S/N:2180.0 Points Across peak:24



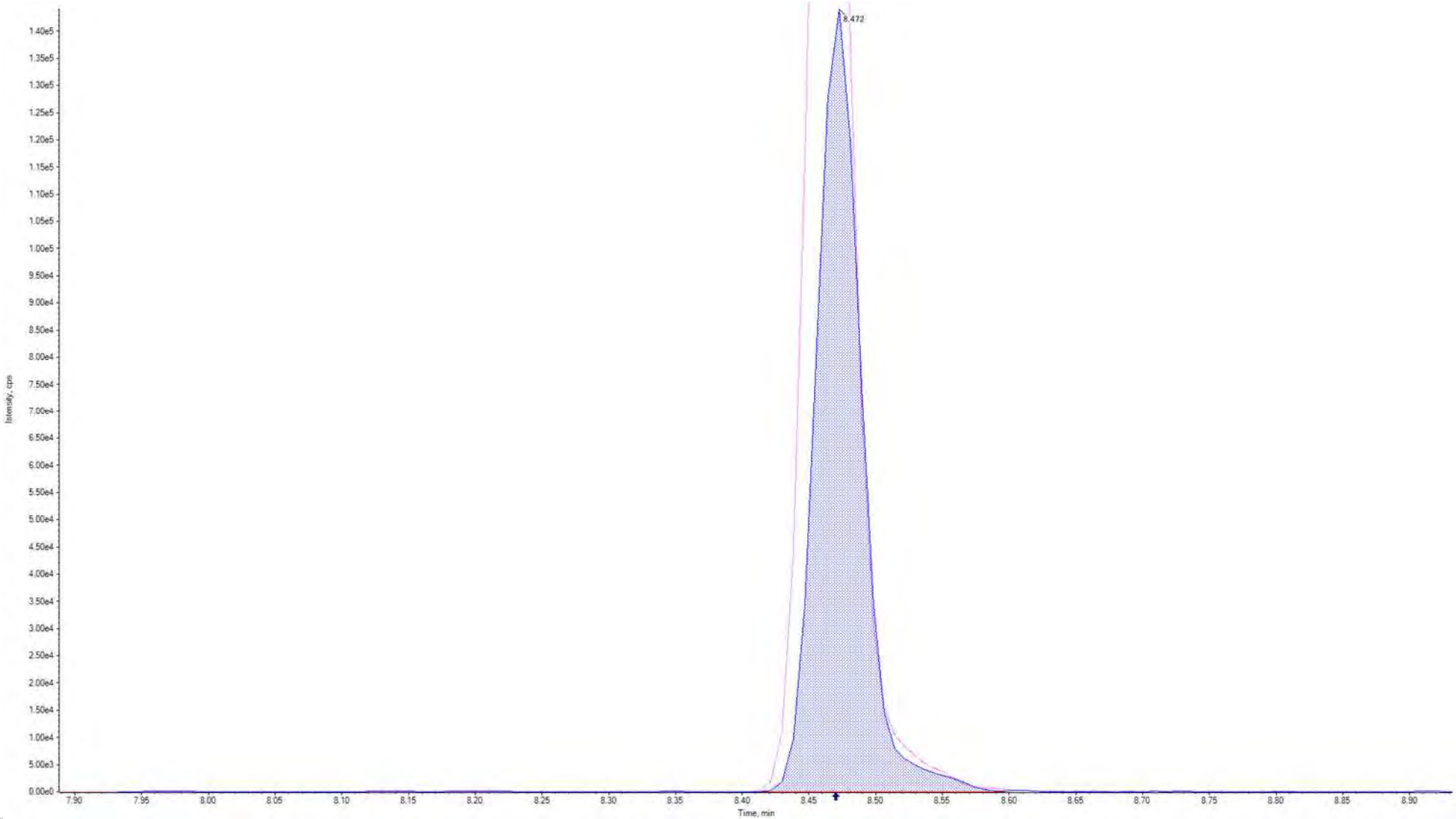
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFUnA
Sample: IA1633STD-5 S/N:7886.0 Points Across peak:39



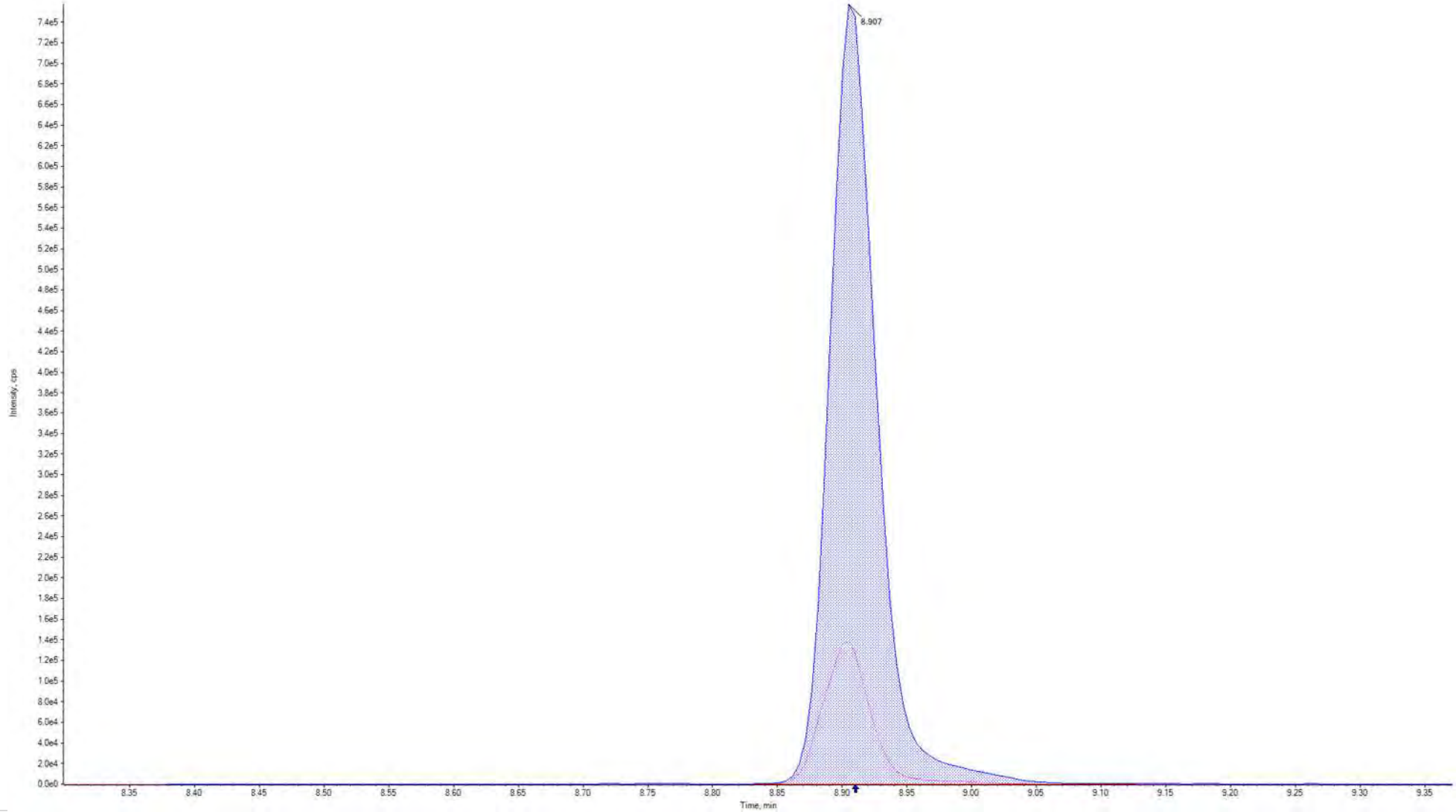
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFUnA_2
Sample: IA1633STD-5 S/N:1501166.4 Points Across peak:26



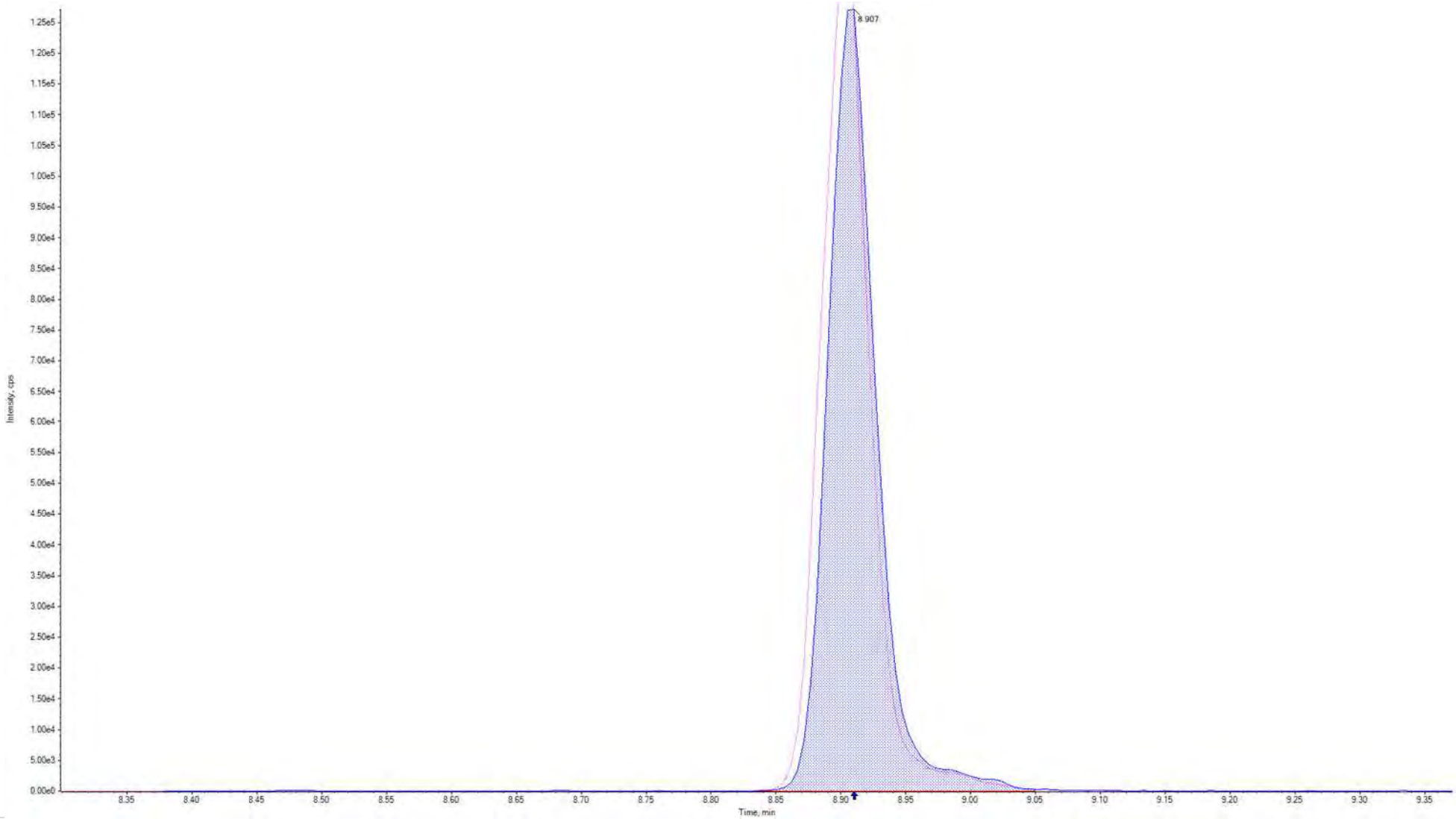
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDoA
Sample: IA1633STD-5 S/N:6964.3 Points Across peak:62



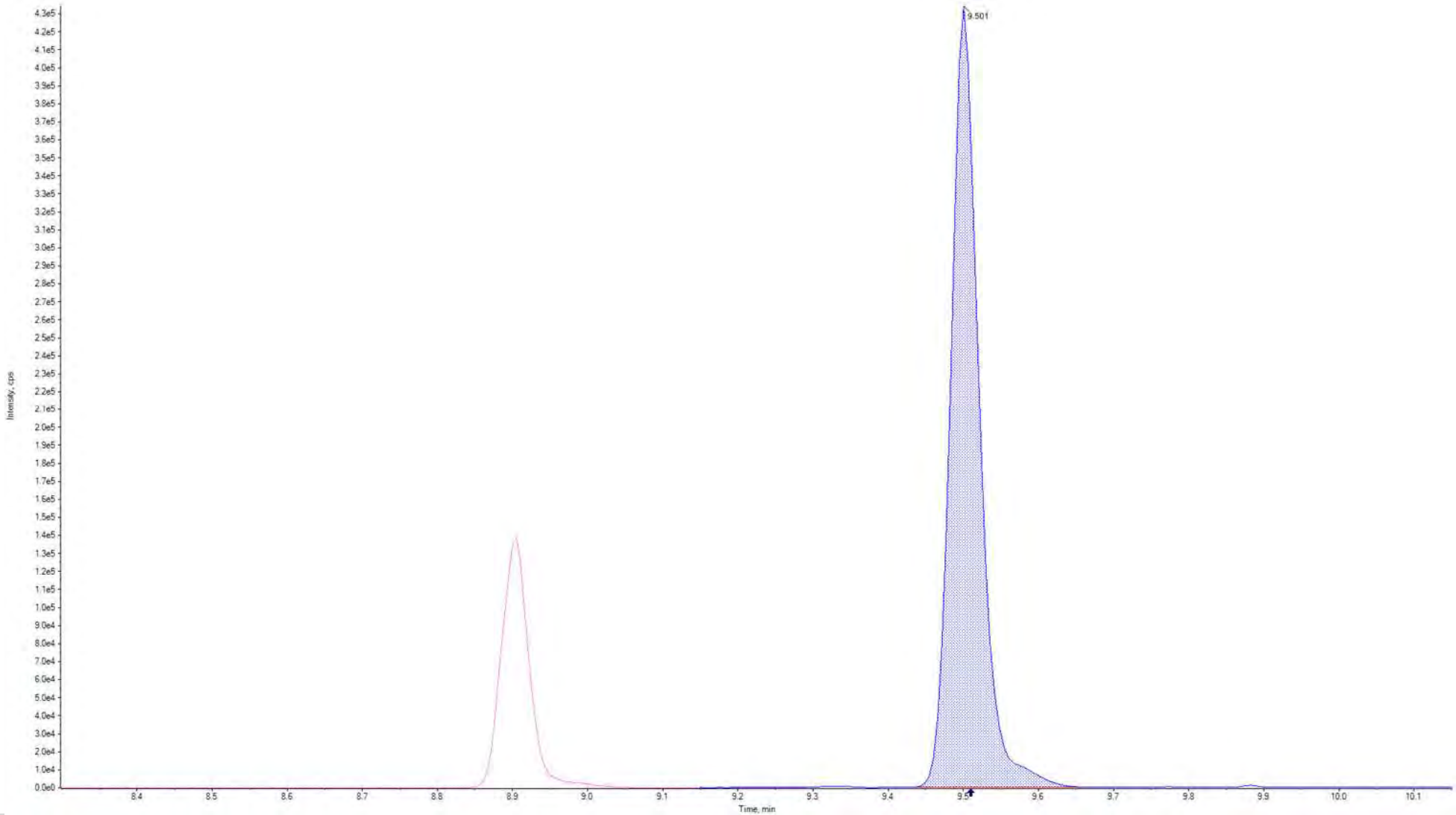
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDoA_2
Sample: IA1633STD-5 S/N:230707.9 Points Across peak:47



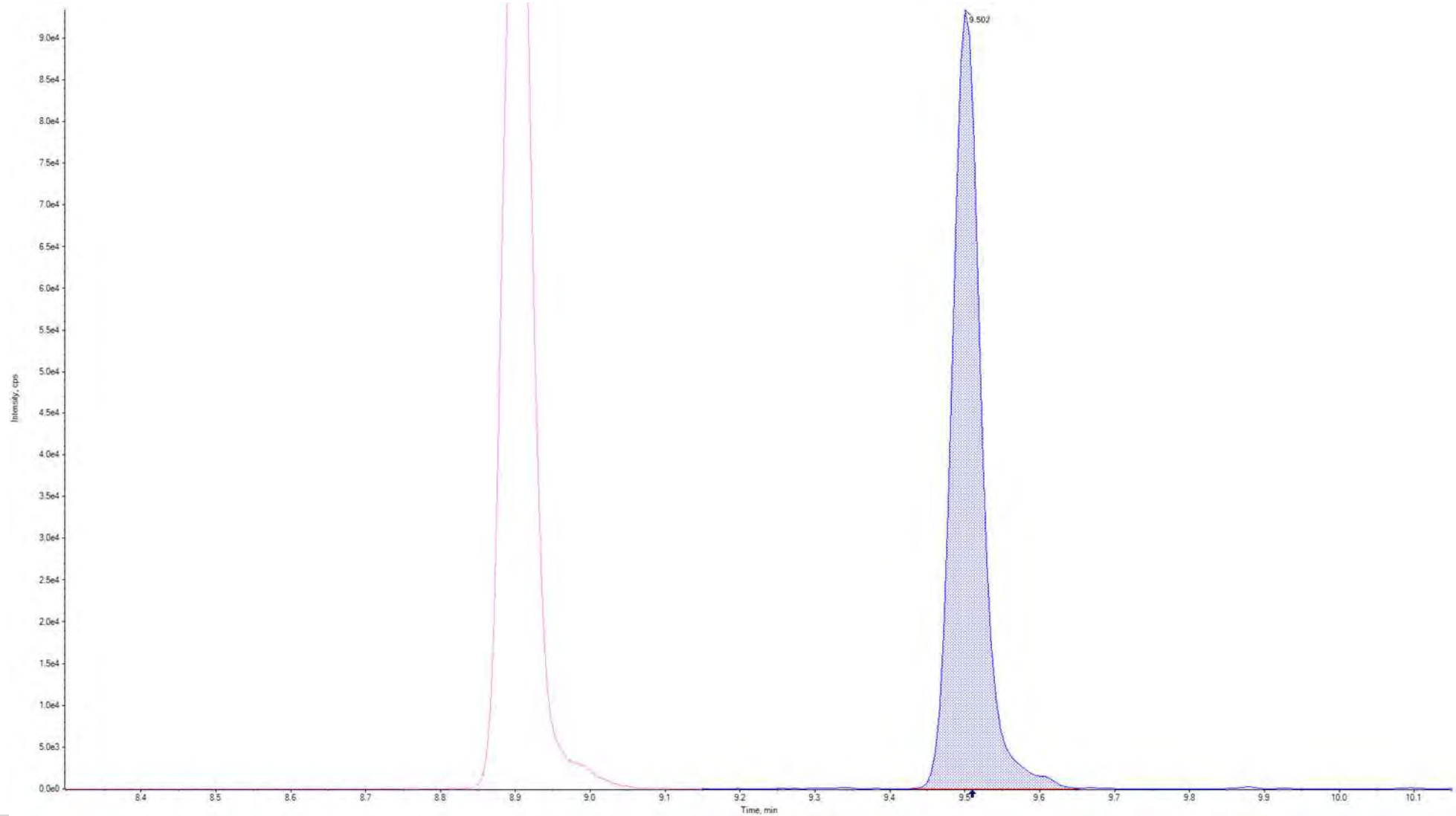
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFTrDA
Sample: IA1633STD-5 S/N:2531.3 Points Across peak:44



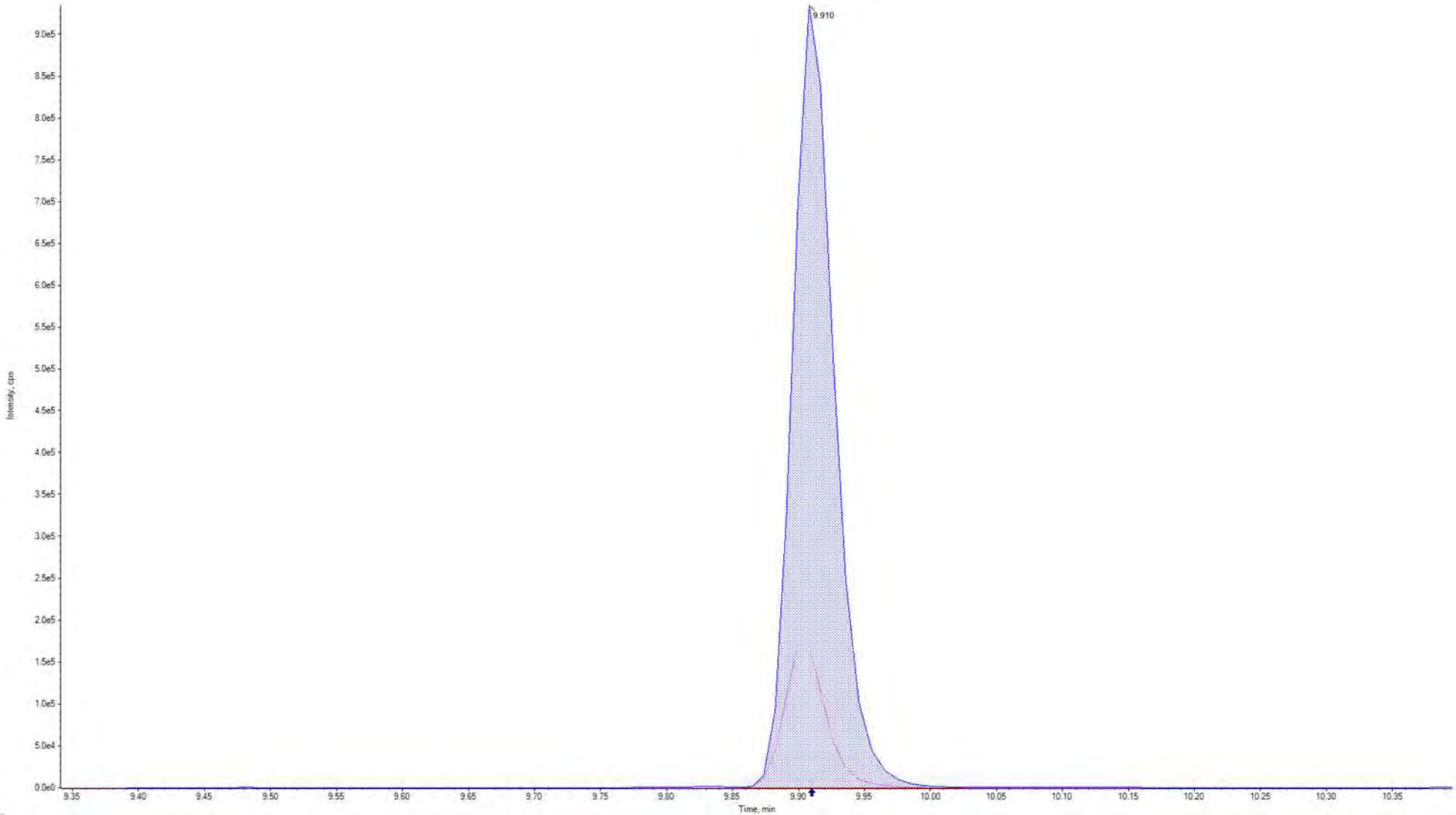
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFTrDA_2
Sample: IA1633STD-5 S/N:212915.8 Points Across peak:41



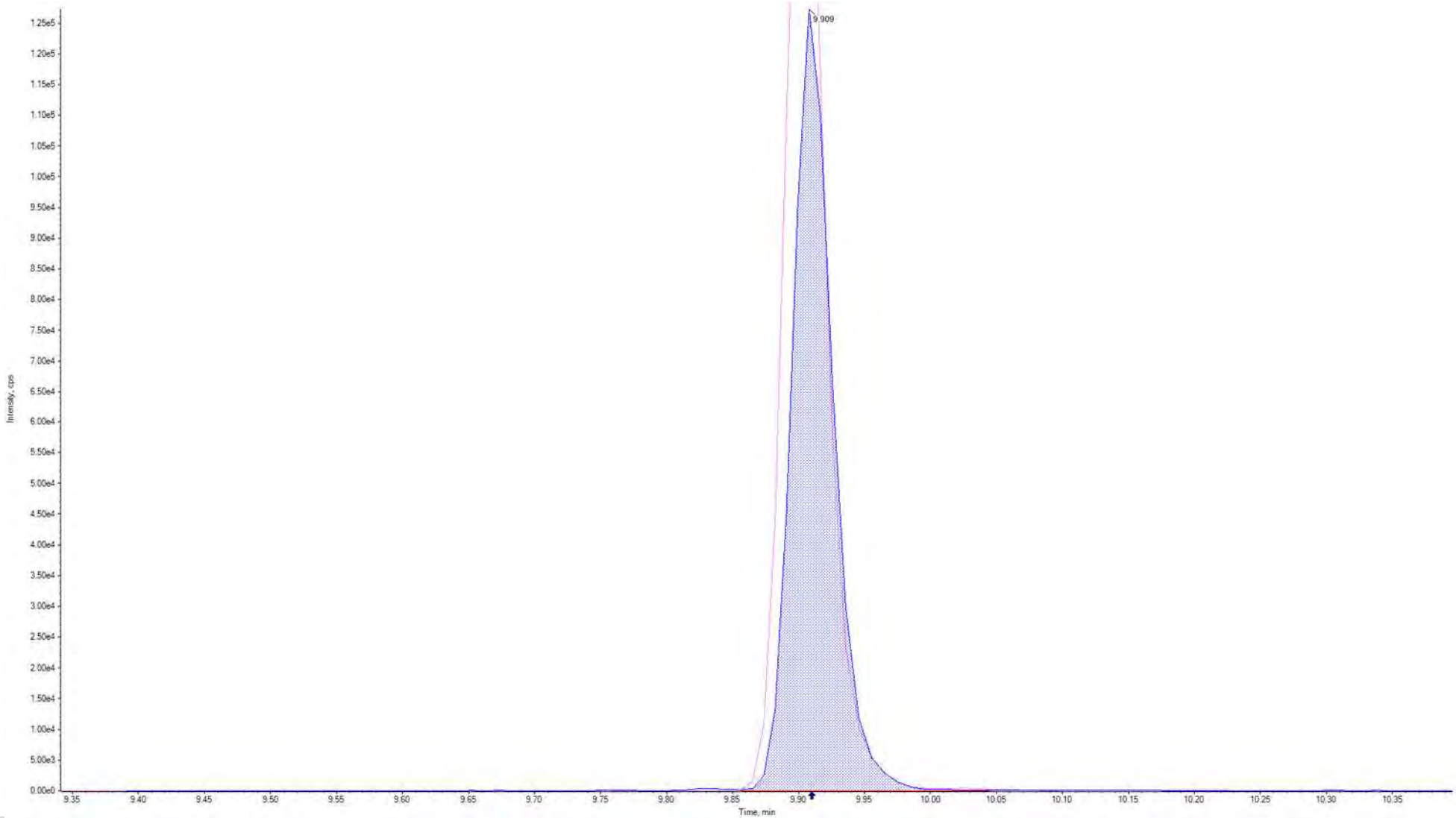
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFTeDA
Sample: IA1633STD-5 S/N:2545.1 Points Across peak:19



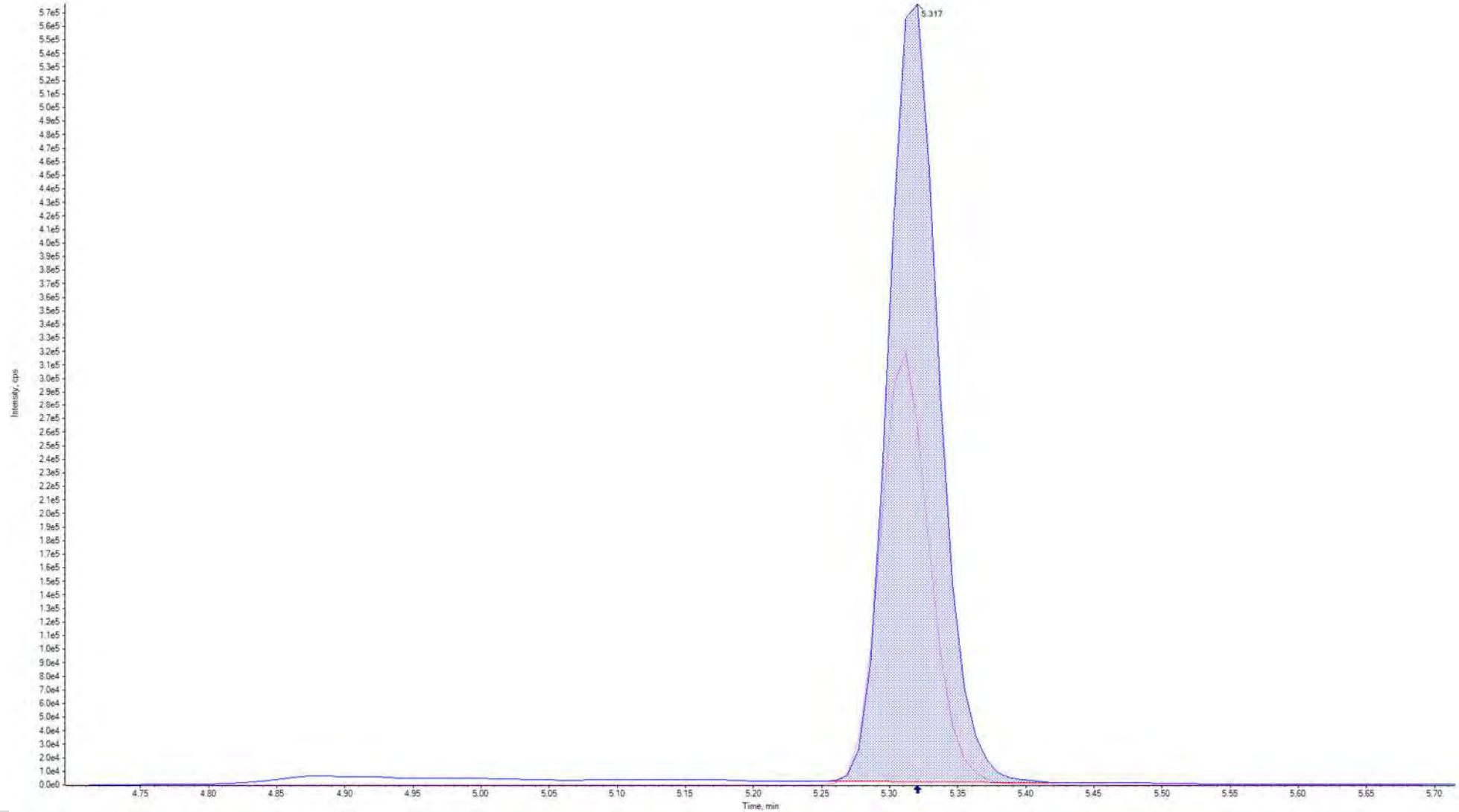
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFTeDA_2
Sample: IA1633STD-5 S/N:1958.4 Points Across peak:21



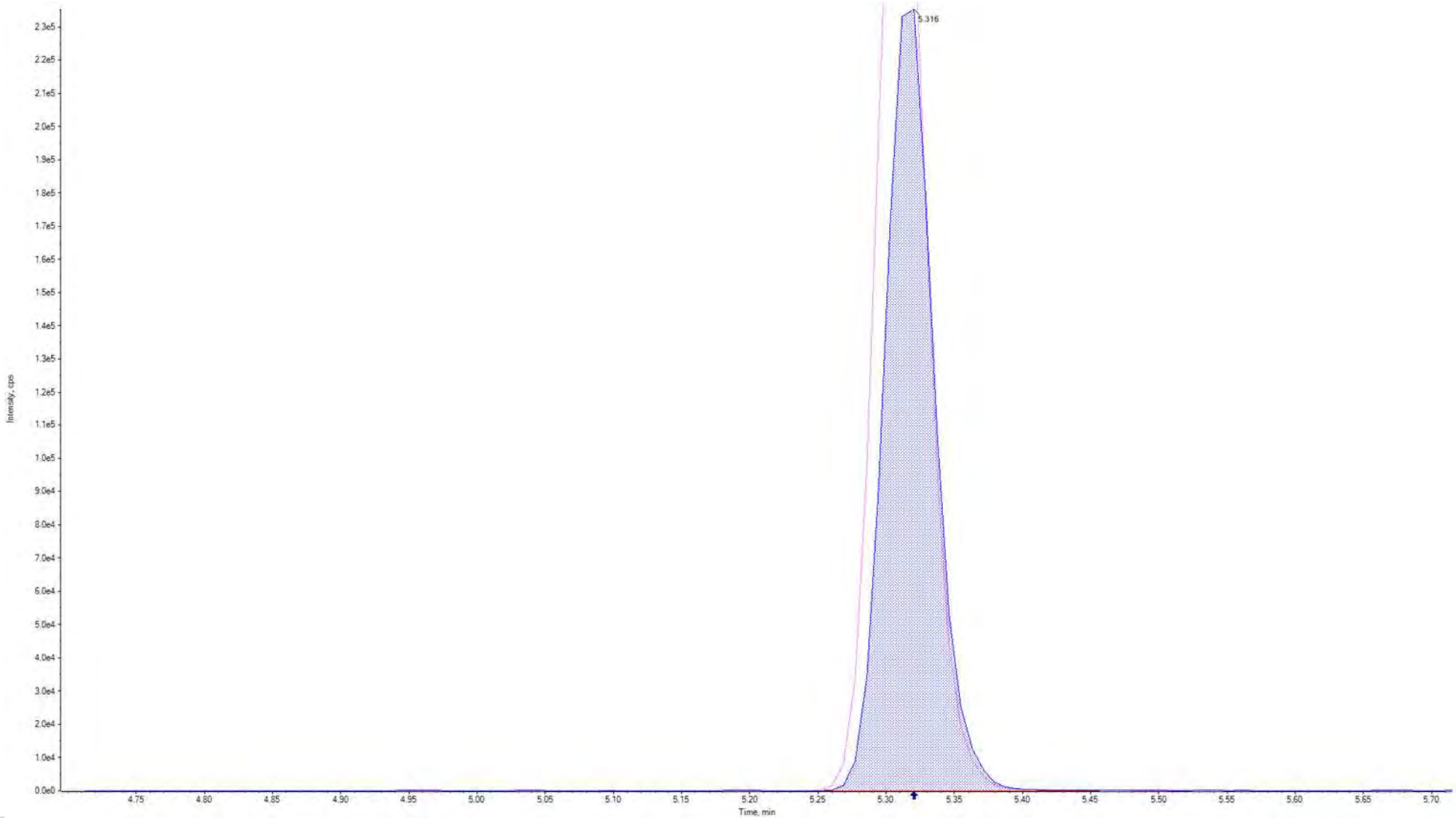
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFBS
Sample: IA1633STD-5 S/N:102.9 Points Across peak:22



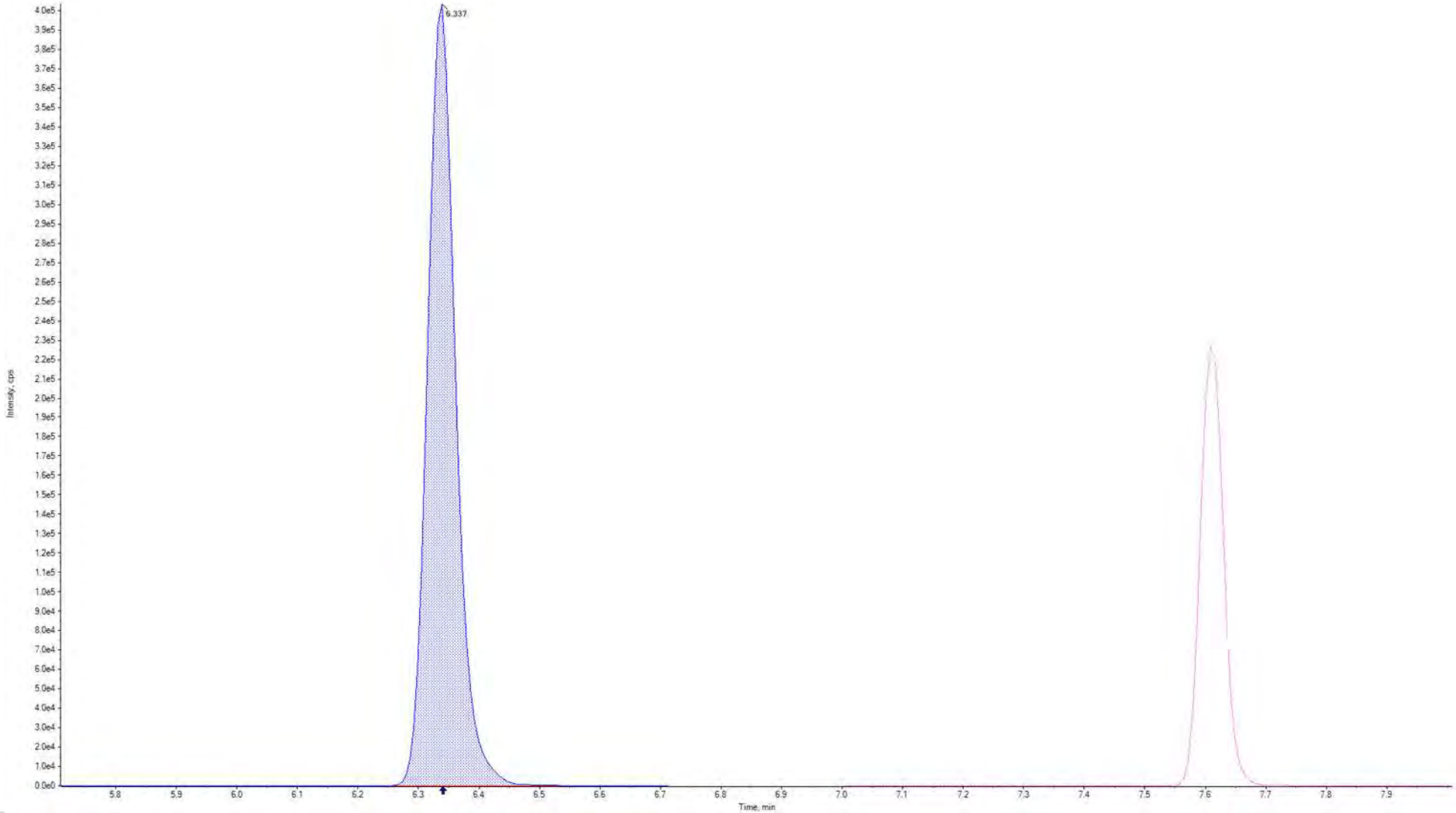
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFBS_2
Sample: IA1633STD-5 S/N:4632.1 Points Across peak:26



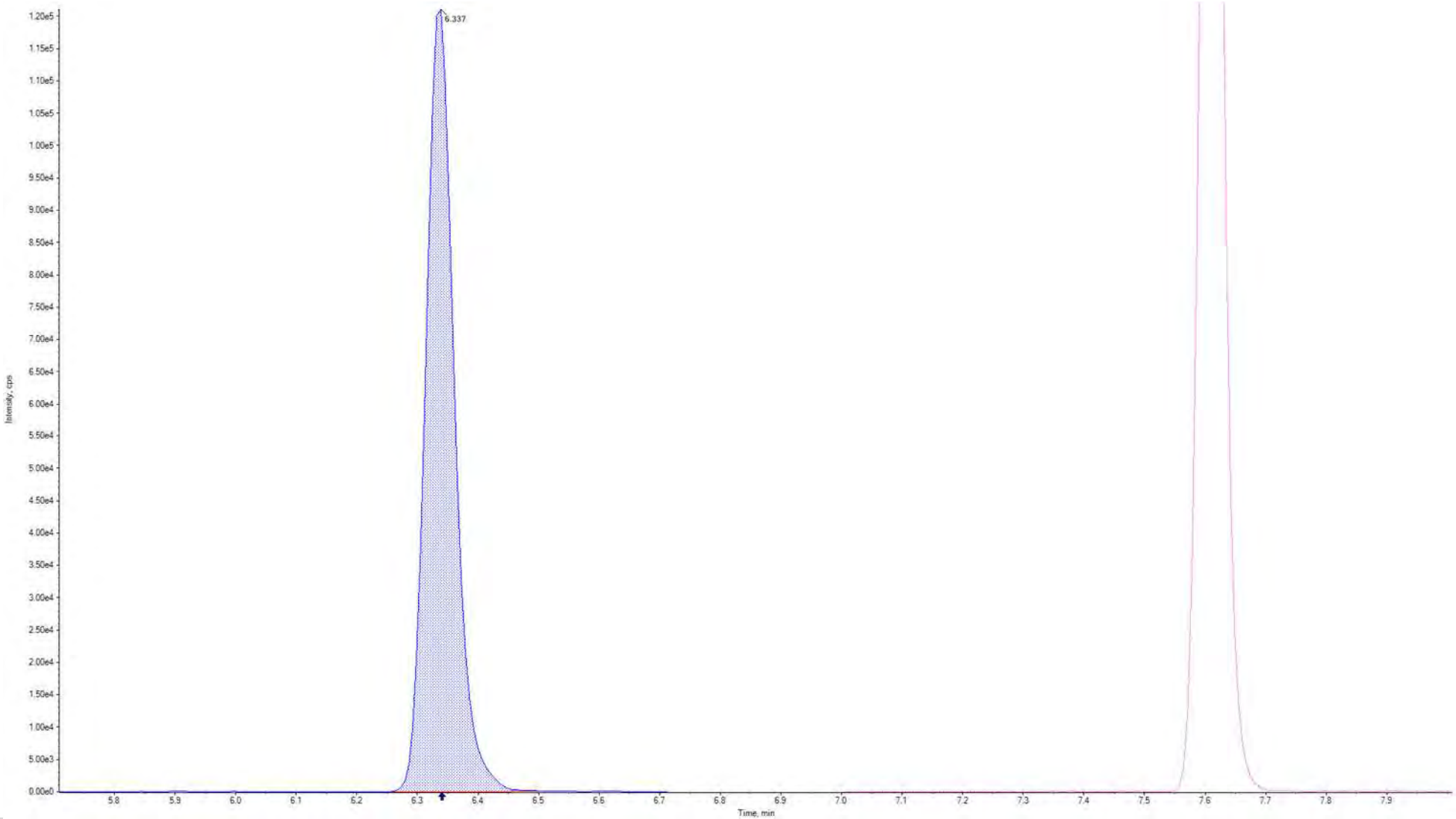
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFPeS
Sample: IA1633STD-5 S/N:8413.7 Points Across peak:48



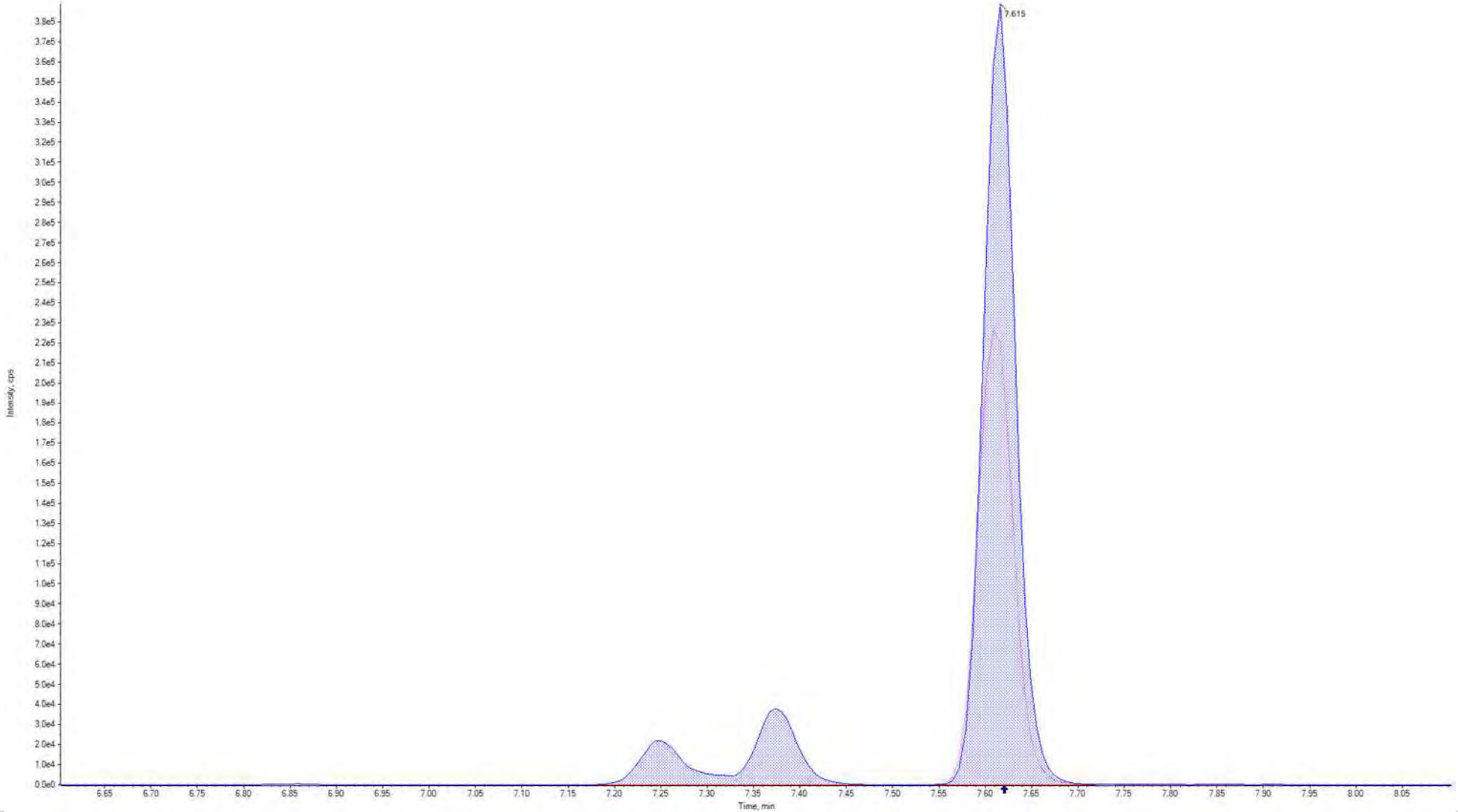
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFPeS_2
Sample: IA1633STD-5 S/N:37340.2 Points Across peak:40



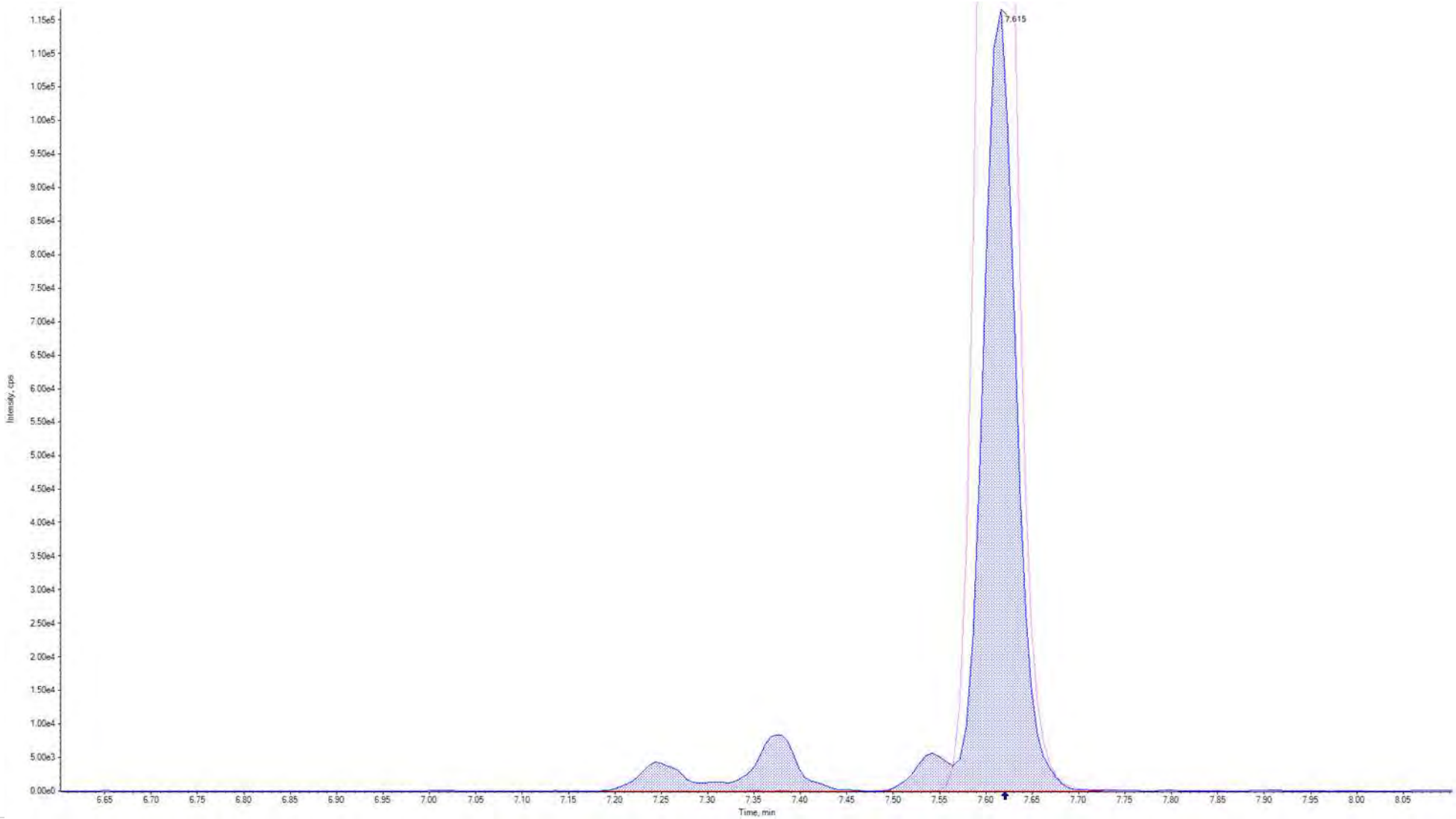
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFHxS
Sample: IA1633STD-5 S/N:42905.0 Points Across peak:89



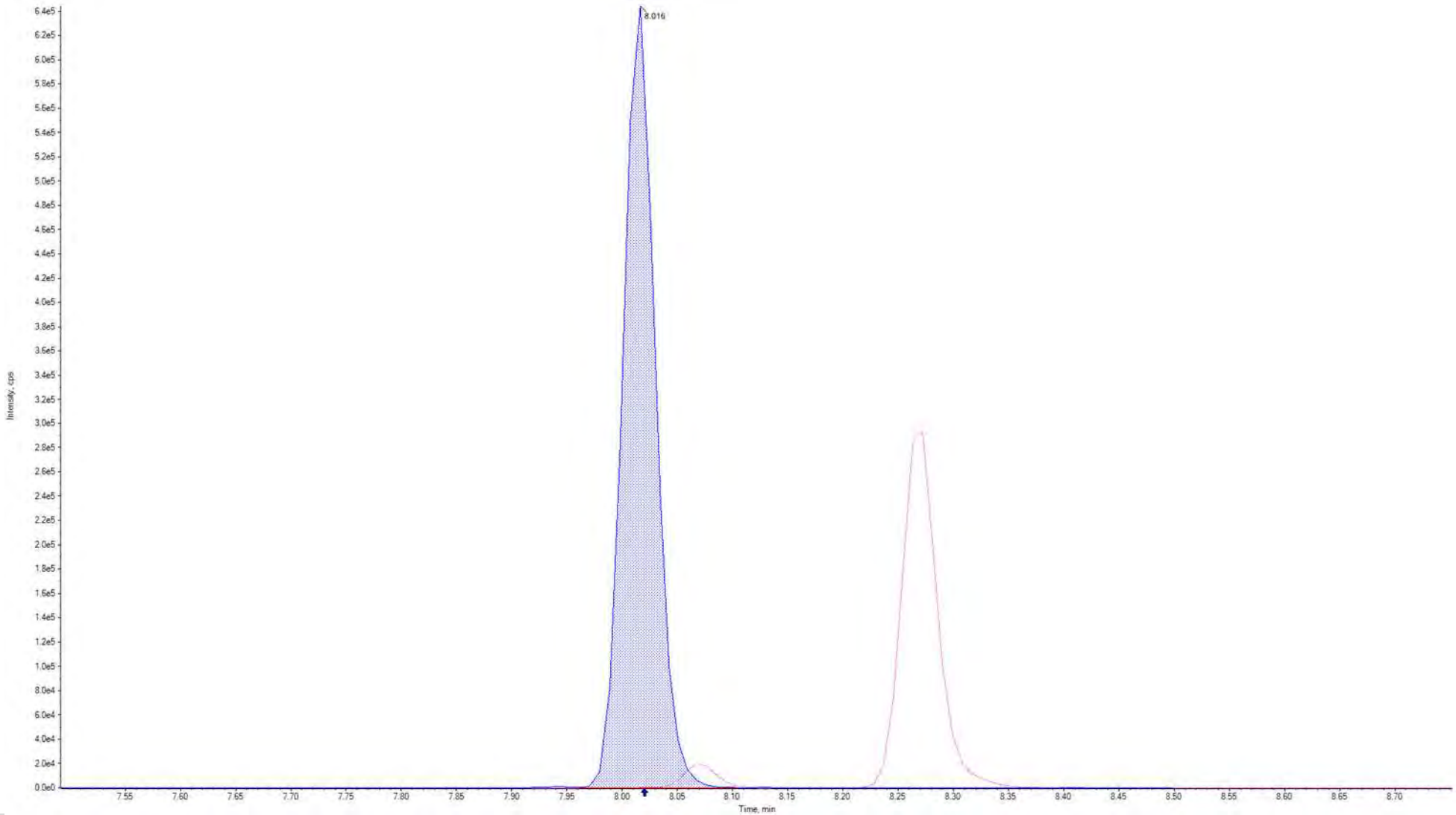
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFHxS_2
Sample: IA1633STD-5 S/N:1823275.2 Points Across peak:89



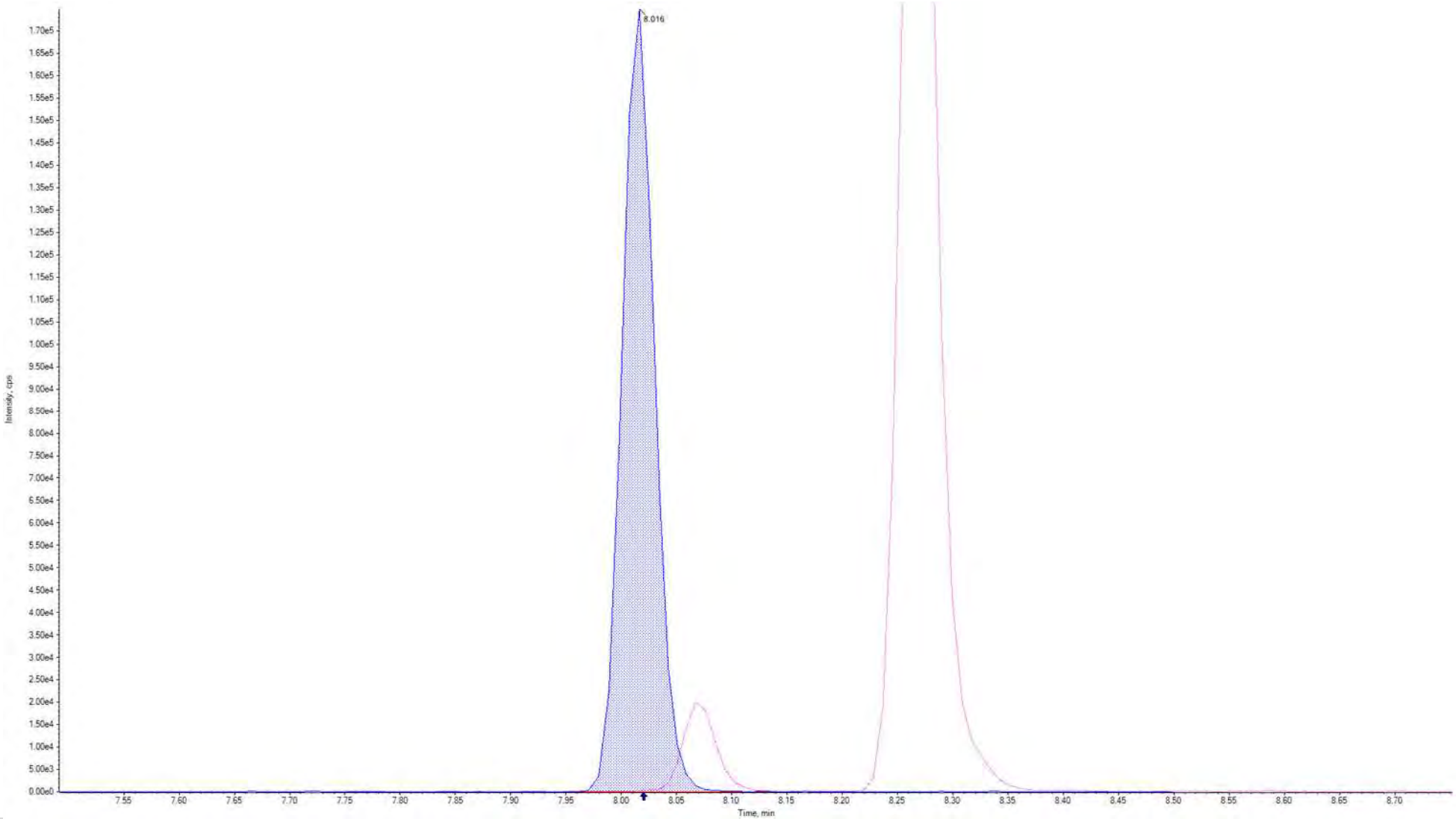
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFHpS
Sample: IA1633STD-5 S/N:23379142.3 Points Across peak:18



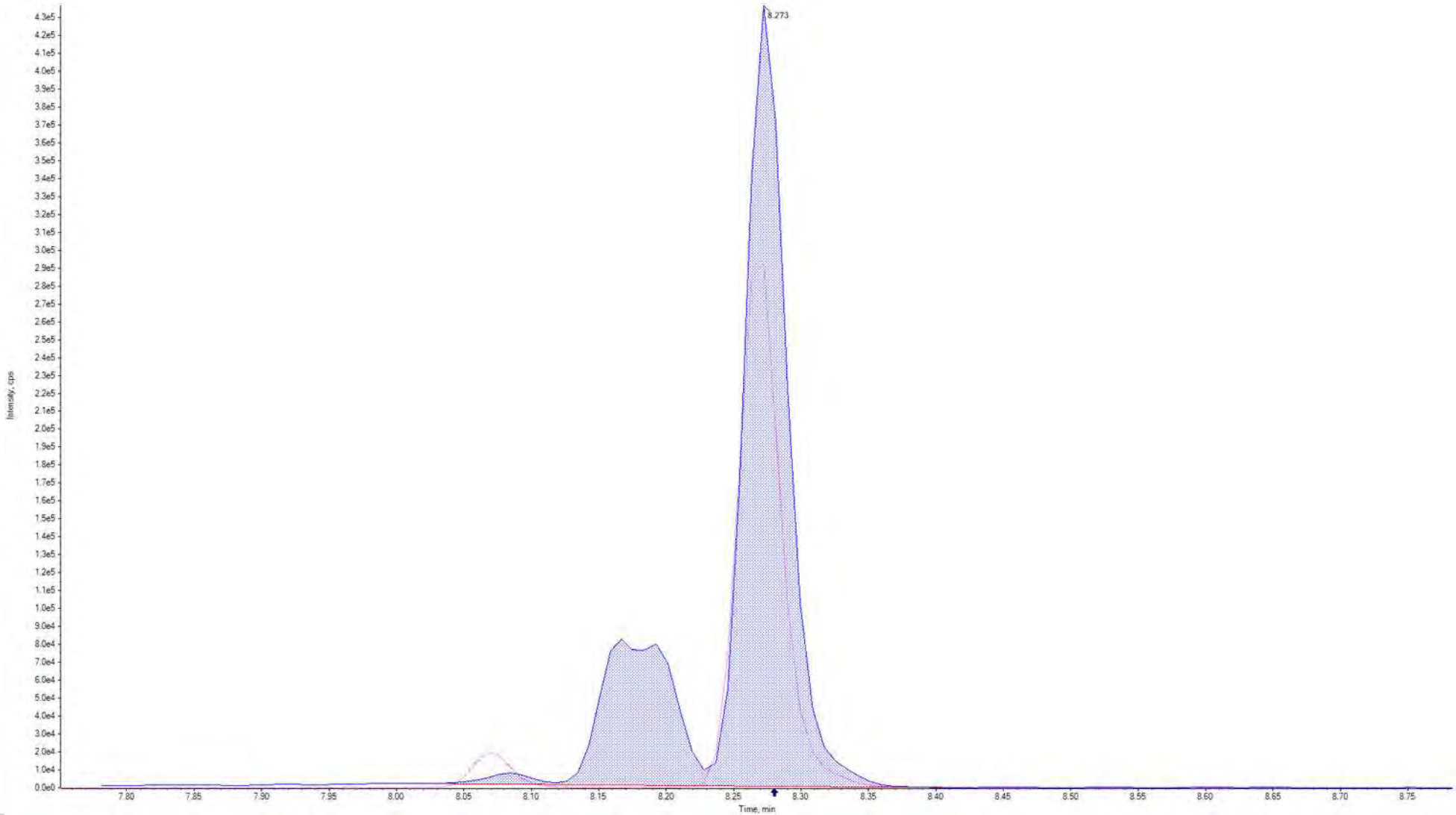
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFHpS_2
Sample: IA1633STD-5 S/N:2611.6 Points Across peak:27



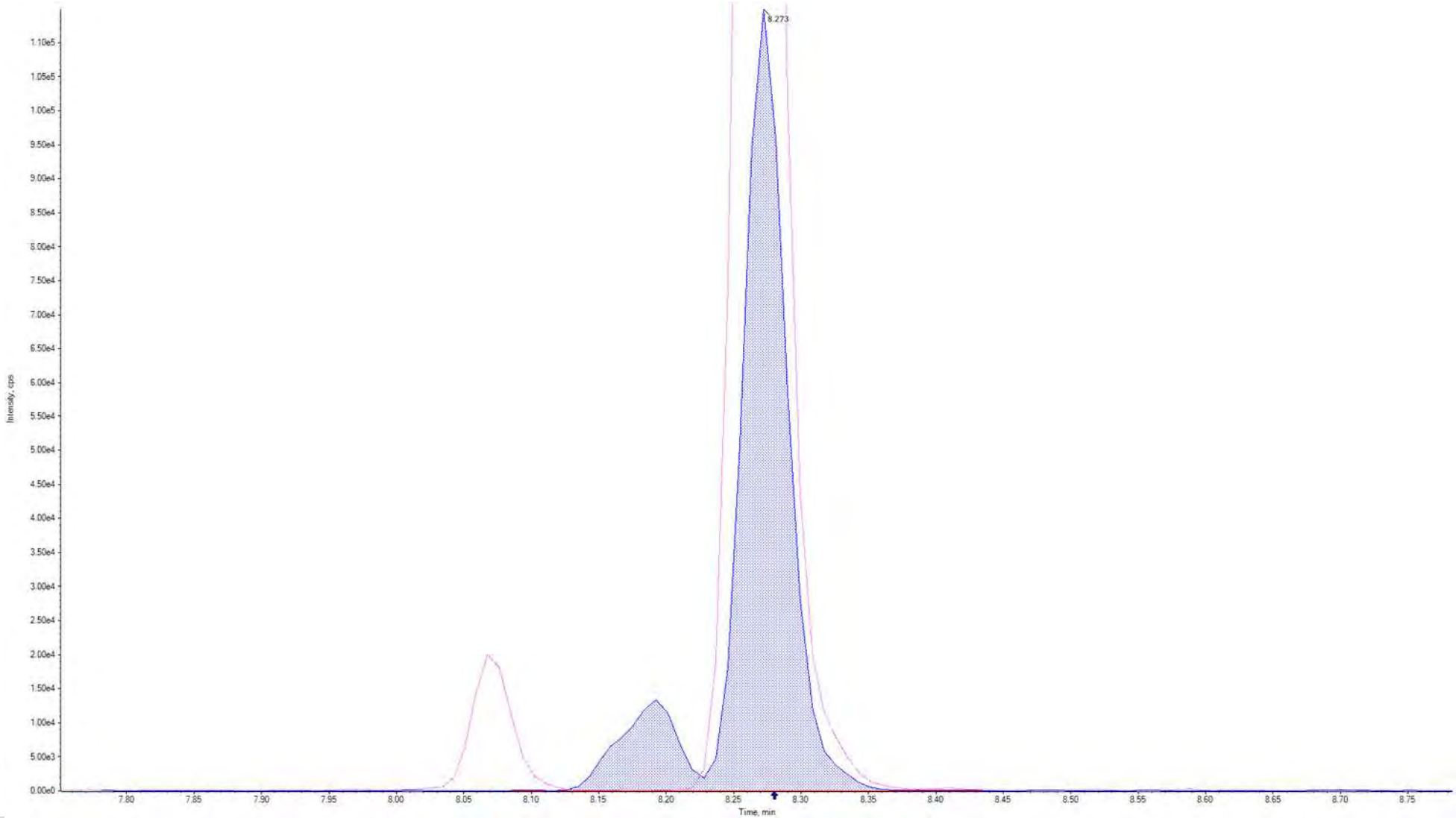
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOS
Sample: IA1633STD-5 S/N:1962.9 Points Across peak:47



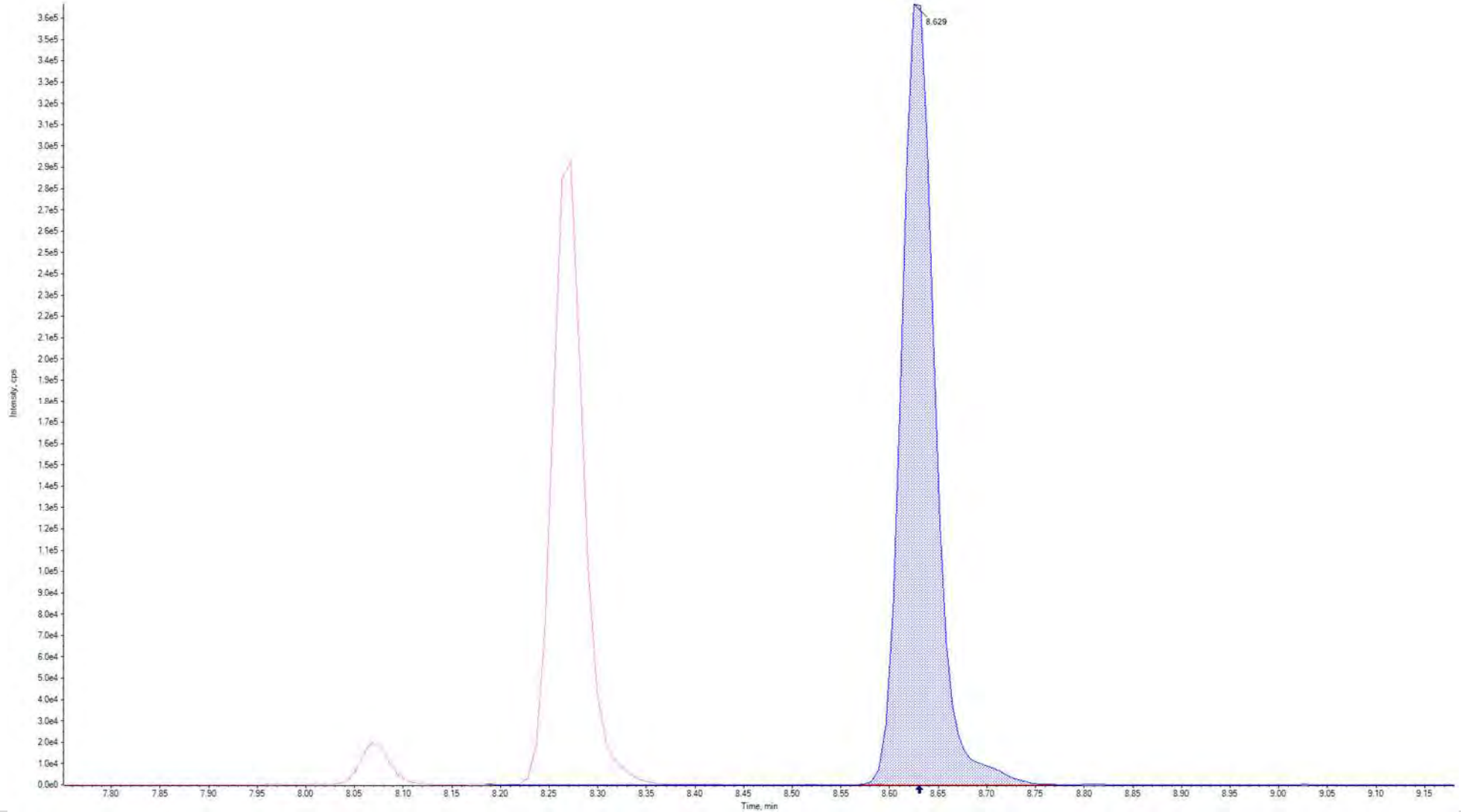
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOS_2
Sample: IA1633STD-5 S/N:1490.1 Points Across peak:46



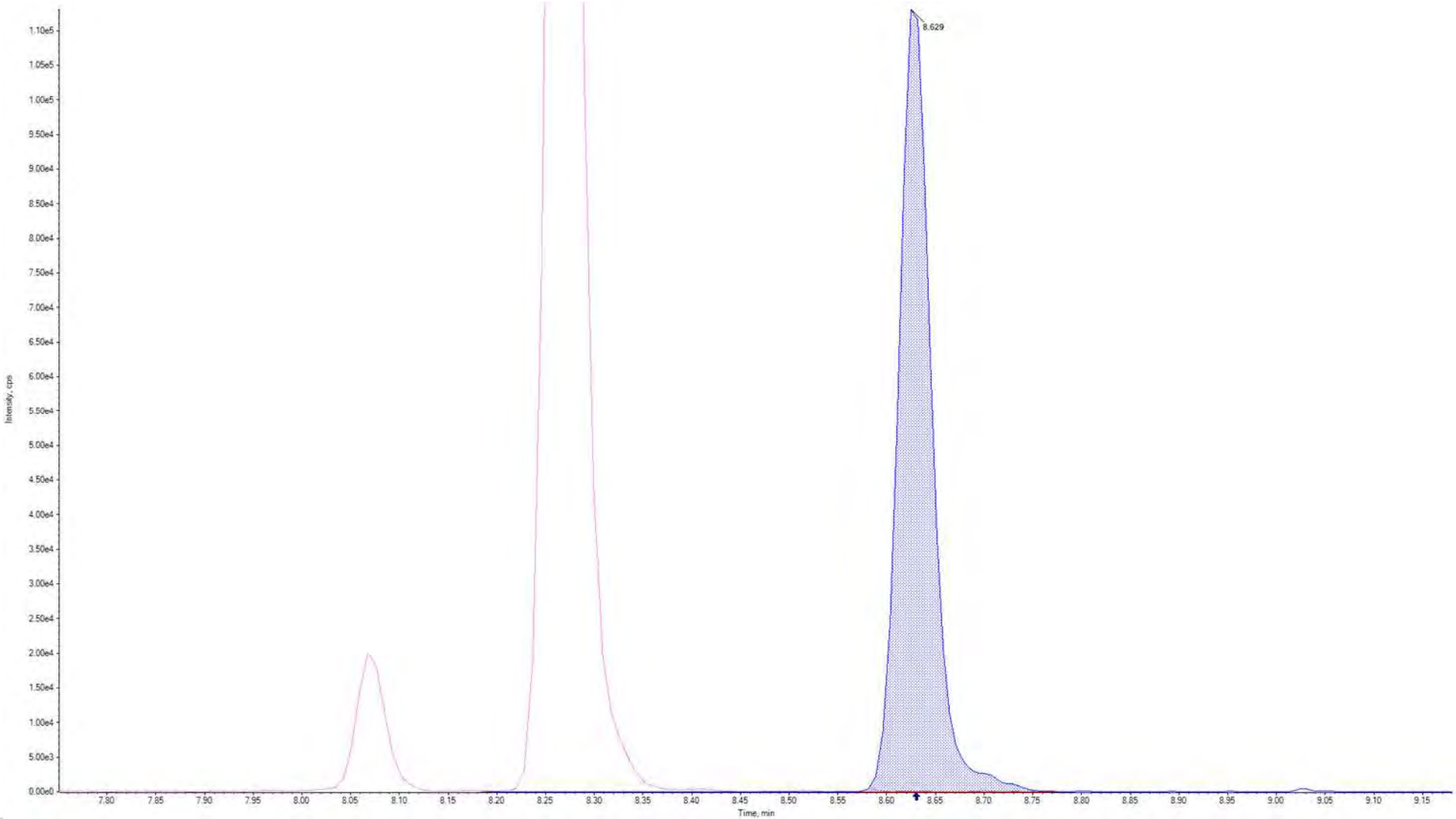
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFNS
Sample: IA1633STD-5 S/N:8483.9 Points Across peak:36



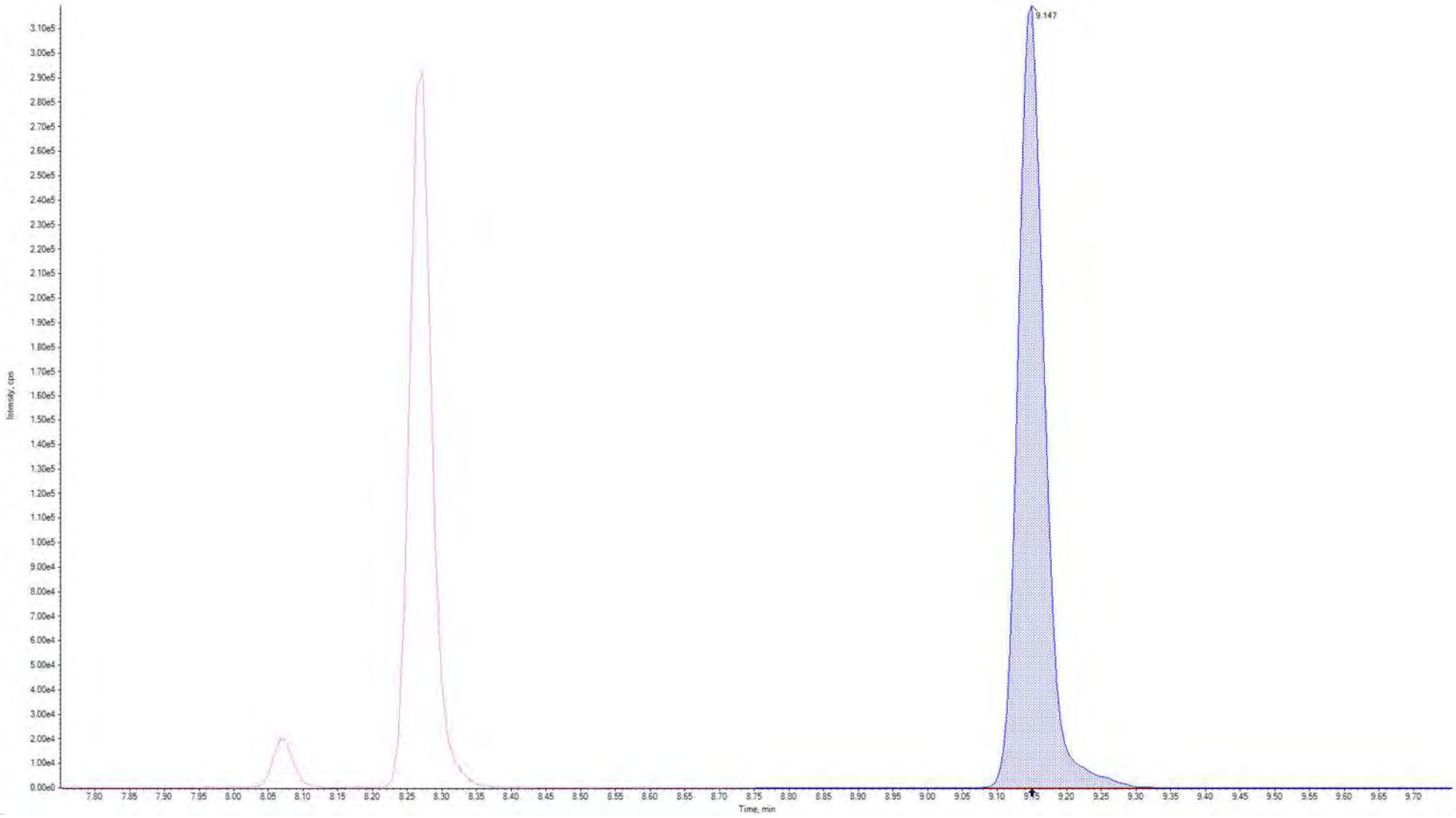
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFNS_2
Sample: IA1633STD-5 S/N:16033997.2 Points Across peak:37



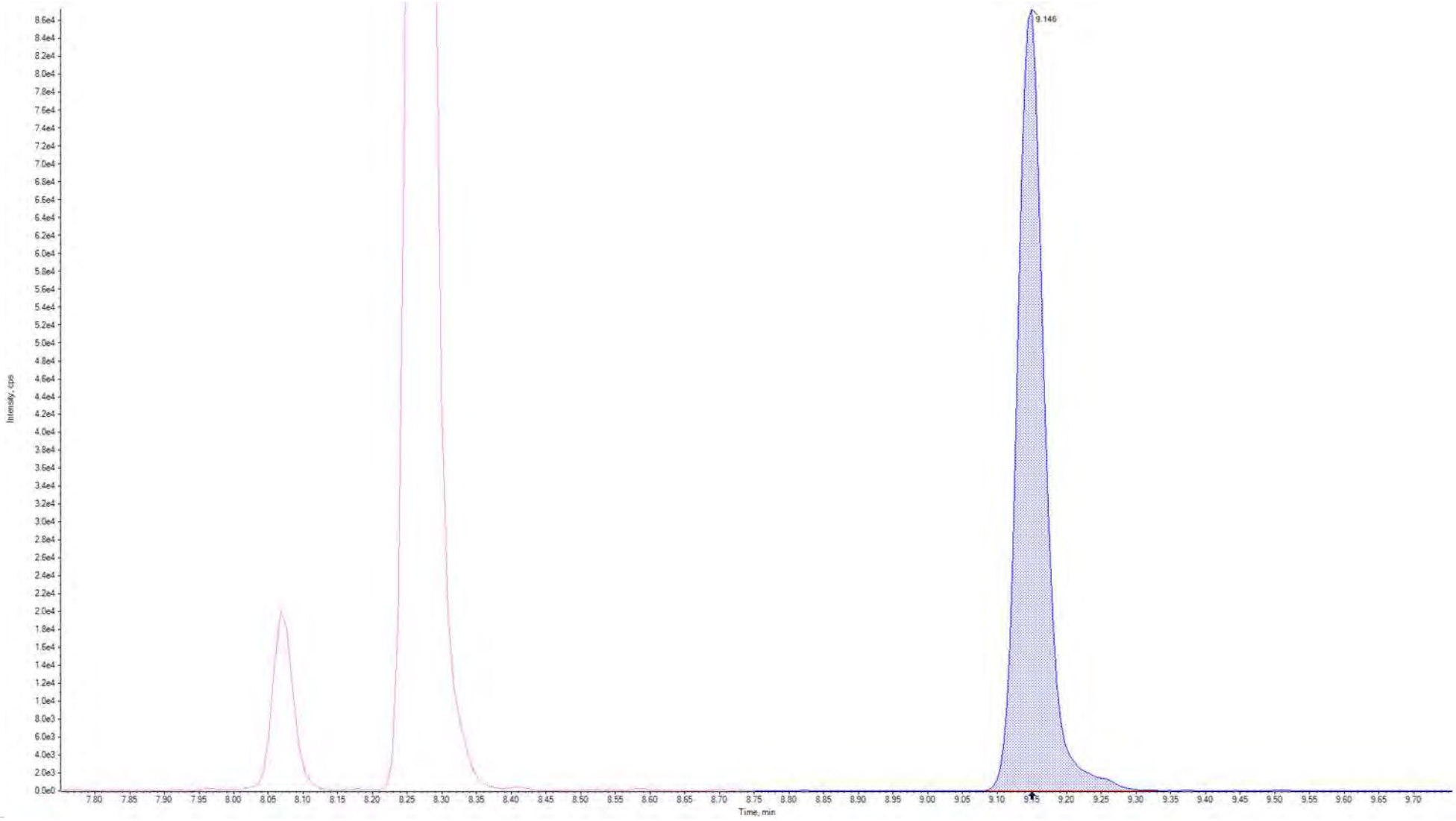
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDS
Sample: IA1633STD-5 S/N:100447.4 Points Across peak:62



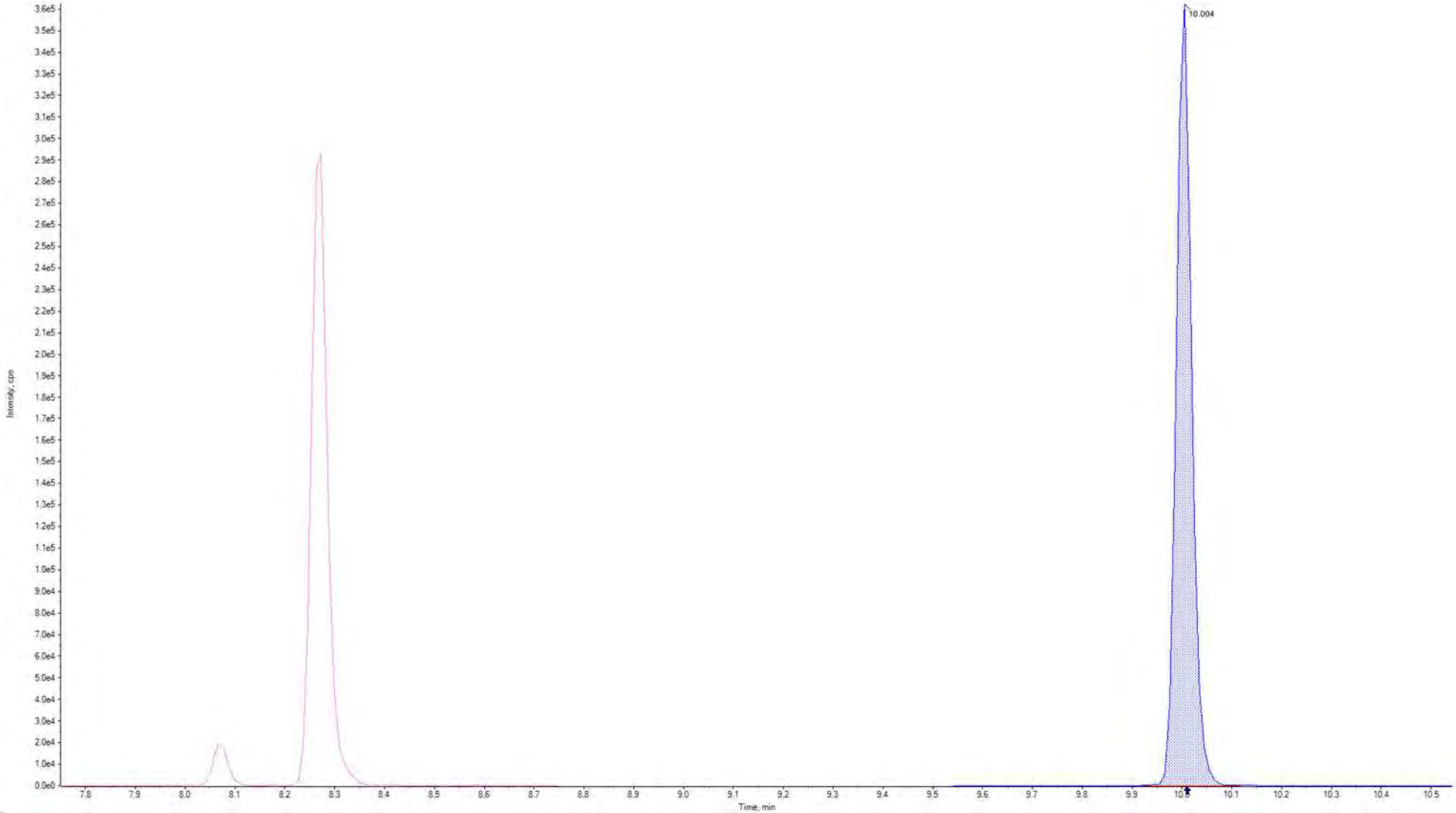
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDS_2
Sample: IA1633STD-5 S/N:308858.1 Points Across peak:49



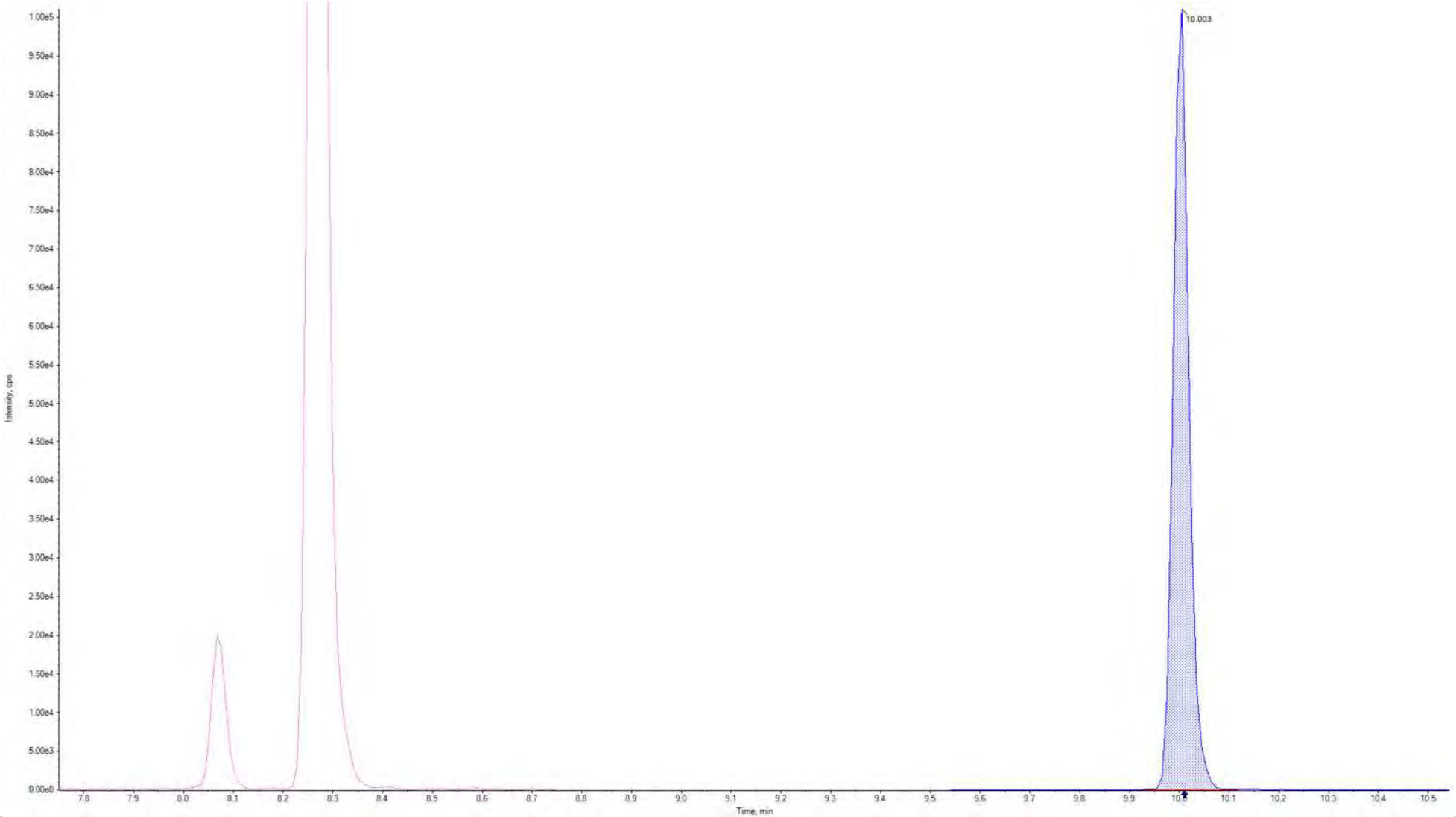
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDoS
Sample: IA1633STD-5 S/N:184217.7 Points Across peak:27



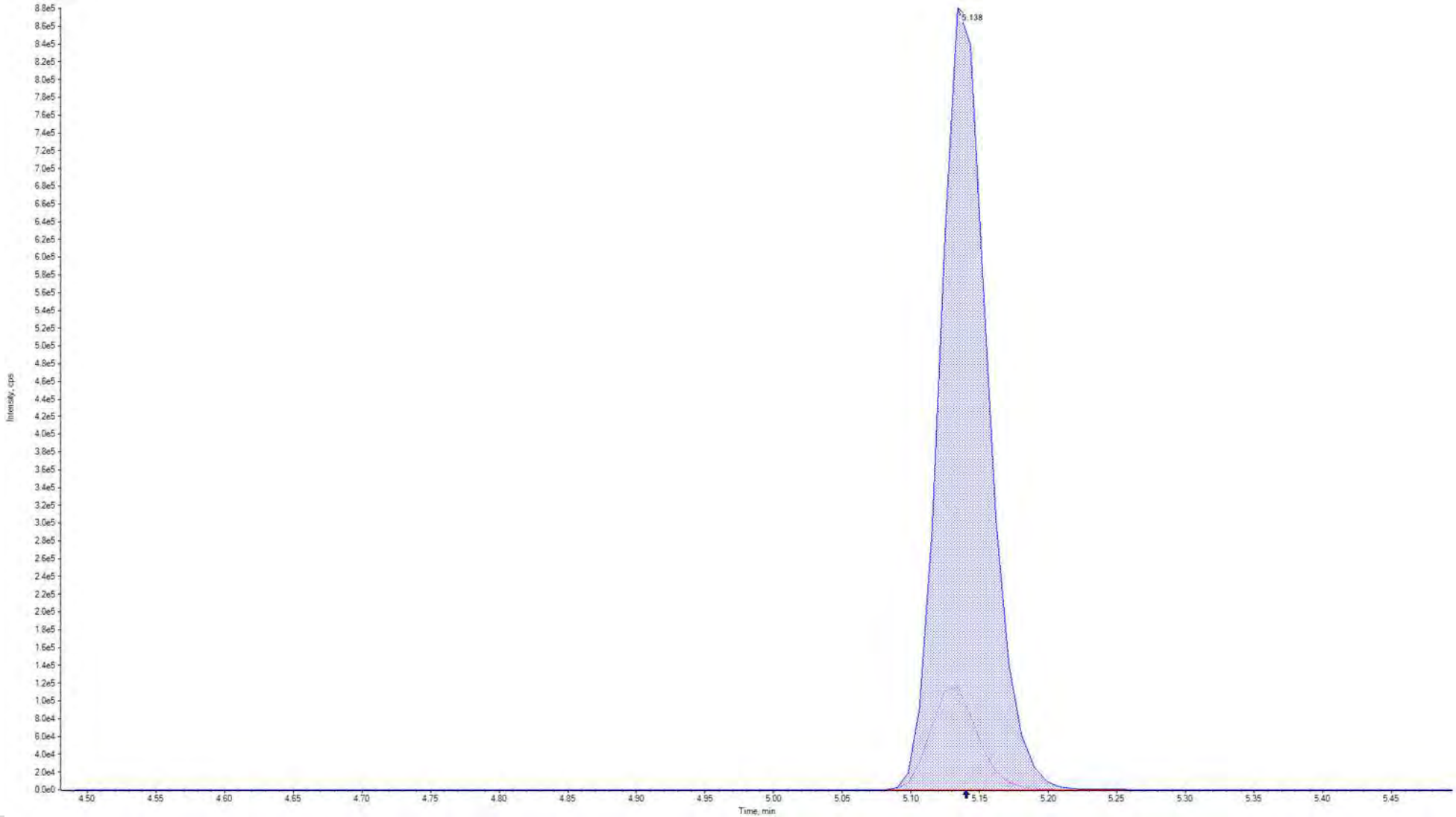
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDoS_2
Sample: IA1633STD-5 S/N:2620.7 Points Across peak:22



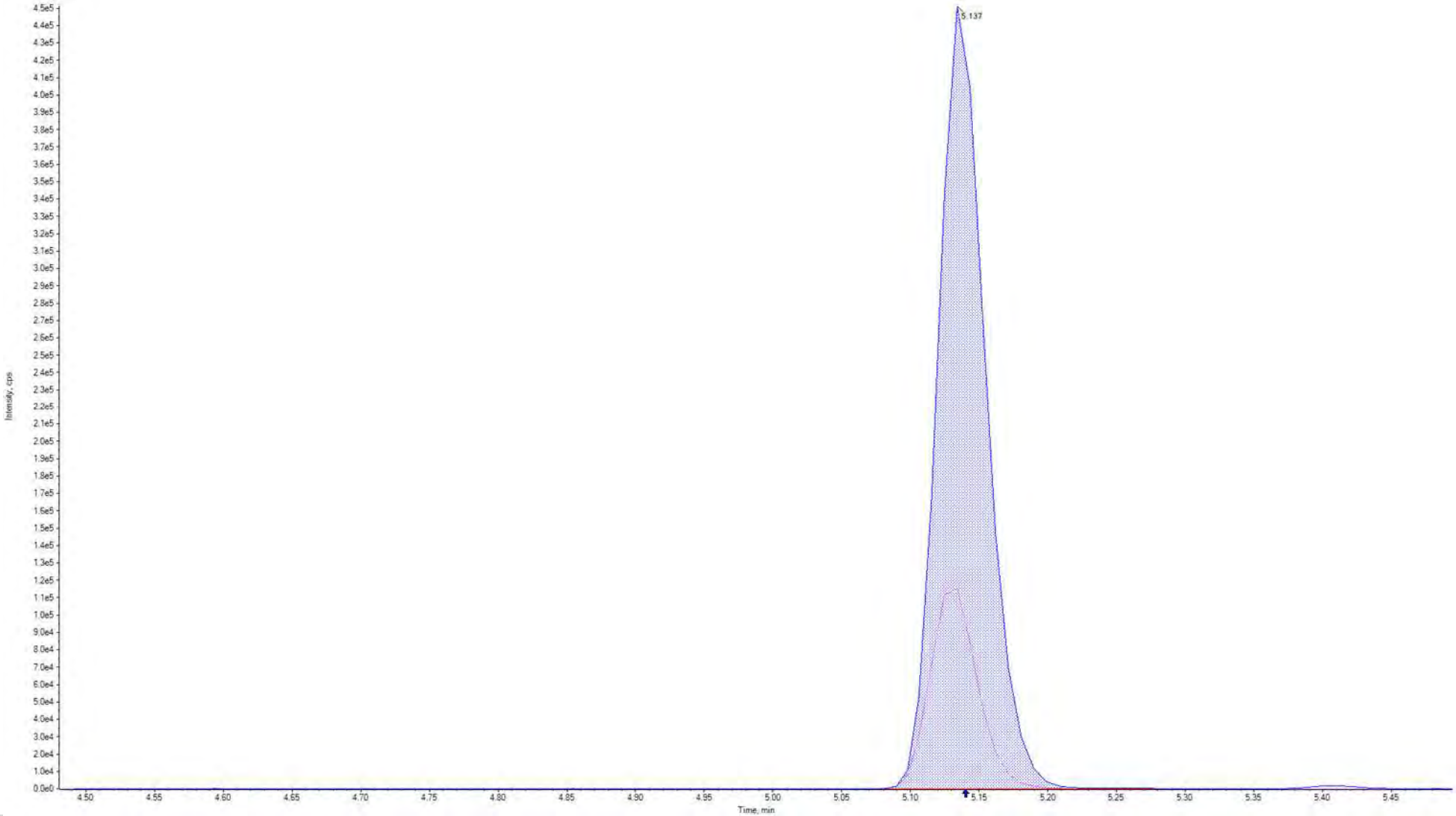
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

4:2FTS
Sample: IA1633STD-5 S/N:4757.6 Points Across peak:24



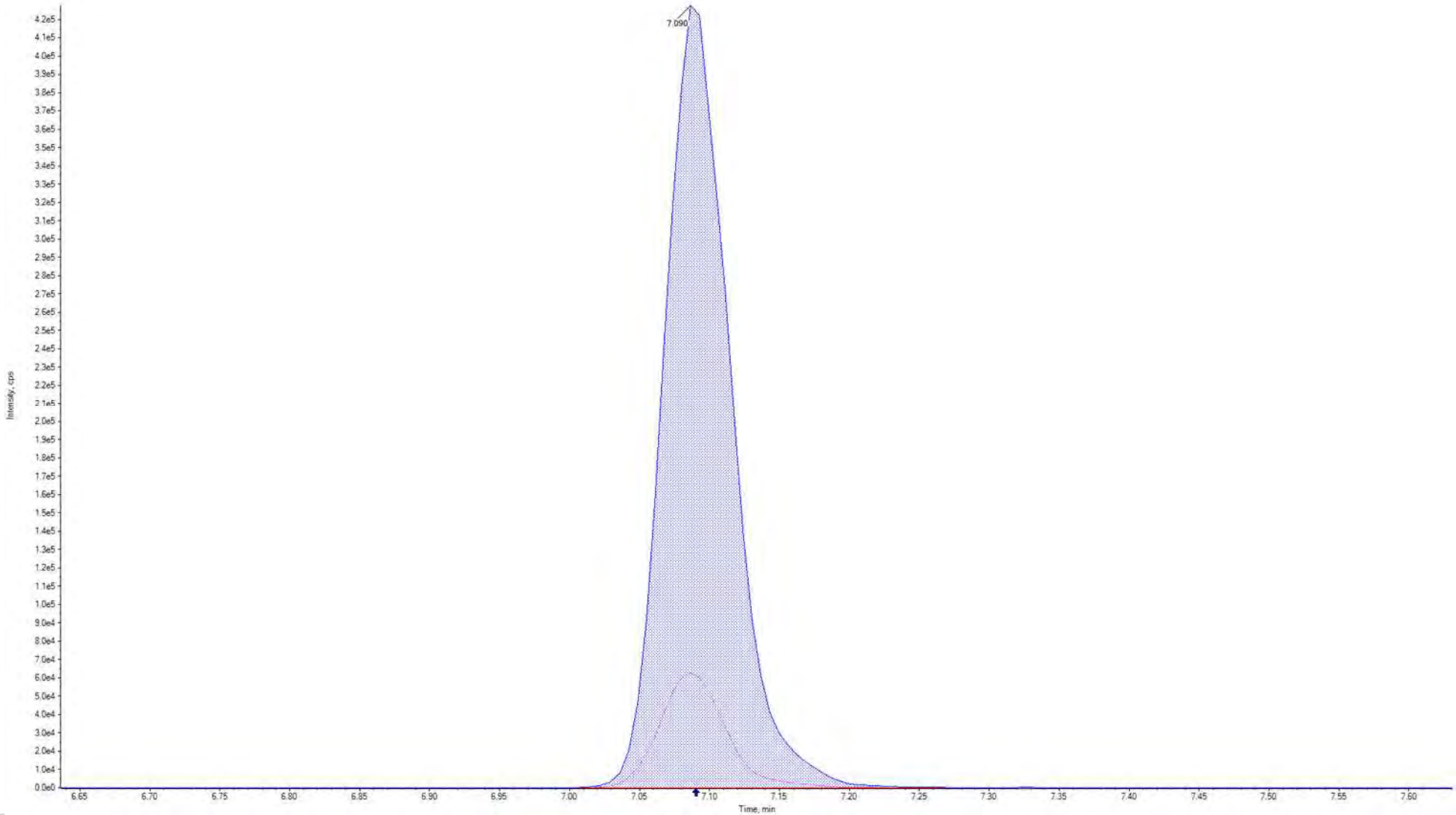
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

4:2FTS_2
Sample: IA1633STD-5 S/N:11366.6 Points Across peak:34



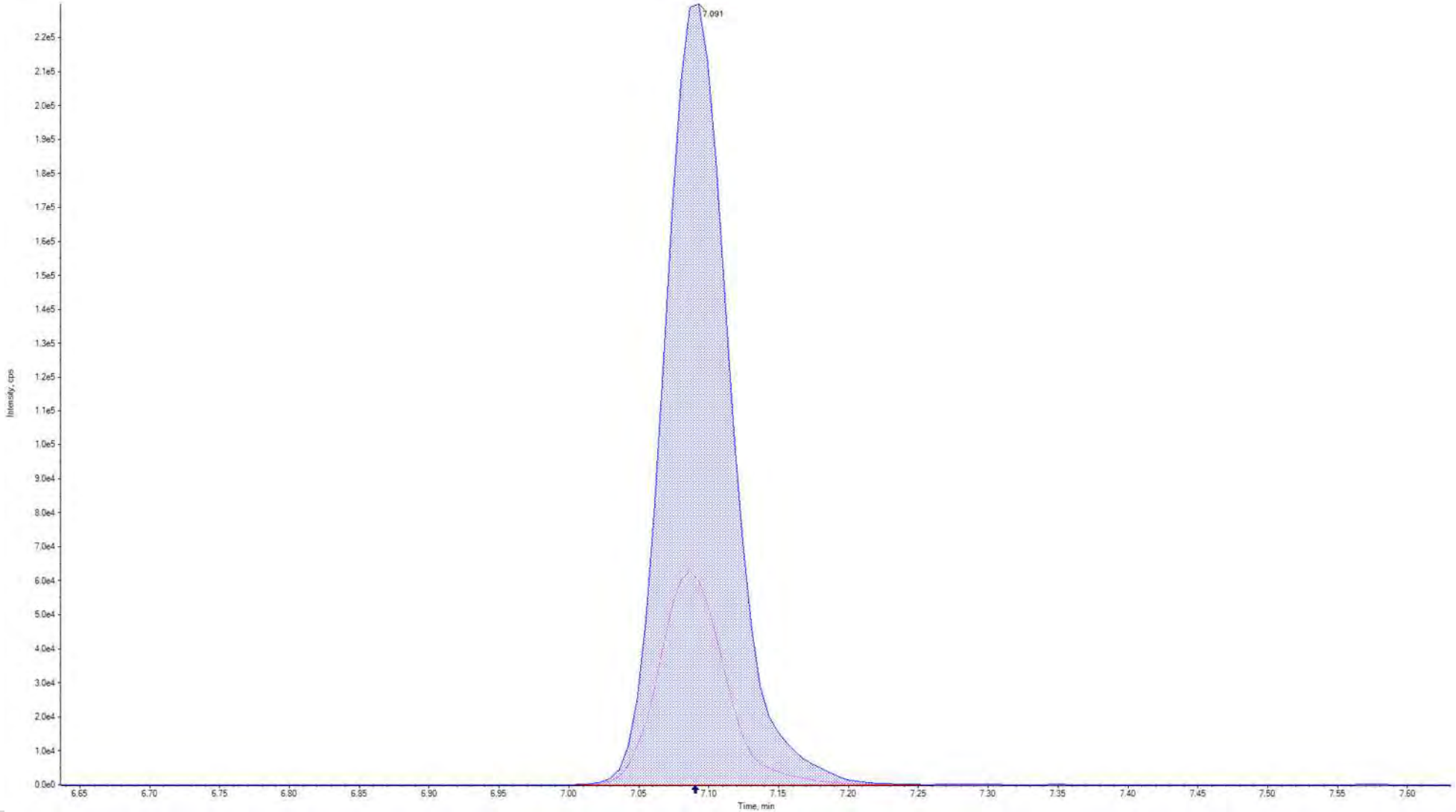
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

6:2FTS
Sample: IA1633STD-5 S/N:4100891.6 Points Across peak:49



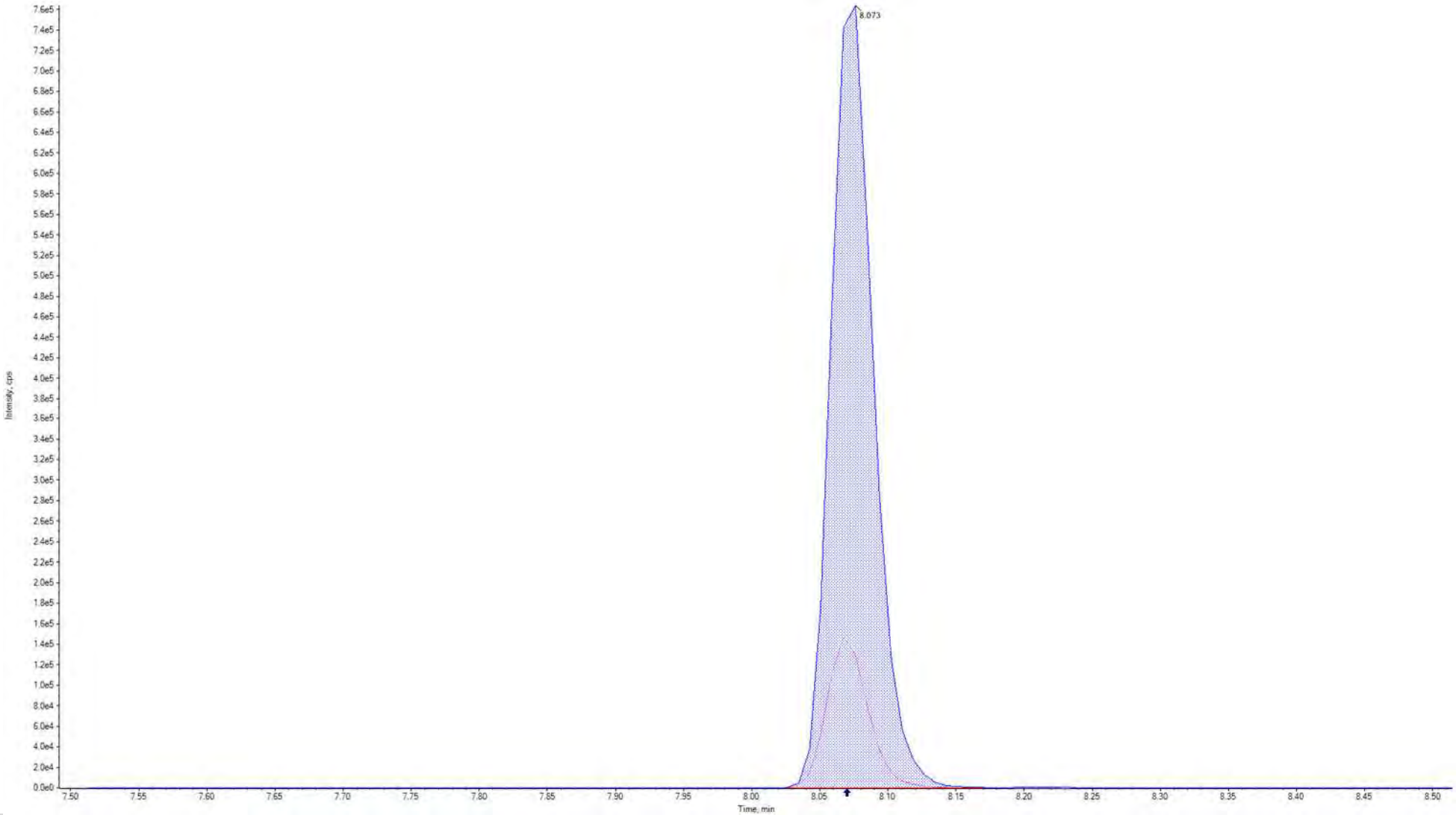
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

6:2FTS_2
Sample: IA1633STD-5 S/N:3317.3 Points Across peak:46



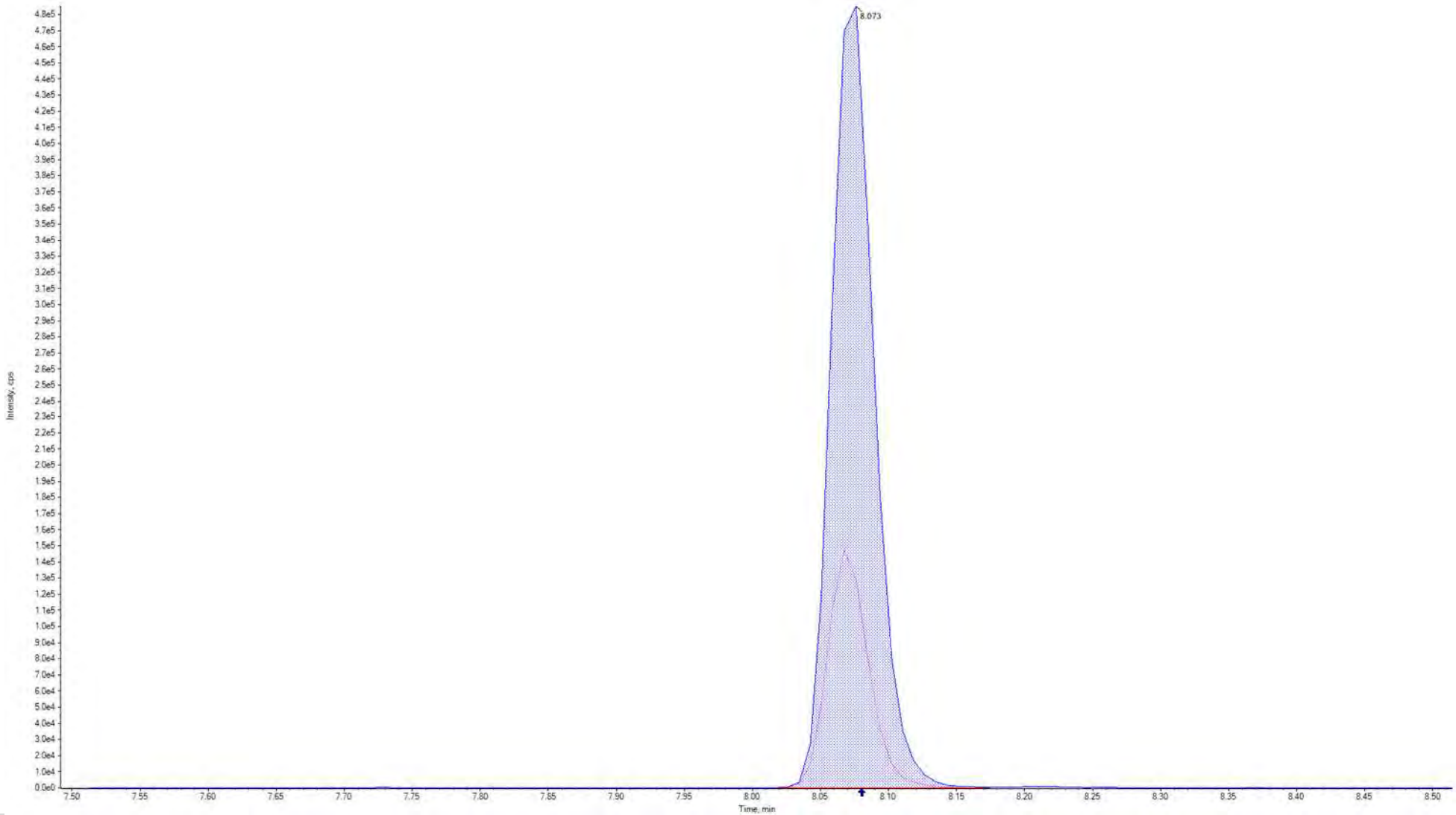
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

8:2FTS
Sample: IA1633STD-5 S/N:5550.3 Points Across peak:27



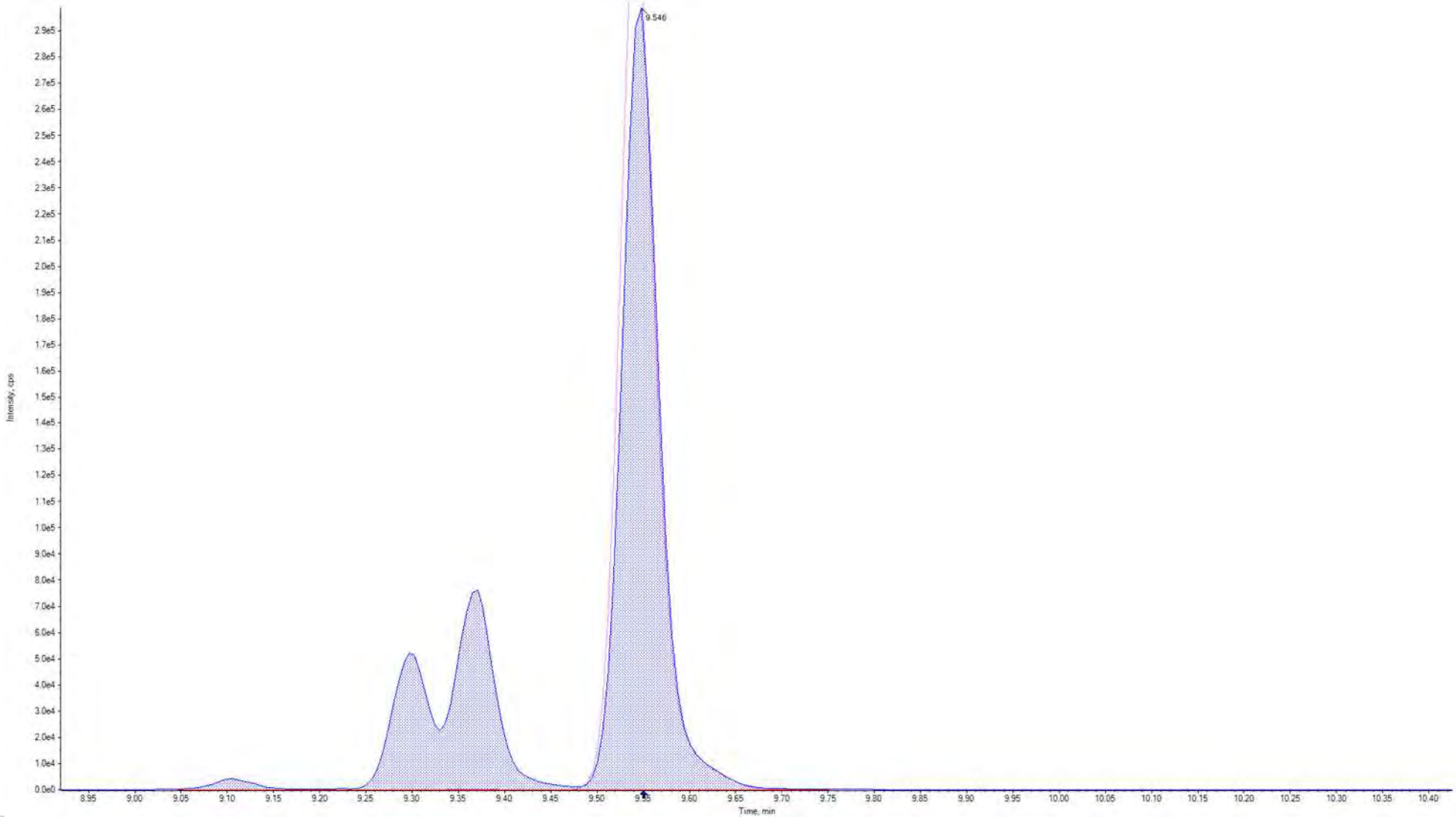
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

8:2FTS_2
Sample: IA1633STD-5 S/N:2714.7 Points Across peak:23



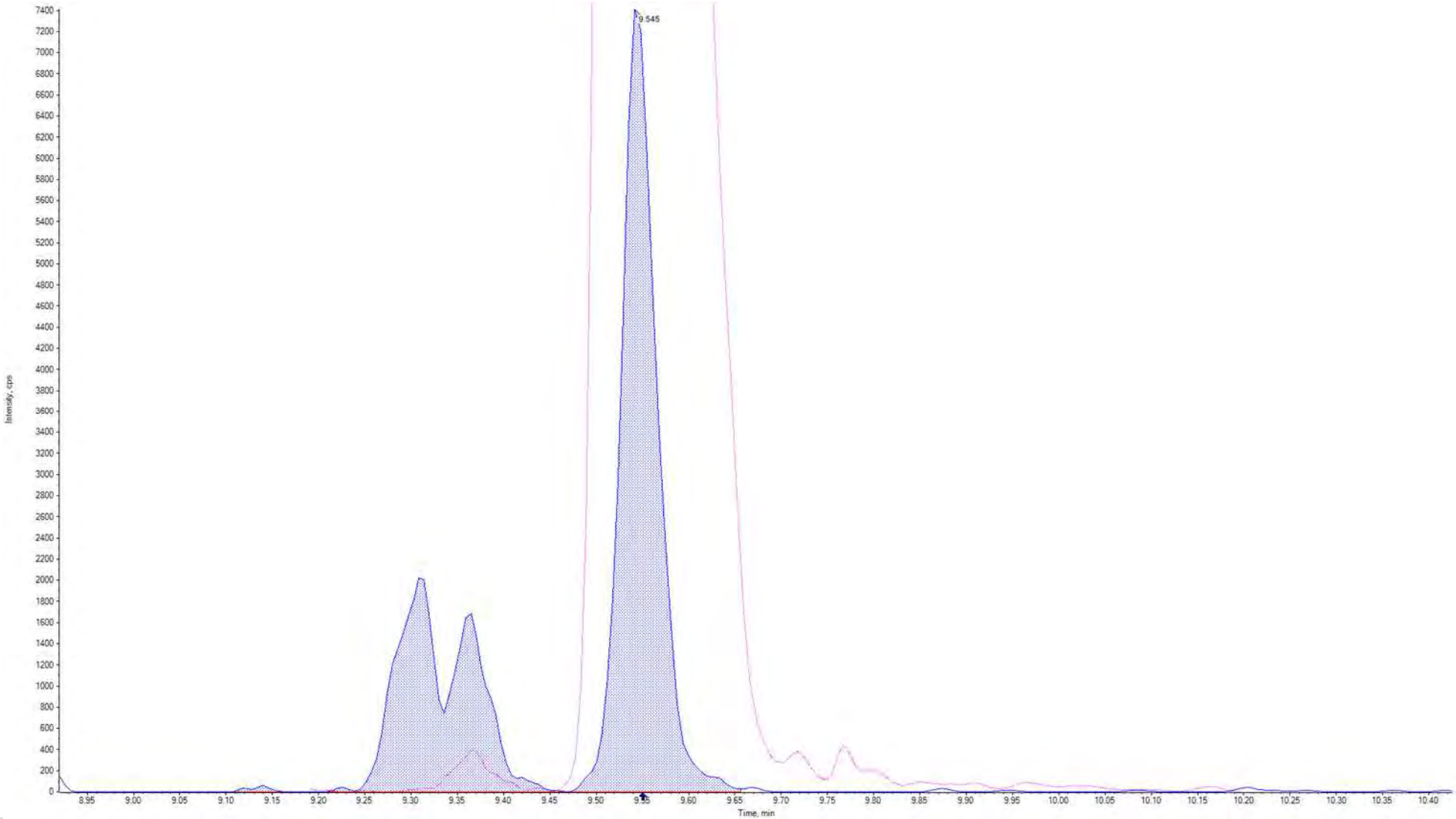
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOSA
Sample: IA1633STD-5 S/N:2974030.6 Points Across peak:123



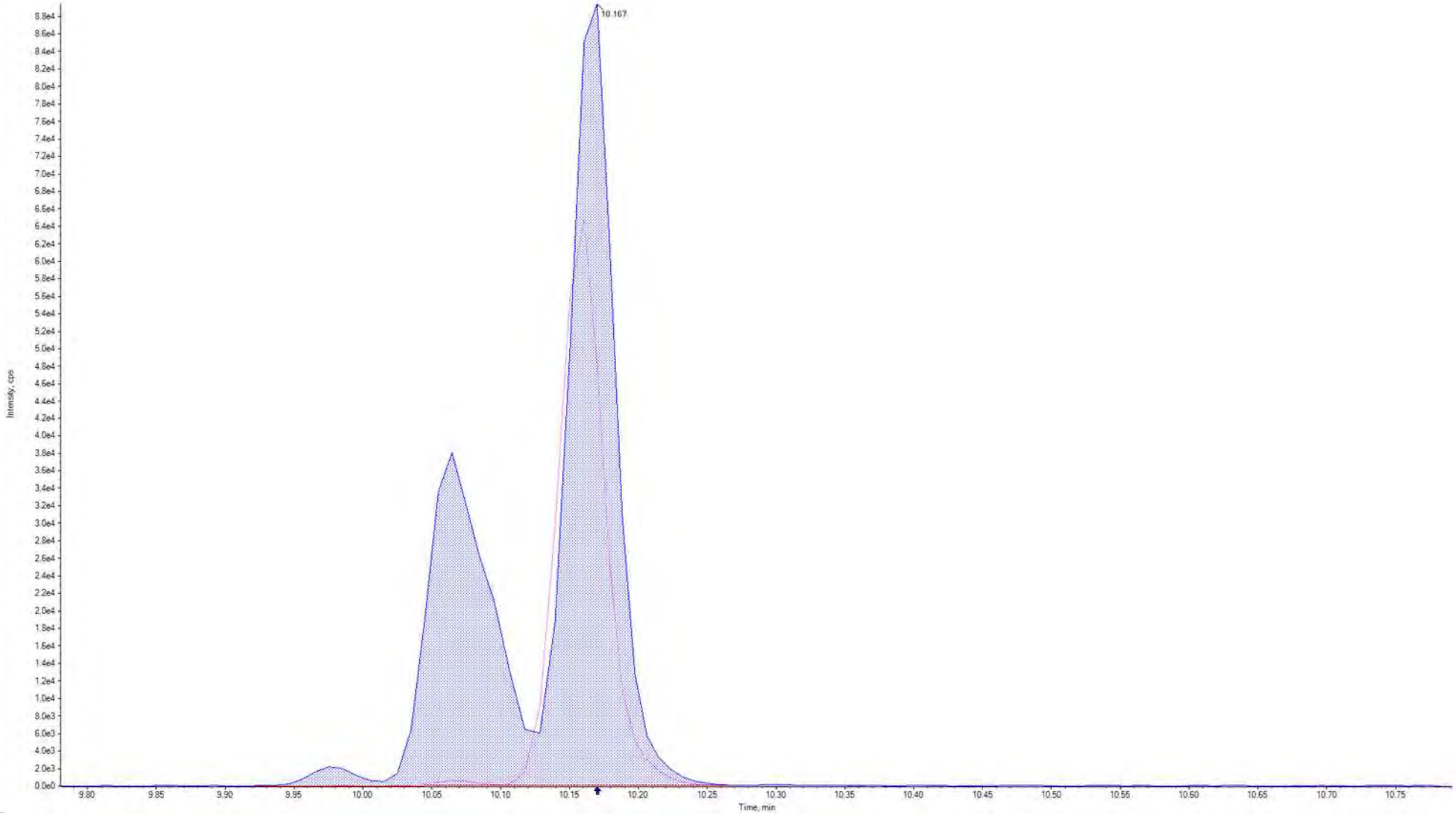
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOSA_2
Sample: IA1633STD-5 S/N:901.1 Points Across peak:97



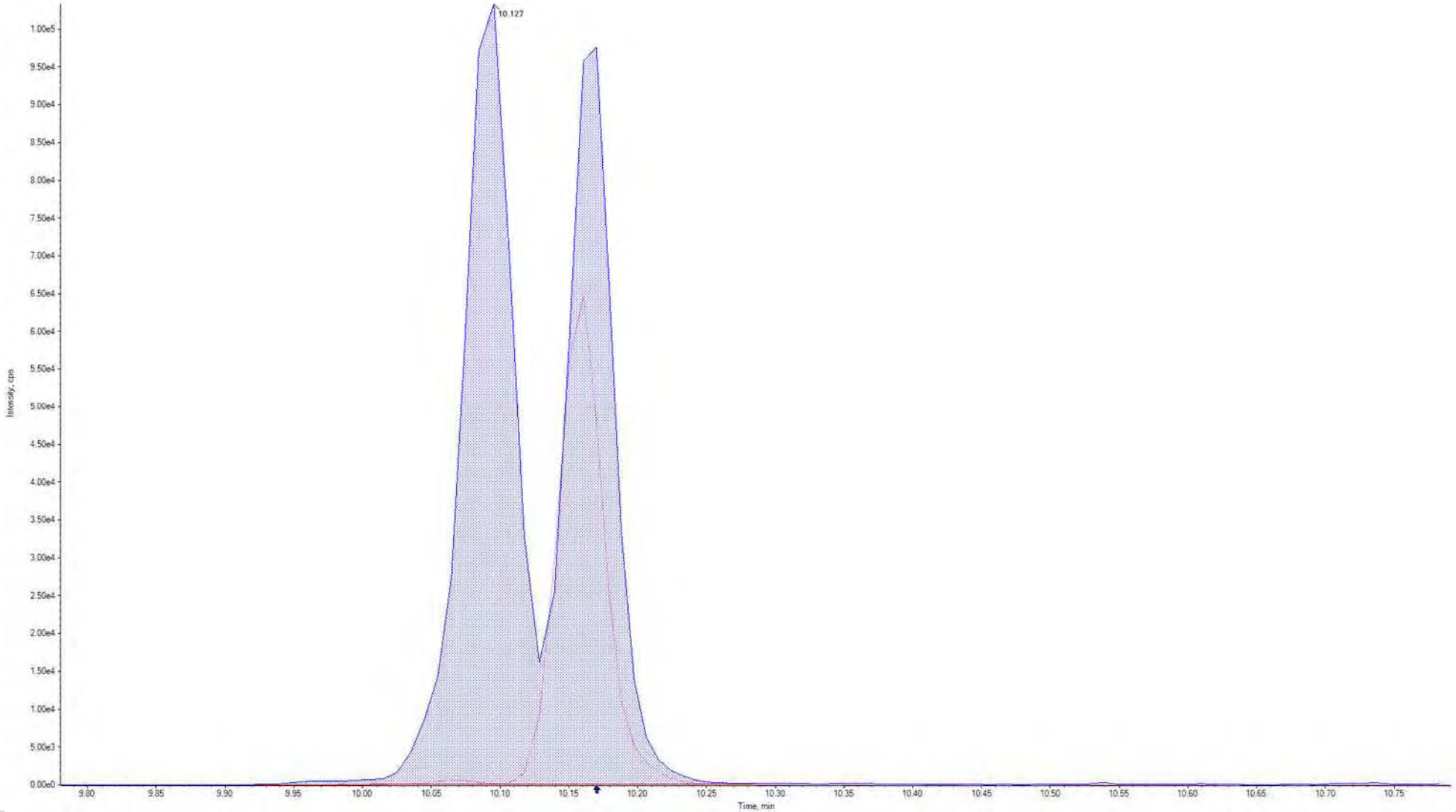
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSA
Sample: IA1633STD-5 S/N:11132.5 Points Across peak:39



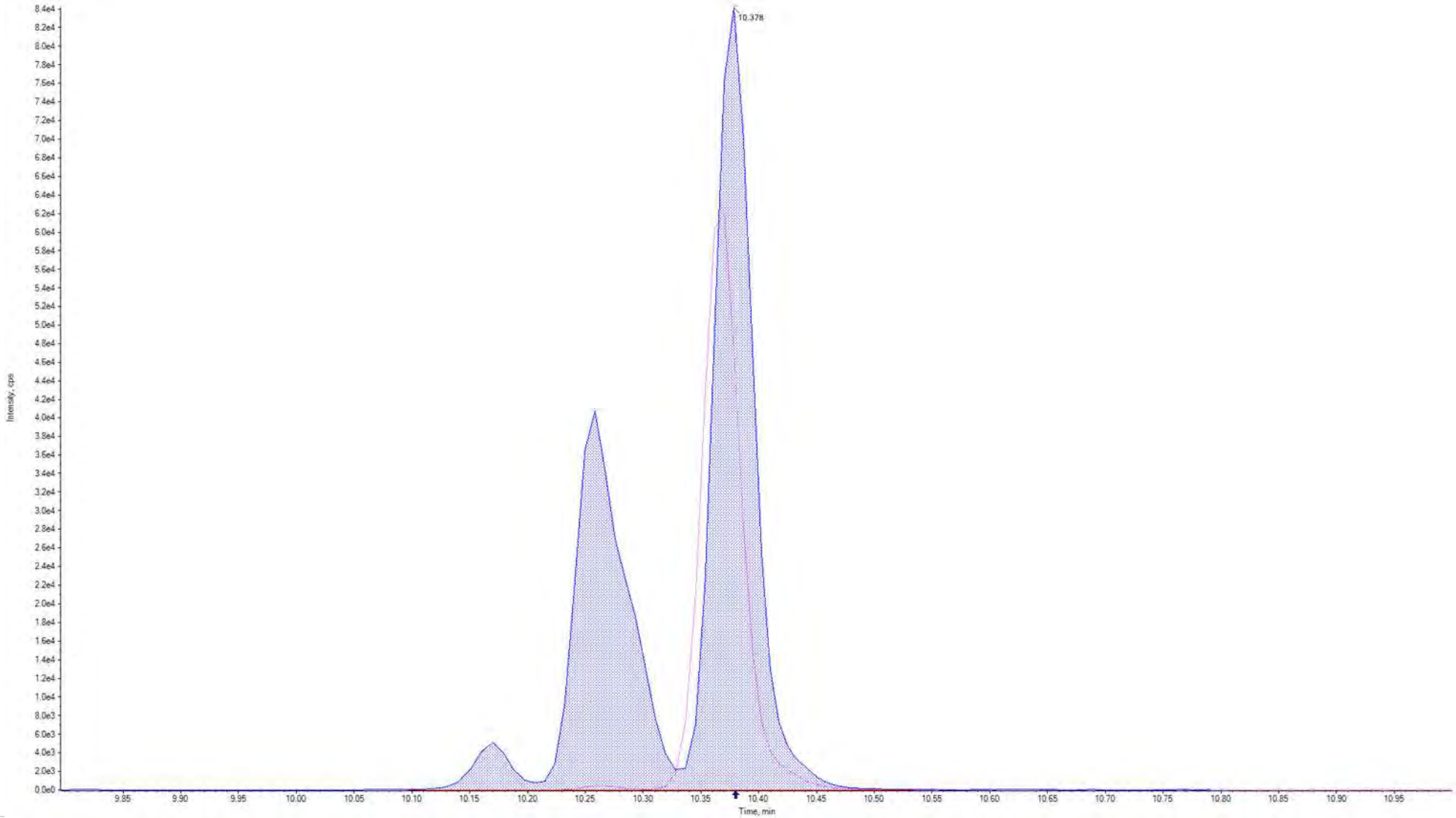
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSA_2
Sample: IA1633STD-5 S/N:15941.5 Points Across peak:40

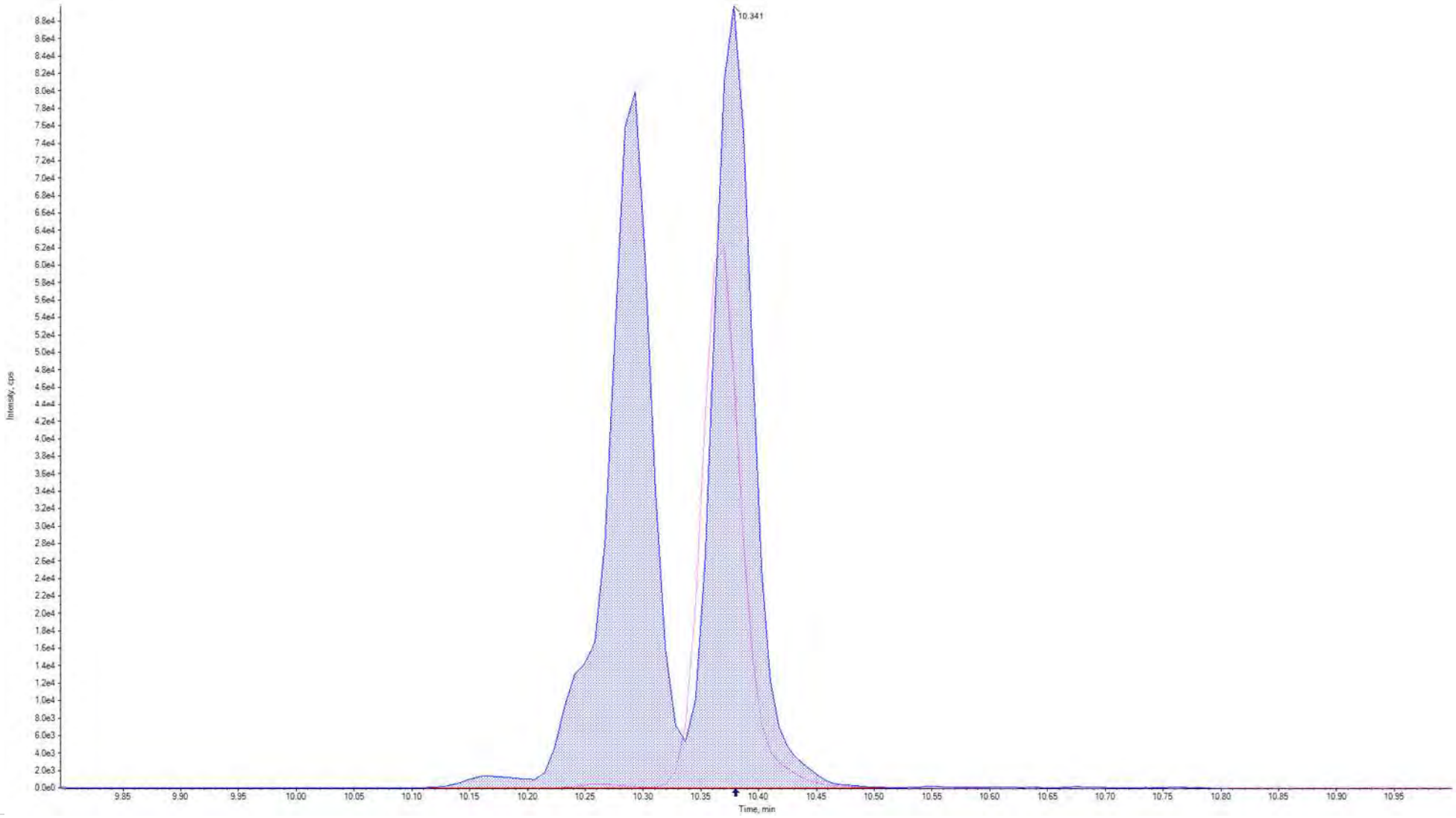


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSA
Sample: IA1633STD-5 S/N:9106040.8 Points Across peak:55

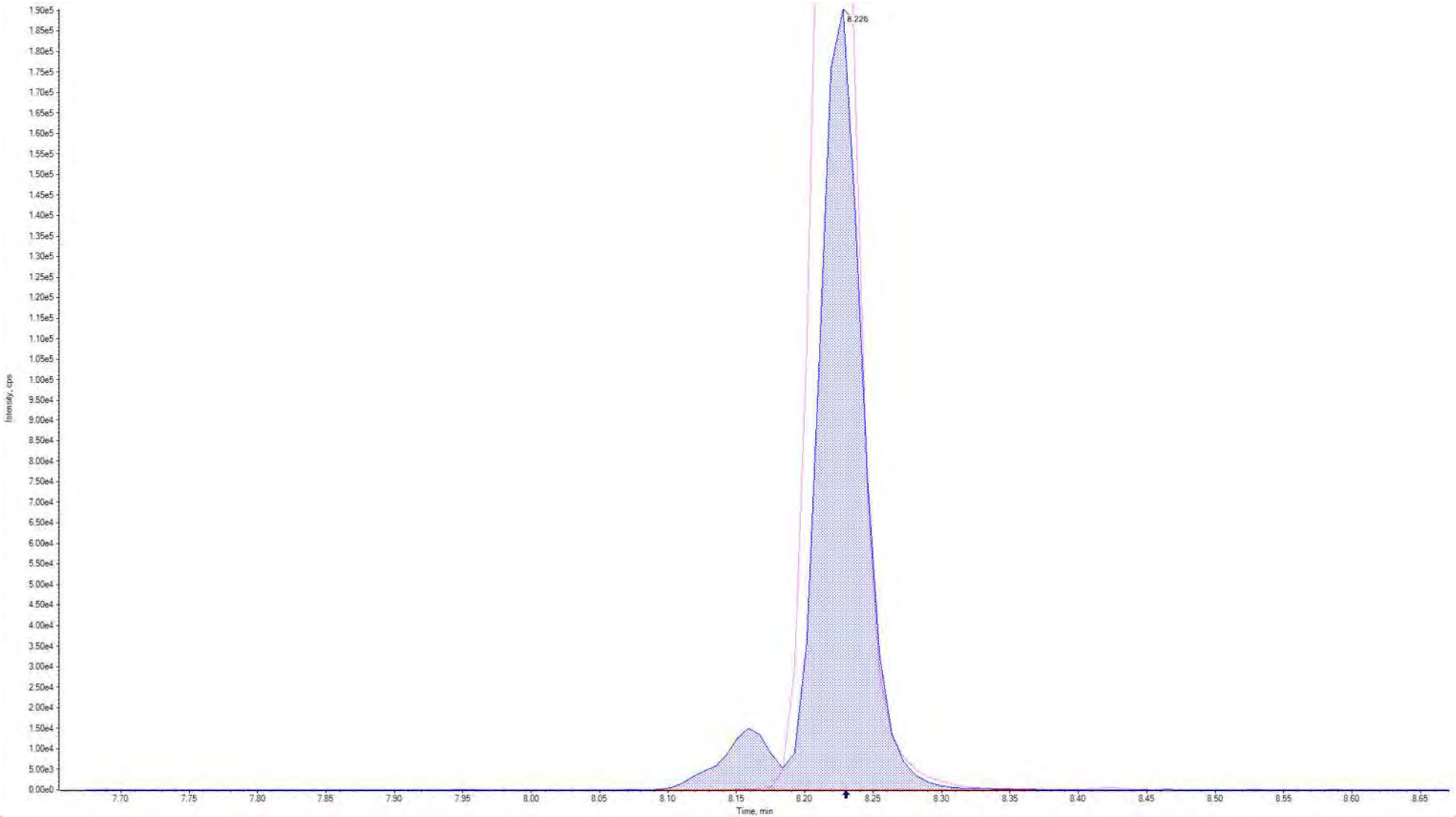


NEtFOSA_2
Sample: IA1633STD-5 S/N:15134.1 Points Across peak:51



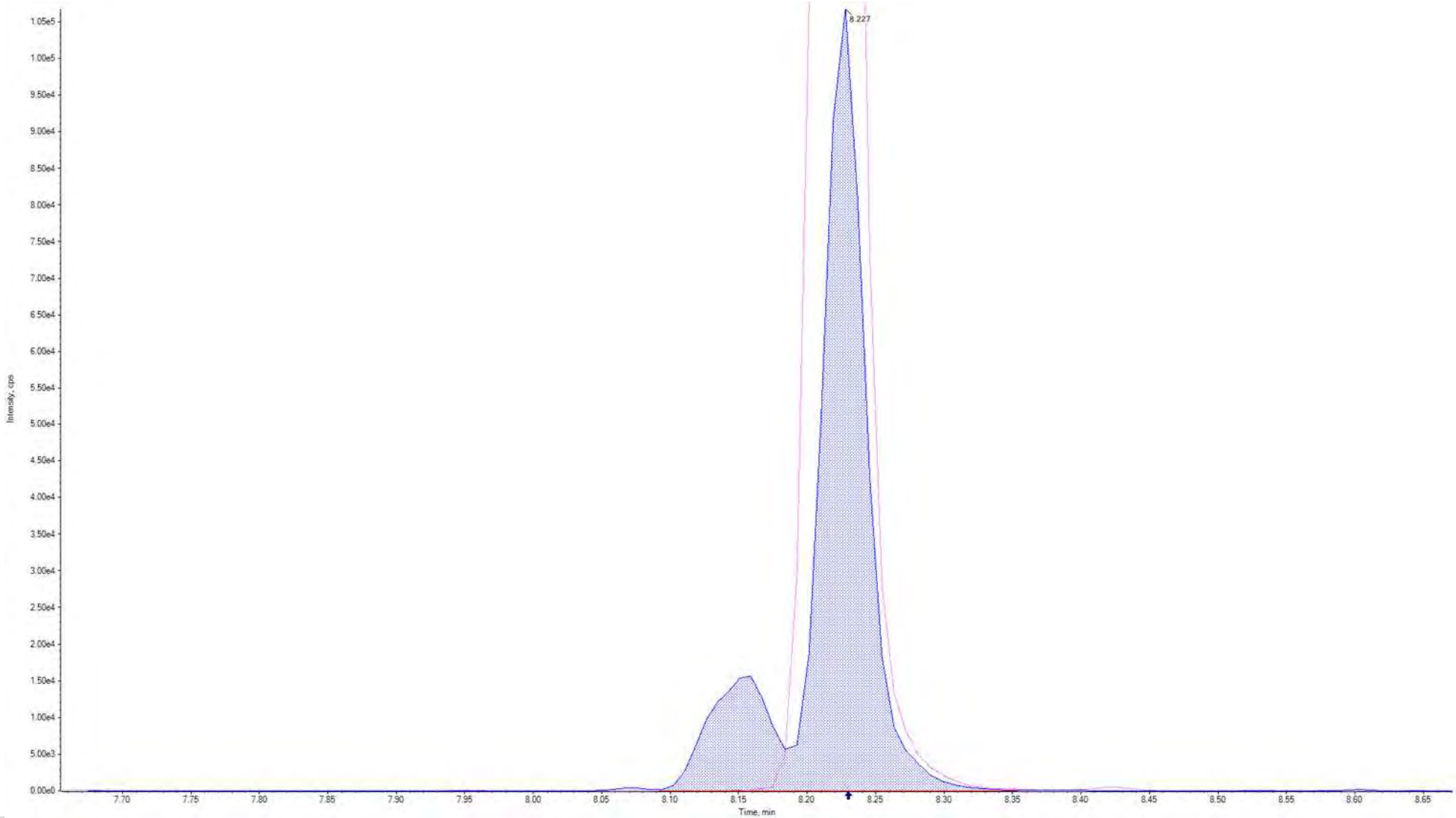
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSAA
Sample: IA1633STD-5 S/N:2089.9 Points Across peak:40



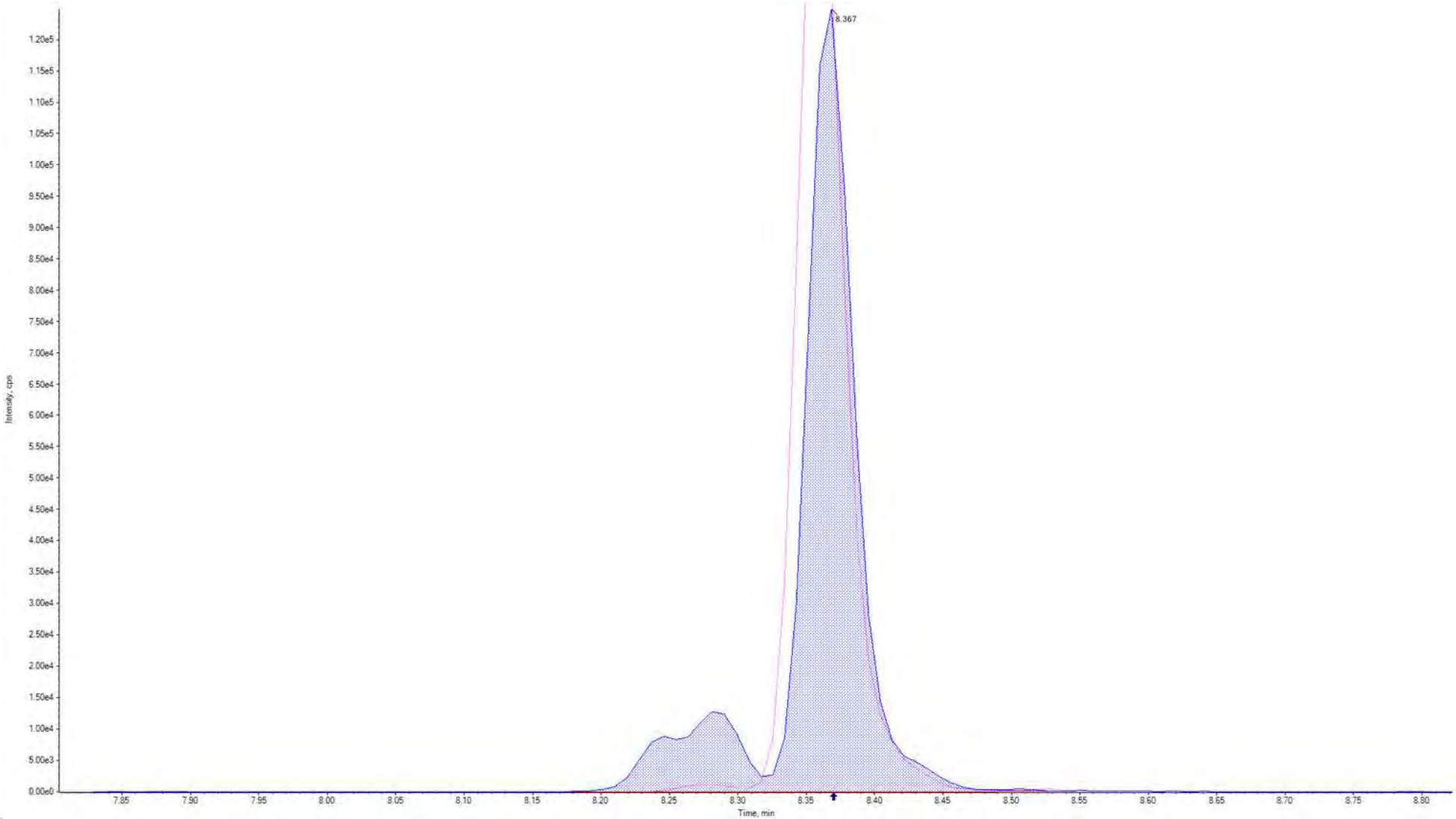
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSAA_2
Sample: IA1633STD-5 S/N:882.3 Points Across peak:33



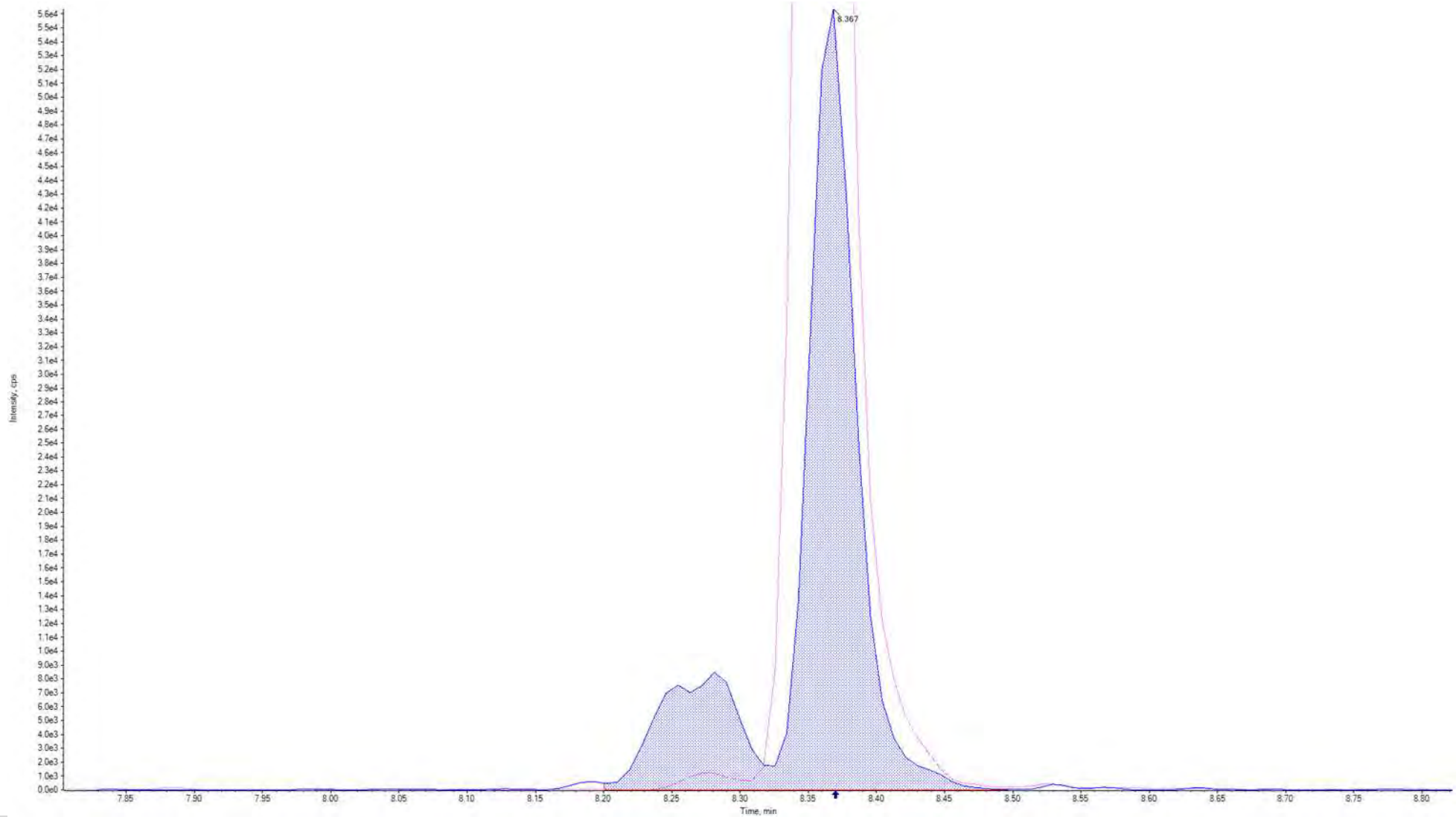
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSAA
Sample: IA1633STD-5 S/N:888.7 Points Across peak:46



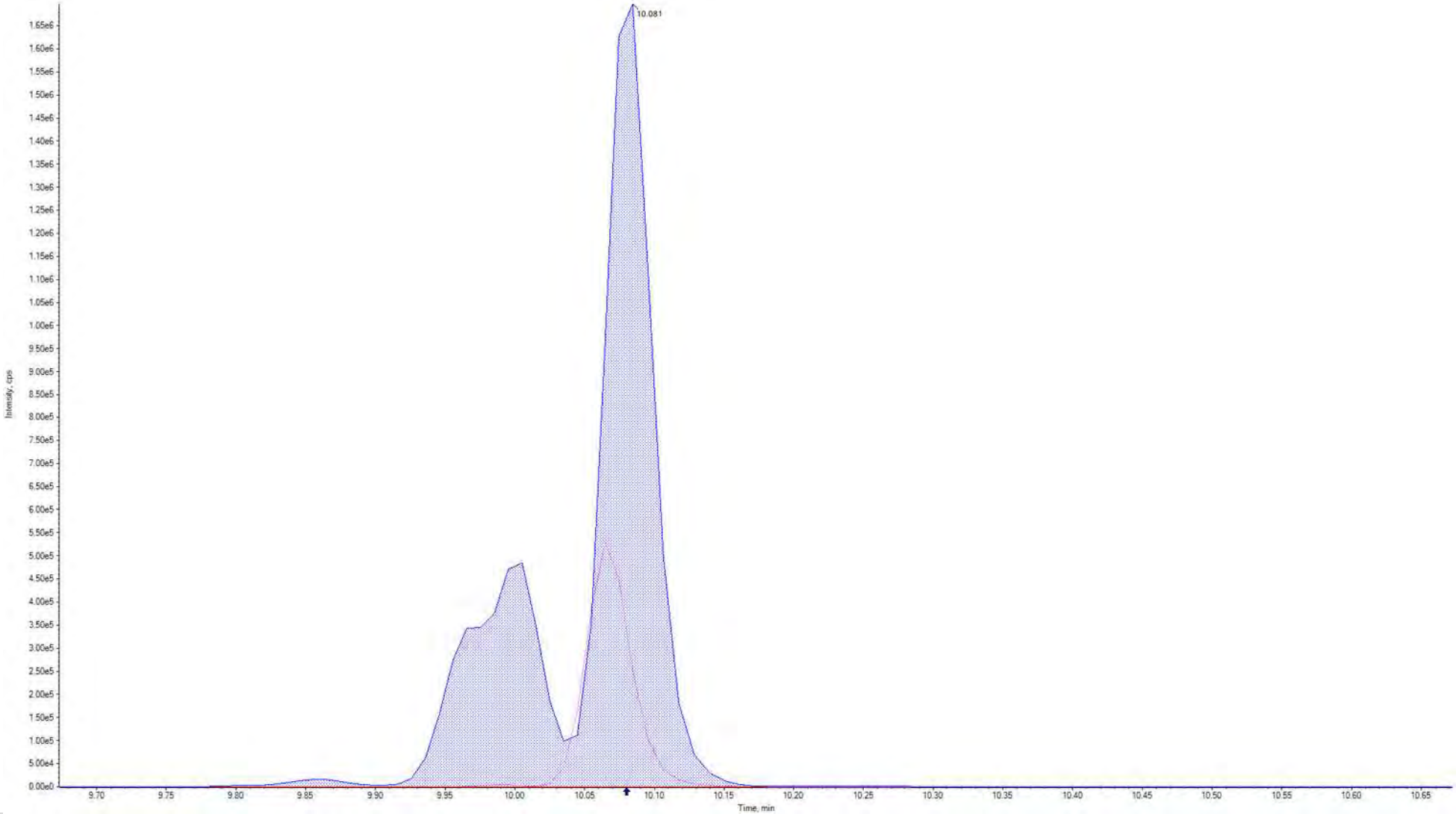
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSAA_2
Sample: IA1633STD-5 S/N:557.0 Points Across peak:36



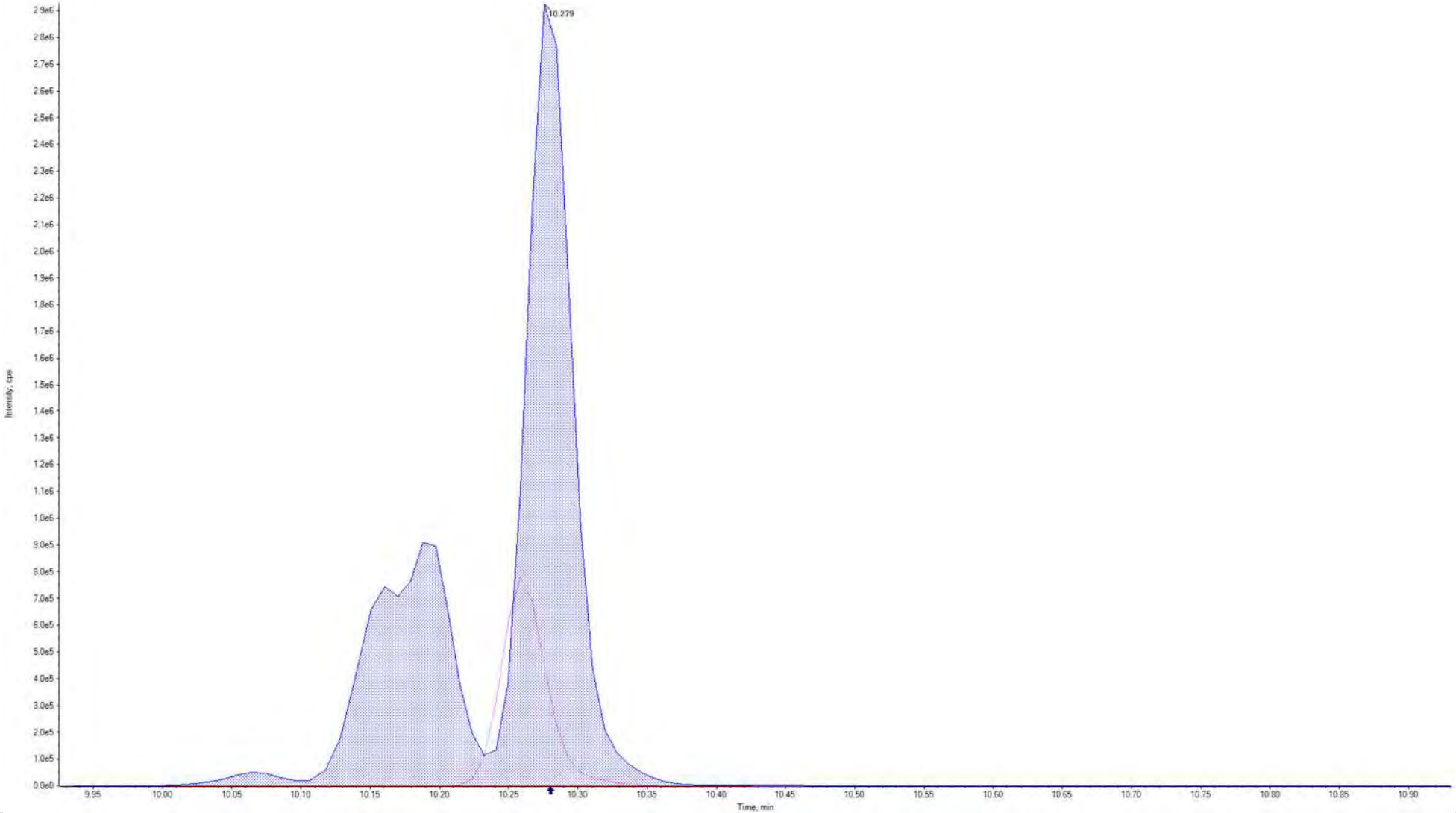
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSE
Sample: IA1633STD-5 S/N:17396.6 Points Across peak:47



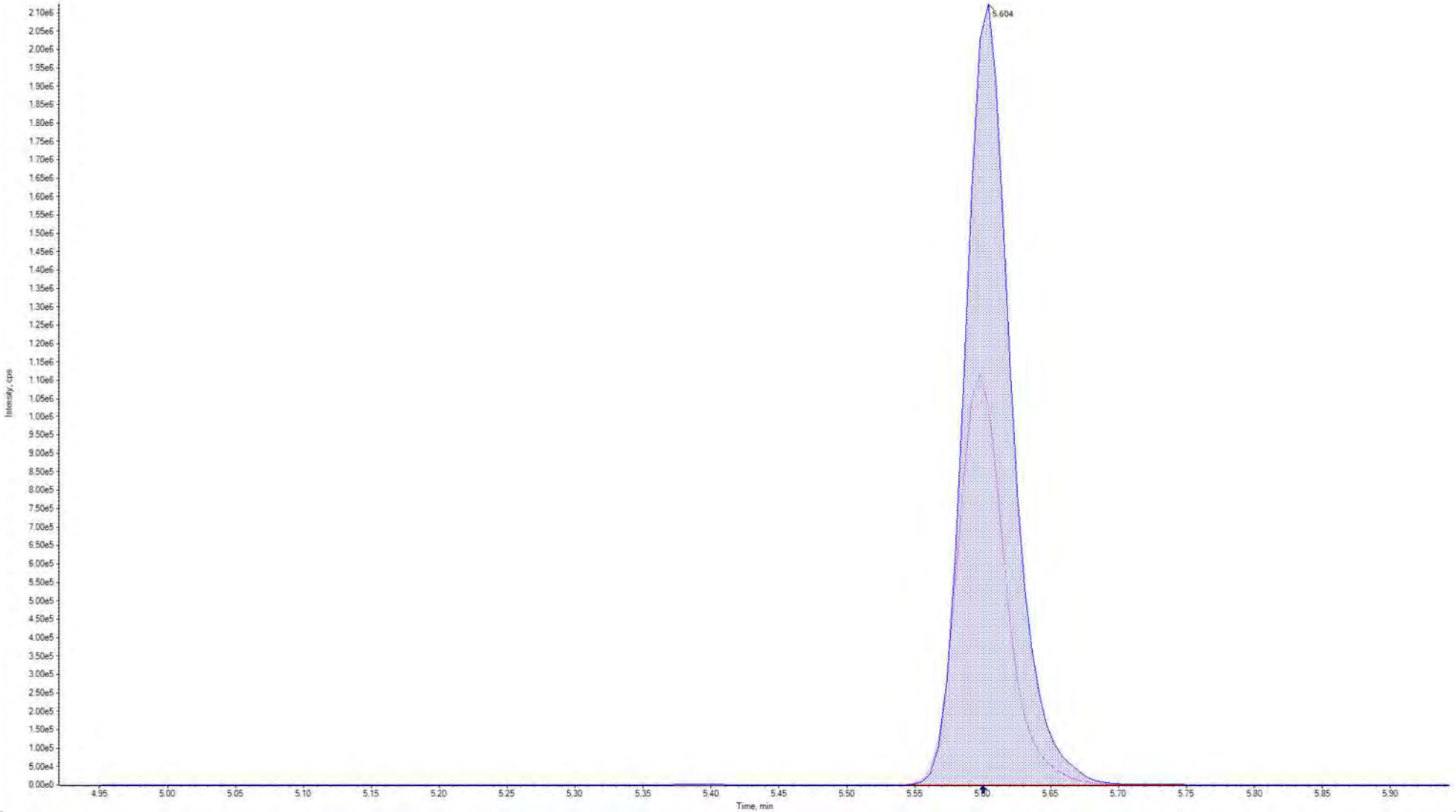
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSE
Sample: IA1633STD-5 S/N:4692.8 Points Across peak:51



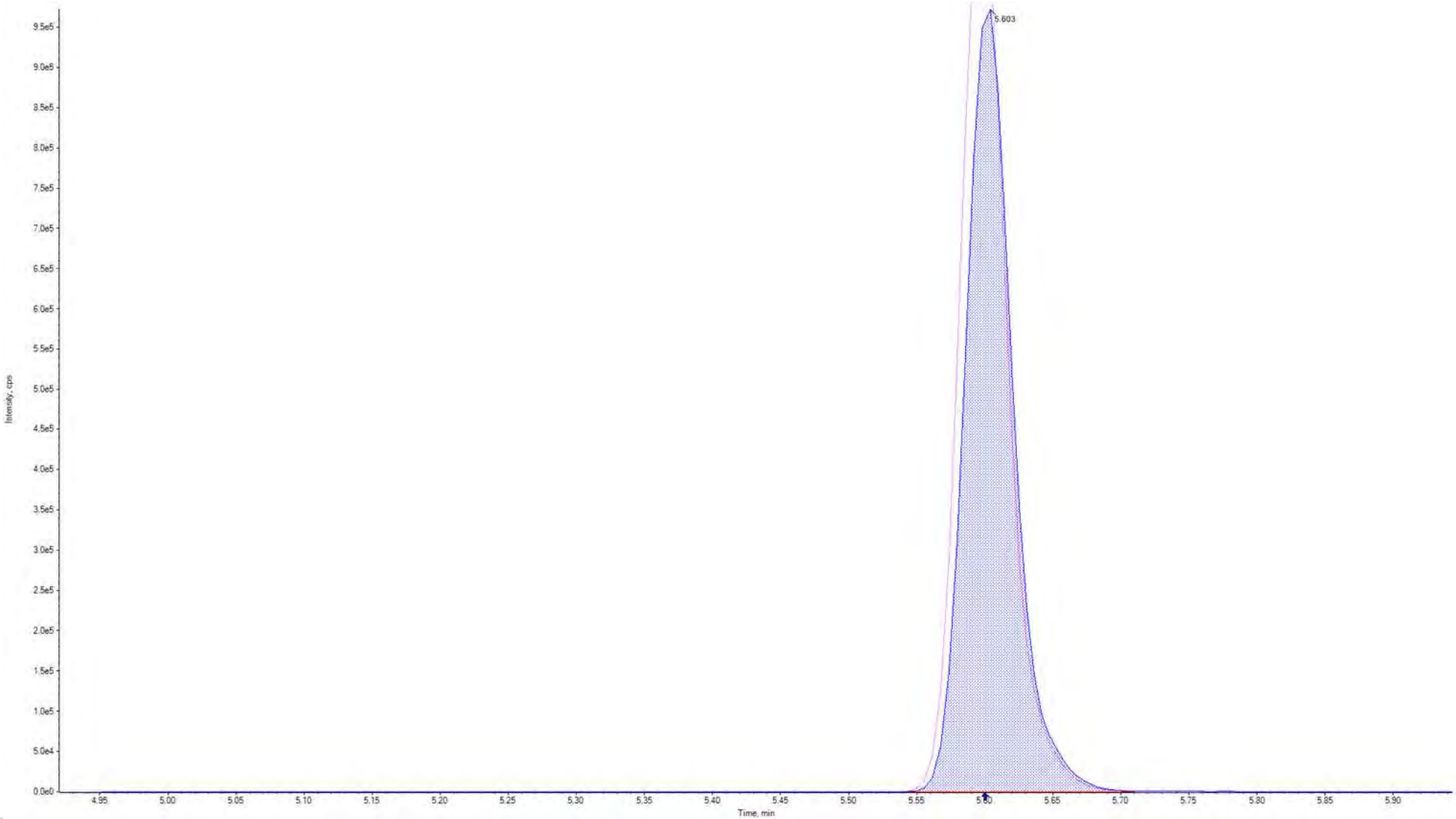
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

HFPO-DA
Sample: IA1633STD-5 S/N:27944.1 Points Across peak:56



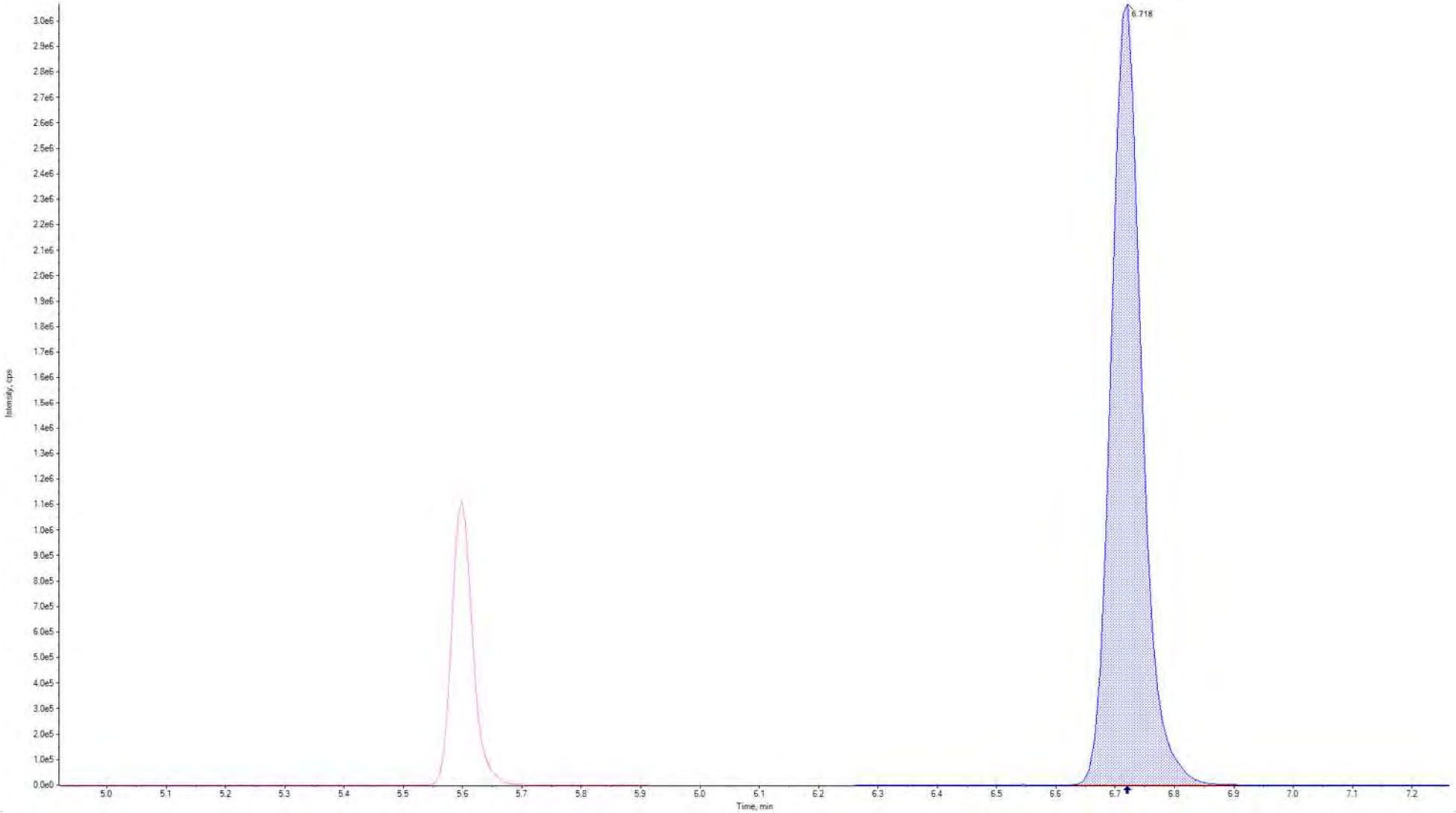
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

HFPO-DA_2
Sample: IA1633STD-5 S/N:6642.1 Points Across peak:36



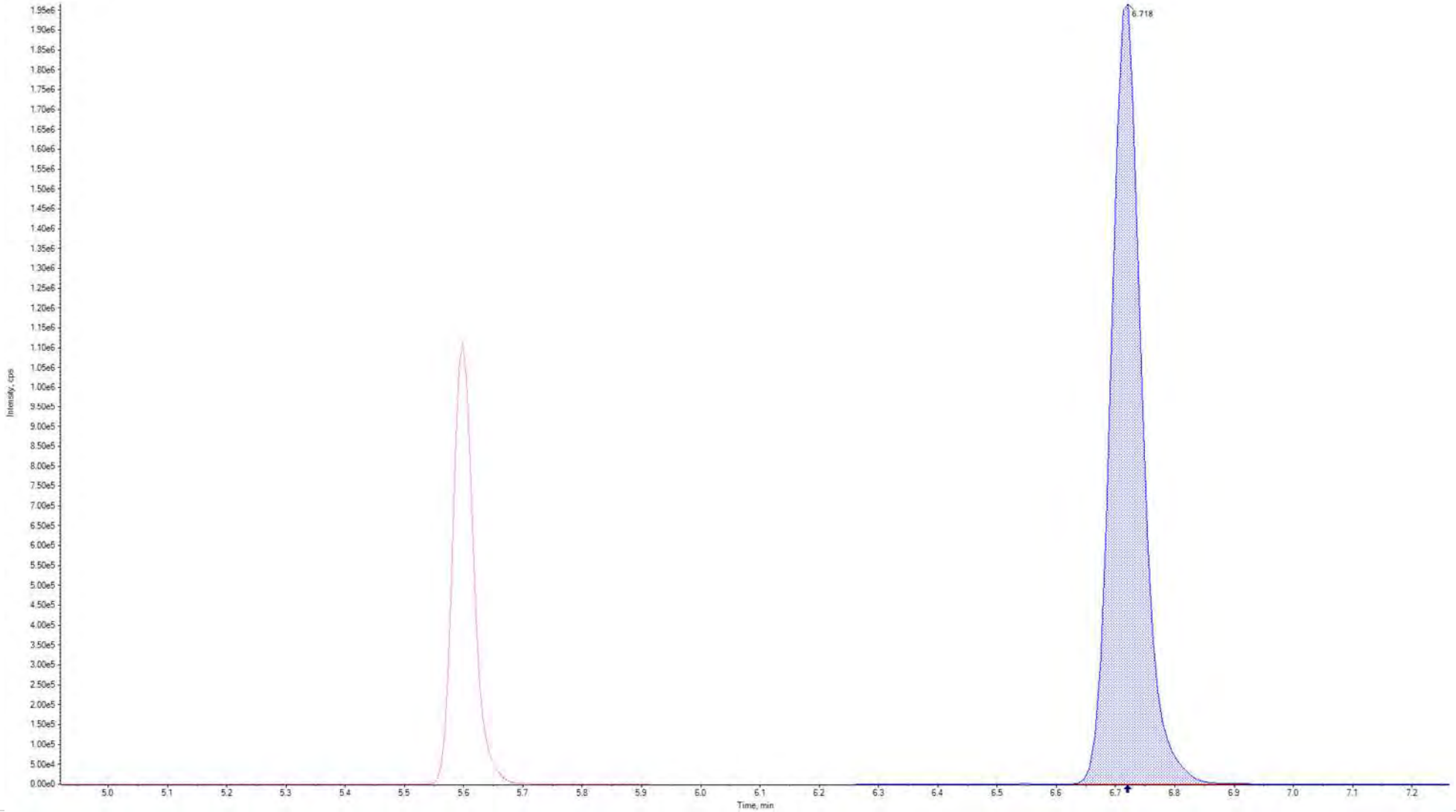
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

ADONA
Sample: IA1633STD-5 S/N:13708.9 Points Across peak:41



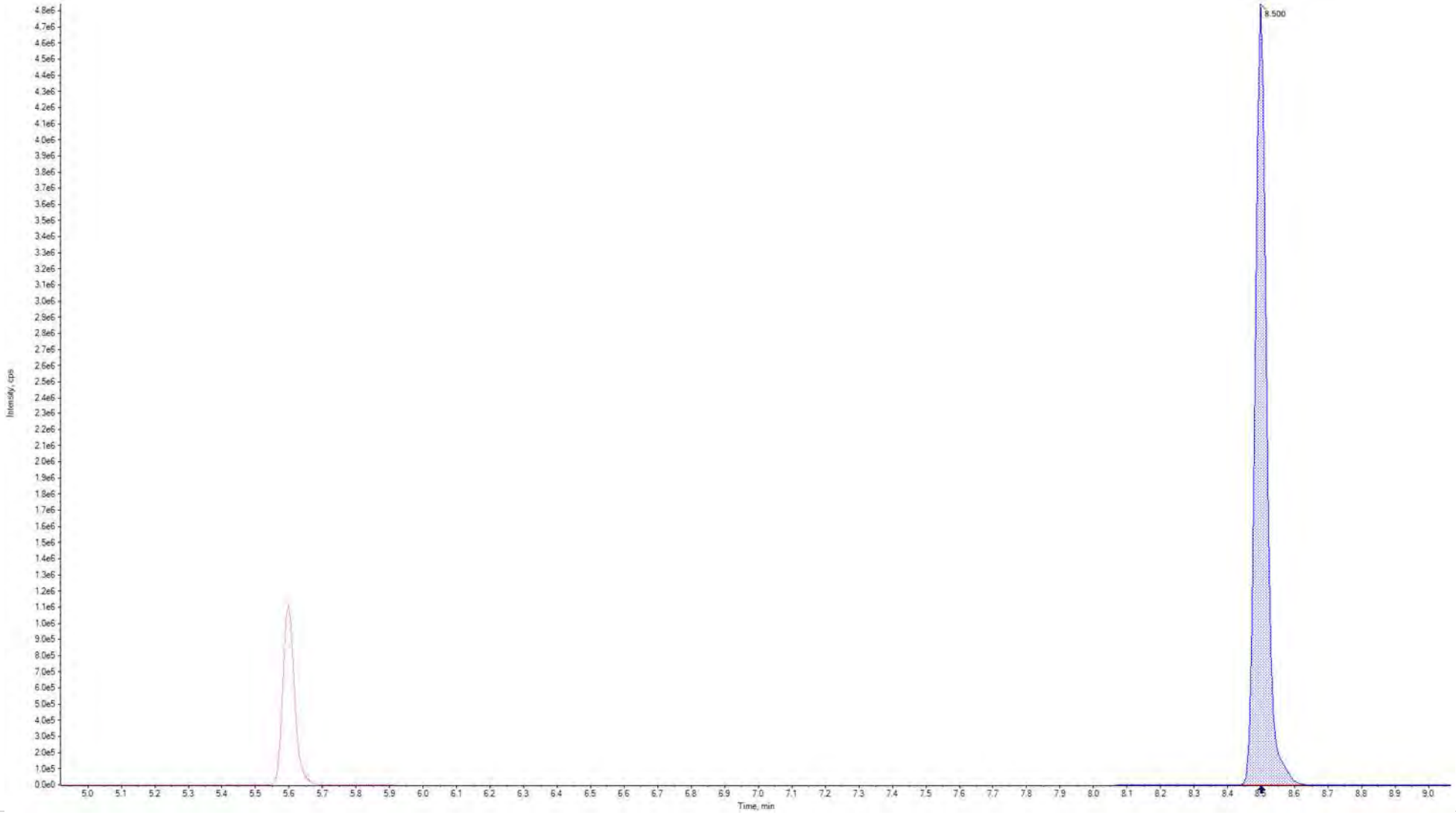
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

ADONA_2
Sample: IA1633STD-5 S/N:17524.9 Points Across peak:45



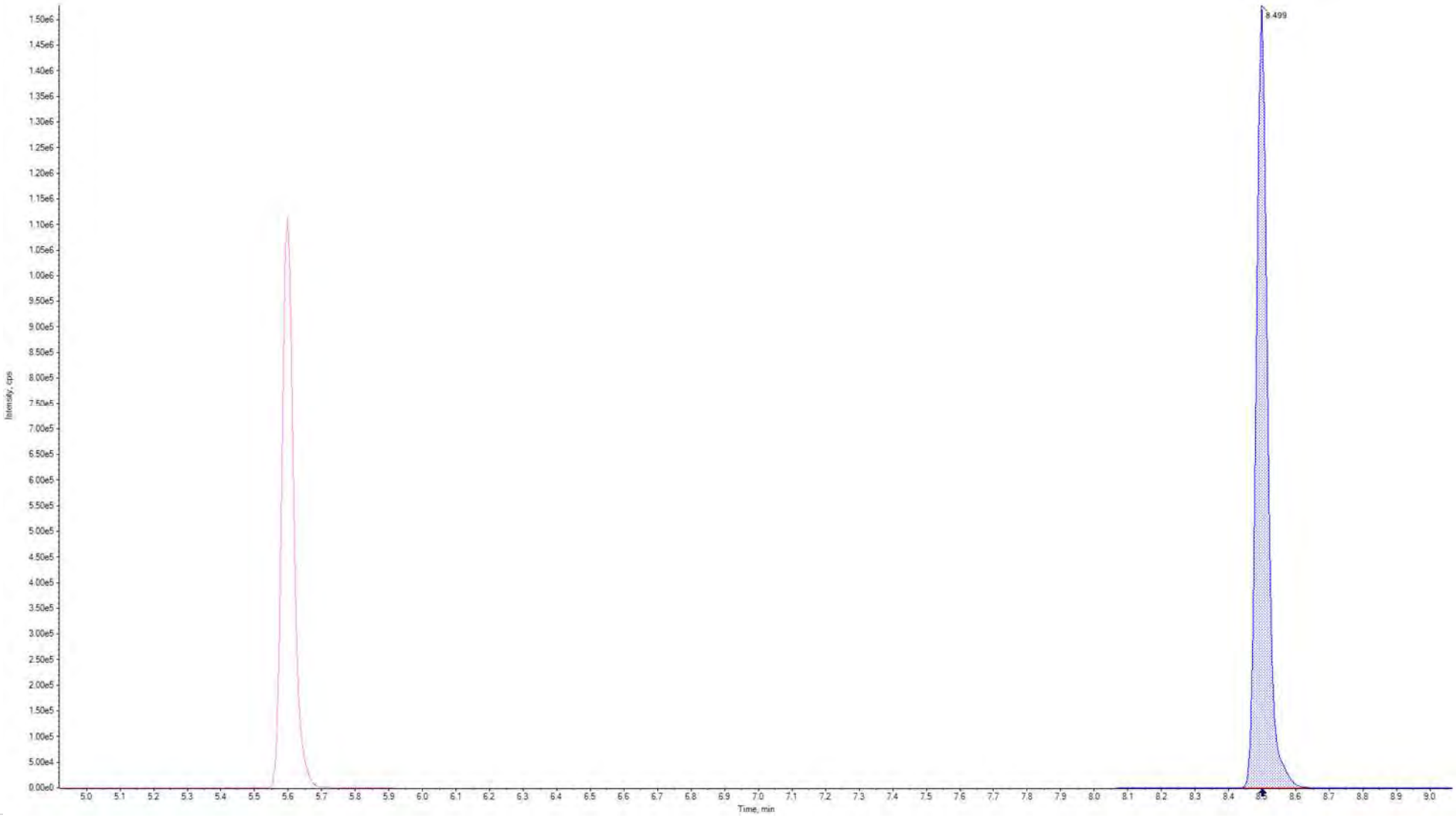
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

9Cl-PF3ONS
Sample: IA1633STD-5 S/N:1142992.2 Points Across peak:45



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

9Cl-PF3ONS_2
Sample: IA1633STD-5 S/N:6168347.9 Points Across peak:35



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

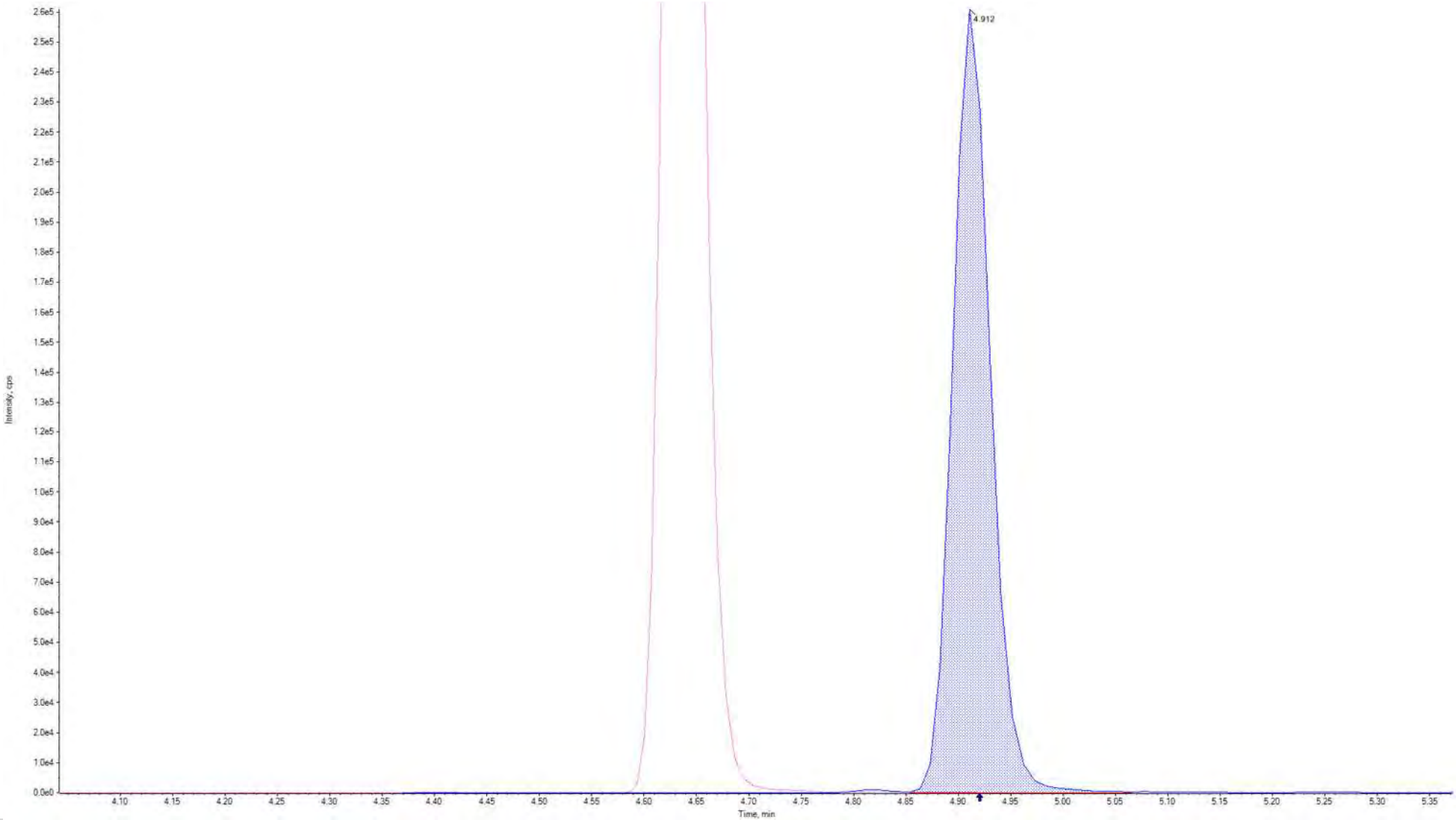
11Cl-PF3OUdS
Sample: IA1633STD-5 S/N:186176.6 Points Across peak:43

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

11Cl-PF3OUdS_2
Sample: IA1633STD-5 S/N:4873.0 Points Across peak:47

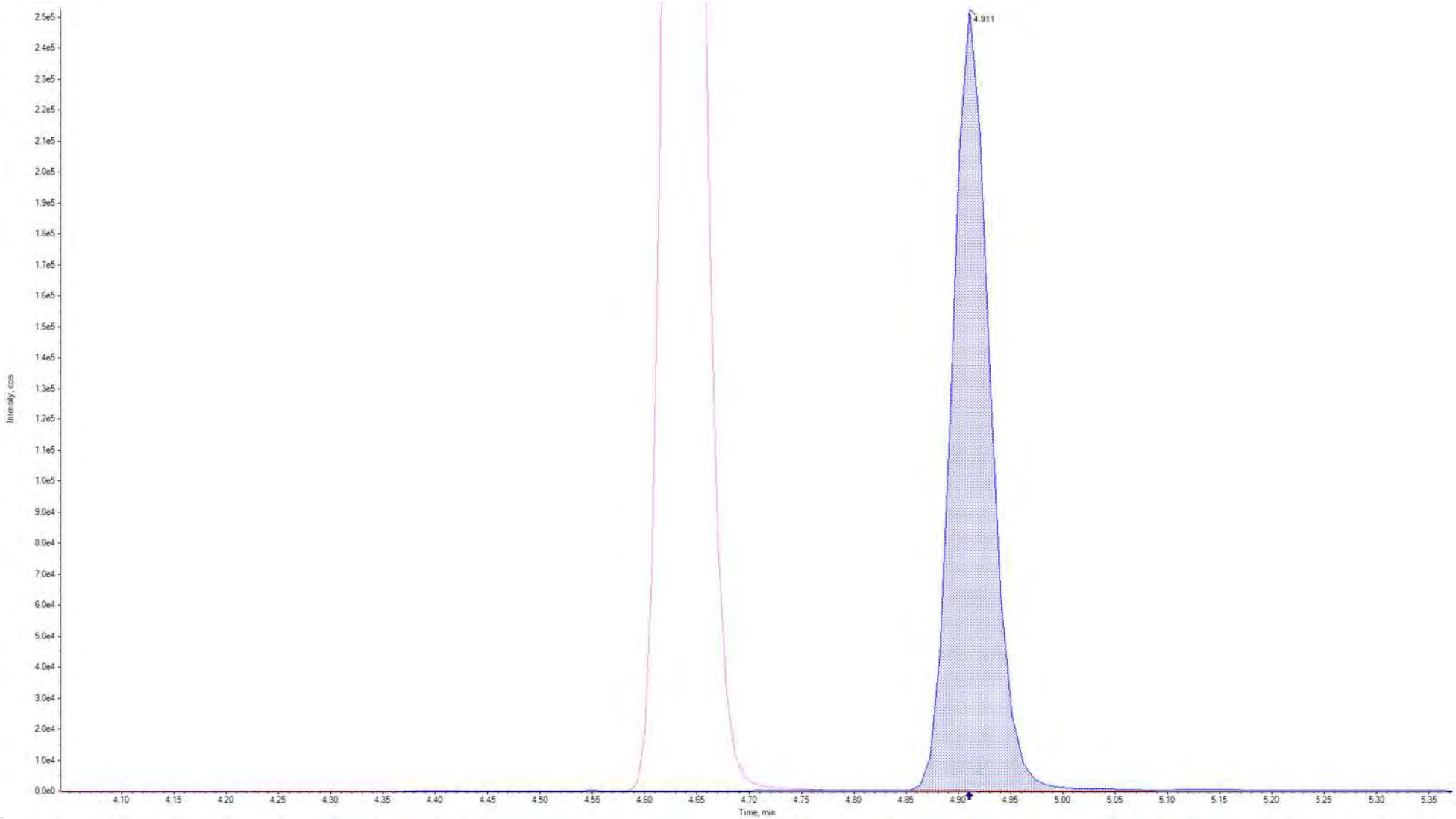
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

3:3FTCA
Sample: IA1633STD-5 S/N:4666.5 Points Across peak:22



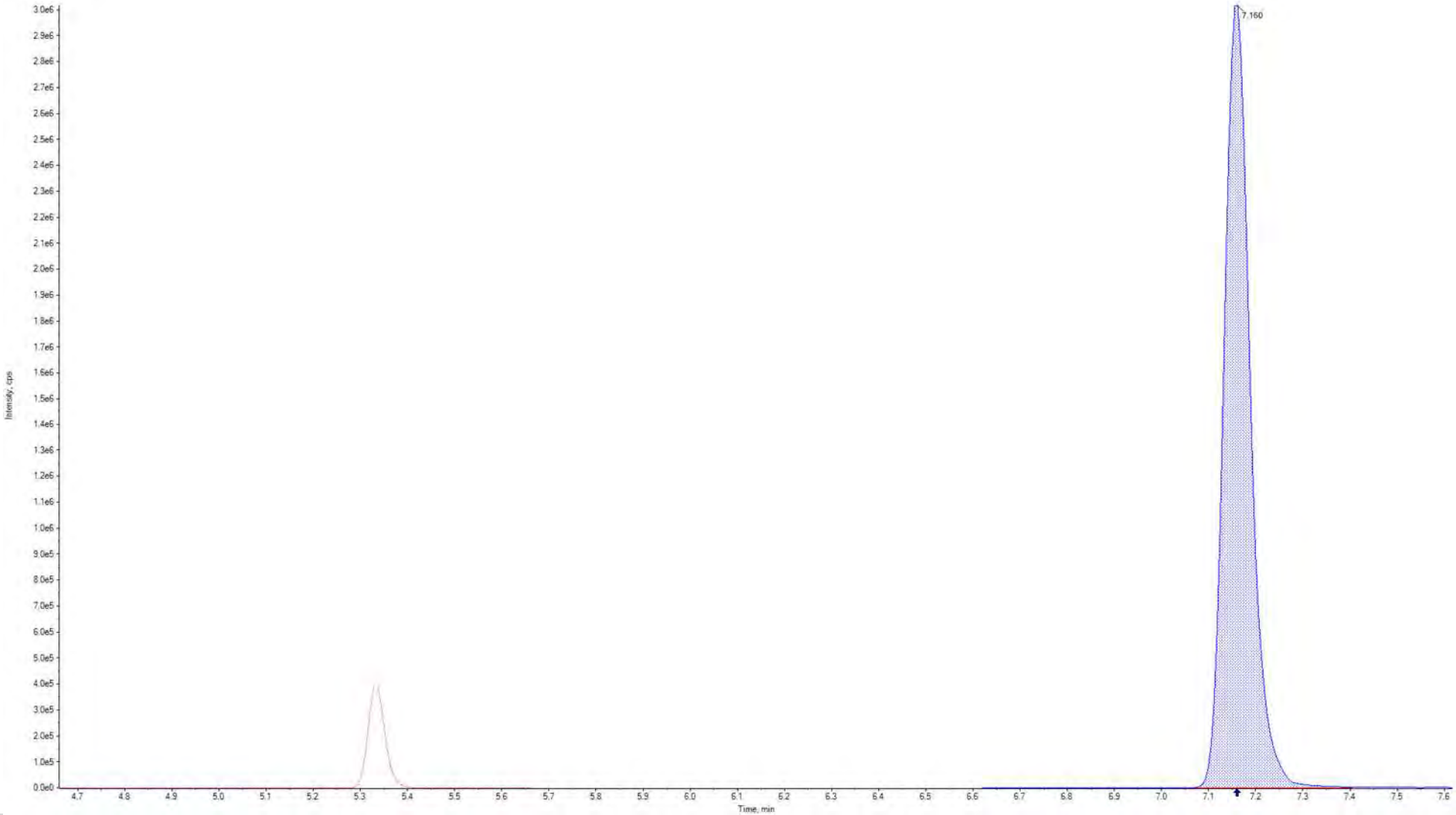
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

3:3FTCA_2
Sample: IA1633STD-5 S/N:5331.1 Points Across peak:26



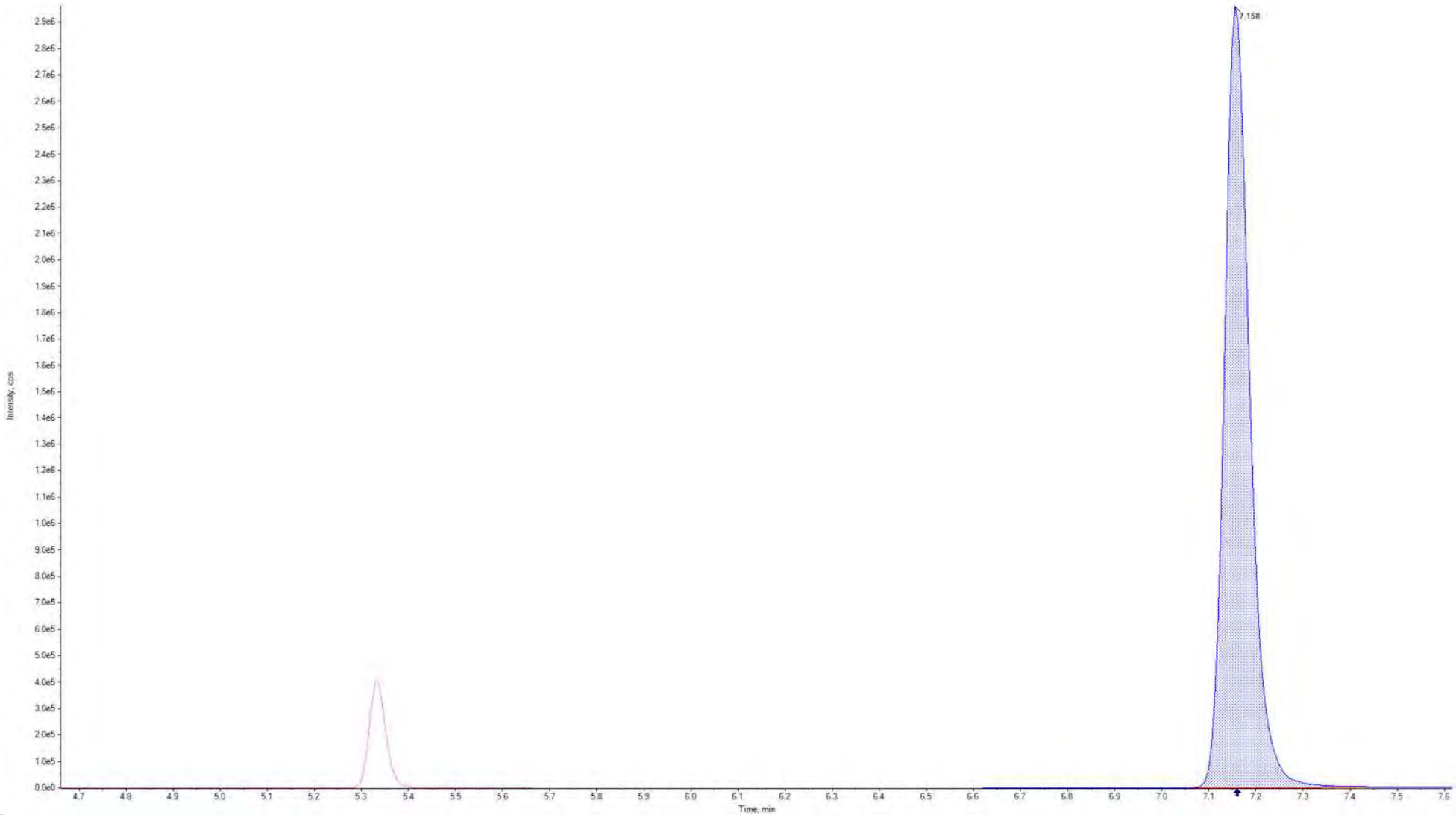
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

5:3FTCA
Sample: IA1633STD-5 S/N:30755.0 Points Across peak:61



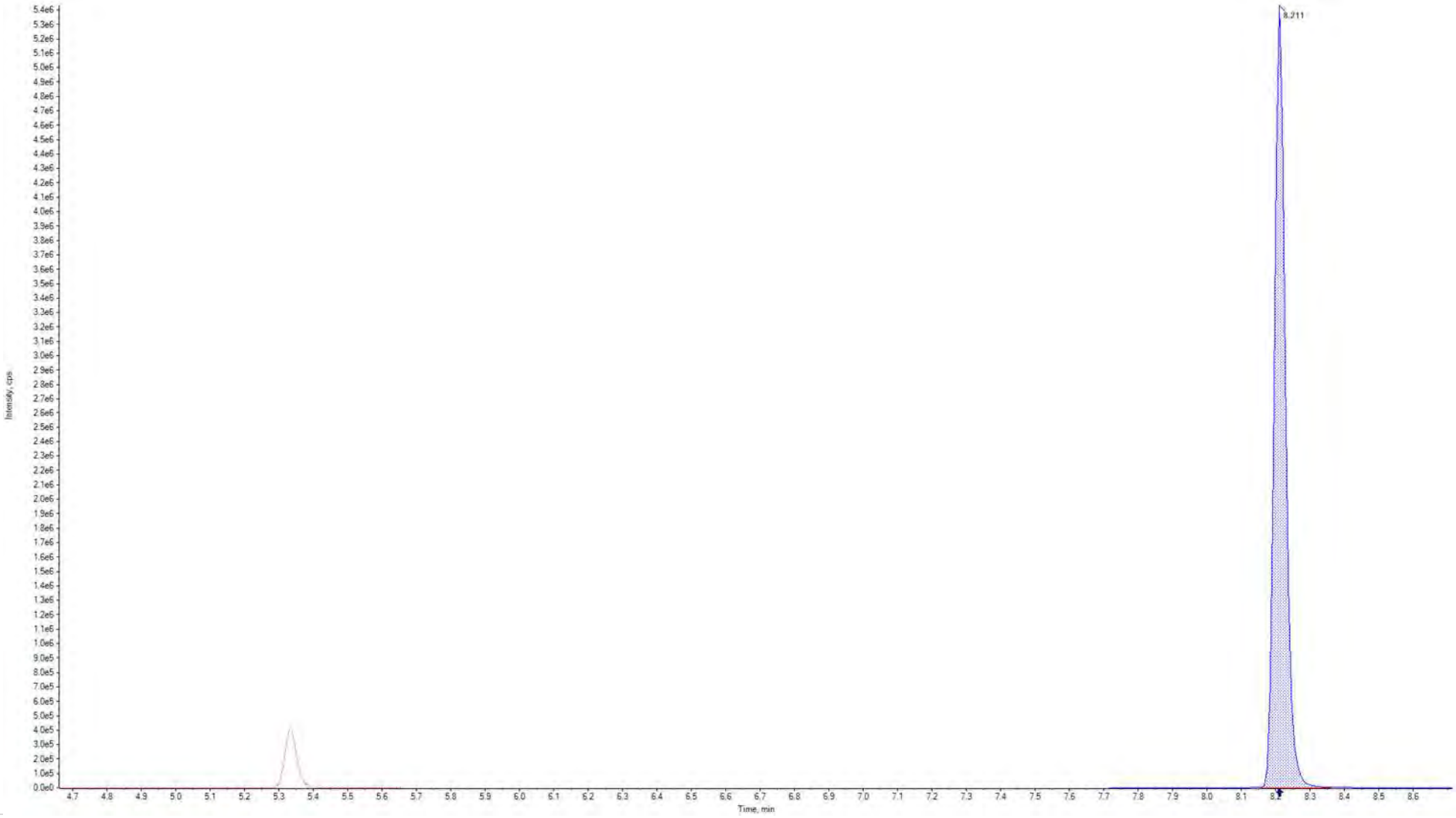
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

5:3FTCA_2
Sample: IA1633STD-5 S/N:18561.2 Points Across peak:72



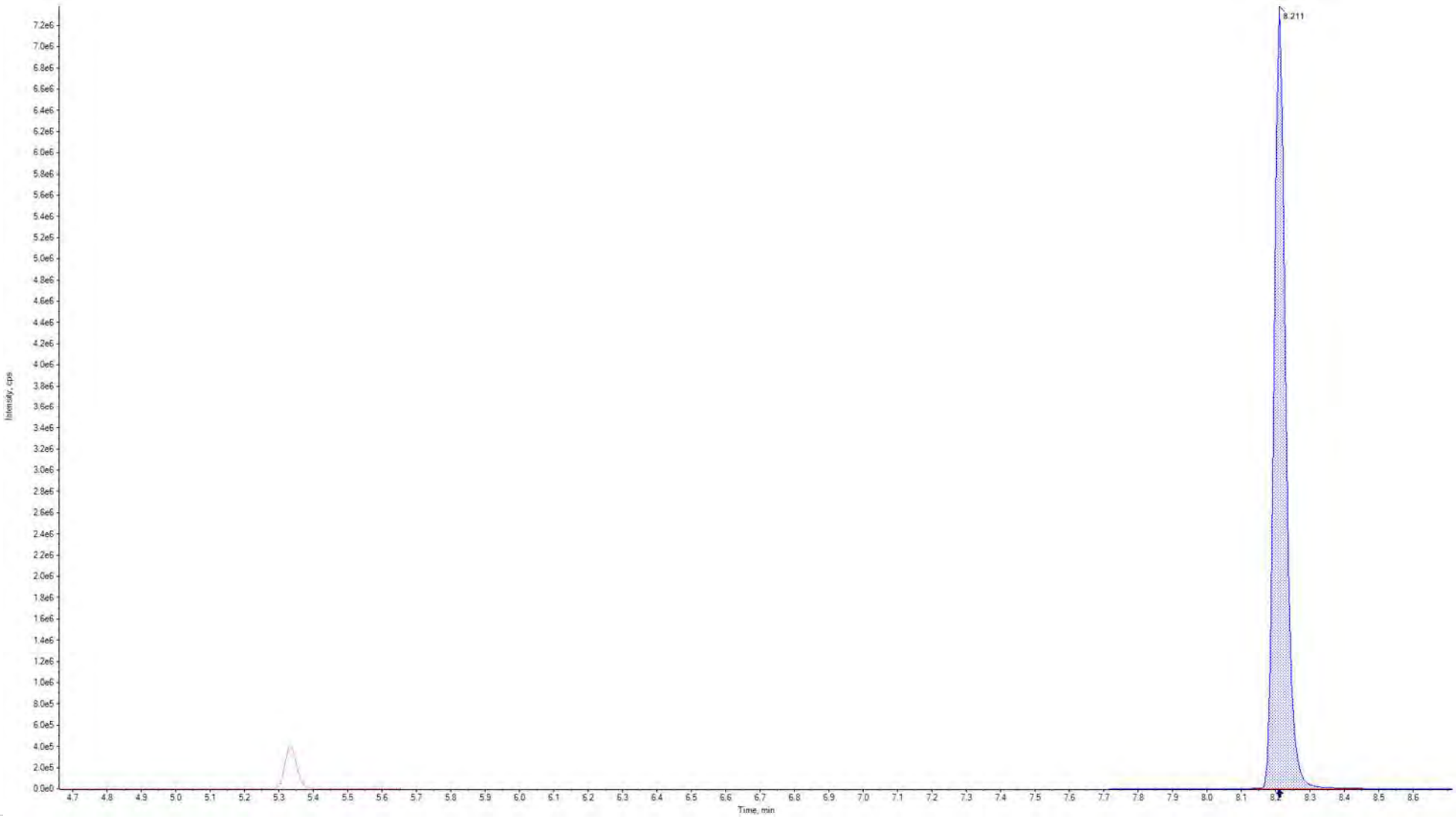
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

7:3FTCA
Sample: IA1633STD-5 S/N:14782.8 Points Across peak:24



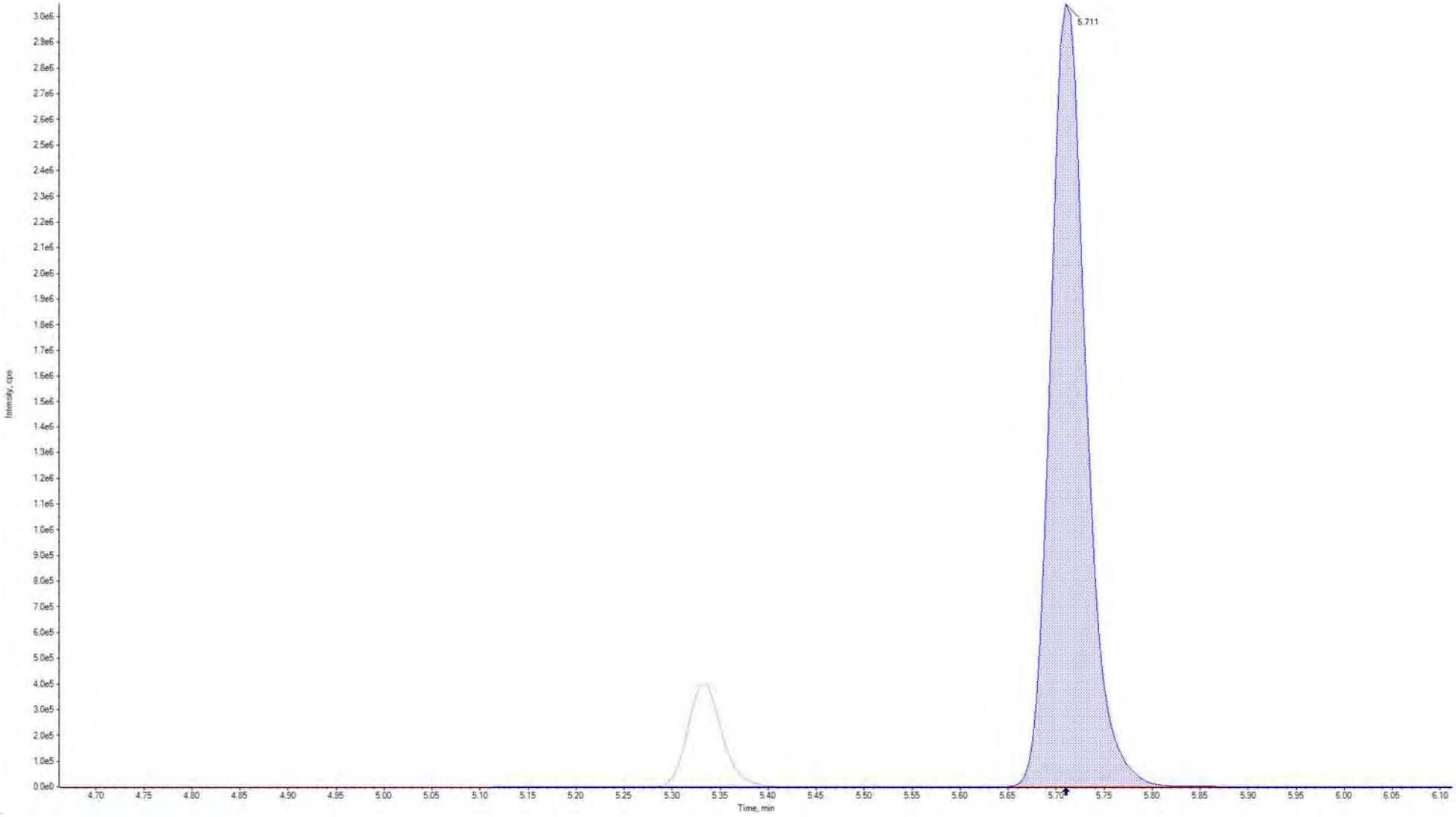
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

7:3FTCA_2
Sample: IA1633STD-5 S/N:44360.9 Points Across peak:48



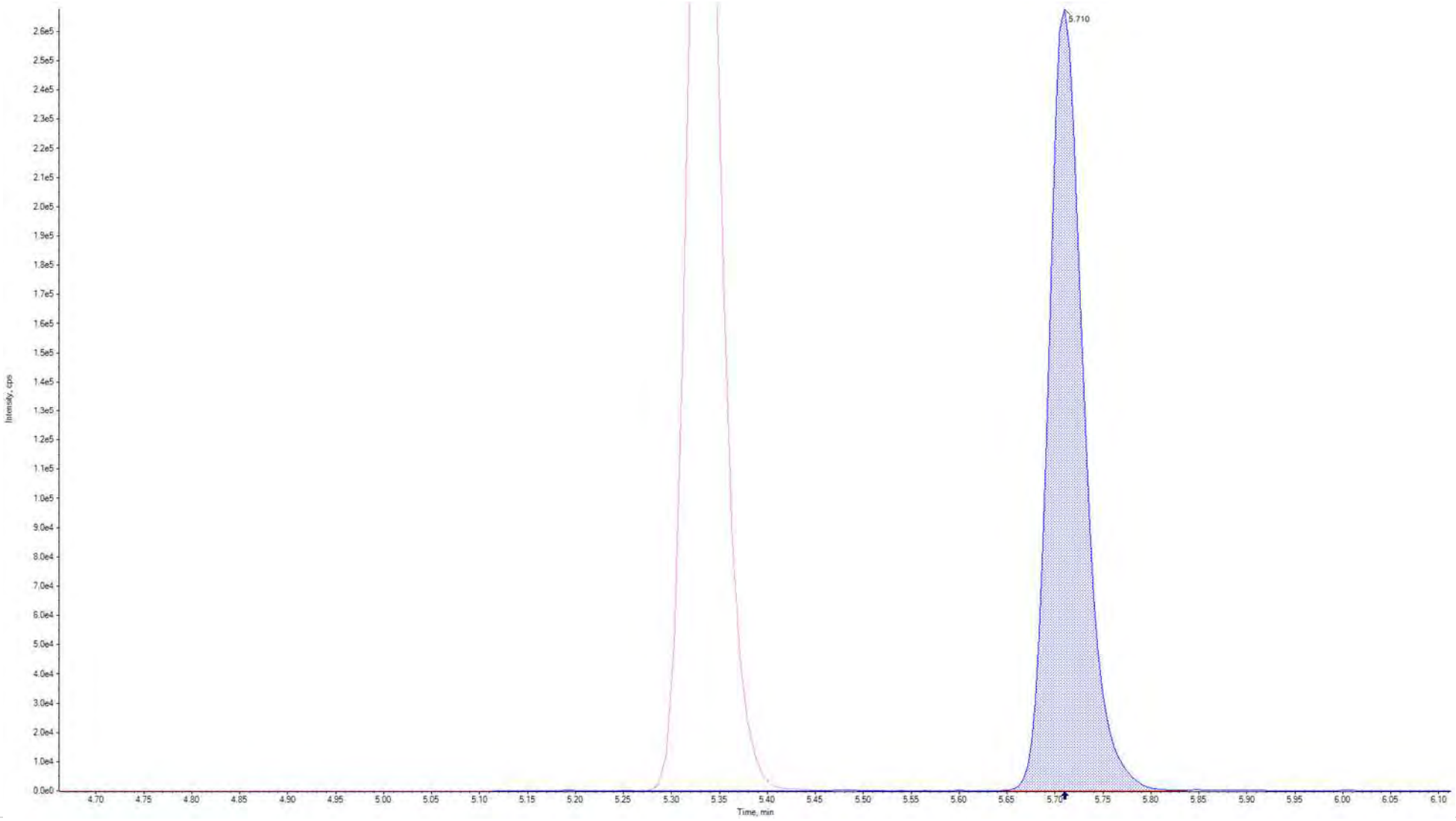
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFEESA
Sample: IA1633STD-5 S/N:17438.8 Points Across peak:58



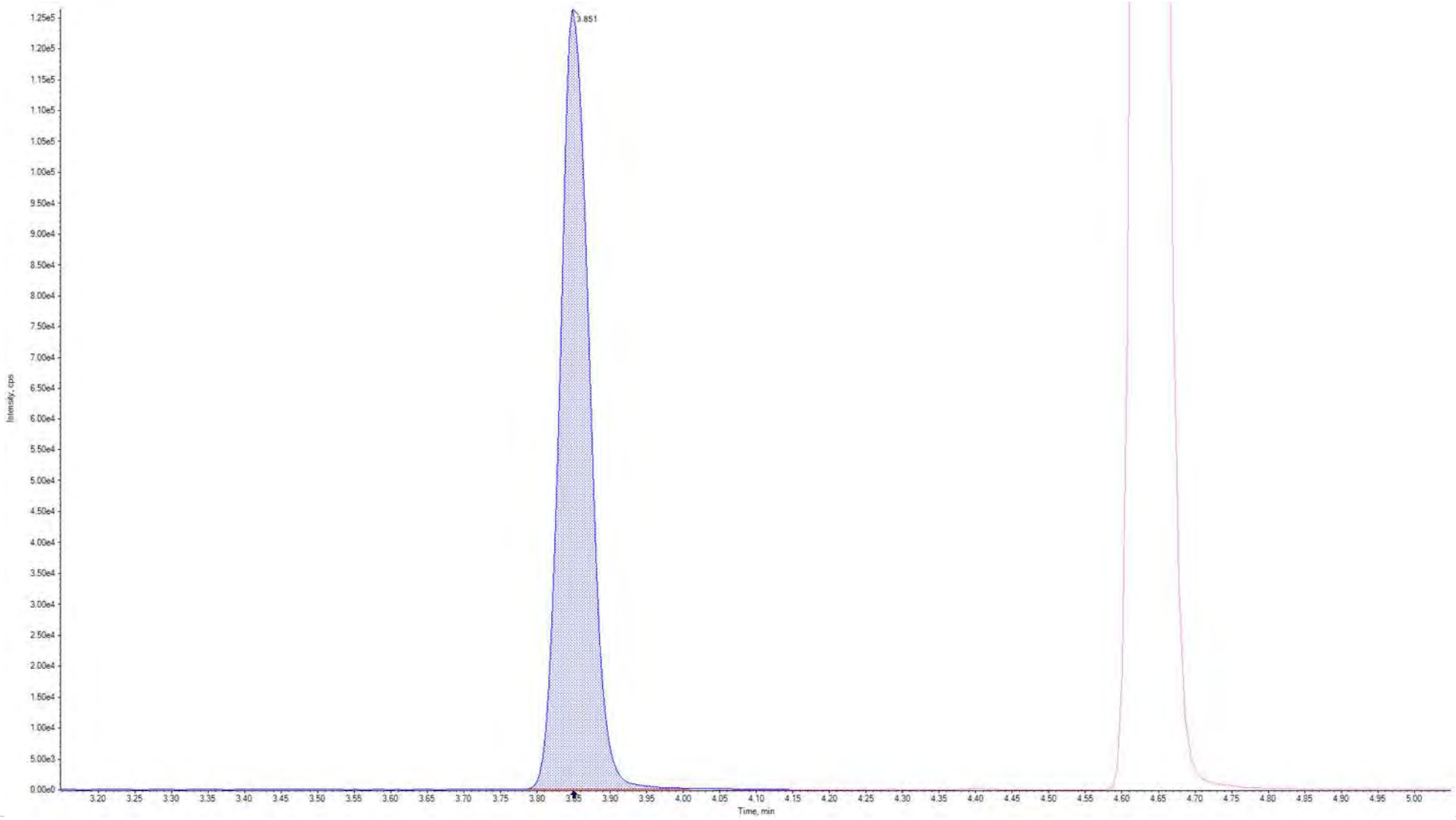
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFEESA_2
Sample: IA1633STD-5 S/N:7182.5 Points Across peak:44



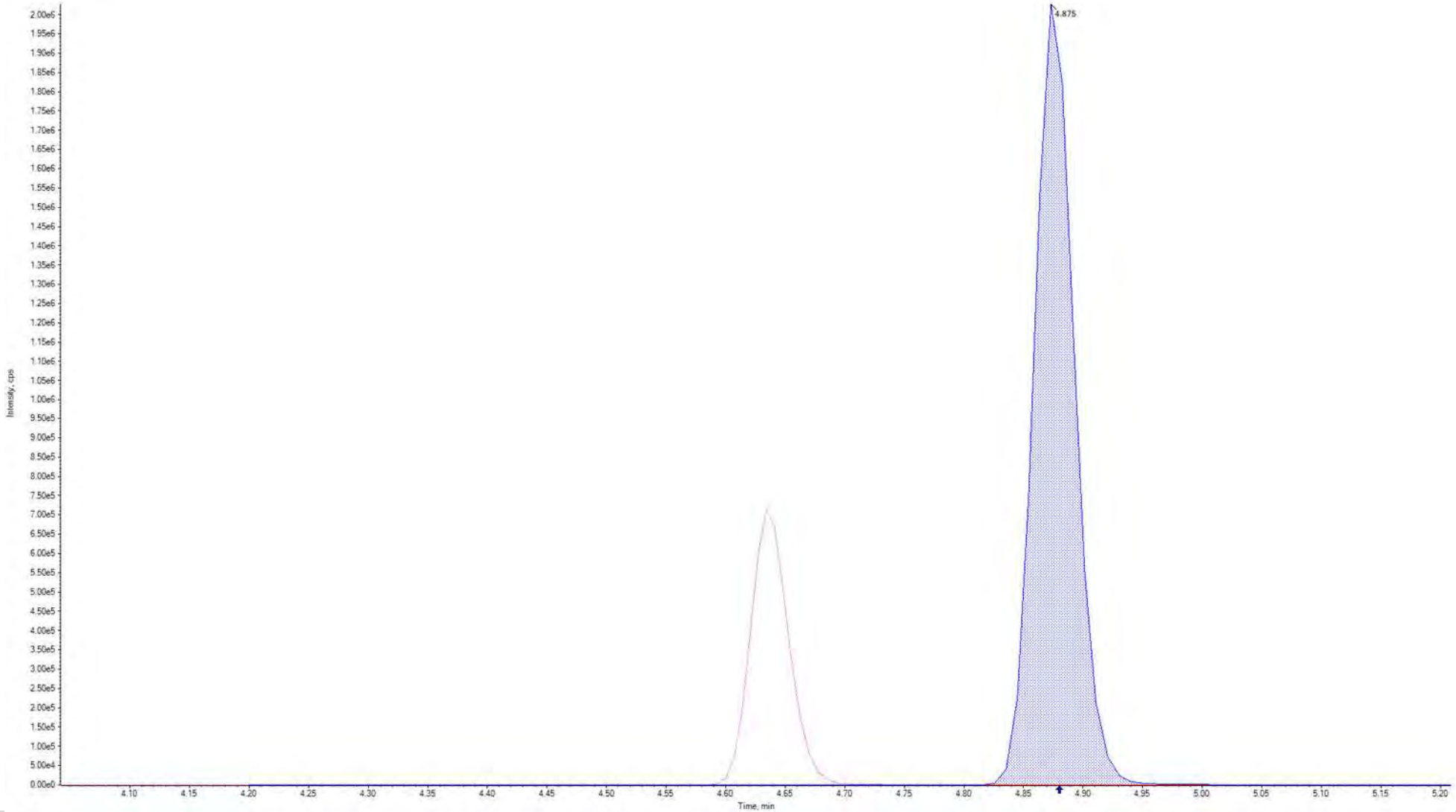
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFMPA
Sample: IA1633STD-5 S/N:4882.7 Points Across peak:59



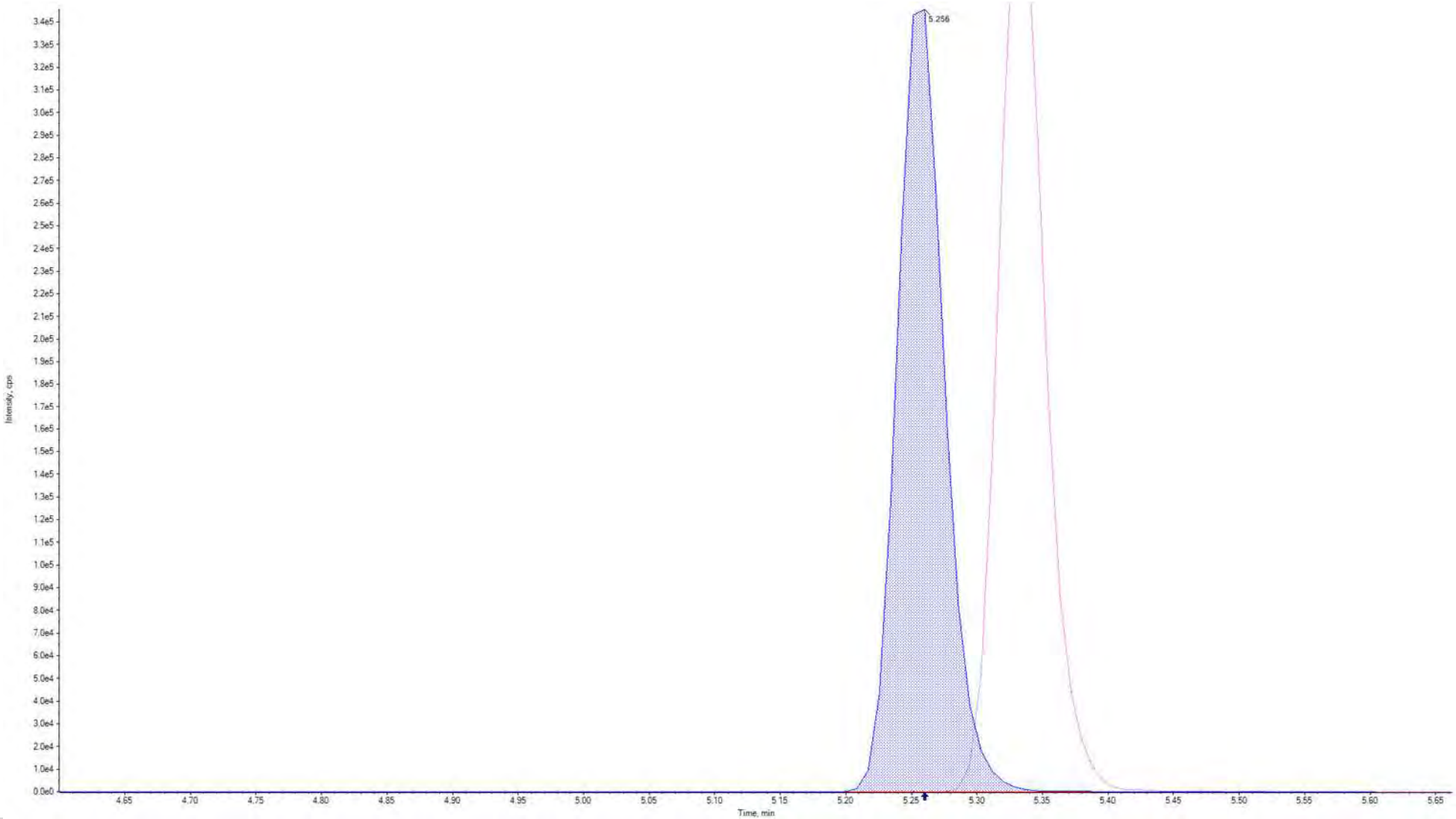
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFMBA
Sample: IA1633STD-5 S/N:12086.9 Points Across peak:30



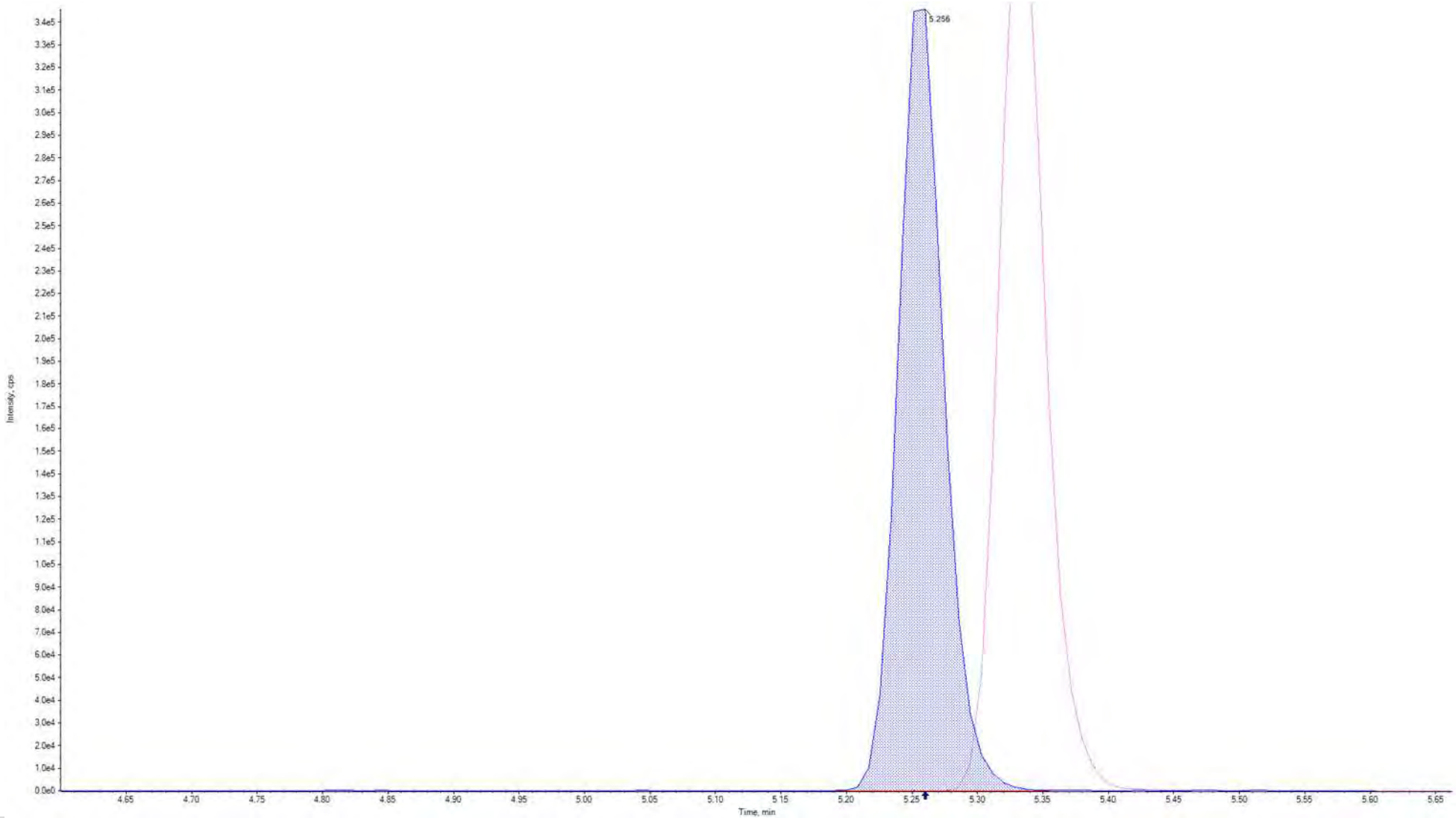
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NFDHA
Sample: IA1633STD-5 S/N:5006.5 Points Across peak:31



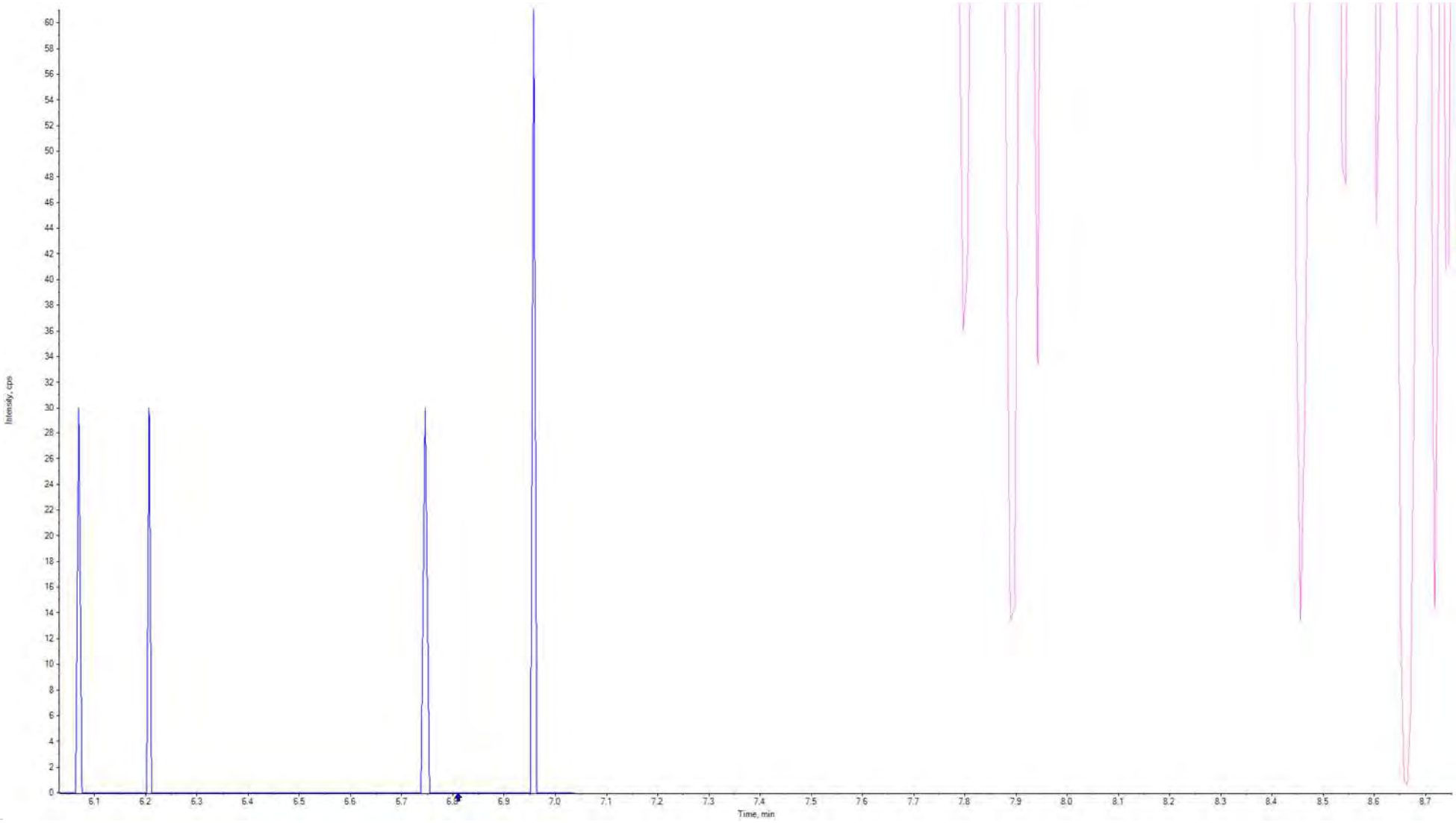
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NFDHA_2
Sample: IA1633STD-5 S/N:3249.6 Points Across peak:23



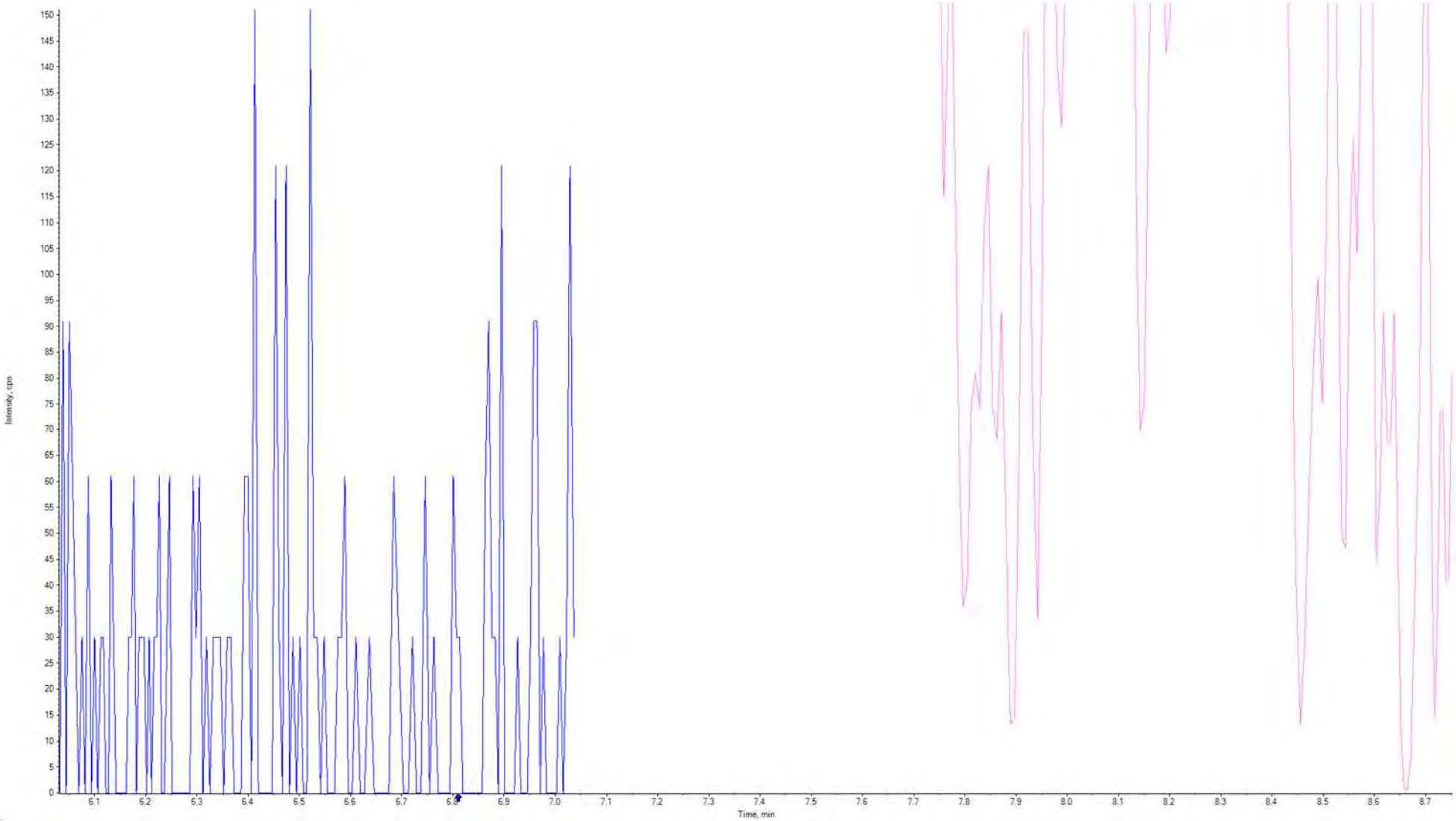
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

TDCA
Sample: IA1633STD-5 S/N:N/A Points Across peak:N/A



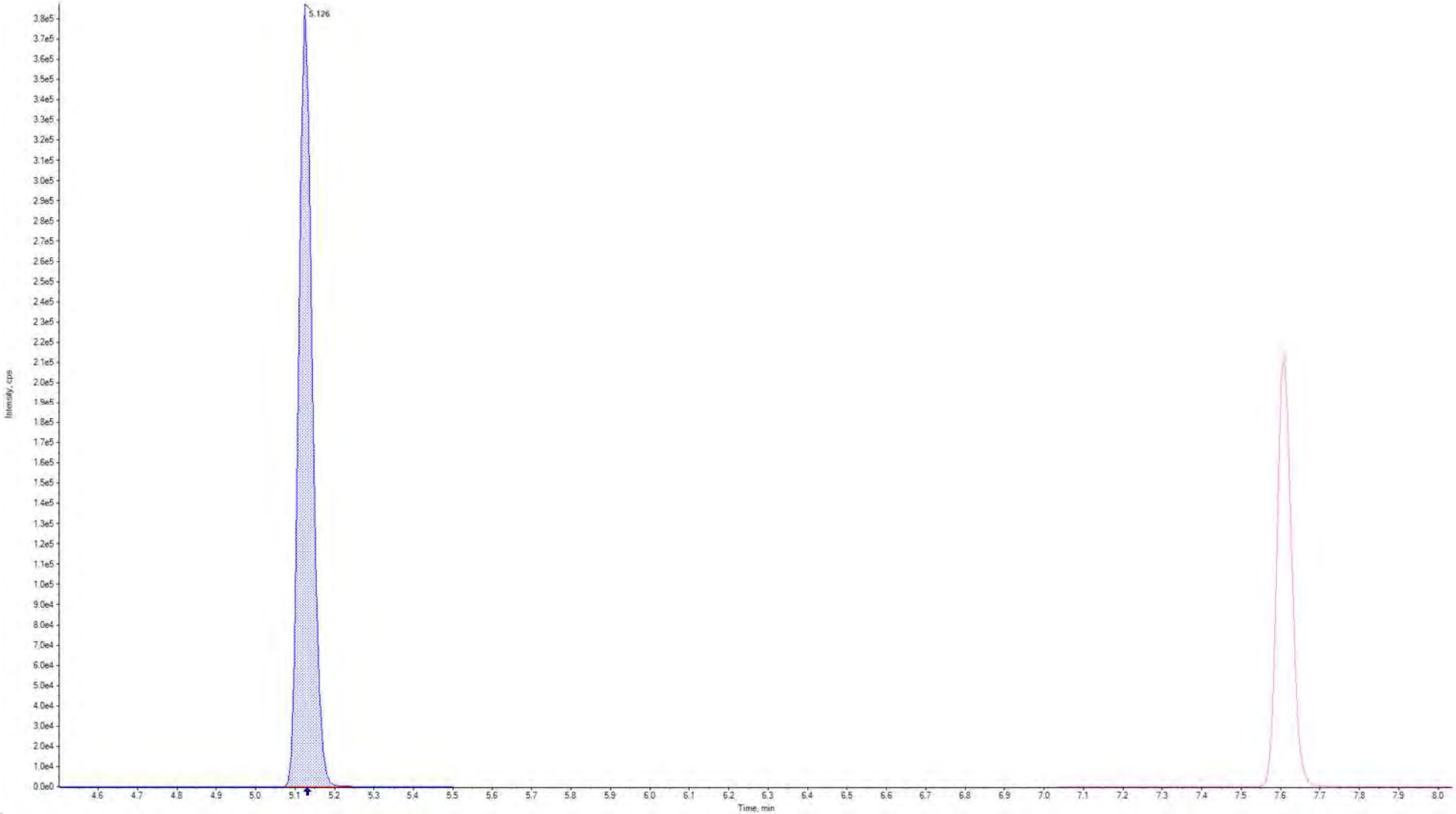
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

TDCA_2
Sample: IA1633STD-5 S/N:N/A Points Across peak:N/A



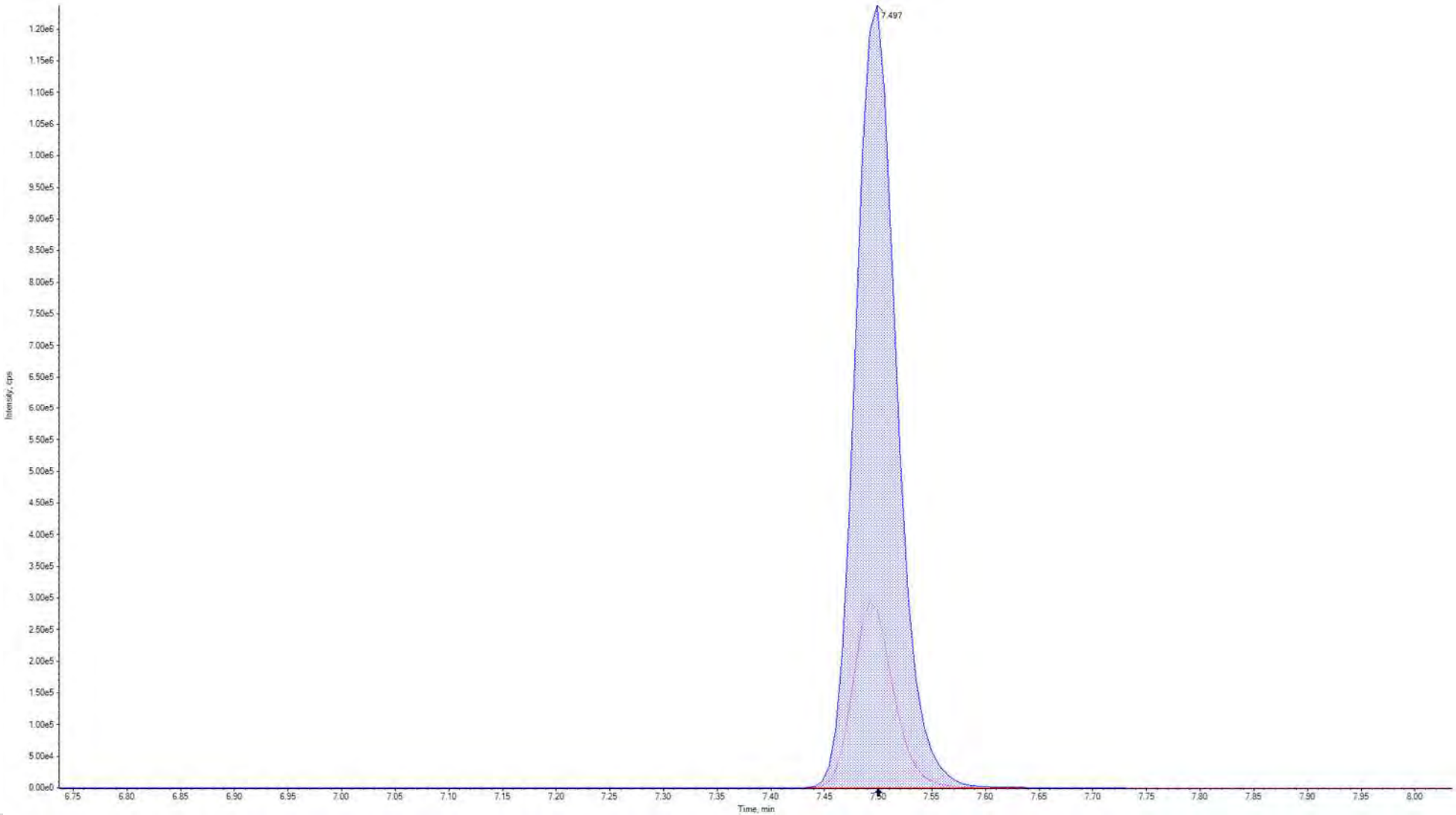
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

13C2D4-4:2FTS
Sample: IA1633STD-5 S/N:5794.2 Points Across peak:33

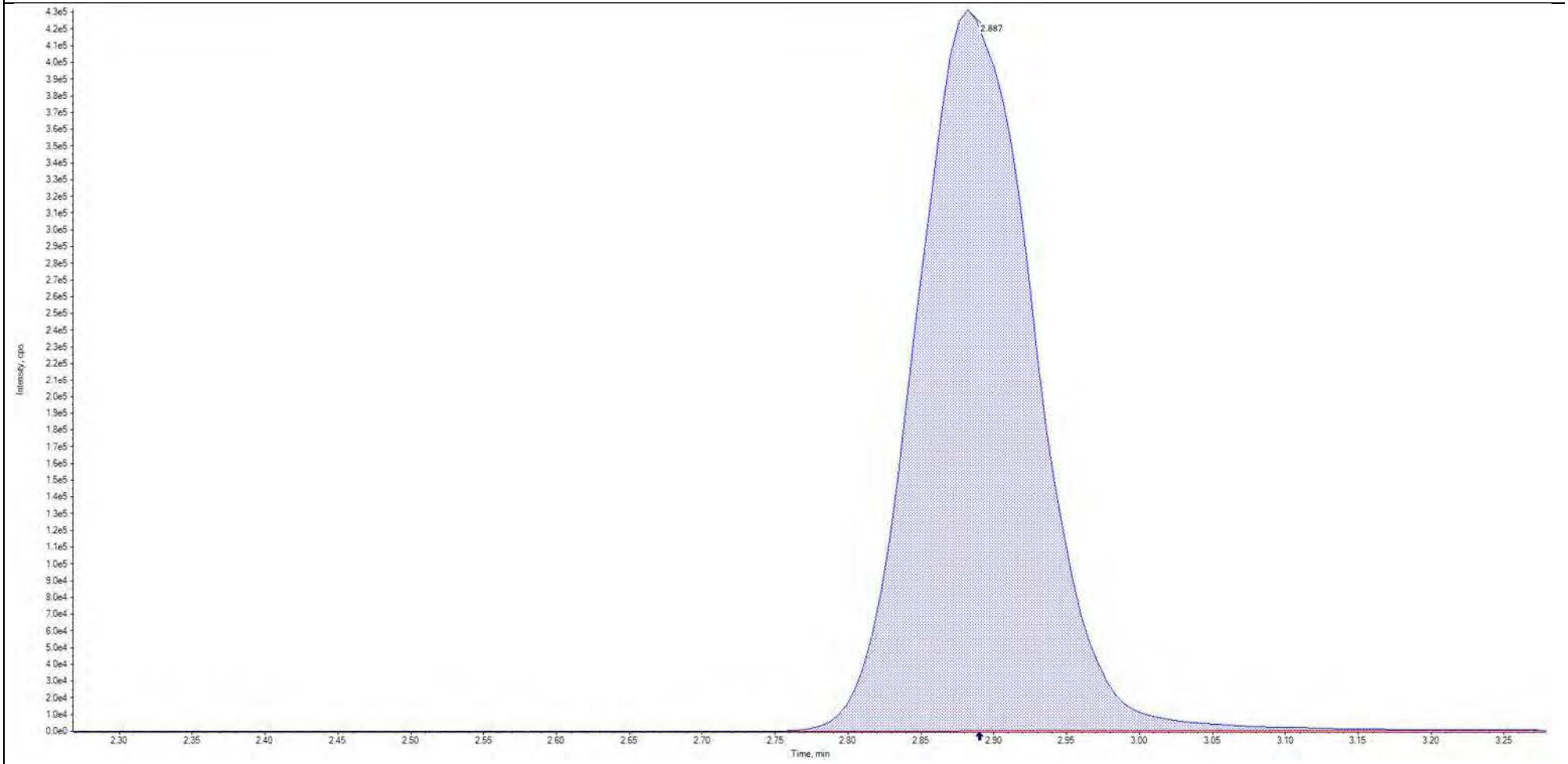


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

13C2-PFOA
Sample: IA1633STD-5 S/N:6630373.2 Points Across peak:40

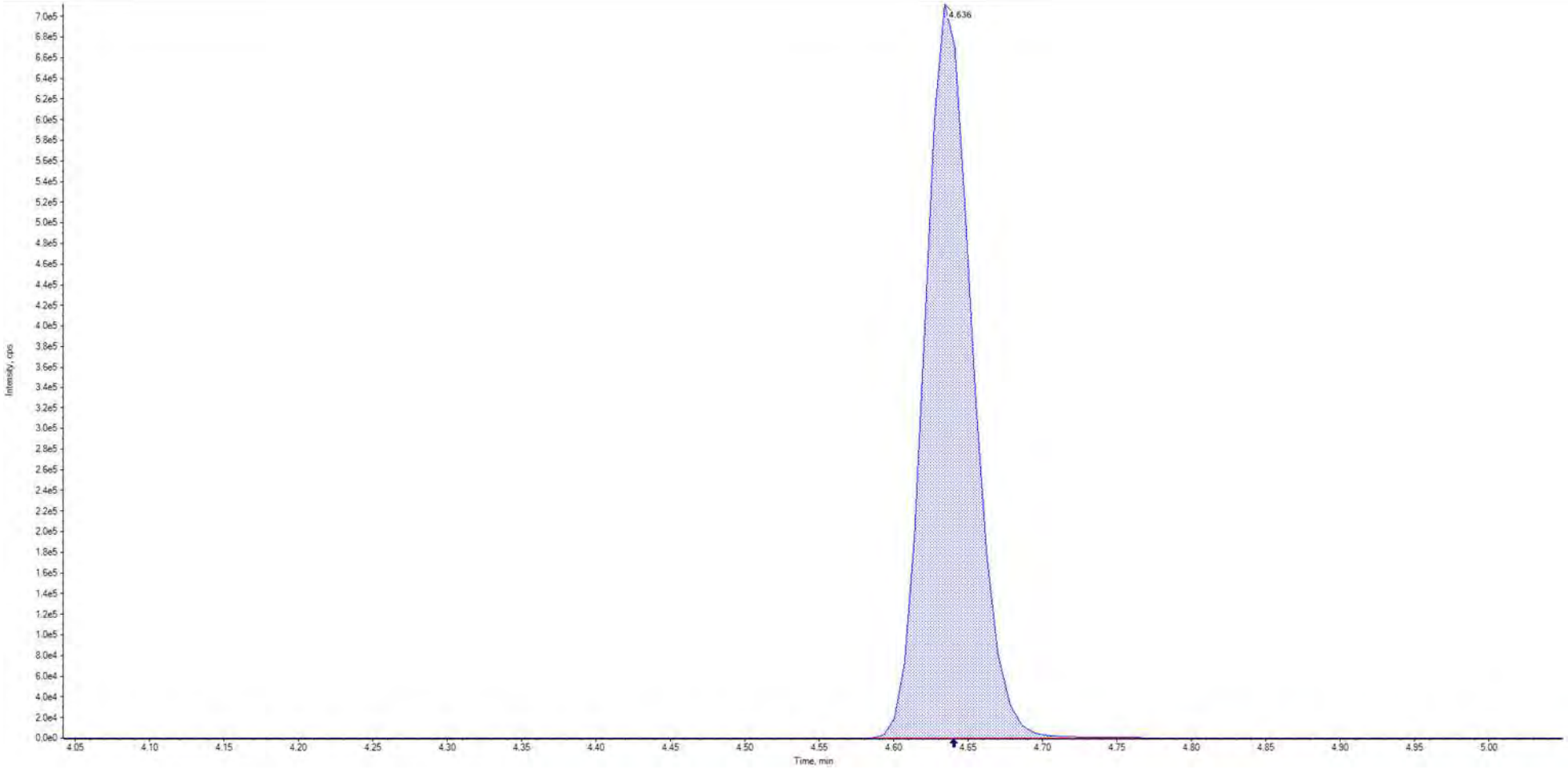


13C4-PFBA
Sample: IA1633STD-5

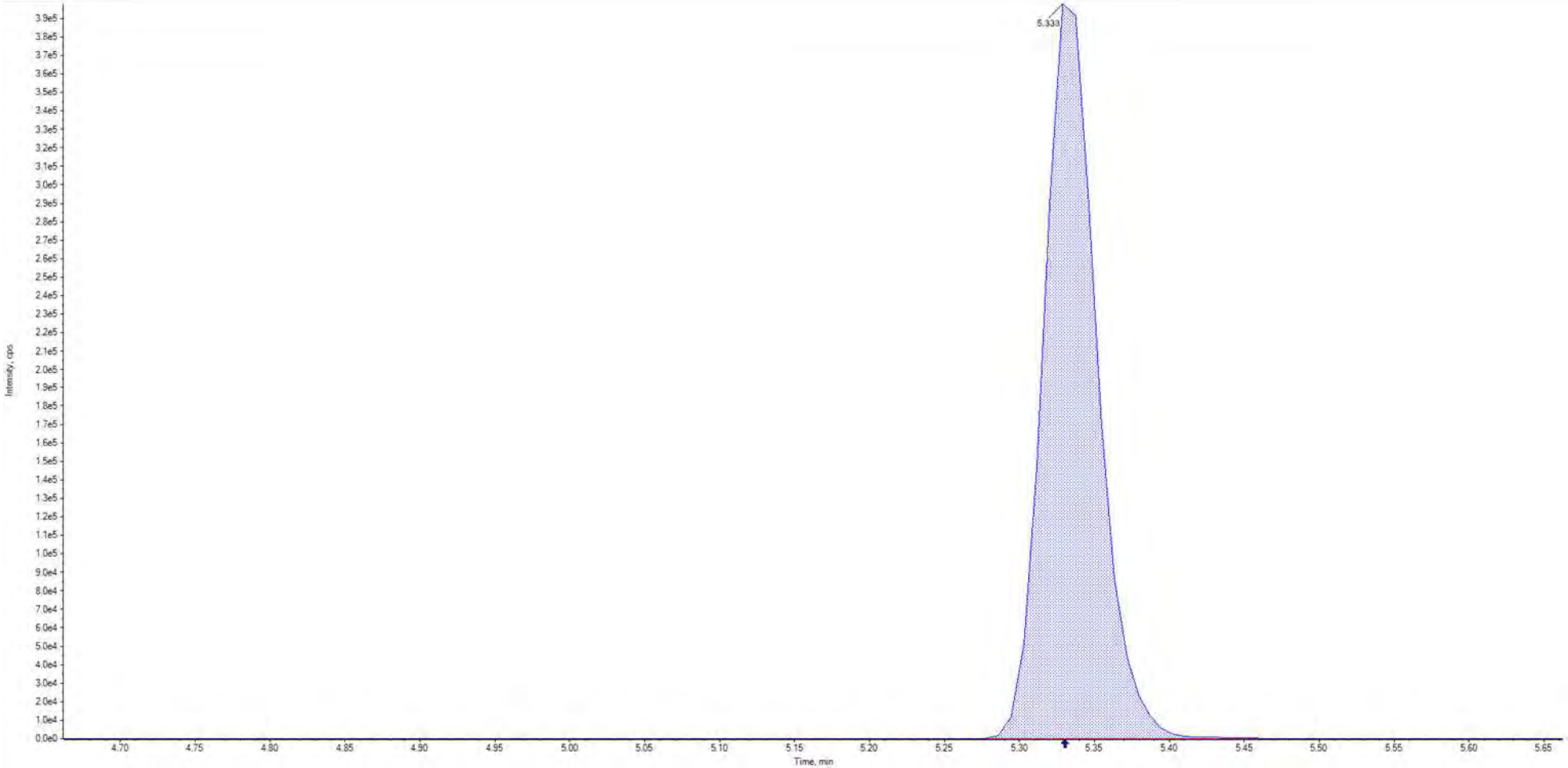


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

13C5-PFPeA
Sample: IA1633STD-5

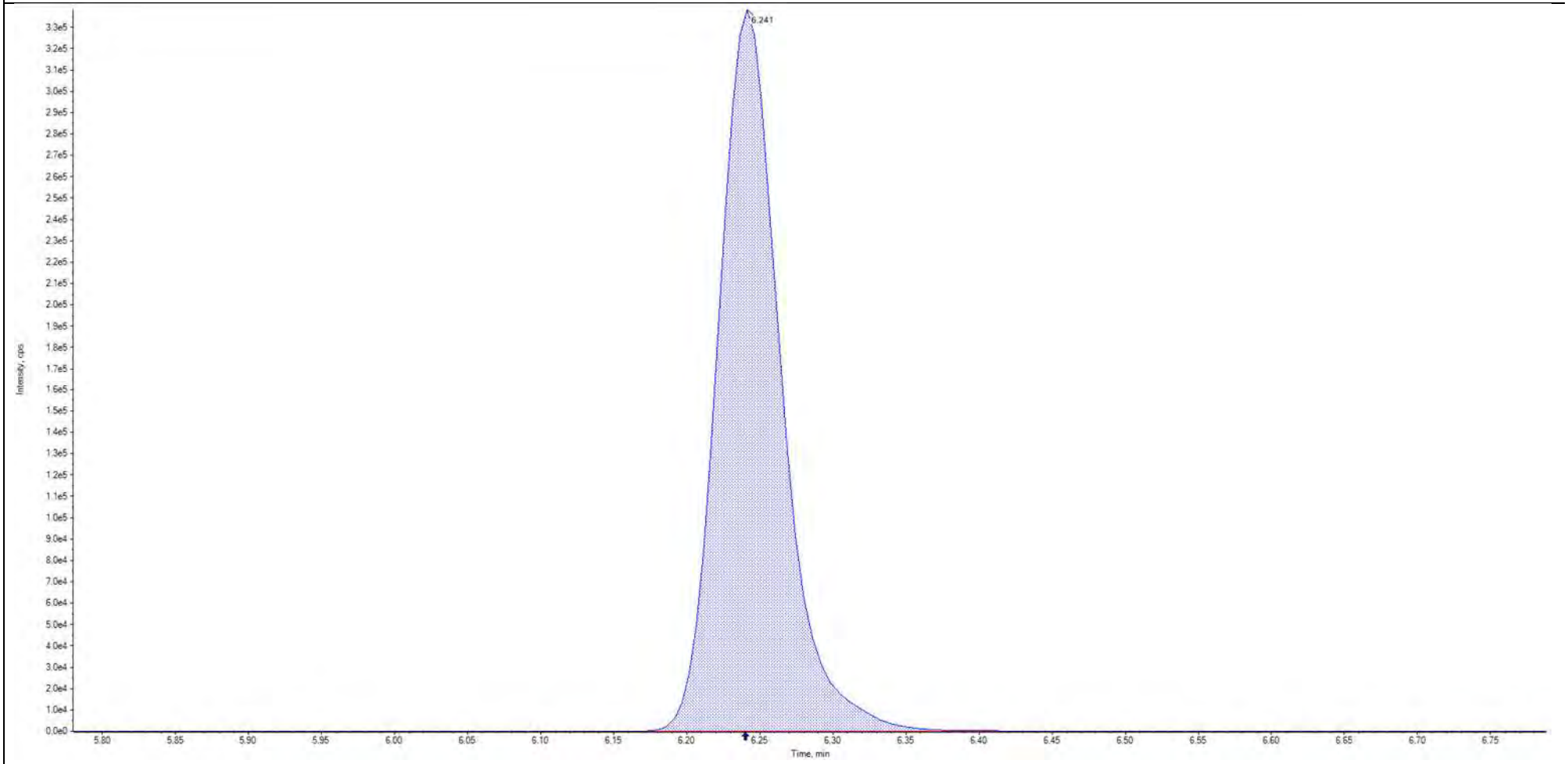


13C5-PFHxA
Sample: IA1633STD-5

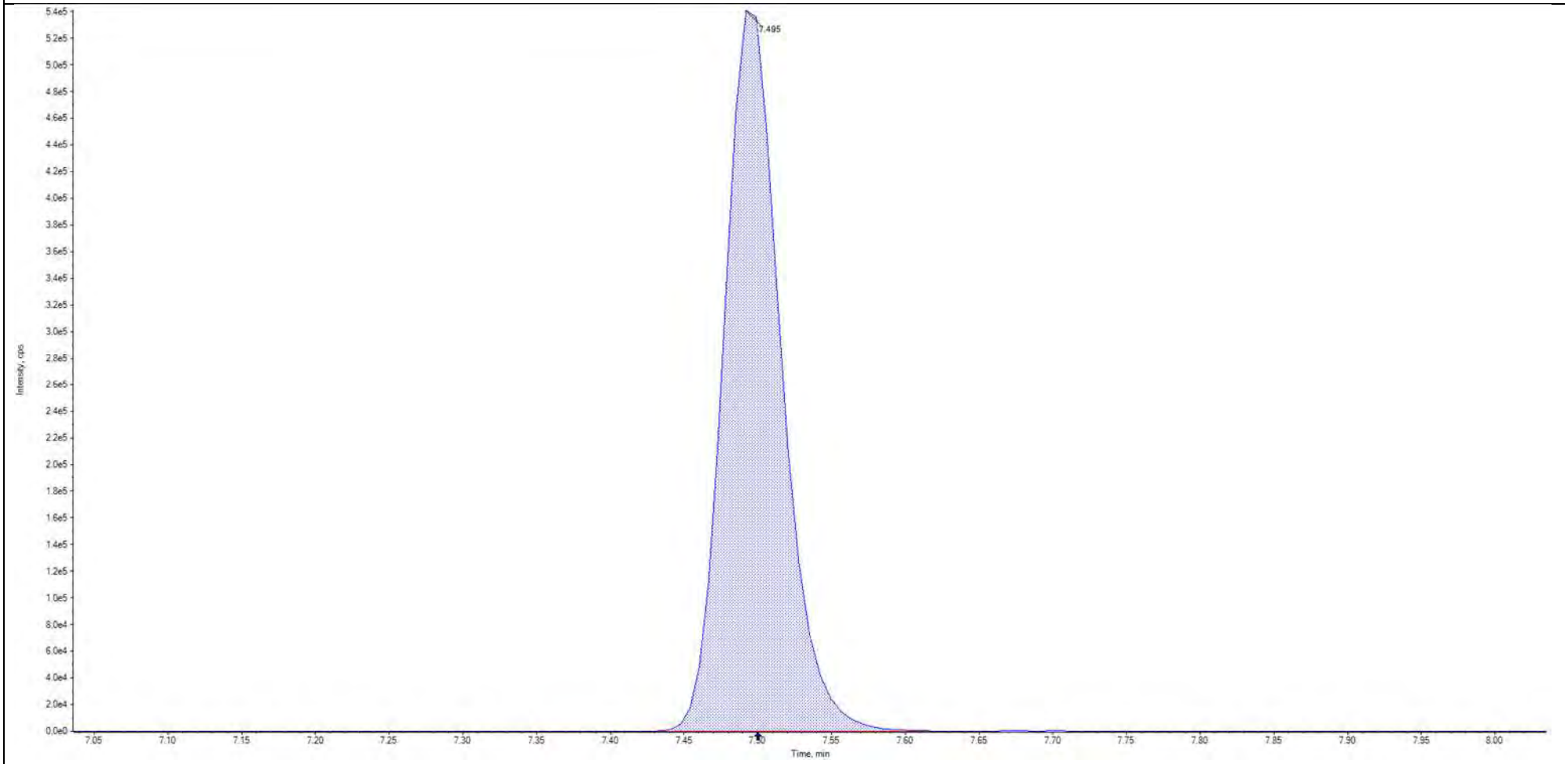


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

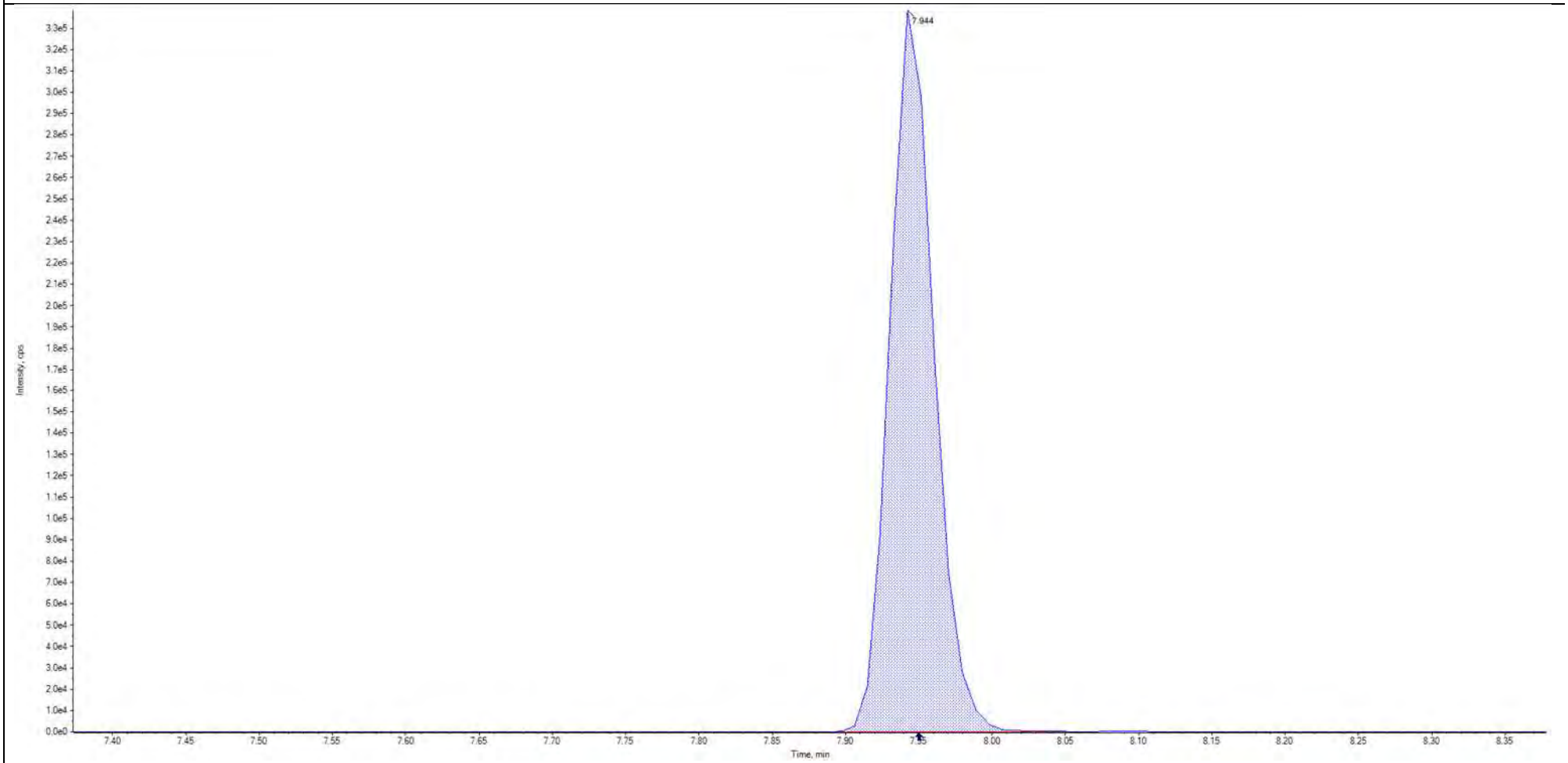
13C4-PFHpA
Sample: IA1633STD-5



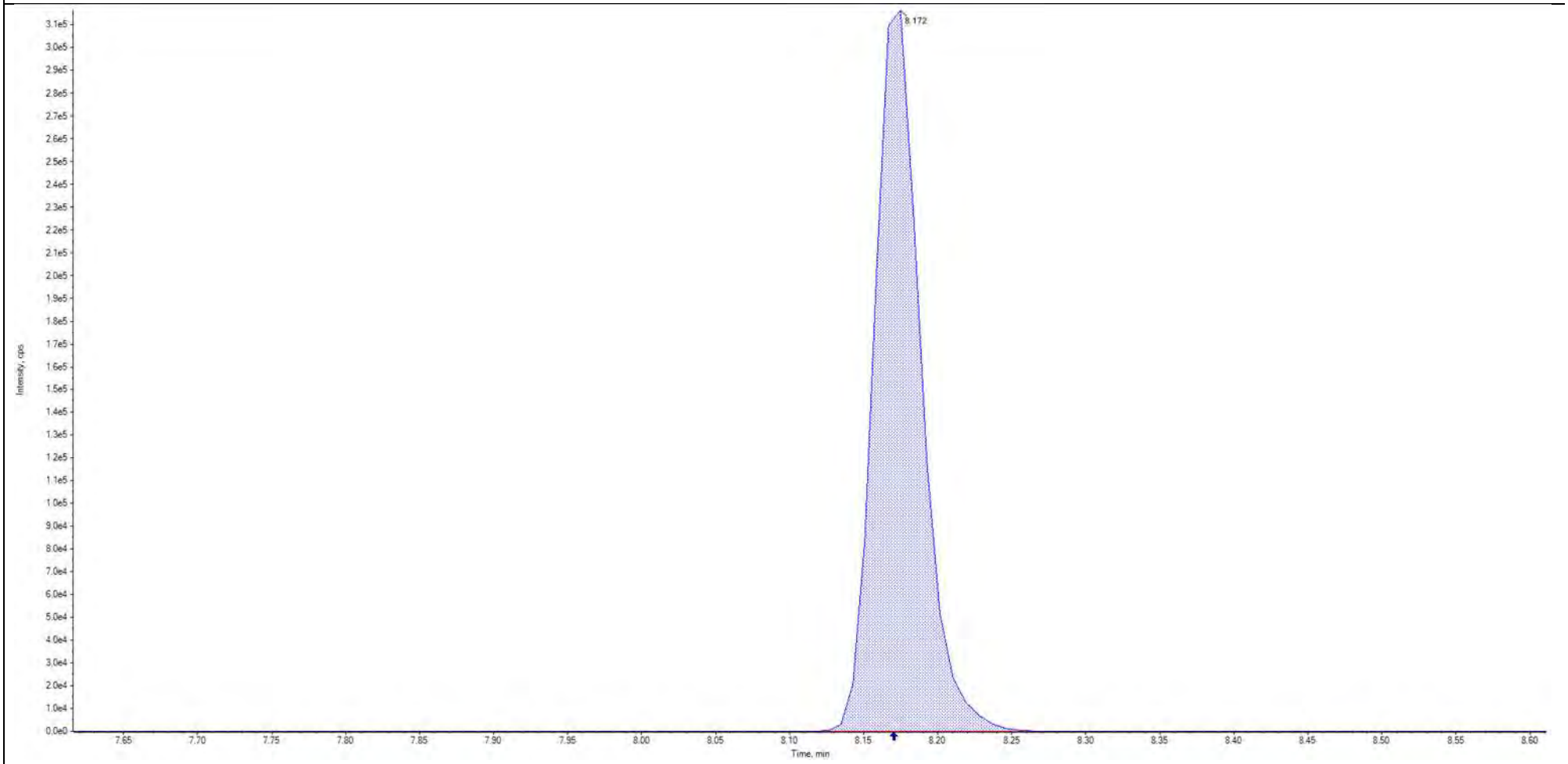
13C8-PFOA
Sample: IA1633STD-5



13C9-PFNA
Sample: IA1633STD-5

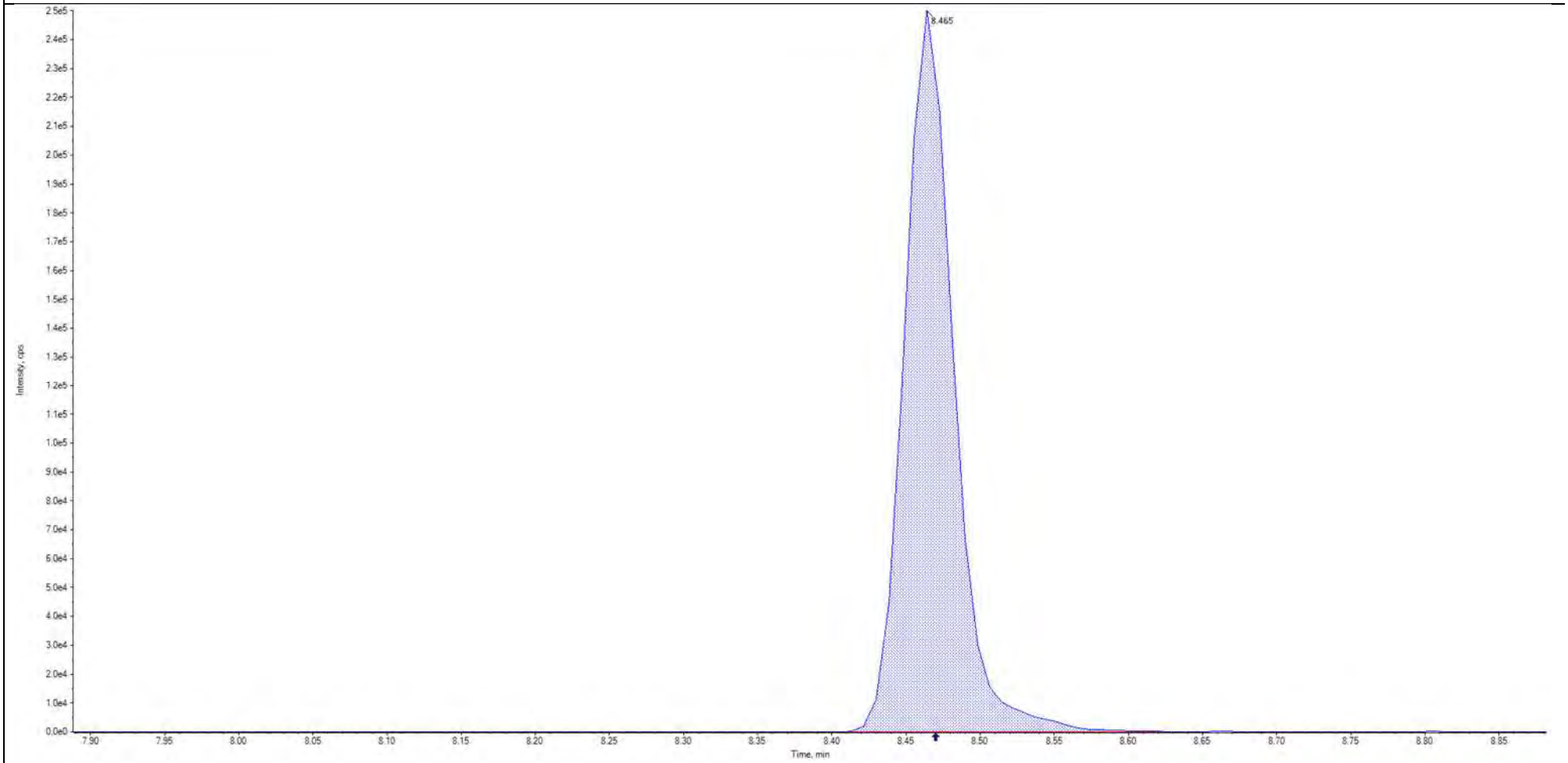


13C6-PFDA
Sample: IA1633STD-5

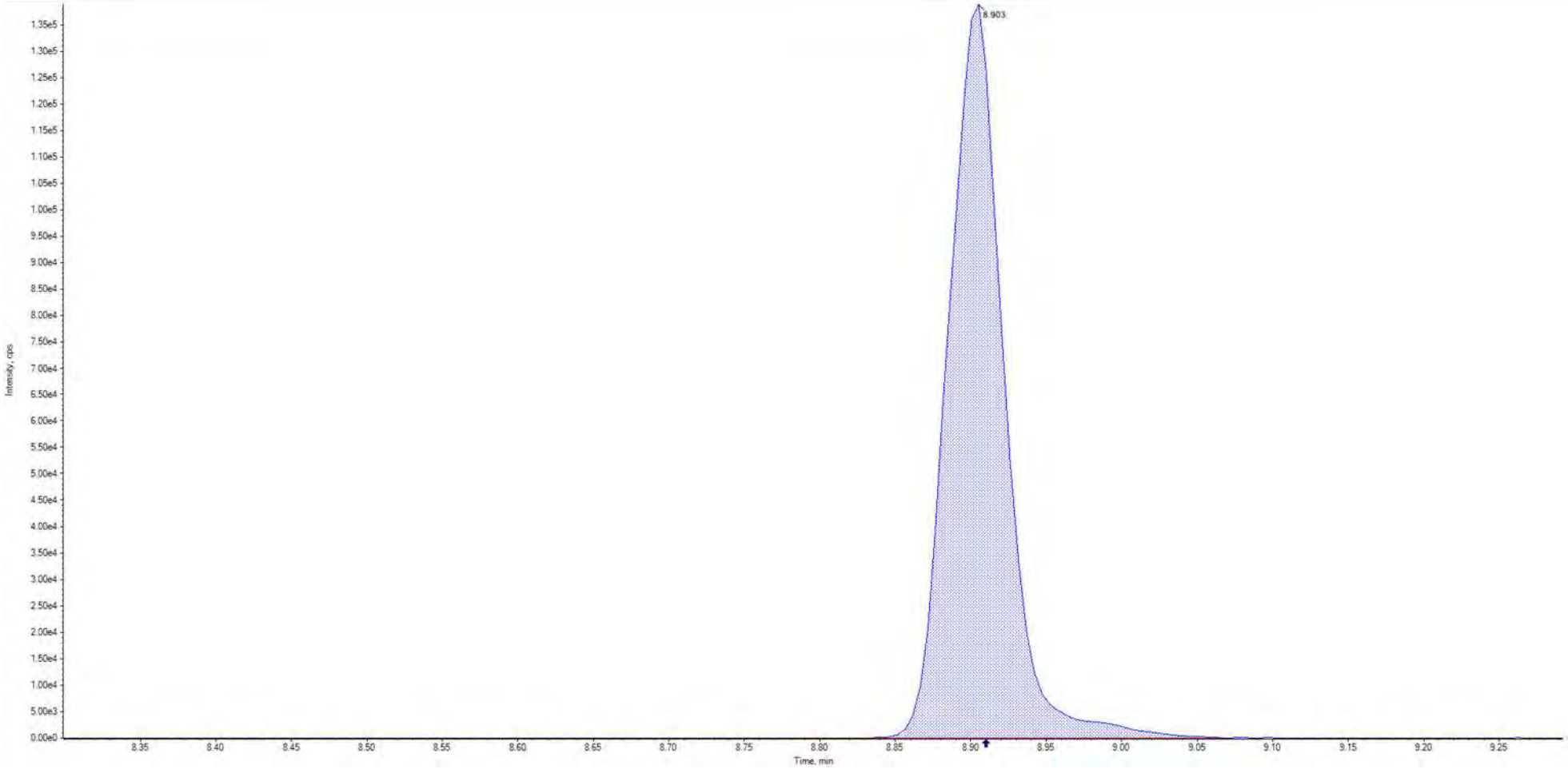


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

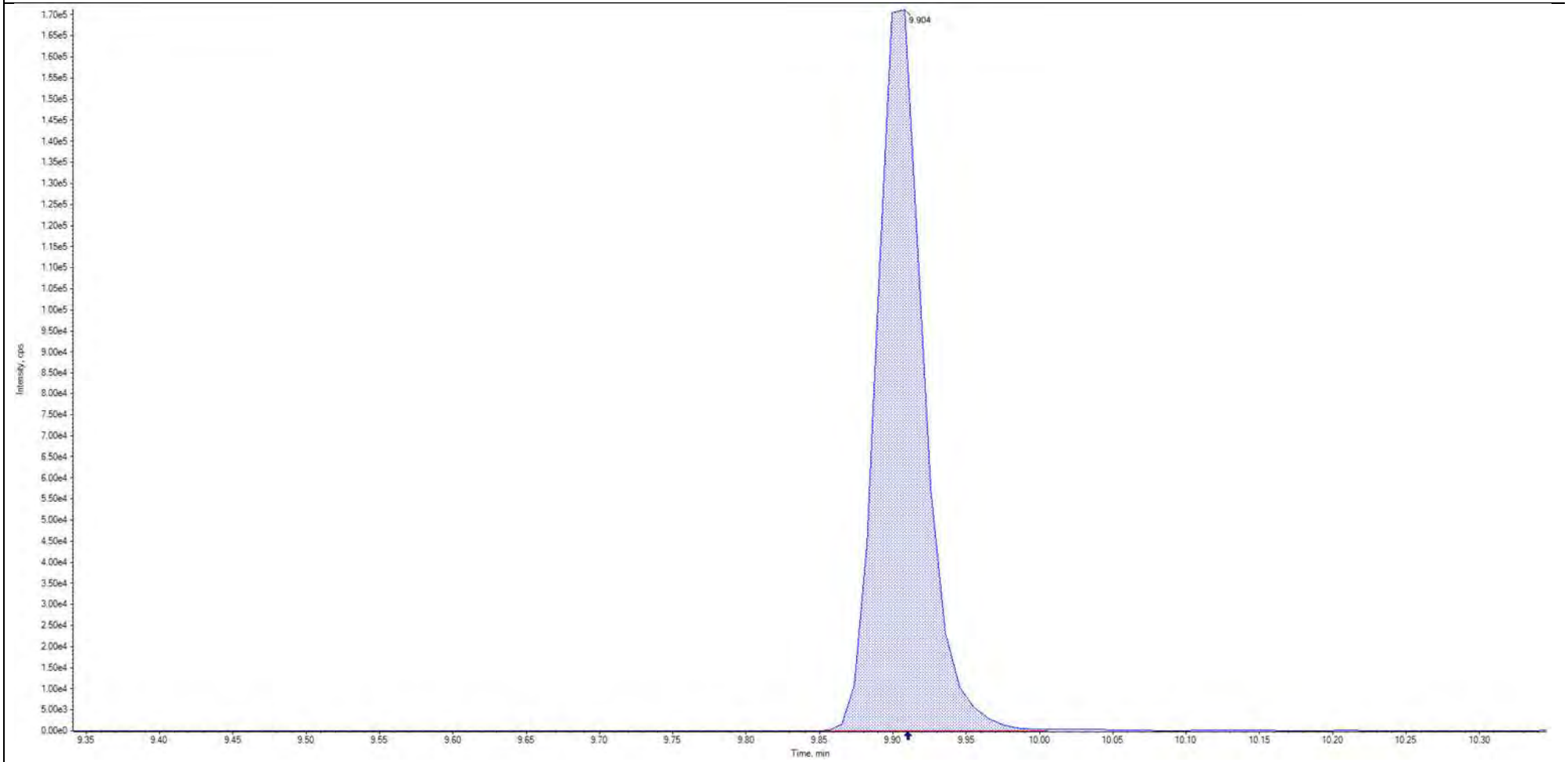
13C7-PFUnA
Sample: IA1633STD-5



13C2-PFDoA
Sample: IA1633STD-5

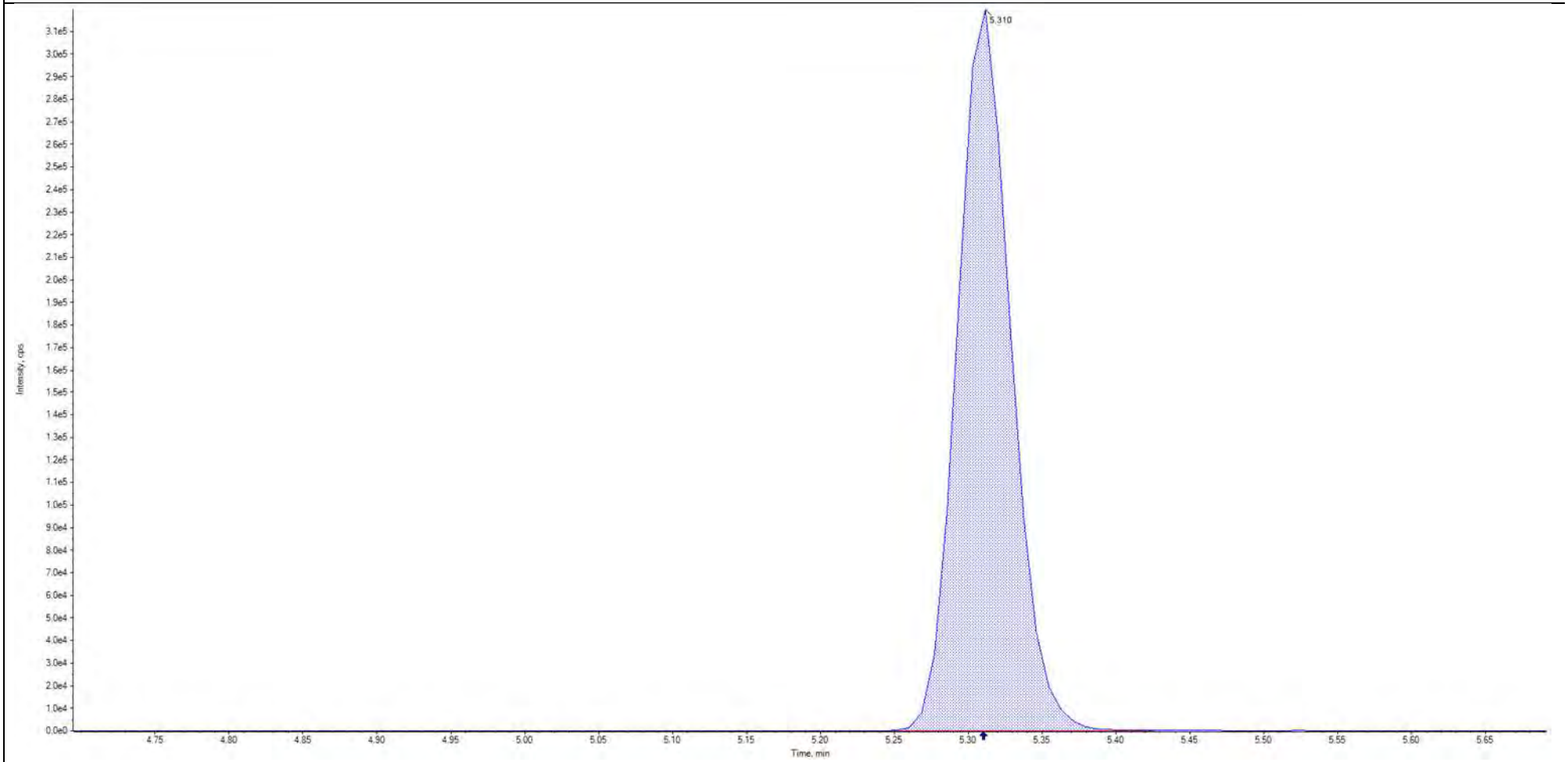


13C2-PFTeDA
Sample: IA1633STD-5

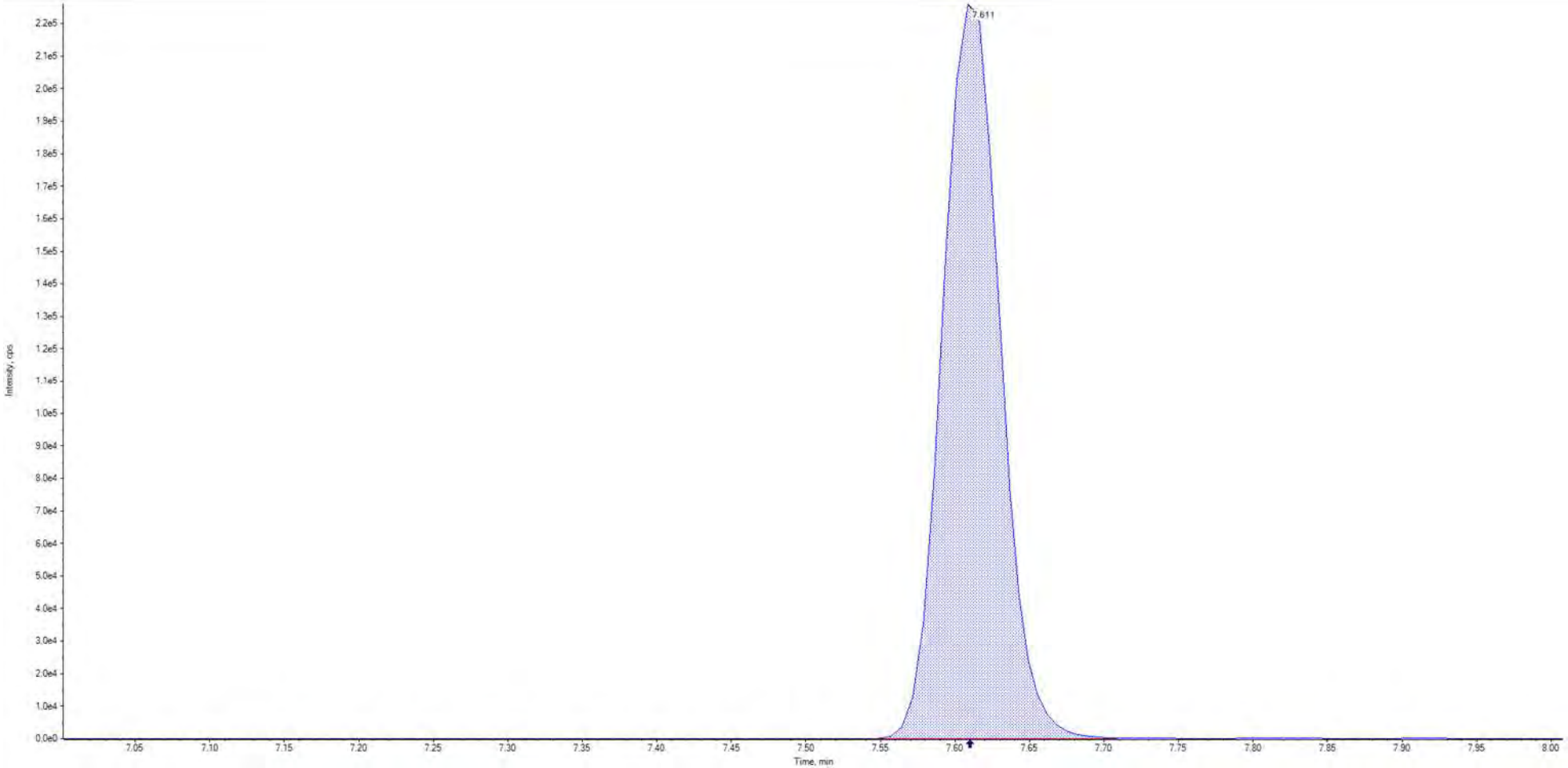


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

13C3-PFBS
Sample: IA1633STD-5

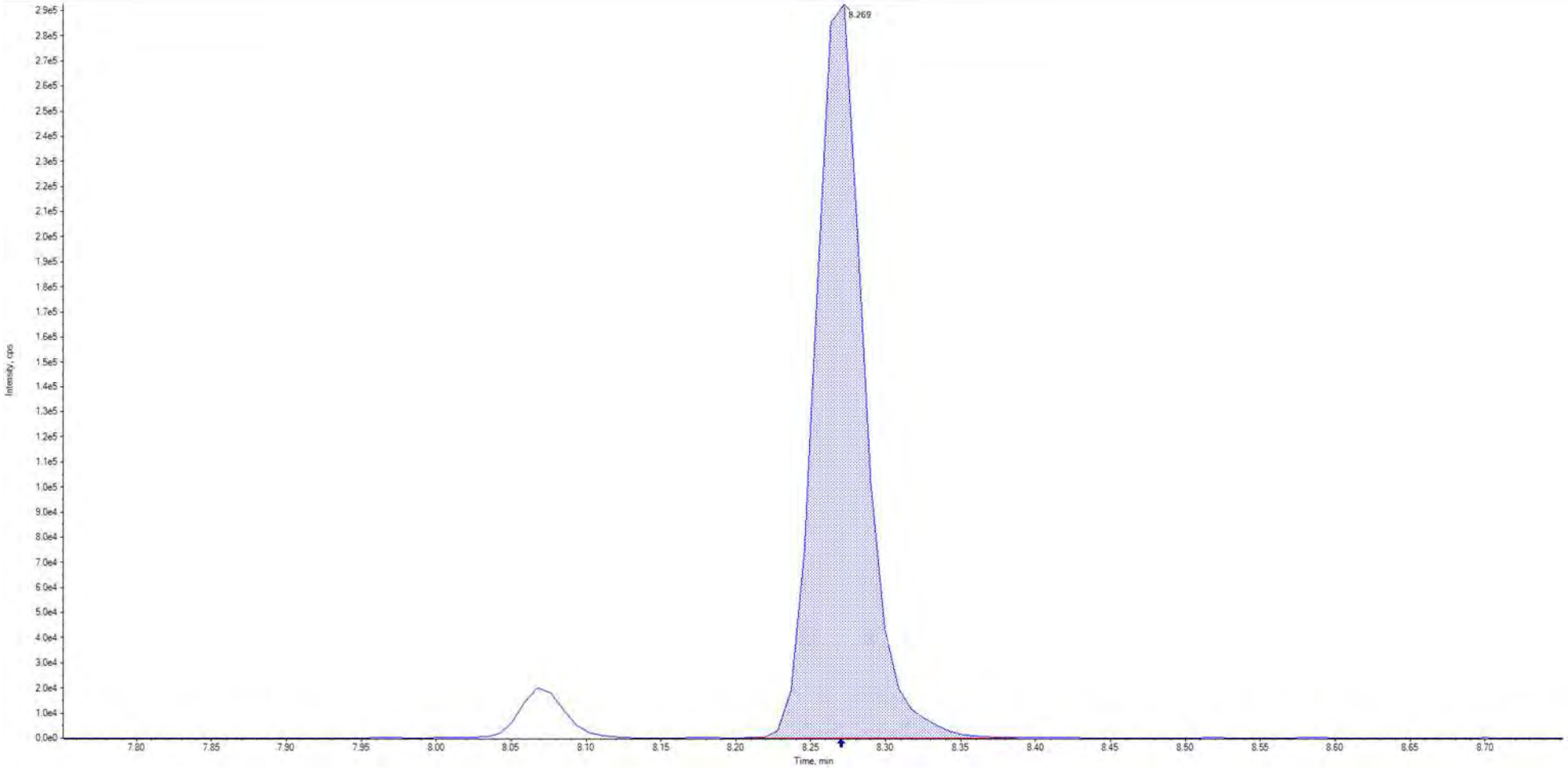


13C3-PFHxS
Sample: IA1633STD-5

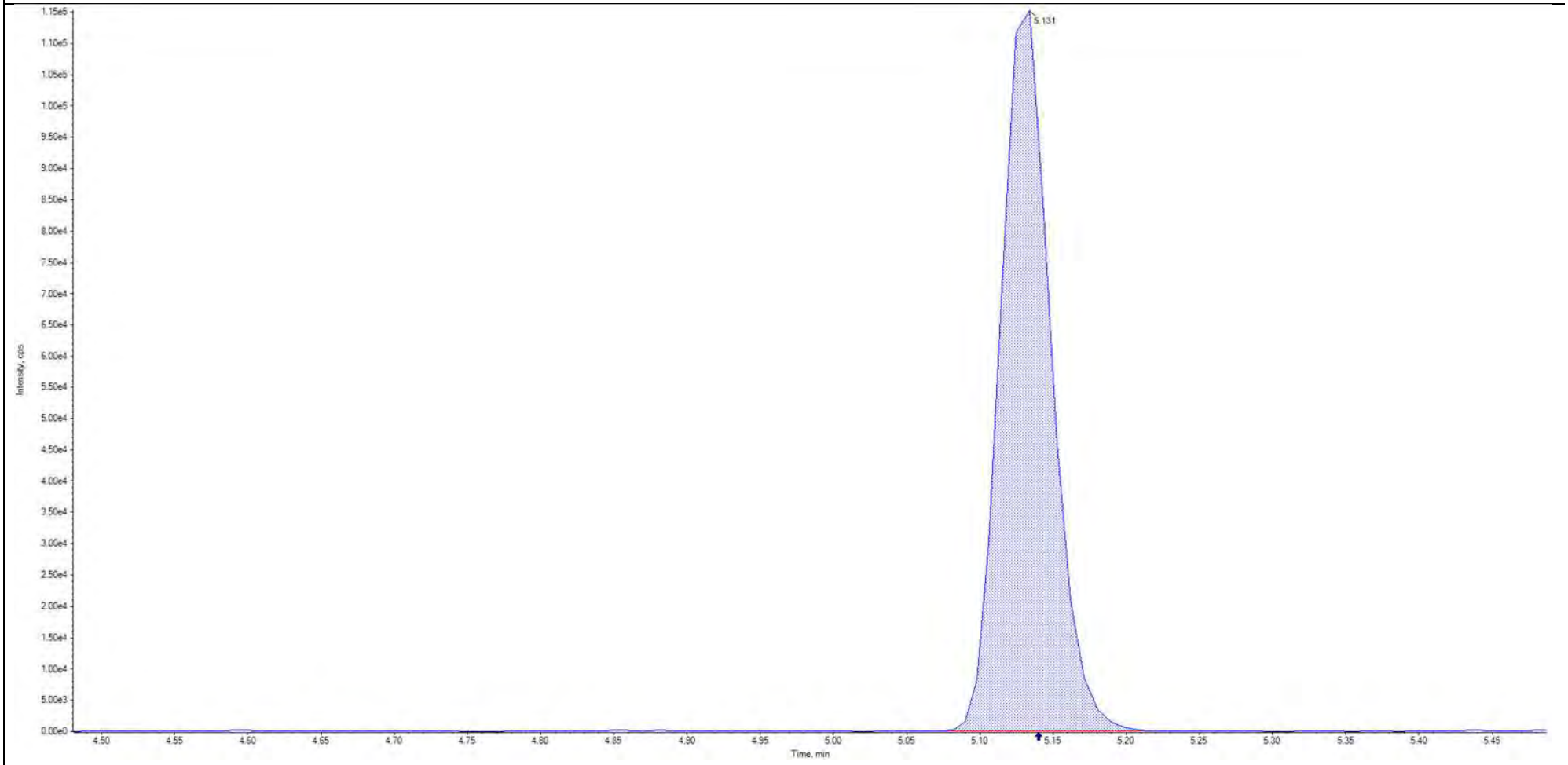


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

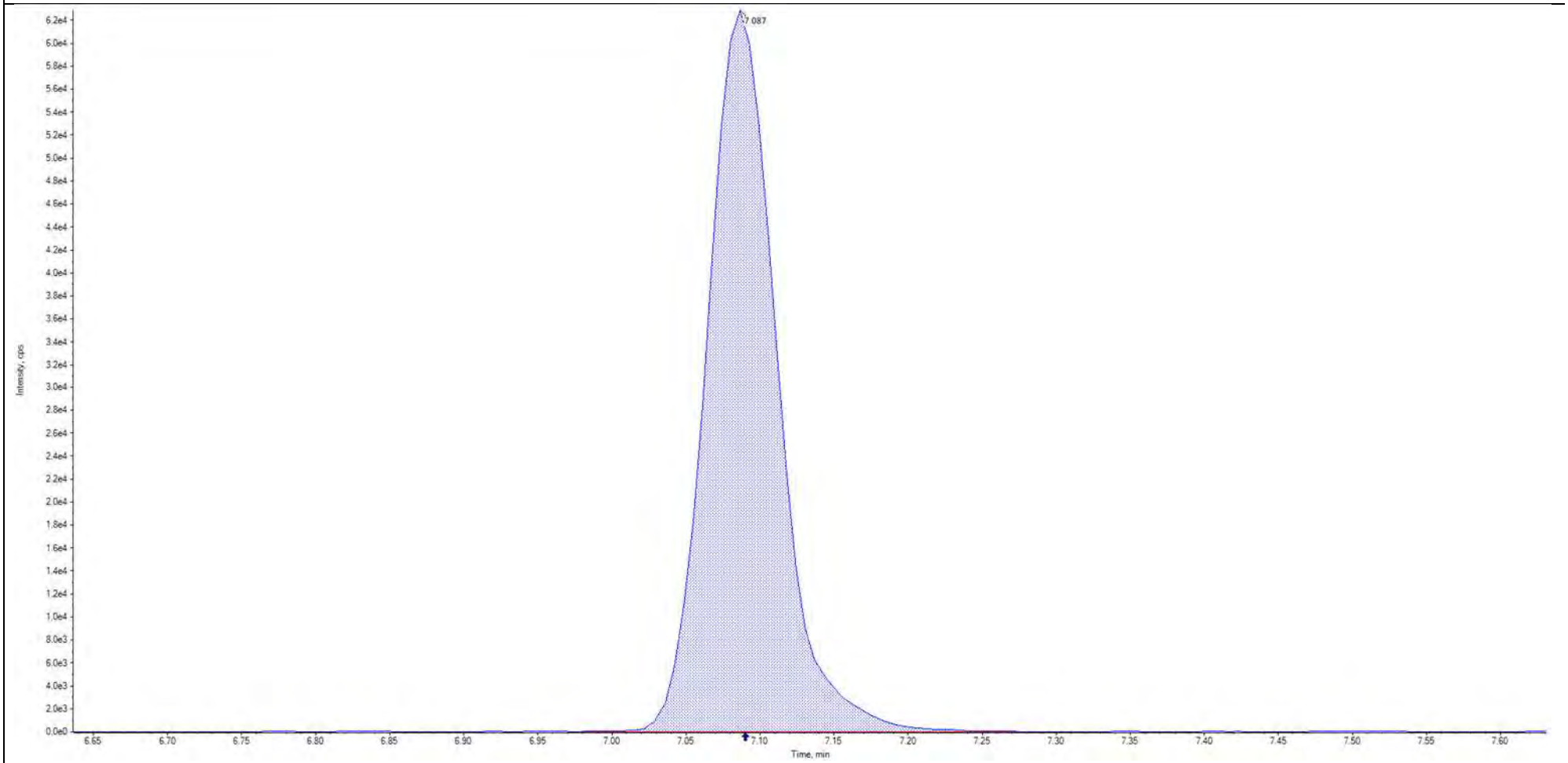
13C8-PFOS
Sample: IA1633STD-5



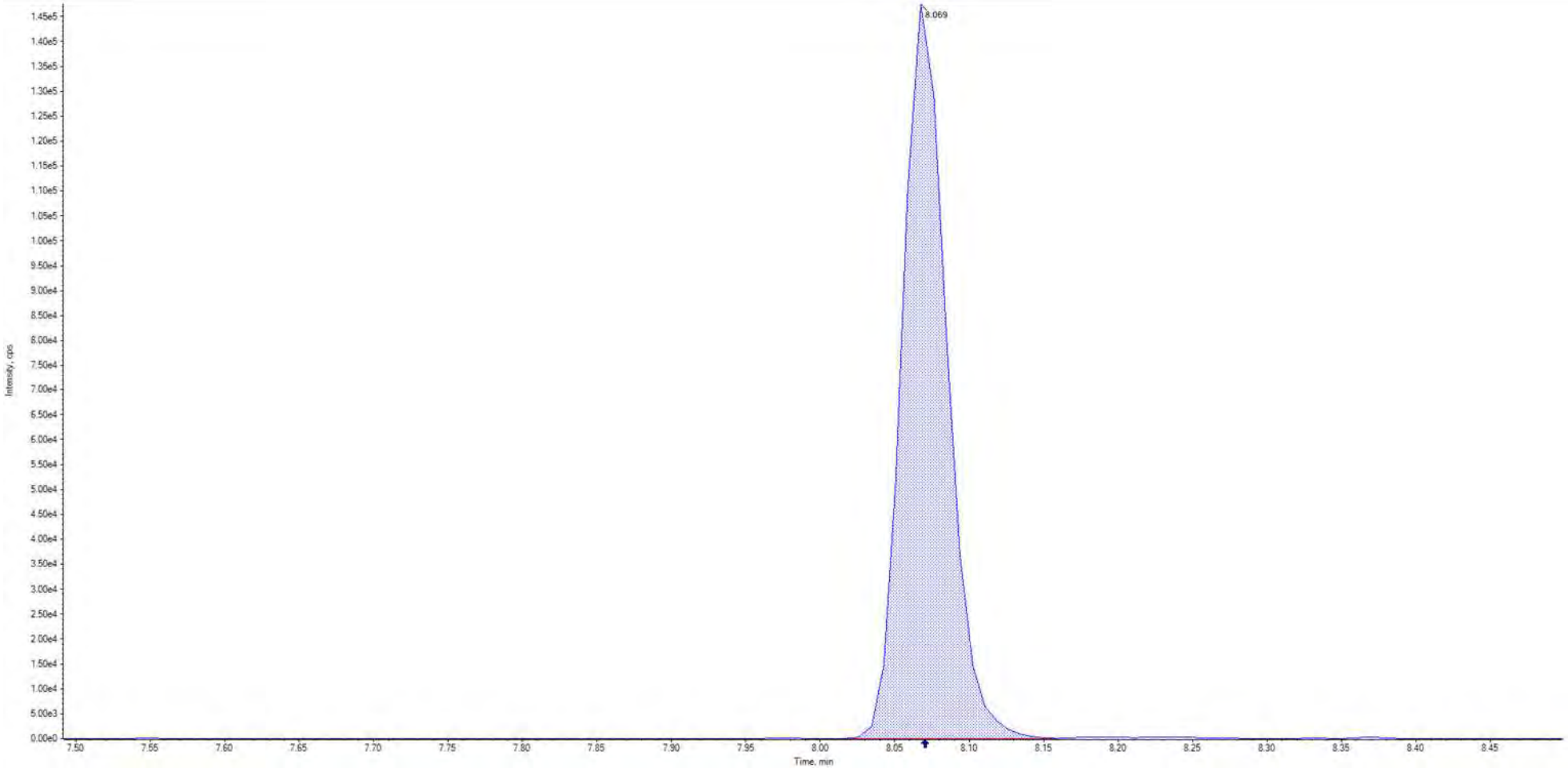
13C2-4:2FTS
Sample: IA1633STD-5



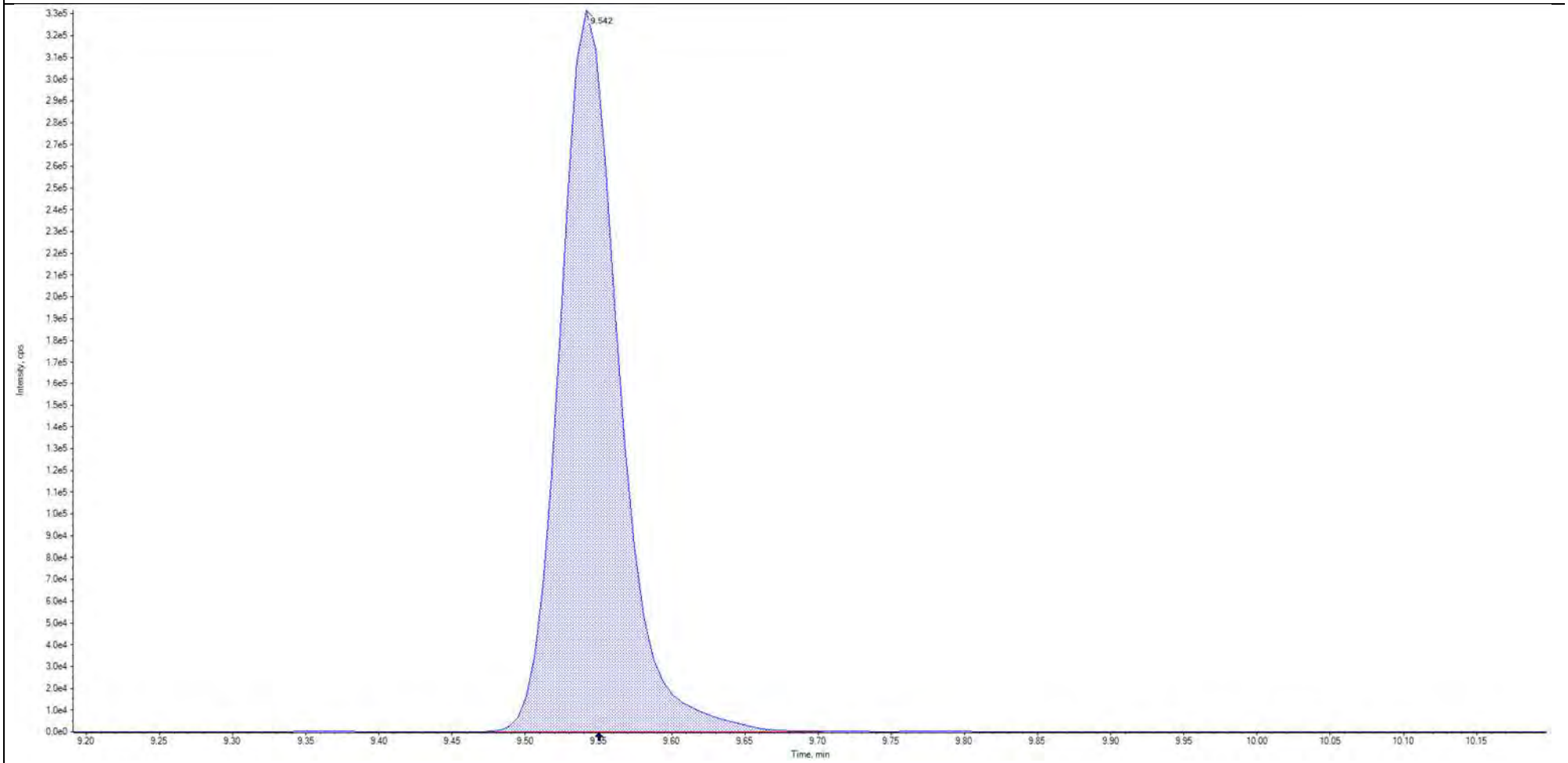
13C2-6:2FTS
Sample: IA1633STD-5



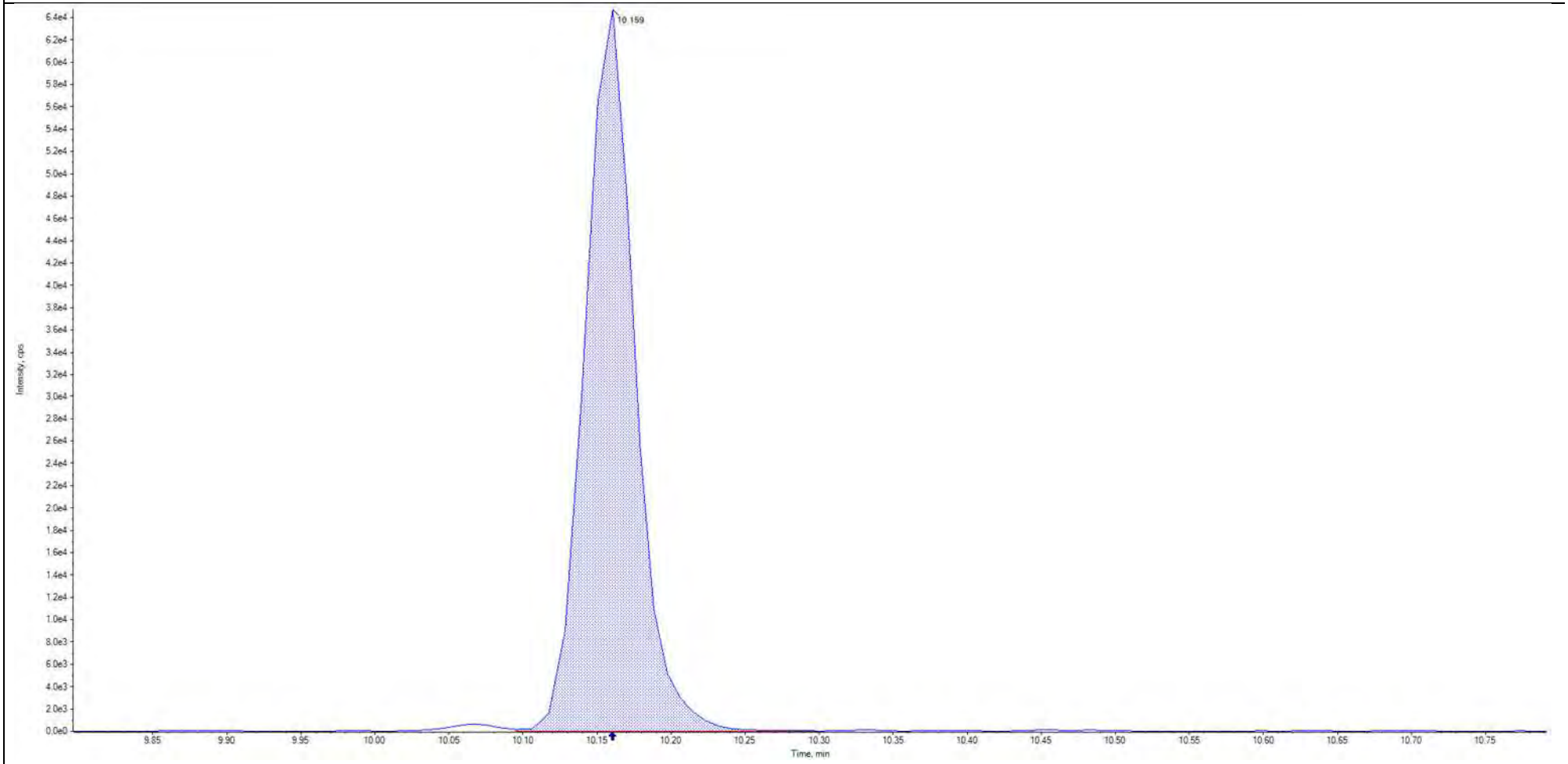
13C2-8:2FTS
Sample: IA1633STD-5



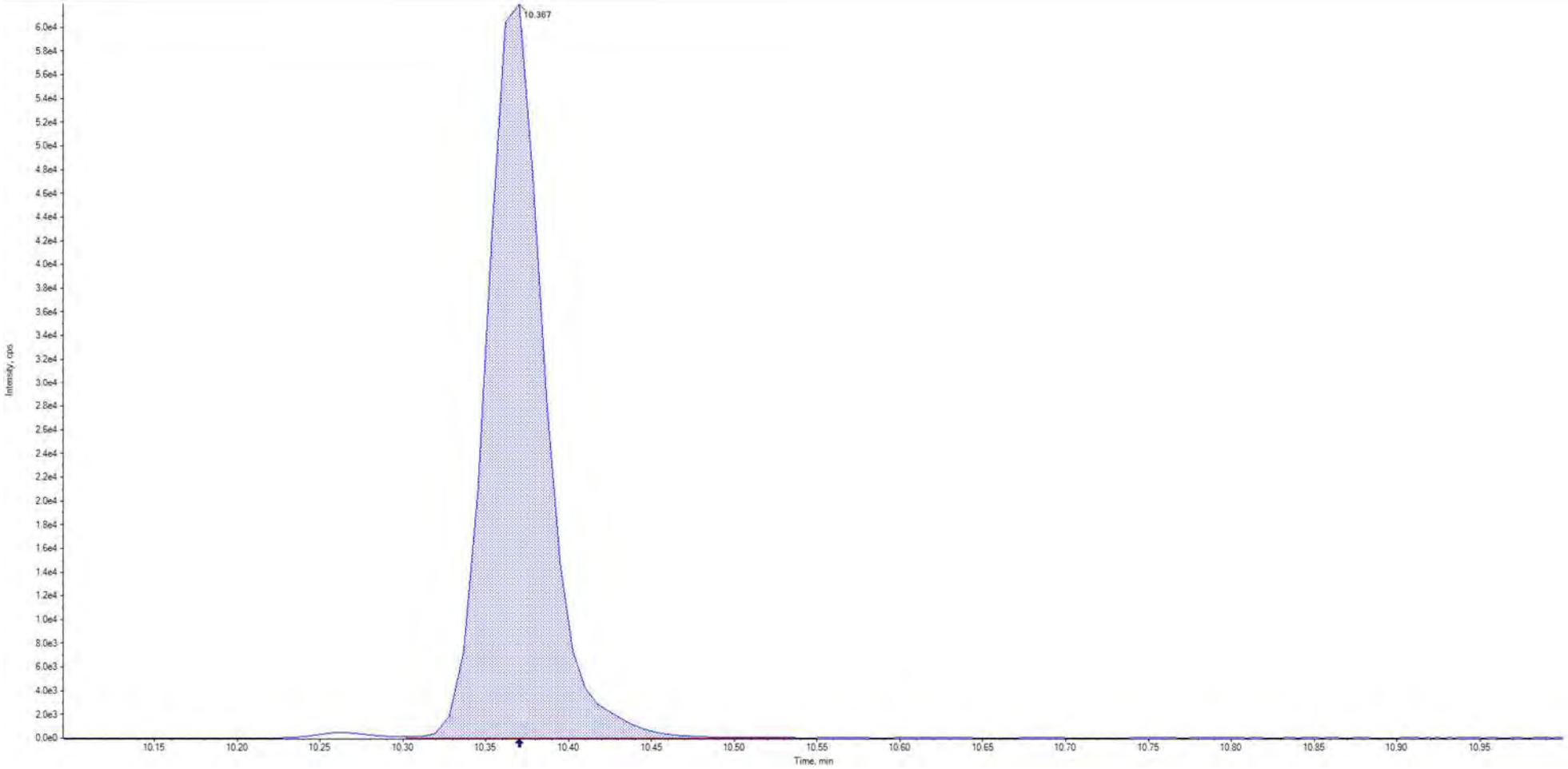
13C8-PFOSA
Sample: IA1633STD-5



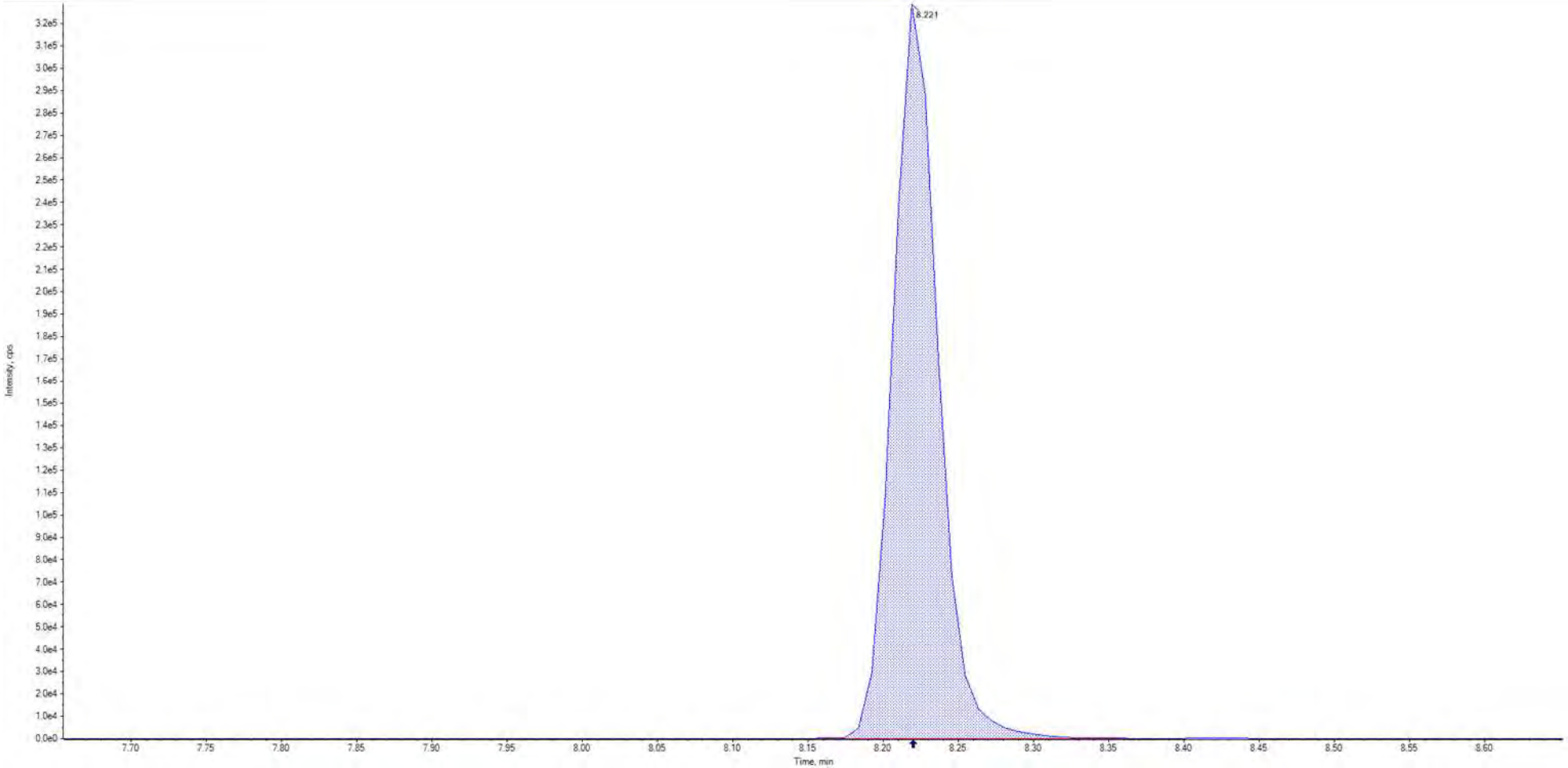
d3-NMeFOSA
Sample: IA1633STD-5



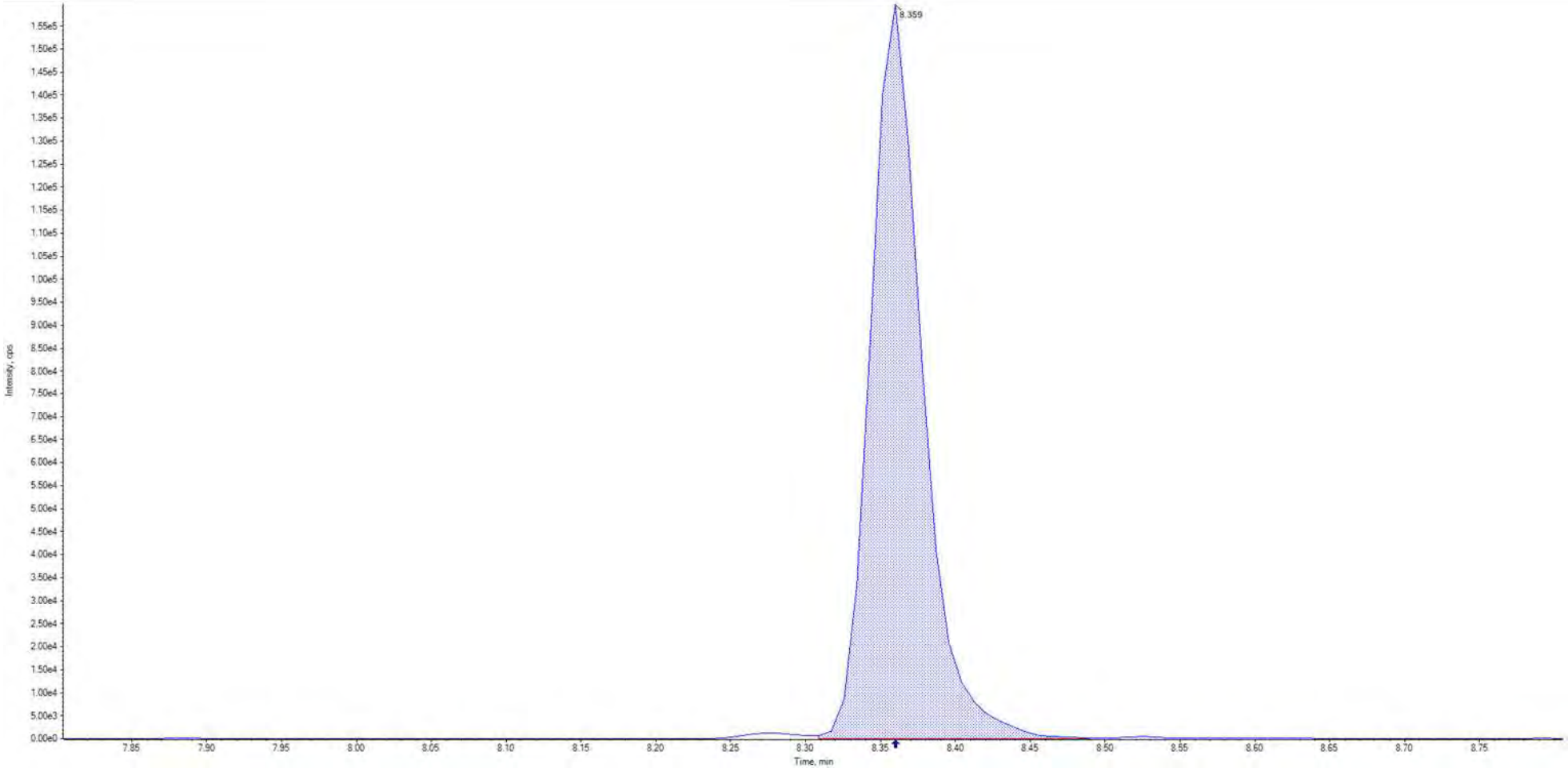
d5-NEtFOSA
Sample: IA1633STD-5



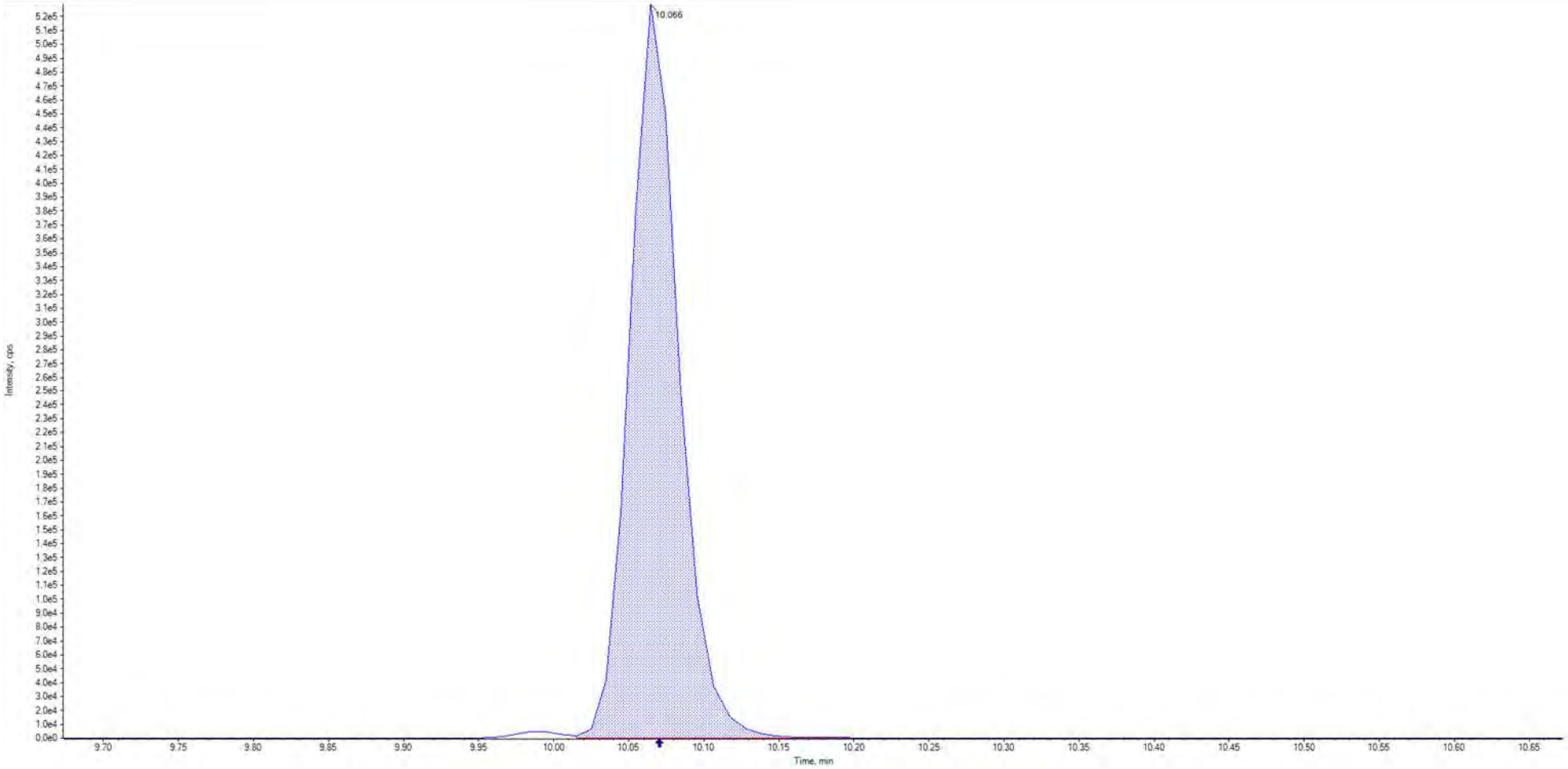
d3-NMeFOSAA
Sample: IA1633STD-5



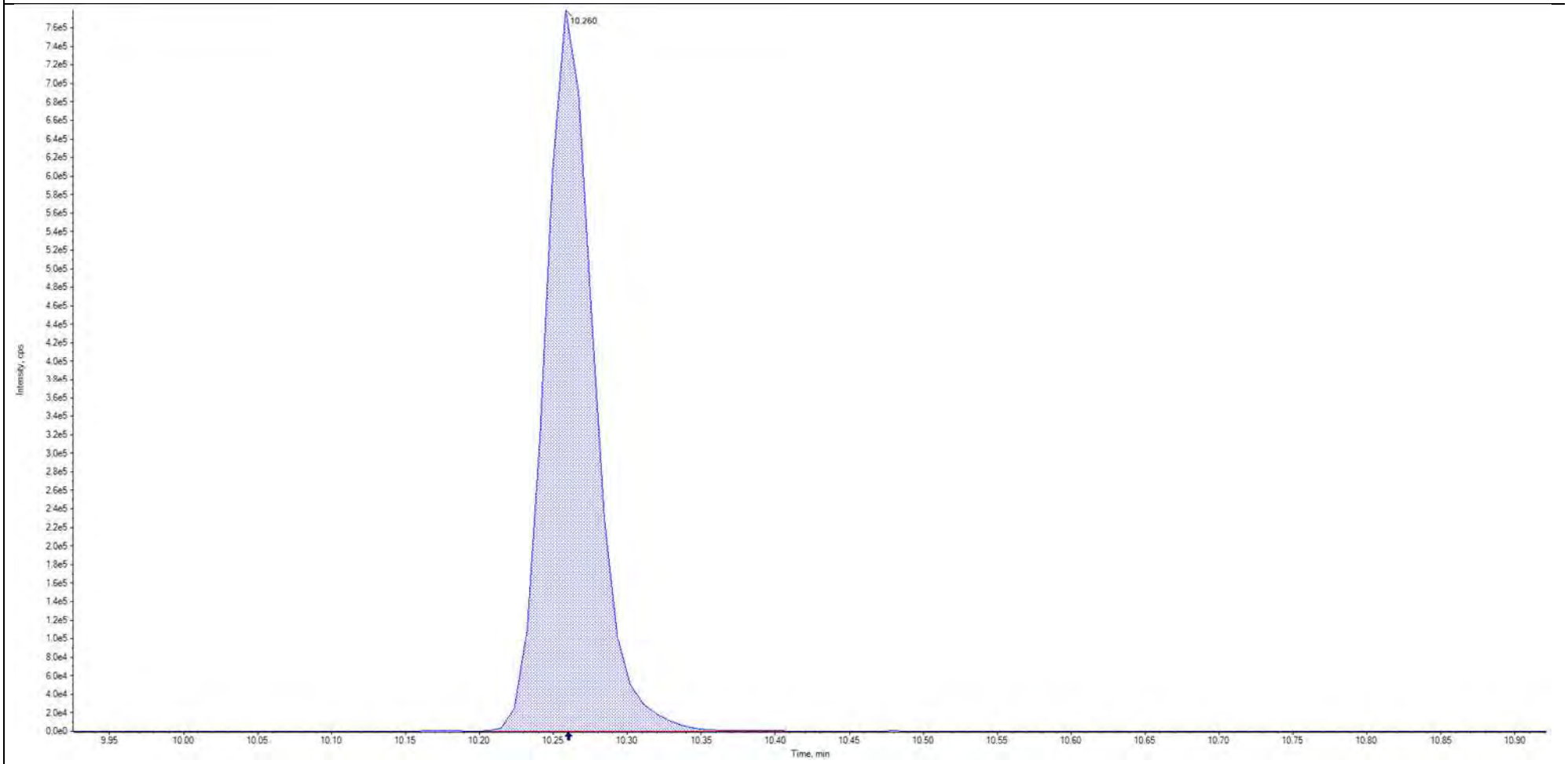
d5-NEtFOSAA
Sample: IA1633STD-5



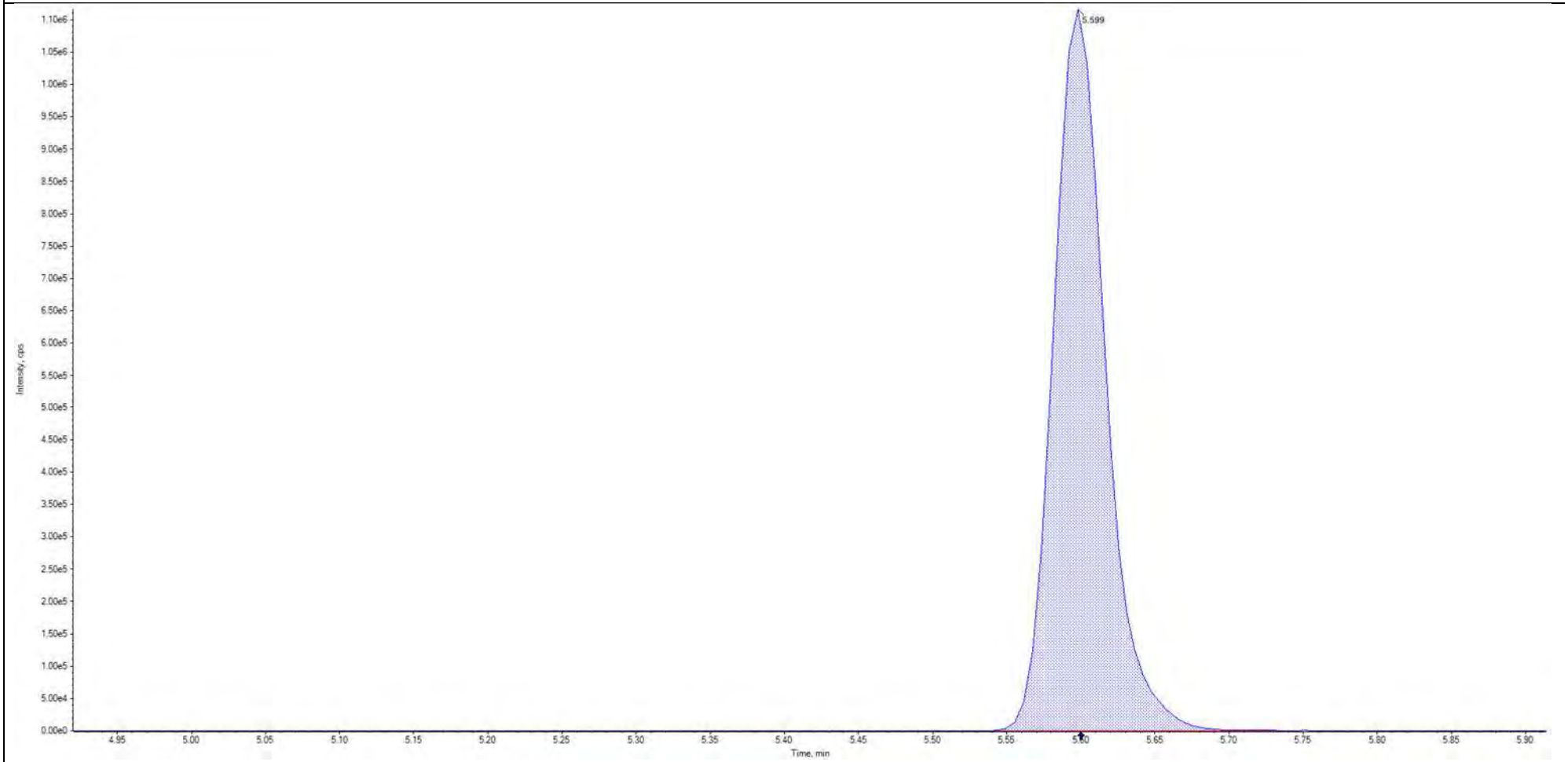
d7-NMeFOSE
Sample: IA1633STD-5



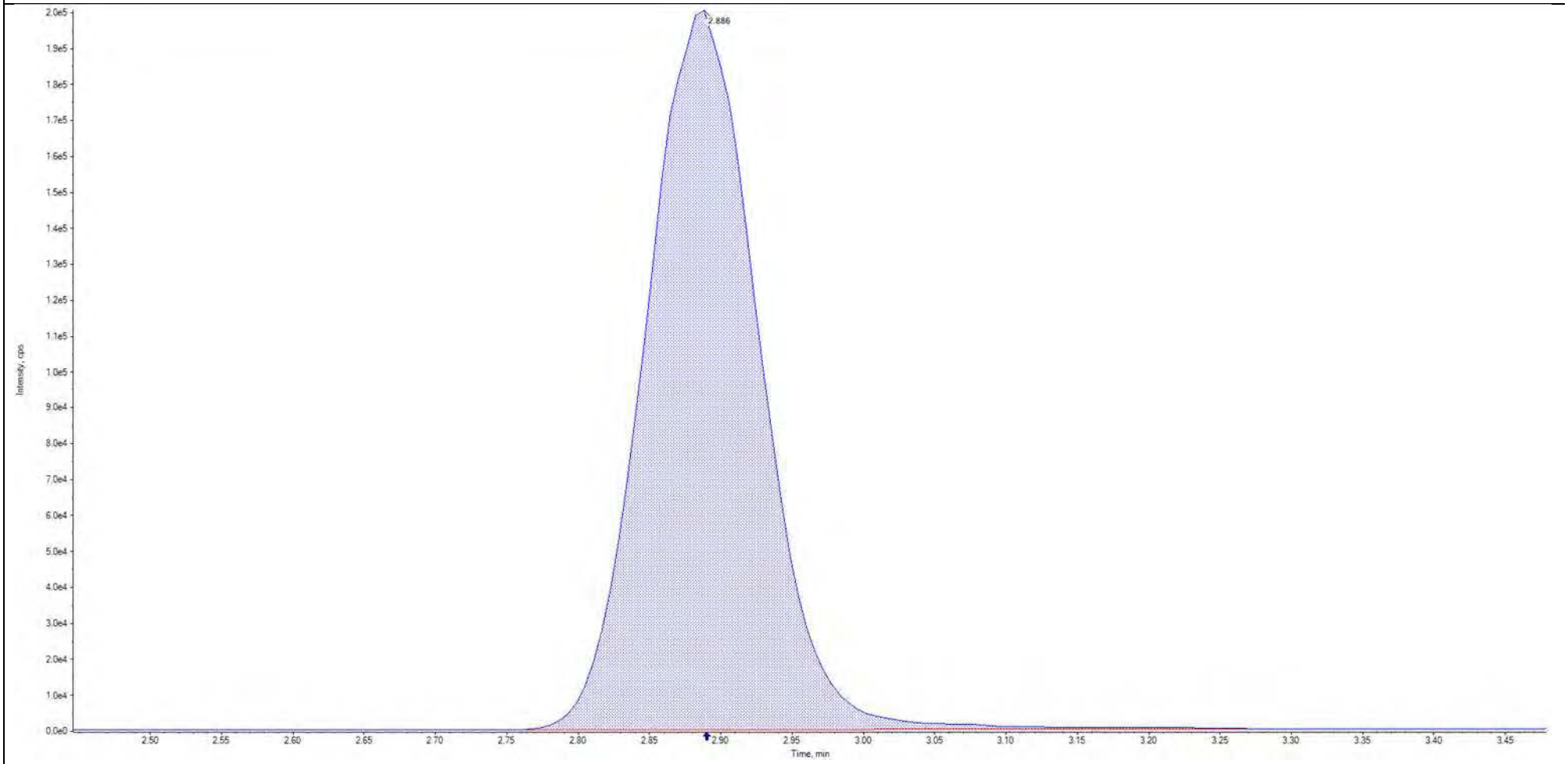
d9-NEtFOSE
Sample: IA1633STD-5



13C3-HFPO-DA
Sample: IA1633STD-5

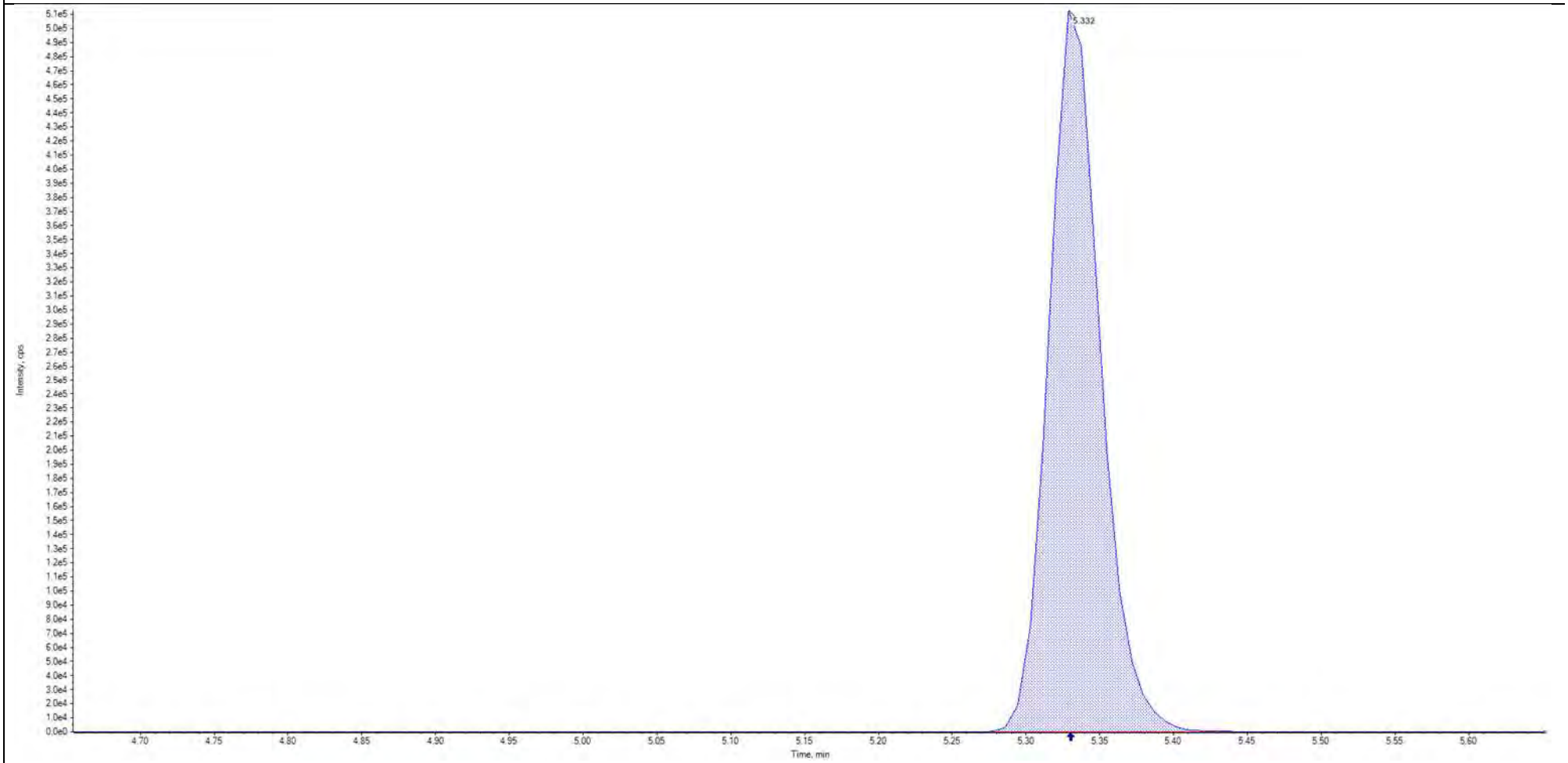


13C3-PFBA
Sample: IA1633STD-5

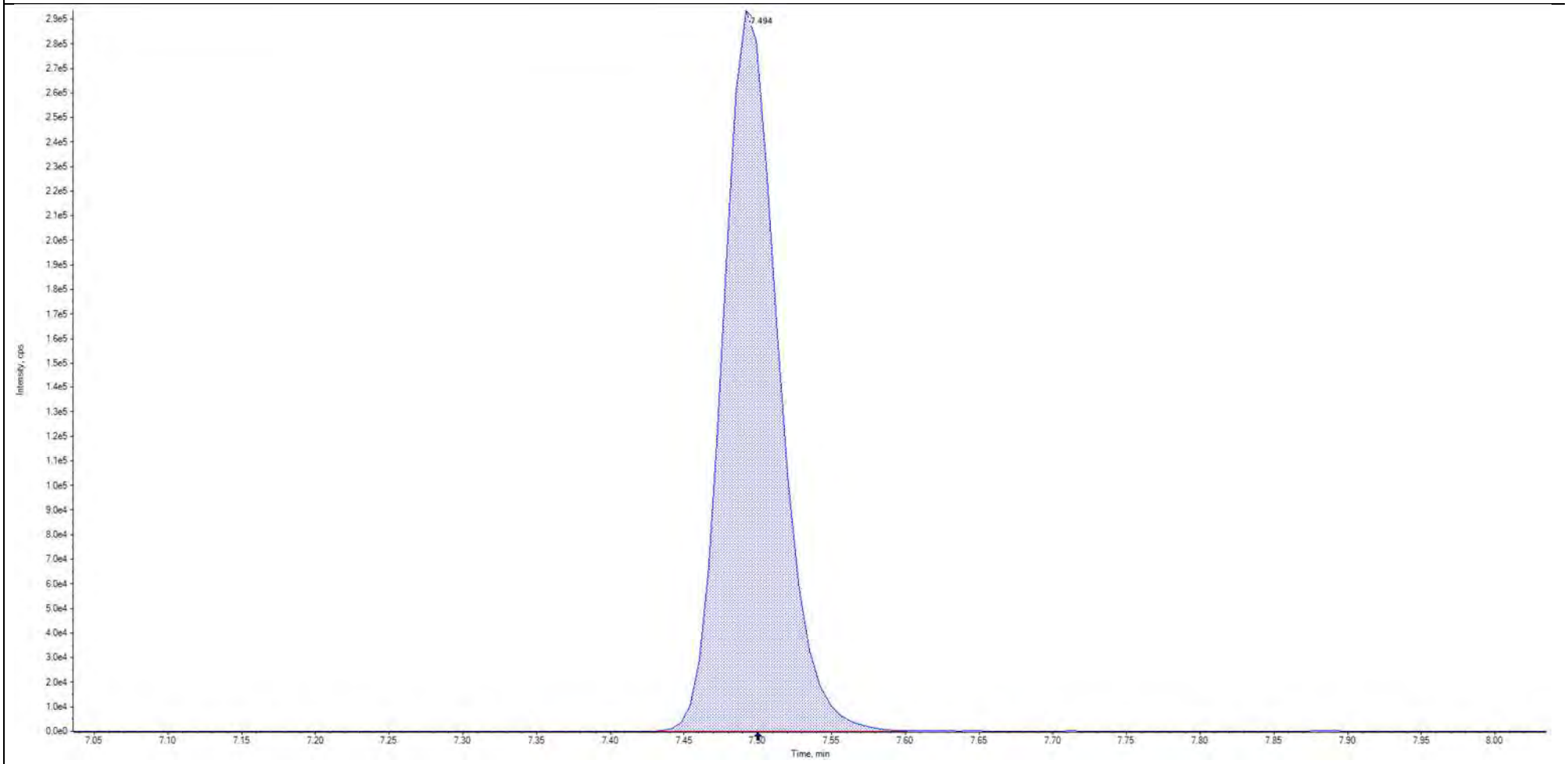


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_76.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

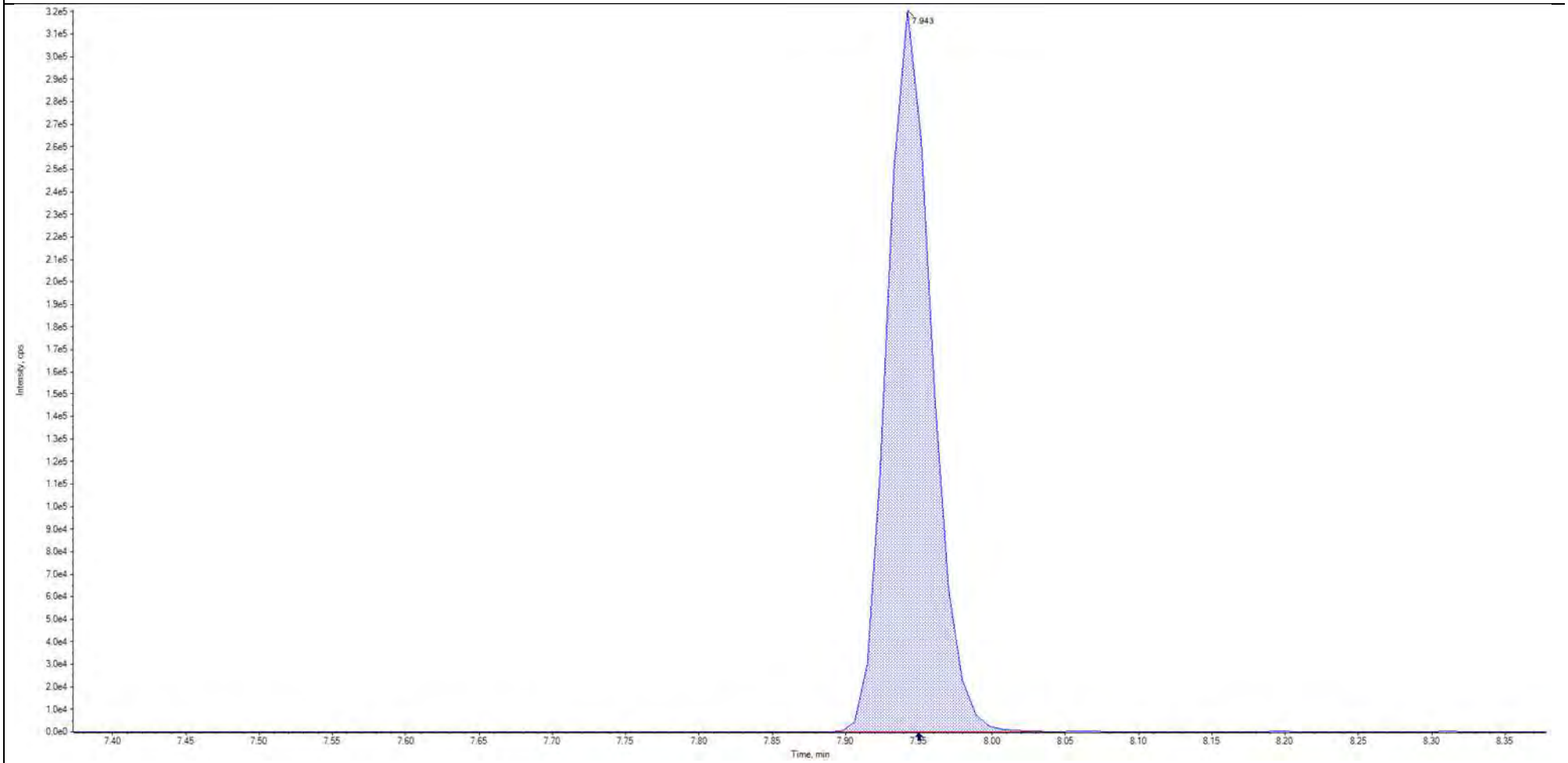
13C2-PFHxA
Sample: IA1633STD-5



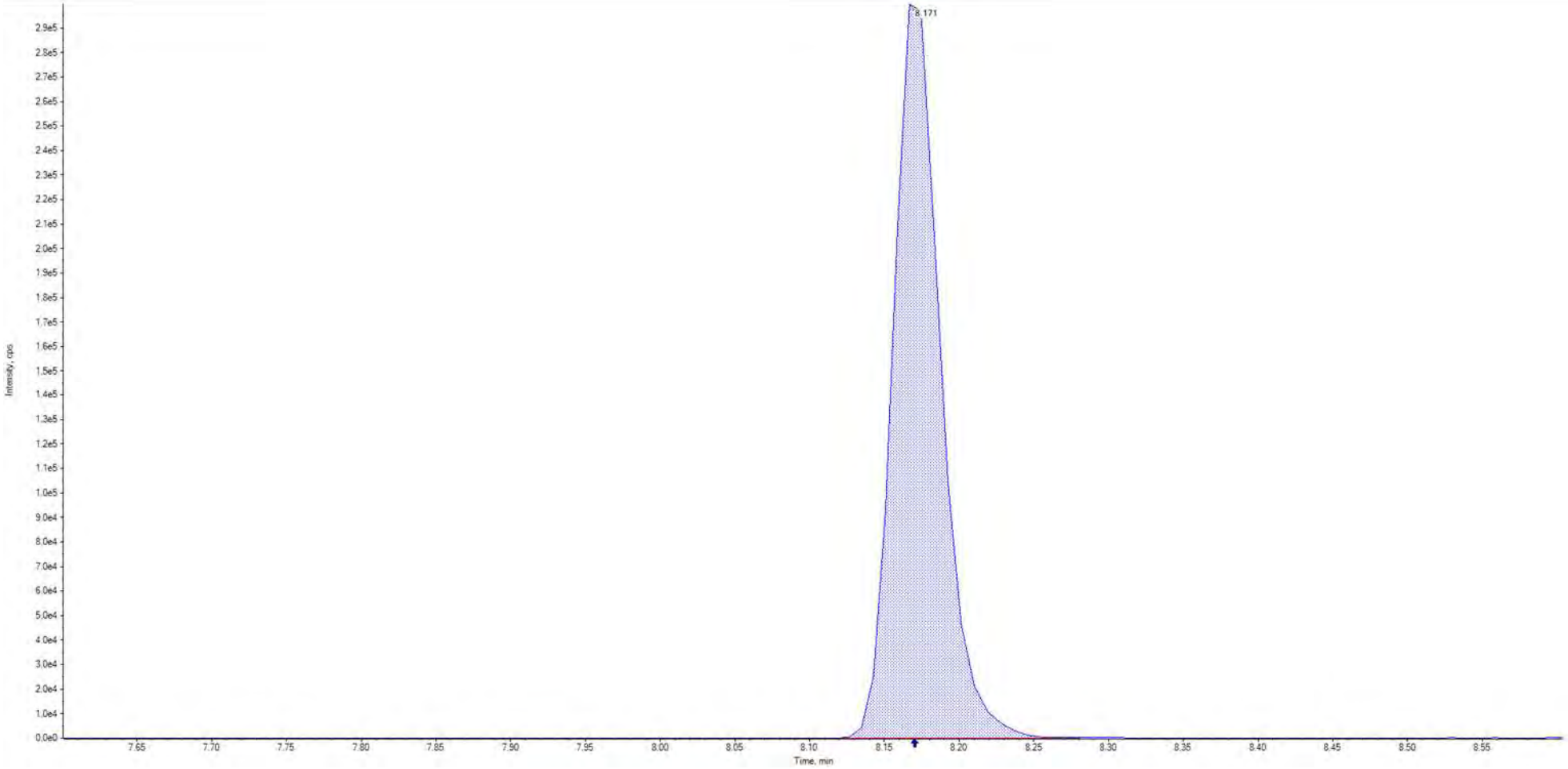
13C4-PFOA
Sample: IA1633STD-5



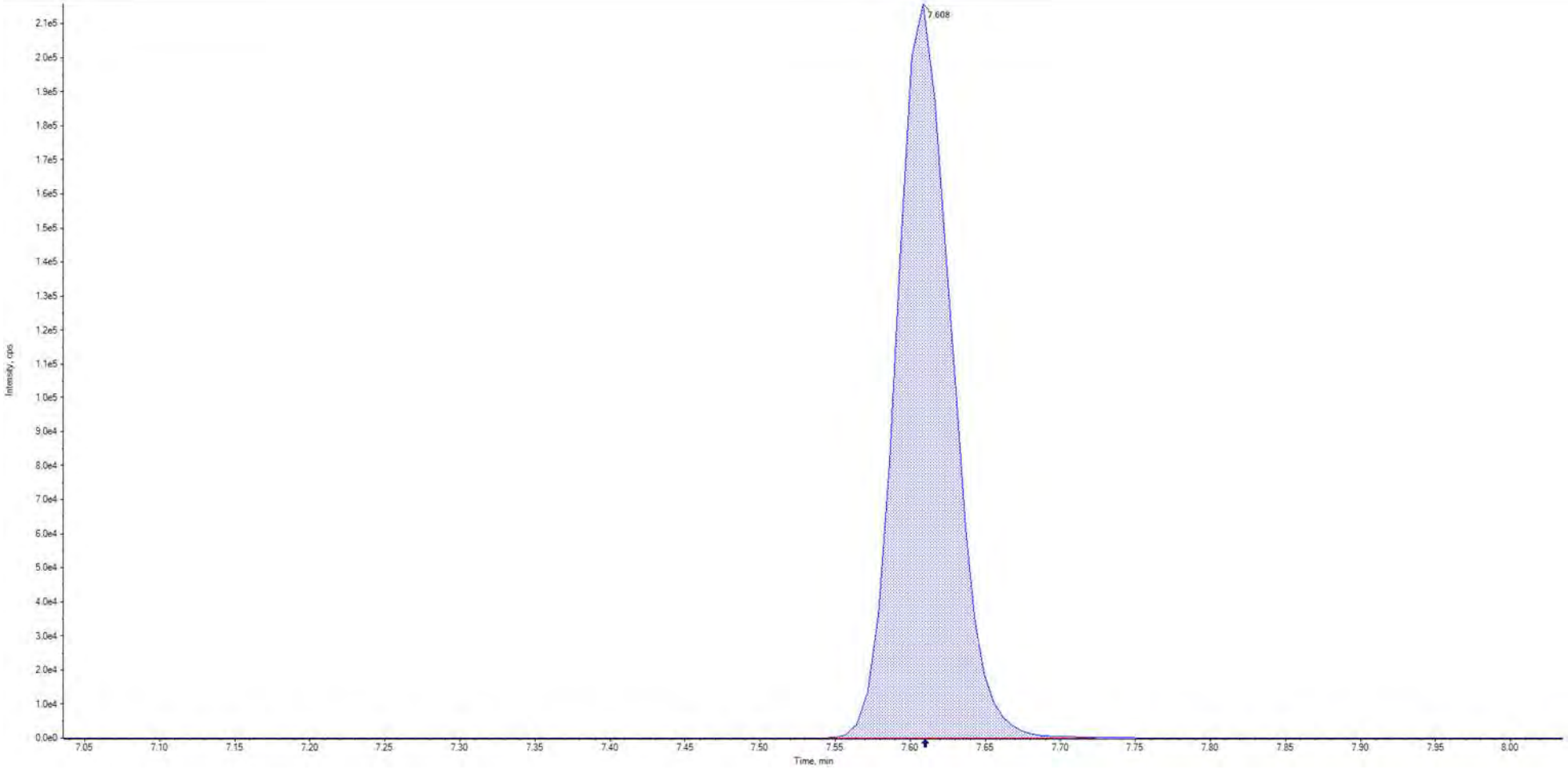
13C5-PFNA
Sample: IA1633STD-5



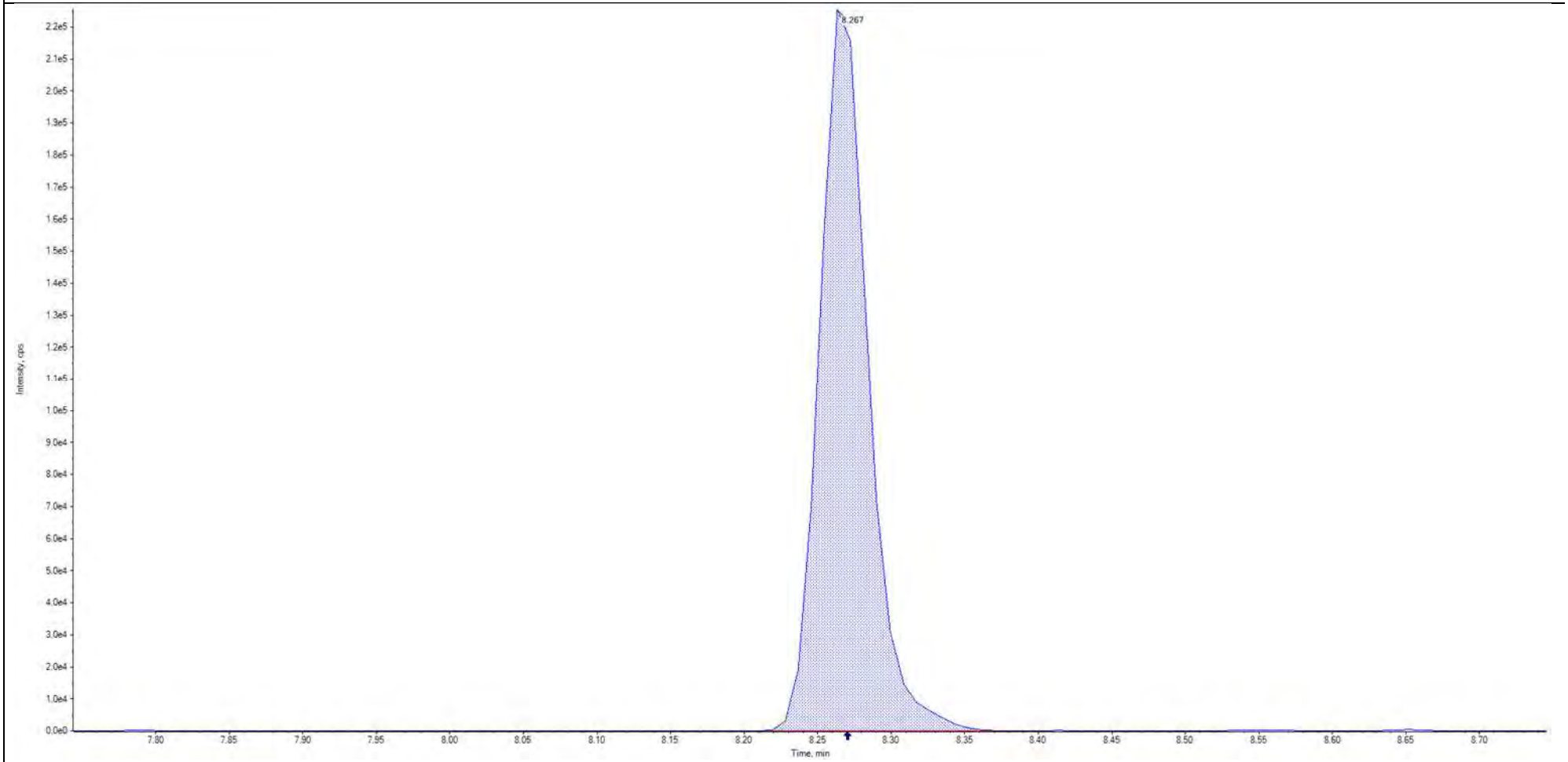
13C2-PFDA
Sample: IA1633STD-5



18O2-PFHxS
Sample: IA1633STD-5



13C4-PFOS
Sample: IA1633STD-5



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Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Method: EPA1633_NIS_CALC.qmethod
Calibration: 240813_1633_ICAL

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Description: WG1958909,,,125 ul EPA1633_240813_CAL
Instrument: Triple Quad 5500+
User: LCMS05:SL

LC/MS-MS Method:EPA_1633.dam

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
1	PFBA	375-22-4	2.89	213.0 / 169.0	10163727		53.211	N/A	N/A	N/A	106.4
2	PFPeA	2706-90-3	4.64	263.0 / 219.0	7315685		25.837	0.007	0.007	N/A	103.4
3	PFPeA_2	2706-90-3	4.64	263.0 / 68.9	50009		25.014	0.007	0.007	N/A	100.1
4	PFHxA	307-24-4	5.34	313.0 / 269.0	6556474		12.673	0.070	0.072	Pass	101.4
5	PFHxA_2	307-24-4	5.34	313.0 / 119.0	462043	M7	12.087	0.070	0.072	Pass	96.7
6	PFHpA	375-85-9	6.25	363.1 / 319.0	6242426		12.971	0.300	0.297	Pass	103.8
7	PFHpA_2	375-85-9	6.25	363.1 / 169.0	1871788		12.710	0.300	0.297	Pass	101.7

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
8	PFOA	335-67-1	7.50	413.1 / 369.1	3795945	M5	12.346	0.576	0.586	Pass	98.8
9	PFOA_2	335-67-1	7.50	413.1 / 169.0	2187125	M7	12.983	0.576	0.586	Pass	103.9
10	PFNA	375-95-1	7.95	462.8 / 418.9	5432775	M5	12.994	0.300	0.313	Pass	104.0
11	PFNA_2	375-95-1	7.95	462.8 / 218.9	1628122	M7	12.742	0.300	0.313	Pass	101.9
12	PFDA	335-76-2	8.18	513.1 / 469.1	5967617		13.200	0.155	0.142	Pass	105.6
13	PFDA_2	335-76-2	8.18	513.1 / 219.0	922675		13.617	0.155	0.142	Pass	108.9
14	PFUnA	2058-94-8	8.47	563.1 / 519.1	4390261		13.273	0.188	0.194	Pass	106.2
15	PFUnA_2	2058-94-8	8.47	563.1 / 269.0	826829		12.905	0.188	0.194	Pass	103.2
16	PFDoA	307-55-1	8.90	613.1 / 569.1	4823549		13.054	0.173	0.167	Pass	104.4
17	PFDoA_2	307-55-1	8.90	613.1 / 319.0	833152		13.347	0.173	0.167	Pass	106.8
18	PFTrDA	72629-94-8	9.50	663.1 / 619.1	3032059		13.771	0.218	0.228	Pass	110.2
19	PFTrDA_2	72629-94-8	9.50	663.1 / 169.0	661787		13.495	0.218	0.228	Pass	108.0
20	PFTeDA	376-06-7	9.91	713.1 / 669.1	5094568		12.914	0.134	0.137	Pass	103.3
21	PFTeDA_2	376-06-7	9.91	713.1 / 169.0	683745		12.672	0.134	0.137	Pass	101.4
22	PFBS	375-73-5	5.31	299.1 / 80.1	3919451		11.957	0.380	0.396	Pass	107.8

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
23	PFBS_2	375-73-5	5.31	299.1 / 99.1	1488821		11.392	0.380	0.396	Pass	102.8
24	PFPeS	2706-91-4	6.34	349.1 / 80.1	3422752		12.335	0.295	0.299	Pass	104.9
25	PFPeS_2	2706-91-4	6.34	349.1 / 99.1	1009409		12.060	0.295	0.299	Pass	102.5
26	PFHxS	355-46-4	7.61	399.1 / 80.1	3015740	M5	11.613	0.316	0.315	Pass	101.7
27	PFHxS_2	355-46-4	7.61	399.1 / 99.1	954073	M7	11.830	0.316	0.315	Pass	103.5
28	PFHpS	375-92-8	8.01	449.1 / 80.1	3346971		13.024	0.290	0.287	Pass	109.3
29	PFHpS_2	375-92-8	8.01	449.1 / 99.1	971992		12.905	0.290	0.287	Pass	108.3
30	PFOS	1763-23-1	8.27	499.1 / 80.1	3372642	M5	12.326	0.240	0.238	Pass	106.3
31	PFOS_2	1763-23-1	8.27	499.1 / 99.1	809147	M7	12.070	0.240	0.238	Pass	104.1
32	PFNS	68259-12-1	8.63	549.1 / 80.1	2304611		13.119	0.293	0.301	Pass	109.1
33	PFNS_2	68259-12-1	8.63	549.1 / 99.1	674910		12.685	0.293	0.301	Pass	105.5
34	PFDS	335-77-3	9.14	599.1 / 80.1	2184110		12.622	0.283	0.275	Pass	104.6
35	PFDS_2	335-77-3	9.14	599.1 / 99.1	619124		12.979	0.283	0.275	Pass	107.6
36	PFDoS	79780-39-5	10.00	699.2 / 80.1	2057796		12.984	0.286	0.274	Pass	107.1
37	PFDoS_2	79780-39-5	10.00	699.2 / 99.1	588810		13.521	0.286	0.274	Pass	111.5

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
38	4:2FTS	757124-72-4	5.13	327.1 / 307.1	5291738		46.630	0.536	0.516	Pass	99.5
39	4:2FTS_2	757124-72-4	5.13	327.1 / 81.1	2836949		46.730	0.536	0.516	Pass	99.7
40	6:2FTS	27619-97-2	7.09	427.2 / 407.2	3565584		49.534	0.541	0.565	Pass	104.3
41	6:2FTS_2	27619-97-2	7.09	427.2 / 81.1	1927887		49.516	0.541	0.565	Pass	104.2
42	8:2FTS	39108-34-4	8.07	527.2 / 507.2	4038399		51.281	0.651	0.662	Pass	106.8
43	8:2FTS_2	39108-34-4	8.07	527.2 / 81.1	2627198		49.184	0.651	0.662	Pass	102.5
44	PFOSA	754-91-6	9.54	498.1 / 78.1	3171379	M5	13.140	0.025	0.025	Pass	105.1
45	PFOSA_2	754-91-6	9.54	498.1 / 478.0	78042	M7	12.324	0.025	0.025	Pass	98.6
46	NMeFOSA	31506-32-8	10.17	512.2 / 219.0	895612	M5	13.670	1.489	1.551	Pass	109.4
47	NMeFOSA_2	31506-32-8	10.13	512.2 / 169.0	1333212	M7	13.132	1.489	1.551	Pass	105.1
48	NEtFOSA	4151-50-2	10.38	526.2 / 219.0	887257	M5	13.440	1.307	1.285	Pass	107.5
49	NEtFOSA_2	4151-50-2	10.34	526.2 / 169.0	1159835	M7	13.124	1.307	1.285	Pass	105.0
50	NMeFOSAA	2355-31-9	8.22	570.2 / 419.1	1169398		12.813	0.644	0.700	Pass	102.5
51	NMeFOSAA_2	2355-31-9	8.22	570.2 / 483.0	752987		12.973	0.644	0.700	Pass	103.8
52	NEtFOSAA	2991-50-6	8.36	584.2 / 419.1	895167		13.022	0.486	0.487	Pass	104.2

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
53	NEtFOSAA_2	2991-50-6	8.36	584.2 / 526.2	435214	M7	13.758	0.486	0.487	Pass	110.1
54	NMeFOSE	24448-09-7	10.08	616.1 / 58.9	16436198	M5	131.219	N/A	N/A	N/A	105.0
55	NEtFOSE	1691-99-2	10.28	630.0 / 58.9	27604824	M5	131.072	N/A	N/A	N/A	104.9
56	HFPO-DA	13252-13-6	5.60	285.0 / 169.0	13116686		52.648	0.464	0.464	Pass	105.3
57	HFPO-DA_2	13252-13-6	5.60	285.0 / 184.9	6086089		52.533	0.464	0.464	Pass	105.1
58	ADONA	919005-14-4	6.71	377.1 / 251.0	28514834		50.326	0.604	0.634	Pass	106.5
59	ADONA_2	919005-14-4	6.71	377.1 / 84.8	17225235		46.984	0.604	0.634	Pass	99.4
60	9Cl-PF3ONS	756426-58-1	8.50	530.8 / 351.1	26617233		47.643	0.327	0.322	Pass	101.9
61	9Cl-PF3ONS_2	756426-58-1	8.50	532.8 / 353.0	8690546		47.768	0.327	0.322	Pass	102.2
62	11Cl-PF3OUdS	763051-92-9	9.57	630.9 / 451.0	17563776		49.771	0.335	0.331	Pass	105.3
63	11Cl-PF3OUdS_2	763051-92-9	9.57	632.9 / 452.9	5888904		49.584	0.335	0.331	Pass	104.9
64	3:3FTCA	356-02-5	4.91	241.1 / 177.1	1725859		70.270	0.983	1.074	Pass	112.4
65	3:3FTCA_2	356-02-5	4.91	241.1 / 117.0	1697178		68.997	0.983	1.074	Pass	110.4
66	5:3FTCA	914637-49-3	7.16	341.1 / 237.1	29042126		309.438	0.960	0.953	Pass	99.0
67	5:3FTCA_2	914637-49-3	7.16	341.1 / 217.0	27873456		313.862	0.960	0.953	Pass	100.4

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
68	7:3FTCA	812-70-4	8.21	441.1 / 316.9	29960681		286.749	1.303	1.558	Pass	91.8
69	7:3FTCA_2	812-70-4	8.21	441.1 / 337.1	39034896		257.452	1.303	1.558	Pass	82.4
70	PFEESA	113507-82-7	5.71	315.1 / 135.0	20195715		22.500	0.085	0.087	Pass	101.1
71	PFEESA_2	113507-82-7	5.70	315.1 / 82.9	1712125		22.079	0.085	0.087	Pass	99.2
72	PFMPA	377-73-1	3.84	229.0 / 85.0	875313		25.540	N/A	N/A	N/A	102.2
73	PFMBA	863090-89-5	4.87	279.0 / 85.0	12117026		26.222	N/A	N/A	N/A	104.9
74	NFDHA	151772-58-6	5.25	295.0 / 201.0	2327402		24.630	0.872	0.910	Pass	98.5
75	NFDHA_2	151772-58-6	5.25	295.0 / 84.9	2029267		23.425	0.872	0.910	Pass	93.7
76	TDCA	516-50-7	N/A	499.1 / 124.1	N/A		N/A	N/A	40.716	N/A	N/A
77	TDCA_2	516-50-7	N/A	499.1 / 79.9	N/A		N/A	N/A	40.716	N/A	N/A
78	13C2D4-4:2FTS	Surr	5.12	333.2 / 312.1	967104		5.097	N/A	N/A	N/A	101.9
79	13C2-PFOA	Surr	7.50	415.0 / 370.0	3402324		2.481	N/A	N/A	N/A	99.2

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C4-PFBA	EIS	2.89	217.0 / 172.0	2355326		9.644	NA	NA	NA	96.4

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C5-PFPeA	EIS	4.63	268.0 / 223.0	1535510		4.774	NA	NA	NA	95.5
	13C5-PFHxA	EIS	5.33	318.0 / 273.0	1061529		2.512	NA	NA	NA	100.5
	13C4-PFHpA	EIS	6.24	367.0 / 322.0	1027376		2.429	NA	NA	NA	97.1
	13C8-PFOA	EIS	7.49	421.0 / 376.0	1477443		2.386	NA	NA	NA	95.4
	13C9-PFNA	EIS	7.94	472.0 / 427.0	714001		1.215	NA	NA	NA	97.2
	13C6-PFDA	EIS	8.17	519.0 / 474.0	655762		1.181	NA	NA	NA	94.5
	13C7-PFUnA	EIS	8.46	570.0 / 525.0	523228		1.165	NA	NA	NA	93.2

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C2-PFDoA	EIS	8.90	615.1 / 570.0	355193		1.216	NA	NA	NA	97.3
	13C2-PFTeDA	EIS	9.90	715.1 / 670.1	393552		1.241	NA	NA	NA	99.3
	13C3-PFBS	EIS	5.30	302.1 / 80.1	781298		2.210	NA	NA	NA	94.8
	13C3-PFHxS	EIS	7.61	402.1 / 80.1	650579		2.317	NA	NA	NA	97.8
	13C8-PFOS	EIS	8.27	507.1 / 80.1	666128		2.236	NA	NA	NA	93.3
	13C2-4:2FTS	EIS	5.13	329.1 / 81.1	271580		4.304	NA	NA	NA	91.8
	13C2-6:2FTS	EIS	7.08	429.2 / 81.1	208647		4.512	NA	NA	NA	94.9
	13C2-8:2FTS	EIS	8.07	529.2 / 81.1	298236		4.407	NA	NA	NA	91.8

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C8-PFOSA	EIS	9.54	506.1 / 78.1	902744		2.279	NA	NA	NA	91.2
	d3-NMeFOSA	EIS	10.16	515.2 / 219.0	152968		2.294	NA	NA	NA	91.8
	d5-NEtFOSA	EIS	10.37	531.2 / 219.0	150279		2.307	NA	NA	NA	92.3
	d3-NMeFOSAA	EIS	8.22	573.2 / 419.1	693534		4.601	NA	NA	NA	92.0
	d5-NEtFOSAA	EIS	8.36	589.3 / 419.1	368677		4.654	NA	NA	NA	93.1
	d7-NMeFOSE	EIS	10.07	623.2 / 58.9	1269350		24.650	NA	NA	NA	98.6
	d9-NEtFOSE	EIS	10.26	639.2 / 58.9	1794100		23.631	NA	NA	NA	94.5

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C3-HFPO-DA	EIS	5.59	287.0 / 169.0	2717784		9.706	NA	NA	NA	97.1
	13C3-PFBA	NIS	2.89	216.0 / 172.0	1068367		4.997	NA	NA	NA	99.9
	13C2-PFHxA	NIS	5.33	315.0 / 270.0	1254537		2.562	NA	NA	NA	102.5
	13C4-PFOA	NIS	7.49	417.0 / 372.0	810163		2.588	NA	NA	NA	103.5
	13C5-PFNA	NIS	7.94	468.0 / 423.0	715709		1.307	NA	NA	NA	104.5
	13C2-PFDA	NIS	8.17	515.1 / 470.1	652094		1.273	NA	NA	NA	101.8
	18O2-PFHxS	NIS	7.61	403.1 / 84.1	570770		2.436	NA	NA	NA	102.8
	13C4-PFOS	NIS	8.27	503.1 / 80.1	527056		2.503	NA	NA	NA	104.5

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	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec

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PFBA
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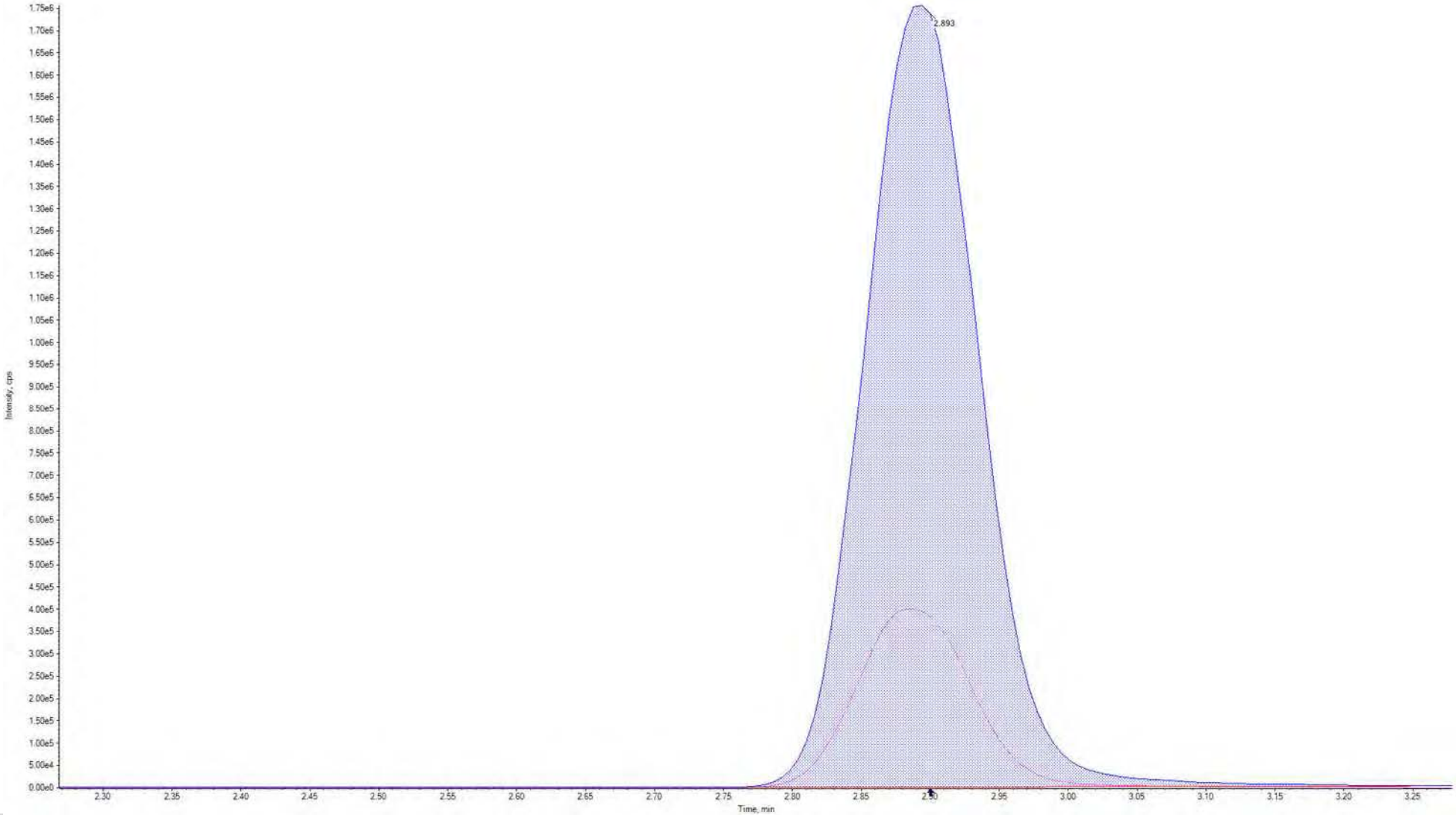

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PFPeA
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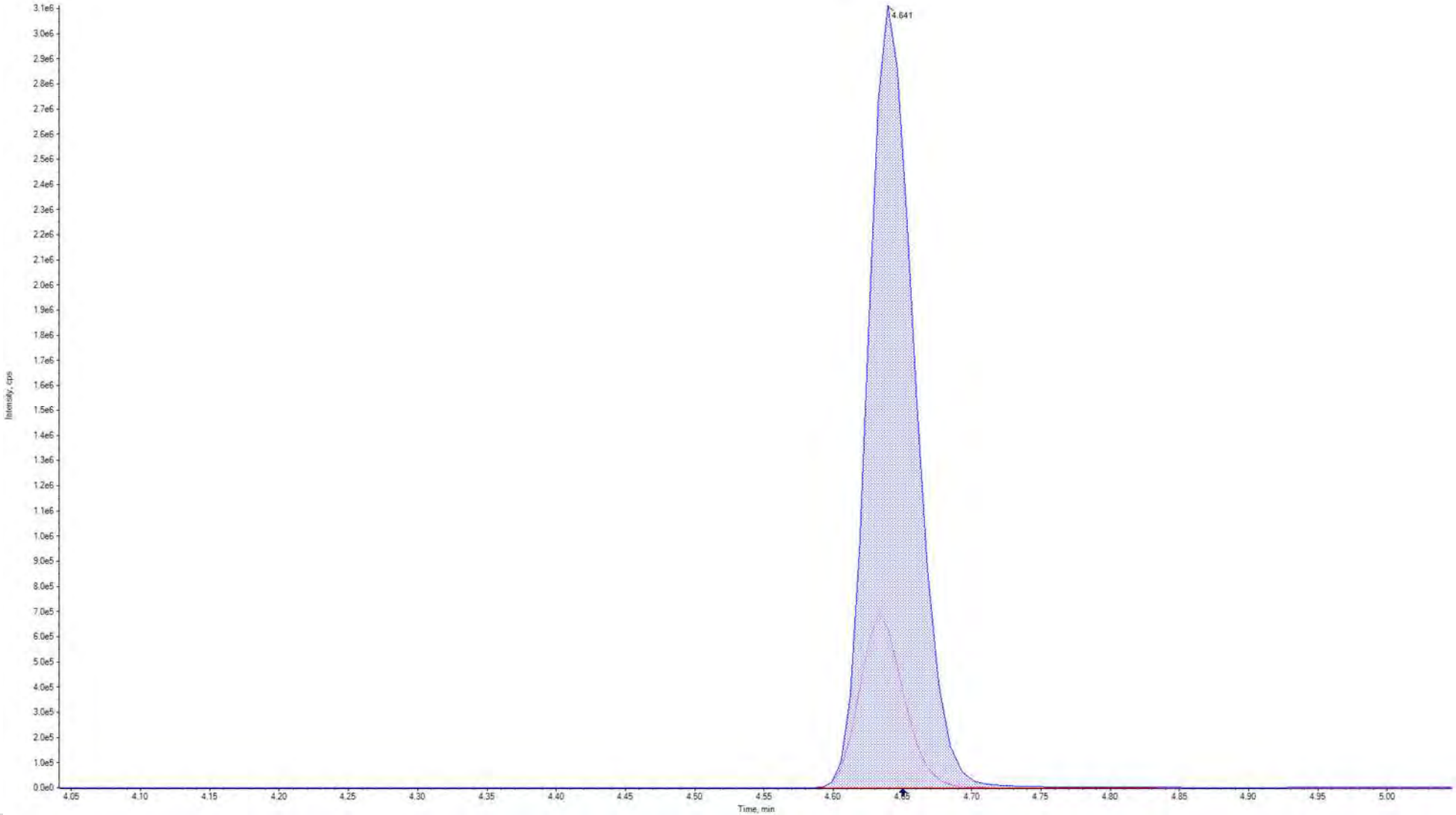

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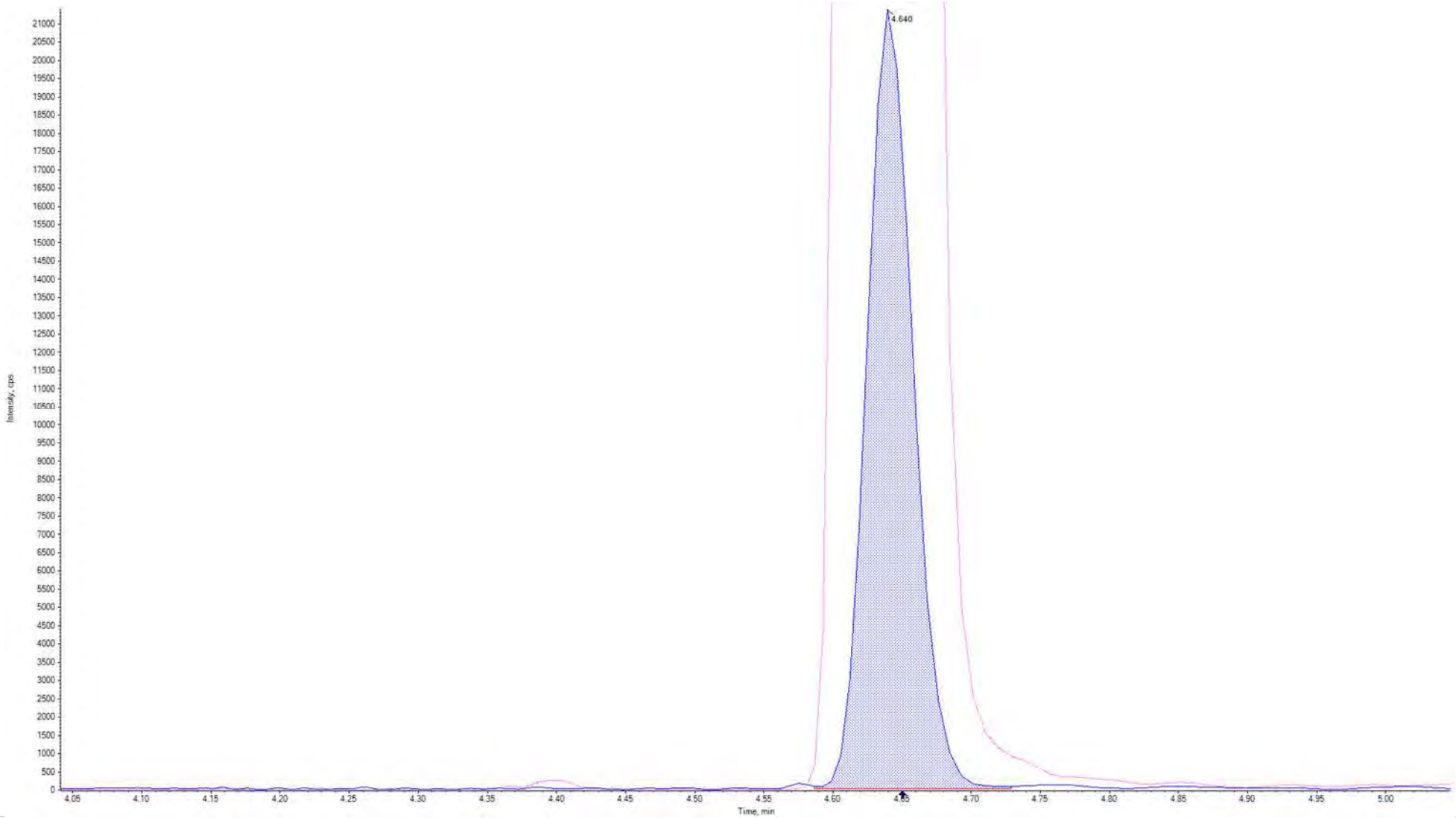
PFPeA_2
Sample: IA1633STD-12.5 S/N:1529.5 Points Across peak:20



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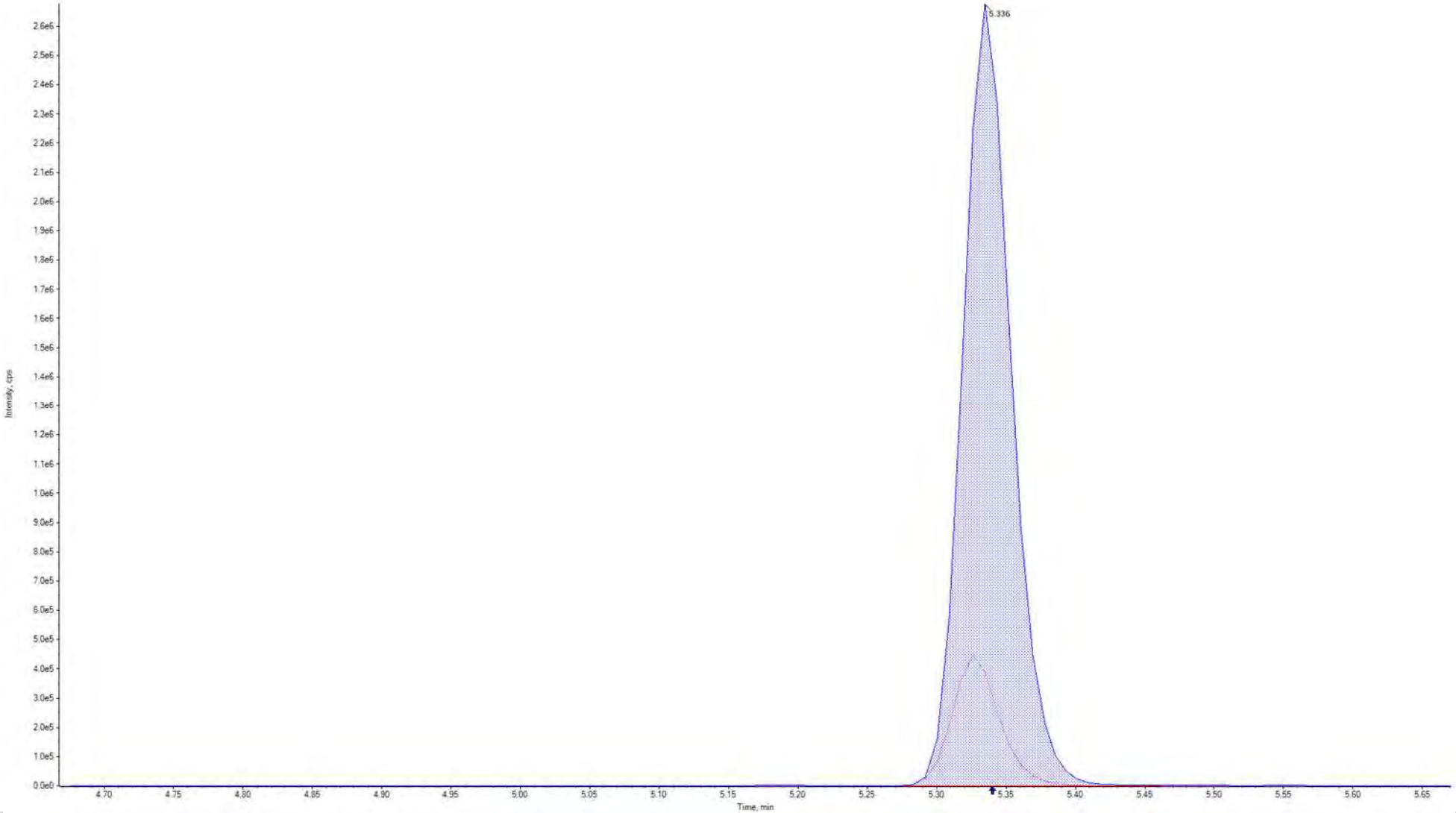
PFHxA
Sample: IA1633STD-12.5 S/N:2673.2 Points Across peak:29



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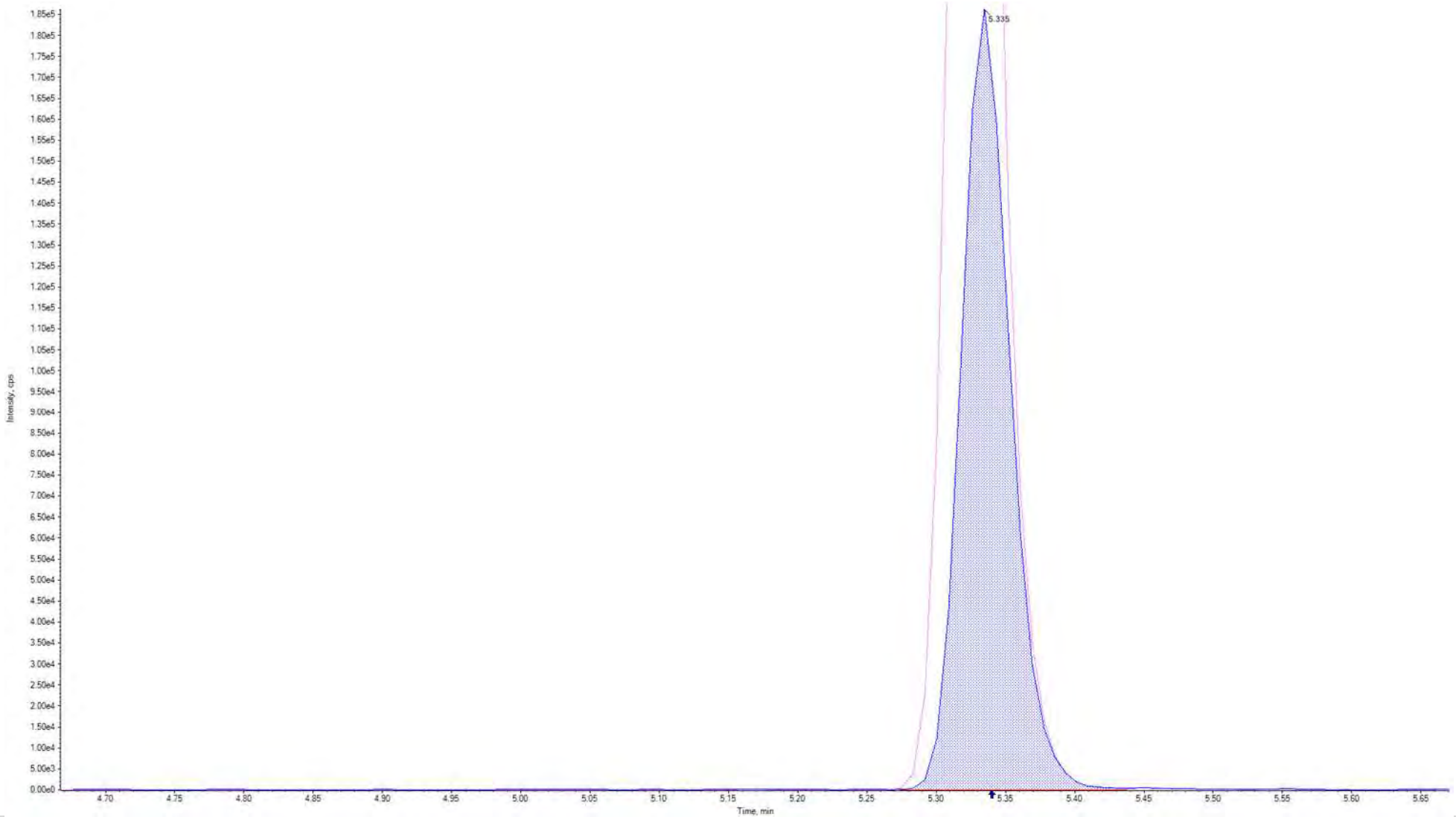
PFHxA_2
Sample: IA1633STD-12.5 S/N:2803.6 Points Across peak:22



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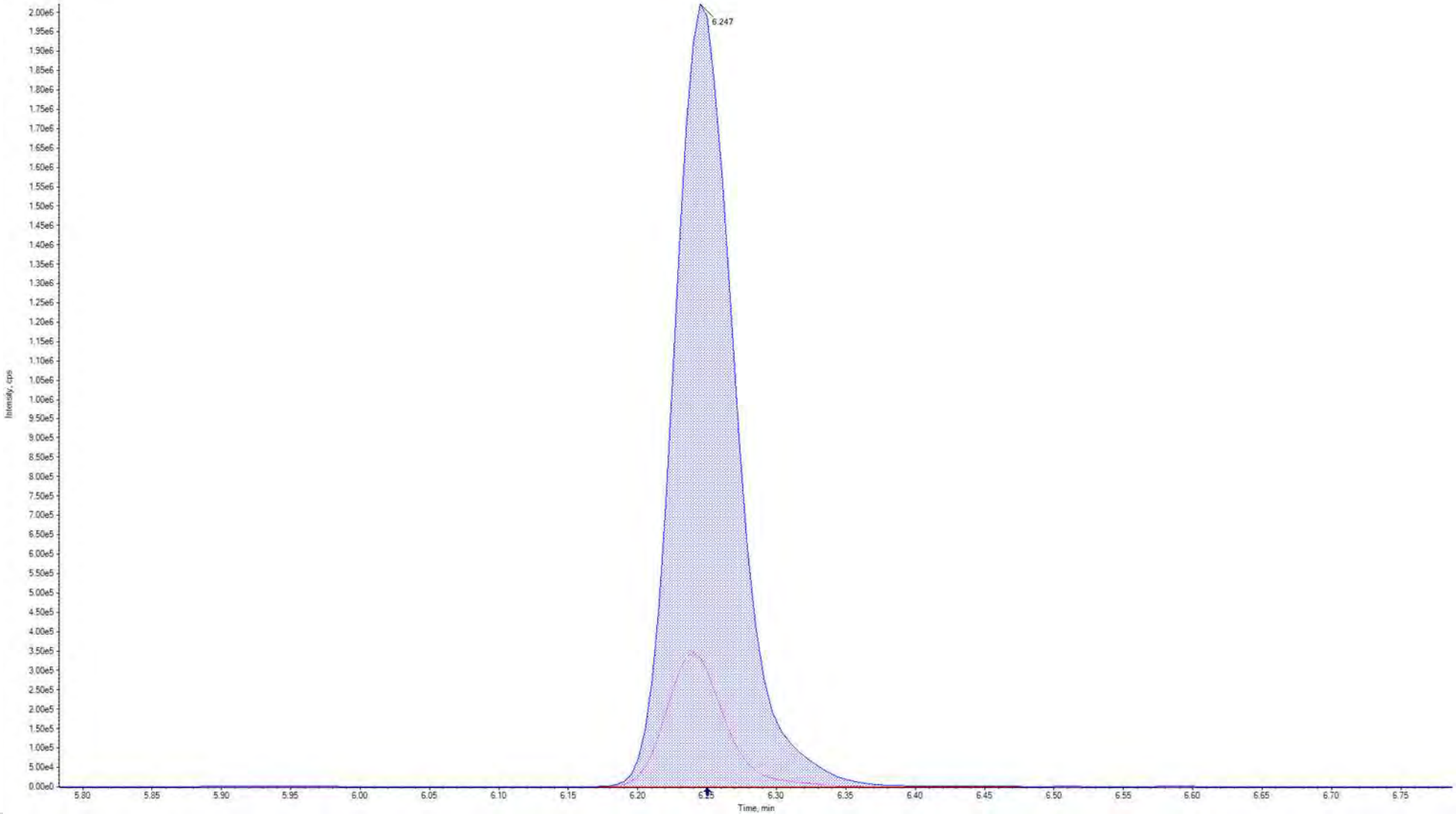
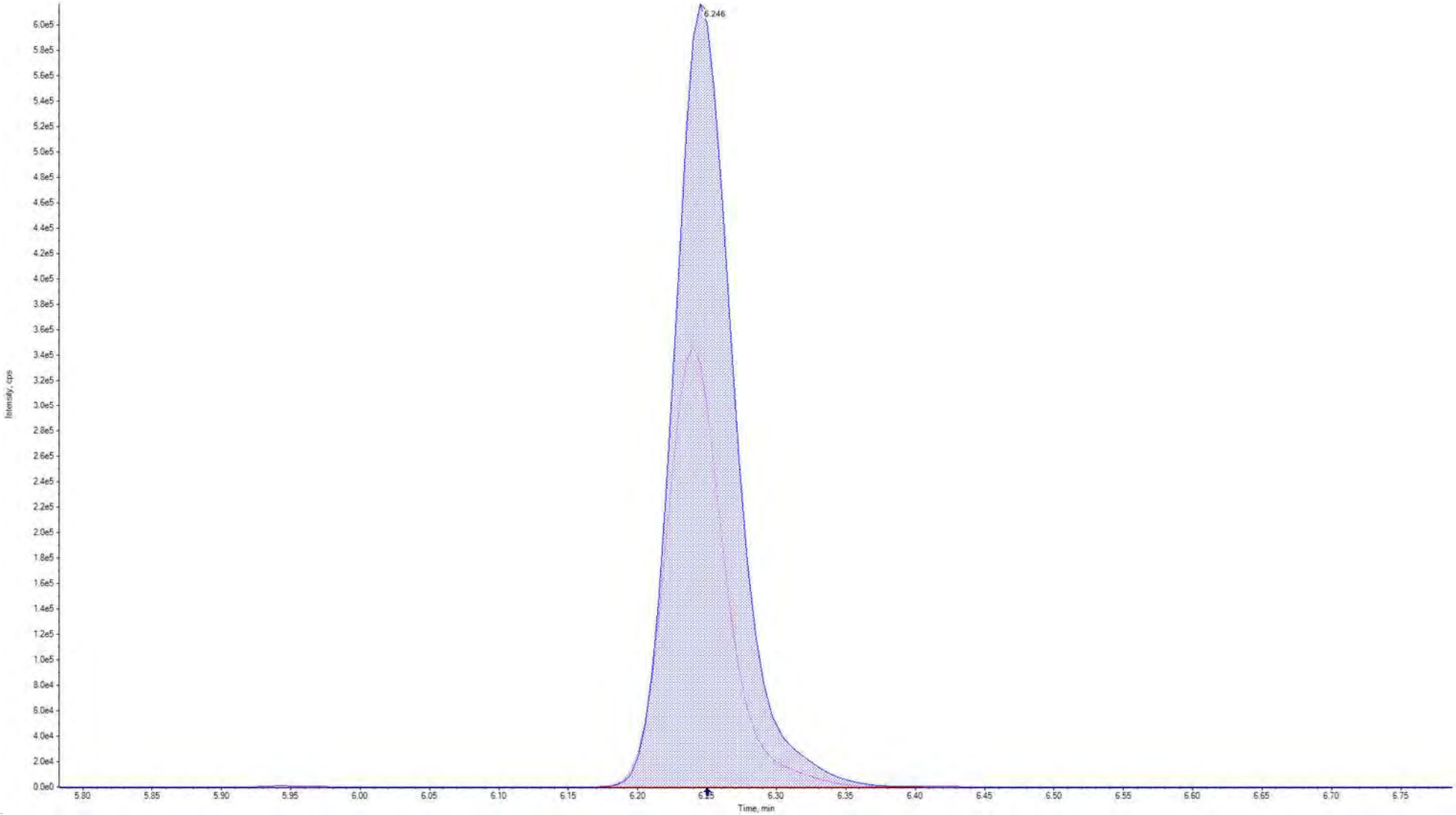
PFHpA
Sample: IA1633STD-12.5 S/N:4596.9 Points Across peak:60



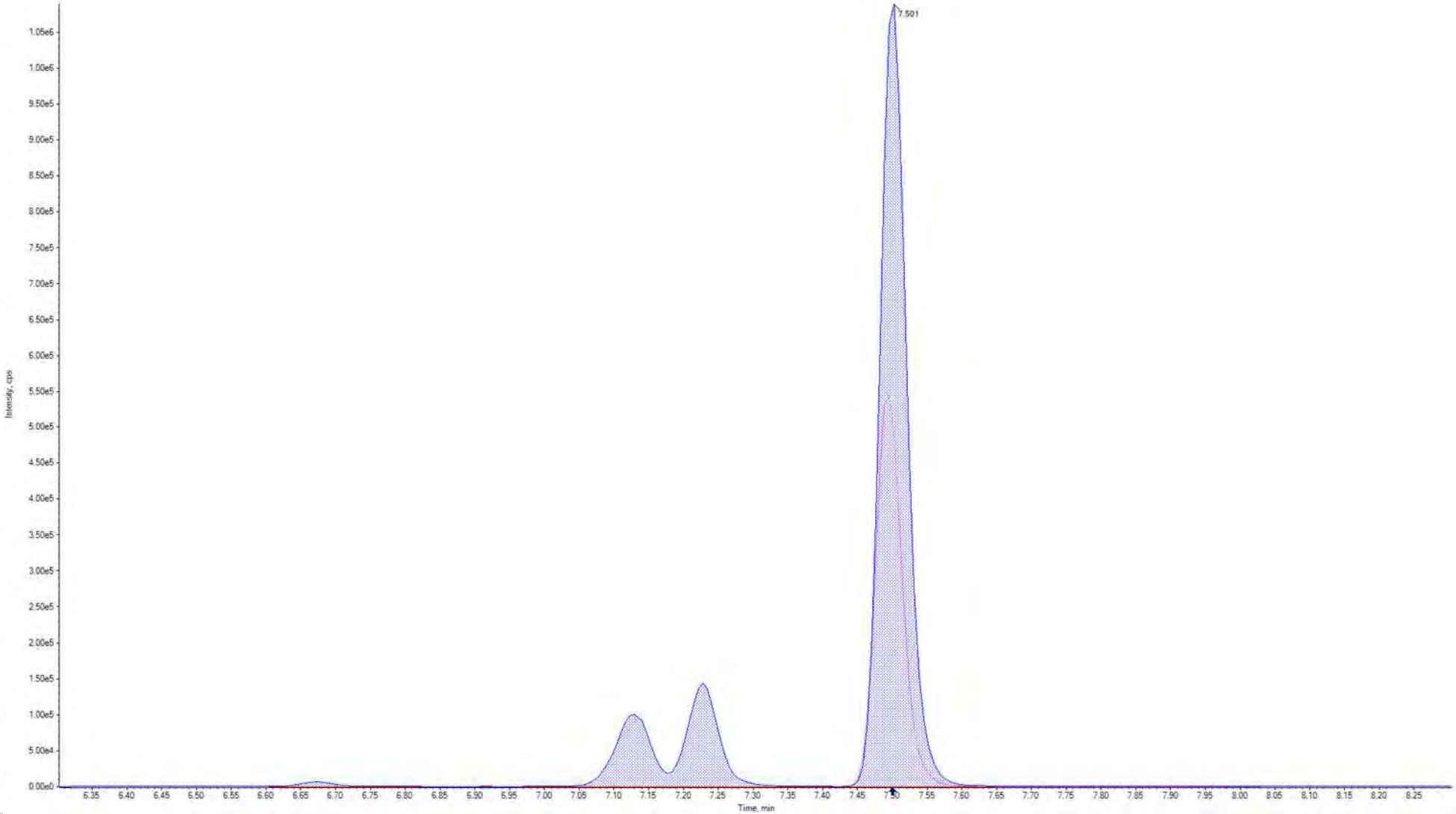
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFHpA_2
Sample: IA1633STD-12.5 S/N:13188.4 Points Across peak:46



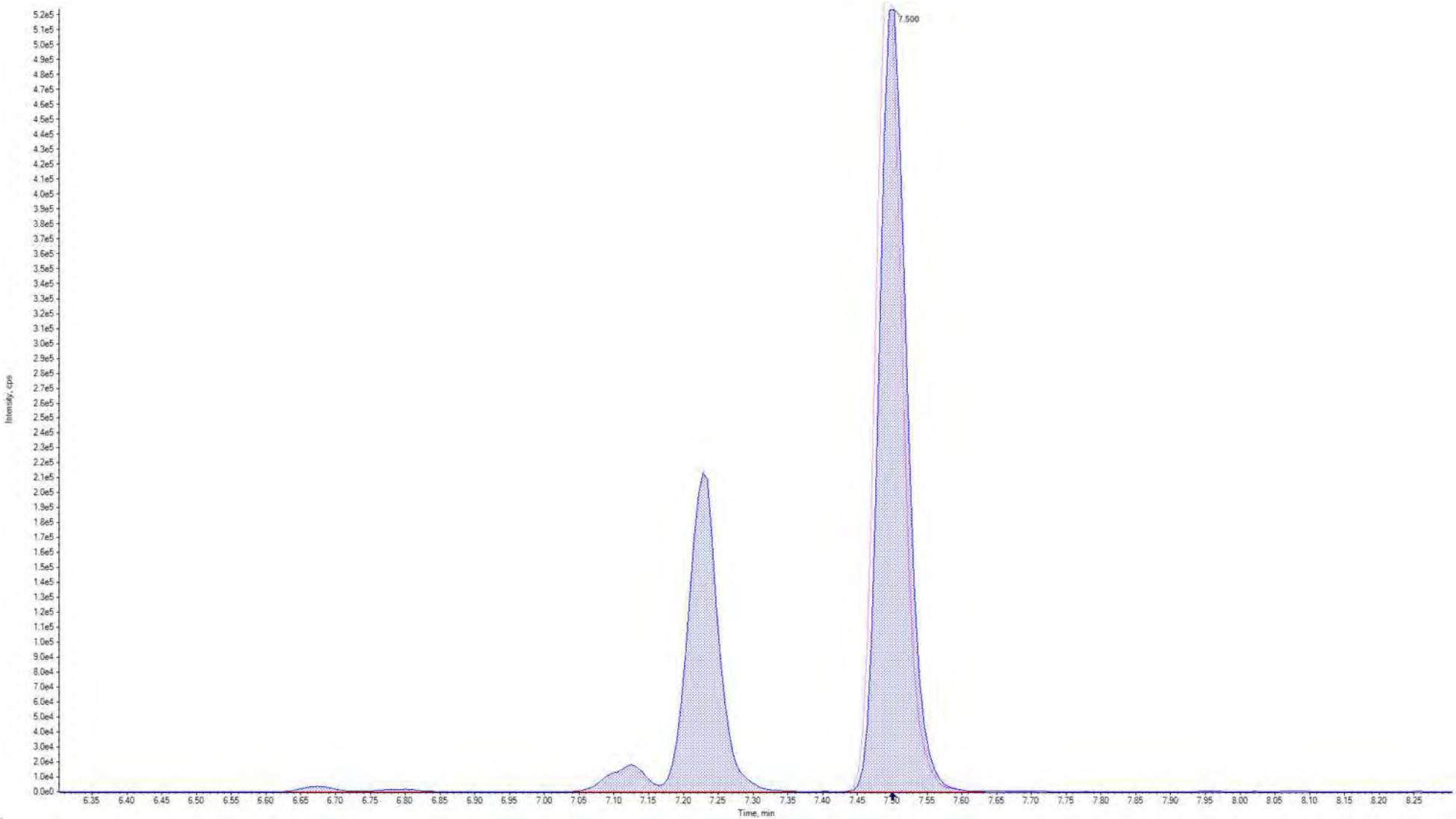
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOA
Sample: IA1633STD-12.5 S/N:3256.8 Points Across peak:159



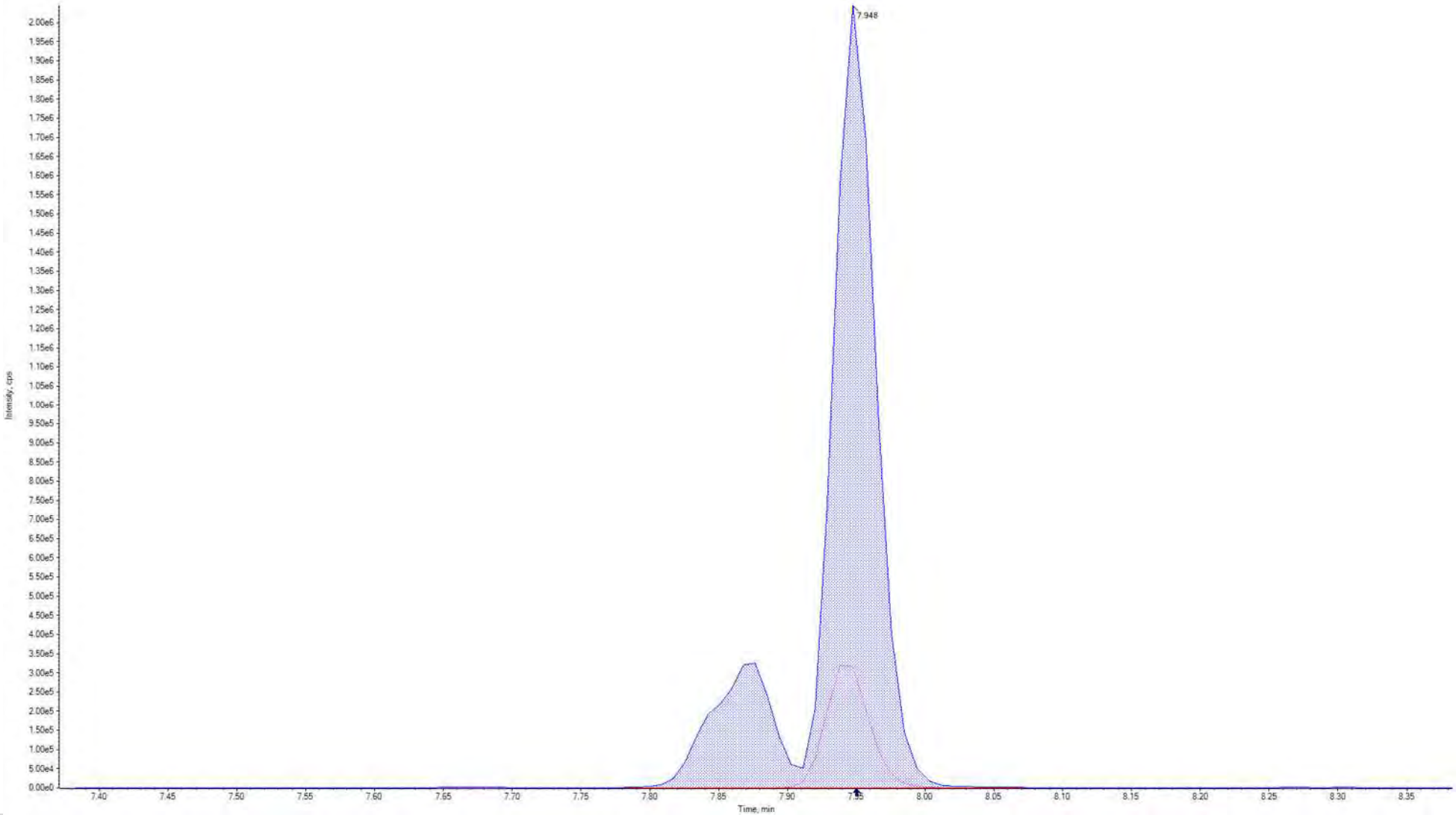
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOA_2
Sample: IA1633STD-12.5 S/N:49173.6 Points Across peak:155



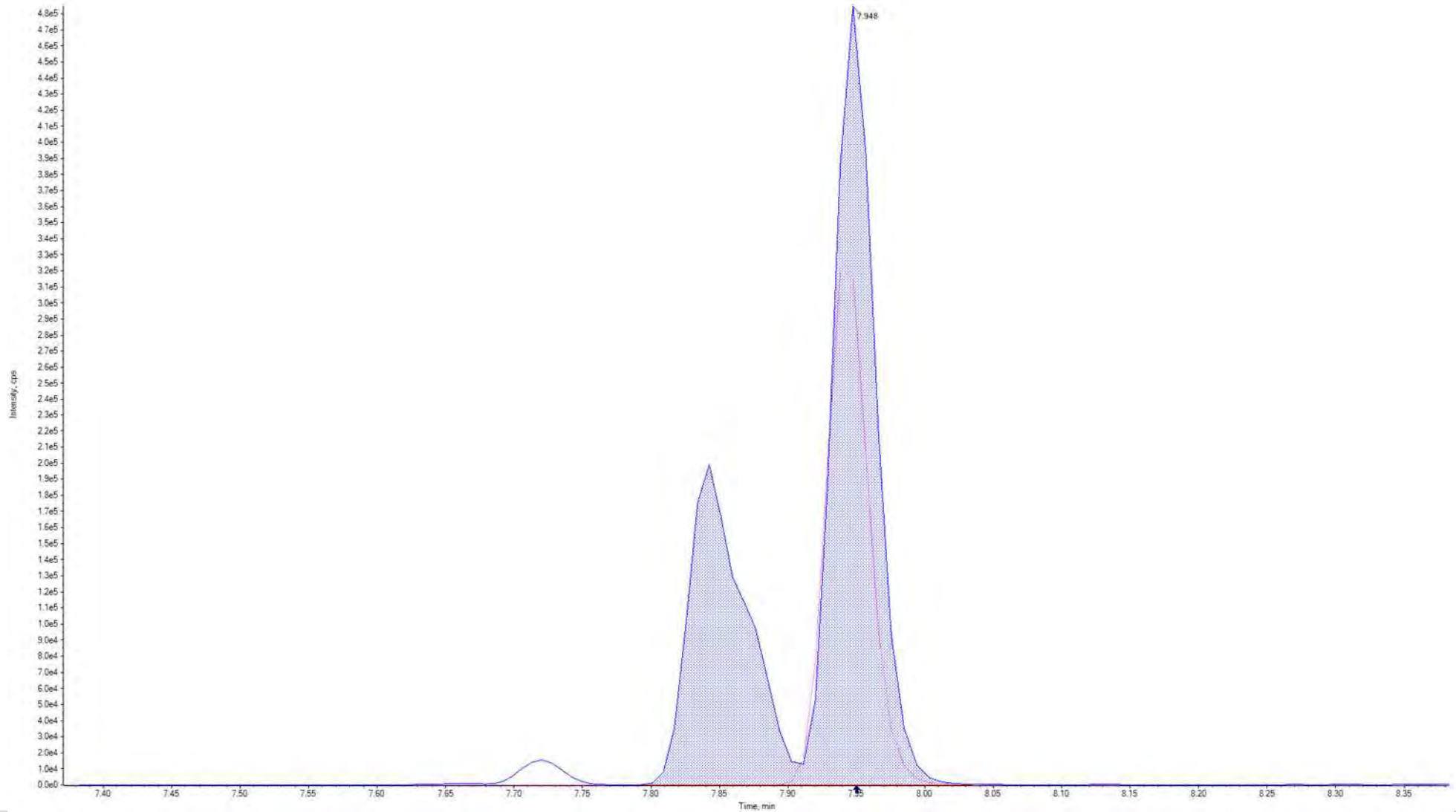
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFNA
Sample: IA1633STD-12.5 S/N:3349.9 Points Across peak:37



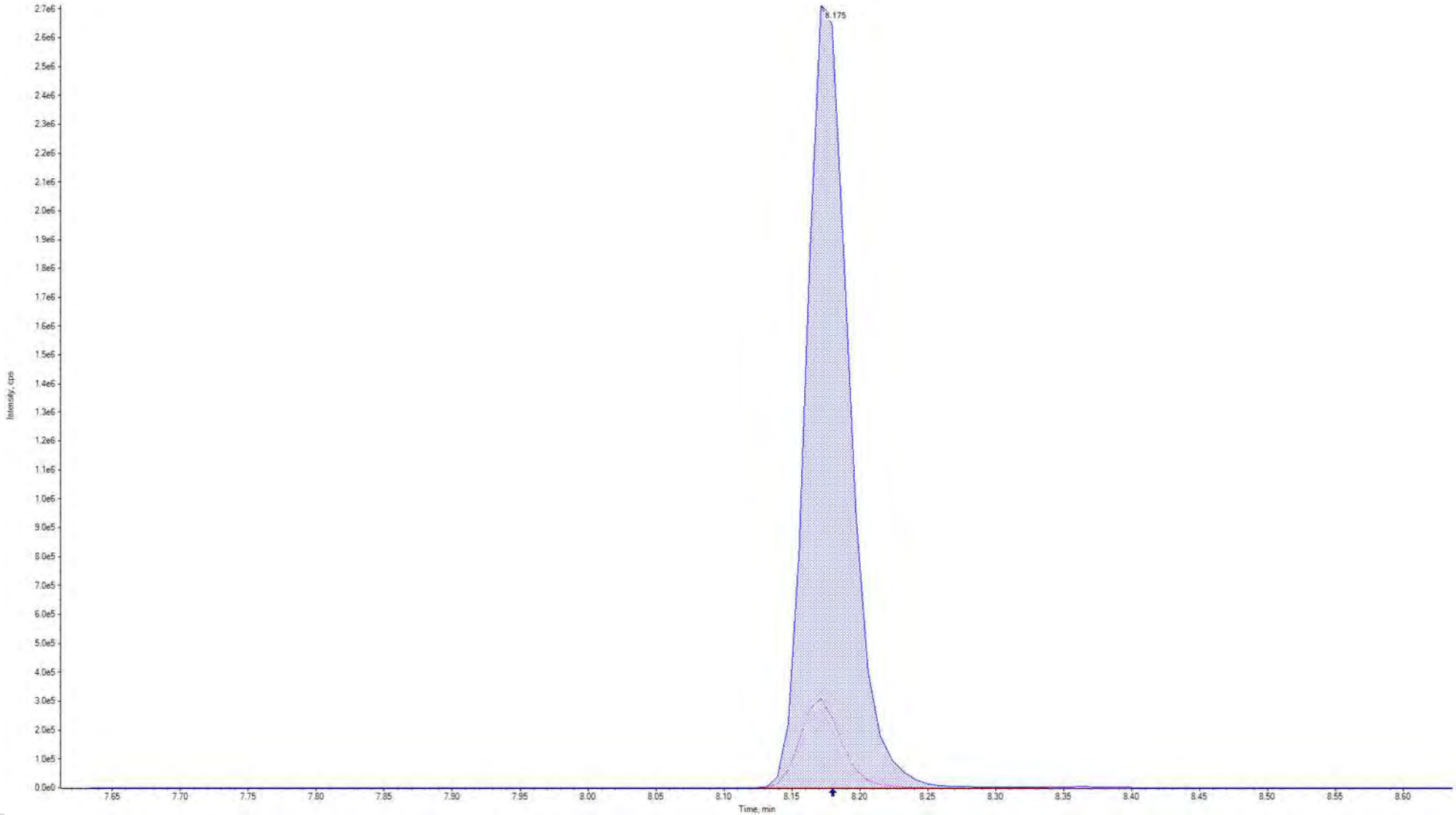
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFNA_2
Sample: IA1633STD-12.5 S/N:1087.0 Points Across peak:31



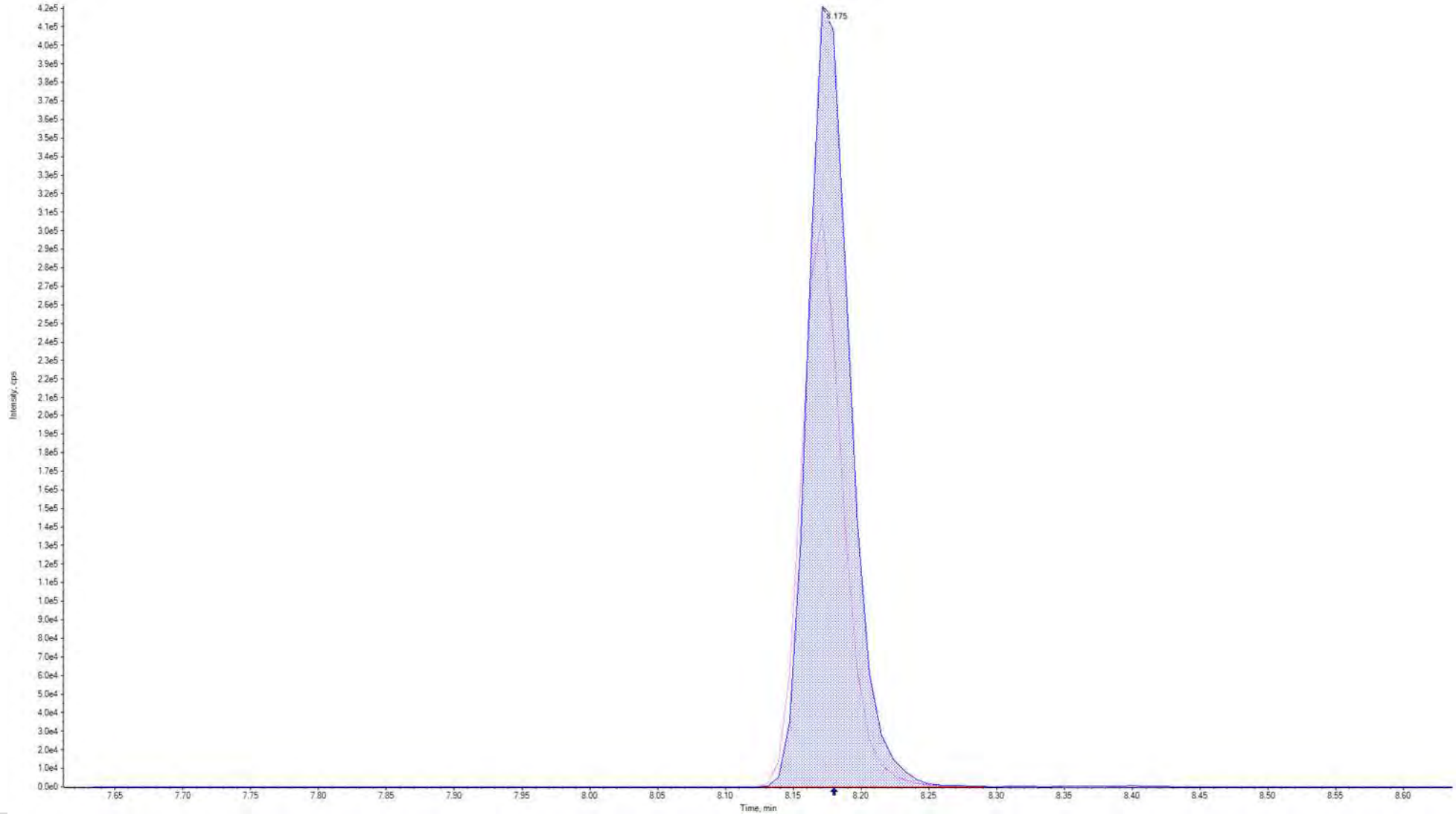
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDA
Sample: IA1633STD-12.5 S/N:5677.4 Points Across peak:27



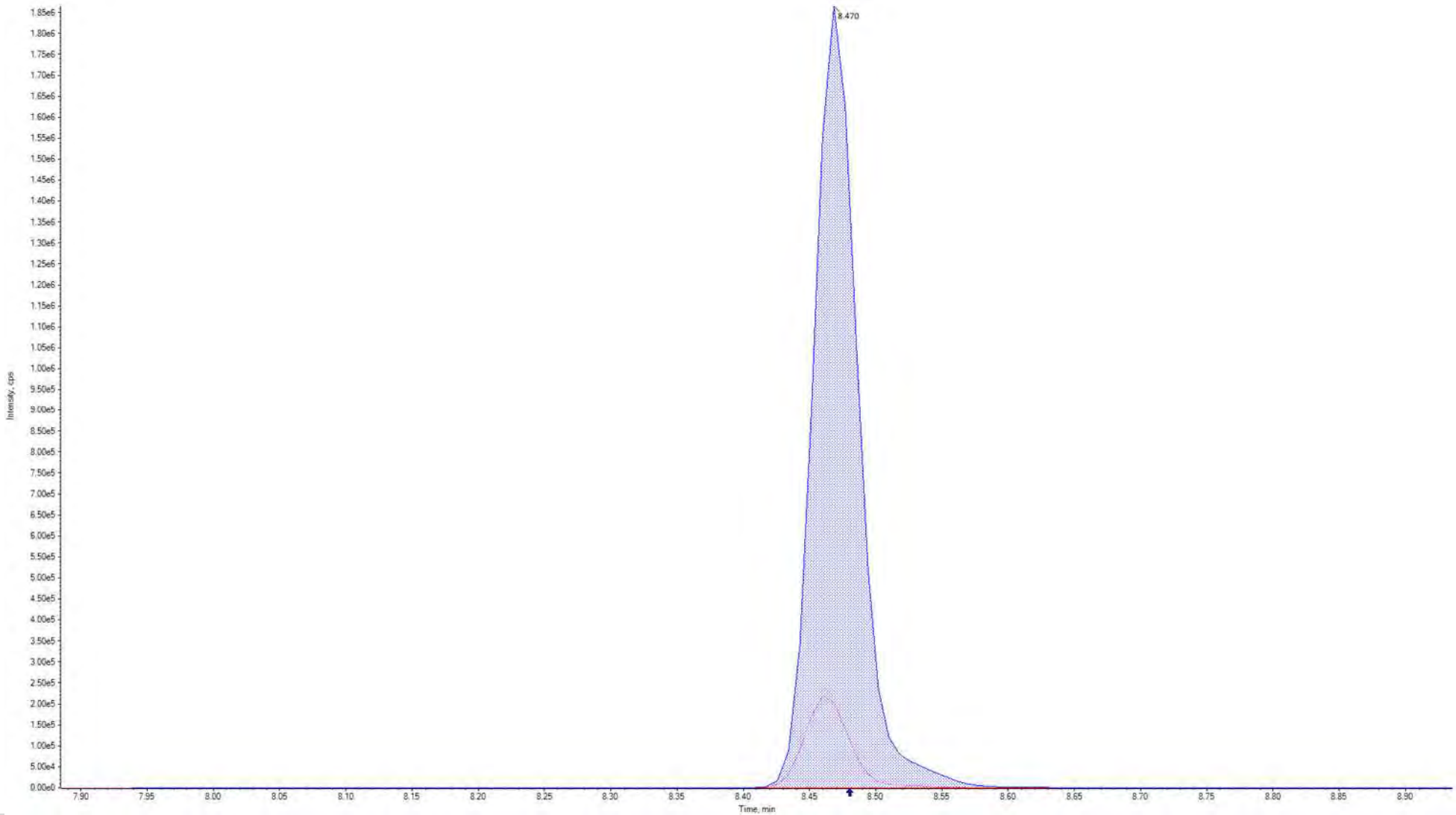
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDA_2
Sample: IA1633STD-12.5 S/N:2248.0 Points Across peak:22



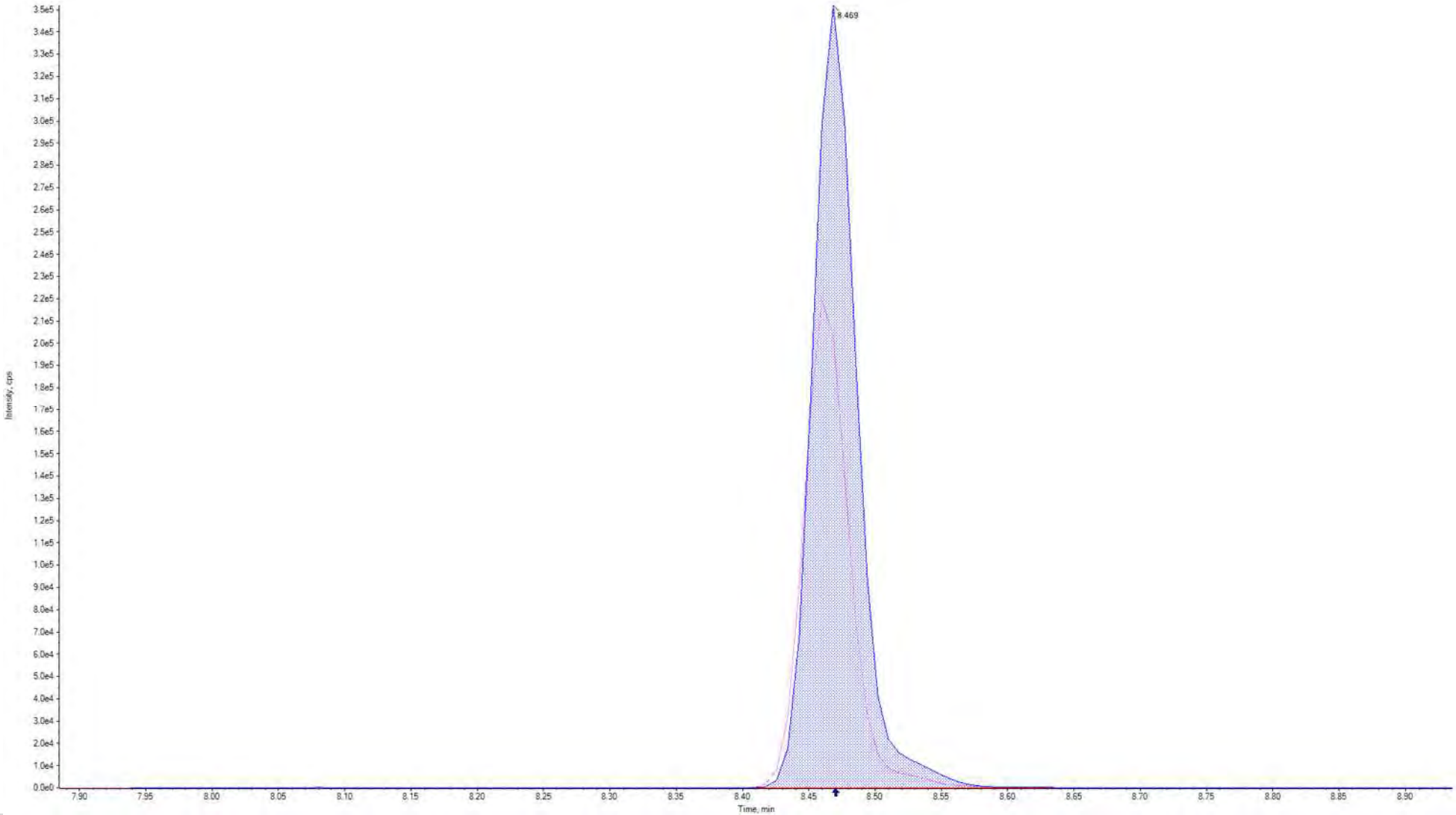
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFUnA
Sample: IA1633STD-12.5 S/N:7069.1 Points Across peak:33



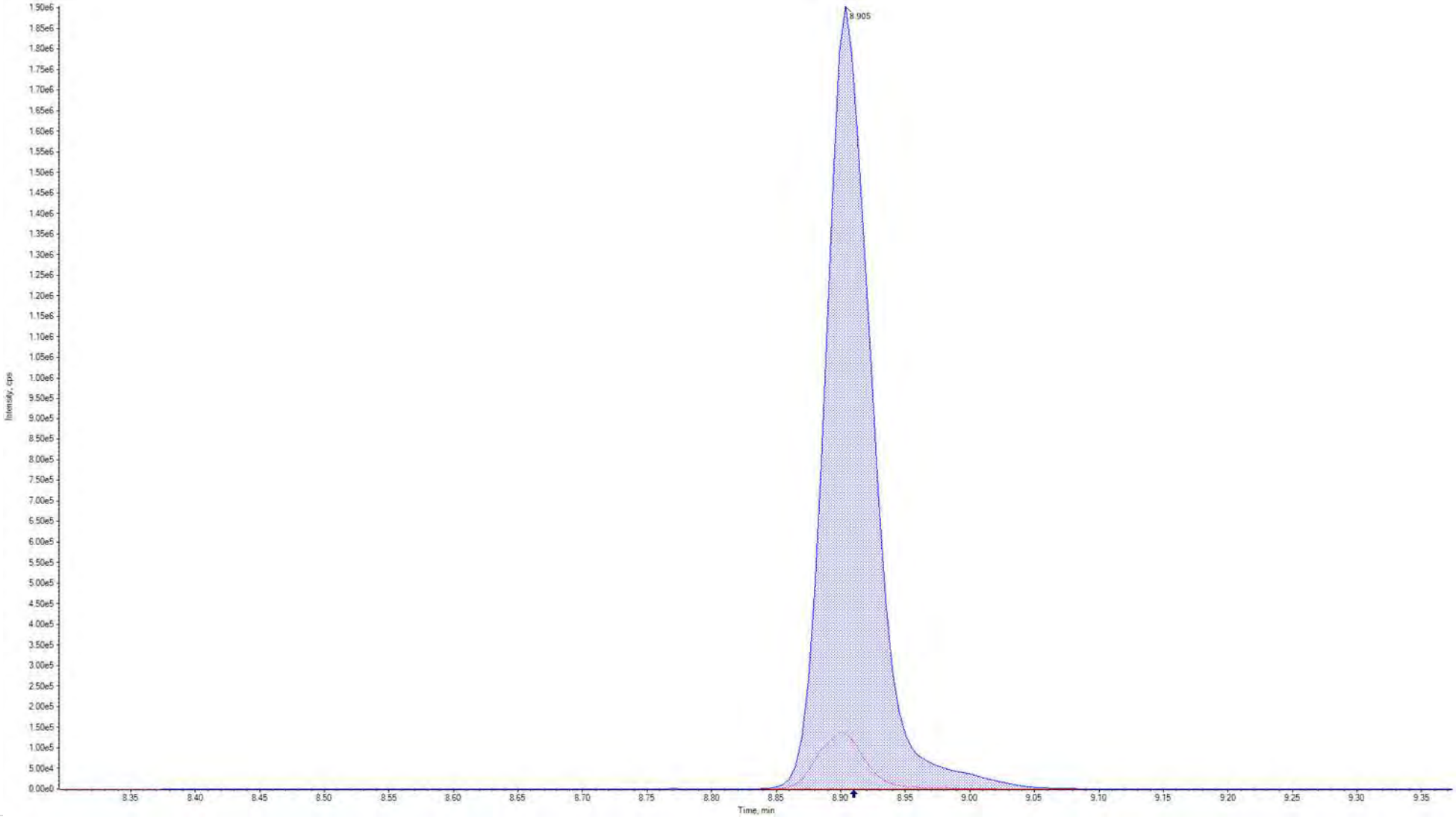
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFUnA_2
Sample: IA1633STD-12.5 S/N:47201.6 Points Across peak:34



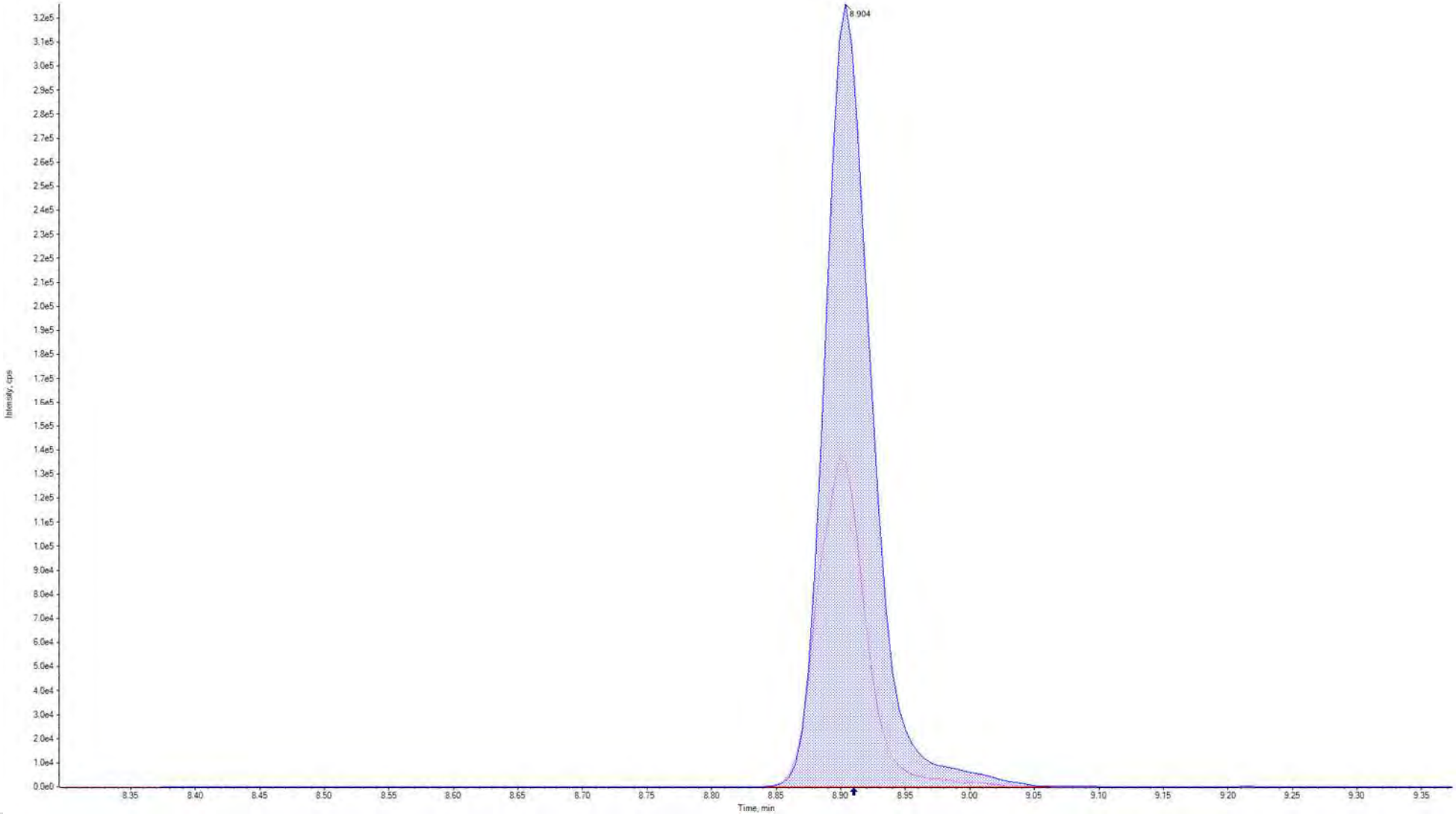
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDoA
Sample: IA1633STD-12.5 S/N:8752.8 Points Across peak:56



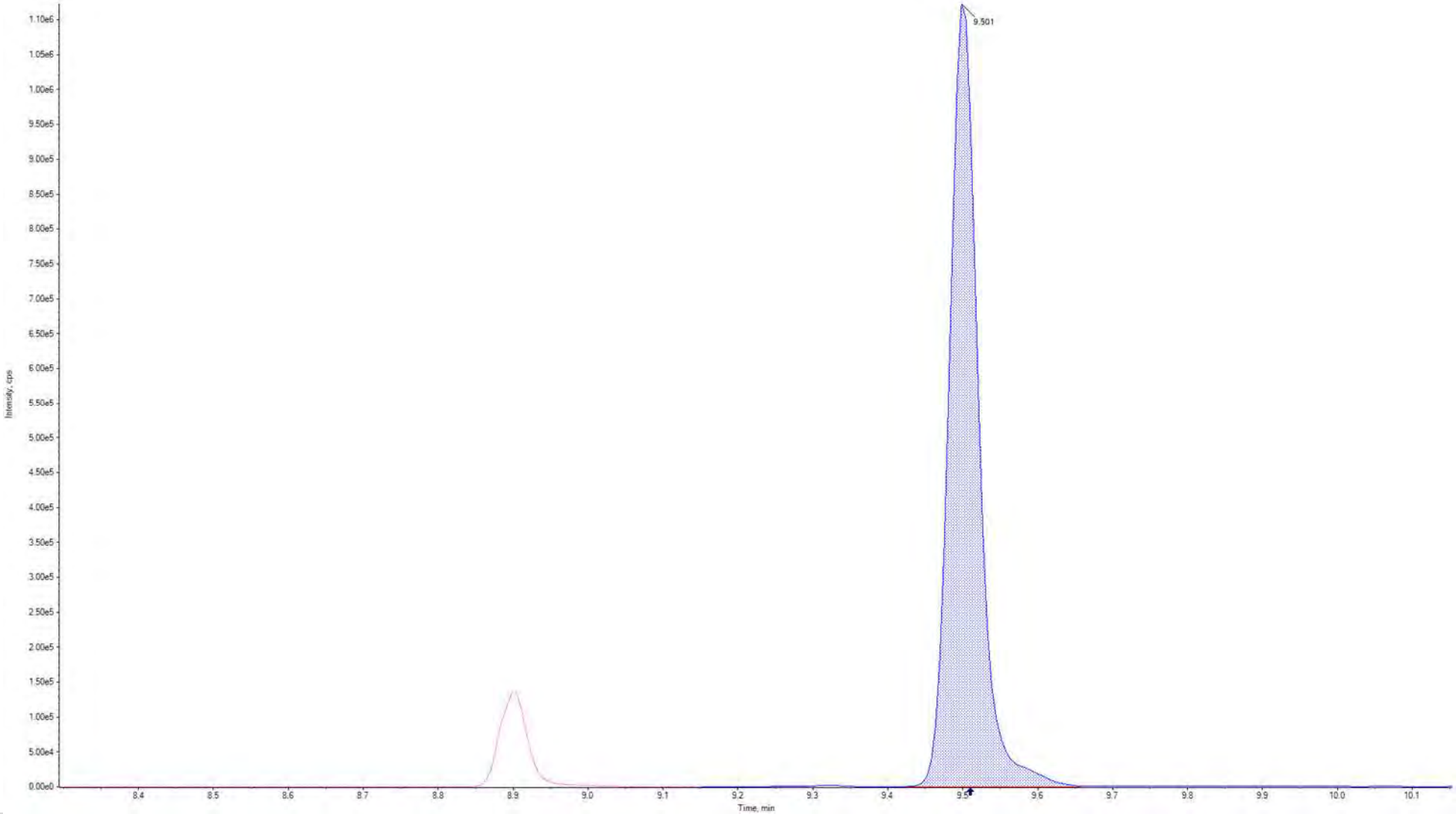
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDoA_2
Sample: IA1633STD-12.5 S/N:4864302.7 Points Across peak:46



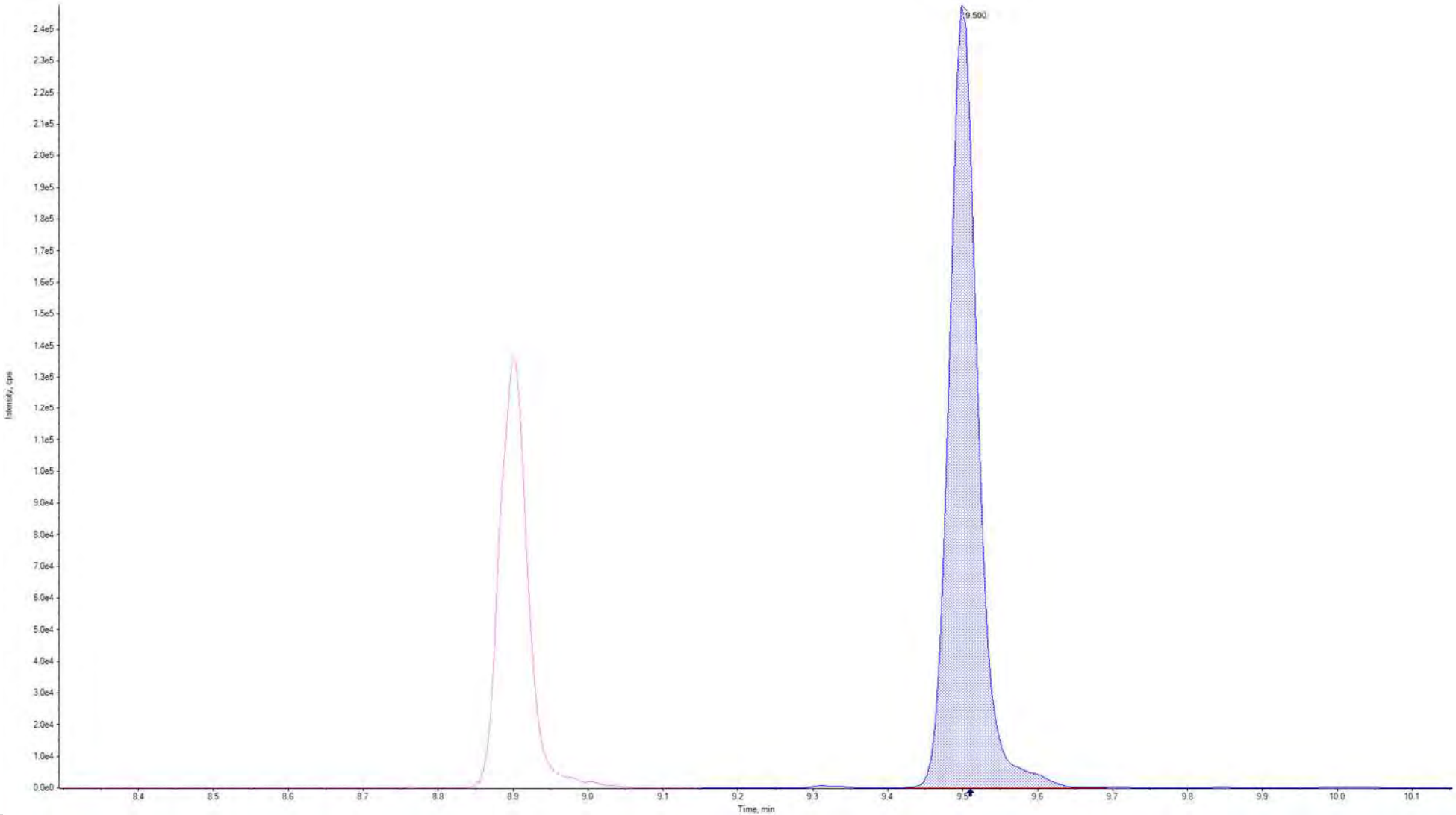
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFTrDA
Sample: IA1633STD-12.5 S/N:3644.2 Points Across peak:45



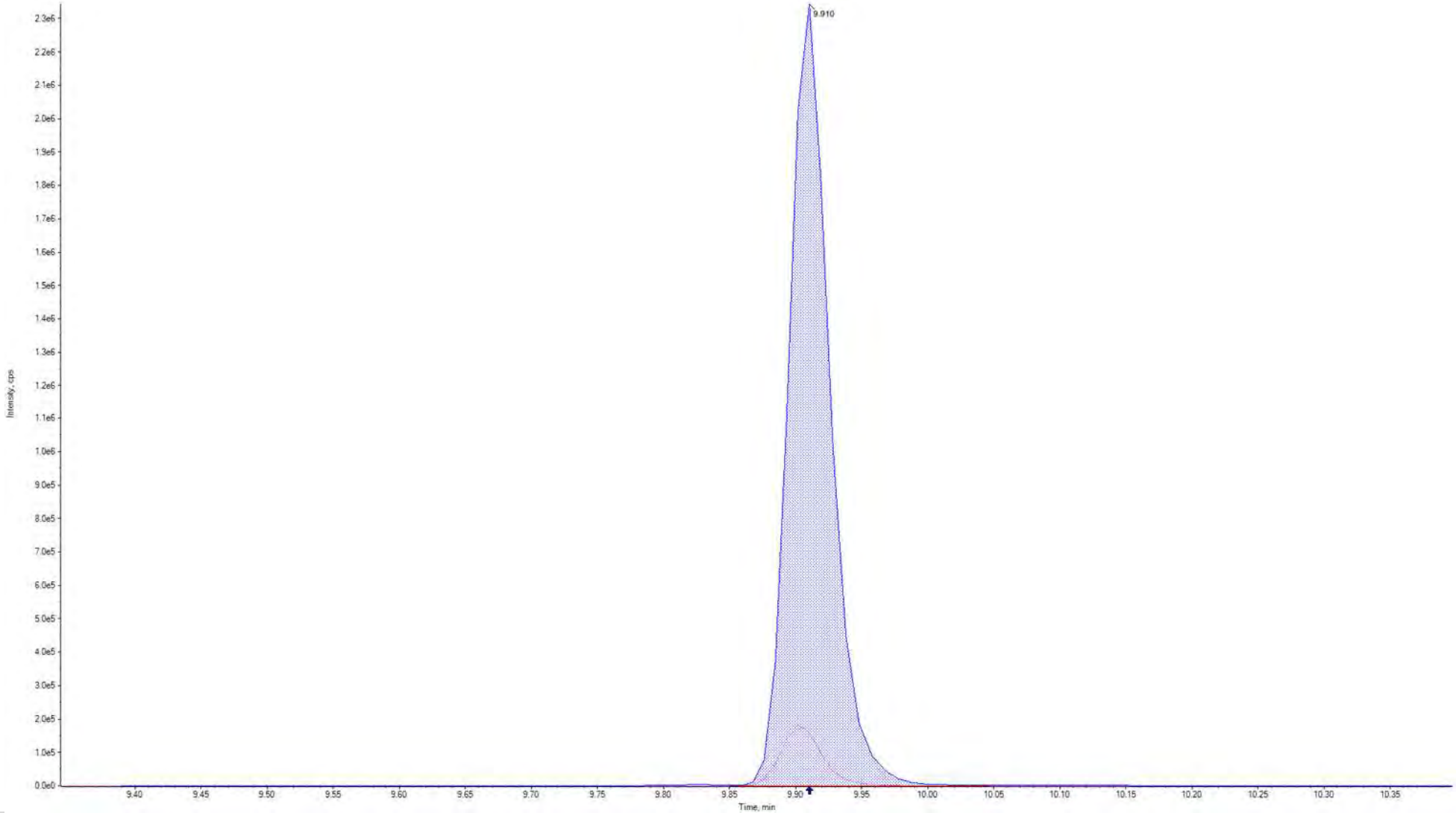
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFTrDA_2
Sample: IA1633STD-12.5 S/N:7407.1 Points Across peak:48



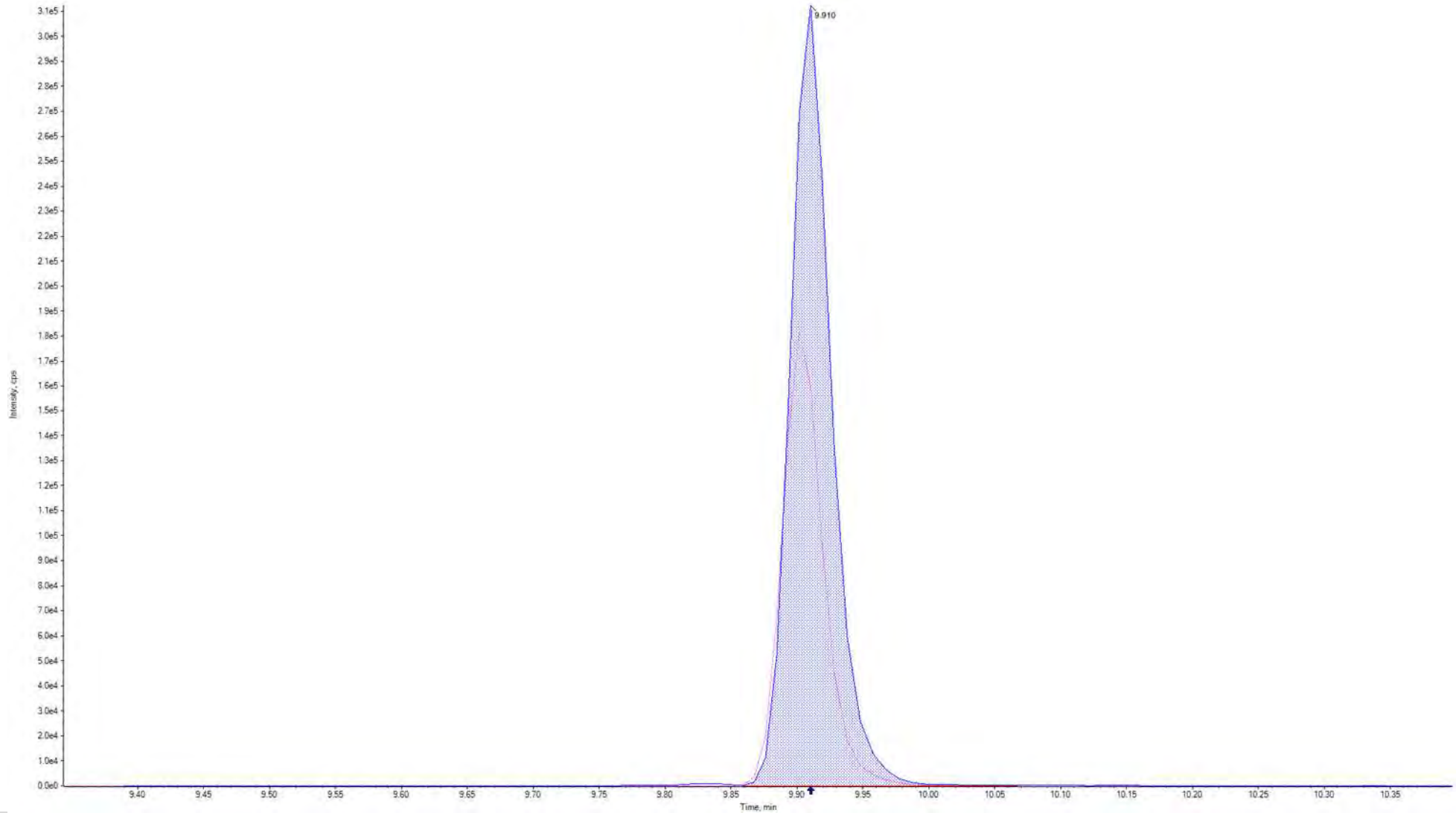
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFTeDA
Sample: IA1633STD-12.5 S/N:6010.5 Points Across peak:22



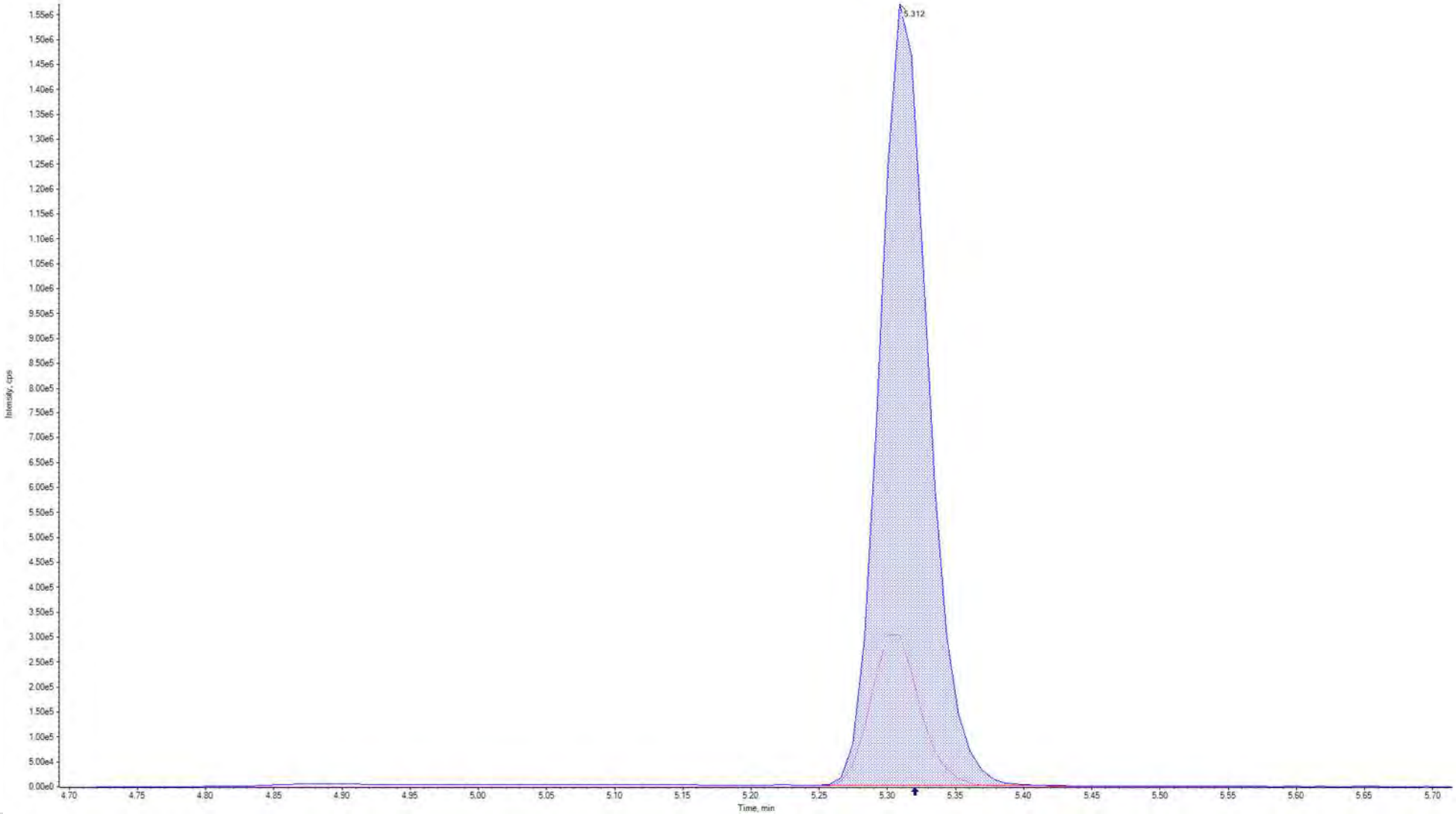
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFTeDA_2
Sample: IA1633STD-12.5 S/N:1145511.7 Points Across peak:23



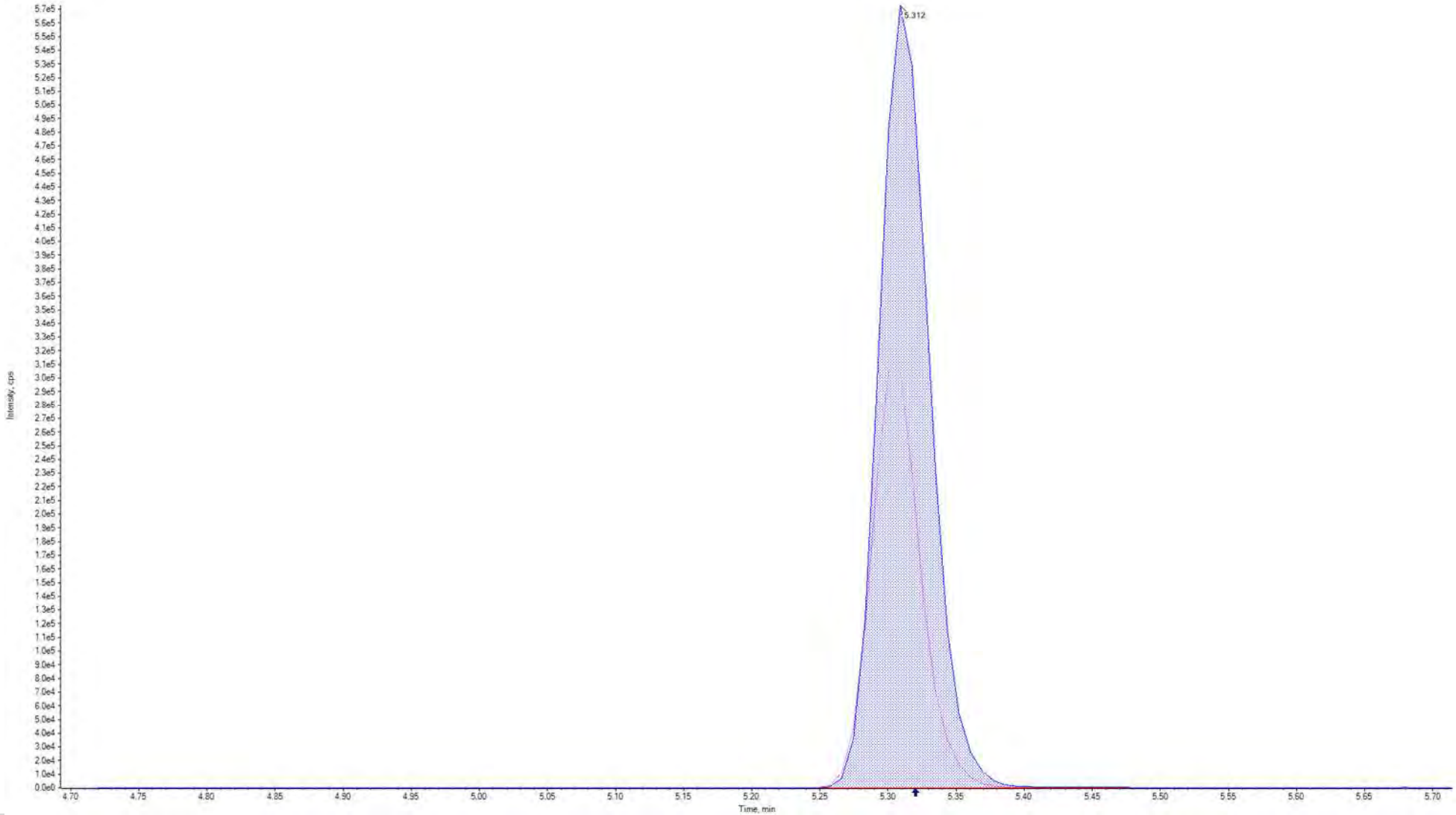
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFBS
Sample: IA1633STD-12.5 S/N:86.5 Points Across peak:24



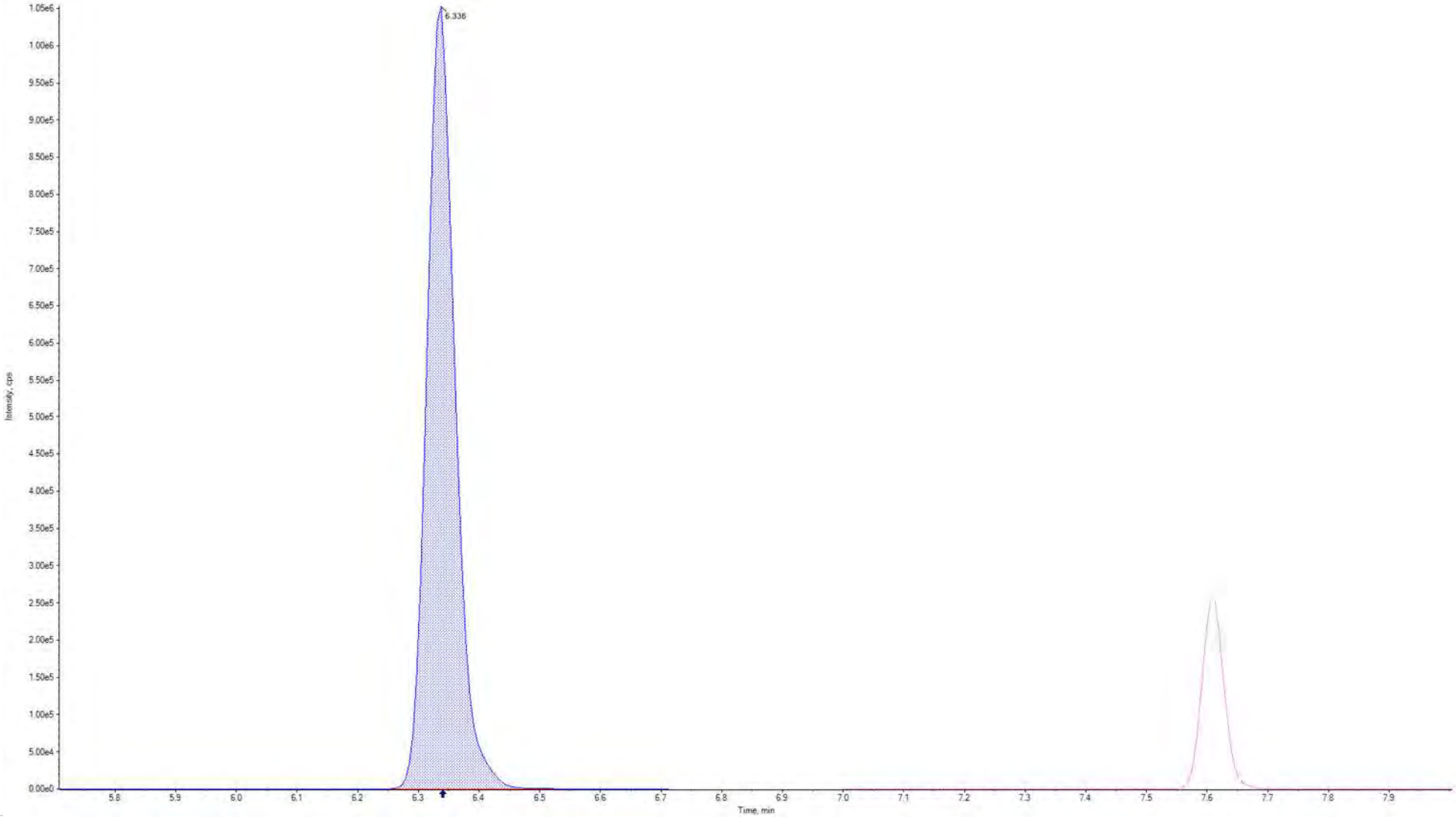
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFBS_2
Sample: IA1633STD-12.5 S/N:5836.6 Points Across peak:35



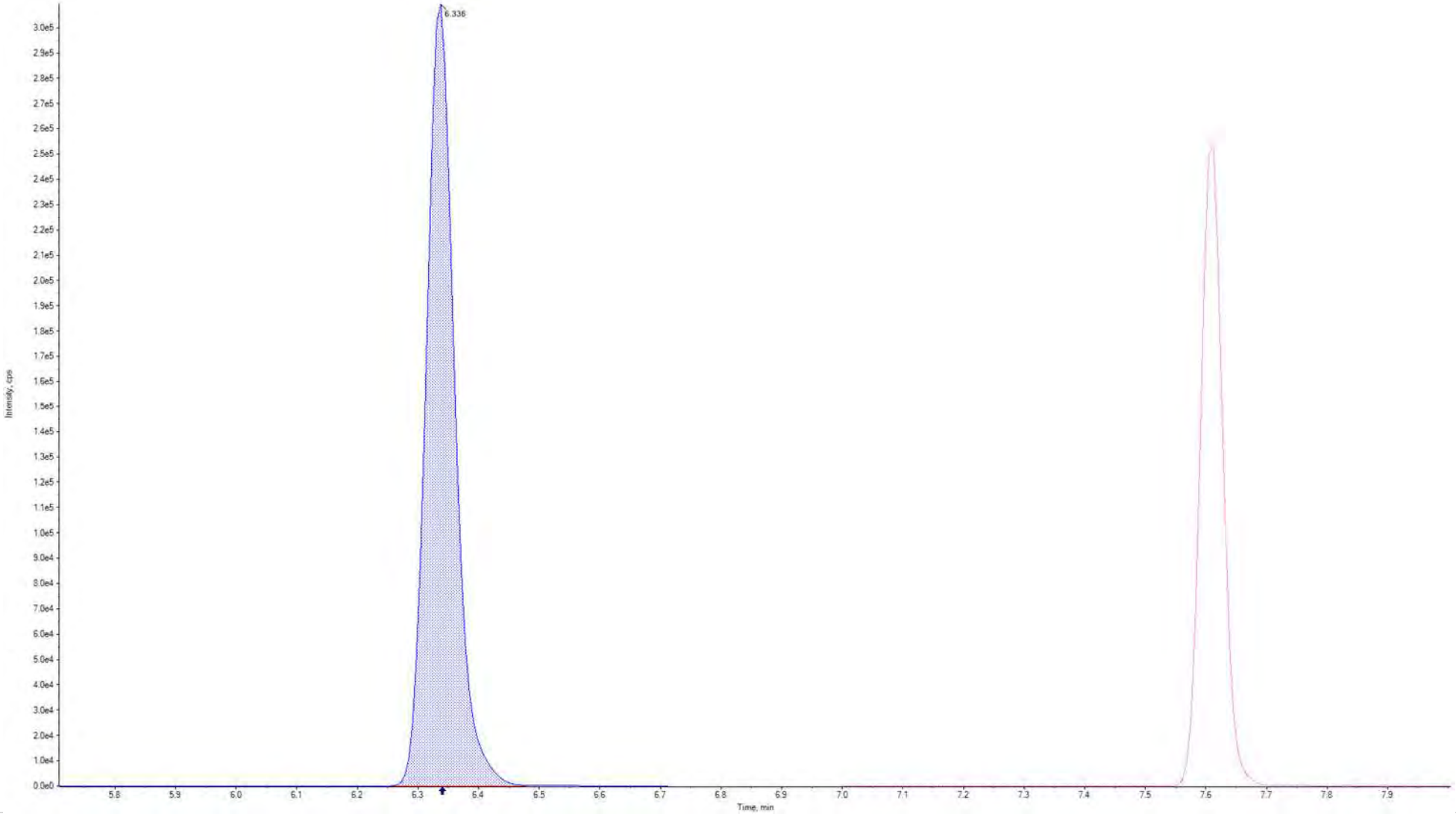
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFPeS
Sample: IA1633STD-12.5 S/N:16268.6 Points Across peak:51



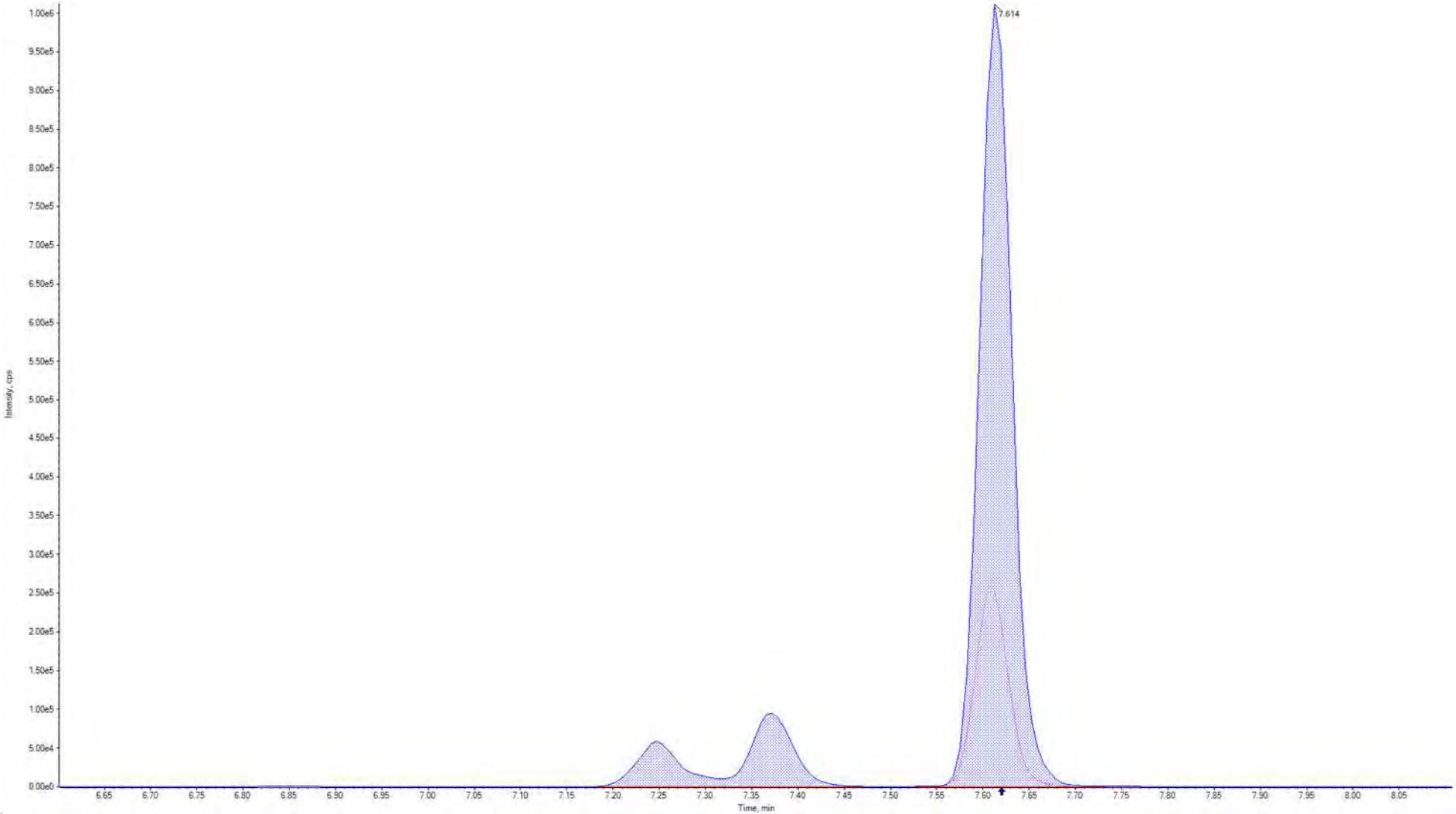
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFPeS_2
Sample: IA1633STD-12.5 S/N:17419.2 Points Across peak:38



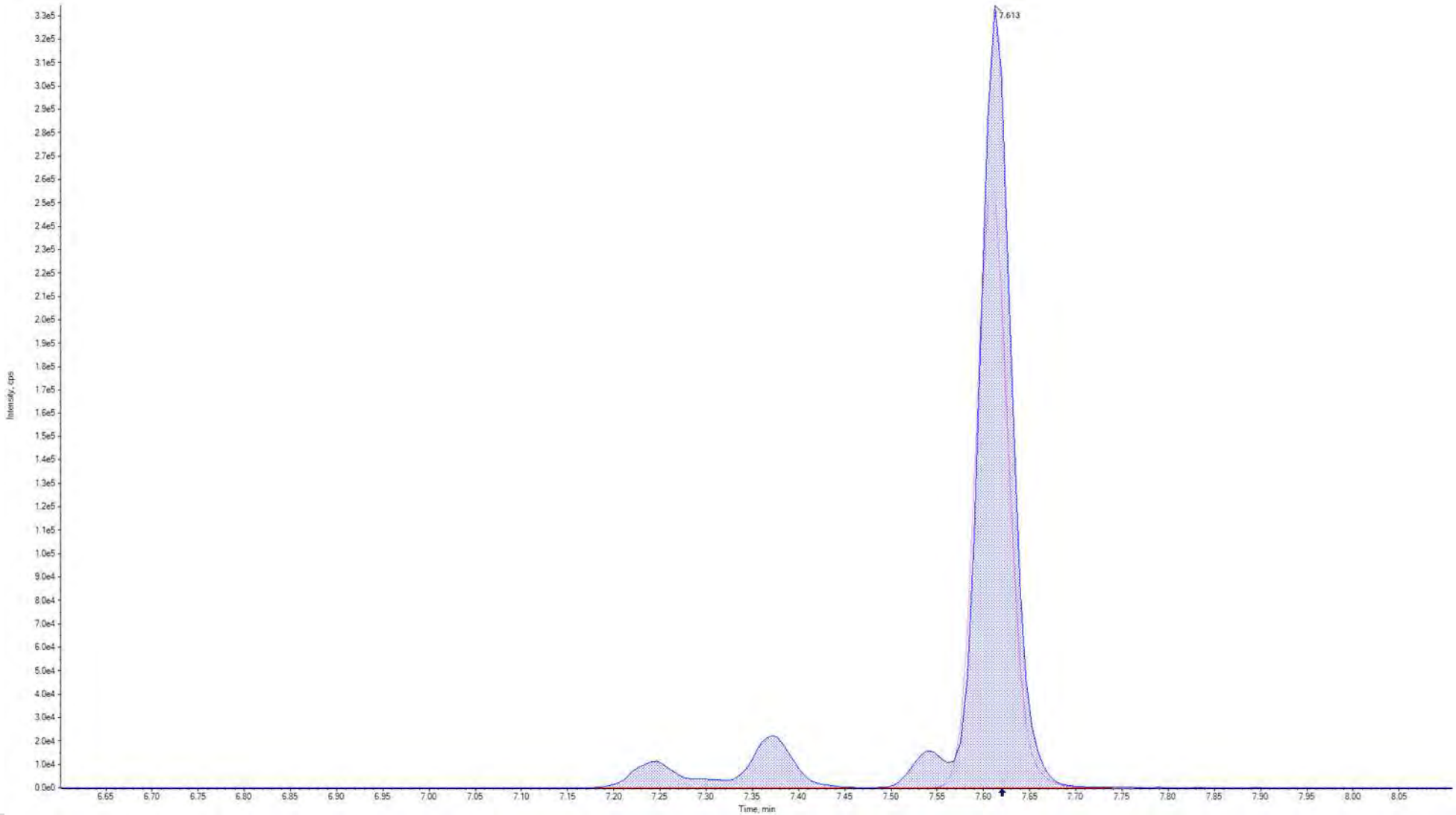
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFHxS
Sample: IA1633STD-12.5 S/N:20016.6 Points Across peak:89



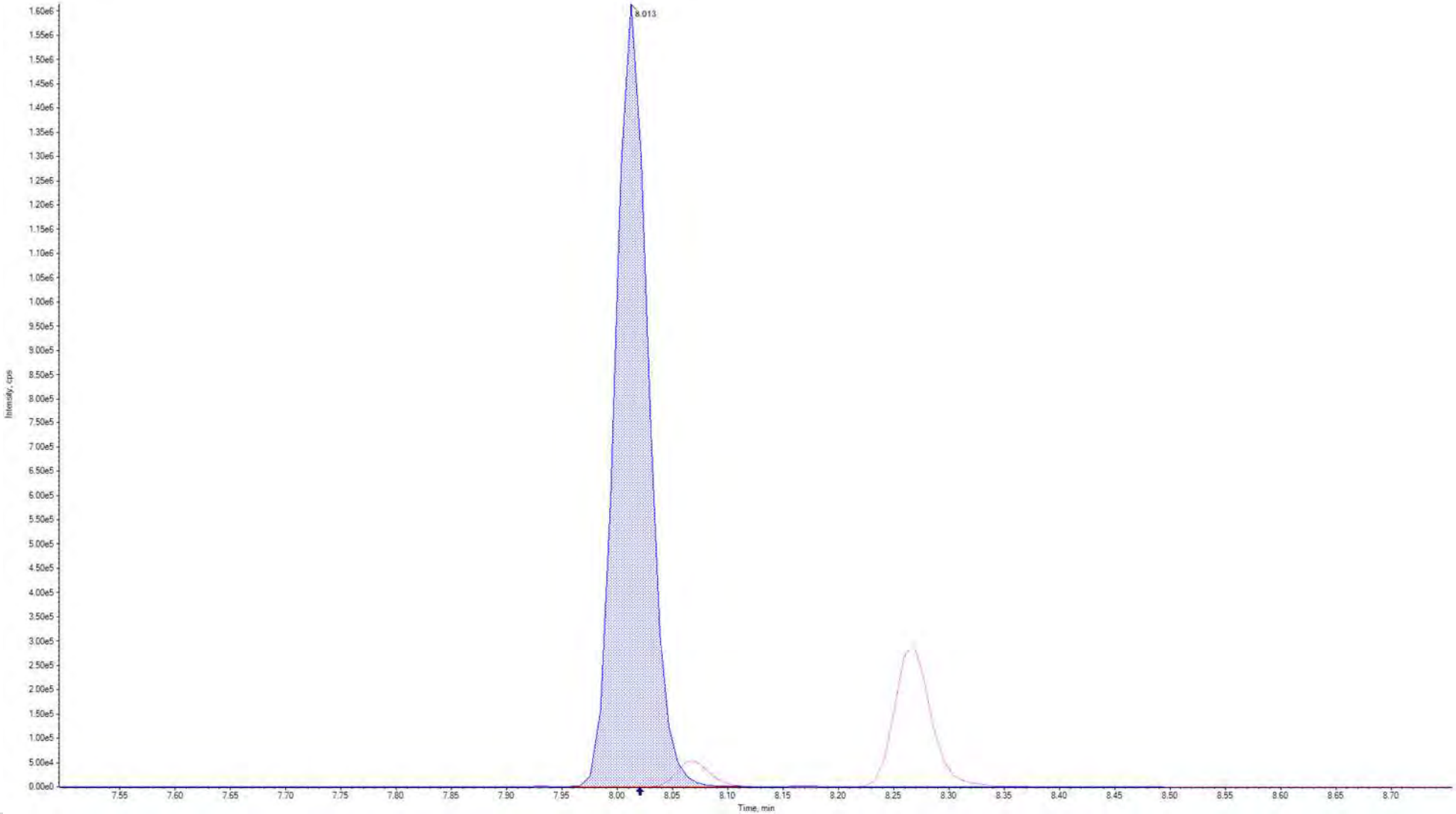
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFHxS_2
Sample: IA1633STD-12.5 S/N:58429.5 Points Across peak:94



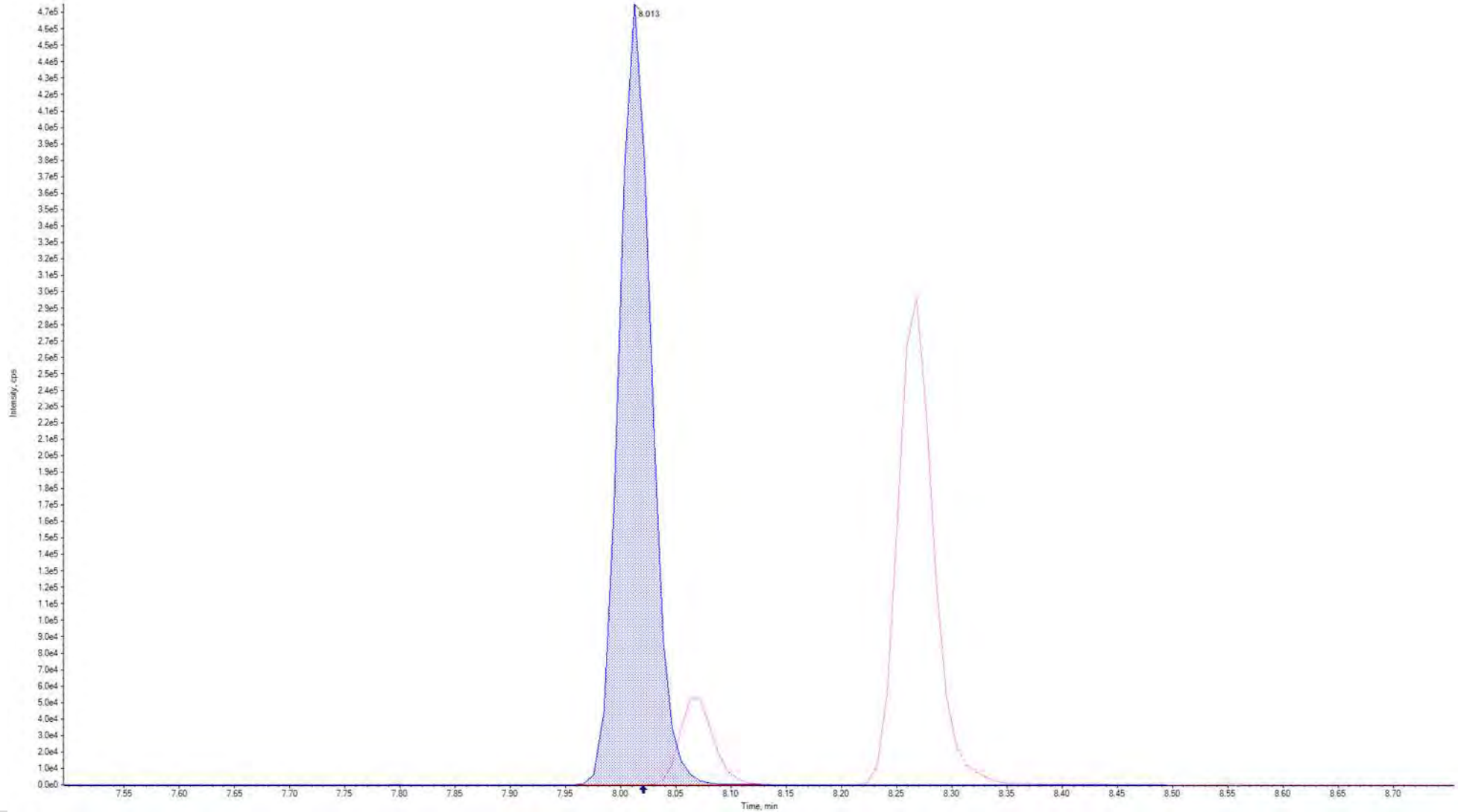
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFHpS
Sample: IA1633STD-12.5 S/N:17355.8 Points Across peak:21



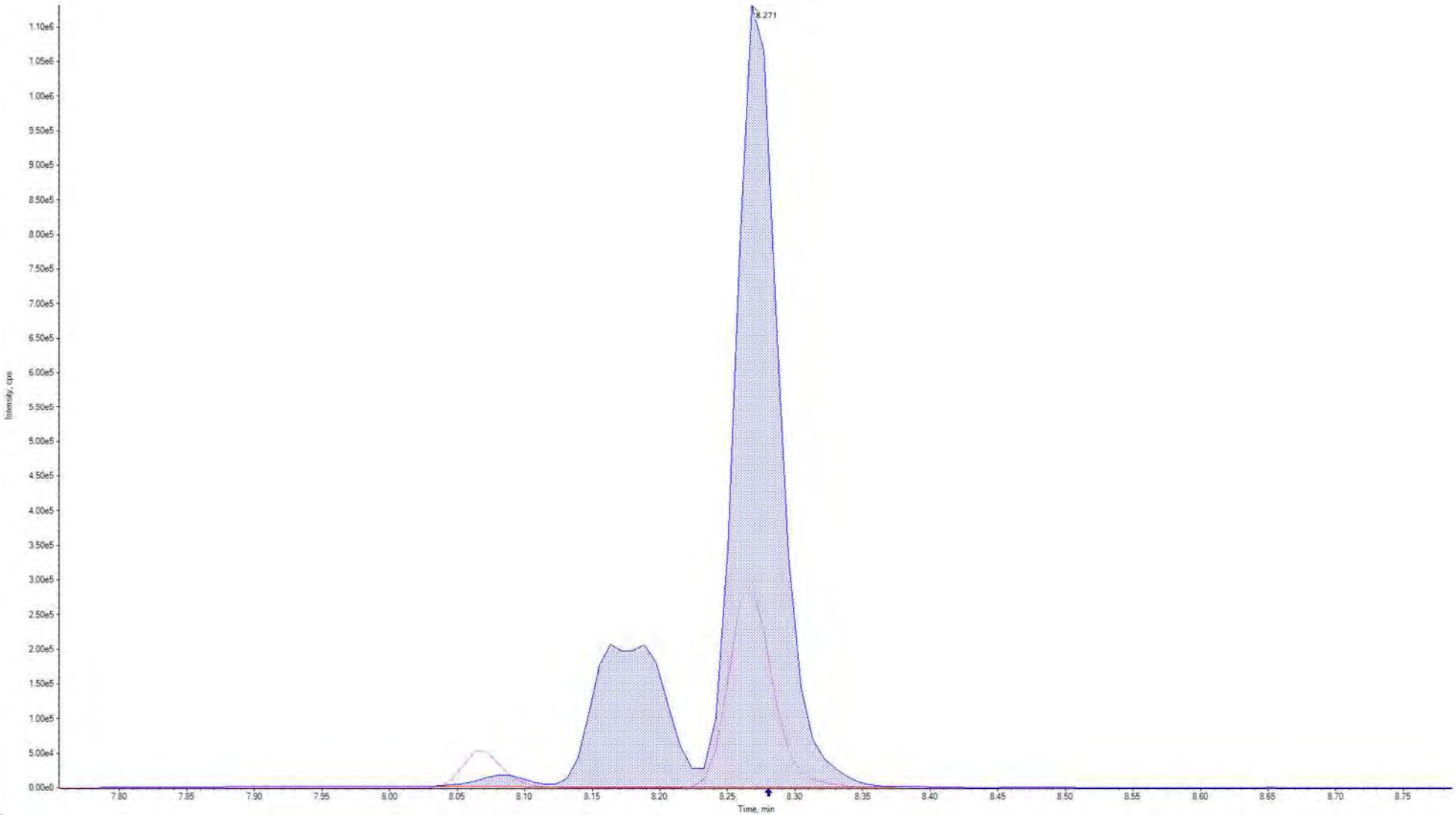
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFHpS_2
Sample: IA1633STD-12.5 S/N:2907.3 Points Across peak:23



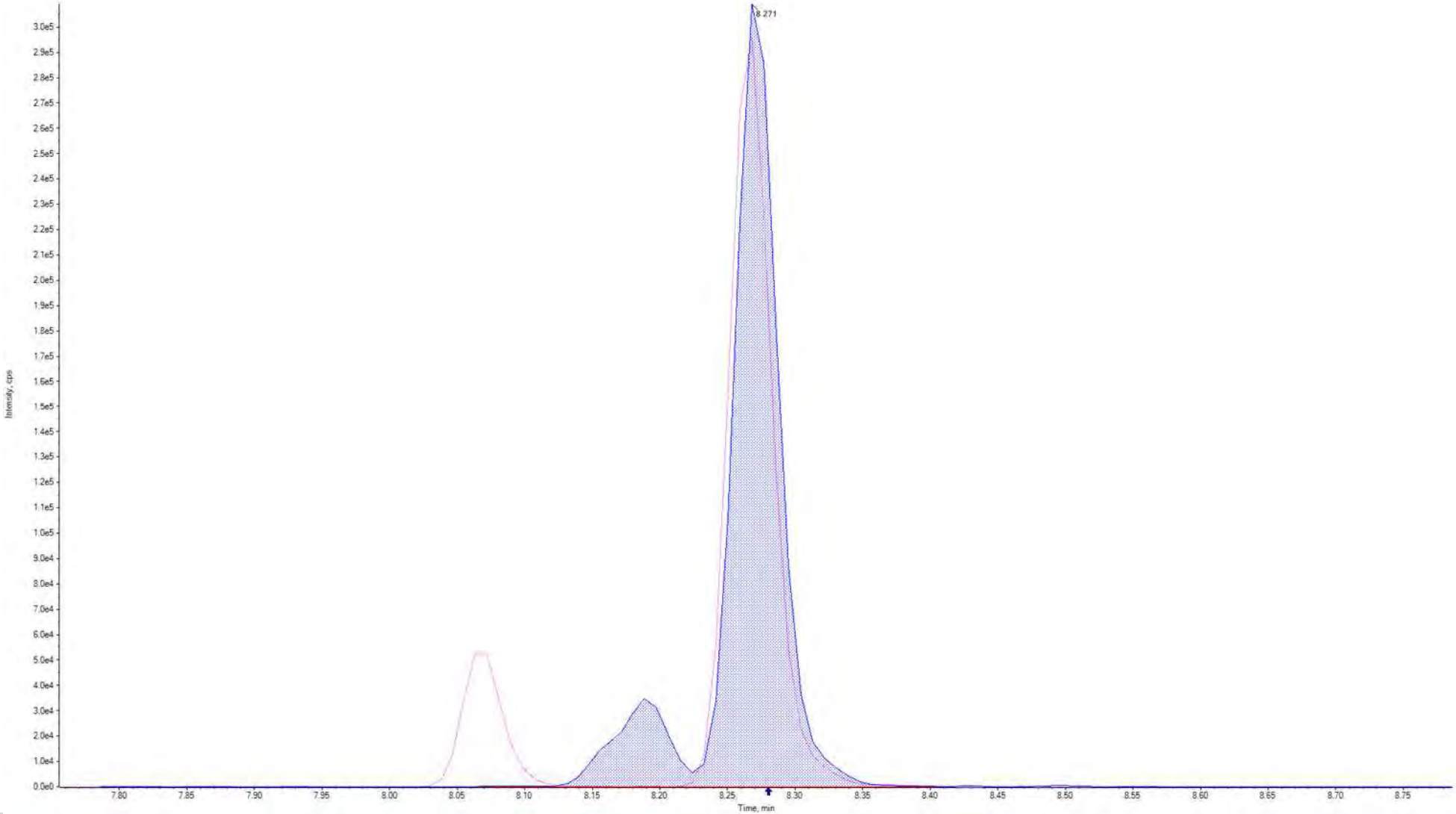
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOS
Sample: IA1633STD-12.5 S/N:3547.5 Points Across peak:42



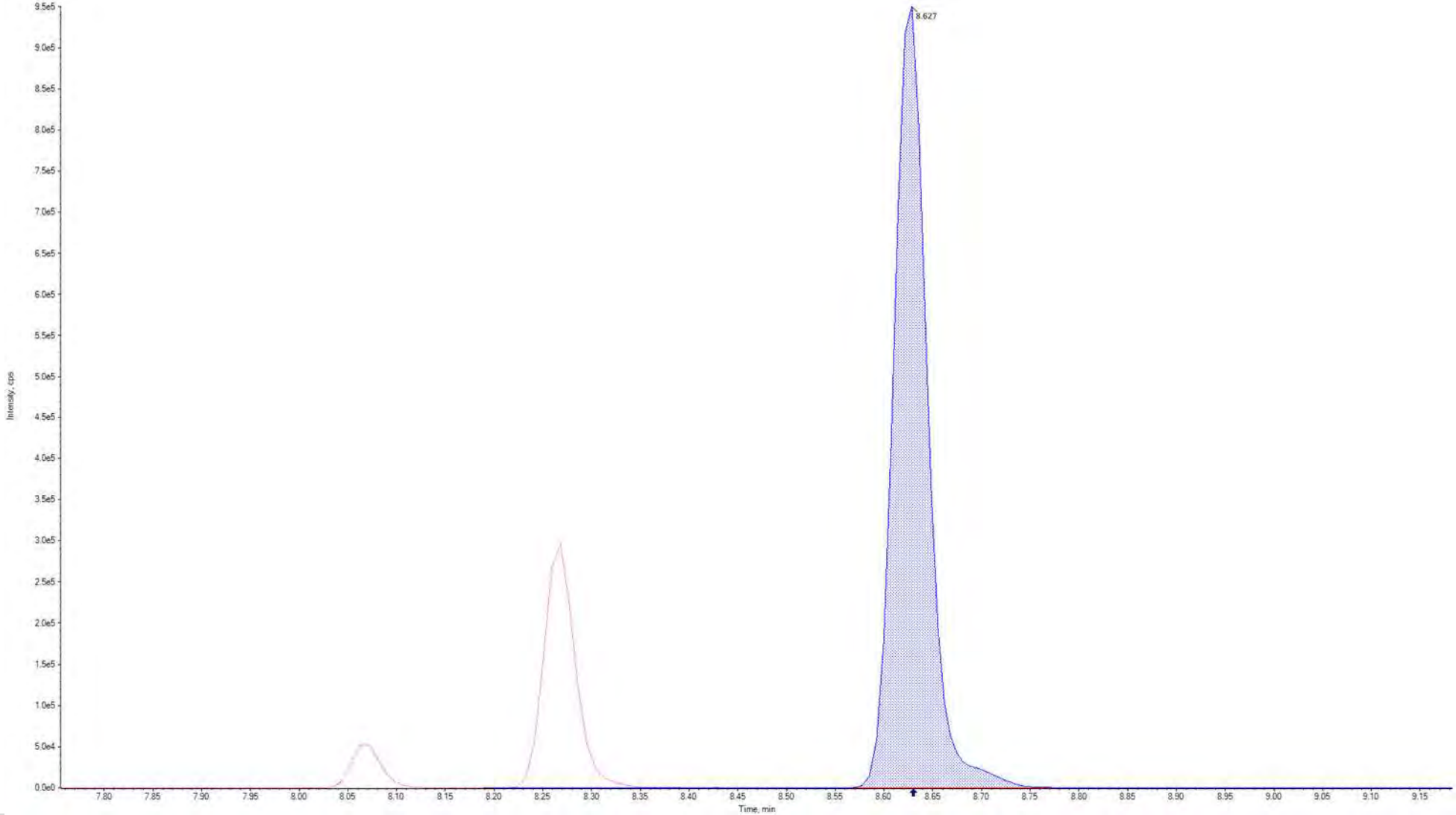
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOS_2
Sample: IA1633STD-12.5 S/N:2106.3 Points Across peak:44



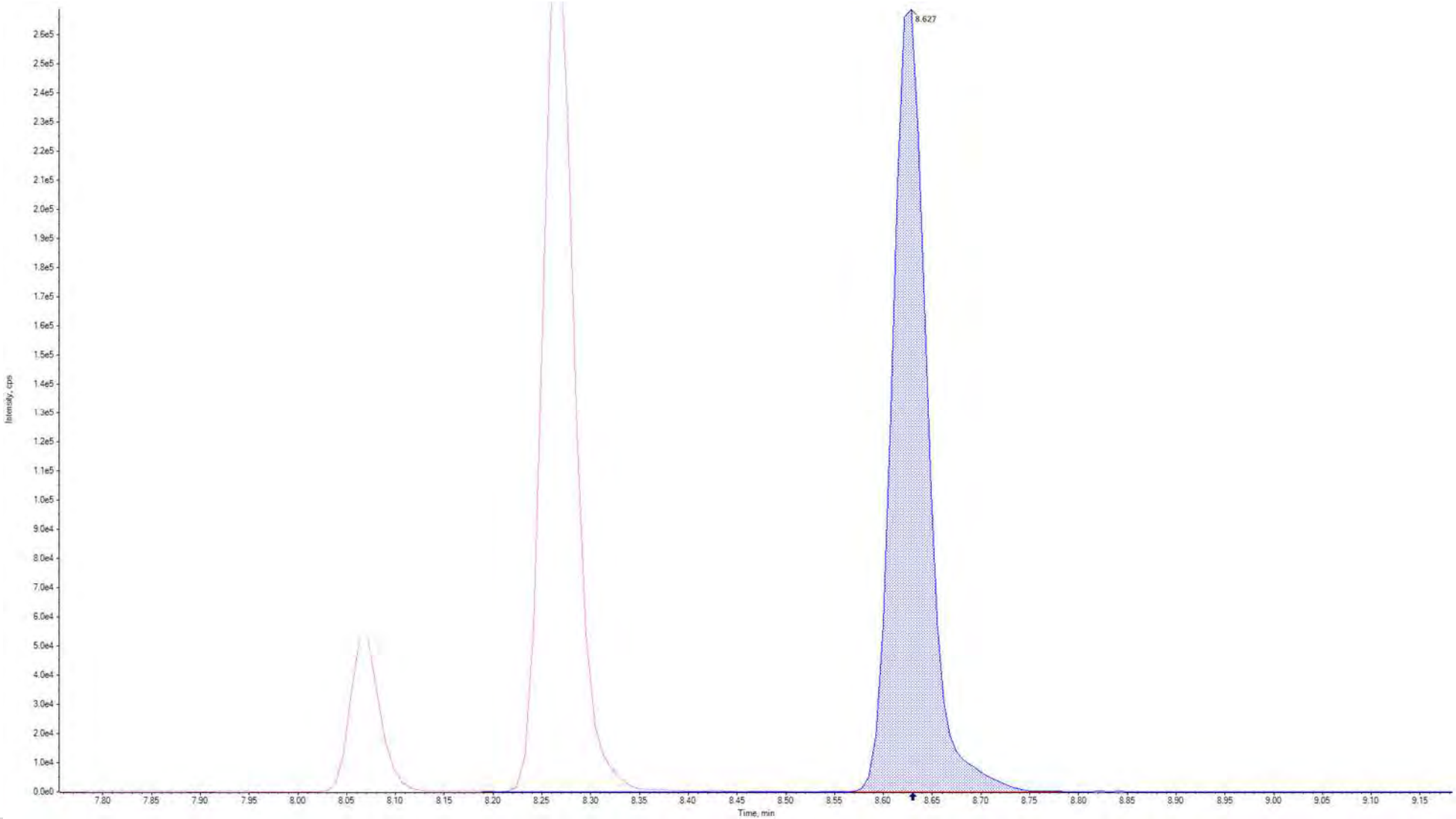
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFNS
Sample: IA1633STD-12.5 S/N:8537.6 Points Across peak:43



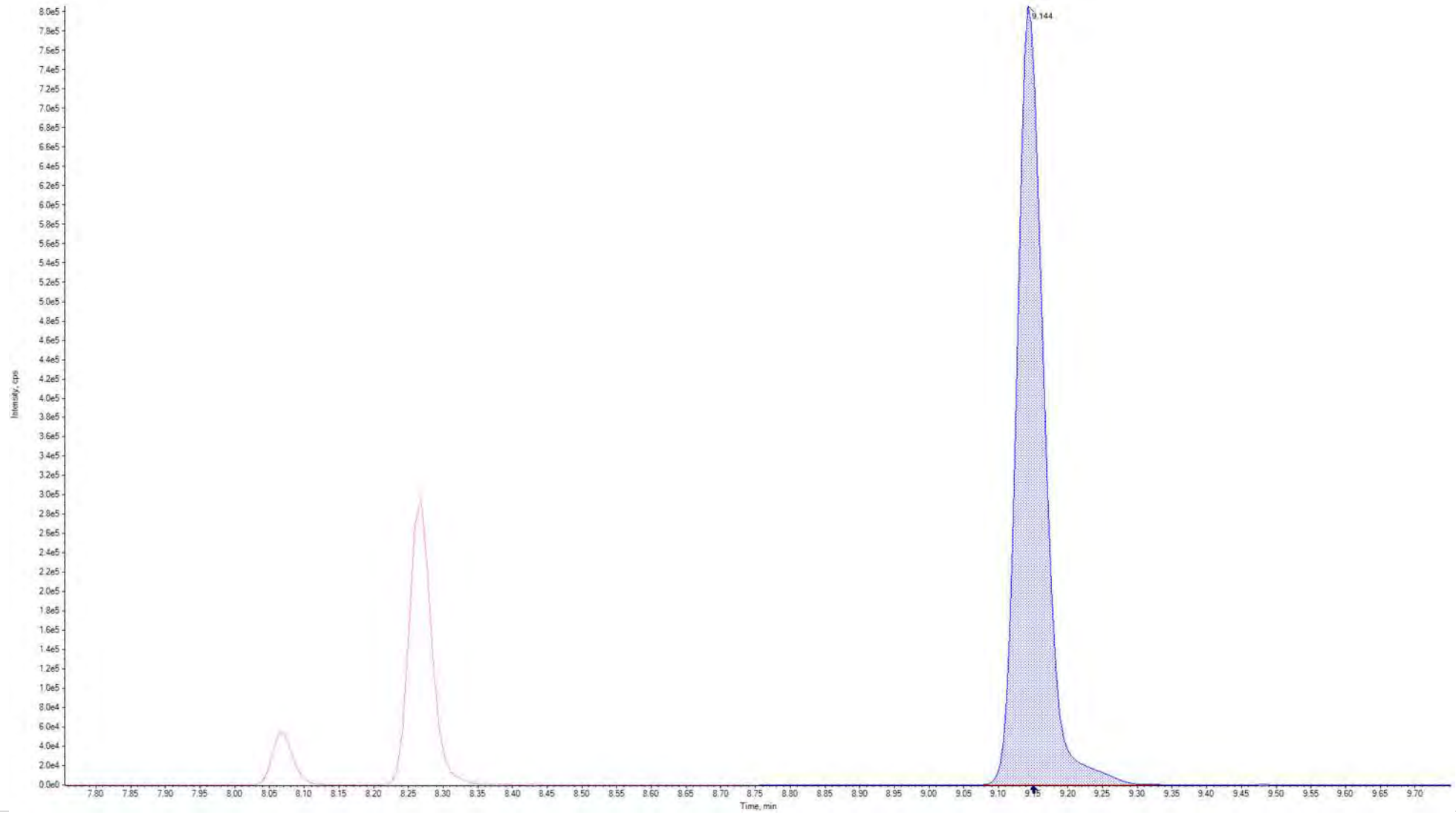
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFNS_2
Sample: IA1633STD-12.5 S/N:6494.8 Points Across peak:40



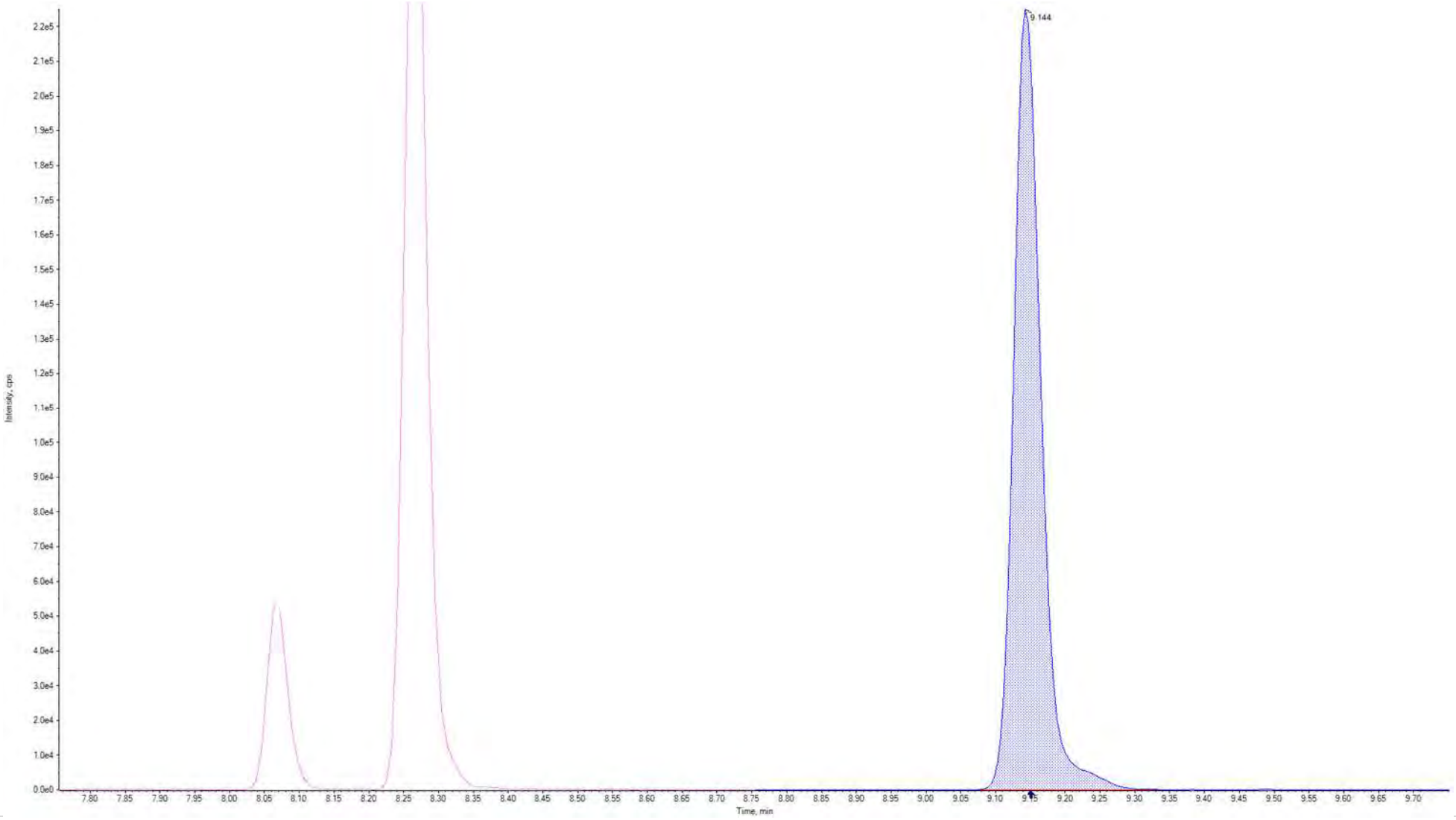
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDS
Sample: IA1633STD-12.5 S/N:33767.3 Points Across peak:61



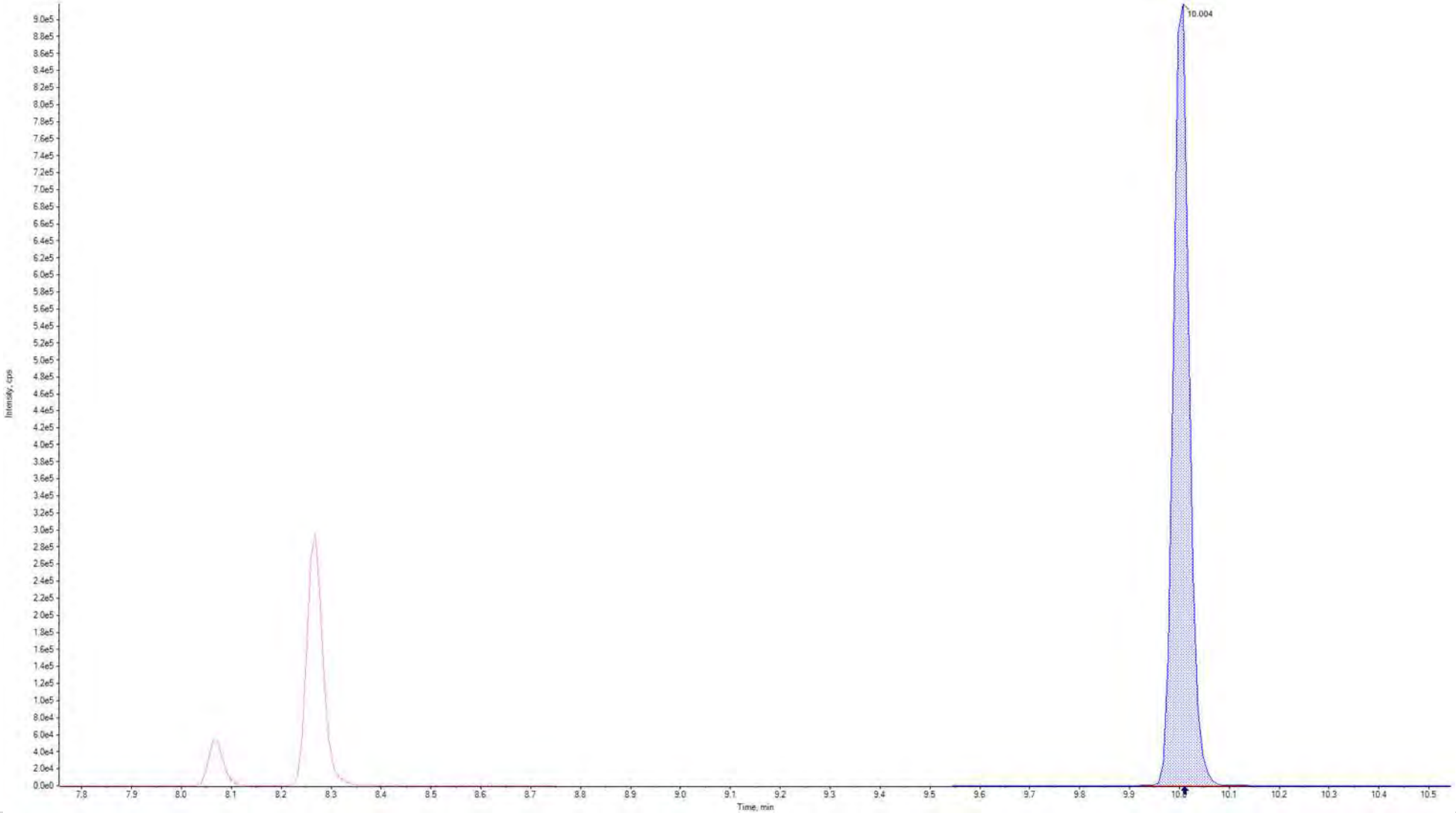
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDS_2
Sample: IA1633STD-12.5 S/N:505551.9 Points Across peak:53



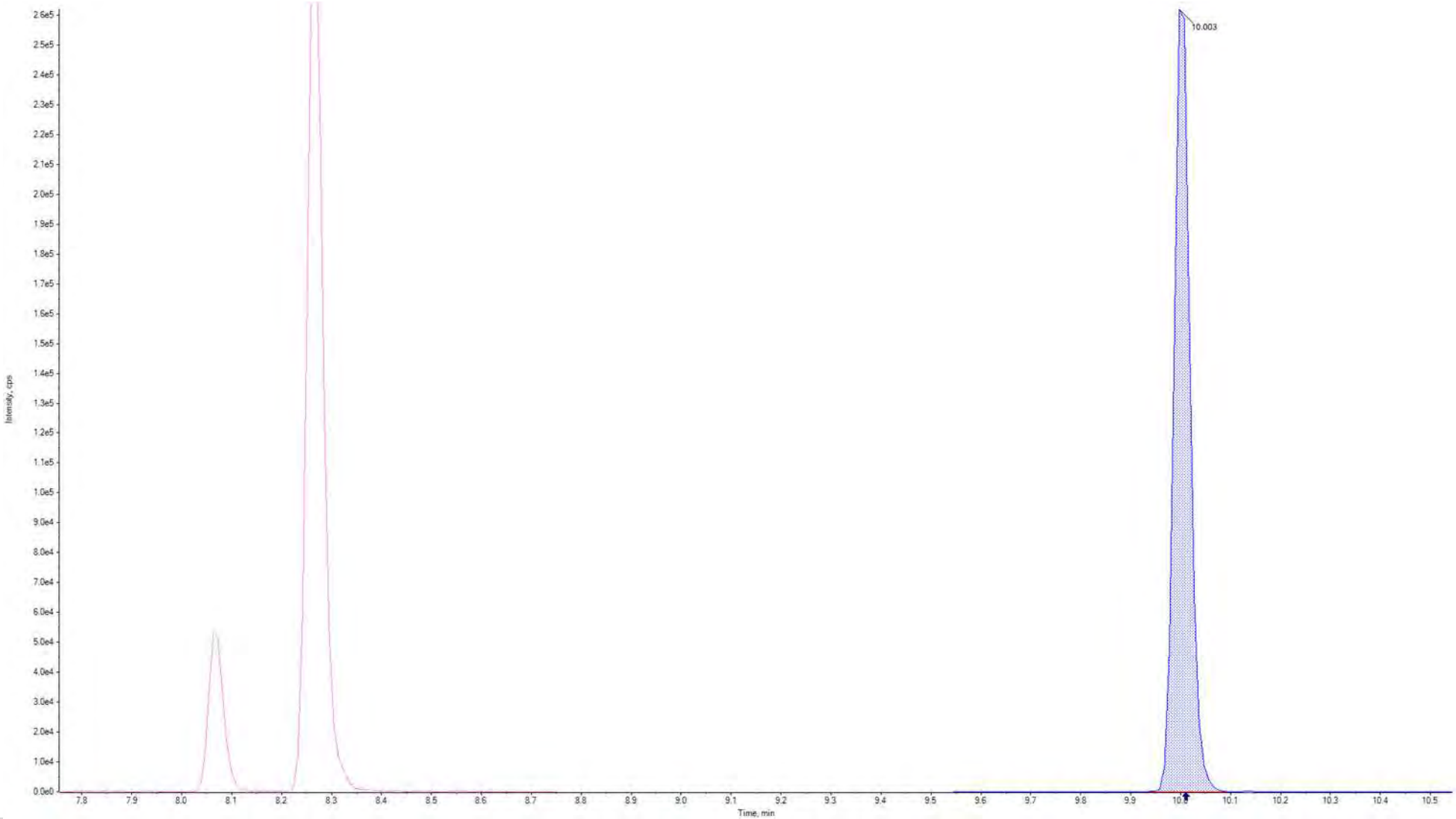
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDoS
Sample: IA1633STD-12.5 S/N:10089.2 Points Across peak:42



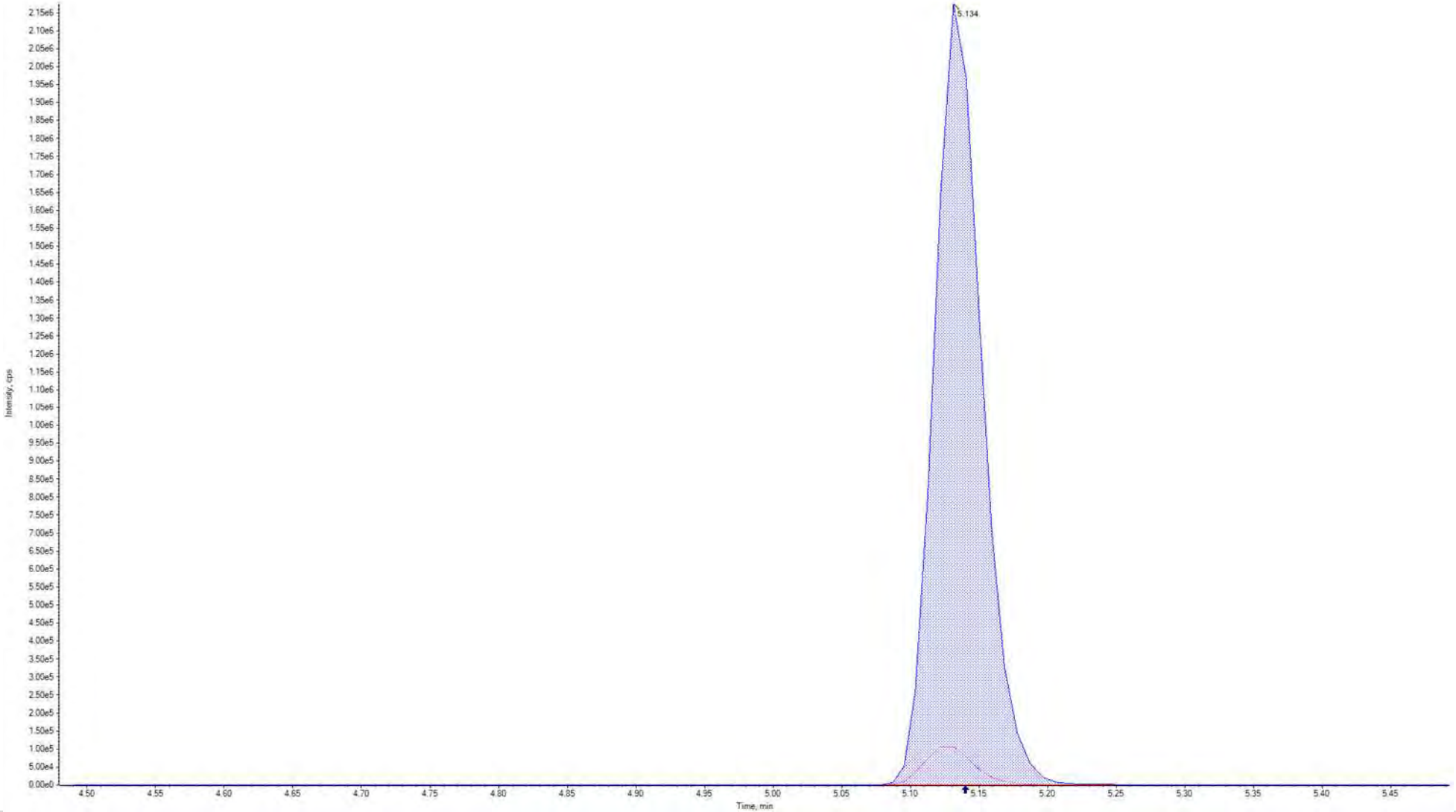
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDoS_2
Sample: IA1633STD-12.5 S/N:2732.7 Points Across peak:21



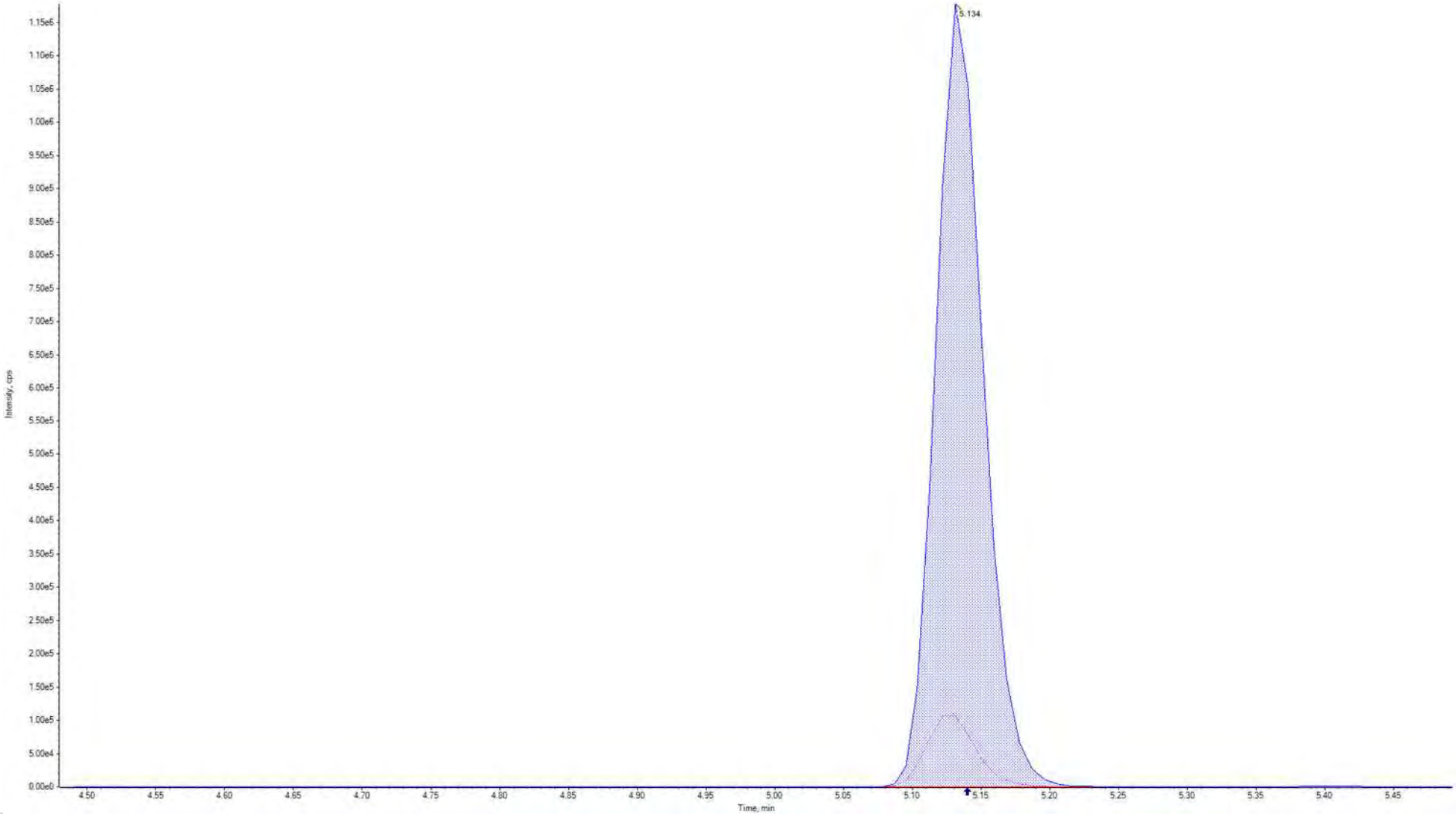
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

4:2FTS
Sample: IA1633STD-12.5 S/N:2568647.3 Points Across peak:26

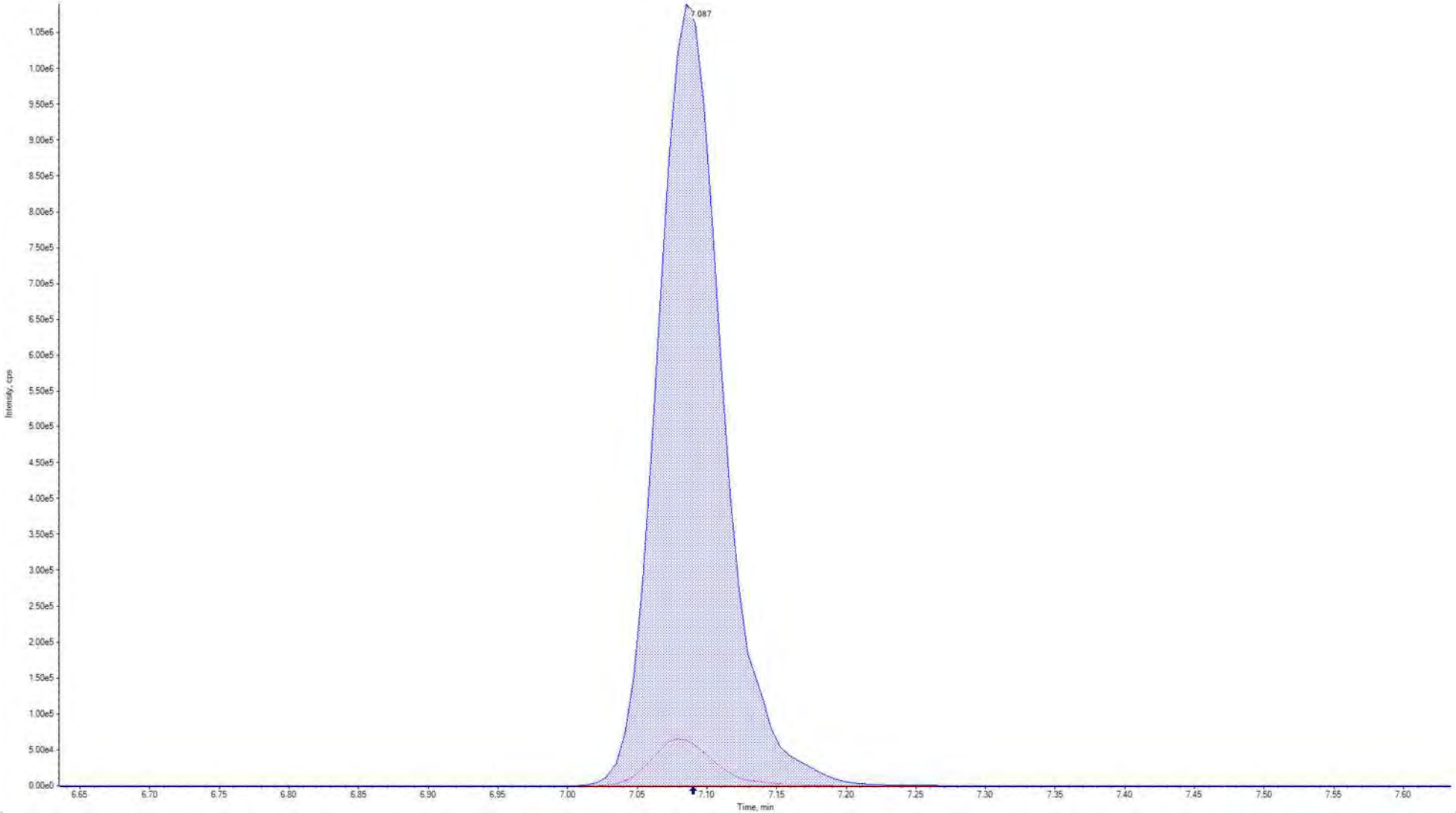


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

4:2FTS_2
Sample: IA1633STD-12.5 S/N:18681.1 Points Across peak:27

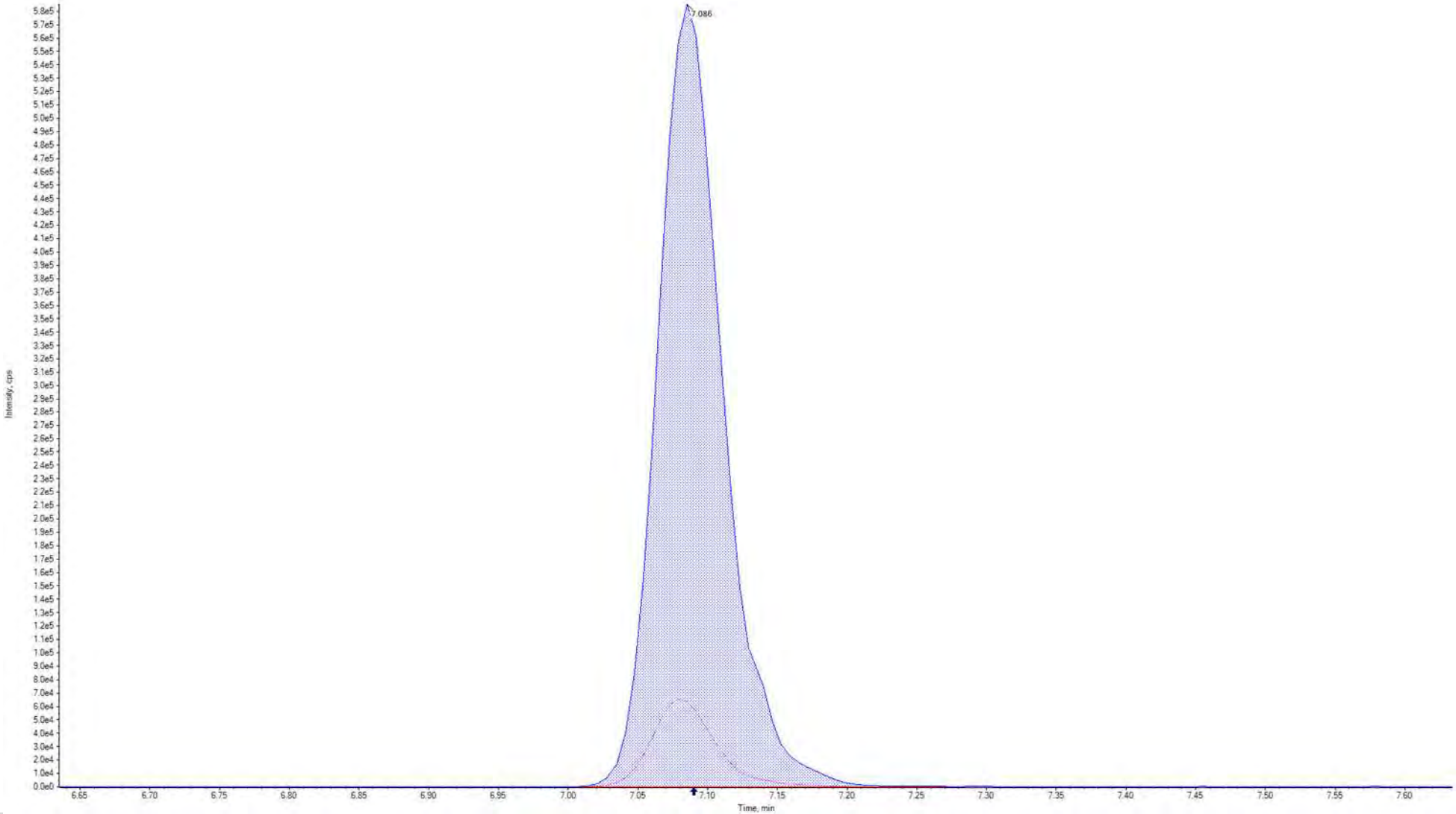


6:2FTS
Sample: IA1633STD-12.5 S/N:120969115.6 Points Across peak:51



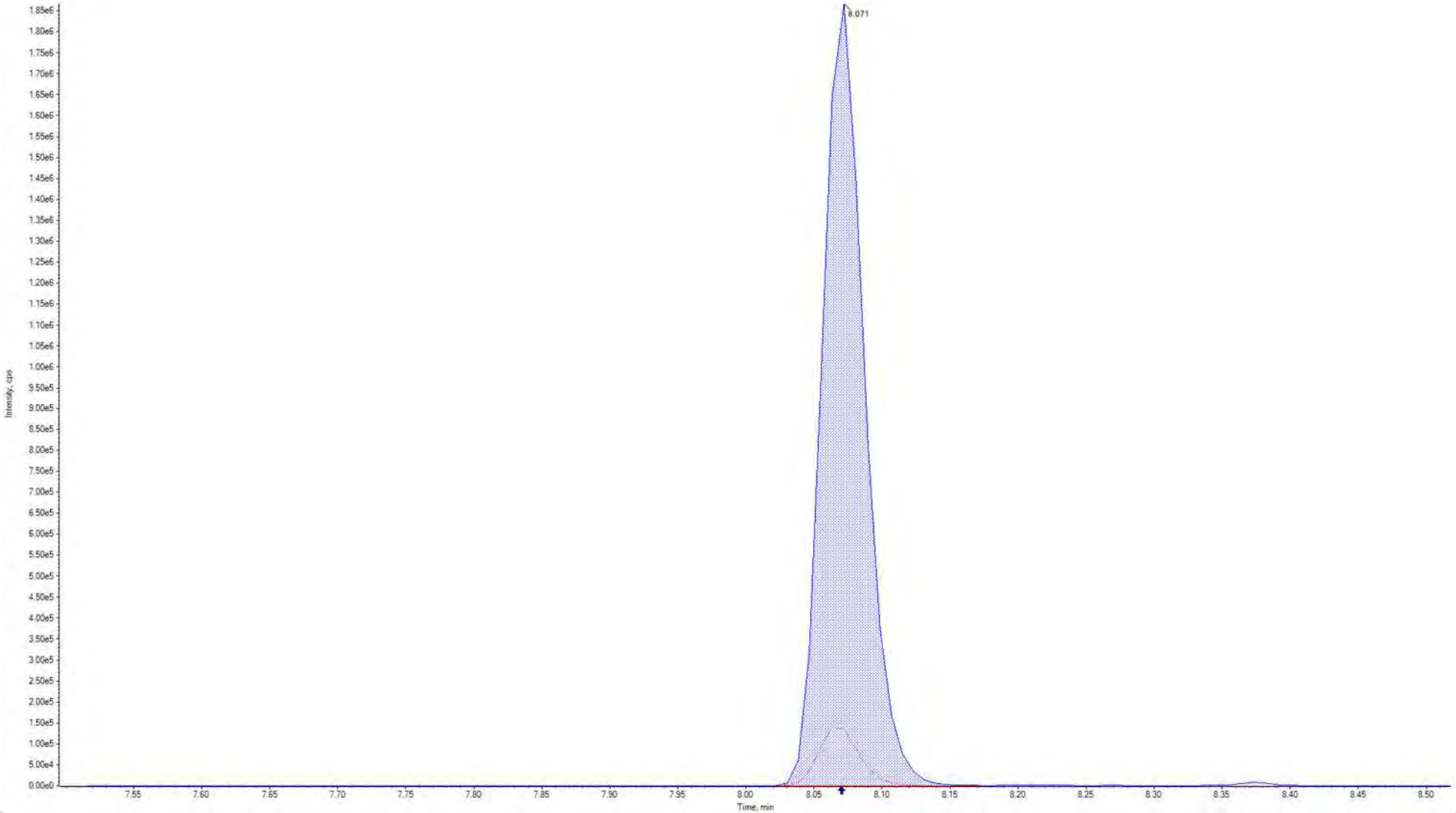
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

6:2FTS_2
Sample: IA1633STD-12.5 S/N:3466447.2 Points Across peak:51



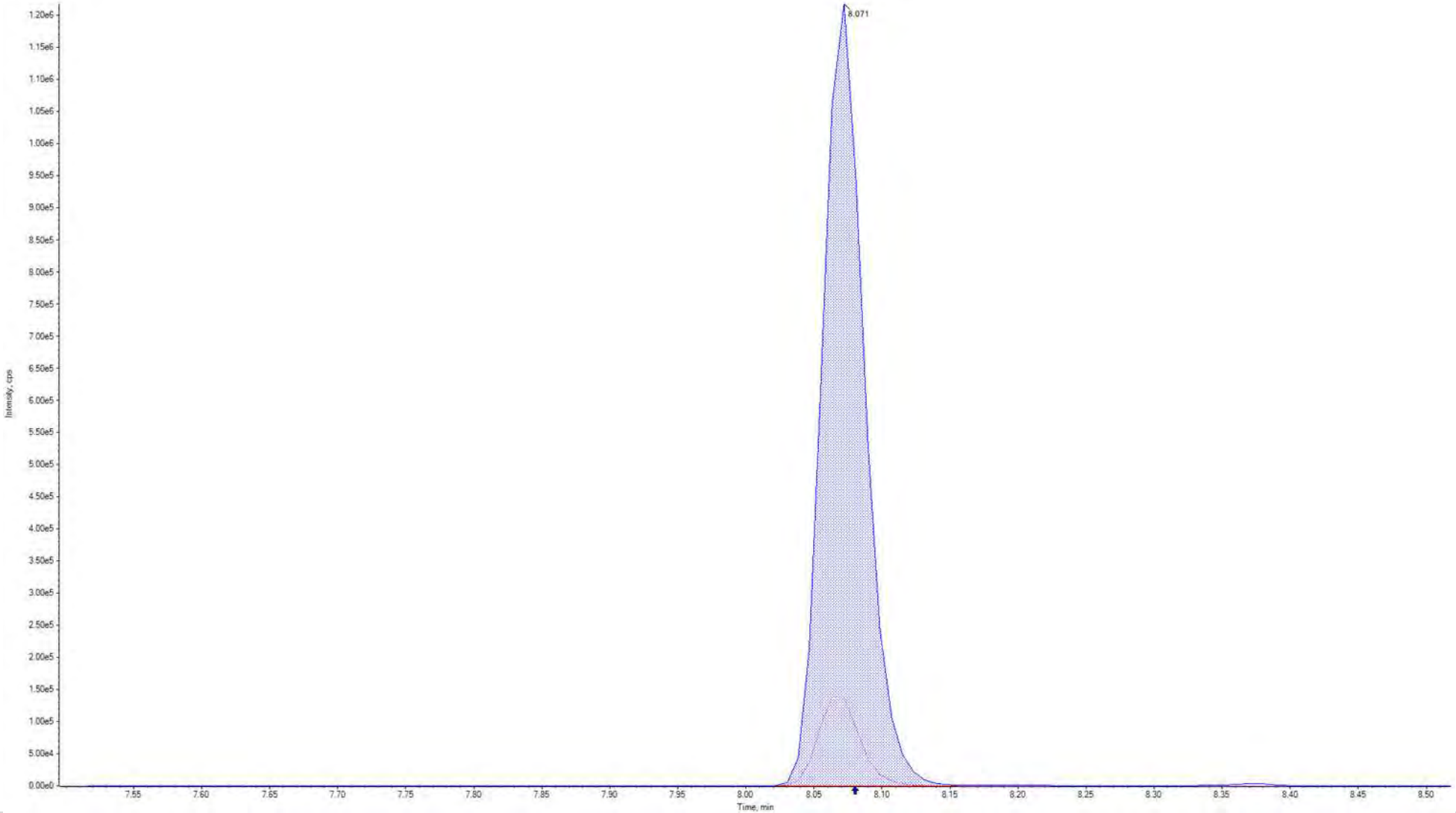
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

8:2FTS
Sample: IA1633STD-12.5 S/N:5812.1 Points Across peak:21



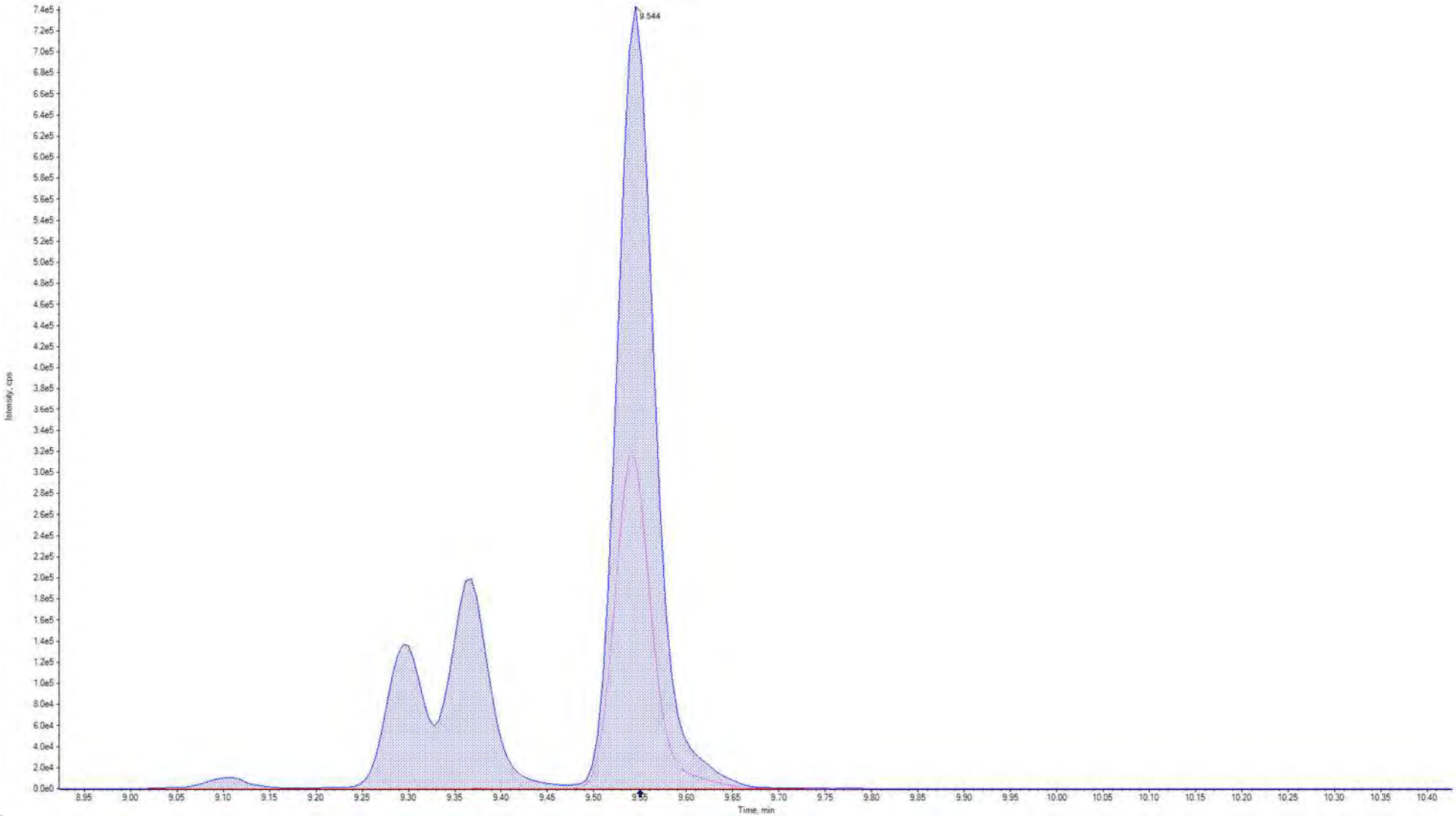
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

8:2FTS_2
Sample: IA1633STD-12.5 S/N:50696400.7 Points Across peak:18



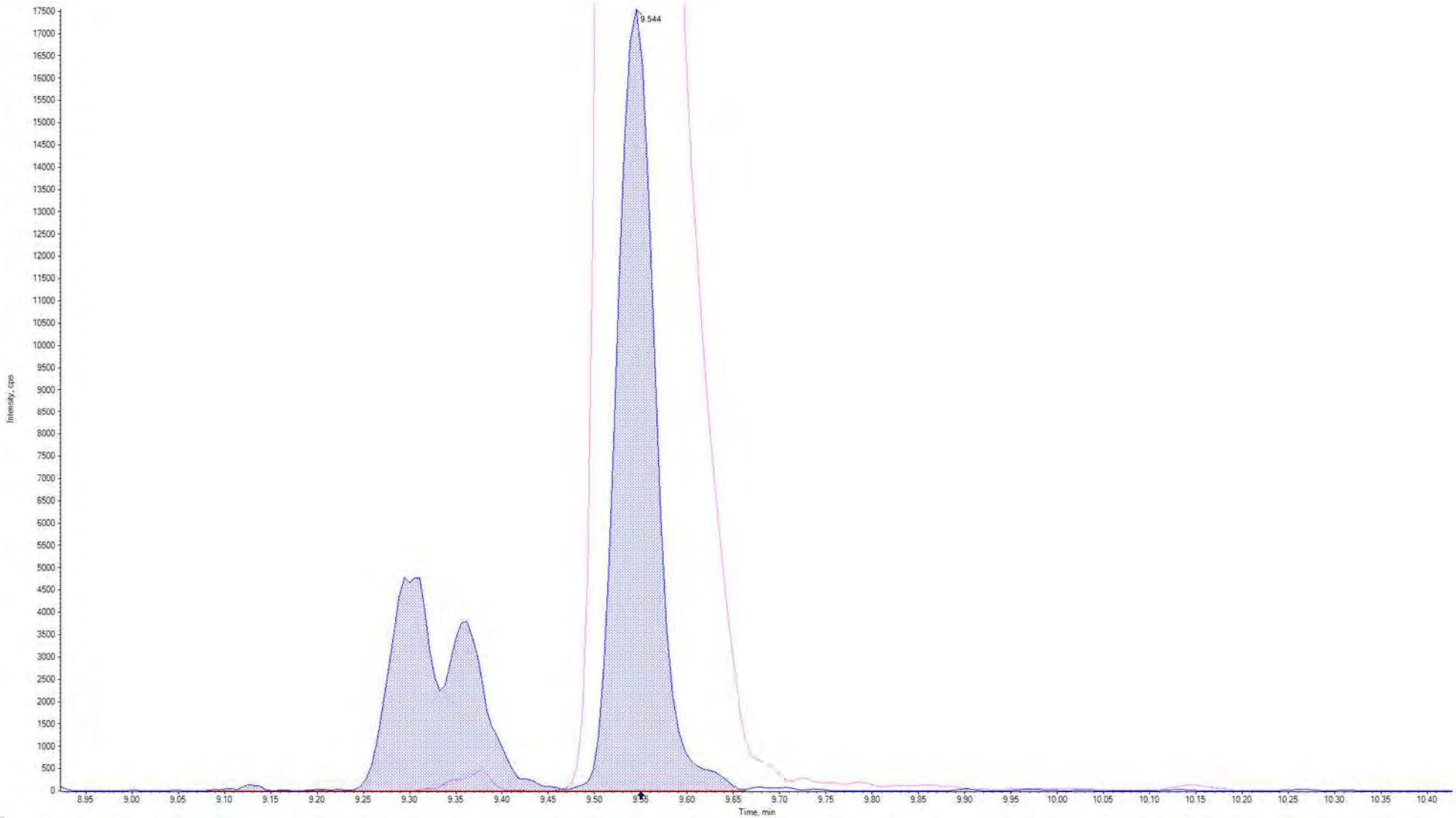
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOSA
Sample: IA1633STD-12.5 S/N:1226.0 Points Across peak:128



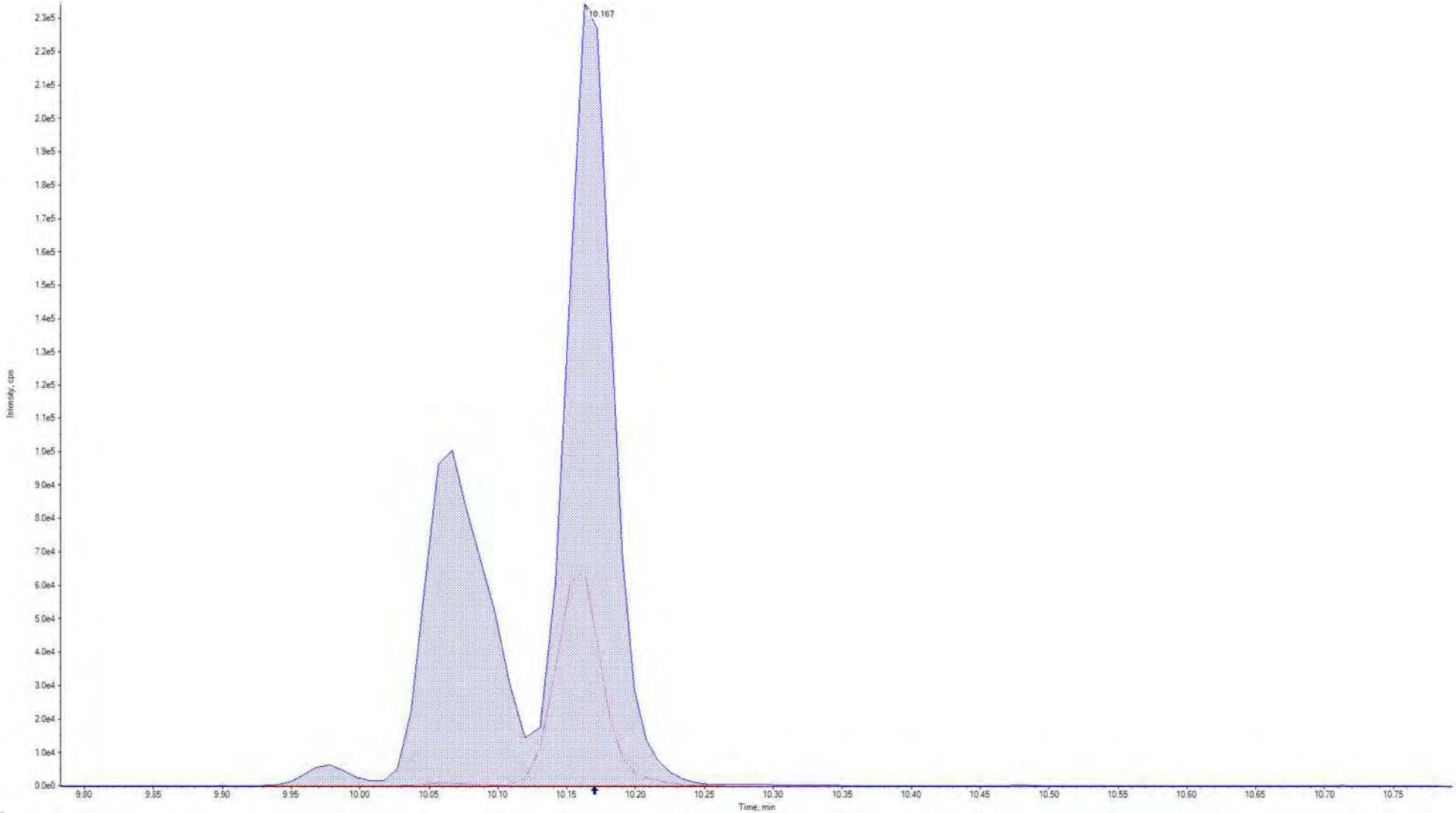
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOSA_2
Sample: IA1633STD-12.5 S/N:974.3 Points Across peak:104



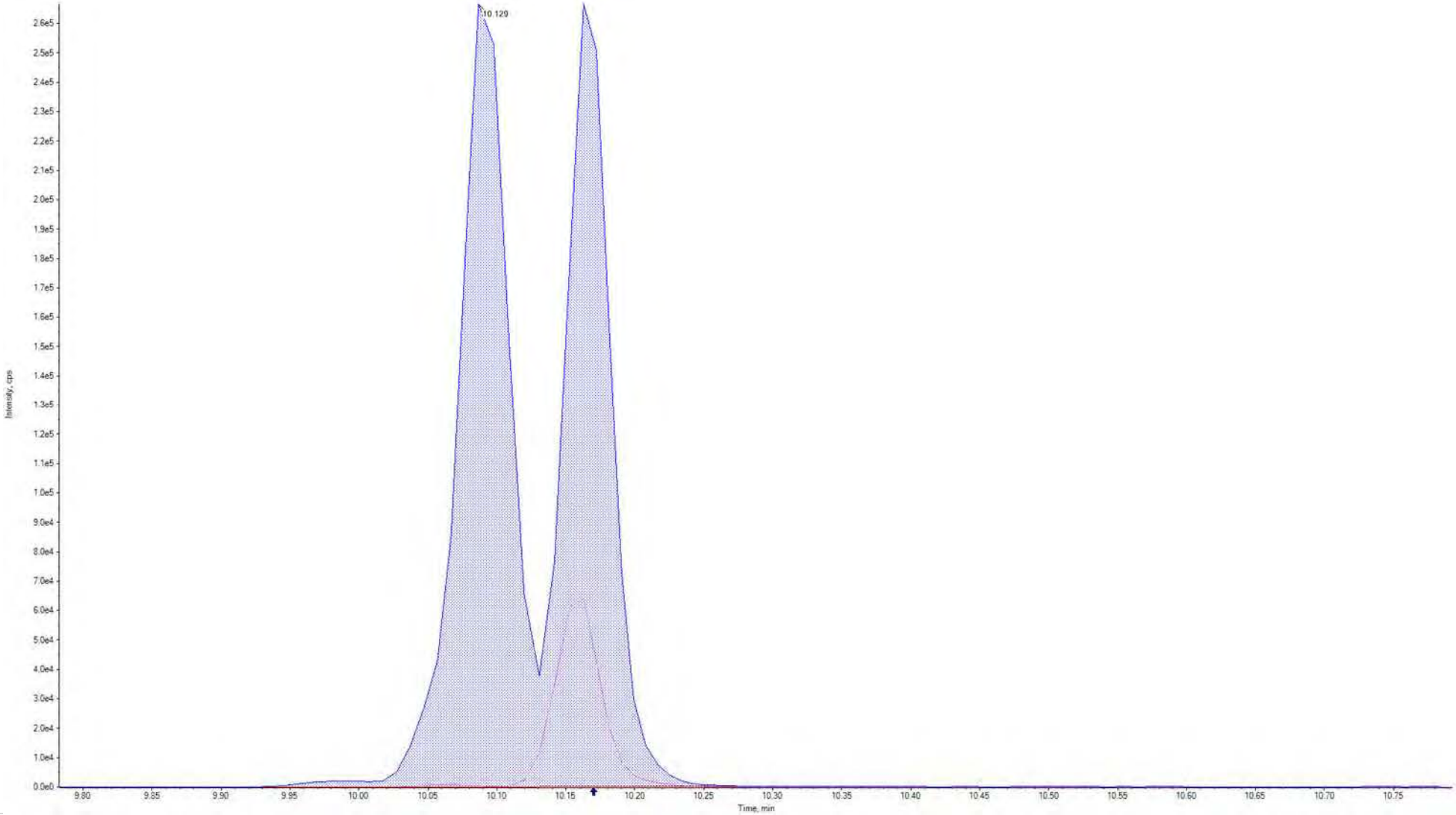
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSA
Sample: IA1633STD-12.5 S/N:6478.8 Points Across peak:37



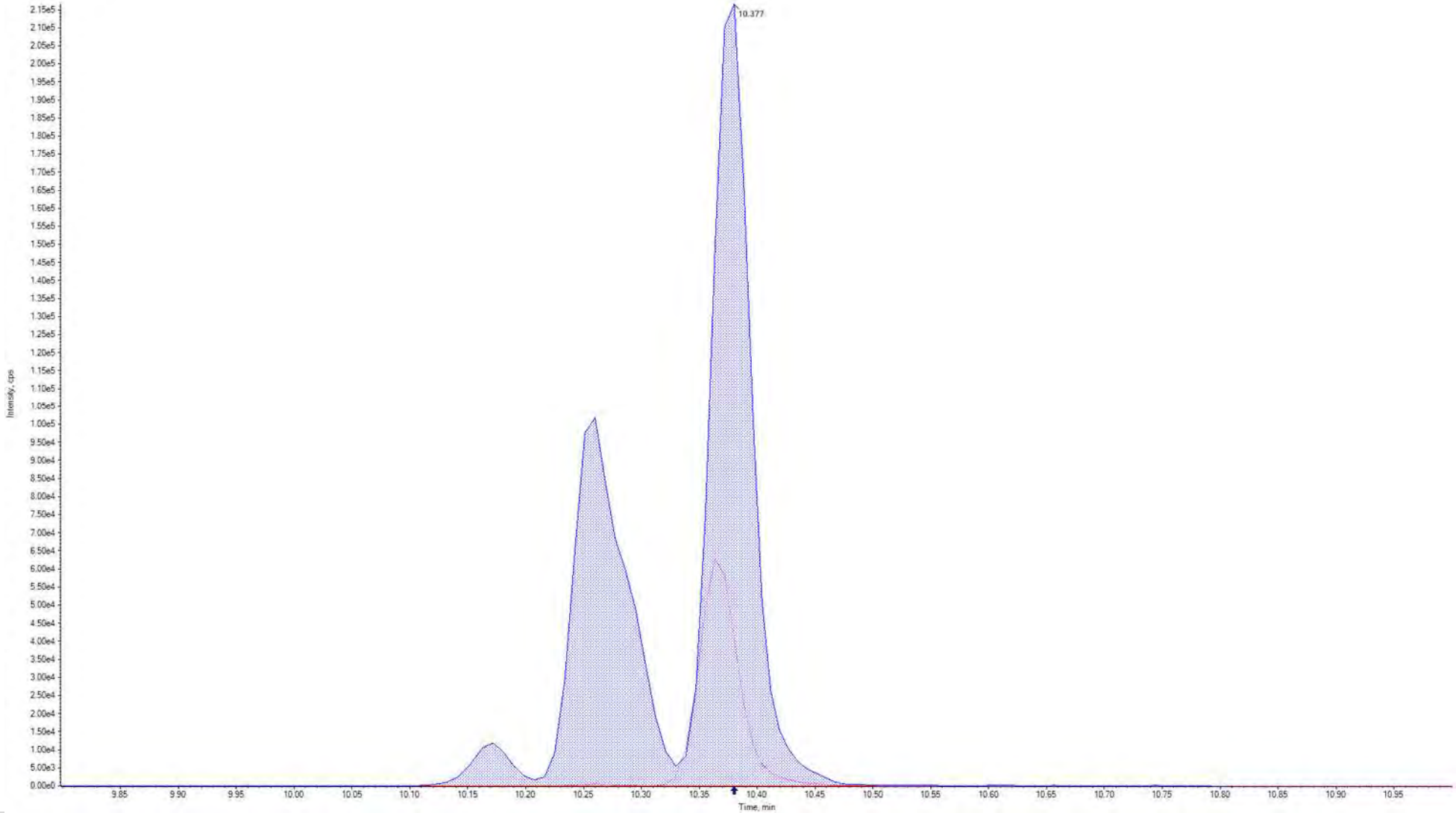
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSA_2
Sample: IA1633STD-12.5 S/N:3068.0 Points Across peak:40



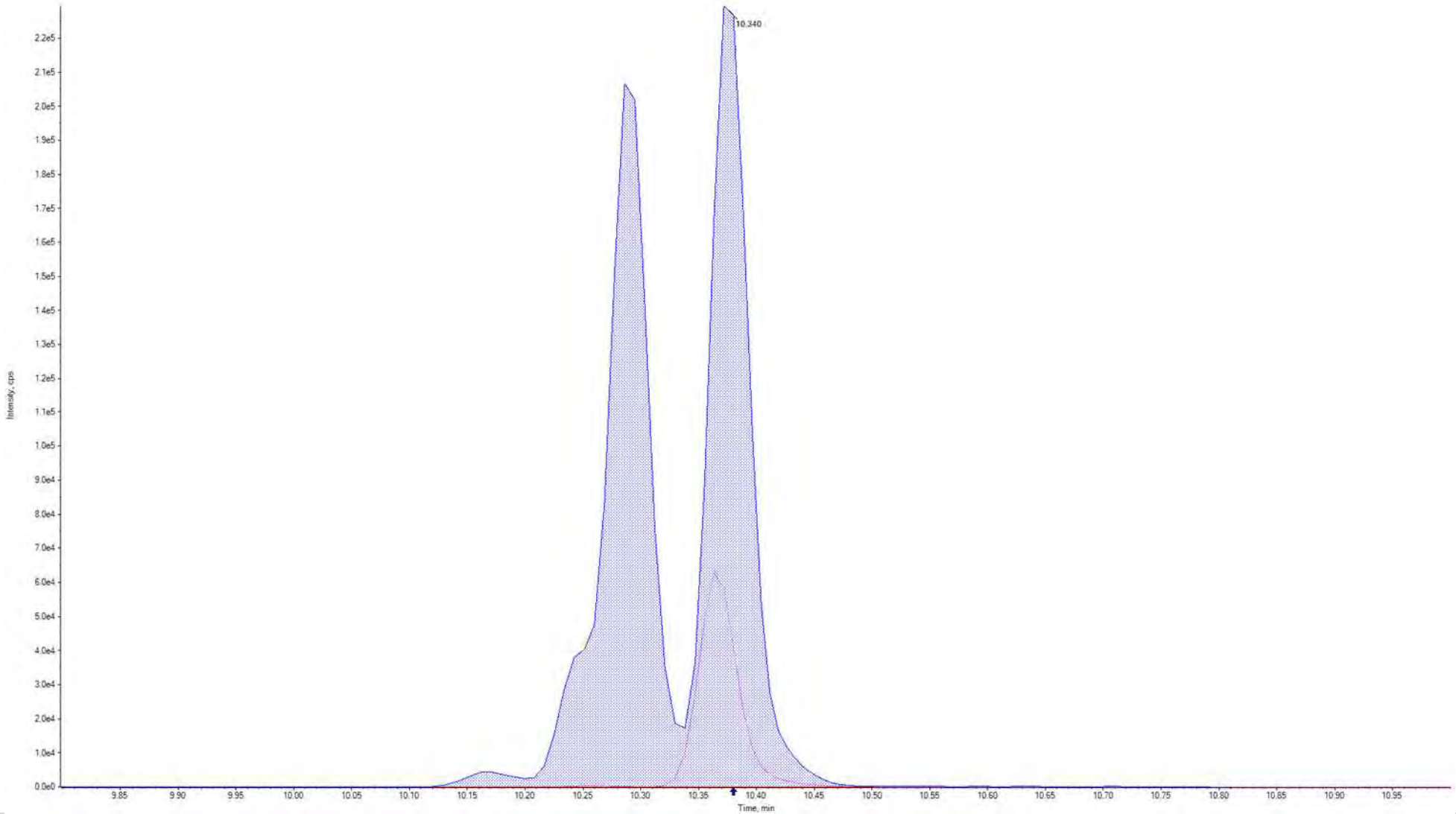
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSA
Sample: IA1633STD-12.5 S/N:6668.4 Points Across peak:50



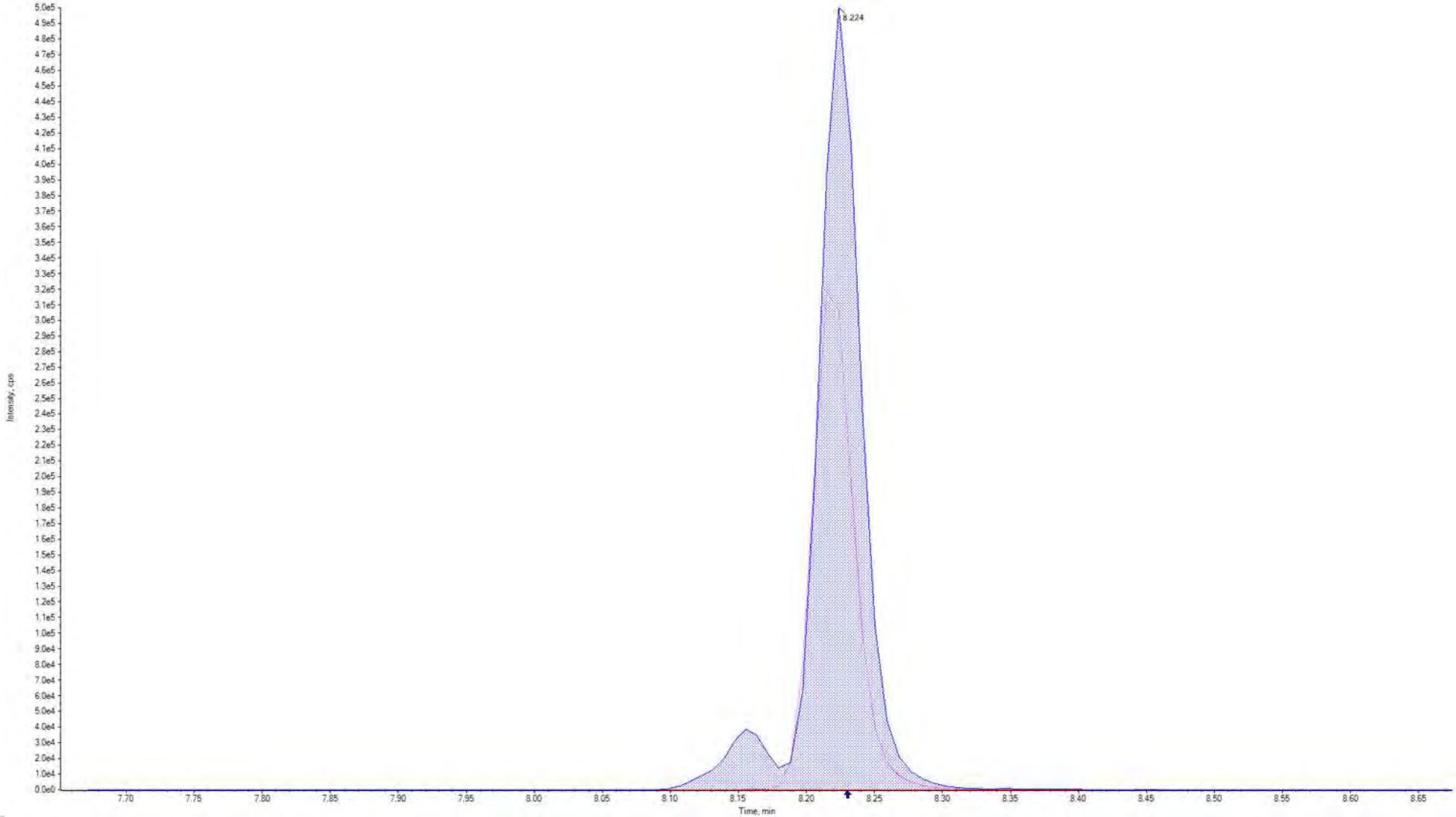
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSA_2
Sample: IA1633STD-12.5 S/N:21994.8 Points Across peak:50



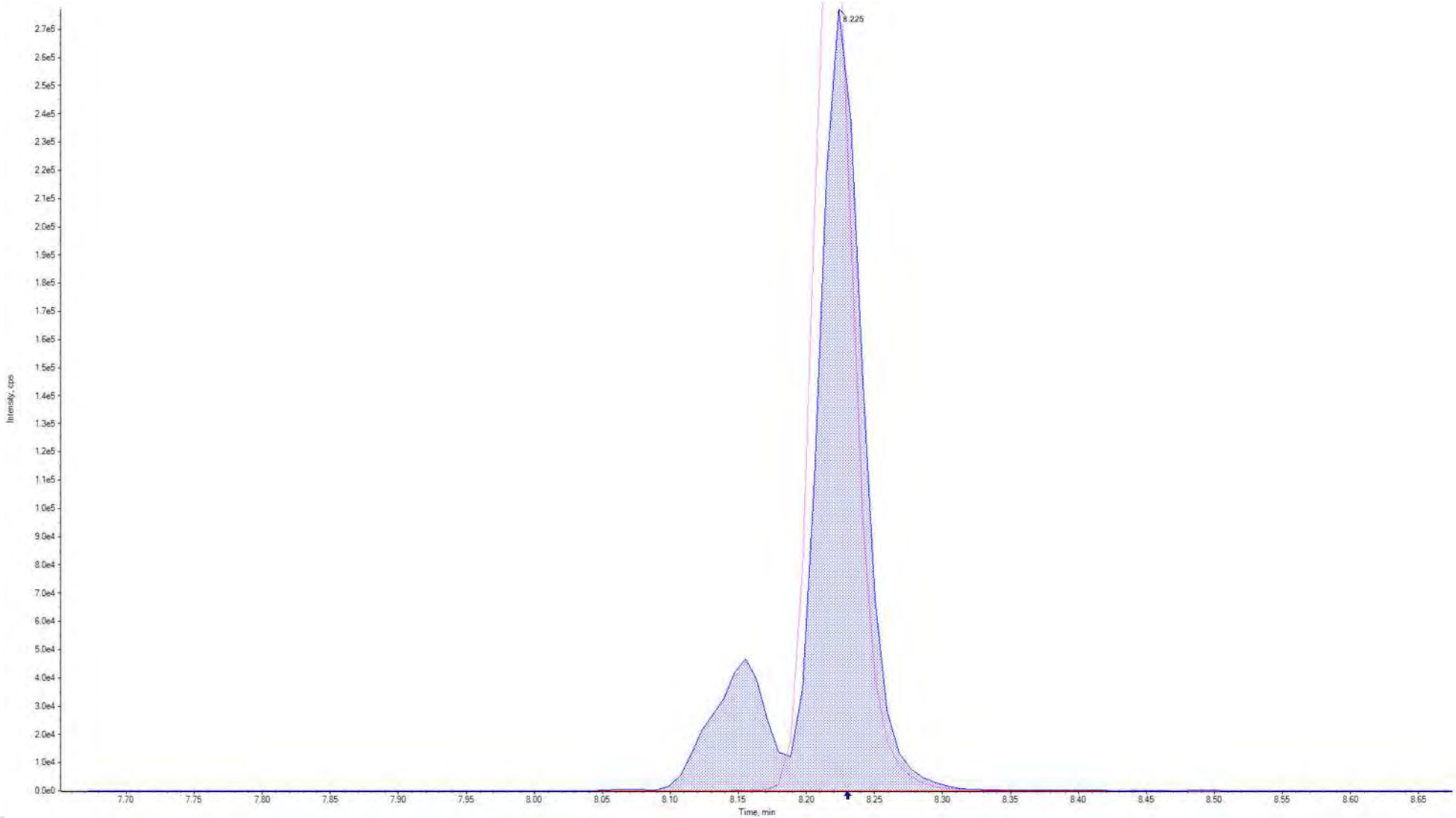
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSAA
Sample: IA1633STD-12.5 S/N:1742.1 Points Across peak:41



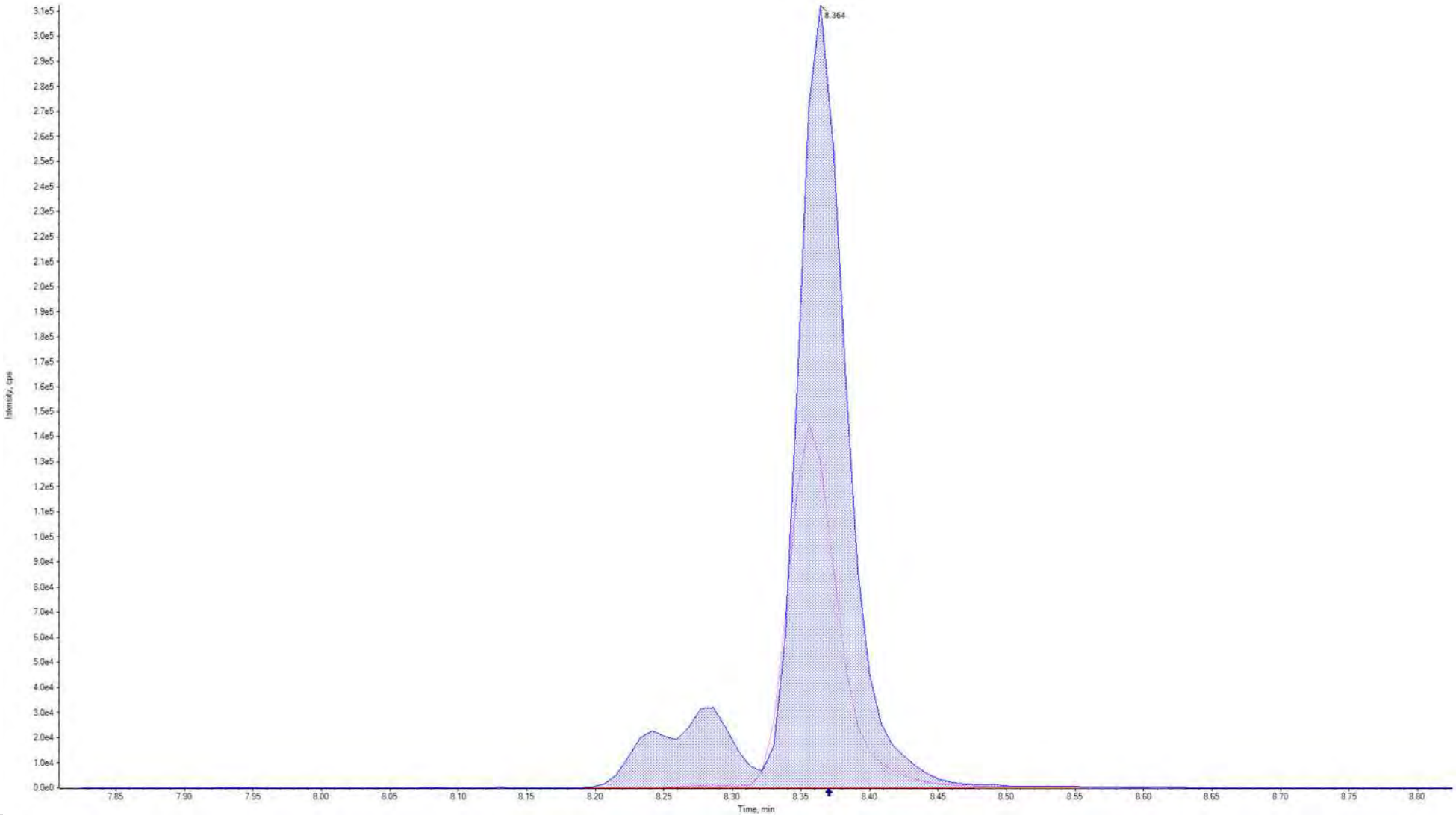
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSAA_2
Sample: IA1633STD-12.5 S/N:987.0 Points Across peak:52



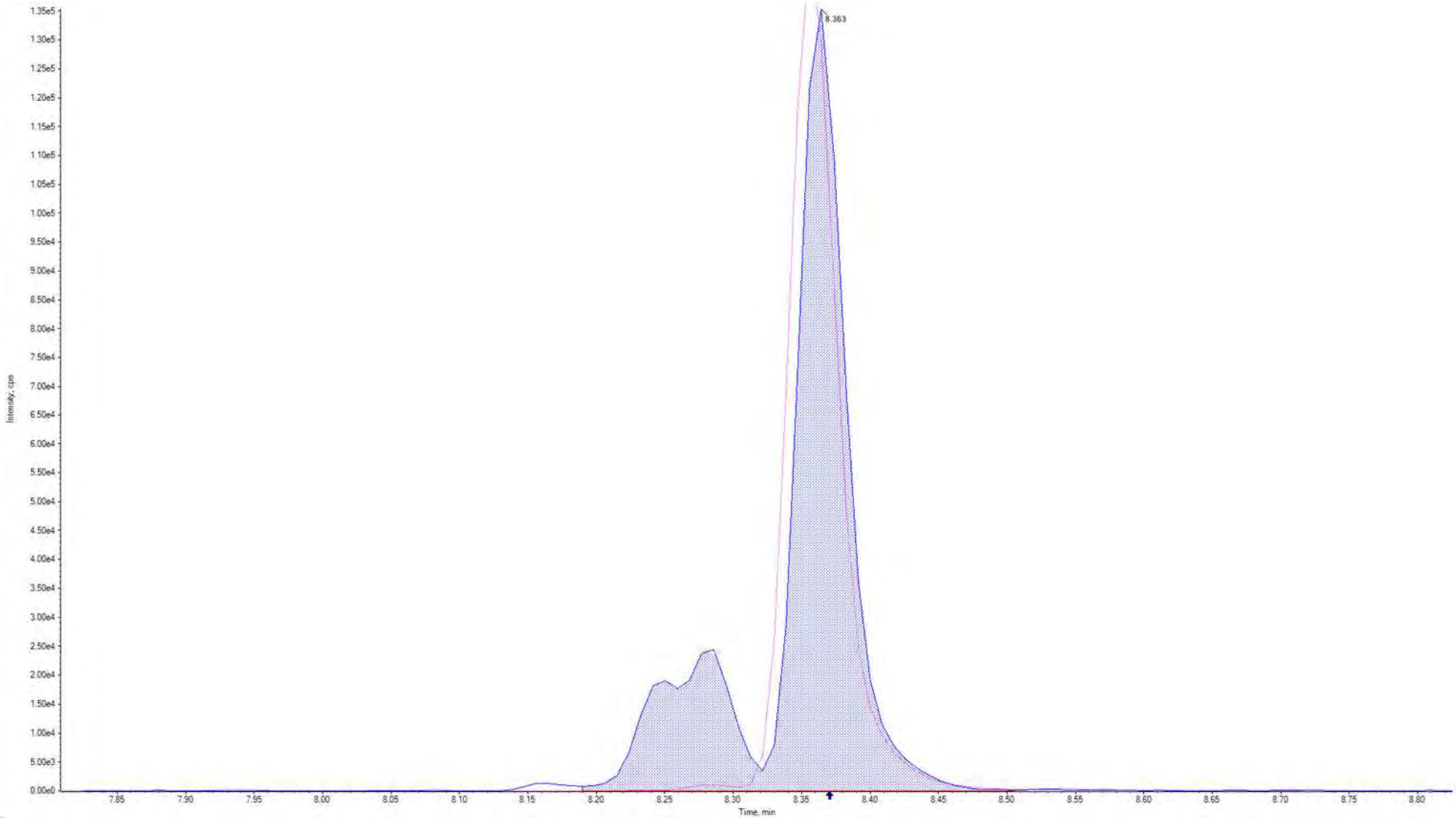
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSAA
Sample: IA1633STD-12.5 S/N:781.1 Points Across peak:50



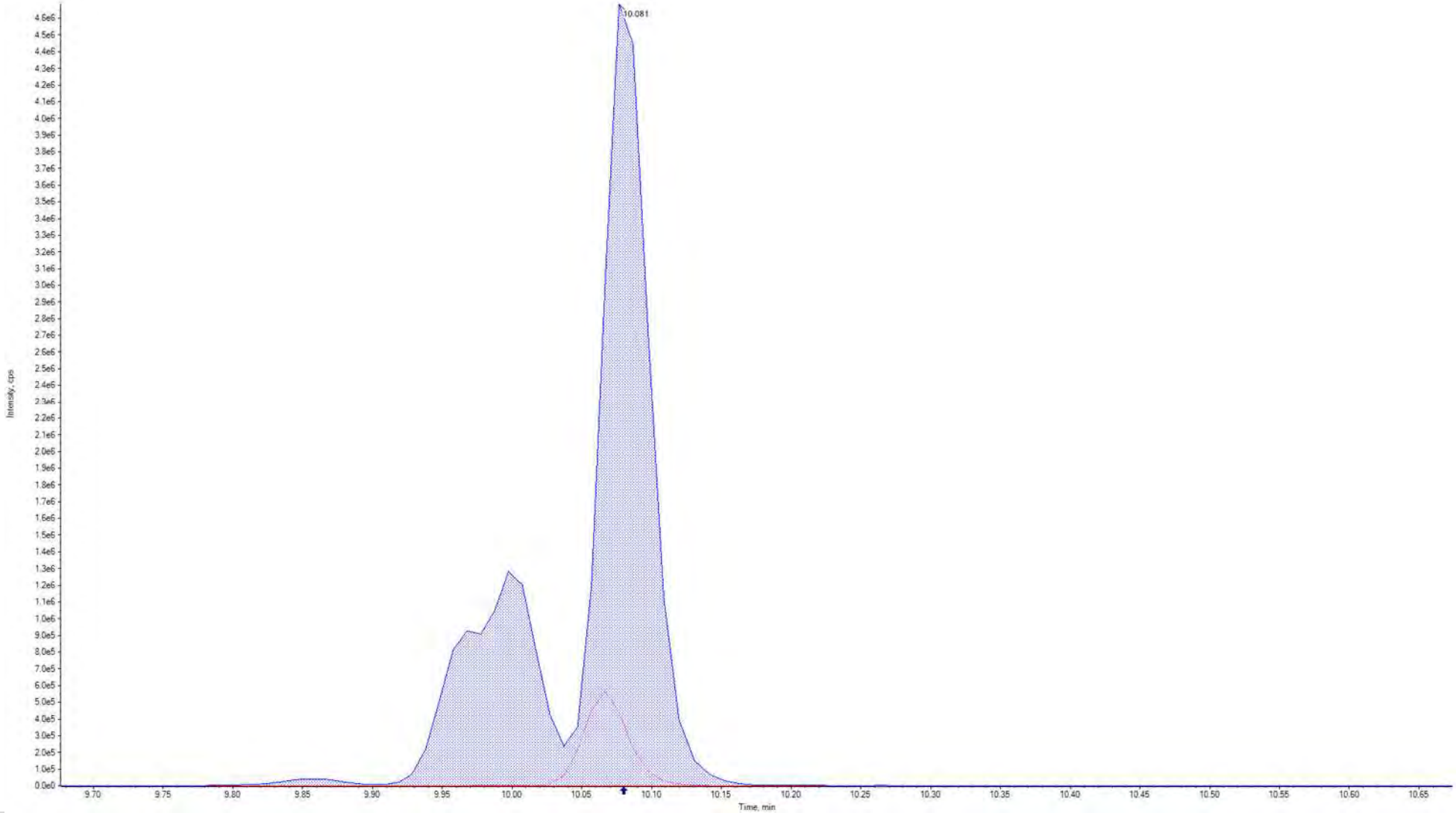
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSAA_2
Sample: IA1633STD-12.5 S/N:577.9 Points Across peak:38



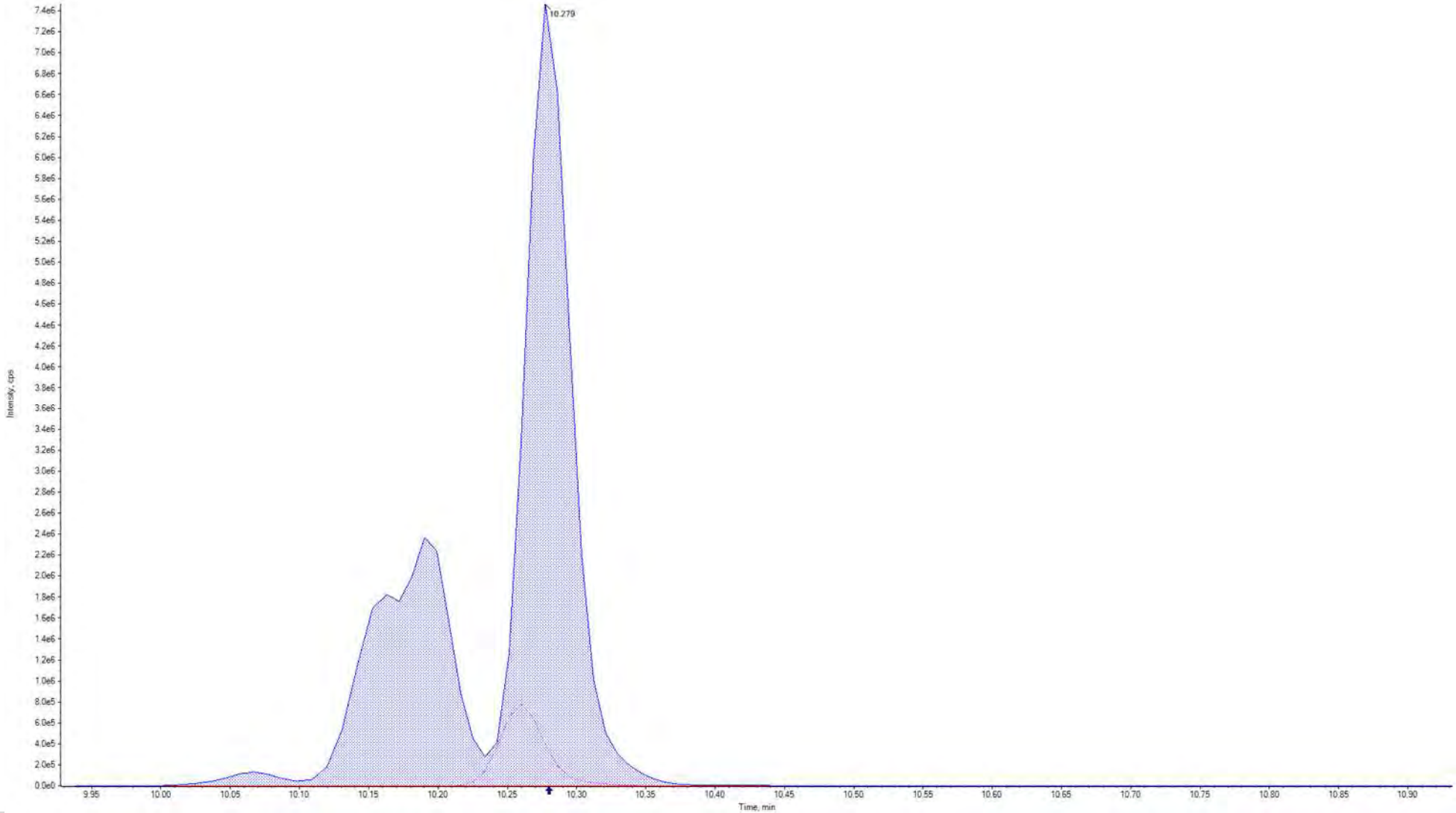
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSE
Sample: IA1633STD-12.5 S/N:6722.2 Points Across peak:57



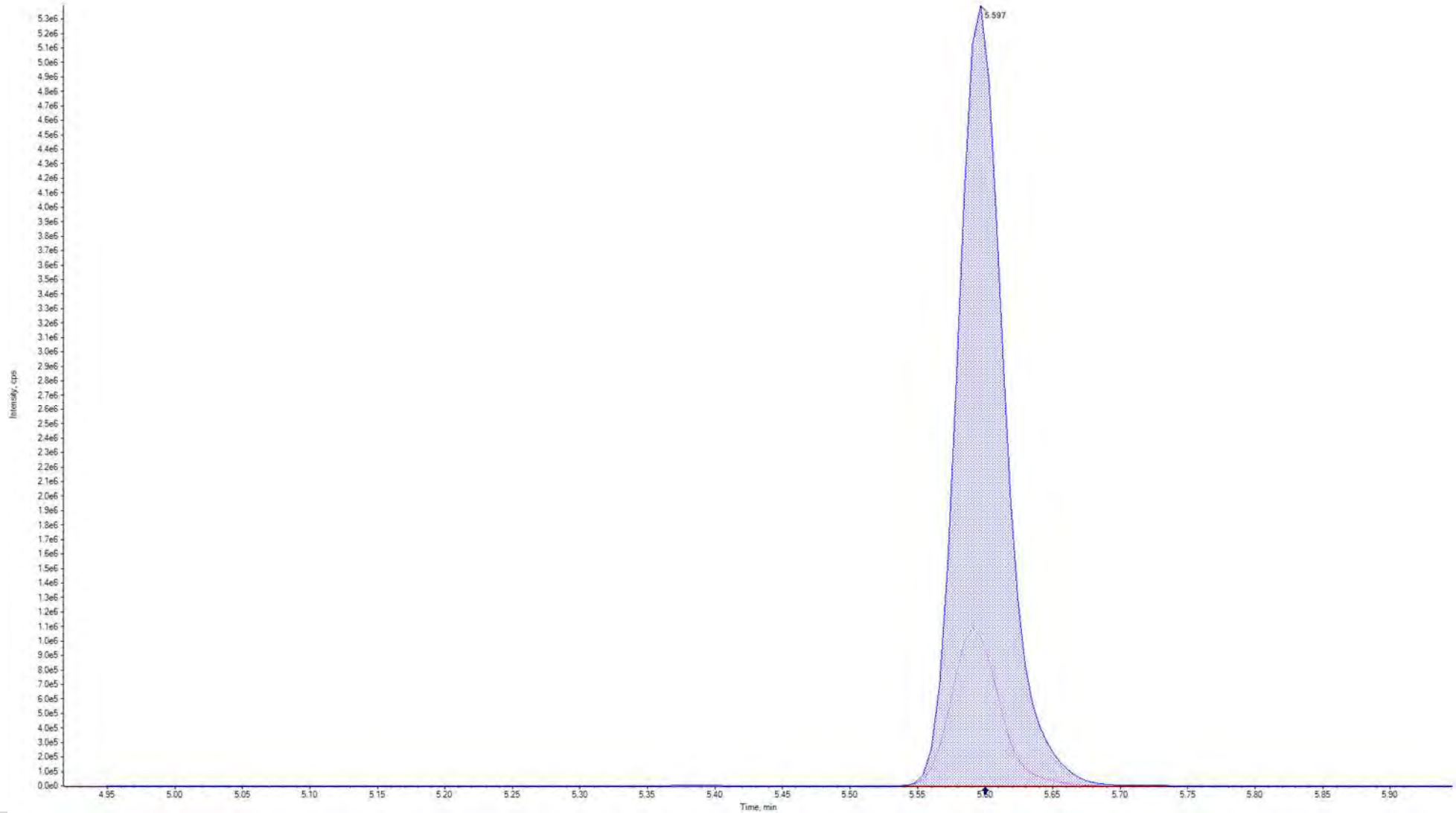
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSE
Sample: IA1633STD-12.5 S/N:4266.4 Points Across peak:57



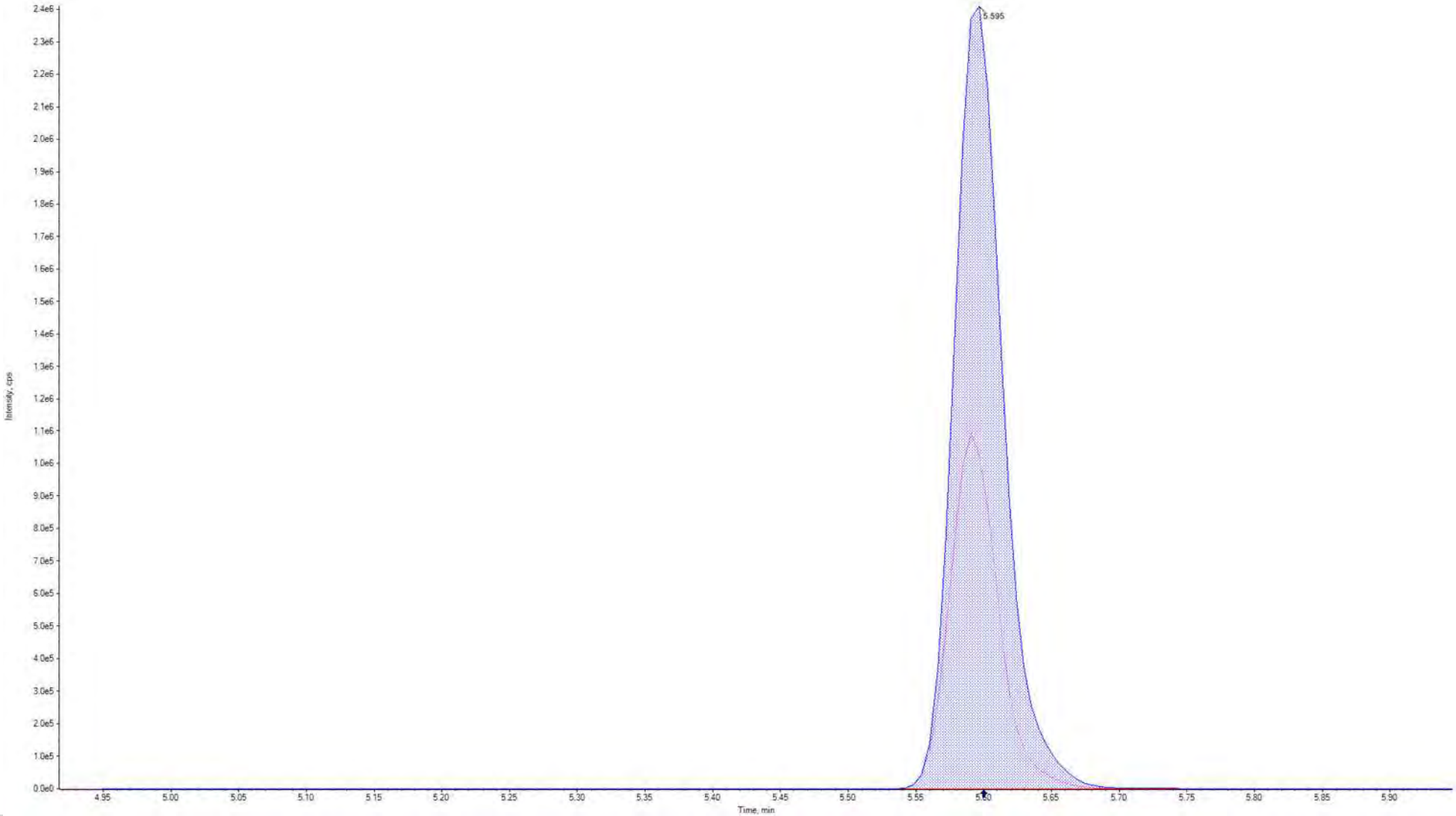
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

HFPO-DA
Sample: IA1633STD-12.5 S/N:25692.9 Points Across peak:61



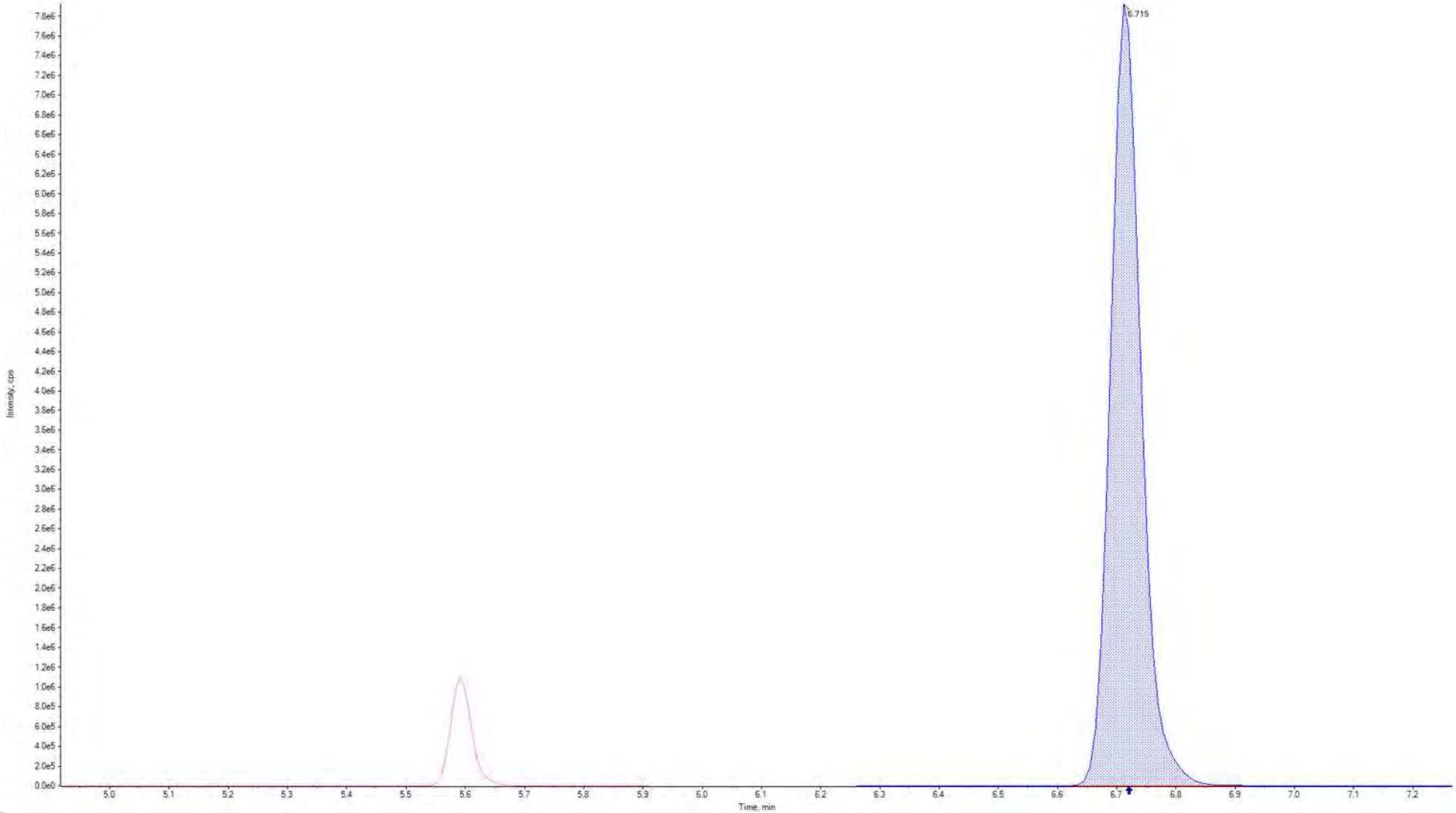
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

HFPO-DA_2
Sample: IA1633STD-12.5 S/N:9799.0 Points Across peak:48



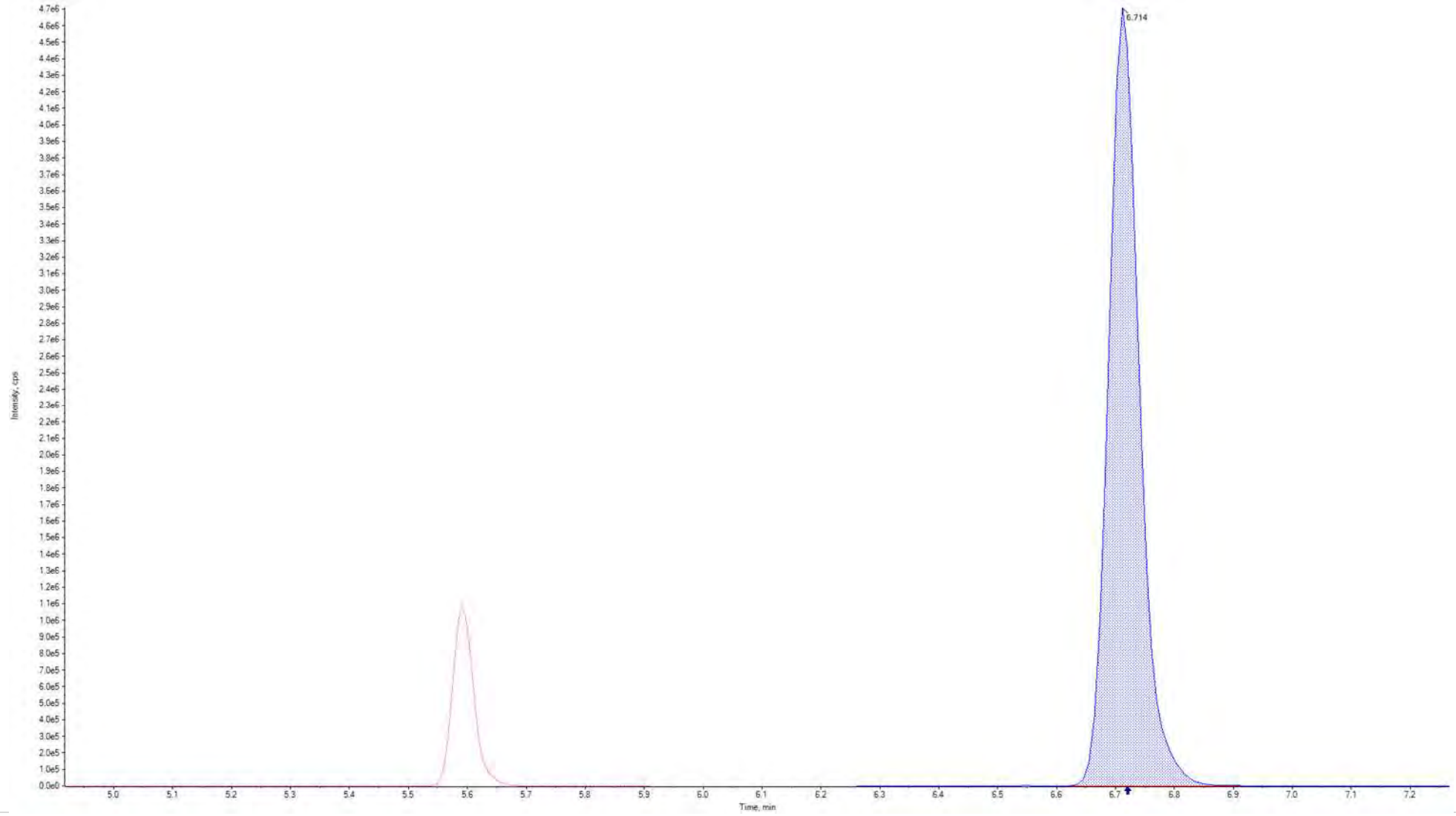
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

ADONA
Sample: IA1633STD-12.5 S/N:30974.3 Points Across peak:44



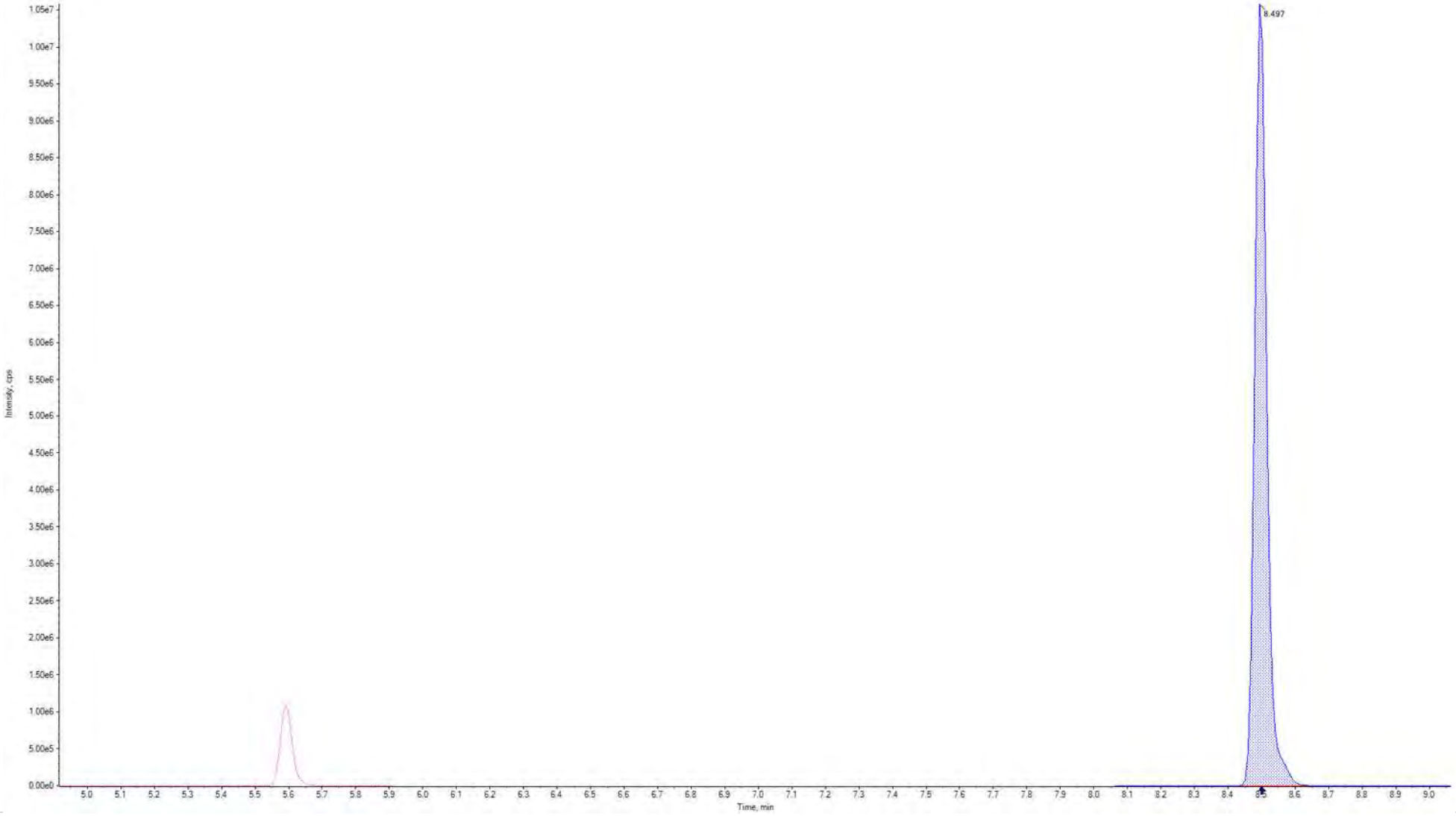
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

ADONA_2
Sample: IA1633STD-12.5 S/N:29898.1 Points Across peak:56



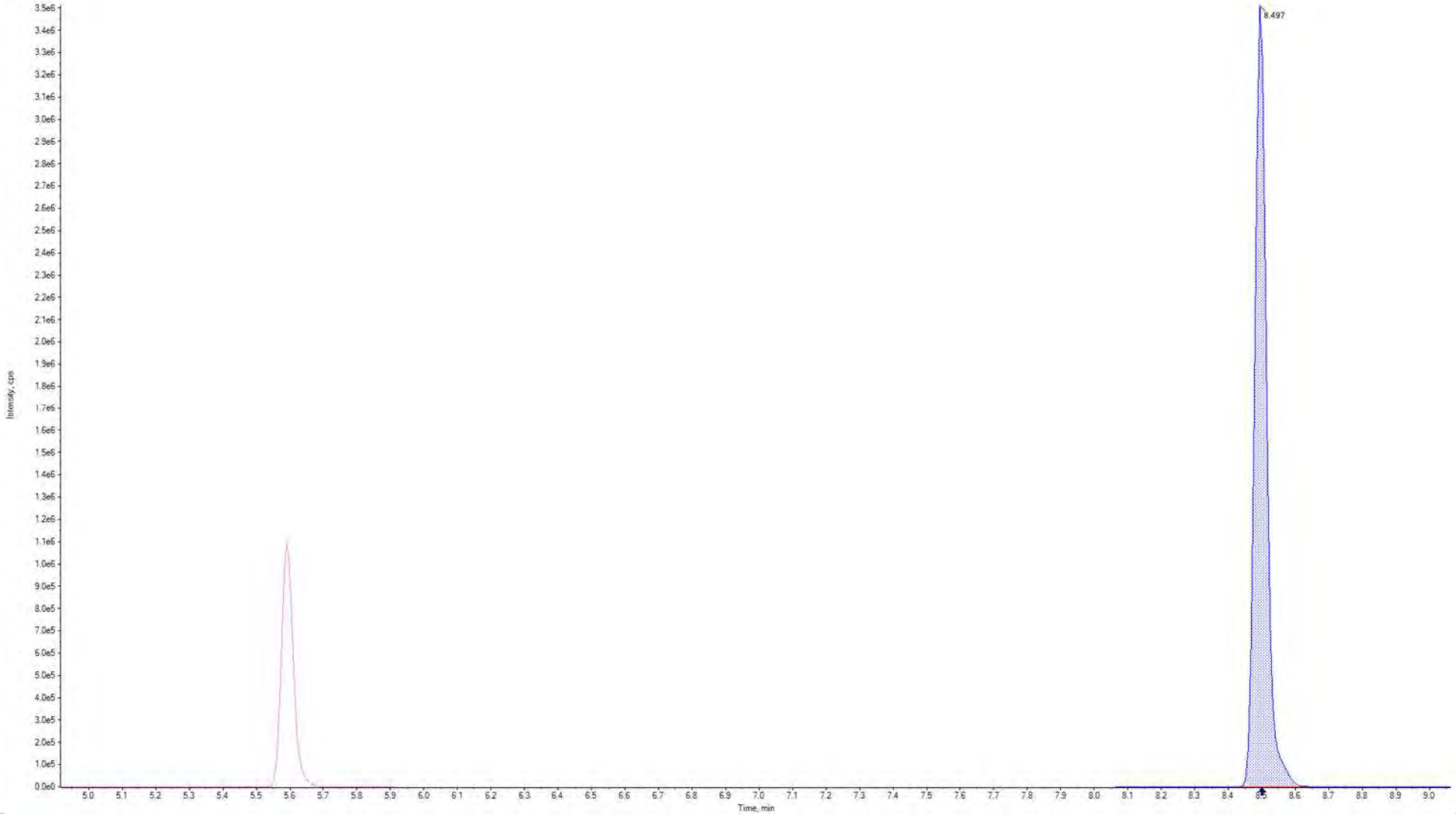
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

9Cl-PF3ONS
Sample: IA1633STD-12.5 S/N:80344.6 Points Across peak:39



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

9Cl-PF3ONS_2
Sample: IA1633STD-12.5 S/N:46132.0 Points Across peak:32



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

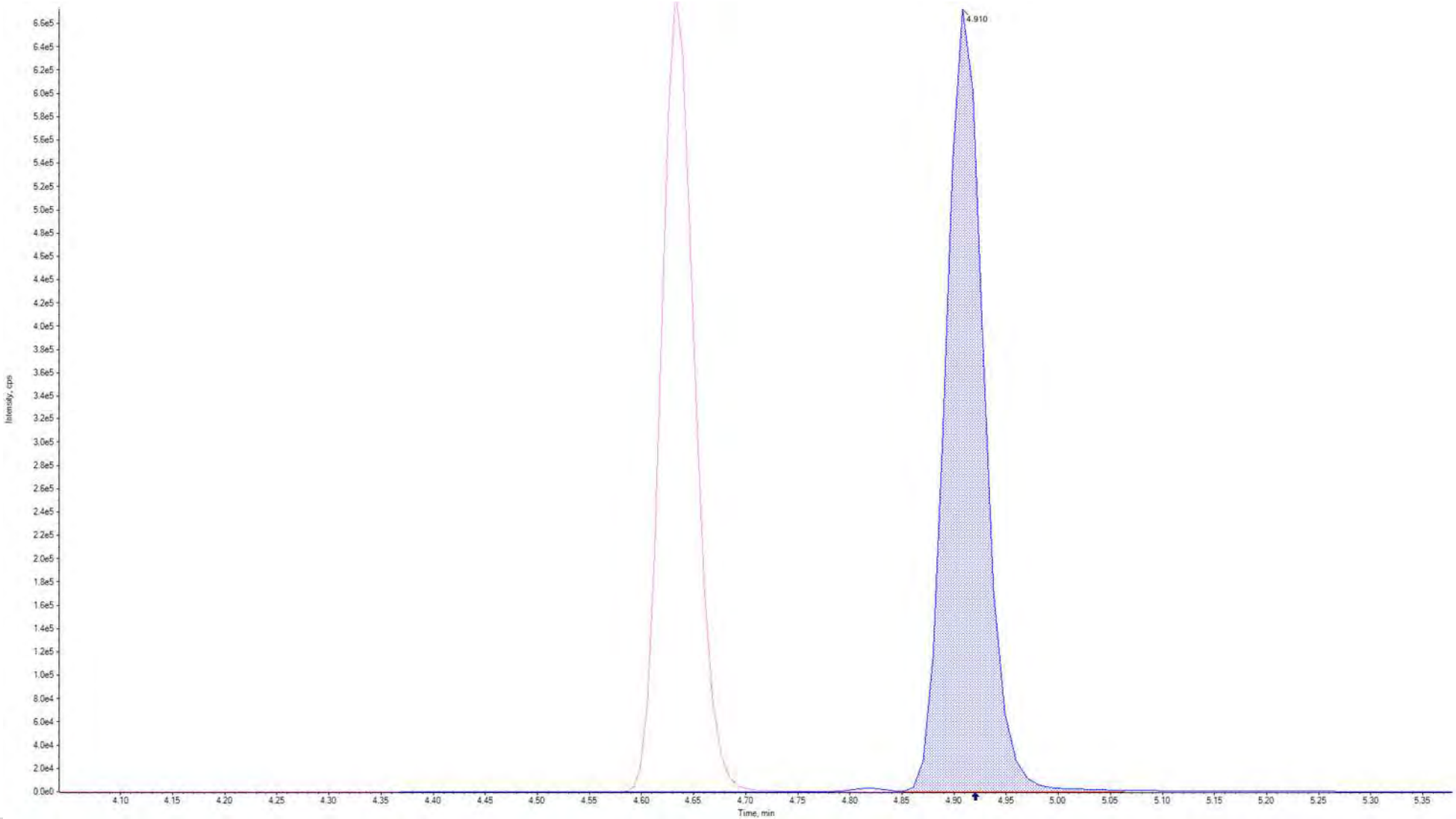
11Cl-PF3OUdS
Sample: IA1633STD-12.5 S/N:1838741.5 Points Across peak:45

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

11Cl-PF3OUdS_2
Sample: IA1633STD-12.5 S/N:161606.3 Points Across peak:47

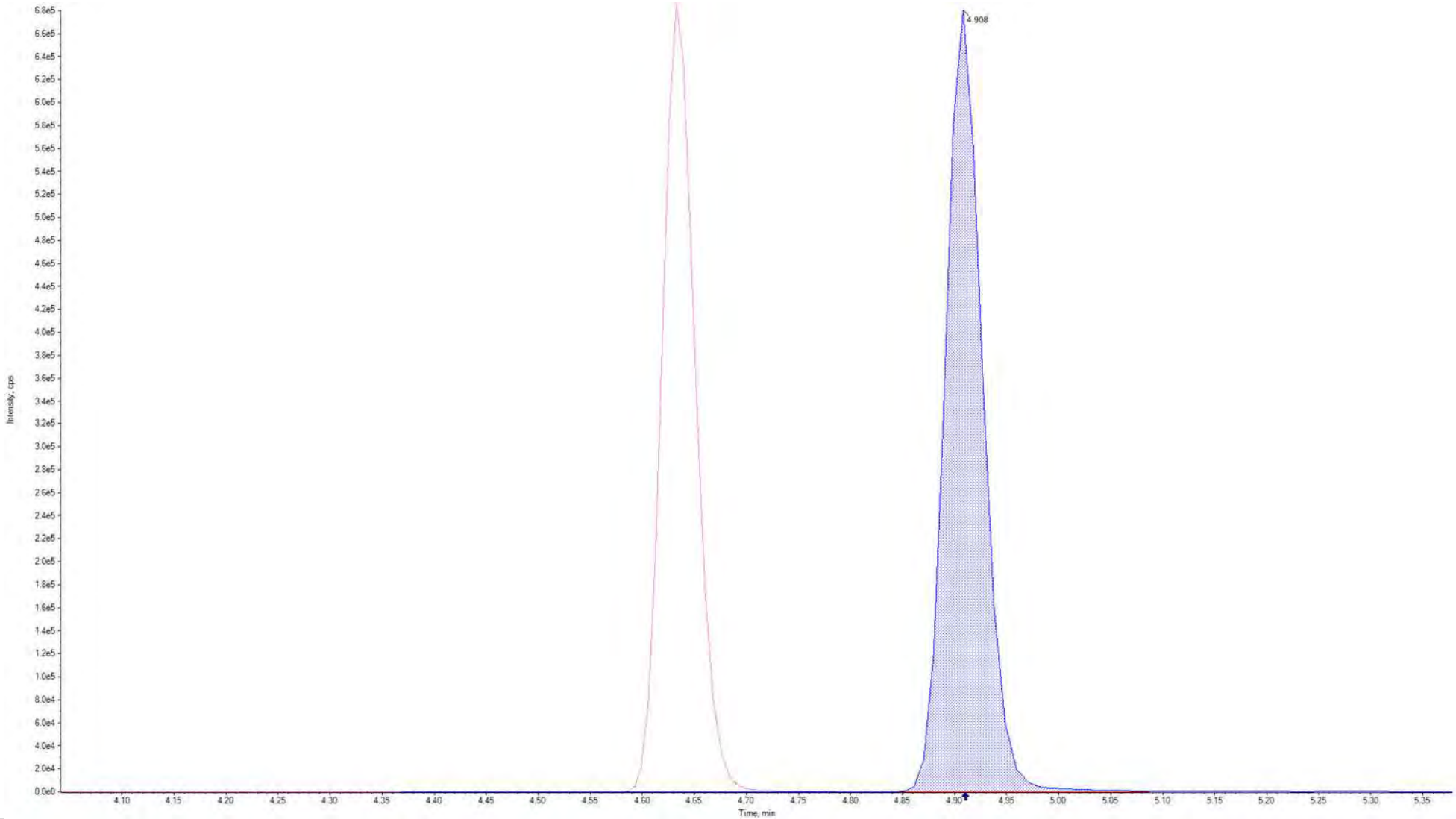
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

3:3FTCA
Sample: IA1633STD-12.5 S/N:551294.0 Points Across peak:22



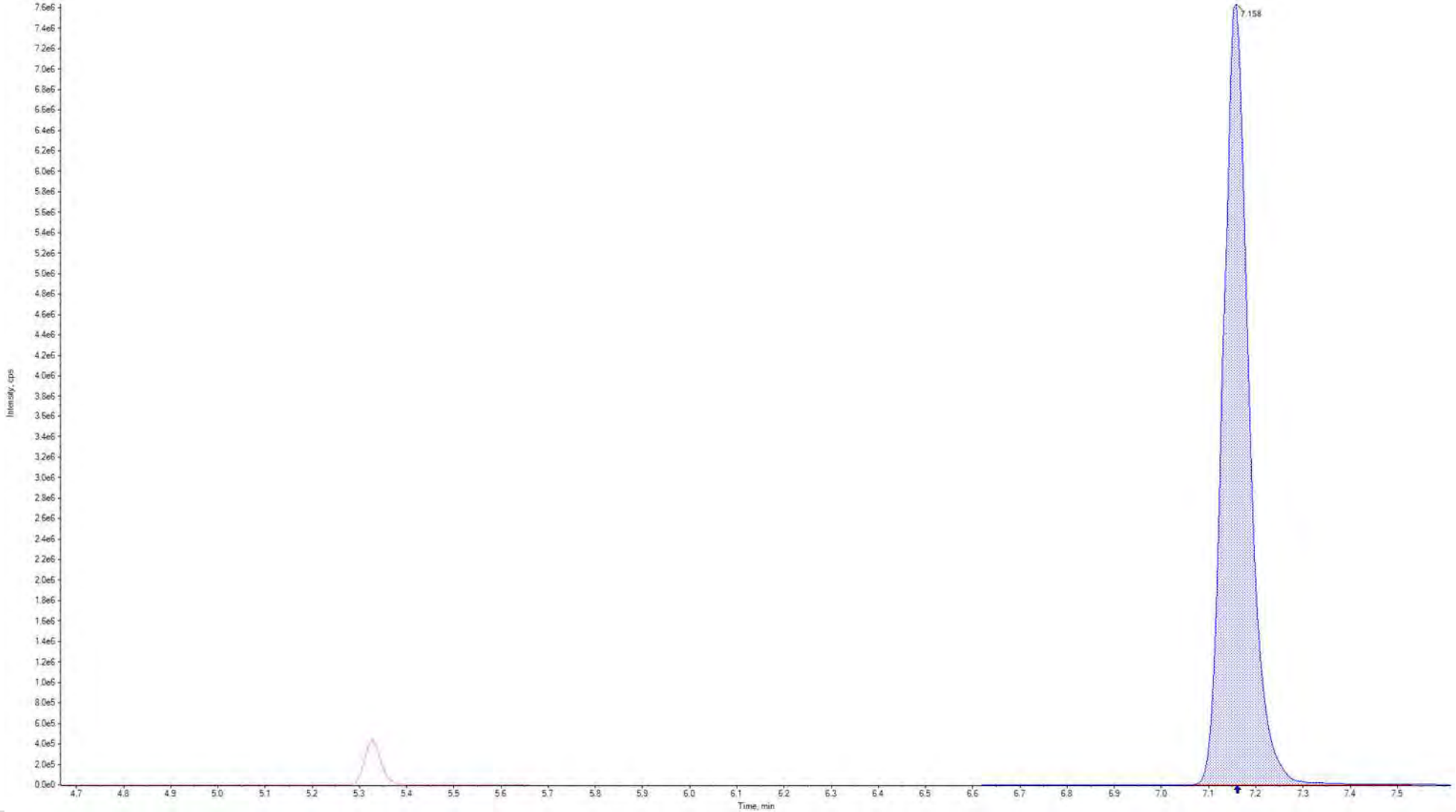
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

3:3FTCA_2
Sample: IA1633STD-12.5 S/N:6586.4 Points Across peak:26



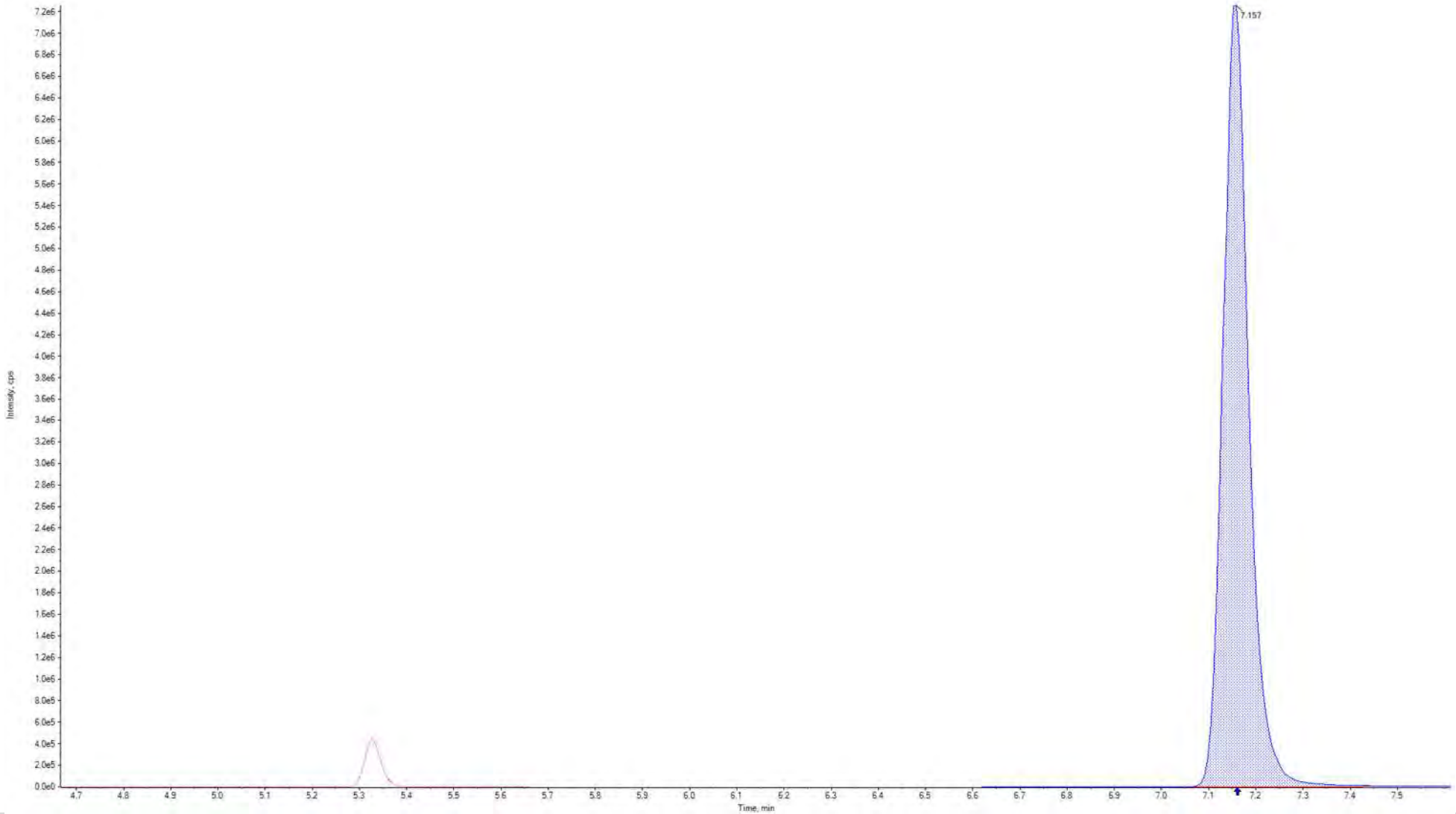
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

5:3FTCA
Sample: IA1633STD-12.5 S/N:26556.5 Points Across peak:82



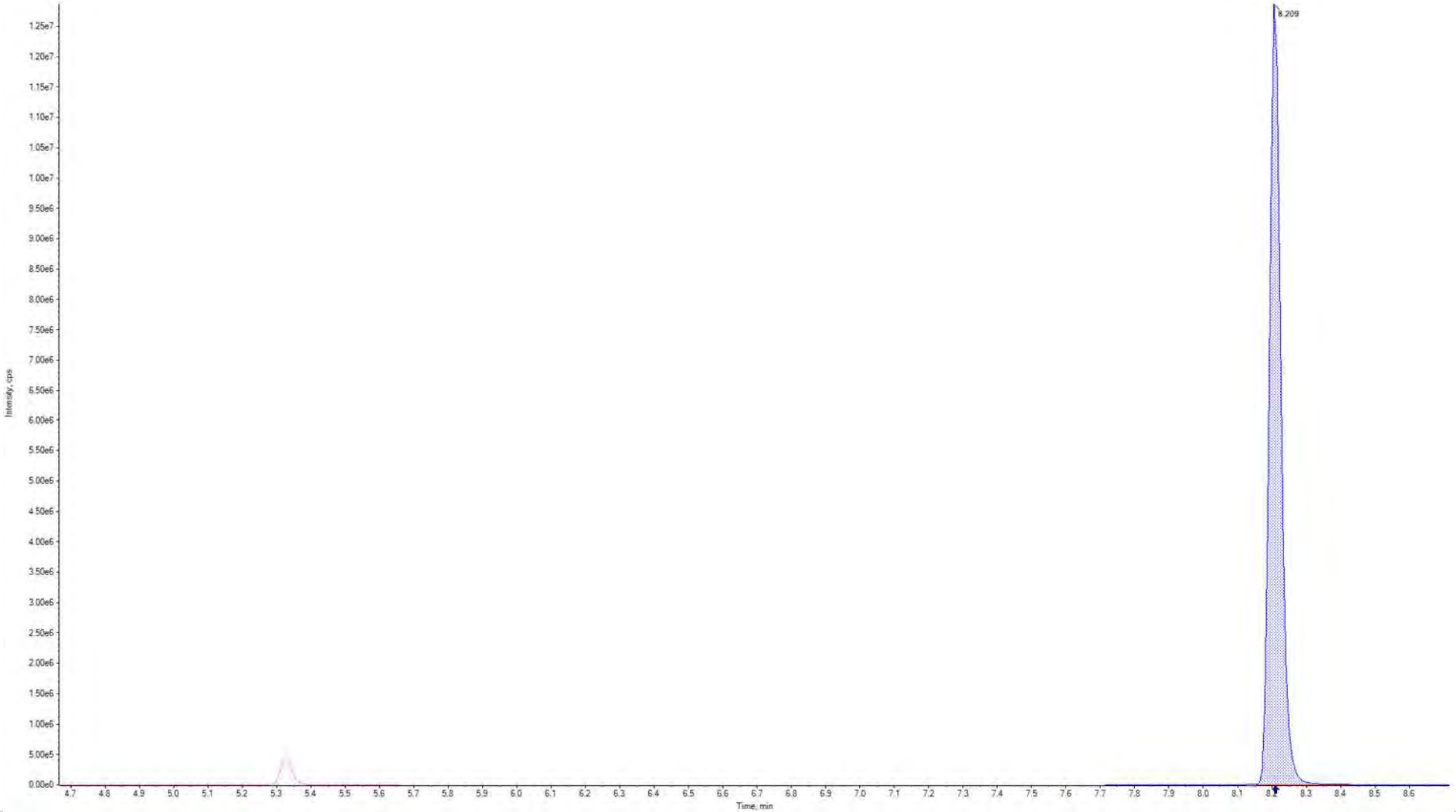
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

5:3FTCA_2
Sample: IA1633STD-12.5 S/N:24130.2 Points Across peak:90



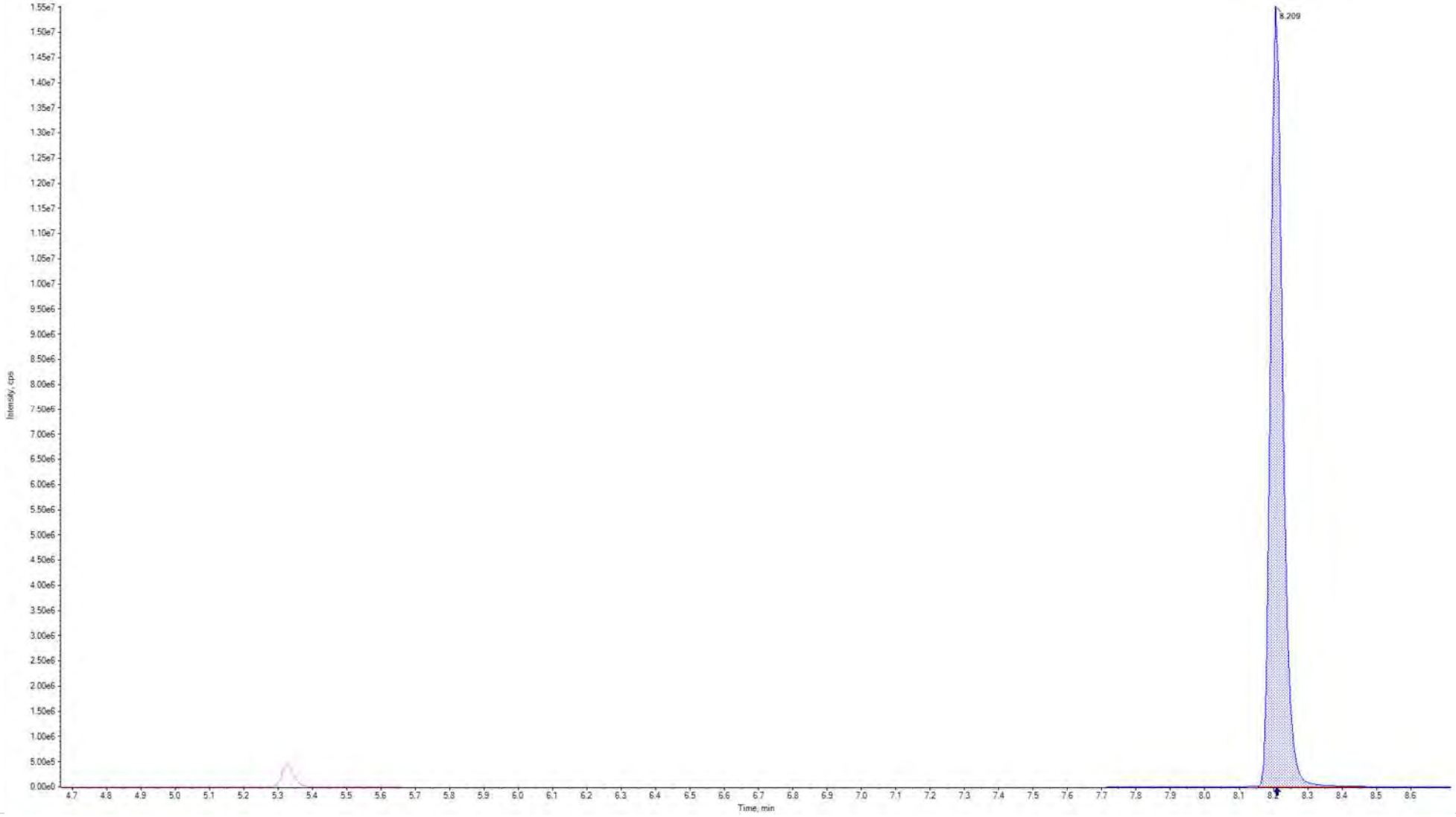
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

7:3FTCA
Sample: IA1633STD-12.5 S/N:24002.1 Points Across peak:38



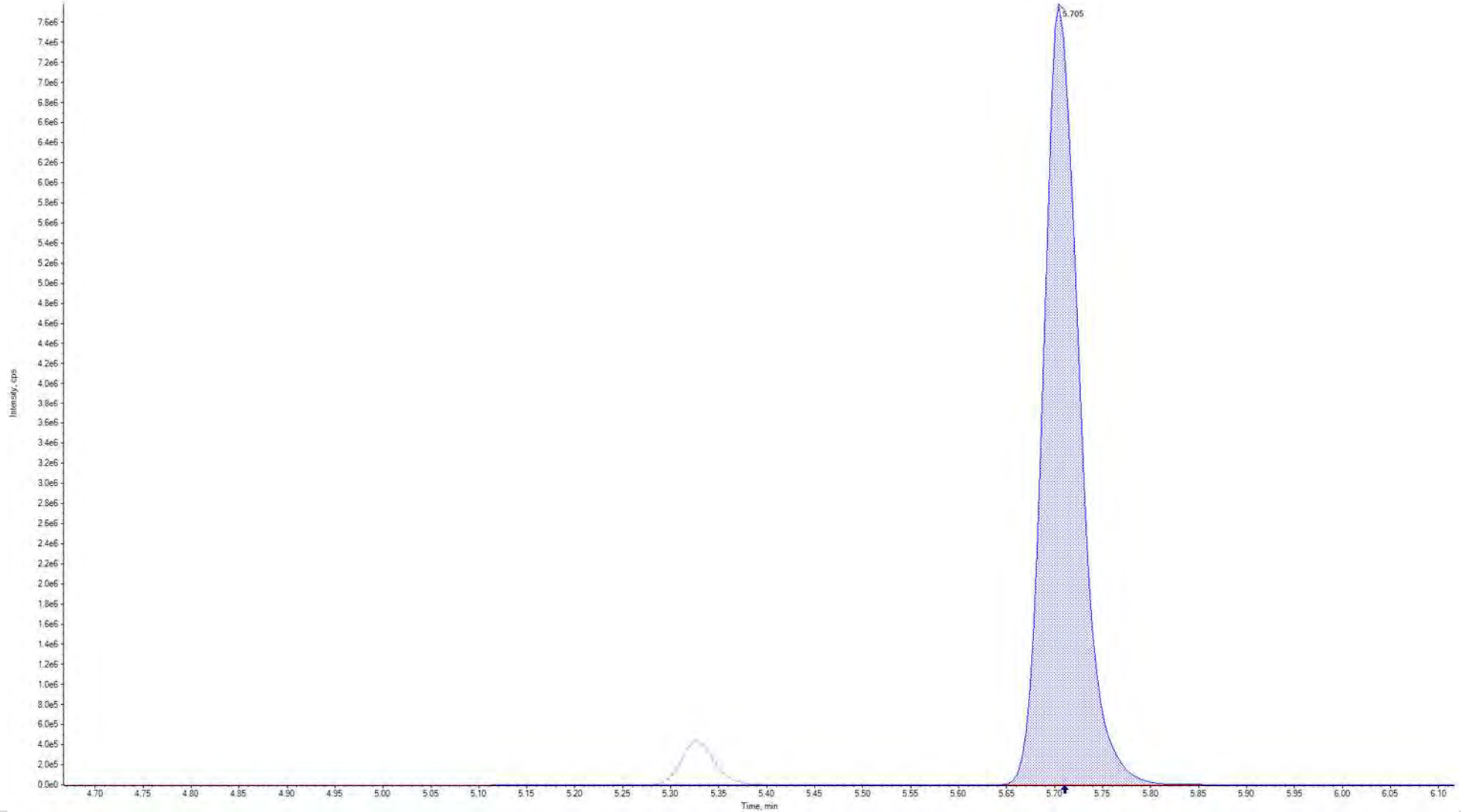
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

7:3FTCA_2
Sample: IA1633STD-12.5 S/N:30062.3 Points Across peak:40



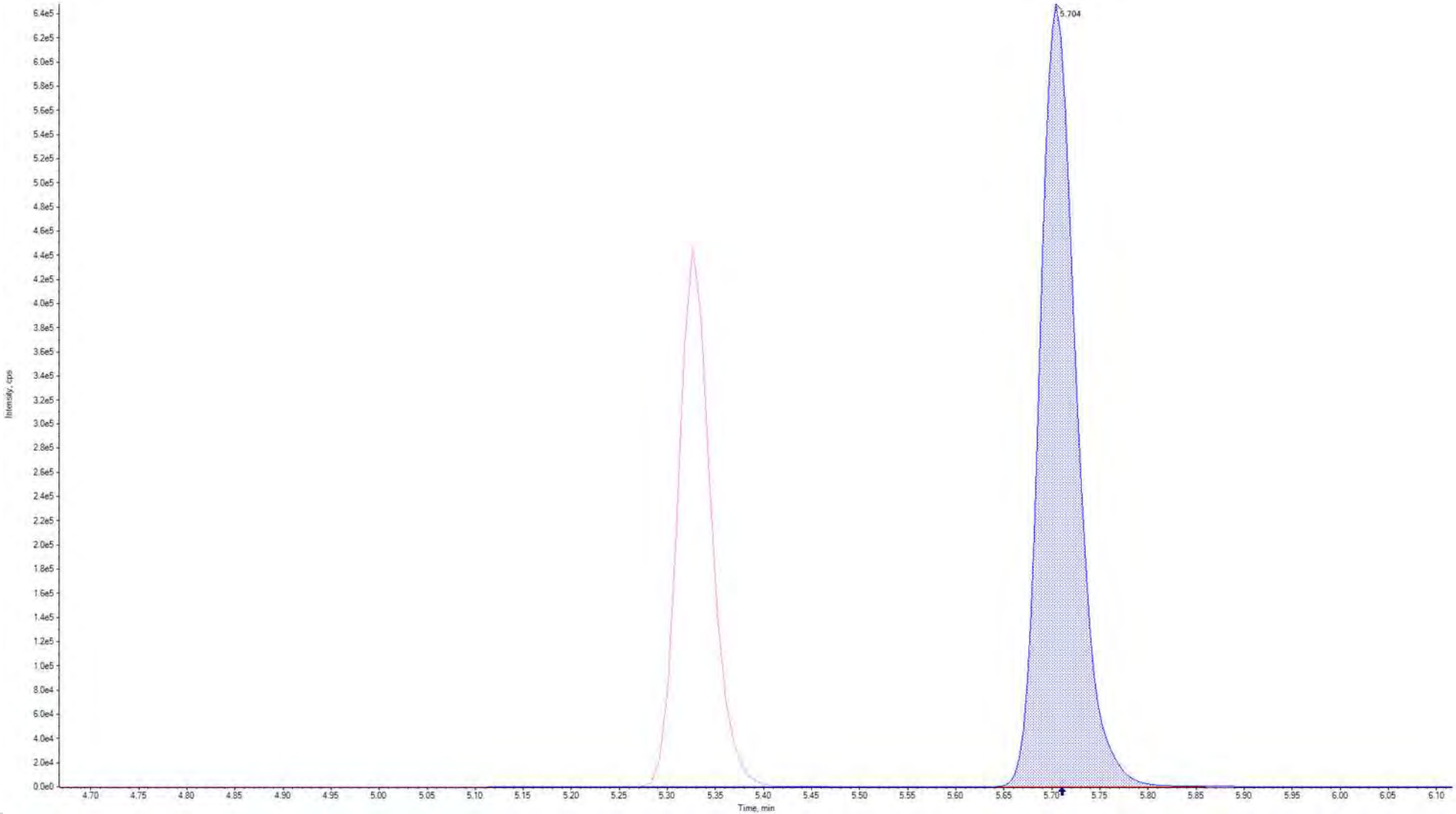
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFEESA
Sample: IA1633STD-12.5 S/N:34835.1 Points Across peak:64



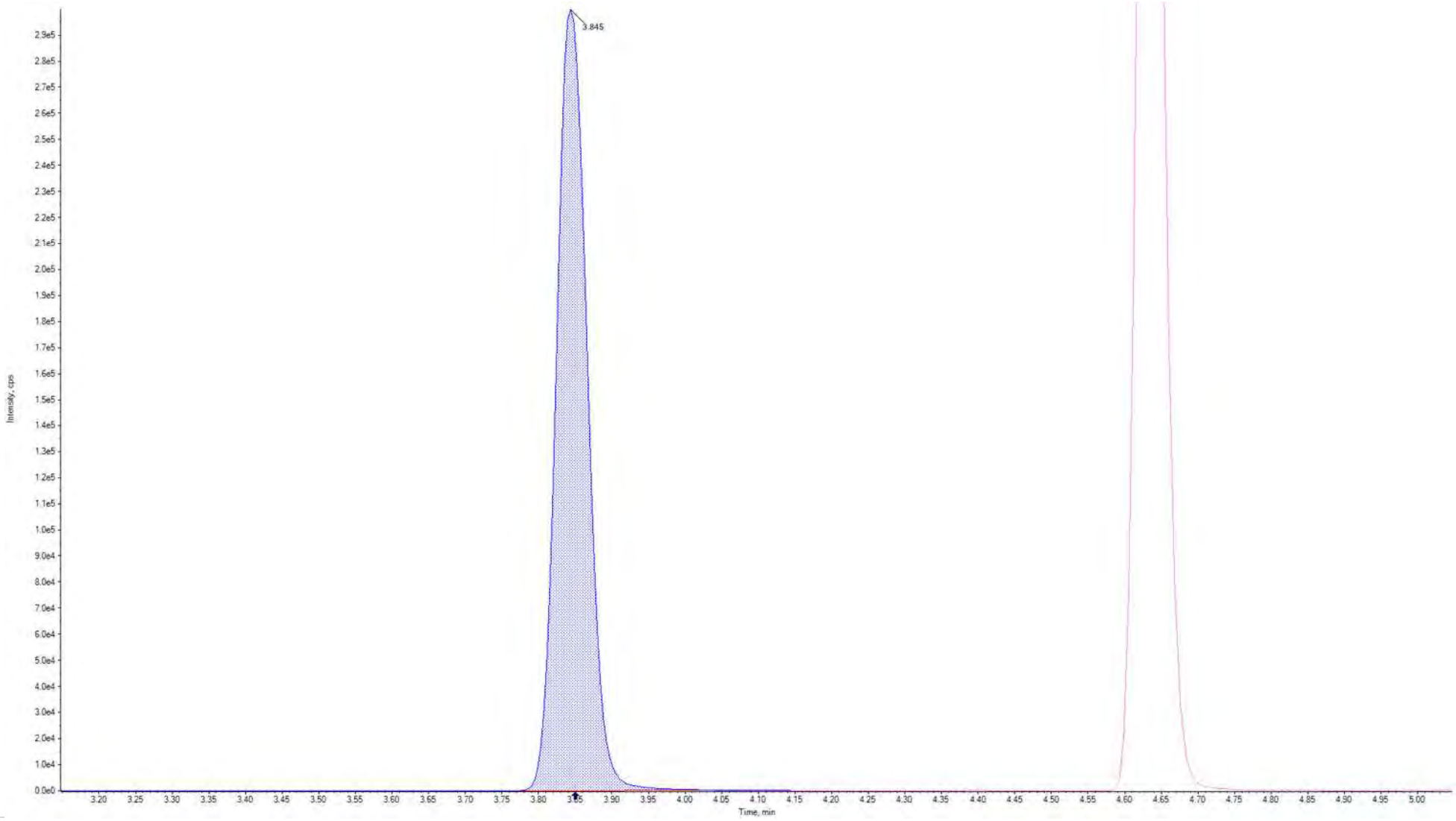
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFEESA_2
Sample: IA1633STD-12.5 S/N:13515.2 Points Across peak:49



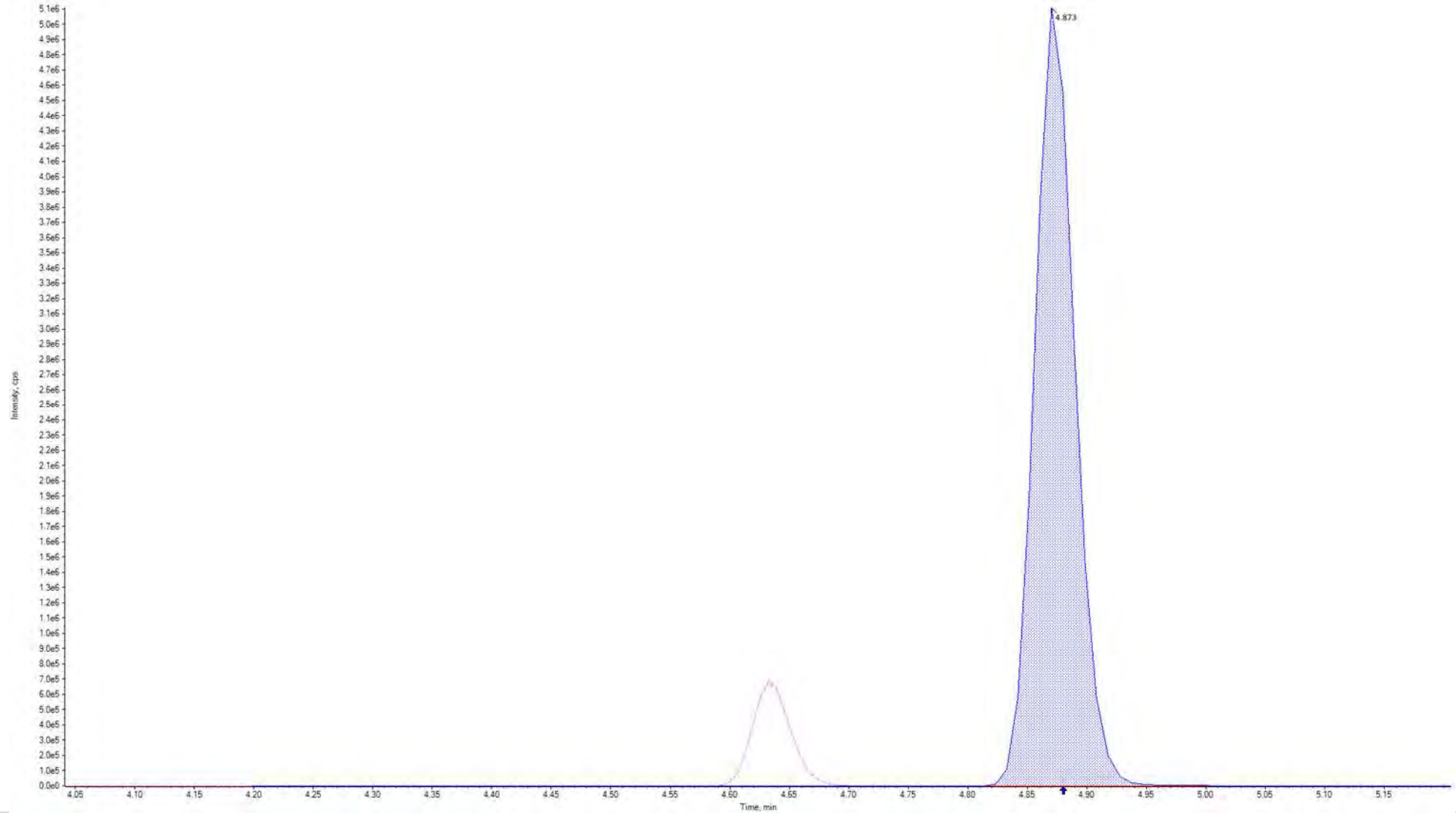
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFMPA
Sample: IA1633STD-12.5 S/N:6360.8 Points Across peak:68



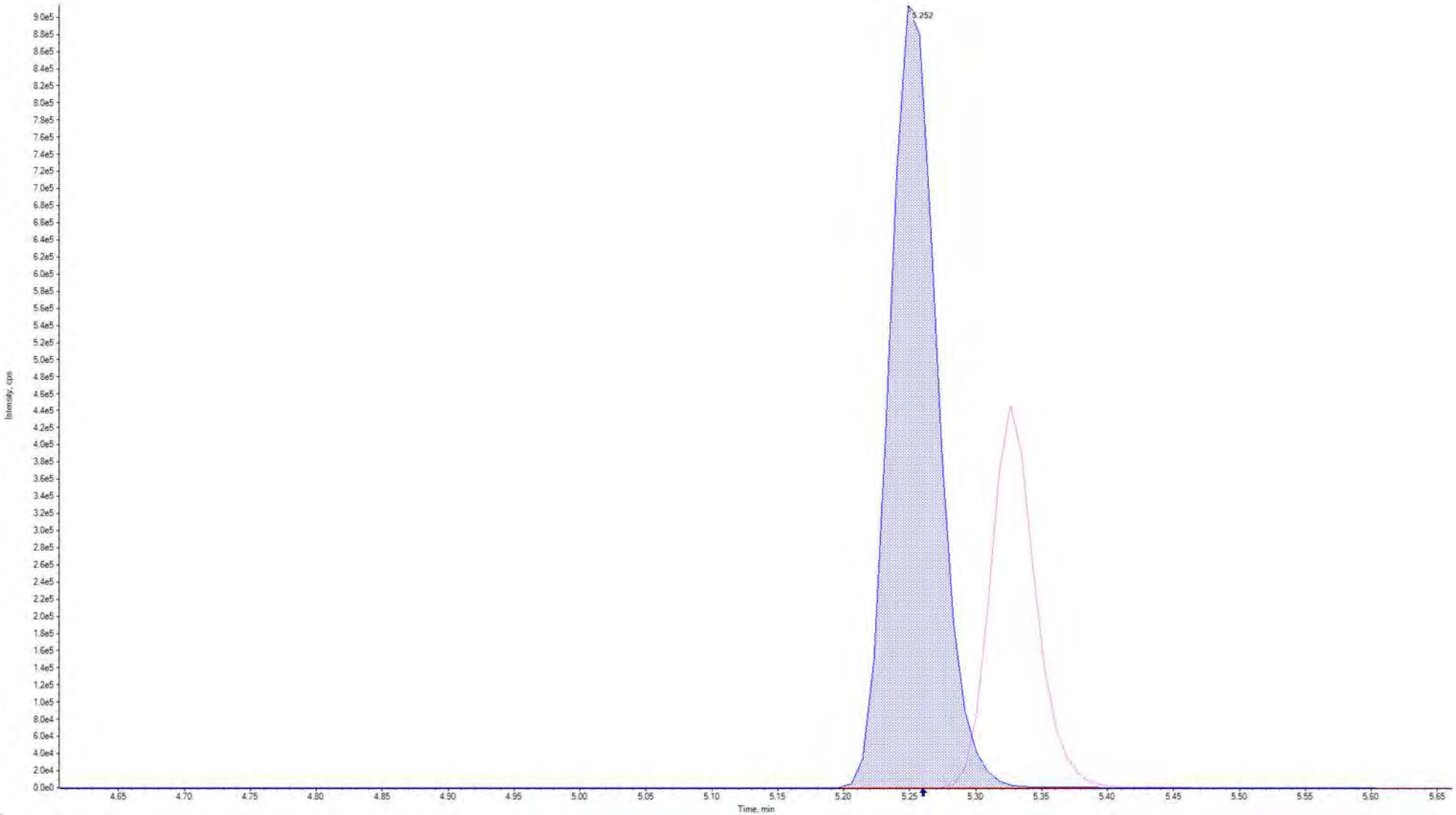
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFMBA
Sample: IA1633STD-12.5 S/N:17509.4 Points Across peak:41



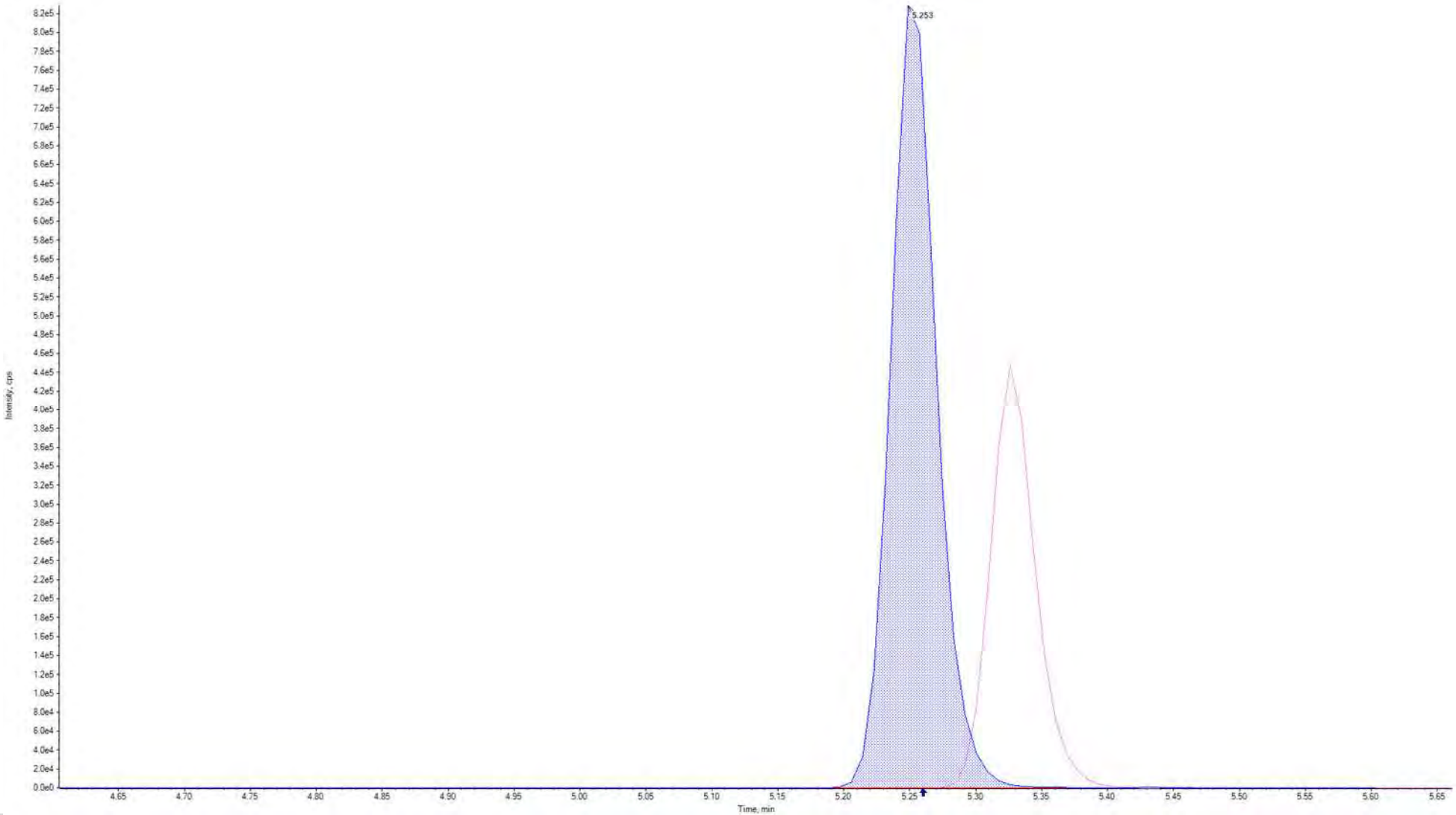
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NFDHA
Sample: IA1633STD-12.5 S/N:5012.3 Points Across peak:29



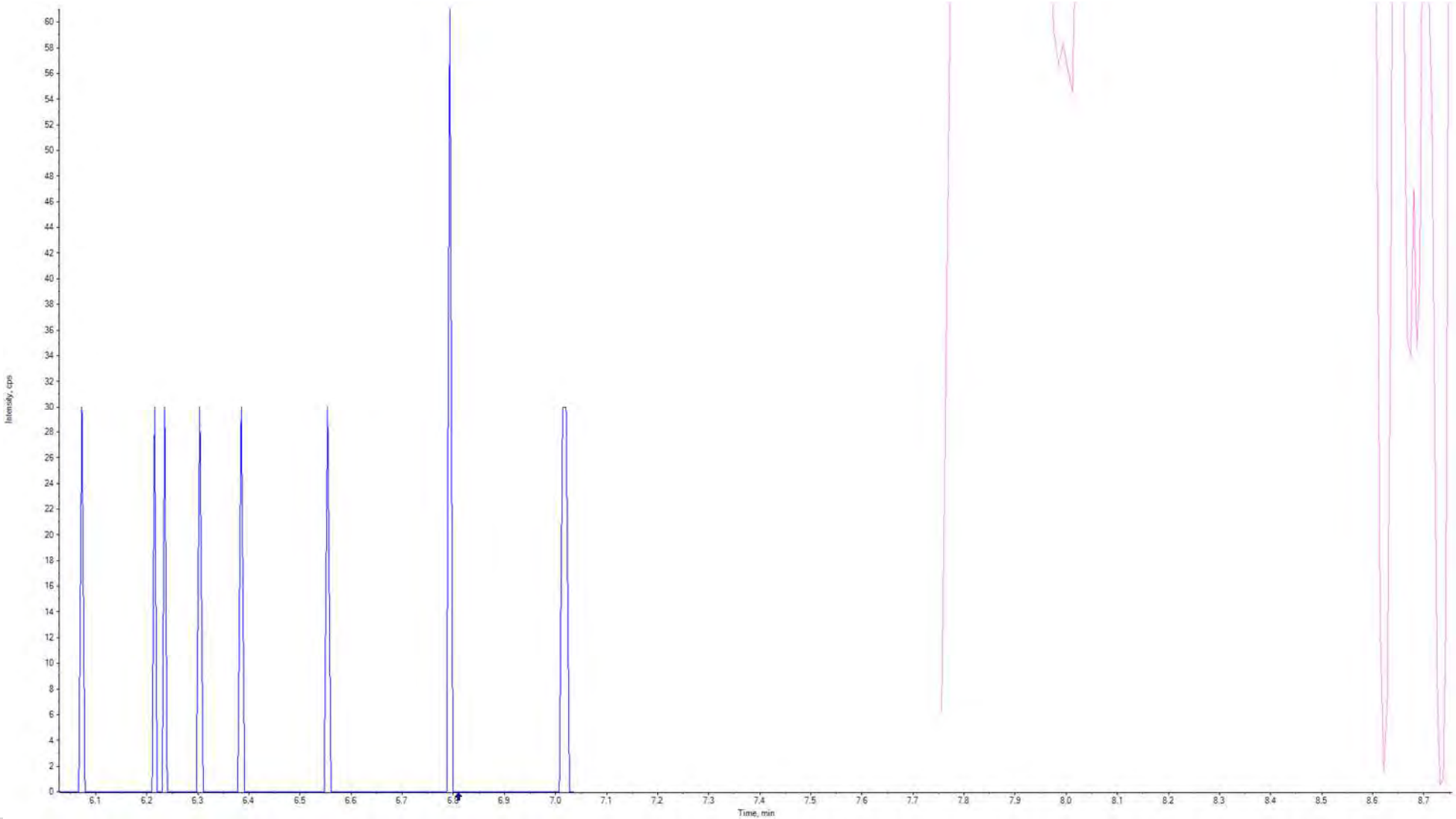
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NFDHA_2
Sample: IA1633STD-12.5 S/N:6278.9 Points Across peak:29



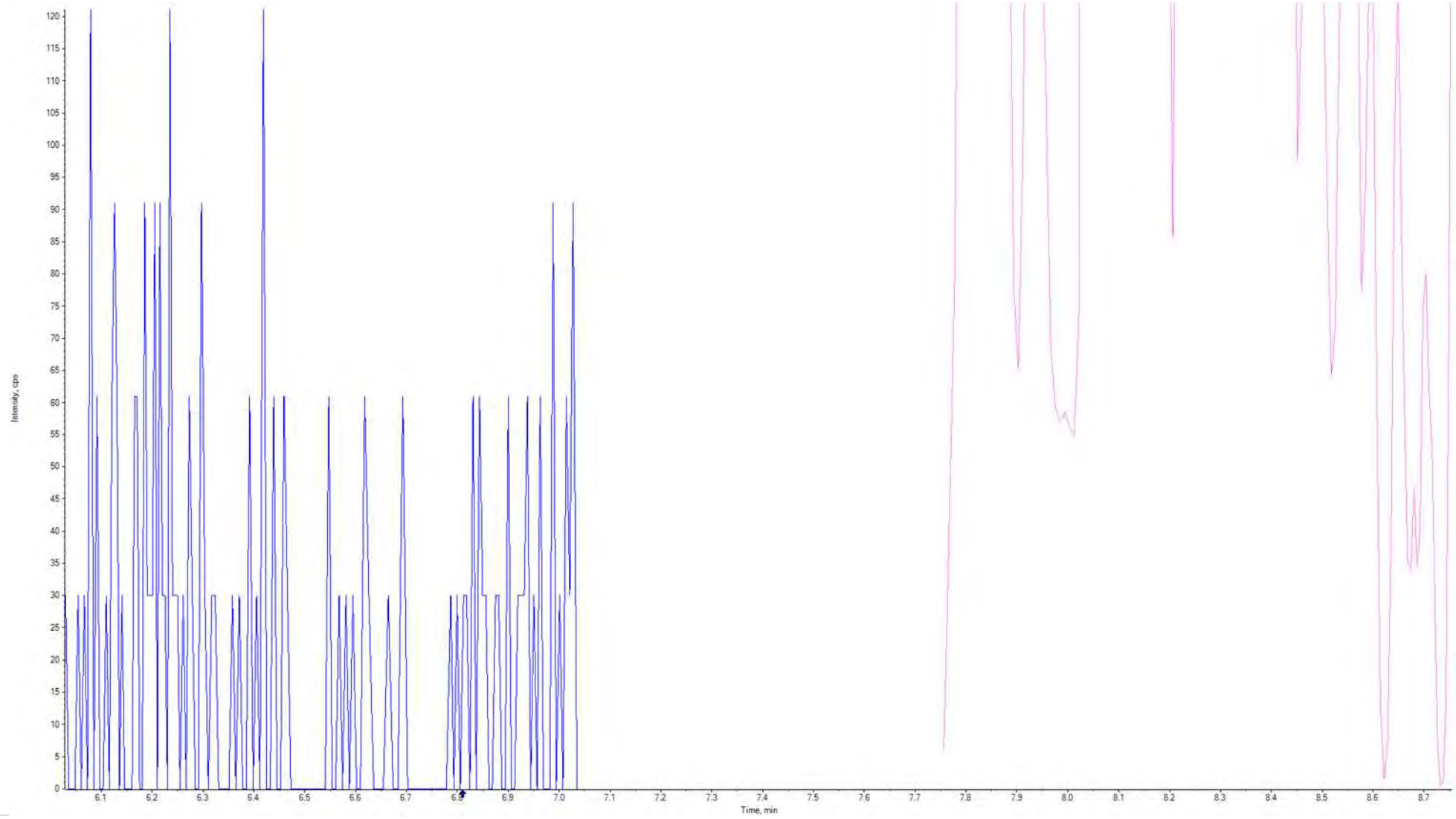
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

TDCA
Sample: IA1633STD-12.5 S/N:N/A Points Across peak:N/A



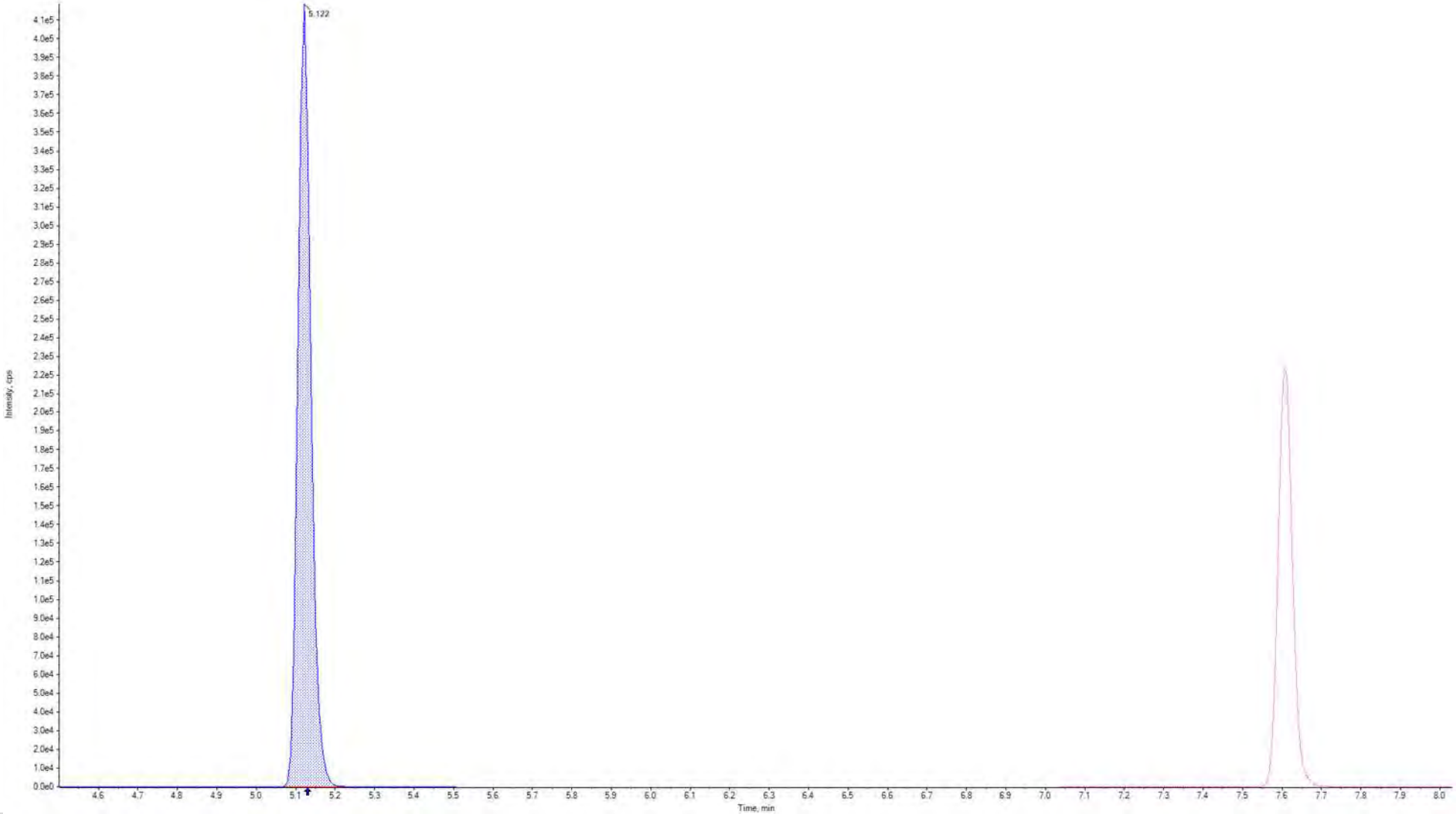
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

TDCA_2
Sample: IA1633STD-12.5 S/N:N/A Points Across peak:N/A



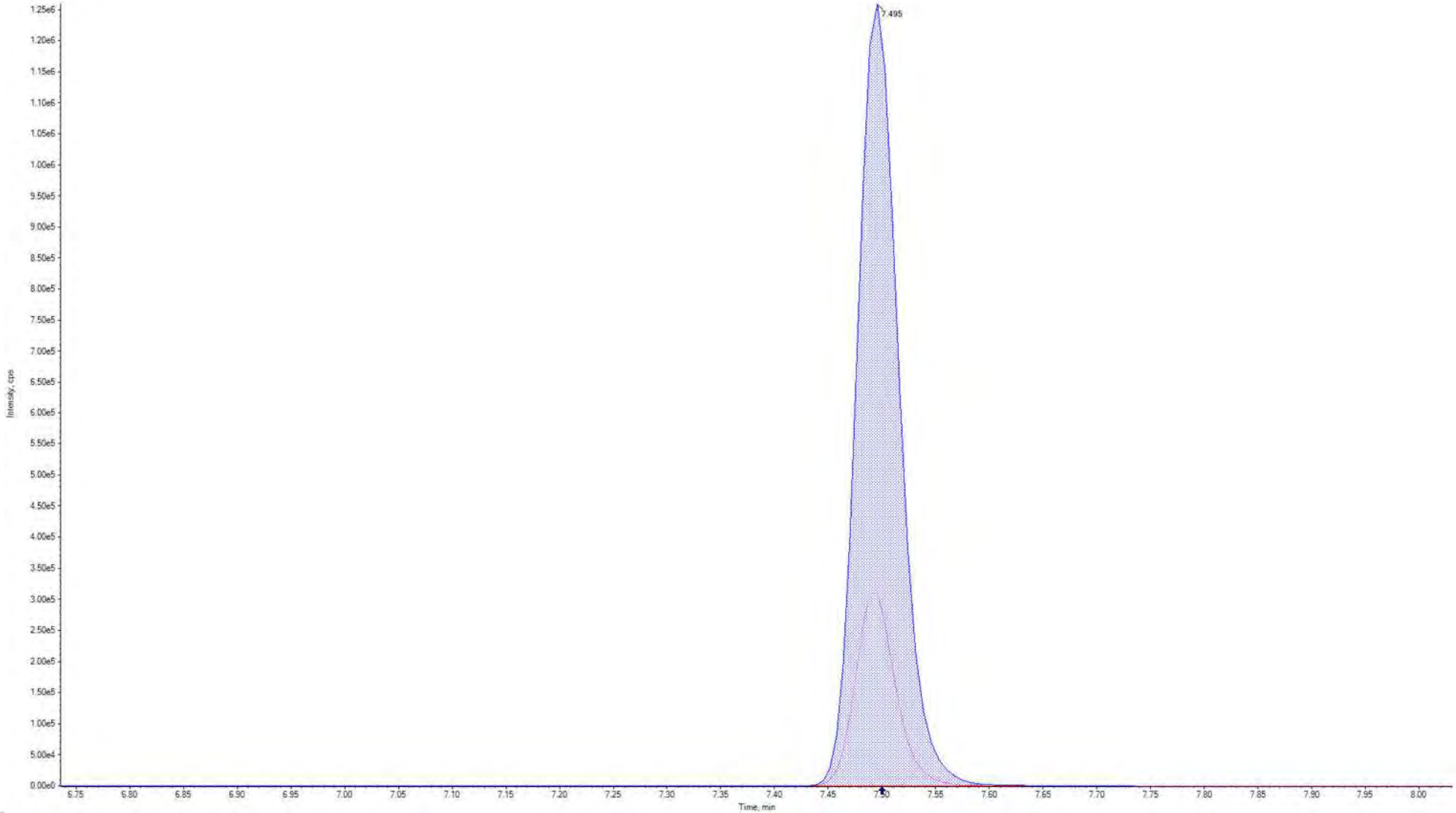
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

13C2D4-4:2FTS
Sample: IA1633STD-12.5 S/N:1841.8 Points Across peak:27



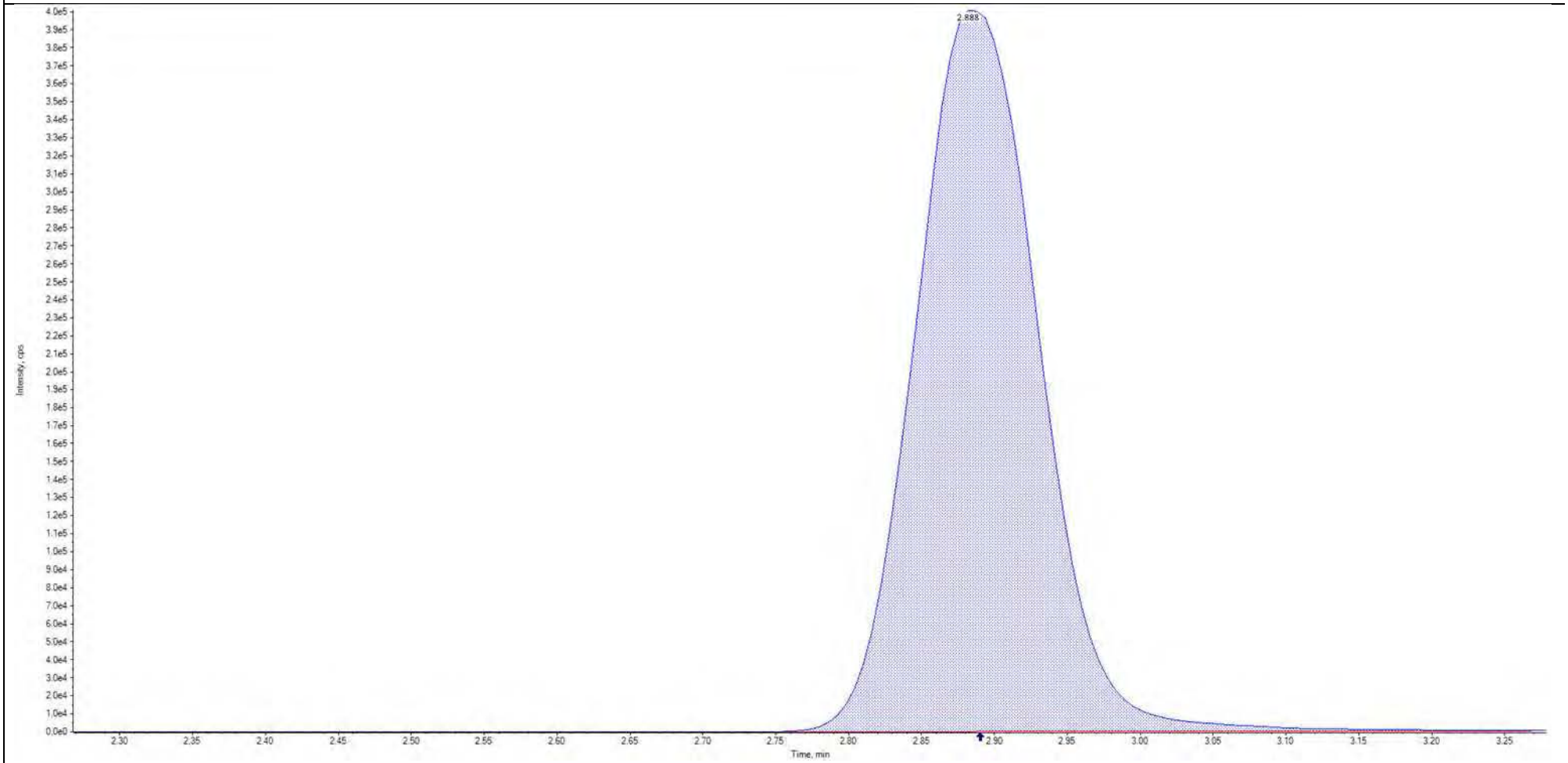
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

13C2-PFOA
Sample: IA1633STD-12.5 S/N:7632.4 Points Across peak:38

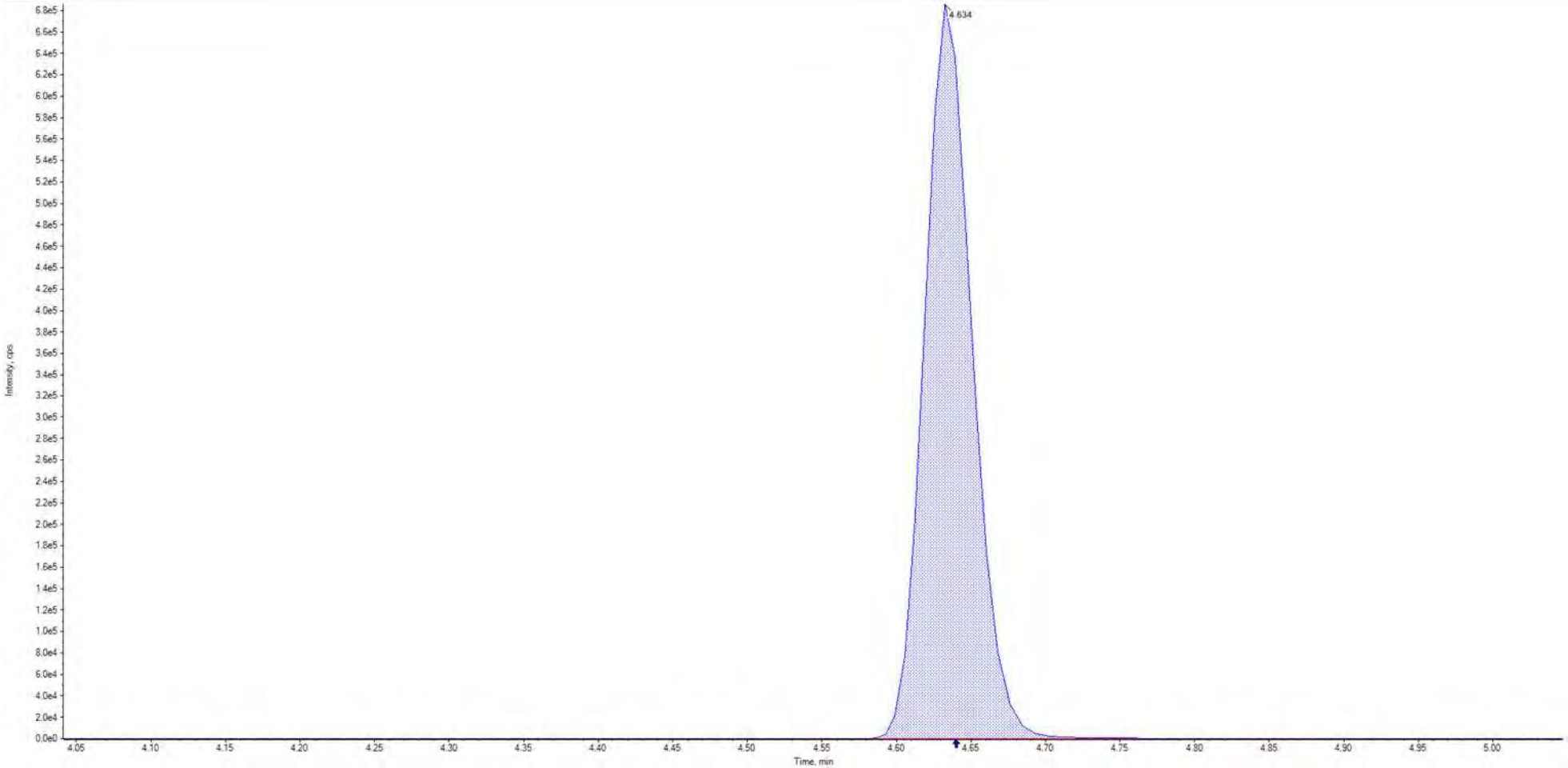


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

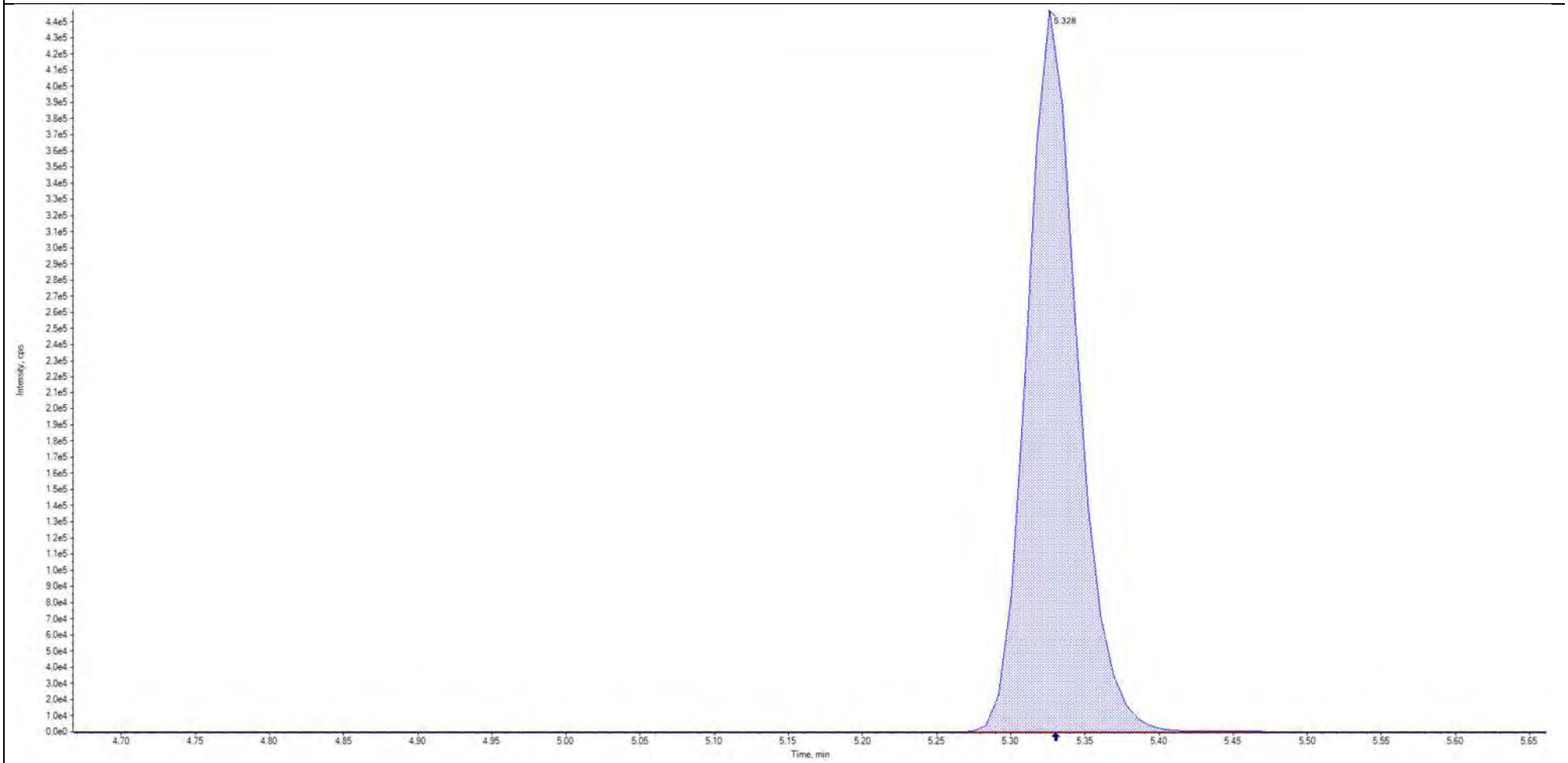
13C4-PFBA
Sample: IA1633STD-12.5



13C5-PFPeA
Sample: IA1633STD-12.5

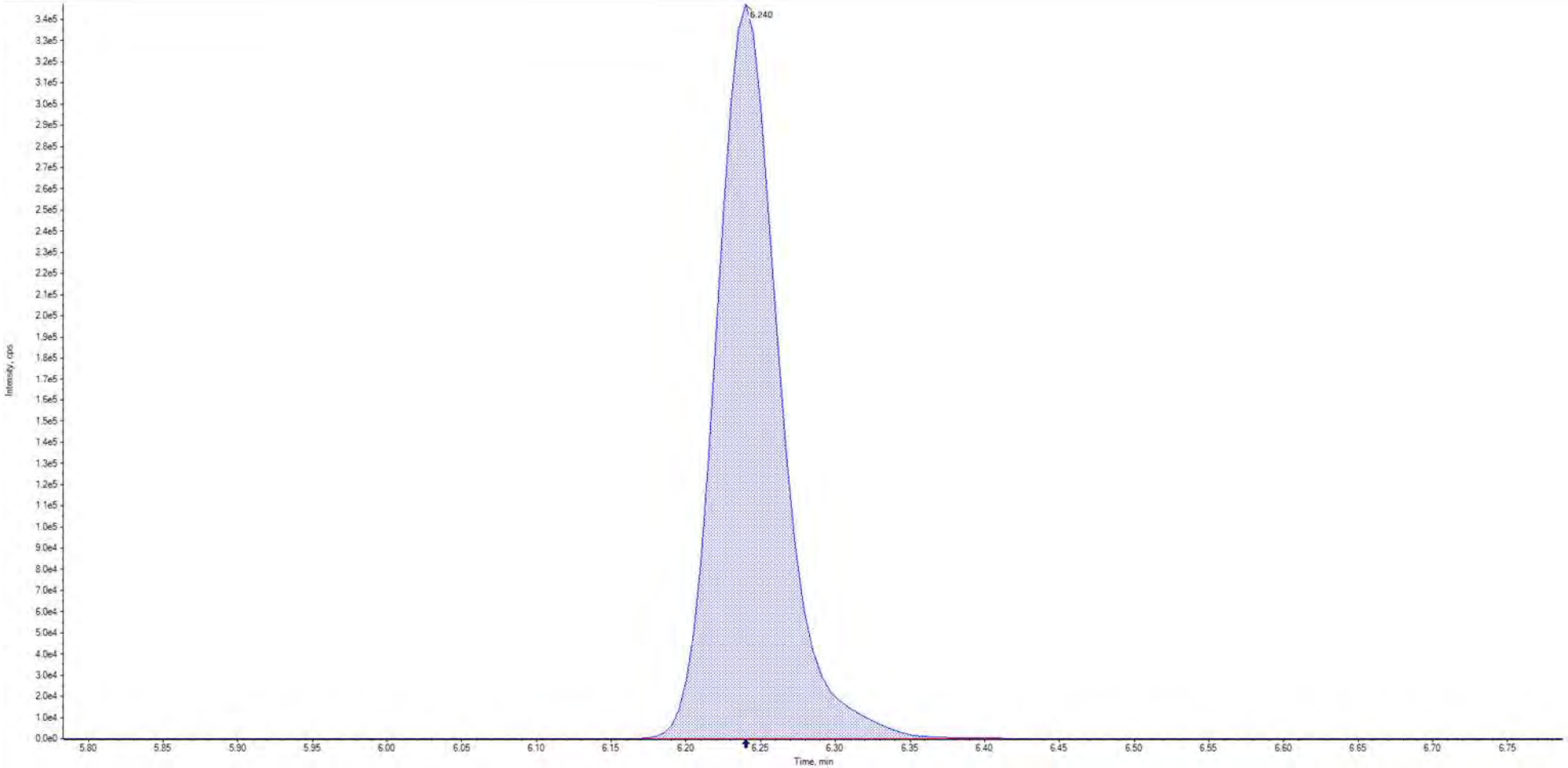


13C5-PFHxA
Sample: IA1633STD-12.5

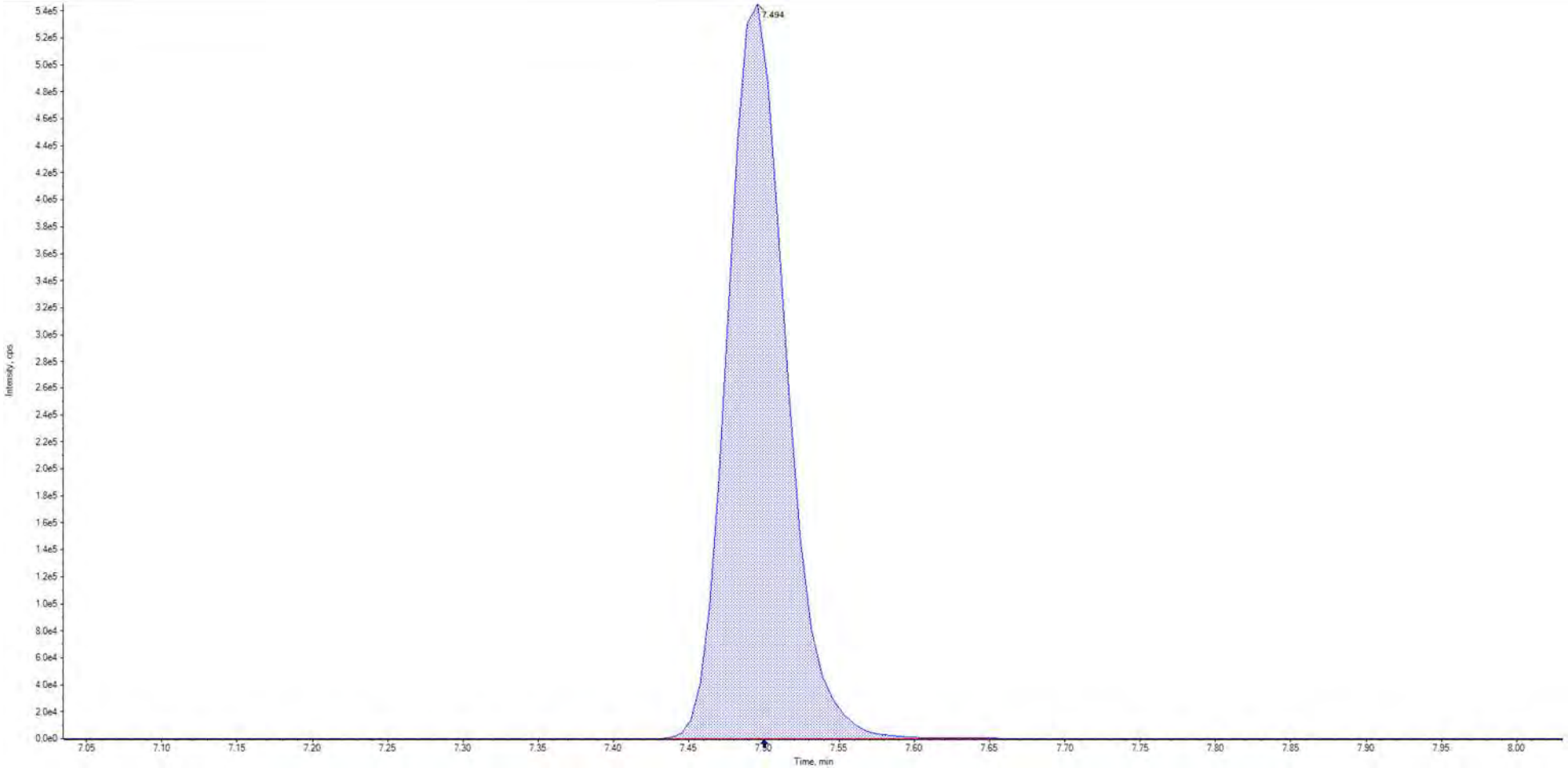


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

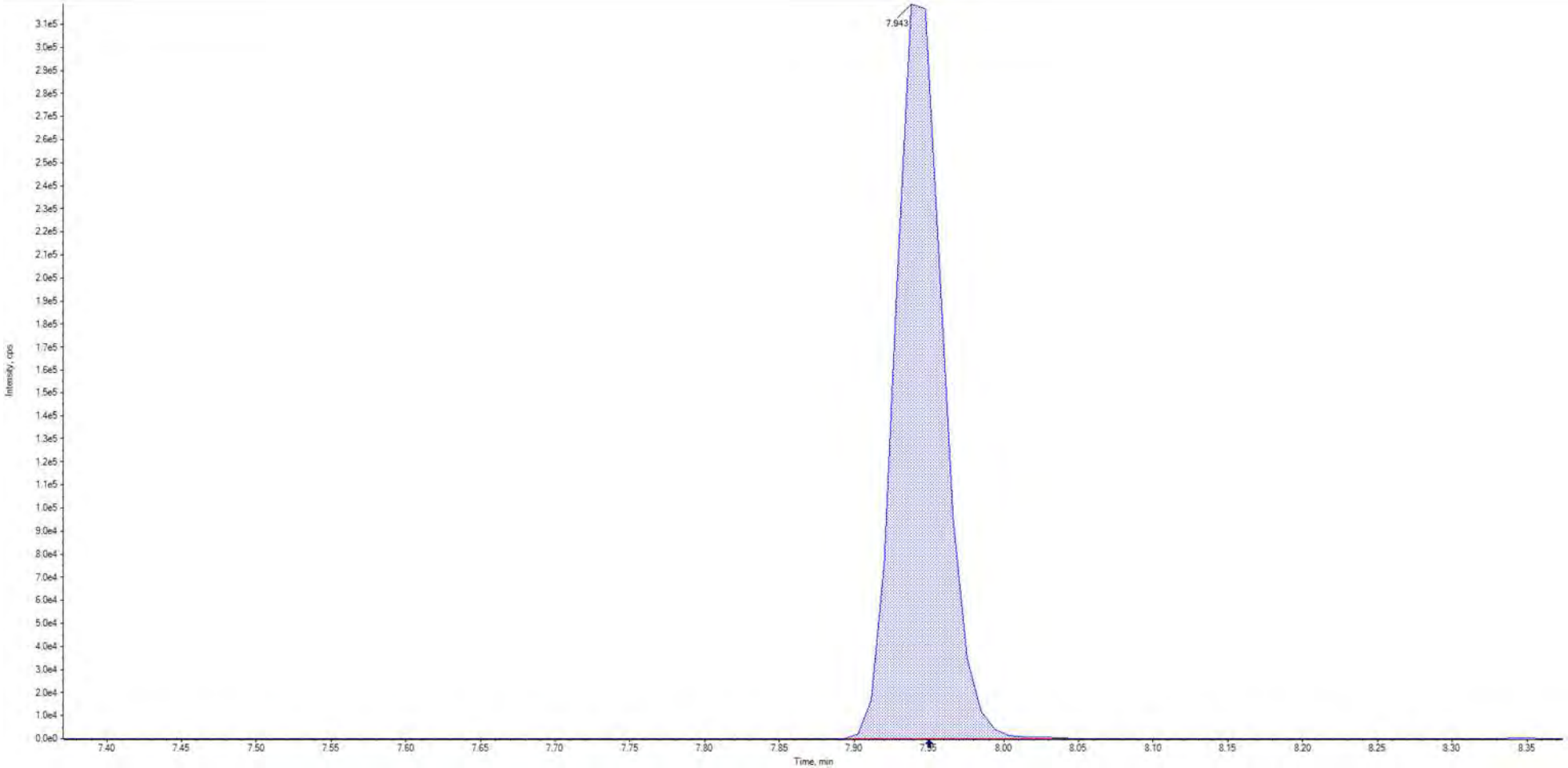
13C4-PFHpA
Sample: IA1633STD-12.5



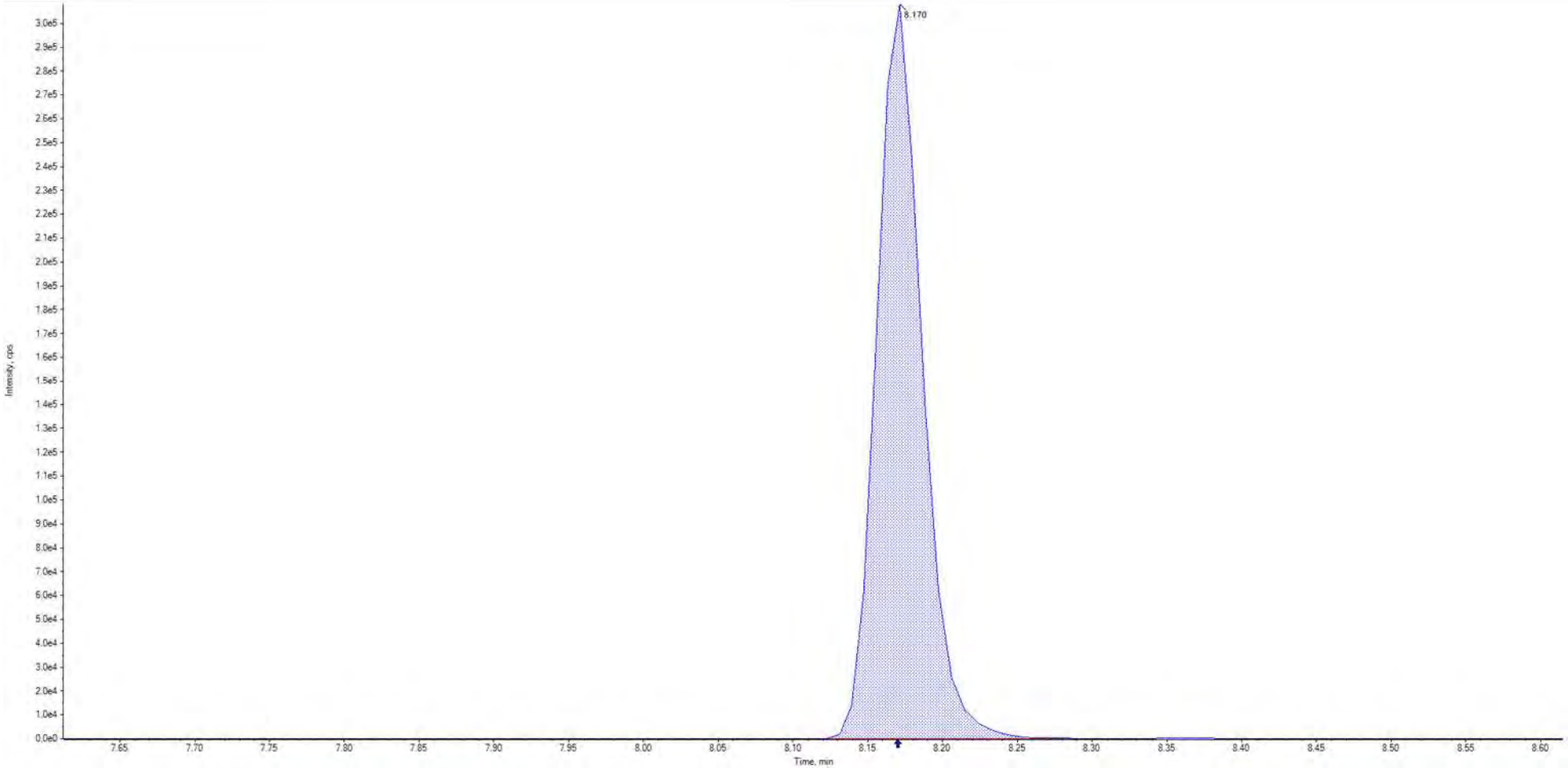
13C8-PFOA
Sample: IA1633STD-12.5



13C9-PFNA
Sample: IA1633STD-12.5

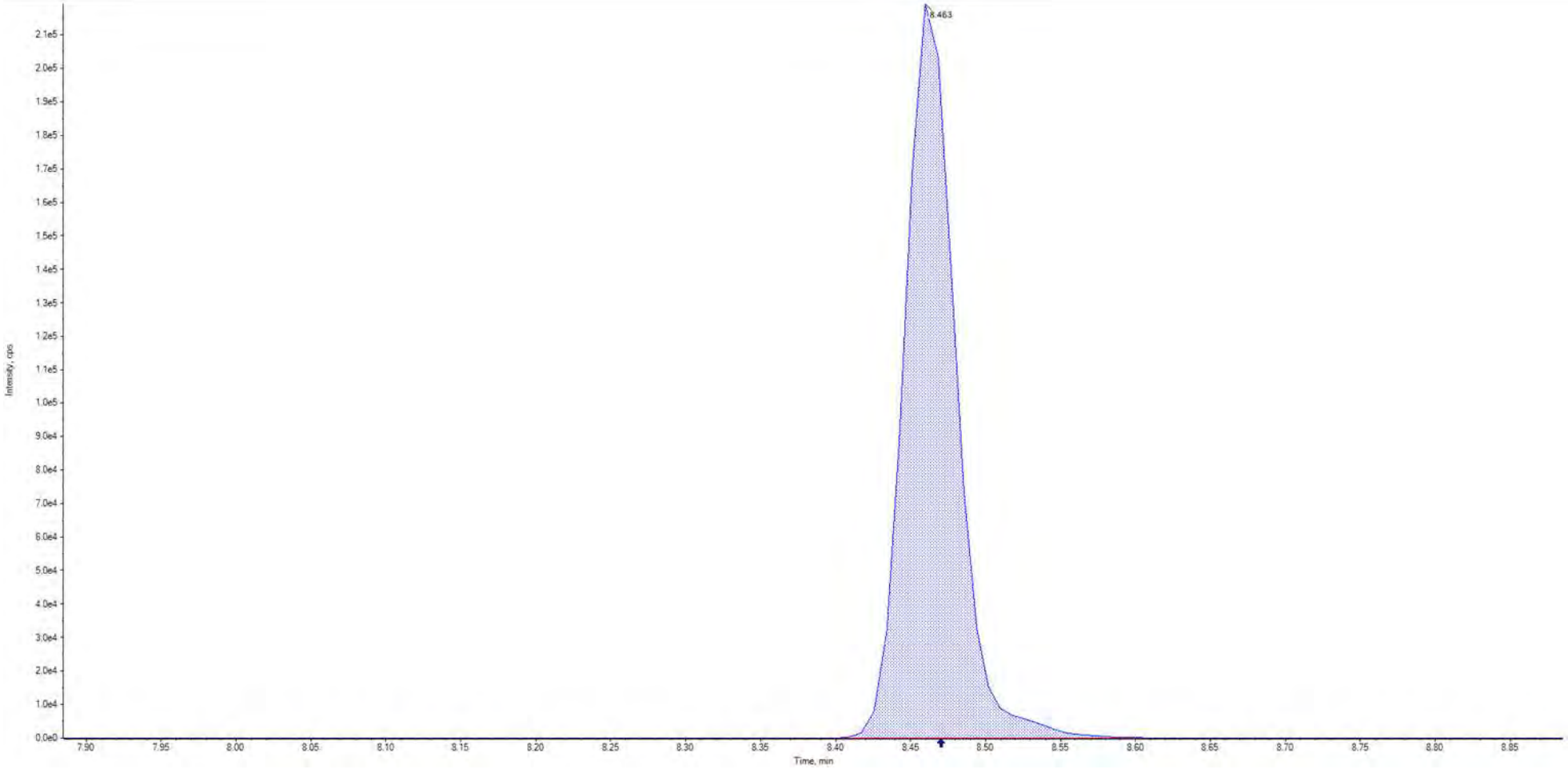


13C6-PFDA
Sample: IA1633STD-12.5

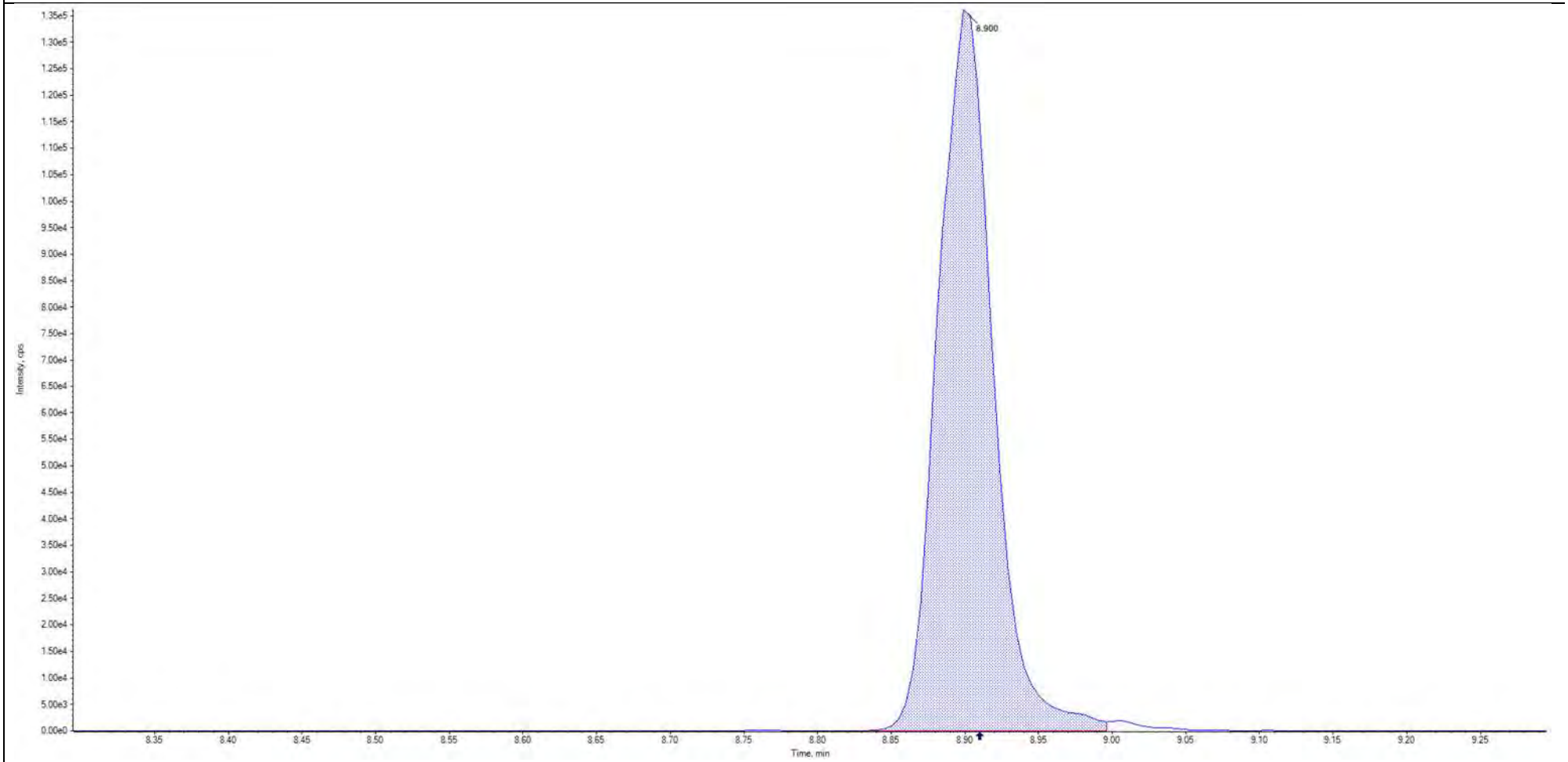


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

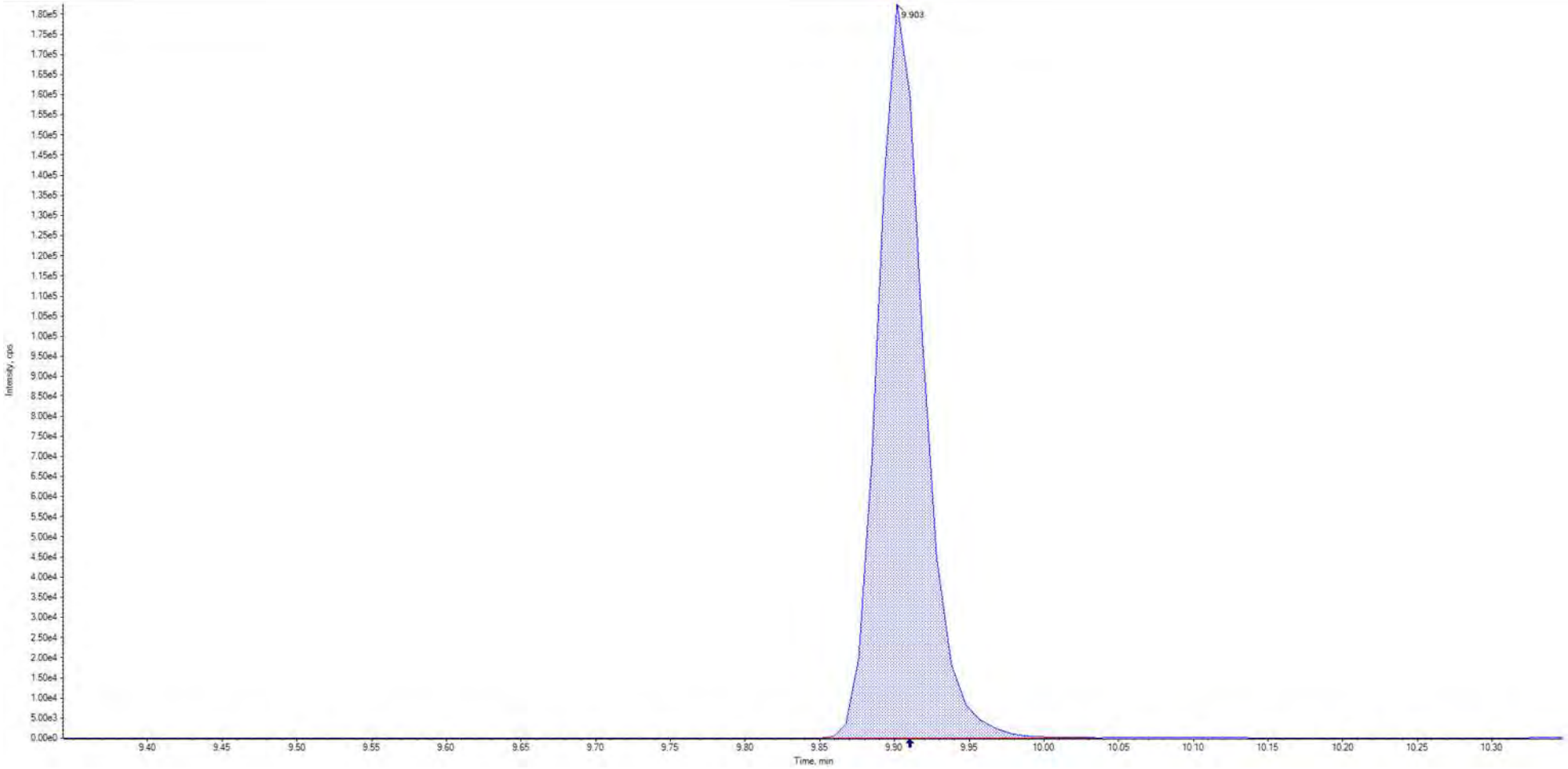
13C7-PFUnA
Sample: IA1633STD-12.5



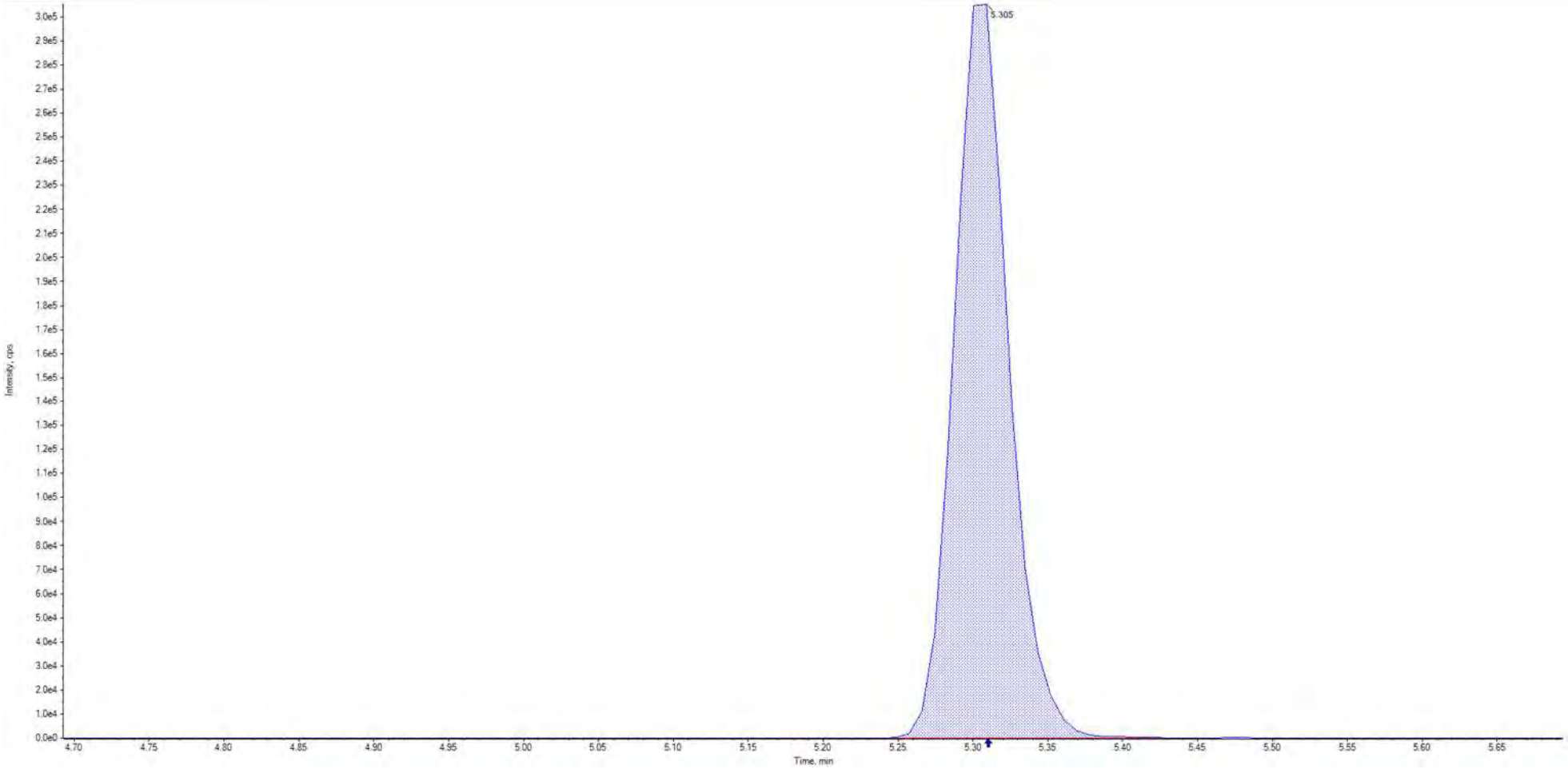
13C2-PFDoA
Sample: IA1633STD-12.5



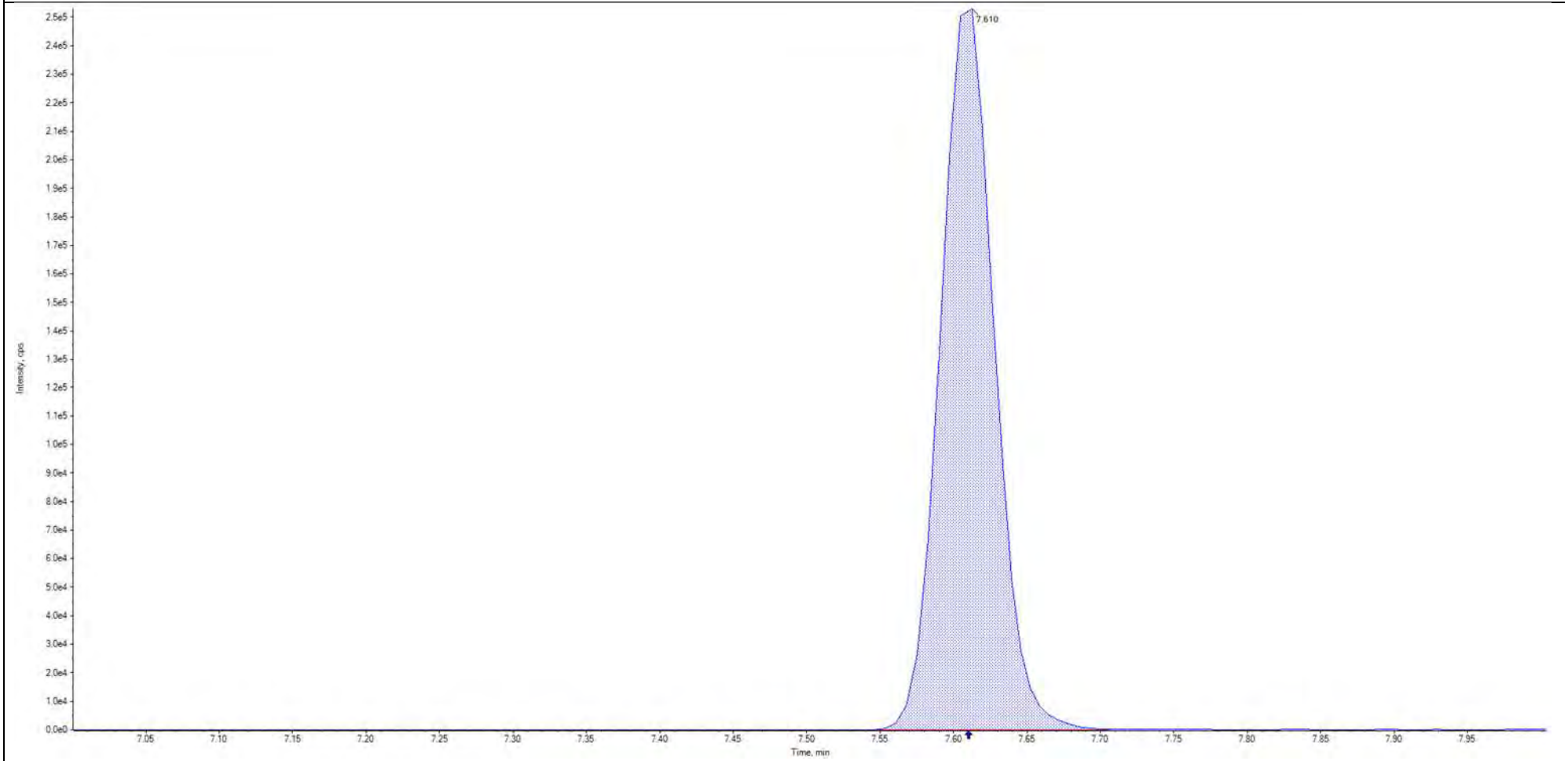
13C2-PFTeDA
Sample: IA1633STD-12.5



13C3-PFBS
Sample: IA1633STD-12.5

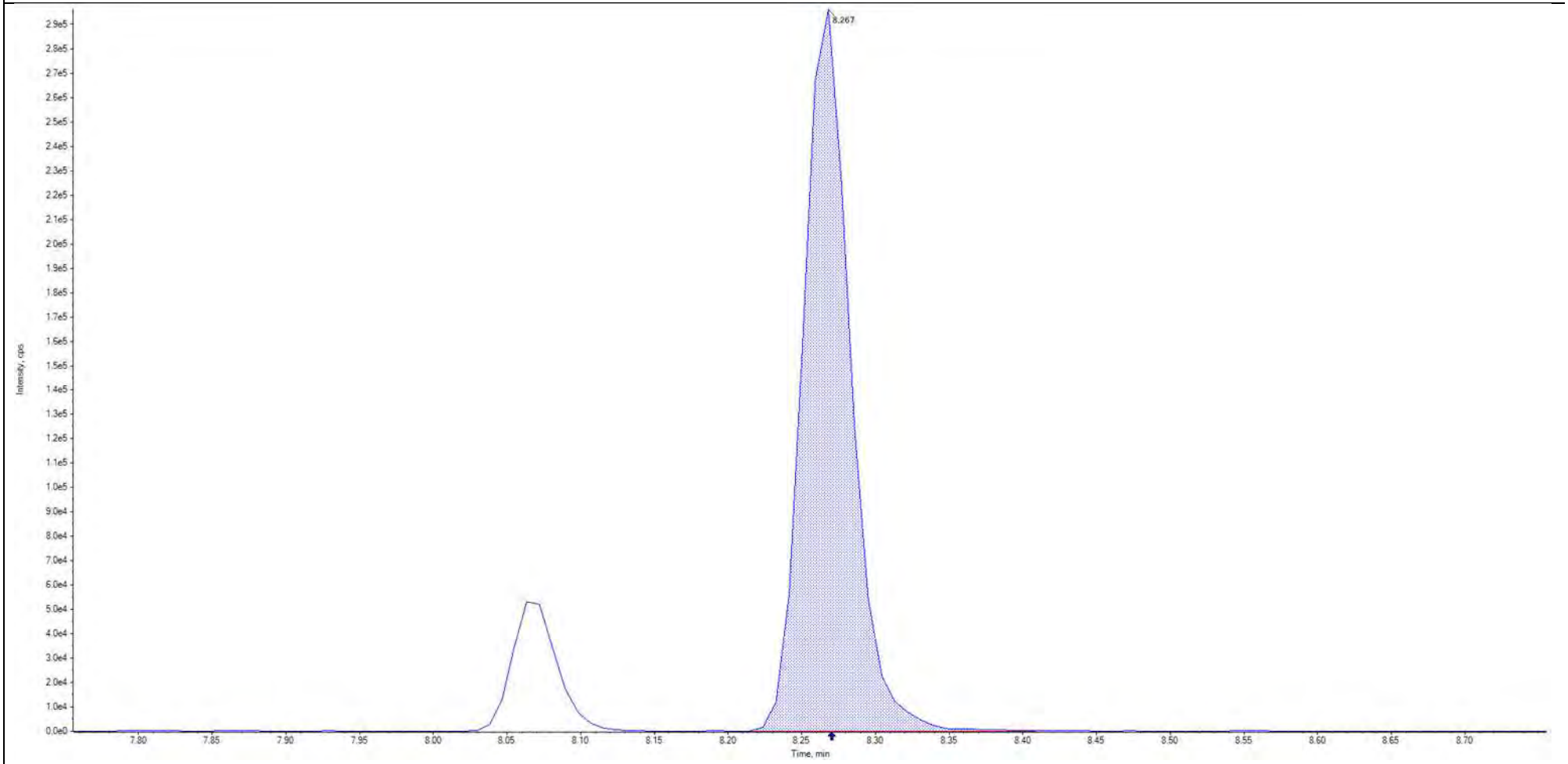


13C3-PFHxS
Sample: IA1633STD-12.5

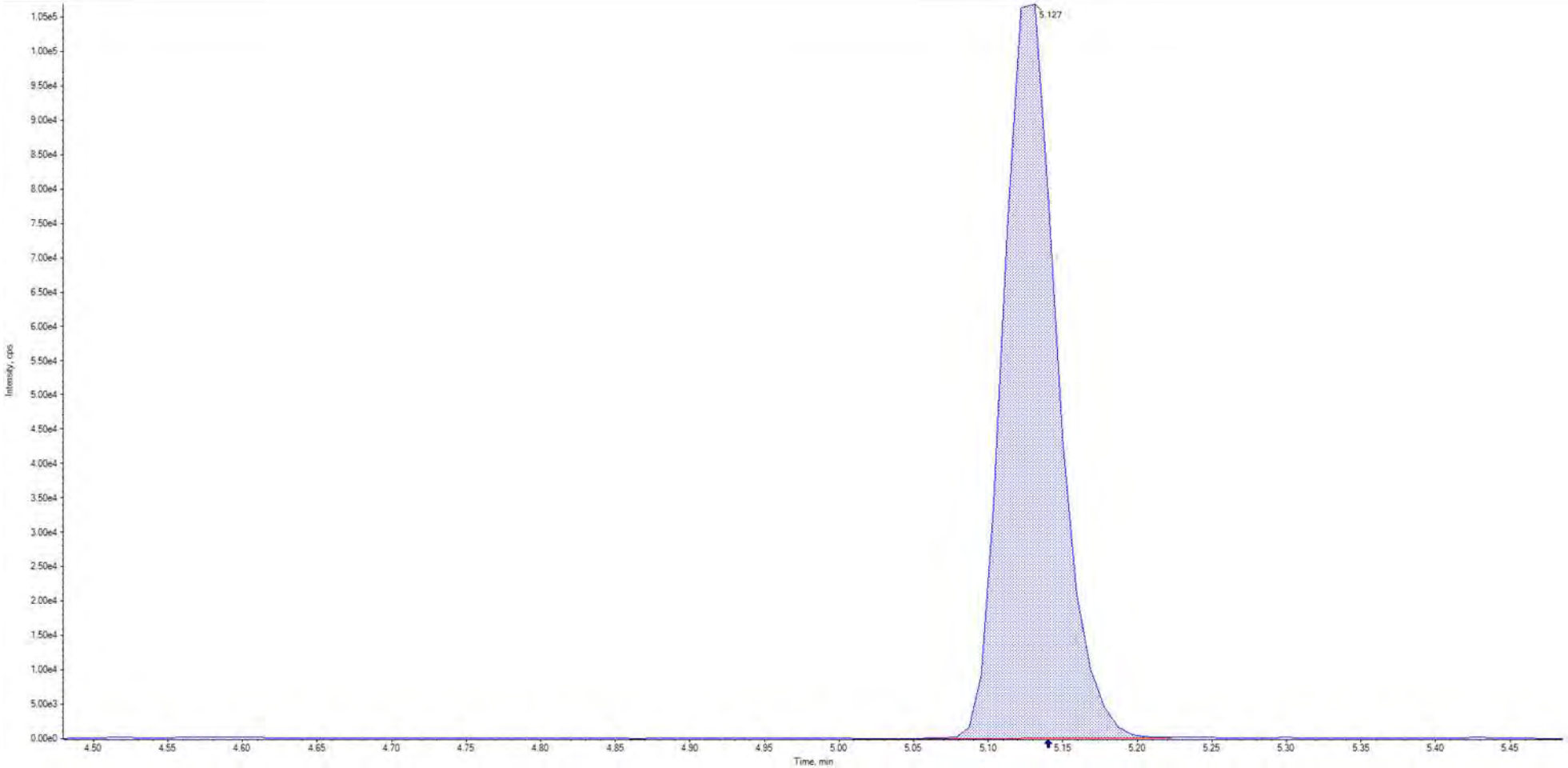


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

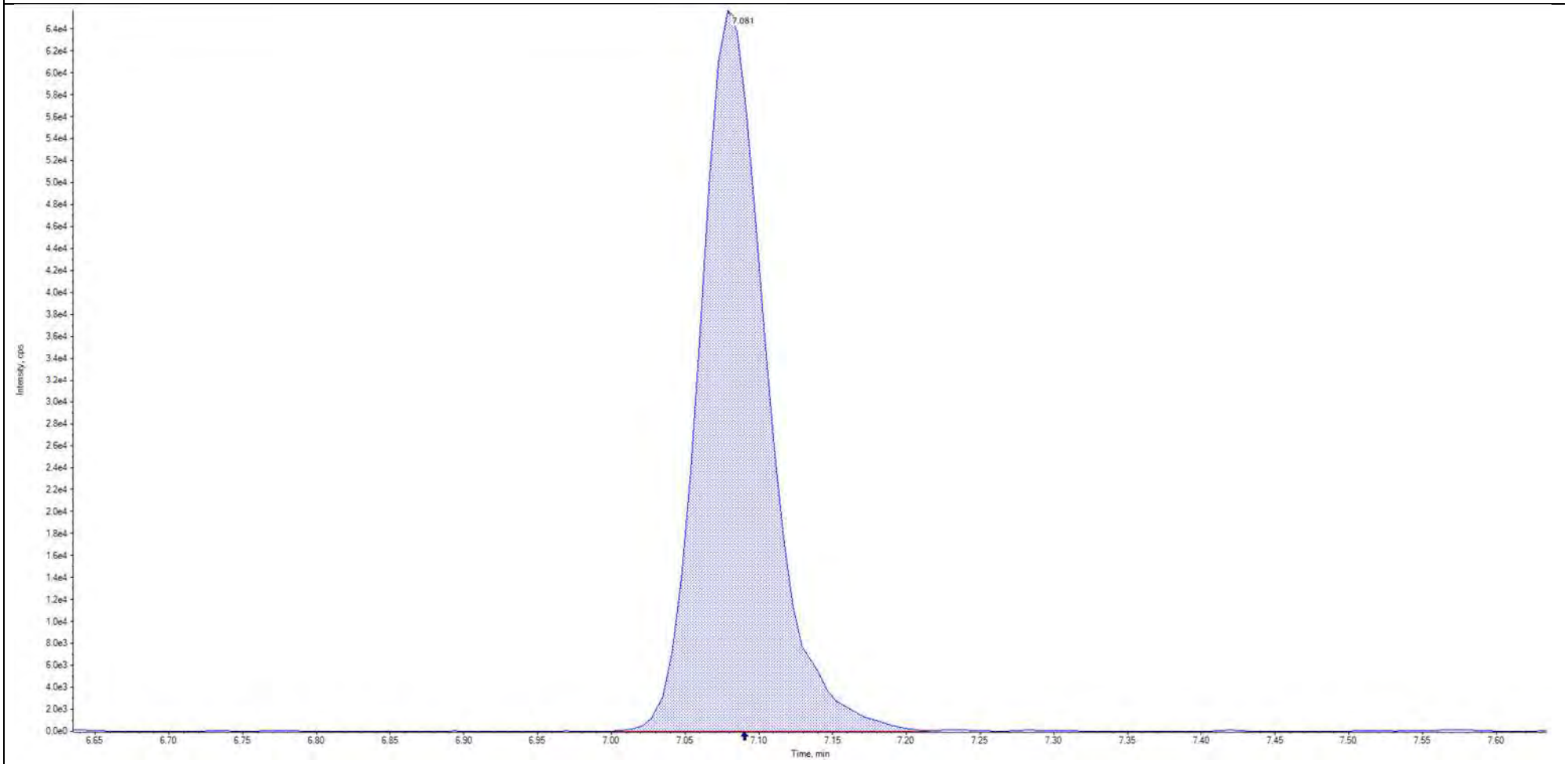
13C8-PFOS
Sample: IA1633STD-12.5



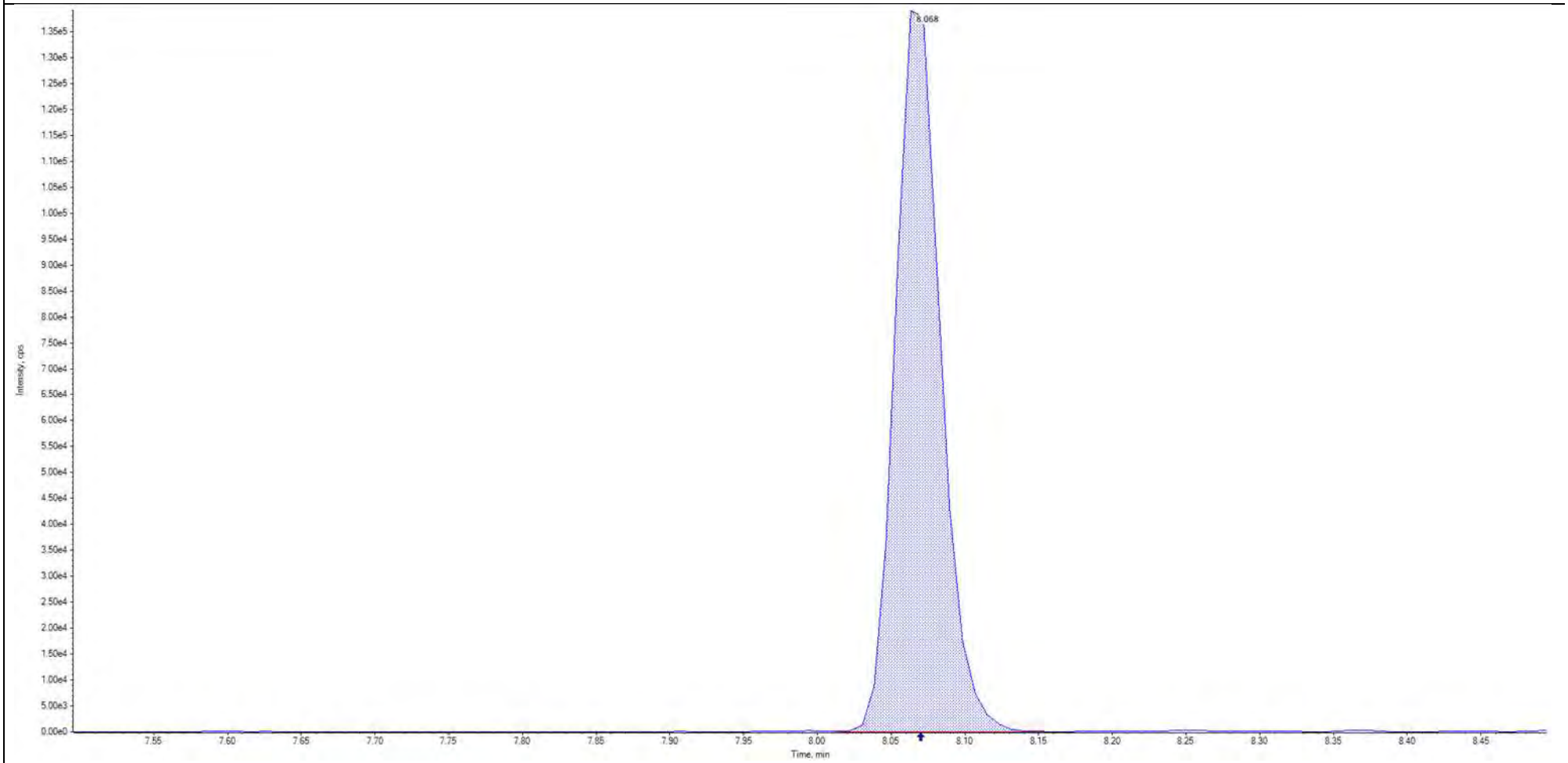
13C2-4:2FTS
Sample: IA1633STD-12.5



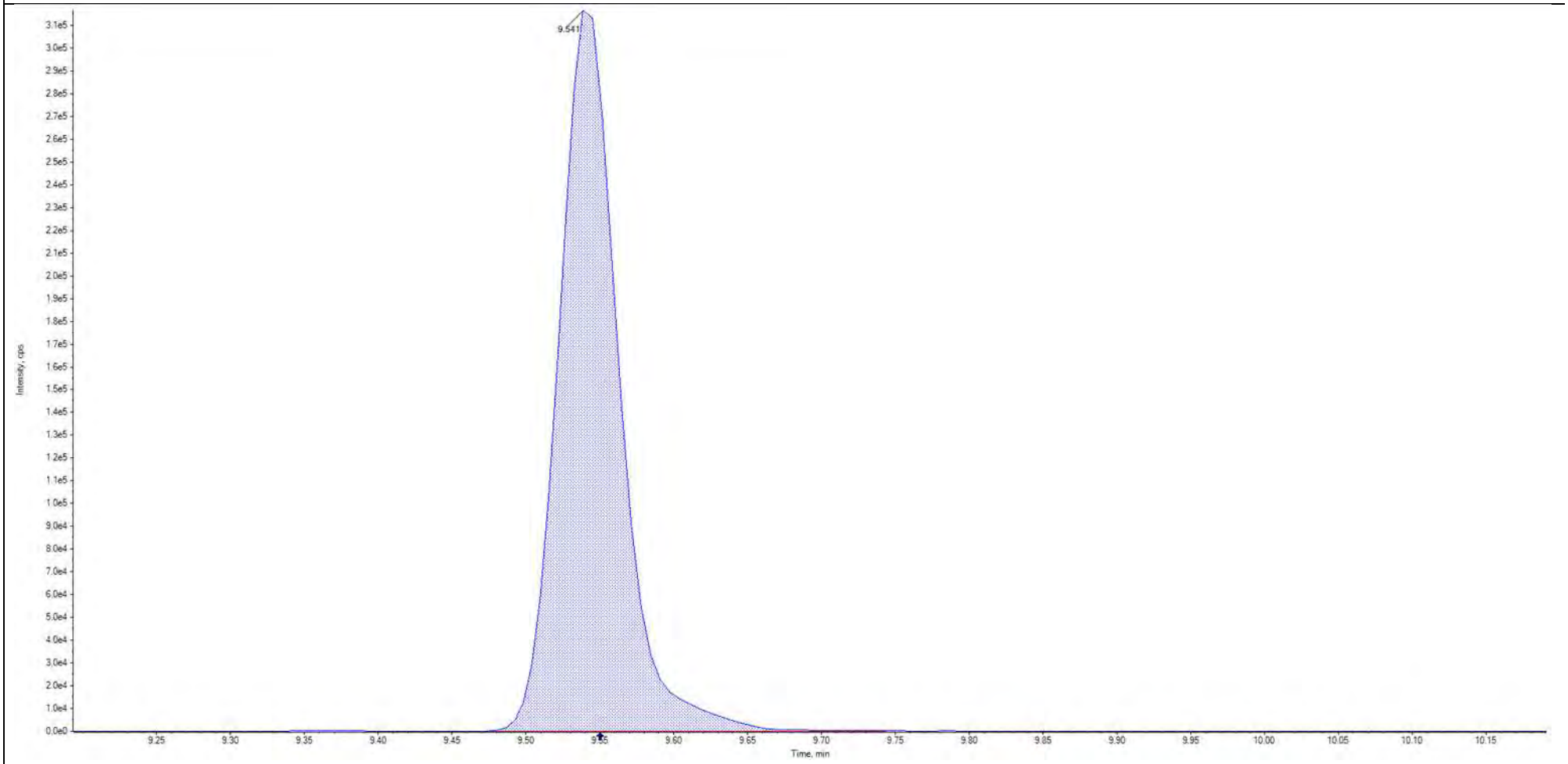
13C2-6:2FTS
Sample: IA1633STD-12.5



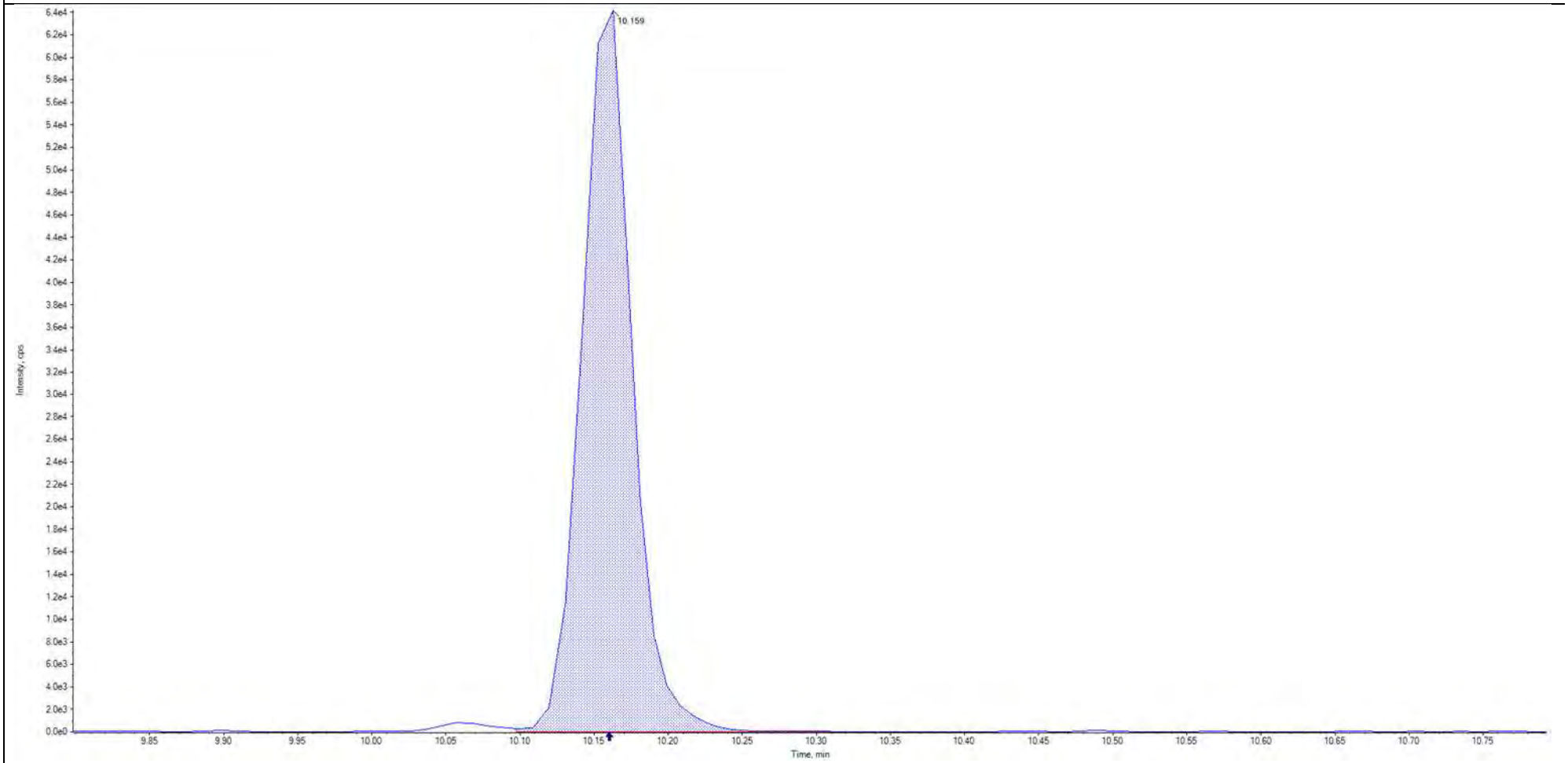
13C2-8:2FTS
Sample: IA1633STD-12.5



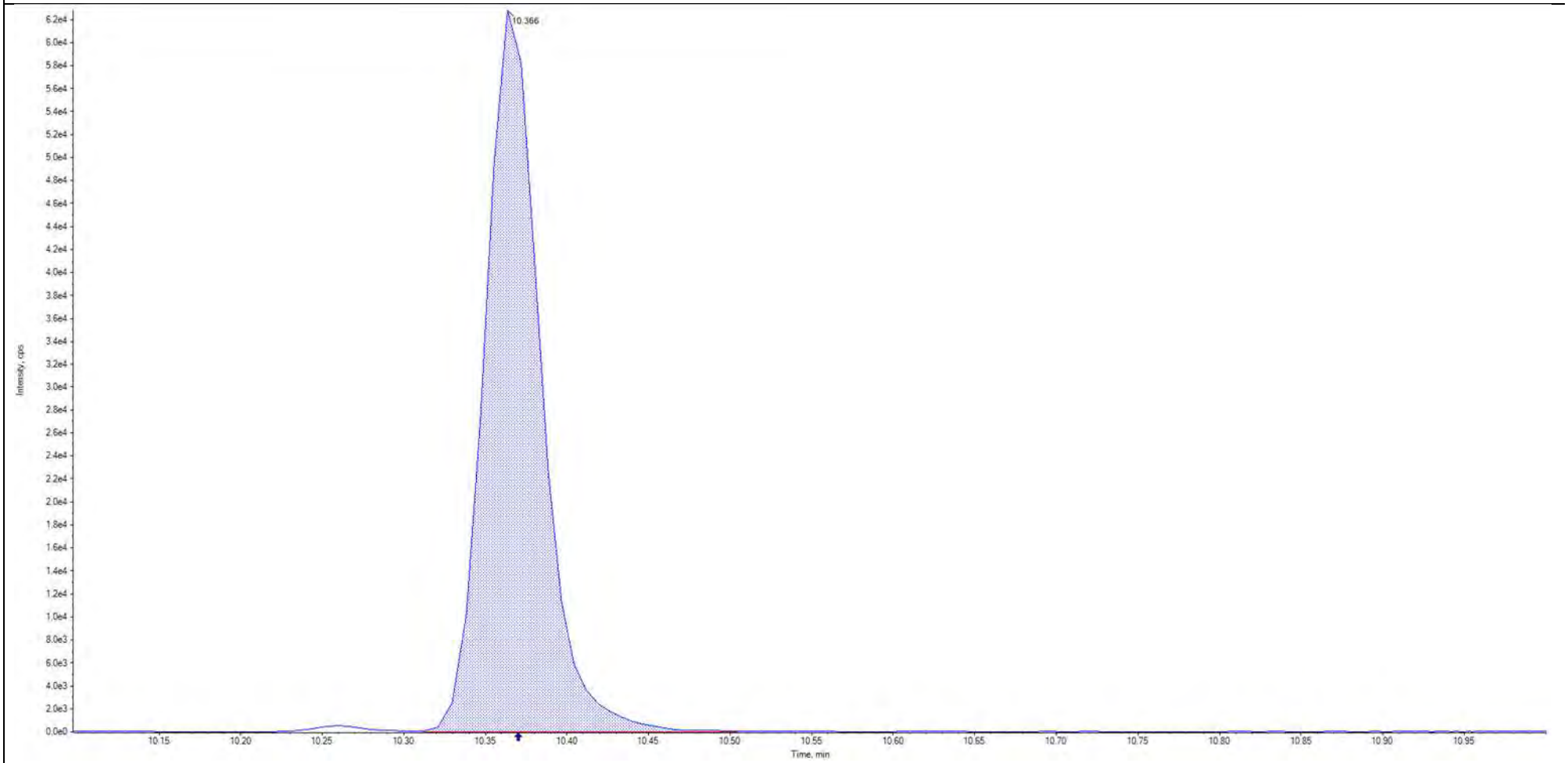
13C8-PFOSA
Sample: IA1633STD-12.5



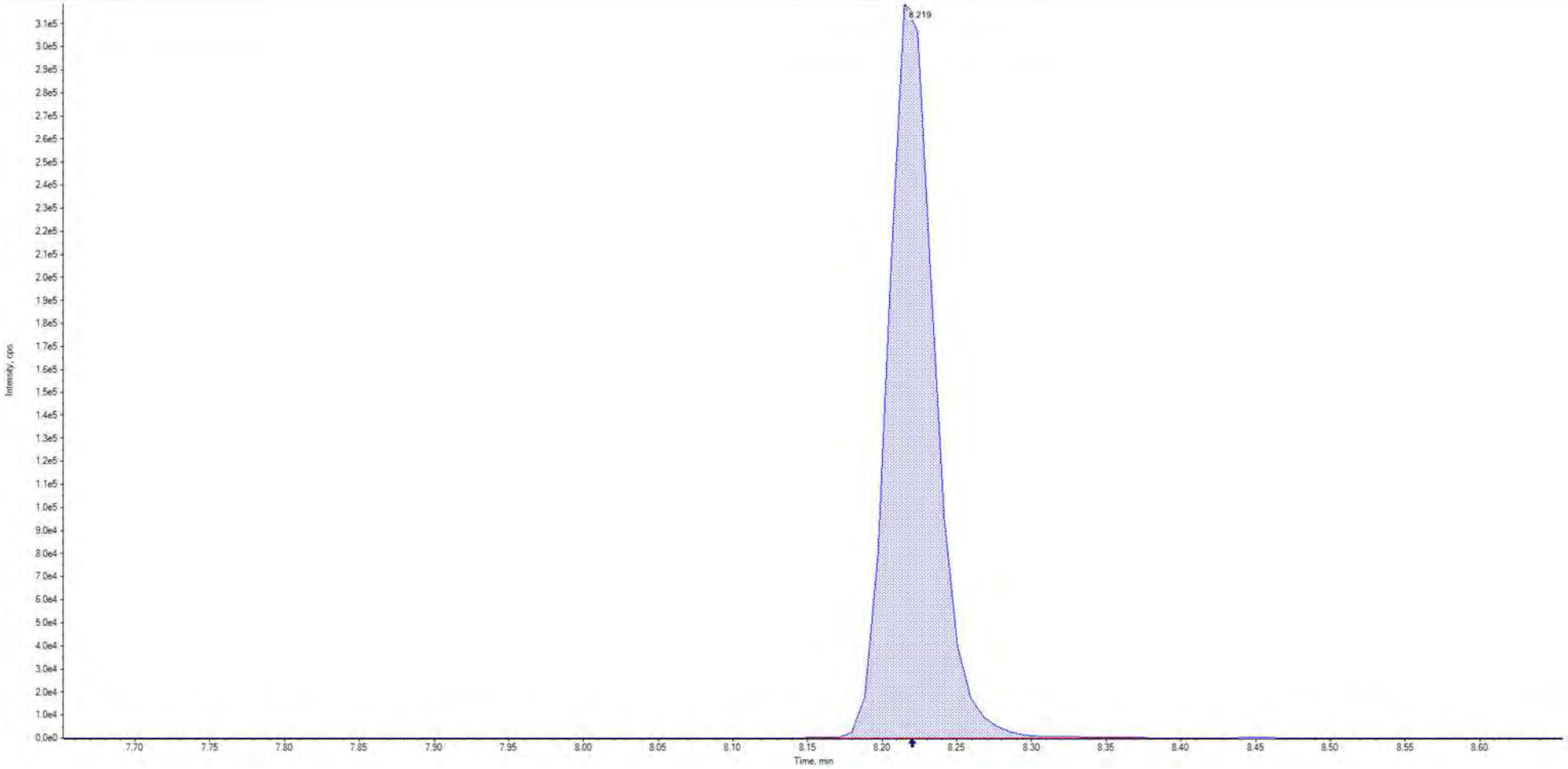
d3-NMeFOSA
Sample: IA1633STD-12.5



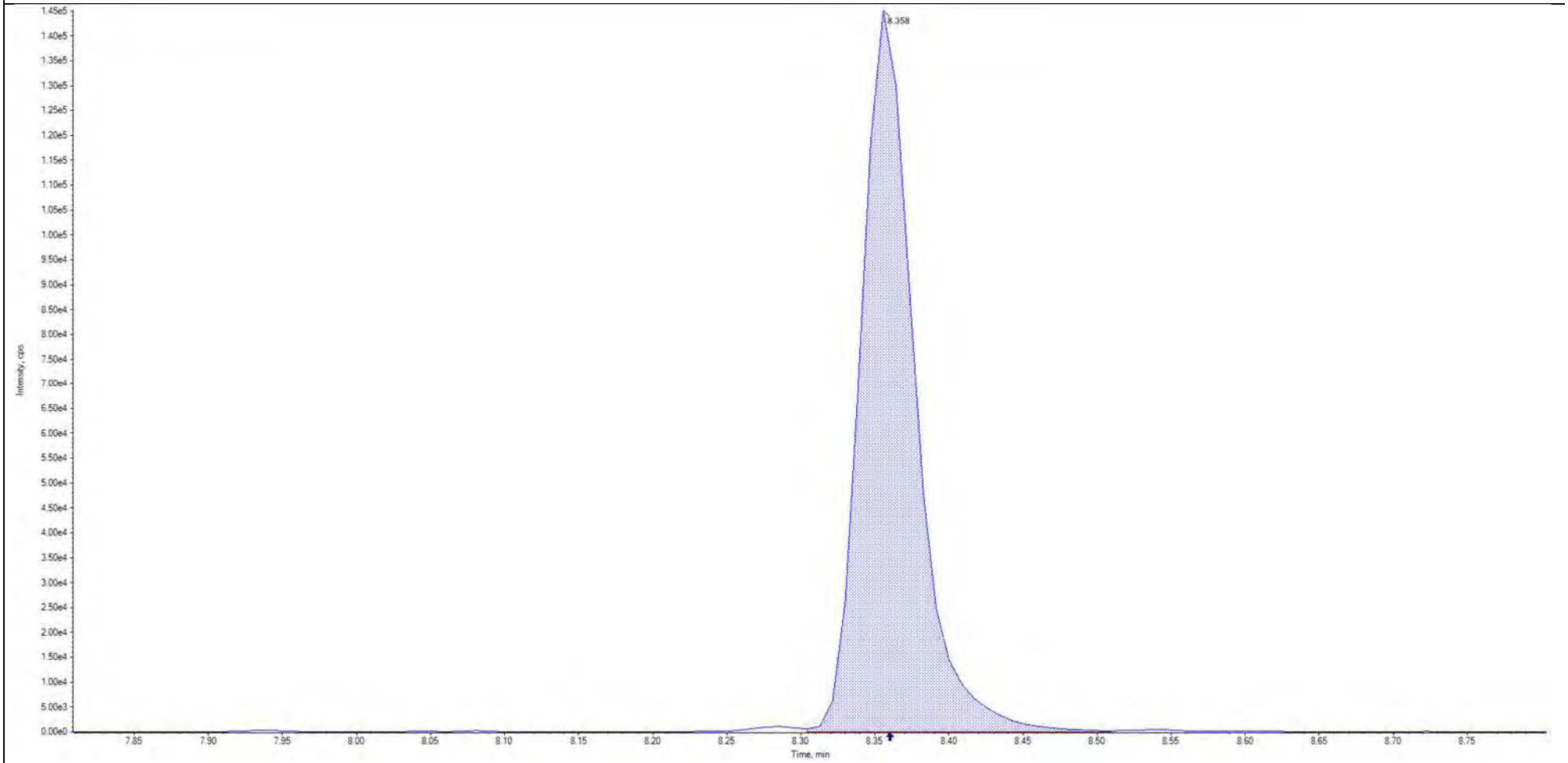
d5-NEtFOSA
Sample: IA1633STD-12.5



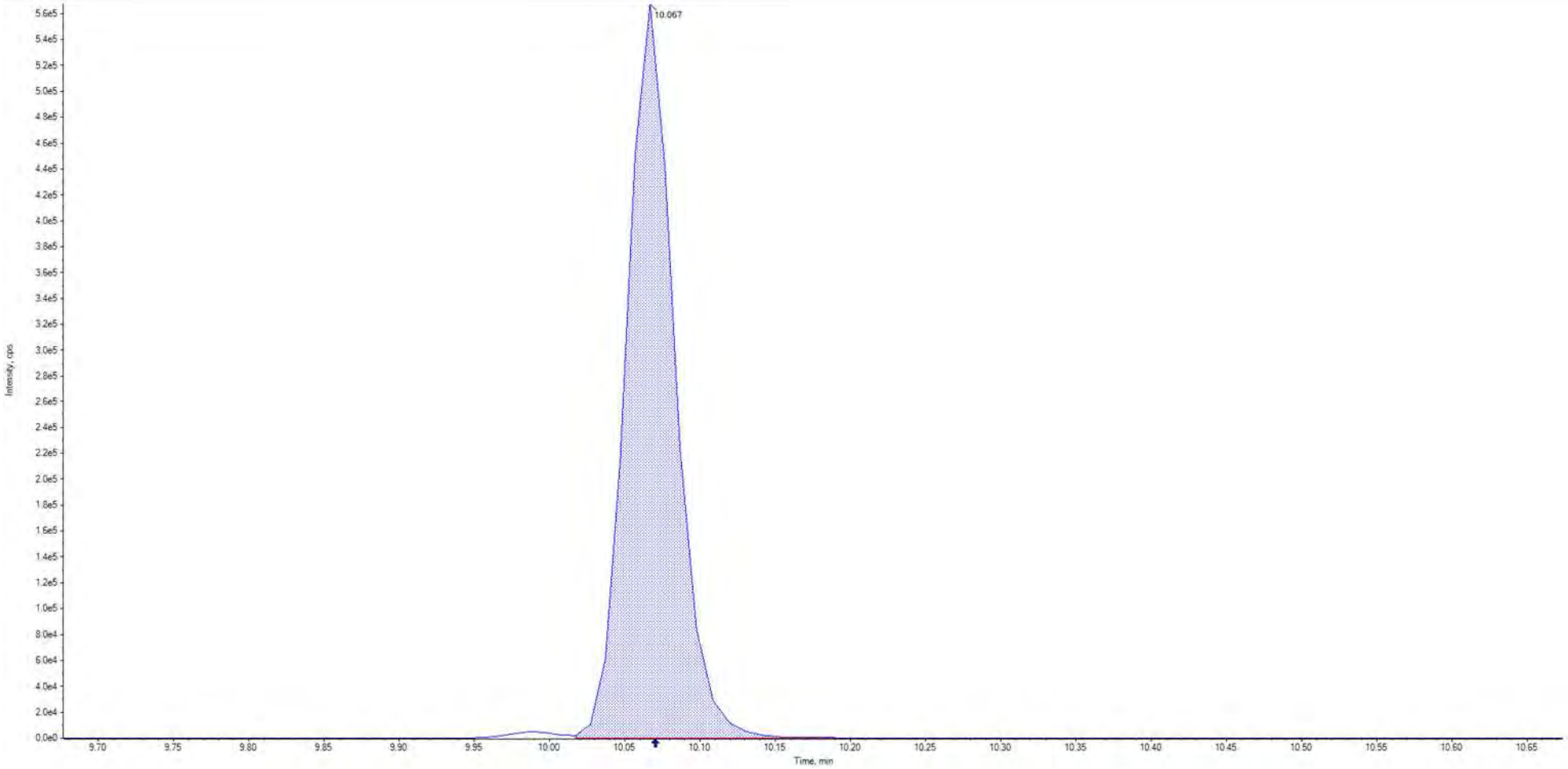
d3-NMeFOSAA
Sample: IA1633STD-12.5



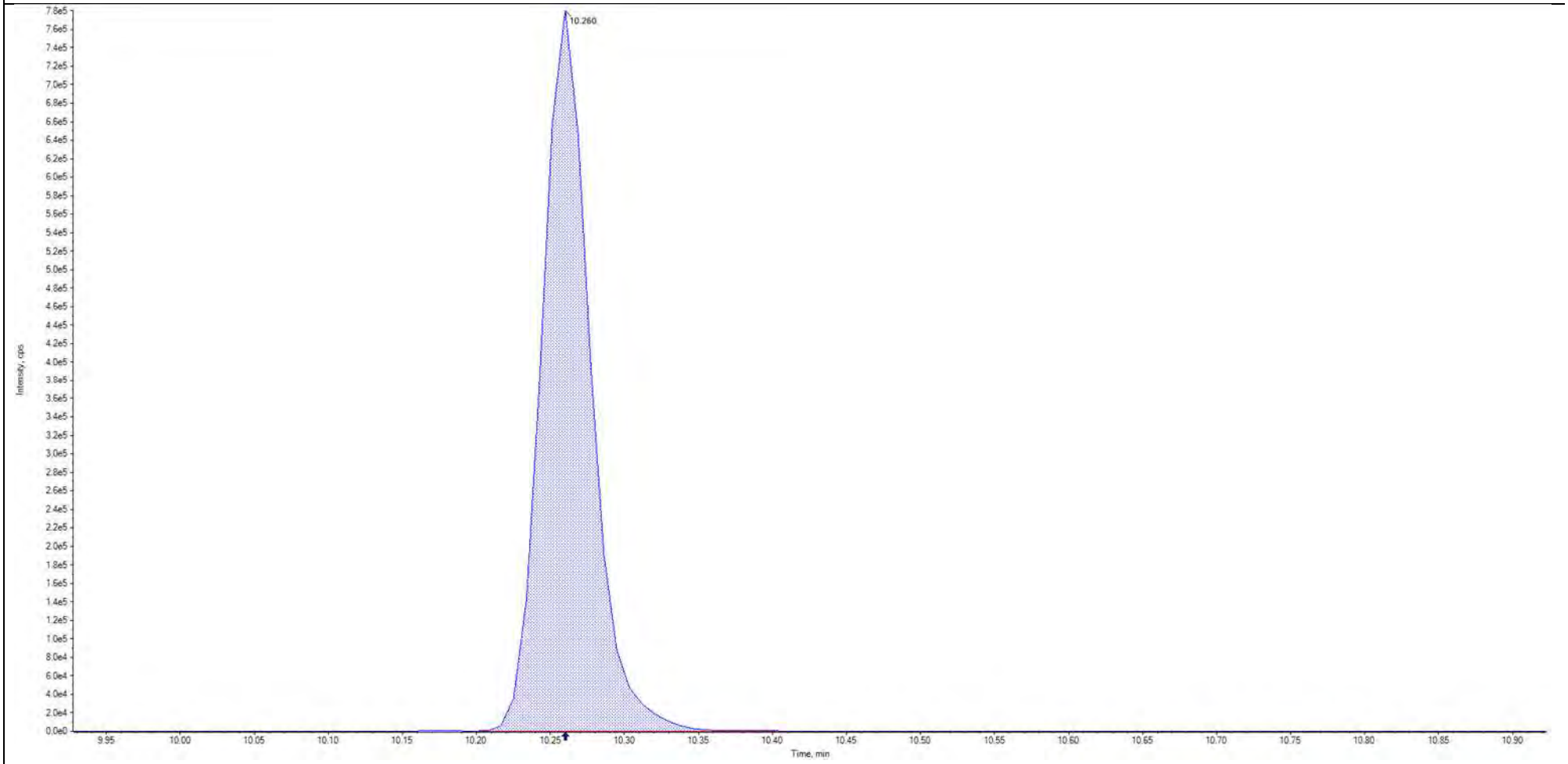
d5-NEtFOSAA
Sample: IA1633STD-12.5



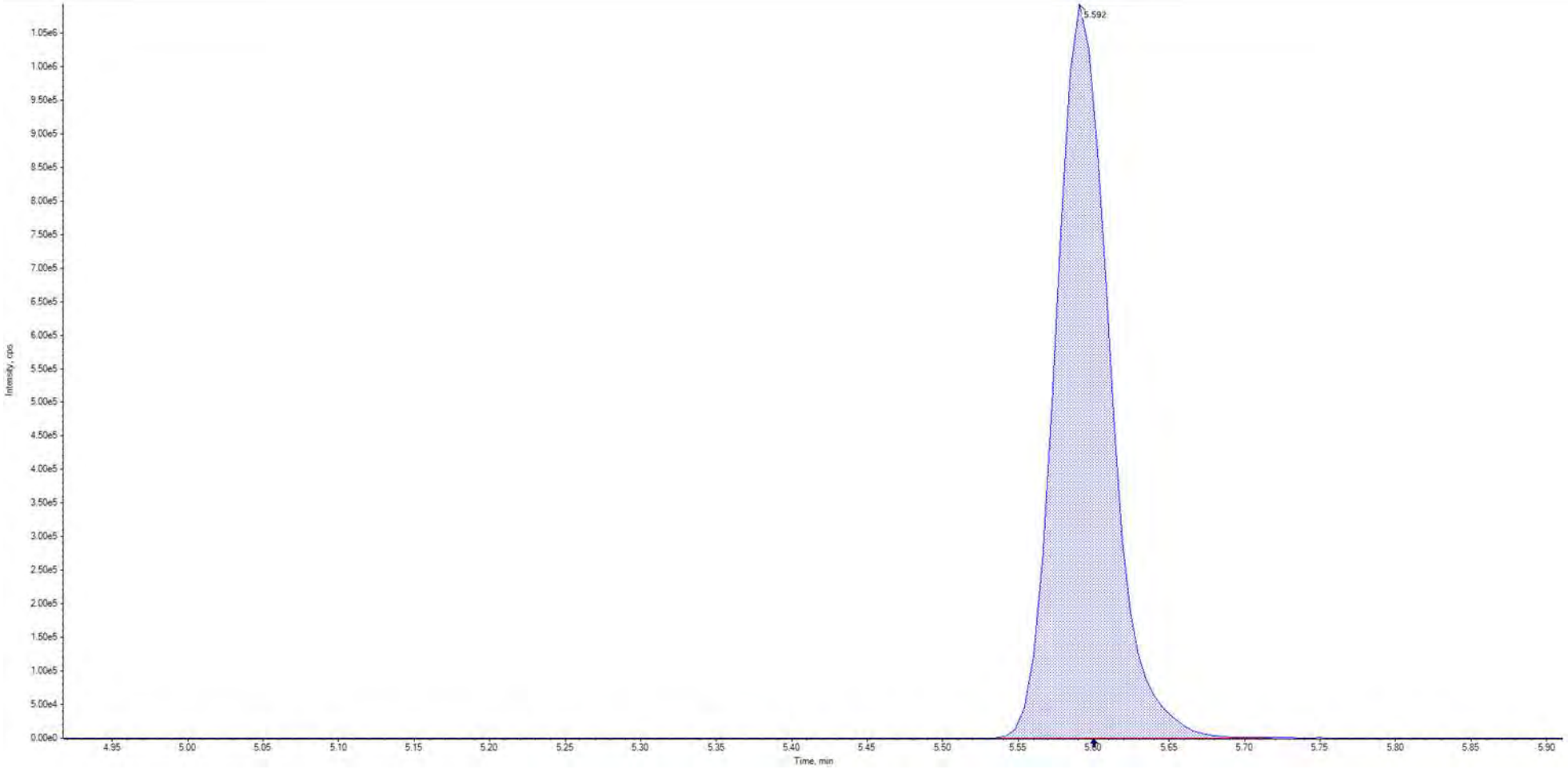
d7-NMeFOSE
Sample: IA1633STD-12.5



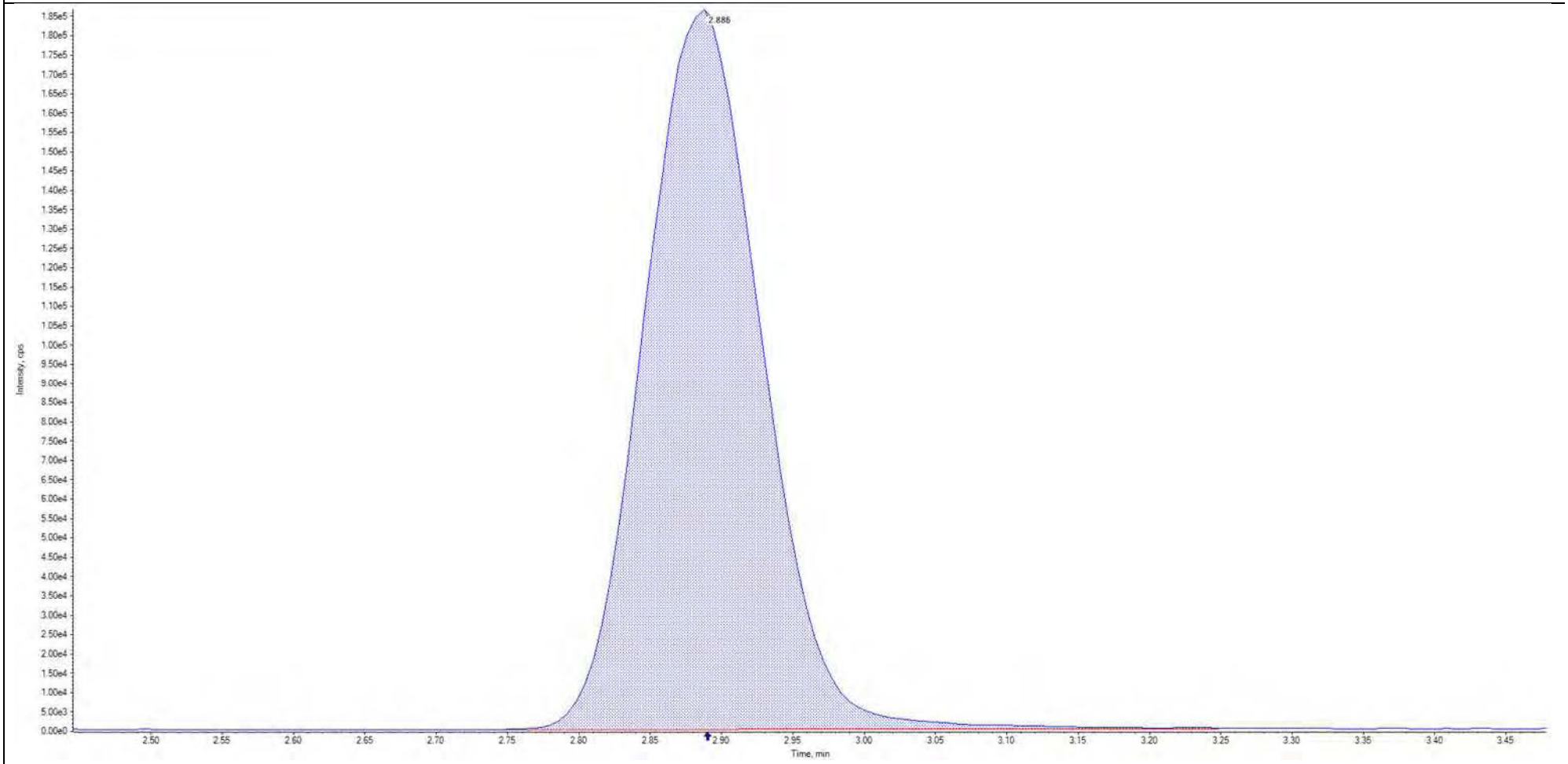
d9-NEtFOSE
Sample: IA1633STD-12.5



13C3-HFPO-DA
Sample: IA1633STD-12.5

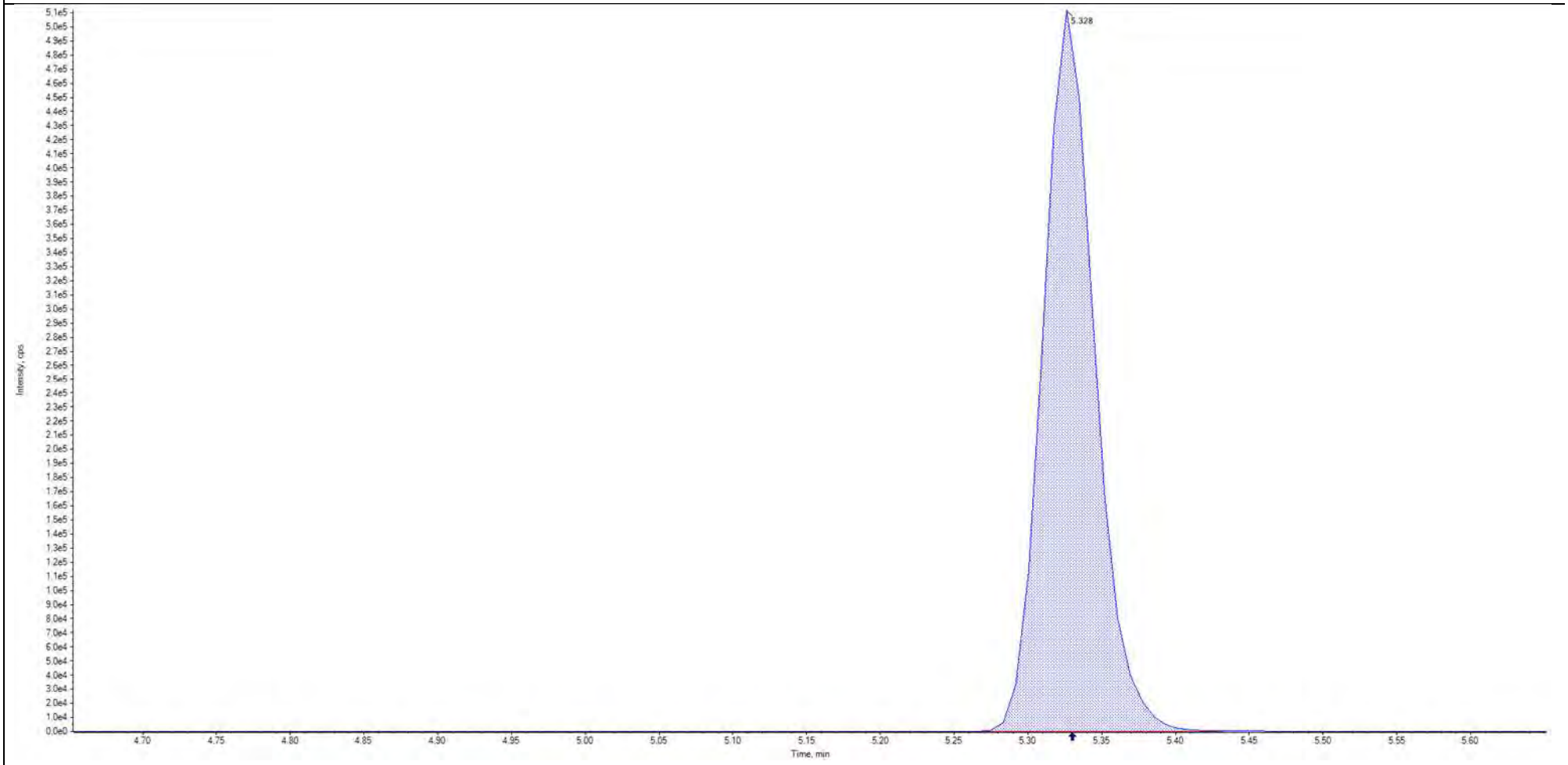


13C3-PFBA
Sample: IA1633STD-12.5



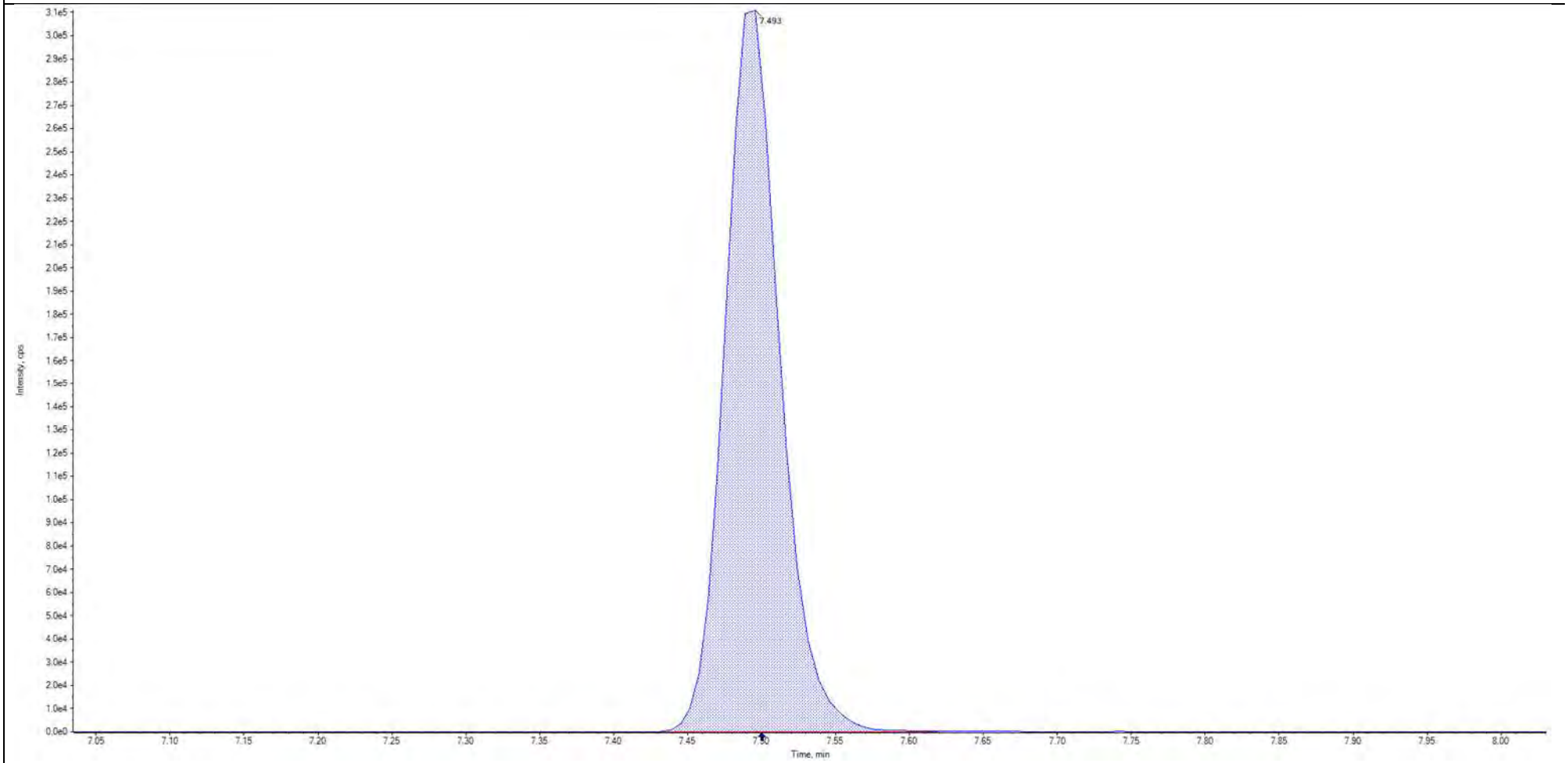
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

13C2-PFHxA
Sample: IA1633STD-12.5

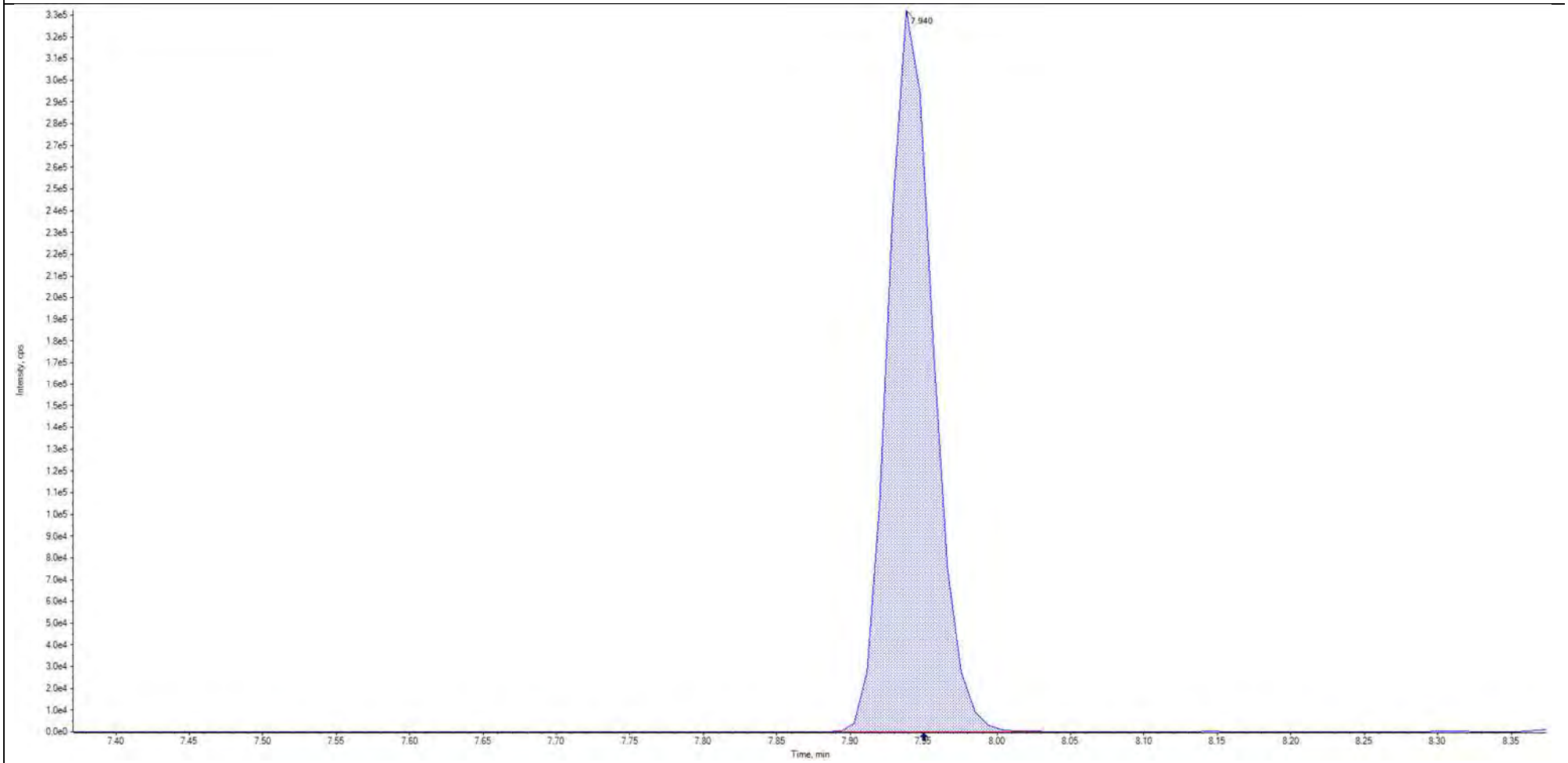


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_77.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

13C4-PFOA
Sample: IA1633STD-12.5



13C5-PFNA
Sample: IA1633STD-12.5



13C2-PFDA
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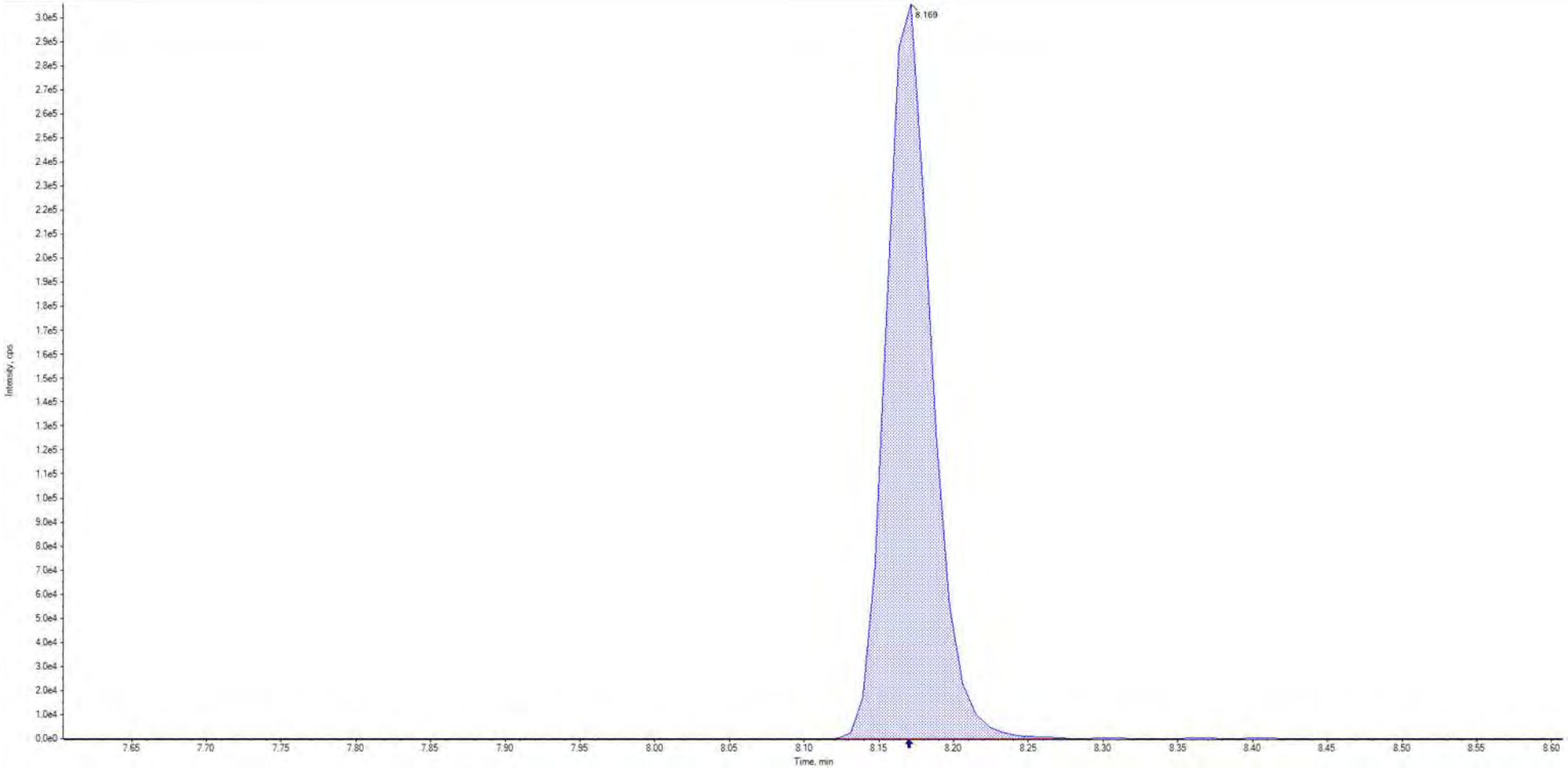

18O2-PFHxS
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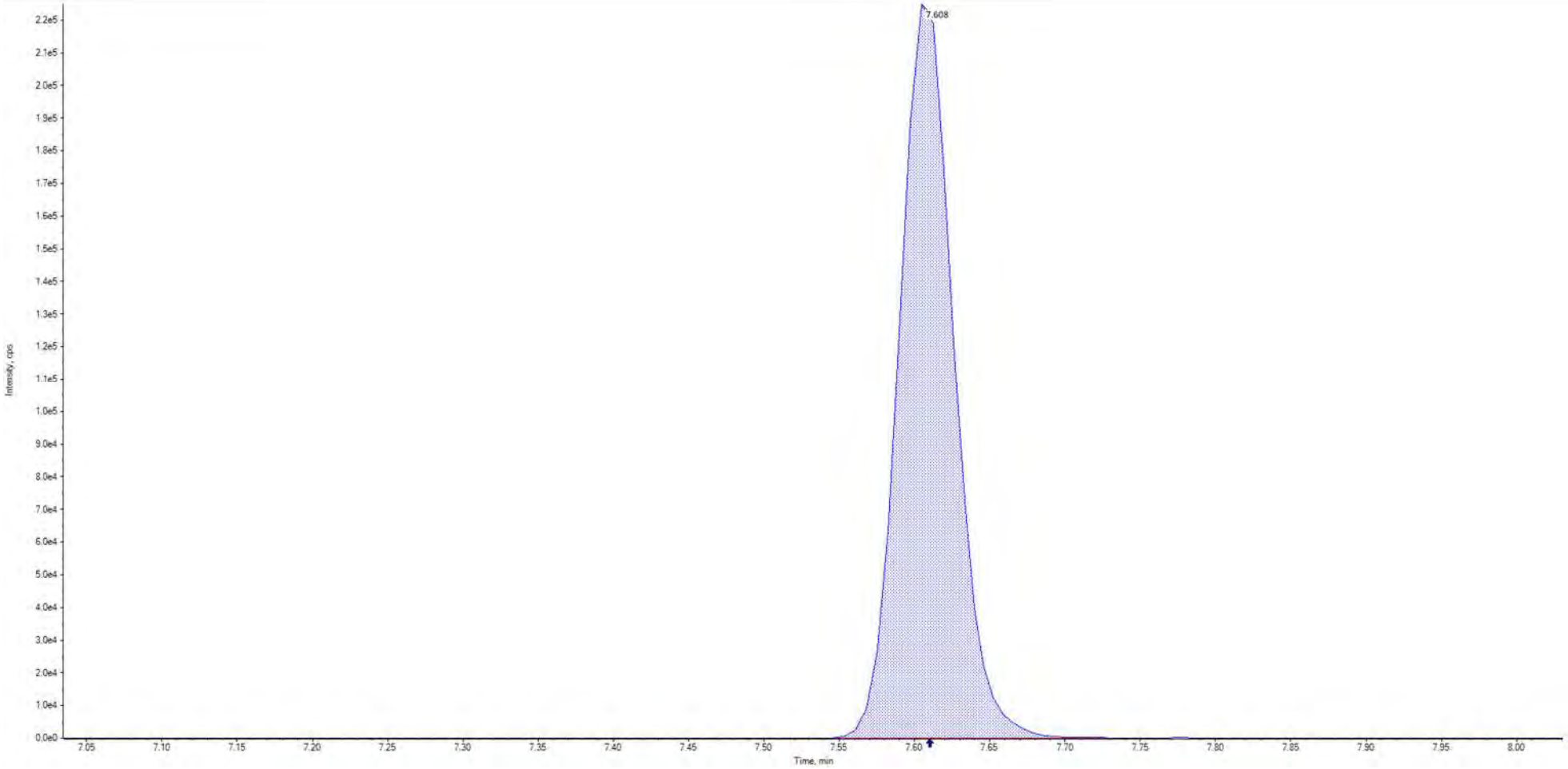

13C4-PFOS
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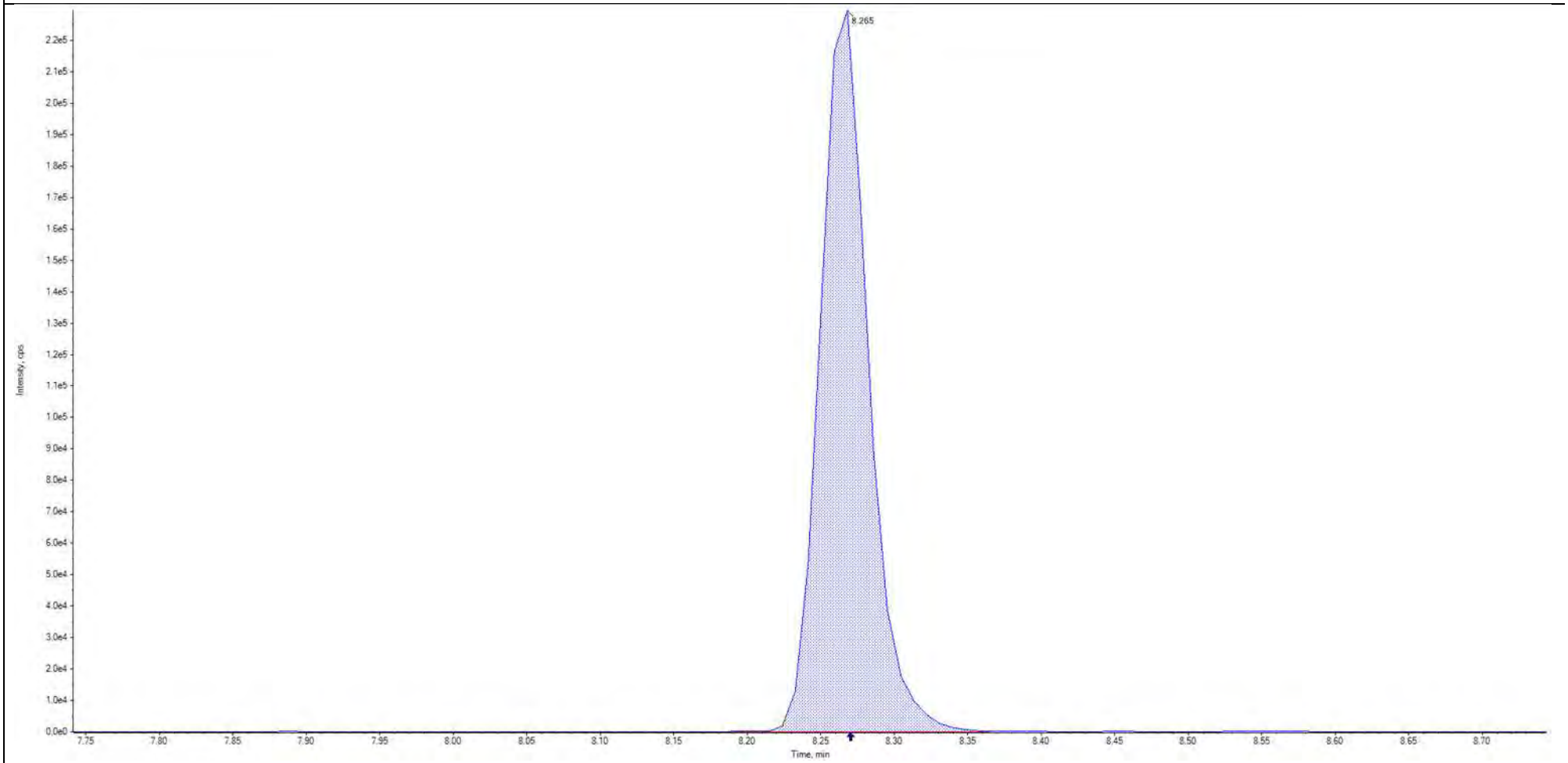

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Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Method: EPA1633_NIS_CALC.qmethod
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Instrument: Triple Quad 5500+
User: LCMS05:SL

LC/MS-MS Method:EPA_1633.dam

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
1	PFBA	375-22-4	2.89	213.0 / 169.0	19372954		111.060	N/A	N/A	N/A	111.1
2	PFPeA	2706-90-3	4.65	263.0 / 219.0	13922796		56.054	0.007	0.007	N/A	112.1
3	PFPeA_2	2706-90-3	4.65	263.0 / 68.9	95101		54.226	0.007	0.007	N/A	108.5
4	PFHxA	307-24-4	5.34	313.0 / 269.0	11476754		24.720	0.080	0.072	Pass	98.9
5	PFHxA_2	307-24-4	5.34	313.0 / 119.0	920997		26.848	0.080	0.072	Pass	107.4
6	PFHpA	375-85-9	6.25	363.1 / 319.0	12077750		27.183	0.310	0.297	Pass	108.7
7	PFHpA_2	375-85-9	6.25	363.1 / 169.0	3749125		27.574	0.310	0.297	Pass	110.3

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
8	PFOA	335-67-1	7.51	413.1 / 369.1	7765819	M5	28.013	0.555	0.586	Pass	112.1
9	PFOA_2	335-67-1	7.51	413.1 / 169.0	4310431	M7	28.378	0.555	0.586	Pass	113.5
10	PFNA	375-95-1	7.95	462.8 / 418.9	10245828	M5	28.158	0.314	0.313	Pass	112.6
11	PFNA_2	375-95-1	7.95	462.8 / 218.9	3221284	M7	28.969	0.314	0.313	Pass	115.9
12	PFDA	335-76-2	8.18	513.1 / 469.1	10987417		26.513	0.154	0.142	Pass	106.1
13	PFDA_2	335-76-2	8.18	513.1 / 219.0	1687869		27.175	0.154	0.142	Pass	108.7
14	PFUnA	2058-94-8	8.47	563.1 / 519.1	8197525		27.918	0.191	0.194	Pass	111.7
15	PFUnA_2	2058-94-8	8.47	563.1 / 269.0	1564098		27.498	0.191	0.194	Pass	110.0
16	PFDoA	307-55-1	8.91	613.1 / 569.1	9400002		25.818	0.173	0.167	Pass	103.3
17	PFDoA_2	307-55-1	8.91	613.1 / 319.0	1629833		26.498	0.173	0.167	Pass	106.0
18	PFTrDA	72629-94-8	9.50	663.1 / 619.1	5780095		26.642	0.216	0.228	Pass	106.6
19	PFTrDA_2	72629-94-8	9.50	663.1 / 169.0	1251198		25.894	0.216	0.228	Pass	103.6
20	PFTeDA	376-06-7	9.91	713.1 / 669.1	9555438		26.193	0.137	0.137	Pass	104.8
21	PFTeDA_2	376-06-7	9.91	713.1 / 169.0	1313139		26.317	0.137	0.137	Pass	105.3
22	PFBS	375-73-5	5.32	299.1 / 80.1	7381223		22.741	0.404	0.396	Pass	102.6

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
23	PFBS_2	375-73-5	5.31	299.1 / 99.1	2979085		23.021	0.404	0.396	Pass	103.8
24	PFPeS	2706-91-4	6.34	349.1 / 80.1	6765018		26.541	0.296	0.299	Pass	112.8
25	PFPeS_2	2706-91-4	6.34	349.1 / 99.1	2004078		26.068	0.296	0.299	Pass	110.8
26	PFHxS	355-46-4	7.62	399.1 / 80.1	5917905	M5	24.810	0.305	0.315	Pass	108.6
27	PFHxS_2	355-46-4	7.62	399.1 / 99.1	1802158	M7	24.327	0.305	0.315	Pass	106.5
28	PFHpS	375-92-8	8.02	449.1 / 80.1	6449656		26.938	0.284	0.287	Pass	113.1
29	PFHpS_2	375-92-8	8.02	449.1 / 99.1	1829404		26.070	0.284	0.287	Pass	109.4
30	PFOS	1763-23-1	8.28	499.1 / 80.1	6704354	M5	26.300	0.244	0.238	Pass	113.4
31	PFOS_2	1763-23-1	8.27	499.1 / 99.1	1635669		26.190	0.244	0.238	Pass	112.9
32	PFNS	68259-12-1	8.63	549.1 / 80.1	4586269		28.023	0.295	0.301	Pass	116.5
33	PFNS_2	68259-12-1	8.63	549.1 / 99.1	1351858		27.273	0.295	0.301	Pass	113.4
34	PFDS	335-77-3	9.14	599.1 / 80.1	4389768		27.229	0.281	0.275	Pass	112.9
35	PFDS_2	335-77-3	9.14	599.1 / 99.1	1235590		27.802	0.281	0.275	Pass	115.2
36	PFDoS	79780-39-5	10.01	699.2 / 80.1	4012335		27.173	0.283	0.274	Pass	112.1
37	PFDoS_2	79780-39-5	10.00	699.2 / 99.1	1137085		28.026	0.283	0.274	Pass	115.6

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
38	4:2FTS	757124-72-4	5.14	327.1 / 307.1	10310809		91.077	0.528	0.516	Pass	97.2
39	4:2FTS_2	757124-72-4	5.14	327.1 / 81.1	5445016		89.906	0.528	0.516	Pass	95.9
40	6:2FTS	27619-97-2	7.09	427.2 / 407.2	7191794		103.975	0.553	0.565	Pass	109.5
41	6:2FTS_2	27619-97-2	7.09	427.2 / 81.1	3974248		106.229	0.553	0.565	Pass	111.8
42	8:2FTS	39108-34-4	8.08	527.2 / 507.2	7209364		100.441	0.697	0.662	Pass	104.6
43	8:2FTS_2	39108-34-4	8.07	527.2 / 81.1	5023863		103.190	0.697	0.662	Pass	107.5
44	PFOSA	754-91-6	9.55	498.1 / 78.1	6437202	M5	29.360	0.024	0.025	Pass	117.4
45	PFOSA_2	754-91-6	9.54	498.1 / 478.0	157051	M7	27.301	0.024	0.025	Pass	109.2
46	NMeFOSA	31506-32-8	10.17	512.2 / 219.0	1828142	M5	28.713	1.429	1.551	Pass	114.9
47	NMeFOSA_2	31506-32-8	10.13	512.2 / 169.0	2612893	M7	26.484	1.429	1.551	Pass	105.9
48	NEtFOSA	4151-50-2	10.38	526.2 / 219.0	1739926	M5	27.889	1.321	1.285	Pass	111.6
49	NEtFOSA_2	4151-50-2	10.34	526.2 / 169.0	2298977	M7	27.527	1.321	1.285	Pass	110.1
50	NMeFOSAA	2355-31-9	8.23	570.2 / 419.1	2587090		28.924	0.606	0.700	Pass	115.7
51	NMeFOSAA_2	2355-31-9	8.23	570.2 / 483.0	1567378	M7	27.555	0.606	0.700	Pass	110.2
52	NEtFOSAA	2991-50-6	8.37	584.2 / 419.1	1868827		27.856	0.474	0.487	Pass	111.4

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
53	NEtFOSAA_2	2991-50-6	8.37	584.2 / 526.2	886656	M7	28.720	0.474	0.487	Pass	114.9
54	NMeFOSE	24448-09-7	10.08	616.1 / 58.9	34160374	M5	287.198	N/A	N/A	N/A	114.9
55	NEtFOSE	1691-99-2	10.28	630.0 / 58.9	53947112	M5	272.126	N/A	N/A	N/A	108.9
56	HFPO-DA	13252-13-6	5.60	285.0 / 169.0	24712719		107.523	0.461	0.464	Pass	107.5
57	HFPO-DA_2	13252-13-6	5.60	285.0 / 184.9	11396560		106.634	0.461	0.464	Pass	106.6
58	ADONA	919005-14-4	6.72	377.1 / 251.0	53256061		101.887	0.643	0.634	Pass	107.8
59	ADONA_2	919005-14-4	6.72	377.1 / 84.8	34258574		101.294	0.643	0.634	Pass	107.2
60	9Cl-PF3ONS	756426-58-1	8.50	530.8 / 351.1	48493859		94.092	0.325	0.322	Pass	100.6
61	9Cl-PF3ONS_2	756426-58-1	8.50	532.8 / 353.0	15749323		93.838	0.325	0.322	Pass	100.4
62	11Cl-PF3OUdS	763051-92-9	9.57	630.9 / 451.0	32877183		100.991	0.337	0.331	Pass	106.9
63	11Cl-PF3OUdS_2	763051-92-9	9.57	632.9 / 452.9	11074336		101.076	0.337	0.331	Pass	107.0
64	3:3FTCA	356-02-5	4.91	241.1 / 177.1	3325237		154.341	0.998	1.074	Pass	123.5
65	3:3FTCA_2	356-02-5	4.91	241.1 / 117.0	3319401		153.836	0.998	1.074	Pass	123.1
66	5:3FTCA	914637-49-3	7.16	341.1 / 237.1	57800169		686.272	0.929	0.953	Pass	109.8
67	5:3FTCA_2	914637-49-3	7.16	341.1 / 217.0	53715436		674.014	0.929	0.953	Pass	107.8

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
68	7:3FTCA	812-70-4	8.21	441.1 / 316.9	55121038		587.882	1.251	1.558	Pass	94.1
69	7:3FTCA_2	812-70-4	8.21	441.1 / 337.1	68940300		506.685	1.251	1.558	Pass	81.1
70	PFEESA	113507-82-7	5.71	315.1 / 135.0	39950589		49.598	0.085	0.087	Pass	111.5
71	PFEESA_2	113507-82-7	5.71	315.1 / 82.9	3412004		49.032	0.085	0.087	Pass	110.2
72	PFMPA	377-73-1	3.85	229.0 / 85.0	1717029		57.112	N/A	N/A	N/A	114.2
73	PFMBA	863090-89-5	4.88	279.0 / 85.0	22136596		54.610	N/A	N/A	N/A	109.2
74	NFDHA	151772-58-6	5.25	295.0 / 201.0	4623243		54.520	0.838	0.910	Pass	109.0
75	NFDHA_2	151772-58-6	5.26	295.0 / 84.9	3874085		49.835	0.838	0.910	Pass	99.7
76	TDCA	516-50-7	N/A	499.1 / 124.1	N/A		N/A	N/A	40.716	N/A	N/A
77	TDCA_2	516-50-7	N/A	499.1 / 79.9	N/A		N/A	N/A	40.716	N/A	N/A
78	13C2D4-4:2FTS	Surr	5.13	333.2 / 312.1	889831		4.863	N/A	N/A	N/A	97.3
79	13C2-PFOA	Surr	7.50	415.0 / 370.0	3163005		2.239	N/A	N/A	N/A	89.6

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C4-PFBA	EIS	2.89	217.0 / 172.0	2151011		9.186	NA	NA	NA	91.9

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C5-PFPeA	EIS	4.64	268.0 / 223.0	1346975		4.222	NA	NA	NA	84.4
	13C5-PFHxA	EIS	5.33	318.0 / 273.0	952598		2.273	NA	NA	NA	90.9
	13C4-PFHpA	EIS	6.25	367.0 / 322.0	948501		2.260	NA	NA	NA	90.4
	13C8-PFOA	EIS	7.50	421.0 / 376.0	1332083		2.088	NA	NA	NA	83.5
	13C9-PFNA	EIS	7.95	472.0 / 427.0	621370		1.138	NA	NA	NA	91.0
	13C6-PFDA	EIS	8.17	519.0 / 474.0	601115		1.154	NA	NA	NA	92.3
	13C7-PFUnA	EIS	8.47	570.0 / 525.0	464490		1.102	NA	NA	NA	88.2

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C2-PFDoA	EIS	8.90	615.1 / 570.0	349980		1.277	NA	NA	NA	102.1
	13C2-PFTeDA	EIS	9.91	715.1 / 670.1	363930		1.223	NA	NA	NA	97.8
	13C3-PFBS	EIS	5.31	302.1 / 80.1	773617		2.269	NA	NA	NA	97.4
	13C3-PFHxS	EIS	7.61	402.1 / 80.1	597576		2.207	NA	NA	NA	93.1
	13C8-PFOS	EIS	8.27	507.1 / 80.1	620603		2.103	NA	NA	NA	87.8
	13C2-4:2FTS	EIS	5.13	329.1 / 81.1	270927		4.453	NA	NA	NA	94.9
	13C2-6:2FTS	EIS	7.09	429.2 / 81.1	200487		4.497	NA	NA	NA	94.6
	13C2-8:2FTS	EIS	8.07	529.2 / 81.1	271829		4.166	NA	NA	NA	86.8

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C8-PFOSA	EIS	9.54	506.1 / 78.1	820090		2.090	NA	NA	NA	83.6
	d3-NMeFOSA	EIS	10.16	515.2 / 219.0	148650		2.250	NA	NA	NA	90.0
	d5-NEtFOSA	EIS	10.37	531.2 / 219.0	142021		2.201	NA	NA	NA	88.0
	d3-NMeFOSAA	EIS	8.22	573.2 / 419.1	679663		4.551	NA	NA	NA	91.0
	d5-NEtFOSAA	EIS	8.36	589.3 / 419.1	359809		4.585	NA	NA	NA	91.7
	d7-NMeFOSE	EIS	10.07	623.2 / 58.9	1205364		23.629	NA	NA	NA	94.5
	d9-NEtFOSE	EIS	10.26	639.2 / 58.9	1688762		22.454	NA	NA	NA	89.8

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C3-HFPO-DA	EIS	5.60	287.0 / 169.0	2507192		9.027	NA	NA	NA	90.3
	13C3-PFBA	NIS	2.89	216.0 / 172.0	1024381		4.791	NA	NA	NA	95.8
	13C2-PFHxA	NIS	5.33	315.0 / 270.0	1244407		2.542	NA	NA	NA	101.7
	13C4-PFOA	NIS	7.50	417.0 / 372.0	834429		2.665	NA	NA	NA	106.6
	13C5-PFNA	NIS	7.94	468.0 / 423.0	665421		1.215	NA	NA	NA	97.2
	13C2-PFDA	NIS	8.17	515.1 / 470.1	611859		1.194	NA	NA	NA	95.5
	18O2-PFHxS	NIS	7.61	403.1 / 84.1	550345		2.349	NA	NA	NA	99.1
	13C4-PFOS	NIS	8.27	503.1 / 80.1	522110		2.480	NA	NA	NA	103.5

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	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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PFBA
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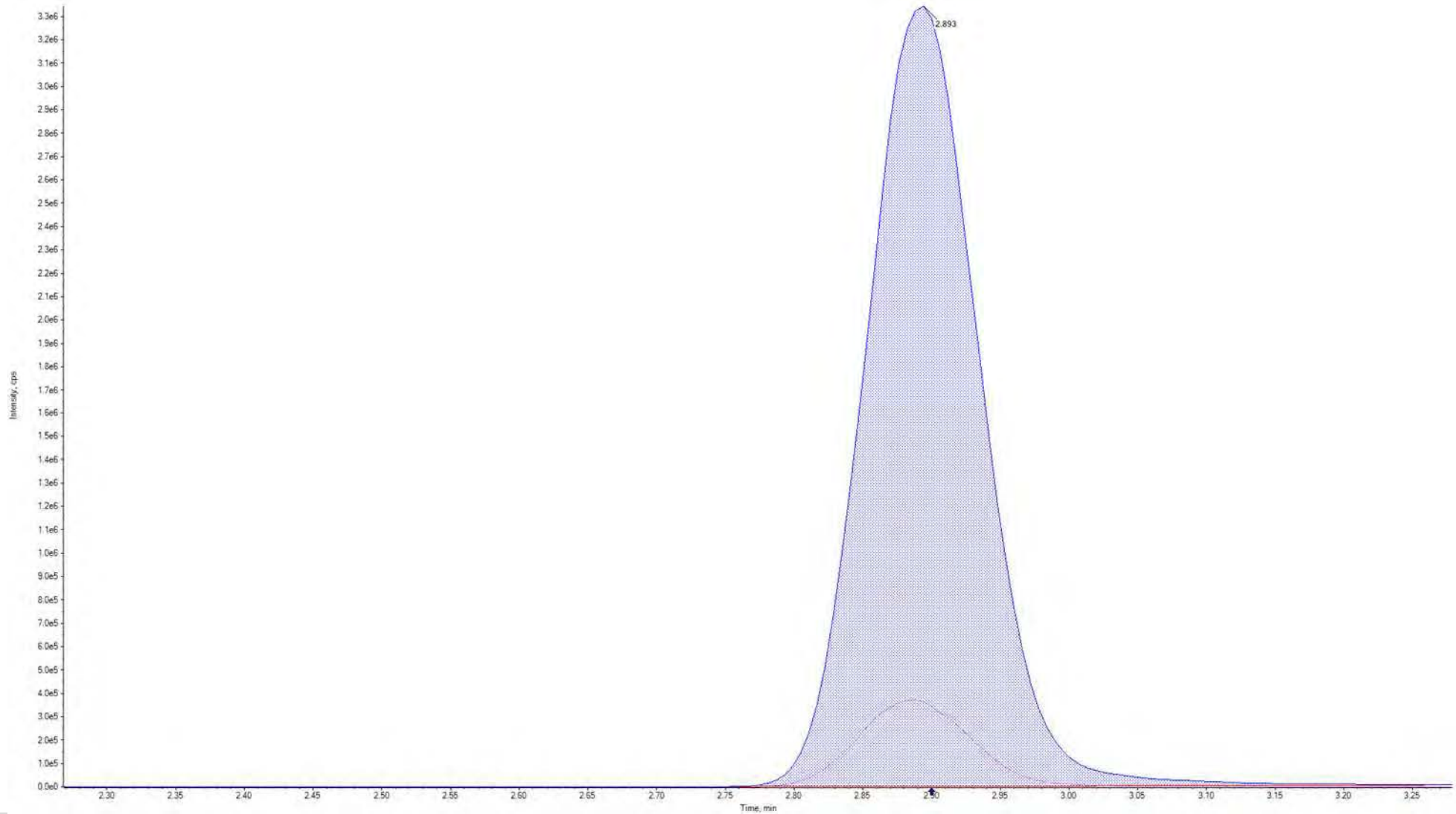

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PFPeA
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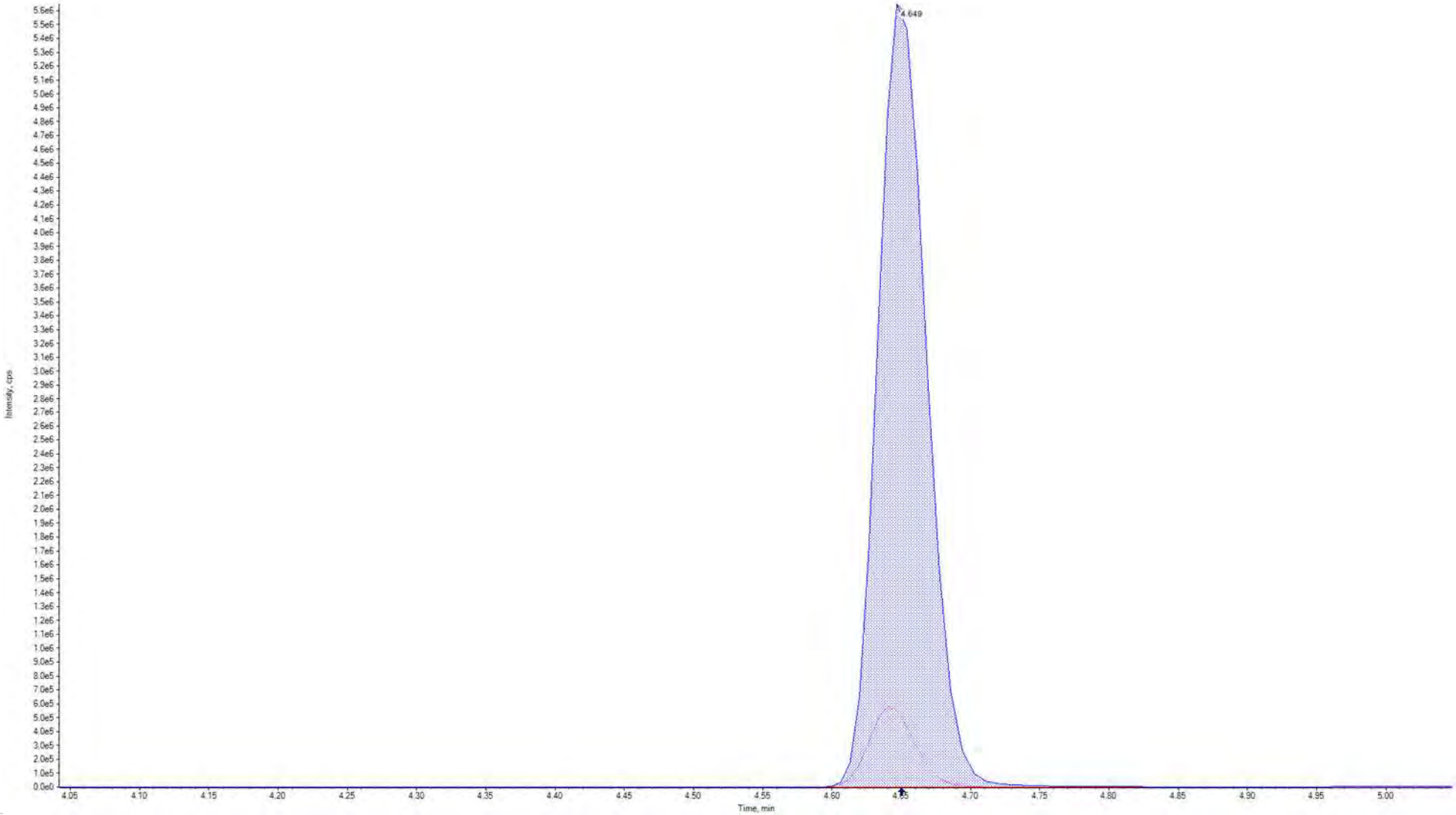

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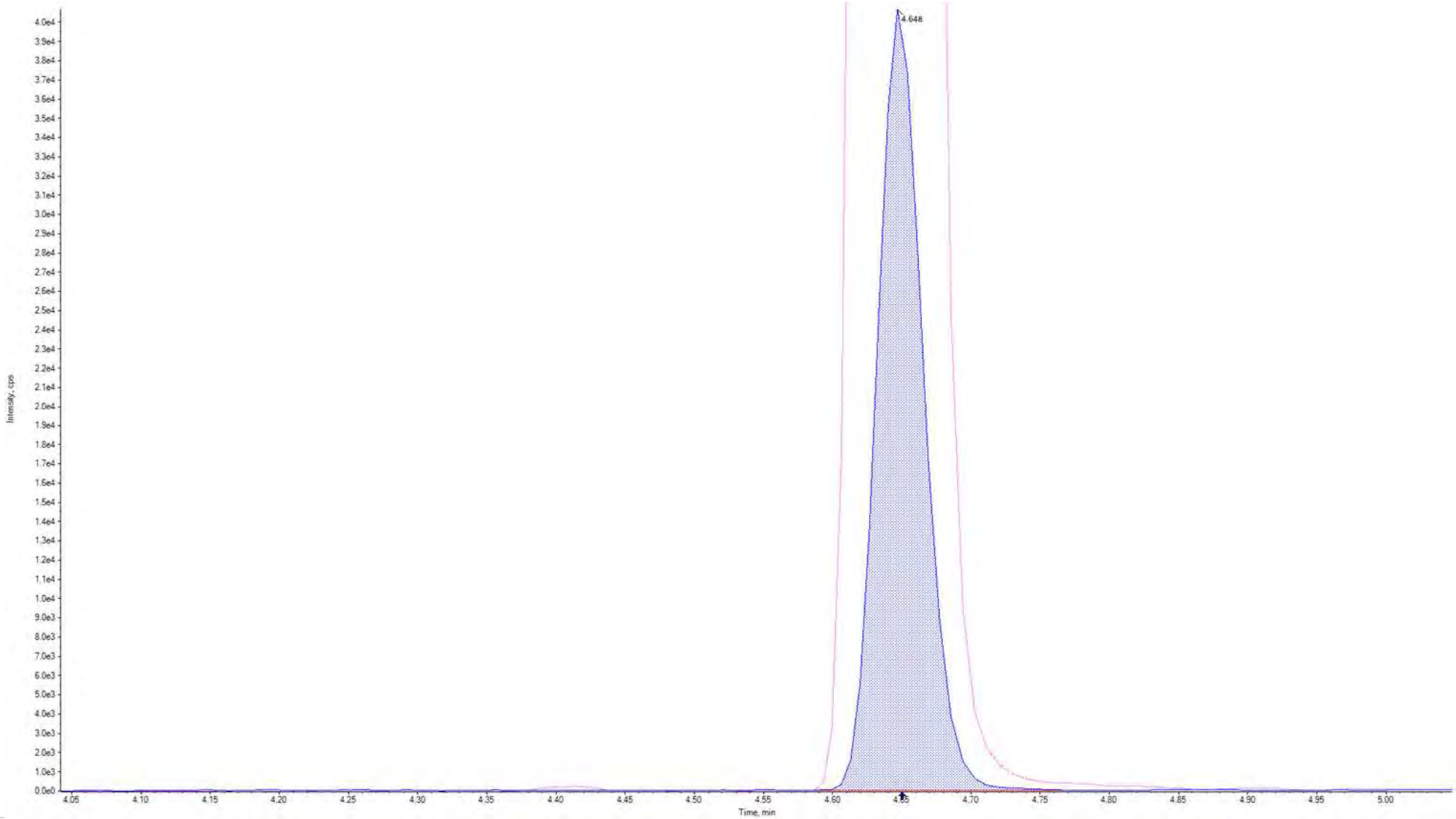
PFPeA_2
Sample: IA1633STD-25 S/N:2353.3 Points Across peak:31



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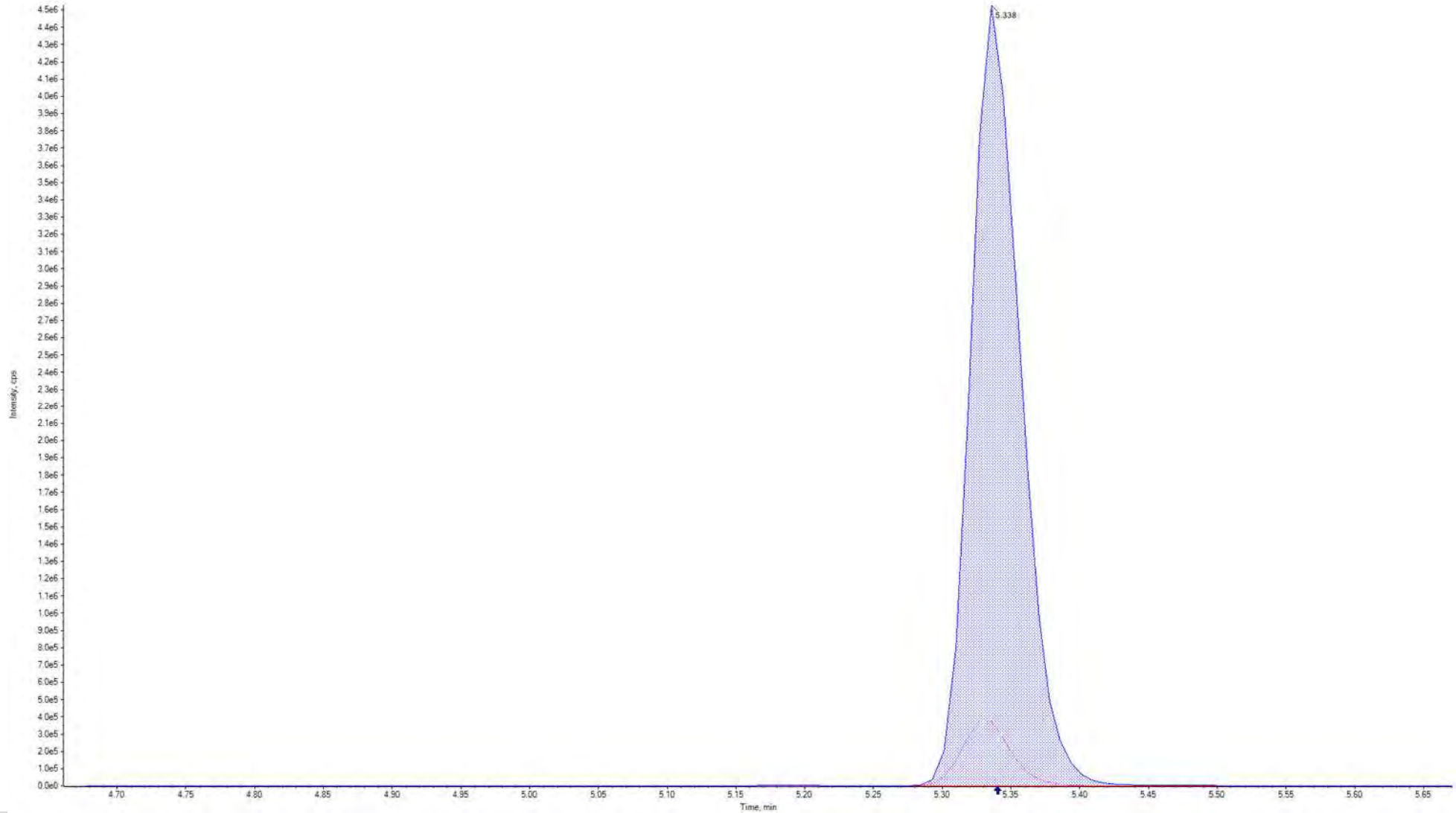
PFHxA
Sample: IA1633STD-25 S/N:4198.8 Points Across peak:45



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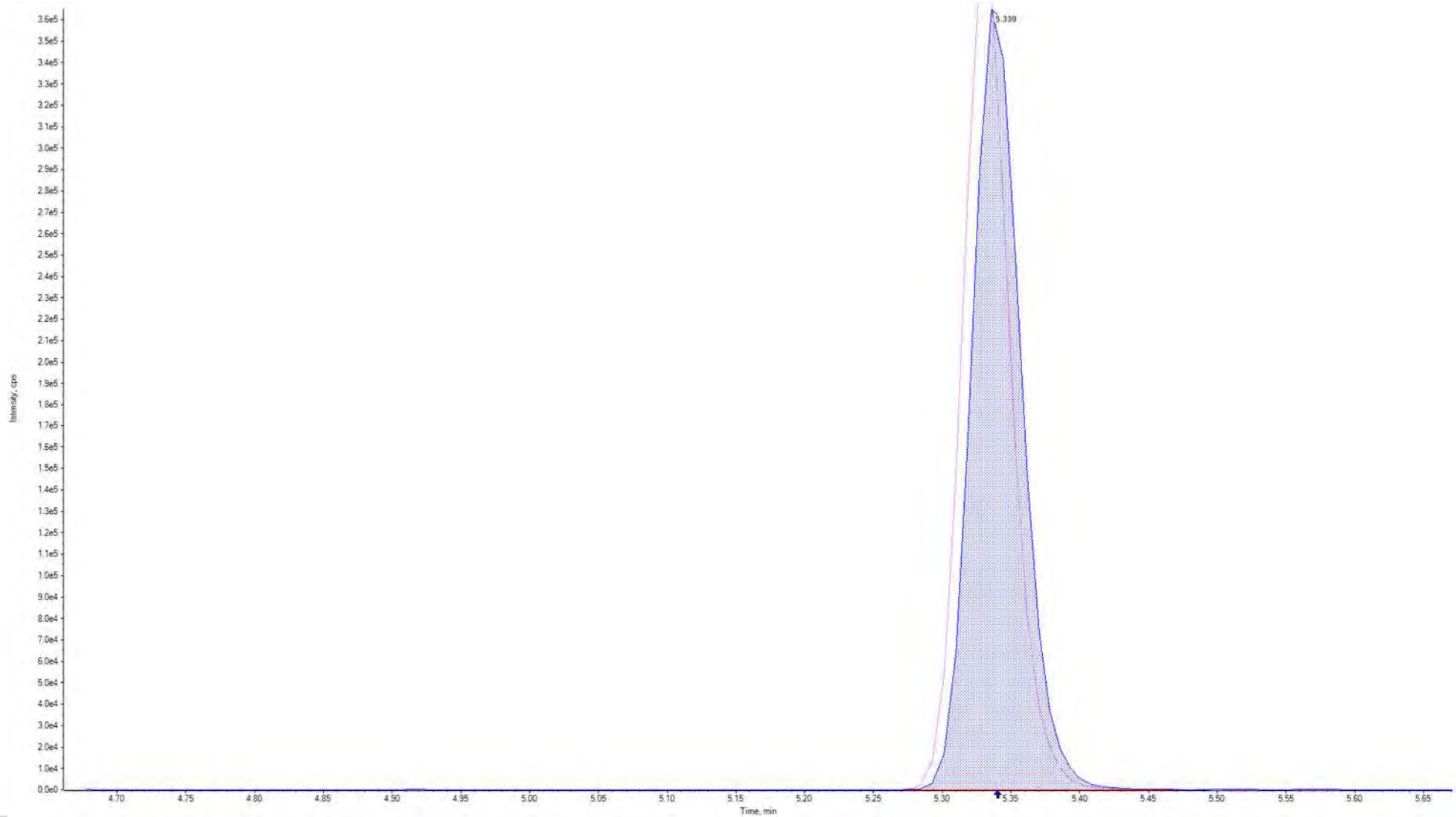
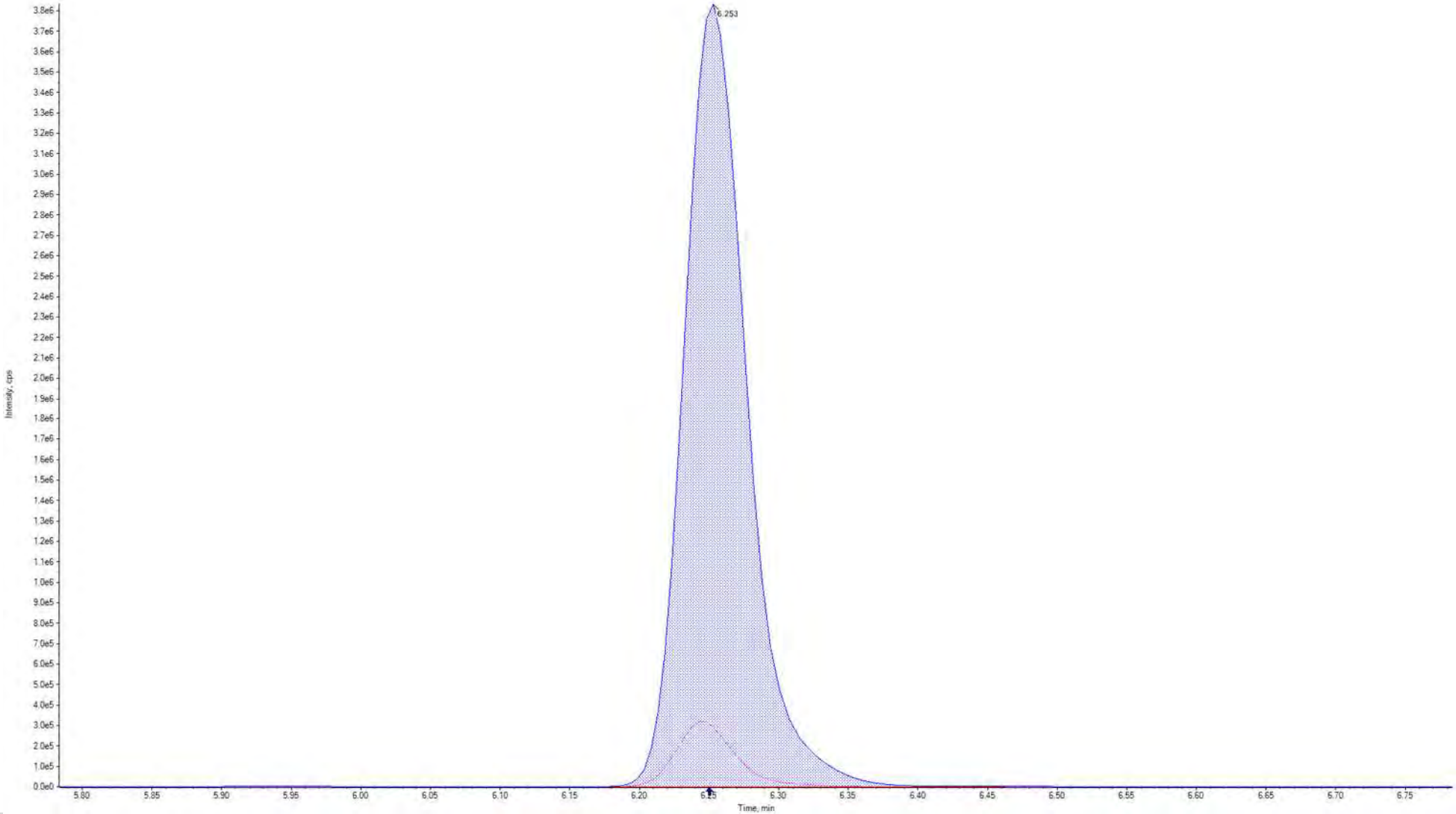
PFHxA_2
Sample: IA1633STD-25 S/N:10463.5 Points Across peak:29



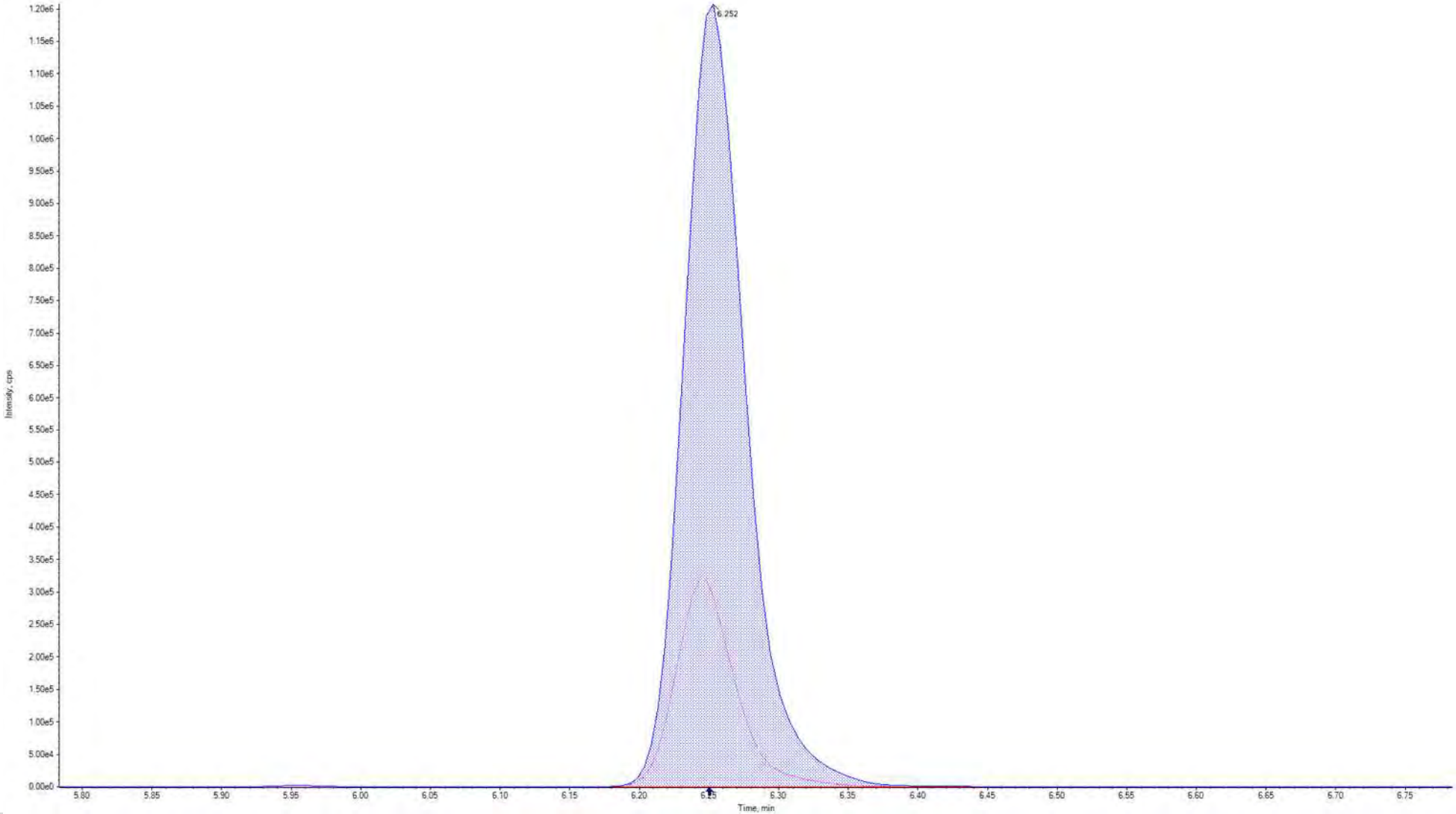
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFHpA
Sample: IA1633STD-25 S/N:6435.5 Points Across peak:53



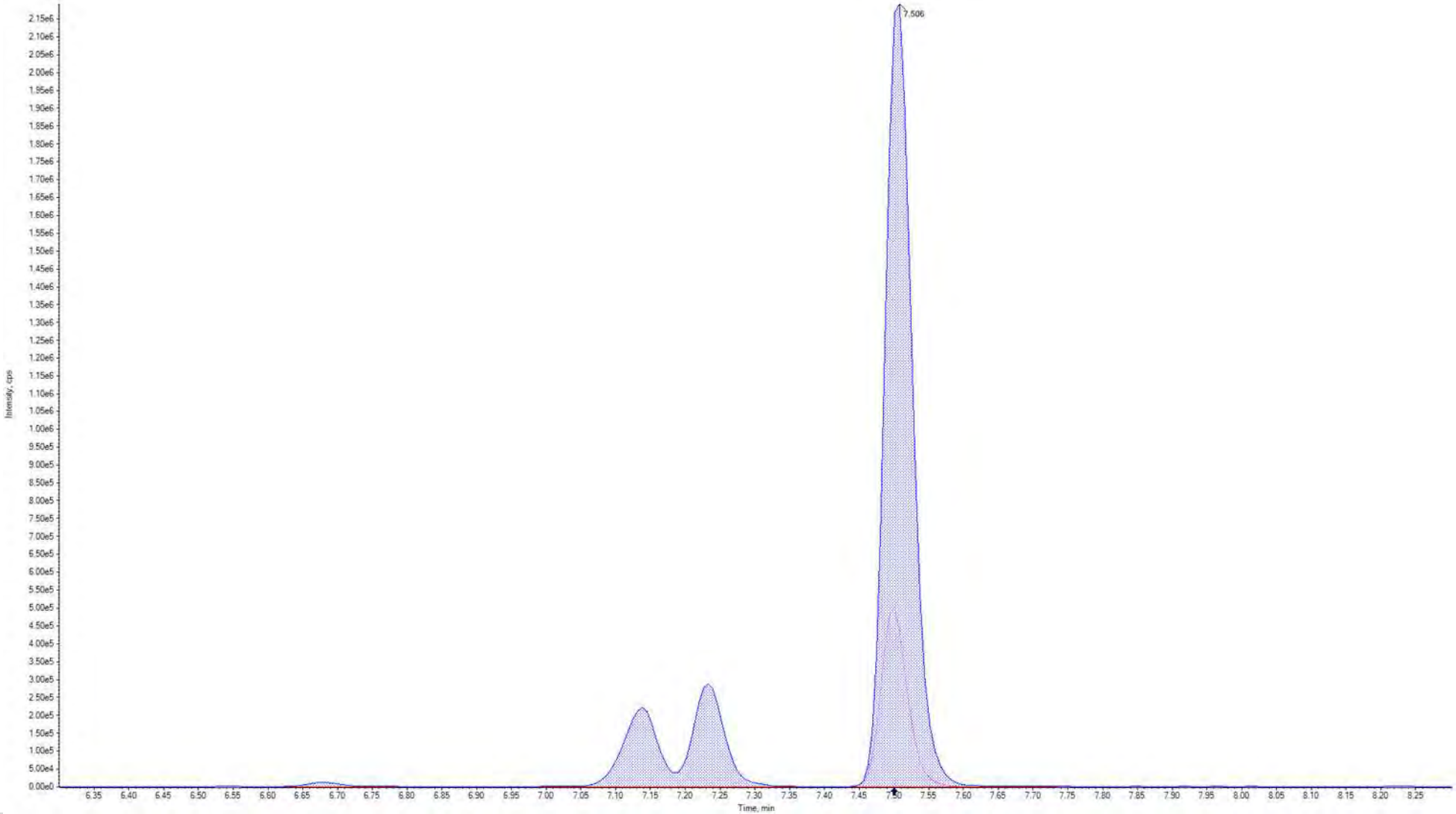
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFHpA_2
Sample: IA1633STD-25 S/N:16030.8 Points Across peak:53



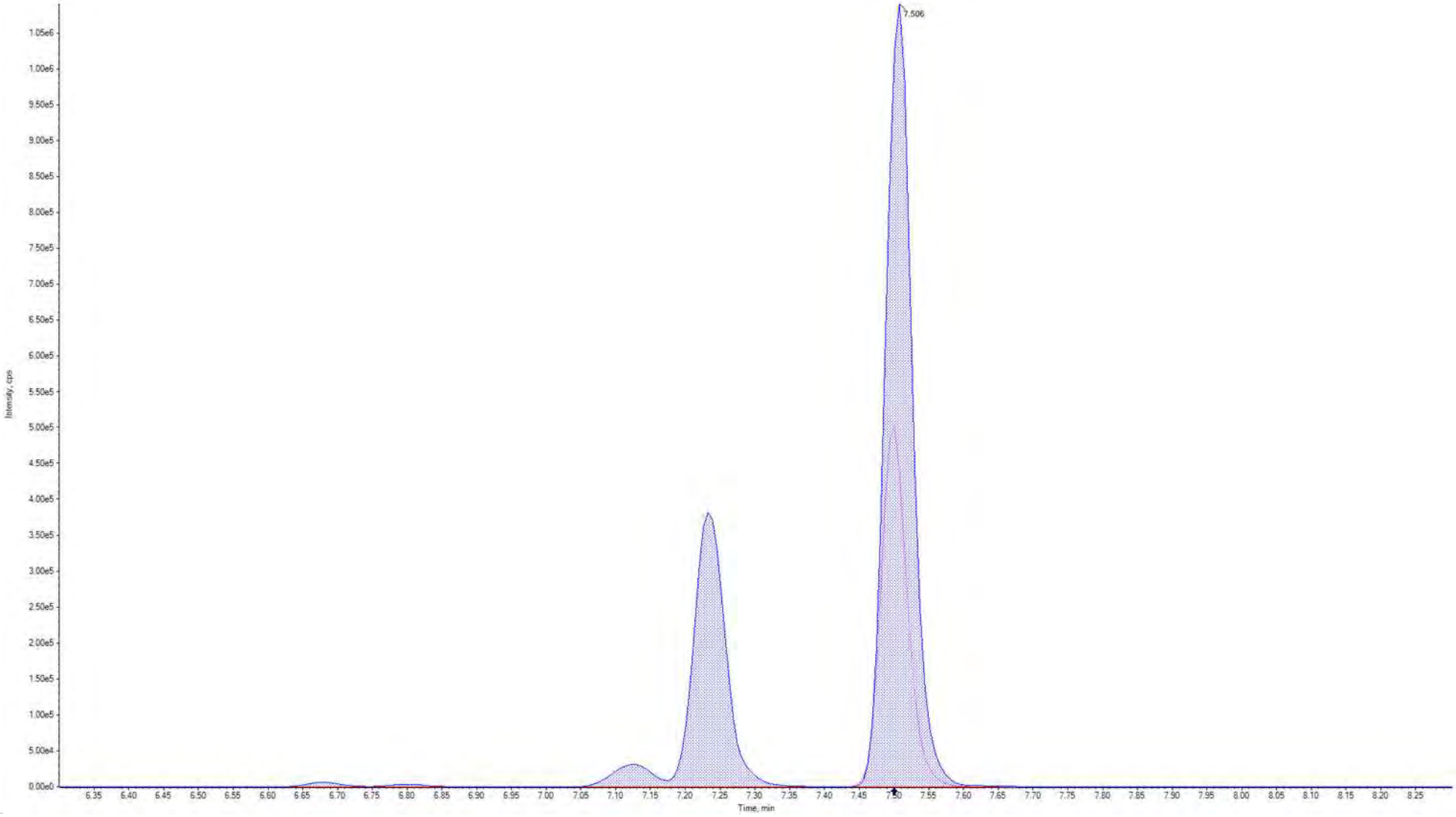
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOA
Sample: IA1633STD-25 S/N:4786.8 Points Across peak:172



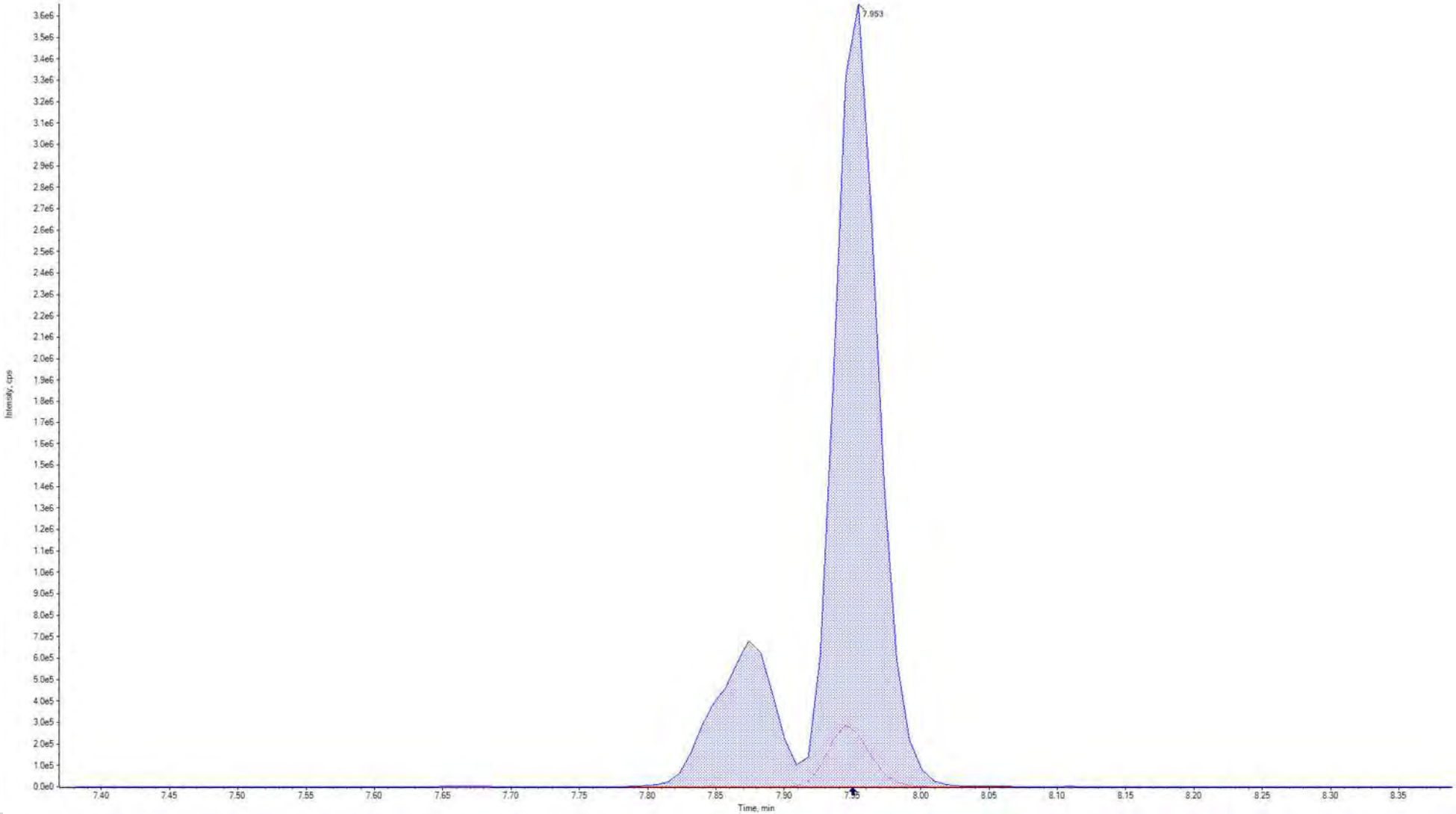
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOA_2
Sample: IA1633STD-25 S/N:5638109.1 Points Across peak:160



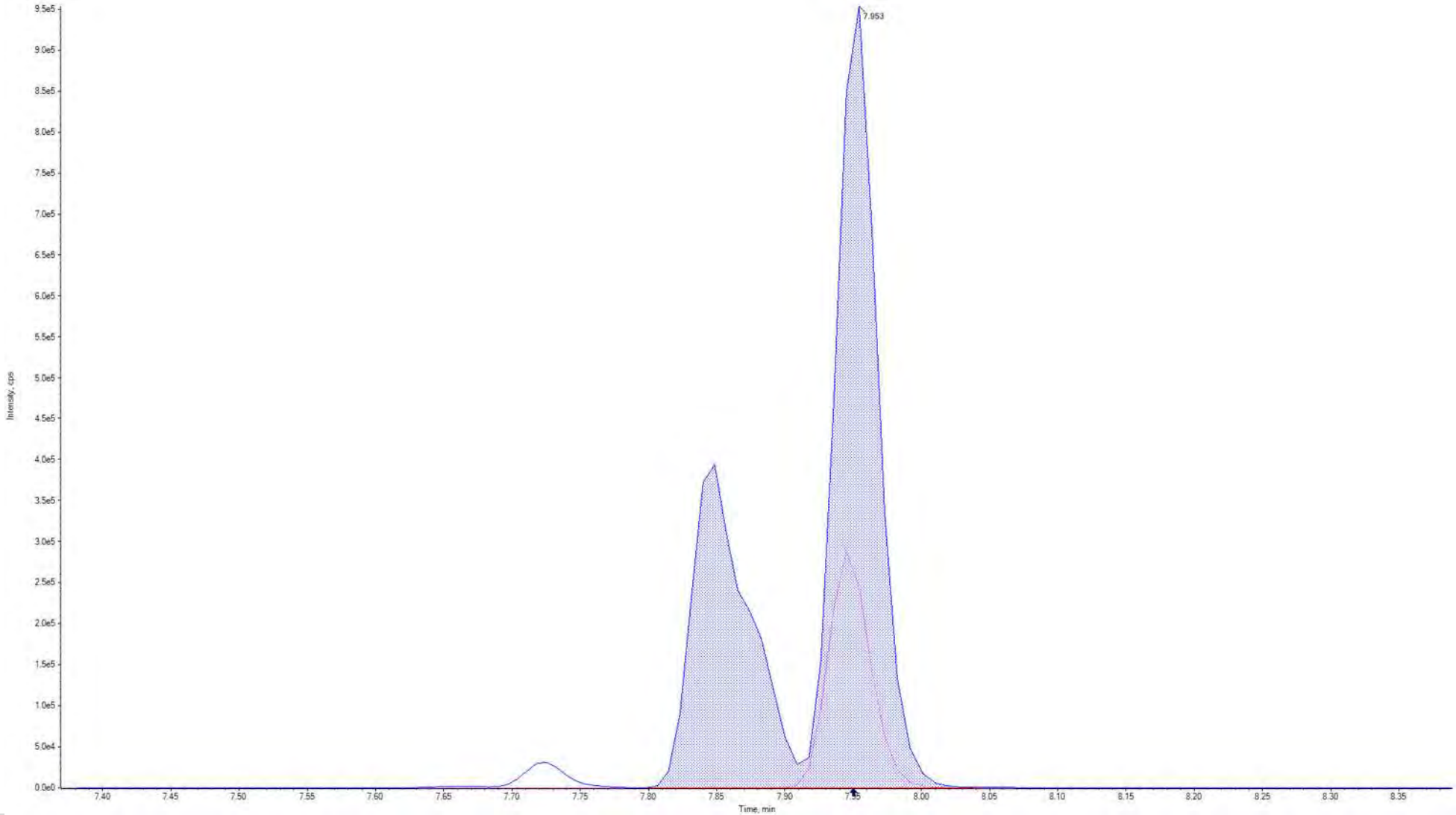
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFNA
Sample: IA1633STD-25 S/N:5226.4 Points Across peak:38



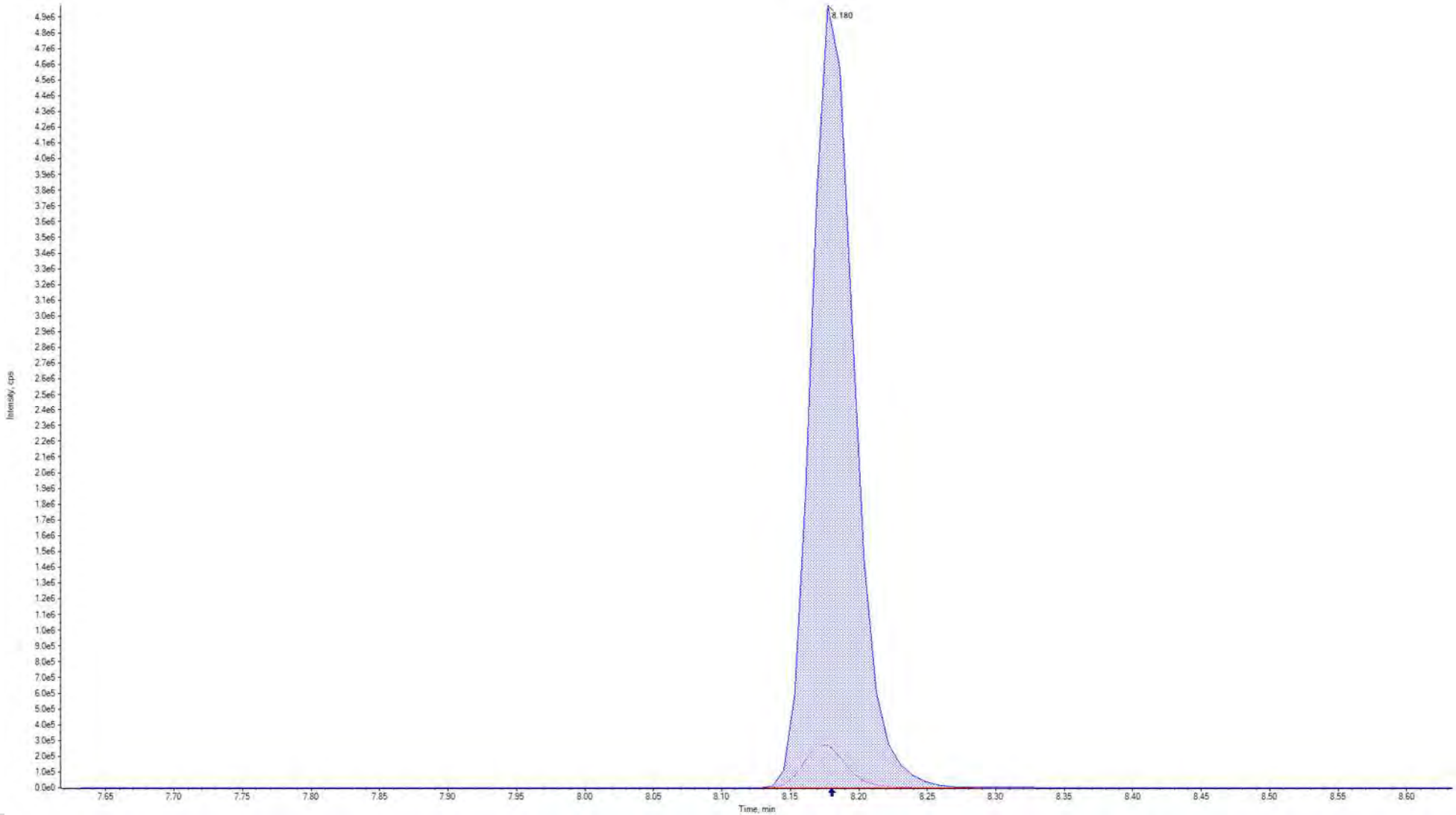
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFNA_2
Sample: IA1633STD-25 S/N:1857.5 Points Across peak:30



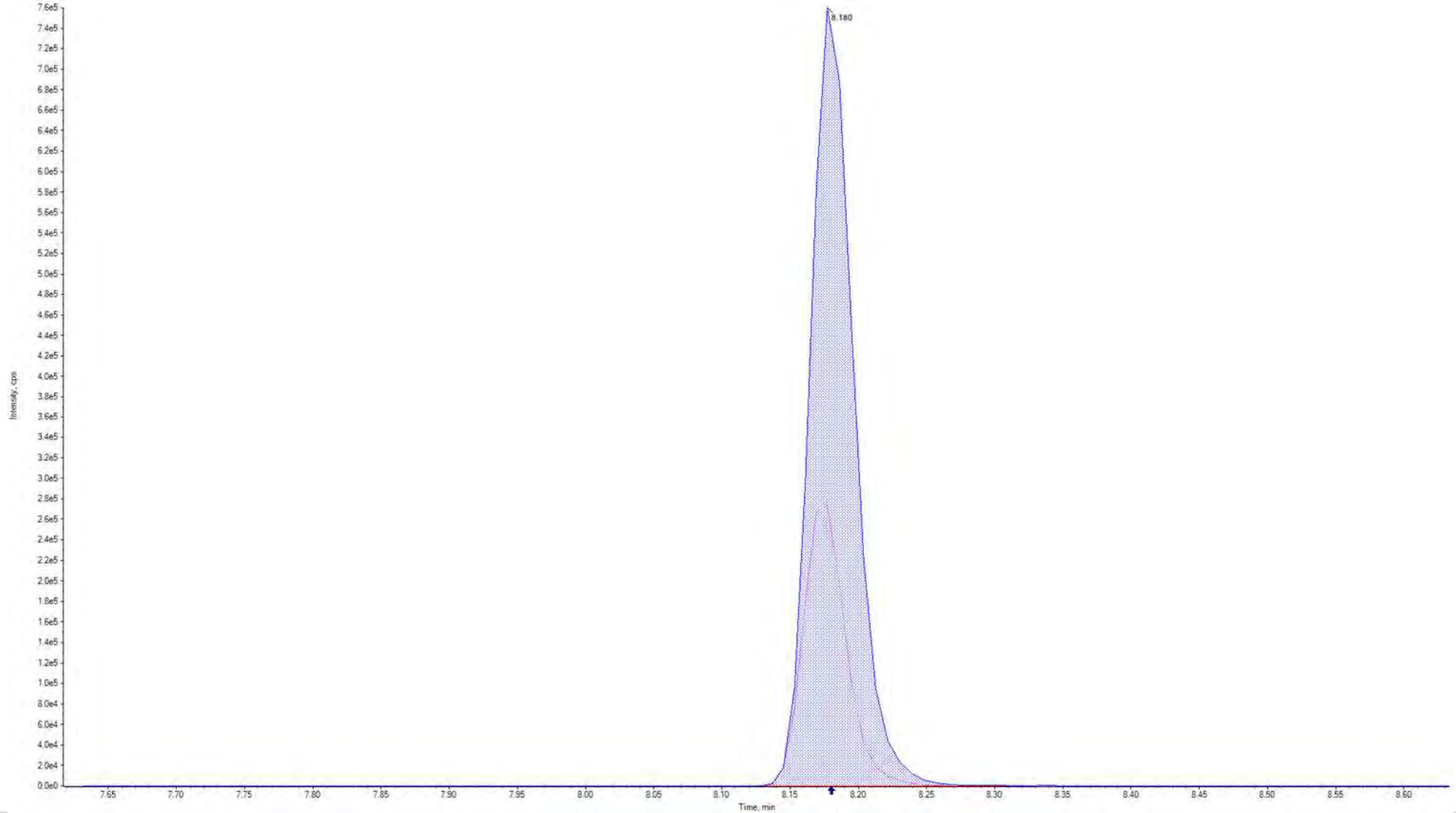
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDA
Sample: IA1633STD-25 S/N:7896.1 Points Across peak:20



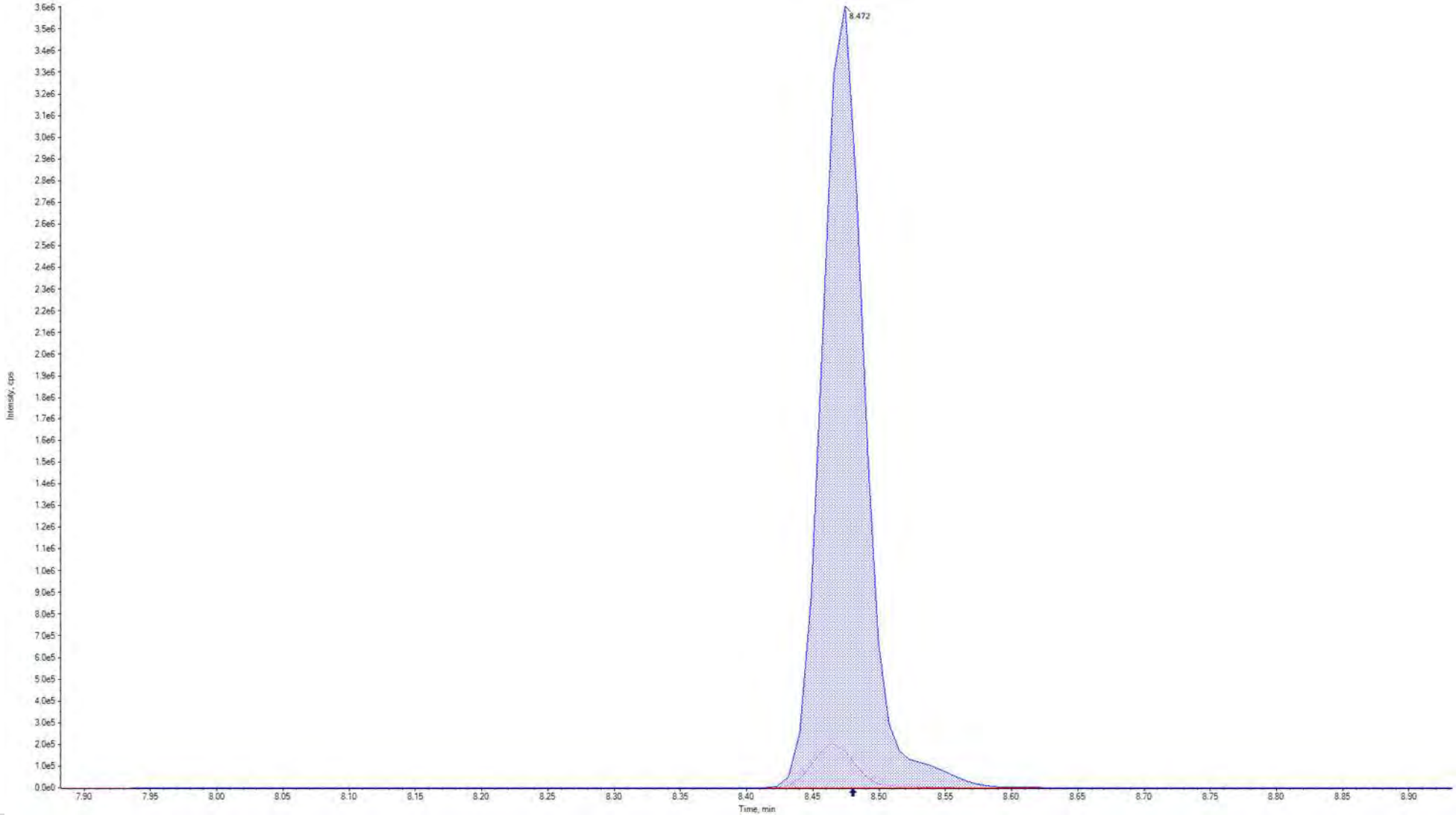
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDA_2
Sample: IA1633STD-25 S/N:1080483.1 Points Across peak:28



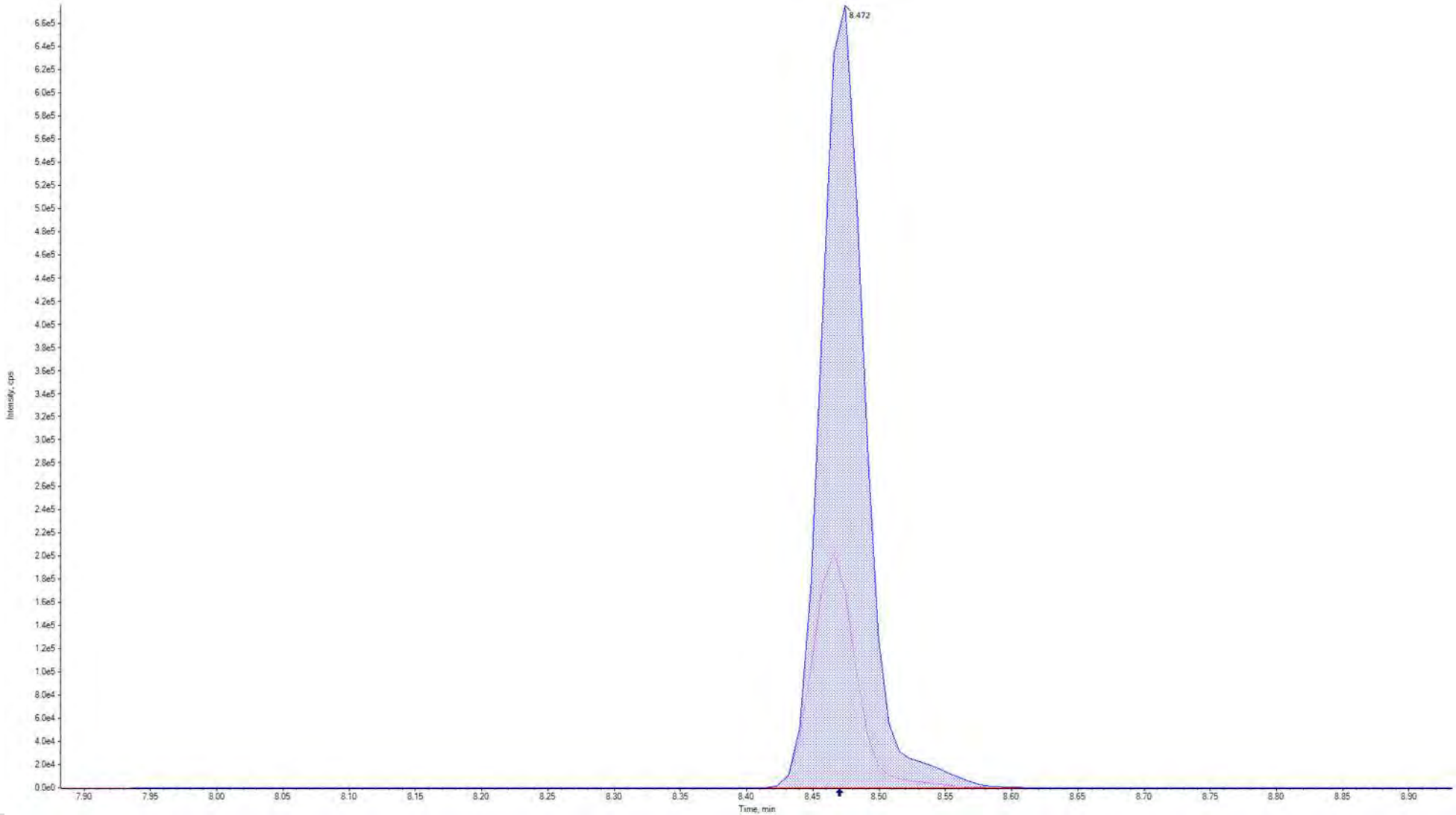
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFUnA
Sample: IA1633STD-25 S/N:6315.1 Points Across peak:33



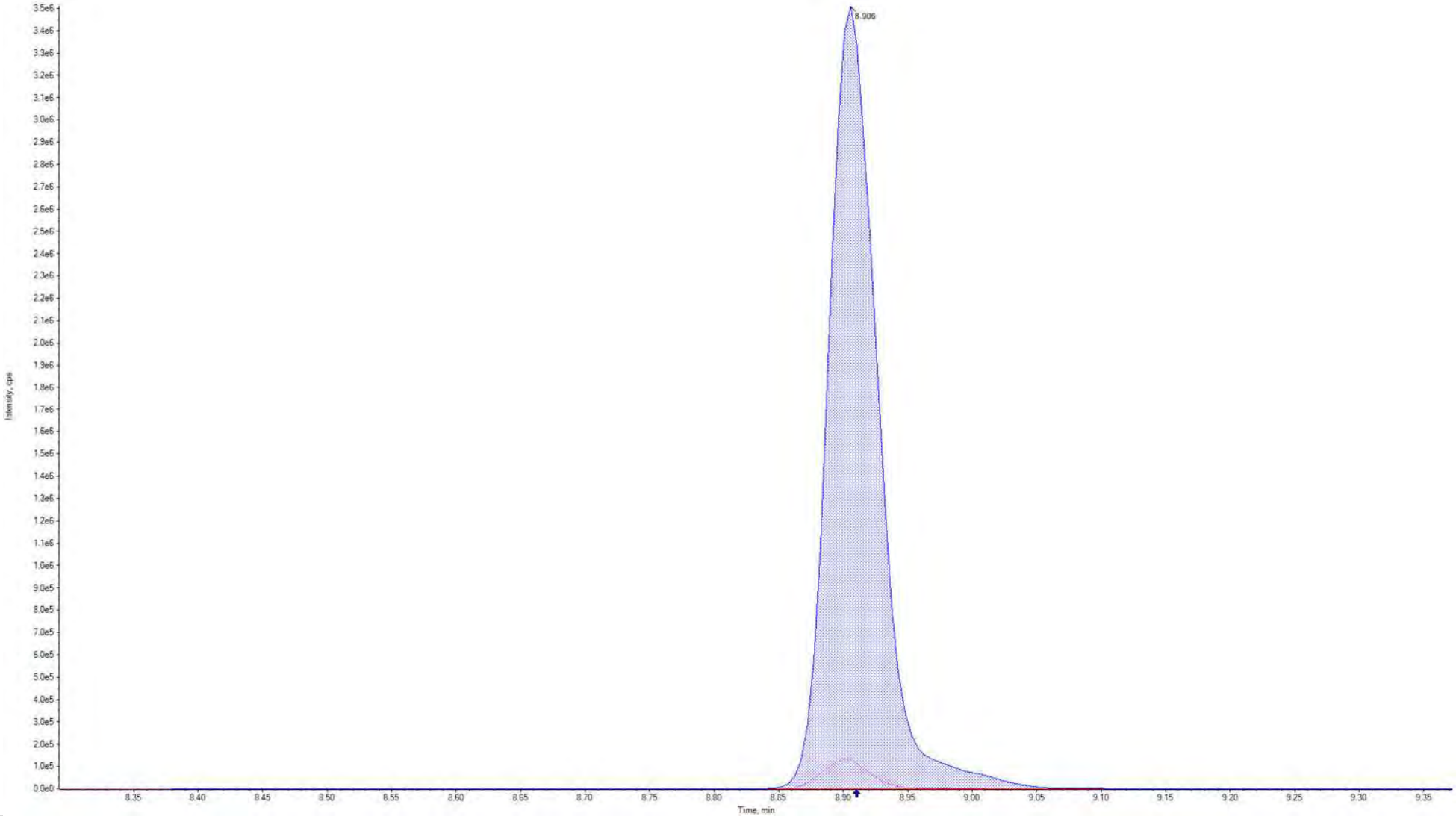
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFUnA_2
Sample: IA1633STD-25 S/N:60228.2 Points Across peak:29



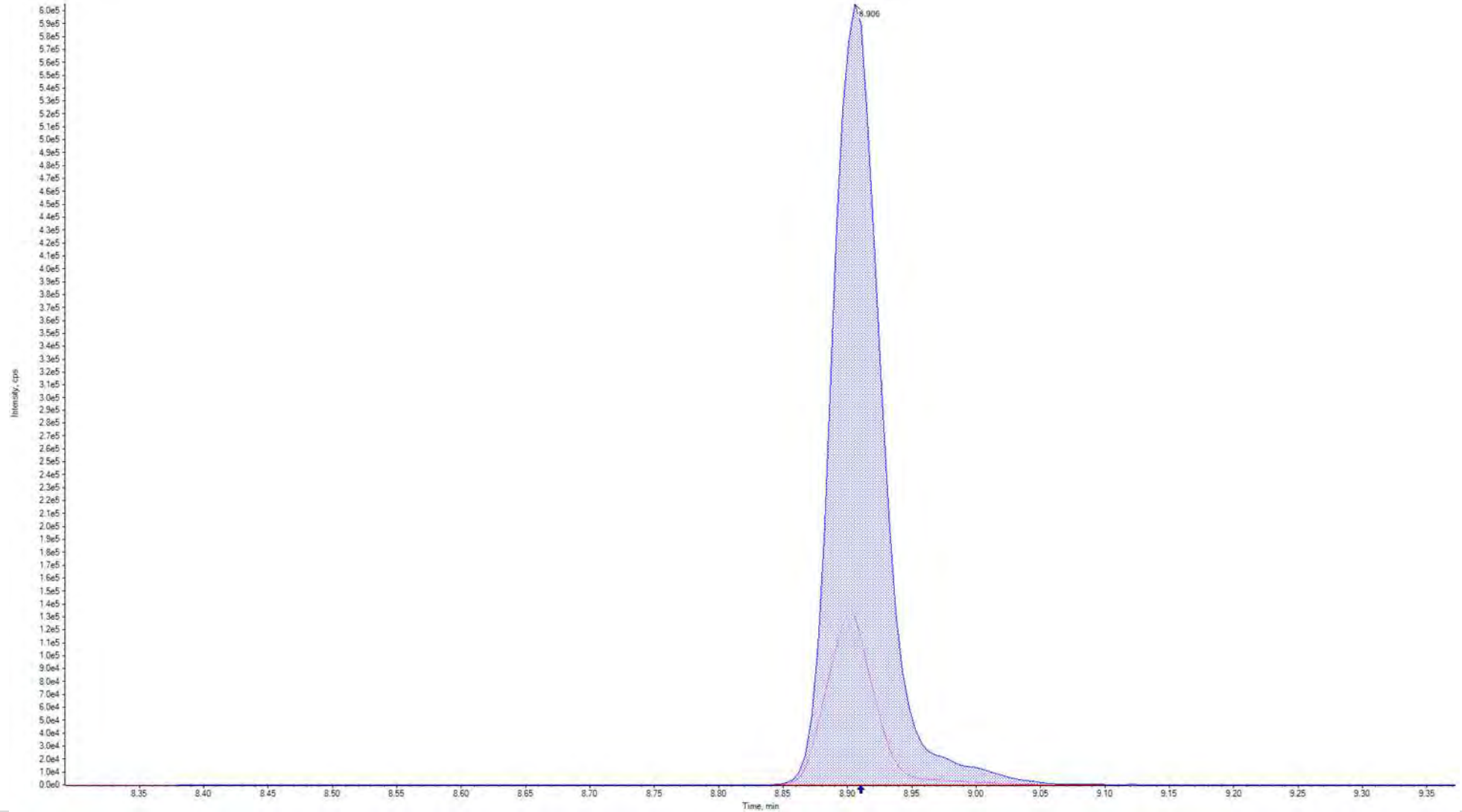
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDoA
Sample: IA1633STD-25 S/N:11450.8 Points Across peak:65



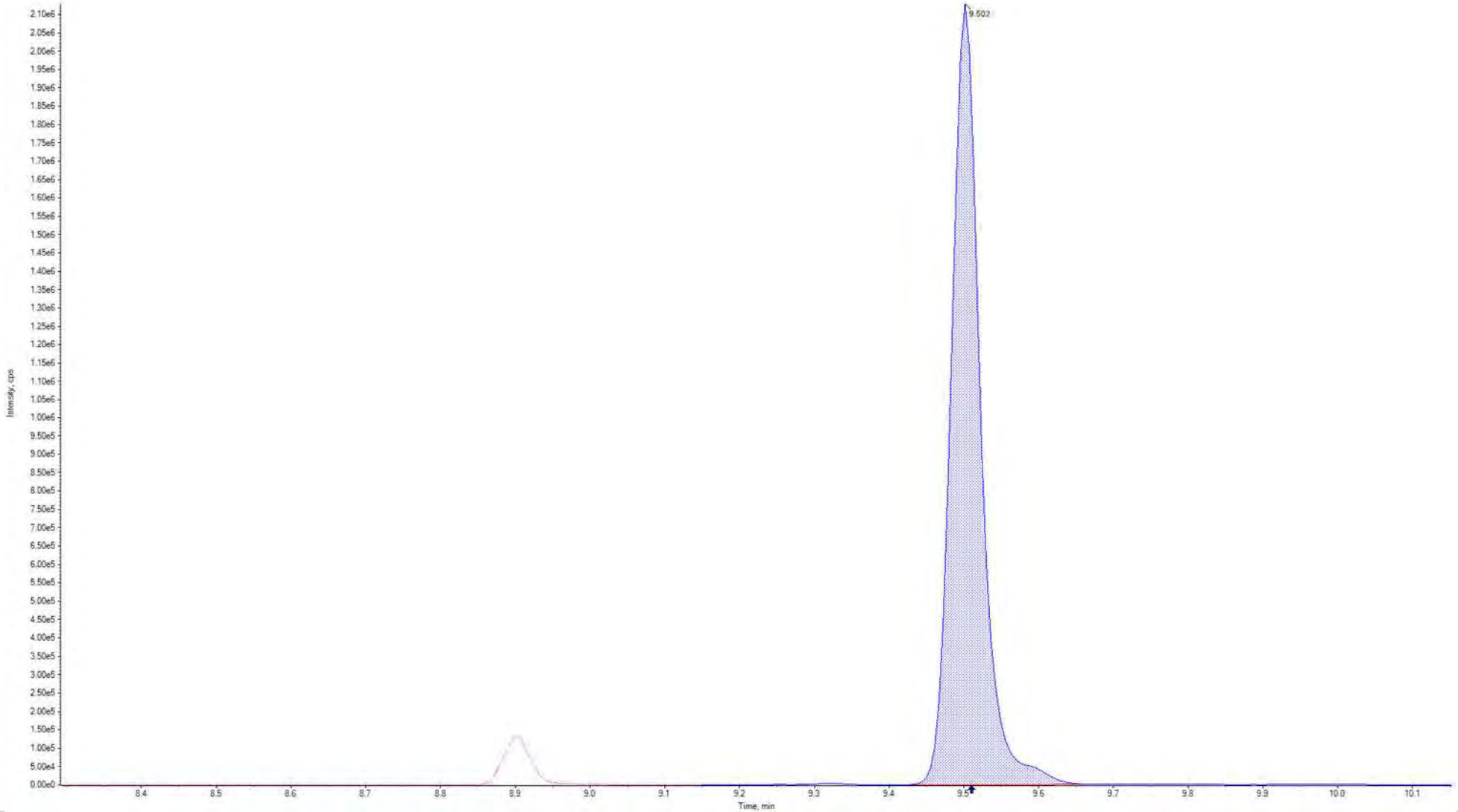
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDoA_2
Sample: IA1633STD-25 S/N:117867.6 Points Across peak:62



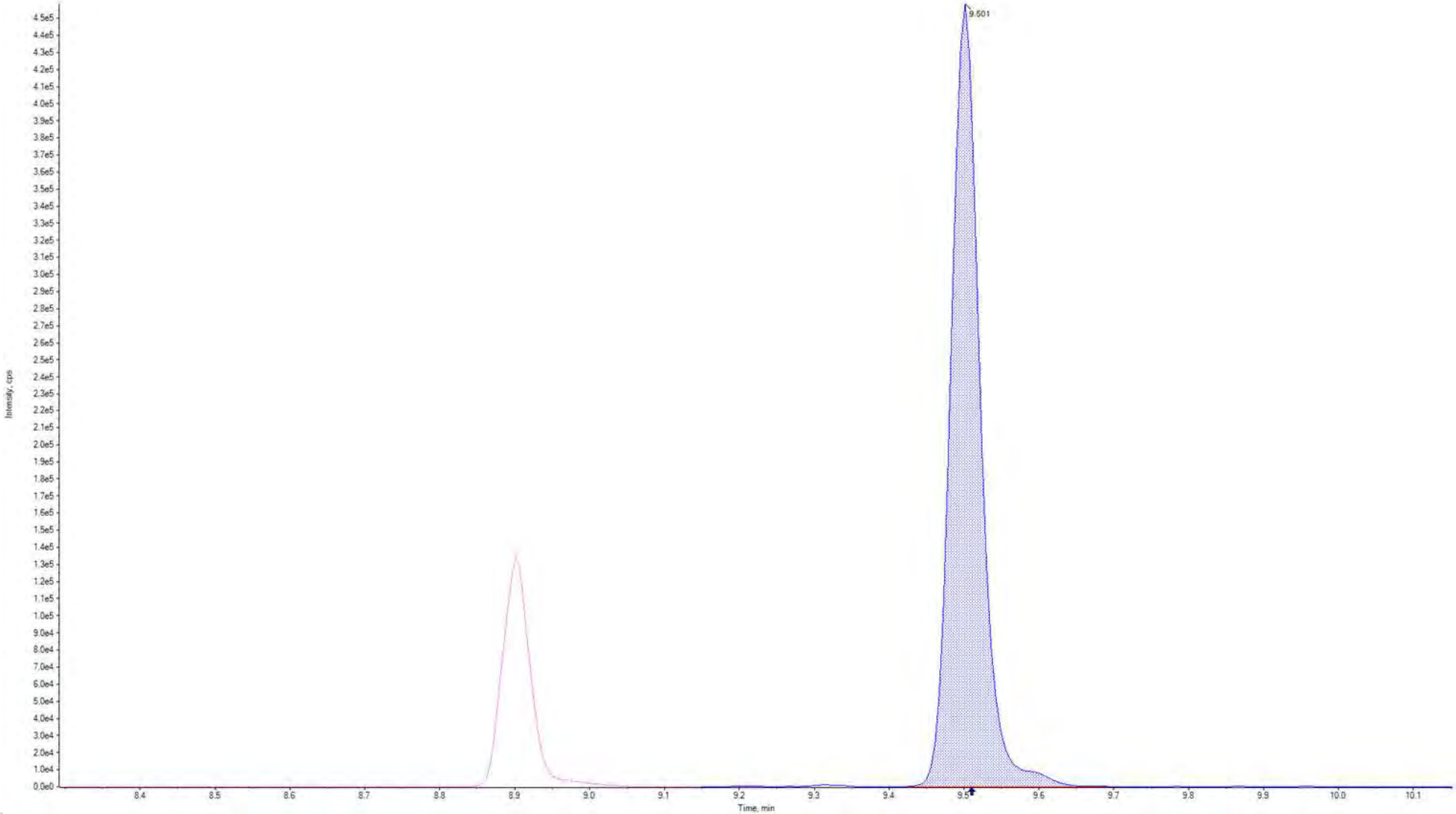
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFTrDA
Sample: IA1633STD-25 S/N:4417.4 Points Across peak:52



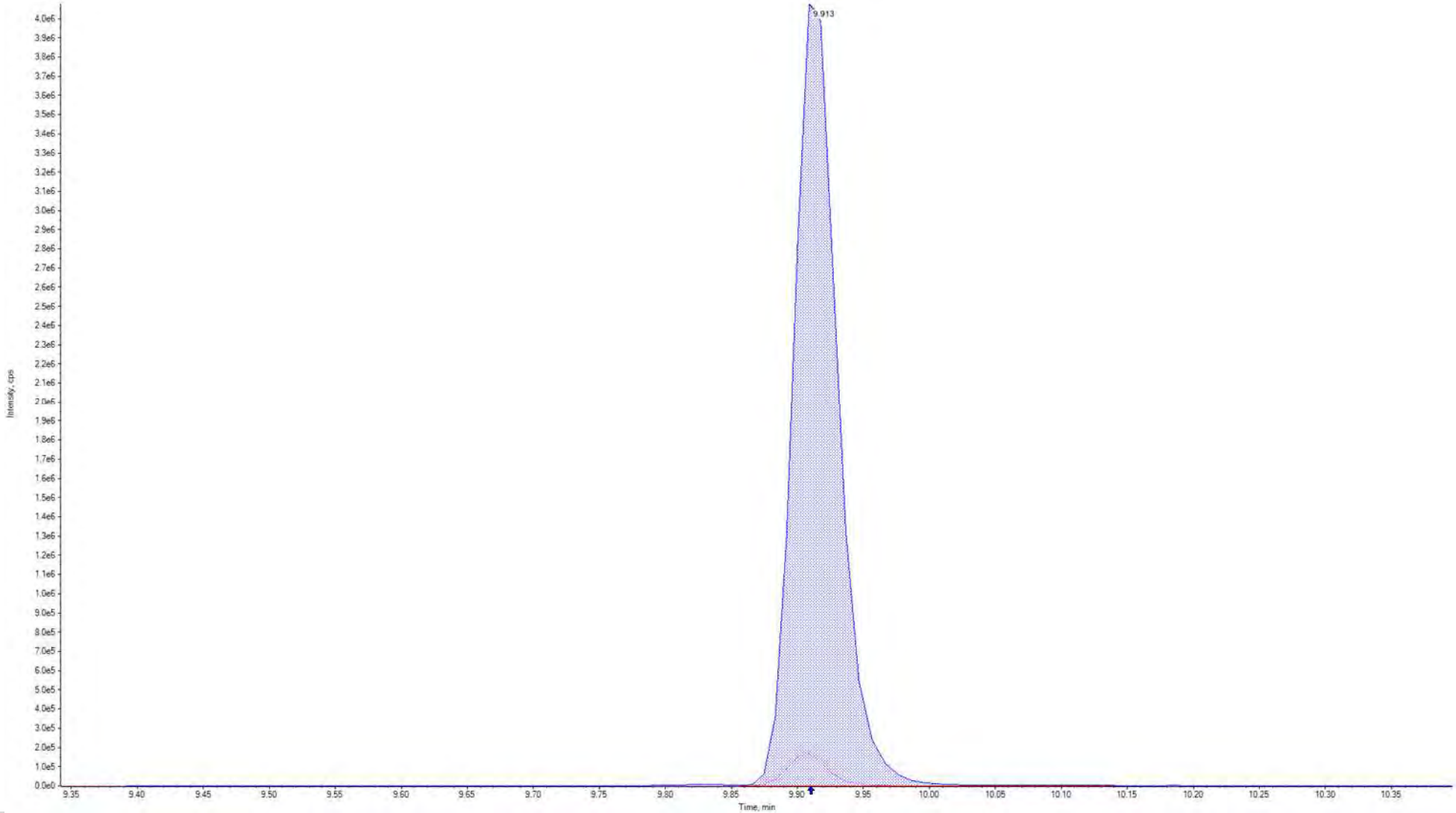
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFTrDA_2
Sample: IA1633STD-25 S/N:22800.3 Points Across peak:50



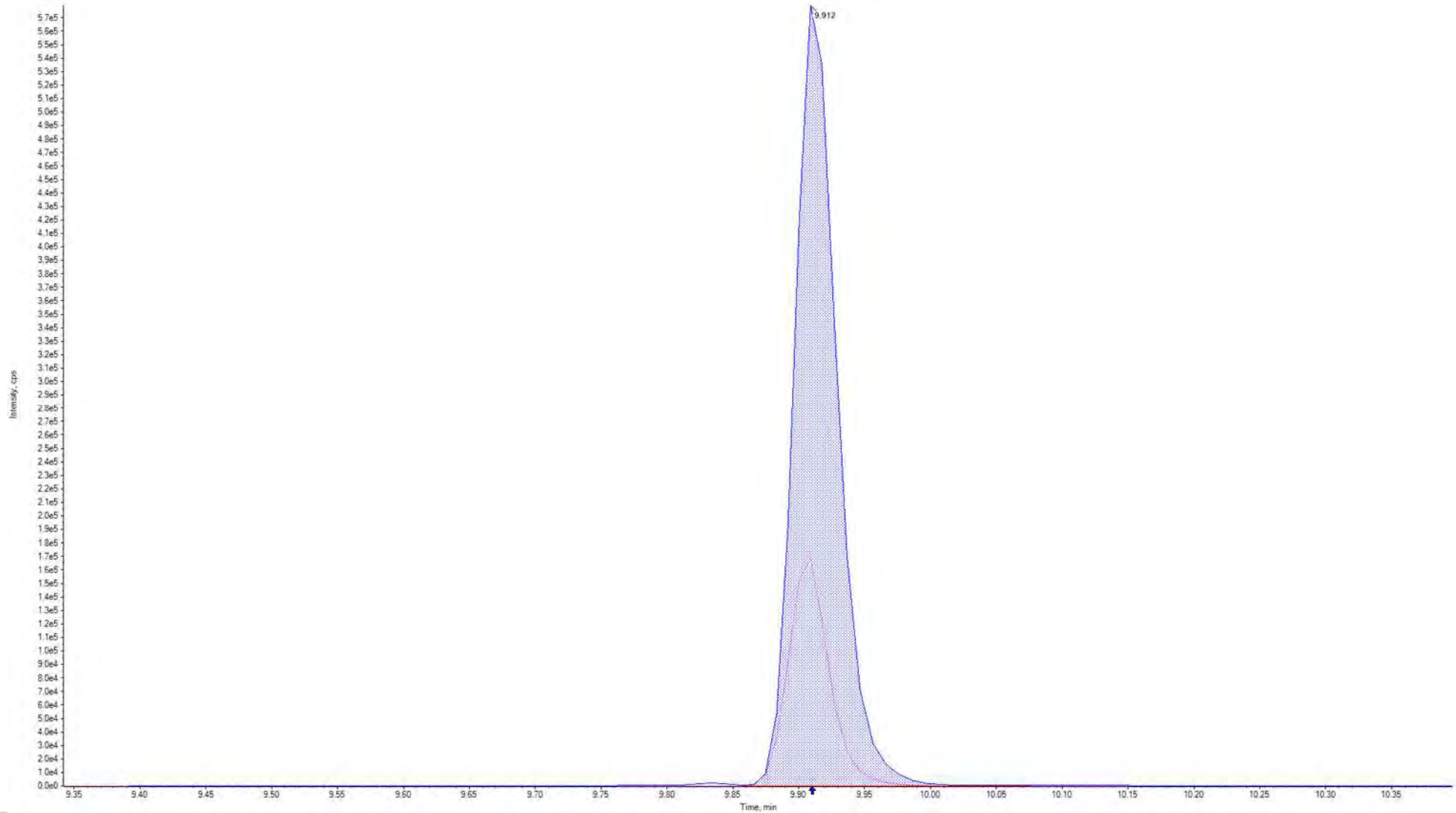
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFTeDA
Sample: IA1633STD-25 S/N:6582.8 Points Across peak:31



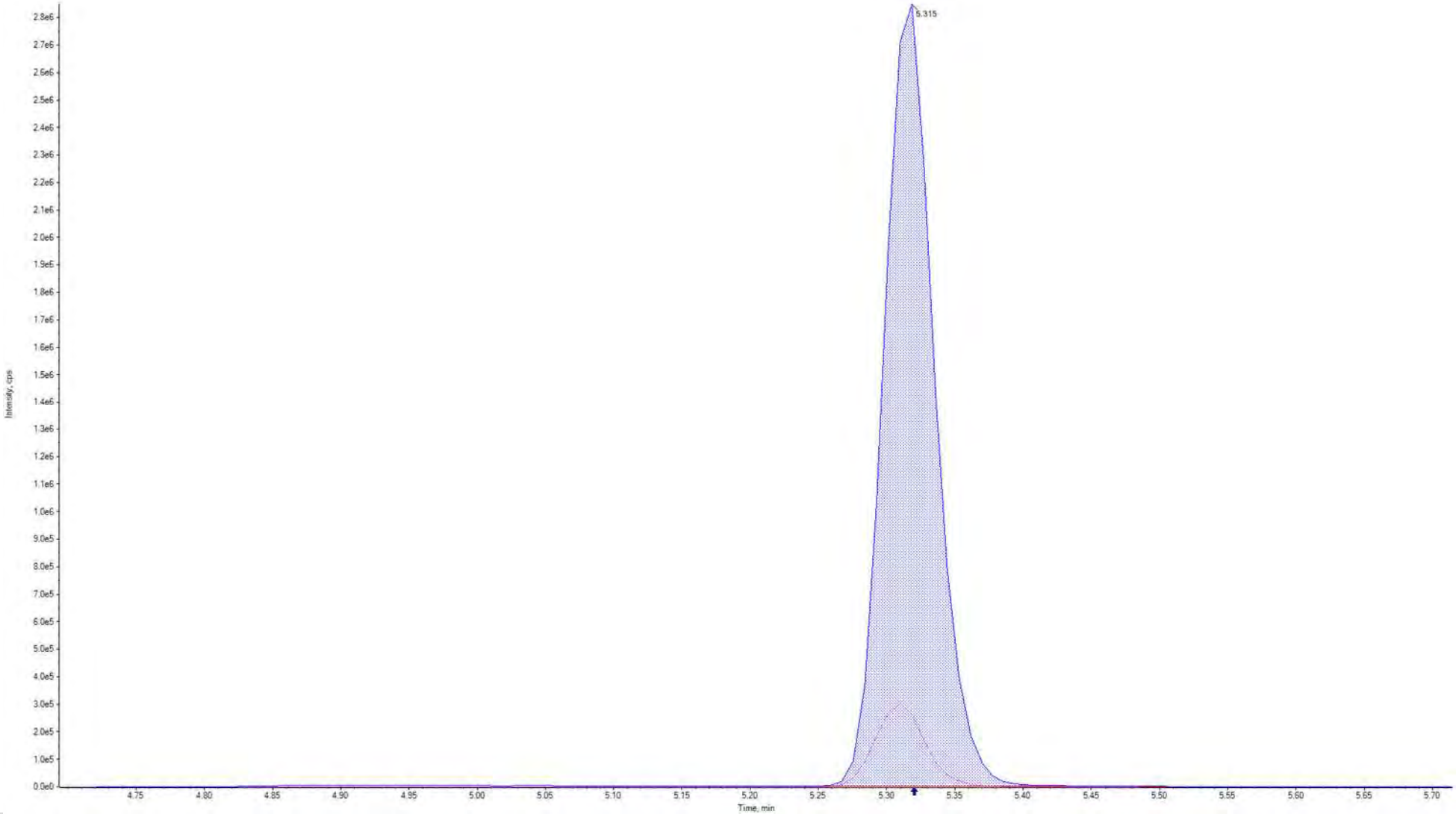
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFTeDA_2
Sample: IA1633STD-25 S/N:23290333.3 Points Across peak:24



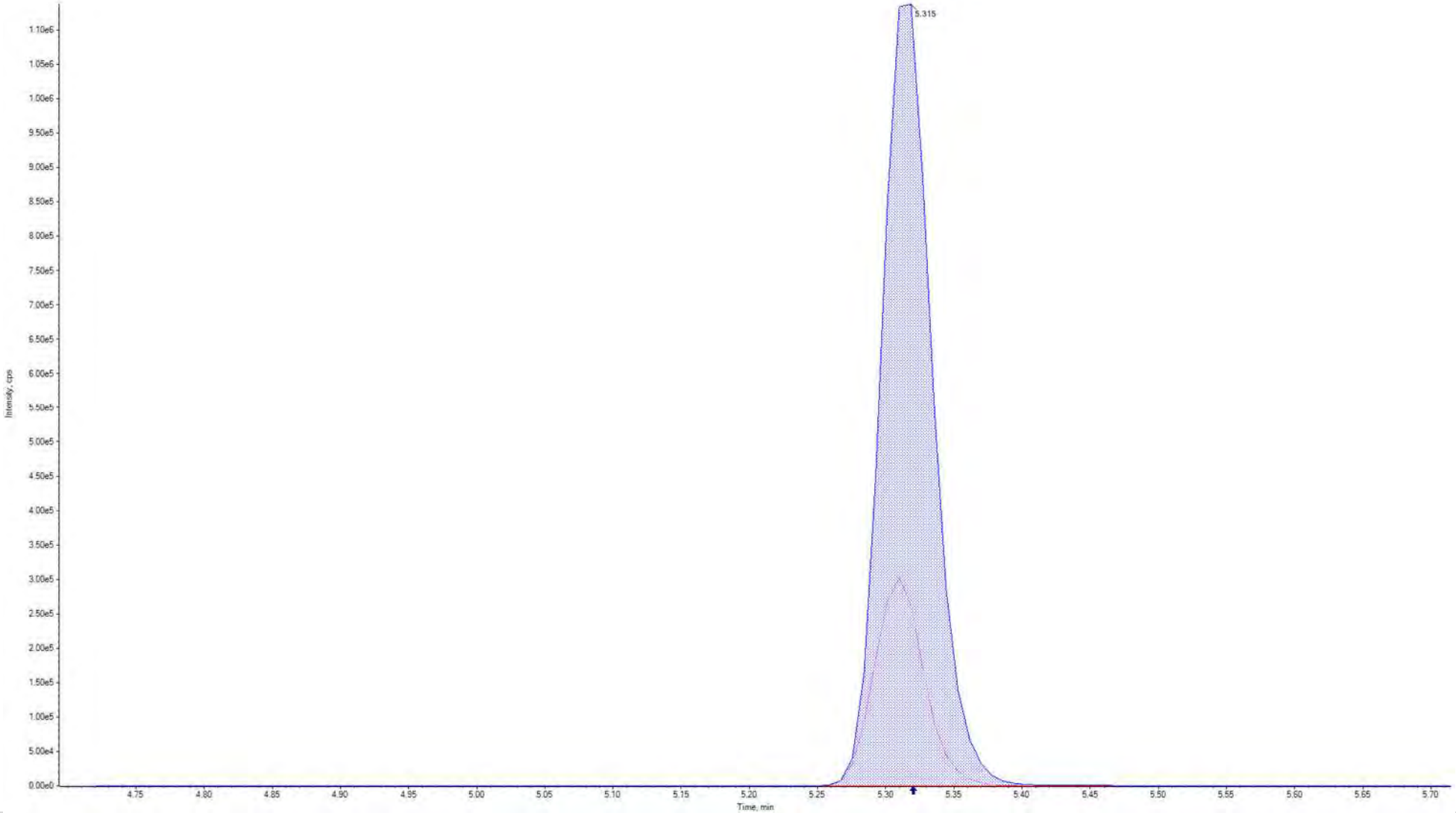
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFBS
Sample: IA1633STD-25 S/N:74.5 Points Across peak:38



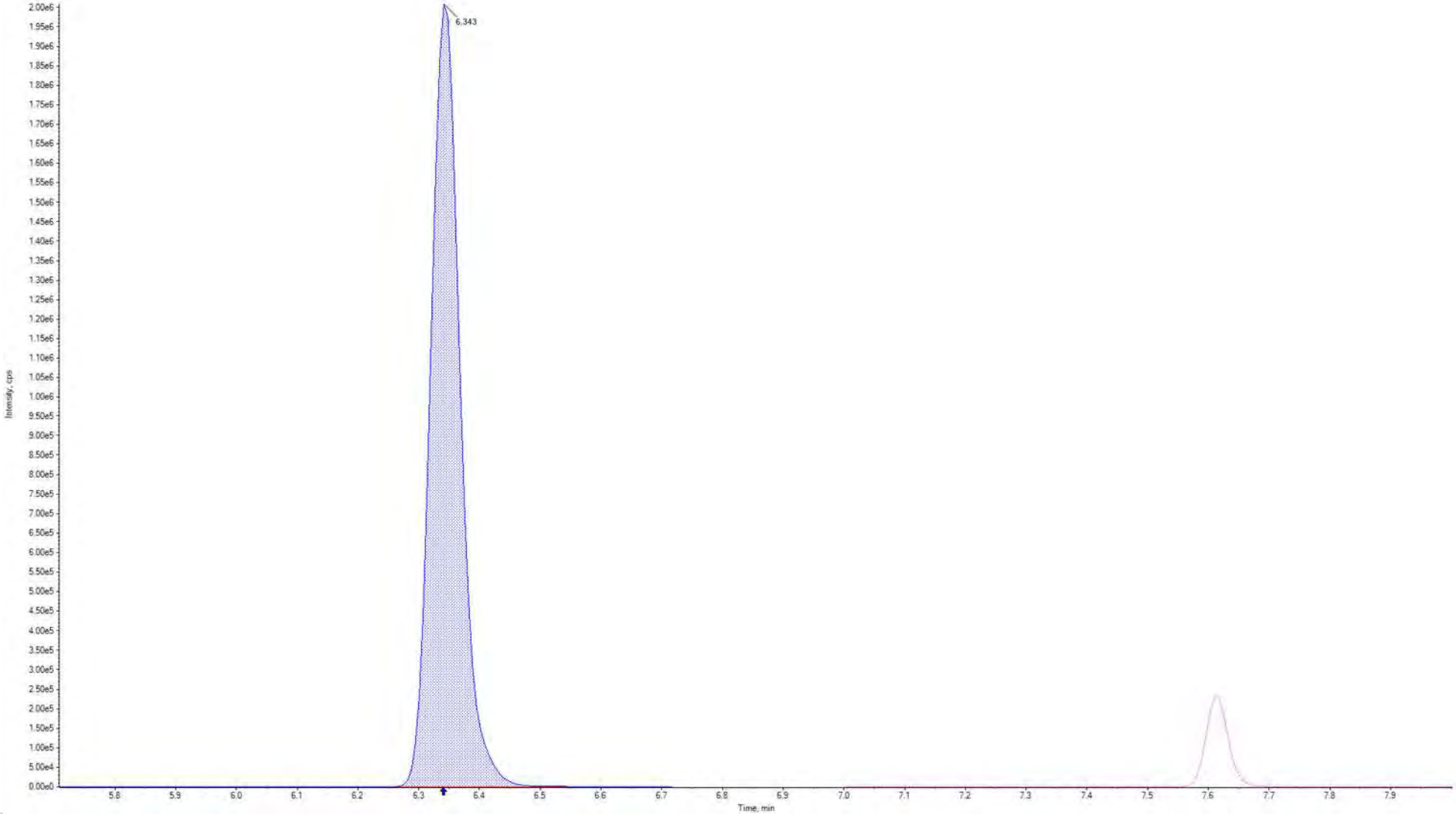
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFBS_2
Sample: IA1633STD-25 S/N:7613.1 Points Across peak:32



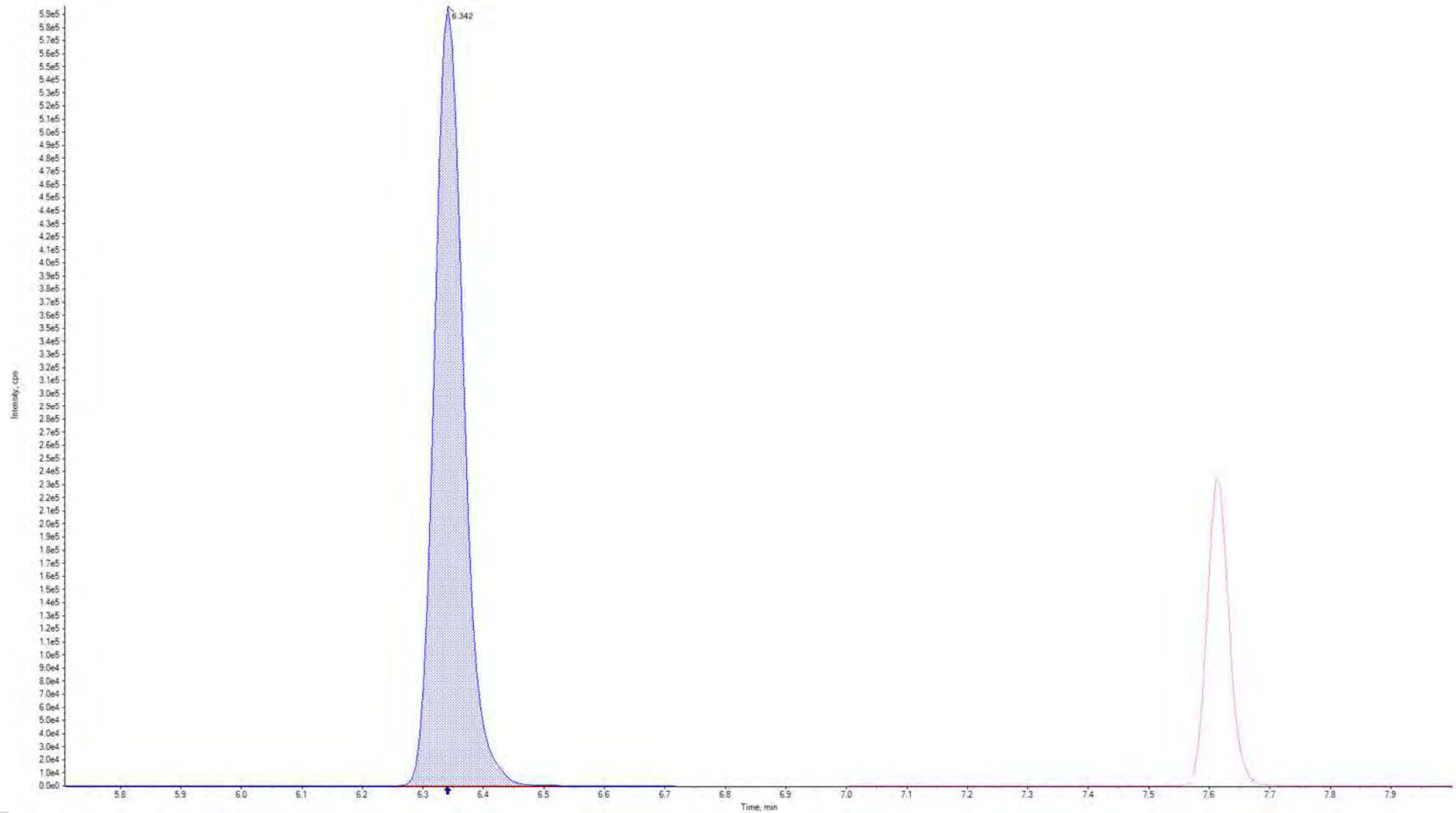
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFPeS
Sample: IA1633STD-25 S/N:18343.2 Points Across peak:58



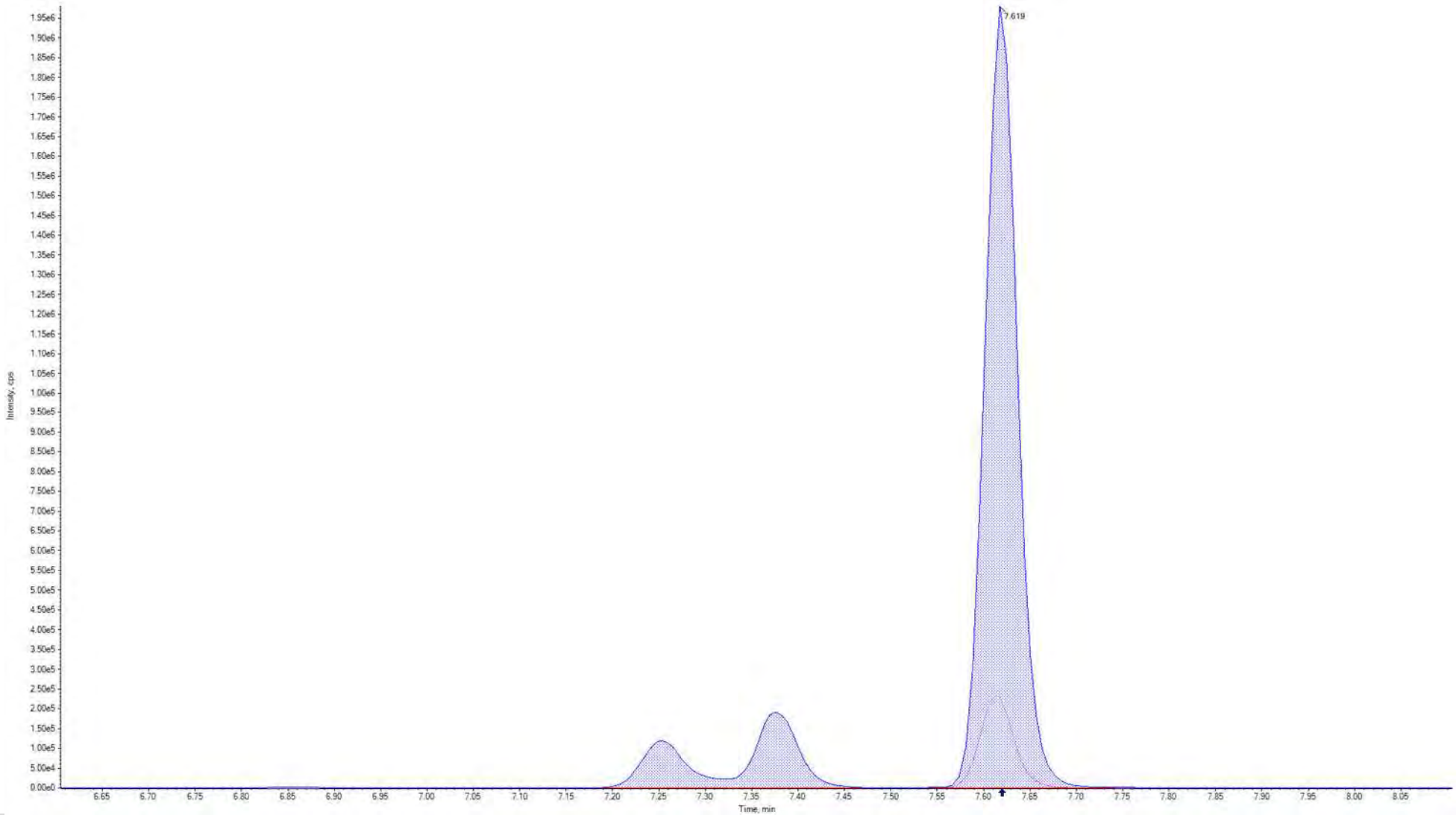
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFPeS_2
Sample: IA1633STD-25 S/N:29784.6 Points Across peak:61



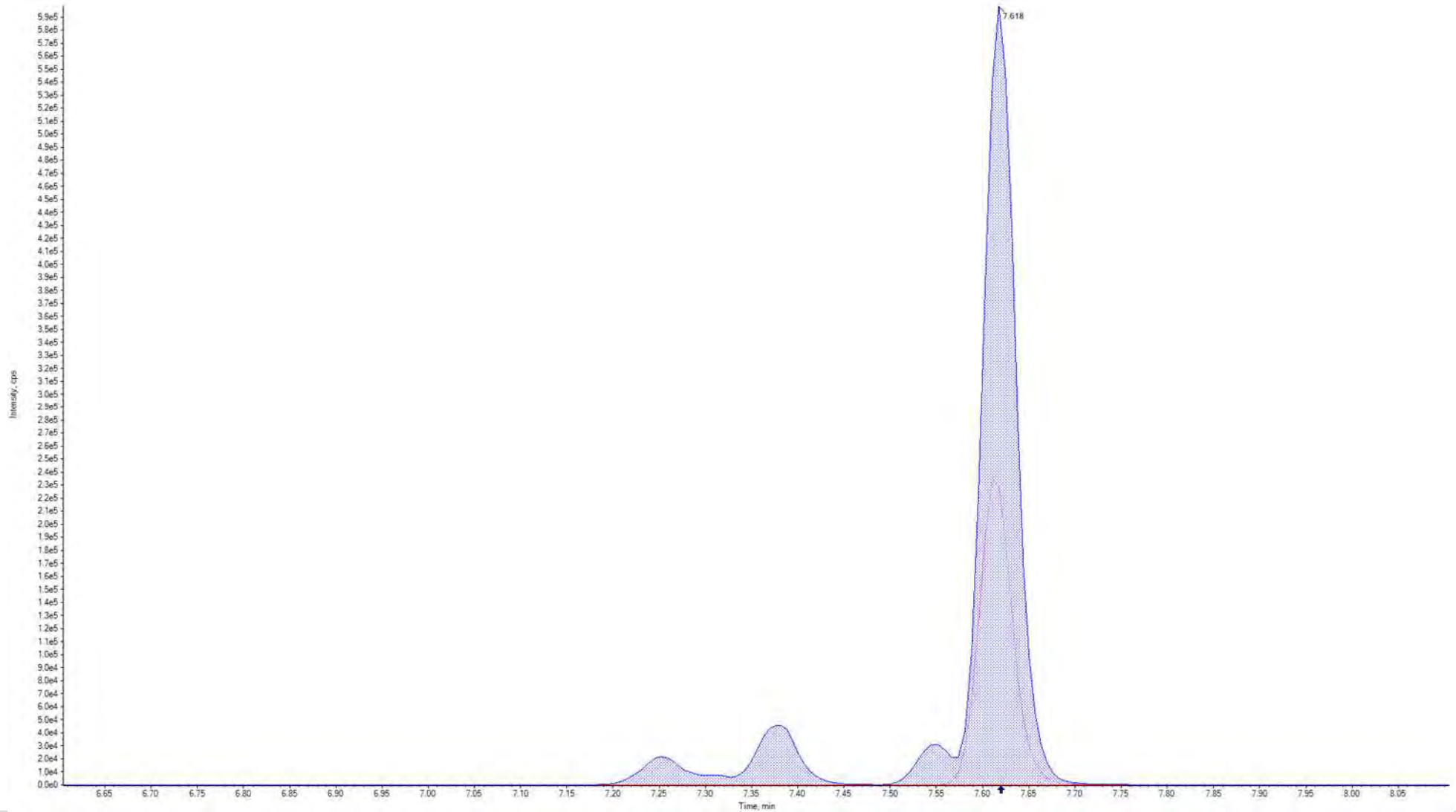
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFHxS
Sample: IA1633STD-25 S/N:40237.0 Points Across peak:91



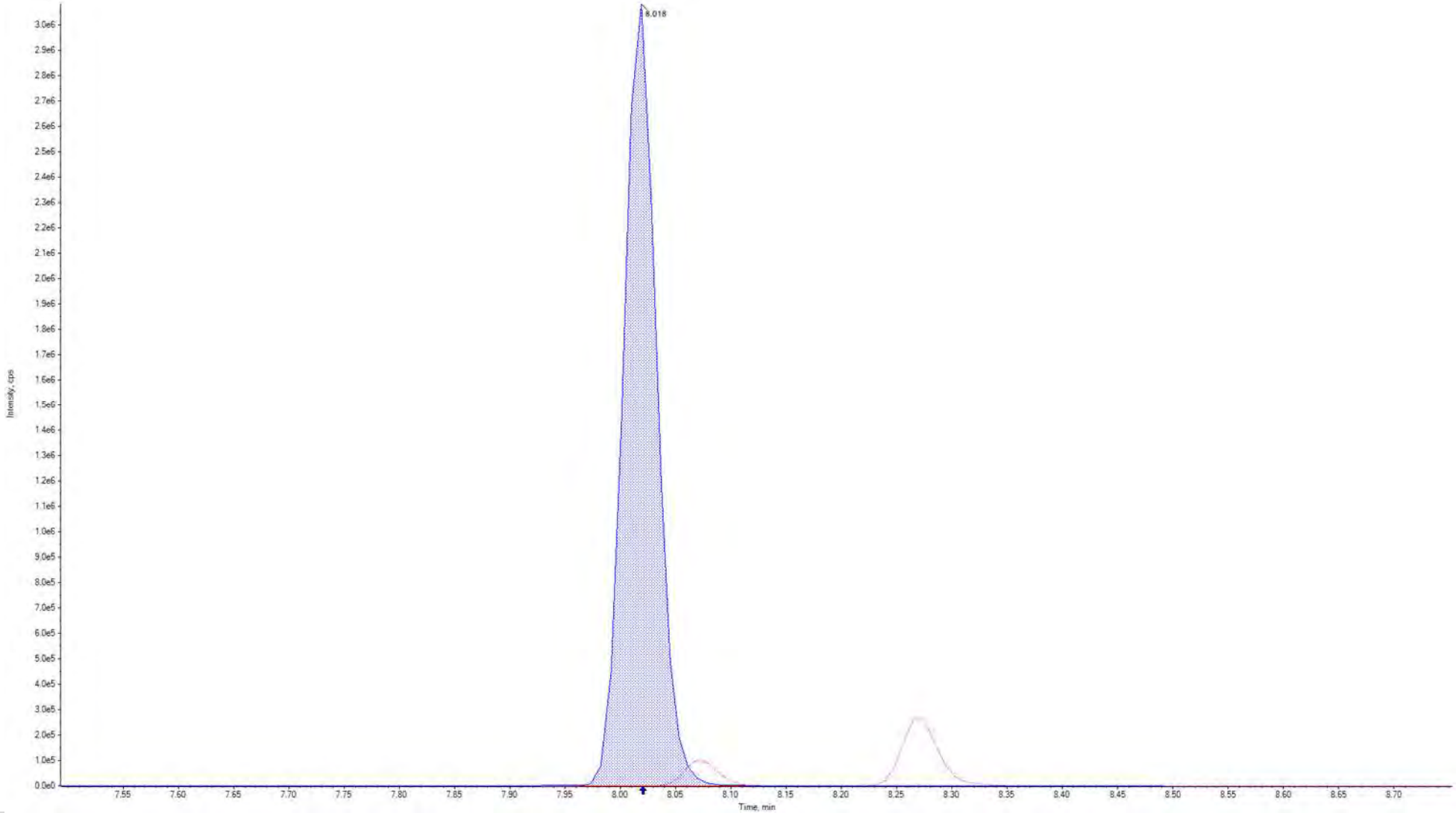
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFHxS_2
Sample: IA1633STD-25 S/N:62008941.1 Points Across peak:95



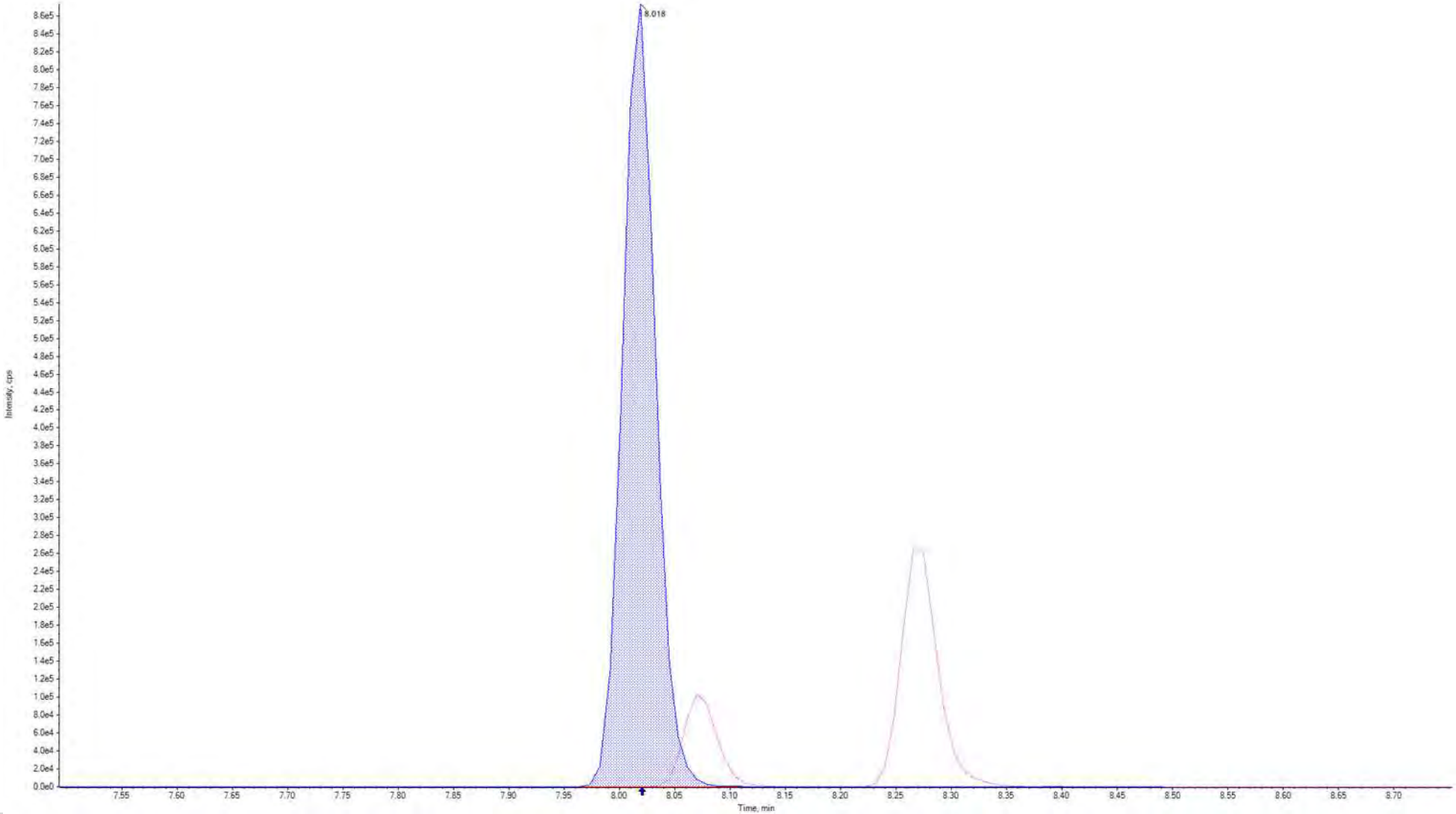
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFHpS
Sample: IA1633STD-25 S/N:22541.3 Points Across peak:32



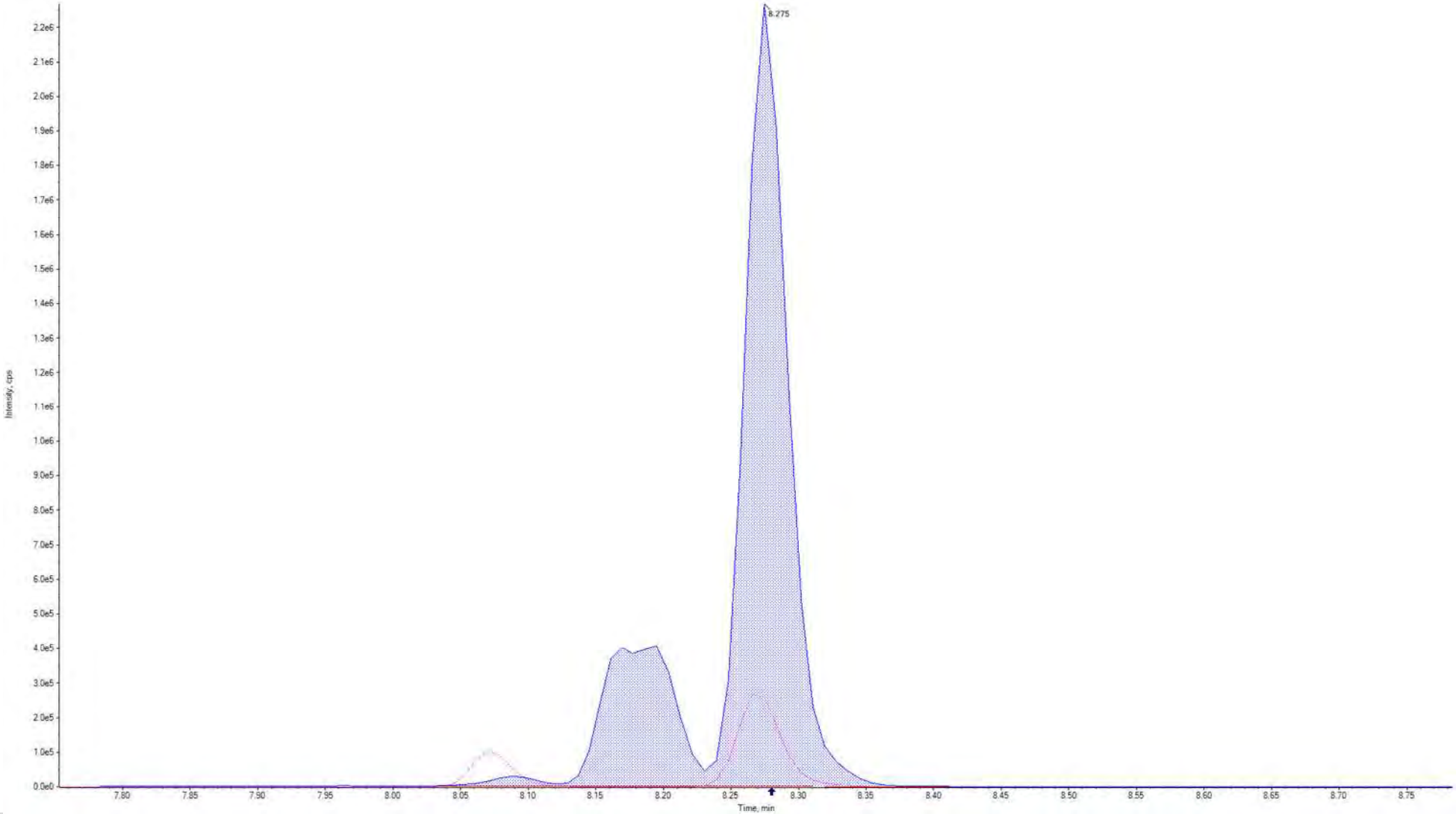
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFHpS_2
Sample: IA1633STD-25 S/N:4801.2 Points Across peak:20



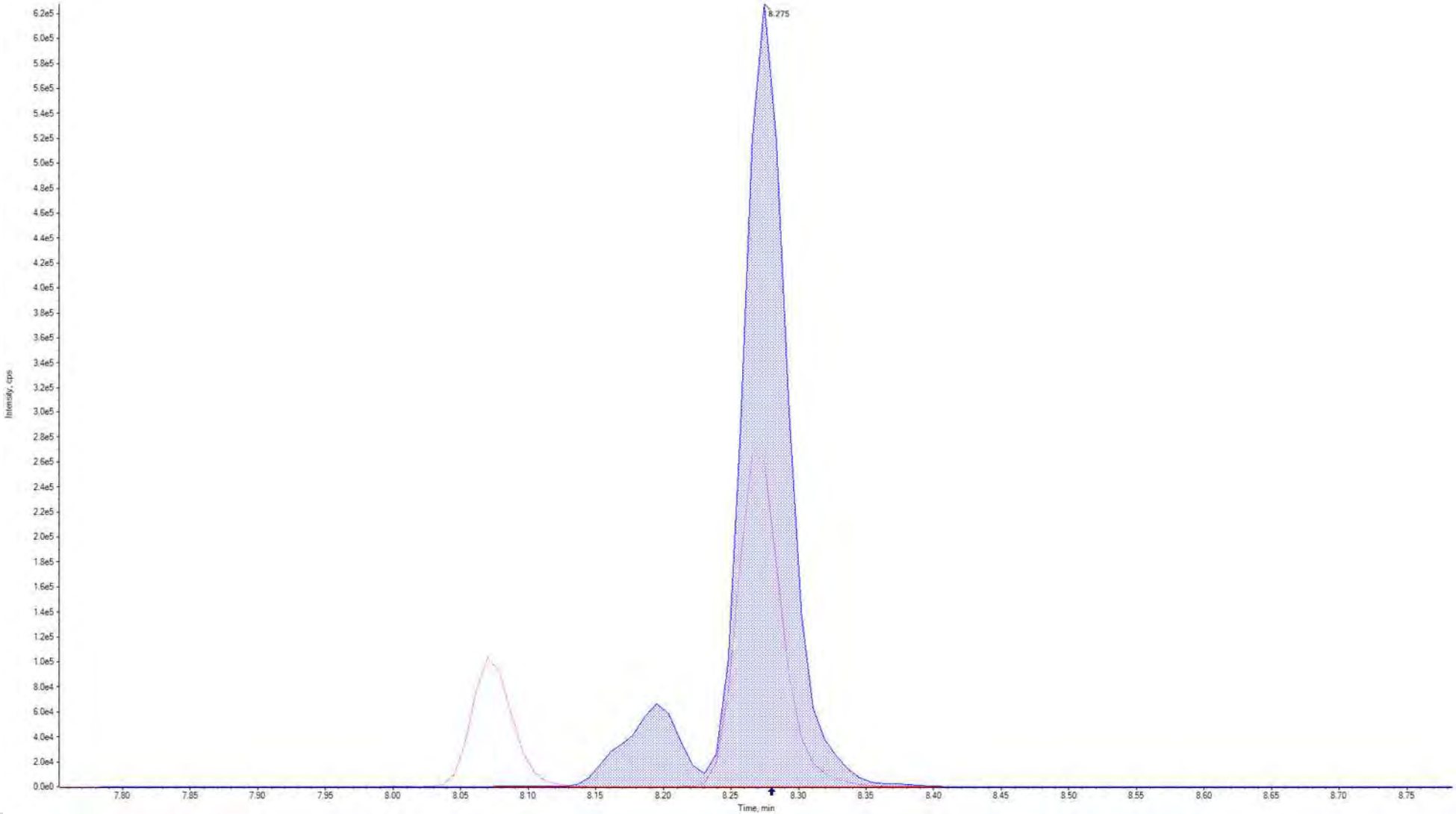
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOS
Sample: IA1633STD-25 S/N:4127.9 Points Across peak:54



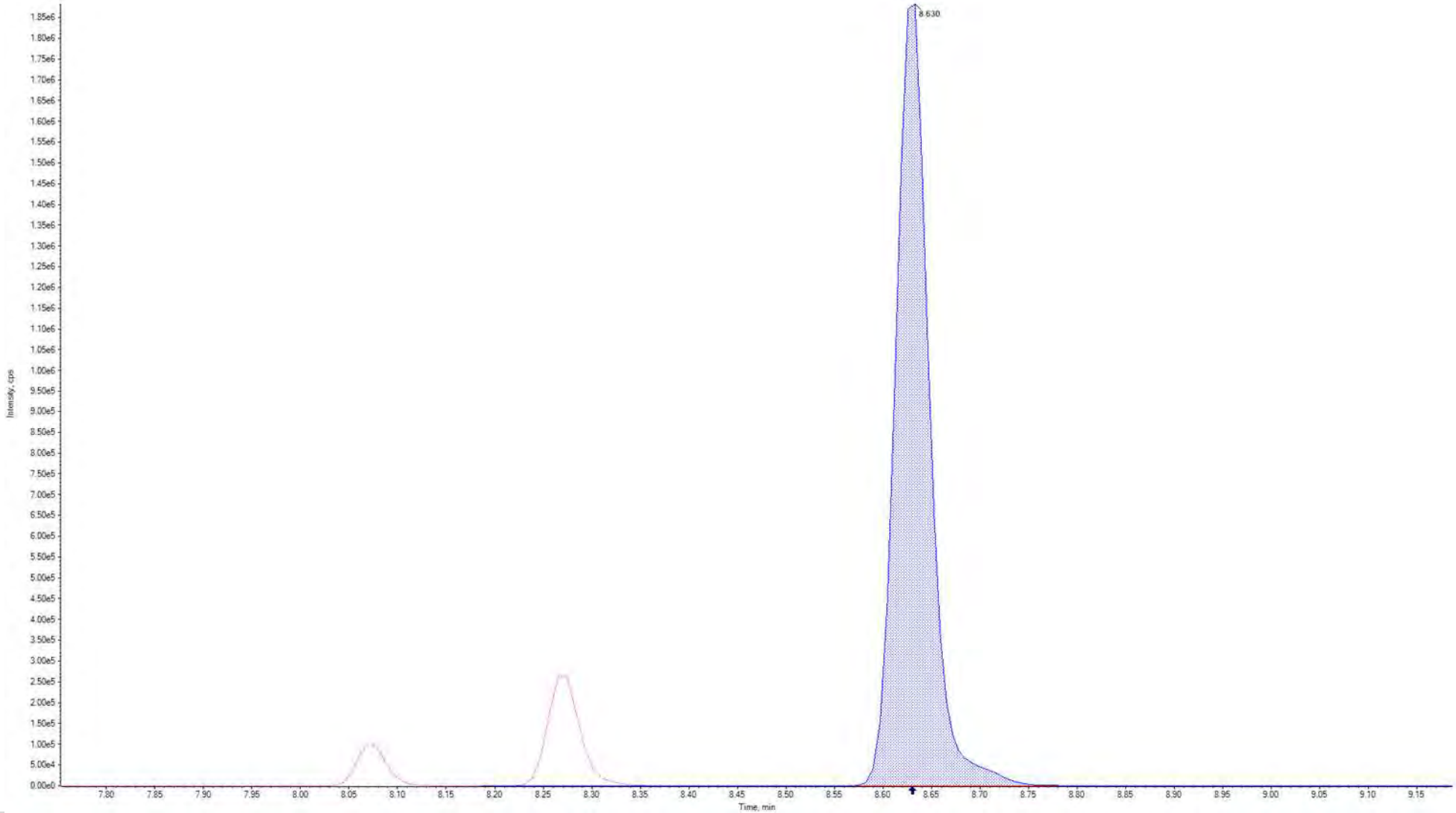
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOS_2
Sample: IA1633STD-25 S/N:3157.8 Points Across peak:55



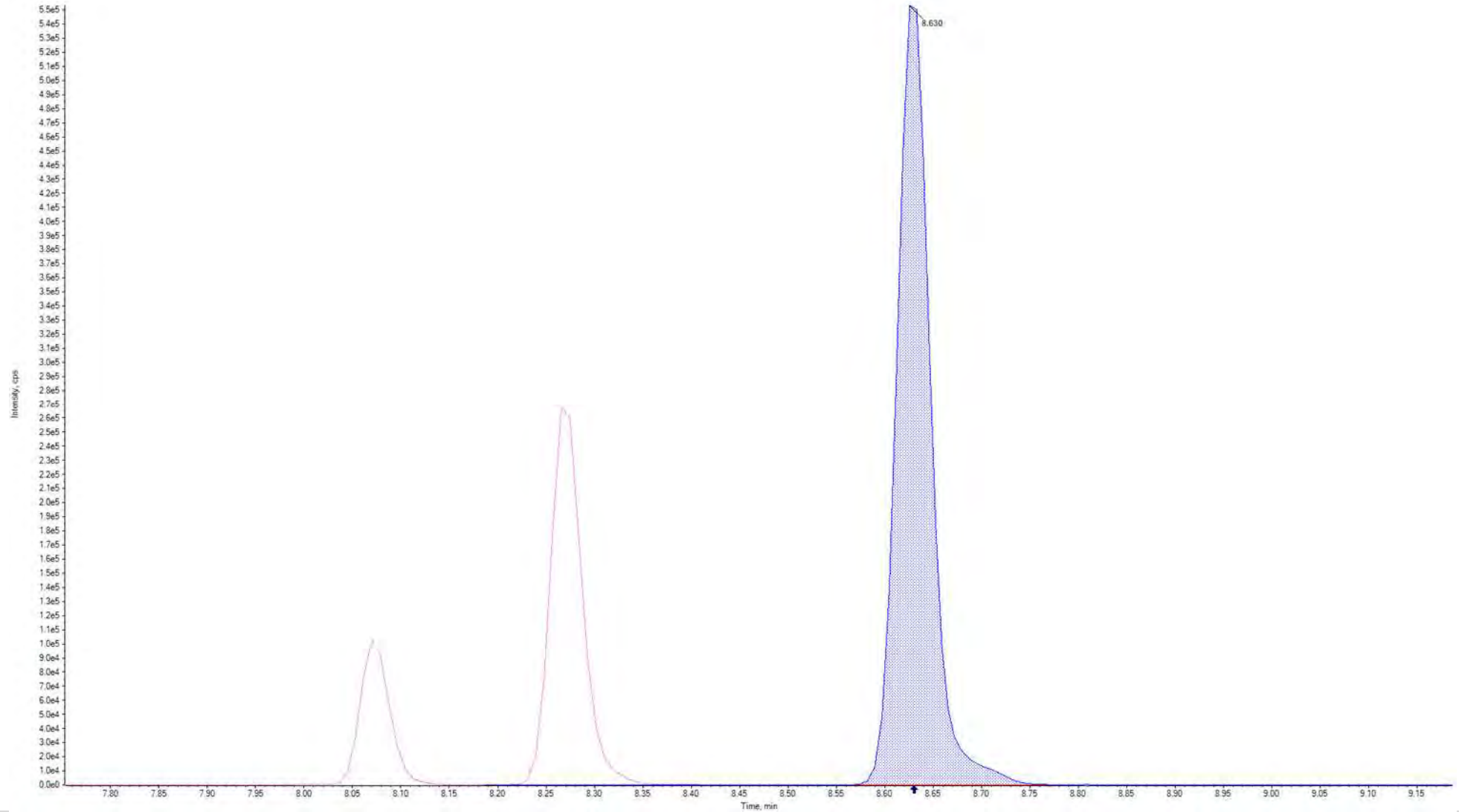
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFNS
Sample: IA1633STD-25 S/N:18060.5 Points Across peak:47



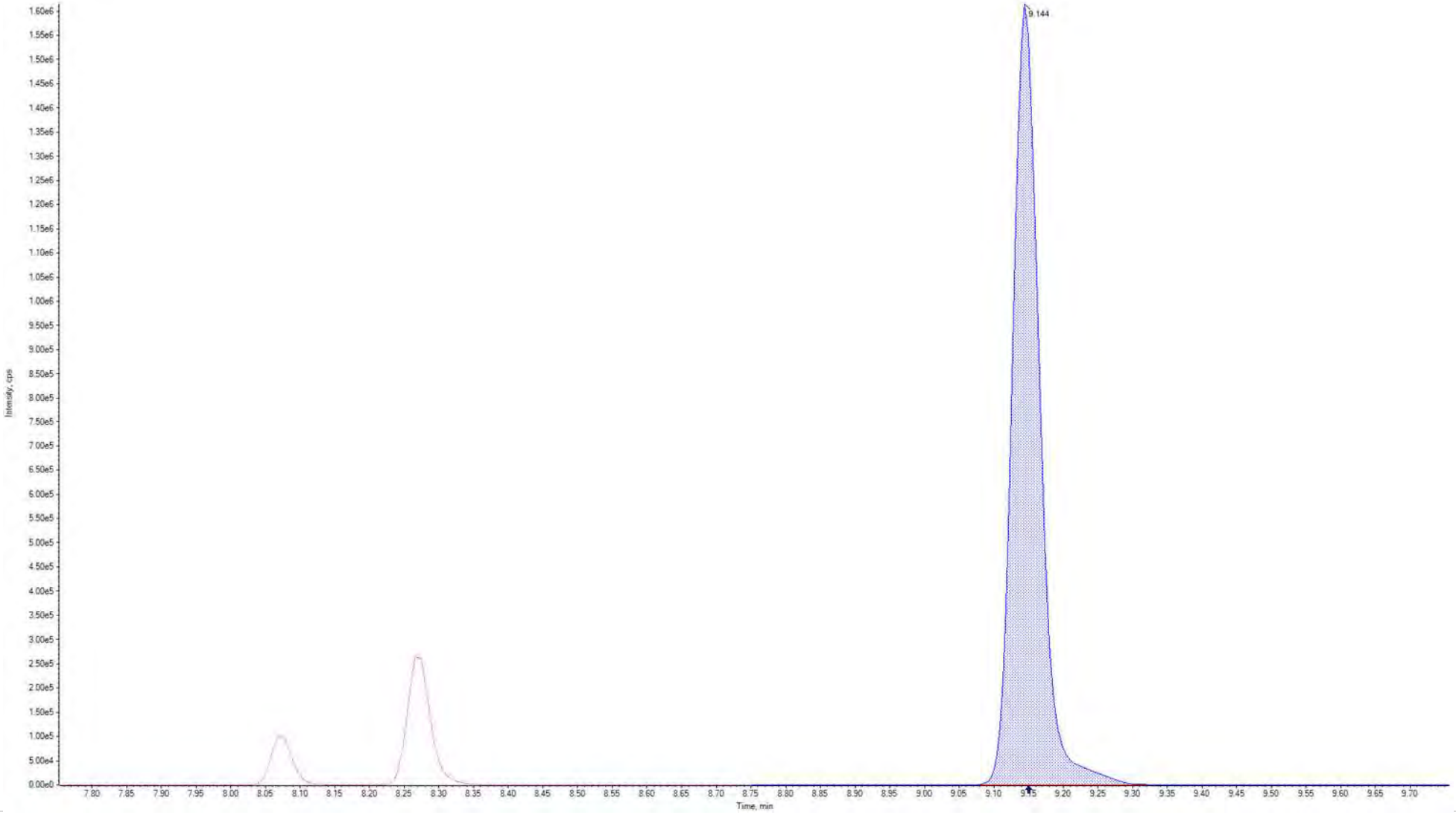
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFNS_2
Sample: IA1633STD-25 S/N:3606325.5 Points Across peak:39



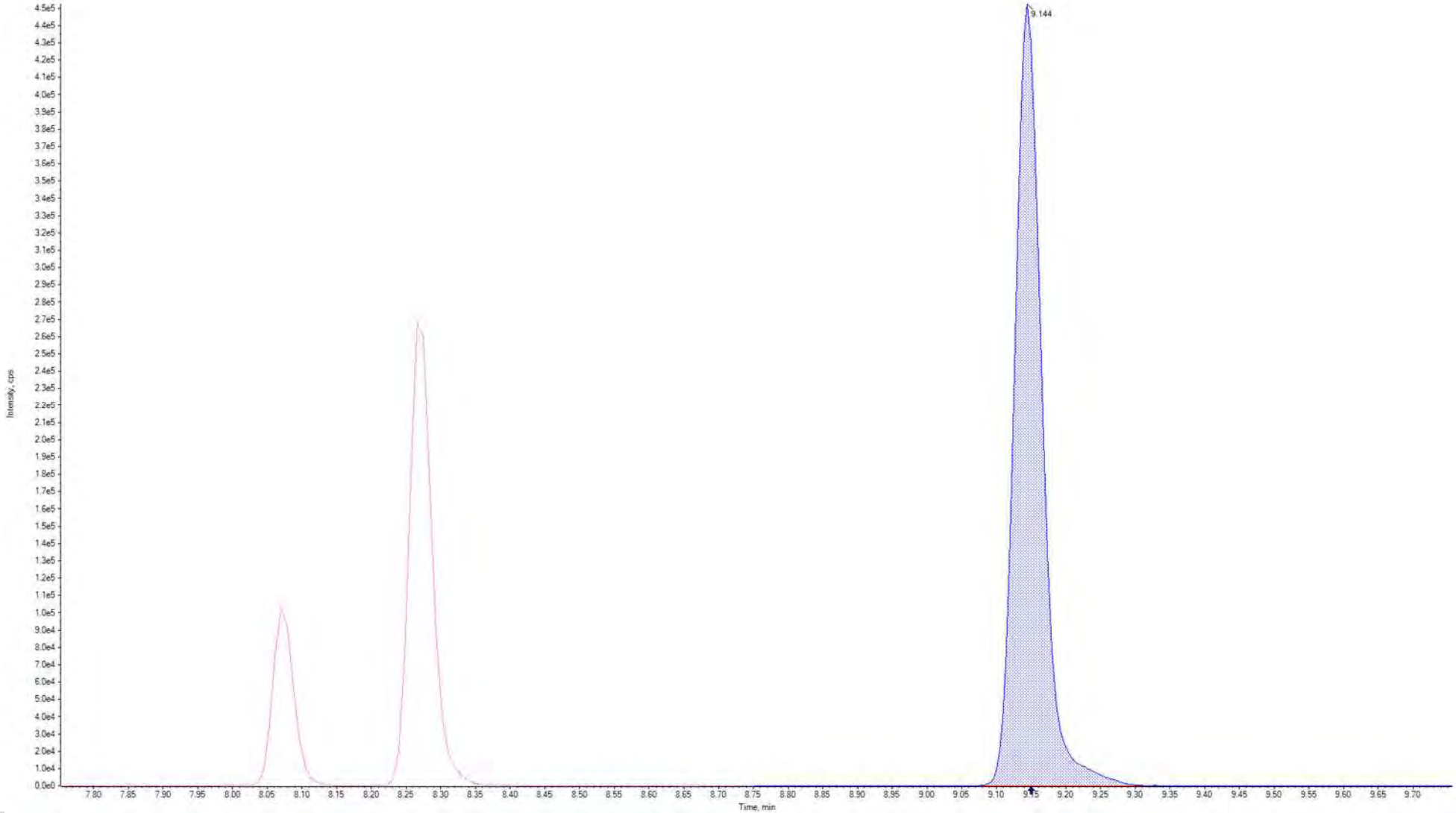
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDS
Sample: IA1633STD-25 S/N:27974.5 Points Across peak:58



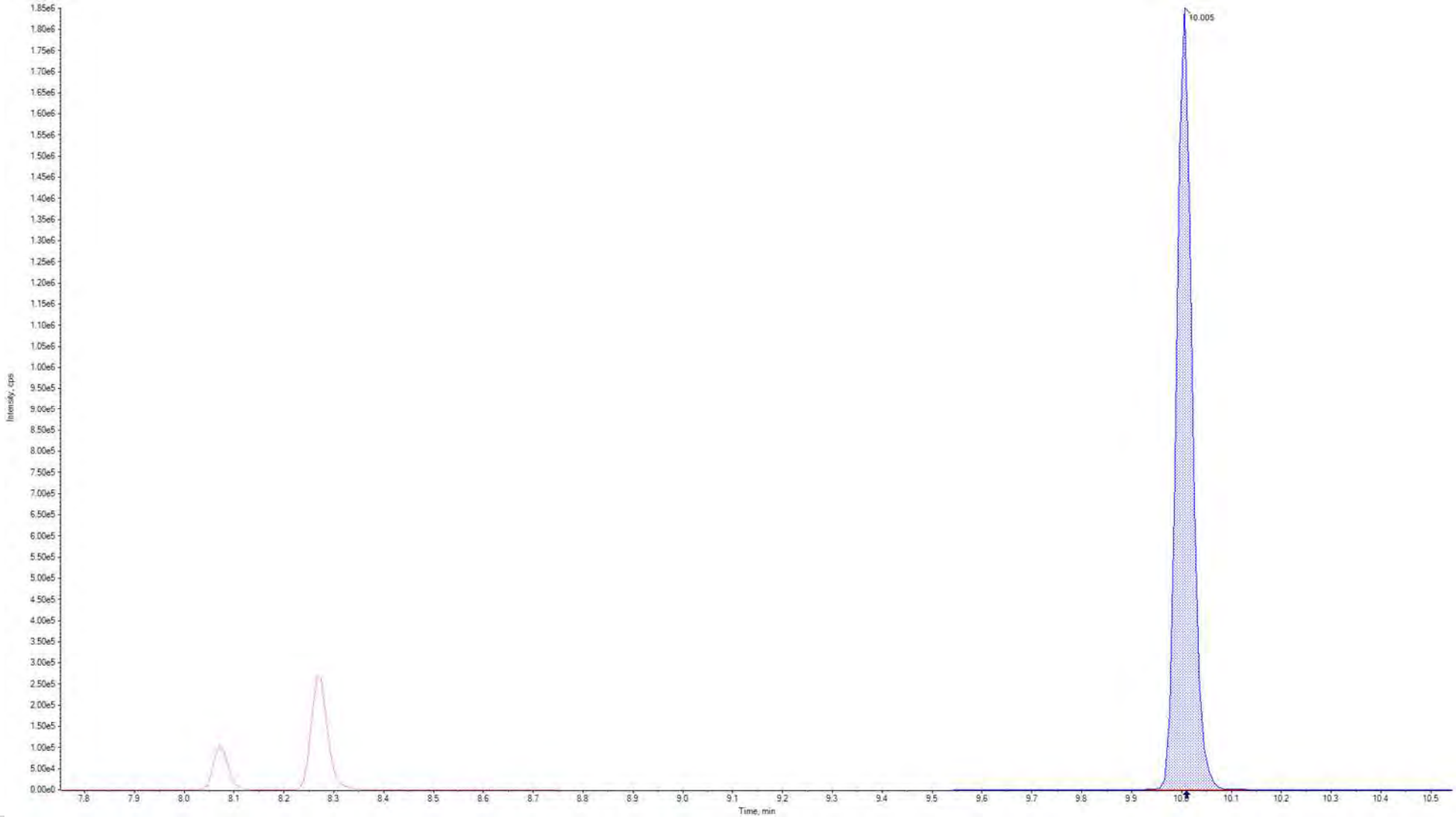
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDS_2
Sample: IA1633STD-25 S/N:737644.8 Points Across peak:52



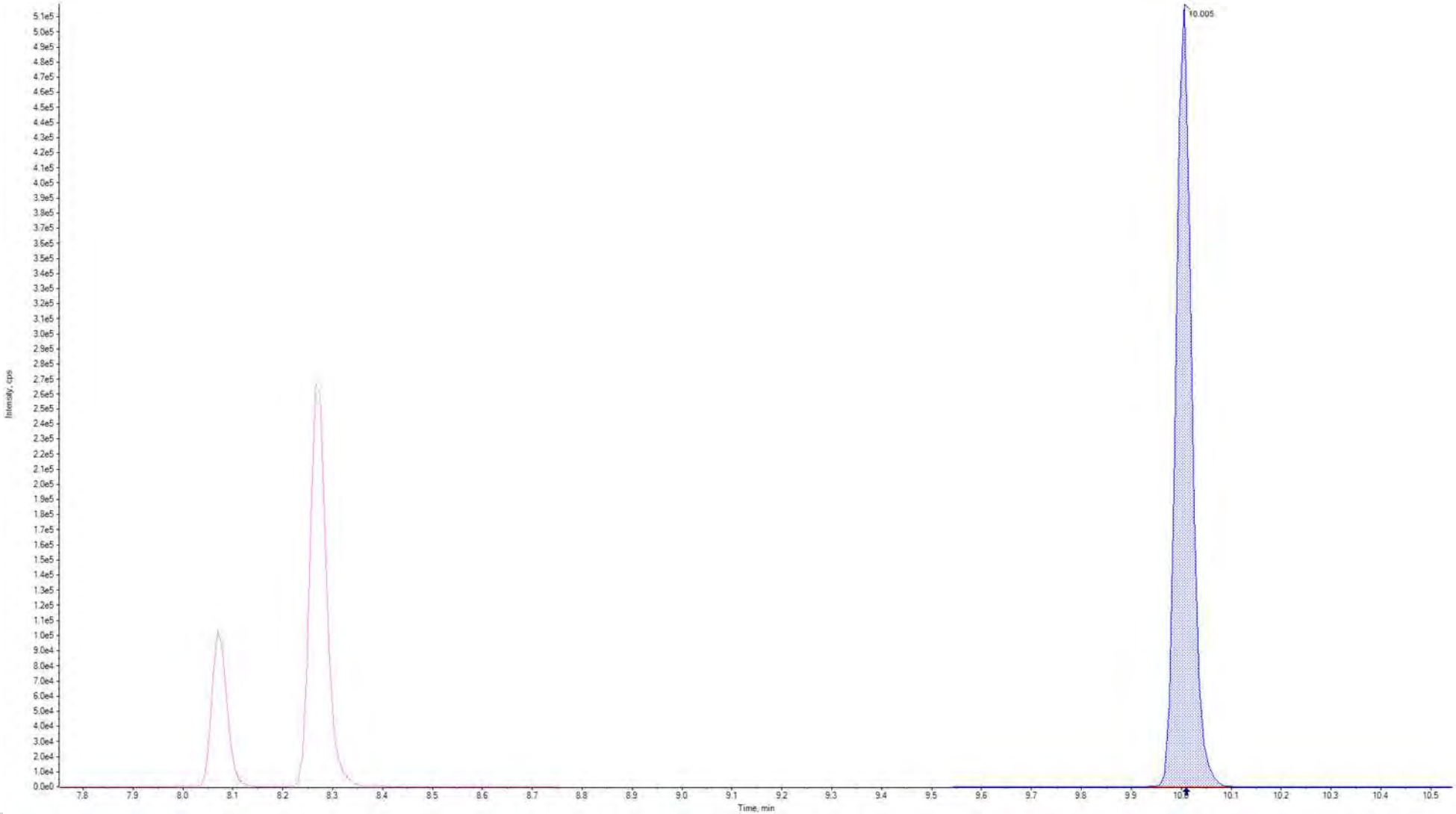
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDoS
Sample: IA1633STD-25 S/N:102419.8 Points Across peak:34



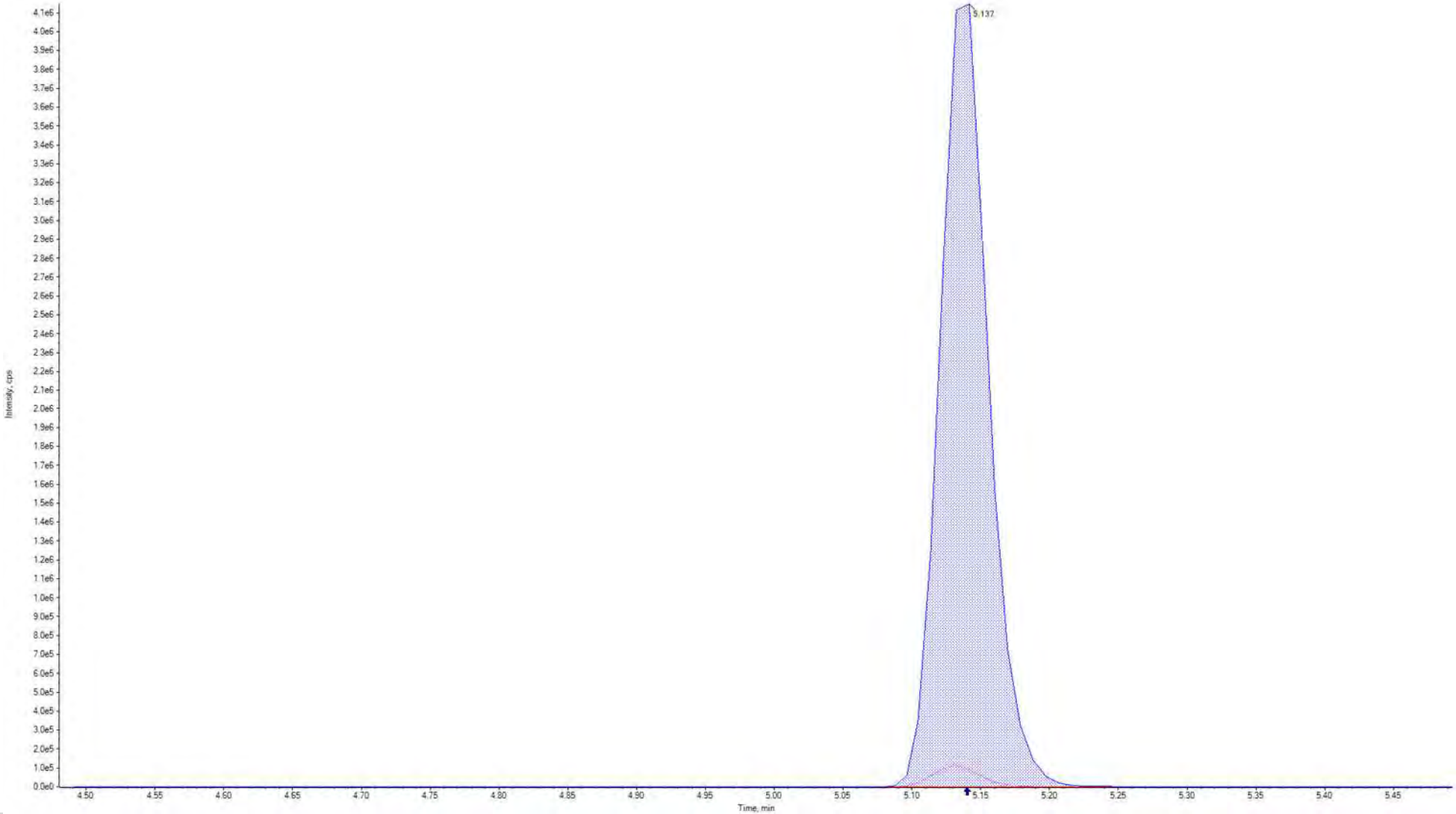
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDoS_2
Sample: IA1633STD-25 S/N:5762.5 Points Across peak:29



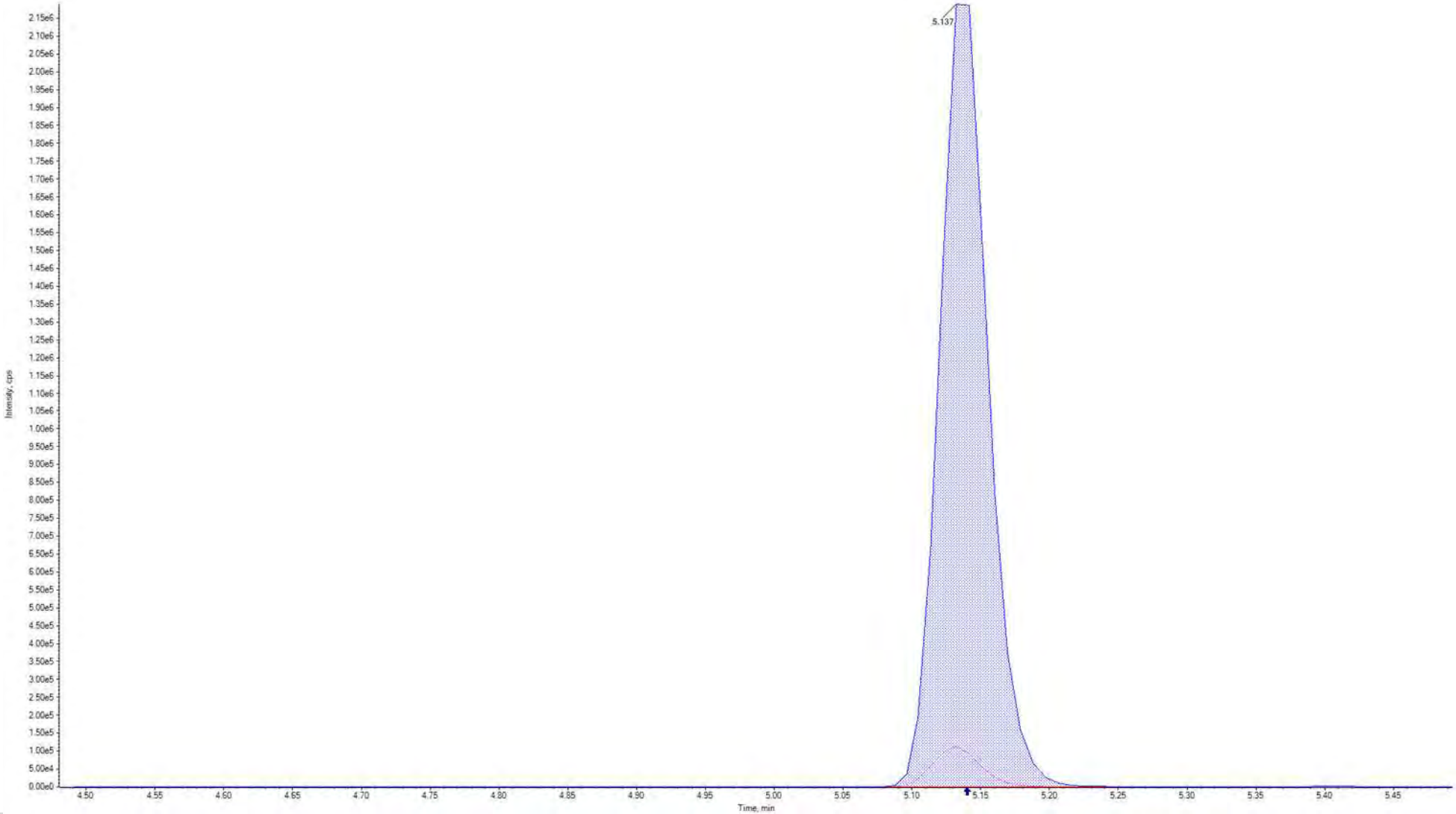
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

4:2FTS
Sample: IA1633STD-25 S/N:5795545.9 Points Across peak:24



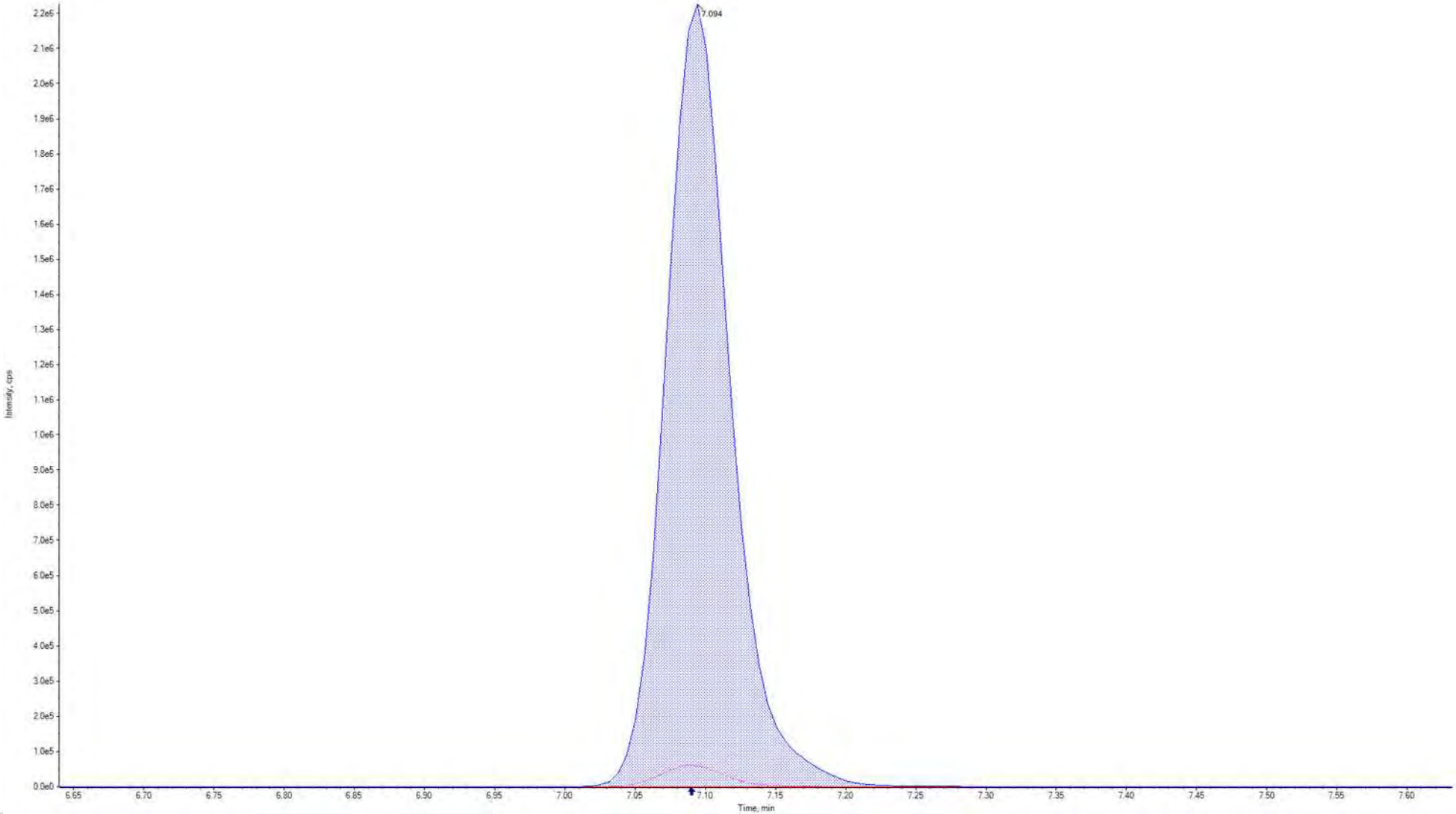
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

4:2FTS_2
Sample: IA1633STD-25 S/N:23388.7 Points Across peak:34



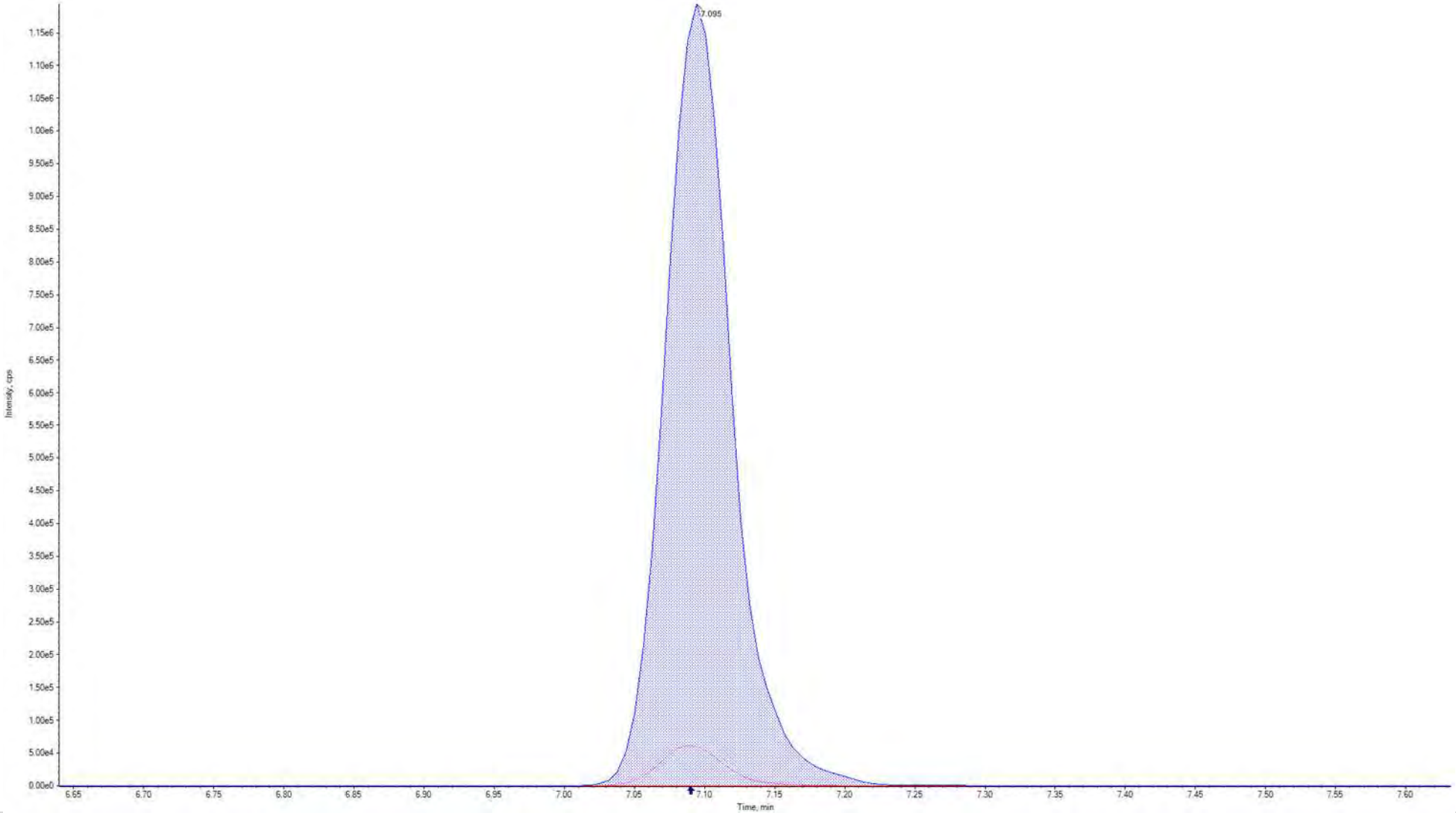
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

6:2FTS
Sample: IA1633STD-25 S/N:4944.1 Points Across peak:51



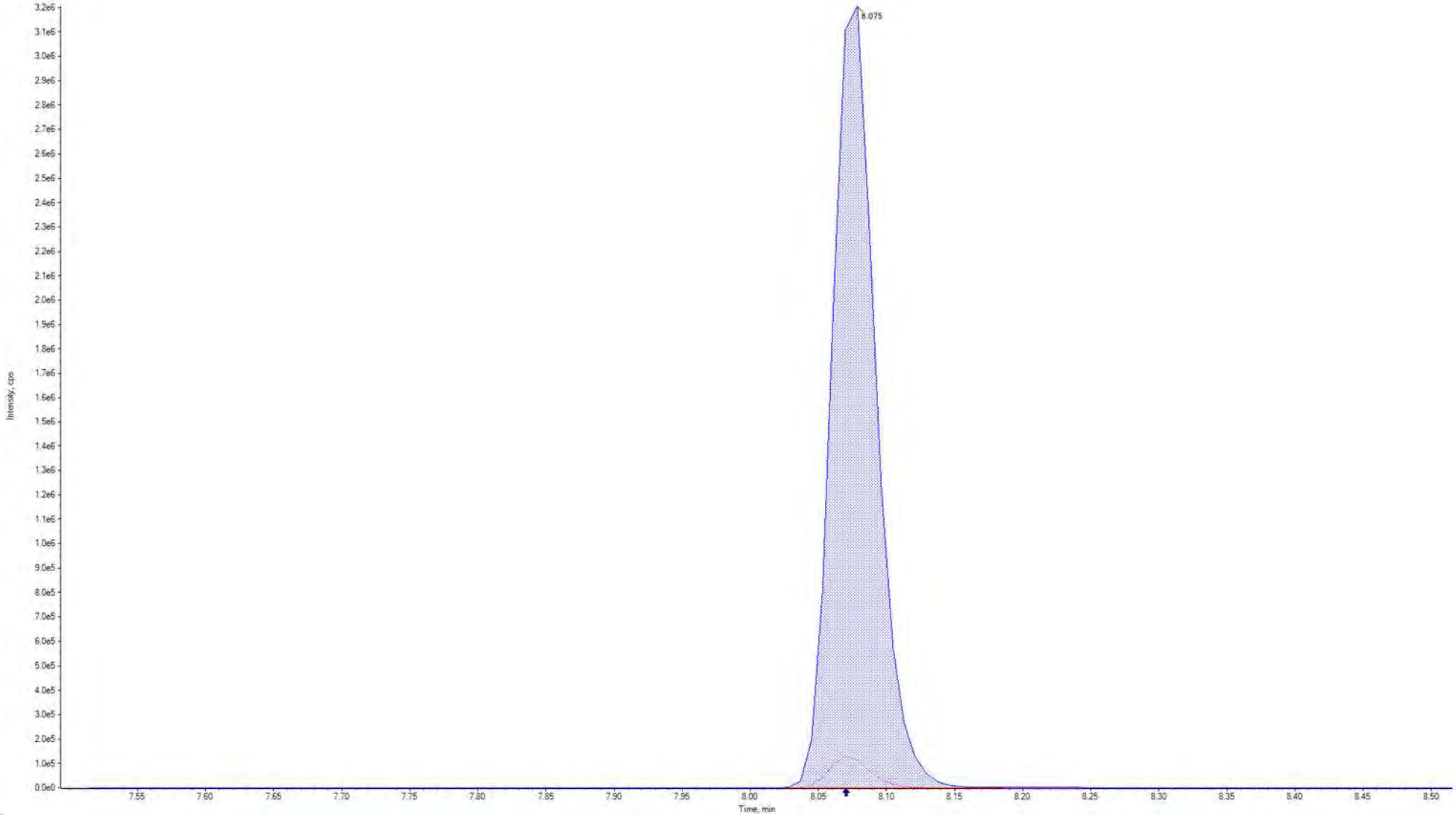
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

6:2FTS_2
Sample: IA1633STD-25 S/N:4386998.4 Points Across peak:52



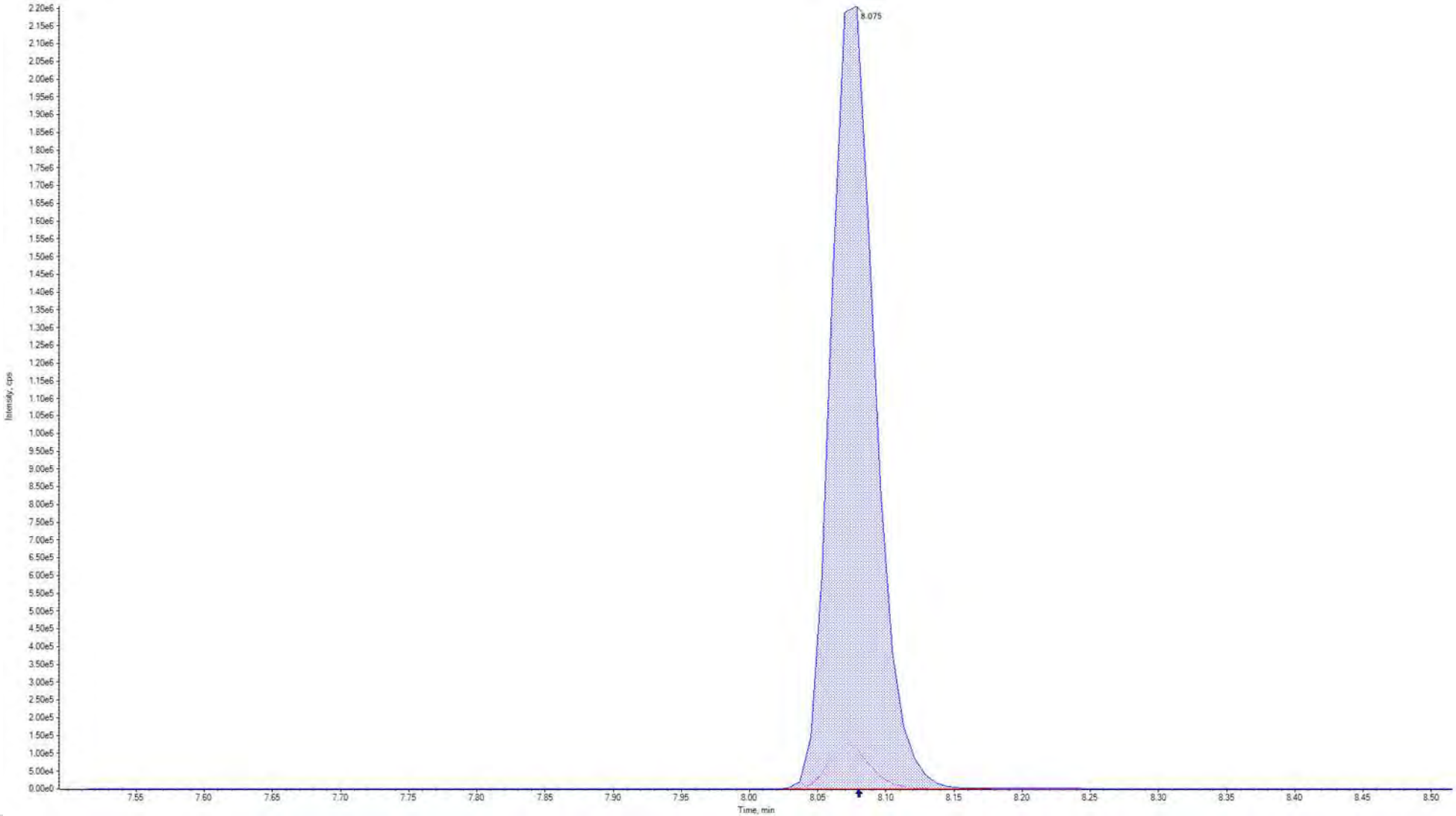
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

8:2FTS
Sample: IA1633STD-25 S/N:7026.9 Points Across peak:22



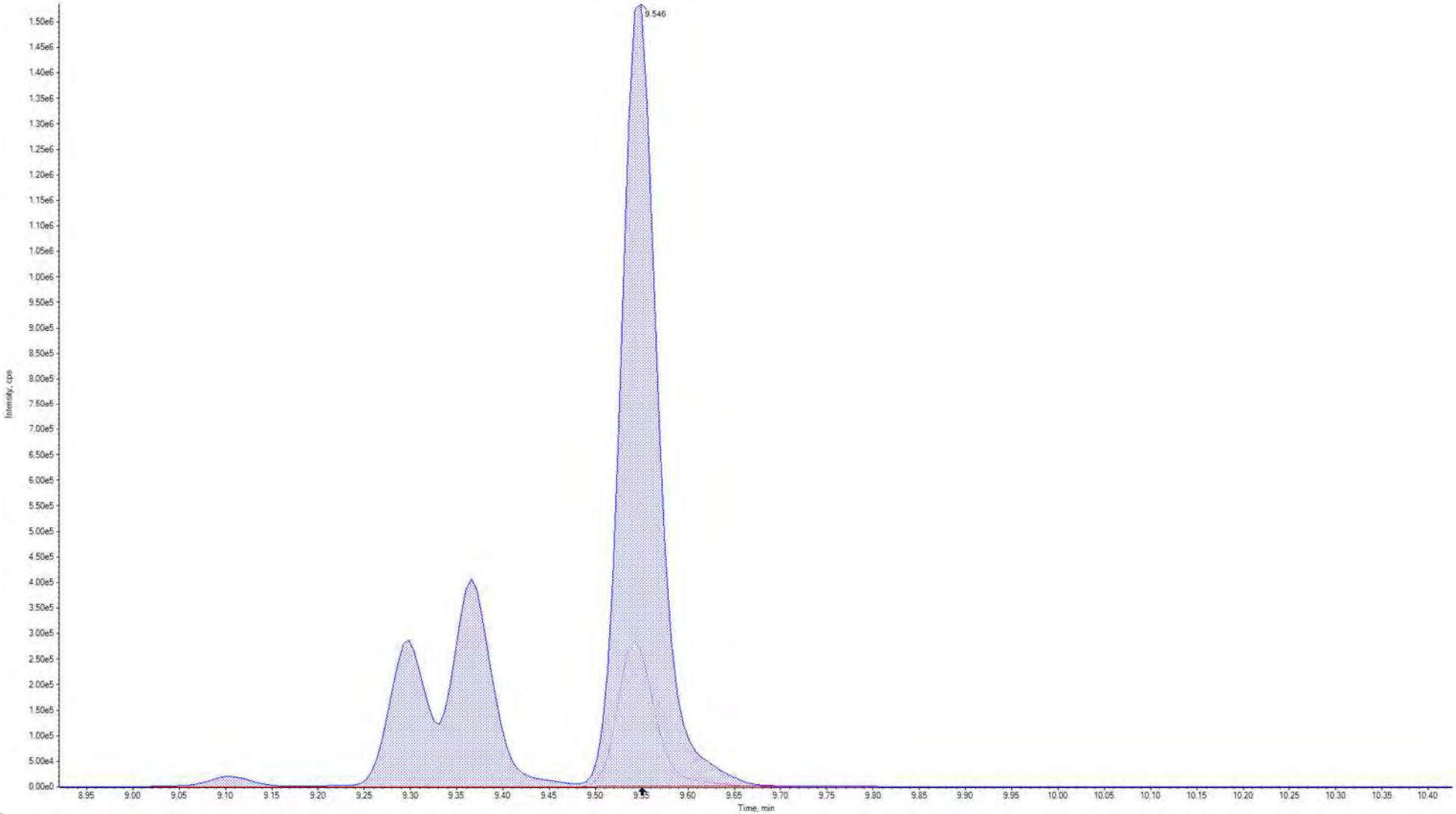
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

8:2FTS_2
Sample: IA1633STD-25 S/N:4338.8 Points Across peak:21



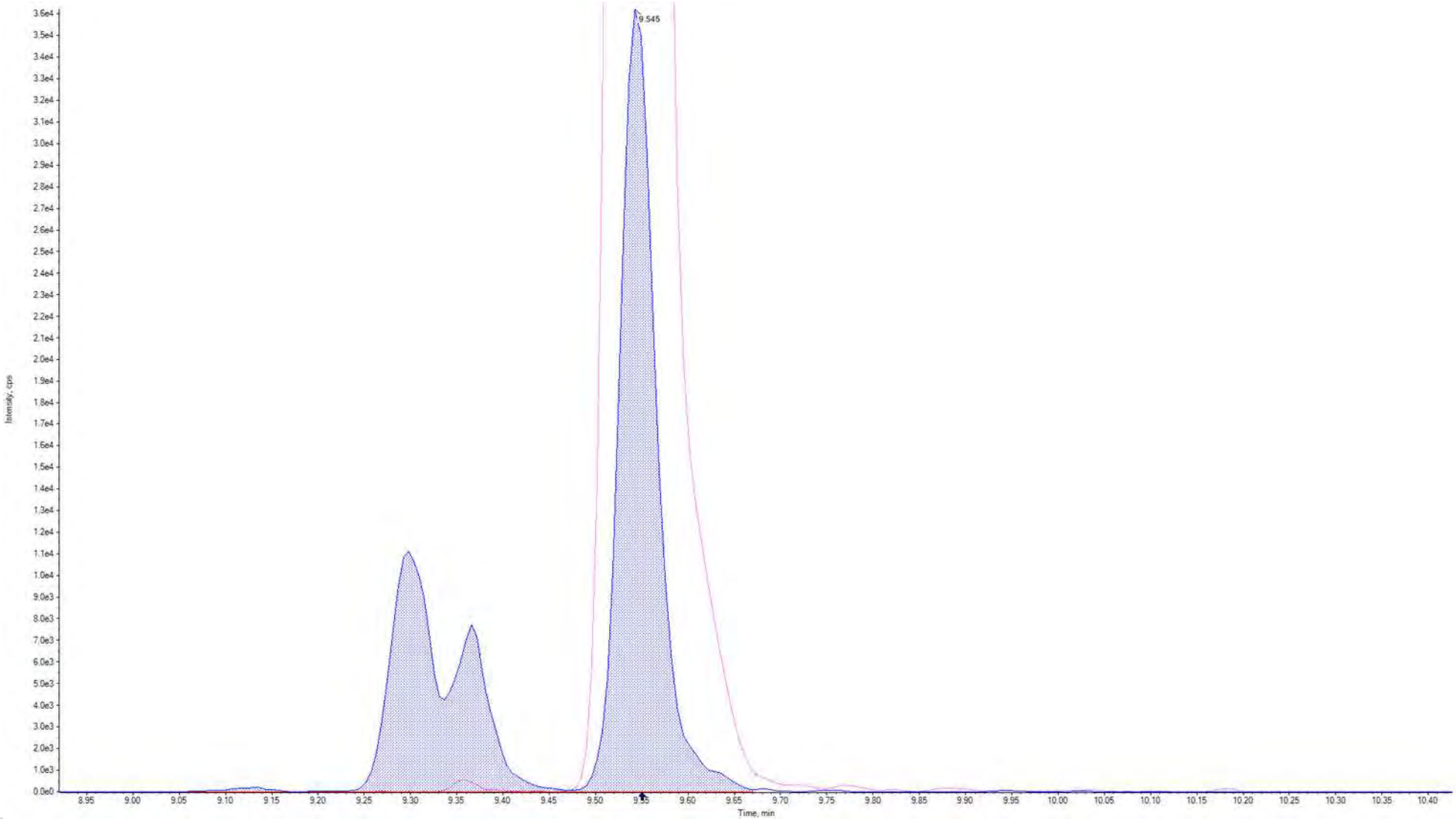
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOSA
Sample: IA1633STD-25 S/N:86873.1 Points Across peak:130



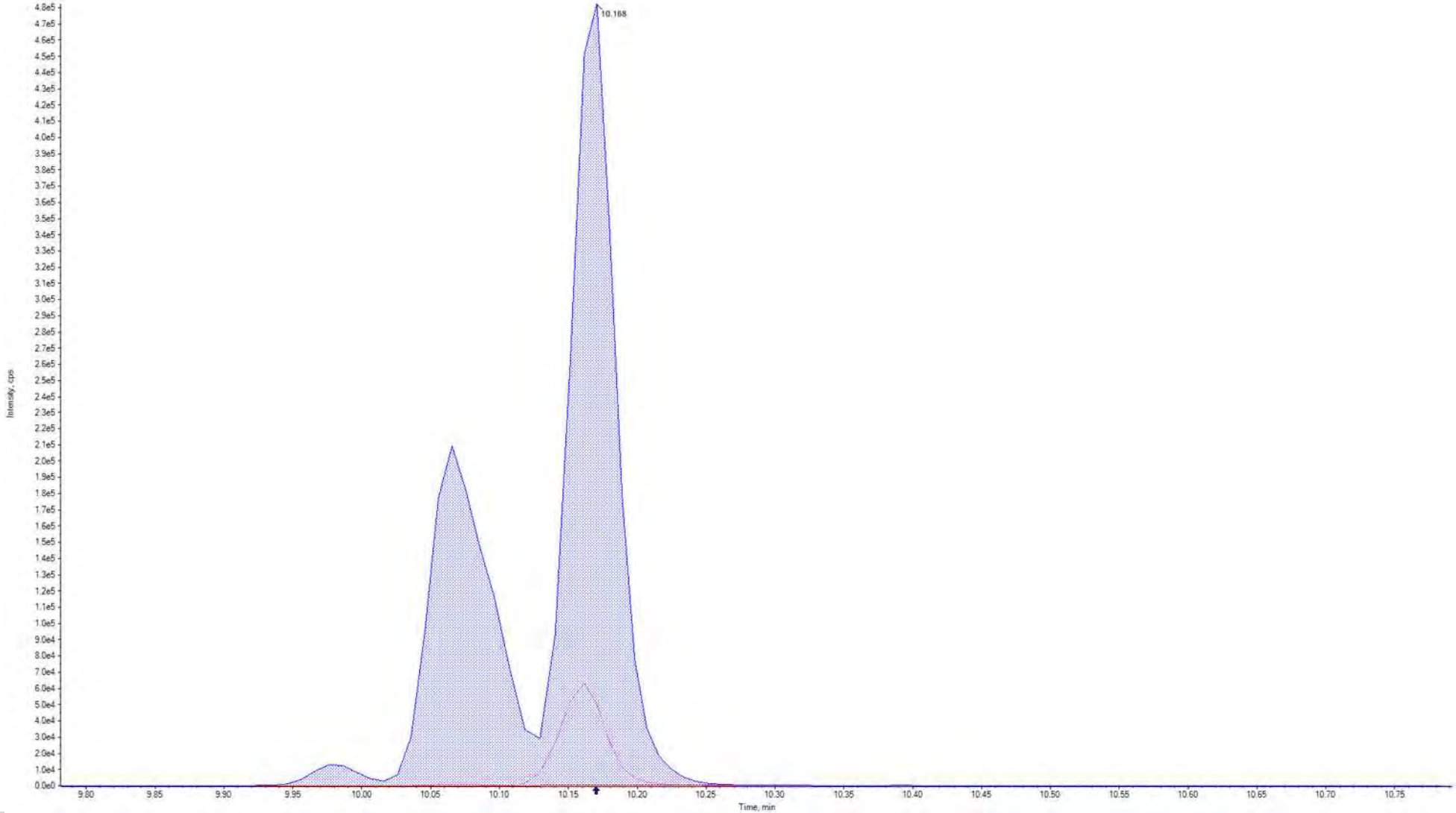
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOSA_2
Sample: IA1633STD-25 S/N:1235.2 Points Across peak:111



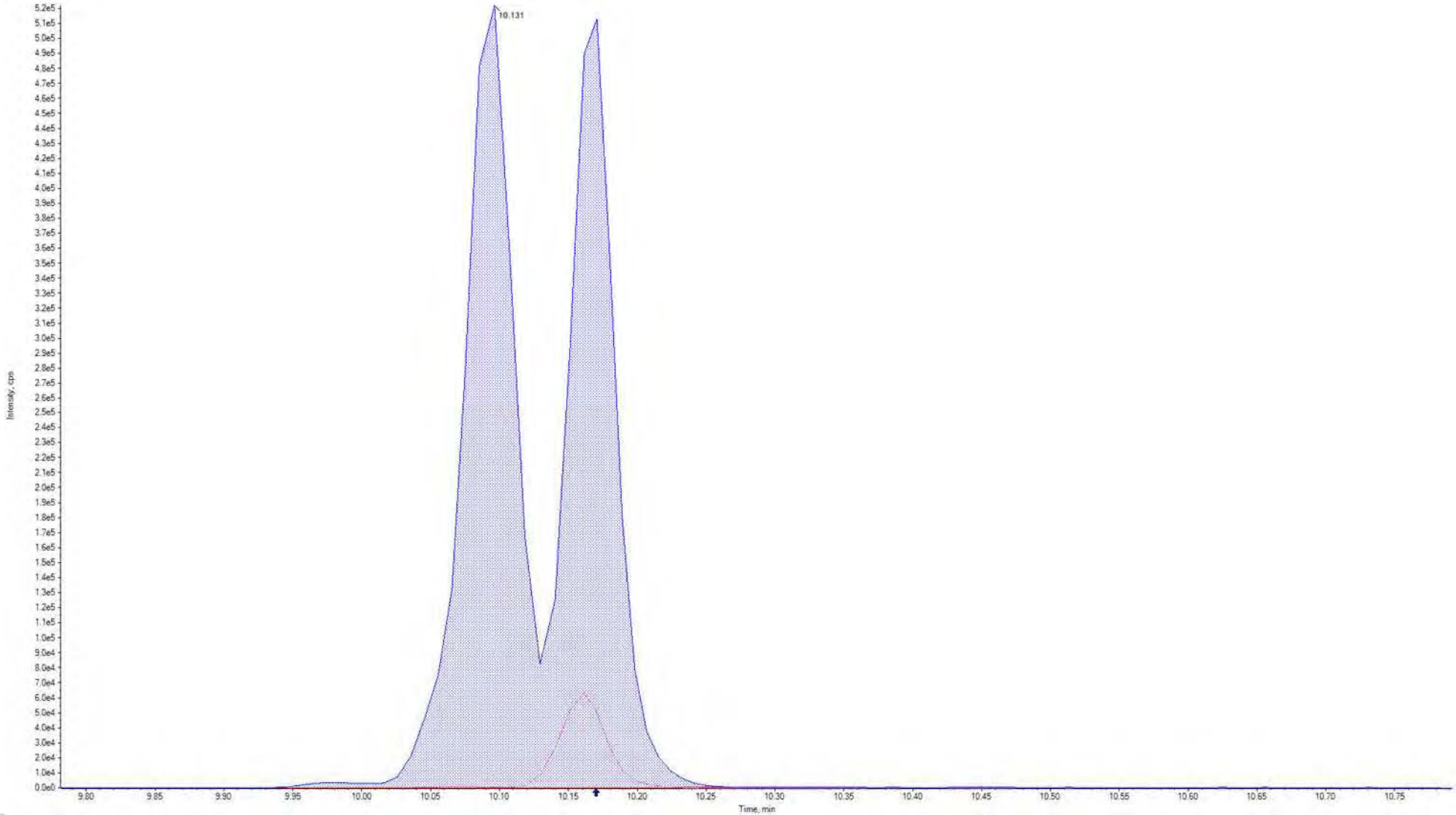
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSA
Sample: IA1633STD-25 S/N:4489.5 Points Across peak:40



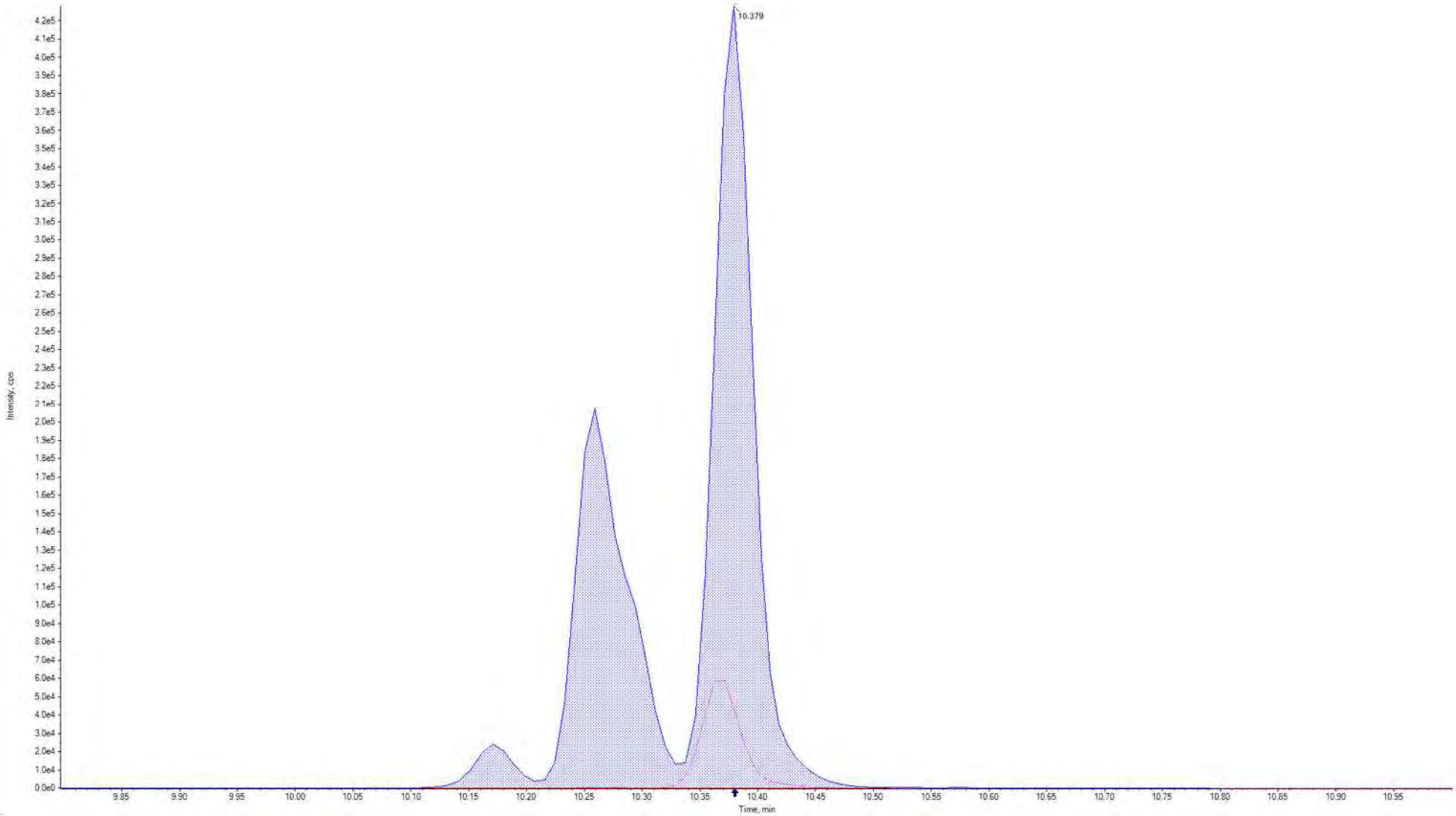
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSA_2
Sample: IA1633STD-25 S/N:3718.5 Points Across peak:40



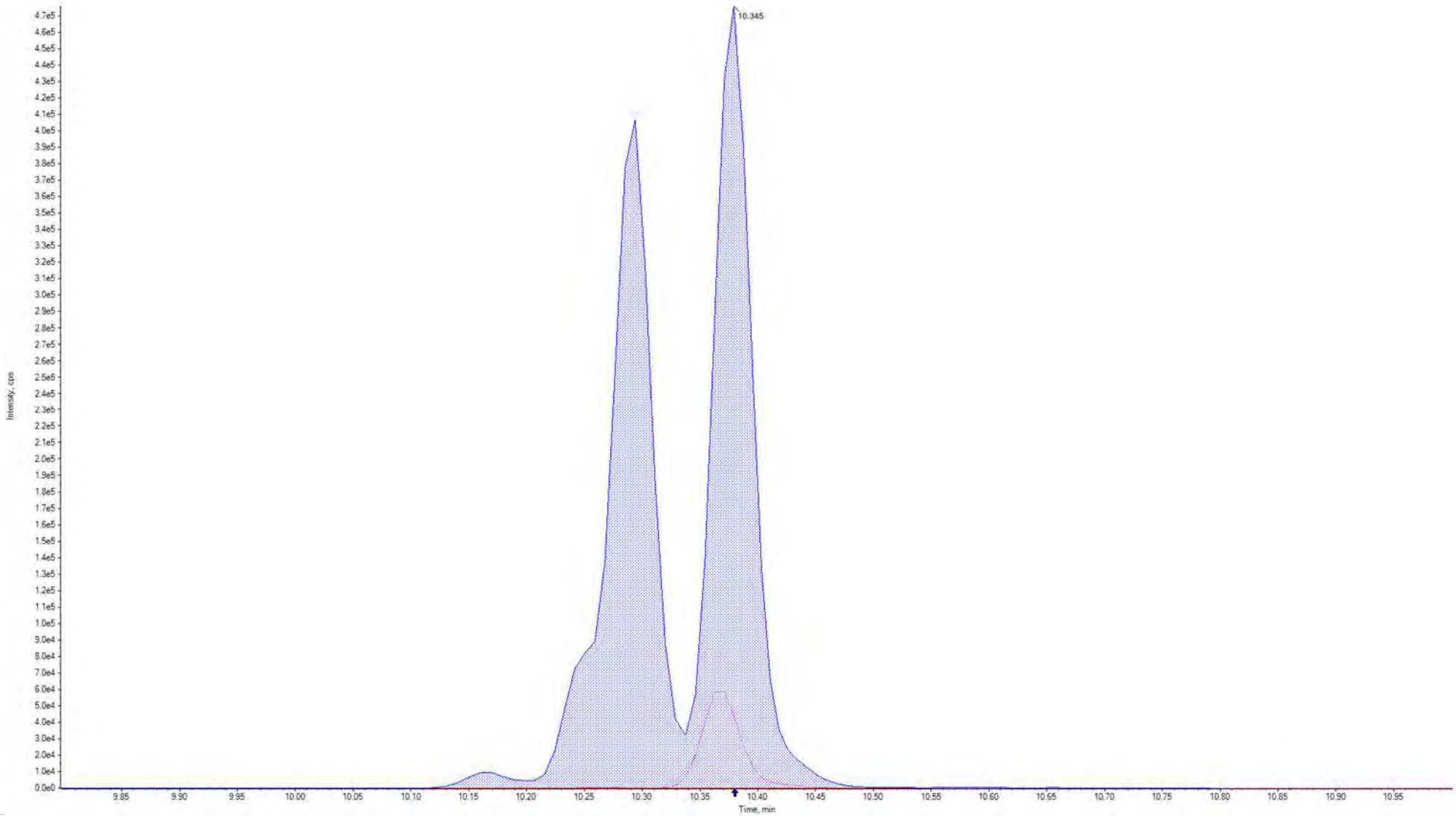
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSA
Sample: IA1633STD-25 S/N:203911.8 Points Across peak:53



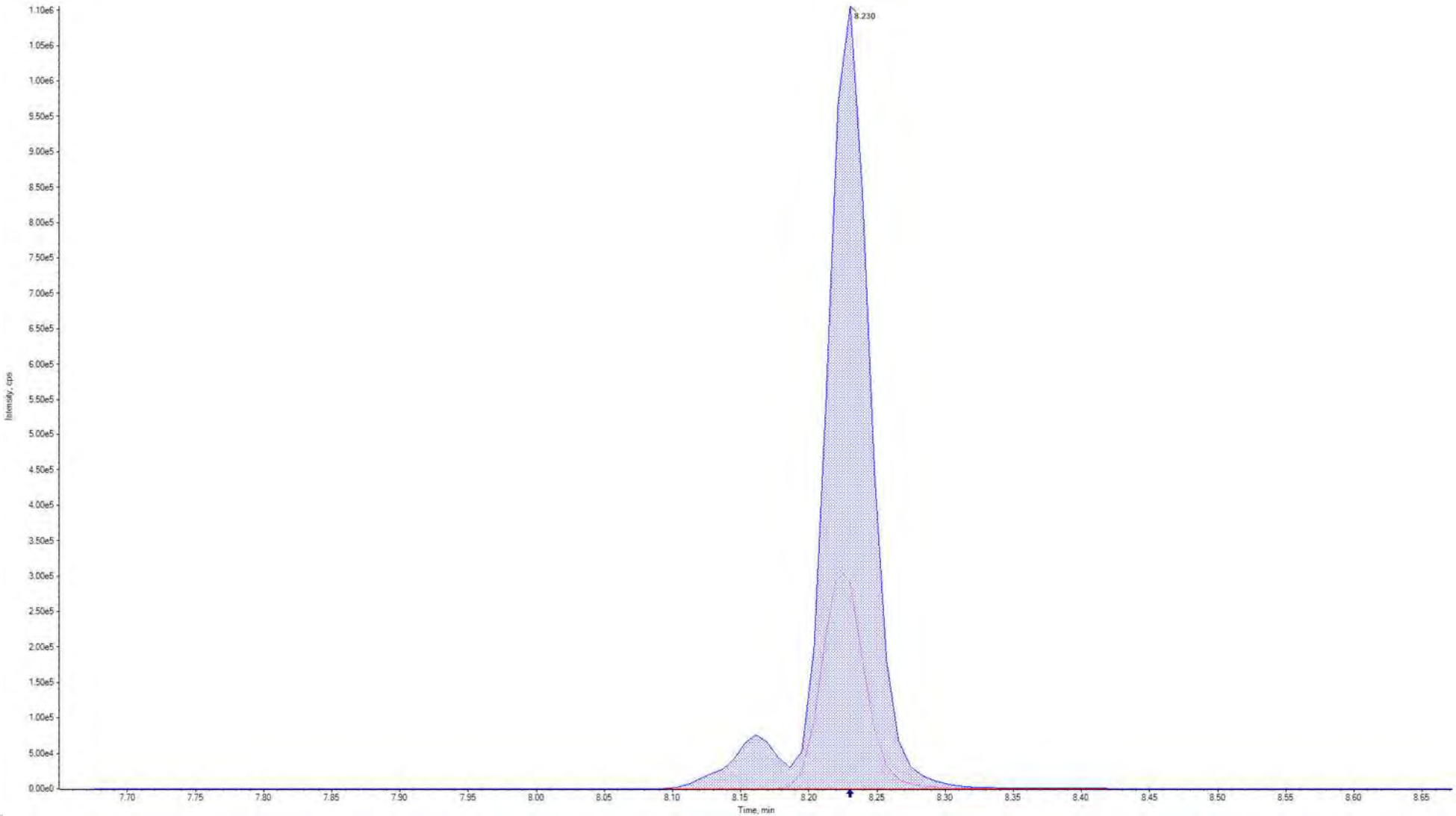
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSA_2
Sample: IA1633STD-25 S/N:10505.6 Points Across peak:56



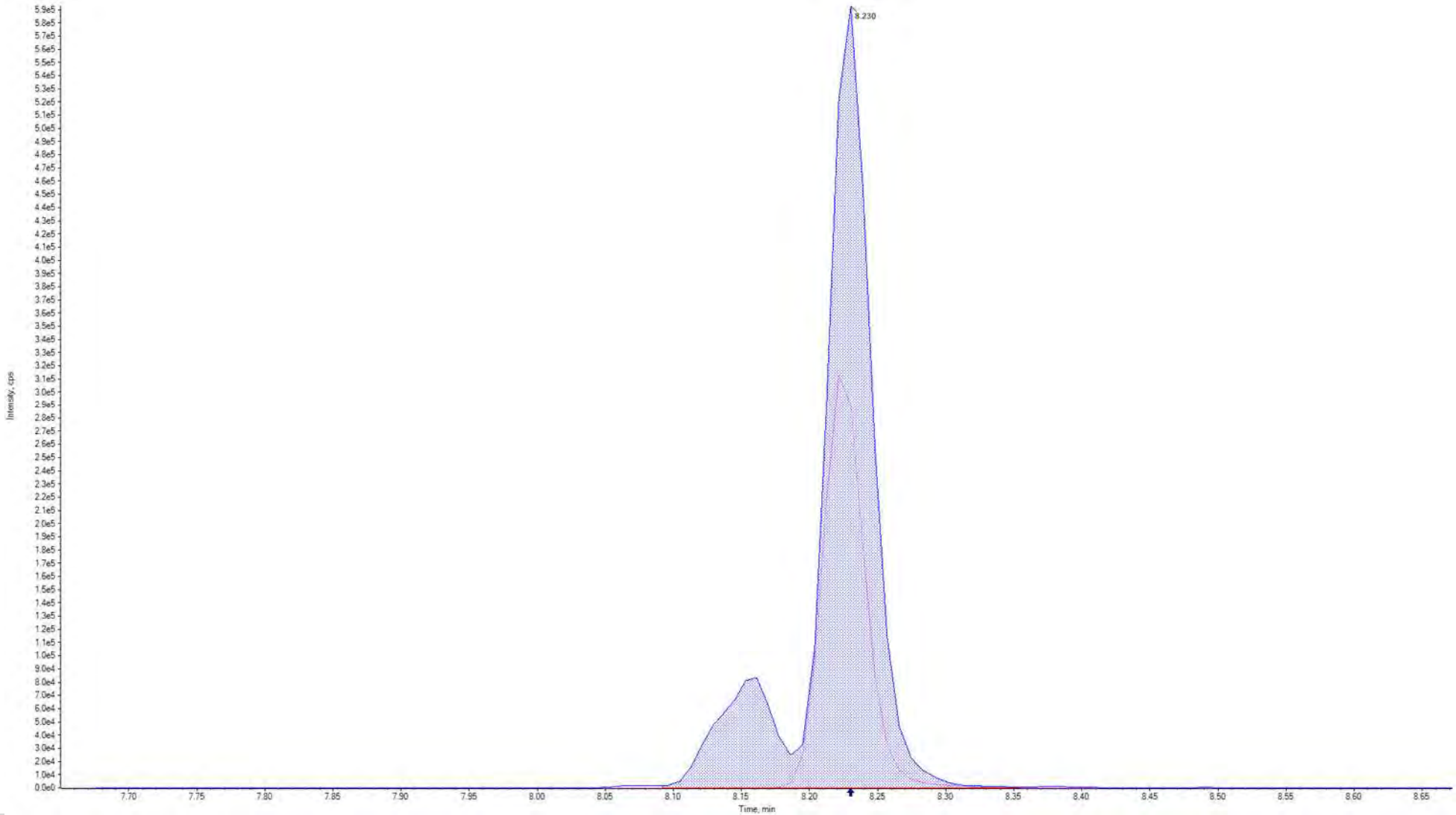
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSAA
Sample: IA1633STD-25 S/N:1458.8 Points Across peak:42



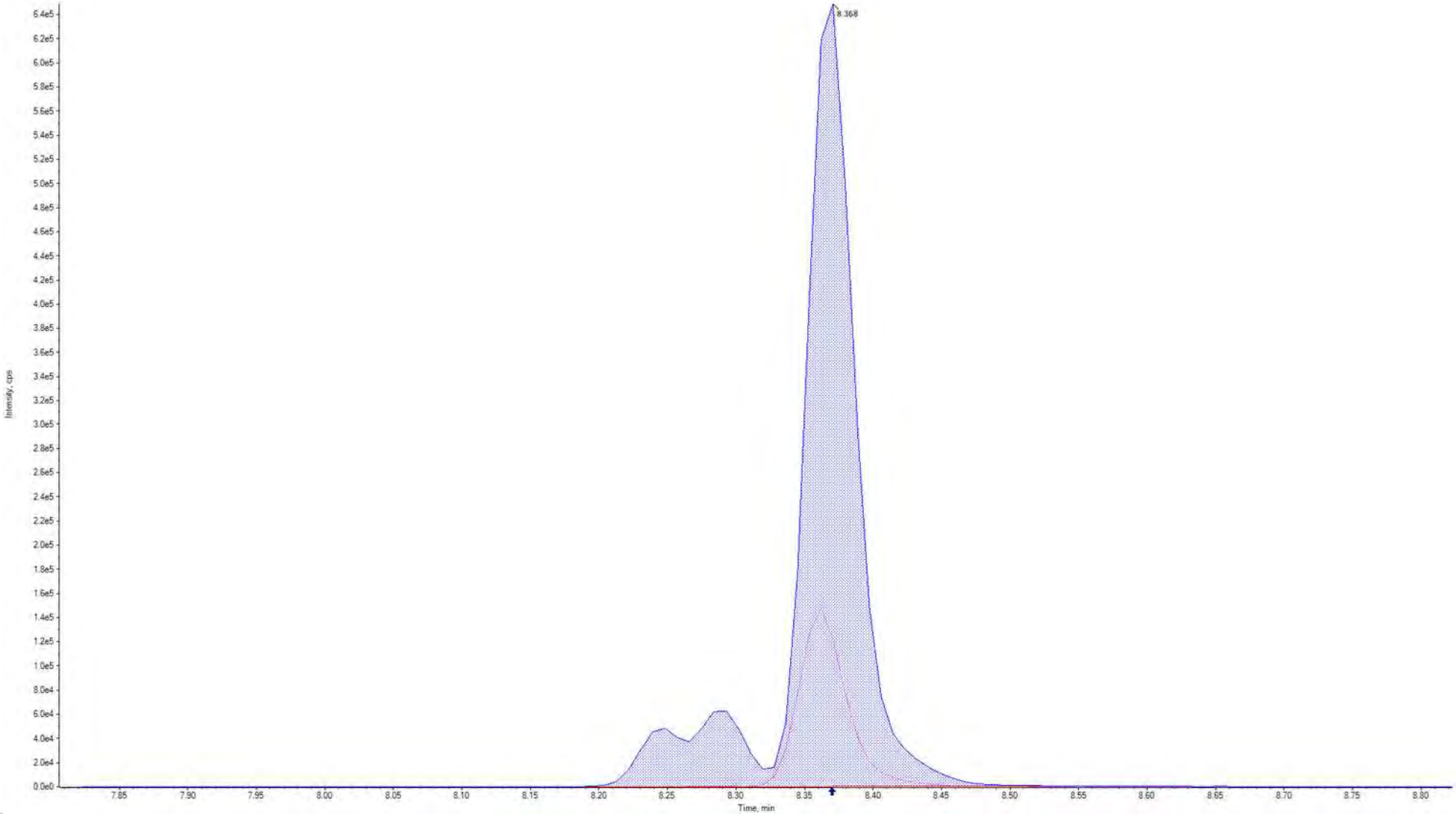
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSAA_2
Sample: IA1633STD-25 S/N:891.1 Points Across peak:33



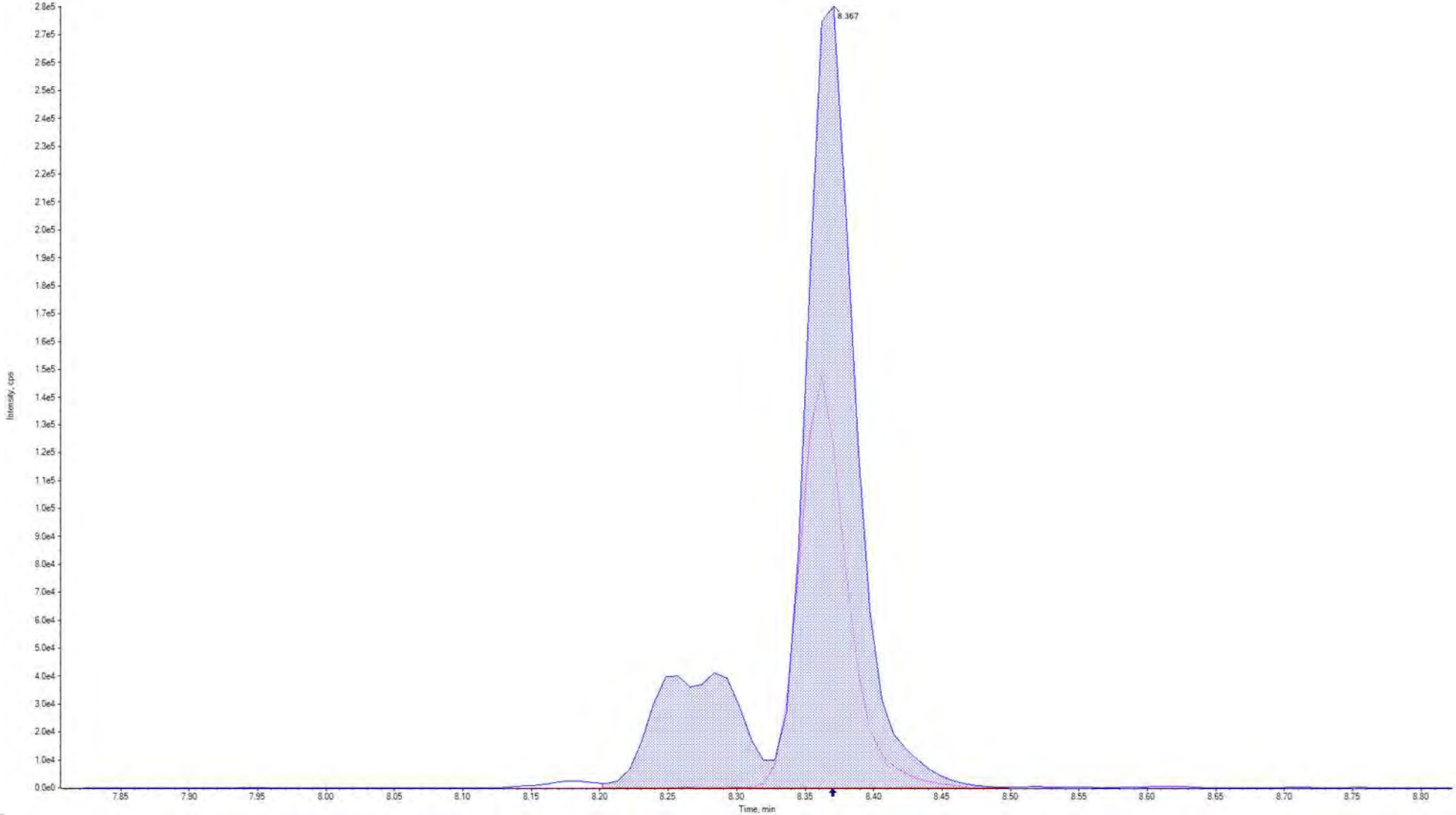
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSAA
Sample: IA1633STD-25 S/N:1061.5 Points Across peak:44



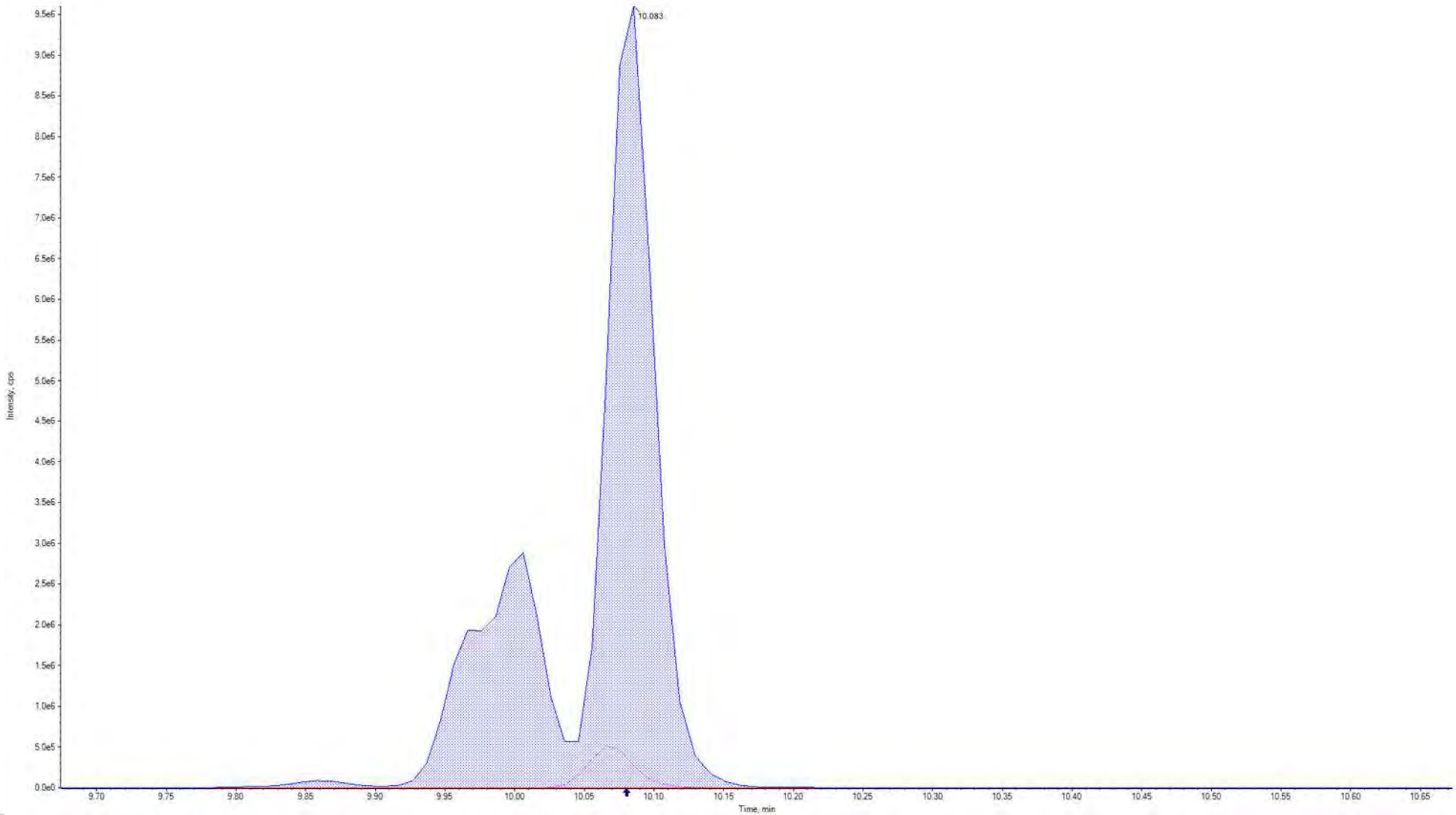
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSAA_2
Sample: IA1633STD-25 S/N:539.3 Points Across peak:36



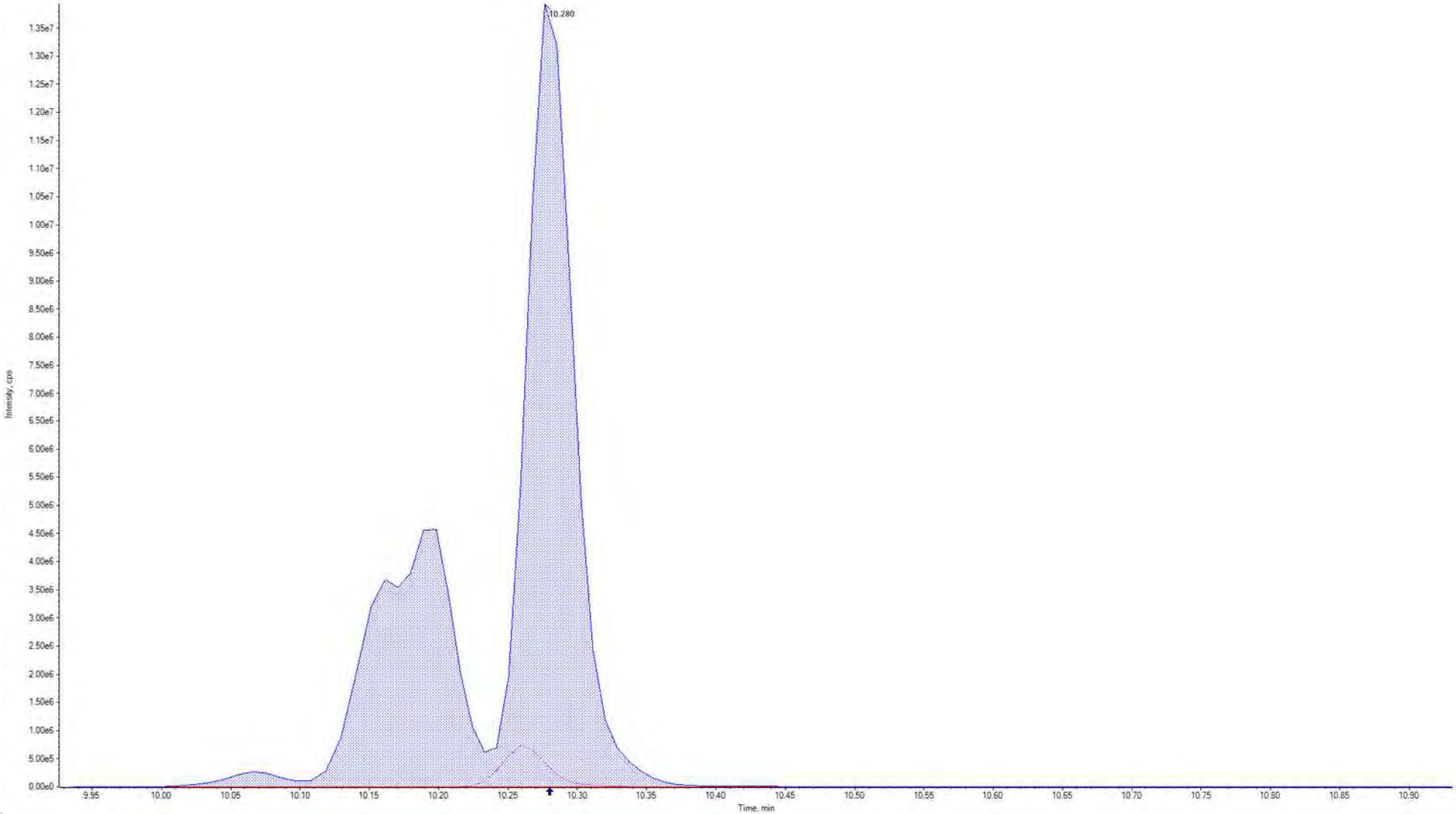
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSE
Sample: IA1633STD-25 S/N:10770.8 Points Across peak:63

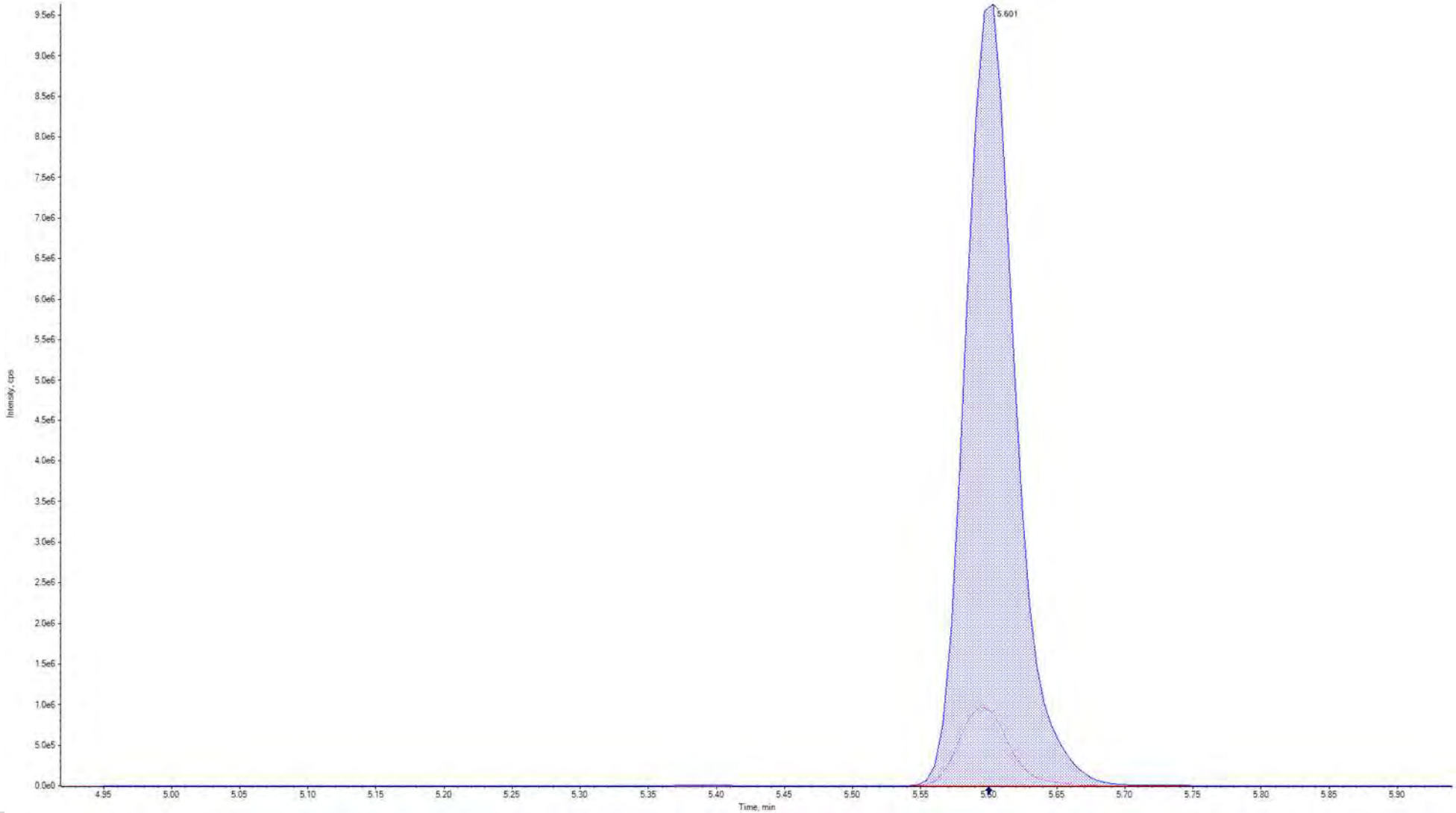


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSE
Sample: IA1633STD-25 S/N:4971.7 Points Across peak:60

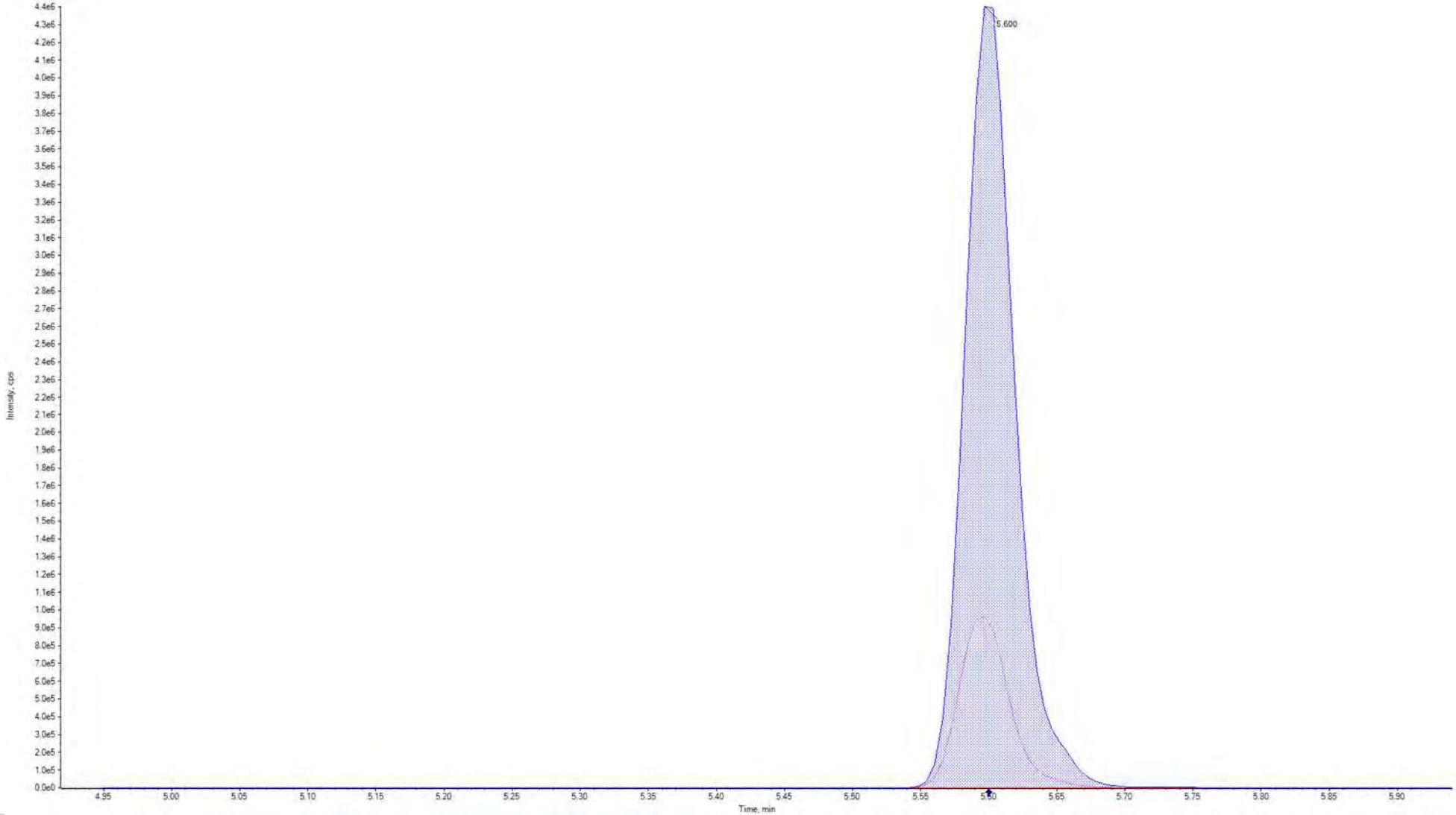


HFPO-DA
Sample: IA1633STD-25 S/N:38611.0 Points Across peak:56



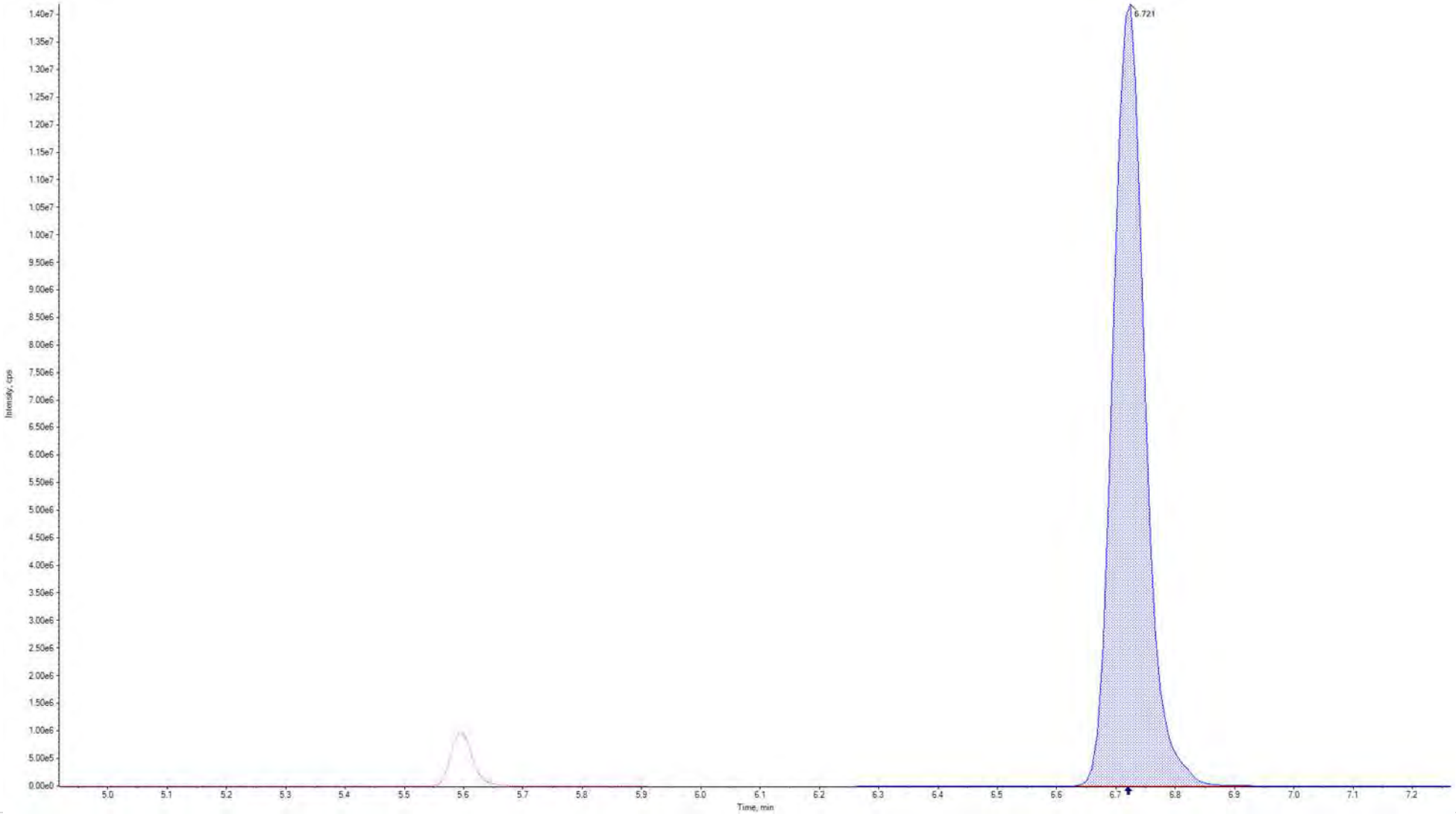
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

HFPO-DA_2
Sample: IA1633STD-25 S/N:16624.9 Points Across peak:53



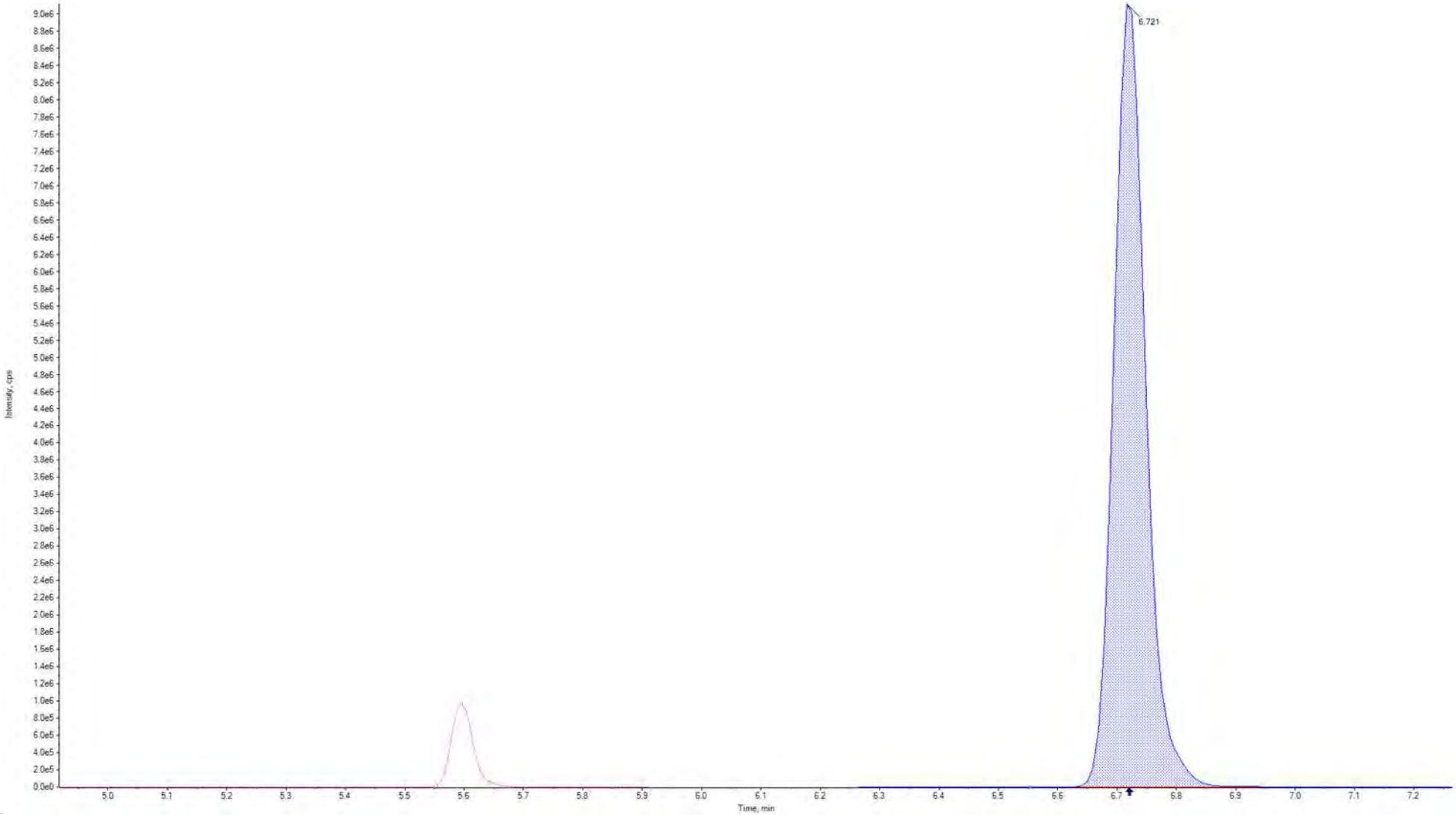
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

ADONA
Sample: IA1633STD-25 S/N:25828.2 Points Across peak:47



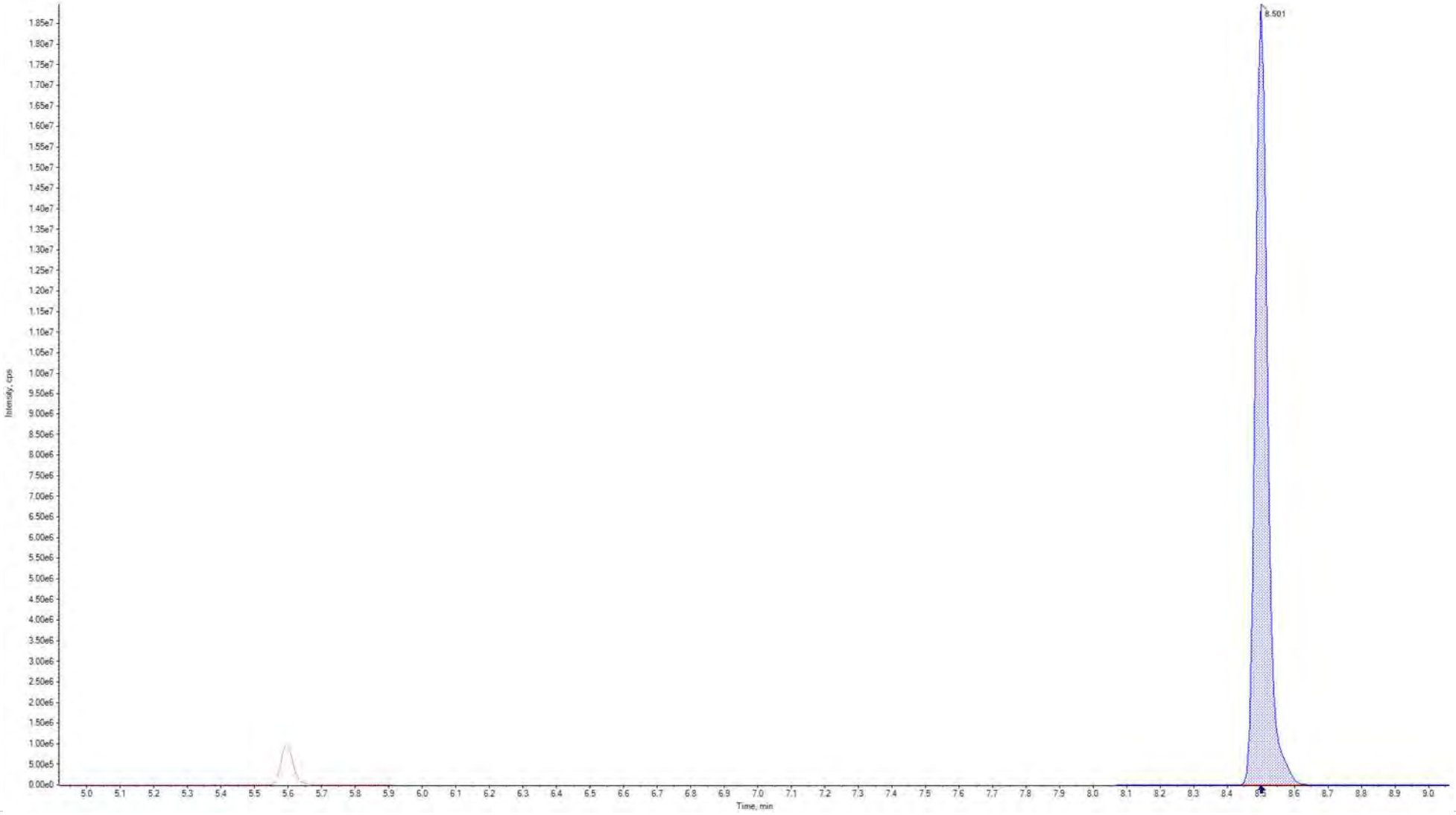
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

ADONA_2
Sample: IA1633STD-25 S/N:29993.7 Points Across peak:49



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

9Cl-PF3ONS
Sample: IA1633STD-25 S/N:96371.0 Points Across peak:46



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

9Cl-PF3ONS_2
Sample: IA1633STD-25 S/N:1289348.6 Points Across peak:39

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

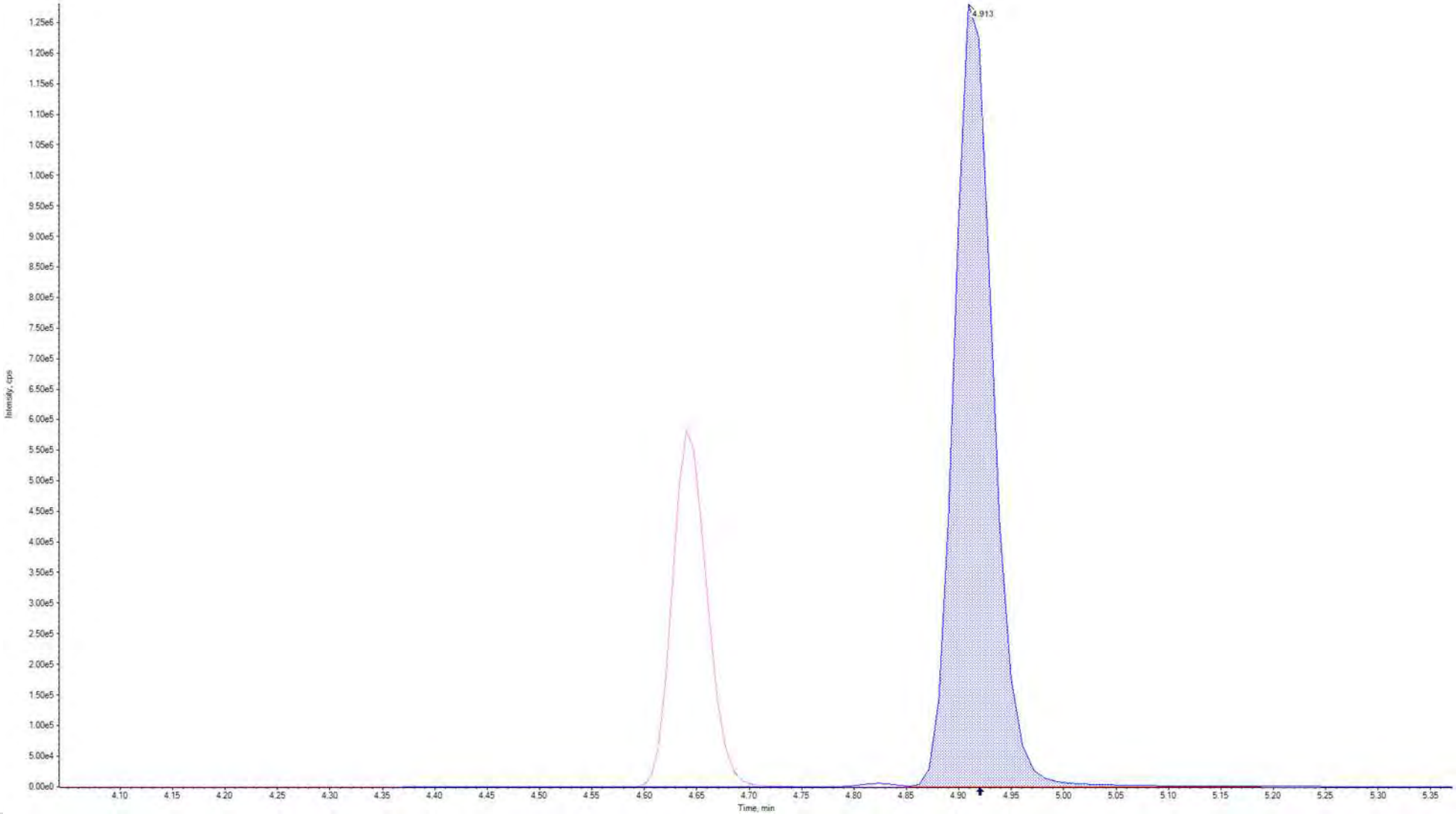
11Cl-PF3OUdS
Sample: IA1633STD-25 S/N:101213.8 Points Across peak:49

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

11Cl-PF3OUdS_2
Sample: IA1633STD-25 S/N:235146.5 Points Across peak:51

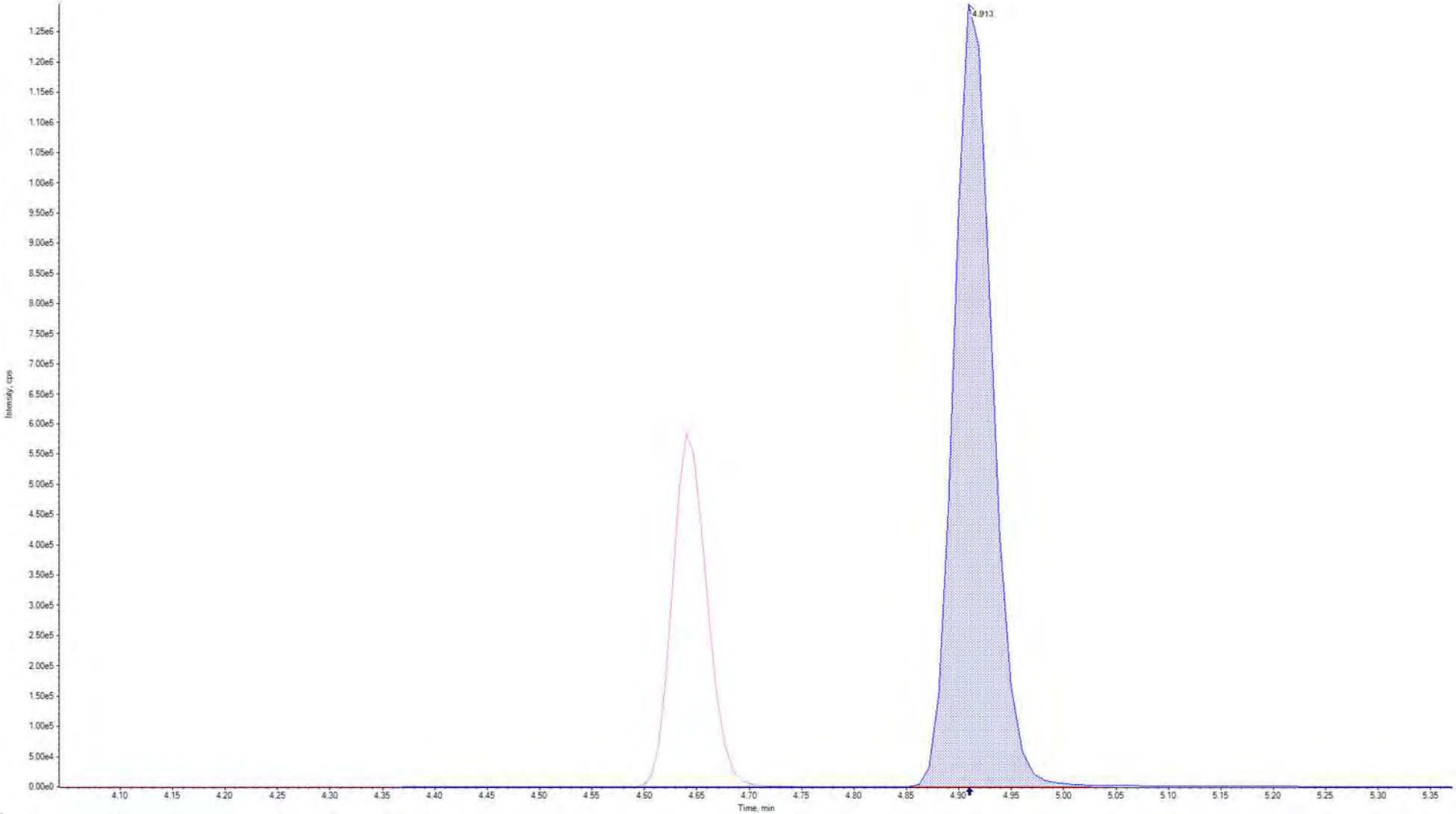
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

3:3FTCA
Sample: IA1633STD-25 S/N:480675.0 Points Across peak:36



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

3:3FTCA_2
Sample: IA1633STD-25 S/N:5732.7 Points Across peak:19

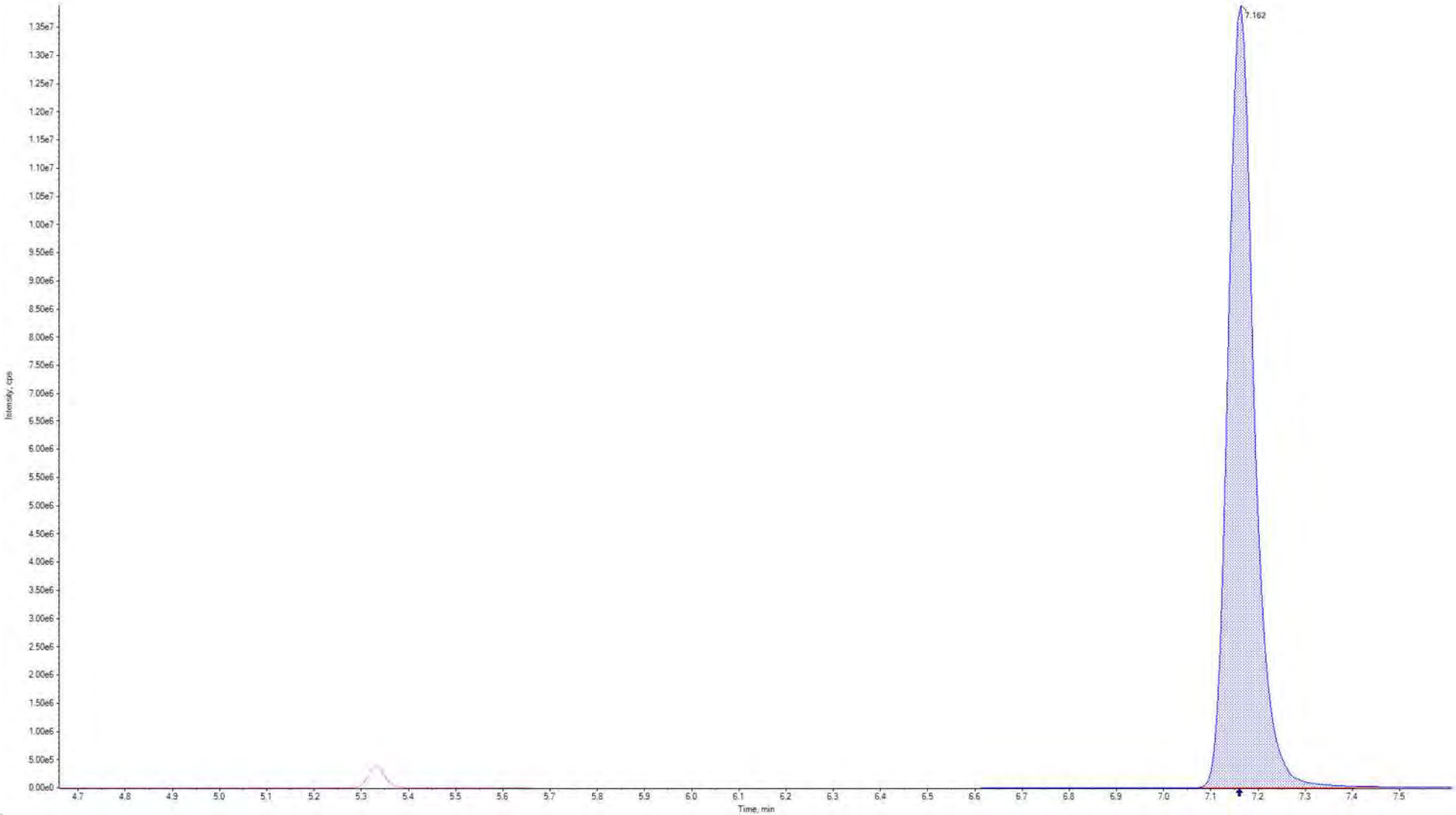


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

5:3FTCA
Sample: IA1633STD-25 S/N:27228.4 Points Across peak:85

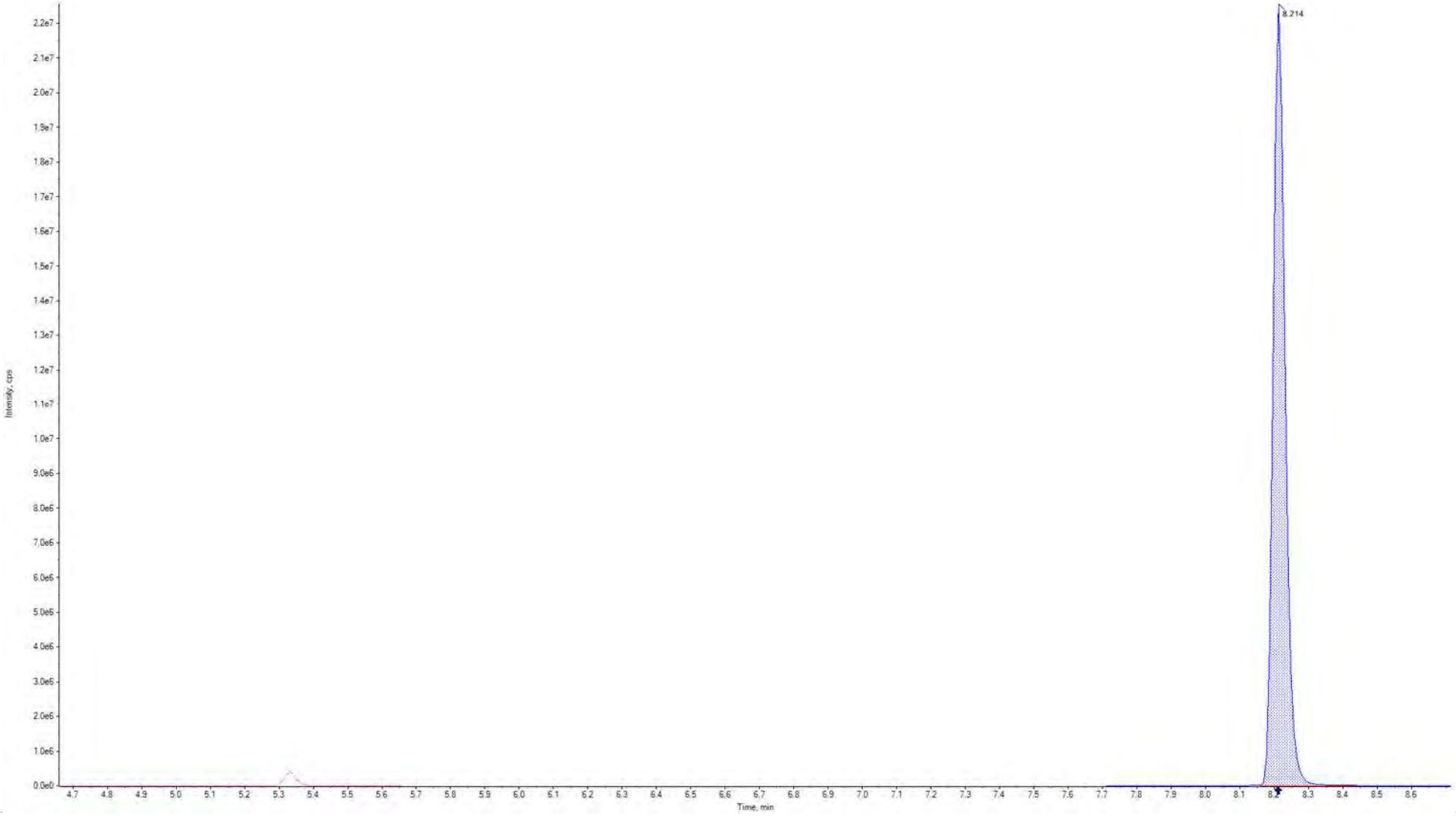
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

5:3FTCA_2
Sample: IA1633STD-25 S/N:27038.7 Points Across peak:74



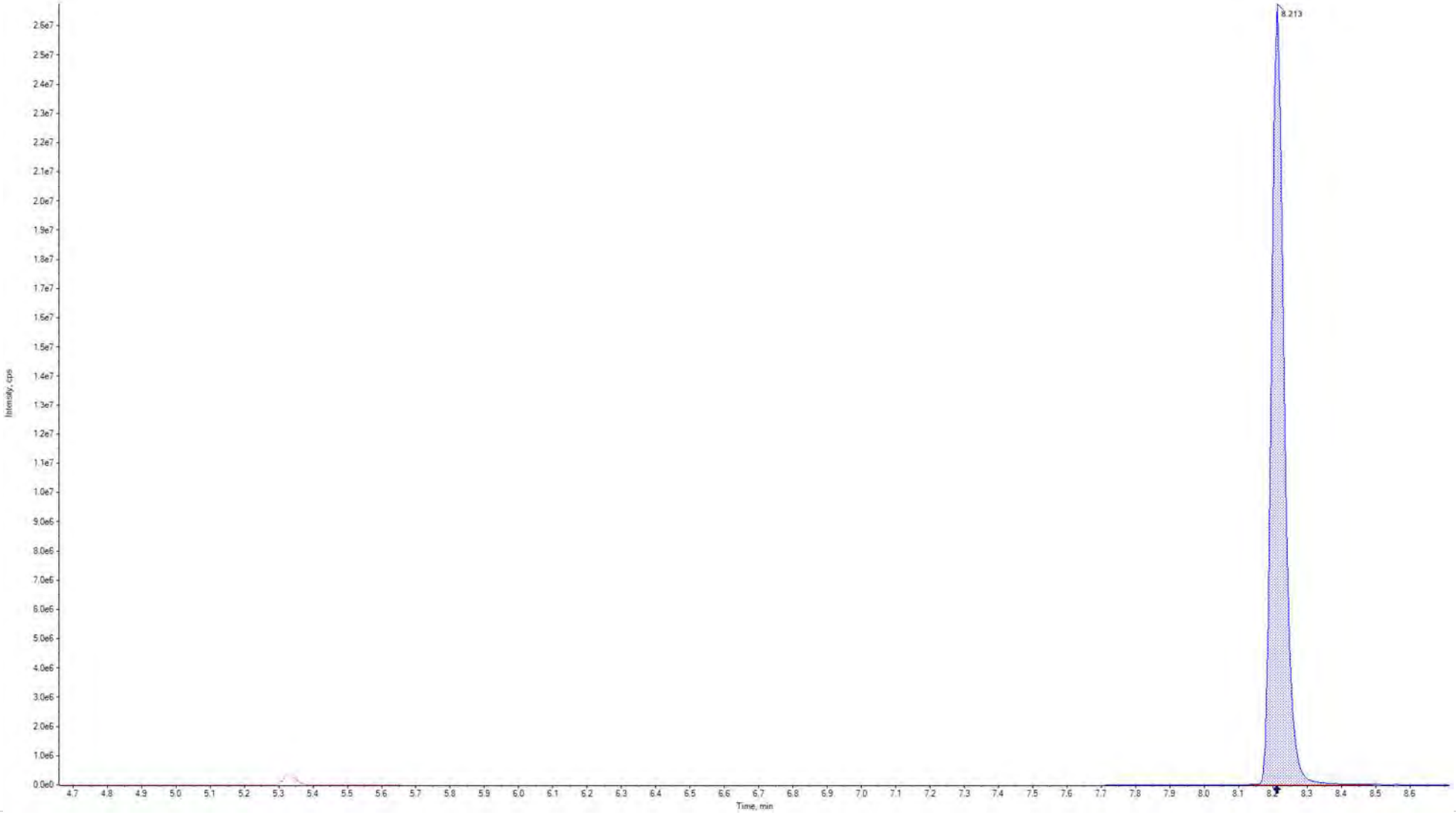
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

7:3FTCA
Sample: IA1633STD-25 S/N:38567.0 Points Across peak:49



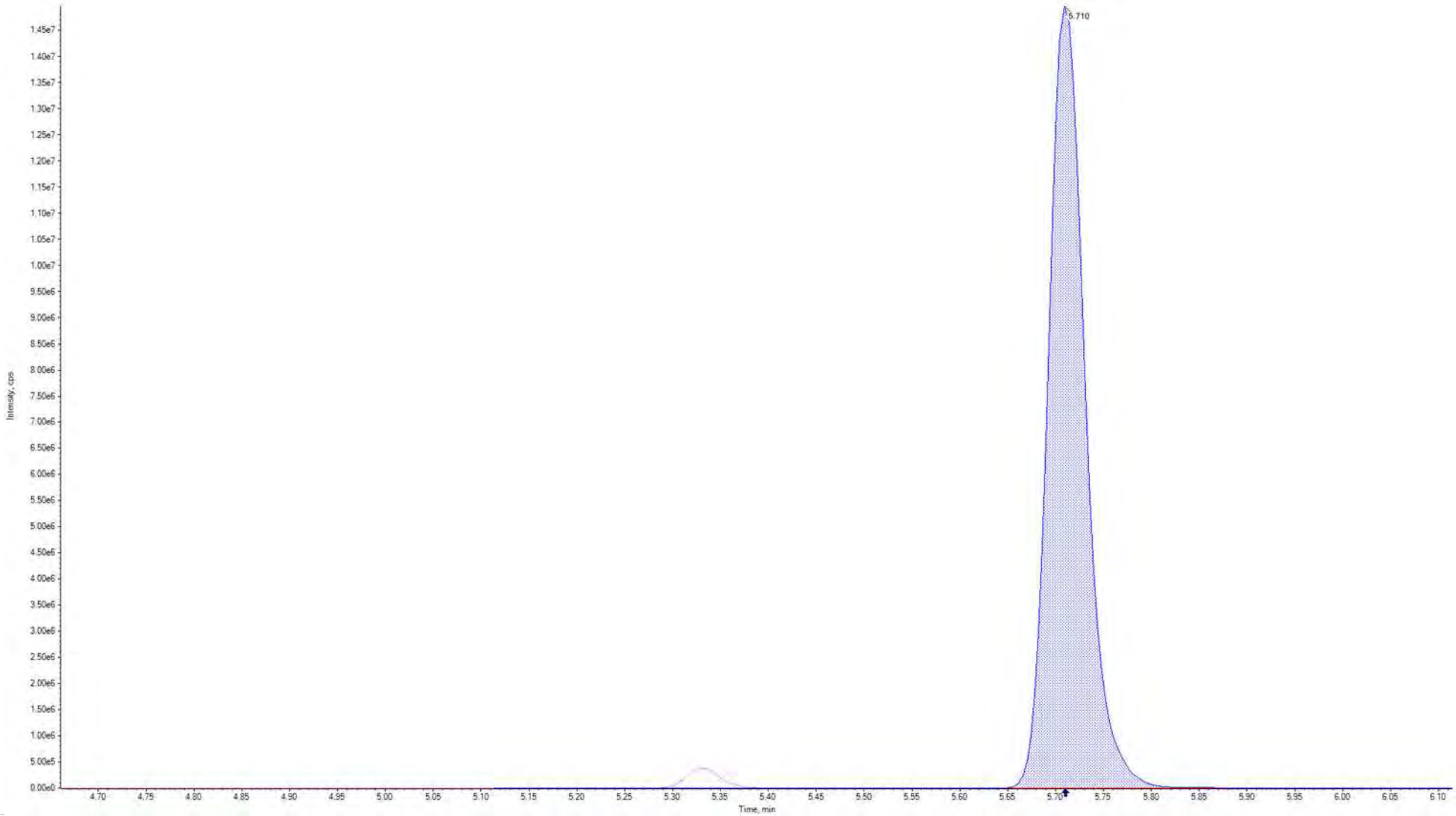
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

7:3FTCA_2
Sample: IA1633STD-25 S/N:17409.8 Points Across peak:47



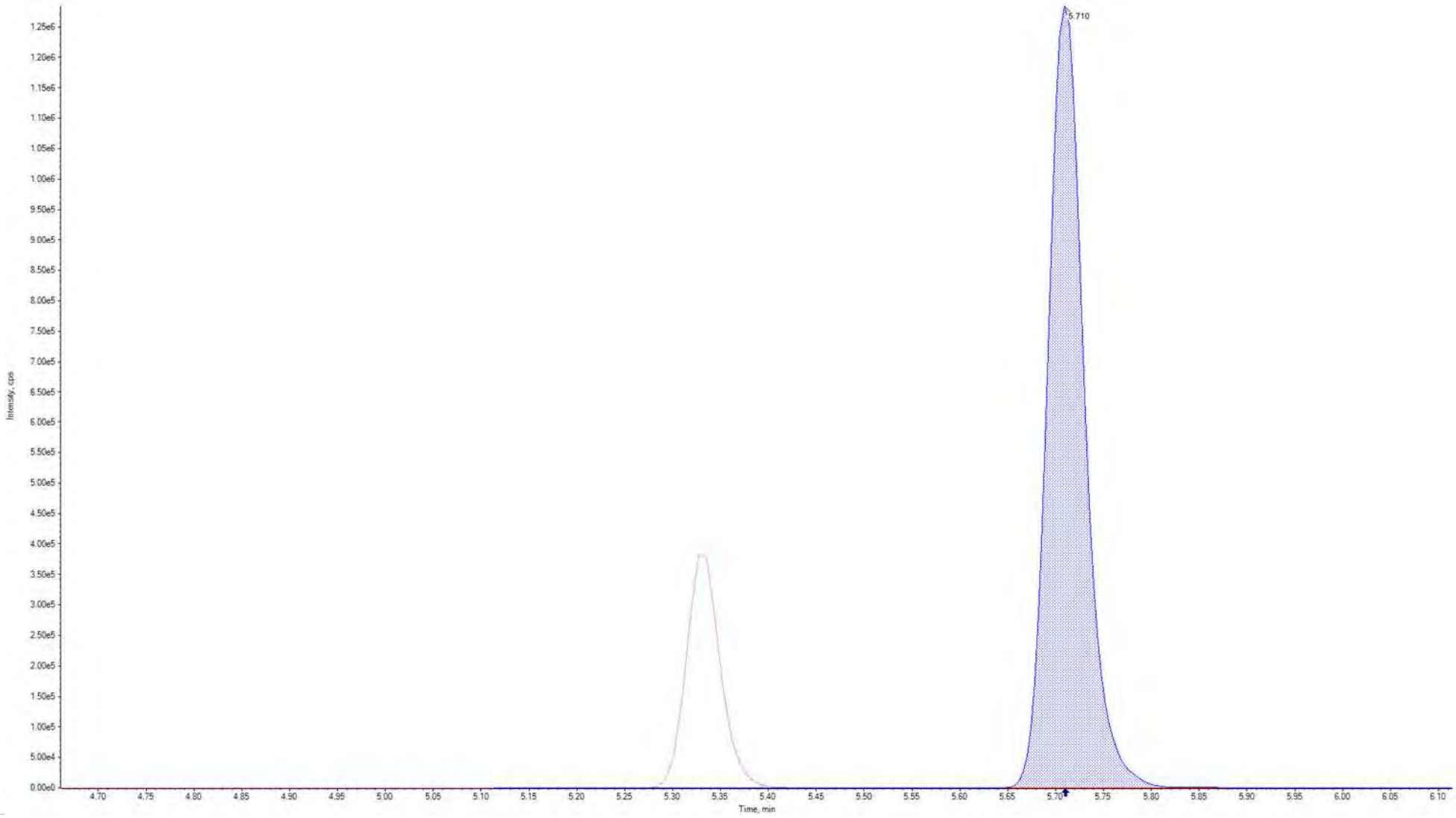
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFEESA
Sample: IA1633STD-25 S/N:44053.1 Points Across peak:61



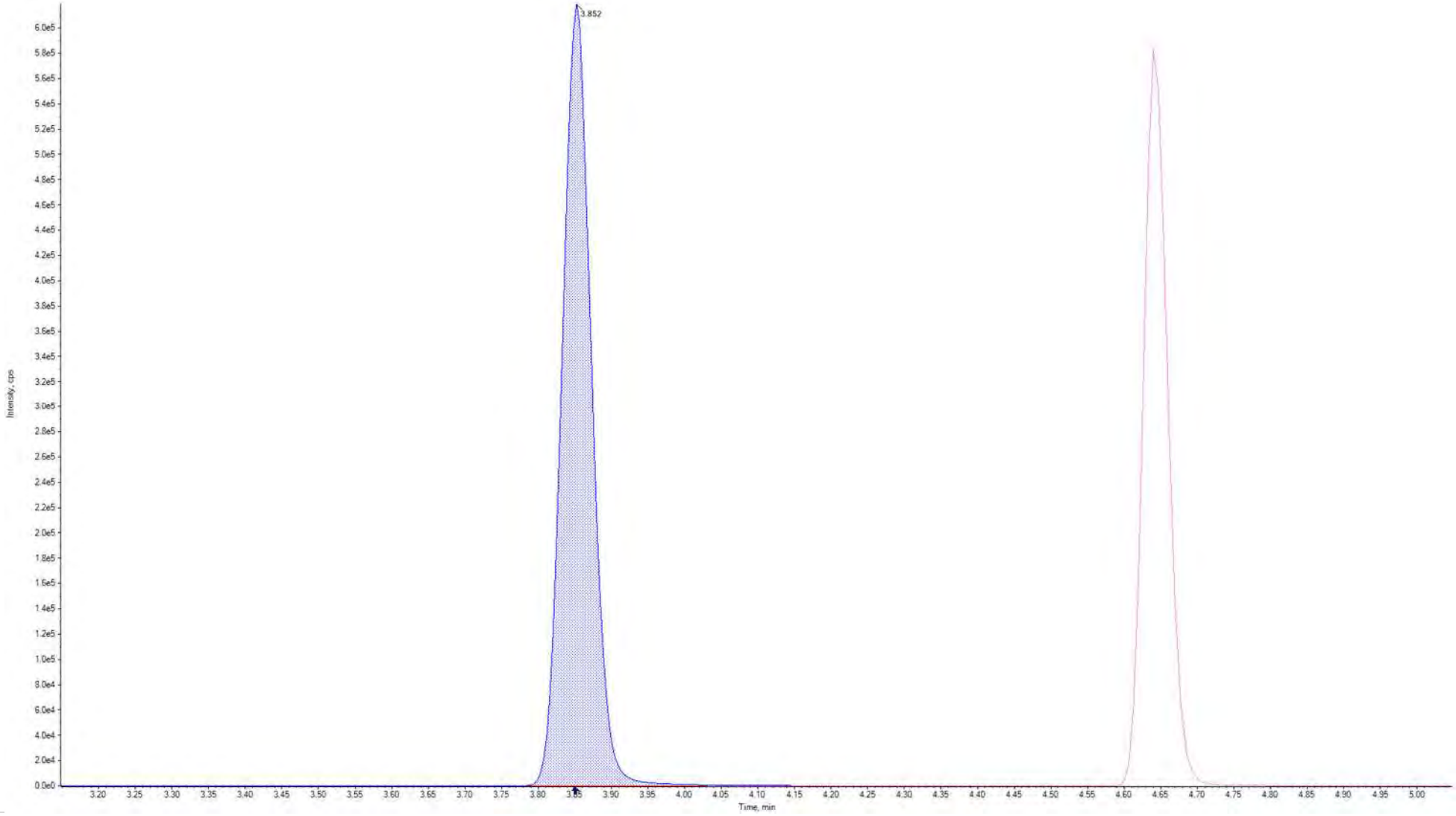
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFEESA_2
Sample: IA1633STD-25 S/N:18454.5 Points Across peak:55



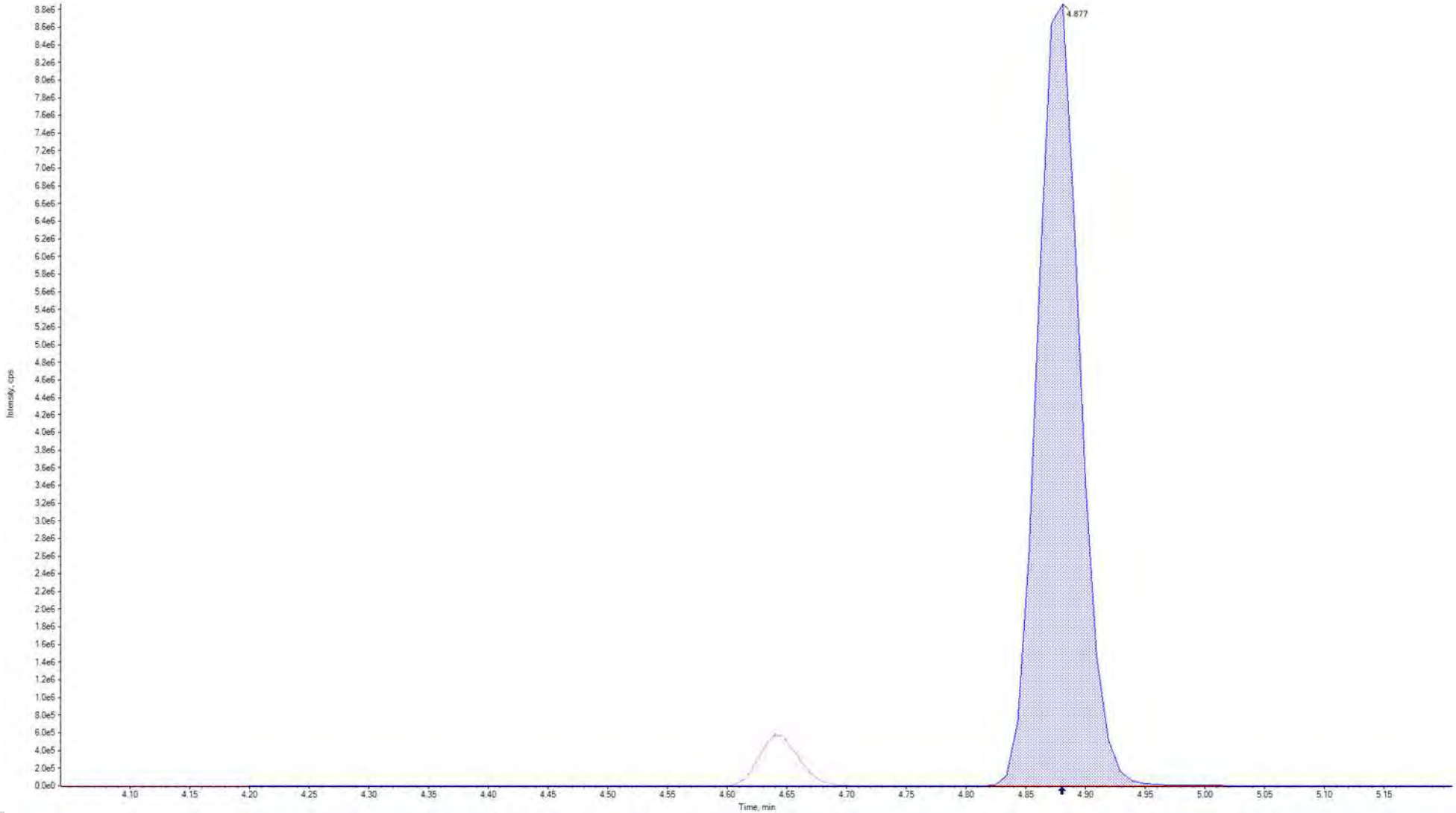
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFMPA
Sample: IA1633STD-25 S/N:10710.8 Points Across peak:66



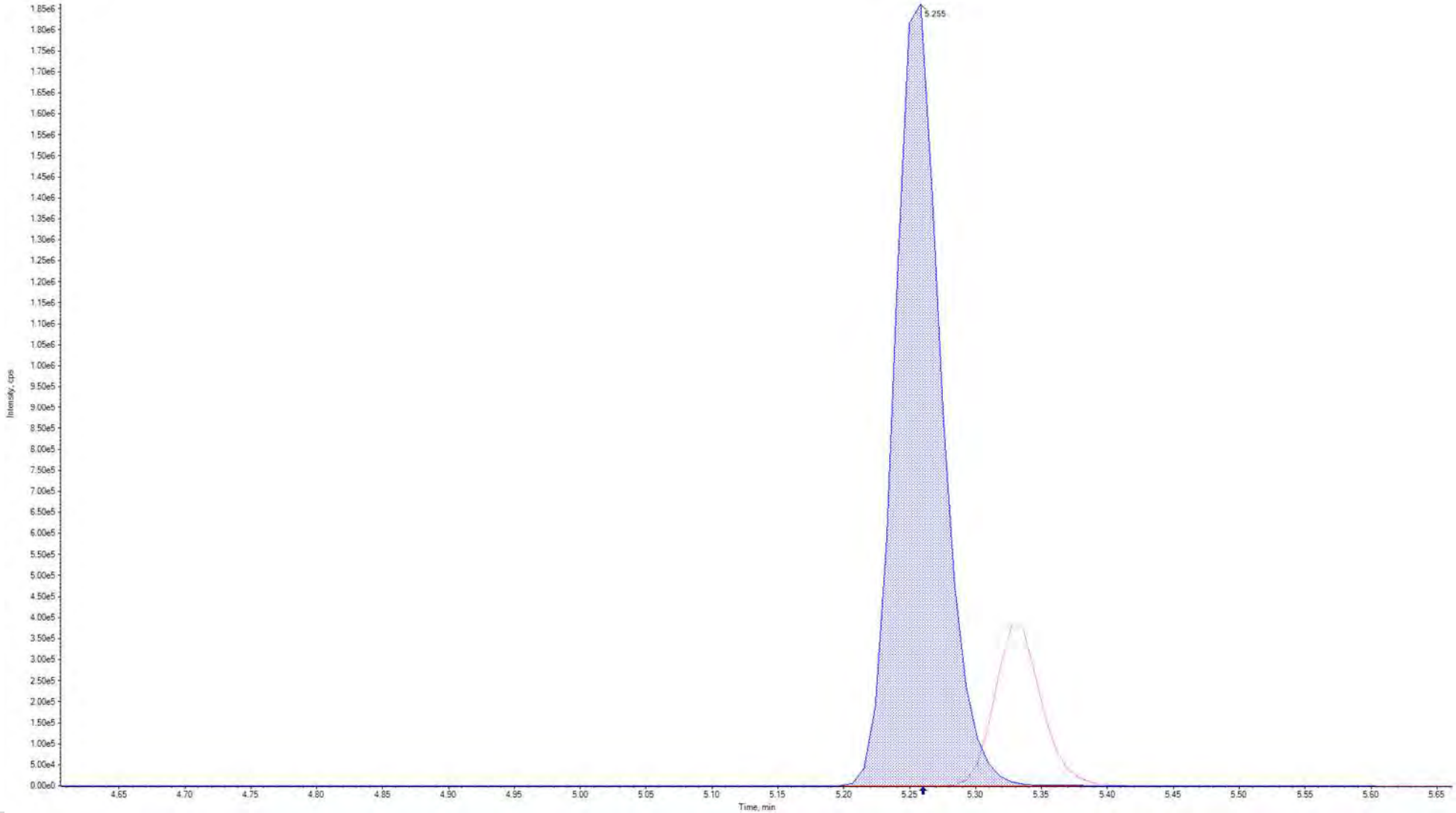
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFMBA
Sample: IA1633STD-25 S/N:18615.6 Points Across peak:36



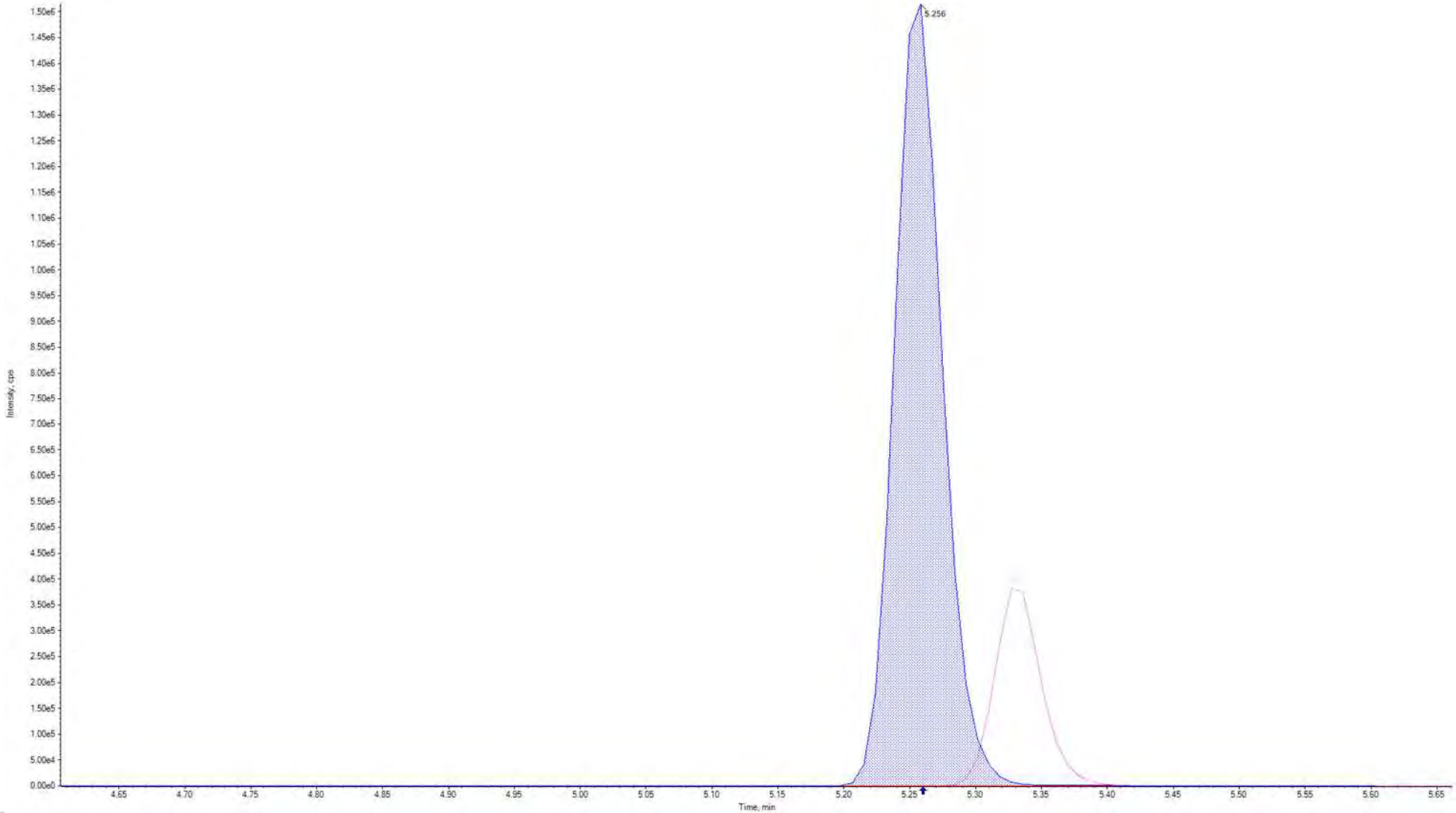
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NFDHA
Sample: IA1633STD-25 S/N:6054.9 Points Across peak:37



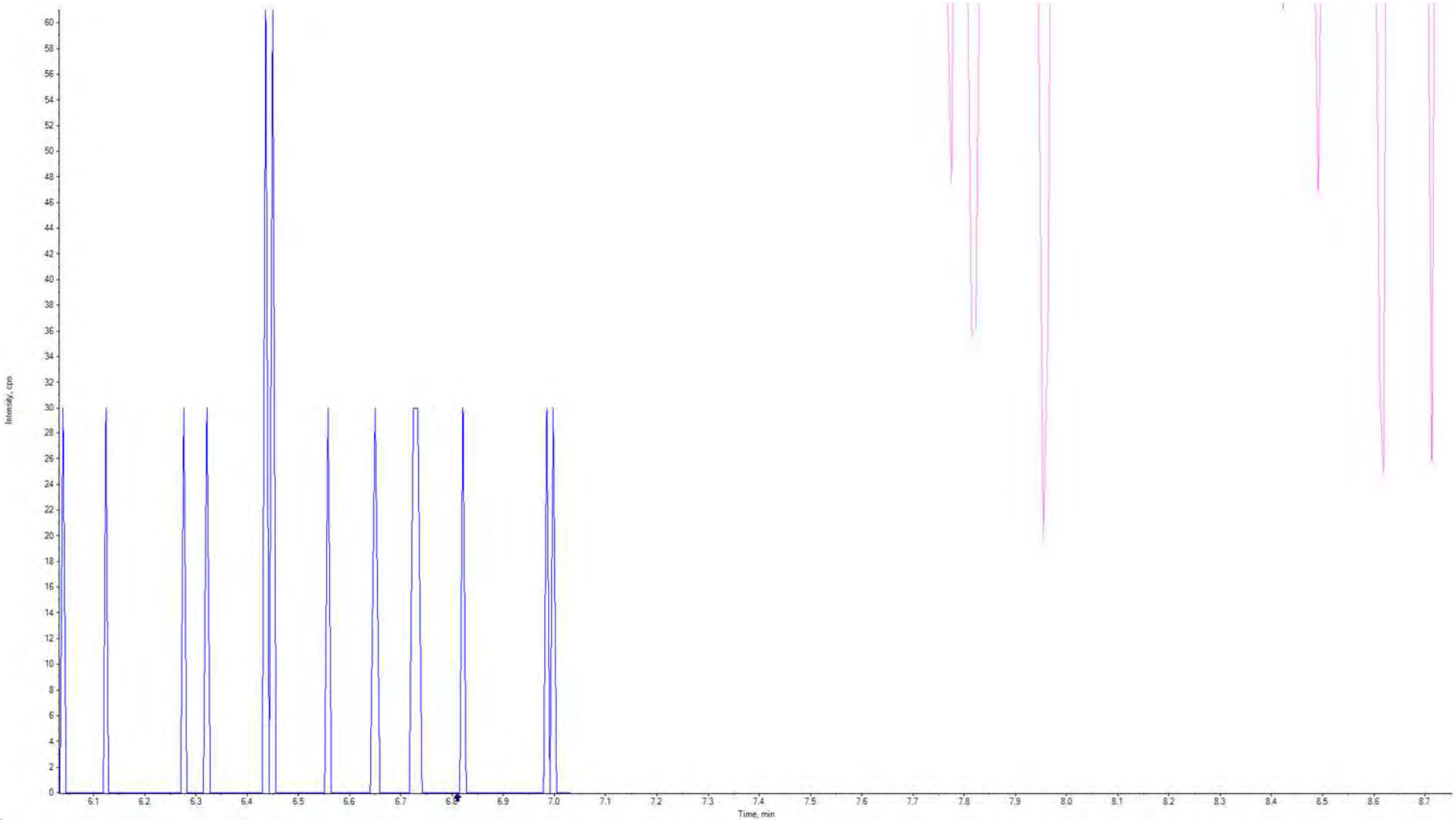
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NFDHA_2
Sample: IA1633STD-25 S/N:12005.3 Points Across peak:37



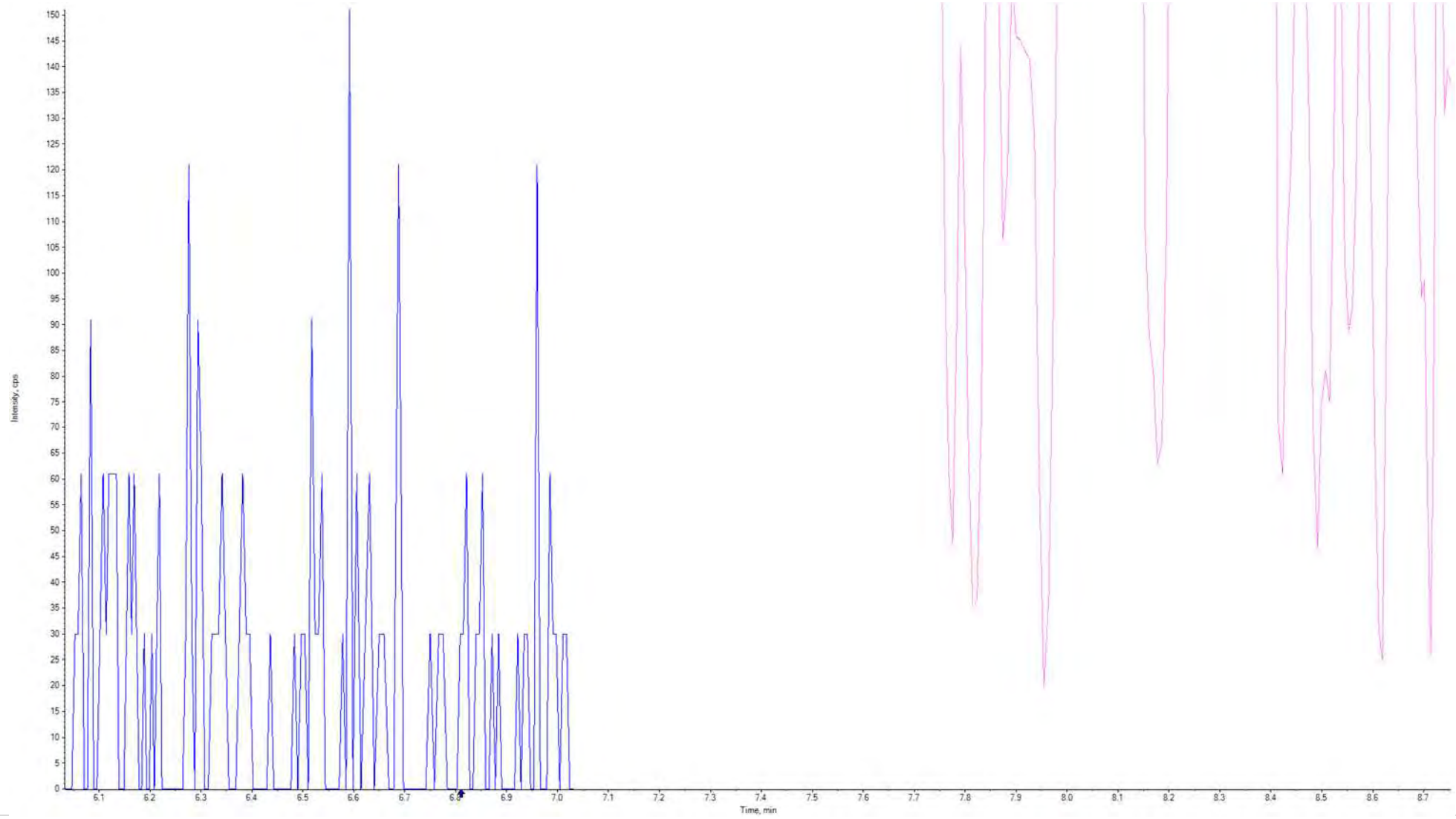
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

TDCA
Sample: IA1633STD-25 S/N:N/A Points Across peak:N/A



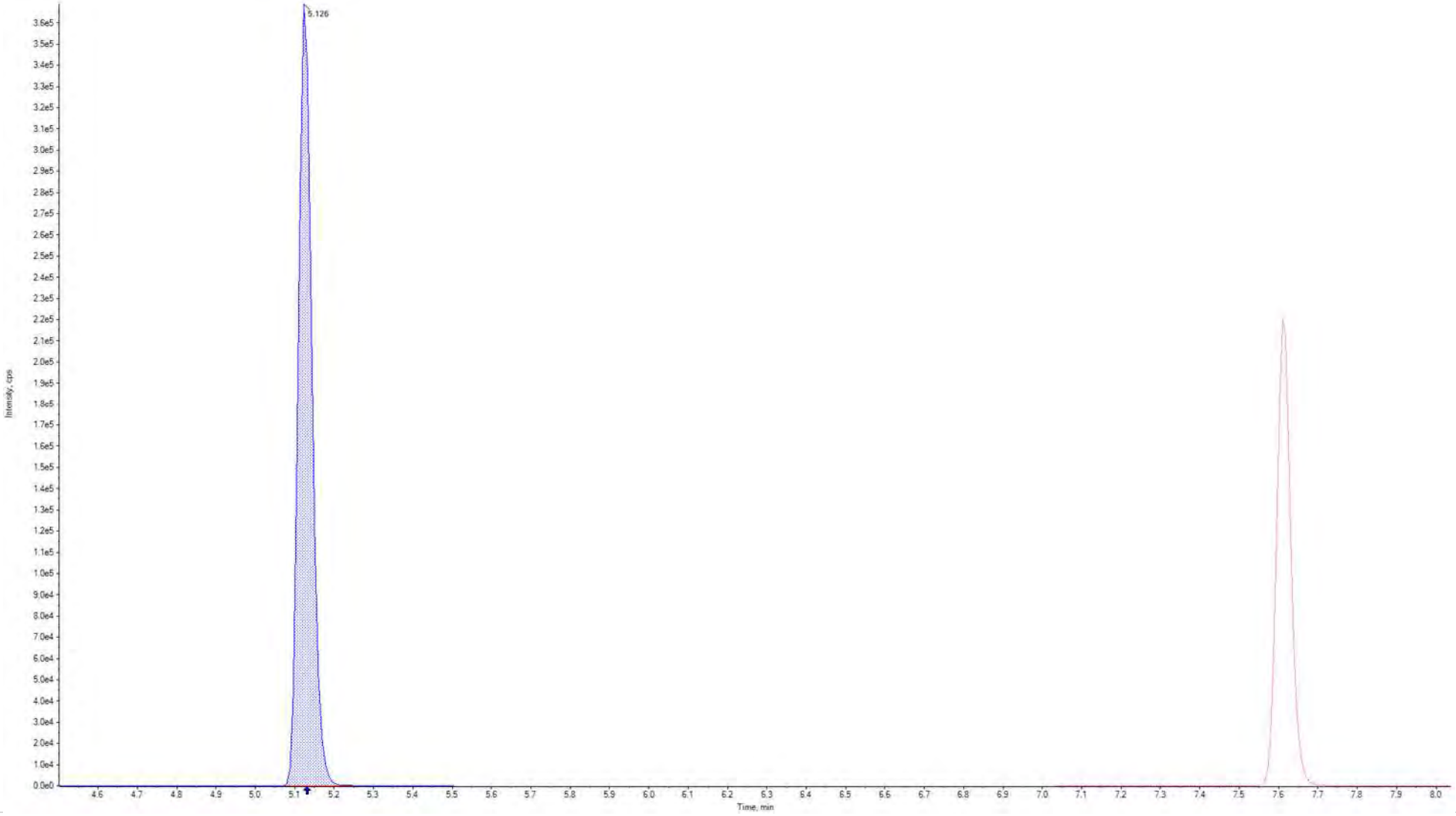
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

TDCA_2
Sample: IA1633STD-25 S/N:N/A Points Across peak:N/A



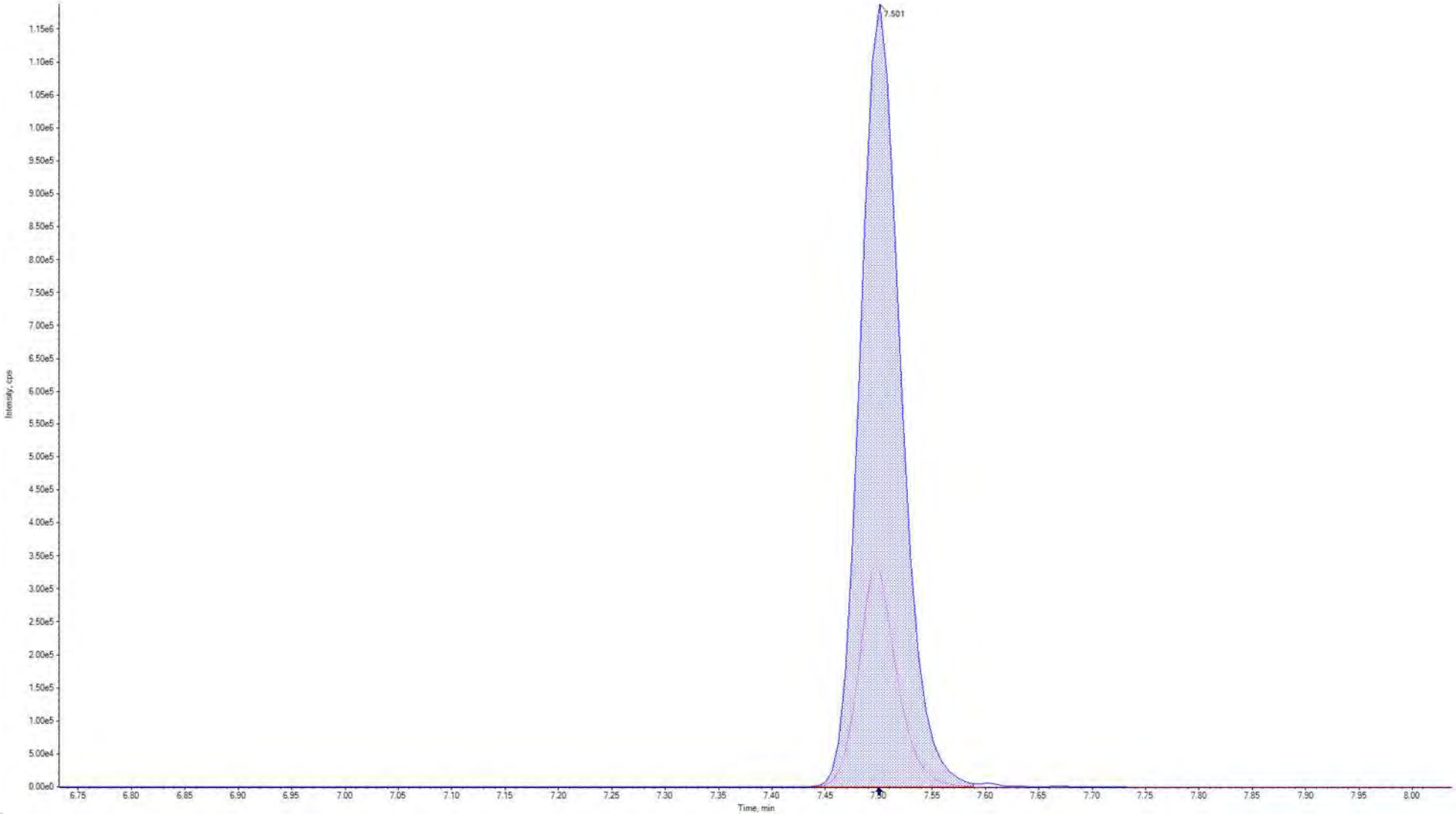
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

13C2D4-4:2FTS
Sample: IA1633STD-25 S/N:10885.7 Points Across peak:29

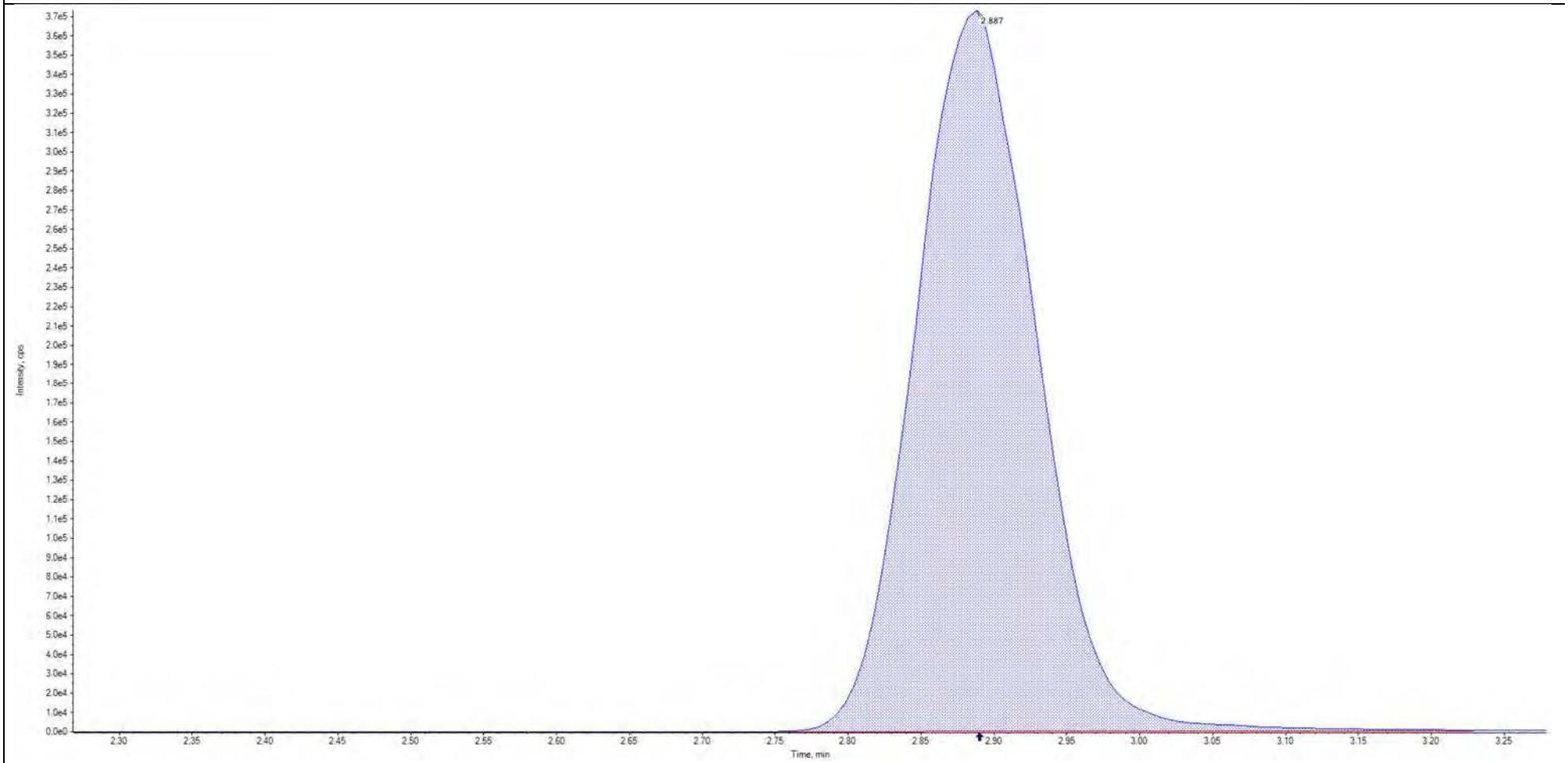


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

13C2-PFOA
Sample: IA1633STD-25 S/N:9611.9 Points Across peak:25

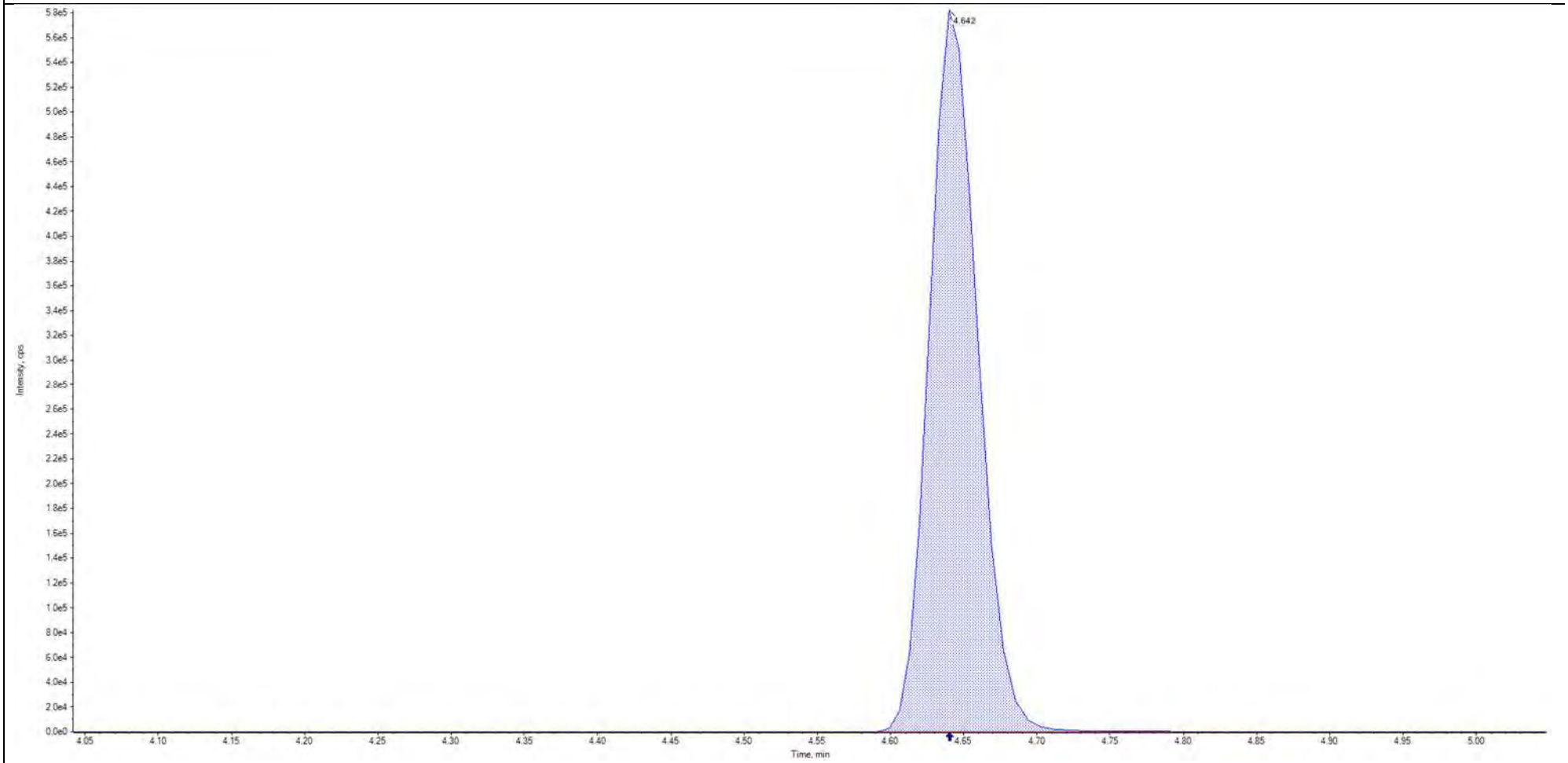


13C4-PFBA
Sample: IA1633STD-25

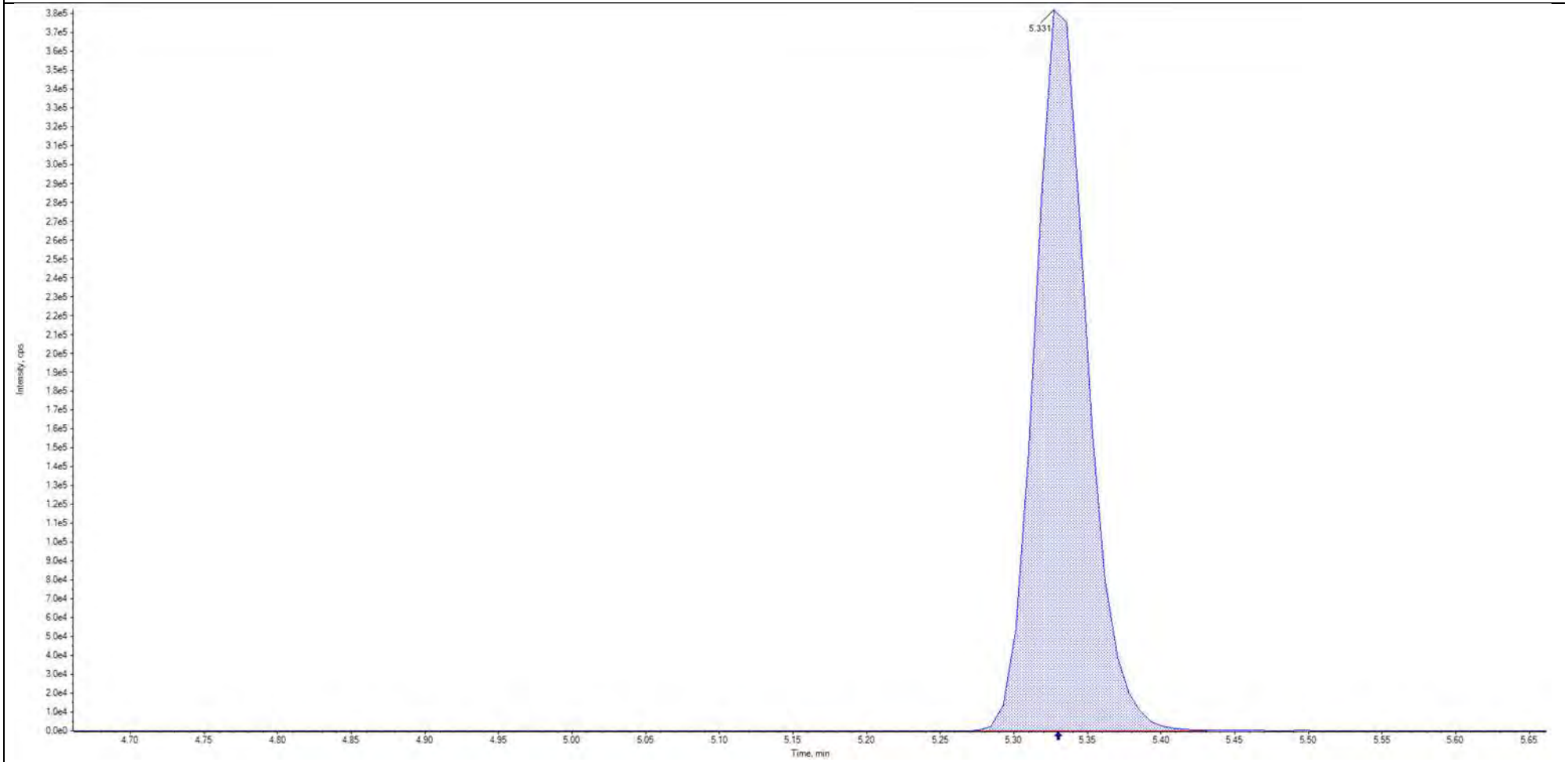


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

13C5-PFPeA
Sample: IA1633STD-25

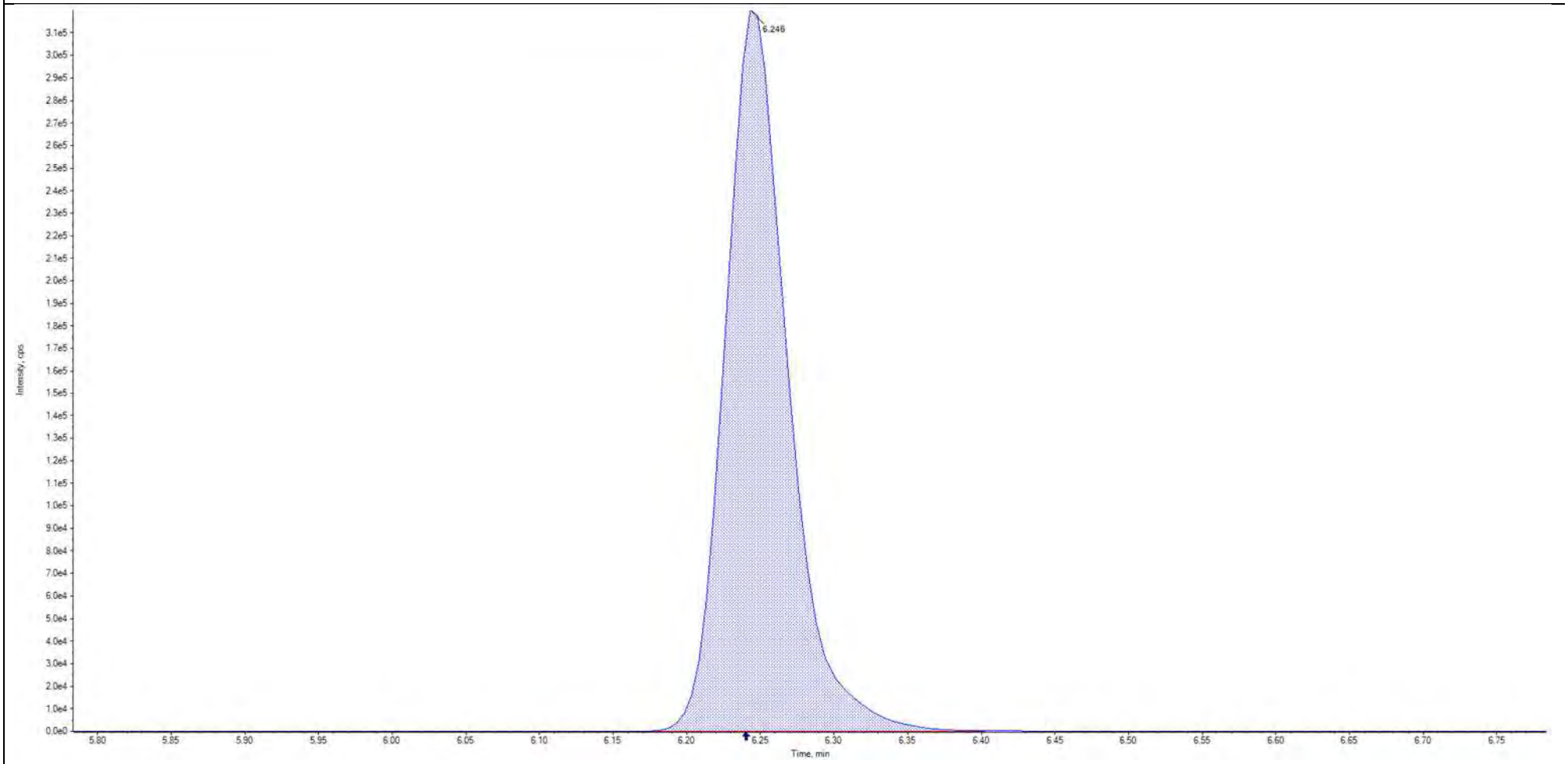


13C5-PFHxA
Sample: IA1633STD-25



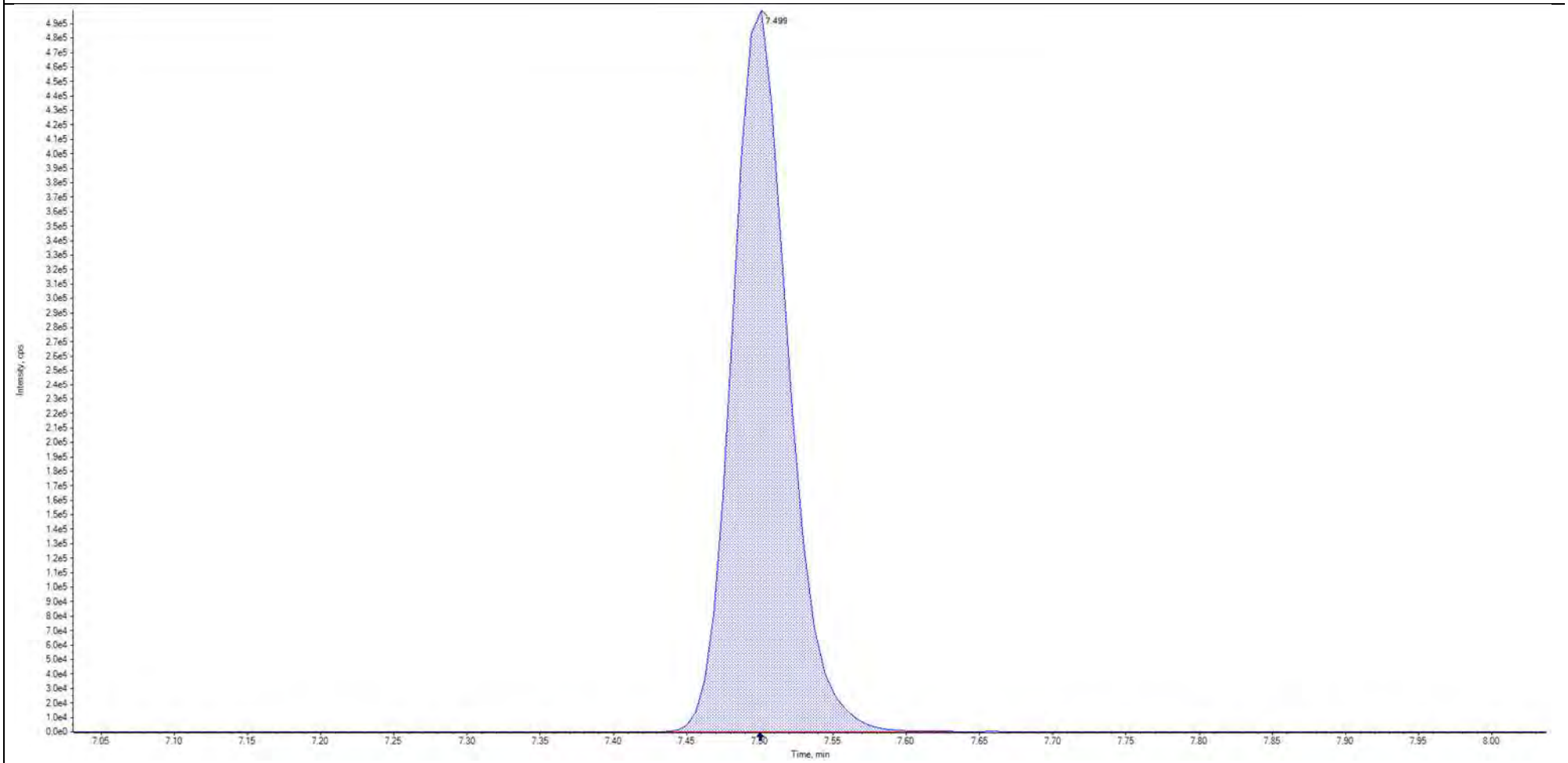
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

13C4-PFHpA
Sample: IA1633STD-25

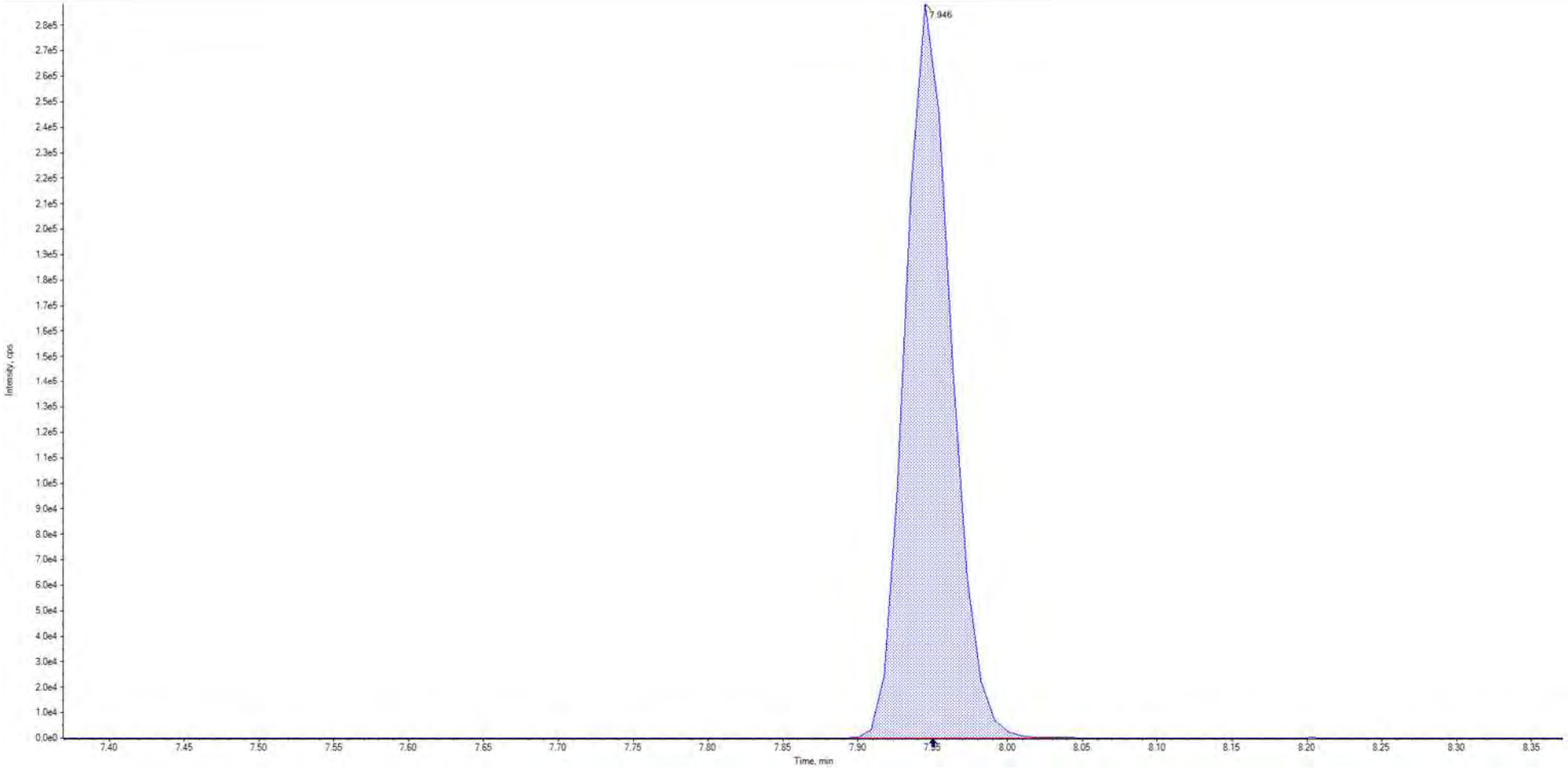


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

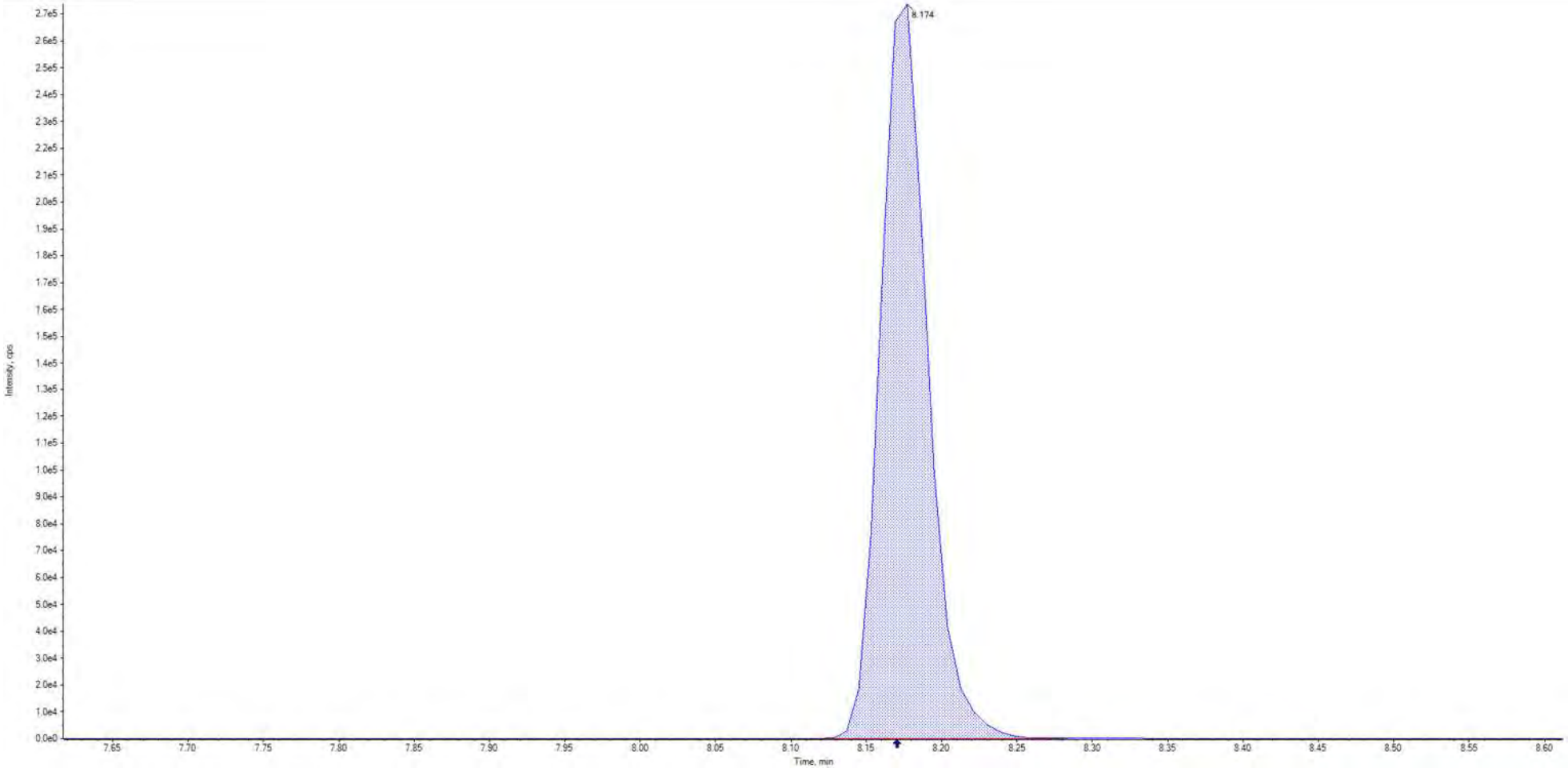
13C8-PFOA
Sample: IA1633STD-25



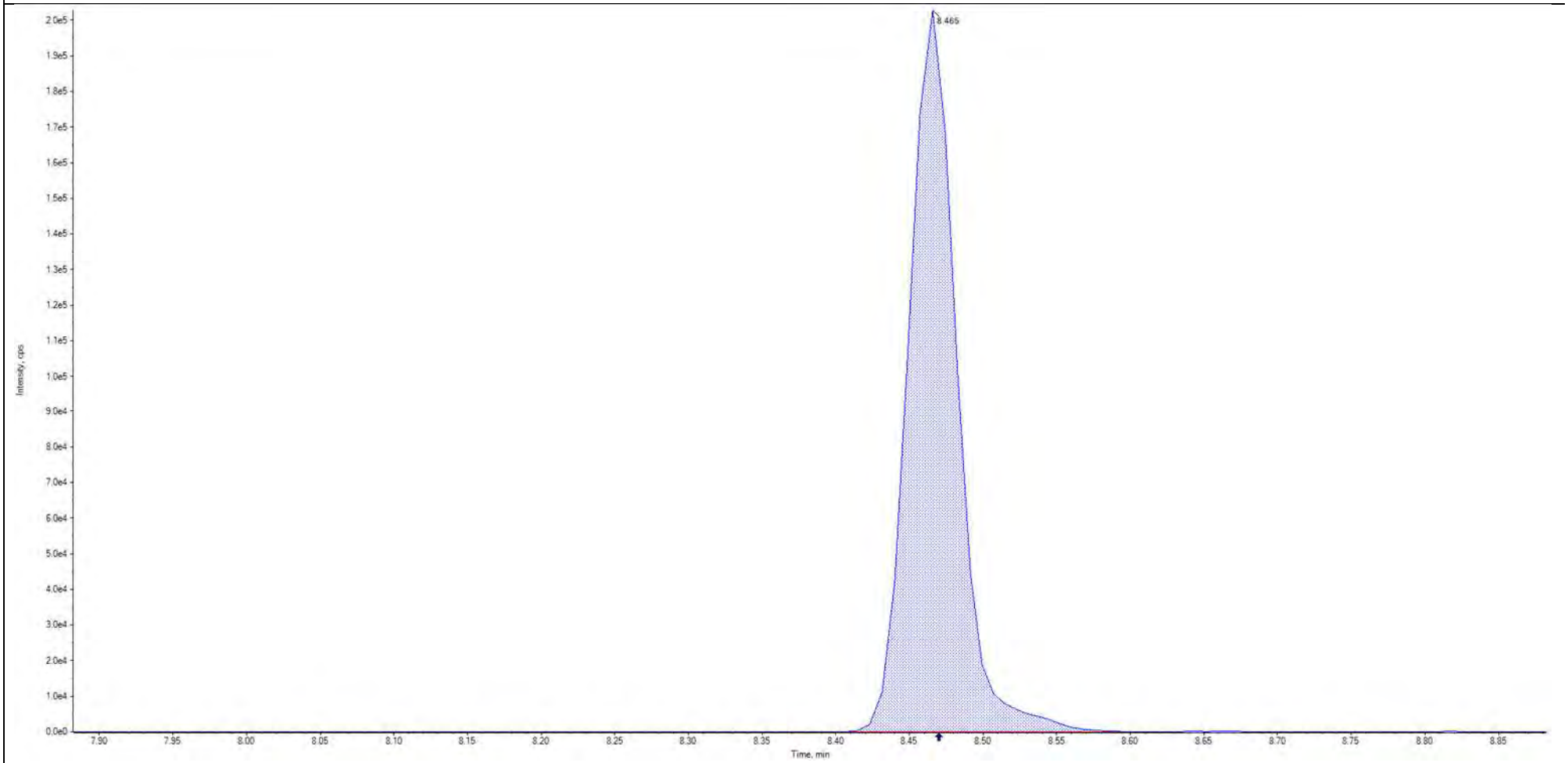
13C9-PFNA
Sample: IA1633STD-25



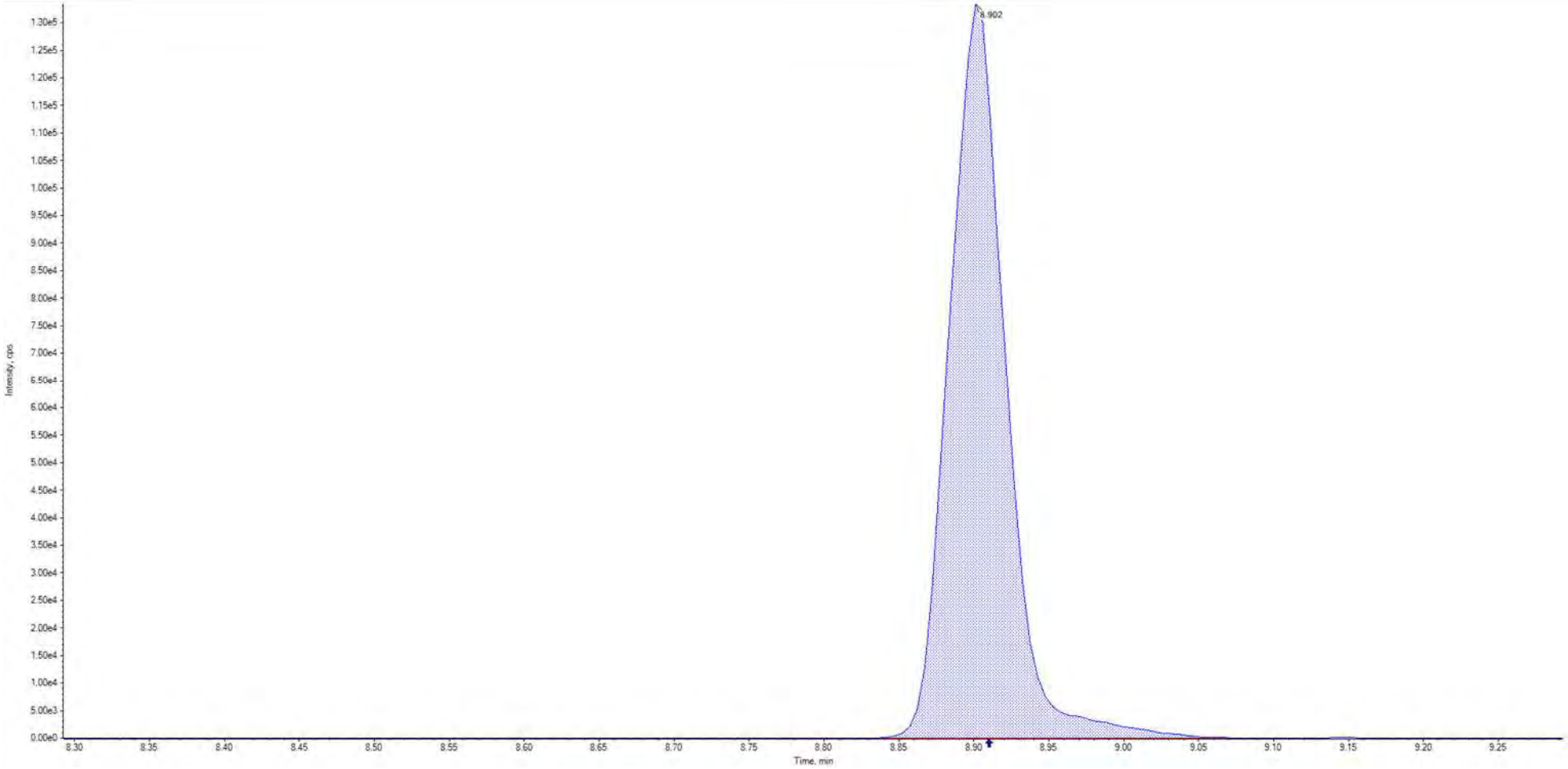
13C6-PFDA
Sample: IA1633STD-25



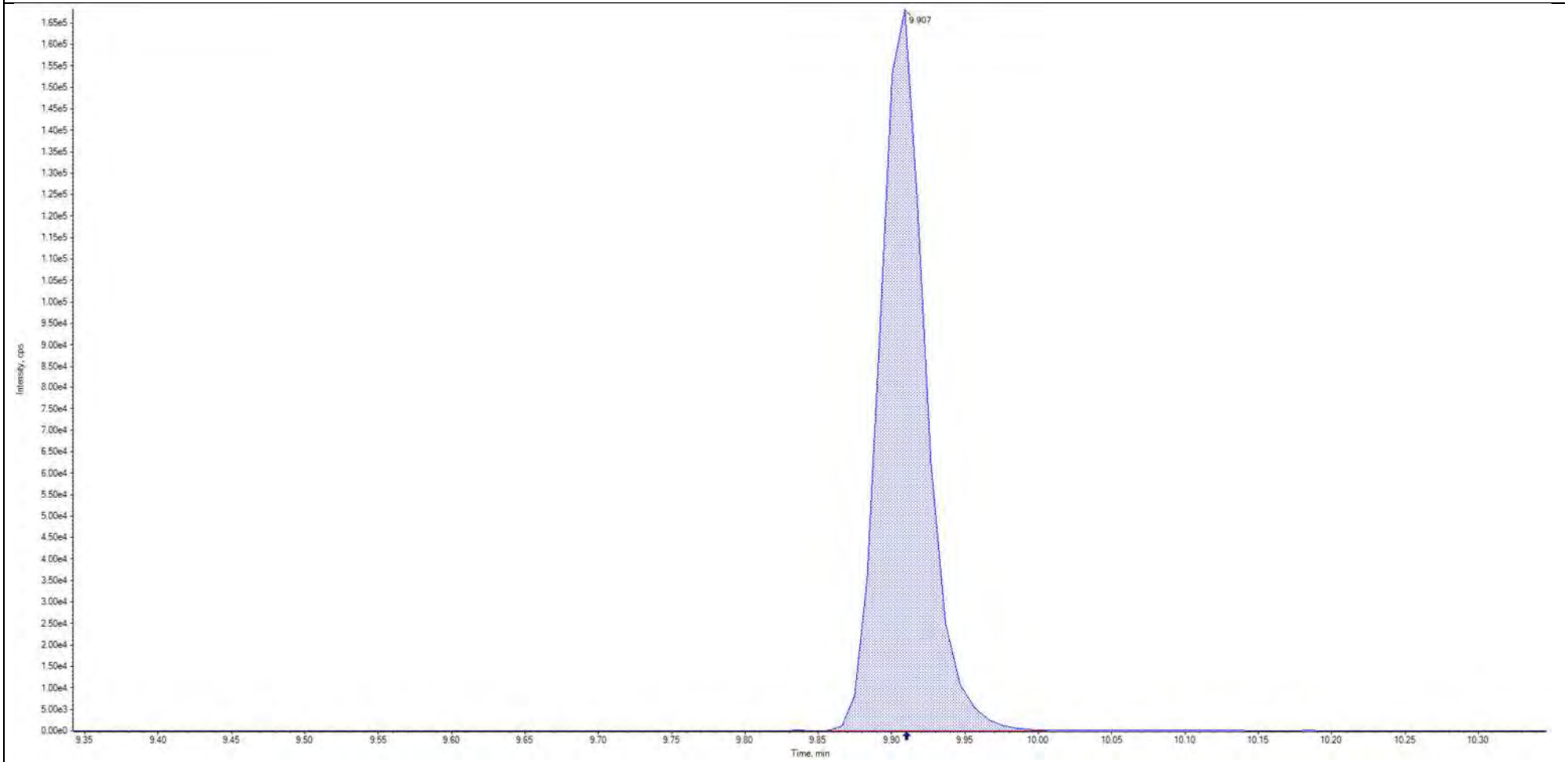
13C7-PFUnA
Sample: IA1633STD-25



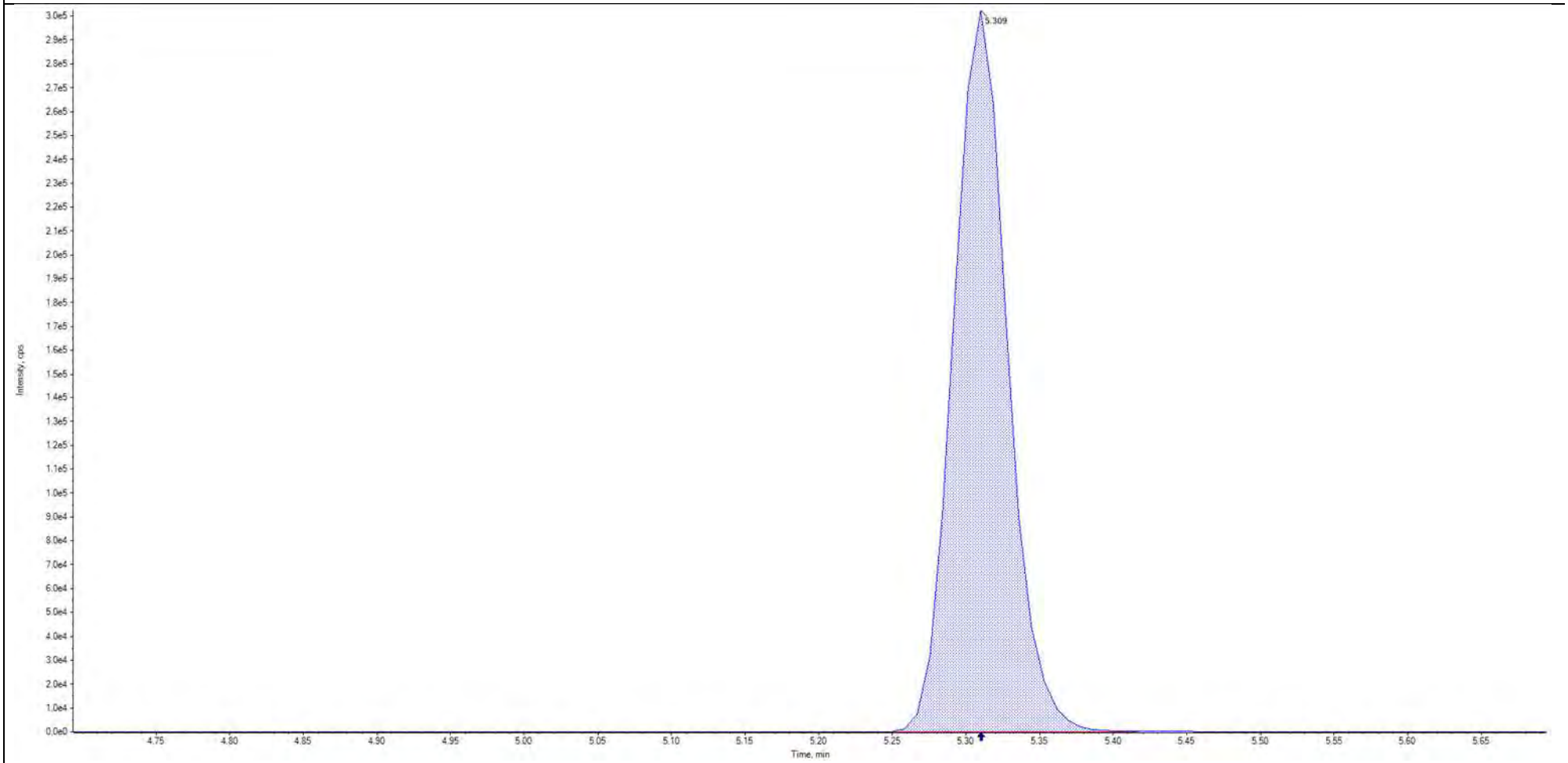
13C2-PFDoA
Sample: IA1633STD-25



13C2-PFTeDA
Sample: IA1633STD-25

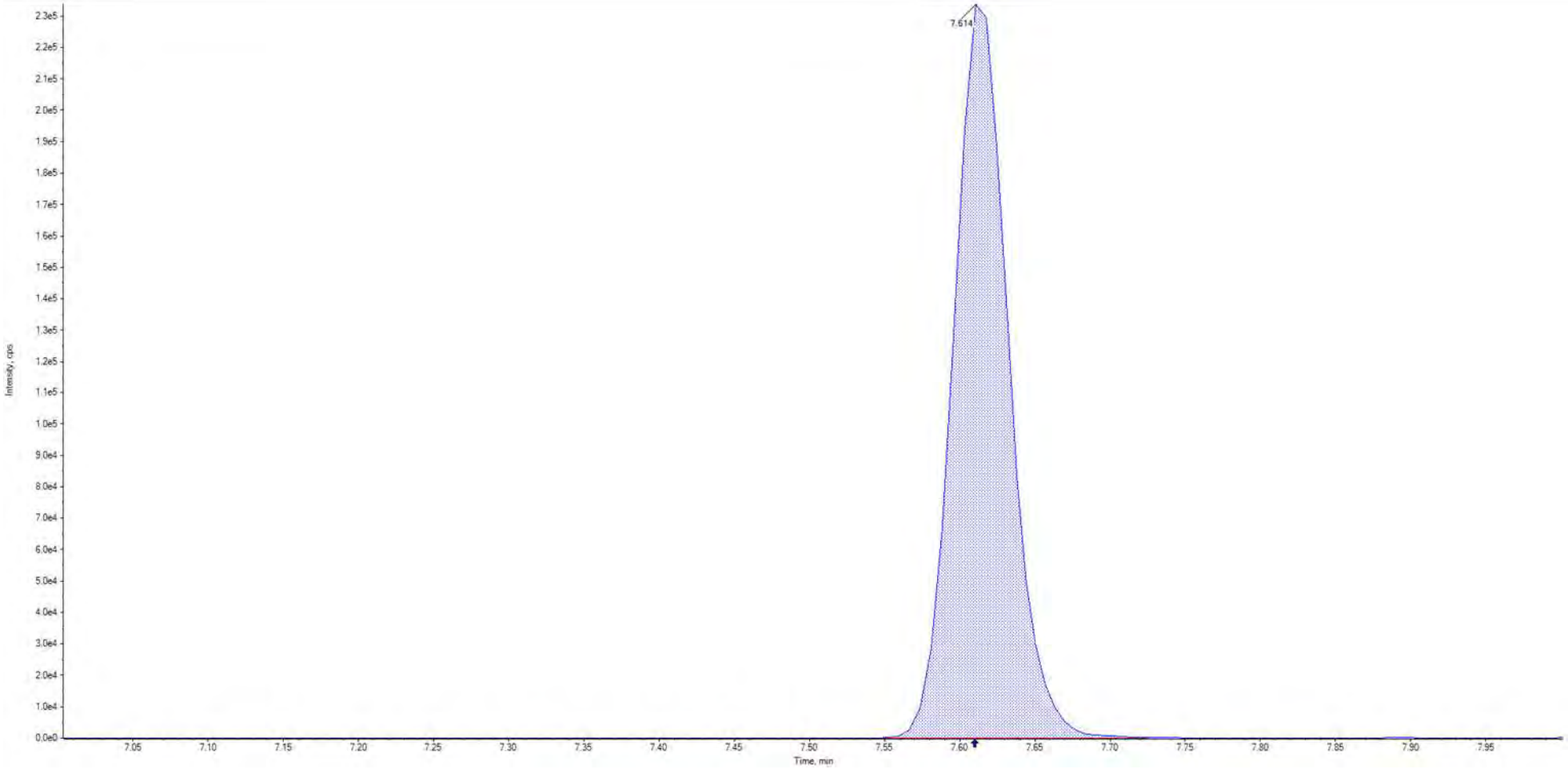


13C3-PFBS
Sample: IA1633STD-25



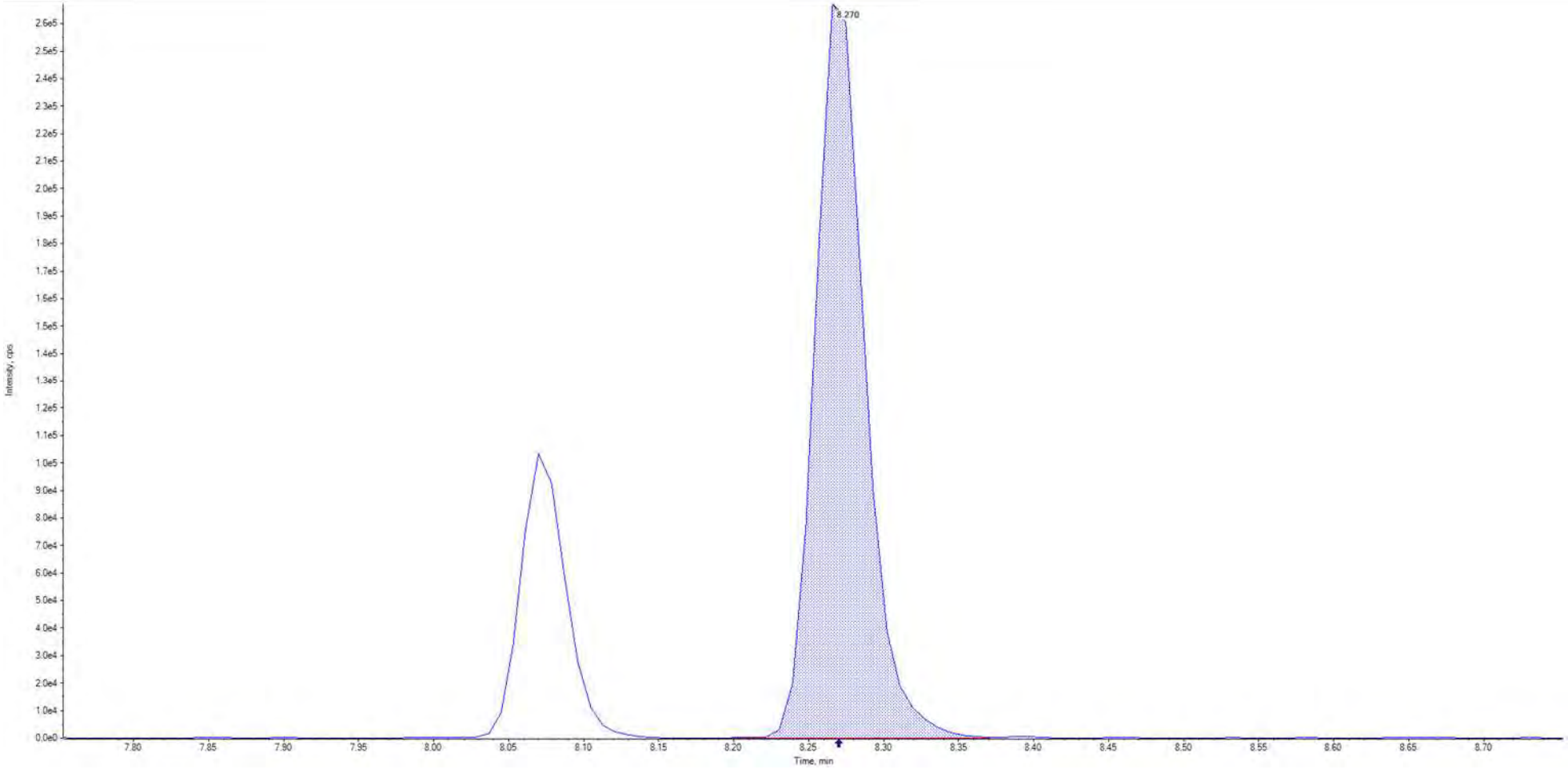
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

13C3-PFHxS
Sample: IA1633STD-25

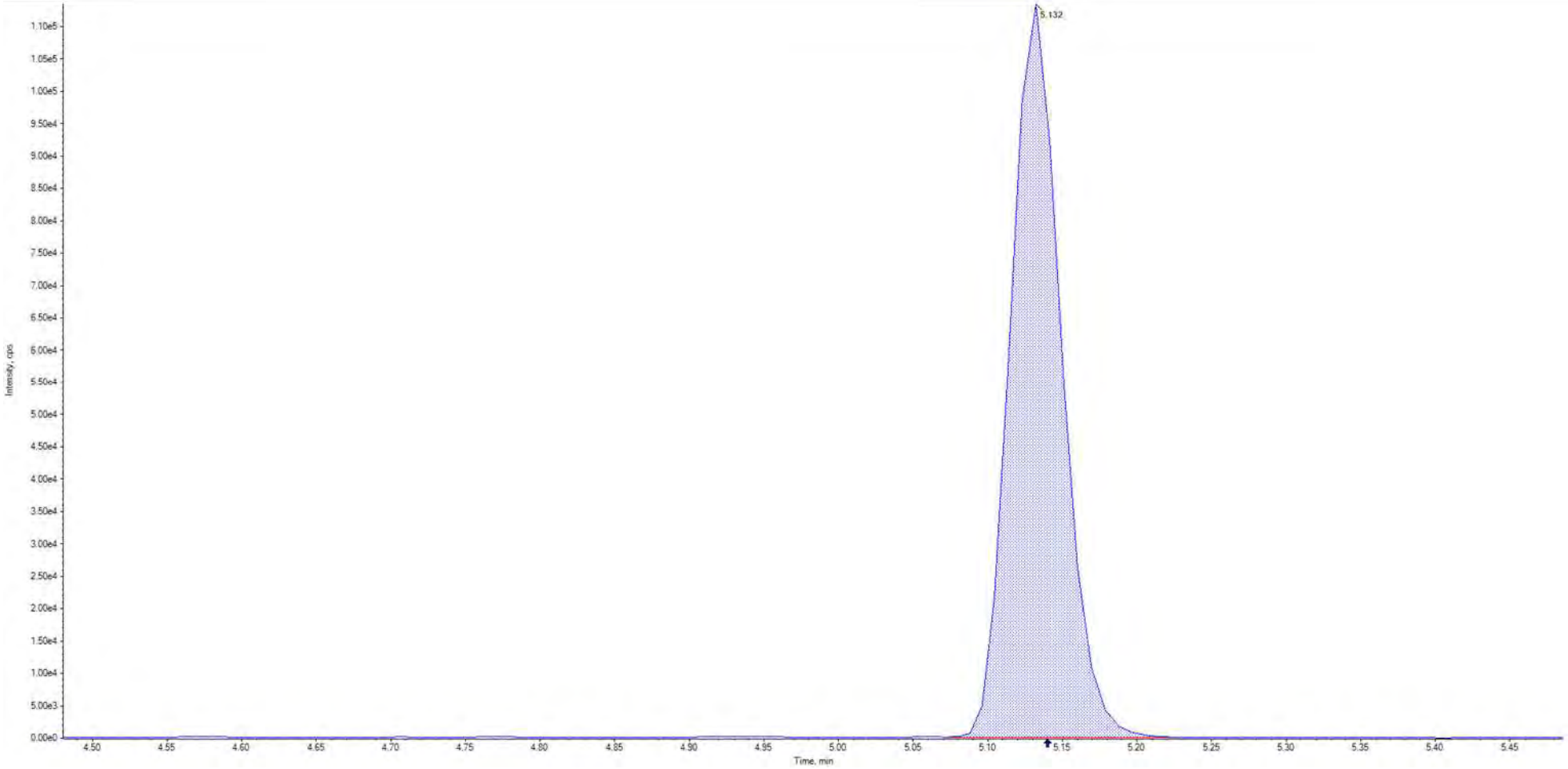


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

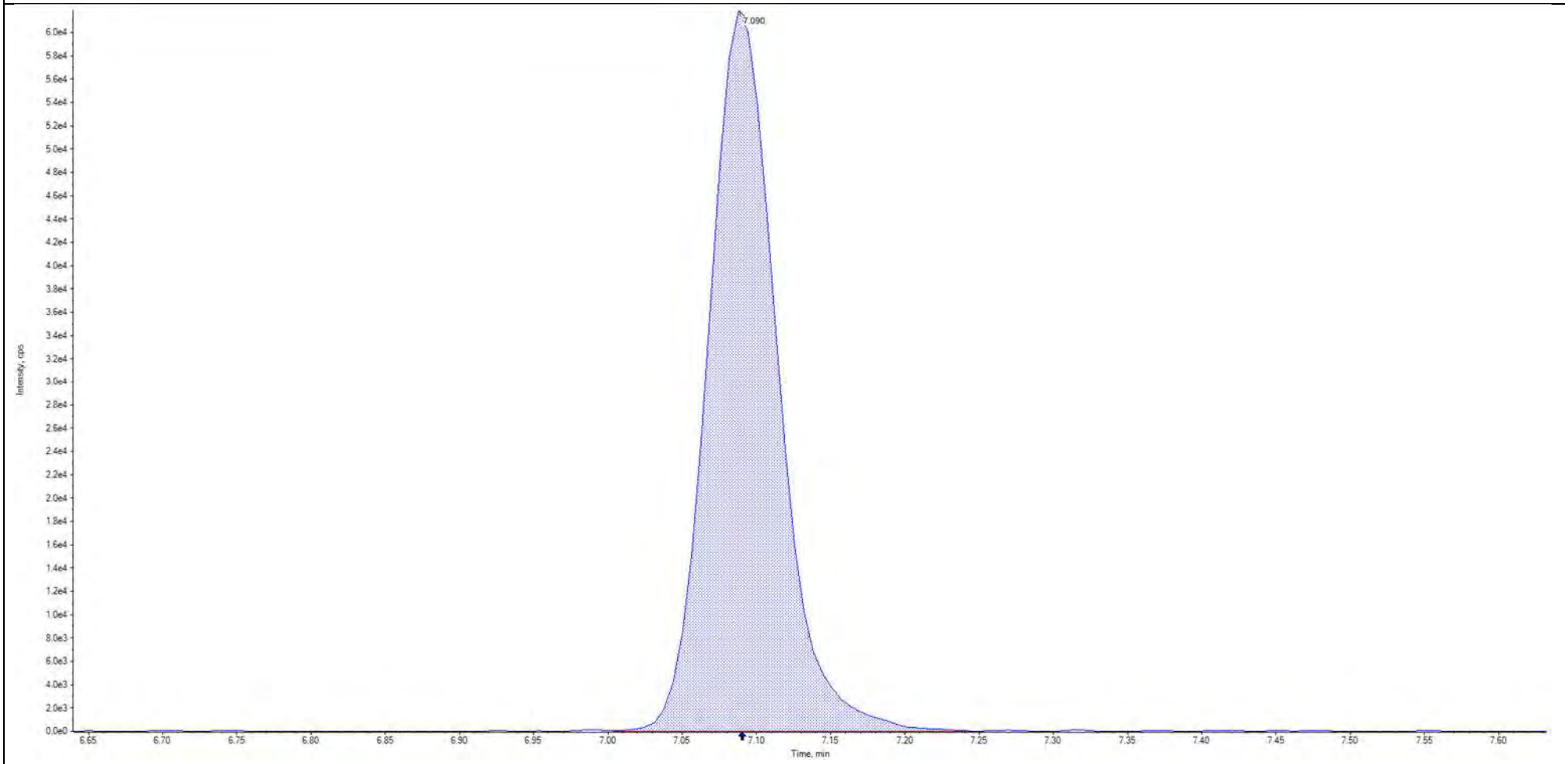
13C8-PFOS
Sample: IA1633STD-25



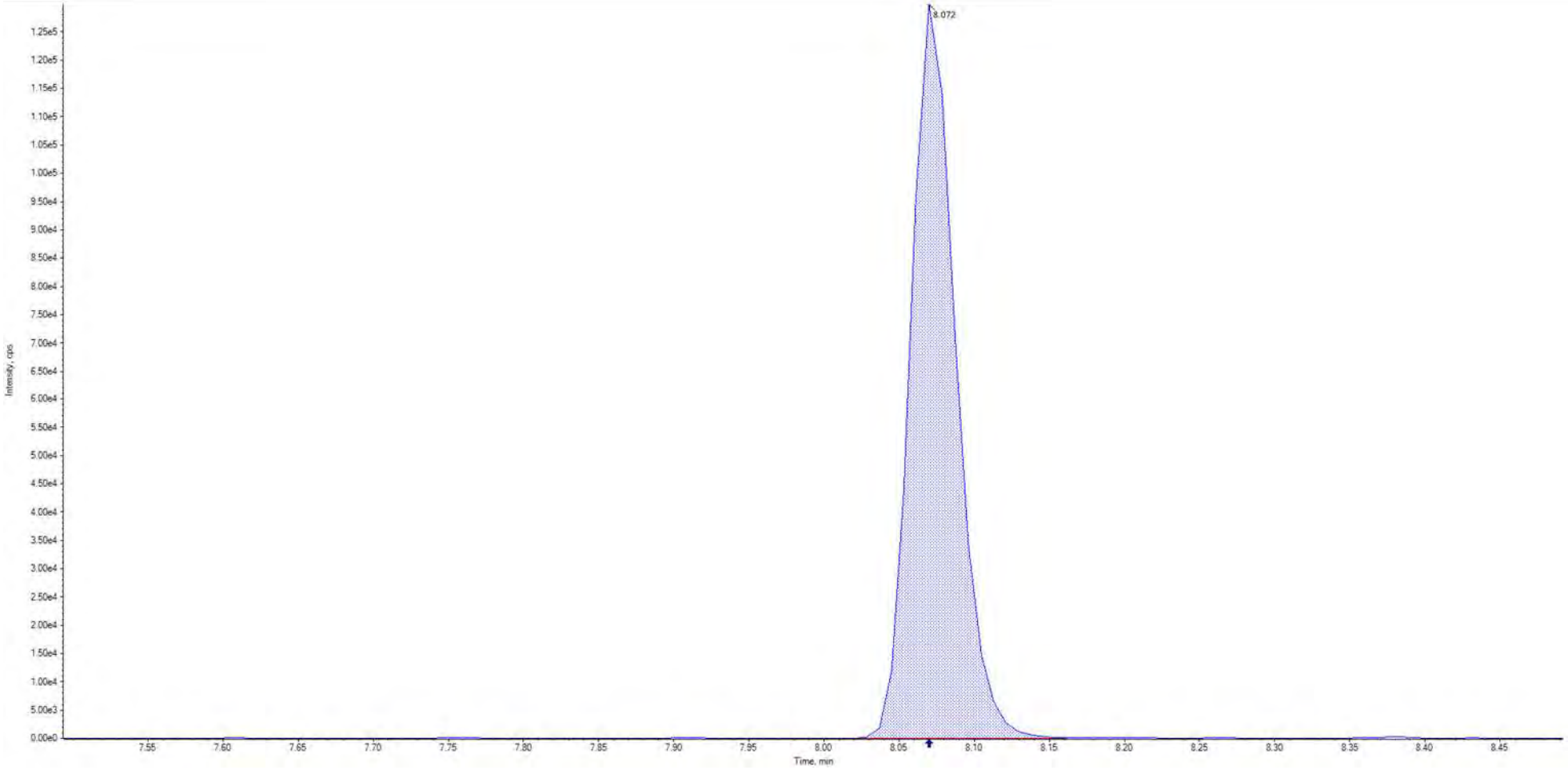
13C2-4:2FTS
Sample: IA1633STD-25



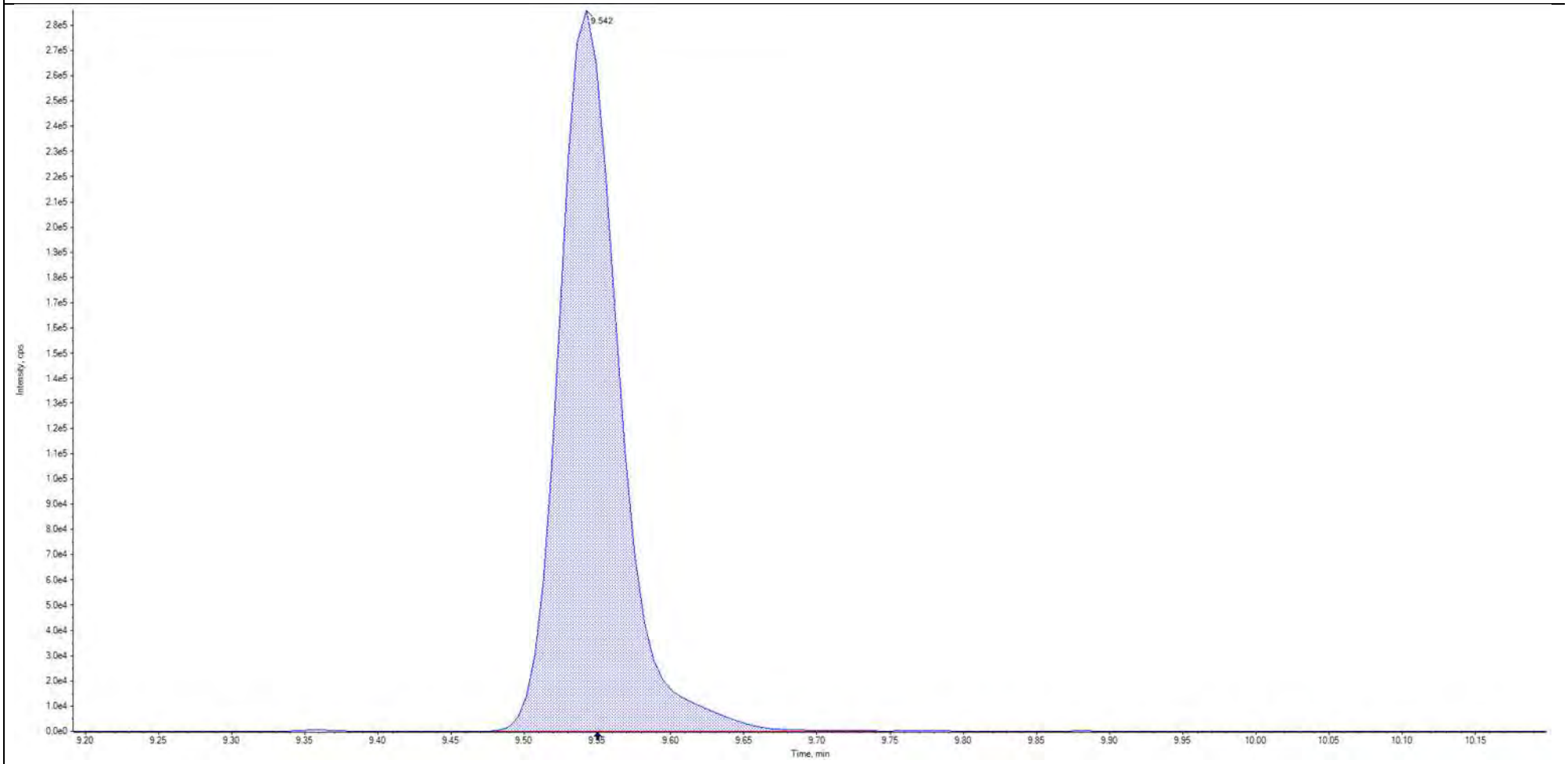
13C2-6:2FTS
Sample: IA1633STD-25



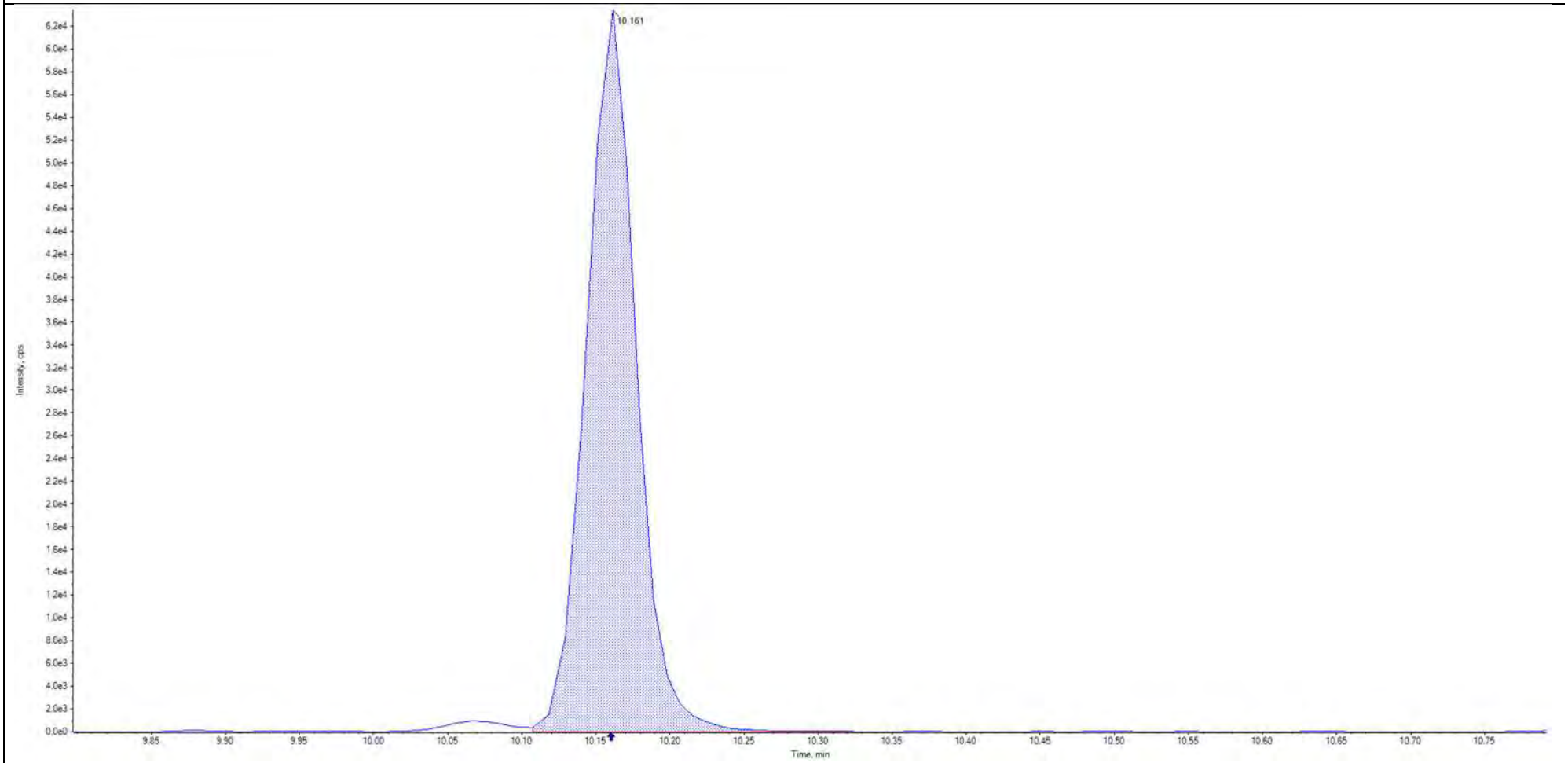
13C2-8:2FTS
Sample: IA1633STD-25



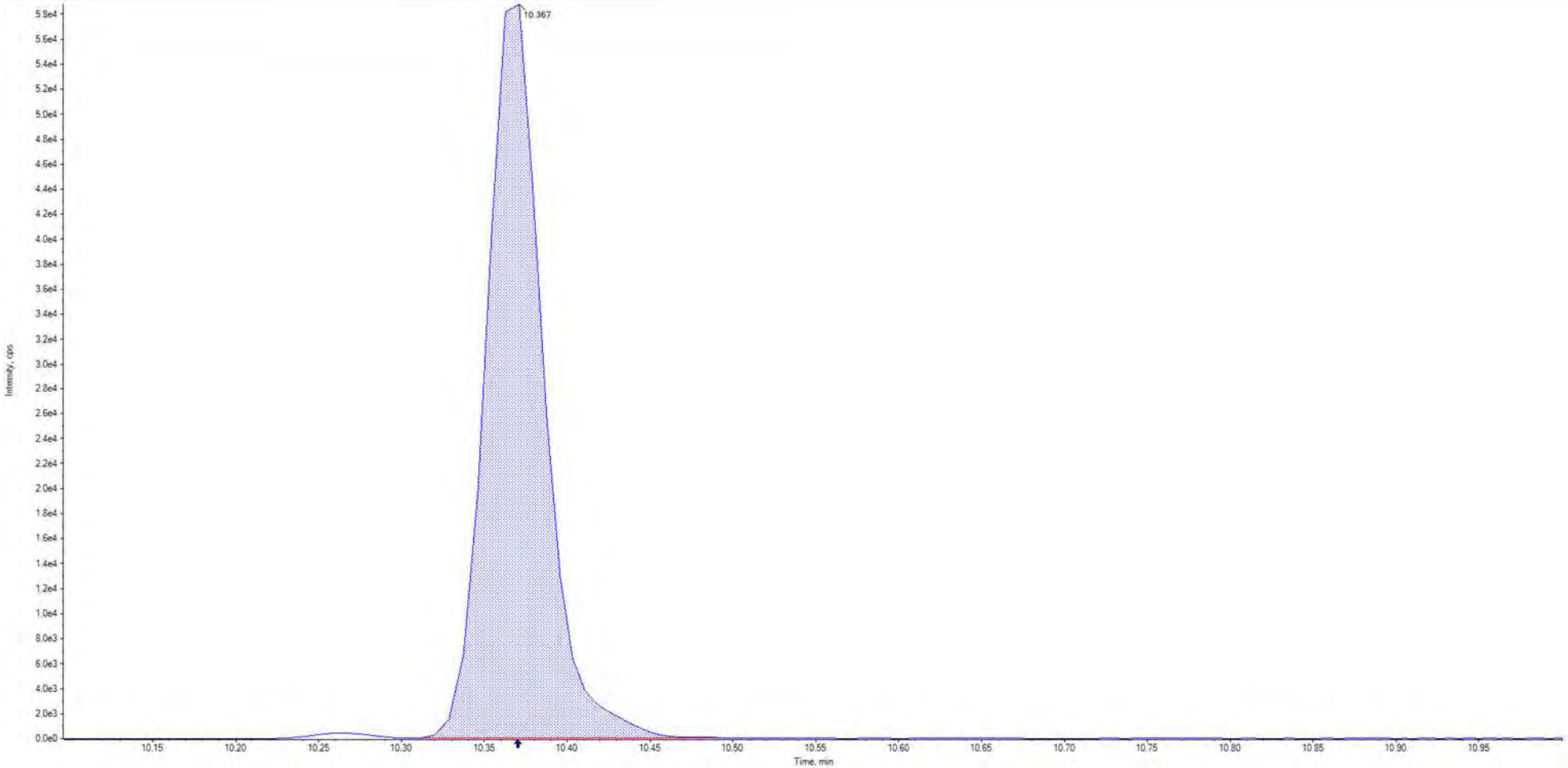
13C8-PFOSA
Sample: IA1633STD-25



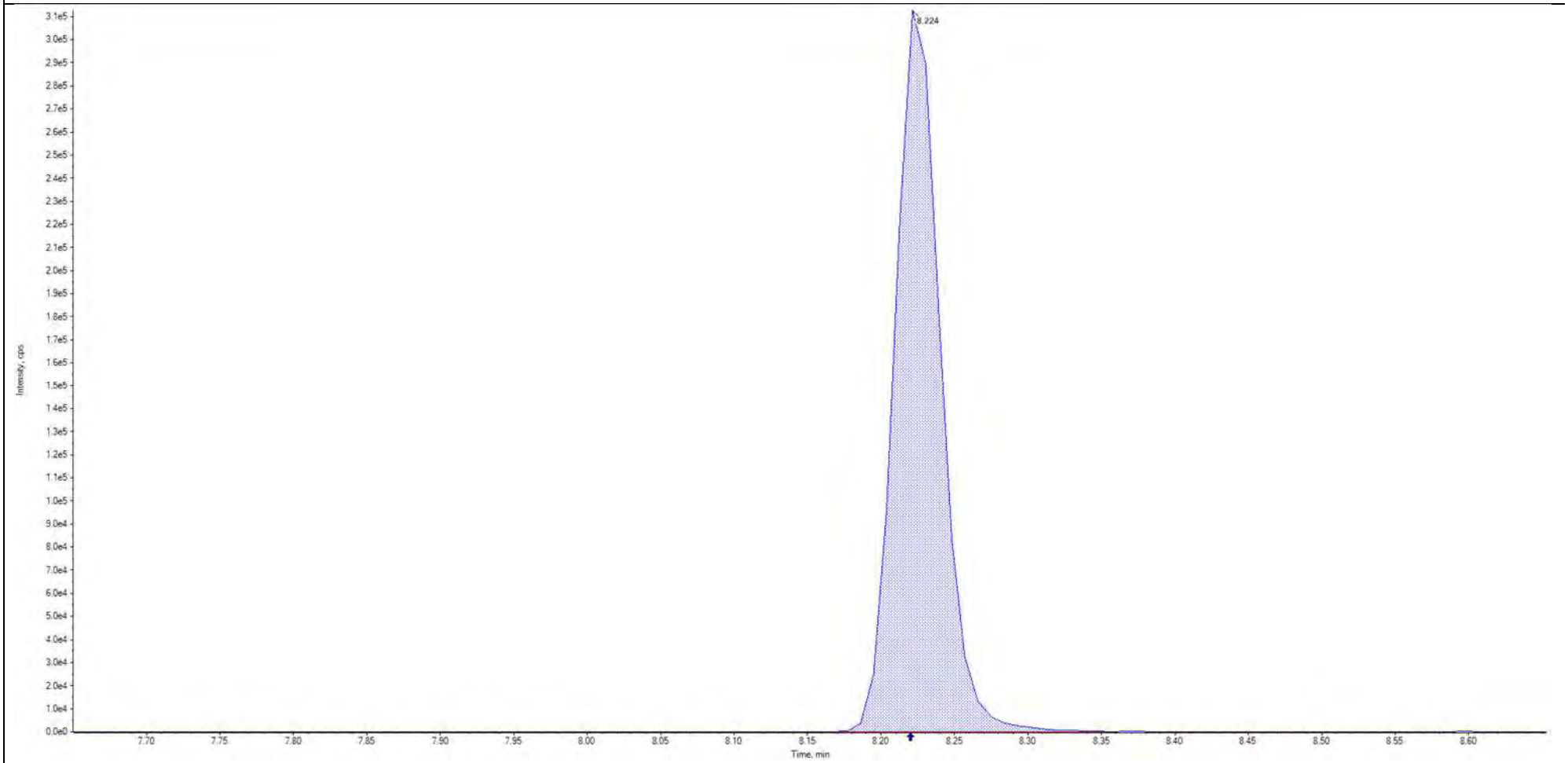
d3-NMeFOSA
Sample: IA1633STD-25



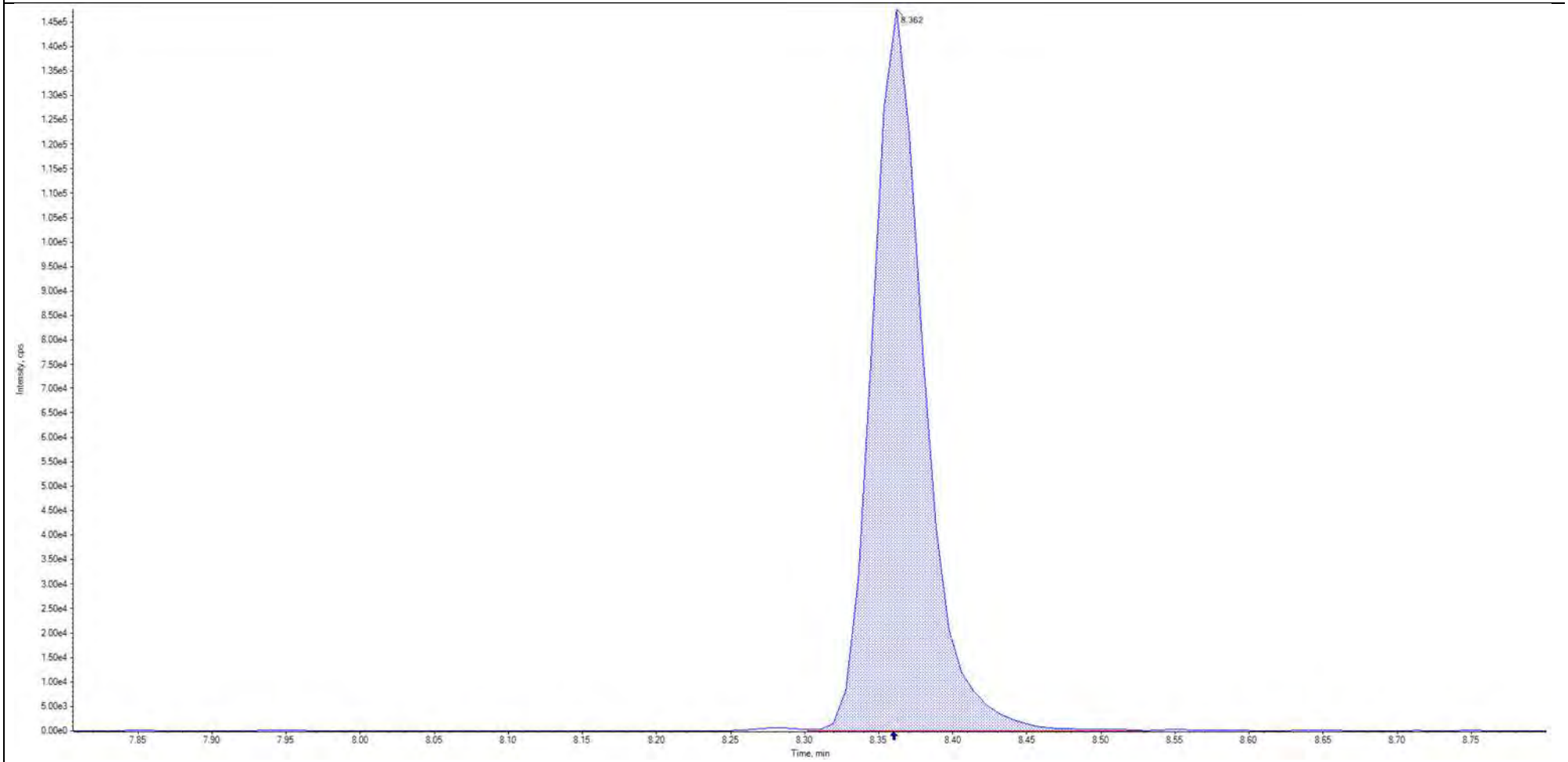
d5-NEtFOSA
Sample: IA1633STD-25



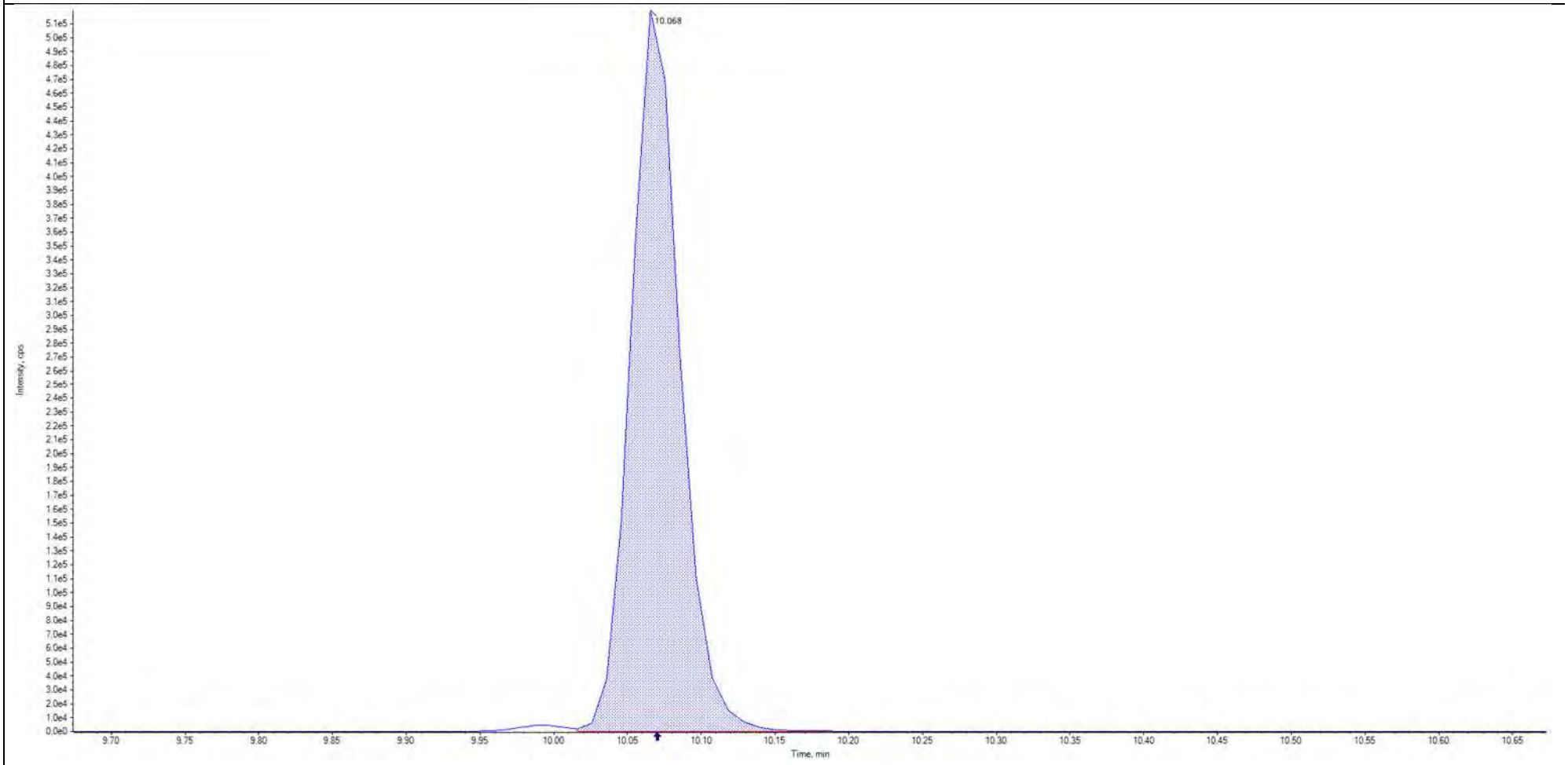
d3-NMeFOSAA
Sample: IA1633STD-25



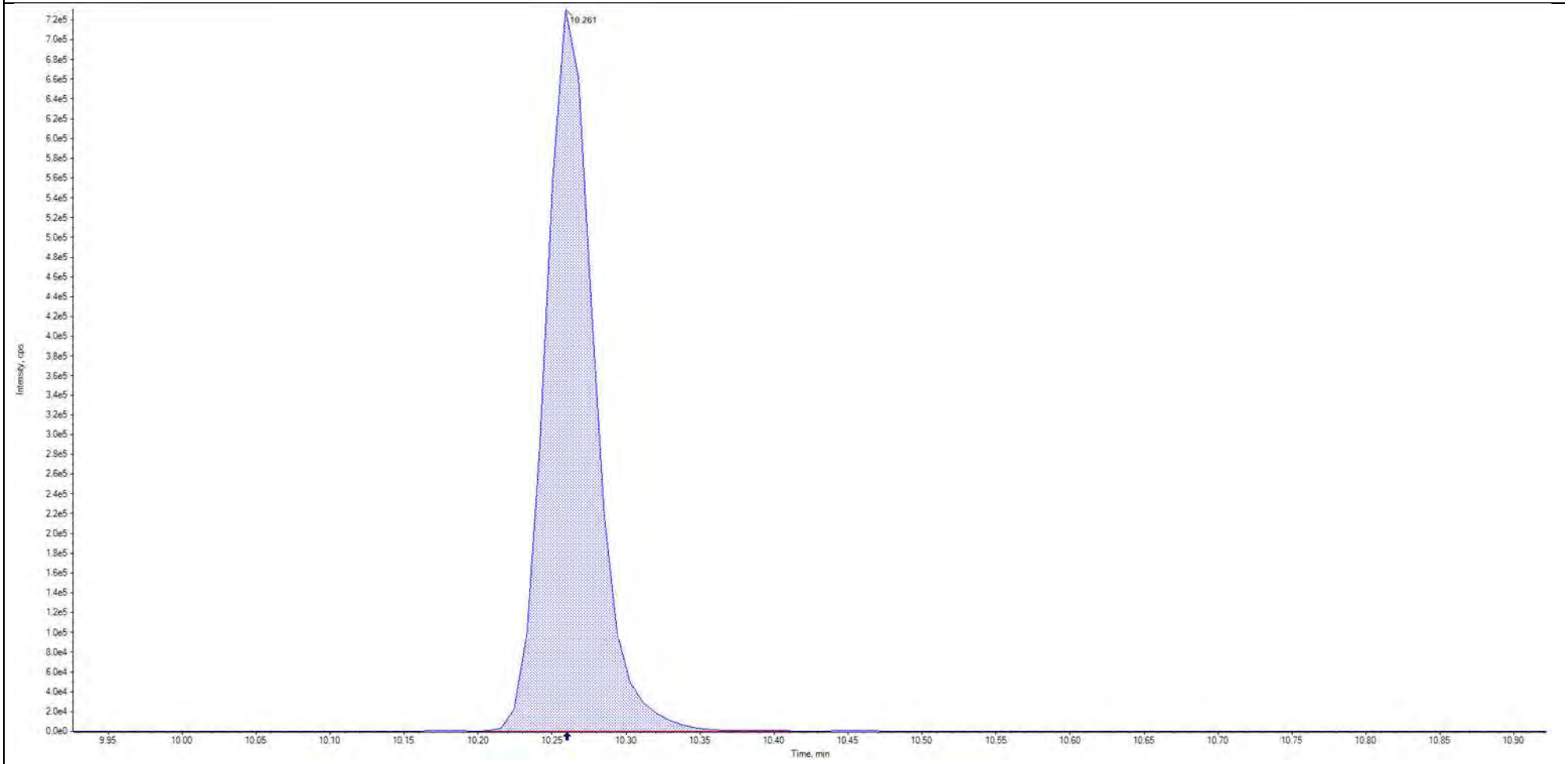
d5-NEtFOSAA
Sample: IA1633STD-25



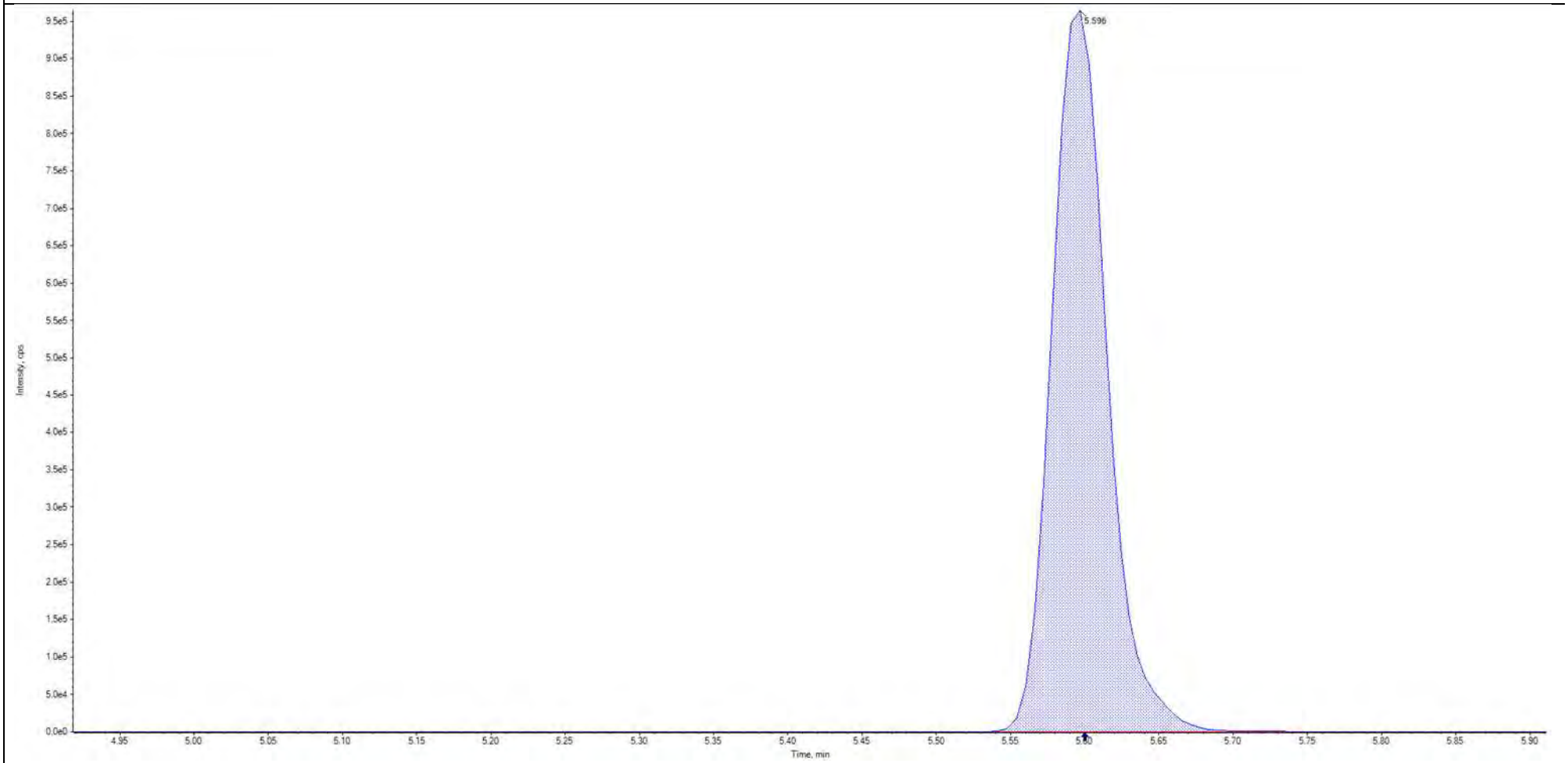
d7-NMeFOSE
Sample: IA1633STD-25



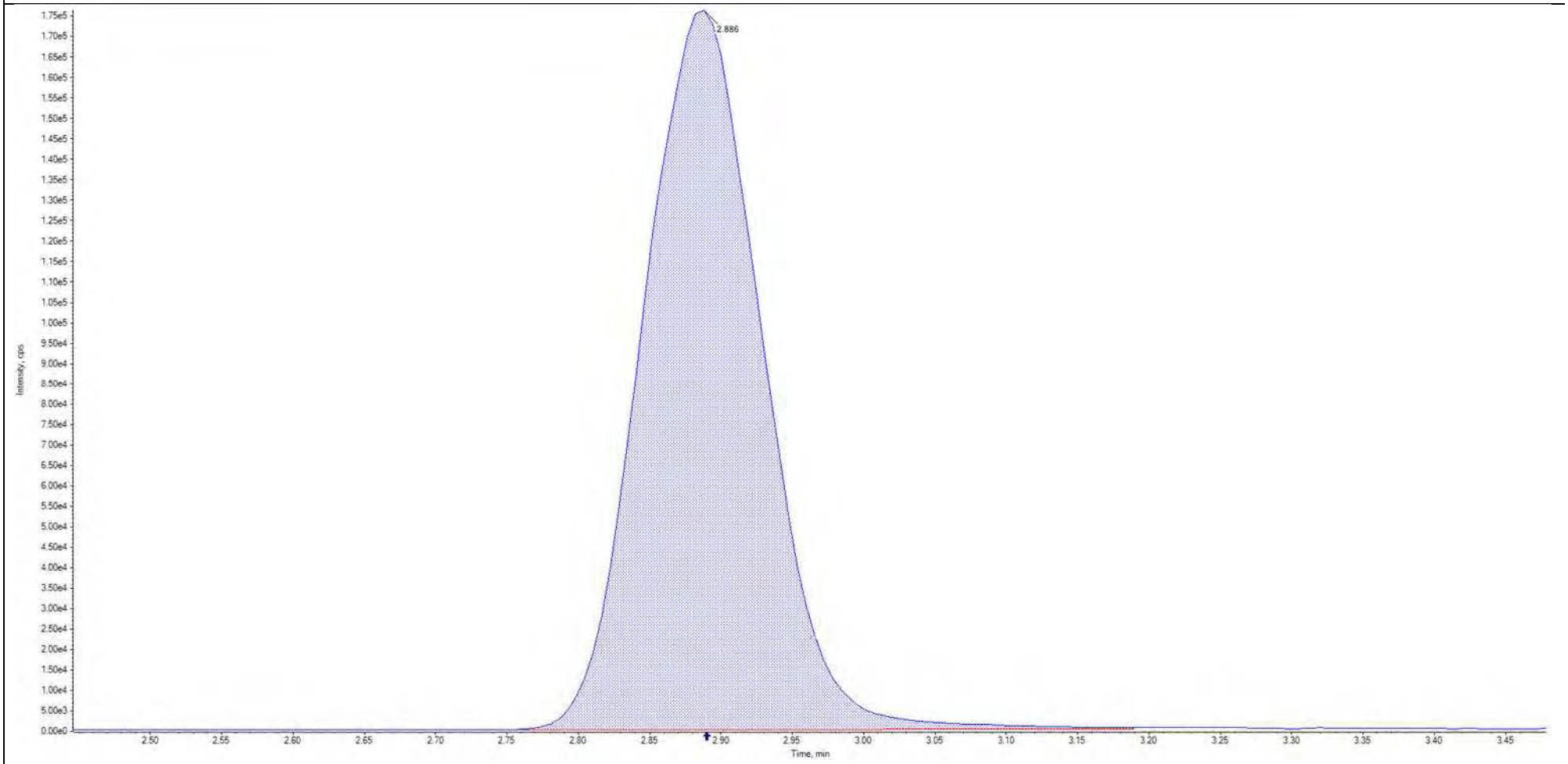
d9-NEtFOSE
Sample: IA1633STD-25



13C3-HFPO-DA
Sample: IA1633STD-25

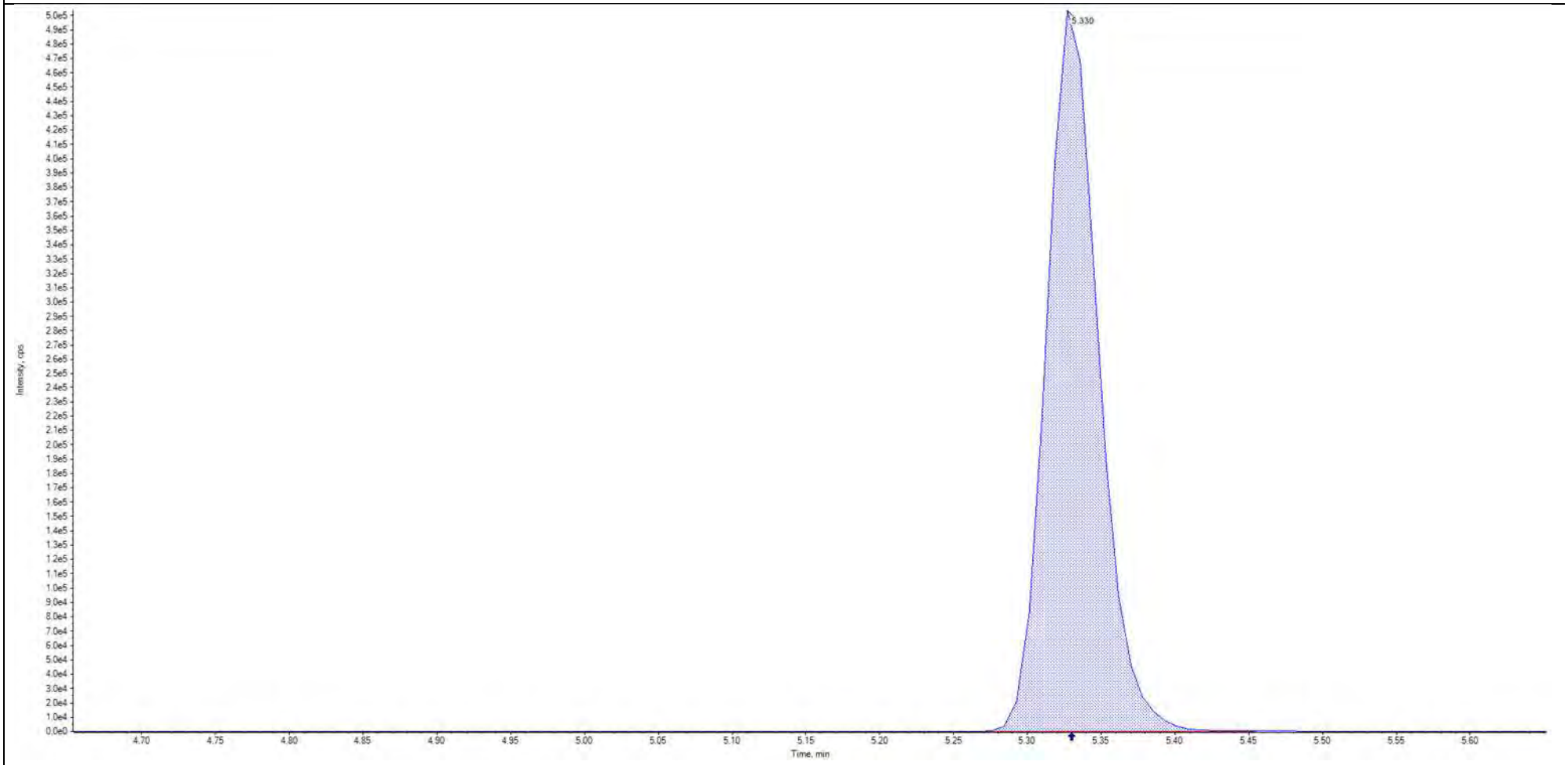


13C3-PFBA
Sample: IA1633STD-25



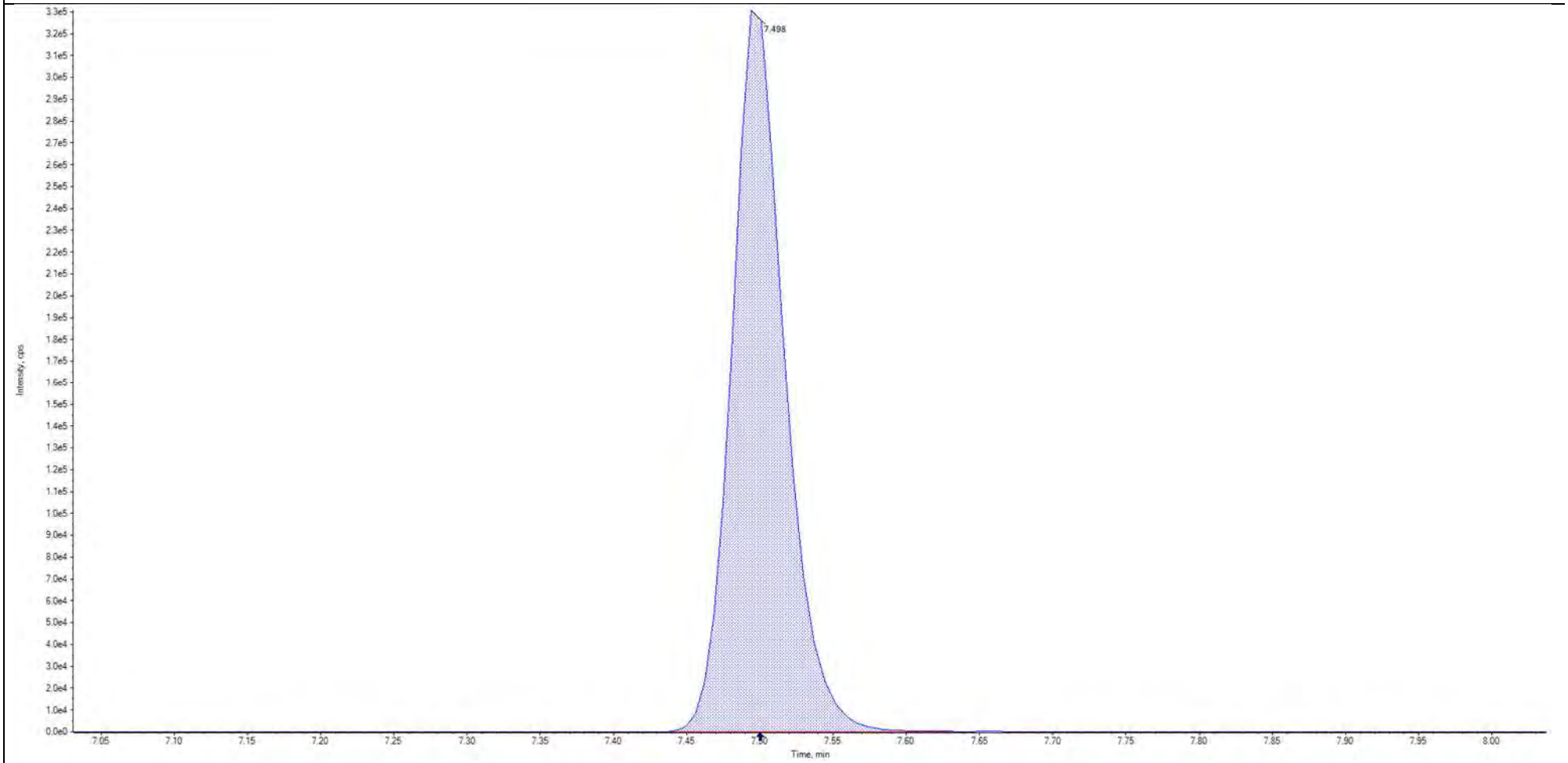
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

13C2-PFHxA
Sample: IA1633STD-25

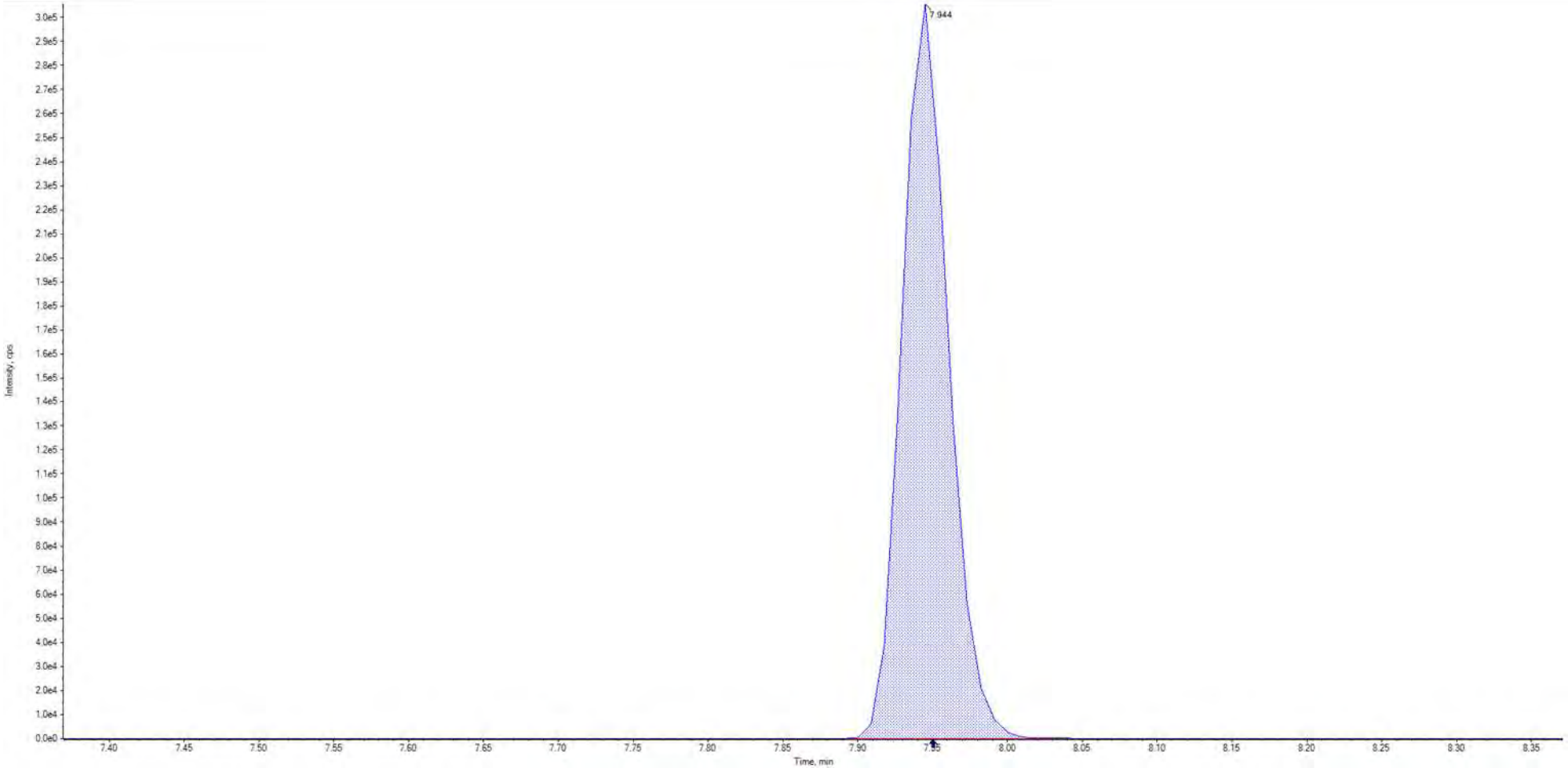


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_78.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

13C4-PFOA
Sample: IA1633STD-25



13C5-PFNA
Sample: IA1633STD-25



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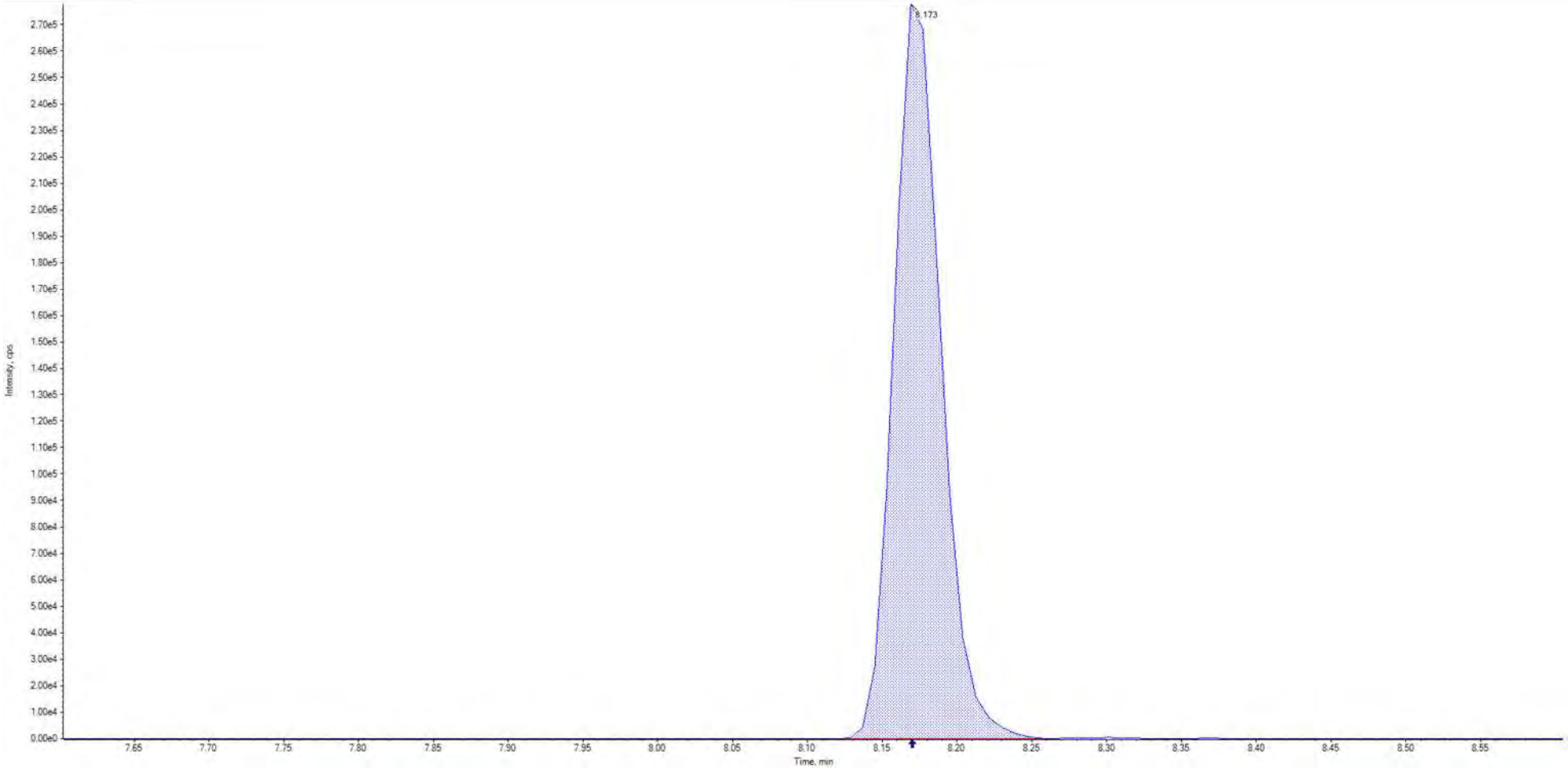

18O2-PFHxS
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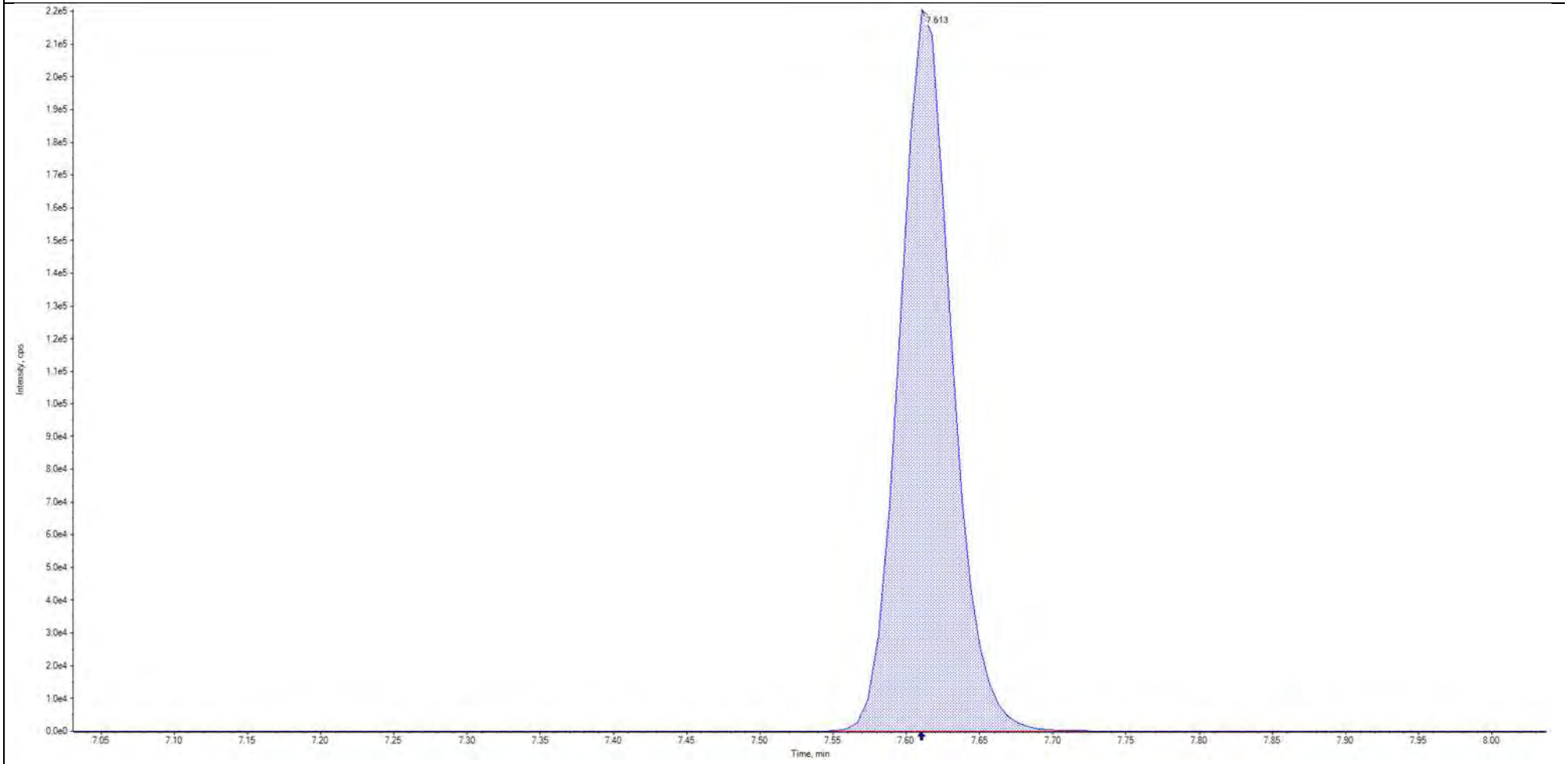

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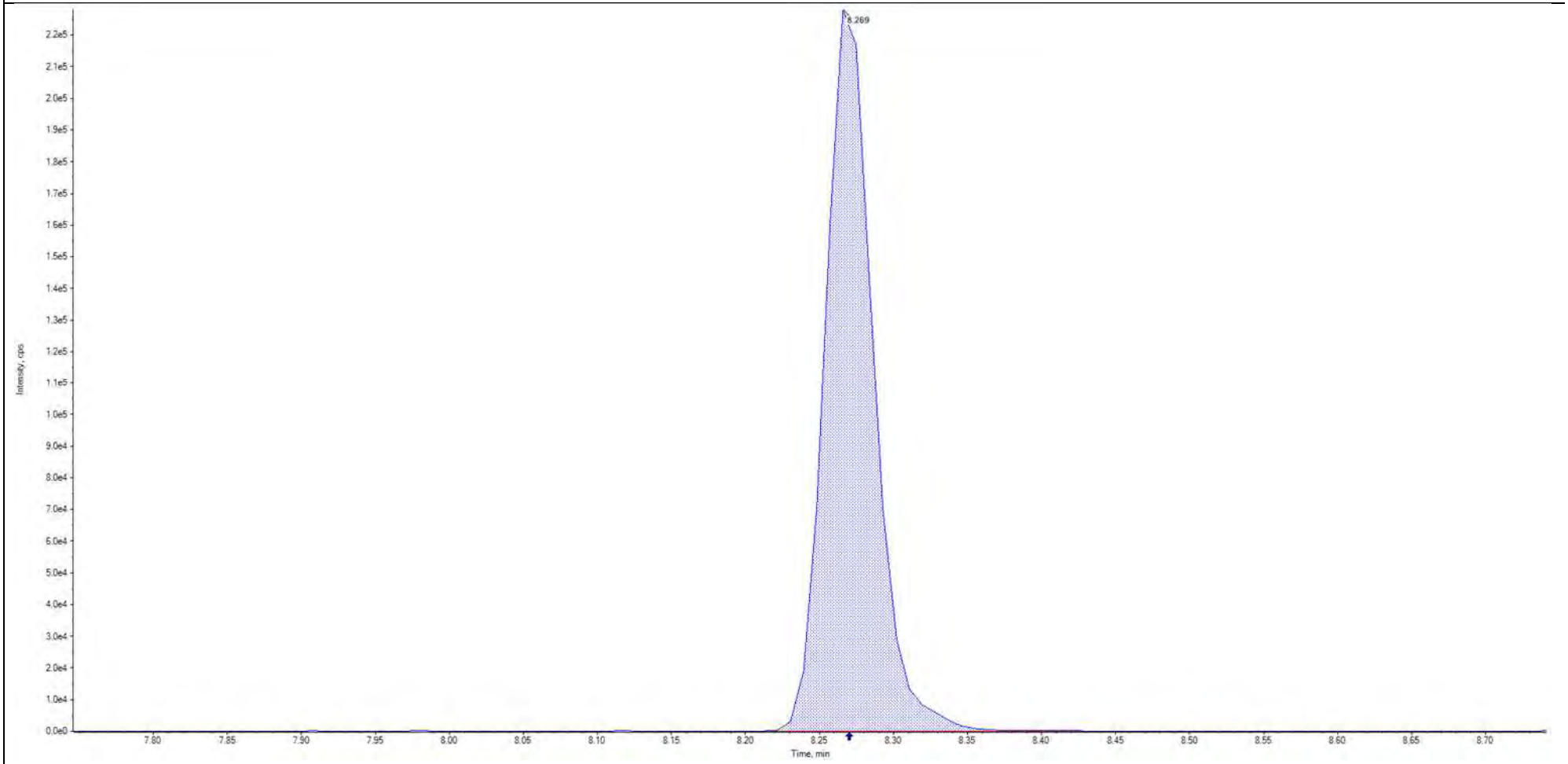
Generated: 8/14/2024 6:27:11 AM

13C4-PFOS
Sample: IA1633STD-25



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Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Method: EPA1633_NIS_CALC.qmethod
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User: LCMS05:SL

LC/MS-MS Method:EPA_1633.dam

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
1	PFBA	375-22-4	2.89	213.0 / 169.0	41238756		257.036	N/A	N/A	N/A	102.8
2	PFPeA	2706-90-3	4.65	263.0 / 219.0	29743263		129.972	0.007	0.007	N/A	104.0
3	PFPeA_2	2706-90-3	4.65	263.0 / 68.9	204295		126.434	0.007	0.007	N/A	101.2
4	PFHxA	307-24-4	5.34	313.0 / 269.0	26624209		57.960	0.074	0.072	Pass	92.7
5	PFHxA_2	307-24-4	5.34	313.0 / 119.0	1966660		57.944	0.074	0.072	Pass	92.7
6	PFHpA	375-85-9	6.25	363.1 / 319.0	27365507		62.077	0.312	0.297	Pass	99.3
7	PFHpA_2	375-85-9	6.25	363.1 / 169.0	8530598		63.237	0.312	0.297	Pass	101.2

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
8	PFOA	335-67-1	7.50	413.1 / 369.1	18218936	M5	66.636	0.539	0.586	Pass	106.6
9	PFOA_2	335-67-1	7.50	413.1 / 169.0	9811452	M7	65.495	0.539	0.586	Pass	104.8
10	PFNA	375-95-1	7.95	462.8 / 418.9	22763835	M5	64.916	0.315	0.313	Pass	103.9
11	PFNA_2	375-95-1	7.95	462.8 / 218.9	7163225	M7	66.844	0.315	0.313	Pass	107.0
12	PFDA	335-76-2	8.18	513.1 / 469.1	21763691		59.208	0.160	0.142	Pass	94.7
13	PFDA_2	335-76-2	8.18	513.1 / 219.0	3472002		63.023	0.160	0.142	Pass	100.8
14	PFUnA	2058-94-8	8.47	563.1 / 519.1	17004399		65.595	0.194	0.194	Pass	105.0
15	PFUnA_2	2058-94-8	8.47	563.1 / 269.0	3303497		65.785	0.194	0.194	Pass	105.3
16	PFDoA	307-55-1	8.90	613.1 / 569.1	20644301		55.749	0.173	0.167	Pass	89.2
17	PFDoA_2	307-55-1	8.90	613.1 / 319.0	3571949		57.099	0.173	0.167	Pass	91.4
18	PFTrDA	72629-94-8	9.50	663.1 / 619.1	13521775		61.280	0.207	0.228	Pass	98.1
19	PFTrDA_2	72629-94-8	9.50	663.1 / 169.0	2800725		56.989	0.207	0.228	Pass	91.2
20	PFTeDA	376-06-7	9.91	713.1 / 669.1	20696767		53.617	0.140	0.137	Pass	85.8
21	PFTeDA_2	376-06-7	9.91	713.1 / 169.0	2887576		54.691	0.140	0.137	Pass	87.5
22	PFBS	375-73-5	5.32	299.1 / 80.1	17476522		59.577	0.387	0.396	Pass	107.5

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
23	PFBS_2	375-73-5	5.32	299.1 / 99.1	6771764		57.902	0.387	0.396	Pass	104.5
24	PFPeS	2706-91-4	6.34	349.1 / 80.1	15870136		63.007	0.301	0.299	Pass	107.1
25	PFPeS_2	2706-91-4	6.34	349.1 / 99.1	4778696		62.902	0.301	0.299	Pass	107.0
26	PFHxS	355-46-4	7.62	399.1 / 80.1	13905841	M5	58.995	0.307	0.315	Pass	103.3
27	PFHxS_2	355-46-4	7.62	399.1 / 99.1	4263367	M7	58.239	0.307	0.315	Pass	102.0
28	PFHpS	375-92-8	8.02	449.1 / 80.1	14651286		61.765	0.289	0.287	Pass	103.7
29	PFHpS_2	375-92-8	8.02	449.1 / 99.1	4241343		61.006	0.289	0.287	Pass	102.4
30	PFOS	1763-23-1	8.27	499.1 / 80.1	15218317	M5	60.256	0.235	0.238	Pass	103.9
31	PFOS_2	1763-23-1	8.27	499.1 / 99.1	3573585		57.753	0.235	0.238	Pass	99.6
32	PFNS	68259-12-1	8.63	549.1 / 80.1	9187351		56.660	0.300	0.301	Pass	94.2
33	PFNS_2	68259-12-1	8.63	549.1 / 99.1	2758938		56.179	0.300	0.301	Pass	93.4
34	PFDS	335-77-3	9.14	599.1 / 80.1	10136479		63.461	0.276	0.275	Pass	105.2
35	PFDS_2	335-77-3	9.14	599.1 / 99.1	2801647		63.629	0.276	0.275	Pass	105.5
36	PFDoS	79780-39-5	10.00	699.2 / 80.1	9057070		61.909	0.269	0.274	Pass	102.1
37	PFDoS_2	79780-39-5	10.00	699.2 / 99.1	2431849		60.498	0.269	0.274	Pass	99.8

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
38	4:2FTS	757124-72-4	5.14	327.1 / 307.1	23137425		193.973	0.556	0.516	Pass	82.8
39	4:2FTS_2	757124-72-4	5.14	327.1 / 81.1	12857638		201.493	0.556	0.516	Pass	86.0
40	6:2FTS	27619-97-2	7.09	427.2 / 407.2	16231198		215.162	0.570	0.565	Pass	90.6
41	6:2FTS_2	27619-97-2	7.09	427.2 / 81.1	9247868		226.647	0.570	0.565	Pass	95.4
42	8:2FTS	39108-34-4	8.07	527.2 / 507.2	15163258		206.092	0.704	0.662	Pass	85.9
43	8:2FTS_2	39108-34-4	8.07	527.2 / 81.1	10675747		213.920	0.704	0.662	Pass	89.1
44	PFOSA	754-91-6	9.54	498.1 / 78.1	15046966	M5	72.144	0.024	0.025	Pass	115.4
45	PFOSA_2	754-91-6	9.54	498.1 / 478.0	366823	M7	67.032	0.024	0.025	Pass	107.3
46	NMeFOSA	31506-32-8	10.17	512.2 / 219.0	4433790	M5	66.397	1.431	1.551	Pass	106.2
47	NMeFOSA_2	31506-32-8	10.13	512.2 / 169.0	6344764	M7	61.315	1.431	1.551	Pass	98.1
48	NEtFOSA	4151-50-2	10.38	526.2 / 219.0	4230356	M5	64.647	1.316	1.285	Pass	103.4
49	NEtFOSA_2	4151-50-2	10.35	526.2 / 169.0	5567473	M7	63.557	1.316	1.285	Pass	101.7
50	NMeFOSAA	2355-31-9	8.23	570.2 / 419.1	5124216		73.109	0.577	0.700	Pass	117.0
51	NMeFOSAA_2	2355-31-9	8.23	570.2 / 483.0	2957556	M7	66.352	0.577	0.700	Pass	106.2
52	NEtFOSAA	2991-50-6	8.37	584.2 / 419.1	4386182		69.025	0.452	0.487	Pass	110.4

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
53	NEtFOSAA_2	2991-50-6	8.37	584.2 / 526.2	1981443	M7	67.761	0.452	0.487	Pass	108.4
54	NMeFOSE	24448-09-7	10.08	616.1 / 58.9	84038487	M5	676.347	N/A	N/A	N/A	108.2
55	NEtFOSE	1691-99-2	10.28	630.0 / 58.9	124215059	M5	634.255	N/A	N/A	N/A	101.5
56	HFPO-DA	13252-13-6	5.60	285.0 / 169.0	56235106		249.987	0.429	0.464	Pass	100.0
57	HFPO-DA_2	13252-13-6	5.60	285.0 / 184.9	24139214		230.767	0.429	0.464	Pass	92.3
58	ADONA	919005-14-4	6.72	377.1 / 251.0	117900625		230.458	0.628	0.634	Pass	97.6
59	ADONA_2	919005-14-4	6.72	377.1 / 84.8	74032171		223.648	0.628	0.634	Pass	94.7
60	9Cl-PF3ONS	756426-58-1	8.50	530.8 / 351.1	92226023		182.829	0.348	0.322	Pass	78.2
61	9Cl-PF3ONS_2	756426-58-1	8.50	532.8 / 353.0	32083911		195.313	0.348	0.322	Pass	83.6
62	11Cl-PF3OUdS	763051-92-9	9.57	630.9 / 451.0	65219566		204.689	0.349	0.331	Pass	86.6
63	11Cl-PF3OUdS_2	763051-92-9	9.57	632.9 / 452.9	22782235		212.450	0.349	0.331	Pass	89.9
64	3:3FTCA	356-02-5	N/A	241.1 / 177.1	N/A		N/A	N/A	1.074	N/A	N/A
65	3:3FTCA_2	356-02-5	N/A	241.1 / 117.0	N/A		N/A	N/A	1.074	N/A	N/A
66	5:3FTCA	914637-49-3	7.16	341.1 / 237.1	120353707		1444.284	0.958	0.953	Pass	92.4
67	5:3FTCA_2	914637-49-3	7.16	341.1 / 217.0	115277893		1461.981	0.958	0.953	Pass	93.6

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
68	7:3FTCA	812-70-4	N/A	441.1 / 316.9	N/A		N/A	N/A	1.558	Pass	N/A
69	7:3FTCA_2	812-70-4	N/A	441.1 / 337.1	N/A		N/A	N/A	1.558	Pass	N/A
70	PFEESA	113507-82-7	5.71	315.1 / 135.0	87964966		110.377	0.086	0.087	Pass	99.2
71	PFEESA_2	113507-82-7	5.71	315.1 / 82.9	7602156		110.416	0.086	0.087	Pass	99.3
72	PFMPA	377-73-1	3.86	229.0 / 85.0	3753262		135.501	N/A	N/A	N/A	108.4
73	PFMBA	863090-89-5	4.88	279.0 / 85.0	49534492		132.632	N/A	N/A	N/A	106.1
74	NFDHA	151772-58-6	5.26	295.0 / 201.0	10150512		120.983	0.838	0.910	Pass	96.8
75	NFDHA_2	151772-58-6	5.26	295.0 / 84.9	8510213		110.645	0.838	0.910	Pass	88.5
76	TDCA	516-50-7	N/A	499.1 / 124.1	N/A		N/A	N/A	40.716	N/A	N/A
77	TDCA_2	516-50-7	N/A	499.1 / 79.9	N/A		N/A	N/A	40.716	N/A	N/A
78	13C2D4-4:2FTS	Surr	5.13	333.2 / 312.1	835350		4.789	N/A	N/A	N/A	95.8
79	13C2-PFOA	Surr	7.50	415.0 / 370.0	3061091		2.255	N/A	N/A	N/A	90.2

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C4-PFBA	EIS	2.89	217.0 / 172.0	1978403		9.573	NA	NA	NA	95.7

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C5-PFPeA	EIS	4.64	268.0 / 223.0	1241019		4.479	NA	NA	NA	89.6
	13C5-PFHxA	EIS	5.33	318.0 / 273.0	942506		2.590	NA	NA	NA	103.6
	13C4-PFHpA	EIS	6.25	367.0 / 322.0	941065		2.583	NA	NA	NA	103.3
	13C8-PFOA	EIS	7.50	421.0 / 376.0	1313780		2.144	NA	NA	NA	85.7
	13C9-PFNA	EIS	7.95	472.0 / 427.0	598825		1.163	NA	NA	NA	93.1
	13C6-PFDA	EIS	8.17	519.0 / 474.0	533177		1.147	NA	NA	NA	91.8
	13C7-PFUnA	EIS	8.46	570.0 / 525.0	410077		1.090	NA	NA	NA	87.2

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C2-PFDoA	EIS	8.90	615.1 / 570.0	355956		1.455	NA	NA	NA	116.4
	13C2-PFTeDA	EIS	9.90	715.1 / 670.1	385088		1.450	NA	NA	NA	116.0
	13C3-PFBS	EIS	5.31	302.1 / 80.1	699173		2.151	NA	NA	NA	92.3
	13C3-PFHxS	EIS	7.61	402.1 / 80.1	590522		2.288	NA	NA	NA	96.5
	13C8-PFOS	EIS	8.27	507.1 / 80.1	614865		2.280	NA	NA	NA	95.2
	13C2-4:2FTS	EIS	5.13	329.1 / 81.1	285459		4.922	NA	NA	NA	104.9
	13C2-6:2FTS	EIS	7.09	429.2 / 81.1	218658		5.144	NA	NA	NA	108.2
	13C2-8:2FTS	EIS	8.07	529.2 / 81.1	278637		4.479	NA	NA	NA	93.3

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C8-PFOSA	EIS	9.54	506.1 / 78.1	780144		2.176	NA	NA	NA	87.0
	d3-NMeFOSA	EIS	10.16	515.2 / 219.0	155908		2.583	NA	NA	NA	103.3
	d5-NEtFOSA	EIS	10.37	531.2 / 219.0	148962		2.527	NA	NA	NA	101.1
	d3-NMeFOSAA	EIS	8.22	573.2 / 419.1	532599		3.903	NA	NA	NA	78.1
	d5-NEtFOSAA	EIS	8.36	589.3 / 419.1	340803		4.753	NA	NA	NA	95.1
	d7-NMeFOSE	EIS	10.07	623.2 / 58.9	1259175		27.016	NA	NA	NA	108.1
	d9-NEtFOSE	EIS	10.26	639.2 / 58.9	1668328		24.278	NA	NA	NA	97.1

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C3-HFPO-DA	EIS	5.60	287.0 / 169.0	2453919		10.174	NA	NA	NA	101.7
	13C3-PFBA	NIS	2.89	216.0 / 172.0	904042		4.228	NA	NA	NA	84.6
	13C2-PFHxA	NIS	5.33	315.0 / 270.0	1080583		2.207	NA	NA	NA	88.3
	13C4-PFOA	NIS	7.49	417.0 / 372.0	801802		2.561	NA	NA	NA	102.5
	13C5-PFNA	NIS	7.94	468.0 / 423.0	627158		1.145	NA	NA	NA	91.6
	13C2-PFDA	NIS	8.17	515.1 / 470.1	545978		1.065	NA	NA	NA	85.2
	18O2-PFHxS	NIS	7.61	403.1 / 84.1	524658		2.239	NA	NA	NA	94.5
	13C4-PFOS	NIS	8.27	503.1 / 80.1	477048		2.266	NA	NA	NA	94.6

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	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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PFBA
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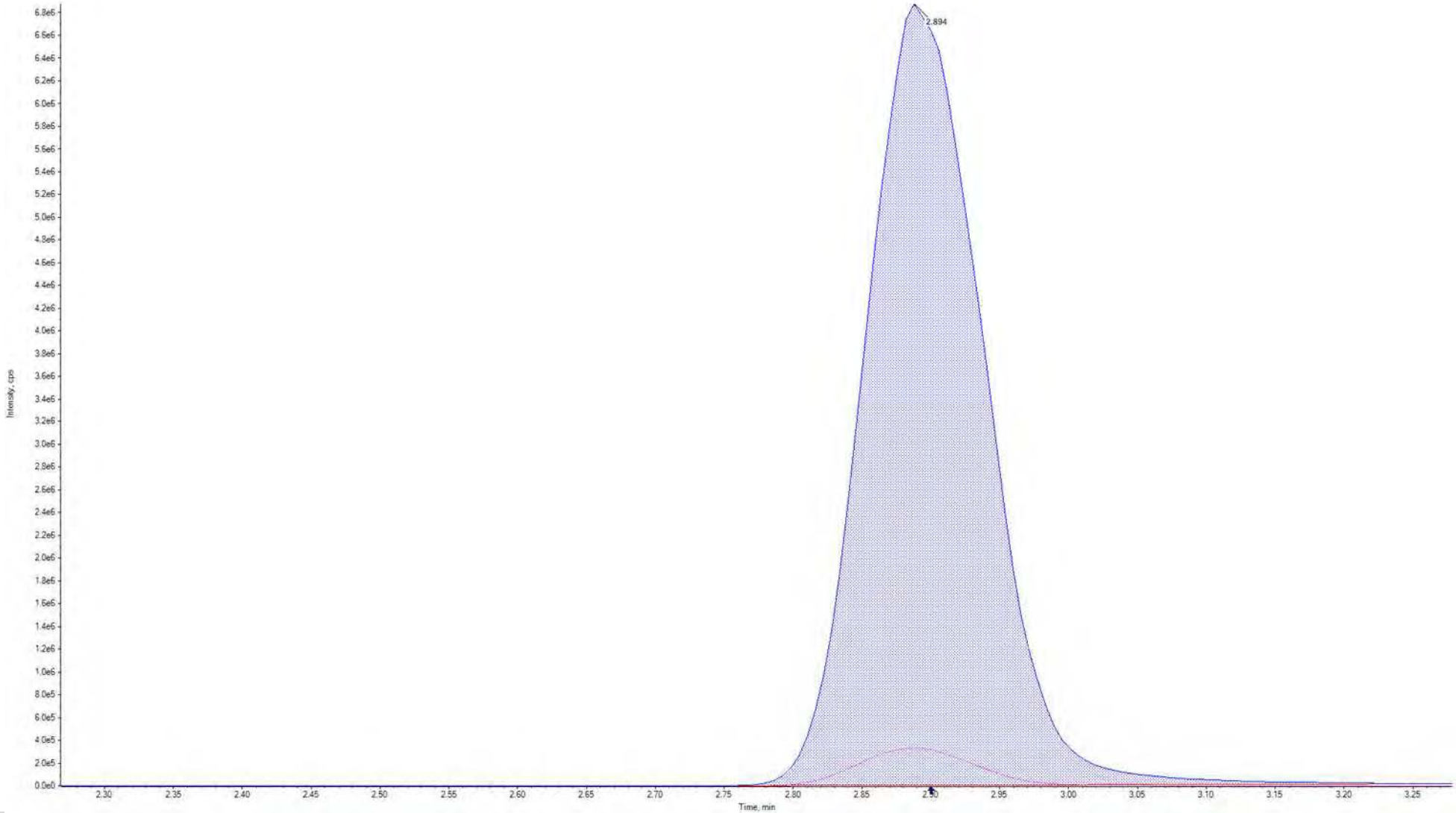

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PFPeA
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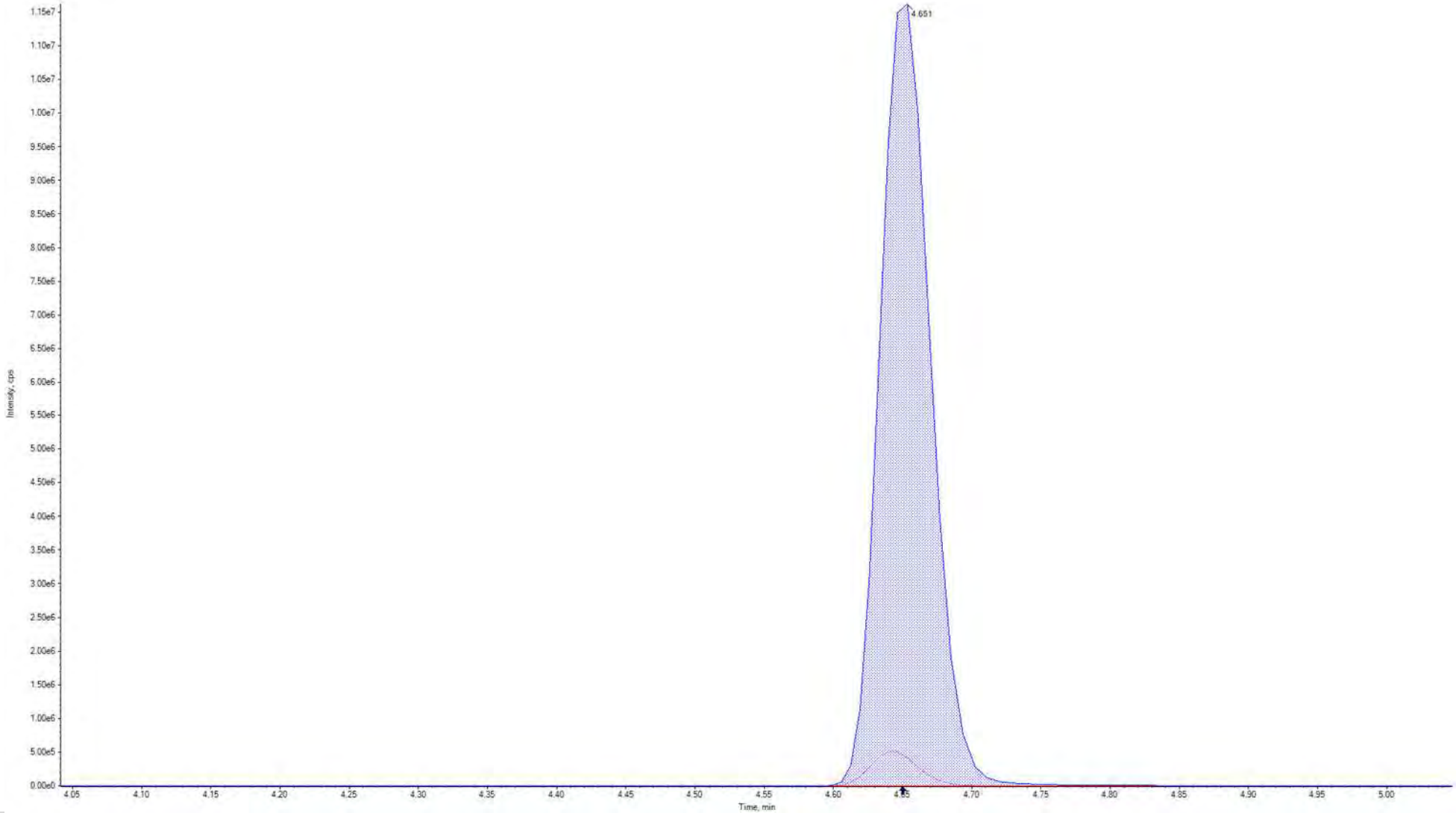

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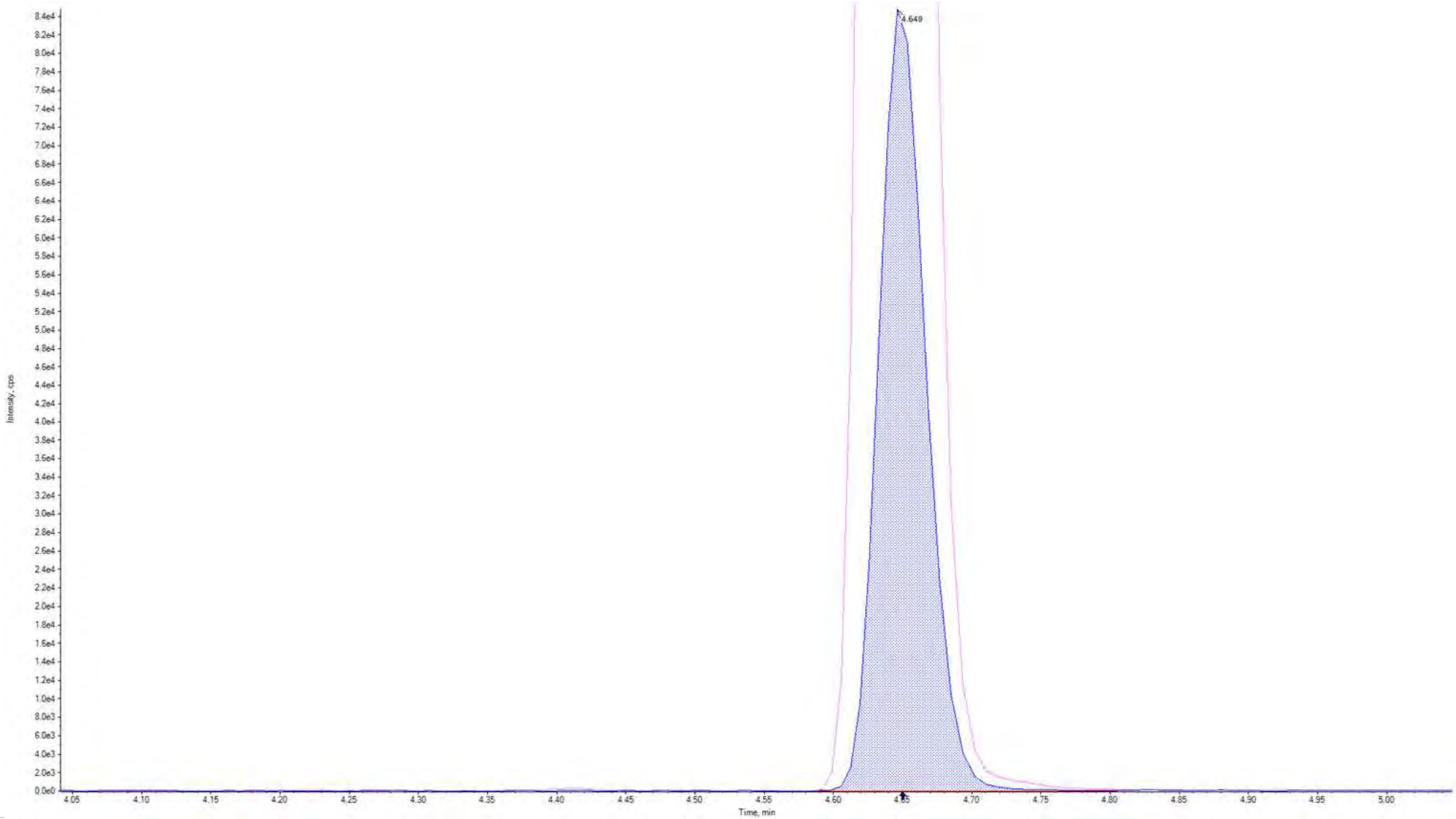
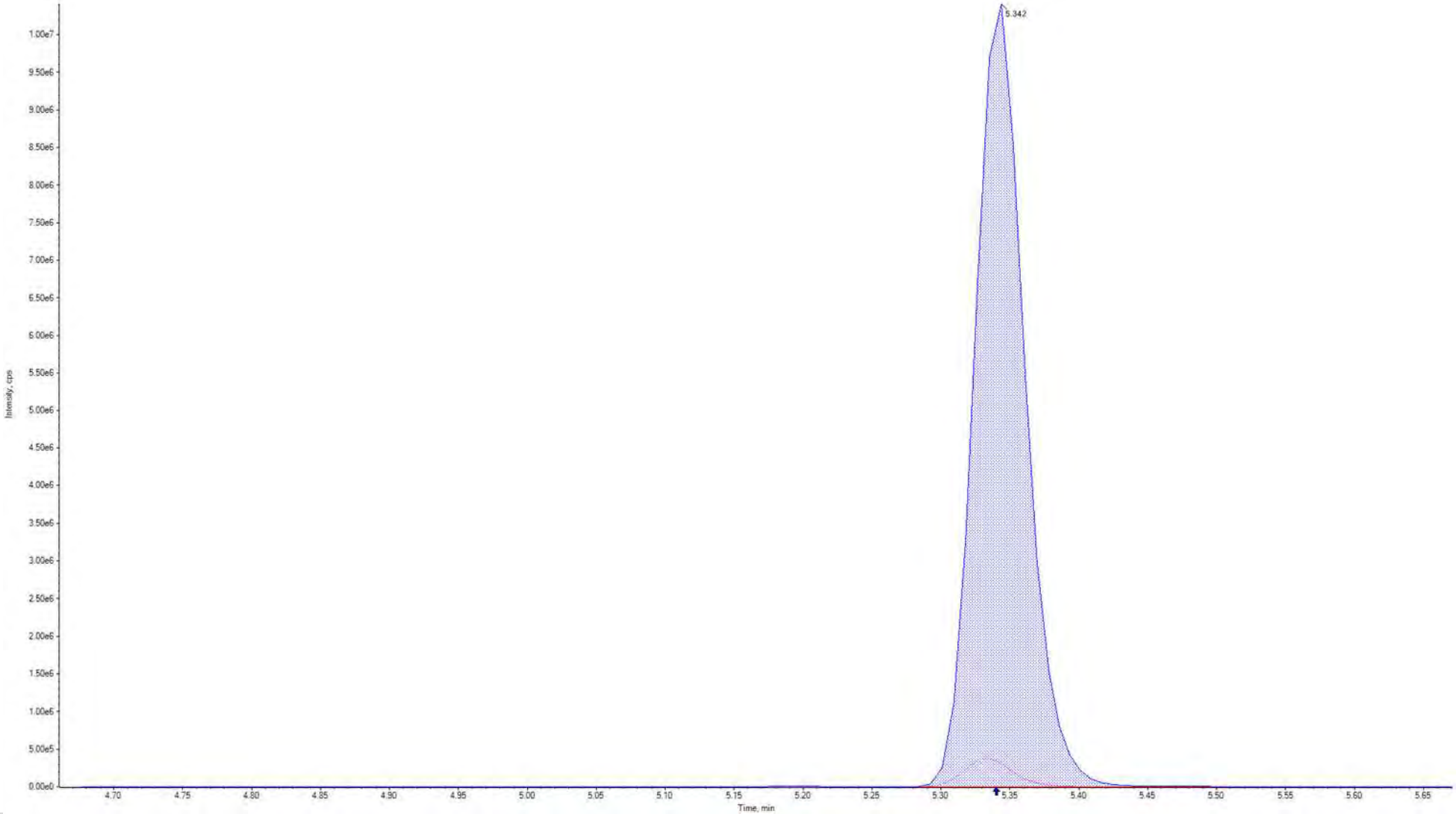
PFPeA_2
Sample: IA1633STD-62.5 S/N:5093.1 Points Across peak:28



PFHxA
Sample: IA1633STD-62.5 S/N:4600.3 Points Across peak:36



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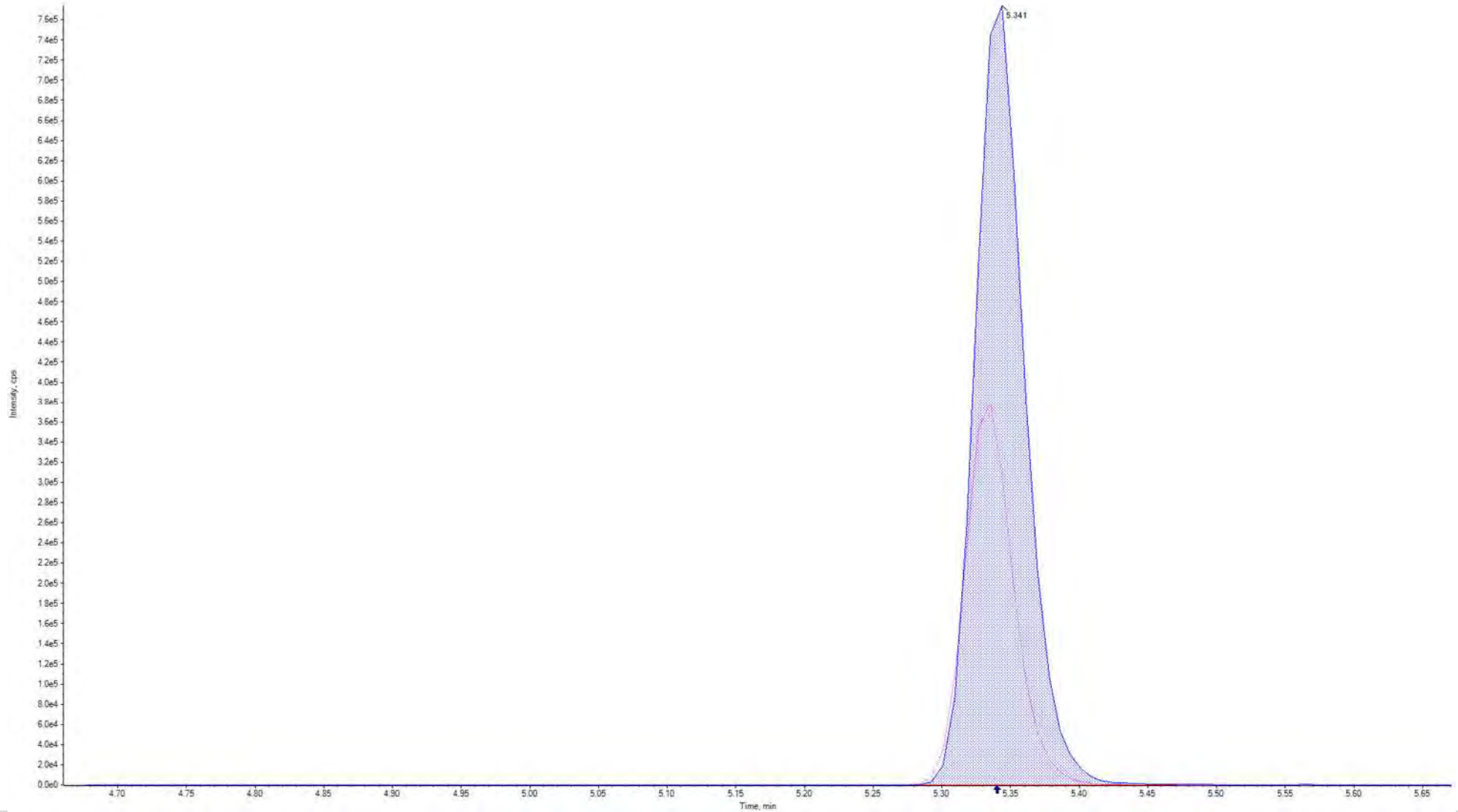
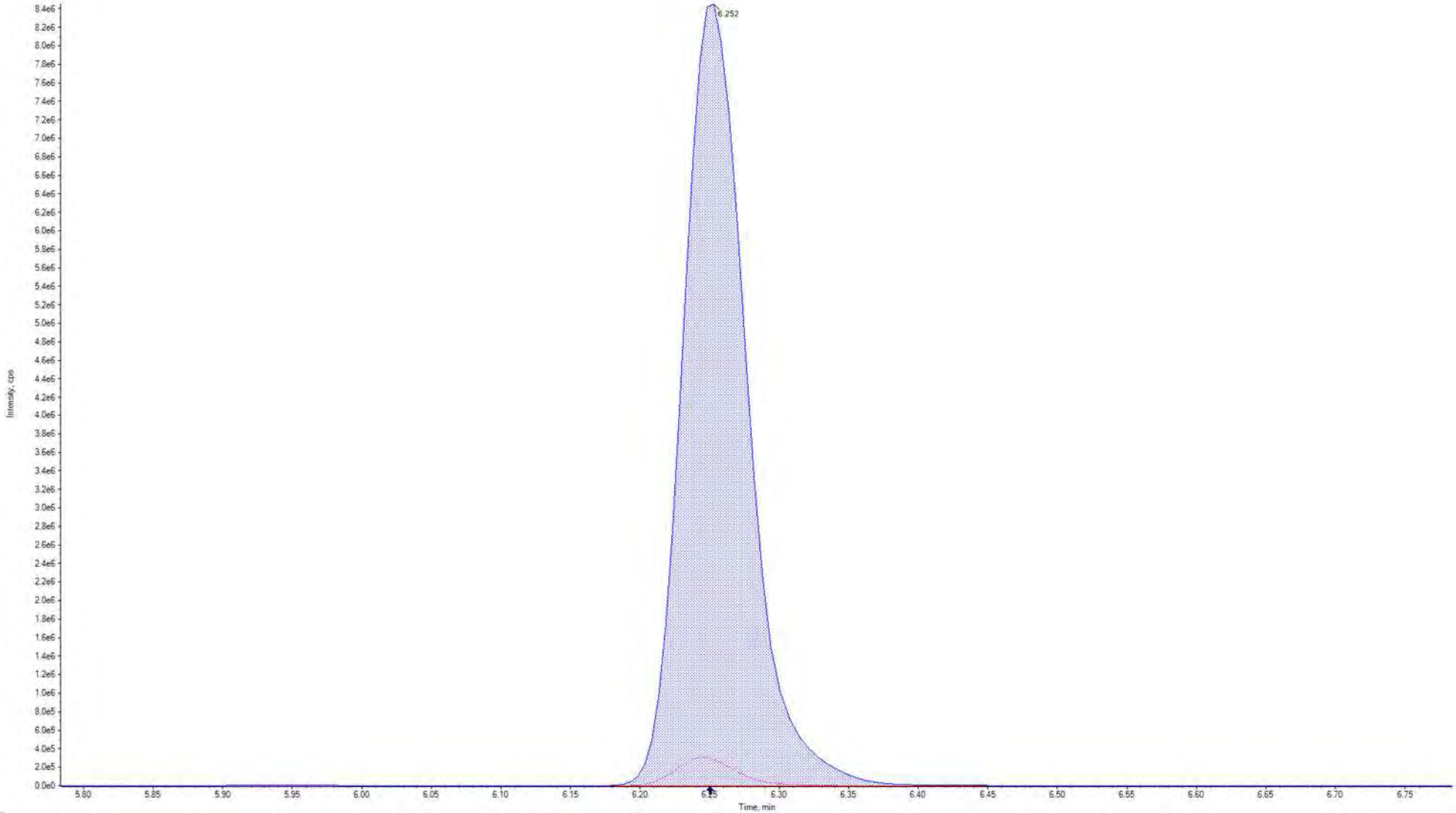
PFHxA_2
Sample: IA1633STD-62.5 S/N:3785.3 Points Across peak:25



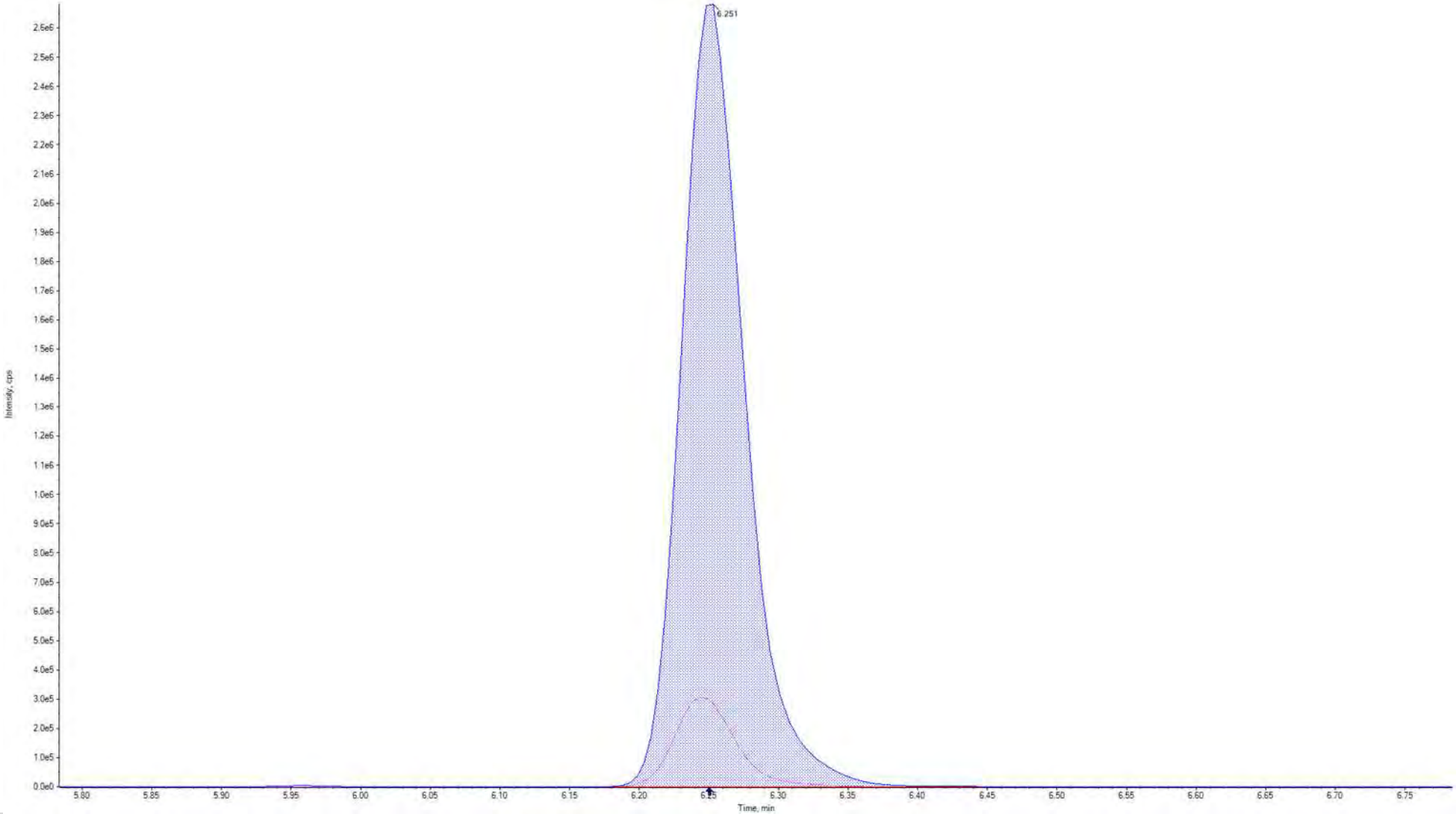
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFHpA
Sample: IA1633STD-62.5 S/N:9844.2 Points Across peak:76



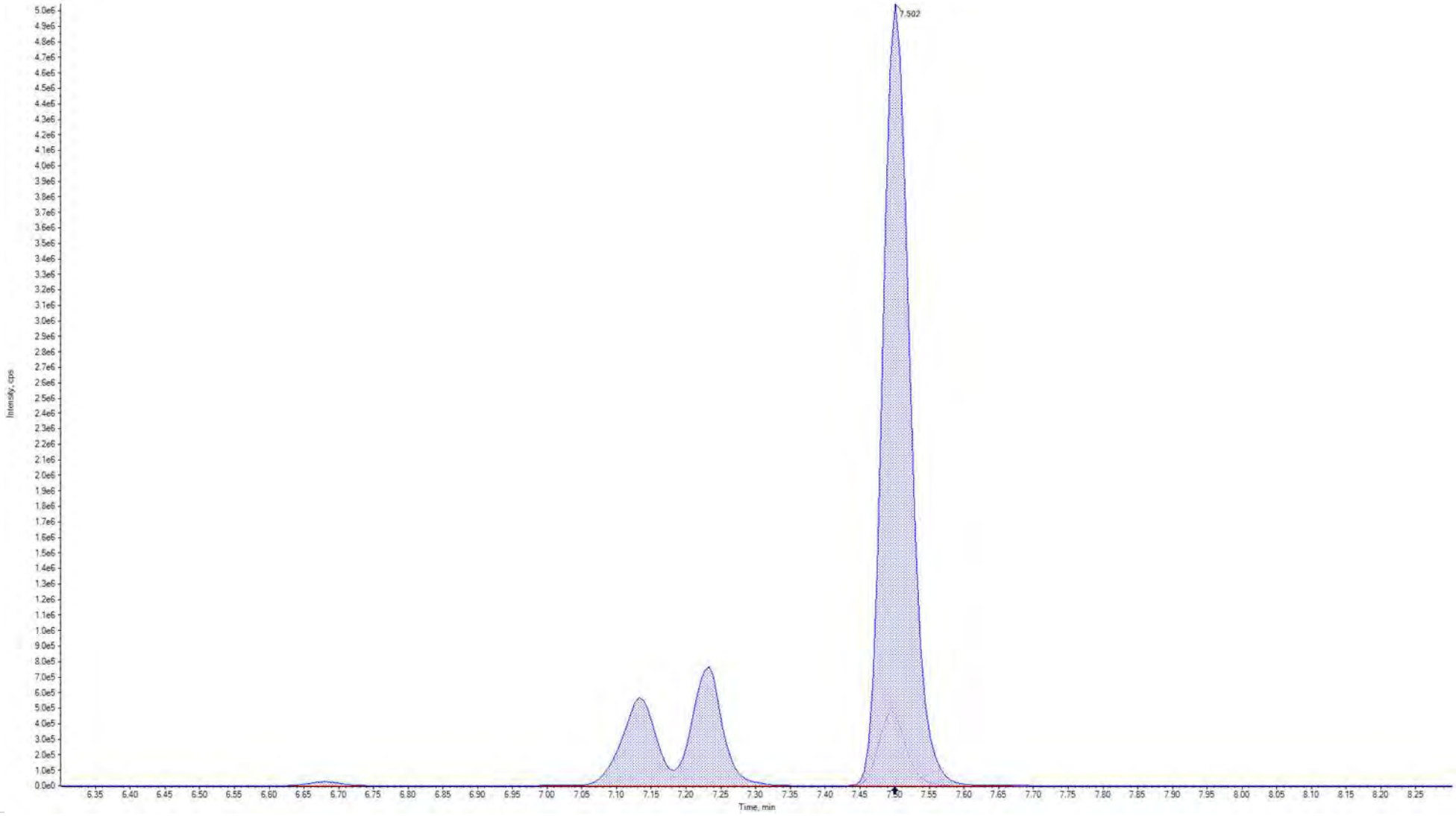
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFHpA_2
Sample: IA1633STD-62.5 S/N:28626.7 Points Across peak:59



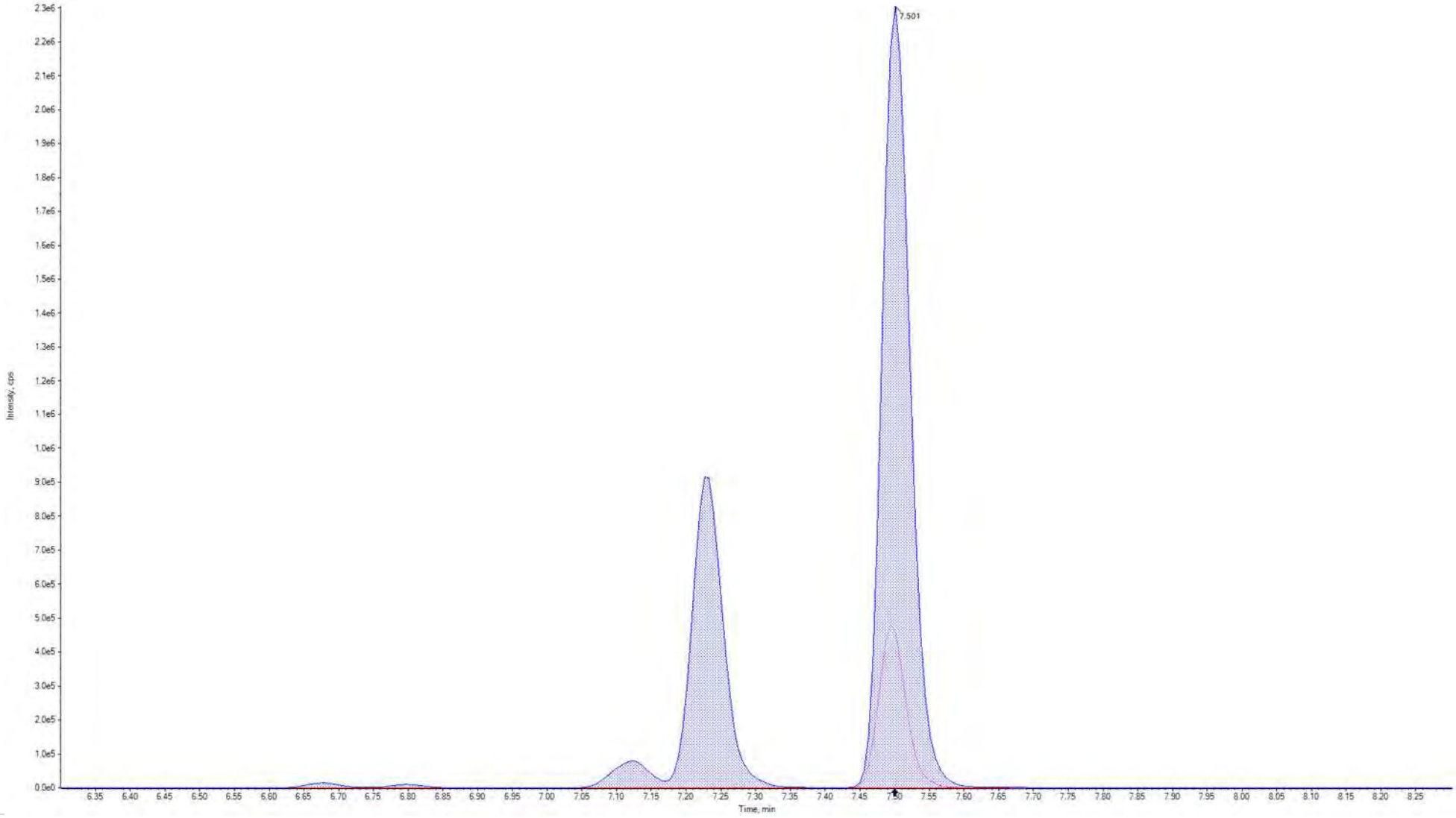
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOA
Sample: IA1633STD-62.5 S/N:6395.3 Points Across peak:163



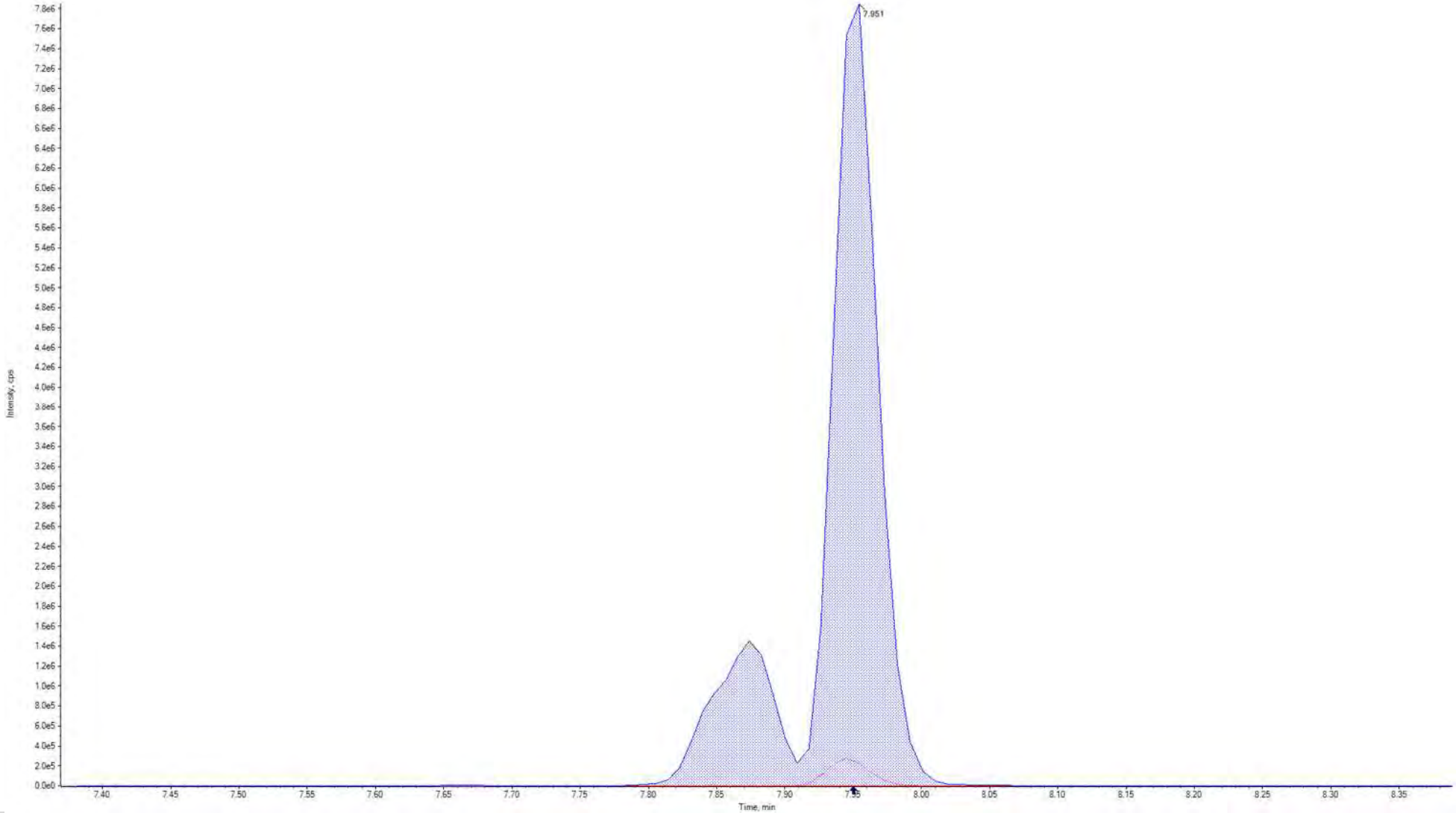
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOA_2
Sample: IA1633STD-62.5 S/N:68293.3 Points Across peak:163



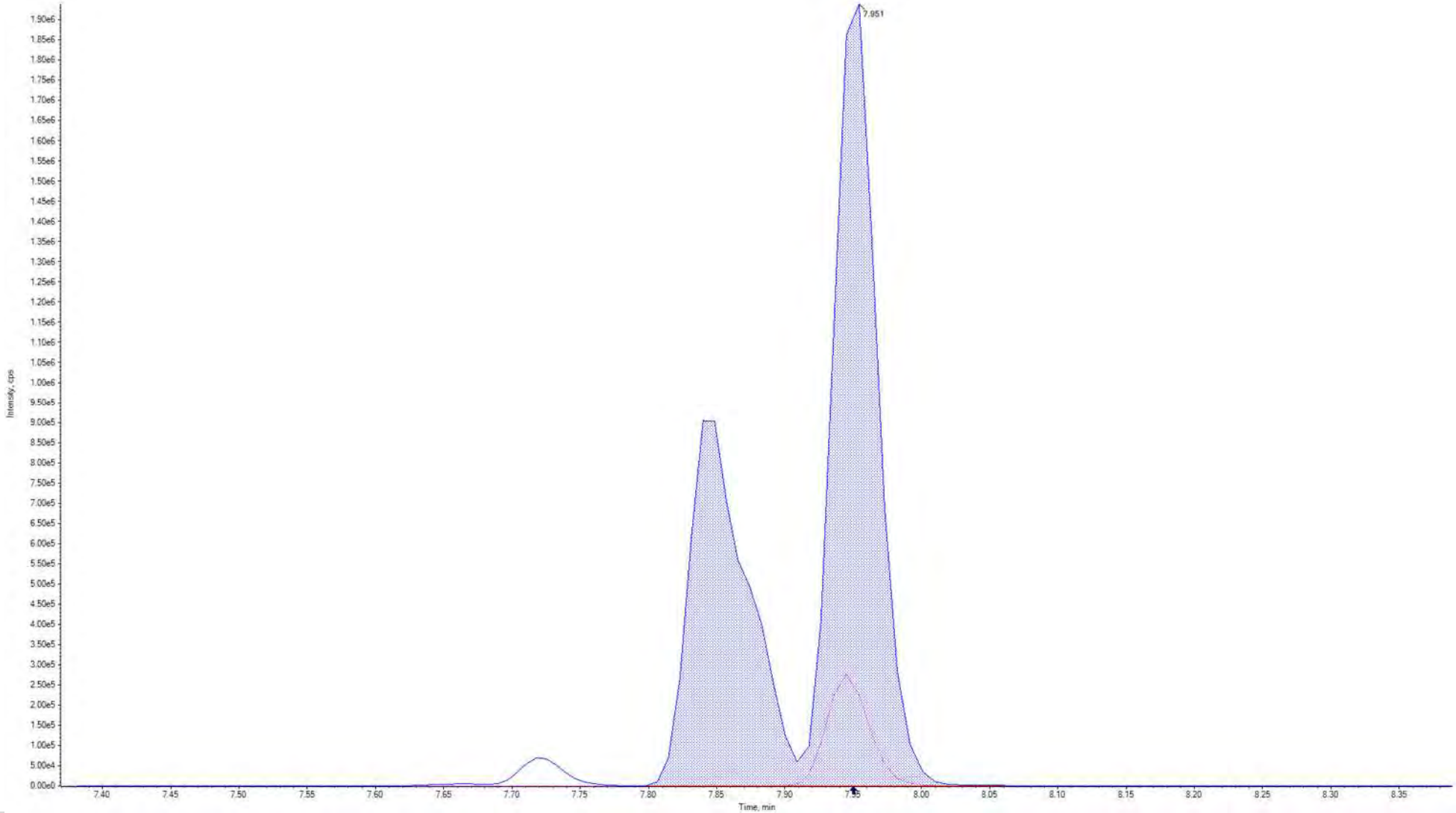
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFNA
Sample: IA1633STD-62.5 S/N:5977.9 Points Across peak:39



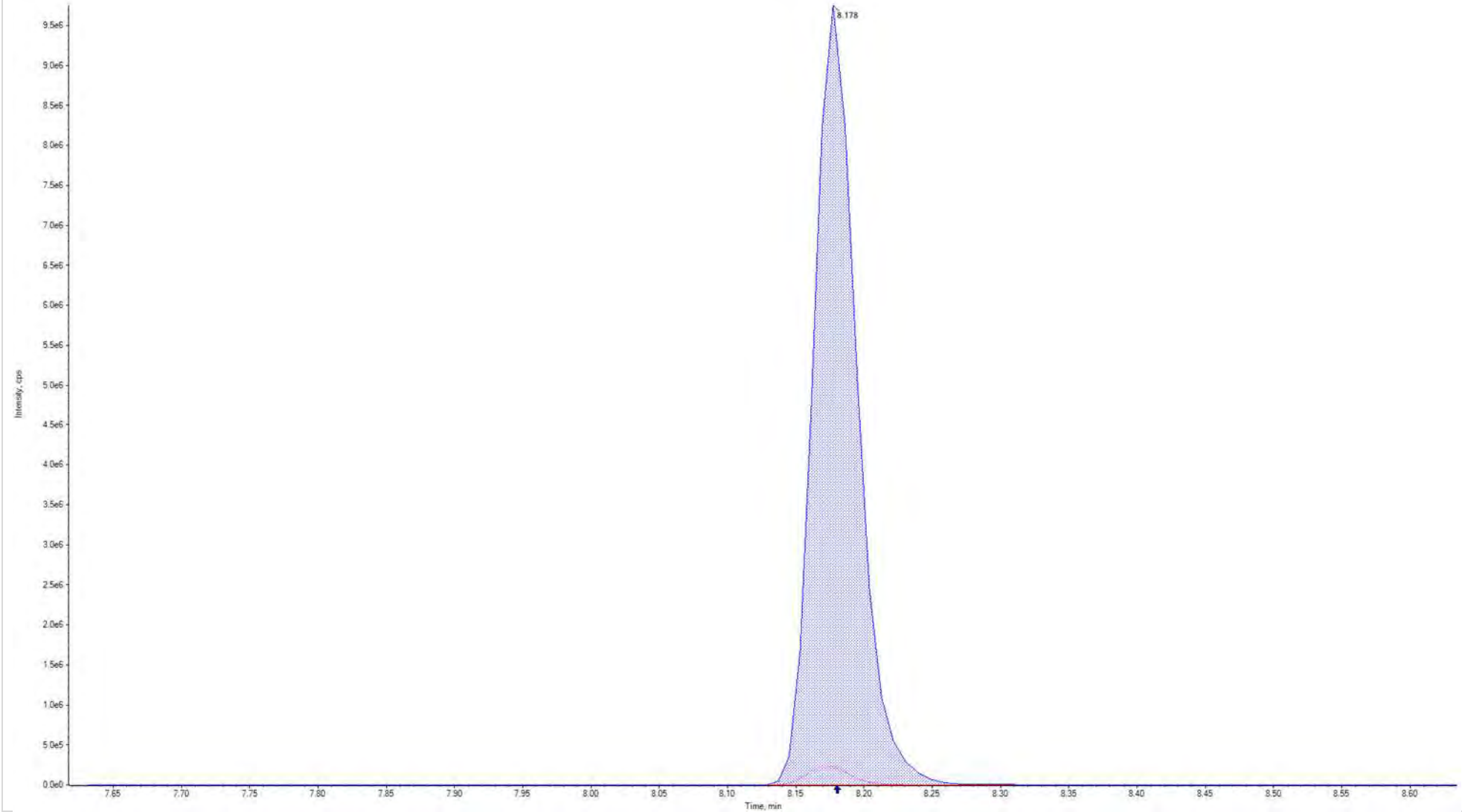
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFNA_2
Sample: IA1633STD-62.5 S/N:1566.4 Points Across peak:35



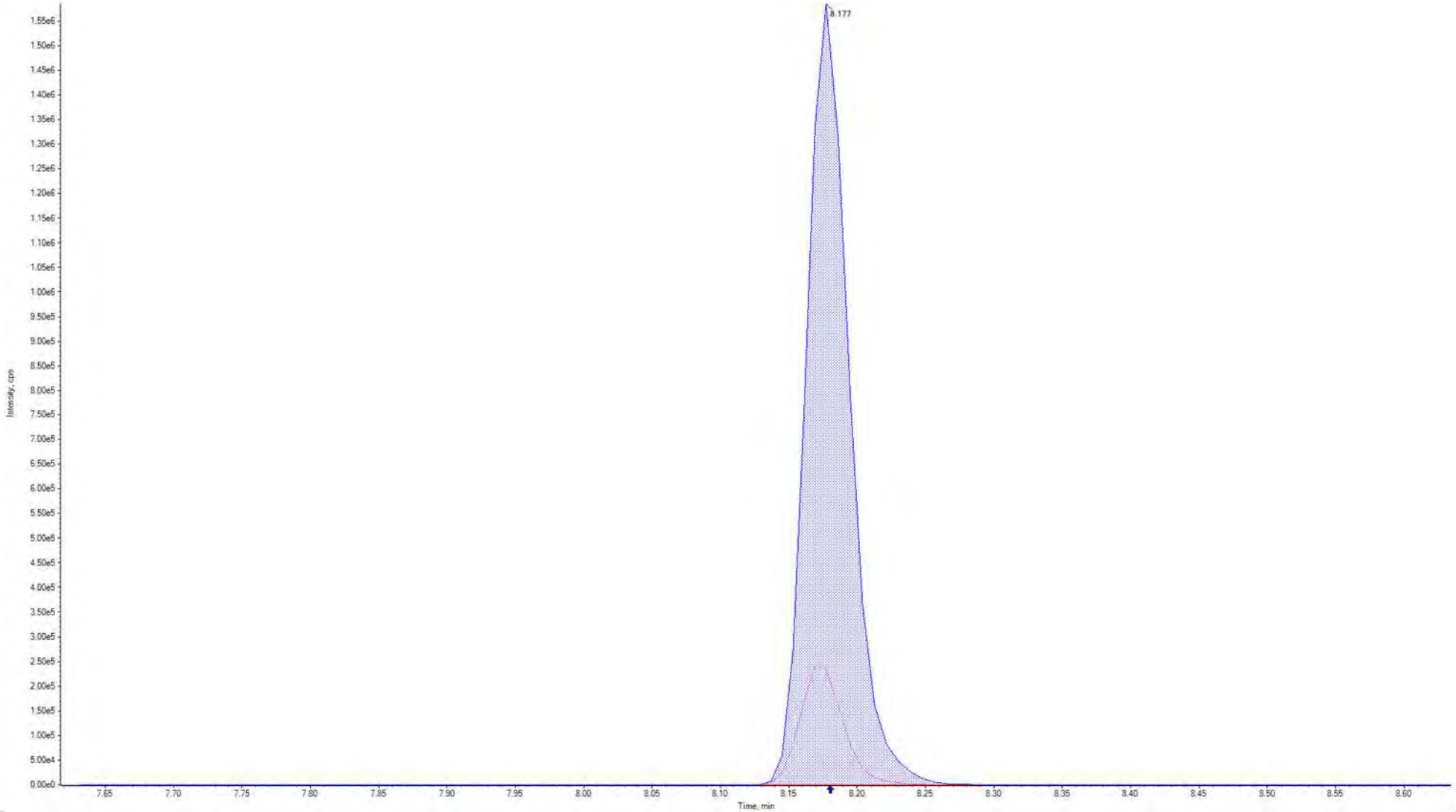
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDA
Sample: IA1633STD-62.5 S/N:10646.2 Points Across peak:40



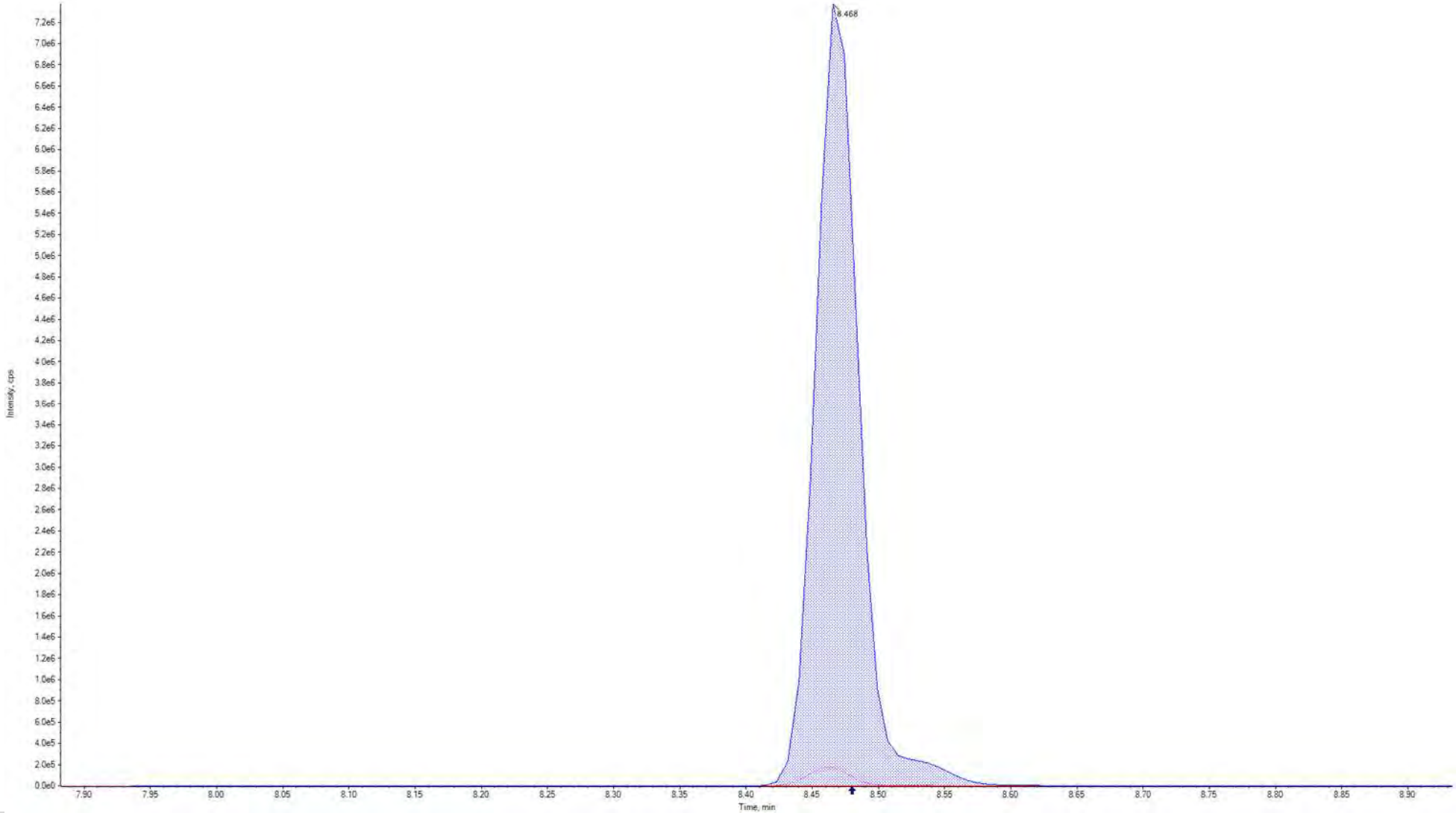
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDA_2
Sample: IA1633STD-62.5 S/N:1948394.4 Points Across peak:36



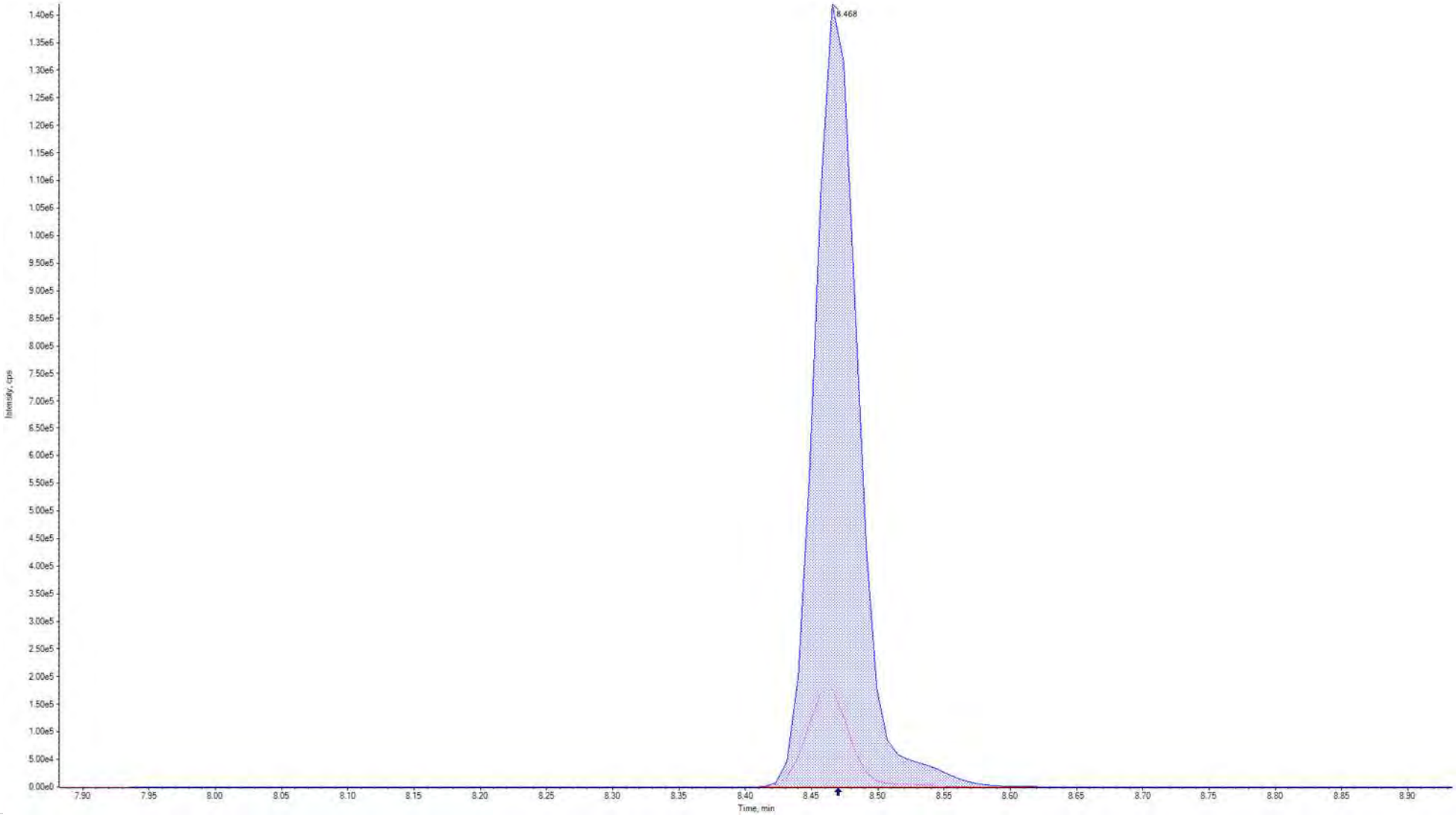
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFUnA
Sample: IA1633STD-62.5 S/N:10439.3 Points Across peak:37



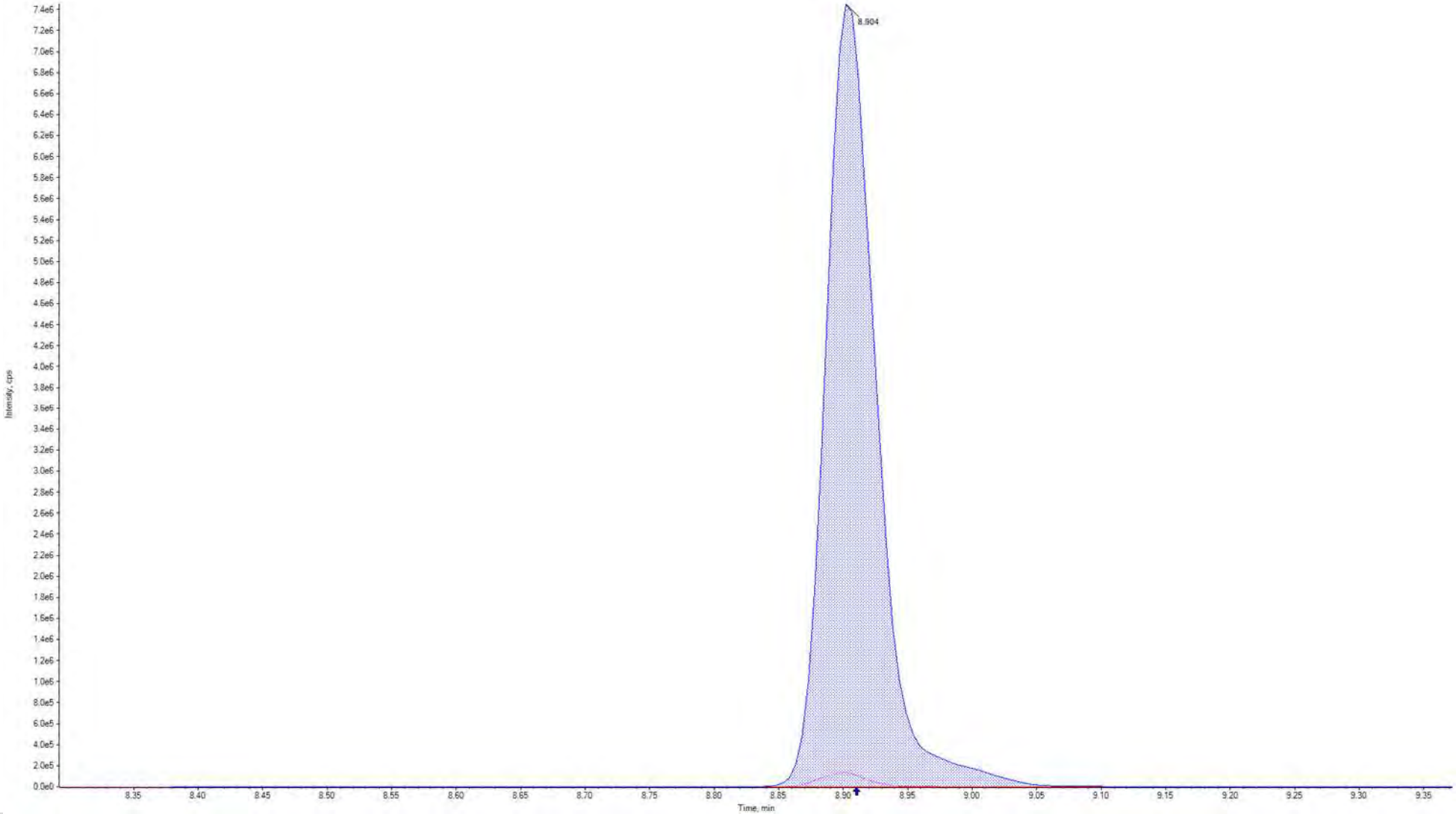
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFUnA_2
Sample: IA1633STD-62.5 S/N:72491.0 Points Across peak:33



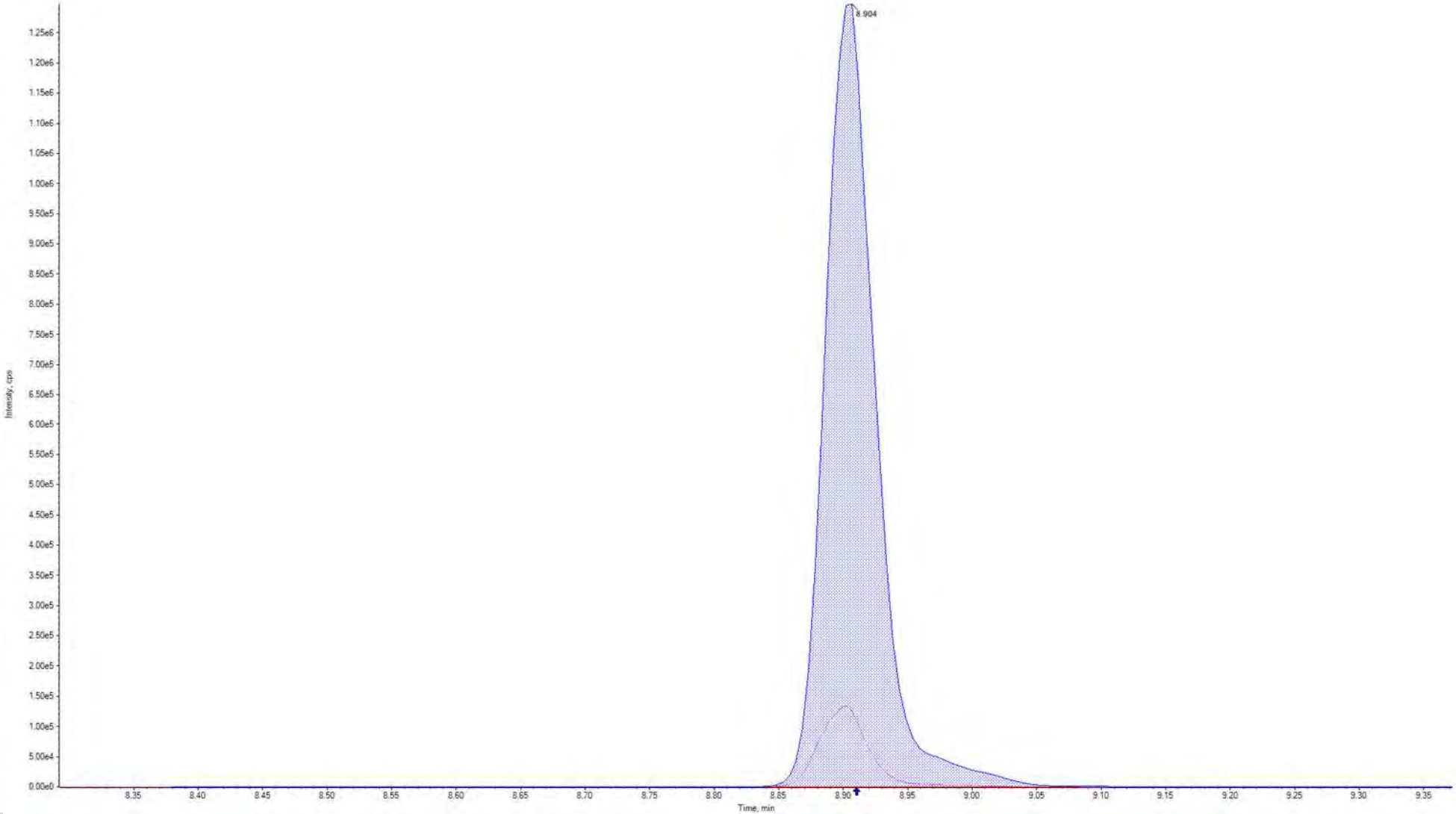
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDoA
Sample: IA1633STD-62.5 S/N:13674.7 Points Across peak:70



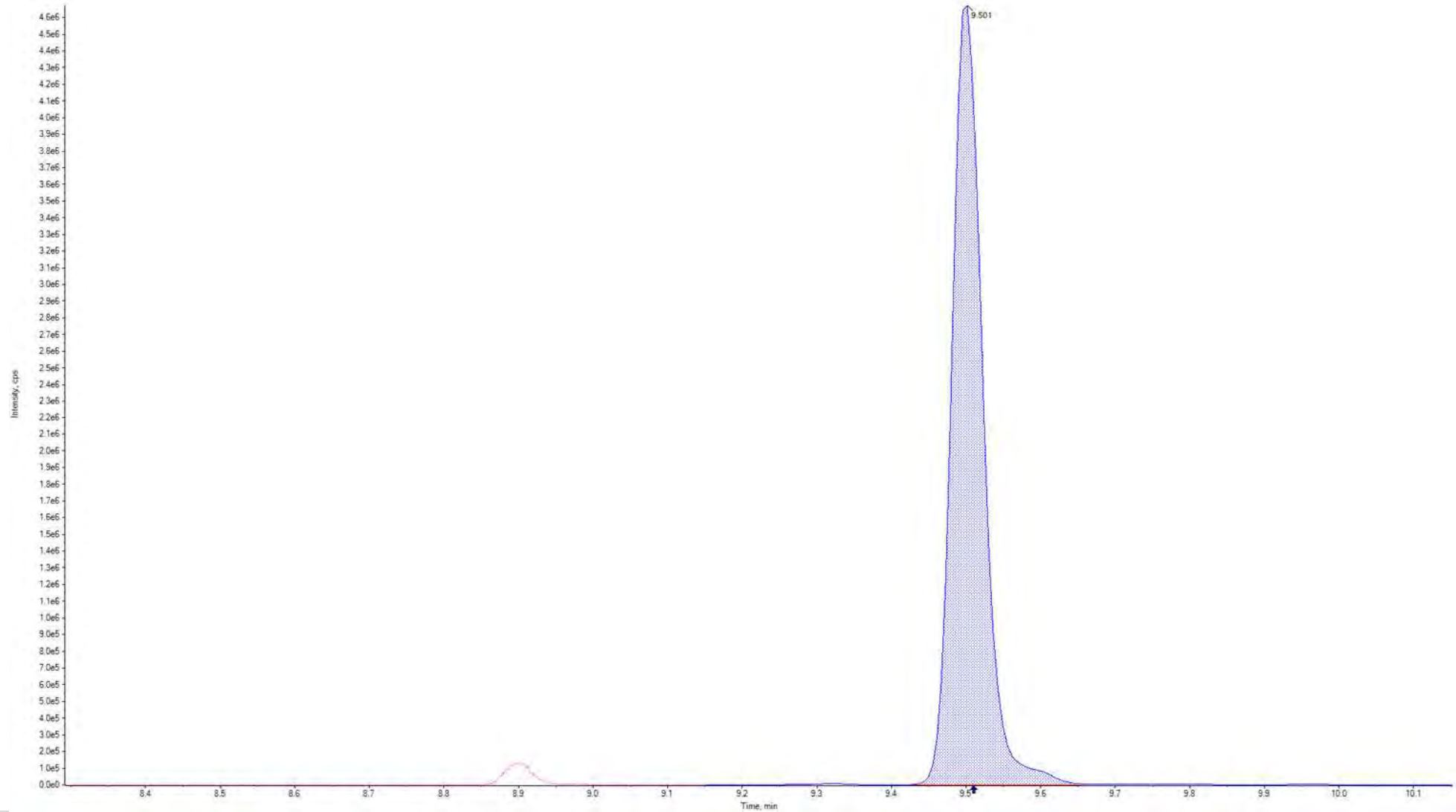
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDoA_2
Sample: IA1633STD-62.5 S/N:53506.2 Points Across peak:55



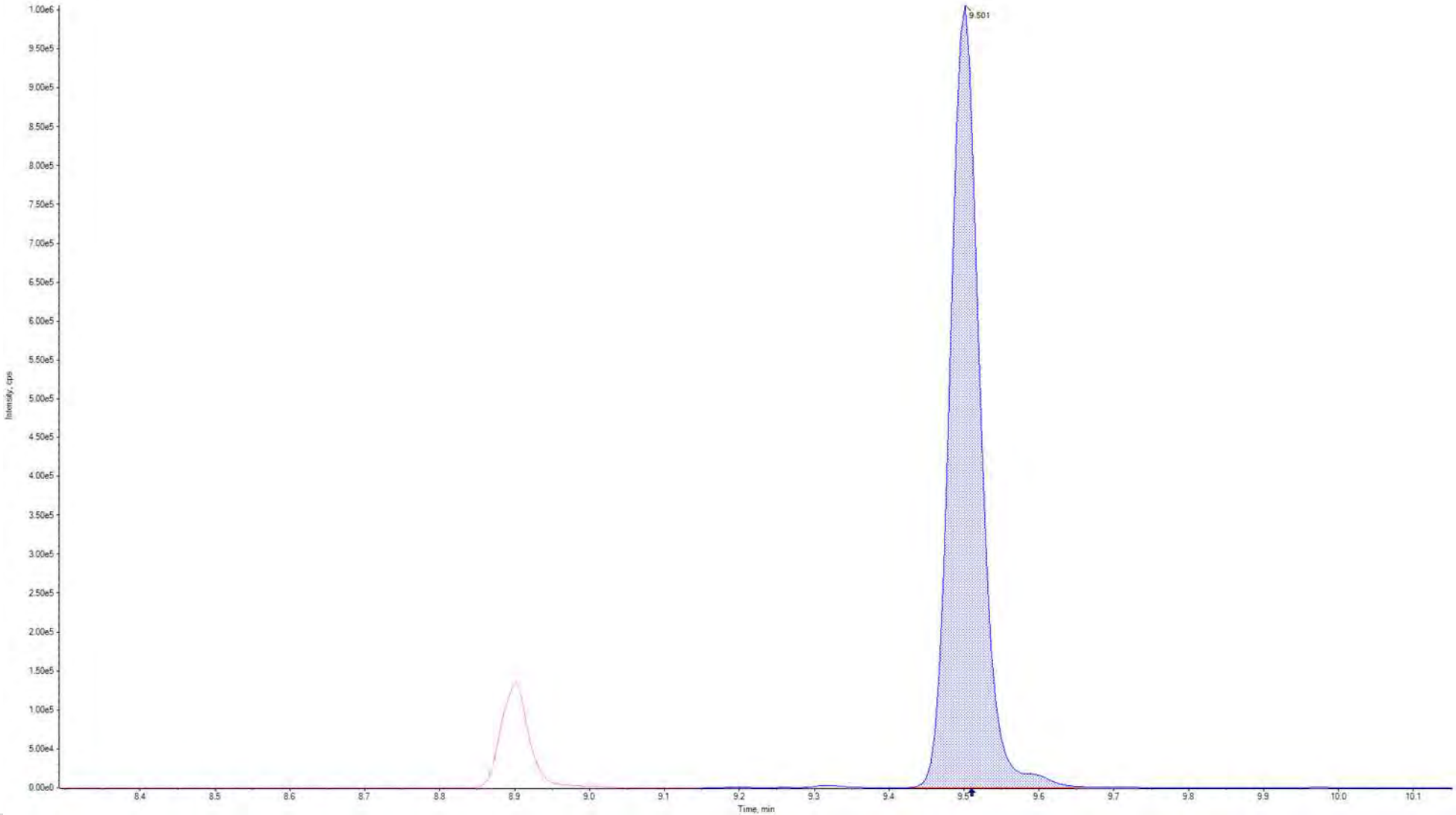
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFTrDA
Sample: IA1633STD-62.5 S/N:5536.6 Points Across peak:43



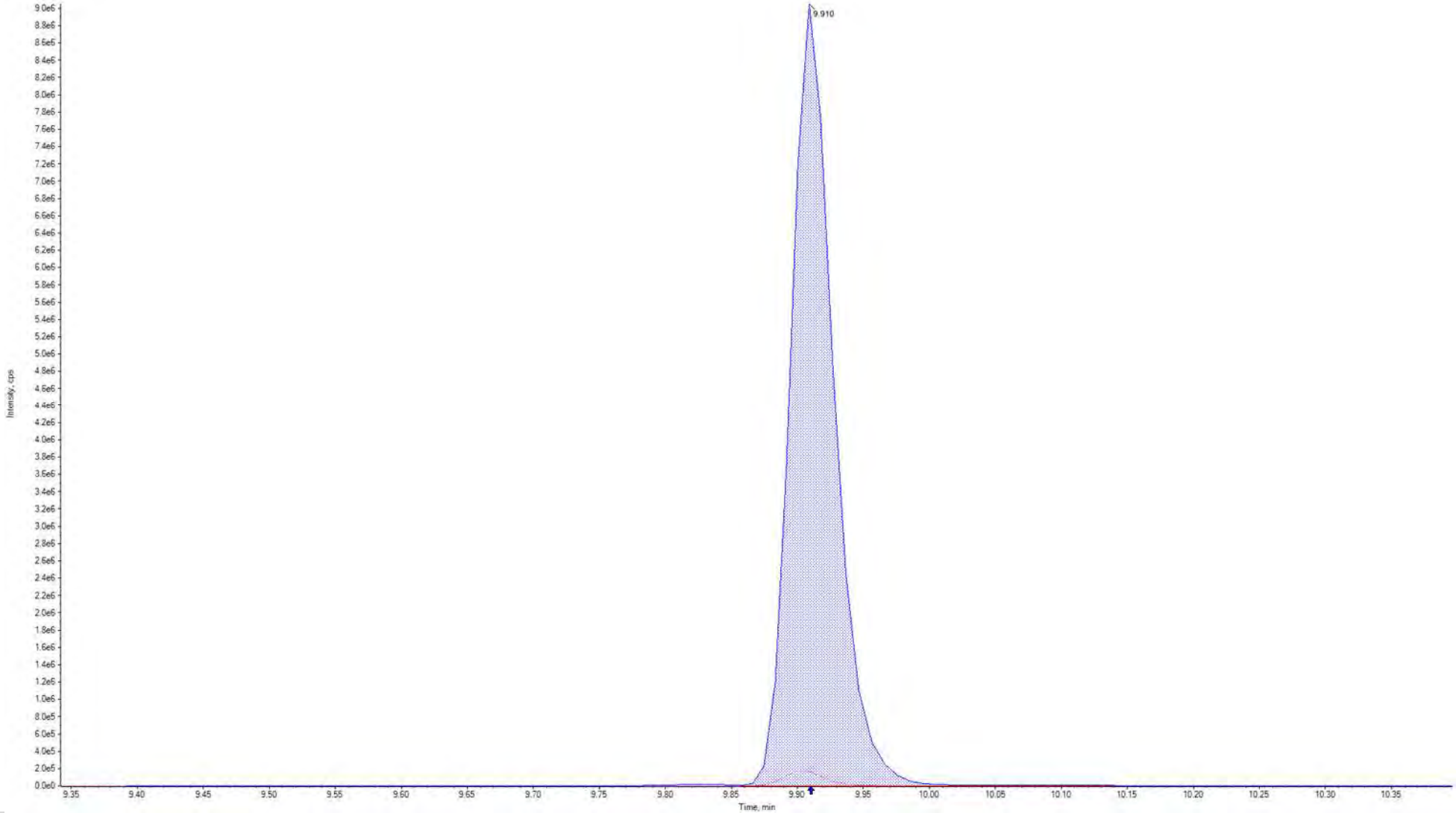
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFTrDA_2
Sample: IA1633STD-62.5 S/N:10474.9 Points Across peak:47



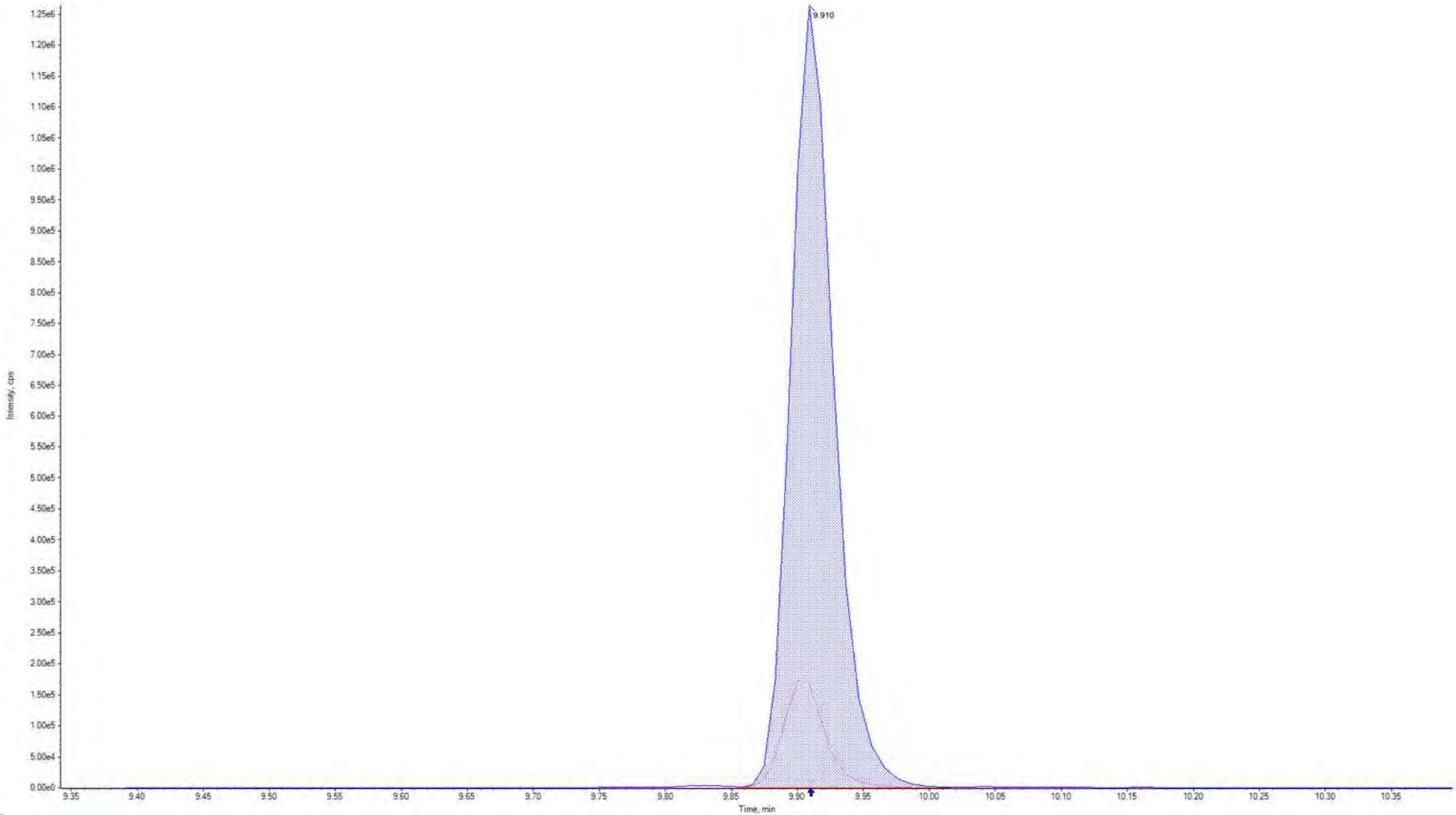
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFTeDA
Sample: IA1633STD-62.5 S/N:6738.0 Points Across peak:33



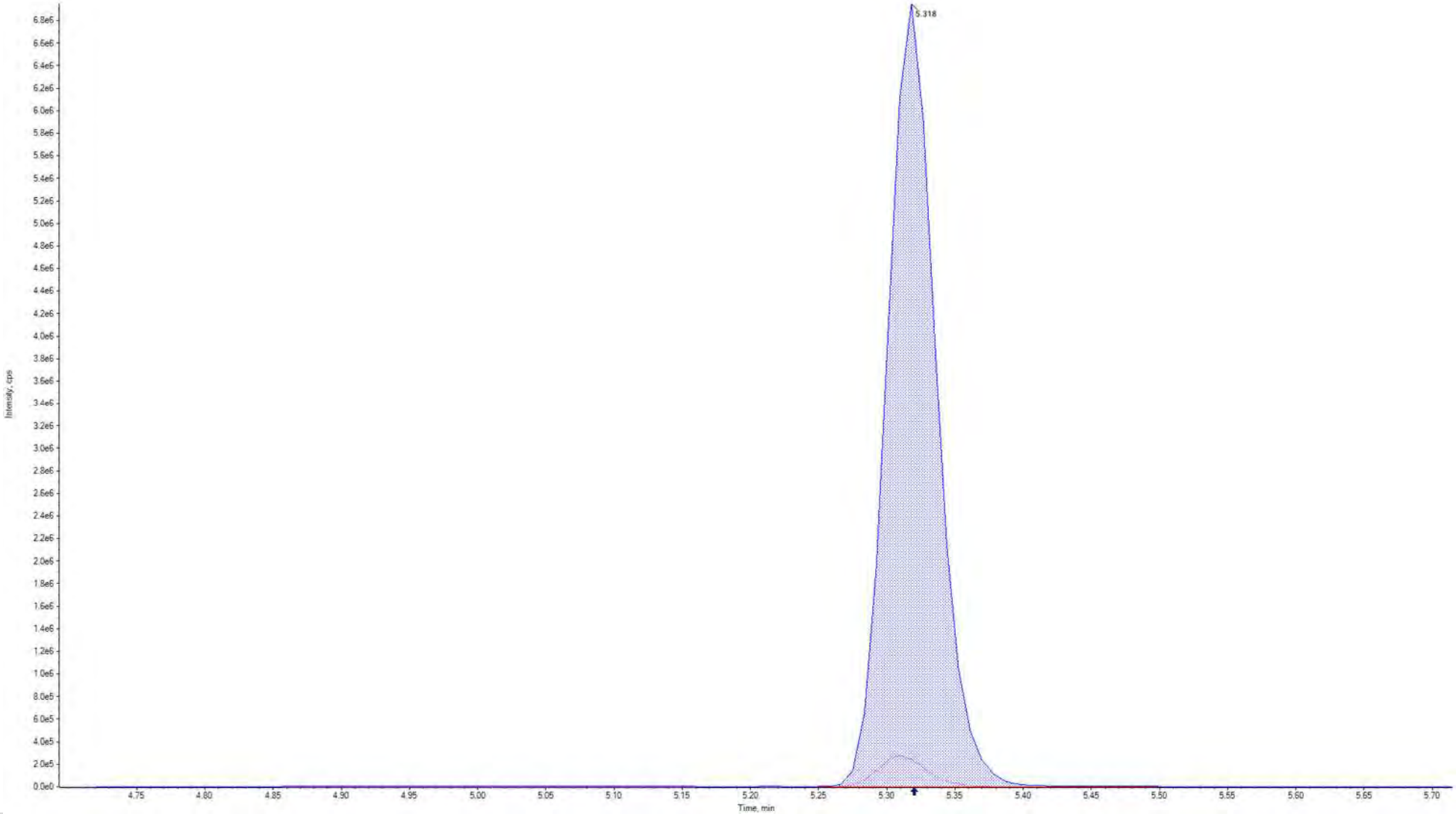
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFTeDA_2
Sample: IA1633STD-62.5 S/N:78834.9 Points Across peak:18



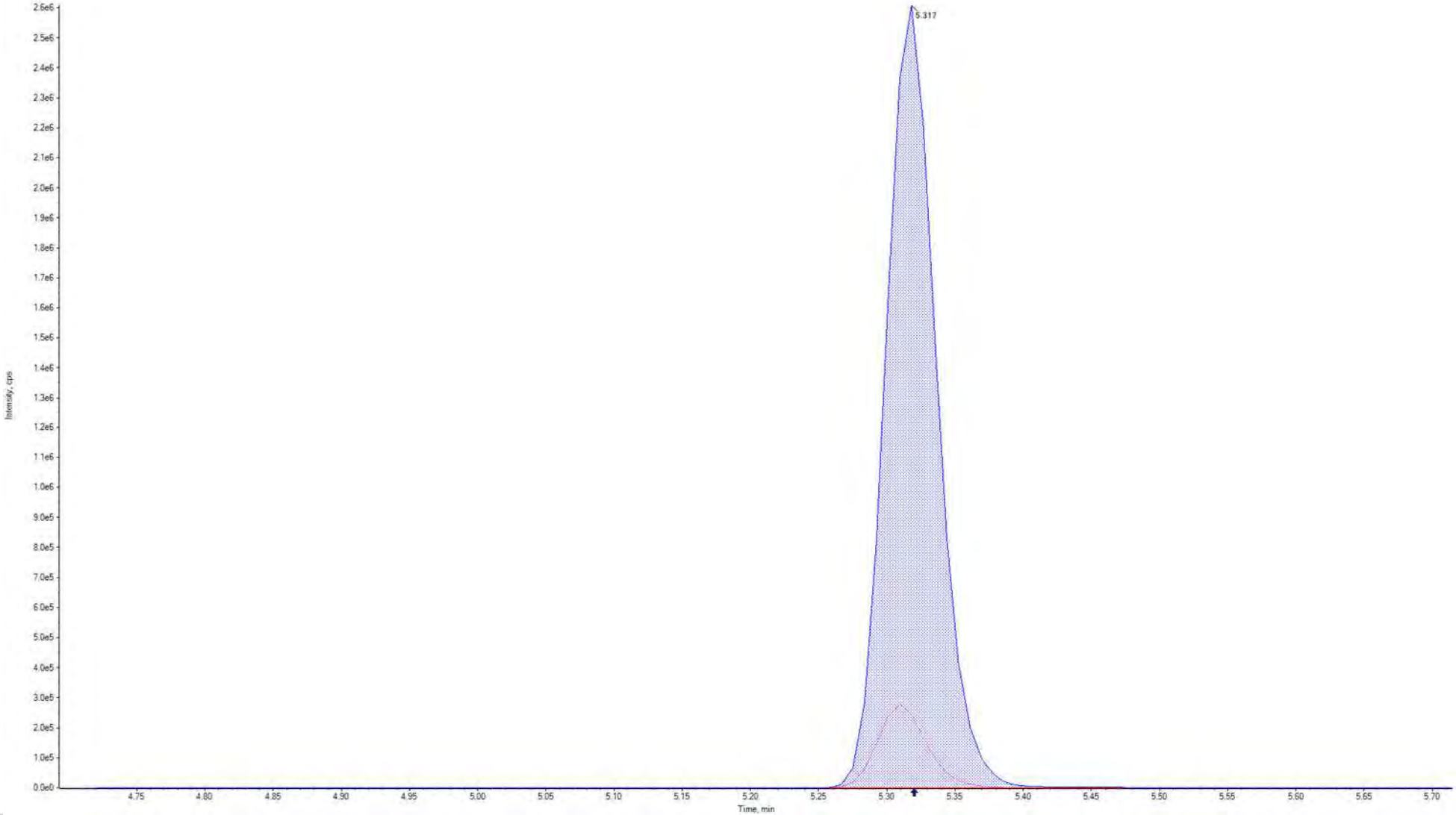
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFBS
Sample: IA1633STD-62.5 S/N:61.0 Points Across peak:40



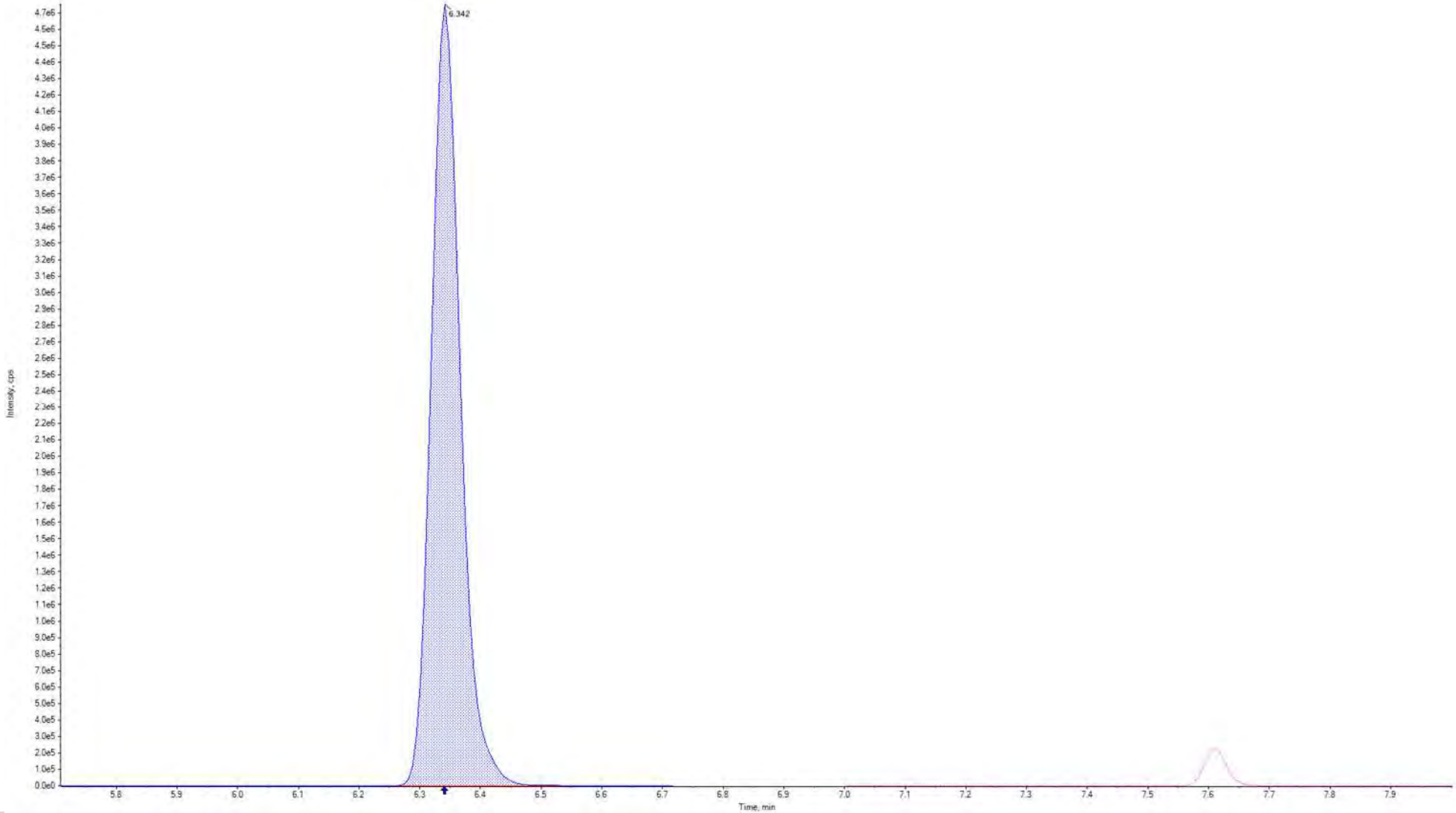
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFBS_2
Sample: IA1633STD-62.5 S/N:5852.8 Points Across peak:38



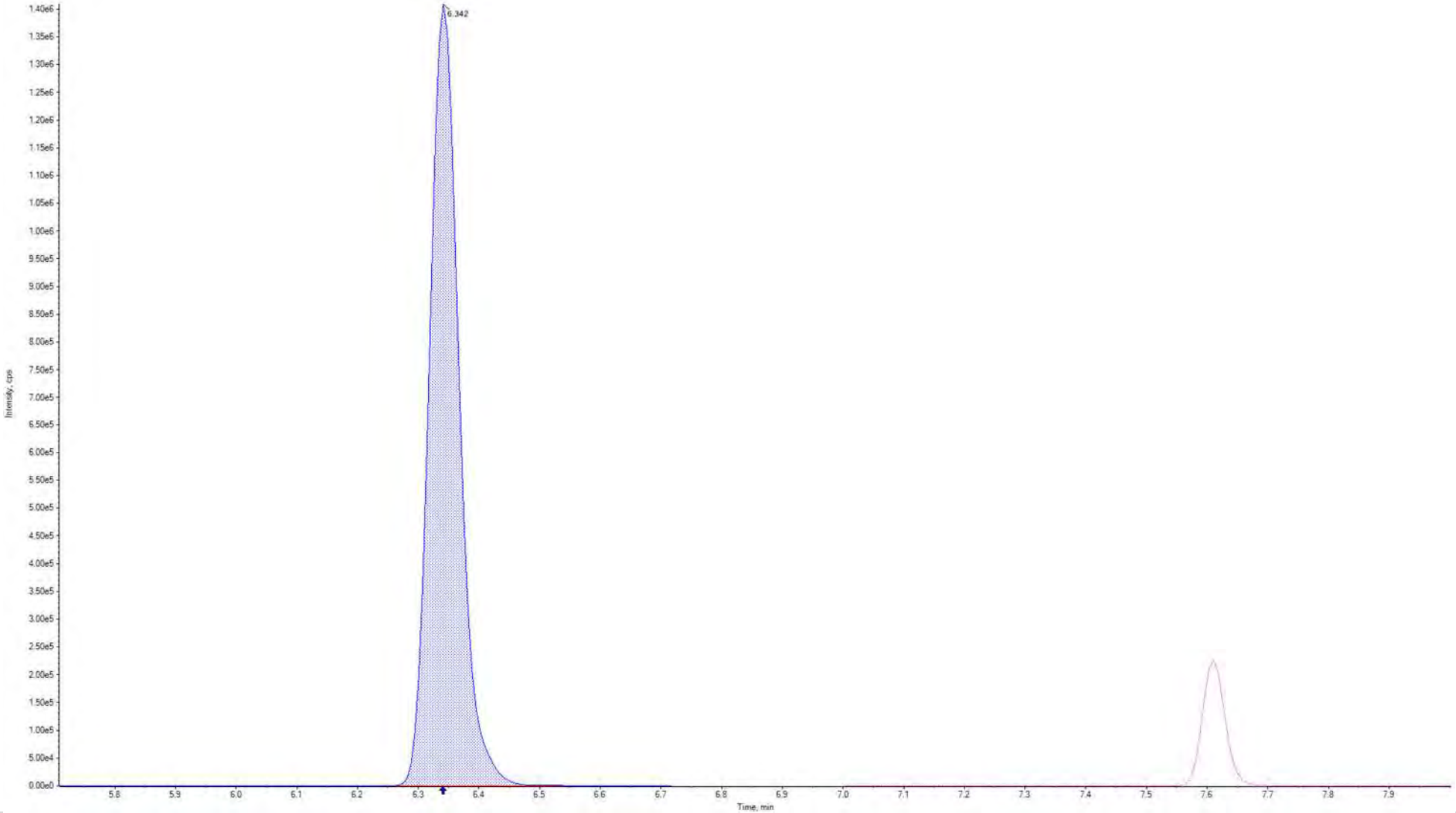
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFPeS
Sample: IA1633STD-62.5 S/N:27047.3 Points Across peak:54



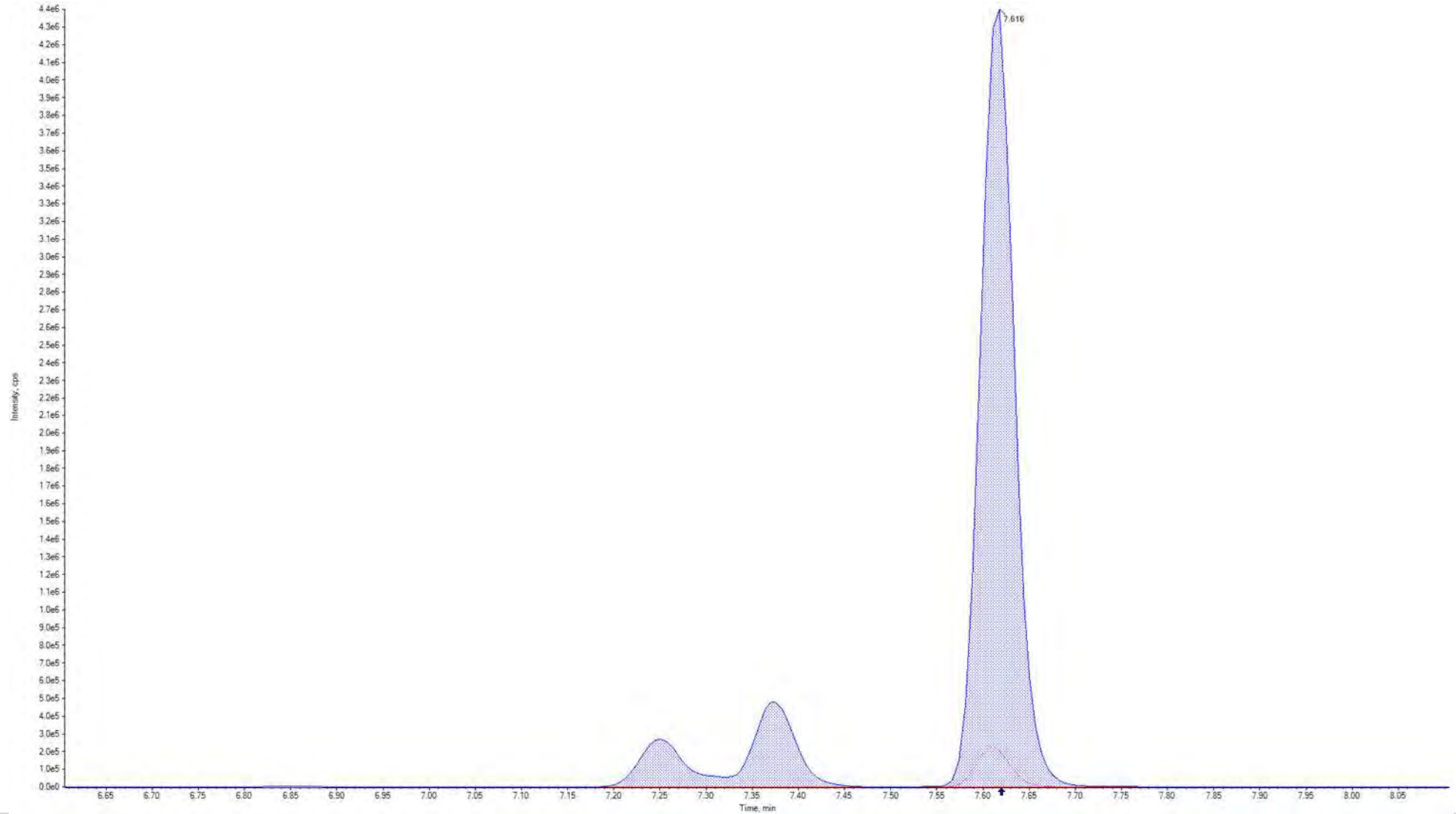
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFPeS_2
Sample: IA1633STD-62.5 S/N:24190.2 Points Across peak:50



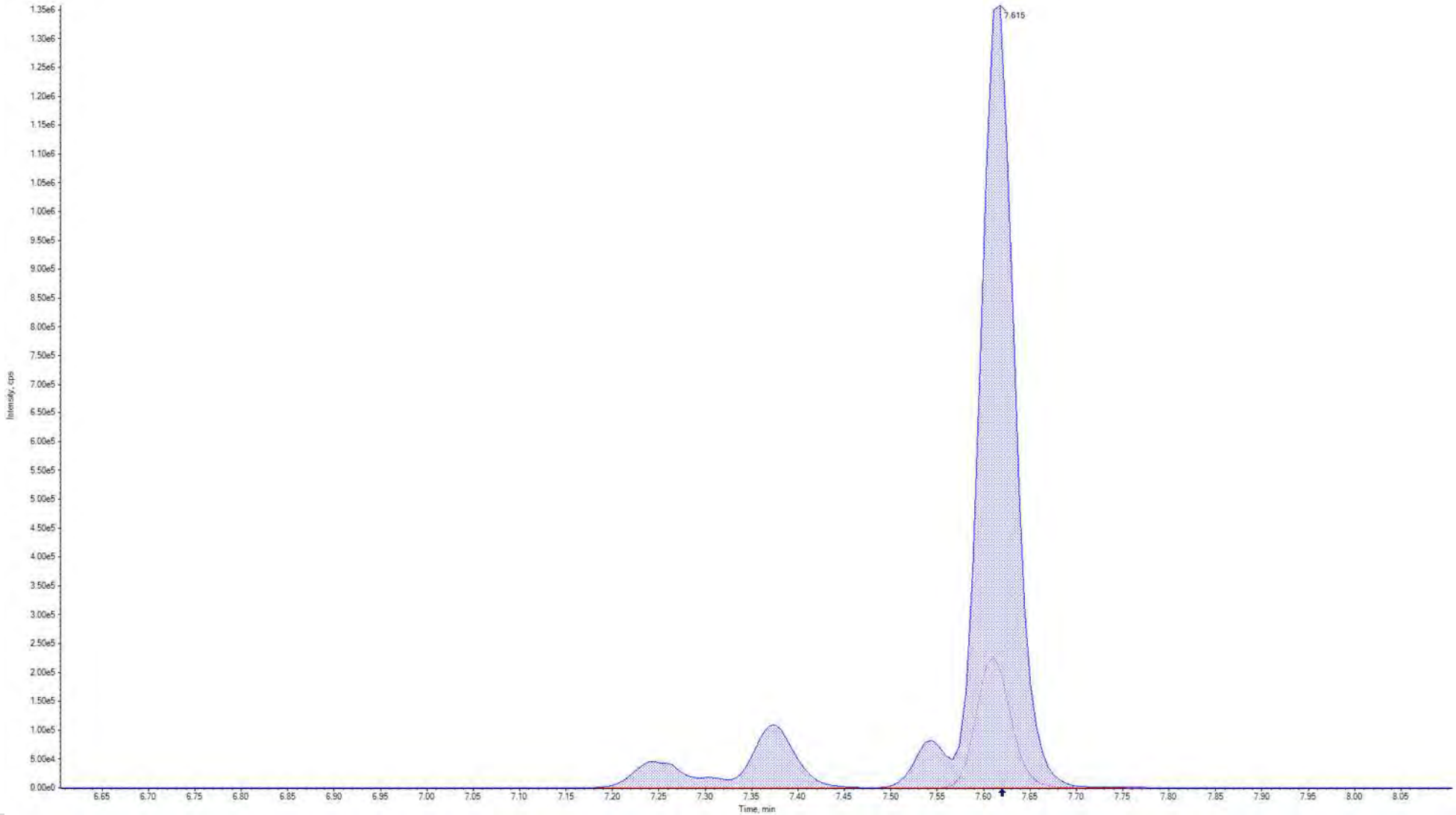
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFHxS
Sample: IA1633STD-62.5 S/N:848847.6 Points Across peak:98



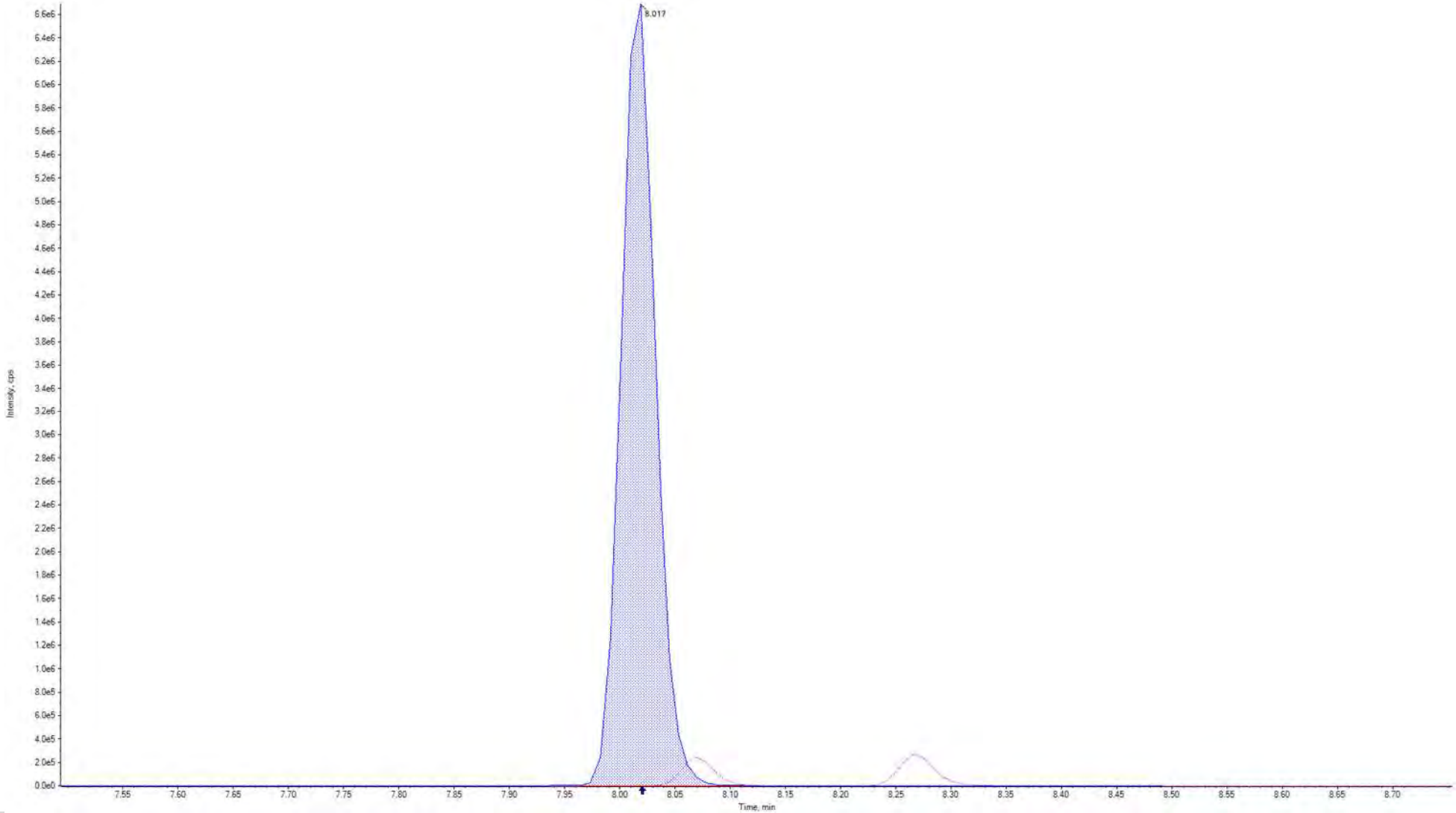
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFHxS_2
Sample: IA1633STD-62.5 S/N:466156.3 Points Across peak:96



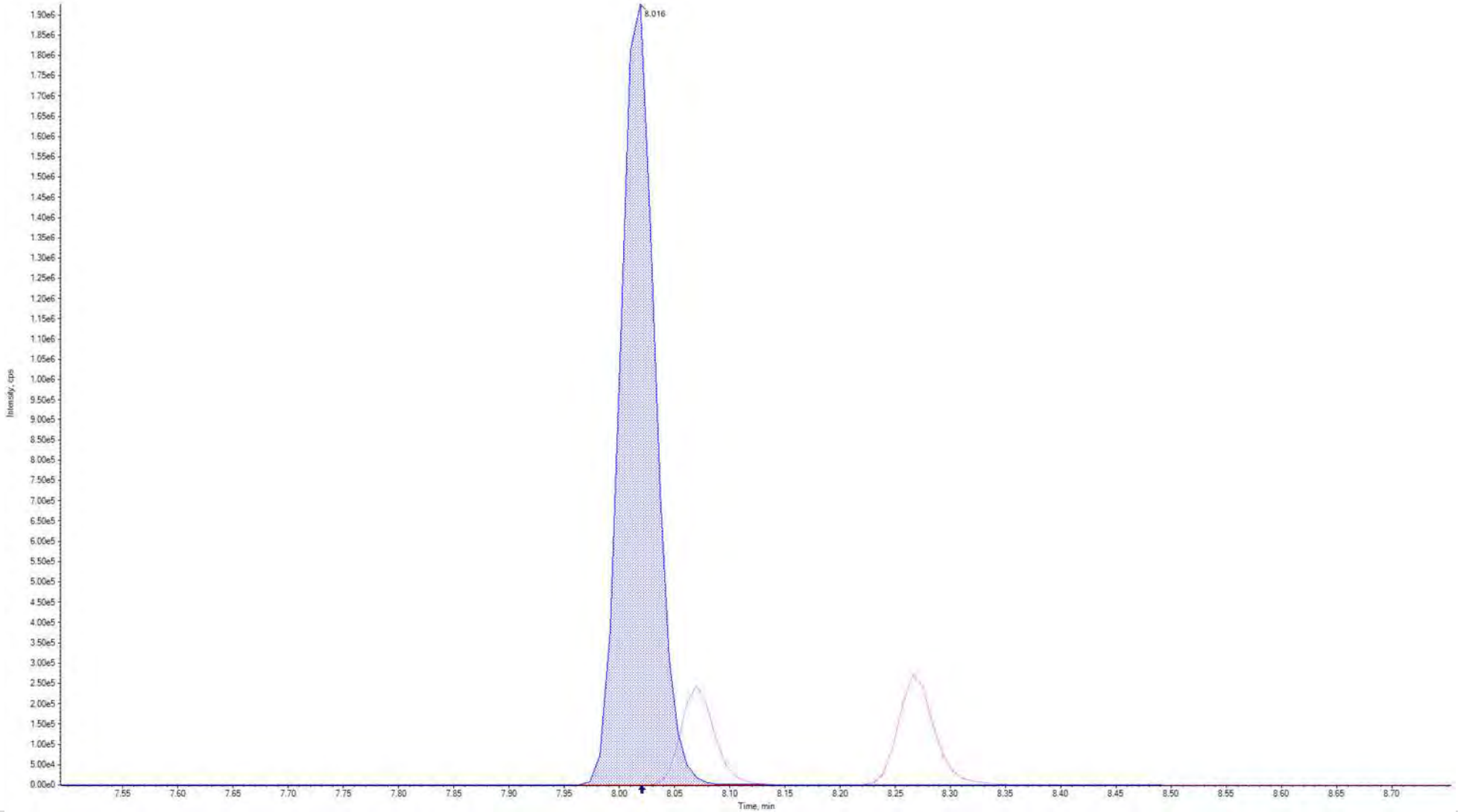
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFHpS
Sample: IA1633STD-62.5 S/N:113644651.8 Points Across peak:26



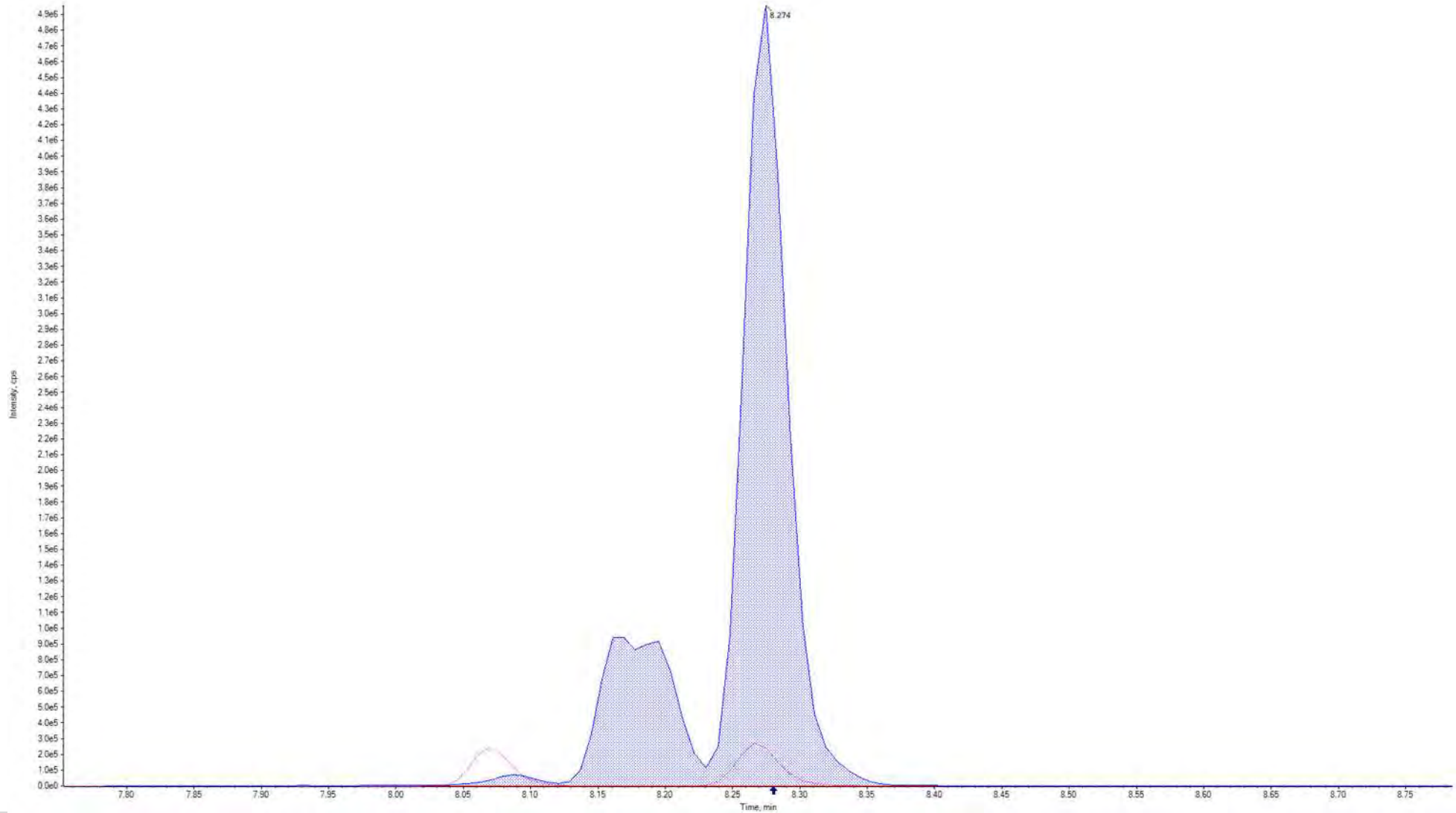
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFHpS_2
Sample: IA1633STD-62.5 S/N:6830.6 Points Across peak:38



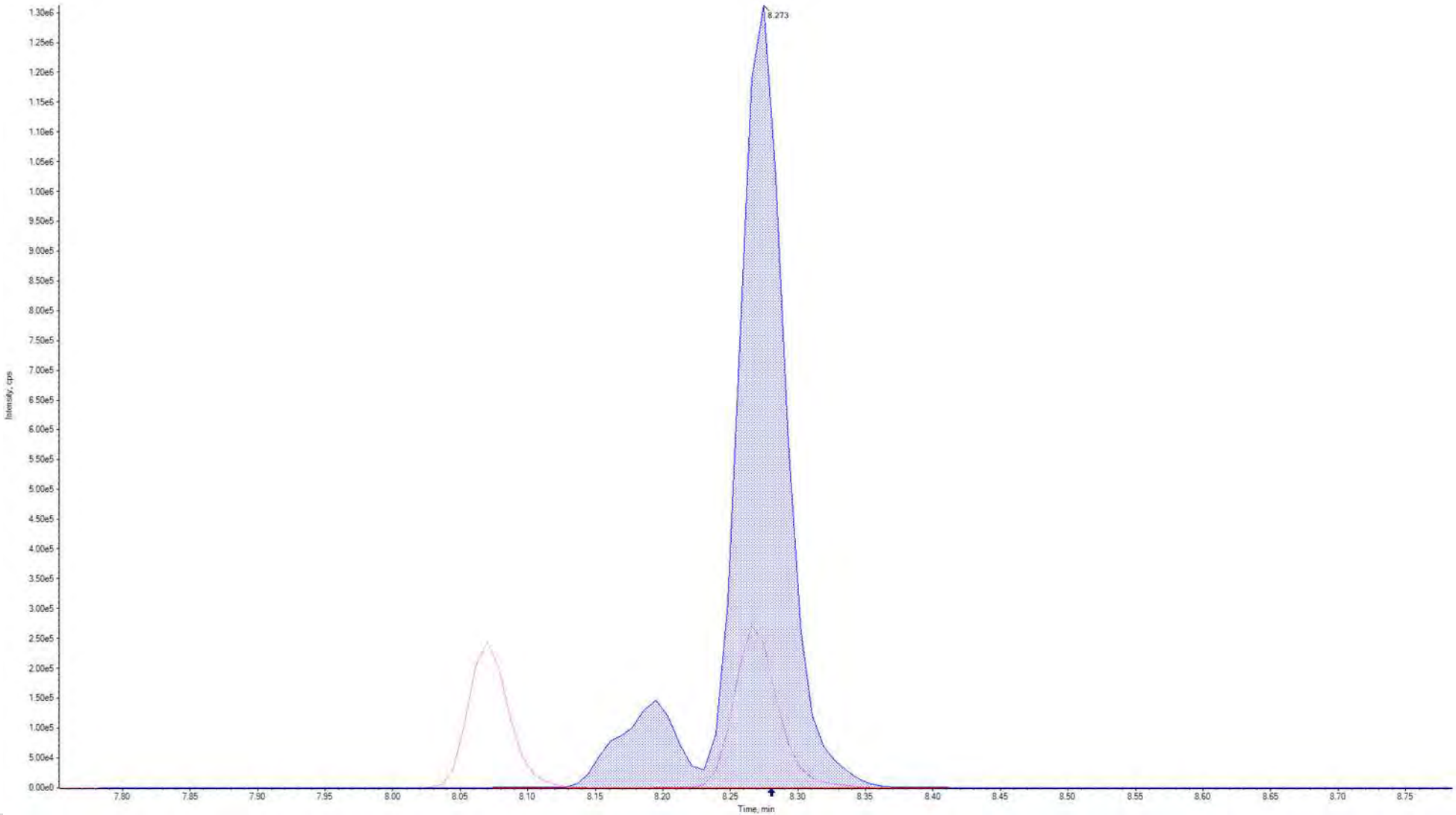
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOS
Sample: IA1633STD-62.5 S/N:4970.6 Points Across peak:48



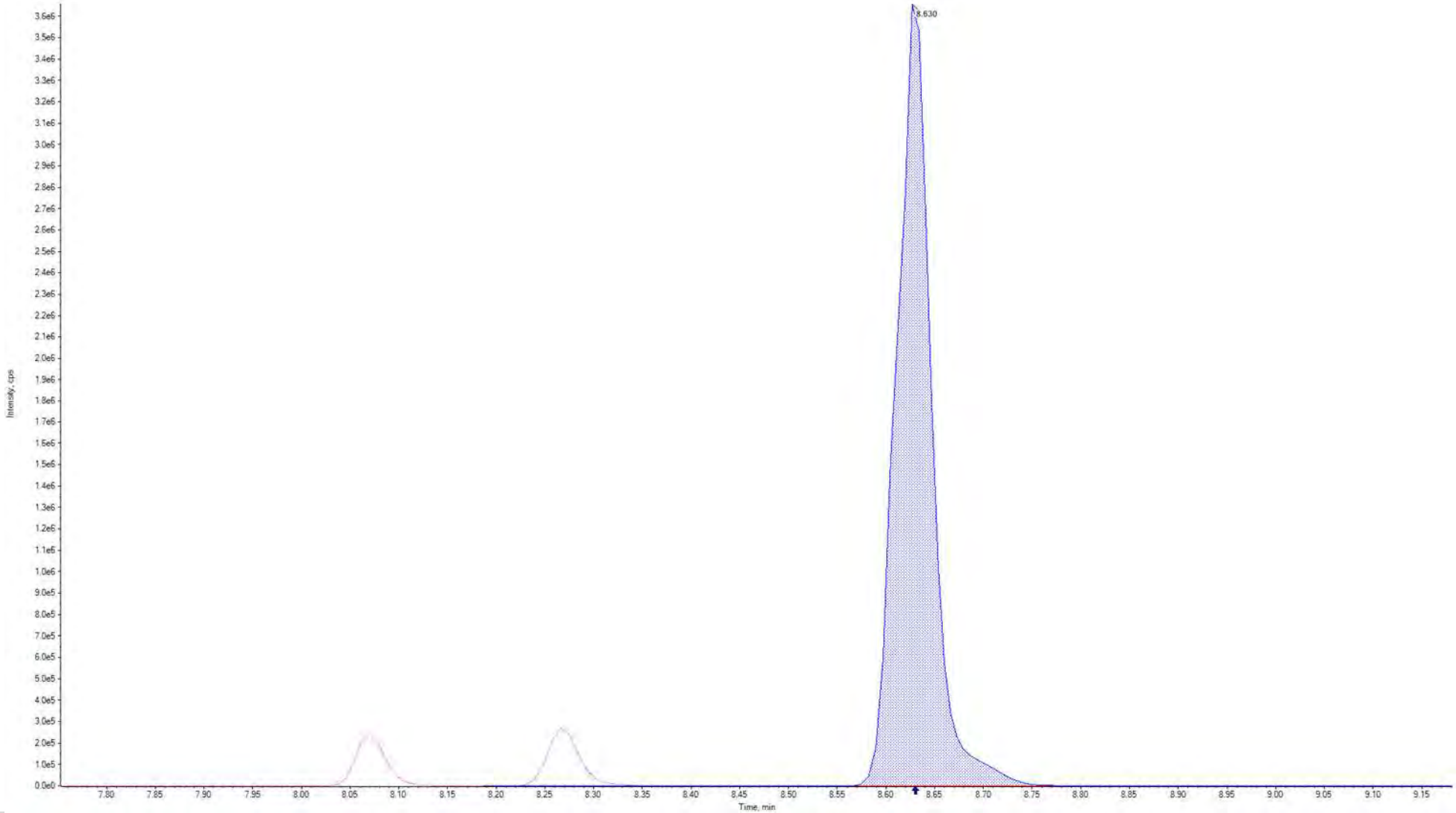
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOS_2
Sample: IA1633STD-62.5 S/N:3301609.0 Points Across peak:53



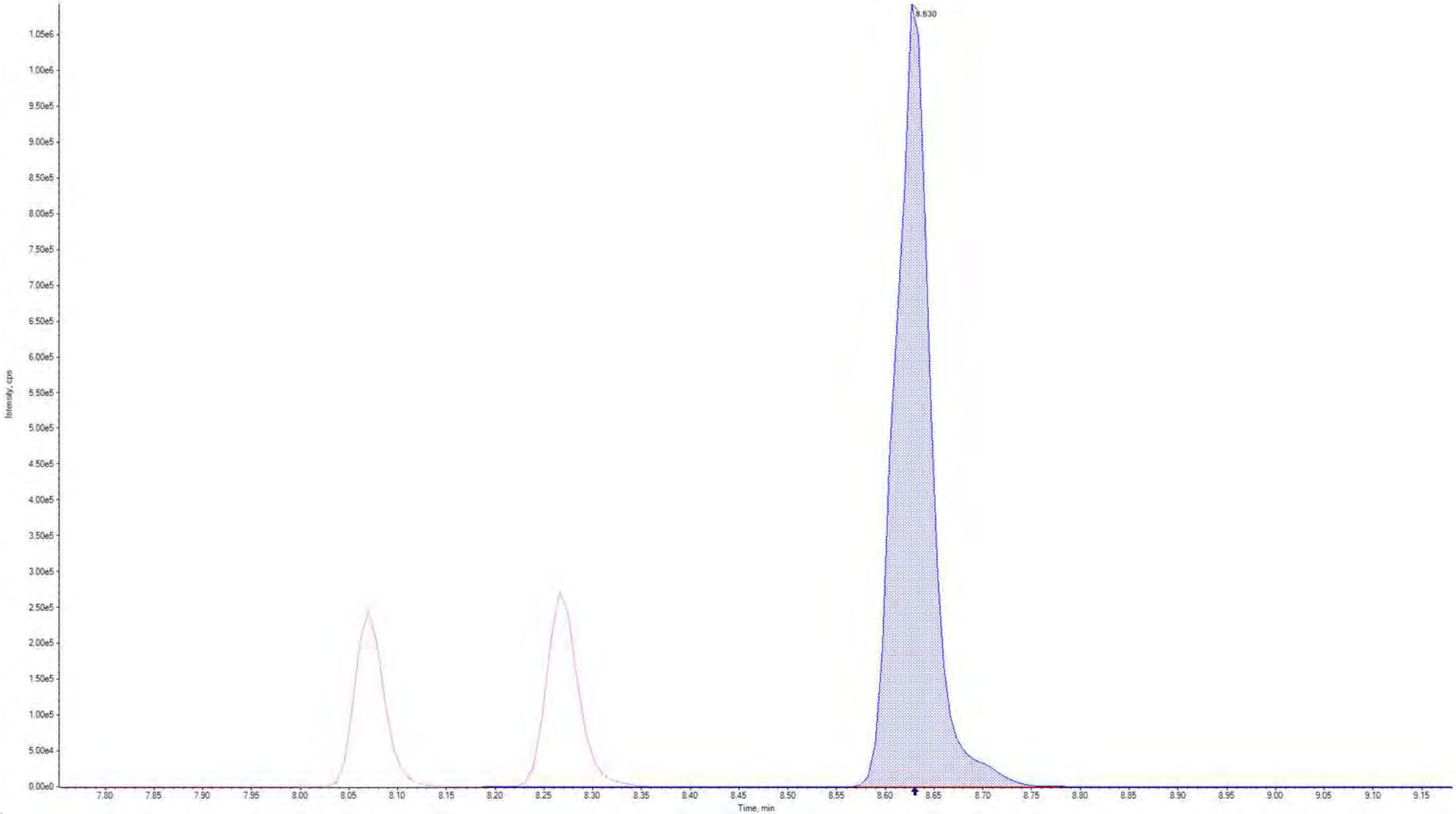
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFNS
Sample: IA1633STD-62.5 S/N:16736.5 Points Across peak:43



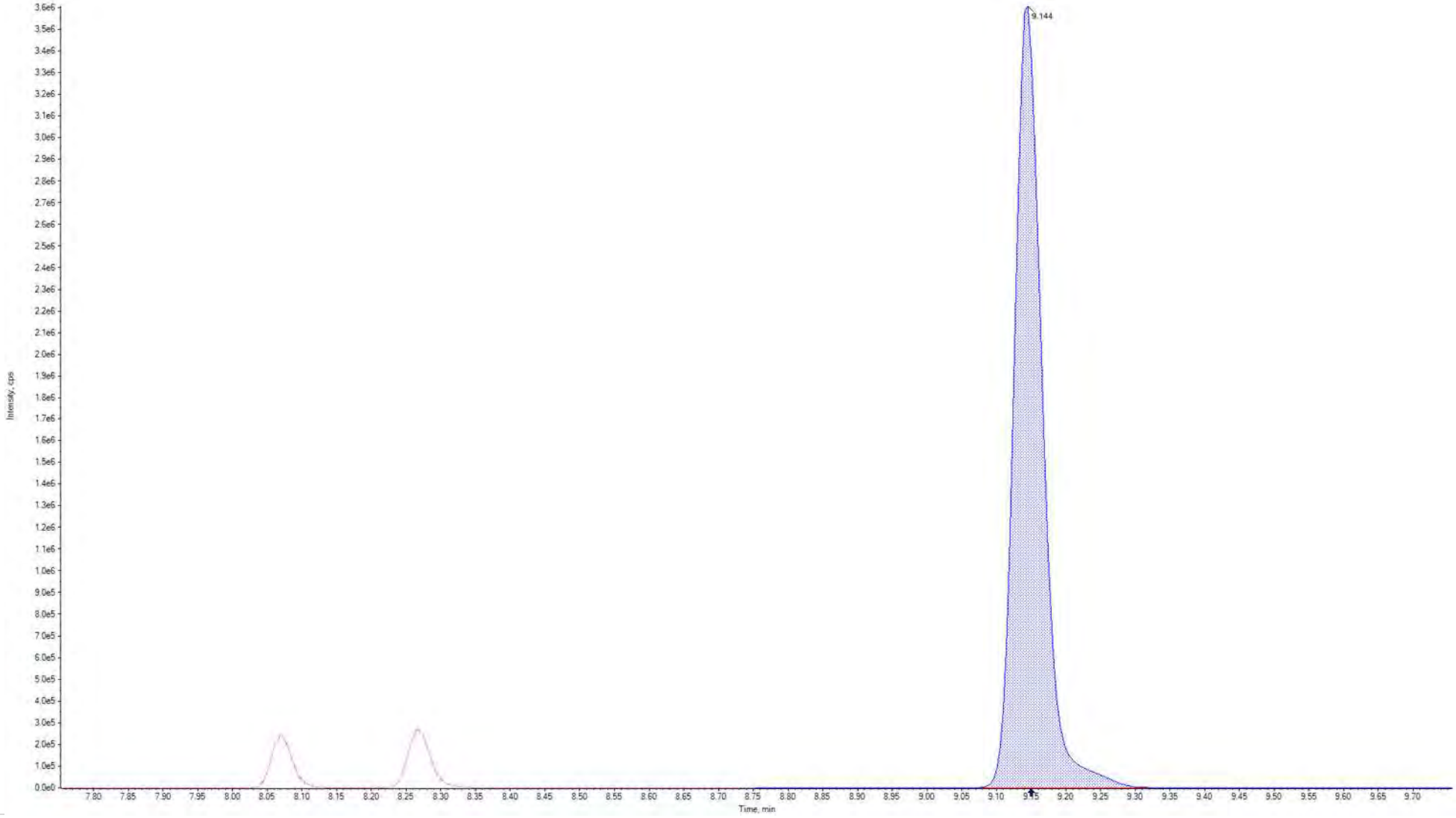
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFNS_2
Sample: IA1633STD-62.5 S/N:4536911.7 Points Across peak:42



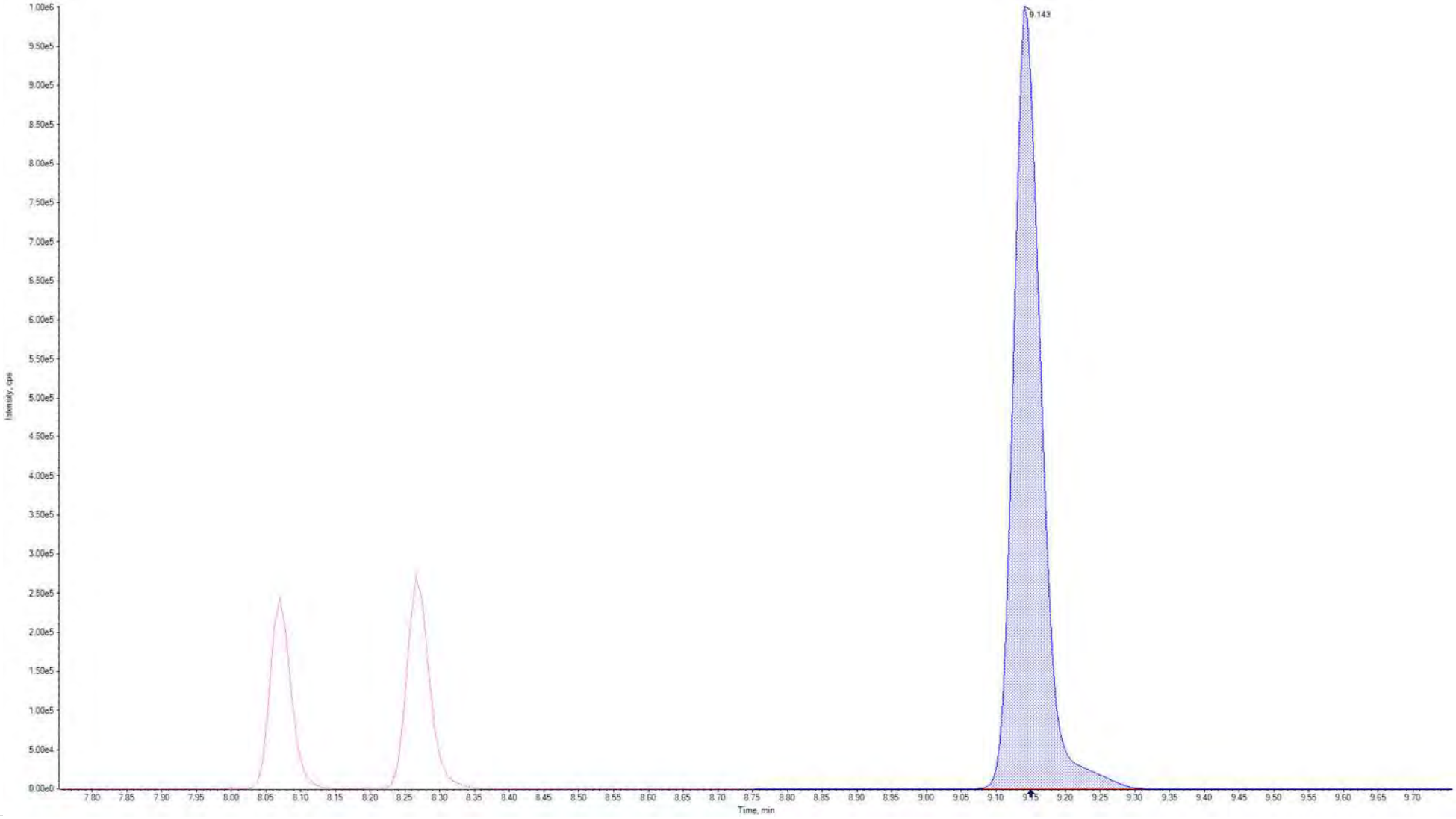
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDS
Sample: IA1633STD-62.5 S/N:29238.4 Points Across peak:67



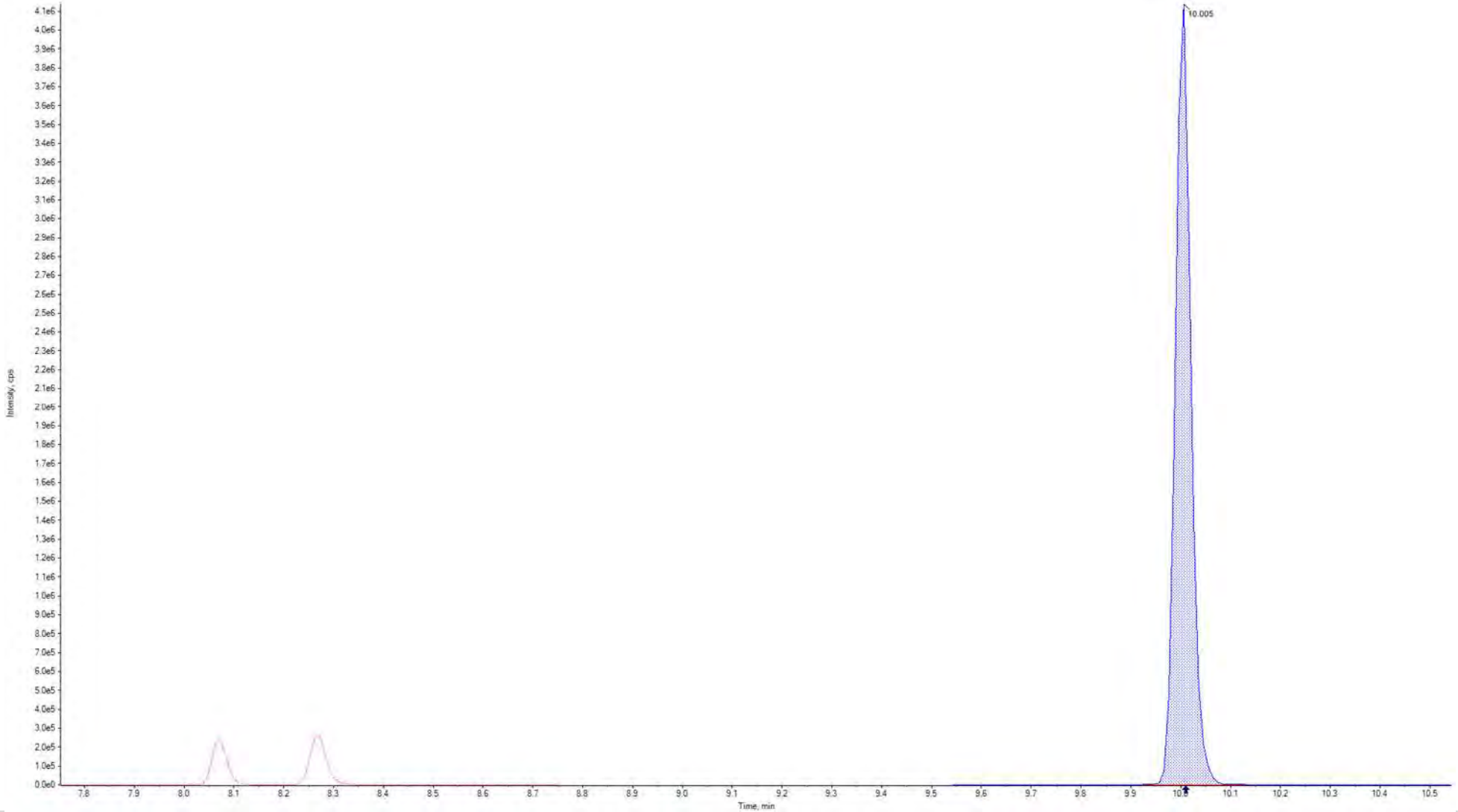
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDS_2
Sample: IA1633STD-62.5 S/N:225096.7 Points Across peak:54



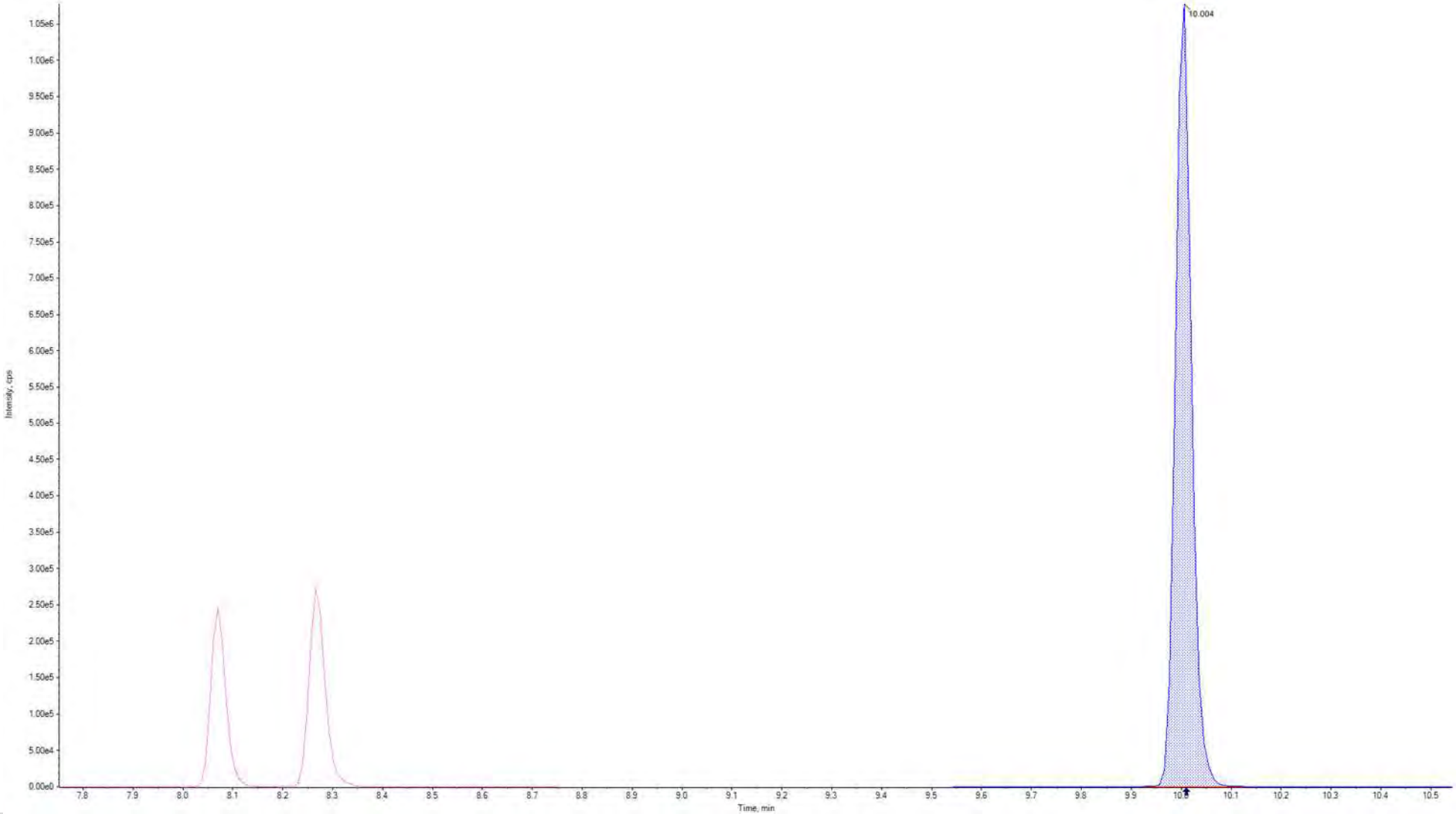
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDoS
Sample: IA1633STD-62.5 S/N:18400.3 Points Across peak:37



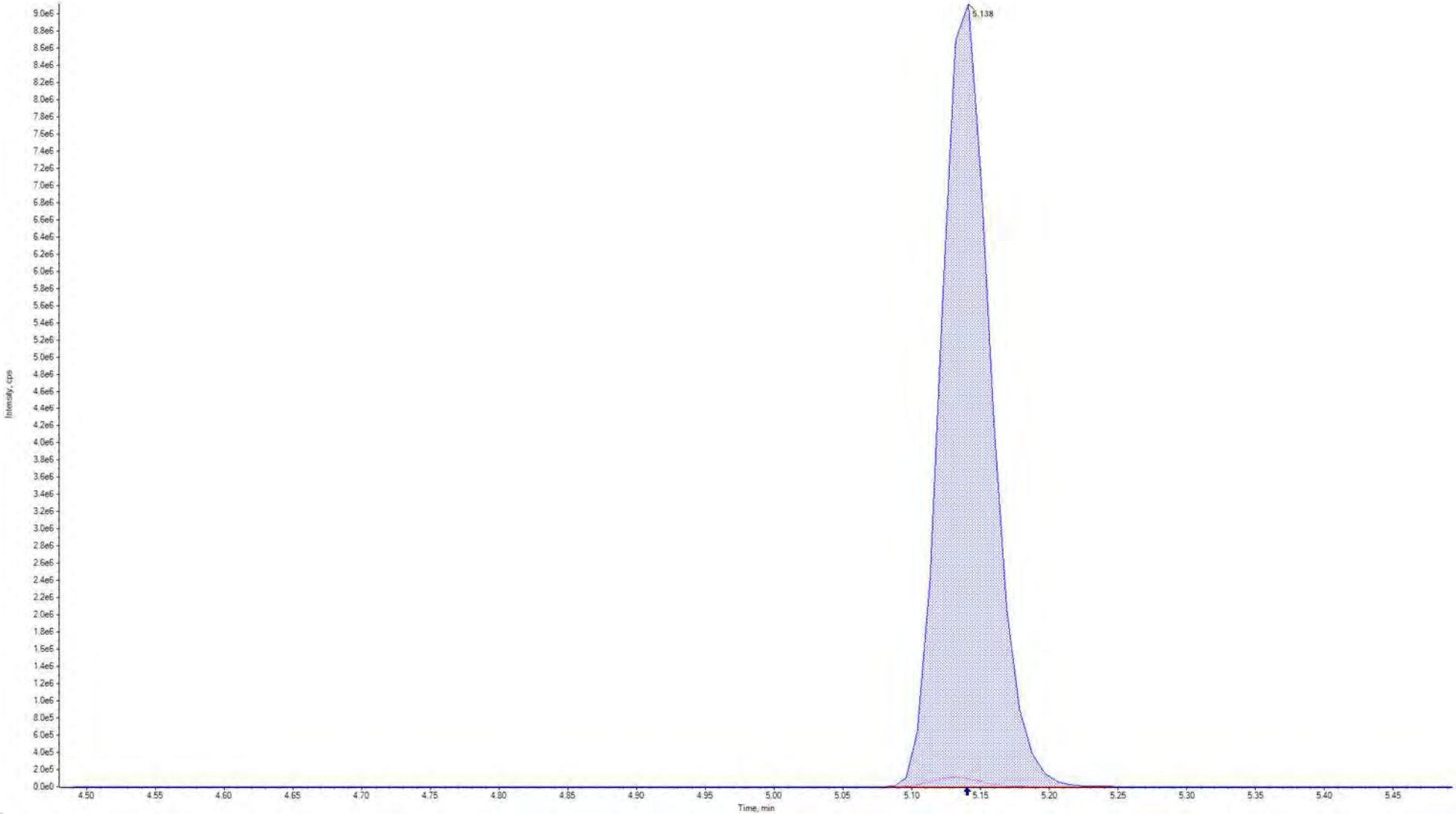
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFDoS_2
Sample: IA1633STD-62.5 S/N:5320.0 Points Across peak:28



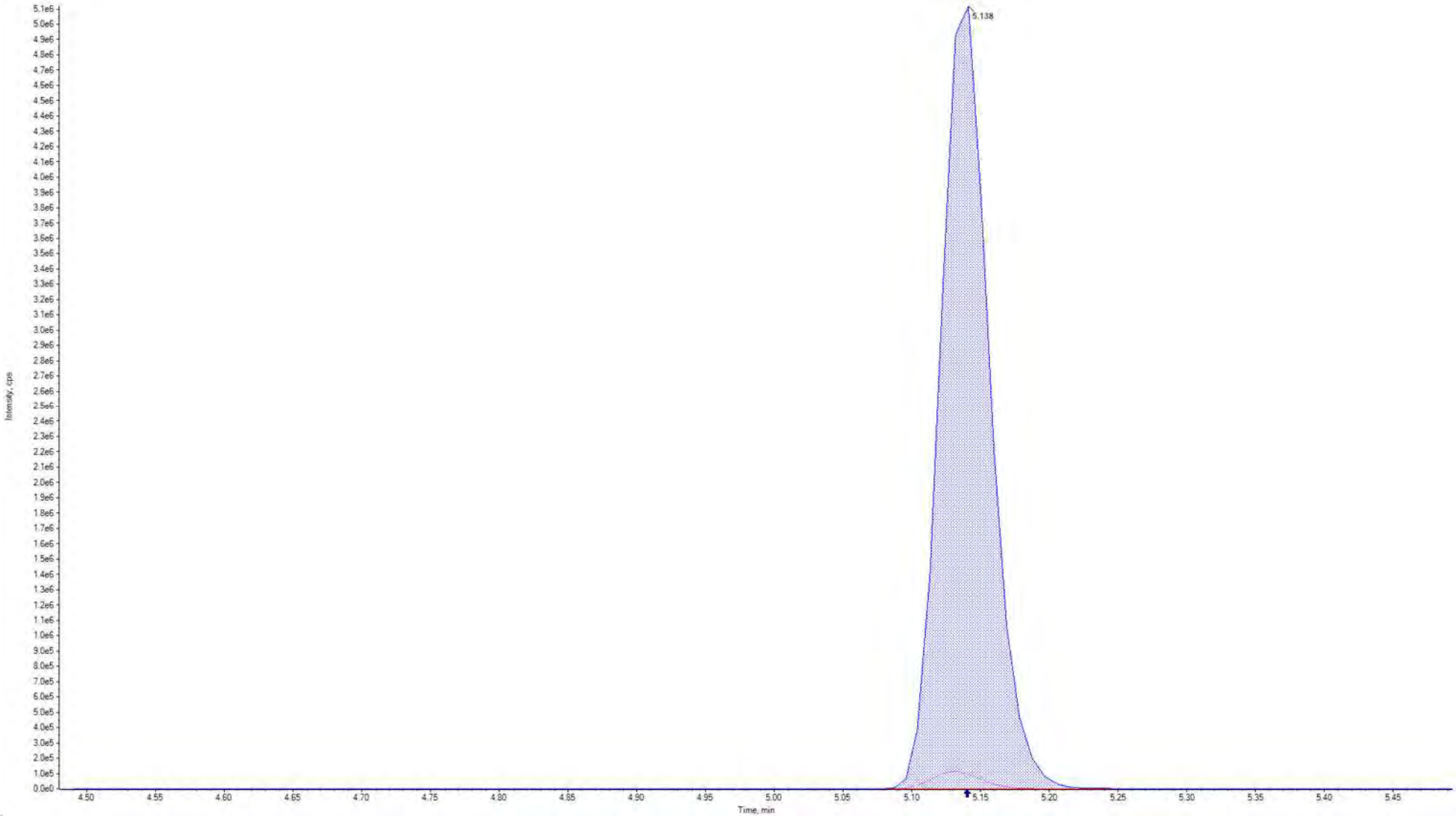
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

4:2FTS
Sample: IA1633STD-62.5 S/N:171109960.8 Points Across peak:31



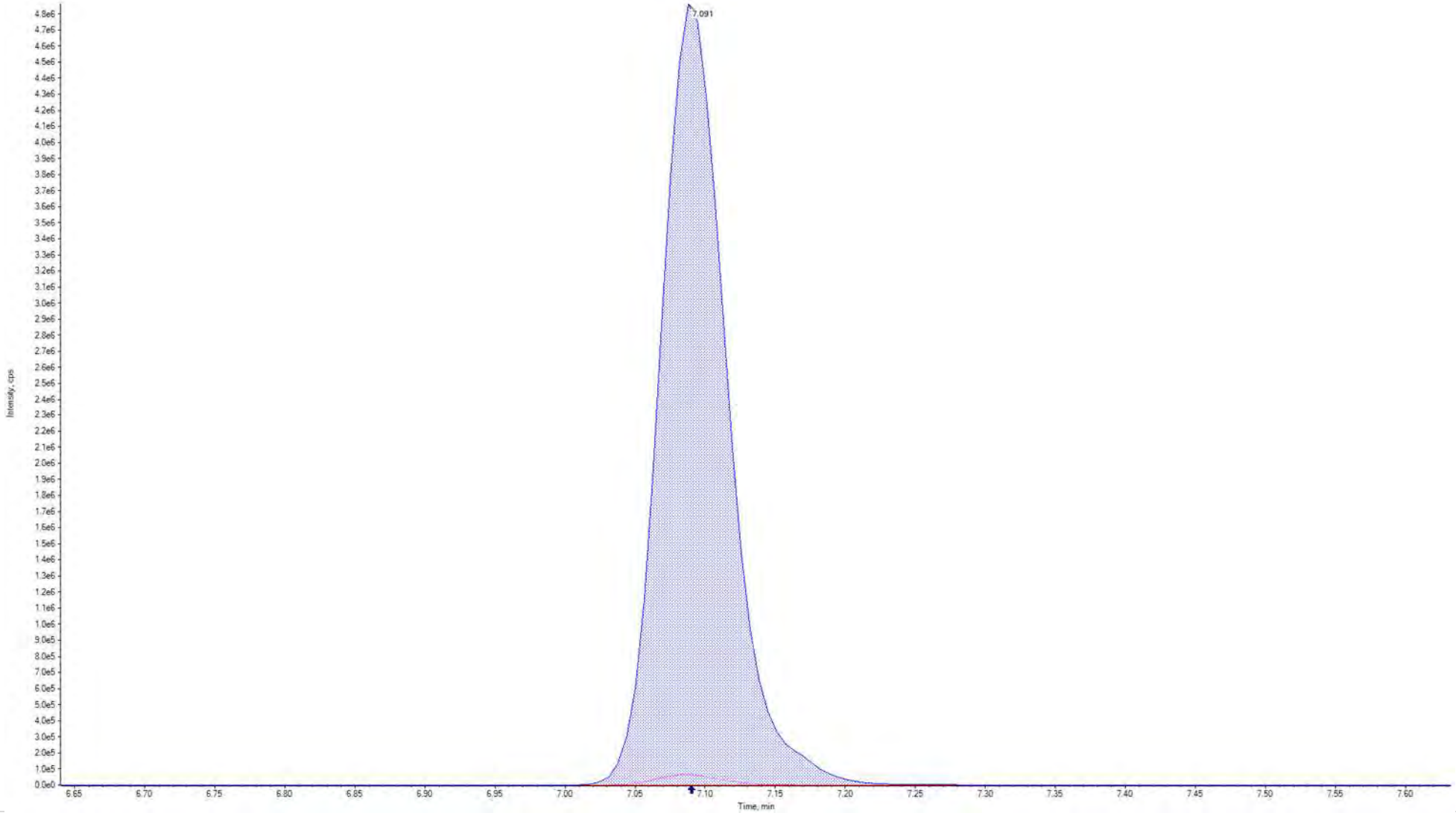
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

4:2FTS_2
Sample: IA1633STD-62.5 S/N:33650.4 Points Across peak:29



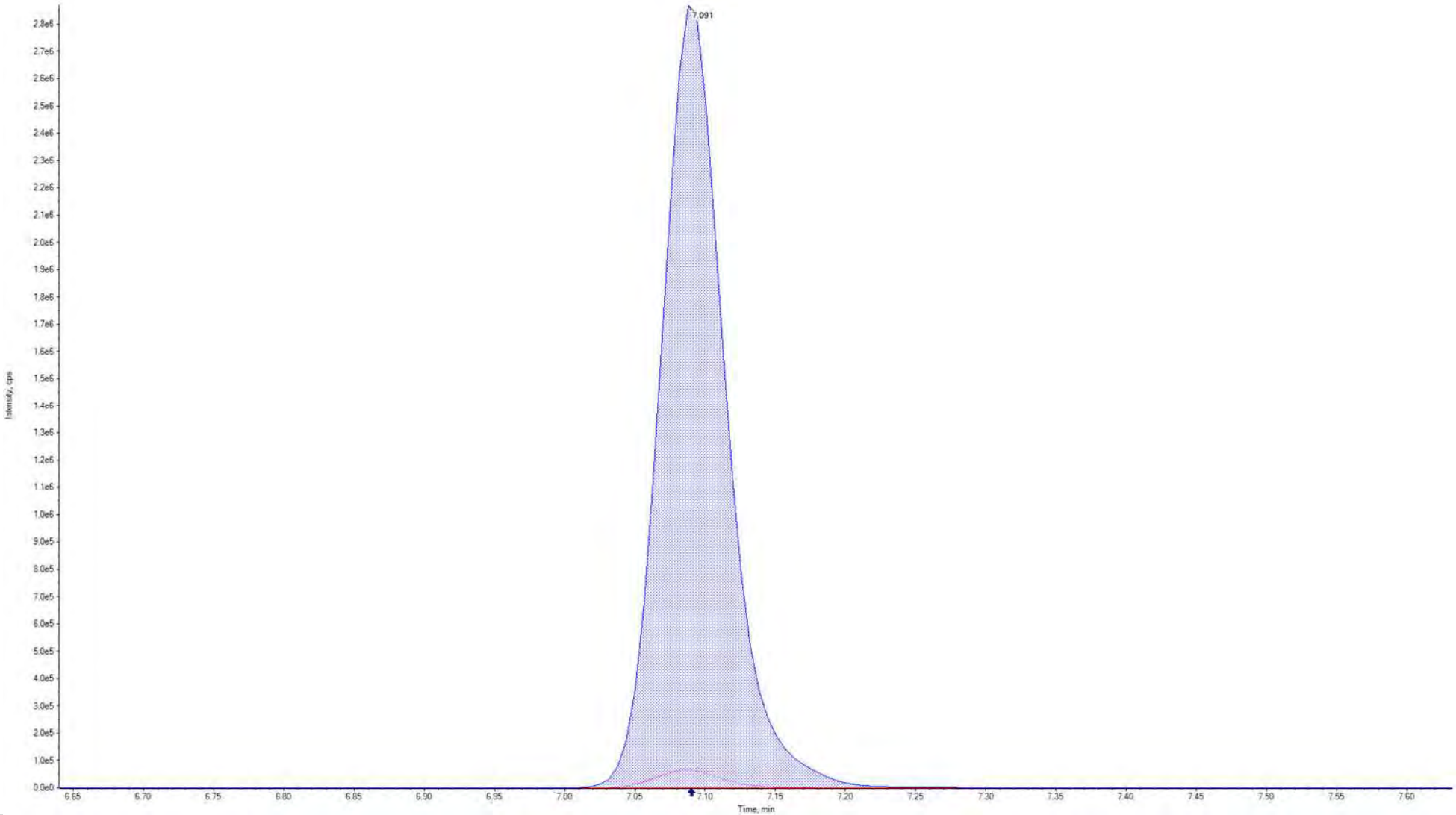
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

6:2FTS
Sample: IA1633STD-62.5 S/N:1168486.8 Points Across peak:71

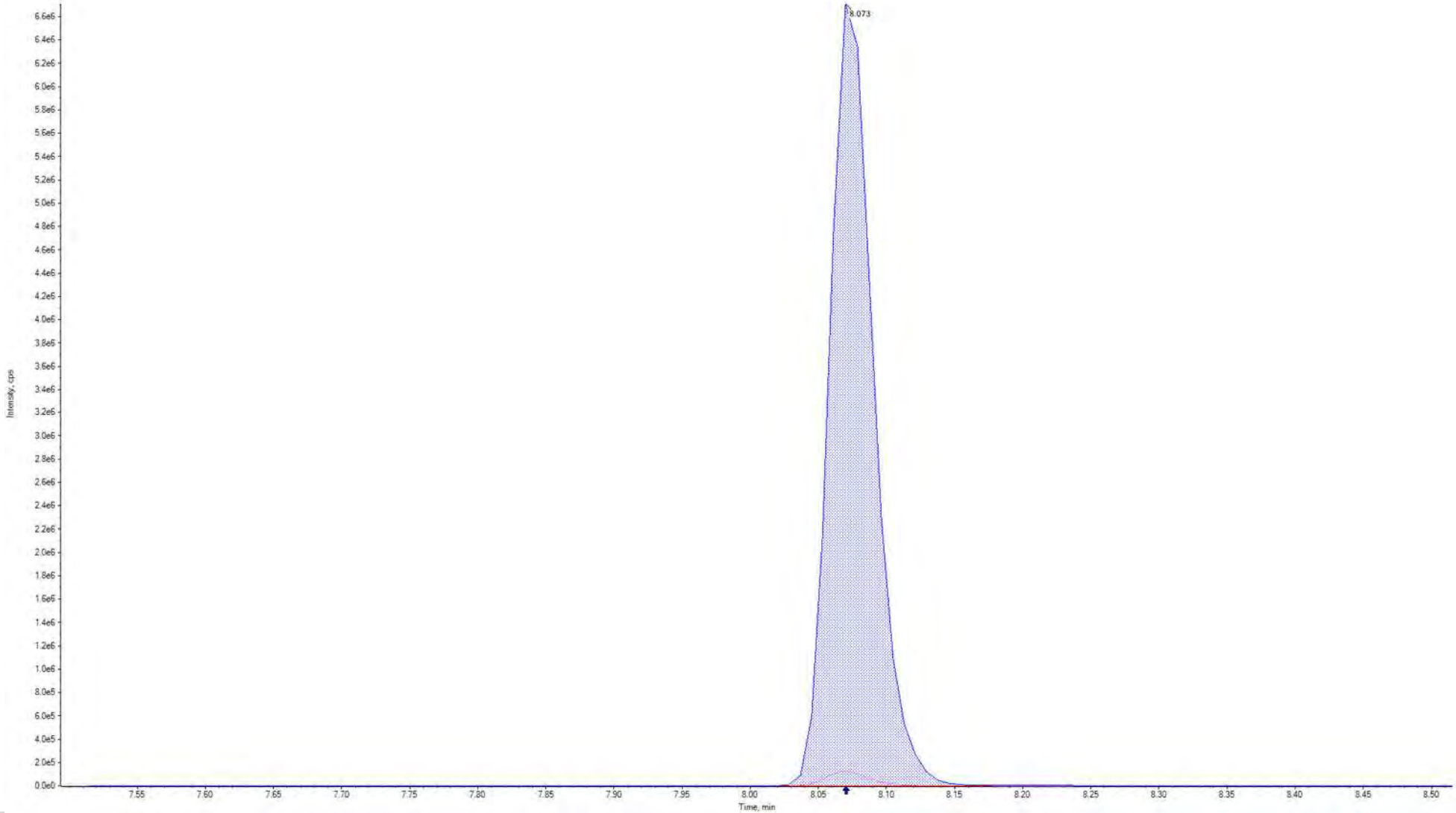


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

6:2FTS_2
Sample: IA1633STD-62.5 S/N:206571.0 Points Across peak:51

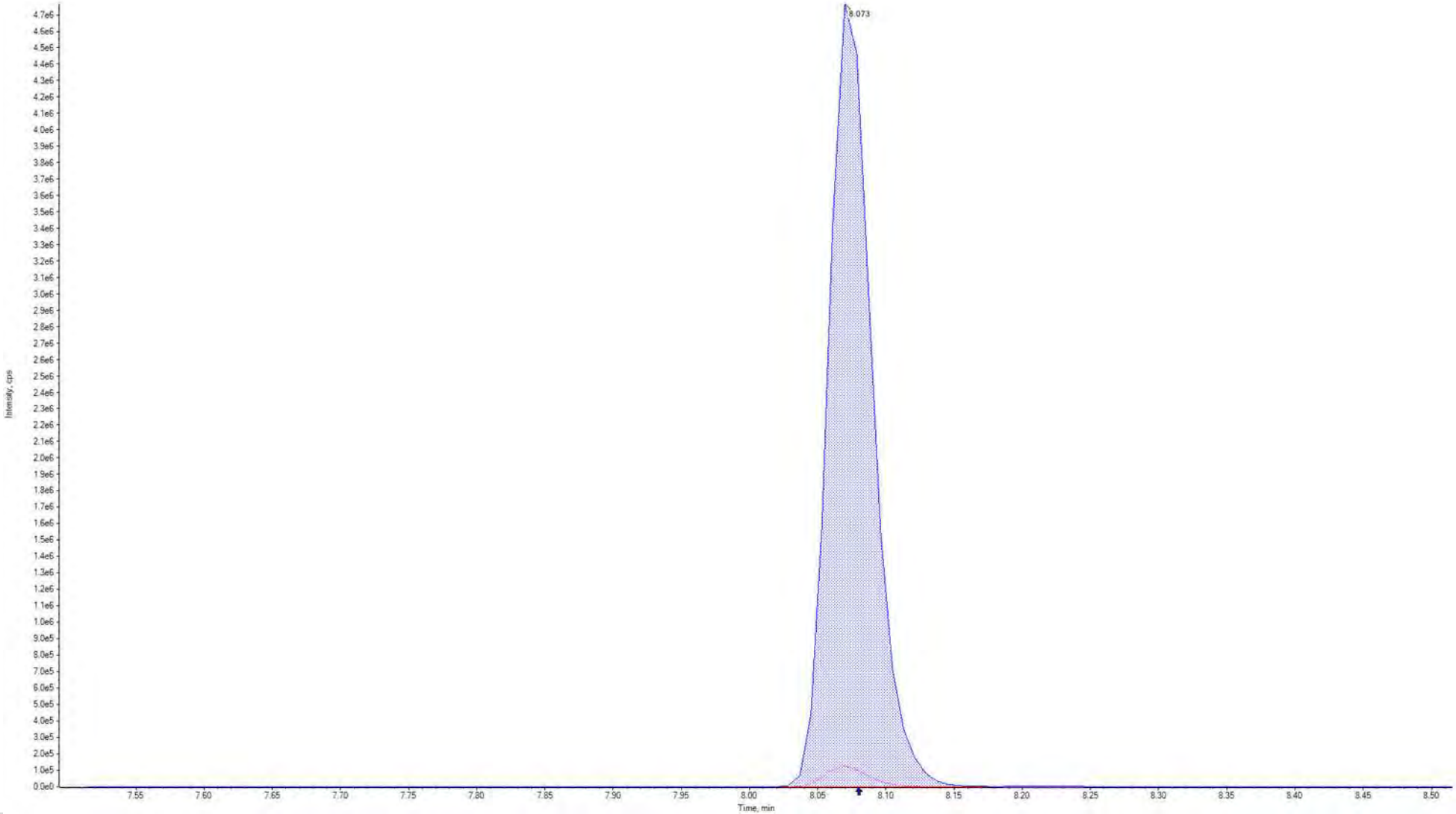


8:2FTS
Sample: IA1633STD-62.5 S/N:9395.8 Points Across peak:21



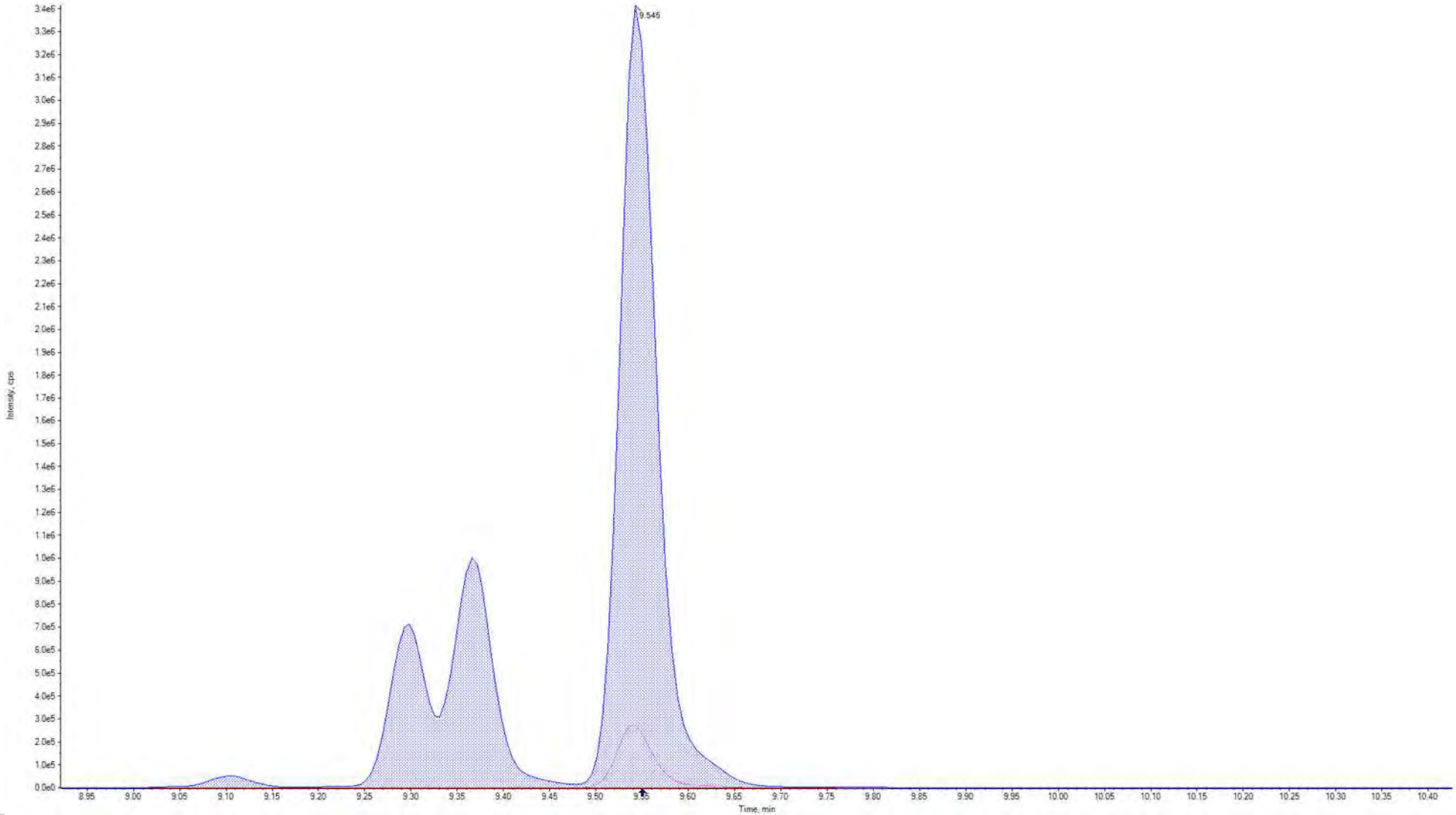
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

8:2FTS_2
Sample: IA1633STD-62.5 S/N:3247175.9 Points Across peak:21



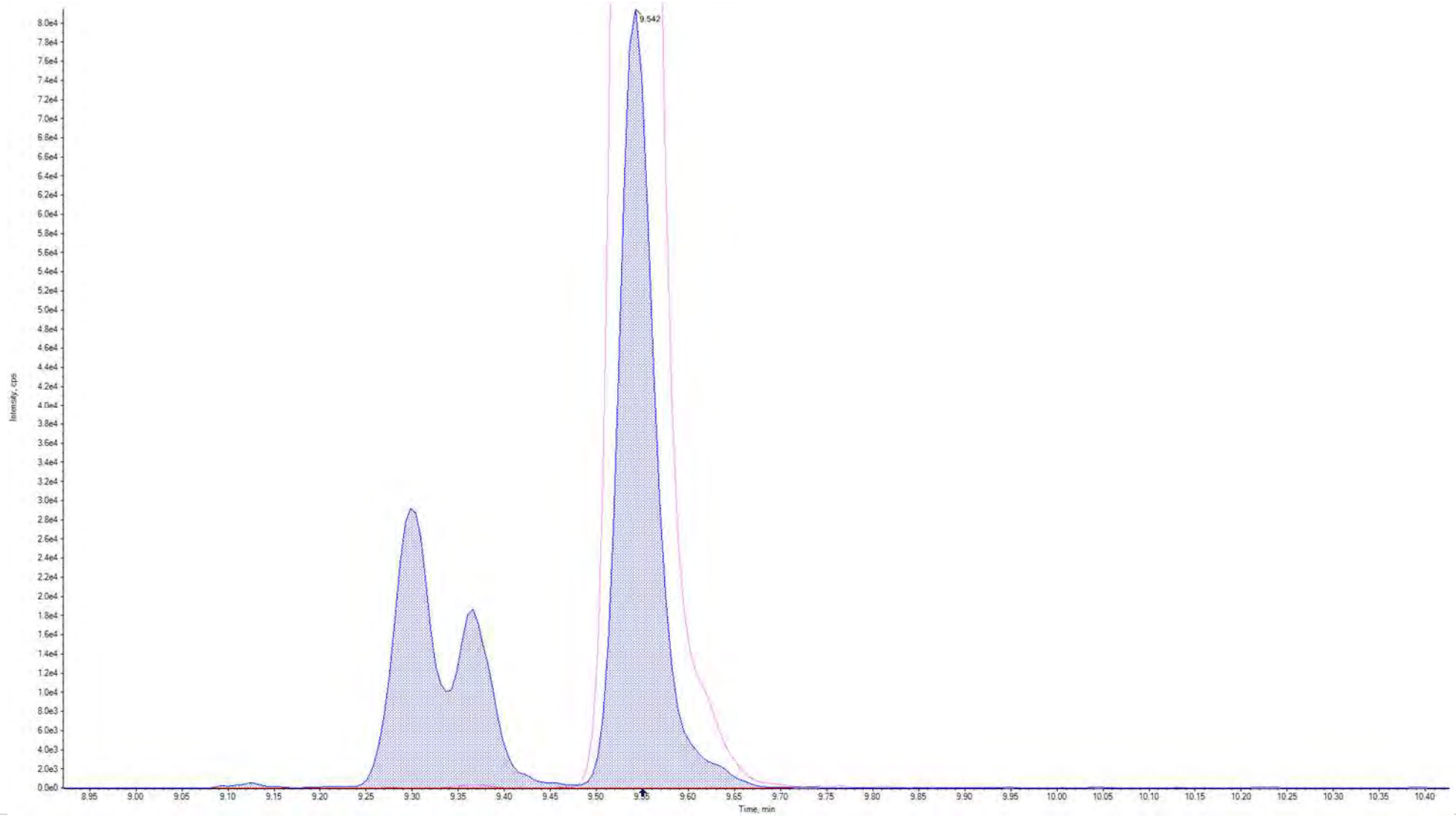
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOSA
Sample: IA1633STD-62.5 S/N:22190.1 Points Across peak:135



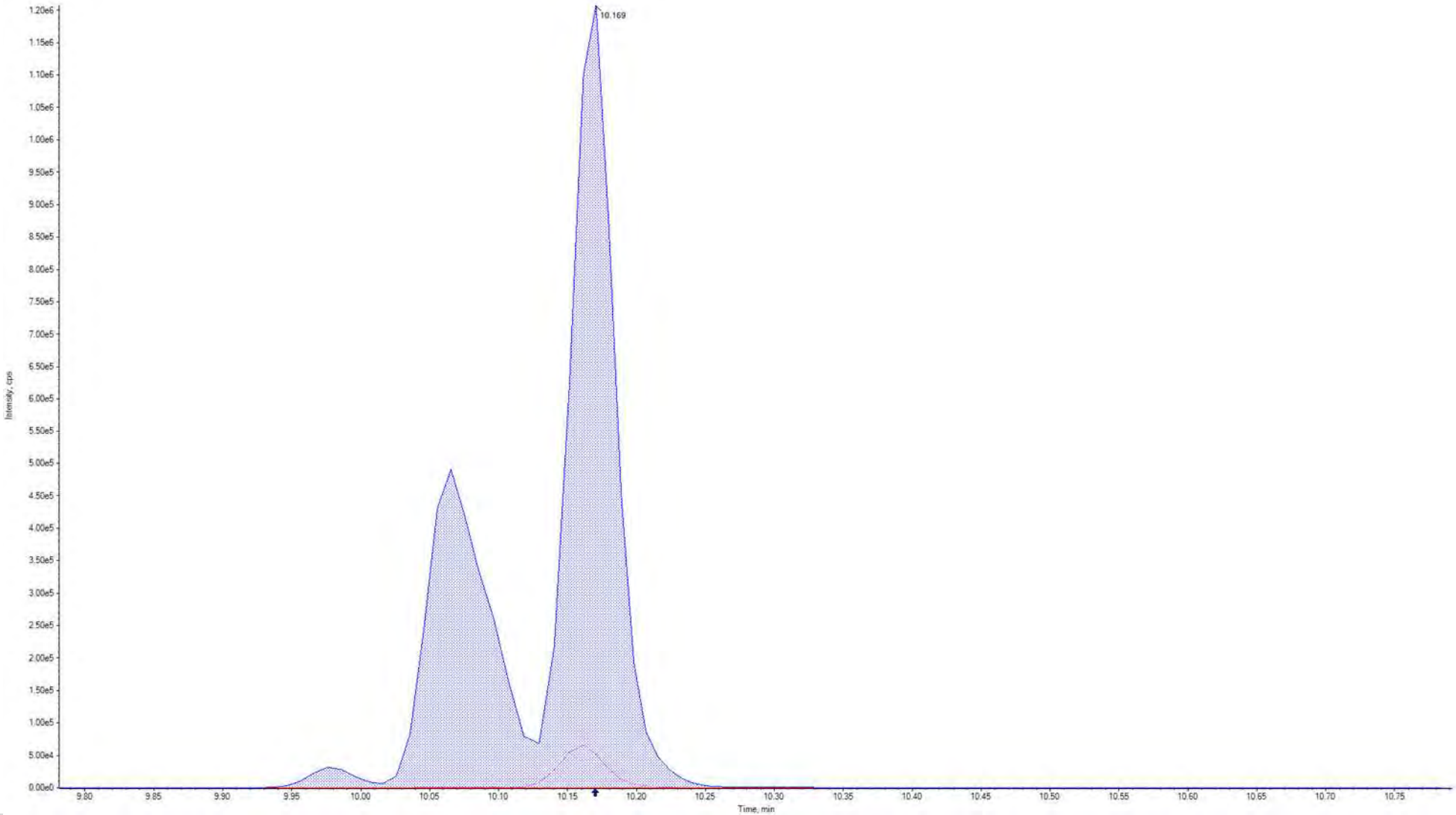
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFOSA_2
Sample: IA1633STD-62.5 S/N:1252.6 Points Across peak:113



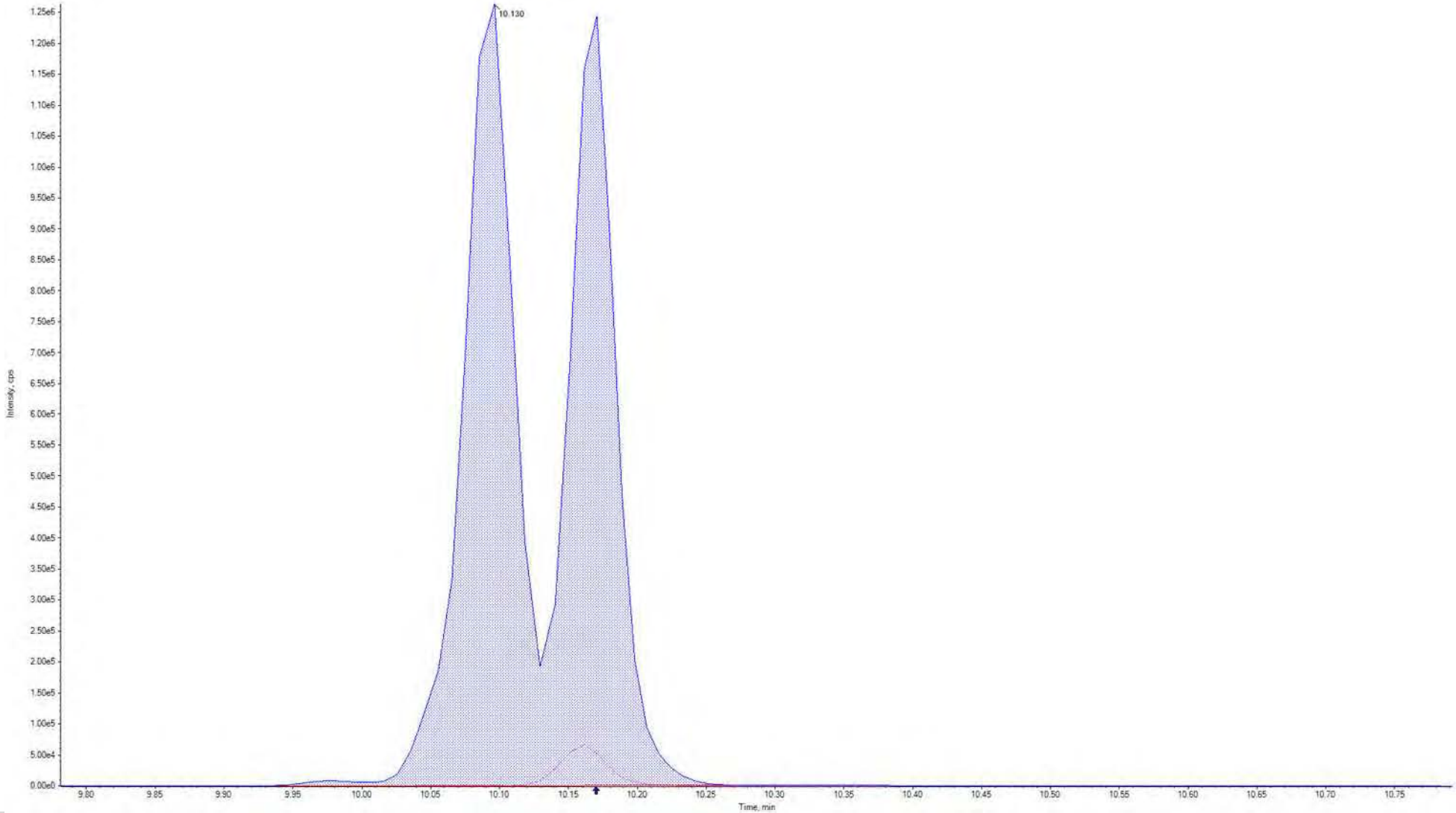
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSA
Sample: IA1633STD-62.5 S/N:8488.7 Points Across peak:47



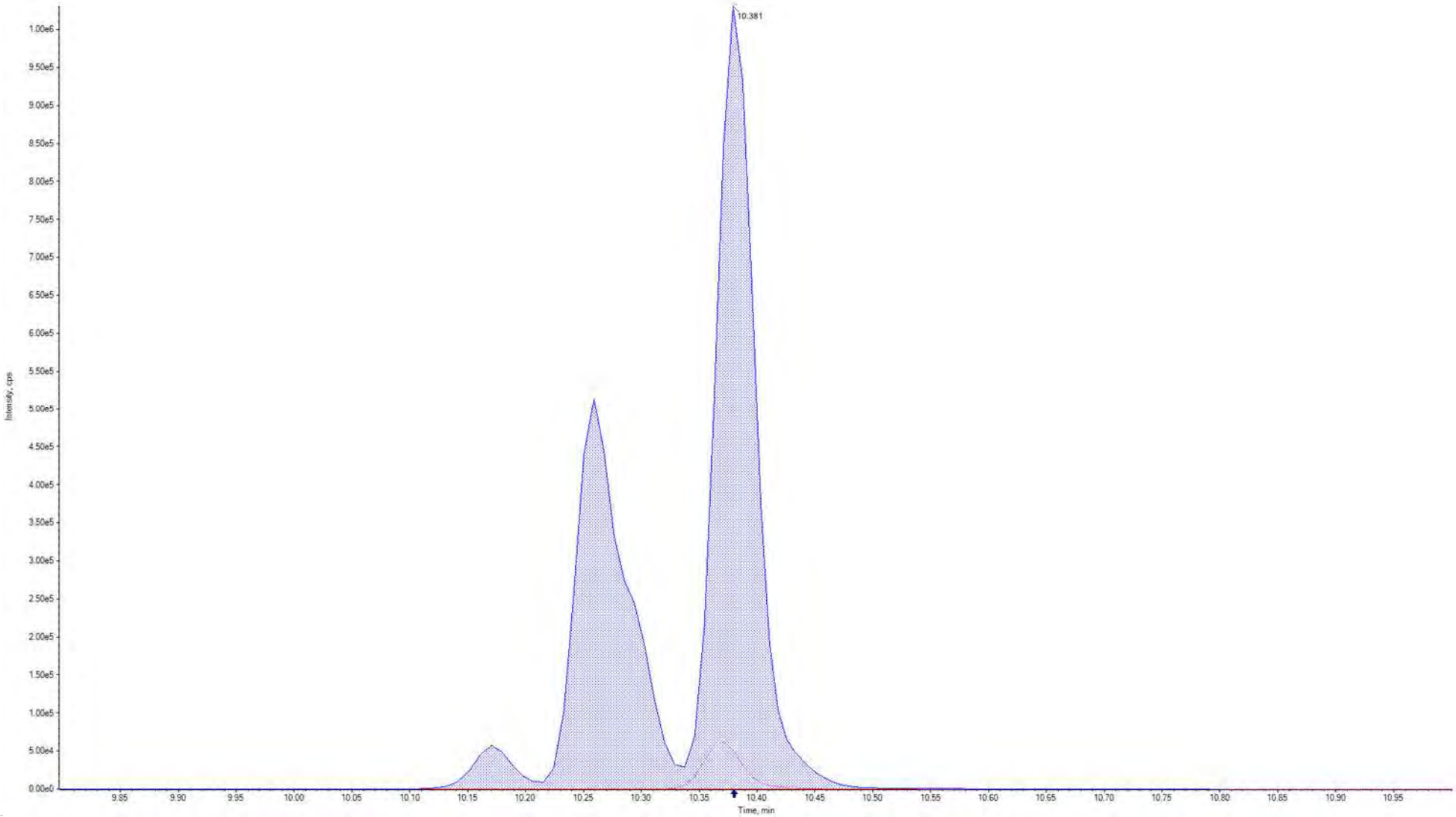
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSA_2
Sample: IA1633STD-62.5 S/N:2667.0 Points Across peak:42



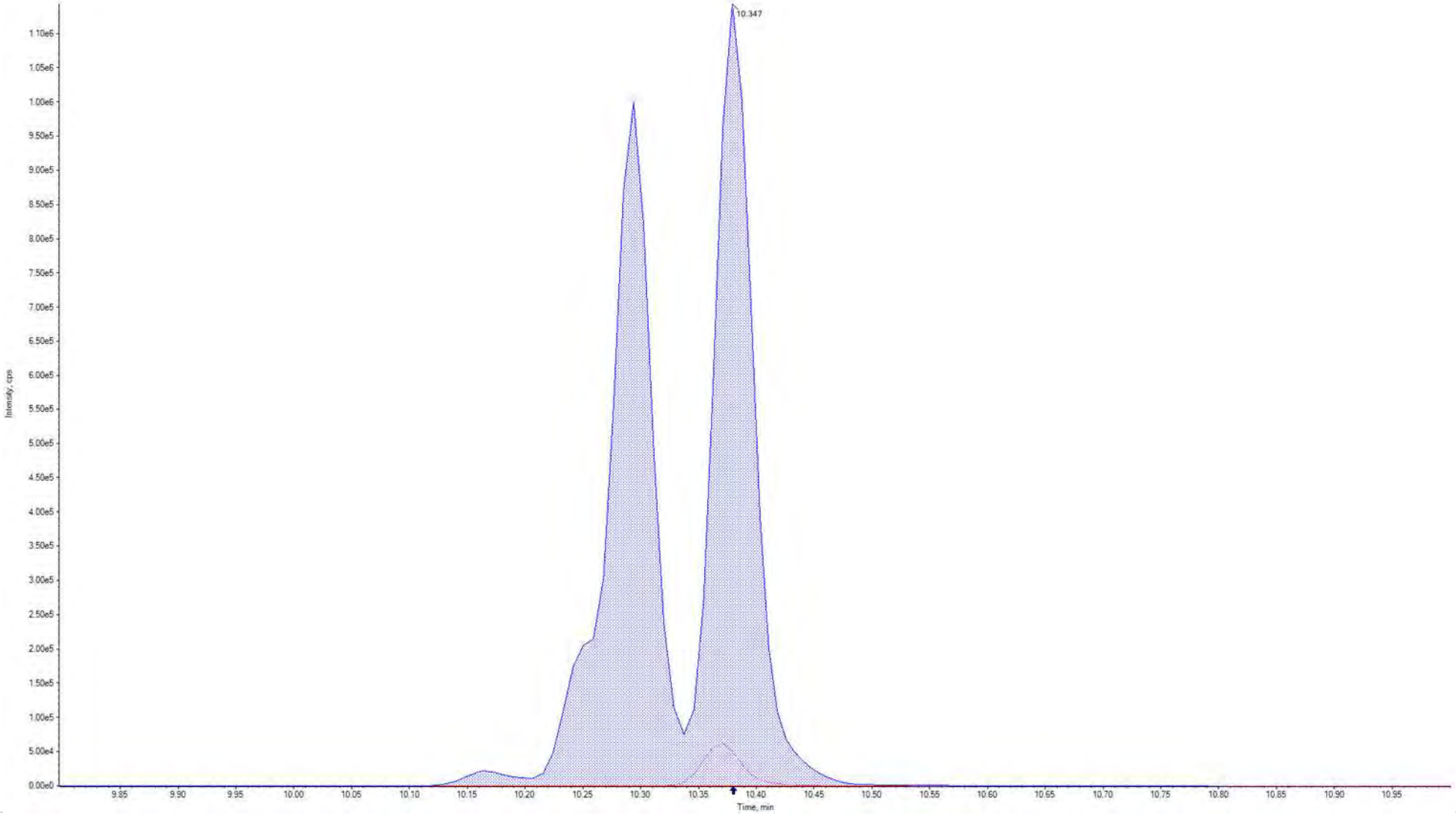
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSA
Sample: IA1633STD-62.5 S/N:26257.4 Points Across peak:56



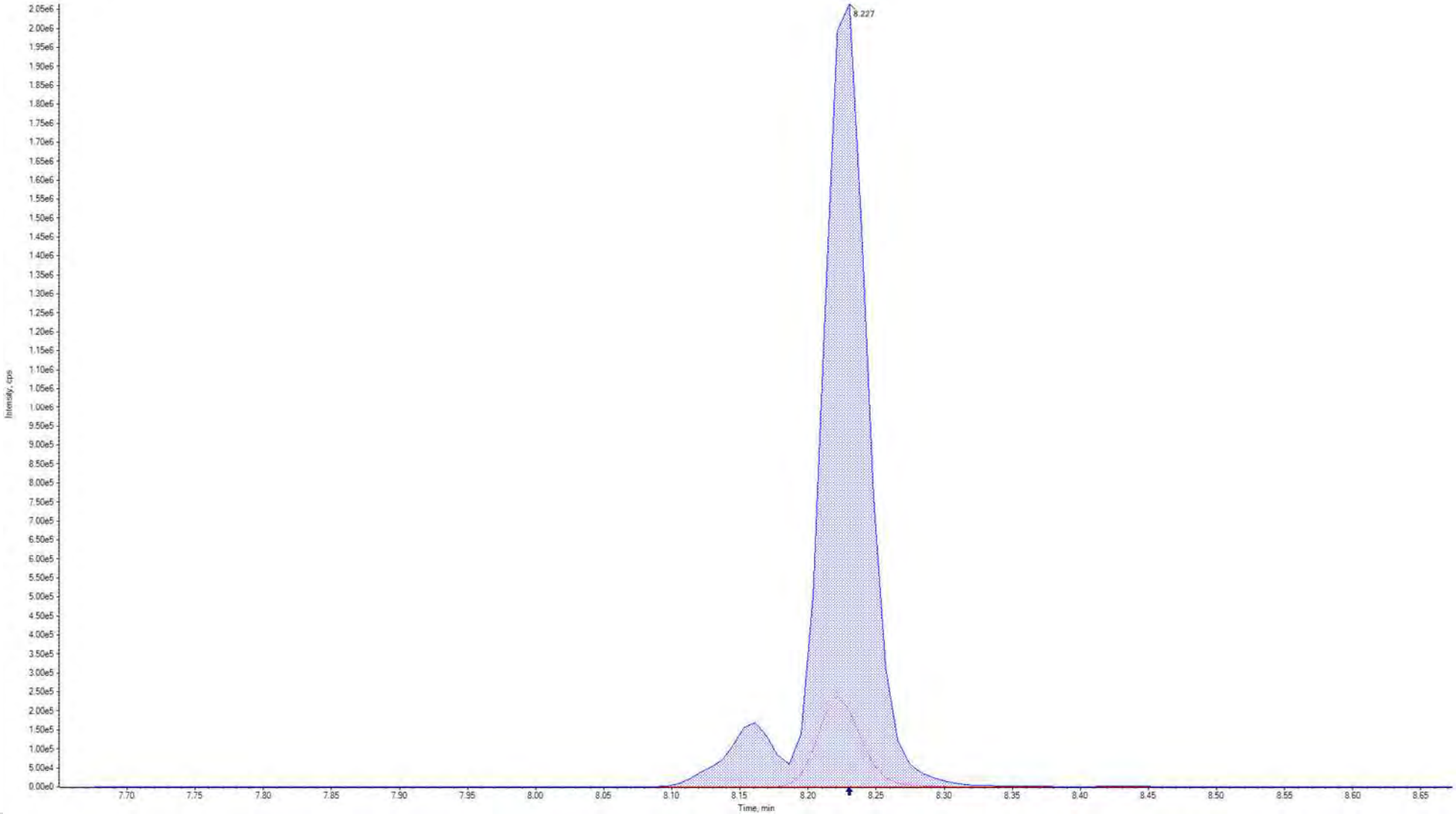
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSA_2
Sample: IA1633STD-62.5 S/N:66857.5 Points Across peak:54



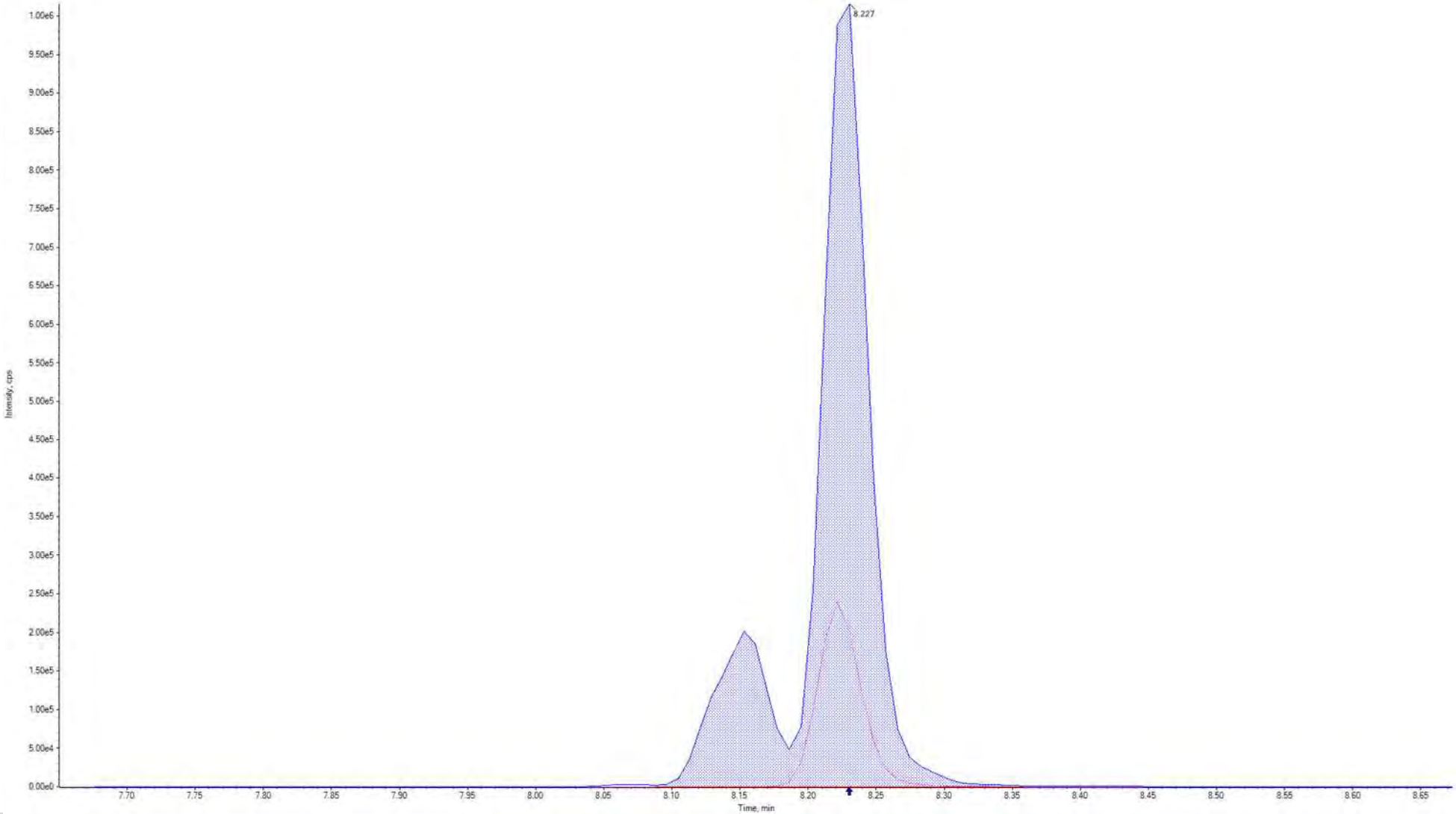
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSAA
Sample: IA1633STD-62.5 S/N:1401.6 Points Across peak:47



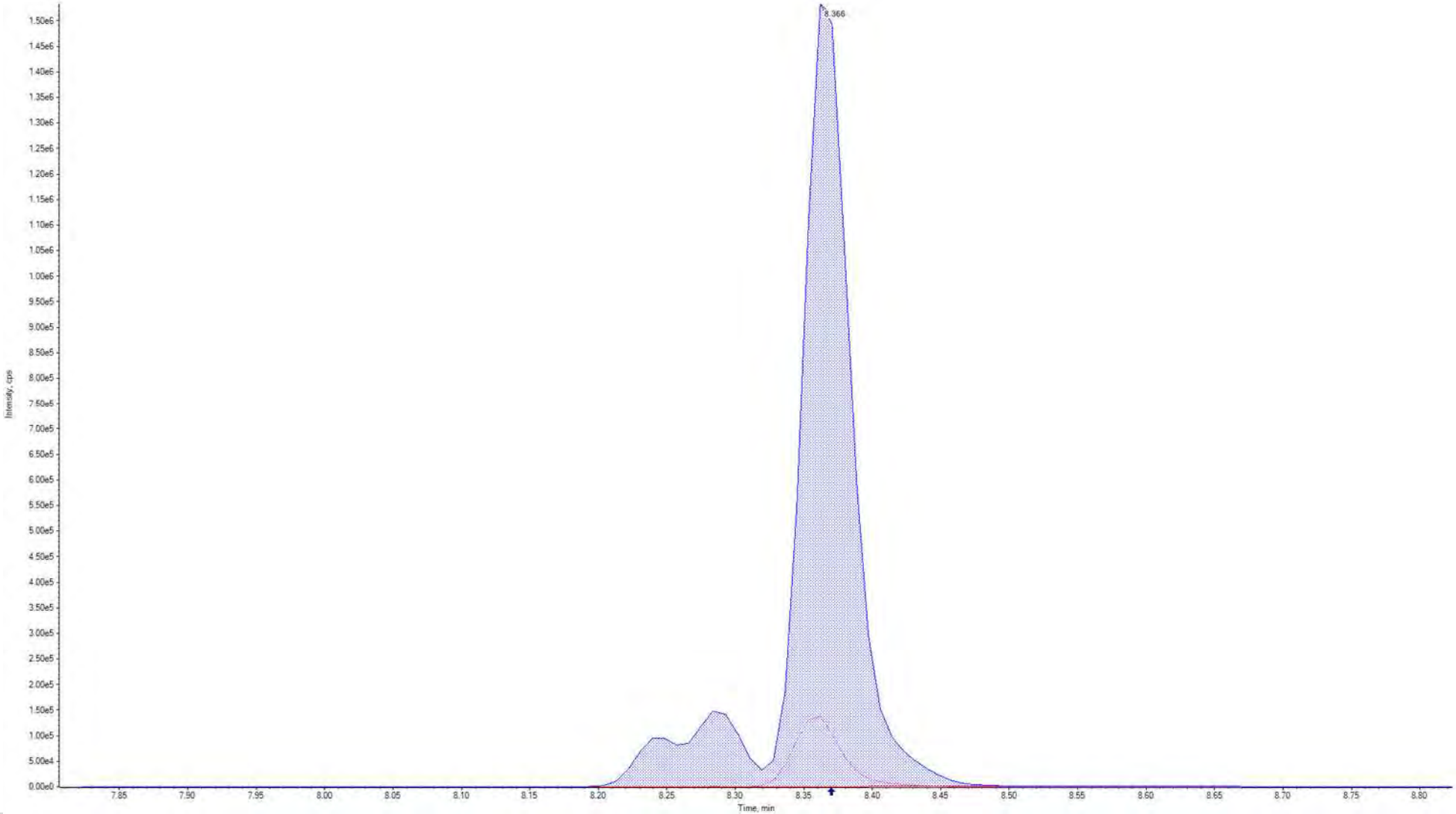
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSAA_2
Sample: IA1633STD-62.5 S/N:743.3 Points Across peak:33



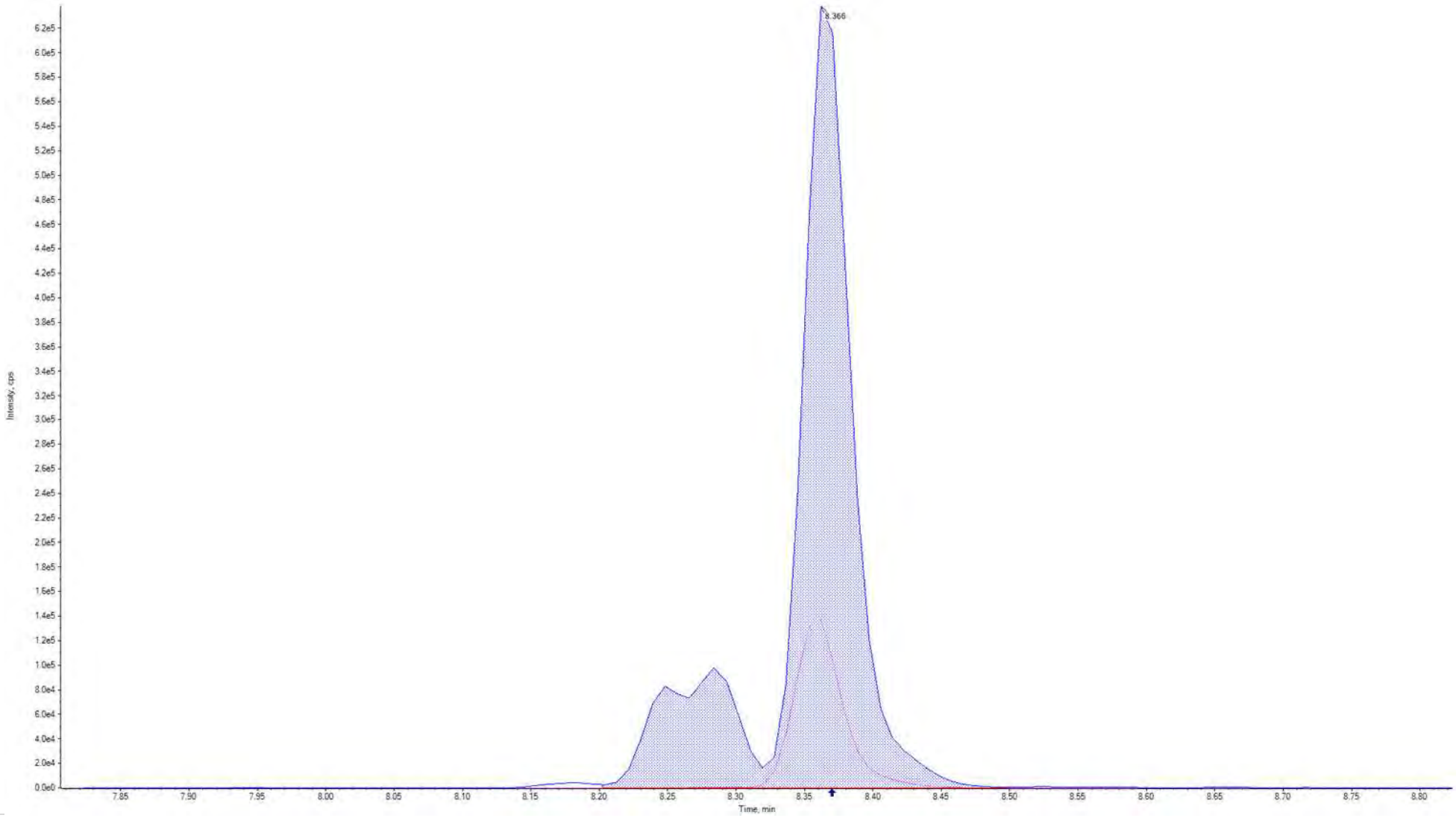
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSAA
Sample: IA1633STD-62.5 S/N:911.1 Points Across peak:40



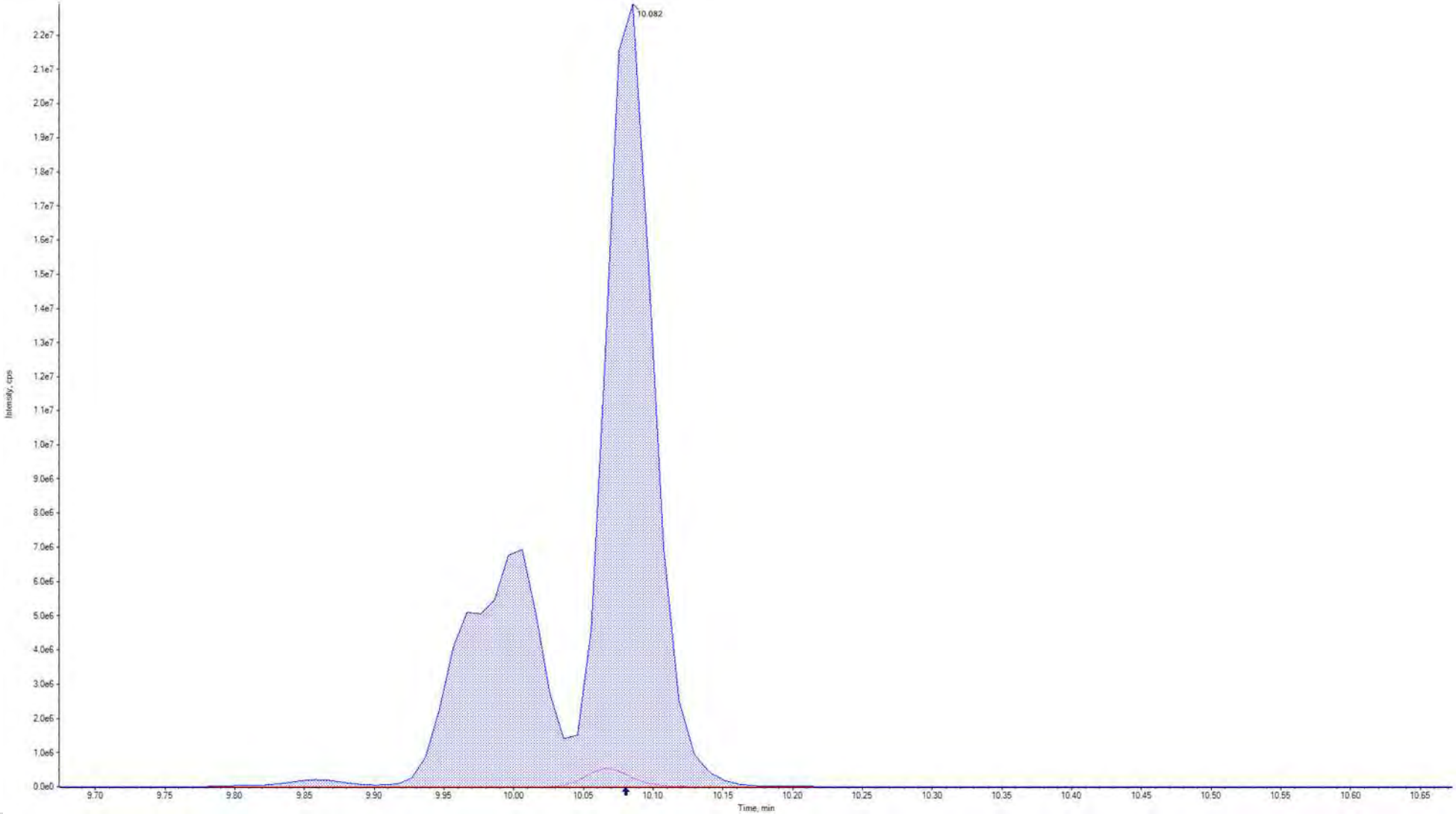
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSAA_2
Sample: IA1633STD-62.5 S/N:595.3 Points Across peak:36



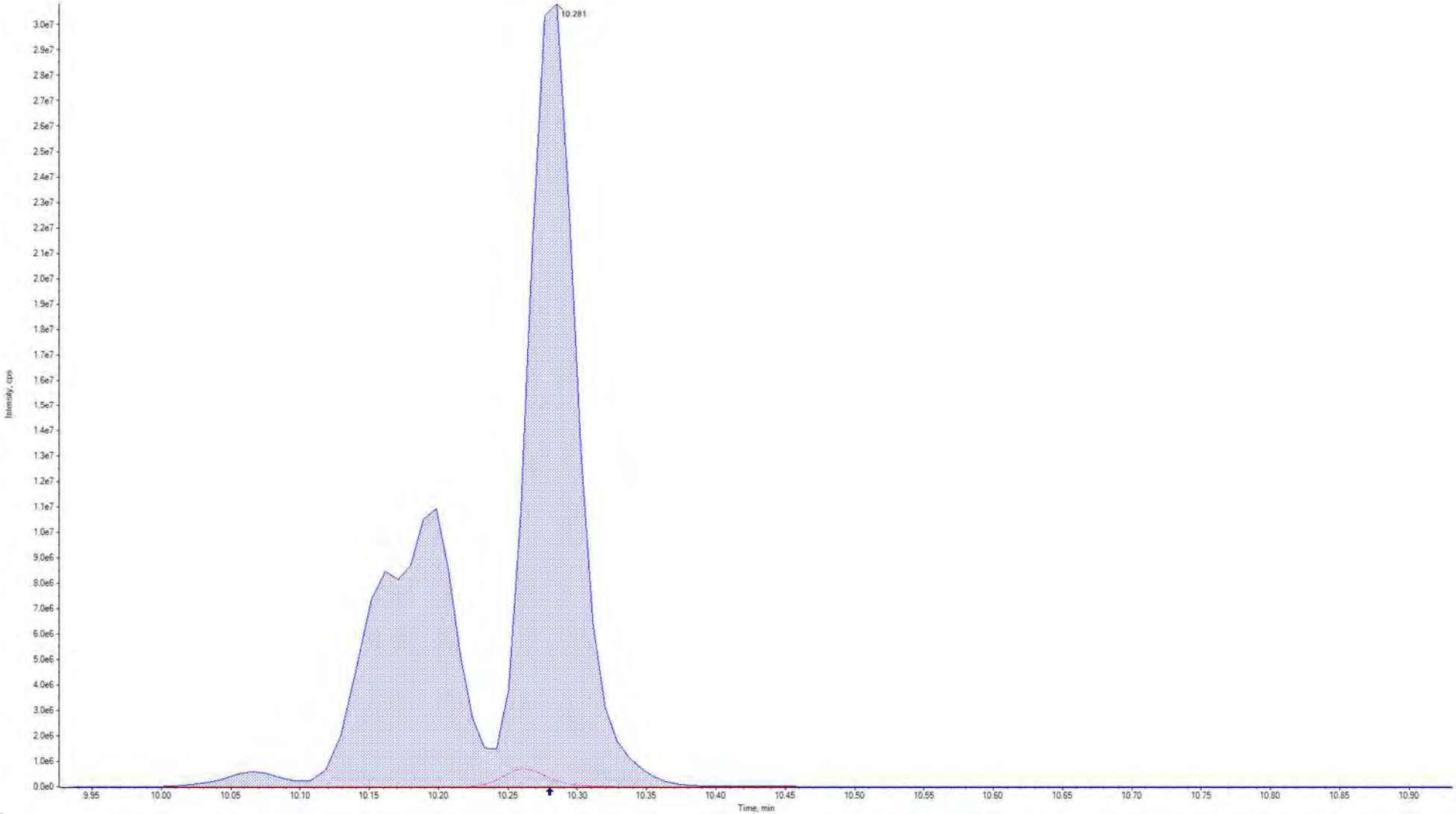
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NMeFOSE
Sample: IA1633STD-62.5 S/N:9664.4 Points Across peak:55



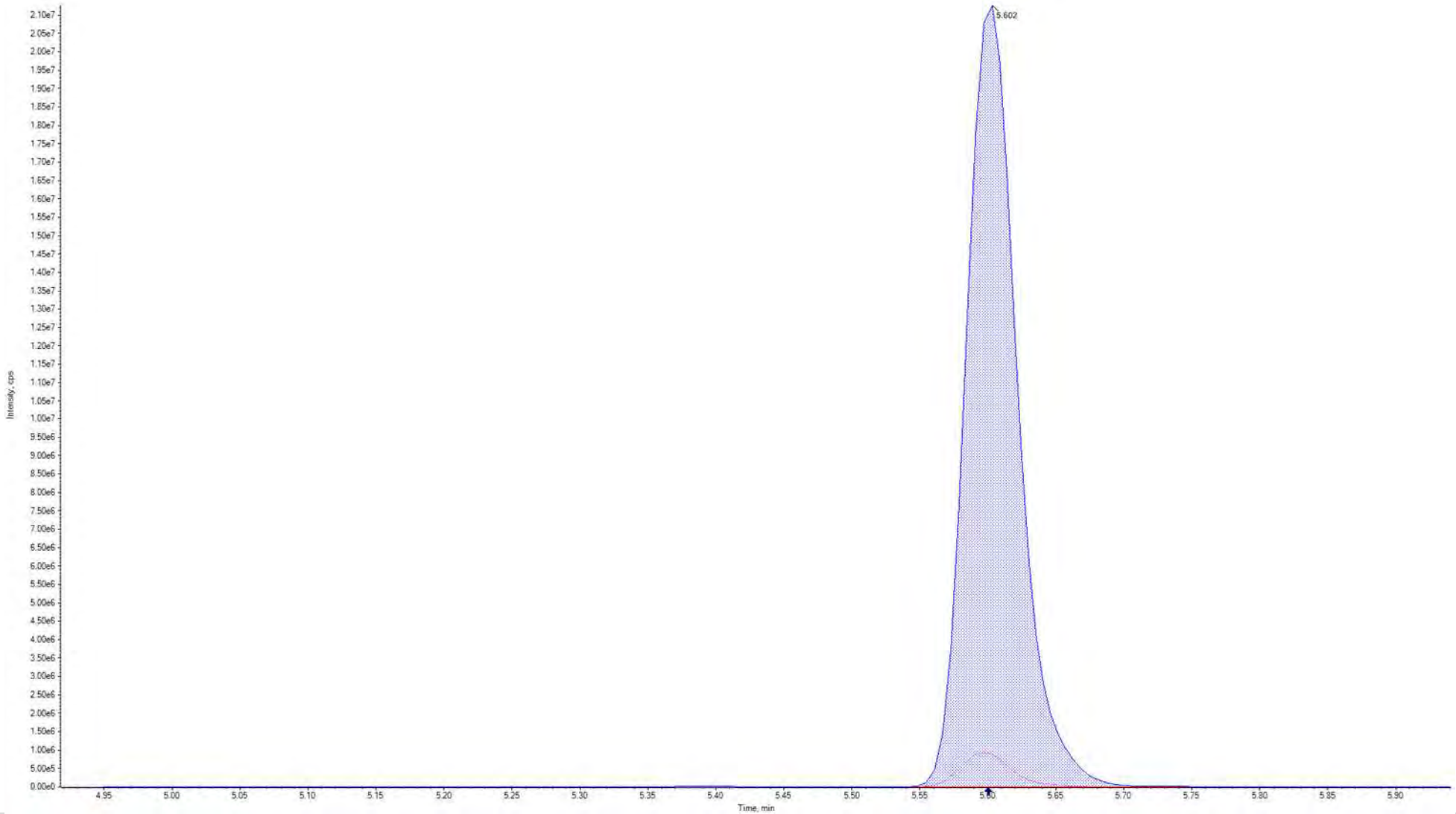
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NEtFOSE
Sample: IA1633STD-62.5 S/N:5049.0 Points Across peak:63



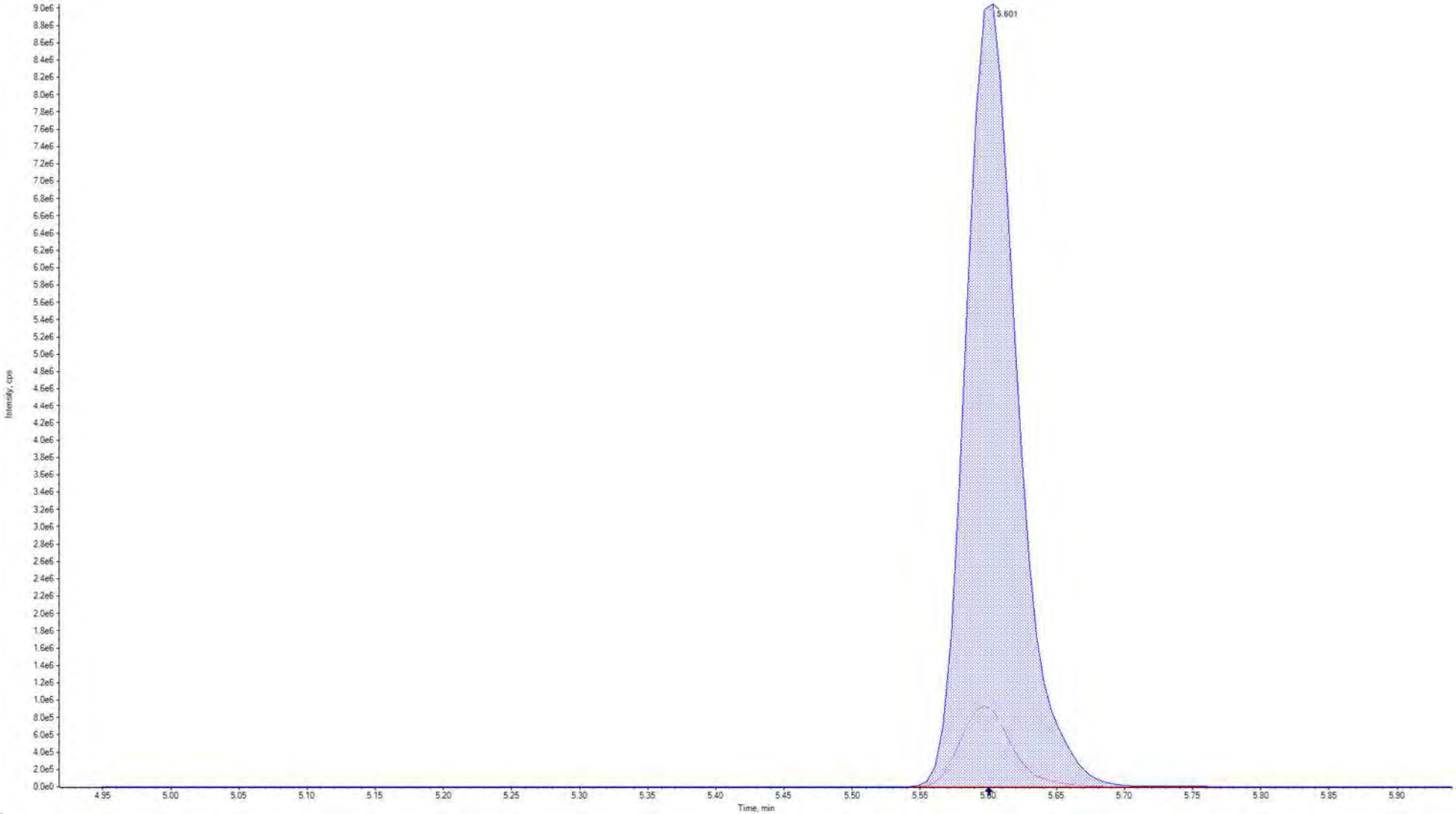
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

HFPO-DA
Sample: IA1633STD-62.5 S/N:44180.4 Points Across peak:74



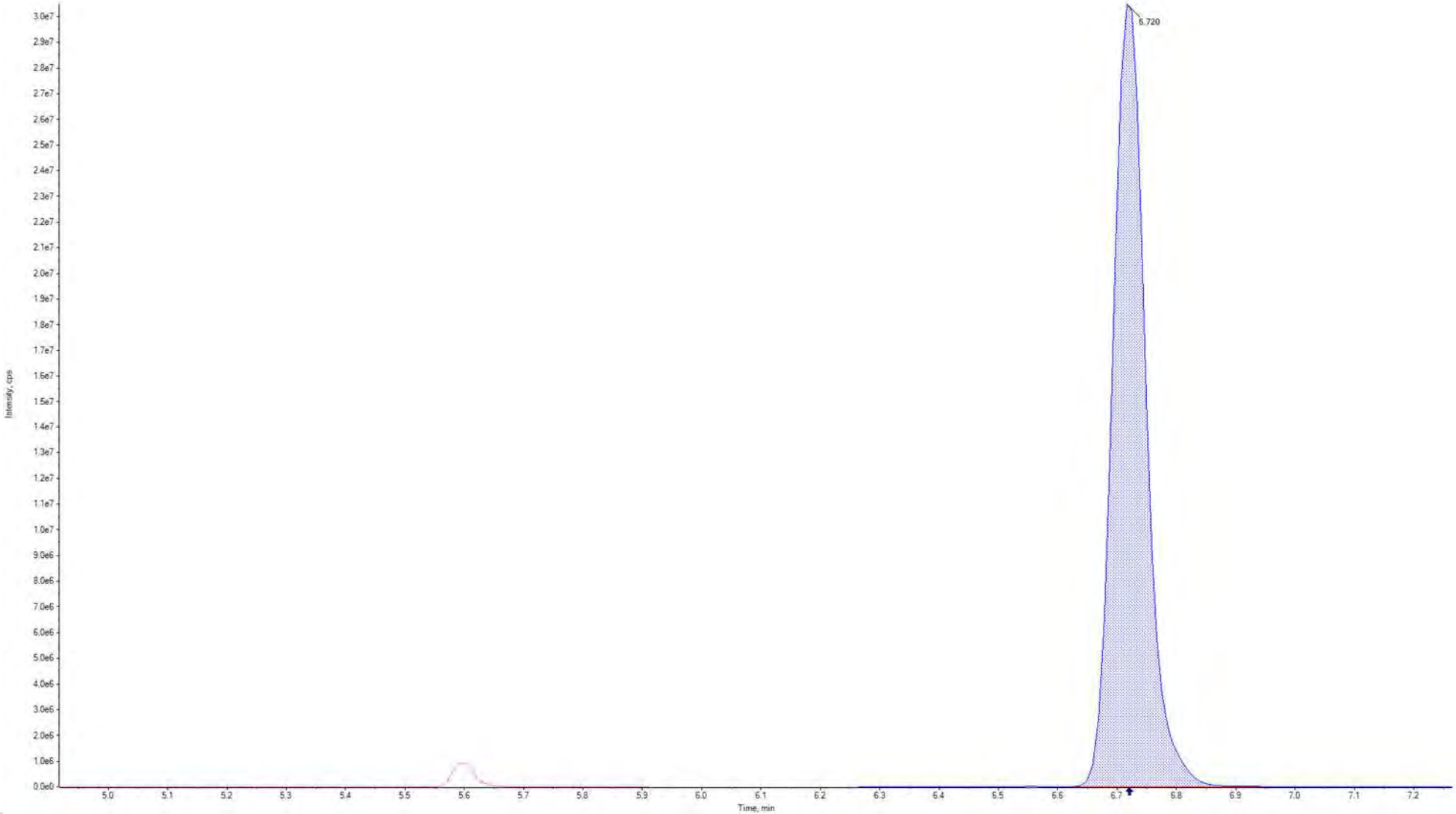
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

HFPO-DA_2
Sample: IA1633STD-62.5 S/N:16832.5 Points Across peak:56



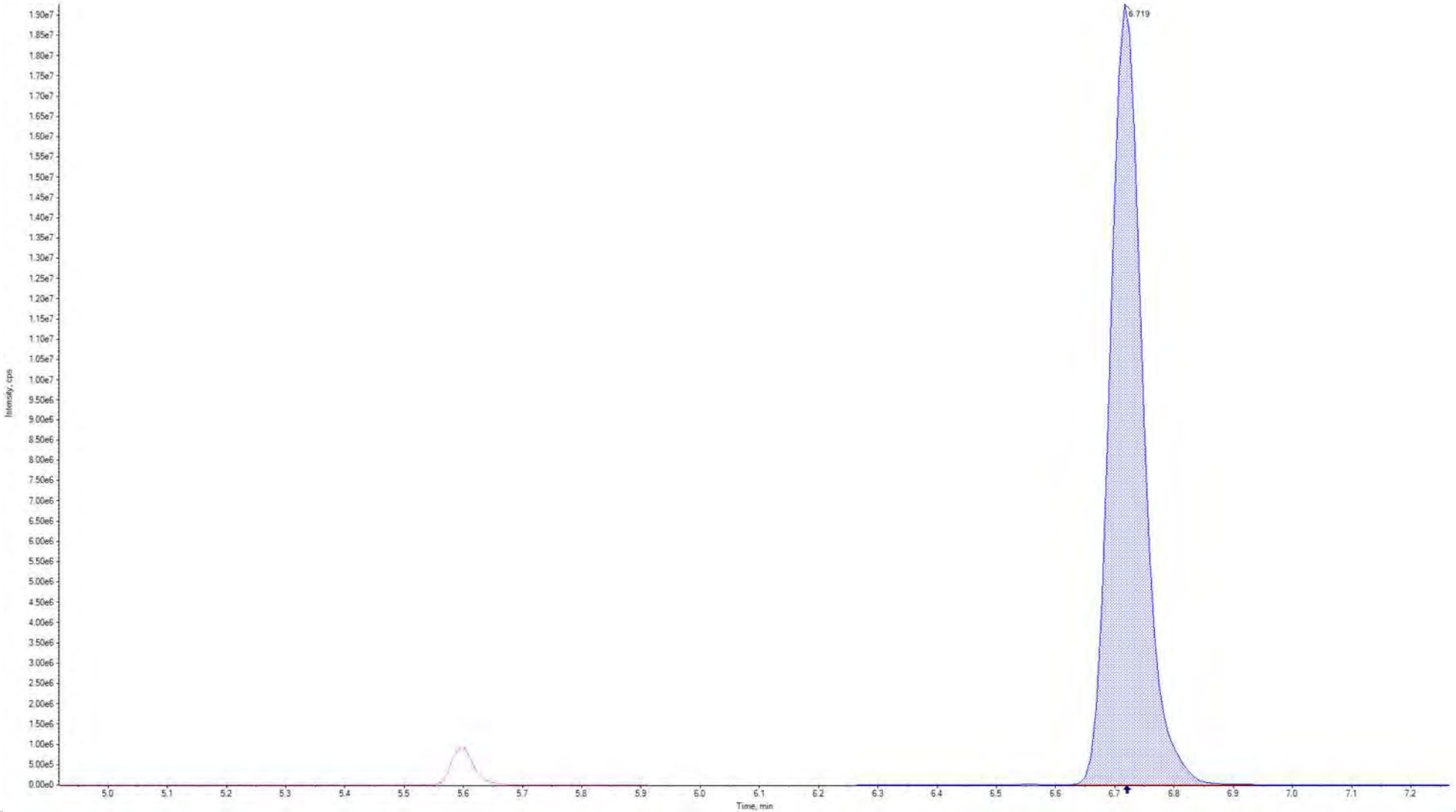
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

ADONA
Sample: IA1633STD-62.5 S/N:28417.9 Points Across peak:55



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

ADONA_2
Sample: IA1633STD-62.5 S/N:25885.3 Points Across peak:52



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

9Cl-PF3ONS
Sample: IA1633STD-62.5 S/N:119953.3 Points Across peak:53

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

9Cl-PF3ONS_2
Sample: IA1633STD-62.5 S/N:84216.3 Points Across peak:33

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

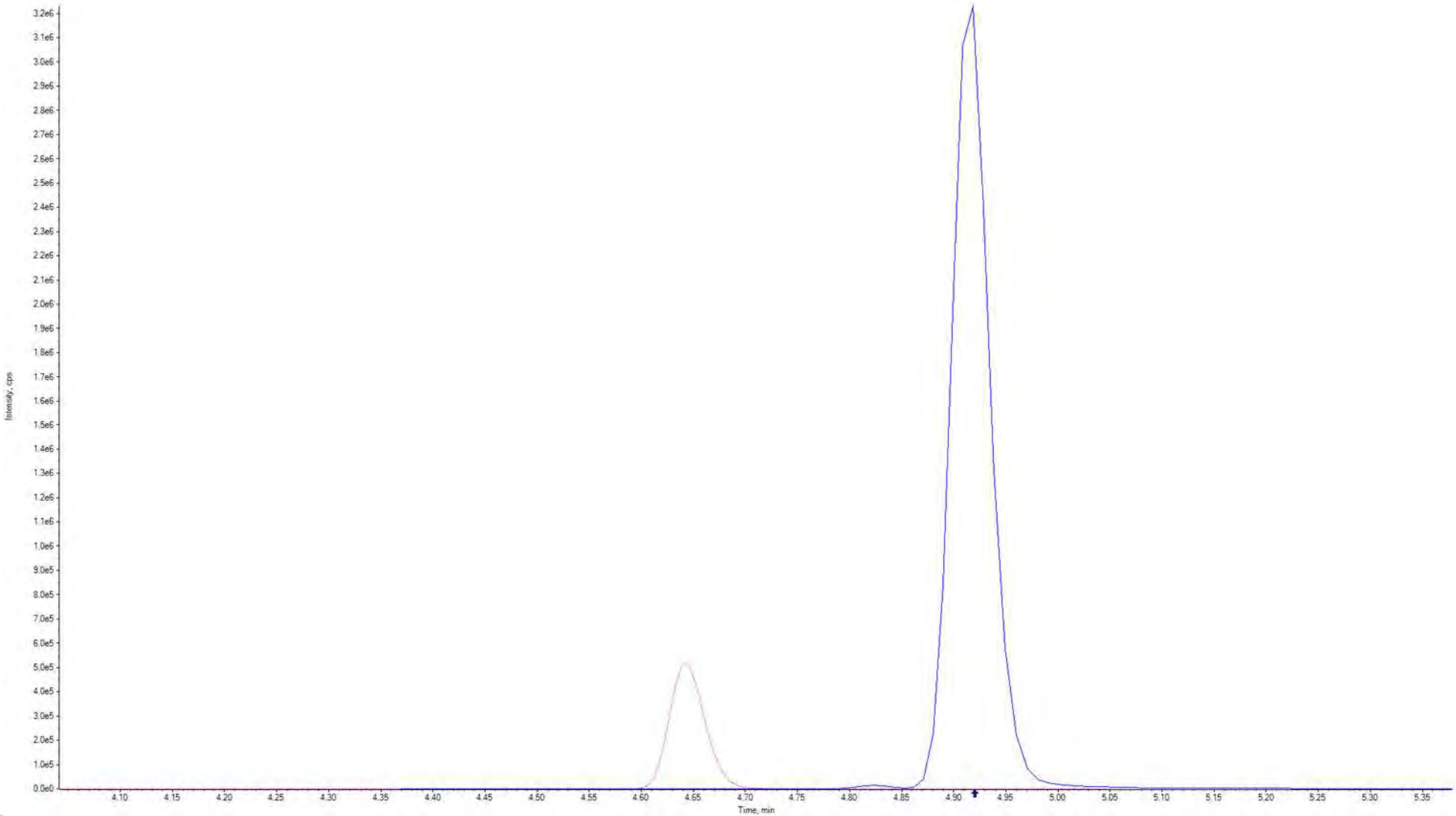
11Cl-PF3OUdS
Sample: IA1633STD-62.5 S/N:53513.6 Points Across peak:48

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

11Cl-PF3OUdS_2
Sample: IA1633STD-62.5 S/N:151573.5 Points Across peak:45

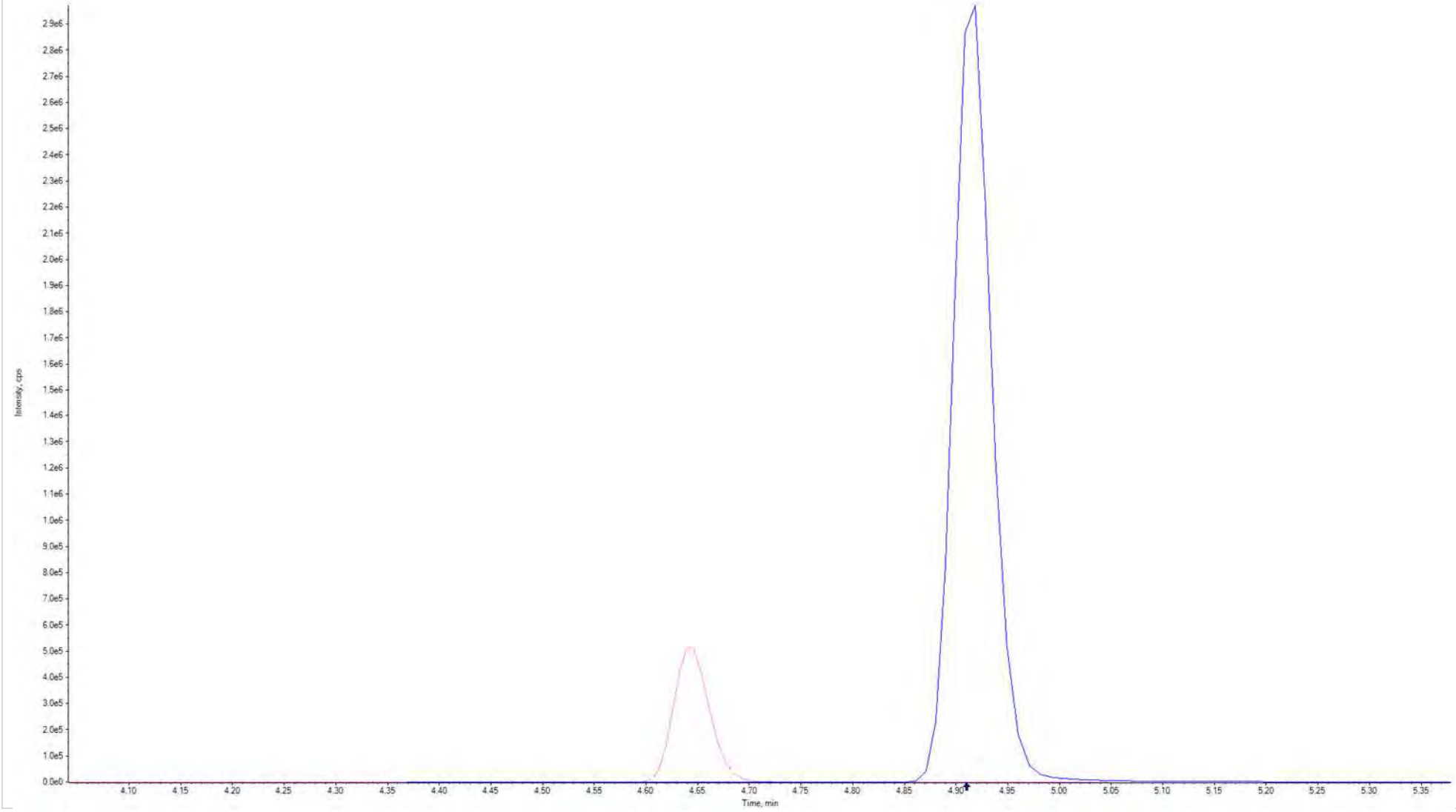
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

3:3FTCA
Sample: IA1633STD-62.5 S/N:N/A Points Across peak:N/A



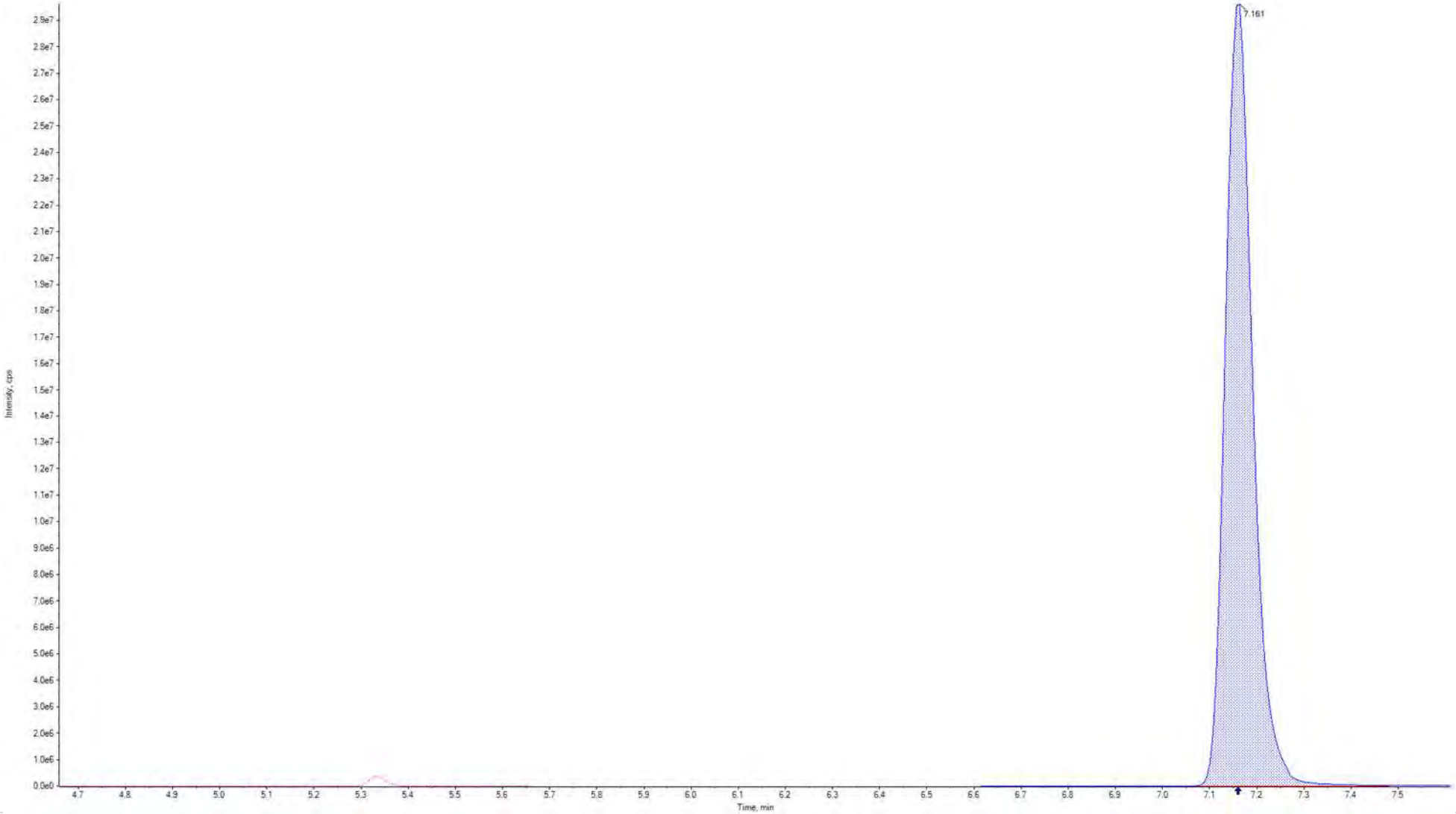
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

3:3FTCA_2
Sample: IA1633STD-62.5 S/N:N/A Points Across peak:N/A



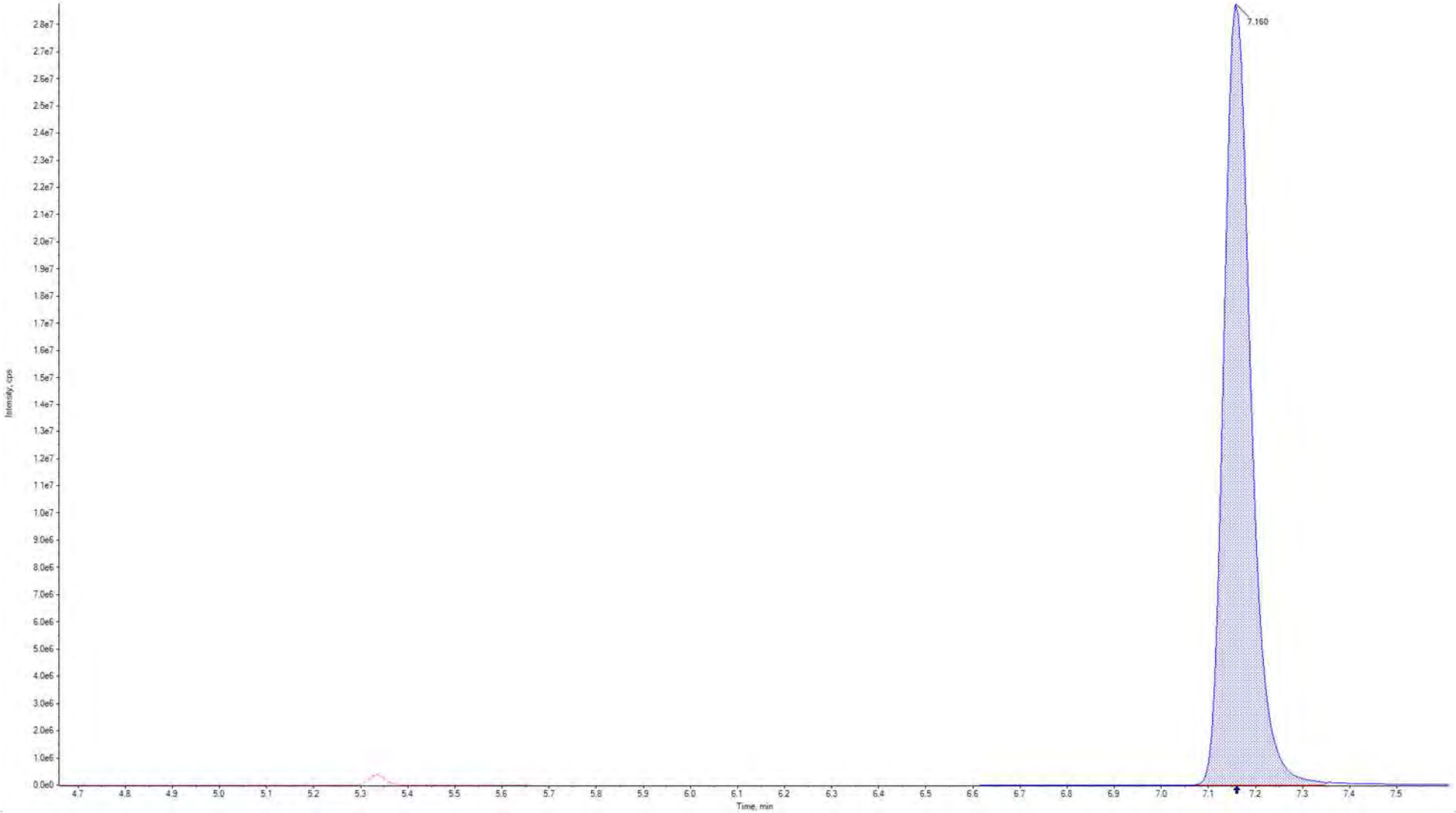
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

5:3FTCA
Sample: IA1633STD-62.5 S/N:34646.5 Points Across peak:75



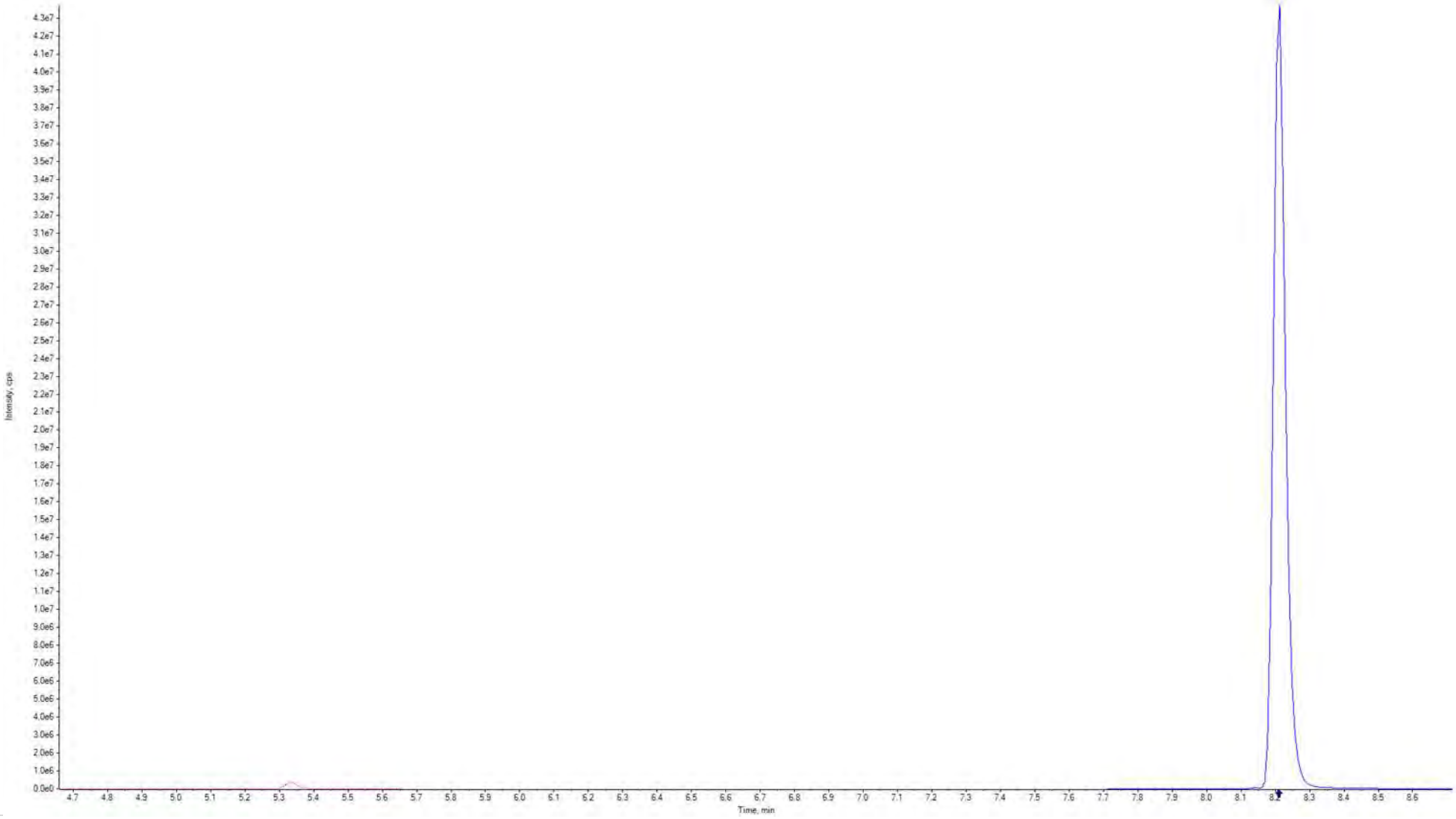
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

5:3FTCA_2
Sample: IA1633STD-62.5 S/N:26996.7 Points Across peak:52



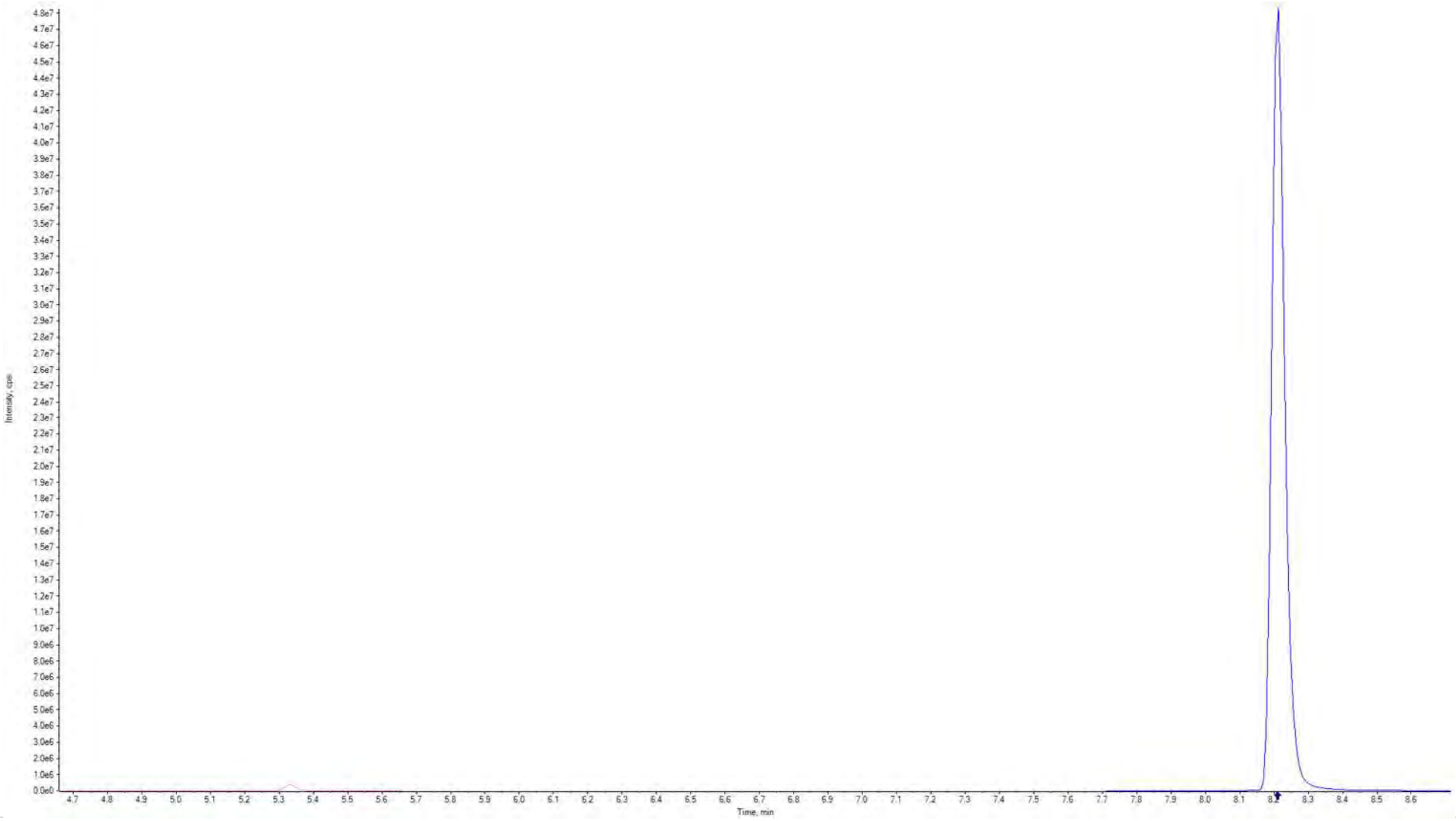
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

7:3FTCA
Sample: IA1633STD-62.5 S/N:N/A Points Across peak:N/A



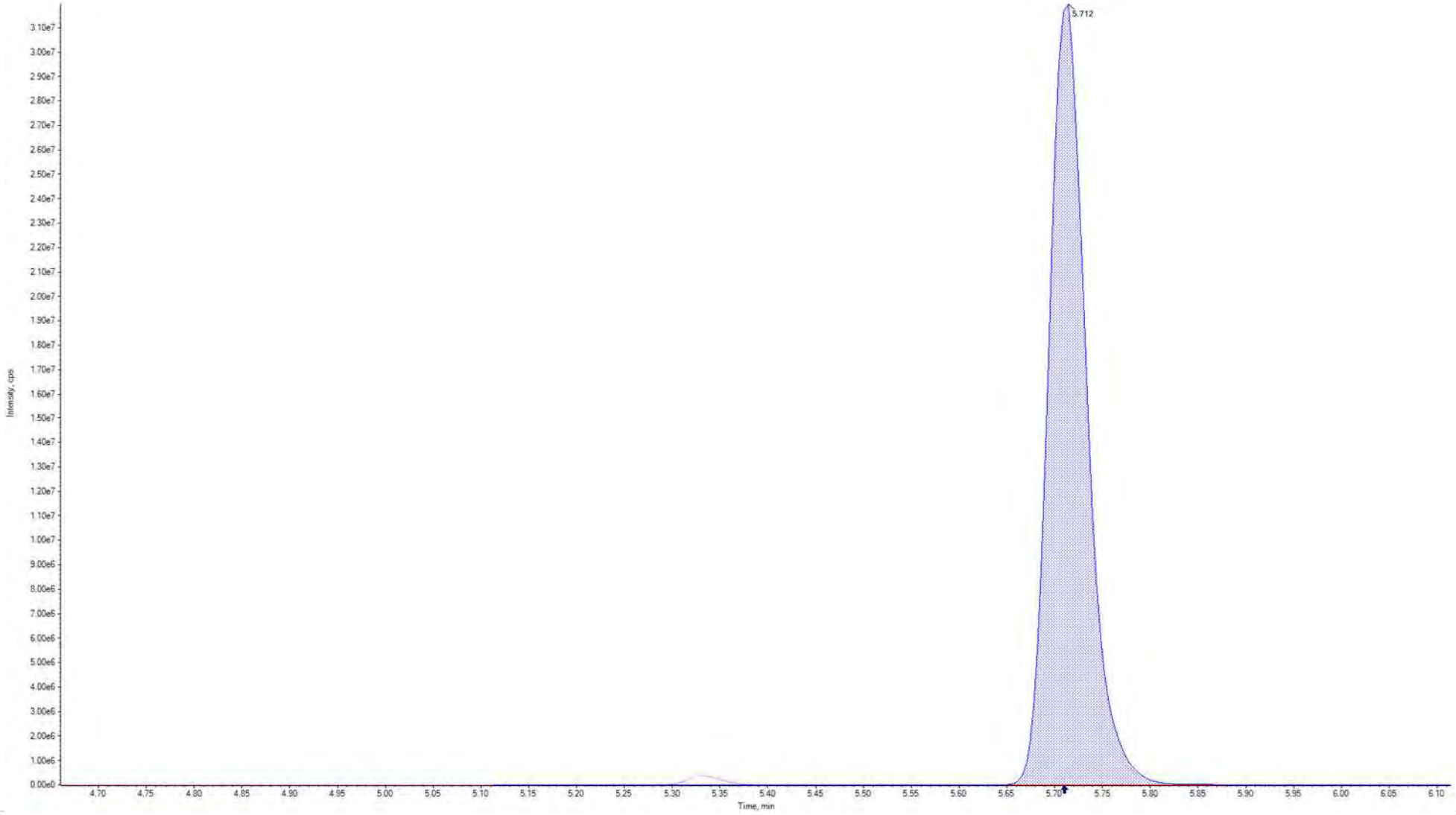
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

7:3FTCA_2
Sample: IA1633STD-62.5 S/N:N/A Points Across peak:N/A



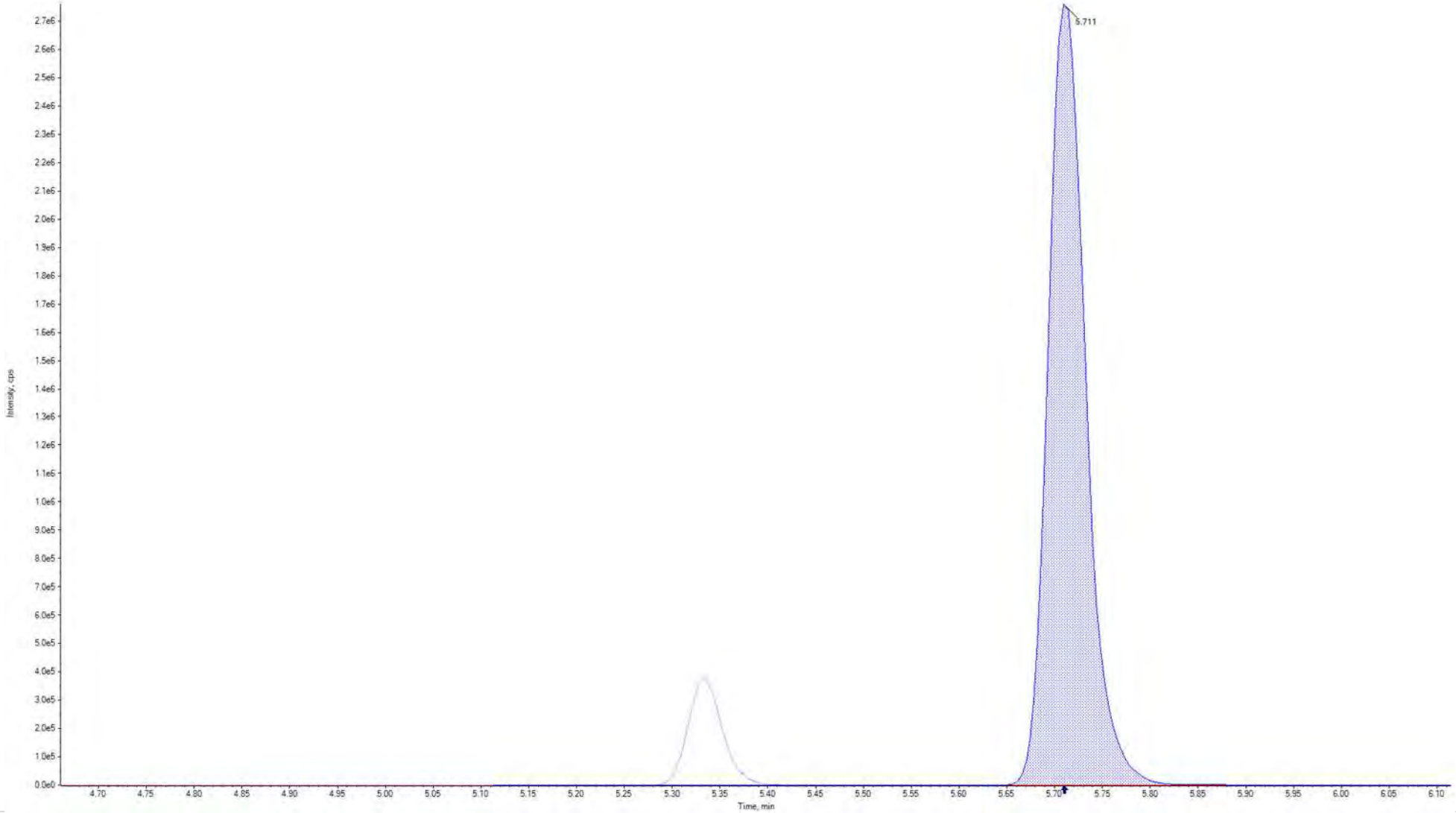
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFEESA
Sample: IA1633STD-62.5 S/N:58046.1 Points Across peak:74



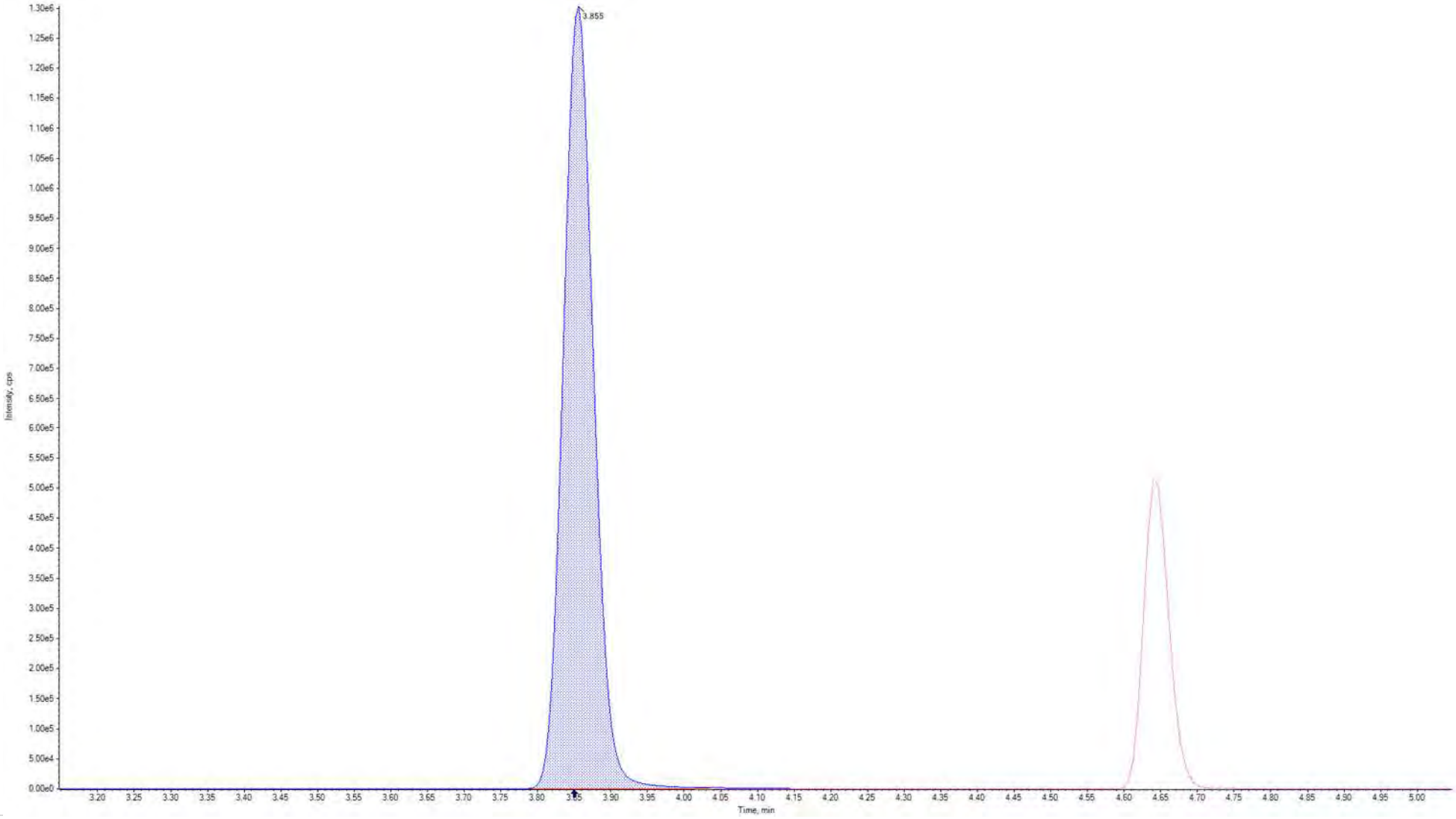
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFEESA_2
Sample: IA1633STD-62.5 S/N:21379.8 Points Across peak:61



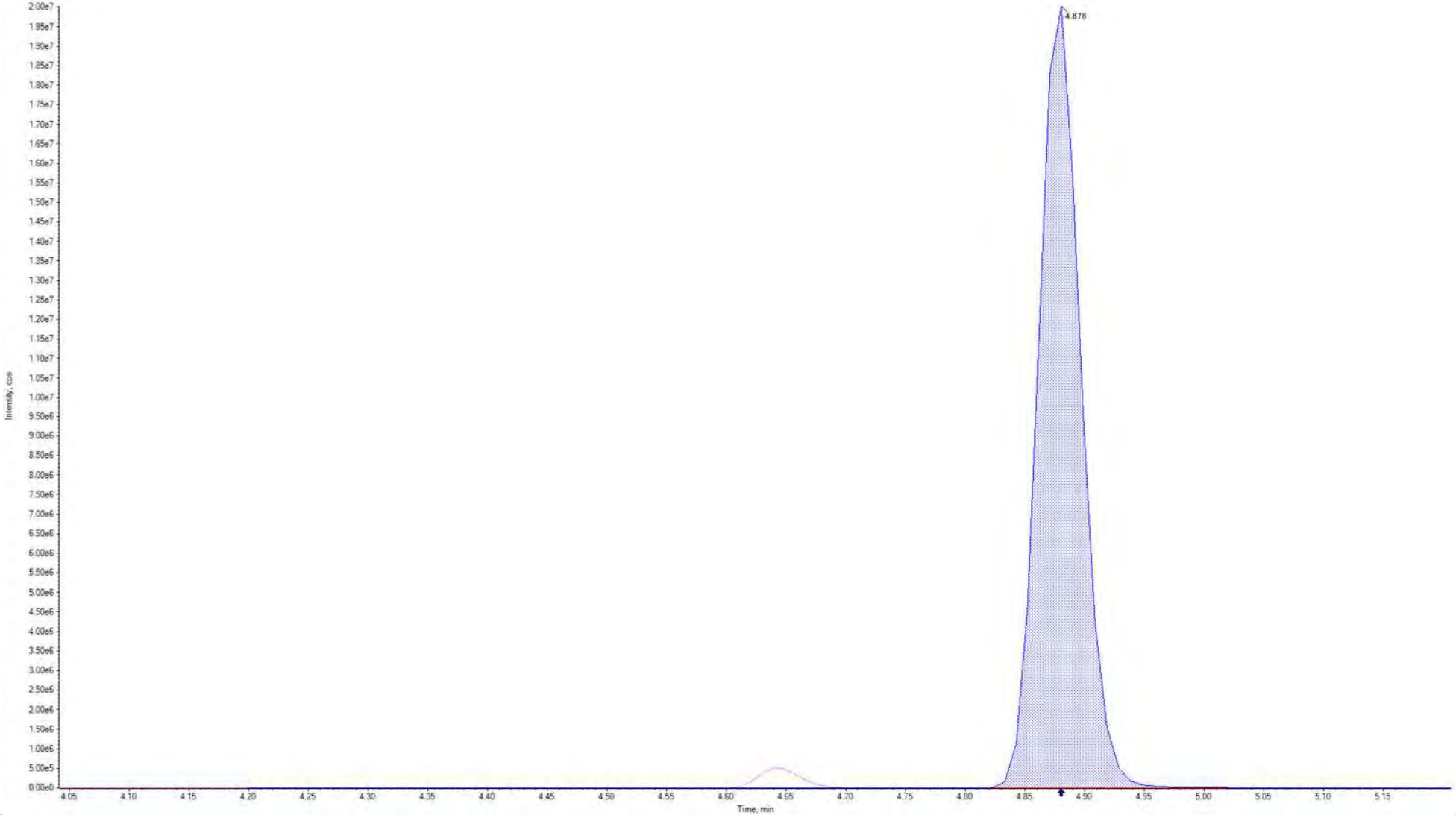
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFMPA
Sample: IA1633STD-62.5 S/N:12755.3 Points Across peak:66



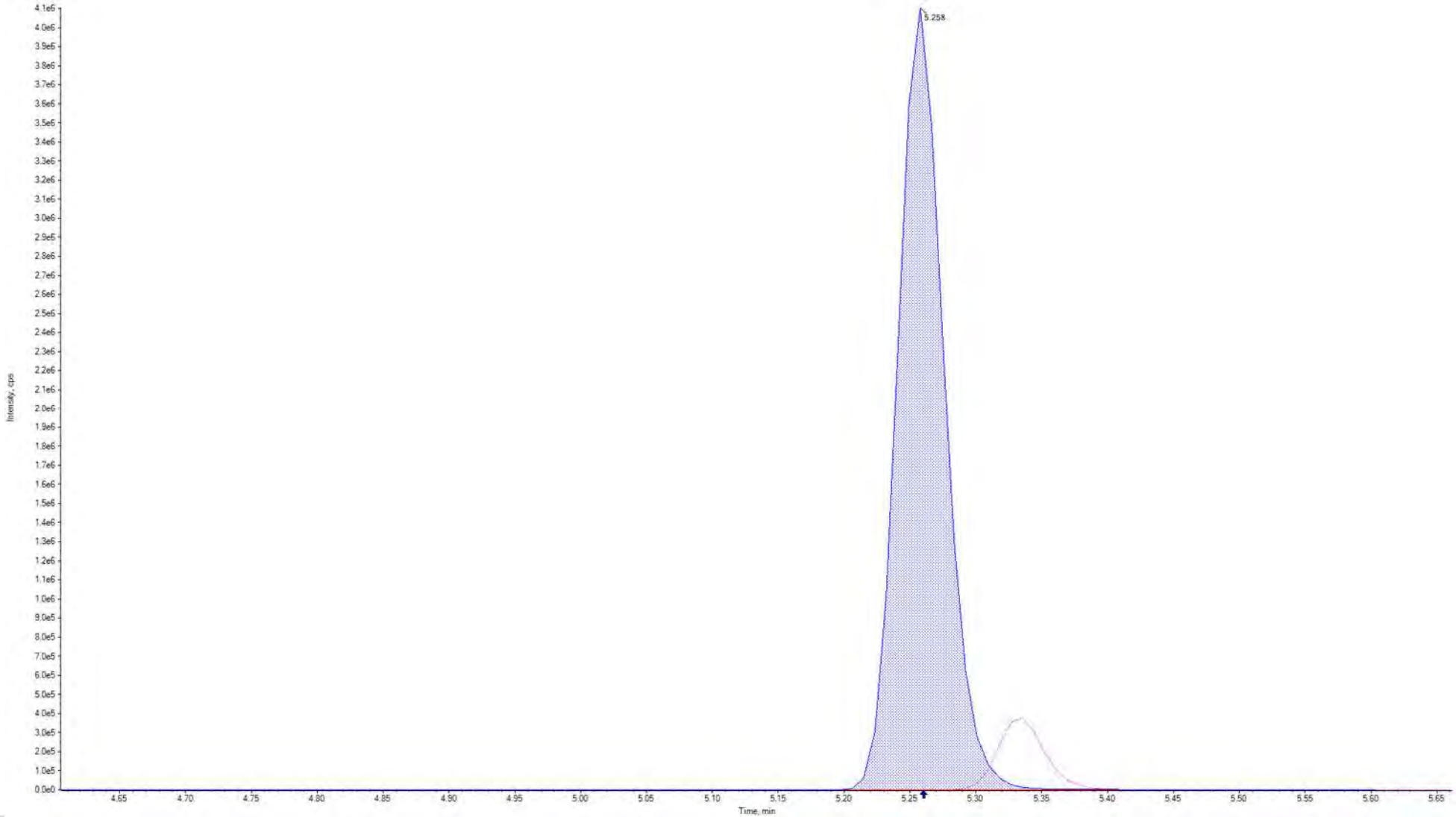
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

PFMBA
Sample: IA1633STD-62.5 S/N:27795.5 Points Across peak:40



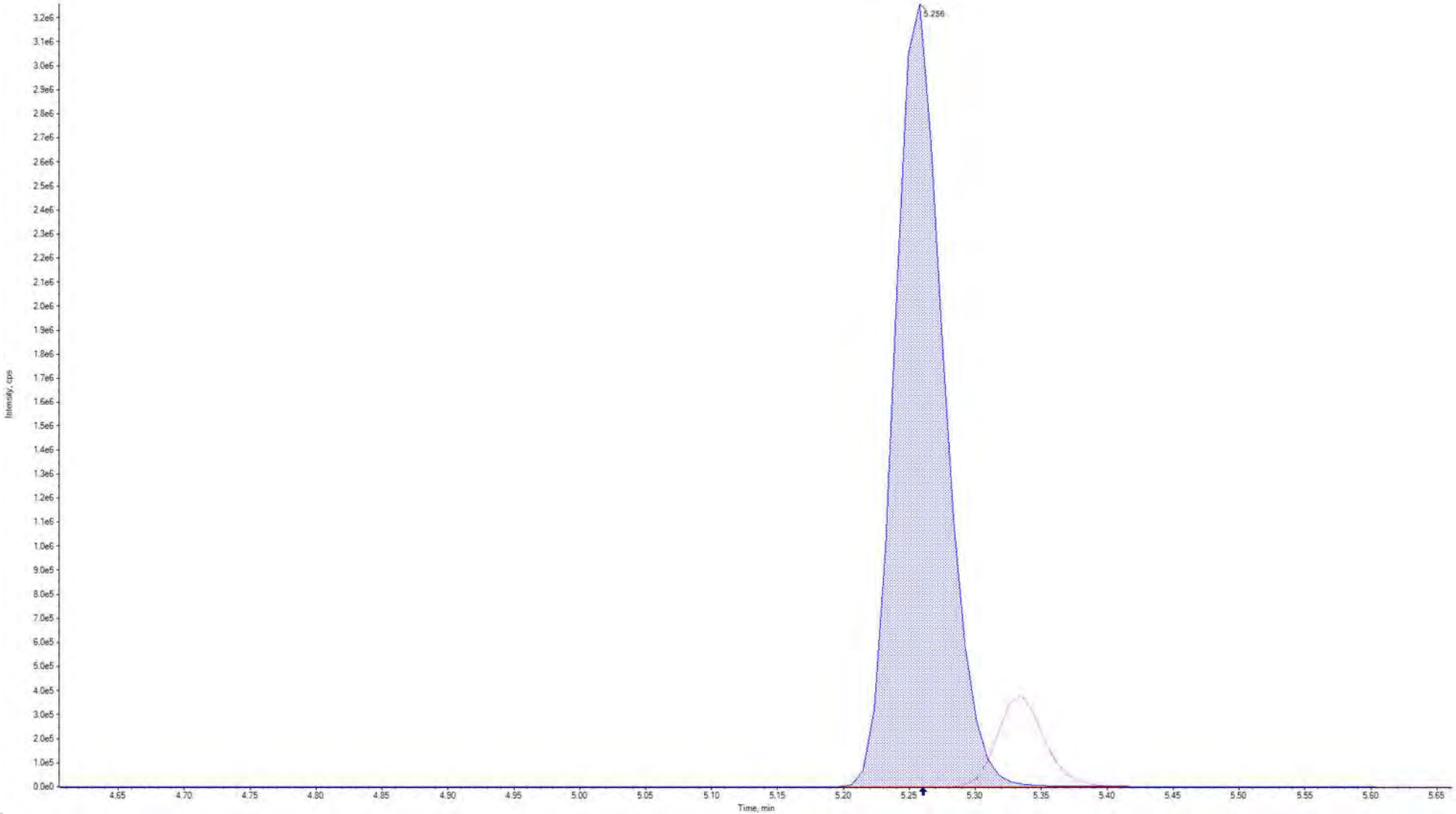
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NFDHA
Sample: IA1633STD-62.5 S/N:9101.4 Points Across peak:39



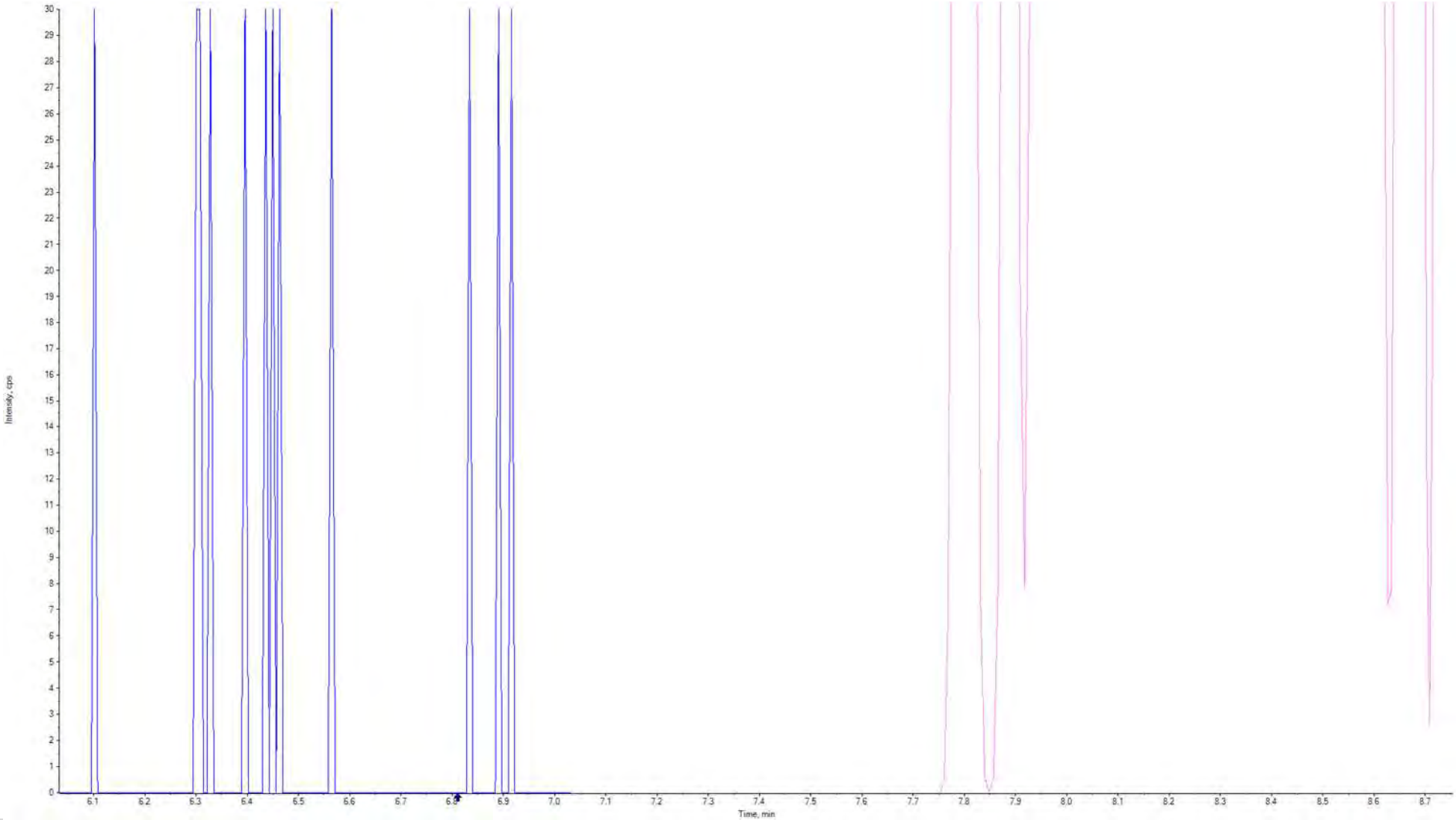
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

NFDHA_2
Sample: IA1633STD-62.5 S/N:9148.1 Points Across peak:39



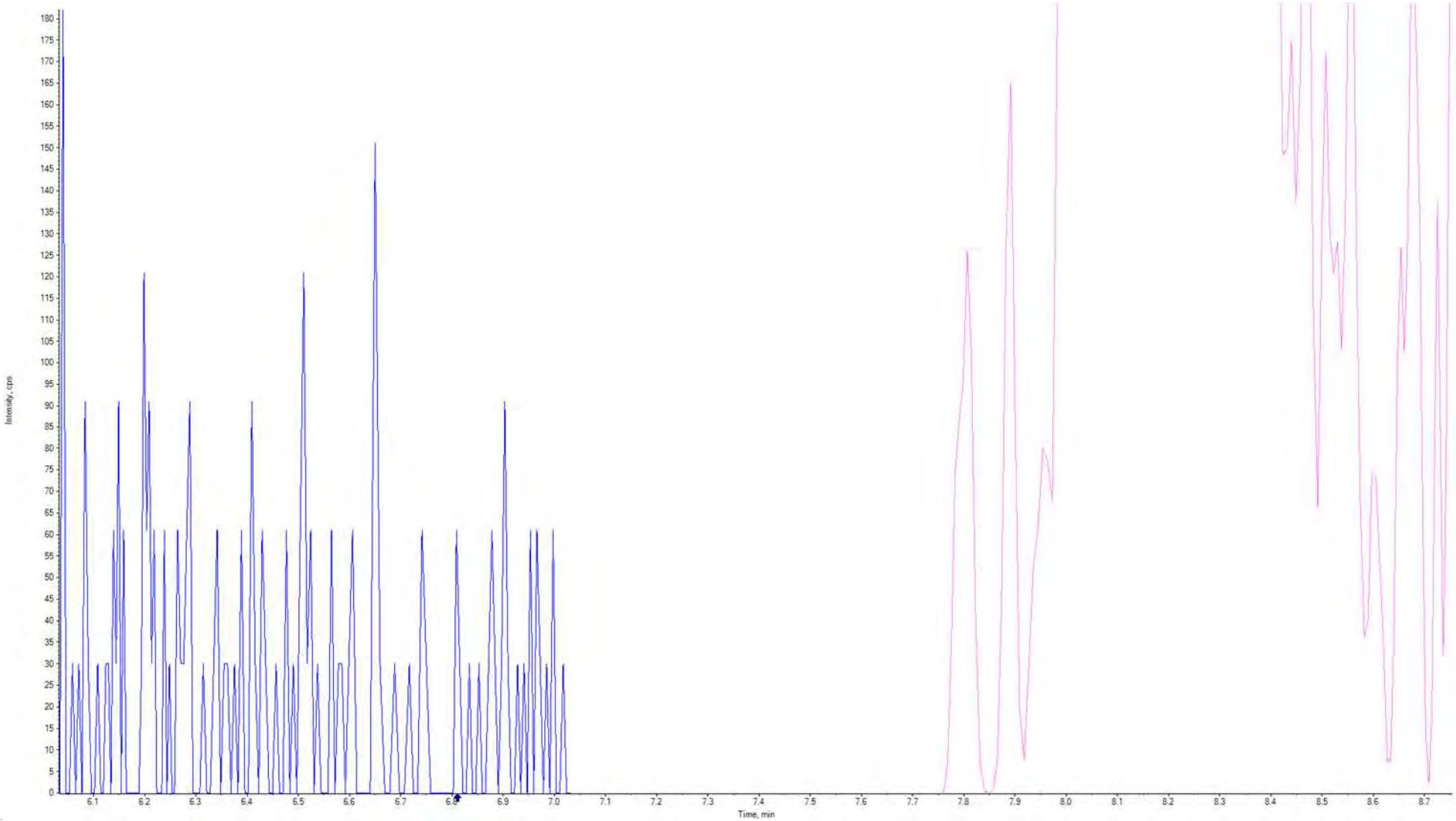
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

TDCA
Sample: IA1633STD-62.5 S/N:N/A Points Across peak:N/A



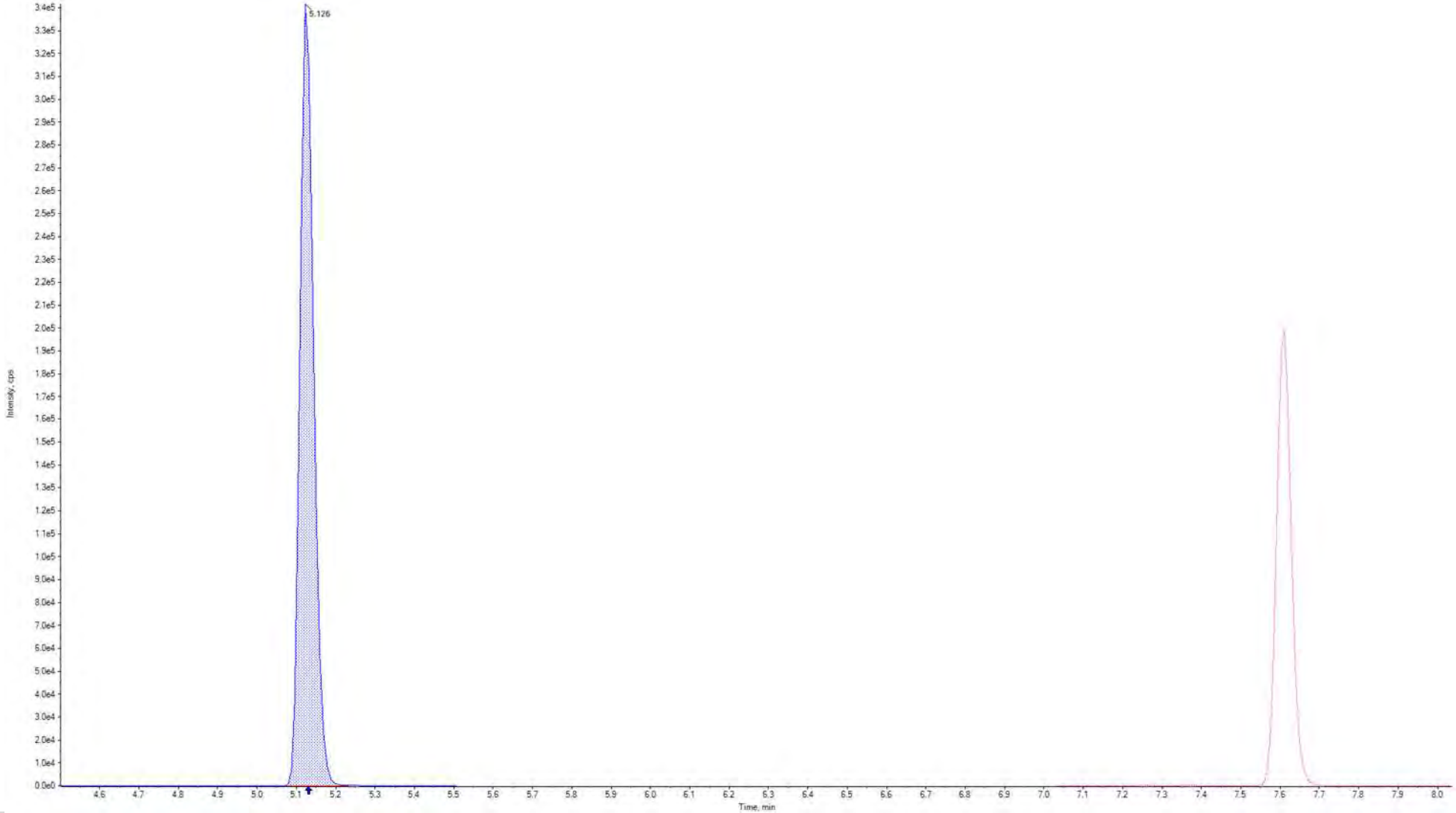
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

TDCA_2
Sample: IA1633STD-62.5 S/N:N/A Points Across peak:N/A



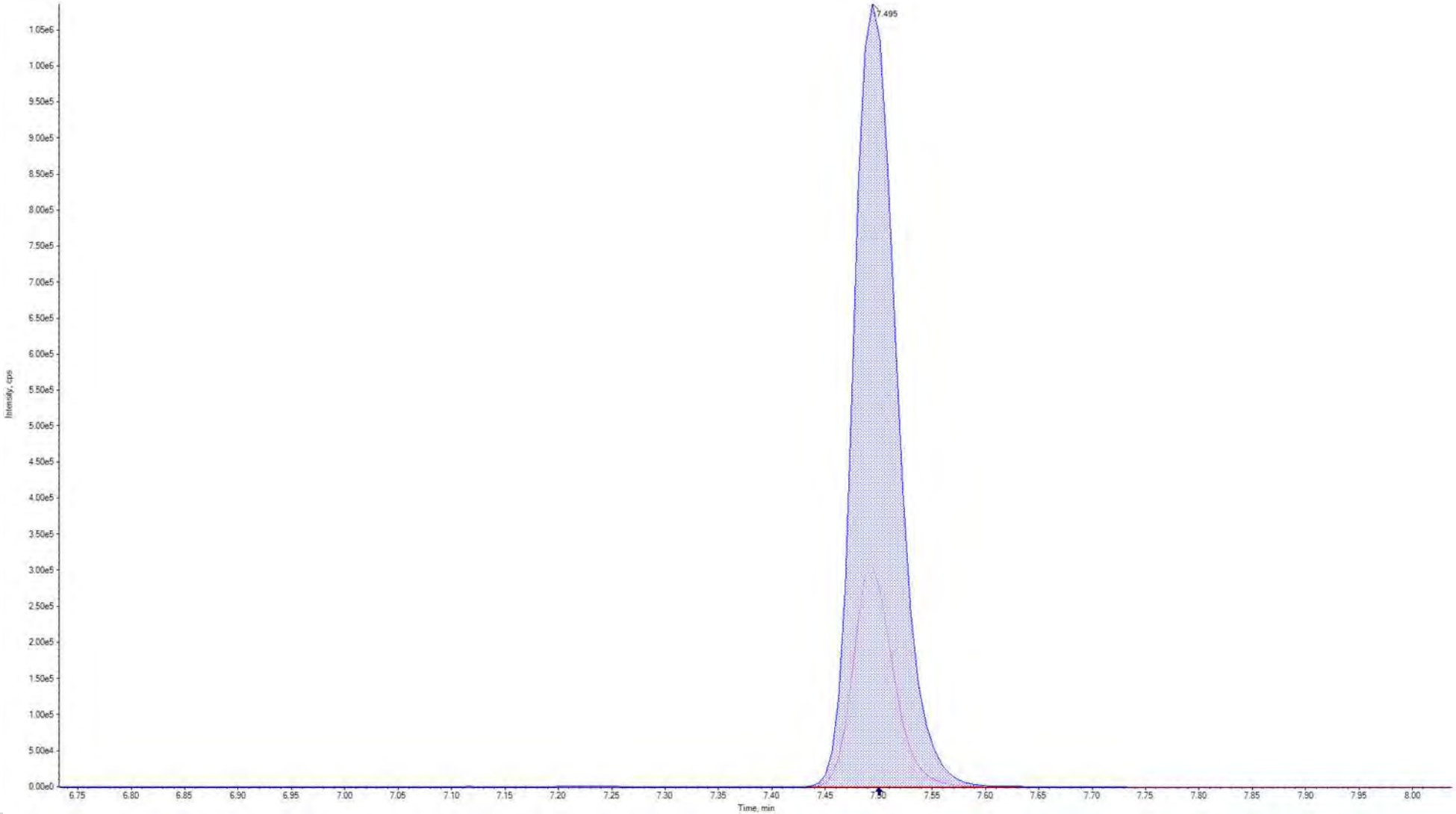
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

13C2D4-4:2FTS
Sample: IA1633STD-62.5 S/N:7630.4 Points Across peak:22

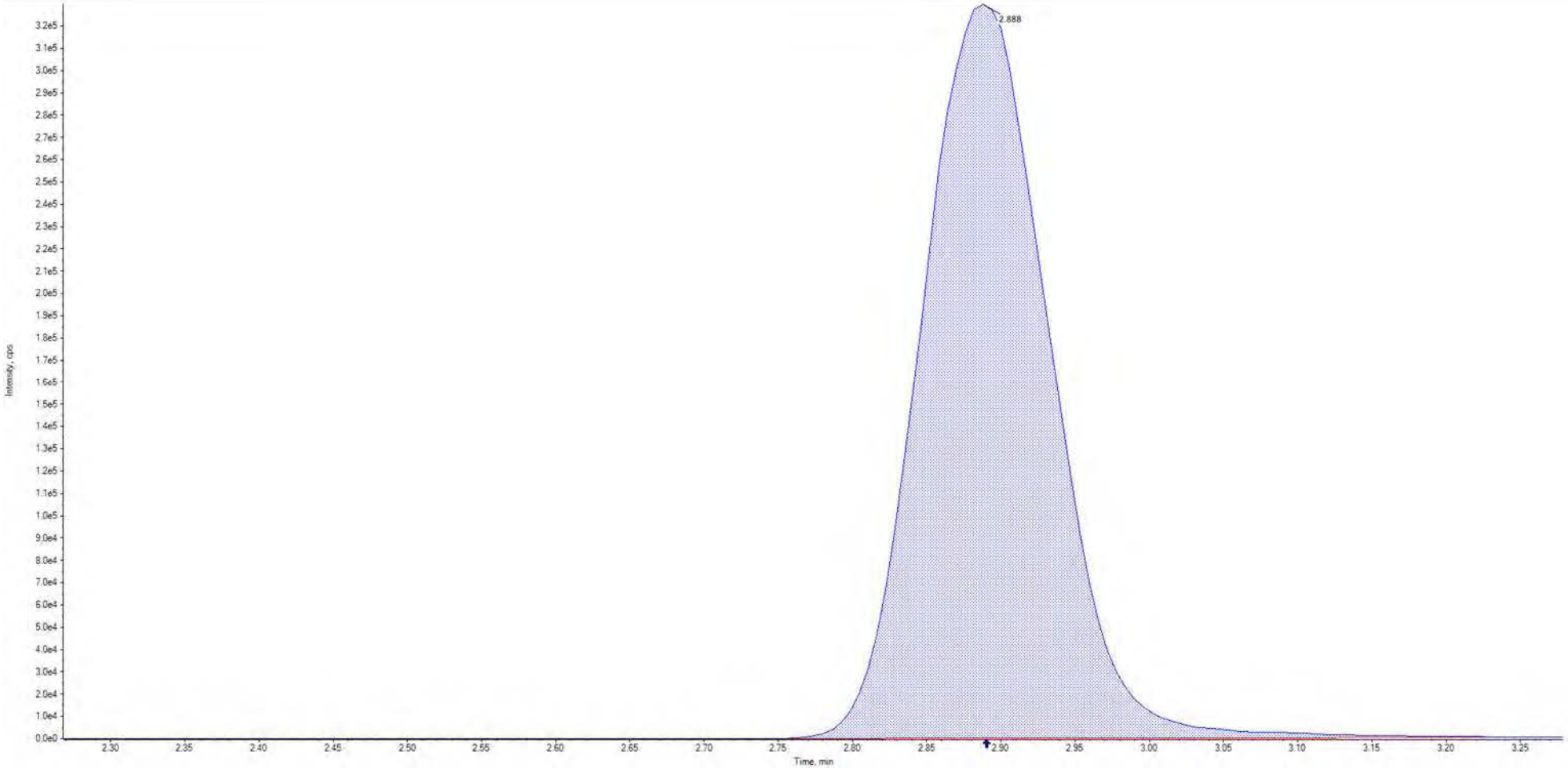


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

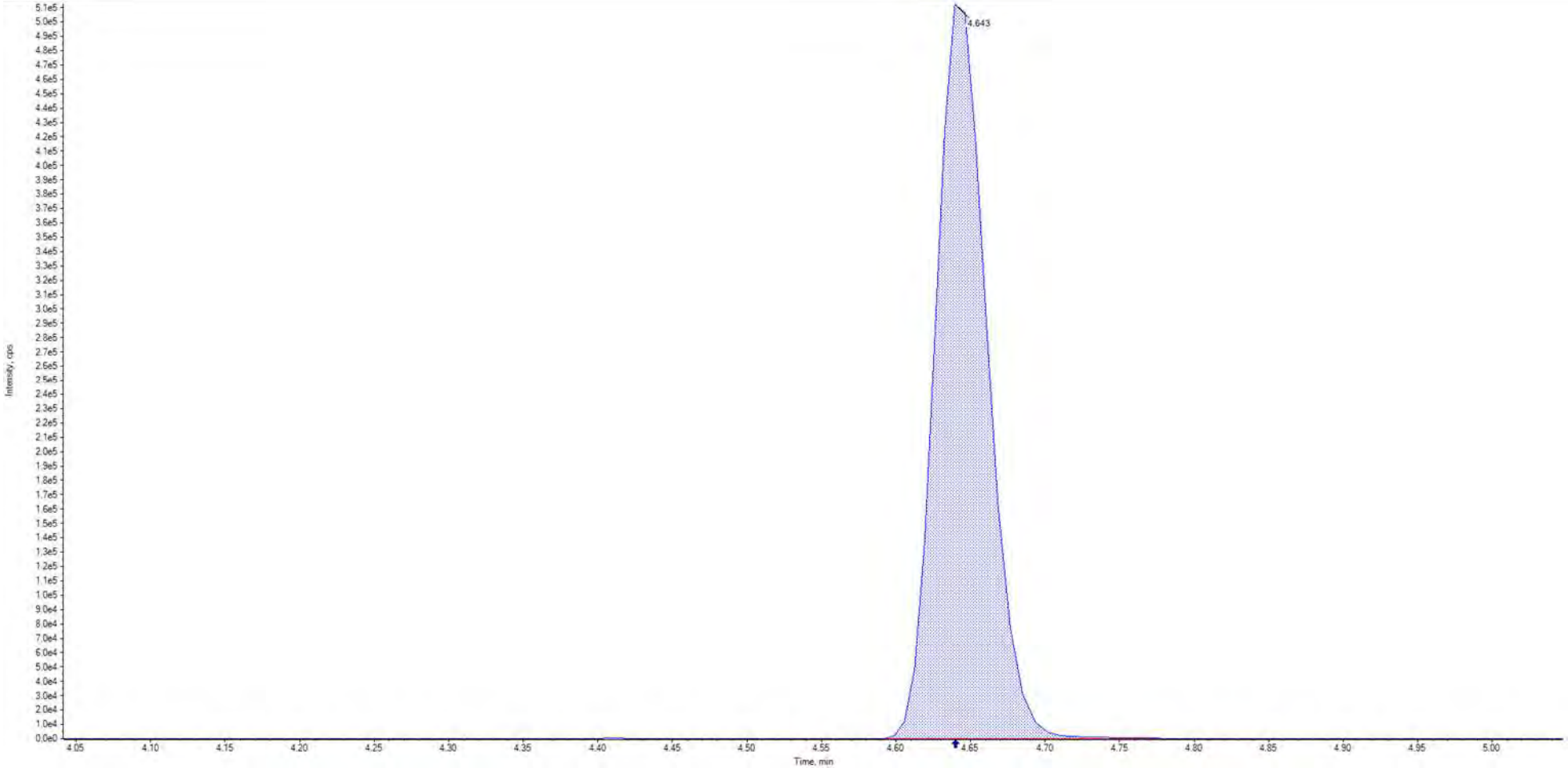
13C2-PFOA
Sample: IA1633STD-62.5 S/N:5354.5 Points Across peak:34



13C4-PFBA
Sample: IA1633STD-62.5

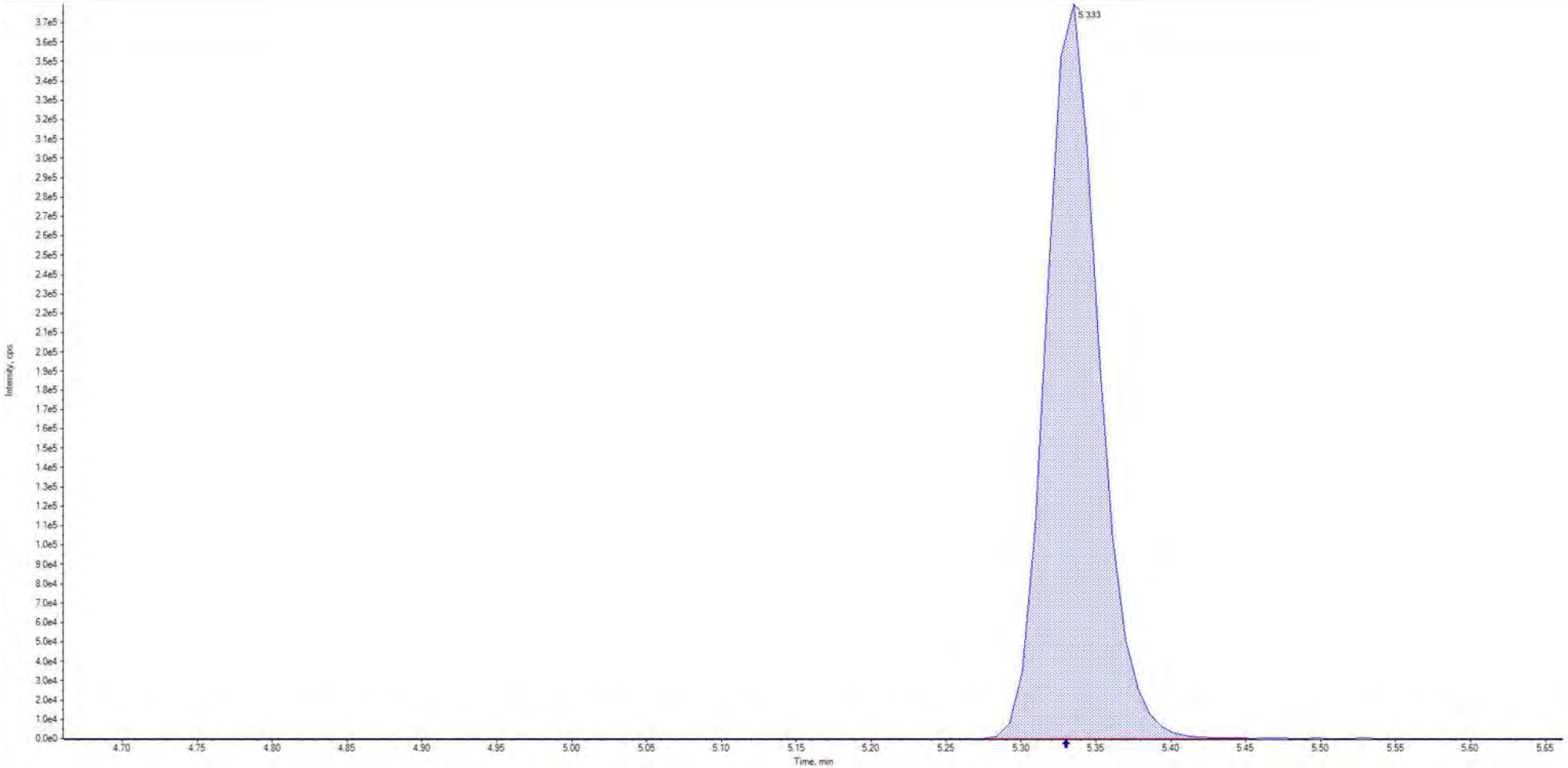


13C5-PFPeA
Sample: IA1633STD-62.5

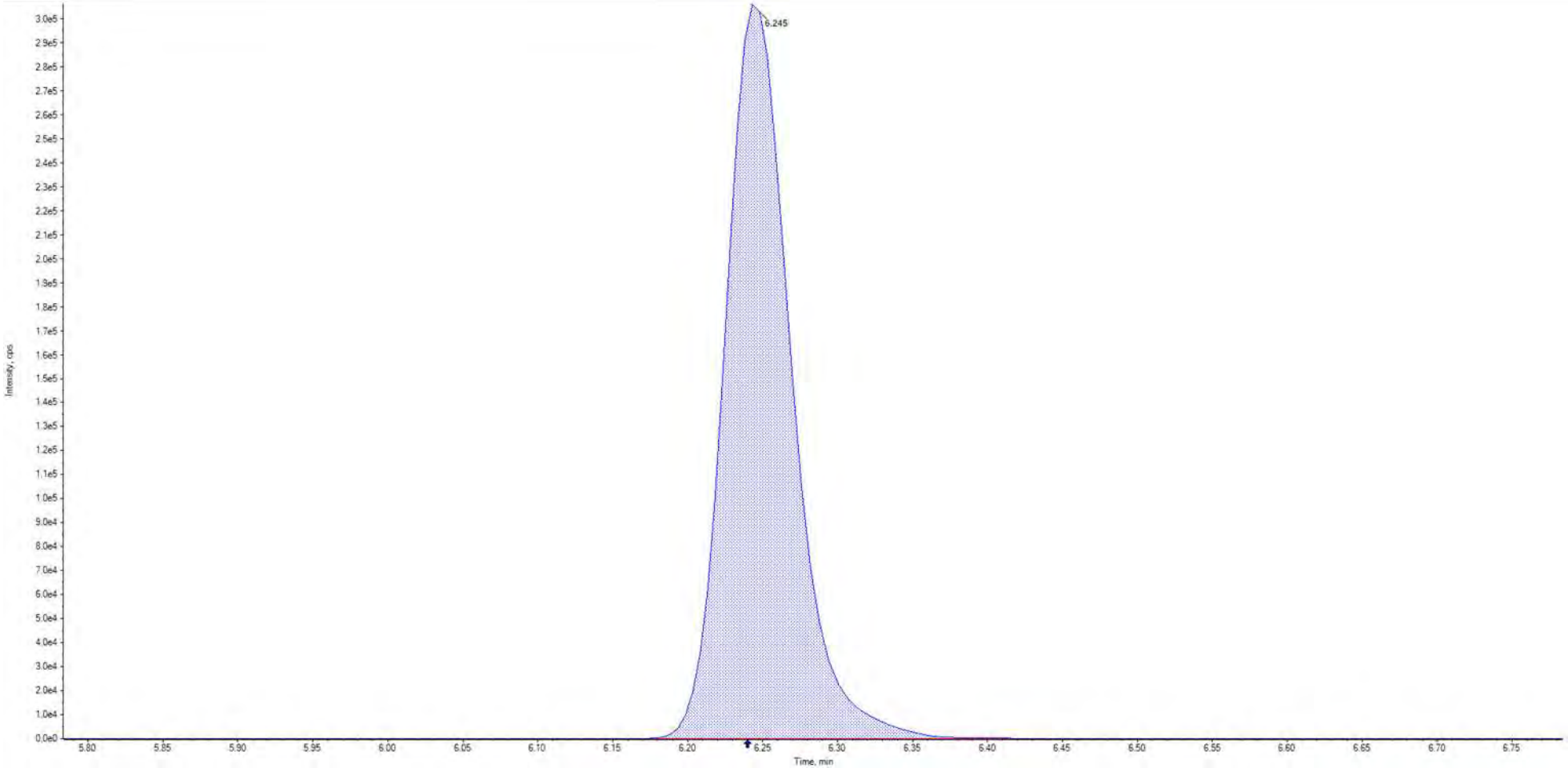


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

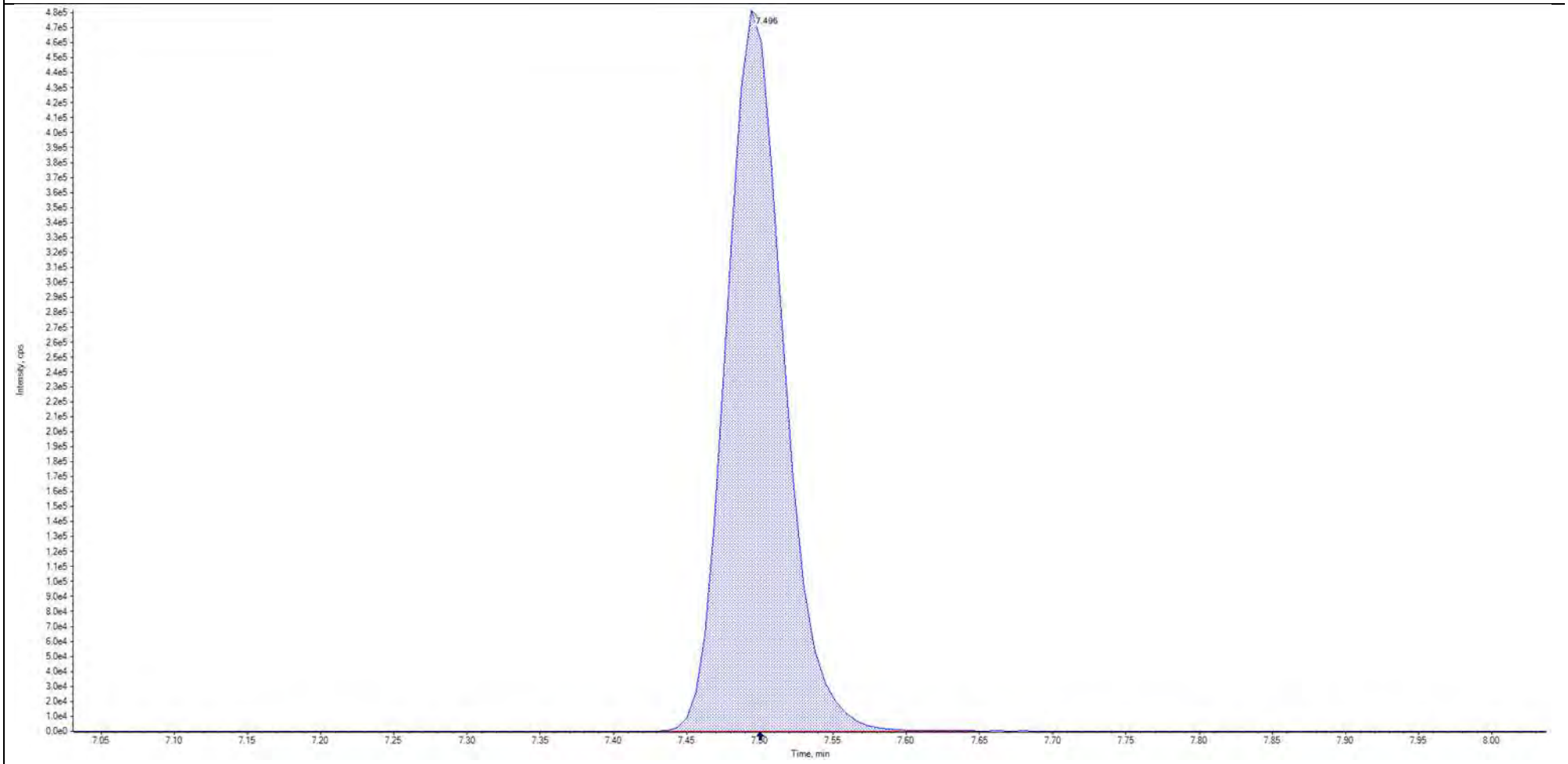
13C5-PFHxA
Sample: IA1633STD-62.5



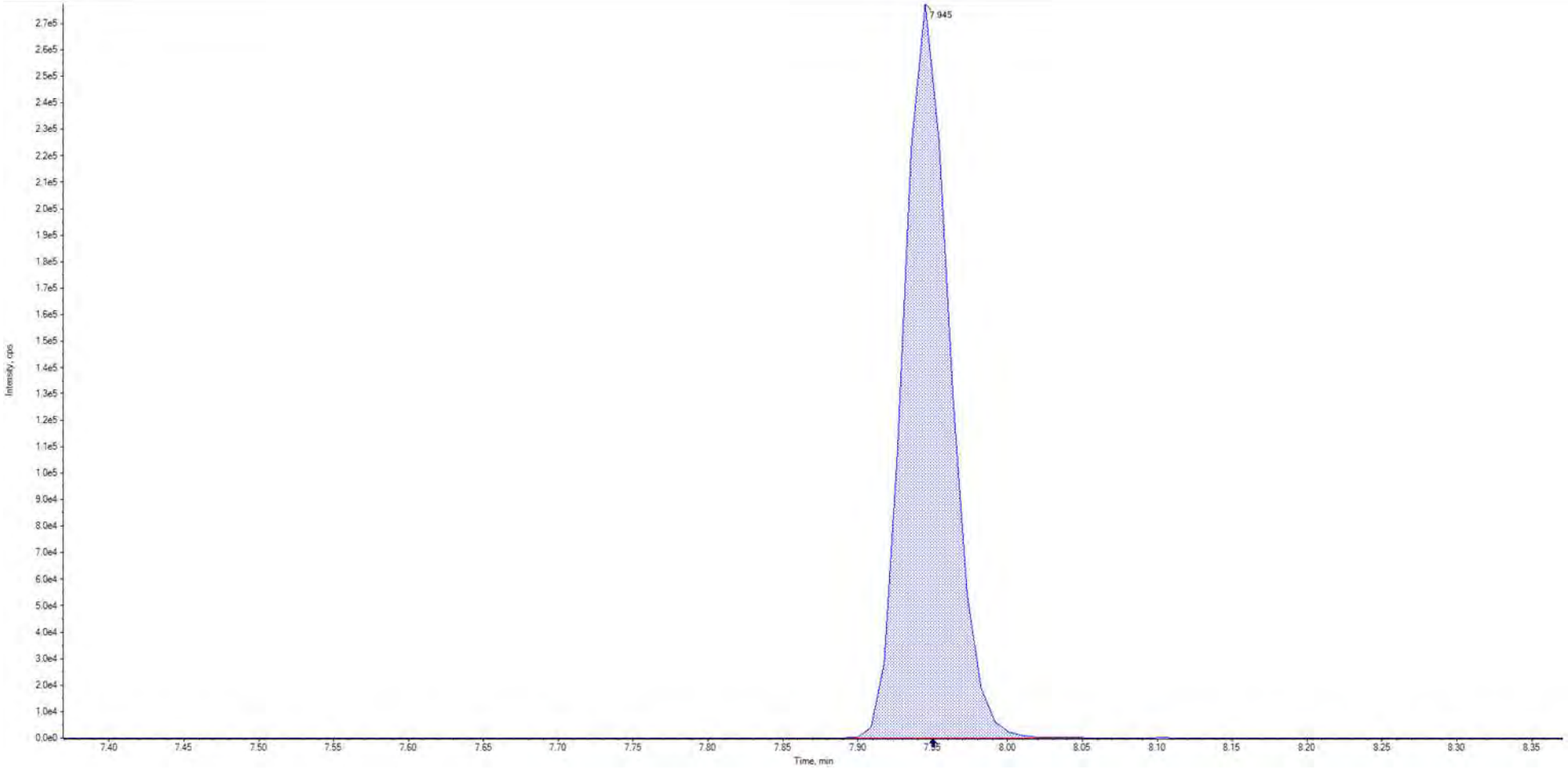
13C4-PFHpA
Sample: IA1633STD-62.5



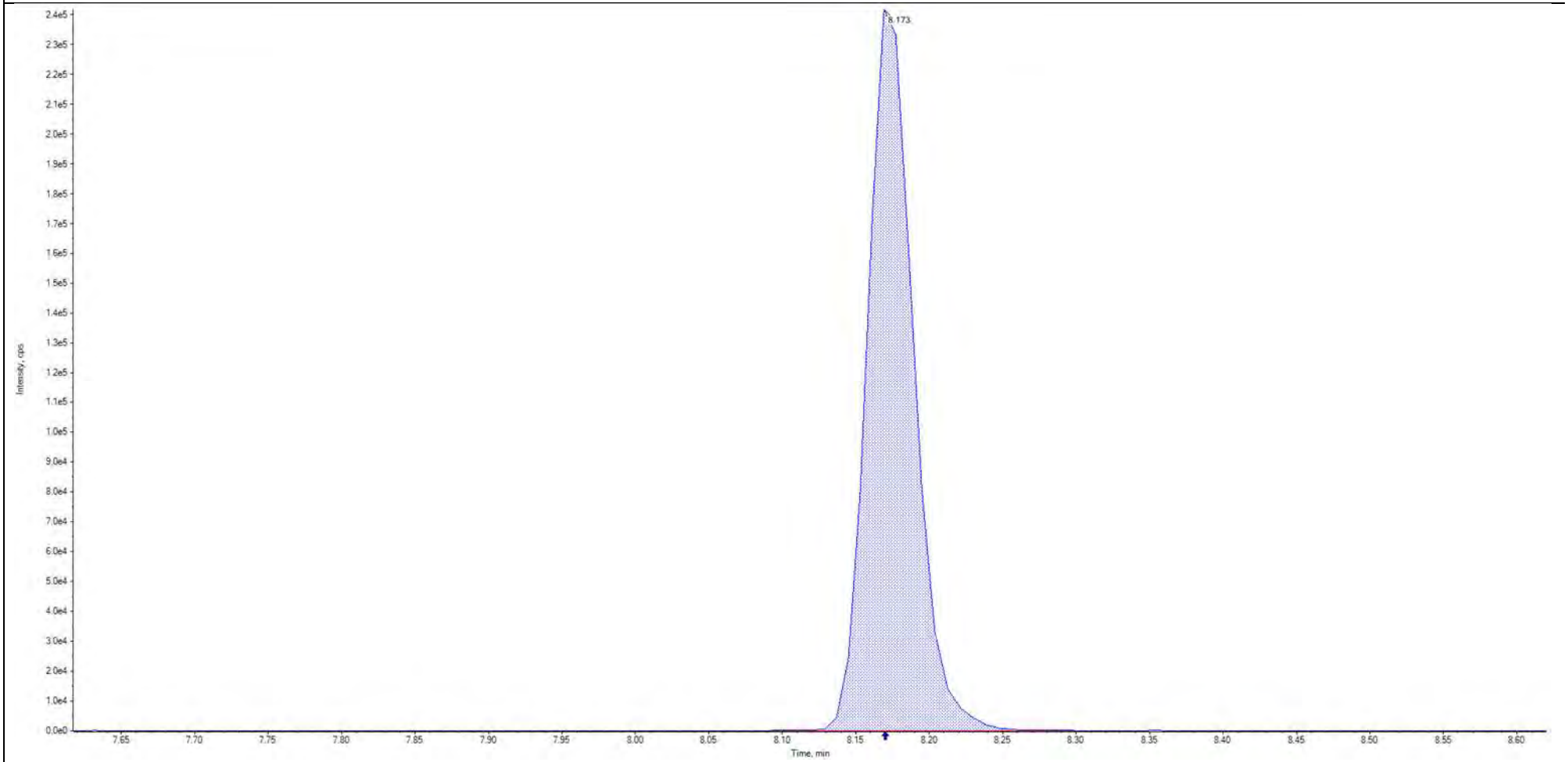
13C8-PFOA
Sample: IA1633STD-62.5



13C9-PFNA
Sample: IA1633STD-62.5

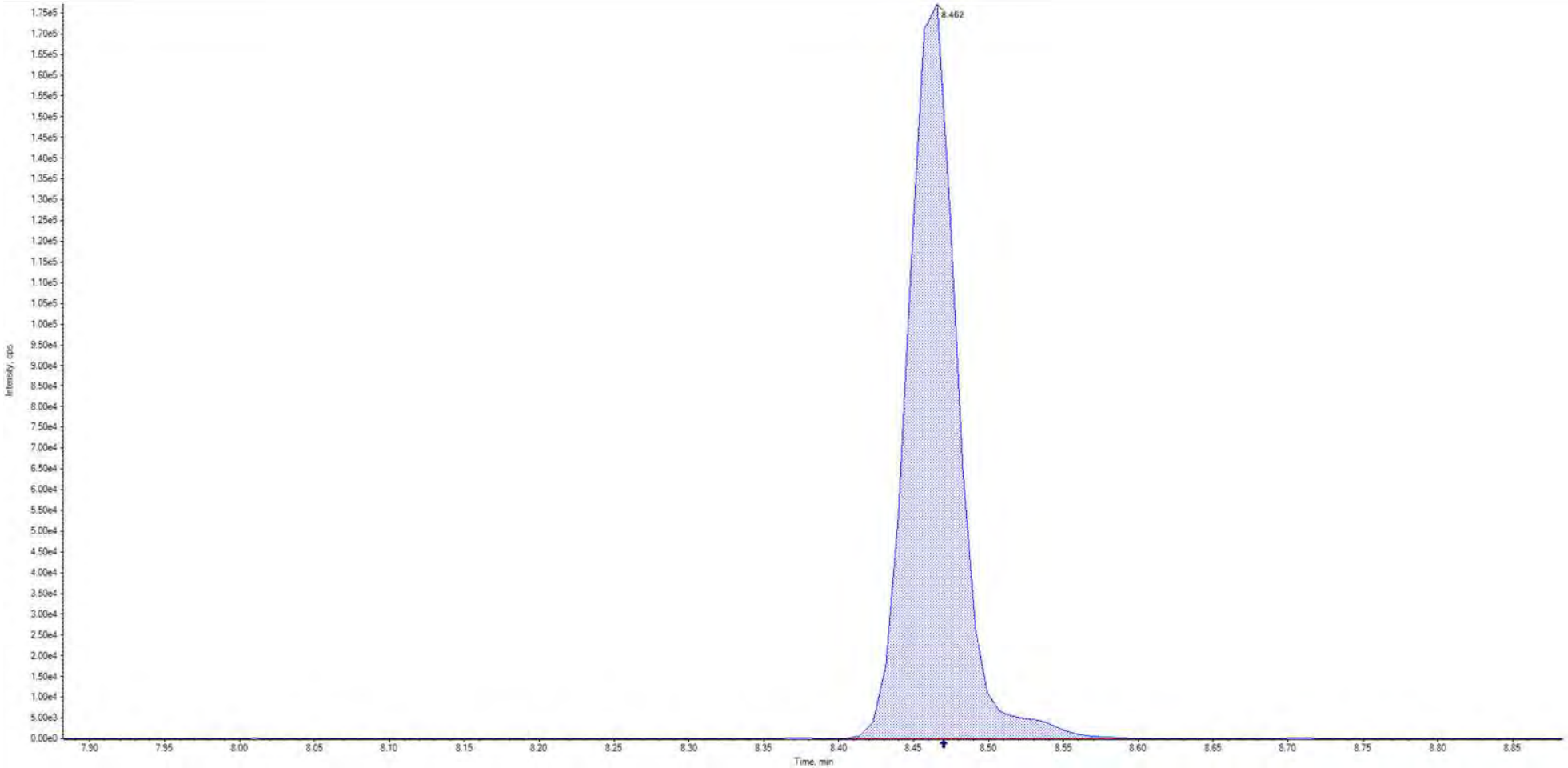


13C6-PFDA
Sample: IA1633STD-62.5



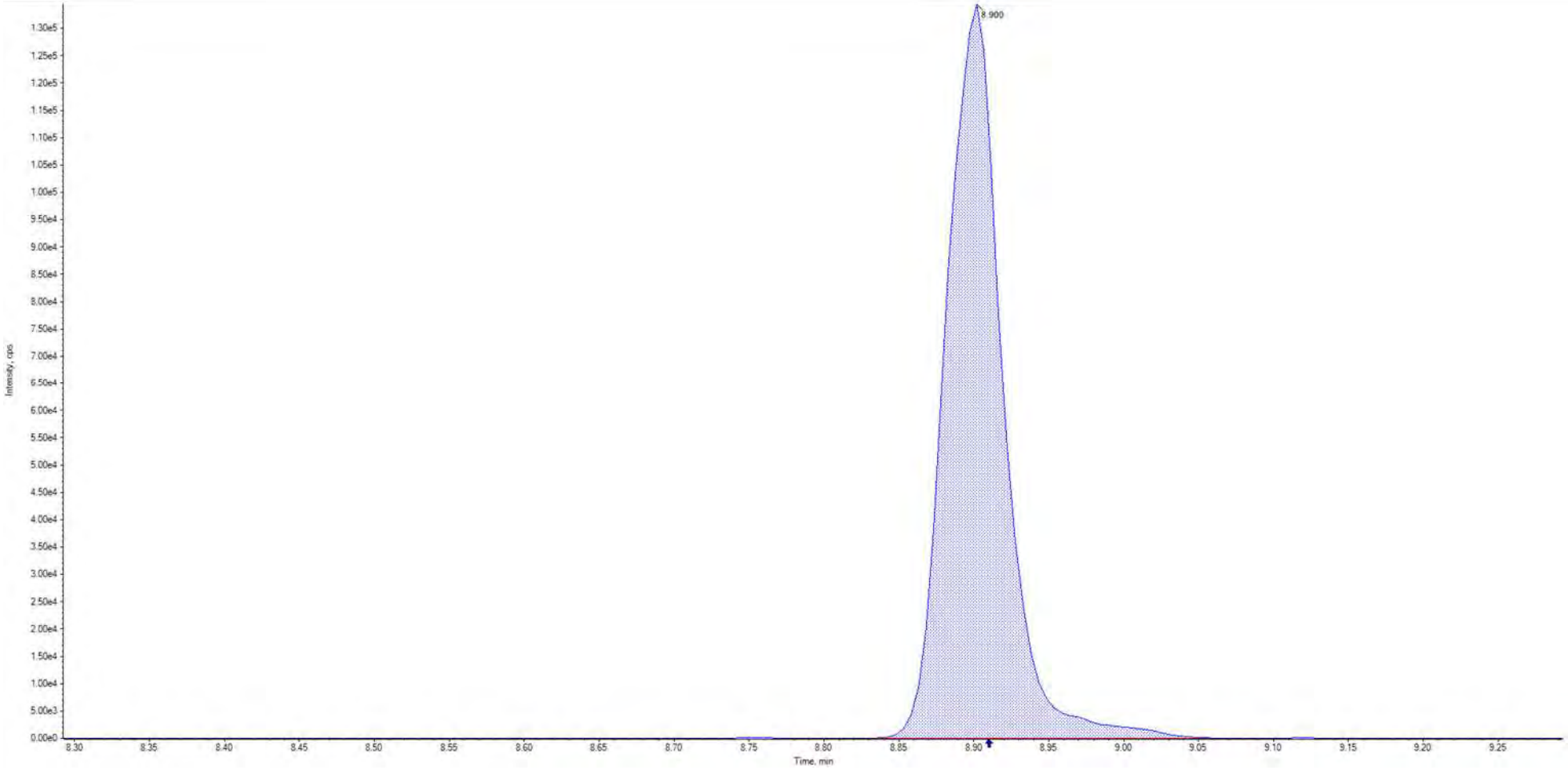
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

13C7-PFUnA
Sample: IA1633STD-62.5

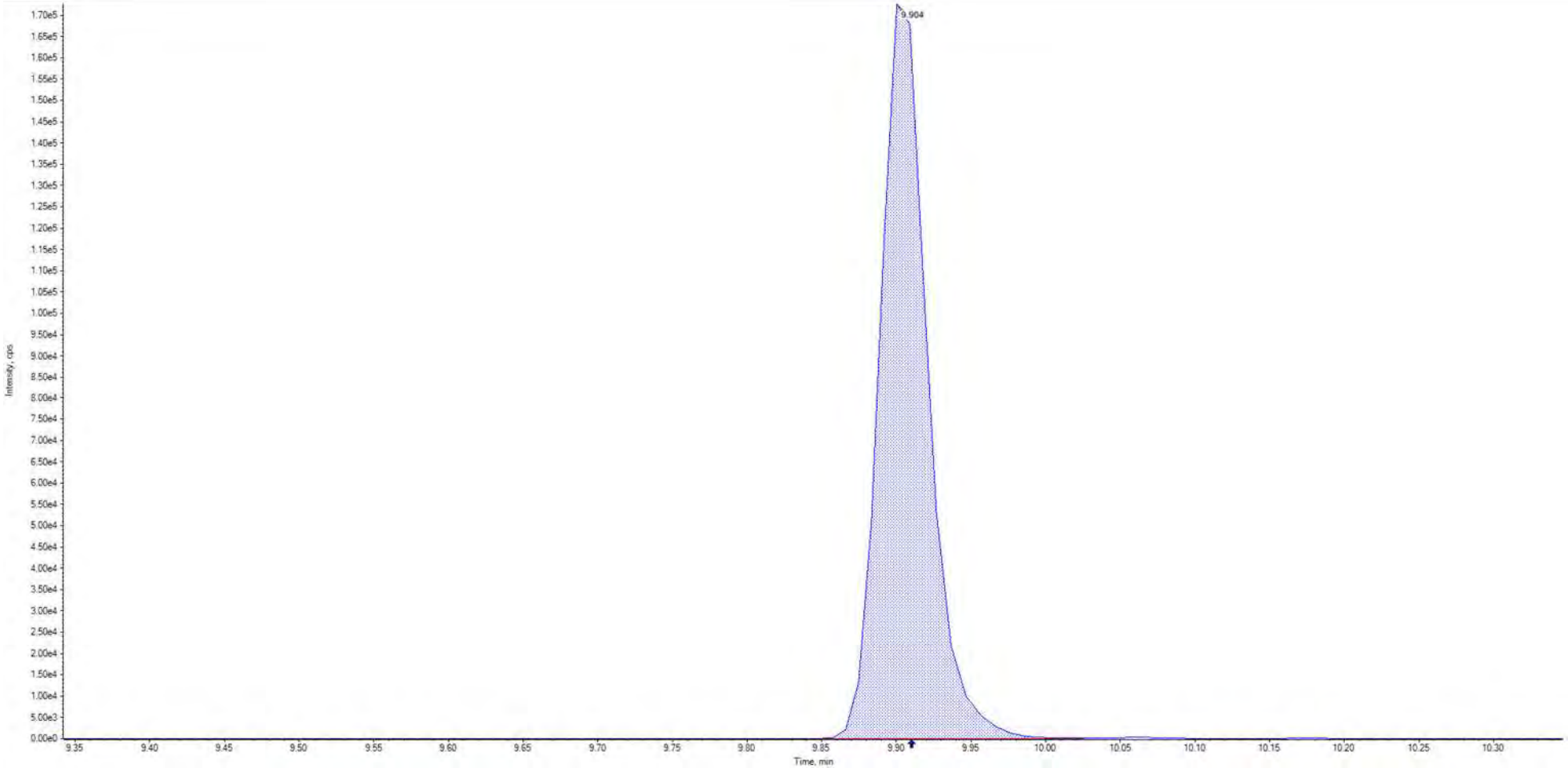


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

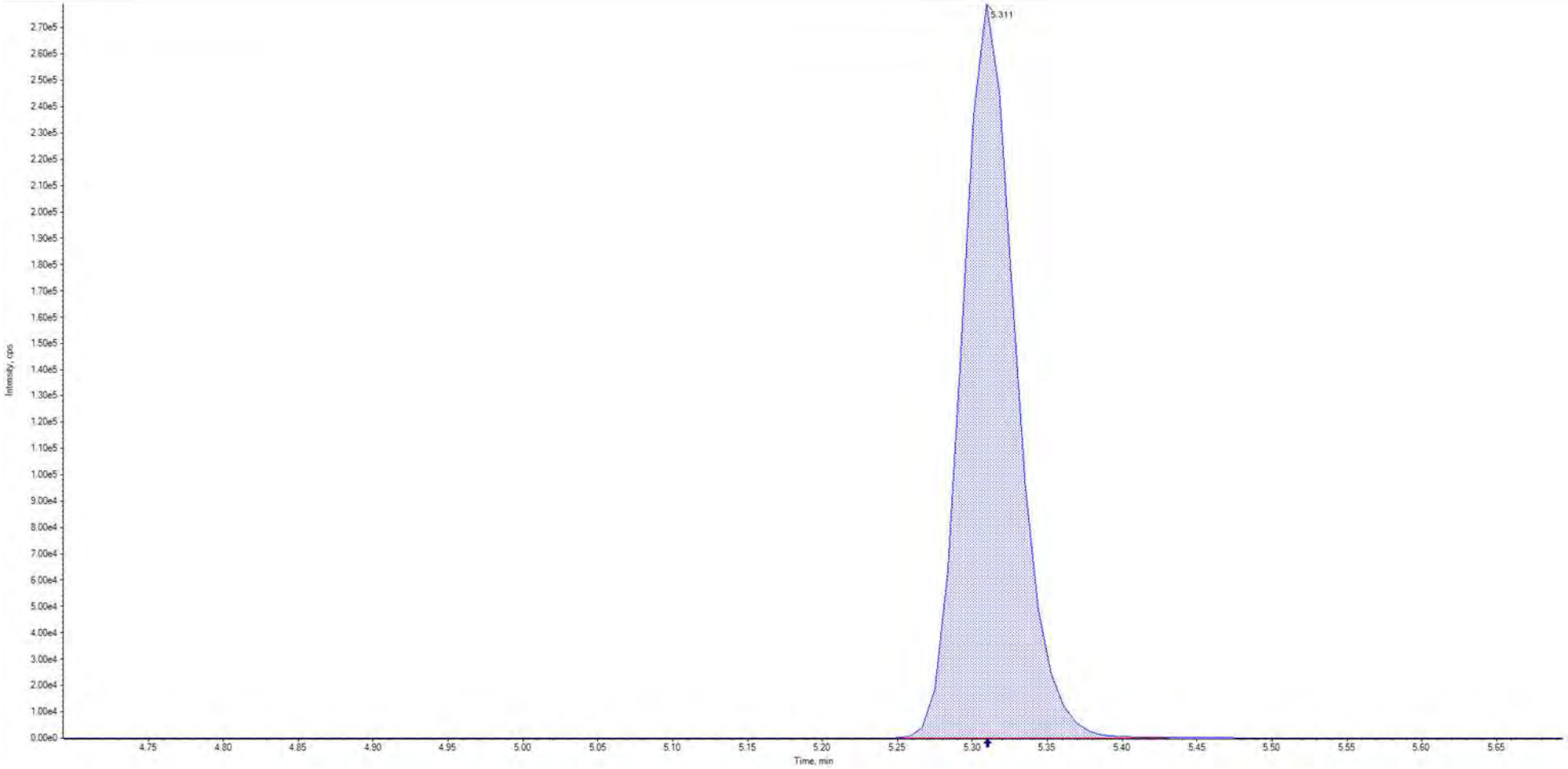
13C2-PFDoA
Sample: IA1633STD-62.5



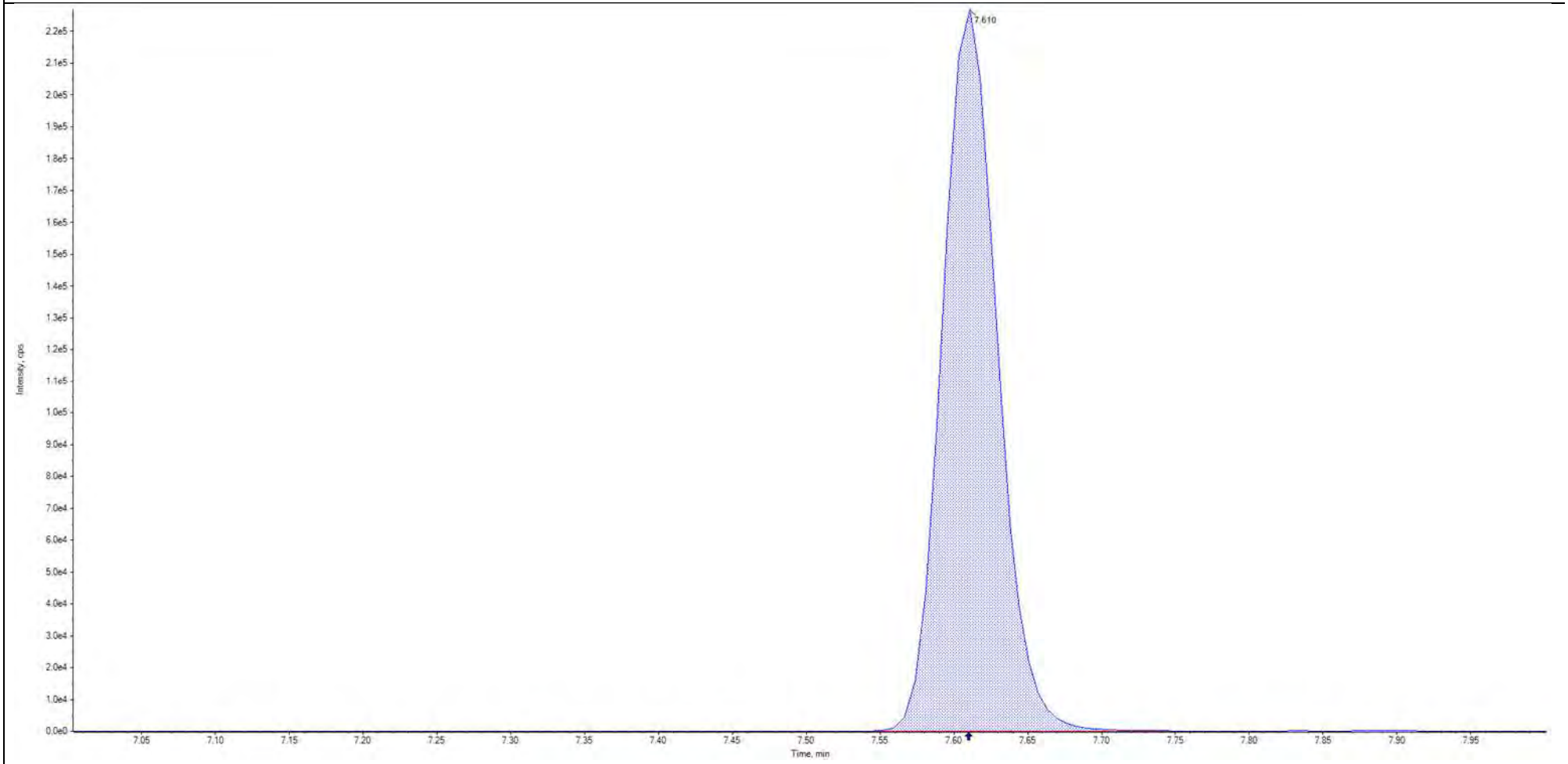
13C2-PFTeDA
Sample: IA1633STD-62.5



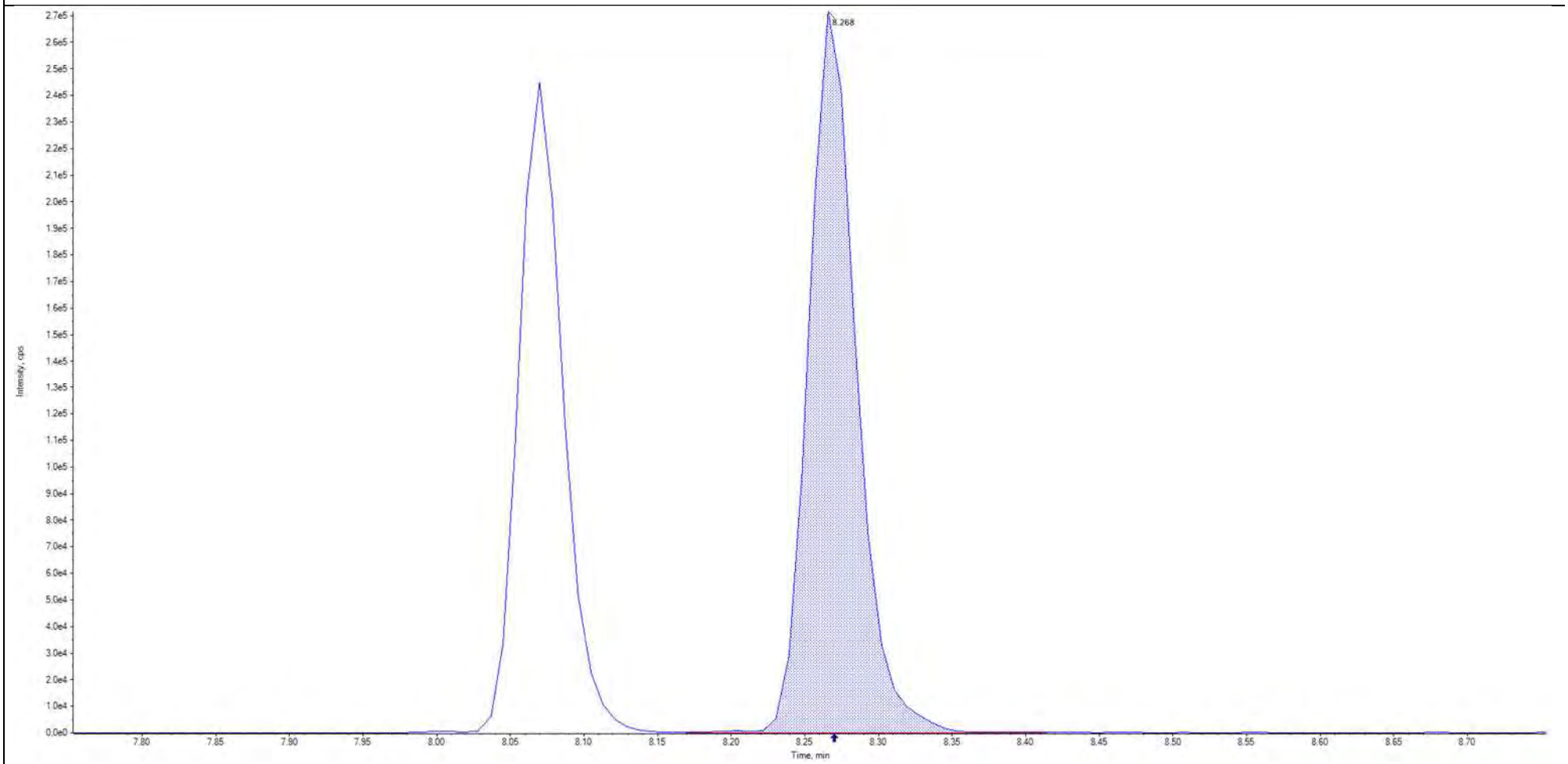
13C3-PFBS
Sample: IA1633STD-62.5



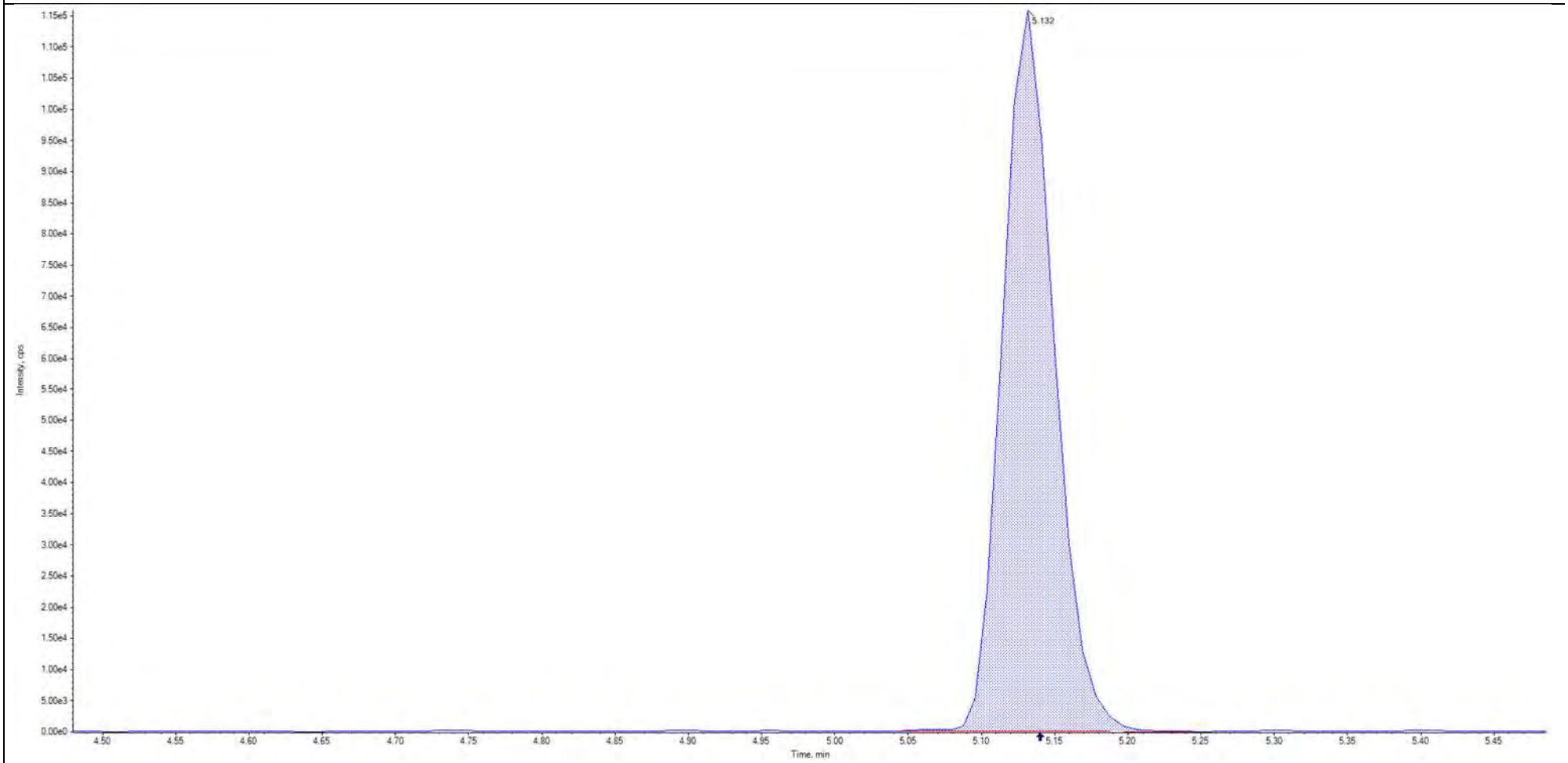
13C3-PFHxS
Sample: IA1633STD-62.5



13C8-PFOS
Sample: IA1633STD-62.5

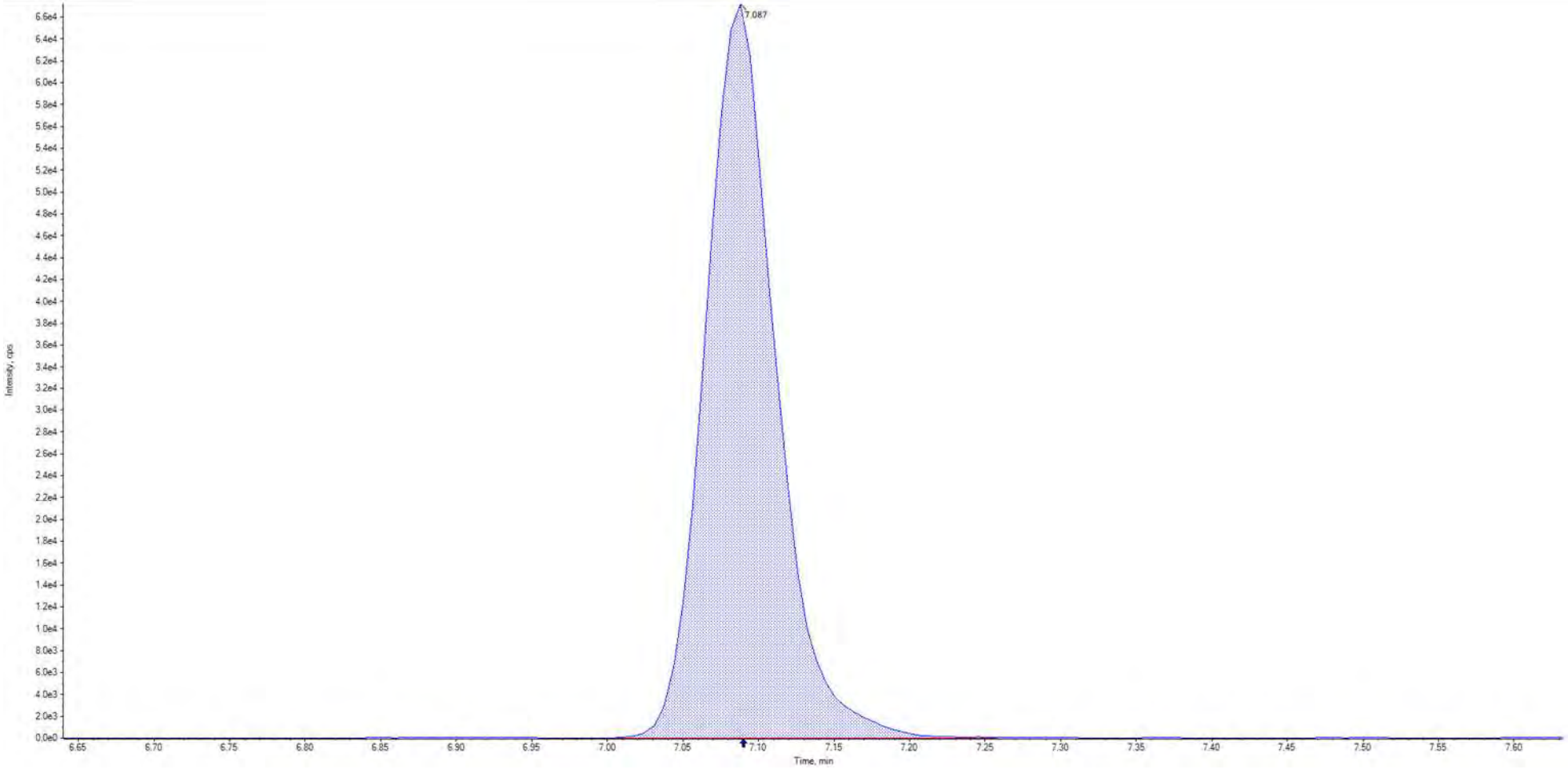


13C2-4:2FTS
Sample: IA1633STD-62.5

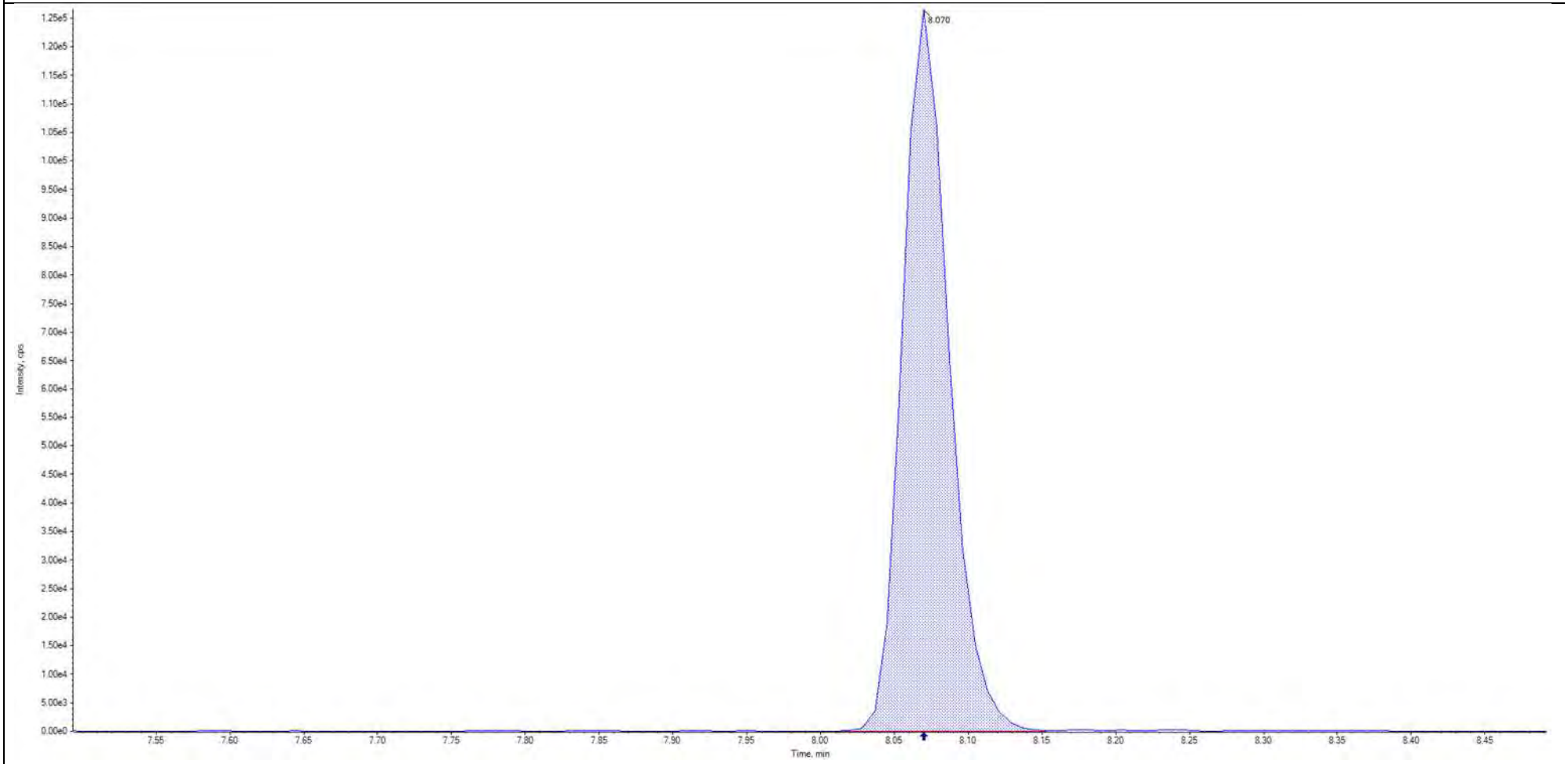


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_79.wiff
Last Altered: 8/14/2024 10:41:29 AM
Generated: 8/14/2024 6:27:11 AM

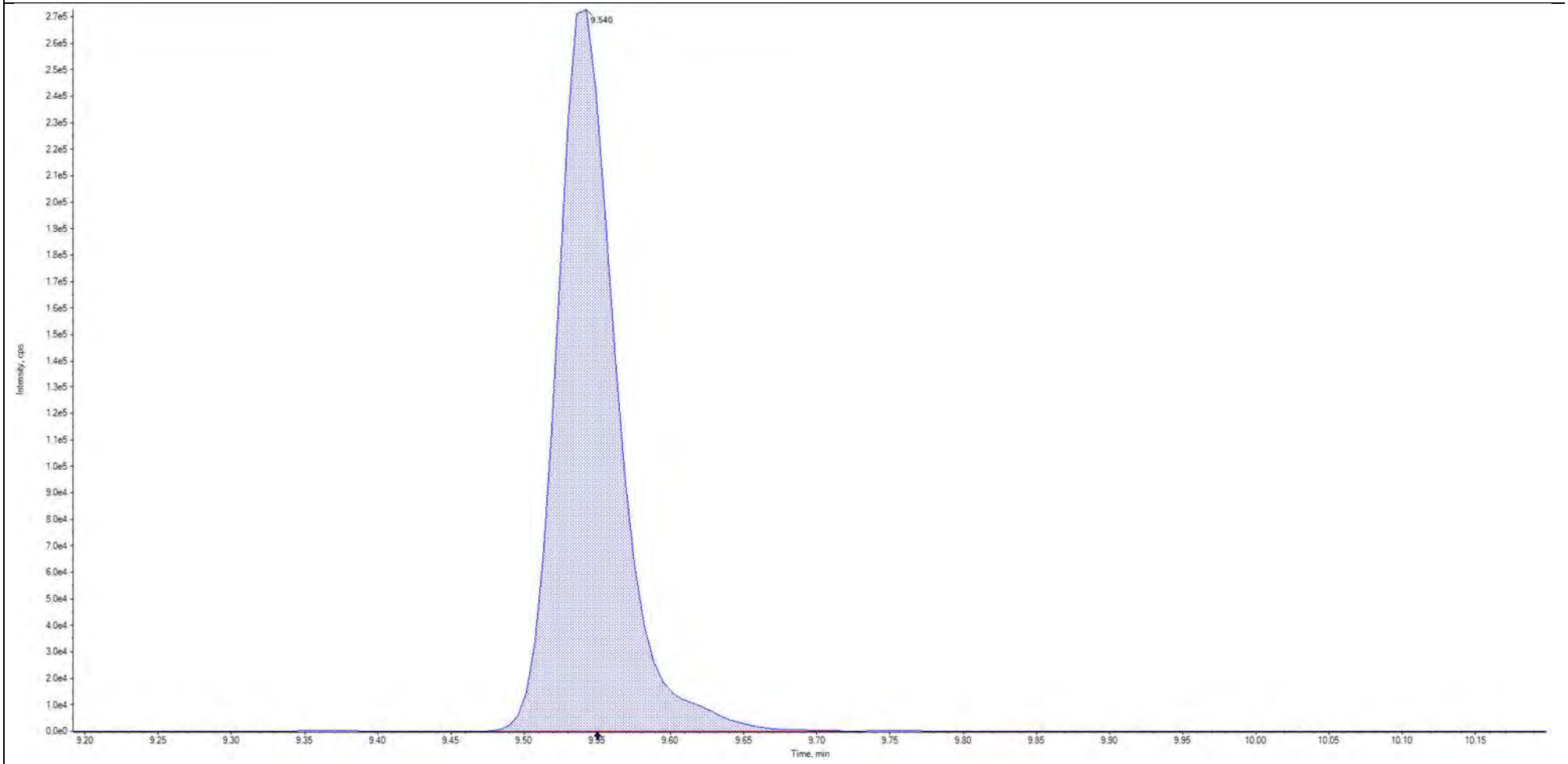
13C2-6:2FTS
Sample: IA1633STD-62.5



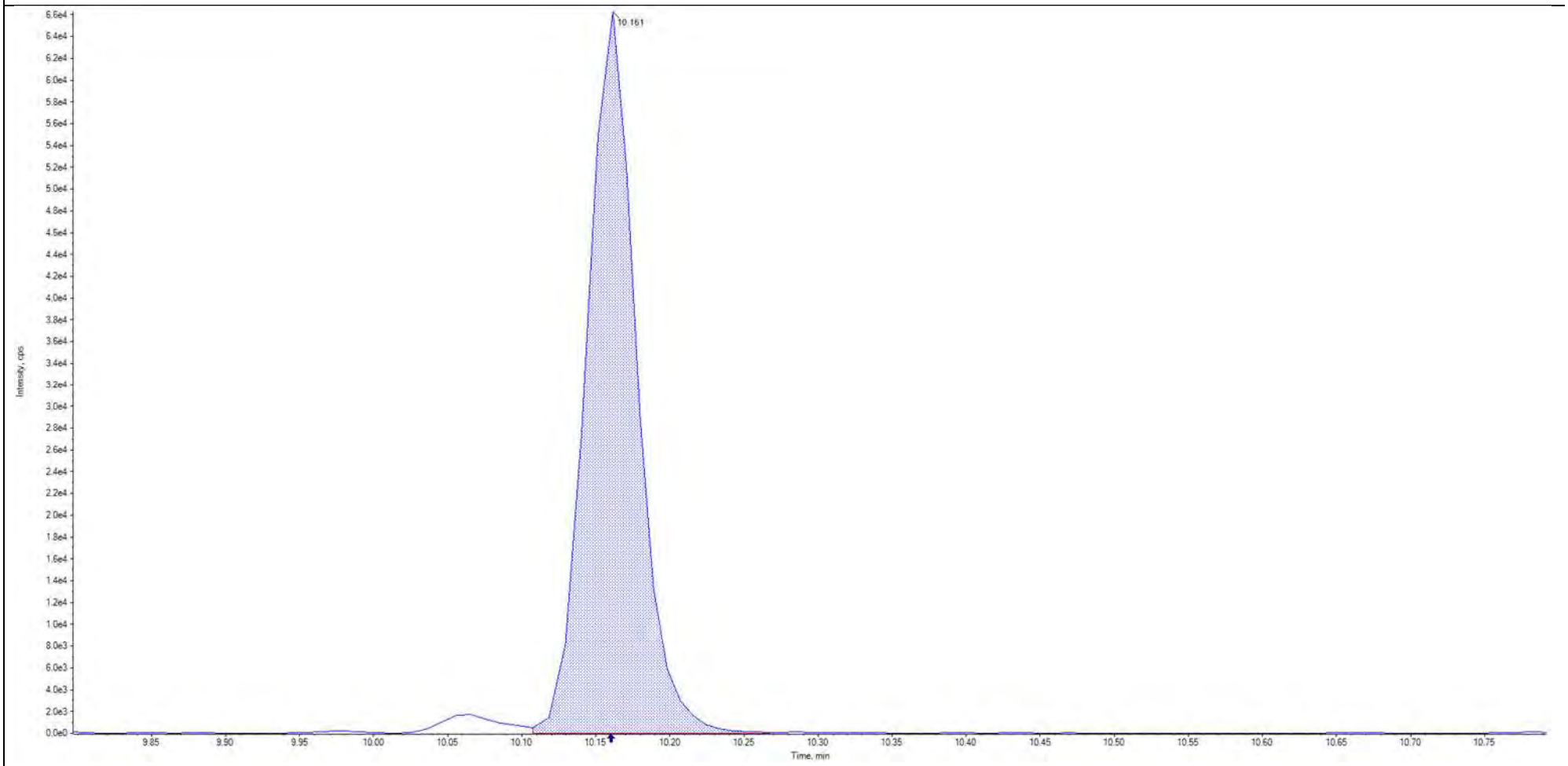
13C2-8:2FTS
Sample: IA1633STD-62.5



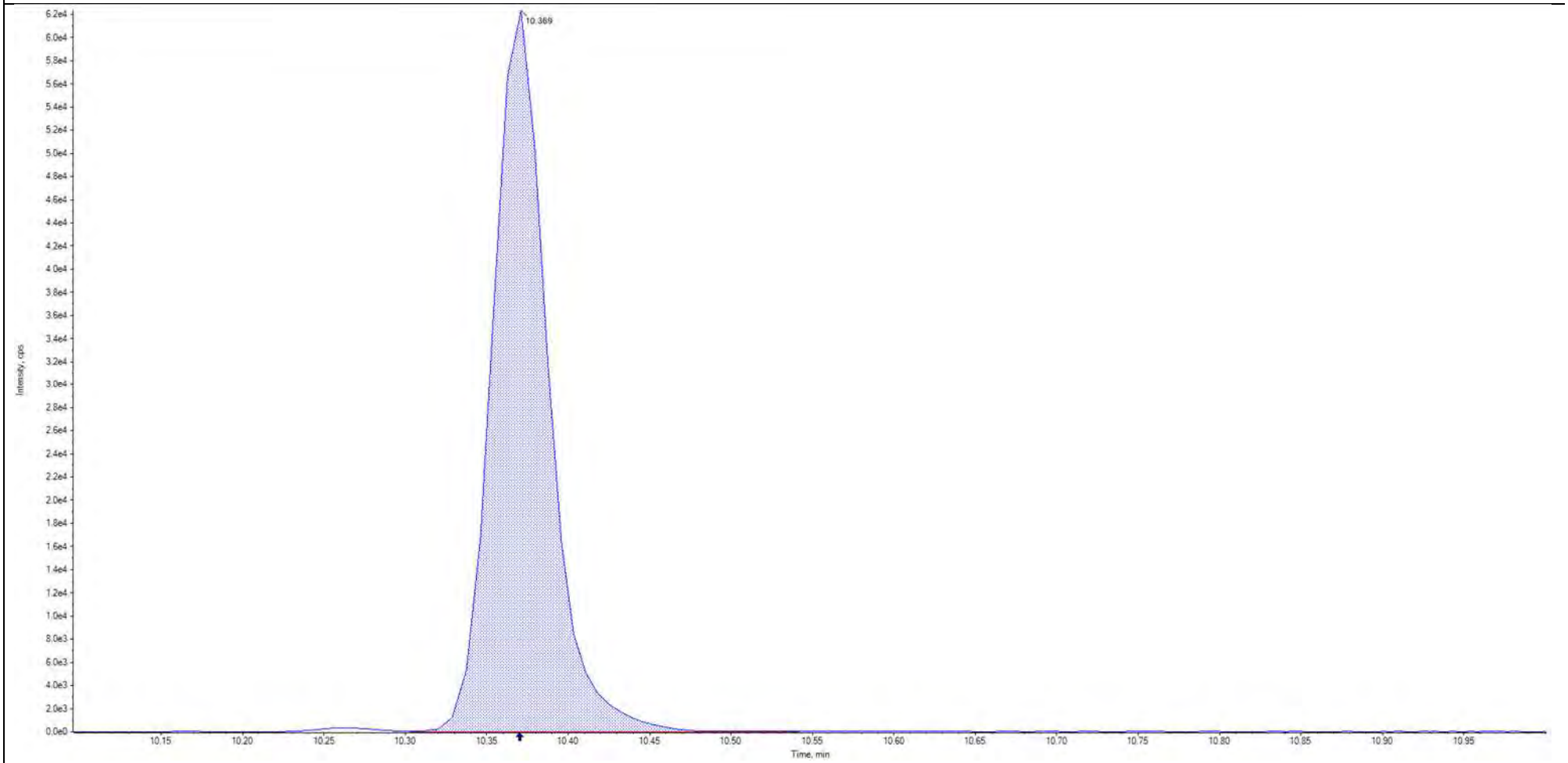
13C8-PFOSA
Sample: IA1633STD-62.5



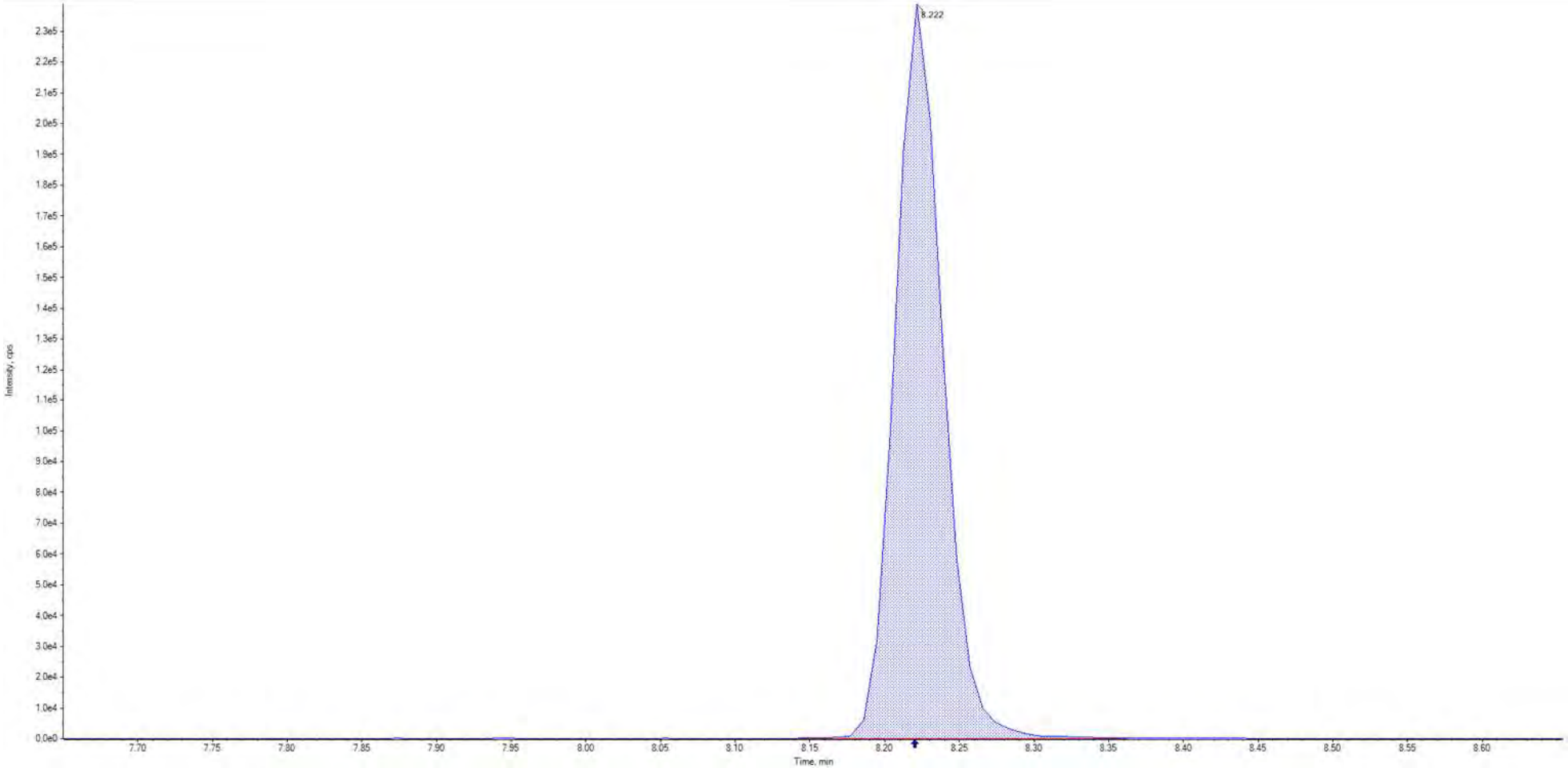
d3-NMeFOSA
Sample: IA1633STD-62.5



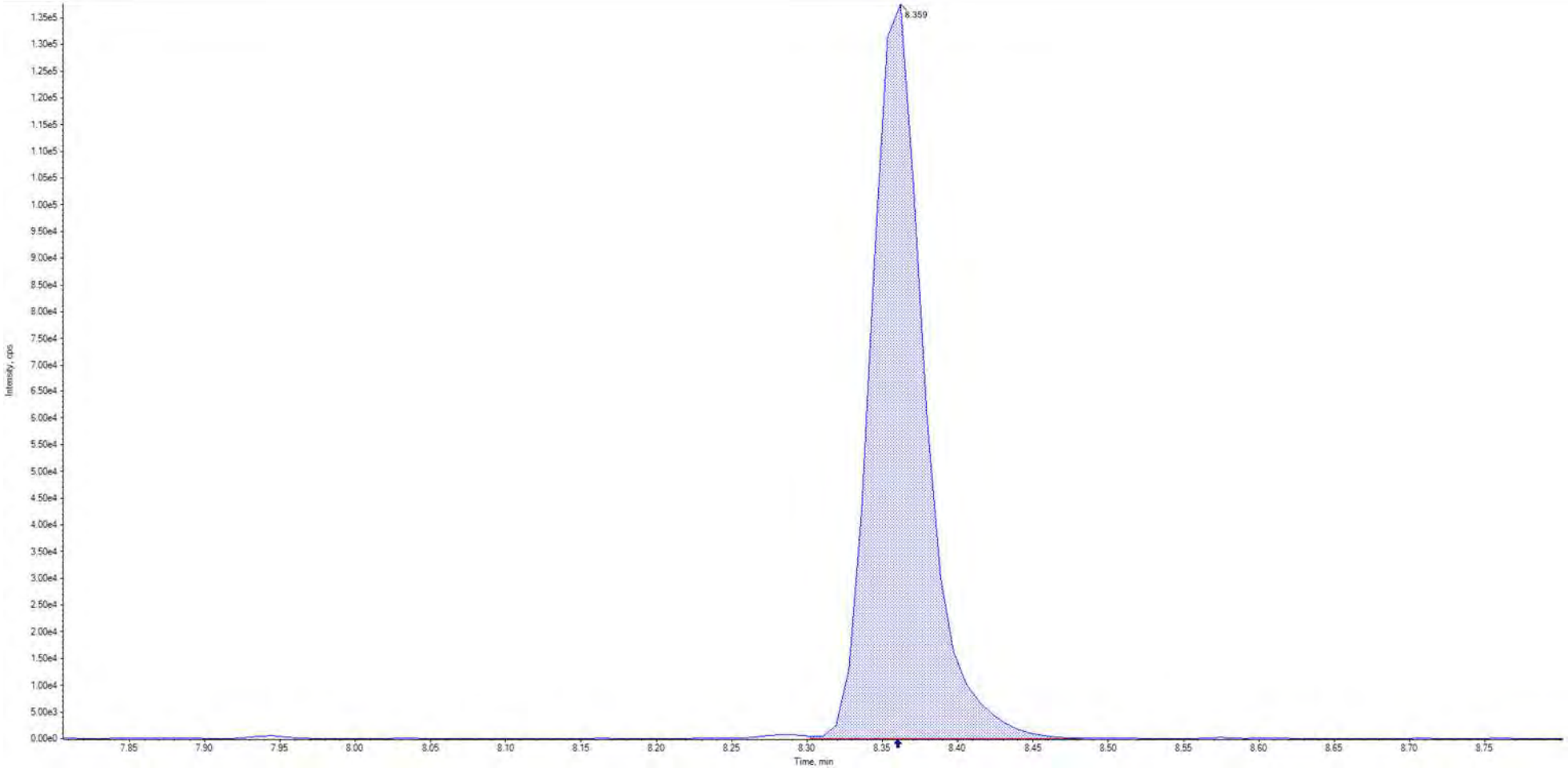
d5-NEtFOSA
Sample: IA1633STD-62.5



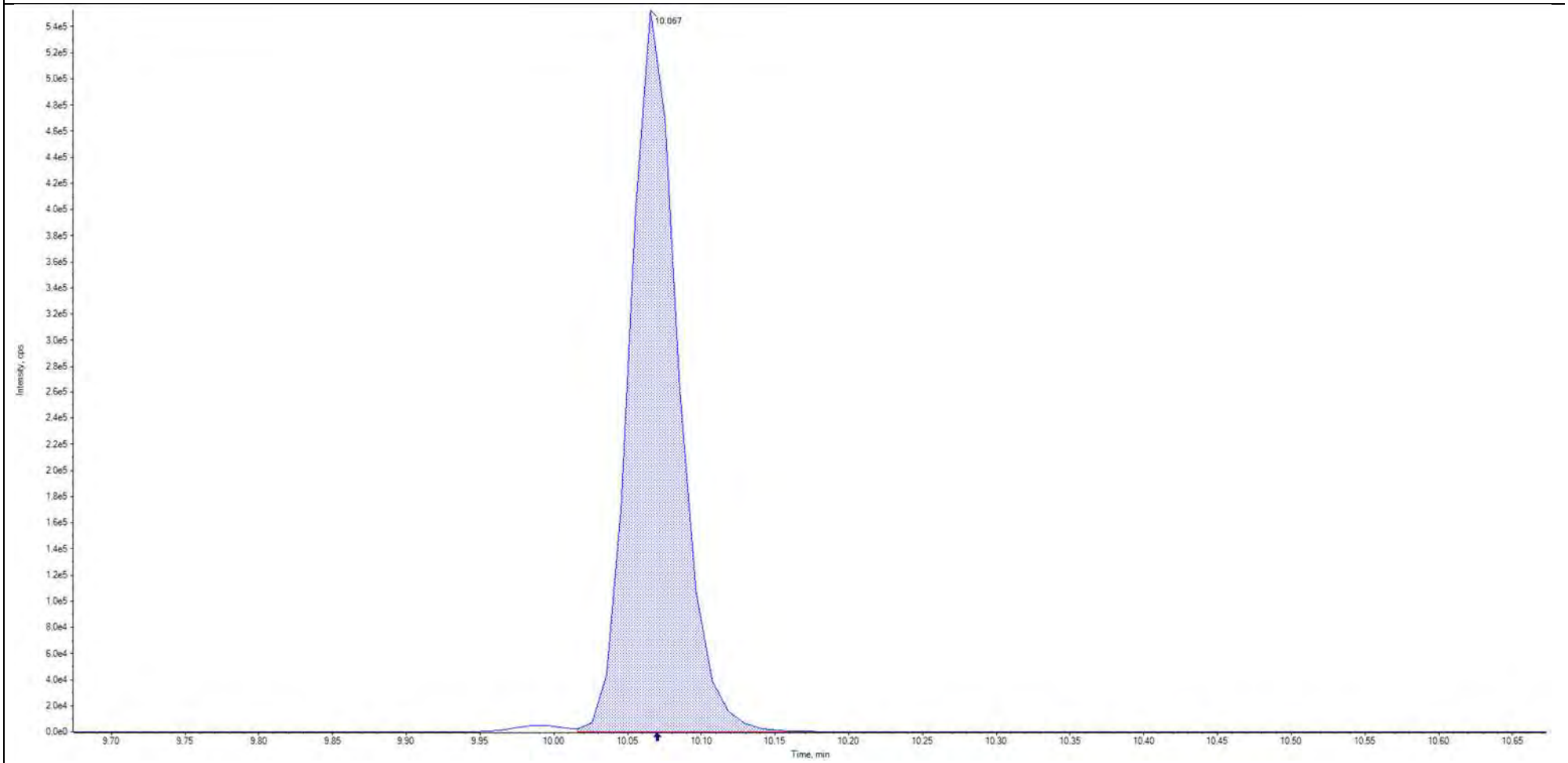
d3-NMeFOSAA
Sample: IA1633STD-62.5



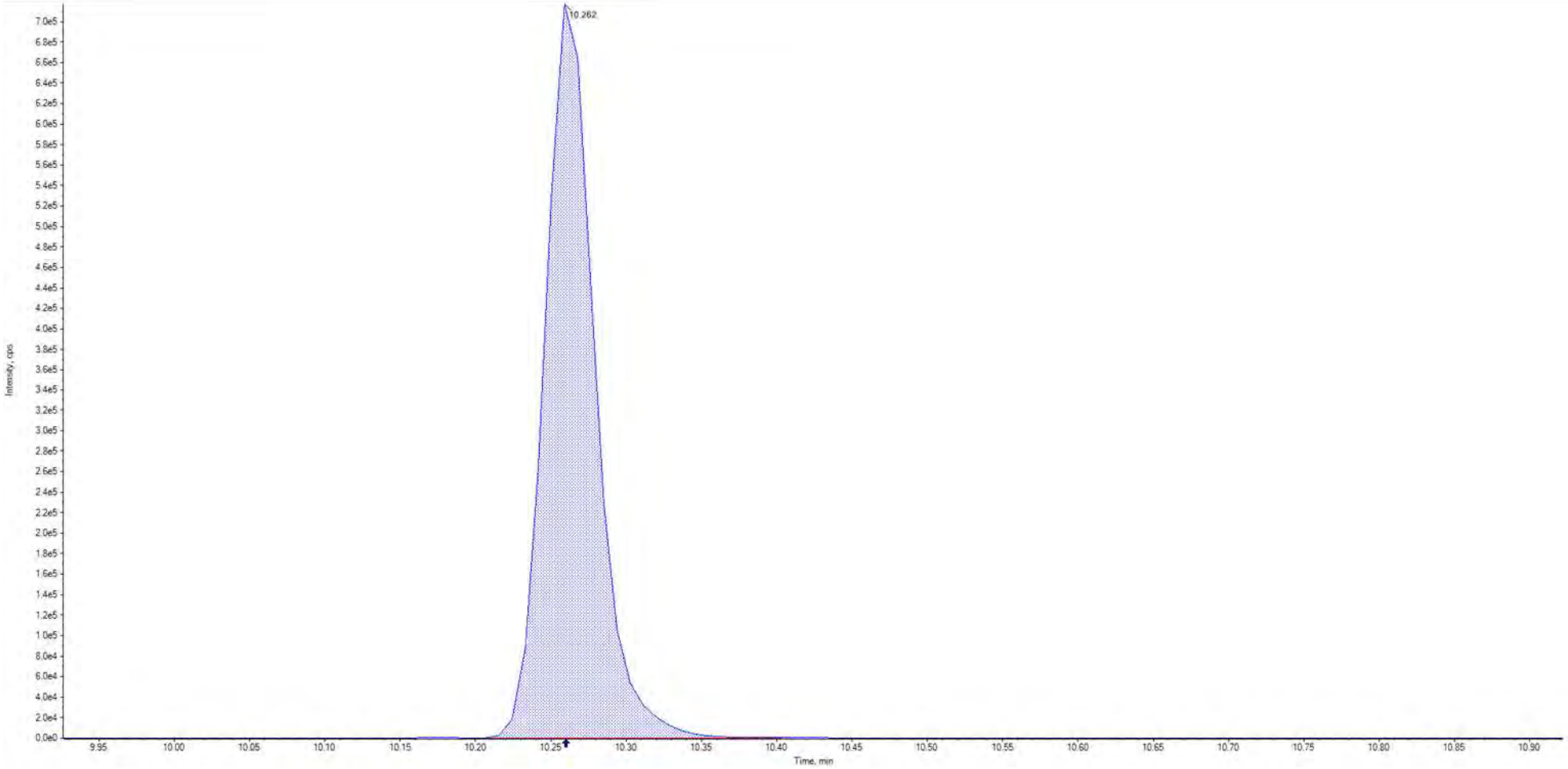
d5-NEtFOSAA
Sample: IA1633STD-62.5



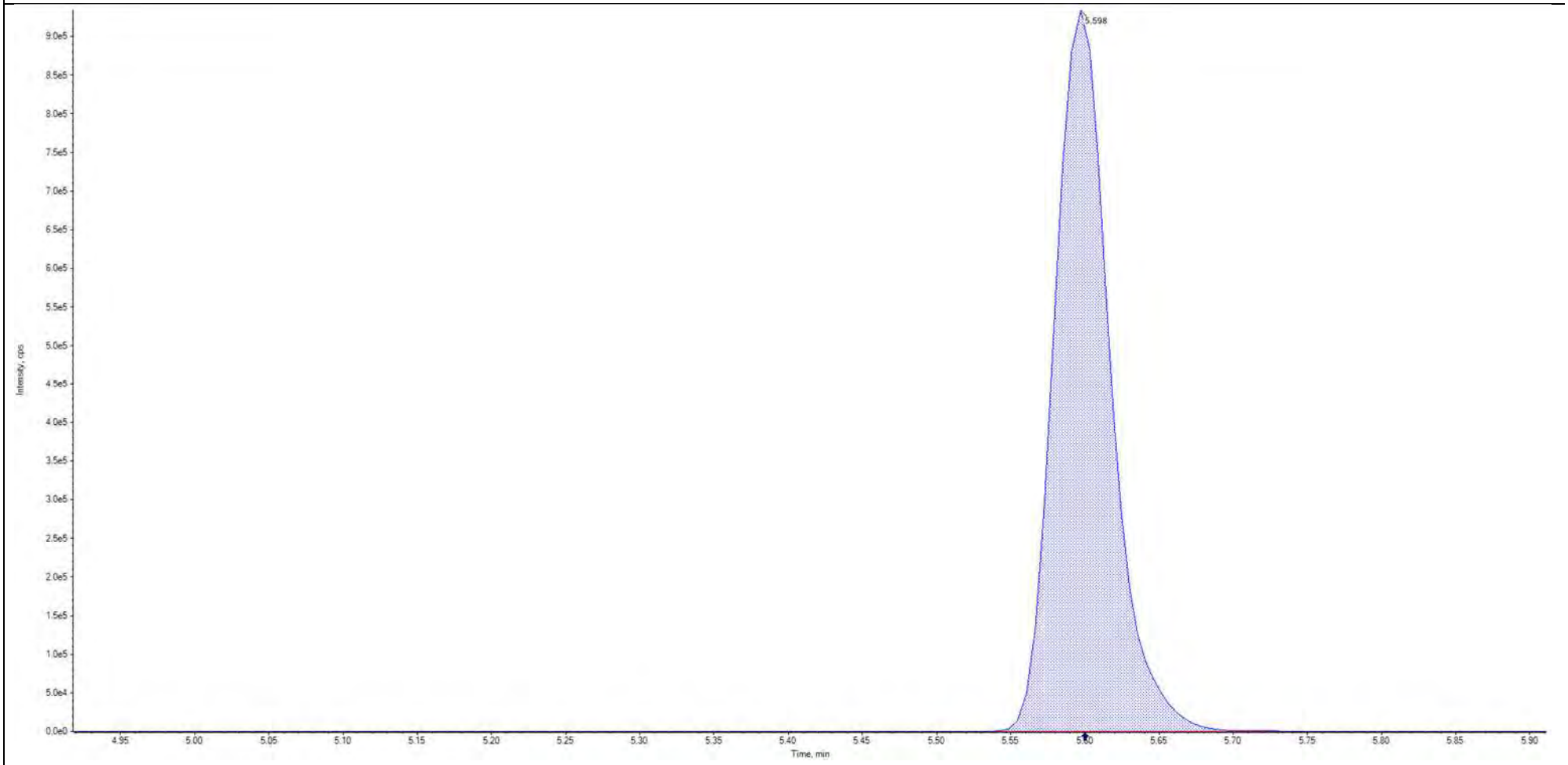
d7-NMeFOSE
Sample: IA1633STD-62.5



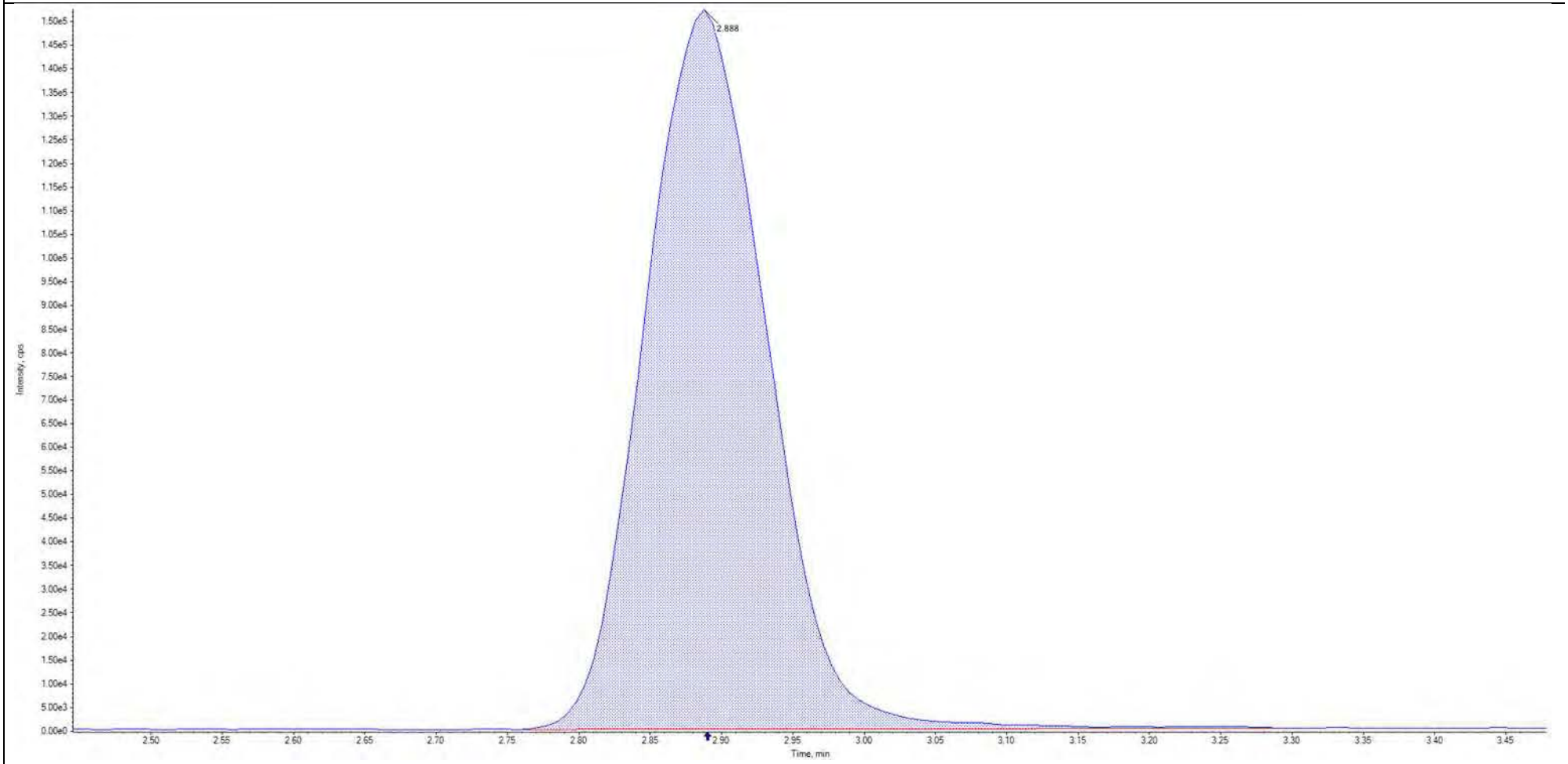
d9-NEtFOSE
Sample: IA1633STD-62.5



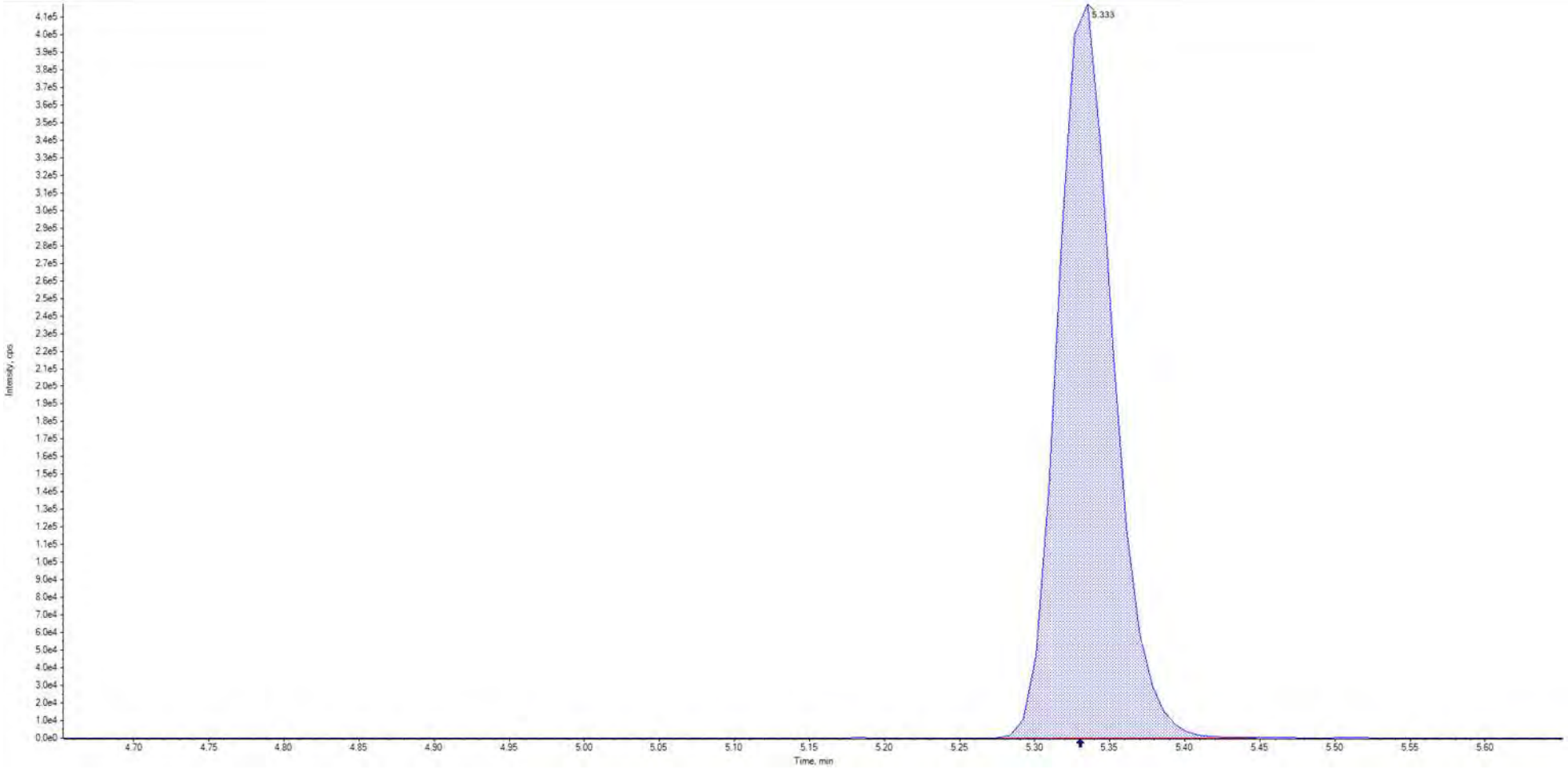
13C3-HFPO-DA
Sample: IA1633STD-62.5



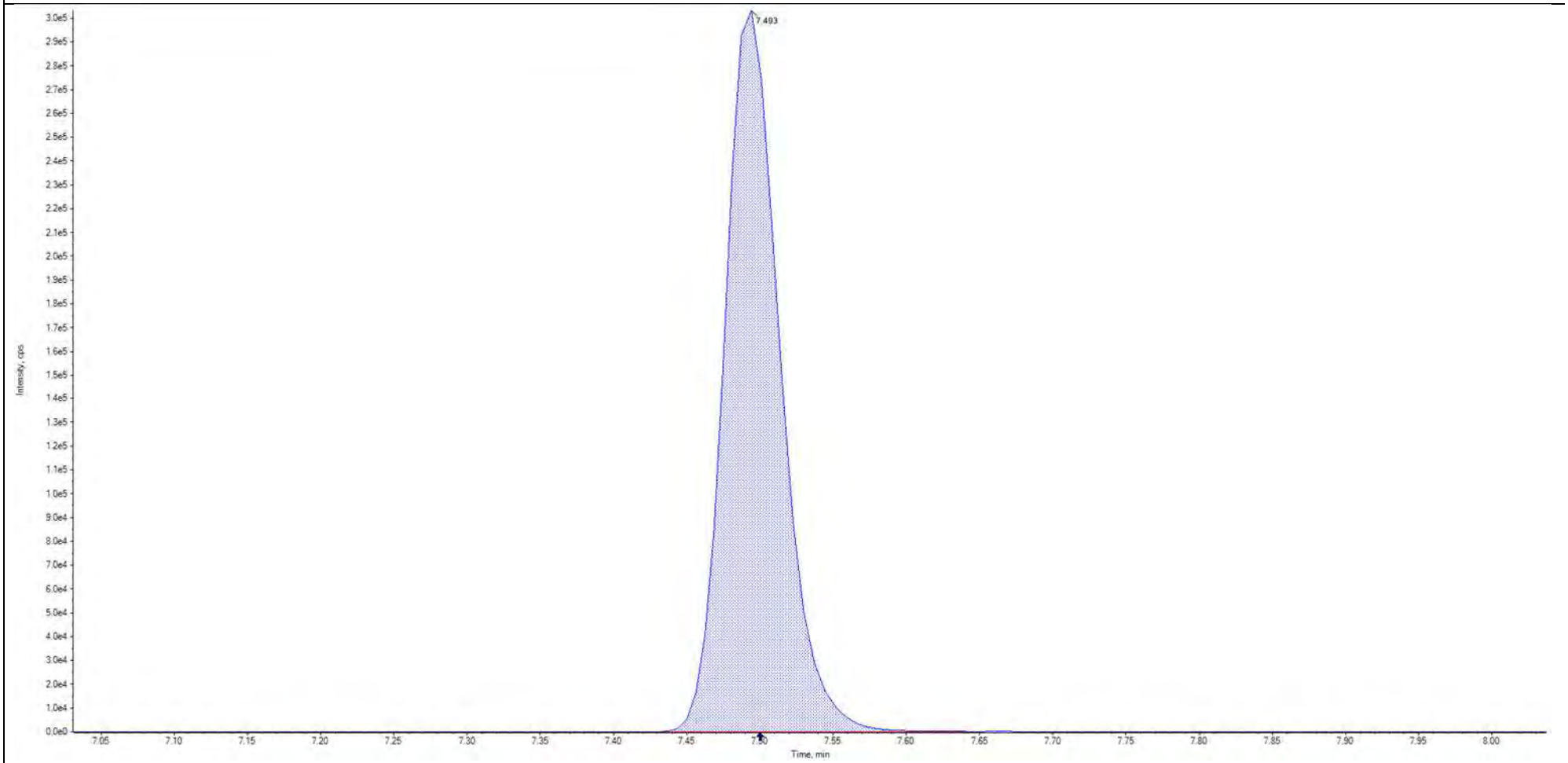
13C3-PFBA
Sample: IA1633STD-62.5



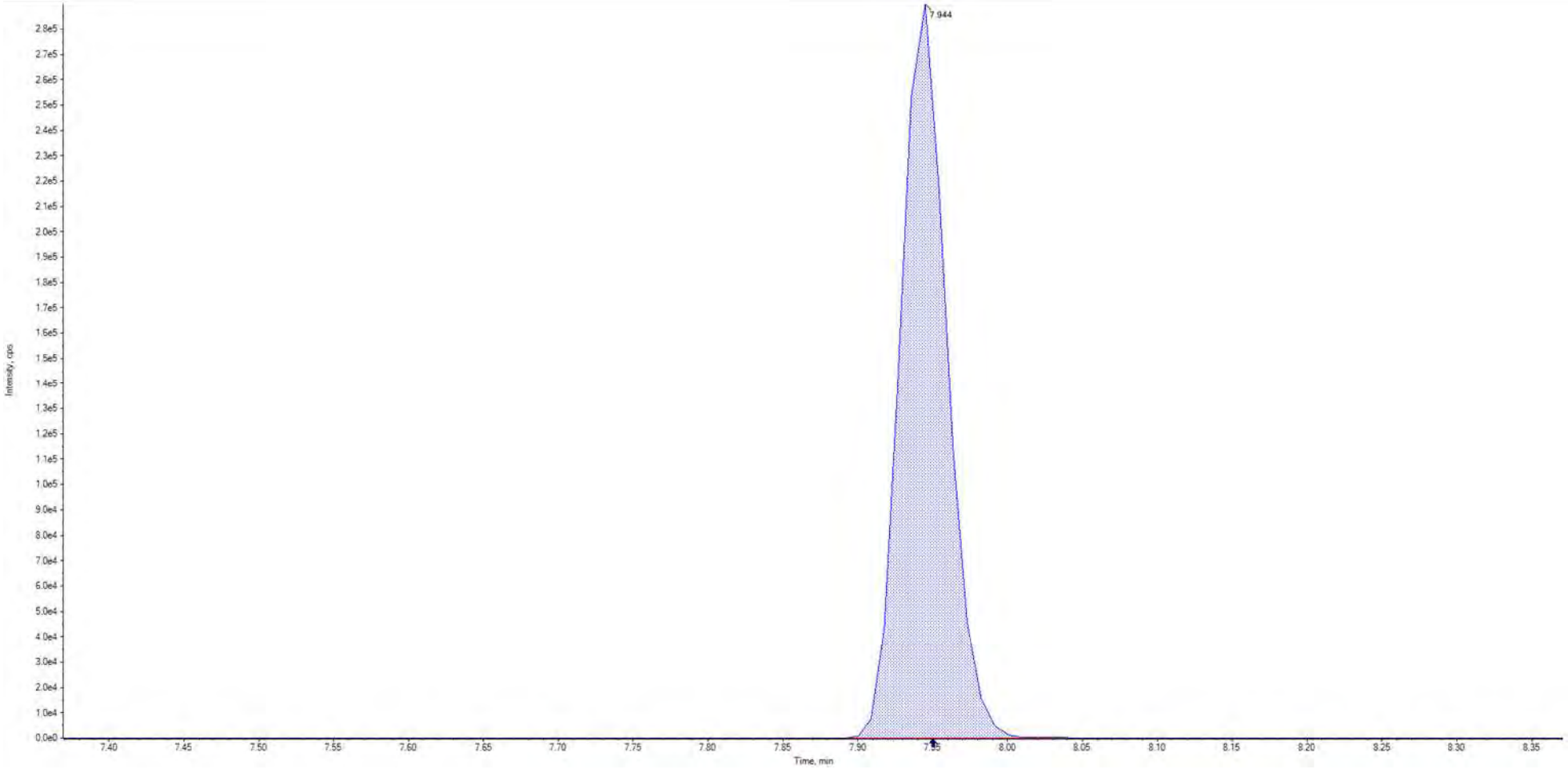
13C2-PFHxA
Sample: IA1633STD-62.5



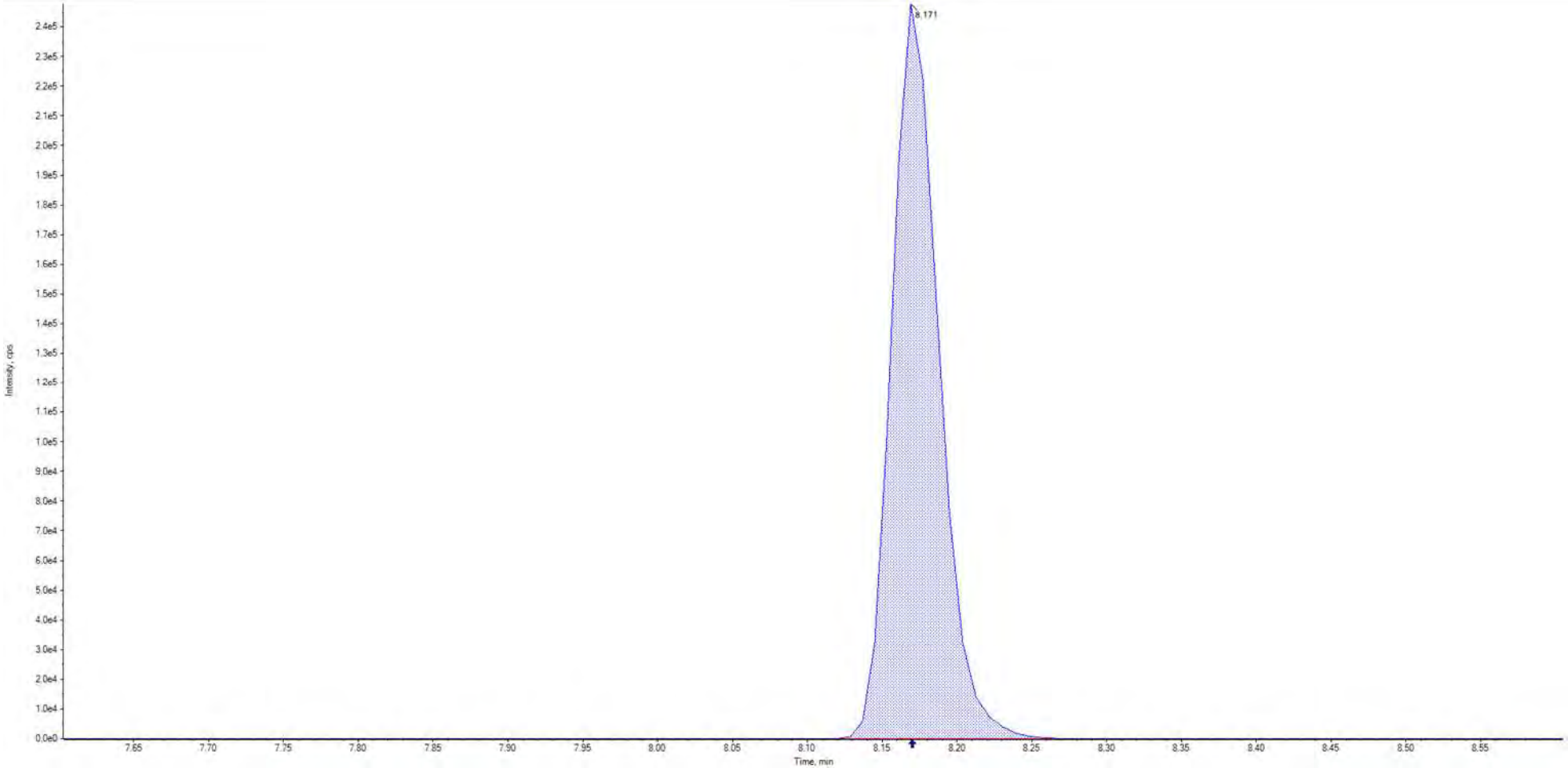
13C4-PFOA
Sample: IA1633STD-62.5



13C5-PFNA
Sample: IA1633STD-62.5



13C2-PFDA
Sample: IA1633STD-62.5



18O2-PFHxS
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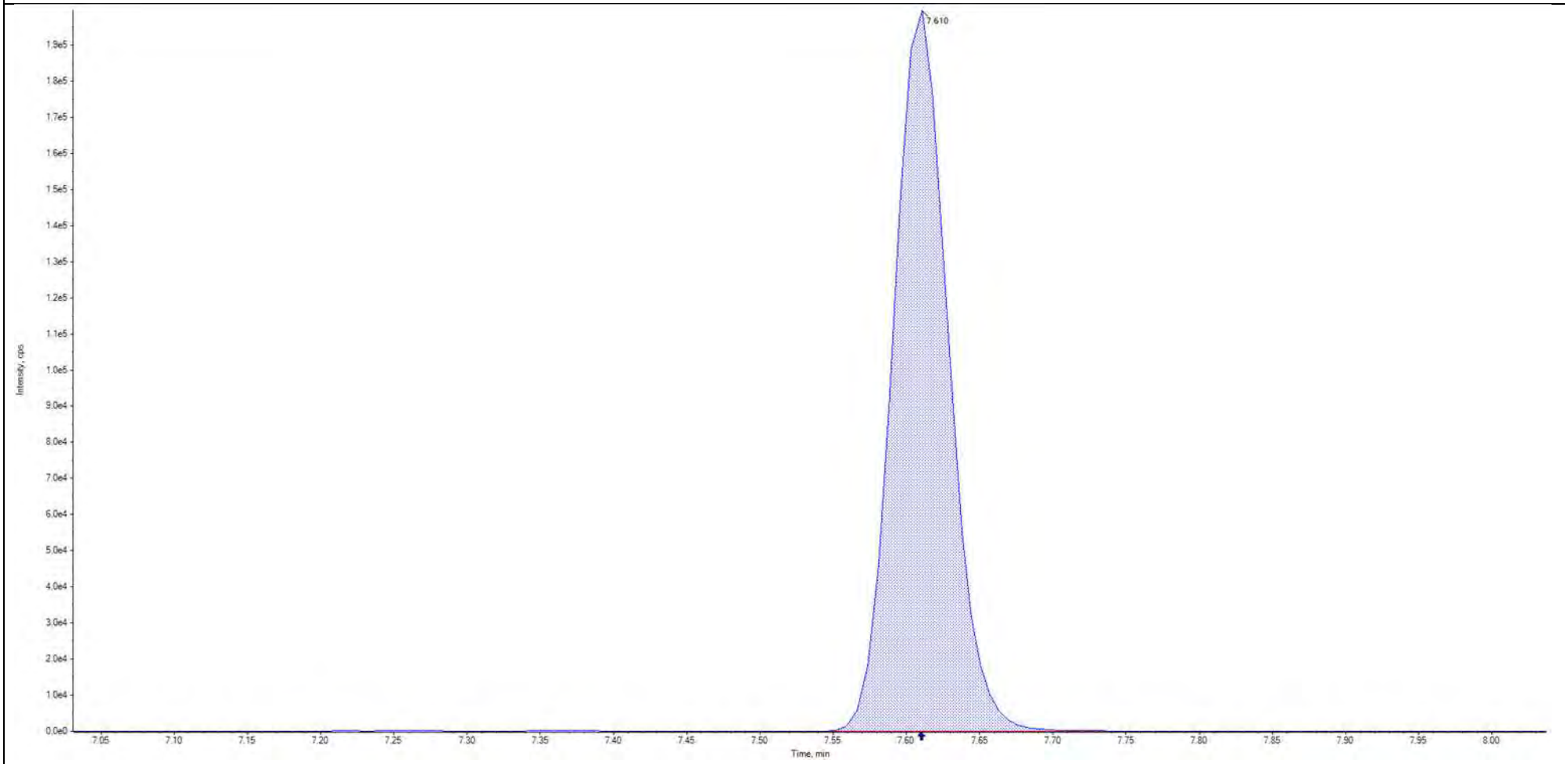

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13C4-PFOS
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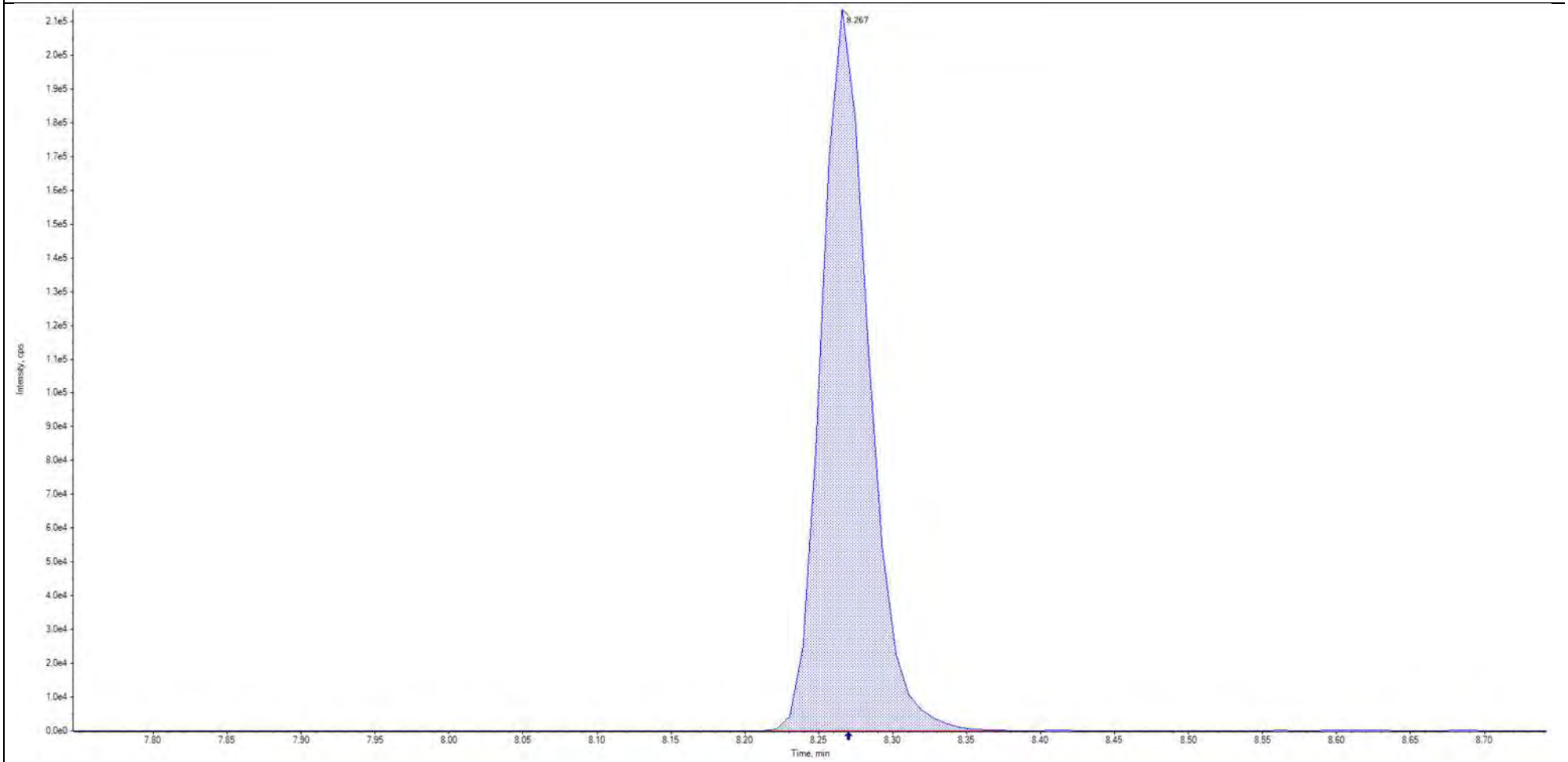

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Generated: 8/14/2024 6:27:11 AM

Method: EPA1633_NIS_CALC.qmethod
Calibration: 240813_1633_ICAL

ID: WG1958909-2,INSTBLANK
Name: SCI05_240813_80.wiff
Date & Time: 2024-08-13T23:45:02
Description: WG1958909
Instrument: Triple Quad 5500+
User: LCMS05:SL

LC/MS-MS Method:EPA_1633.dam

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
1	PFBA	375-22-4	N/A	213.0 / 169.0	N/A		N/A	N/A	N/A	N/A	N/A
2	PFPeA	2706-90-3	N/A	263.0 / 219.0	N/A		N/A	N/A	0.007	N/A	N/A
3	PFPeA_2	2706-90-3	N/A	263.0 / 68.9	N/A		N/A	N/A	0.007	N/A	N/A
4	PFHxA	307-24-4	N/A	313.0 / 269.0	N/A		N/A	N/A	0.072	N/A	N/A
5	PFHxA_2	307-24-4	N/A	313.0 / 119.0	N/A		N/A	N/A	0.072	N/A	N/A
6	PFHpA	375-85-9	N/A	363.1 / 319.0	N/A		N/A	N/A	0.297	N/A	N/A
7	PFHpA_2	375-85-9	N/A	363.1 / 169.0	N/A		N/A	N/A	0.297	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
8	PFOA	335-67-1	N/A	413.1 / 369.1	N/A		N/A	N/A	0.586	N/A	N/A
9	PFOA_2	335-67-1	N/A	413.1 / 169.0	N/A		N/A	N/A	0.586	N/A	N/A
10	PFNA	375-95-1	N/A	462.8 / 418.9	N/A		N/A	N/A	0.313	N/A	N/A
11	PFNA_2	375-95-1	N/A	462.8 / 218.9	N/A		N/A	N/A	0.313	N/A	N/A
12	PFDA	335-76-2	N/A	513.1 / 469.1	N/A		N/A	N/A	0.142	N/A	N/A
13	PFDA_2	335-76-2	N/A	513.1 / 219.0	N/A		N/A	N/A	0.142	N/A	N/A
14	PFUnA	2058-94-8	N/A	563.1 / 519.1	N/A		N/A	N/A	0.194	N/A	N/A
15	PFUnA_2	2058-94-8	N/A	563.1 / 269.0	N/A		N/A	N/A	0.194	N/A	N/A
16	PFDoA	307-55-1	N/A	613.1 / 569.1	N/A		N/A	N/A	0.167	N/A	N/A
17	PFDoA_2	307-55-1	N/A	613.1 / 319.0	N/A		N/A	N/A	0.167	N/A	N/A
18	PFTrDA	72629-94-8	9.49	663.1 / 619.1	6349		0.030	0.256	0.228	Pass	N/A
19	PFTrDA_2	72629-94-8	9.50	663.1 / 169.0	1624	M7	0.034	0.256	0.228	Pass	N/A
20	PFTeDA	376-06-7	9.90	713.1 / 669.1	21668	M4	0.063	0.157	0.137	Pass	N/A
21	PFTeDA_2	376-06-7	9.90	713.1 / 169.0	3400		0.072	0.157	0.137	Pass	N/A
22	PFBS	375-73-5	N/A	299.1 / 80.1	N/A		N/A	N/A	0.396	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
23	PFBS_2	375-73-5	N/A	299.1 / 99.1	N/A		N/A	N/A	0.396	N/A	N/A
24	PFPeS	2706-91-4	N/A	349.1 / 80.1	N/A		N/A	N/A	0.299	N/A	N/A
25	PFPeS_2	2706-91-4	N/A	349.1 / 99.1	N/A		N/A	N/A	0.299	N/A	N/A
26	PFHxS	355-46-4	N/A	399.1 / 80.1	N/A		N/A	N/A	0.315	N/A	N/A
27	PFHxS_2	355-46-4	N/A	399.1 / 99.1	N/A		N/A	N/A	0.315	N/A	N/A
28	PFHpS	375-92-8	N/A	449.1 / 80.1	N/A		N/A	N/A	0.287	N/A	N/A
29	PFHpS_2	375-92-8	N/A	449.1 / 99.1	N/A		N/A	N/A	0.287	N/A	N/A
30	PFOS	1763-23-1	N/A	499.1 / 80.1	N/A		N/A	N/A	0.238	N/A	N/A
31	PFOS_2	1763-23-1	N/A	499.1 / 99.1	N/A		N/A	N/A	0.238	N/A	N/A
32	PFNS	68259-12-1	N/A	549.1 / 80.1	N/A		N/A	N/A	0.301	N/A	N/A
33	PFNS_2	68259-12-1	N/A	549.1 / 99.1	N/A		N/A	N/A	0.301	N/A	N/A
34	PFDS	335-77-3	N/A	599.1 / 80.1	N/A		N/A	N/A	0.275	N/A	N/A
35	PFDS_2	335-77-3	N/A	599.1 / 99.1	N/A		N/A	N/A	0.275	N/A	N/A
36	PFDoS	79780-39-5	N/A	699.2 / 80.1	N/A		N/A	N/A	0.274	N/A	N/A
37	PFDoS_2	79780-39-5	N/A	699.2 / 99.1	N/A		N/A	N/A	0.274	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
38	4:2FTS	757124-72-4	5.13	327.1 / 307.1	21946		0.189	0.600	0.516	Pass	N/A
39	4:2FTS_2	757124-72-4	5.13	327.1 / 81.1	13162		0.212	0.600	0.516	Pass	N/A
40	6:2FTS	27619-97-2	N/A	427.2 / 407.2	N/A		N/A	N/A	0.565	N/A	N/A
41	6:2FTS_2	27619-97-2	N/A	427.2 / 81.1	N/A		N/A	N/A	0.565	N/A	N/A
42	8:2FTS	39108-34-4	N/A	527.2 / 507.2	N/A		N/A	N/A	0.662	N/A	N/A
43	8:2FTS_2	39108-34-4	N/A	527.2 / 81.1	N/A		N/A	N/A	0.662	N/A	N/A
44	PFOSA	754-91-6	N/A	498.1 / 78.1	N/A		N/A	N/A	0.025	N/A	N/A
45	PFOSA_2	754-91-6	N/A	498.1 / 478.0	N/A		N/A	N/A	0.025	N/A	N/A
46	NMeFOSA	31506-32-8	N/A	512.2 / 219.0	N/A		N/A	N/A	1.551	N/A	N/A
47	NMeFOSA_2	31506-32-8	N/A	512.2 / 169.0	N/A		N/A	N/A	1.551	N/A	N/A
48	NEtFOSA	4151-50-2	N/A	526.2 / 219.0	N/A		N/A	N/A	1.285	N/A	N/A
49	NEtFOSA_2	4151-50-2	N/A	526.2 / 169.0	N/A		N/A	N/A	1.285	N/A	N/A
50	NMeFOSAA	2355-31-9	8.22	570.2 / 419.1	9989	M4	0.122	0.612	0.700	Pass	N/A
51	NMeFOSAA_2	2355-31-9	8.22	570.2 / 483.0	6119	M7	0.117	0.612	0.700	Pass	N/A
52	NEtFOSAA	2991-50-6	8.36	584.2 / 419.1	12334		0.188	0.476	0.487	Pass	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
53	NEtFOSAA_2	2991-50-6	8.37	584.2 / 526.2	5875	M7	0.195	0.476	0.487	Pass	N/A
54	NMeFOSE	24448-09-7	10.07	616.1 / 58.9	41408	M5	0.379	N/A	N/A	N/A	N/A
55	NEtFOSE	1691-99-2	10.27	630.0 / 58.9	75268	M5	0.371	N/A	N/A	N/A	N/A
56	HFPO-DA	13252-13-6	N/A	285.0 / 169.0	N/A		N/A	N/A	0.464	N/A	N/A
57	HFPO-DA_2	13252-13-6	N/A	285.0 / 184.9	N/A		N/A	N/A	0.464	N/A	N/A
58	ADONA	919005-14-4	N/A	377.1 / 251.0	N/A		N/A	N/A	0.634	N/A	N/A
59	ADONA_2	919005-14-4	N/A	377.1 / 84.8	N/A		N/A	N/A	0.634	N/A	N/A
60	9Cl-PF3ONS	756426-58-1	N/A	530.8 / 351.1	N/A		N/A	N/A	0.322	N/A	N/A
61	9Cl-PF3ONS_2	756426-58-1	N/A	532.8 / 353.0	N/A		N/A	N/A	0.322	N/A	N/A
62	11Cl-PF3OUdS	763051-92-9	N/A	630.9 / 451.0	N/A		N/A	N/A	0.331	N/A	N/A
63	11Cl-PF3OUdS_2	763051-92-9	N/A	632.9 / 452.9	N/A		N/A	N/A	0.331	N/A	N/A
64	3:3FTCA	356-02-5	N/A	241.1 / 177.1	N/A		N/A	N/A	1.074	N/A	N/A
65	3:3FTCA_2	356-02-5	N/A	241.1 / 117.0	N/A		N/A	N/A	1.074	N/A	N/A
66	5:3FTCA	914637-49-3	7.16	341.1 / 237.1	12241		0.143	0.711	0.953	Pass	N/A
67	5:3FTCA_2	914637-49-3	7.15	341.1 / 217.0	8706	M7	0.108	0.711	0.953	Pass	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
68	7:3FTCA	812-70-4	8.21	441.1 / 316.9	111677		1.173	1.795	1.558	Pass	N/A
69	7:3FTCA_2	812-70-4	8.20	441.1 / 337.1	200446	M7	1.451	1.795	1.558	Pass	N/A
70	PFEESA	113507-82-7	N/A	315.1 / 135.0	N/A		N/A	N/A	0.087	N/A	N/A
71	PFEESA_2	113507-82-7	N/A	315.1 / 82.9	N/A		N/A	N/A	0.087	N/A	N/A
72	PFMPA	377-73-1	N/A	229.0 / 85.0	N/A		N/A	N/A	N/A	N/A	N/A
73	PFMBA	863090-89-5	N/A	279.0 / 85.0	N/A		N/A	N/A	N/A	N/A	N/A
74	NFDHA	151772-58-6	N/A	295.0 / 201.0	N/A		N/A	N/A	0.910	N/A	N/A
75	NFDHA_2	151772-58-6	N/A	295.0 / 84.9	N/A		N/A	N/A	0.910	N/A	N/A
76	TDCA	516-50-7	N/A	499.1 / 124.1	N/A		N/A	N/A	40.716	N/A	N/A
77	TDCA_2	516-50-7	N/A	499.1 / 79.9	N/A		N/A	N/A	40.716	N/A	N/A
78	13C2D4-4:2FTS	Surr	5.12	333.2 / 312.1	877243		5.051	N/A	N/A	N/A	N/A
79	13C2-PFOA	Surr	7.49	415.0 / 370.0	3166284		2.661	N/A	N/A	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C4-PFBA	EIS	2.89	217.0 / 172.0	2447124		10.262	NA	NA	NA	102.6

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C5-PFPeA	EIS	4.64	268.0 / 223.0	1615830		5.645	NA	NA	NA	112.9
	13C5-PFHxA	EIS	5.33	318.0 / 273.0	966894		2.571	NA	NA	NA	102.9
	13C4-PFHpA	EIS	6.24	367.0 / 322.0	973772		2.587	NA	NA	NA	103.5
	13C8-PFOA	EIS	7.49	421.0 / 376.0	1433742		2.668	NA	NA	NA	106.7
	13C9-PFNA	EIS	7.94	472.0 / 427.0	704347		1.334	NA	NA	NA	106.8
	13C6-PFDA	EIS	8.17	519.0 / 474.0	641968		1.230	NA	NA	NA	98.4
	13C7-PFUnA	EIS	8.46	570.0 / 525.0	540761		1.280	NA	NA	NA	102.4

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C2-PFDoA	EIS	8.89	615.1 / 570.0	347084		1.263	NA	NA	NA	101.0
	13C2-PFTeDA	EIS	9.90	715.1 / 670.1	344626		1.155	NA	NA	NA	92.4
	13C3-PFBS	EIS	5.31	302.1 / 80.1	786899		2.432	NA	NA	NA	104.4
	13C3-PFHxS	EIS	7.61	402.1 / 80.1	629576		2.450	NA	NA	NA	103.4
	13C8-PFOS	EIS	8.26	507.1 / 80.1	684125		2.478	NA	NA	NA	103.5
	13C2-4:2FTS	EIS	5.13	329.1 / 81.1	277969		4.814	NA	NA	NA	102.6
	13C2-6:2FTS	EIS	7.08	429.2 / 81.1	192934		4.559	NA	NA	NA	95.9
	13C2-8:2FTS	EIS	8.06	529.2 / 81.1	322603		5.209	NA	NA	NA	108.5

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C8-PFOSA	EIS	9.54	506.1 / 78.1	962182		2.622	NA	NA	NA	104.9
	d3-NMeFOSA	EIS	10.15	515.2 / 219.0	156834		2.539	NA	NA	NA	101.6
	d5-NEtFOSA	EIS	10.36	531.2 / 219.0	149880		2.484	NA	NA	NA	99.3
	d3-NMeFOSAA	EIS	8.21	573.2 / 419.1	624650		4.473	NA	NA	NA	89.5
	d5-NEtFOSAA	EIS	8.35	589.3 / 419.1	351423		4.788	NA	NA	NA	95.8
	d7-NMeFOSE	EIS	10.06	623.2 / 58.9	1105881		23.181	NA	NA	NA	92.7
	d9-NEtFOSE	EIS	10.25	639.2 / 58.9	1729004		24.582	NA	NA	NA	98.3

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C3-HFPO-DA	EIS	5.59	287.0 / 169.0	2621805		10.521	NA	NA	NA	105.2
	13C3-PFBA	NIS	2.89	216.0 / 172.0	1043142		4.879	NA	NA	NA	97.6
	13C2-PFHxA	NIS	5.33	315.0 / 270.0	1116476		2.280	NA	NA	NA	91.2
	13C4-PFOA	NIS	7.49	417.0 / 372.0	703013		2.246	NA	NA	NA	89.8
	13C5-PFNA	NIS	7.94	468.0 / 423.0	643048		1.174	NA	NA	NA	93.9
	13C2-PFDA	NIS	8.16	515.1 / 470.1	613358		1.197	NA	NA	NA	95.8
	18O2-PFHxS	NIS	7.60	403.1 / 84.1	522354		2.230	NA	NA	NA	94.1
	13C4-PFOS	NIS	8.26	503.1 / 80.1	488274		2.319	NA	NA	NA	96.8

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	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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PFBA
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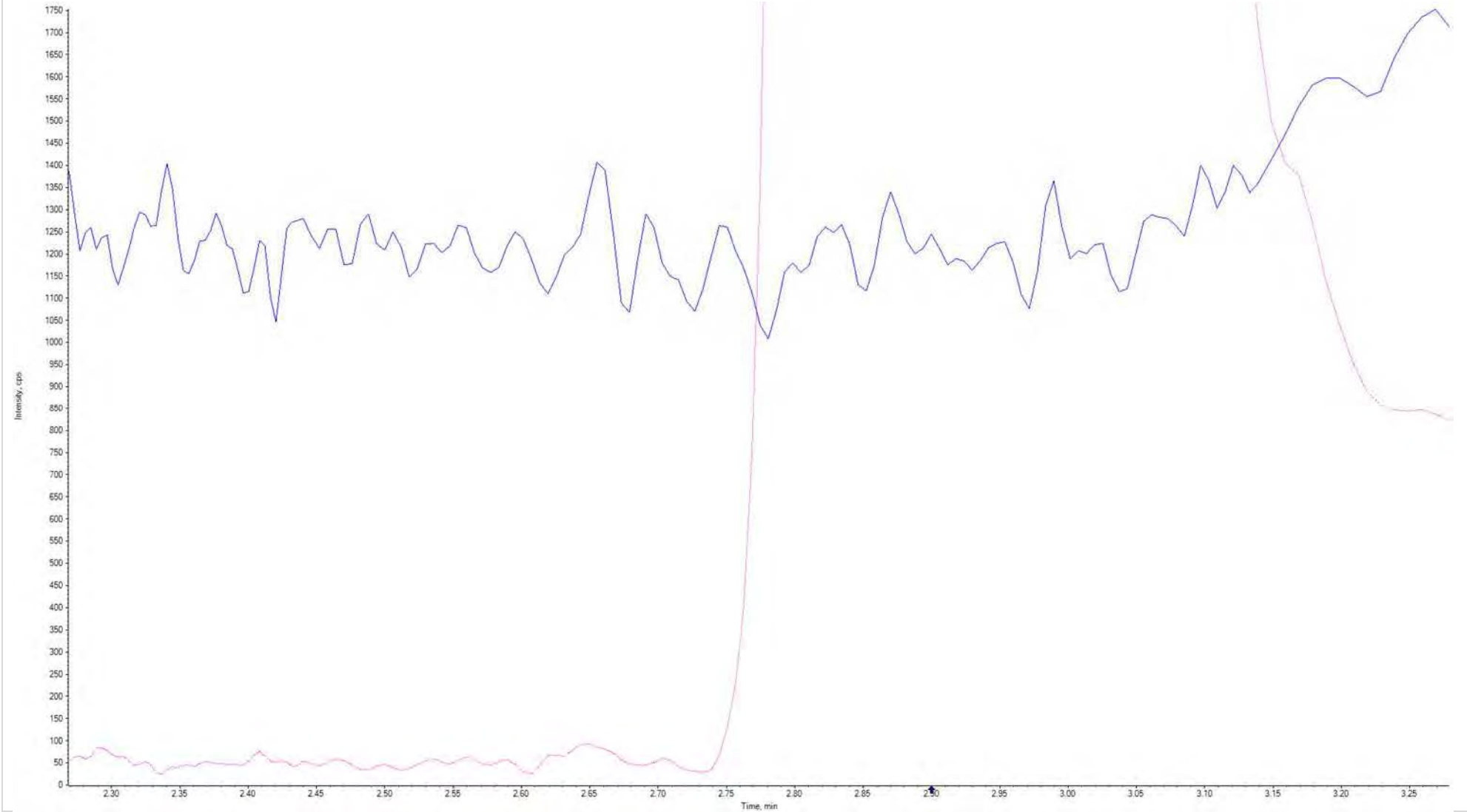

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PFPeA
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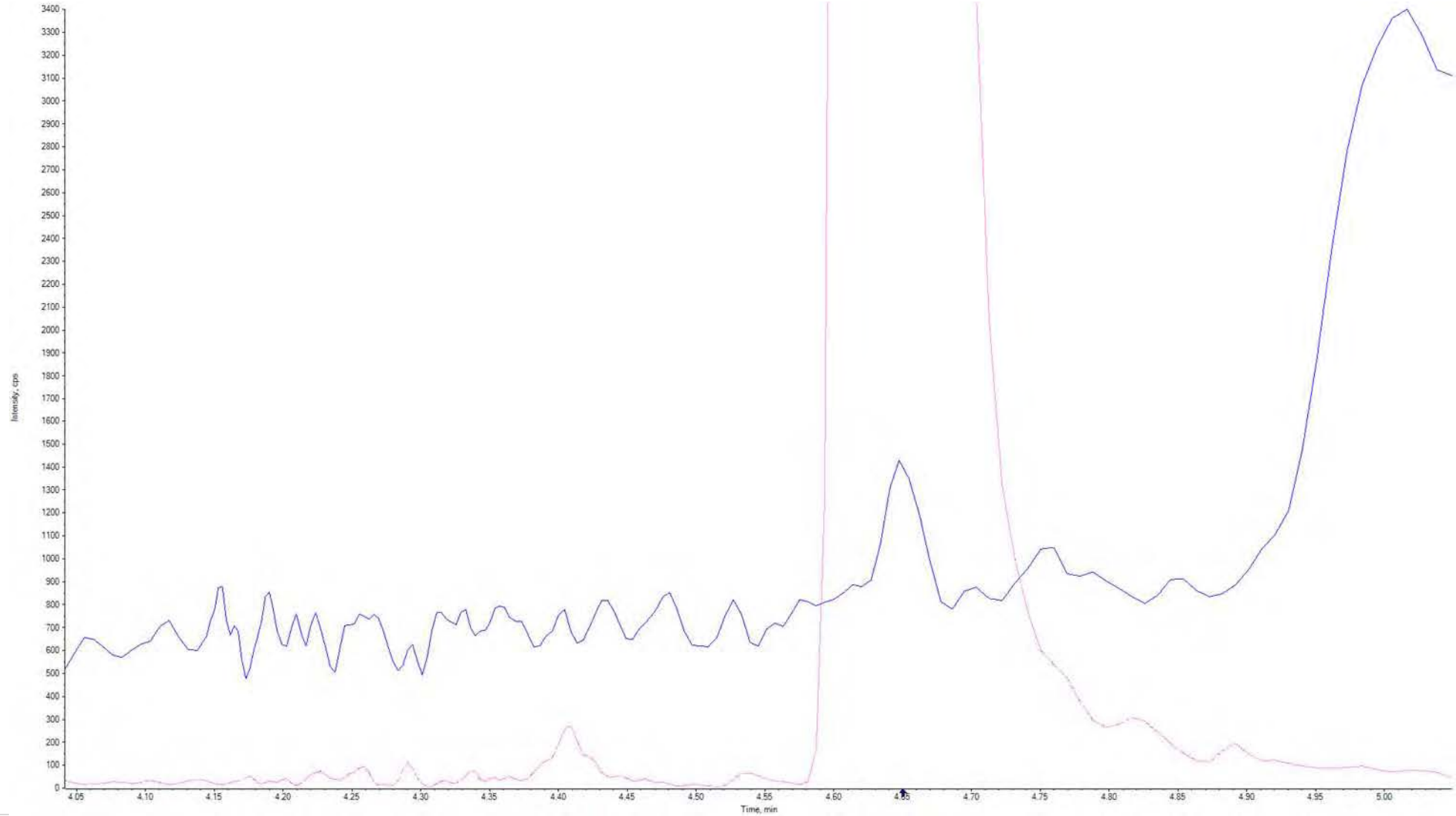

PFPeA_2
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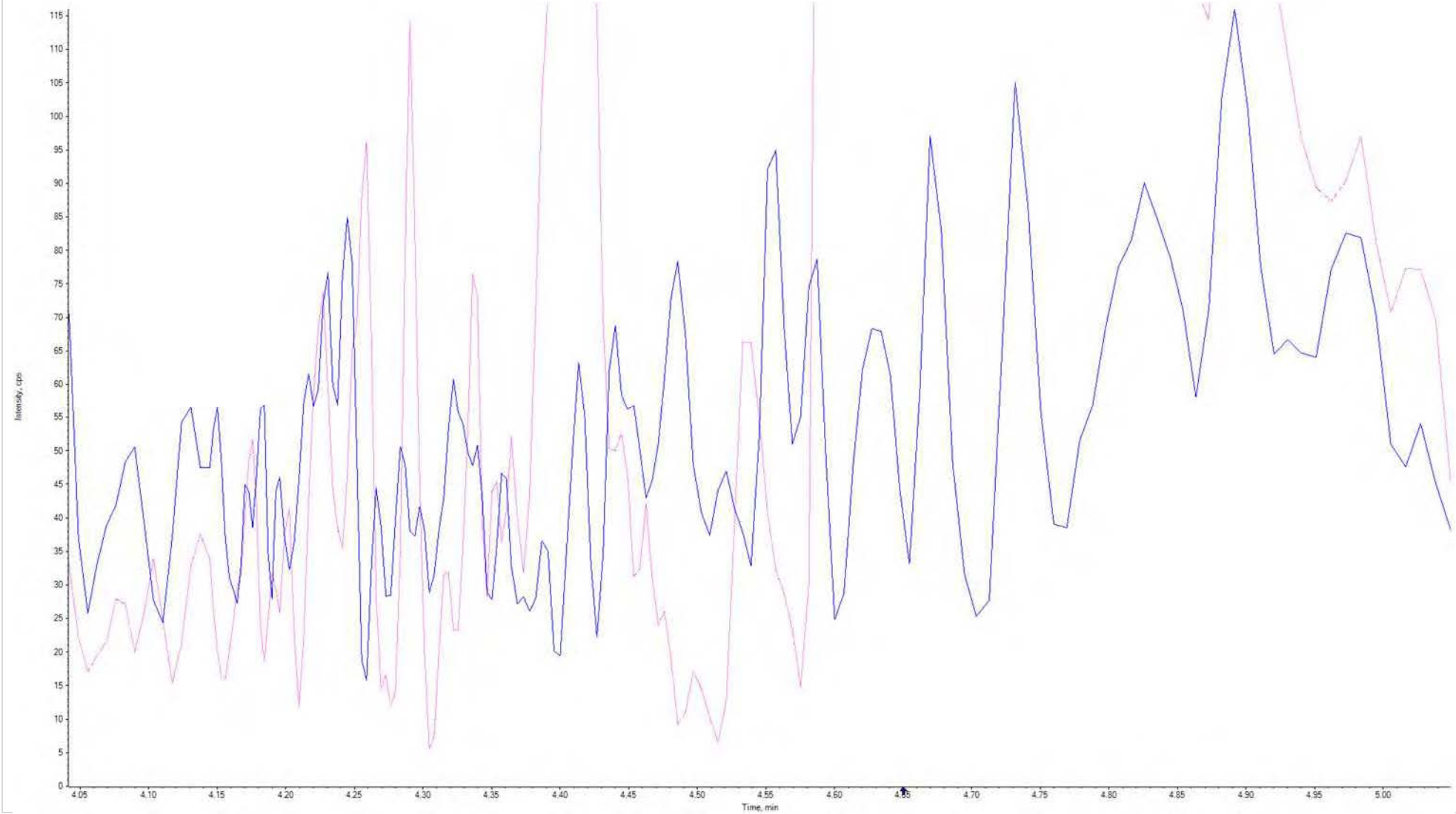
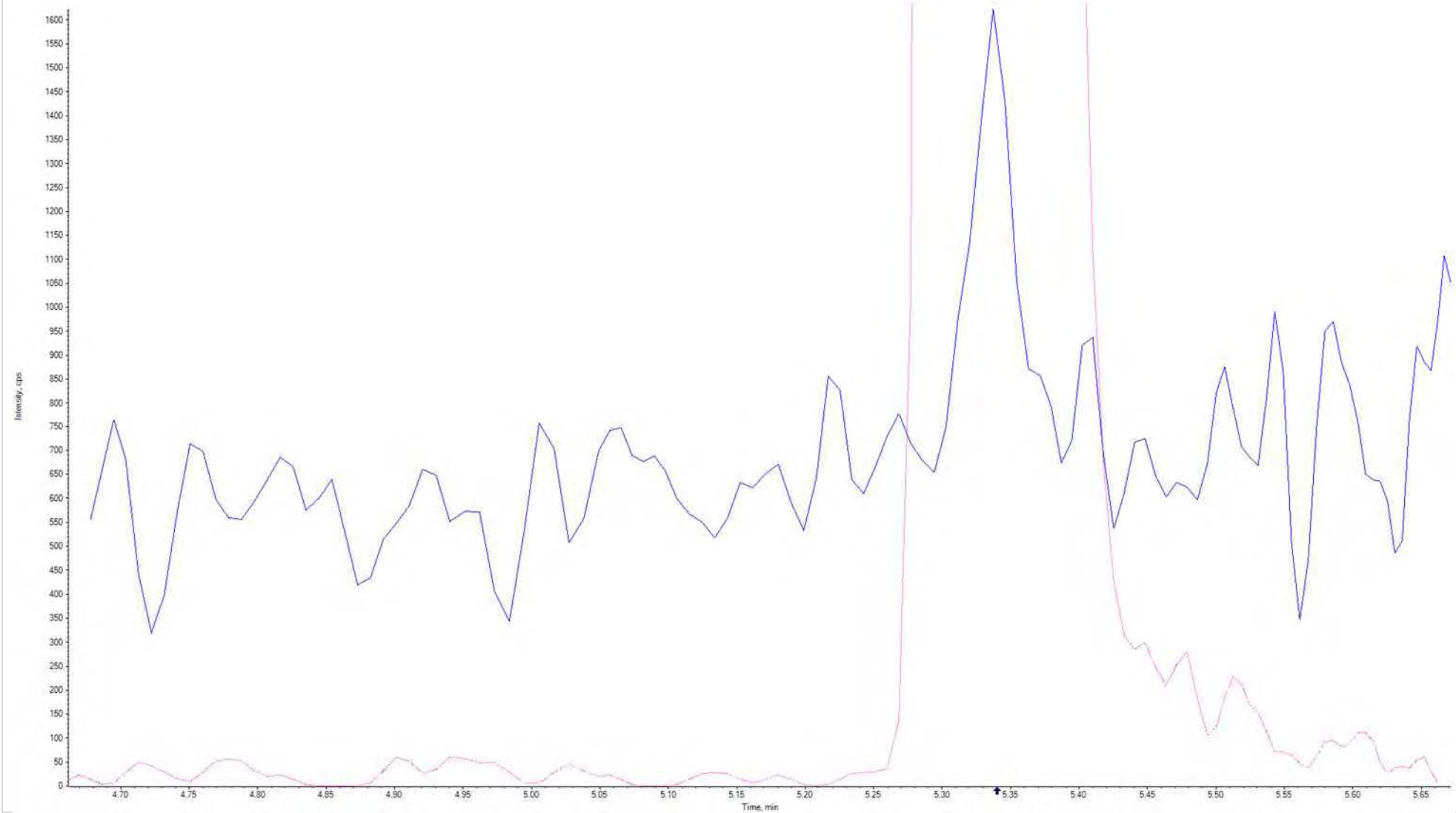


PFHxA
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



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PFHxA_2
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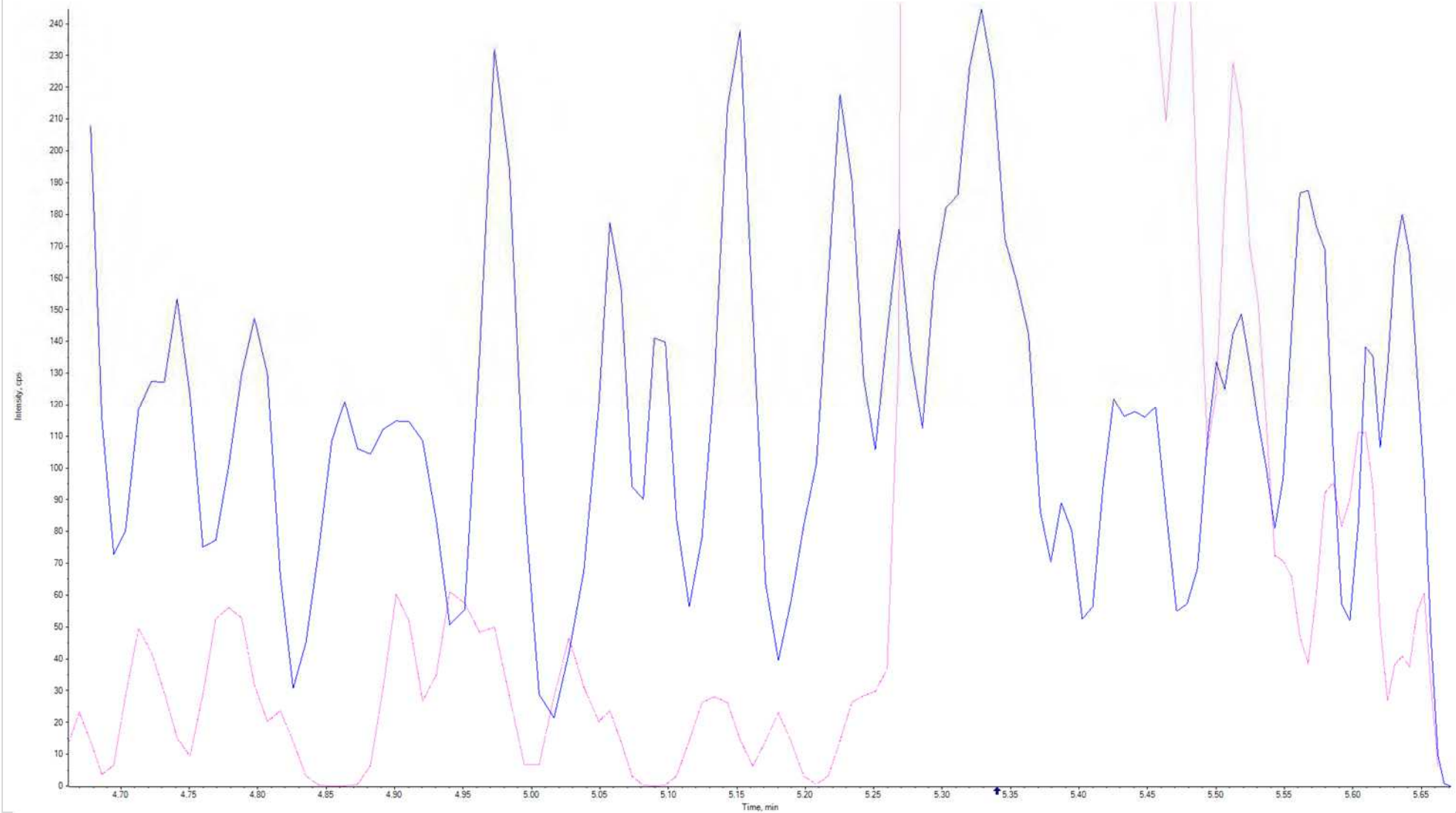

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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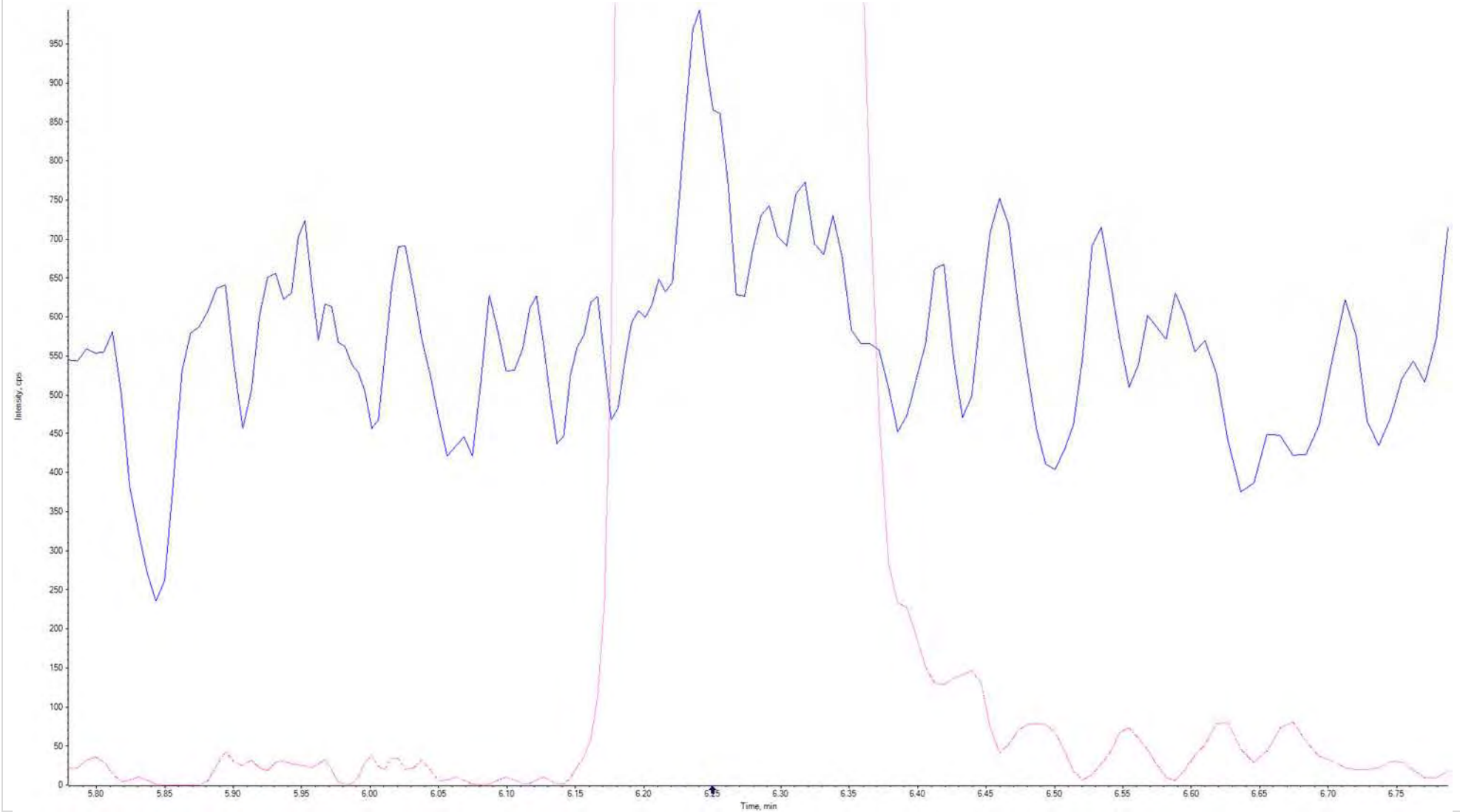
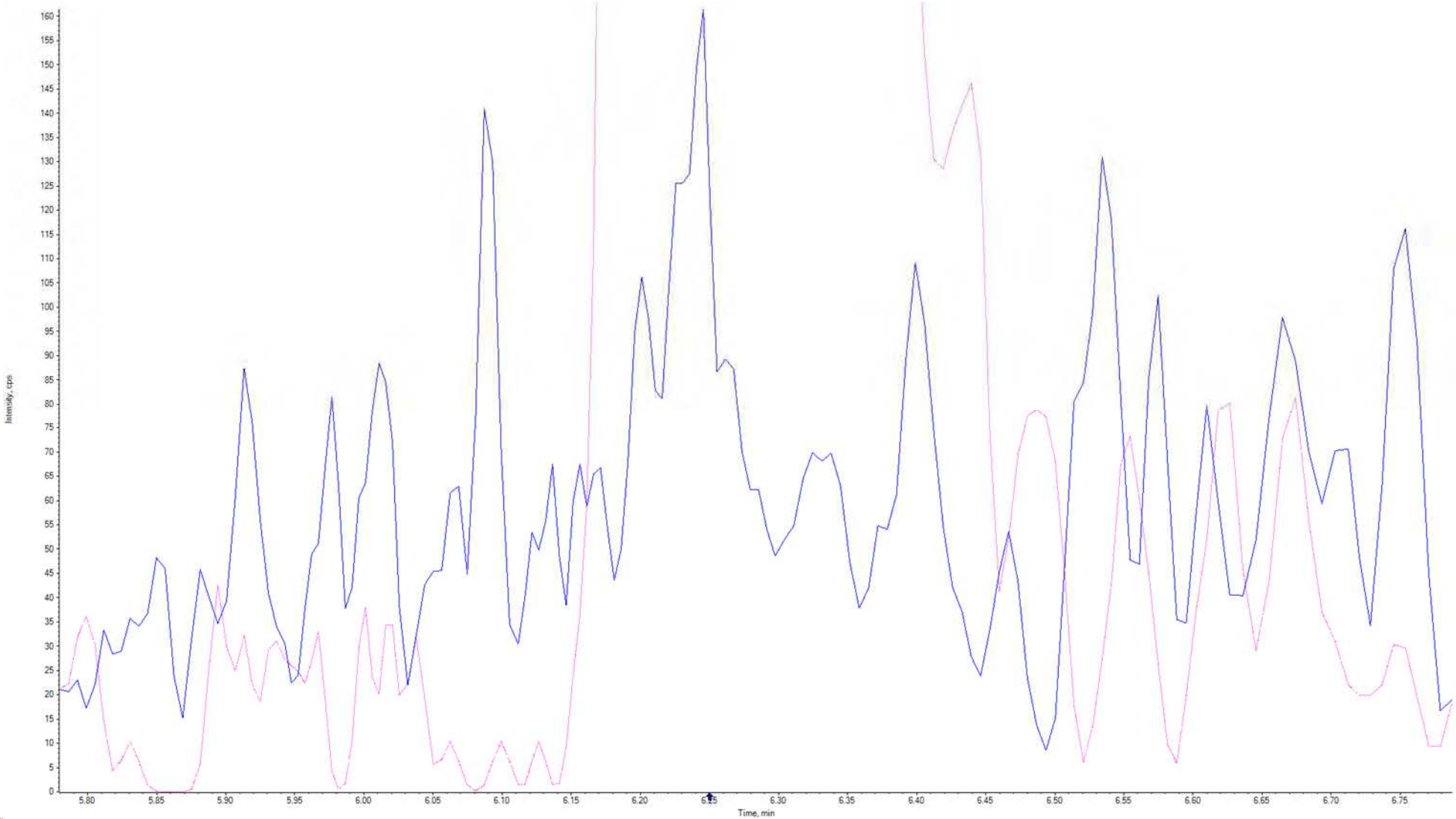
Generated: 8/14/2024 9:40:32 AM

PFHpA
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFHpA_2
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



PFOA
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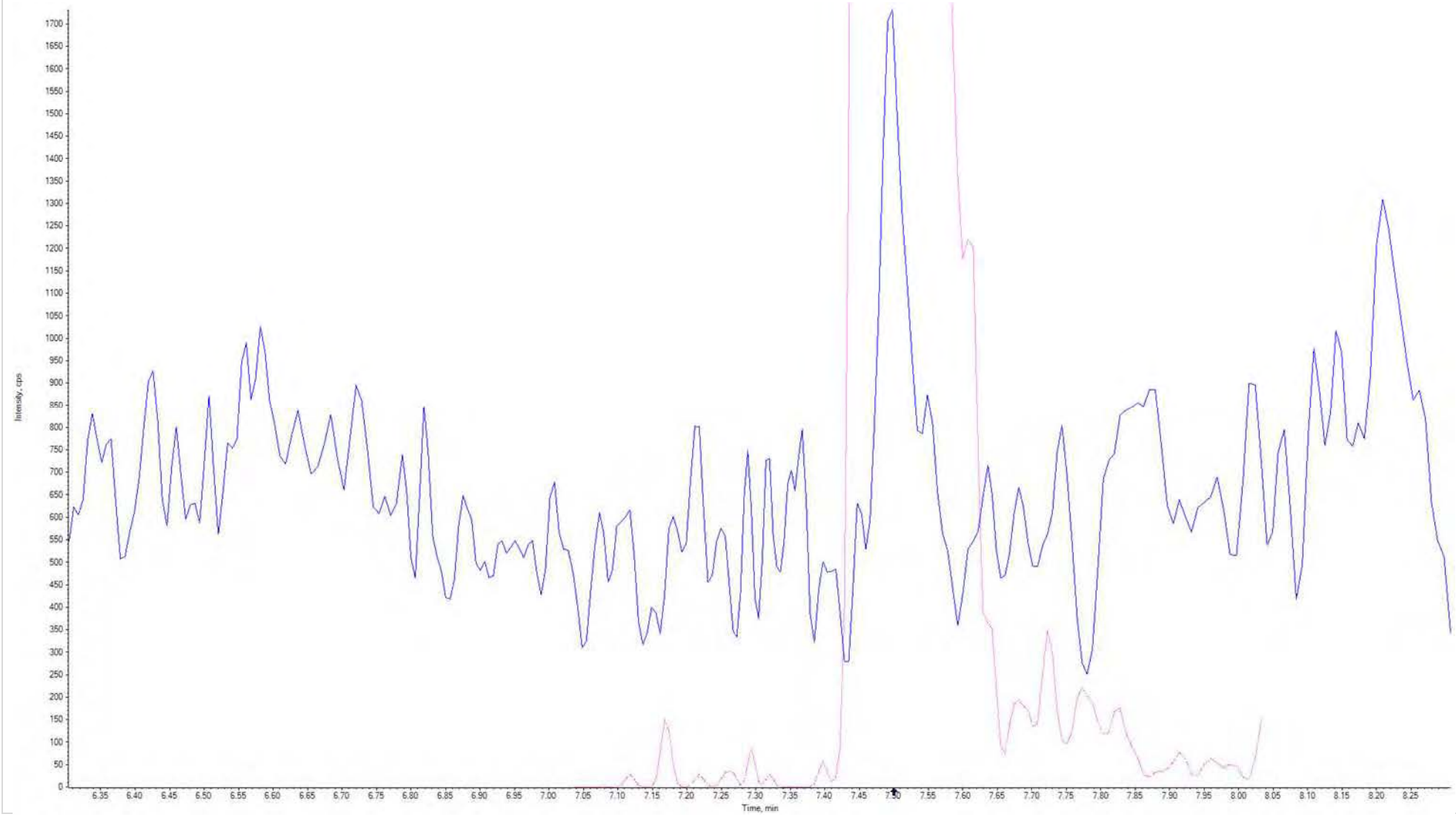
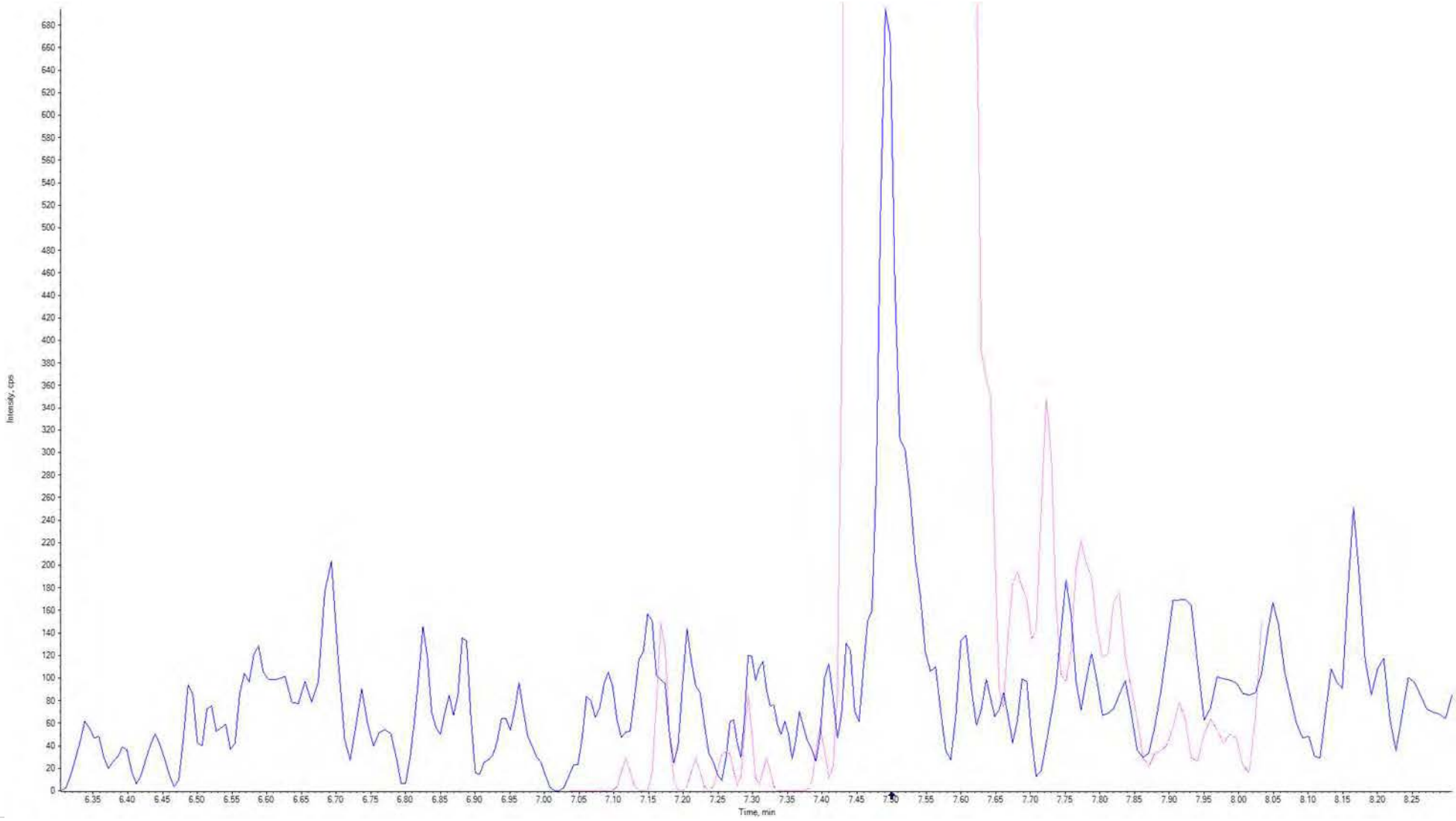


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFOA_2
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFNA
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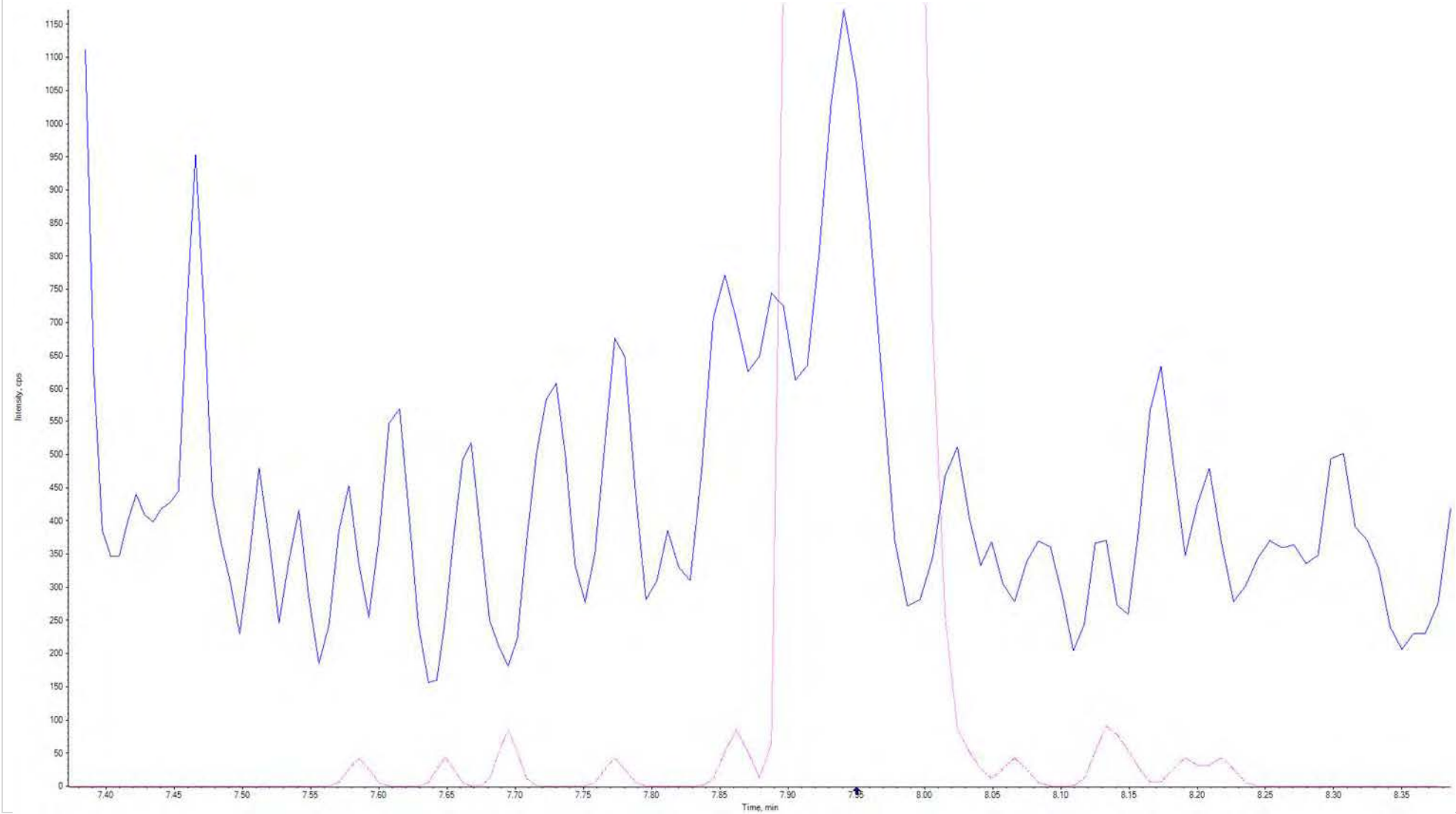
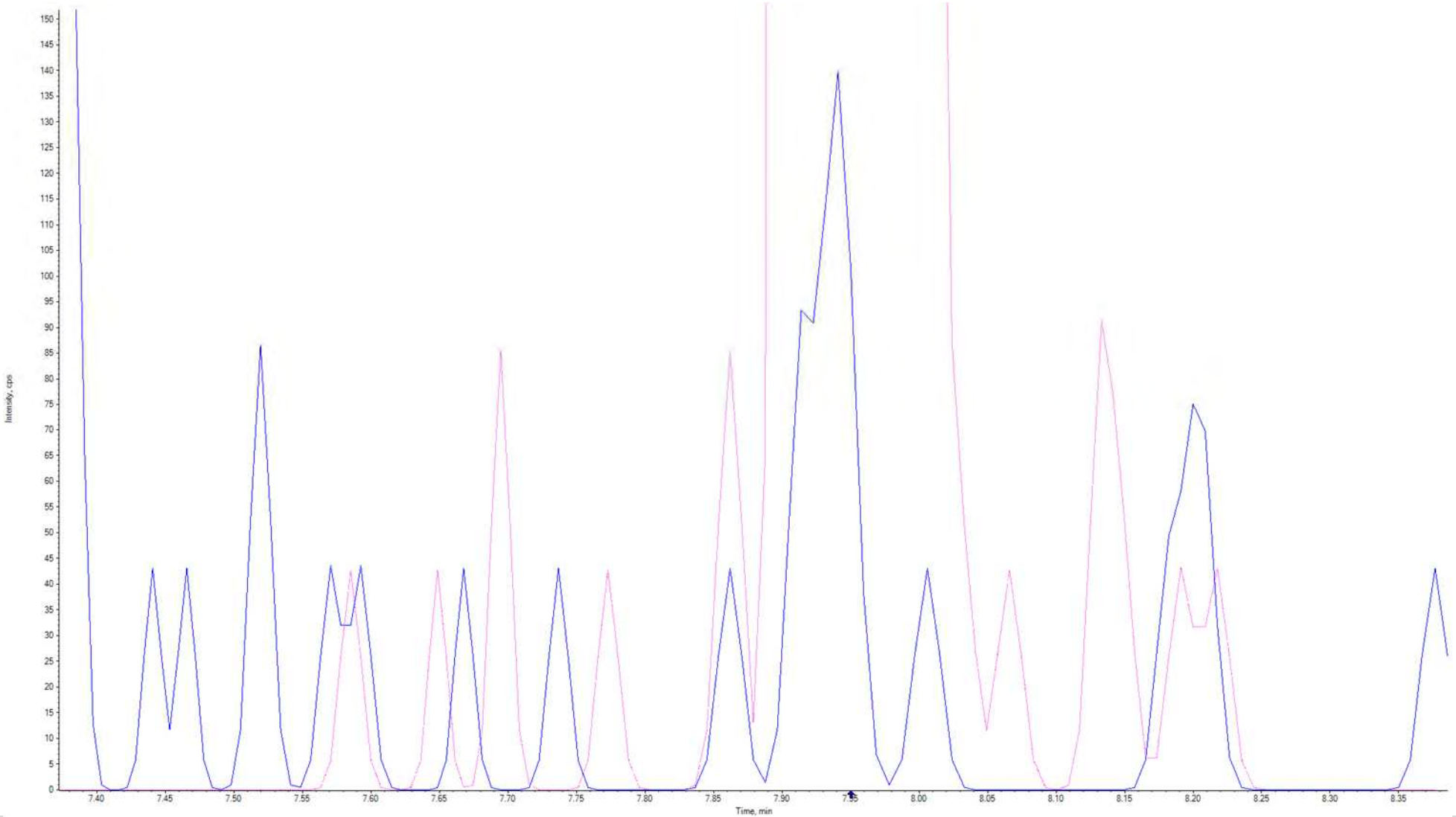


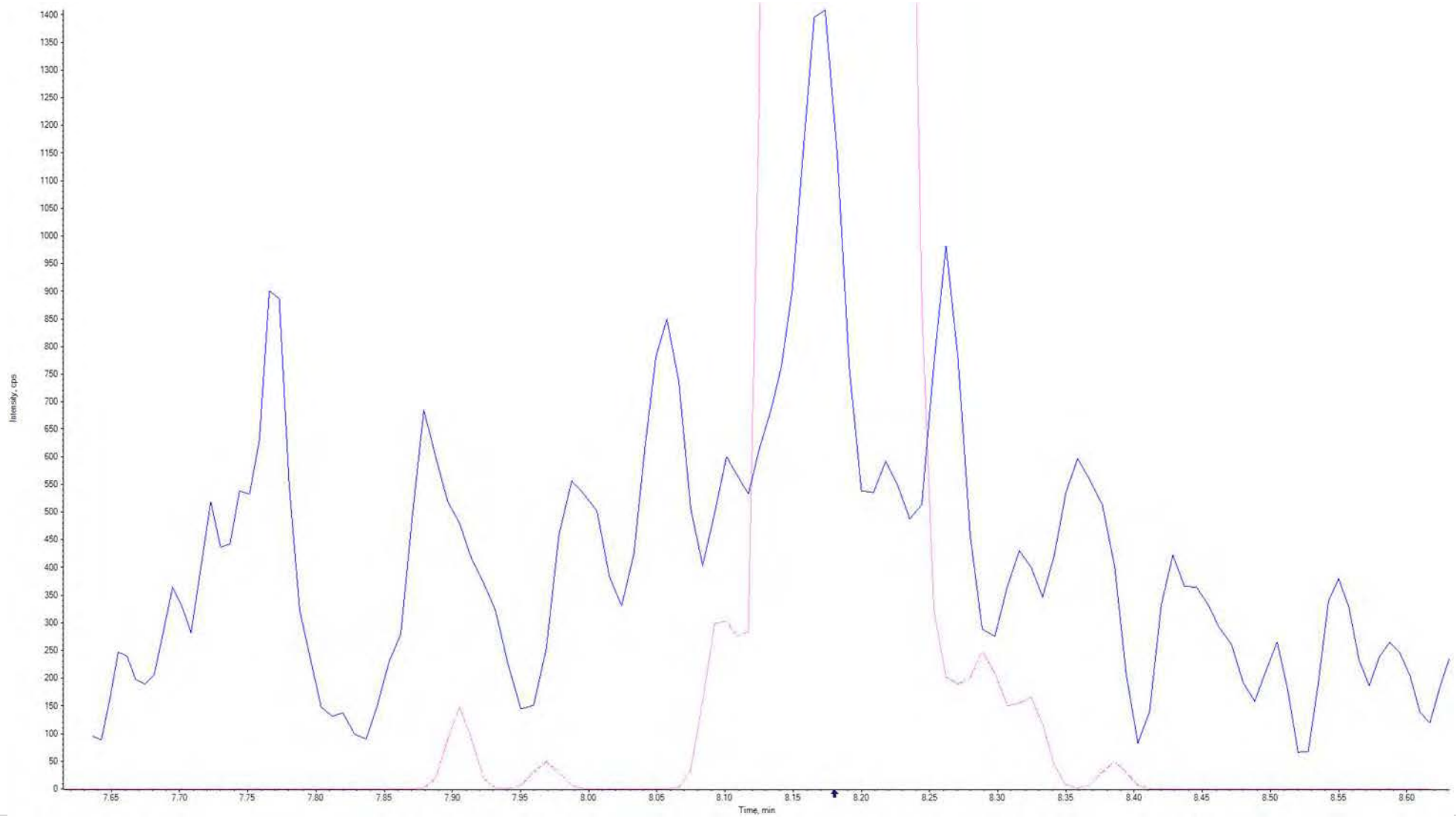
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFNA_2
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



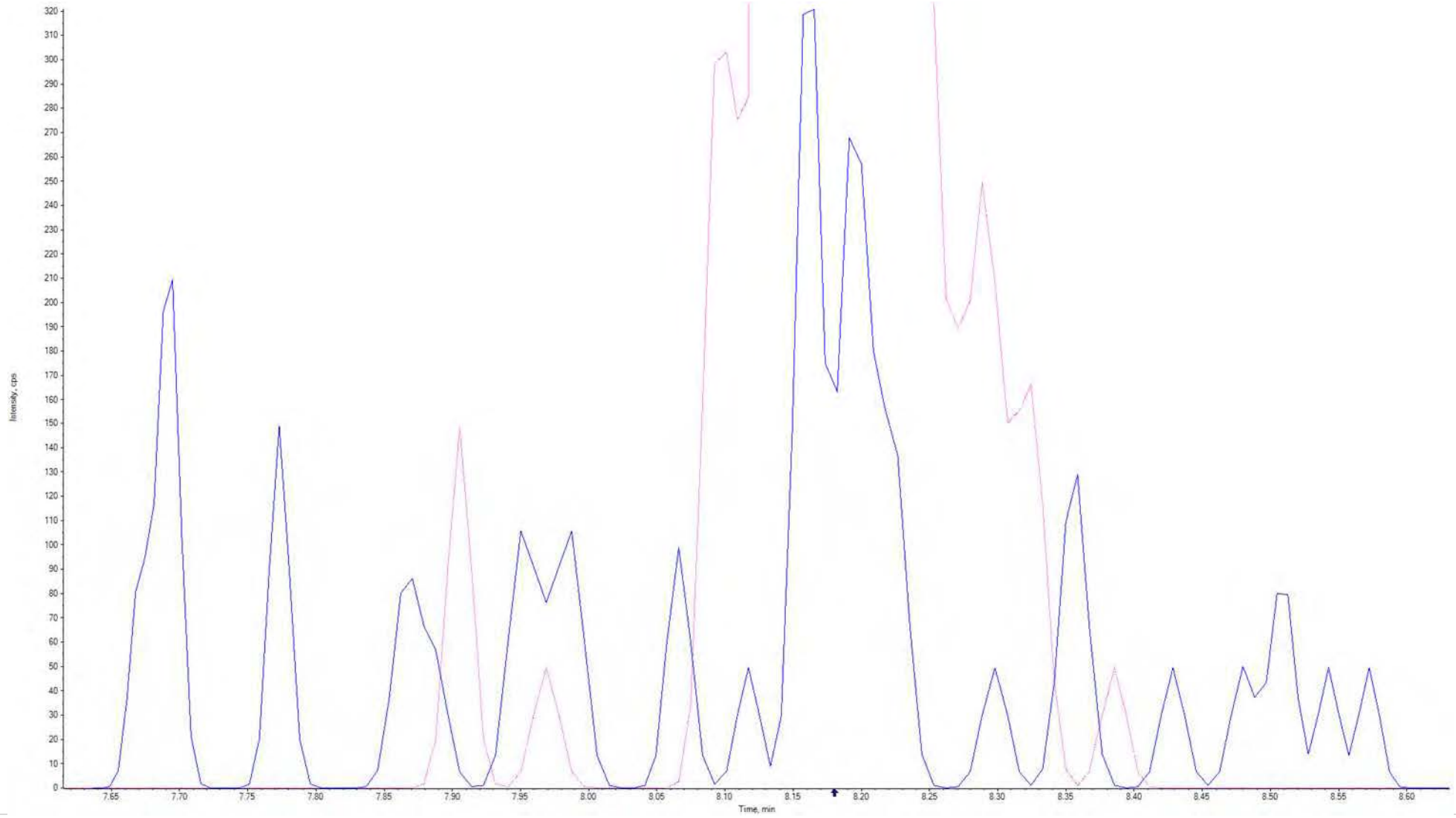
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFDA
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



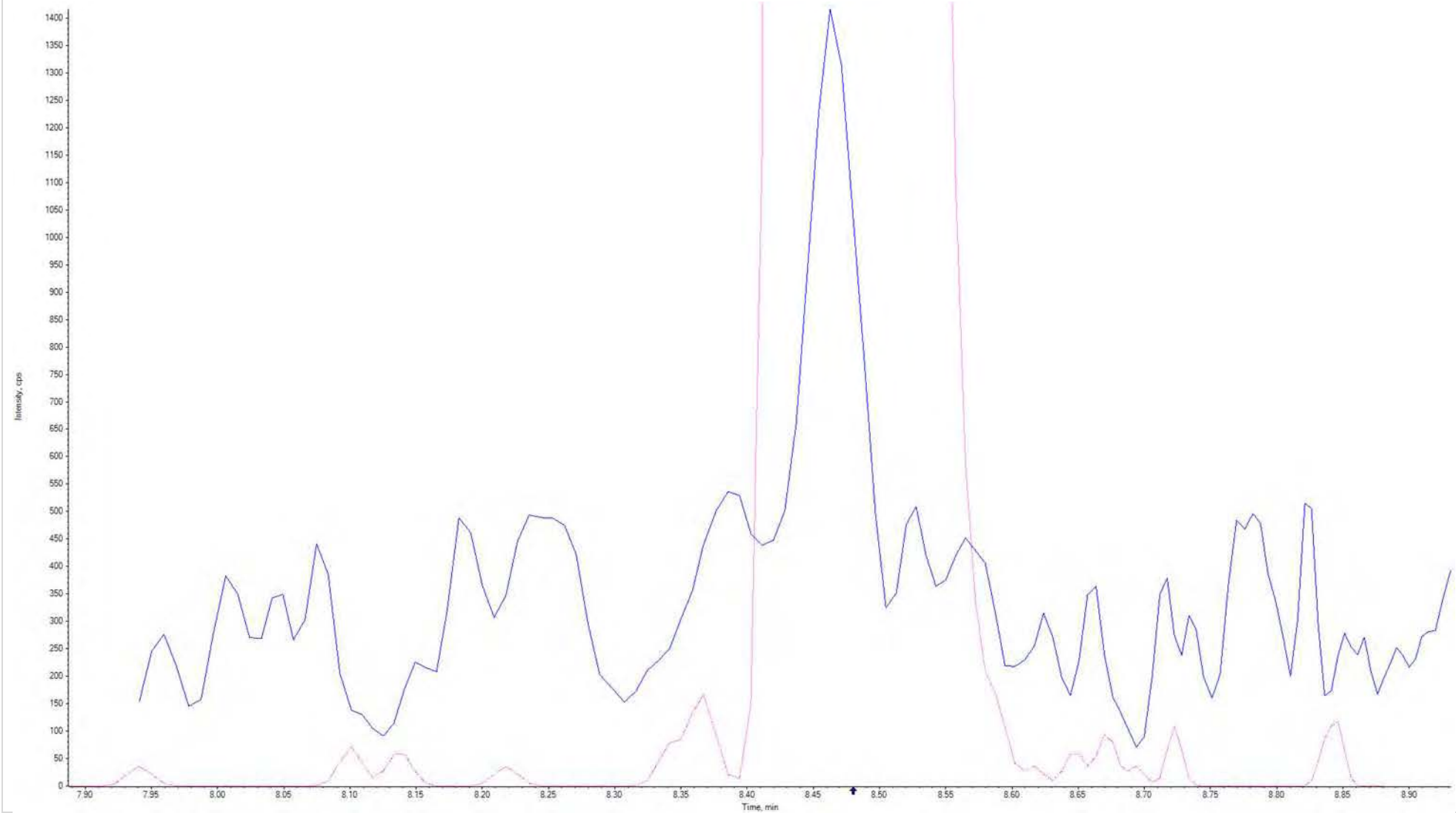
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFDA_2
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



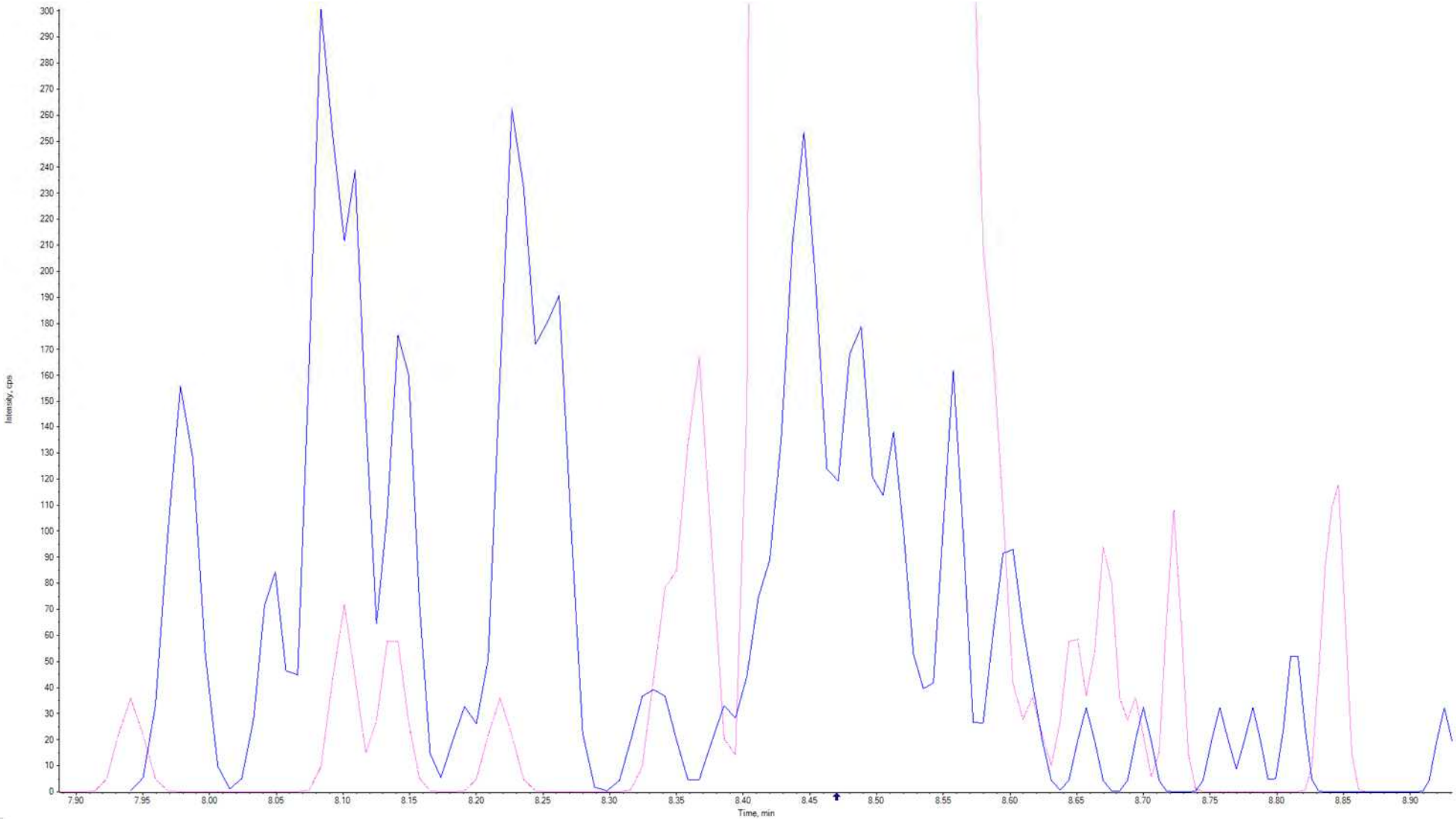
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFUnA
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



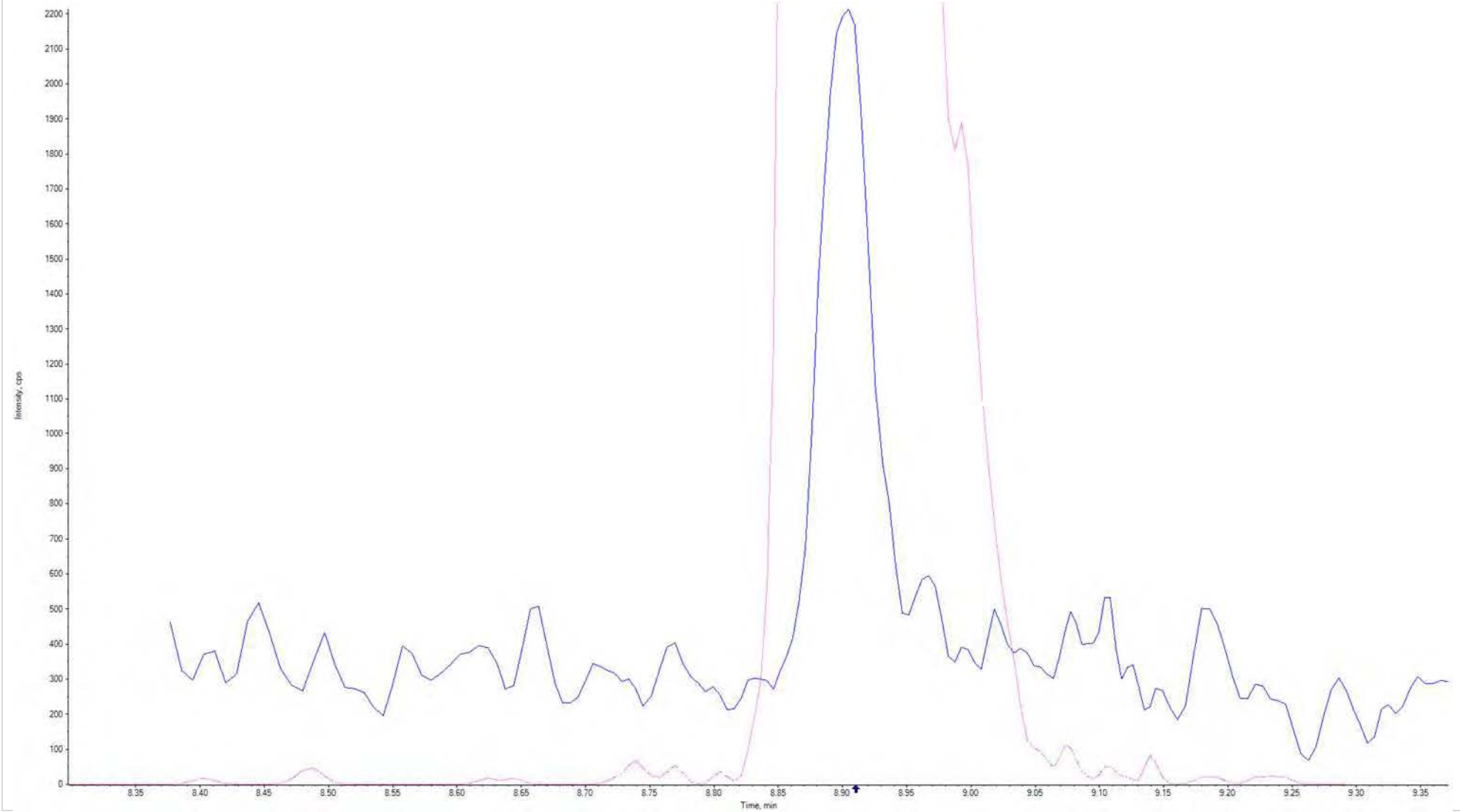
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFUnA_2
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



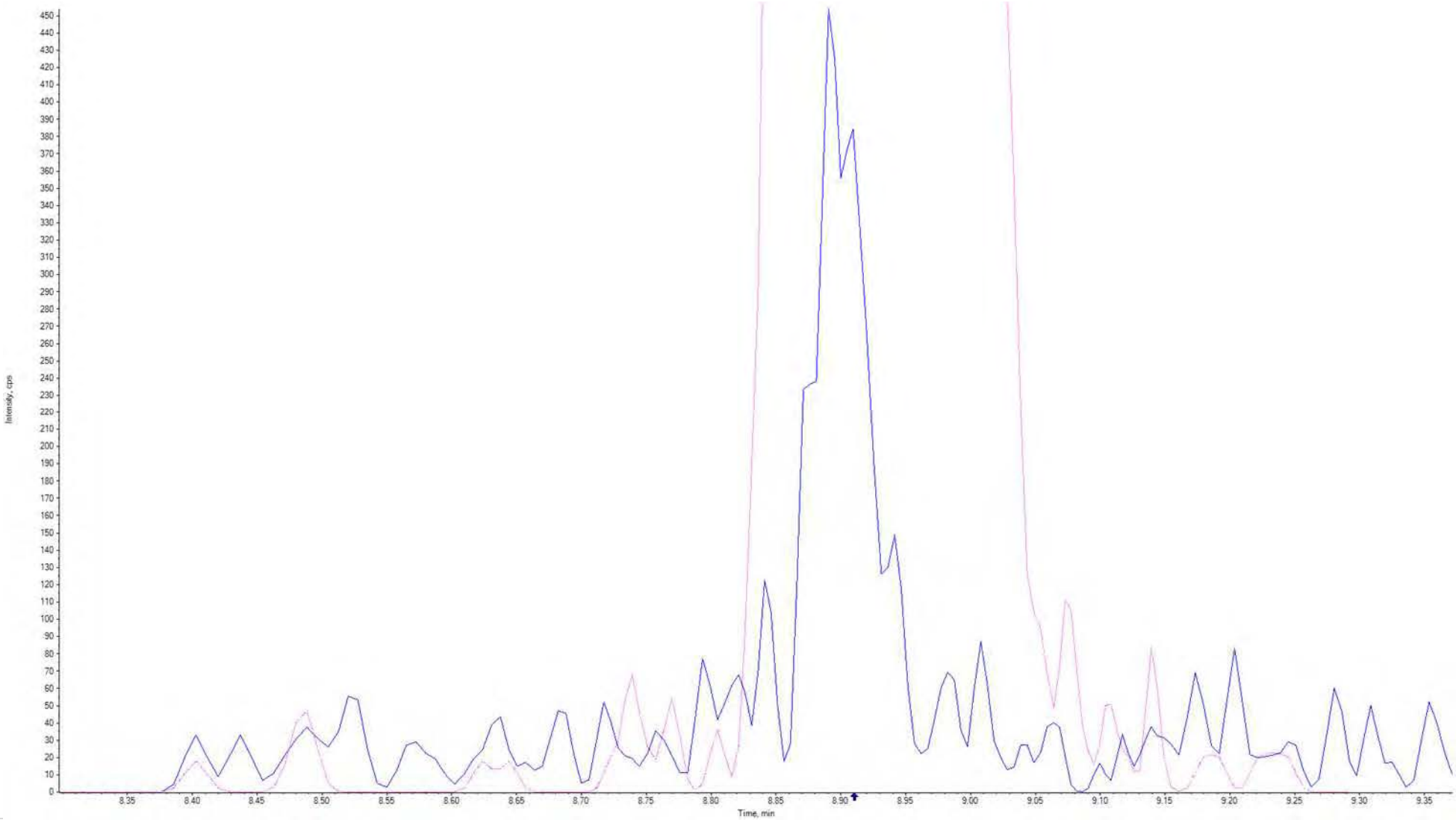
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFDoA
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



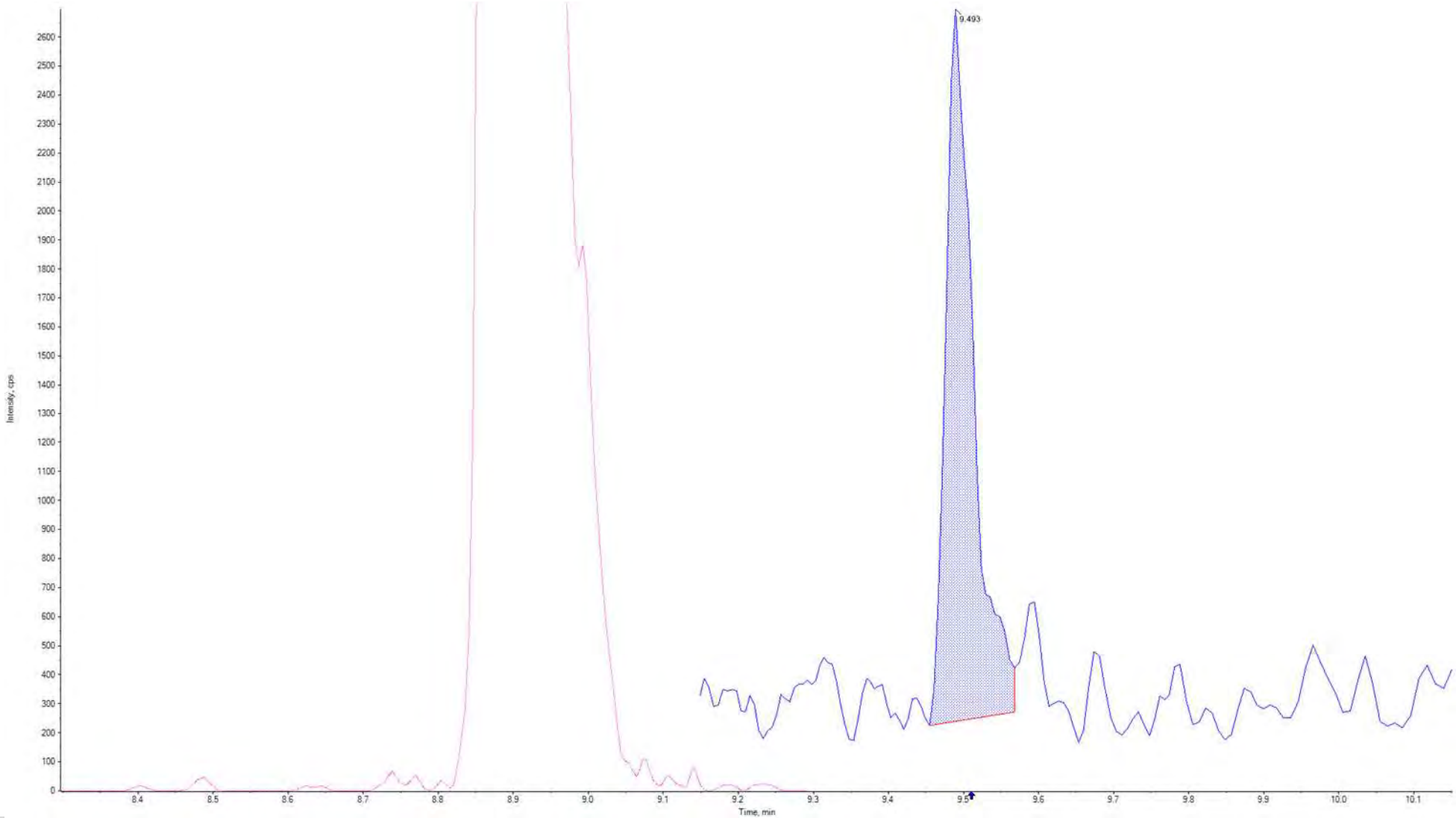
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFDoA_2
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



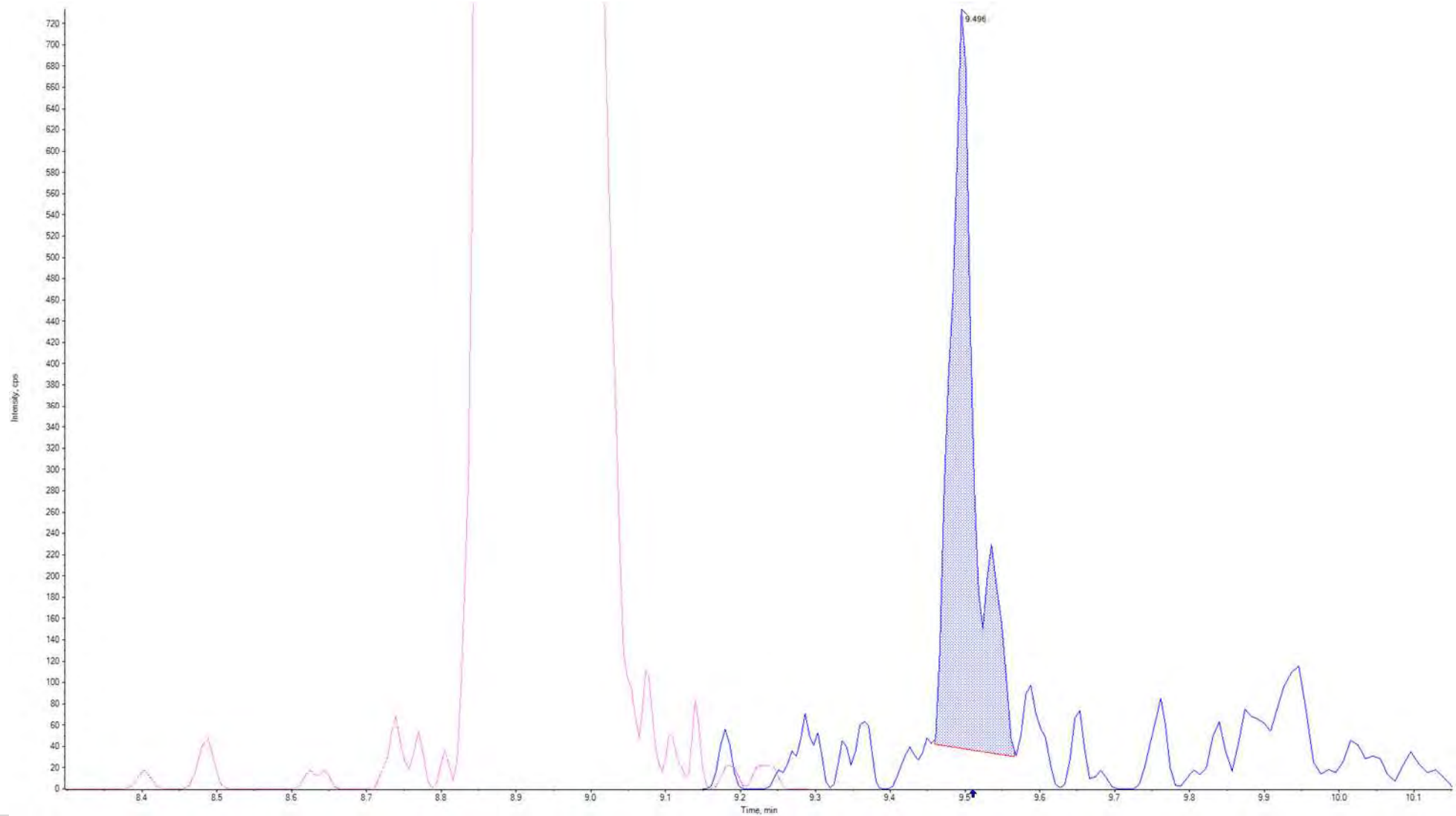
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFTrDA
Sample: WG1958909-2,INSTBLANK S/N:71.5 Points Across peak:20



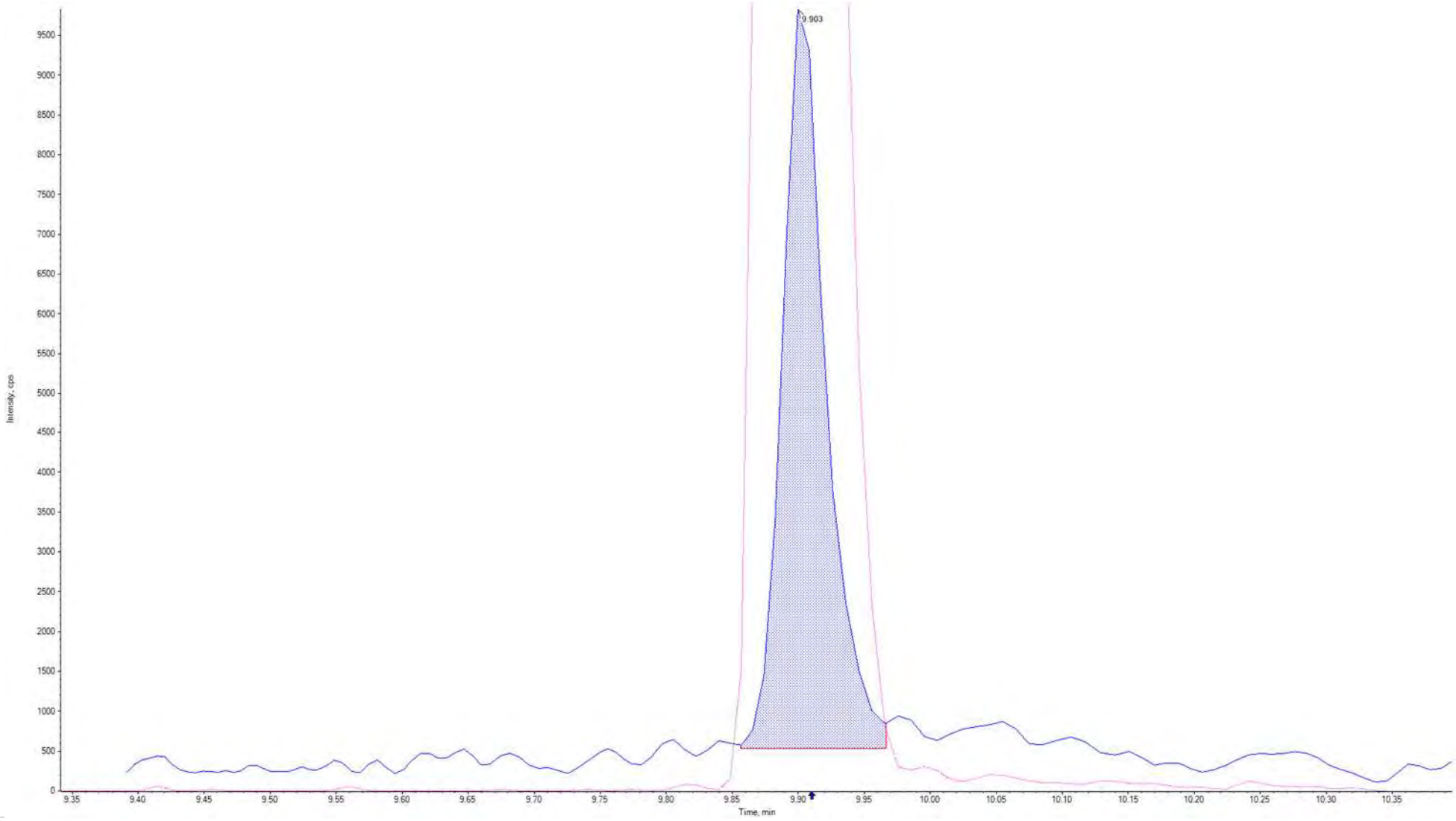
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFTrDA_2
Sample: WG1958909-2,INSTBLANK S/N:37524.9 Points Across peak:20



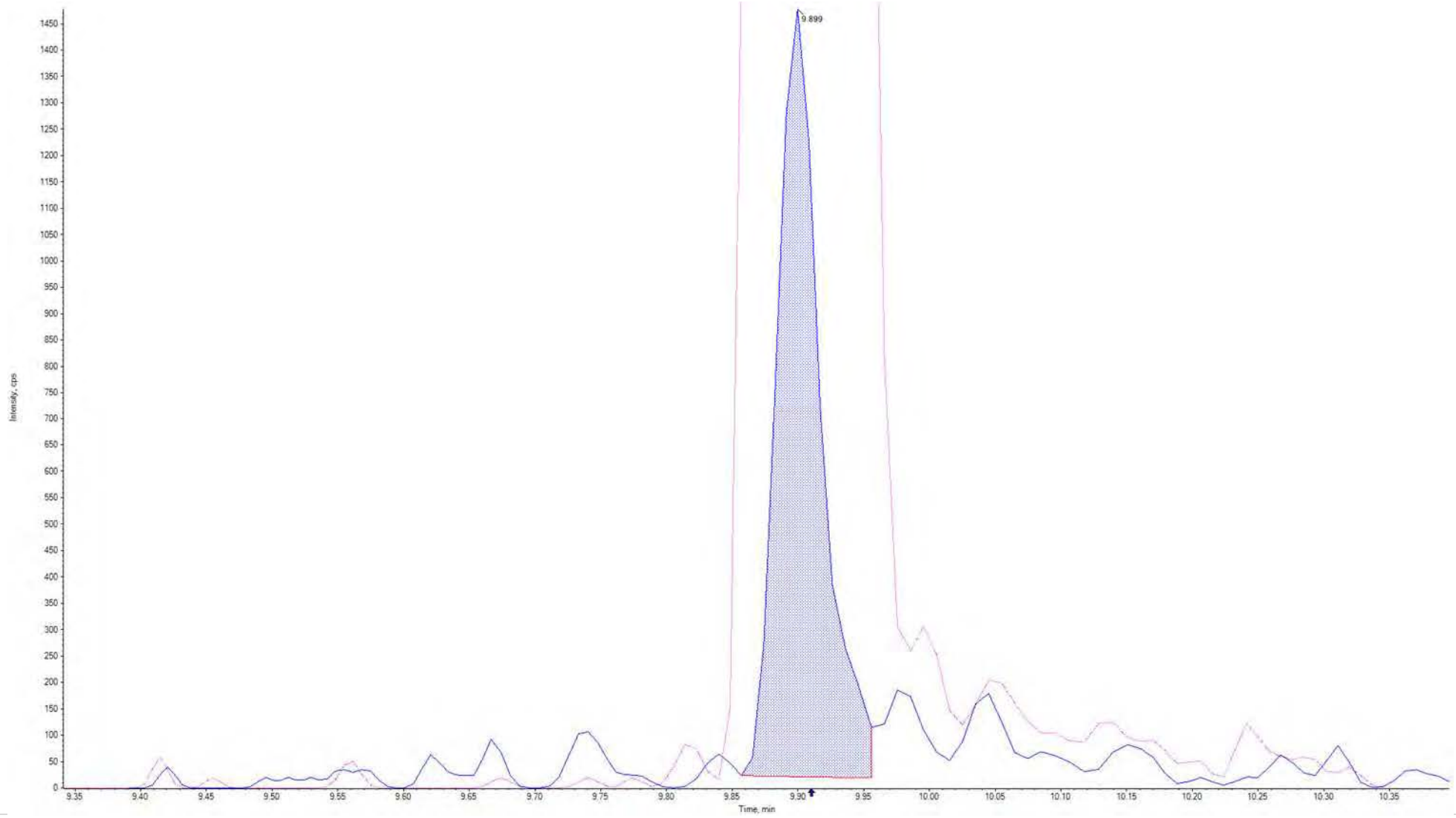
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFTeDA
Sample: WG1958909-2,INSTBLANK S/N:230.6 Points Across peak:15



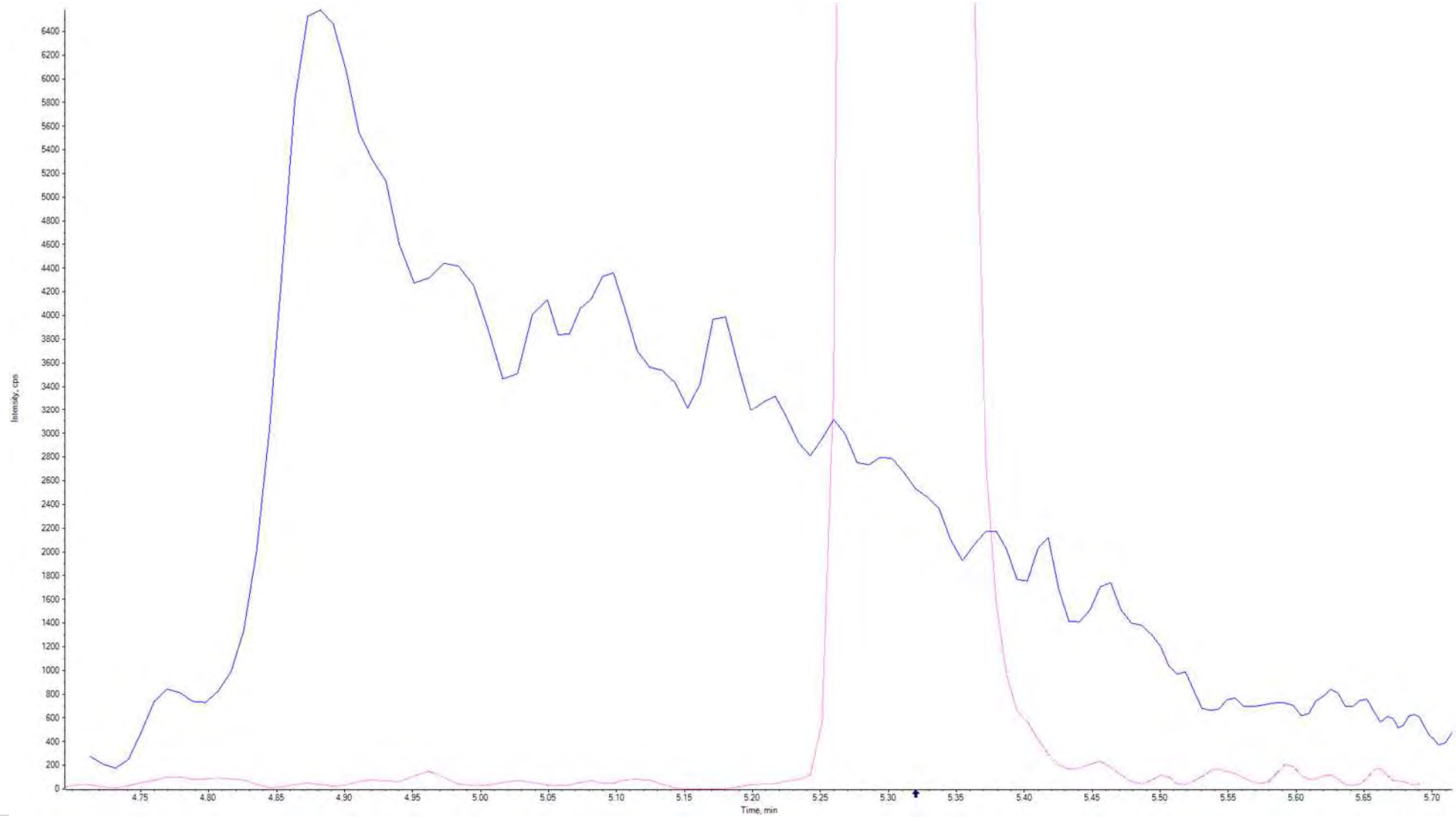
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFTeDA_2
Sample: WG1958909-2,INSTBLANK S/N:669554.6 Points Across peak:12



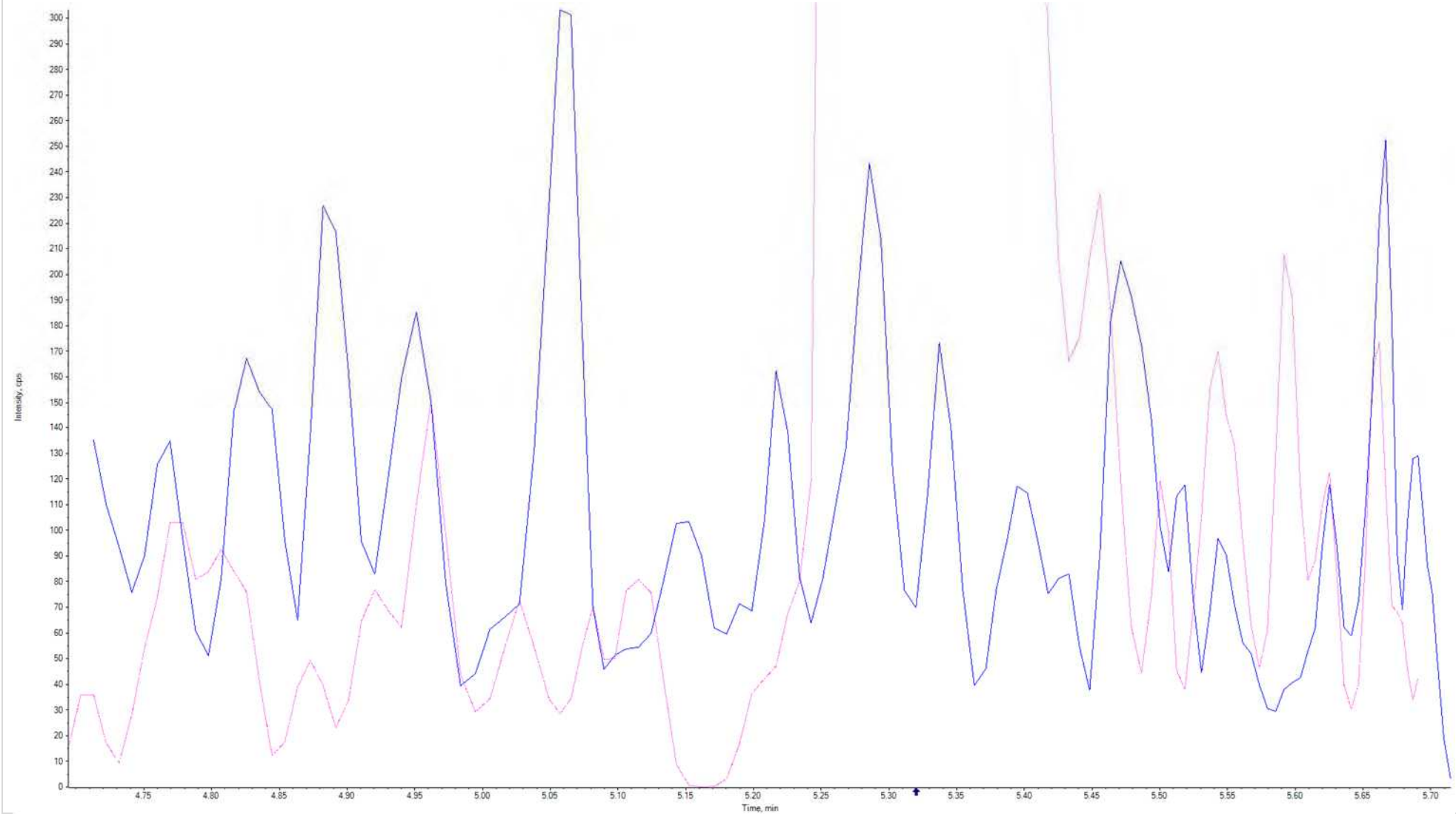
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFBS
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



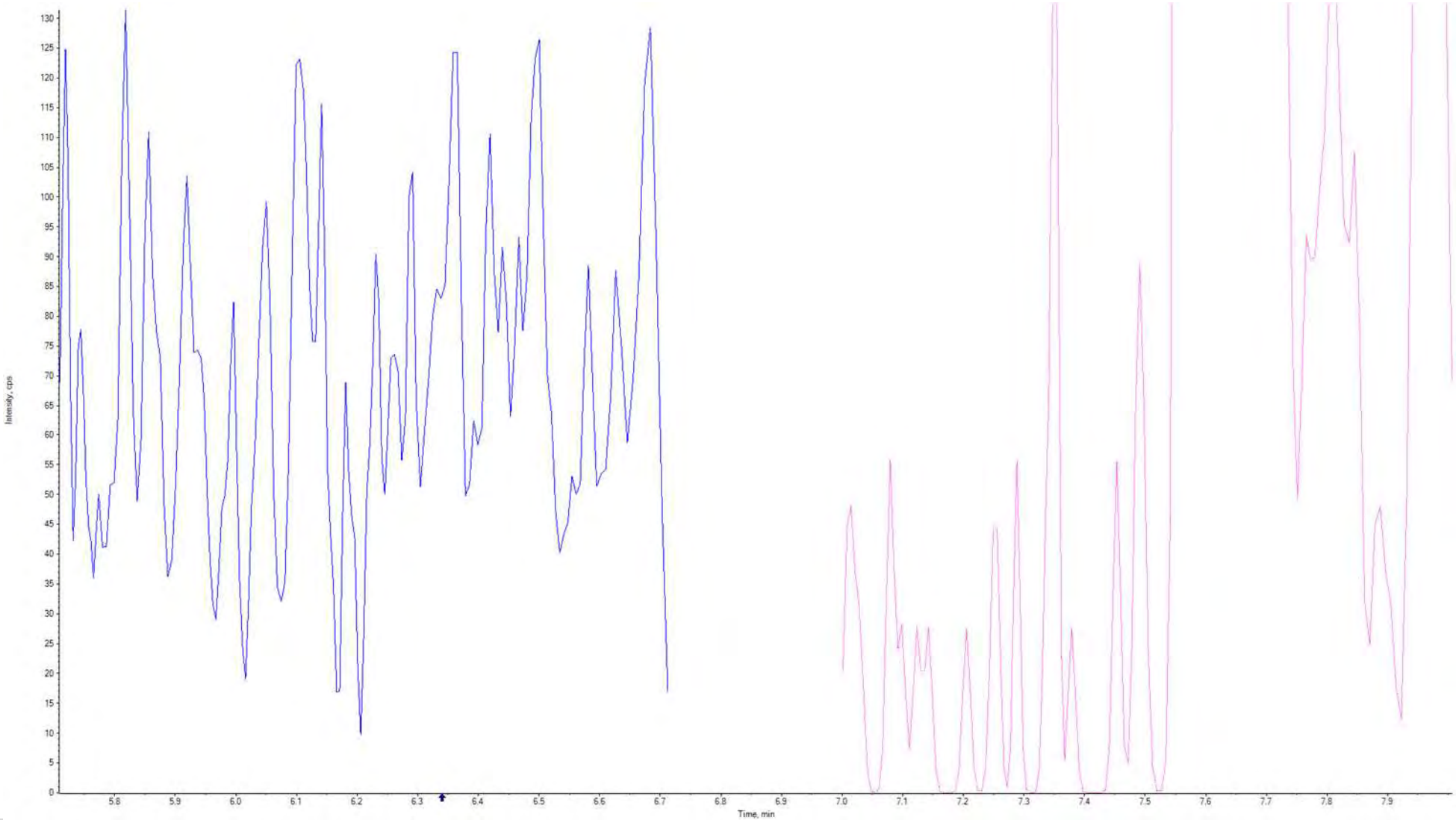
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFBS_2
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFPeS
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFPeS_2
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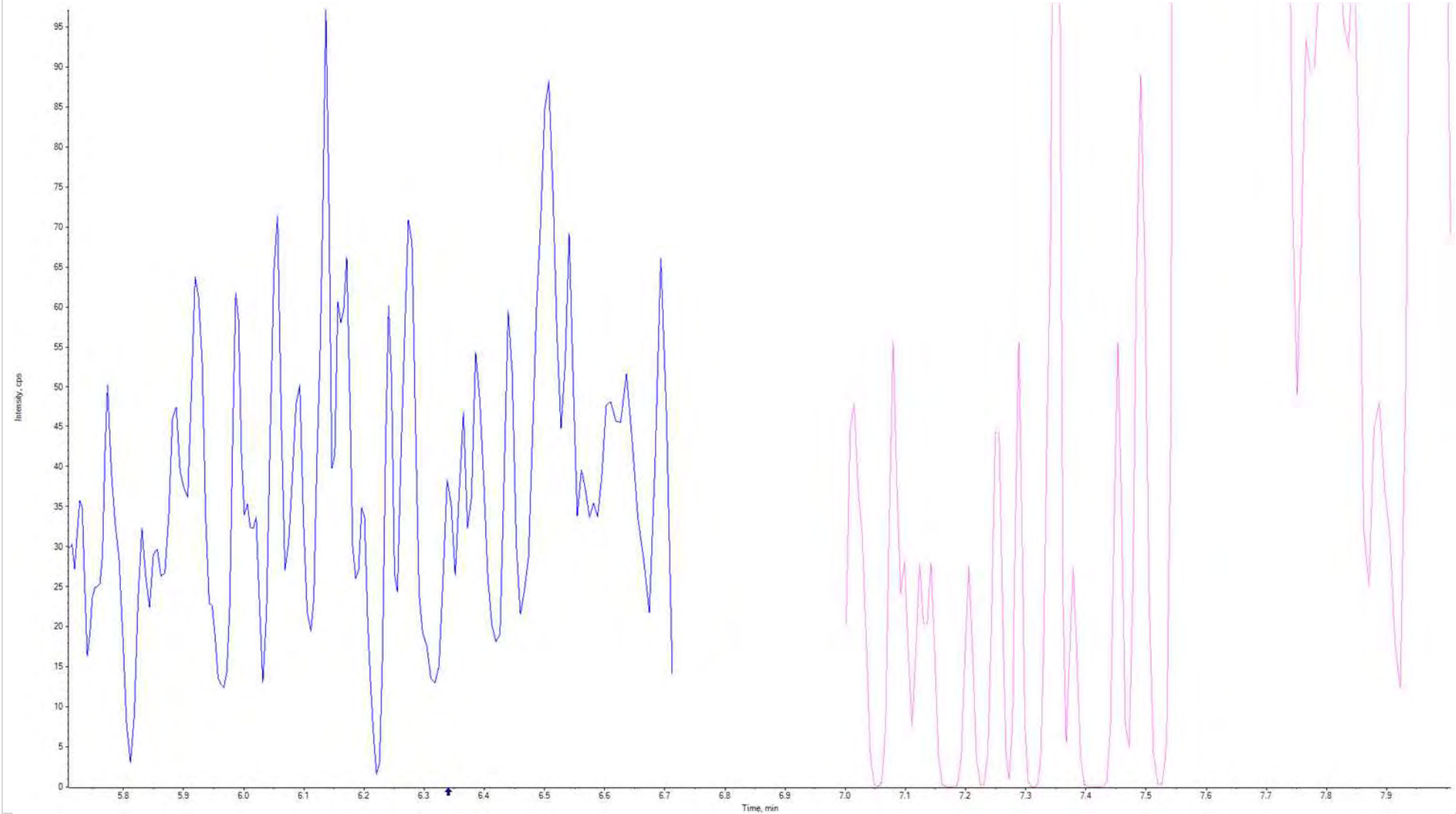
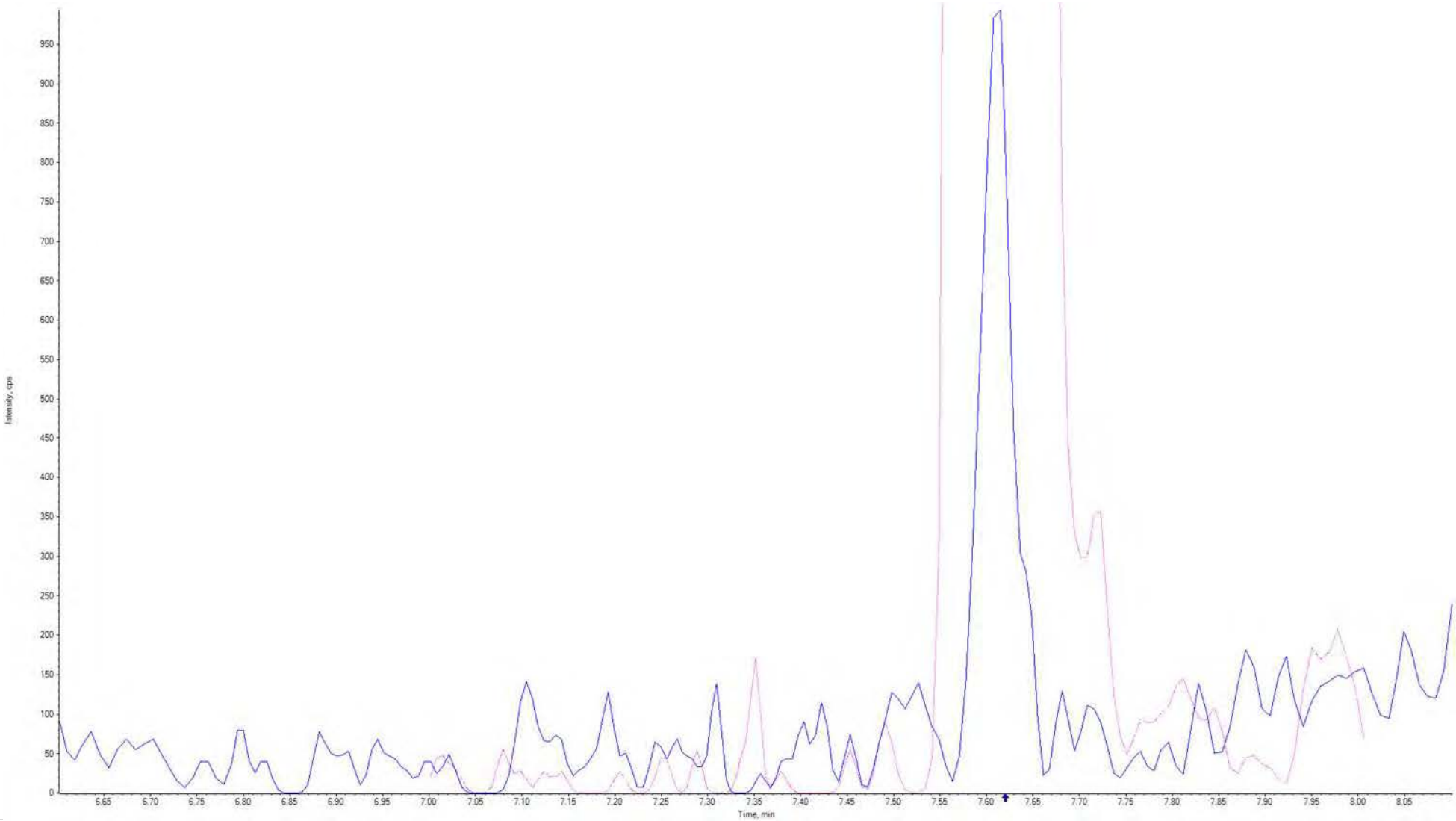


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFHxS
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFHxS_2
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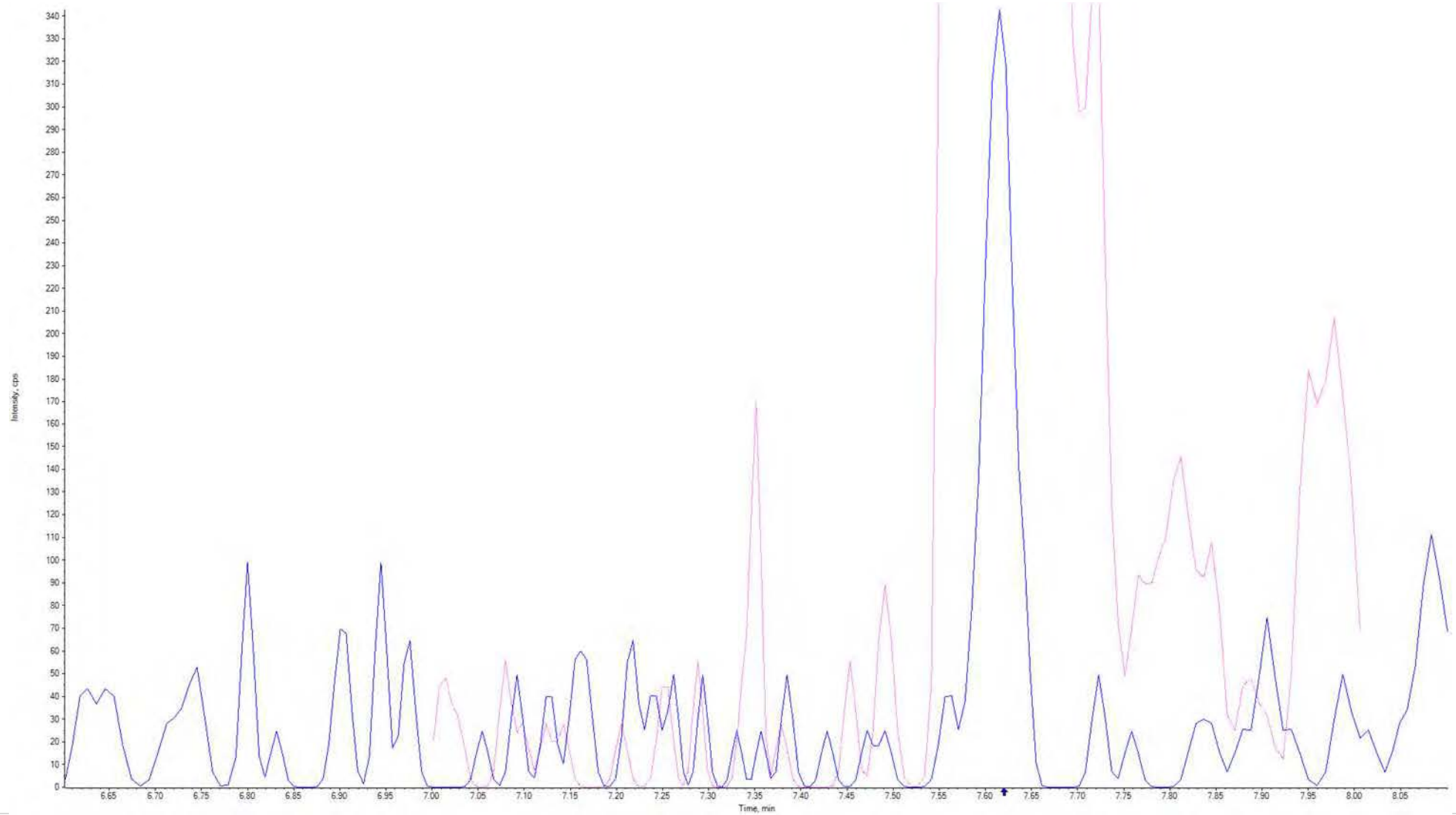

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFHpS
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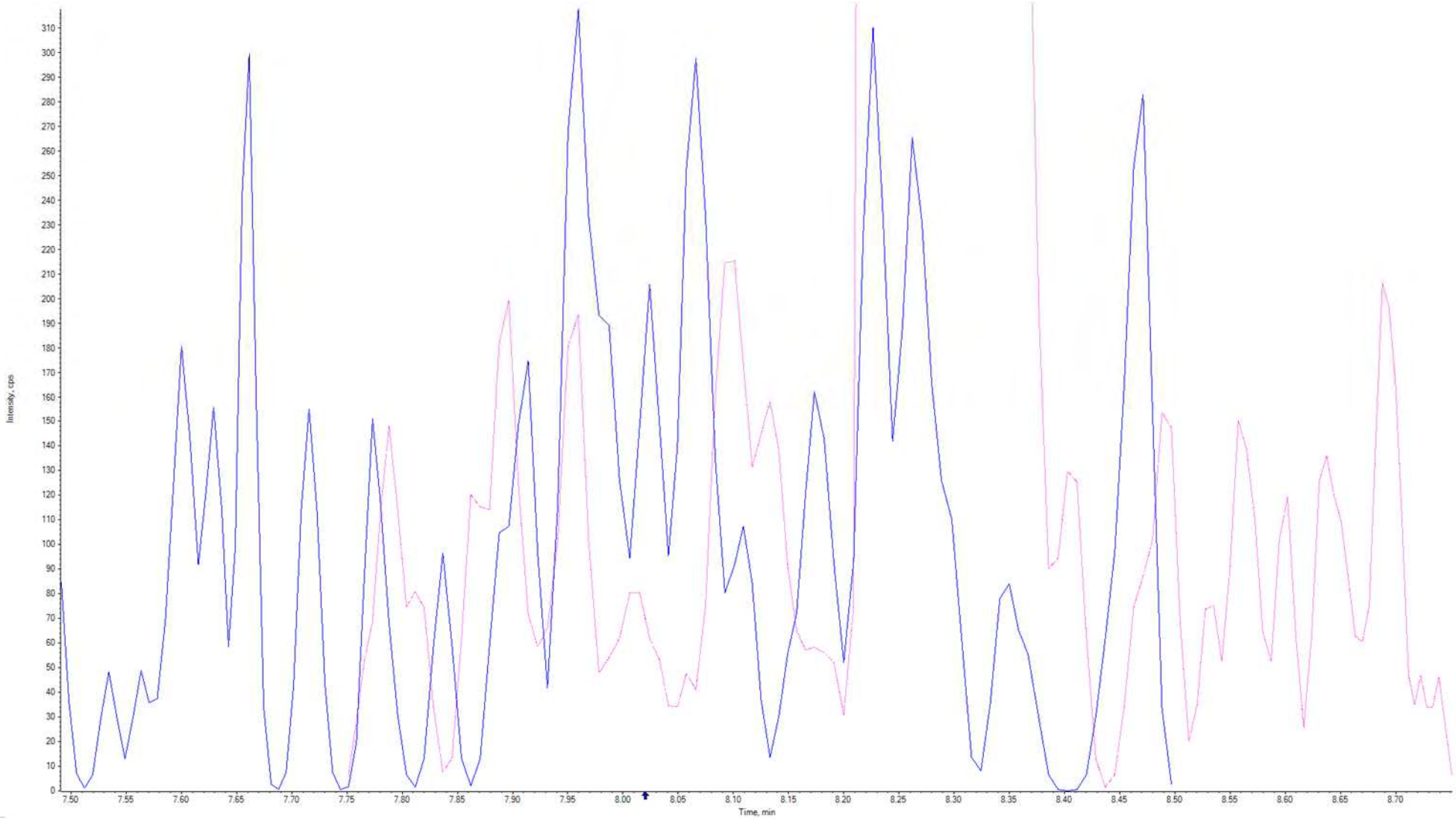

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFHpS_2
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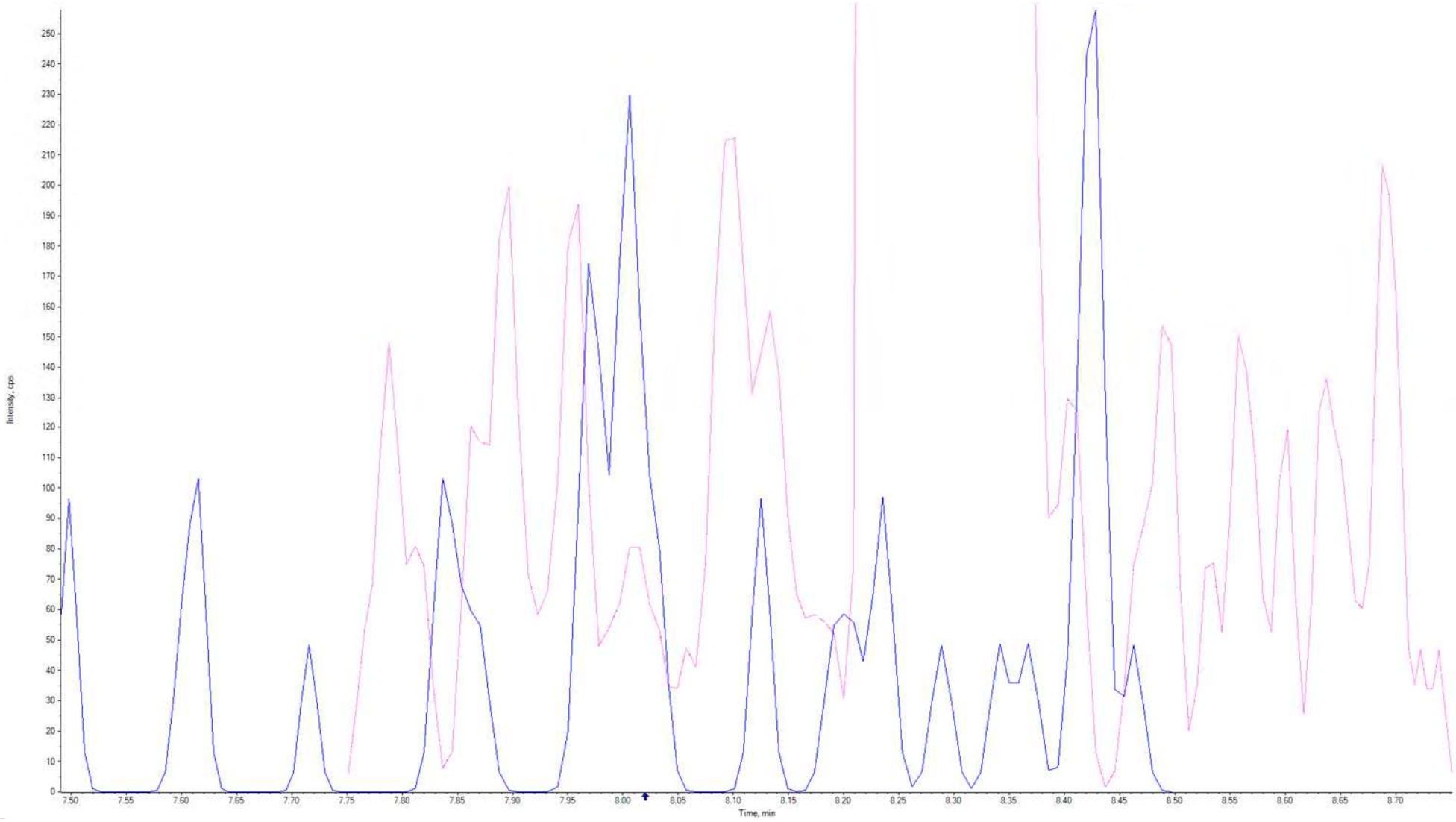

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFOS
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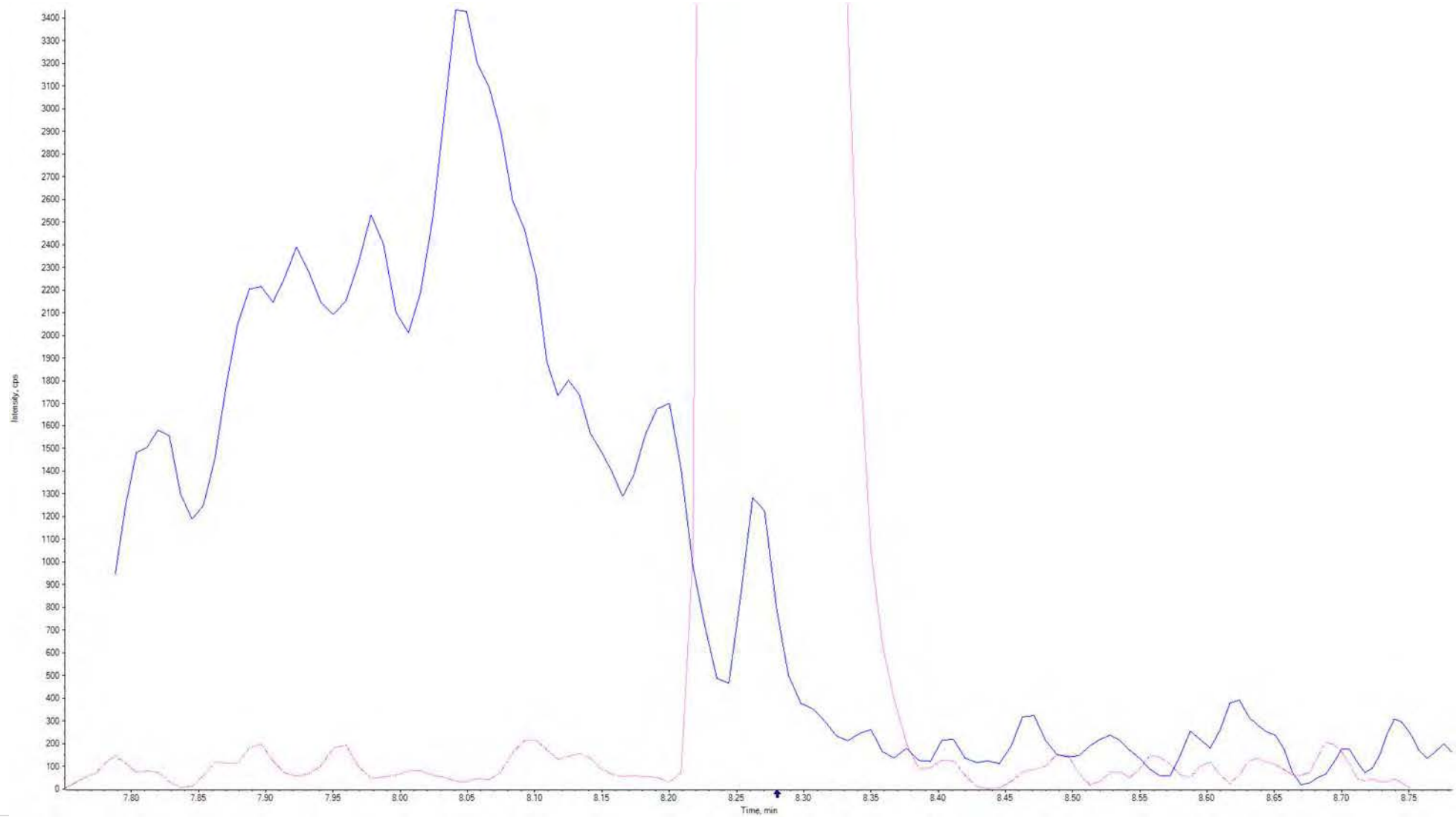

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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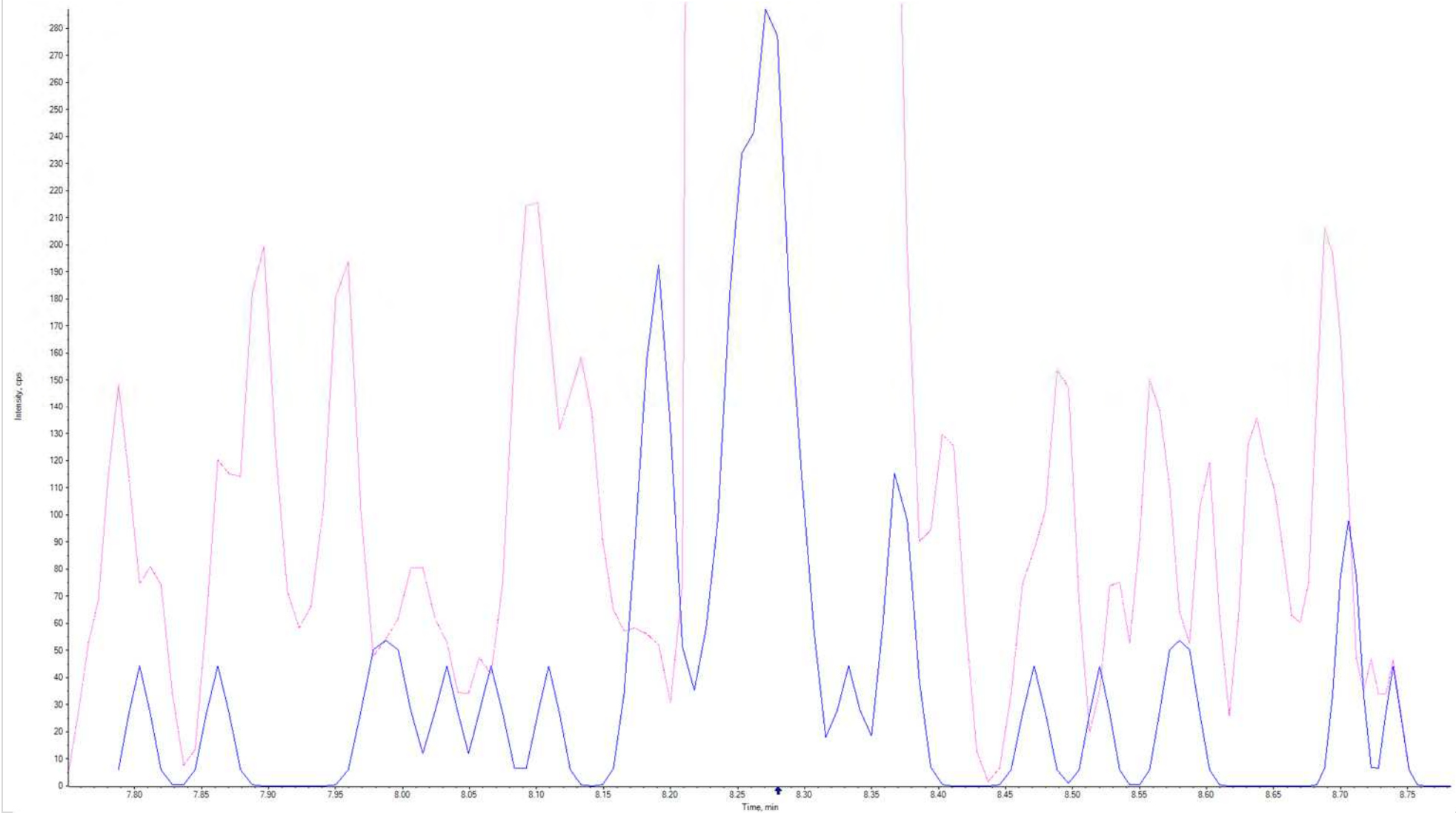
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFOS_2
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFNS
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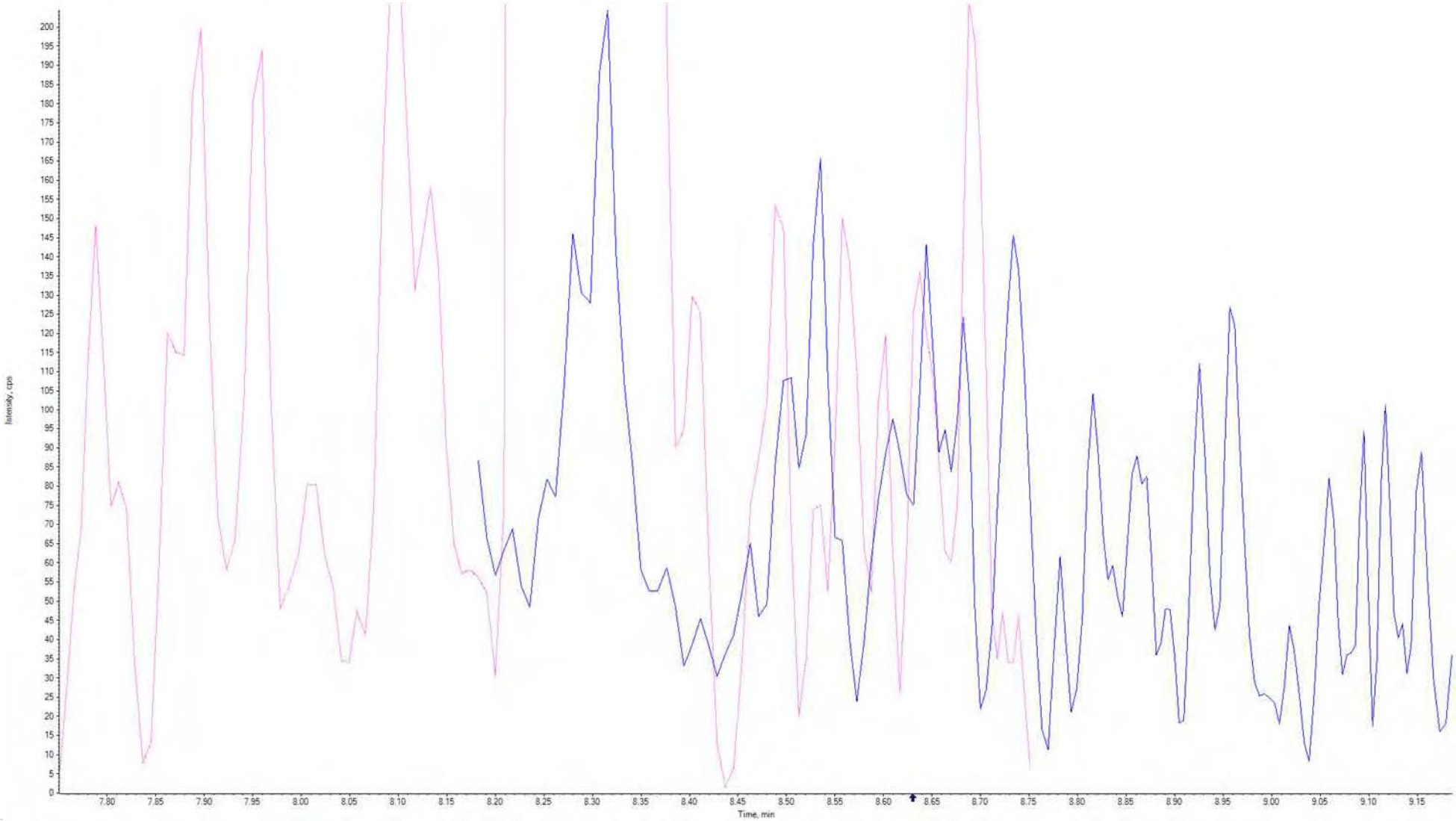

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFNS_2
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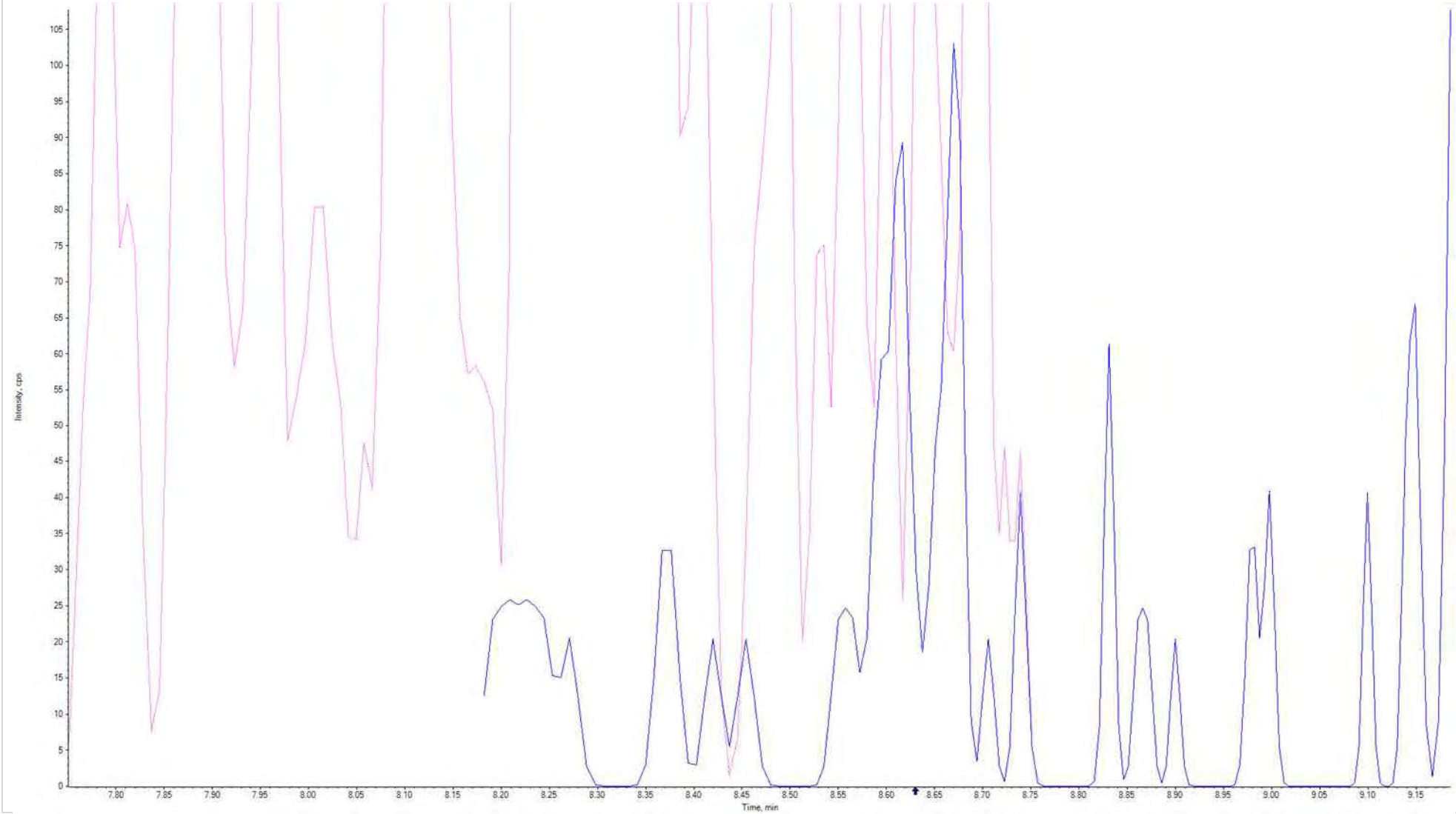

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFDS
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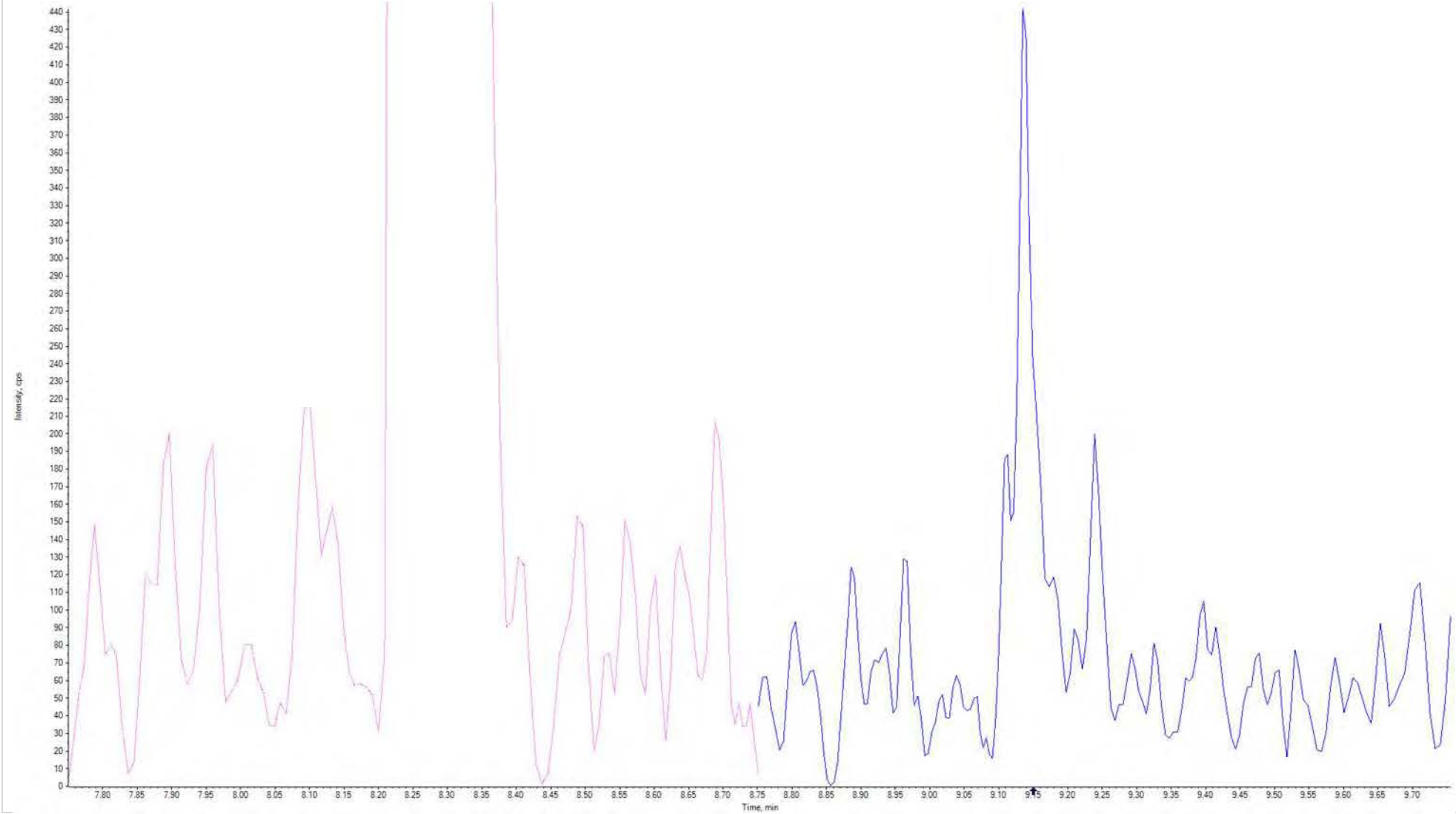
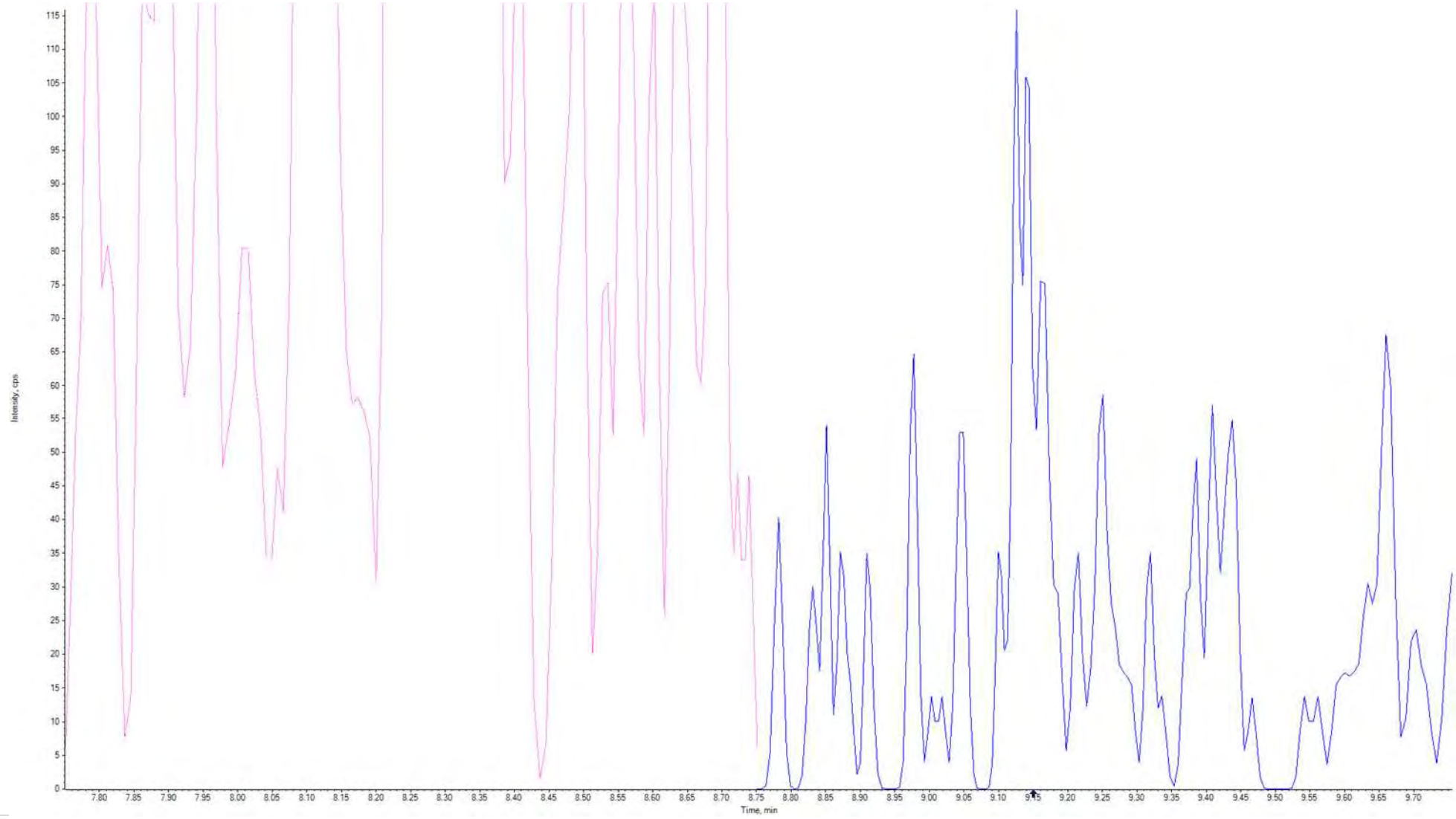


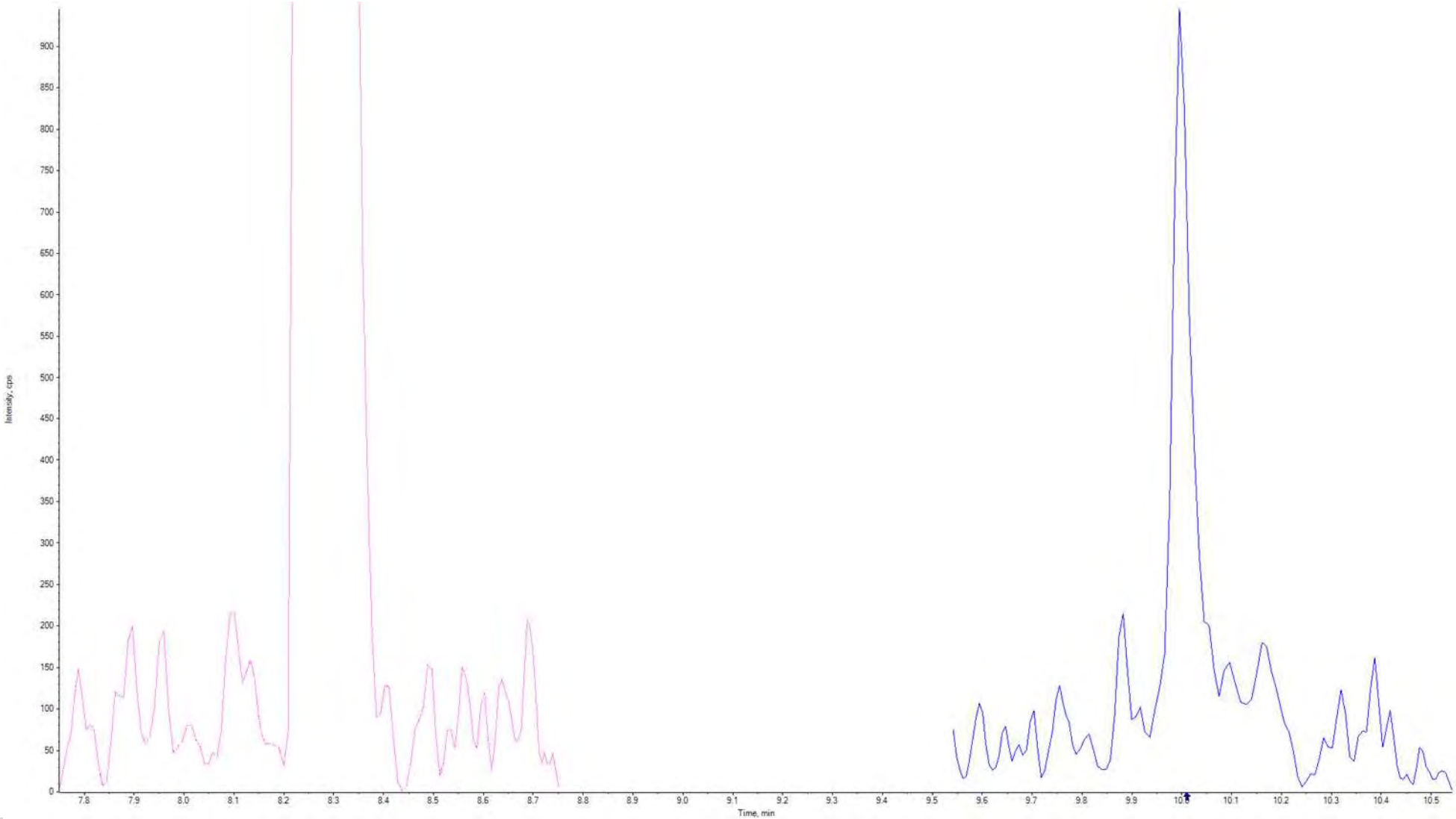
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFDS_2
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



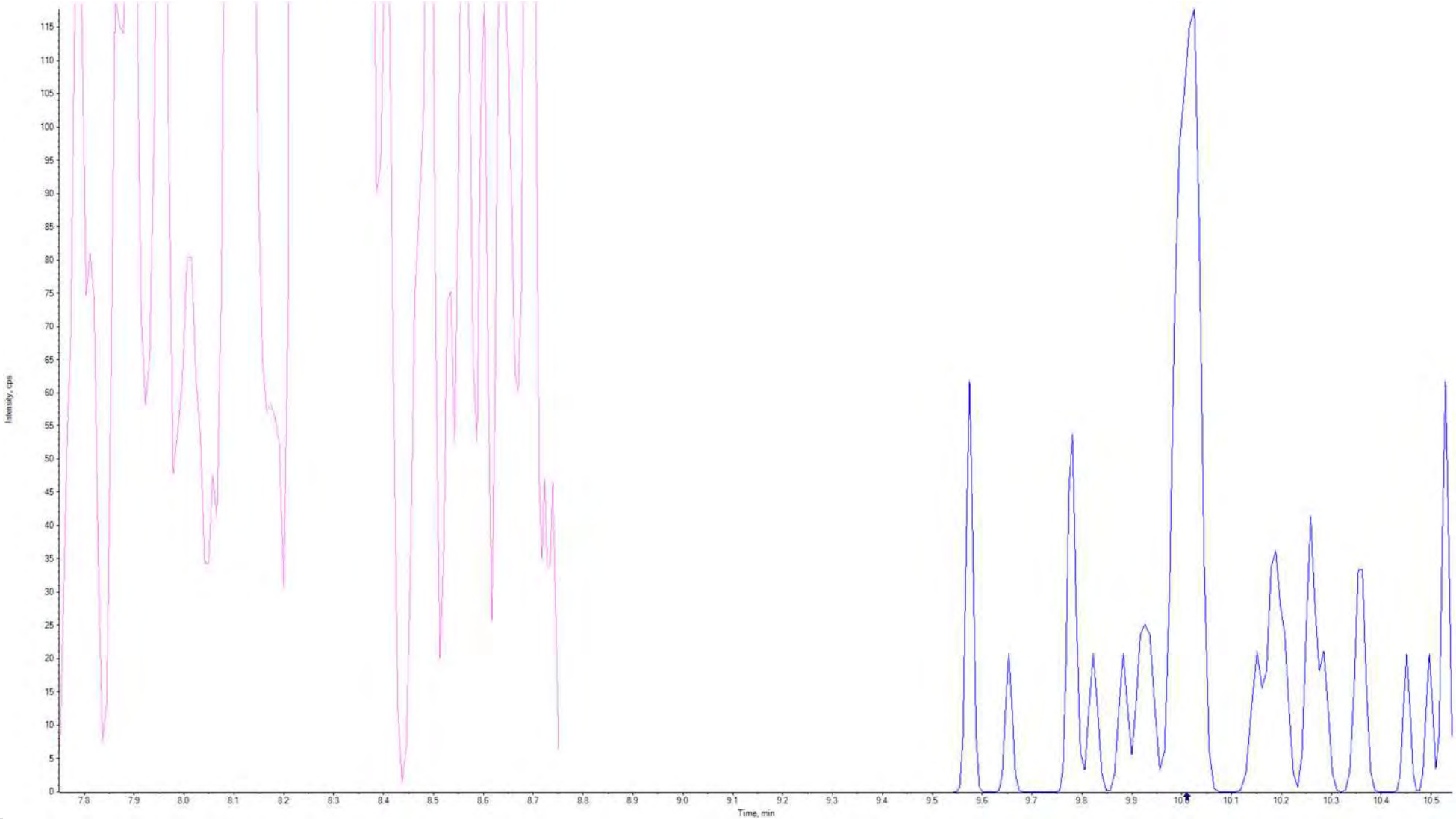
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFDoS
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



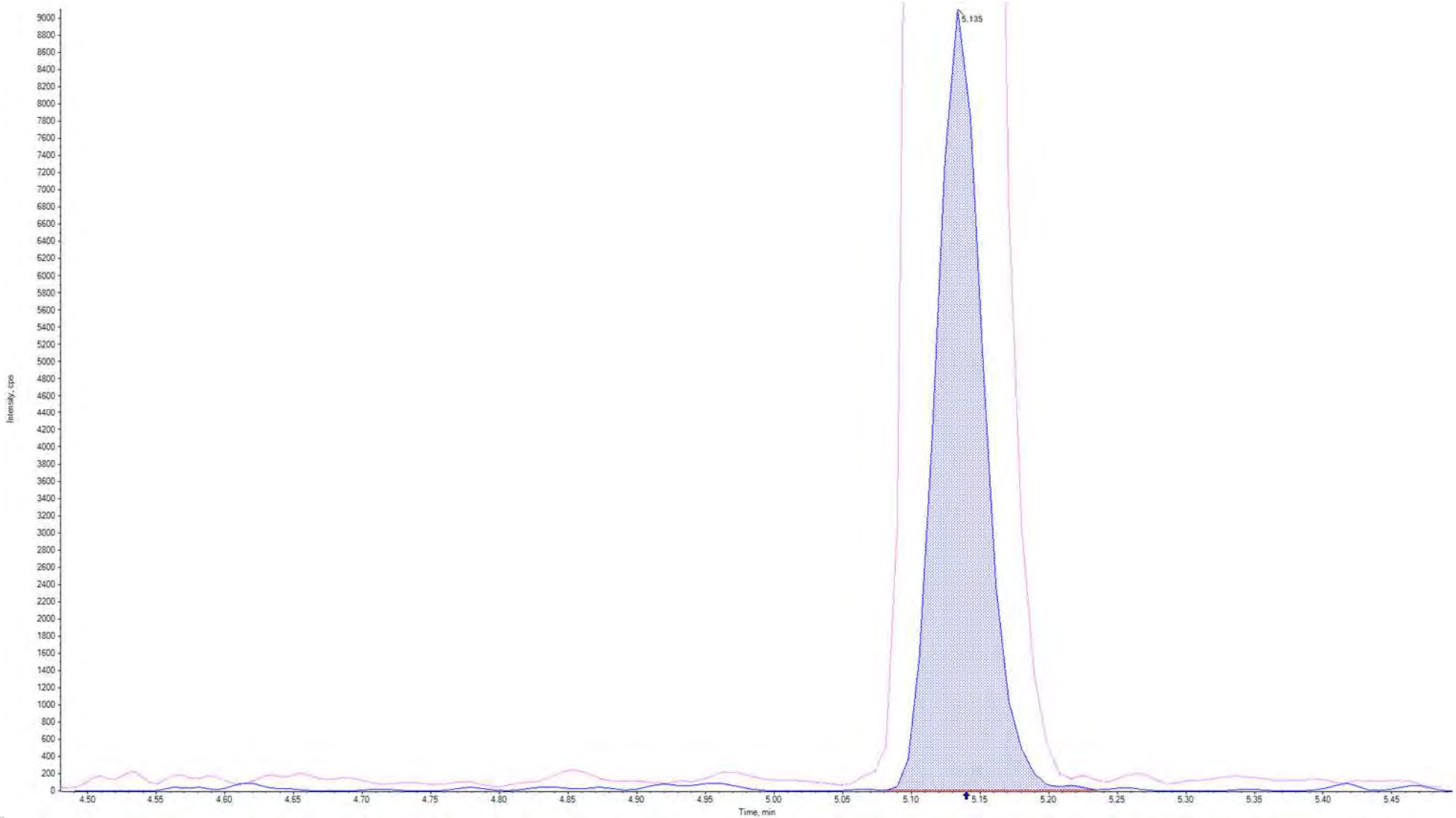
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFDoS_2
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



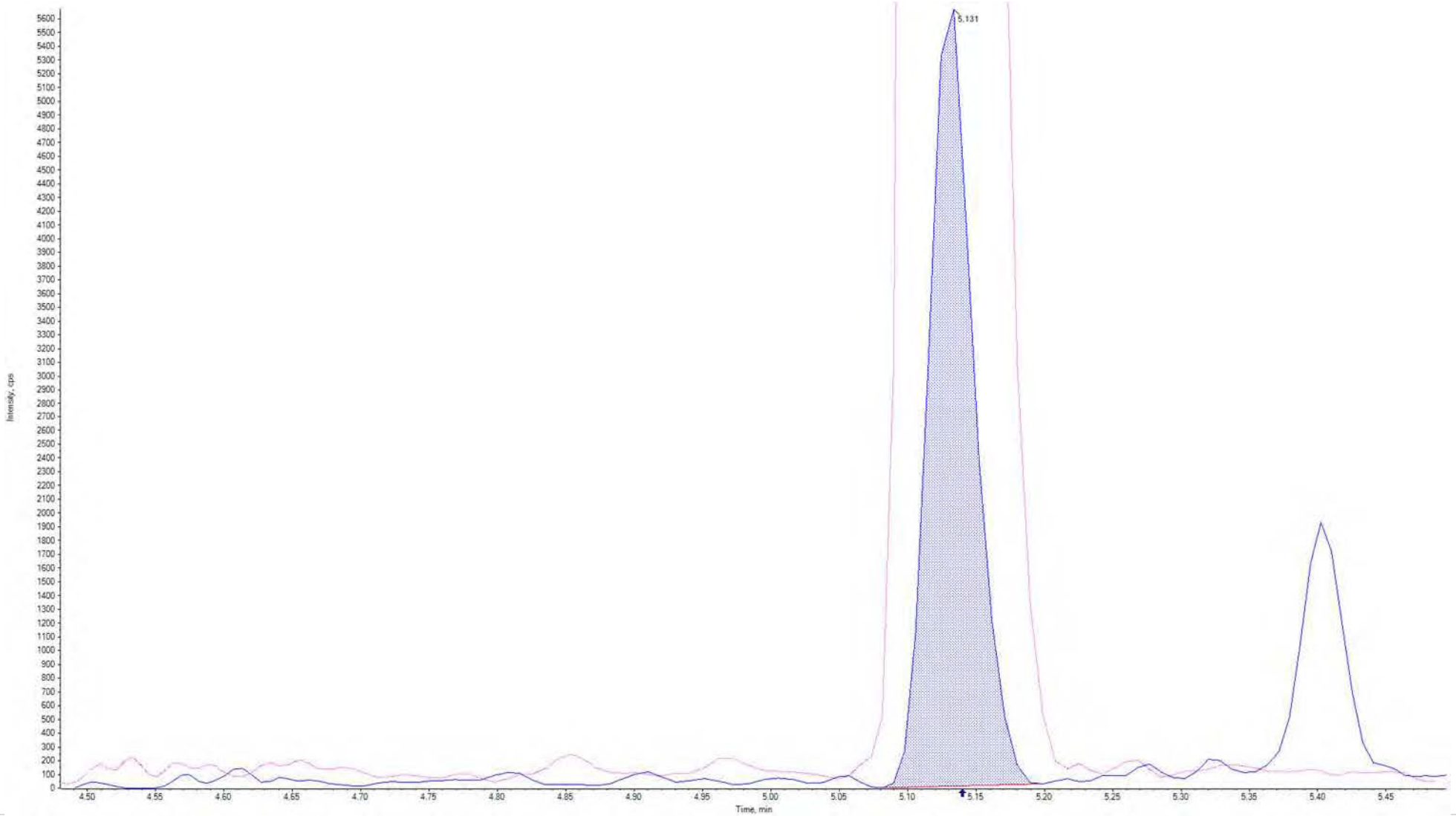
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

4:2FTS
Sample: WG1958909-2,INSTBLANK S/N:531.3 Points Across peak:18



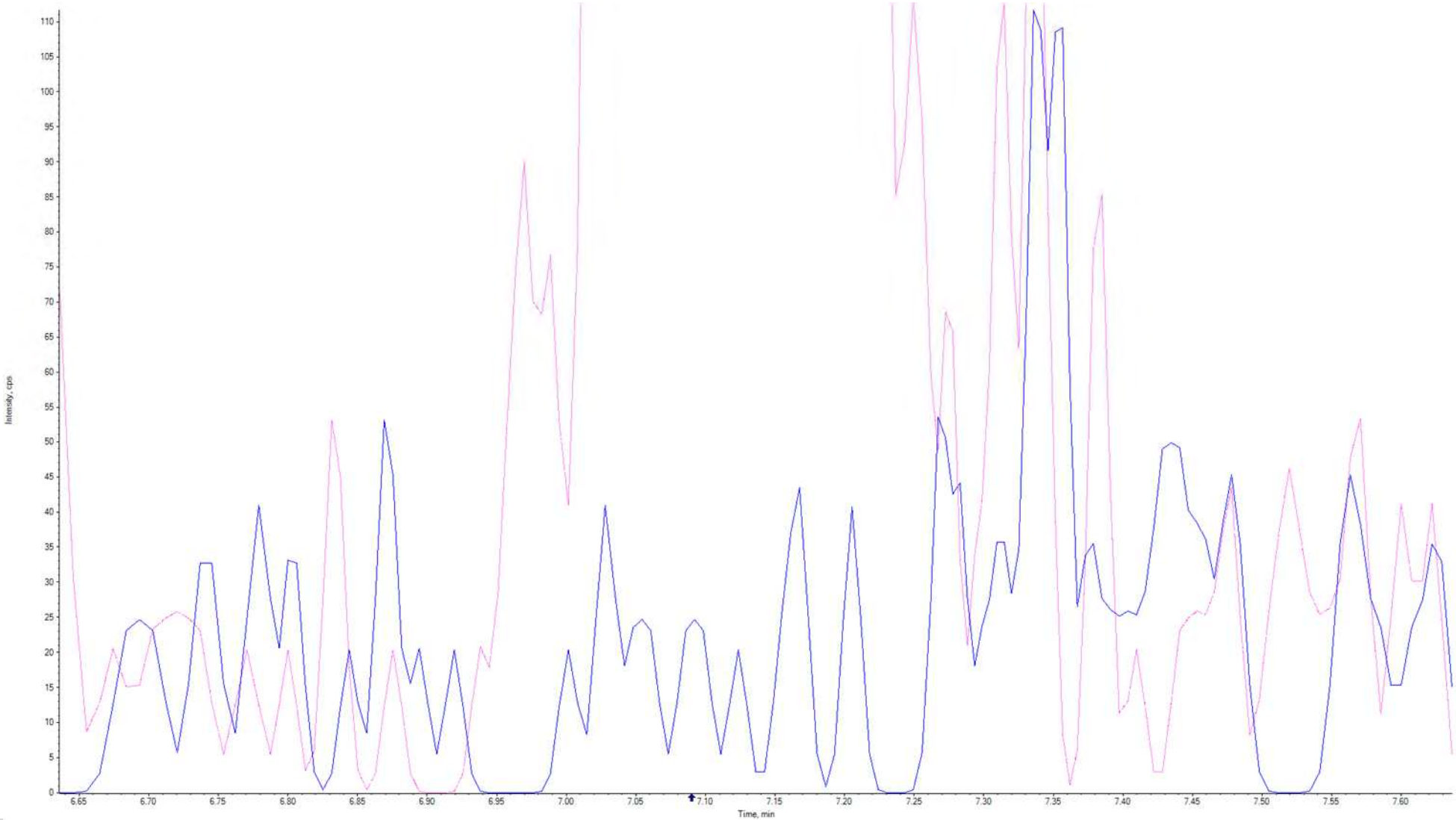
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

4:2FTS_2
Sample: WG1958909-2,INSTBLANK S/N:2413.8 Points Across peak:14



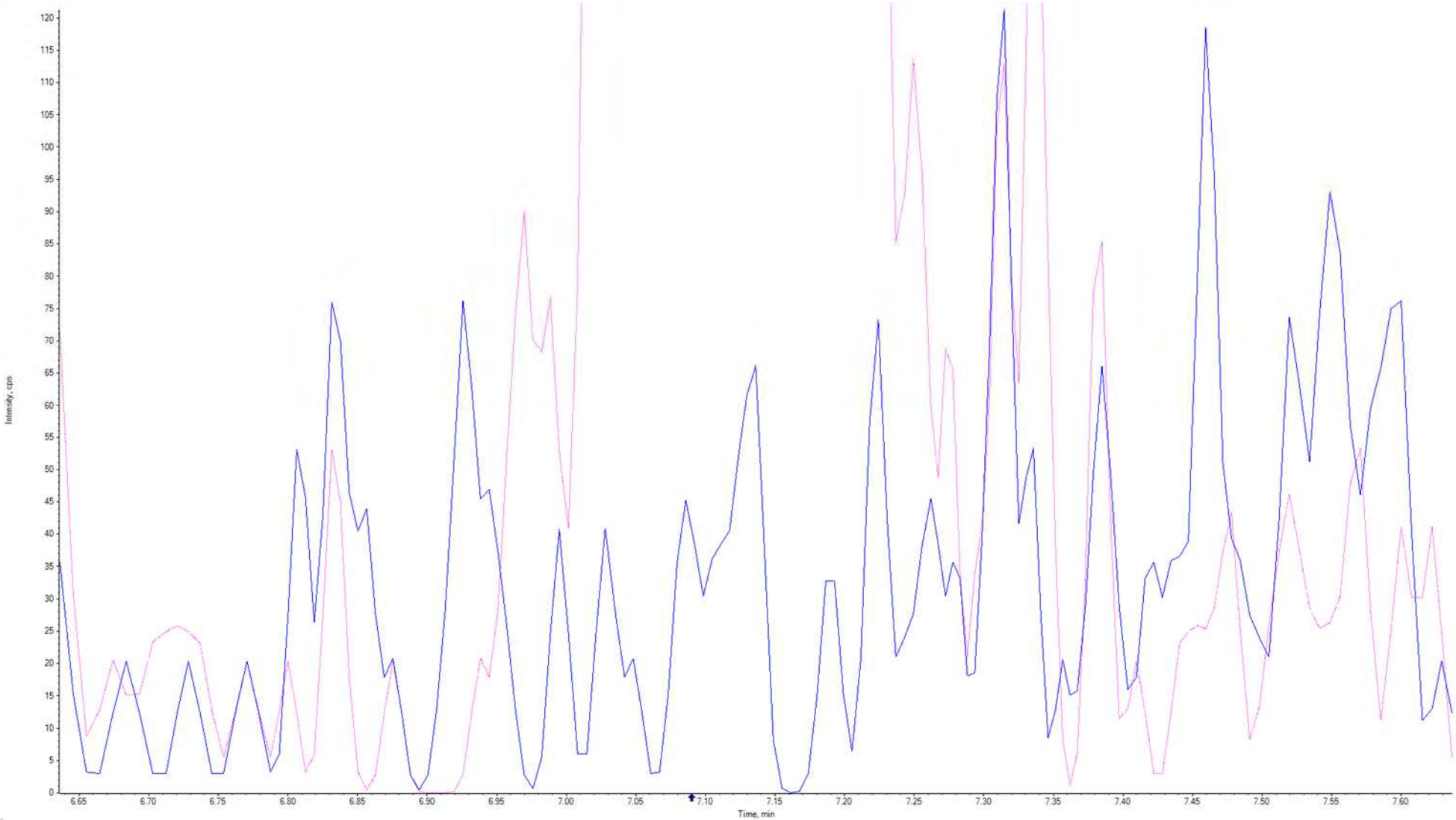
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

6:2FTS
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



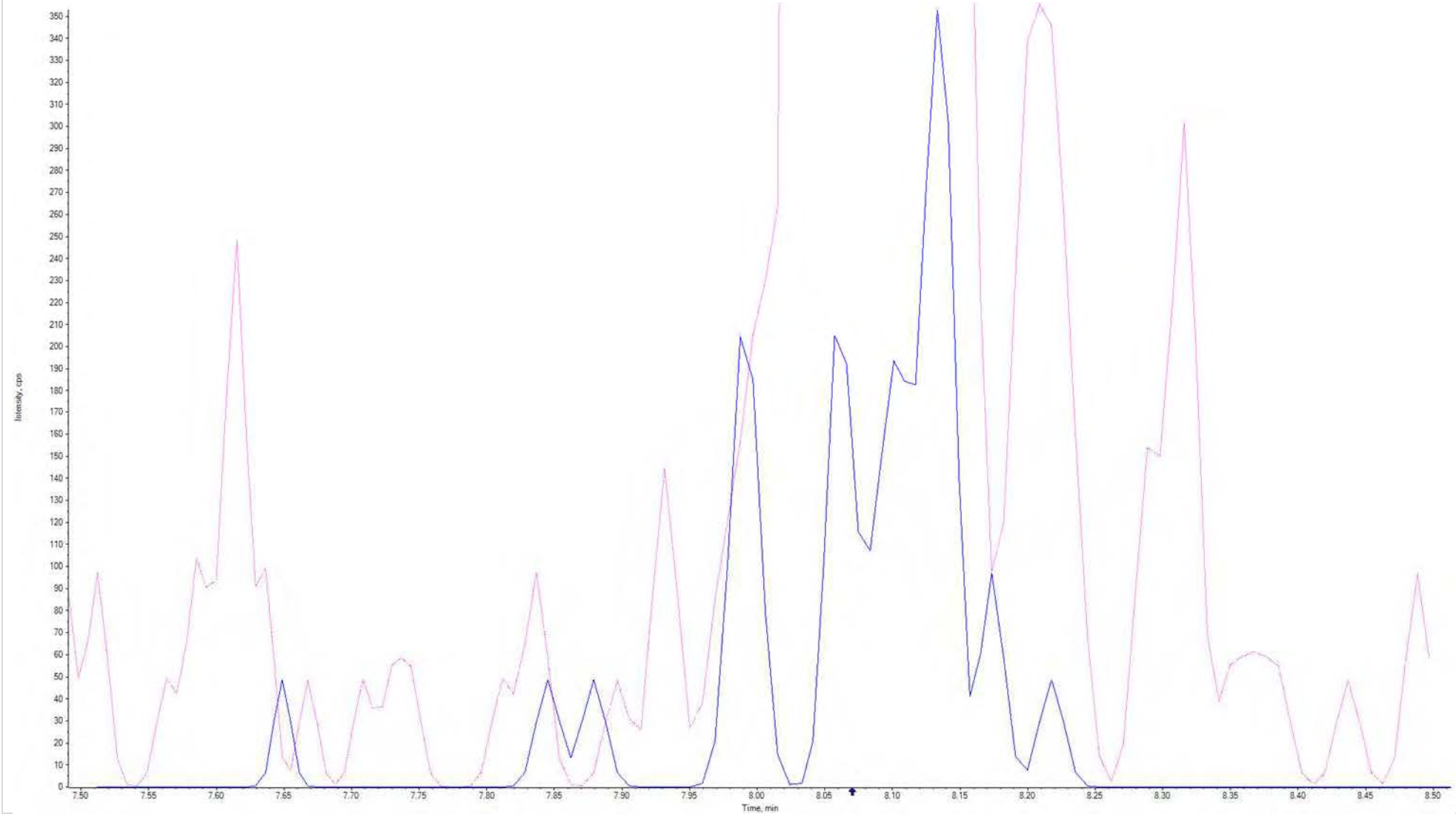
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

6:2FTS_2
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



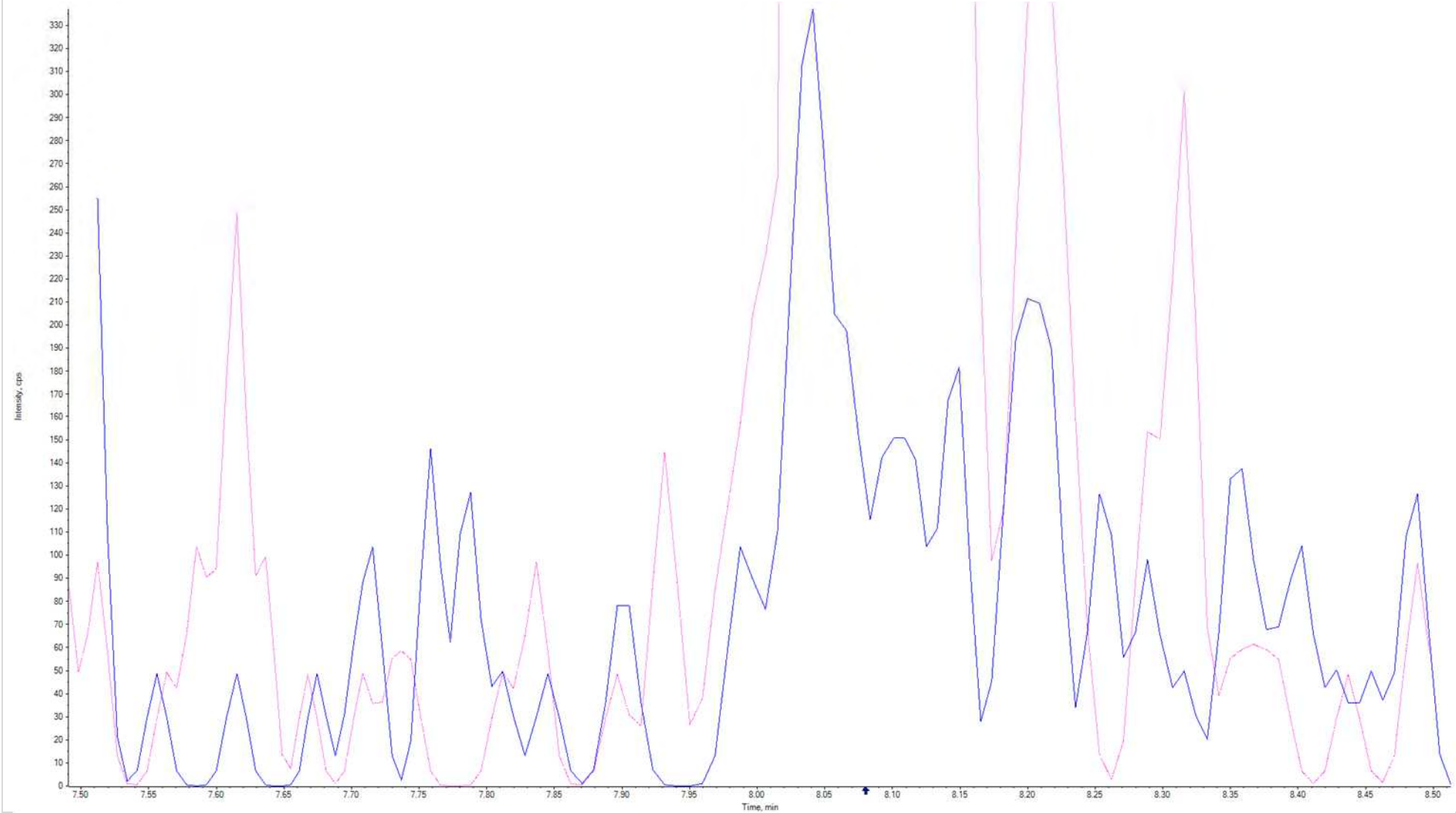
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

8:2FTS
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



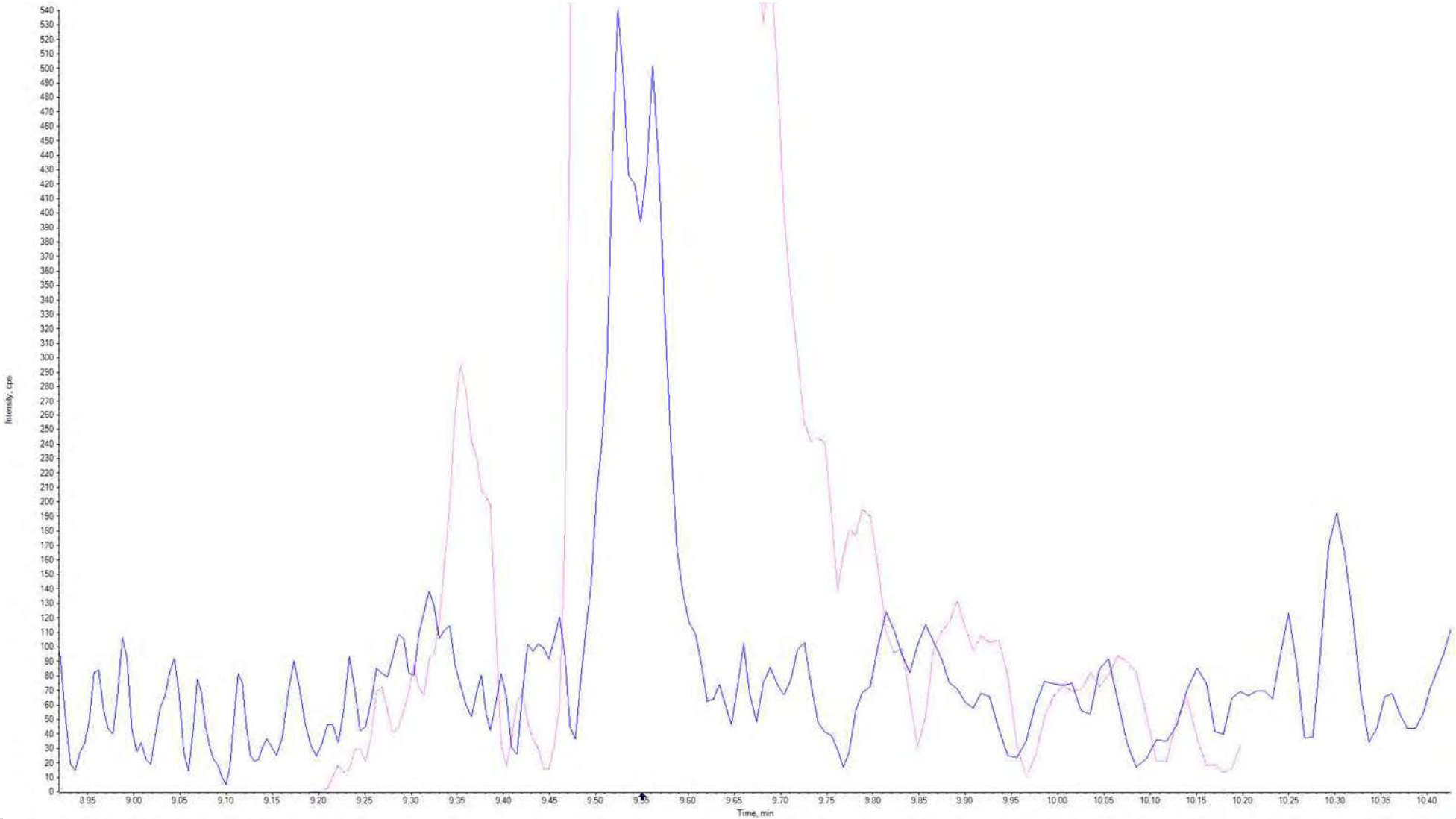
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

8:2FTS_2
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



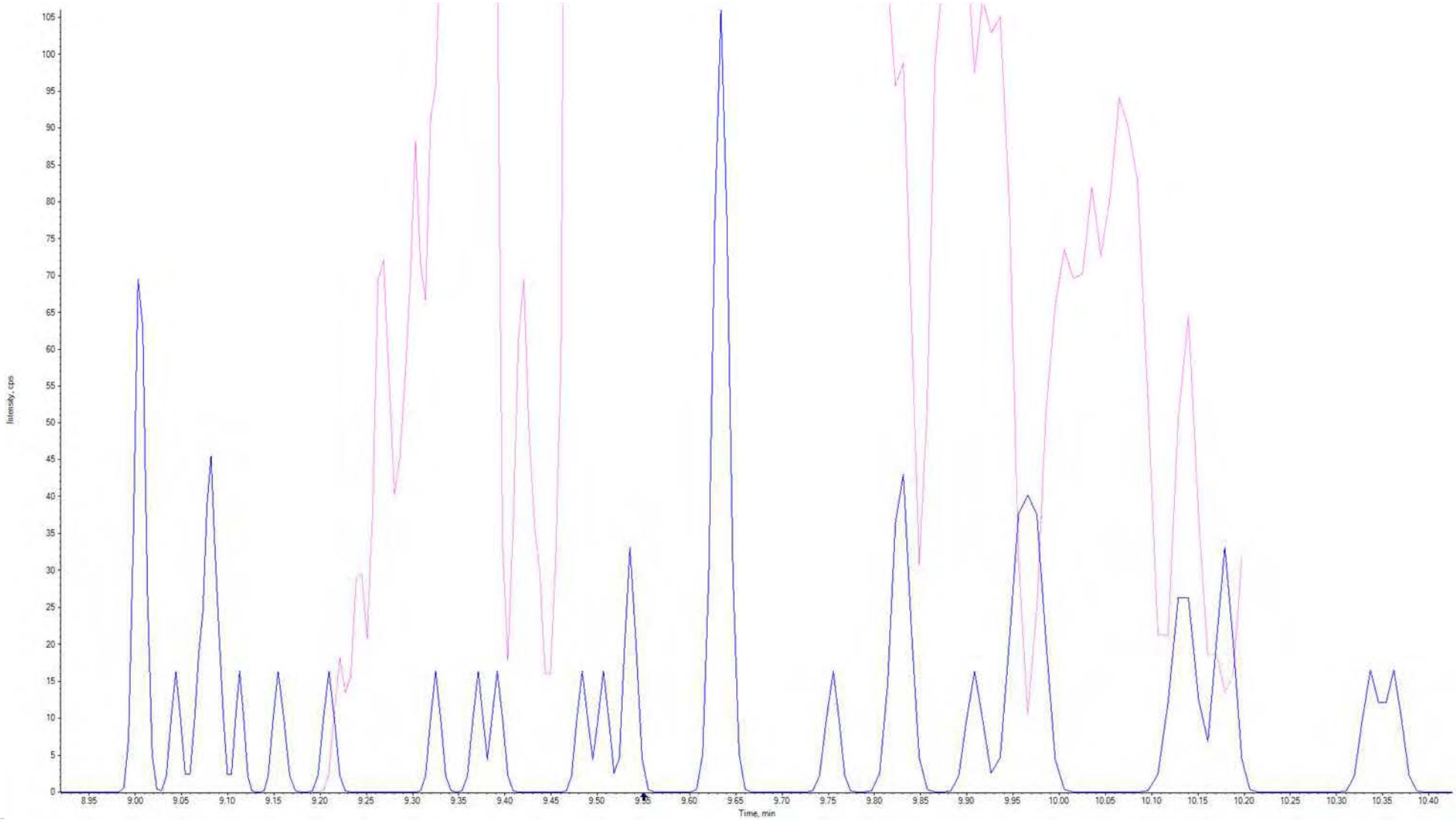
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFOSA
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A

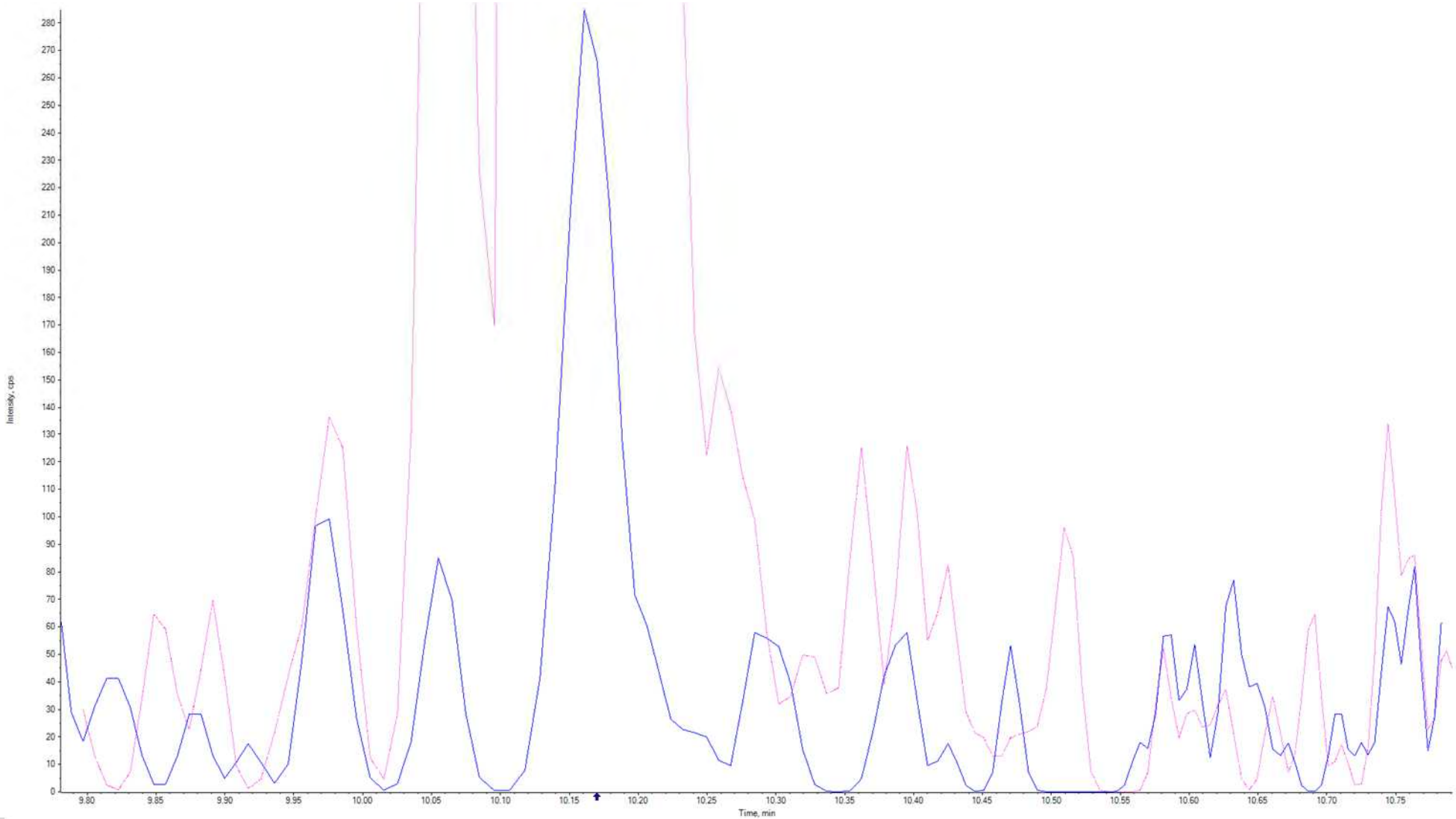


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

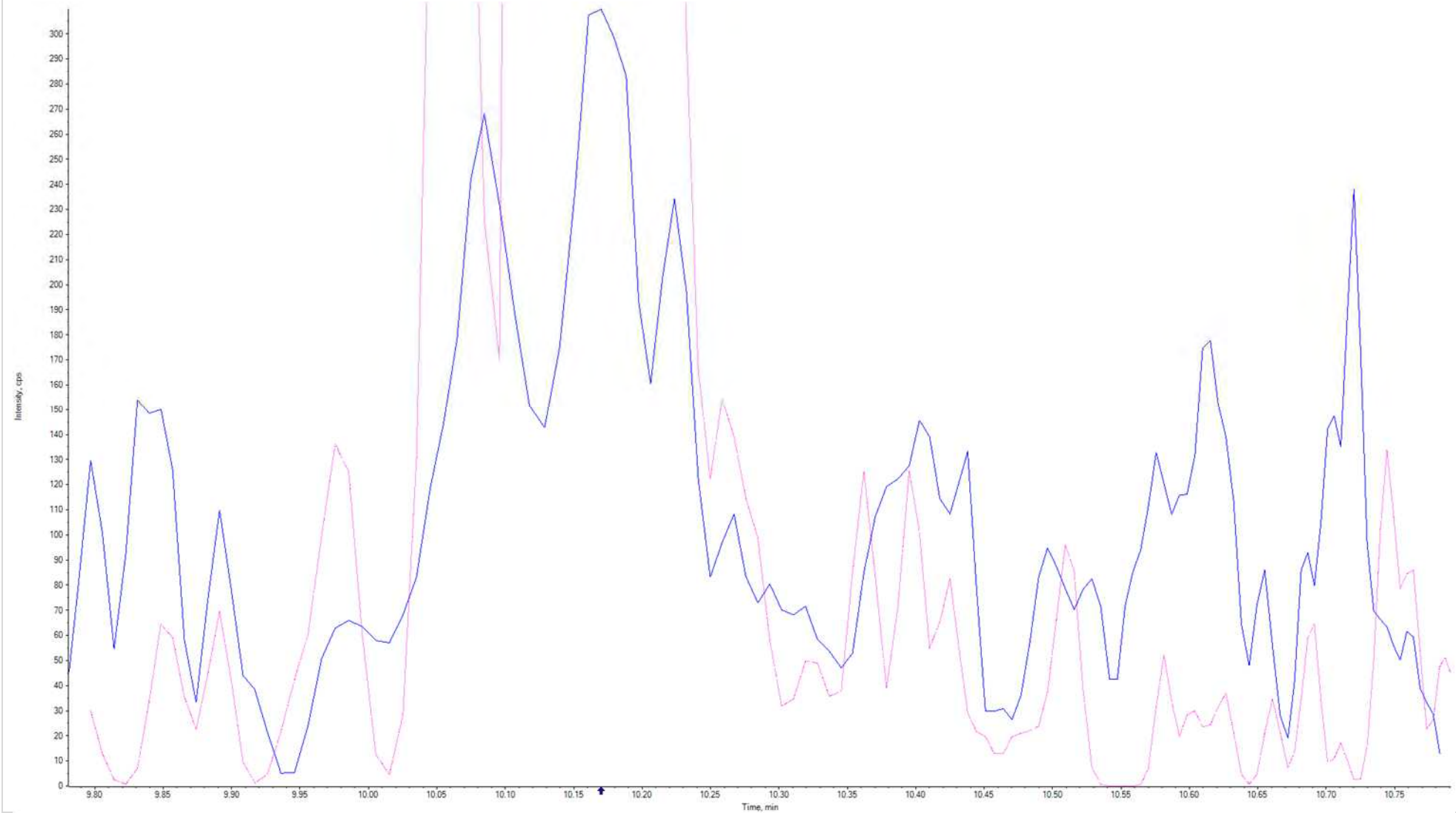
PFOSA_2
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



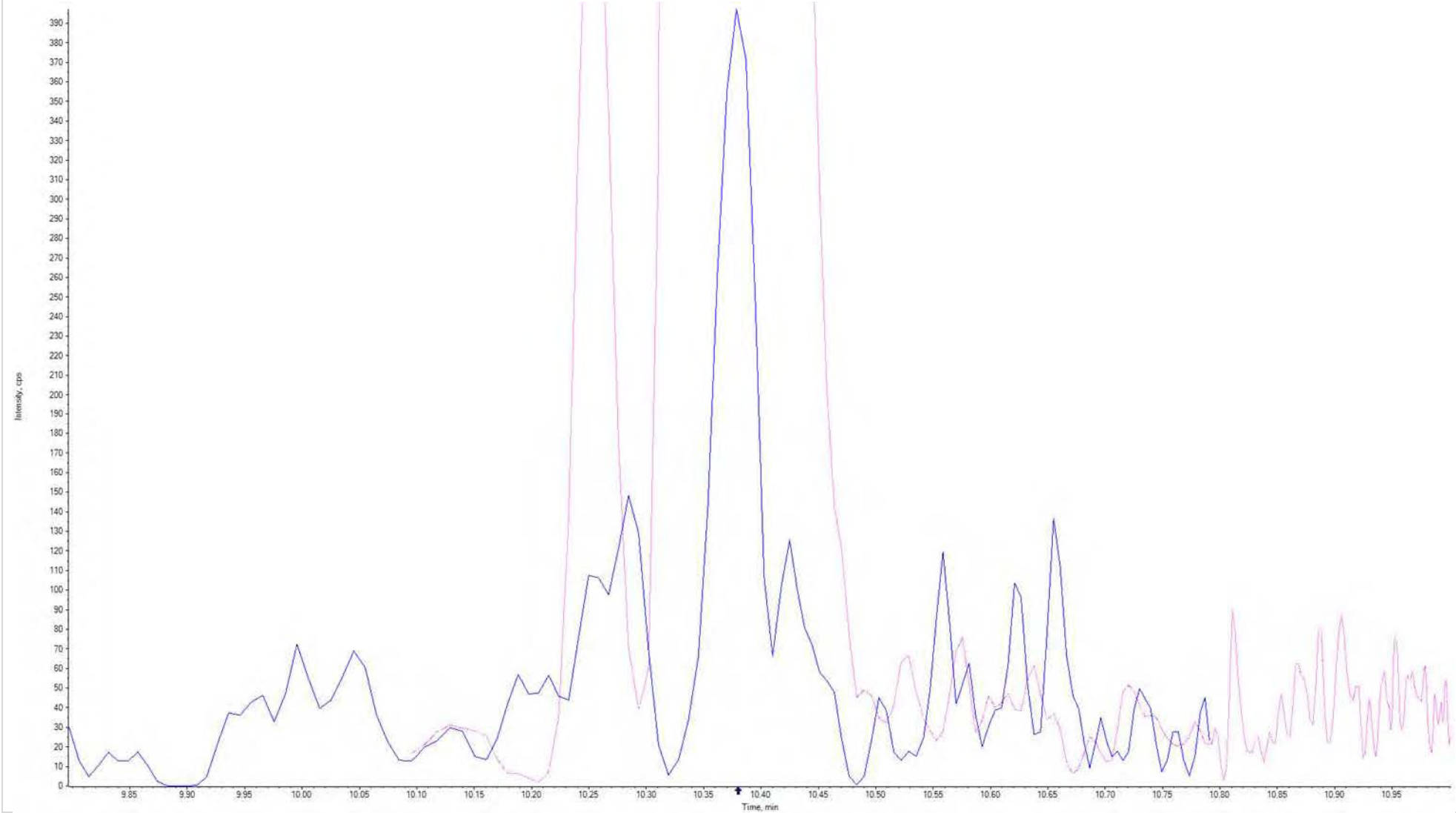
NMeFOSA
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



NMeFOSA_2
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A

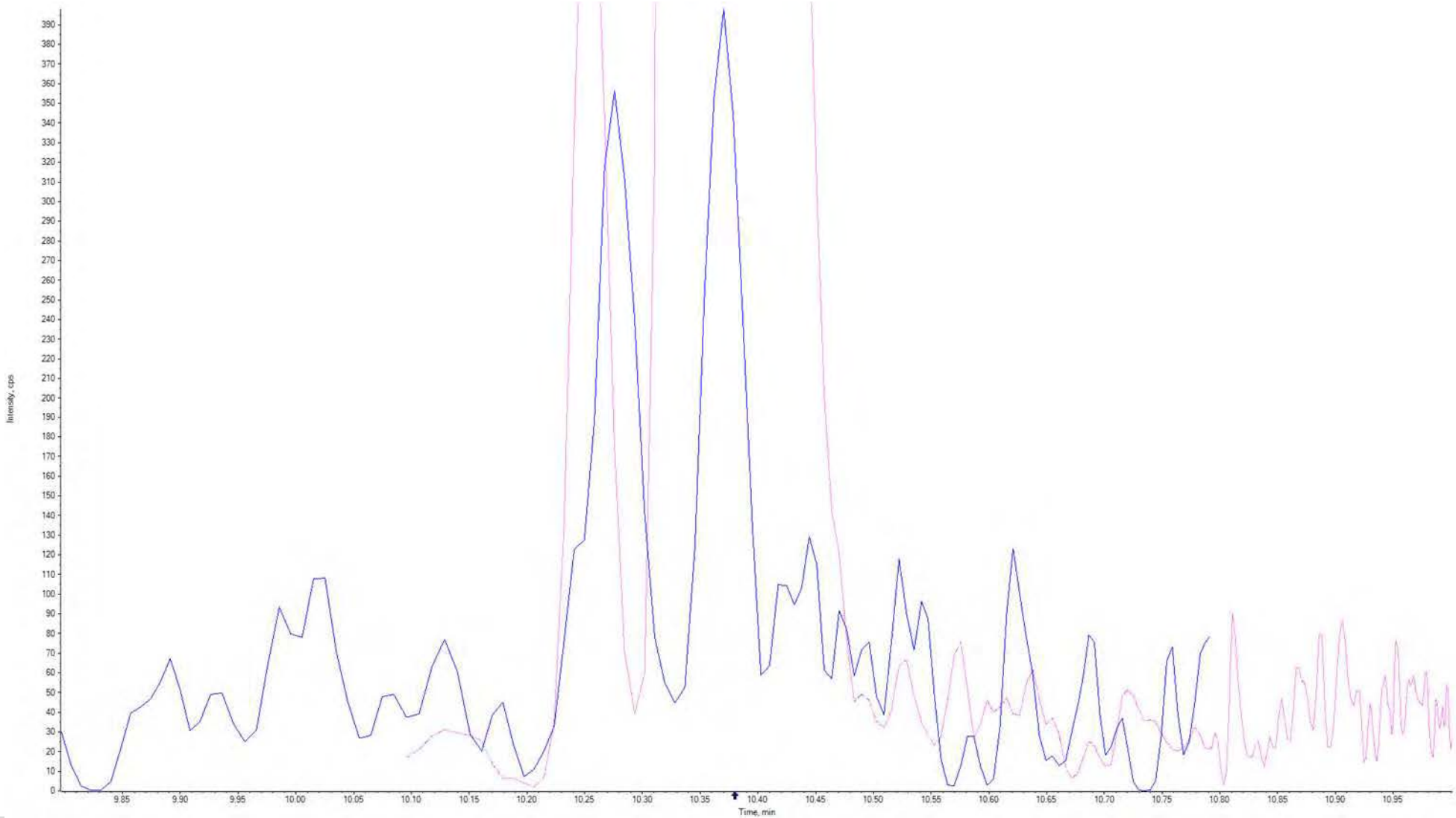


NEtFOSA
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



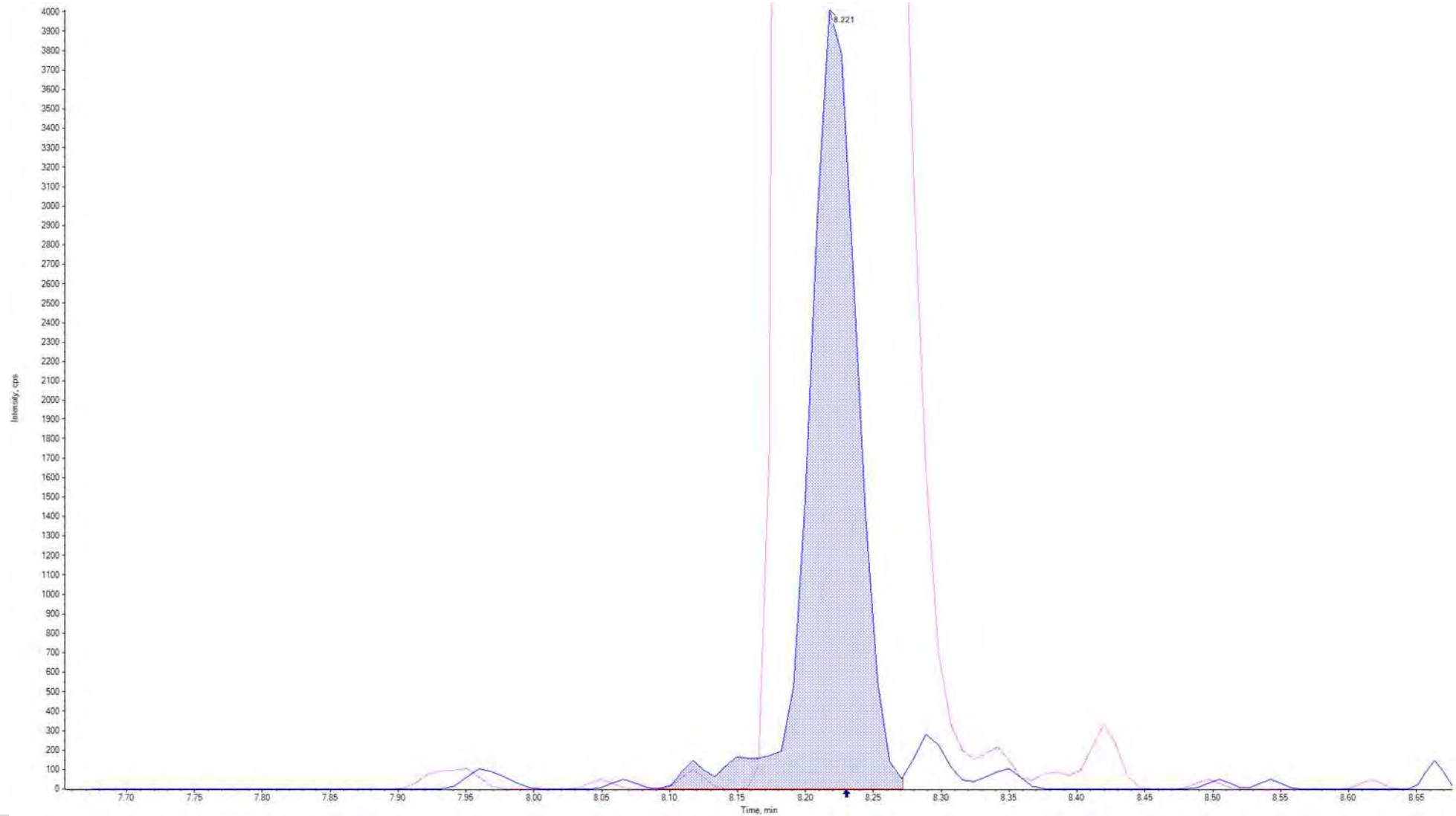
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NEtFOSA_2
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



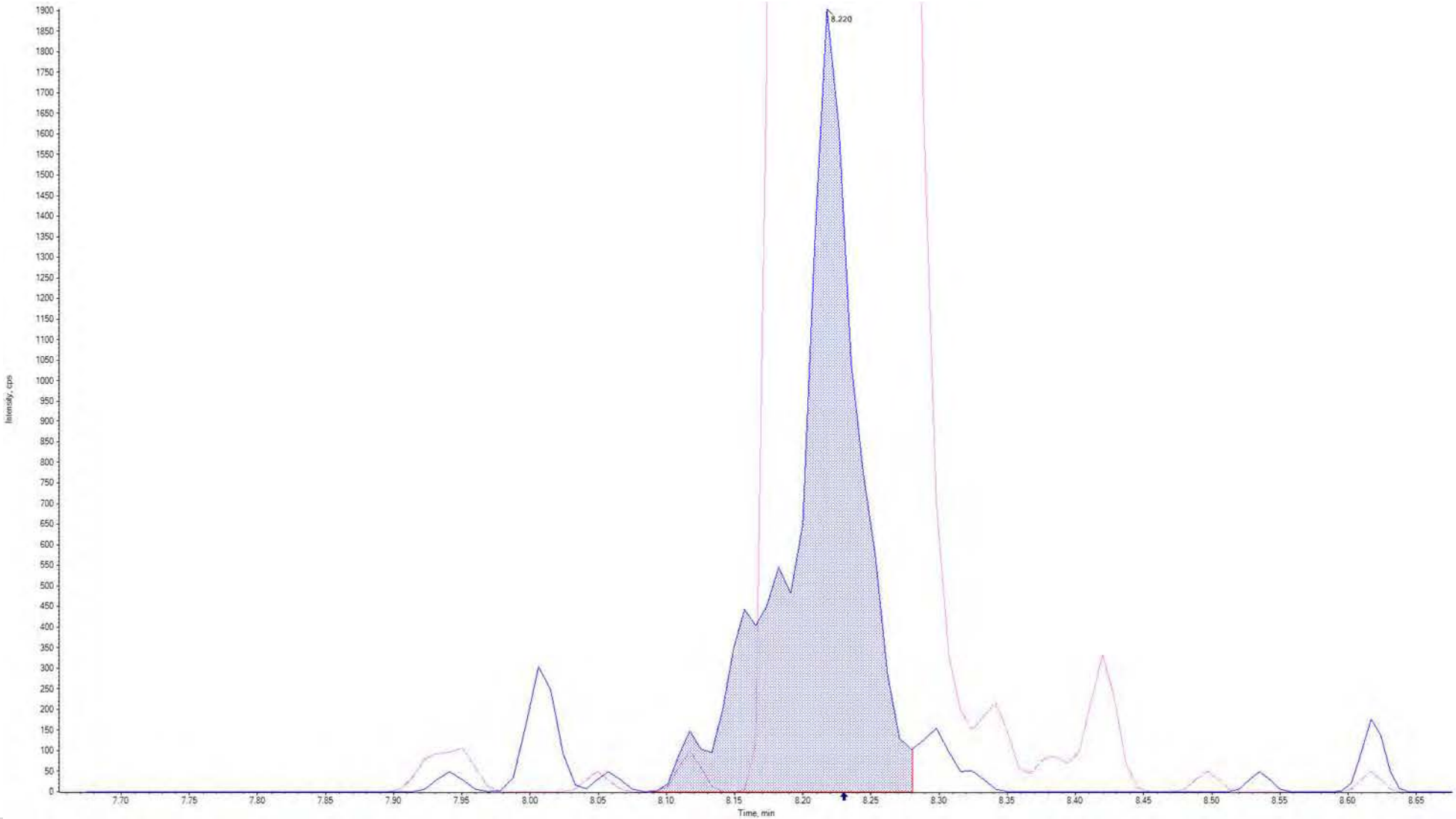
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NMeFOSAA
Sample: WG1958909-2,INSTBLANK S/N:167.2 Points Across peak:24



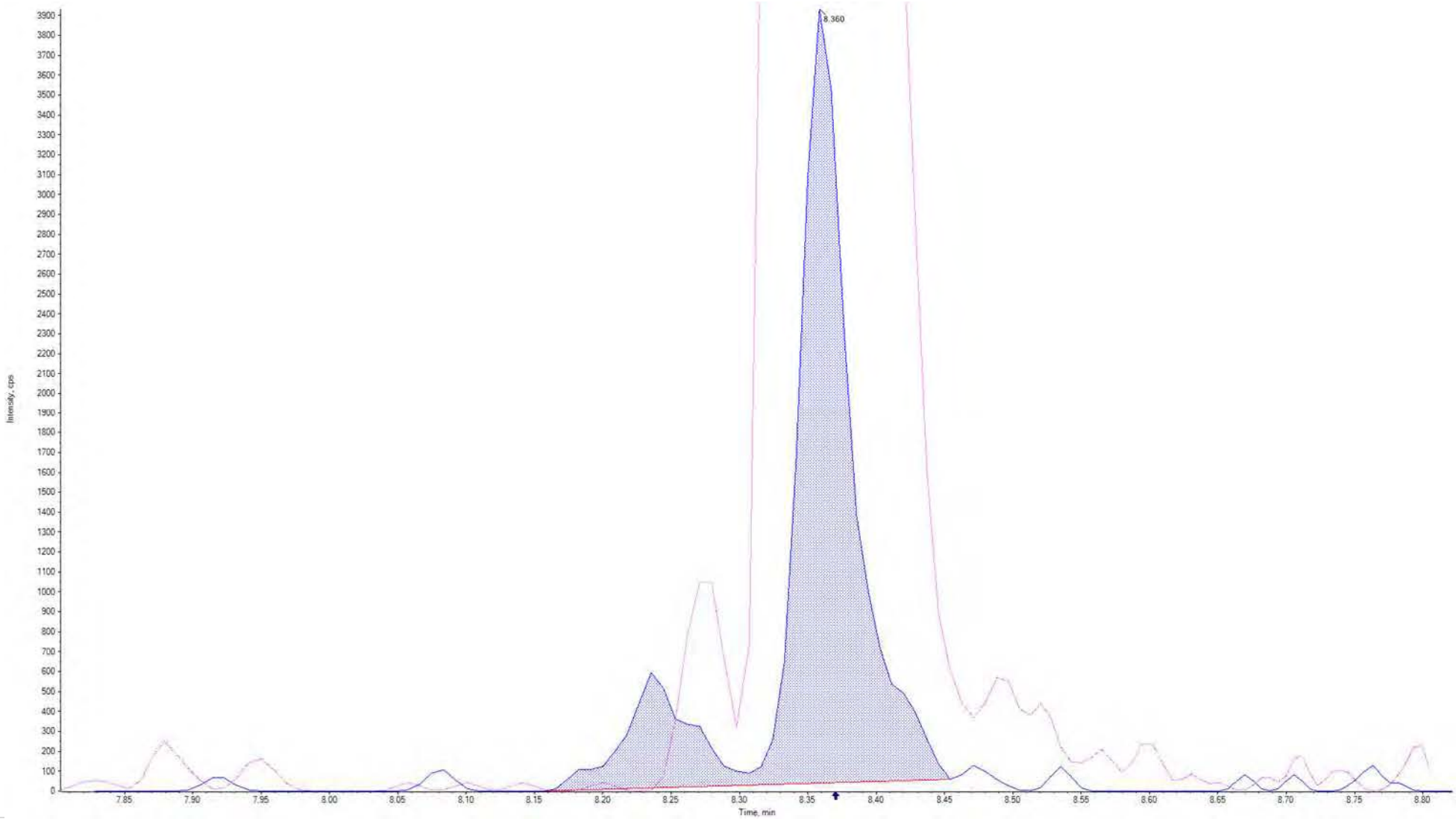
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NMeFOSAA_2
Sample: WG1958909-2,INSTBLANK S/N:109.6 Points Across peak:25



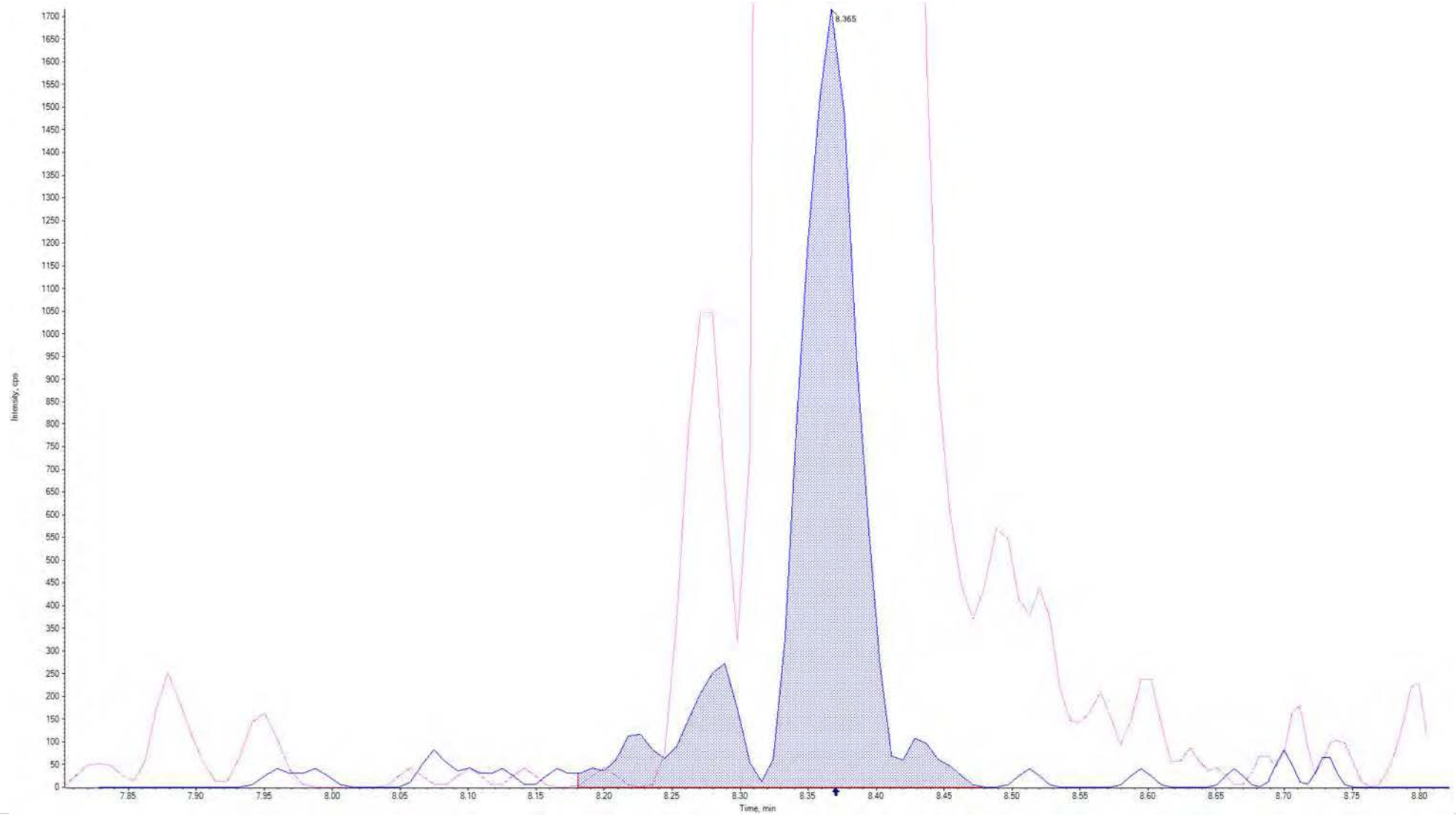
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NEtFOSAA
Sample: WG1958909-2,INSTBLANK S/N:122.2 Points Across peak:35



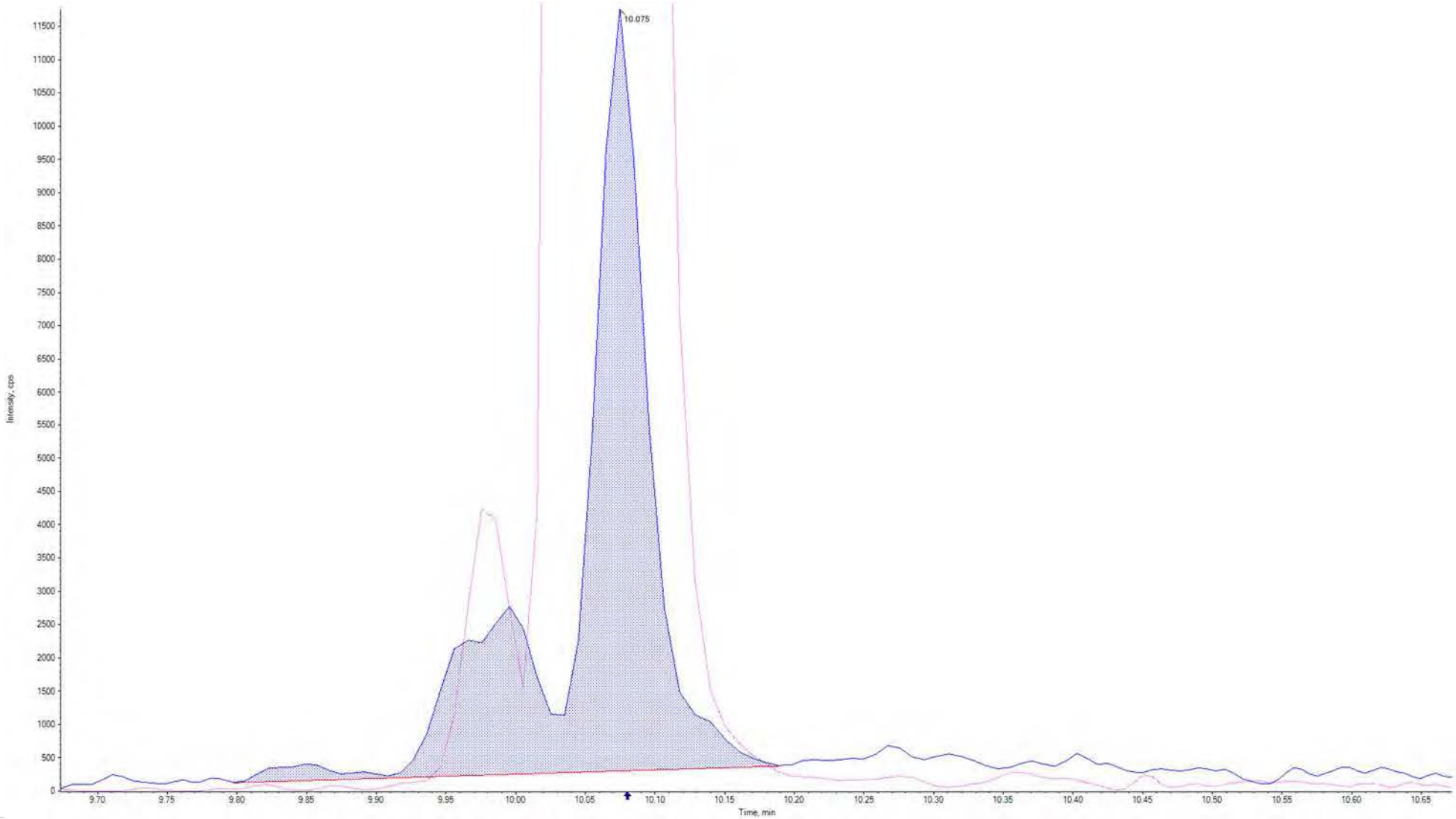
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NEtFOSAA_2
Sample: WG1958909-2,INSTBLANK S/N:104.3 Points Across peak:36



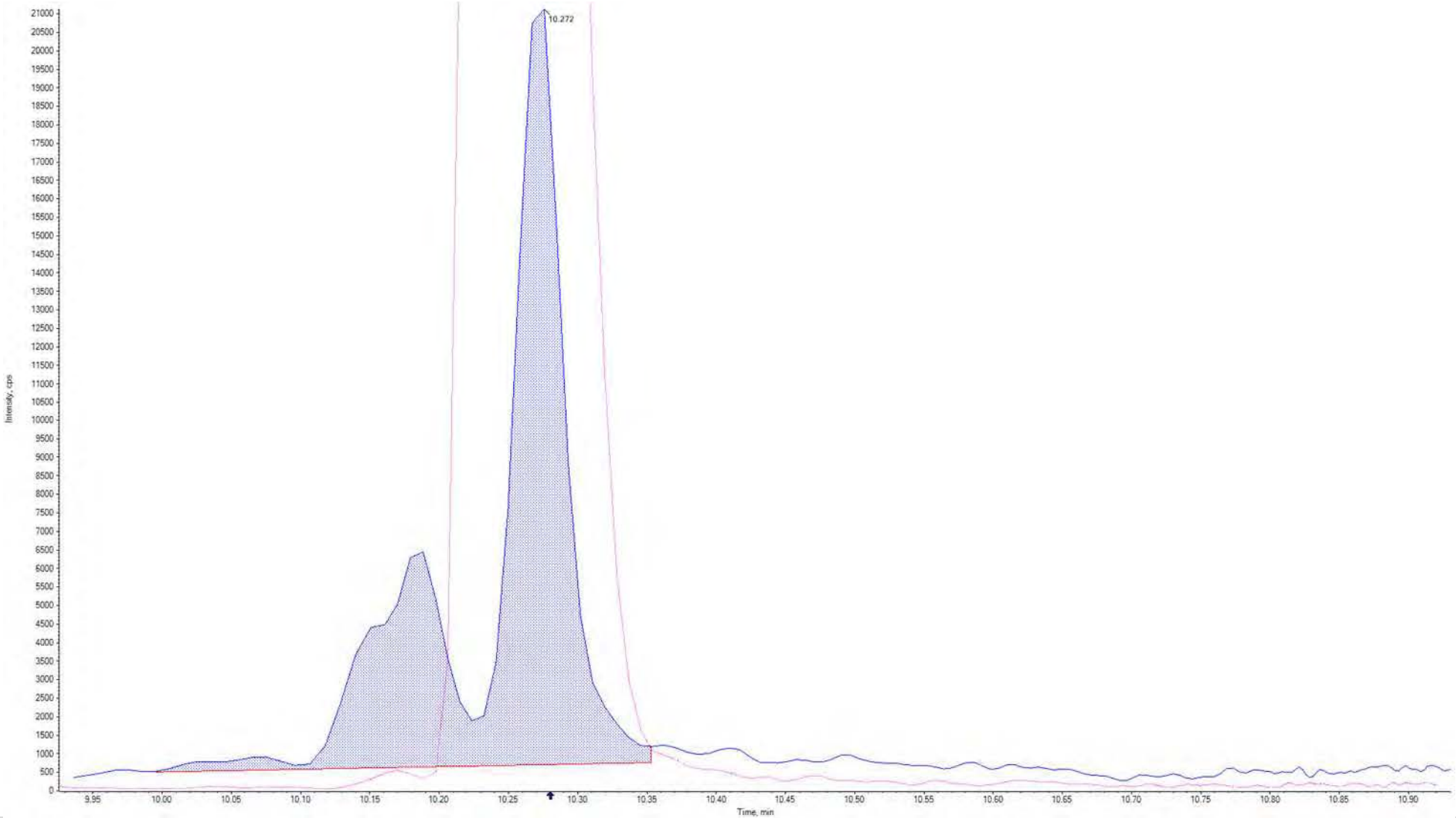
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NMeFOSE
Sample: WG1958909-2,INSTBLANK S/N:318.3 Points Across peak:43



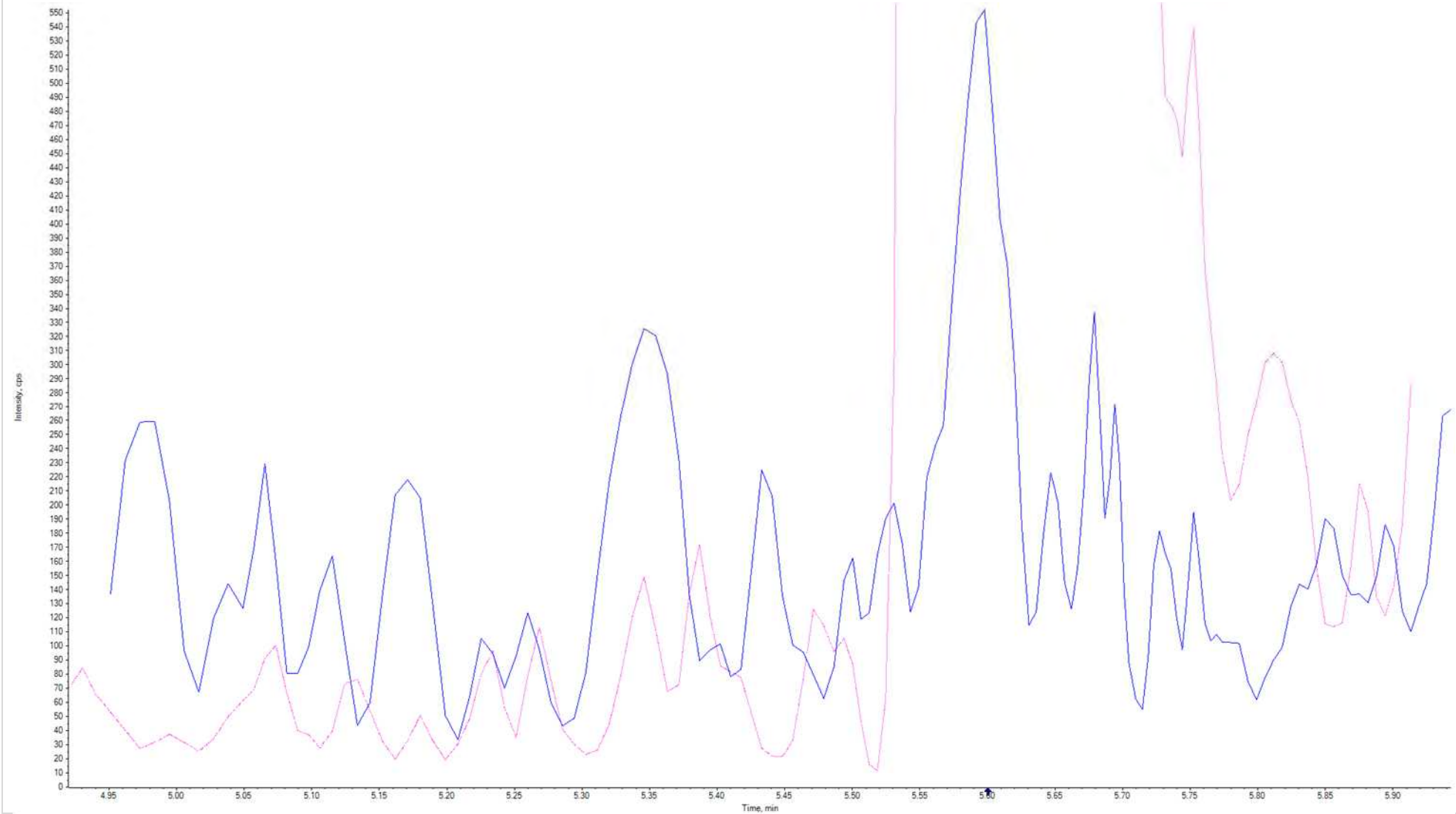
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NEtFOSE
Sample: WG1958909-2,INSTBLANK S/N:277.1 Points Across peak:40

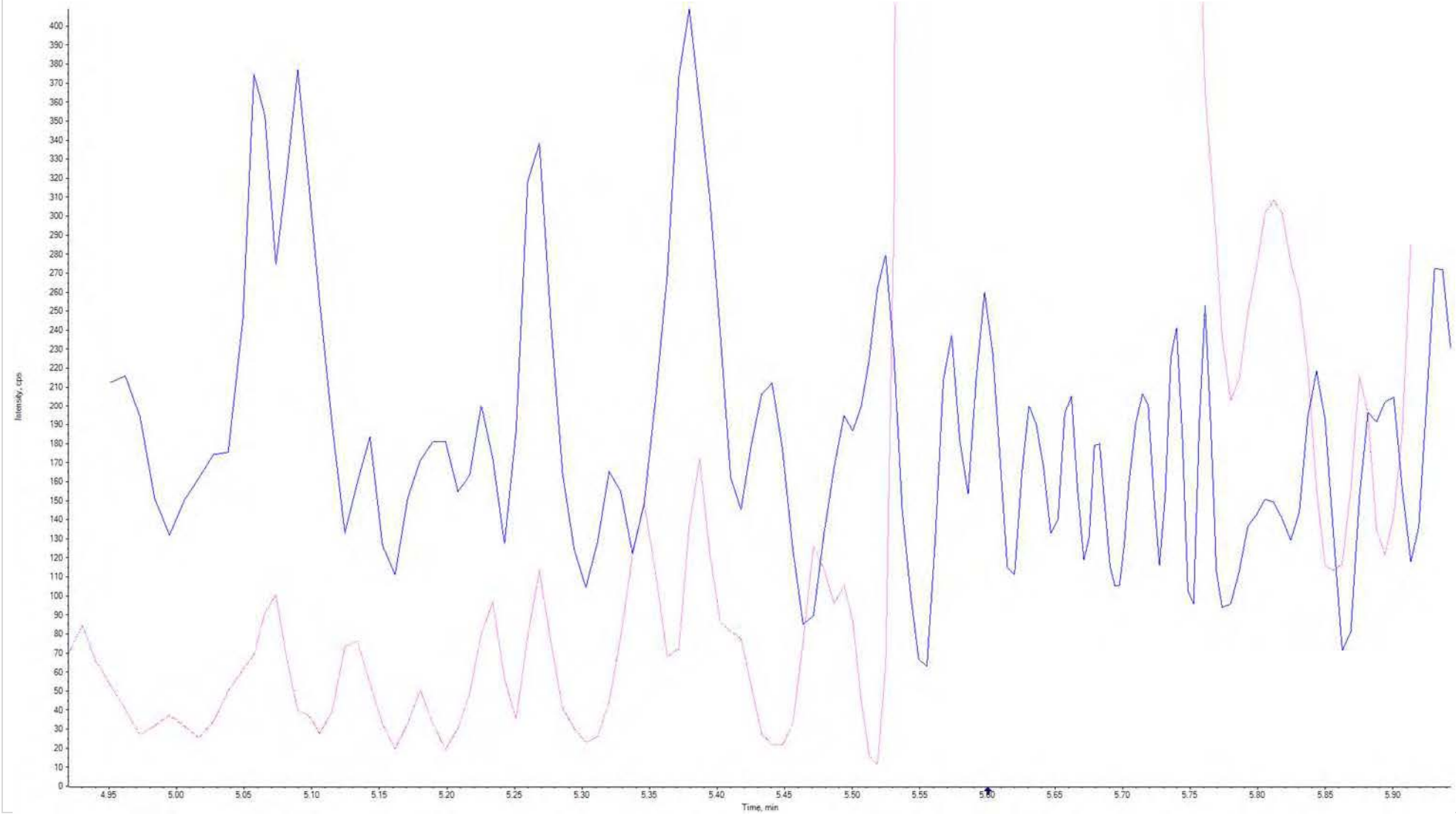


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

HFPO-DA
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A

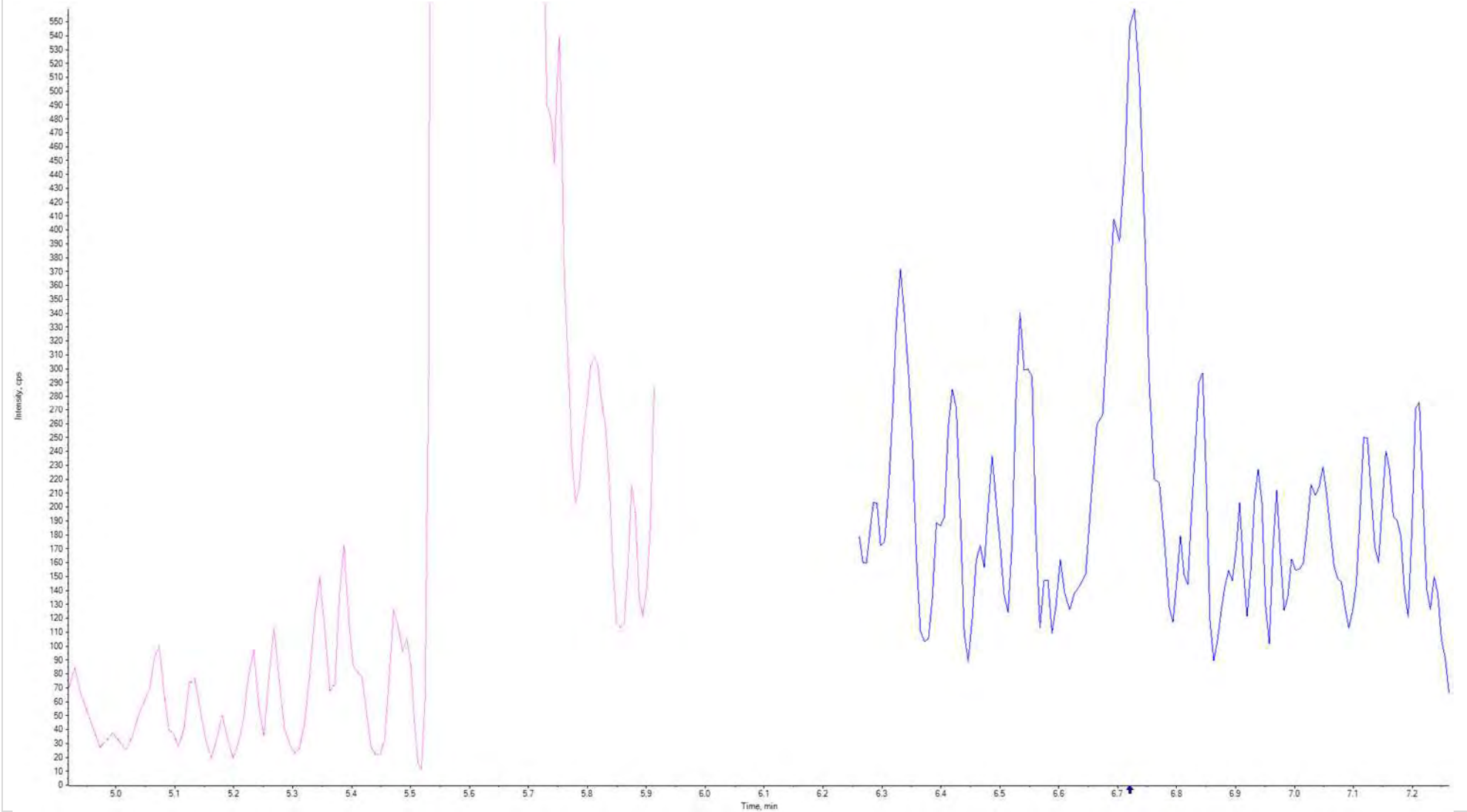


HFPO-DA_2
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

ADONA
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

ADONA_2
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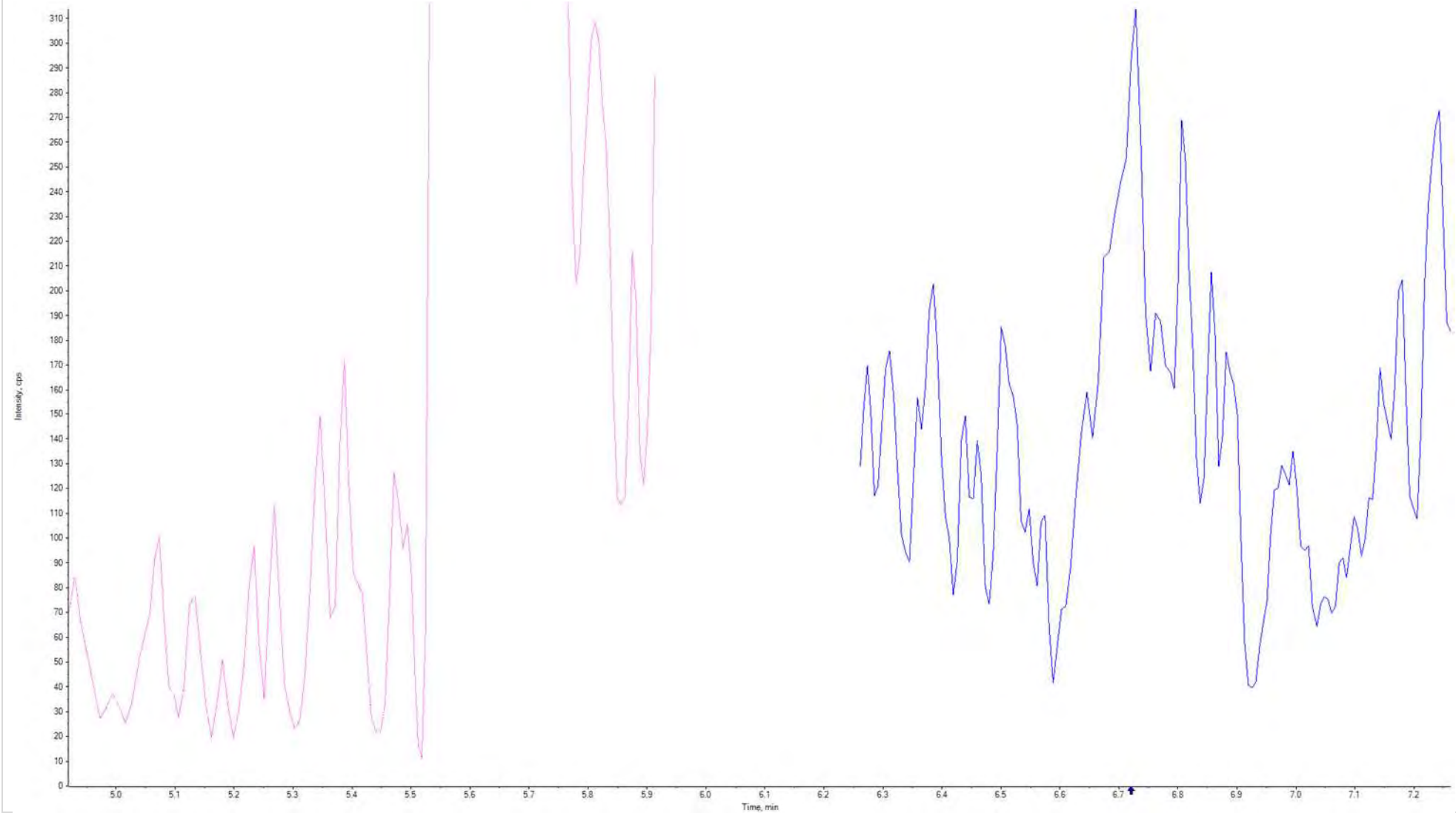
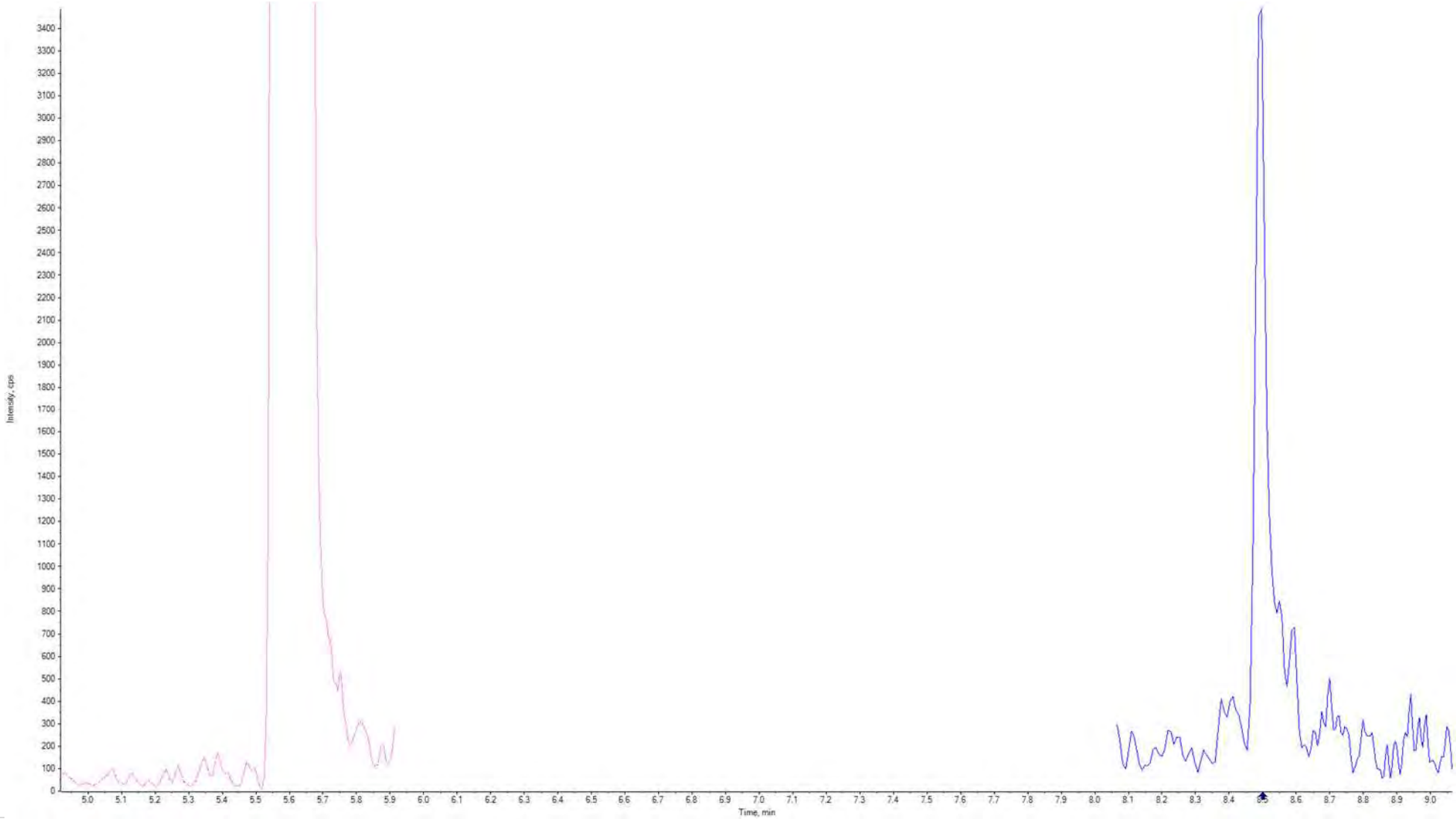


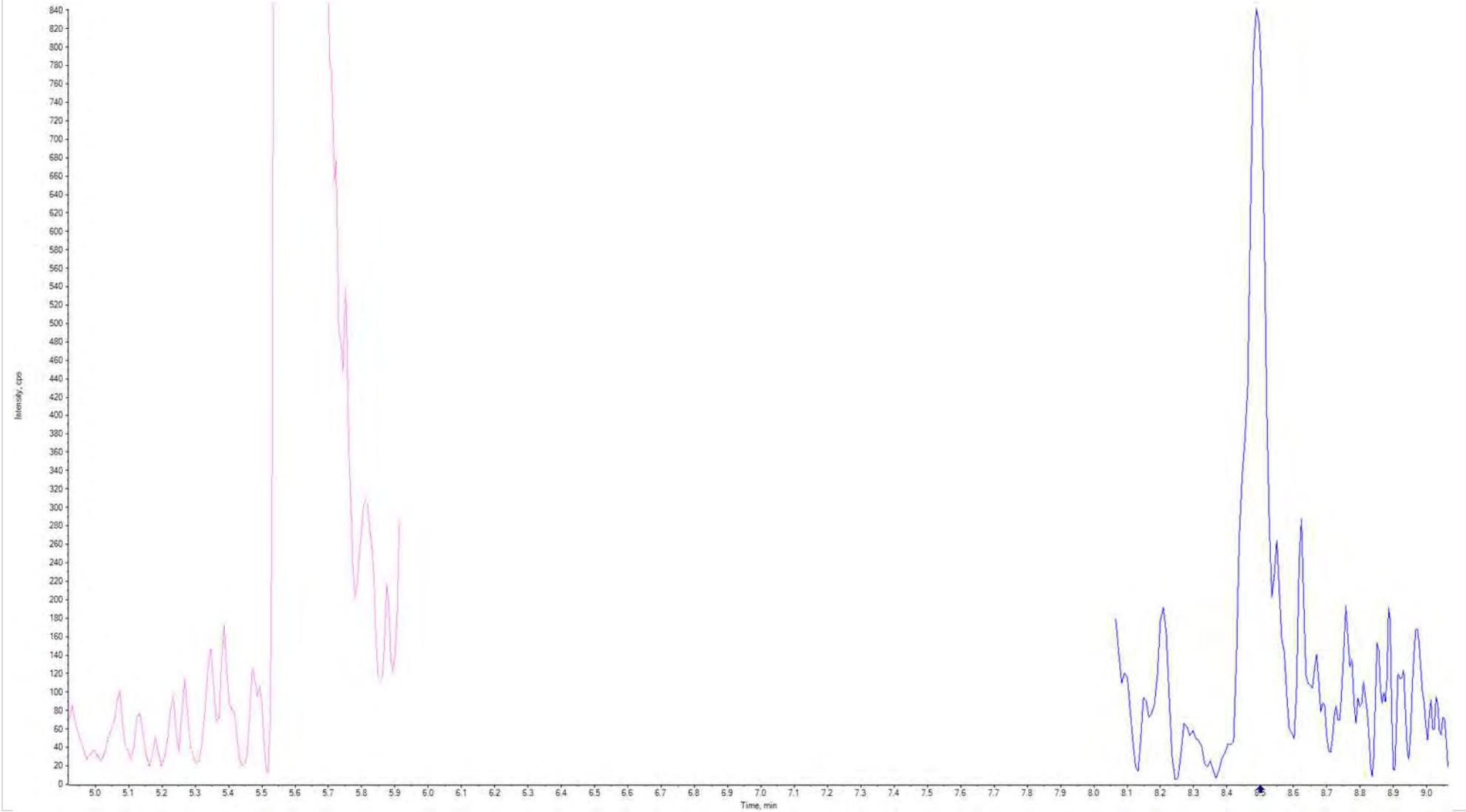
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

9Cl-PF3ONS
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

9Cl-PF3ONS_2
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A

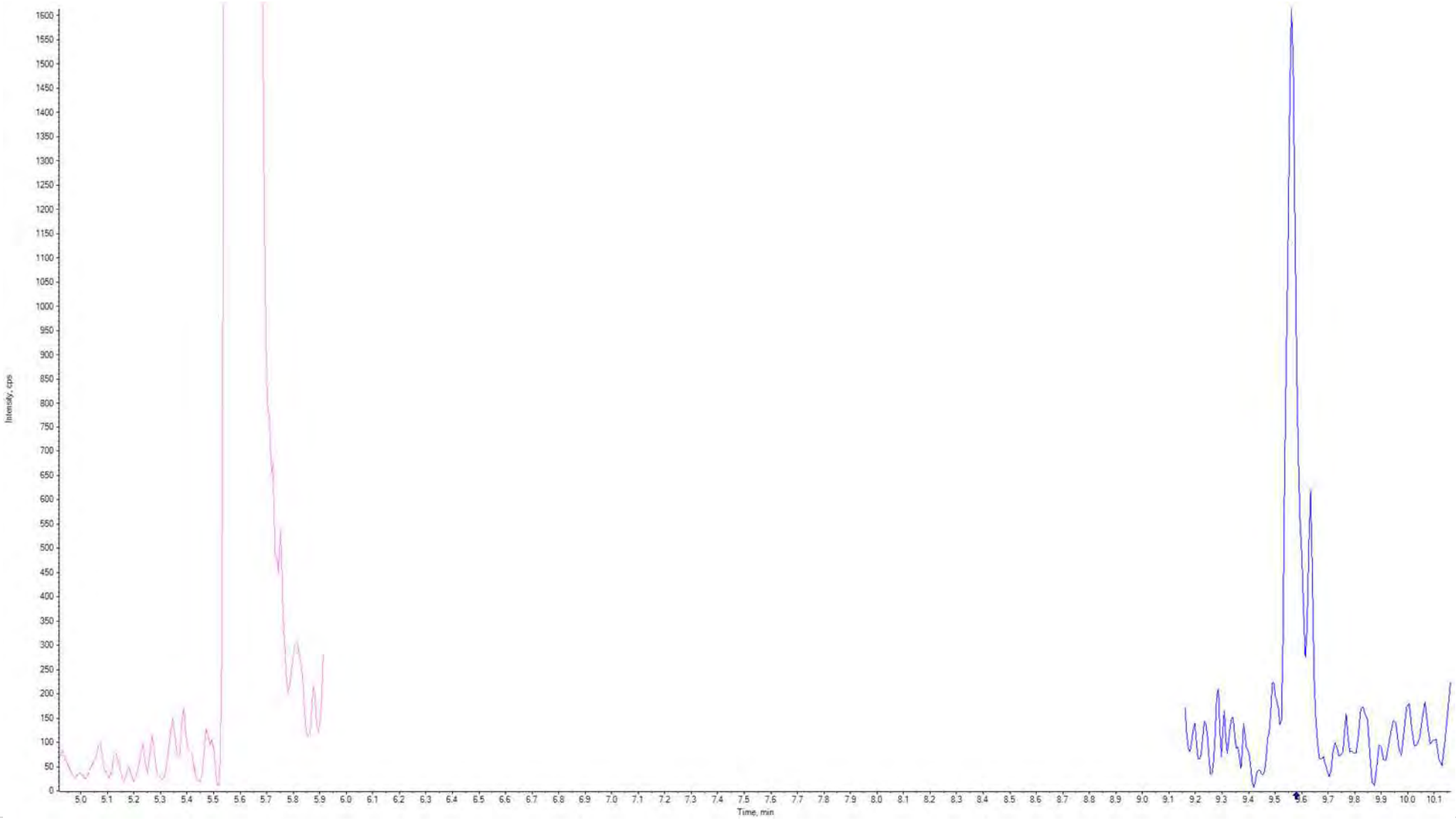


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

11Cl-PF3OUdS
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A

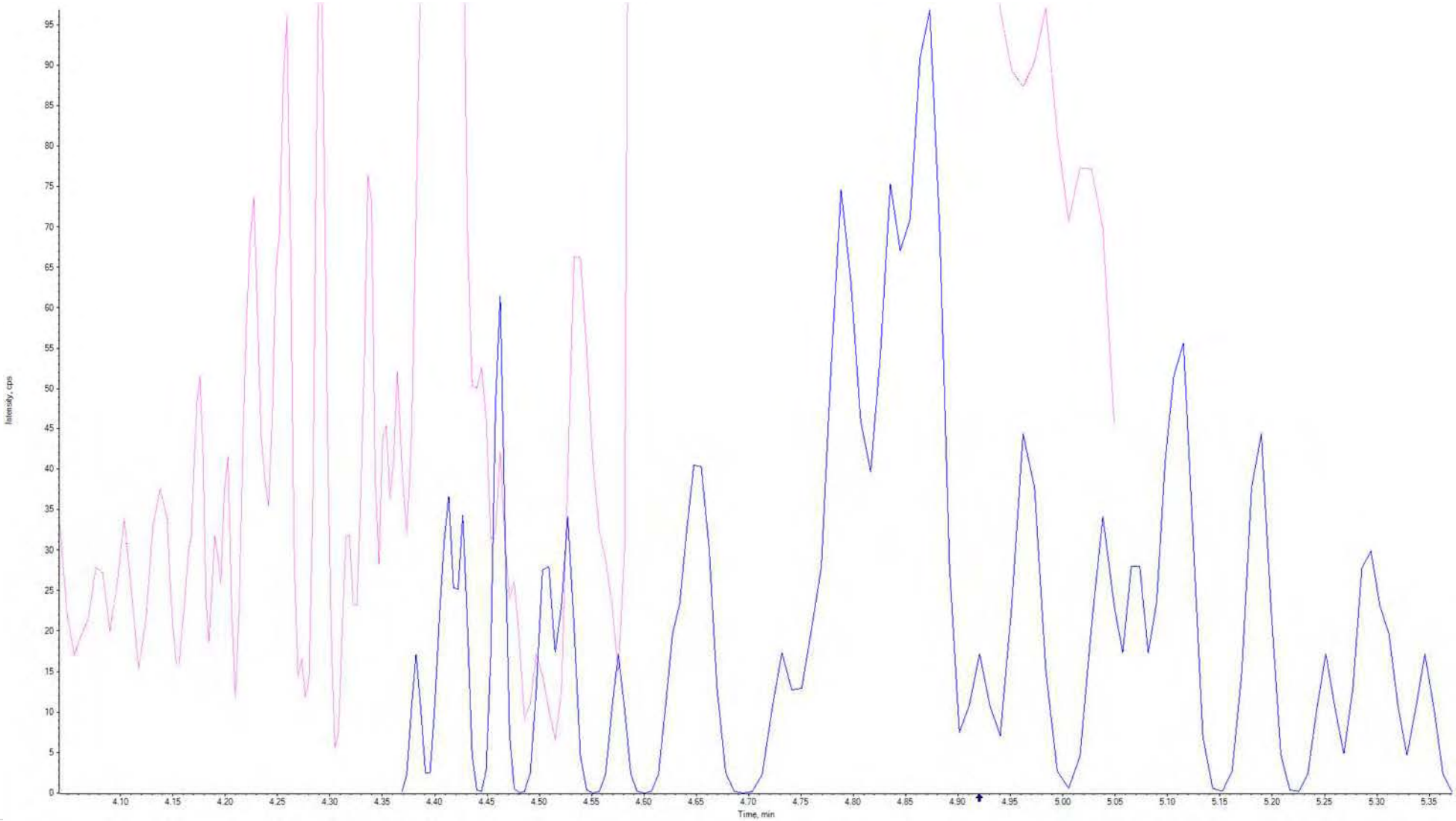
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

11Cl-PF3OUdS_2
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



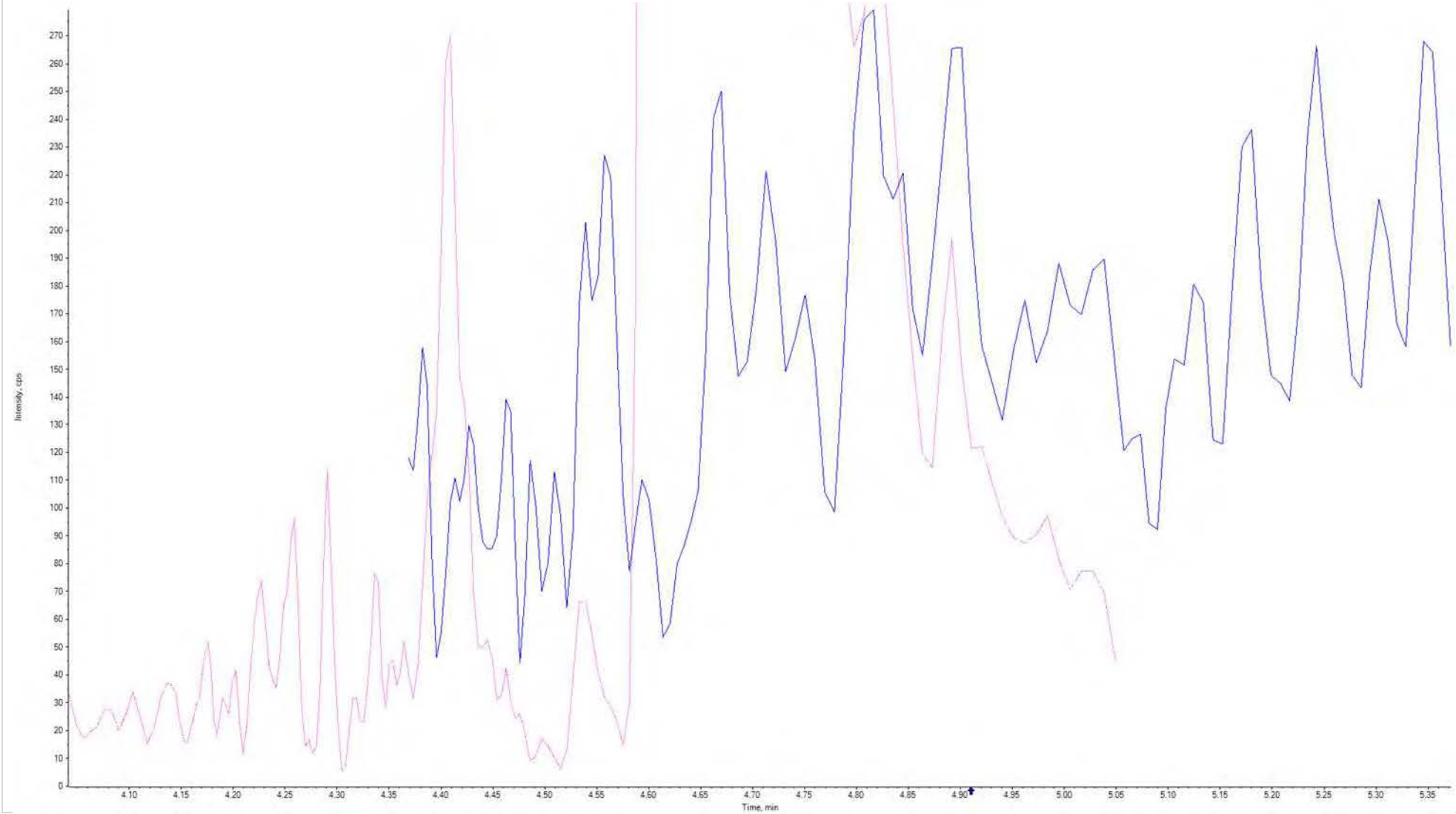
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

3:3FTCA
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



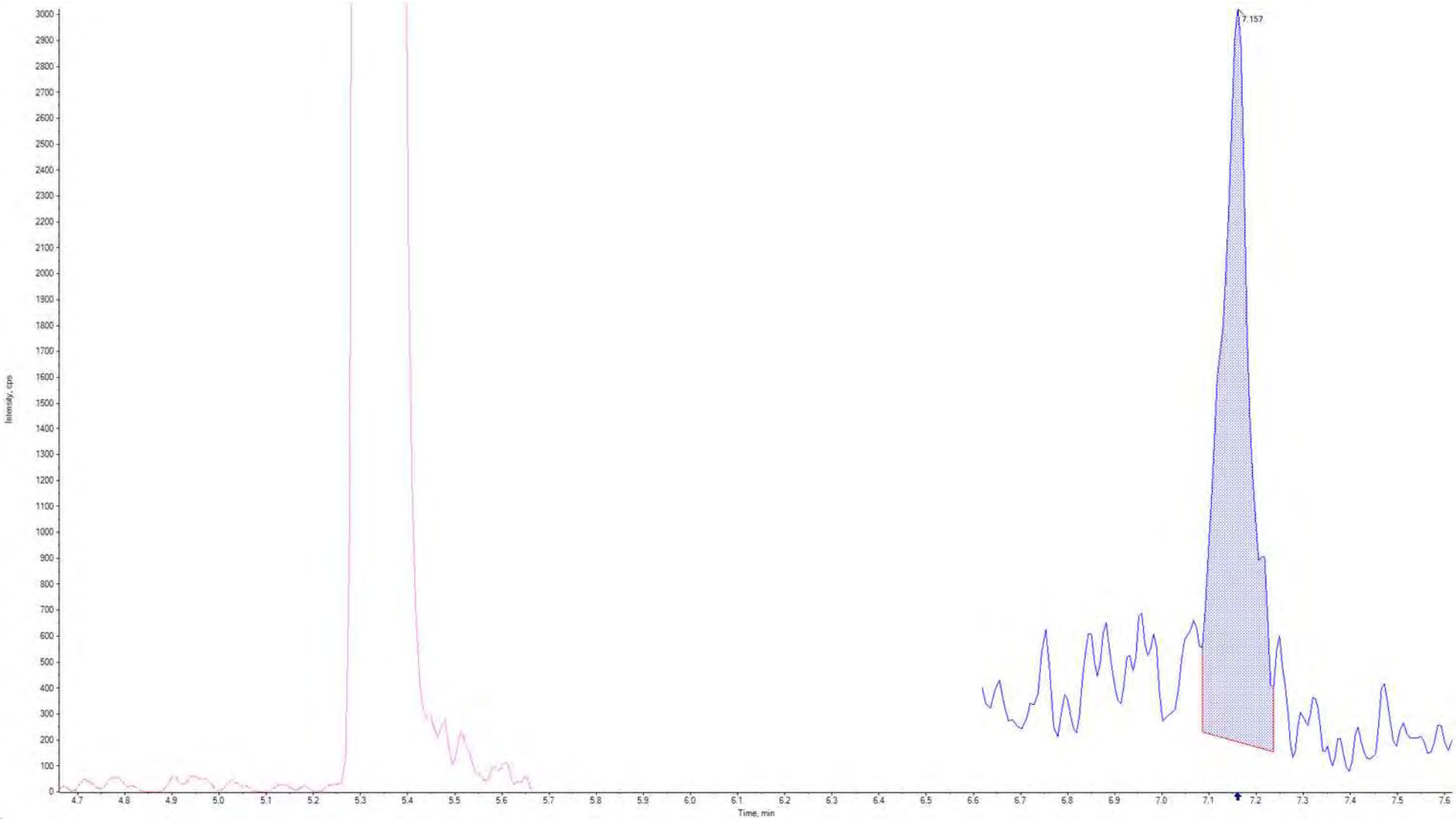
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

3:3FTCA_2
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



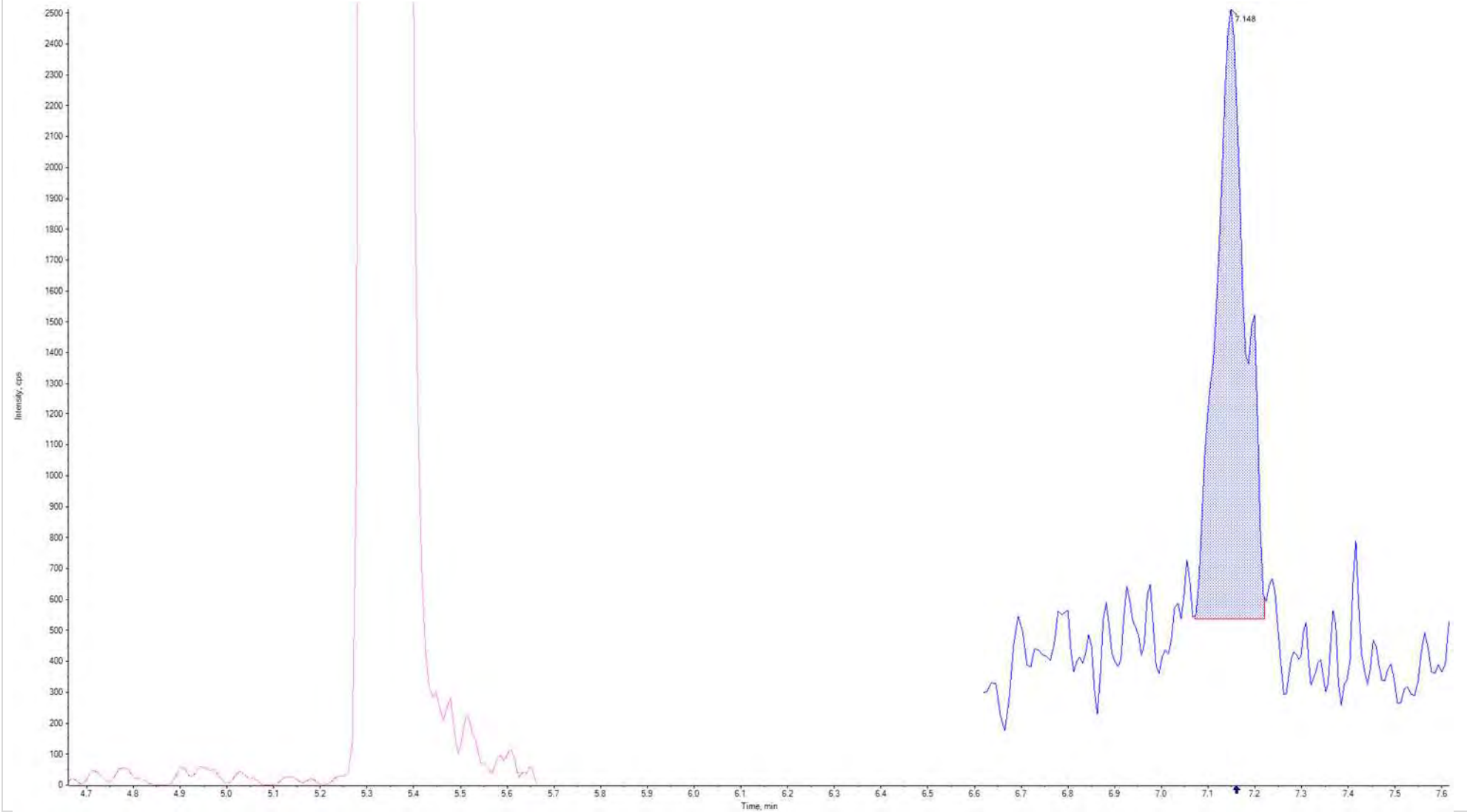
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

5:3FTCA
Sample: WG1958909-2,INSTBLANK S/N:97.9 Points Across peak:25



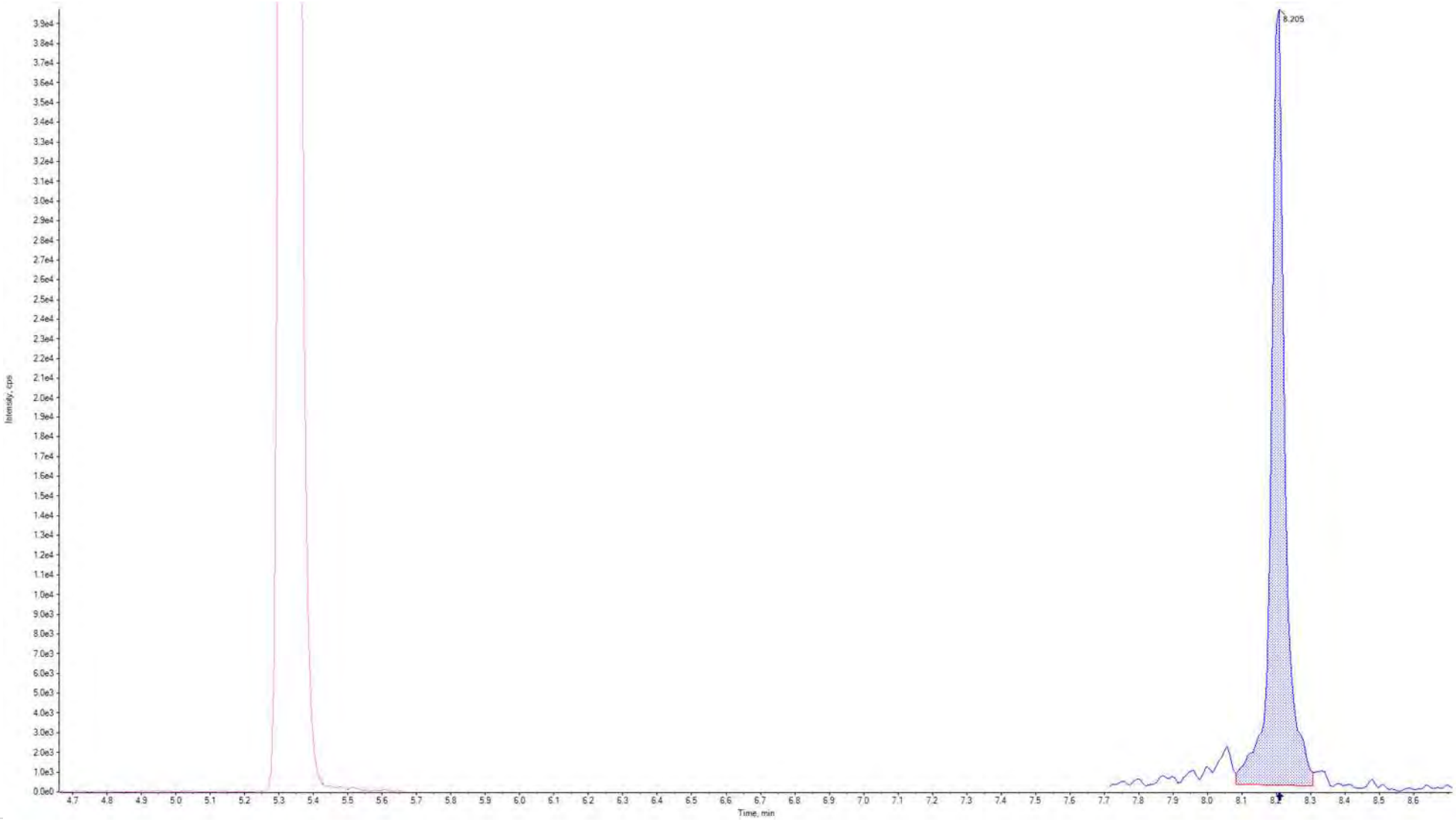
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

5:3FTCA_2
Sample: WG1958909-2,INSTBLANK S/N:47.3 Points Across peak:26



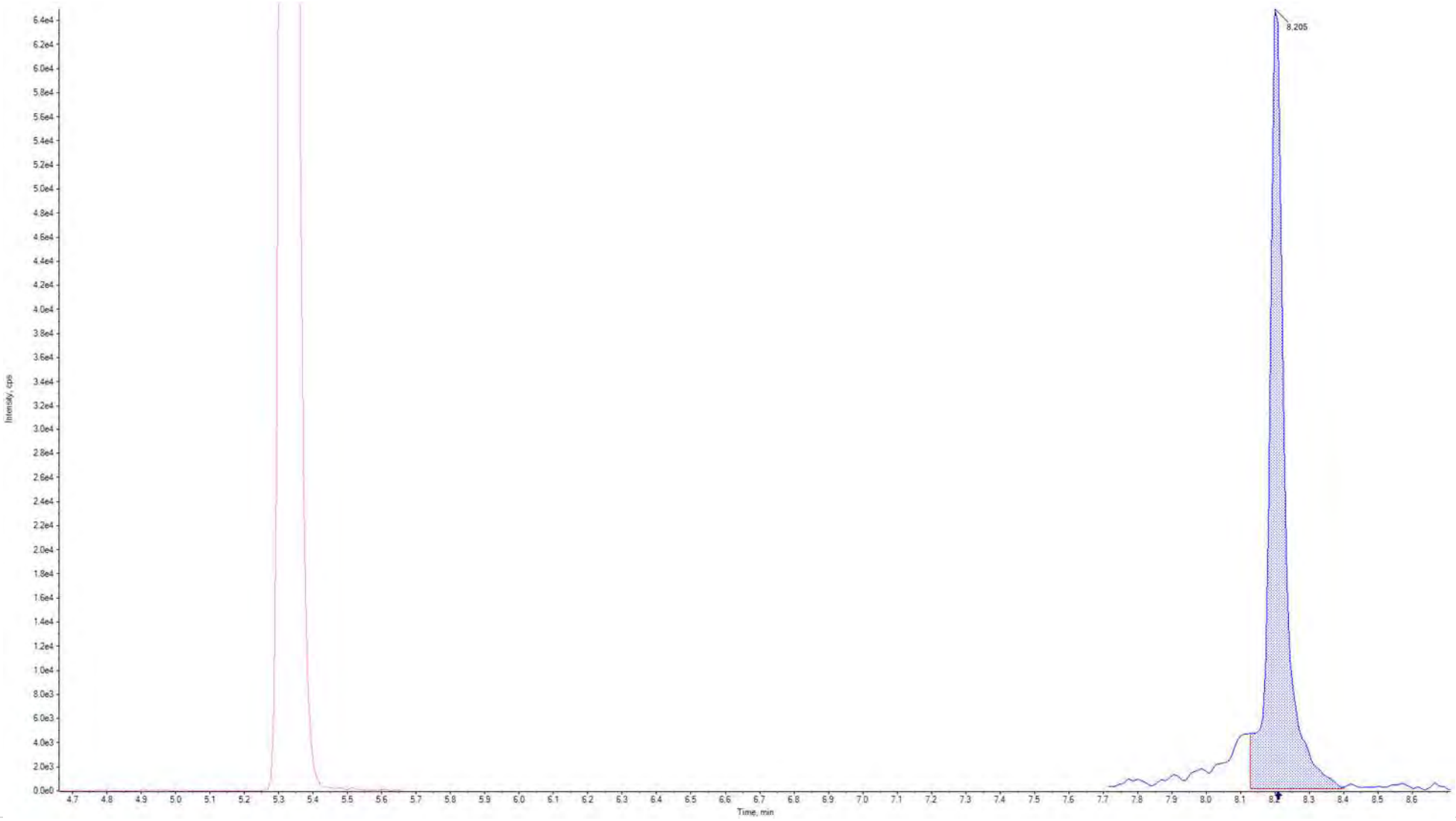
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

7:3FTCA
Sample: WG1958909-2,INSTBLANK S/N:741.6 Points Across peak:27



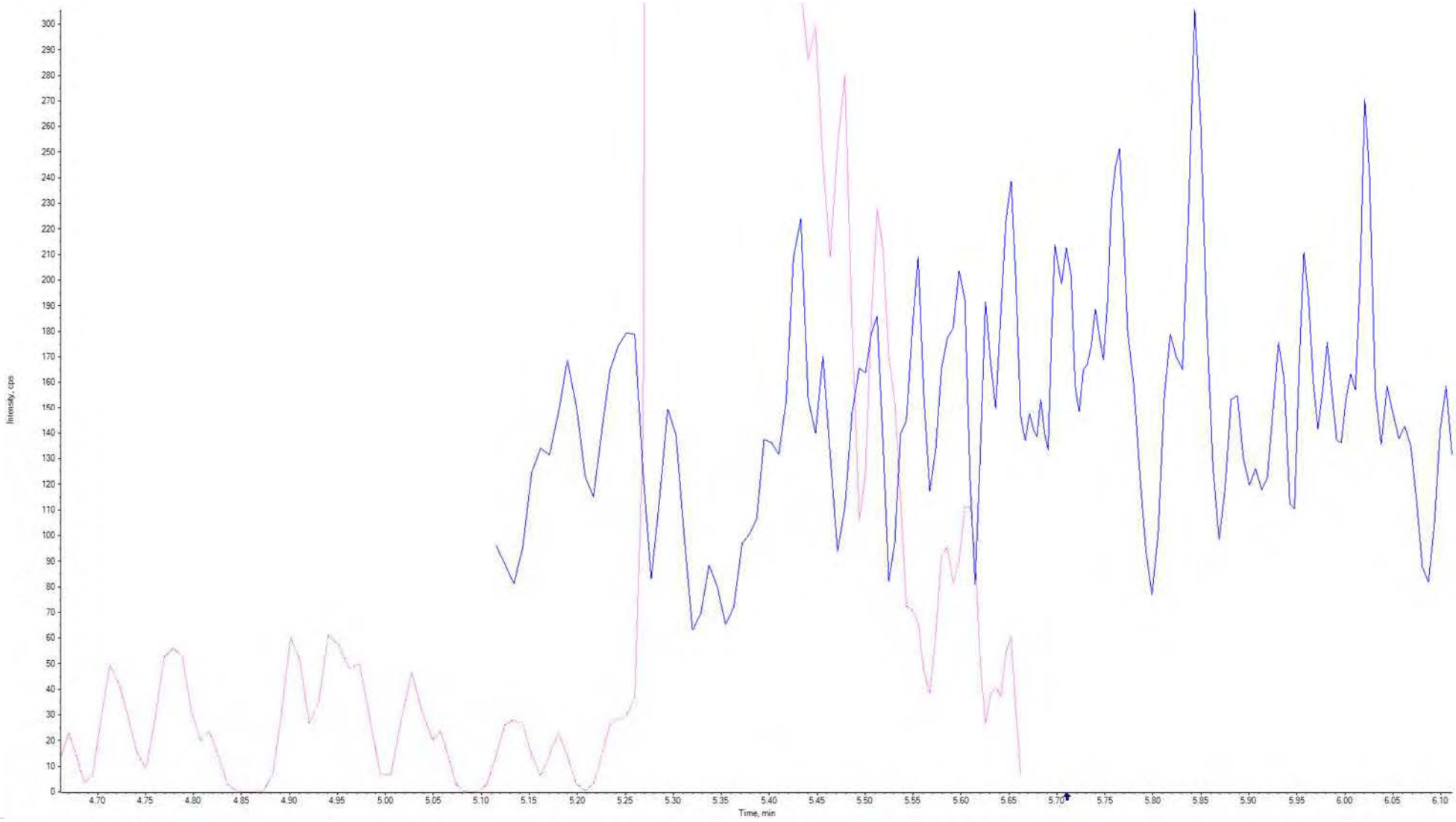
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

7:3FTCA_2
Sample: WG1958909-2,INSTBLANK S/N:902.1 Points Across peak:33



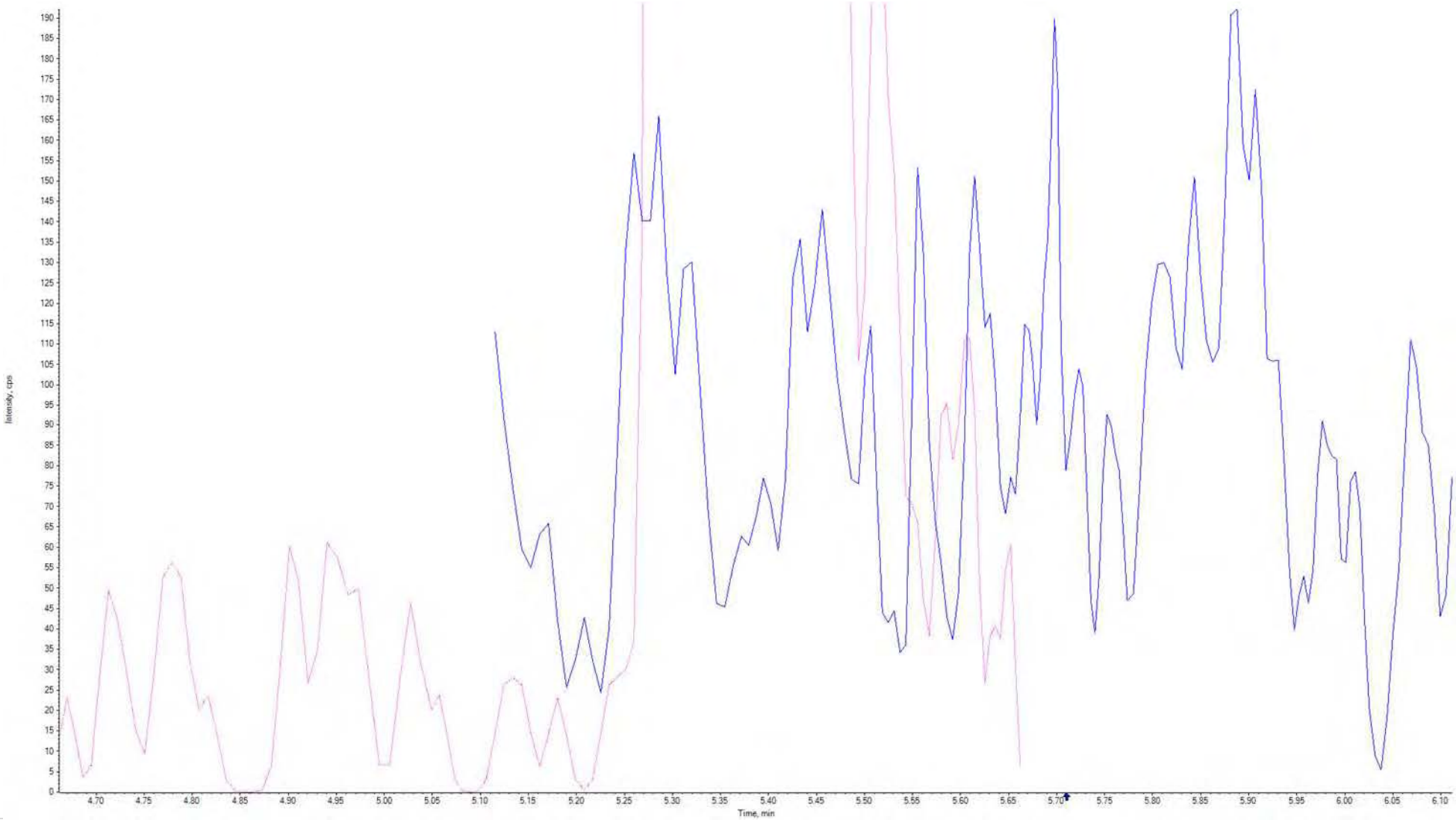
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFEESA
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



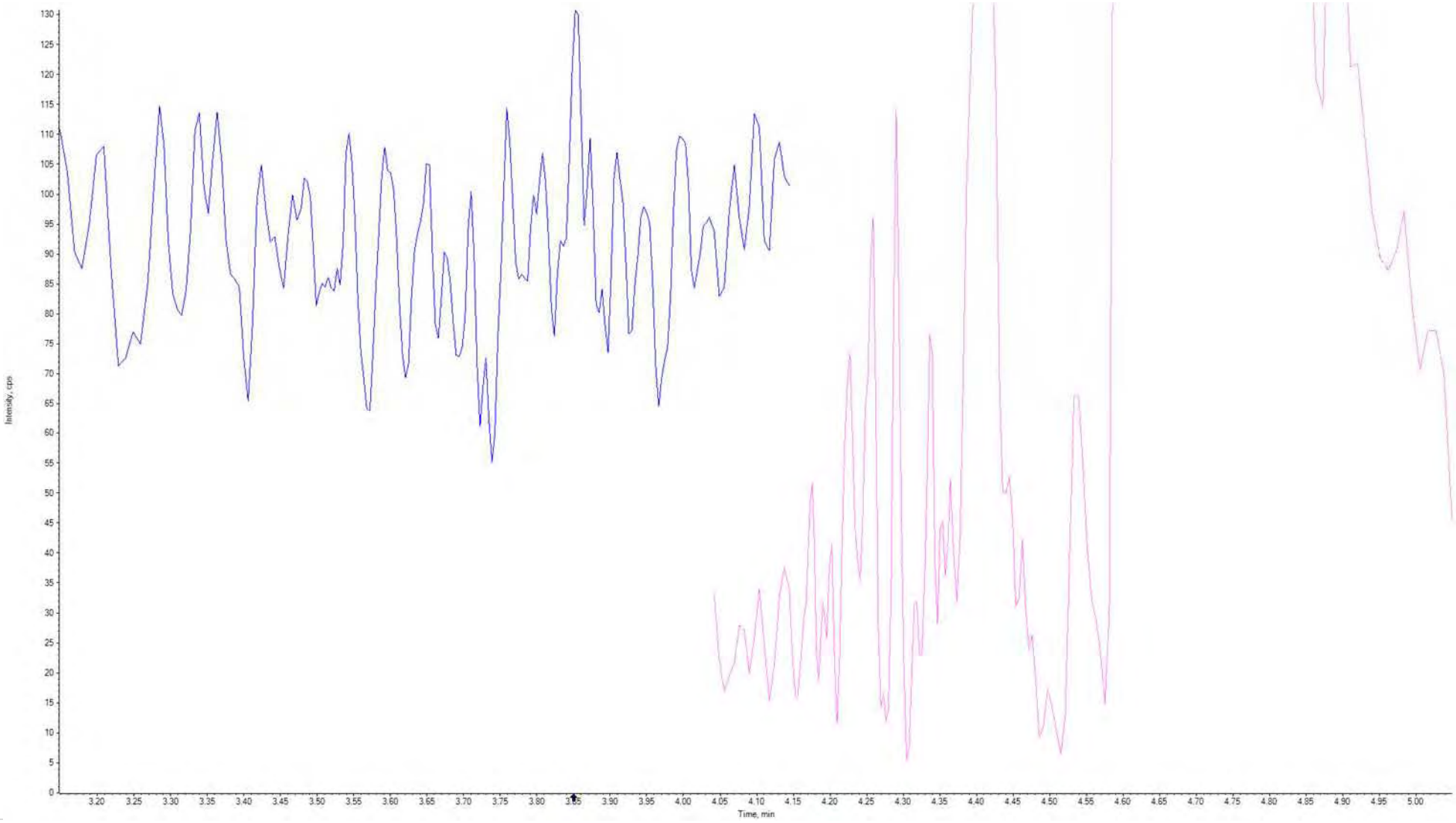
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFEESA_2
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



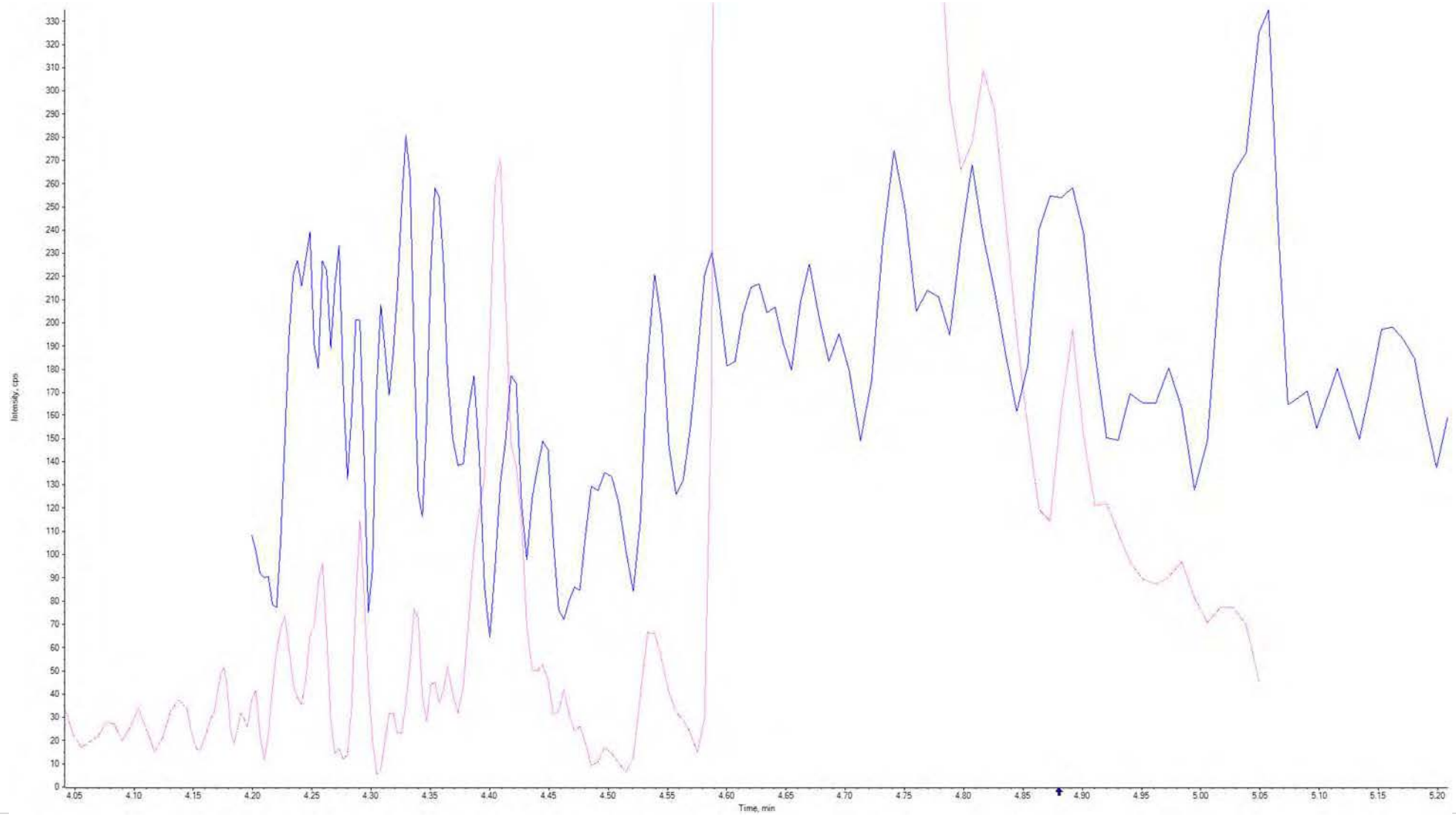
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFMPA
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFMBA
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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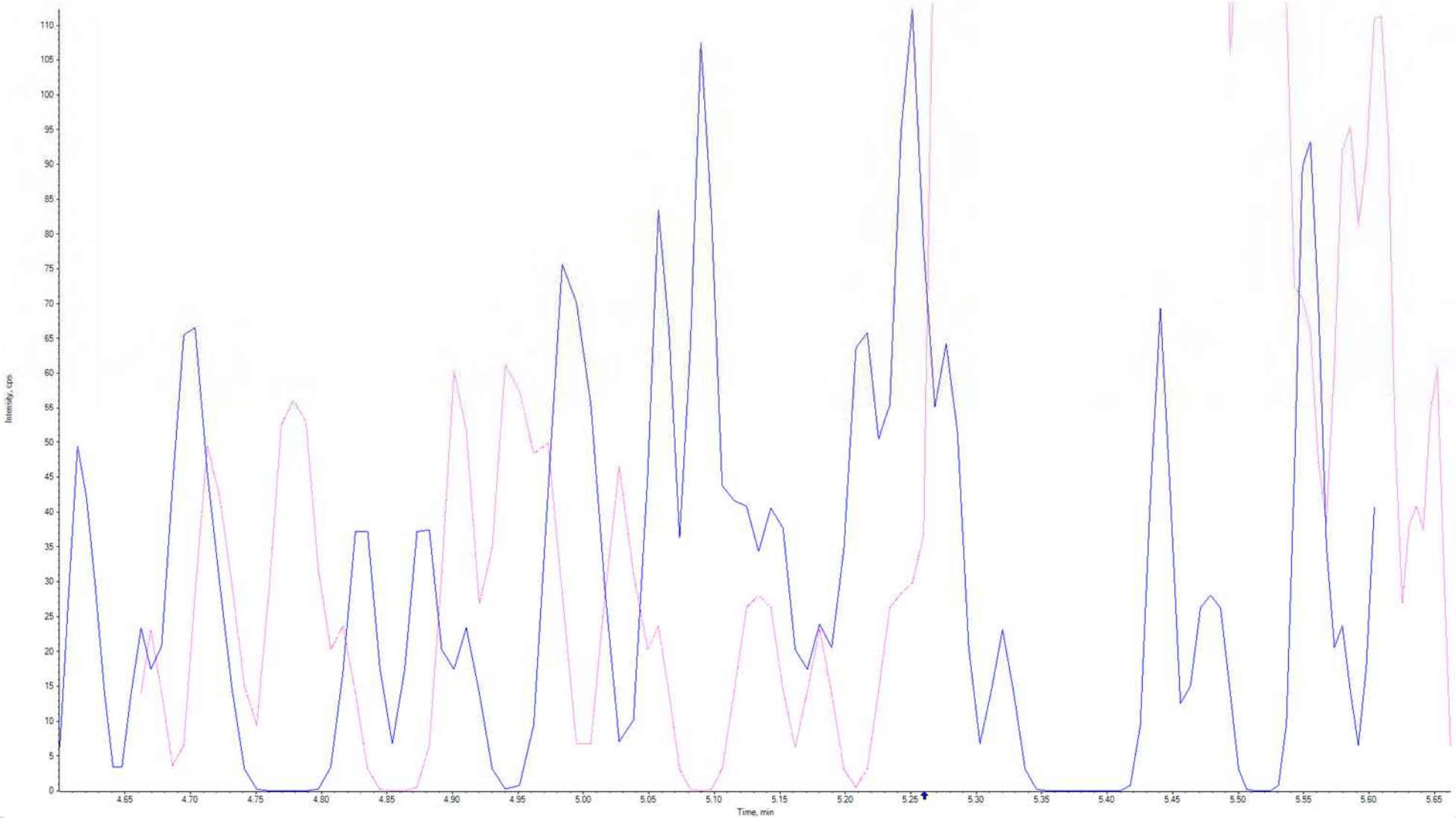
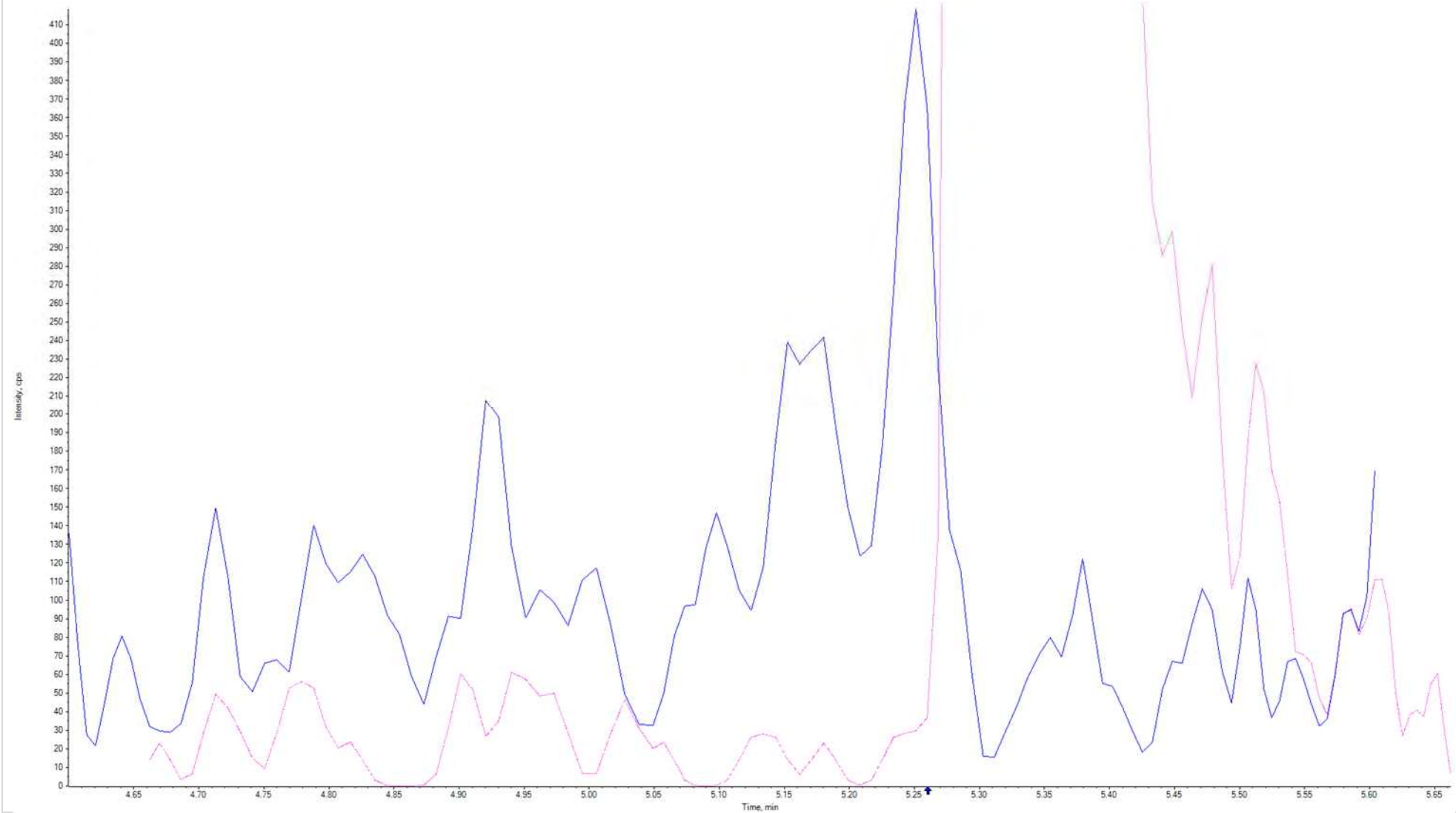
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NFDHA
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



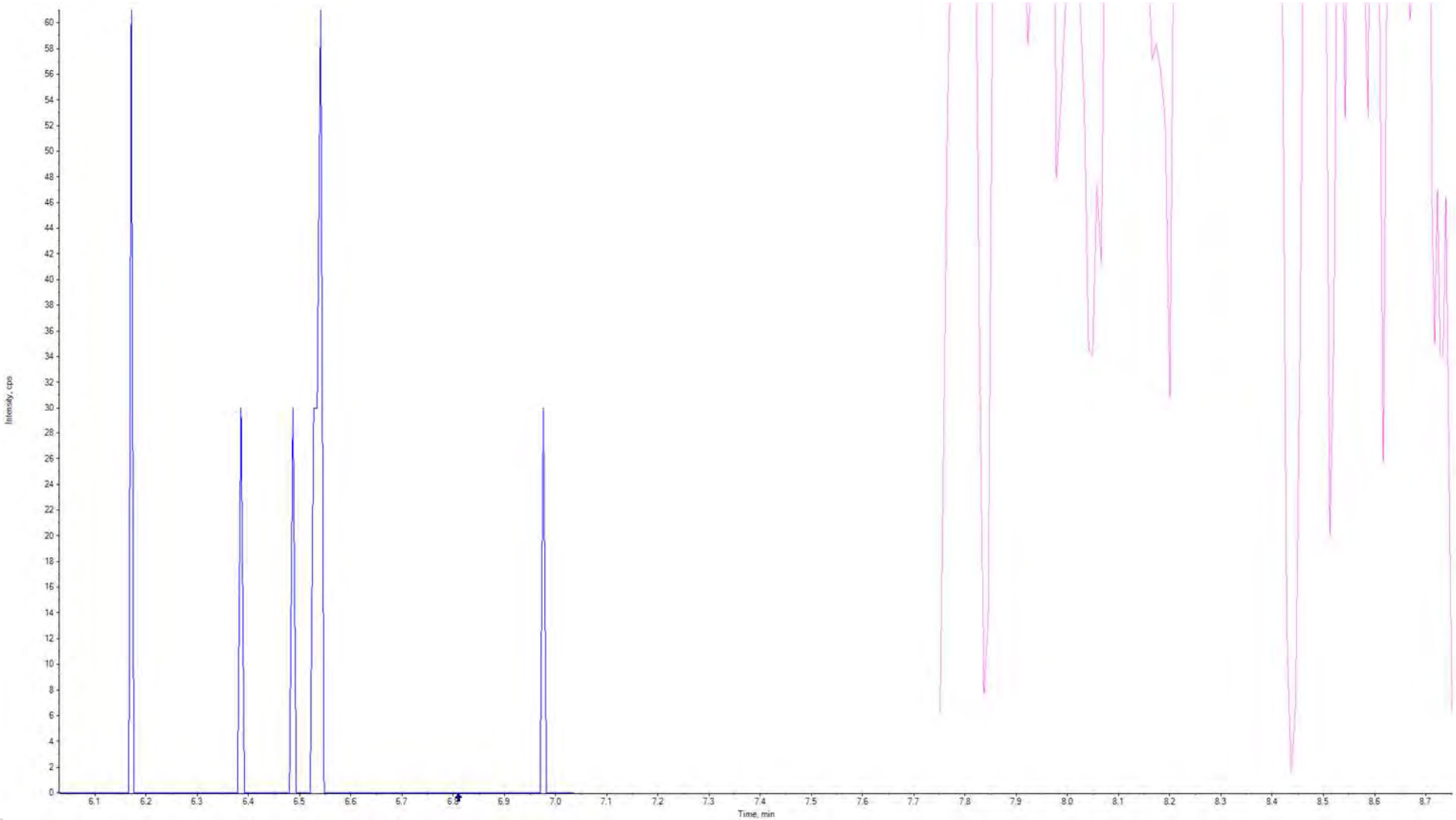
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NFDHA_2
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



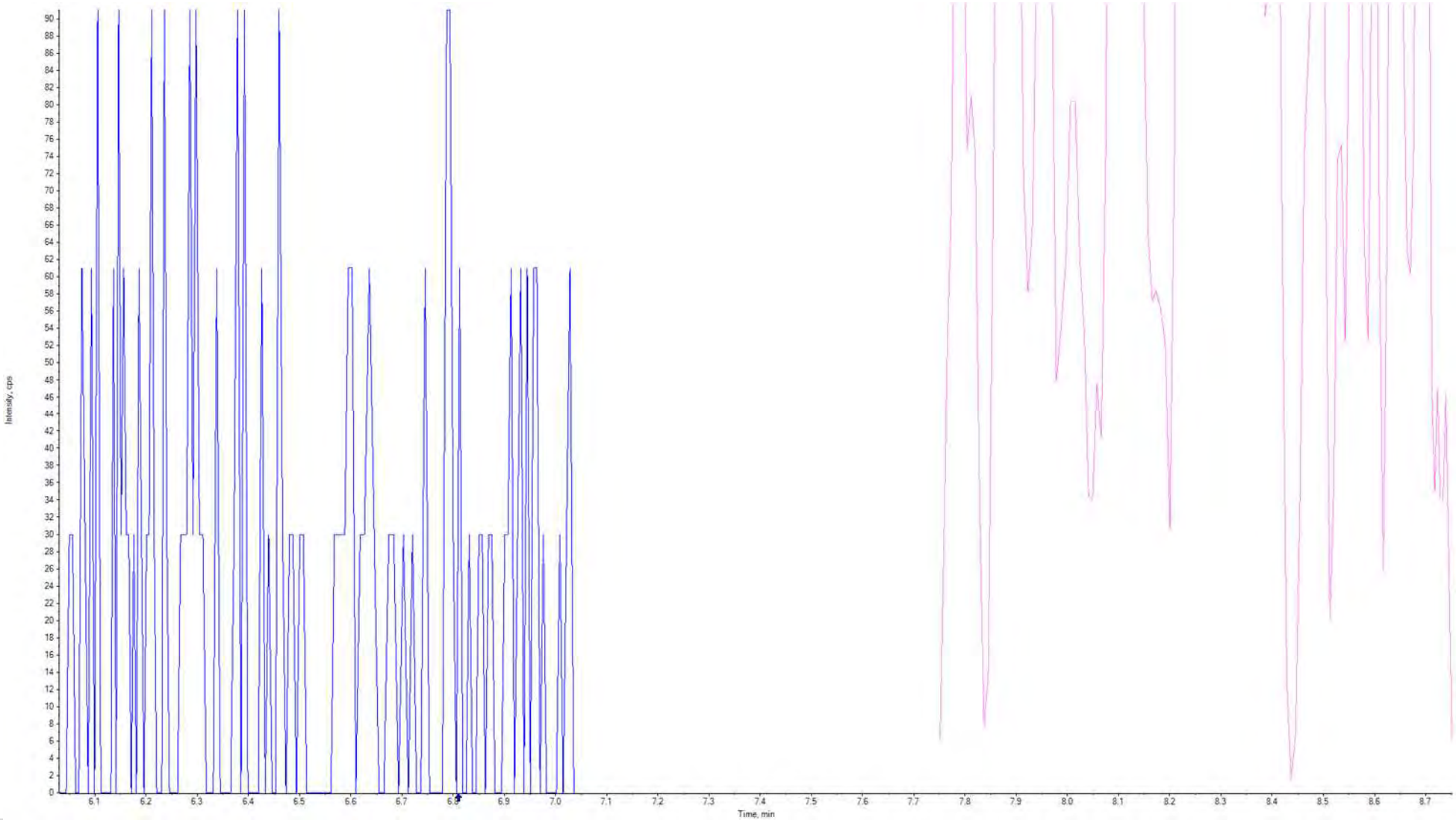
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

TDCA
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



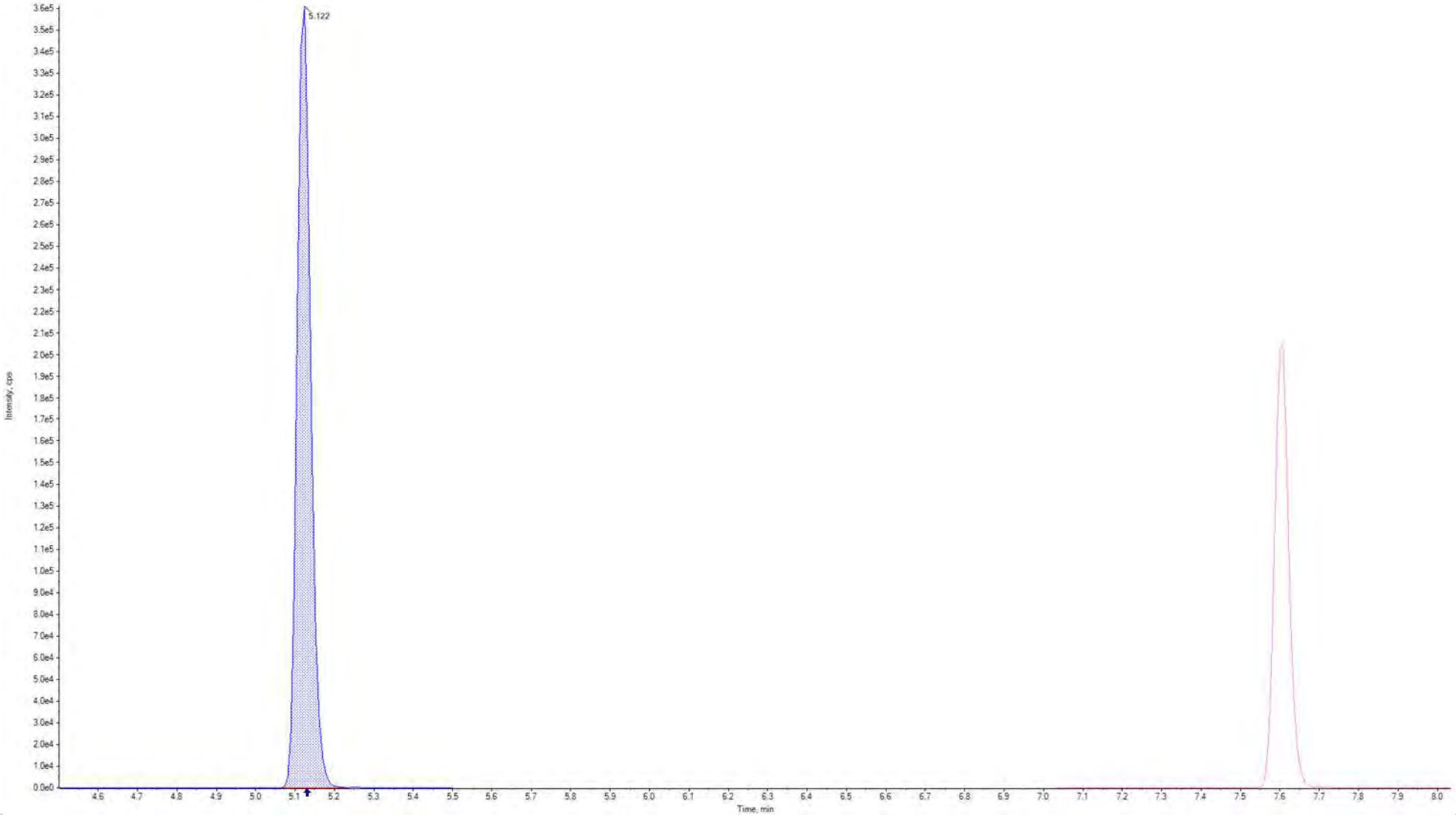
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

TDCA_2
Sample: WG1958909-2,INSTBLANK S/N:N/A Points Across peak:N/A



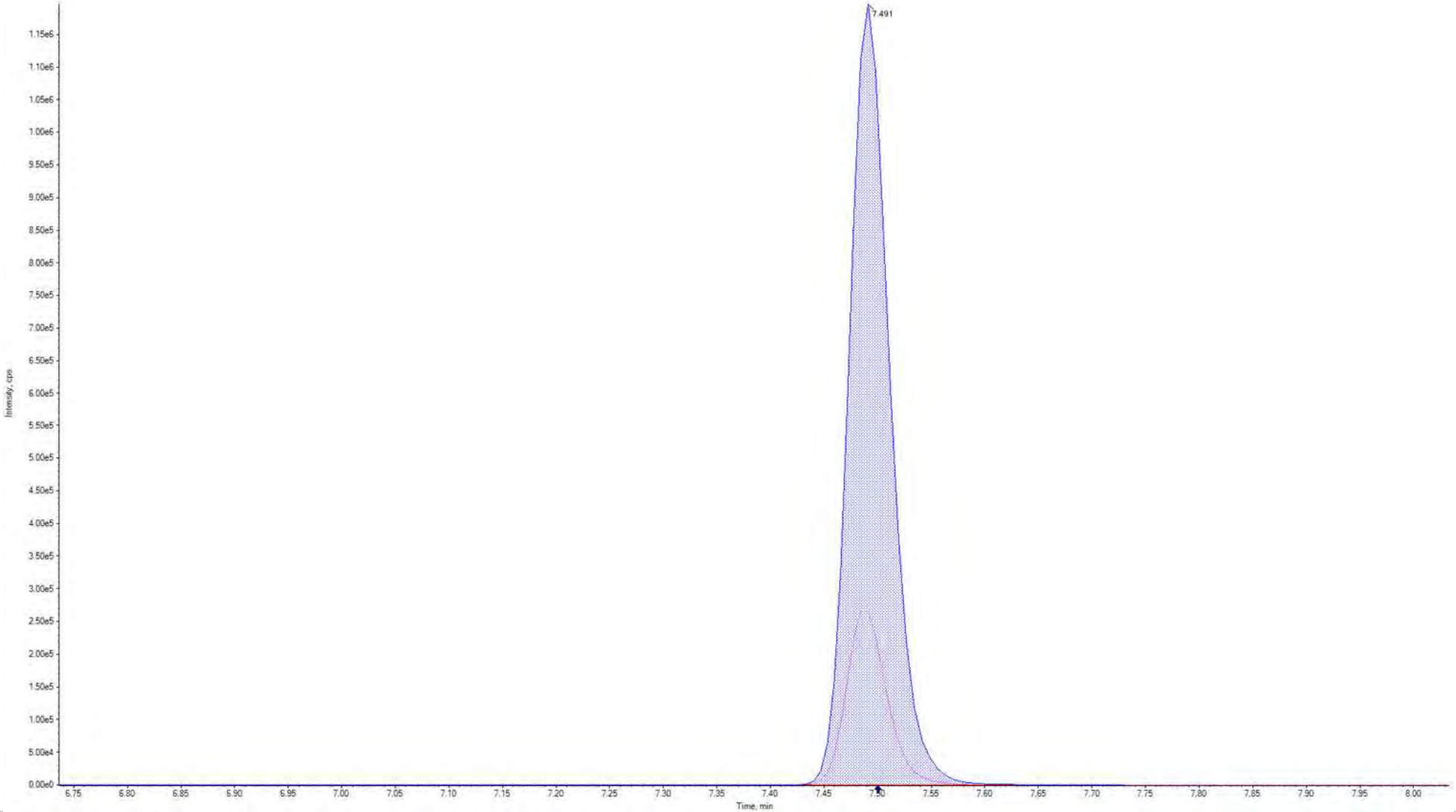
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

13C2D4-4:2FTS
Sample: WG1958909-2,INSTBLANK S/N:28048.2 Points Across peak:24

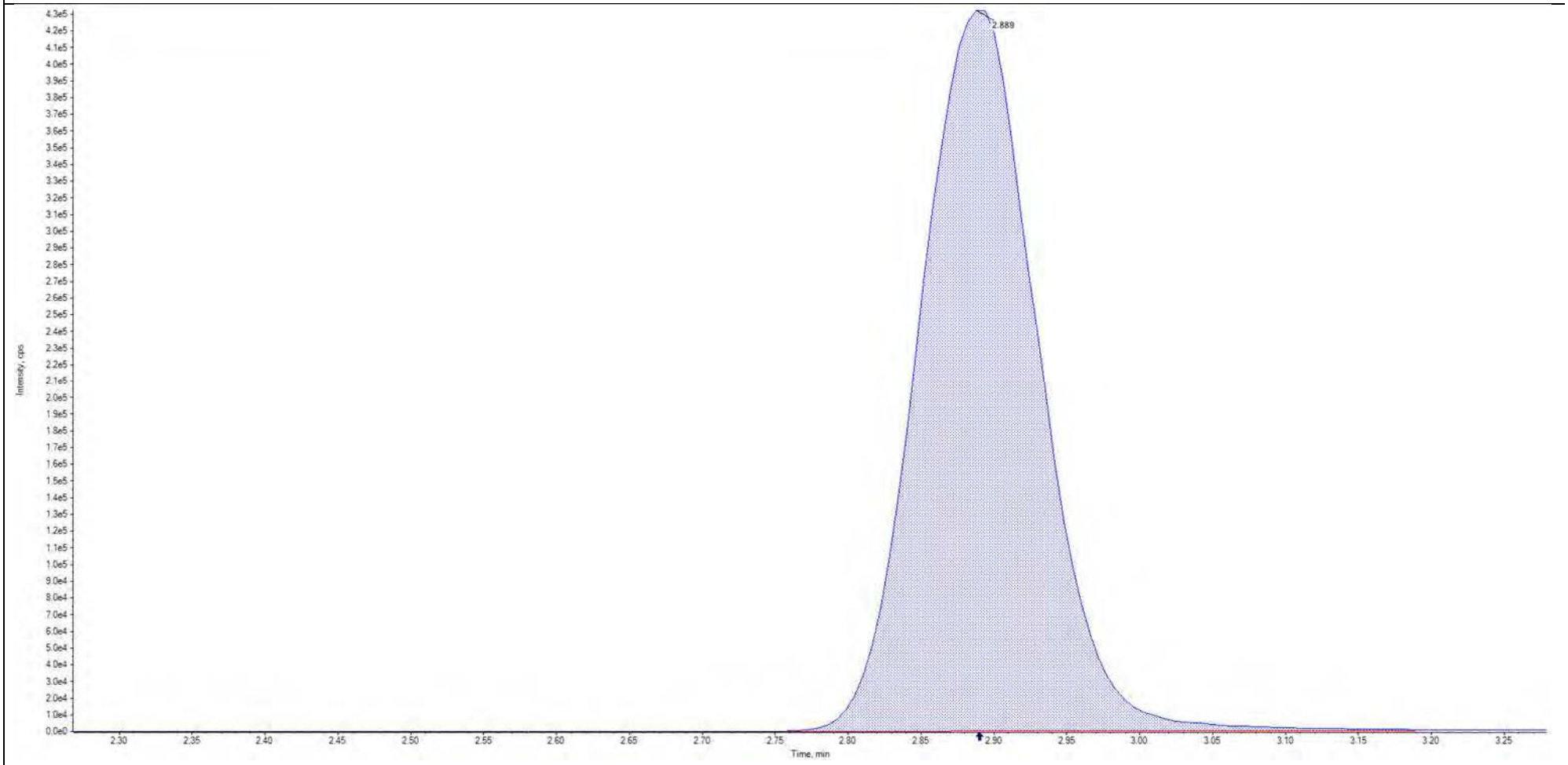


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

13C2-PFOA
Sample: WG1958909-2,INSTBLANK S/N:13113.6 Points Across peak:39

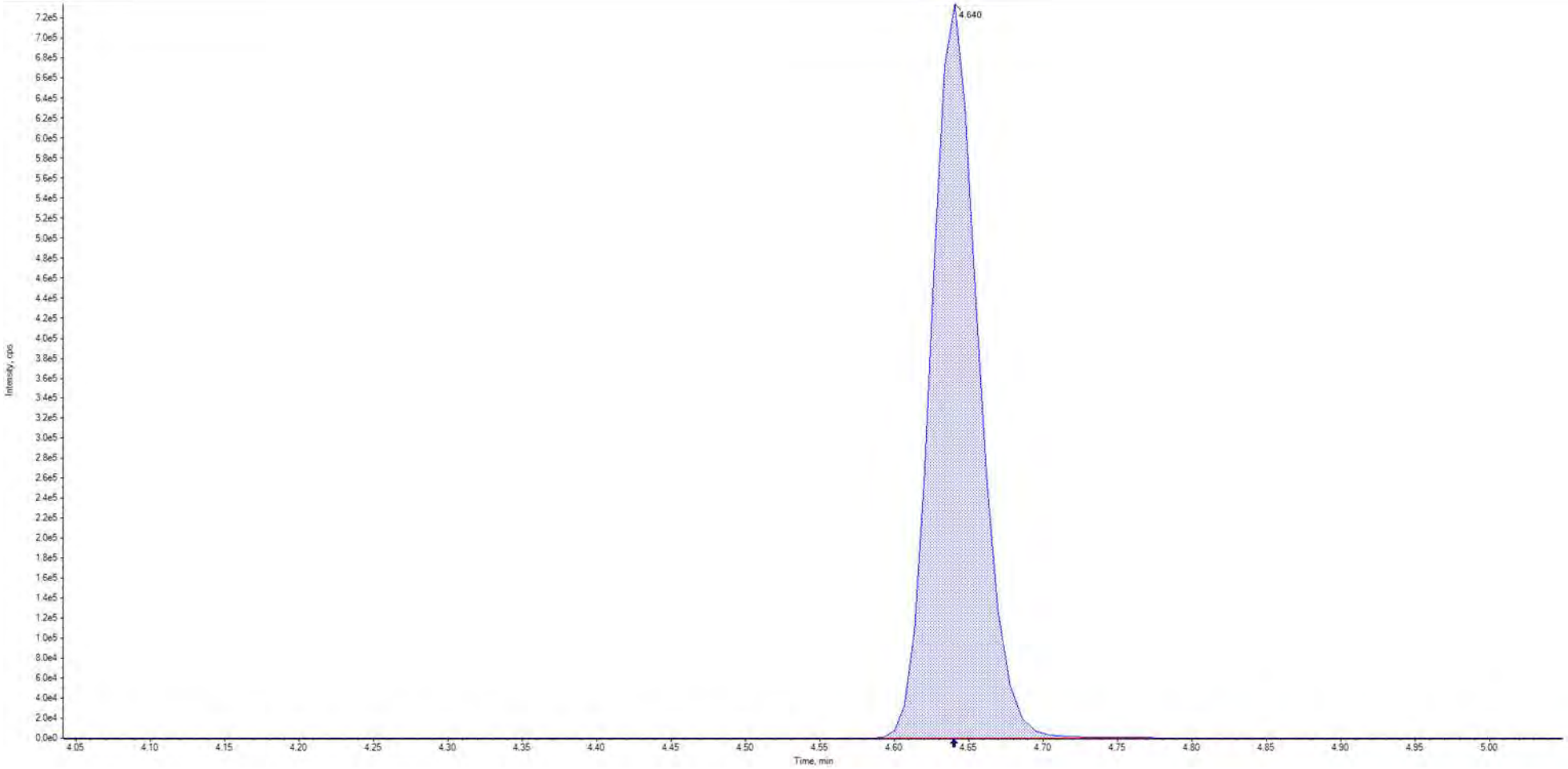


13C4-PFBA
Sample: WG1958909-2,INSTBLANK

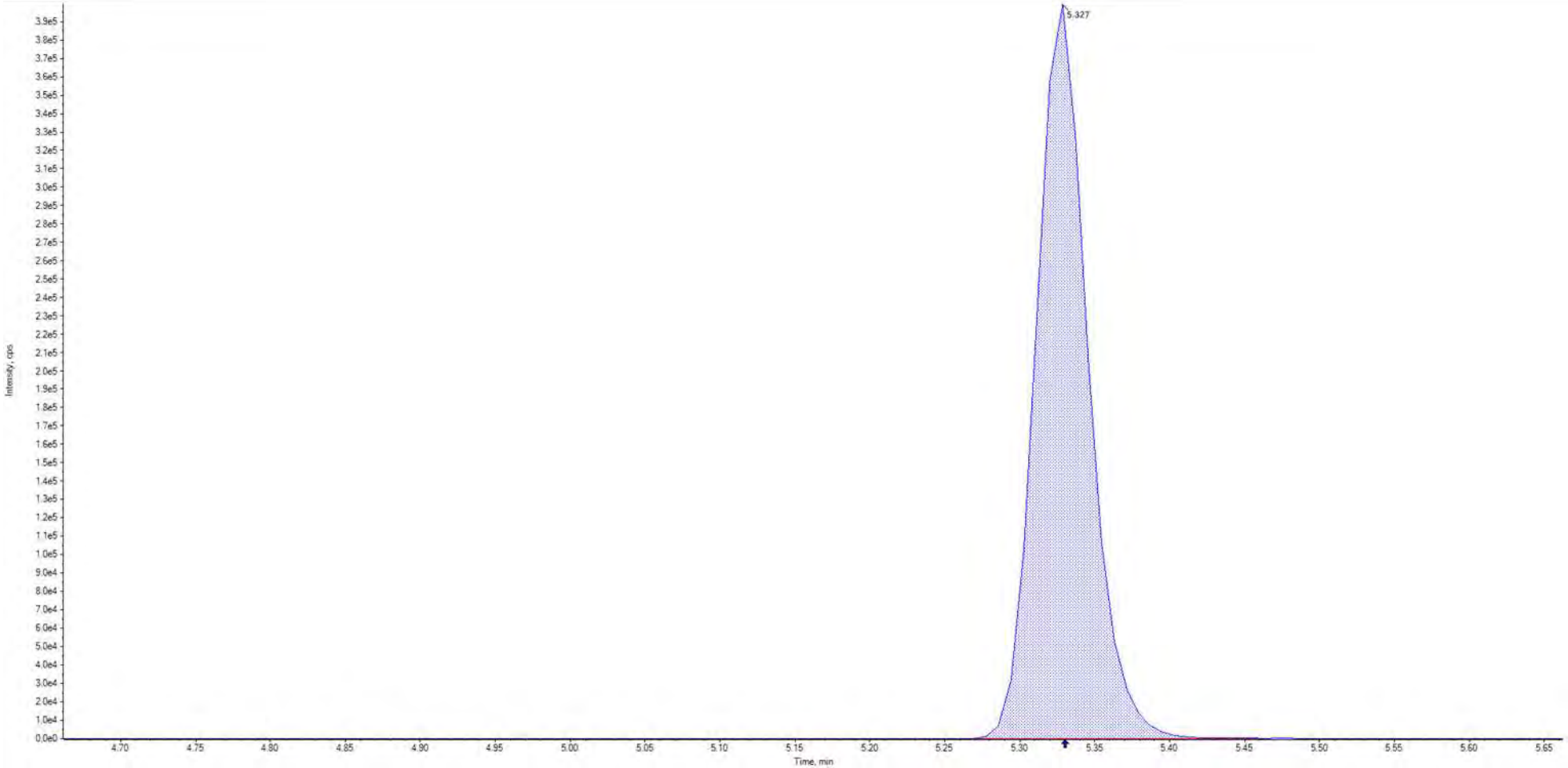


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

13C5-PFPeA
Sample: WG1958909-2,INSTBLANK

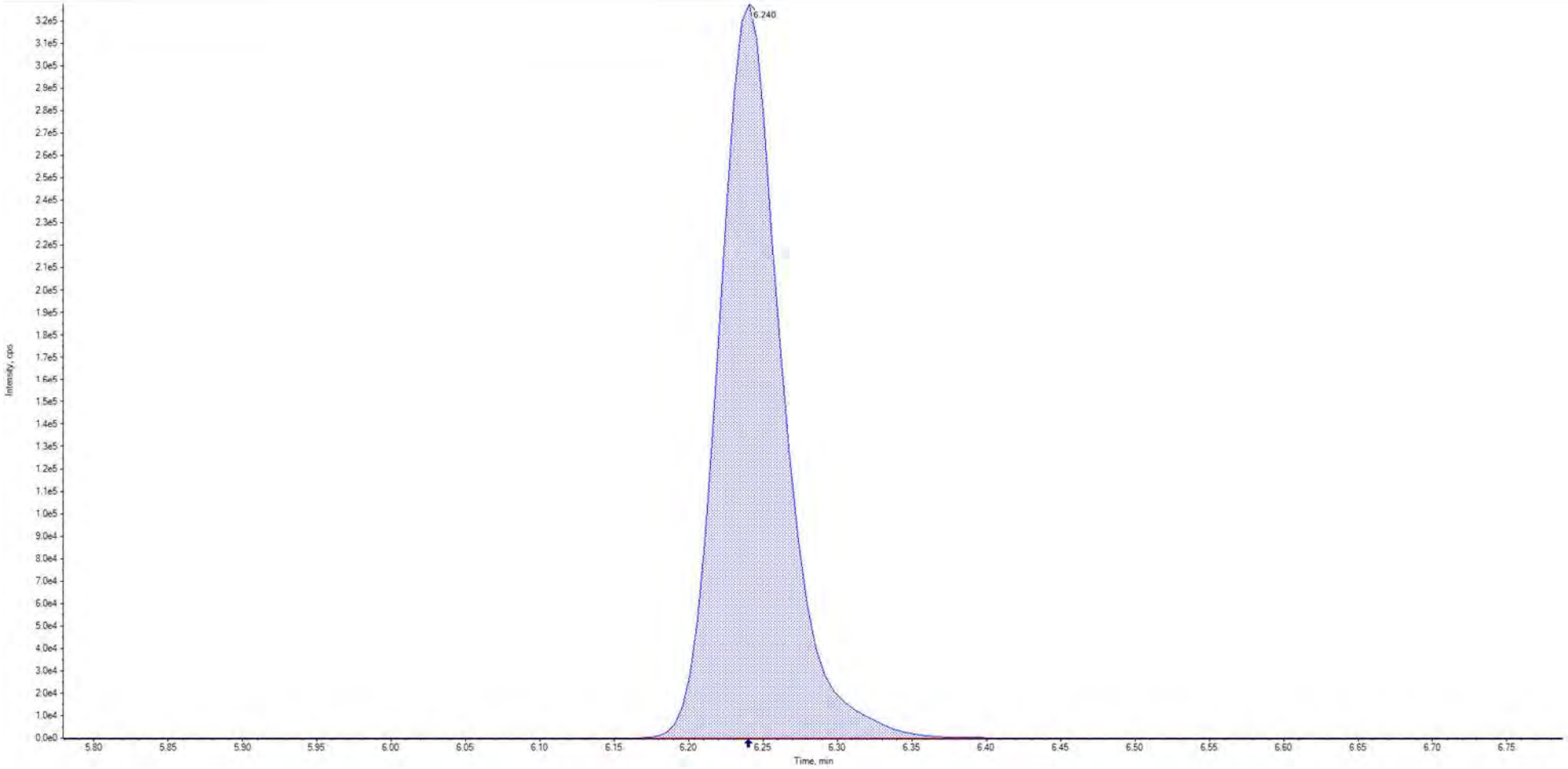


13C5-PFHxA
Sample: WG1958909-2,INSTBLANK



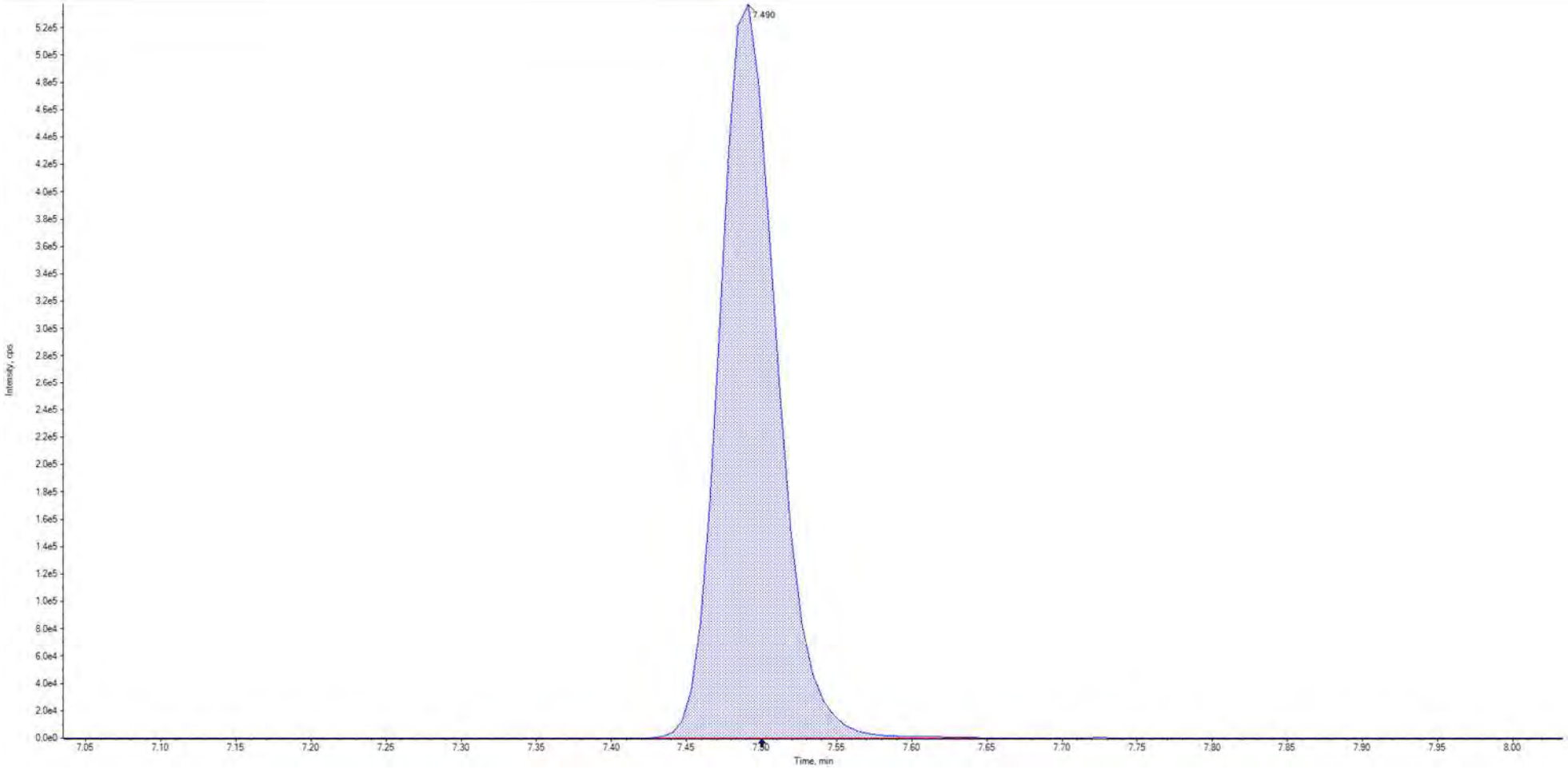
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

13C4-PFHpA
Sample: WG1958909-2,INSTBLANK

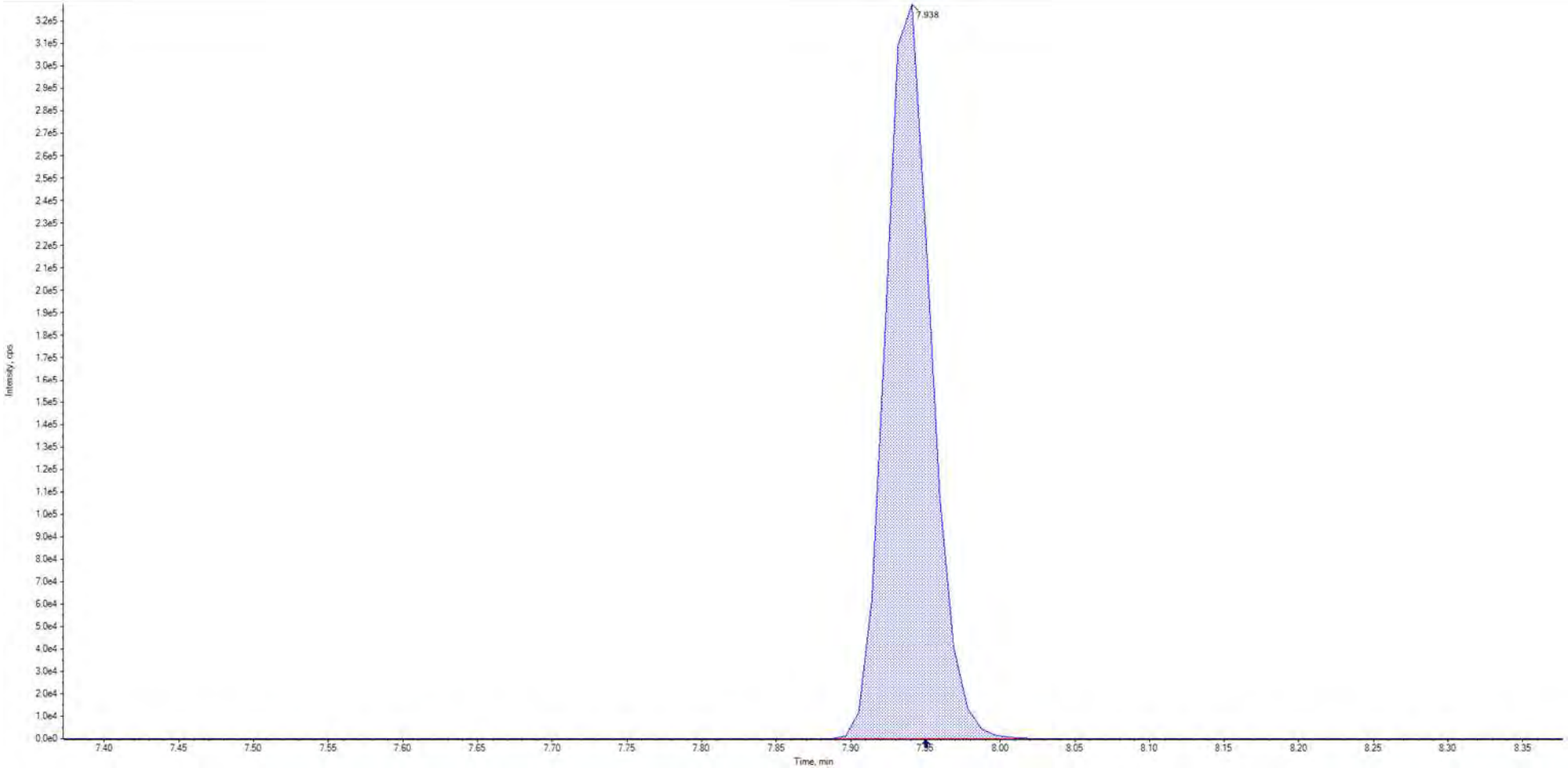


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

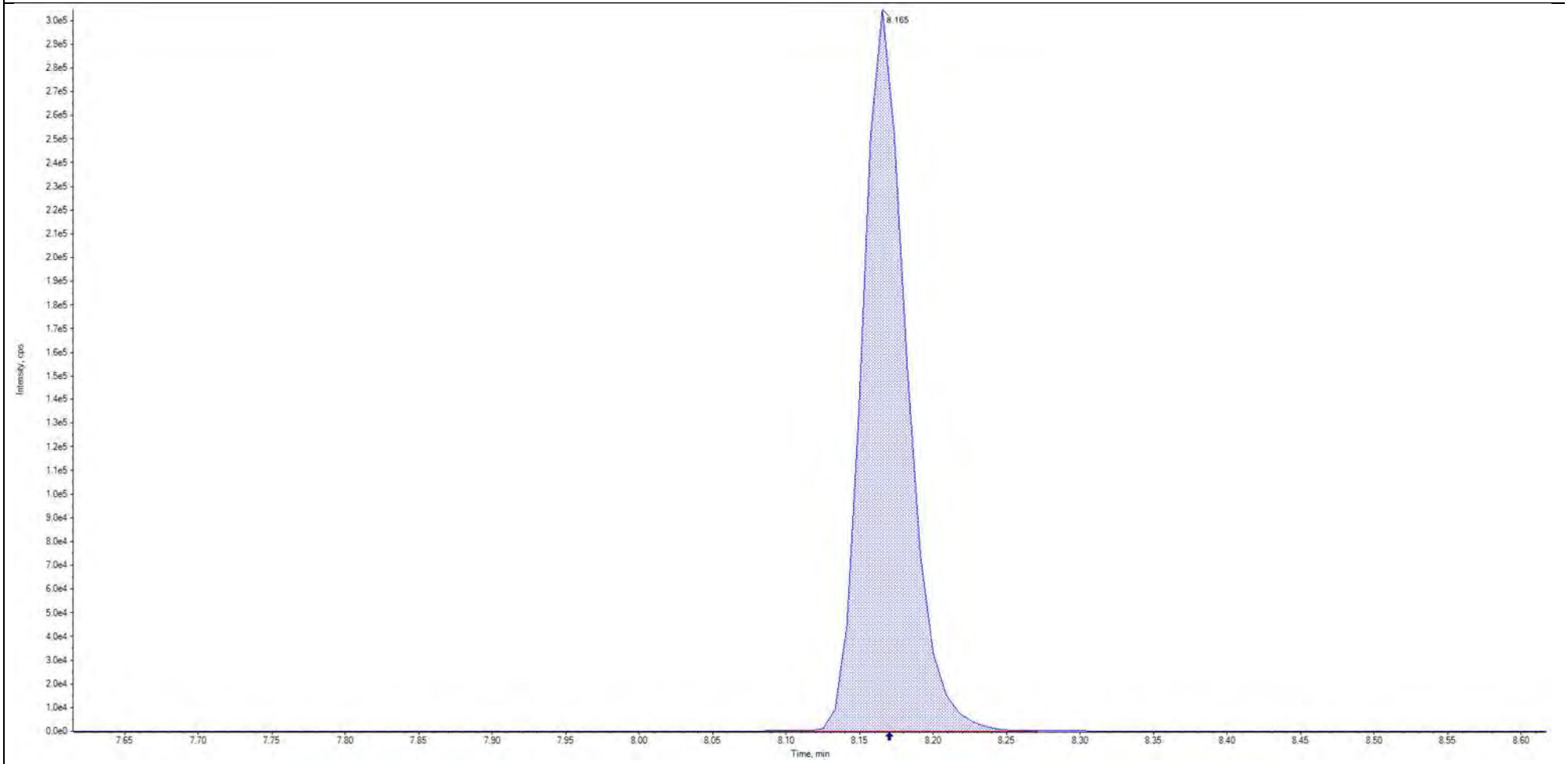
13C8-PFOA
Sample: WG1958909-2,INSTBLANK



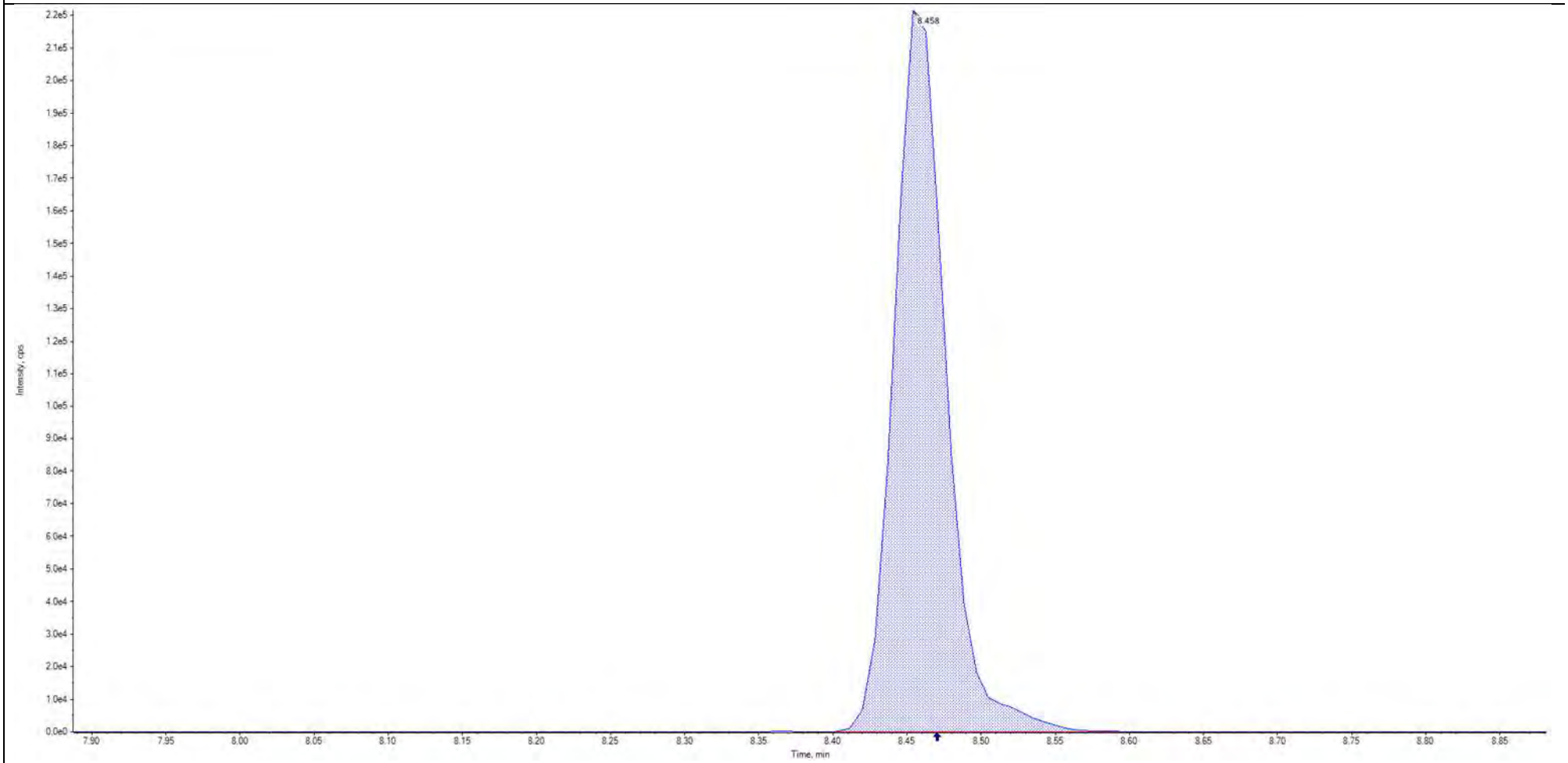
13C9-PFNA
Sample: WG1958909-2,INSTBLANK



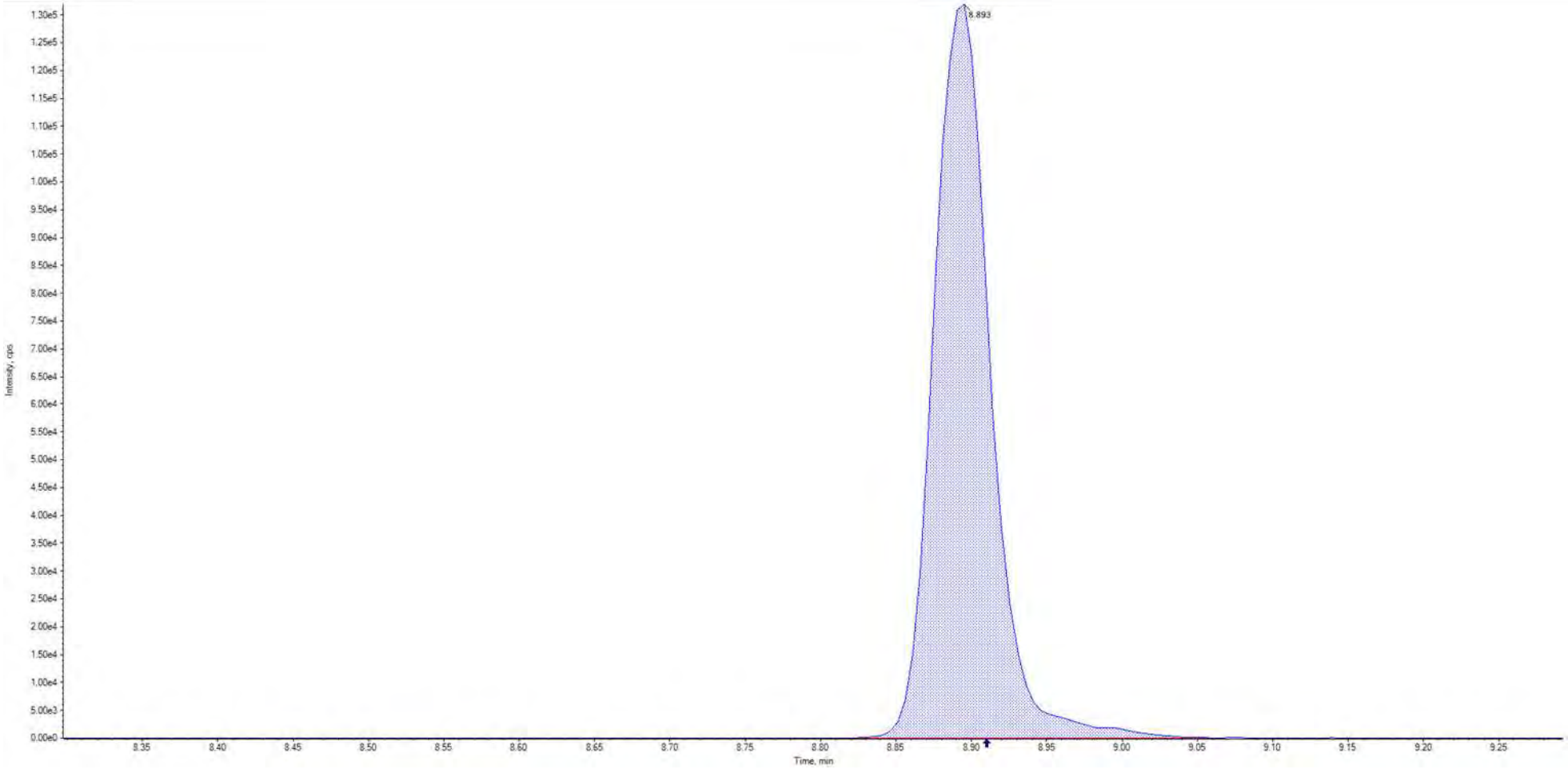
13C6-PFDA
Sample: WG1958909-2,INSTBLANK



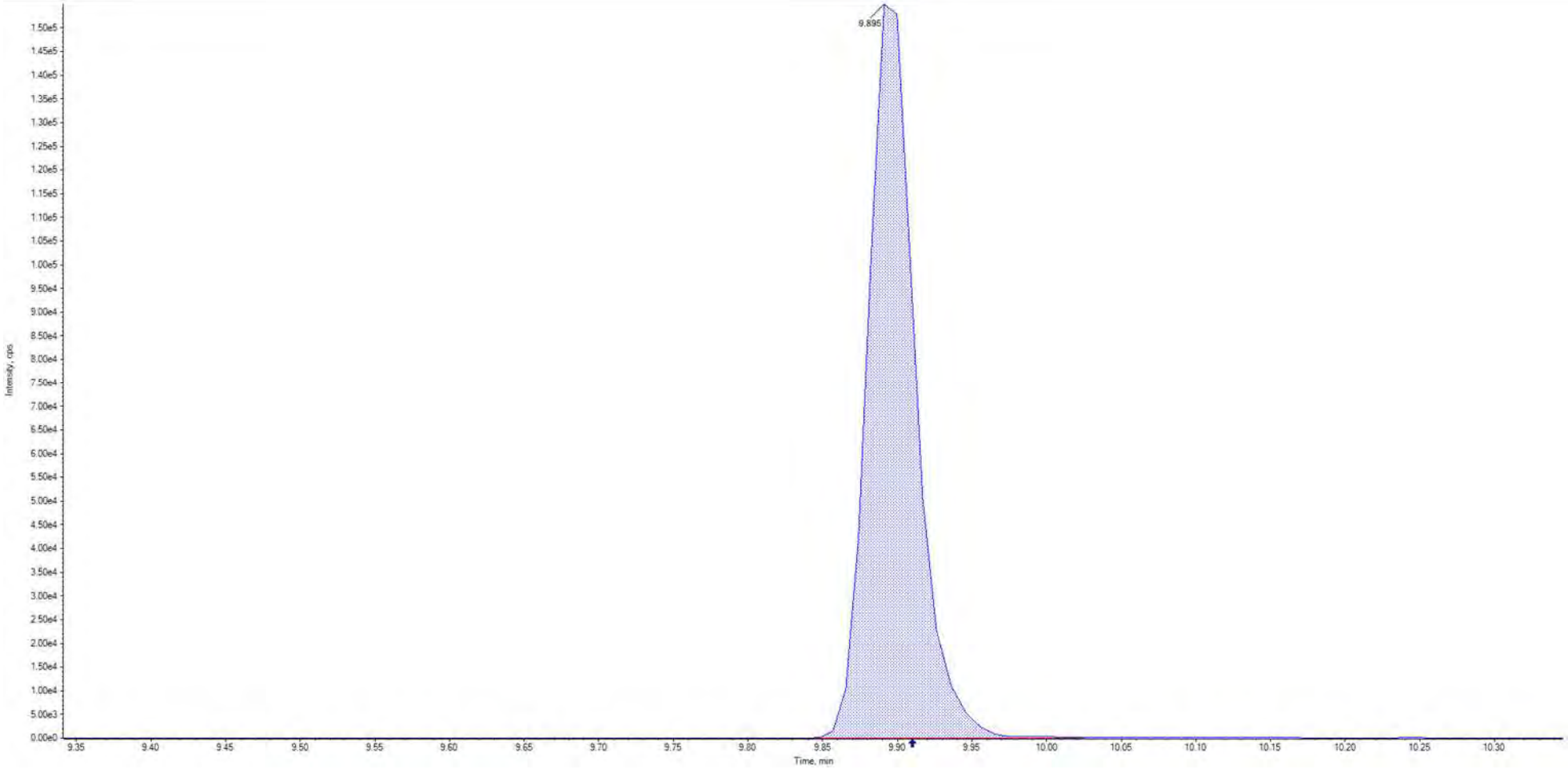
13C7-PFUnA
Sample: WG1958909-2,INSTBLANK



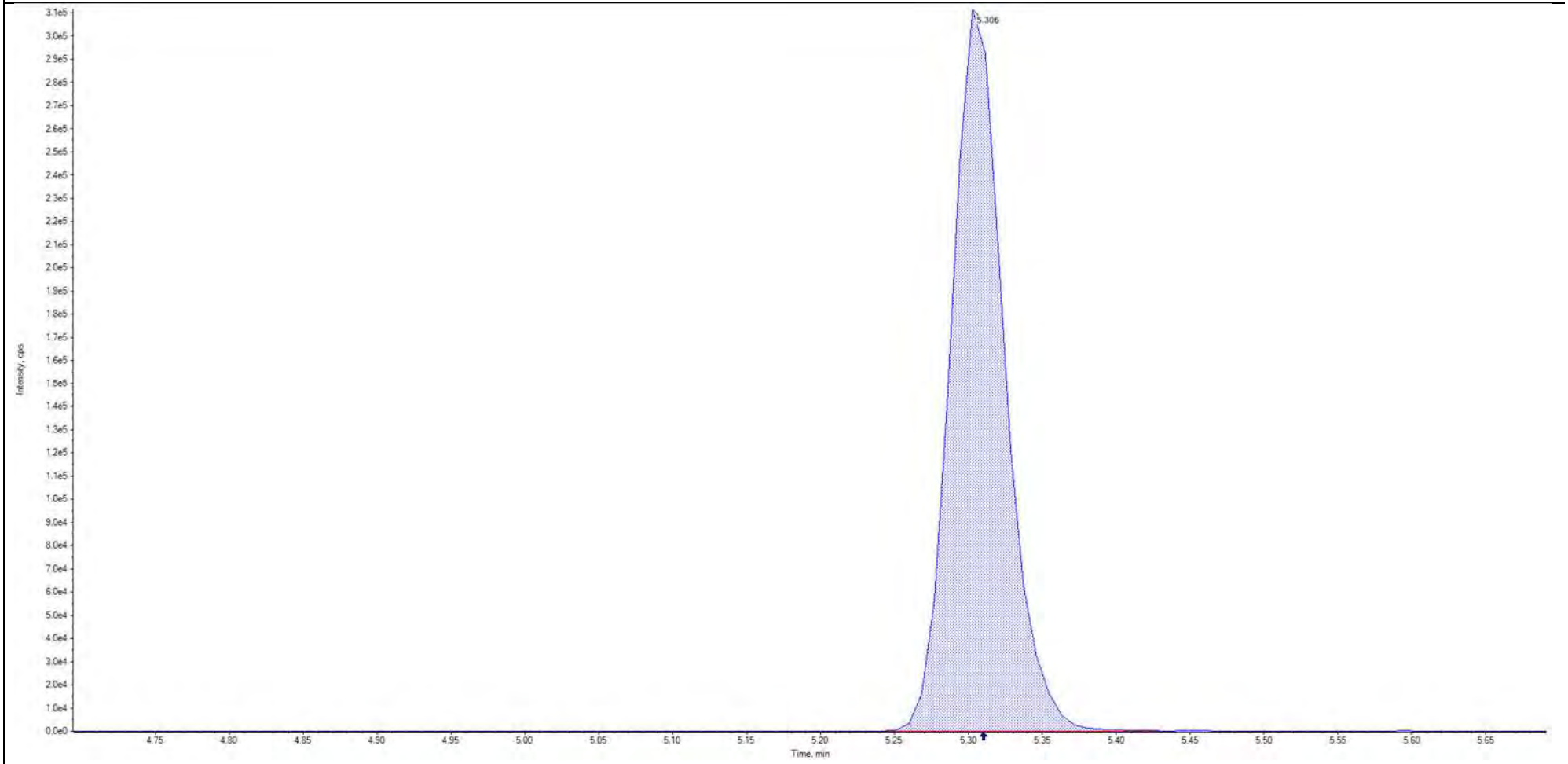
13C2-PFDoA
Sample: WG1958909-2,INSTBLANK



13C2-PFTeDA
Sample: WG1958909-2,INSTBLANK

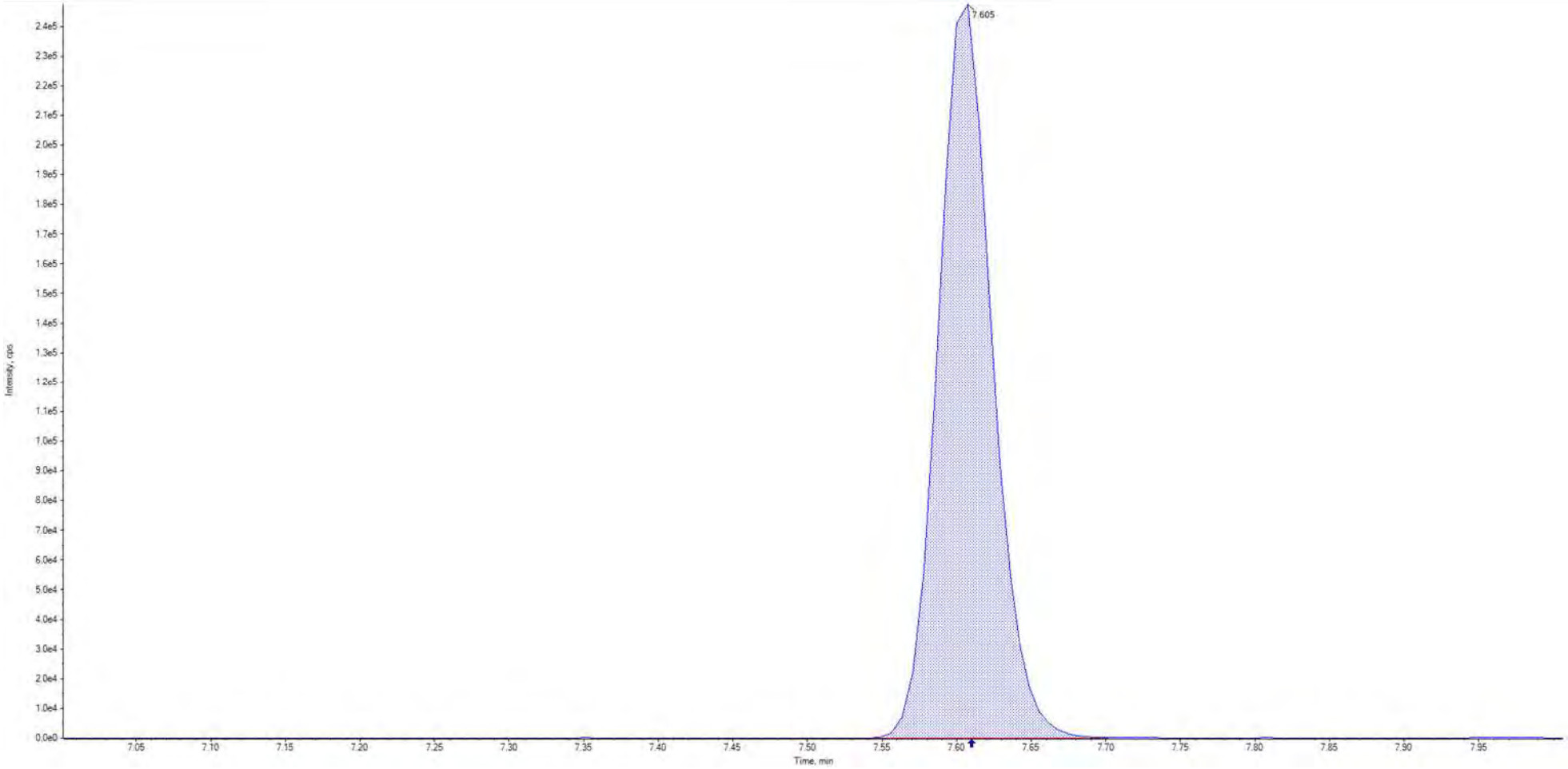


13C3-PFBS
Sample: WG1958909-2,INSTBLANK

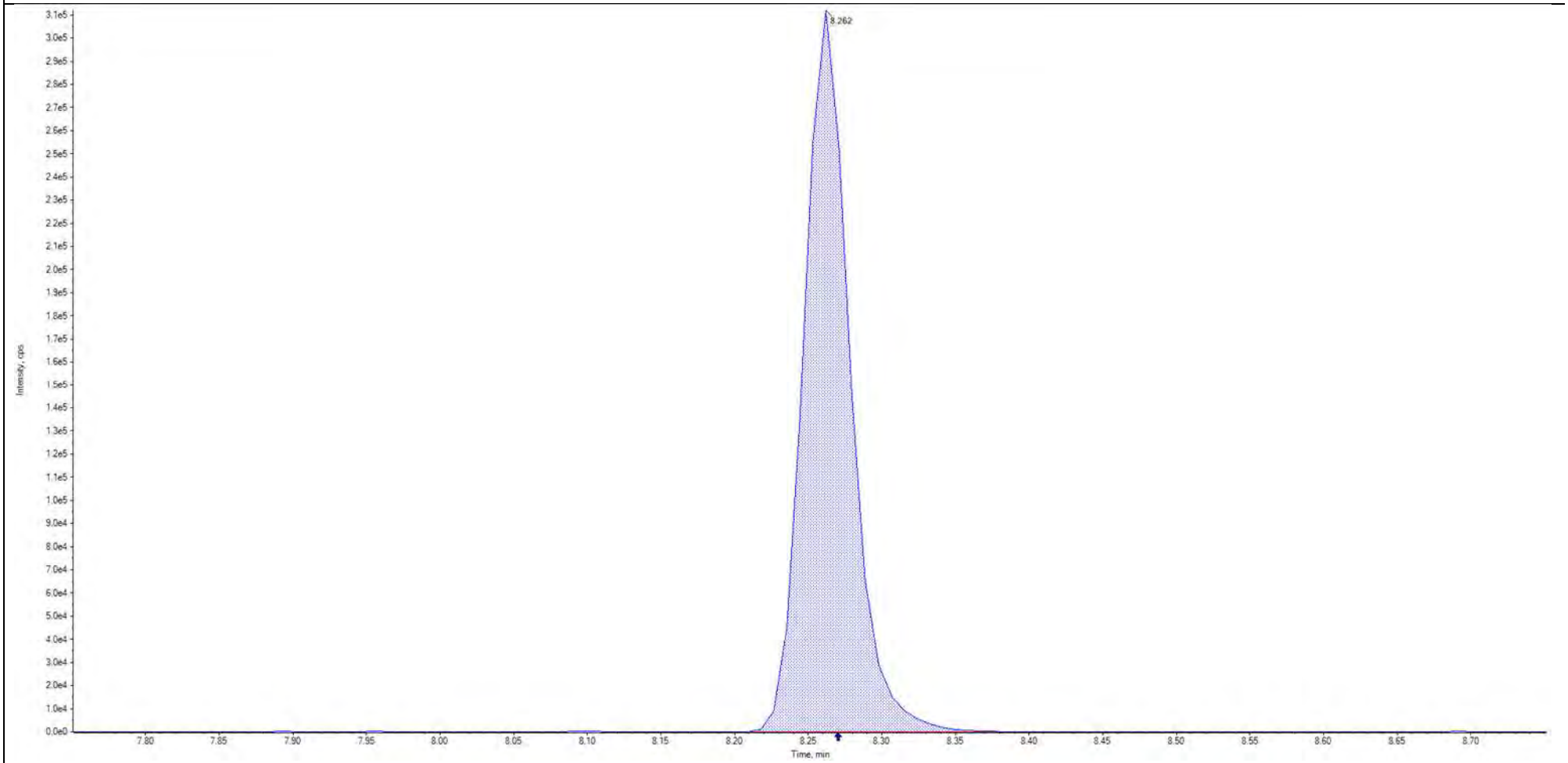


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

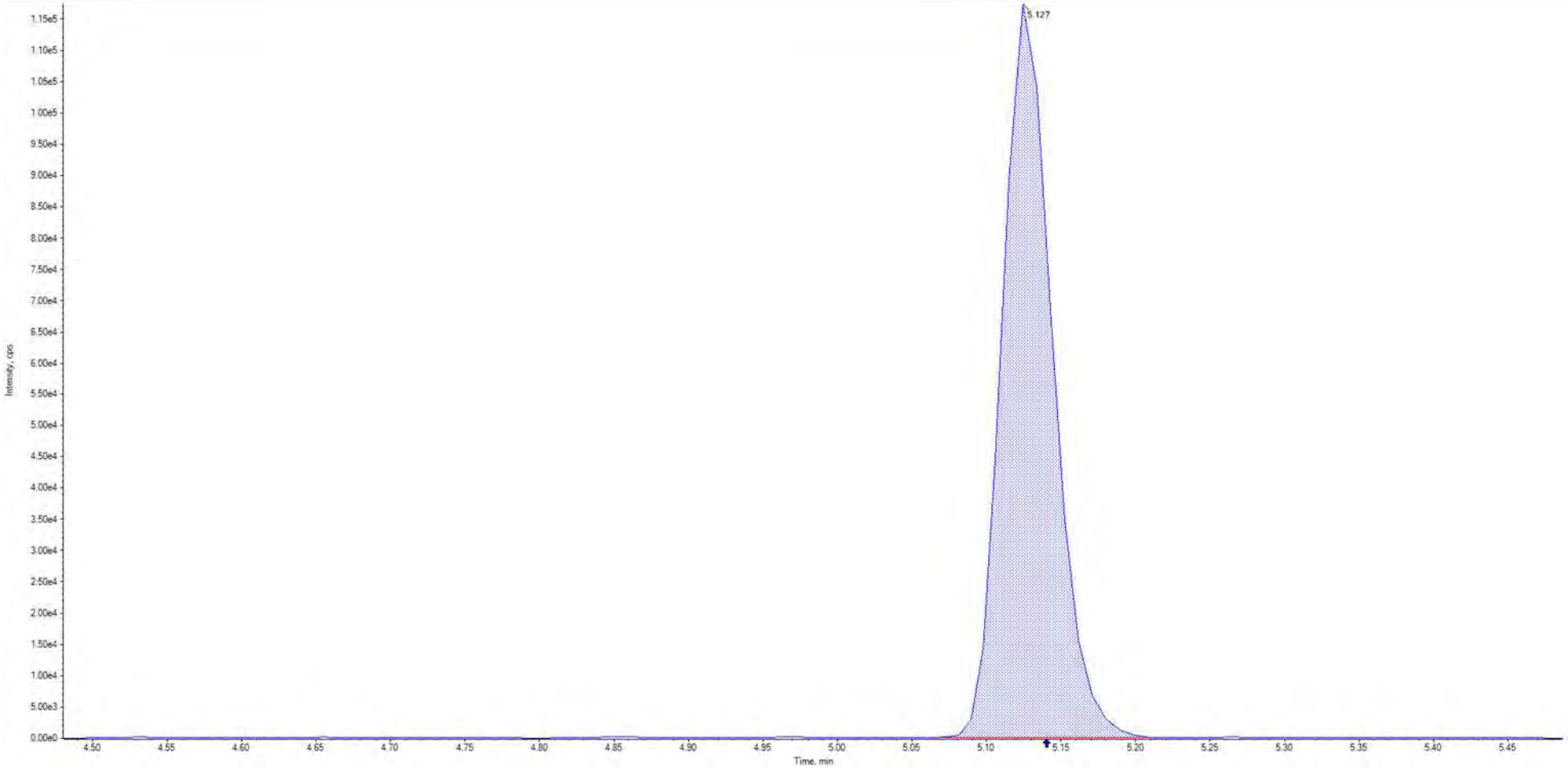
13C3-PFHxS
Sample: WG1958909-2,INSTBLANK



13C8-PFOS
Sample: WG1958909-2,INSTBLANK

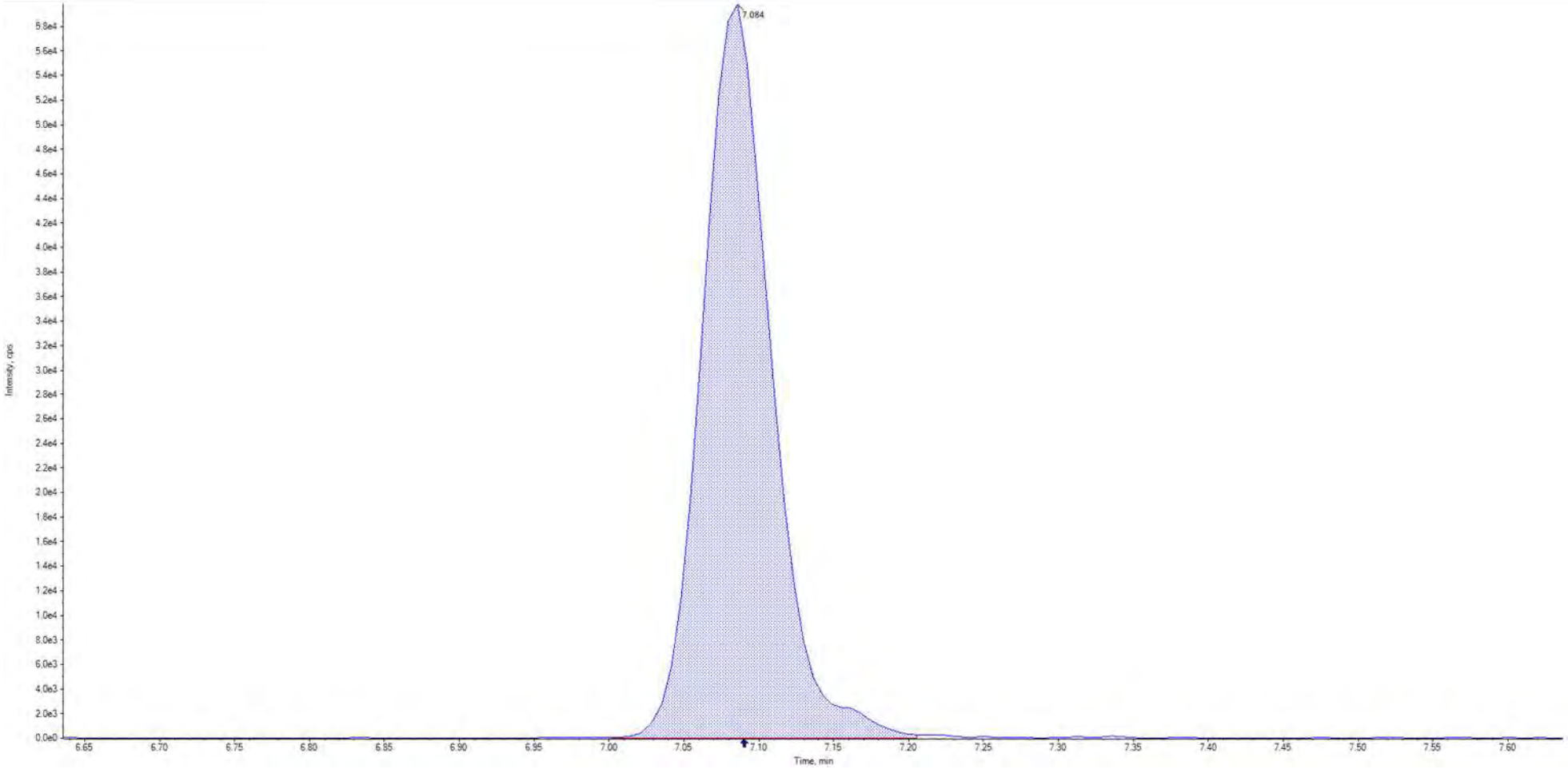


13C2-4:2FTS
Sample: WG1958909-2,INSTBLANK

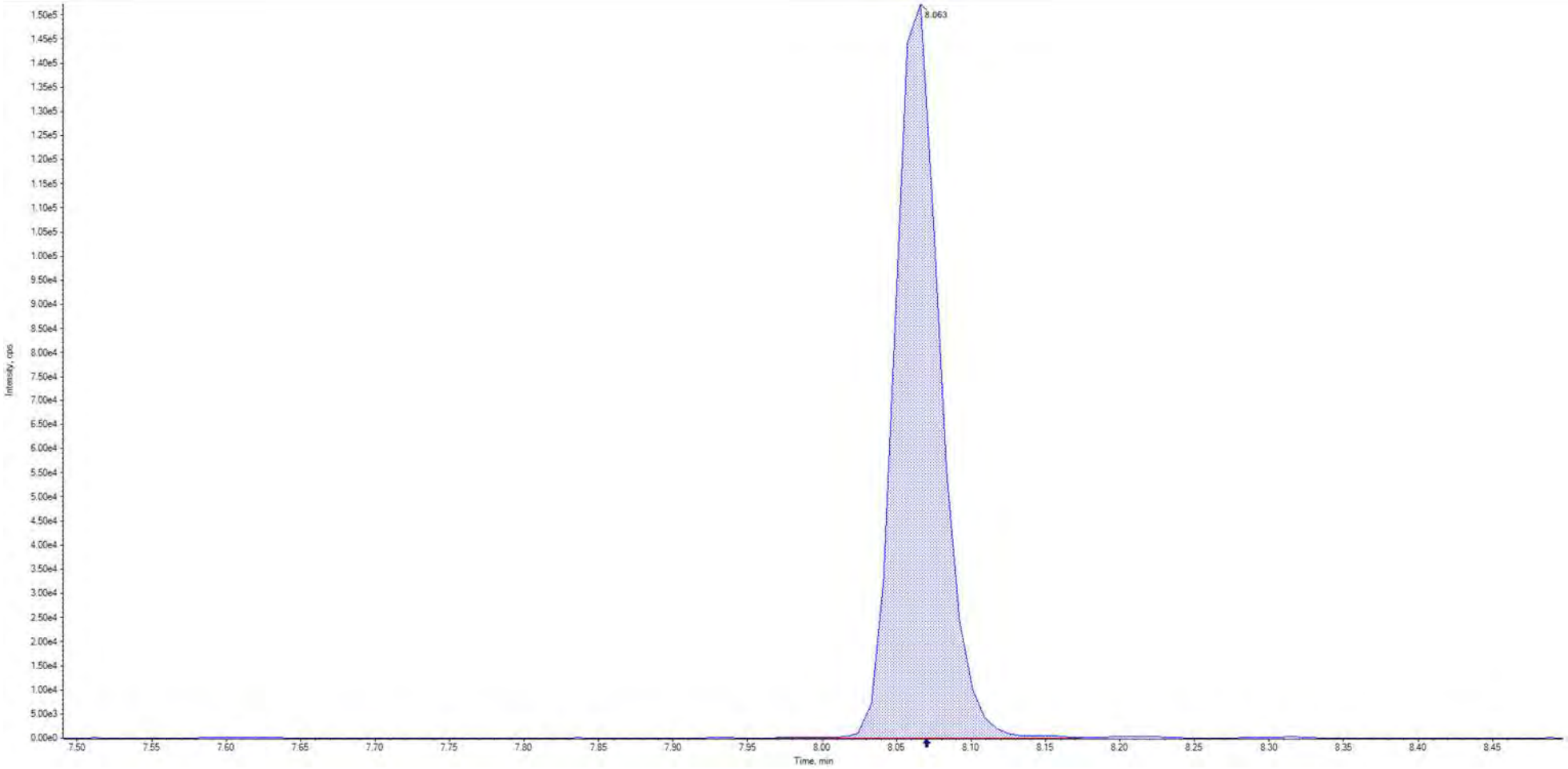


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

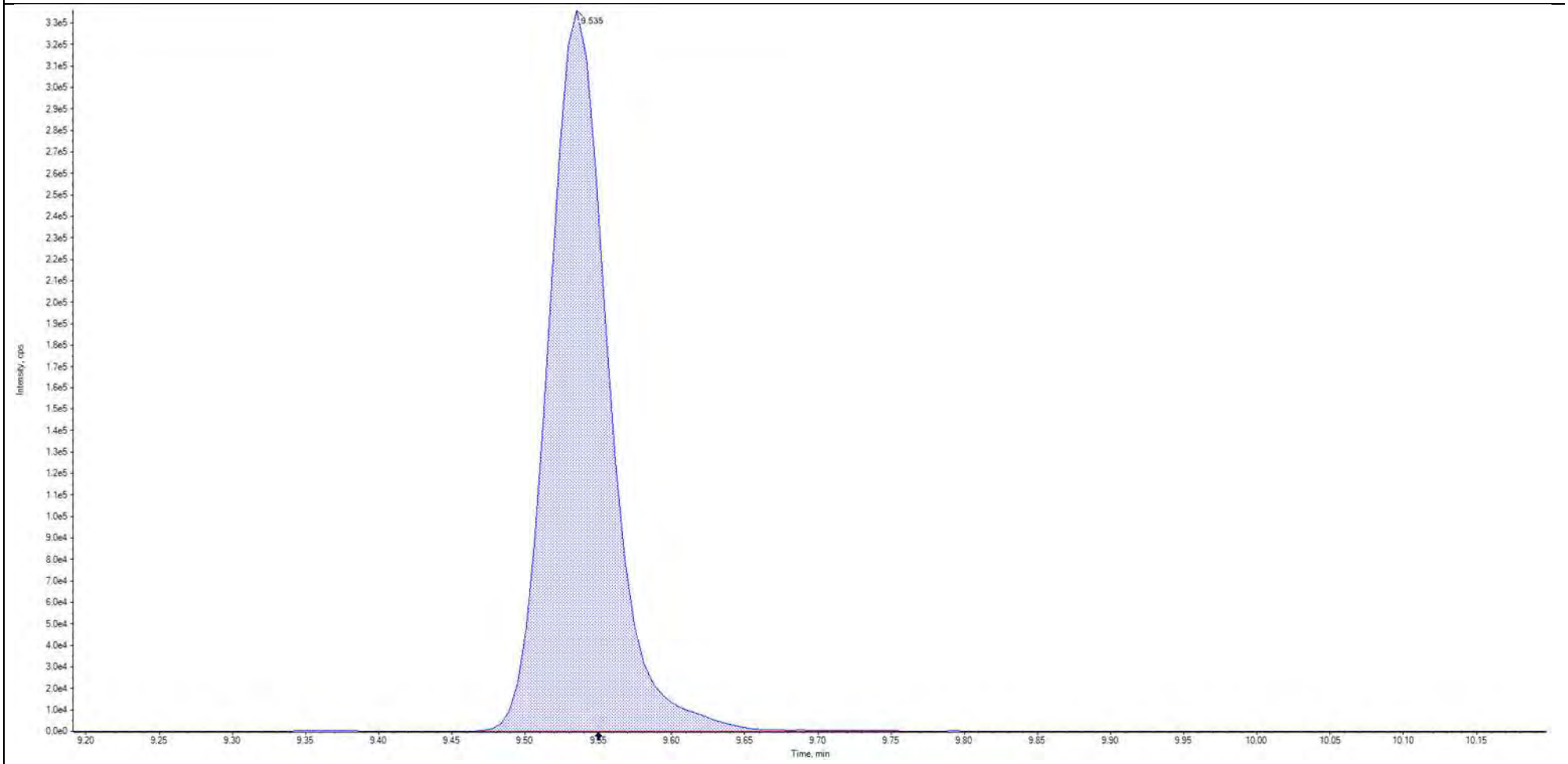
13C2-6:2FTS
Sample: WG1958909-2,INSTBLANK



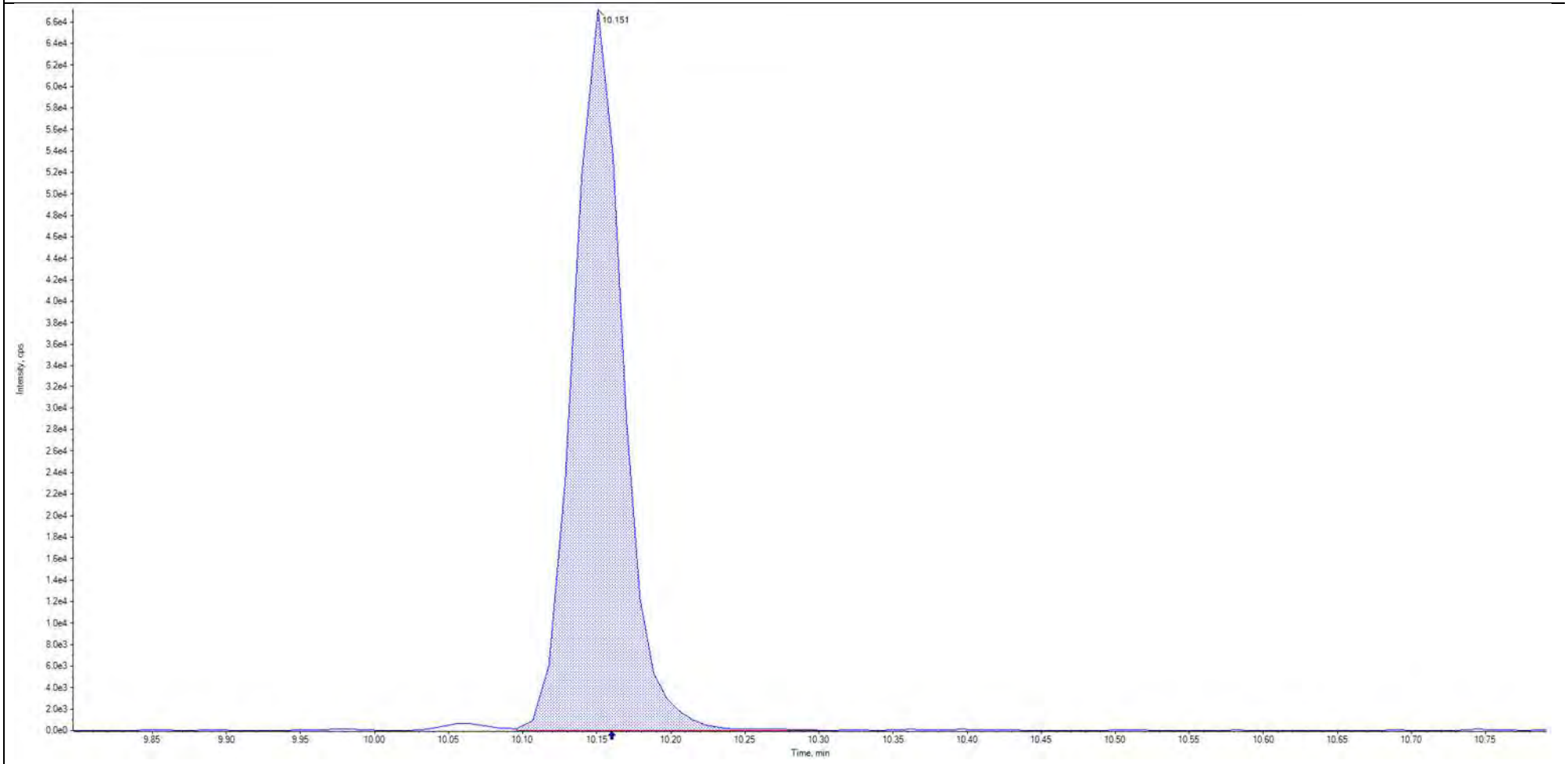
13C2-8:2FTS
Sample: WG1958909-2,INSTBLANK



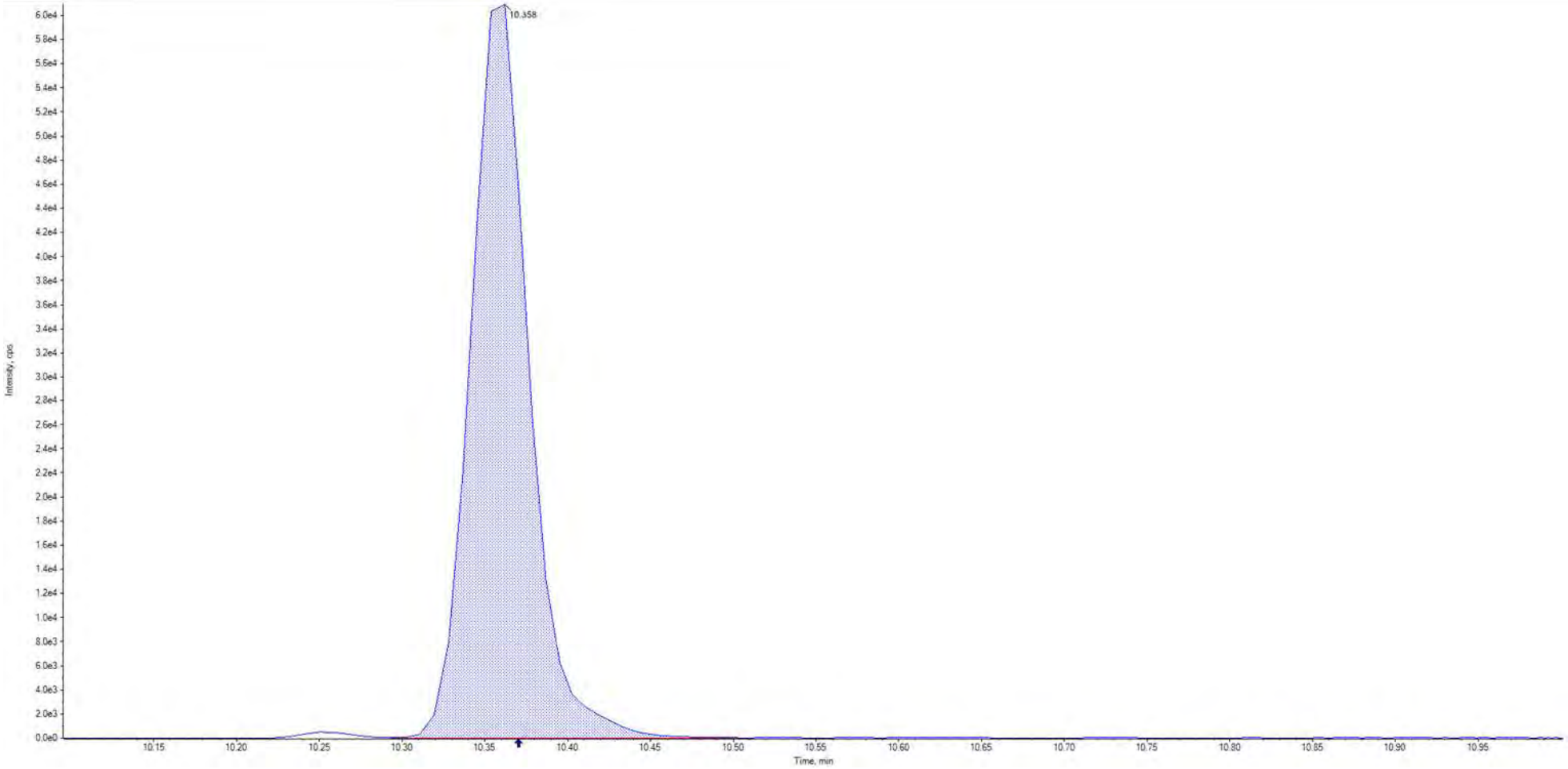
13C8-PFOSA
Sample: WG1958909-2,INSTBLANK



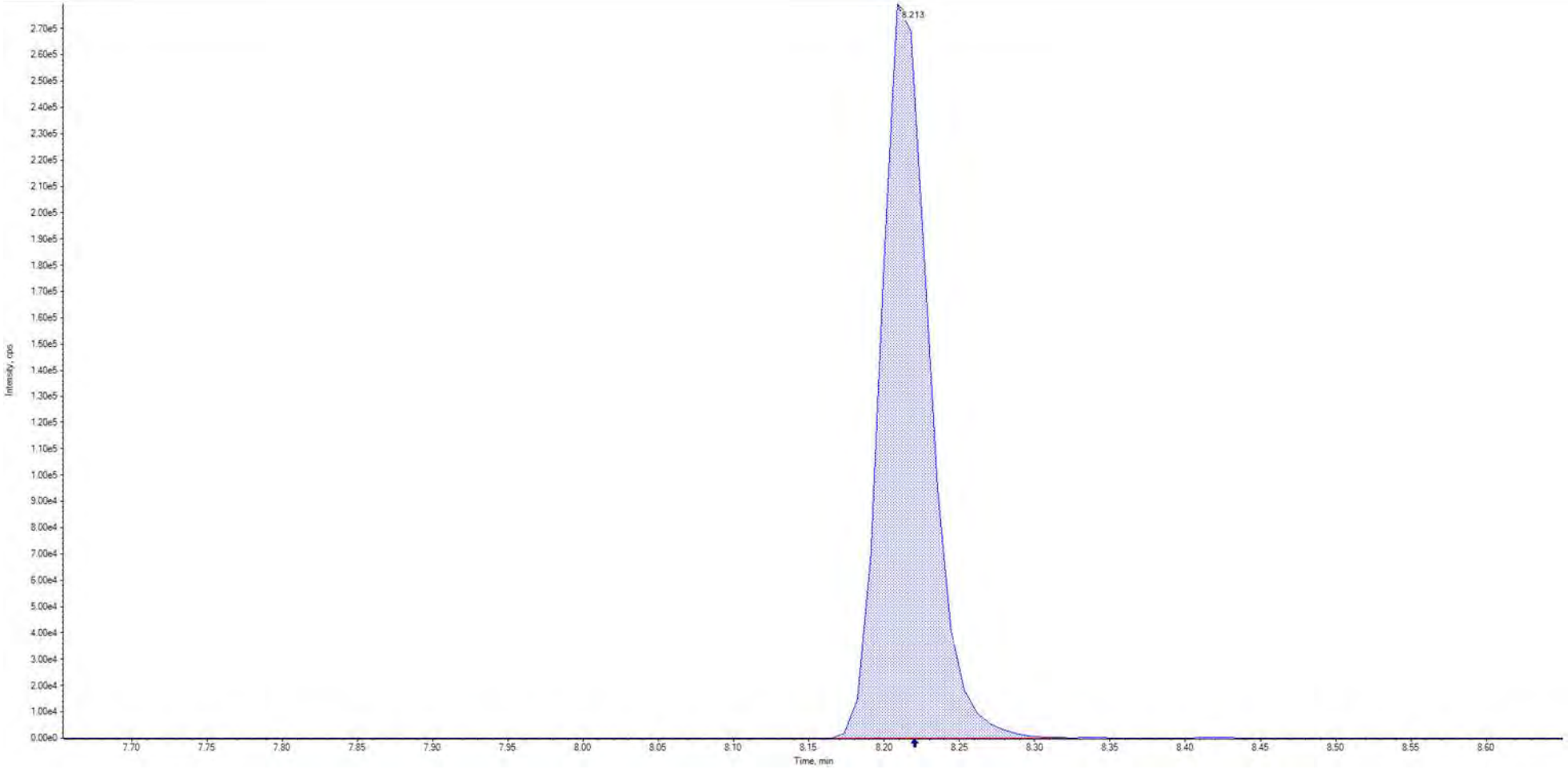
d3-NMeFOSA
Sample: WG1958909-2,INSTBLANK



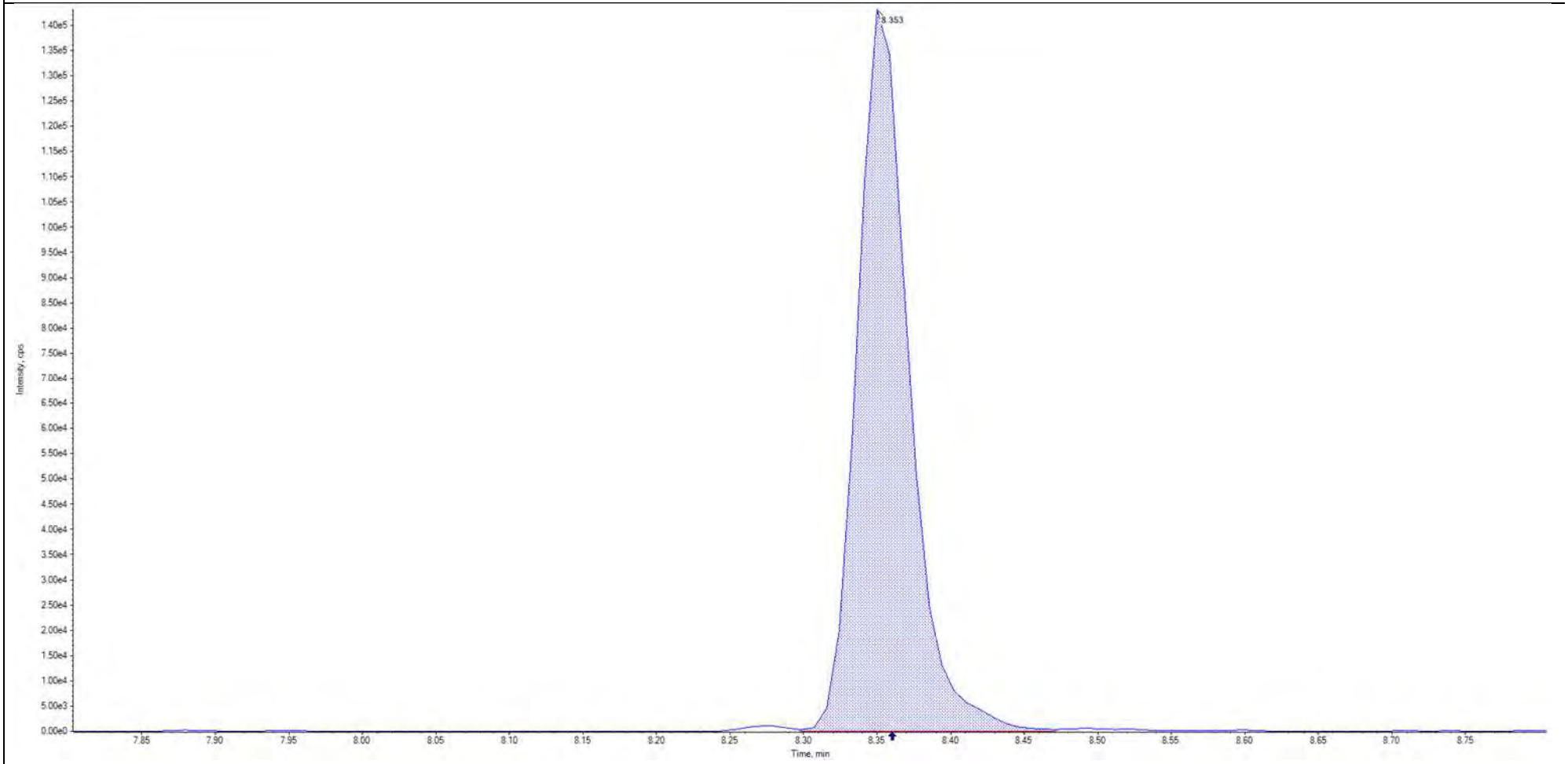
d5-NEtFOSA
Sample: WG1958909-2,INSTBLANK



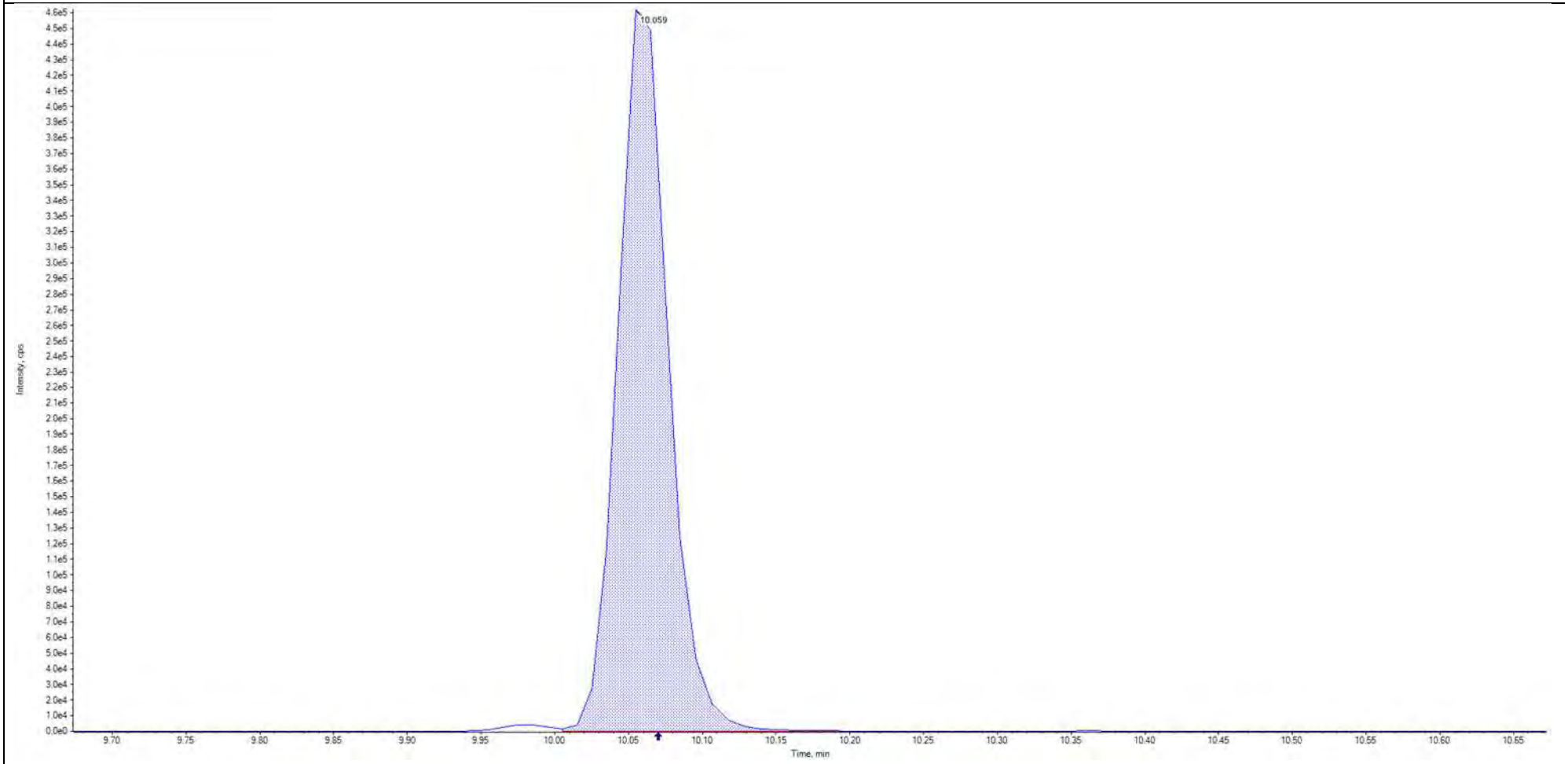
d3-NMeFOSAA
Sample: WG1958909-2,INSTBLANK



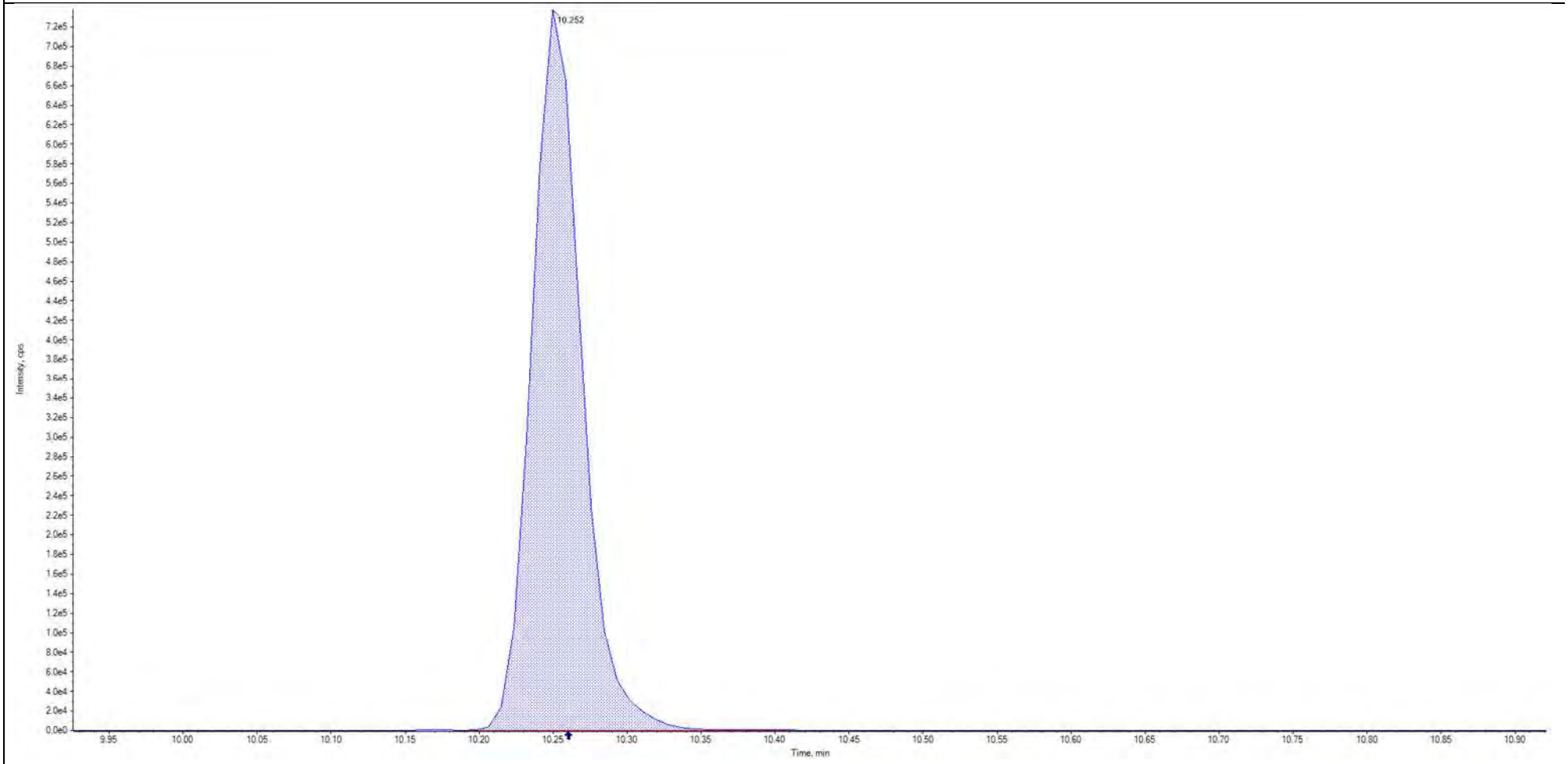
d5-NEtFOSAA
Sample: WG1958909-2,INSTBLANK



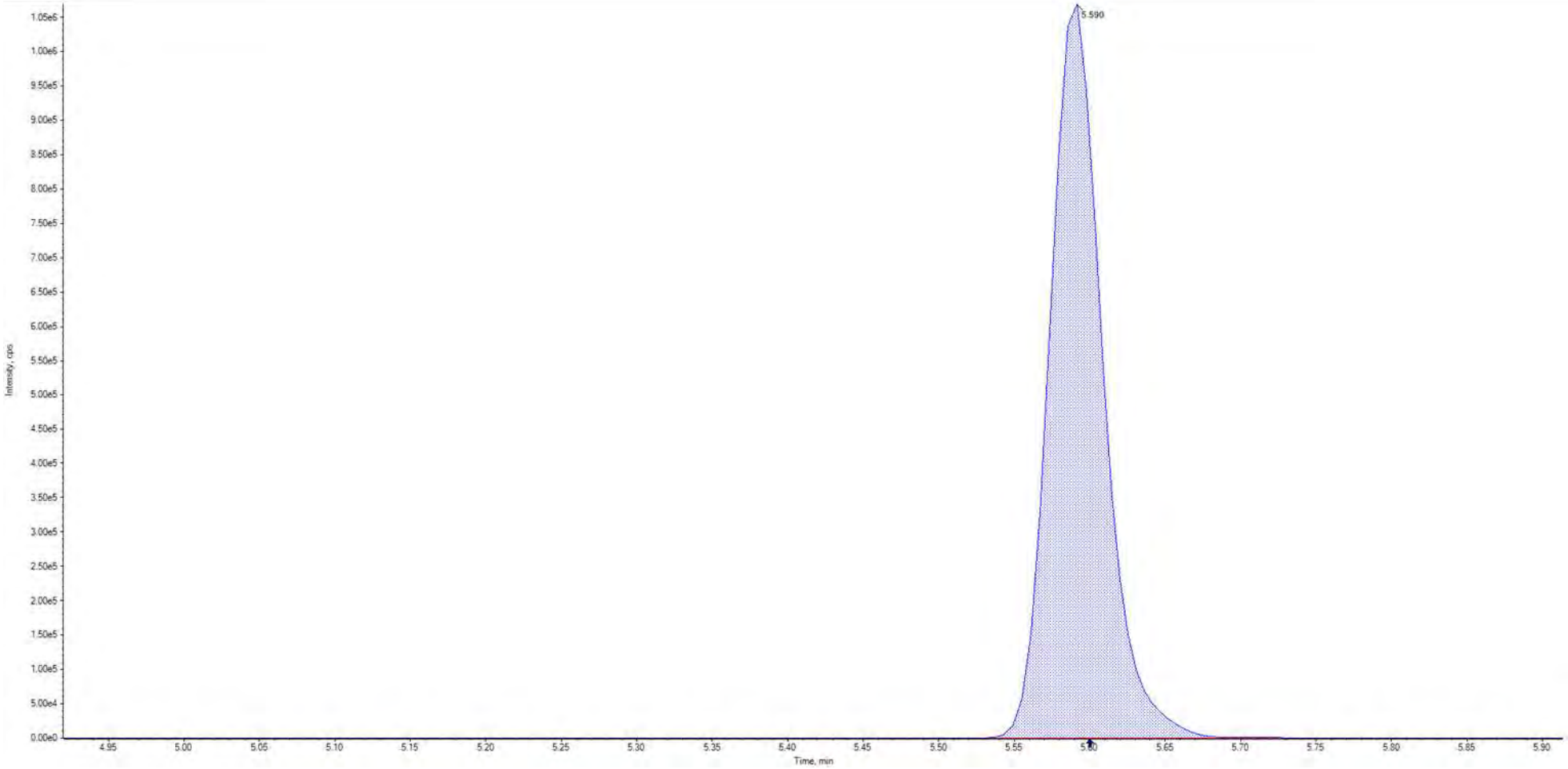
d7-NMeFOSE
Sample: WG1958909-2,INSTBLANK



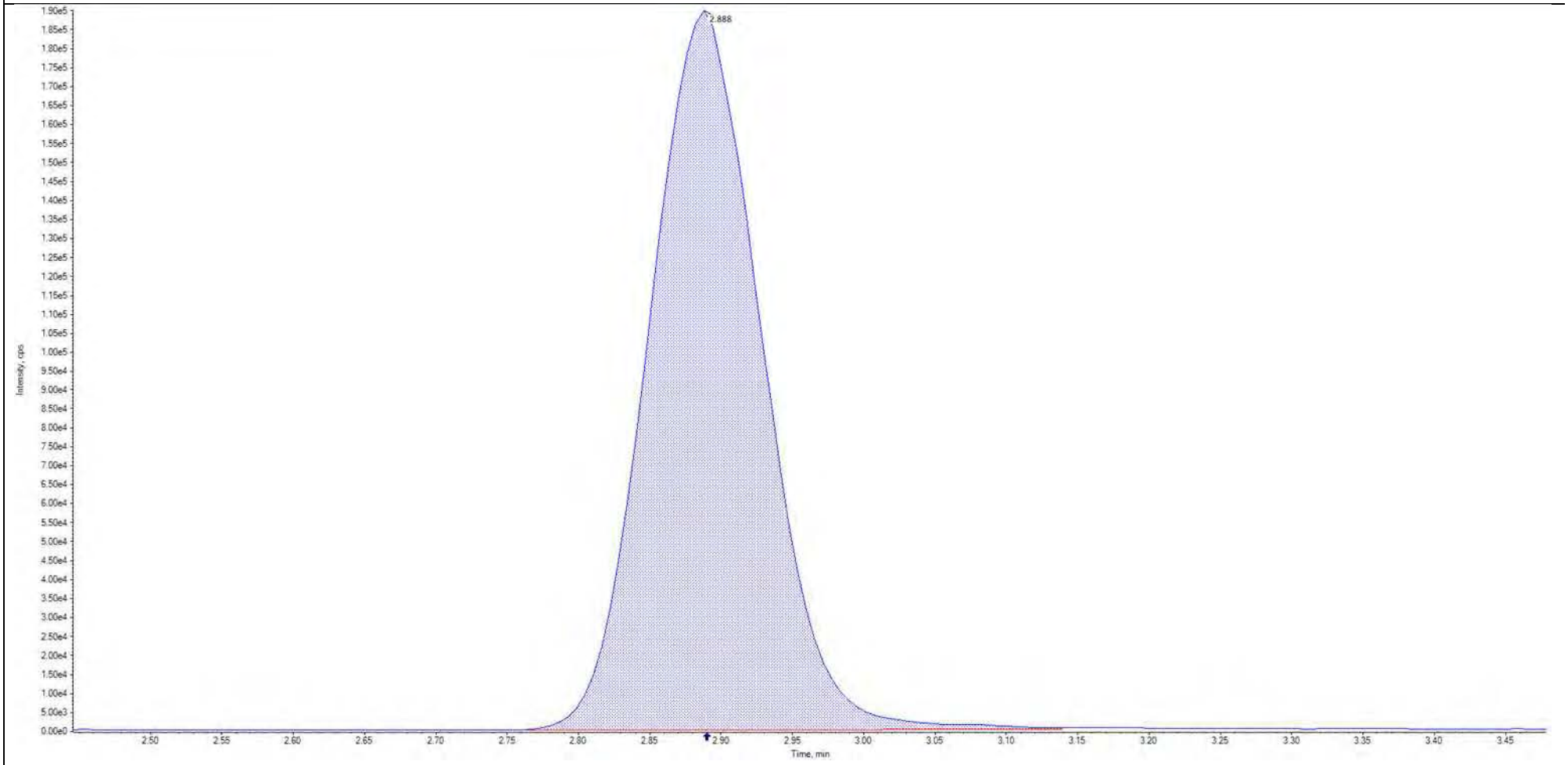
d9-NEtFOSE
Sample: WG1958909-2,INSTBLANK



13C3-HFPO-DA
Sample: WG1958909-2,INSTBLANK

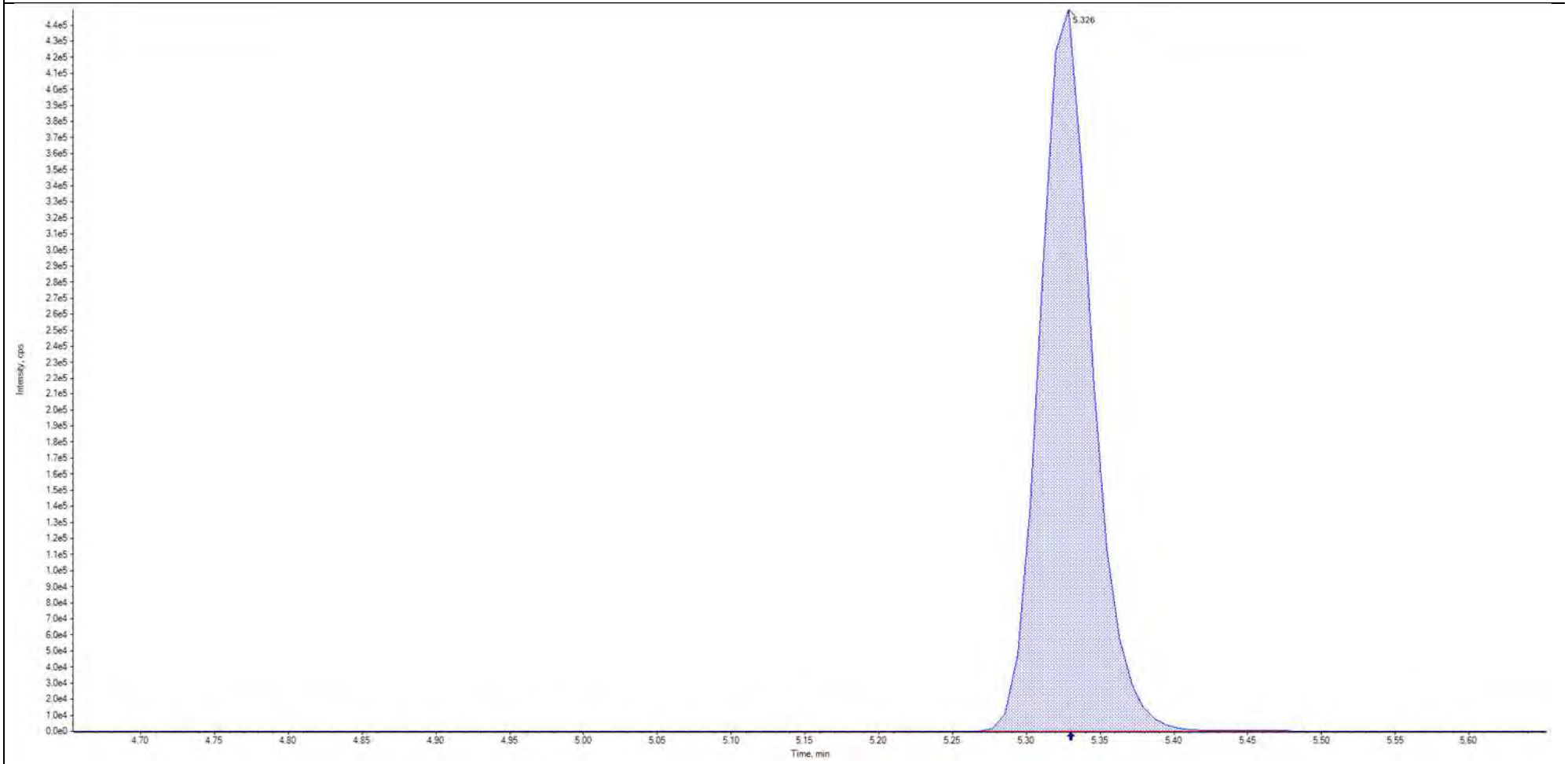


13C3-PFBA
Sample: WG1958909-2,INSTBLANK

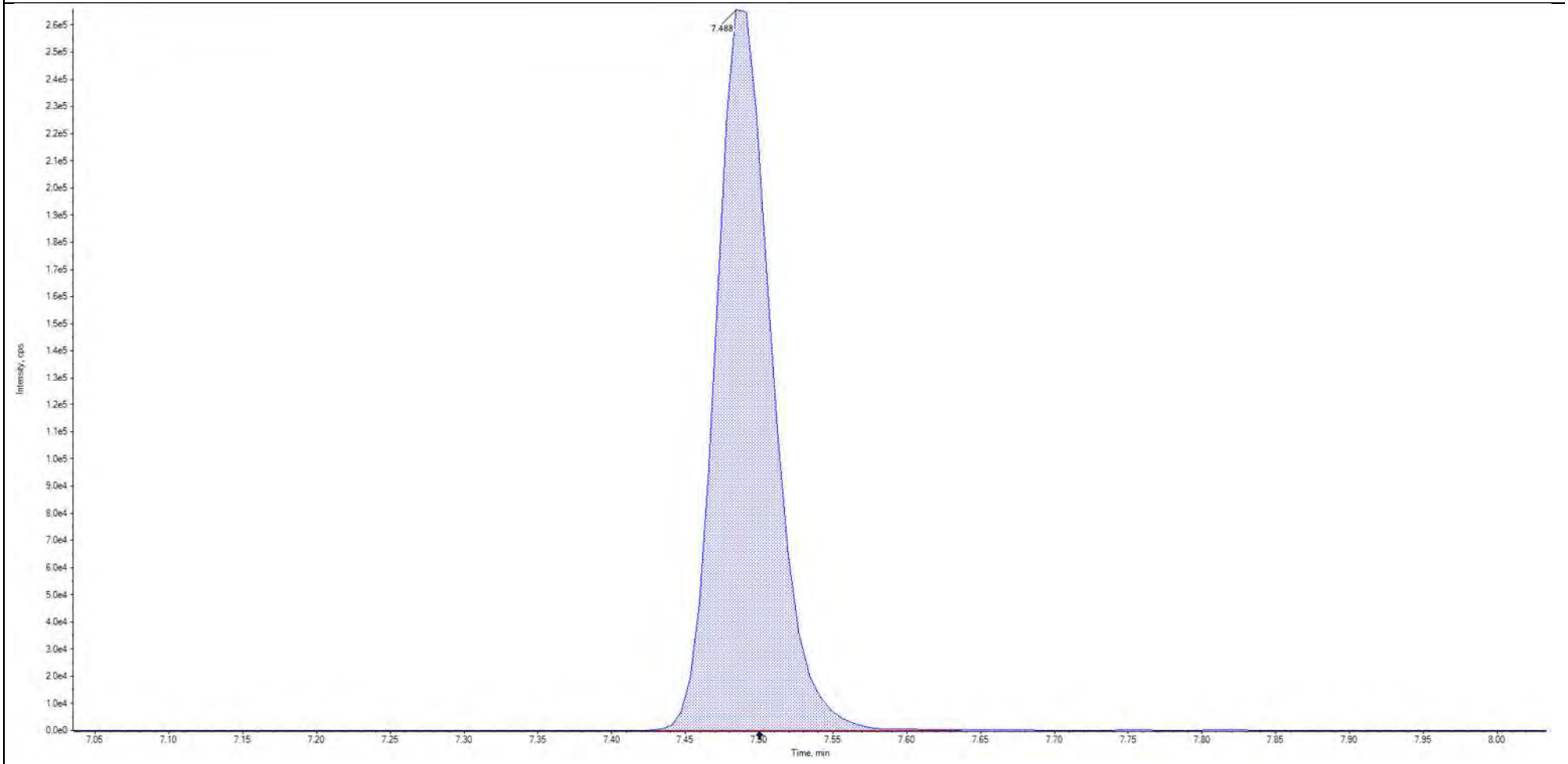


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_80.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

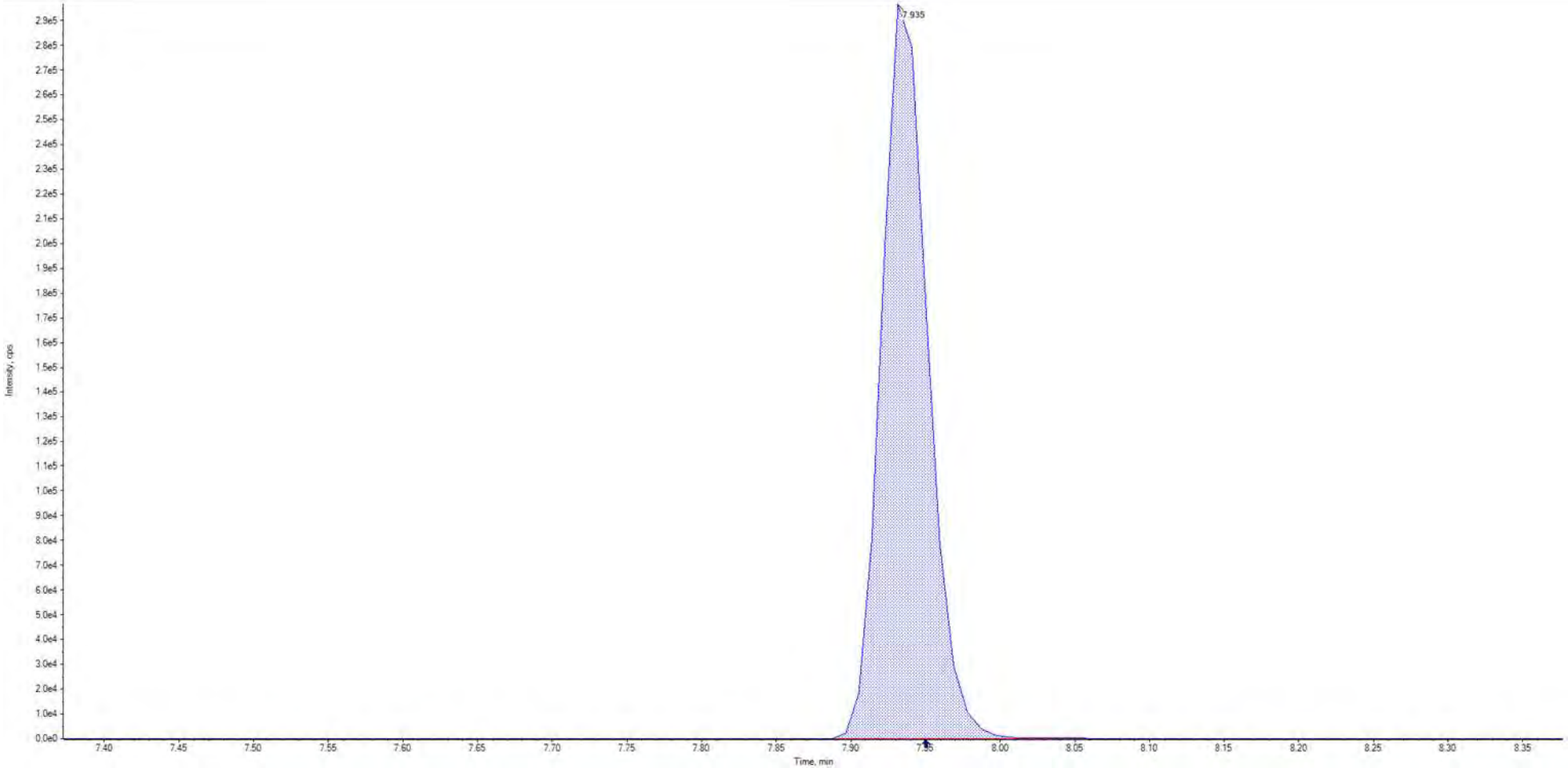
13C2-PFHxA
Sample: WG1958909-2,INSTBLANK



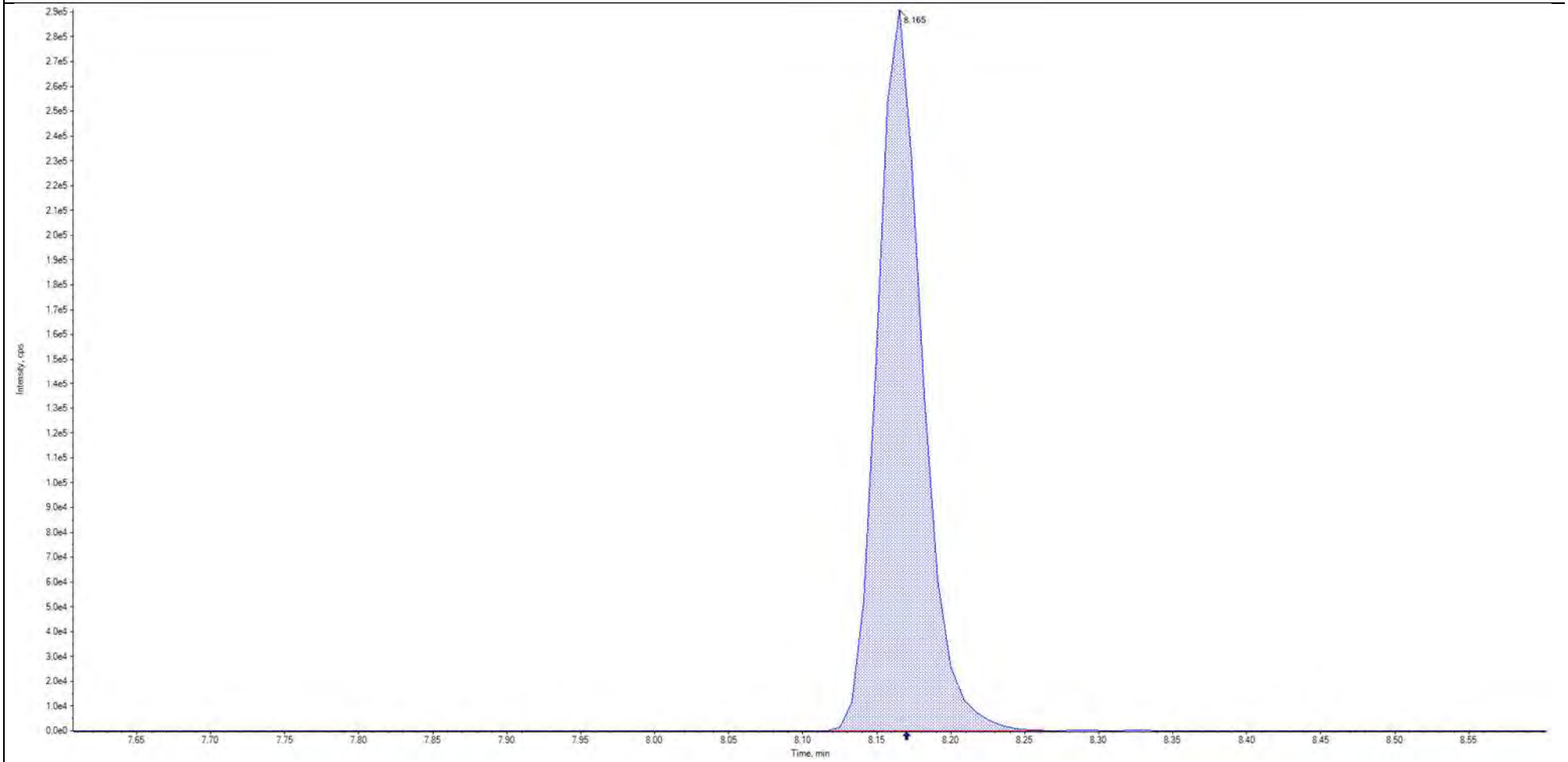
13C4-PFOA
Sample: WG1958909-2,INSTBLANK



13C5-PFNA
Sample: WG1958909-2,INSTBLANK



13C2-PFDA
Sample: WG1958909-2,INSTBLANK



18O2-PFHxS
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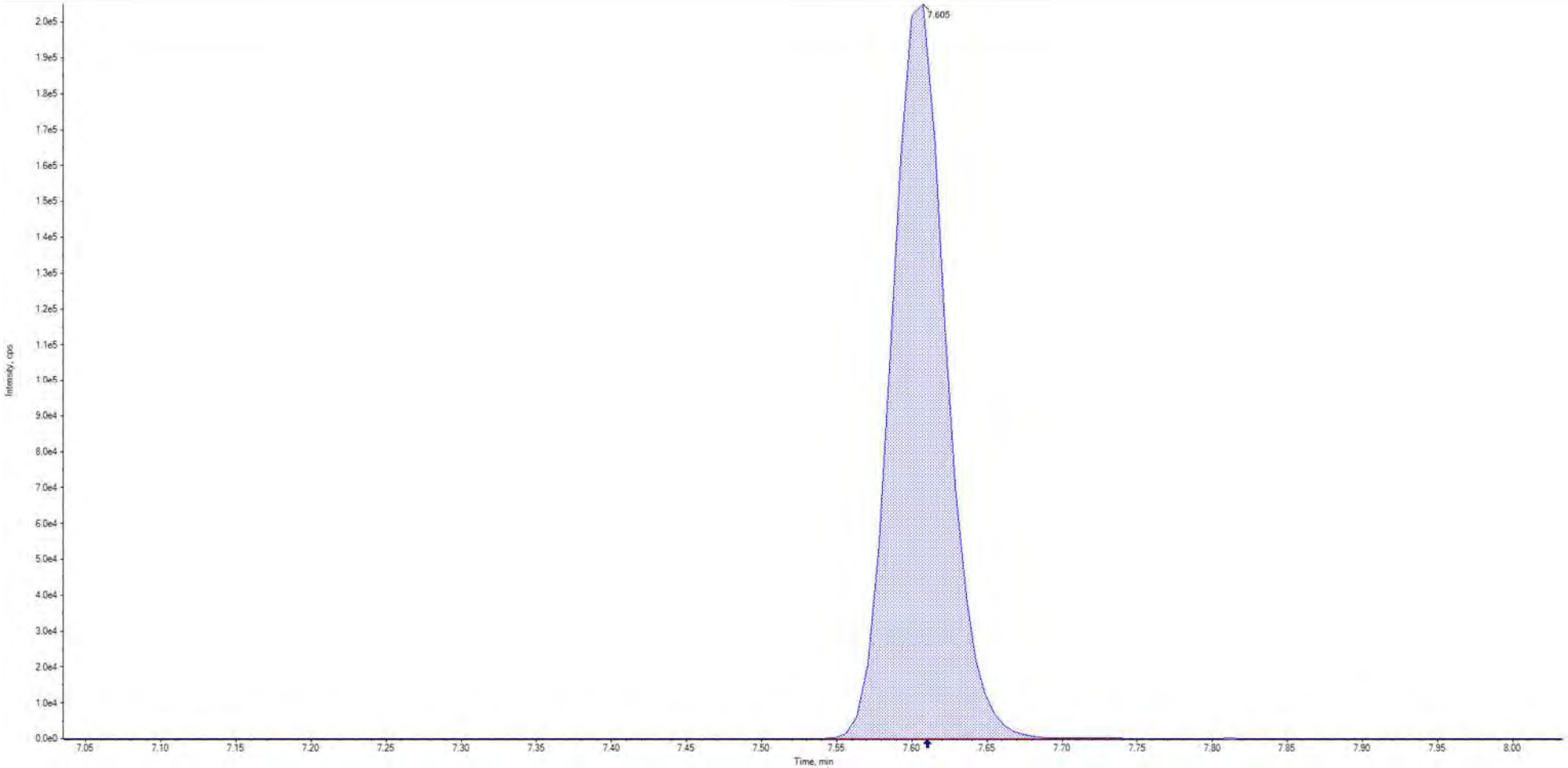
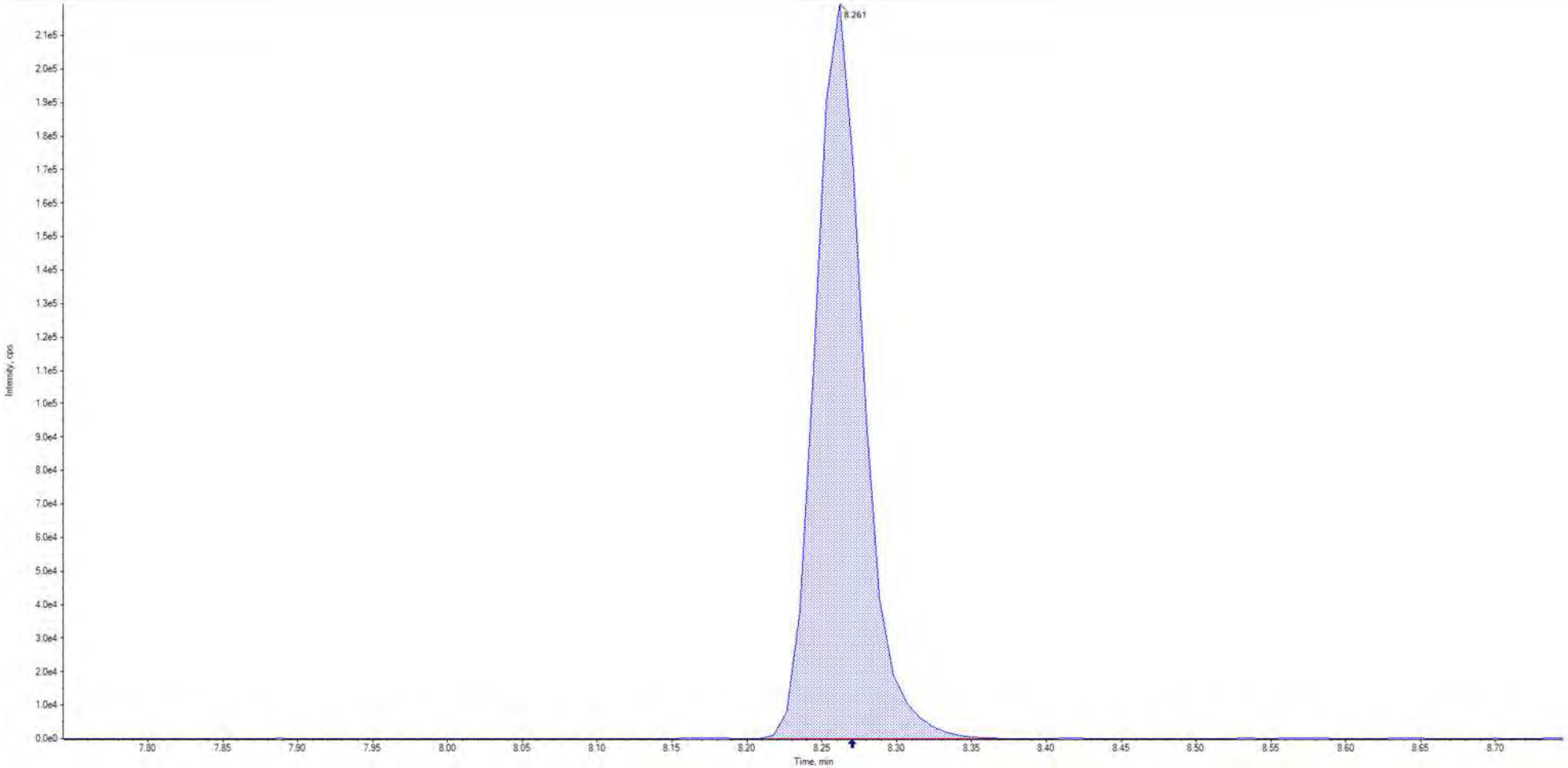


13C4-PFOS
Sample: WG1958909-2,INSTBLANK



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Alpha Analytical Inc.
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Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

Method: EPA1633_NIS_CALC.qmethod
Calibration: 240813_1633_ICAL

ID: WG1958909-3,INSTBLANK
Name: SCI05_240813_81.wiff
Date & Time: 2024-08-13T23:57:47
Description: WG1958909
Instrument: Triple Quad 5500+
User: LCMS05:SL

LC/MS-MS Method:EPA_1633.dam

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
1	PFBA	375-22-4	N/A	213.0 / 169.0	N/A		N/A	N/A	N/A	N/A	N/A
2	PFPeA	2706-90-3	N/A	263.0 / 219.0	N/A		N/A	N/A	0.007	N/A	N/A
3	PFPeA_2	2706-90-3	N/A	263.0 / 68.9	N/A		N/A	N/A	0.007	N/A	N/A
4	PFHxA	307-24-4	N/A	313.0 / 269.0	N/A		N/A	N/A	0.072	N/A	N/A
5	PFHxA_2	307-24-4	N/A	313.0 / 119.0	N/A		N/A	N/A	0.072	N/A	N/A
6	PFHpA	375-85-9	N/A	363.1 / 319.0	N/A		N/A	N/A	0.297	N/A	N/A
7	PFHpA_2	375-85-9	N/A	363.1 / 169.0	N/A		N/A	N/A	0.297	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
8	PFOA	335-67-1	N/A	413.1 / 369.1	N/A		N/A	N/A	0.586	N/A	N/A
9	PFOA_2	335-67-1	N/A	413.1 / 169.0	N/A		N/A	N/A	0.586	N/A	N/A
10	PFNA	375-95-1	N/A	462.8 / 418.9	N/A		N/A	N/A	0.313	N/A	N/A
11	PFNA_2	375-95-1	N/A	462.8 / 218.9	N/A		N/A	N/A	0.313	N/A	N/A
12	PFDA	335-76-2	N/A	513.1 / 469.1	N/A		N/A	N/A	0.142	N/A	N/A
13	PFDA_2	335-76-2	N/A	513.1 / 219.0	N/A		N/A	N/A	0.142	N/A	N/A
14	PFUnA	2058-94-8	N/A	563.1 / 519.1	N/A		N/A	N/A	0.194	N/A	N/A
15	PFUnA_2	2058-94-8	N/A	563.1 / 269.0	N/A		N/A	N/A	0.194	N/A	N/A
16	PFDoA	307-55-1	N/A	613.1 / 569.1	N/A		N/A	N/A	0.167	N/A	N/A
17	PFDoA_2	307-55-1	N/A	613.1 / 319.0	N/A		N/A	N/A	0.167	N/A	N/A
18	PFTrDA	72629-94-8	N/A	663.1 / 619.1	N/A		N/A	N/A	0.228	N/A	N/A
19	PFTrDA_2	72629-94-8	N/A	663.1 / 169.0	N/A		N/A	N/A	0.228	N/A	N/A
20	PFTeDA	376-06-7	N/A	713.1 / 669.1	N/A		N/A	N/A	0.137	N/A	N/A
21	PFTeDA_2	376-06-7	N/A	713.1 / 169.0	N/A		N/A	N/A	0.137	N/A	N/A
22	PFBS	375-73-5	N/A	299.1 / 80.1	N/A		N/A	N/A	0.396	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
23	PFBS_2	375-73-5	N/A	299.1 / 99.1	N/A		N/A	N/A	0.396	N/A	N/A
24	PFPeS	2706-91-4	N/A	349.1 / 80.1	N/A		N/A	N/A	0.299	N/A	N/A
25	PFPeS_2	2706-91-4	N/A	349.1 / 99.1	N/A		N/A	N/A	0.299	N/A	N/A
26	PFHxS	355-46-4	N/A	399.1 / 80.1	N/A		N/A	N/A	0.315	N/A	N/A
27	PFHxS_2	355-46-4	N/A	399.1 / 99.1	N/A		N/A	N/A	0.315	N/A	N/A
28	PFHpS	375-92-8	N/A	449.1 / 80.1	N/A		N/A	N/A	0.287	N/A	N/A
29	PFHpS_2	375-92-8	N/A	449.1 / 99.1	N/A		N/A	N/A	0.287	N/A	N/A
30	PFOS	1763-23-1	N/A	499.1 / 80.1	N/A		N/A	N/A	0.238	N/A	N/A
31	PFOS_2	1763-23-1	N/A	499.1 / 99.1	N/A		N/A	N/A	0.238	N/A	N/A
32	PFNS	68259-12-1	N/A	549.1 / 80.1	N/A		N/A	N/A	0.301	N/A	N/A
33	PFNS_2	68259-12-1	N/A	549.1 / 99.1	N/A		N/A	N/A	0.301	N/A	N/A
34	PFDS	335-77-3	N/A	599.1 / 80.1	N/A		N/A	N/A	0.275	N/A	N/A
35	PFDS_2	335-77-3	N/A	599.1 / 99.1	N/A		N/A	N/A	0.275	N/A	N/A
36	PFDoS	79780-39-5	N/A	699.2 / 80.1	N/A		N/A	N/A	0.274	N/A	N/A
37	PFDoS_2	79780-39-5	N/A	699.2 / 99.1	N/A		N/A	N/A	0.274	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
38	4:2FTS	757124-72-4	5.14	327.1 / 307.1	24729		0.206	0.509	0.516	Pass	N/A
39	4:2FTS_2	757124-72-4	5.14	327.1 / 81.1	12589		0.196	0.509	0.516	Pass	N/A
40	6:2FTS	27619-97-2	N/A	427.2 / 407.2	N/A		N/A	N/A	0.565	N/A	N/A
41	6:2FTS_2	27619-97-2	N/A	427.2 / 81.1	N/A		N/A	N/A	0.565	N/A	N/A
42	8:2FTS	39108-34-4	N/A	527.2 / 507.2	N/A		N/A	N/A	0.662	N/A	N/A
43	8:2FTS_2	39108-34-4	N/A	527.2 / 81.1	N/A		N/A	N/A	0.662	N/A	N/A
44	PFOSA	754-91-6	N/A	498.1 / 78.1	N/A		N/A	N/A	0.025	N/A	N/A
45	PFOSA_2	754-91-6	N/A	498.1 / 478.0	N/A		N/A	N/A	0.025	N/A	N/A
46	NMeFOSA	31506-32-8	N/A	512.2 / 219.0	N/A		N/A	N/A	1.551	N/A	N/A
47	NMeFOSA_2	31506-32-8	N/A	512.2 / 169.0	N/A		N/A	N/A	1.551	N/A	N/A
48	NEtFOSA	4151-50-2	N/A	526.2 / 219.0	N/A		N/A	N/A	1.285	N/A	N/A
49	NEtFOSA_2	4151-50-2	N/A	526.2 / 169.0	N/A		N/A	N/A	1.285	N/A	N/A
50	NMeFOSAA	2355-31-9	N/A	570.2 / 419.1	N/A		N/A	N/A	0.700	N/A	N/A
51	NMeFOSAA_2	2355-31-9	N/A	570.2 / 483.0	N/A		N/A	N/A	0.700	N/A	N/A
52	NEtFOSAA	2991-50-6	N/A	584.2 / 419.1	N/A		N/A	N/A	0.487	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
53	NEtFOSAA_2	2991-50-6	N/A	584.2 / 526.2	N/A		N/A	N/A	0.487	N/A	N/A
54	NMeFOSE	24448-09-7	10.08	616.1 / 58.9	13295	M5	0.112	N/A	N/A	N/A	N/A
55	NEtFOSE	1691-99-2	10.28	630.0 / 58.9	23968	M5	0.112	N/A	N/A	N/A	N/A
56	HFPO-DA	13252-13-6	N/A	285.0 / 169.0	N/A		N/A	N/A	0.464	N/A	N/A
57	HFPO-DA_2	13252-13-6	N/A	285.0 / 184.9	N/A		N/A	N/A	0.464	N/A	N/A
58	ADONA	919005-14-4	N/A	377.1 / 251.0	N/A		N/A	N/A	0.634	N/A	N/A
59	ADONA_2	919005-14-4	N/A	377.1 / 84.8	N/A		N/A	N/A	0.634	N/A	N/A
60	9Cl-PF3ONS	756426-58-1	N/A	530.8 / 351.1	N/A		N/A	N/A	0.322	N/A	N/A
61	9Cl-PF3ONS_2	756426-58-1	N/A	532.8 / 353.0	N/A		N/A	N/A	0.322	N/A	N/A
62	11Cl-PF3OUdS	763051-92-9	N/A	630.9 / 451.0	N/A		N/A	N/A	0.331	N/A	N/A
63	11Cl-PF3OUdS_2	763051-92-9	N/A	632.9 / 452.9	N/A		N/A	N/A	0.331	N/A	N/A
64	3:3FTCA	356-02-5	N/A	241.1 / 177.1	N/A		N/A	N/A	1.074	N/A	N/A
65	3:3FTCA_2	356-02-5	N/A	241.1 / 117.0	N/A		N/A	N/A	1.074	N/A	N/A
66	5:3FTCA	914637-49-3	N/A	341.1 / 237.1	N/A		N/A	N/A	0.953	N/A	N/A
67	5:3FTCA_2	914637-49-3	N/A	341.1 / 217.0	N/A		N/A	N/A	0.953	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
68	7:3FTCA	812-70-4	8.21	441.1 / 316.9	31669		0.325	1.670	1.558	Pass	N/A
69	7:3FTCA_2	812-70-4	8.21	441.1 / 337.1	52892		0.374	1.670	1.558	Pass	N/A
70	PFEESA	113507-82-7	N/A	315.1 / 135.0	N/A		N/A	N/A	0.087	N/A	N/A
71	PFEESA_2	113507-82-7	N/A	315.1 / 82.9	N/A		N/A	N/A	0.087	N/A	N/A
72	PFMPA	377-73-1	N/A	229.0 / 85.0	N/A		N/A	N/A	N/A	N/A	N/A
73	PFMBA	863090-89-5	N/A	279.0 / 85.0	N/A		N/A	N/A	N/A	N/A	N/A
74	NFDHA	151772-58-6	N/A	295.0 / 201.0	N/A		N/A	N/A	0.910	N/A	N/A
75	NFDHA_2	151772-58-6	N/A	295.0 / 84.9	N/A		N/A	N/A	0.910	N/A	N/A
76	TDCA	516-50-7	N/A	499.1 / 124.1	N/A		N/A	N/A	40.716	N/A	N/A
77	TDCA_2	516-50-7	N/A	499.1 / 79.9	N/A		N/A	N/A	40.716	N/A	N/A
78	13C2D4-4:2FTS	Surr	5.13	333.2 / 312.1	923024		5.338	N/A	N/A	N/A	N/A
79	13C2-PFOA	Surr	7.50	415.0 / 370.0	3303332		2.507	N/A	N/A	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C4-PFBA	EIS	2.89	217.0 / 172.0	2523656		10.263	NA	NA	NA	102.6

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C5-PFPeA	EIS	4.64	268.0 / 223.0	1581078		5.176	NA	NA	NA	103.5
	13C5-PFHxA	EIS	5.33	318.0 / 273.0	989418		2.466	NA	NA	NA	98.6
	13C4-PFHpA	EIS	6.24	367.0 / 322.0	1021617		2.543	NA	NA	NA	101.7
	13C8-PFOA	EIS	7.49	421.0 / 376.0	1503887		2.527	NA	NA	NA	101.1
	13C9-PFNA	EIS	7.94	472.0 / 427.0	704924		1.210	NA	NA	NA	96.8
	13C6-PFDA	EIS	8.17	519.0 / 474.0	703562		1.299	NA	NA	NA	104.0
	13C7-PFUnA	EIS	8.46	570.0 / 525.0	591561		1.350	NA	NA	NA	108.0

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C2-PFDoA	EIS	8.89	615.1 / 570.0	355414		1.247	NA	NA	NA	99.8
	13C2-PFTeDA	EIS	9.90	715.1 / 670.1	354461		1.146	NA	NA	NA	91.7
	13C3-PFBS	EIS	5.31	302.1 / 80.1	784429		2.435	NA	NA	NA	104.5
	13C3-PFHxS	EIS	7.61	402.1 / 80.1	624714		2.441	NA	NA	NA	103.0
	13C8-PFOS	EIS	8.26	507.1 / 80.1	674222		2.389	NA	NA	NA	99.8
	13C2-4:2FTS	EIS	5.13	329.1 / 81.1	287076		4.993	NA	NA	NA	106.5
	13C2-6:2FTS	EIS	7.09	429.2 / 81.1	200592		4.761	NA	NA	NA	100.1
	13C2-8:2FTS	EIS	8.07	529.2 / 81.1	308803		5.008	NA	NA	NA	104.3

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C8-PFOSA	EIS	9.54	506.1 / 78.1	955397		2.547	NA	NA	NA	101.9
	d3-NMeFOSA	EIS	10.16	515.2 / 219.0	152826		2.420	NA	NA	NA	96.8
	d5-NEtFOSA	EIS	10.36	531.2 / 219.0	154572		2.505	NA	NA	NA	100.2
	d3-NMeFOSAA	EIS	8.22	573.2 / 419.1	718613		5.033	NA	NA	NA	100.7
	d5-NEtFOSAA	EIS	8.35	589.3 / 419.1	374093		4.986	NA	NA	NA	99.7
	d7-NMeFOSE	EIS	10.06	623.2 / 58.9	1202052		24.646	NA	NA	NA	98.6
	d9-NEtFOSE	EIS	10.26	639.2 / 58.9	1817167		25.270	NA	NA	NA	101.1

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C3-HFPO-DA	EIS	5.60	287.0 / 169.0	2798953		10.527	NA	NA	NA	105.3
	13C3-PFBA	NIS	2.89	216.0 / 172.0	1075649		5.031	NA	NA	NA	100.6
	13C2-PFHxA	NIS	5.33	315.0 / 270.0	1191249		2.433	NA	NA	NA	97.3
	13C4-PFOA	NIS	7.49	417.0 / 372.0	778547		2.487	NA	NA	NA	99.5
	13C5-PFNA	NIS	7.94	468.0 / 423.0	710042		1.296	NA	NA	NA	103.7
	13C2-PFDA	NIS	8.17	515.1 / 470.1	636077		1.241	NA	NA	NA	99.3
	18O2-PFHxS	NIS	7.61	403.1 / 84.1	520101		2.220	NA	NA	NA	93.7
	13C4-PFOS	NIS	8.26	503.1 / 80.1	499194		2.371	NA	NA	NA	99.0

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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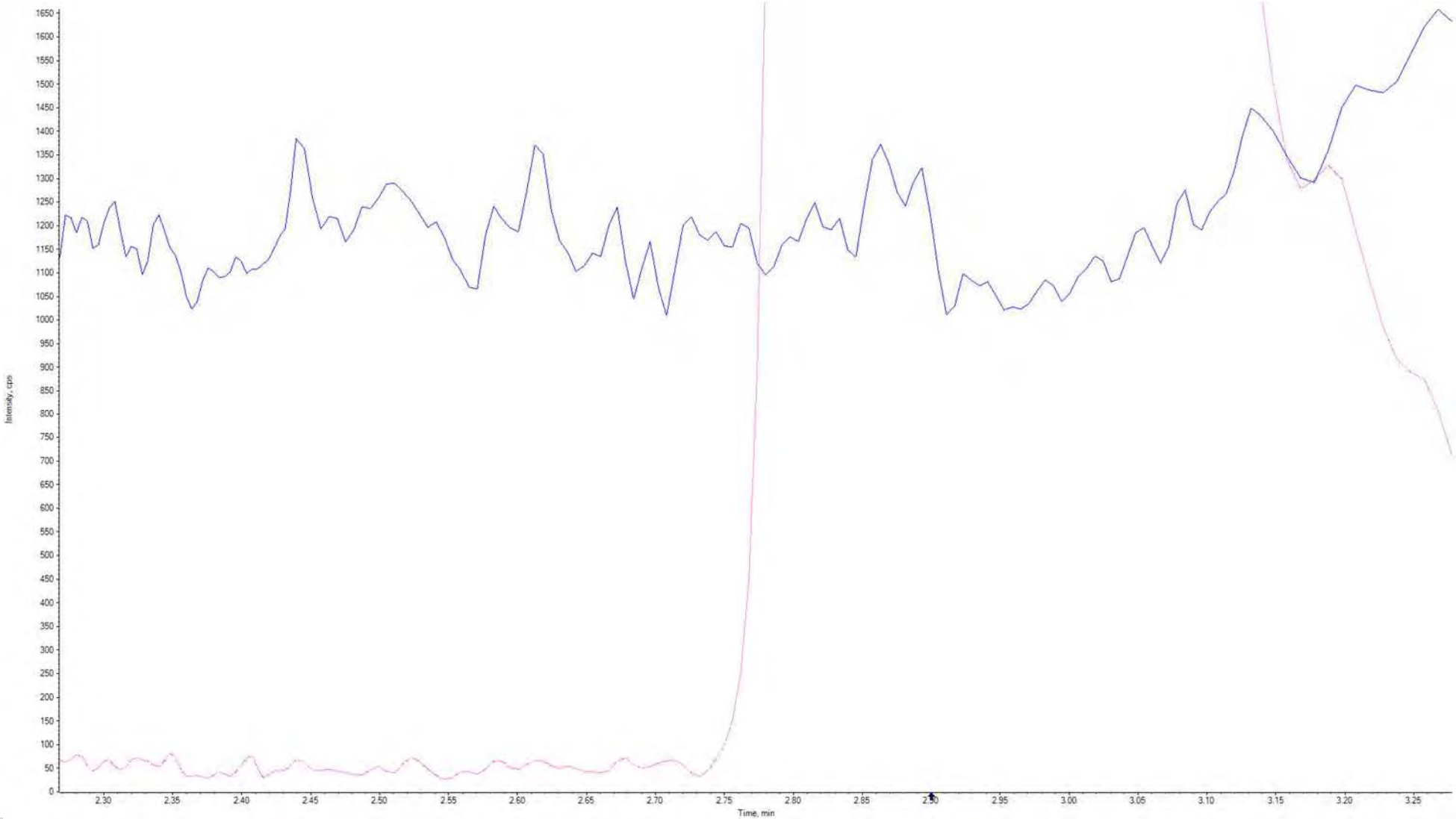
PFBA
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A



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PFPeA
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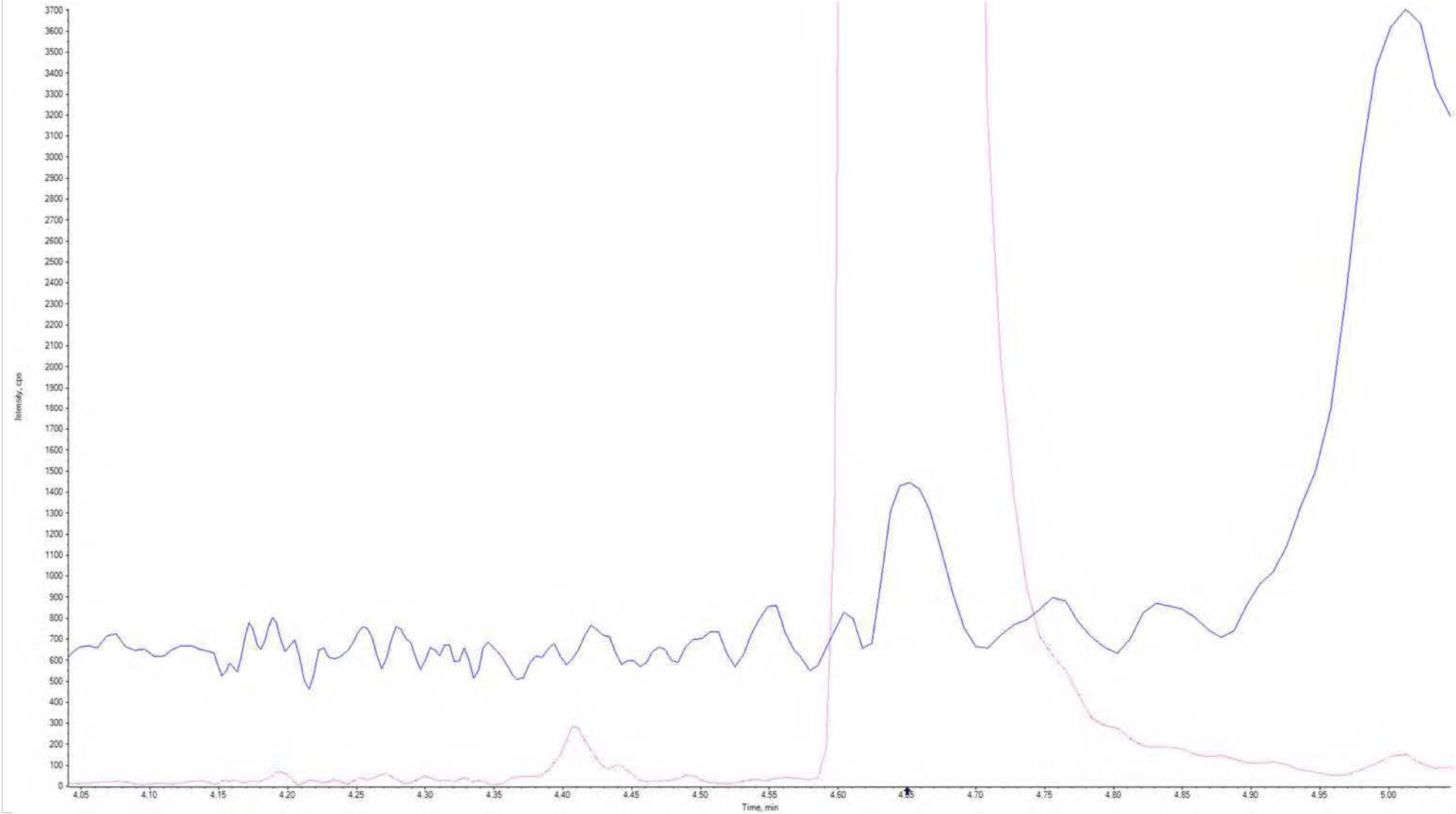

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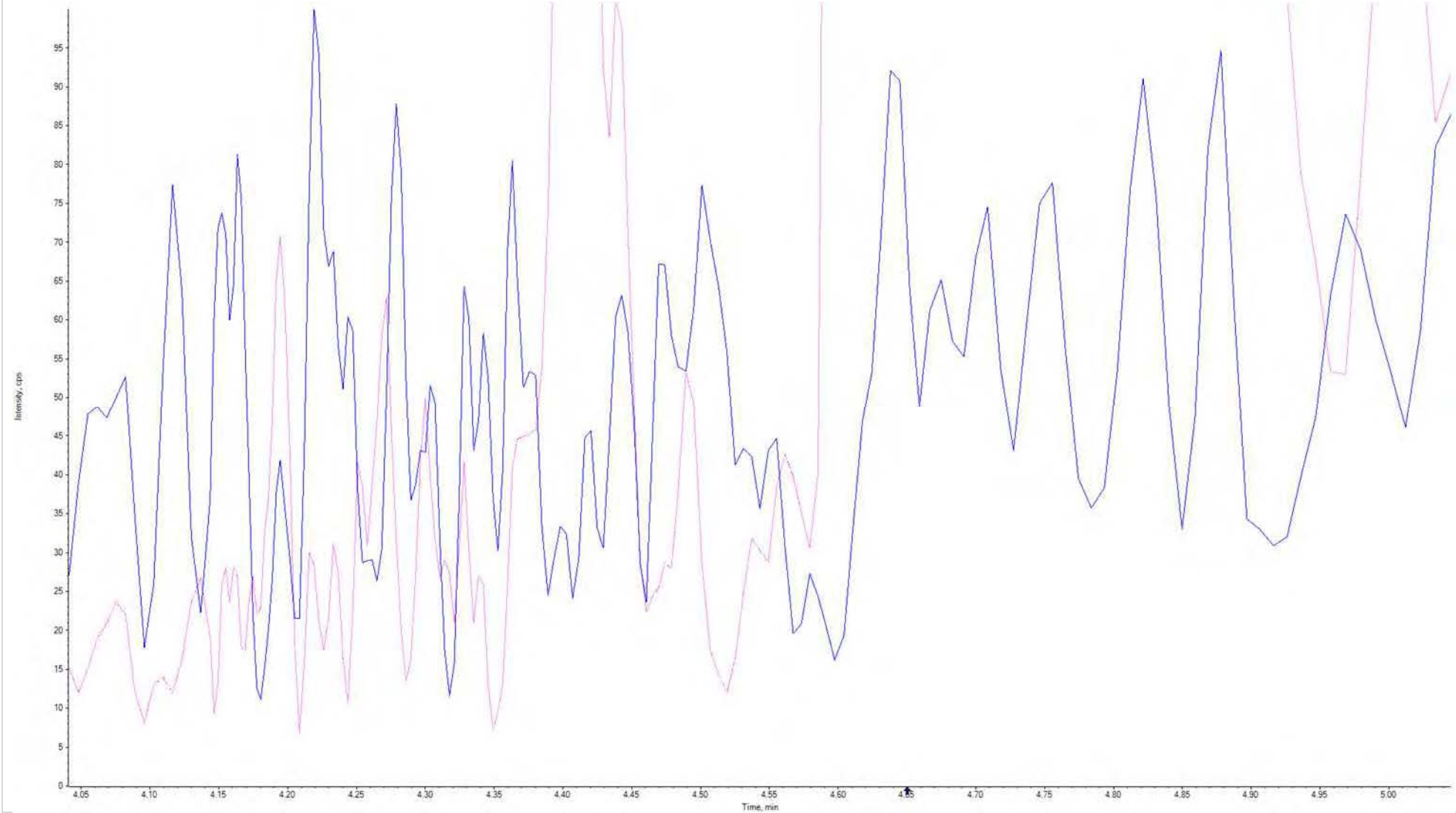
PFPeA_2
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A



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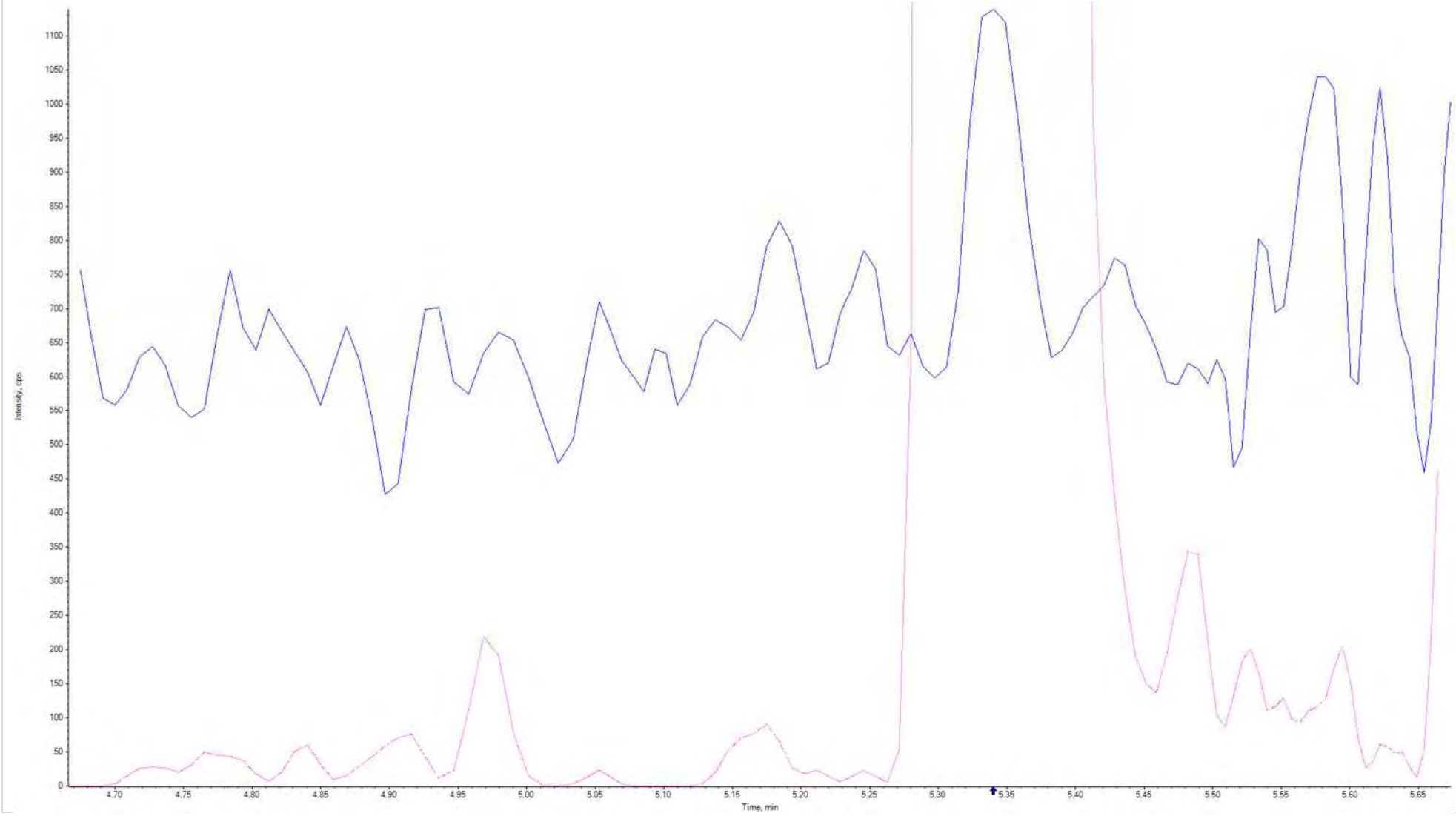
PFHxA
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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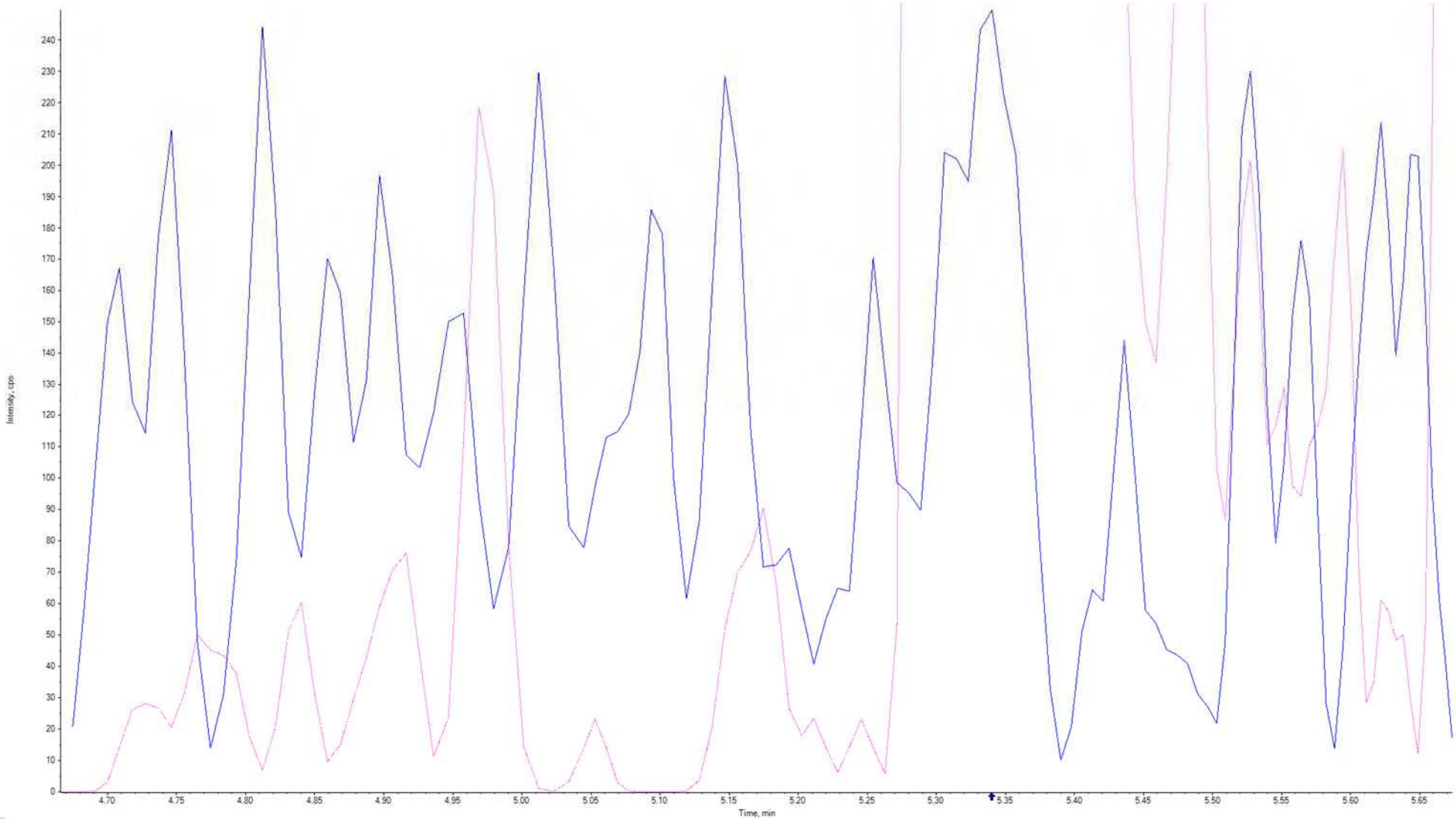
Generated: 8/14/2024 9:40:32 AM

PFHxA_2
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFHpA
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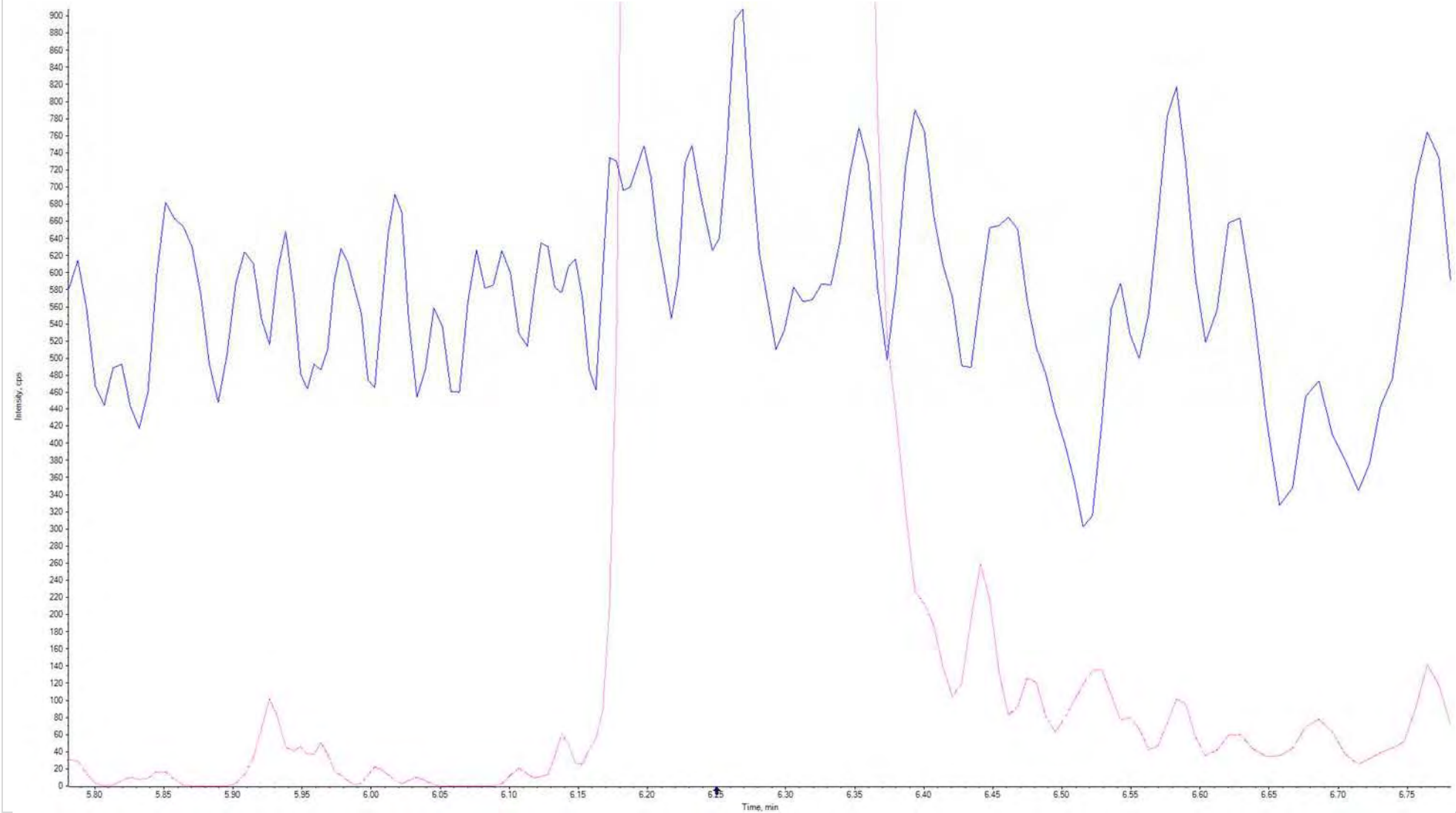

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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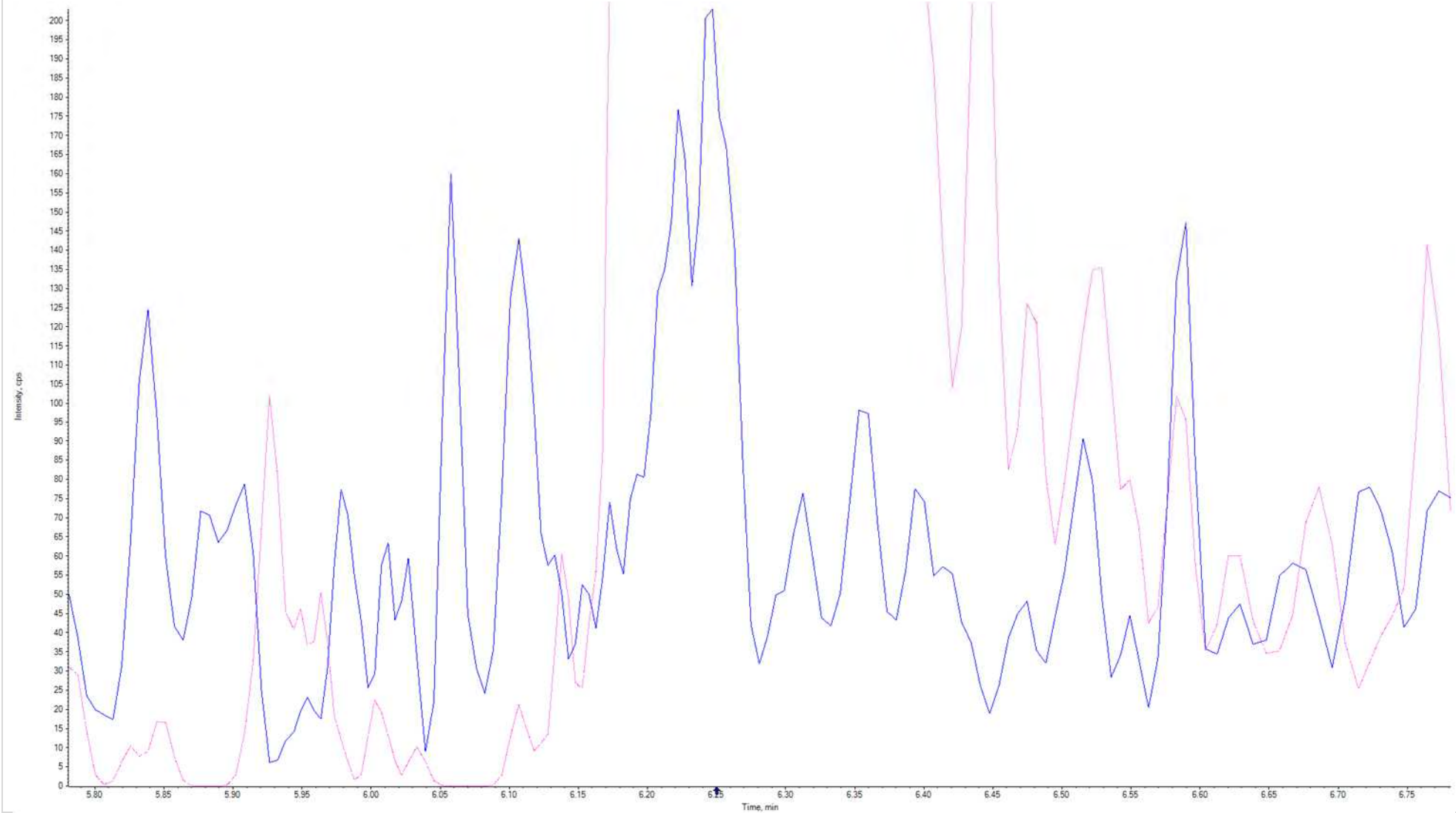

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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PFOA
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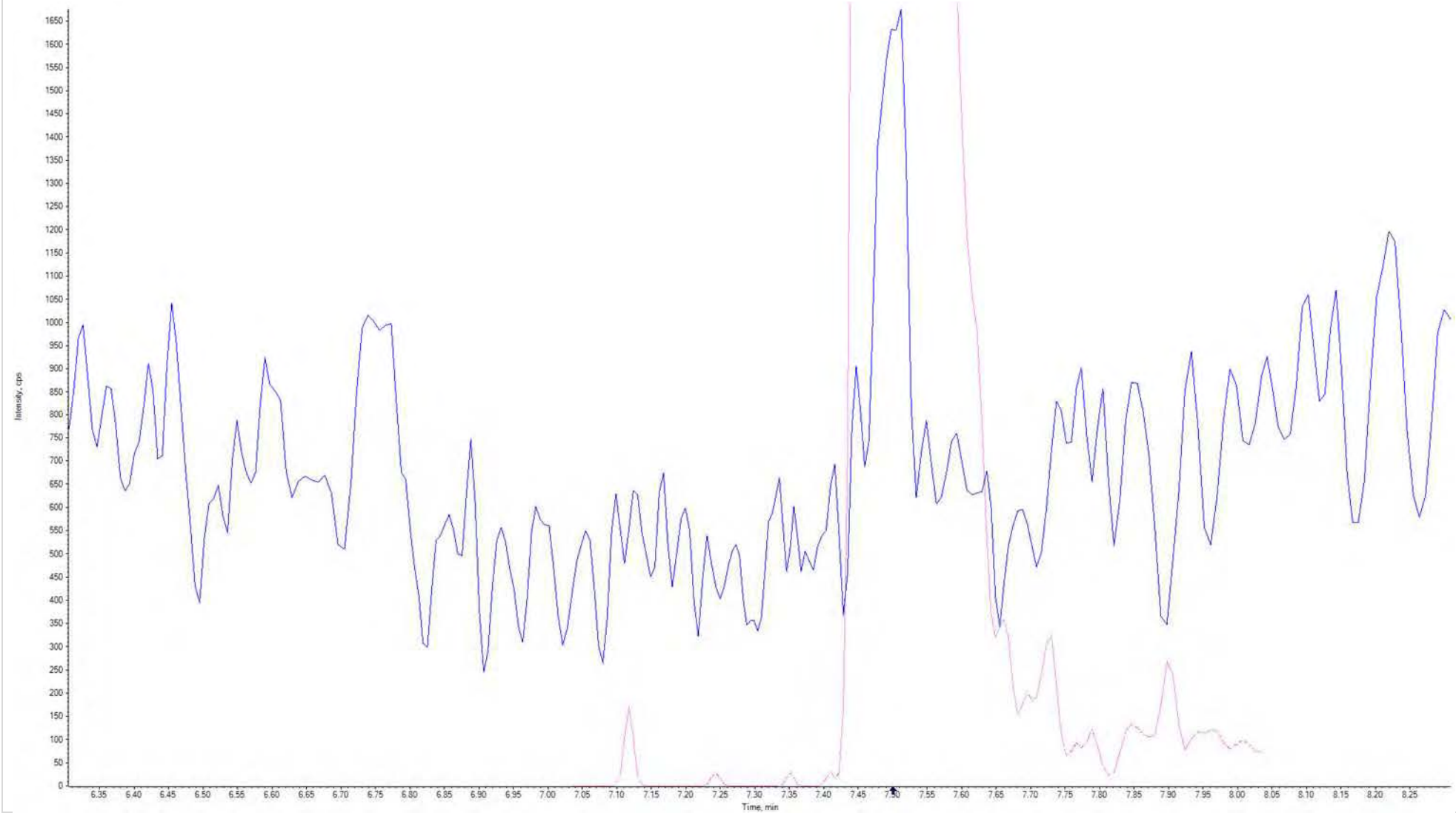

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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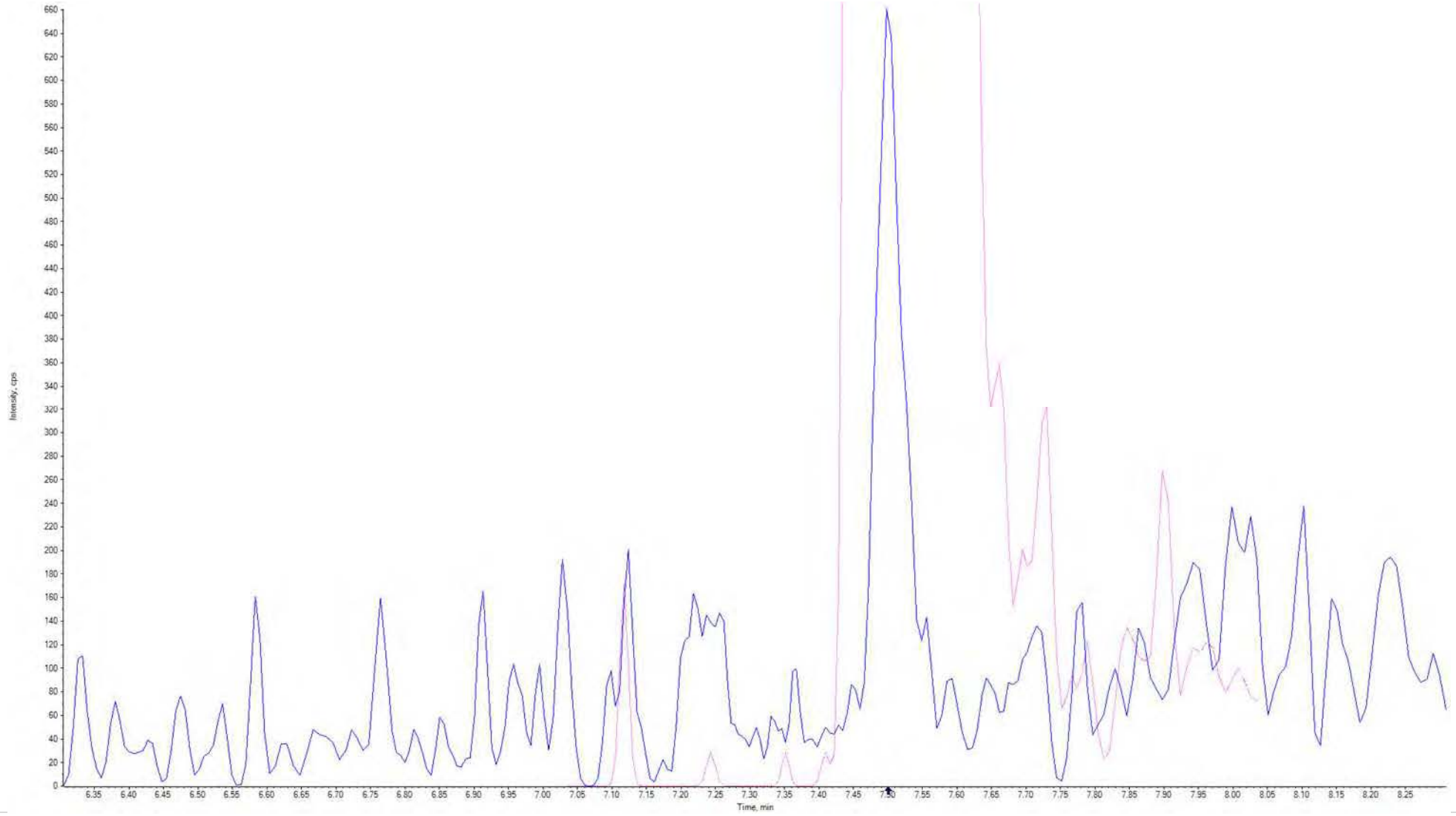

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PFNA
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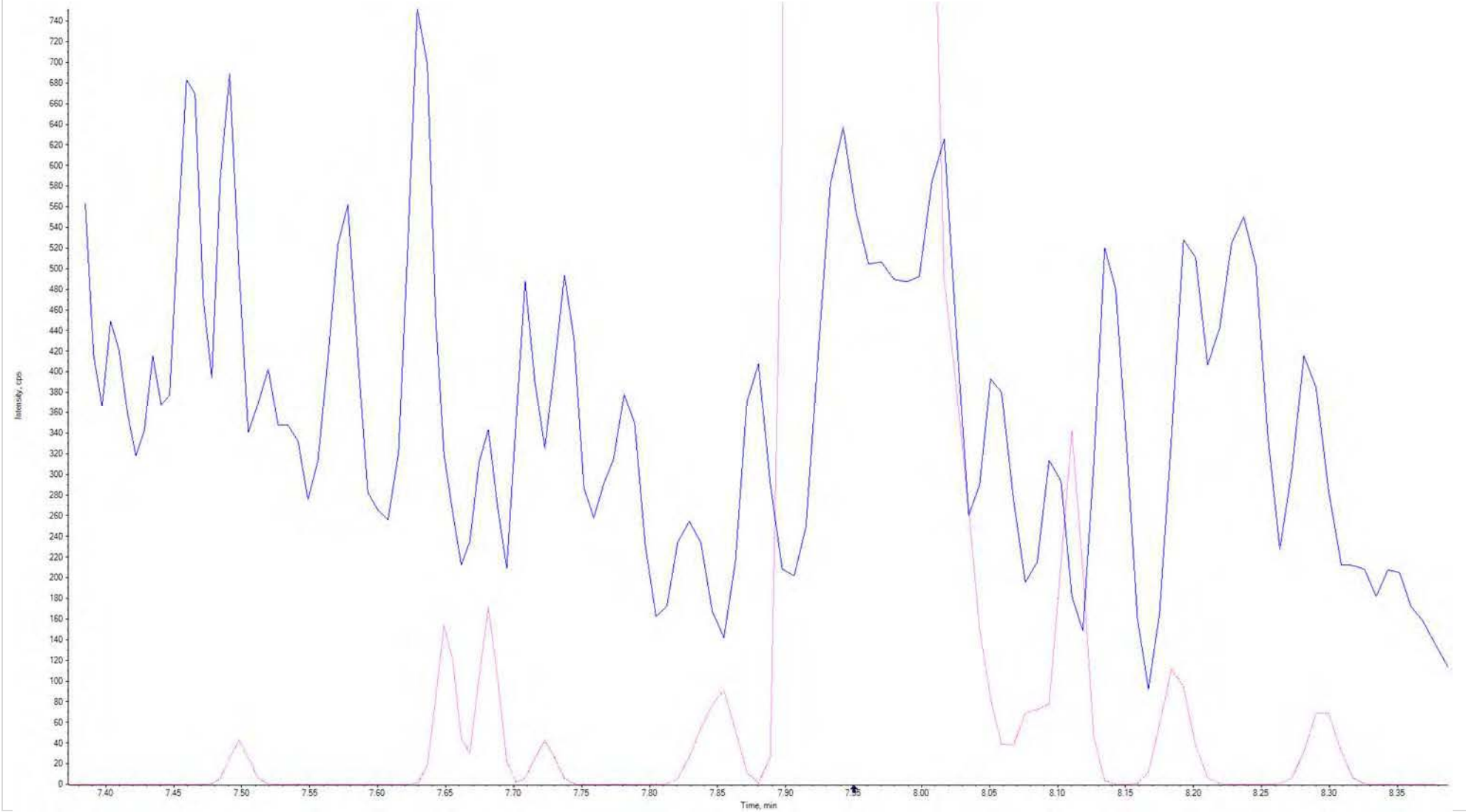

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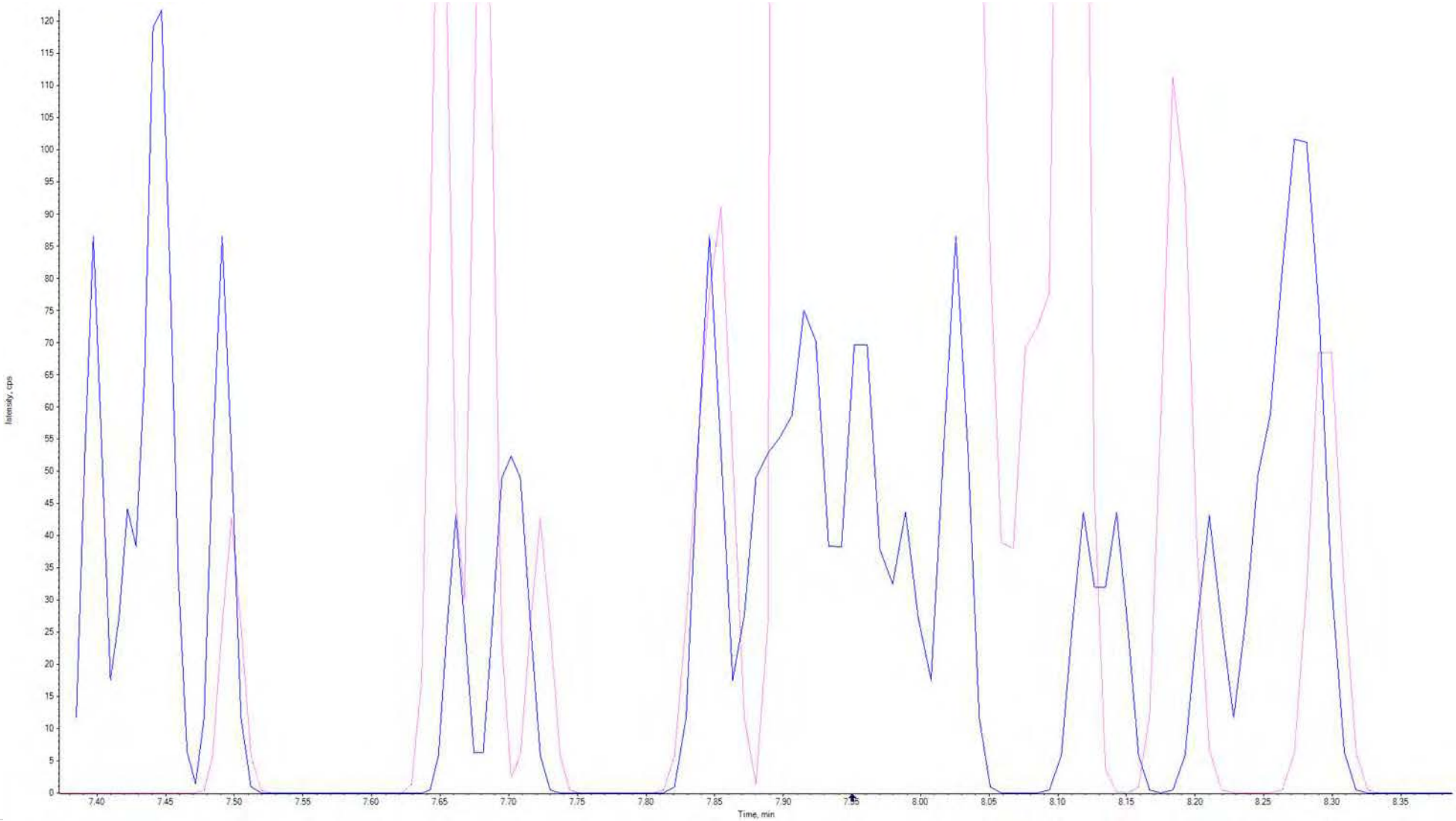

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Alpha Analytical Inc.
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PFDA
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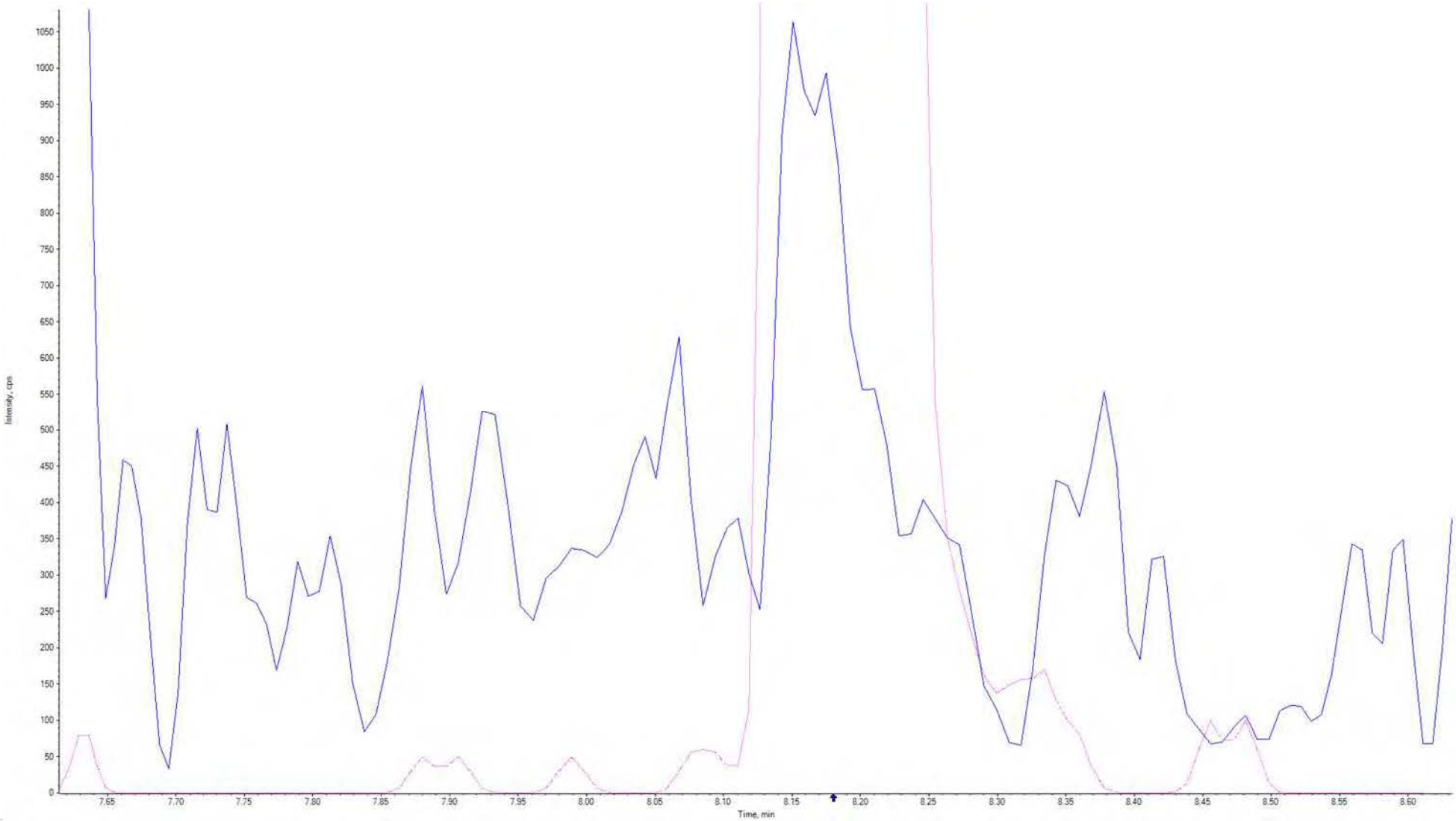

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PFDA_2
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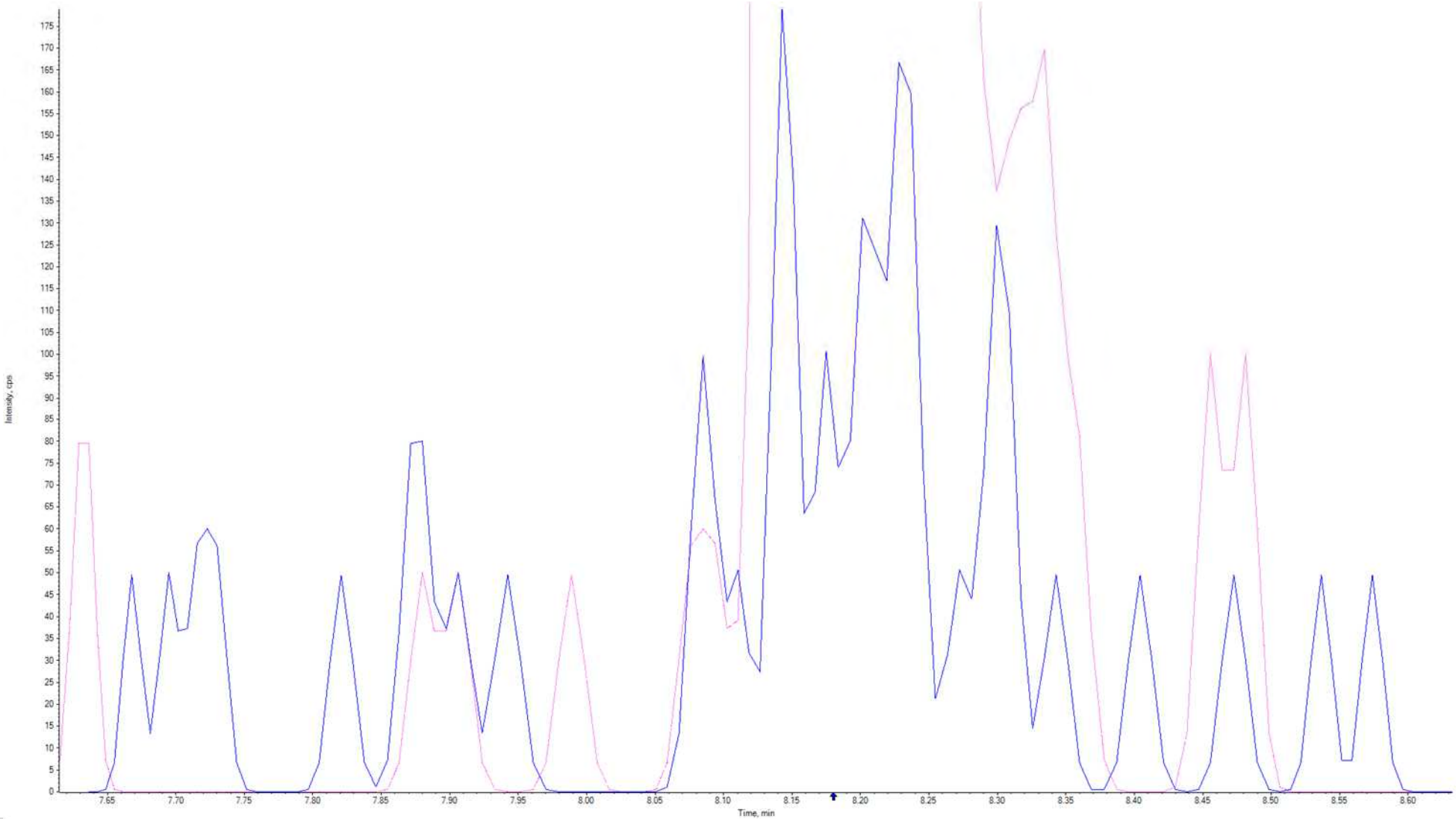

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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PFUnA
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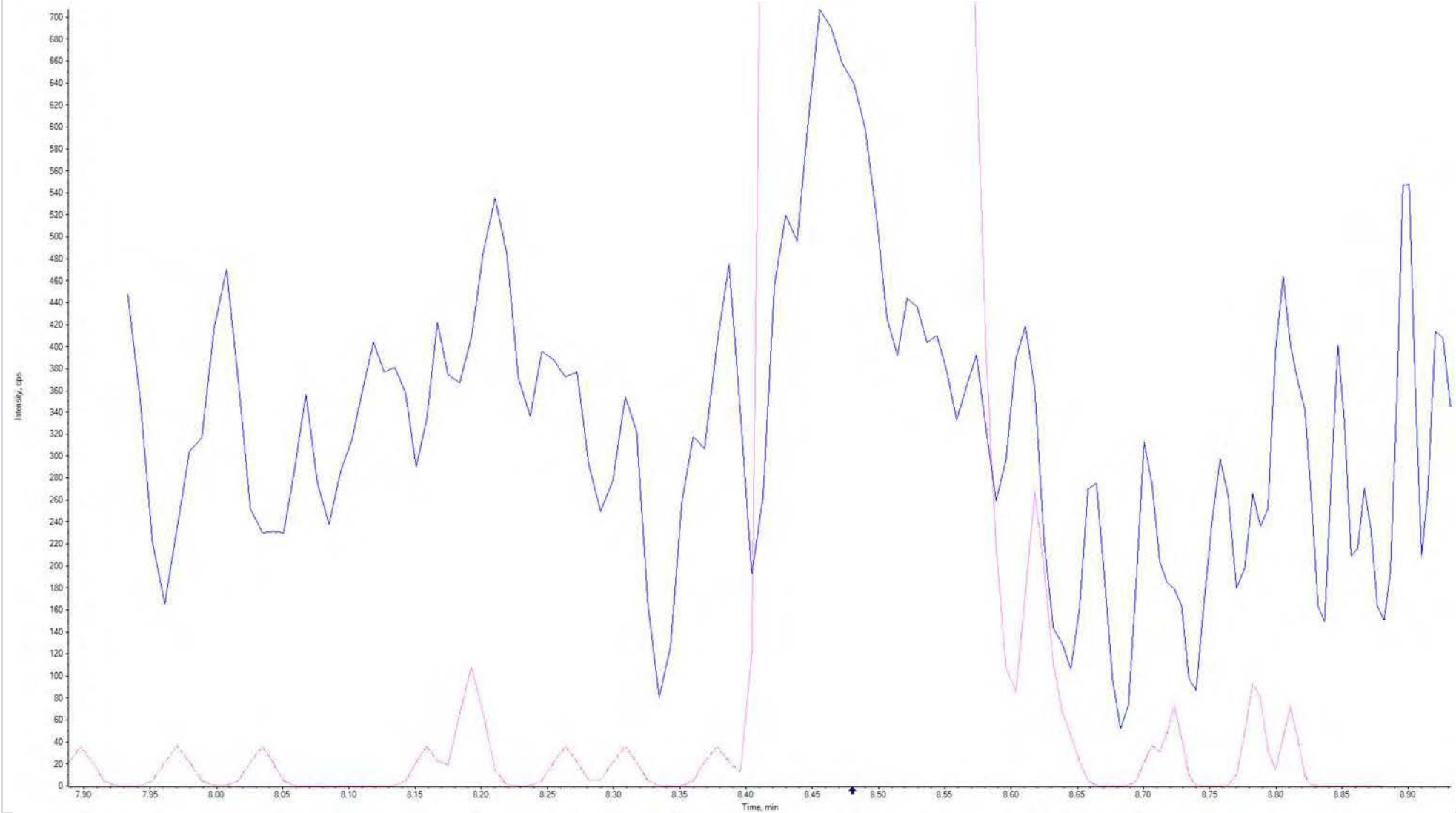

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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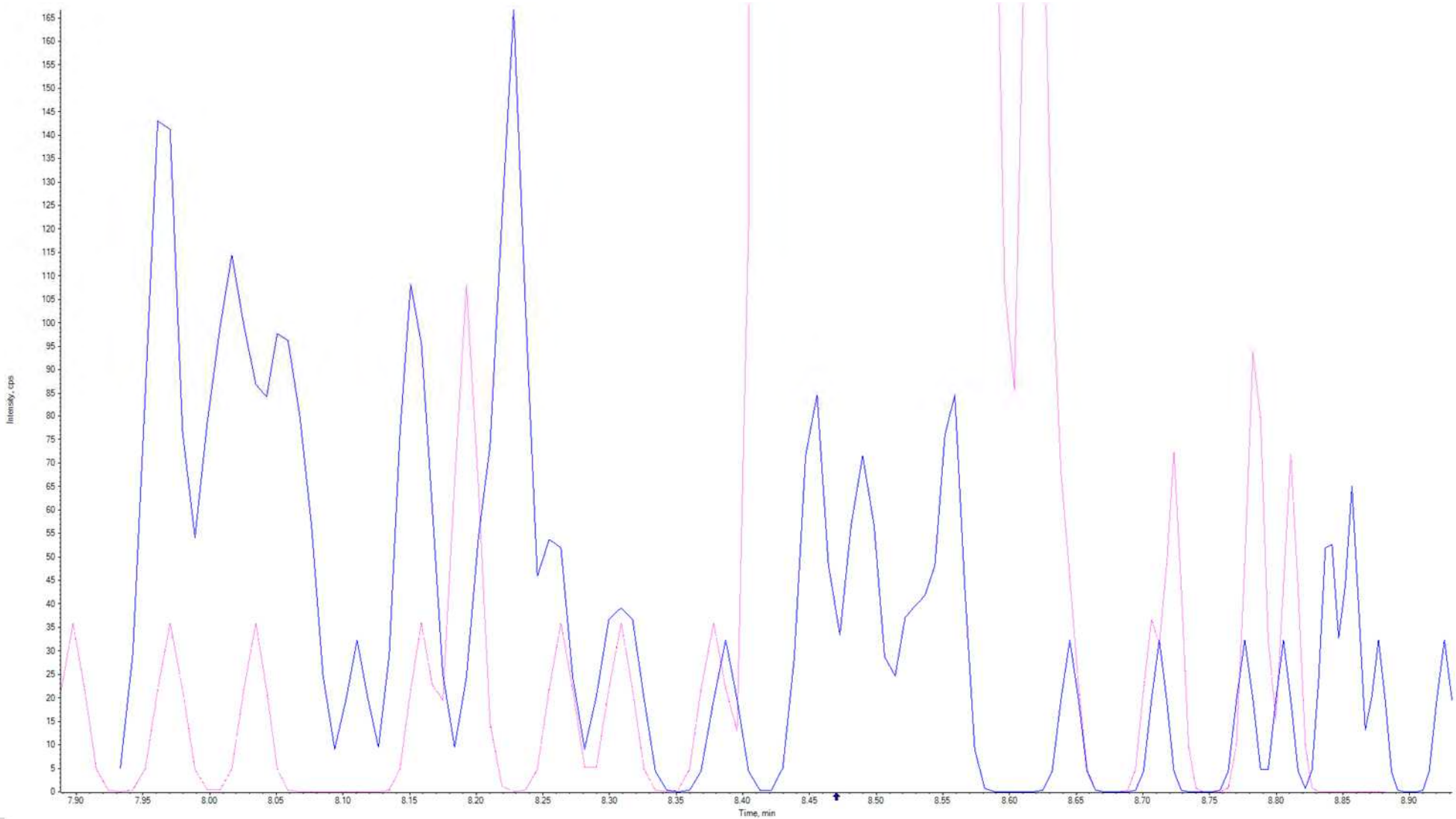

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PFDoA
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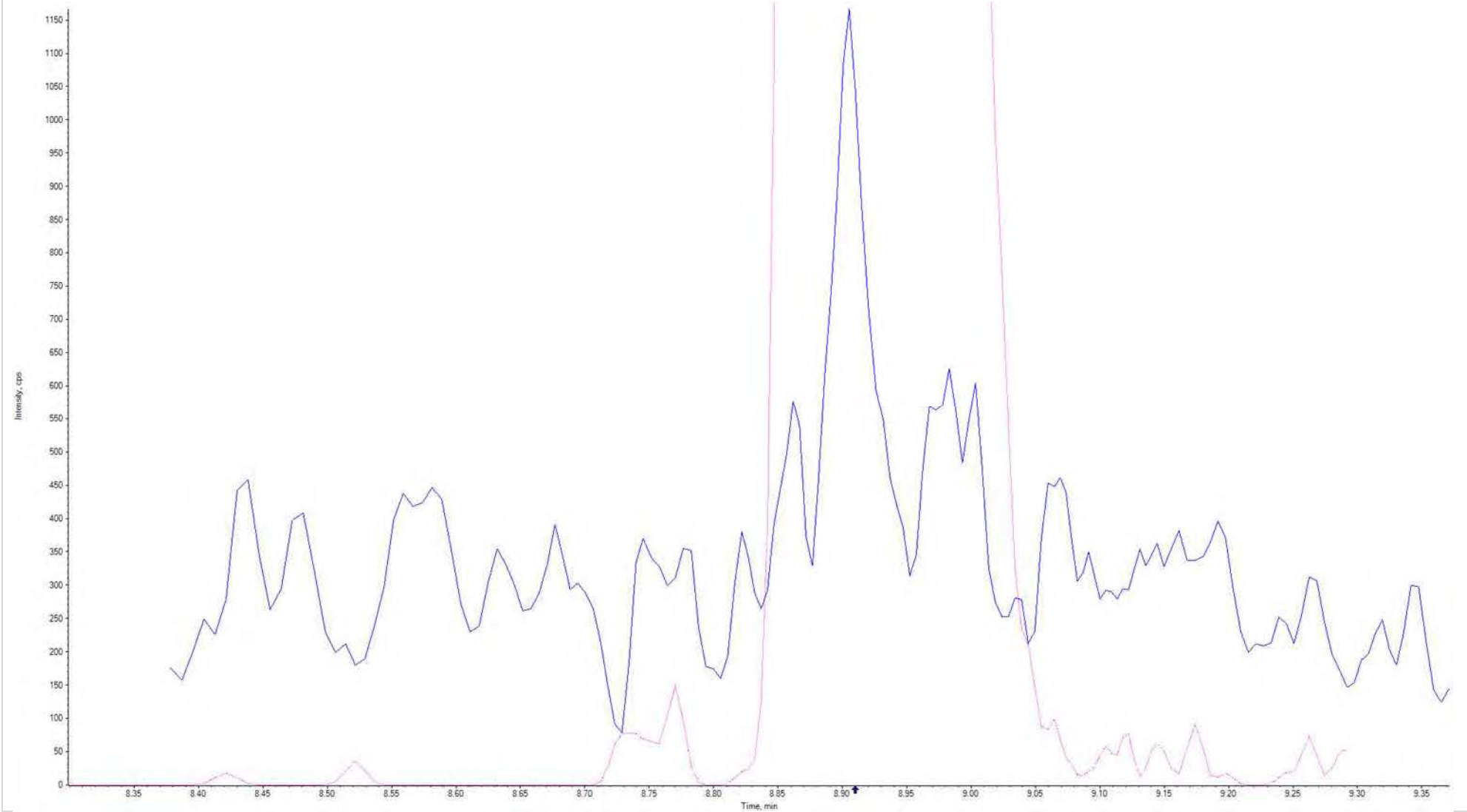

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 8/14/2024 9:55:24 AM
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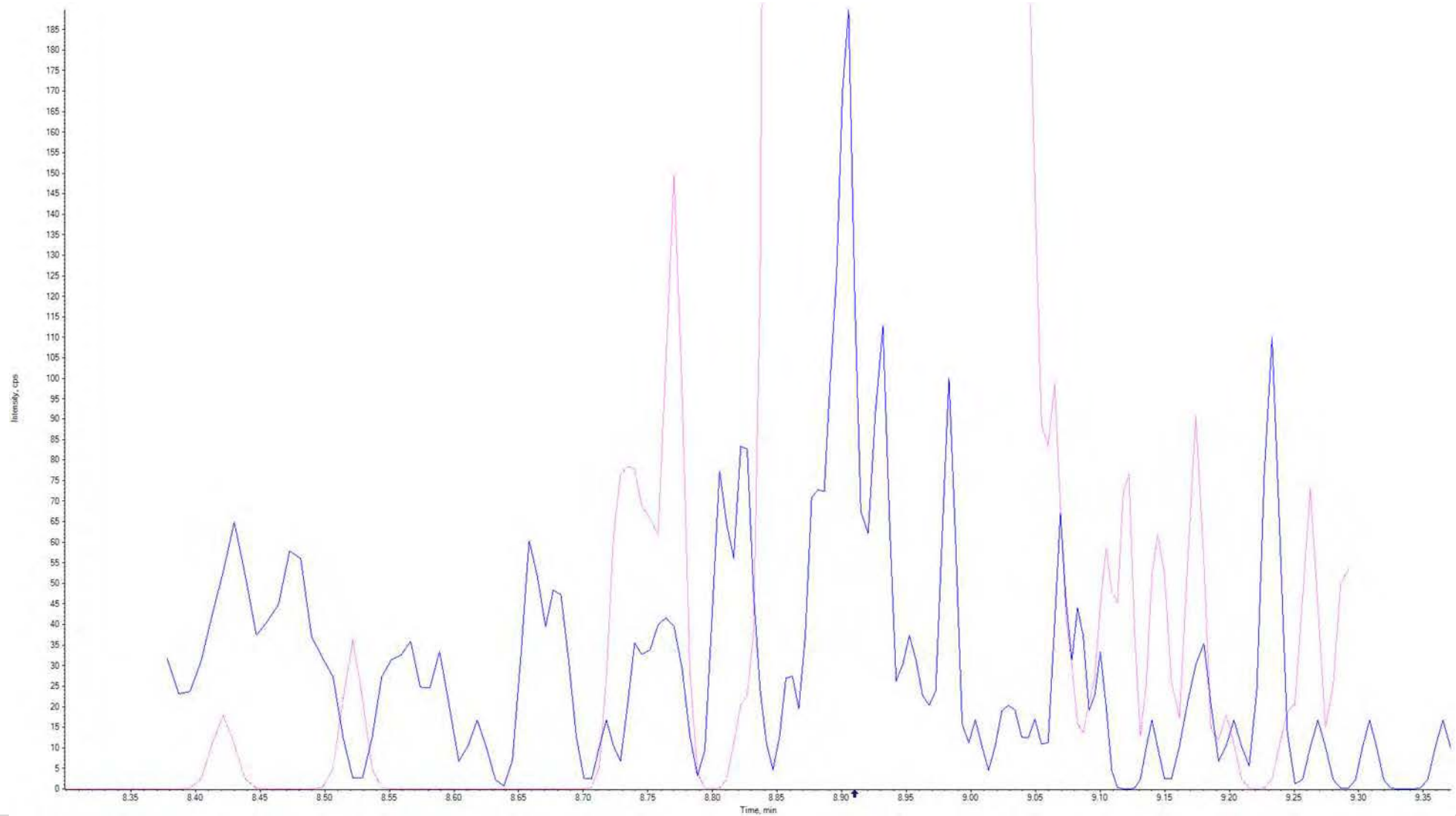

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Alpha Analytical Inc.
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PFTrDA
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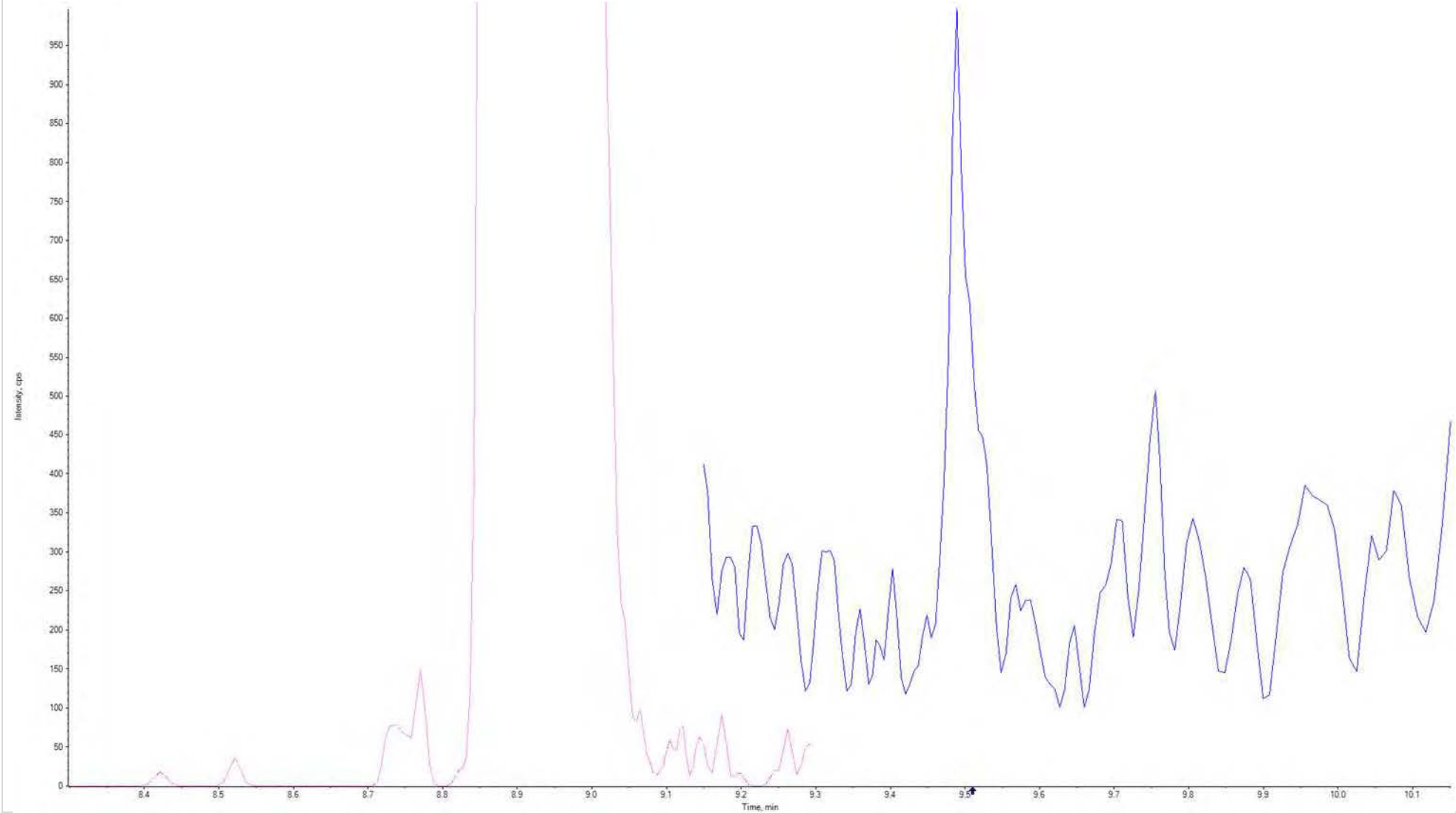

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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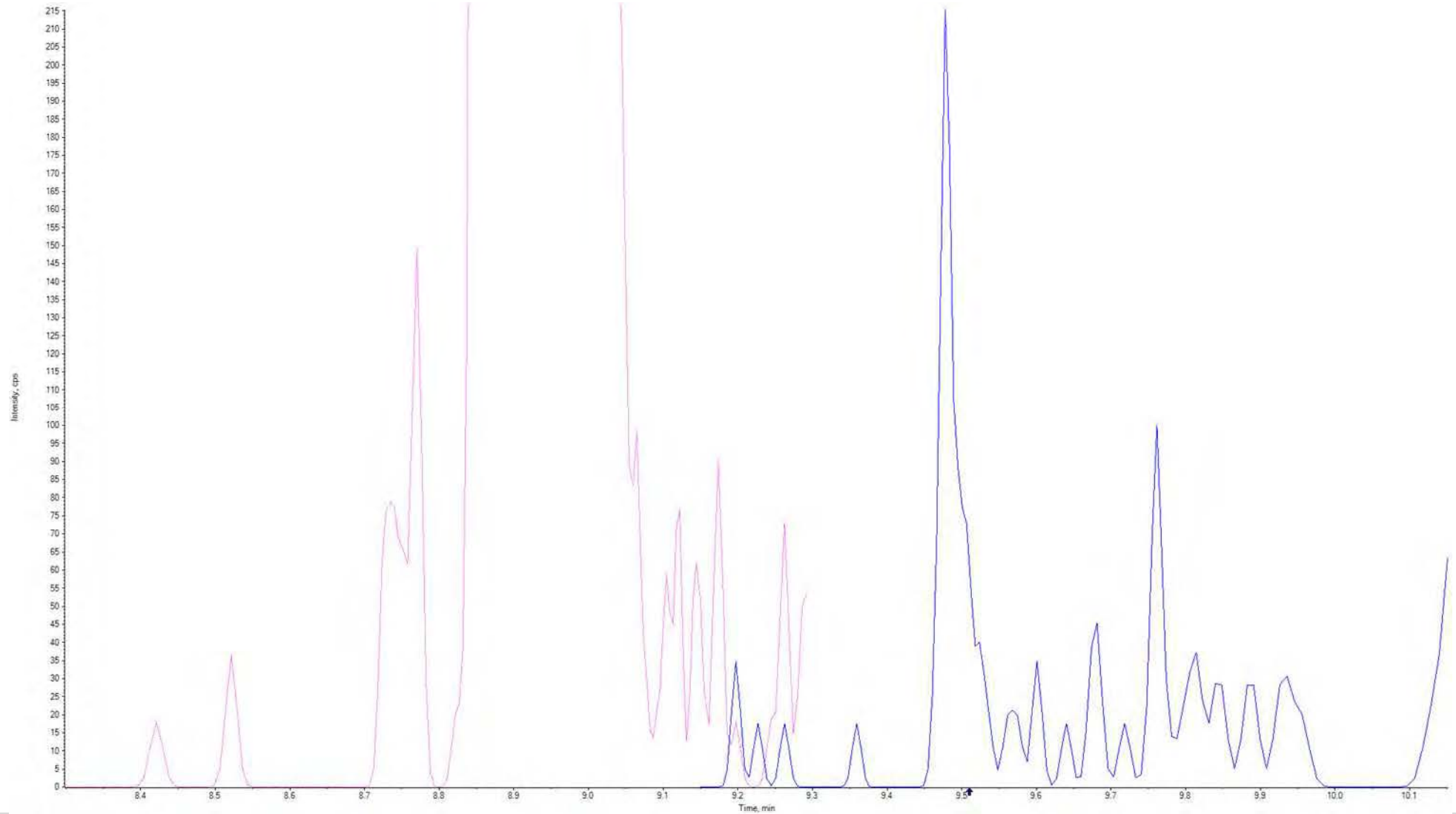

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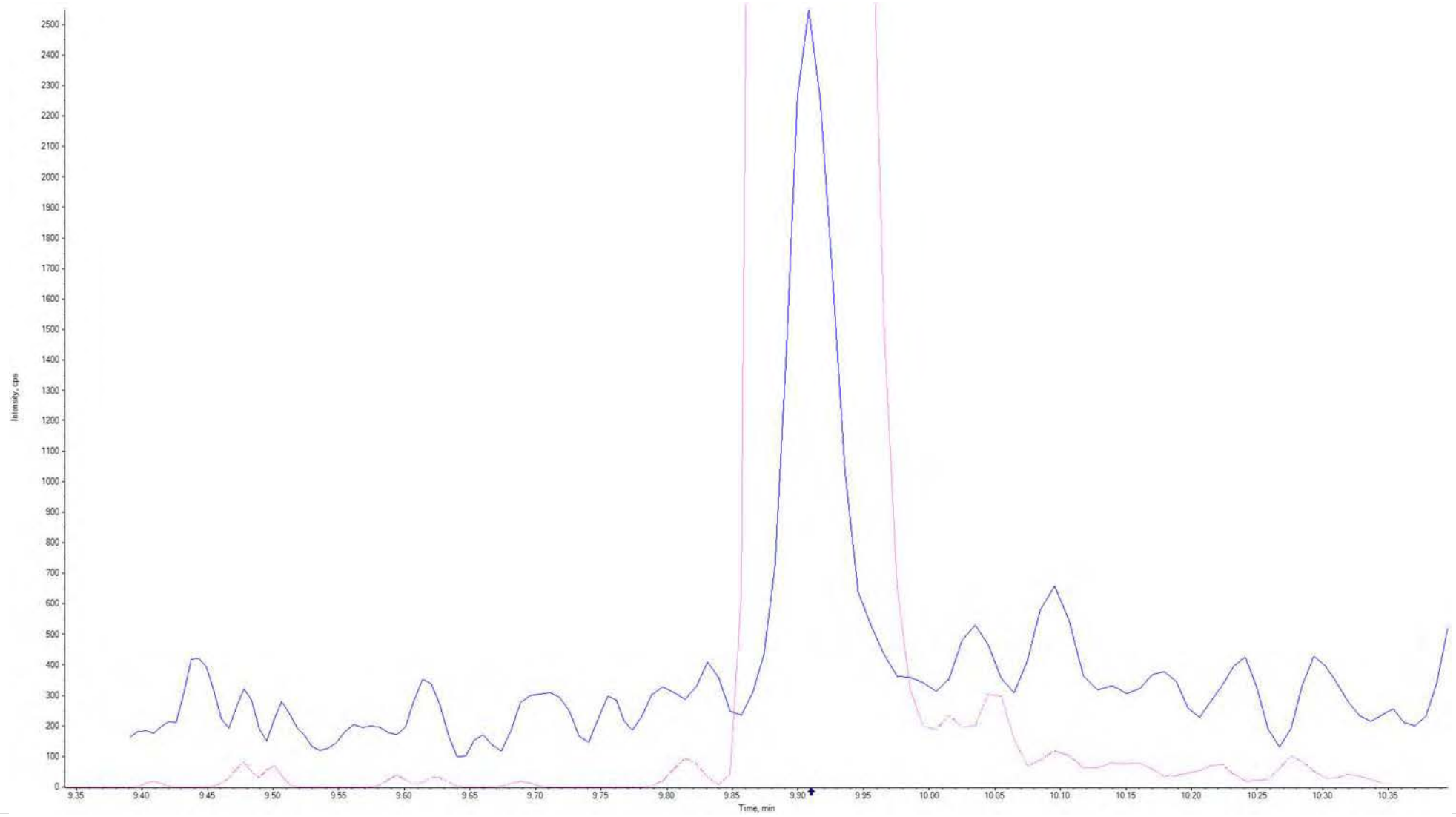

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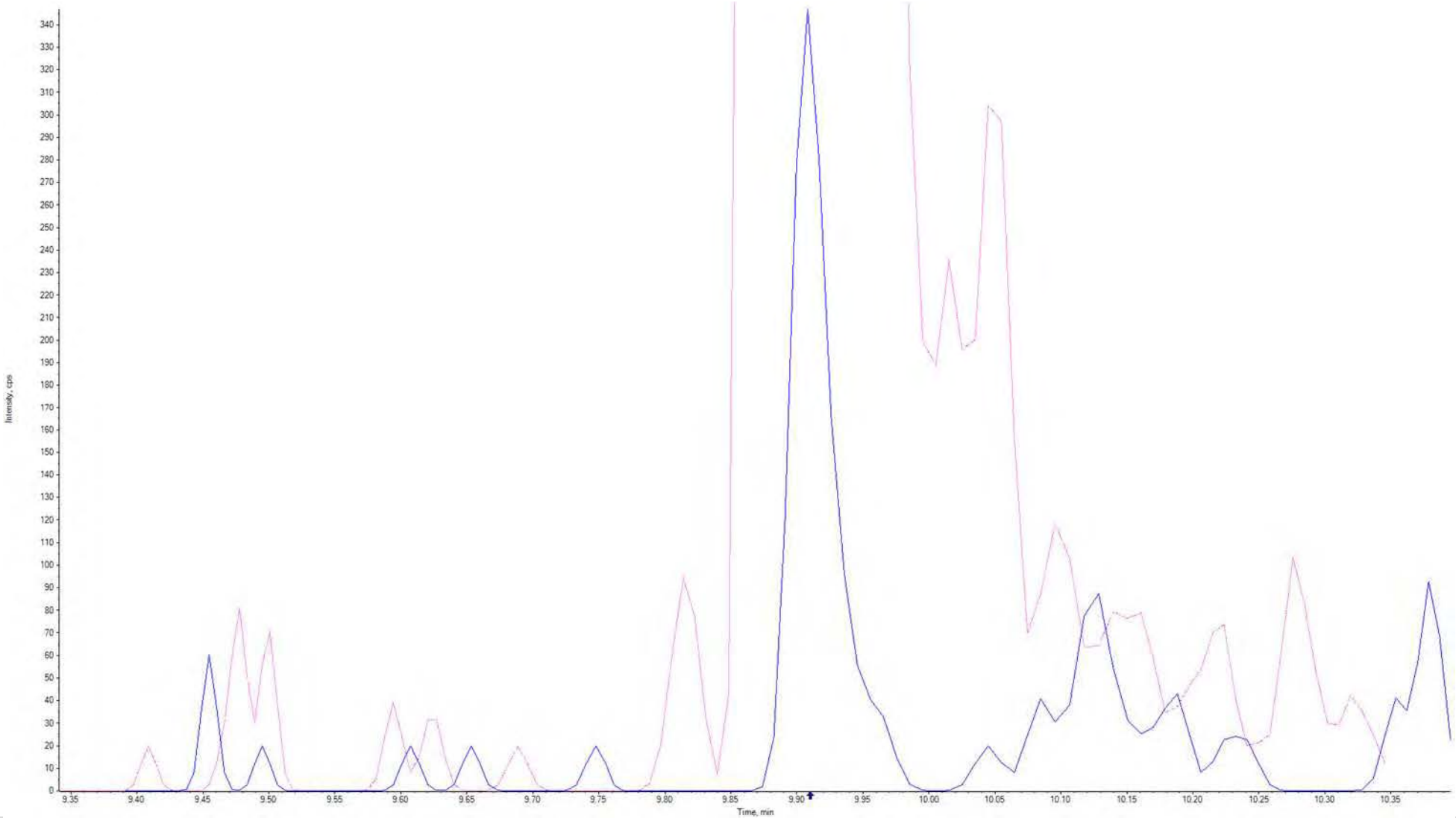

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 8/14/2024 9:55:24 AM
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PFBS
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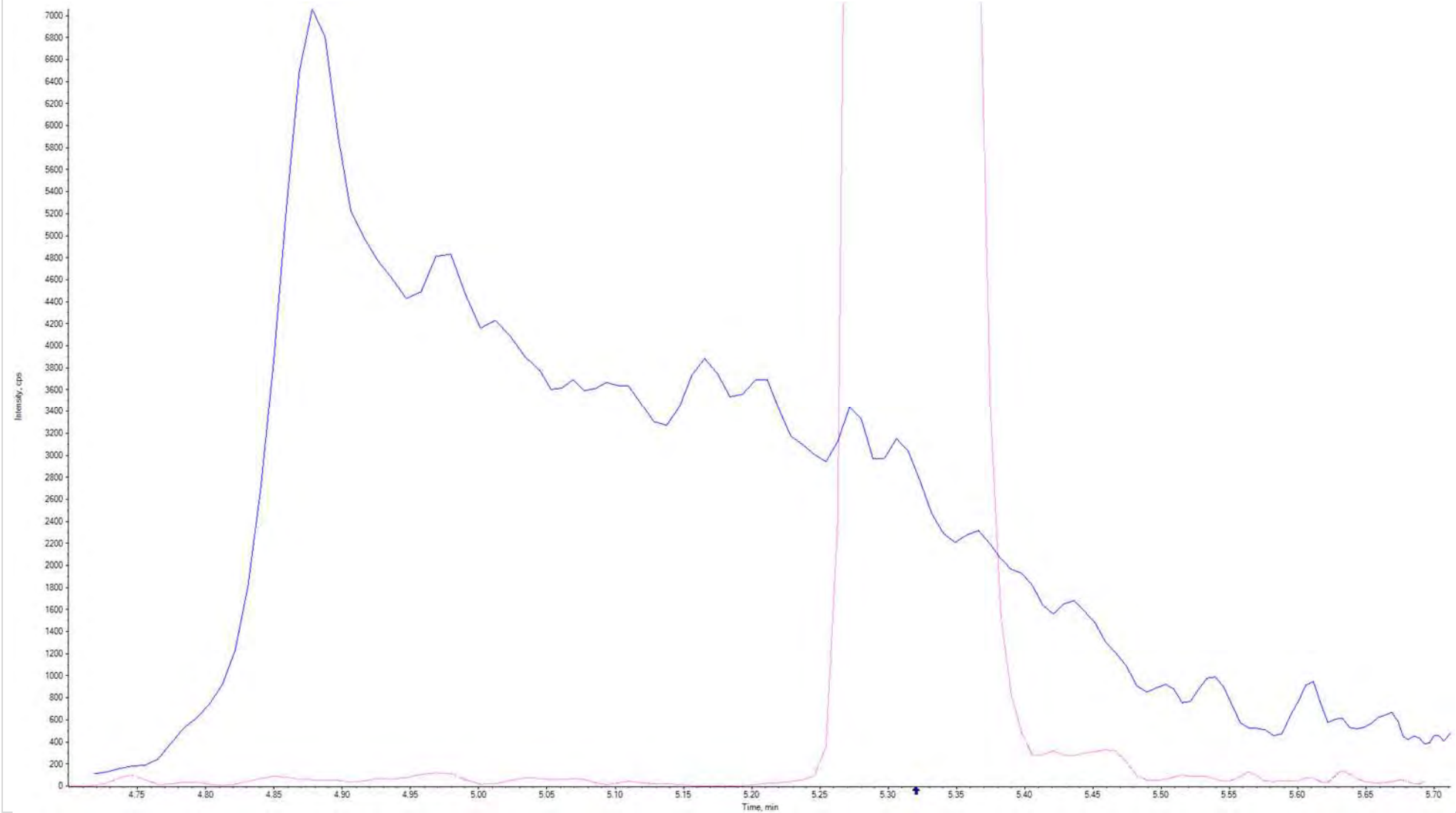

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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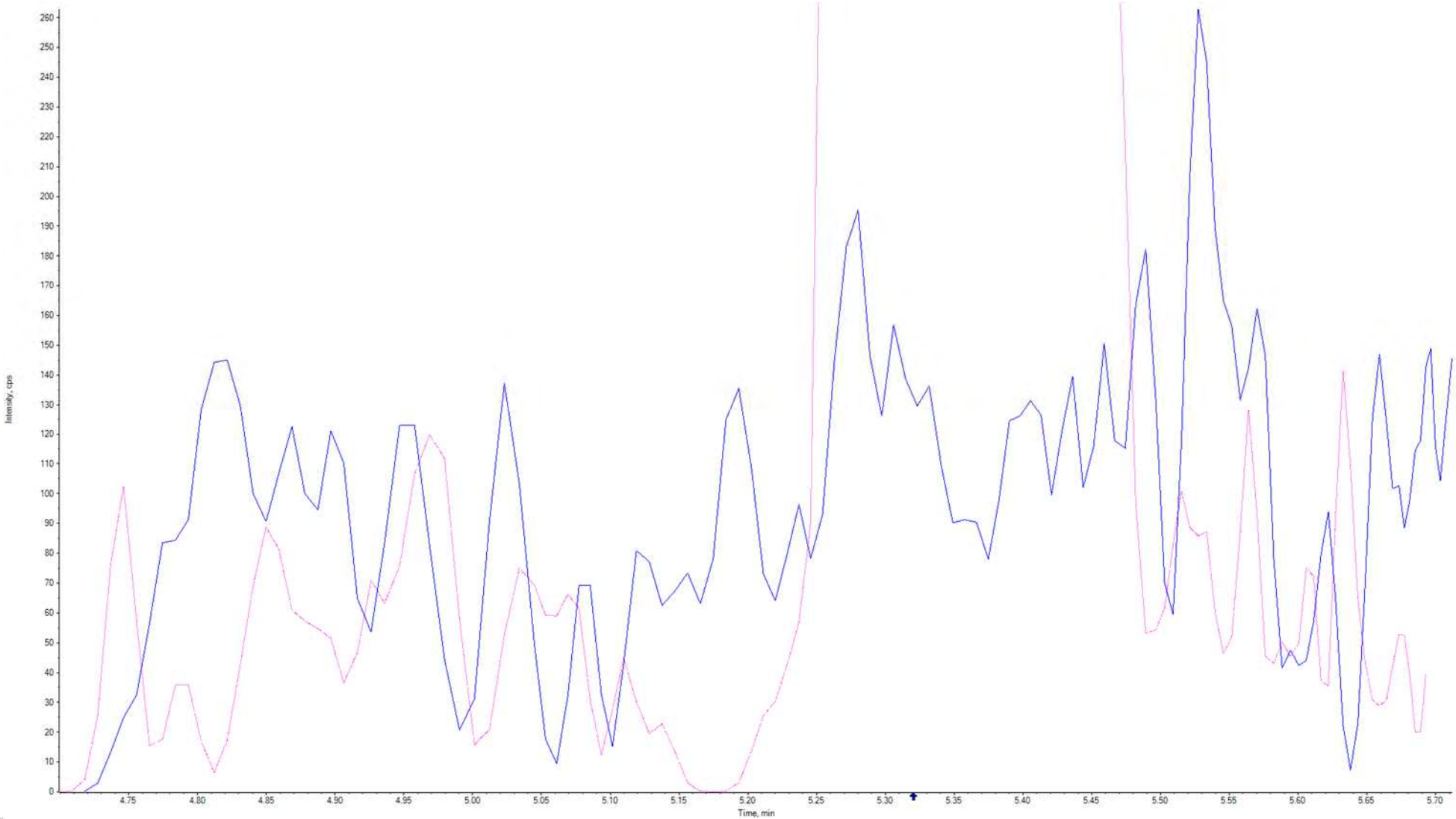

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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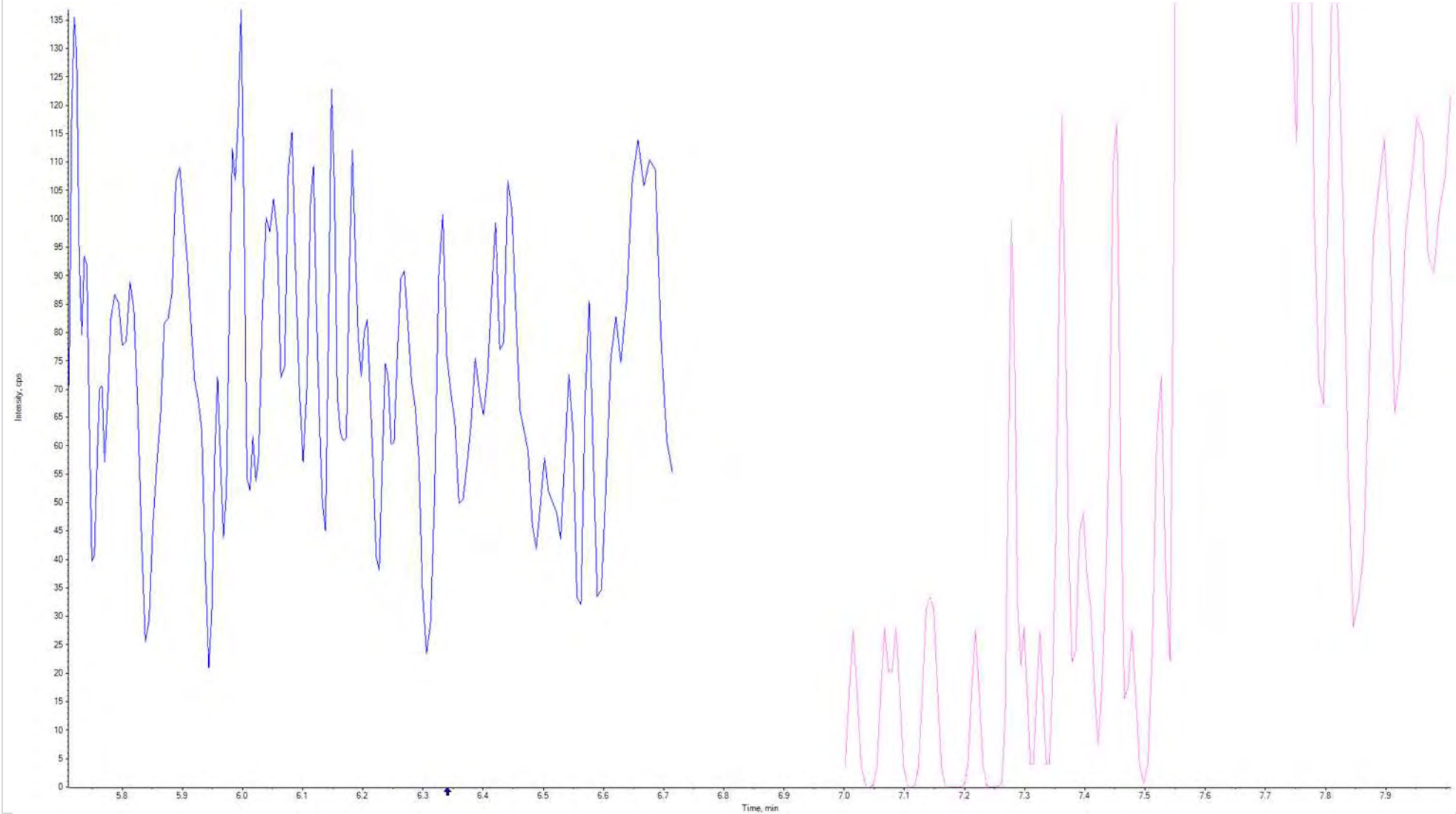

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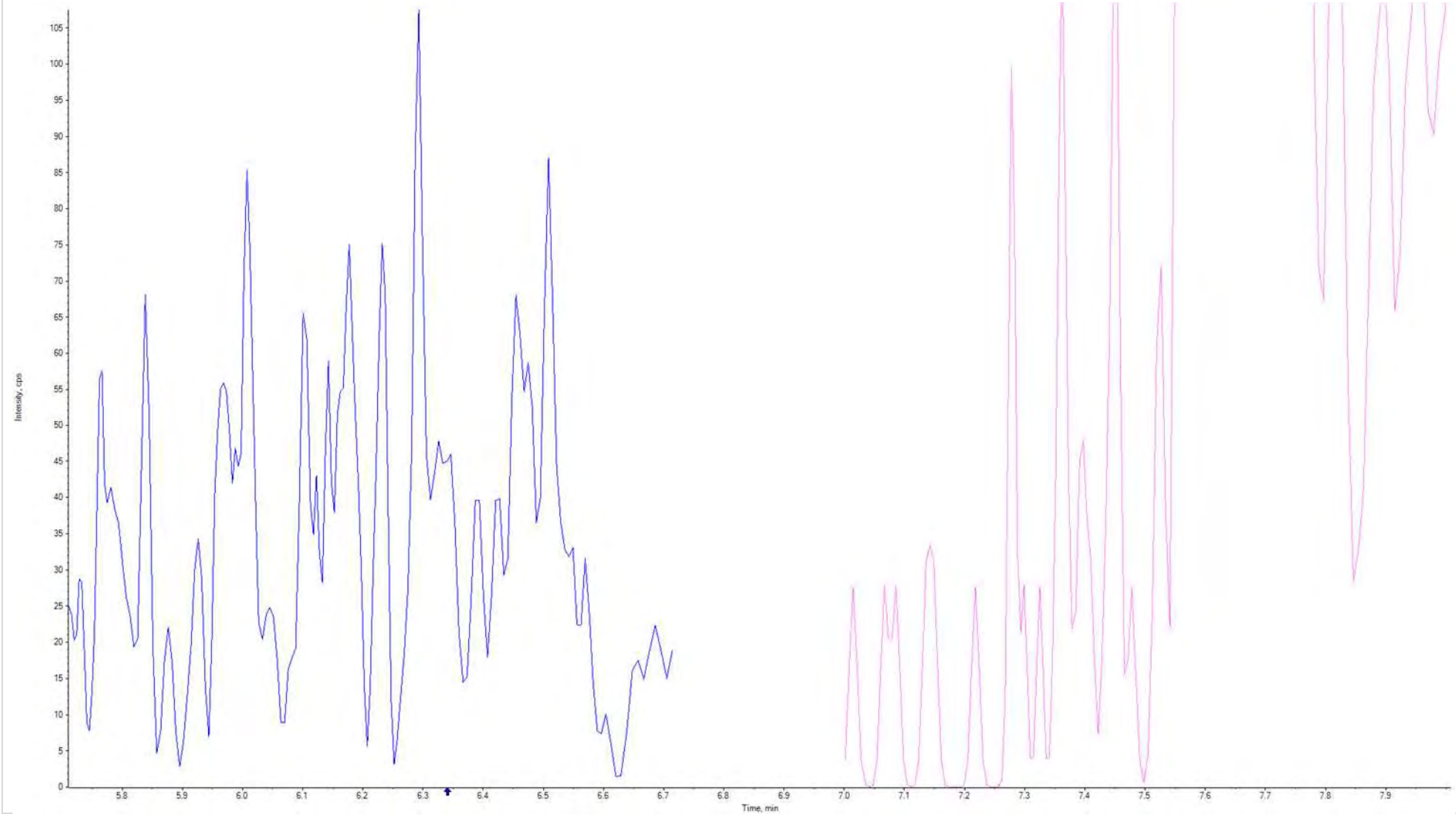

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PFHxS
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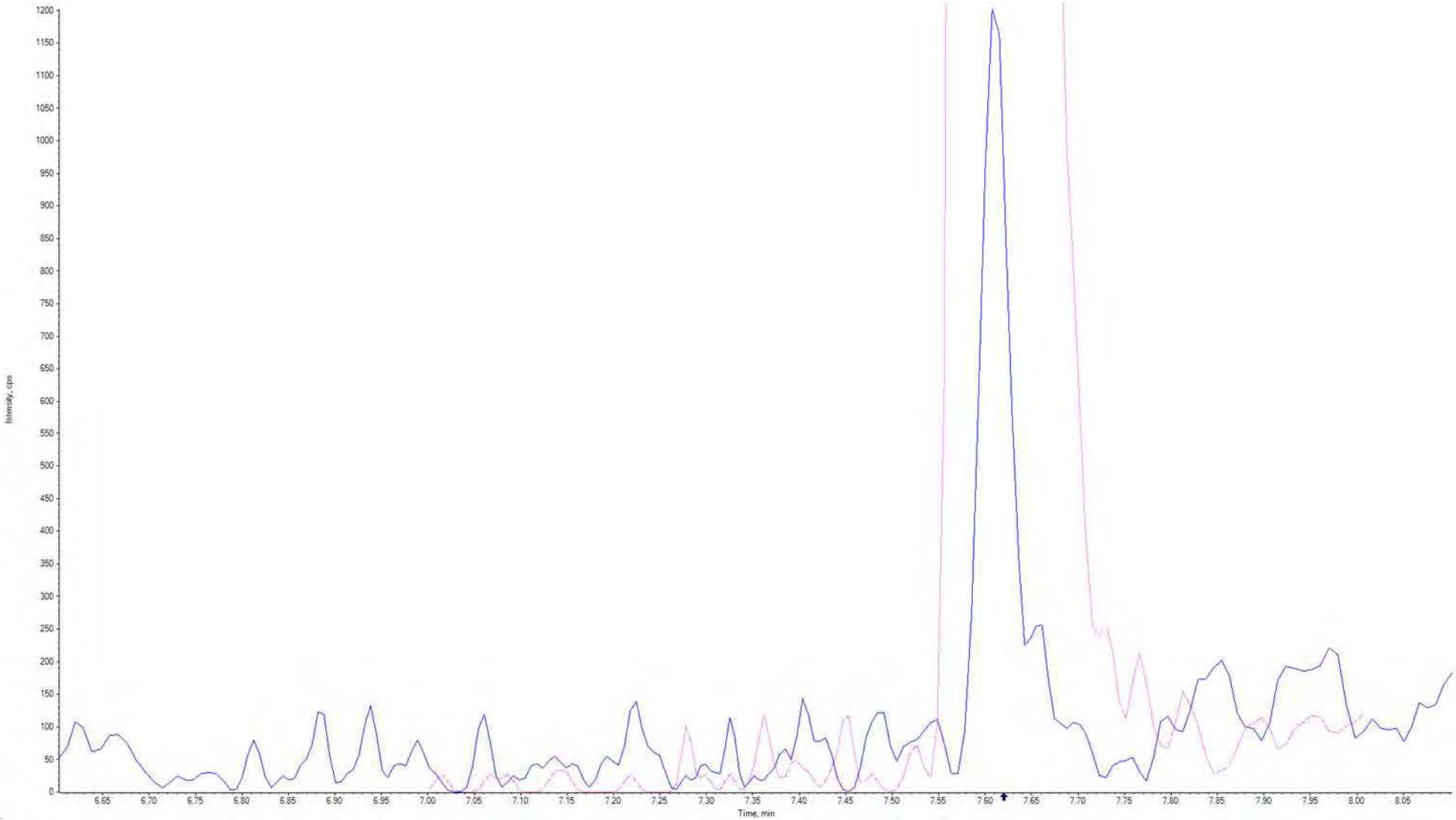

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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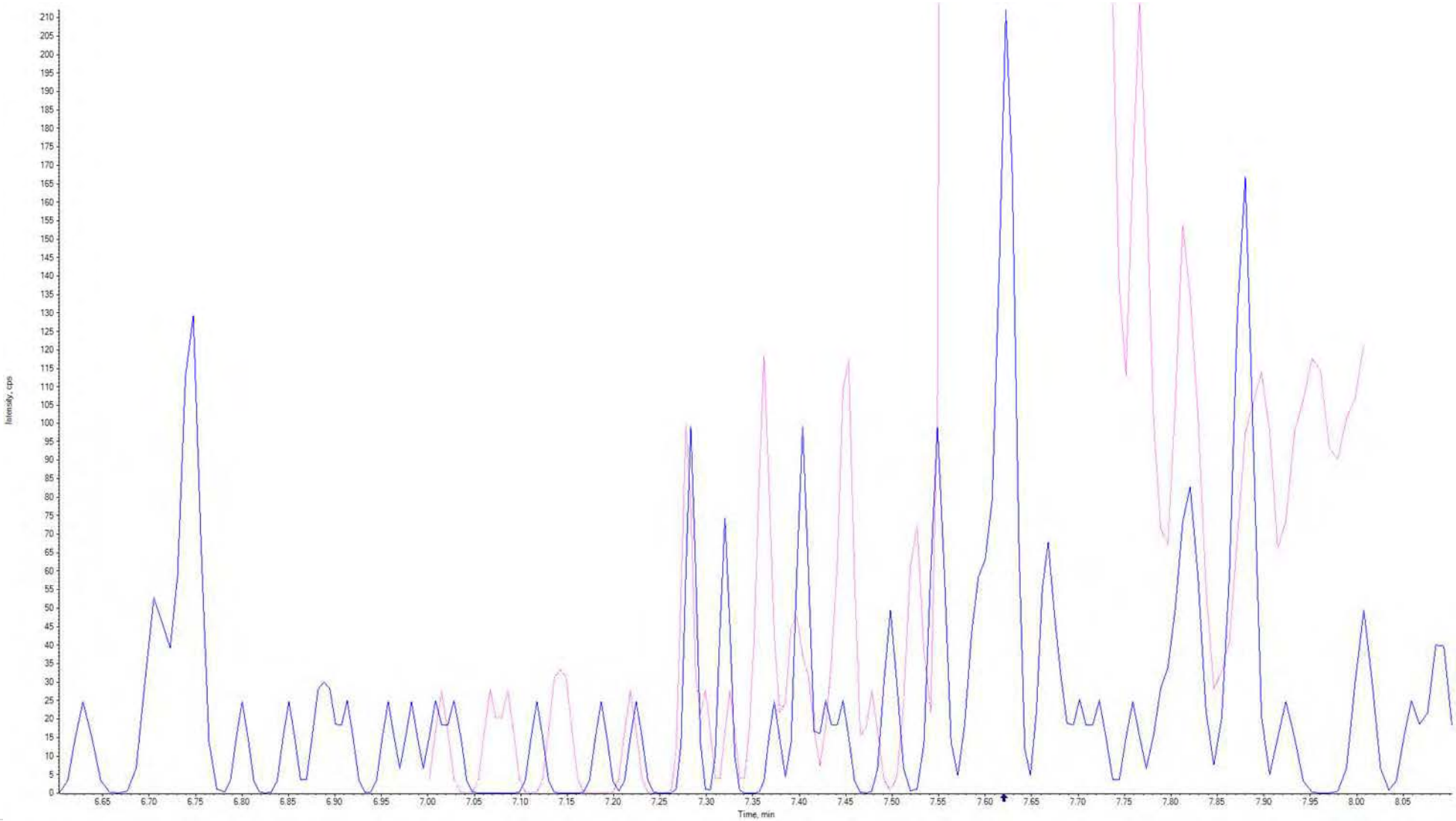

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PFHpS
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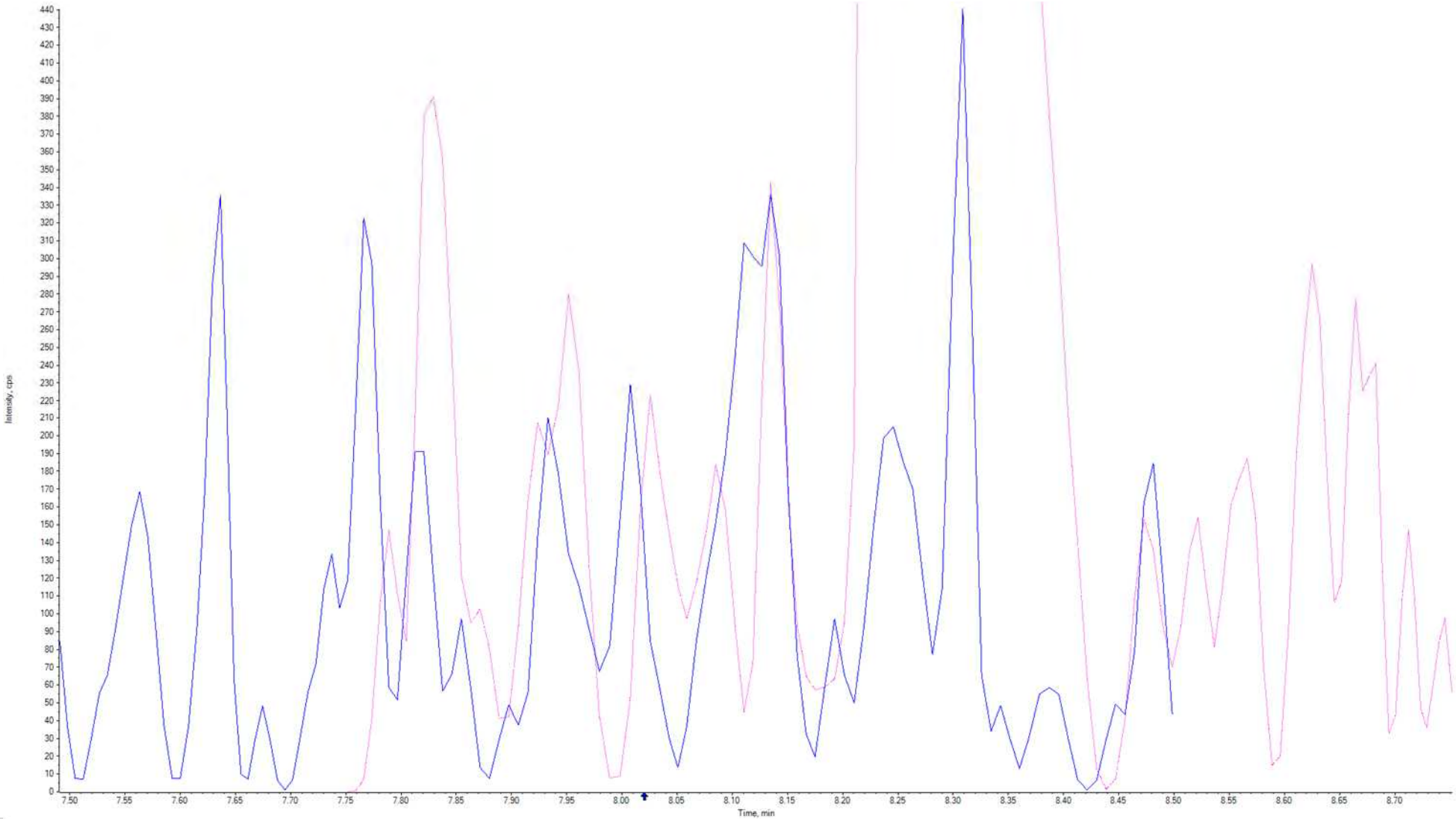

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PFHpS_2
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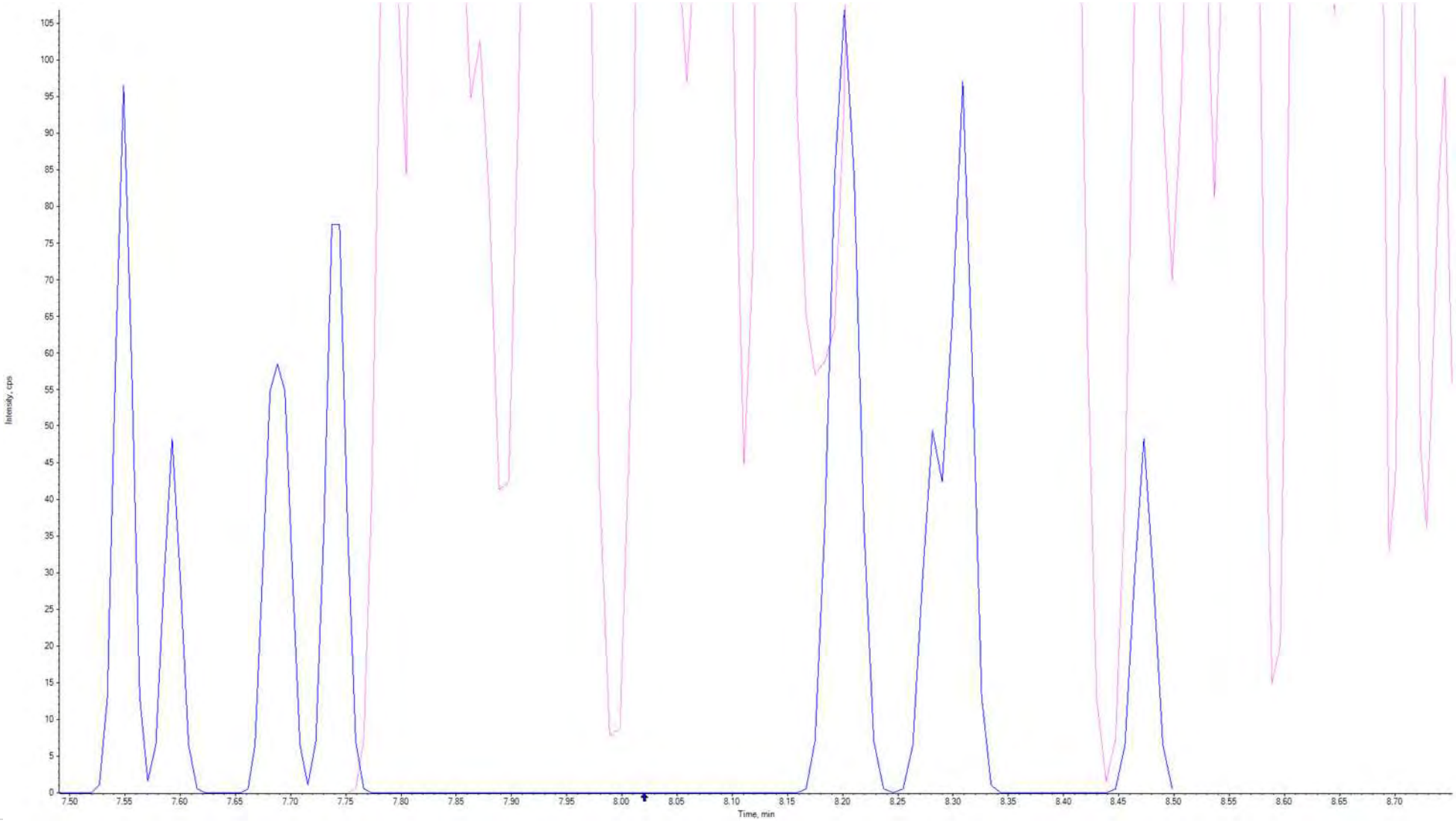

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PFOS
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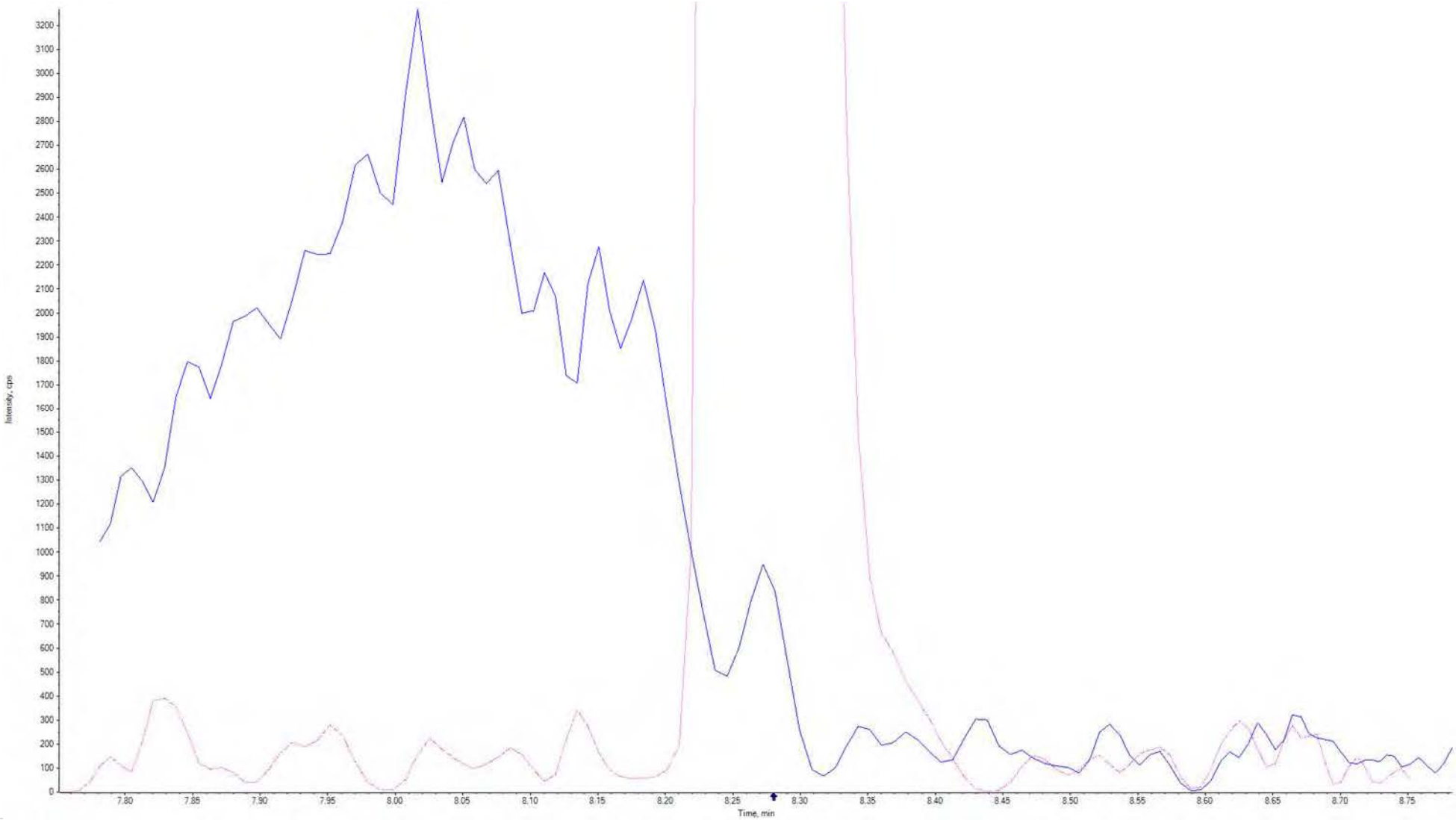

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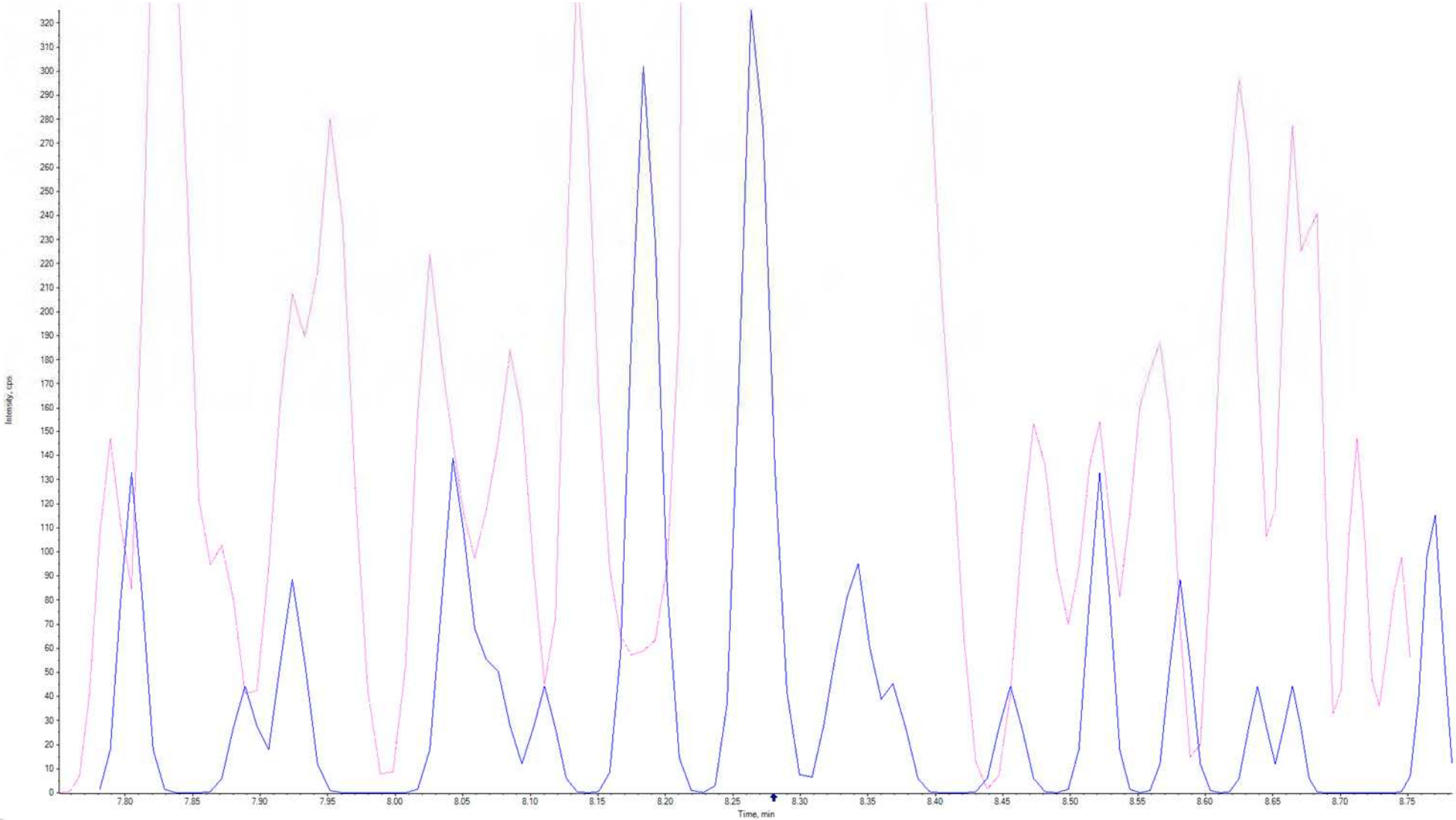

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Generated: 8/14/2024 9:40:32 AM

PFNS
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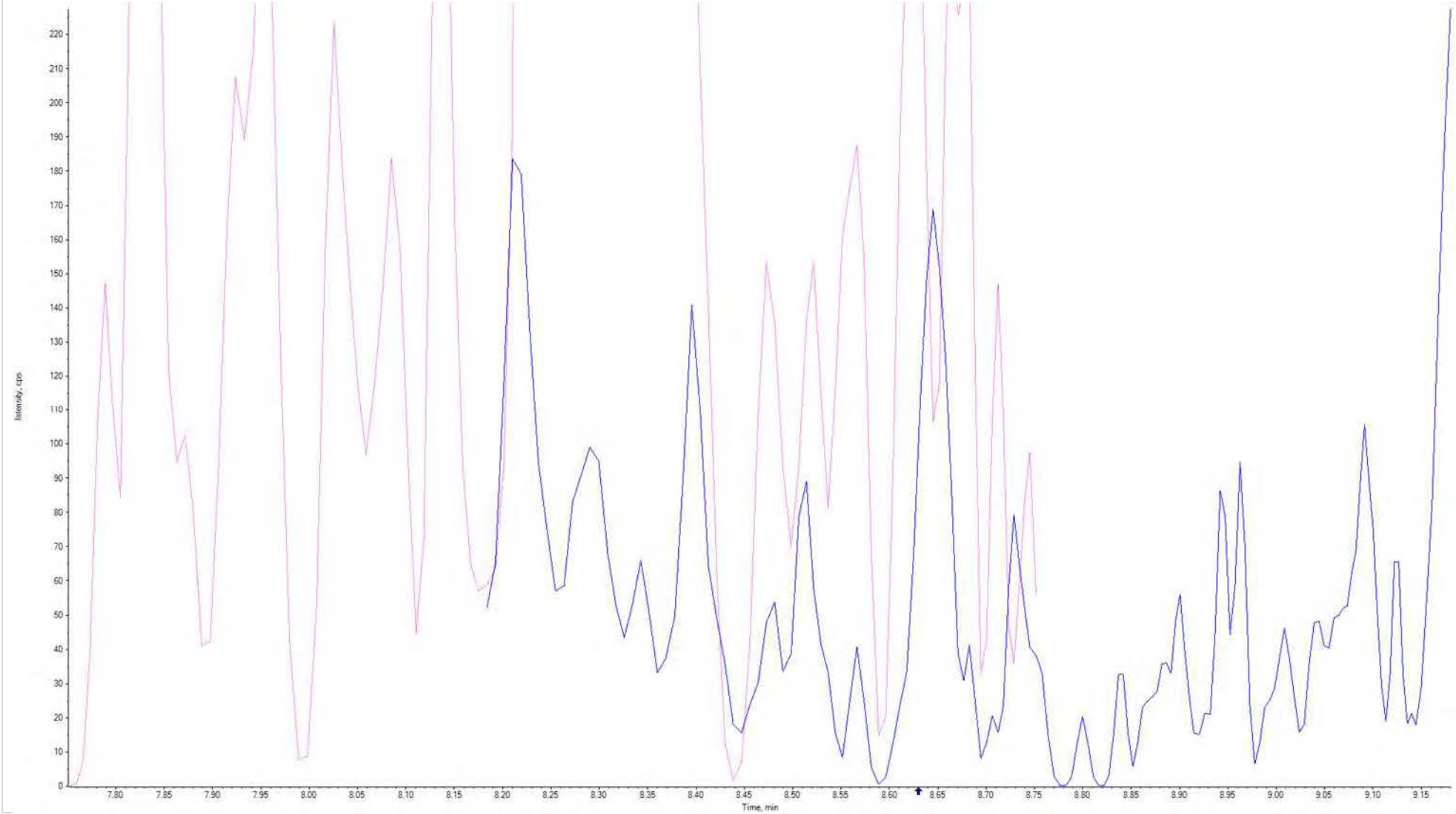

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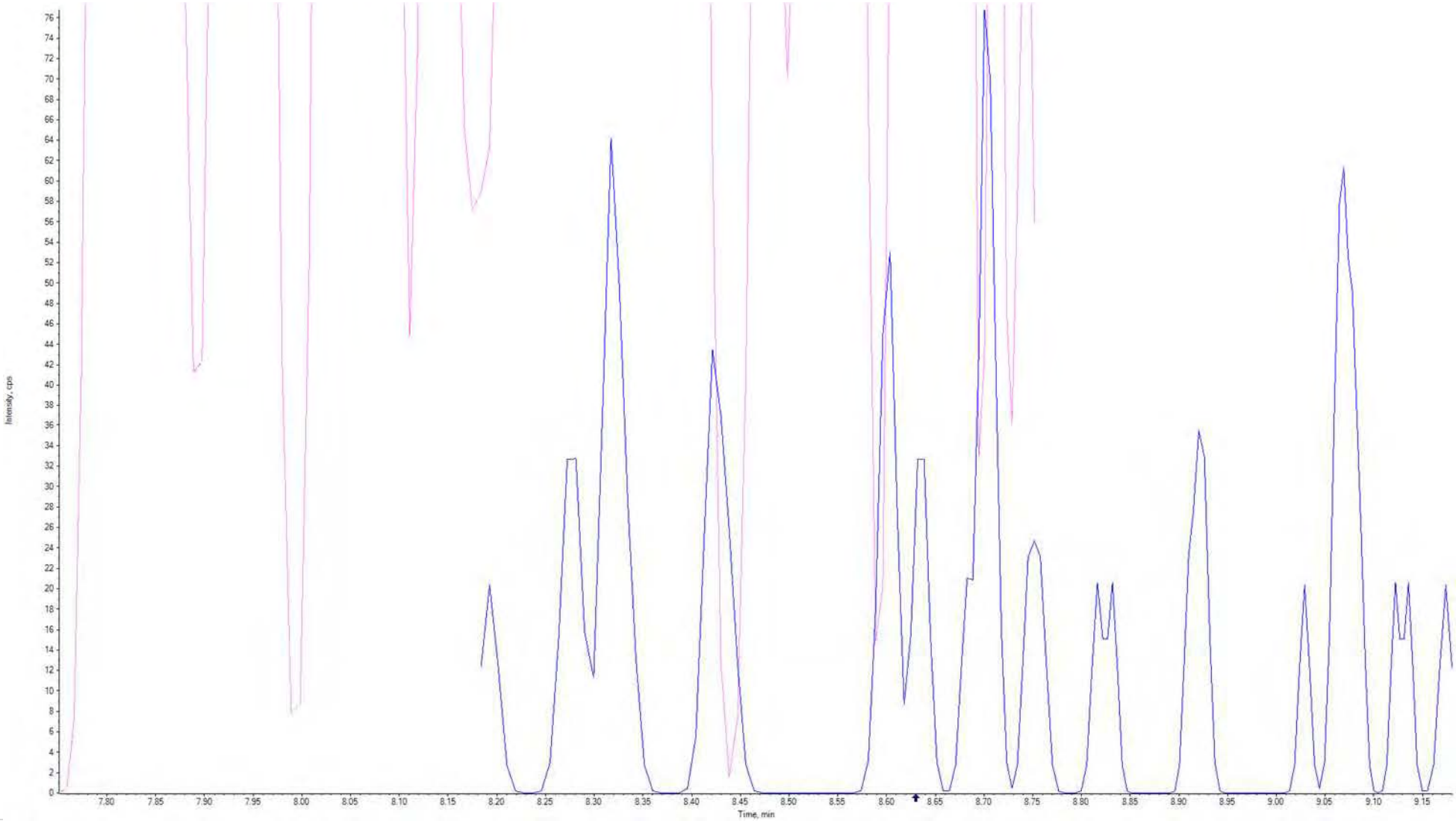

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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PFDS
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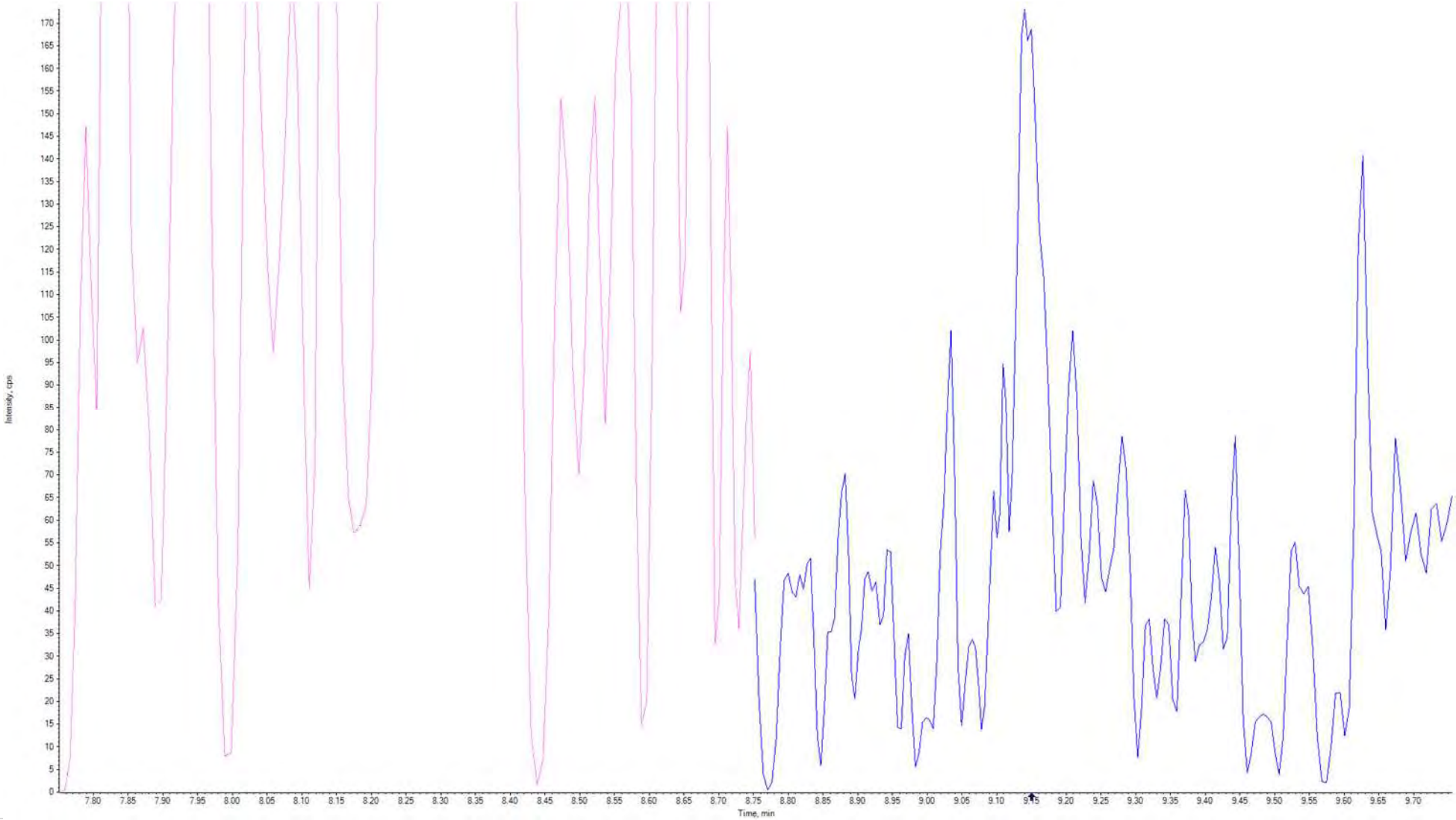

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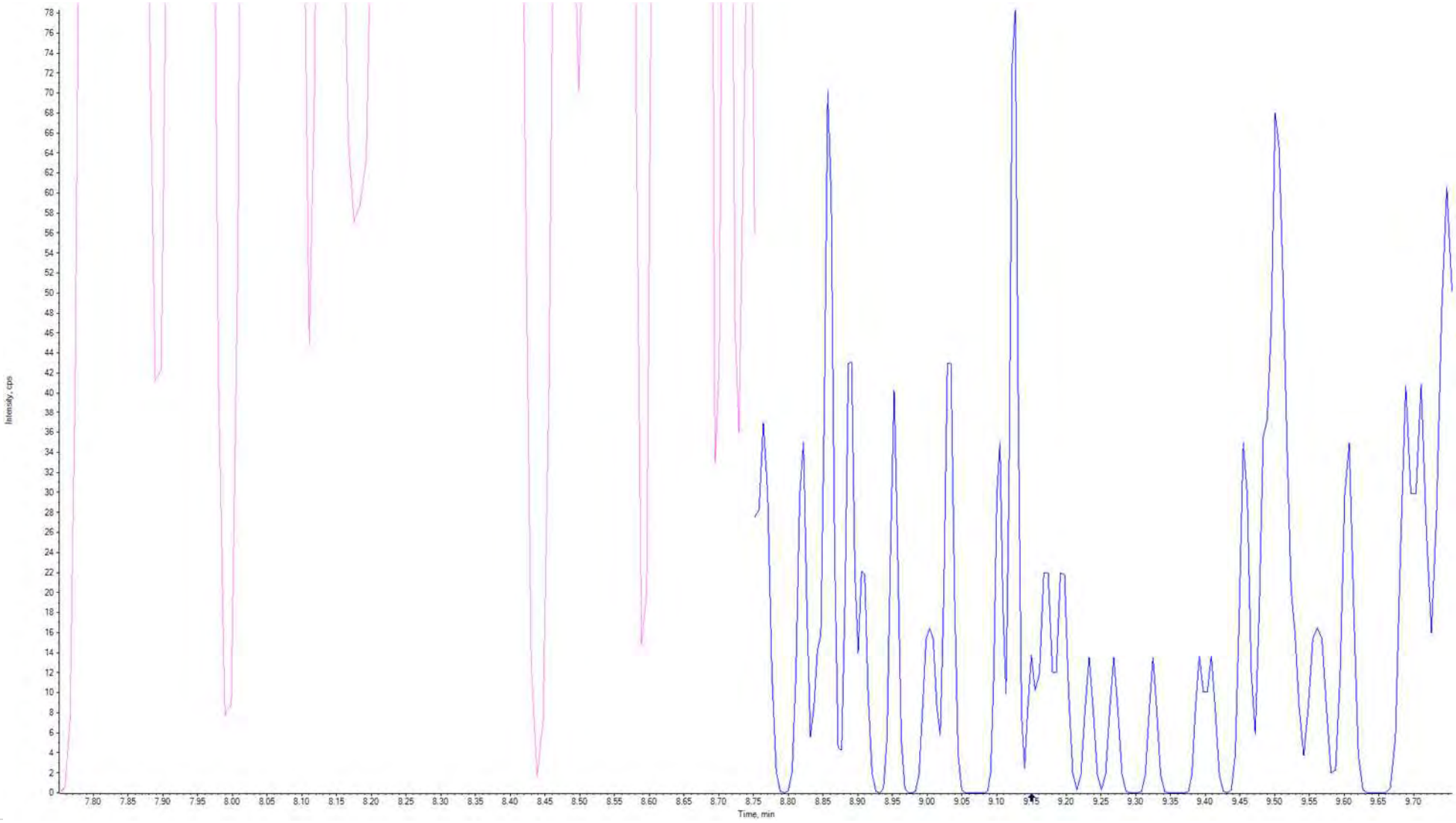
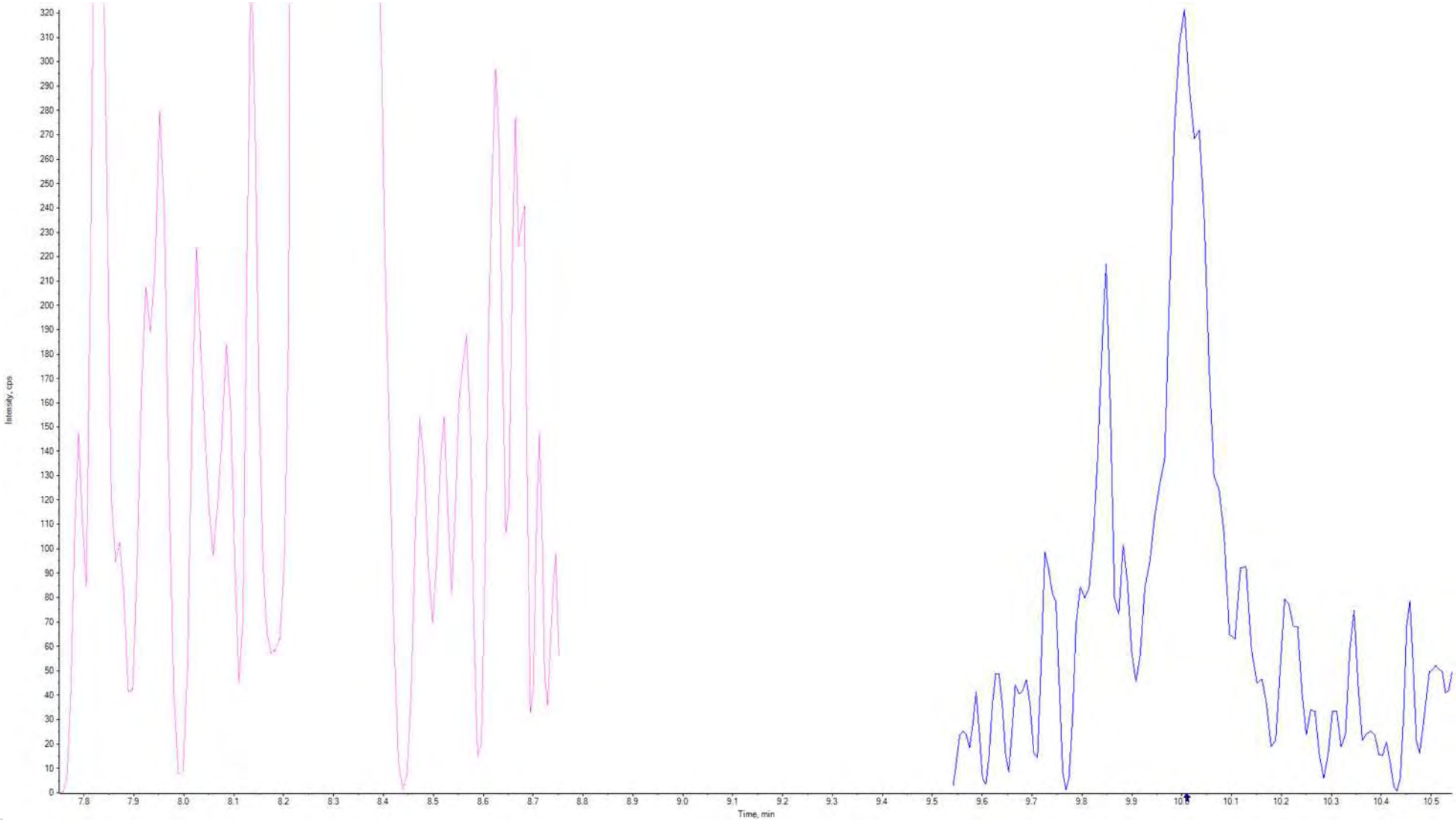


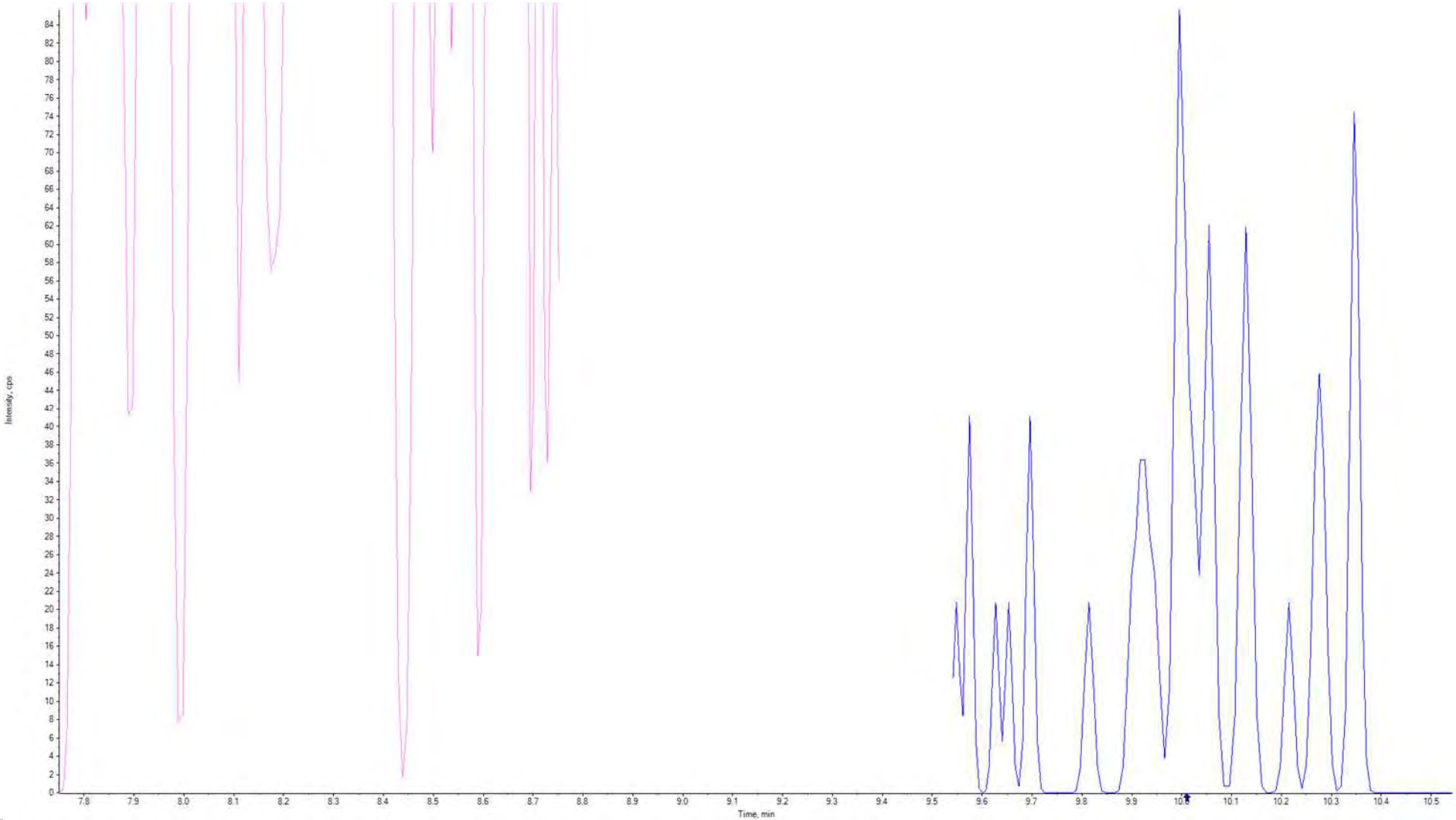
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFDoS
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A



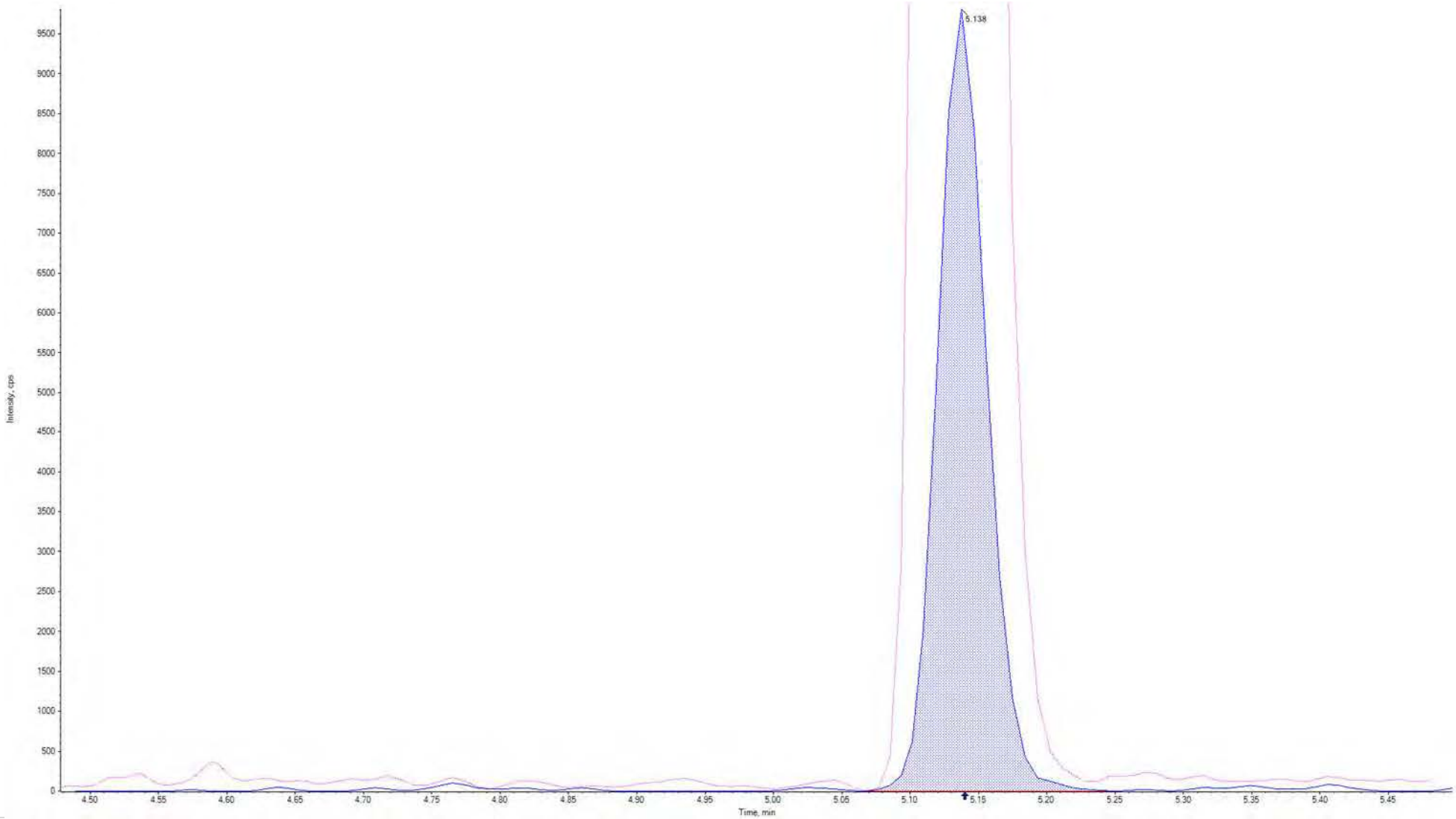
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFDoS_2
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A



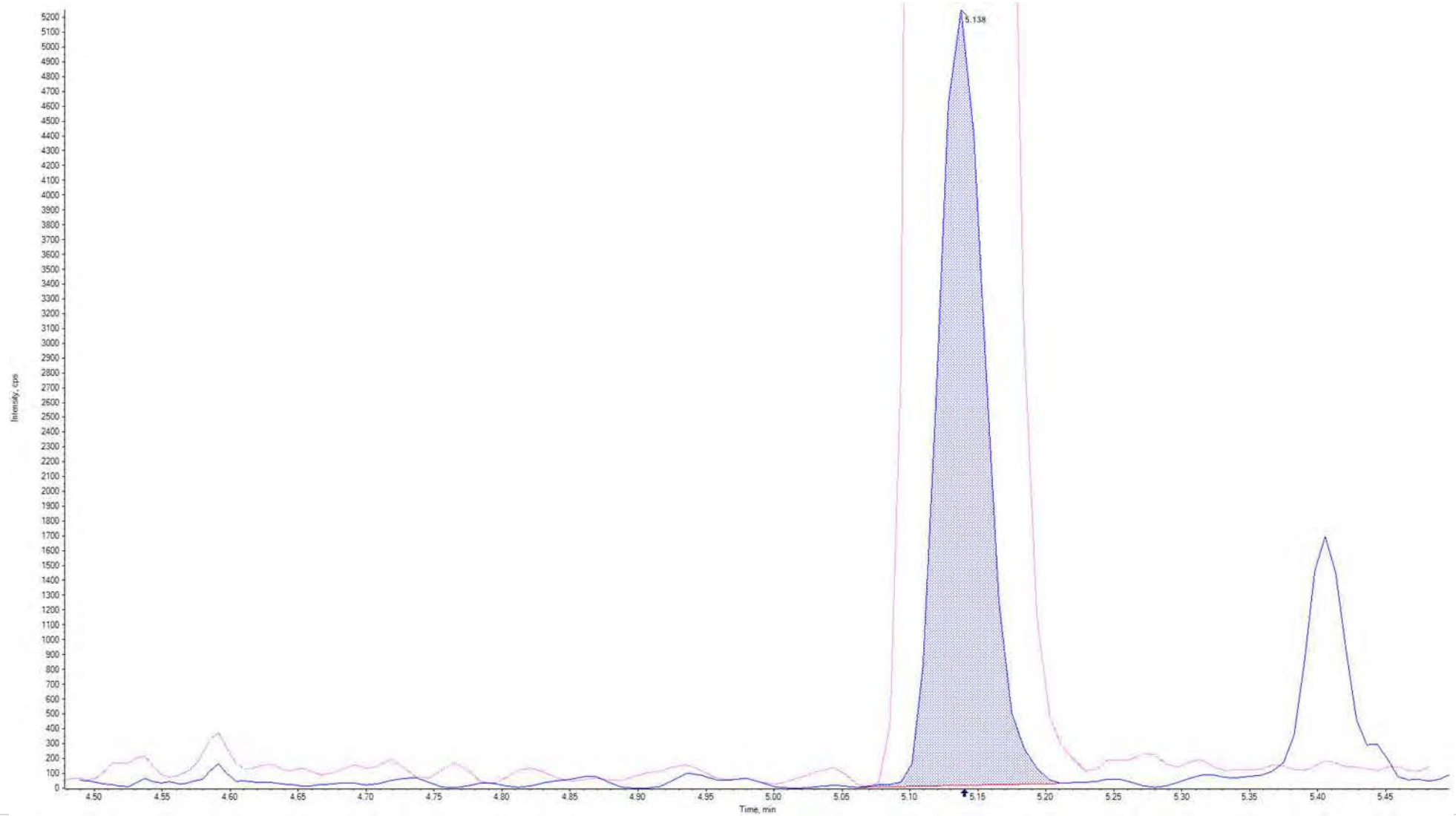
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

4:2FTS
Sample: WG1958909-3,INSTBLANK S/N:756.9 Points Across peak:23



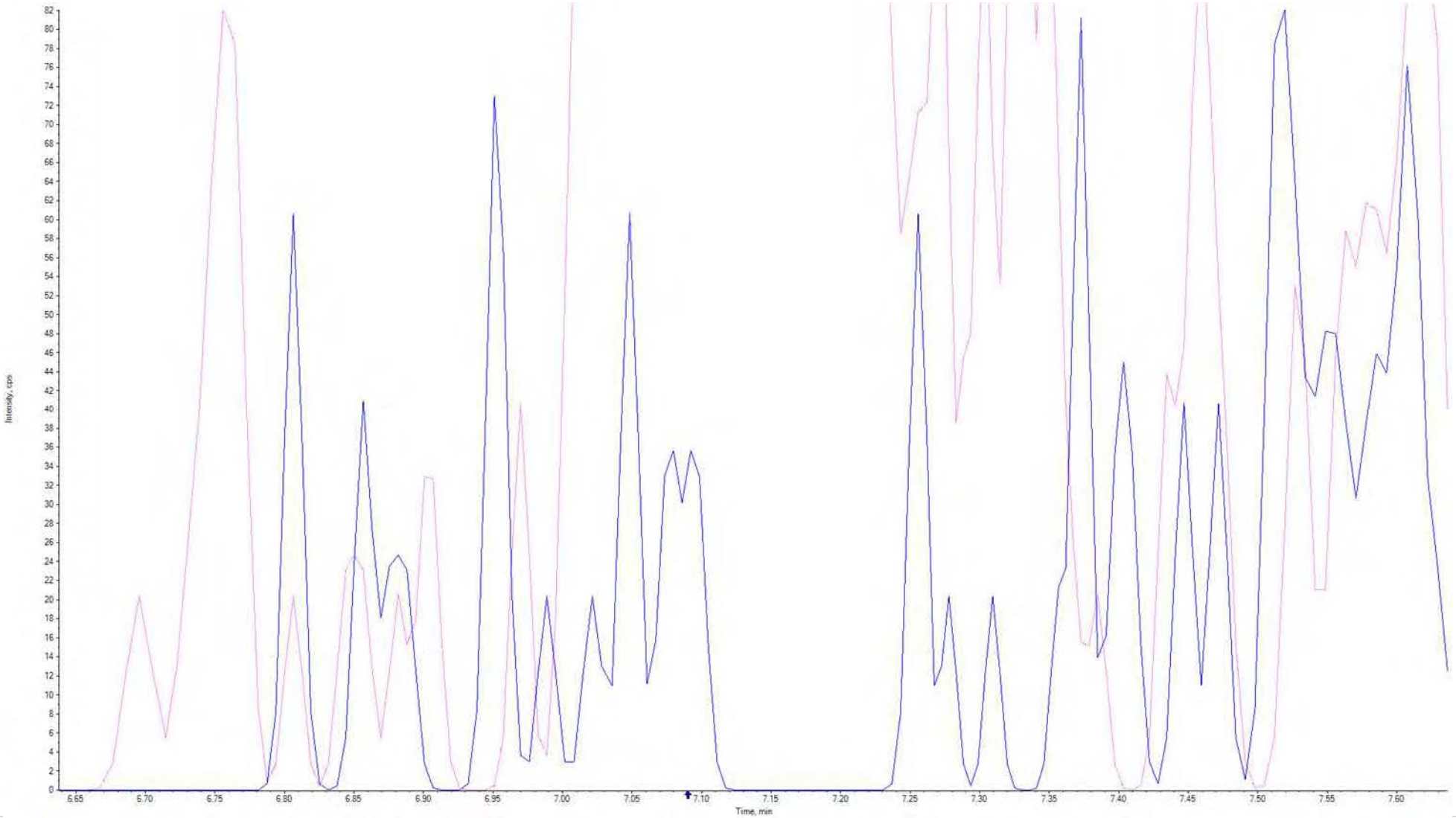
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

4:2FTS_2
Sample: WG1958909-3,INSTBLANK S/N:1278.6 Points Across peak:18

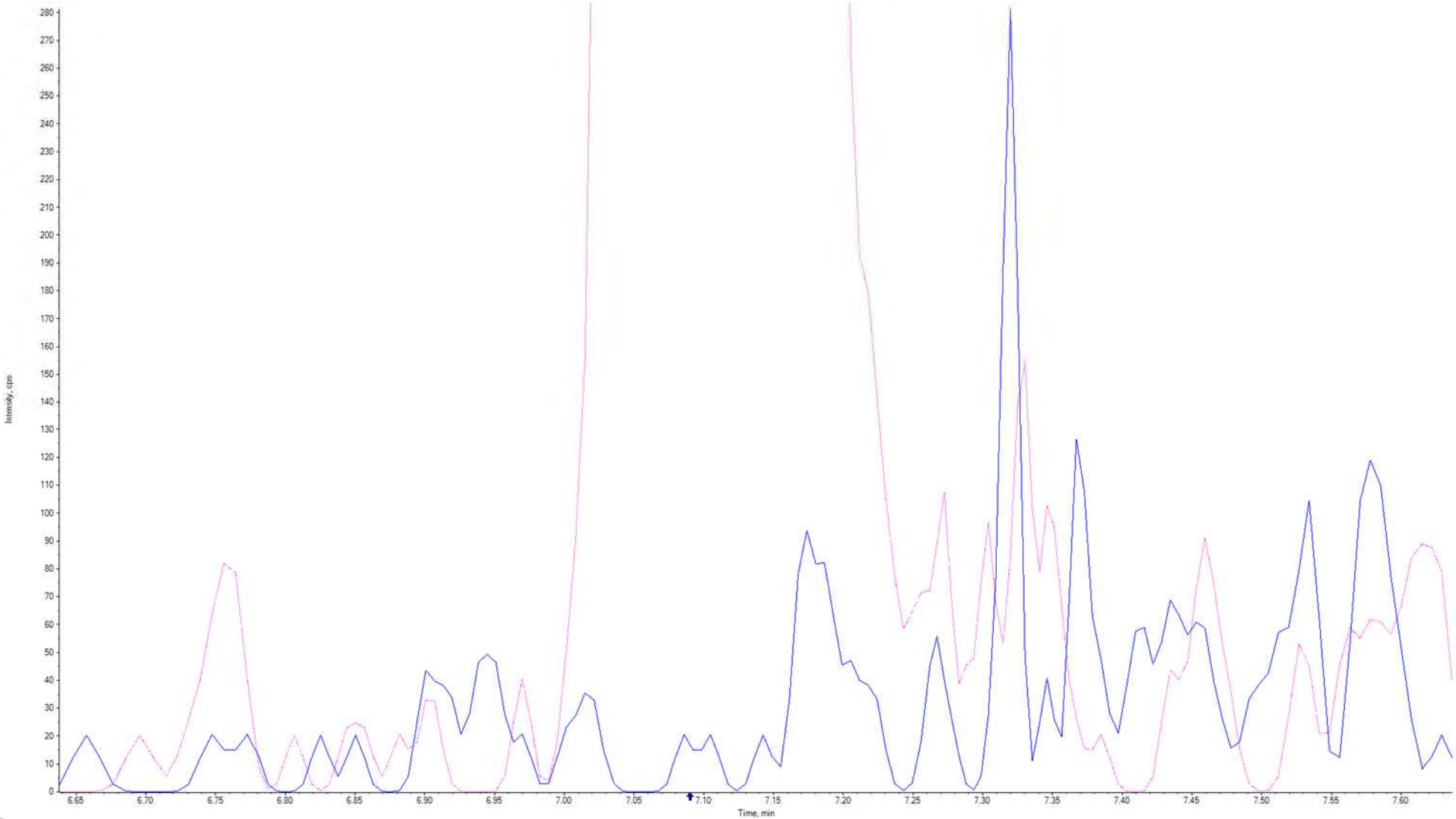


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

6:2FTS
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A

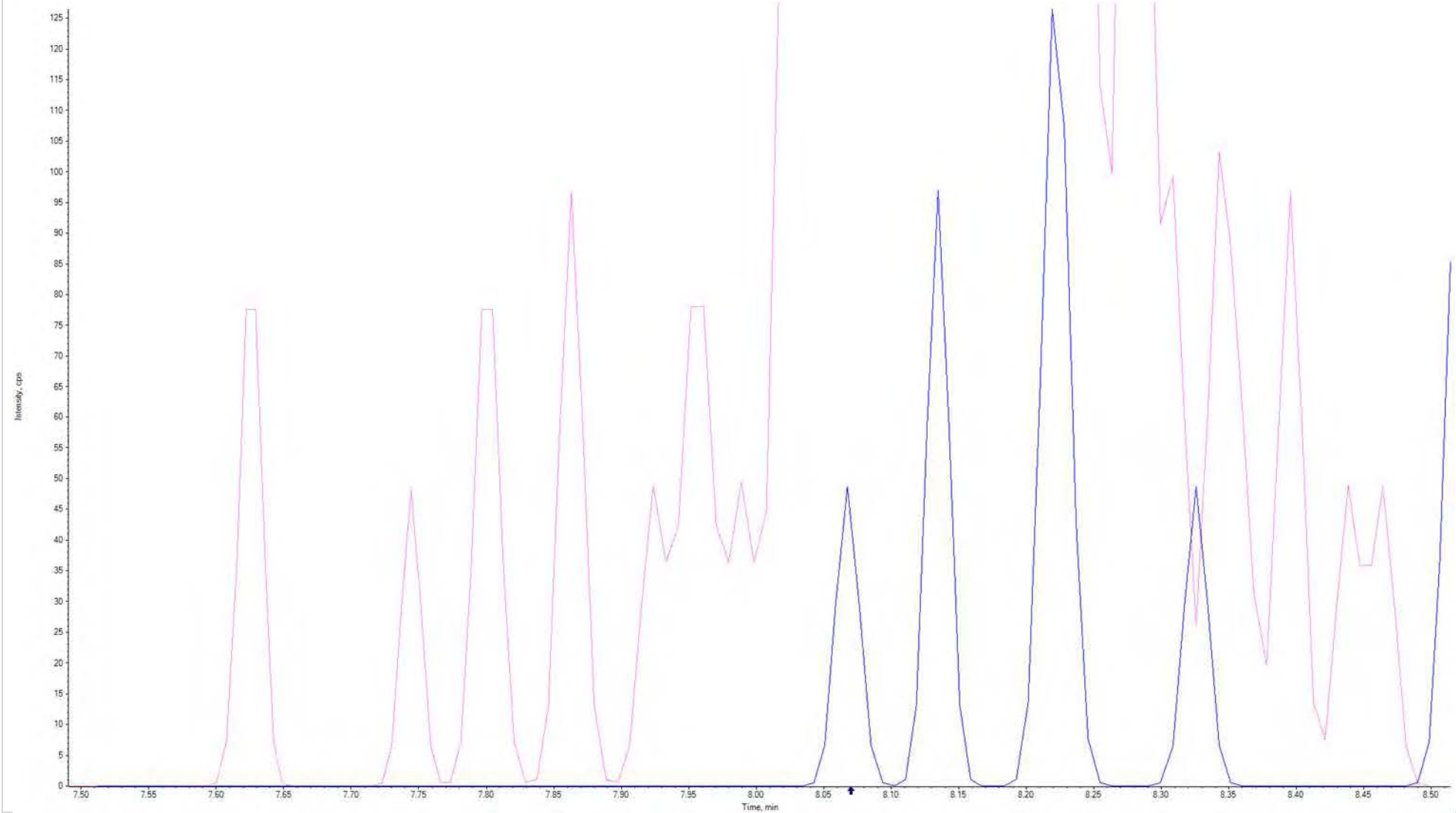


6:2FTS_2
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A



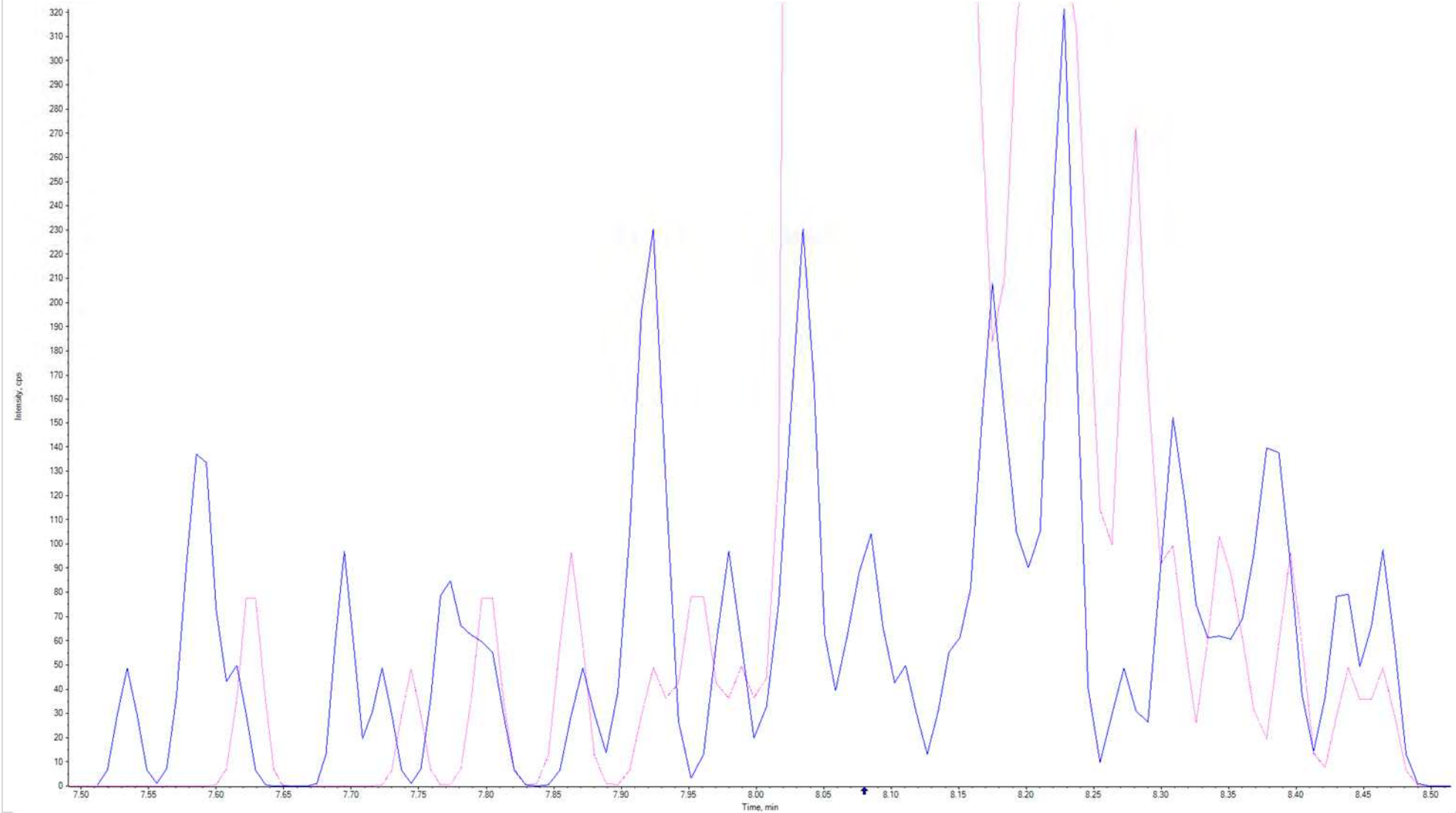
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

8:2FTS
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A



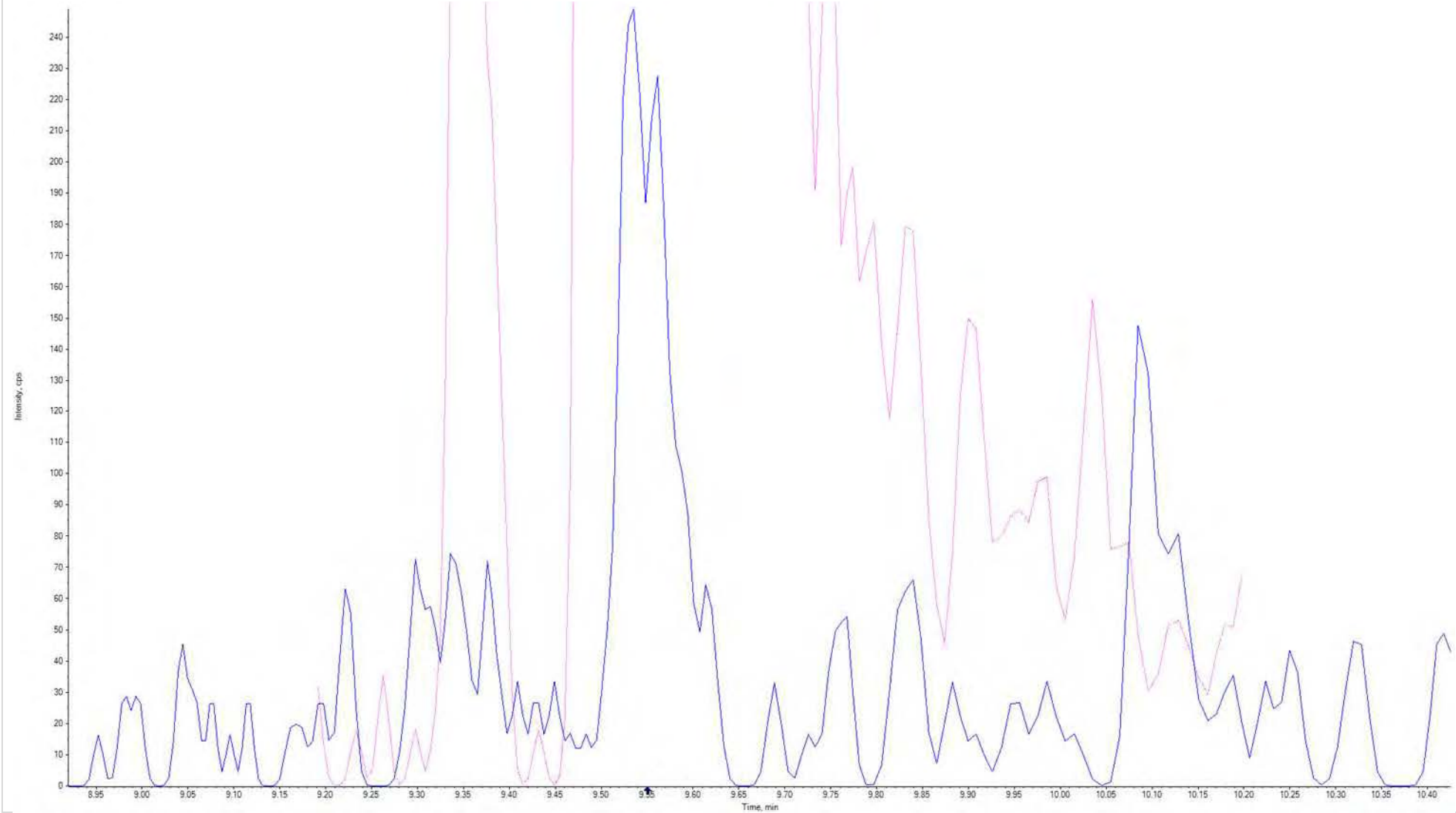
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

8:2FTS_2
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A



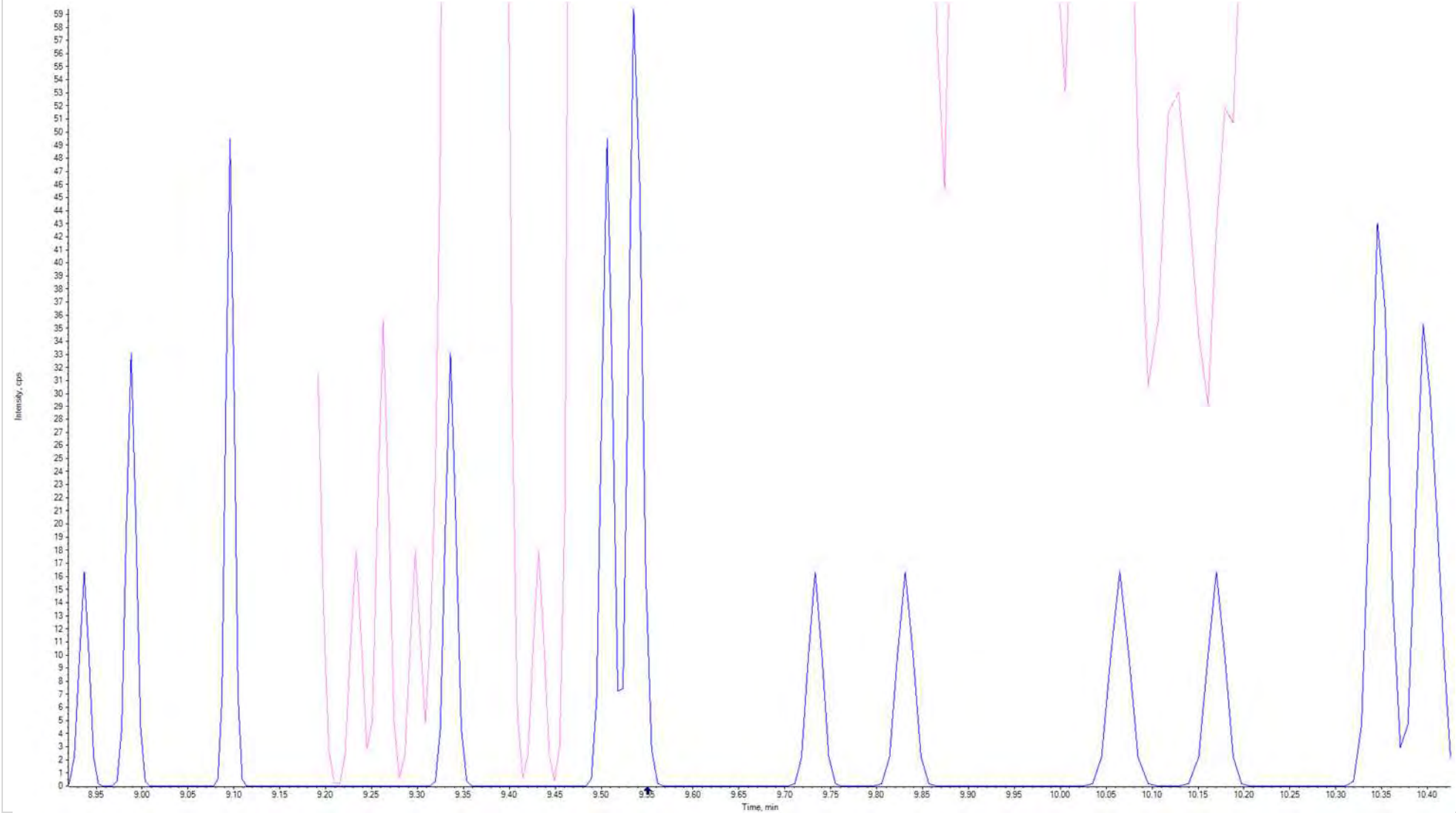
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFOSA
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A



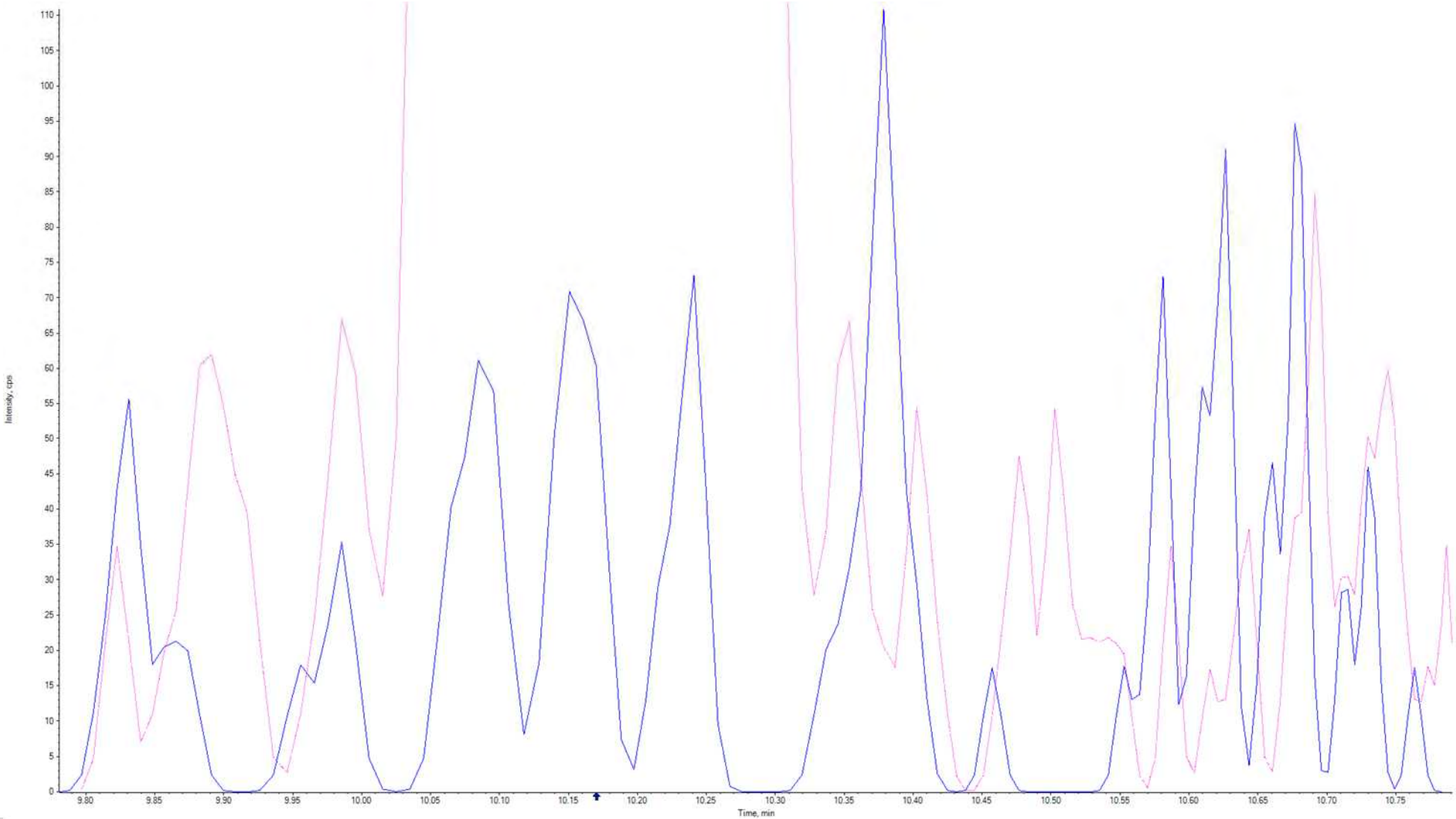
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFOSA_2
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A

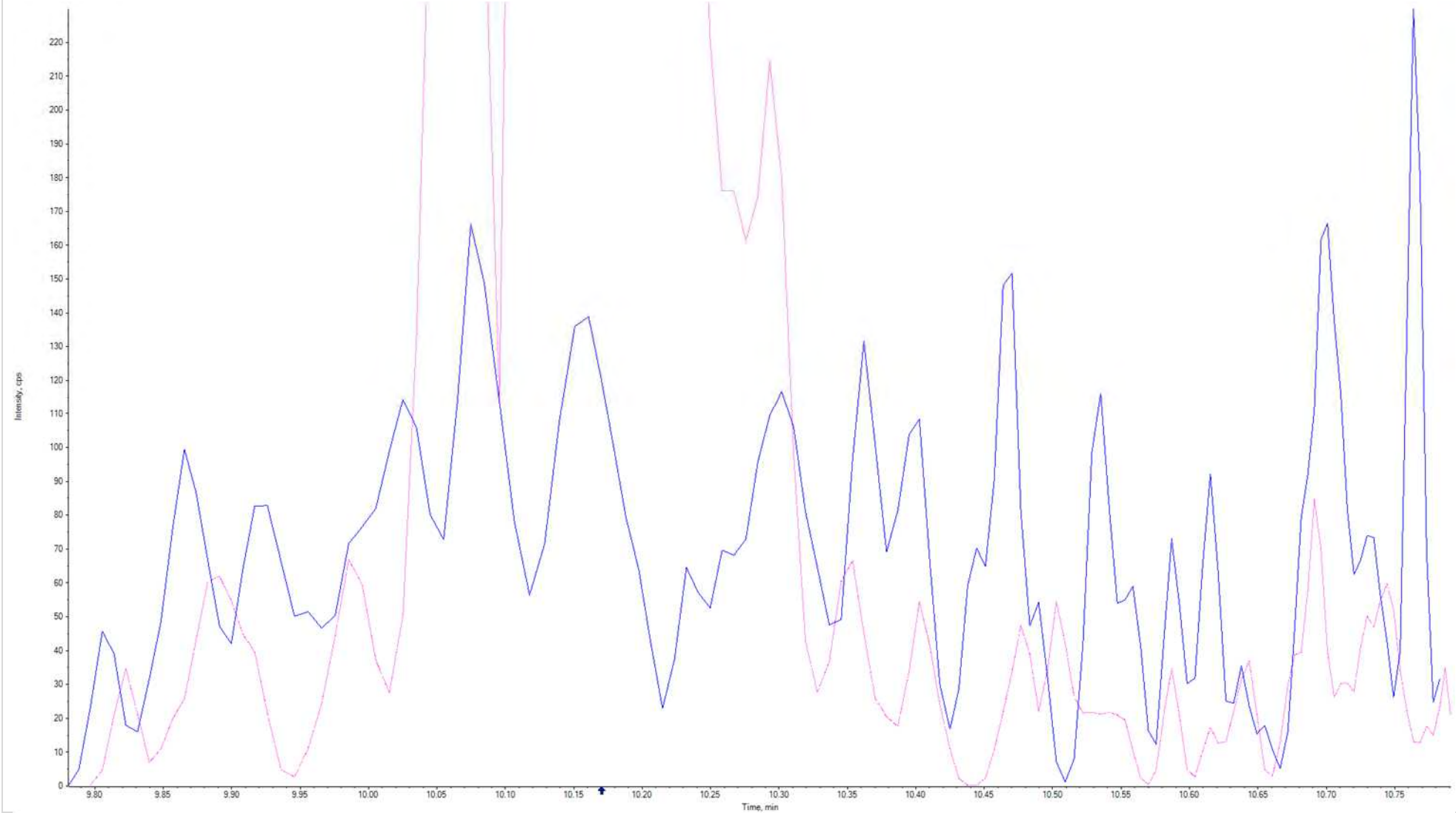


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

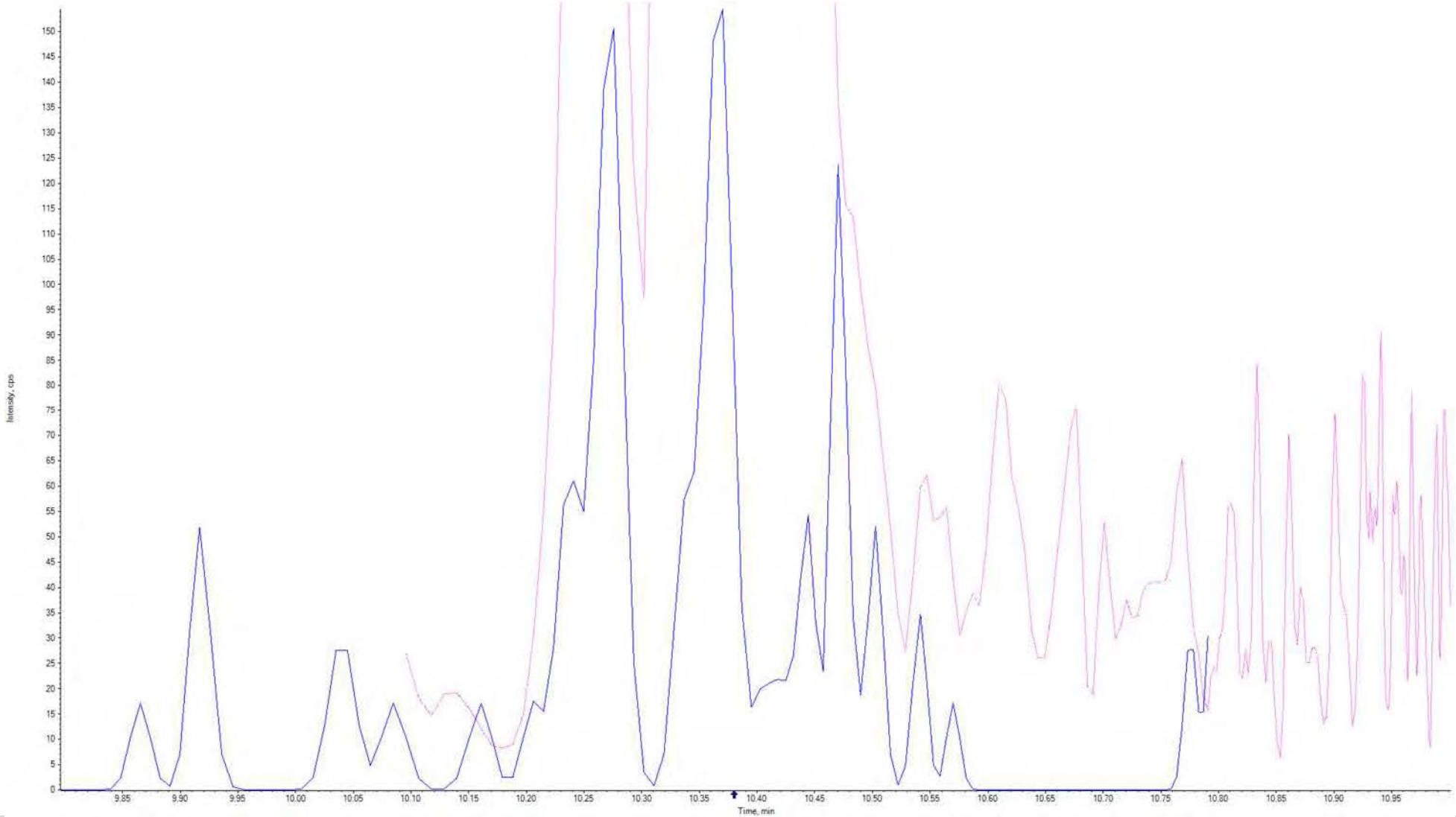
NMeFOSA
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A



NMeFOSA_2
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A

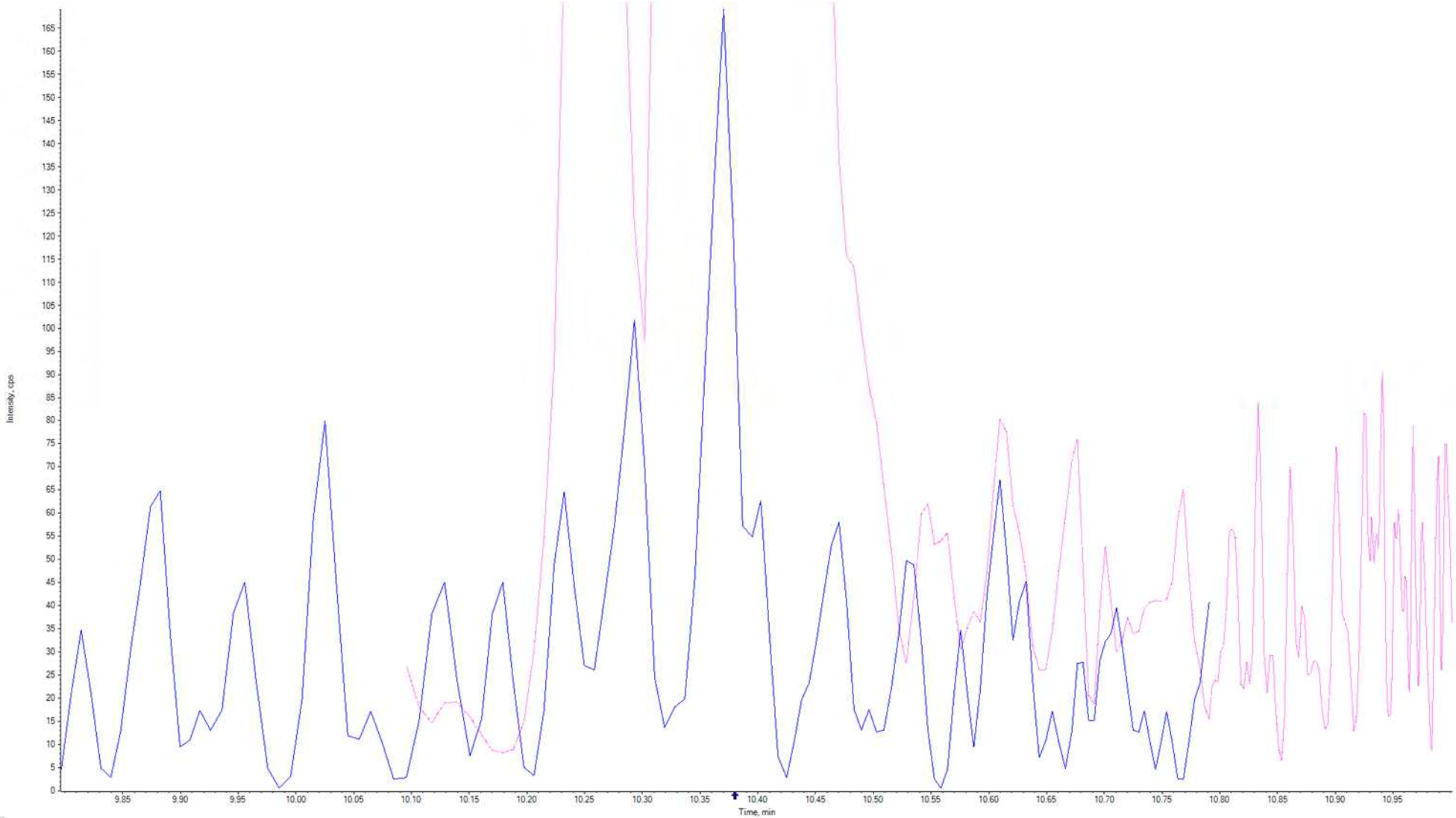


NEtFOSA
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A



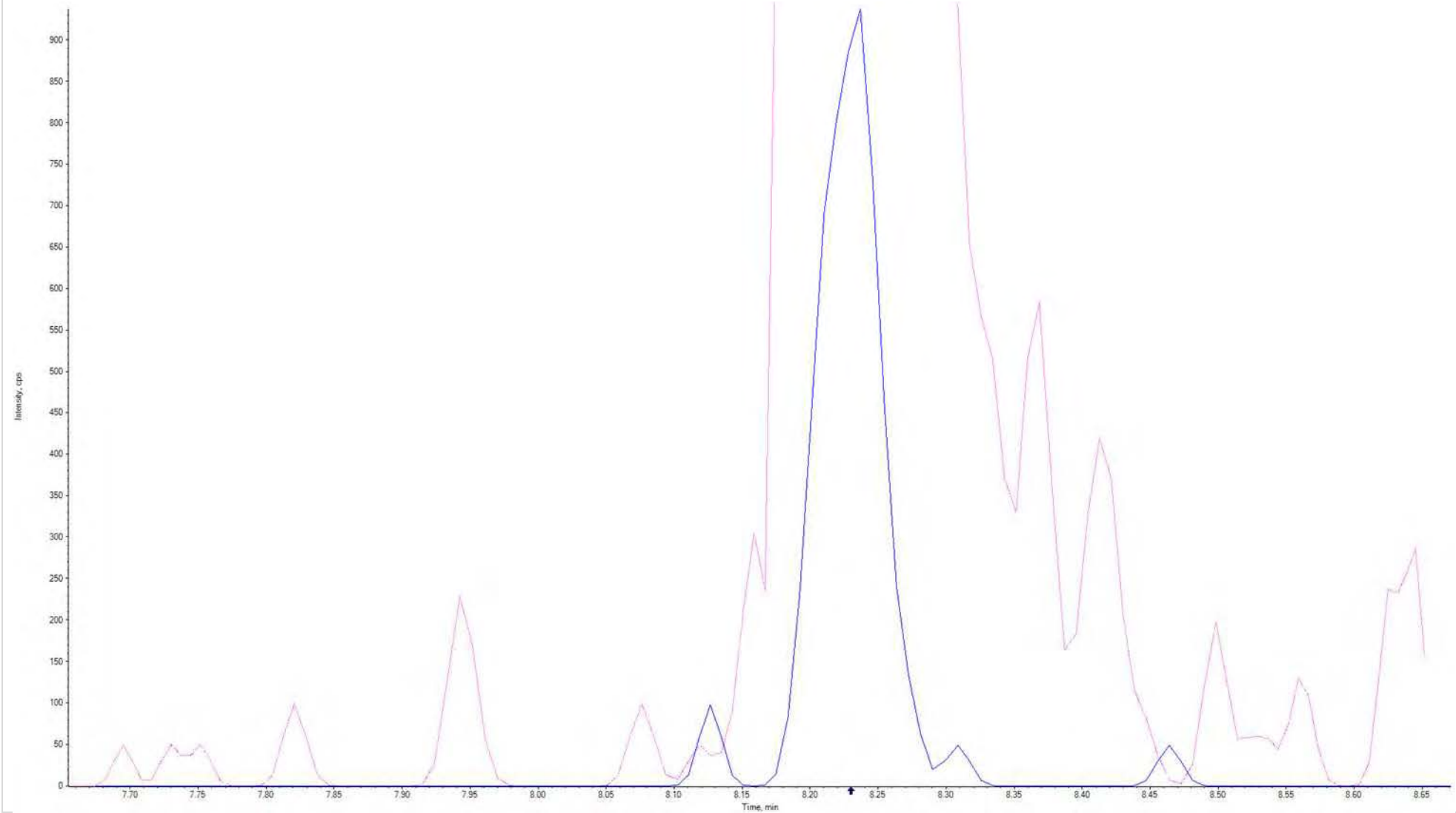
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NEtFOSA_2
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A



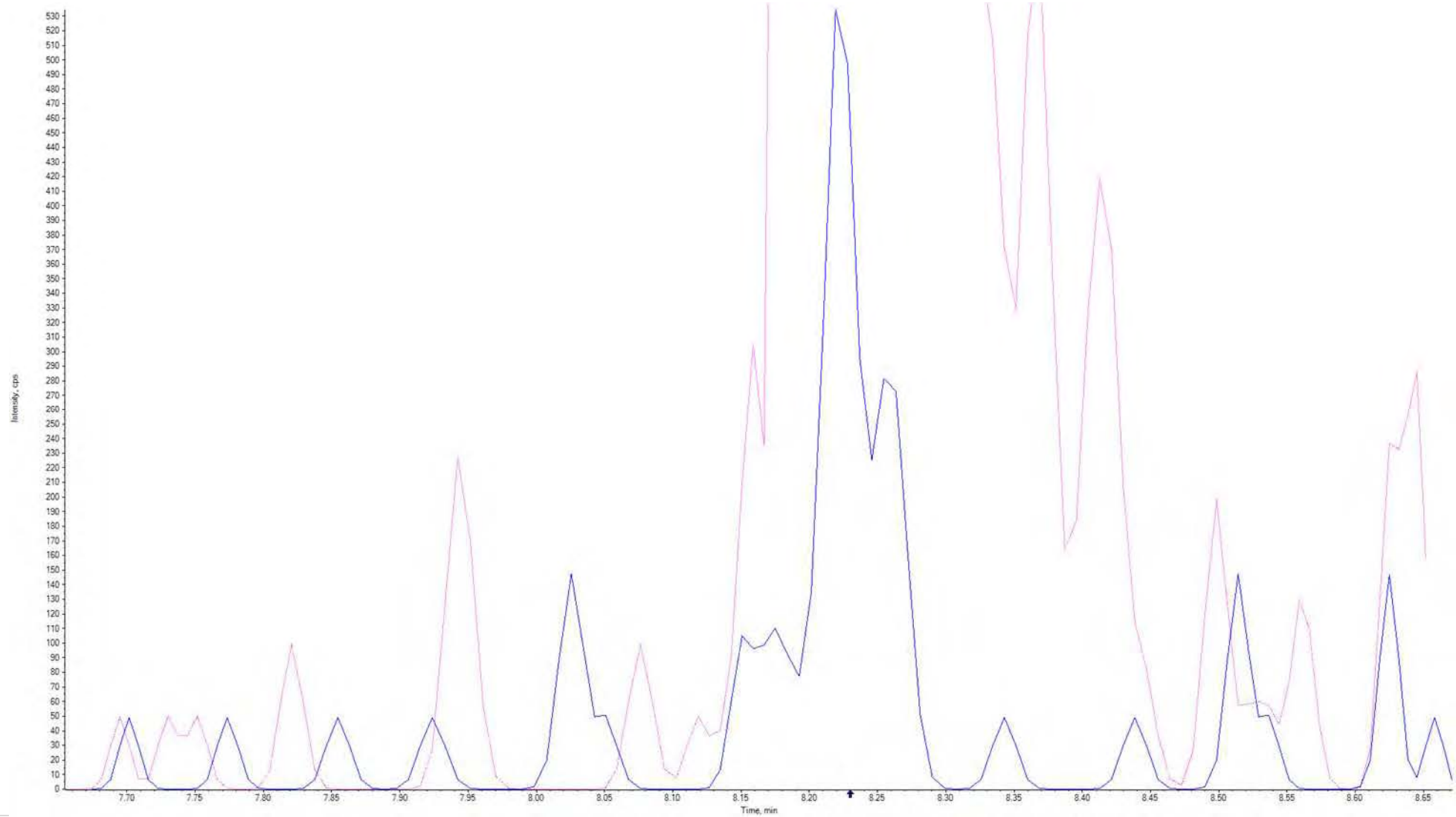
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NMeFOSAA
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A



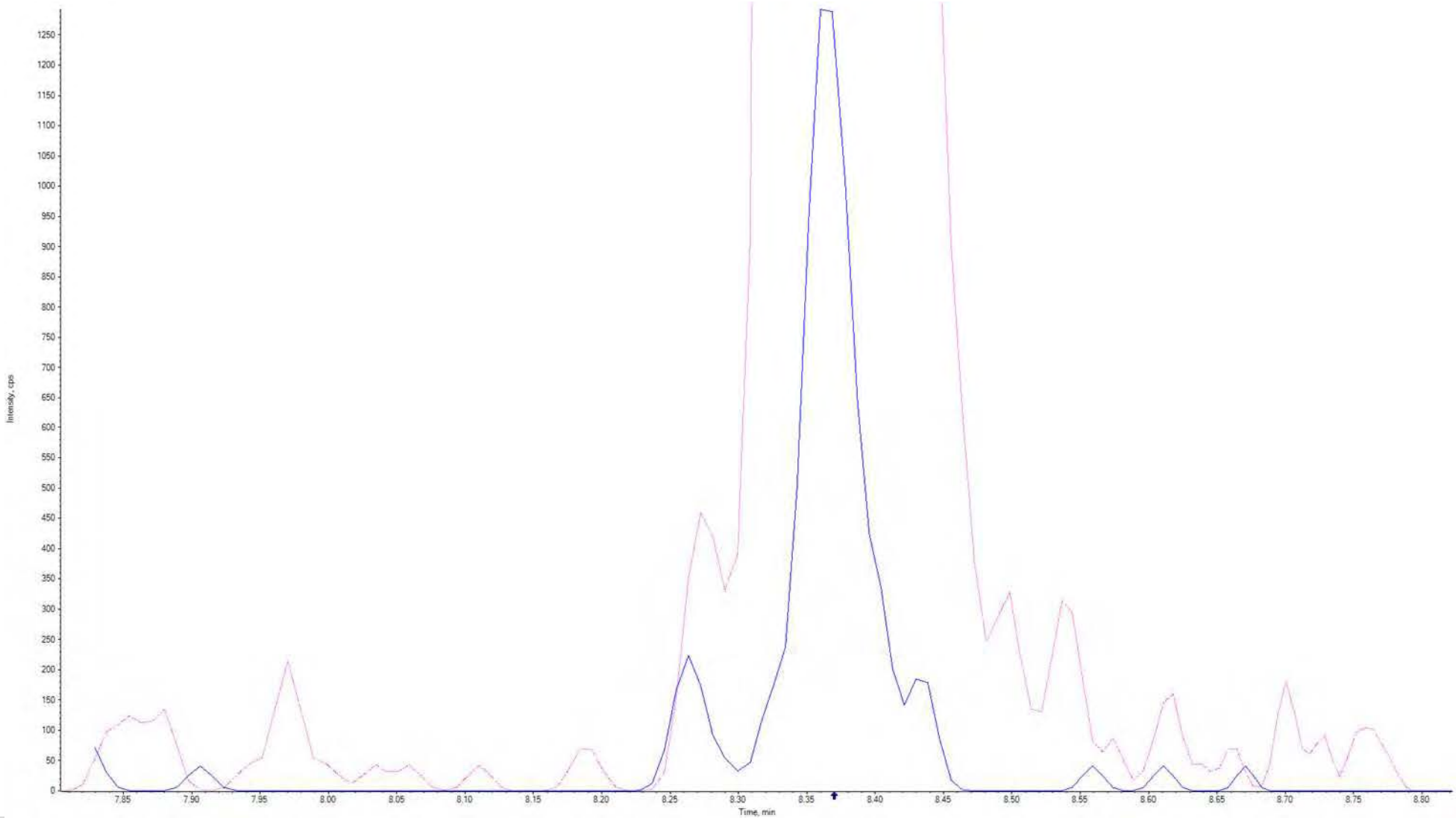
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NMeFOSAA_2
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NEtFOSAA
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NEtFOSAA_2
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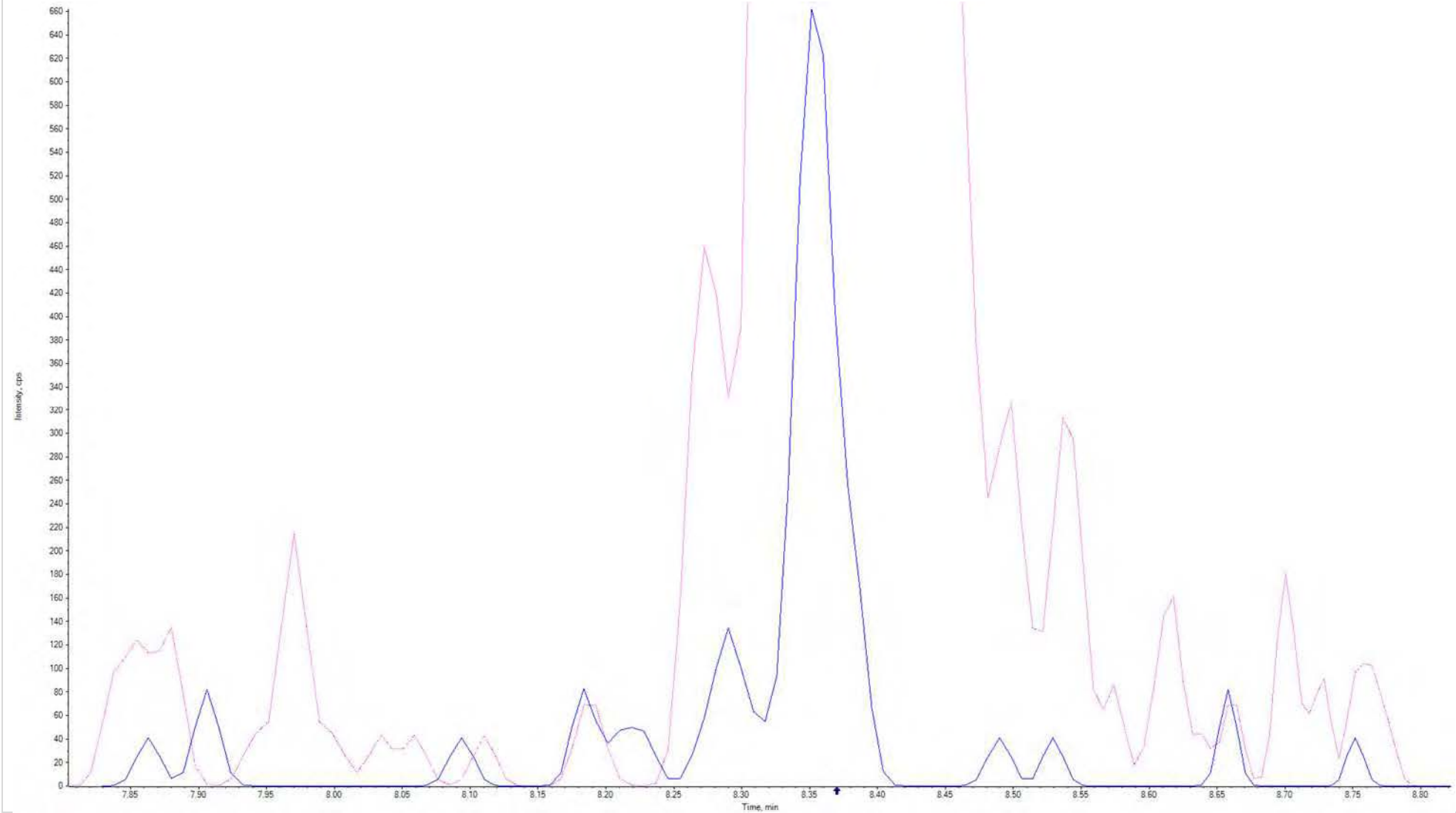
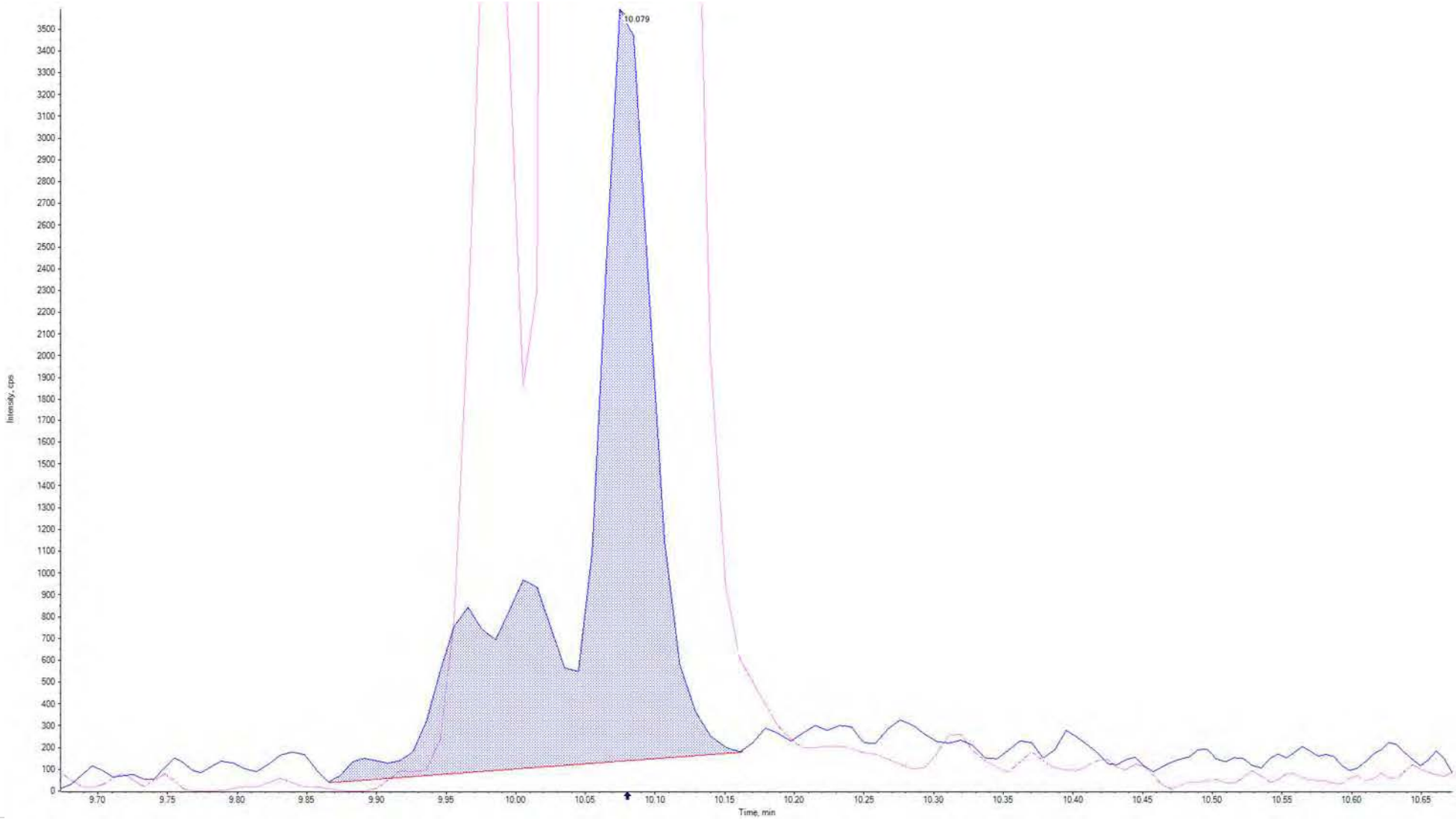


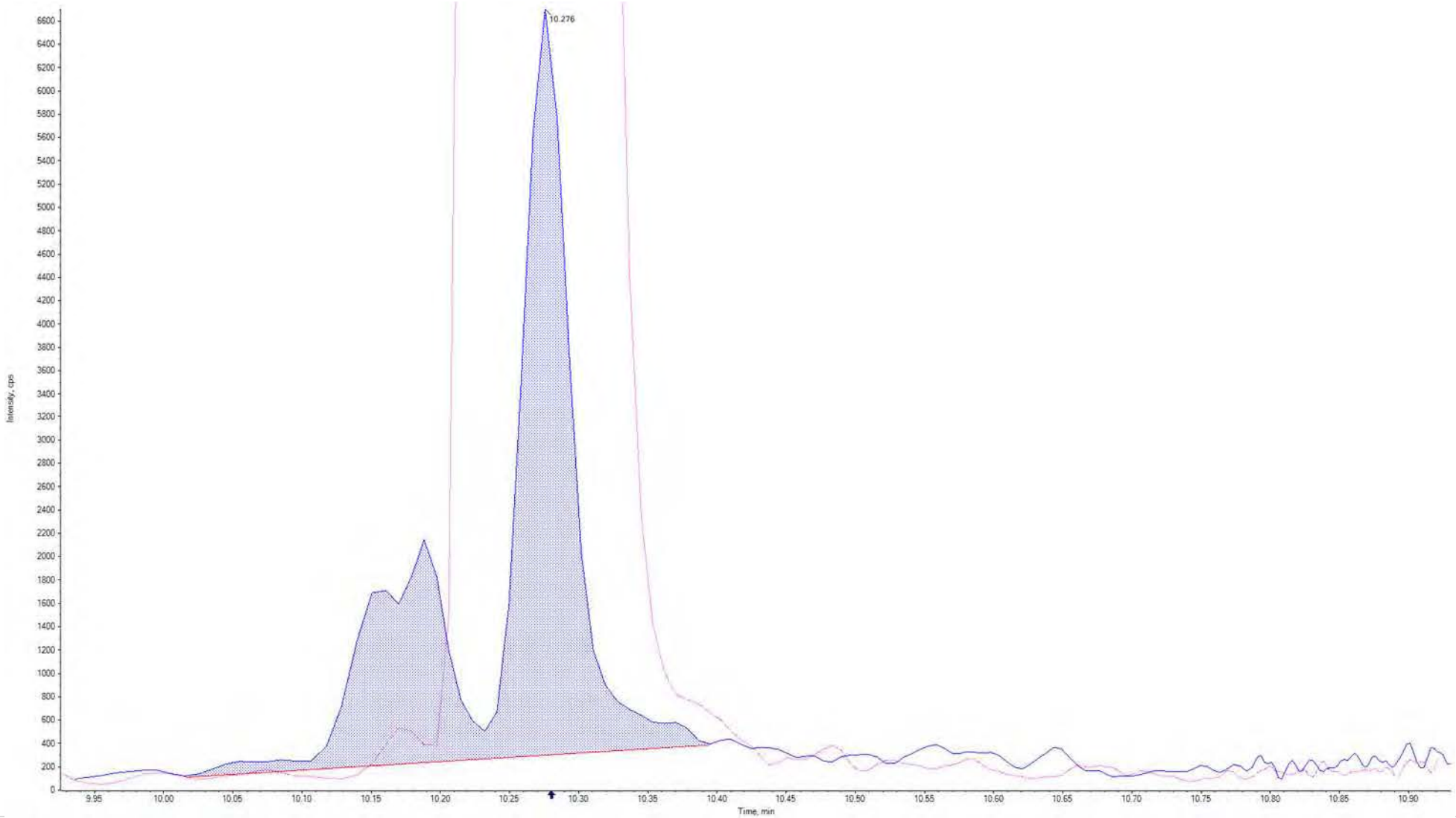
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NMeFOSE
Sample: WG1958909-3,INSTBLANK S/N:204.8 Points Across peak:32



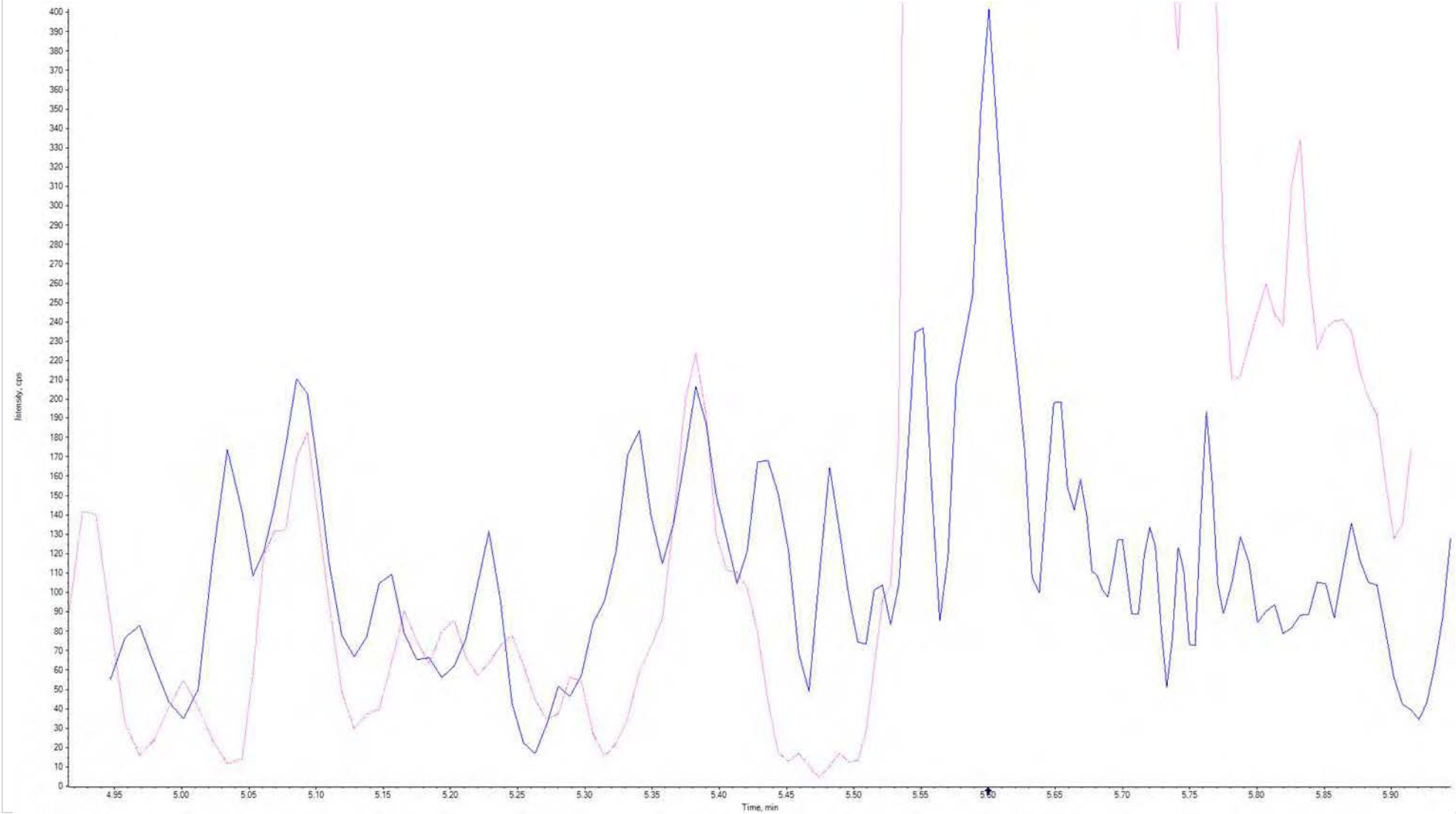
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NEtFOSE
Sample: WG1958909-3,INSTBLANK S/N:249.5 Points Across peak:42

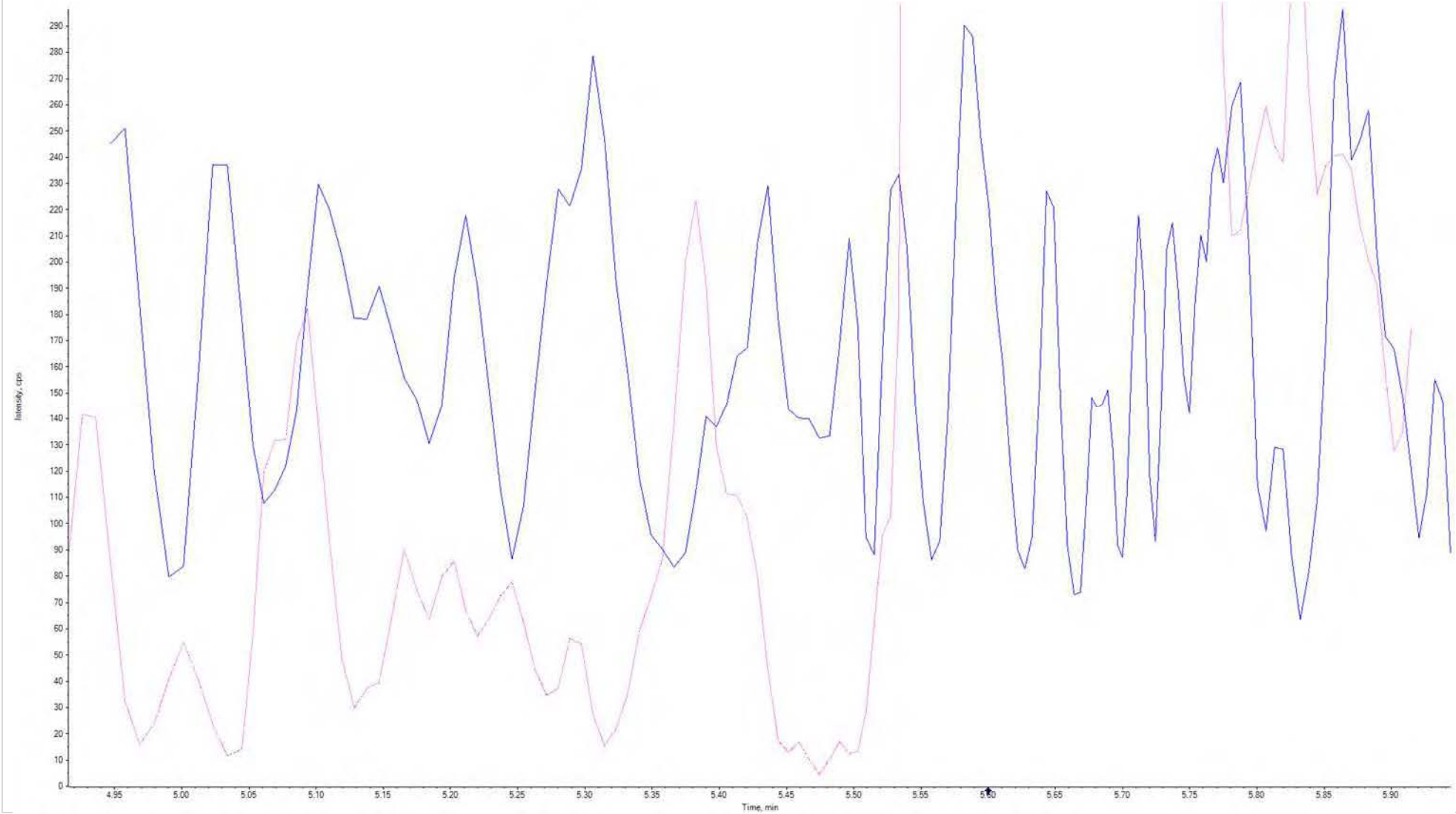


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

HFPO-DA
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A

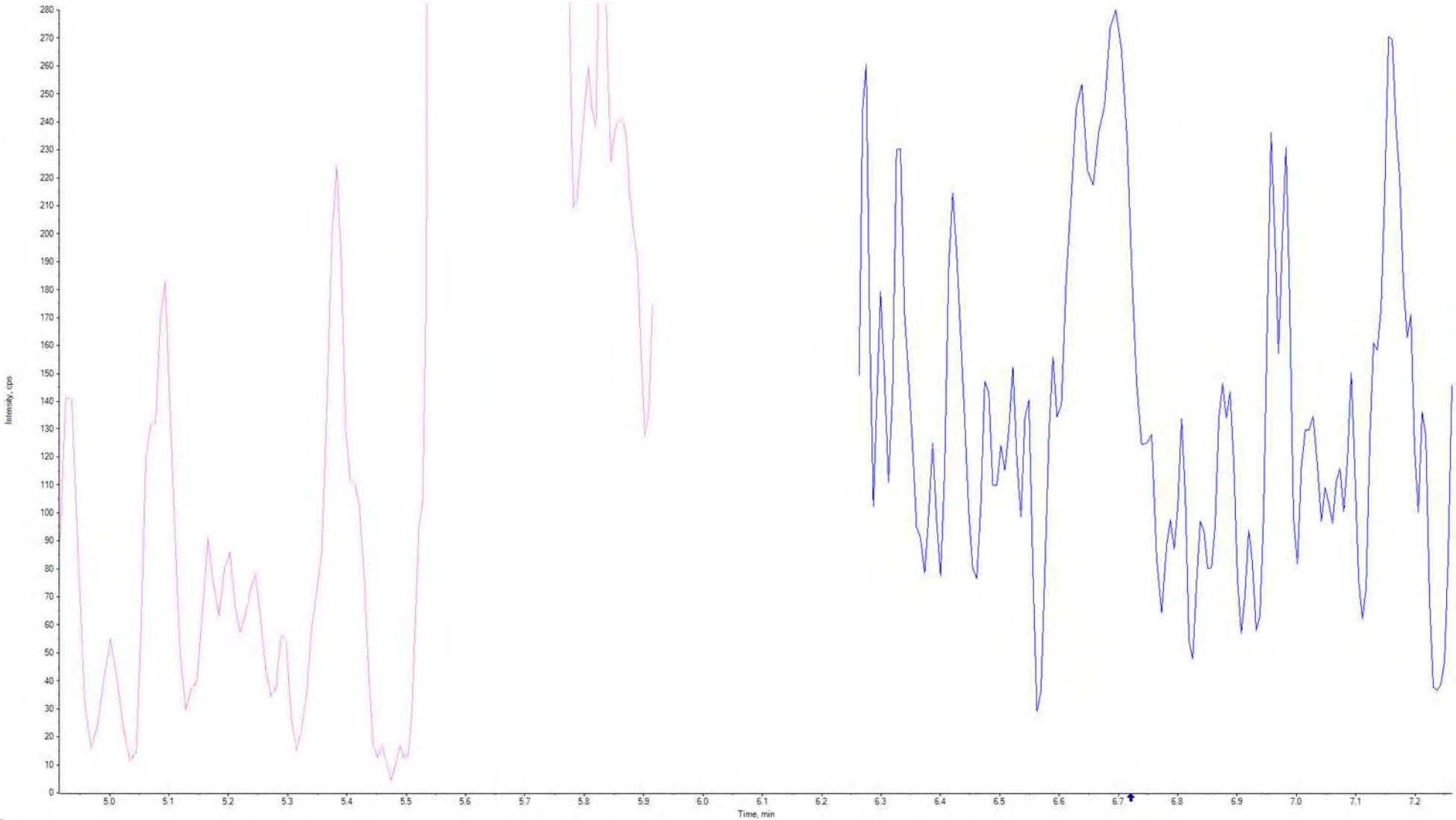


HFPO-DA_2
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

ADONA
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A



ADONA_2
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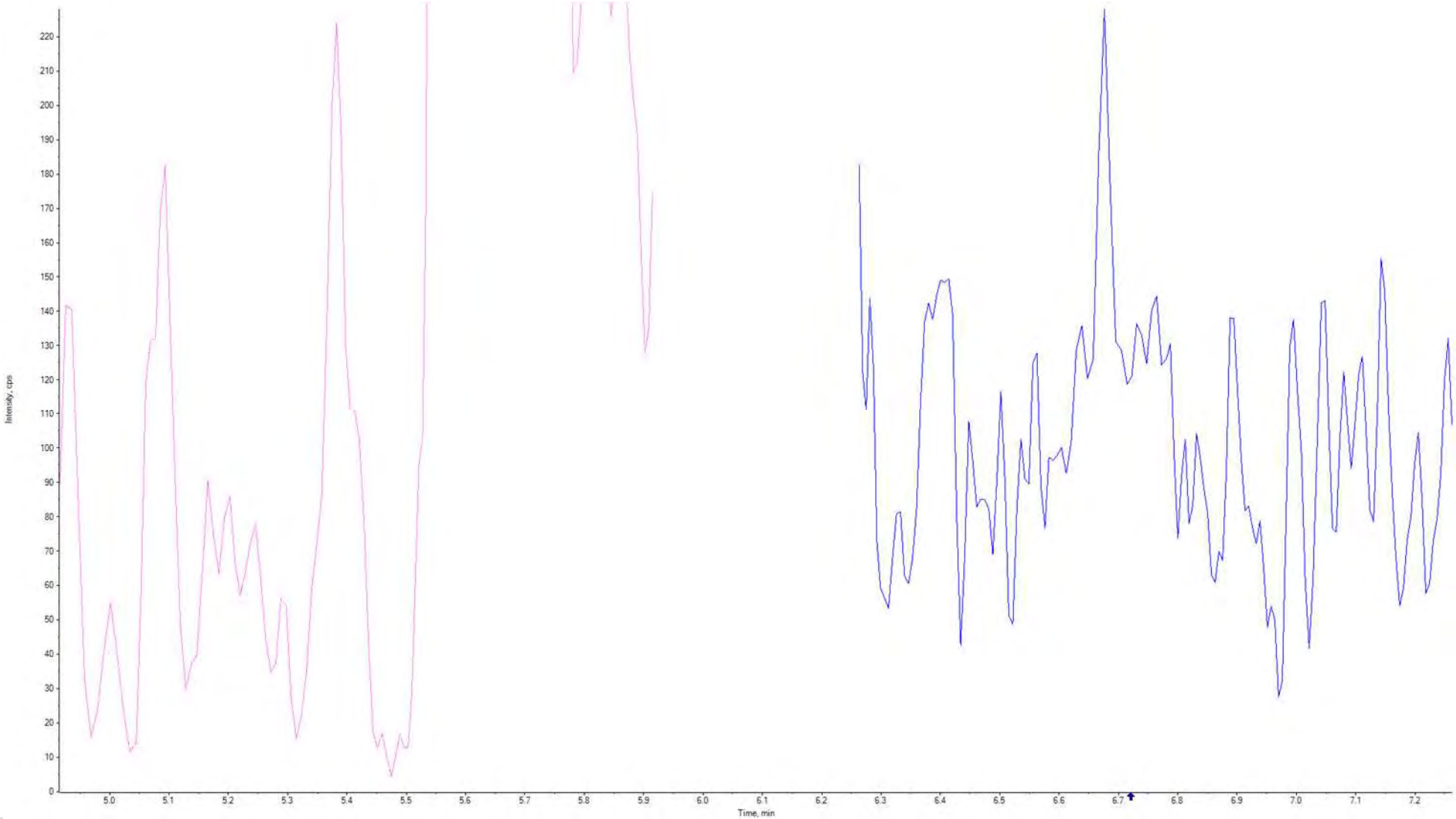

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

9Cl-PF3ONS
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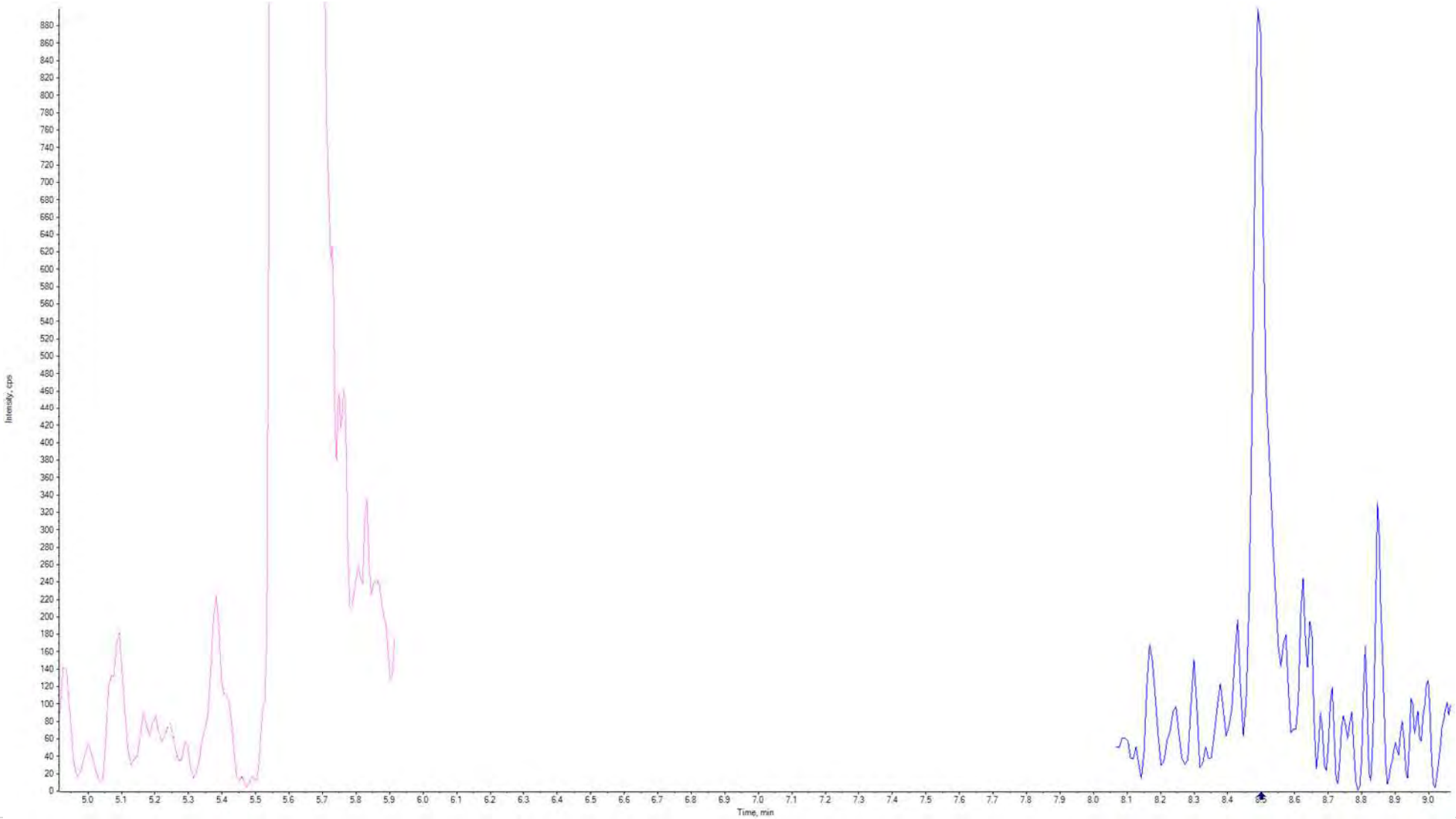
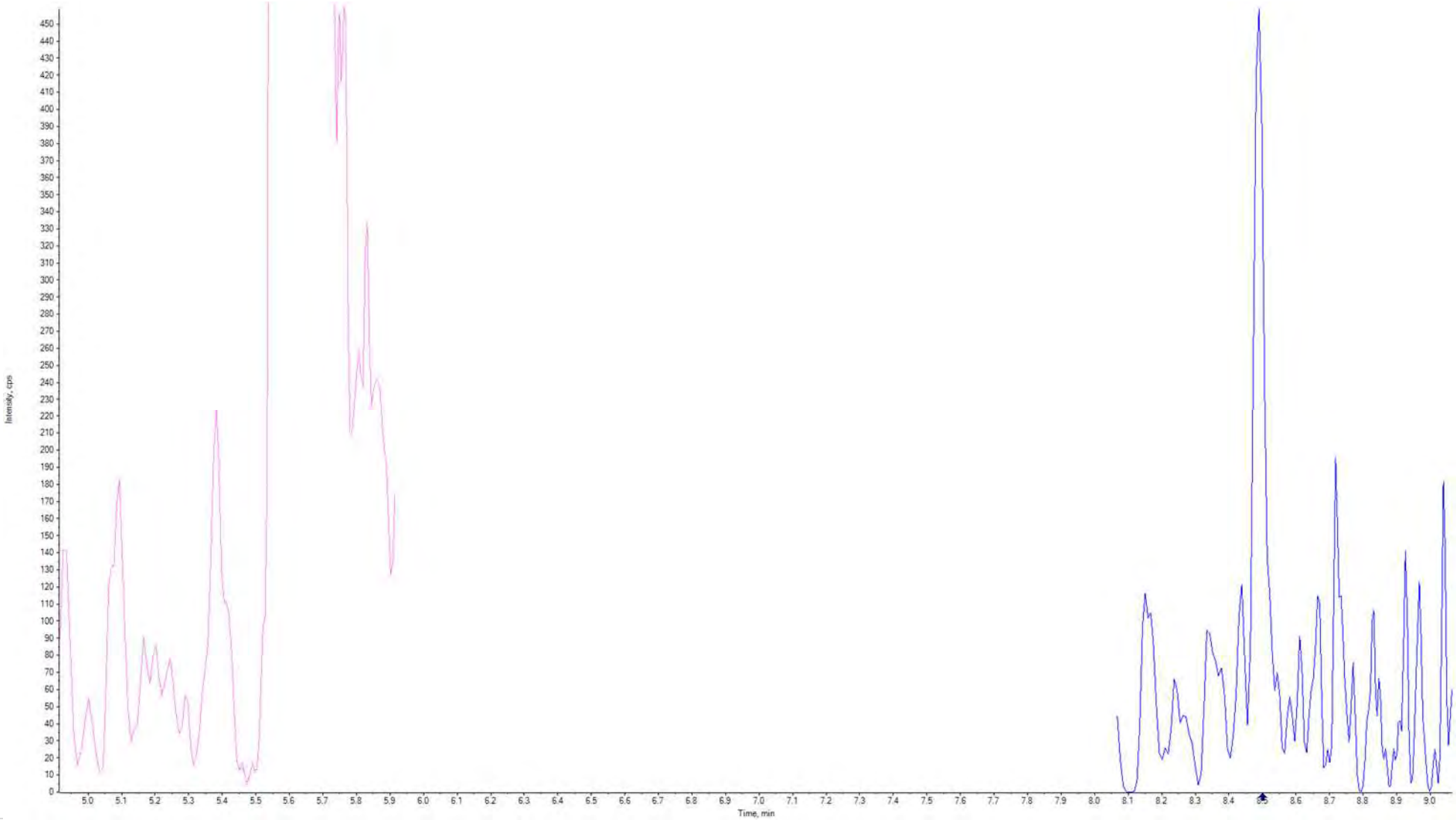


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

9Cl-PF3ONS_2
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A

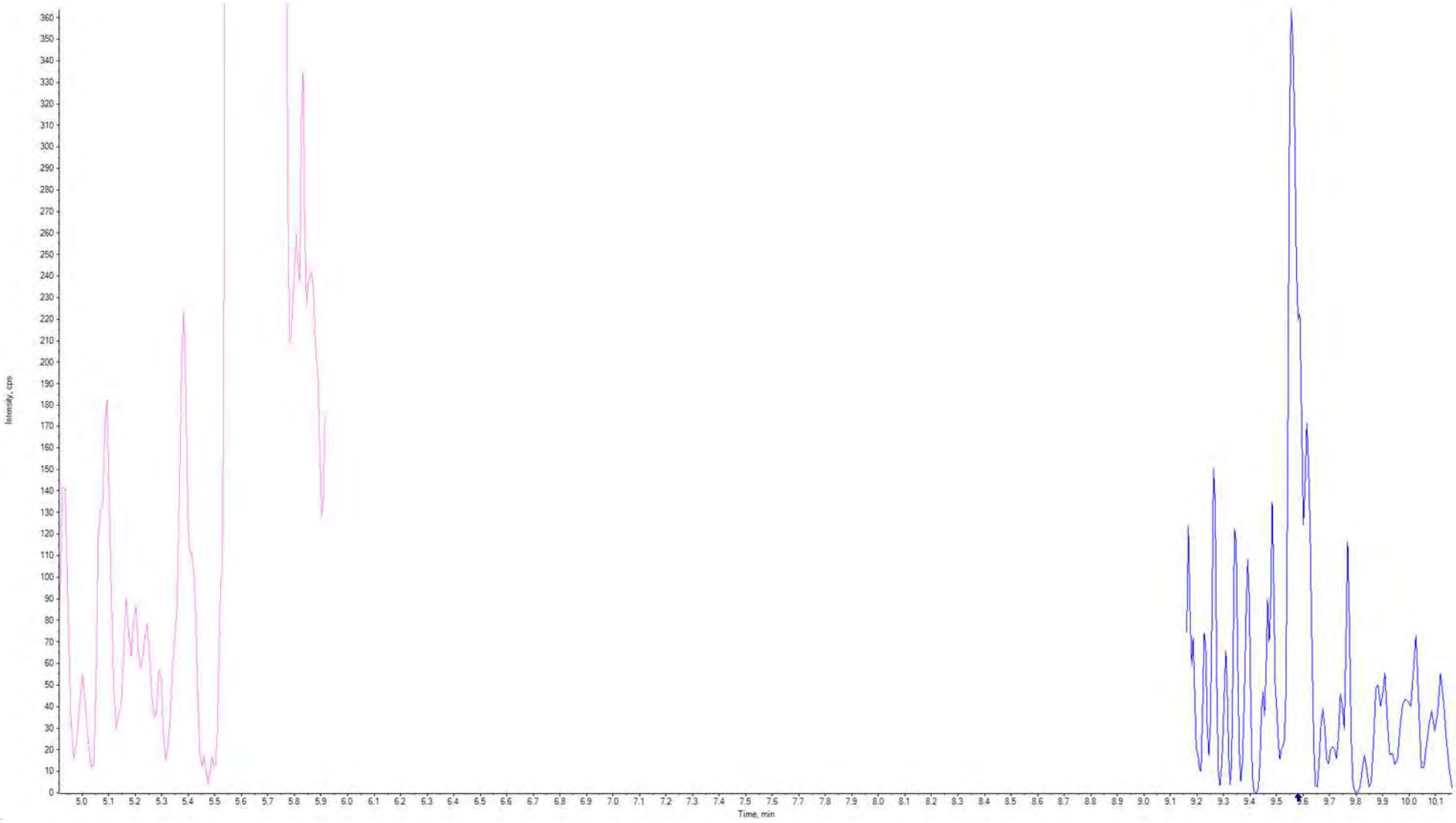


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

11Cl-PF3OUdS
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A

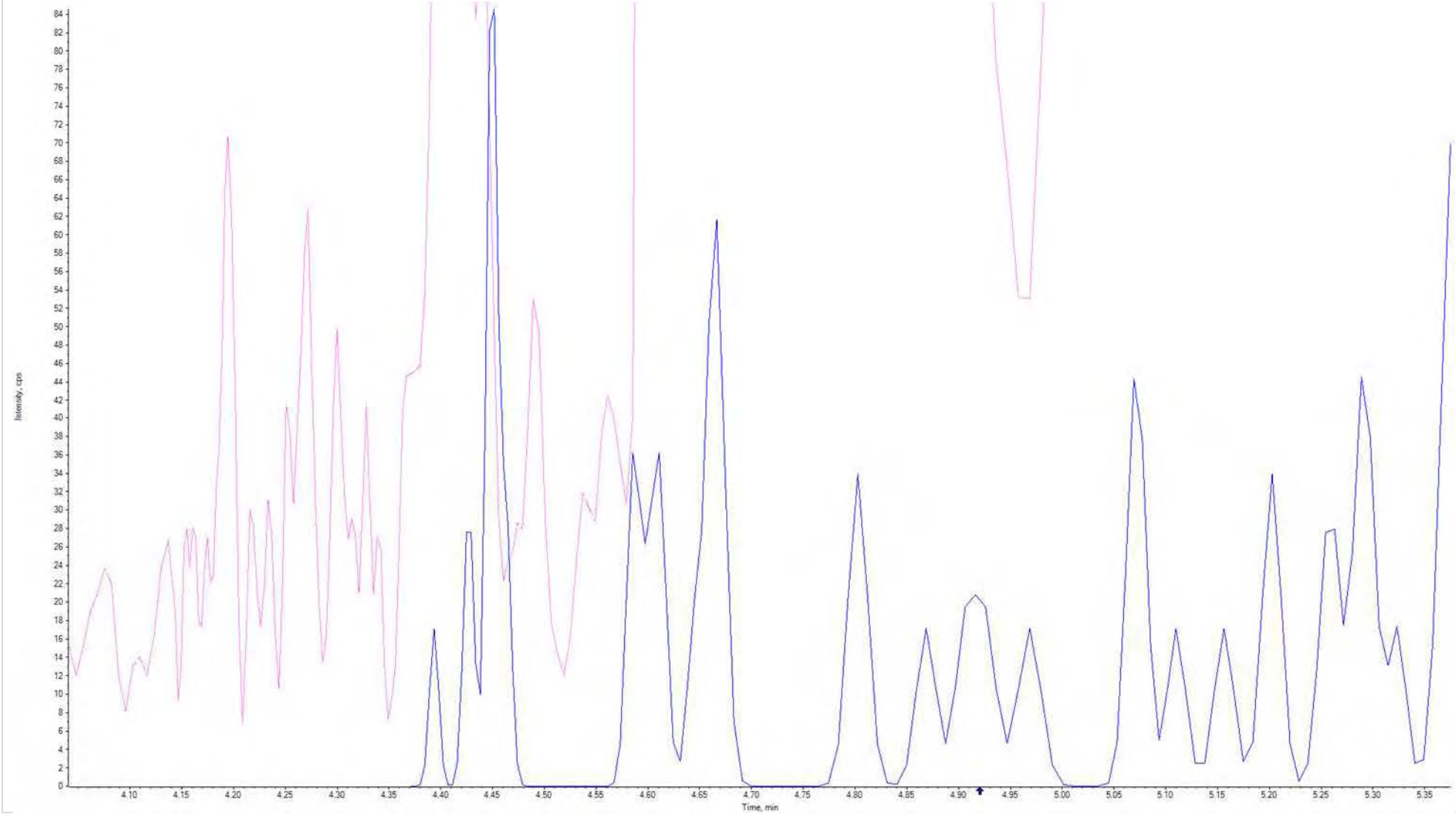
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

11Cl-PF3OUdS_2
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A

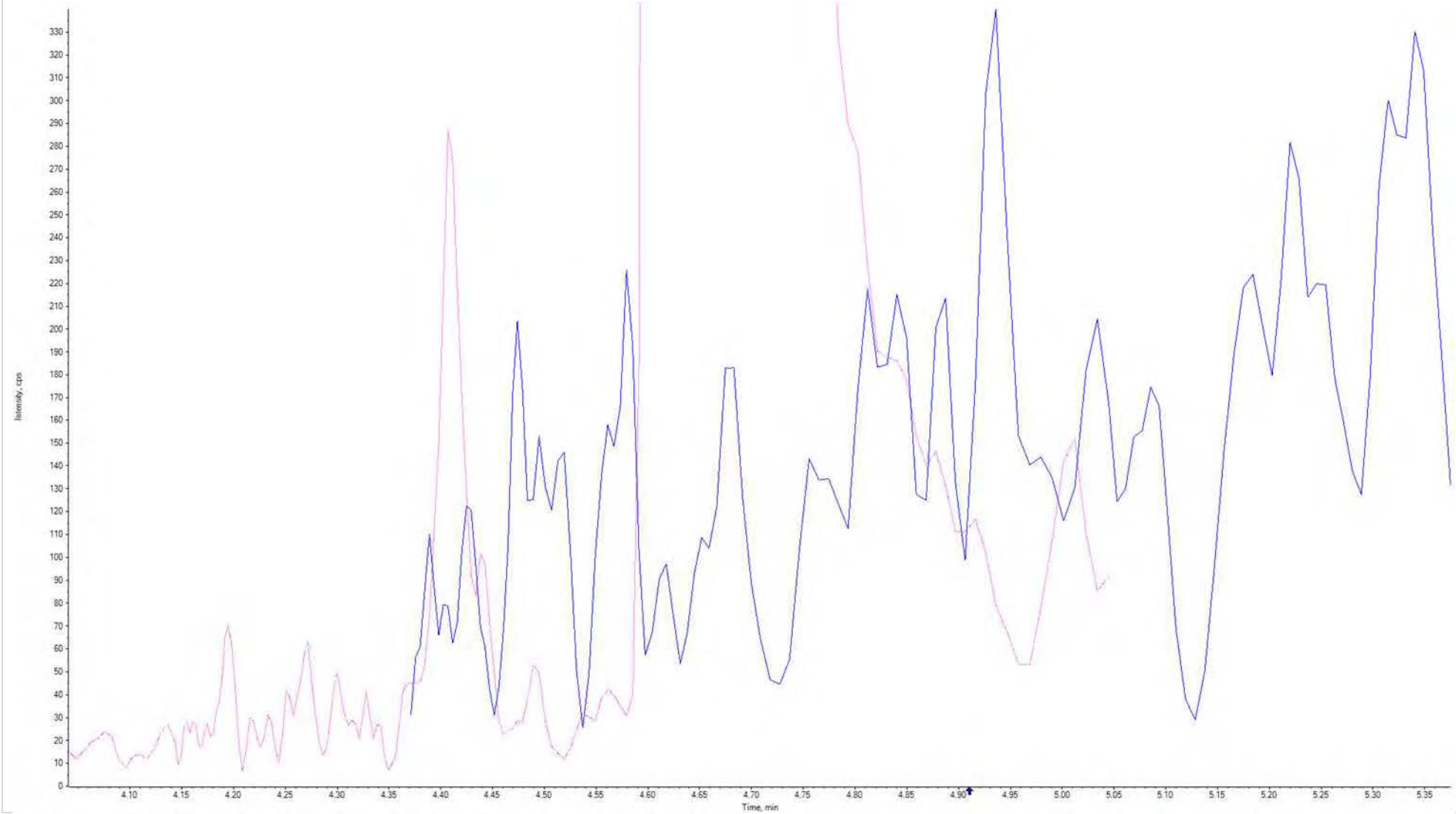


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

3:3FTCA
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A

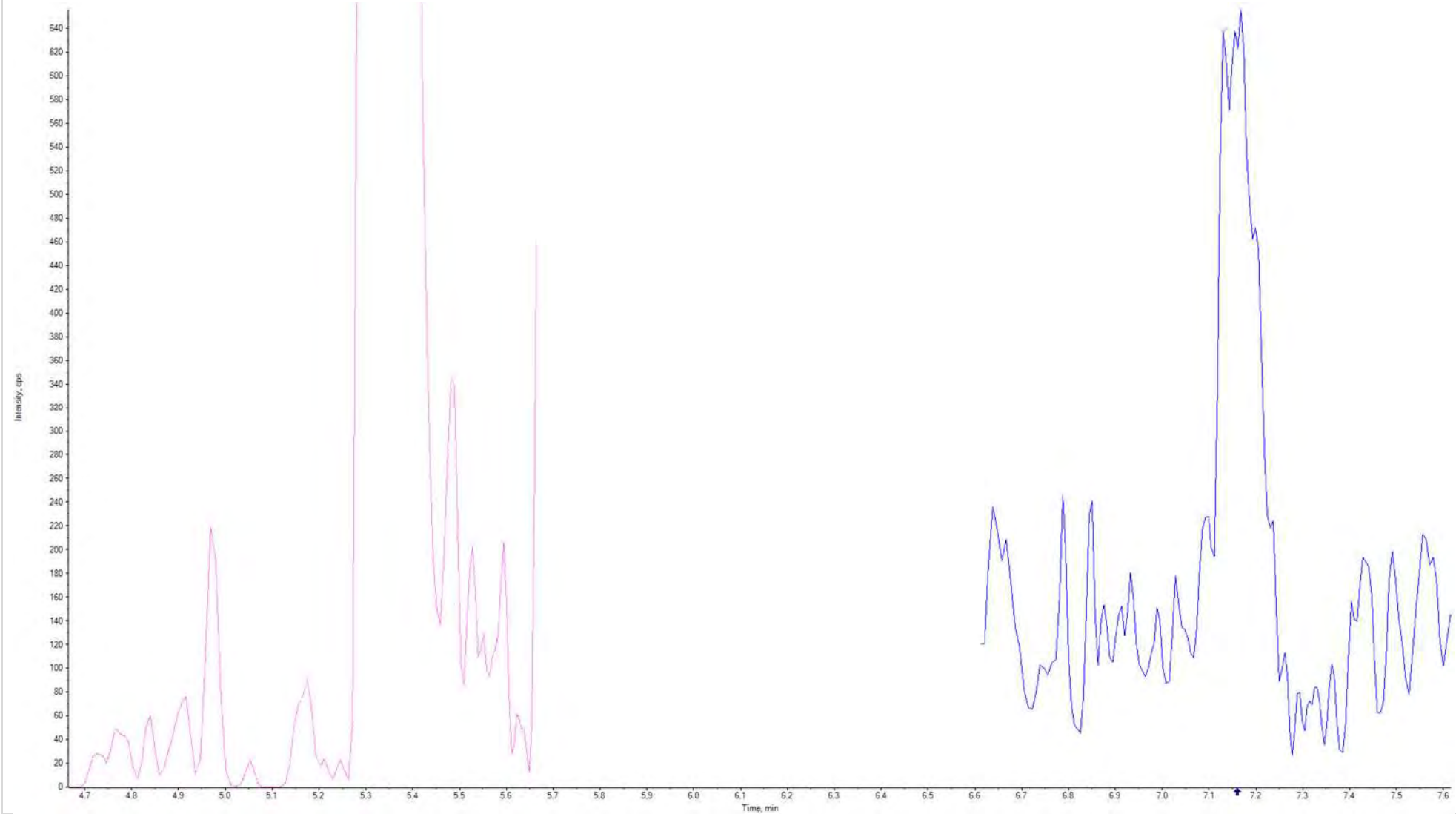


3:3FTCA_2
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A



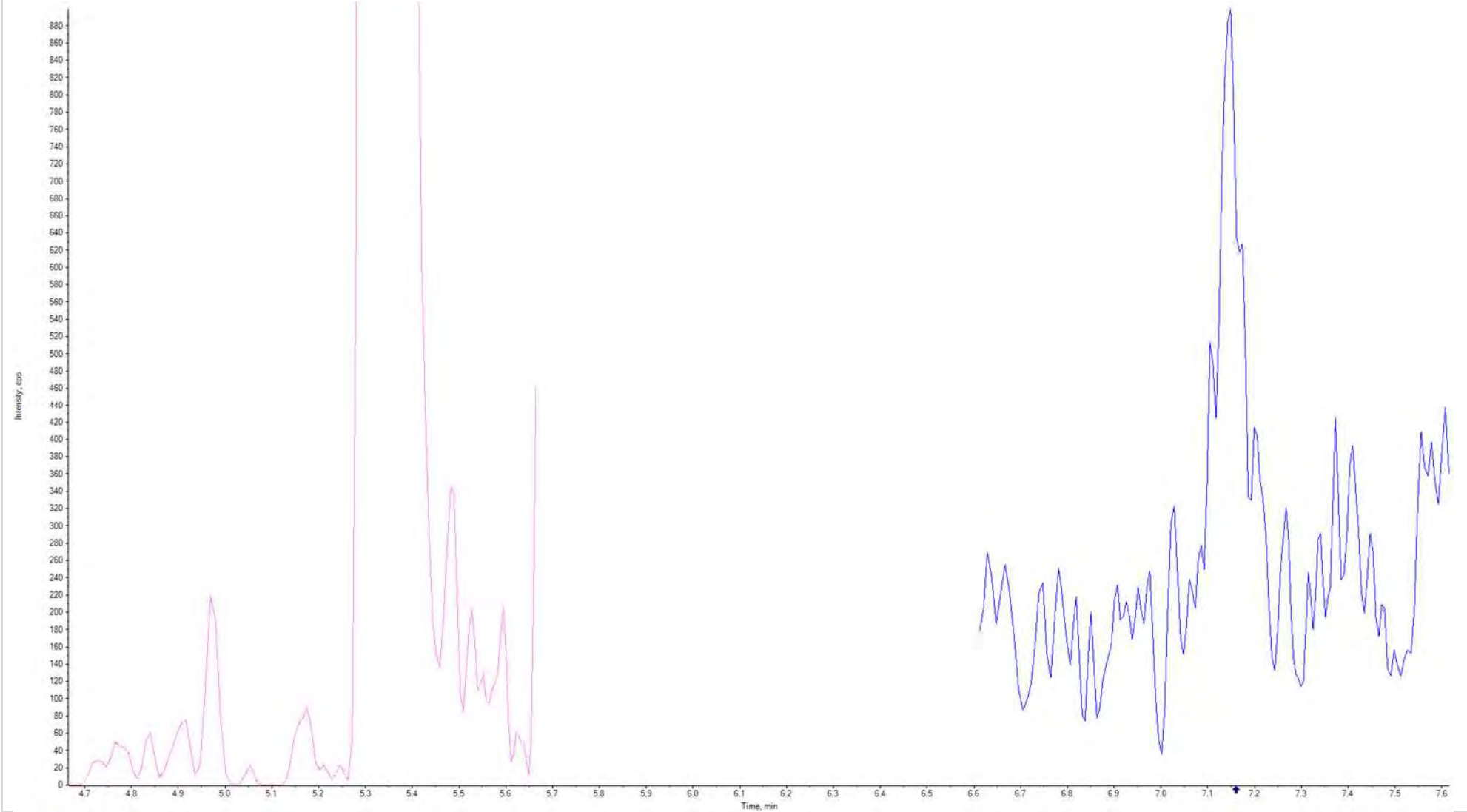
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

5:3FTCA
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A



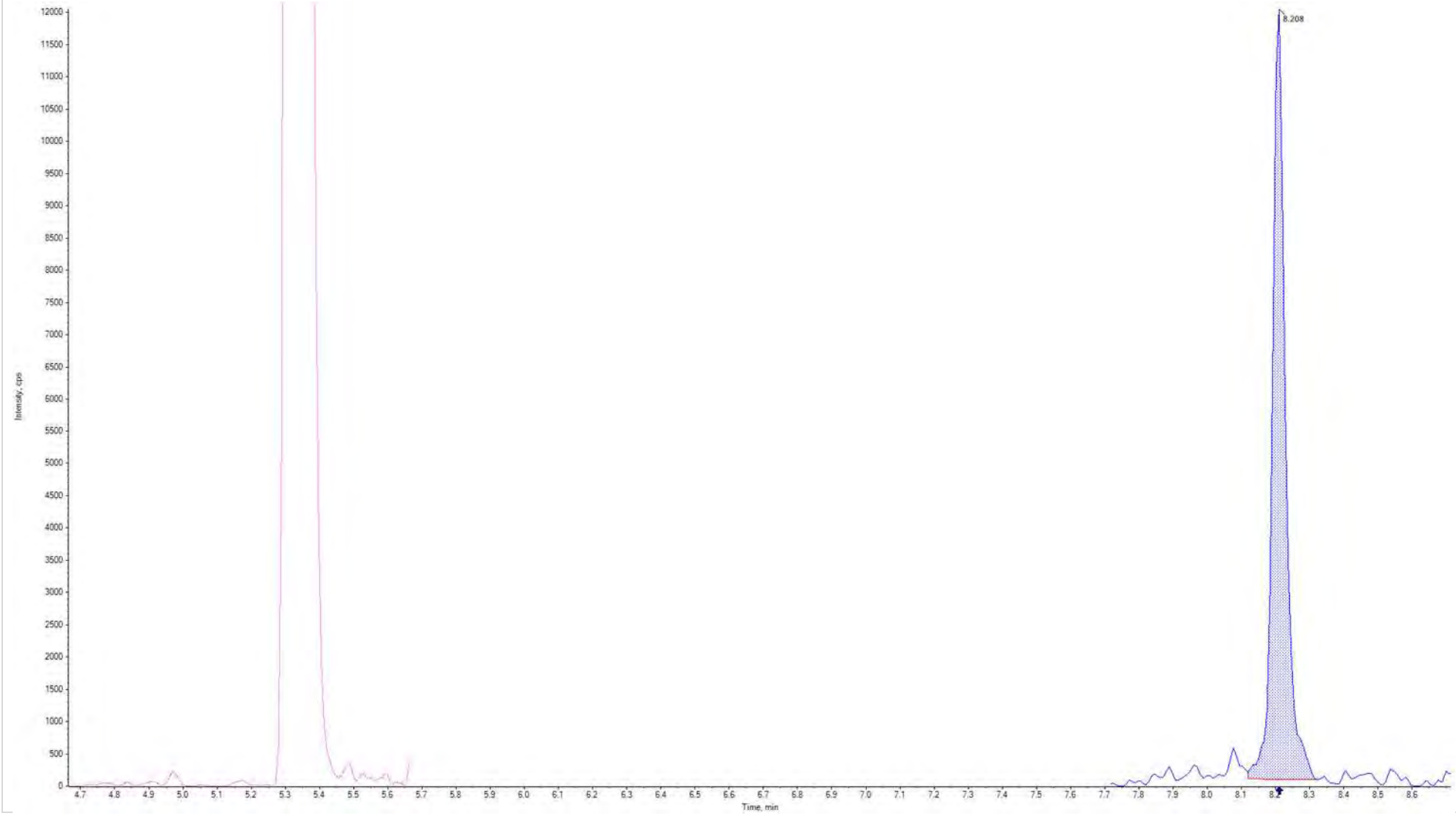
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

5:3FTCA_2
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A



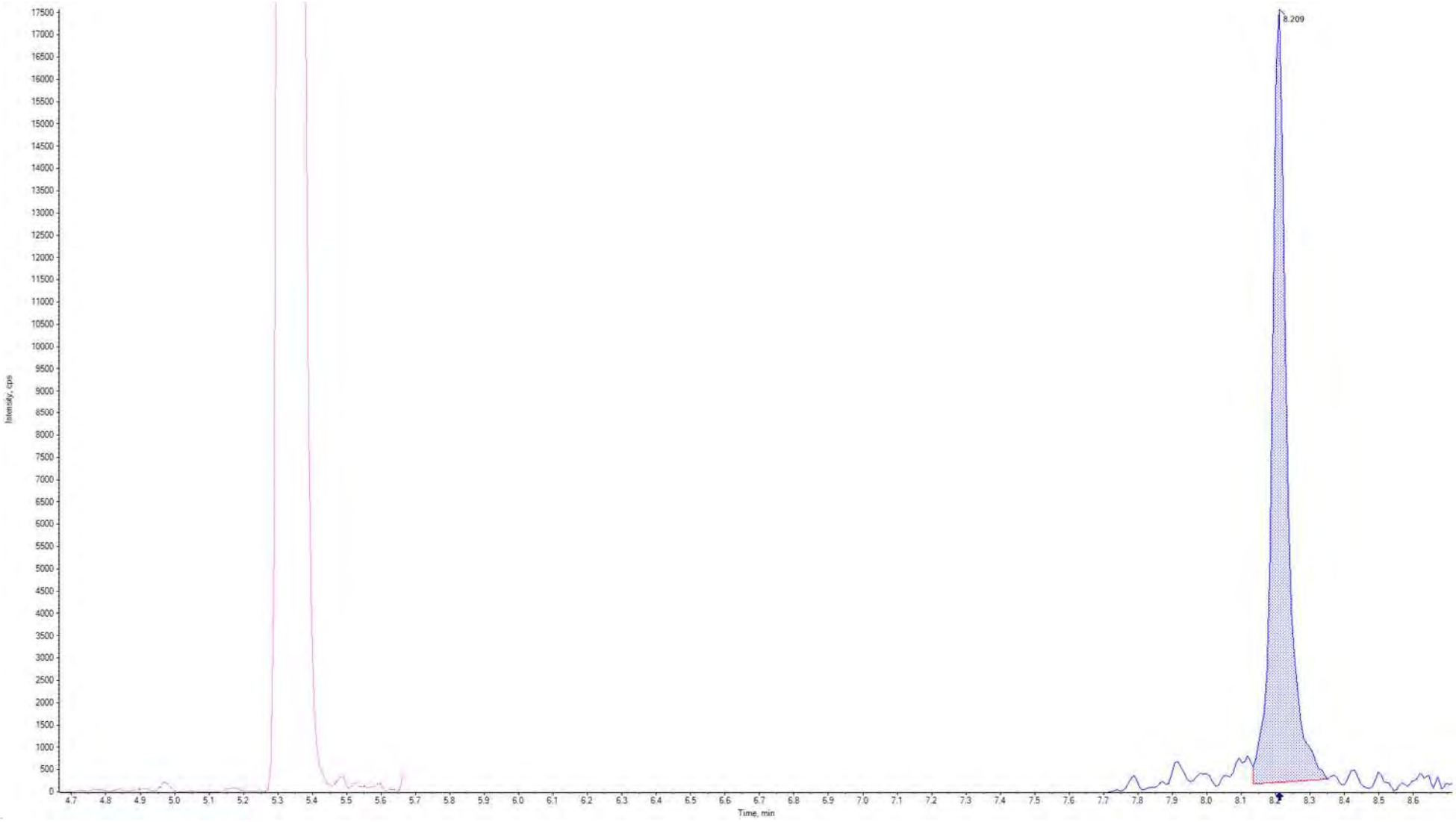
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

7:3FTCA
Sample: WG1958909-3,INSTBLANK S/N:3626.9 Points Across peak:25



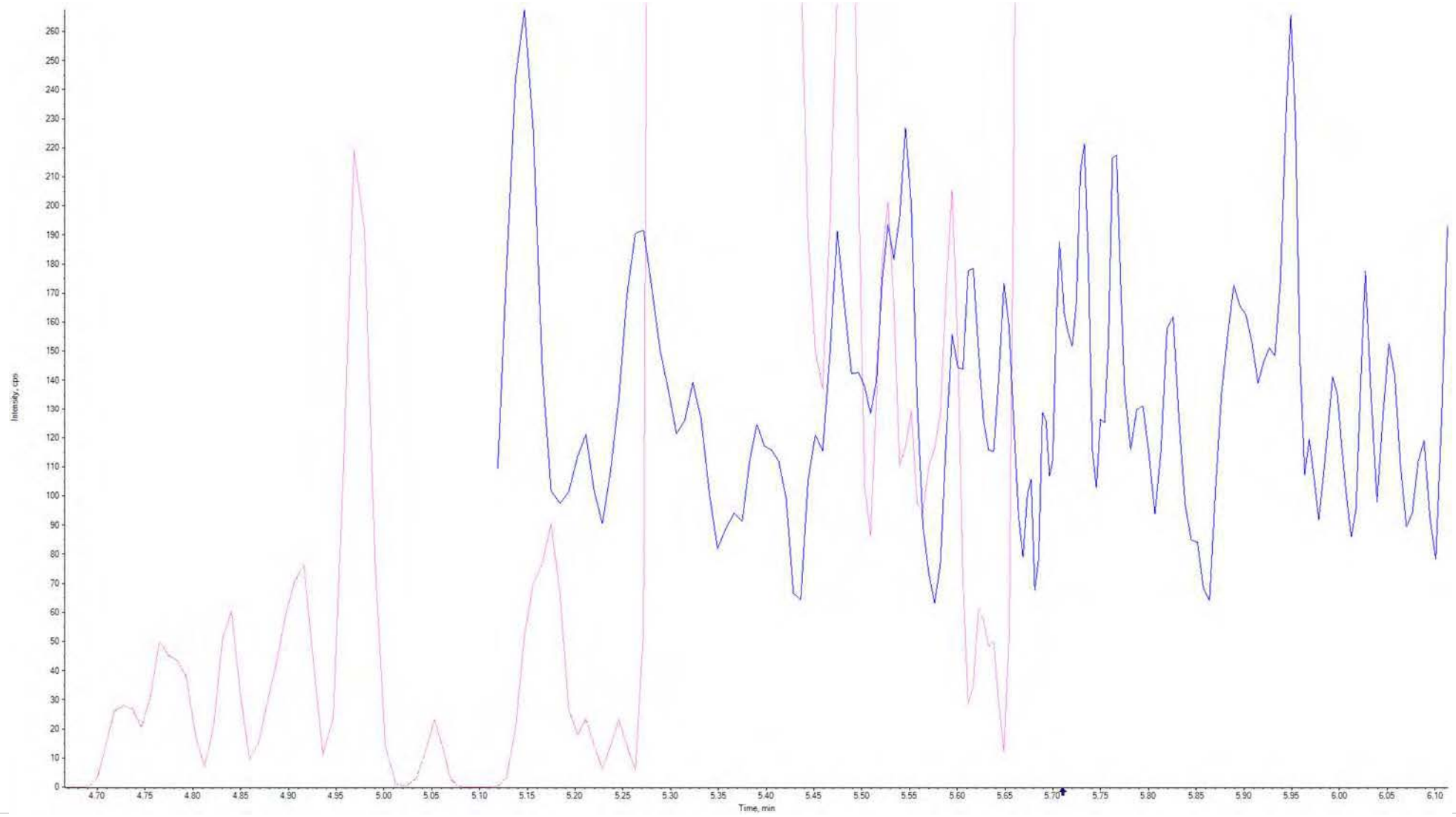
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

7:3FTCA_2
Sample: WG1958909-3,INSTBLANK S/N:1308.5 Points Across peak:26

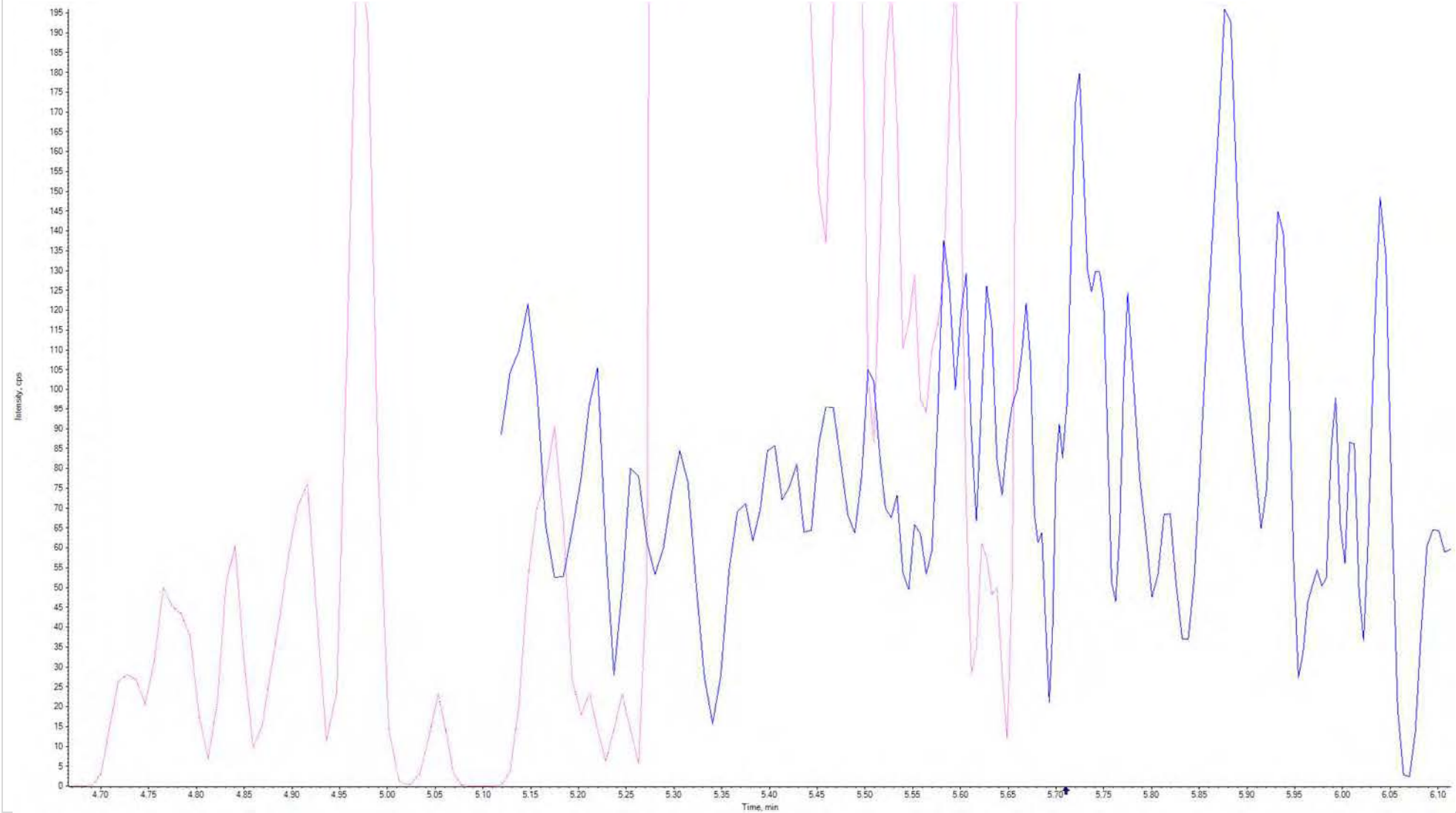


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFEESA
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A

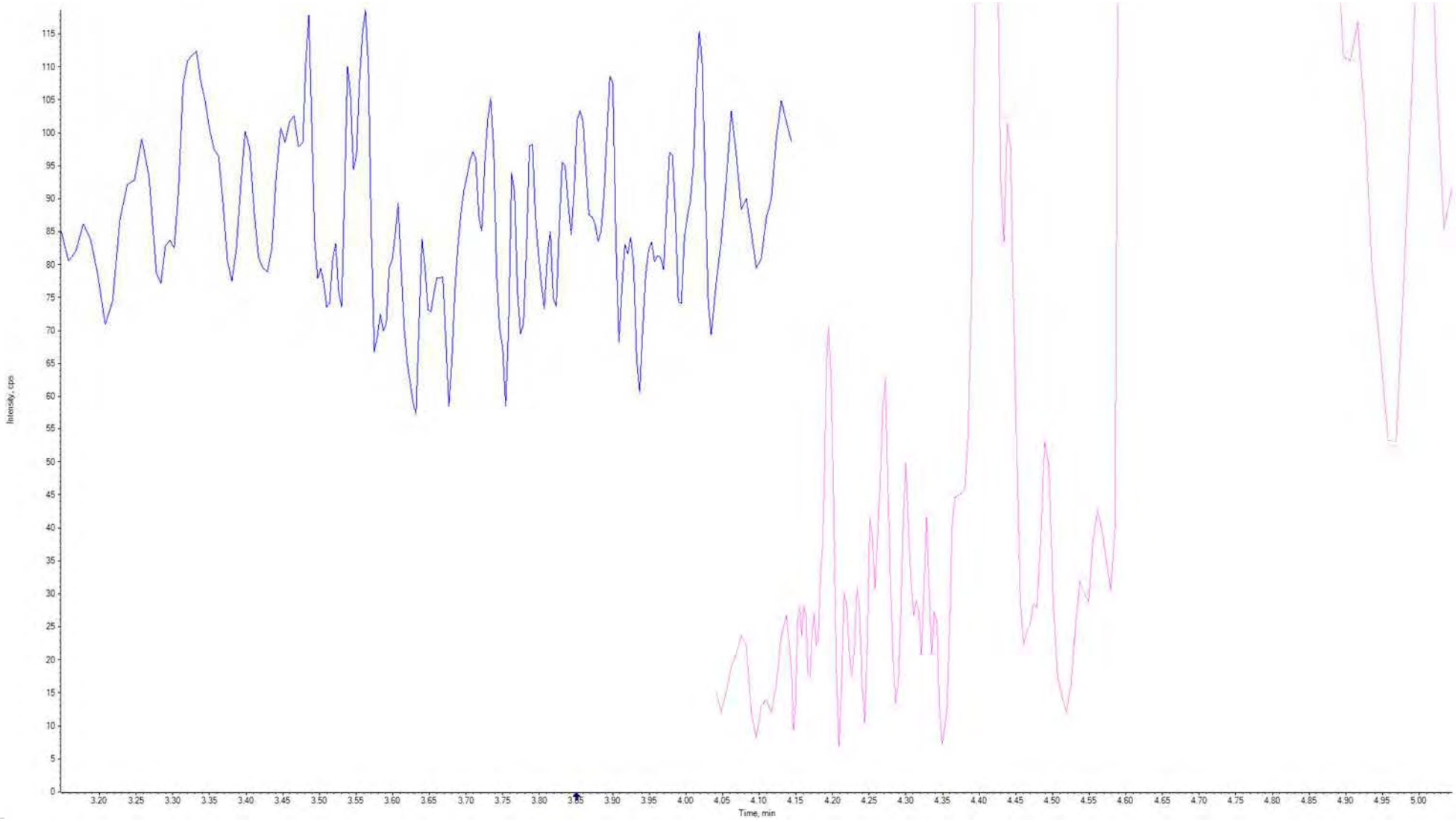


PFEESA_2
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A

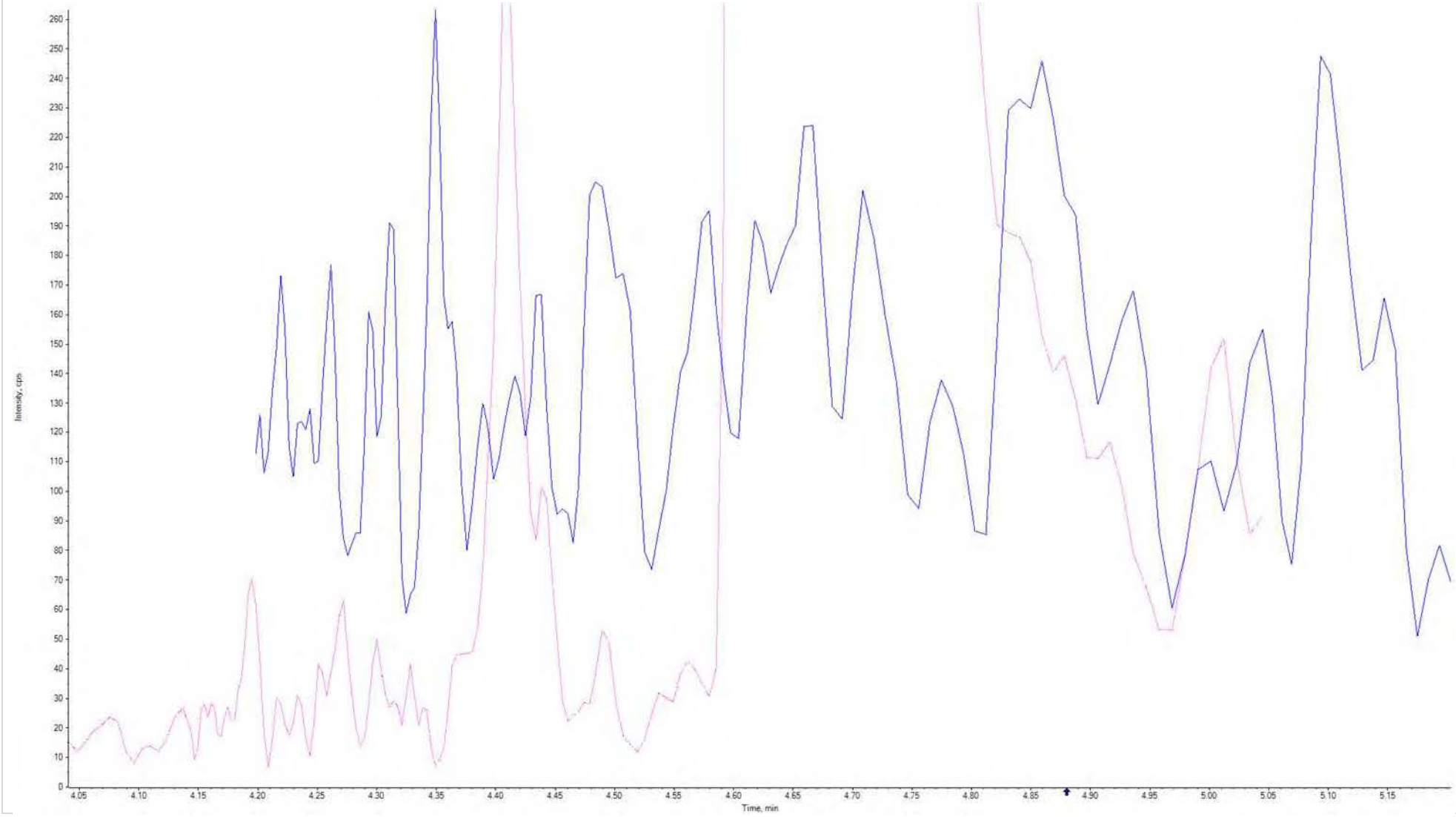


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

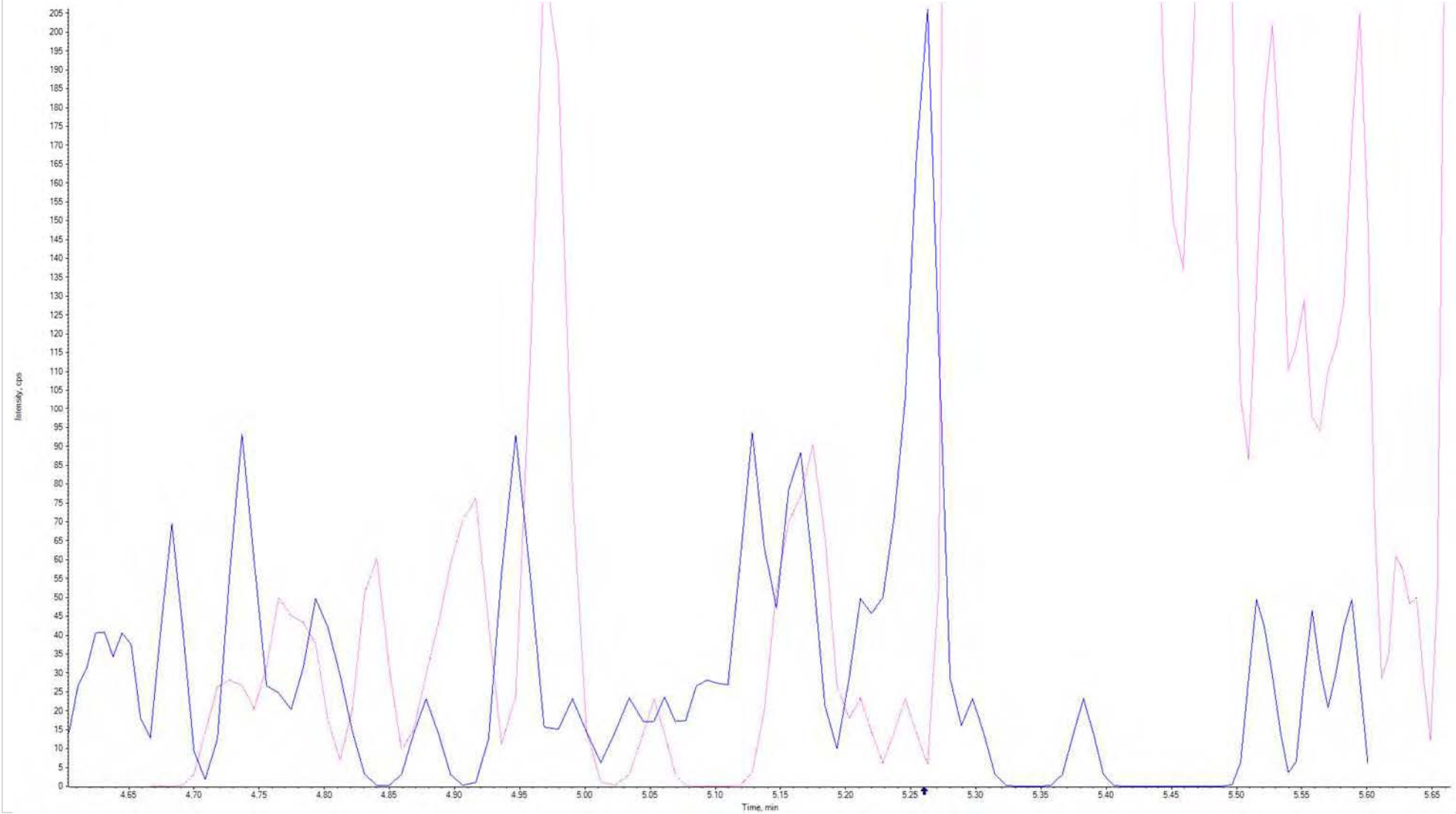
PFMPA
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A



PFMBA
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A

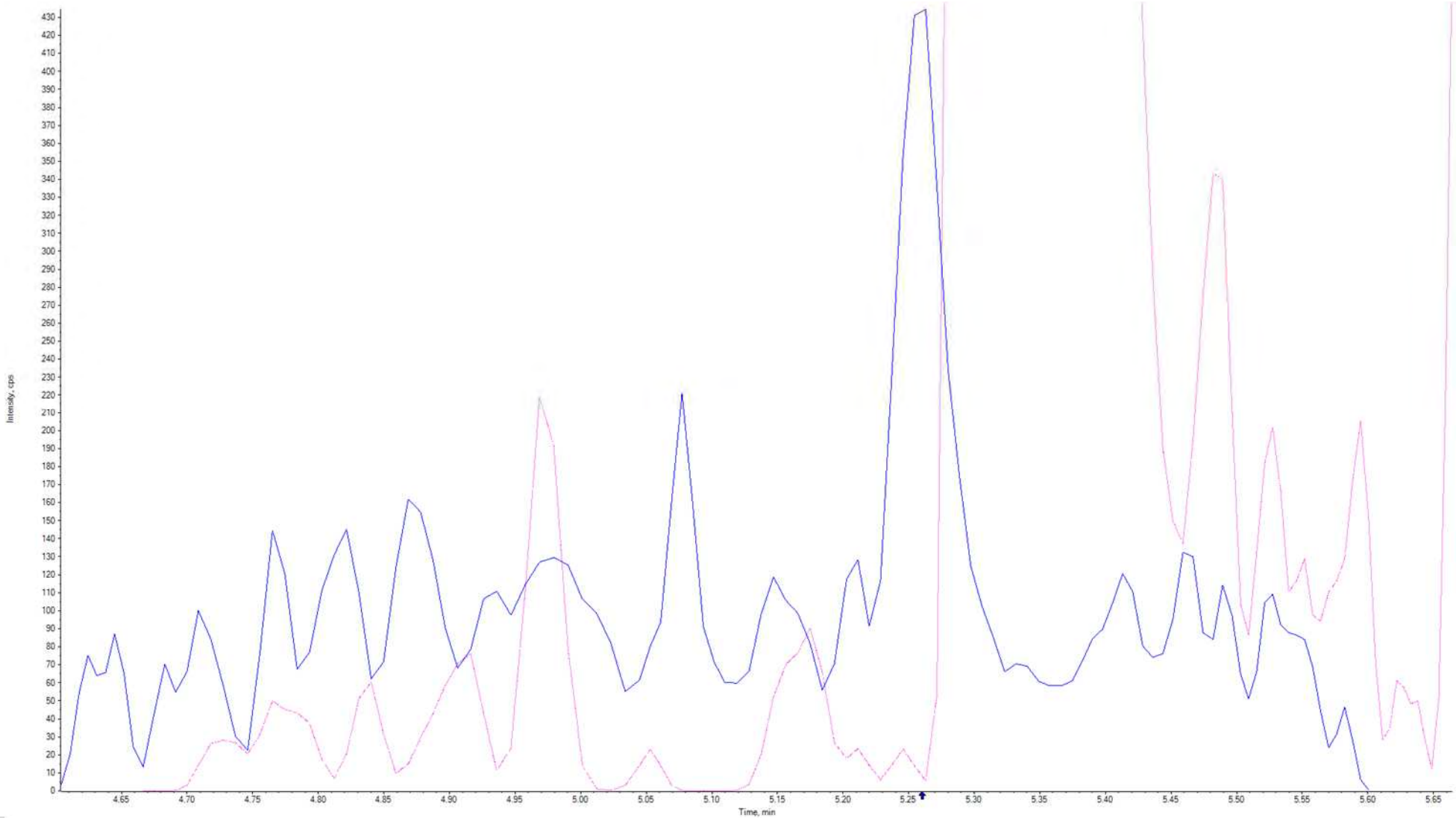


NFDHA
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A



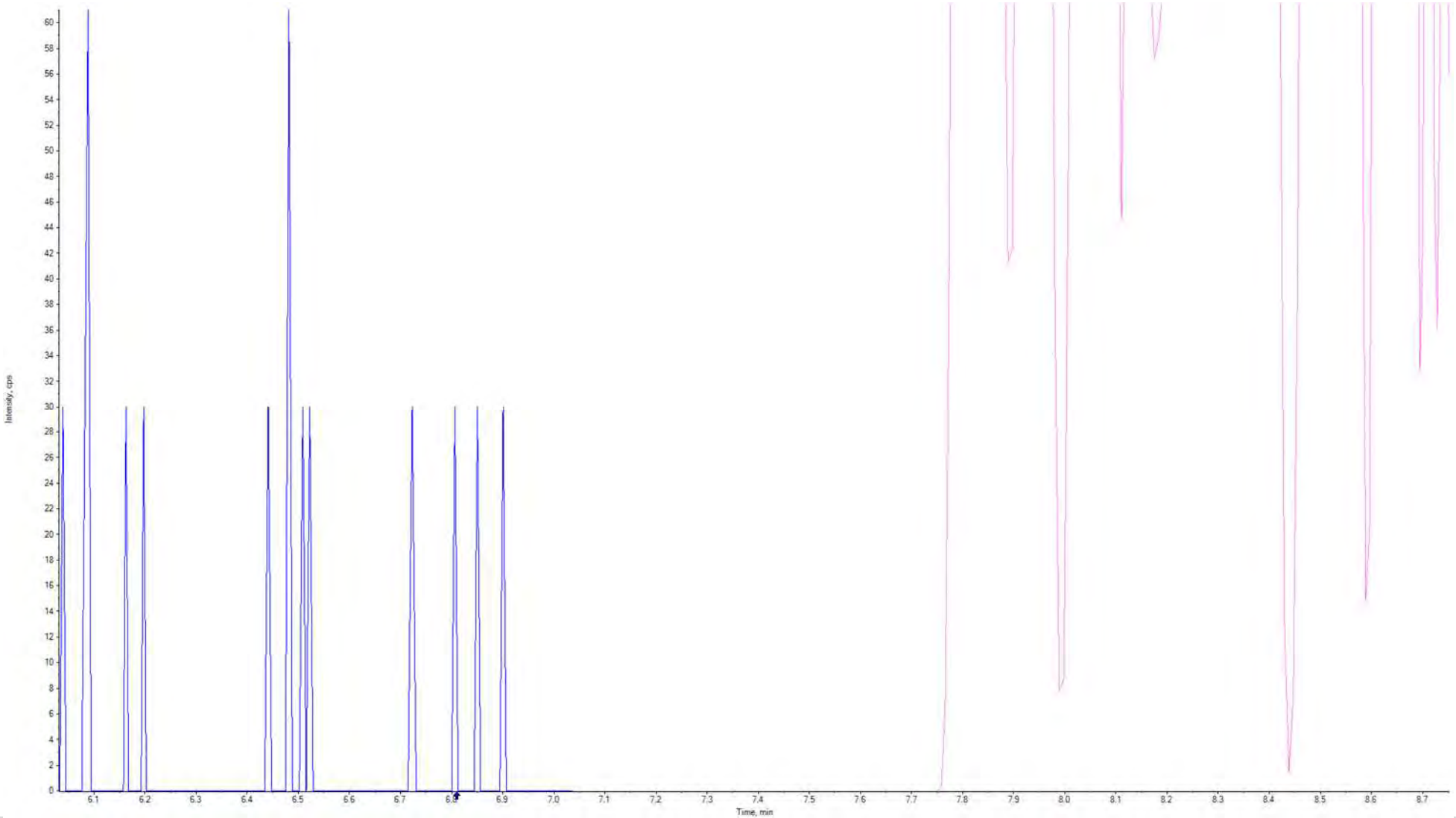
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NFDHA_2
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A



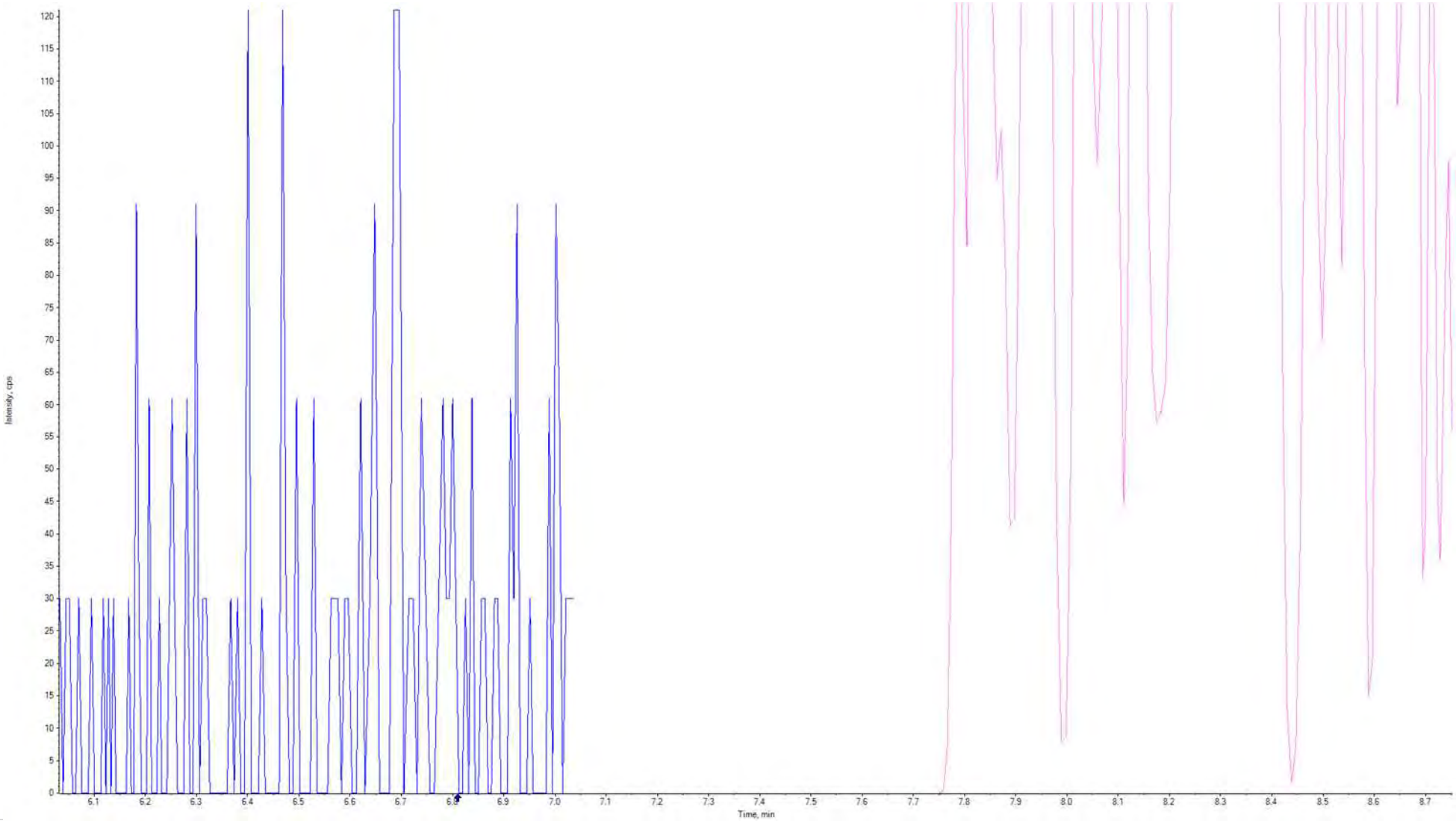
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

TDCA
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A



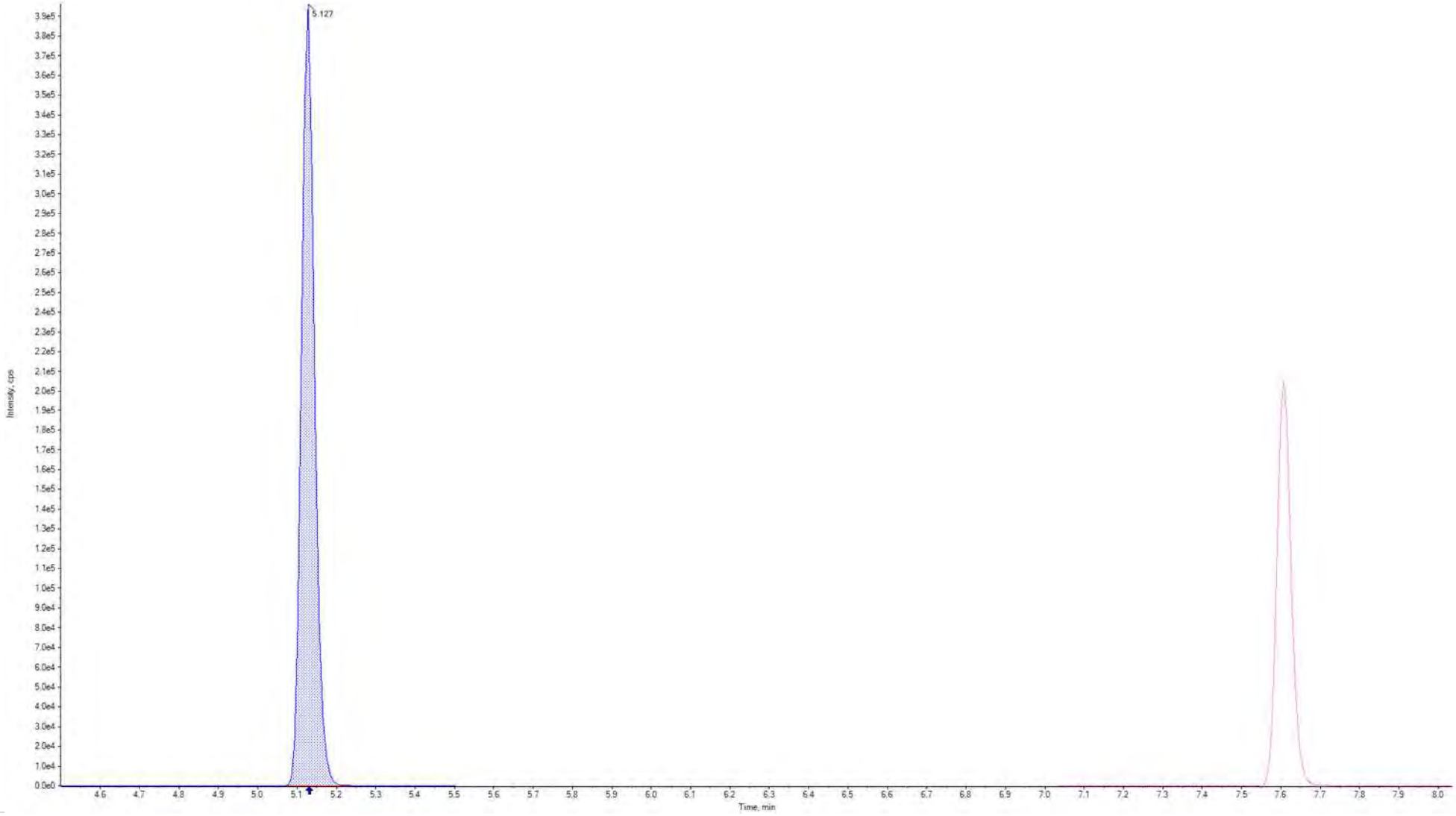
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

TDCA_2
Sample: WG1958909-3,INSTBLANK S/N:N/A Points Across peak:N/A



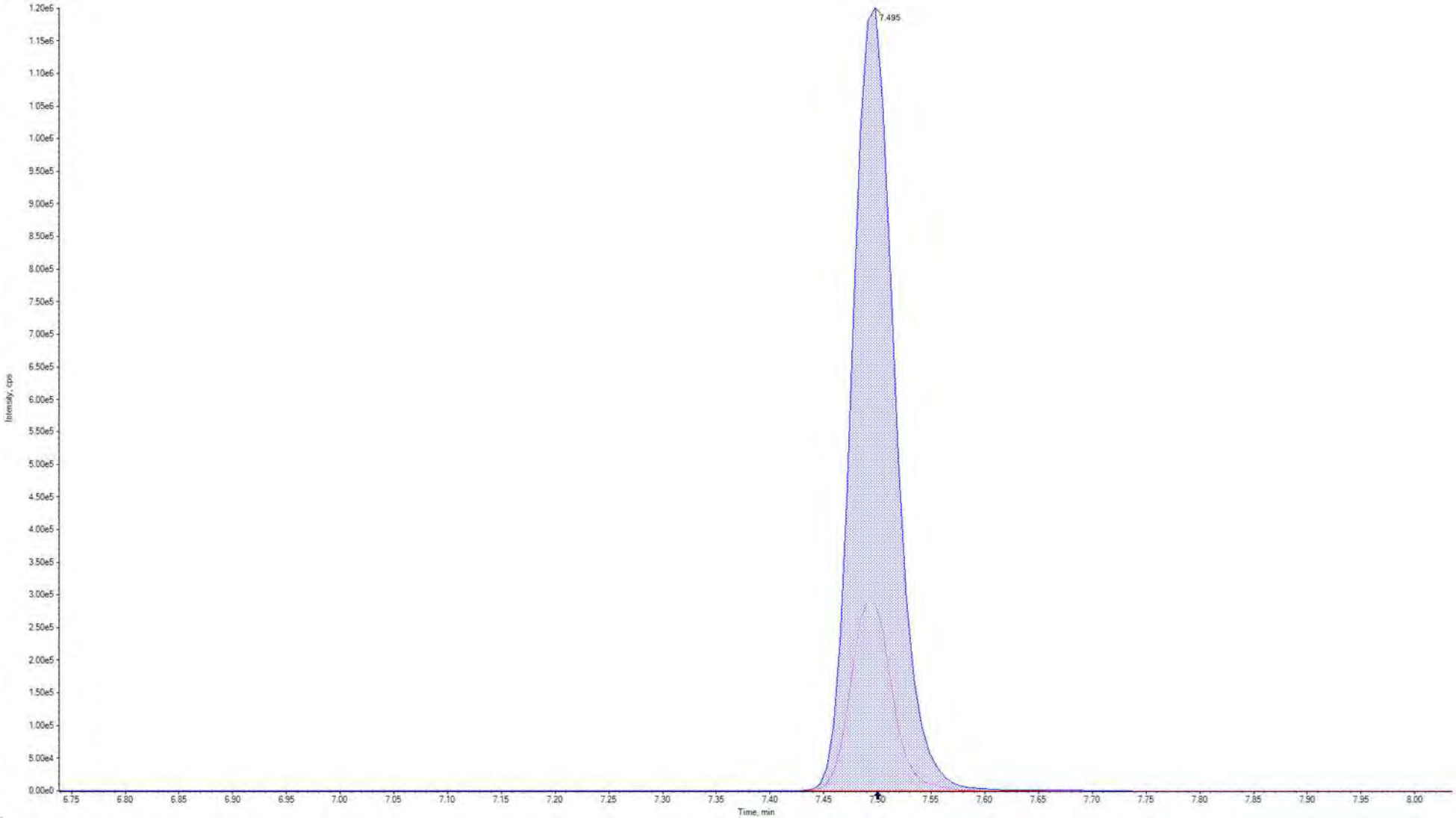
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

13C2D4-4:2FTS
Sample: WG1958909-3,INSTBLANK S/N:1371.1 Points Across peak:23

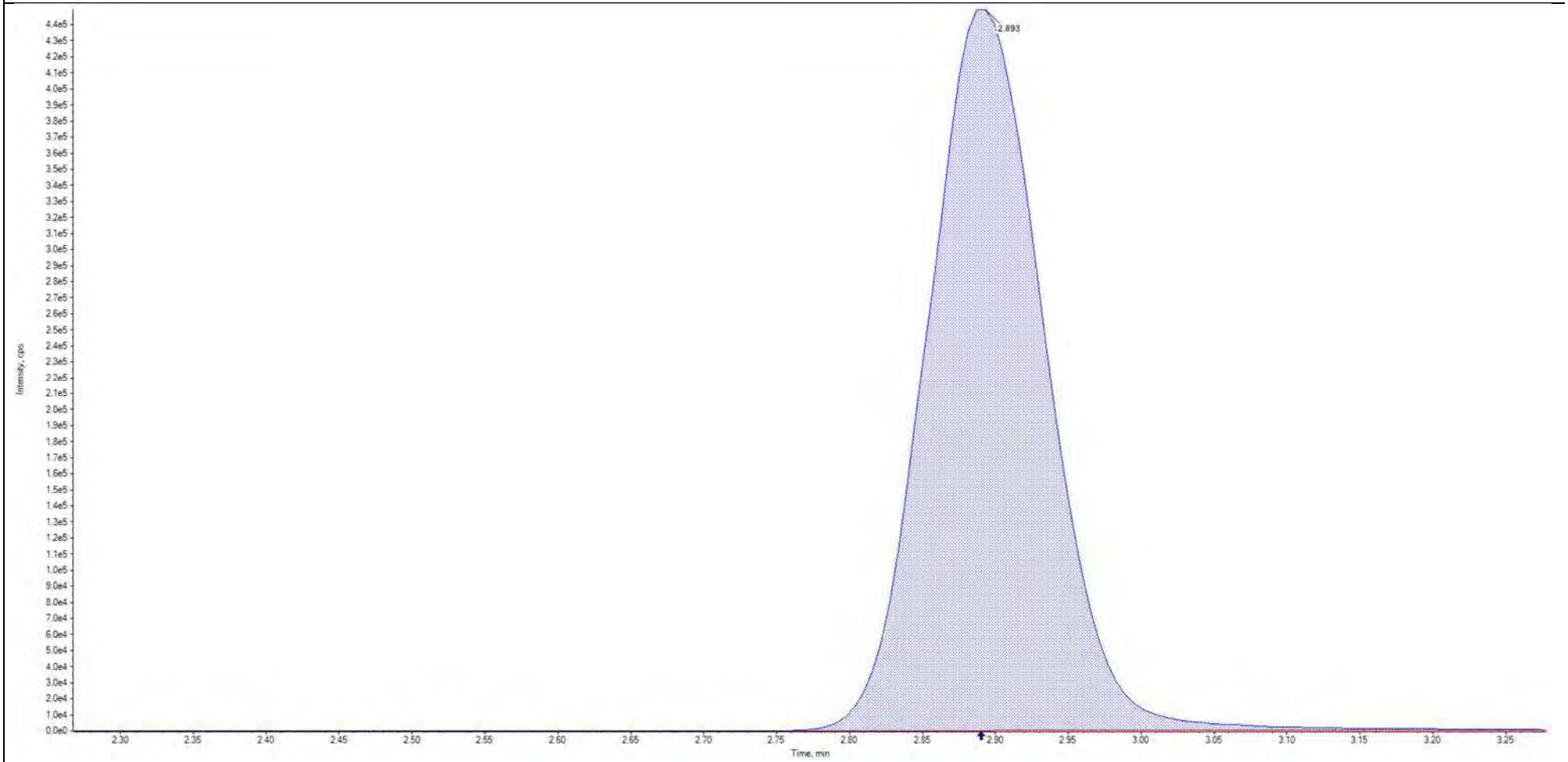


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

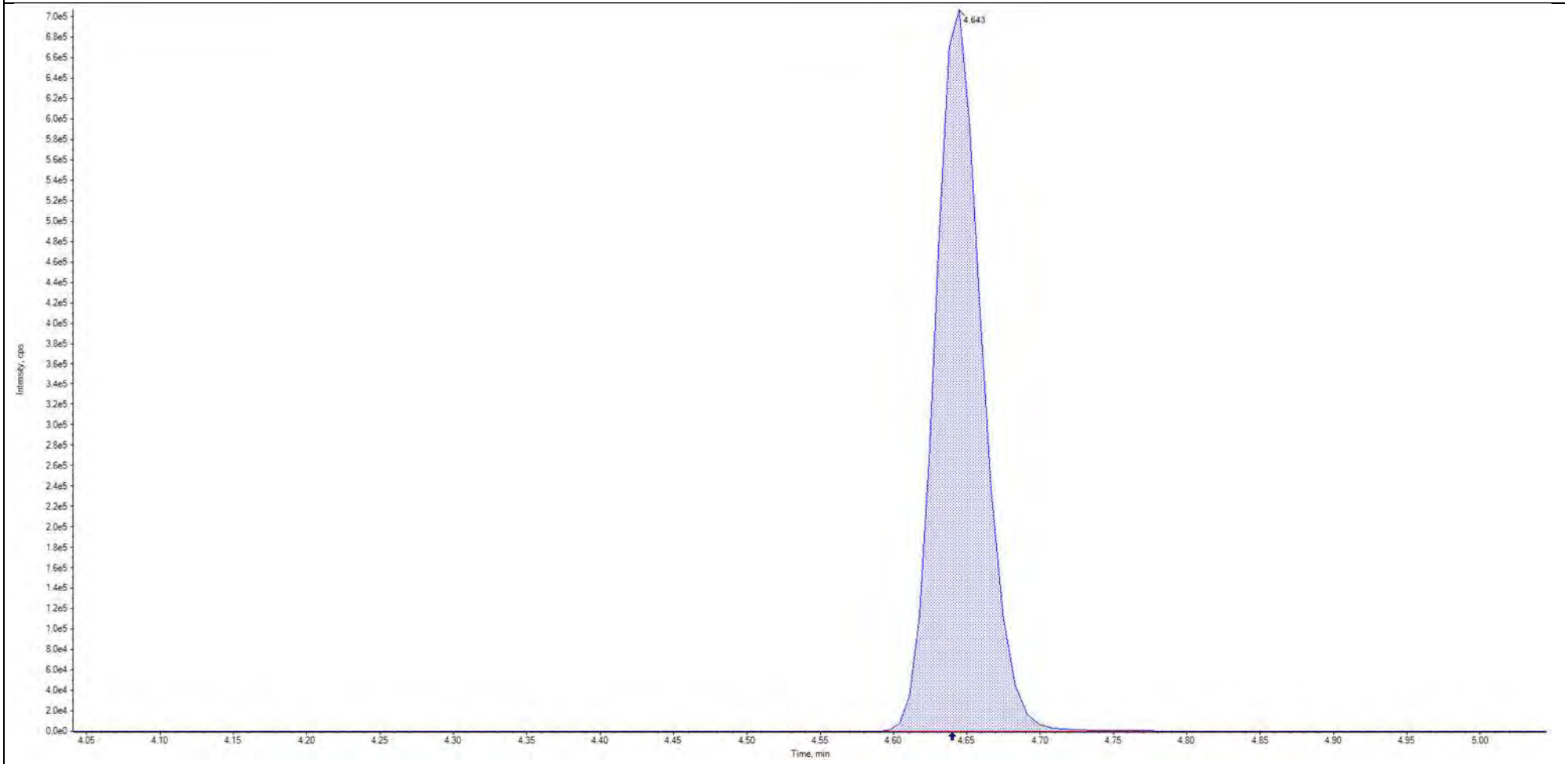
13C2-PFOA
Sample: WG1958909-3,INSTBLANK S/N:11189.5 Points Across peak:37



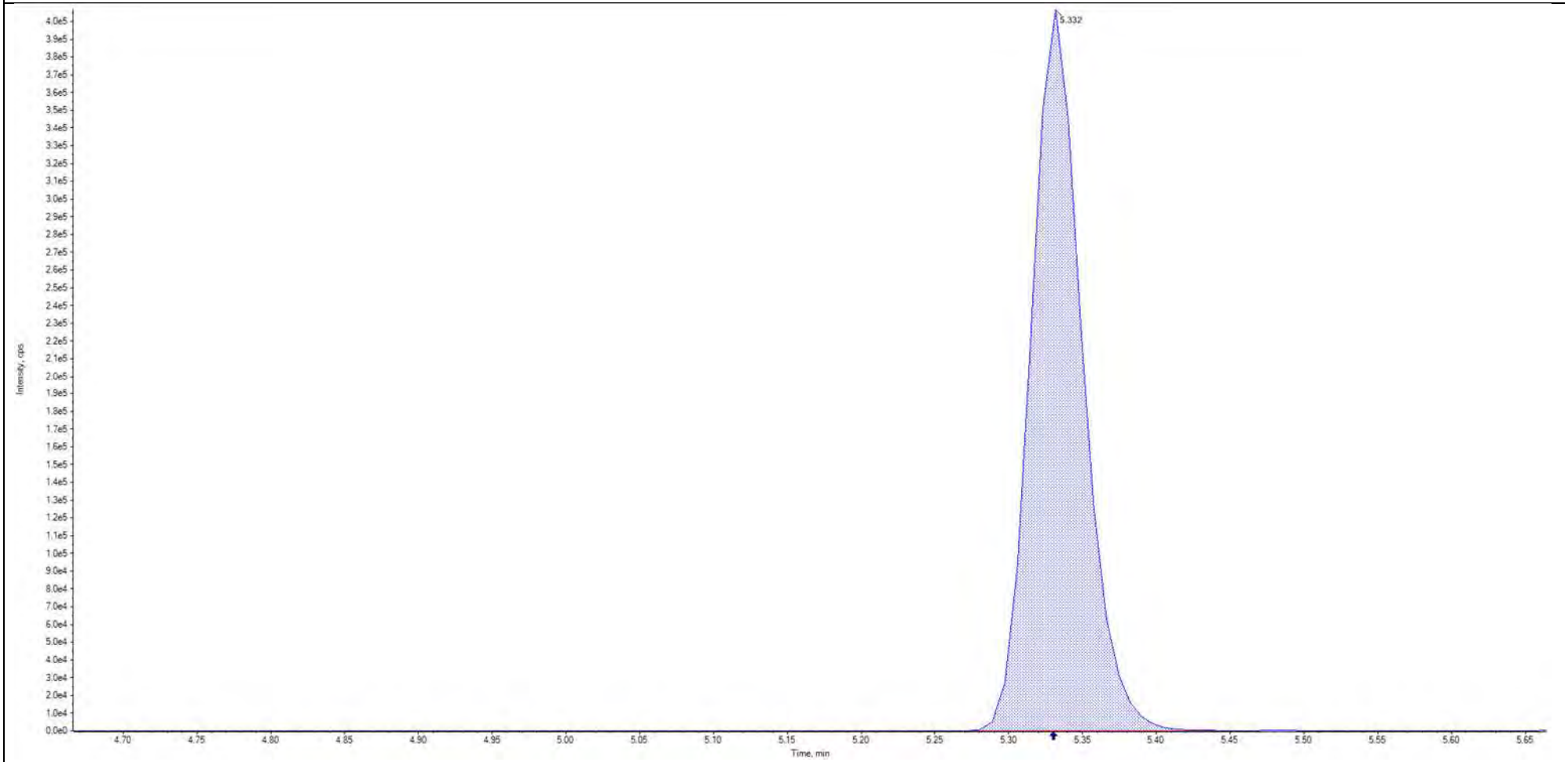
13C4-PFBA
Sample: WG1958909-3,INSTBLANK



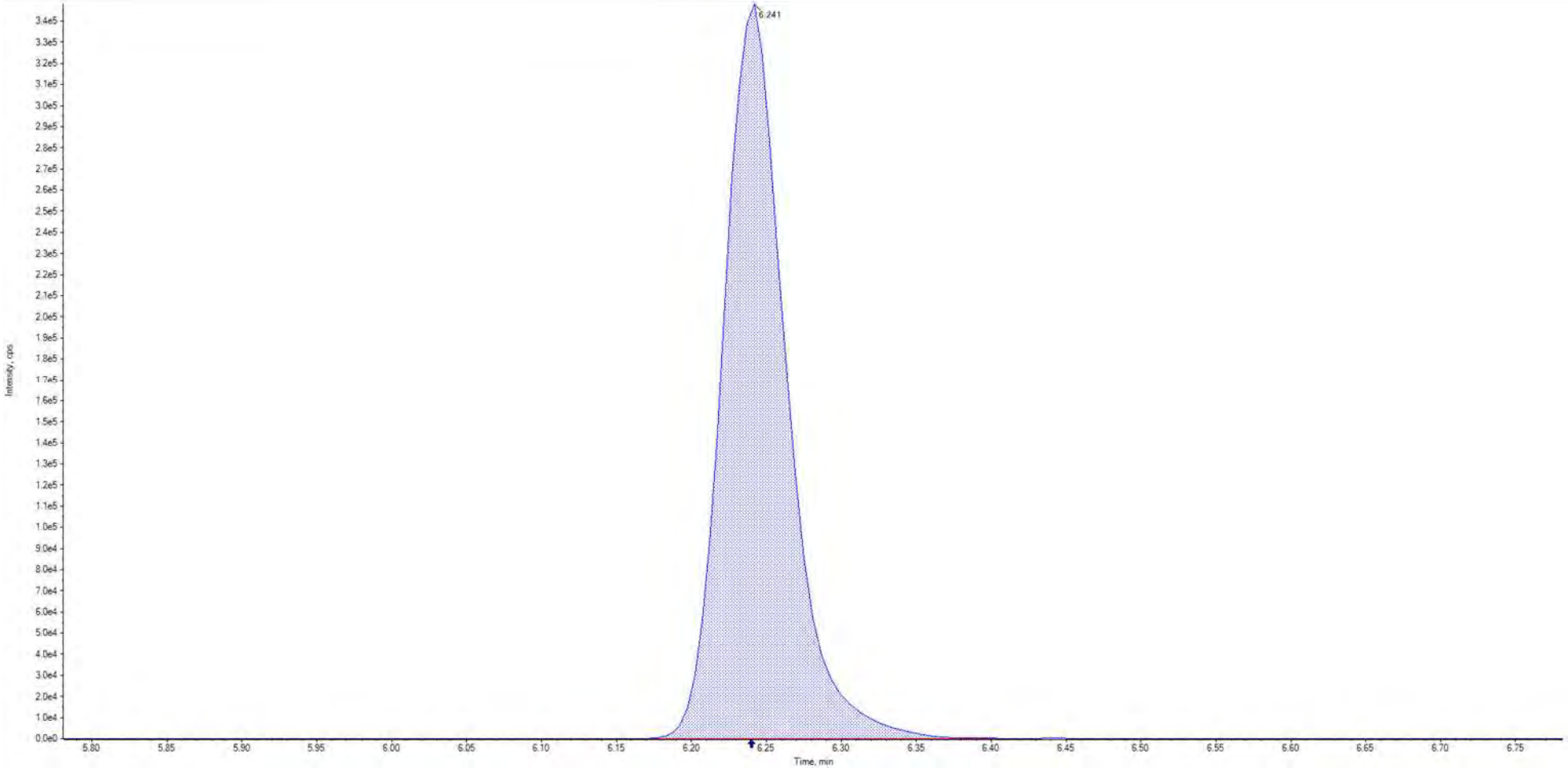
13C5-PFPeA
Sample: WG1958909-3,INSTBLANK



13C5-PFHxA
Sample: WG1958909-3,INSTBLANK

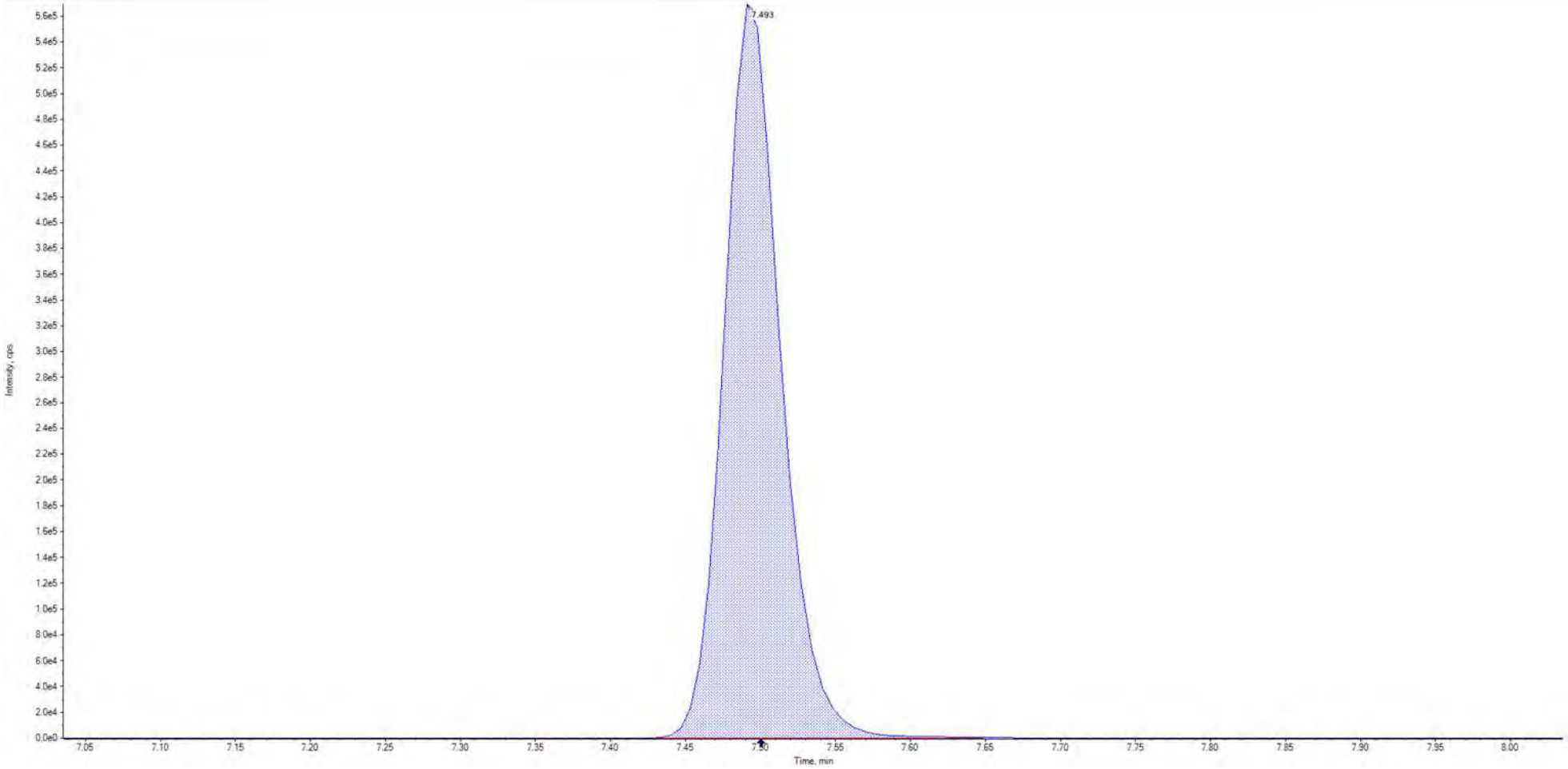


13C4-PFHpA
Sample: WG1958909-3,INSTBLANK

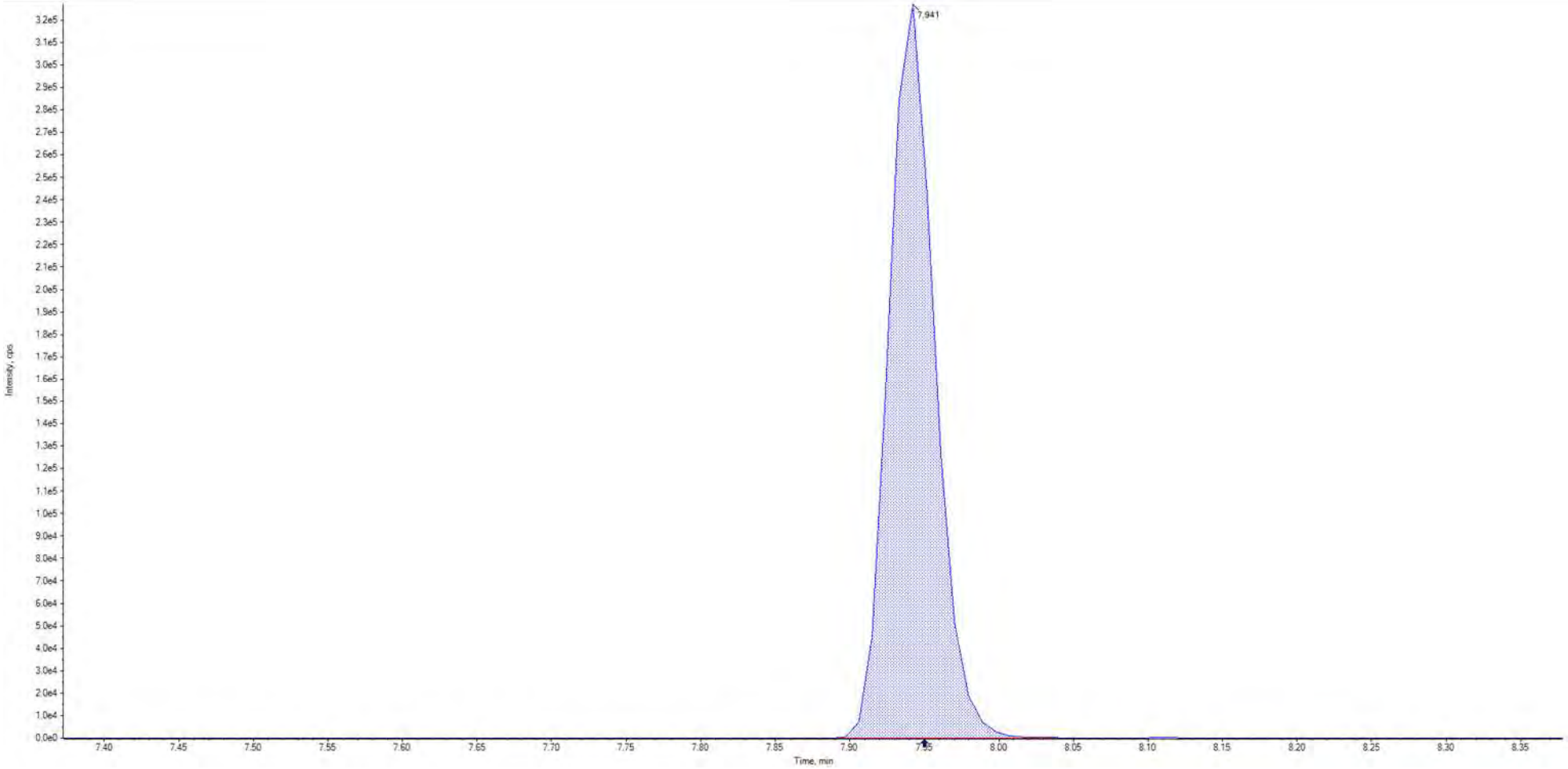


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

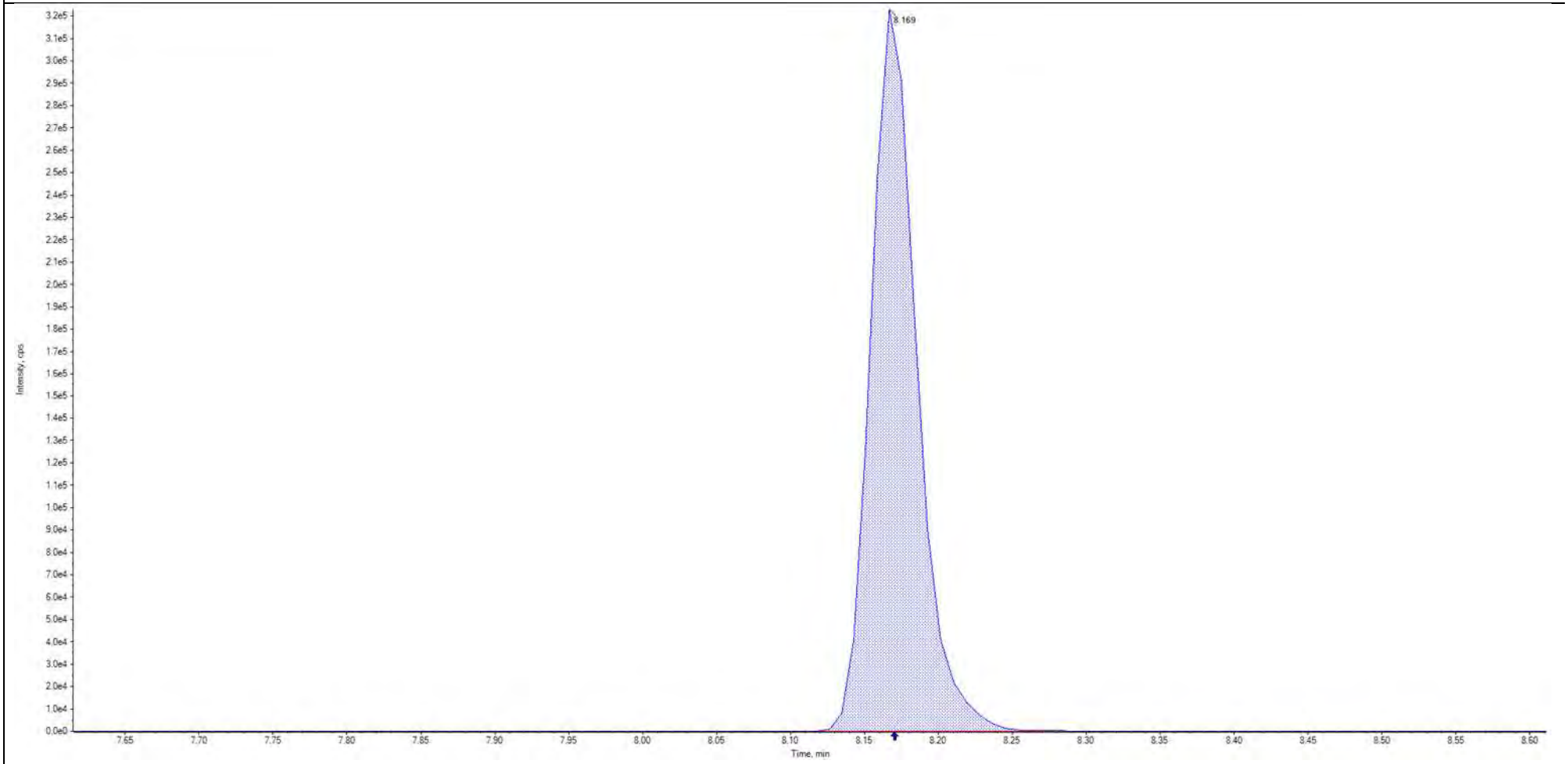
13C8-PFOA
Sample: WG1958909-3,INSTBLANK



13C9-PFNA
Sample: WG1958909-3,INSTBLANK

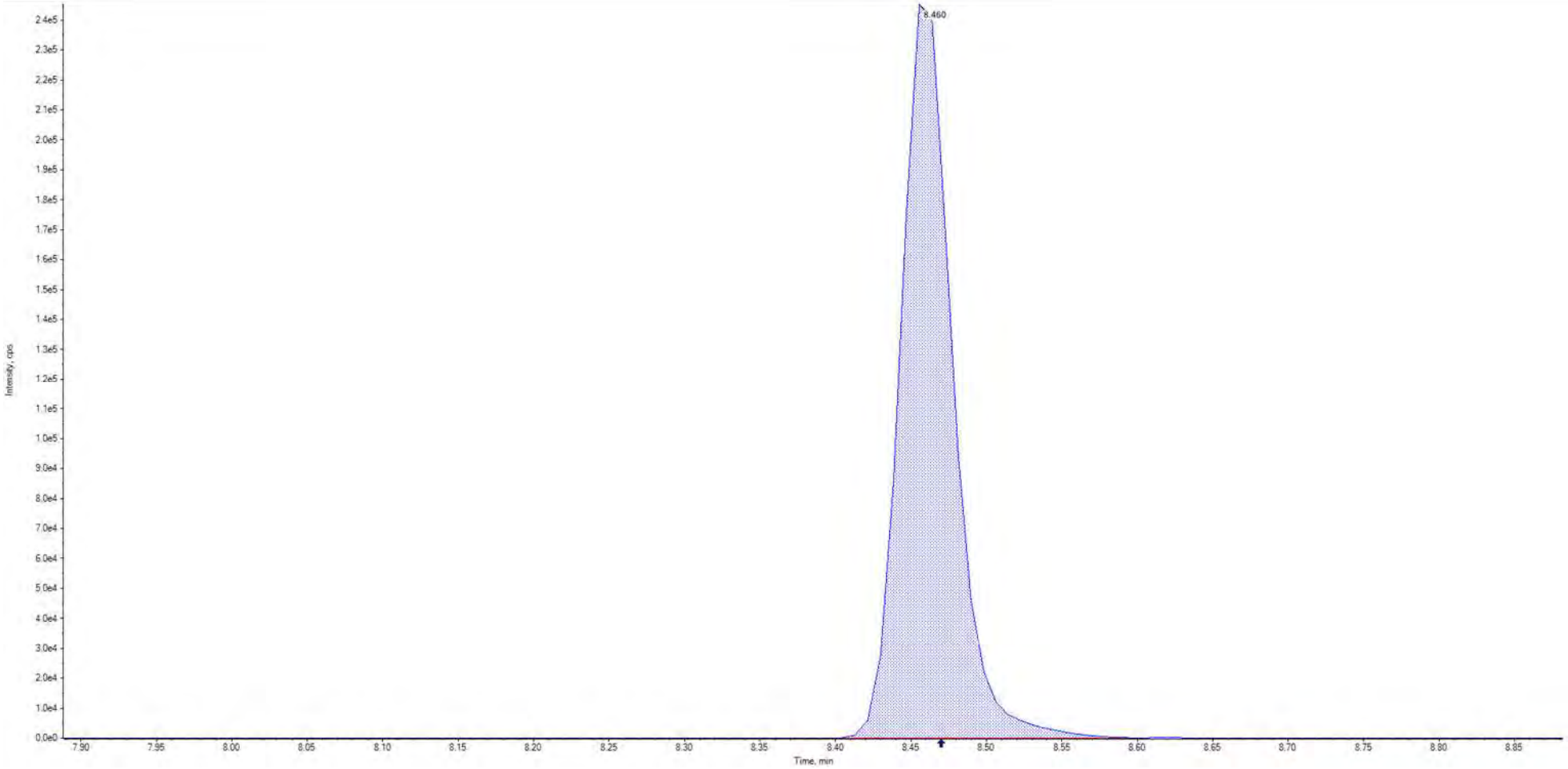


13C6-PFDA
Sample: WG1958909-3,INSTBLANK



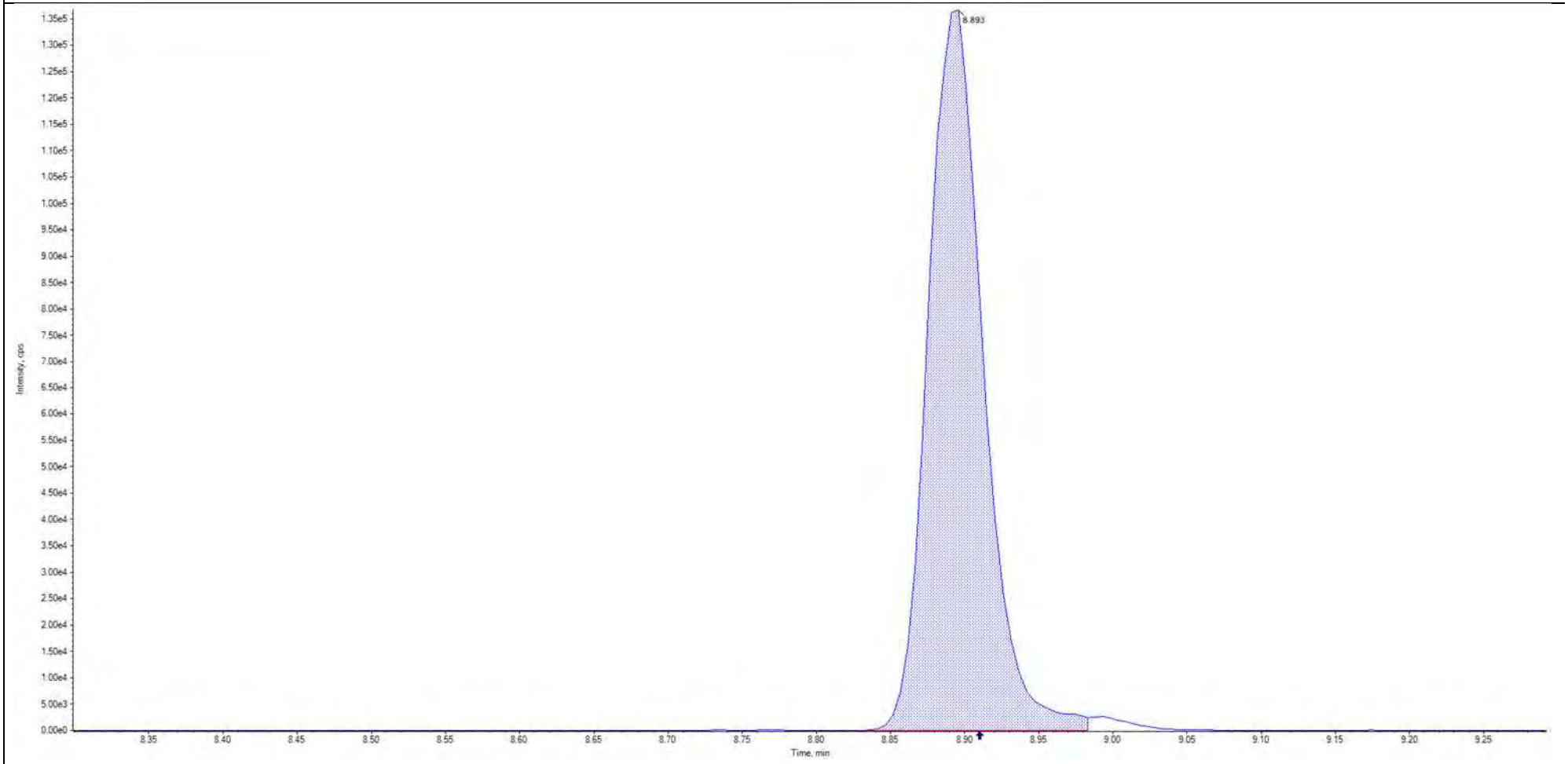
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

13C7-PFUnA
Sample: WG1958909-3,INSTBLANK



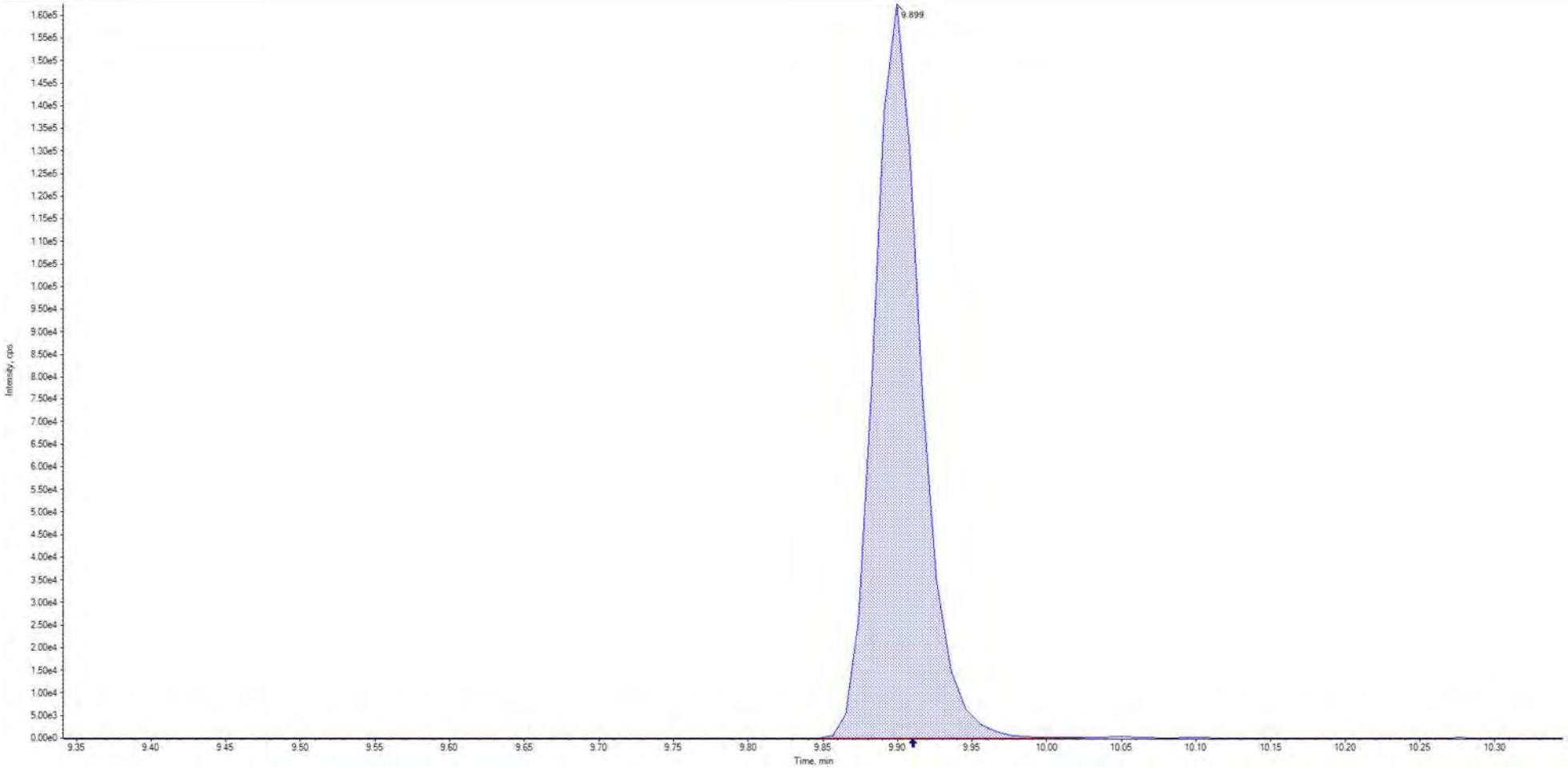
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

13C2-PFDoA
Sample: WG1958909-3,INSTBLANK

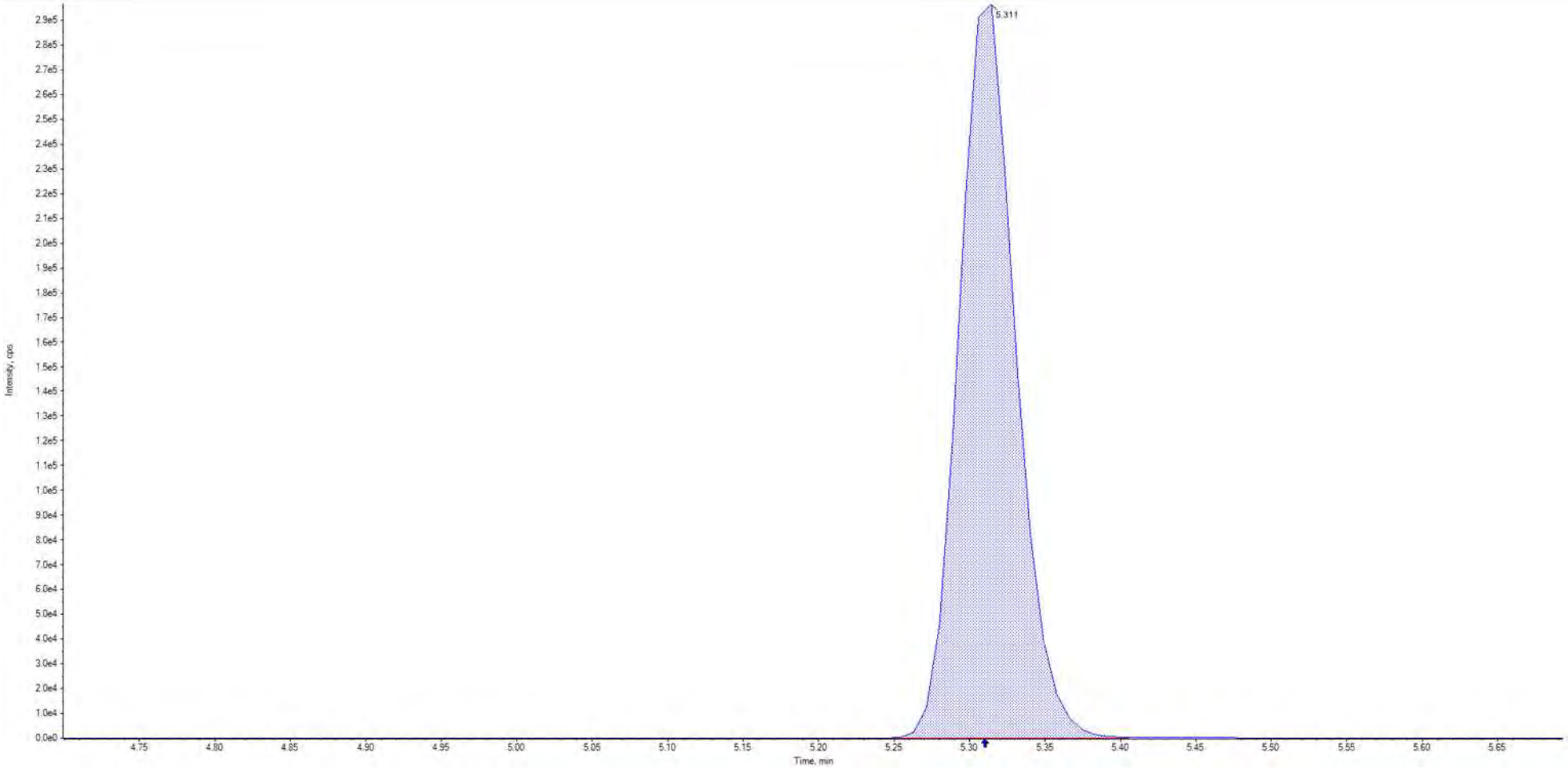


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

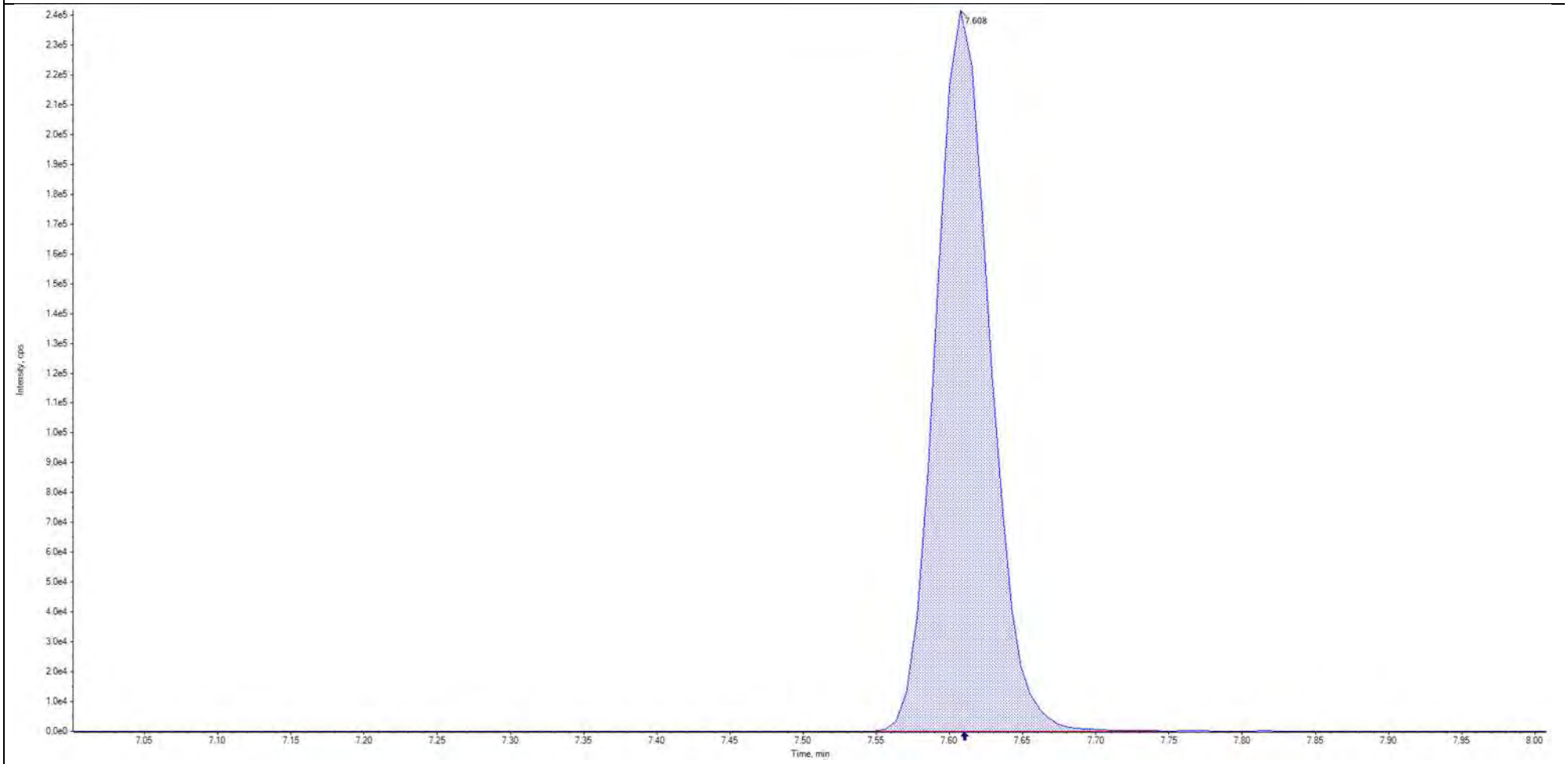
13C2-PFTeDA
Sample: WG1958909-3,INSTBLANK



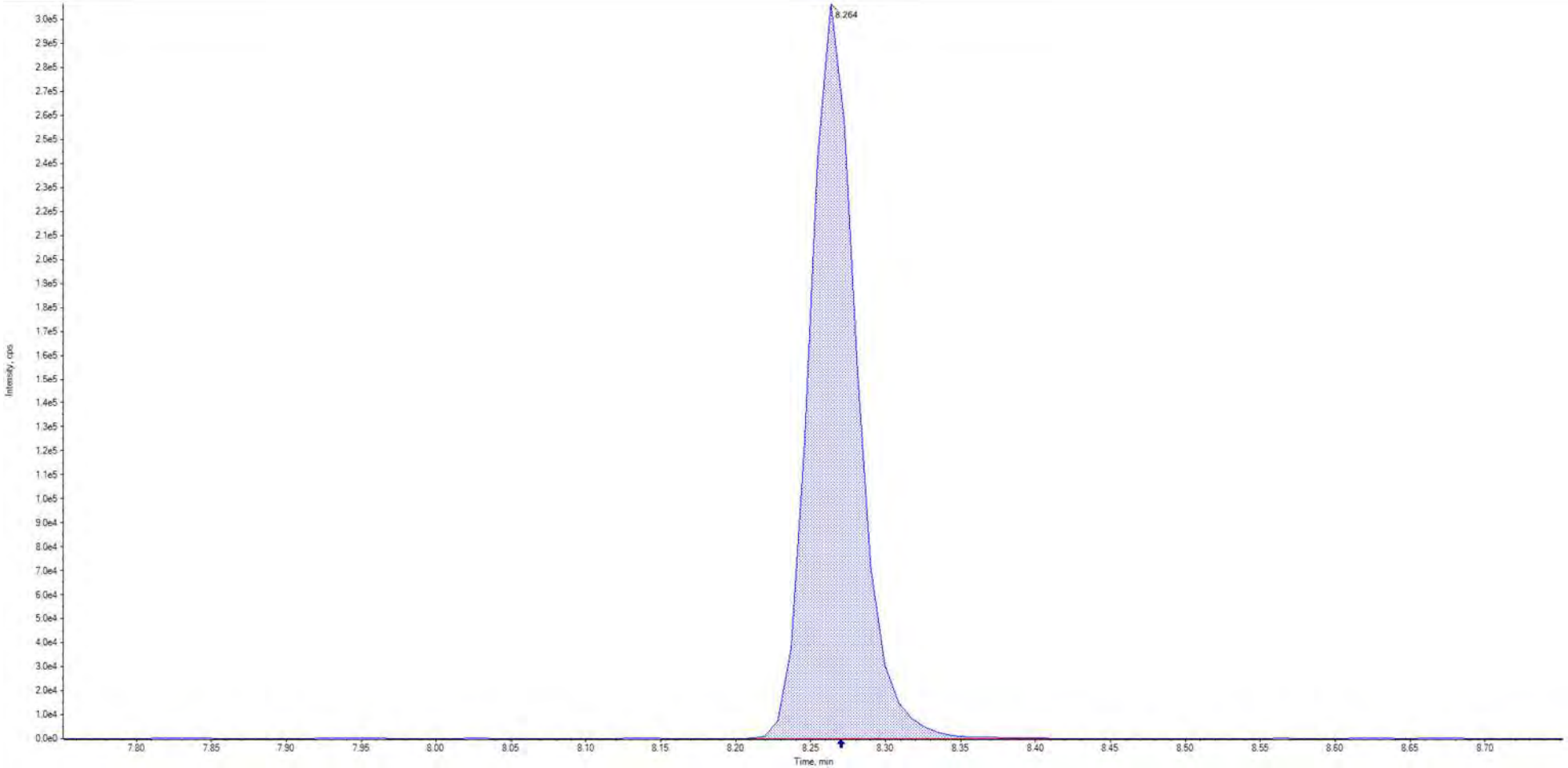
13C3-PFBS
Sample: WG1958909-3,INSTBLANK



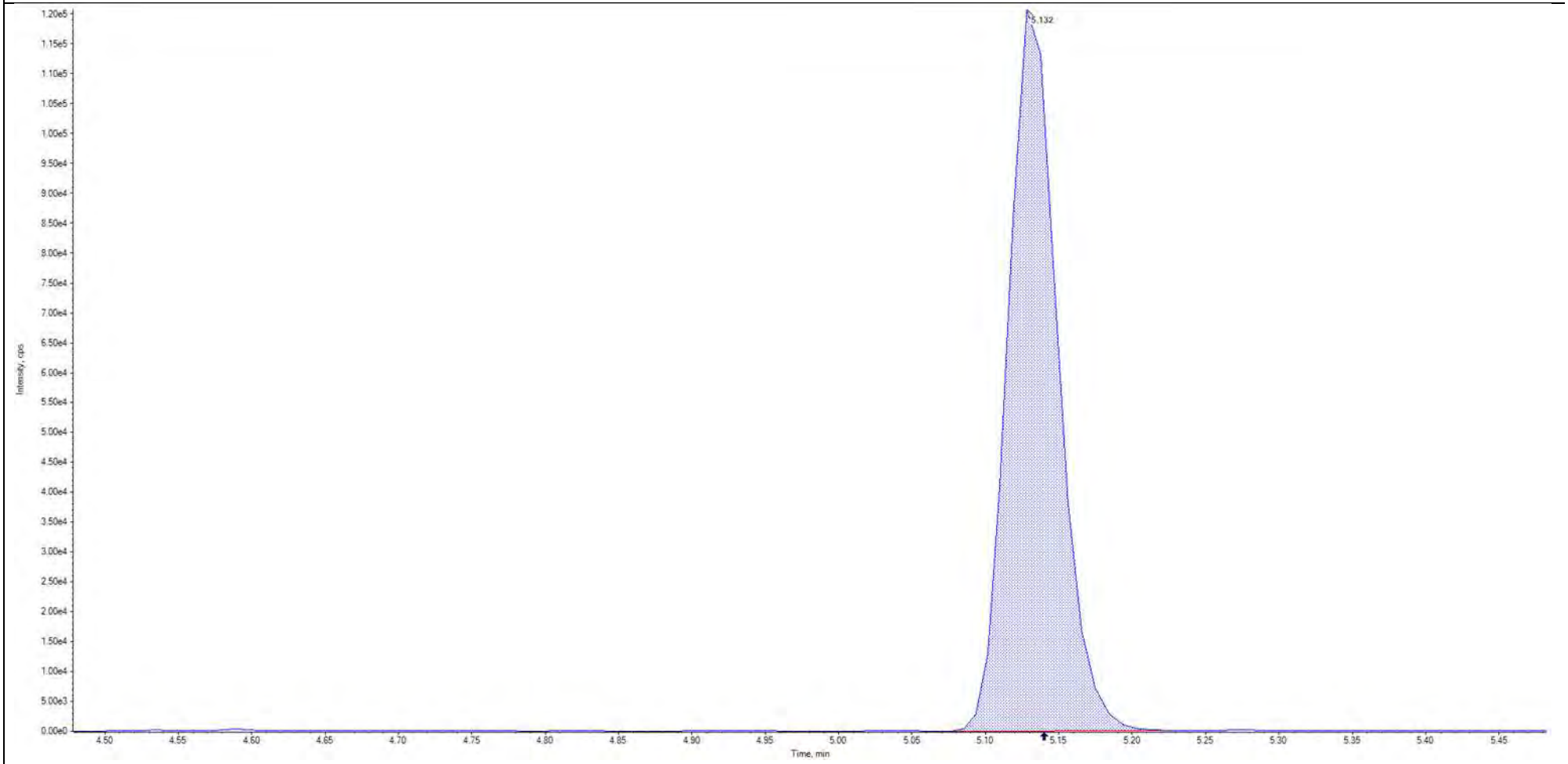
13C3-PFHxS
Sample: WG1958909-3,INSTBLANK



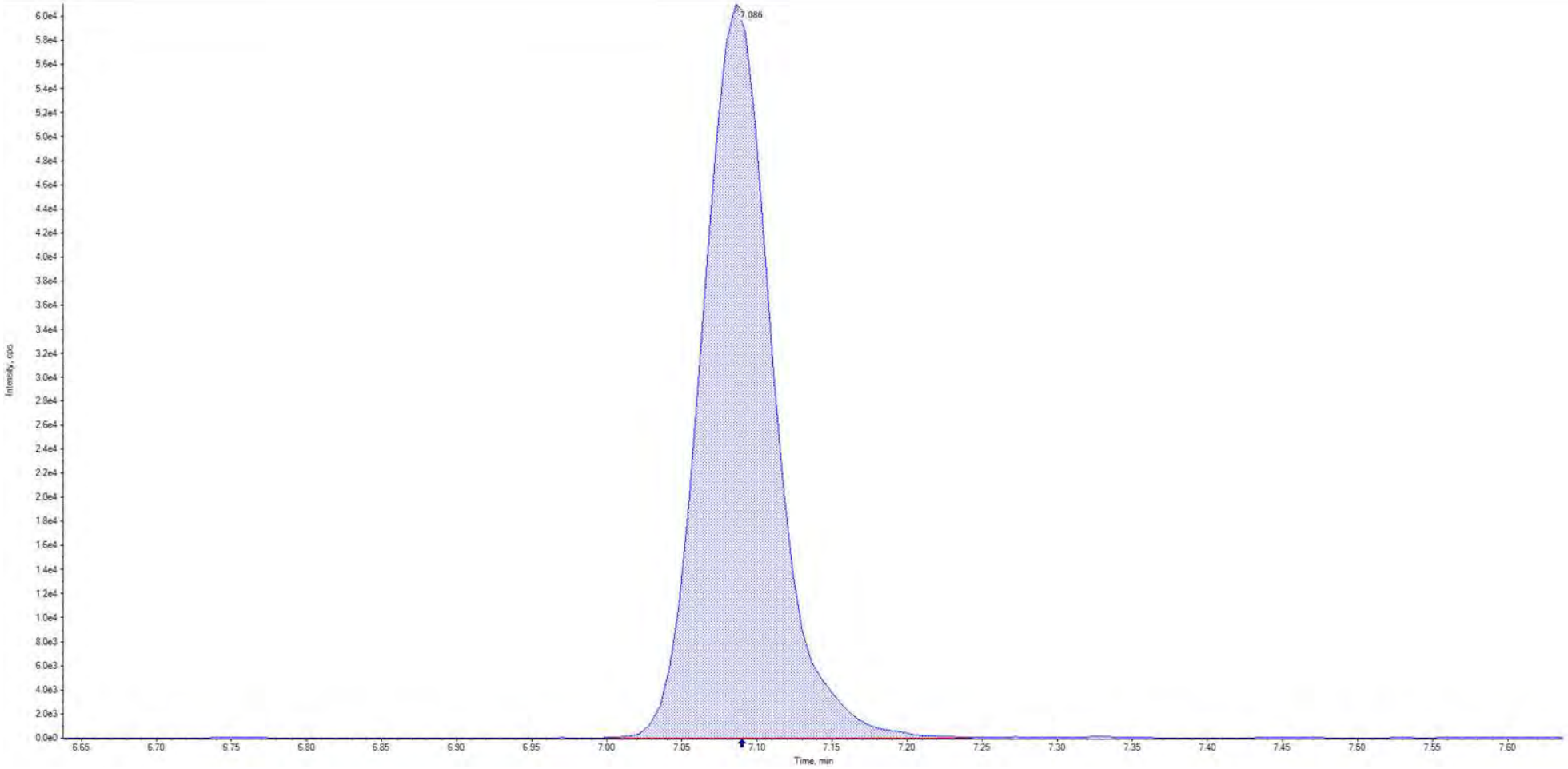
13C8-PFOS
Sample: WG1958909-3,INSTBLANK



13C2-4:2FTS
Sample: WG1958909-3,INSTBLANK

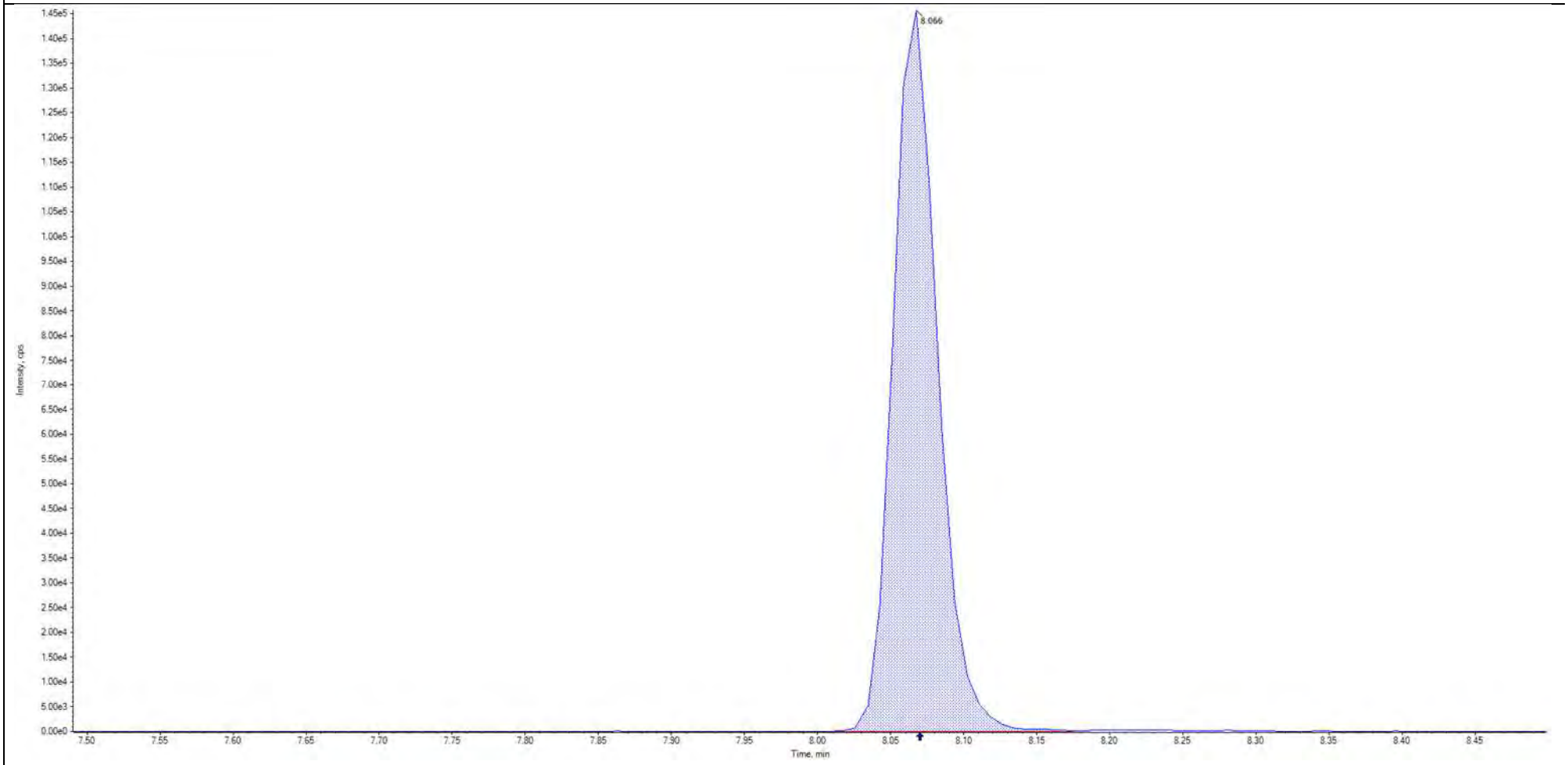


13C2-6:2FTS
Sample: WG1958909-3,INSTBLANK



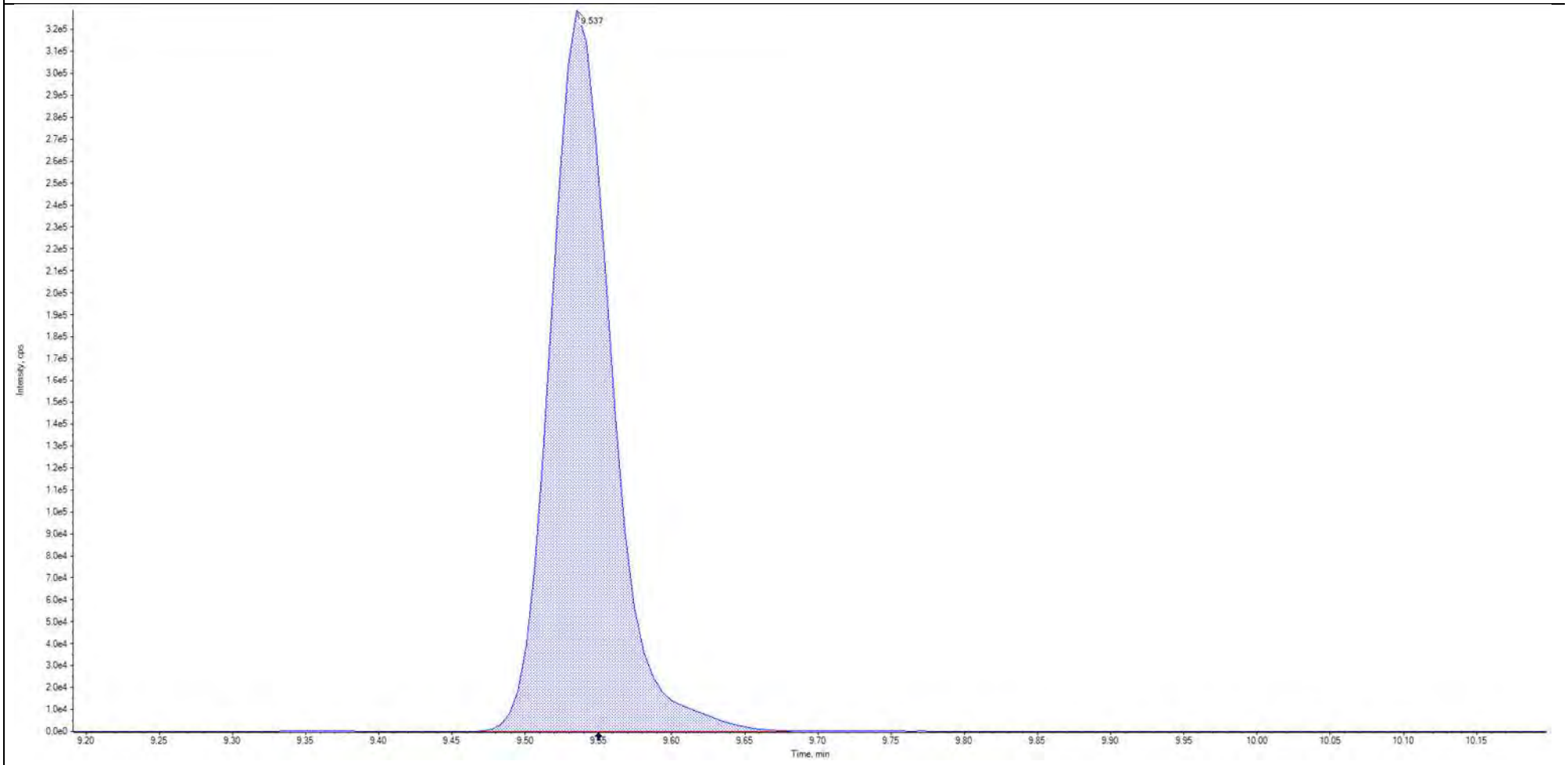
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

13C2-8:2FTS
Sample: WG1958909-3,INSTBLANK

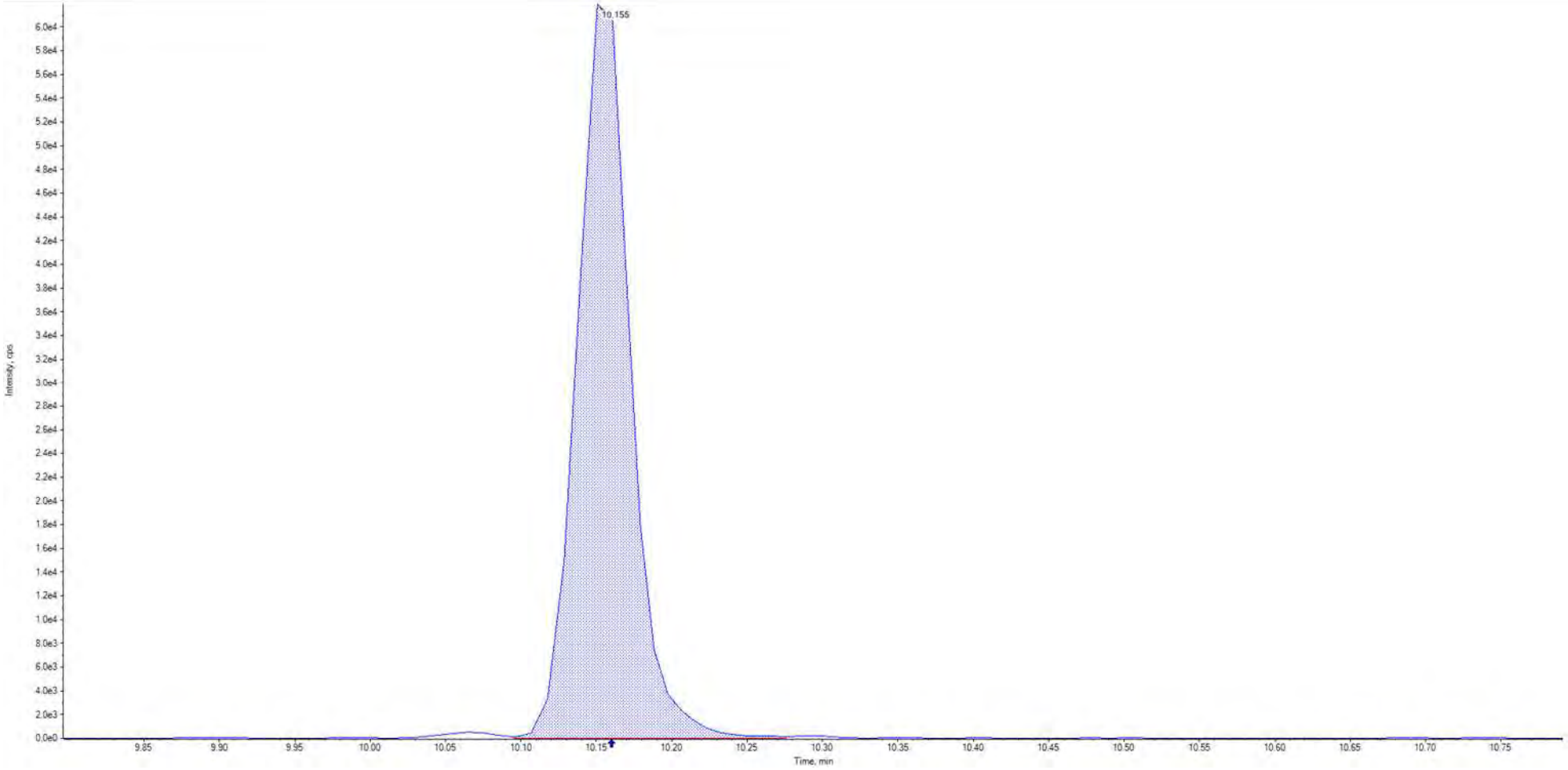


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

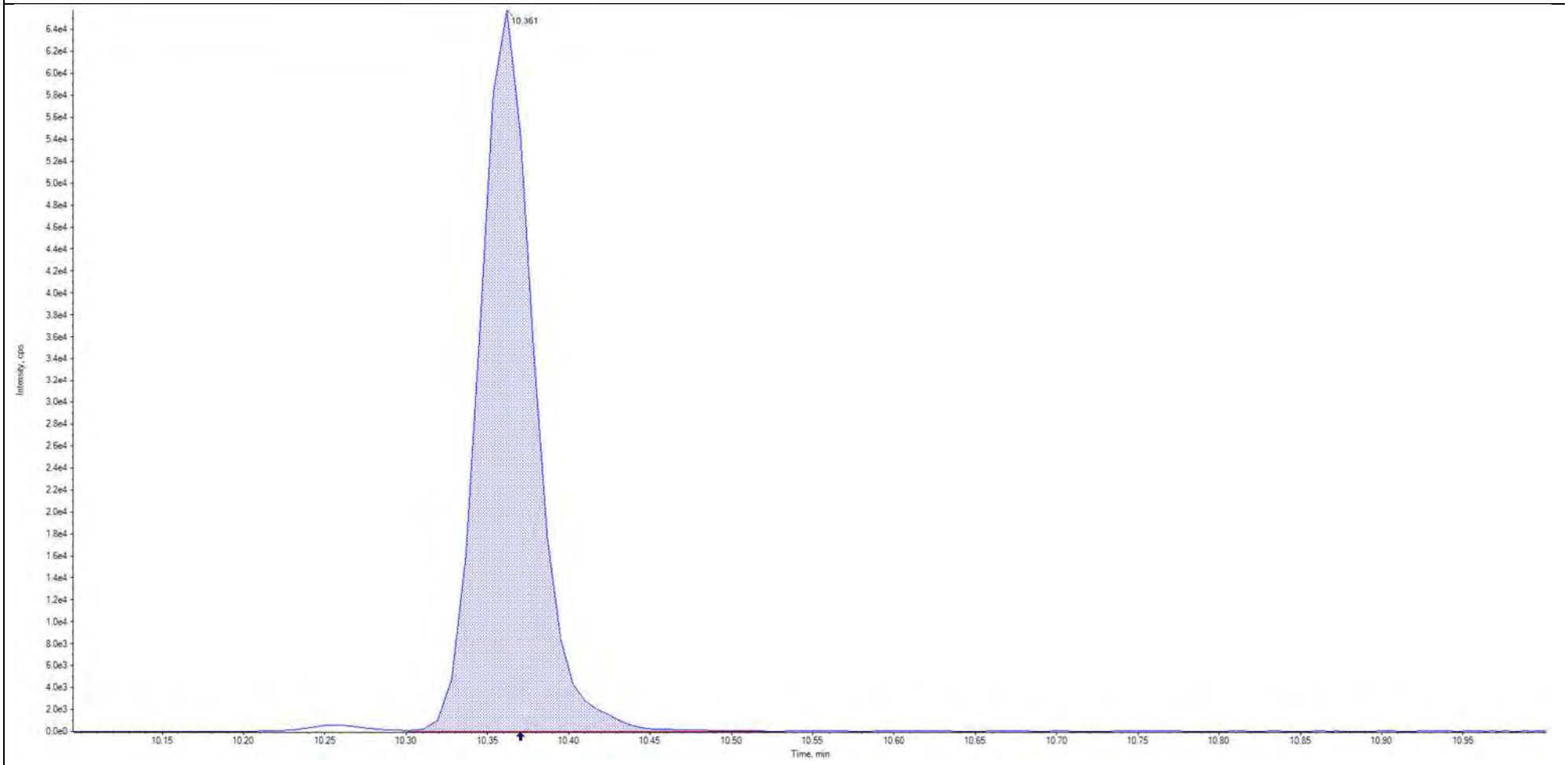
13C8-PFOSA
Sample: WG1958909-3,INSTBLANK



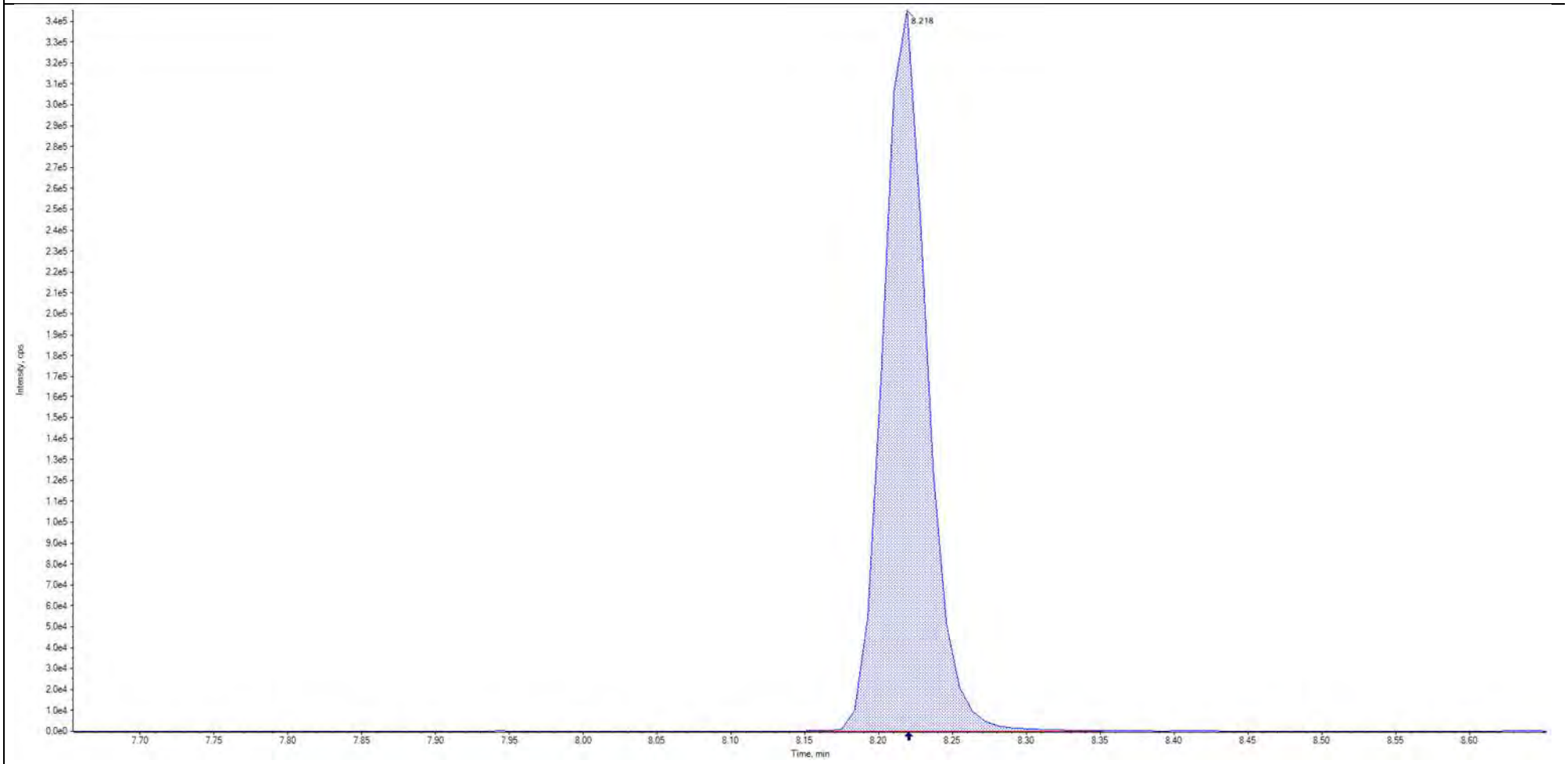
d3-NMeFOSA
Sample: WG1958909-3,INSTBLANK



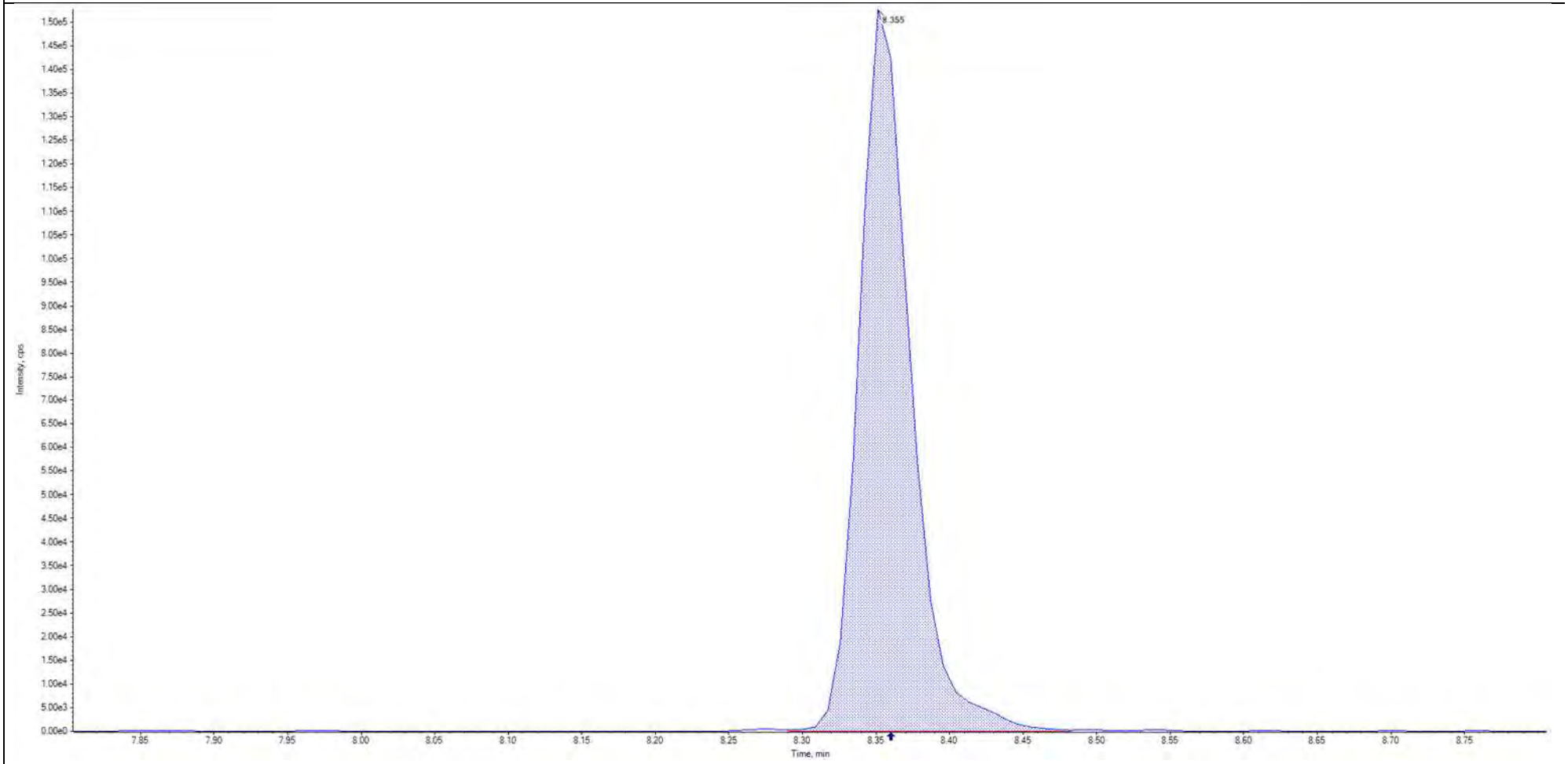
d5-NEtFOSA
Sample: WG1958909-3,INSTBLANK



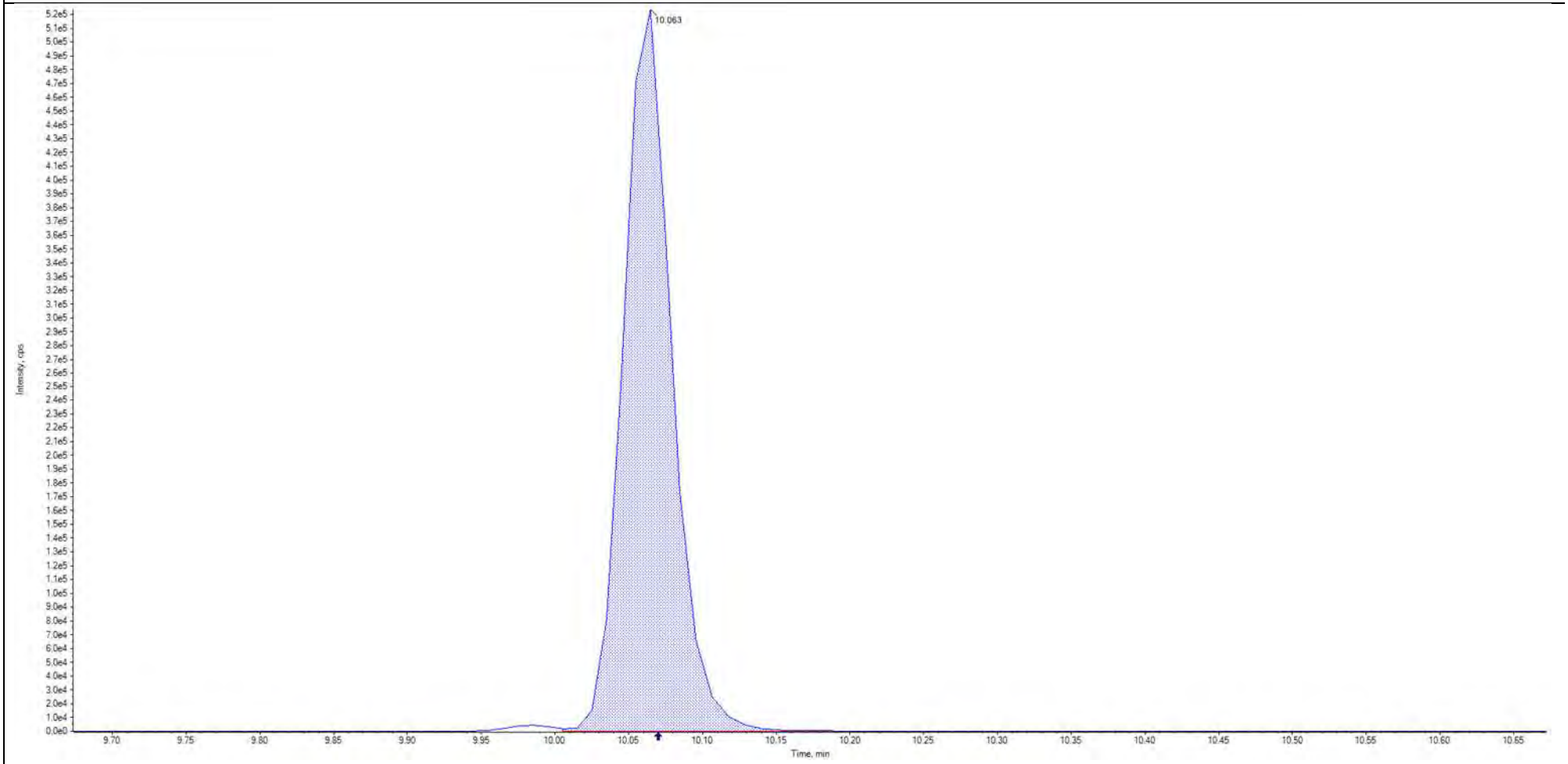
d3-NMeFOSAA
Sample: WG1958909-3,INSTBLANK



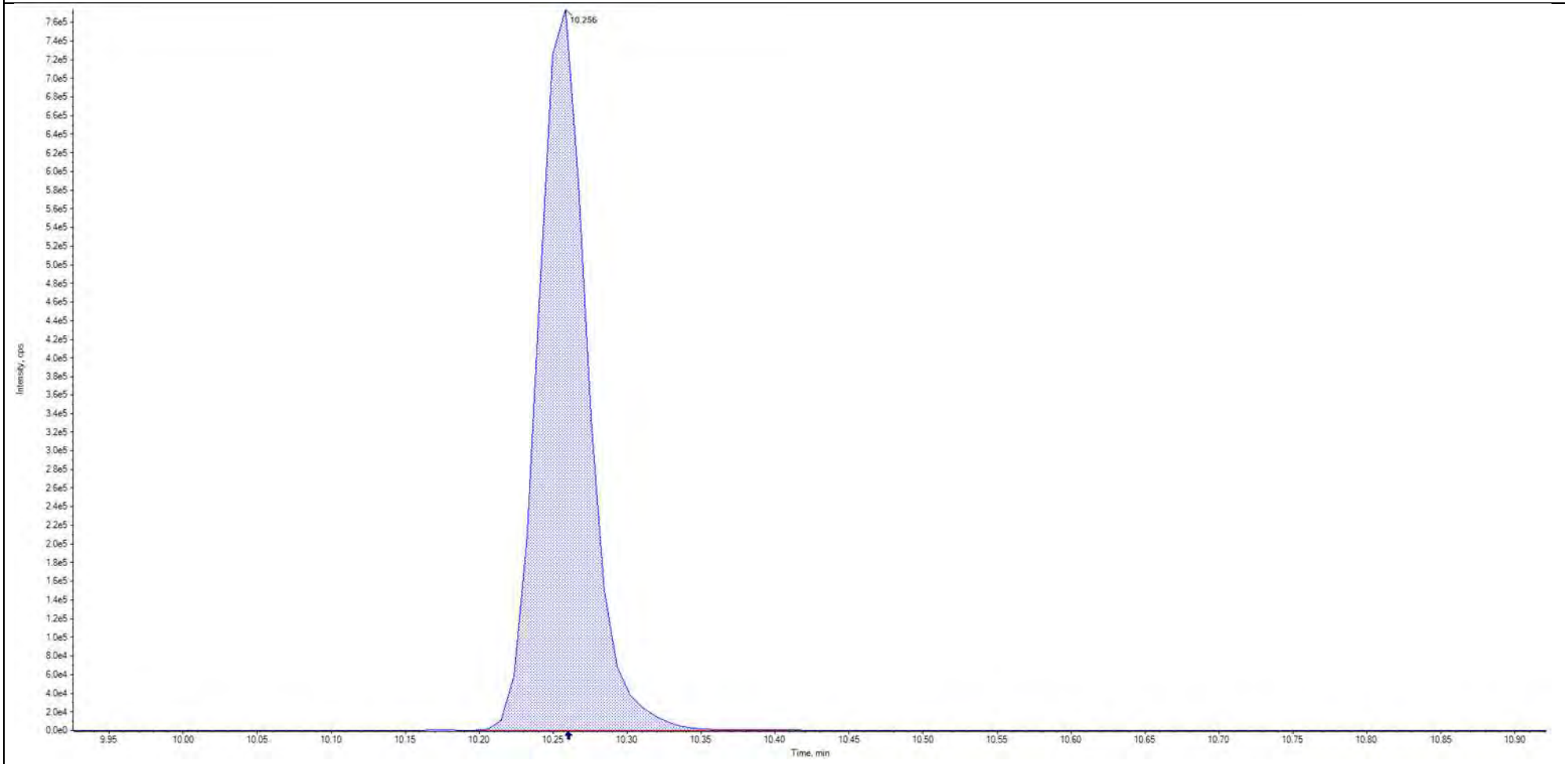
d5-NEtFOSAA
Sample: WG1958909-3,INSTBLANK



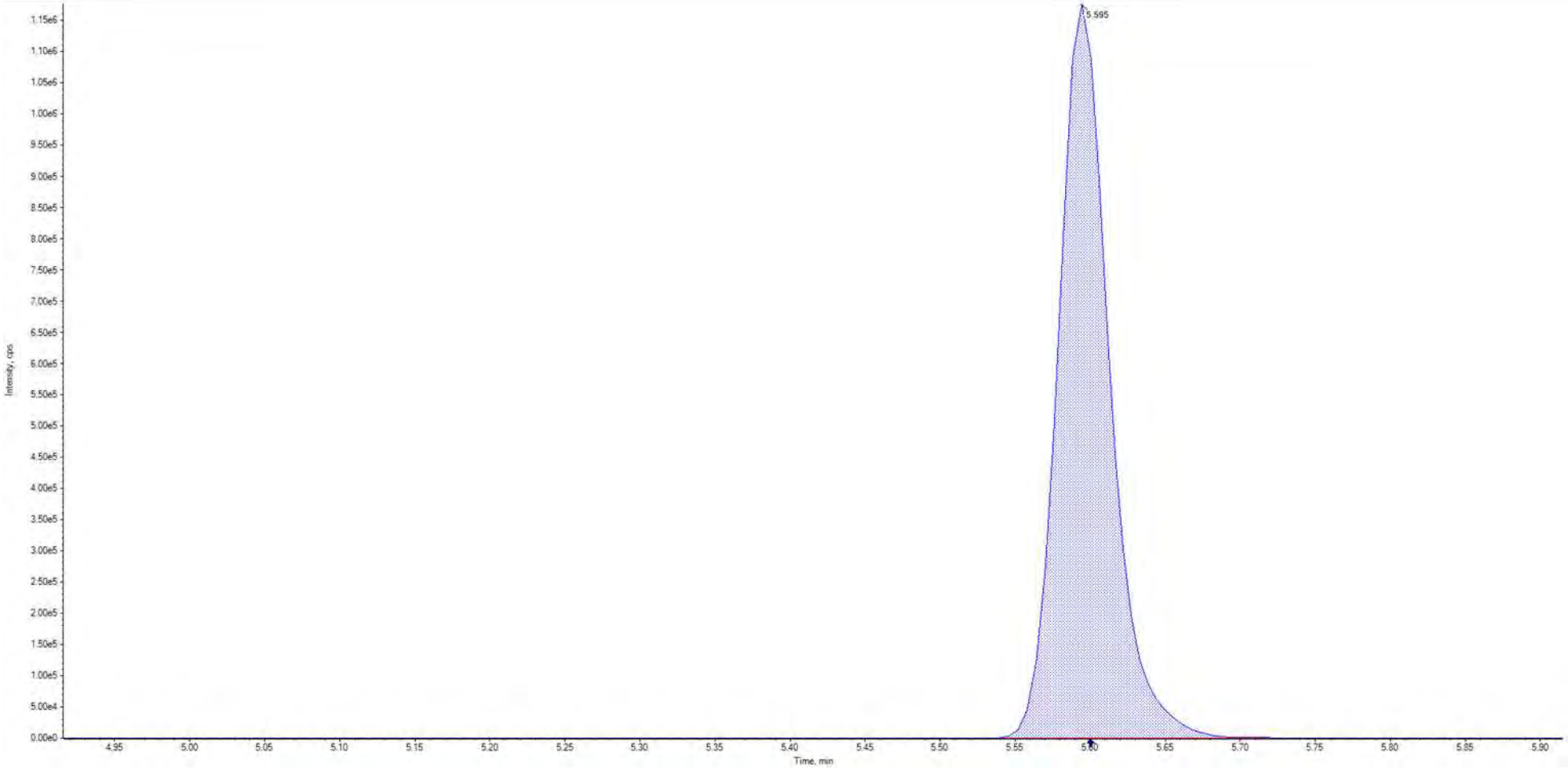
d7-NMeFOSE
Sample: WG1958909-3,INSTBLANK



d9-NEtFOSE
Sample: WG1958909-3,INSTBLANK

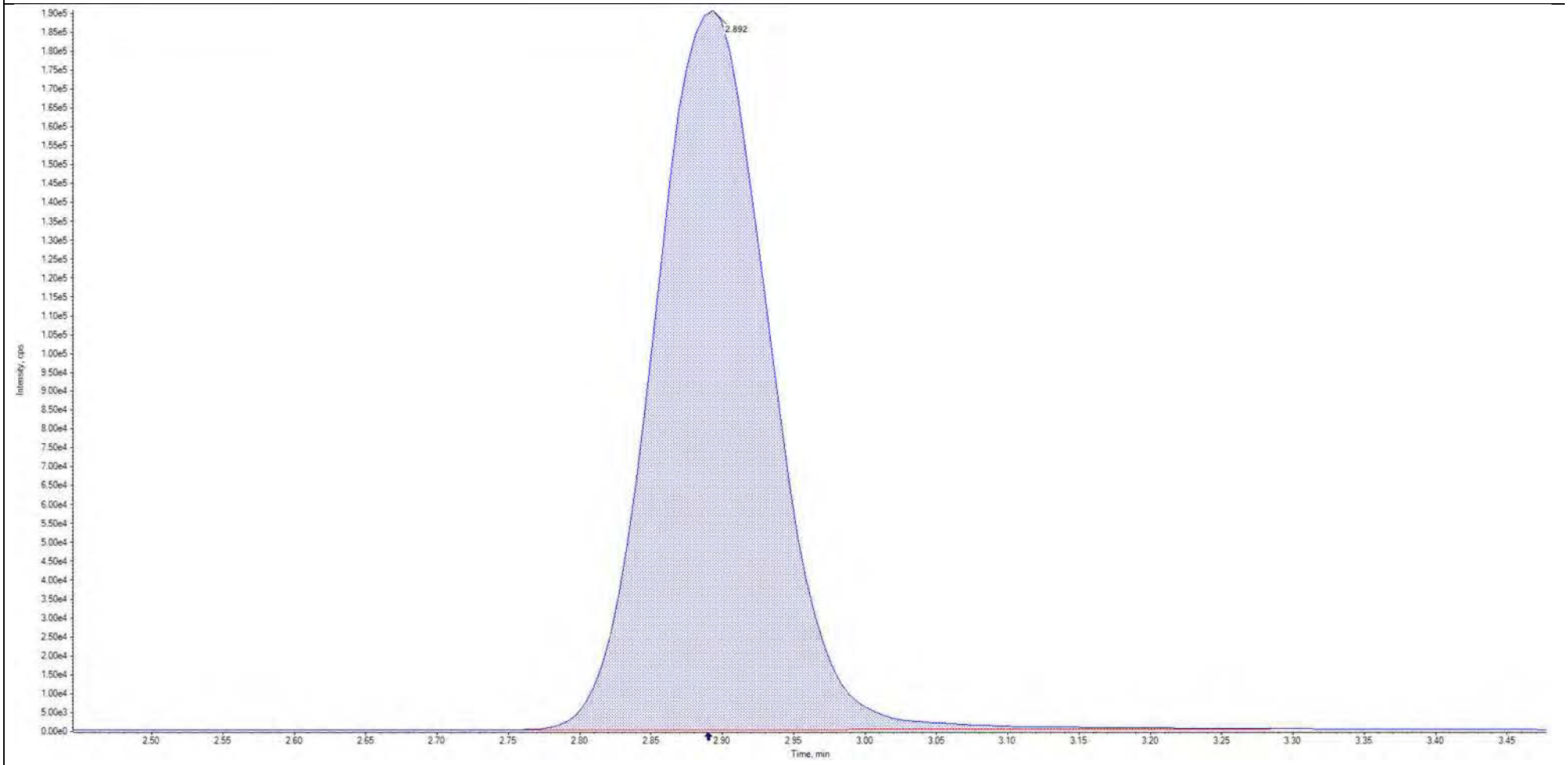


13C3-HFPO-DA
Sample: WG1958909-3,INSTBLANK

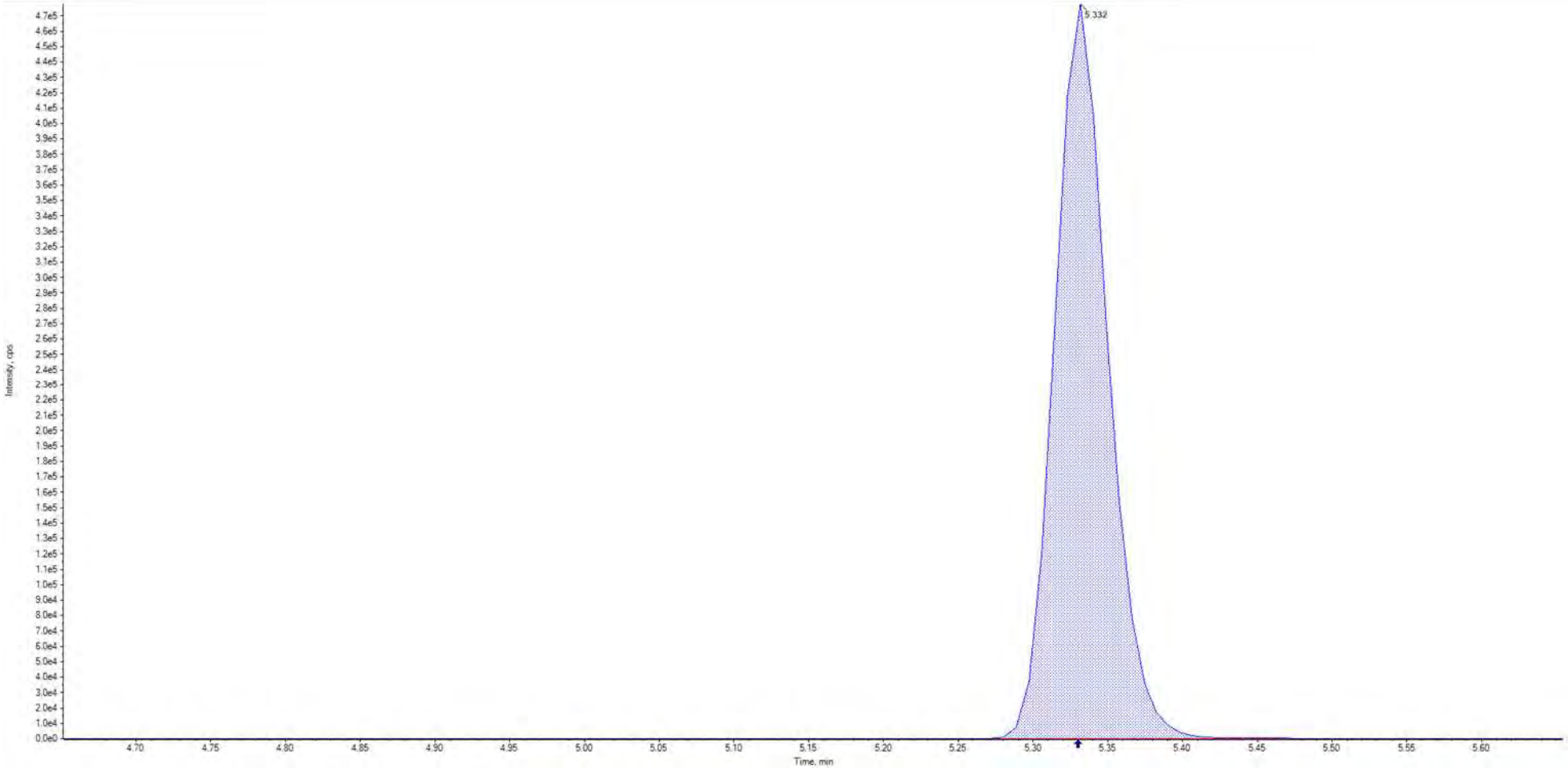


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

13C3-PFBA
Sample: WG1958909-3,INSTBLANK

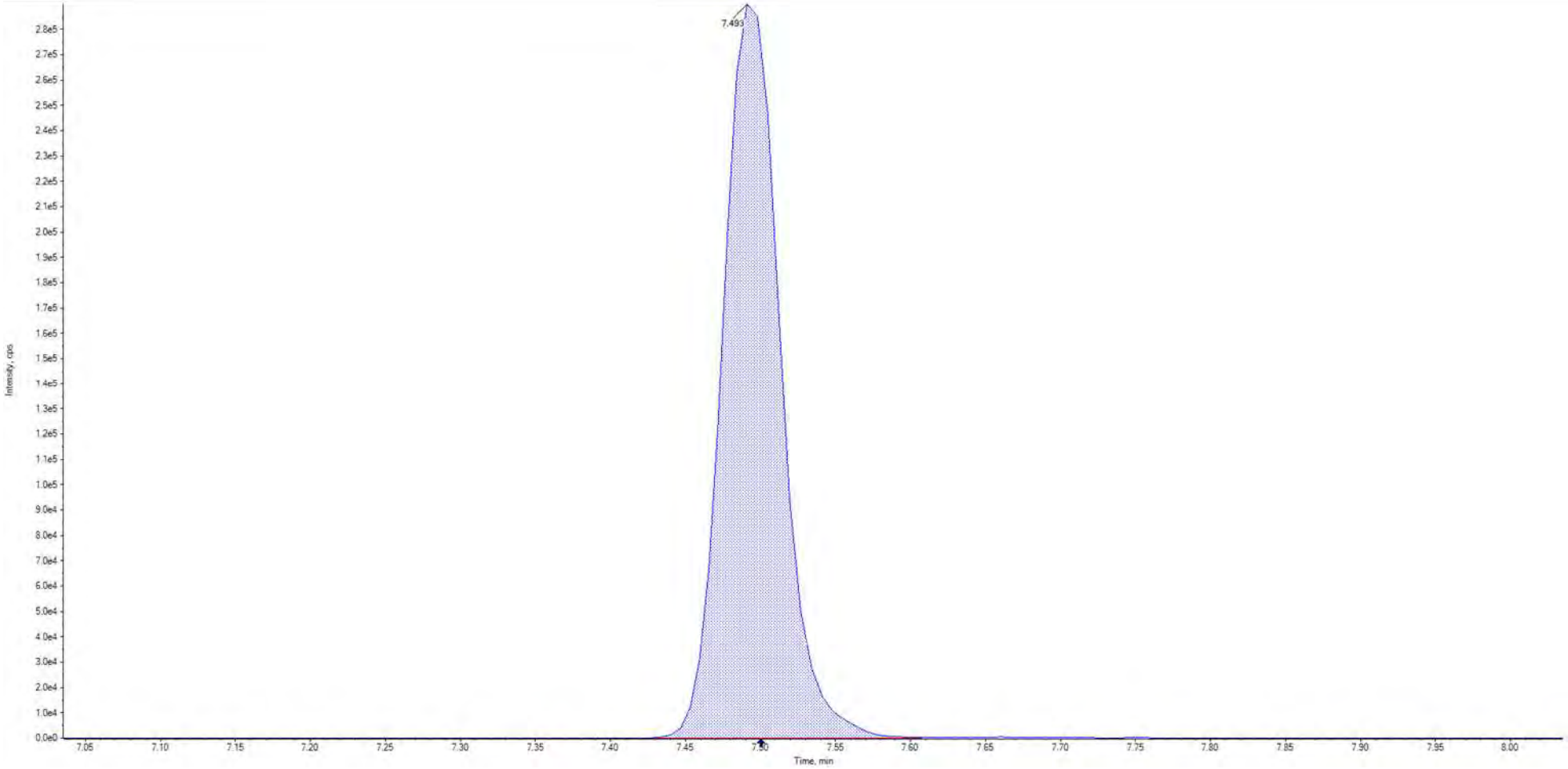


13C2-PFHxA
Sample: WG1958909-3,INSTBLANK

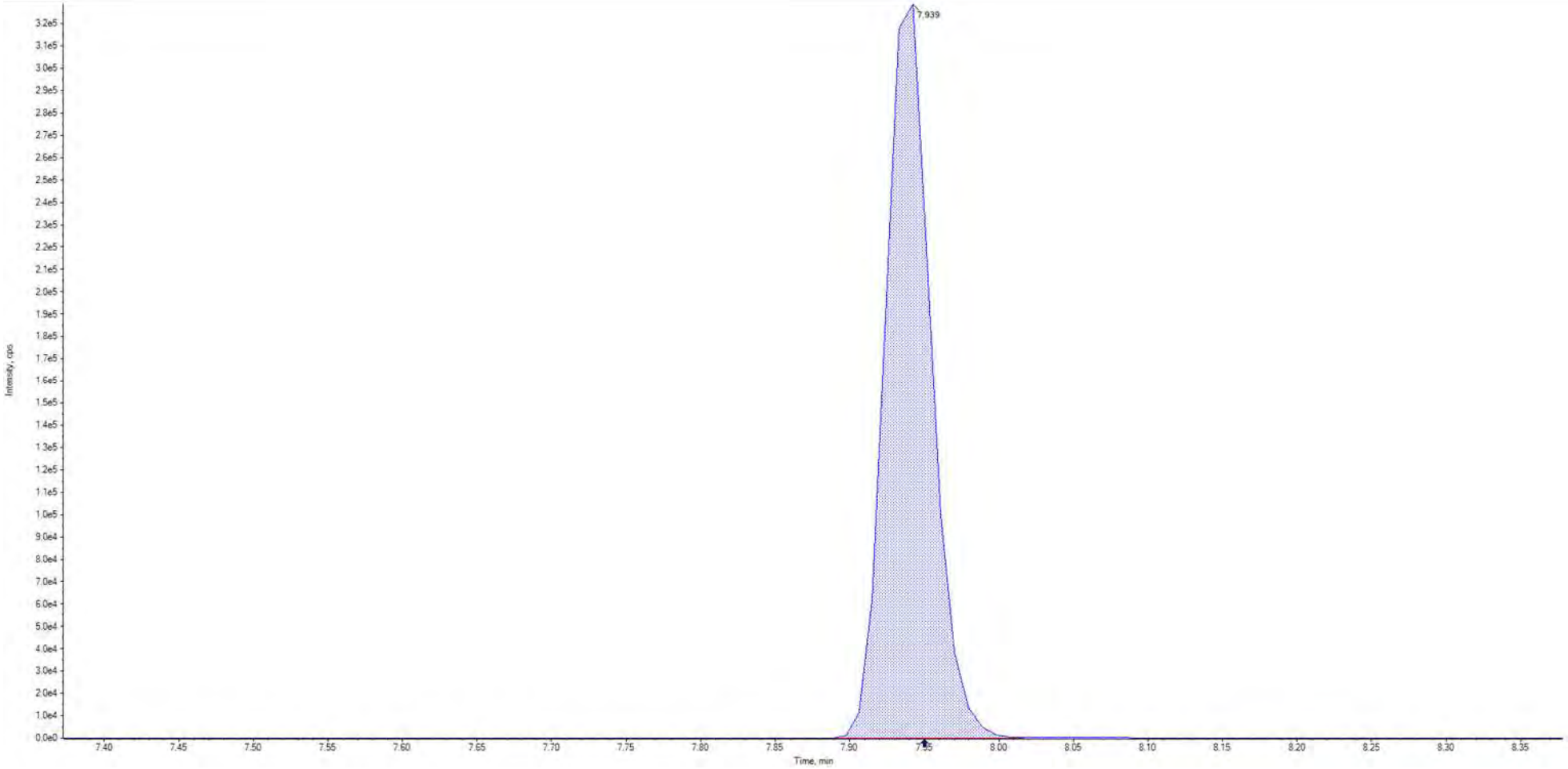


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_81.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

13C4-PFOA
Sample: WG1958909-3,INSTBLANK



13C5-PFNA
Sample: WG1958909-3,INSTBLANK



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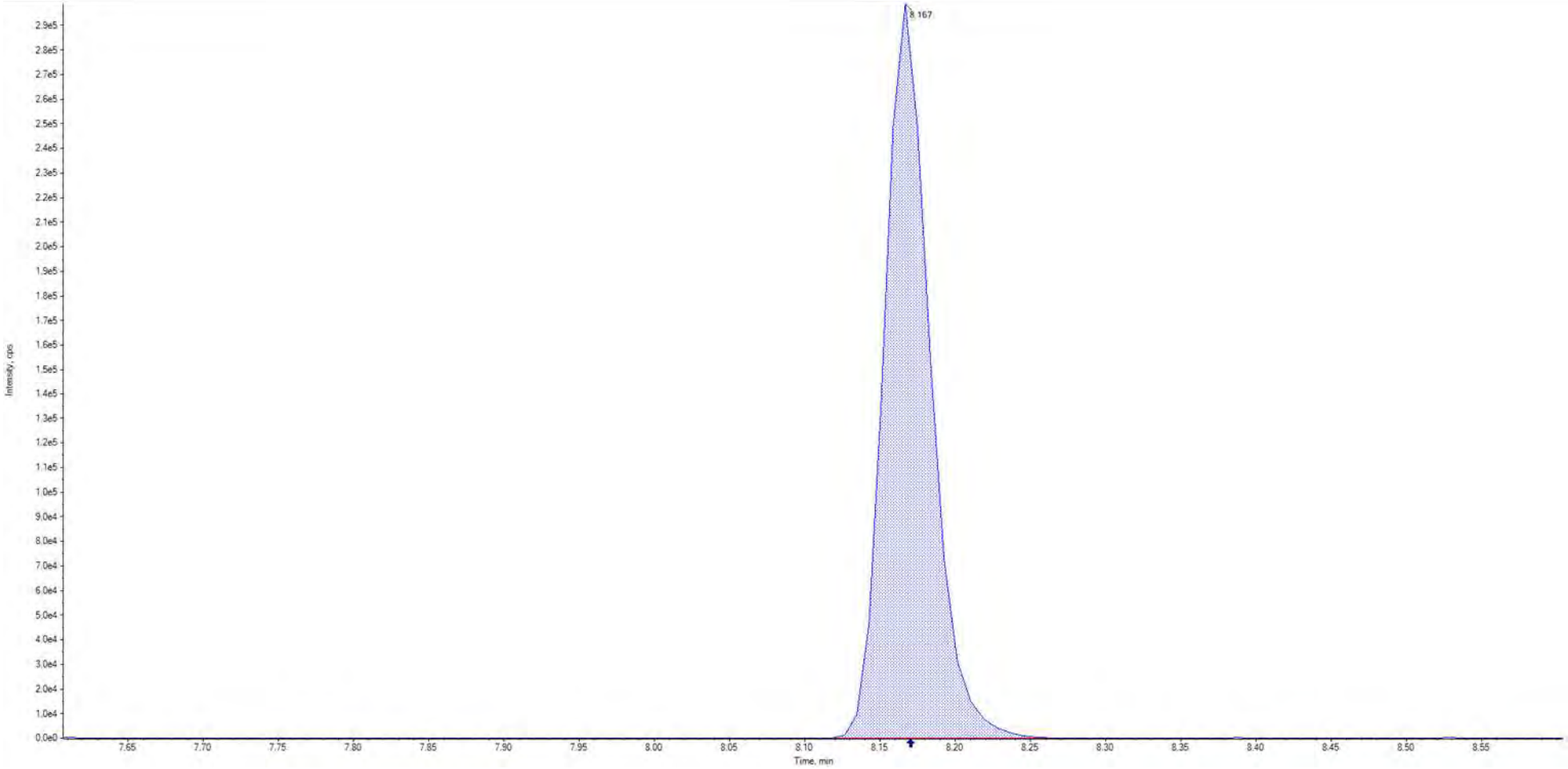
13C2-PFDA
Sample: WG1958909-3,INSTBLANK



18O2-PFHxS
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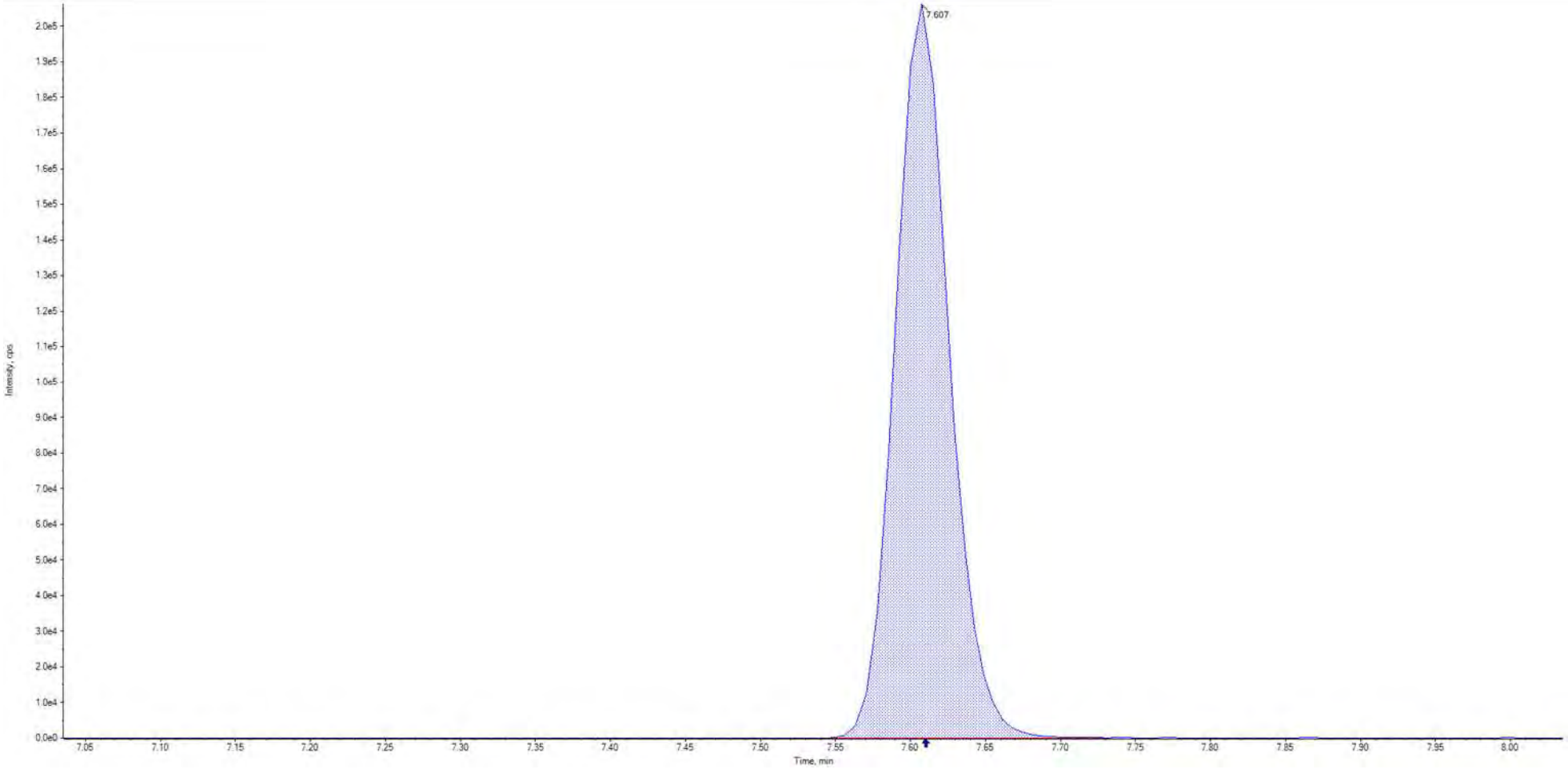

13C4-PFOS
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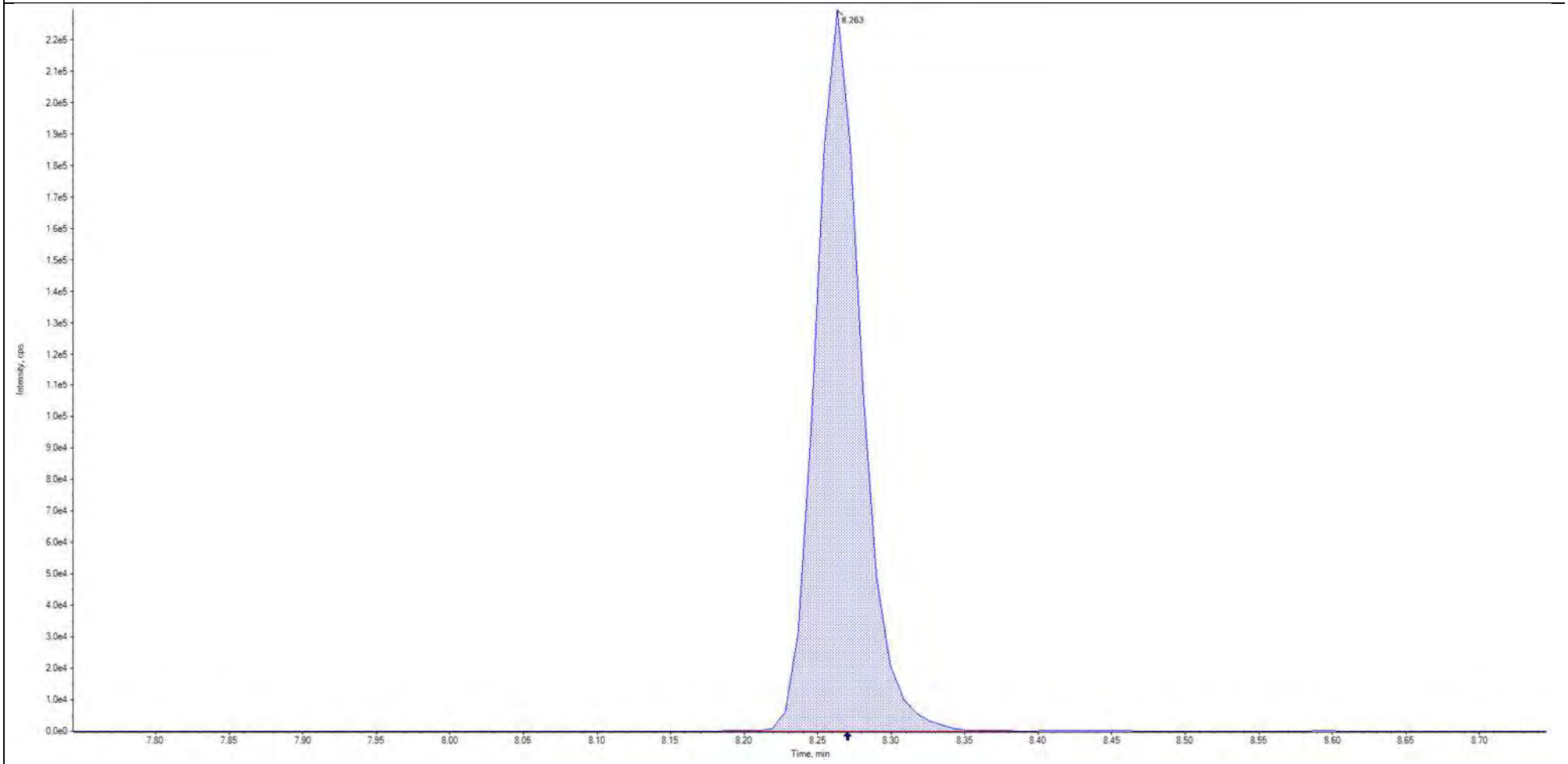

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Method: EPA1633_NIS_CALC.qmethod
Calibration: 240813_1633_ICAL

ID: CA1633STD-10
Name: SCI05_240813_82.wiff
Date & Time: 2024-08-14T00:10:32
Description: WG1958909,,,5 µl LCMS231120C
Instrument: Triple Quad 5500+
User: LCMS05:SL

LC/MS-MS Method:EPA_1633.dam

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
1	PFBA	375-22-4	2.89	213.0 / 169.0	2141398		10.591	N/A	N/A	N/A	105.9
2	PFPeA	2706-90-3	4.64	263.0 / 219.0	3020740		10.377	0.007	0.007	N/A	103.8
3	PFPeA_2	2706-90-3	4.64	263.0 / 68.9	21055		10.244	0.007	0.007	N/A	102.4
4	PFHxA	307-24-4	5.34	313.0 / 269.0	4919878		9.774	0.075	0.072	Pass	97.7
5	PFHxA_2	307-24-4	5.34	313.0 / 119.0	367737		9.888	0.075	0.072	Pass	98.9
6	PFHpA	375-85-9	6.25	363.1 / 319.0	4540092		9.470	0.303	0.297	Pass	94.7
7	PFHpA_2	375-85-9	6.25	363.1 / 169.0	1375613		9.377	0.303	0.297	Pass	93.8

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
8	PFOA	335-67-1	7.49	413.1 / 369.1	3327816	M5	10.706	0.501	0.586	Pass	107.1
9	PFOA_2	335-67-1	7.49	413.1 / 169.0	1667071	M7	9.788	0.501	0.586	Pass	97.9
10	PFNA	375-95-1	7.94	462.8 / 418.9	5019221		12.184	0.245	0.313	Pass	121.8
11	PFNA_2	375-95-1	7.94	462.8 / 218.9	1230141		9.772	0.245	0.313	Pass	97.7
12	PFDA	335-76-2	8.17	513.1 / 469.1	4771597		10.429	0.143	0.142	Pass	104.3
13	PFDA_2	335-76-2	8.17	513.1 / 219.0	683931		9.974	0.143	0.142	Pass	99.7
14	PFUnA	2058-94-8	8.46	563.1 / 519.1	3418593		9.907	0.189	0.194	Pass	99.1
15	PFUnA_2	2058-94-8	8.46	563.1 / 269.0	647262		9.684	0.189	0.194	Pass	96.8
16	PFDoA	307-55-1	8.90	613.1 / 569.1	3306536		8.752	0.172	0.167	Pass	87.5
17	PFDoA_2	307-55-1	8.90	613.1 / 319.0	568188		8.903	0.172	0.167	Pass	89.0
18	PFTrDA	72629-94-8	9.49	663.1 / 619.1	2072227		9.205	0.223	0.228	Pass	92.1
19	PFTrDA_2	72629-94-8	9.49	663.1 / 169.0	462202		9.219	0.223	0.228	Pass	92.2
20	PFTeDA	376-06-7	9.90	713.1 / 669.1	4000682		10.311	0.139	0.137	Pass	103.1
21	PFTeDA_2	376-06-7	9.90	713.1 / 169.0	556492		10.486	0.139	0.137	Pass	104.9
22	PFBS	375-73-5	5.31	299.1 / 80.1	3478595		10.677	0.406	0.396	Pass	106.8

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
23	PFBS_2	375-73-5	5.31	299.1 / 99.1	1411395		10.866	0.406	0.396	Pass	108.7
24	PFPeS	2706-91-4	6.34	349.1 / 80.1	2944351		10.672	0.301	0.299	Pass	106.7
25	PFPeS_2	2706-91-4	6.34	349.1 / 99.1	884989		10.635	0.301	0.299	Pass	106.4
26	PFHxS	355-46-4	7.61	399.1 / 80.1	2717542	M5	10.525	0.304	0.315	Pass	105.3
27	PFHxS_2	355-46-4	7.61	399.1 / 99.1	826780	M7	10.311	0.304	0.315	Pass	103.1
28	PFHpS	375-92-8	8.01	449.1 / 80.1	2628602		10.475	0.298	0.287	Pass	104.8
29	PFHpS_2	375-92-8	8.01	449.1 / 99.1	783541		10.653	0.298	0.287	Pass	106.5
30	PFOS	1763-23-1	8.27	499.1 / 80.1	2661502	M5	9.961	0.225	0.238	Pass	99.6
31	PFOS_2	1763-23-1	8.27	499.1 / 99.1	598859		9.148	0.225	0.238	Pass	91.5
32	PFNS	68259-12-1	8.62	549.1 / 80.1	1869857		10.900	0.301	0.301	Pass	109.0
33	PFNS_2	68259-12-1	8.62	549.1 / 99.1	562916		10.835	0.301	0.301	Pass	108.4
34	PFDS	335-77-3	9.14	599.1 / 80.1	1750884		10.362	0.278	0.275	Pass	103.6
35	PFDS_2	335-77-3	9.14	599.1 / 99.1	486862		10.452	0.278	0.275	Pass	104.5
36	PFDoS	79780-39-5	10.00	699.2 / 80.1	1643234		10.617	0.273	0.274	Pass	106.2
37	PFDoS_2	79780-39-5	10.00	699.2 / 99.1	448555		10.548	0.273	0.274	Pass	105.5

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
38	4:2FTS	757124-72-4	5.13	327.1 / 307.1	1188112		10.742	0.516	0.516	Pass	107.4
39	4:2FTS_2	757124-72-4	5.13	327.1 / 81.1	613309		10.365	0.516	0.516	Pass	103.7
40	6:2FTS	27619-97-2	7.09	427.2 / 407.2	749524		10.450	0.568	0.565	Pass	104.5
41	6:2FTS_2	27619-97-2	7.08	427.2 / 81.1	425704		10.973	0.568	0.565	Pass	109.7
42	8:2FTS	39108-34-4	8.07	527.2 / 507.2	862361		11.180	0.708	0.662	Pass	111.8
43	8:2FTS_2	39108-34-4	8.07	527.2 / 81.1	610405		11.667	0.708	0.662	Pass	116.7
44	PFOSA	754-91-6	9.54	498.1 / 78.1	2485355	M5	9.934	0.023	0.025	Pass	99.3
45	PFOSA_2	754-91-6	9.54	498.1 / 478.0	58399	M7	8.896	0.023	0.025	Pass	89.0
46	NMeFOSA	31506-32-8	10.16	512.2 / 219.0	602931	M4	8.720	1.109	1.551	Pass	87.2
47	NMeFOSA_2	31506-32-8	10.16	512.2 / 169.0	668394		6.238	1.109	1.551	Pass	62.4
48	NEtFOSA	4151-50-2	10.37	526.2 / 219.0	619581		9.226	1.058	1.285	Pass	92.3
49	NEtFOSA_2	4151-50-2	10.37	526.2 / 169.0	655449		7.291	1.058	1.285	Pass	72.9
50	NMeFOSAA	2355-31-9	8.22	570.2 / 419.1	1125555		9.268	0.611	0.700	Pass	92.7
51	NMeFOSAA_2	2355-31-9	8.22	570.2 / 483.0	687407		8.901	0.611	0.700	Pass	89.0
52	NEtFOSAA	2991-50-6	8.36	584.2 / 419.1	682270		9.641	0.494	0.487	Pass	96.4

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
53	NEtFOSAA_2	2991-50-6	8.36	584.2 / 526.2	337280	M7	10.357	0.494	0.487	Pass	103.6
54	NMeFOSE	24448-09-7	10.07	616.1 / 58.9	1193158		9.990	N/A	N/A	N/A	99.9
55	NEtFOSE	1691-99-2	10.27	630.0 / 58.9	2261051		10.666	N/A	N/A	N/A	106.7
56	HFPO-DA	13252-13-6	5.60	285.0 / 169.0	2708510		10.702	0.468	0.464	Pass	107.0
57	HFPO-DA_2	13252-13-6	5.60	285.0 / 184.9	1268011		10.774	0.468	0.464	Pass	107.7
58	ADONA	919005-14-4	6.72	377.1 / 251.0	5709762		9.920	0.664	0.634	Pass	99.2
59	ADONA_2	919005-14-4	6.72	377.1 / 84.8	3791420		10.180	0.664	0.634	Pass	101.8
60	9Cl-PF3ONS	756426-58-1	8.49	530.8 / 351.1	6161445		10.856	0.309	0.322	Pass	108.6
61	9Cl-PF3ONS_2	756426-58-1	8.49	532.8 / 353.0	1905585		10.311	0.309	0.322	Pass	103.1
62	11Cl-PF3OUdS	763051-92-9	9.56	630.9 / 451.0	3646247		10.171	0.330	0.331	Pass	101.7
63	11Cl-PF3OUdS_2	763051-92-9	9.56	632.9 / 452.9	1204287		9.982	0.330	0.331	Pass	99.8
64	3:3FTCA	356-02-5	4.91	241.1 / 177.1	243107		9.628	1.086	1.074	Pass	96.3
65	3:3FTCA_2	356-02-5	4.91	241.1 / 117.0	263901		10.436	1.086	1.074	Pass	104.4
66	5:3FTCA	914637-49-3	7.16	341.1 / 237.1	985608		10.794	0.942	0.953	Pass	107.9
67	5:3FTCA_2	914637-49-3	7.15	341.1 / 217.0	928171		10.742	0.942	0.953	Pass	107.4

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
68	7:3FTCA	812-70-4	8.20	441.1 / 316.9	1301430		12.803	1.388	1.558	Pass	128.0
69	7:3FTCA_2	812-70-4	8.20	441.1 / 337.1	1806684		12.248	1.388	1.558	Pass	122.5
70	PFEESA	113507-82-7	5.71	315.1 / 135.0	7907250		9.055	0.086	0.087	Pass	90.6
71	PFEESA_2	113507-82-7	5.71	315.1 / 82.9	680359		9.018	0.086	0.087	Pass	90.2
72	PFMPA	377-73-1	3.85	229.0 / 85.0	359459		10.202	N/A	N/A	N/A	102.0
73	PFMBA	863090-89-5	4.87	279.0 / 85.0	4607412		9.698	N/A	N/A	N/A	97.0
74	NFDHA	151772-58-6	5.25	295.0 / 201.0	894680		9.732	1.003	0.910	Pass	97.3
75	NFDHA_2	151772-58-6	5.25	295.0 / 84.9	897470		10.649	1.003	0.910	Pass	106.5
76	TDCA	516-50-7	N/A	499.1 / 124.1	N/A		N/A	N/A	40.716	N/A	N/A
77	TDCA_2	516-50-7	N/A	499.1 / 79.9	N/A		N/A	N/A	40.716	N/A	N/A
78	13C2D4-4:2FTS	Surr	5.12	333.2 / 312.1	903529		5.141	N/A	N/A	N/A	102.8
79	13C2-PFOA	Surr	7.49	415.0 / 370.0	3256013		2.506	N/A	N/A	N/A	100.2

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C4-PFBA	EIS	2.89	217.0 / 172.0	2493179		10.016	NA	NA	NA	100.2

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C5-PFPeA	EIS	4.64	268.0 / 223.0	1578635		5.147	NA	NA	NA	102.9
	13C5-PFHxA	EIS	5.33	318.0 / 273.0	1032774		2.564	NA	NA	NA	102.5
	13C4-PFHpA	EIS	6.24	367.0 / 322.0	1023436		2.537	NA	NA	NA	101.5
	13C8-PFOA	EIS	7.49	421.0 / 376.0	1493646		2.546	NA	NA	NA	101.8
	13C9-PFNA	EIS	7.94	472.0 / 427.0	703450		1.312	NA	NA	NA	105.0
	13C6-PFDA	EIS	8.17	519.0 / 474.0	663654		1.240	NA	NA	NA	99.2
	13C7-PFUnA	EIS	8.46	570.0 / 525.0	545839		1.260	NA	NA	NA	100.8

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C2-PFDoA	EIS	8.89	615.1 / 570.0	363150		1.289	NA	NA	NA	103.1
	13C2-PFTeDA	EIS	9.90	715.1 / 670.1	387076		1.266	NA	NA	NA	101.3
	13C3-PFBS	EIS	5.30	302.1 / 80.1	776535		2.371	NA	NA	NA	101.8
	13C3-PFHxS	EIS	7.60	402.1 / 80.1	646849		2.487	NA	NA	NA	104.9
	13C8-PFOS	EIS	8.26	507.1 / 80.1	650472		2.387	NA	NA	NA	99.7
	13C2-4:2FTS	EIS	5.12	329.1 / 81.1	264698		4.529	NA	NA	NA	96.6
	13C2-6:2FTS	EIS	7.08	429.2 / 81.1	207907		4.855	NA	NA	NA	102.1
	13C2-8:2FTS	EIS	8.06	529.2 / 81.1	292118		4.661	NA	NA	NA	97.1

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C8-PFOSA	EIS	9.54	506.1 / 78.1	935828		2.583	NA	NA	NA	103.3
	d3-NMeFOSA	EIS	10.15	515.2 / 219.0	161439		2.647	NA	NA	NA	105.9
	d5-NEtFOSA	EIS	10.36	531.2 / 219.0	152879		2.566	NA	NA	NA	102.6
	d3-NMeFOSAA	EIS	8.21	573.2 / 419.1	922810		6.693	NA	NA	NA	133.9
	d5-NEtFOSAA	EIS	8.35	589.3 / 419.1	379523		5.238	NA	NA	NA	104.8
	d7-NMeFOSE	EIS	10.06	623.2 / 58.9	1210370		25.700	NA	NA	NA	102.8
	d9-NEtFOSE	EIS	10.25	639.2 / 58.9	1805761		26.006	NA	NA	NA	104.0

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C3-HFPO-DA	EIS	5.59	287.0 / 169.0	2760880		10.341	NA	NA	NA	103.4
	13C3-PFBA	NIS	2.89	216.0 / 172.0	1088885		5.092	NA	NA	NA	101.9
	13C2-PFHxA	NIS	5.33	315.0 / 270.0	1196116		2.443	NA	NA	NA	97.7
	13C4-PFOA	NIS	7.49	417.0 / 372.0	767568		2.452	NA	NA	NA	98.1
	13C5-PFNA	NIS	7.94	468.0 / 423.0	653059		1.192	NA	NA	NA	95.4
	13C2-PFDA	NIS	8.16	515.1 / 470.1	628726		1.227	NA	NA	NA	98.2
	18O2-PFHxS	NIS	7.60	403.1 / 84.1	528641		2.256	NA	NA	NA	95.2
	13C4-PFOS	NIS	8.26	503.1 / 80.1	482037		2.289	NA	NA	NA	95.6

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	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec

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PFBA
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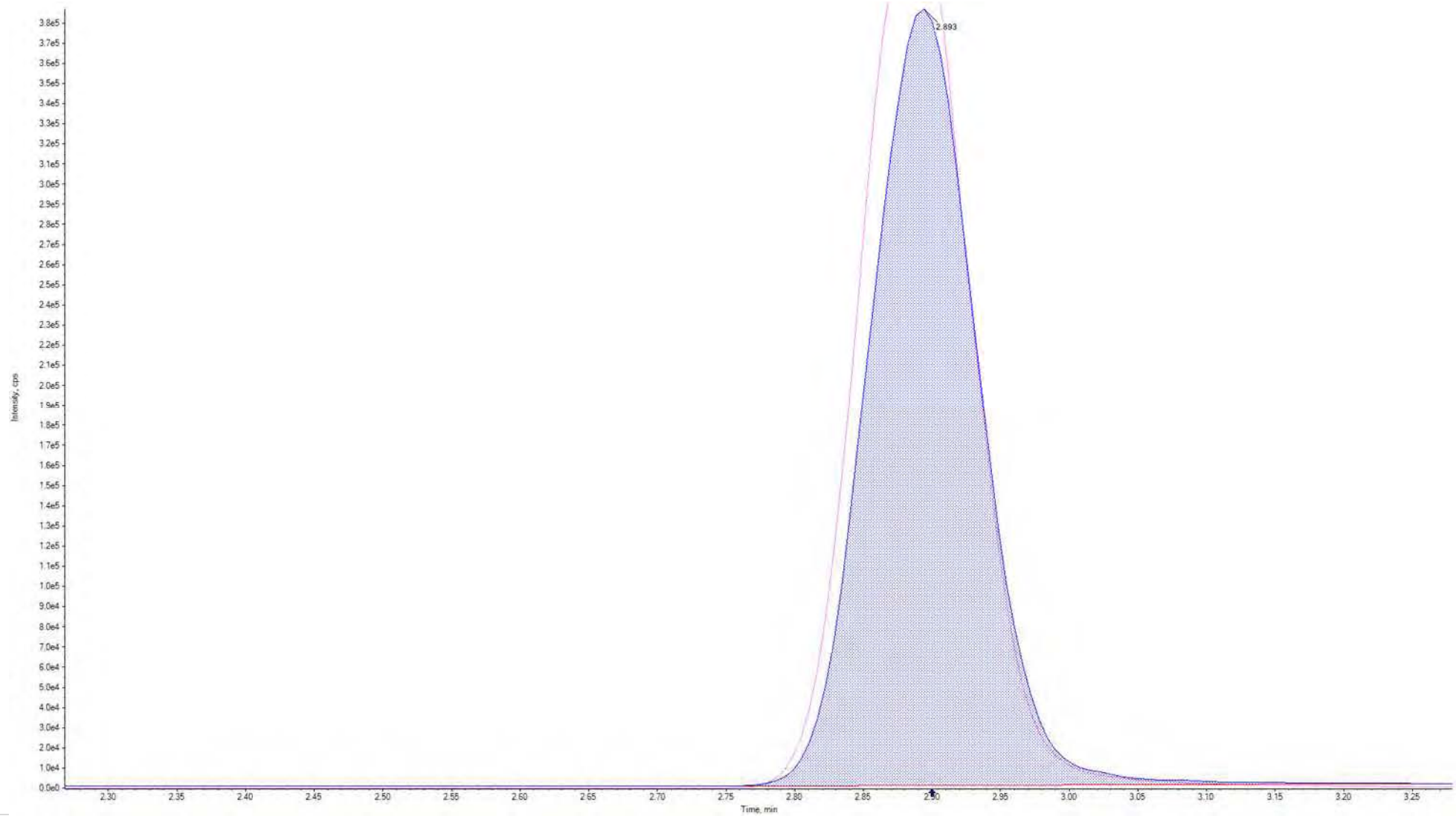

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PFPeA
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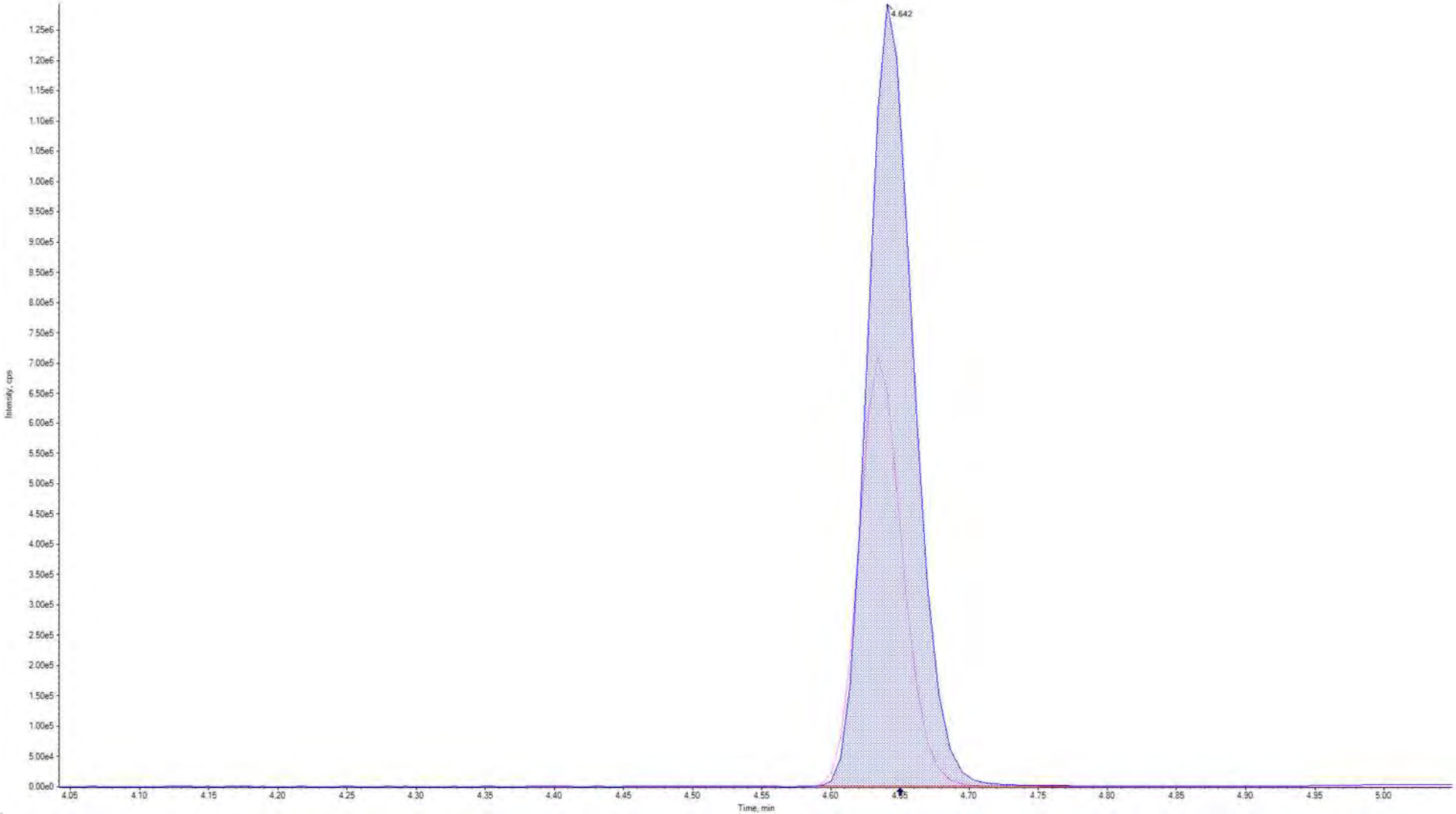

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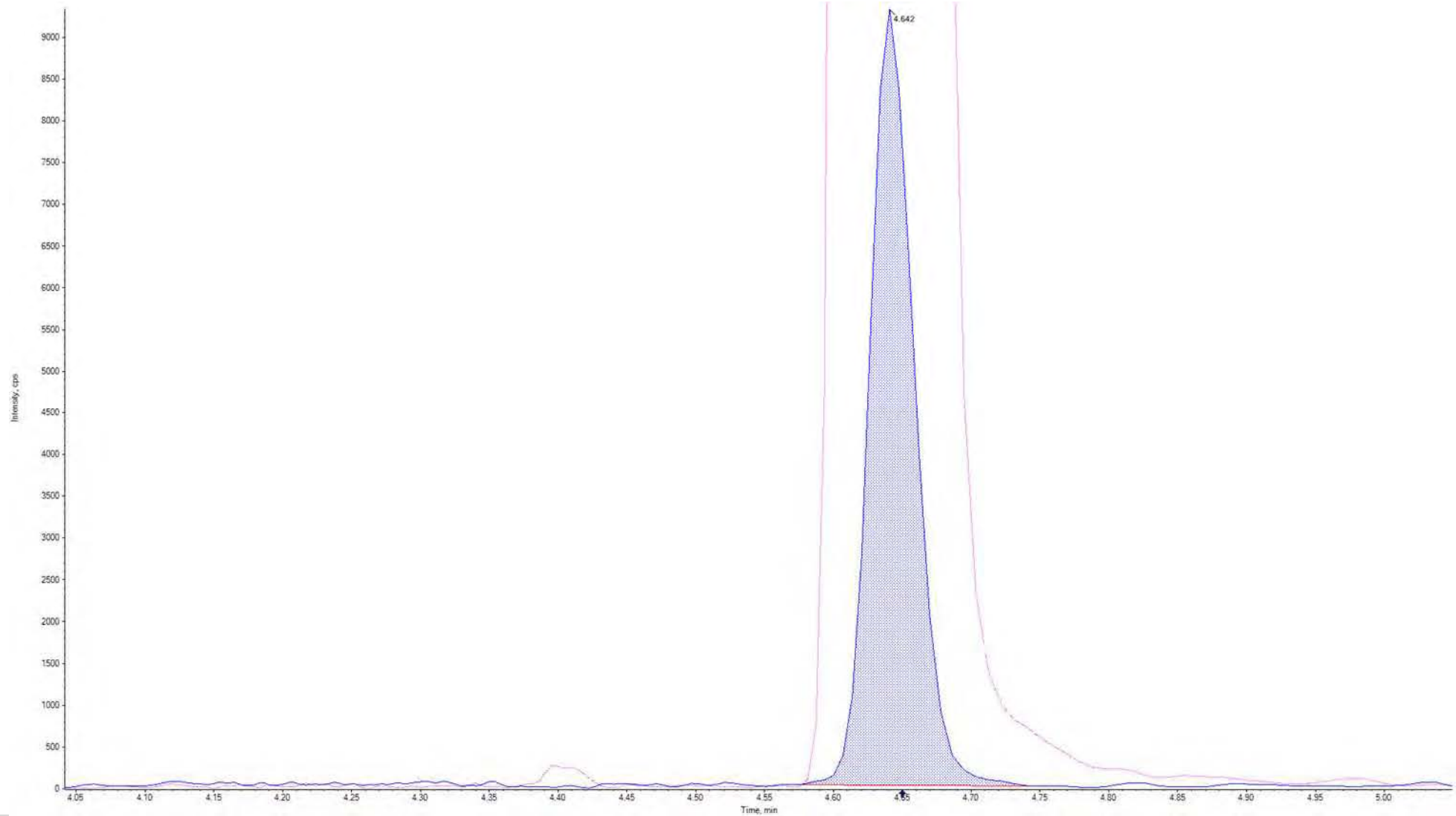
PFPeA_2
Sample: CA1633STD-10 S/N:1017.4 Points Across peak:24



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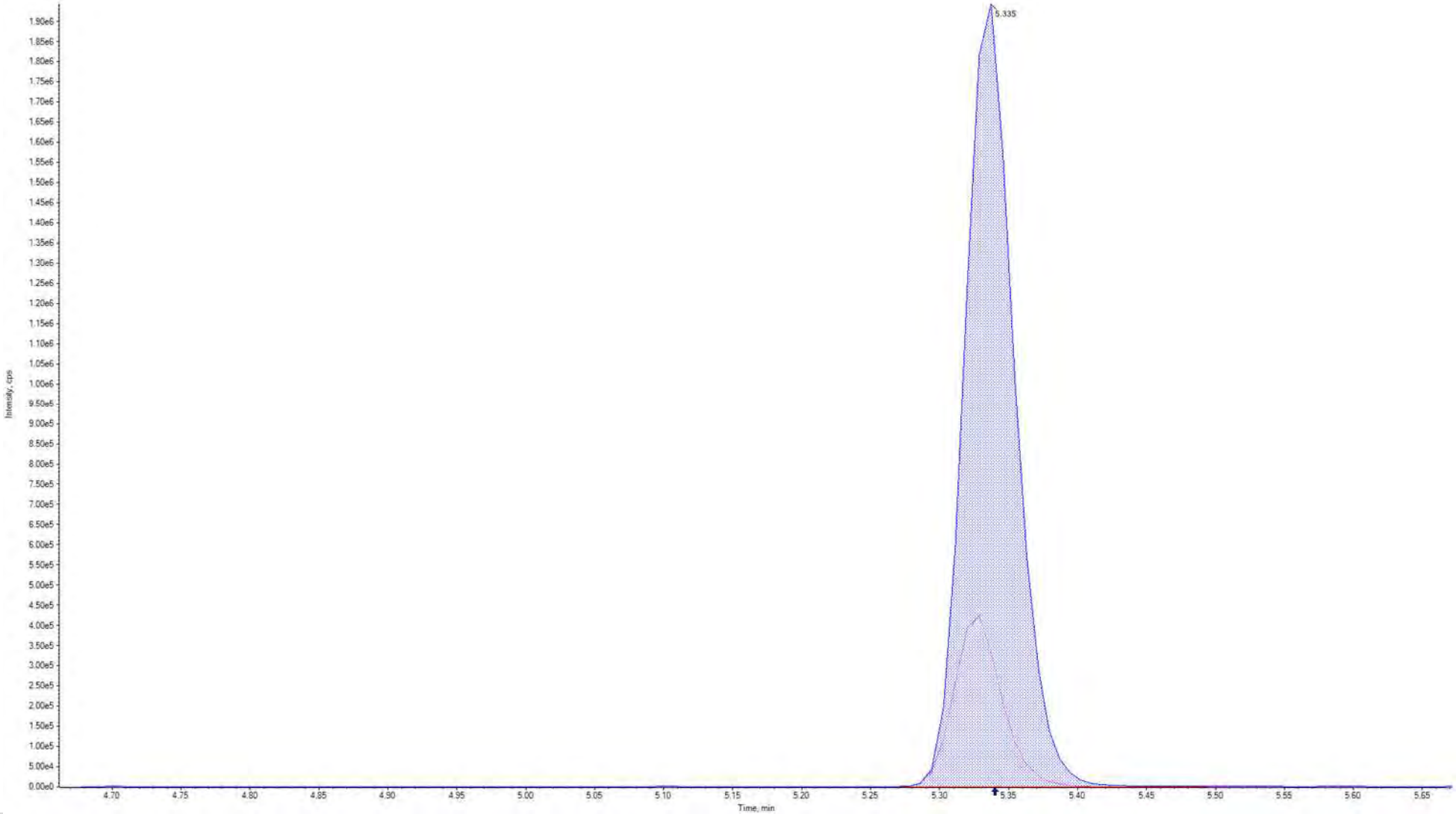
PFHxA
Sample: CA1633STD-10 S/N:1979.7 Points Across peak:30



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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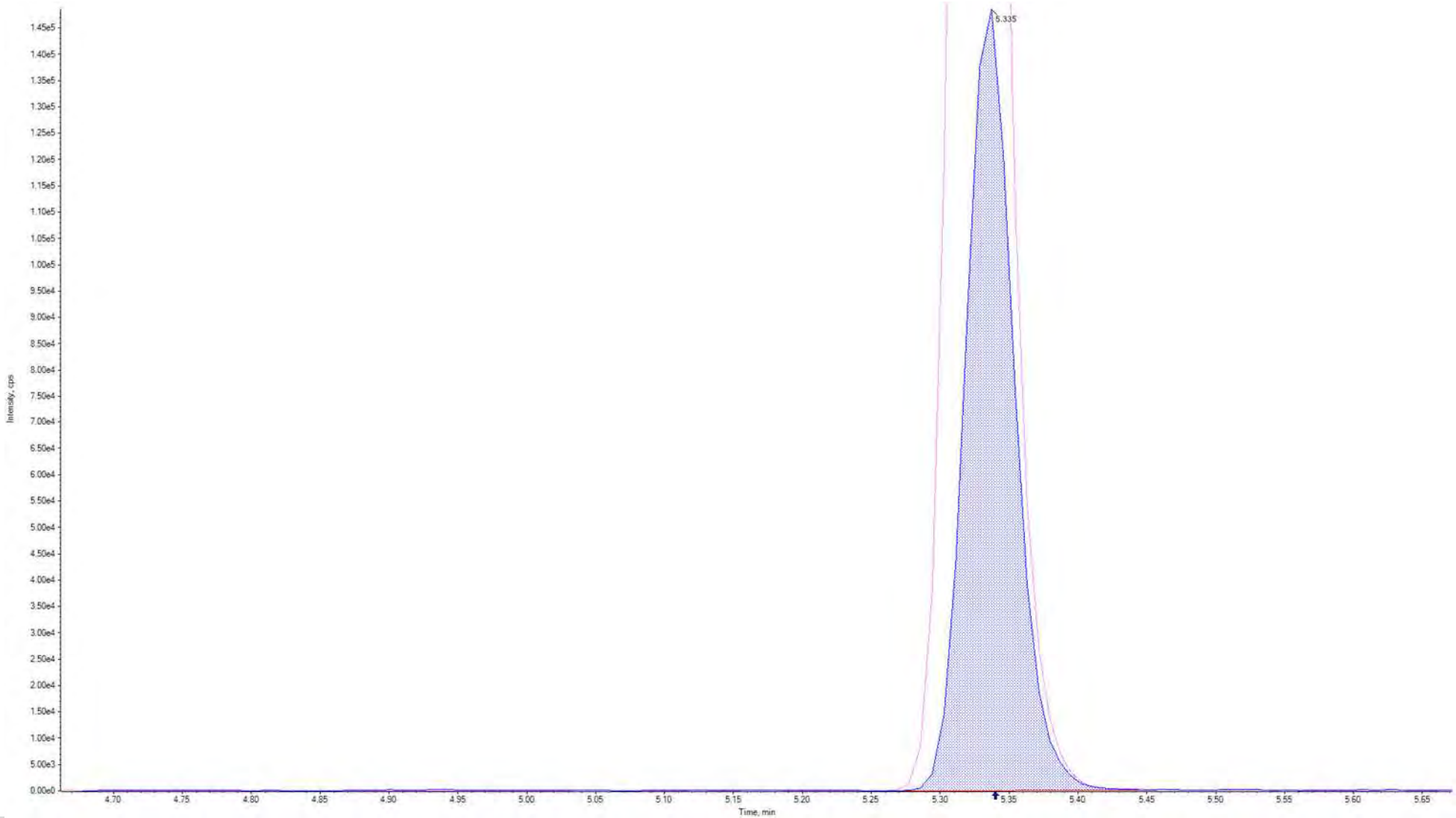
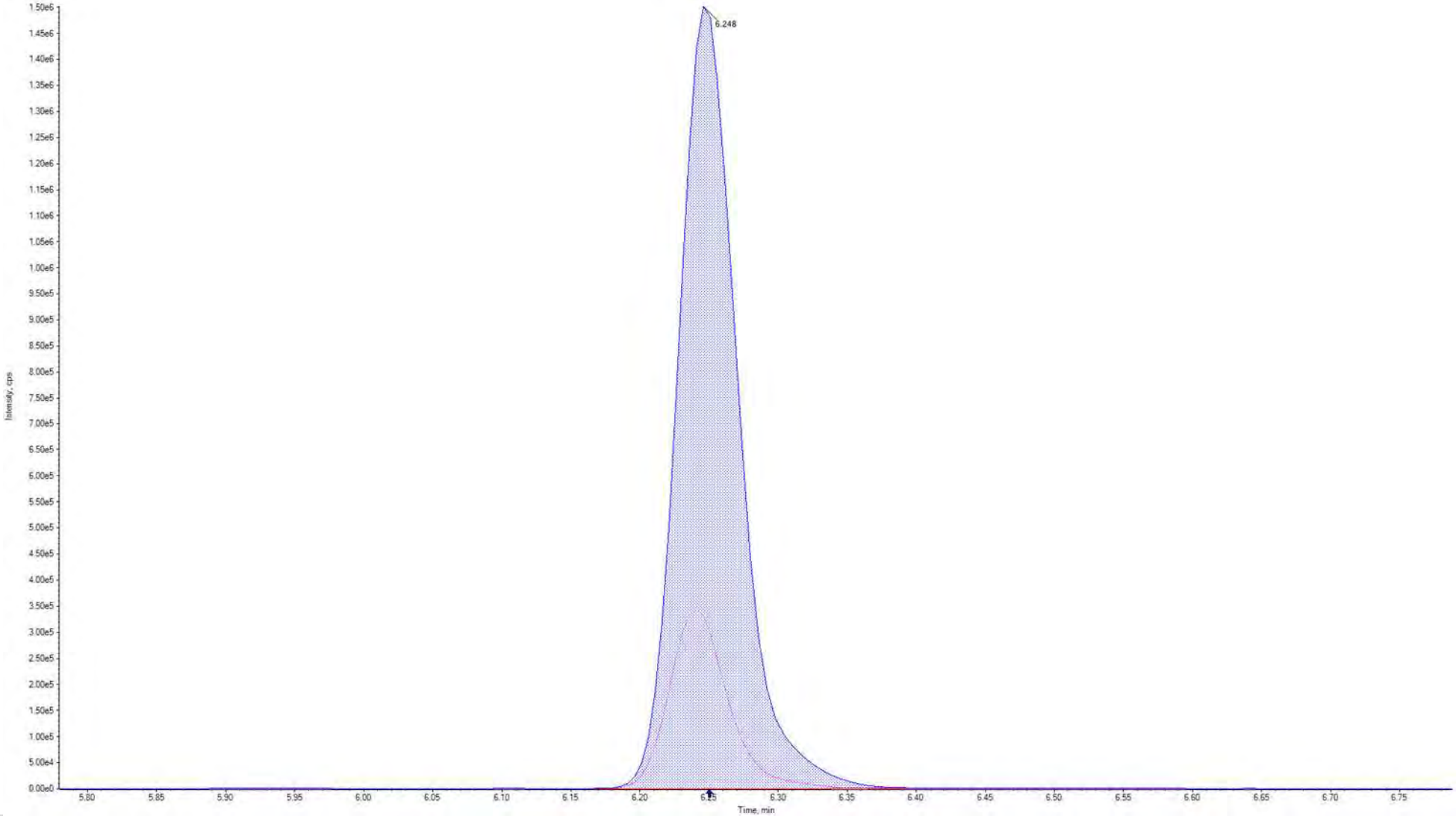
Generated: 8/14/2024 9:40:32 AM

PFHxA_2
Sample: CA1633STD-10 S/N:2434.5 Points Across peak:24



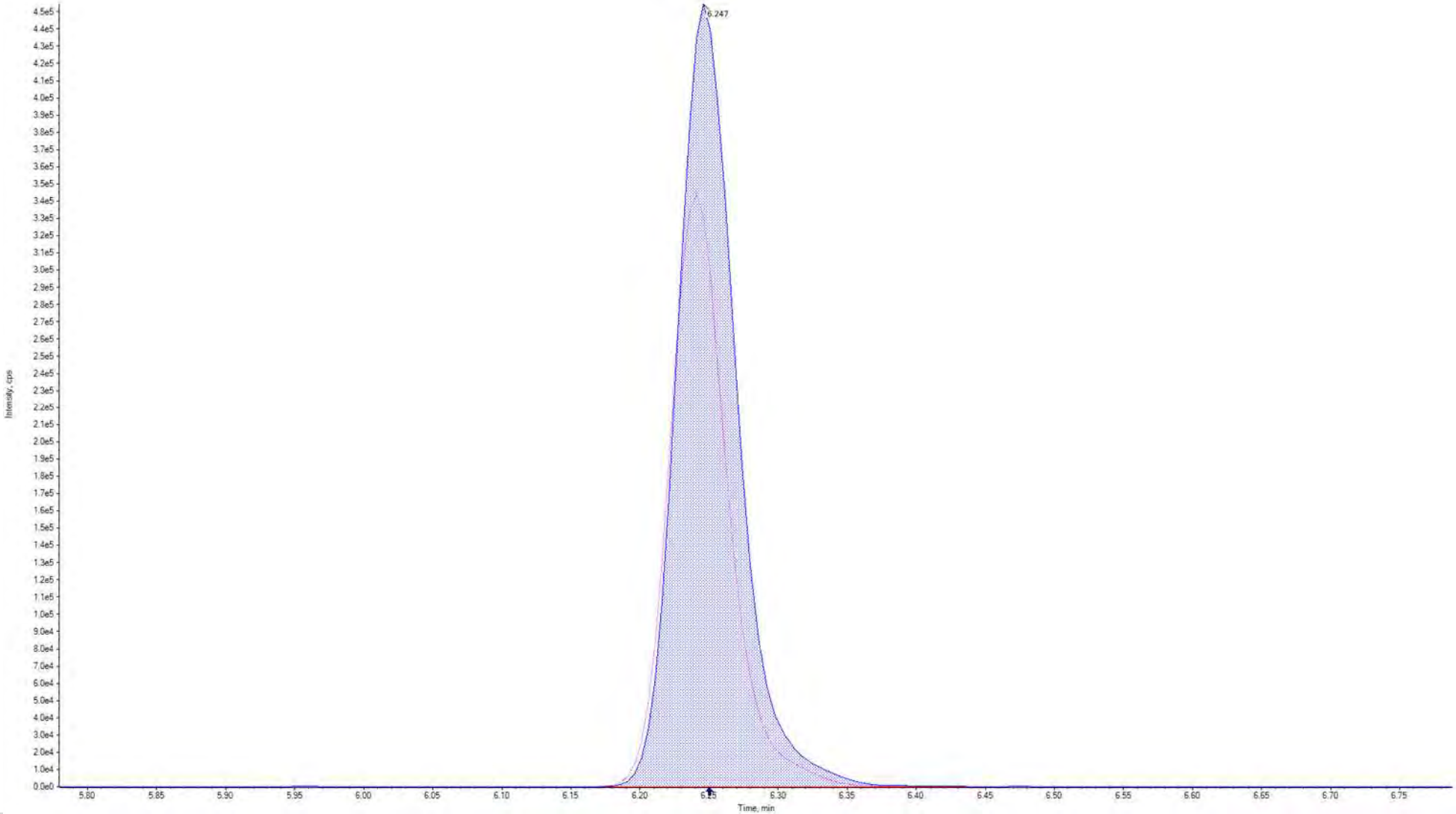
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFHpA
Sample: CA1633STD-10 S/N:4194.0 Points Across peak:55



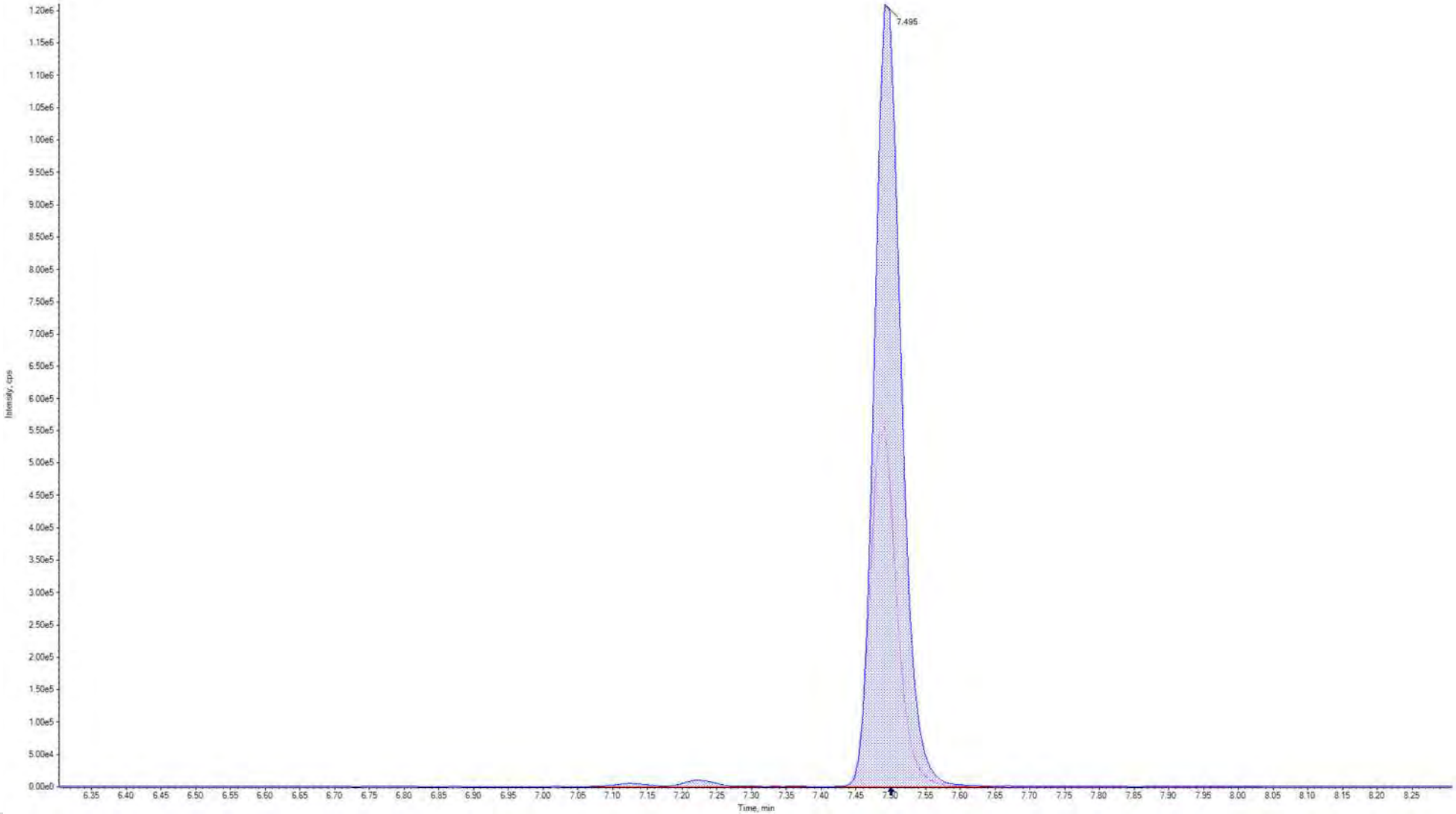
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFHpA_2
Sample: CA1633STD-10 S/N:20339.3 Points Across peak:52



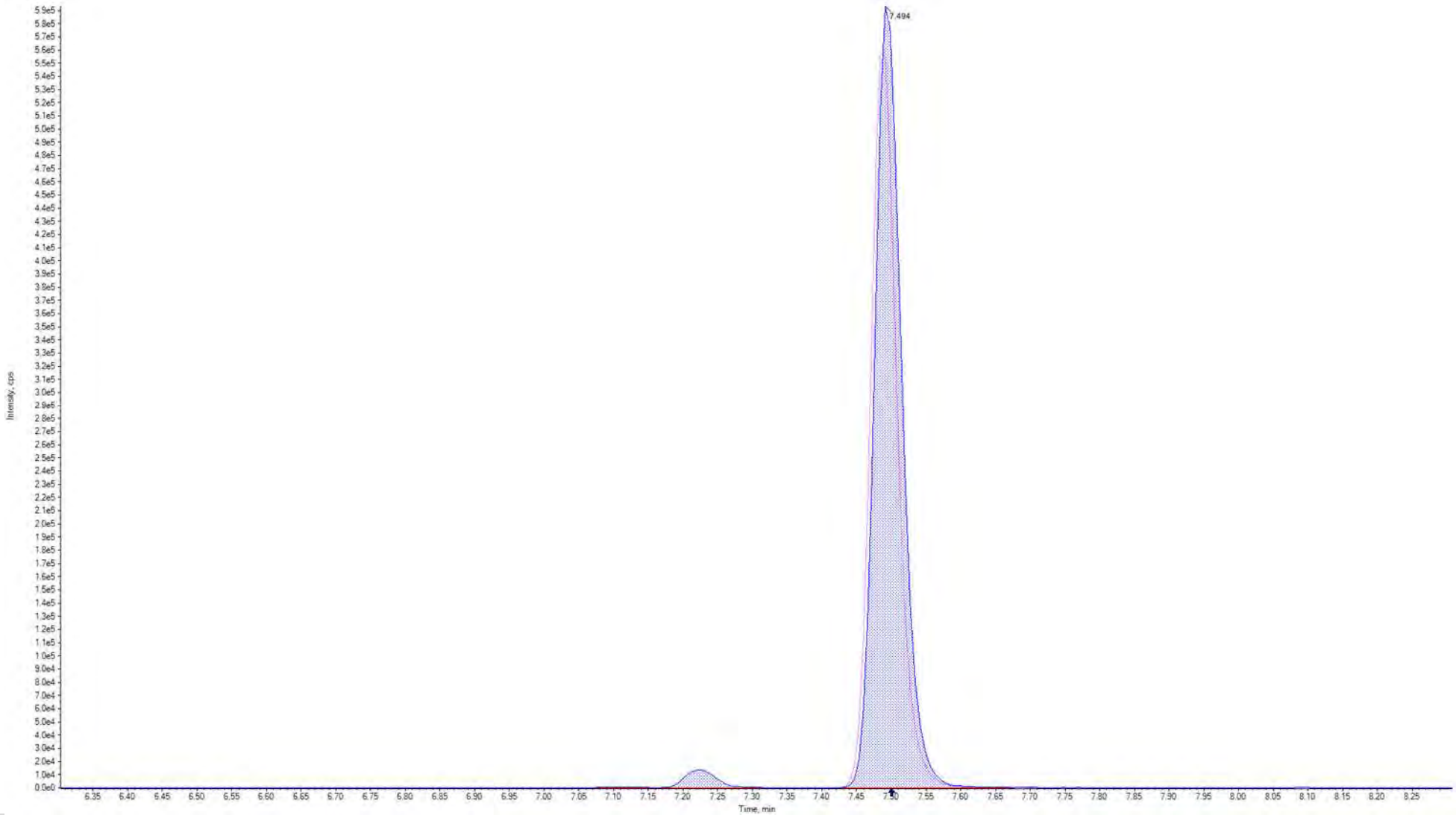
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFOA
Sample: CA1633STD-10 S/N:5303.8 Points Across peak:98



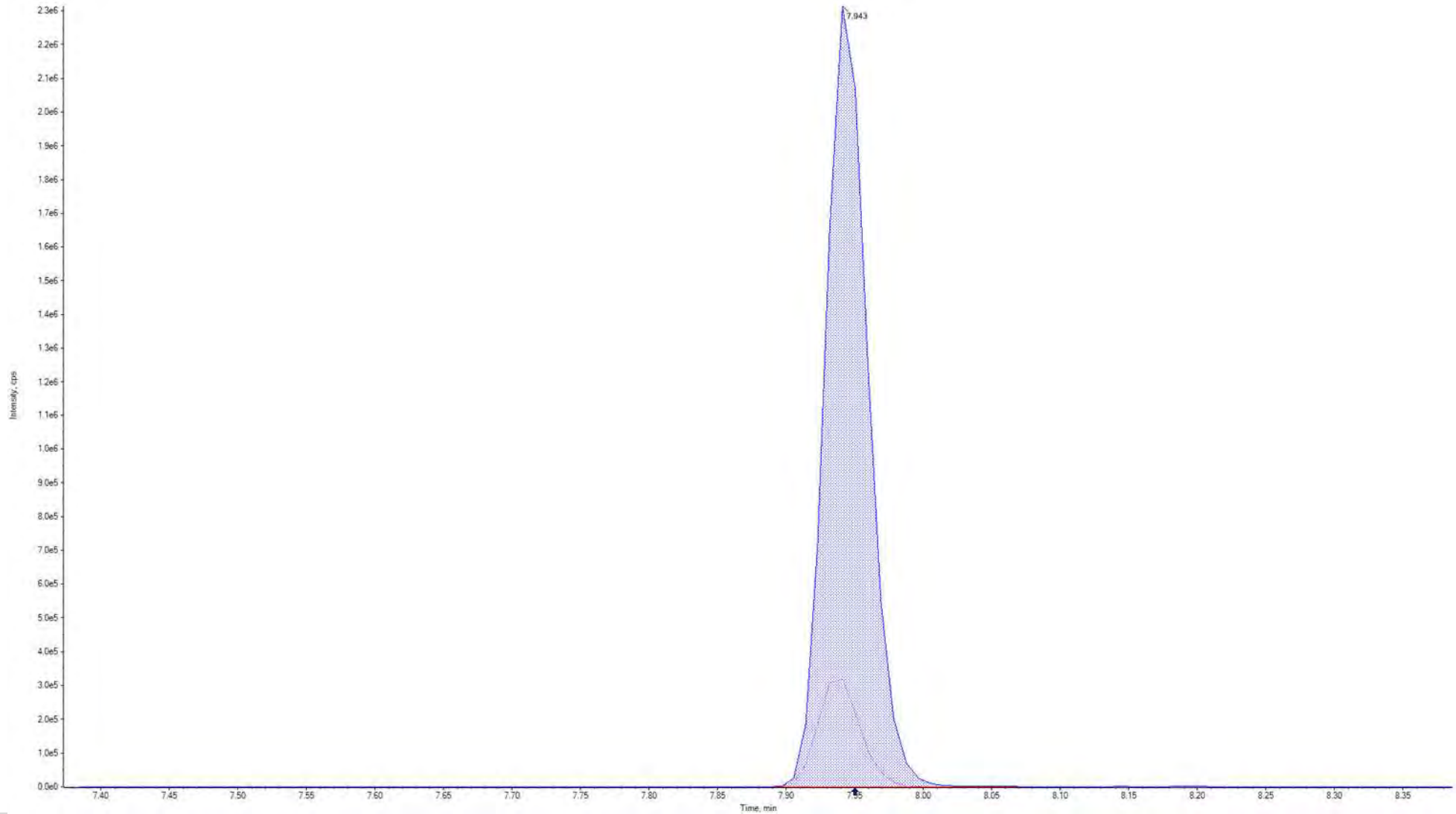
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFOA_2
Sample: CA1633STD-10 S/N:109559.1 Points Across peak:106



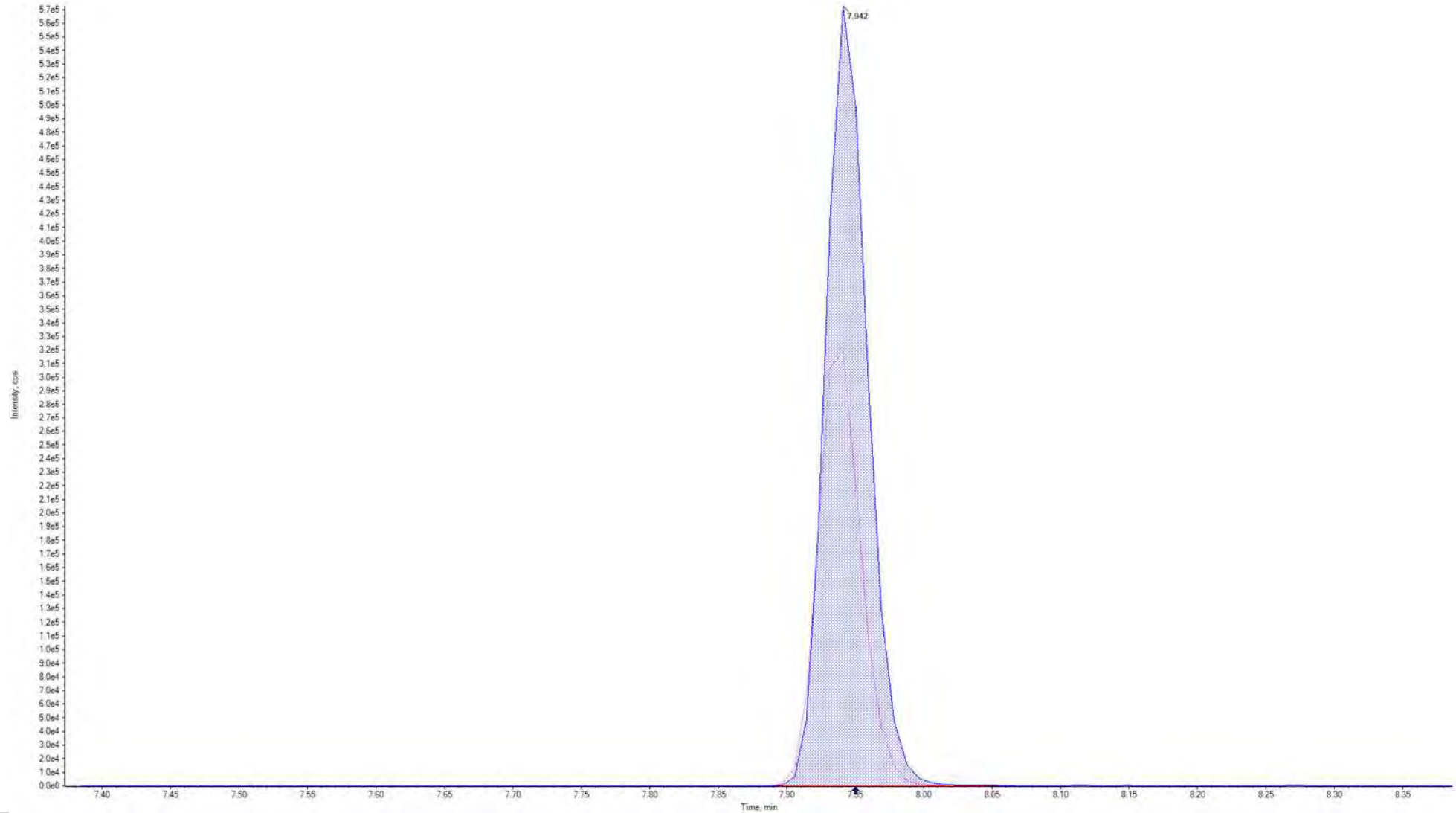
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFNA
Sample: CA1633STD-10 S/N:5100.7 Points Across peak:34



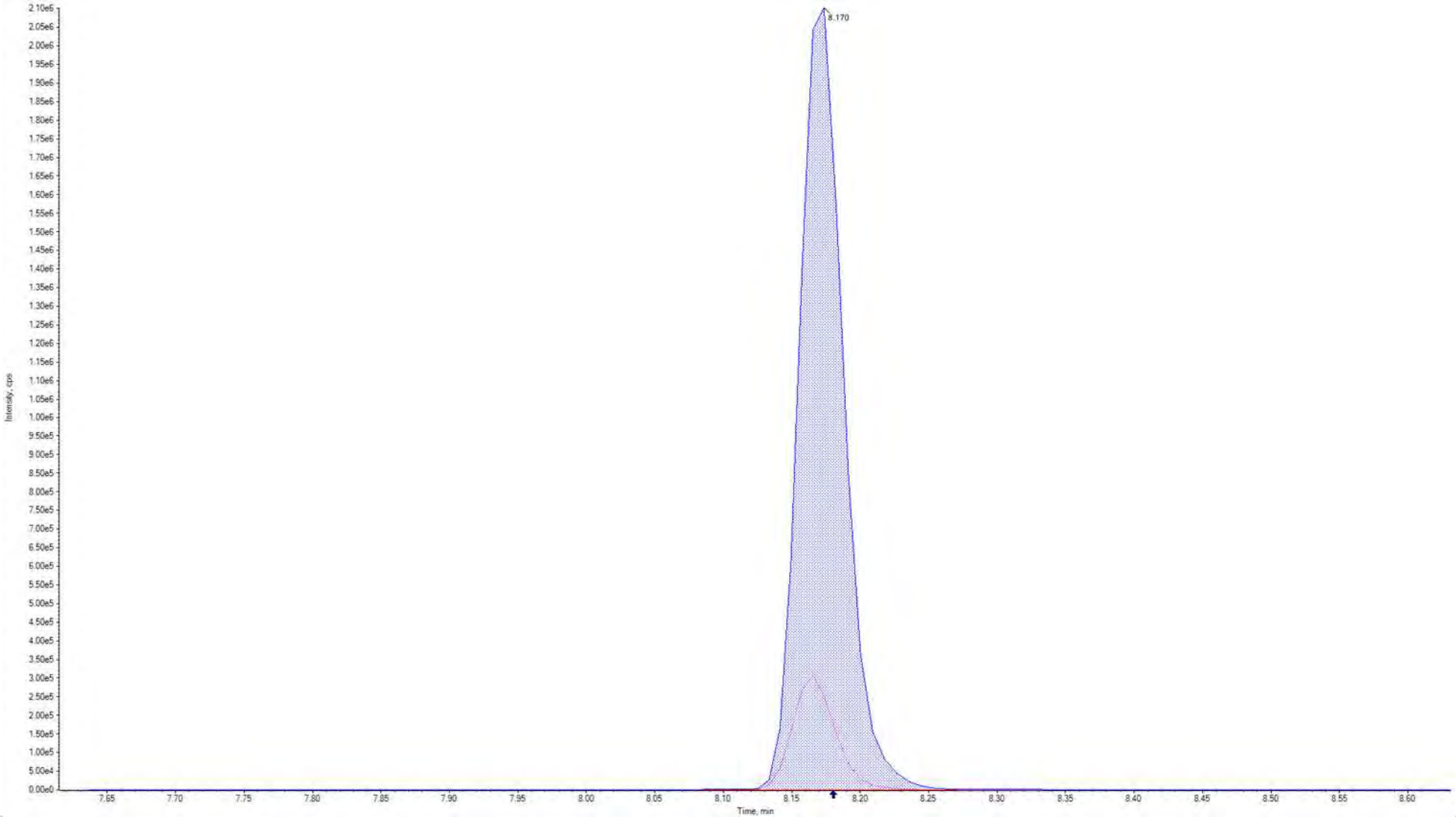
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFNA_2
Sample: CA1633STD-10 S/N:4803.0 Points Across peak:24



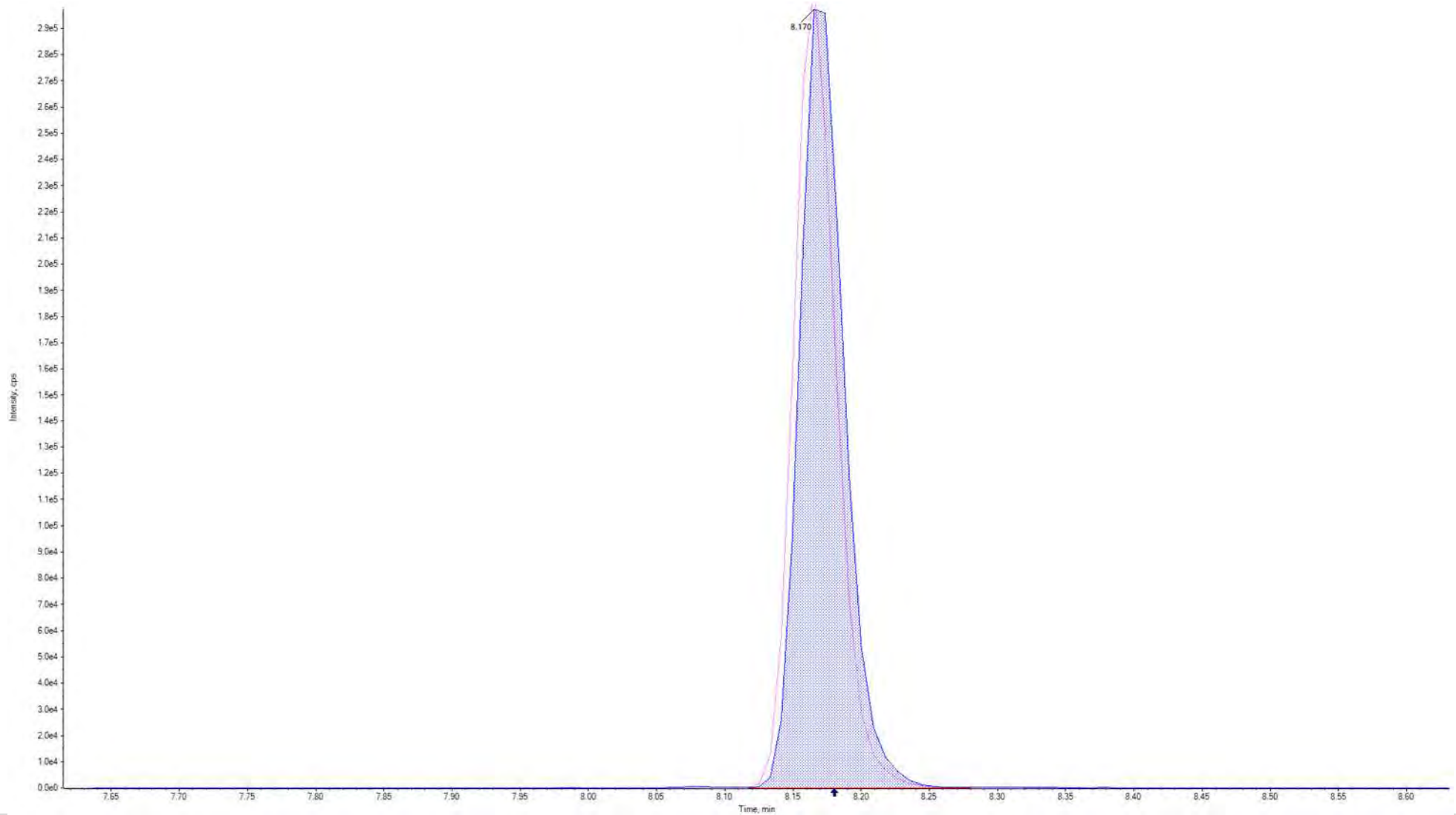
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFDA
Sample: CA1633STD-10 S/N:4327.3 Points Across peak:26



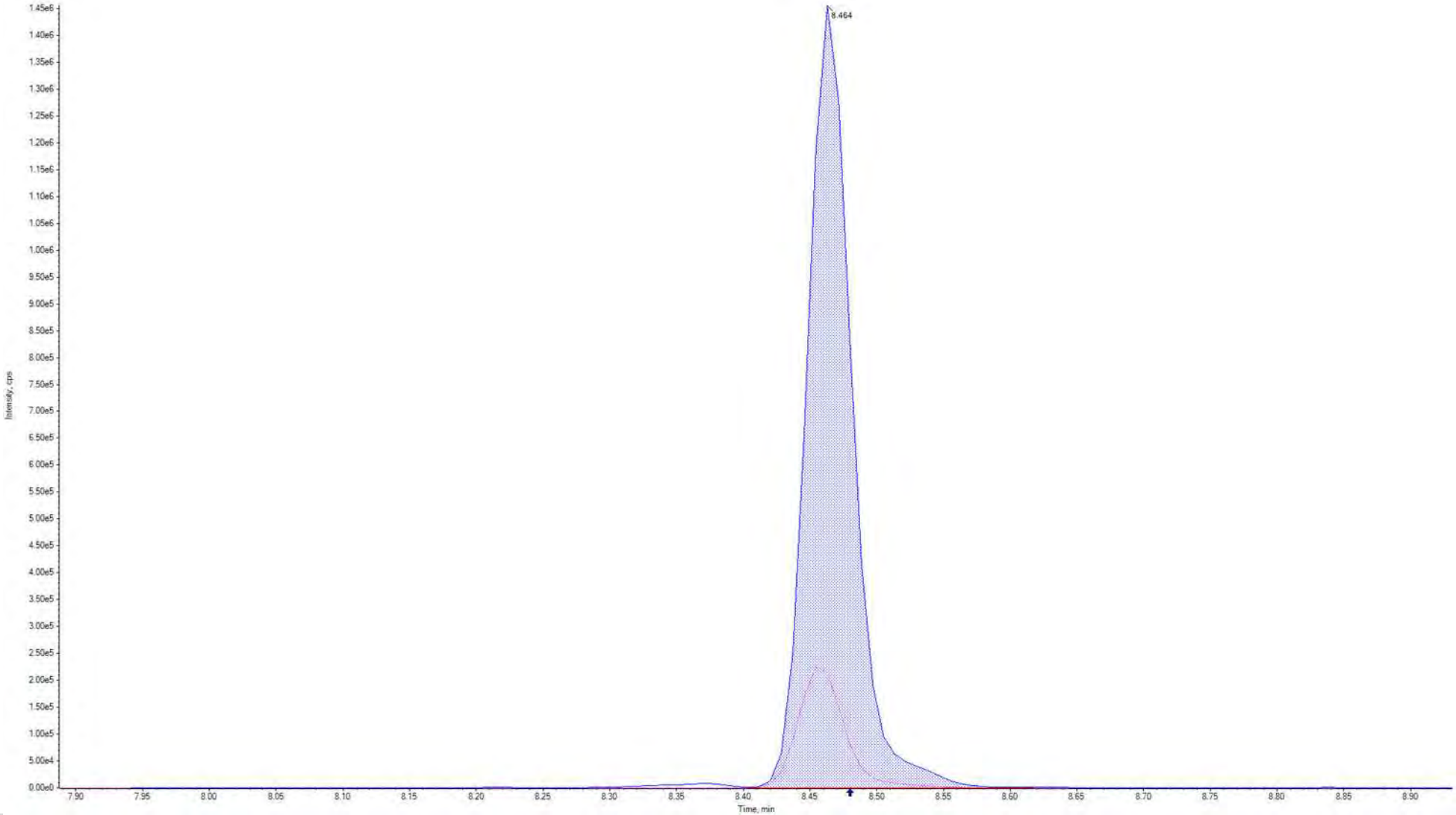
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFDA_2
Sample: CA1633STD-10 S/N:20974326.7 Points Across peak:20



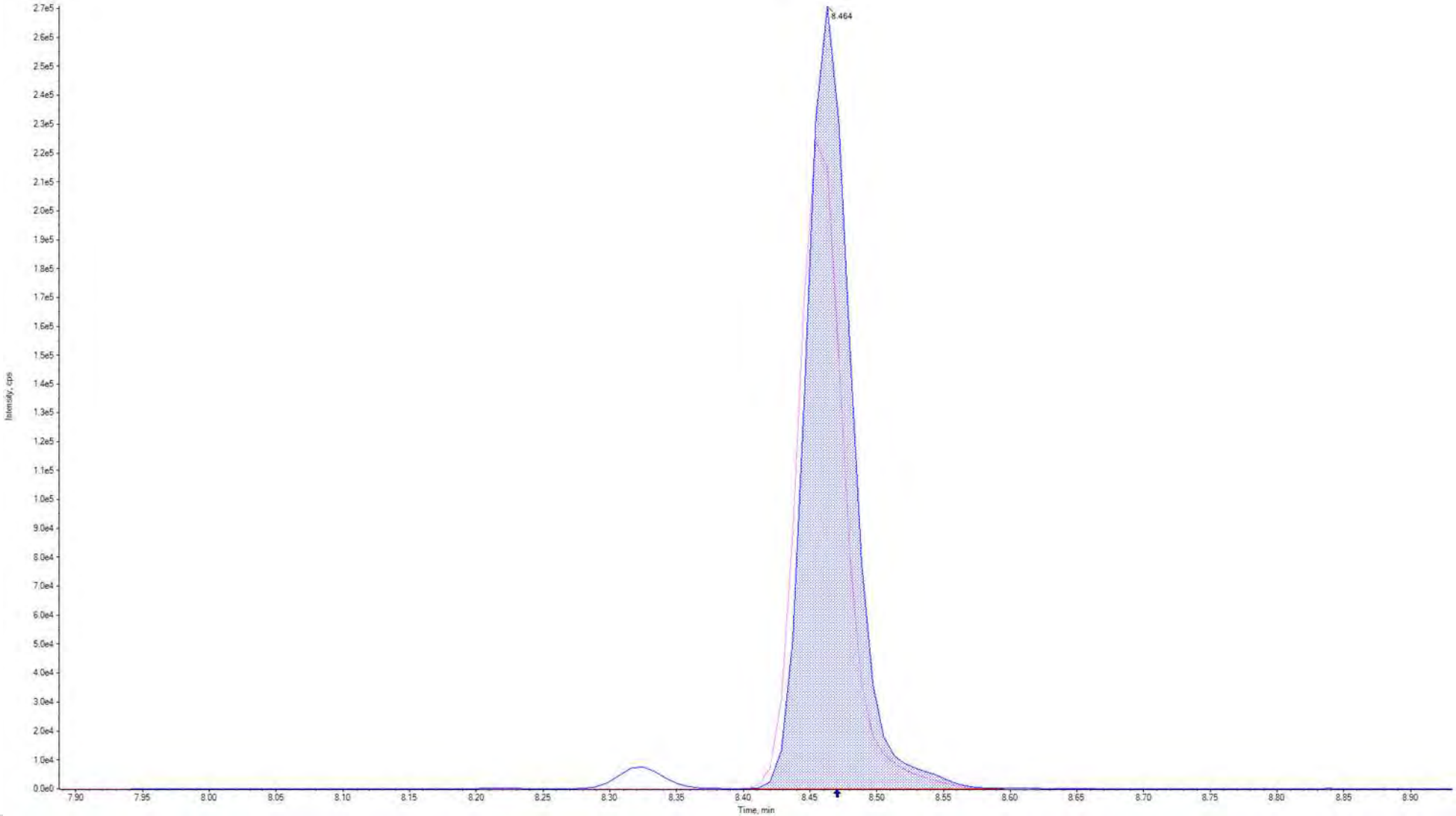
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFUnA
Sample: CA1633STD-10 S/N:4789.0 Points Across peak:28



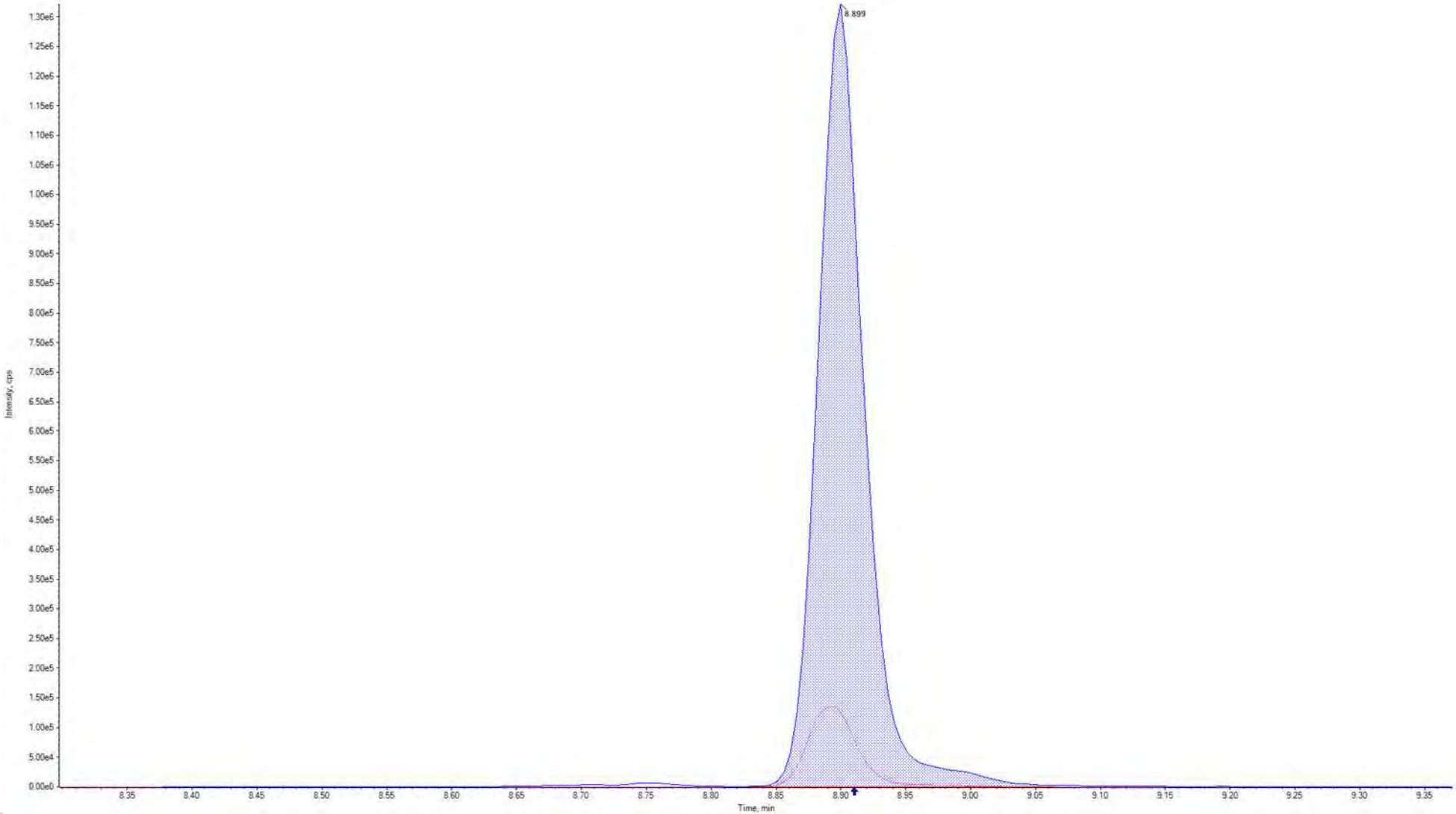
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFUnA_2
Sample: CA1633STD-10 S/N:2054.6 Points Across peak:26



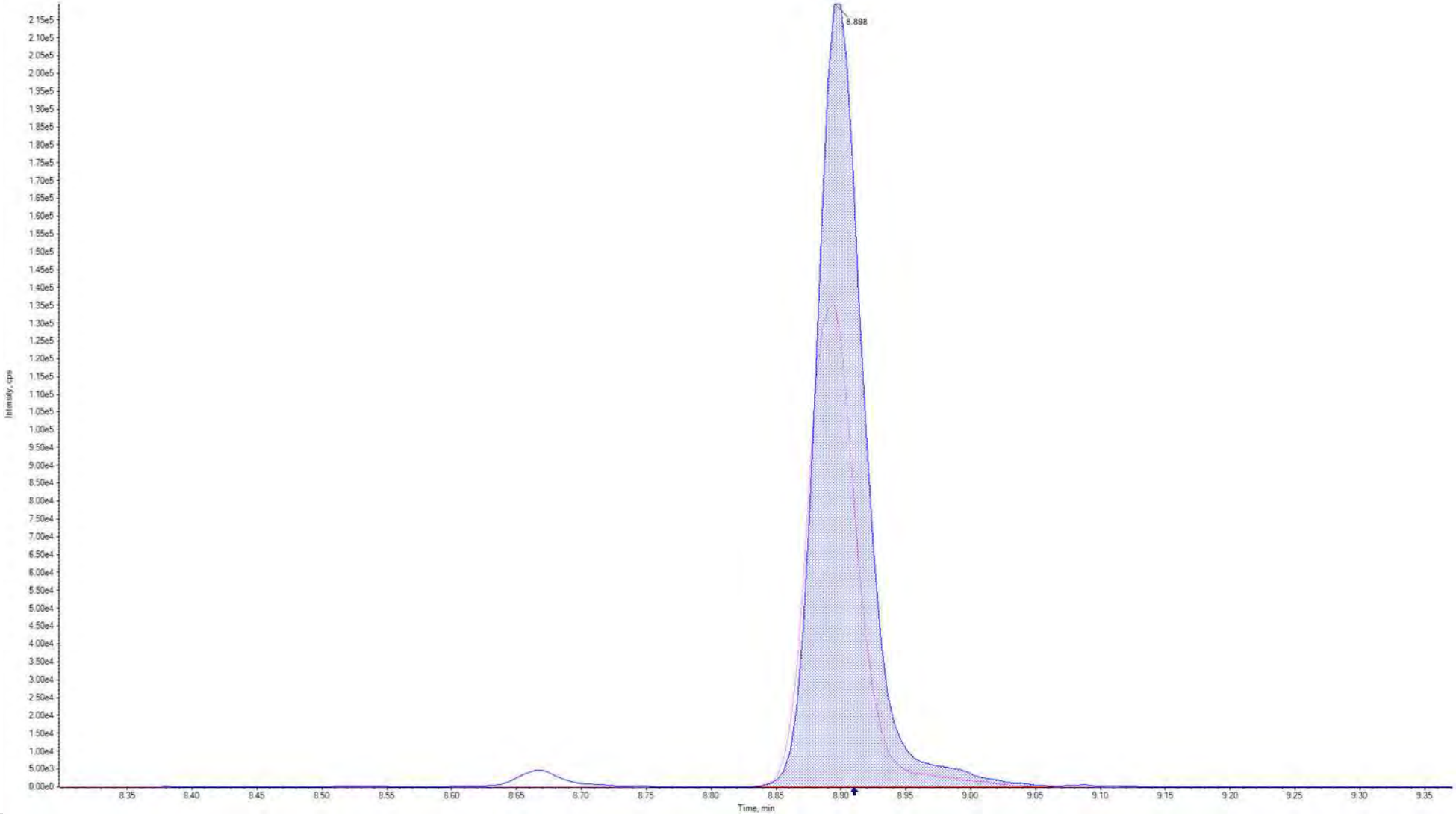
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFDoA
Sample: CA1633STD-10 S/N:5516.4 Points Across peak:49



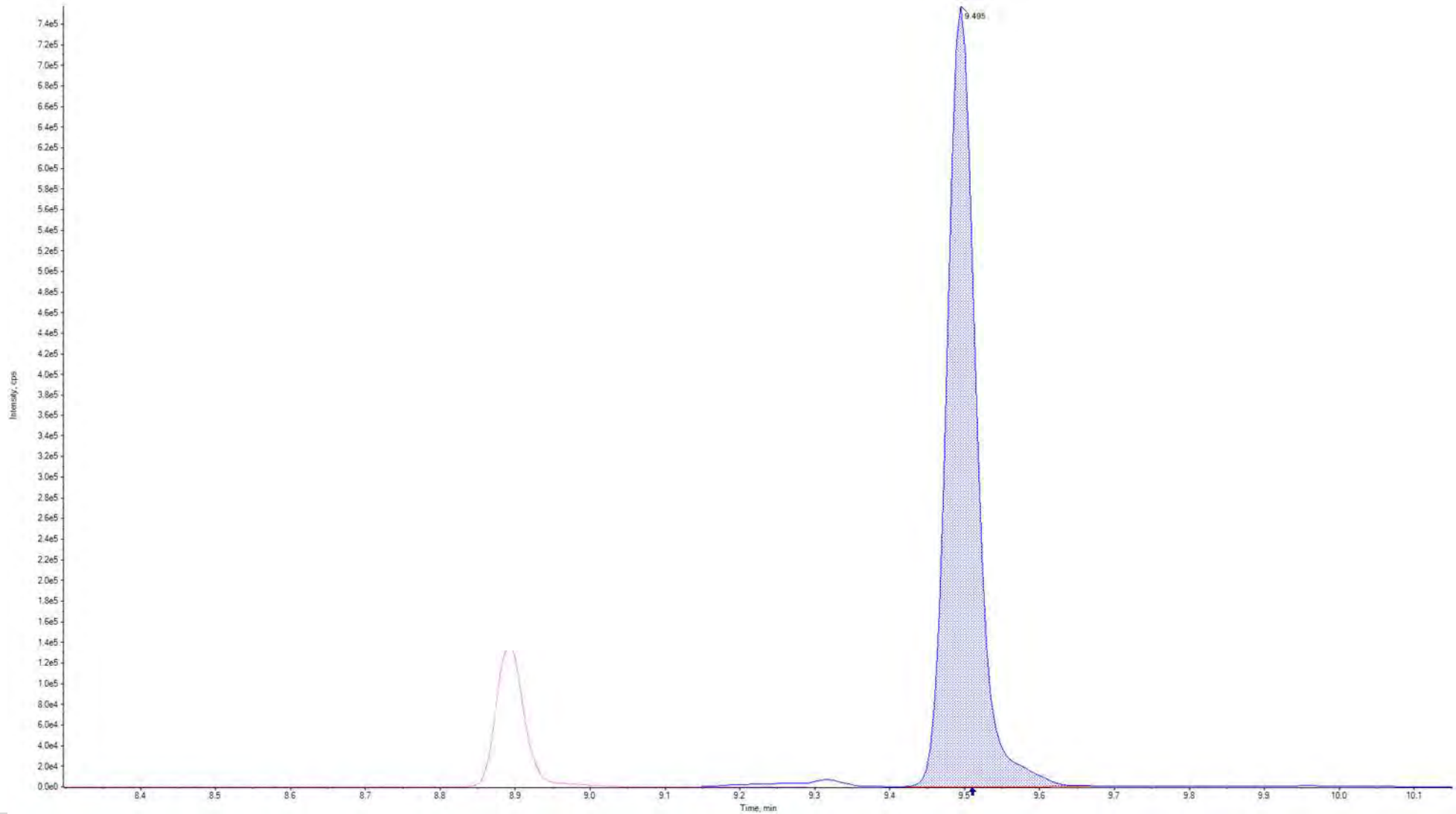
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFDoA_2
Sample: CA1633STD-10 S/N:27837.4 Points Across peak:48



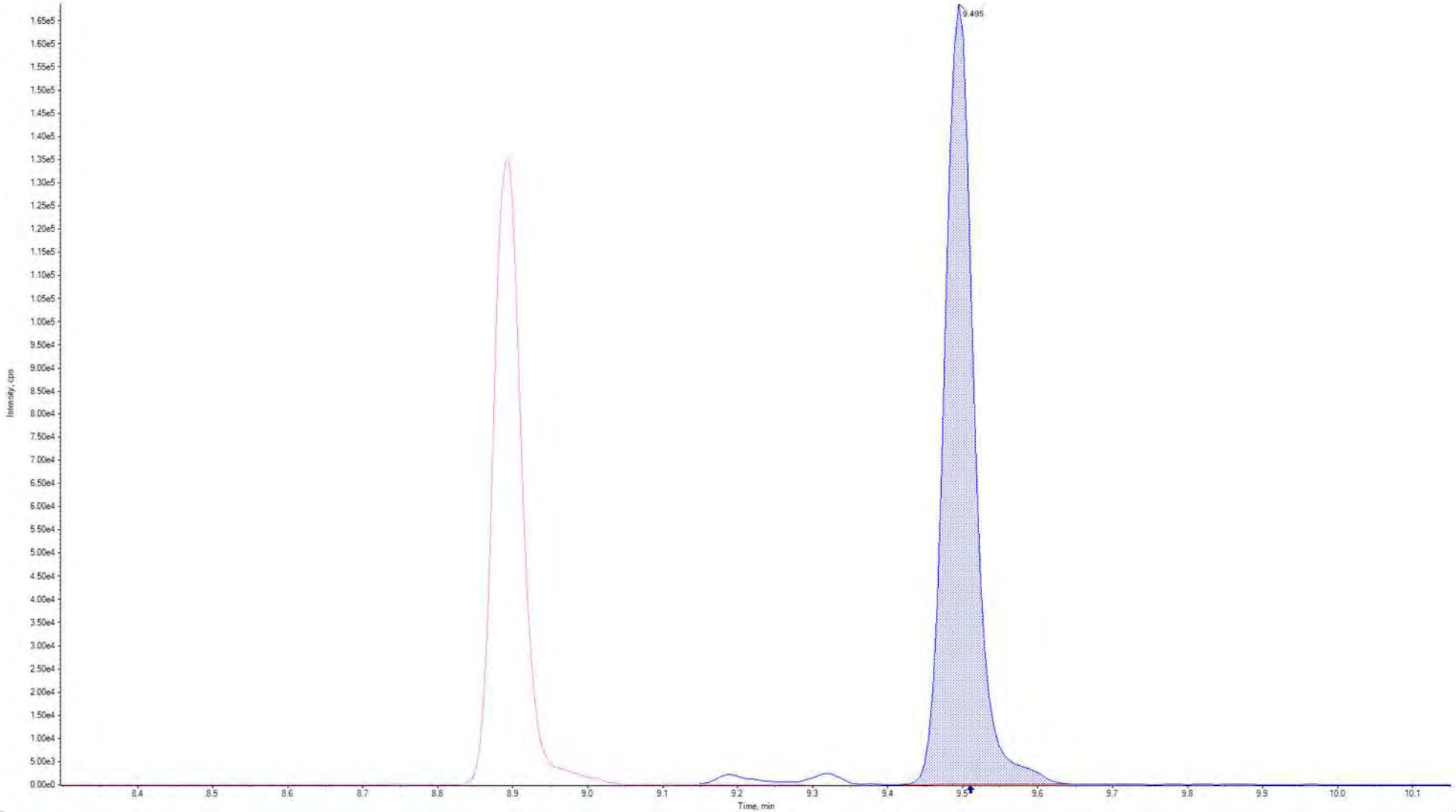
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFTrDA
Sample: CA1633STD-10 S/N:2826.9 Points Across peak:52



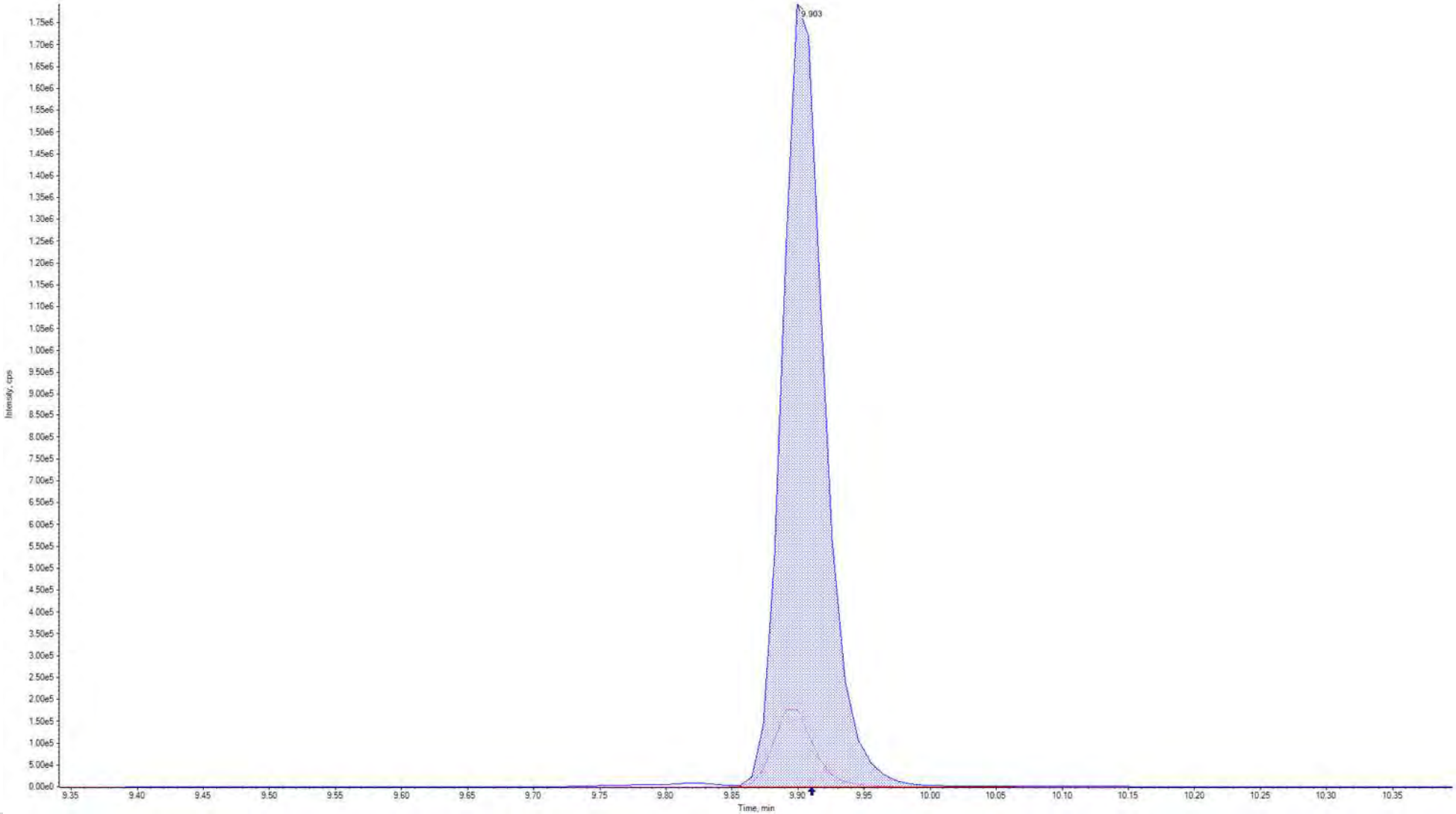
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFTrDA_2
Sample: CA1633STD-10 S/N:11826.6 Points Across peak:39



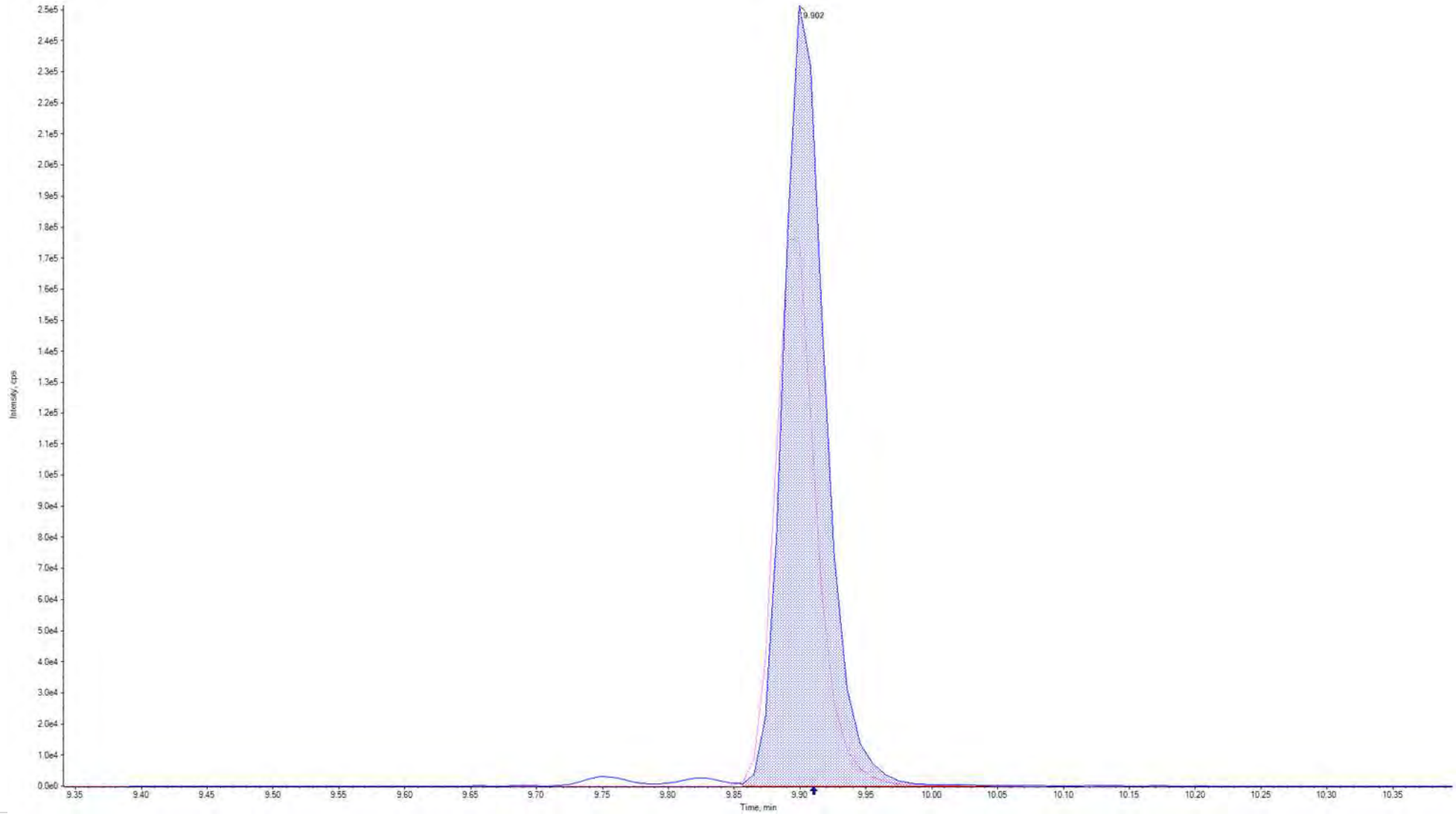
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFTeDA
Sample: CA1633STD-10 S/N:4428.5 Points Across peak:24



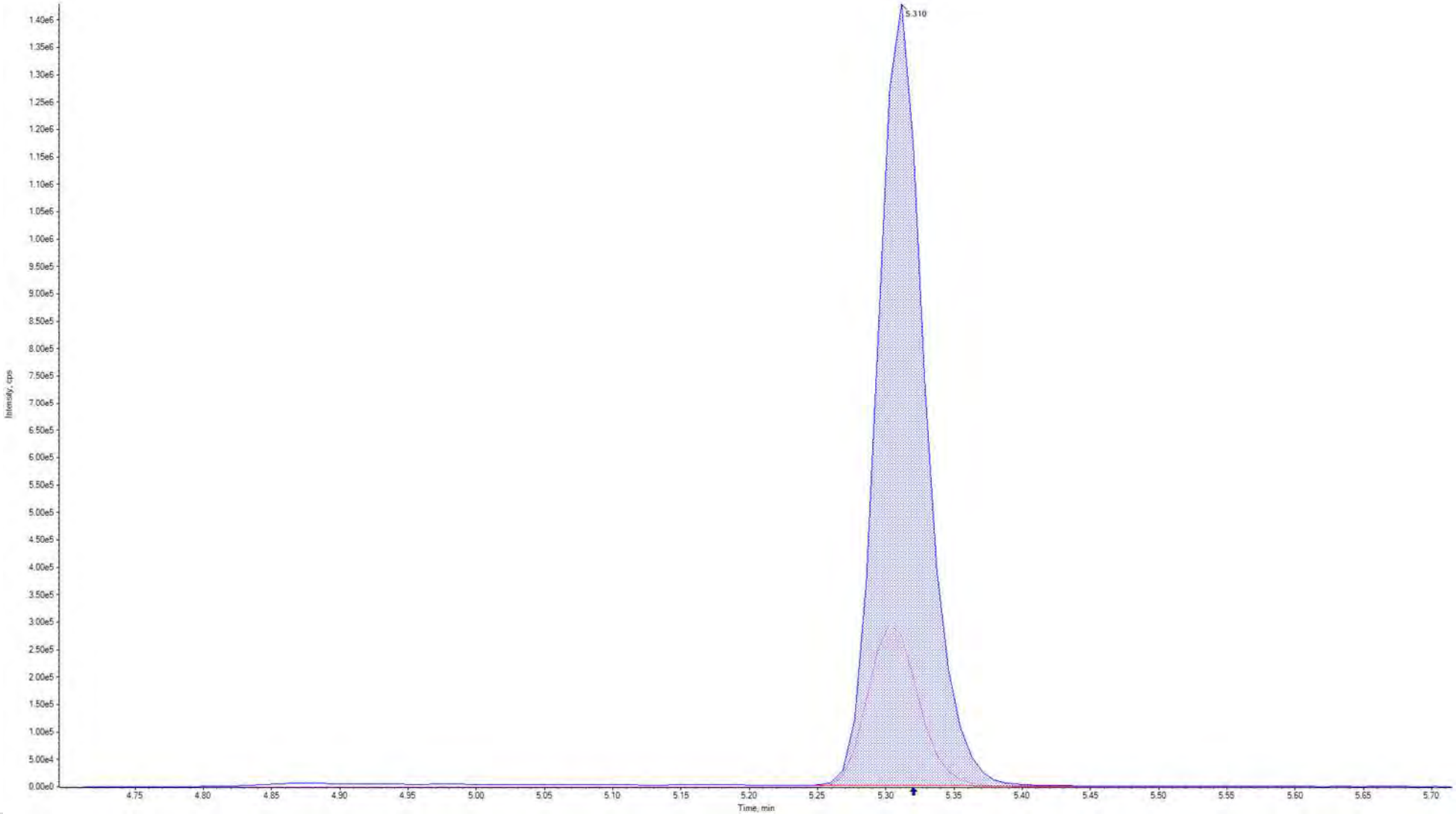
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFTeDA_2
Sample: CA1633STD-10 S/N:1673093.3 Points Across peak:21



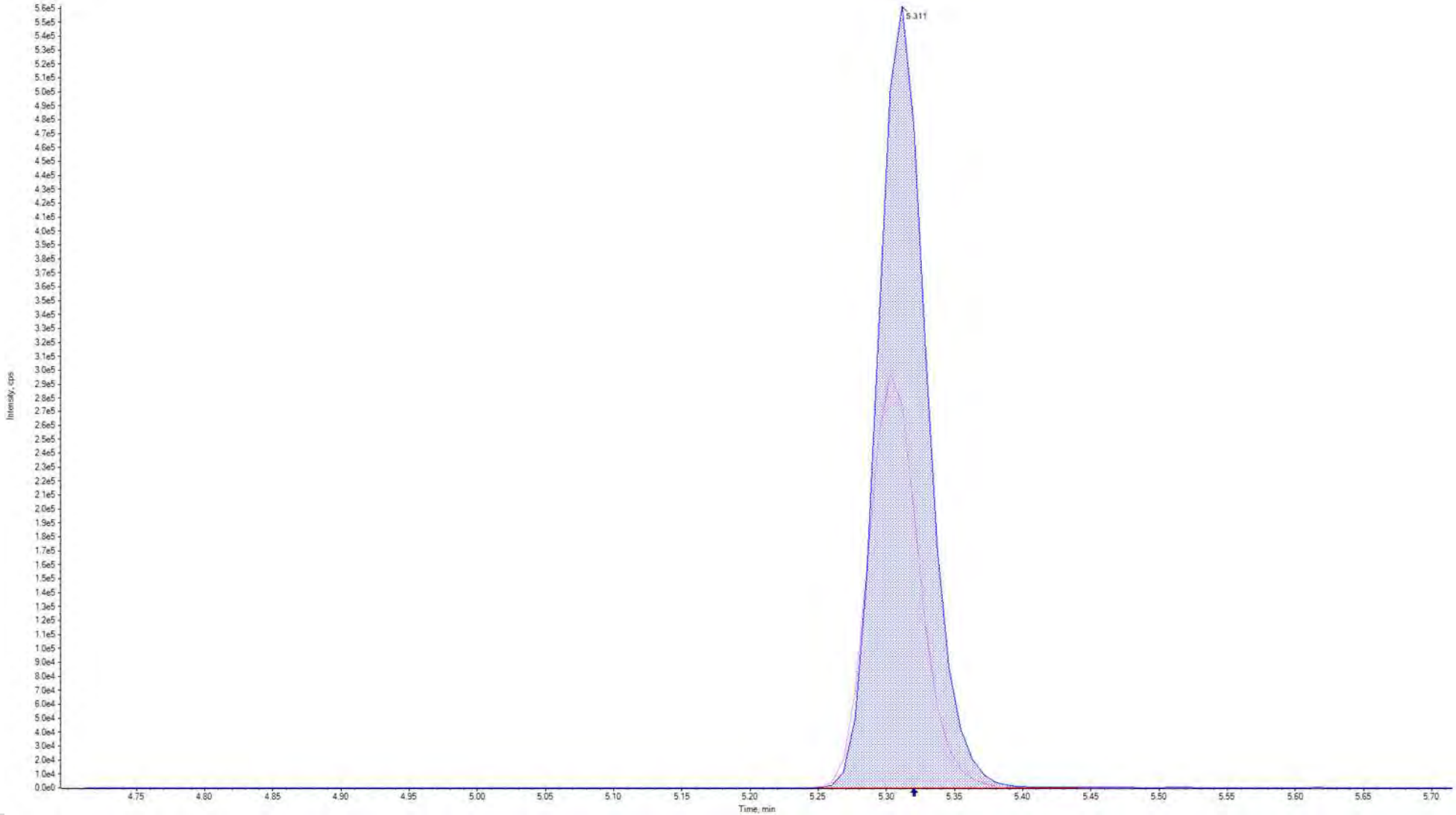
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFBS
Sample: CA1633STD-10 S/N:63.8 Points Across peak:31



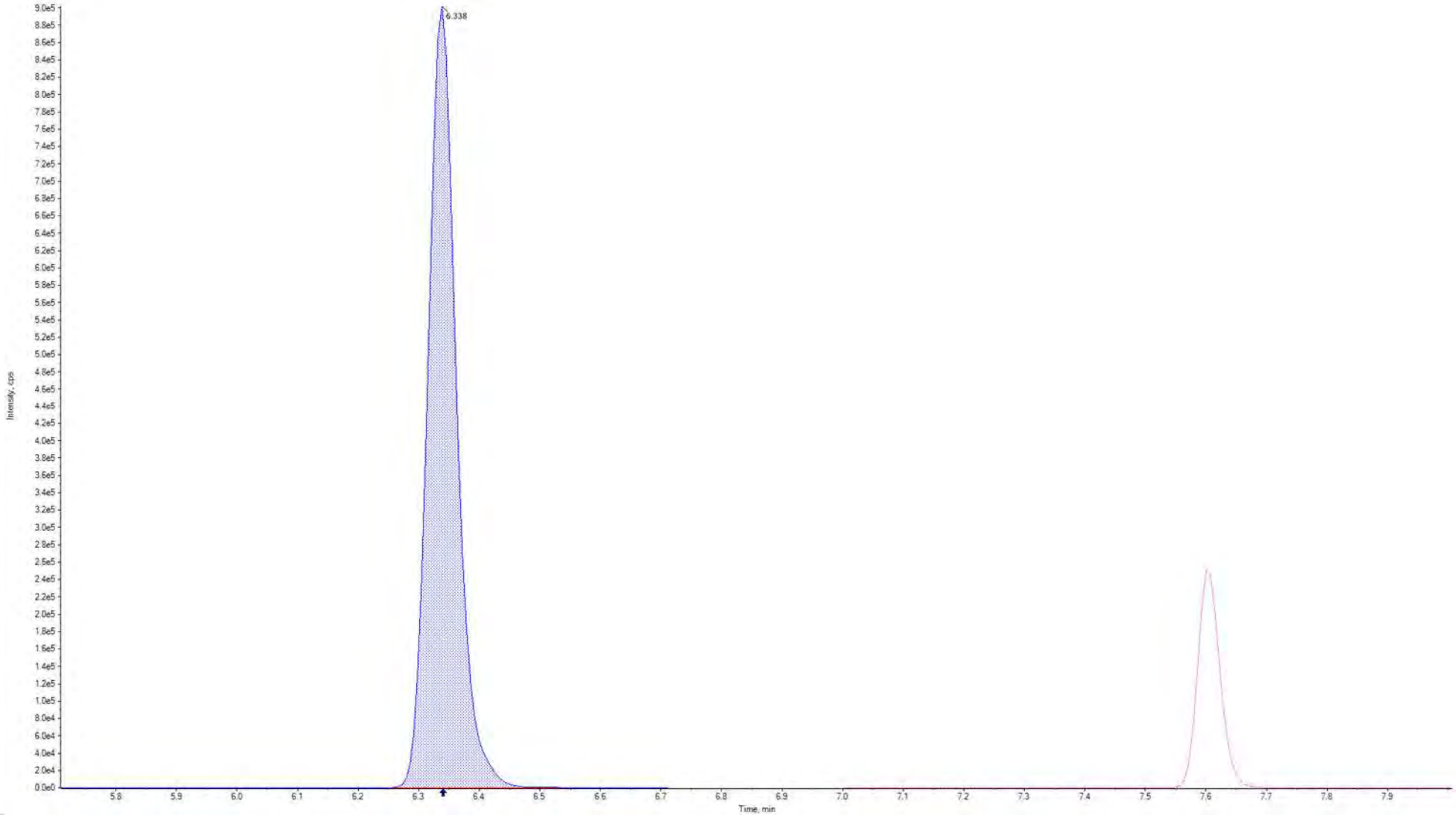
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFBS_2
Sample: CA1633STD-10 S/N:5797.7 Points Across peak:29



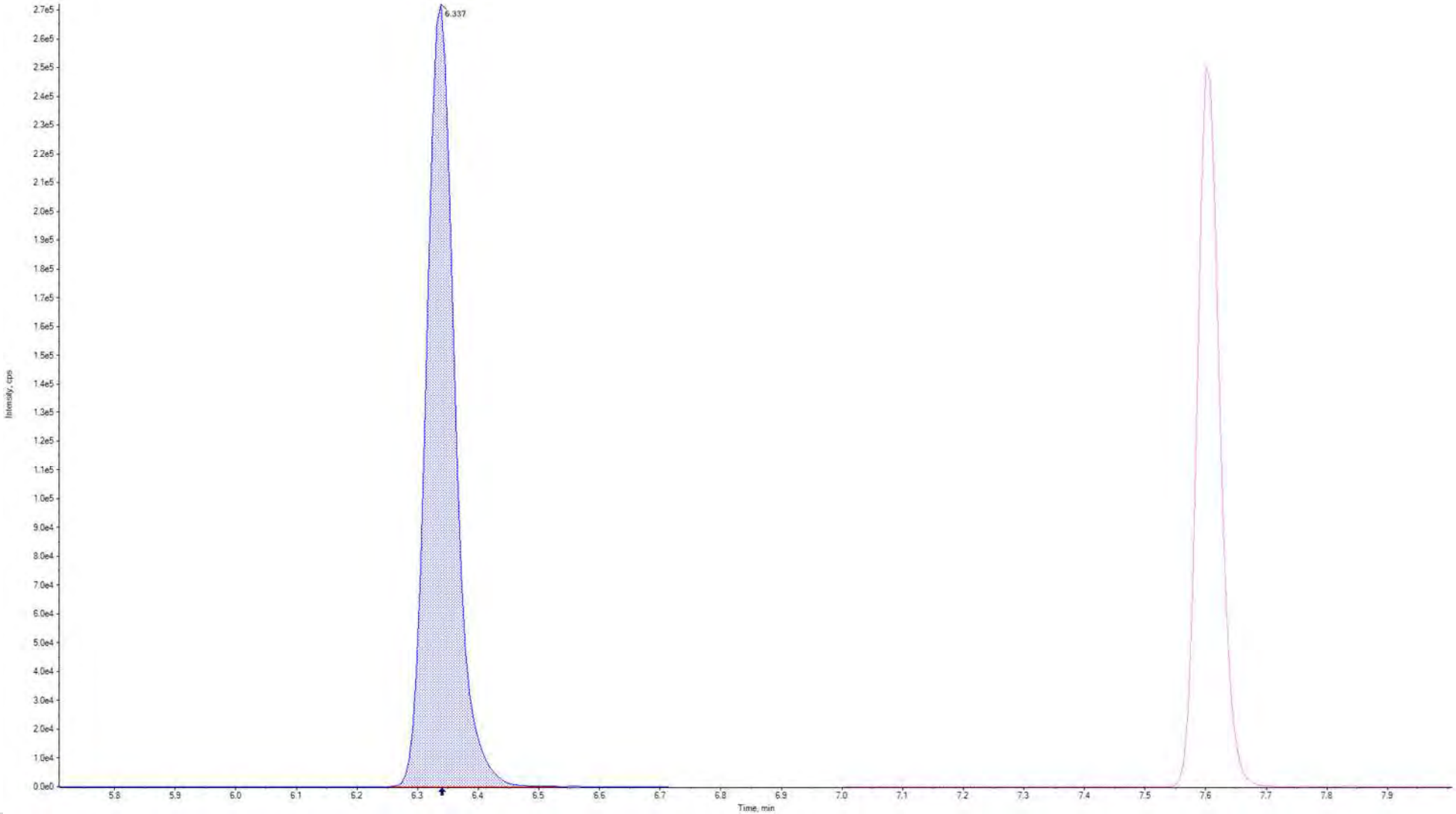
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFPeS
Sample: CA1633STD-10 S/N:14664.2 Points Across peak:53



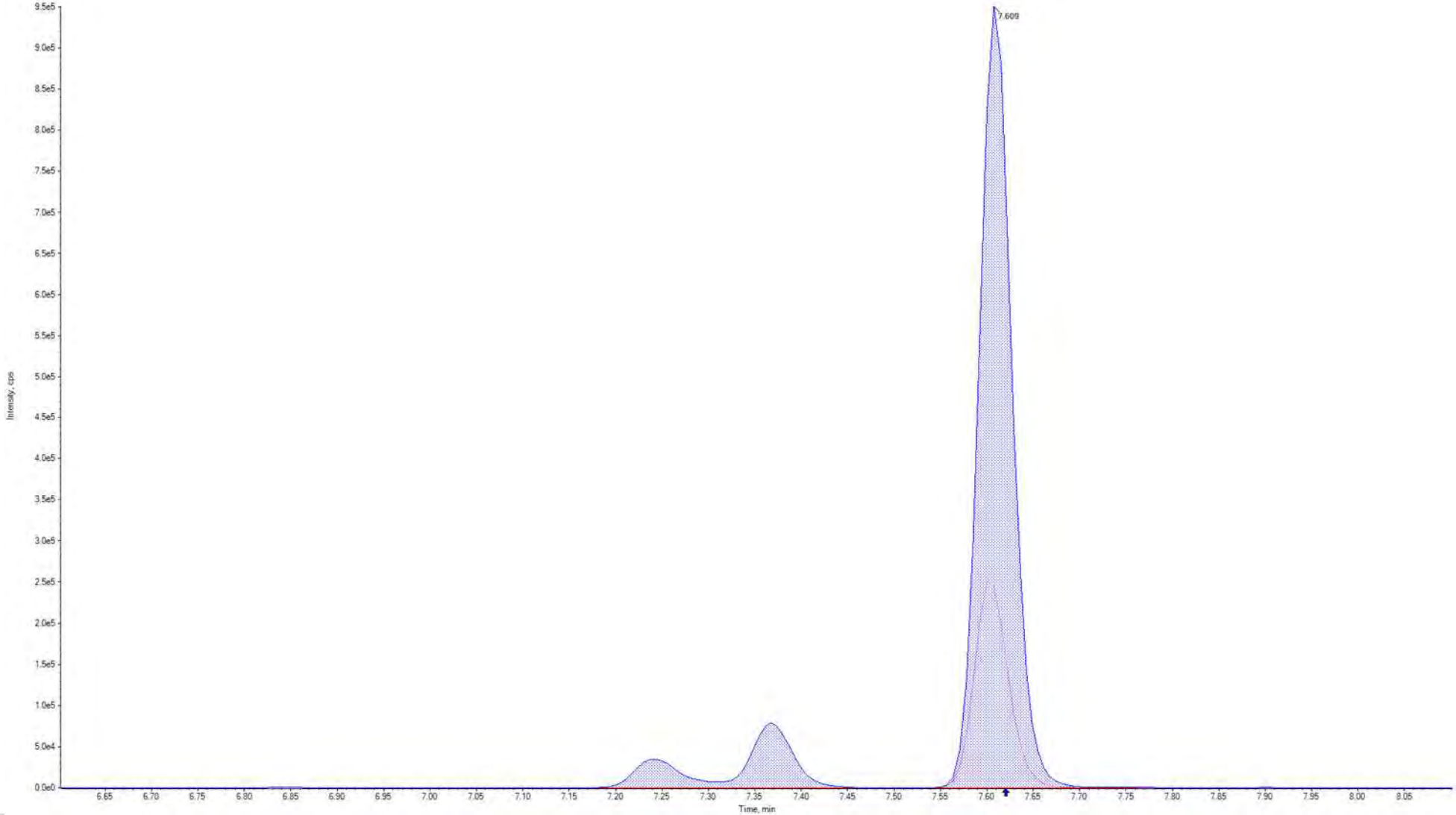
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFPeS_2
Sample: CA1633STD-10 S/N:20084.9 Points Across peak:45



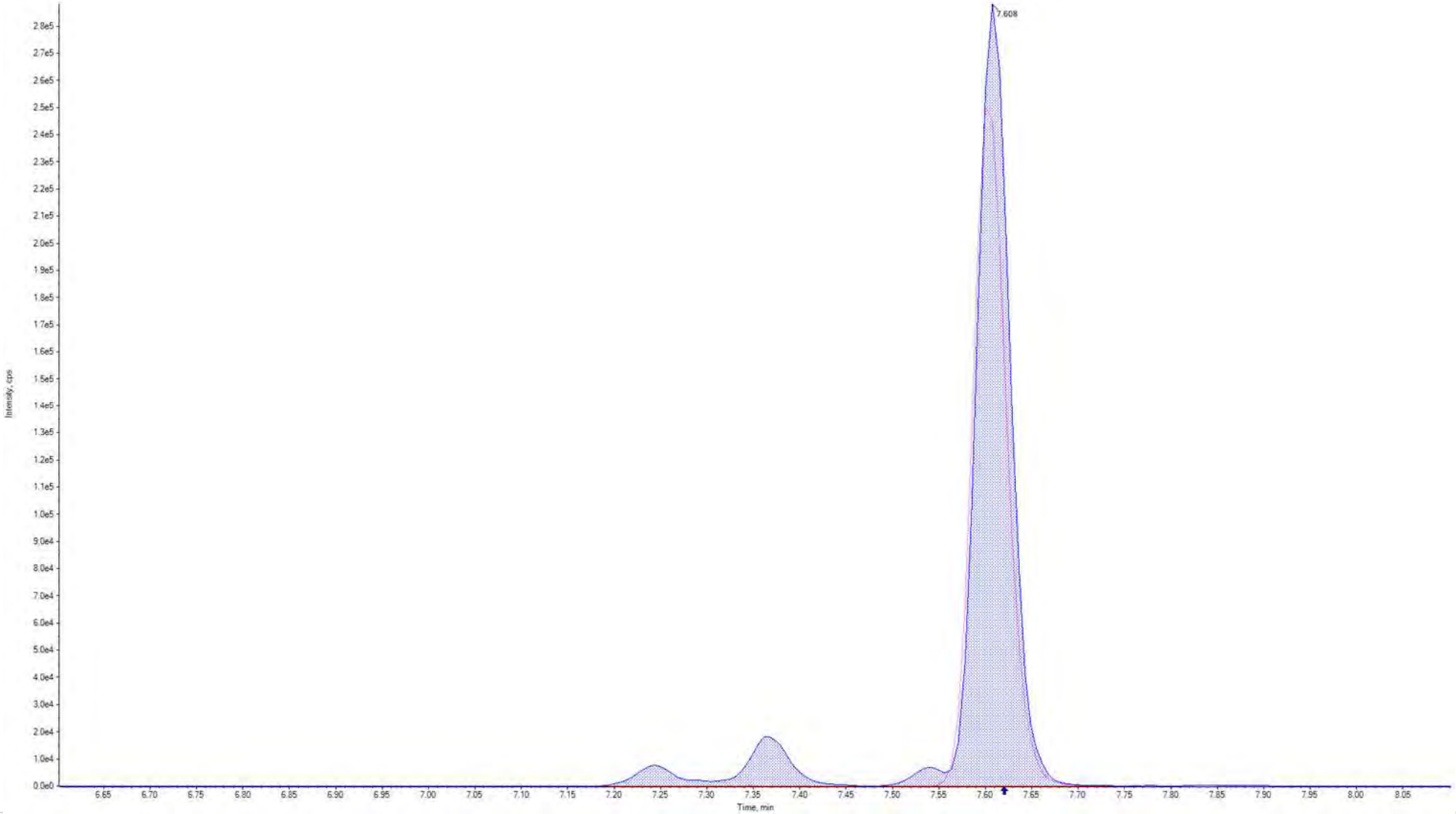
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFHxS
Sample: CA1633STD-10 S/N:18283.3 Points Across peak:96



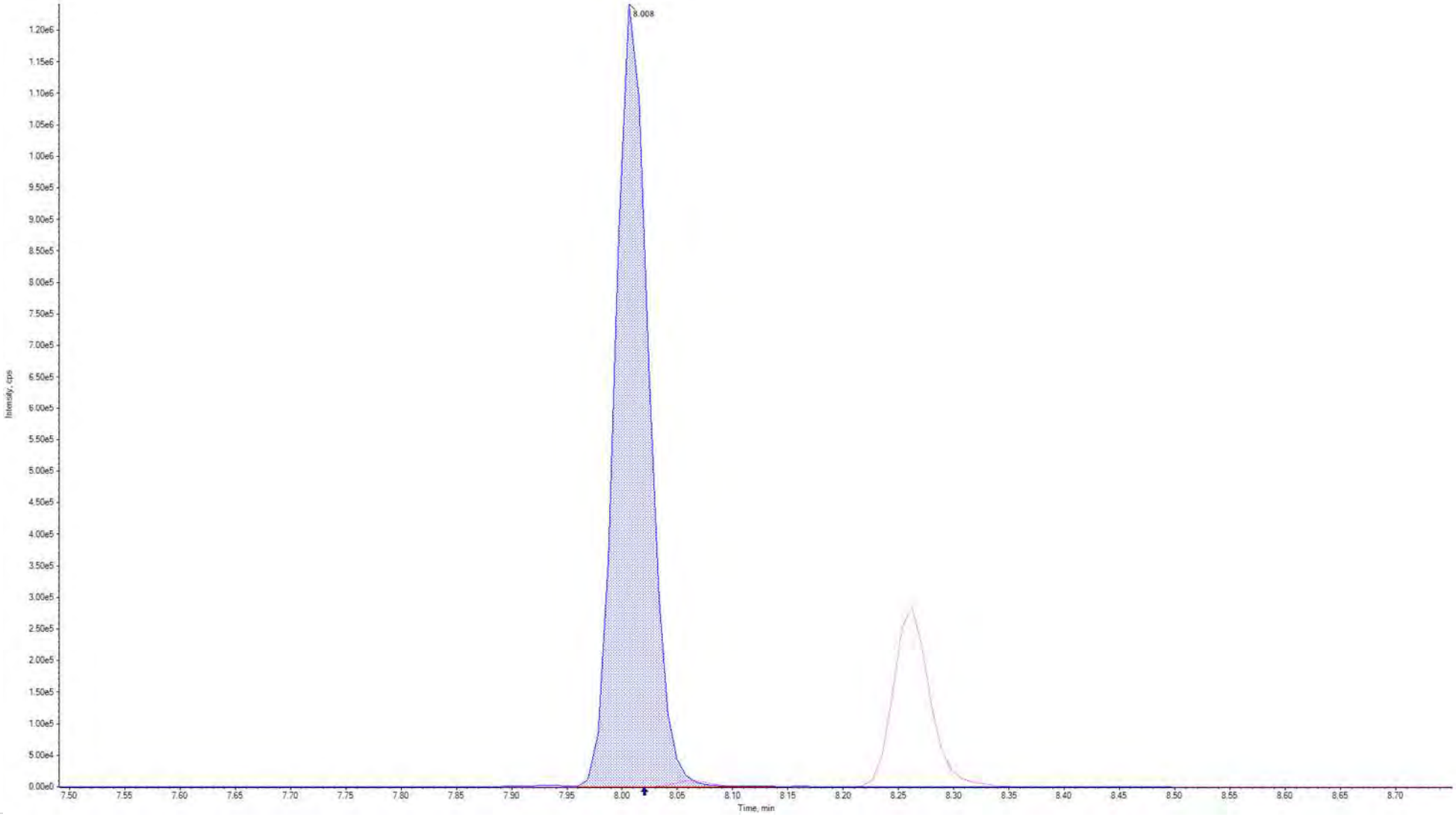
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFHxS_2
Sample: CA1633STD-10 S/N:2847794.3 Points Across peak:95



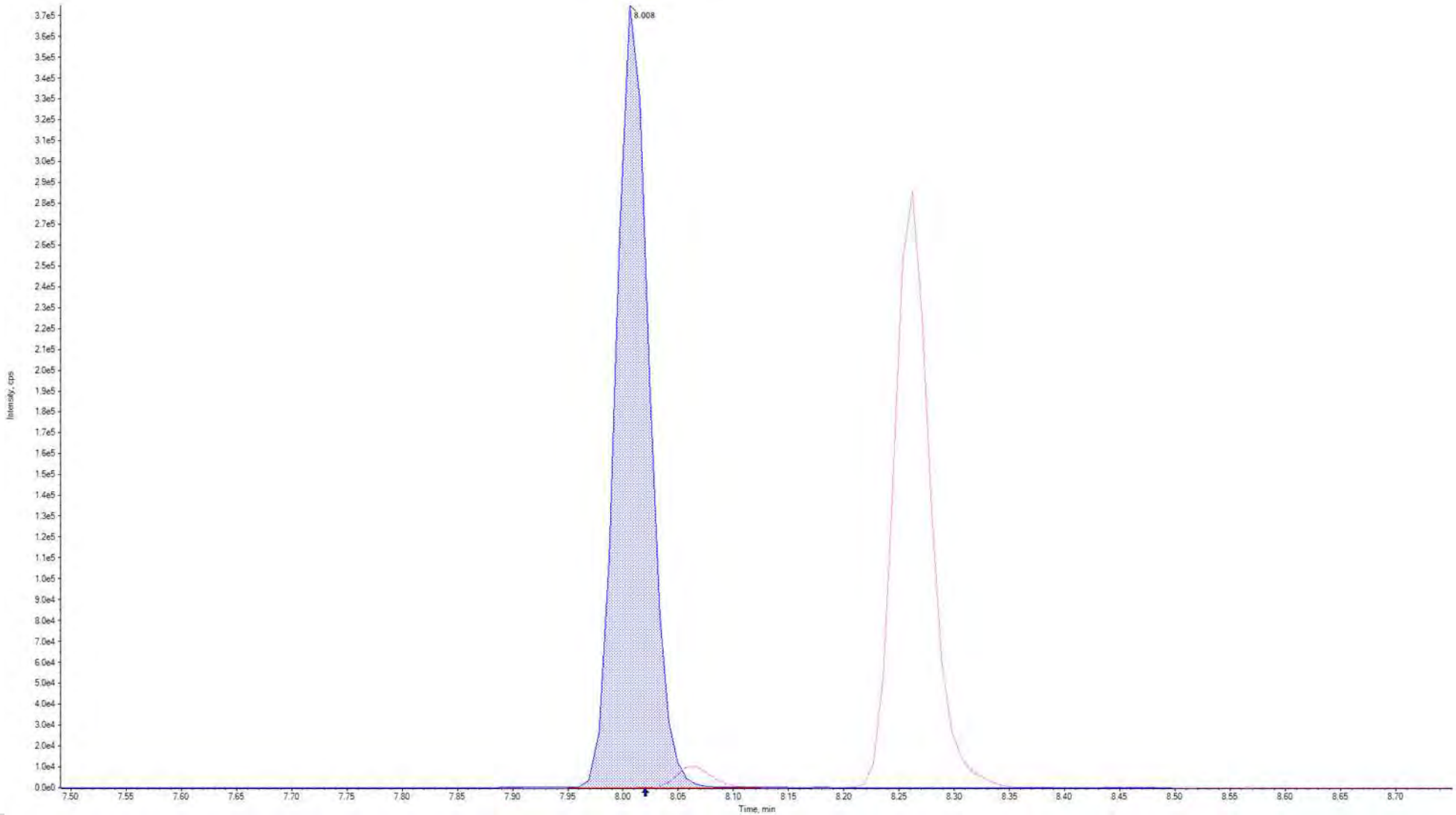
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFHpS
Sample: CA1633STD-10 S/N:30011.9 Points Across peak:23



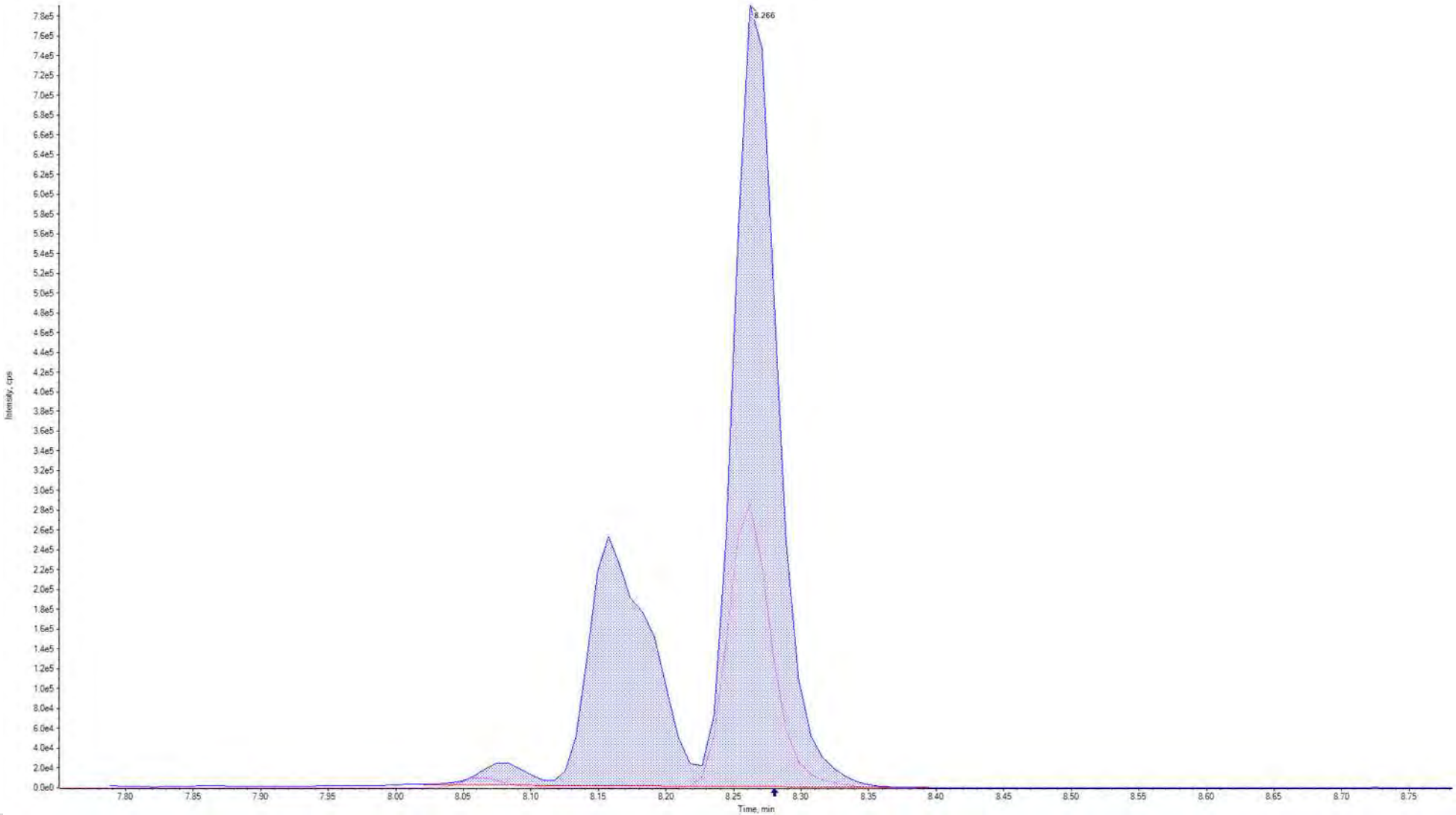
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFHpS_2
Sample: CA1633STD-10 S/N:2290.8 Points Across peak:21



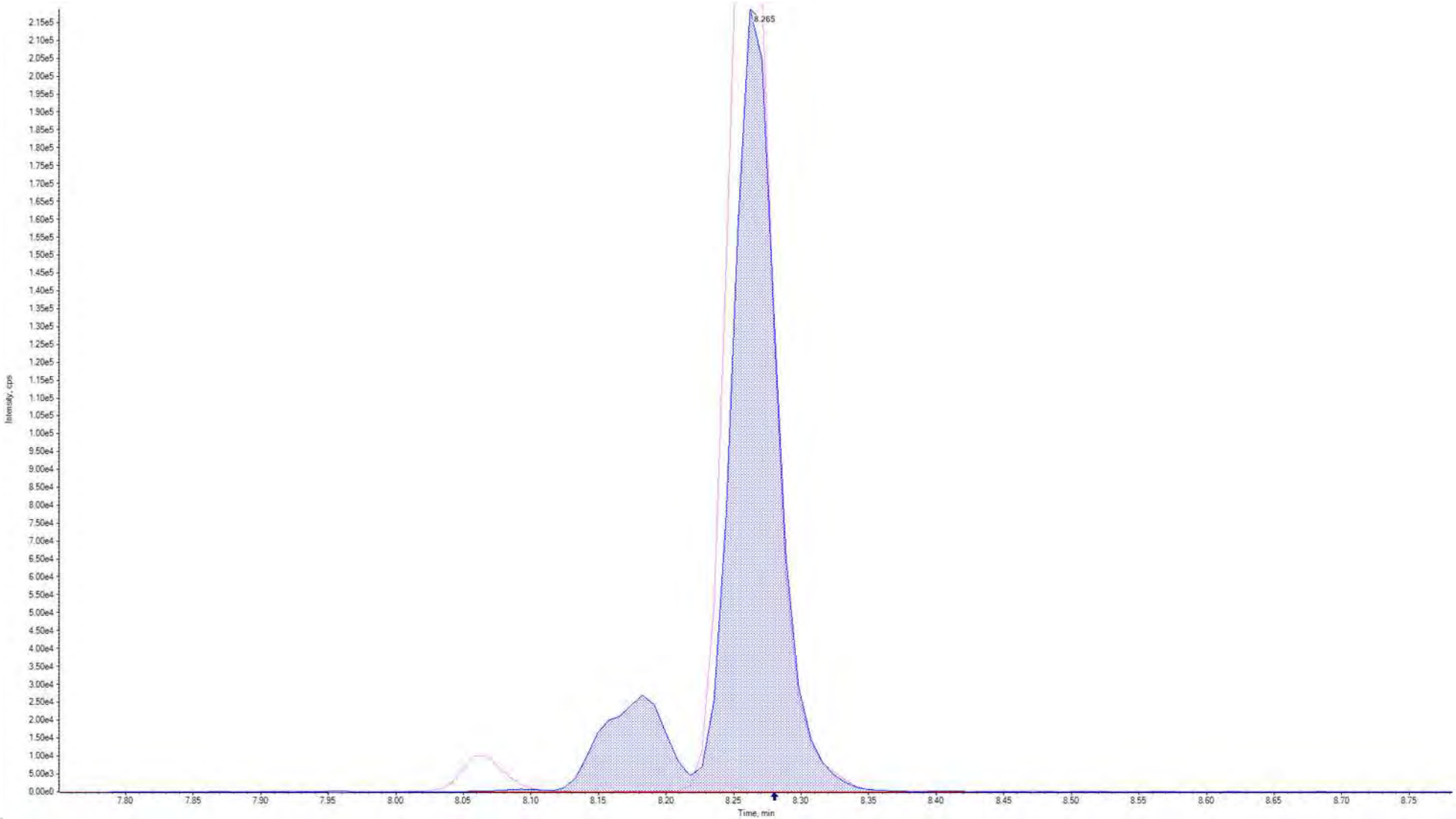
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFOS
Sample: CA1633STD-10 S/N:2268.9 Points Across peak:45



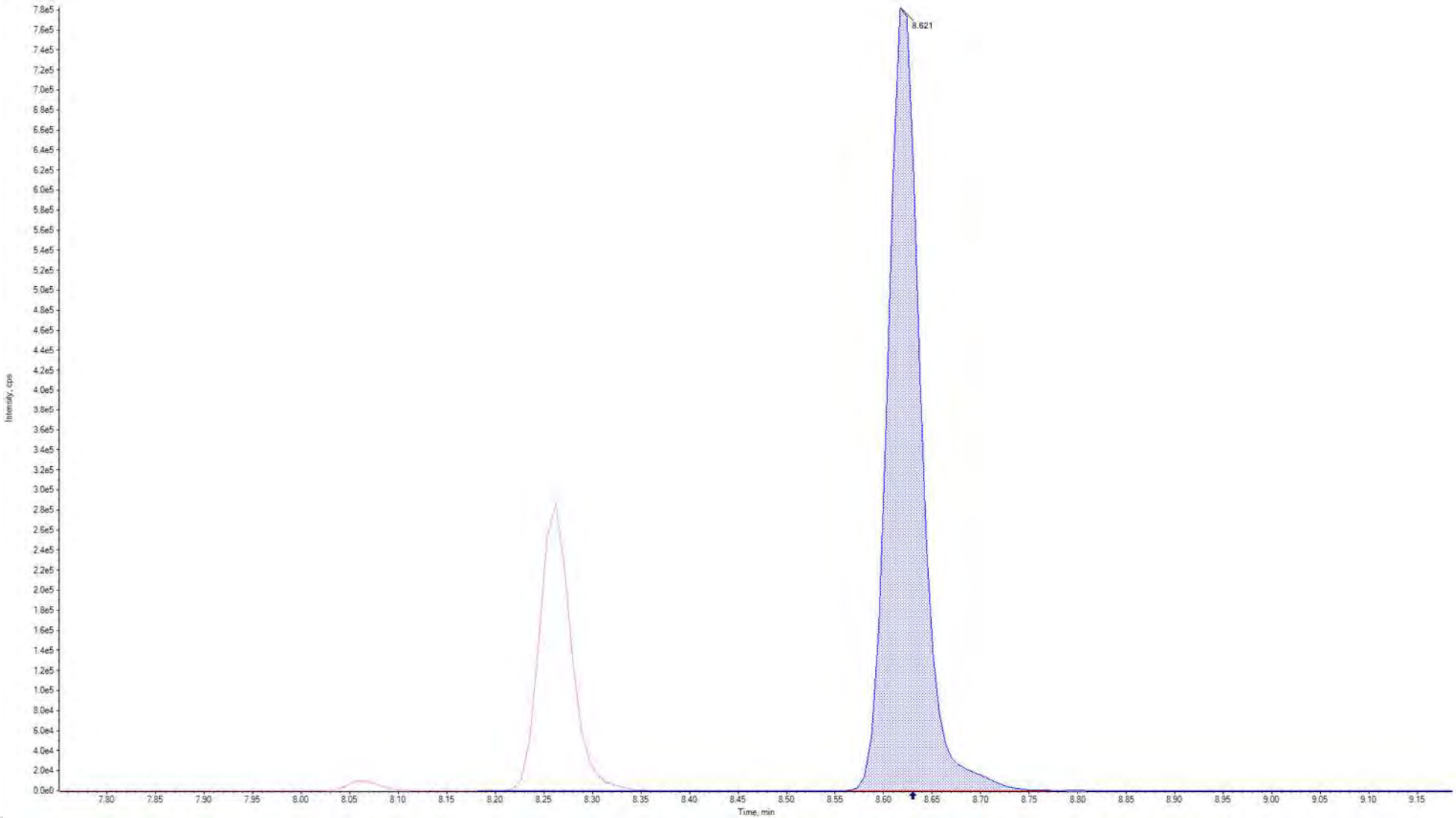
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFOS_2
Sample: CA1633STD-10 S/N:1865.7 Points Across peak:49



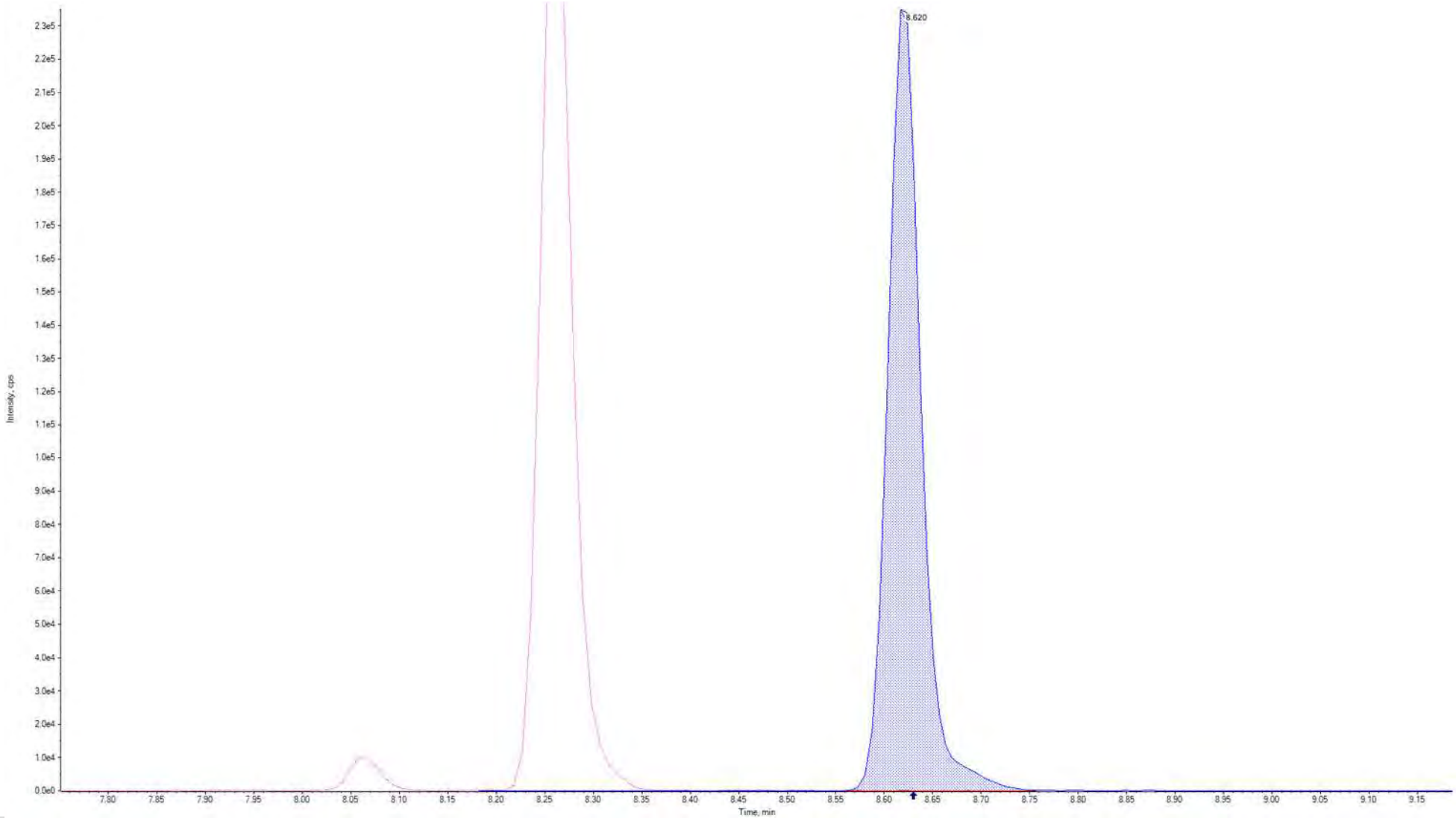
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFNS
Sample: CA1633STD-10 S/N:11818.0 Points Across peak:37



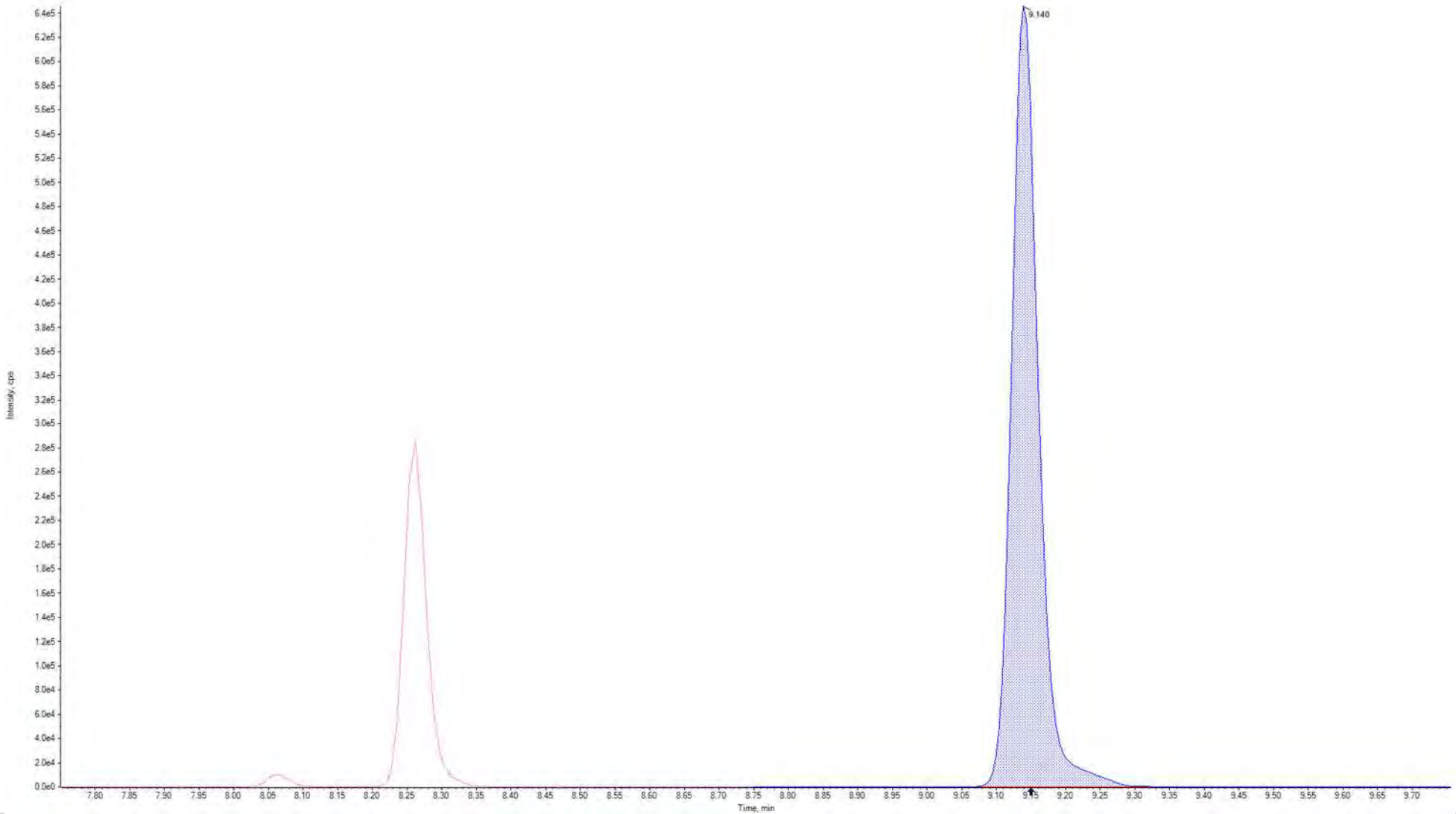
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFNS_2
Sample: CA1633STD-10 S/N:7253.3 Points Across peak:35



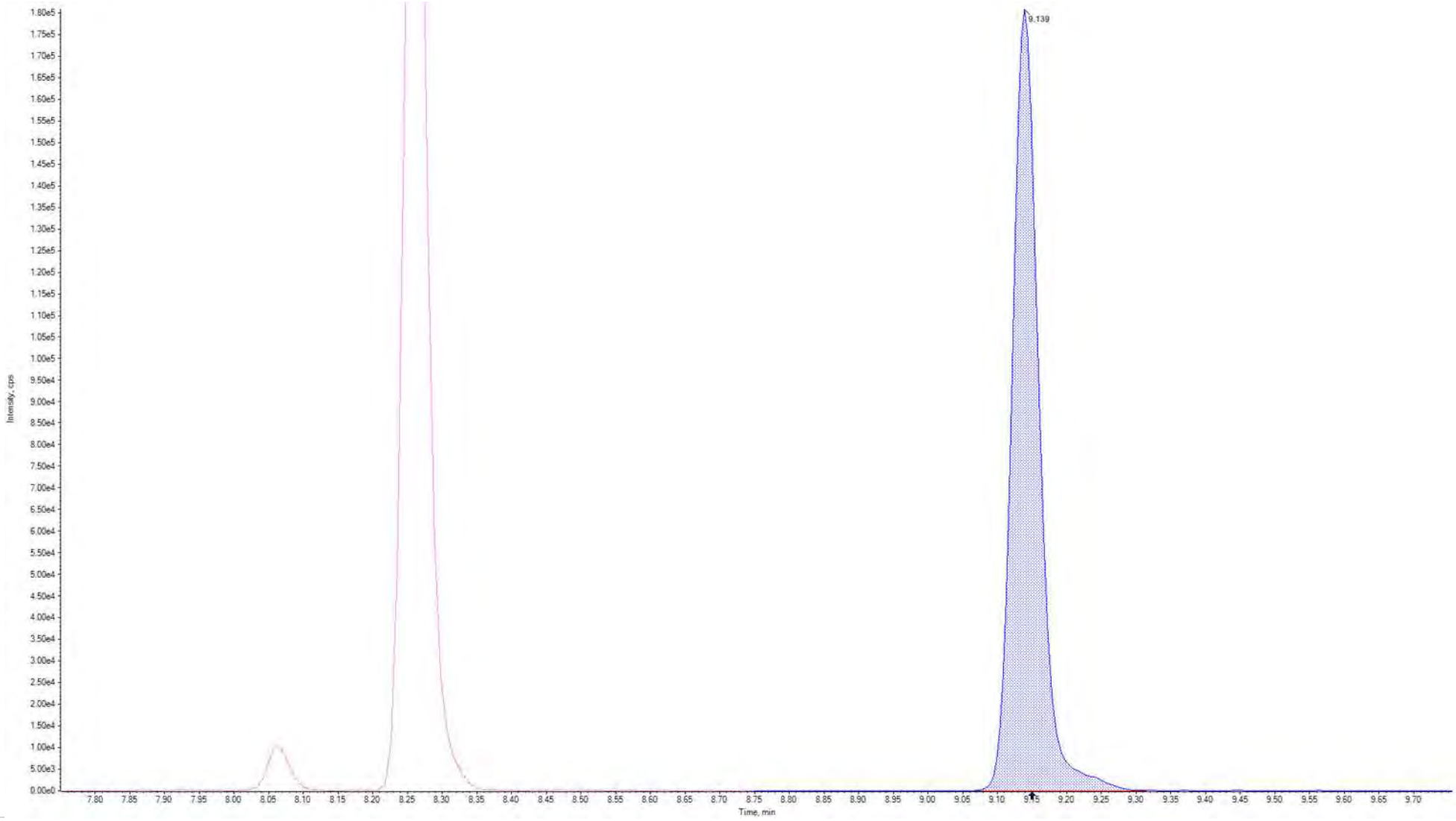
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFDS
Sample: CA1633STD-10 S/N:20044.8 Points Across peak:57



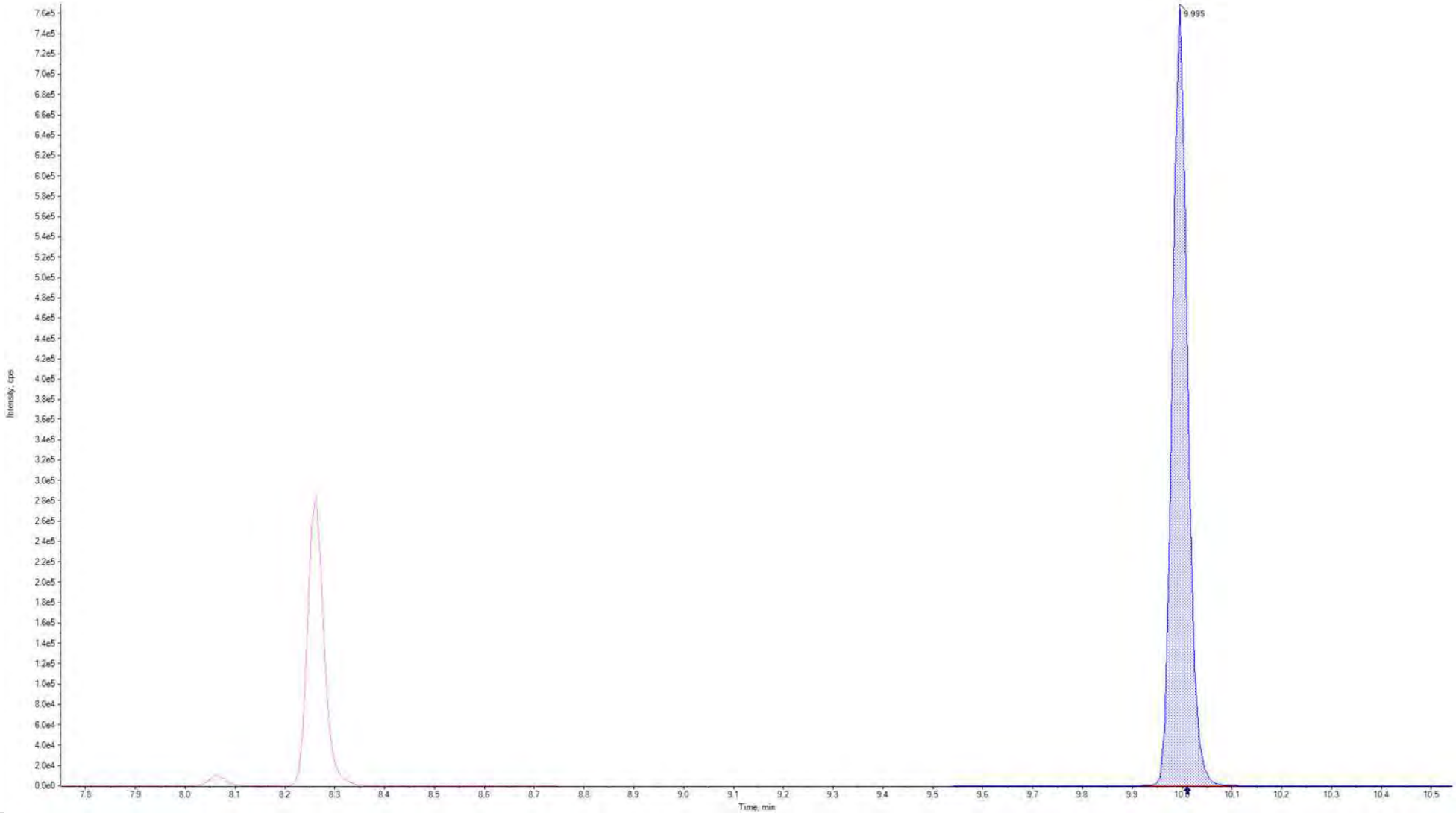
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFDS_2
Sample: CA1633STD-10 S/N:485473.6 Points Across peak:52



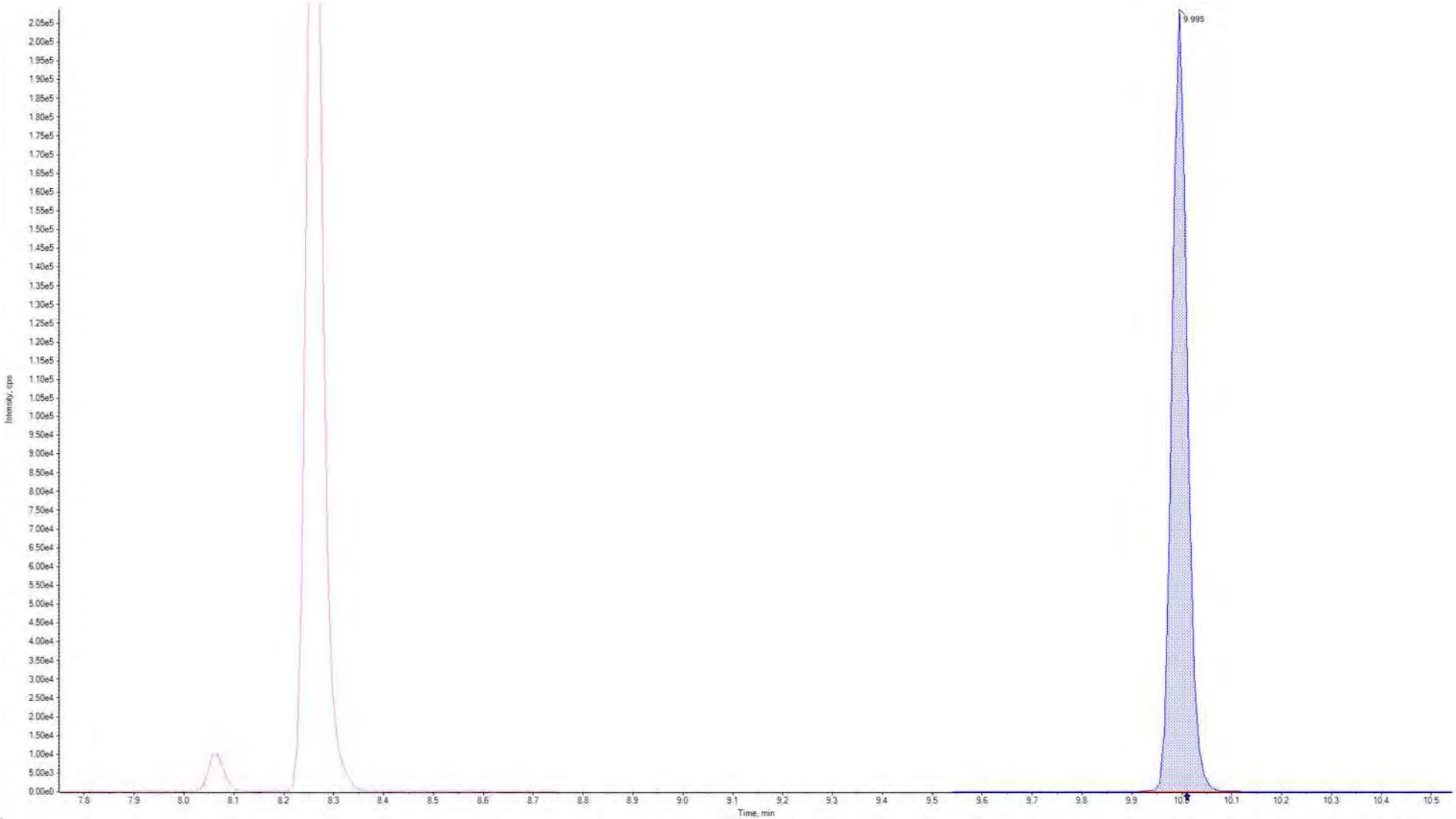
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFDoS
Sample: CA1633STD-10 S/N:13001.9 Points Across peak:25



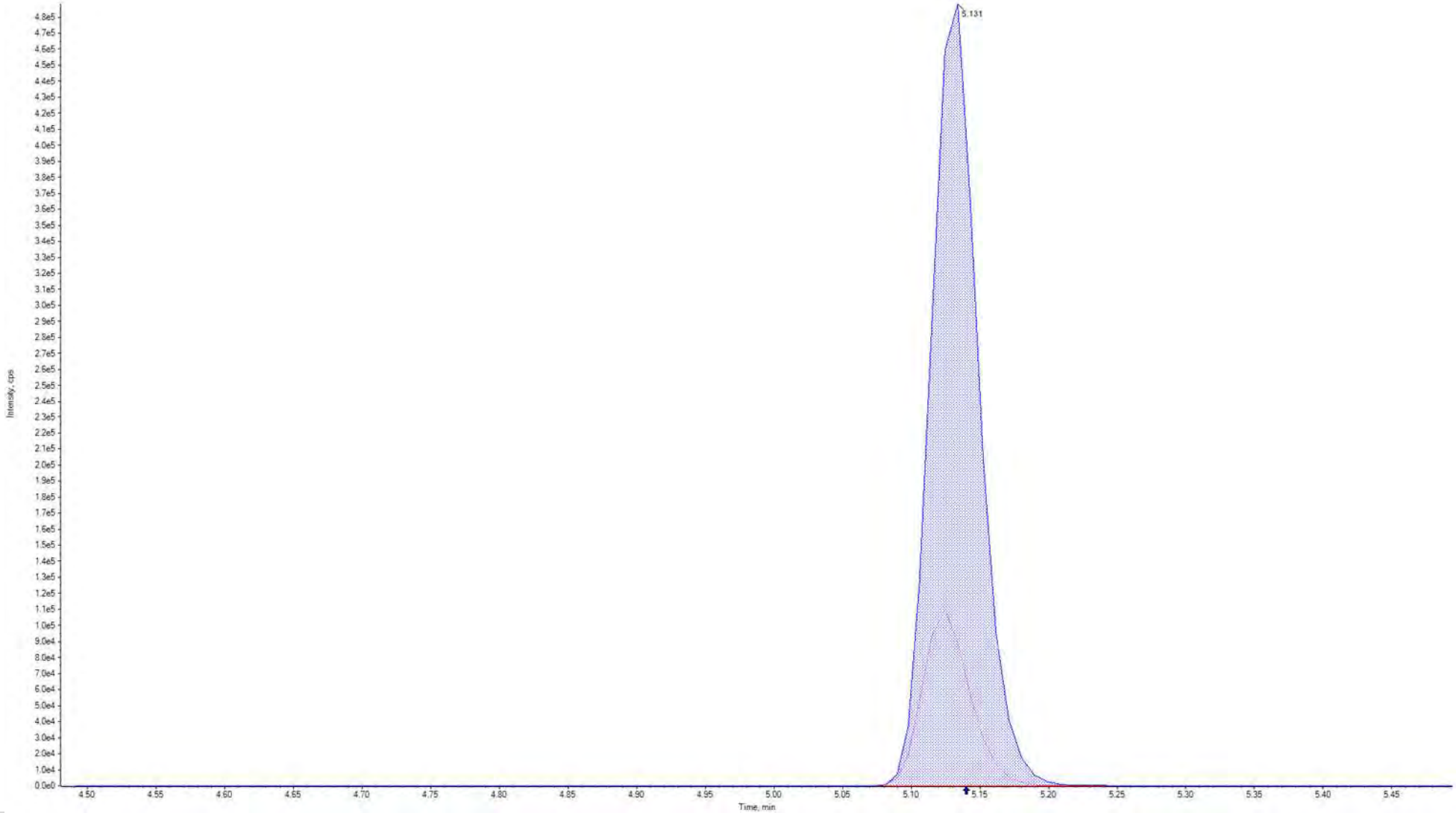
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFDoS_2
Sample: CA1633STD-10 S/N:3690.6 Points Across peak:32



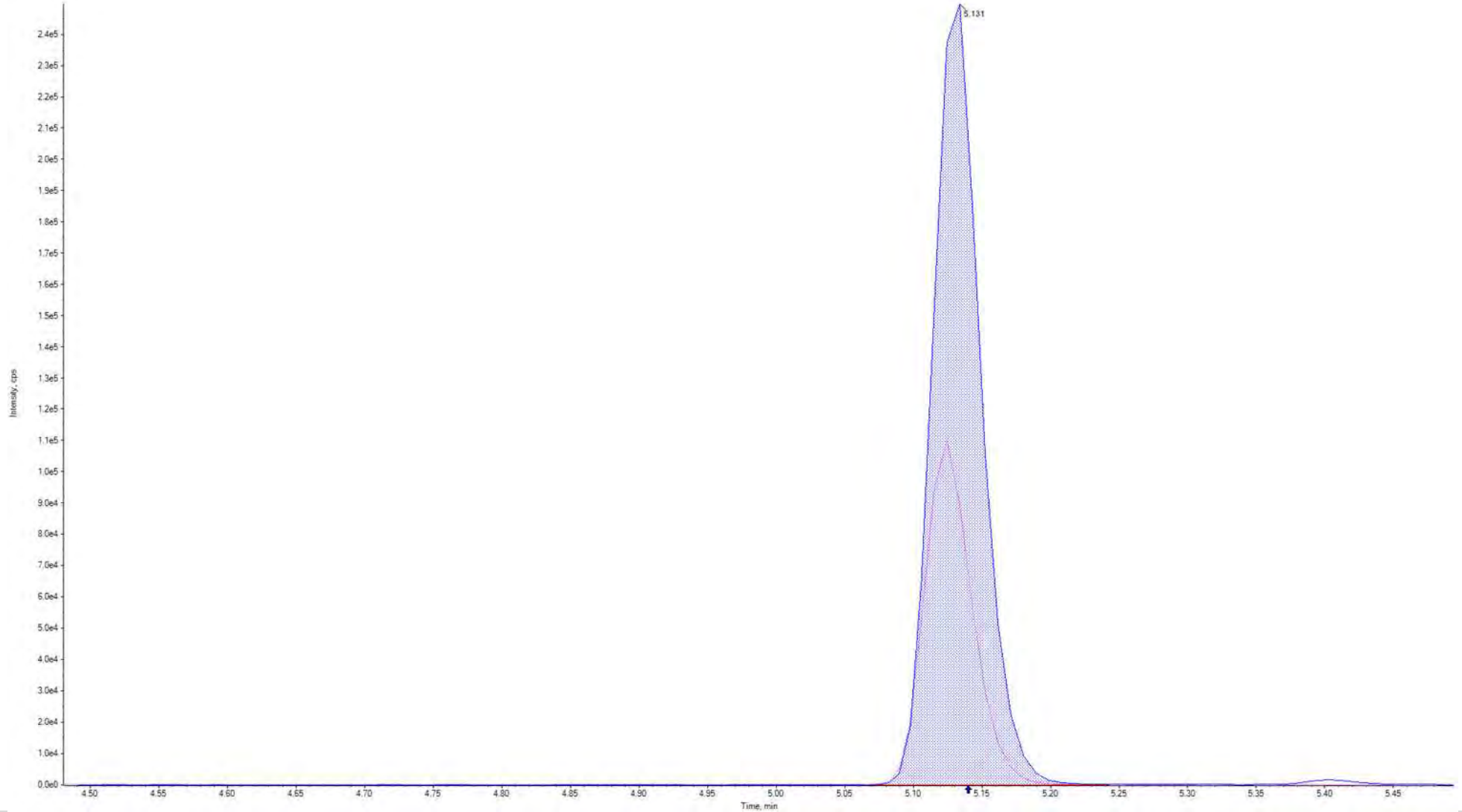
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

4:2FTS
Sample: CA1633STD-10 S/N:5001.8 Points Across peak:29



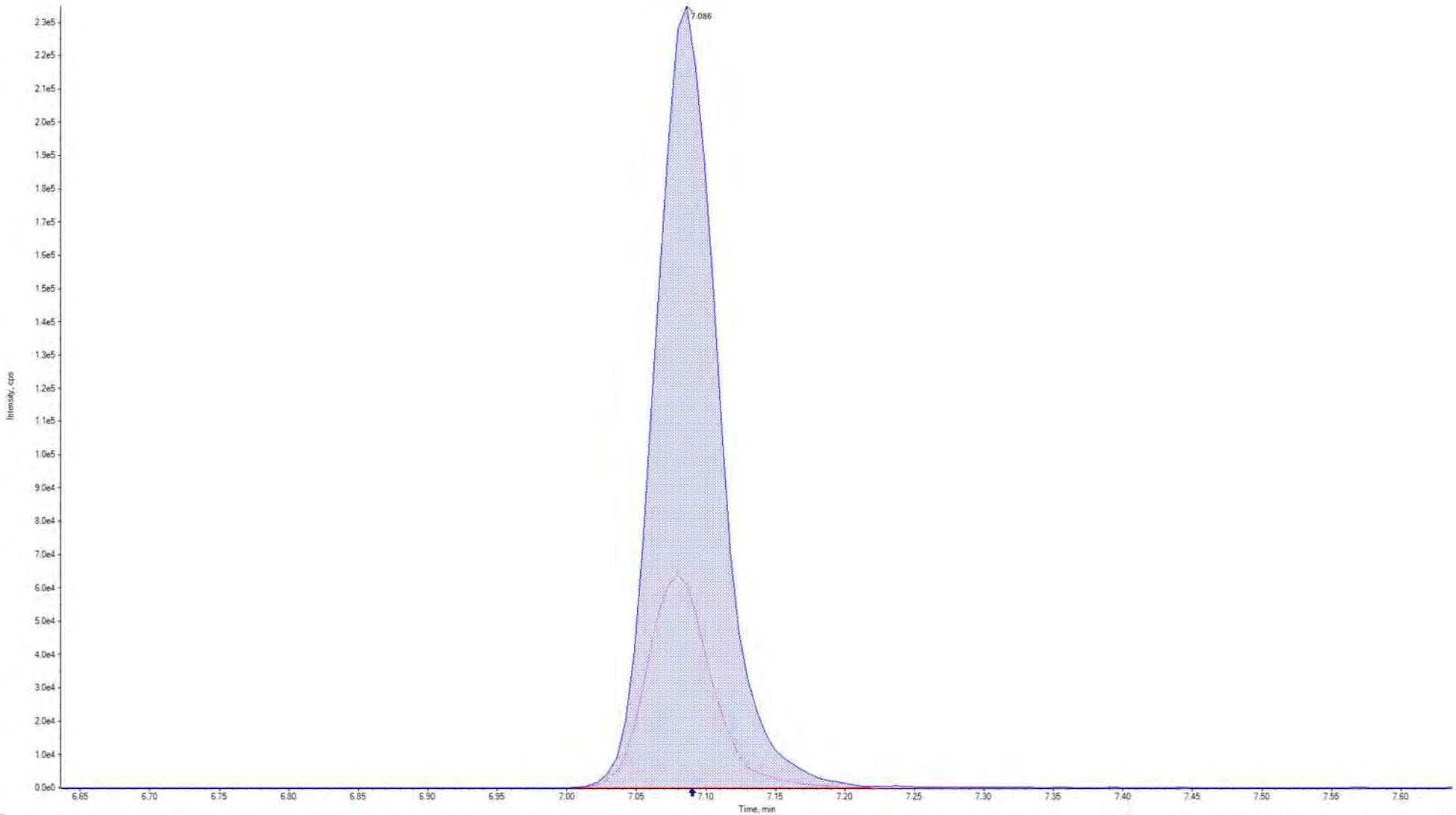
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

4:2FTS_2
Sample: CA1633STD-10 S/N:6484.9 Points Across peak:22



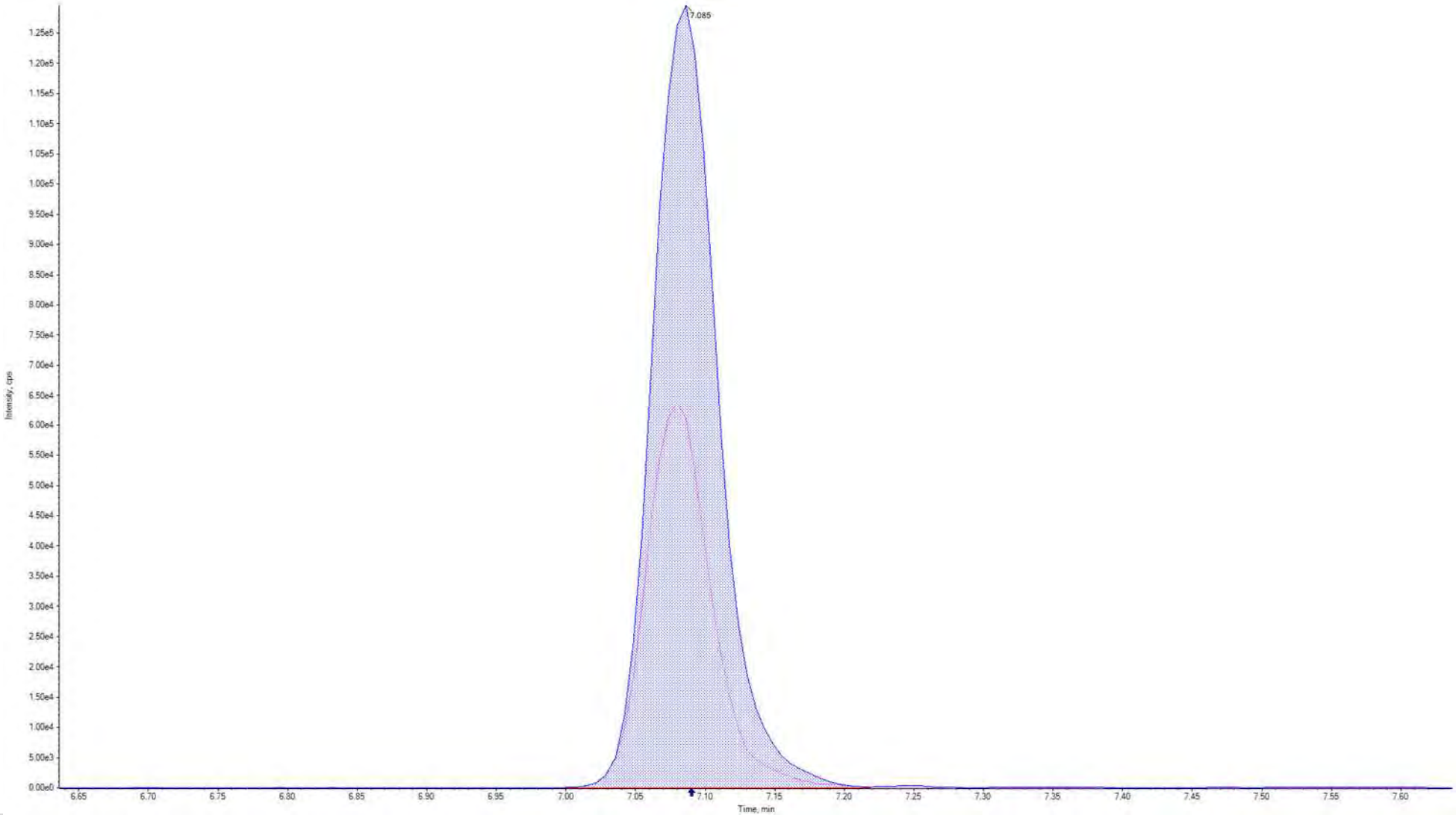
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

6:2FTS
Sample: CA1633STD-10 S/N:2793.4 Points Across peak:38



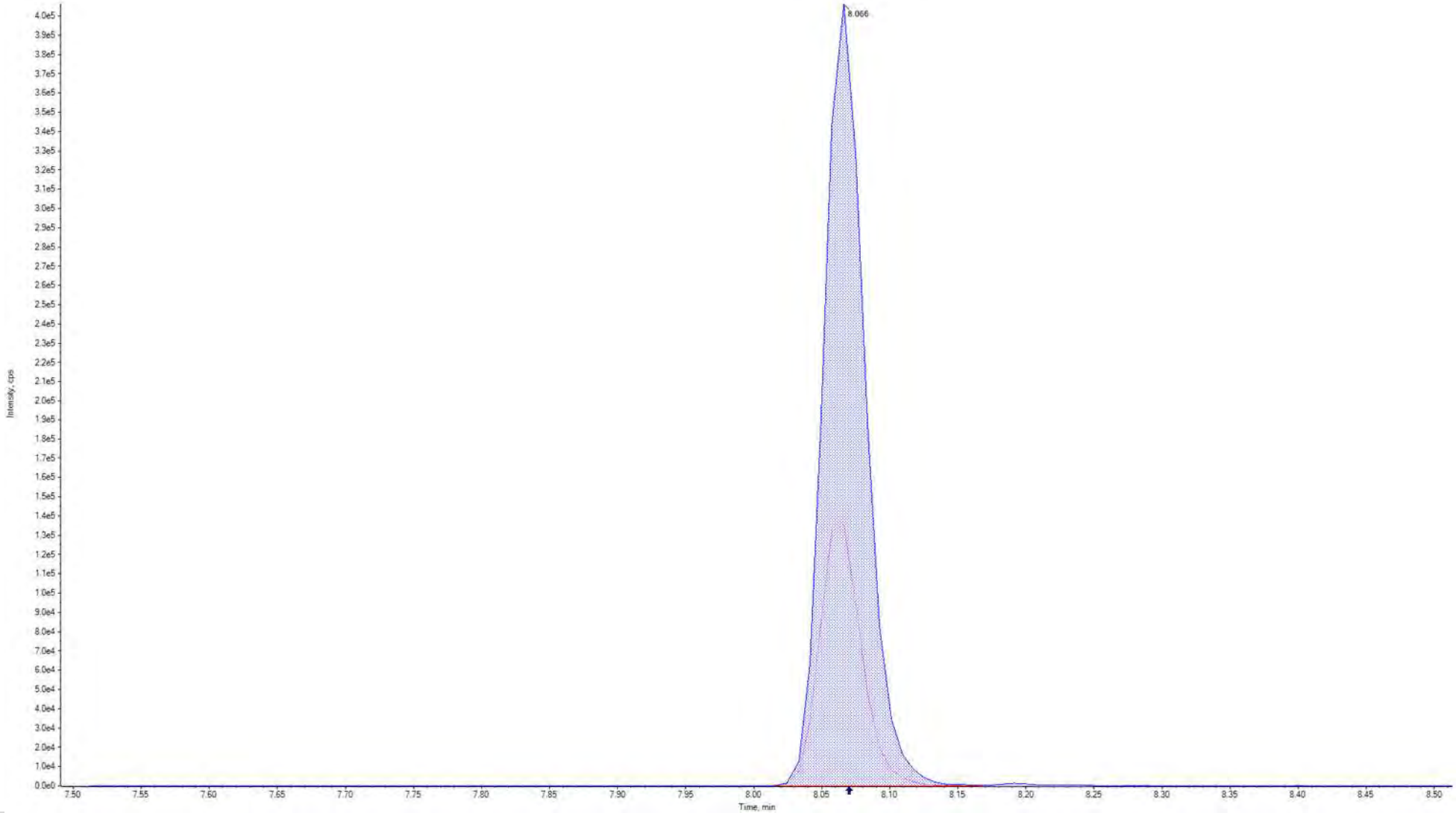
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

6:2FTS_2
Sample: CA1633STD-10 S/N:46504.9 Points Across peak:37



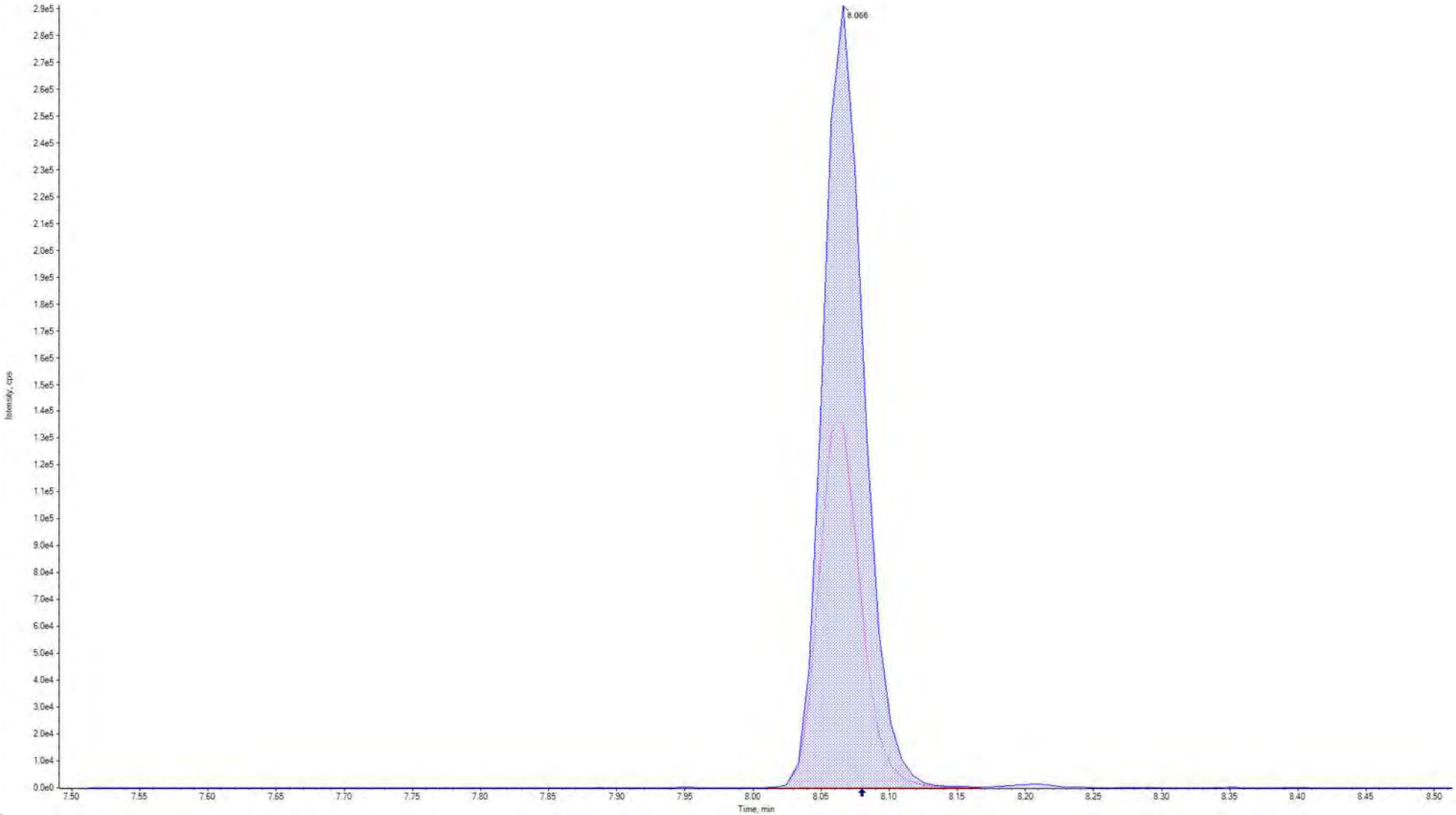
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

8:2FTS
Sample: CA1633STD-10 S/N:7262.8 Points Across peak:20



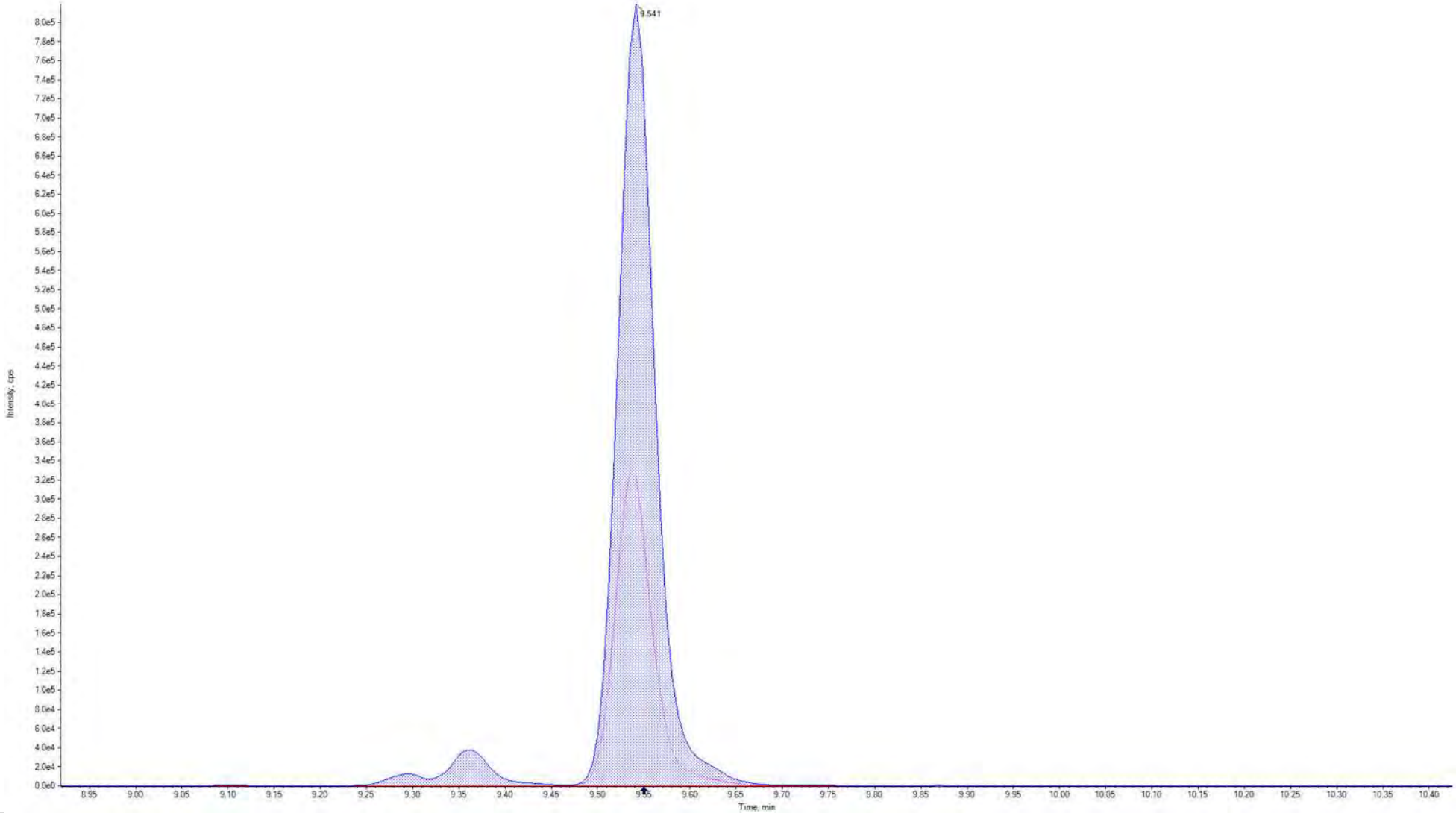
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

8:2FTS_2
Sample: CA1633STD-10 S/N:2928.3 Points Across peak:22



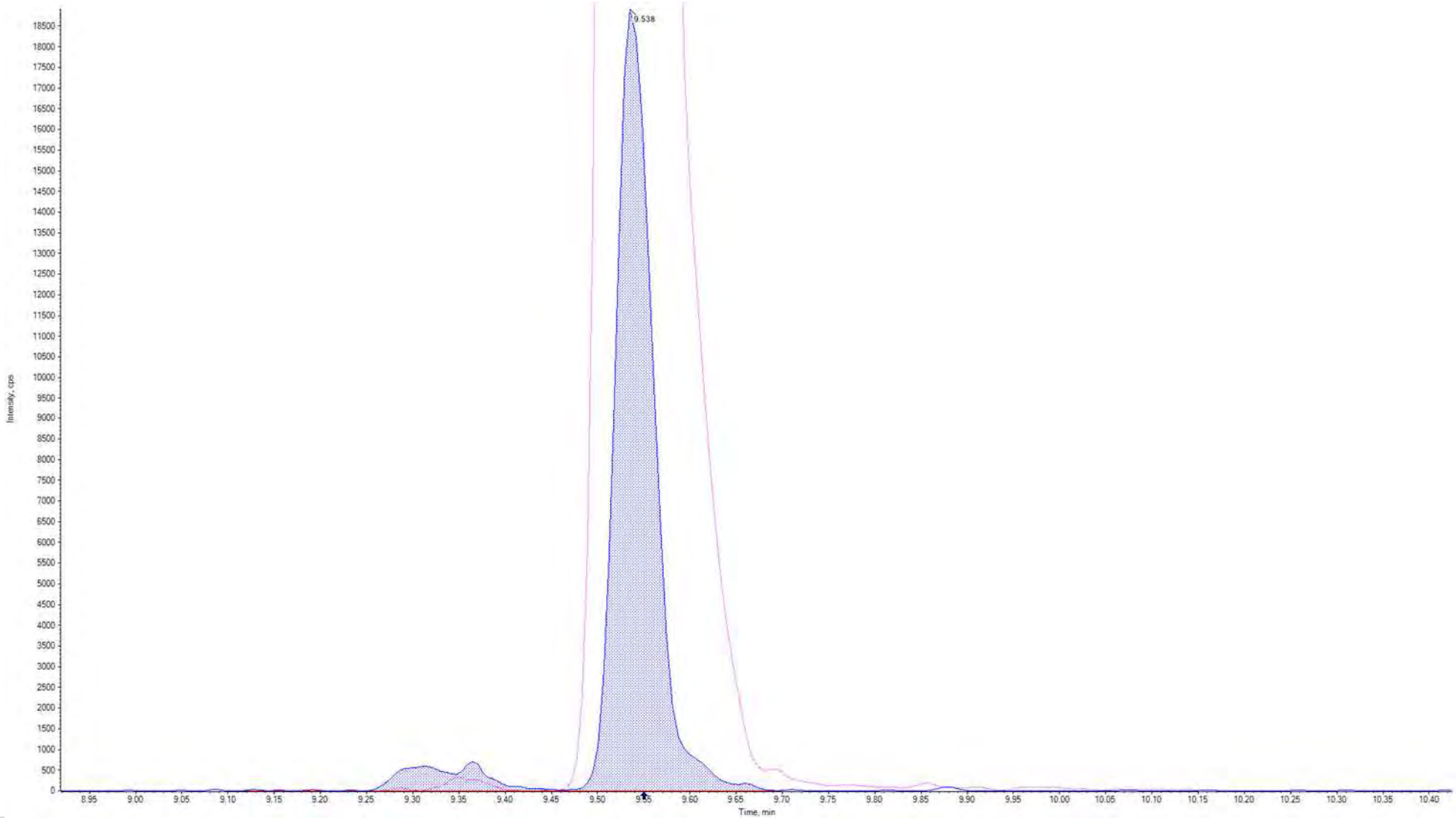
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFOSA
Sample: CA1633STD-10 S/N:98094.6 Points Across peak:123



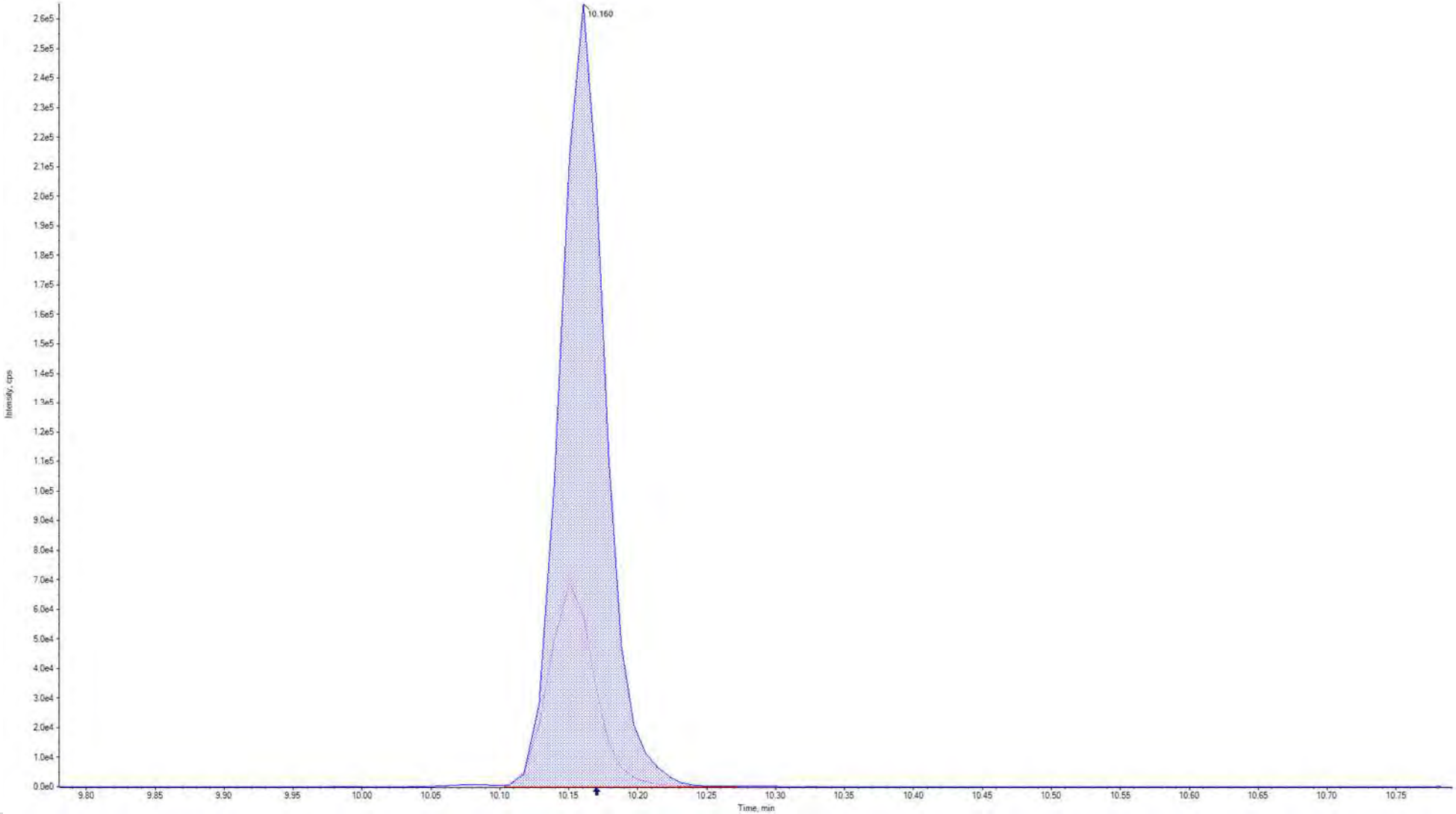
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFOSA_2
Sample: CA1633STD-10 S/N:2467.8 Points Across peak:102



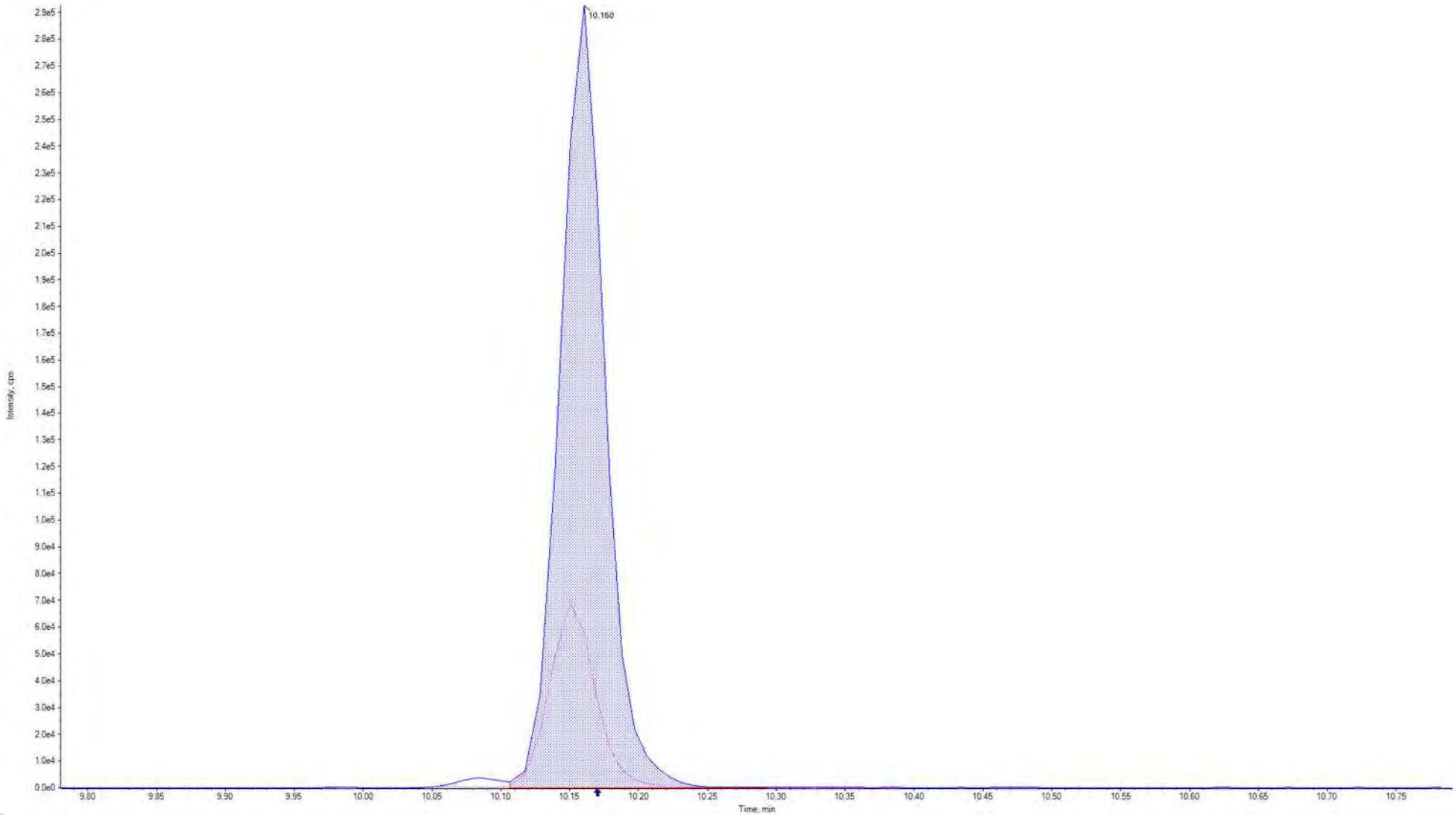
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NMeFOSA
Sample: CA1633STD-10 S/N:8935.6 Points Across peak:20



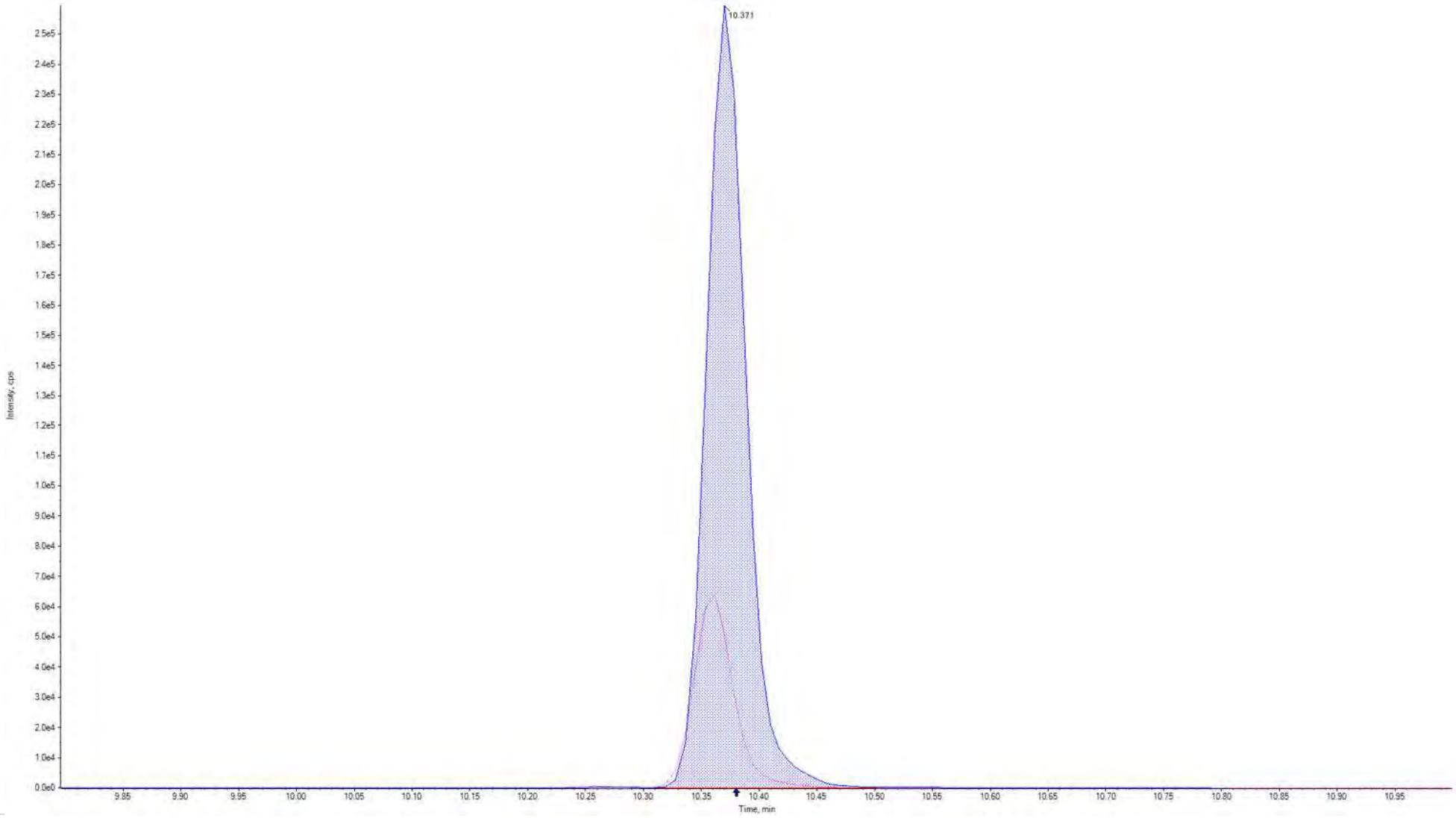
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NMeFOSA_2
Sample: CA1633STD-10 S/N:5500.0 Points Across peak:21



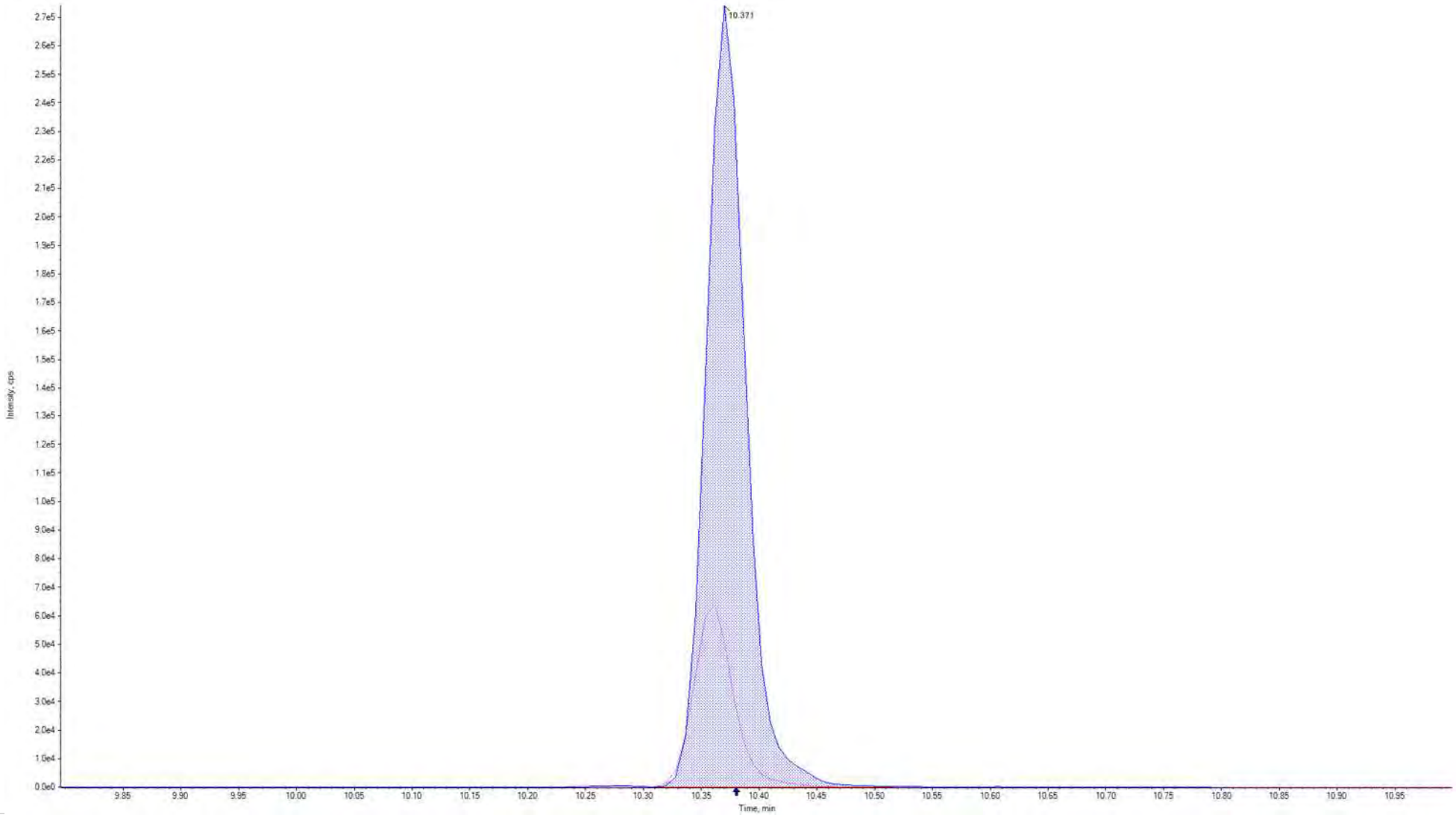
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NEtFOSA
Sample: CA1633STD-10 S/N:43645756.3 Points Across peak:27



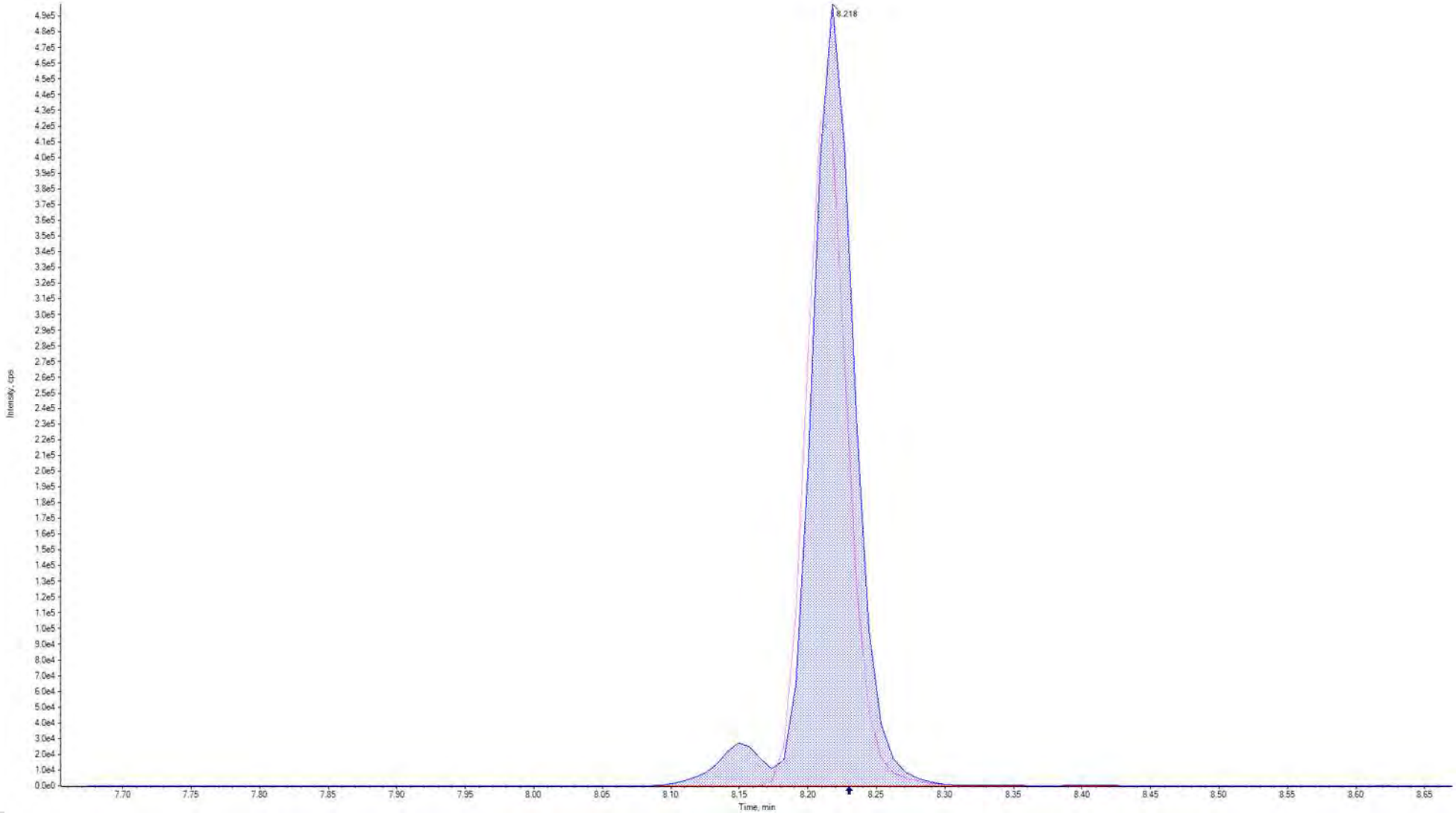
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NEtFOSA_2
Sample: CA1633STD-10 S/N:52270.9 Points Across peak:29



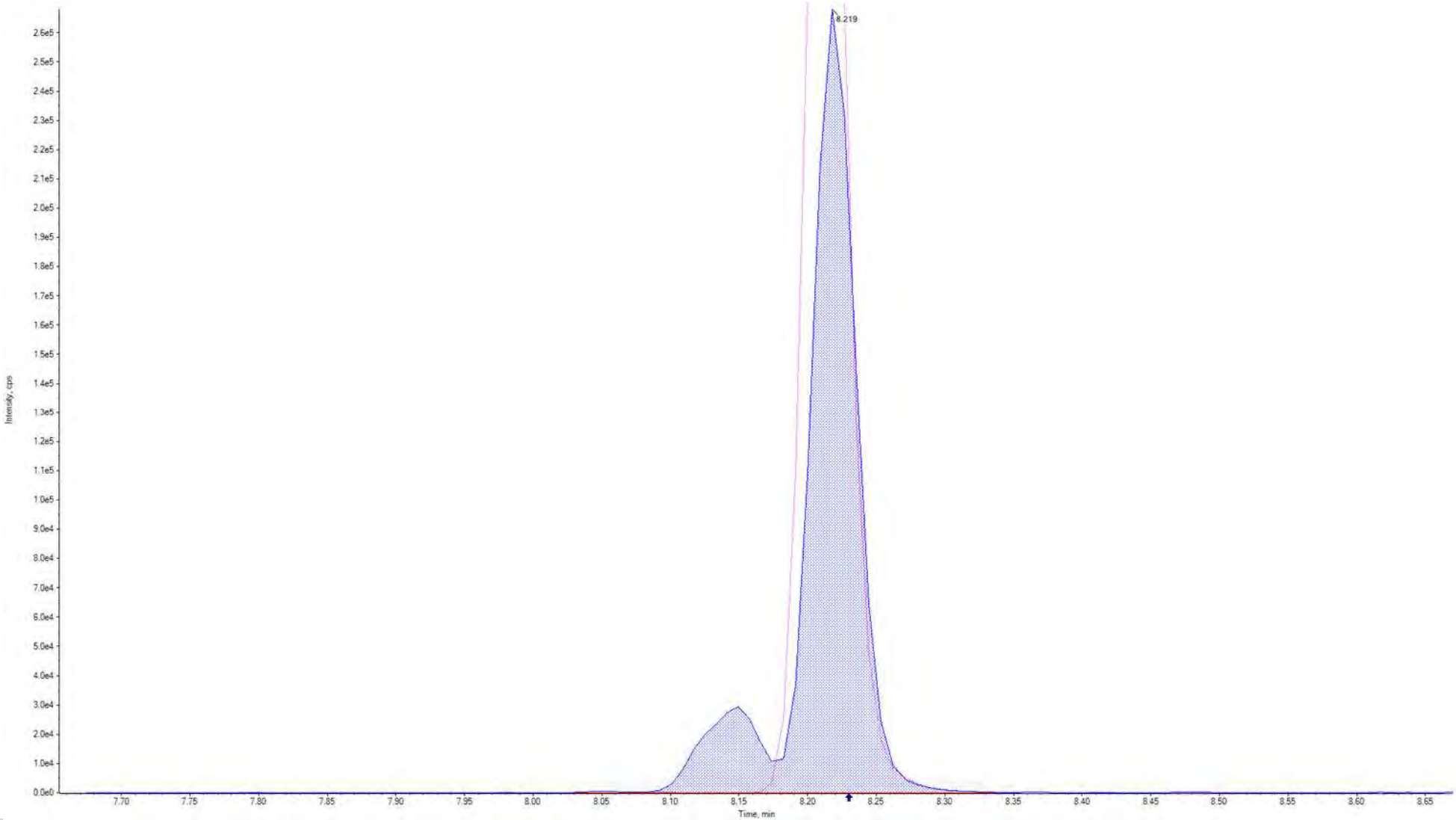
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NMeFOSAA
Sample: CA1633STD-10 S/N:1593.2 Points Across peak:46



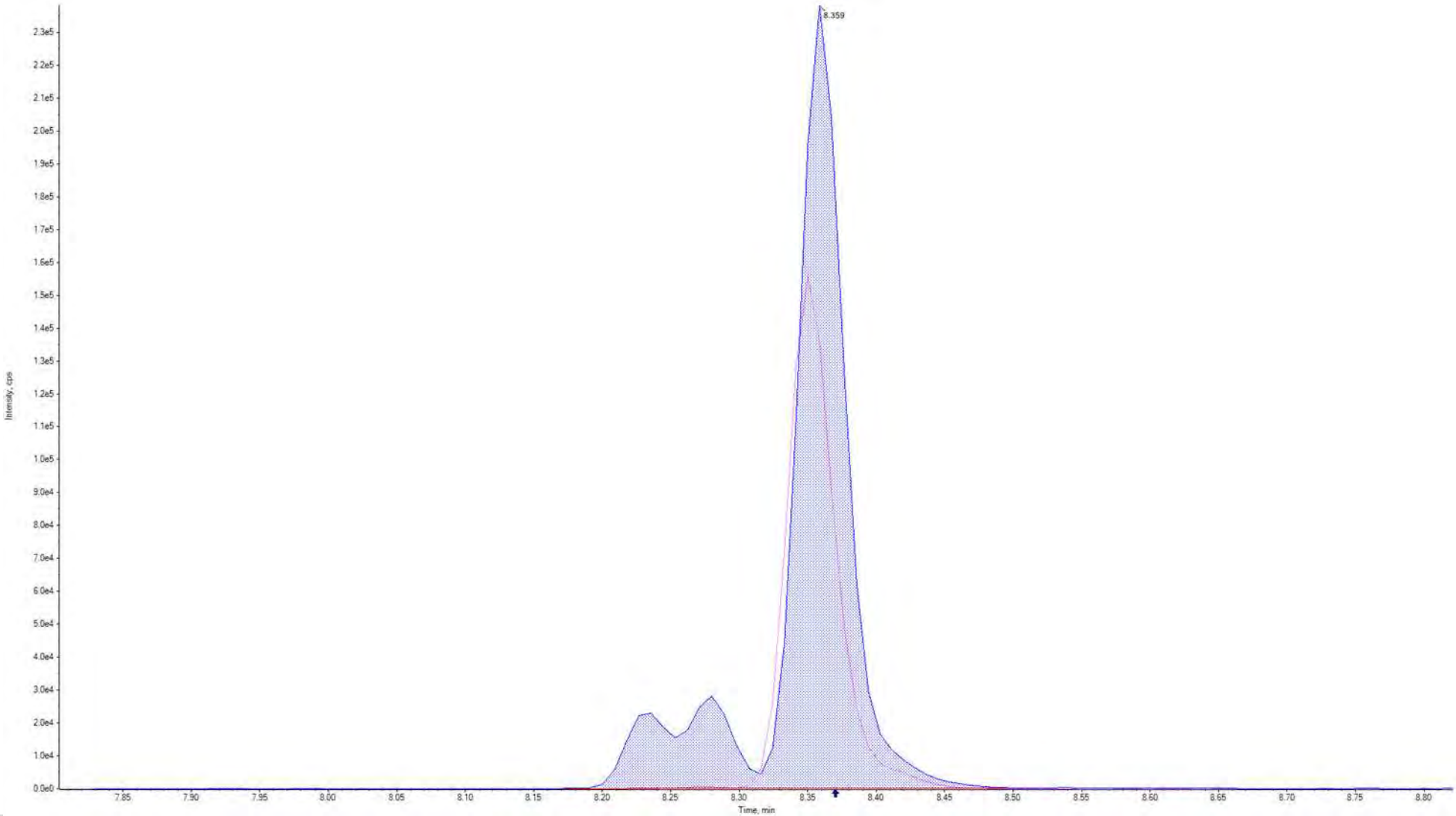
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NMeFOSAA_2
Sample: CA1633STD-10 S/N:1208.6 Points Across peak:40



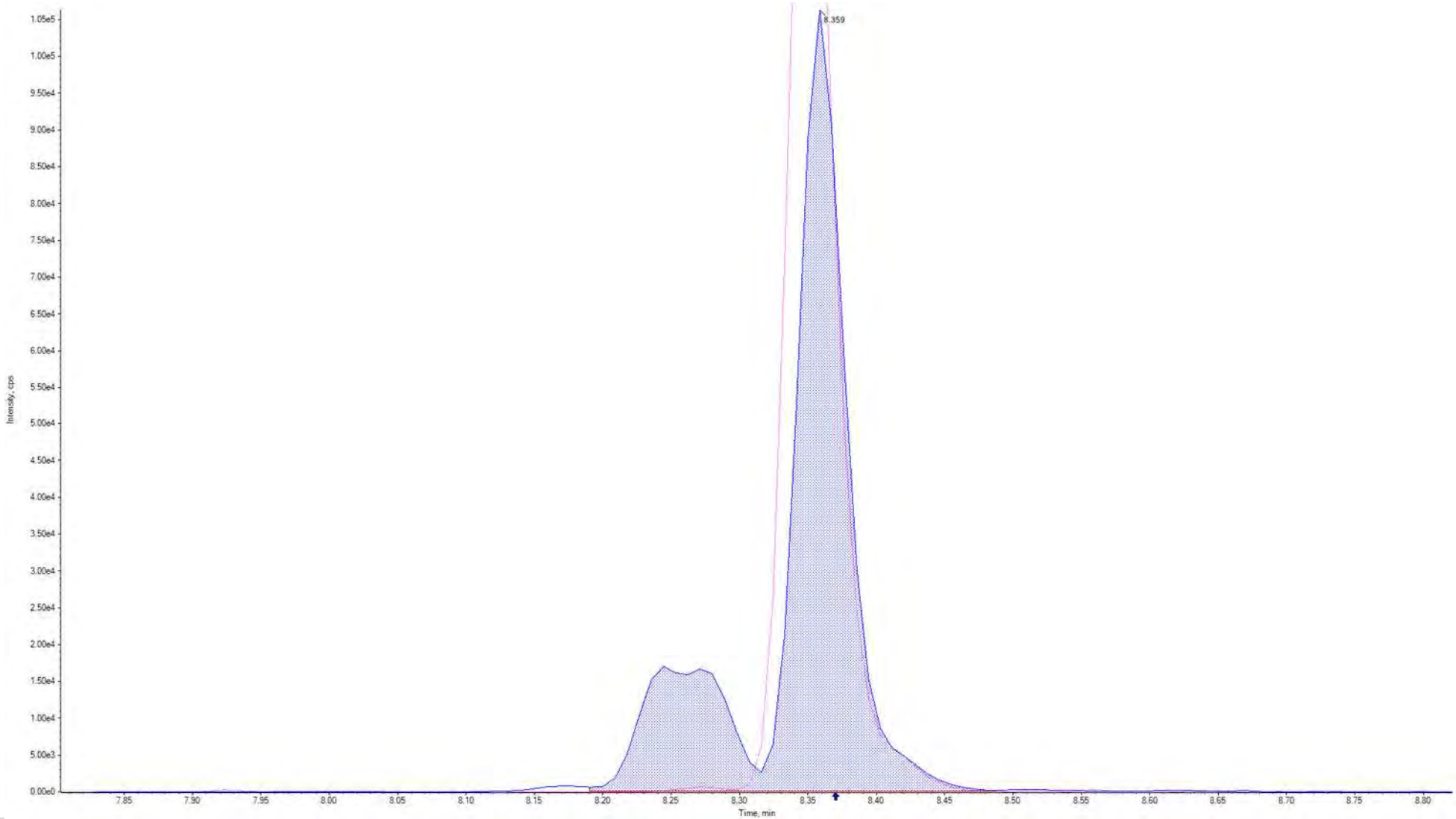
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NEtFOSAA
Sample: CA1633STD-10 S/N:879.7 Points Across peak:42



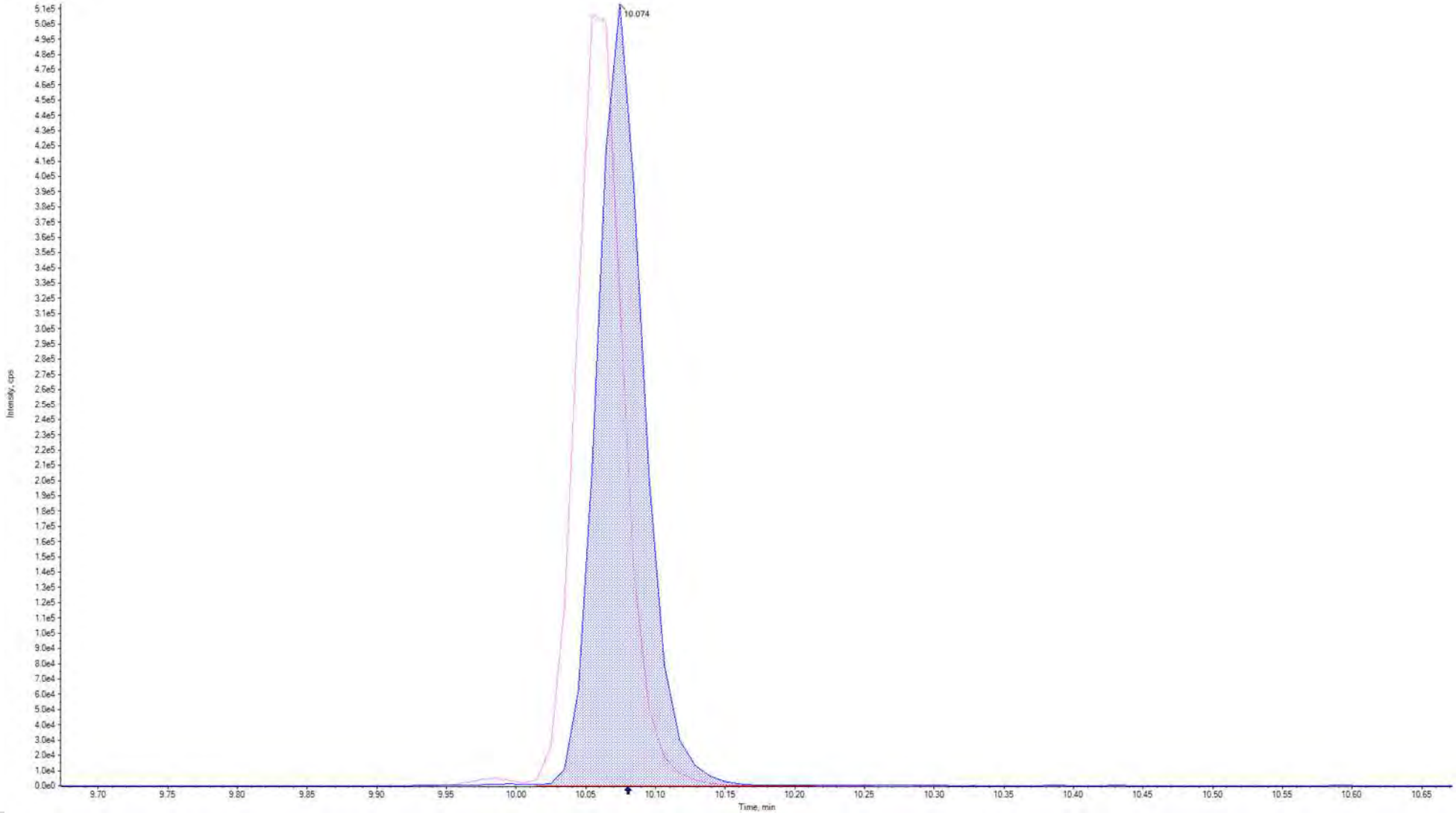
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NEtFOSAA_2
Sample: CA1633STD-10 S/N:549.1 Points Across peak:36



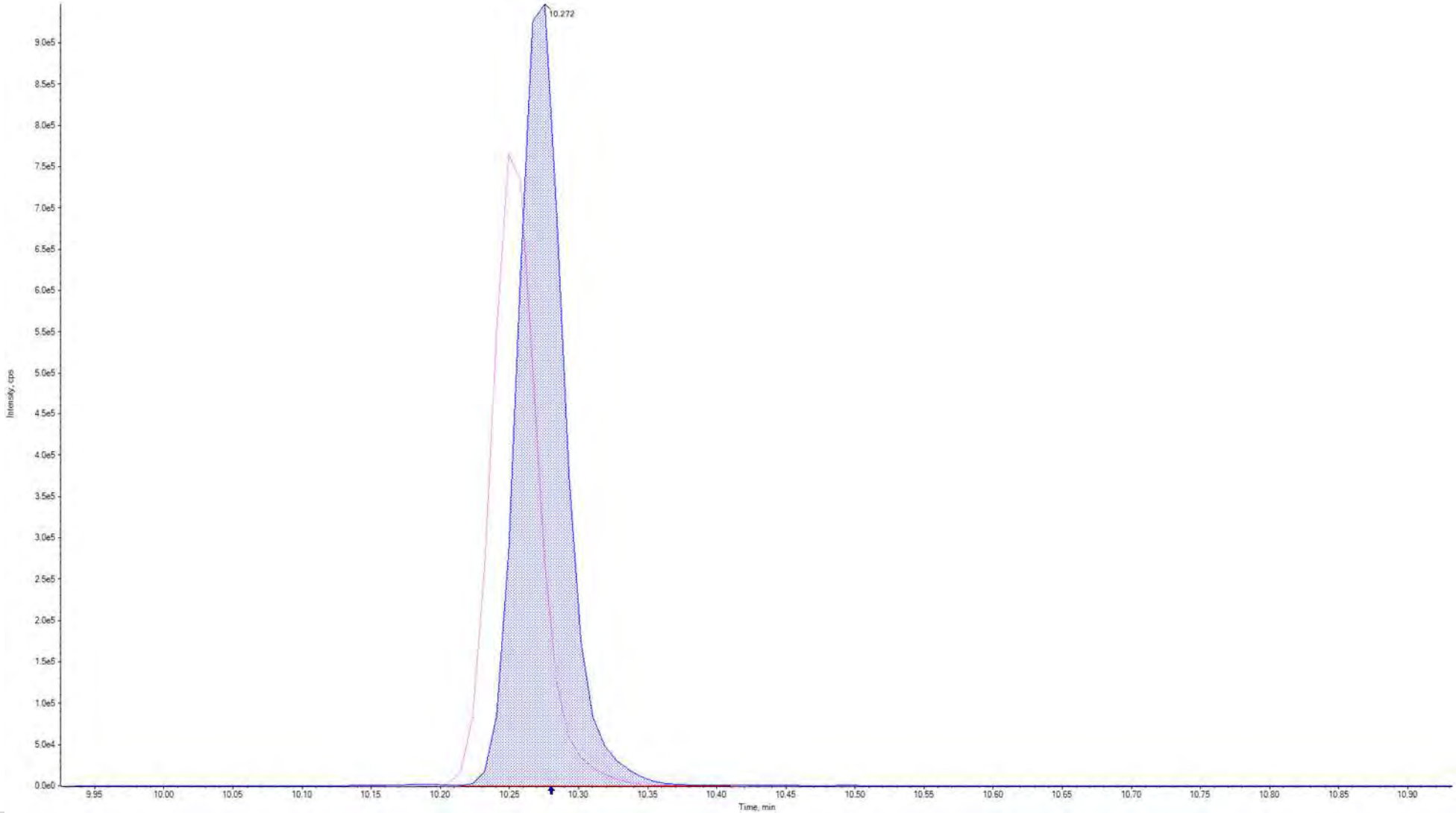
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NMeFOSE
Sample: CA1633STD-10 S/N:3872.4 Points Across peak:21



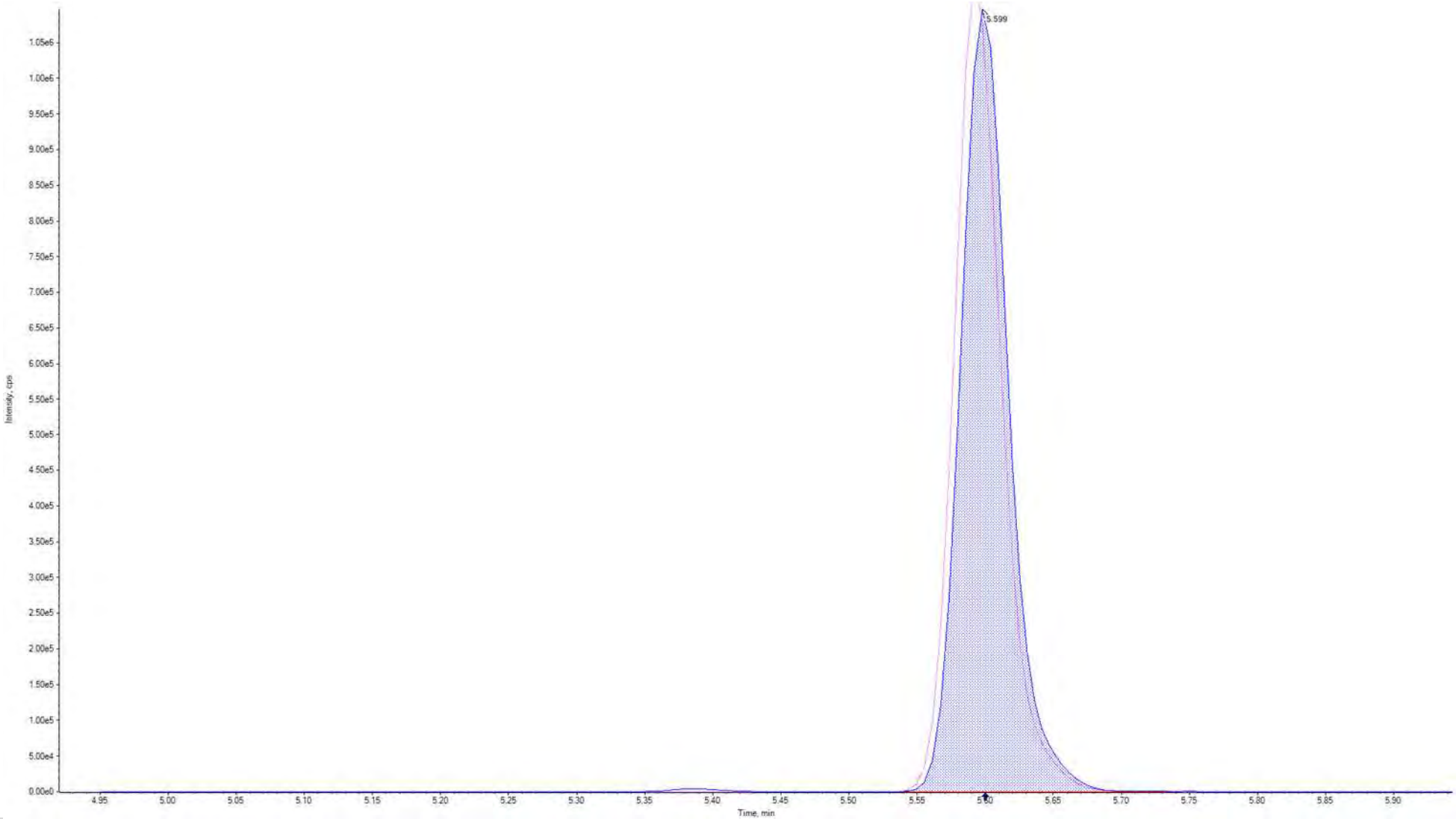
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NEtFOSE
Sample: CA1633STD-10 S/N:4254.1 Points Across peak:24



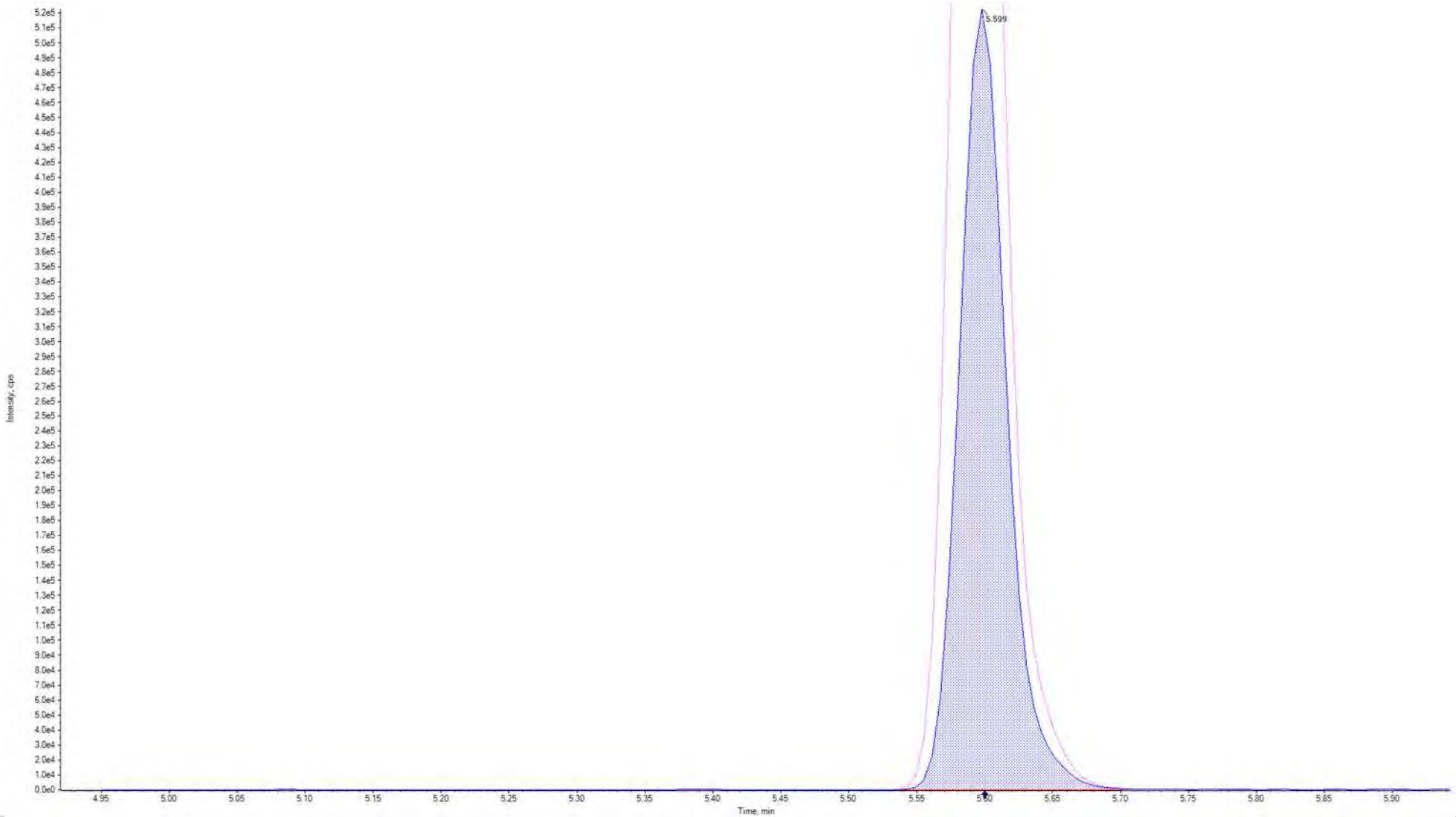
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

HFPO-DA
Sample: CA1633STD-10 S/N:12127.9 Points Across peak:44



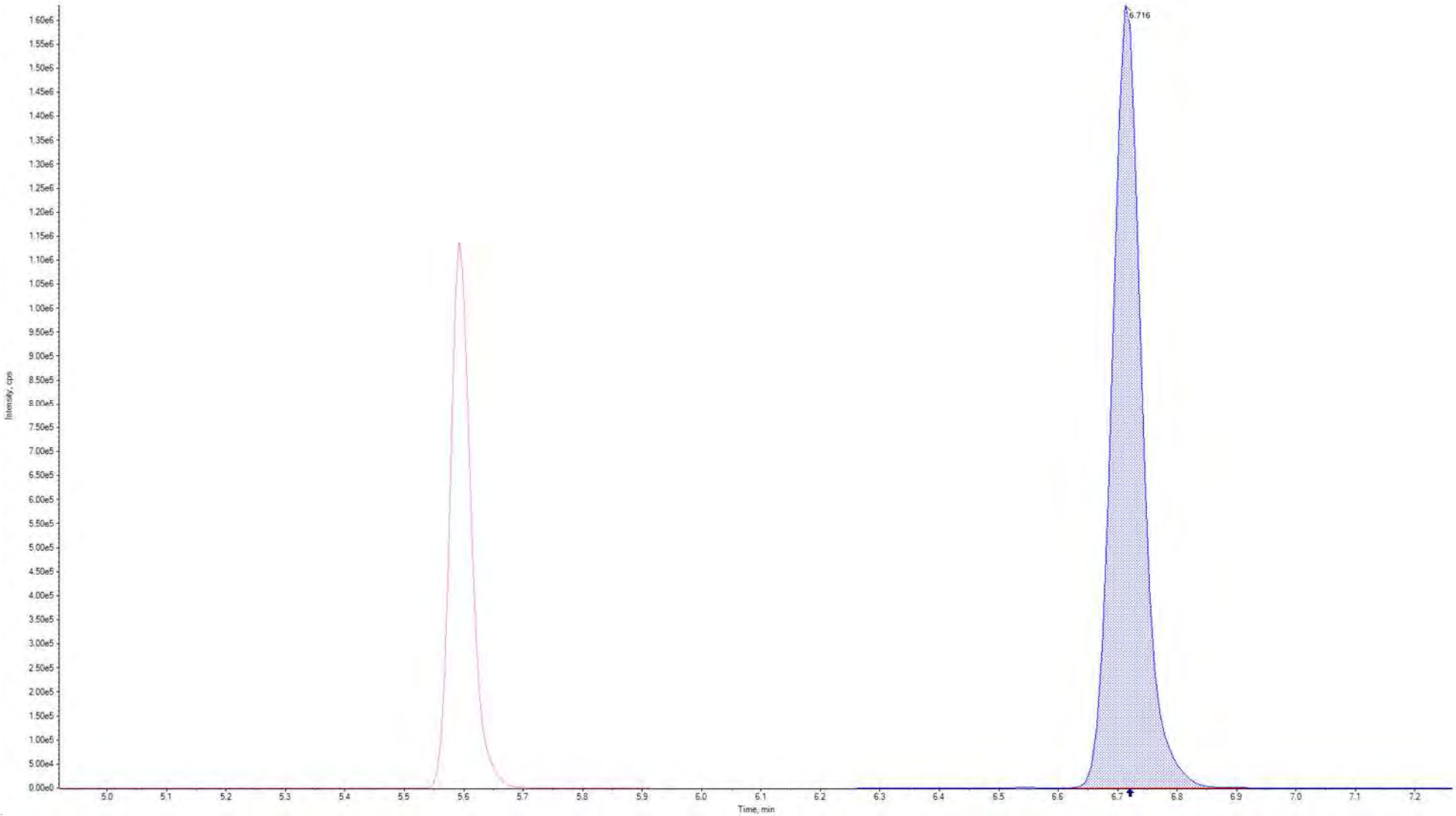
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

HFPO-DA_2
Sample: CA1633STD-10 S/N:3995.2 Points Across peak:34



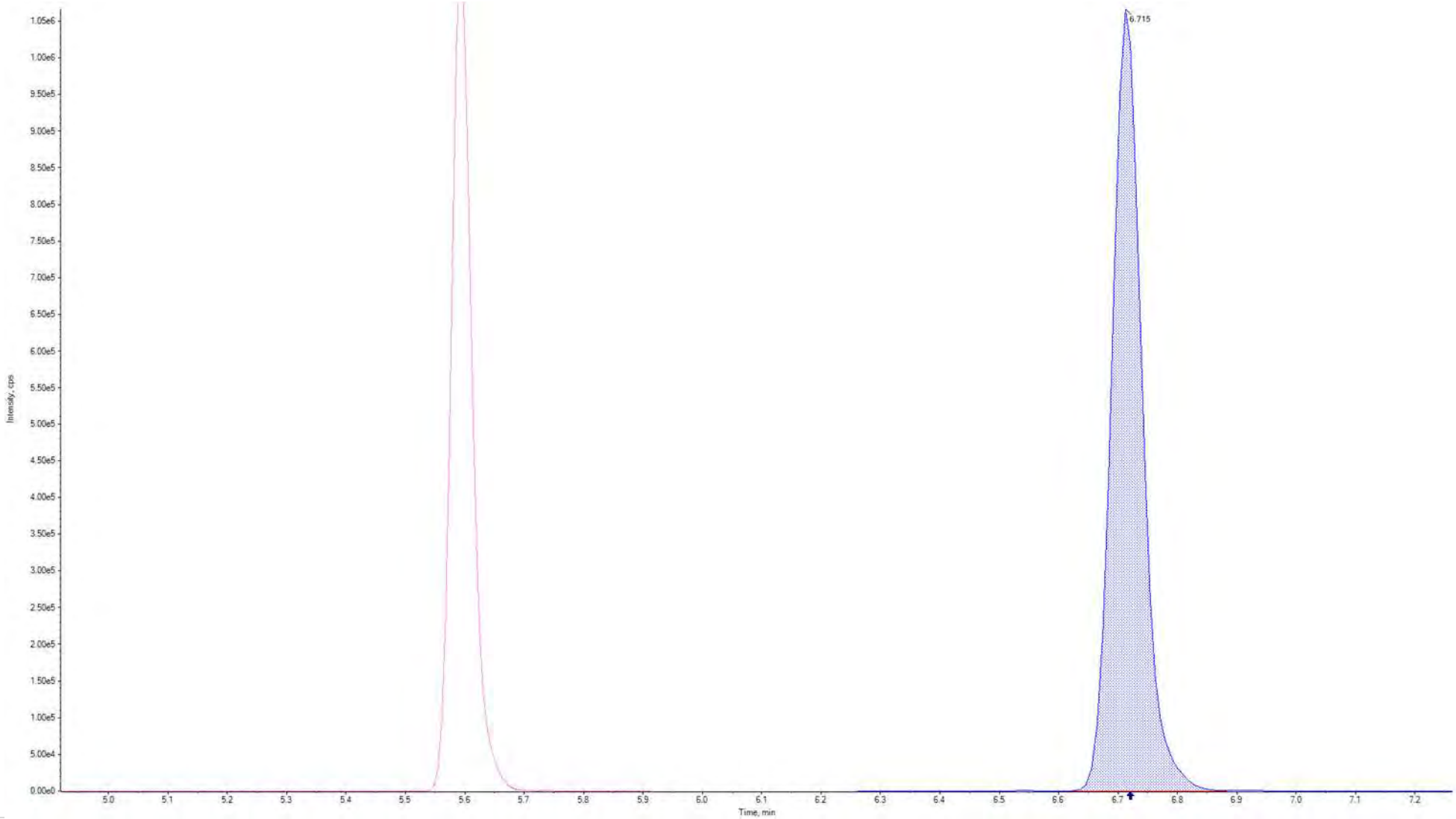
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

ADONA
Sample: CA1633STD-10 S/N:9355.5 Points Across peak:47



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

ADONA_2
Sample: CA1633STD-10 S/N:8341.5 Points Across peak:37

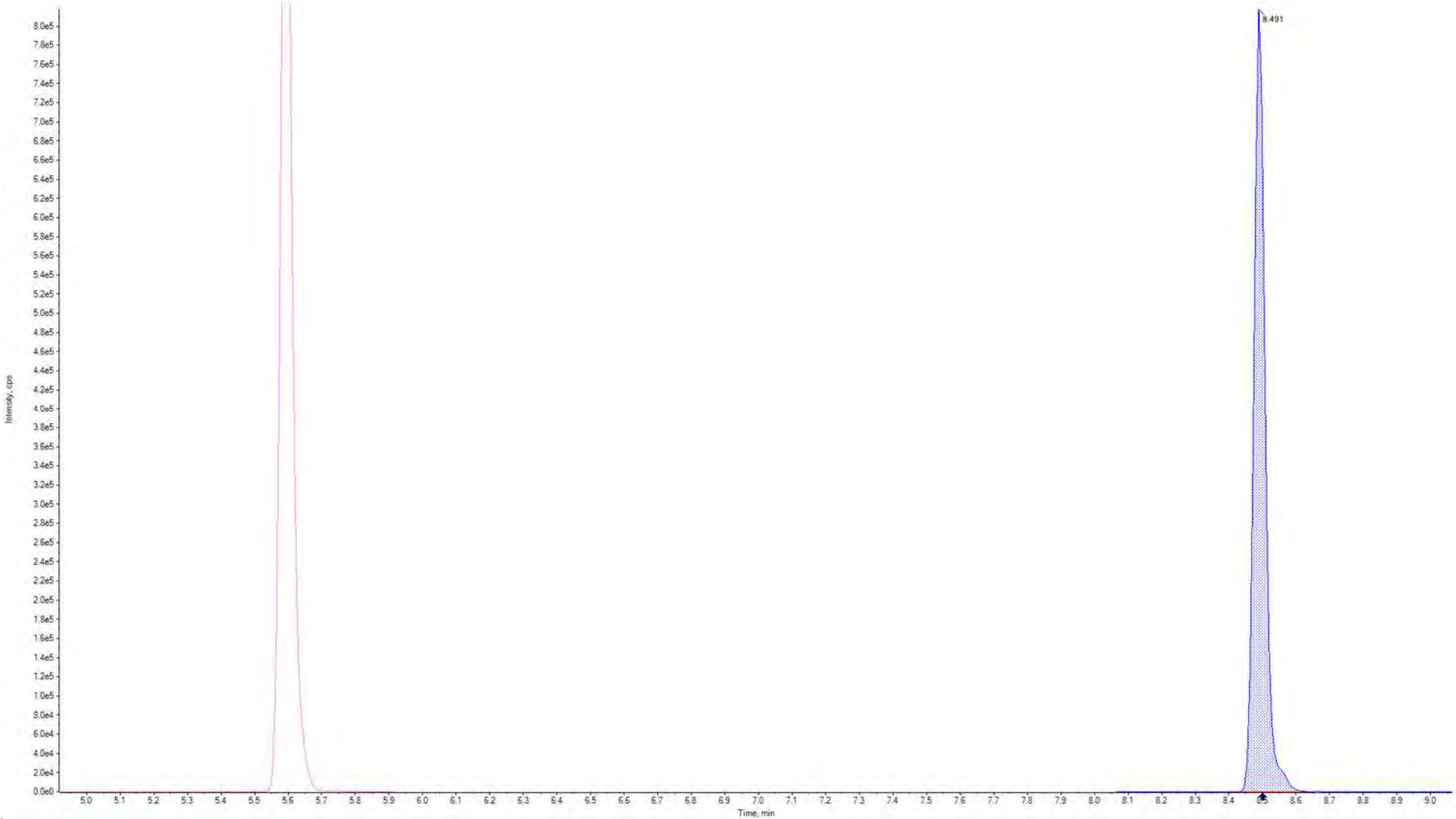


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

9Cl-PF3ONS
Sample: CA1633STD-10 S/N:20448.8 Points Across peak:31

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

9Cl-PF3ONS_2
Sample: CA1633STD-10 S/N:56252.5 Points Across peak:30



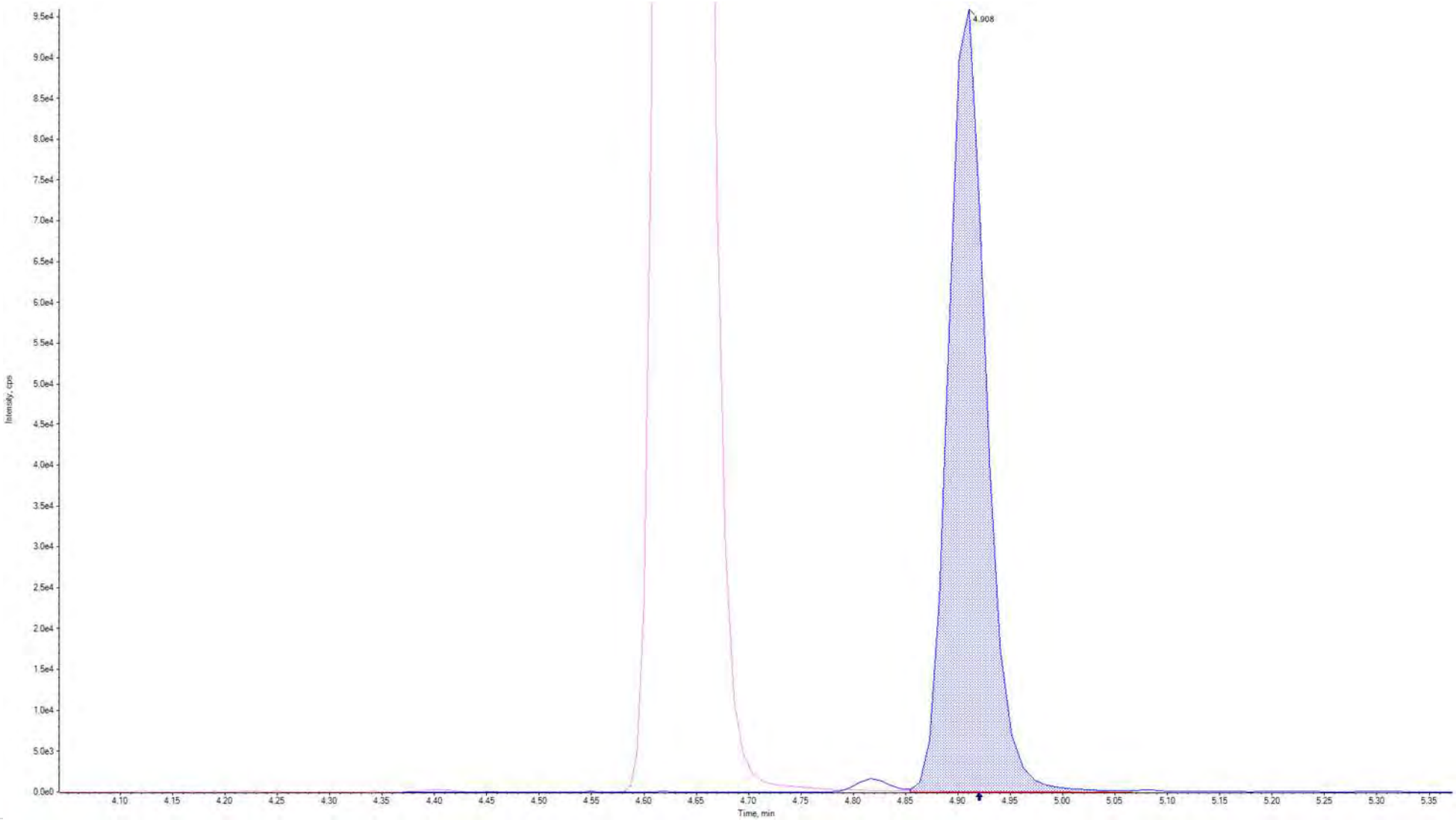
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

11Cl-PF3OUdS
Sample: CA1633STD-10 S/N:848107.0 Points Across peak:42

11Cl-PF3OUdS_2
Sample: CA1633STD-10 S/N:76646.3 Points Across peak:43

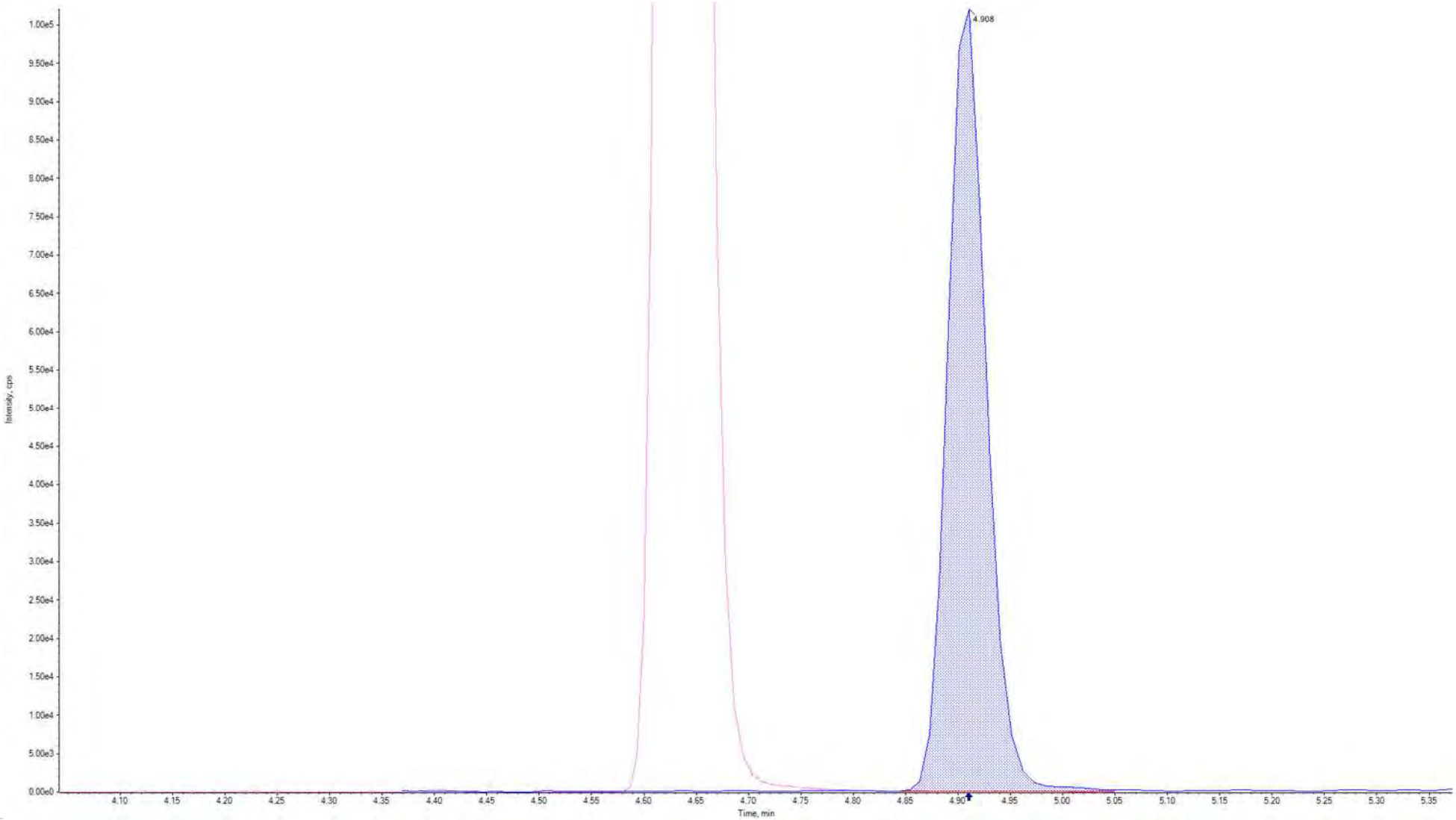
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

3:3FTCA
Sample: CA1633STD-10 S/N:2300.8 Points Across peak:22



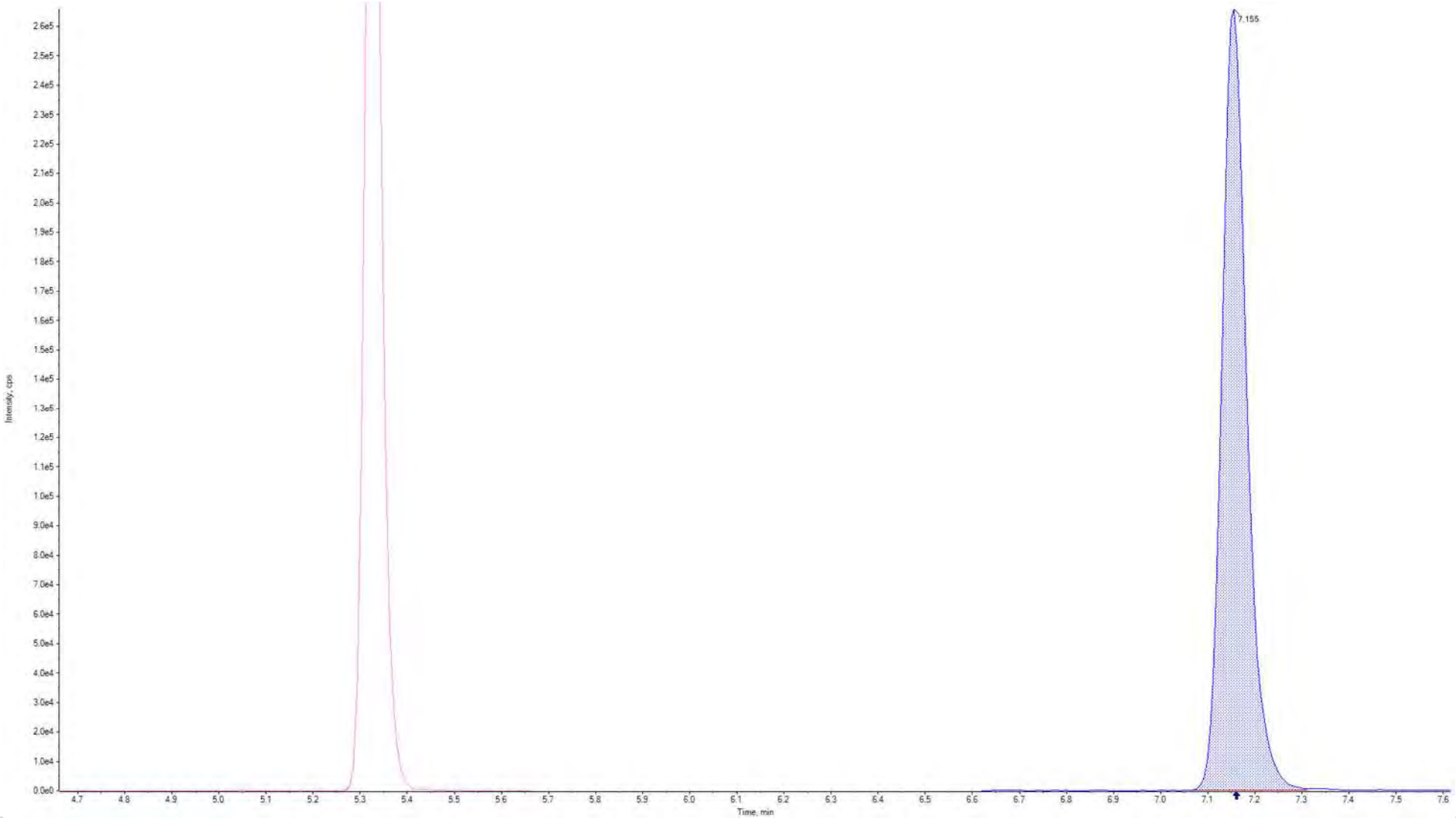
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

3:3FTCA_2
Sample: CA1633STD-10 S/N:2447.3 Points Across peak:22



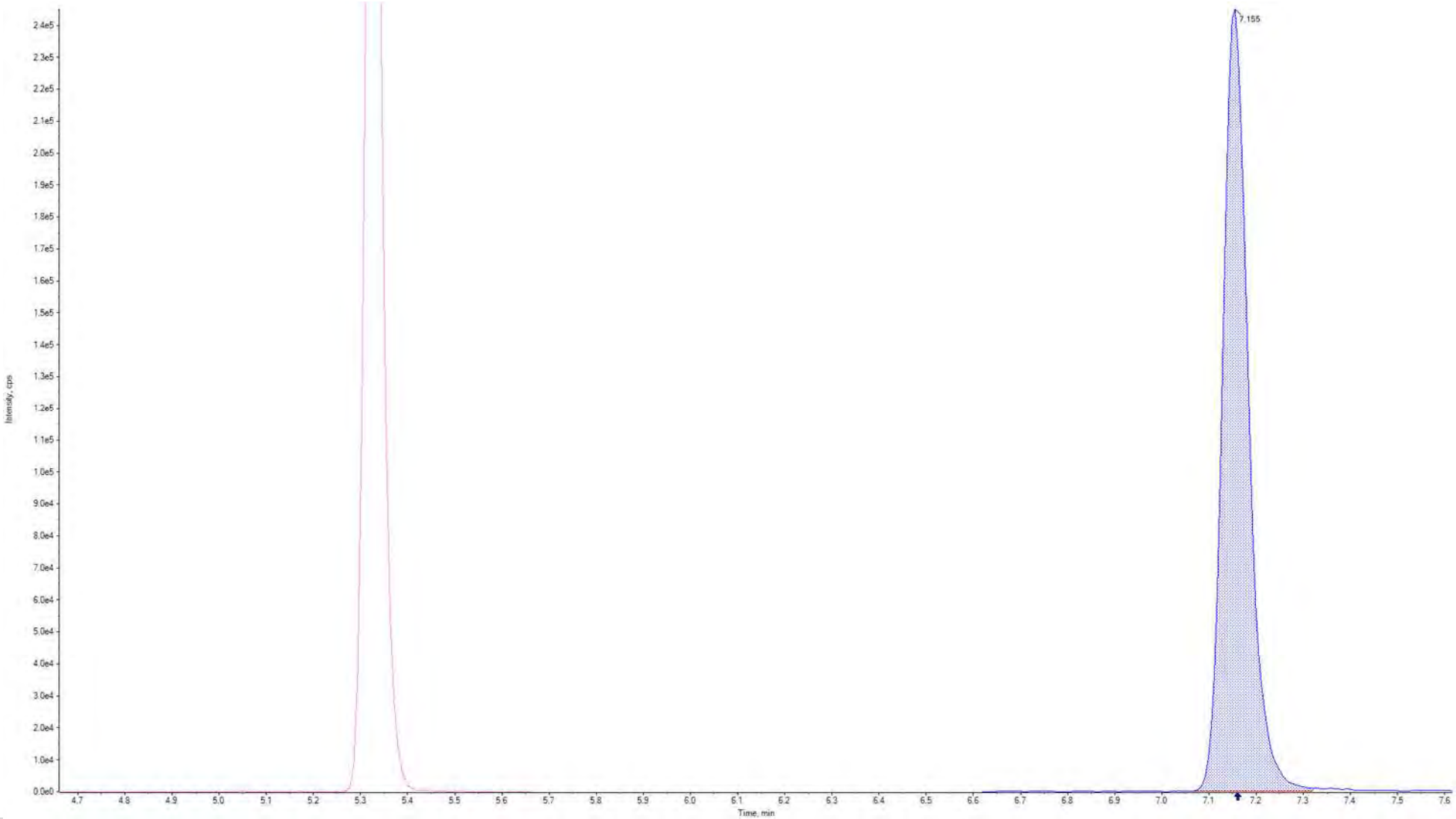
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

5:3FTCA
Sample: CA1633STD-10 S/N:4990.5 Points Across peak:42



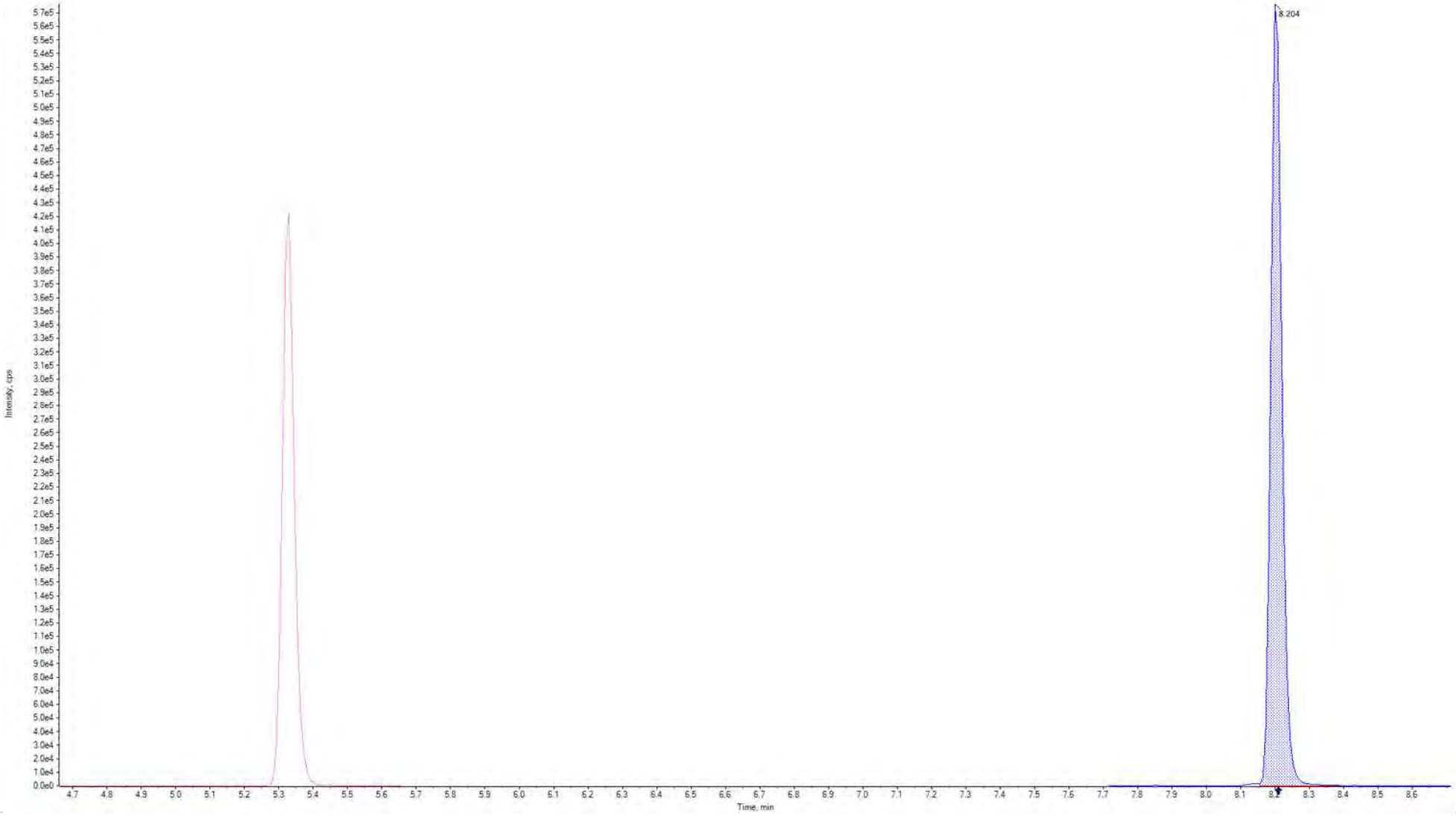
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

5:3FTCA_2
Sample: CA1633STD-10 S/N:4206.9 Points Across peak:43



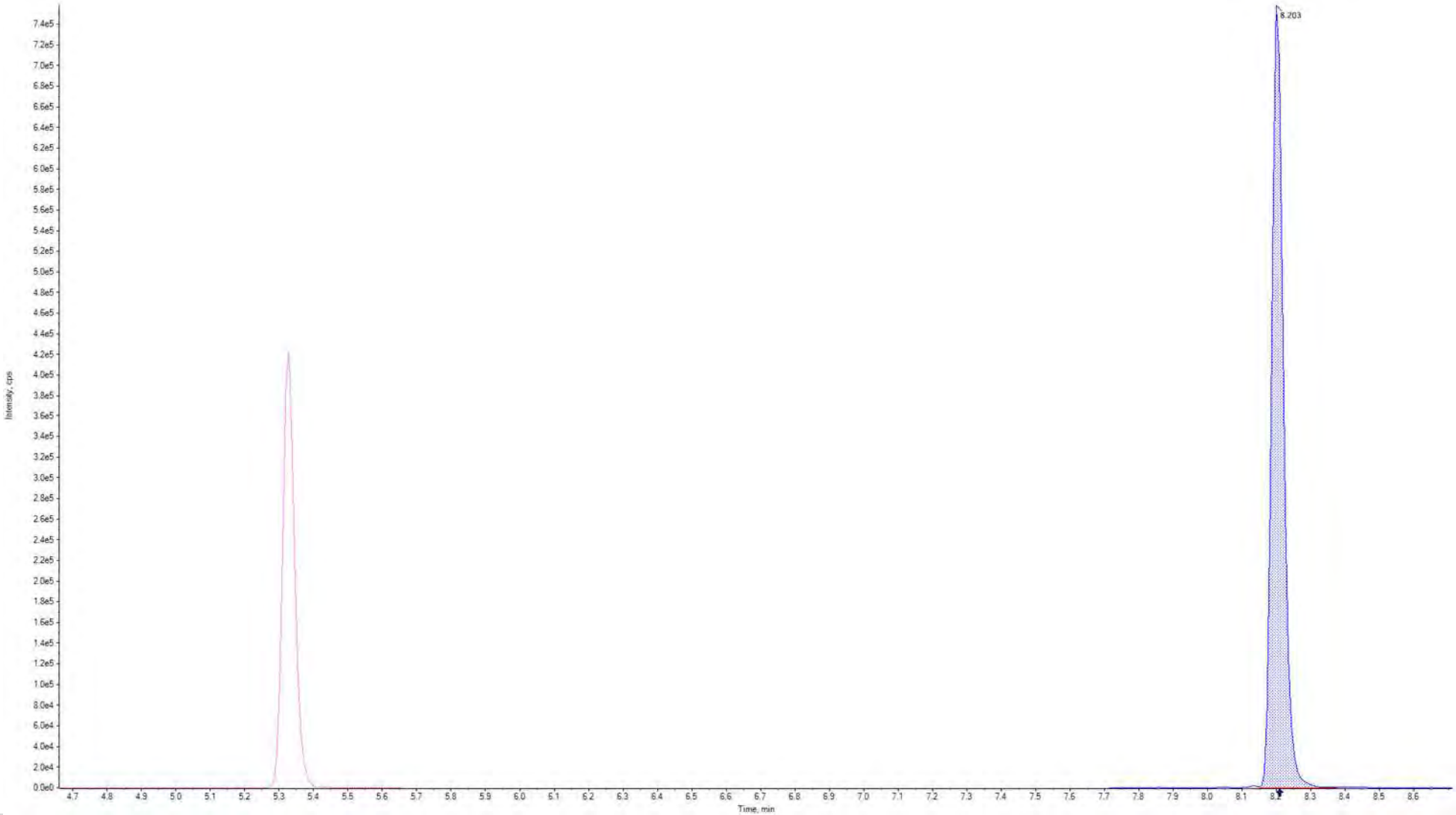
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

7:3FTCA
Sample: CA1633STD-10 S/N:16604.3 Points Across peak:29



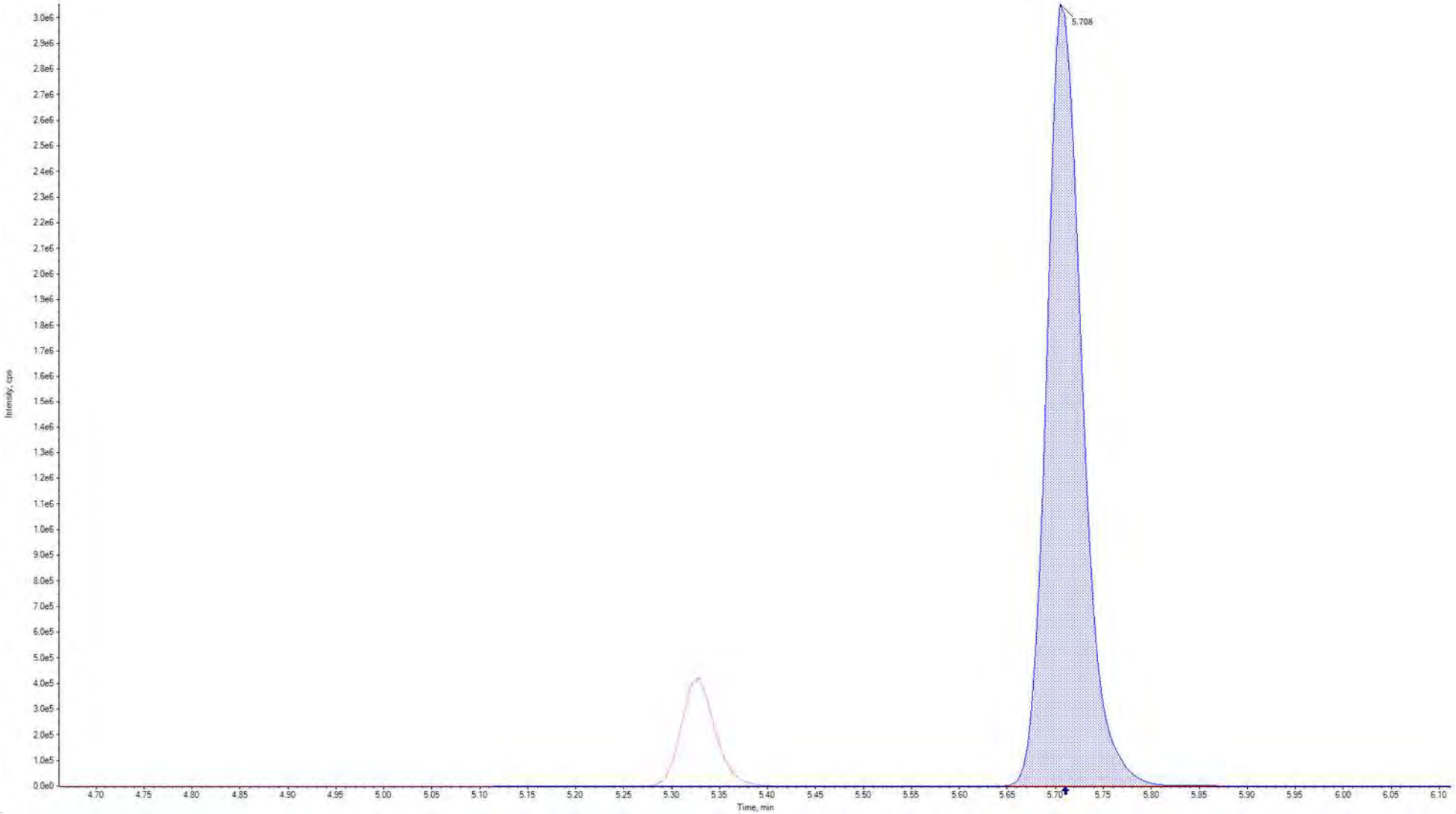
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

7:3FTCA_2
Sample: CA1633STD-10 S/N:28046.4 Points Across peak:27



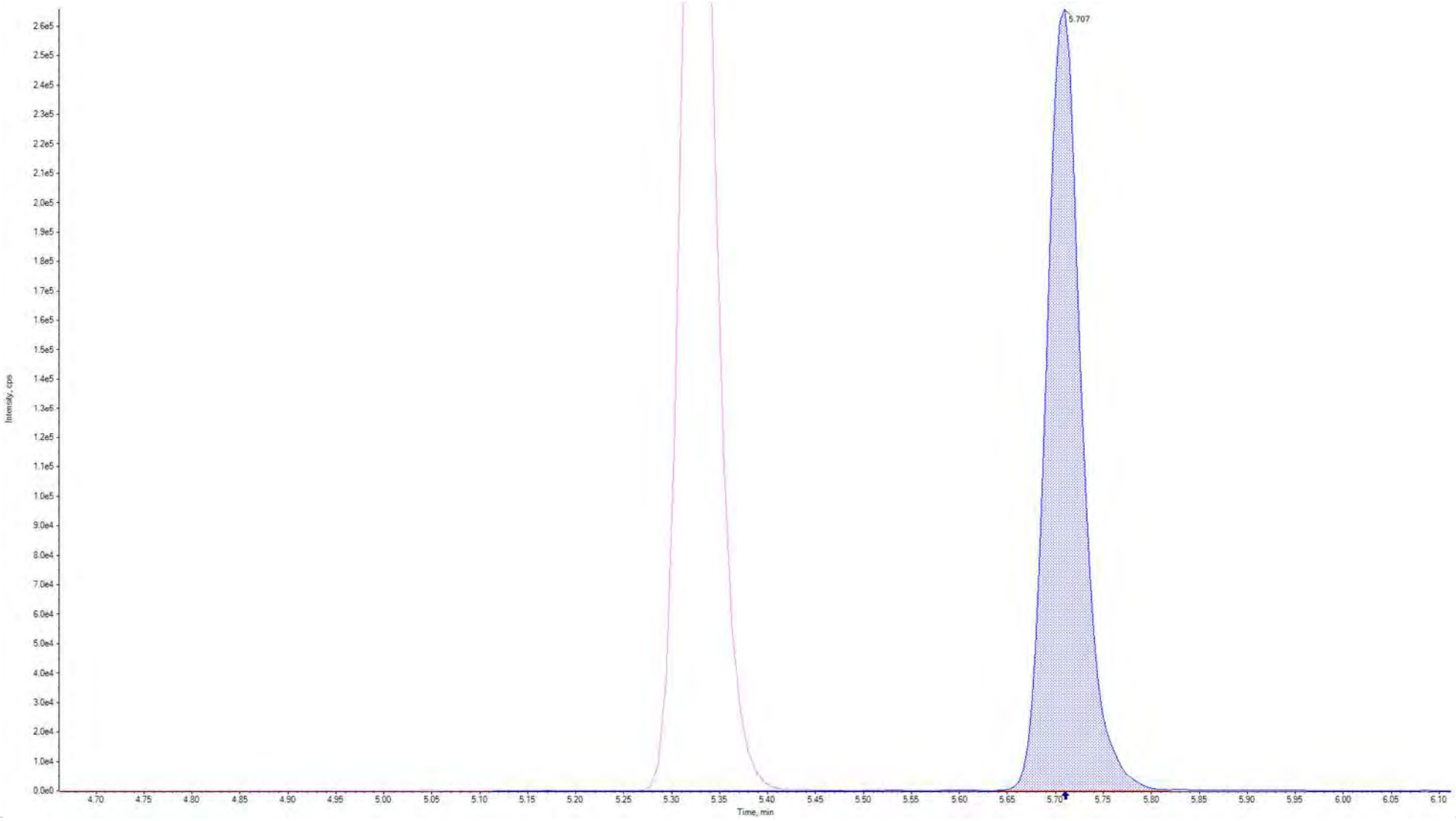
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFEESA
Sample: CA1633STD-10 S/N:16542.2 Points Across peak:60



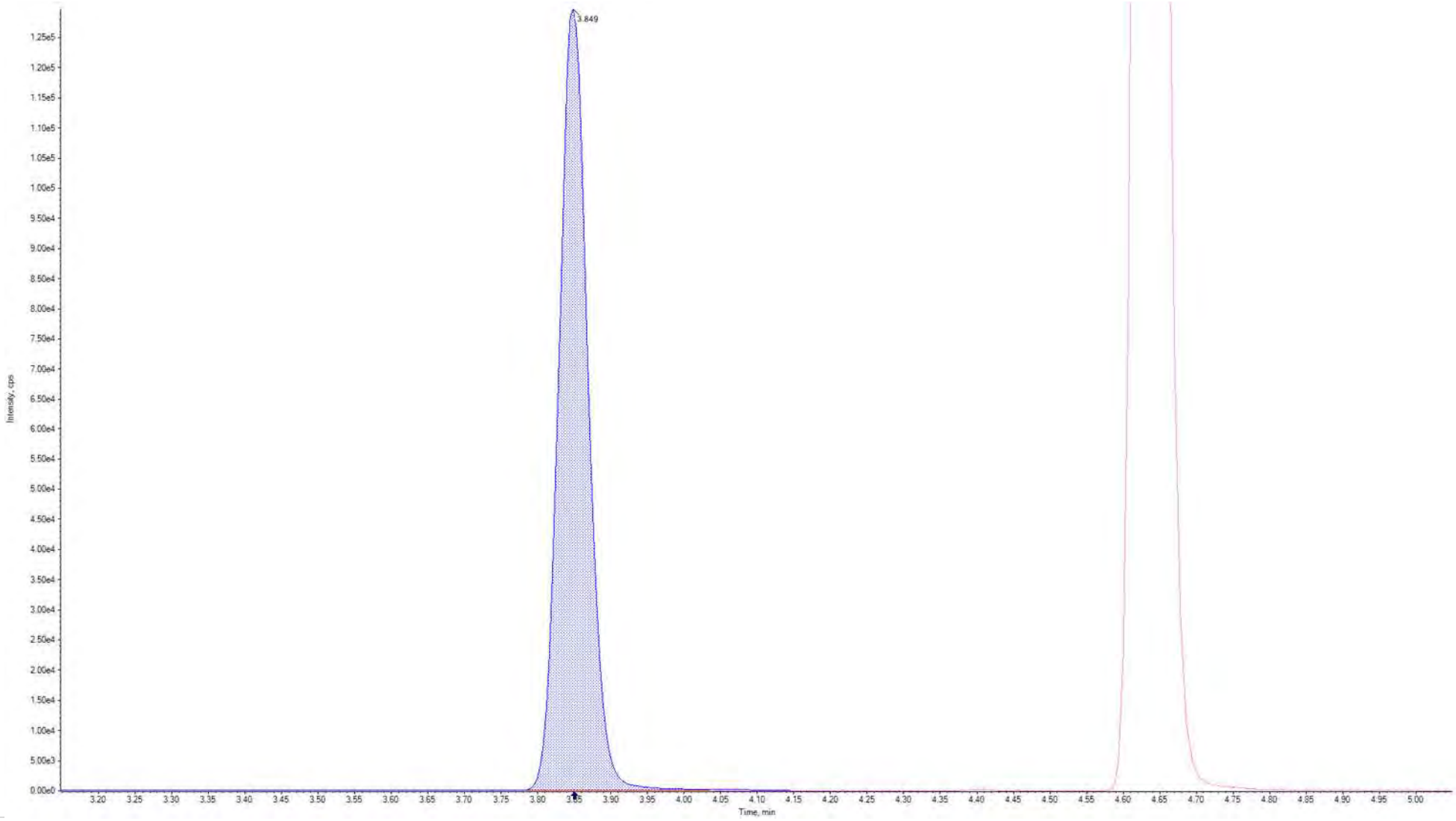
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFEESA_2
Sample: CA1633STD-10 S/N:7952.6 Points Across peak:41



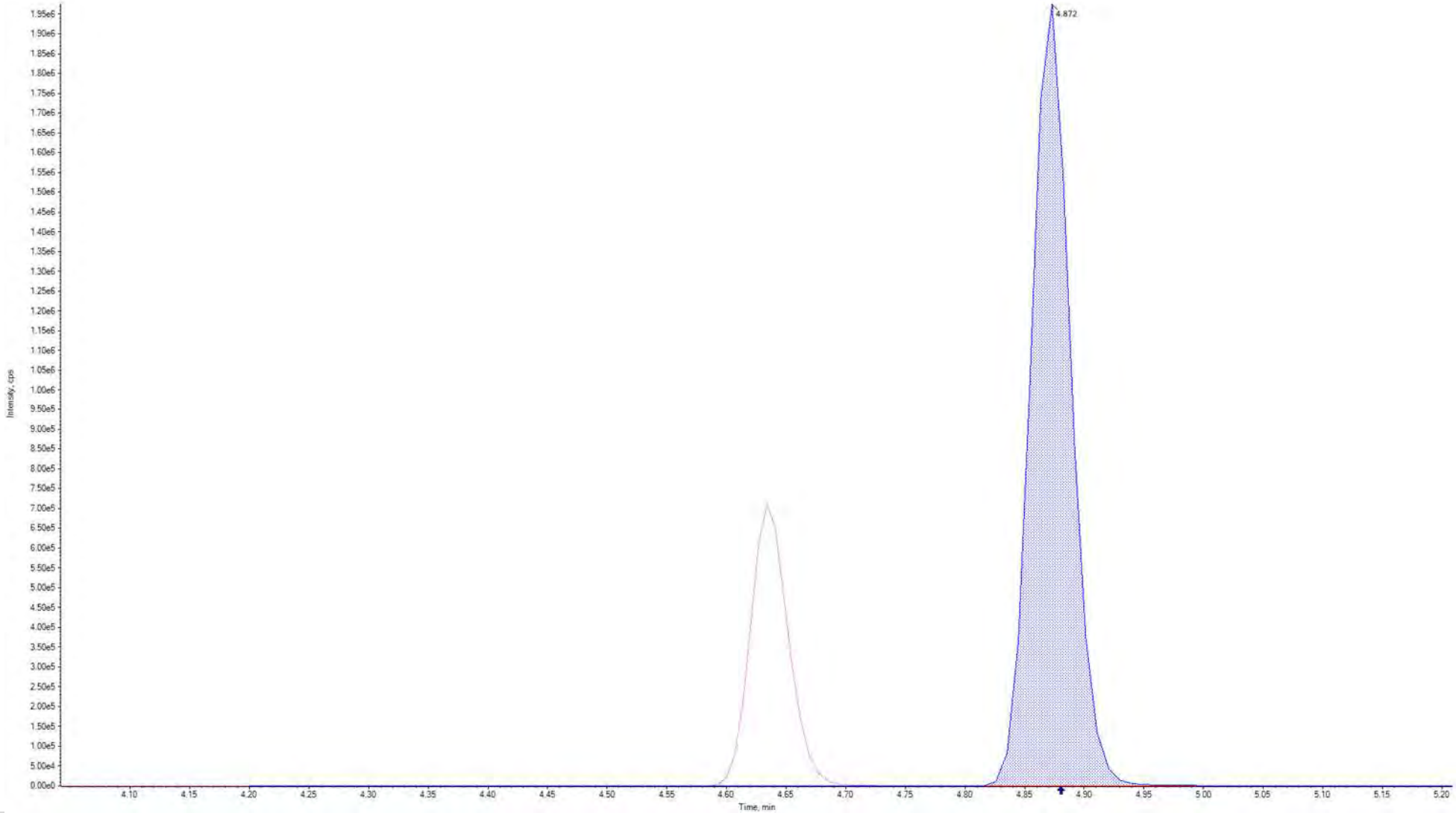
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFMPA
Sample: CA1633STD-10 S/N:4072.8 Points Across peak:68



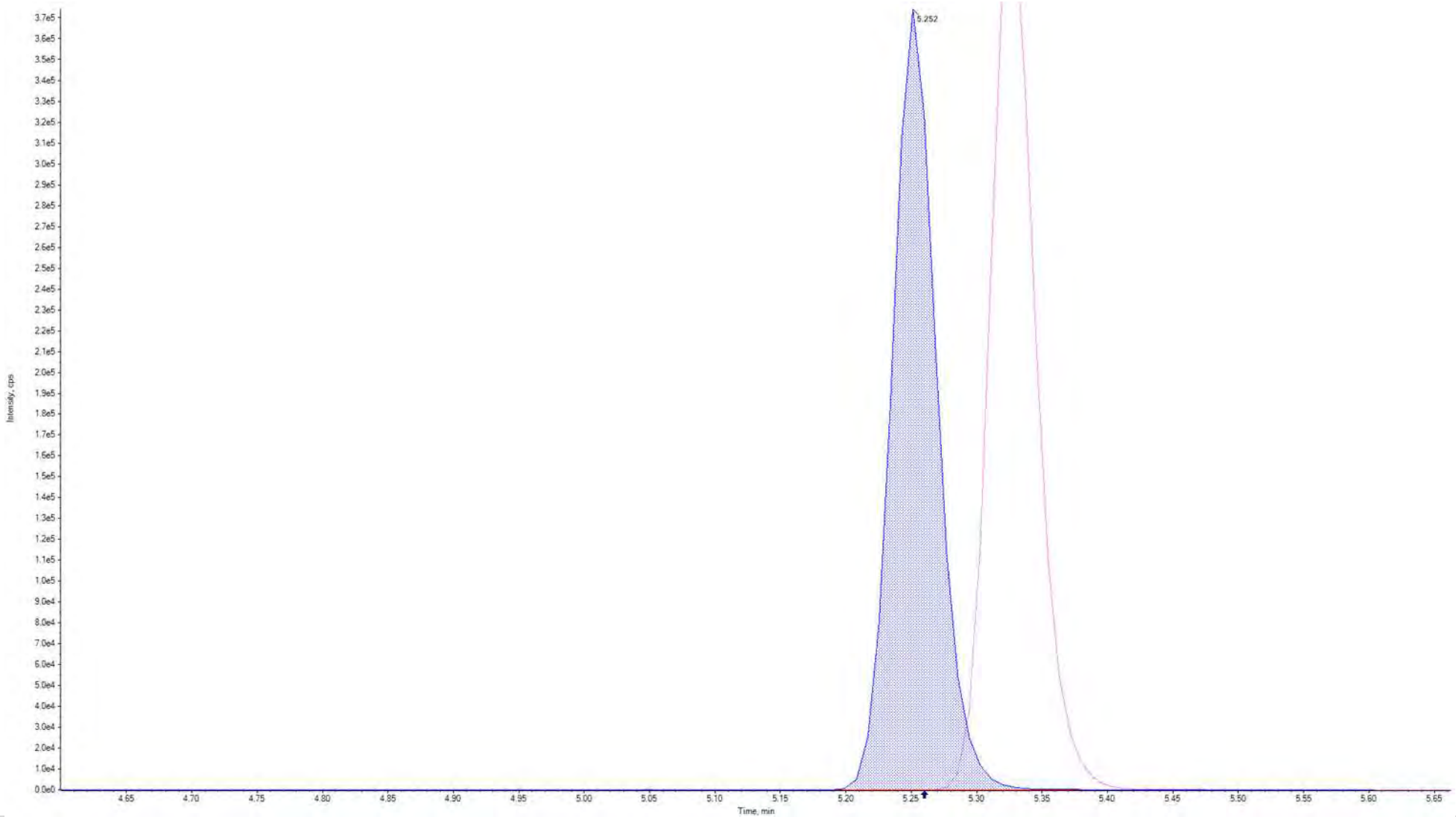
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFMBA
Sample: CA1633STD-10 S/N:9696.0 Points Across peak:27



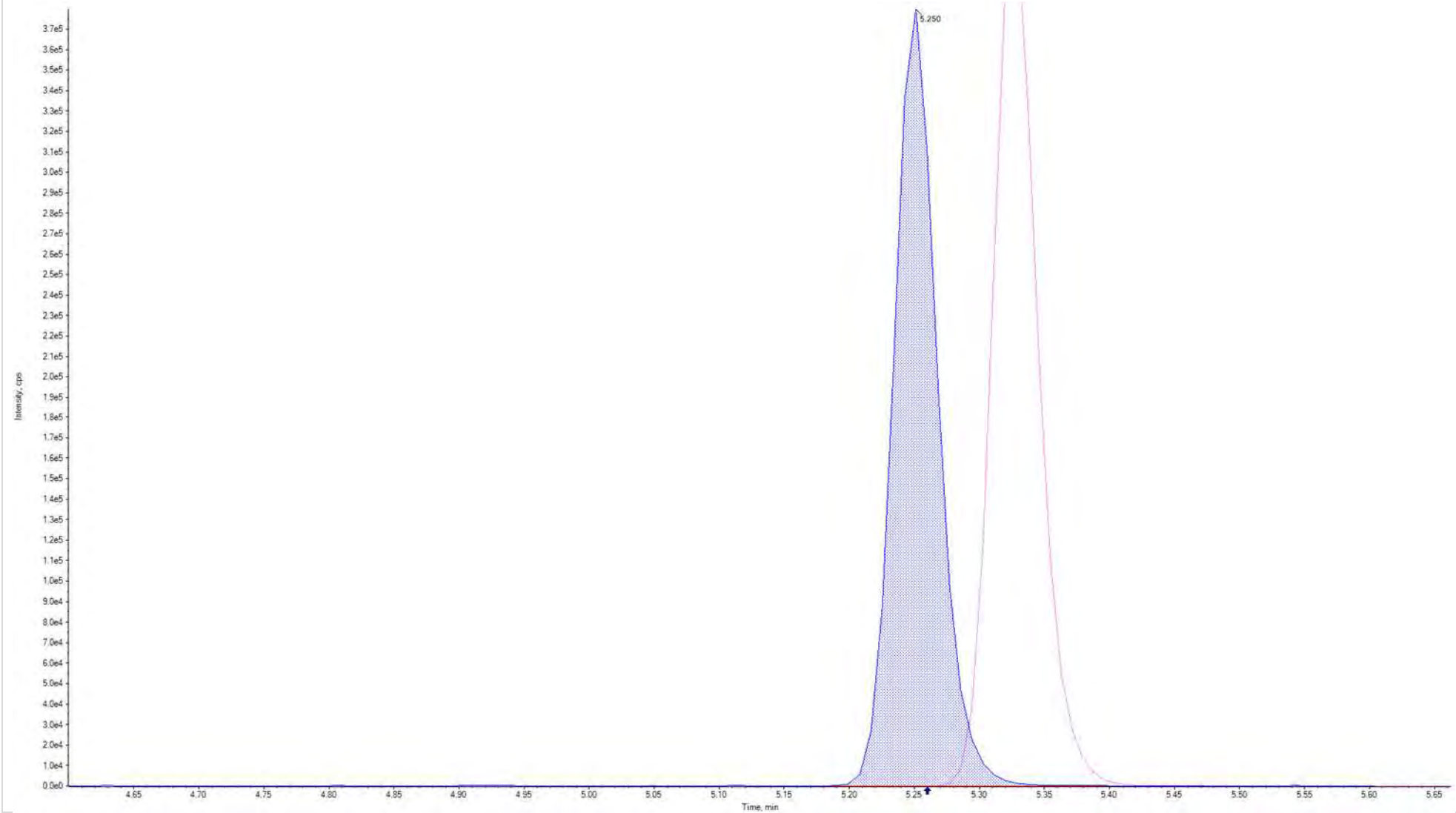
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NFDHA
Sample: CA1633STD-10 S/N:37574917.5 Points Across peak:29



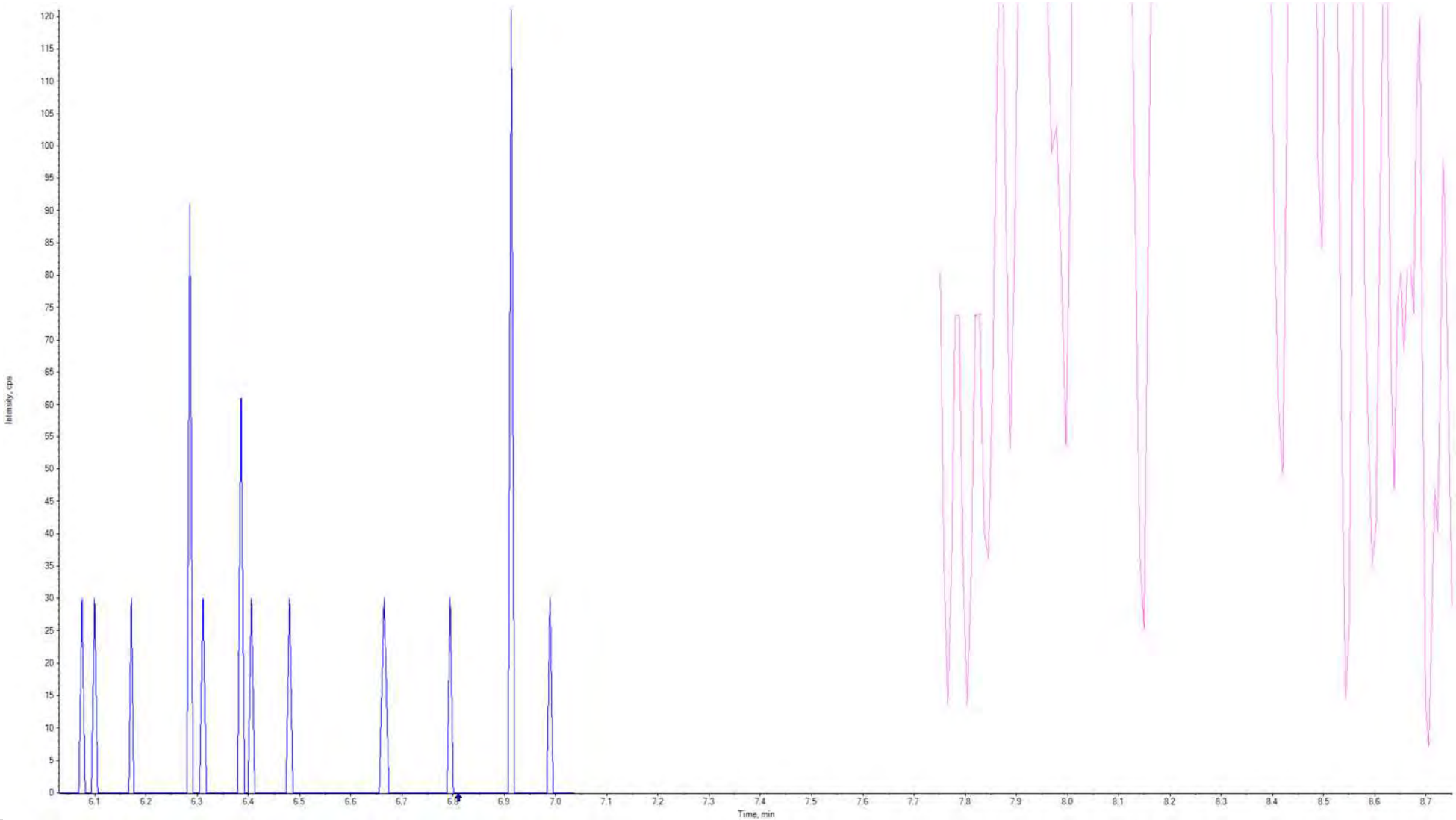
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NFDHA_2
Sample: CA1633STD-10 S/N:3976.4 Points Across peak:34



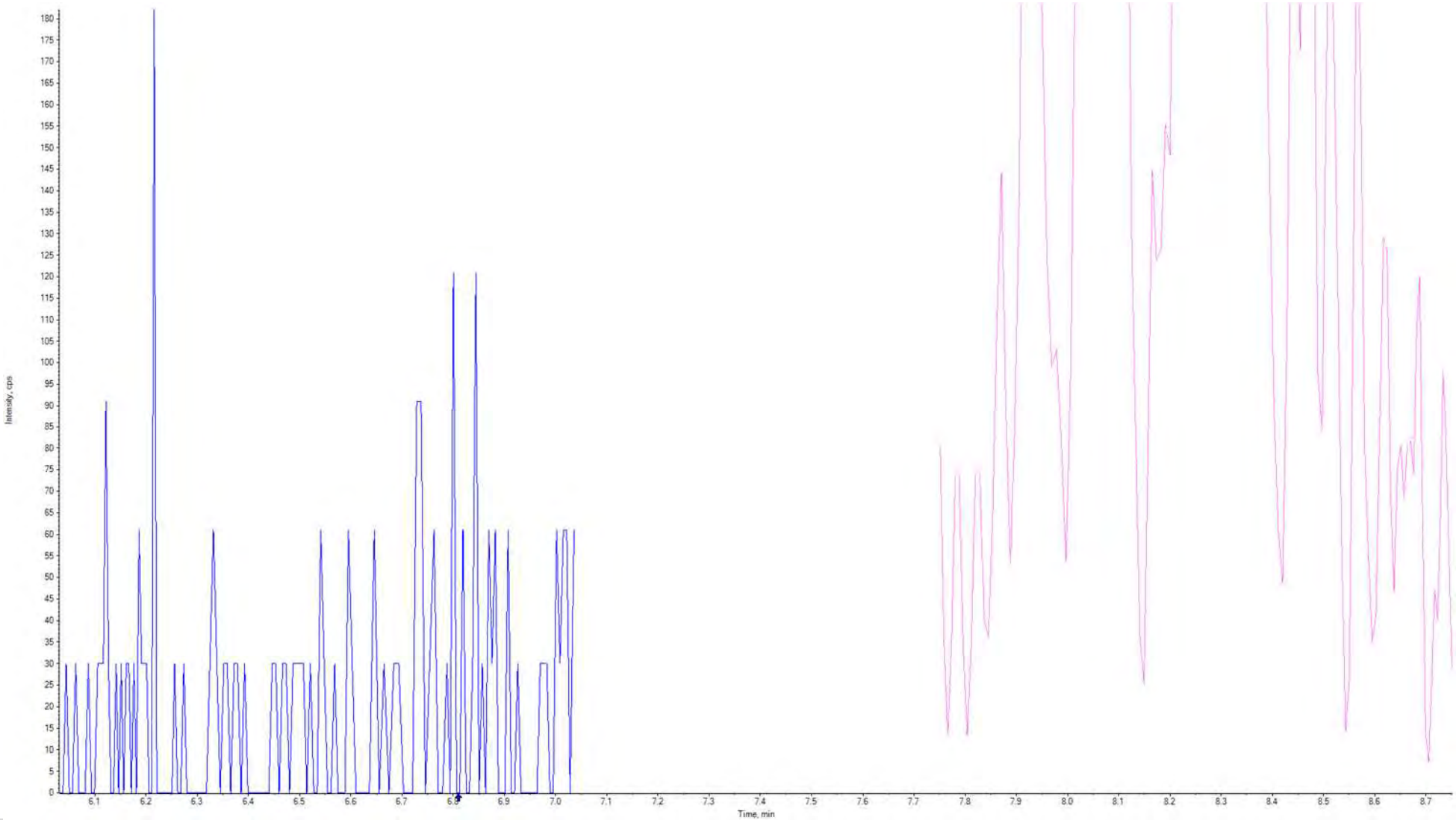
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

TDCA
Sample: CA1633STD-10 S/N:N/A Points Across peak:N/A



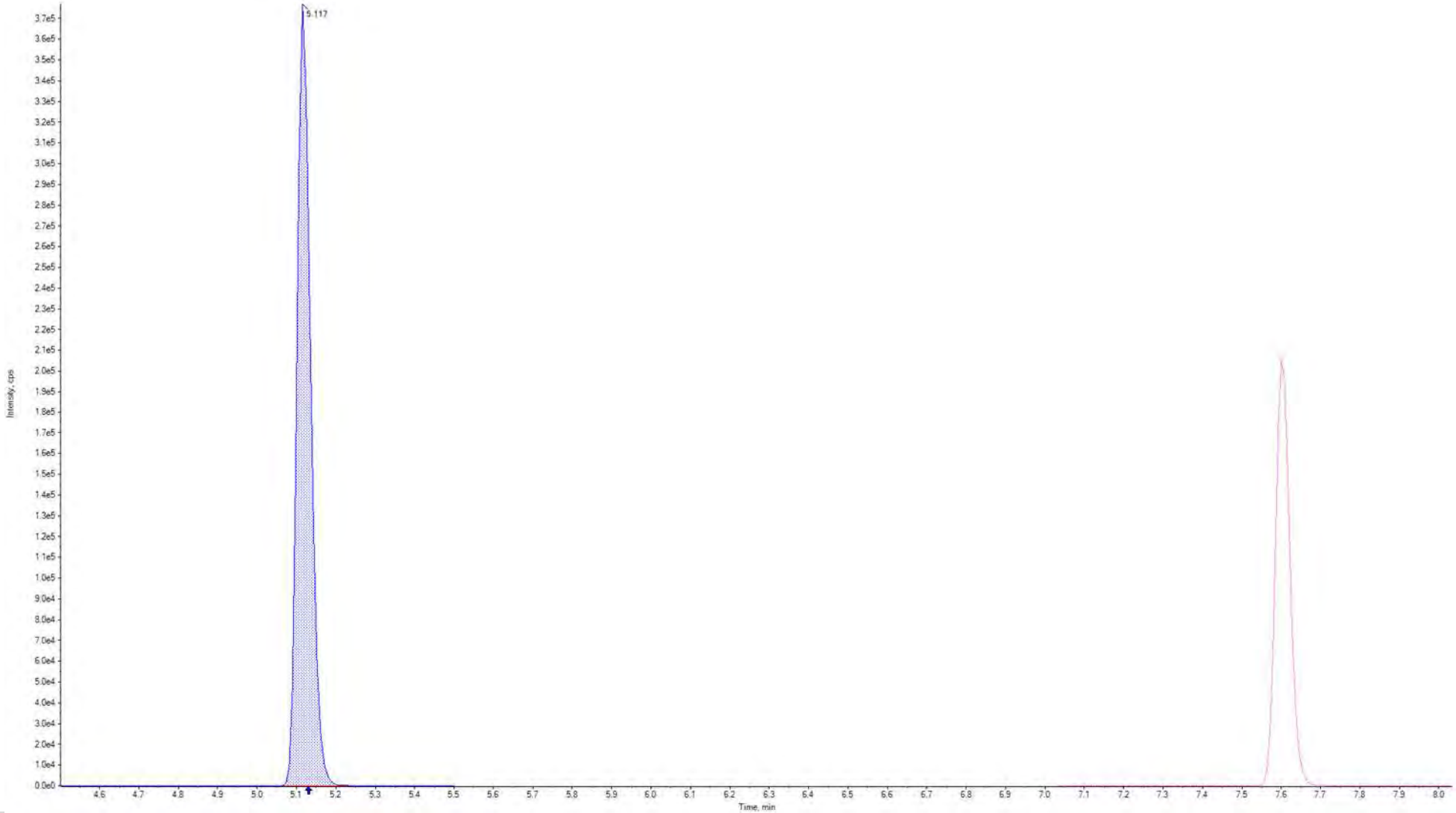
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

TDCA_2
Sample: CA1633STD-10 S/N:N/A Points Across peak:N/A



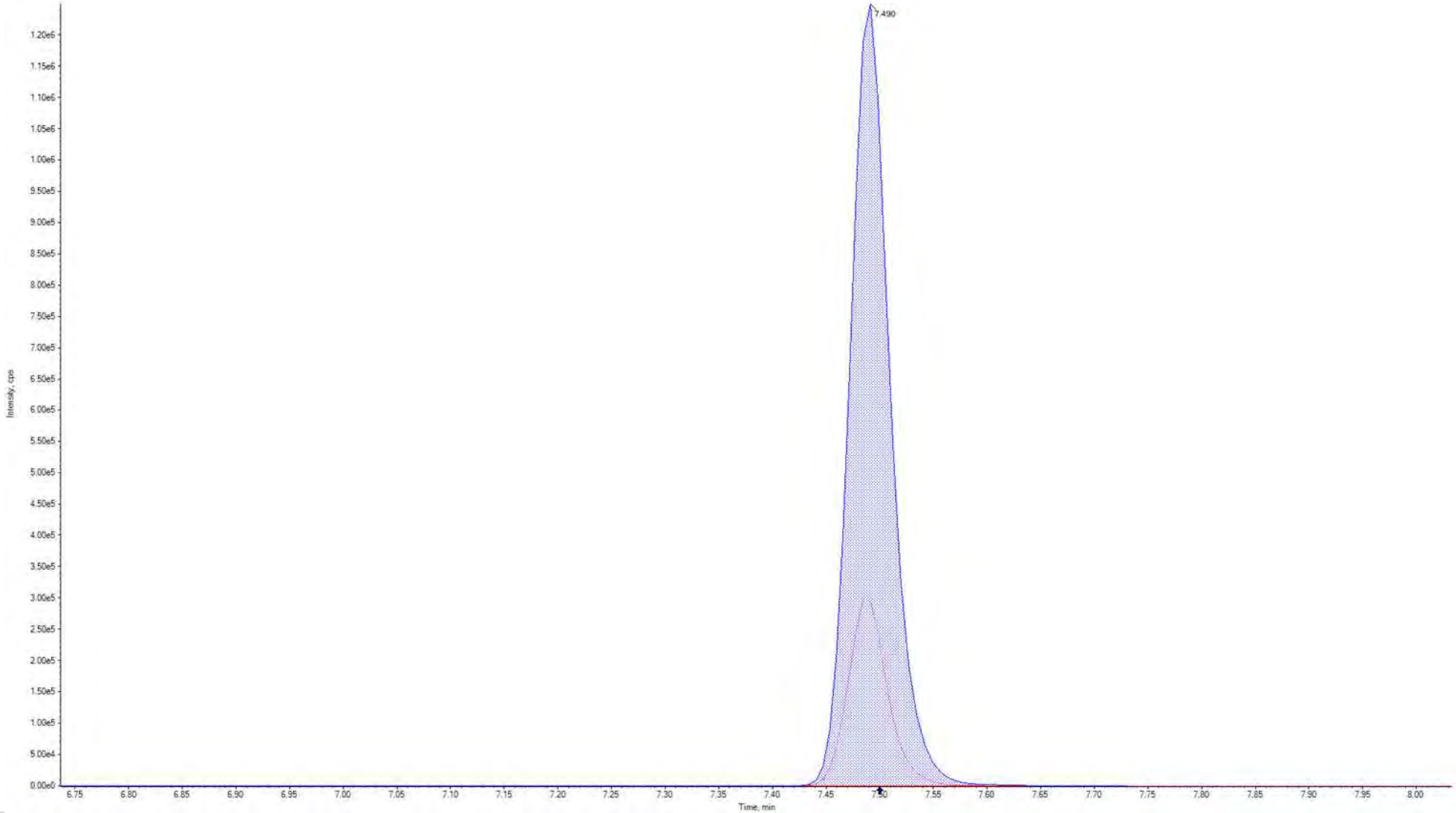
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

13C2D4-4:2FTS
Sample: CA1633STD-10 S/N:8132.6 Points Across peak:26

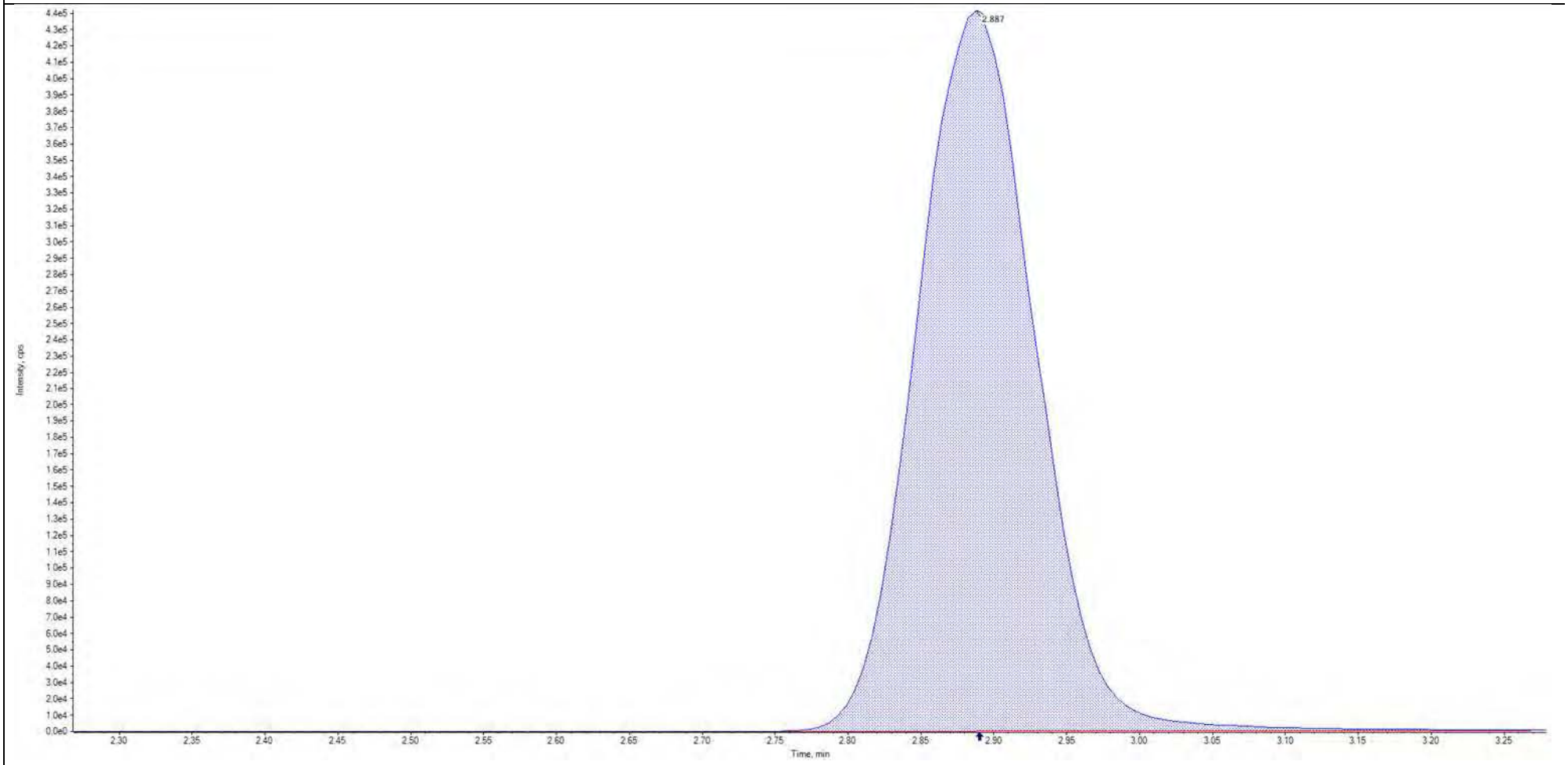


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

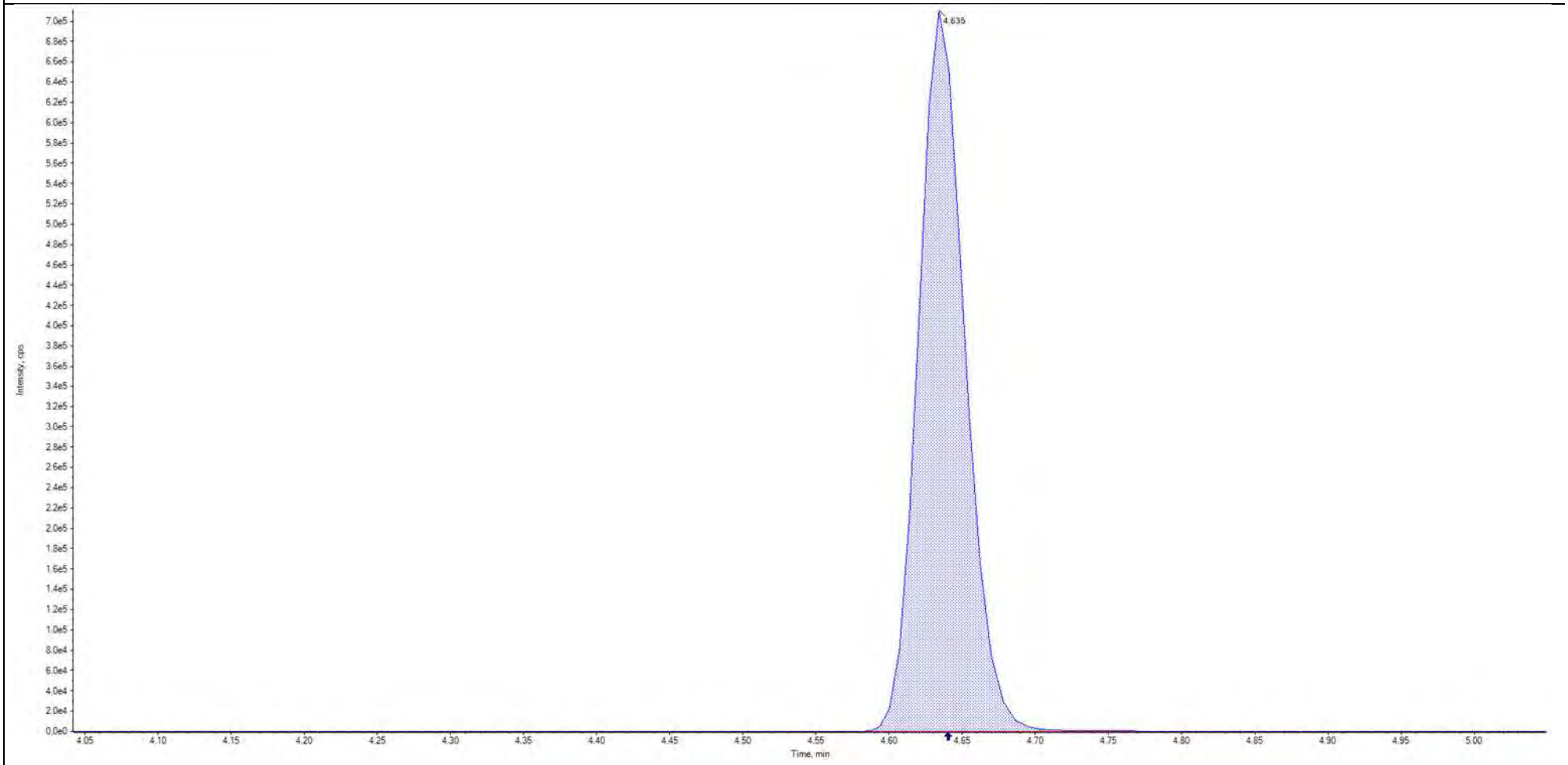
13C2-PFOA
Sample: CA1633STD-10 S/N:10276.5 Points Across peak:36



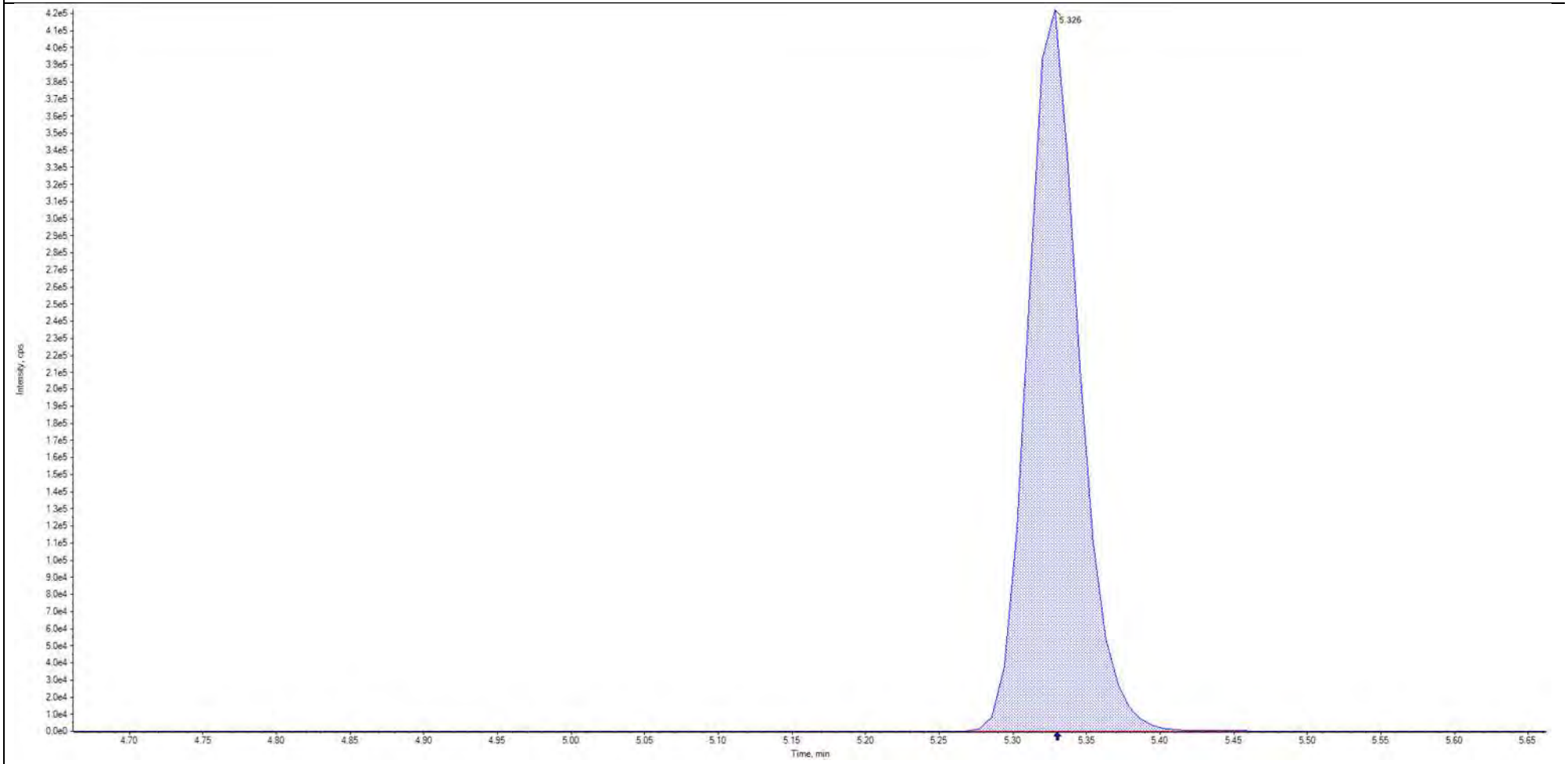
13C4-PFBA
Sample: CA1633STD-10



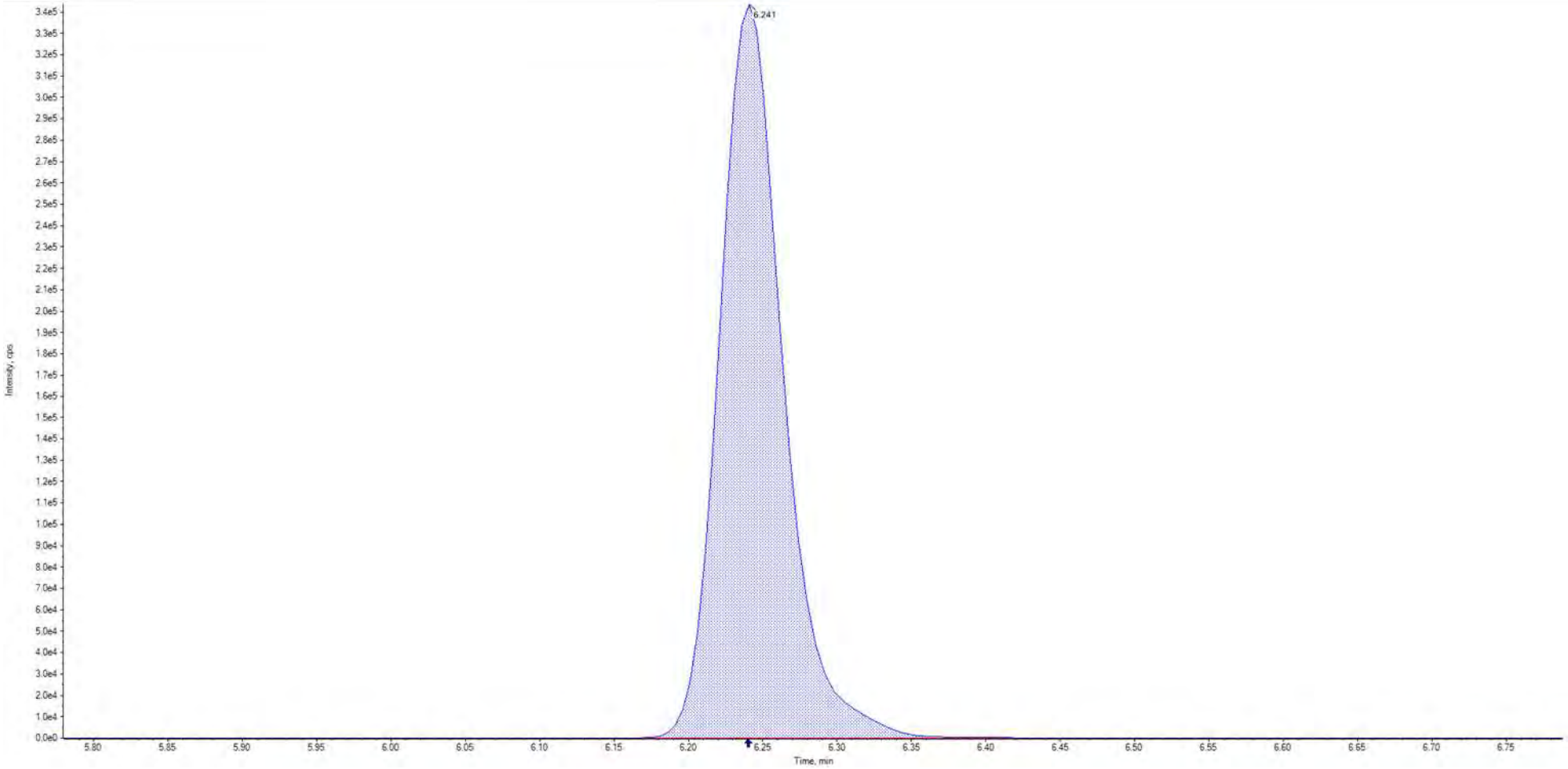
13C5-PFPeA
Sample: CA1633STD-10



13C5-PFHxA
Sample: CA1633STD-10

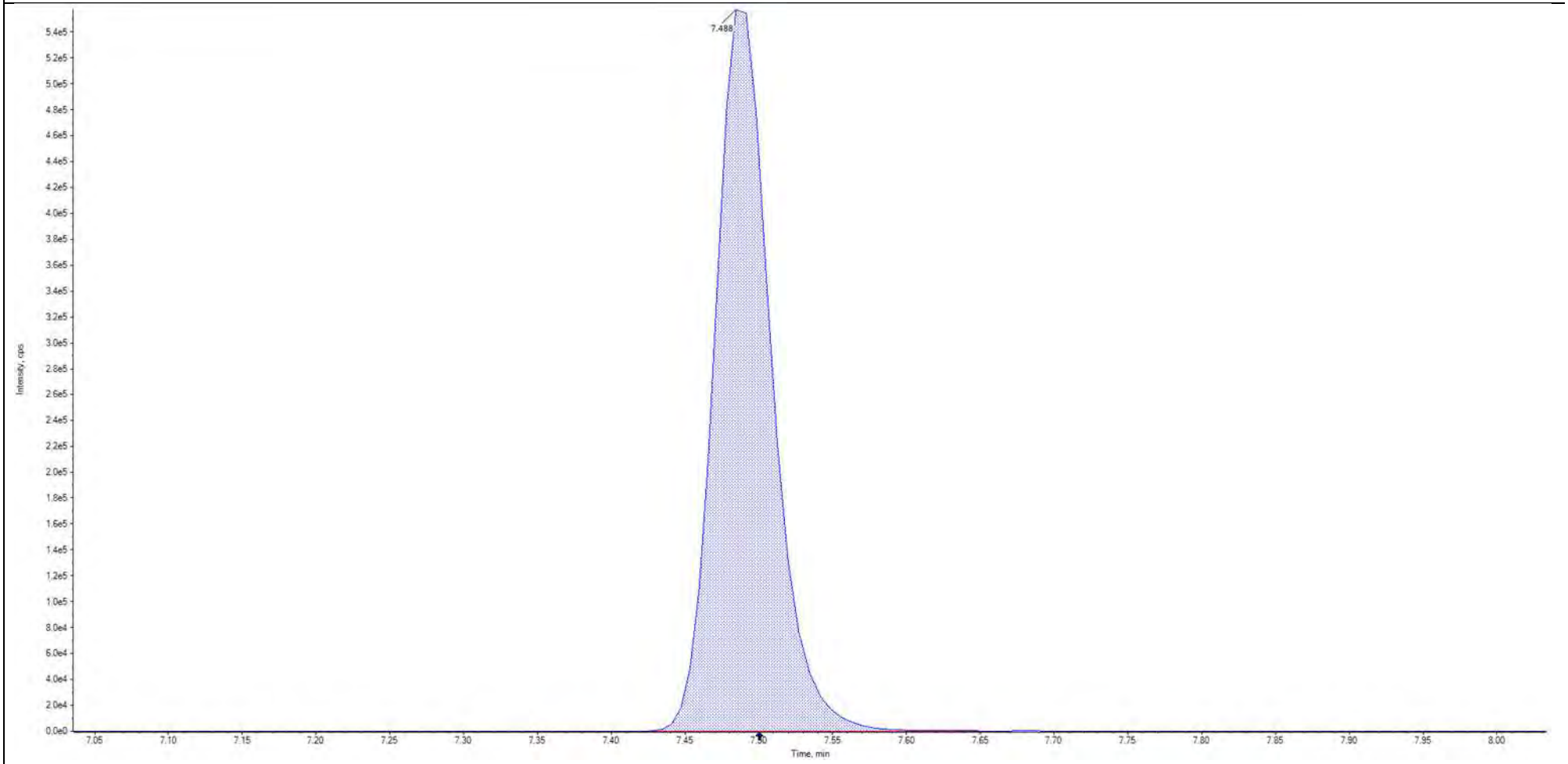


13C4-PFHpA
Sample: CA1633STD-10

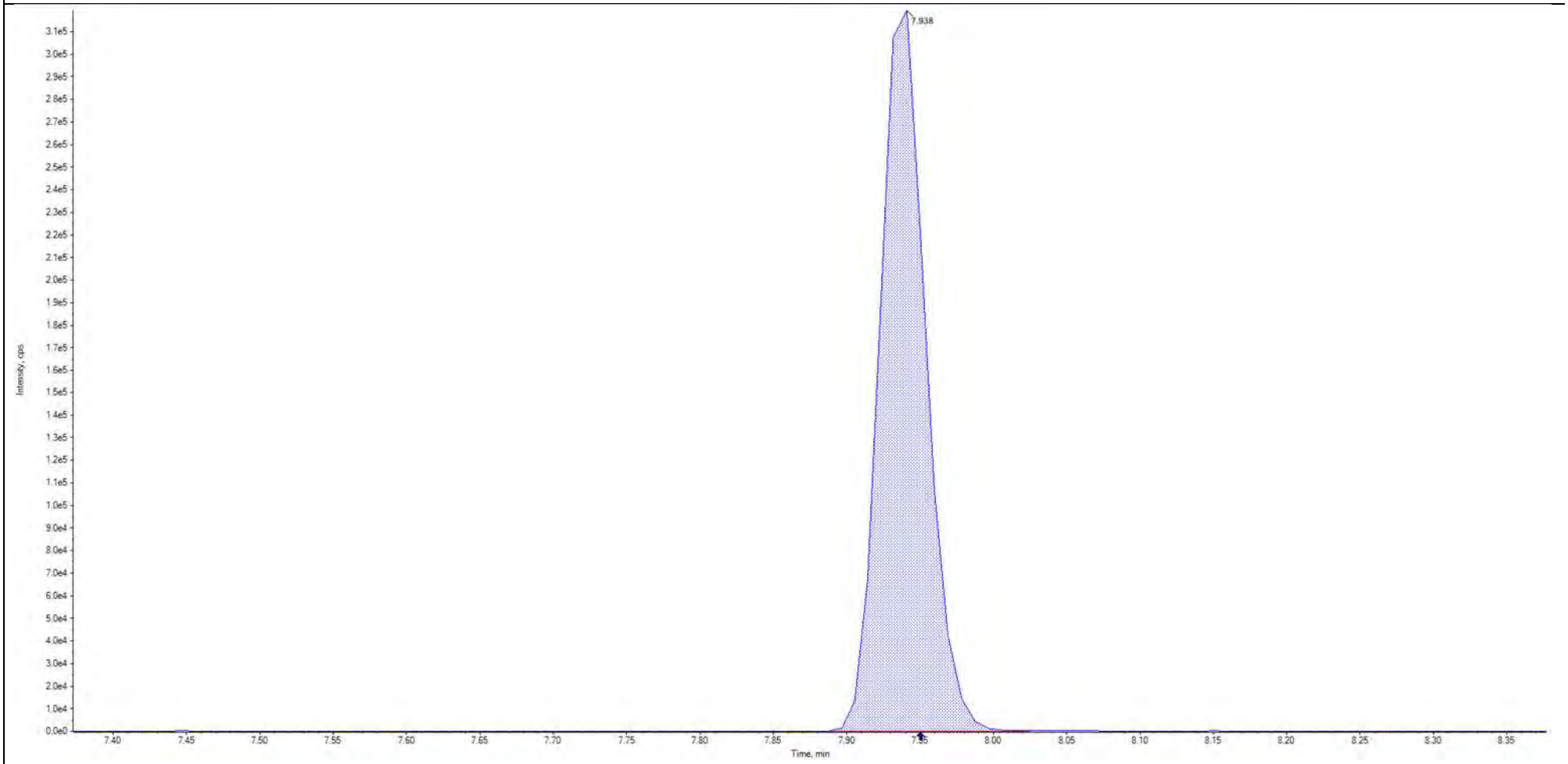


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

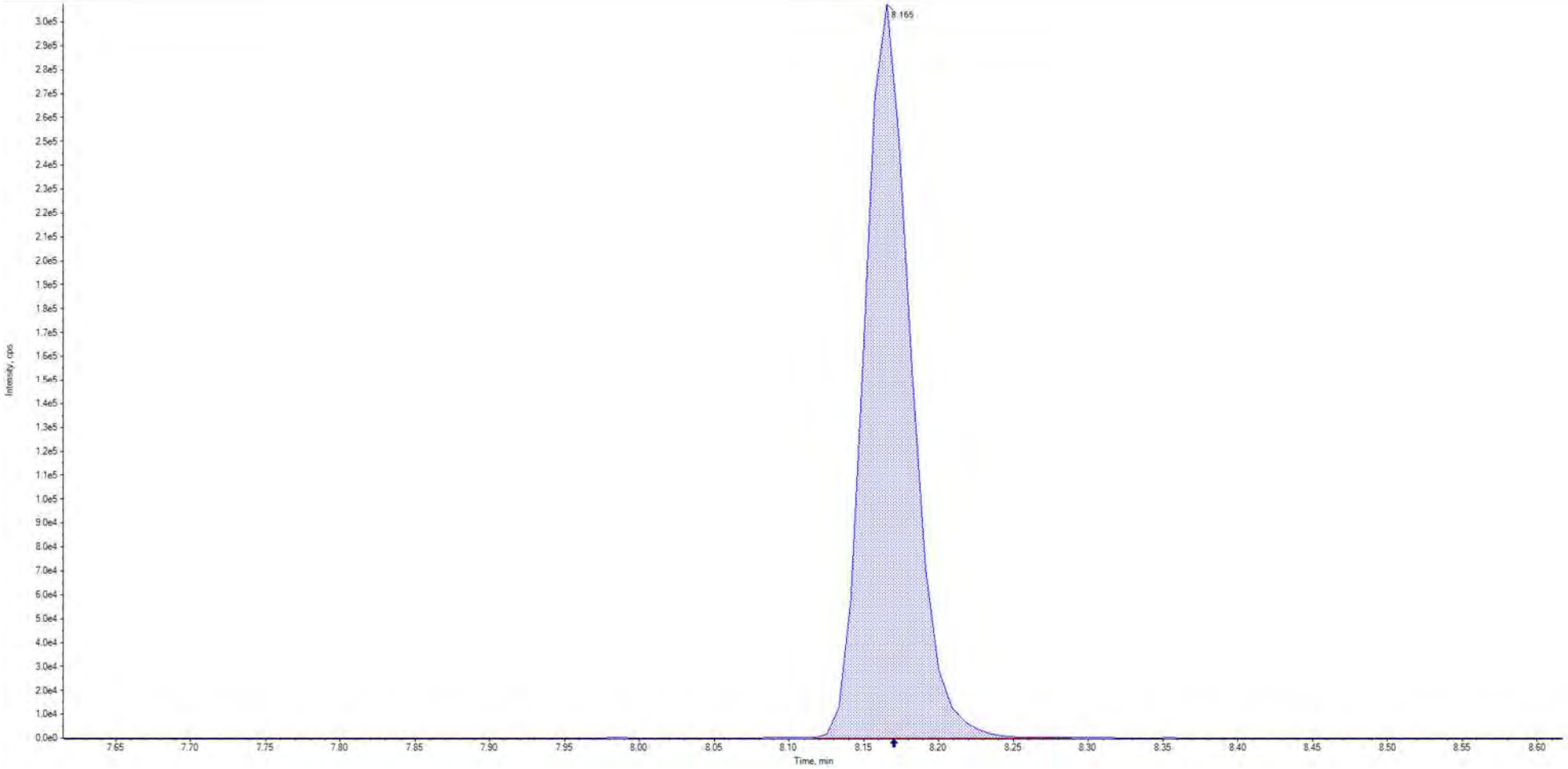
13C8-PFOA
Sample: CA1633STD-10



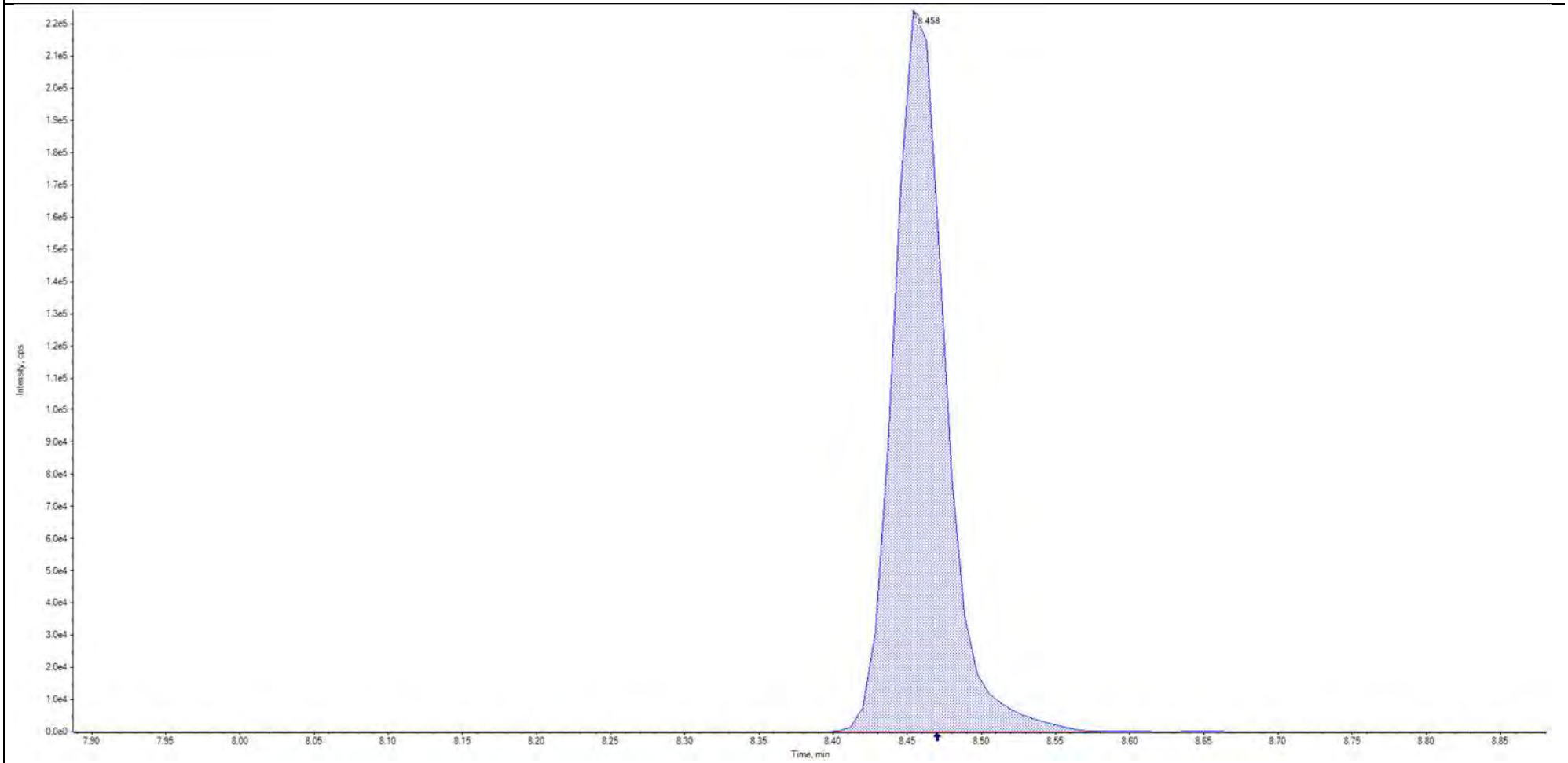
13C9-PFNA
Sample: CA1633STD-10



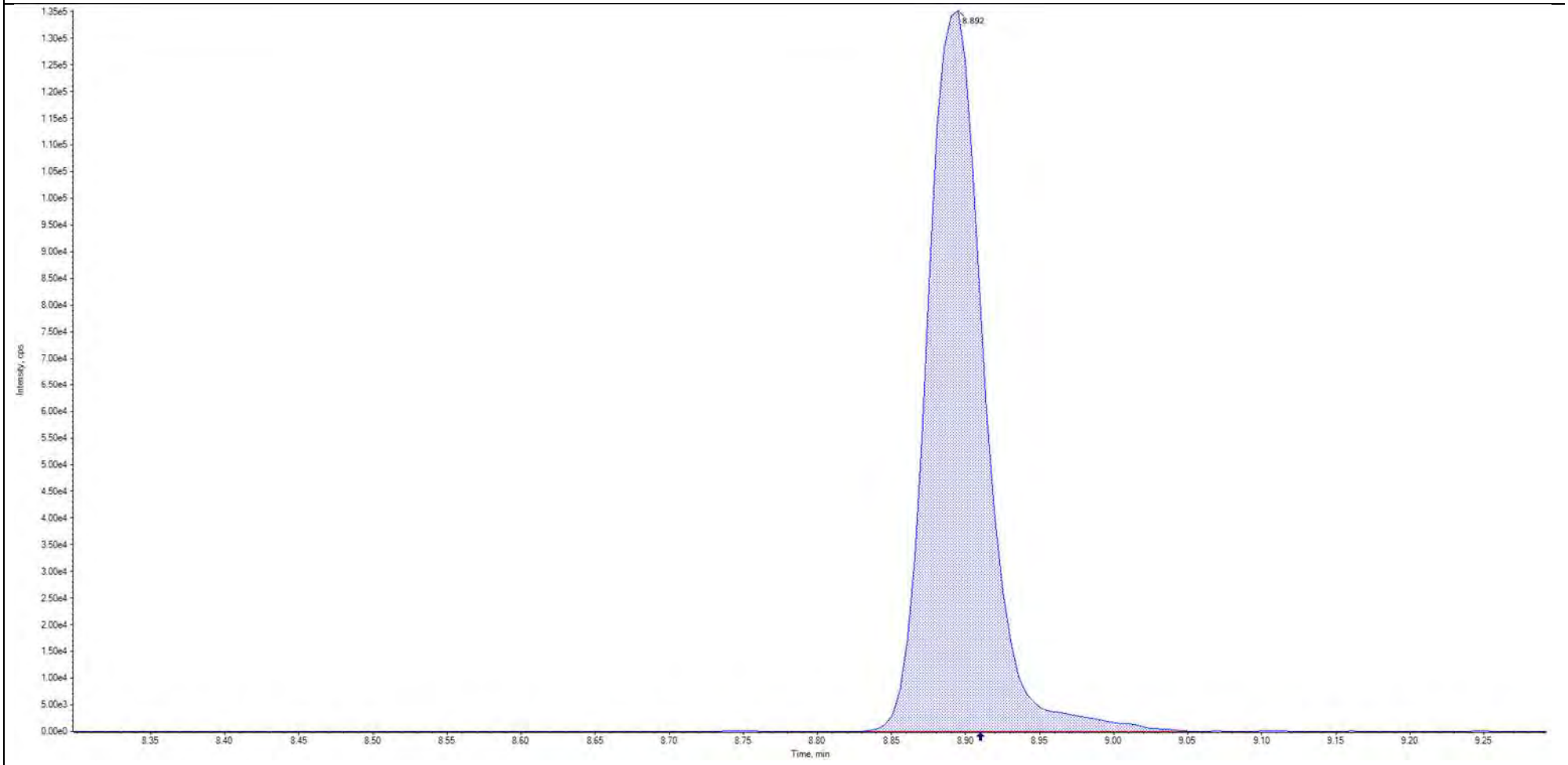
13C6-PFDA
Sample: CA1633STD-10



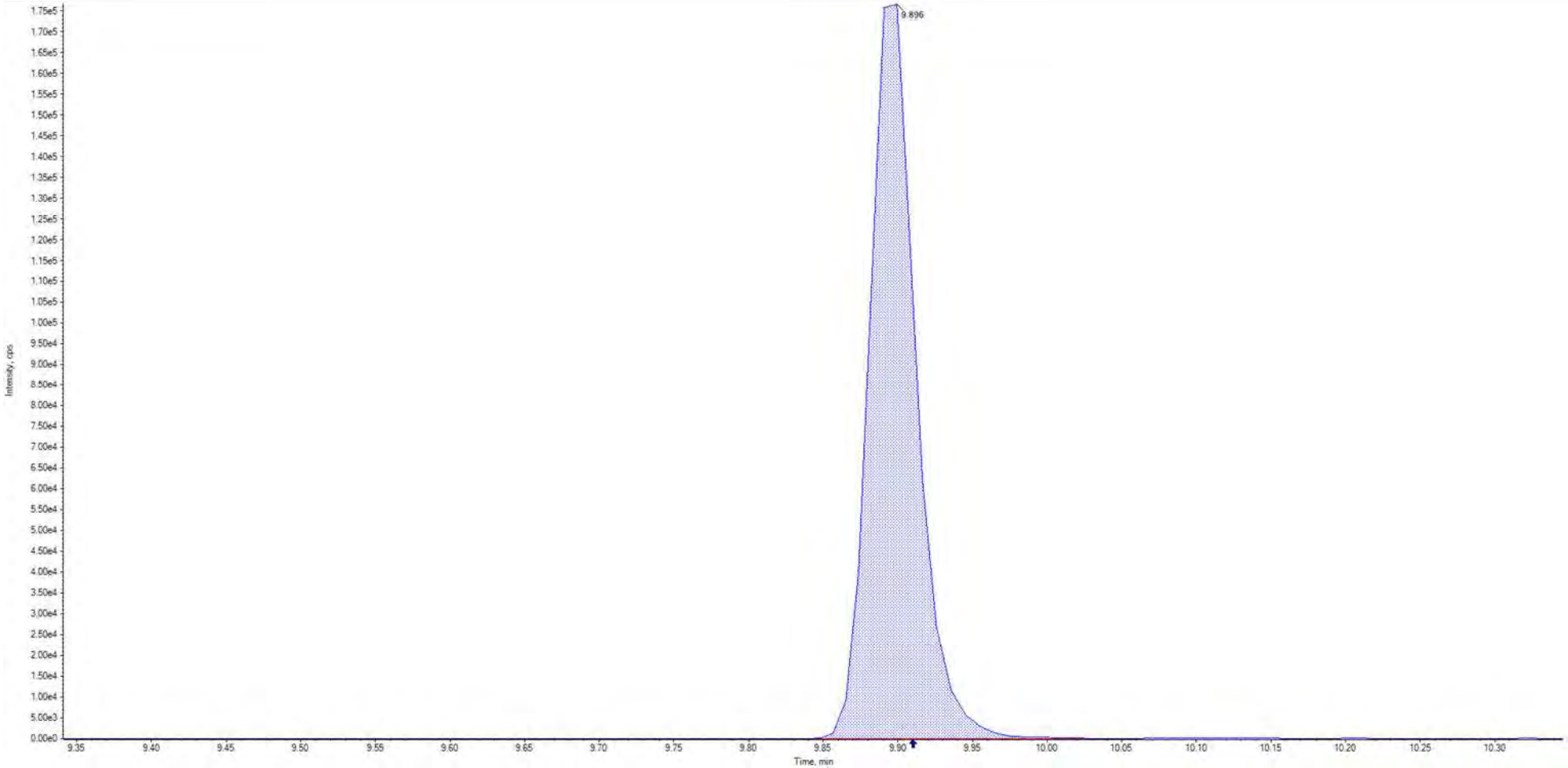
13C7-PFUnA
Sample: CA1633STD-10



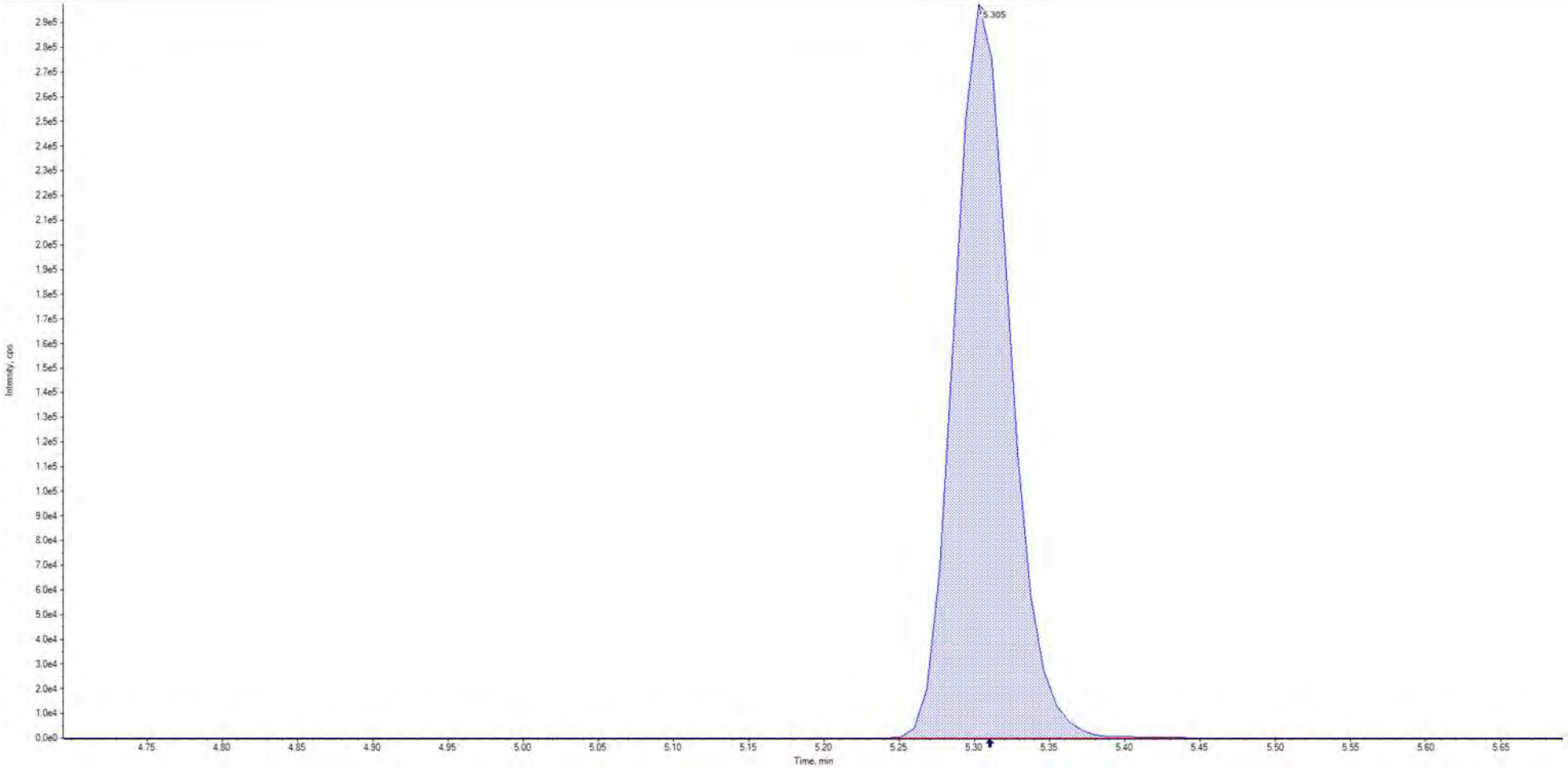
13C2-PFDoA
Sample: CA1633STD-10



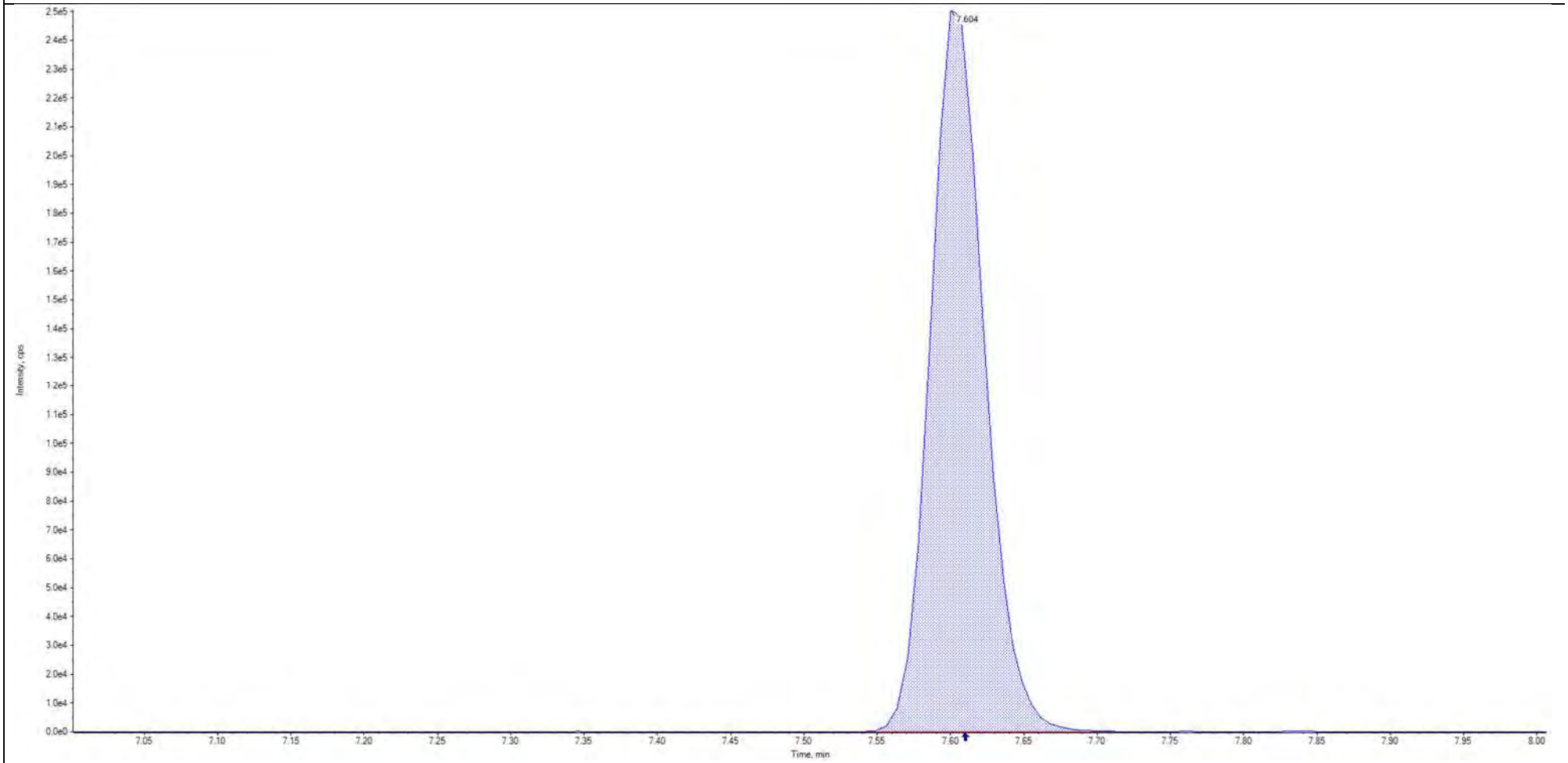
13C2-PFTeDA
Sample: CA1633STD-10



13C3-PFBS
Sample: CA1633STD-10

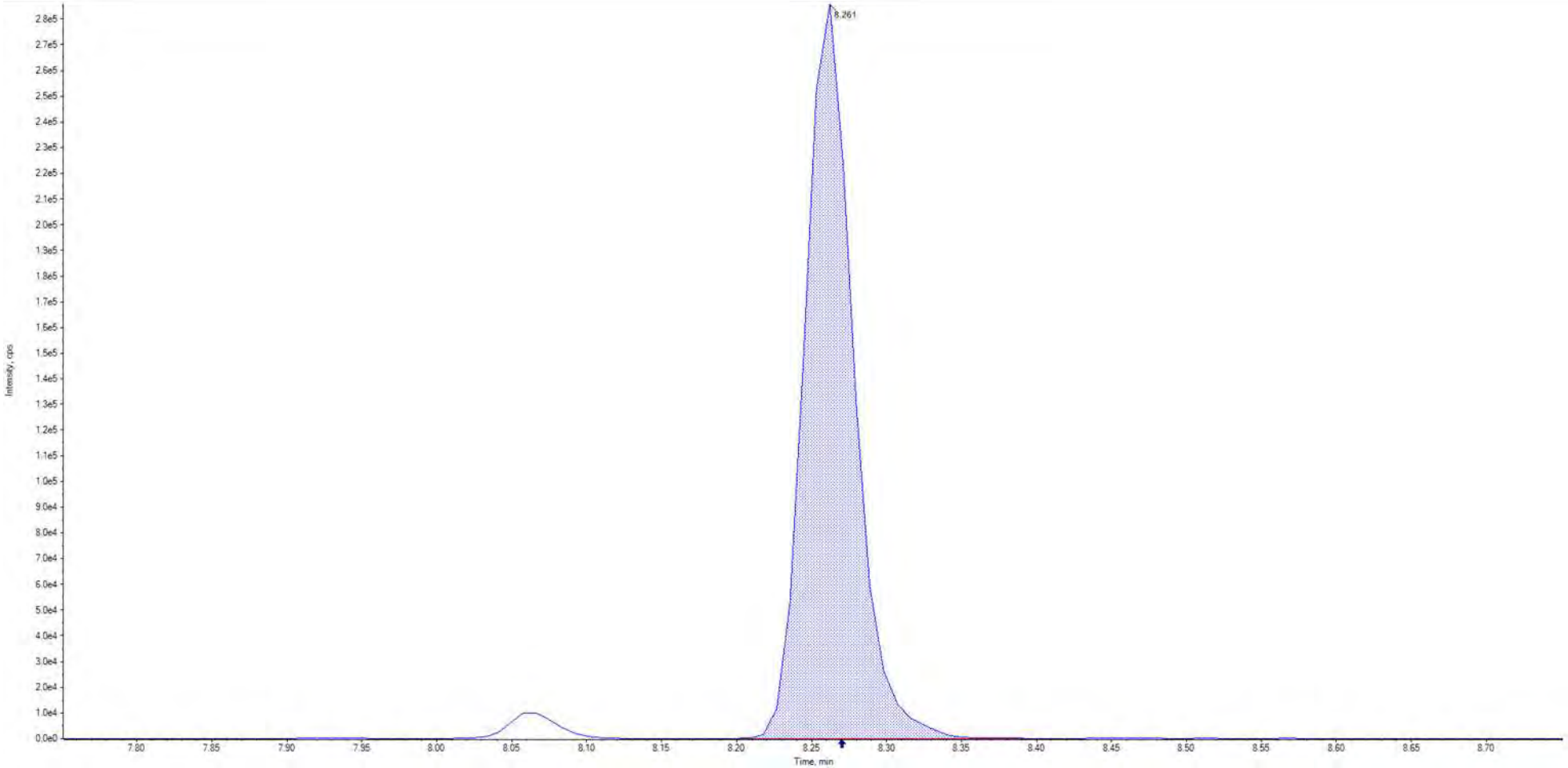


13C3-PFHxS
Sample: CA1633STD-10



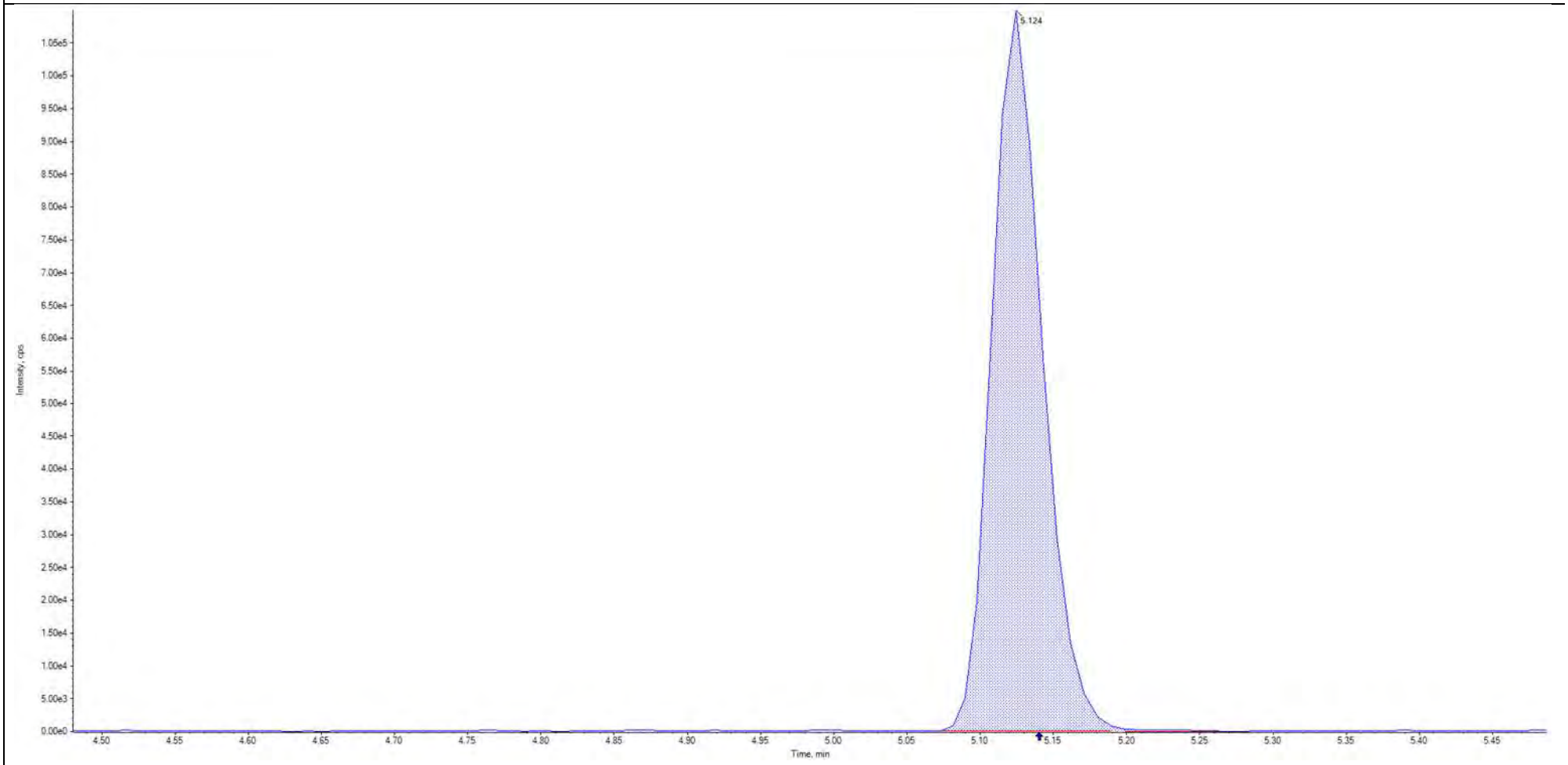
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

13C8-PFOS
Sample: CA1633STD-10

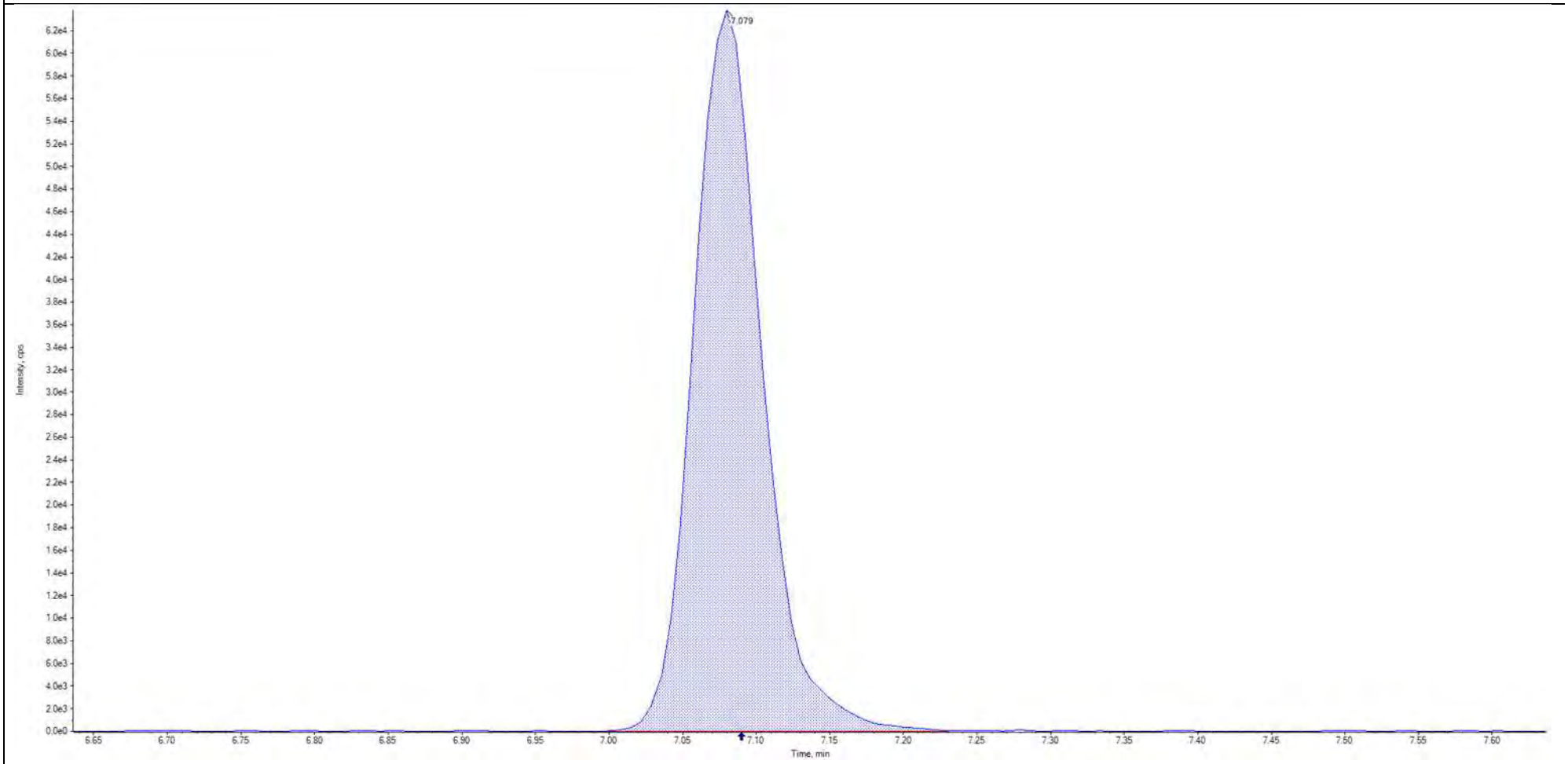


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

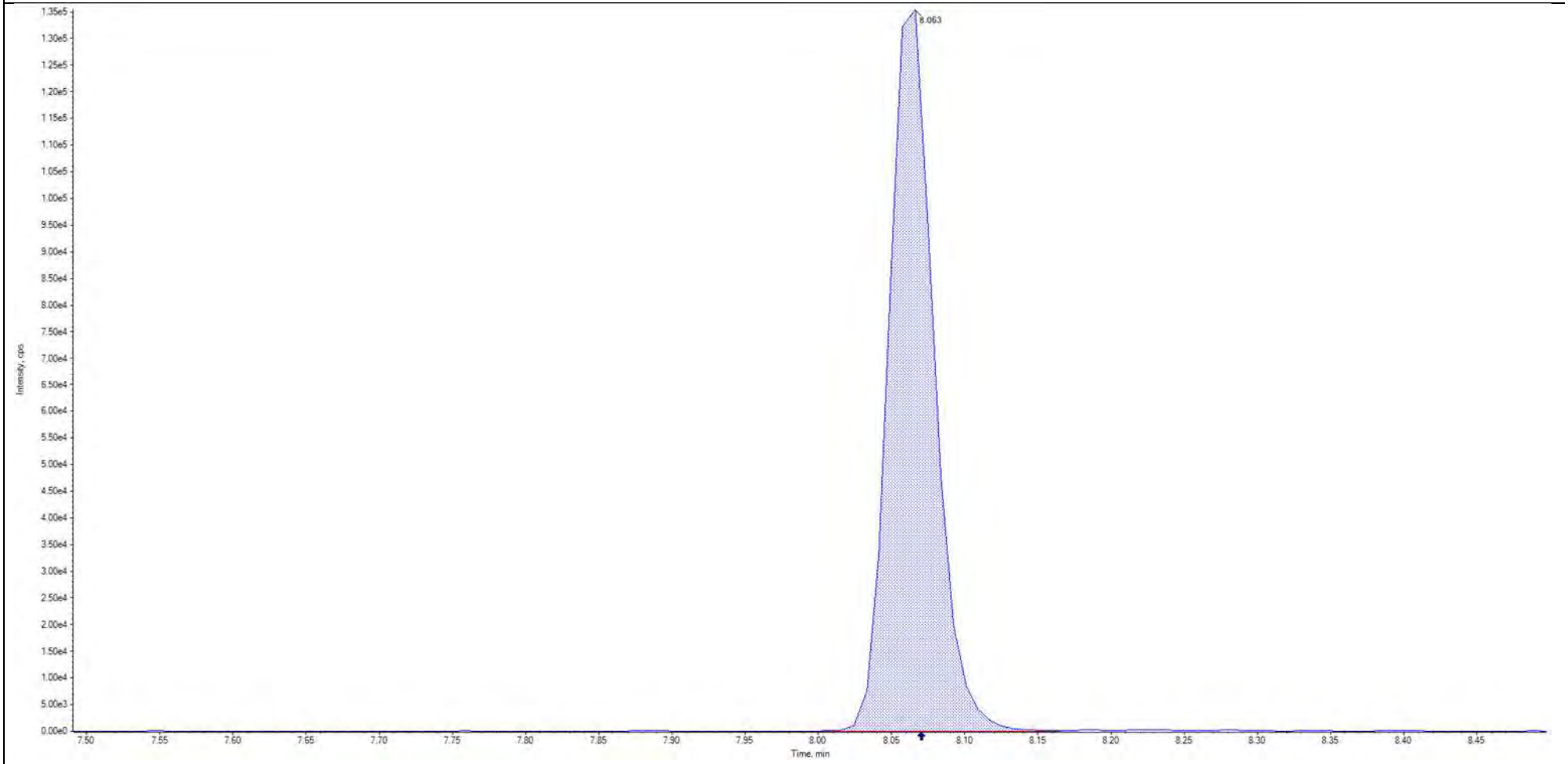
13C2-4:2FTS
Sample: CA1633STD-10



13C2-6:2FTS
Sample: CA1633STD-10

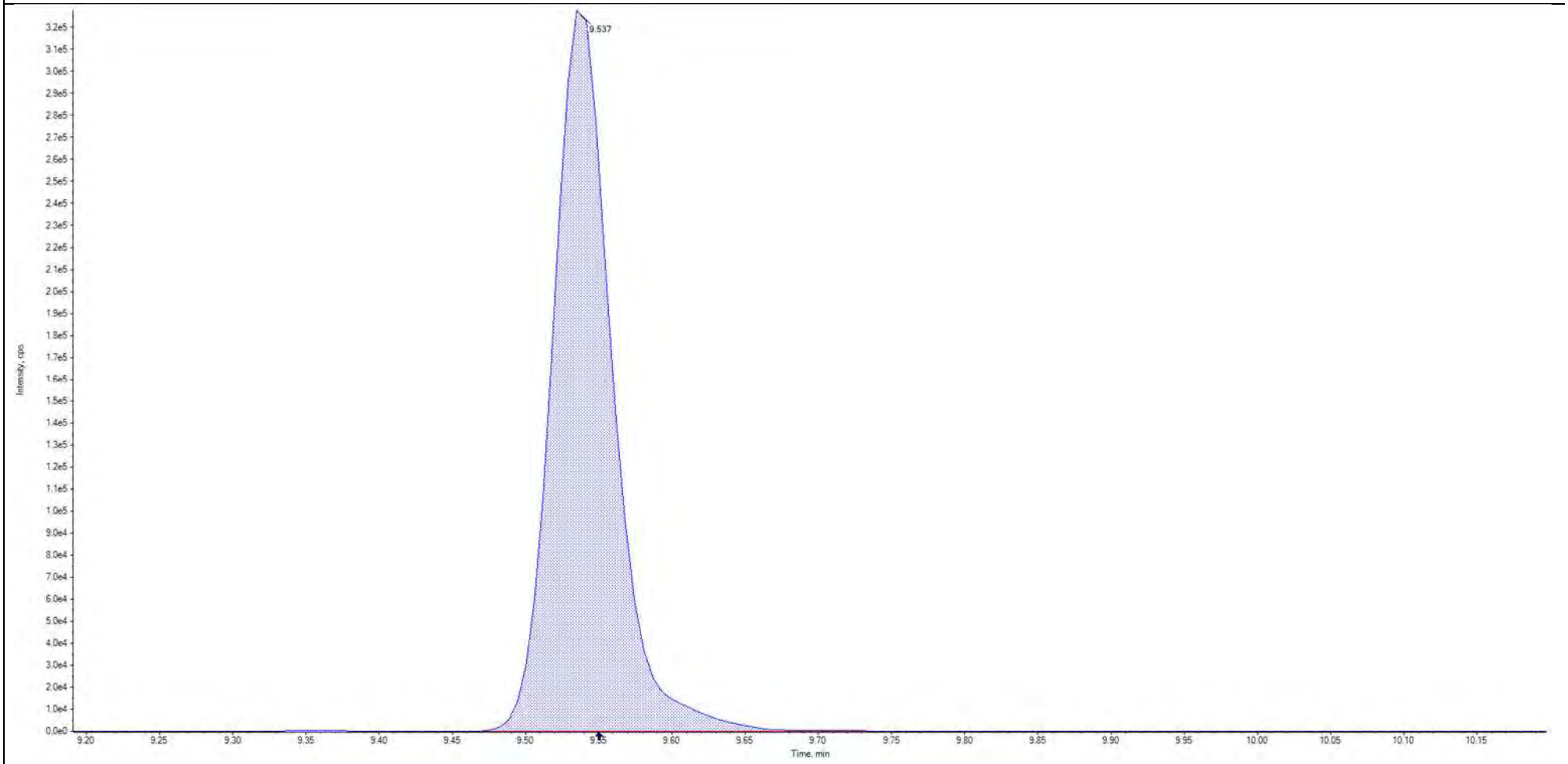


13C2-8:2FTS
Sample: CA1633STD-10

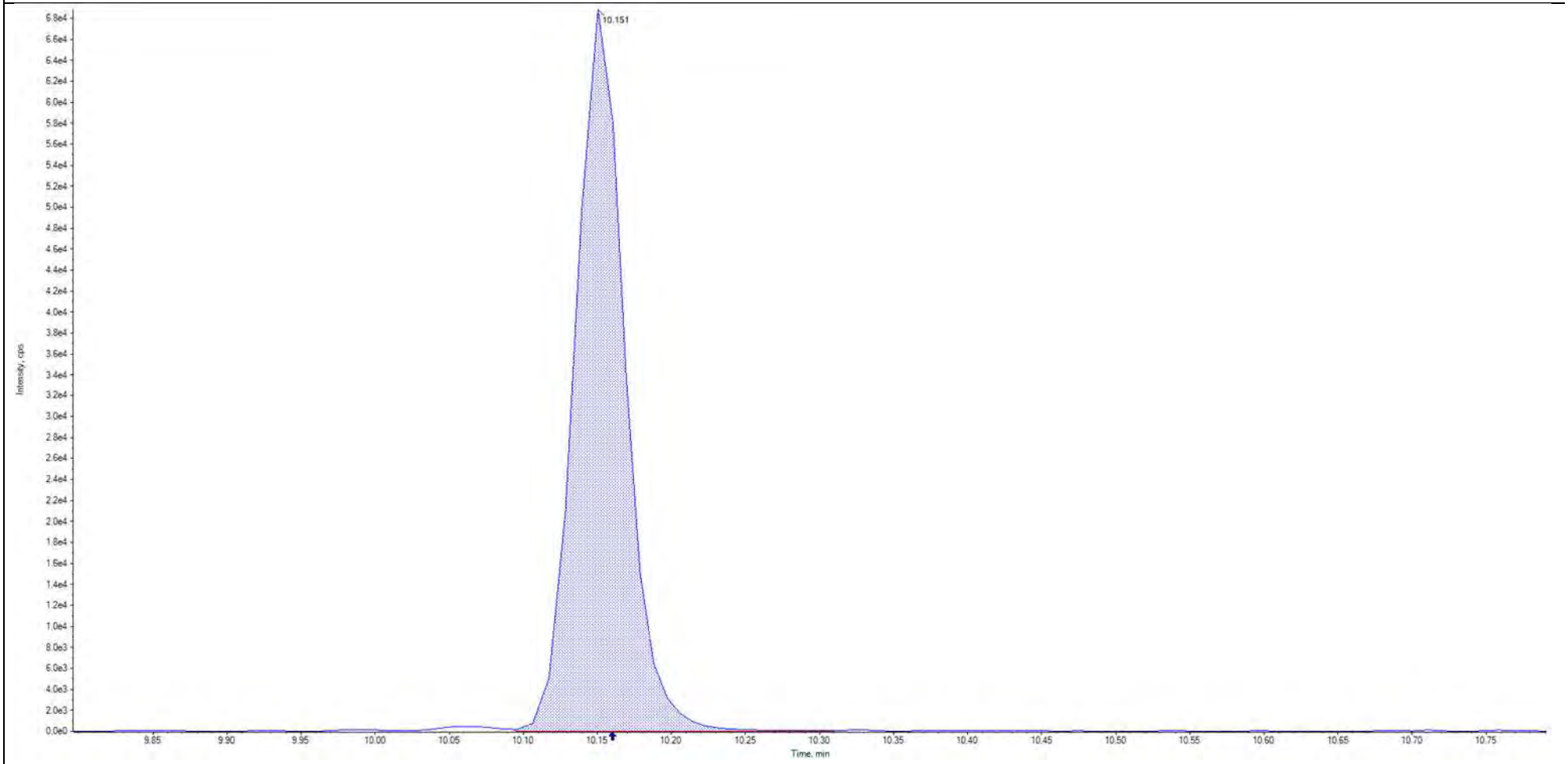


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

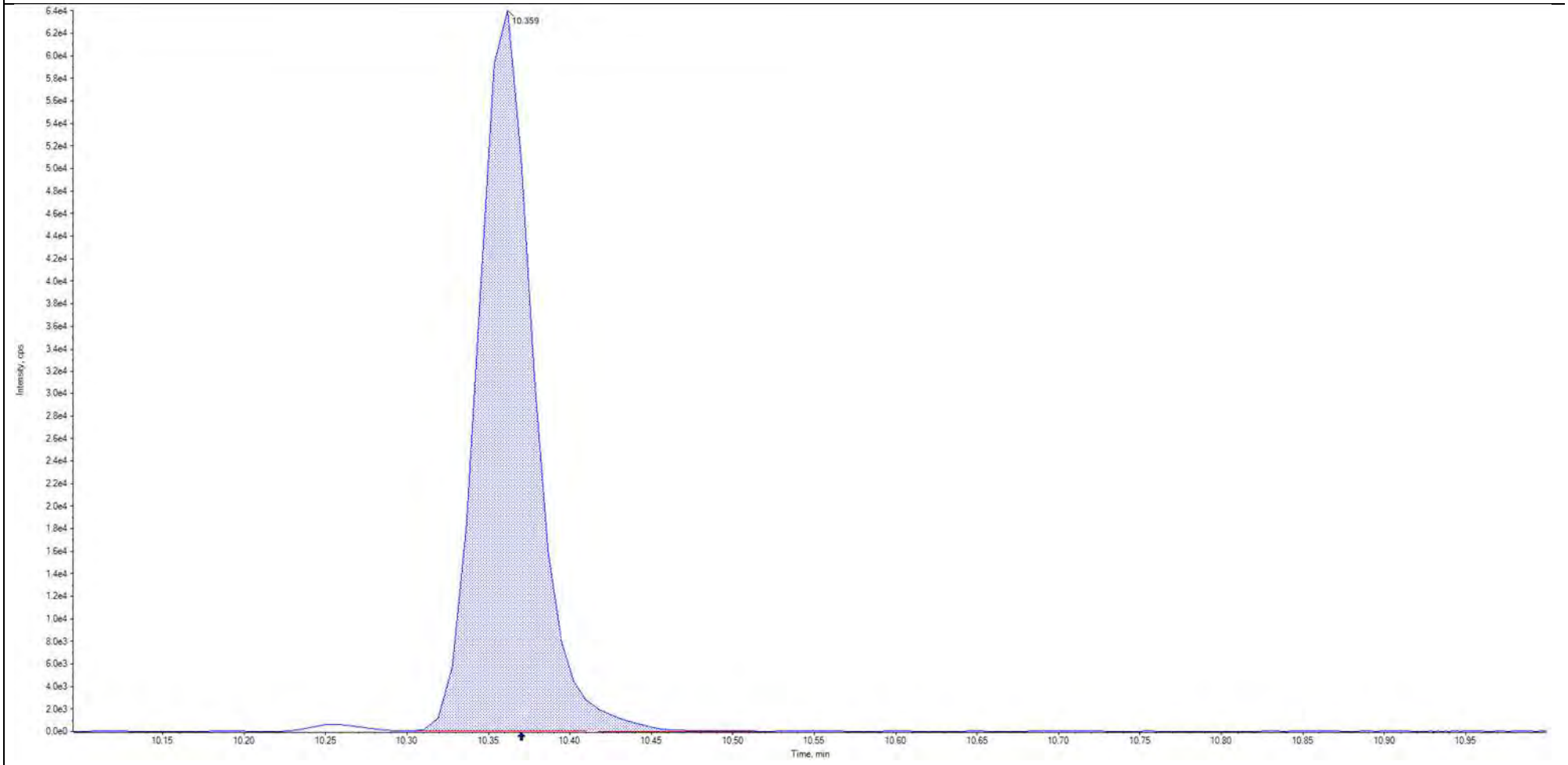
13C8-PFOSA
Sample: CA1633STD-10



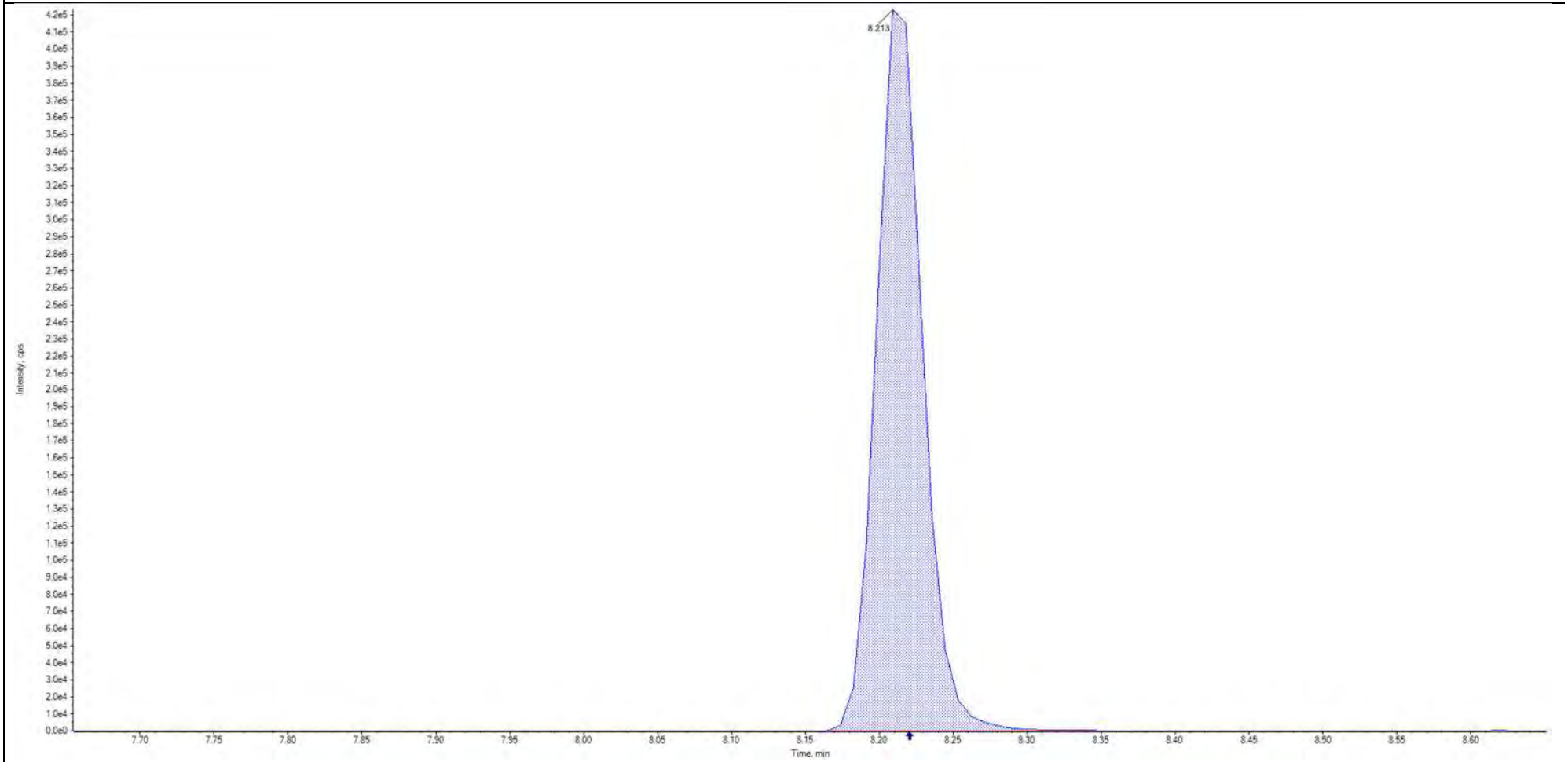
d3-NMeFOSA
Sample: CA1633STD-10



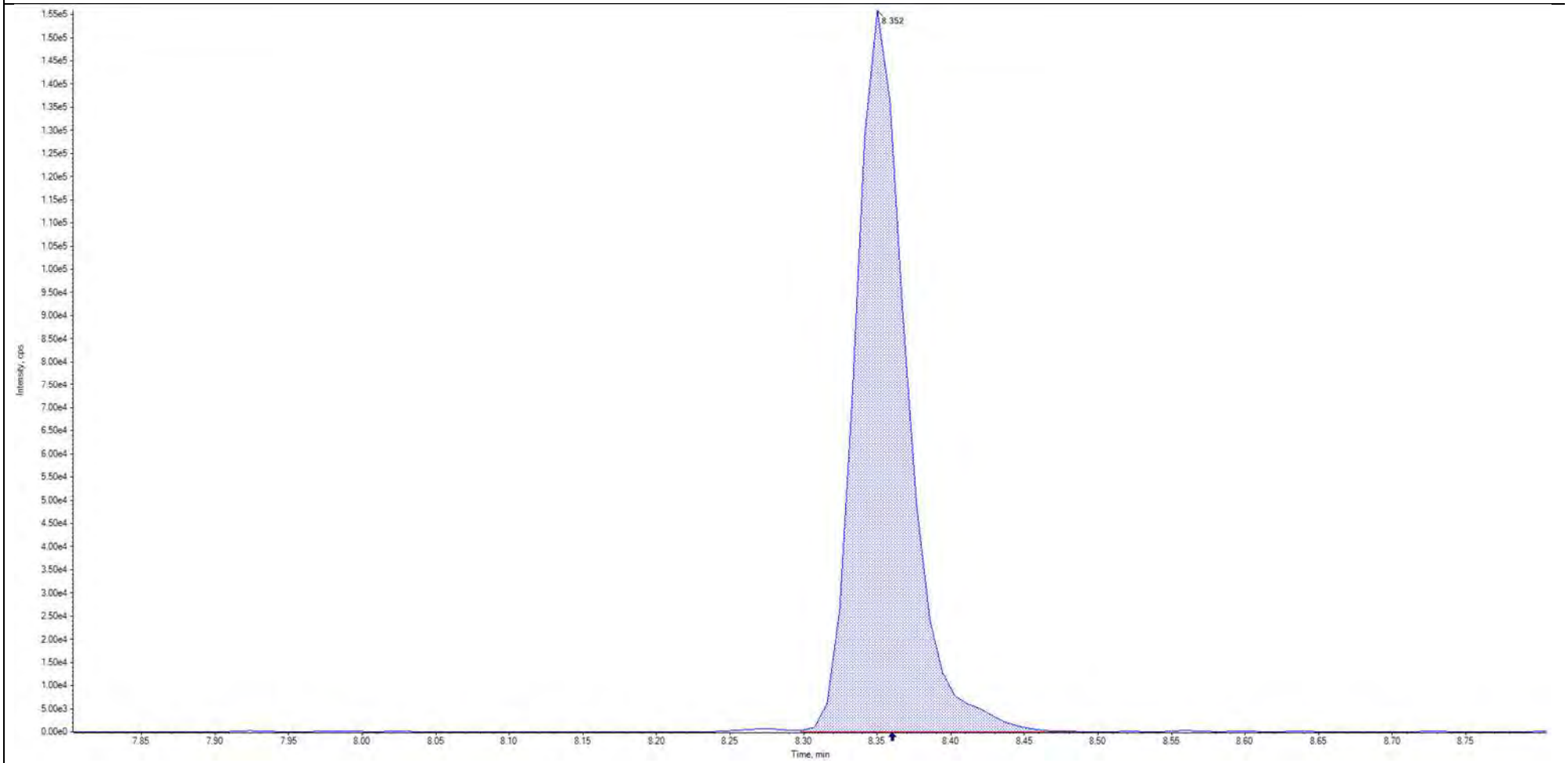
d5-NEtFOSA
Sample: CA1633STD-10



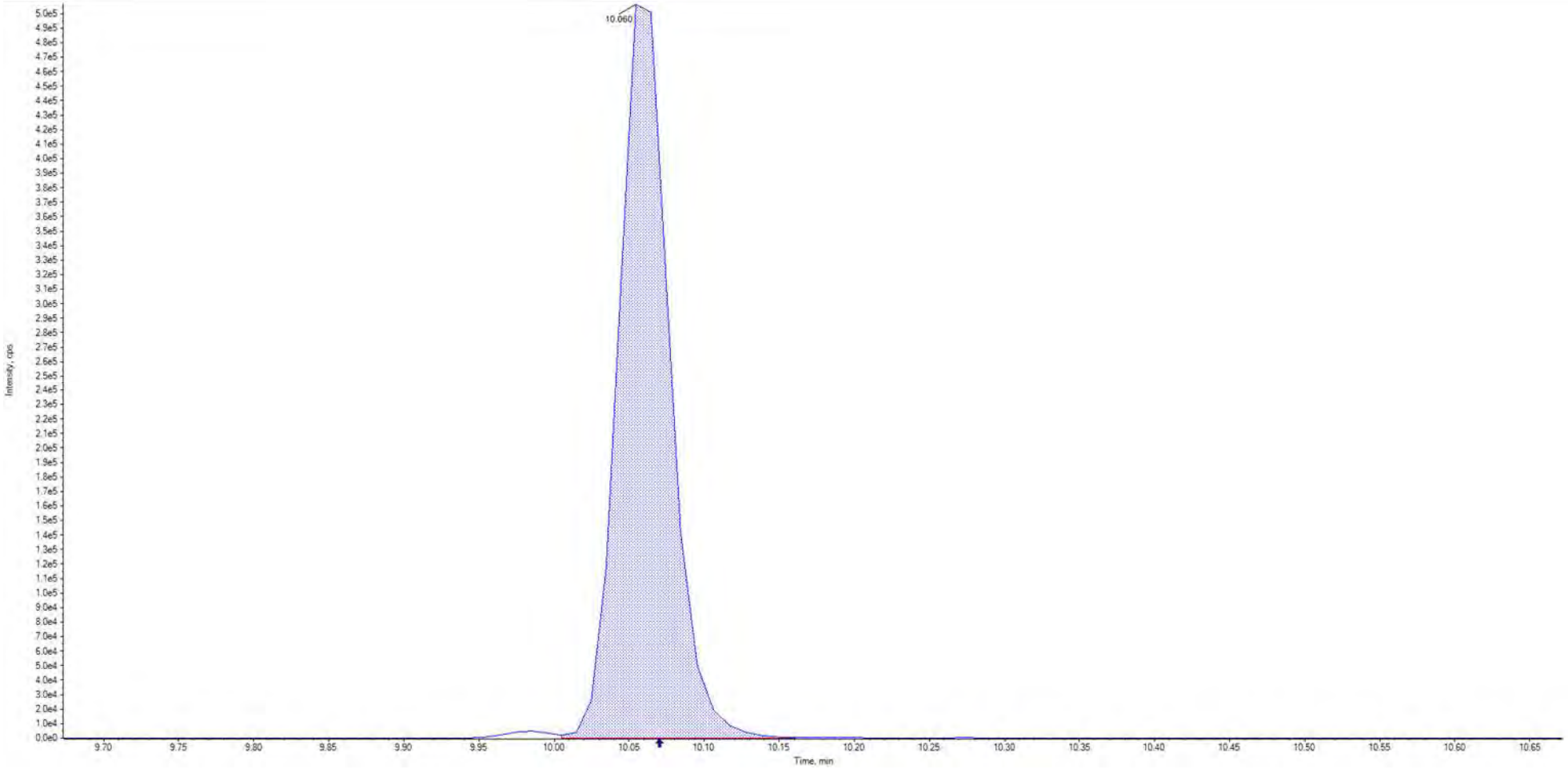
d3-NMeFOSAA
Sample: CA1633STD-10



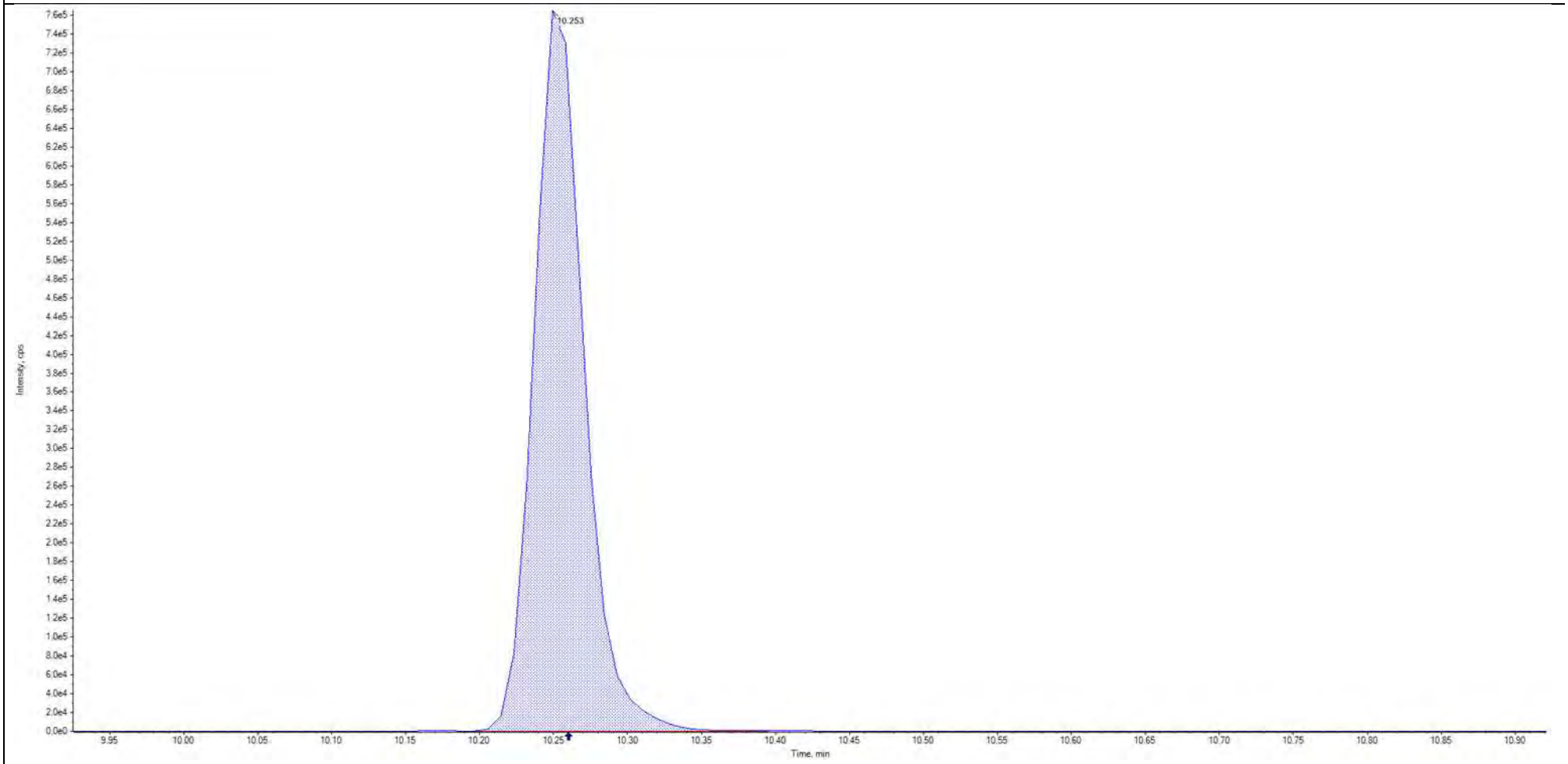
d5-NEtFOSAA
Sample: CA1633STD-10



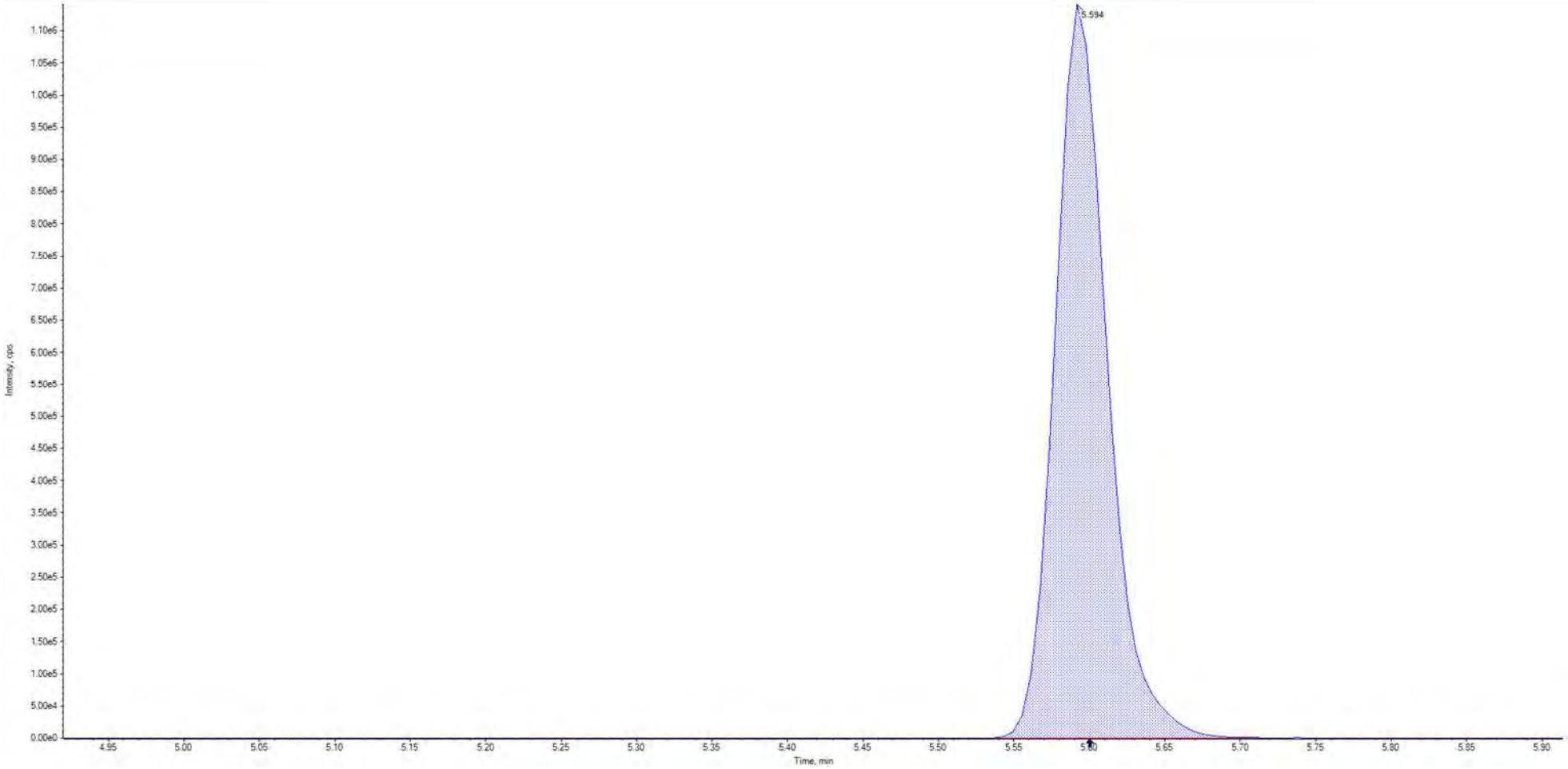
d7-NMeFOSE
Sample: CA1633STD-10



d9-NEtFOSE
Sample: CA1633STD-10

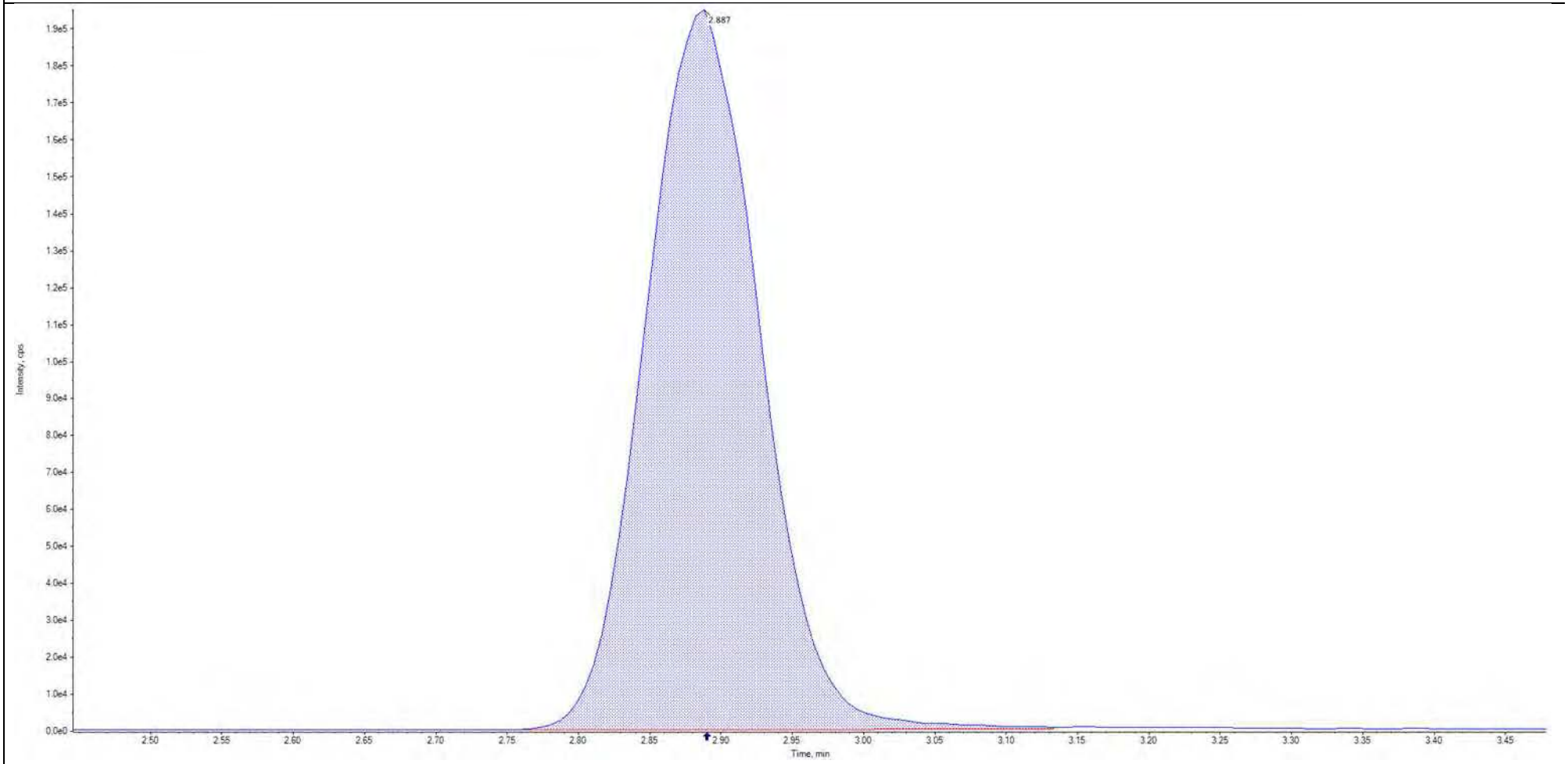


13C3-HFPO-DA
Sample: CA1633STD-10



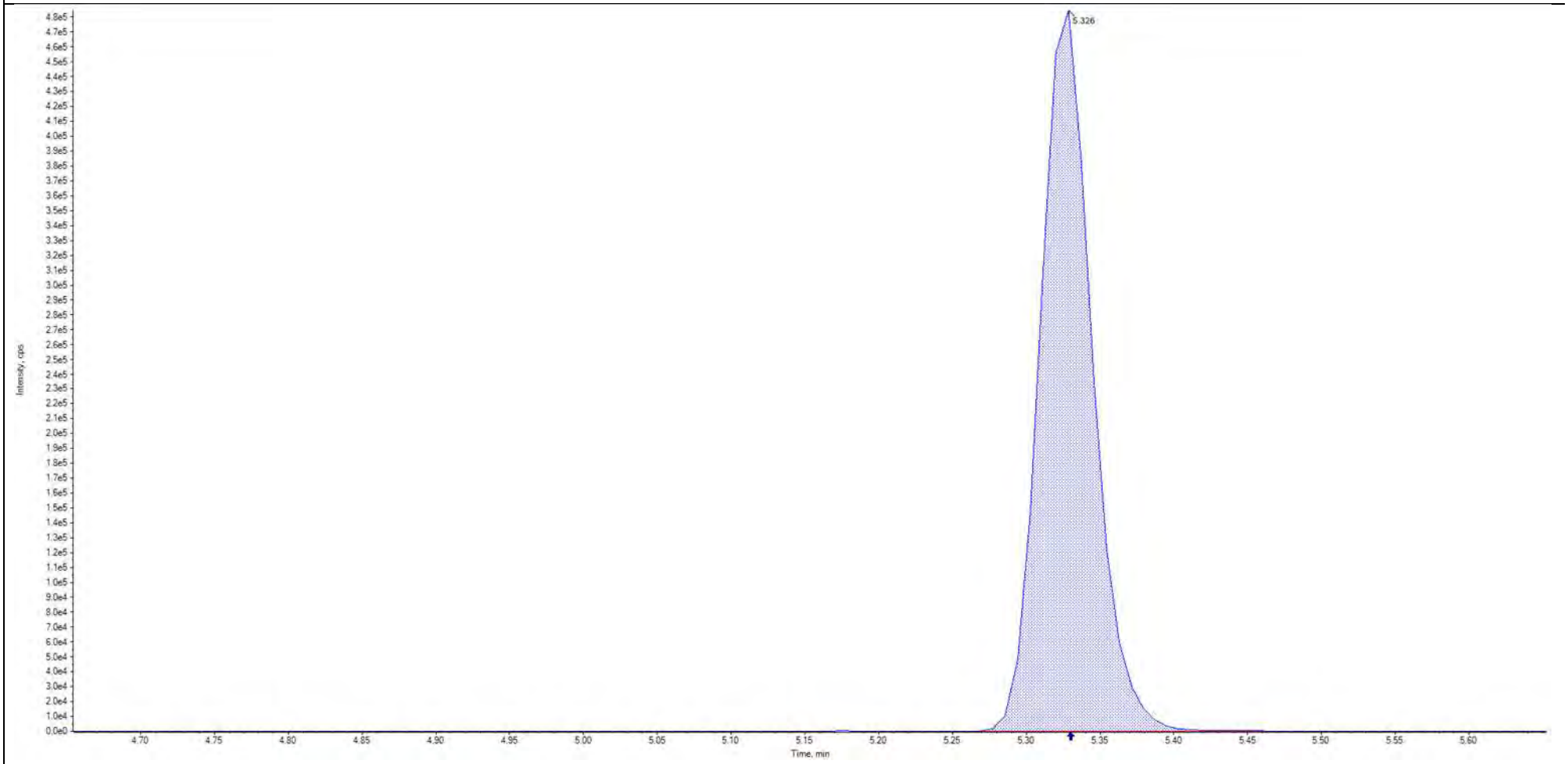
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

13C3-PFBA
Sample: CA1633STD-10



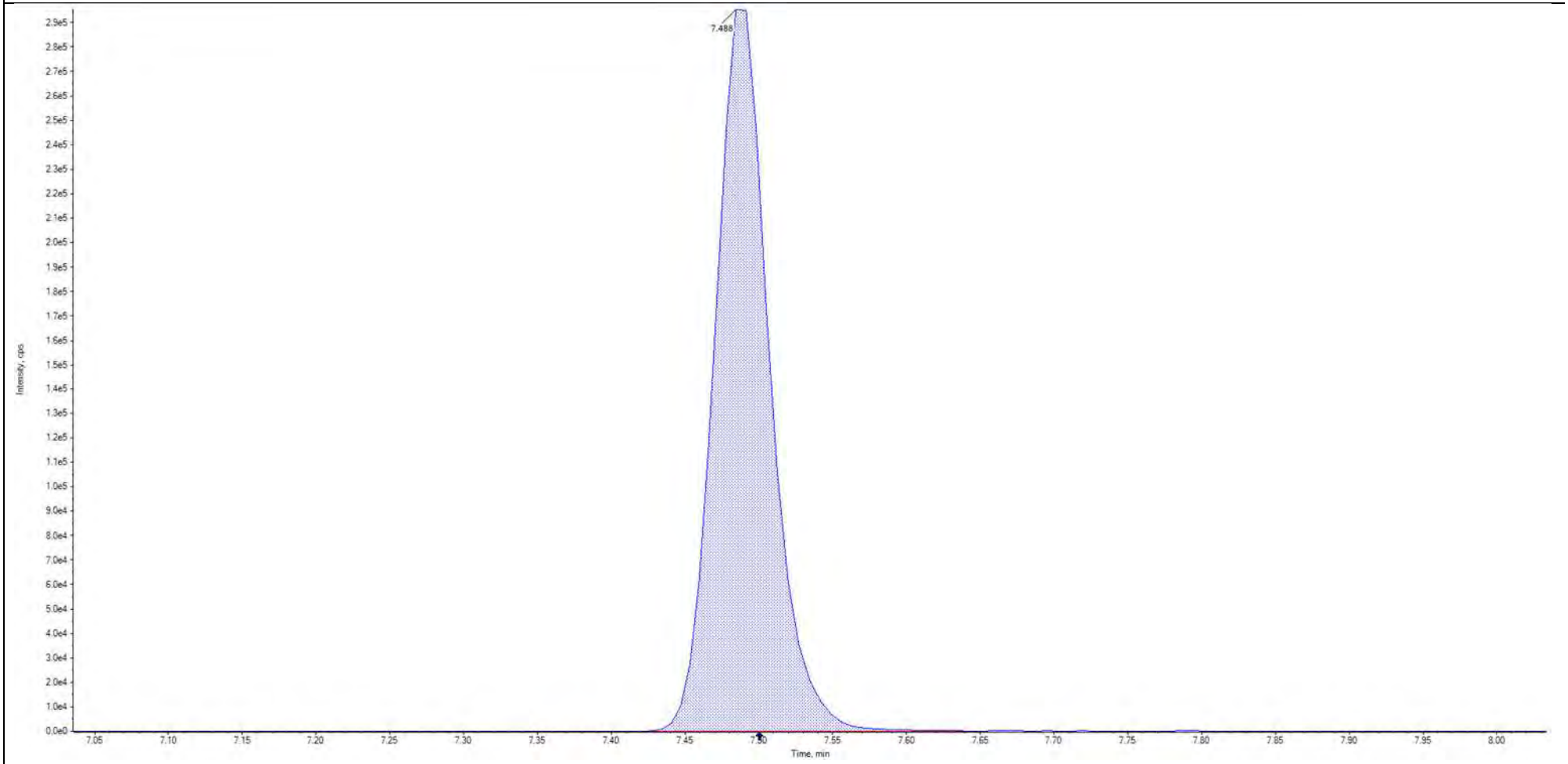
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

13C2-PFHxA
Sample: CA1633STD-10

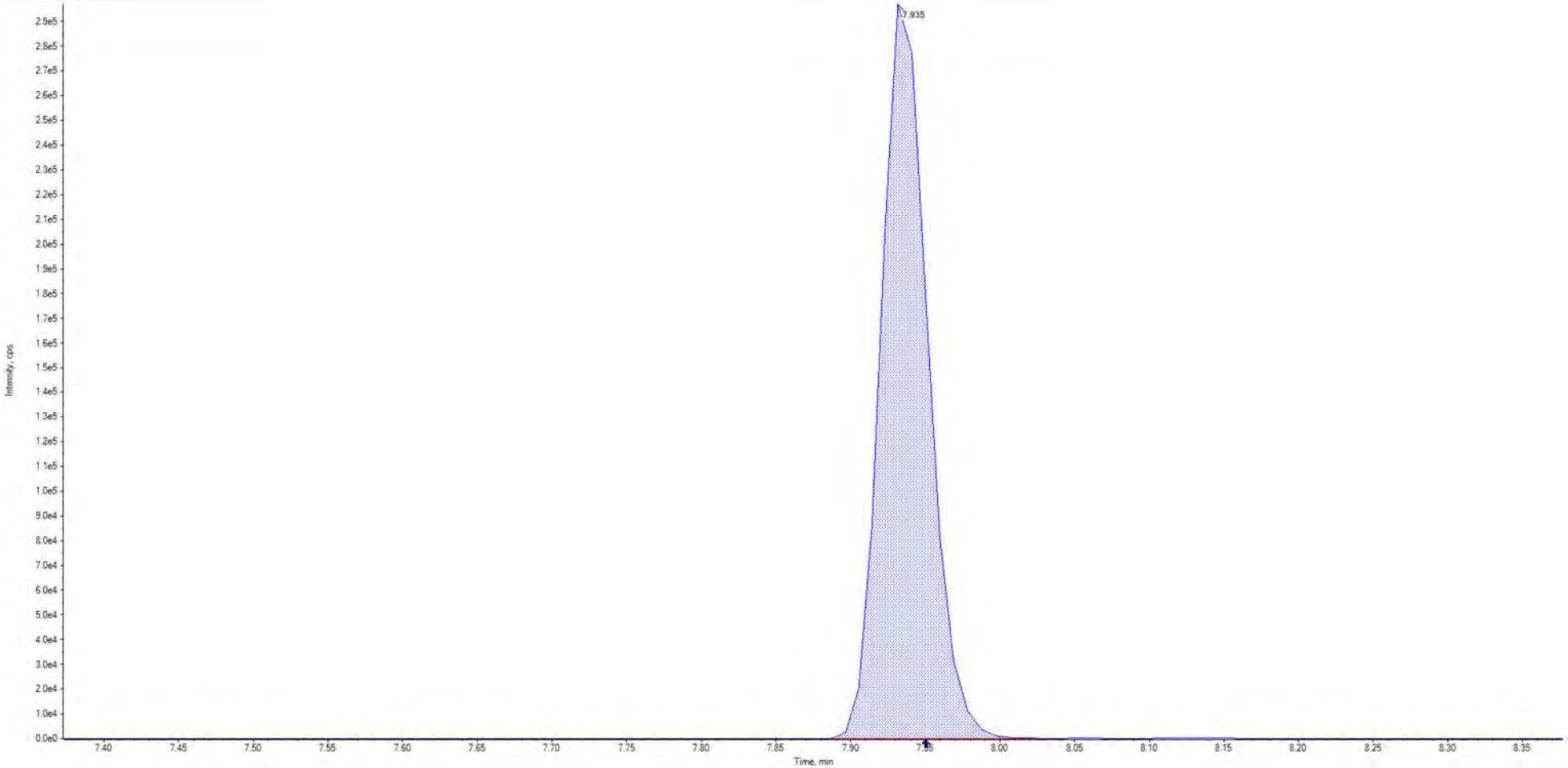


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

13C4-PFOA
Sample: CA1633STD-10



13C5-PFNA
Sample: CA1633STD-10



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
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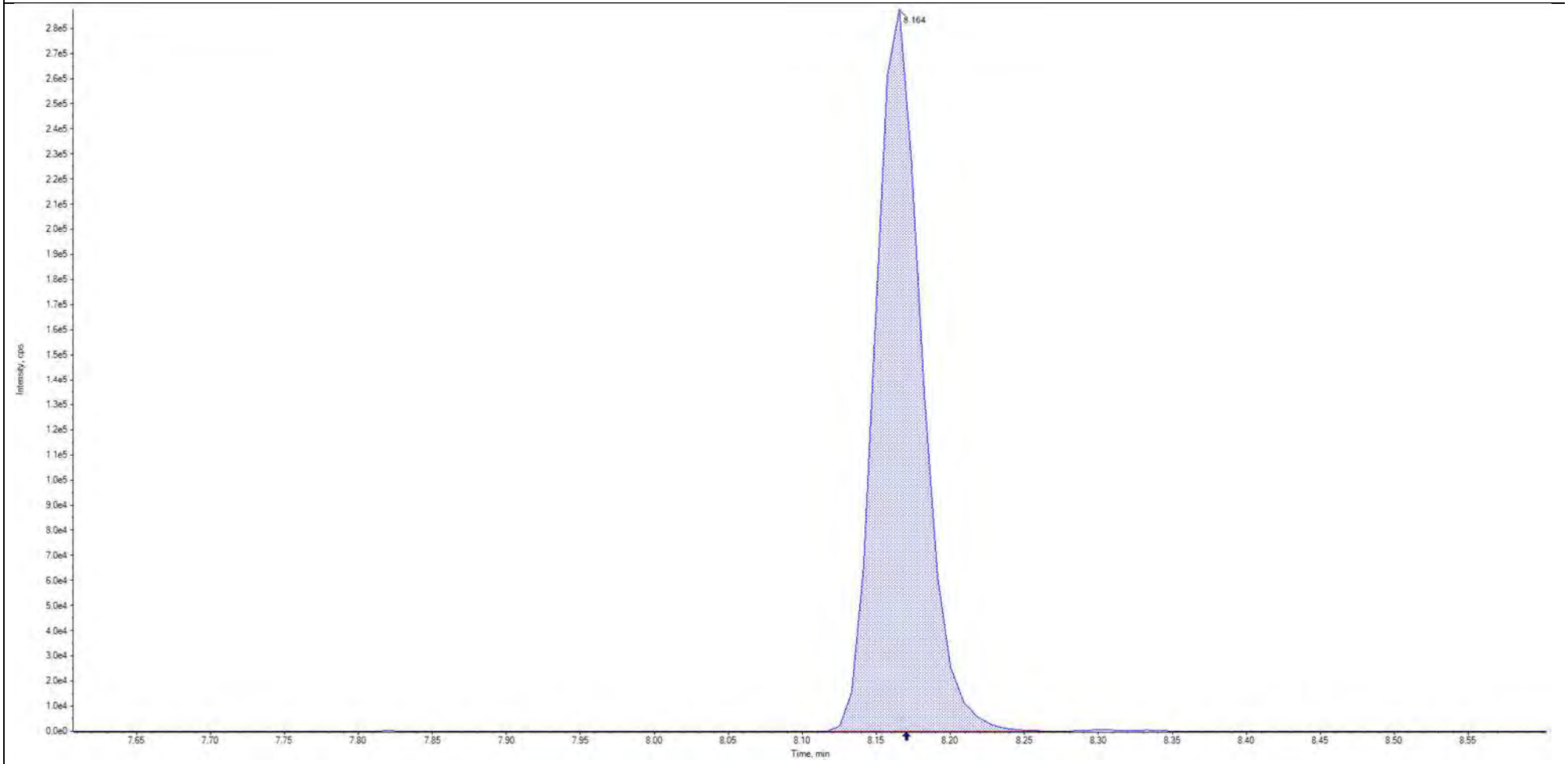
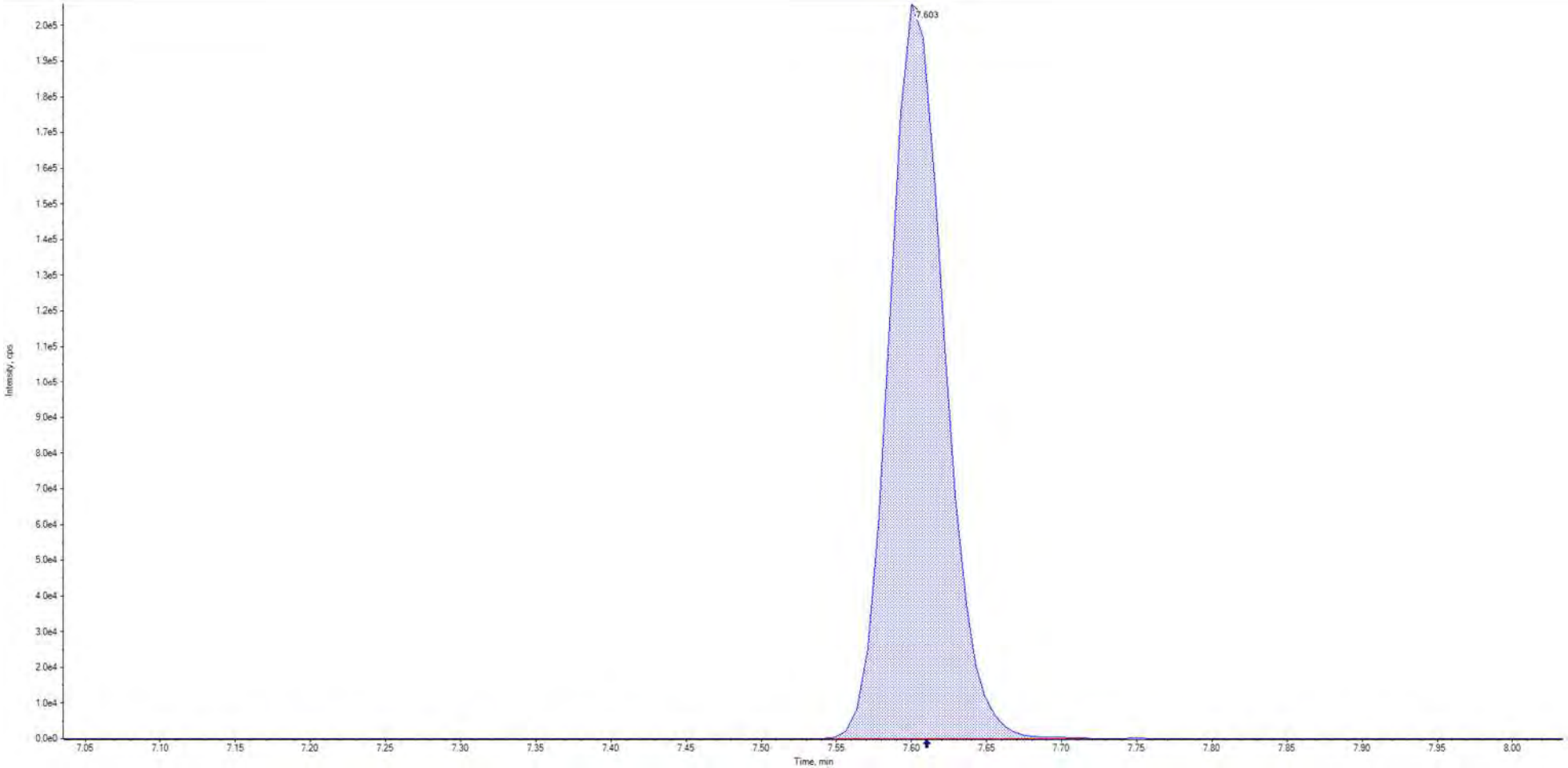
Generated: 8/14/2024 9:40:32 AM

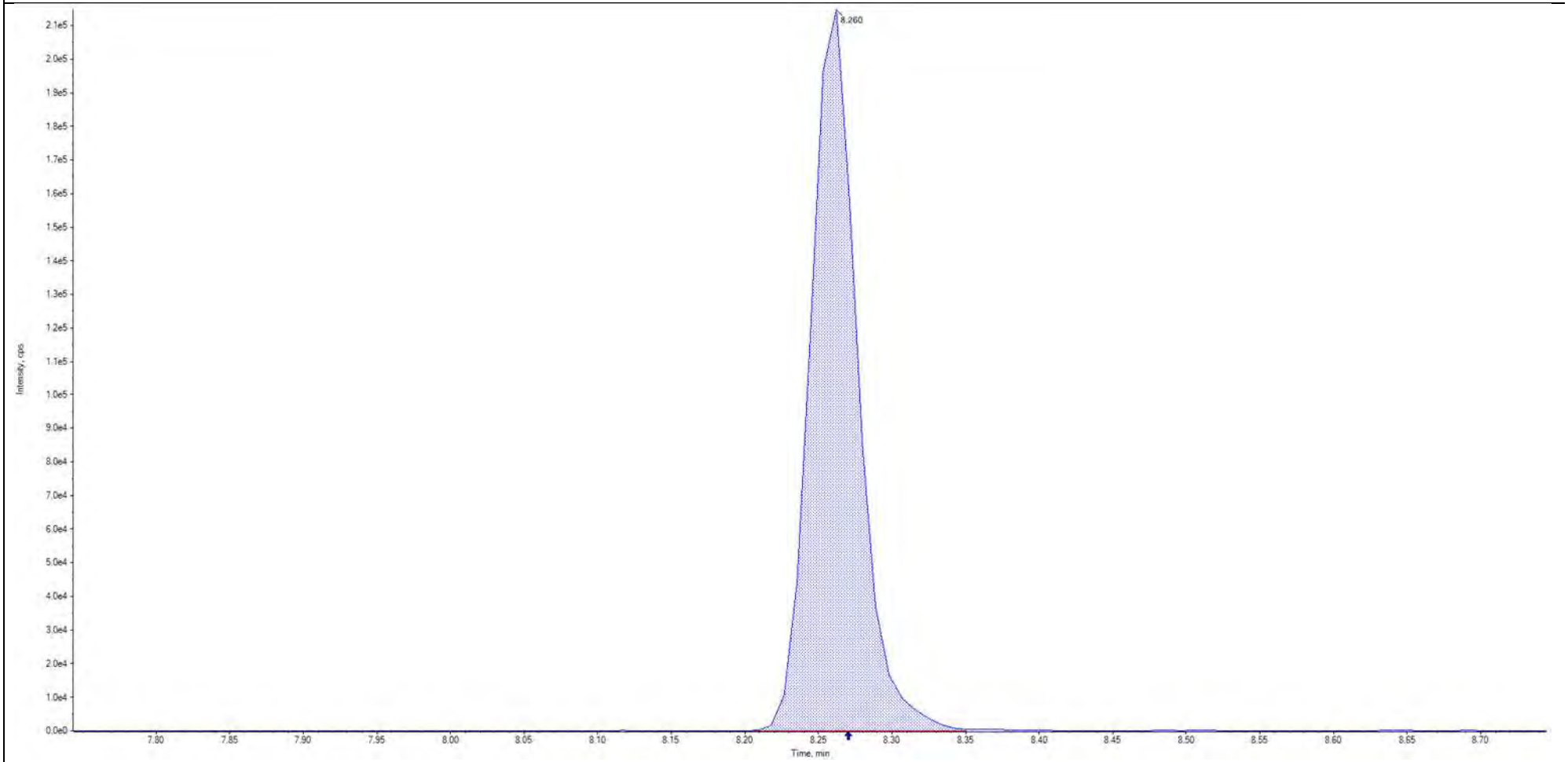
13C2-PFDA
Sample: CA1633STD-10



18O2-PFHxS
Sample: CA1633STD-10



13C4-PFOS
Sample: CA1633STD-10



Quantity Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_82.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

Method: EPA1633_NIS_CALC.qmethod
Calibration: 240813_1633_ICAL

ID: WG1958909-5,BSICS
Name: SCI05_240813_83.wiff
Date & Time: 2024-08-14T00:23:18
Description: WG1958909
Instrument: Triple Quad 5500+
User: LCMS05:SL

LC/MS-MS Method:EPA_1633.dam

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
30	PFOS	1763-23-1	8.27	499.1 / 80.1	3701312	M5	13.614	0.207	0.238	Pass	N/A
31	PFOS_2	1763-23-1	8.27	499.1 / 99.1	766071	M7	11.501	0.207	0.238	Pass	N/A
76	TDCA	516-50-7	6.81	499.1 / 124.1	6428		100.000	40.716	40.716	Pass	N/A
77	TDCA_2	516-50-7	6.81	499.1 / 79.9	261739		100.000	40.716	40.716	Pass	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C4-PFBA	EIS	2.89	217.0 / 172.0	2473265		9.854	NA	NA	NA	98.5

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C5-PFPeA	EIS	4.64	268.0 / 223.0	1561160		5.006	NA	NA	NA	100.1
	13C5-PFHxA	EIS	5.33	318.0 / 273.0	958278		2.340	NA	NA	NA	93.6
	13C4-PFHpA	EIS	6.25	367.0 / 322.0	994170		2.424	NA	NA	NA	97.0
	13C8-PFOA	EIS	7.50	421.0 / 376.0	1468648		2.632	NA	NA	NA	105.3
	13C9-PFNA	EIS	7.94	472.0 / 427.0	649183		1.205	NA	NA	NA	96.4
	13C6-PFDA	EIS	8.17	519.0 / 474.0	677177		1.288	NA	NA	NA	103.1
	13C7-PFUnA	EIS	8.47	570.0 / 525.0	563590		1.325	NA	NA	NA	106.0

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C2-PFDoA	EIS	8.90	615.1 / 570.0	340864		1.232	NA	NA	NA	98.6
	13C2-PFTeDA	EIS	9.90	715.1 / 670.1	371241		1.236	NA	NA	NA	98.9
	13C3-PFBS	EIS	5.31	302.1 / 80.1	709845		2.139	NA	NA	NA	91.8
	13C3-PFHxS	EIS	7.61	402.1 / 80.1	634410		2.407	NA	NA	NA	101.6
	13C8-PFOS	EIS	8.27	507.1 / 80.1	661873		2.353	NA	NA	NA	98.3
	13C2-4:2FTS	EIS	5.13	329.1 / 81.1	289614		4.890	NA	NA	NA	104.3
	13C2-6:2FTS	EIS	7.09	429.2 / 81.1	197203		4.543	NA	NA	NA	95.6
	13C2-8:2FTS	EIS	8.07	529.2 / 81.1	299092		4.708	NA	NA	NA	98.1

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C8-PFOSA	EIS	9.54	506.1 / 78.1	929502		2.486	NA	NA	NA	99.4
	d3-NMeFOSA	EIS	10.16	515.2 / 219.0	159881		2.540	NA	NA	NA	101.6
	d5-NEtFOSA	EIS	10.37	531.2 / 219.0	152252		2.476	NA	NA	NA	99.1
	d3-NMeFOSAA	EIS	8.22	573.2 / 419.1	347283		2.441	NA	NA	NA	48.8
	d5-NEtFOSAA	EIS	8.36	589.3 / 419.1	375431		5.021	NA	NA	NA	100.4
	d7-NMeFOSE	EIS	10.07	623.2 / 58.9	1123032		23.105	NA	NA	NA	92.4
	d9-NEtFOSE	EIS	10.26	639.2 / 58.9	1777891		24.809	NA	NA	NA	99.2

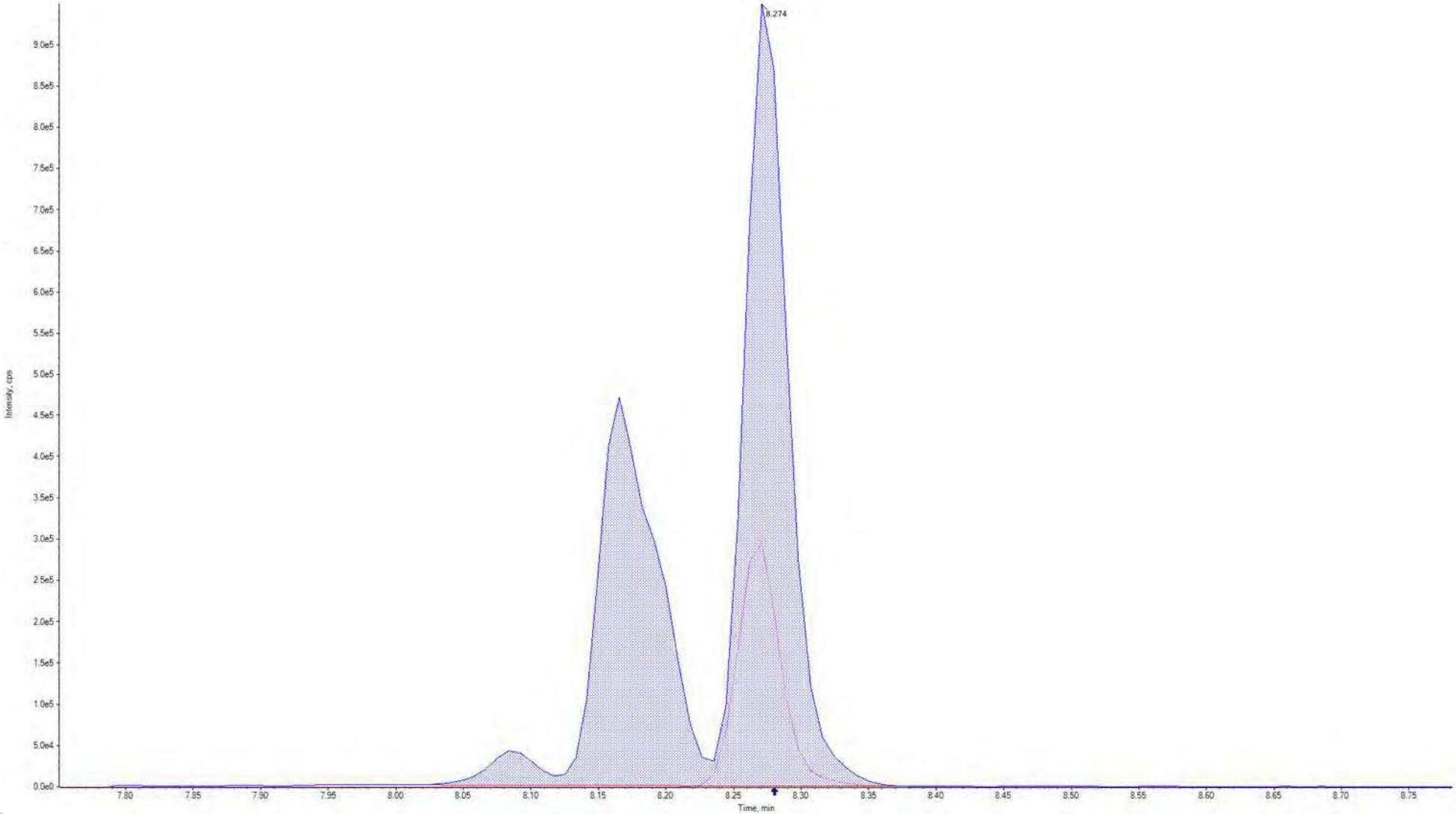
	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C3-HFPO-DA	EIS	5.60	287.0 / 169.0	2730343		10.058	NA	NA	NA	100.6
	13C3-PFBA	NIS	2.89	216.0 / 172.0	1097957		5.135	NA	NA	NA	102.7
	13C2-PFHxA	NIS	5.33	315.0 / 270.0	1216174		2.484	NA	NA	NA	99.4
	13C4-PFOA	NIS	7.50	417.0 / 372.0	730115		2.332	NA	NA	NA	93.3
	13C5-PFNA	NIS	7.94	468.0 / 423.0	656416		1.198	NA	NA	NA	95.9
	13C2-PFDA	NIS	8.17	515.1 / 470.1	617433		1.205	NA	NA	NA	96.4
	18O2-PFHxS	NIS	7.61	403.1 / 84.1	535768		2.287	NA	NA	NA	96.5
	13C4-PFOS	NIS	8.27	503.1 / 80.1	497485		2.363	NA	NA	NA	98.7

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_83.wiff
Last Altered: 8/14/2024 10:29:12 AM
Generated: 8/14/2024 9:40:32 AM

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec

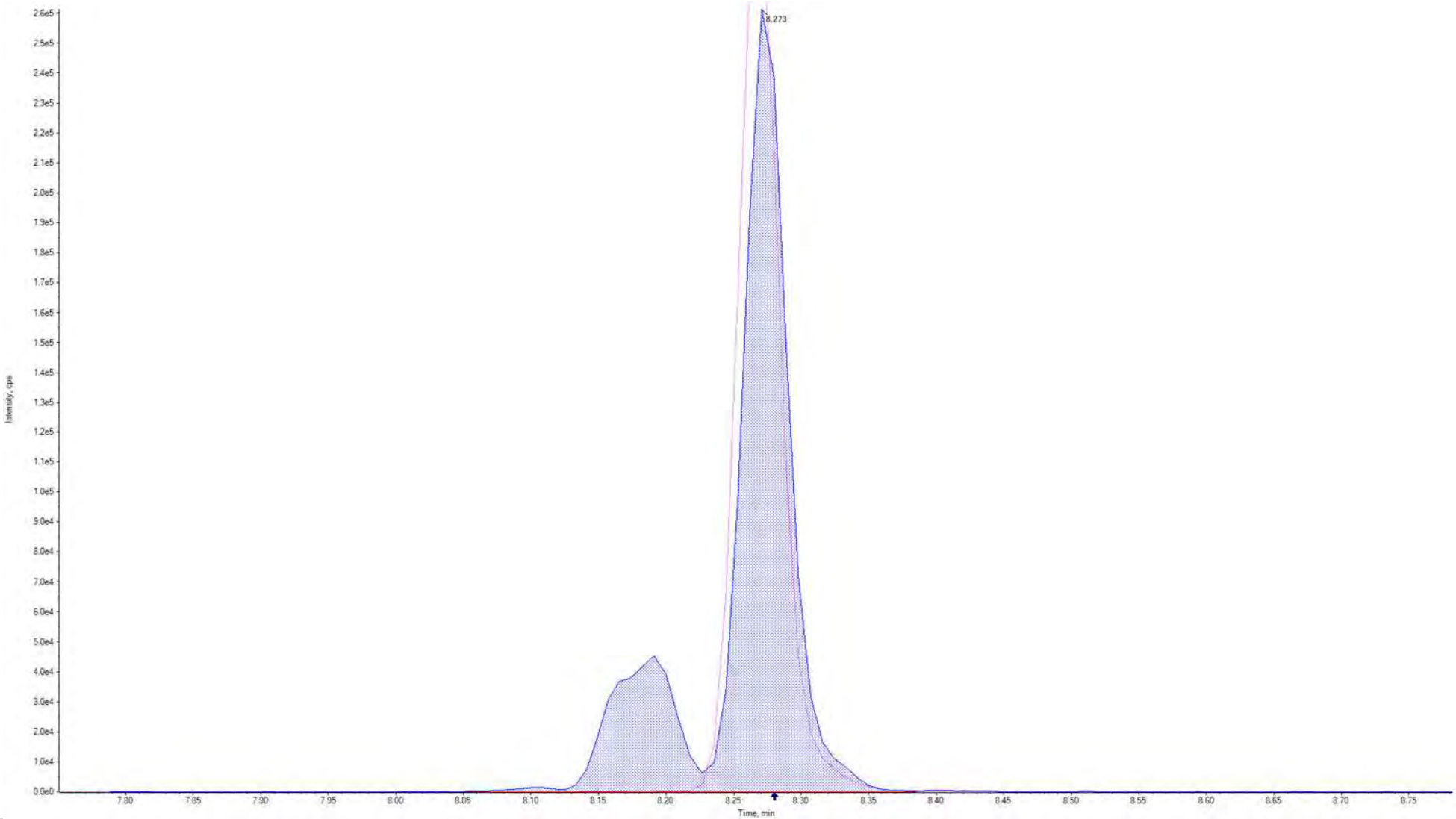
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_83.wiff
Last Altered: 8/14/2024 10:29:12 AM
Generated: 8/14/2024 9:40:32 AM

PFOS
Sample: WG1958909-5,BSICS S/N:2243.0 Points Across peak:43



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_83.wiff
Last Altered: 8/14/2024 10:29:12 AM
Generated: 8/14/2024 9:40:32 AM

PFOS_2
Sample: WG1958909-5,BSICS S/N:1531.6 Points Across peak:43



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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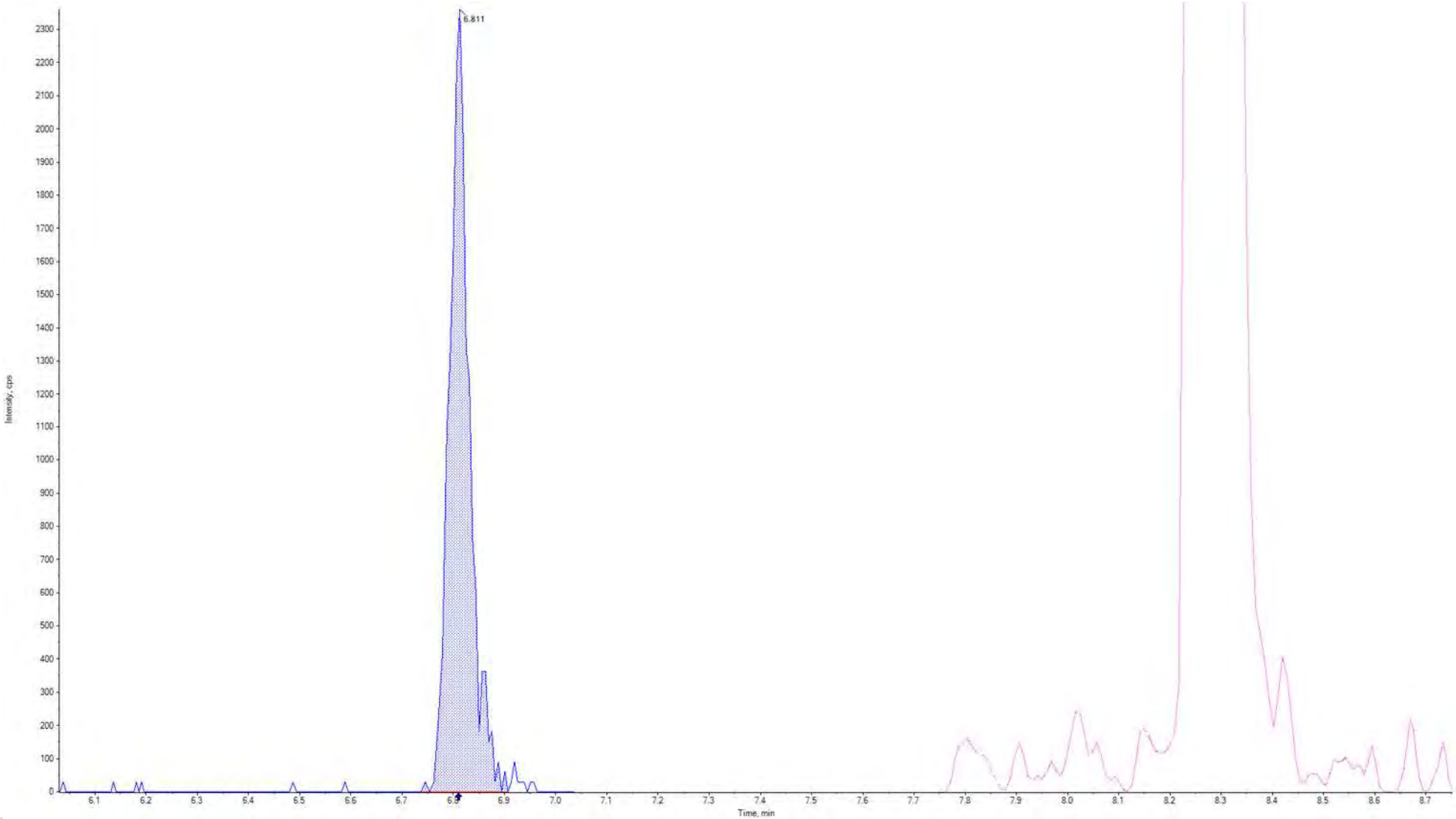
Generated: 8/14/2024 9:40:32 AM

TDCA
Sample: WG1958909-5,BSICS S/N:210.0 Points Across peak:26



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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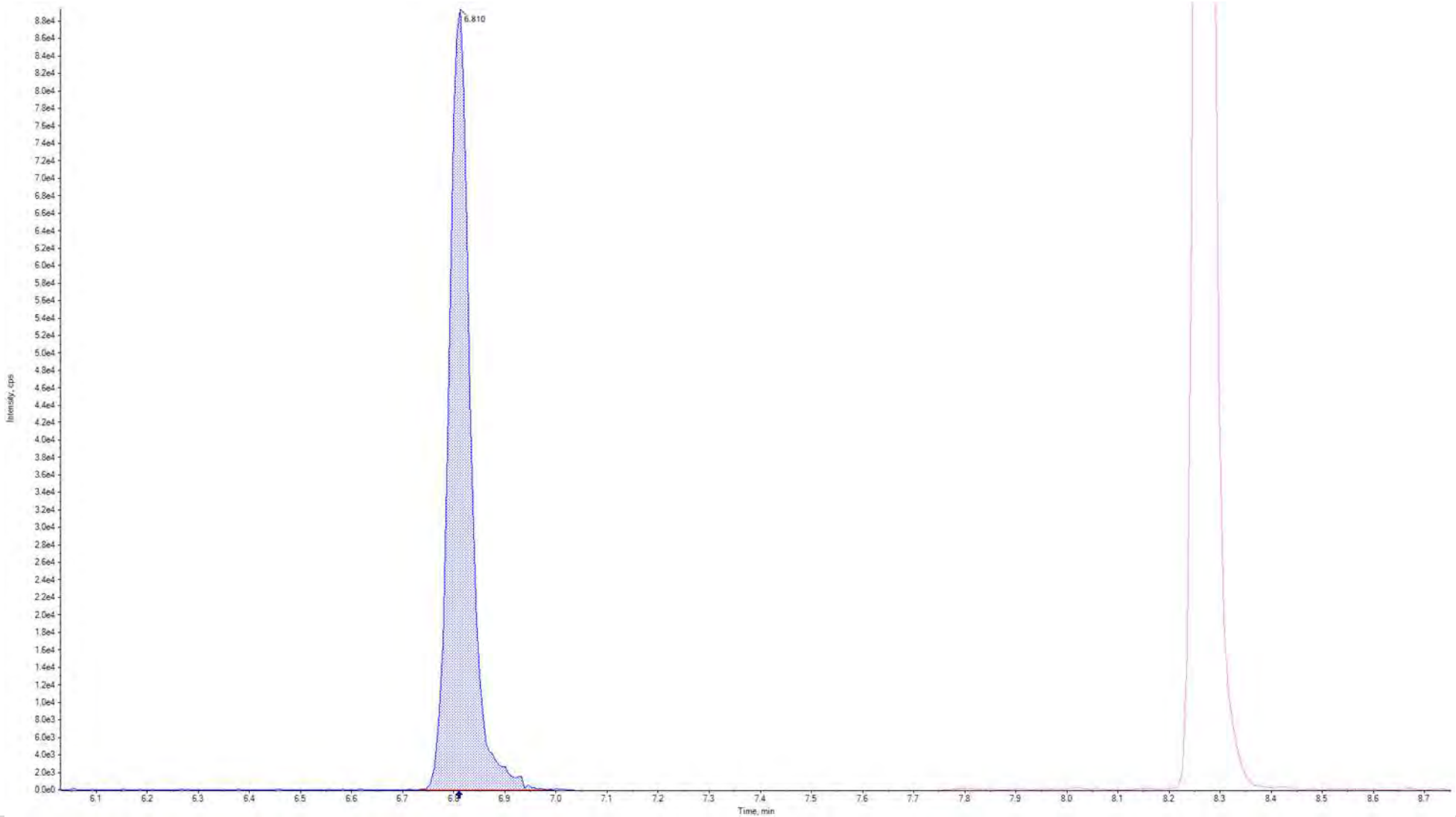
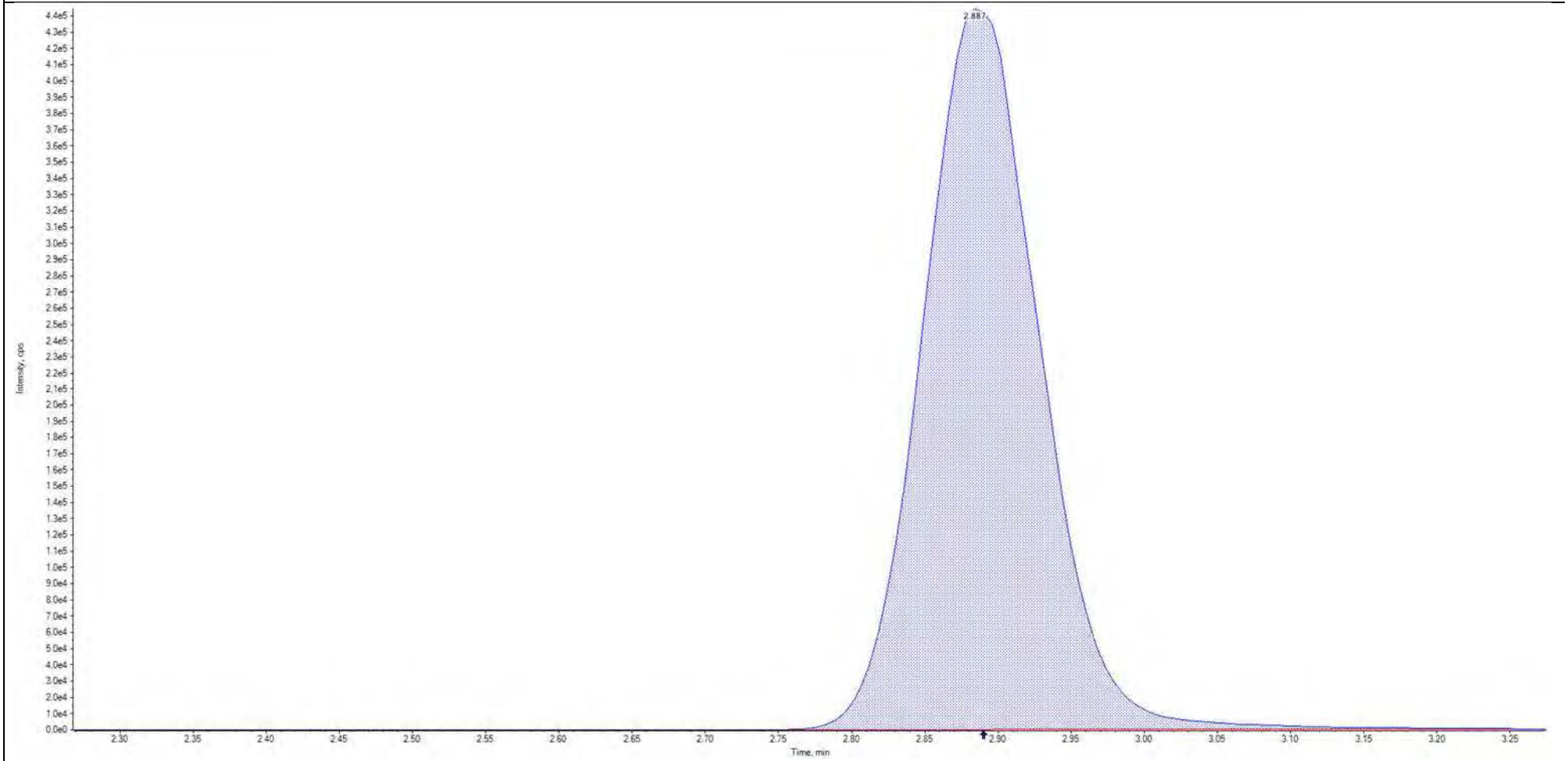
Last Altered: 8/14/2024 10:29:12 AM
Generated: 8/14/2024 9:40:32 AM

TDCA_2
Sample: WG1958909-5,BSICS S/N:1411.8 Points Across peak:44



13C4-PFBA
Sample: WG1958909-5,BSICS



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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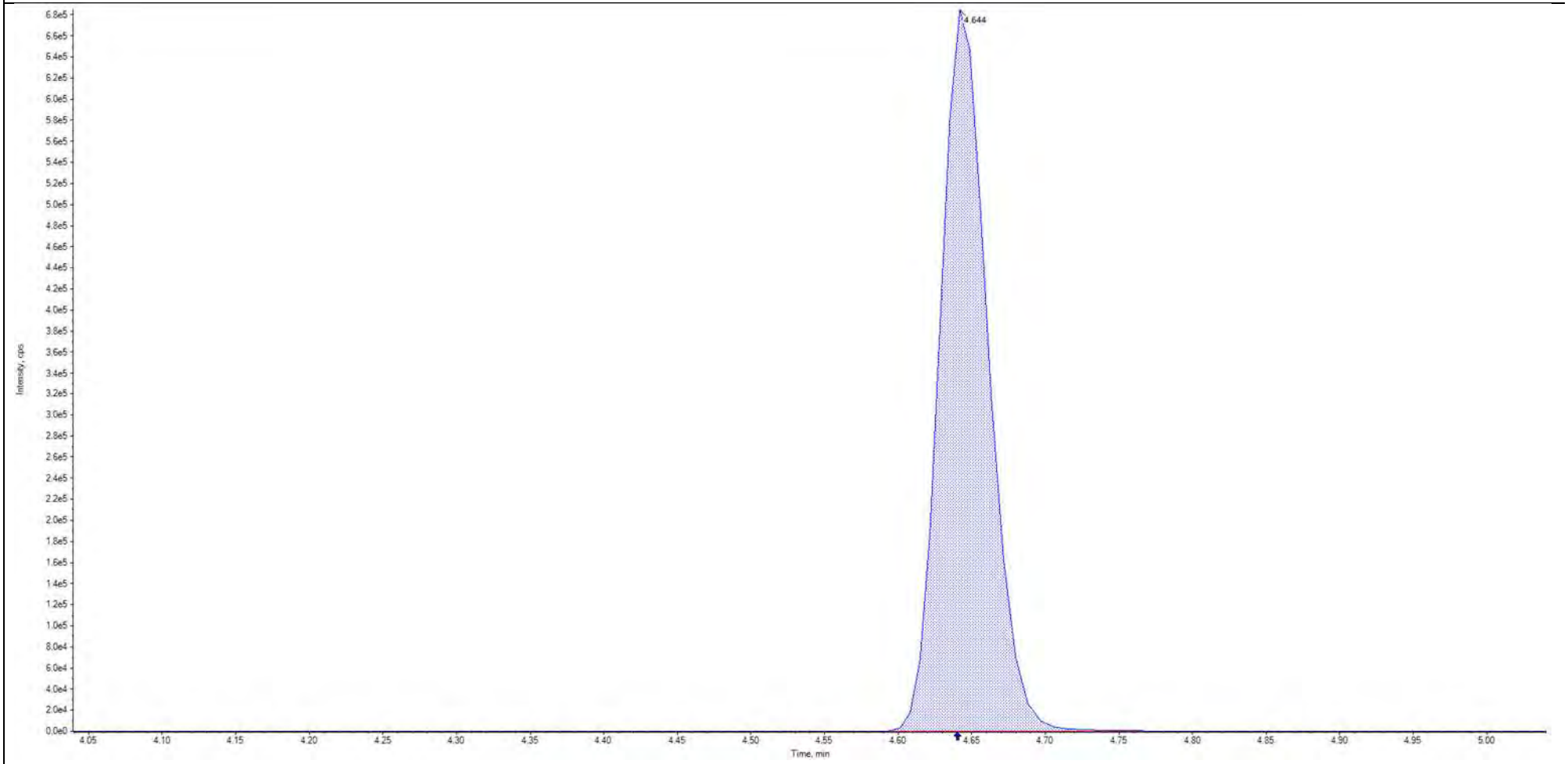
Generated: 8/14/2024 9:40:32 AM

13C5-PFPeA
Sample: WG1958909-5,BSICS



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_83.wiff
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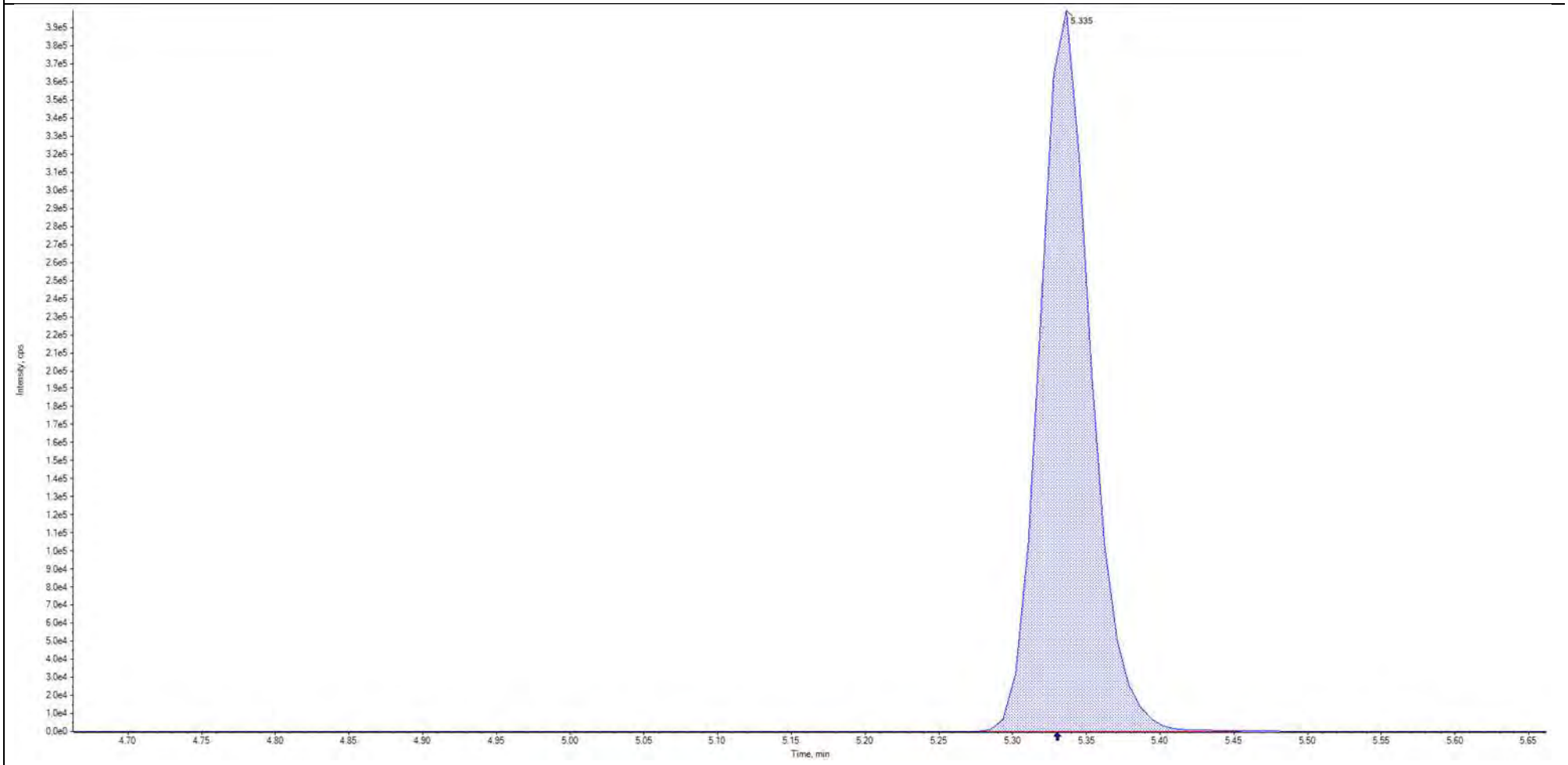
Generated: 8/14/2024 9:40:32 AM

13C5-PFHxA
Sample: WG1958909-5,BSICS



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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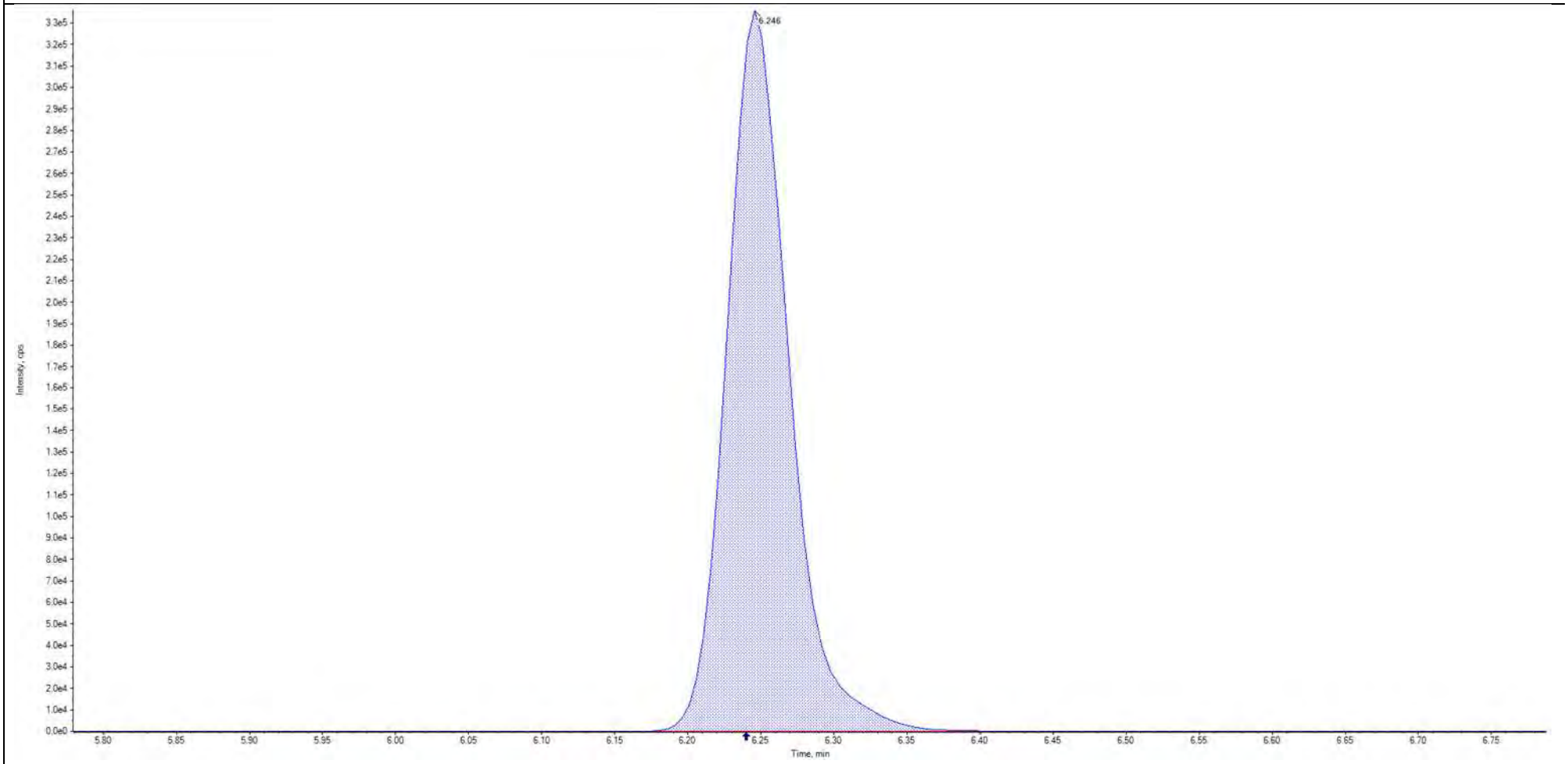
Generated: 8/14/2024 9:40:32 AM

13C4-PFHpA
Sample: WG1958909-5,BSICS



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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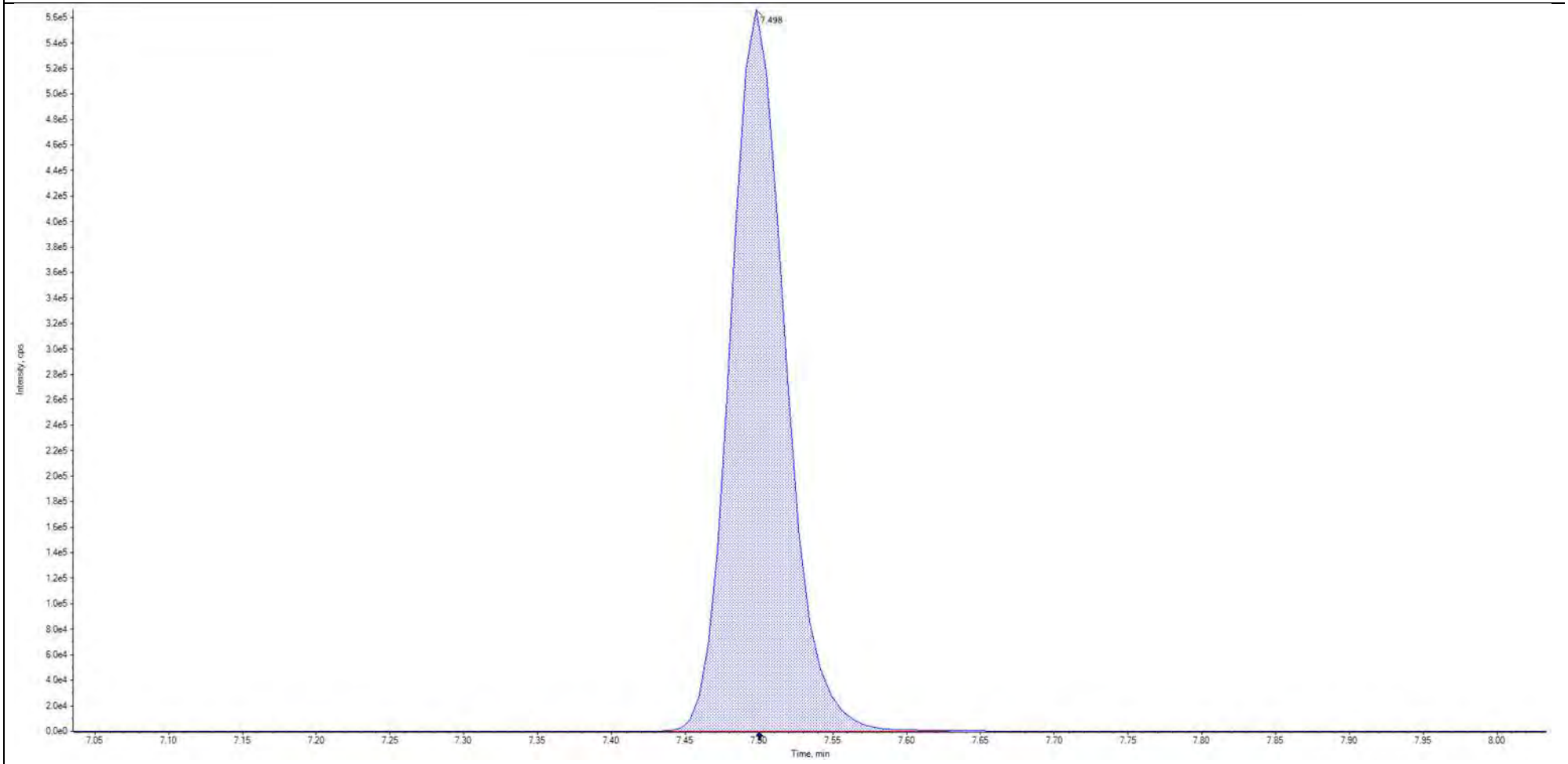
Generated: 8/14/2024 9:40:32 AM

13C8-PFOA
Sample: WG1958909-5,BSICS



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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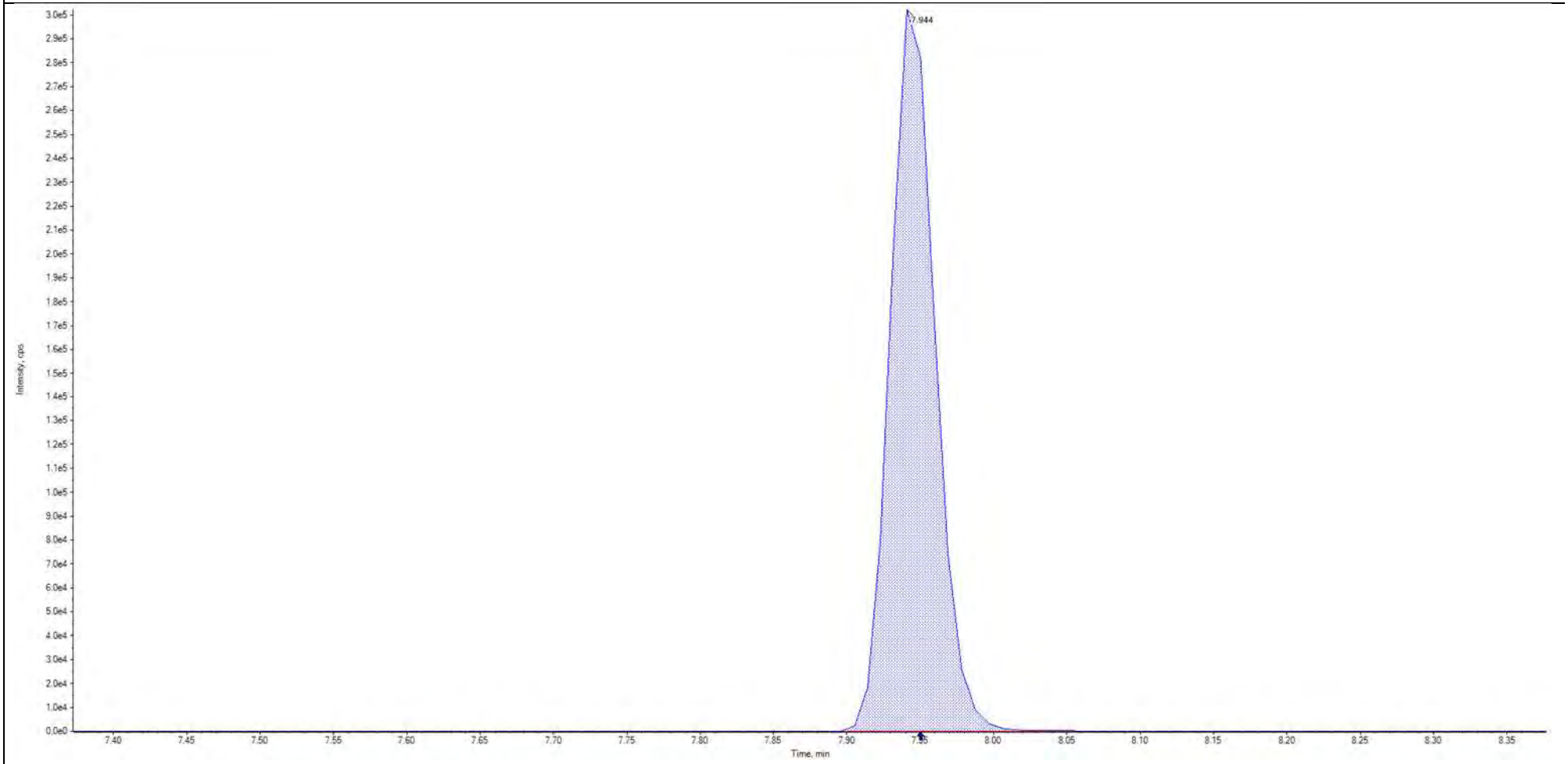
Generated: 8/14/2024 9:40:32 AM

13C9-PFNA
Sample: WG1958909-5,BSICS



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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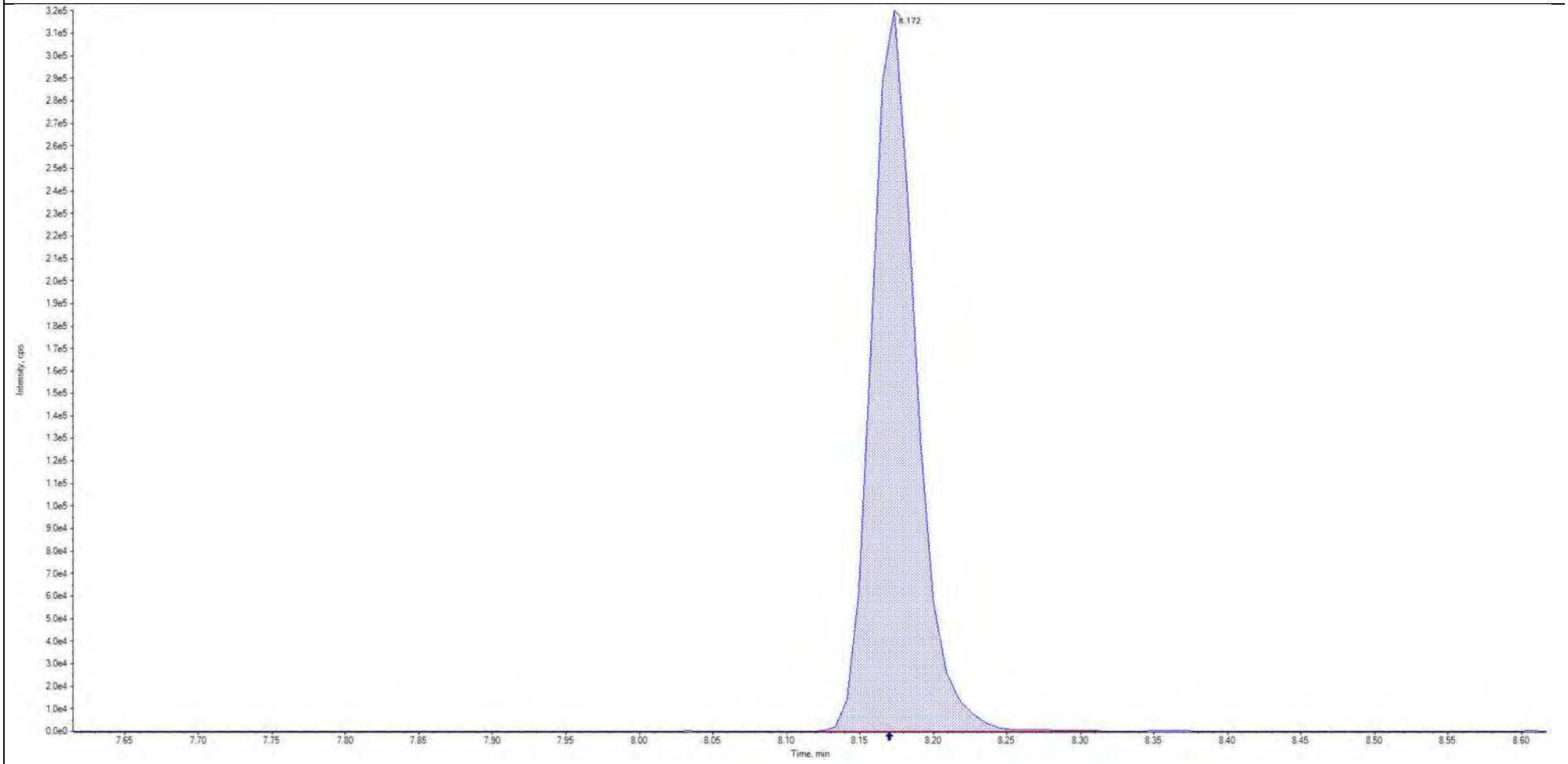
Generated: 8/14/2024 9:40:32 AM

13C6-PFDA
Sample: WG1958909-5,BSICS



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Alpha Analytical Inc.
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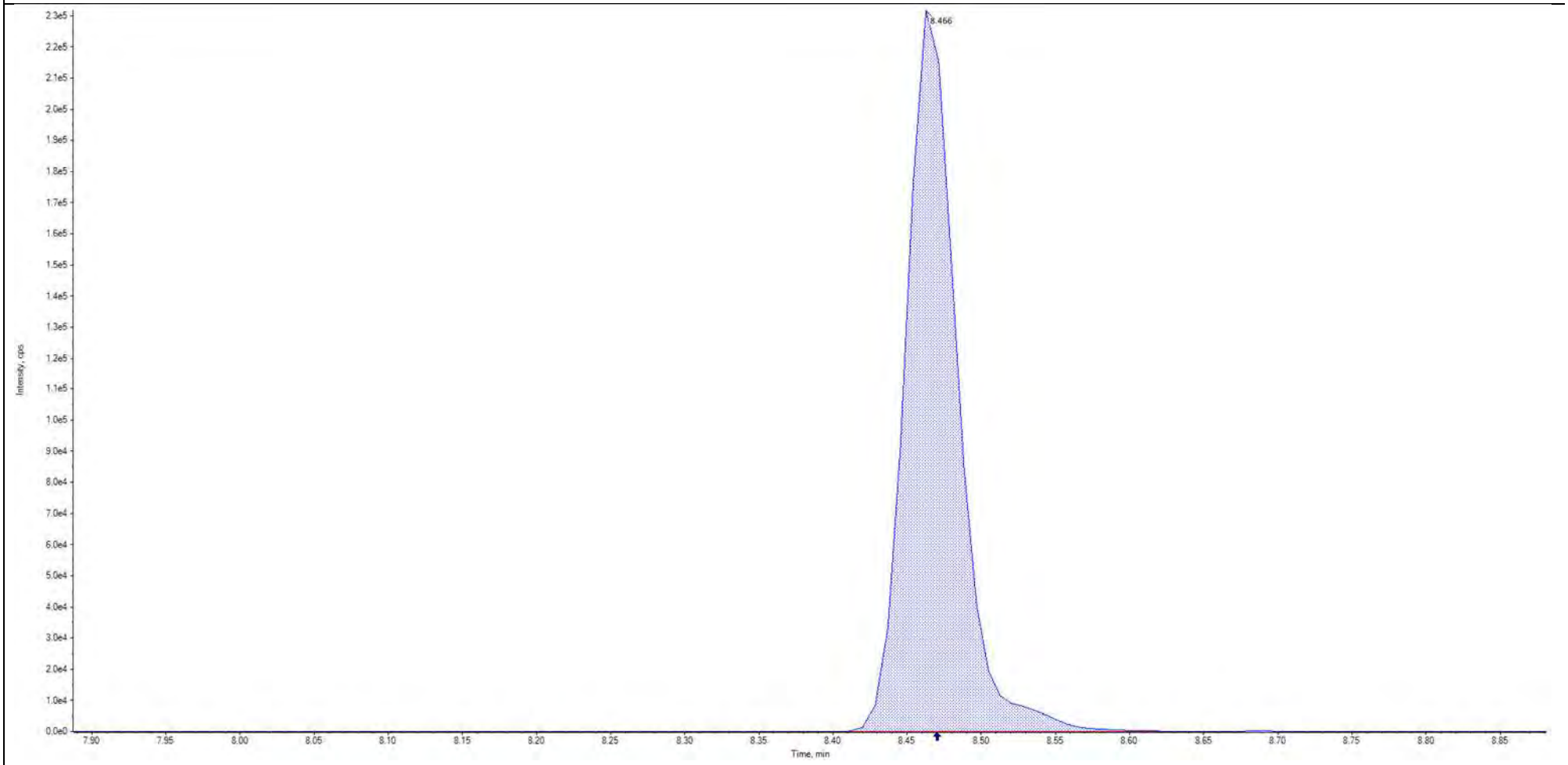
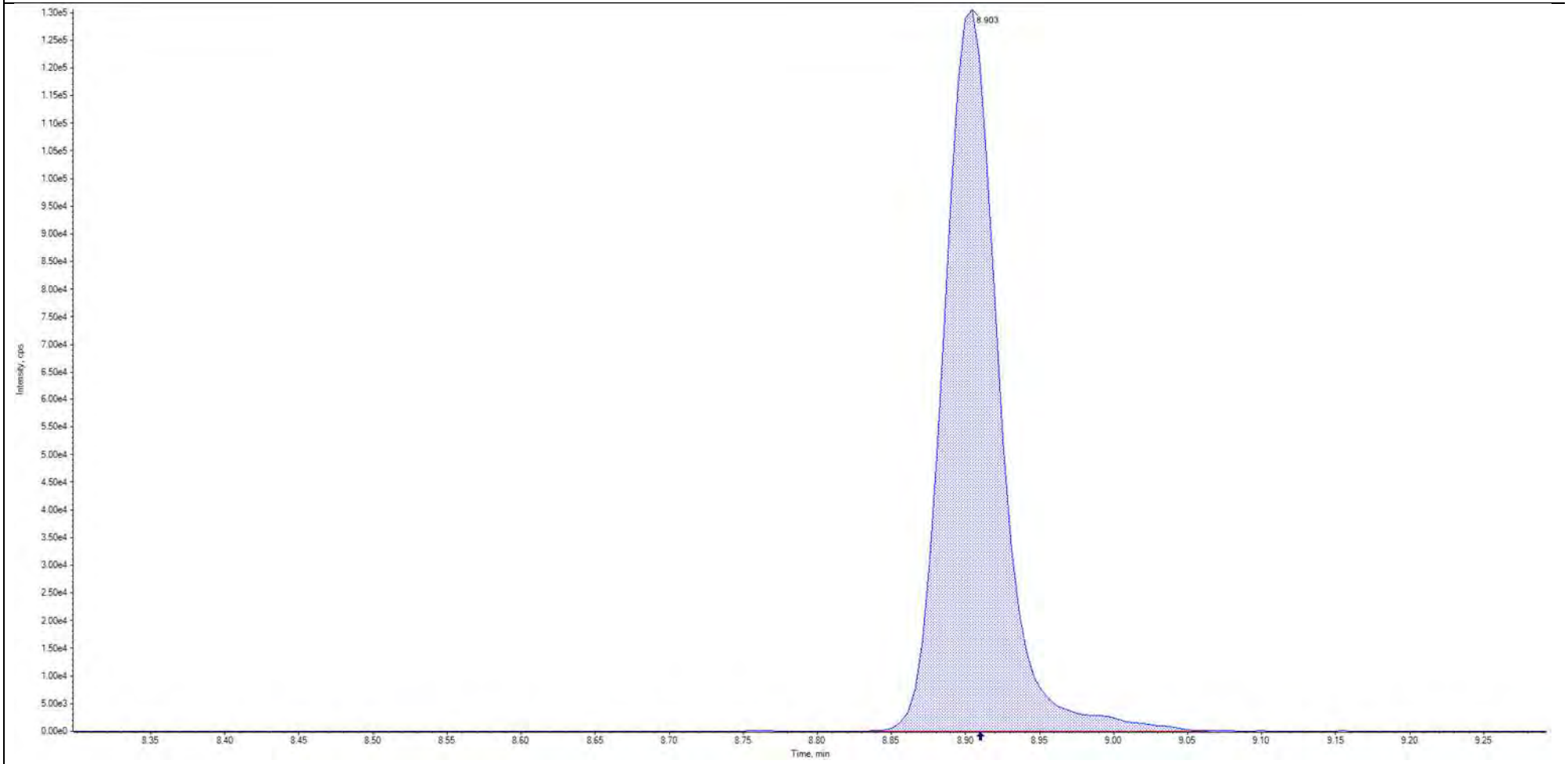
Generated: 8/14/2024 9:40:32 AM

13C7-PFUnA
Sample: WG1958909-5,BSICS

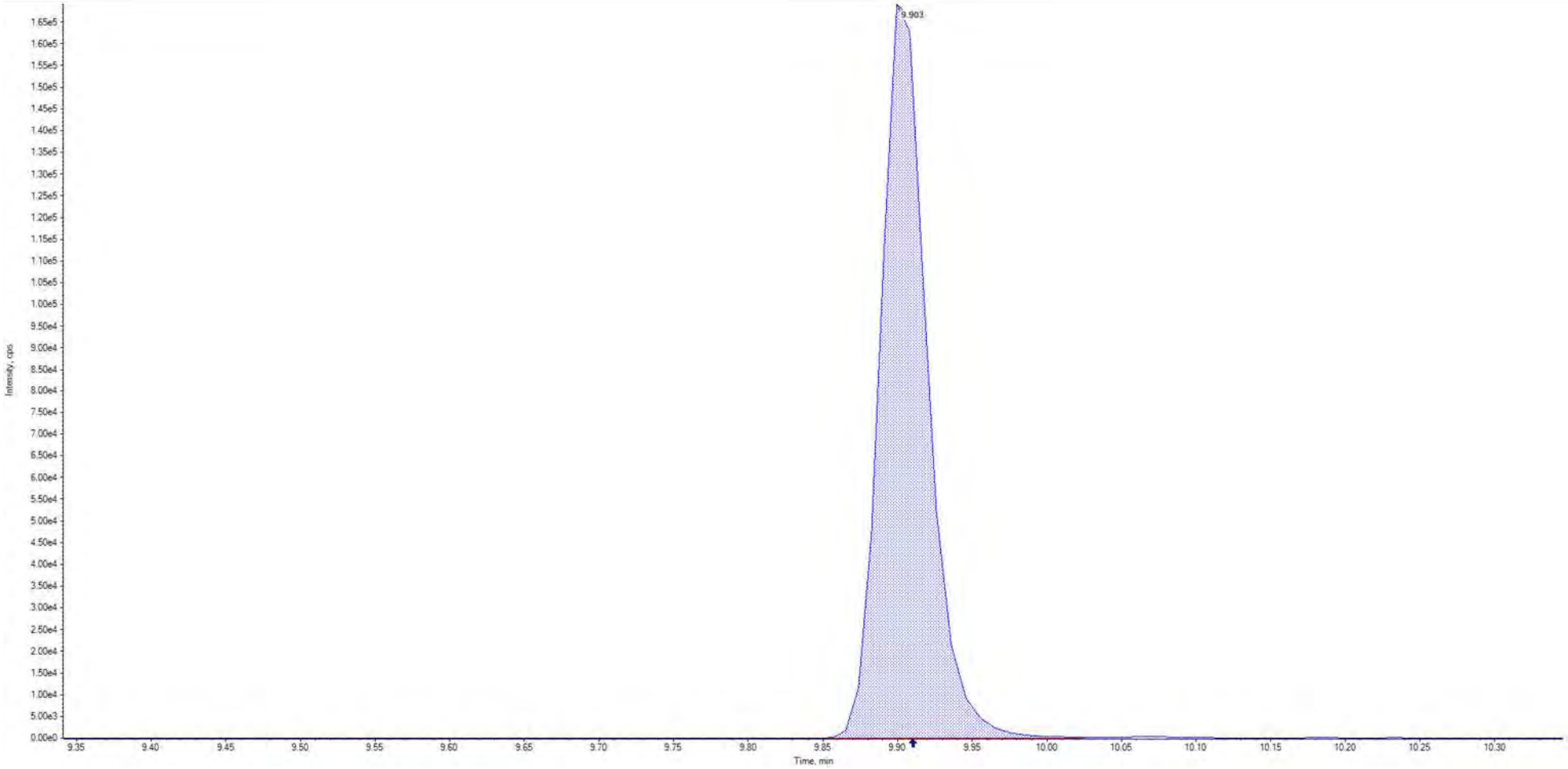


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_83.wiff
Last Altered: 8/14/2024 10:29:12 AM
Generated: 8/14/2024 9:40:32 AM

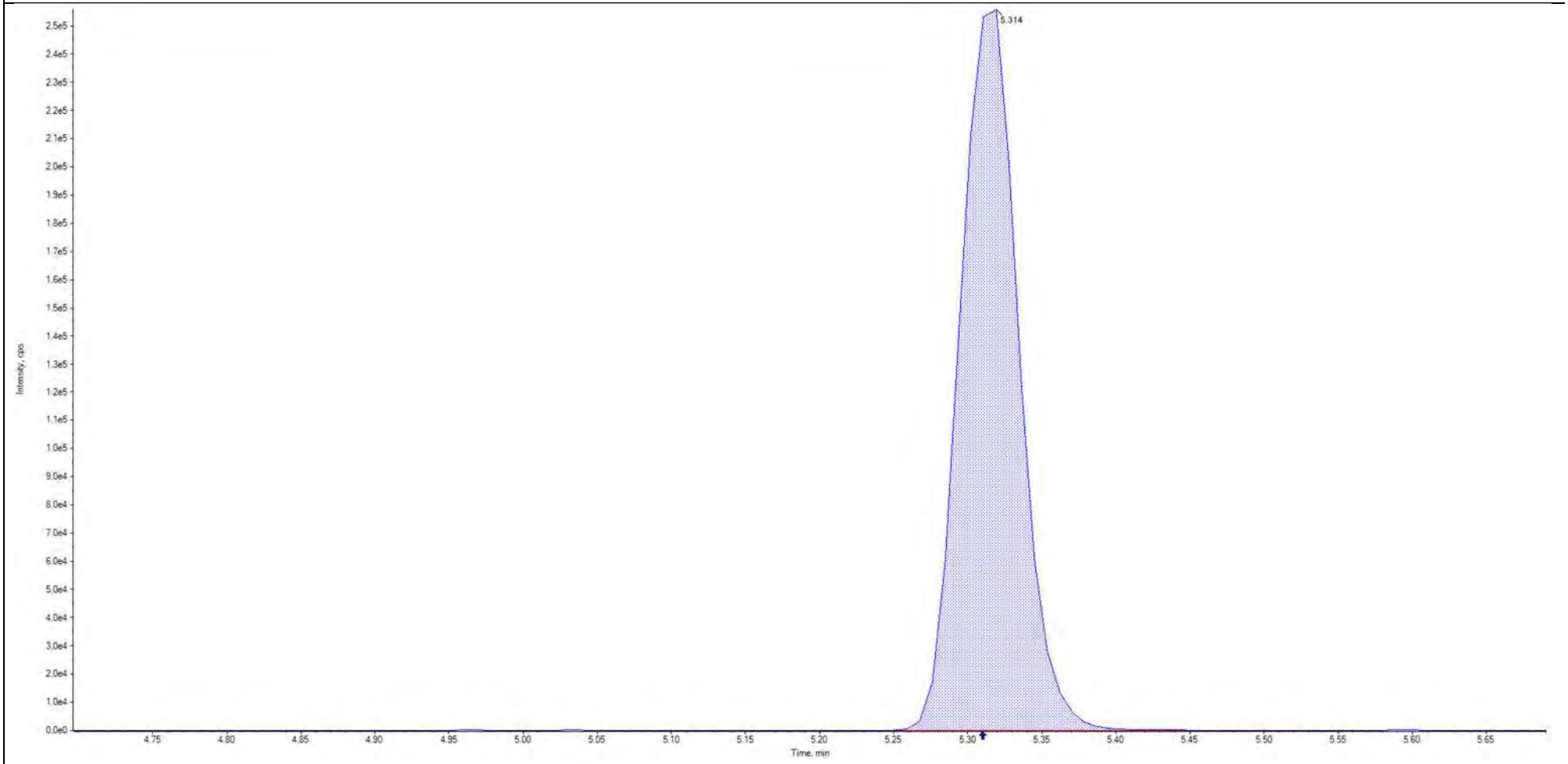
13C2-PFDoA
Sample: WG1958909-5,BSICS



13C2-PFTeDA
Sample: WG1958909-5,BSICS



13C3-PFBS
Sample: WG1958909-5,BSICS



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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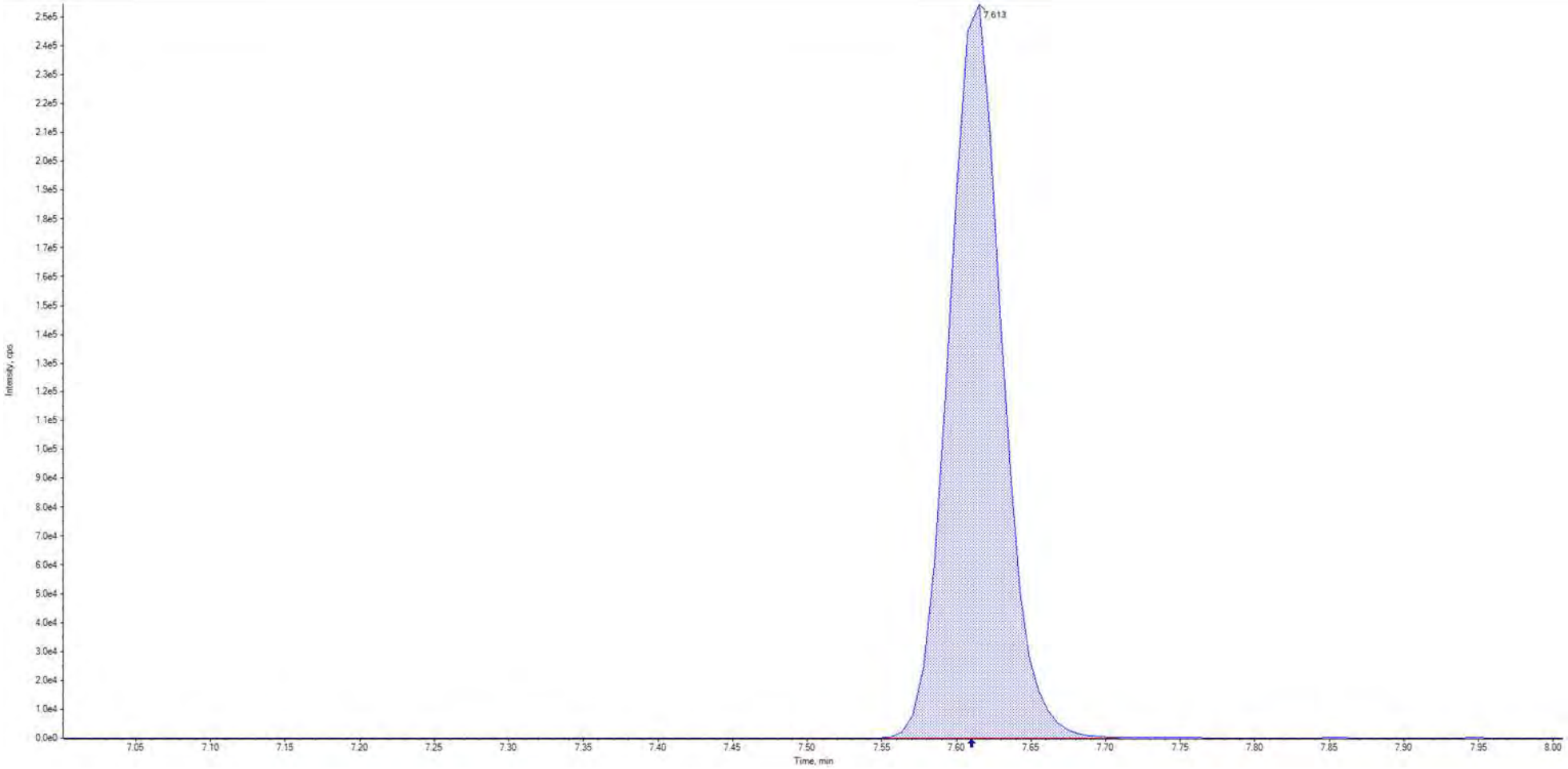
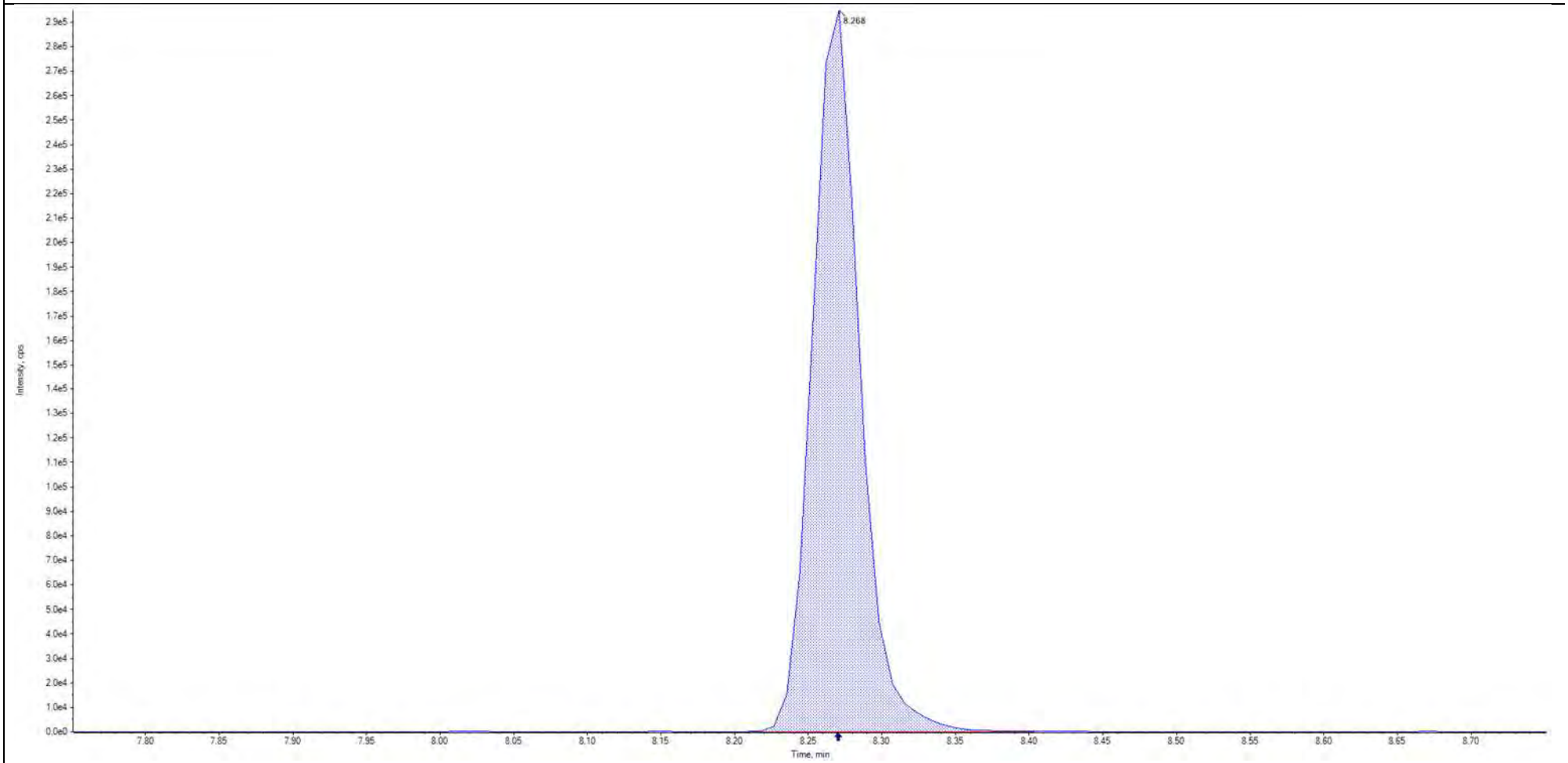
Last Altered: 8/14/2024 10:29:12 AM
Generated: 8/14/2024 9:40:32 AM

13C3-PFHxS
Sample: WG1958909-5,BSICS

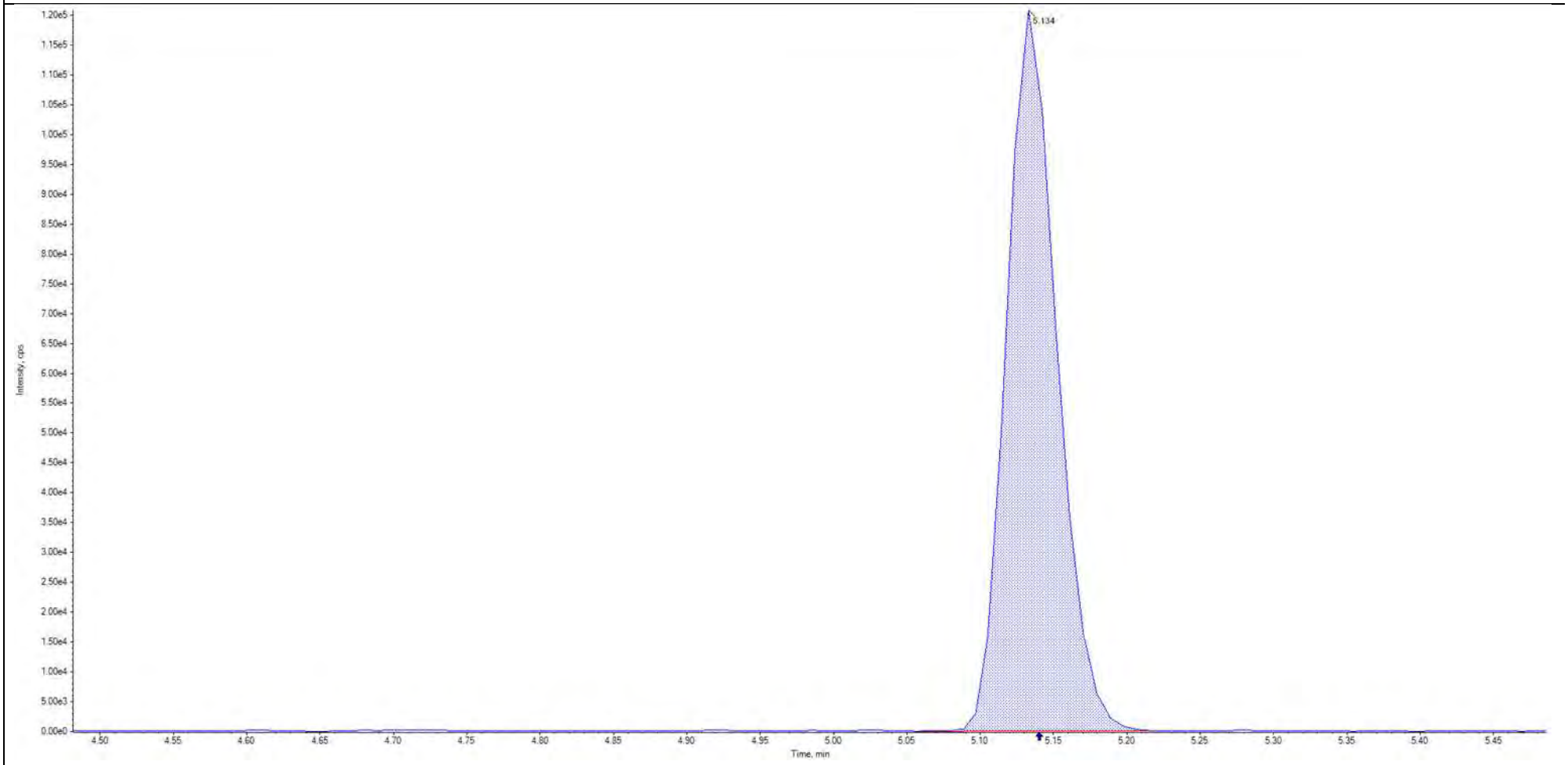


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_83.wiff
Last Altered: 8/14/2024 10:29:12 AM
Generated: 8/14/2024 9:40:32 AM

13C8-PFOS
Sample: WG1958909-5,BSICS

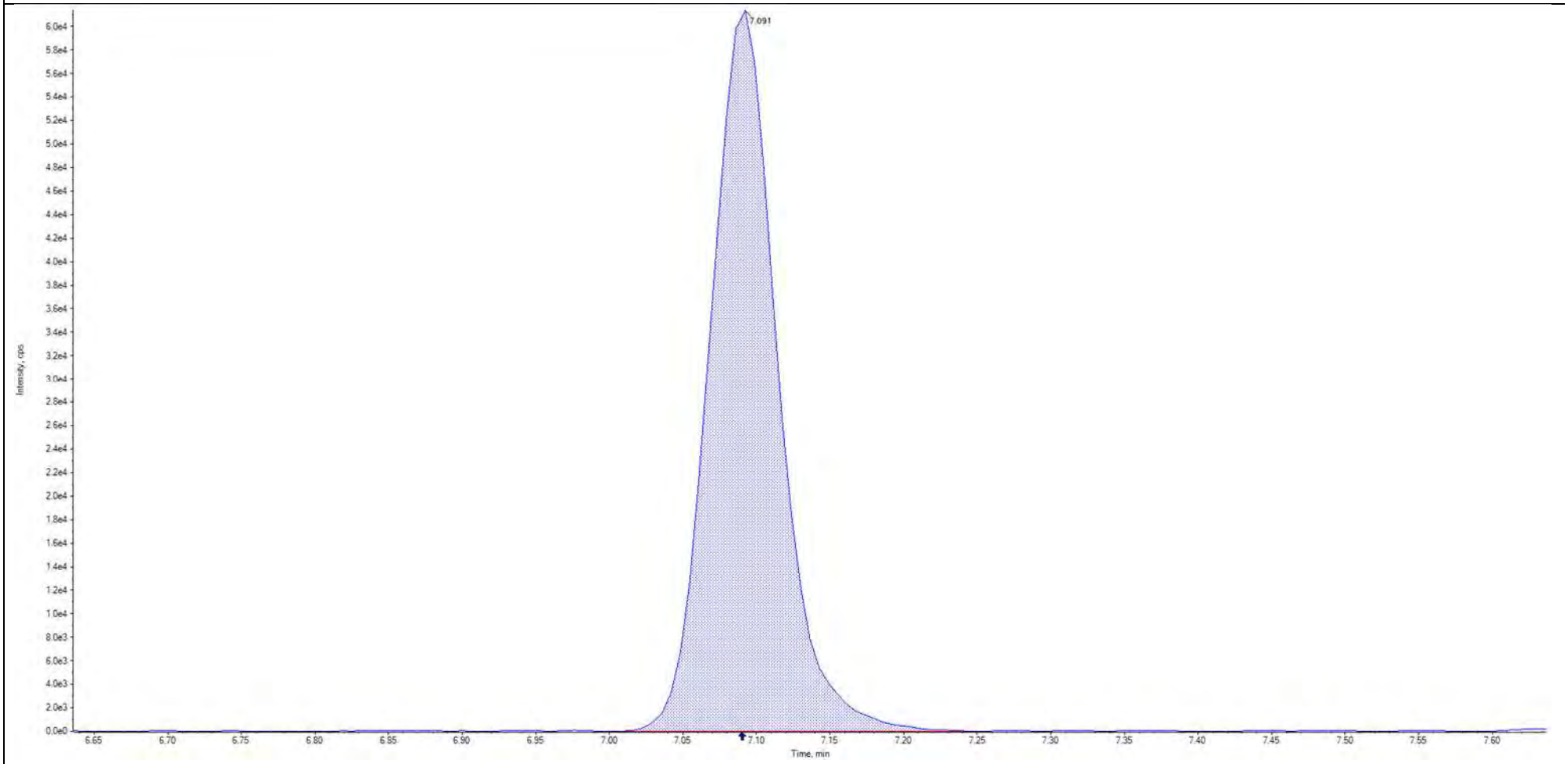


13C2-4:2FTS
Sample: WG1958909-5,BSICS



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_83.wiff
Last Altered: 8/14/2024 10:29:12 AM
Generated: 8/14/2024 9:40:32 AM

13C2-6:2FTS
Sample: WG1958909-5,BSICS



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_83.wiff
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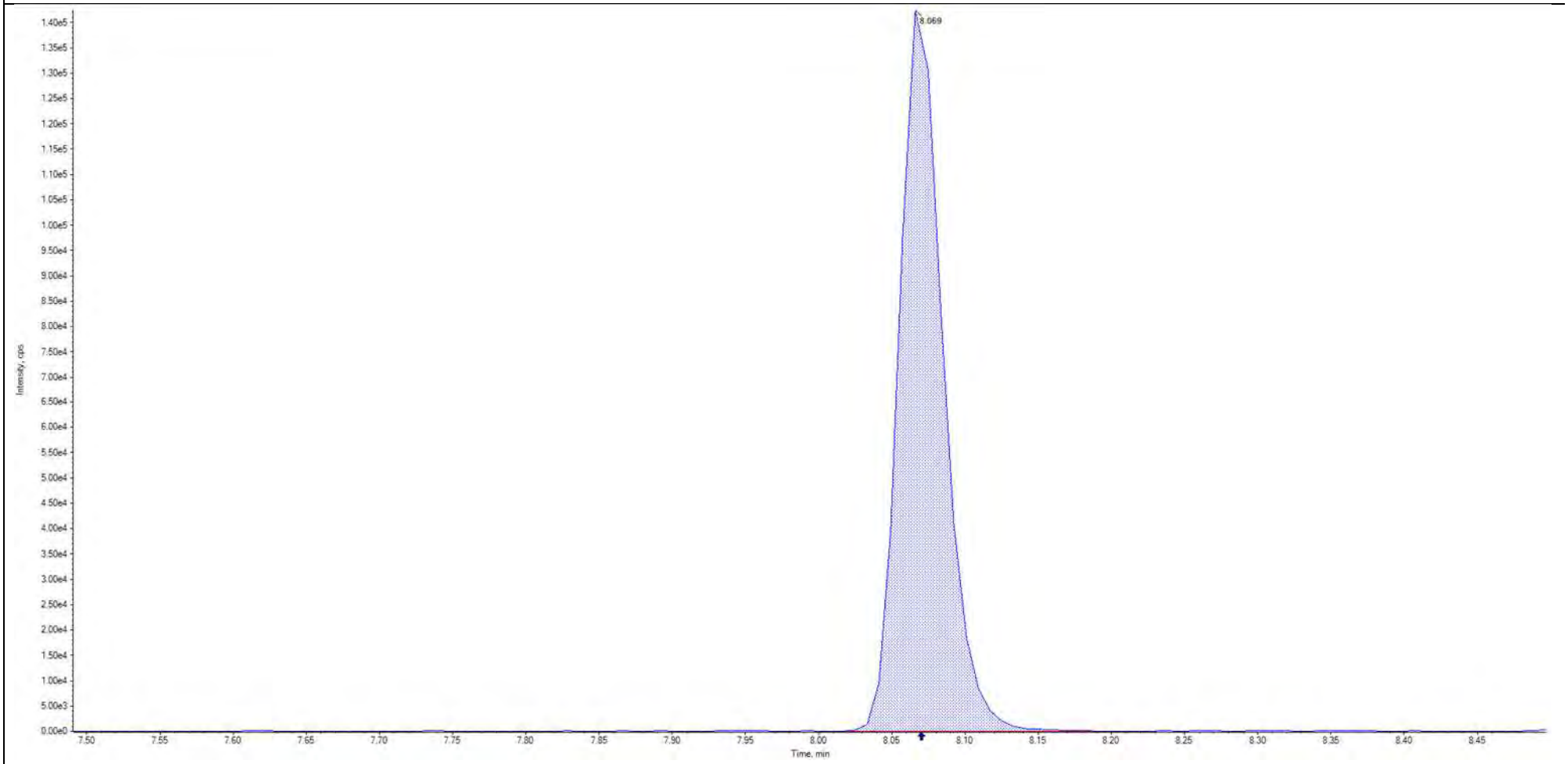
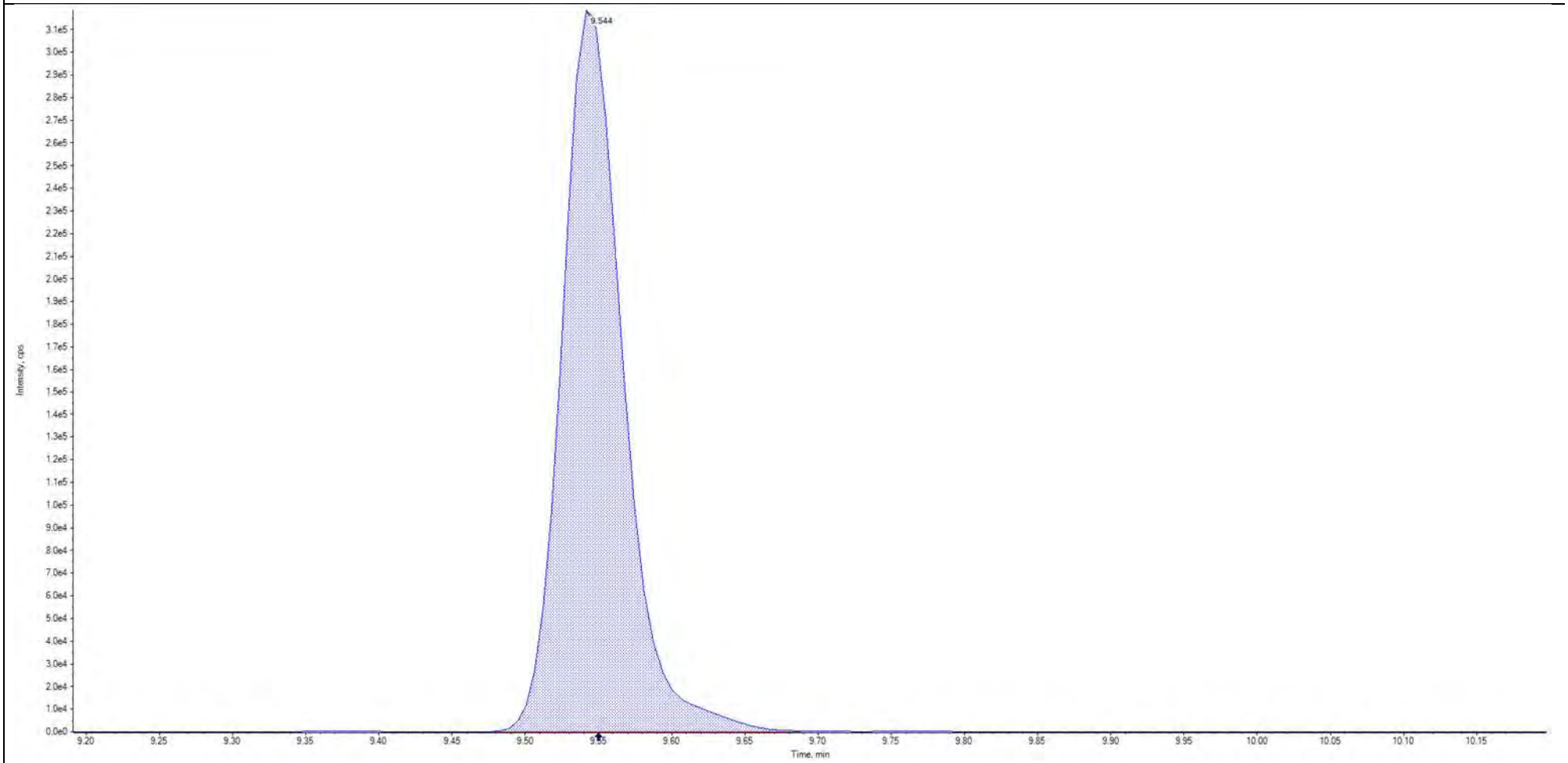
Generated: 8/14/2024 9:40:32 AM

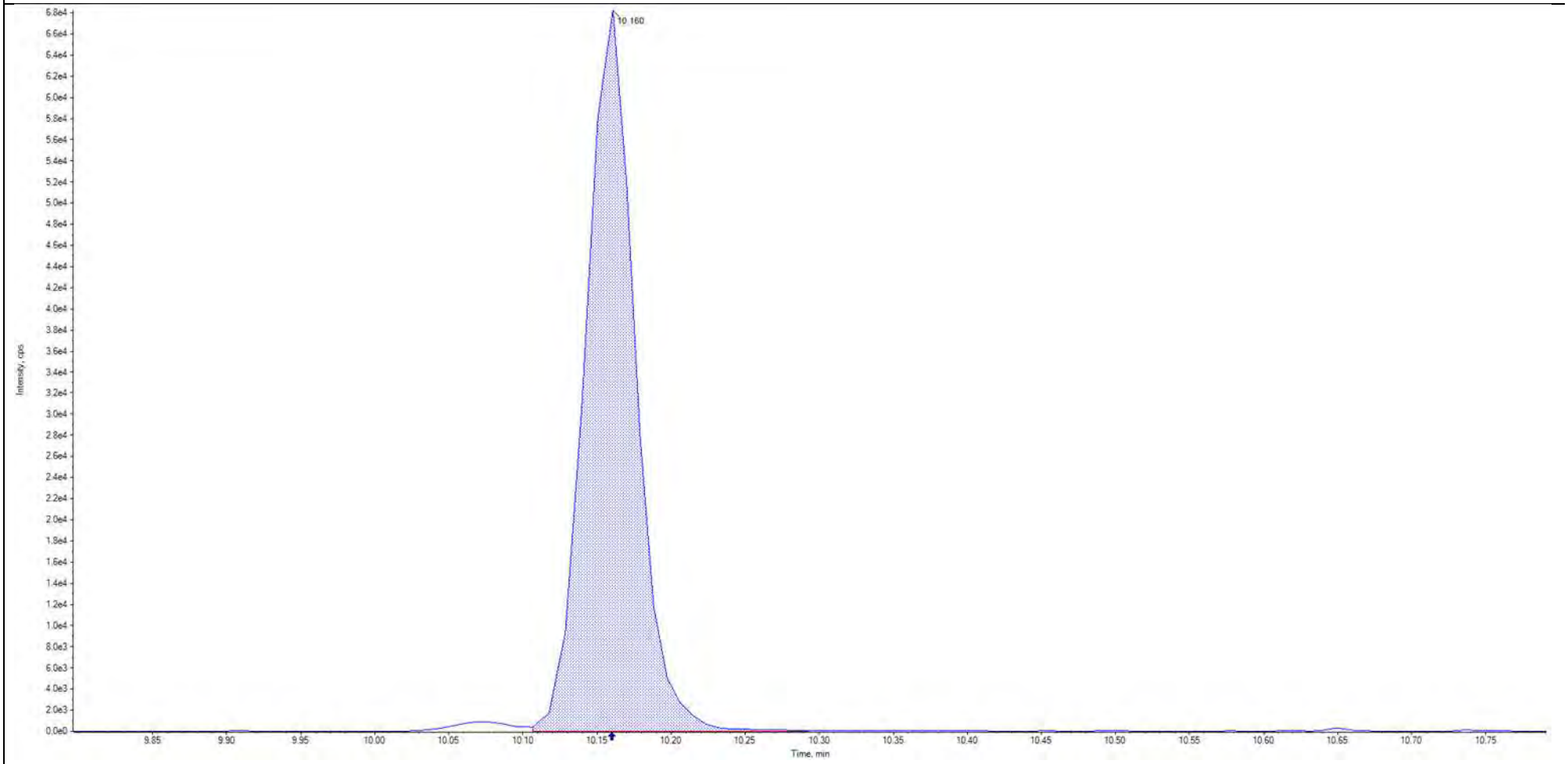
13C2-8:2FTS
Sample: WG1958909-5,BSICS



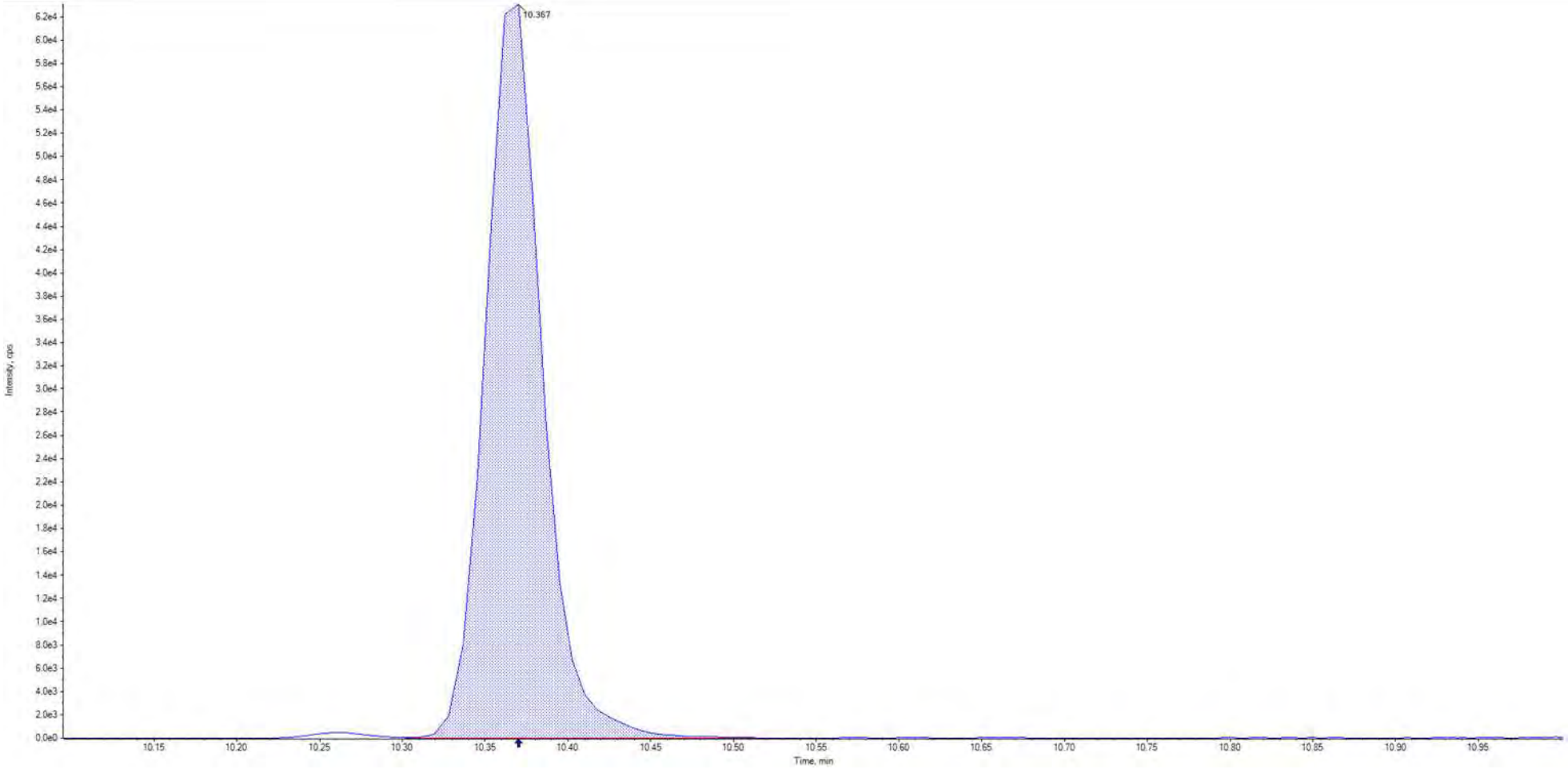
13C8-PFOSA
Sample: WG1958909-5,BSICS



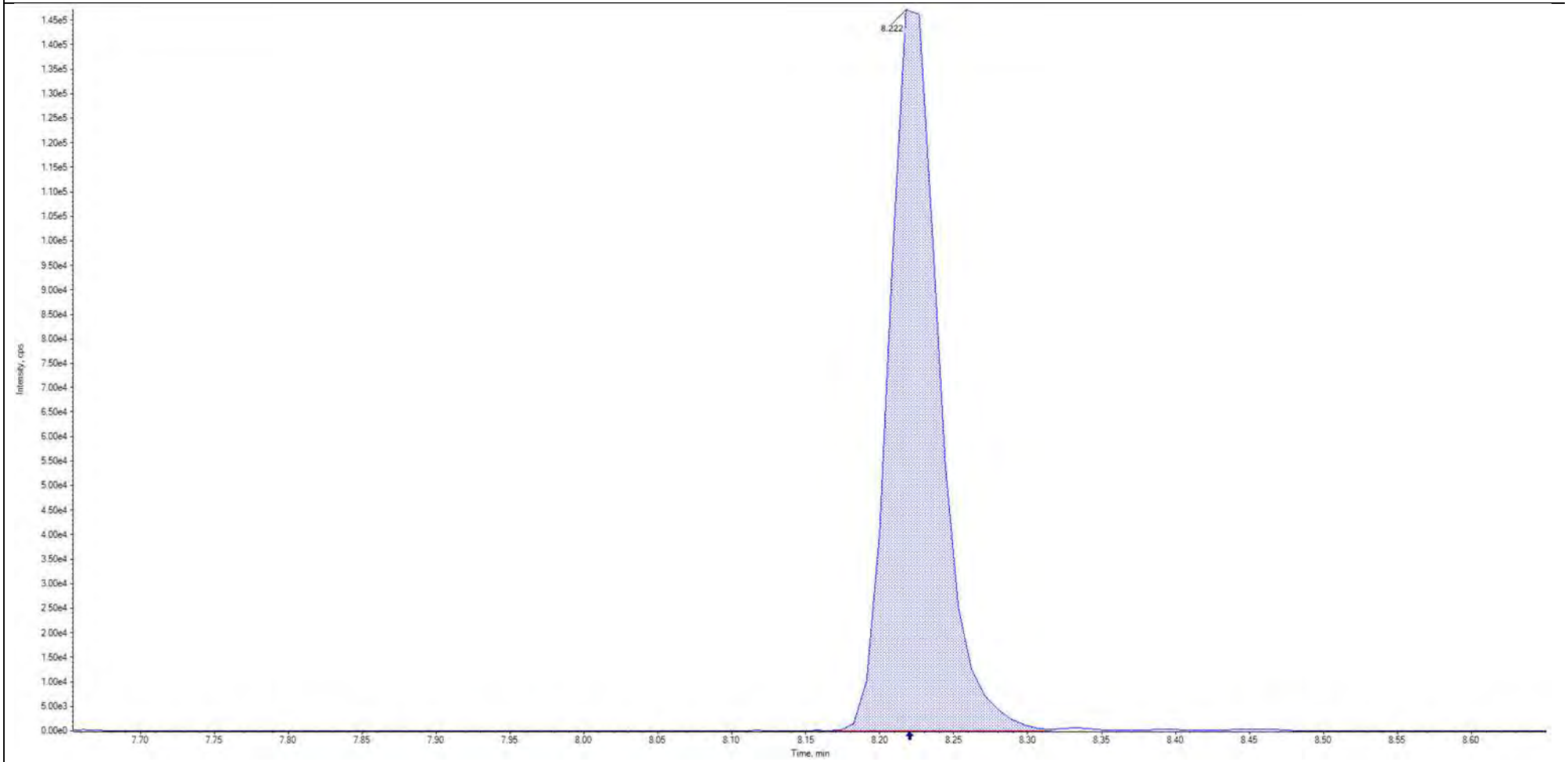
d3-NMeFOSA
Sample: WG1958909-5,BSICS



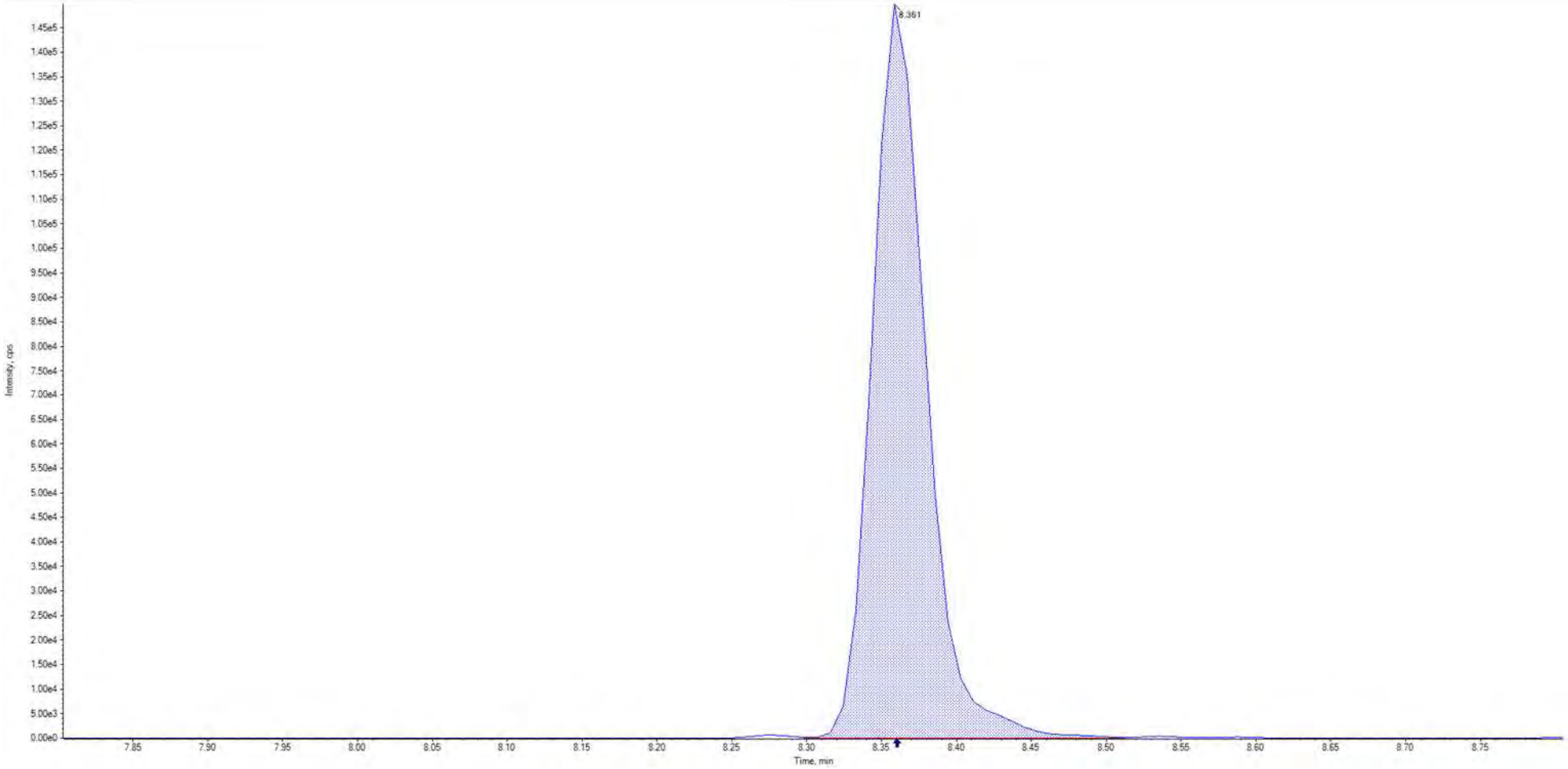
d5-NEtFOSA
Sample: WG1958909-5,BSICS



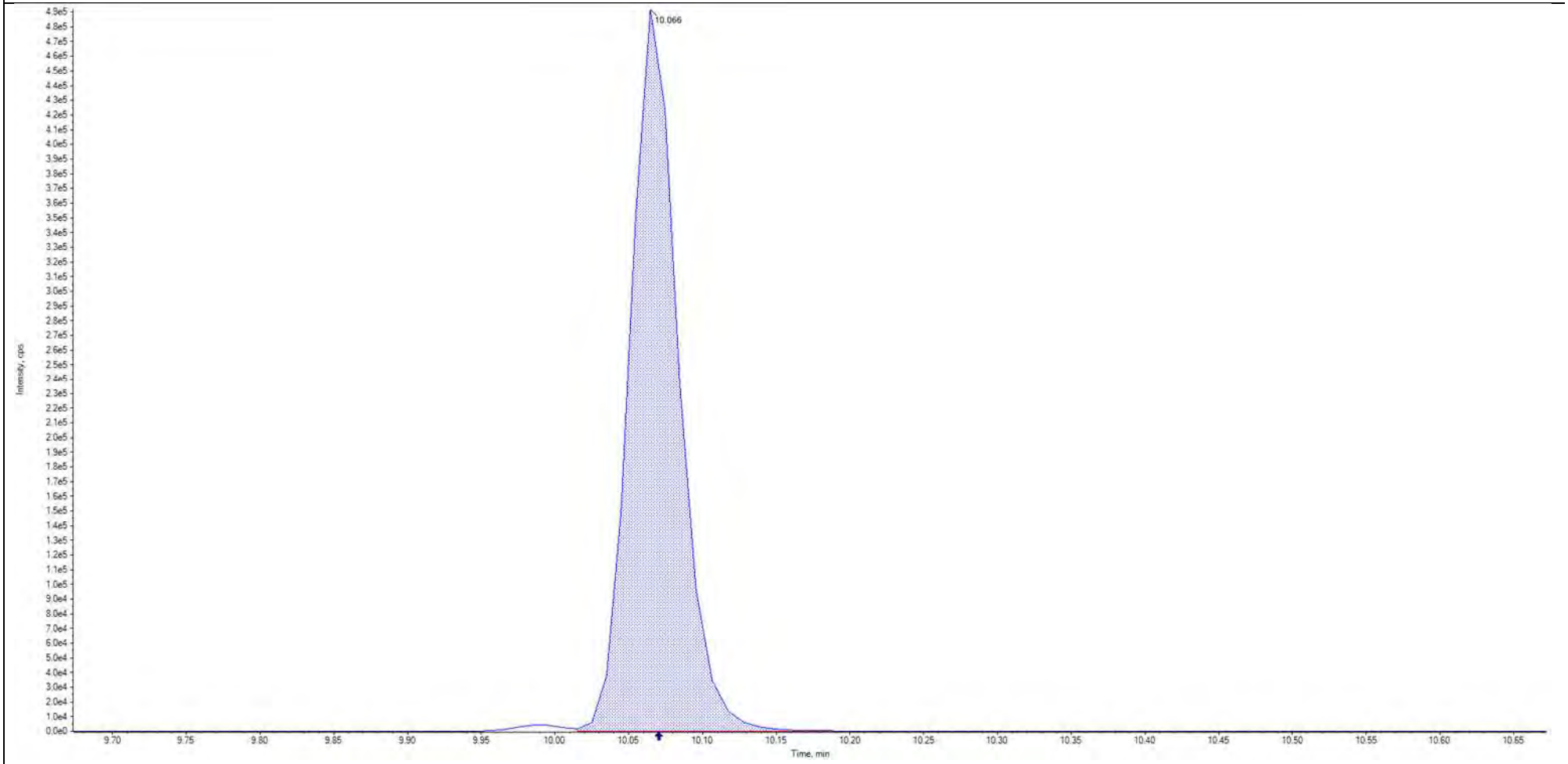
d3-NMeFOSAA
Sample: WG1958909-5,BSICS



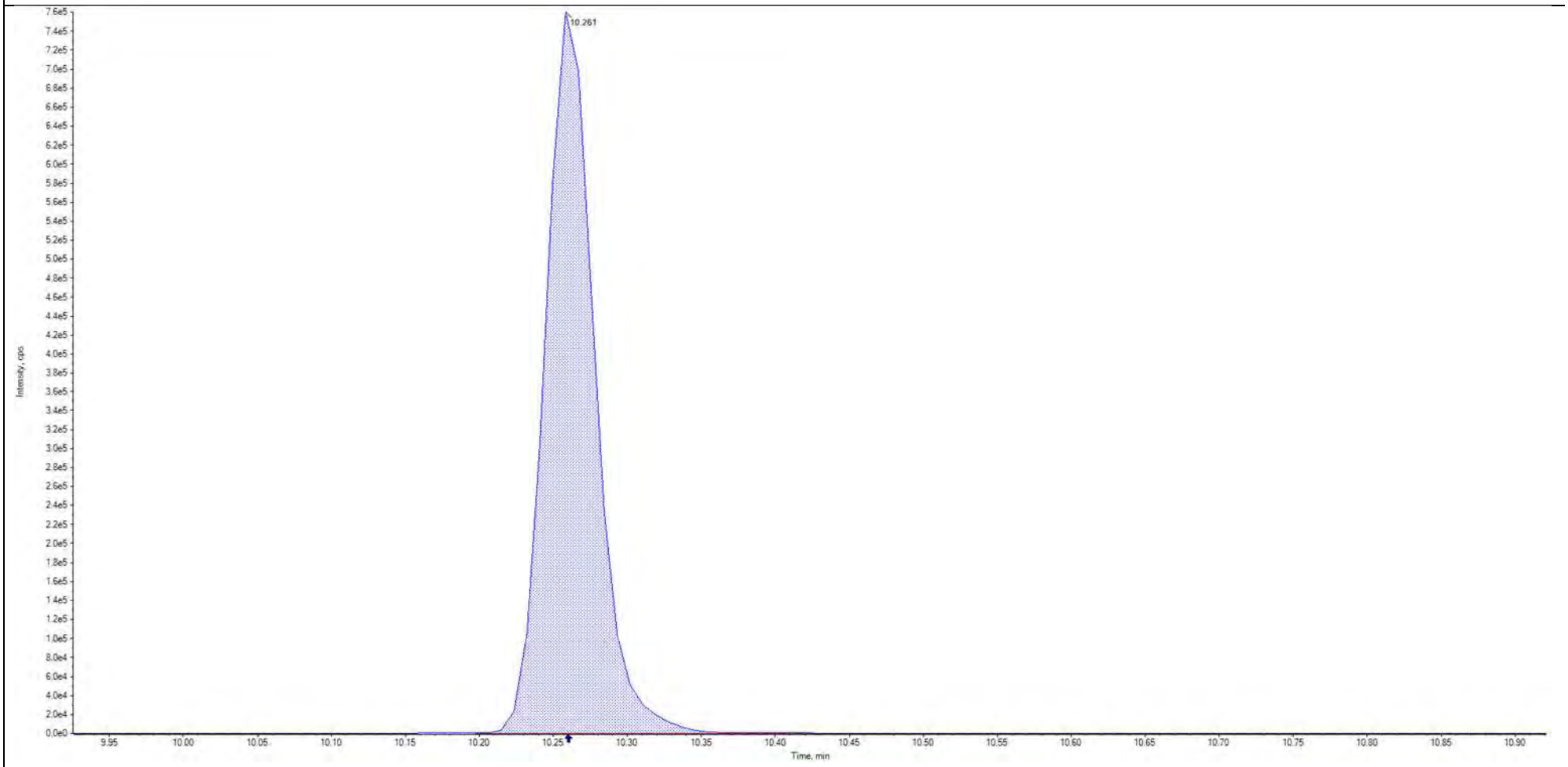
d5-NEtFOSAA
Sample: WG1958909-5,BSICS



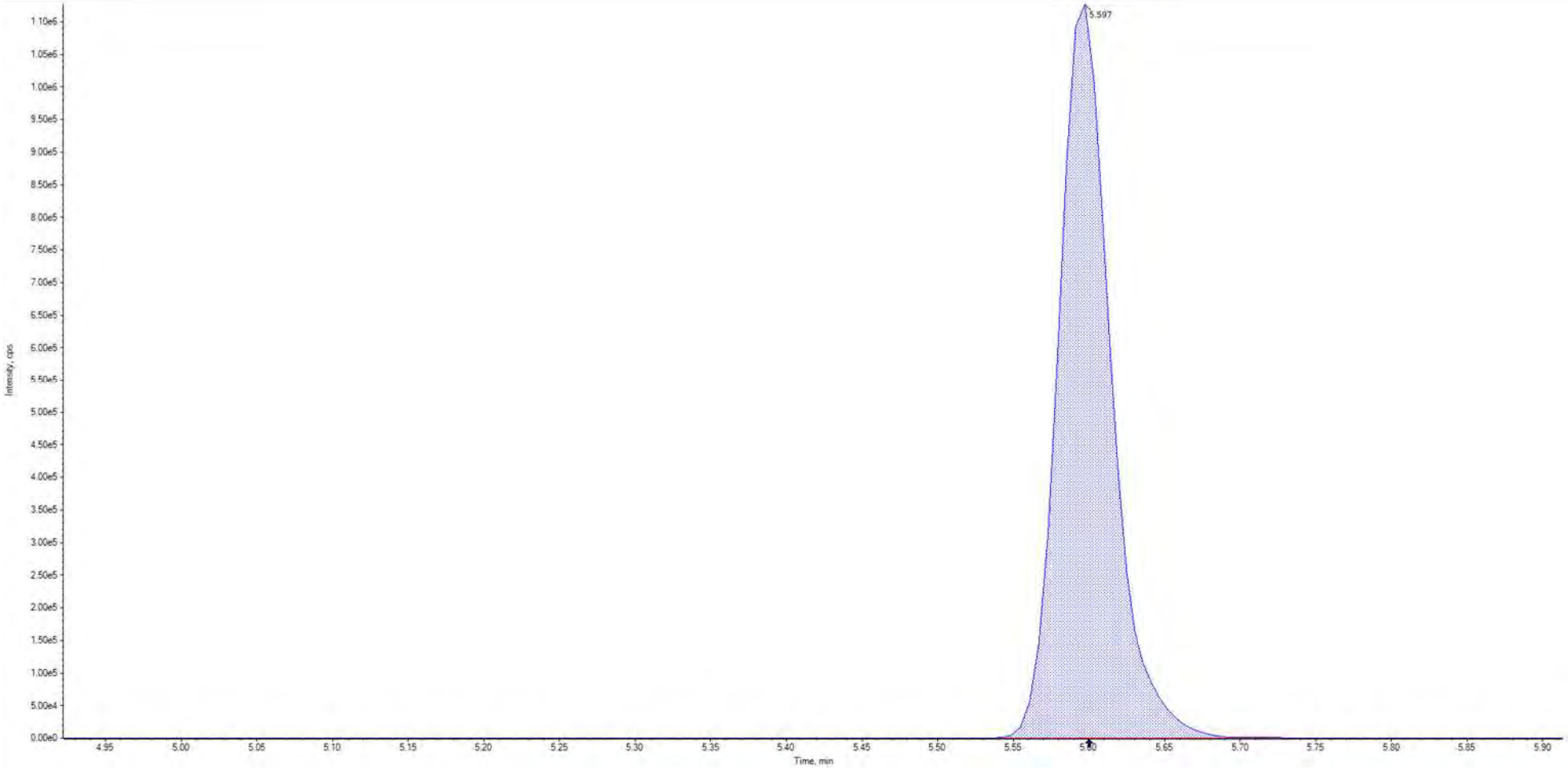
d7-NMeFOSE
Sample: WG1958909-5,BSICS



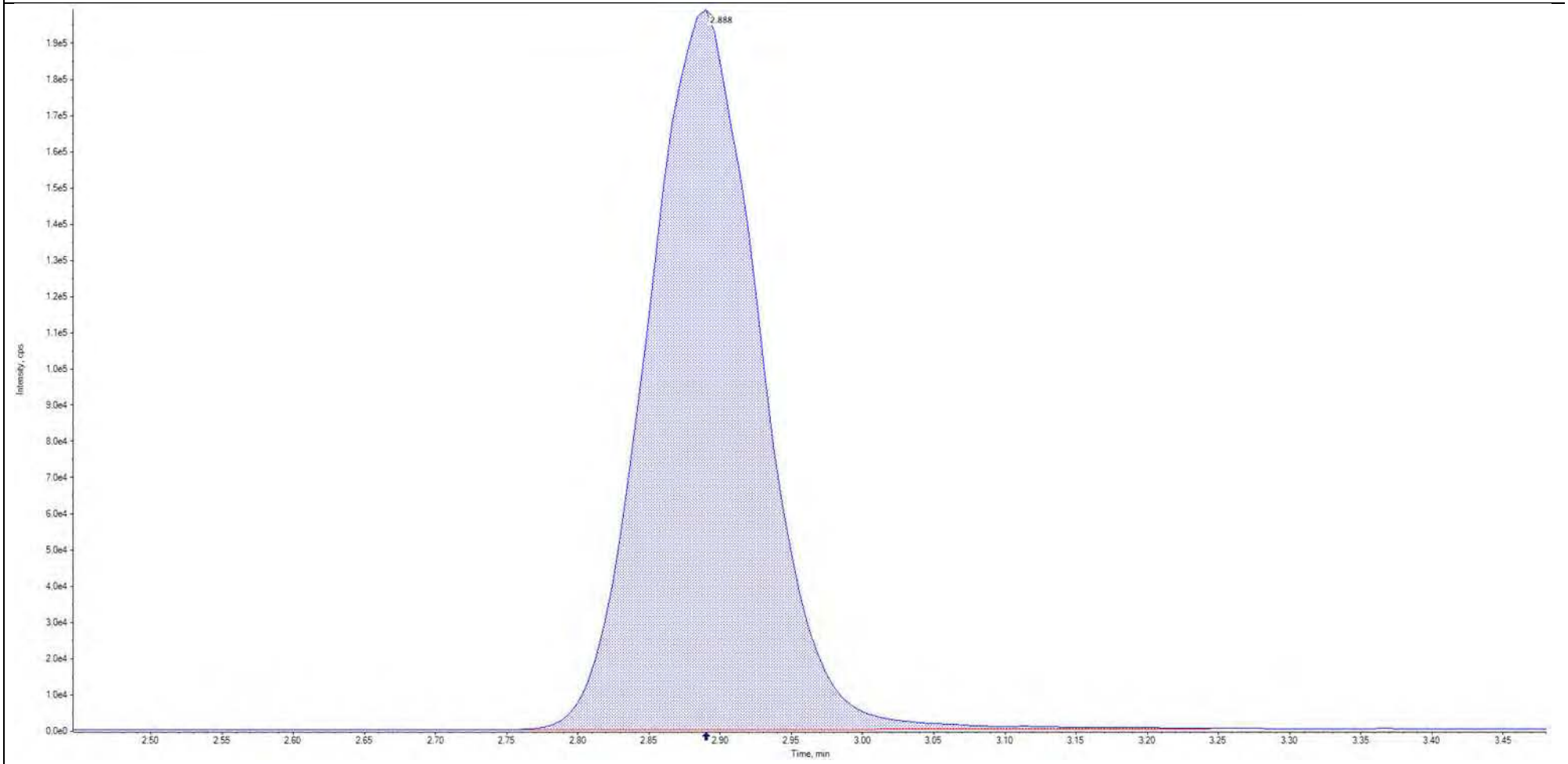
d9-NEtFOSE
Sample: WG1958909-5,BSICS



13C3-HFPO-DA
Sample: WG1958909-5,BSICS

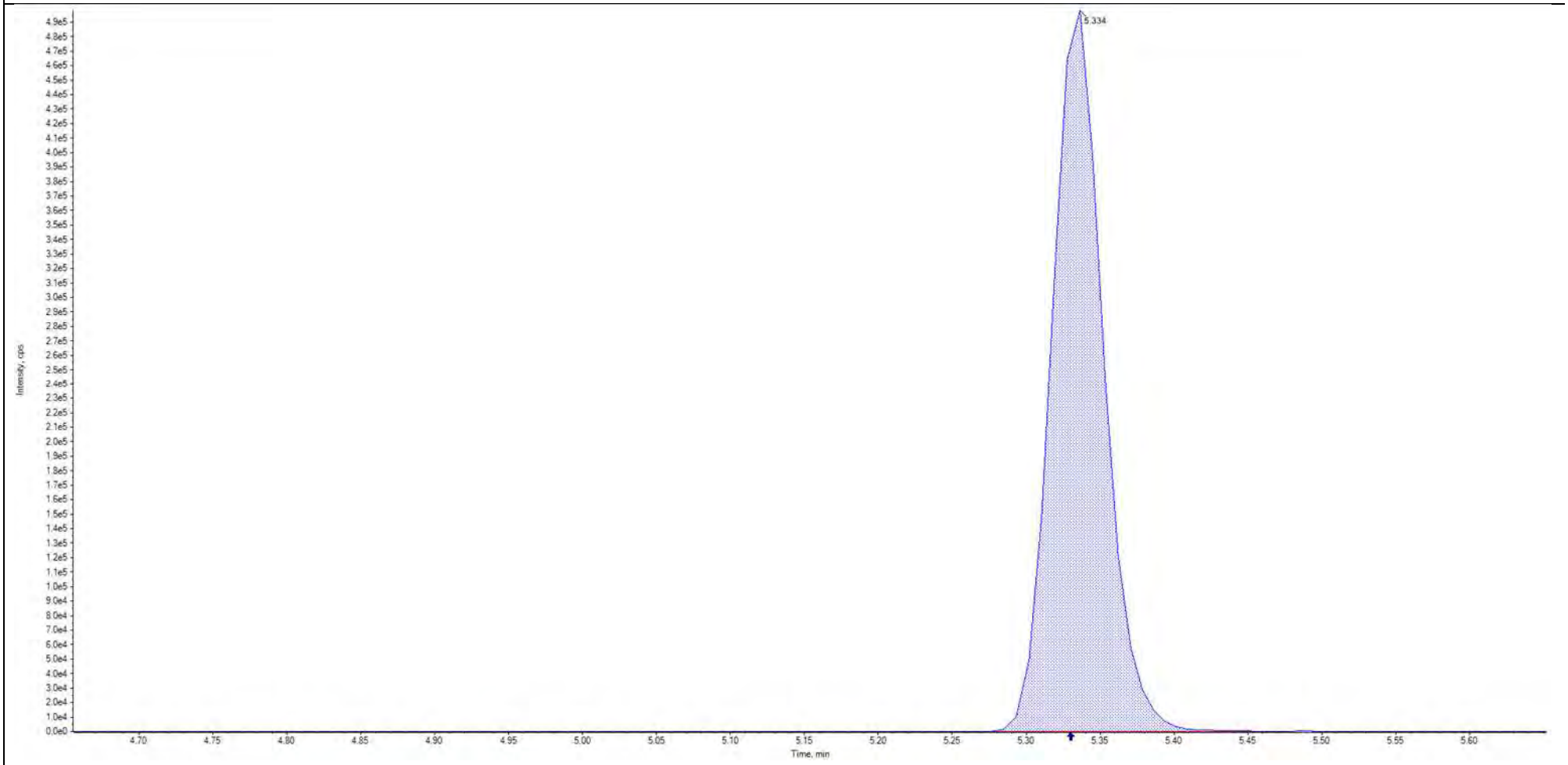


13C3-PFBA
Sample: WG1958909-5,BSICS

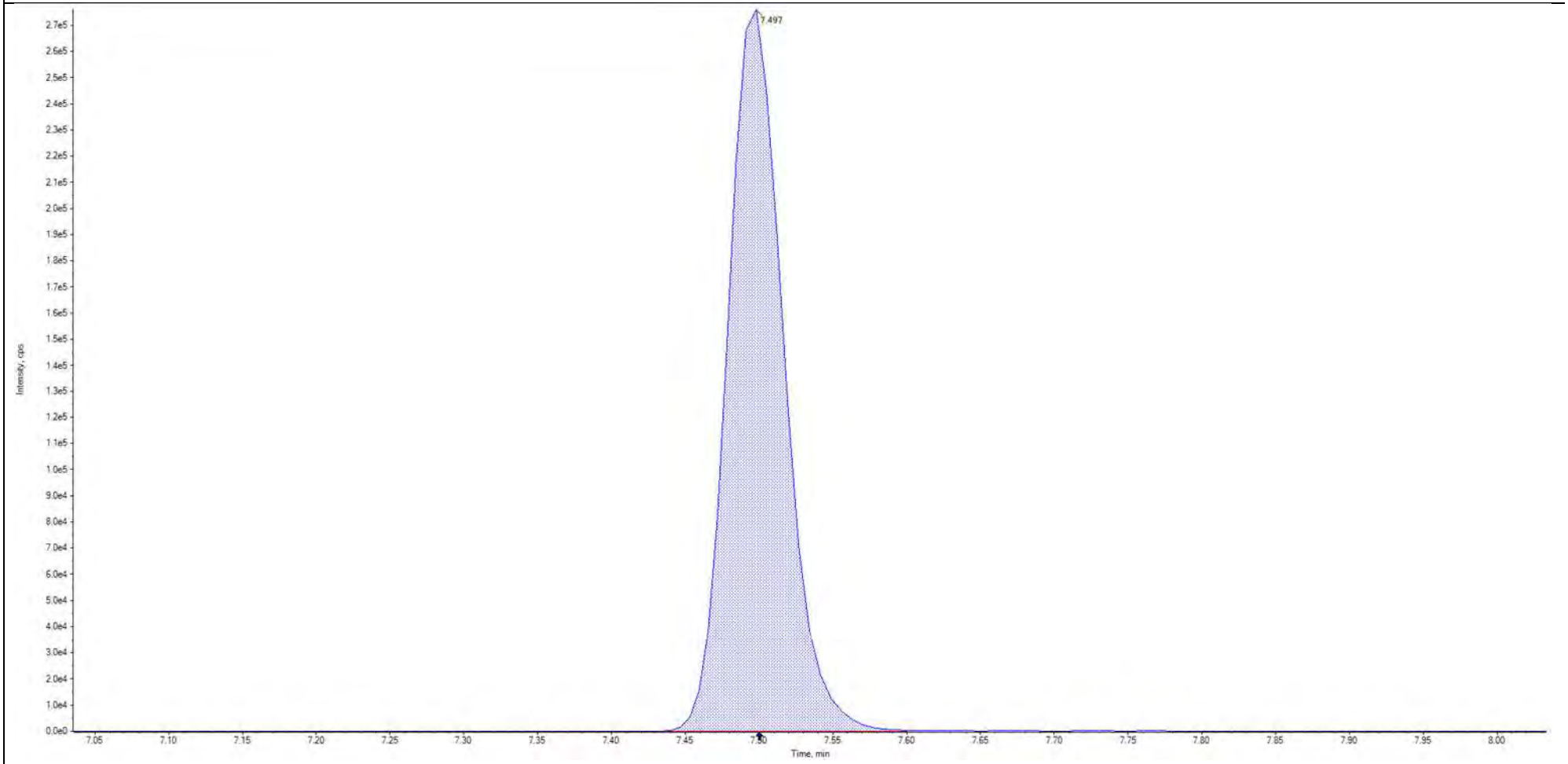


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_83.wiff
Last Altered: 8/14/2024 10:29:12 AM
Generated: 8/14/2024 9:40:32 AM

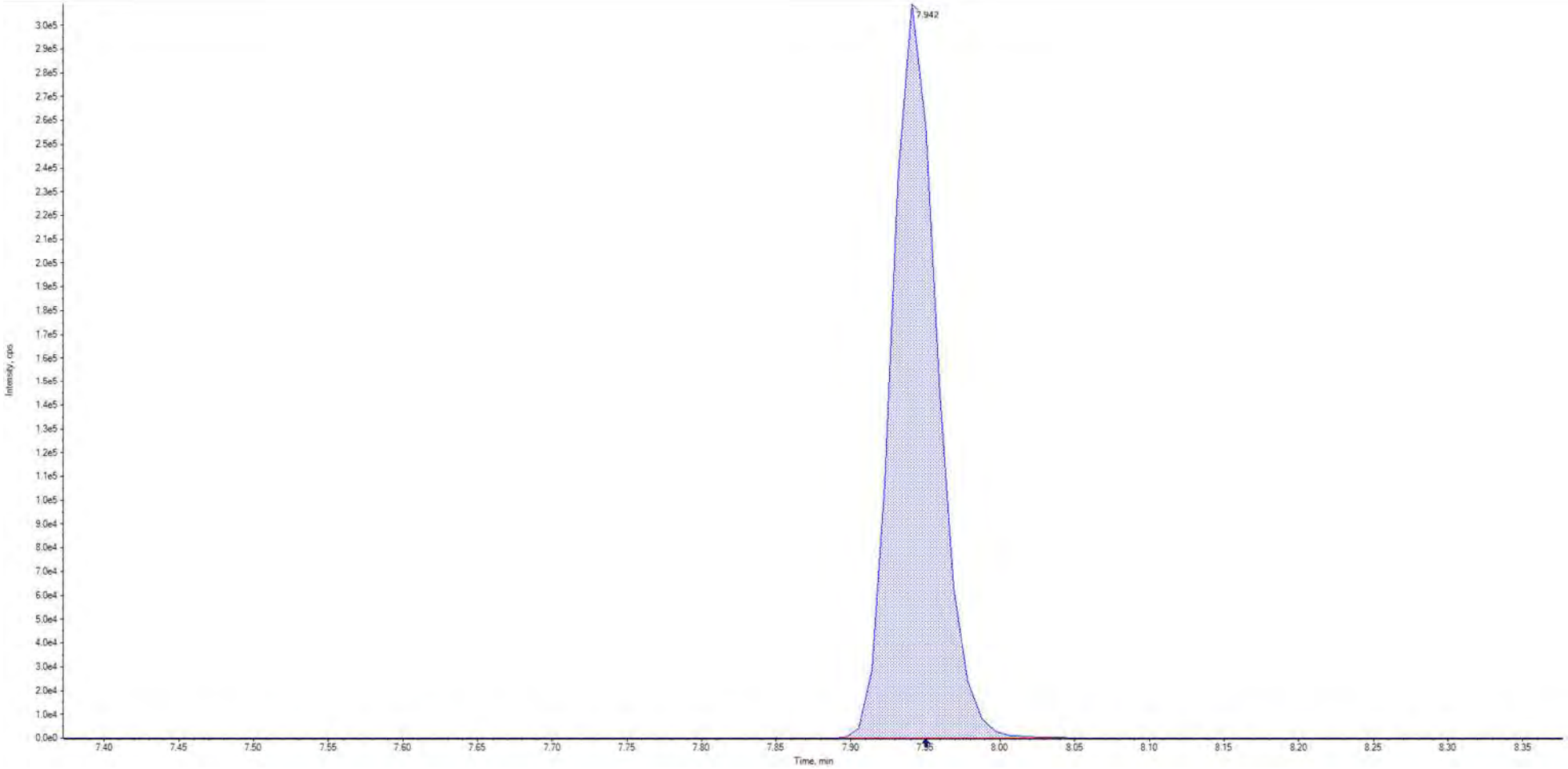
13C2-PFHxA
Sample: WG1958909-5,BSICS



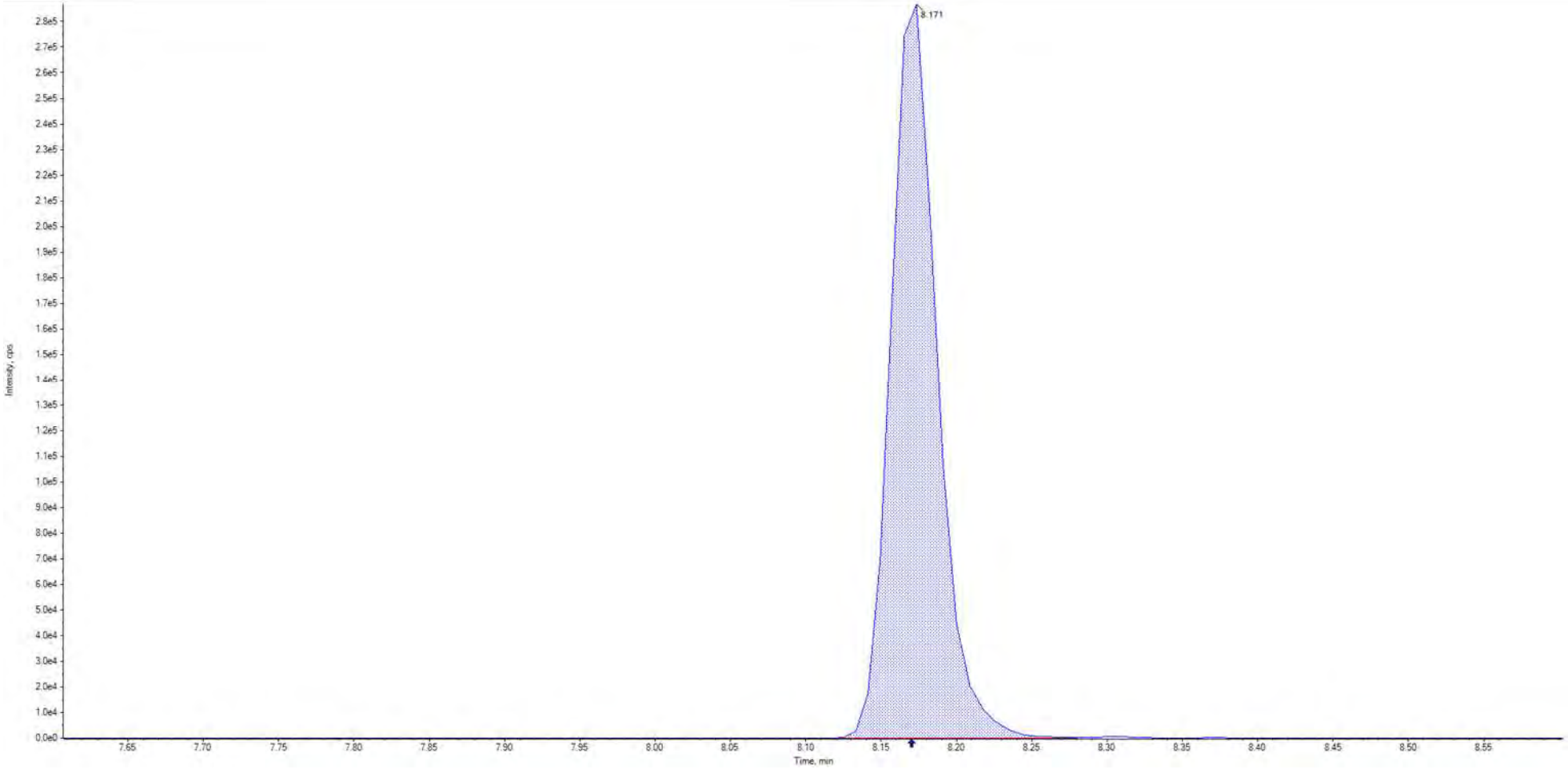
13C4-PFOA
Sample: WG1958909-5,BSICS



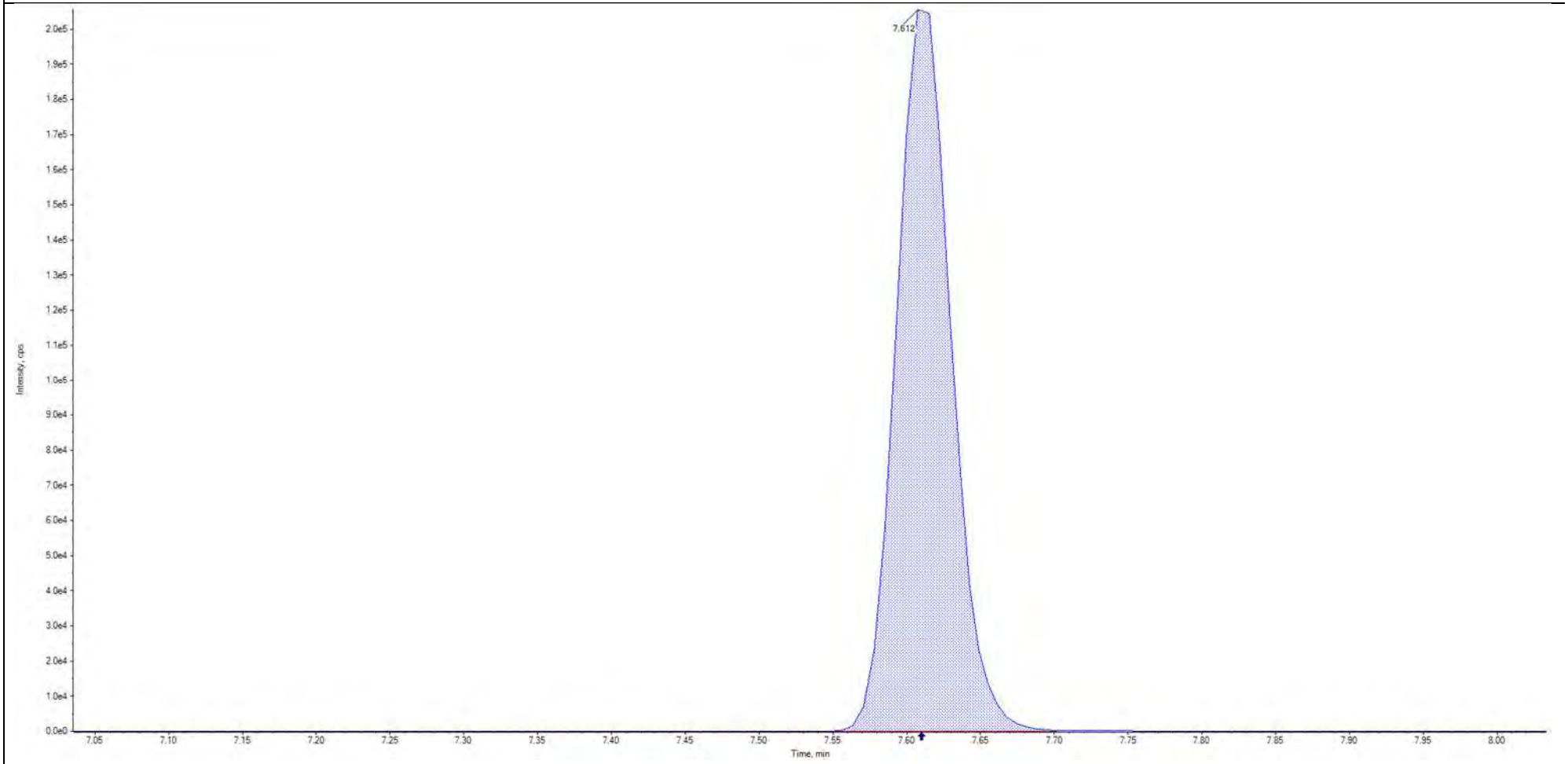
13C5-PFNA
Sample: WG1958909-5,BSICS



13C2-PFDA
Sample: WG1958909-5,BSICS



18O2-PFHxS
Sample: WG1958909-5,BSICS



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_83.wiff
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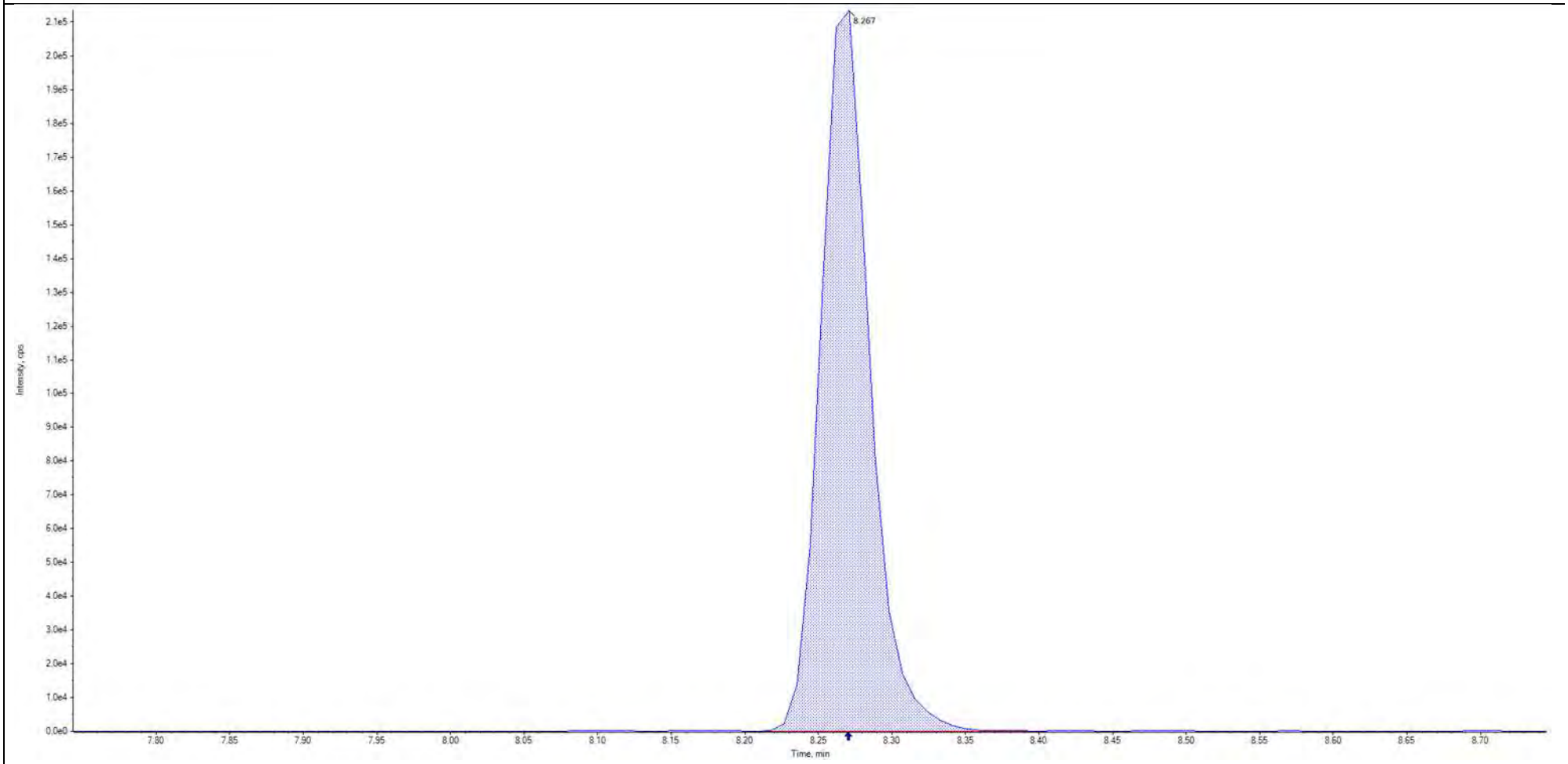
Generated: 8/14/2024 9:40:32 AM

13C4-PFOS
Sample: WG1958909-5,BSICS



Quantity Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_83.wiff
Last Altered: 8/14/2024 10:29:12 AM
Generated: 8/14/2024 9:40:32 AM

Method: EPA1633_NIS_CALC.qmethod
Calibration: 240813_1633_ICAL

ID: WG1958909-4,TRS
Name: SCI05_240813_83.wiff
Date & Time: 2024-08-14T00:23:18
Description: WG1958909
Instrument: Triple Quad 5500+
User: LCMS05:SL

LC/MS-MS Method:EPA_1633.dam

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
8	PFOA	335-67-1	7.50	413.1 / 369.1	4243897	M5	13.885	0.561	0.586	Pass	N/A
9	PFOA_2	335-67-1	7.50	413.1 / 169.0	2379191	M7	14.207	0.561	0.586	Pass	N/A
10	PFNA	375-95-1	7.95	462.8 / 418.9	6089110	M5	16.017	0.302	0.313	Pass	N/A
11	PFNA_2	375-95-1	7.95	462.8 / 218.9	1841643	M7	15.852	0.302	0.313	Pass	N/A
44	PFOSA	754-91-6	9.55	498.1 / 78.1	3770193	M5	15.172	0.025	0.025	Pass	N/A
45	PFOSA_2	754-91-6	9.55	498.1 / 478.0	93144	M7	14.286	0.025	0.025	Pass	N/A
46	NMeFOSA	31506-32-8	10.17	512.2 / 219.0	857015	M5	12.515	1.482	1.551	Pass	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
47	NMeFOSA_2	31506-32-8	10.13	512.2 / 169.0	1270260	M7	11.971	1.482	1.551	Pass	N/A
48	NEtFOSA	4151-50-2	10.38	526.2 / 219.0	855834	M5	12.796	1.315	1.285	Pass	N/A
49	NEtFOSA_2	4151-50-2	10.34	526.2 / 169.0	1125480	M7	12.571	1.315	1.285	Pass	N/A
54	NMeFOSE	24448-09-7	10.08	616.1 / 58.9	1716403	M5	15.488	N/A	N/A	N/A	N/A
55	NEtFOSE	1691-99-2	10.28	630.0 / 58.9	3015822	M5	14.450	N/A	N/A	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C4-PFBA	EIS	2.89	217.0 / 172.0	2473265		9.854	NA	NA	NA	98.5
	13C5-PFPeA	EIS	4.64	268.0 / 223.0	1561160		5.006	NA	NA	NA	100.1
	13C5-PFHxA	EIS	5.33	318.0 / 273.0	958278		2.340	NA	NA	NA	93.6
	13C4-PFHpA	EIS	6.25	367.0 / 322.0	994170		2.424	NA	NA	NA	97.0

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C8-PFOA	EIS	7.50	421.0 / 376.0	1468648		2.632	NA	NA	NA	105.3
	13C9-PFNA	EIS	7.94	472.0 / 427.0	649183		1.205	NA	NA	NA	96.4
	13C6-PFDA	EIS	8.17	519.0 / 474.0	677177		1.288	NA	NA	NA	103.1
	13C7-PFUnA	EIS	8.47	570.0 / 525.0	563590		1.325	NA	NA	NA	106.0
	13C2-PFDoA	EIS	8.90	615.1 / 570.0	340864		1.232	NA	NA	NA	98.6
	13C2-PFTeDA	EIS	9.90	715.1 / 670.1	371241		1.236	NA	NA	NA	98.9
	13C3-PFBS	EIS	5.31	302.1 / 80.1	709845		2.139	NA	NA	NA	91.8
	13C3-PFHxS	EIS	7.61	402.1 / 80.1	634410		2.407	NA	NA	NA	101.6

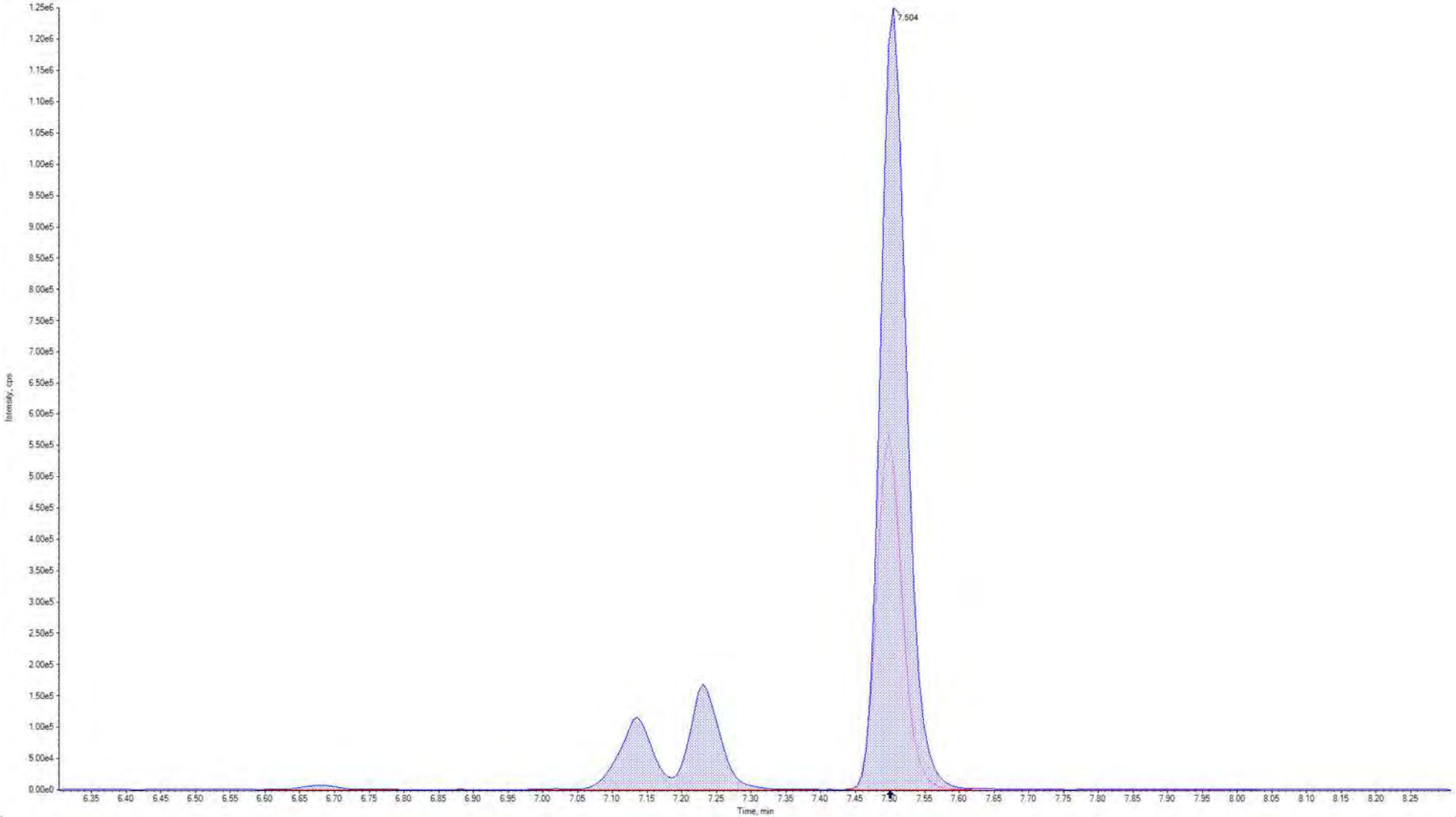
Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
13C8-PFOS	EIS	8.27	507.1 / 80.1	661873		2.353	NA	NA	NA	98.3
13C2-4:2FTS	EIS	5.13	329.1 / 81.1	289614		4.890	NA	NA	NA	104.3
13C2-6:2FTS	EIS	7.09	429.2 / 81.1	197203		4.543	NA	NA	NA	95.6
13C2-8:2FTS	EIS	8.07	529.2 / 81.1	299092		4.708	NA	NA	NA	98.1
13C8-PFOSA	EIS	9.54	506.1 / 78.1	929502		2.486	NA	NA	NA	99.4
d3-NMeFOSA	EIS	10.16	515.2 / 219.0	159881		2.540	NA	NA	NA	101.6
d5-NEtFOSA	EIS	10.37	531.2 / 219.0	152252		2.476	NA	NA	NA	99.1

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	d3-NMeFOSAA	EIS	8.22	573.2 / 419.1	347283		2.441	NA	NA	NA	48.8
	d5-NEtFOSAA	EIS	8.36	589.3 / 419.1	375431		5.021	NA	NA	NA	100.4
	d7-NMeFOSE	EIS	10.07	623.2 / 58.9	1123032		23.105	NA	NA	NA	92.4
	d9-NEtFOSE	EIS	10.26	639.2 / 58.9	1777891		24.809	NA	NA	NA	99.2
	13C3-HFPO-DA	EIS	5.60	287.0 / 169.0	2730343		10.058	NA	NA	NA	100.6
	13C3-PFBA	NIS	2.89	216.0 / 172.0	1097957		5.135	NA	NA	NA	102.7
	13C2-PFHxA	NIS	5.33	315.0 / 270.0	1216174		2.484	NA	NA	NA	99.4
	13C4-PFOA	NIS	7.50	417.0 / 372.0	730115		2.332	NA	NA	NA	93.3

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C5-PFNA	NIS	7.94	468.0 / 423.0	656416		1.198	NA	NA	NA	95.9
	13C2-PFDA	NIS	8.17	515.1 / 470.1	617433		1.205	NA	NA	NA	96.4
	18O2-PFHxS	NIS	7.61	403.1 / 84.1	535768		2.287	NA	NA	NA	96.5
	13C4-PFOS	NIS	8.27	503.1 / 80.1	497485		2.363	NA	NA	NA	98.7

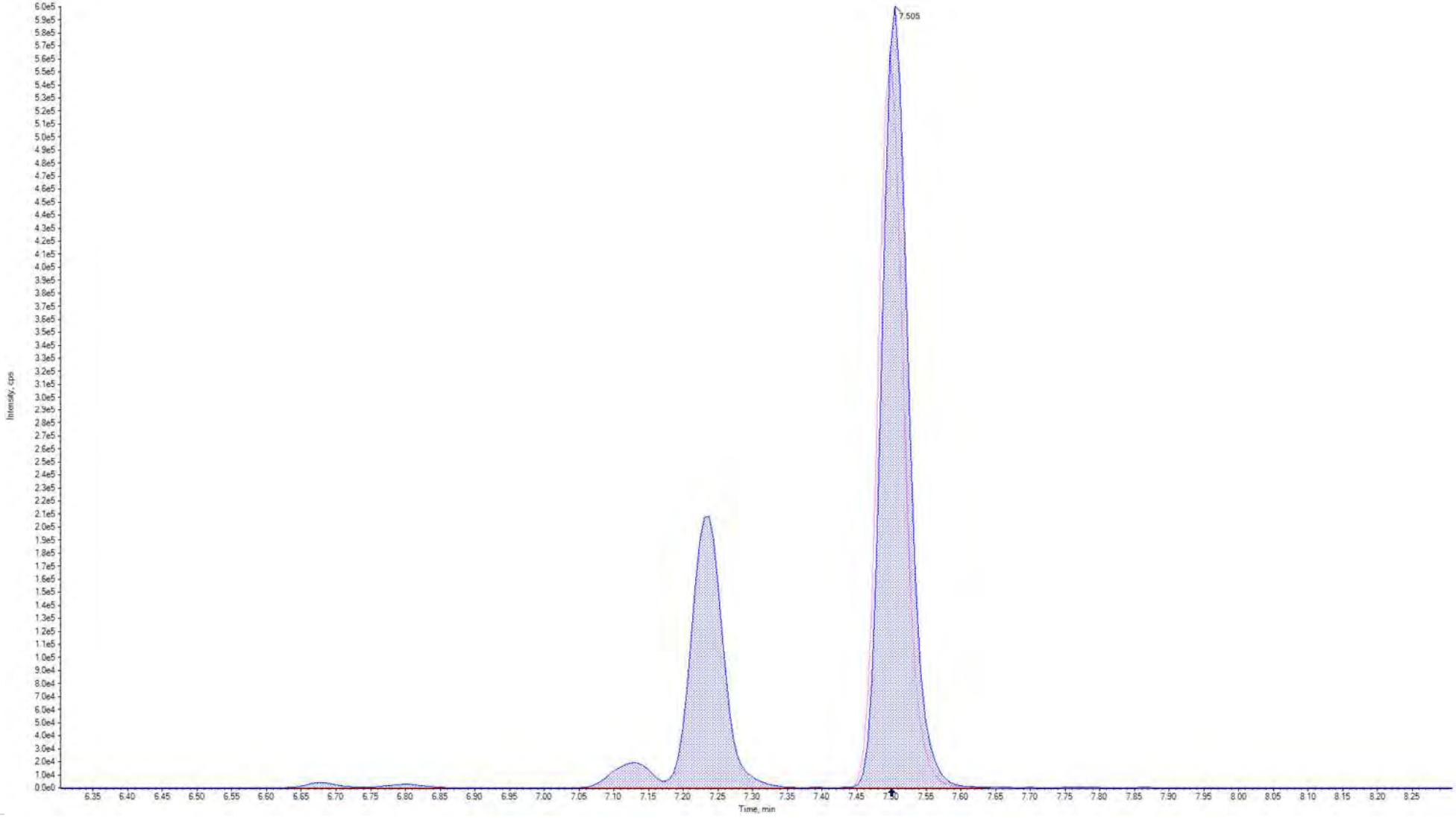
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_83.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFOA
Sample: WG1958909-4,TRS S/N:3358.2 Points Across peak:156



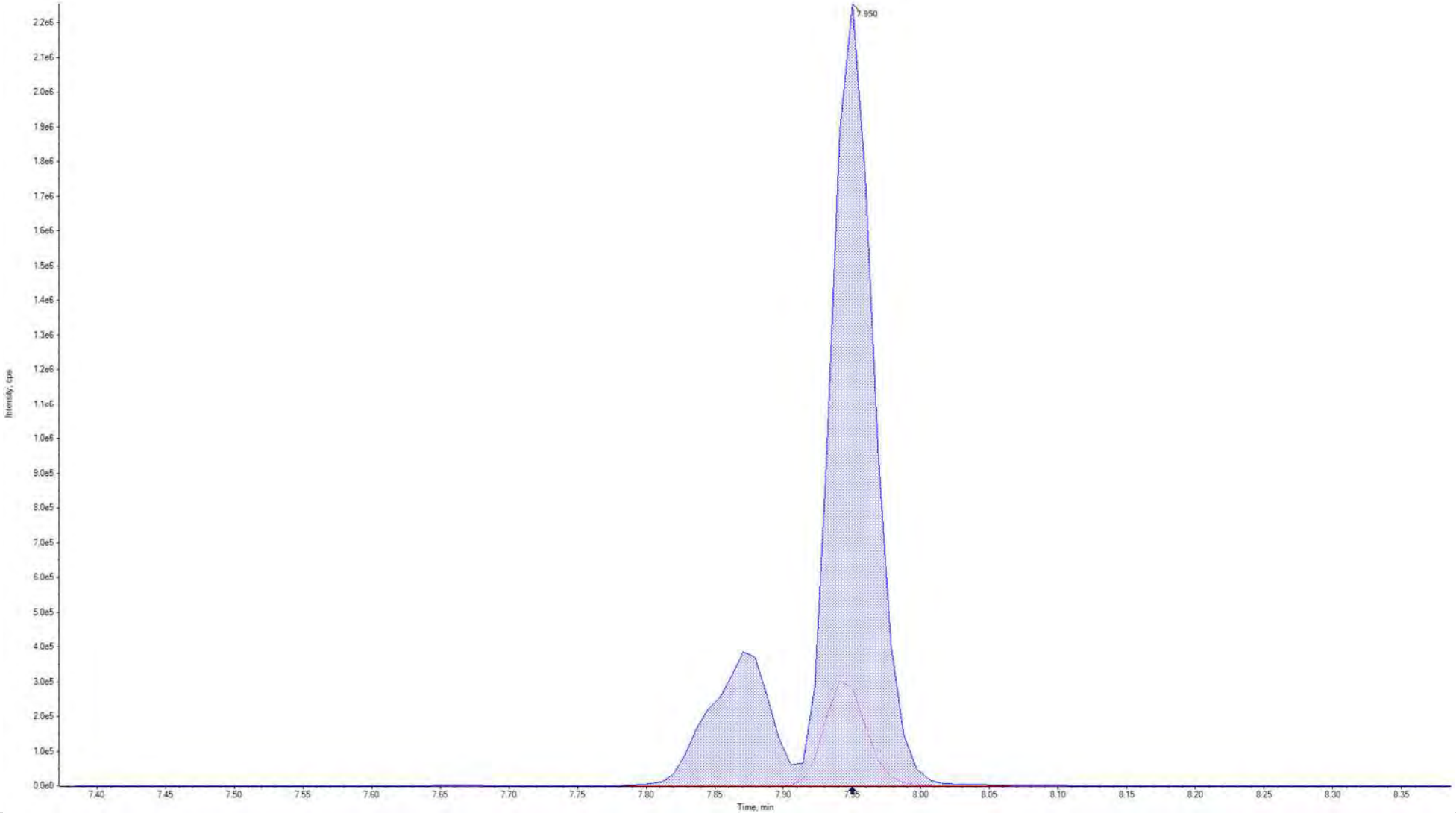
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_83.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFOA_2
Sample: WG1958909-4,TRS S/N:76317.2 Points Across peak:160



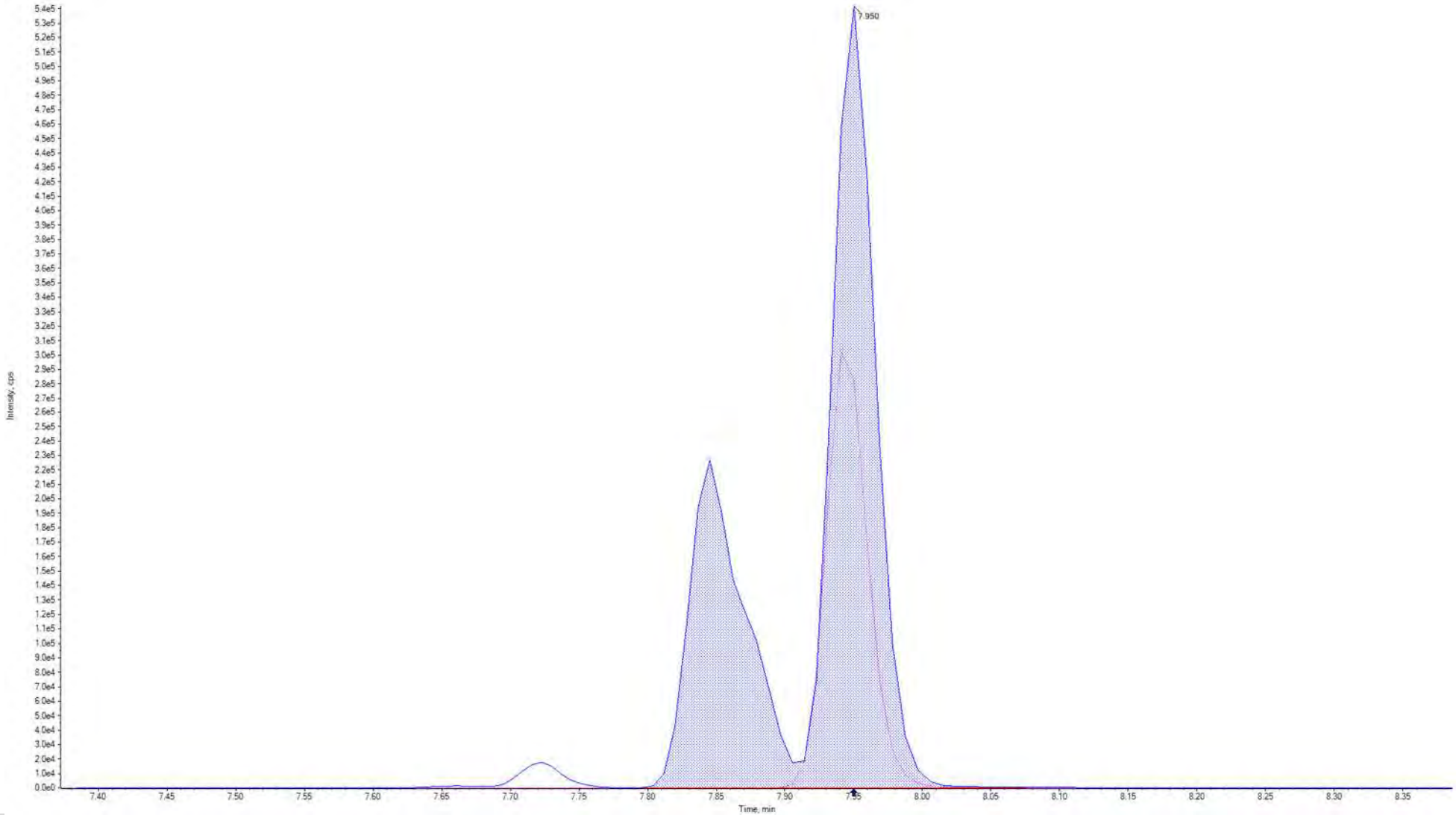
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_83.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFNA
Sample: WG1958909-4,TRS S/N:4059.4 Points Across peak:35



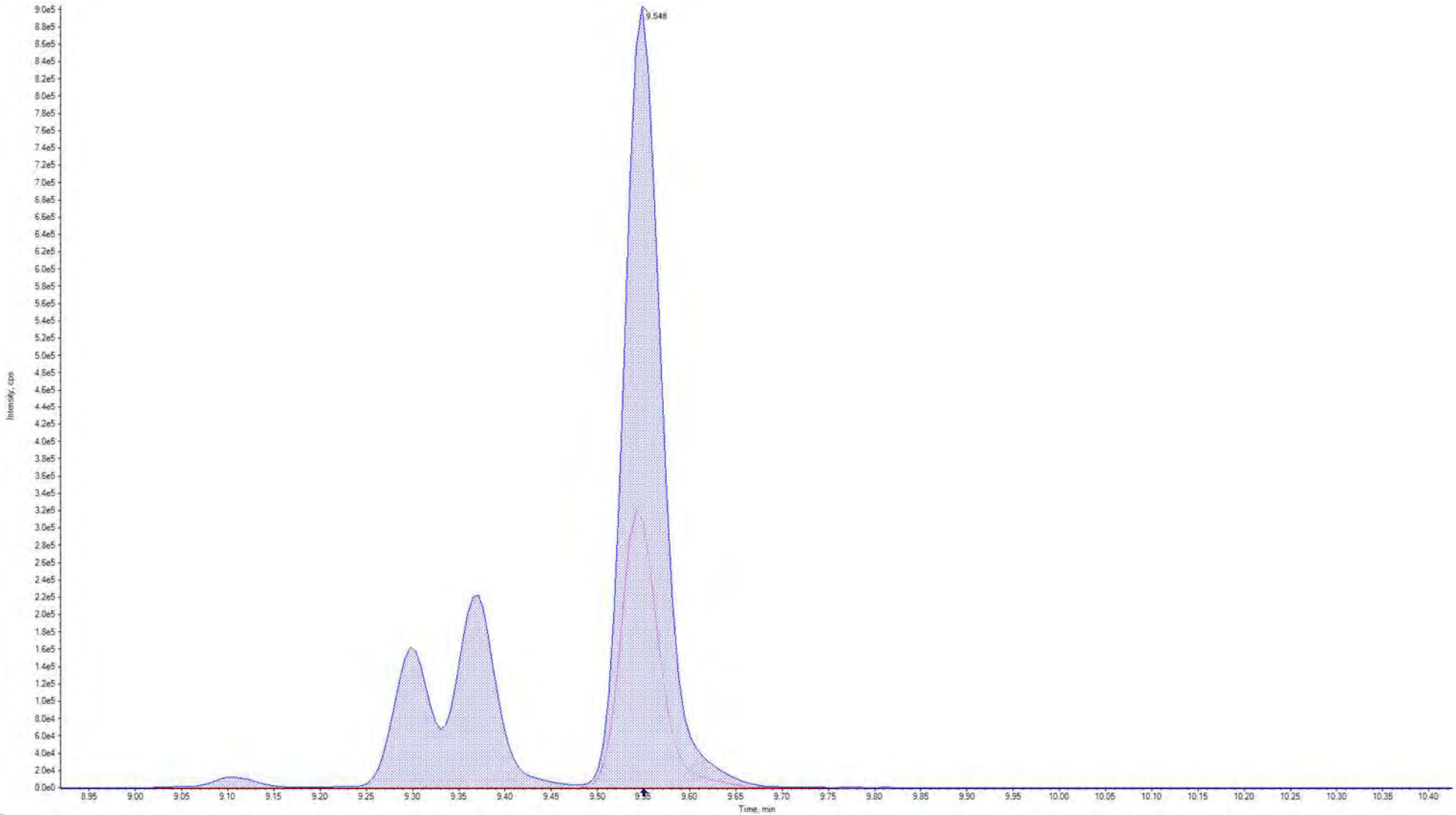
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_83.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFNA_2
Sample: WG1958909-4,TRS S/N:1284.2 Points Across peak:34



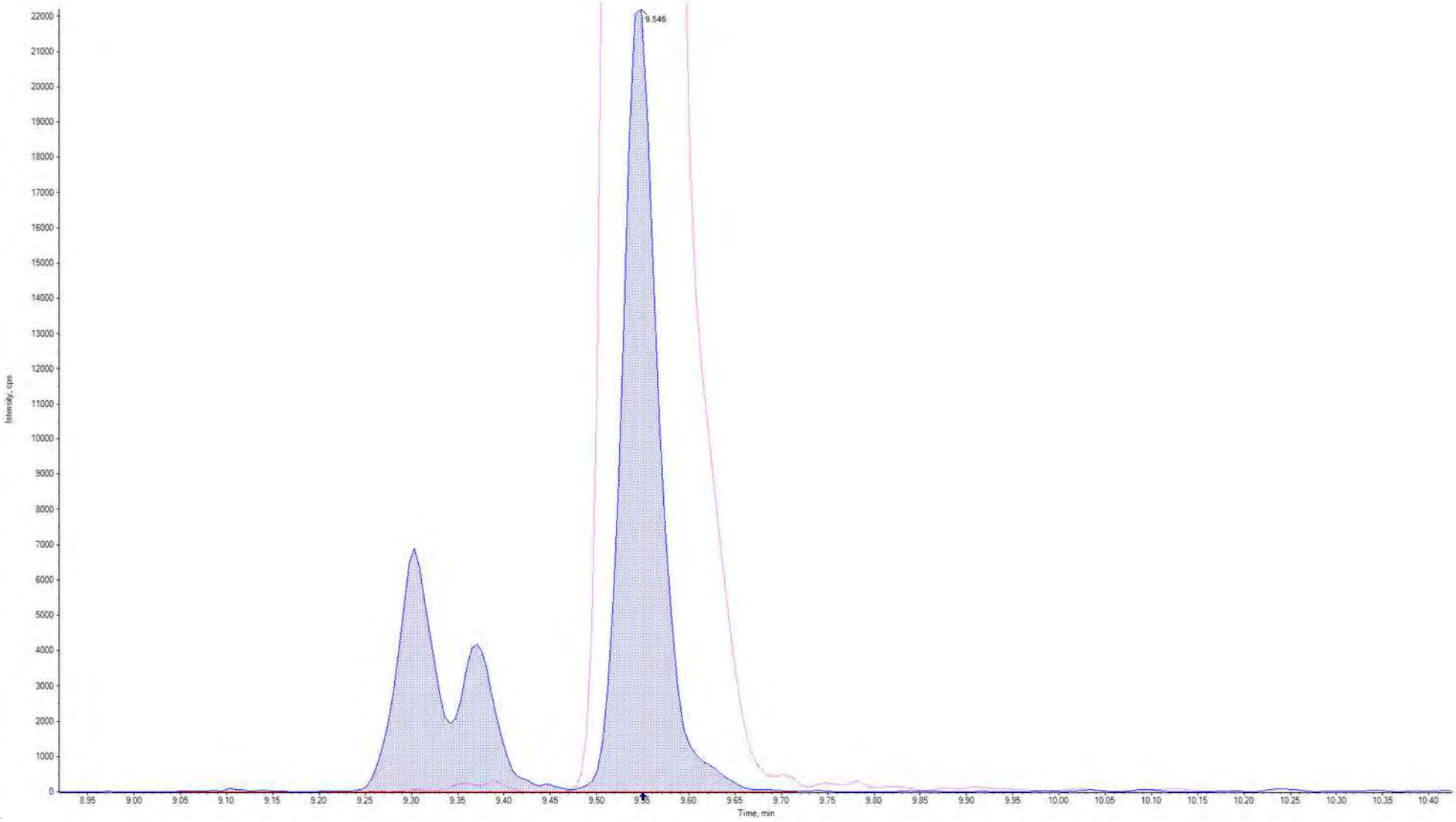
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_83.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFOSA
Sample: WG1958909-4,TRS S/N:12828.6 Points Across peak:130



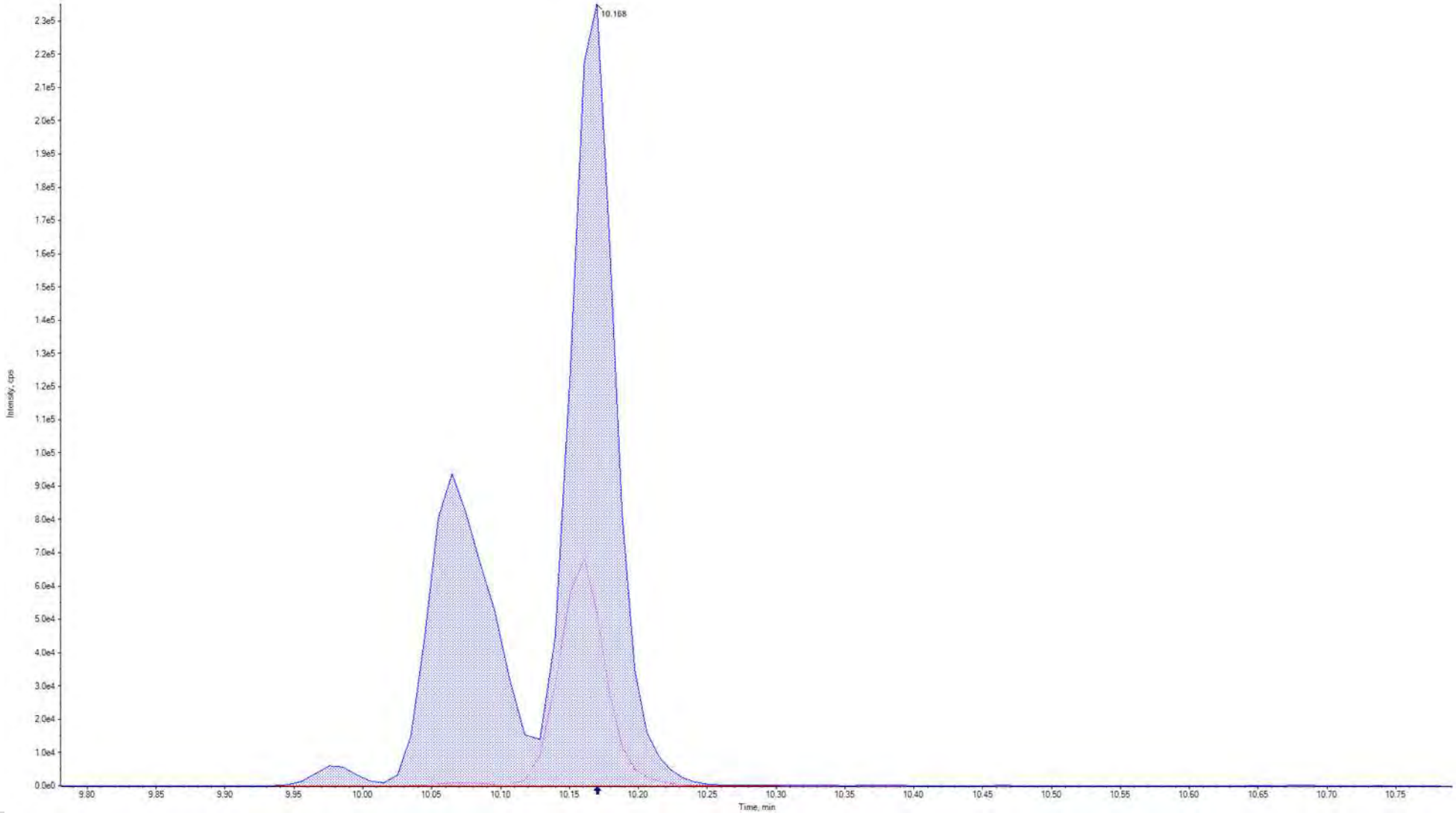
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_83.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFOSA_2
Sample: WG1958909-4,TRS S/N:990.9 Points Across peak:120



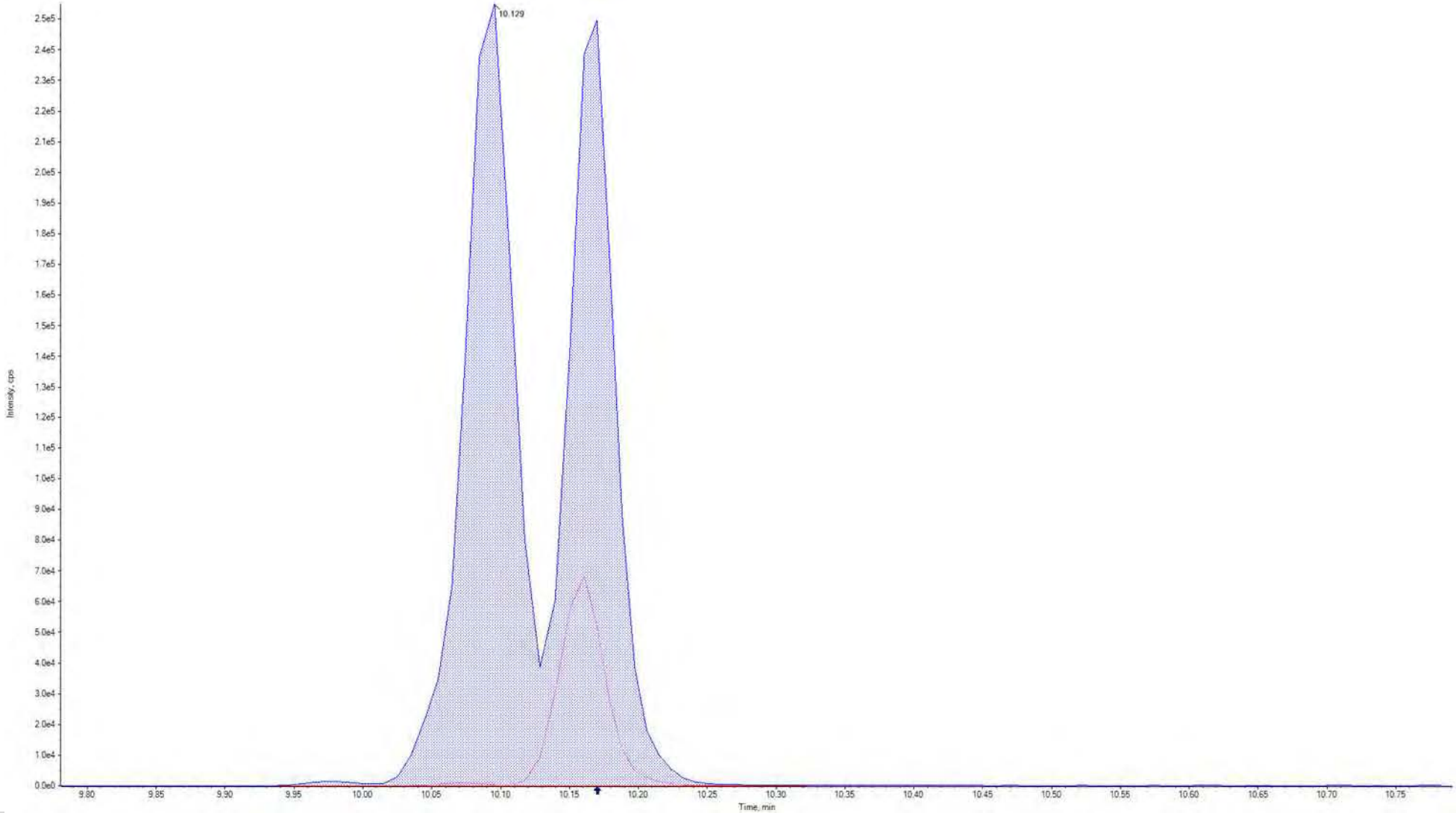
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_83.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NMeFOSA
Sample: WG1958909-4,TRS S/N:25795.5 Points Across peak:42



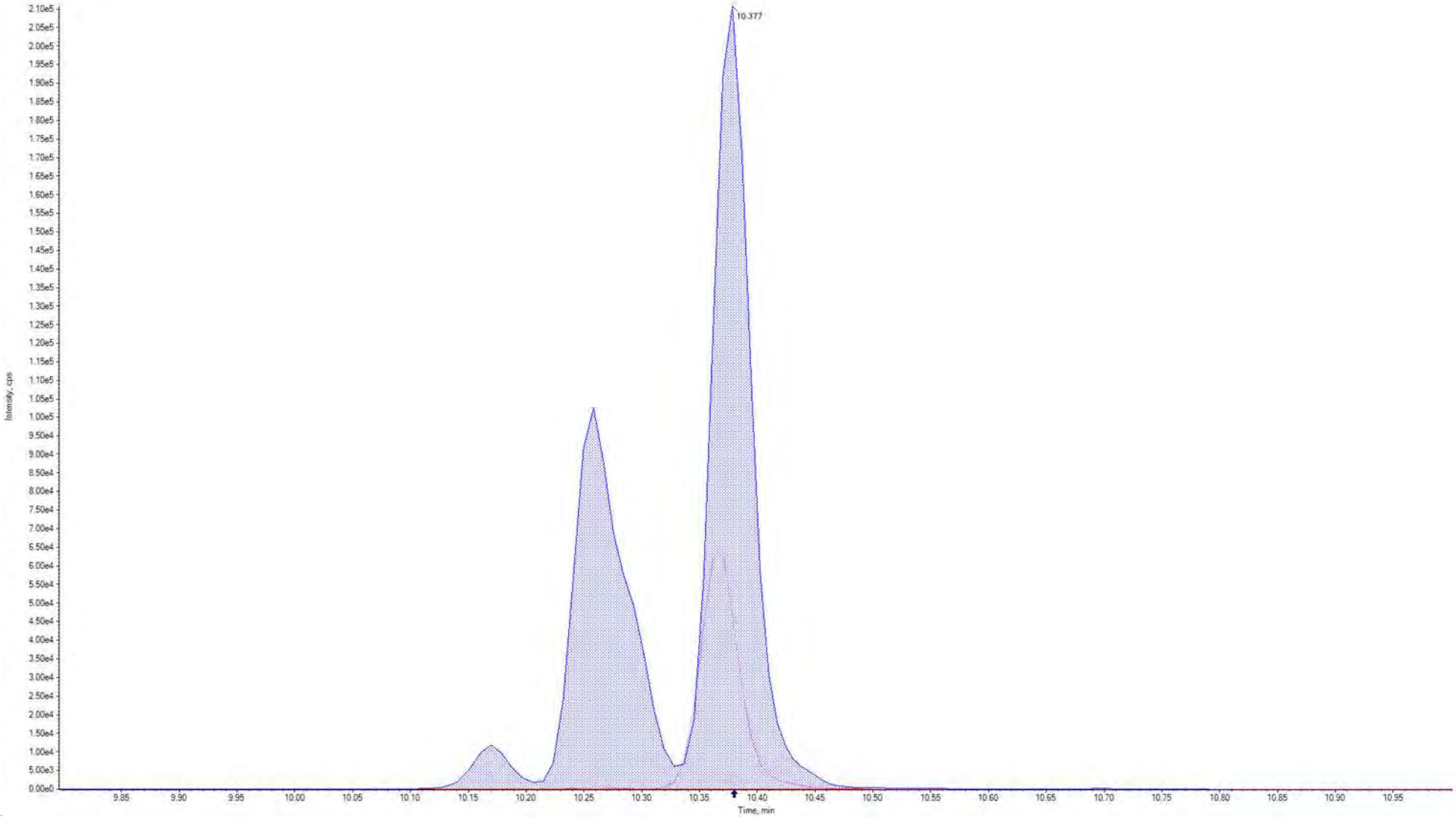
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_83.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NMeFOSA_2
Sample: WG1958909-4,TRS S/N:2694.7 Points Across peak:44



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_83.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NEtFOSA
Sample: WG1958909-4,TRS S/N:1064.8 Points Across peak:52



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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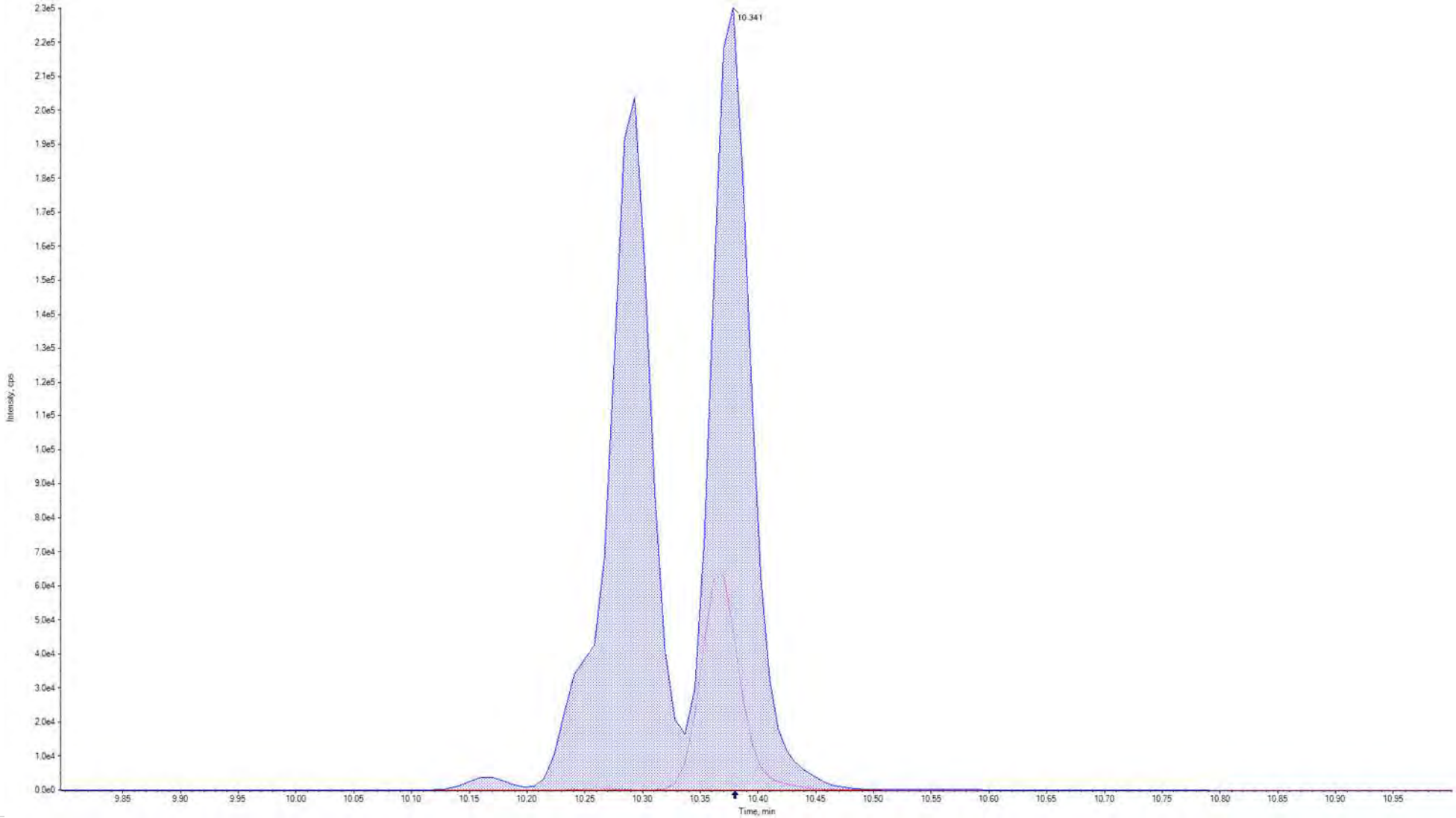
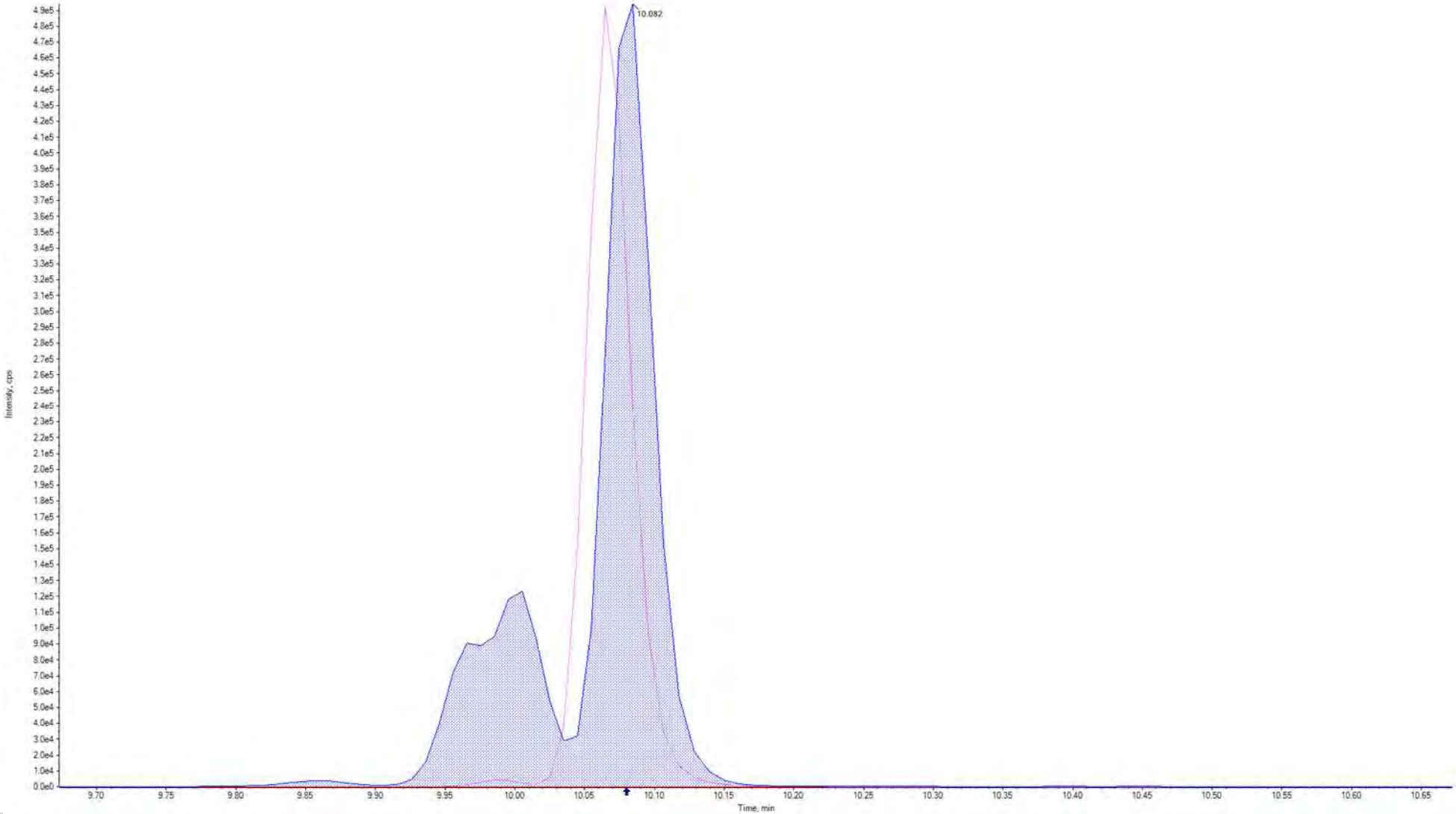
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NEtFOSA_2
Sample: WG1958909-4,TRS S/N:921710.0 Points Across peak:52



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_83.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NMeFOSE
Sample: WG1958909-4,TRS S/N:2670.5 Points Across peak:53



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_83.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NEtFOSE
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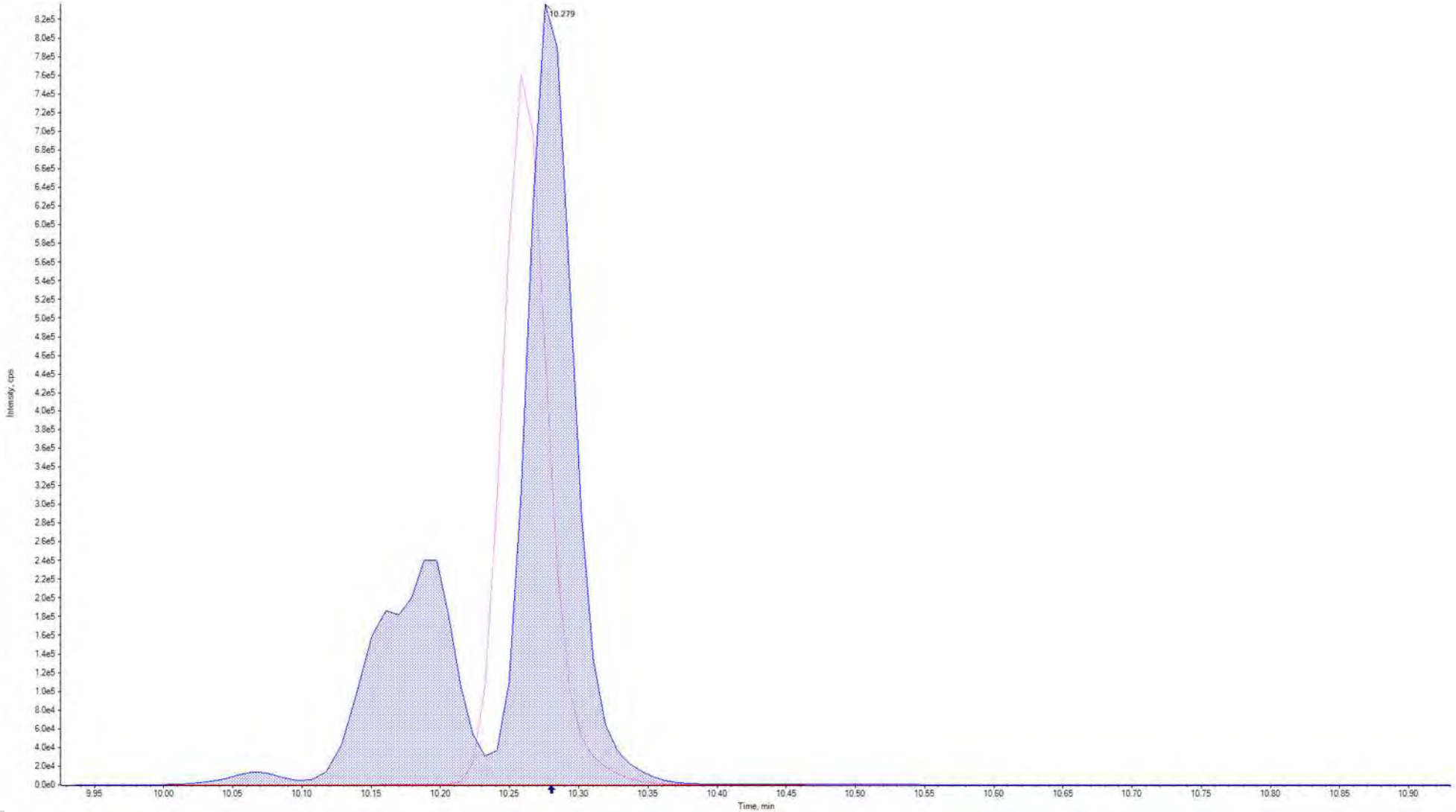
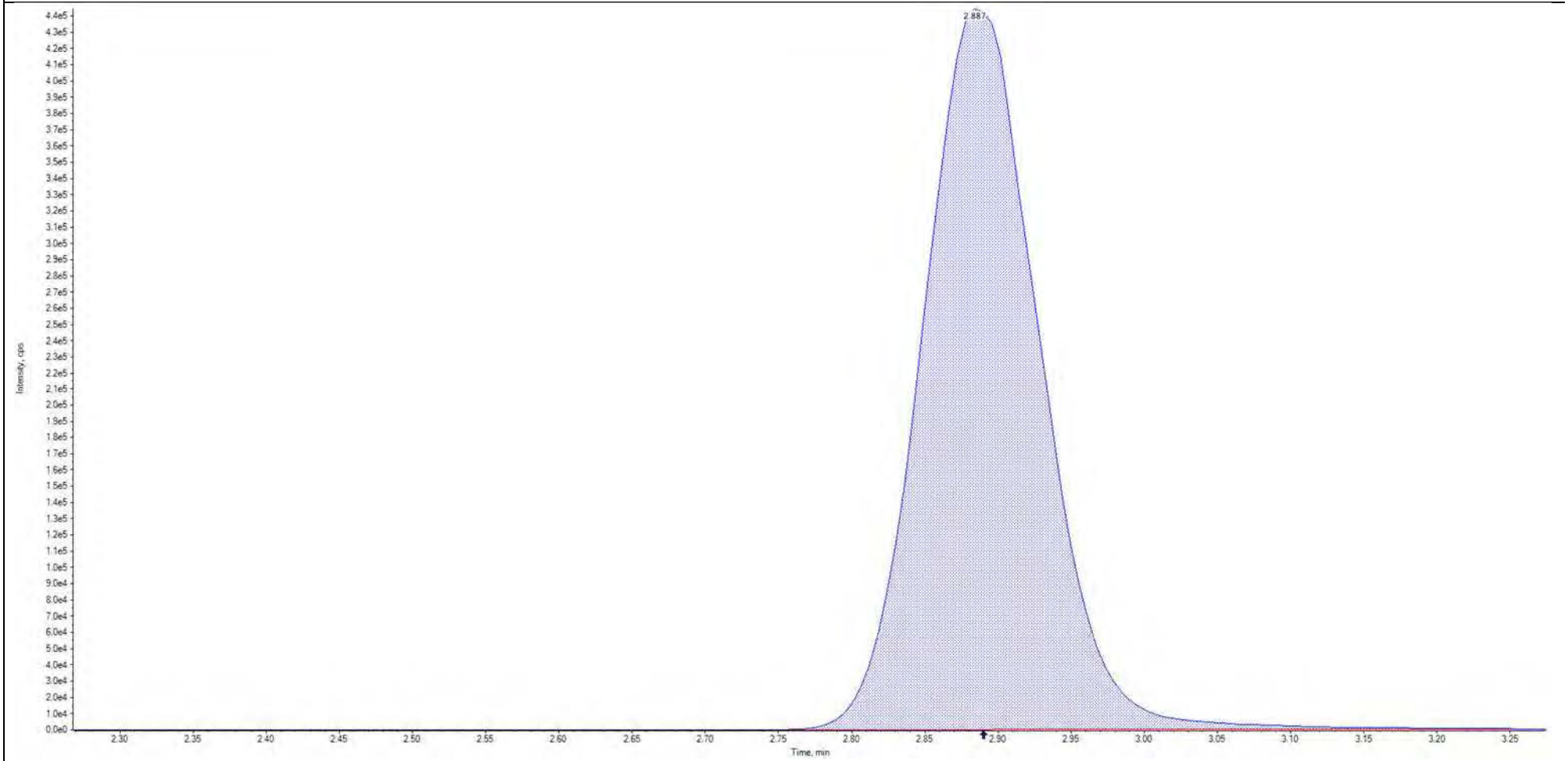
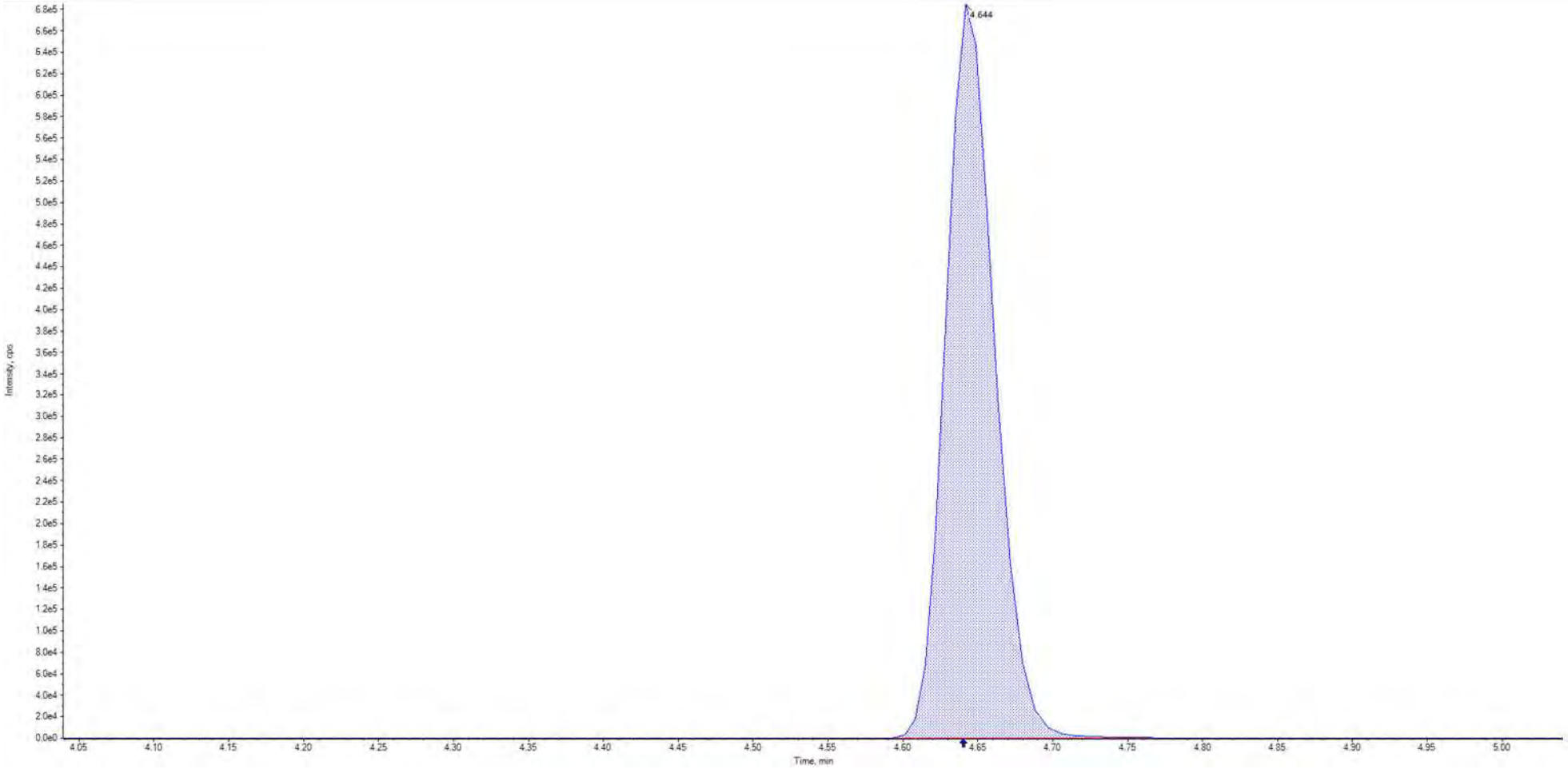


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_83.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

13C4-PFBA
Sample: WG1958909-4,TRS

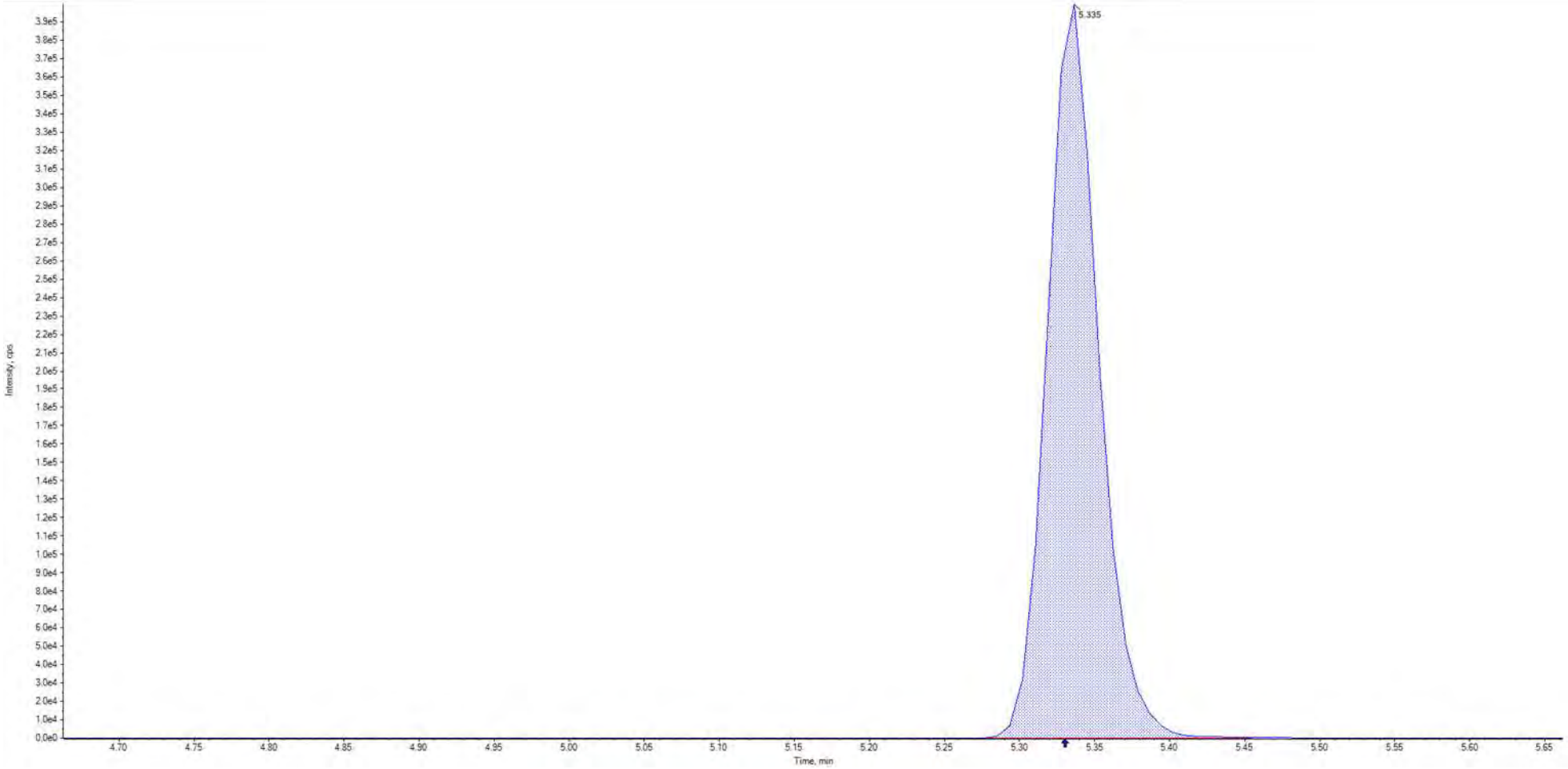


13C5-PFPeA
Sample: WG1958909-4,TRS

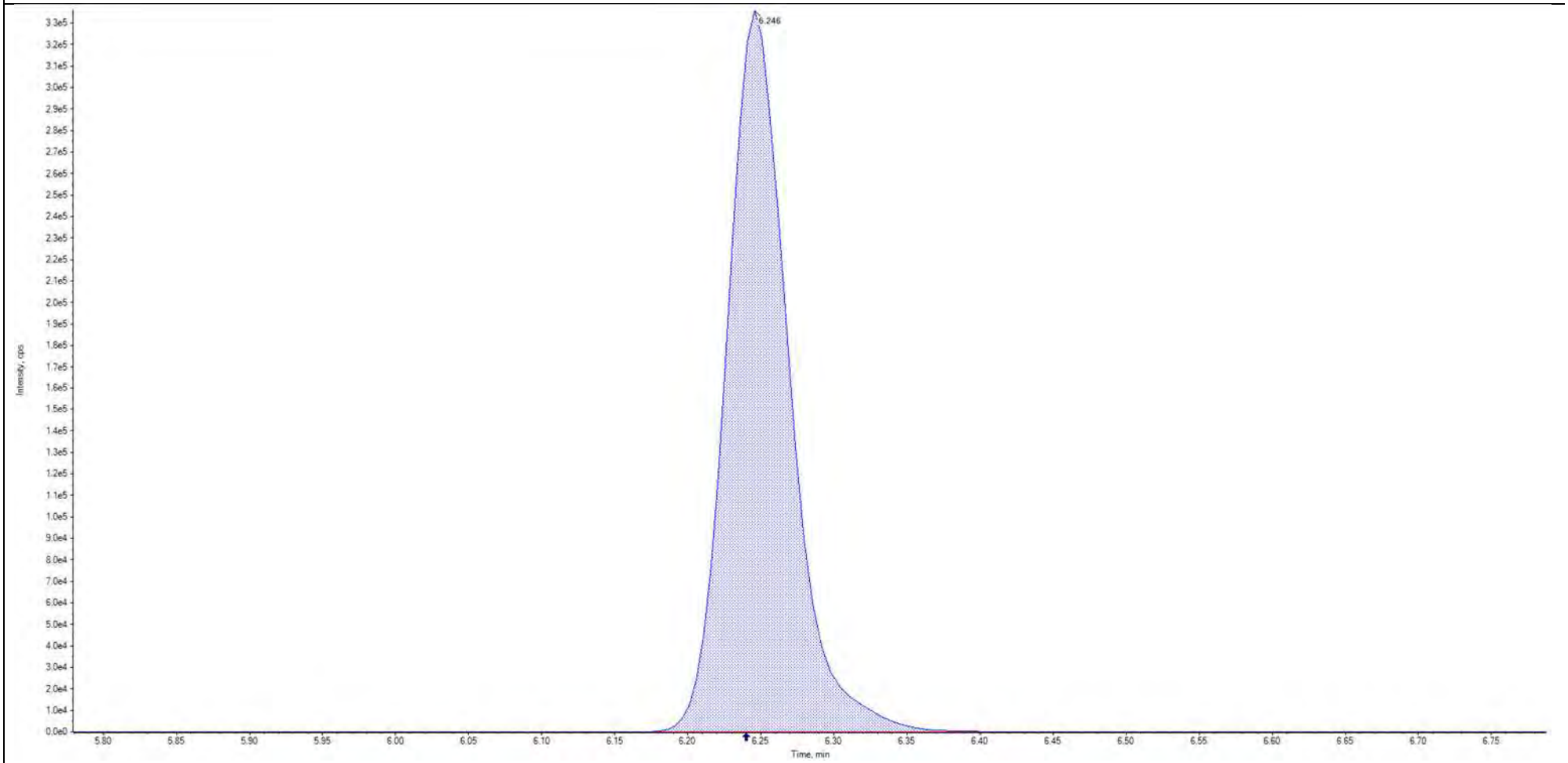


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_83.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

13C5-PFHxA
Sample: WG1958909-4,TRS



13C4-PFHpA
Sample: WG1958909-4,TRS



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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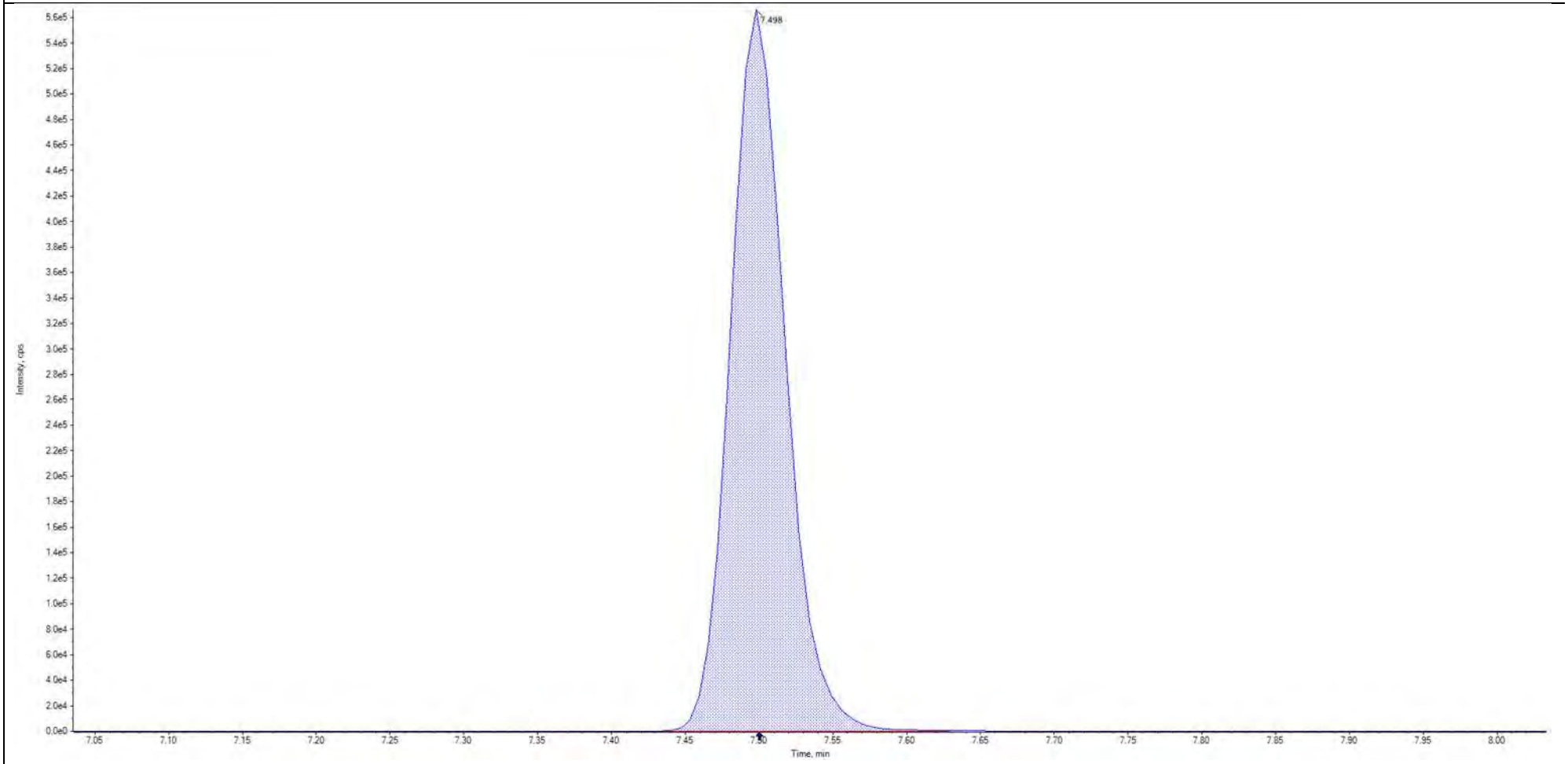
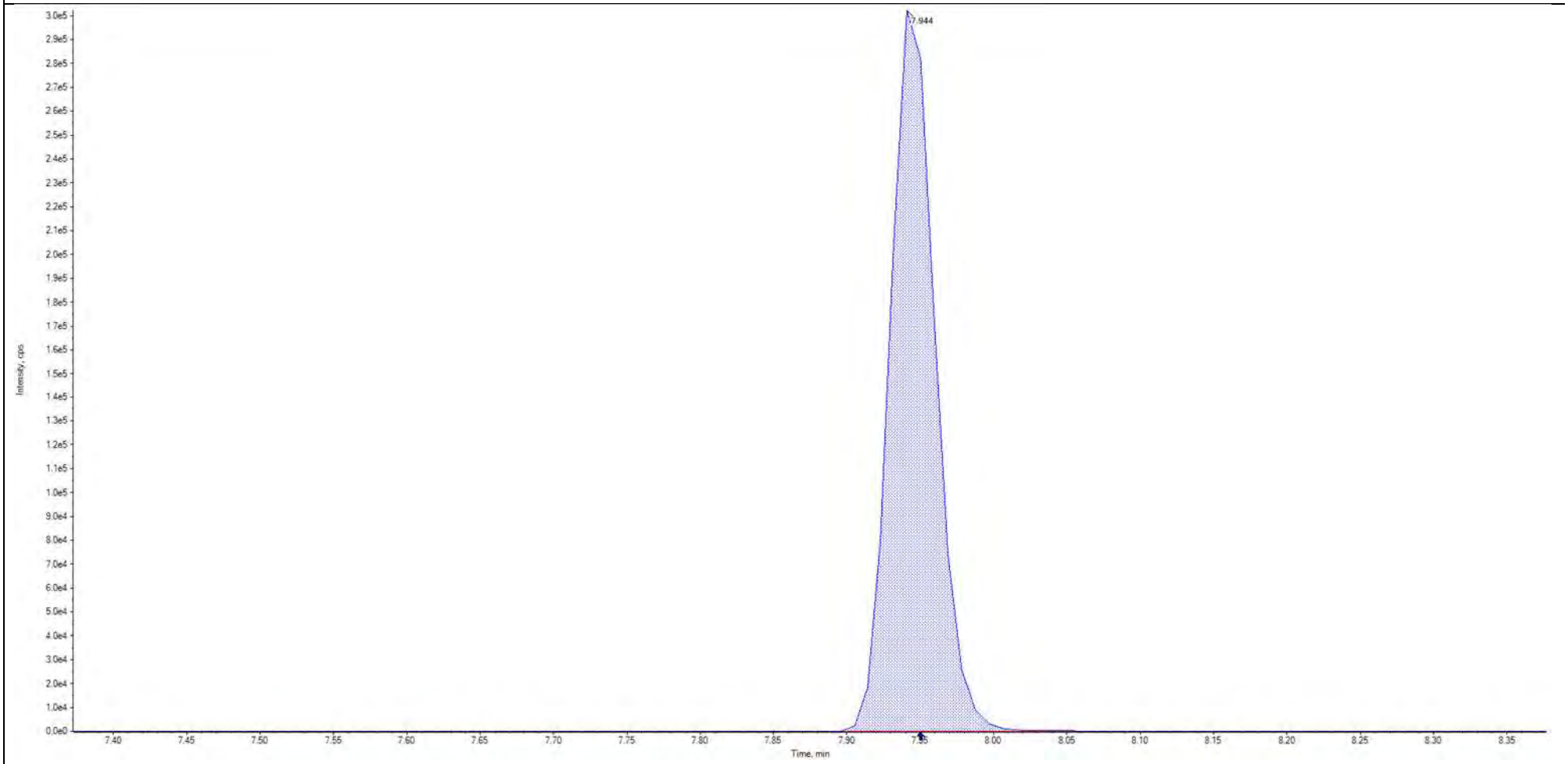
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

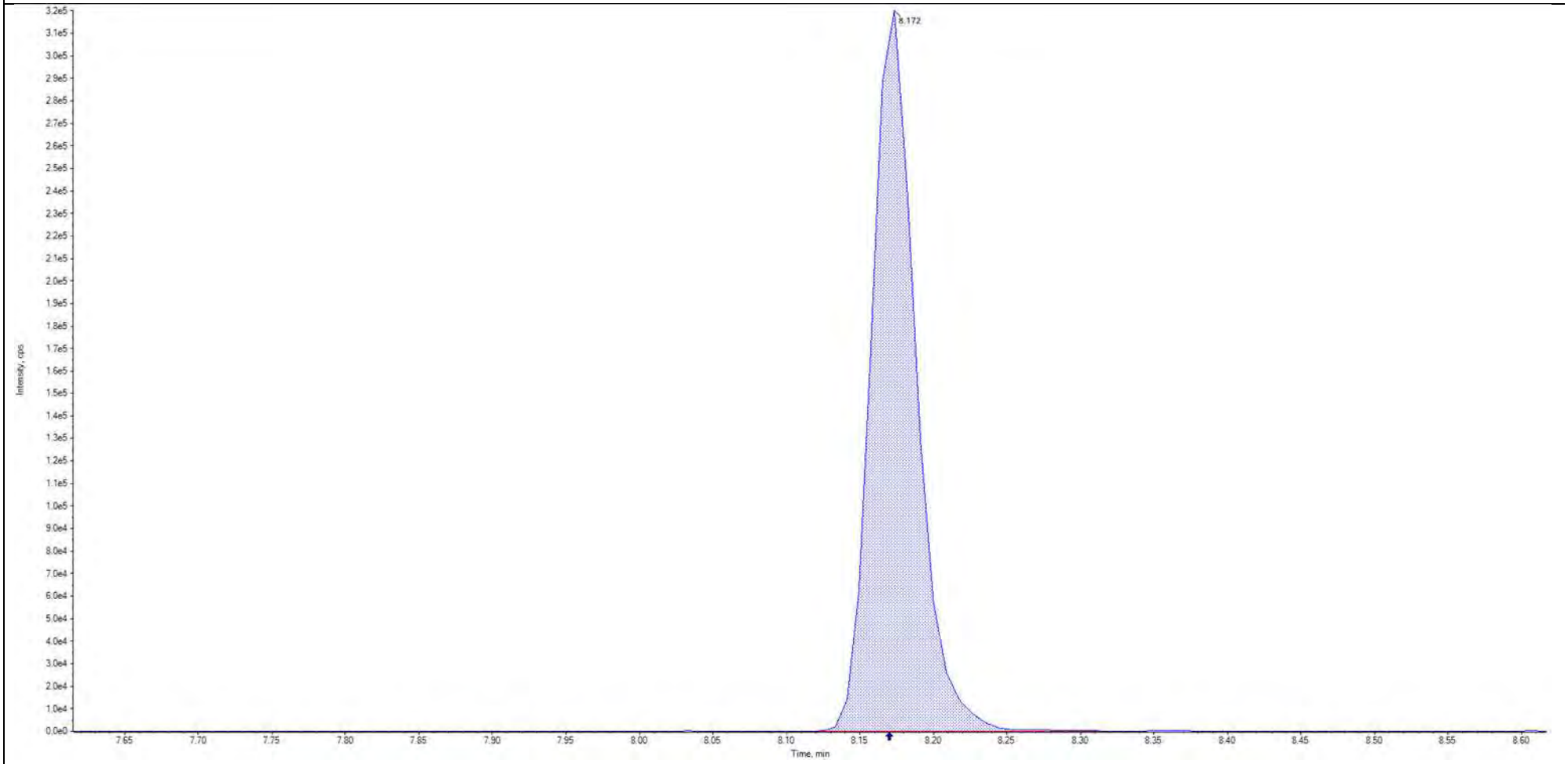
13C8-PFOA
Sample: WG1958909-4,TRS



13C9-PFNA
Sample: WG1958909-4,TRS



13C6-PFDA
Sample: WG1958909-4,TRS



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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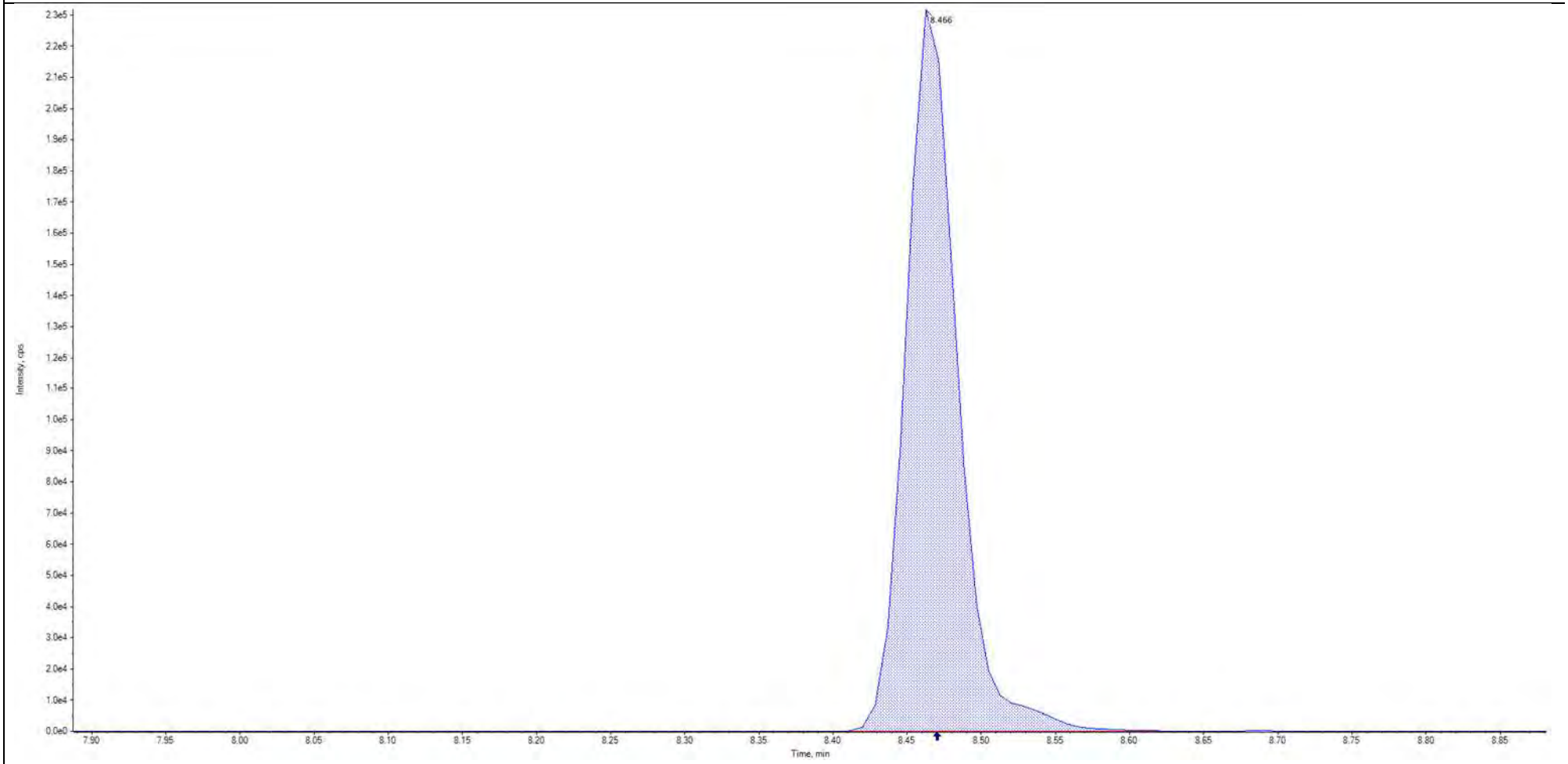
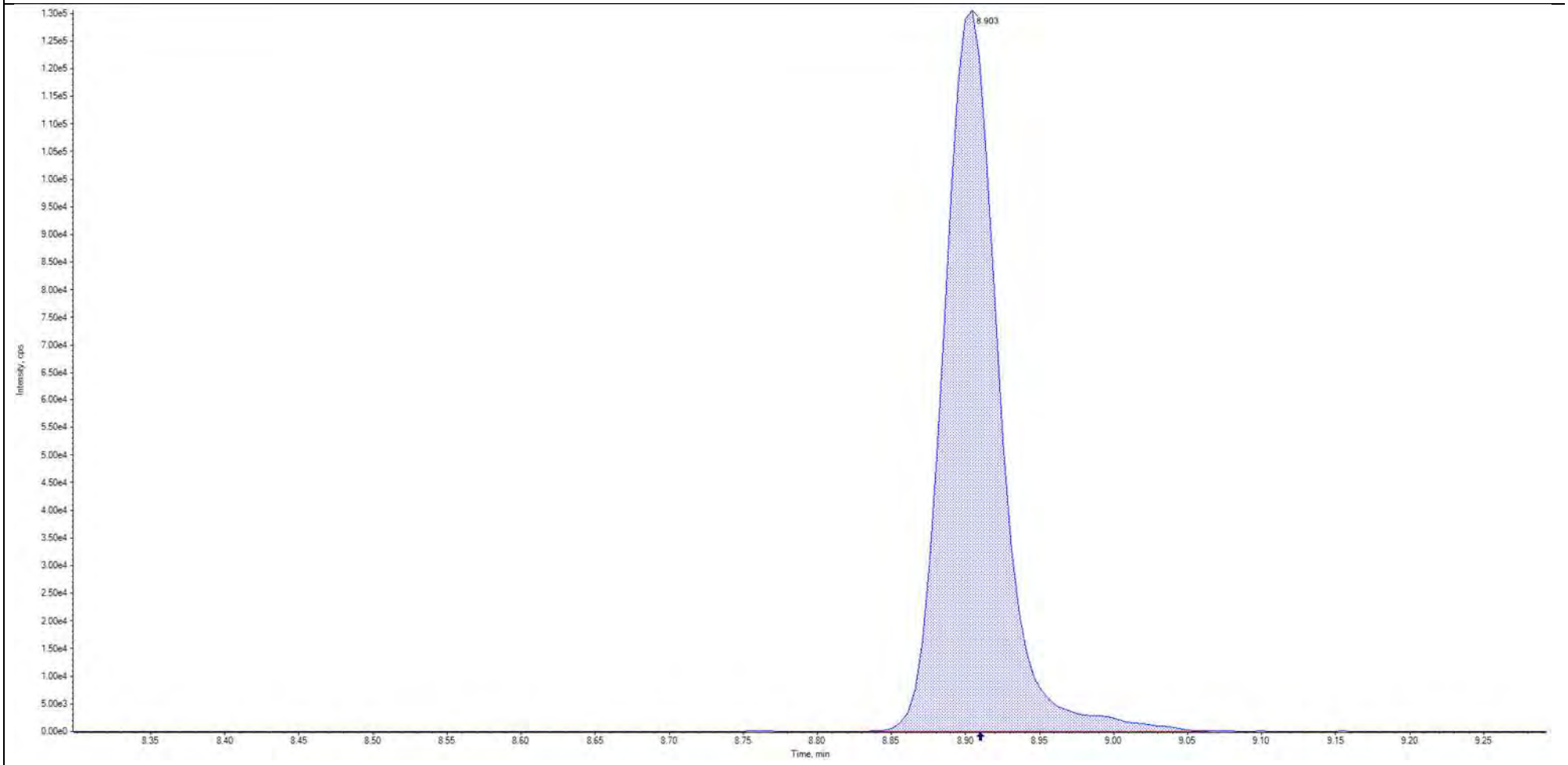
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

13C7-PFUnA
Sample: WG1958909-4,TRS



13C2-PFDoA
Sample: WG1958909-4,TRS



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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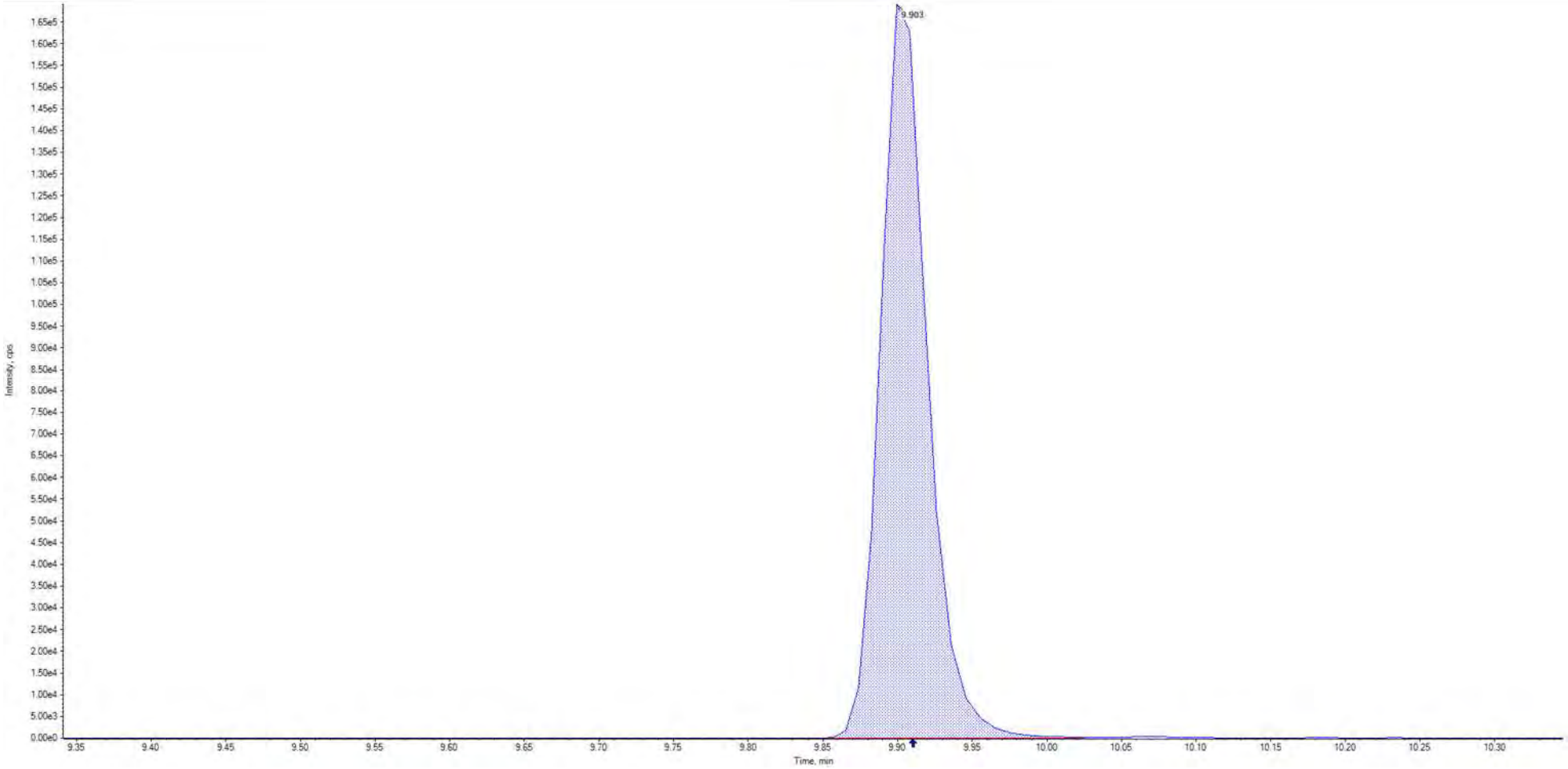
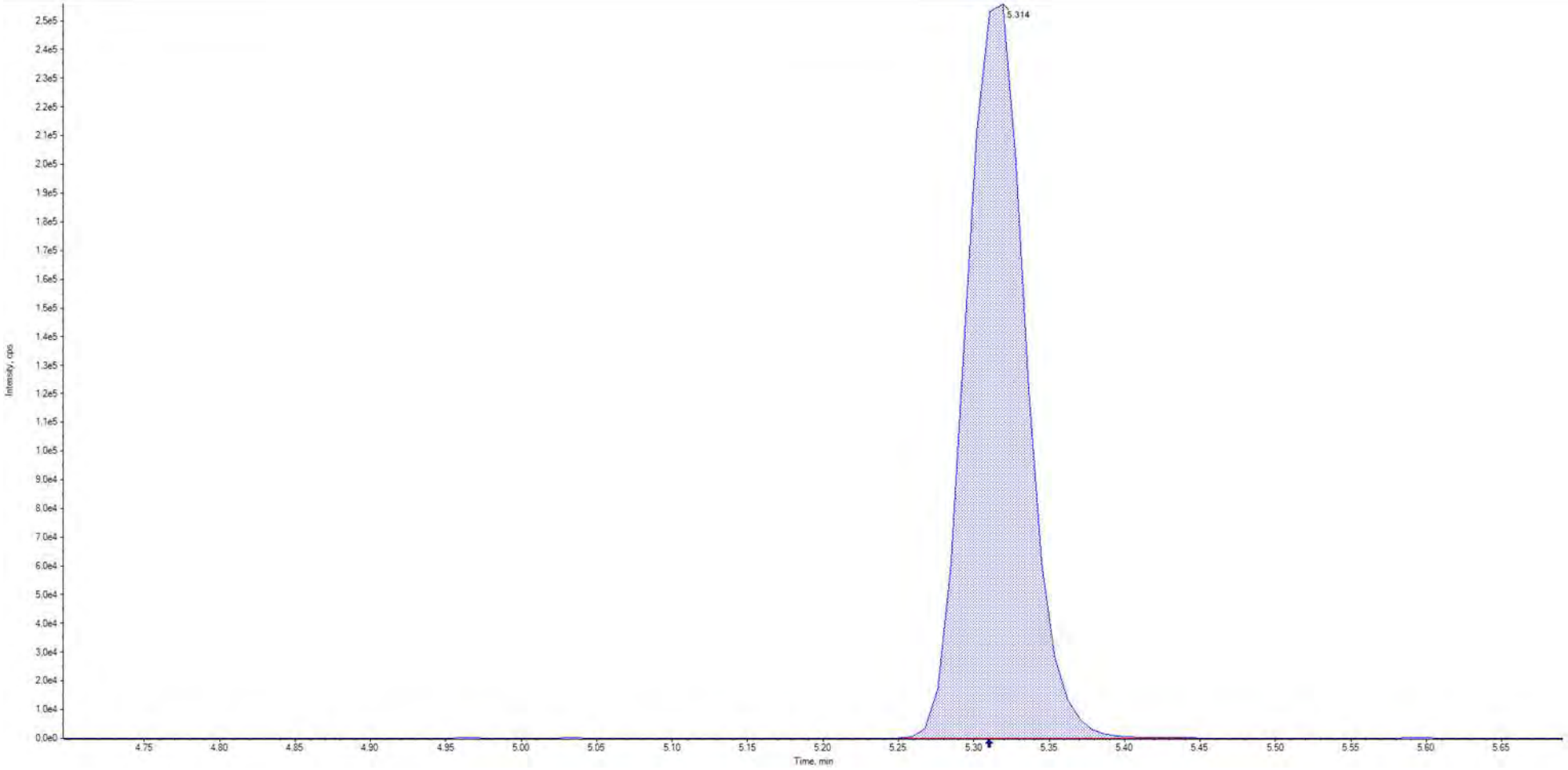
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

13C2-PFTeDA
Sample: WG1958909-4,TRS



13C3-PFBS
Sample: WG1958909-4,TRS



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_83.wiff
Last Altered: 8/14/2024 9:55:24 AM
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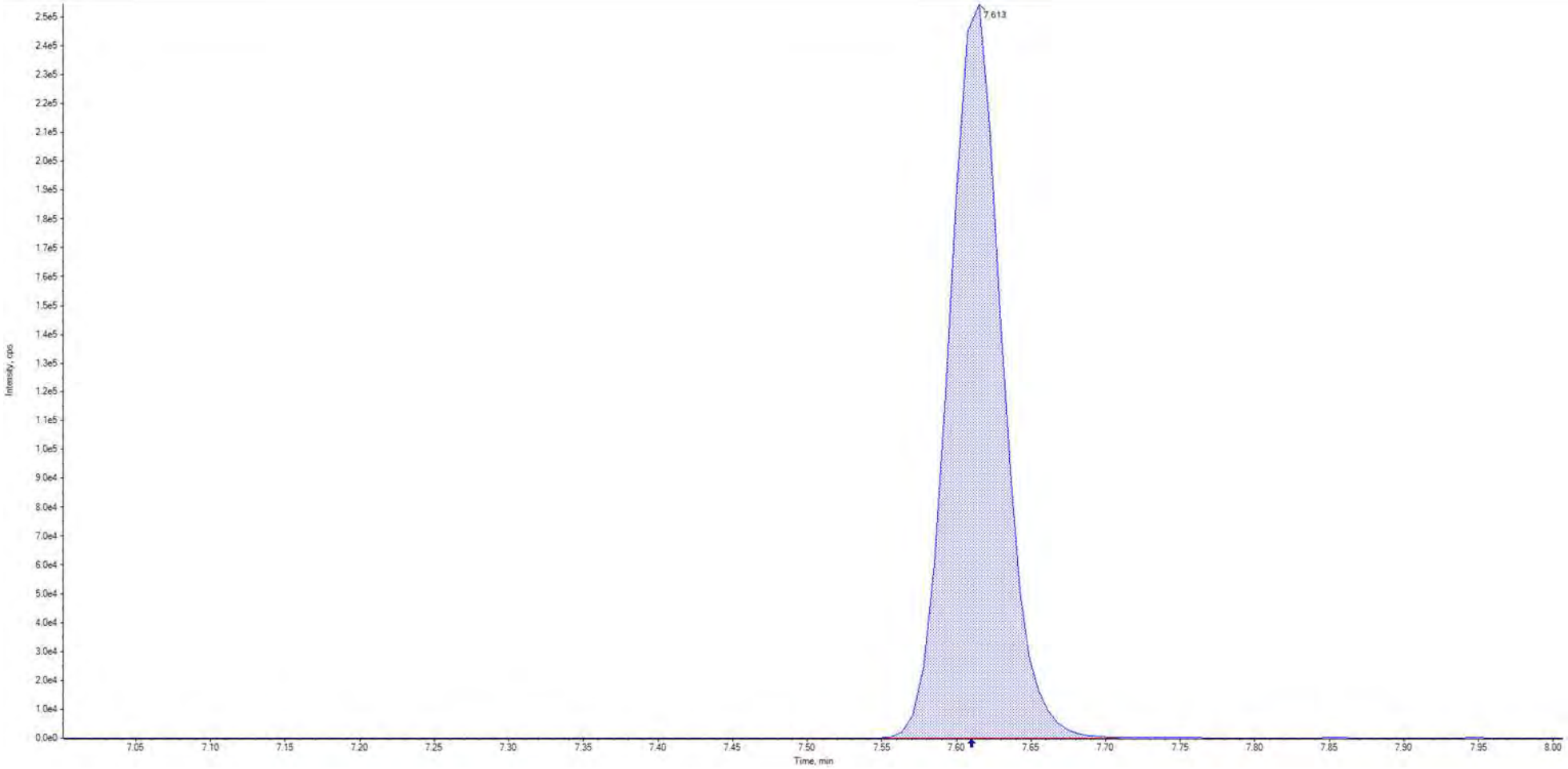
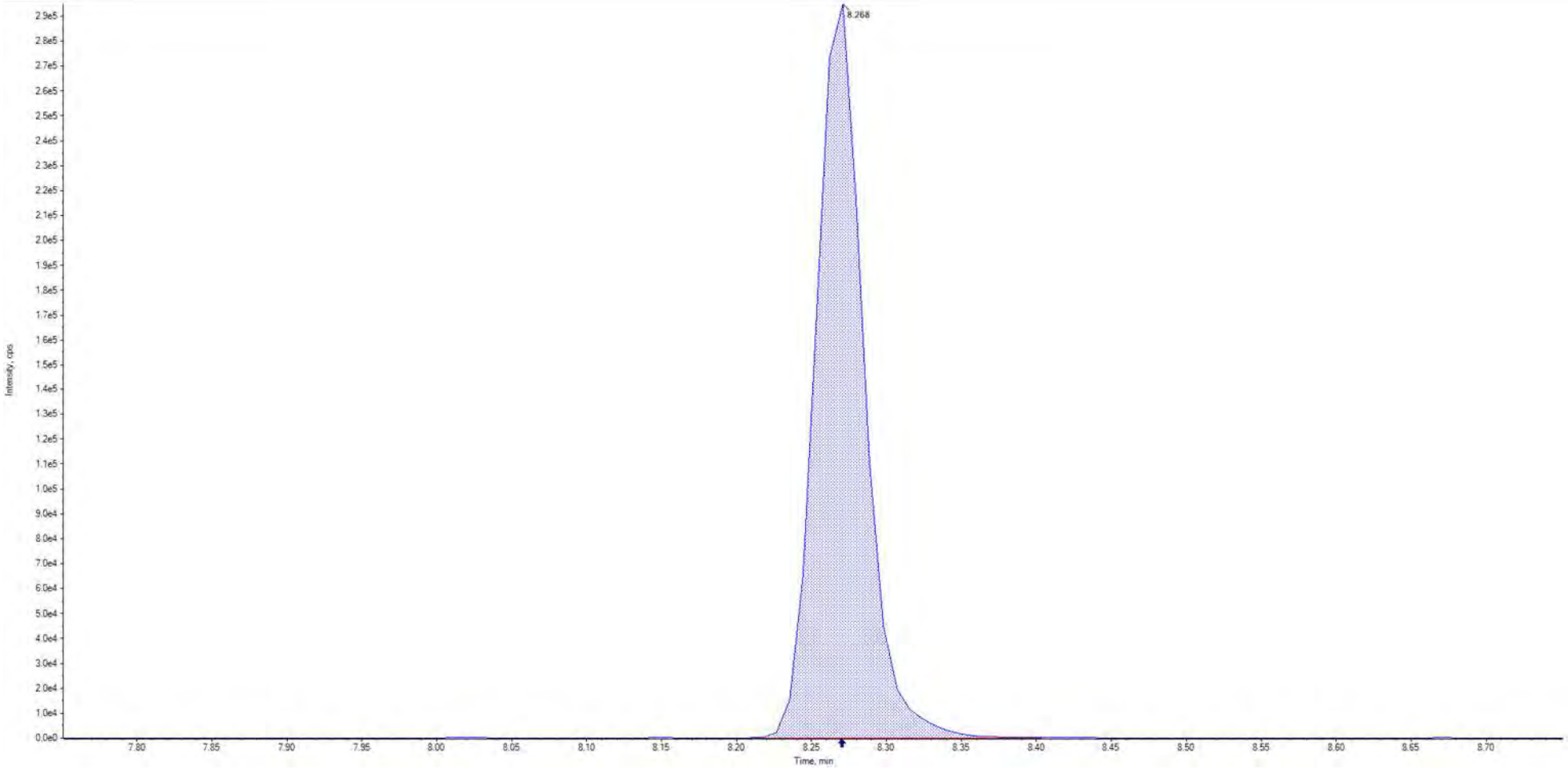
13C3-PFHxS
Sample: WG1958909-4,TRS



13C8-PFOS
Sample: WG1958909-4,TRS



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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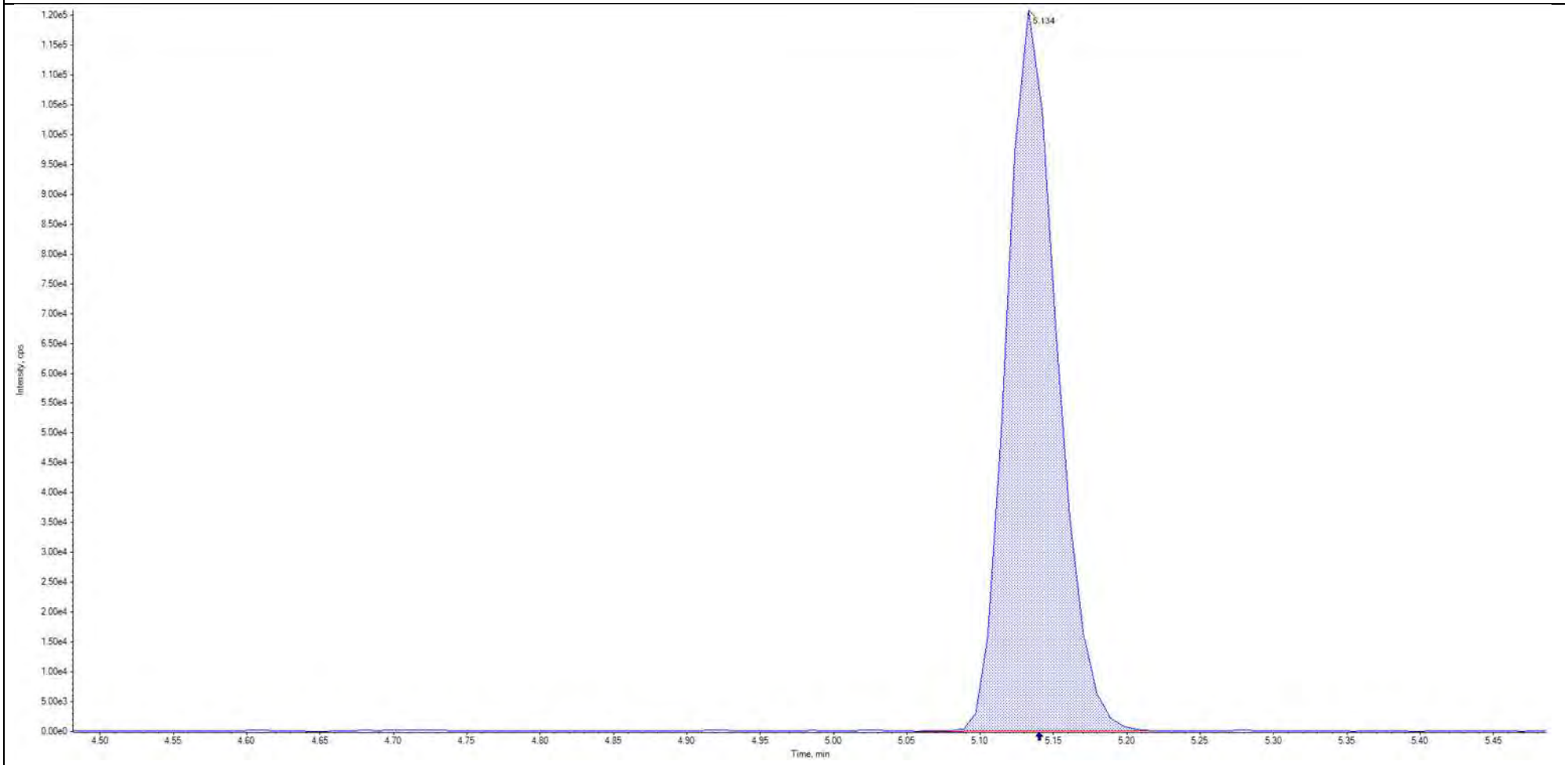
Generated: 8/14/2024 9:40:32 AM

13C2-4:2FTS
Sample: WG1958909-4,TRS



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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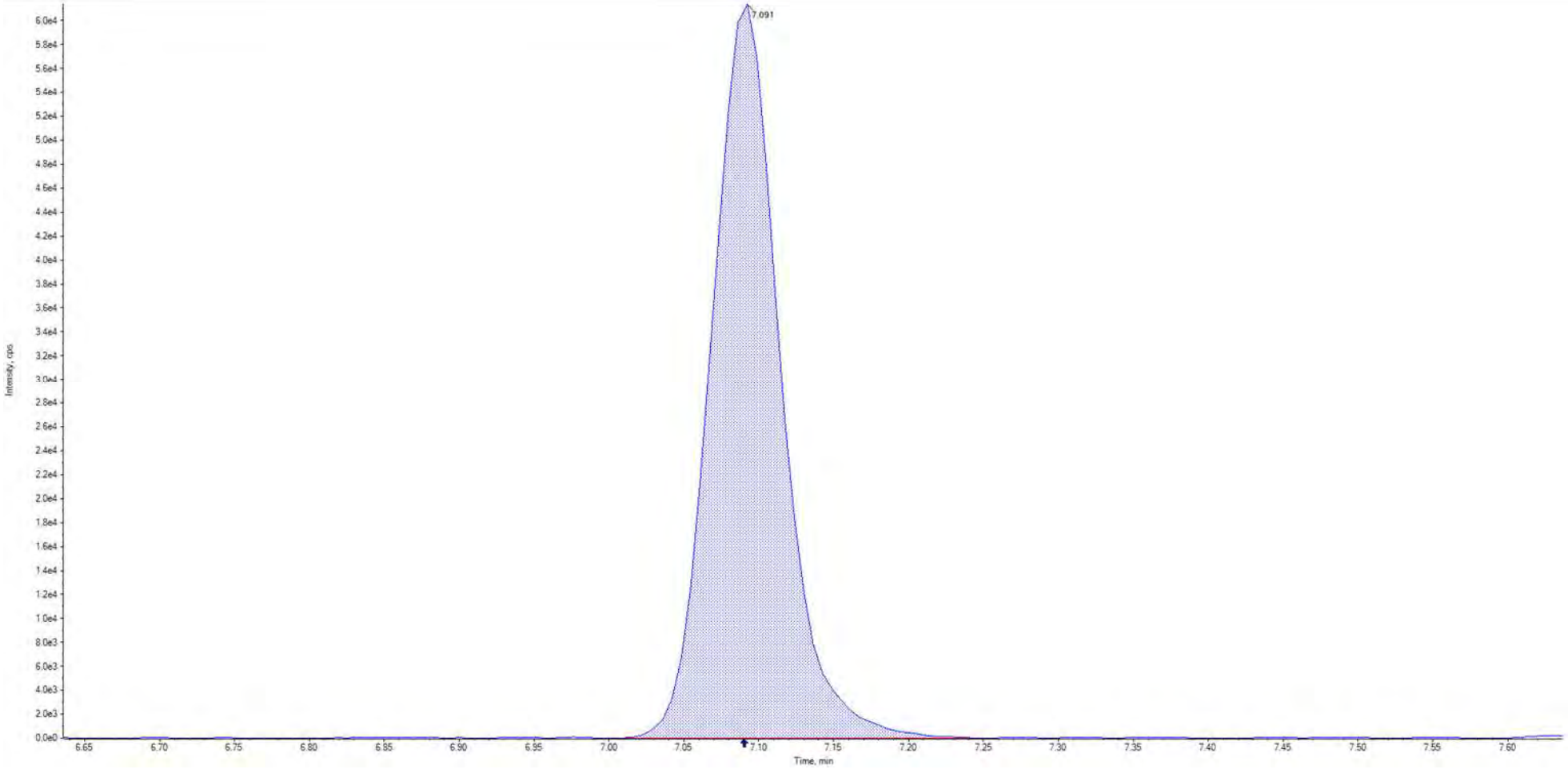
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

13C2-6:2FTS
Sample: WG1958909-4,TRS



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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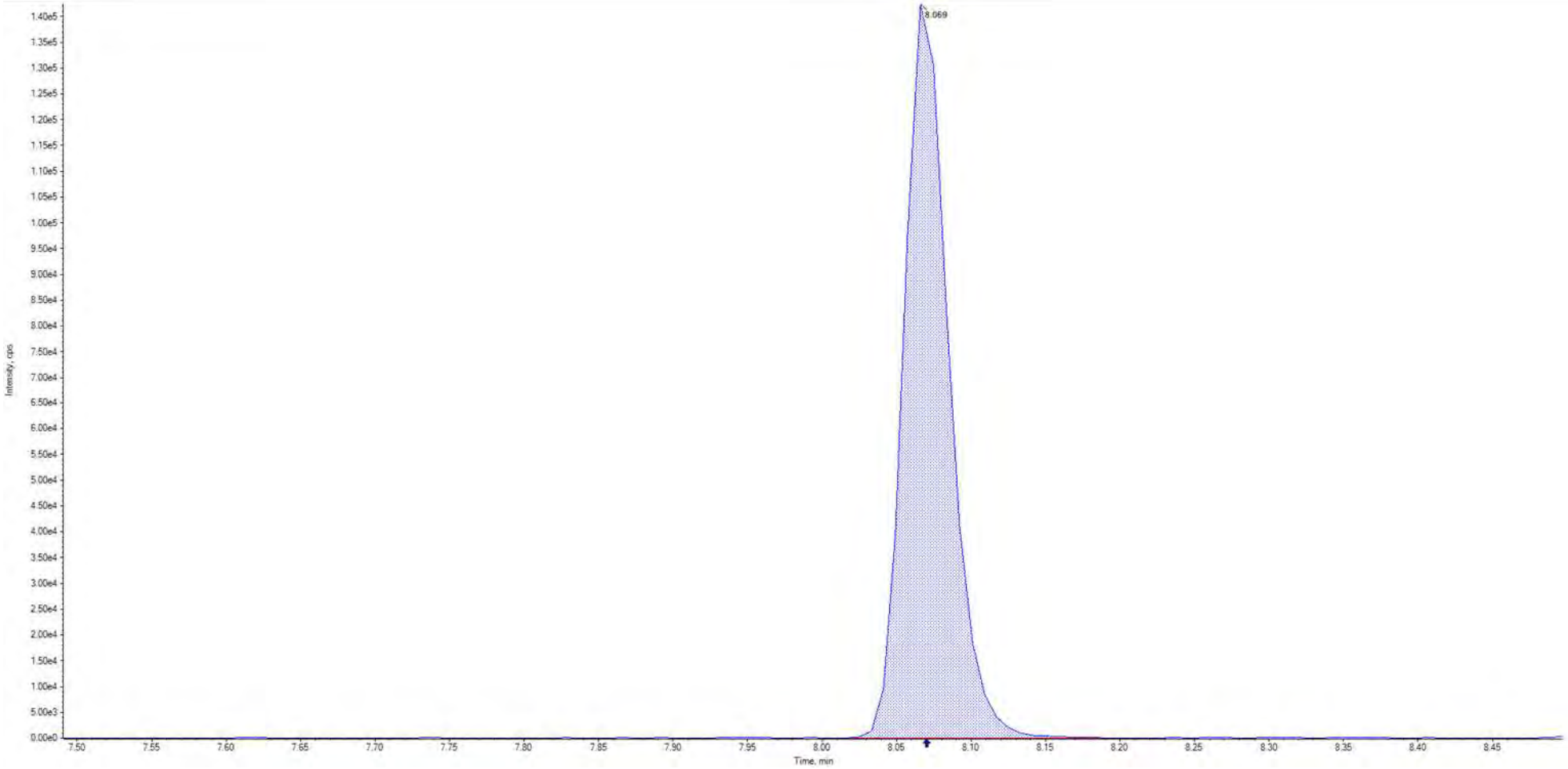
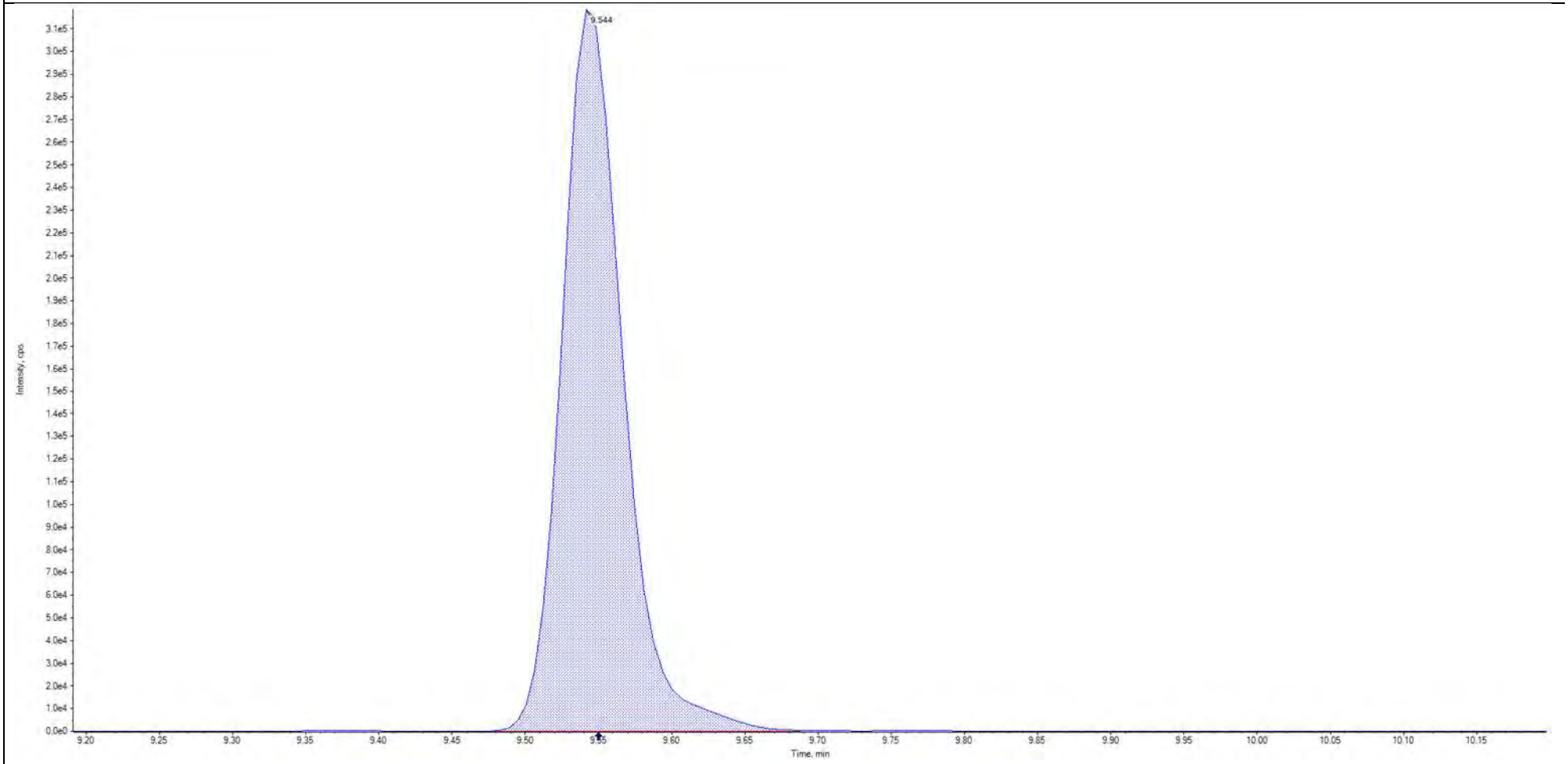
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

13C2-8:2FTS
Sample: WG1958909-4,TRS

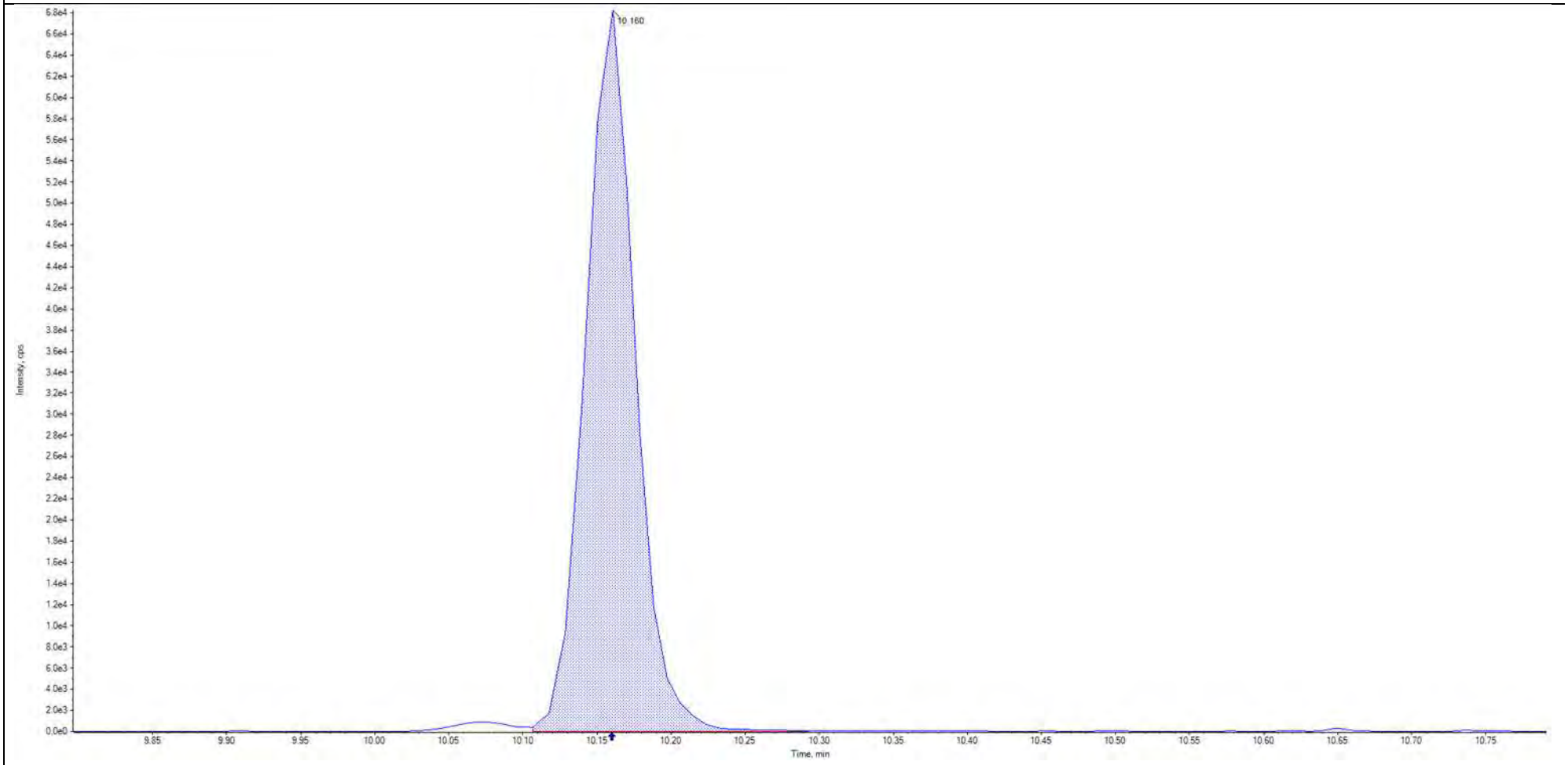


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_83.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

13C8-PFOSA
Sample: WG1958909-4,TRS



d3-NMeFOSA
Sample: WG1958909-4,TRS



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 8/14/2024 9:55:24 AM
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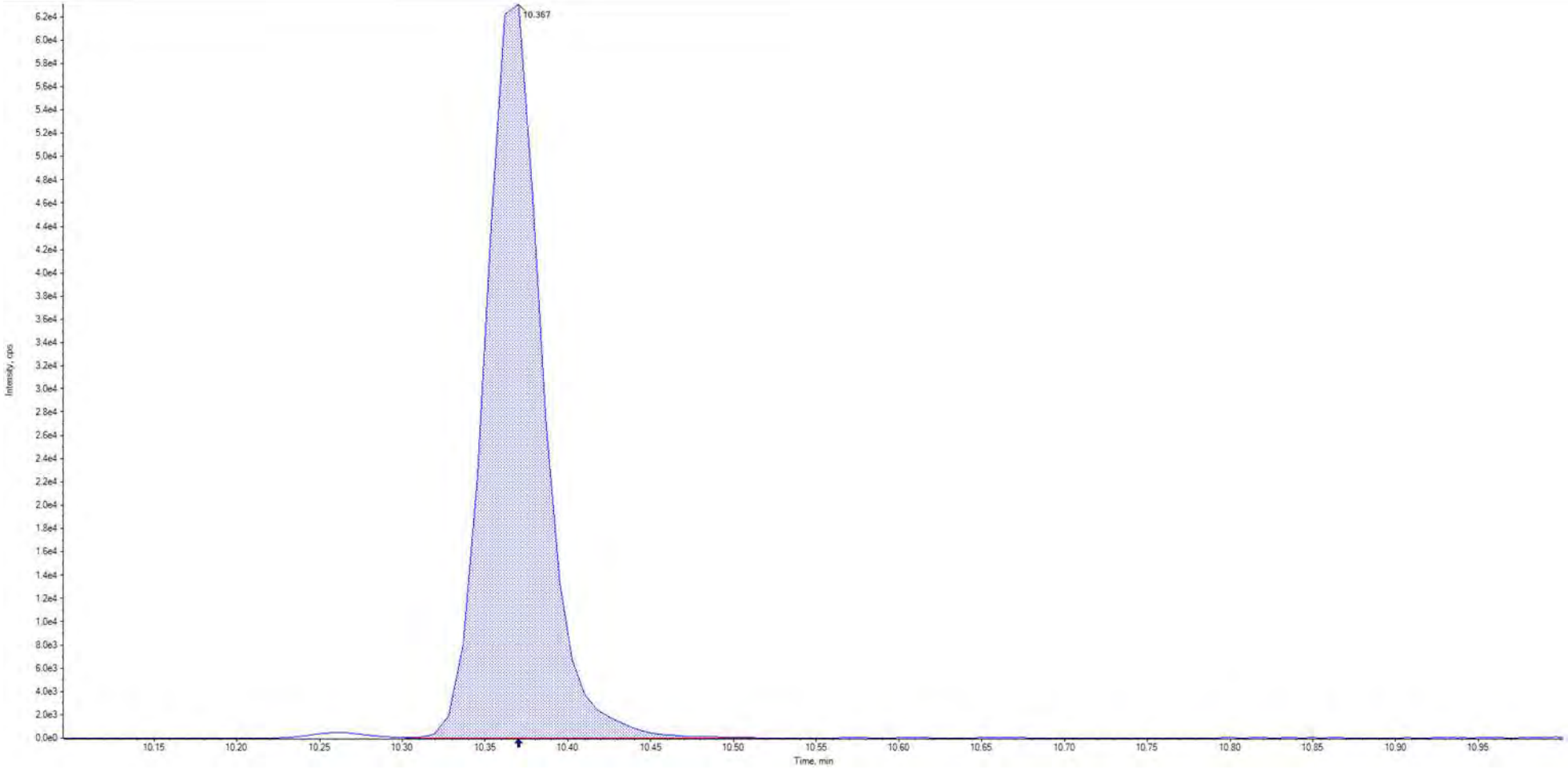
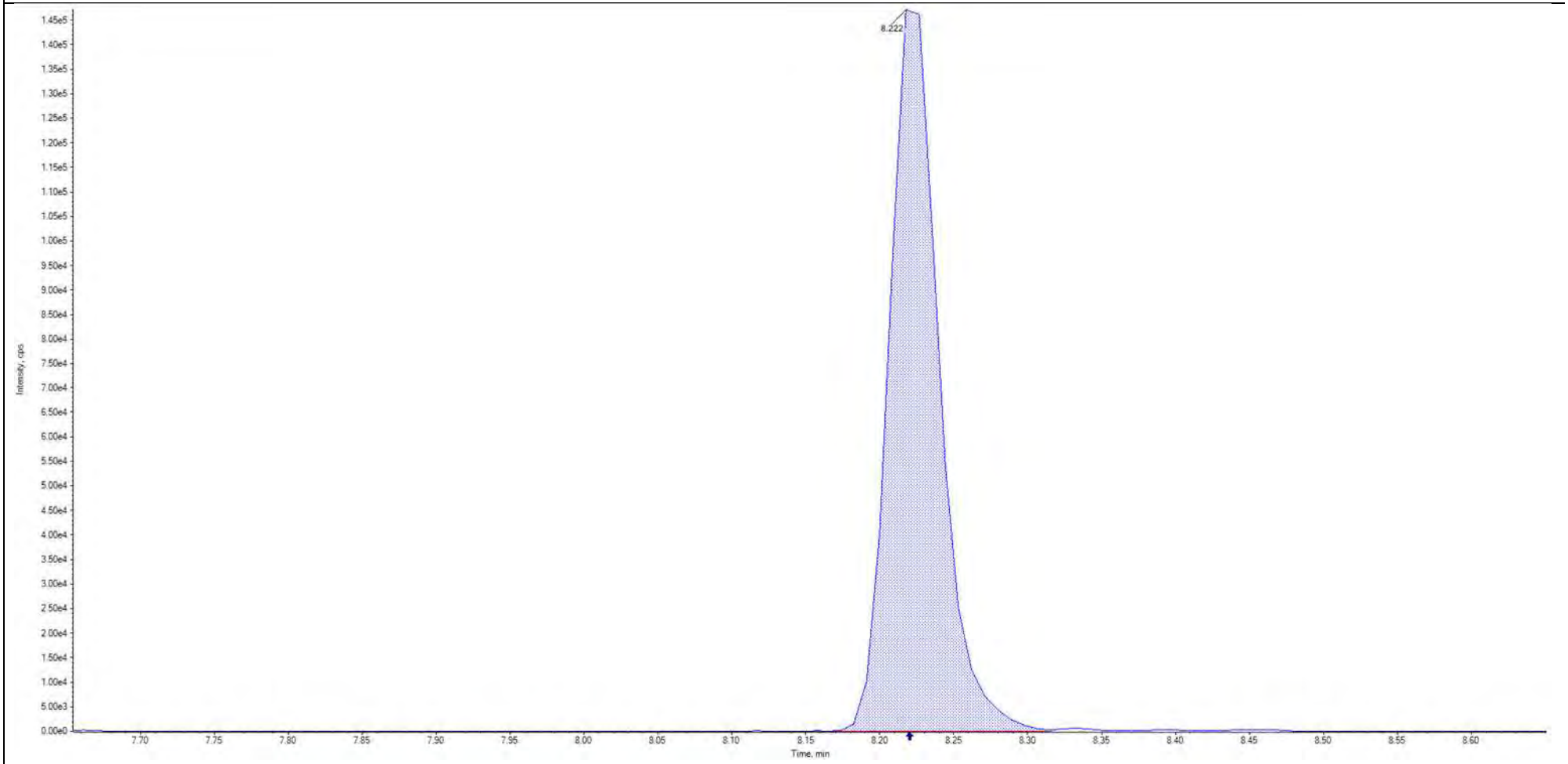
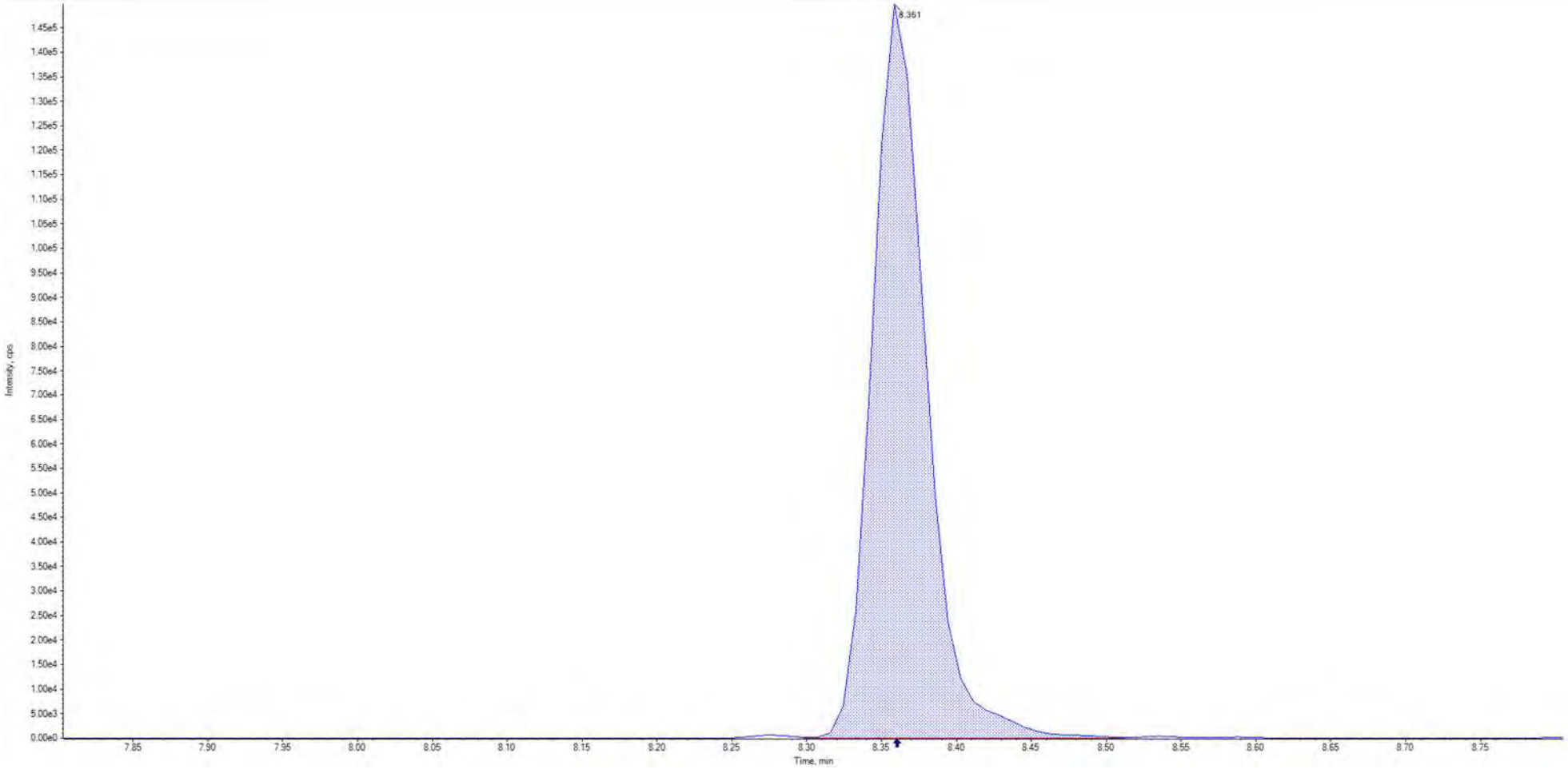
d5-NEtFOSA
Sample: WG1958909-4,TRS



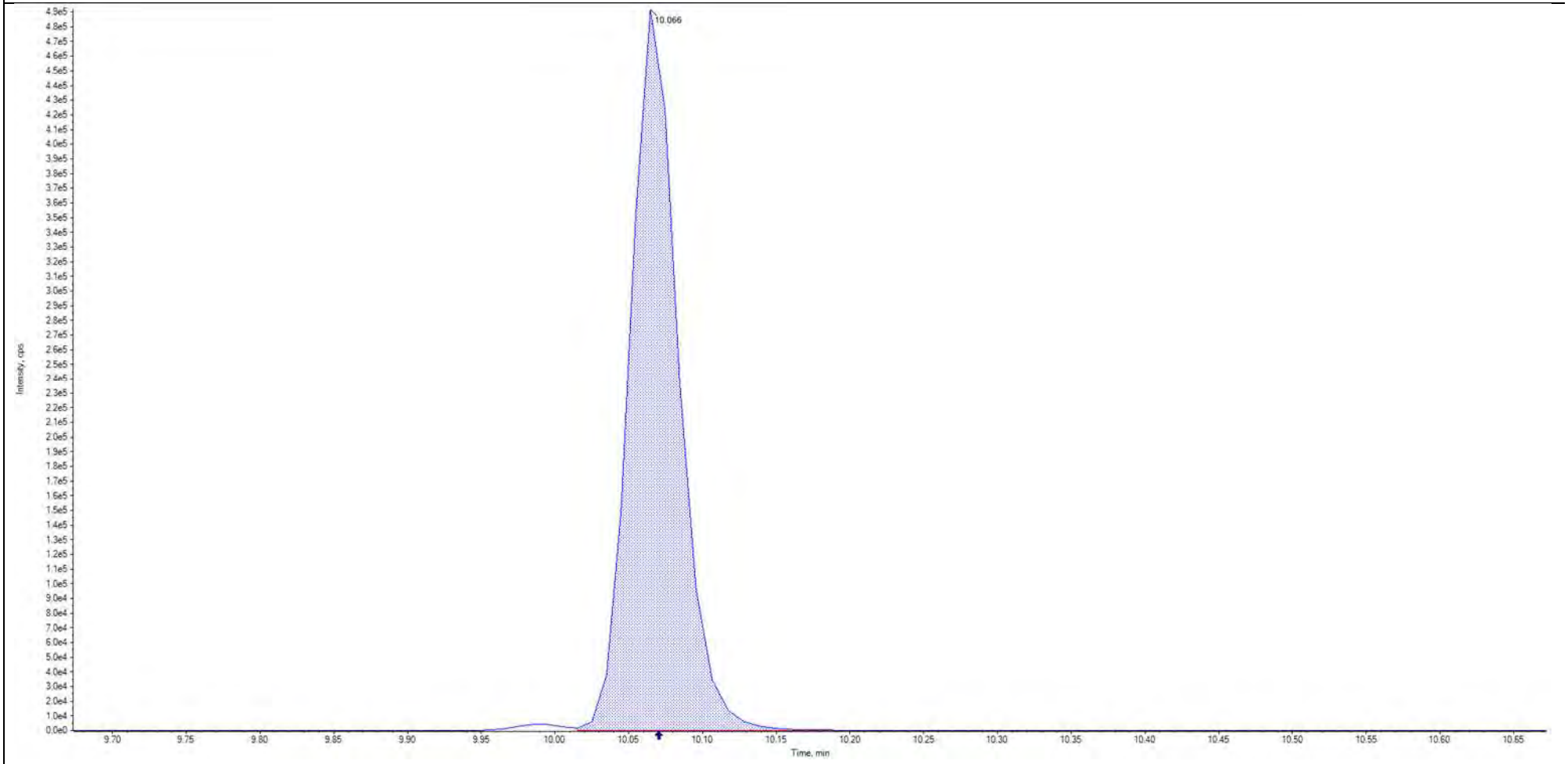
d3-NMeFOSAA
Sample: WG1958909-4,TRS



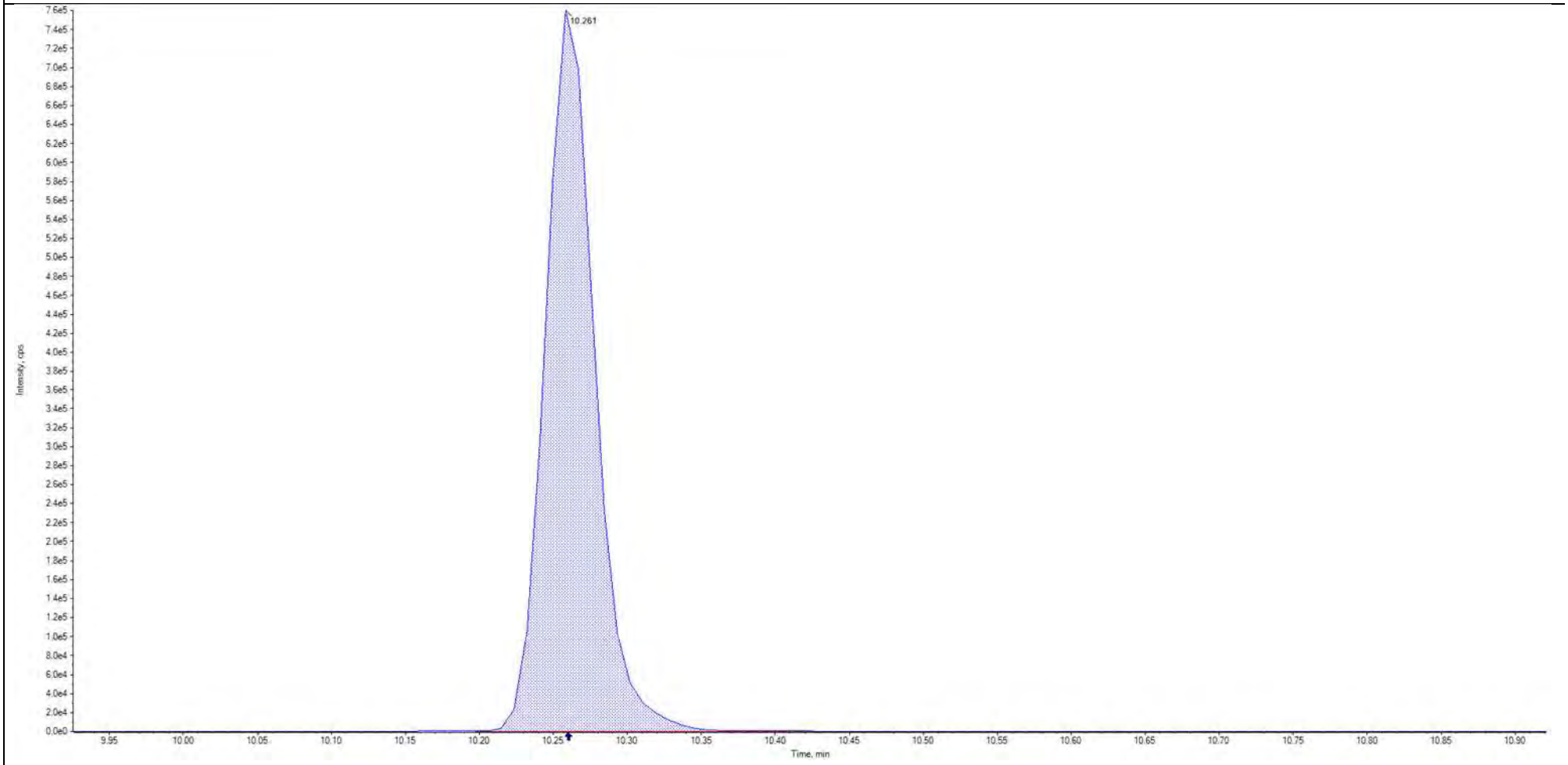
d5-NEtFOSAA
Sample: WG1958909-4,TRS



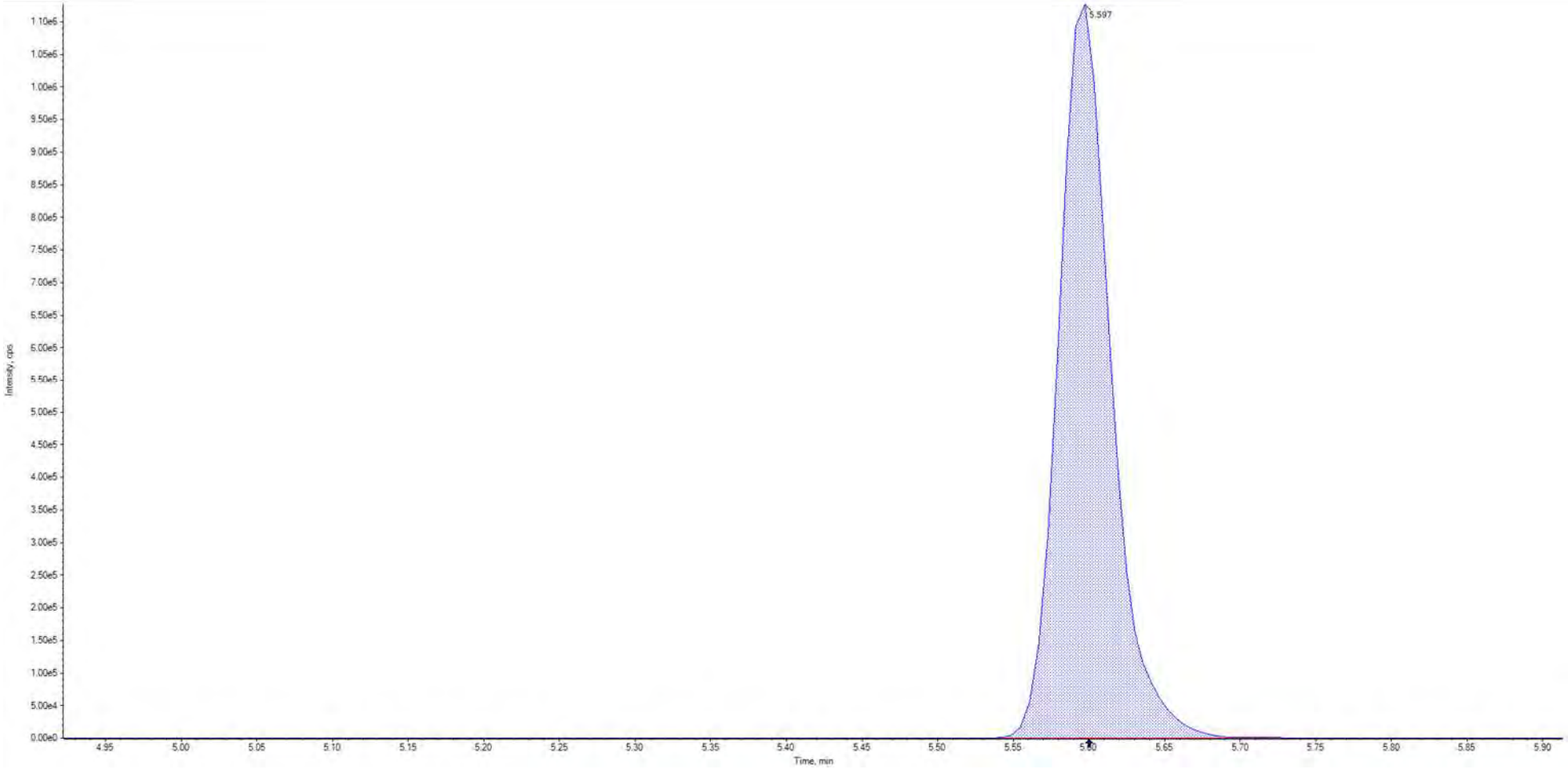
d7-NMeFOSE
Sample: WG1958909-4,TRS



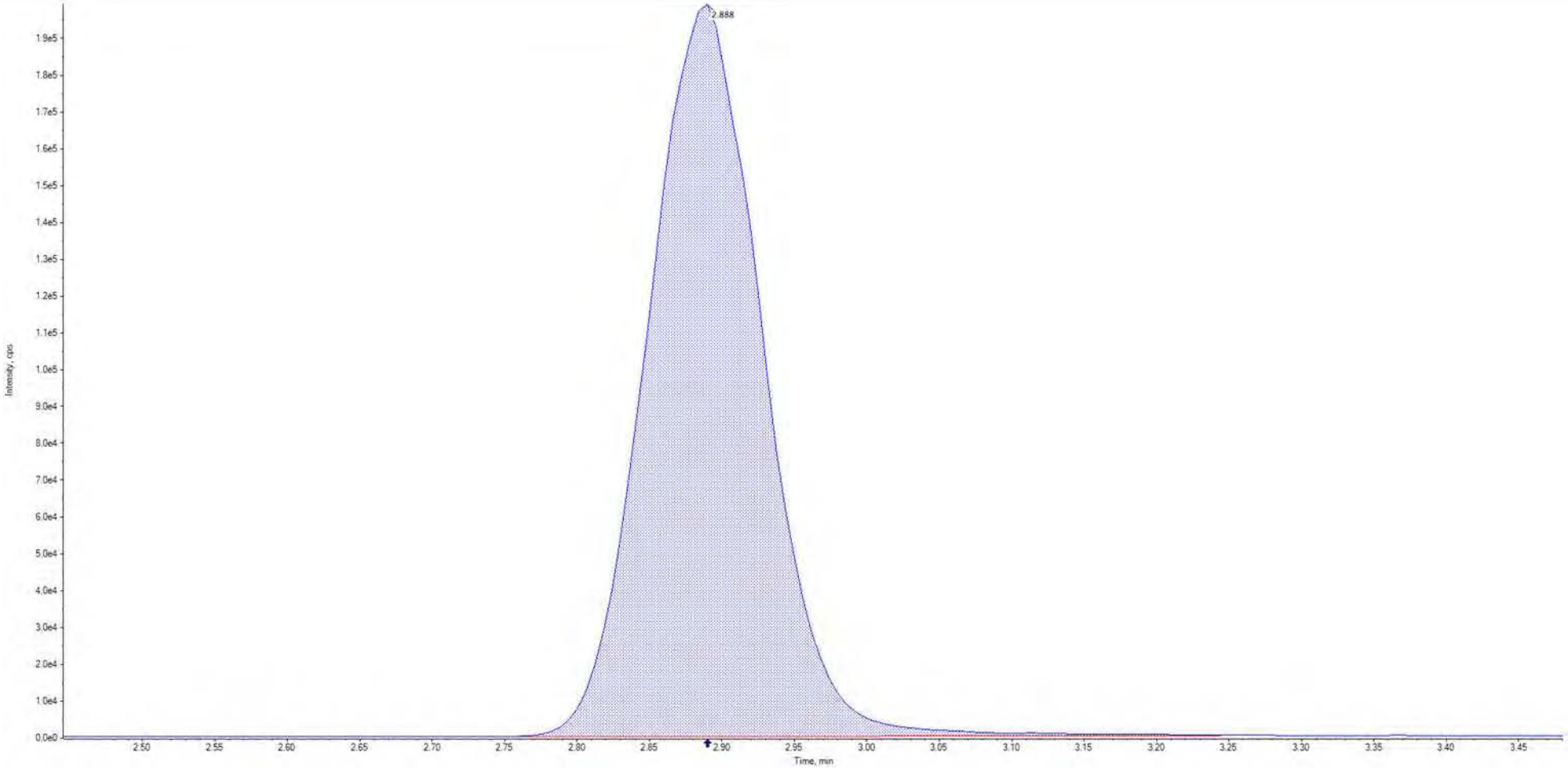
d9-NEtFOSE
Sample: WG1958909-4,TRS



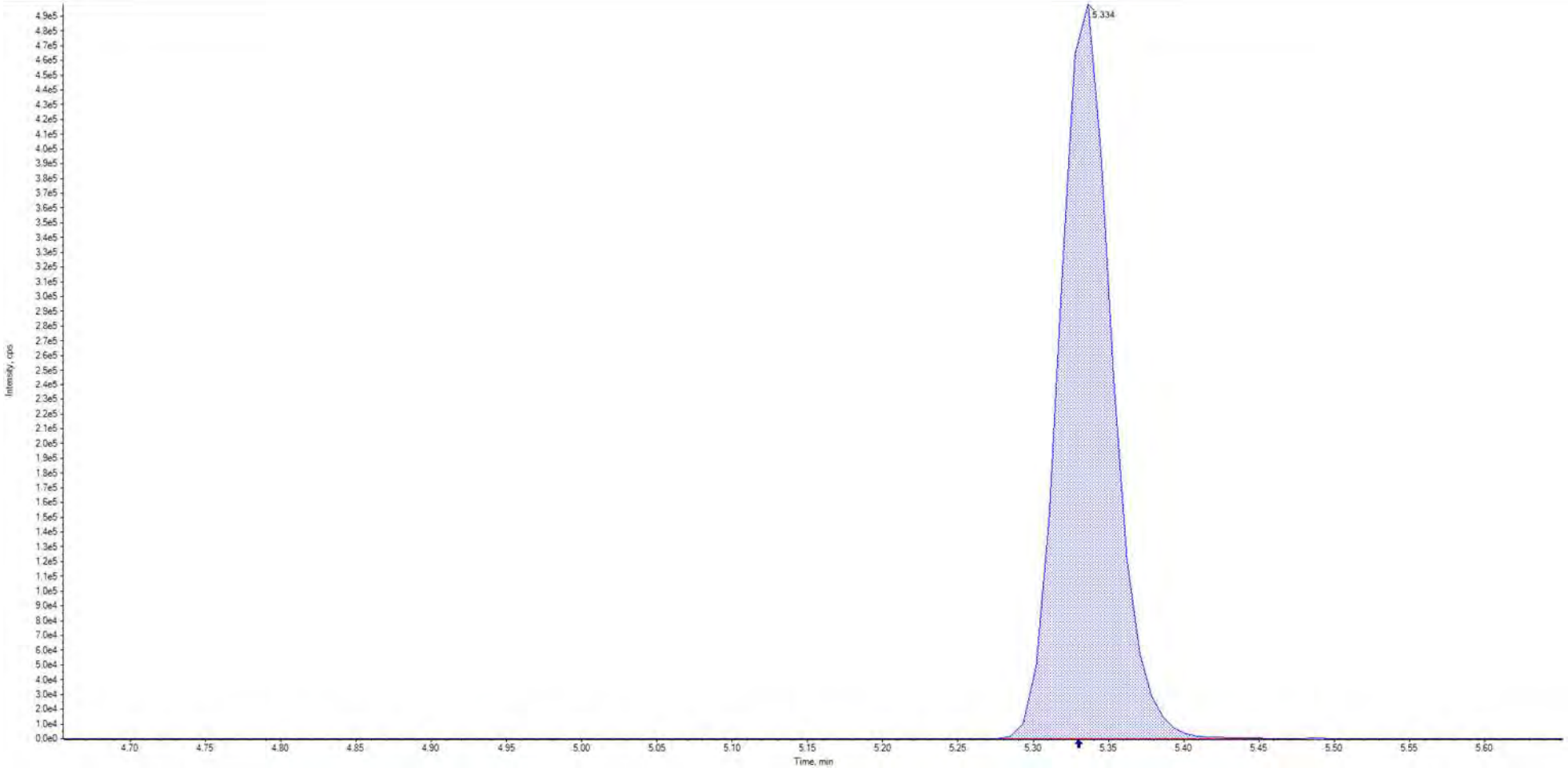
13C3-HFPO-DA
Sample: WG1958909-4,TRS



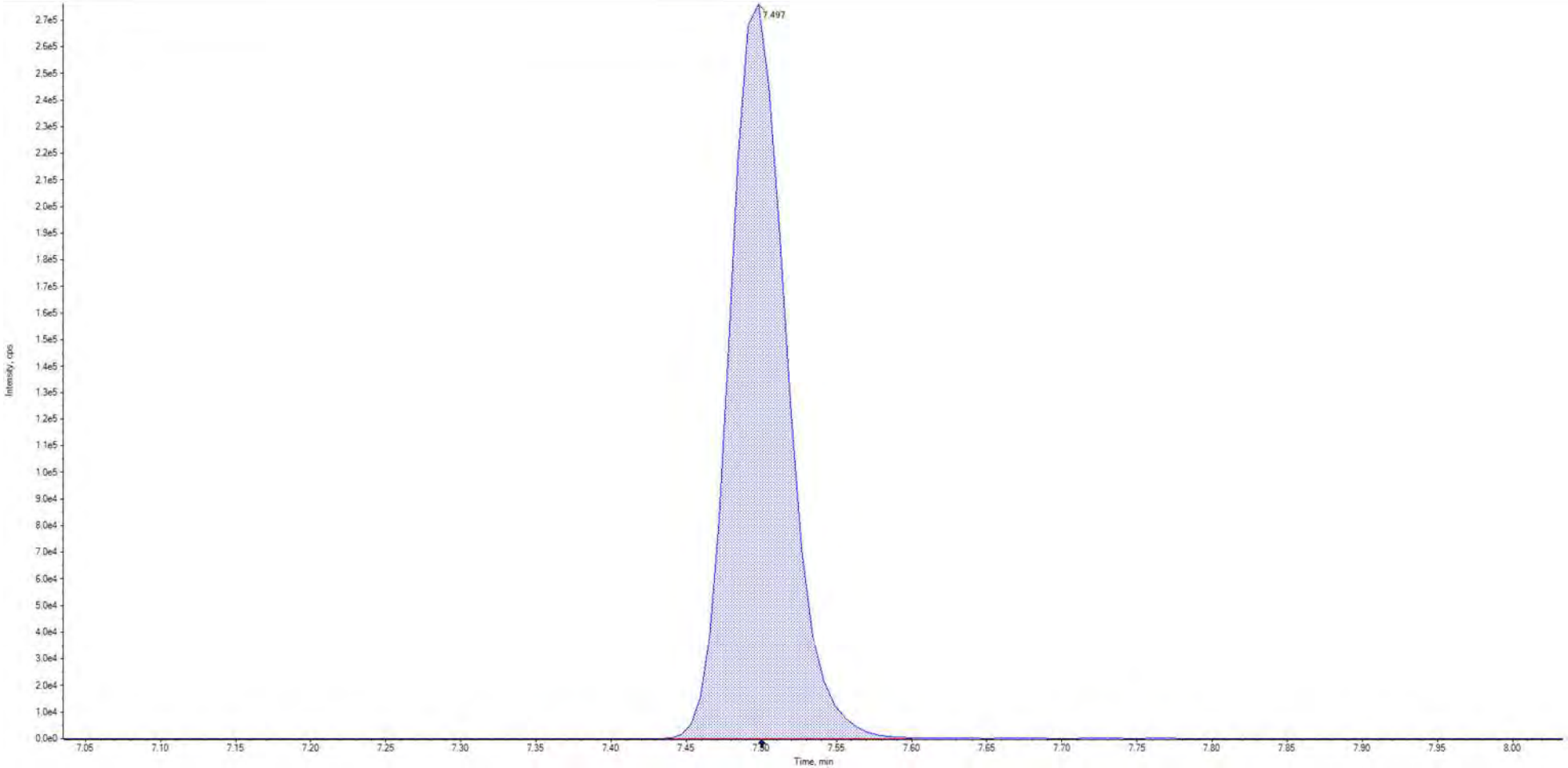
13C3-PFBA
Sample: WG1958909-4,TRS



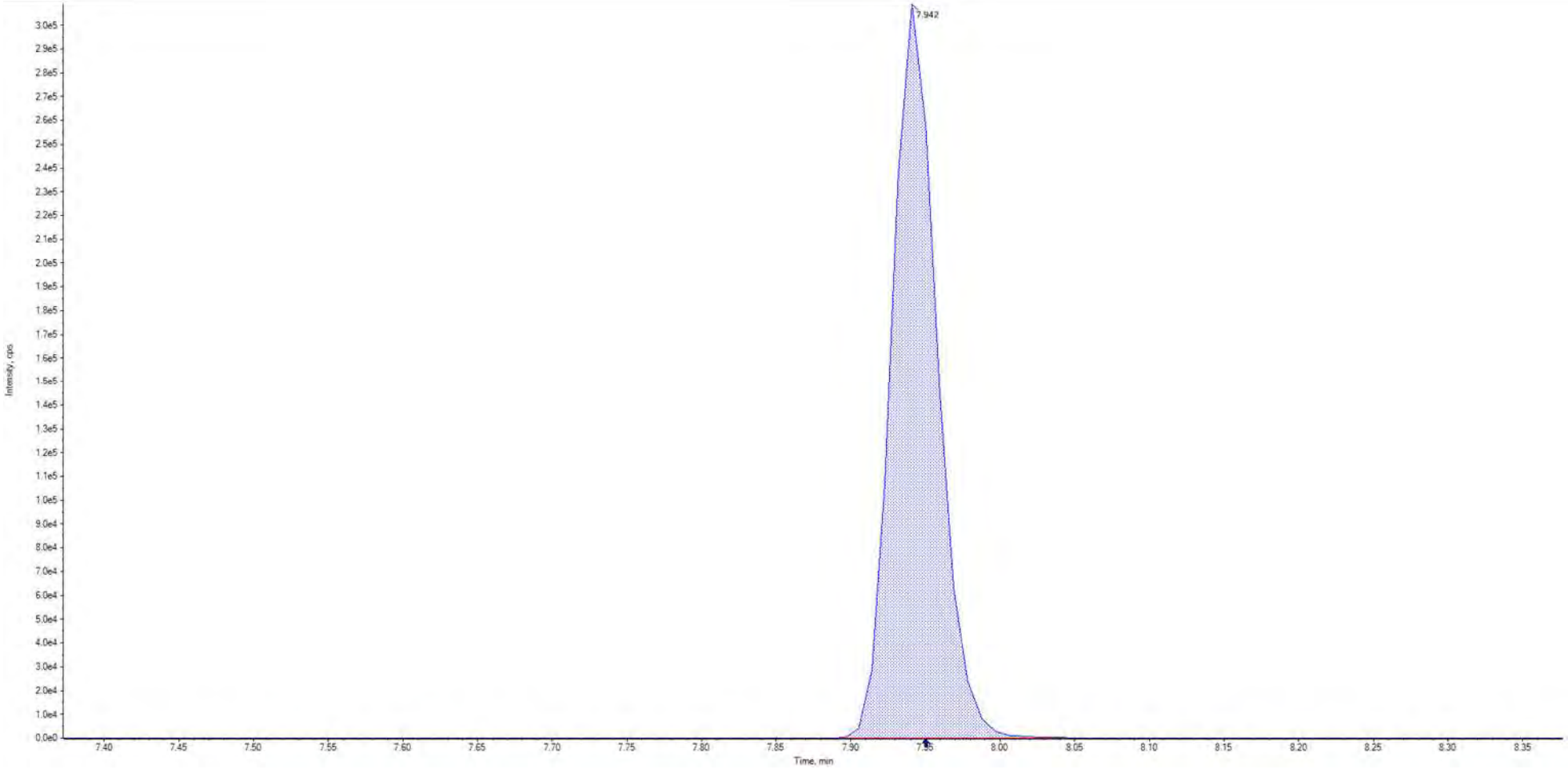
13C2-PFHxA
Sample: WG1958909-4,TRS



13C4-PFOA
Sample: WG1958909-4,TRS



13C5-PFNA
Sample: WG1958909-4,TRS



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_83.wiff
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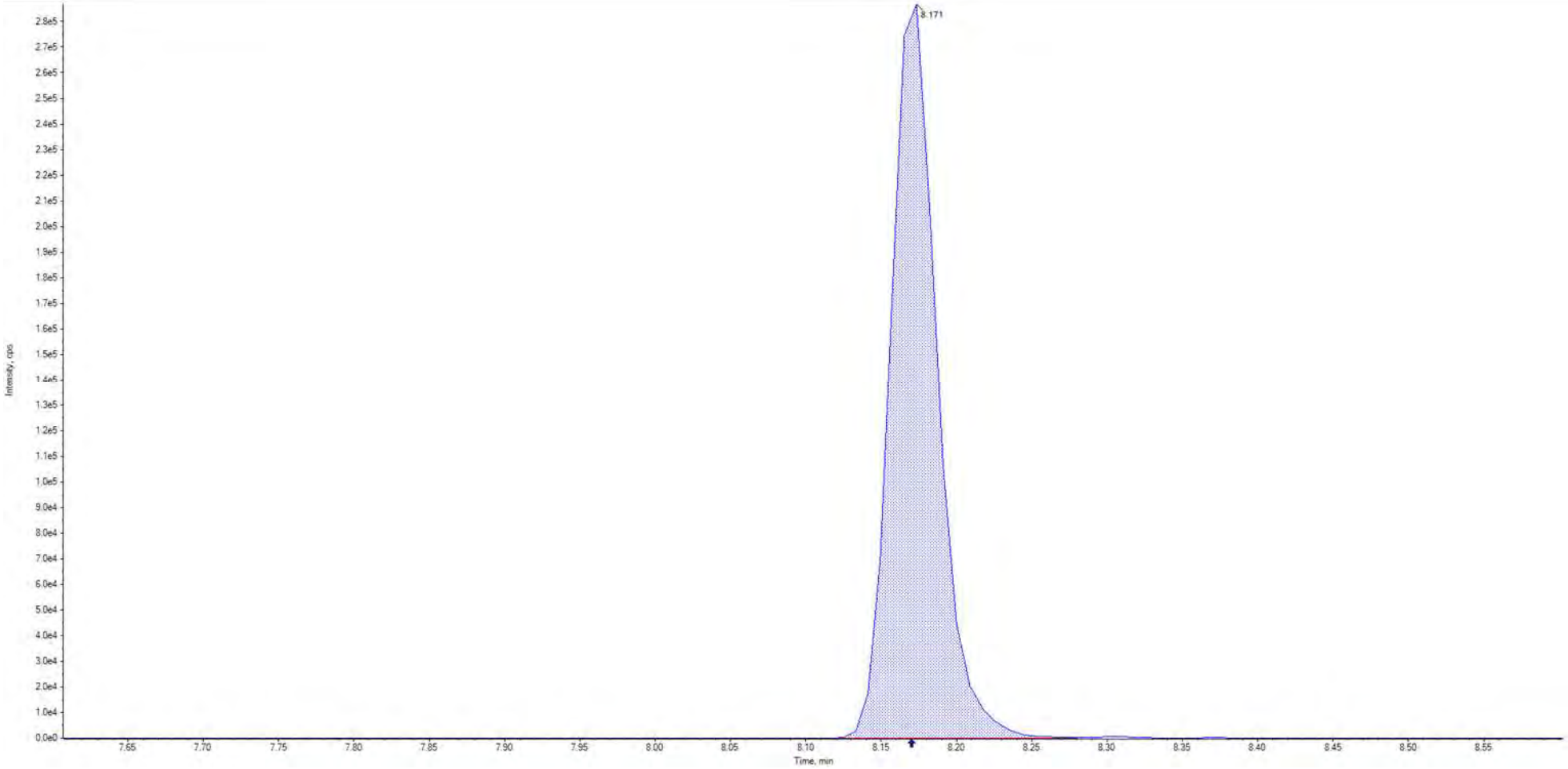
Generated: 8/14/2024 9:40:32 AM

13C2-PFDA
Sample: WG1958909-4,TRS



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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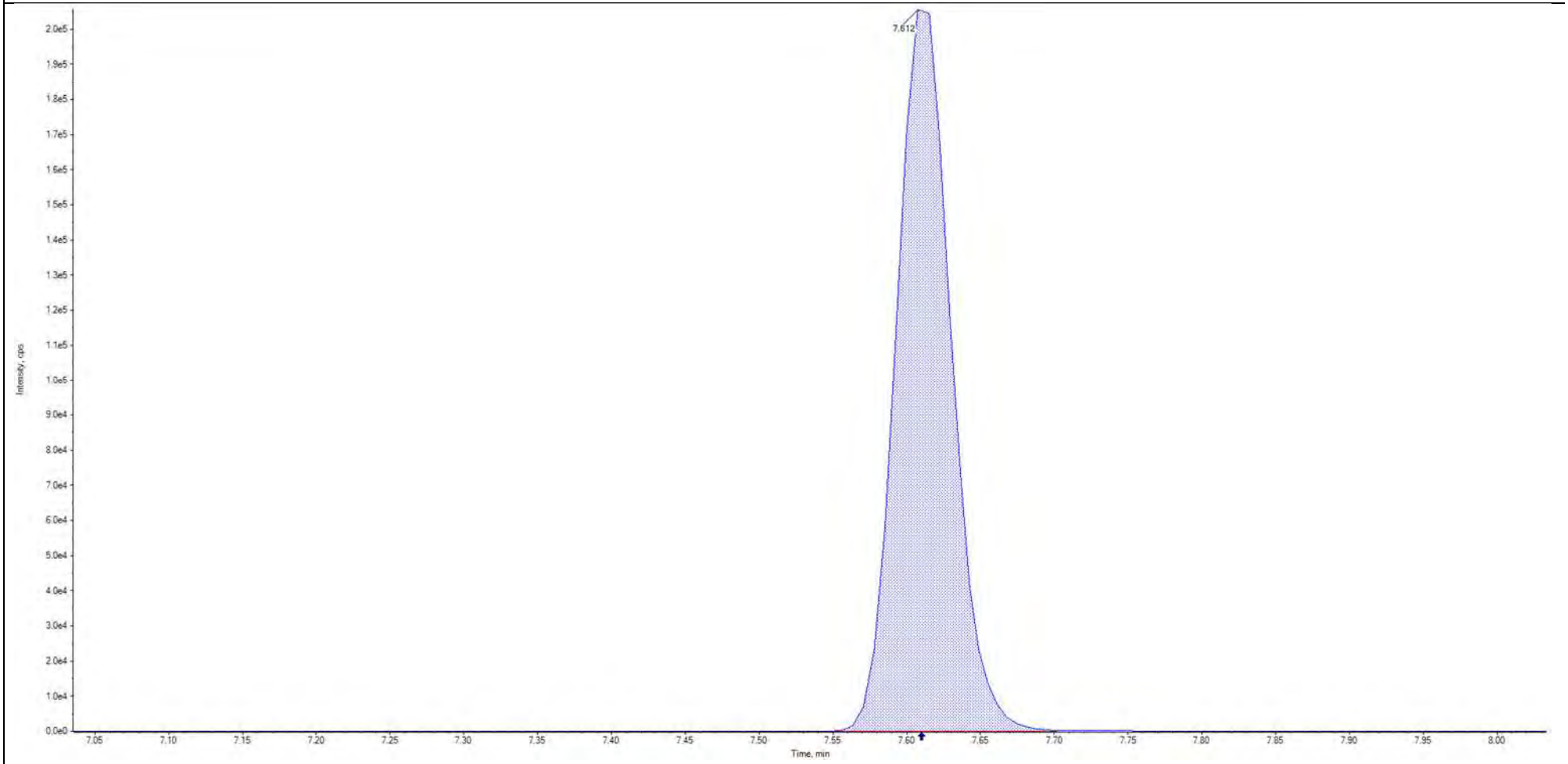
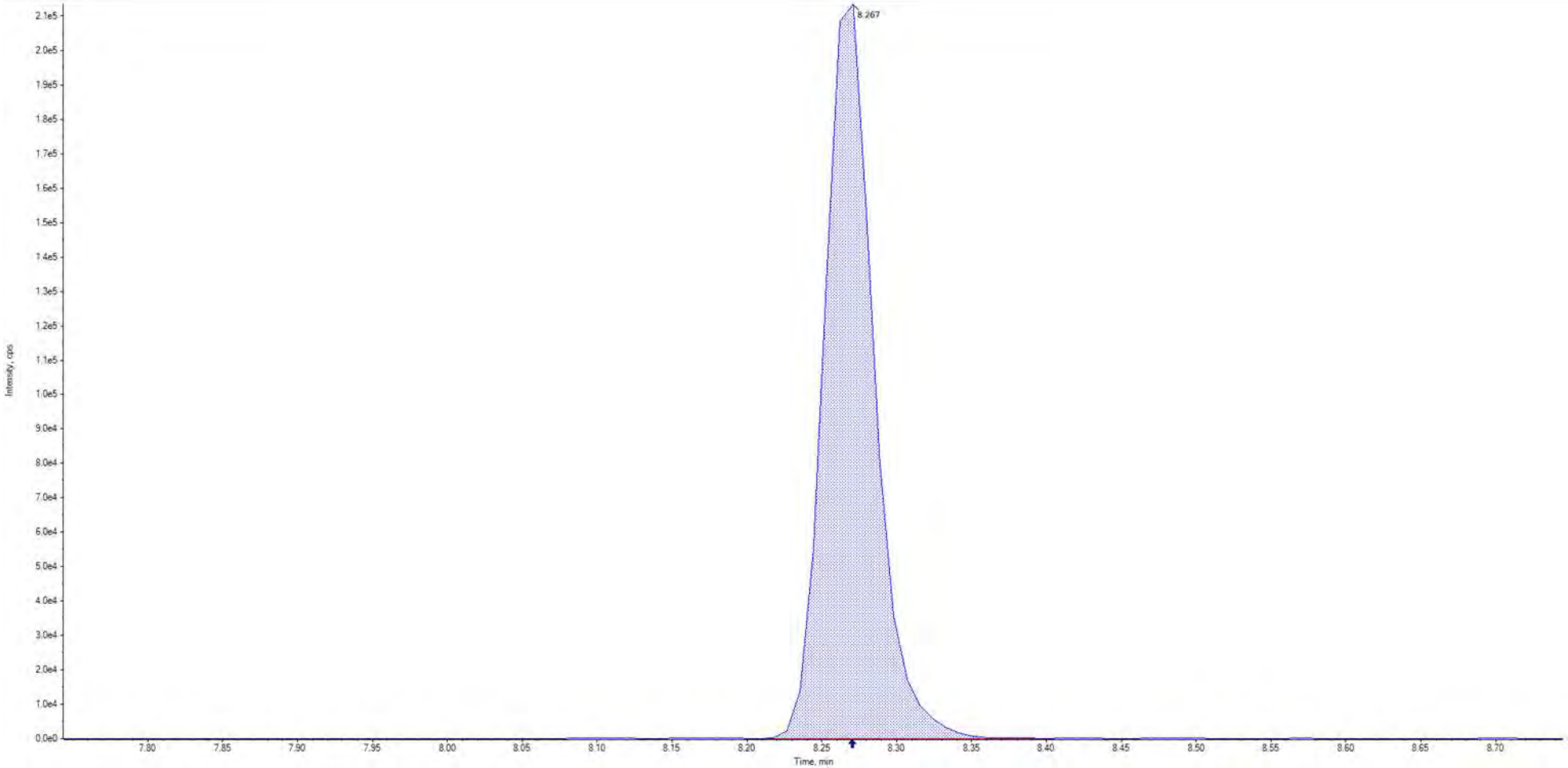
Generated: 8/14/2024 9:40:32 AM

18O2-PFHxS
Sample: WG1958909-4,TRS



13C4-PFOS
Sample: WG1958909-4,TRS



Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_83.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

Method: EPA1633_NIS_CALC.qmethod
Calibration: 240813_1633_ICAL

ID: WG1958909-6,INSTBLANK
Name: SCI05_240813_84.wiff
Date & Time: 2024-08-14T00:36:03
Description: WG1958909
Instrument: Triple Quad 5500+
User: LCMS05:SL

LC/MS-MS Method:EPA_1633.dam

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
1	PFBA	375-22-4	N/A	213.0 / 169.0	N/A		N/A	N/A	N/A	N/A	N/A
2	PFPeA	2706-90-3	N/A	263.0 / 219.0	N/A		N/A	N/A	0.007	N/A	N/A
3	PFPeA_2	2706-90-3	N/A	263.0 / 68.9	N/A		N/A	N/A	0.007	N/A	N/A
4	PFHxA	307-24-4	N/A	313.0 / 269.0	N/A		N/A	N/A	0.072	N/A	N/A
5	PFHxA_2	307-24-4	N/A	313.0 / 119.0	N/A		N/A	N/A	0.072	N/A	N/A
6	PFHpA	375-85-9	N/A	363.1 / 319.0	N/A		N/A	N/A	0.297	N/A	N/A
7	PFHpA_2	375-85-9	N/A	363.1 / 169.0	N/A		N/A	N/A	0.297	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
8	PFOA	335-67-1	N/A	413.1 / 369.1	N/A		N/A	N/A	0.586	N/A	N/A
9	PFOA_2	335-67-1	N/A	413.1 / 169.0	N/A		N/A	N/A	0.586	N/A	N/A
10	PFNA	375-95-1	N/A	462.8 / 418.9	N/A		N/A	N/A	0.313	N/A	N/A
11	PFNA_2	375-95-1	N/A	462.8 / 218.9	N/A		N/A	N/A	0.313	N/A	N/A
12	PFDA	335-76-2	N/A	513.1 / 469.1	N/A		N/A	N/A	0.142	N/A	N/A
13	PFDA_2	335-76-2	N/A	513.1 / 219.0	N/A		N/A	N/A	0.142	N/A	N/A
14	PFUnA	2058-94-8	N/A	563.1 / 519.1	N/A		N/A	N/A	0.194	N/A	N/A
15	PFUnA_2	2058-94-8	N/A	563.1 / 269.0	N/A		N/A	N/A	0.194	N/A	N/A
16	PFDoA	307-55-1	N/A	613.1 / 569.1	N/A		N/A	N/A	0.167	N/A	N/A
17	PFDoA_2	307-55-1	N/A	613.1 / 319.0	N/A		N/A	N/A	0.167	N/A	N/A
18	PFTrDA	72629-94-8	N/A	663.1 / 619.1	N/A		N/A	N/A	0.228	N/A	N/A
19	PFTrDA_2	72629-94-8	N/A	663.1 / 169.0	N/A		N/A	N/A	0.228	N/A	N/A
20	PFTeDA	376-06-7	N/A	713.1 / 669.1	N/A		N/A	N/A	0.137	N/A	N/A
21	PFTeDA_2	376-06-7	N/A	713.1 / 169.0	N/A		N/A	N/A	0.137	N/A	N/A
22	PFBS	375-73-5	N/A	299.1 / 80.1	N/A		N/A	N/A	0.396	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
23	PFBS_2	375-73-5	N/A	299.1 / 99.1	N/A		N/A	N/A	0.396	N/A	N/A
24	PFPeS	2706-91-4	N/A	349.1 / 80.1	N/A		N/A	N/A	0.299	N/A	N/A
25	PFPeS_2	2706-91-4	N/A	349.1 / 99.1	N/A		N/A	N/A	0.299	N/A	N/A
26	PFHxS	355-46-4	N/A	399.1 / 80.1	N/A		N/A	N/A	0.315	N/A	N/A
27	PFHxS_2	355-46-4	N/A	399.1 / 99.1	N/A		N/A	N/A	0.315	N/A	N/A
28	PFHpS	375-92-8	N/A	449.1 / 80.1	N/A		N/A	N/A	0.287	N/A	N/A
29	PFHpS_2	375-92-8	N/A	449.1 / 99.1	N/A		N/A	N/A	0.287	N/A	N/A
30	PFOS	1763-23-1	N/A	499.1 / 80.1	N/A		N/A	N/A	0.238	N/A	N/A
31	PFOS_2	1763-23-1	N/A	499.1 / 99.1	N/A		N/A	N/A	0.238	N/A	N/A
32	PFNS	68259-12-1	N/A	549.1 / 80.1	N/A		N/A	N/A	0.301	N/A	N/A
33	PFNS_2	68259-12-1	N/A	549.1 / 99.1	N/A		N/A	N/A	0.301	N/A	N/A
34	PFDS	335-77-3	N/A	599.1 / 80.1	N/A		N/A	N/A	0.275	N/A	N/A
35	PFDS_2	335-77-3	N/A	599.1 / 99.1	N/A		N/A	N/A	0.275	N/A	N/A
36	PFDoS	79780-39-5	N/A	699.2 / 80.1	N/A		N/A	N/A	0.274	N/A	N/A
37	PFDoS_2	79780-39-5	N/A	699.2 / 99.1	N/A		N/A	N/A	0.274	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
38	4:2FTS	757124-72-4	5.14	327.1 / 307.1	21565		0.176	0.562	0.516	Pass	N/A
39	4:2FTS_2	757124-72-4	5.14	327.1 / 81.1	12125		0.185	0.562	0.516	Pass	N/A
40	6:2FTS	27619-97-2	N/A	427.2 / 407.2	N/A		N/A	N/A	0.565	N/A	N/A
41	6:2FTS_2	27619-97-2	N/A	427.2 / 81.1	N/A		N/A	N/A	0.565	N/A	N/A
42	8:2FTS	39108-34-4	N/A	527.2 / 507.2	N/A		N/A	N/A	0.662	N/A	N/A
43	8:2FTS_2	39108-34-4	N/A	527.2 / 81.1	N/A		N/A	N/A	0.662	N/A	N/A
44	PFOSA	754-91-6	N/A	498.1 / 78.1	N/A		N/A	N/A	0.025	N/A	N/A
45	PFOSA_2	754-91-6	N/A	498.1 / 478.0	N/A		N/A	N/A	0.025	N/A	N/A
46	NMeFOSA	31506-32-8	N/A	512.2 / 219.0	N/A		N/A	N/A	1.551	N/A	N/A
47	NMeFOSA_2	31506-32-8	N/A	512.2 / 169.0	N/A		N/A	N/A	1.551	N/A	N/A
48	NEtFOSA	4151-50-2	N/A	526.2 / 219.0	N/A		N/A	N/A	1.285	N/A	N/A
49	NEtFOSA_2	4151-50-2	N/A	526.2 / 169.0	N/A		N/A	N/A	1.285	N/A	N/A
50	NMeFOSAA	2355-31-9	N/A	570.2 / 419.1	N/A		N/A	N/A	0.700	N/A	N/A
51	NMeFOSAA_2	2355-31-9	N/A	570.2 / 483.0	N/A		N/A	N/A	0.700	N/A	N/A
52	NEtFOSAA	2991-50-6	N/A	584.2 / 419.1	N/A		N/A	N/A	0.487	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
53	NEtFOSAA_2	2991-50-6	N/A	584.2 / 526.2	N/A		N/A	N/A	0.487	N/A	N/A
54	NMeFOSE	24448-09-7	N/A	616.1 / 58.9	N/A		N/A	N/A	N/A	N/A	N/A
55	NEtFOSE	1691-99-2	N/A	630.0 / 58.9	N/A		N/A	N/A	N/A	N/A	N/A
56	HFPO-DA	13252-13-6	N/A	285.0 / 169.0	N/A		N/A	N/A	0.464	N/A	N/A
57	HFPO-DA_2	13252-13-6	N/A	285.0 / 184.9	N/A		N/A	N/A	0.464	N/A	N/A
58	ADONA	919005-14-4	N/A	377.1 / 251.0	N/A		N/A	N/A	0.634	N/A	N/A
59	ADONA_2	919005-14-4	N/A	377.1 / 84.8	N/A		N/A	N/A	0.634	N/A	N/A
60	9Cl-PF3ONS	756426-58-1	N/A	530.8 / 351.1	N/A		N/A	N/A	0.322	N/A	N/A
61	9Cl-PF3ONS_2	756426-58-1	N/A	532.8 / 353.0	N/A		N/A	N/A	0.322	N/A	N/A
62	11Cl-PF3OUdS	763051-92-9	N/A	630.9 / 451.0	N/A		N/A	N/A	0.331	N/A	N/A
63	11Cl-PF3OUdS_2	763051-92-9	N/A	632.9 / 452.9	N/A		N/A	N/A	0.331	N/A	N/A
64	3:3FTCA	356-02-5	N/A	241.1 / 177.1	N/A		N/A	N/A	1.074	N/A	N/A
65	3:3FTCA_2	356-02-5	N/A	241.1 / 117.0	N/A		N/A	N/A	1.074	N/A	N/A
66	5:3FTCA	914637-49-3	N/A	341.1 / 237.1	N/A		N/A	N/A	0.953	N/A	N/A
67	5:3FTCA_2	914637-49-3	N/A	341.1 / 217.0	N/A		N/A	N/A	0.953	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
68	7:3FTCA	812-70-4	N/A	441.1 / 316.9	N/A		N/A	N/A	1.558	N/A	N/A
69	7:3FTCA_2	812-70-4	N/A	441.1 / 337.1	N/A		N/A	N/A	1.558	N/A	N/A
70	PFEESA	113507-82-7	N/A	315.1 / 135.0	N/A		N/A	N/A	0.087	N/A	N/A
71	PFEESA_2	113507-82-7	N/A	315.1 / 82.9	N/A		N/A	N/A	0.087	N/A	N/A
72	PFMPA	377-73-1	N/A	229.0 / 85.0	N/A		N/A	N/A	N/A	N/A	N/A
73	PFMBA	863090-89-5	N/A	279.0 / 85.0	N/A		N/A	N/A	N/A	N/A	N/A
74	NFDHA	151772-58-6	N/A	295.0 / 201.0	N/A		N/A	N/A	0.910	N/A	N/A
75	NFDHA_2	151772-58-6	N/A	295.0 / 84.9	N/A		N/A	N/A	0.910	N/A	N/A
76	TDCA	516-50-7	N/A	499.1 / 124.1	N/A		N/A	N/A	40.716	N/A	N/A
77	TDCA_2	516-50-7	N/A	499.1 / 79.9	N/A		N/A	N/A	40.716	N/A	N/A
78	13C2D4-4:2FTS	Surr	5.12	333.2 / 312.1	831075		4.782	N/A	N/A	N/A	N/A
79	13C2-PFOA	Surr	7.49	415.0 / 370.0	3176142		2.674	N/A	N/A	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C4-PFBA	EIS	2.89	217.0 / 172.0	2375613		10.204	NA	NA	NA	102.0

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C5-PFPeA	EIS	4.64	268.0 / 223.0	1552656		5.404	NA	NA	NA	108.1
	13C5-PFHxA	EIS	5.33	318.0 / 273.0	1036094		2.745	NA	NA	NA	109.8
	13C4-PFHpA	EIS	6.24	367.0 / 322.0	991160		2.623	NA	NA	NA	104.9
	13C8-PFOA	EIS	7.49	421.0 / 376.0	1406213		2.622	NA	NA	NA	104.9
	13C9-PFNA	EIS	7.94	472.0 / 427.0	715341		1.393	NA	NA	NA	111.4
	13C6-PFDA	EIS	8.17	519.0 / 474.0	656191		1.269	NA	NA	NA	101.6
	13C7-PFUnA	EIS	8.46	570.0 / 525.0	529450		1.266	NA	NA	NA	101.3

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C2-PFDoA	EIS	8.90	615.1 / 570.0	336154		1.236	NA	NA	NA	98.8
	13C2-PFTeDA	EIS	9.90	715.1 / 670.1	344024		1.165	NA	NA	NA	93.2
	13C3-PFBS	EIS	5.31	302.1 / 80.1	695203		2.147	NA	NA	NA	92.1
	13C3-PFHxS	EIS	7.61	402.1 / 80.1	606212		2.357	NA	NA	NA	99.4
	13C8-PFOS	EIS	8.26	507.1 / 80.1	647263		2.488	NA	NA	NA	103.9
	13C2-4:2FTS	EIS	5.13	329.1 / 81.1	293570		5.079	NA	NA	NA	108.3
	13C2-6:2FTS	EIS	7.08	429.2 / 81.1	192064		4.535	NA	NA	NA	95.4
	13C2-8:2FTS	EIS	8.06	529.2 / 81.1	279349		4.507	NA	NA	NA	93.9

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C8-PFOSA	EIS	9.54	506.1 / 78.1	928323		2.684	NA	NA	NA	107.4
	d3-NMeFOSA	EIS	10.15	515.2 / 219.0	147075		2.526	NA	NA	NA	101.1
	d5-NEtFOSA	EIS	10.36	531.2 / 219.0	148771		2.616	NA	NA	NA	104.6
	d3-NMeFOSAA	EIS	8.22	573.2 / 419.1	653243		4.963	NA	NA	NA	99.3
	d5-NEtFOSAA	EIS	8.36	589.3 / 419.1	330505		4.778	NA	NA	NA	95.6
	d7-NMeFOSE	EIS	10.06	623.2 / 58.9	1099937		24.465	NA	NA	NA	97.9
	d9-NEtFOSE	EIS	10.26	639.2 / 58.9	1696488		25.593	NA	NA	NA	102.4

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C3-HFPO-DA	EIS	5.59	287.0 / 169.0	2562544		10.246	NA	NA	NA	102.5
	13C3-PFBA	NIS	2.89	216.0 / 172.0	1018395		4.763	NA	NA	NA	95.3
	13C2-PFHxA	NIS	5.33	315.0 / 270.0	1120501		2.288	NA	NA	NA	91.5
	13C4-PFOA	NIS	7.49	417.0 / 372.0	701723		2.242	NA	NA	NA	89.7
	13C5-PFNA	NIS	7.94	468.0 / 423.0	625607		1.142	NA	NA	NA	91.4
	13C2-PFDA	NIS	8.17	515.1 / 470.1	607279		1.185	NA	NA	NA	94.8
	18O2-PFHxS	NIS	7.61	403.1 / 84.1	522805		2.232	NA	NA	NA	94.2
	13C4-PFOS	NIS	8.26	503.1 / 80.1	460170		2.186	NA	NA	NA	91.3

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Generated: 8/14/2024 9:40:32 AM

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec

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Generated: 8/14/2024 9:40:32 AM

PFBA
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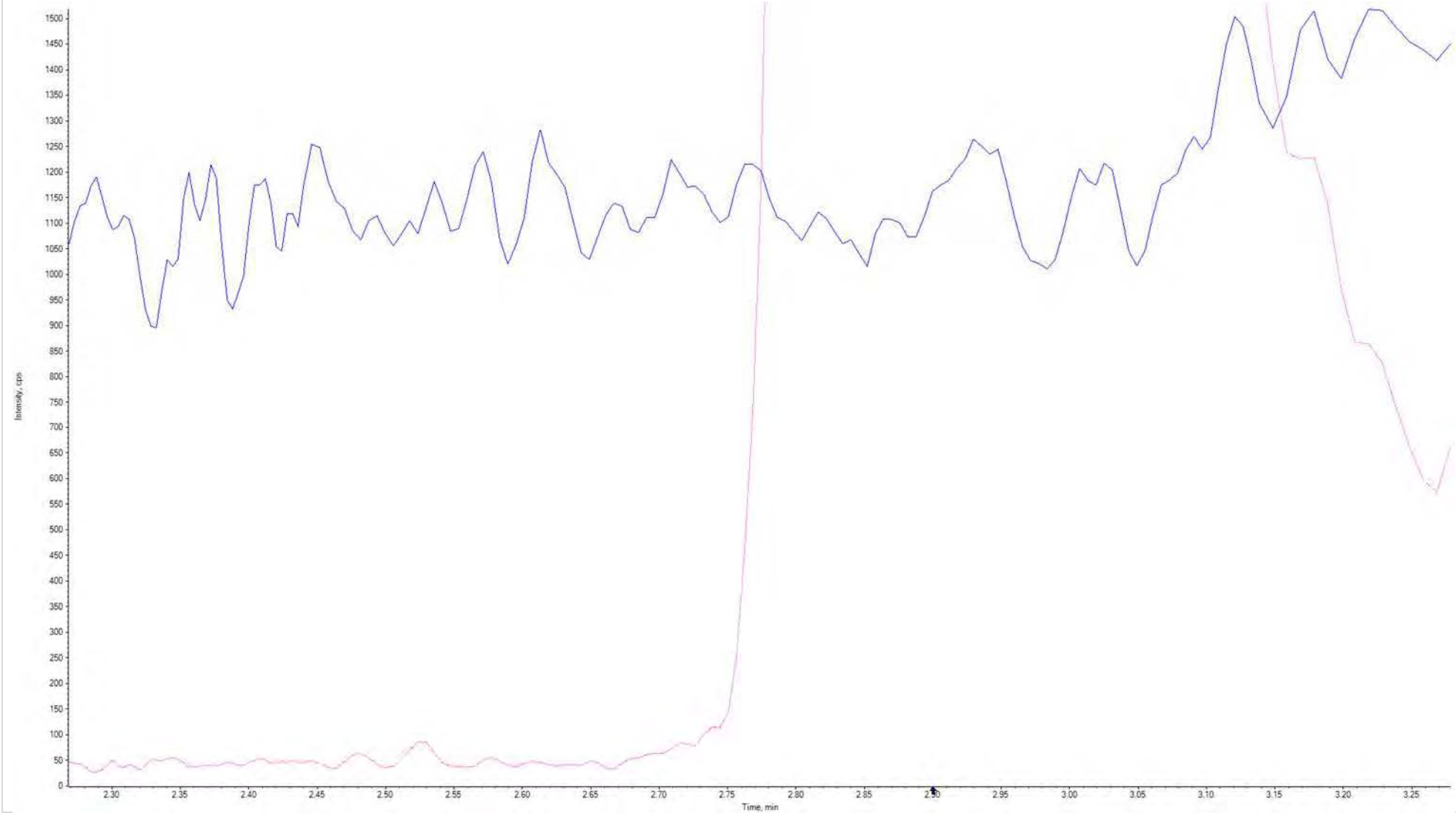

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PFPeA
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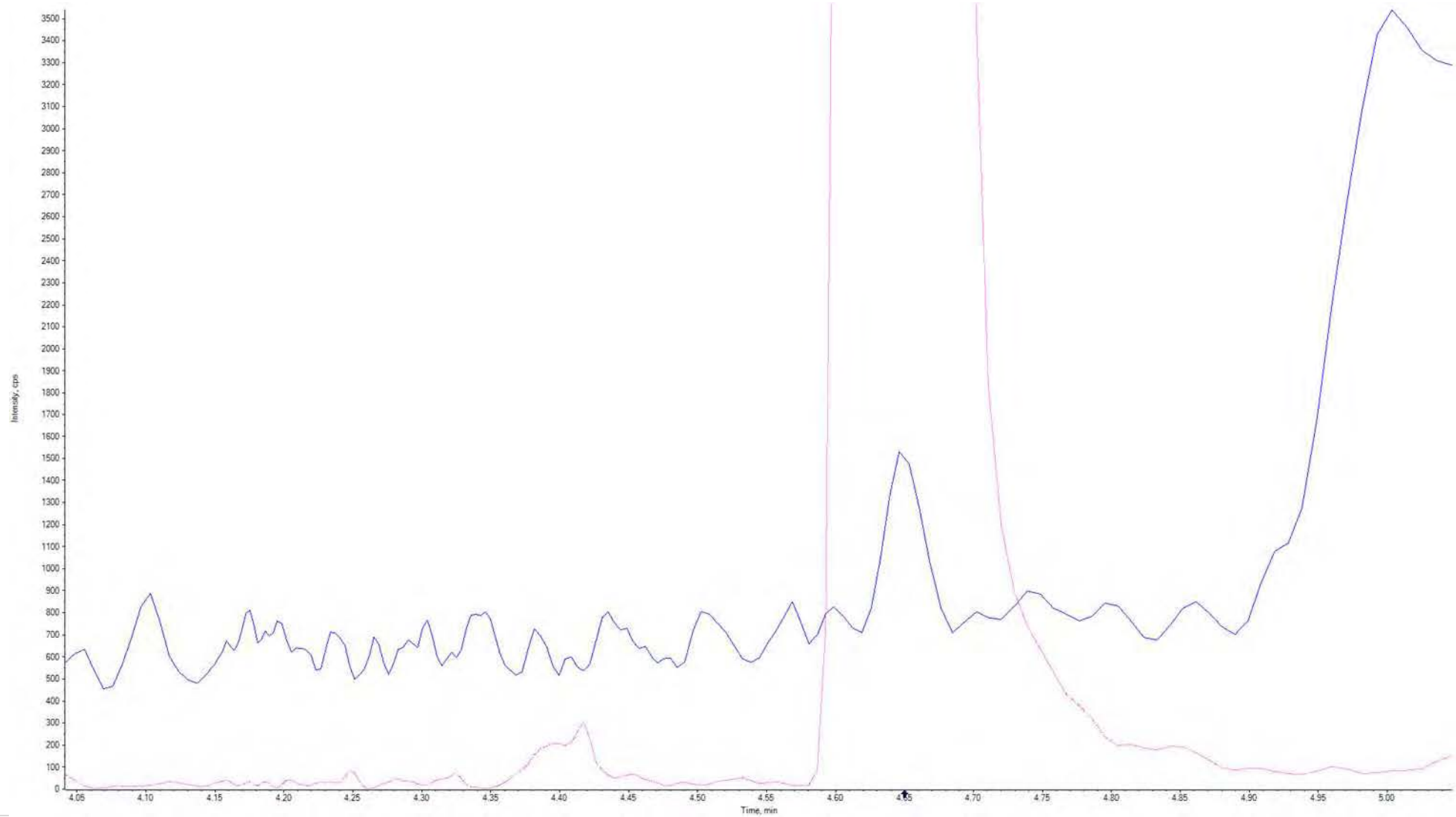

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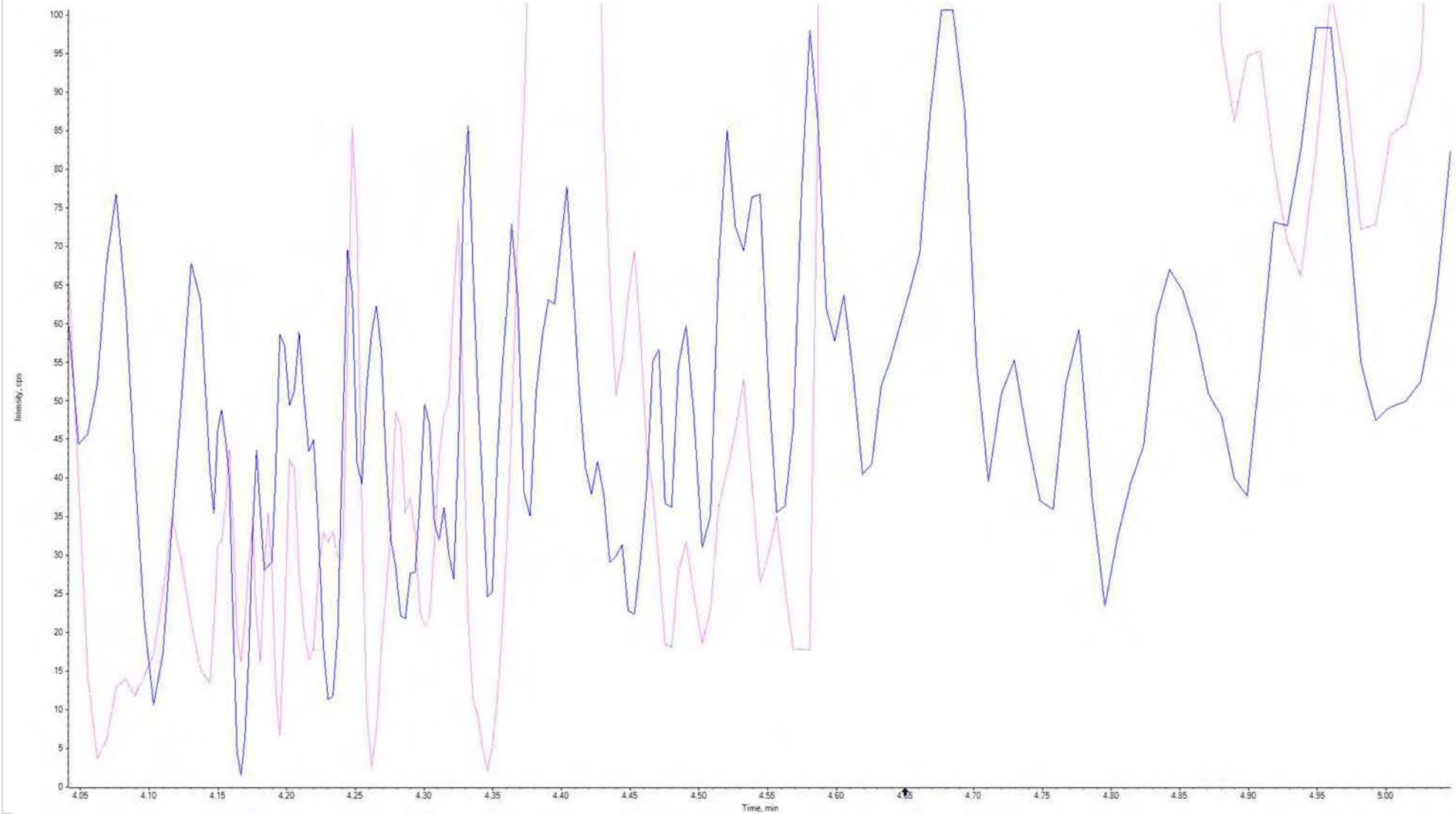

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PFHxA
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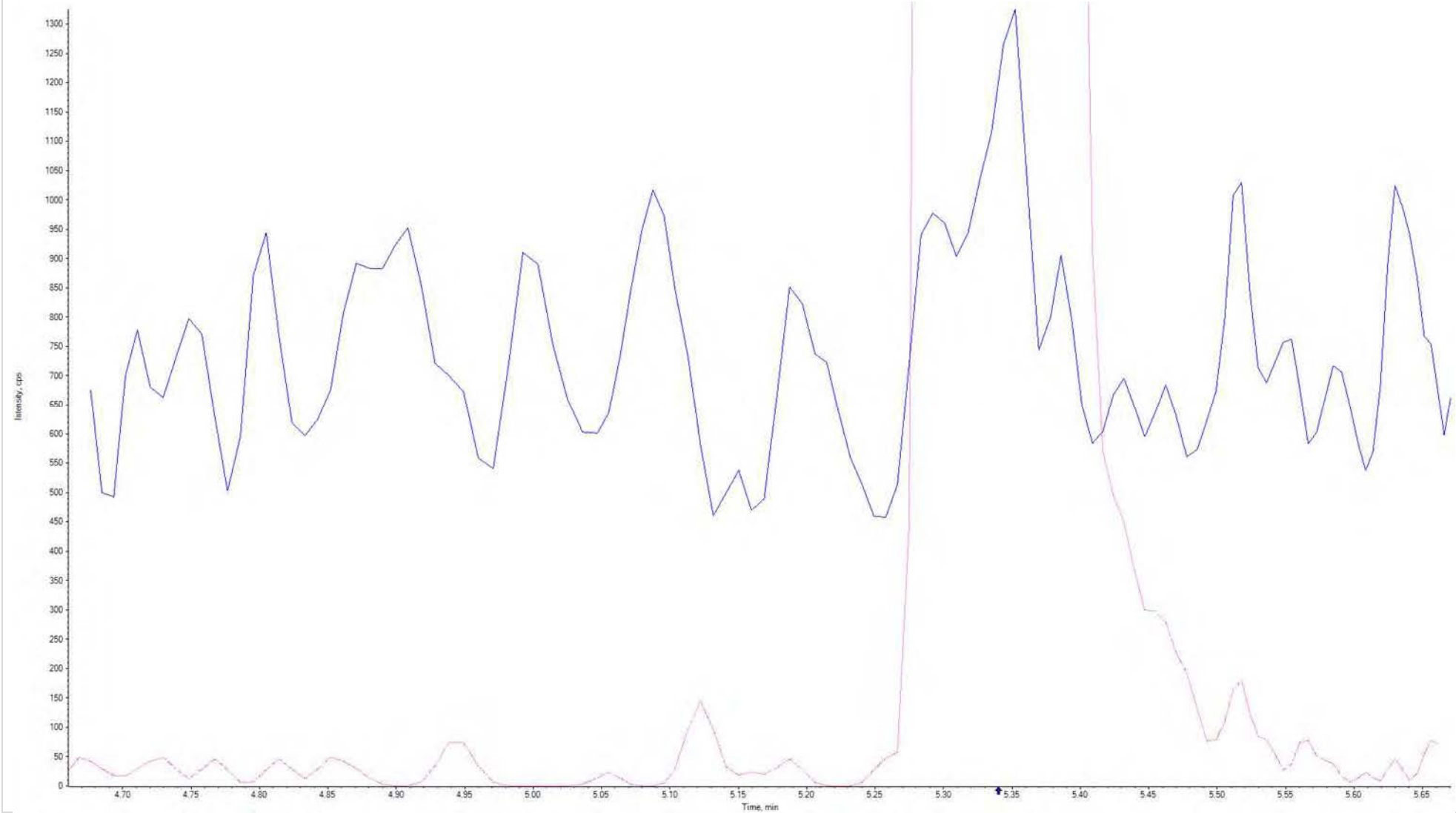

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PFHxA_2
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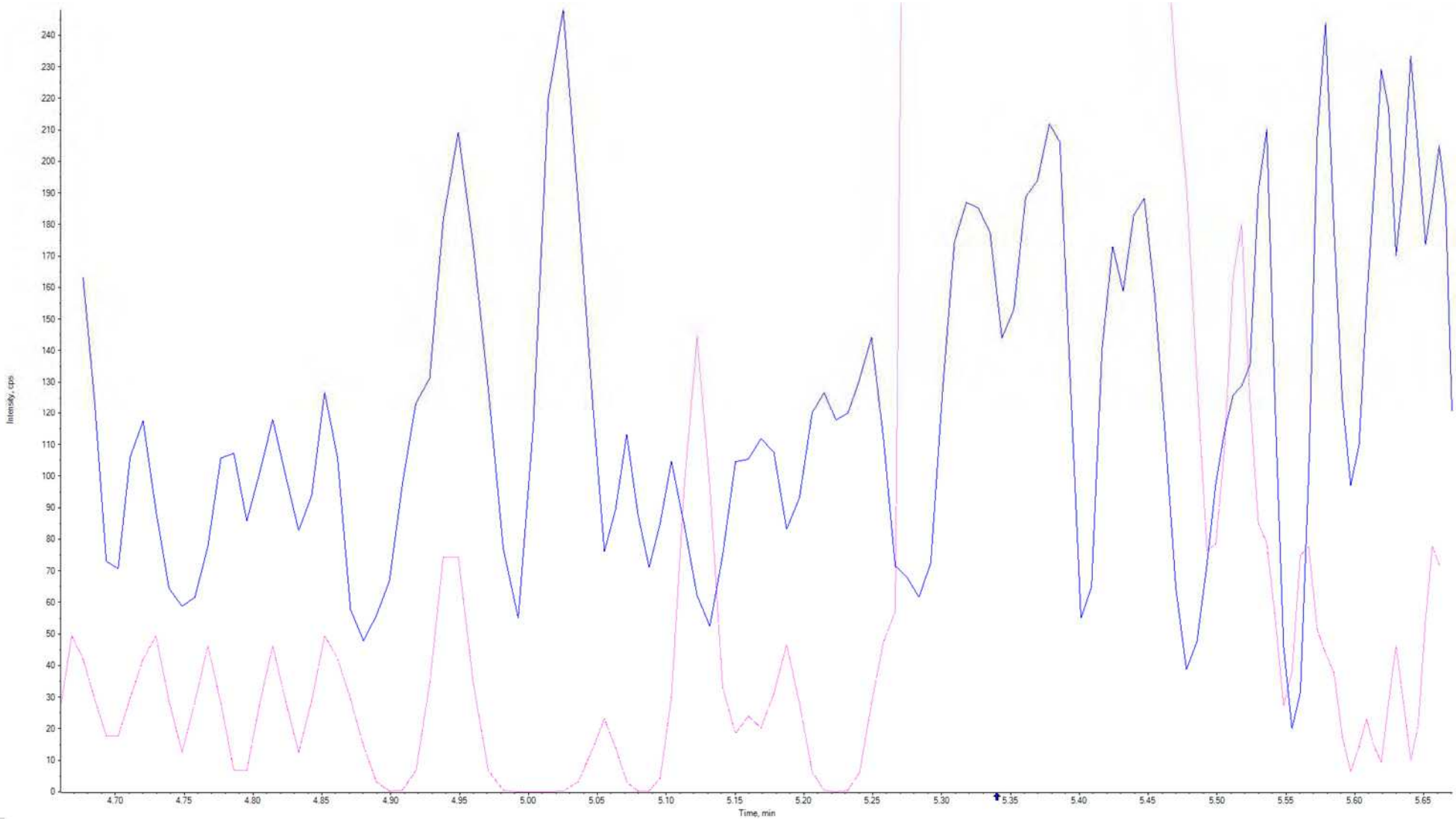

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PFHpA
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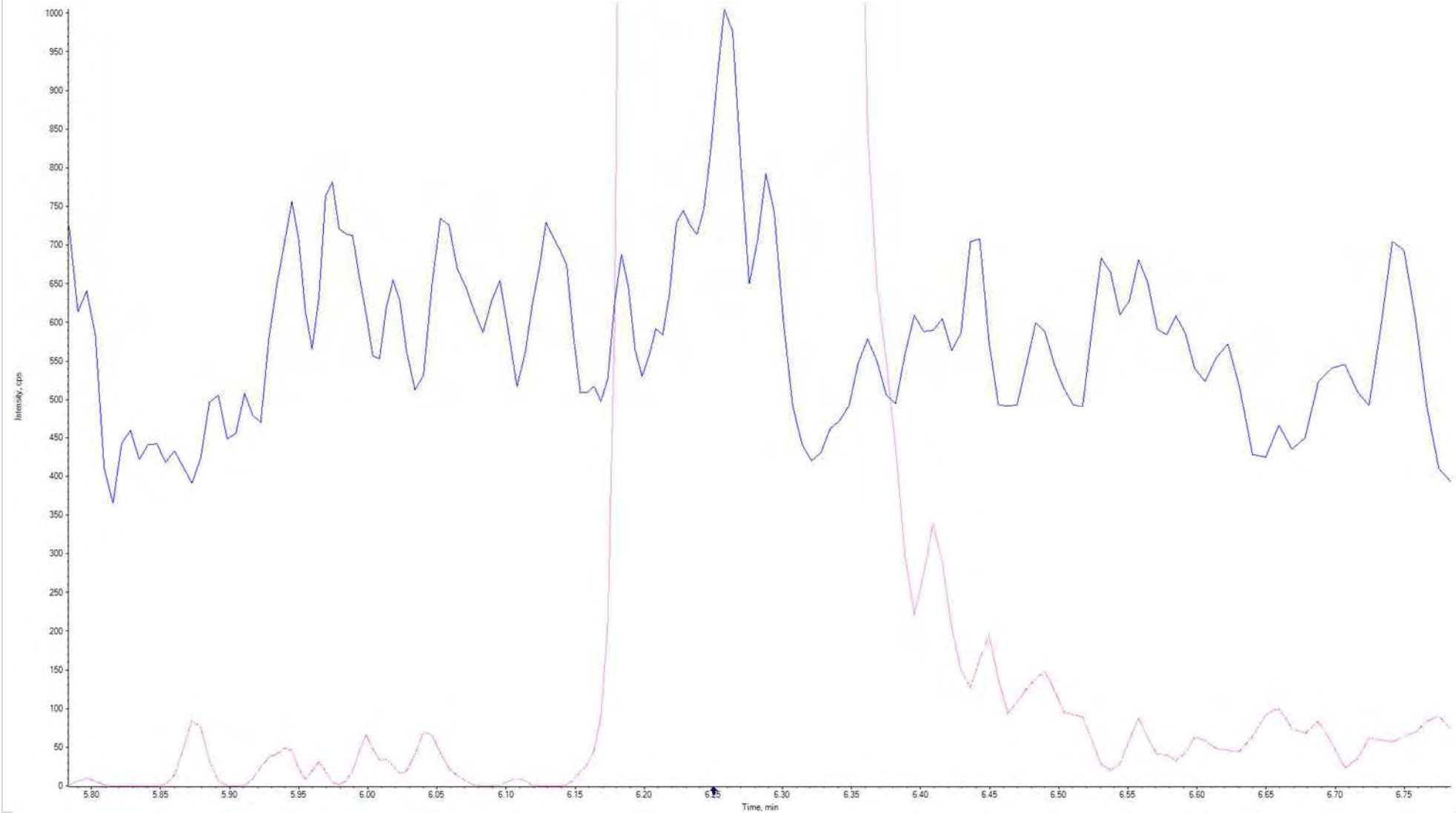

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PFHpA_2
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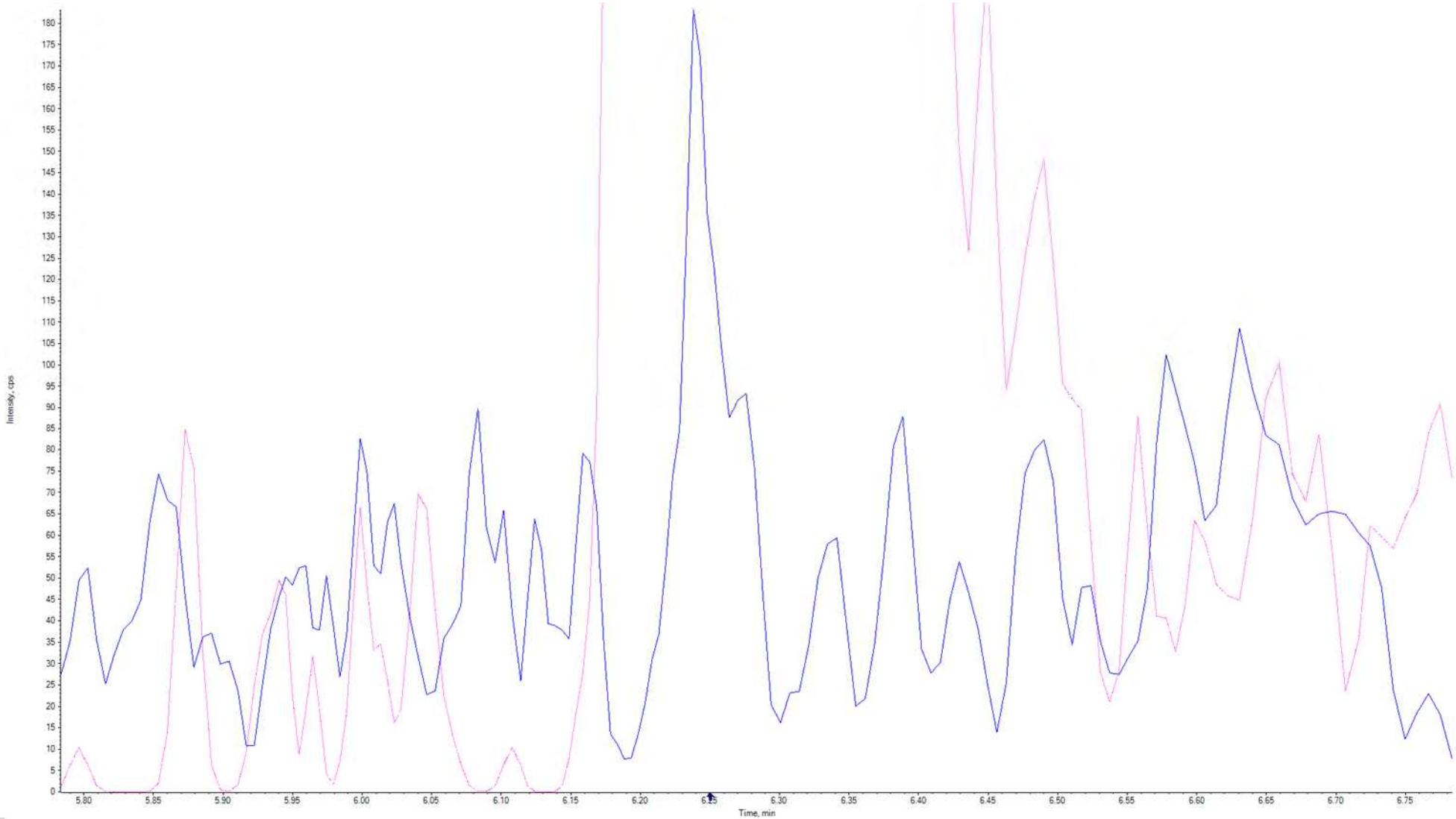

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PFOA
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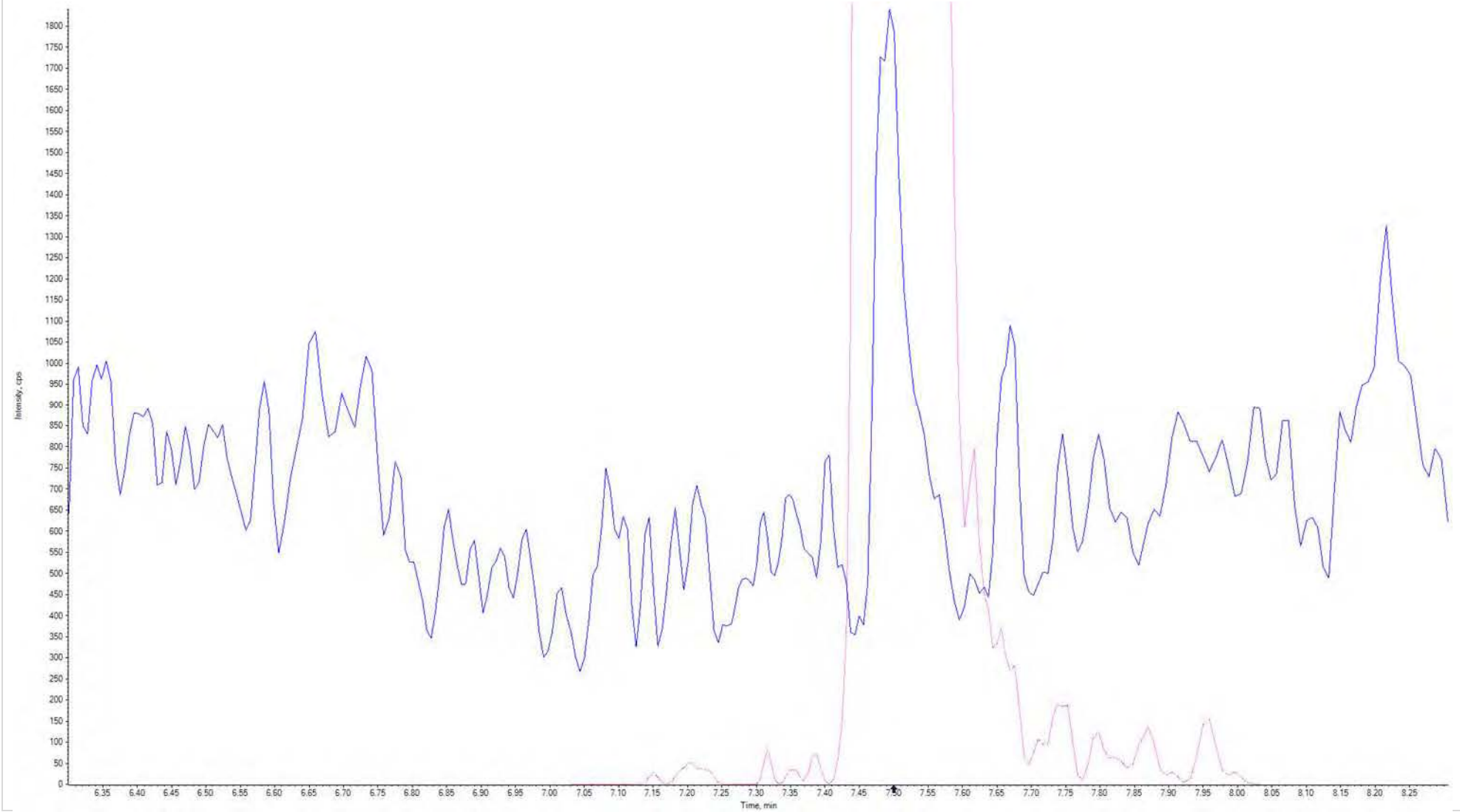

PFOA_2
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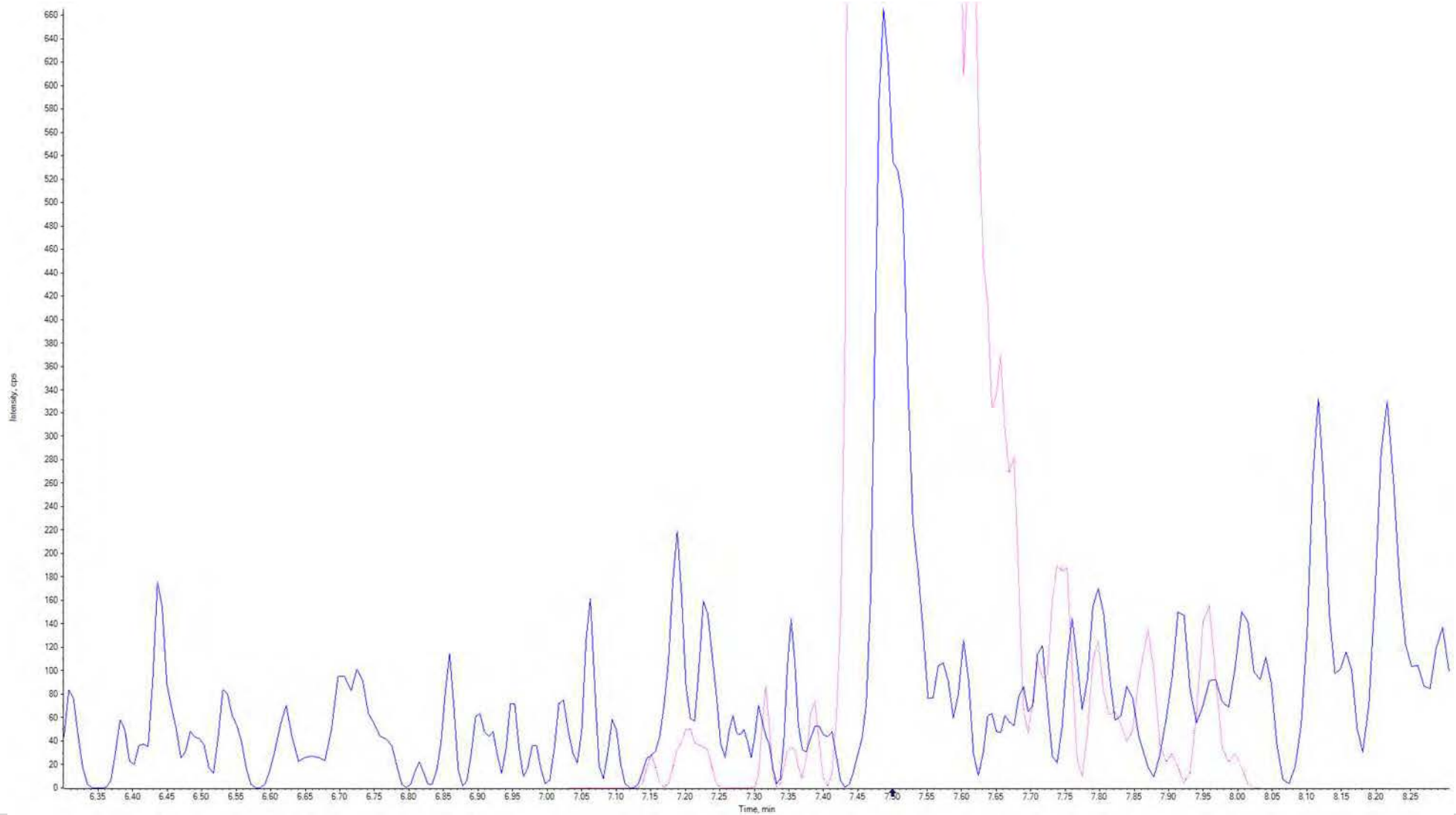

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PFNA
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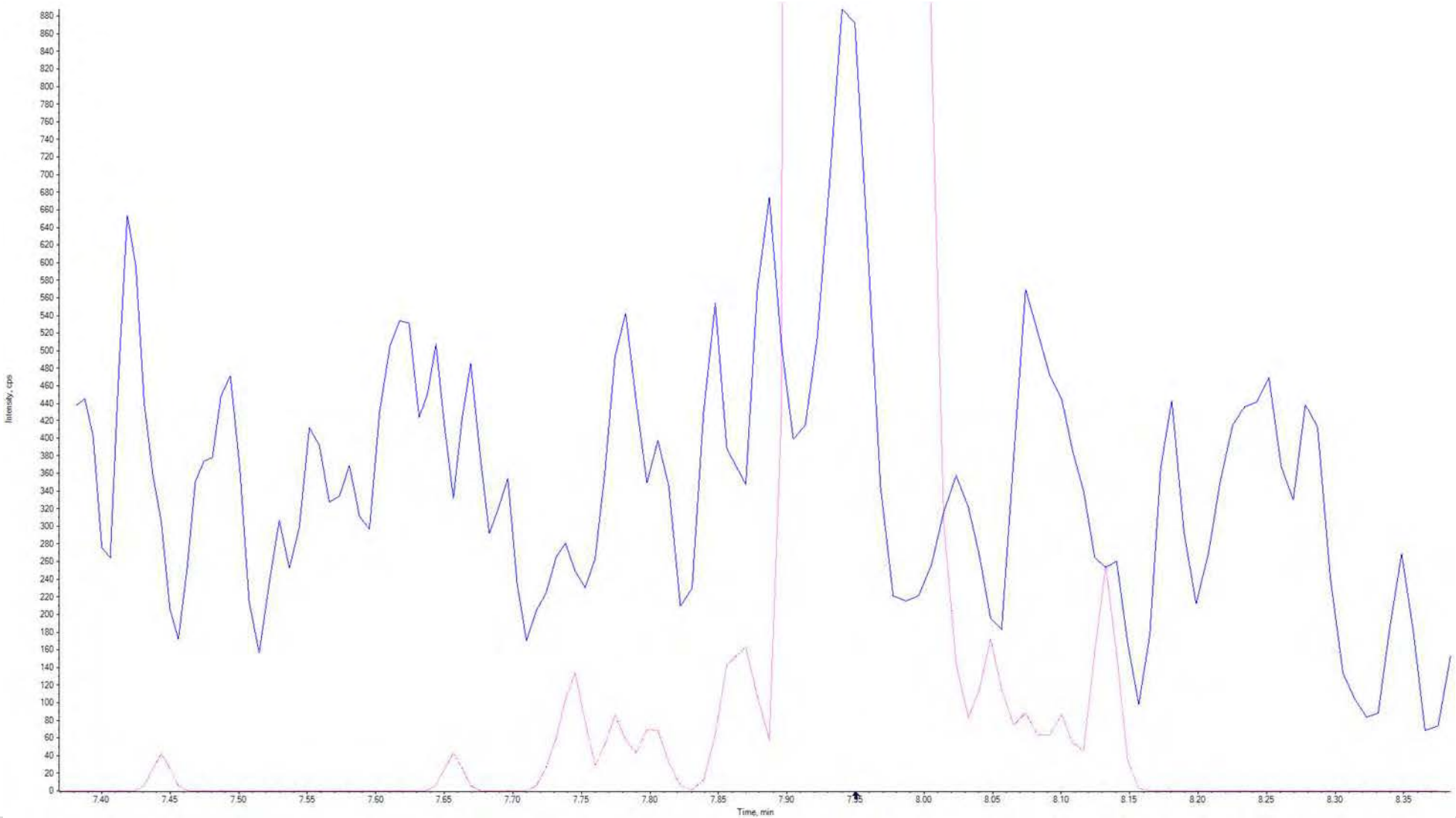

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PFNA_2
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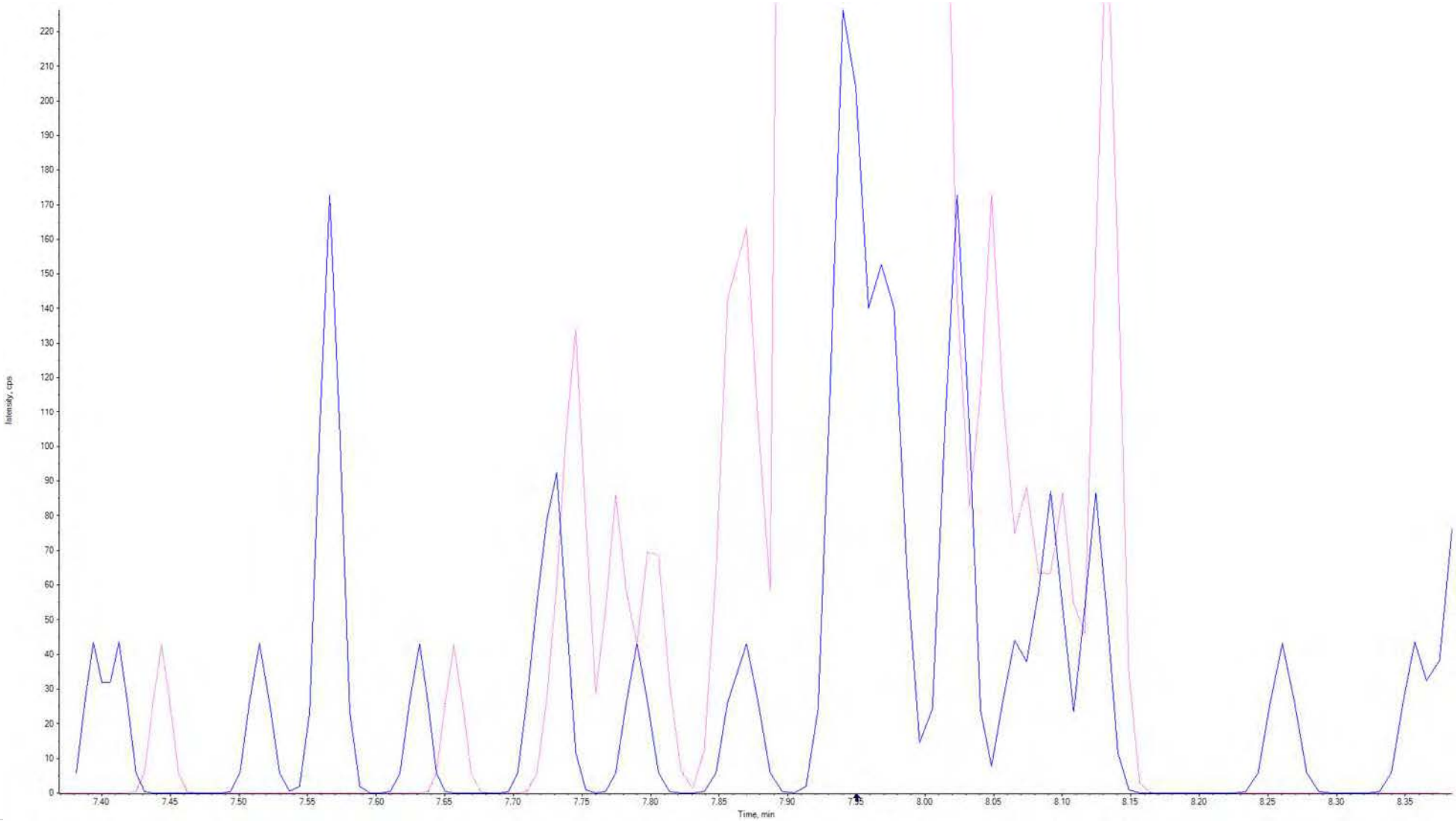

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PFDA
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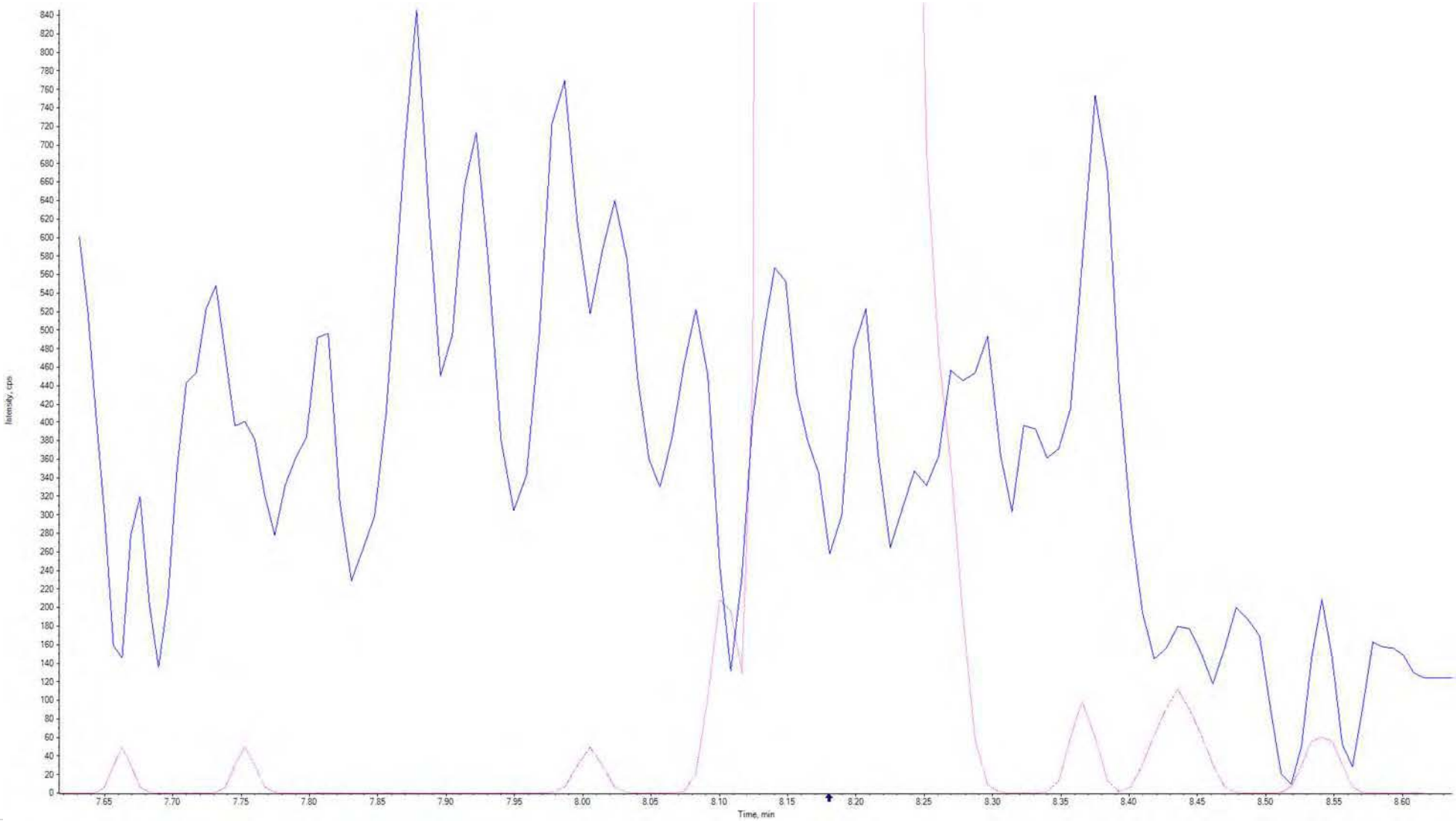

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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PFDA_2
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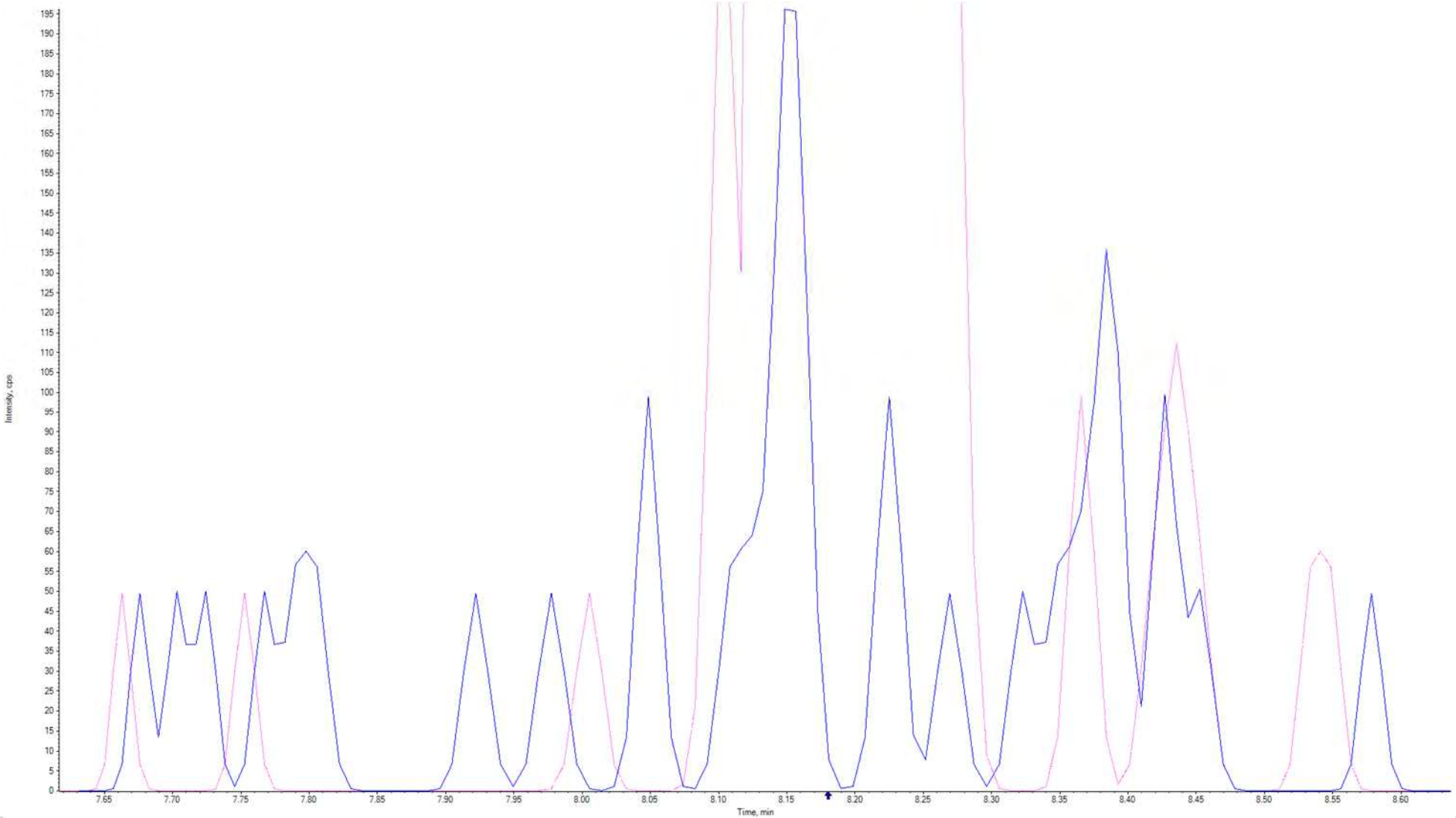

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Last Altered: 8/14/2024 9:55:24 AM
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PFUnA
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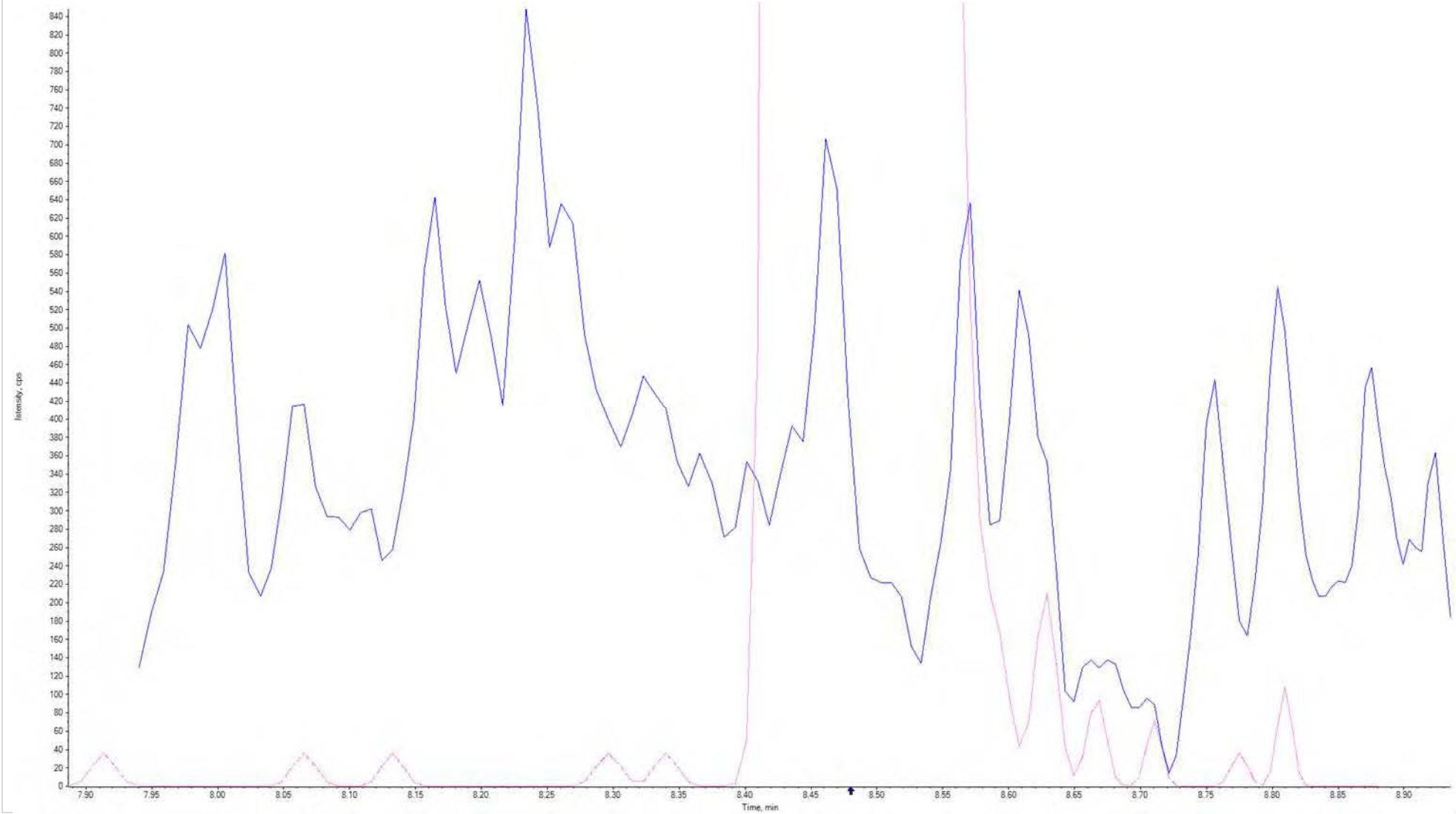

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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PFUnA_2
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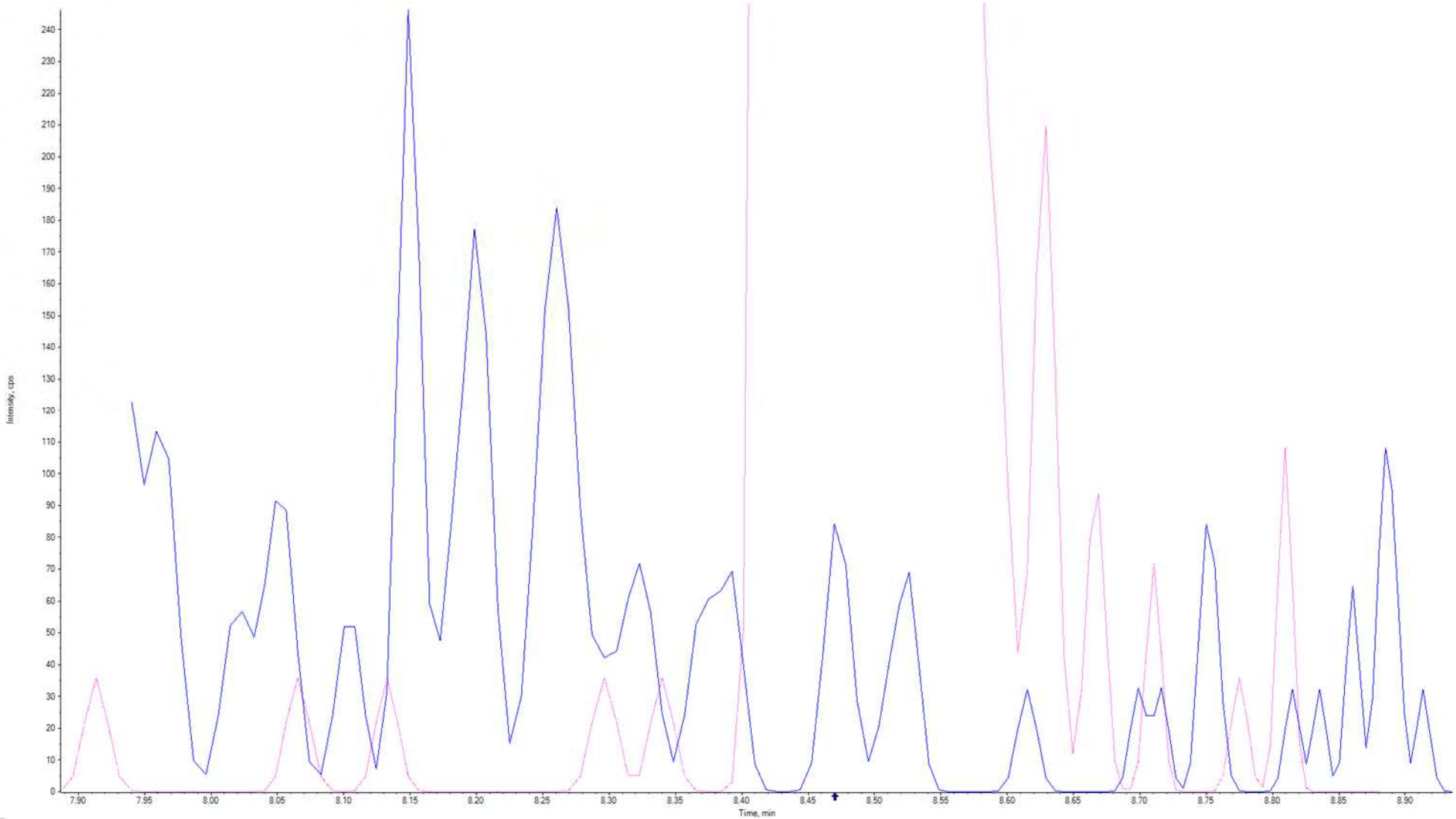
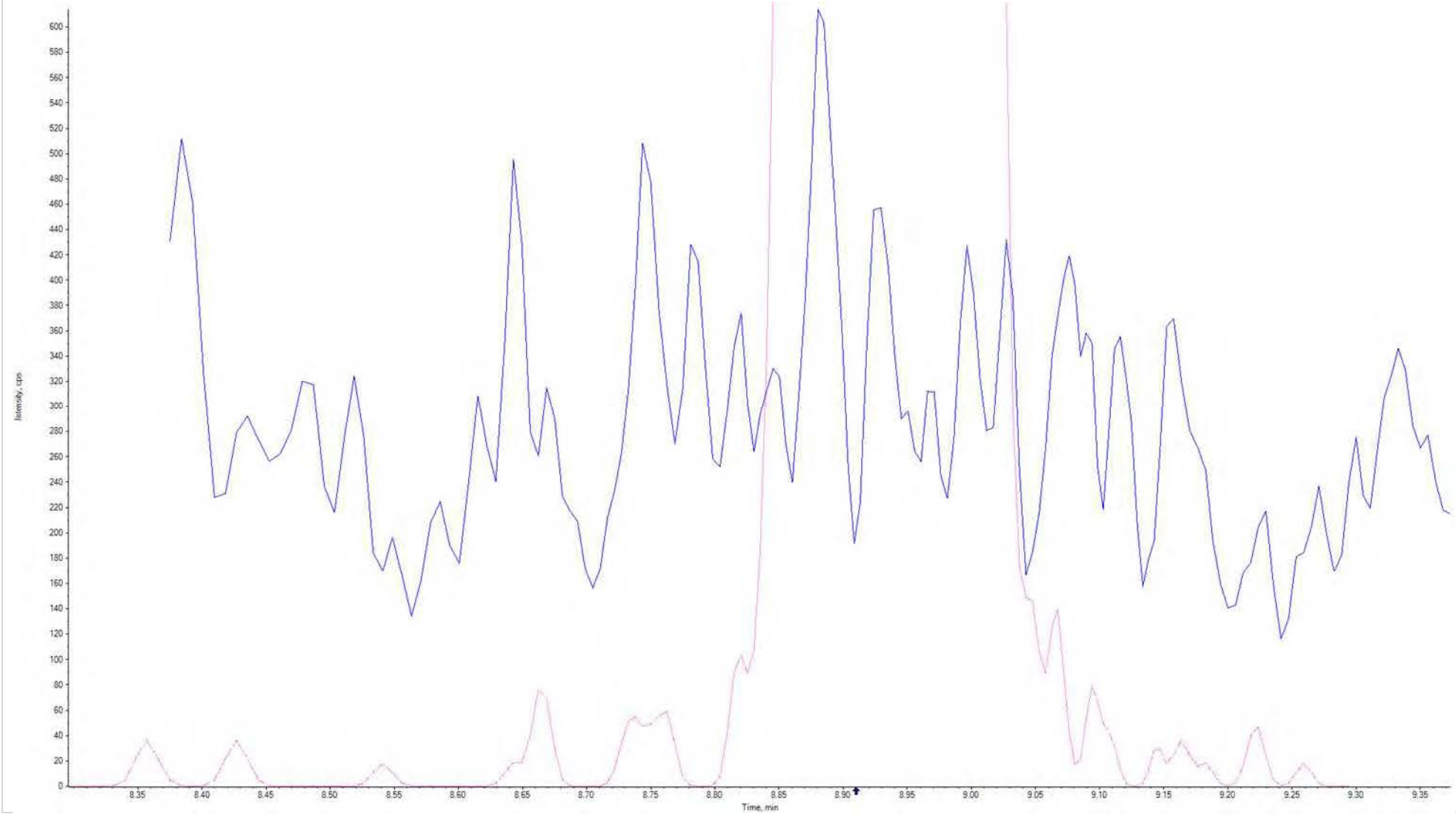


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_84.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFDoA
Sample: WG1958909-6,INSTBLANK S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_84.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFDoA_2
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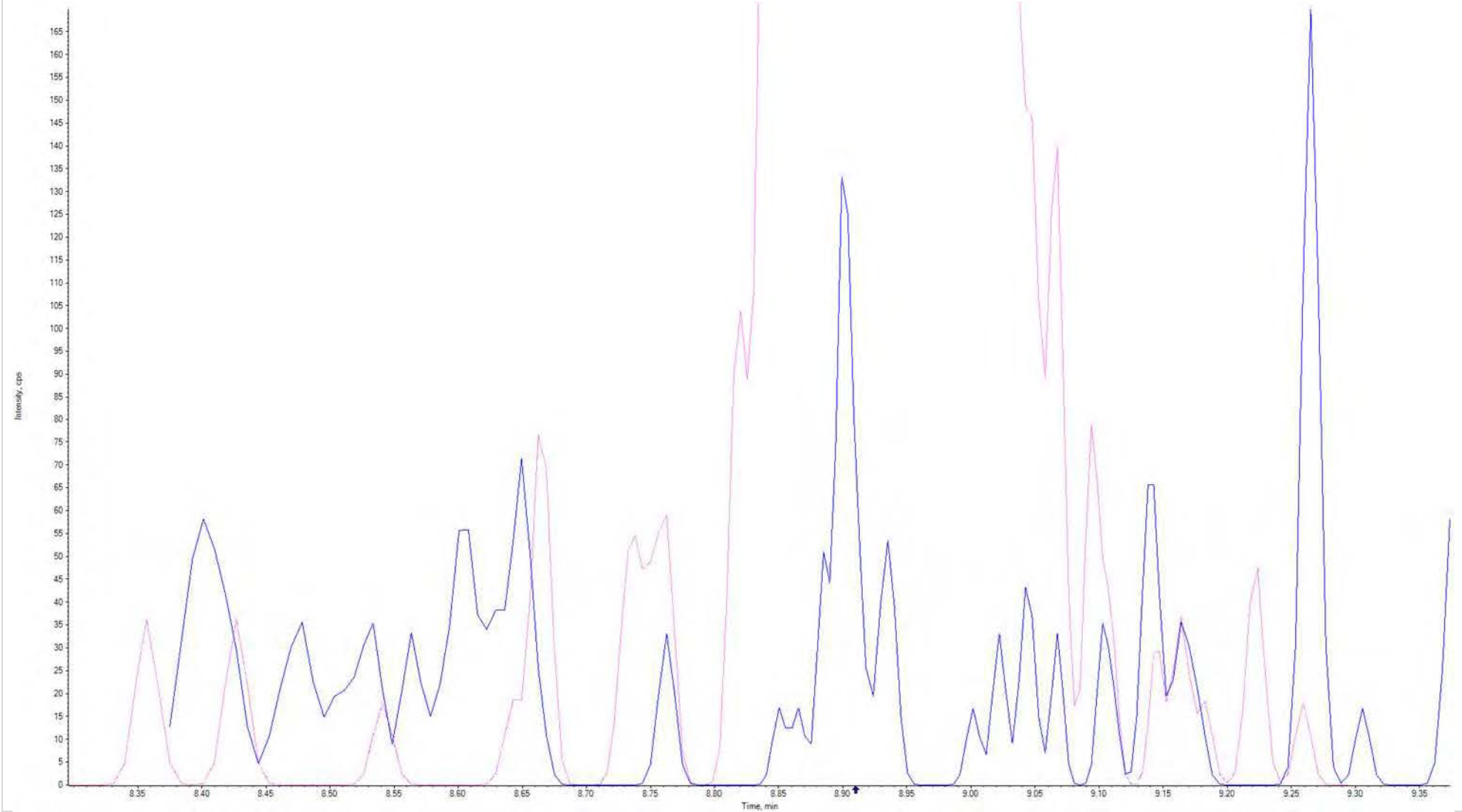

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_84.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFTrDA
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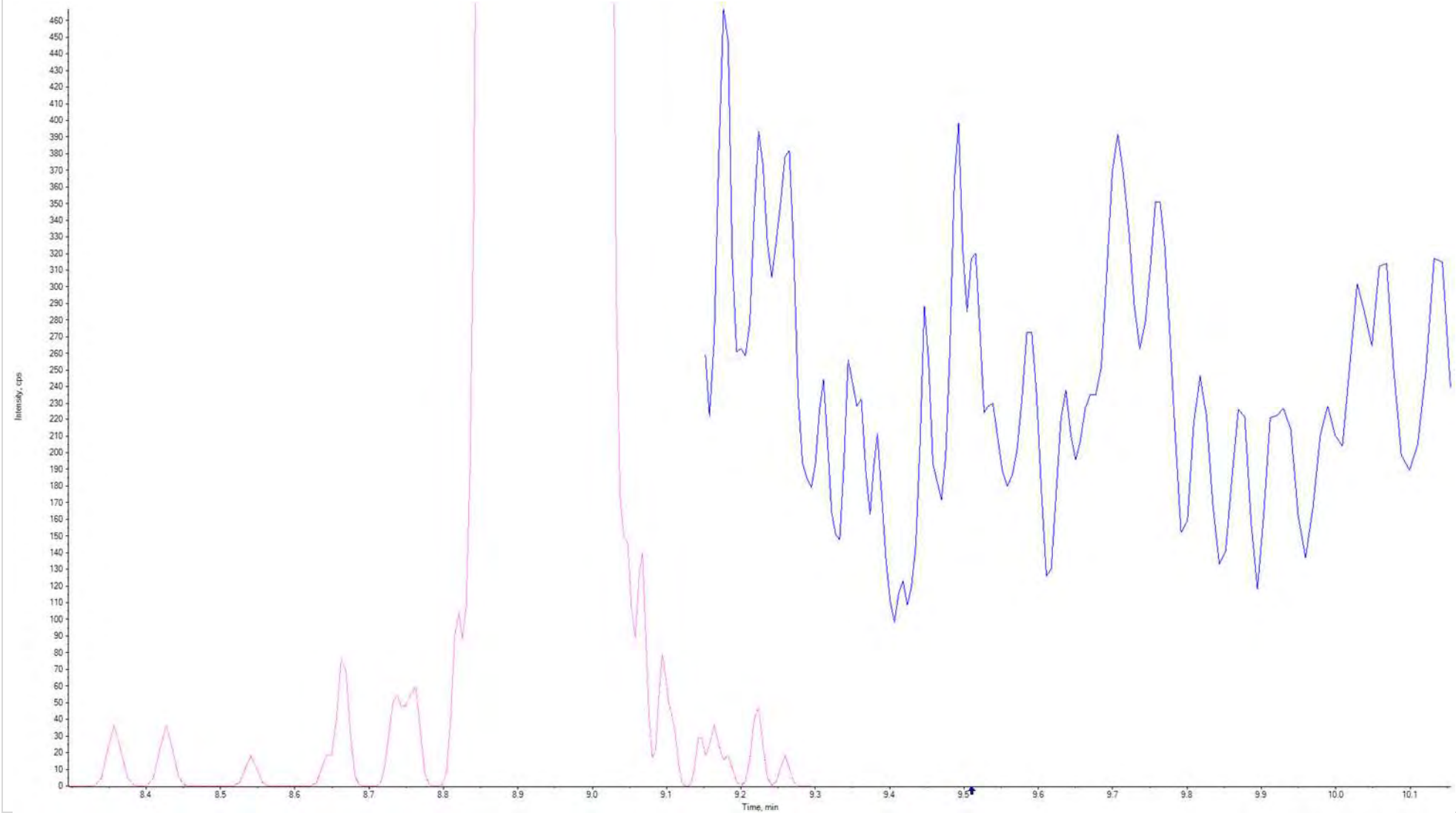

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Generated: 8/14/2024 9:40:32 AM

PFTrDA_2
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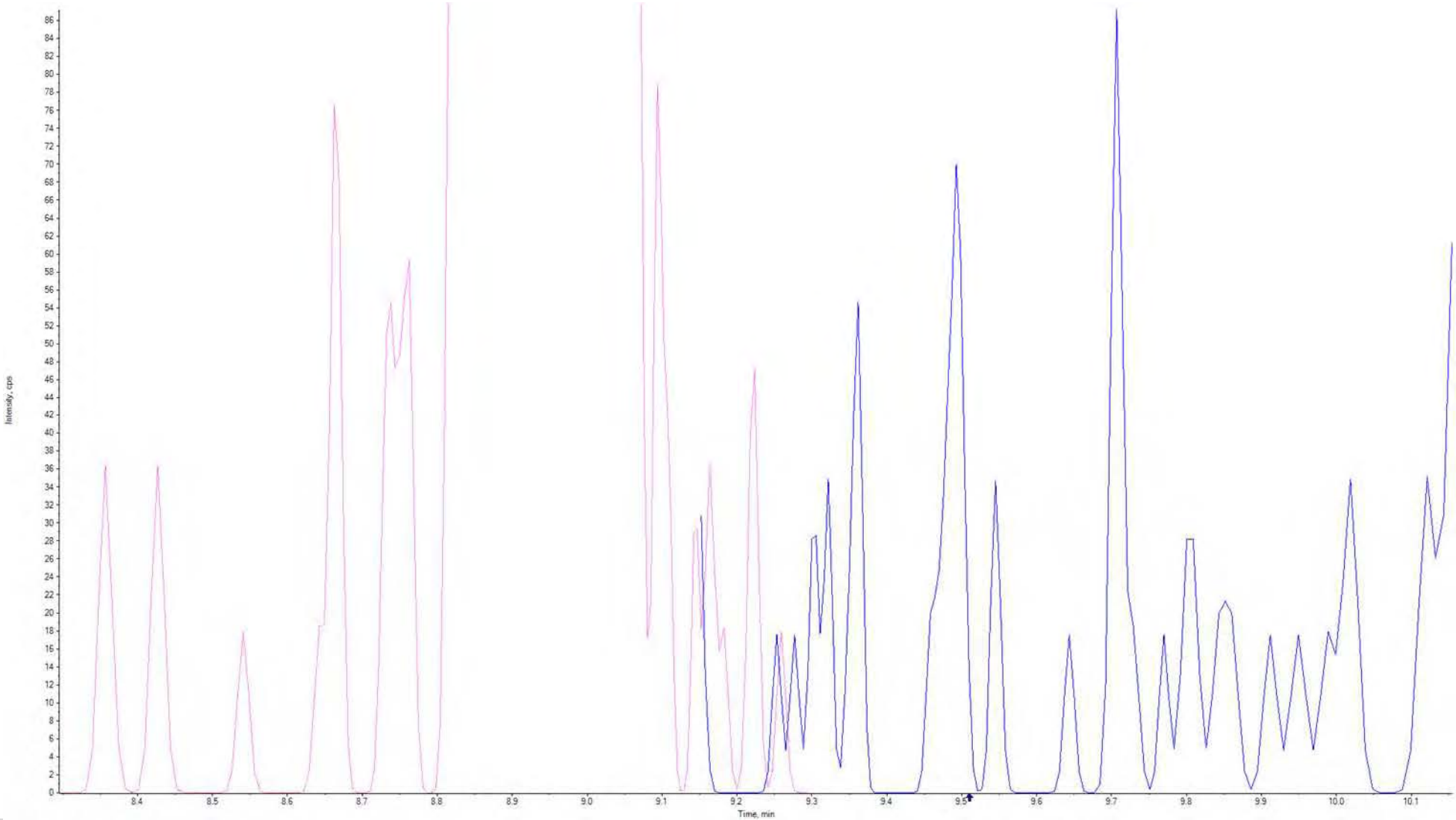

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFTeDA
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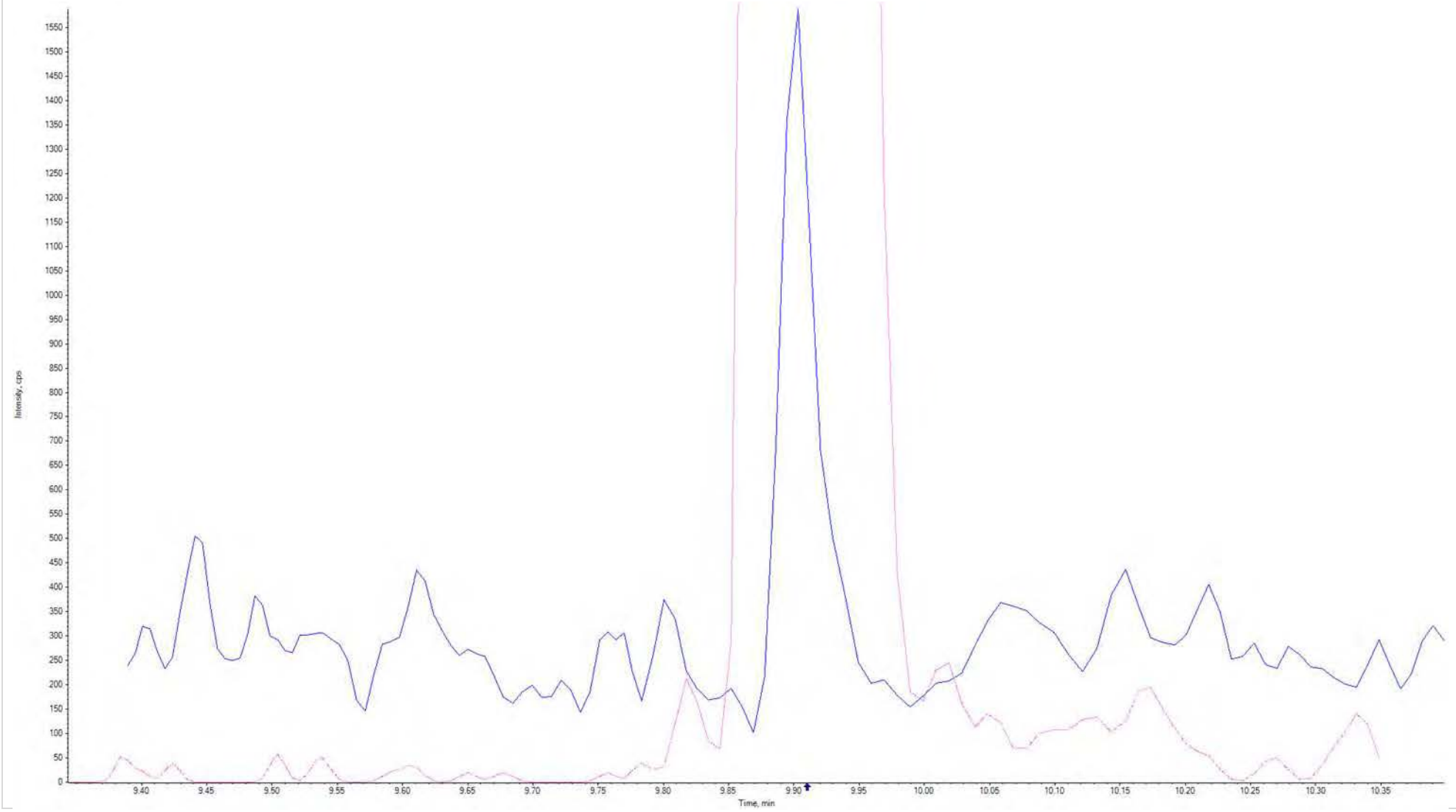

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 8/14/2024 9:55:24 AM
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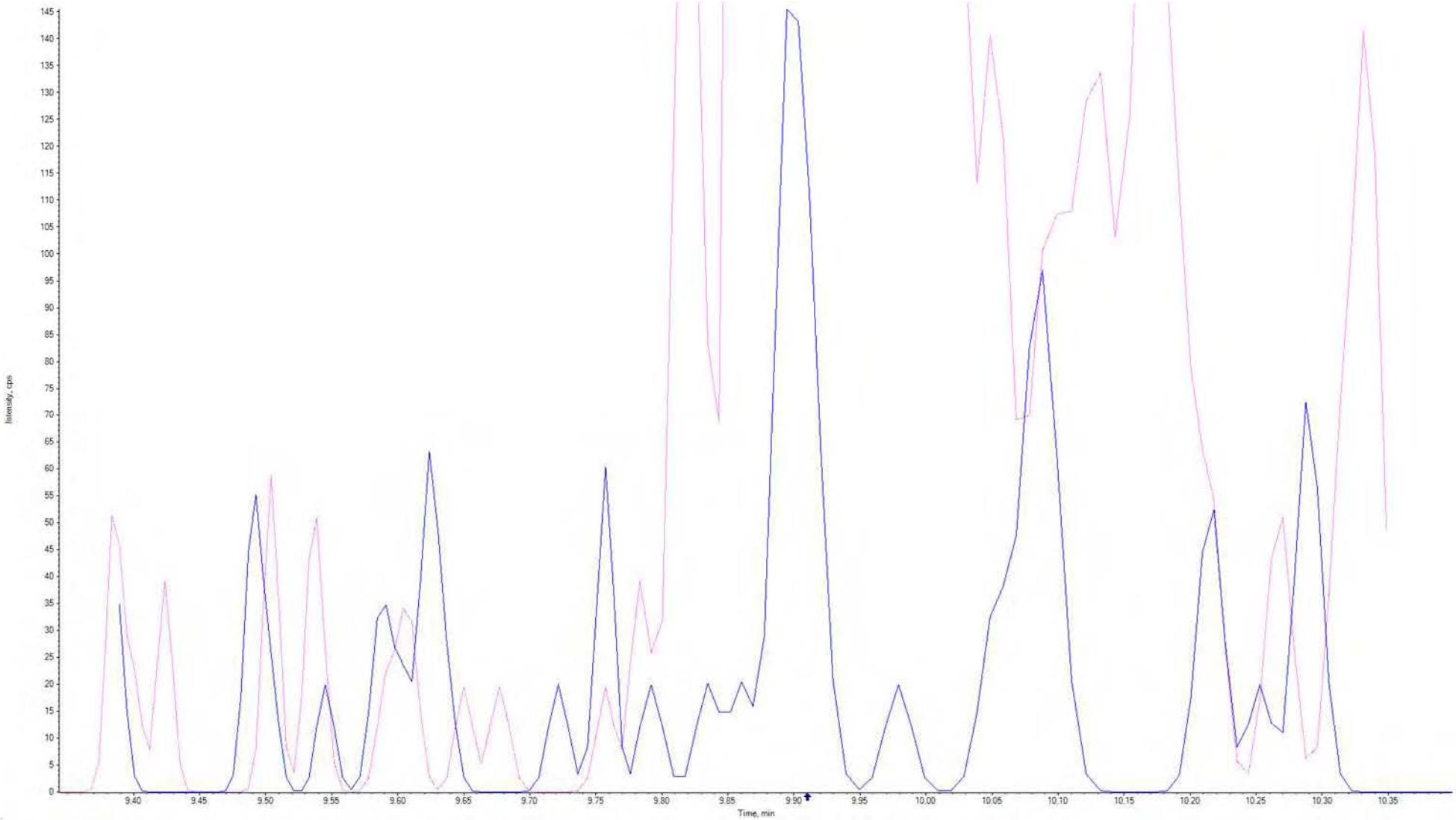

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_84.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFBS
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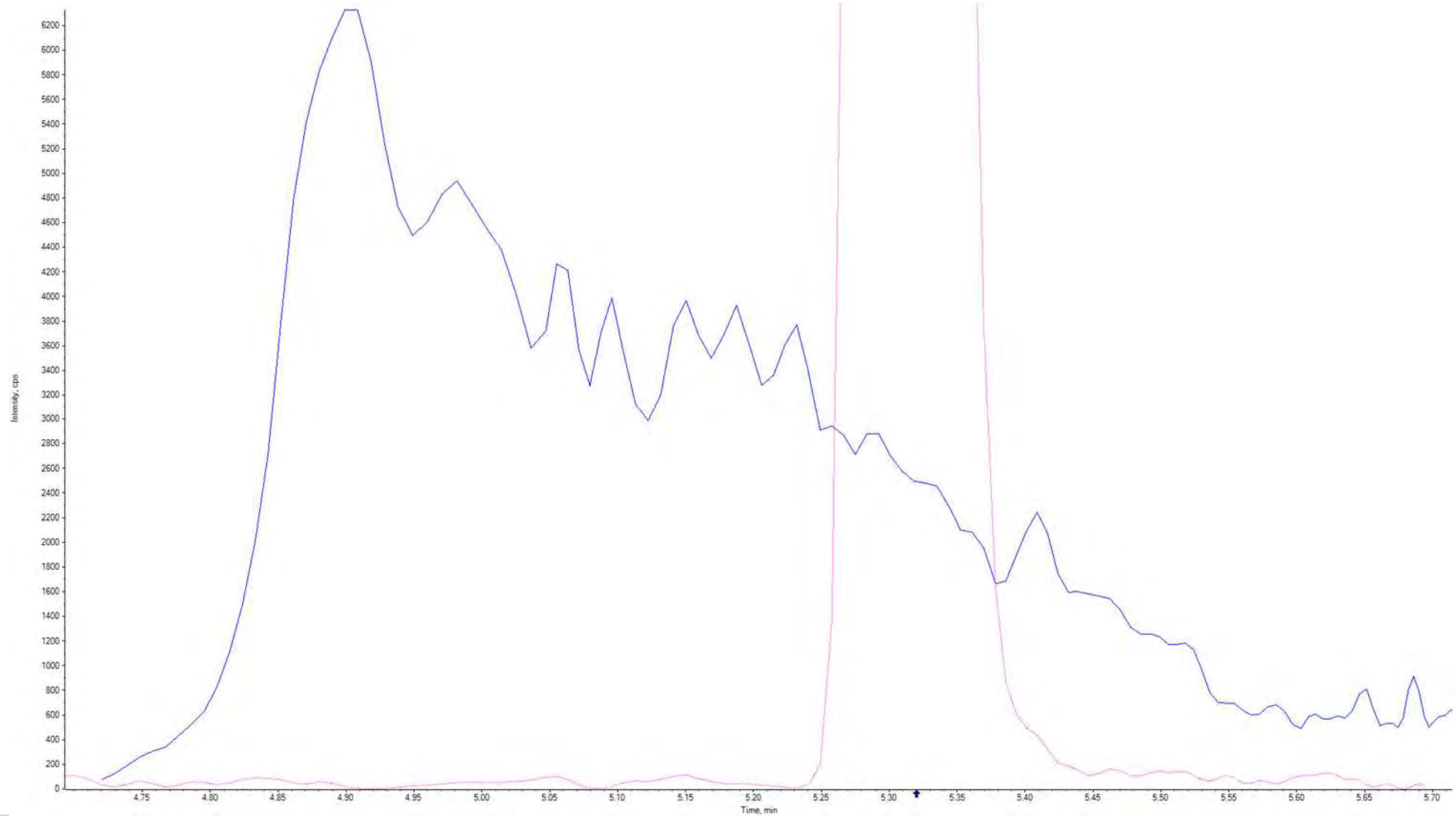

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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PFBS_2
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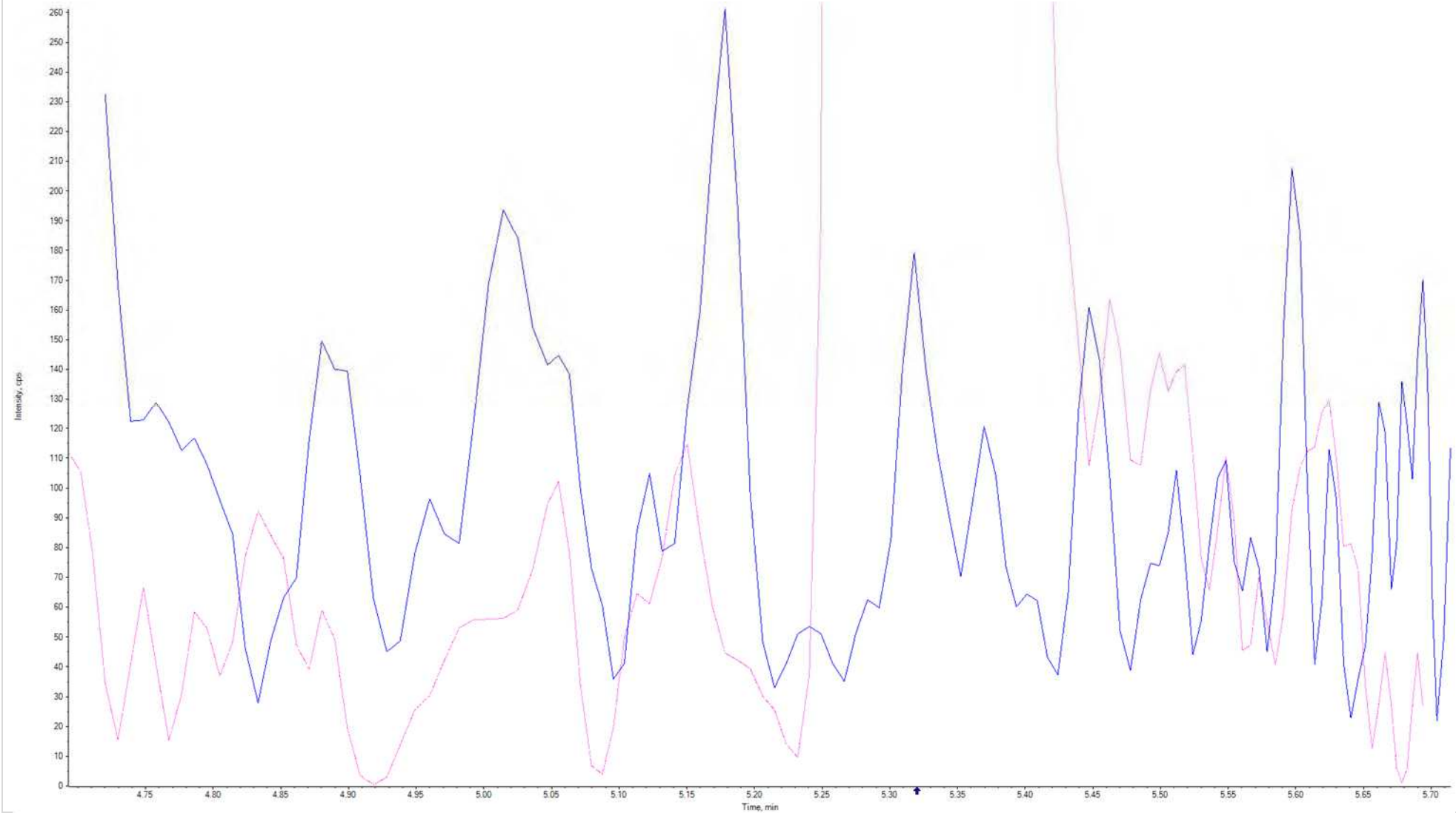

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_84.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFPeS
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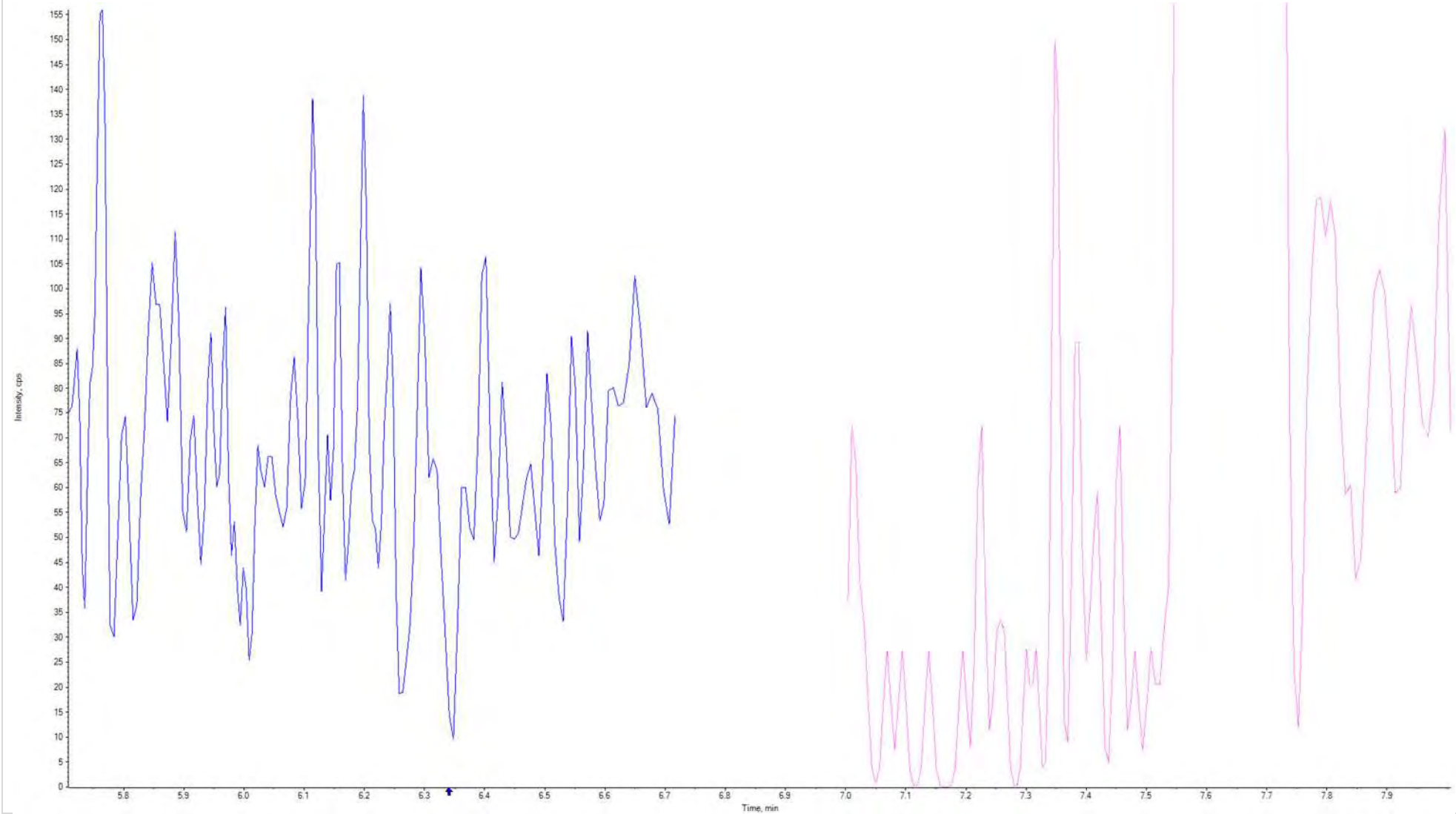

PFPeS_2
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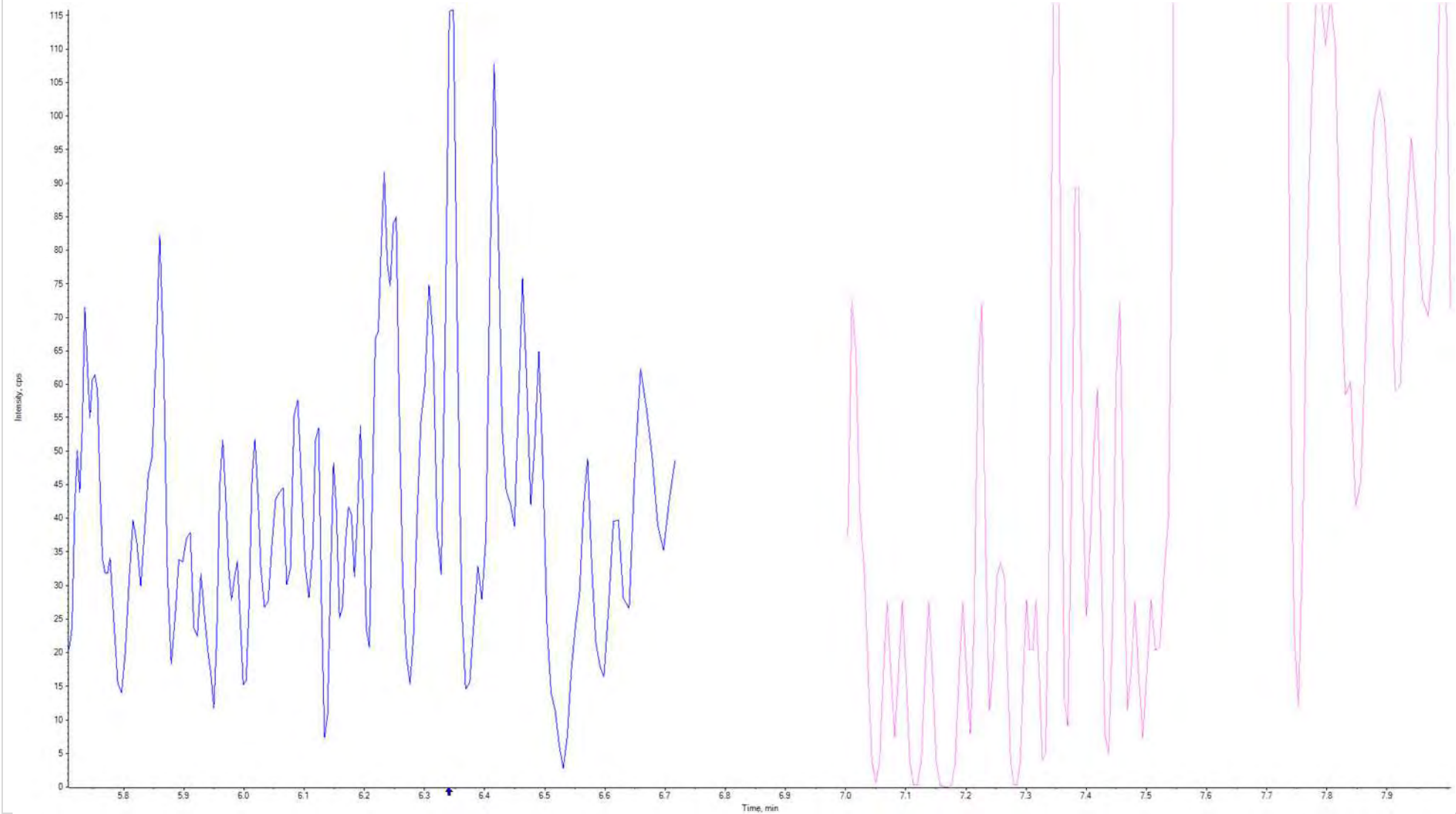
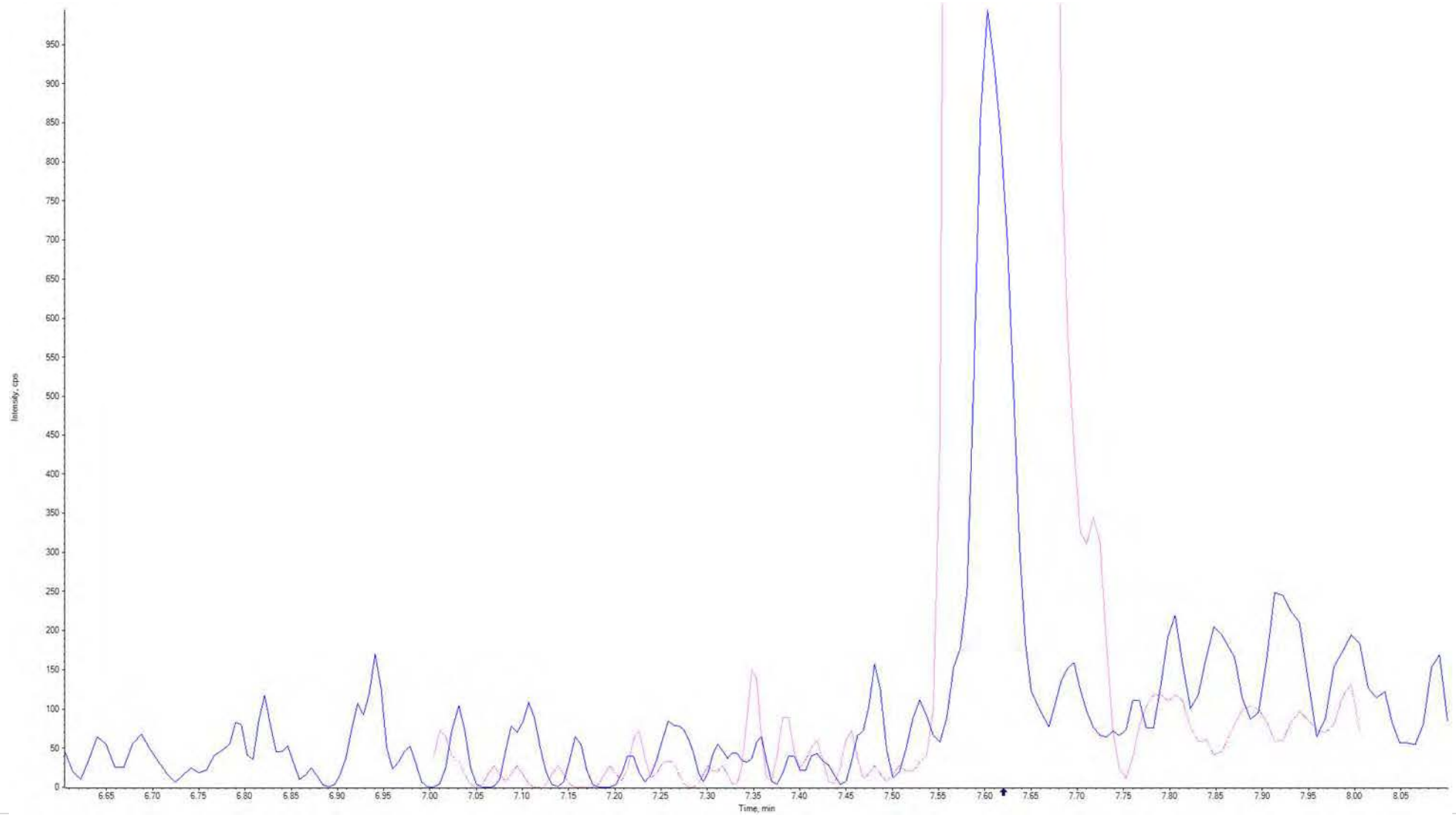


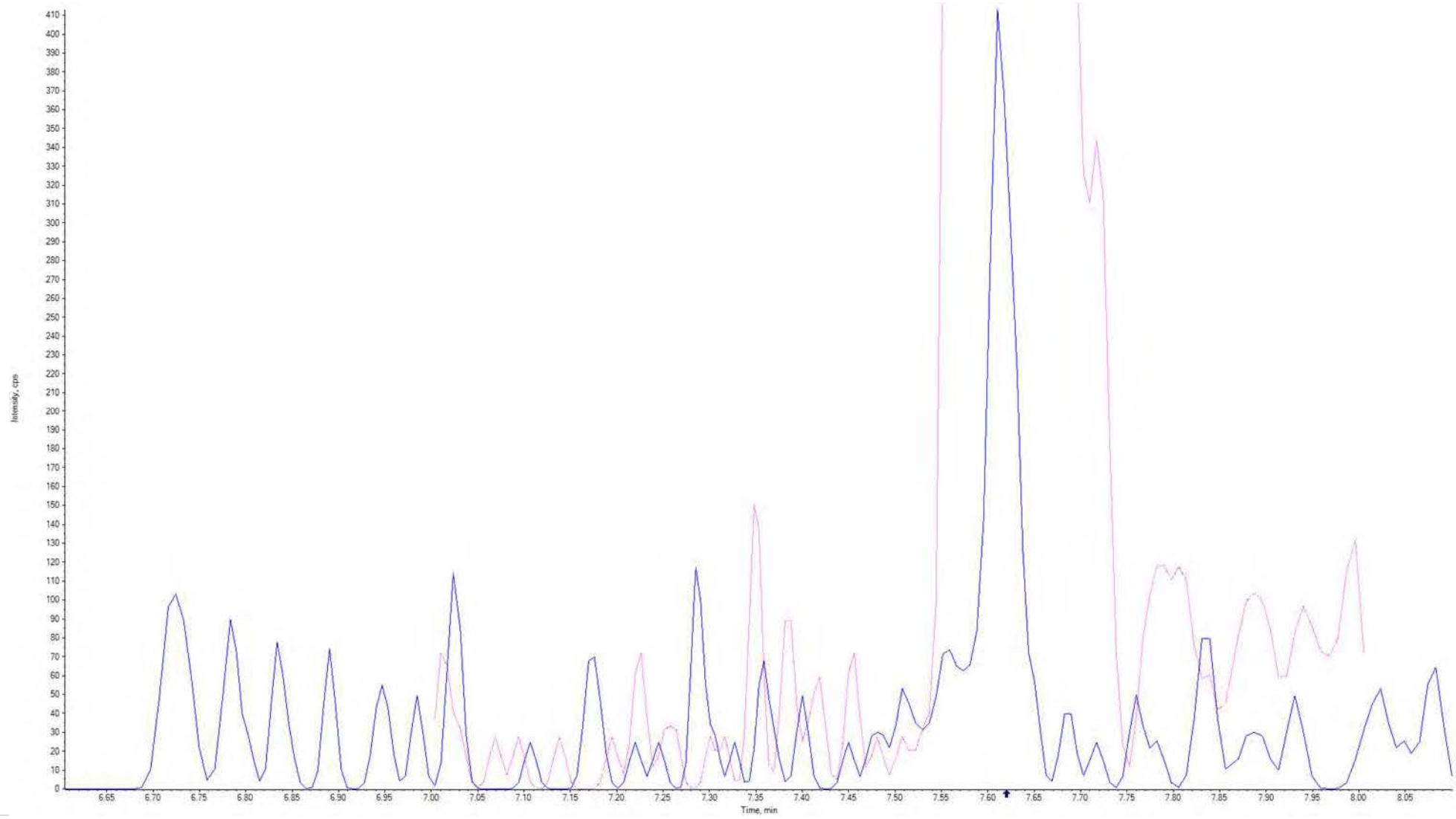
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_84.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFHxS
Sample: WG1958909-6,INSTBLANK S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_84.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFHxS_2
Sample: WG1958909-6,INSTBLANK S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFHpS
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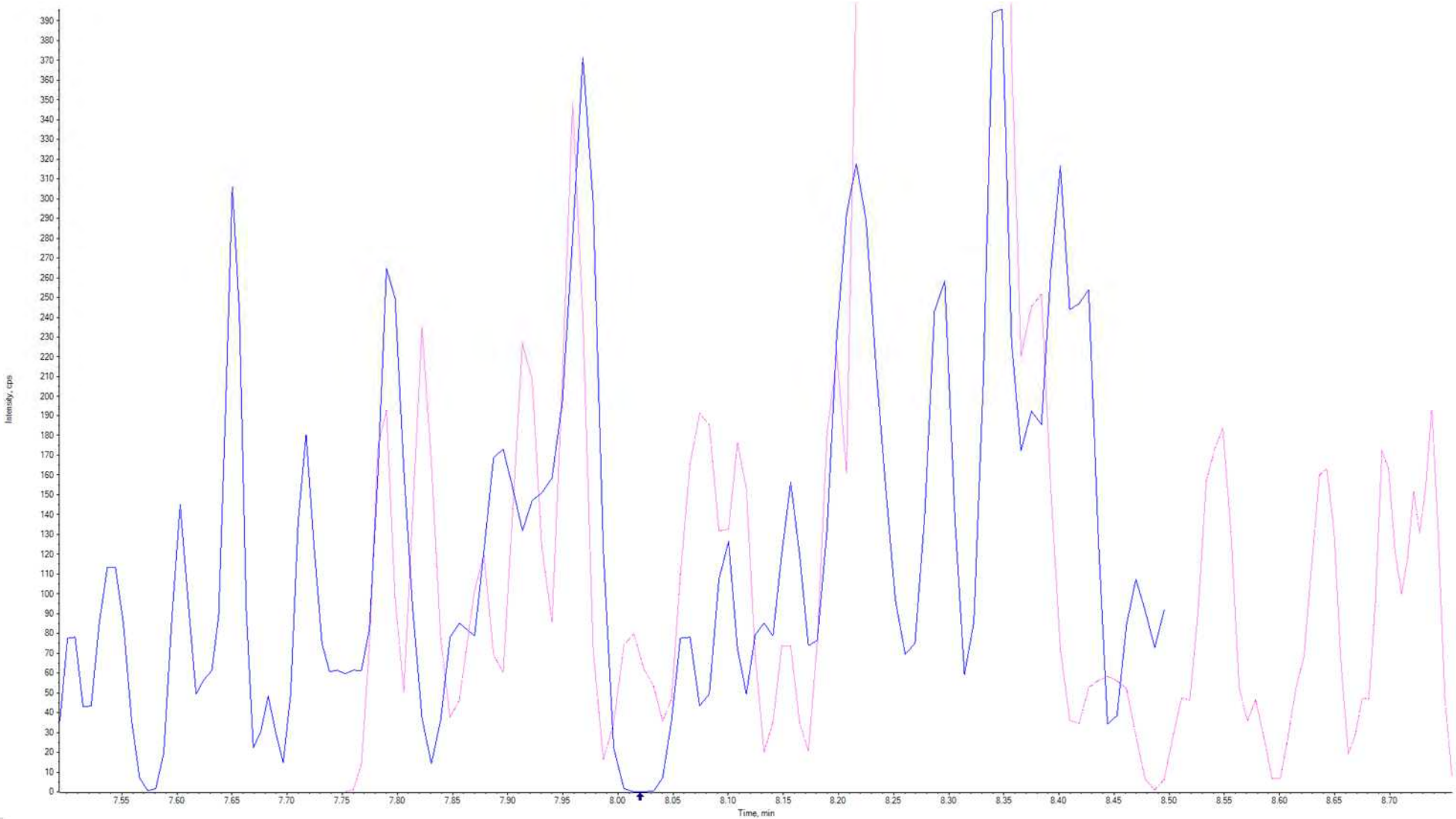

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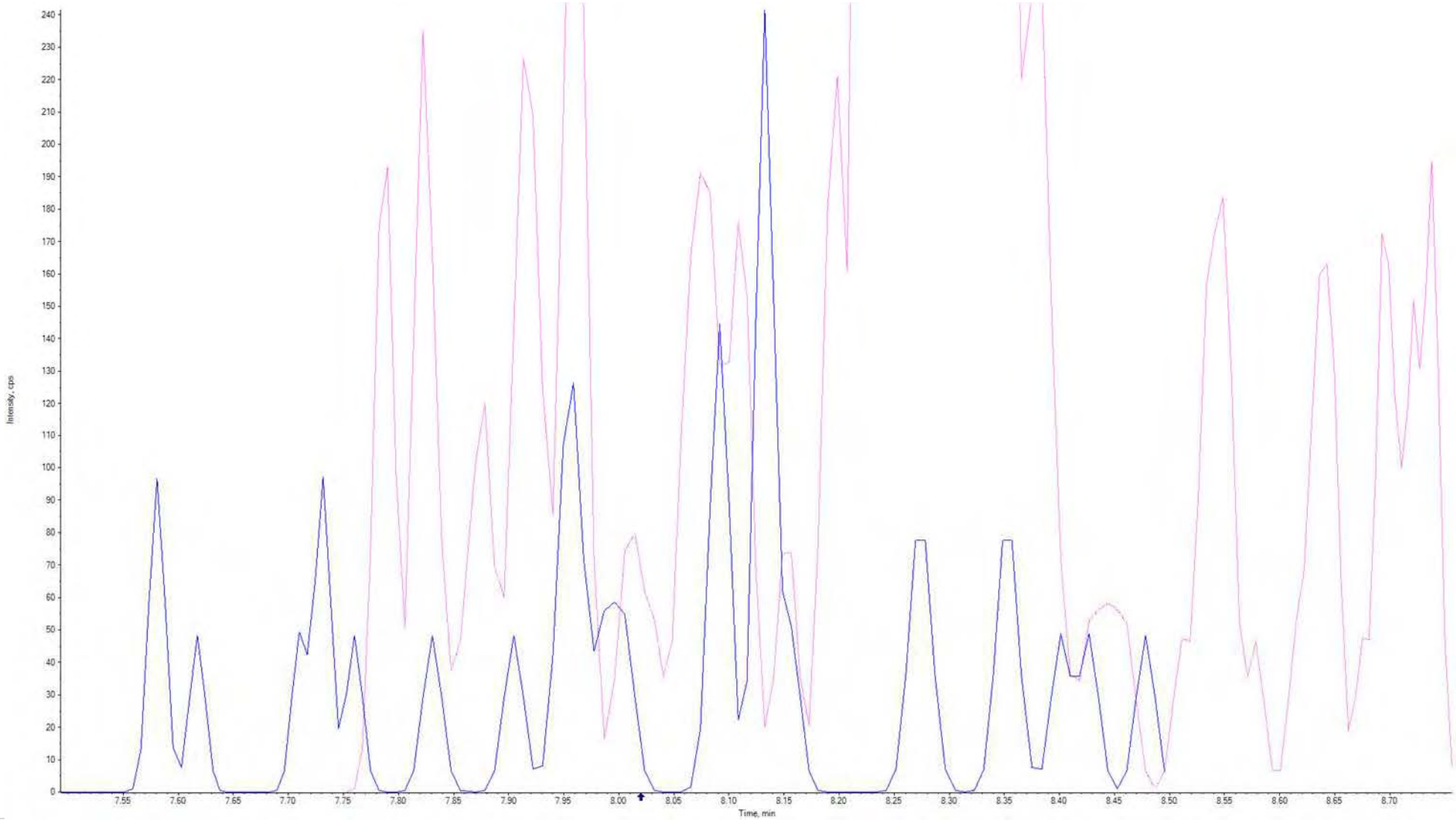

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_84.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFOS
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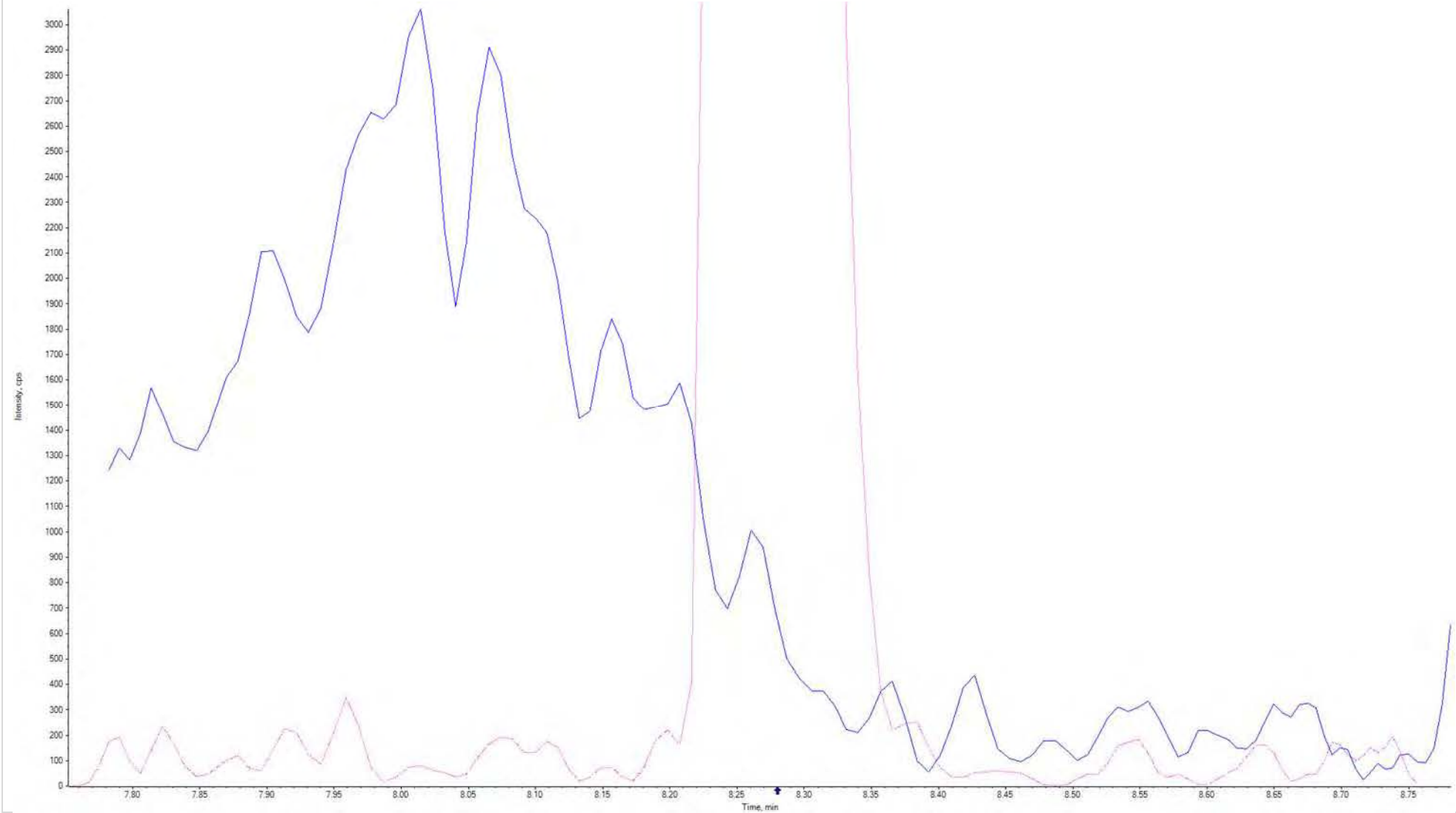

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFOS_2
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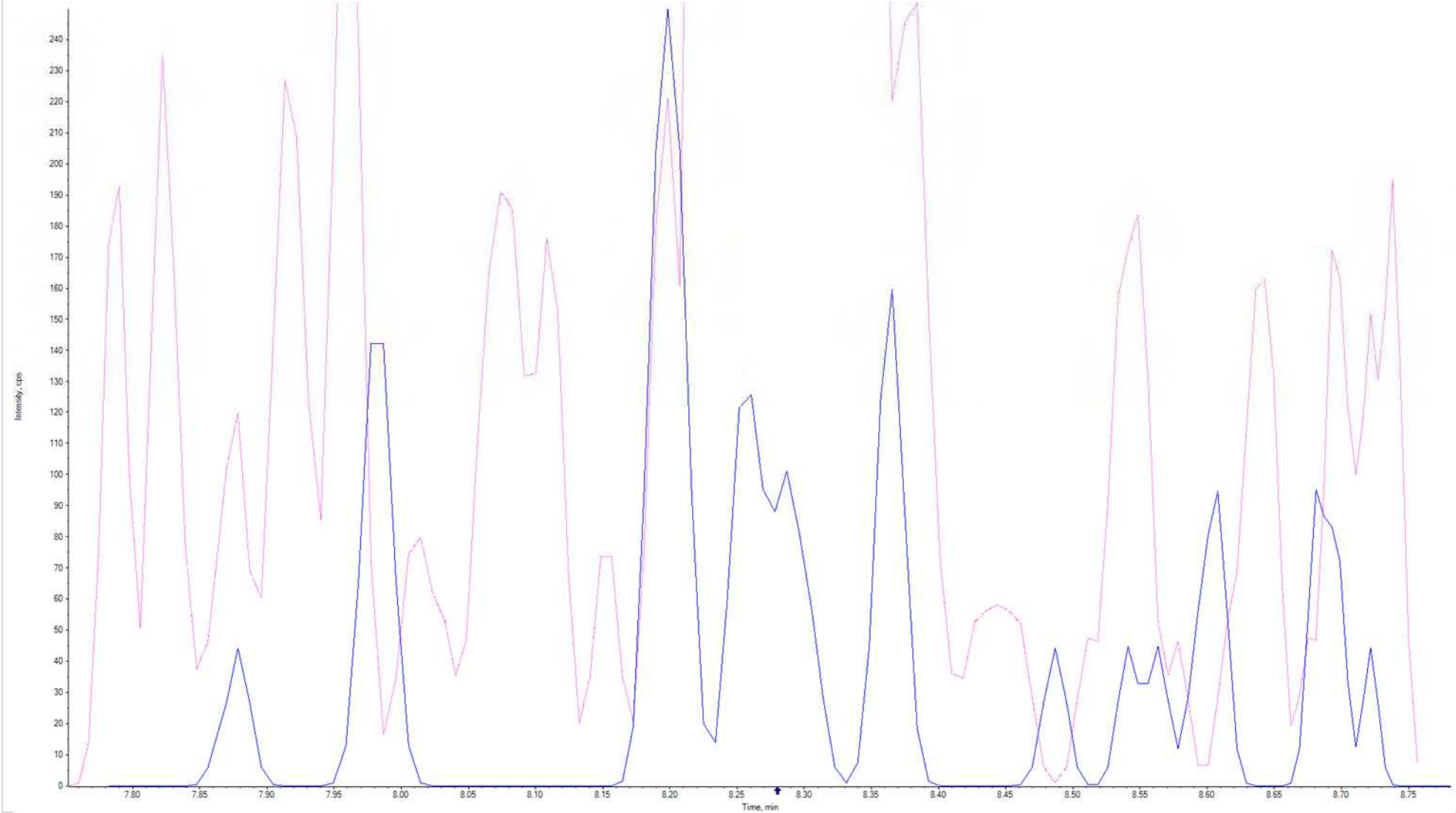

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFNS
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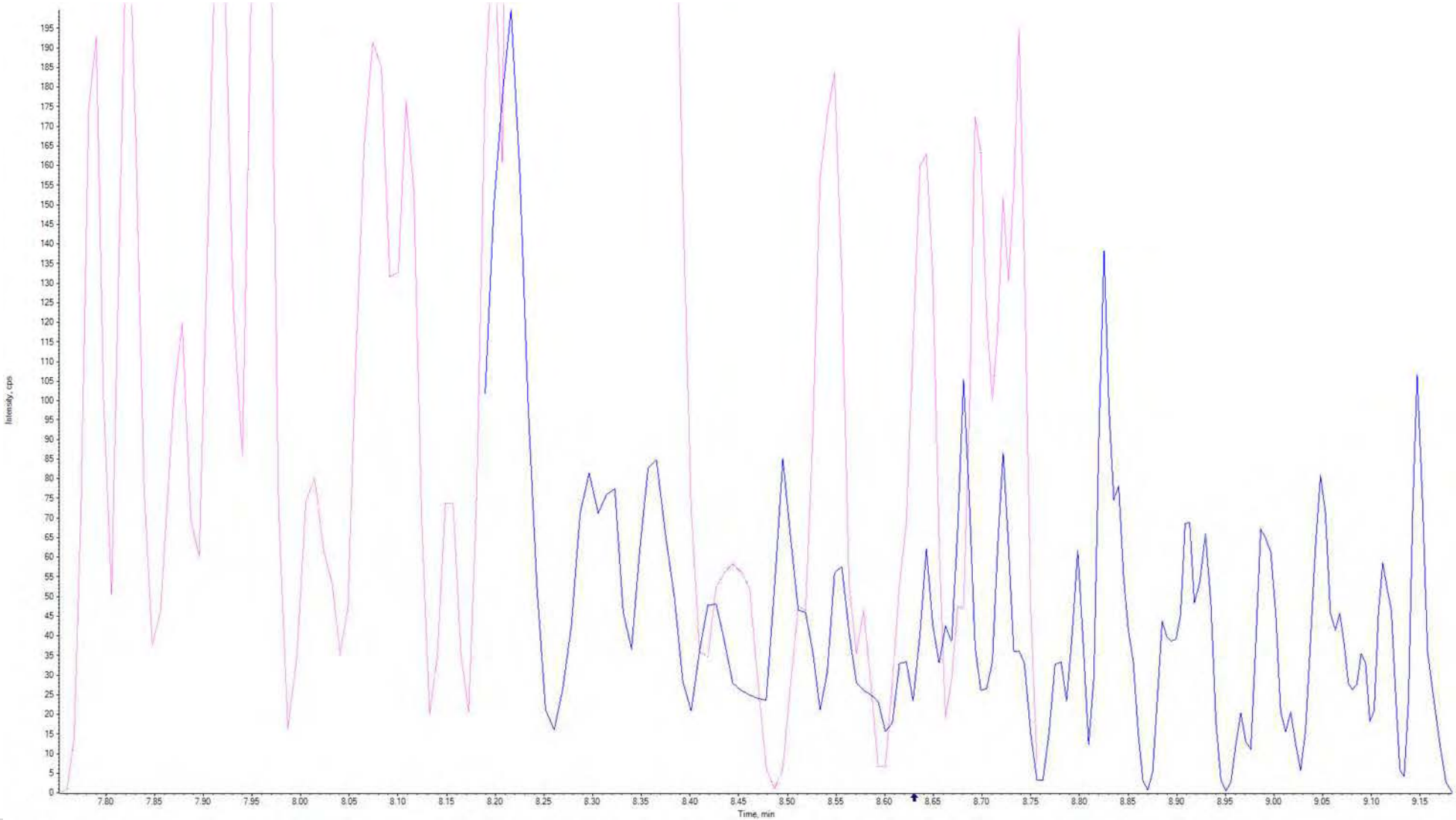

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_84.wiff
Last Altered: 8/14/2024 9:55:24 AM
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PFNS_2
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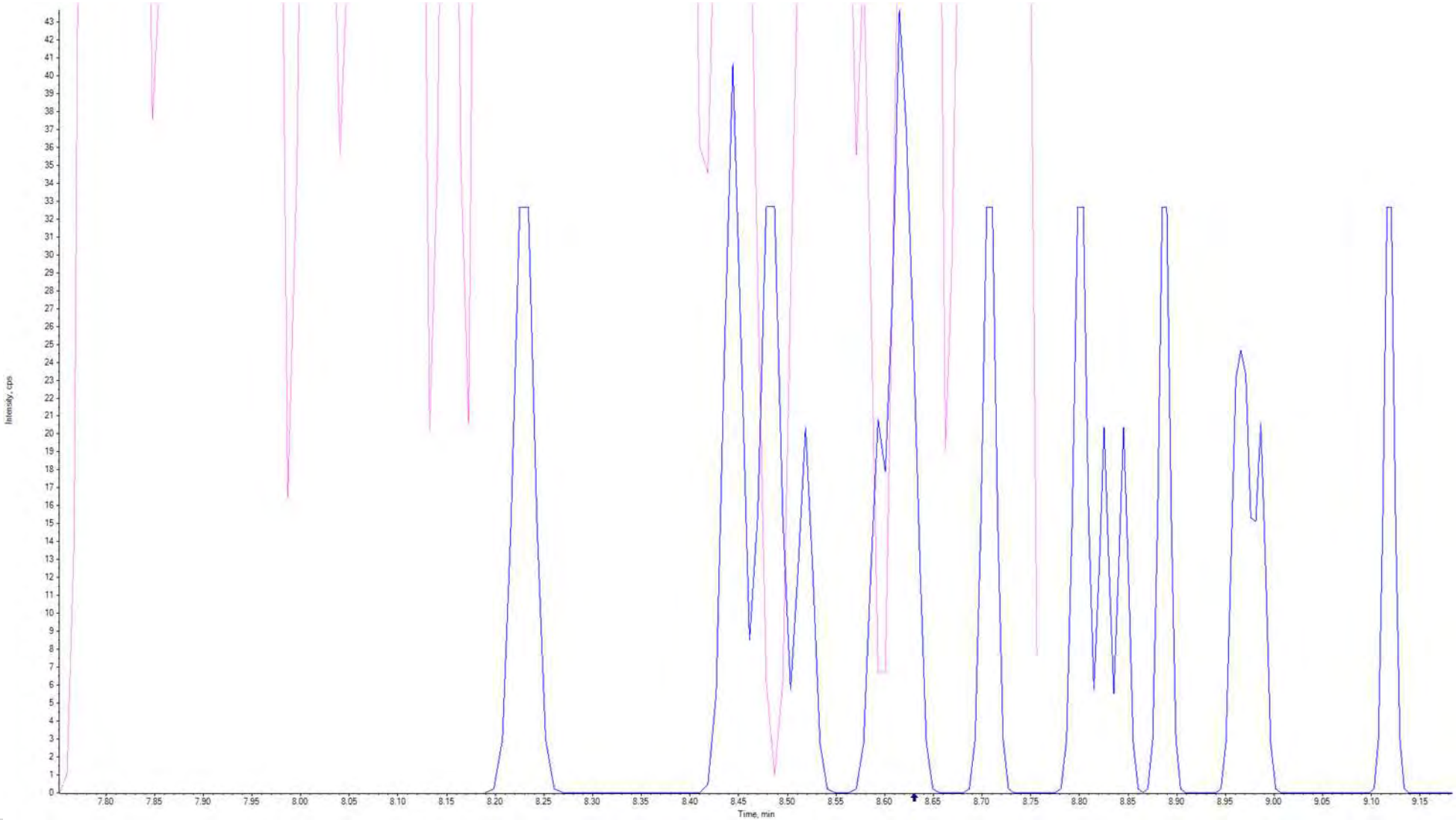

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFDS
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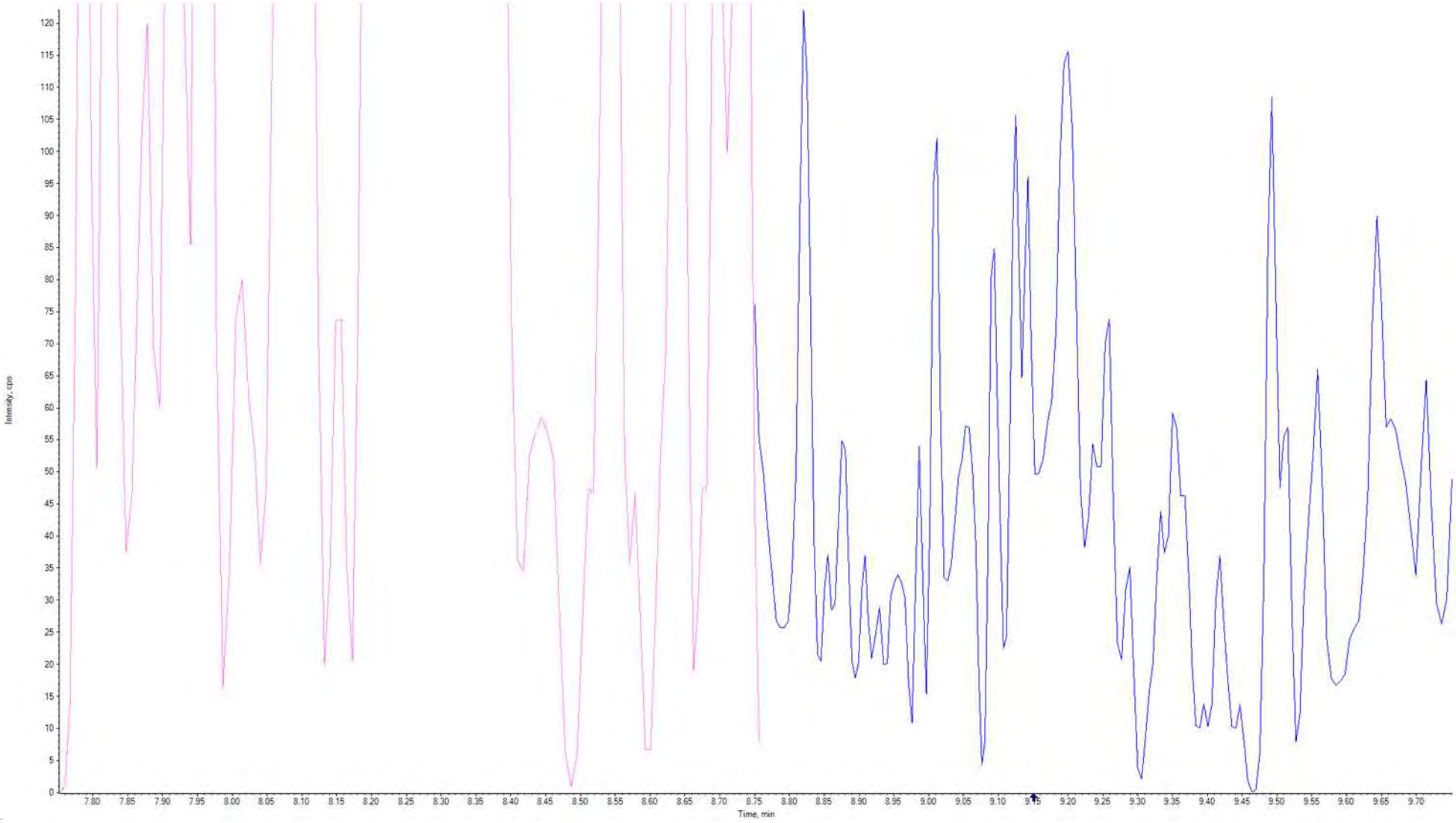

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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PFDS_2
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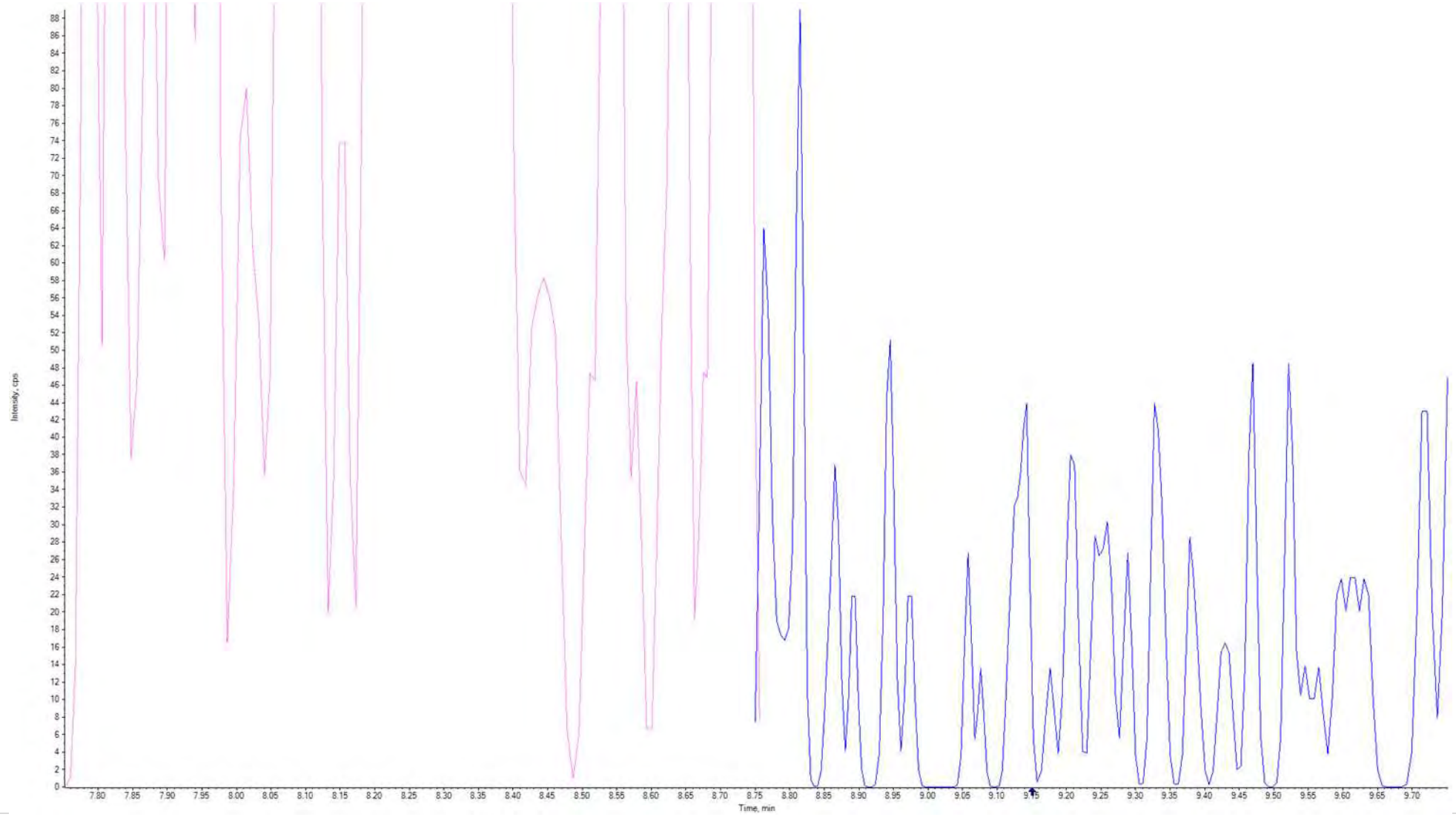

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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PFDoS
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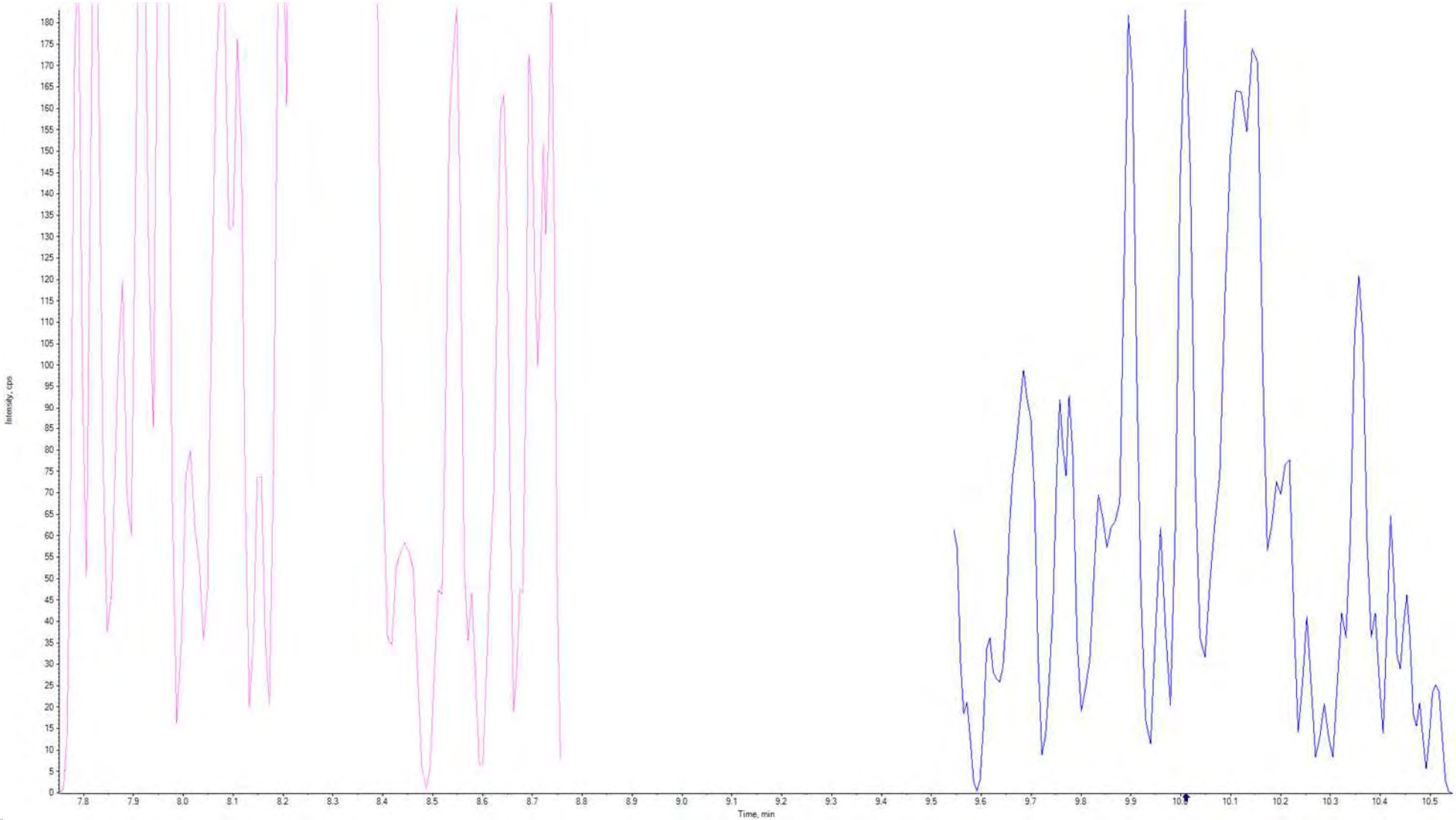

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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PFDoS_2
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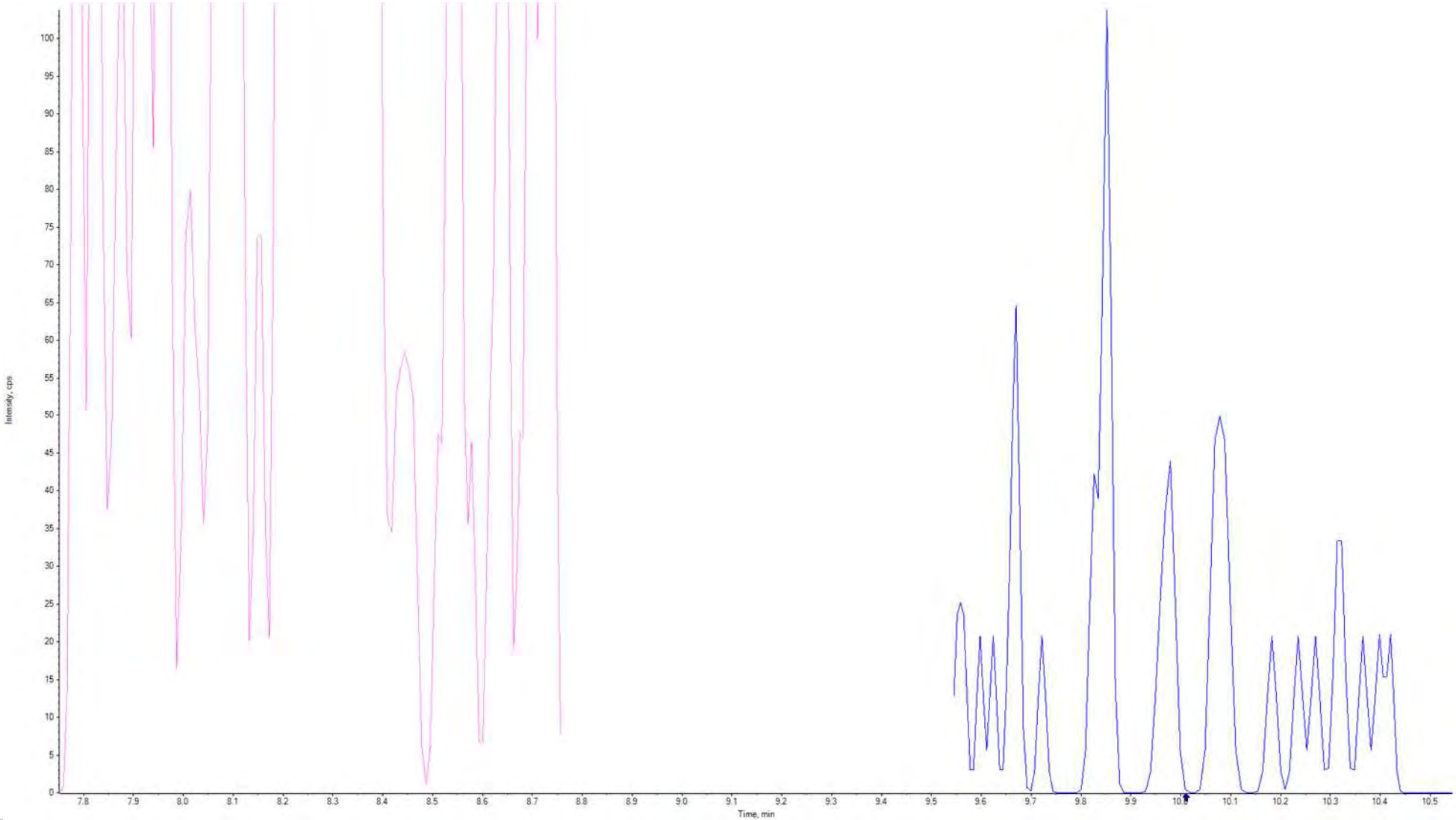

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Generated: 8/14/2024 9:40:32 AM

4:2FTS
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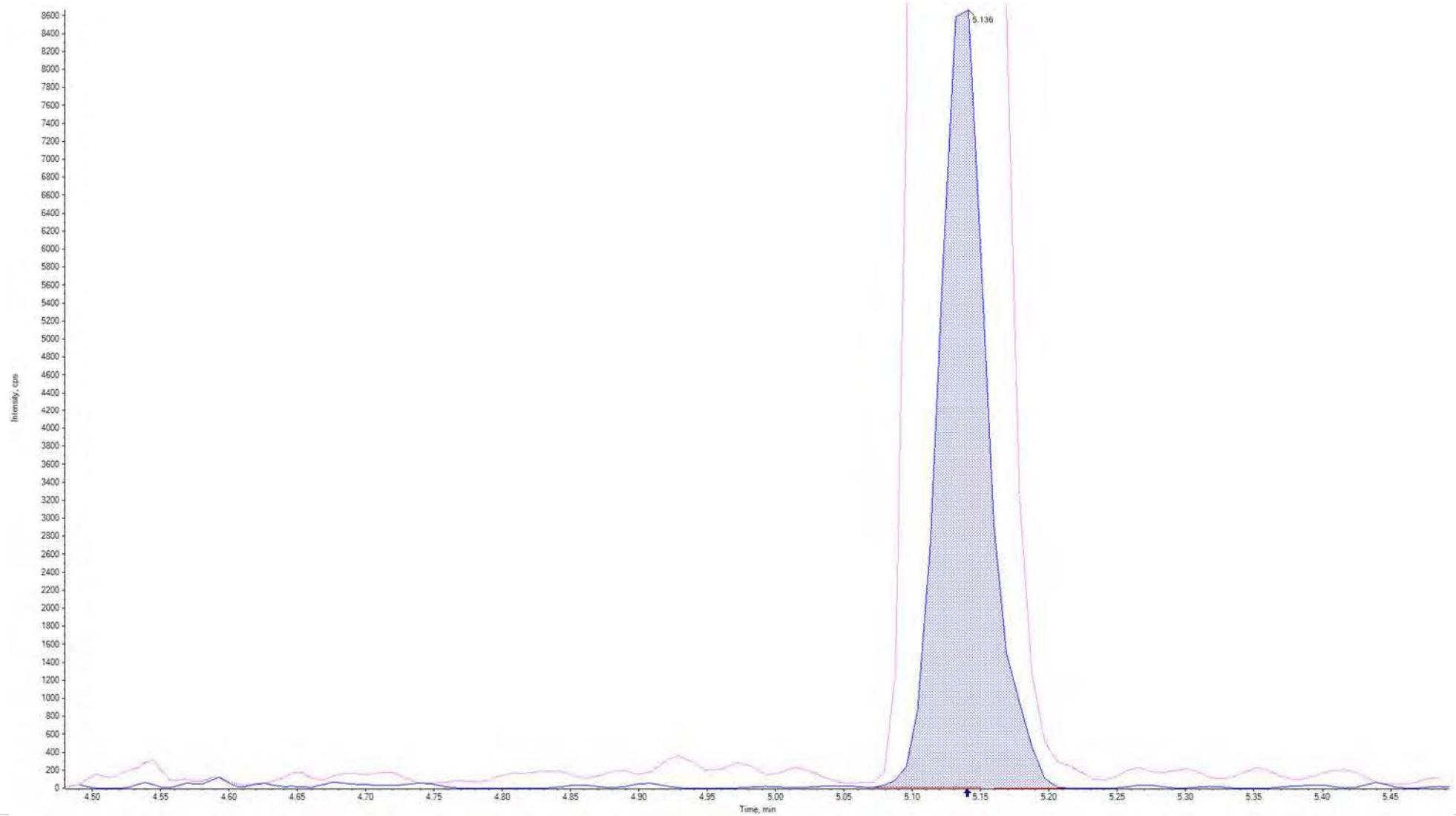

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Last Altered: 8/14/2024 9:55:24 AM
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4:2FTS_2
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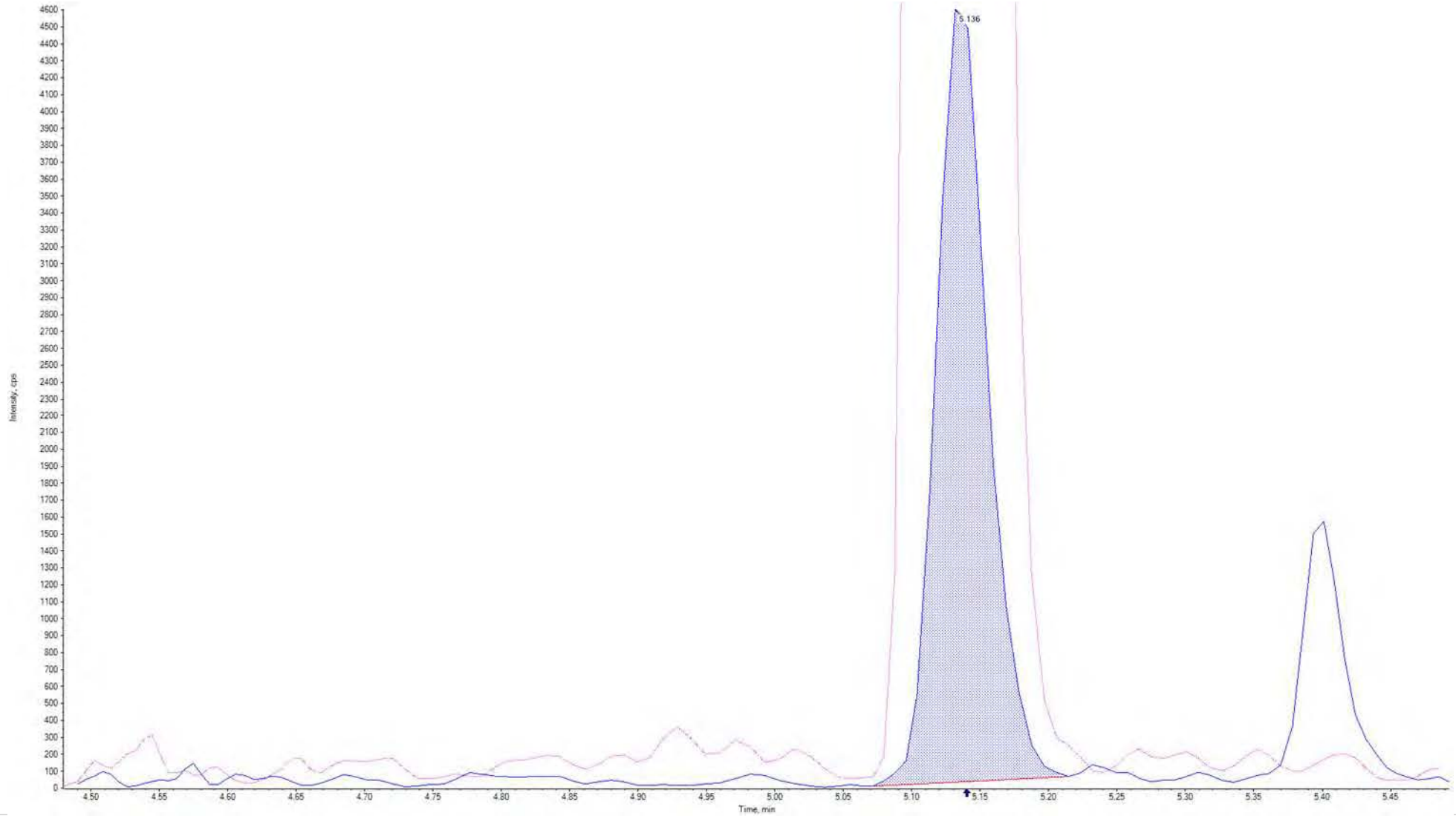

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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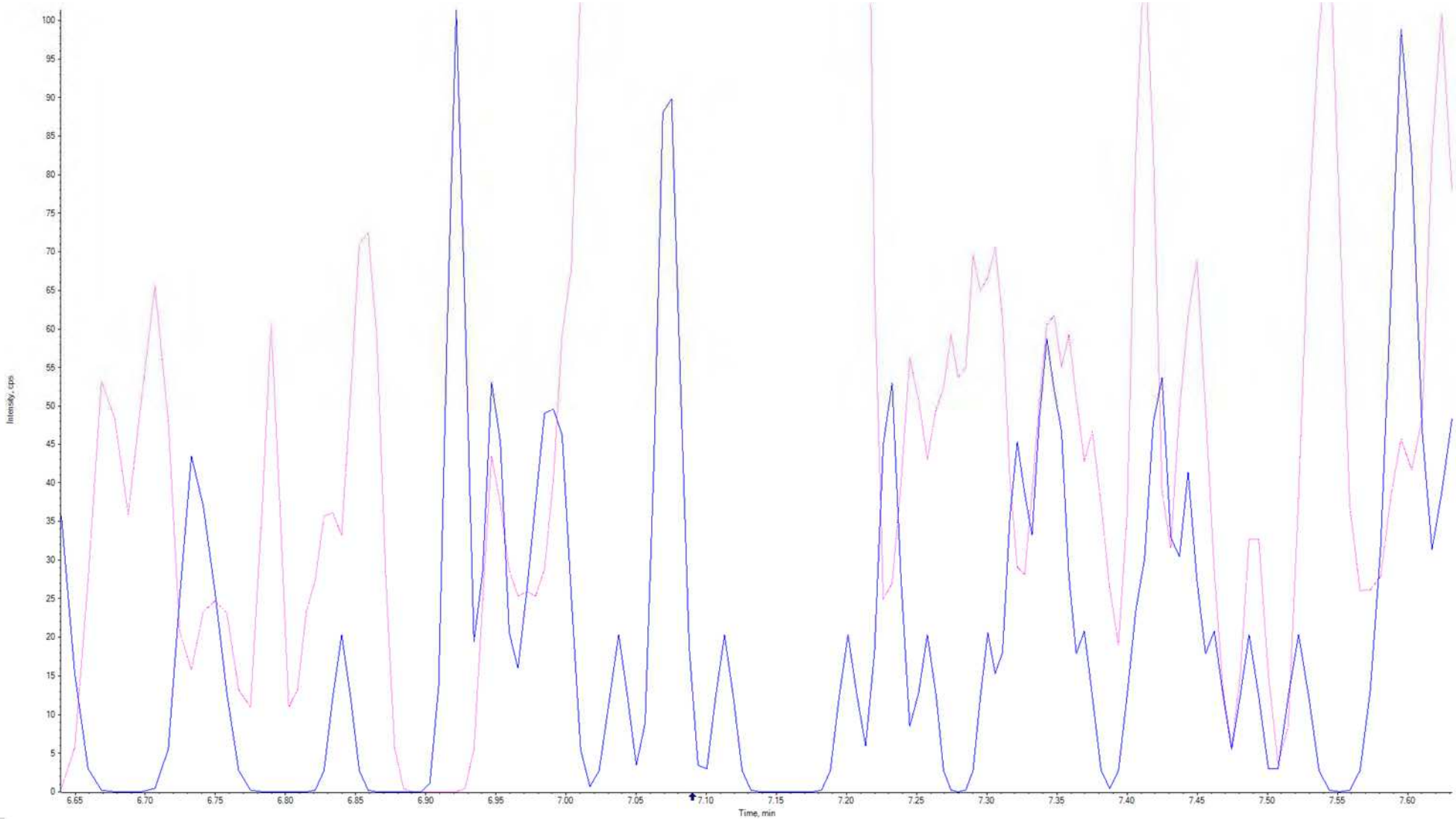
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

6:2FTS
Sample: WG1958909-6,INSTBLANK S/N:N/A Points Across peak:N/A



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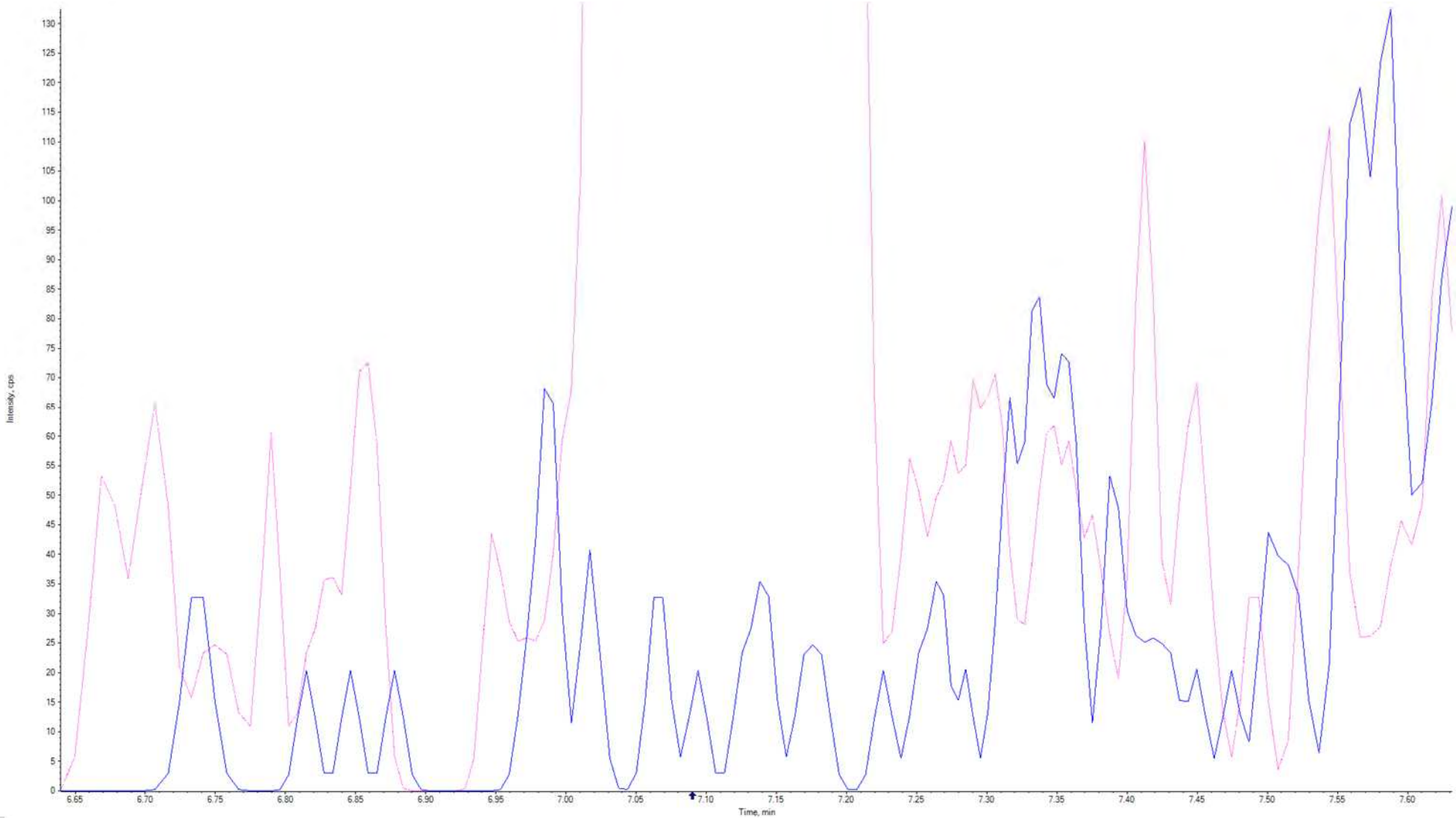

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

8:2FTS
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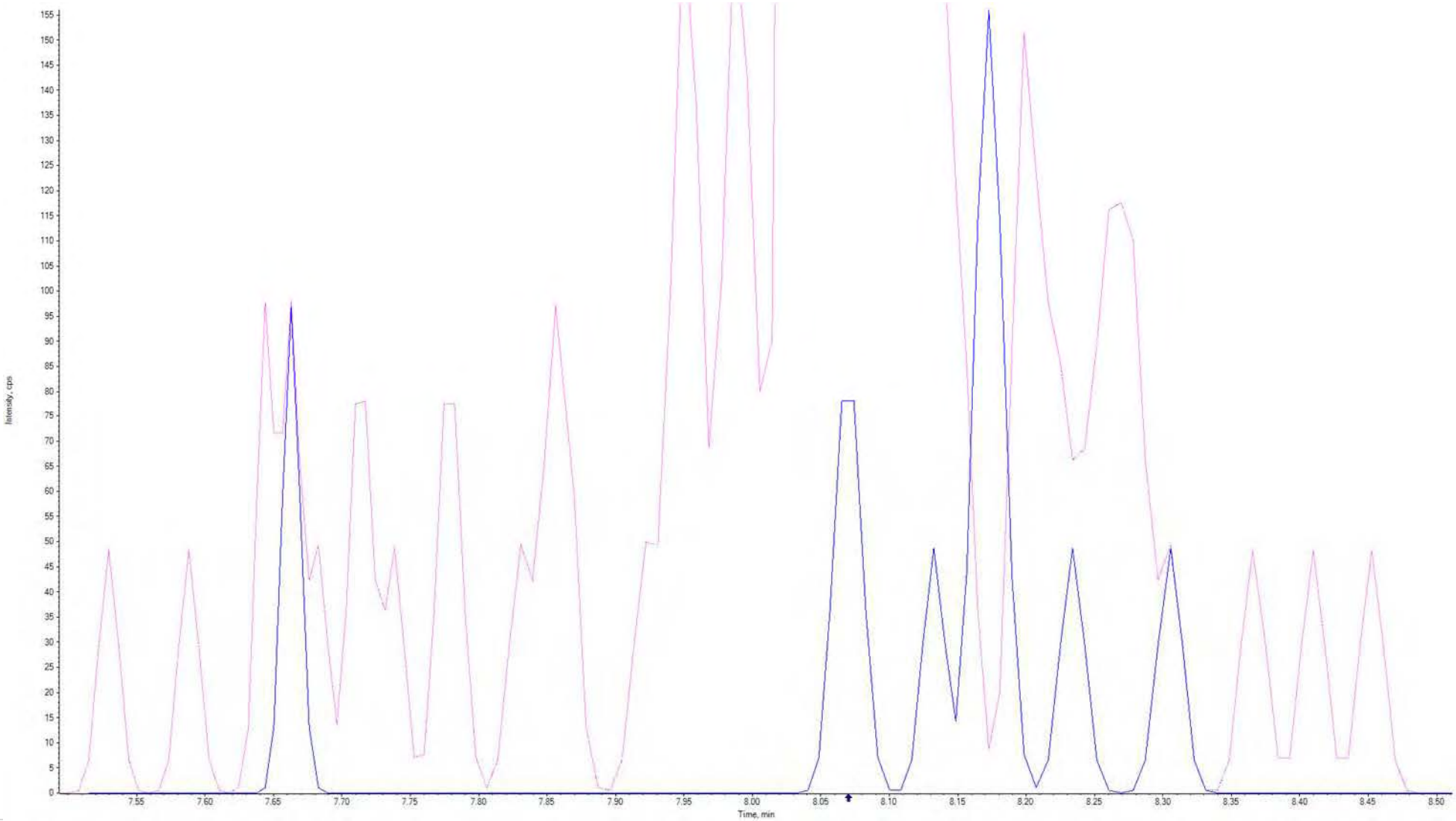

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 8/14/2024 9:55:24 AM
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8:2FTS_2
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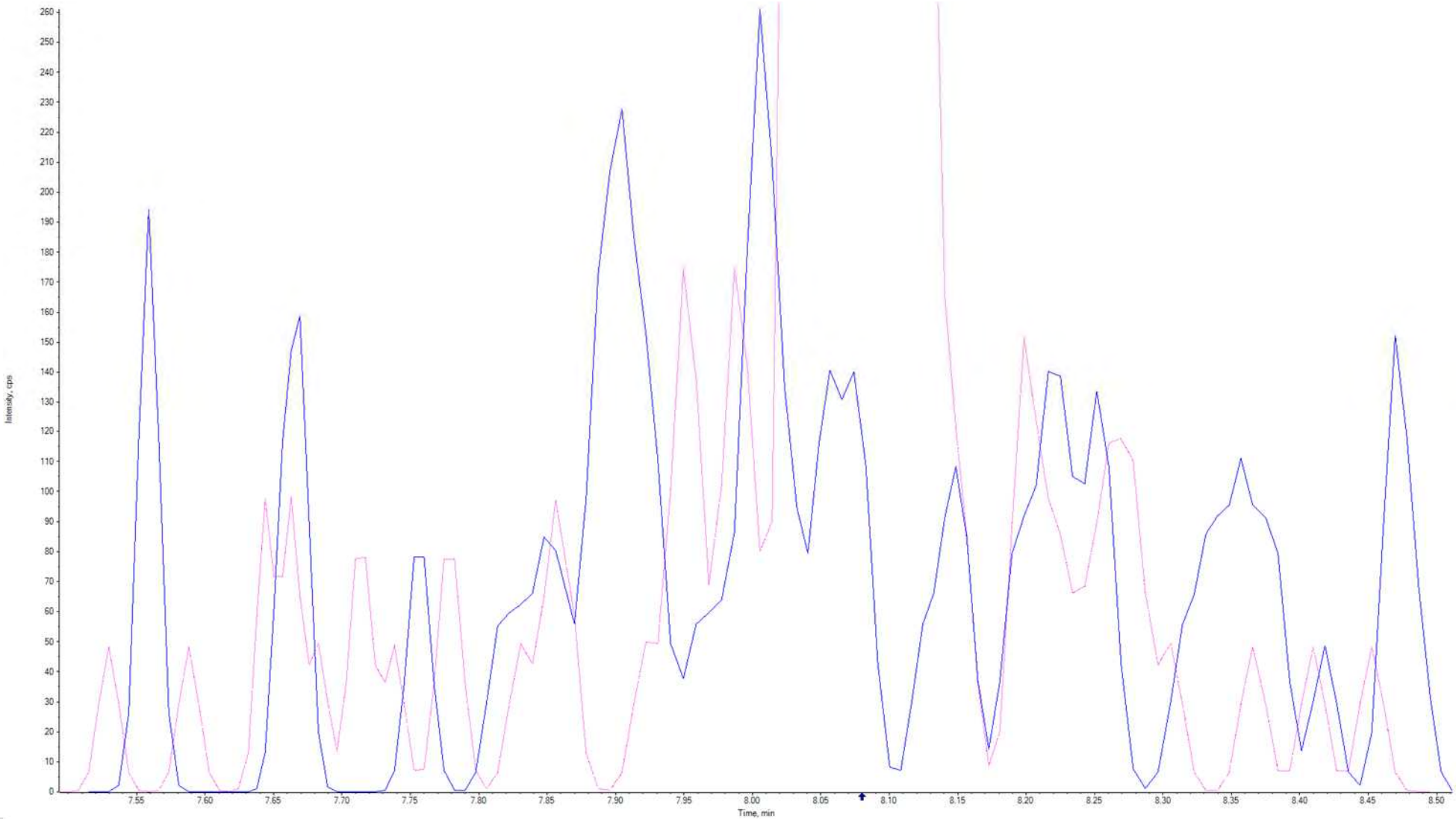

PFOSA
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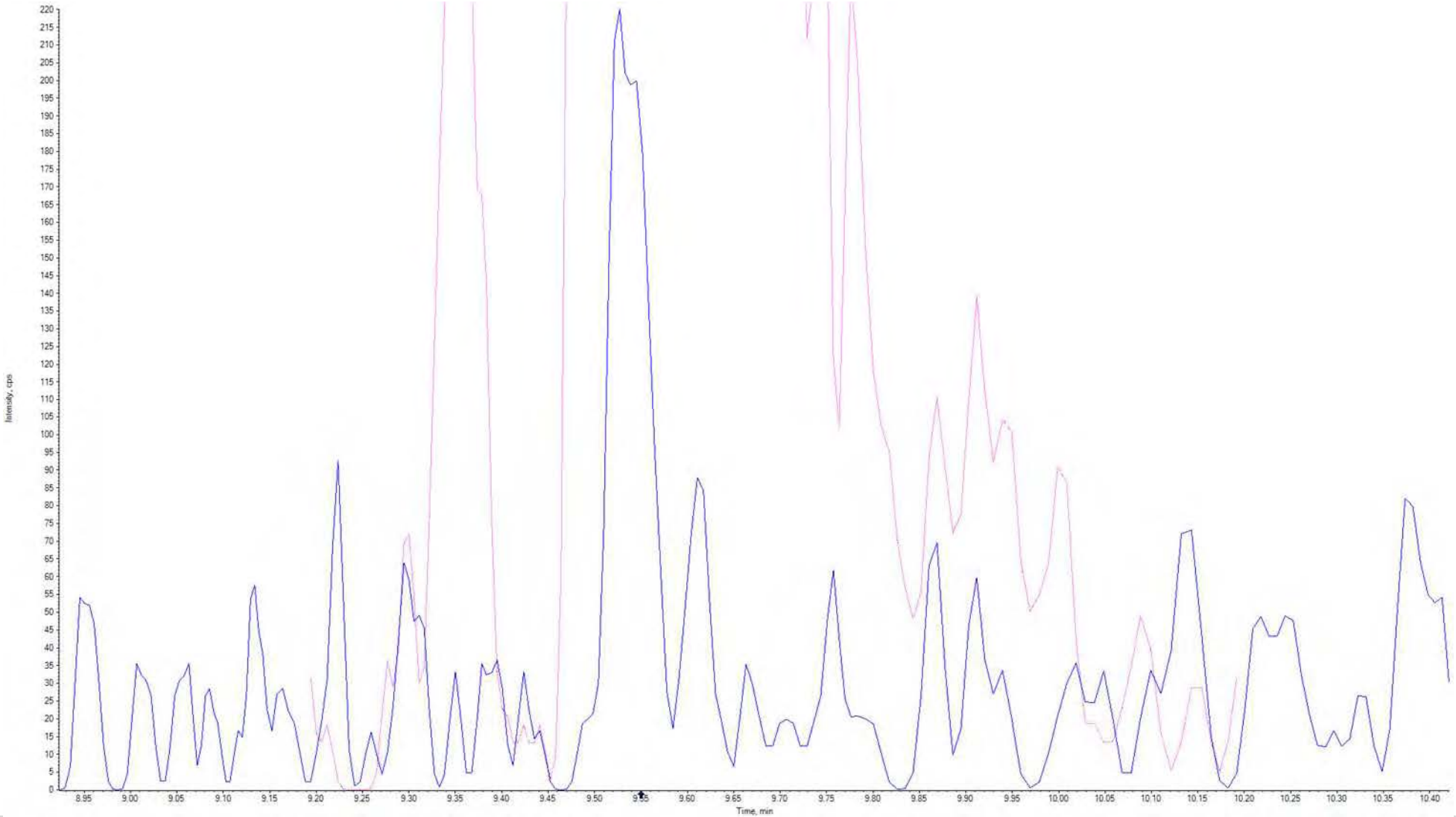

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFOSA_2
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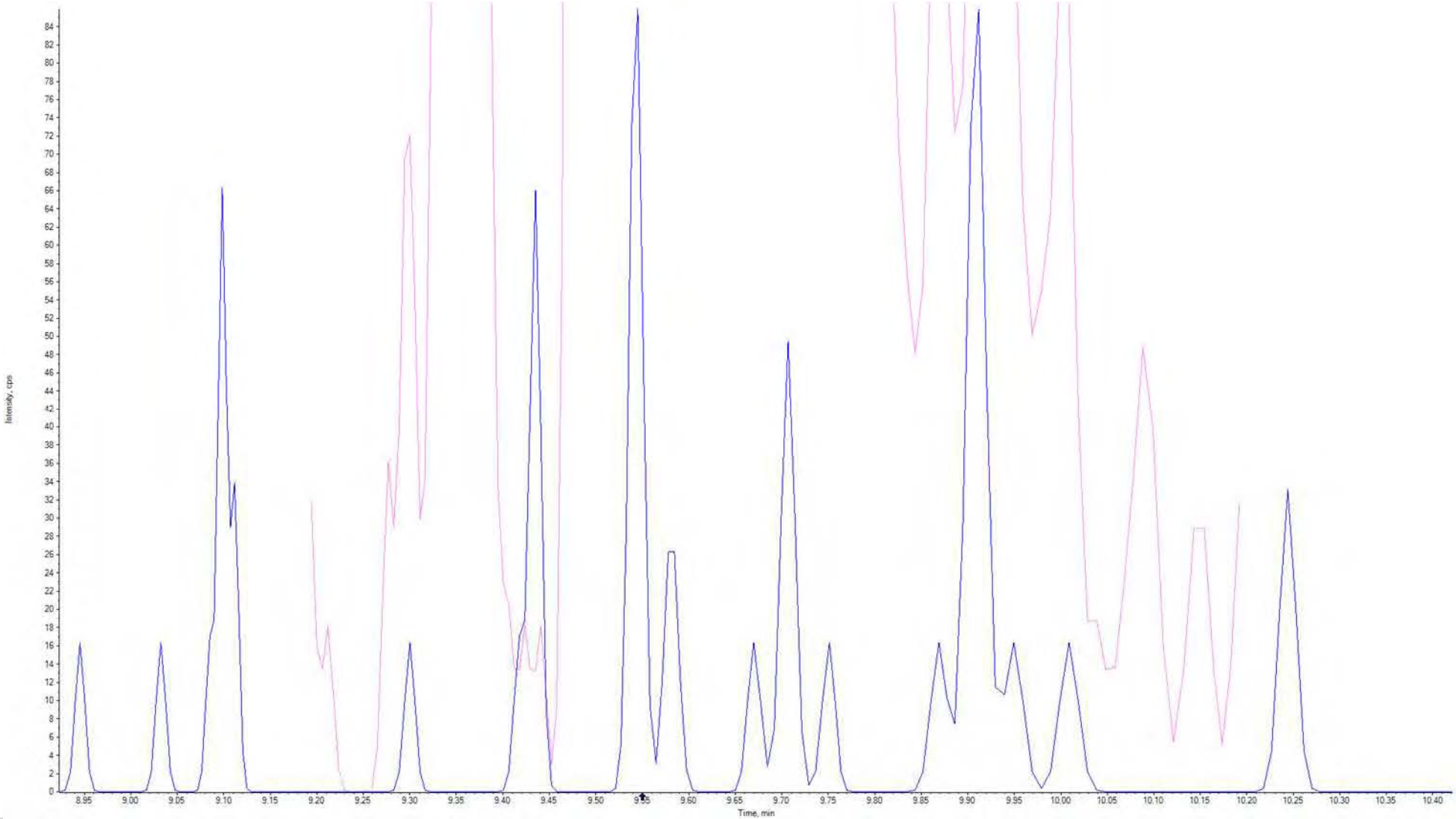

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Generated: 8/14/2024 9:40:32 AM

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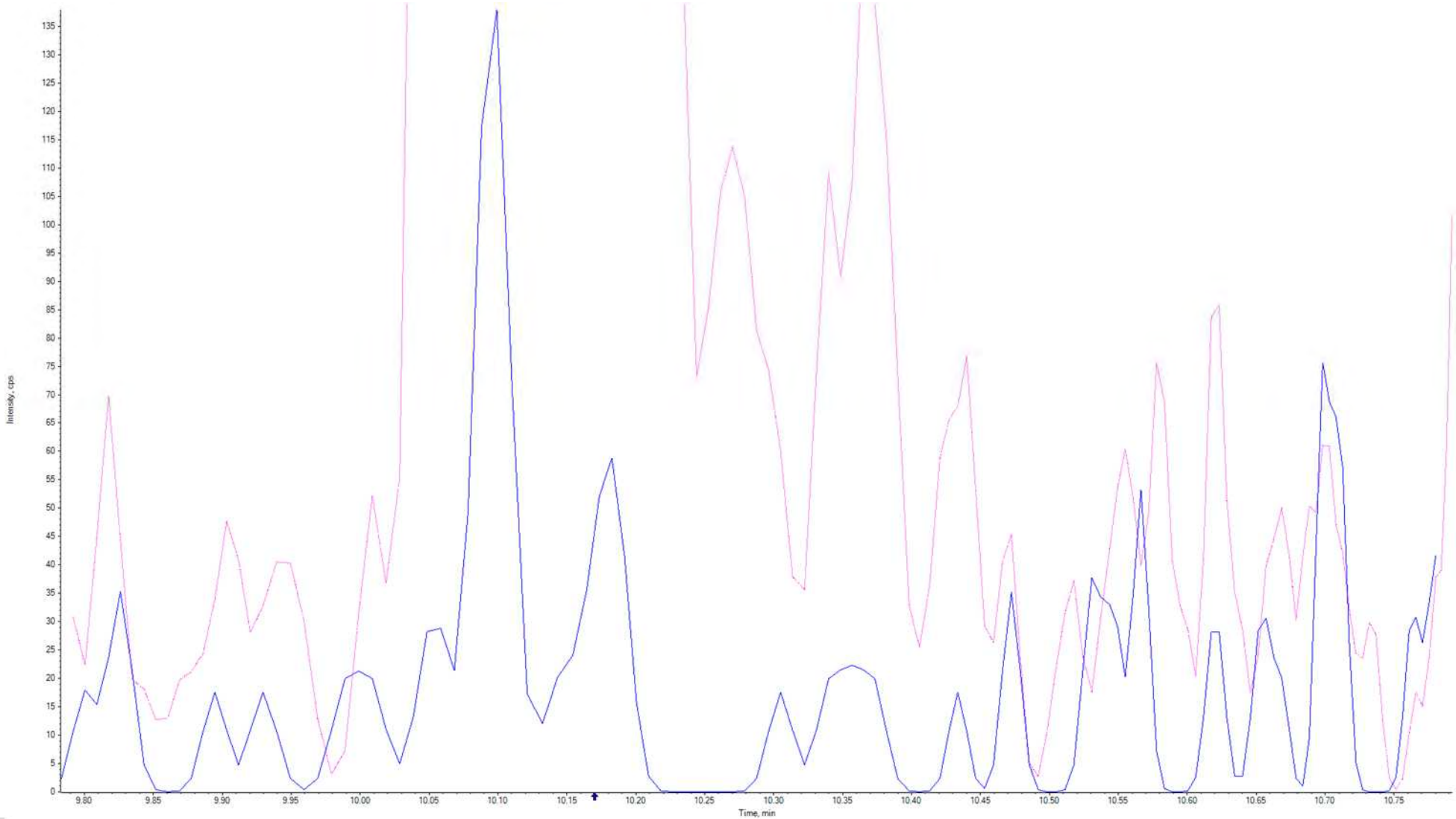

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_84.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NMeFOSA_2
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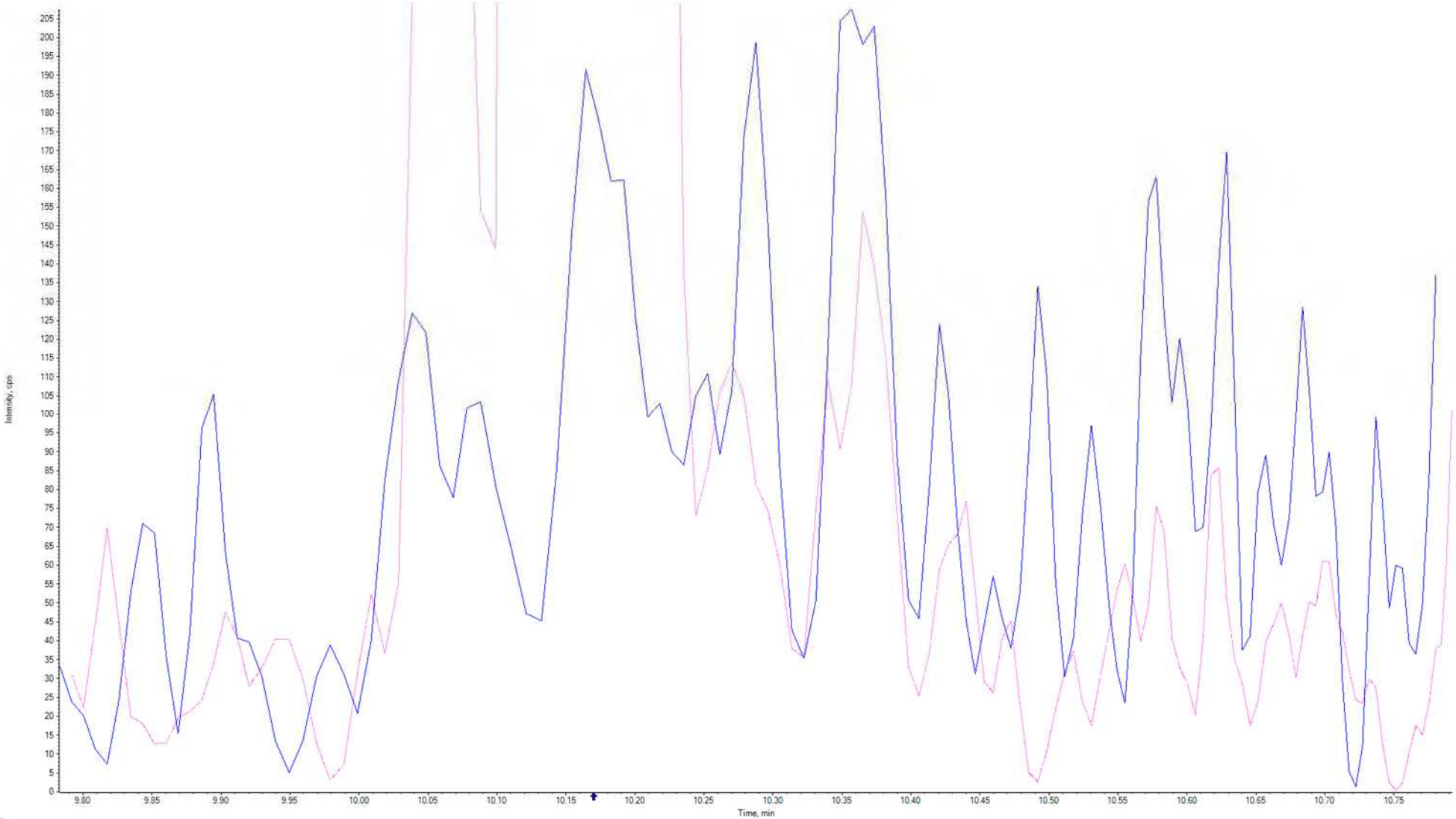

NEtFOSA
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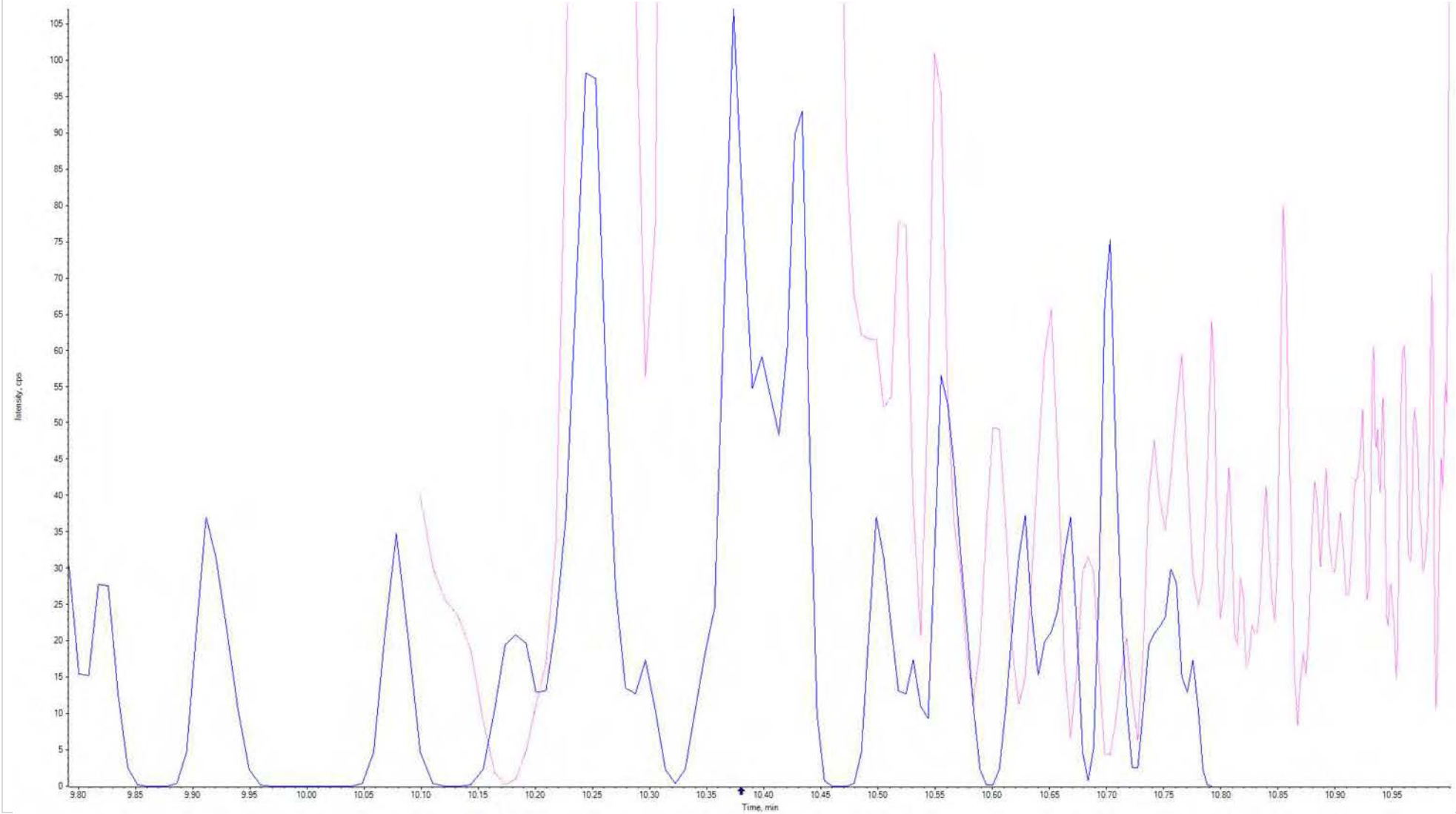

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NEtFOSA_2
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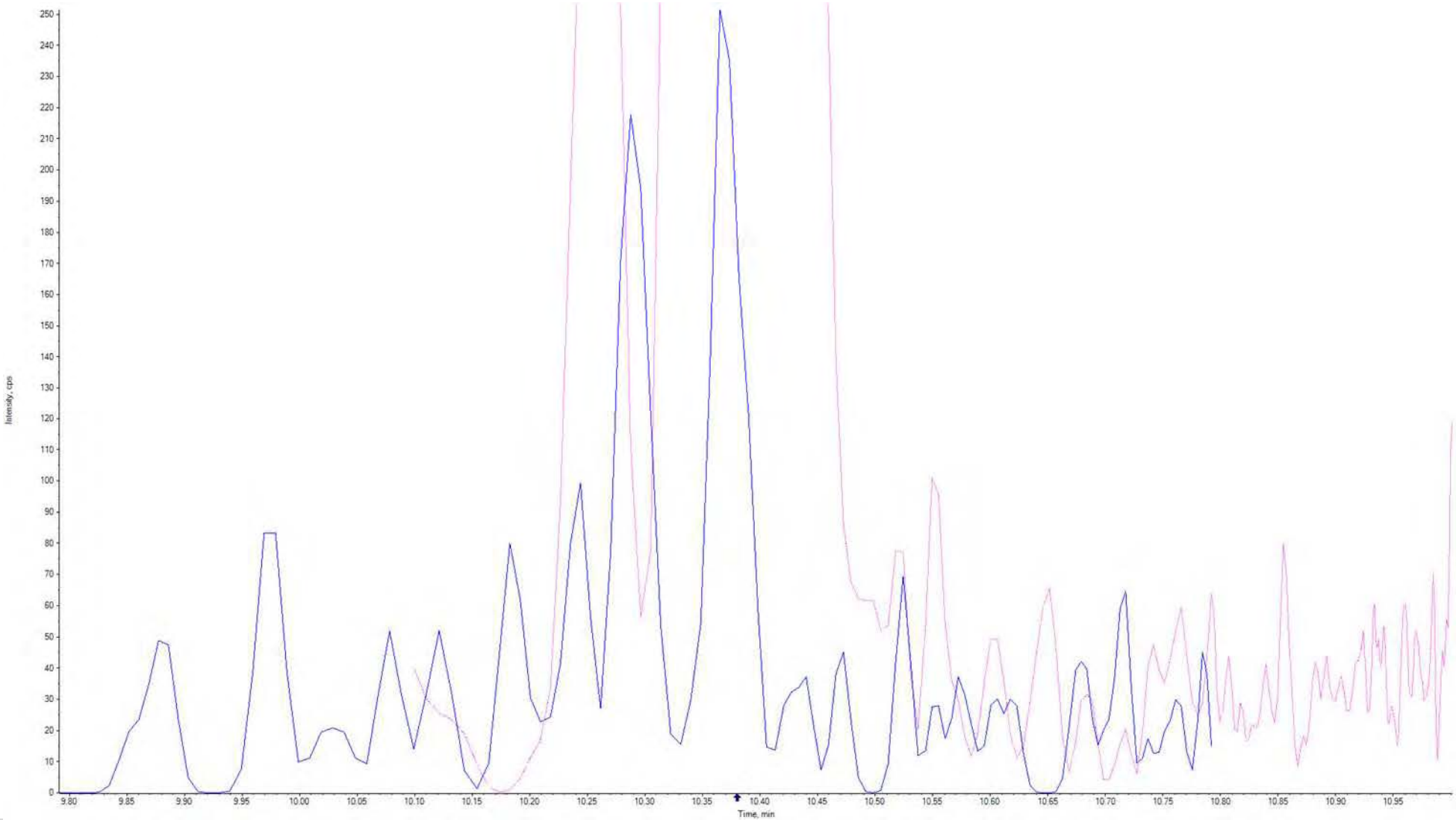

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 8/14/2024 9:55:24 AM
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NMeFOSAA
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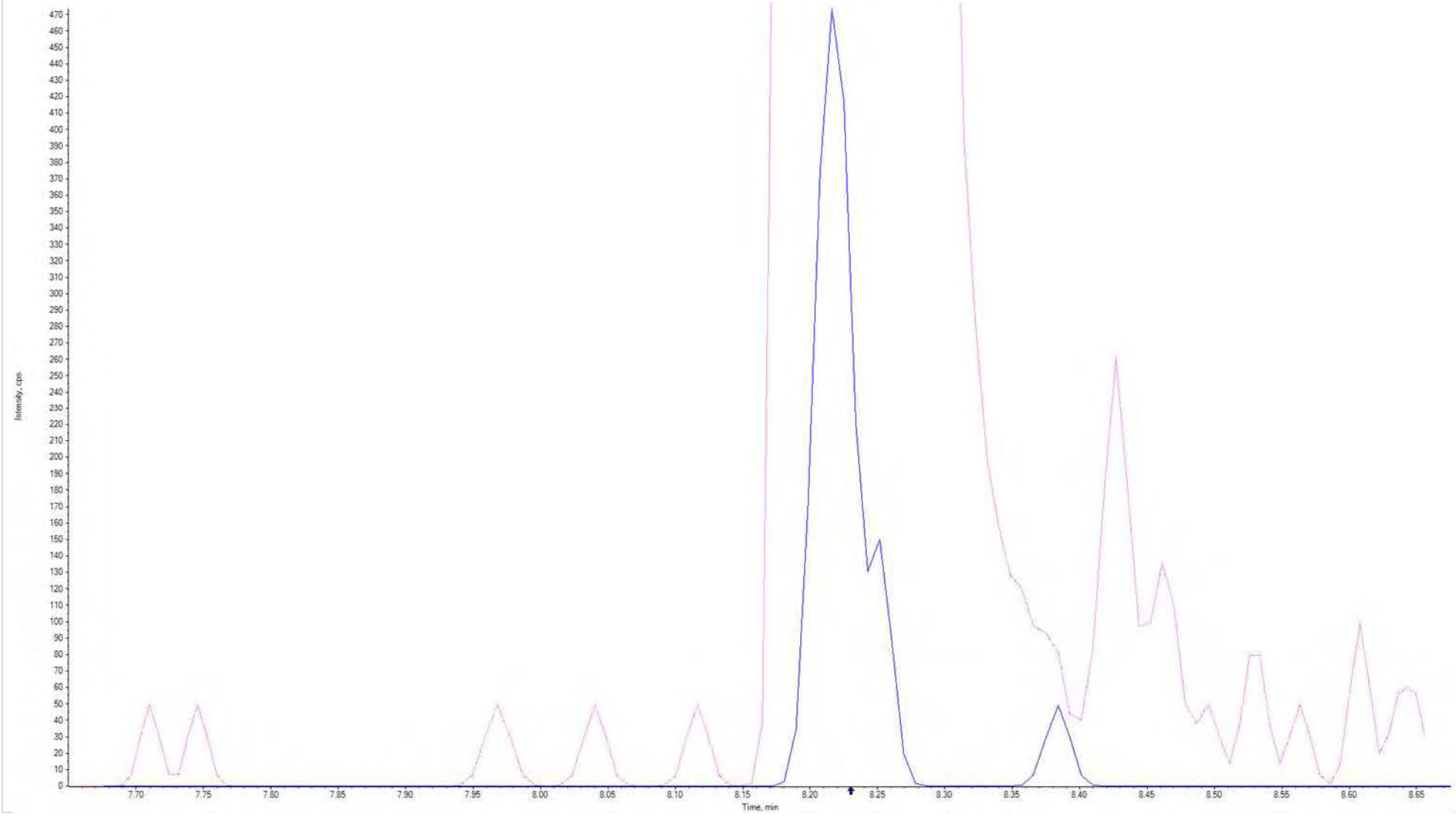

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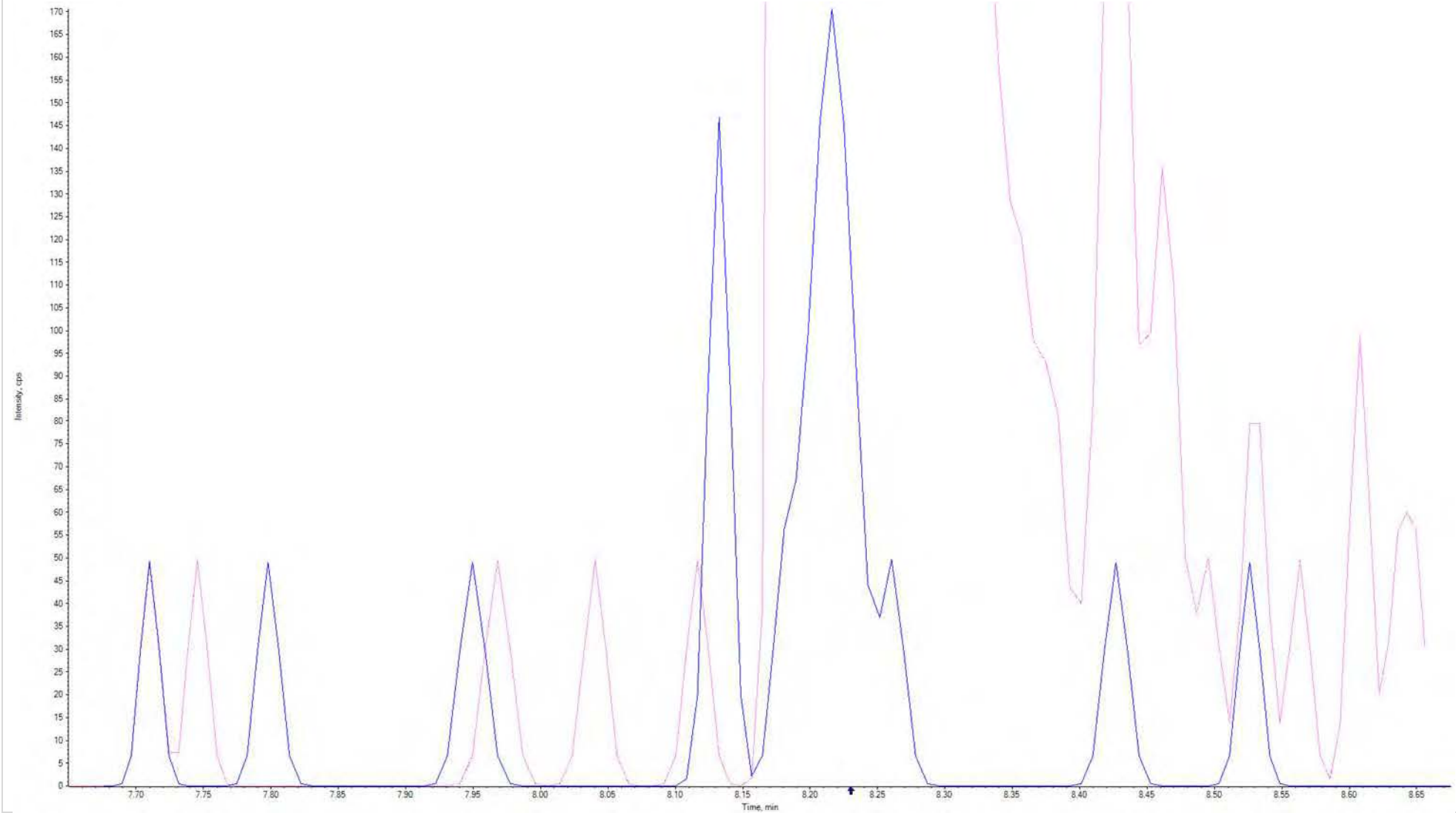

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_84.wiff
Last Altered: 8/14/2024 9:55:24 AM
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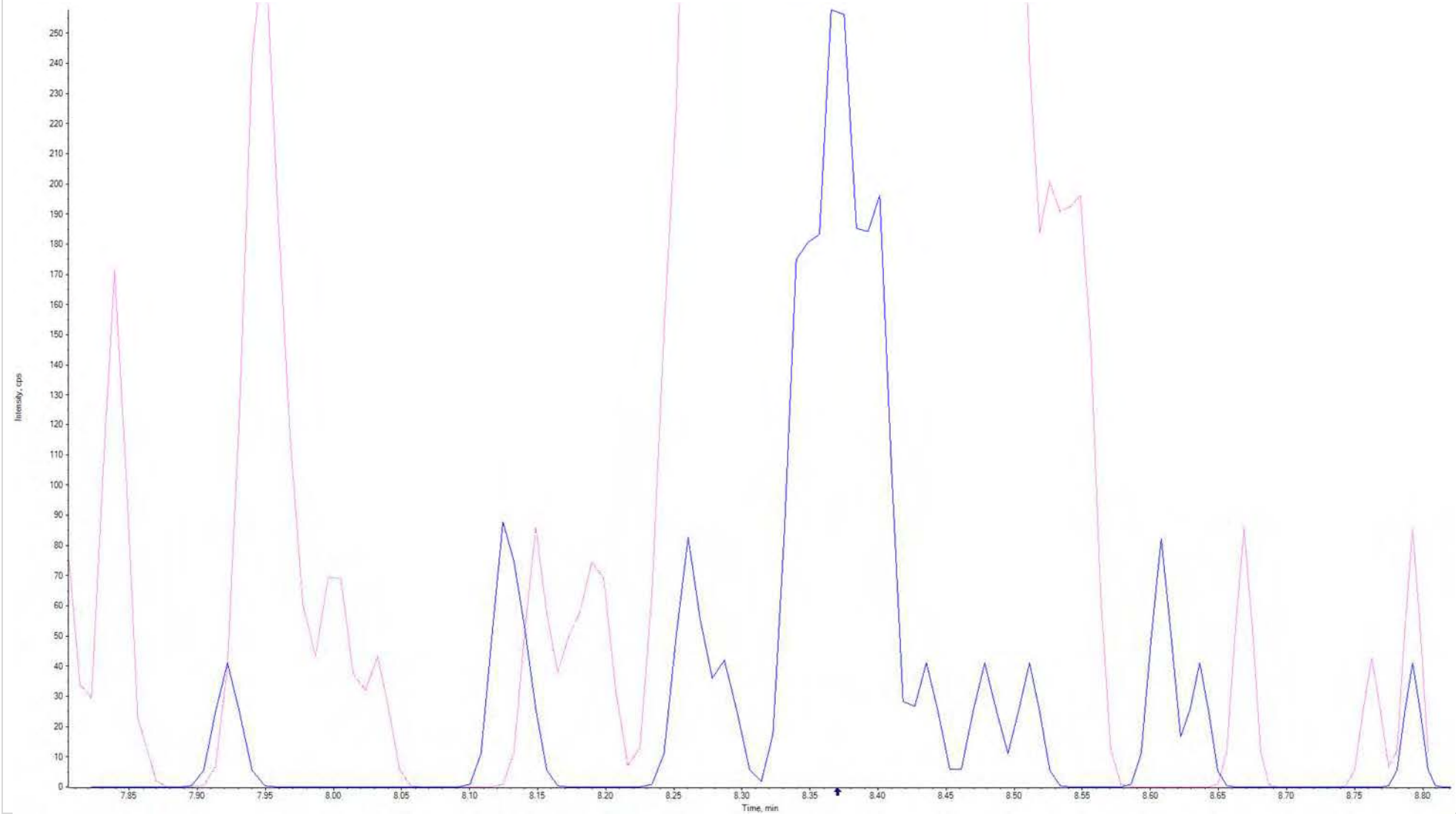

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_84.wiff
Last Altered: 8/14/2024 9:55:24 AM
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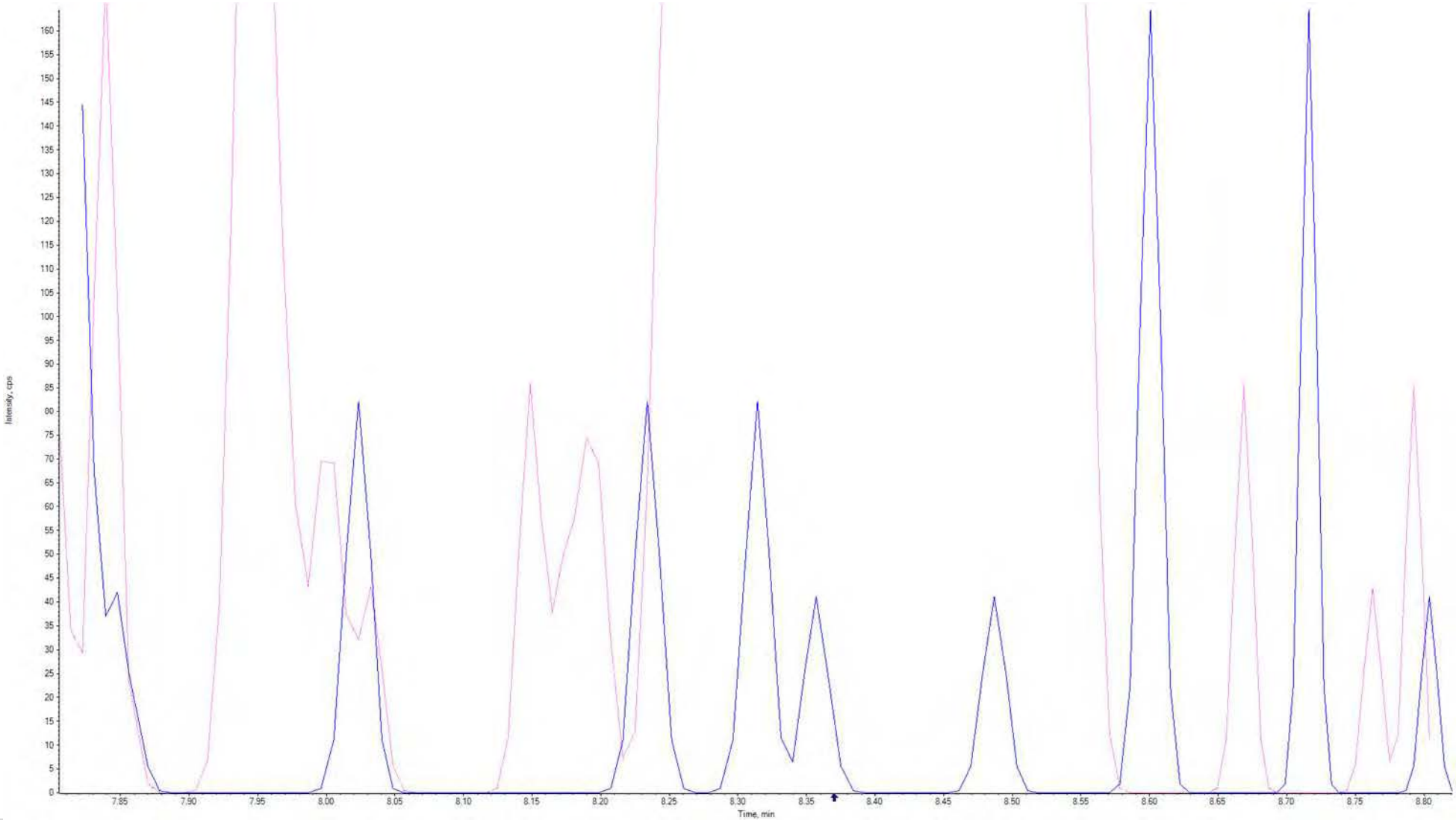

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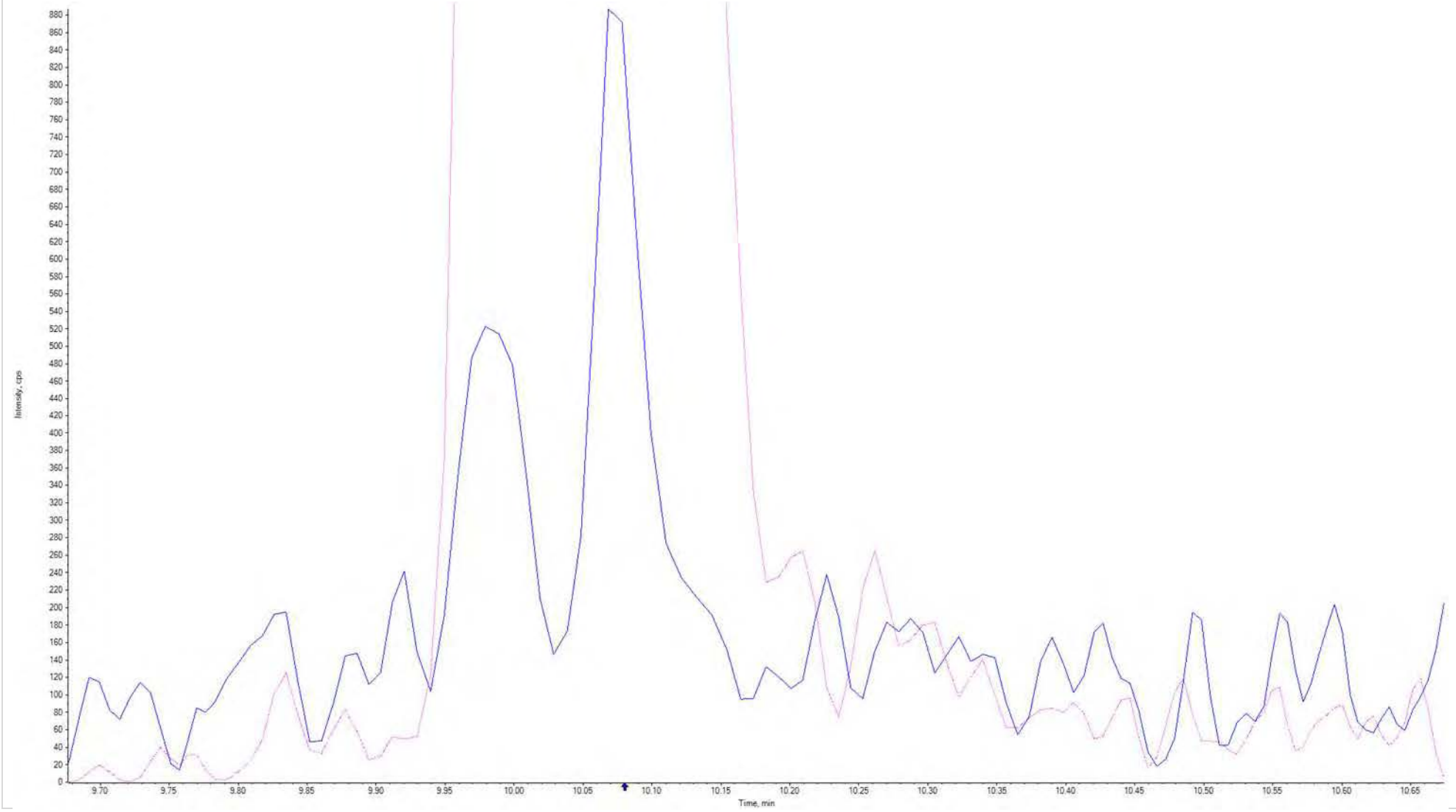

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_84.wiff
Last Altered: 8/14/2024 9:55:24 AM
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NEtFOSE
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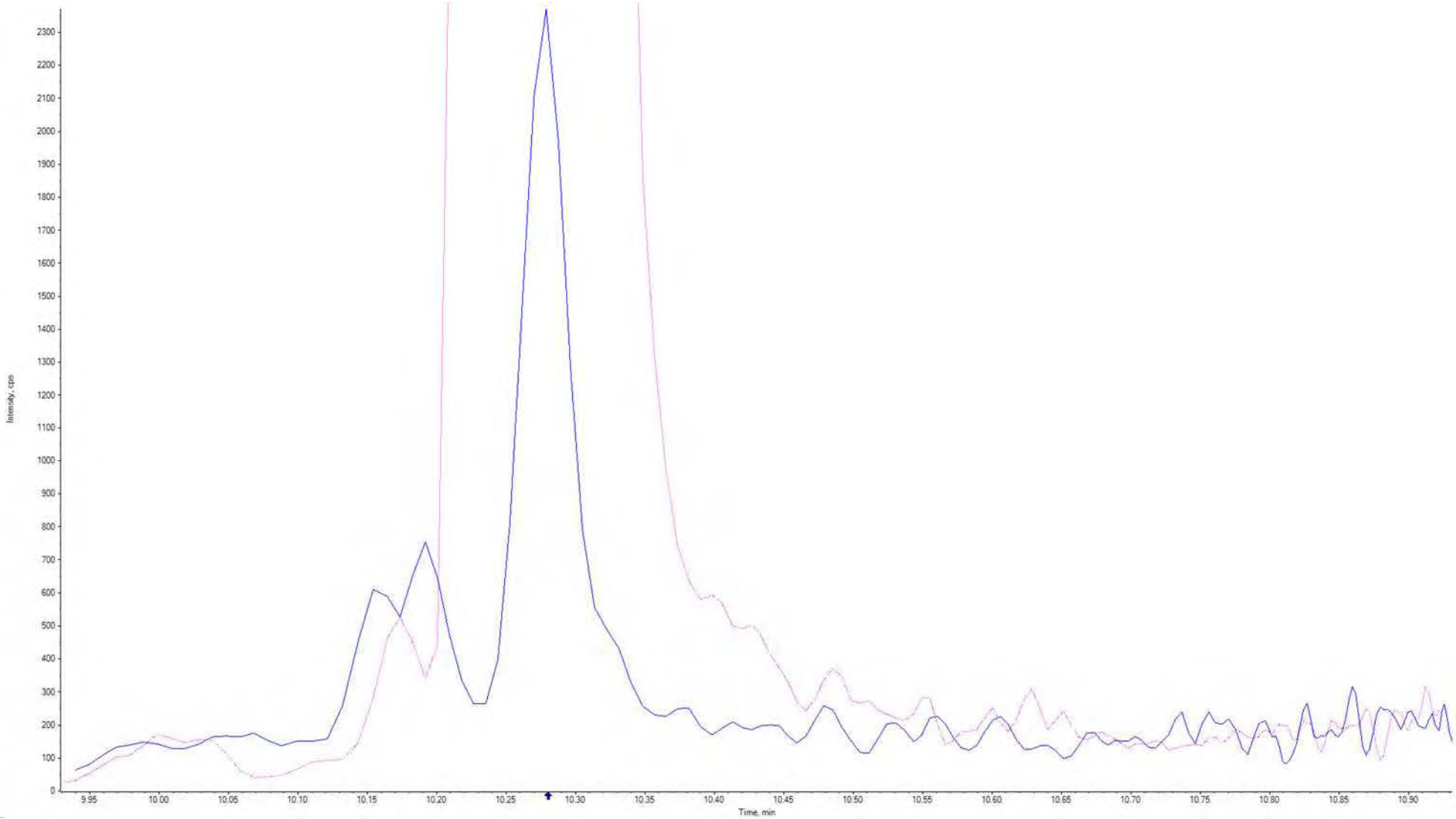

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_84.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

HFPO-DA
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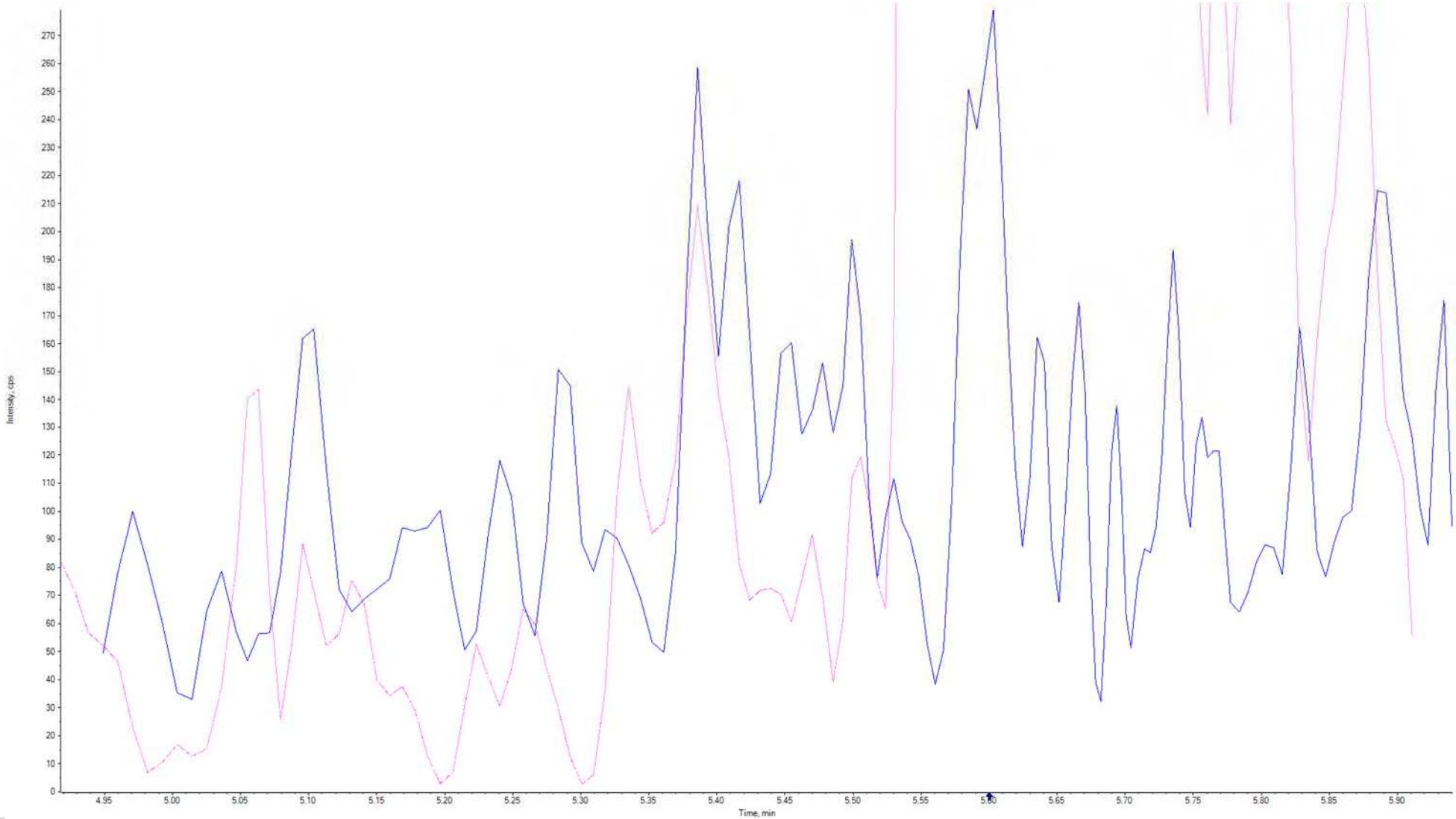

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

HFPO-DA_2
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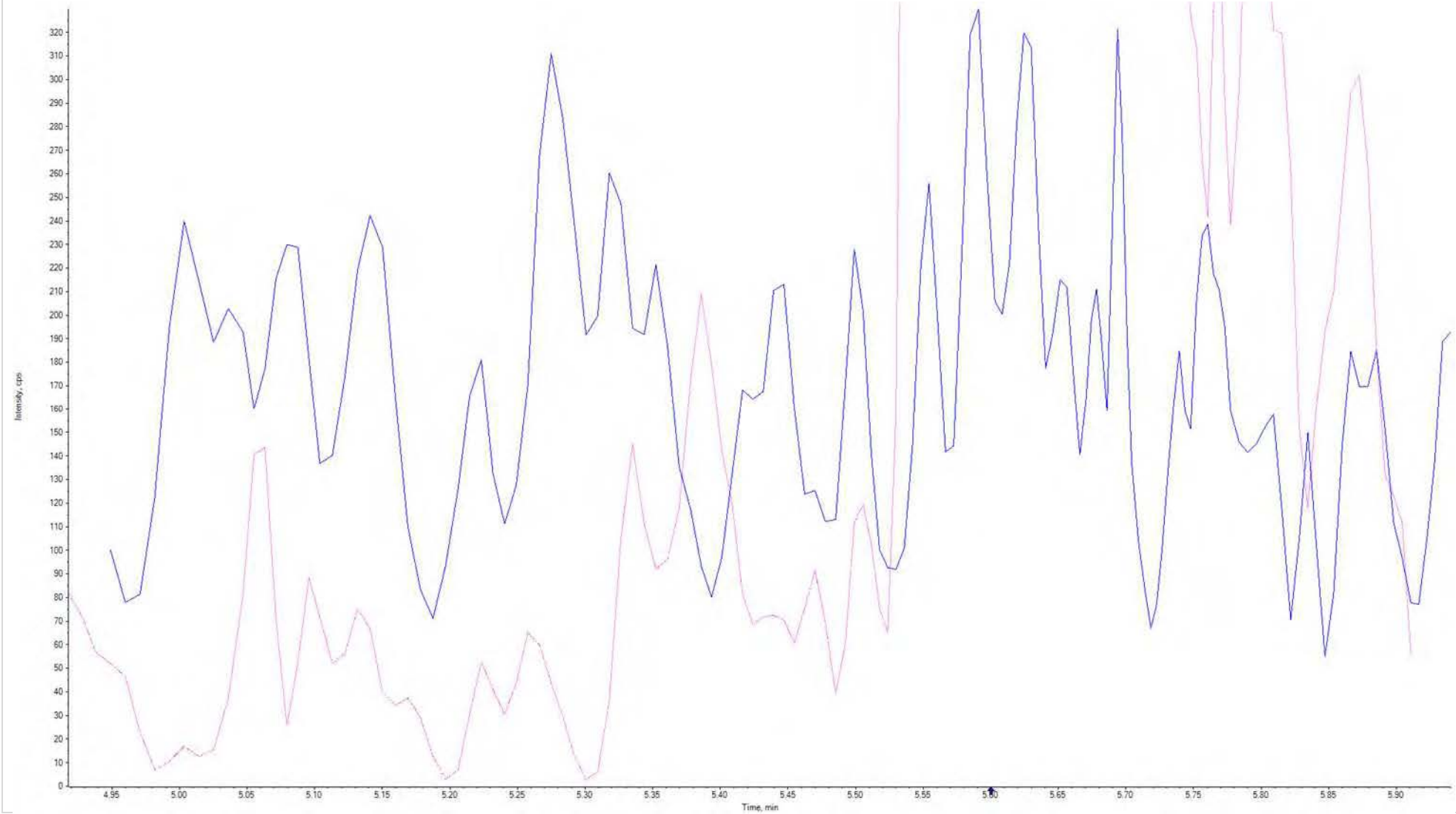

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

ADONA
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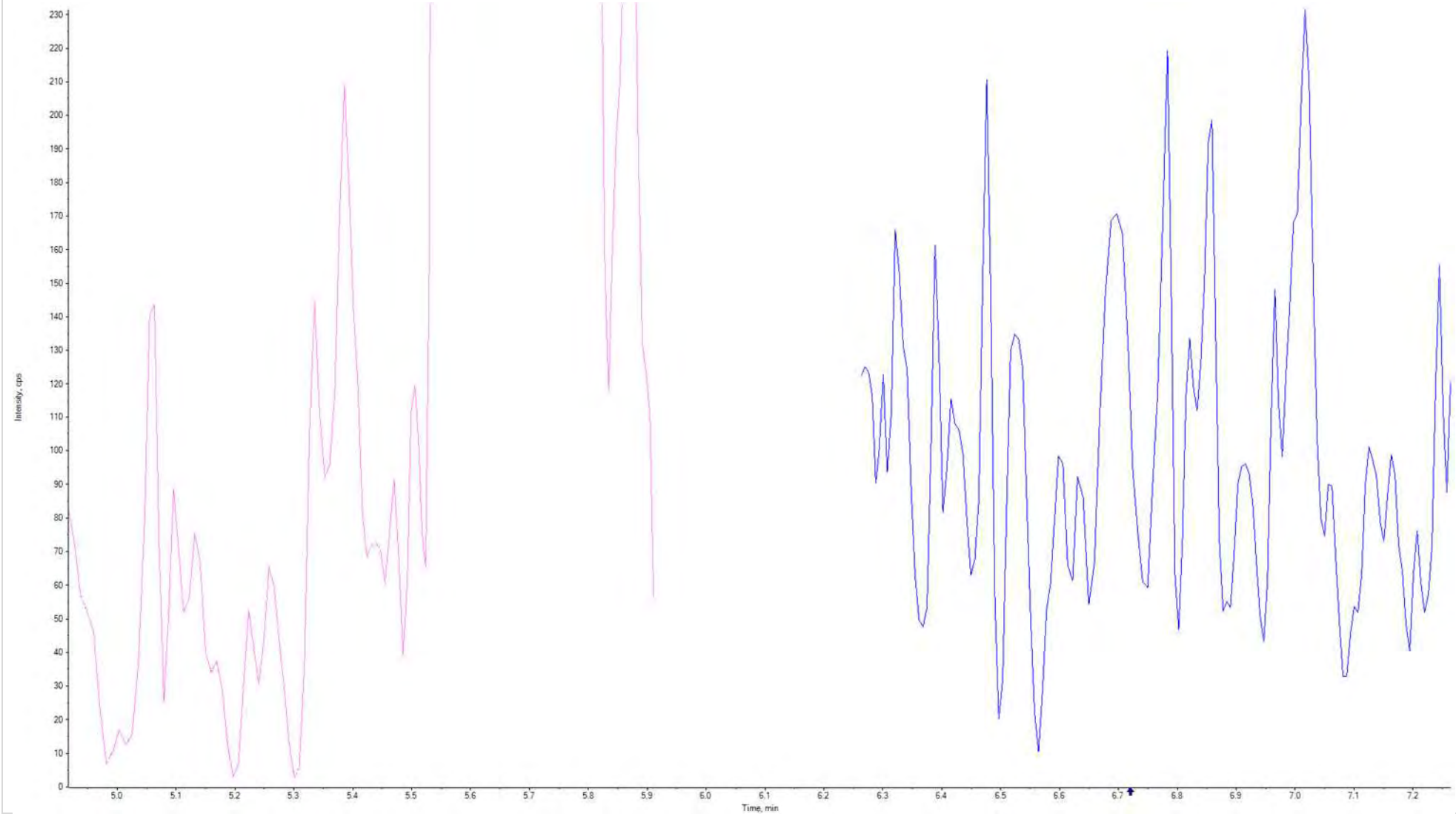

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_84.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

ADONA_2
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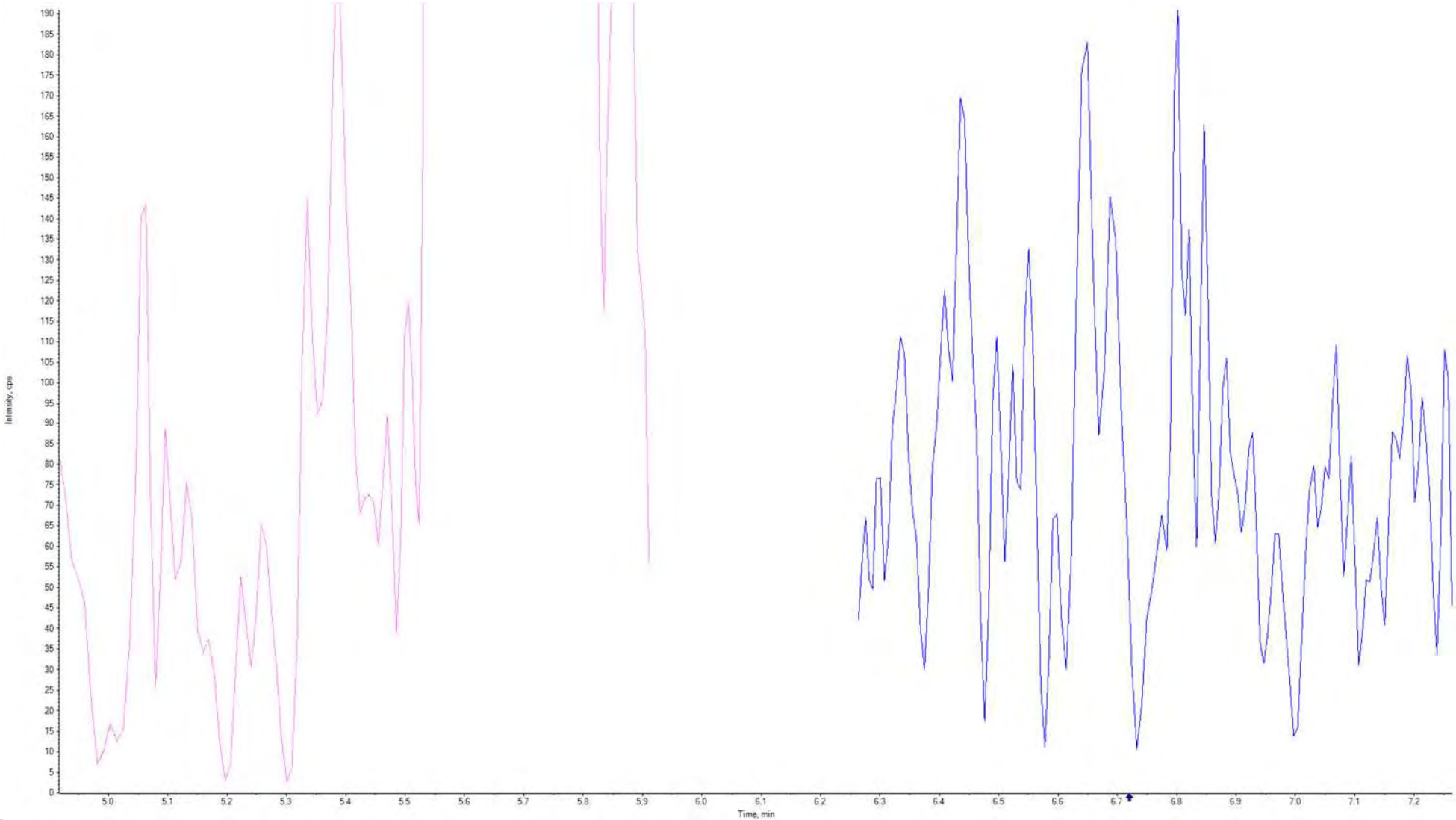

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 8/14/2024 9:55:24 AM
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9Cl-PF3ONS
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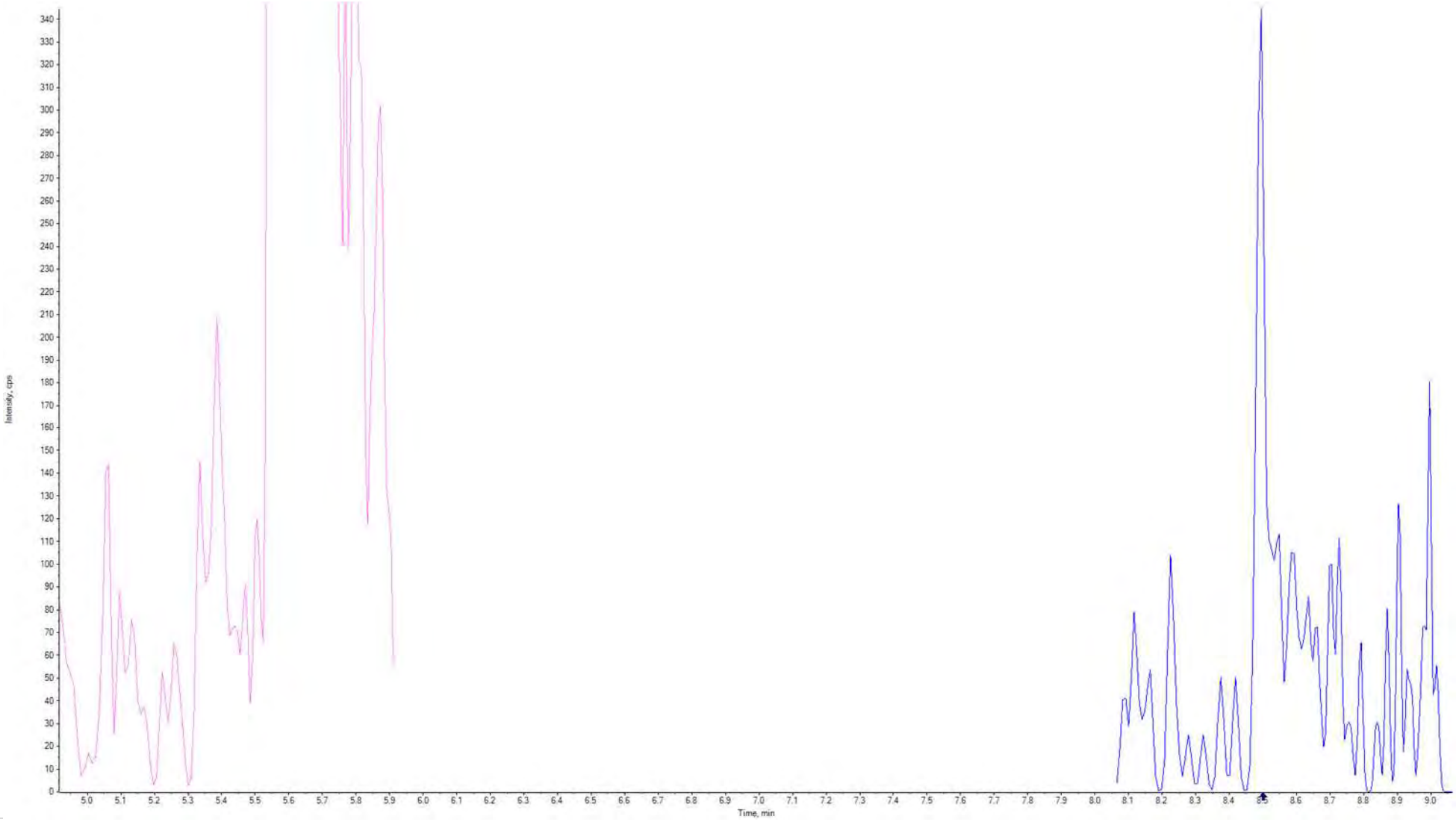

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

9Cl-PF3ONS_2
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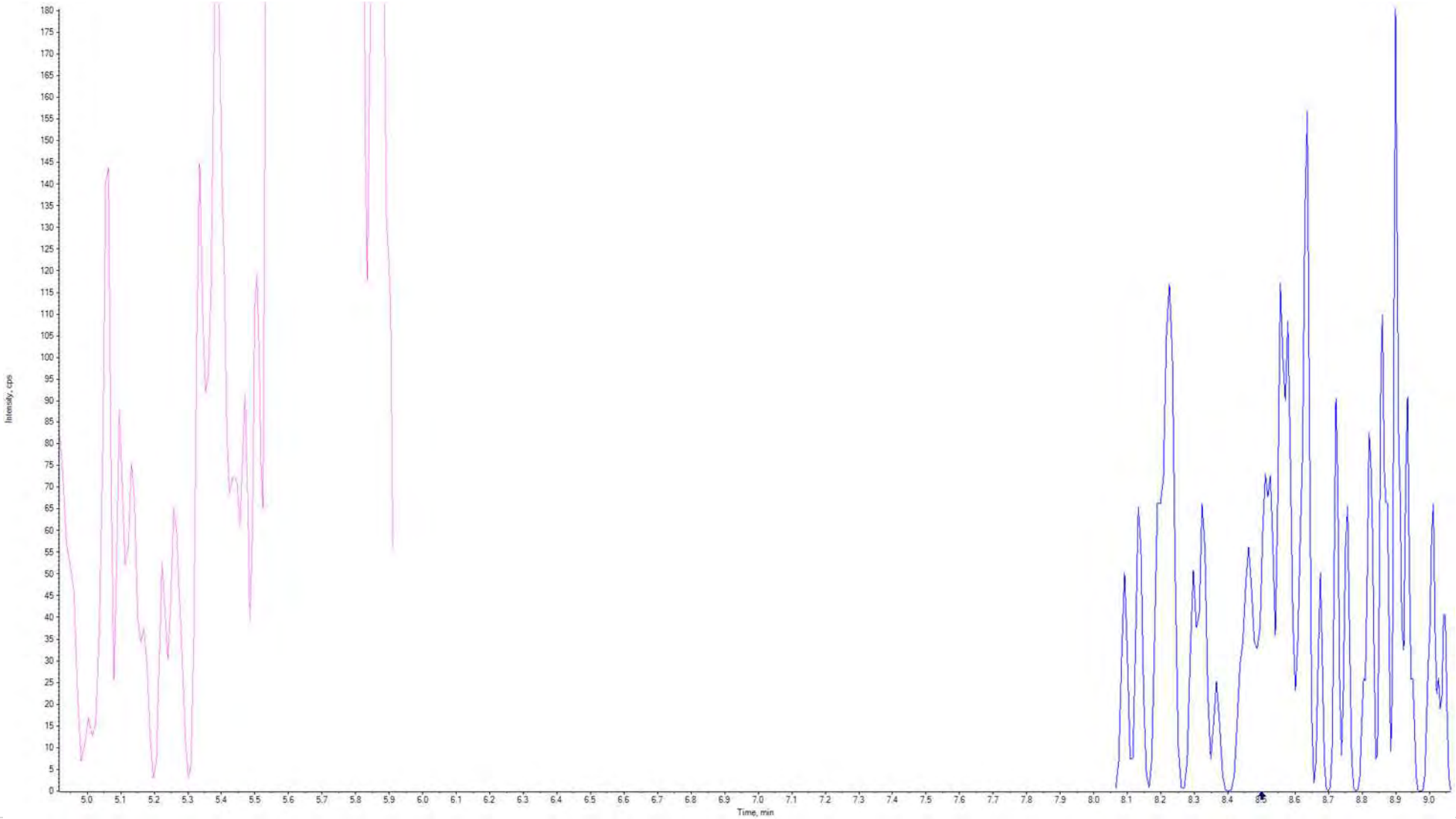

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 8/14/2024 9:55:24 AM
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11Cl-PF3OUdS
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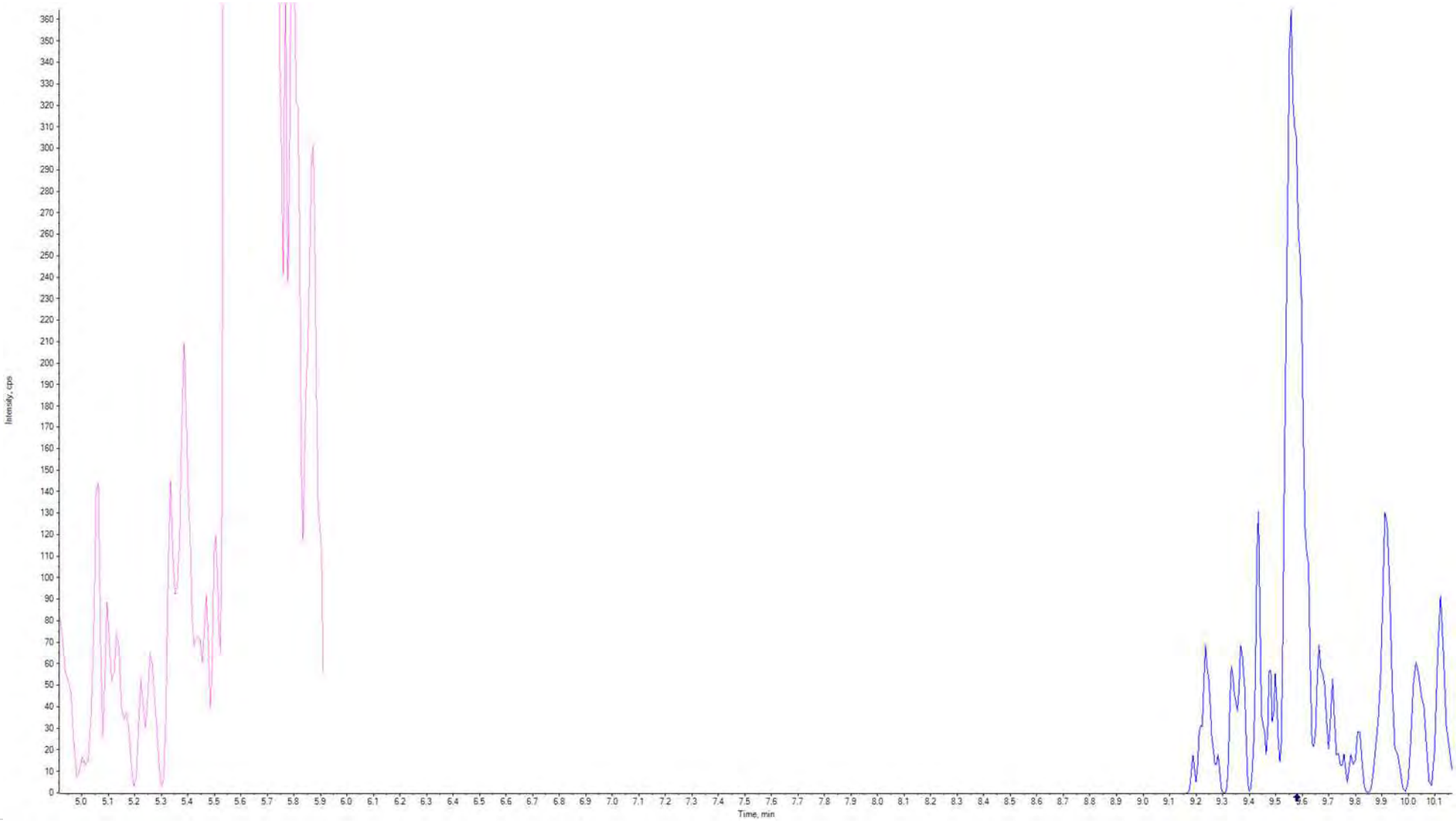

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

11Cl-PF3OUdS_2
Sample: WG1958909-6,INSTBLANK S/N:N/A Points Across peak:N/A

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_84.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

3:3FTCA
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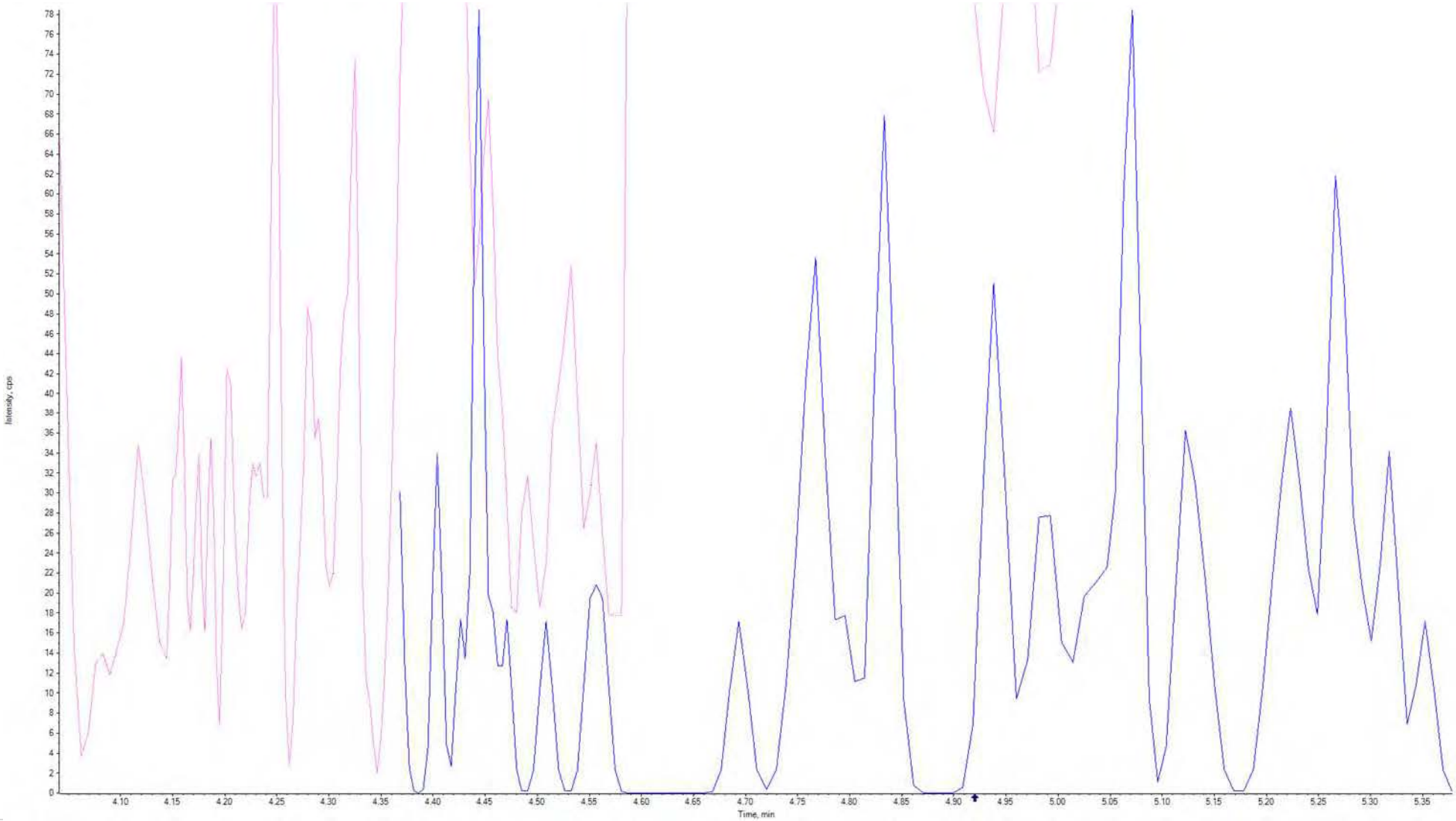

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

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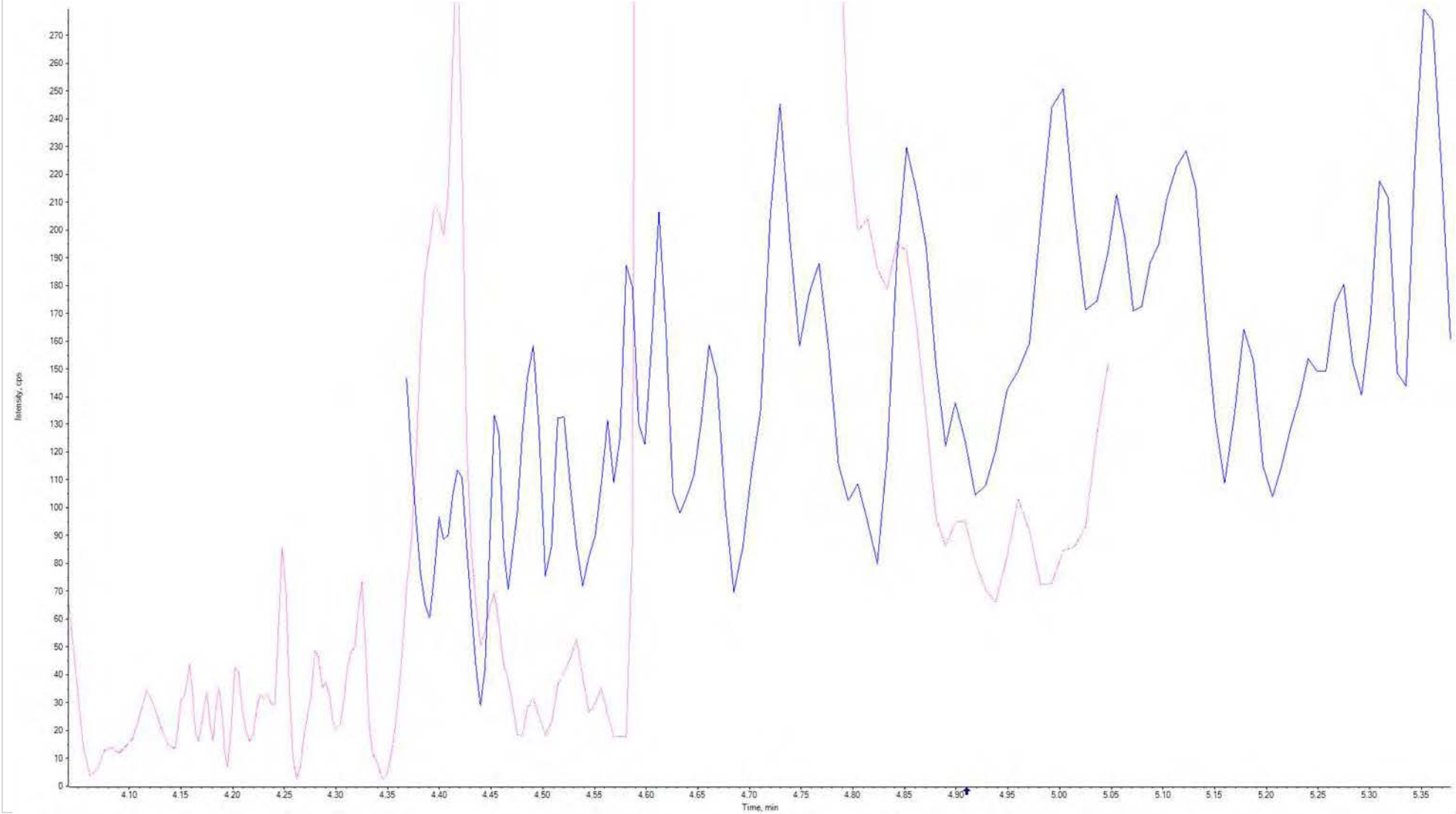

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

5:3FTCA
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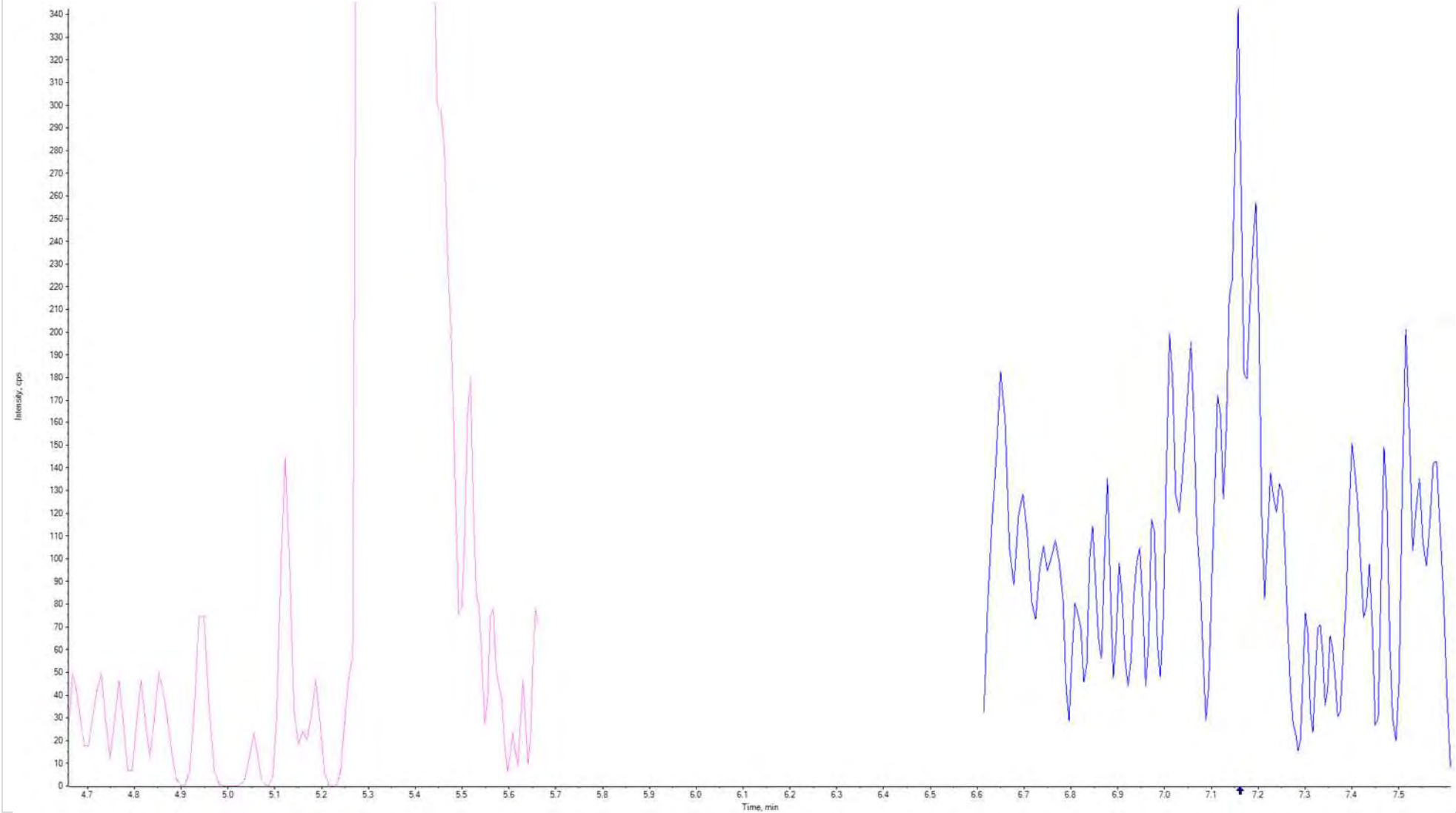

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

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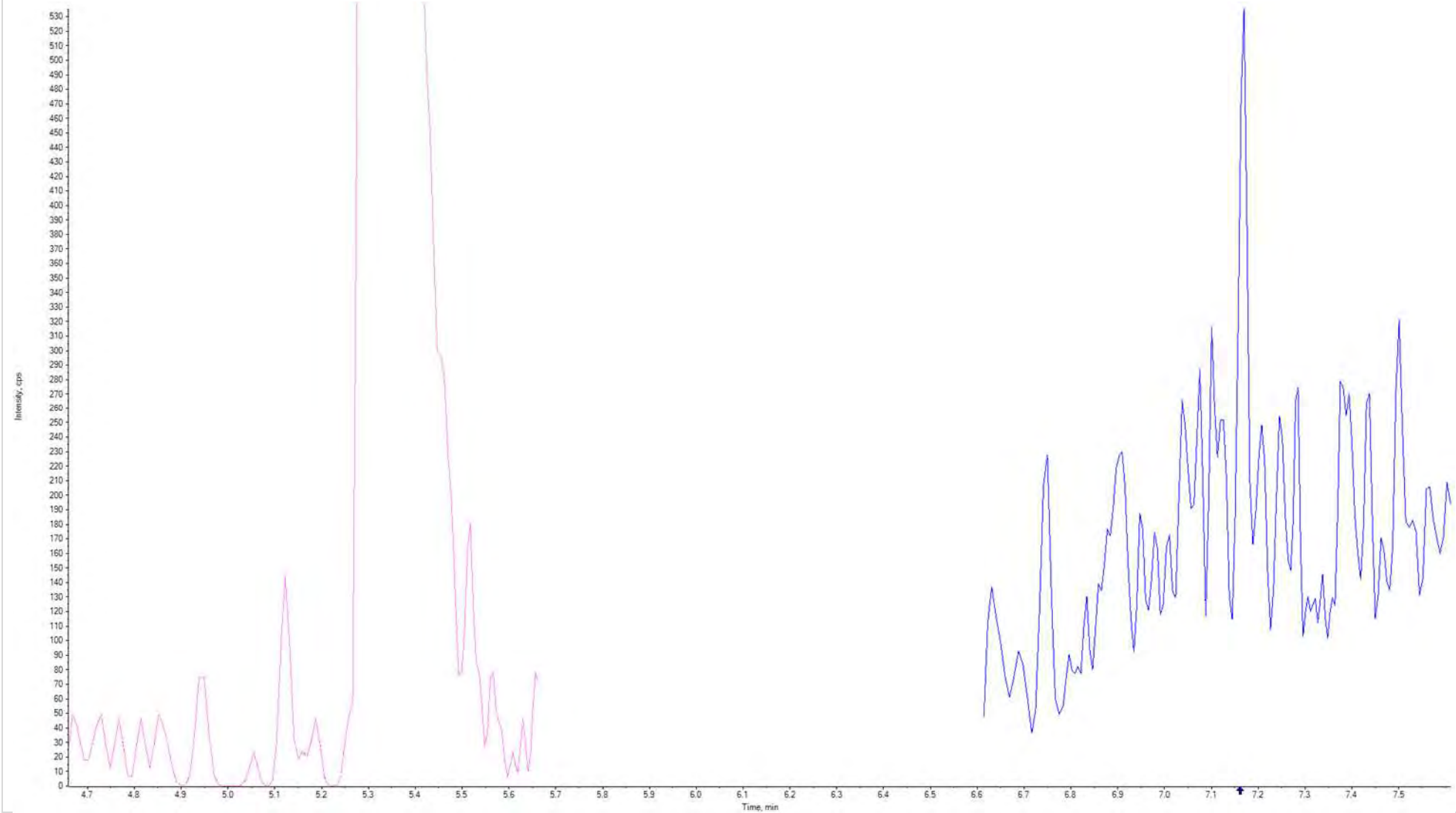

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

7:3FTCA
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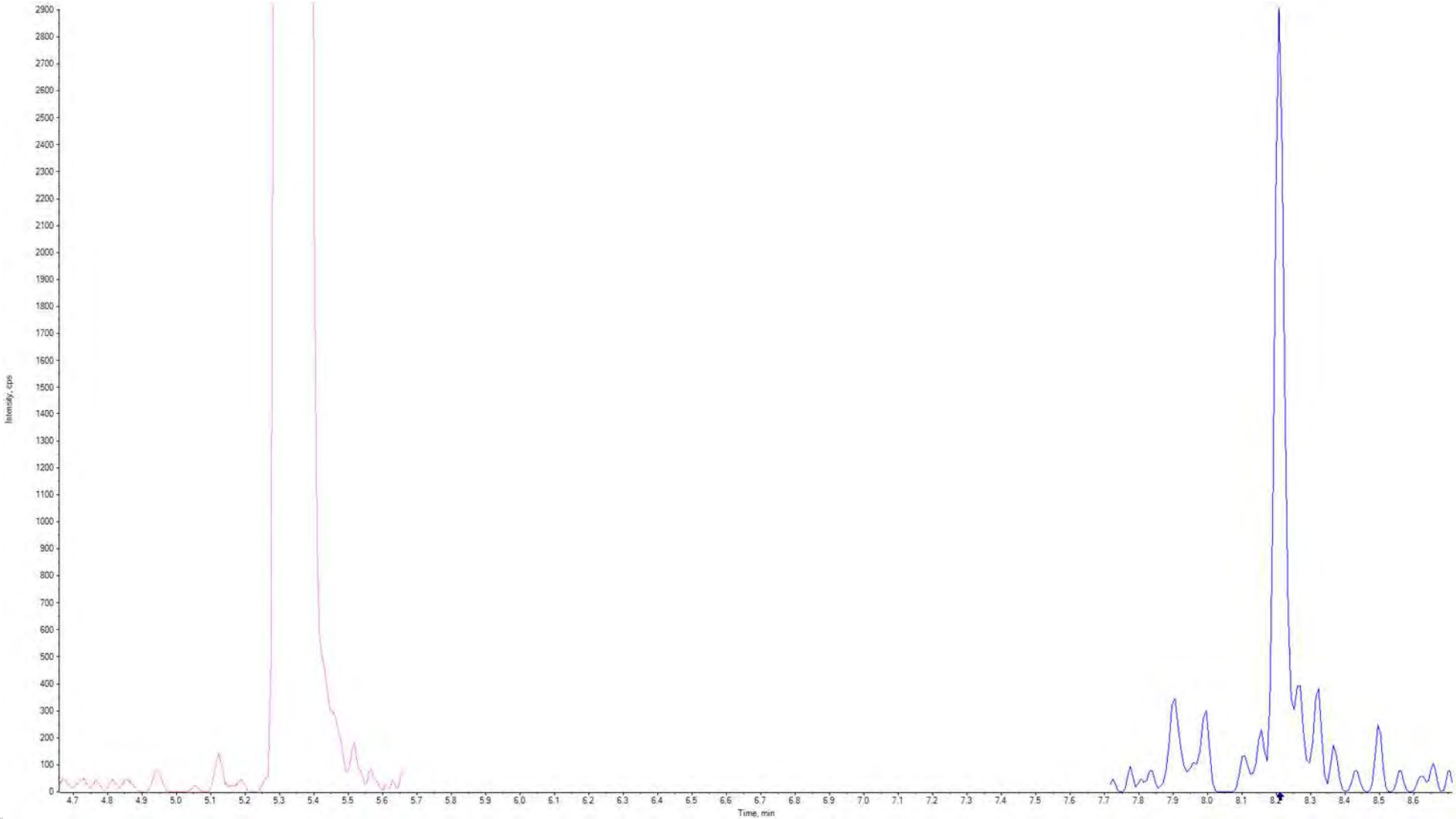

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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7:3FTCA_2
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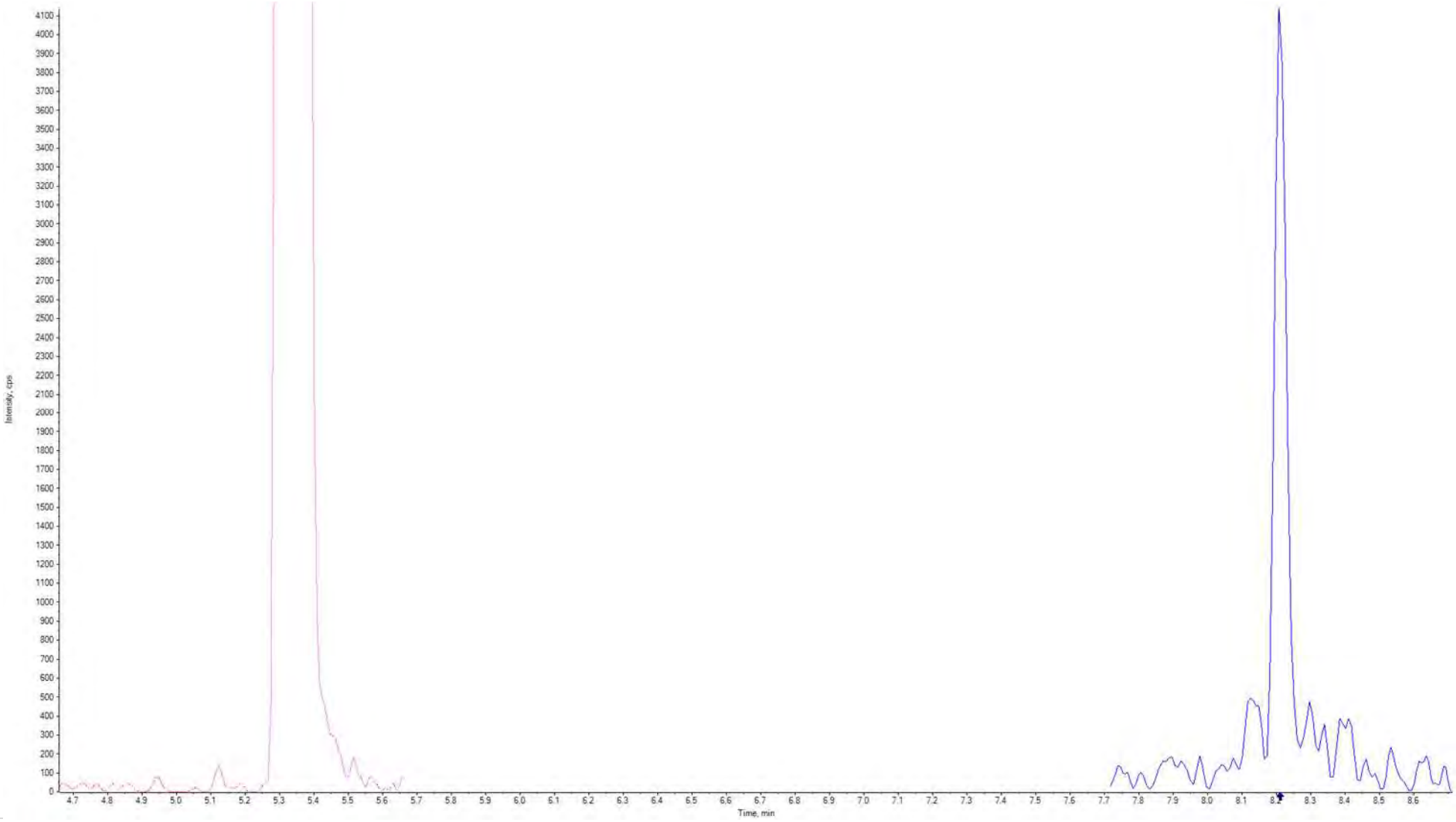

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFEESA
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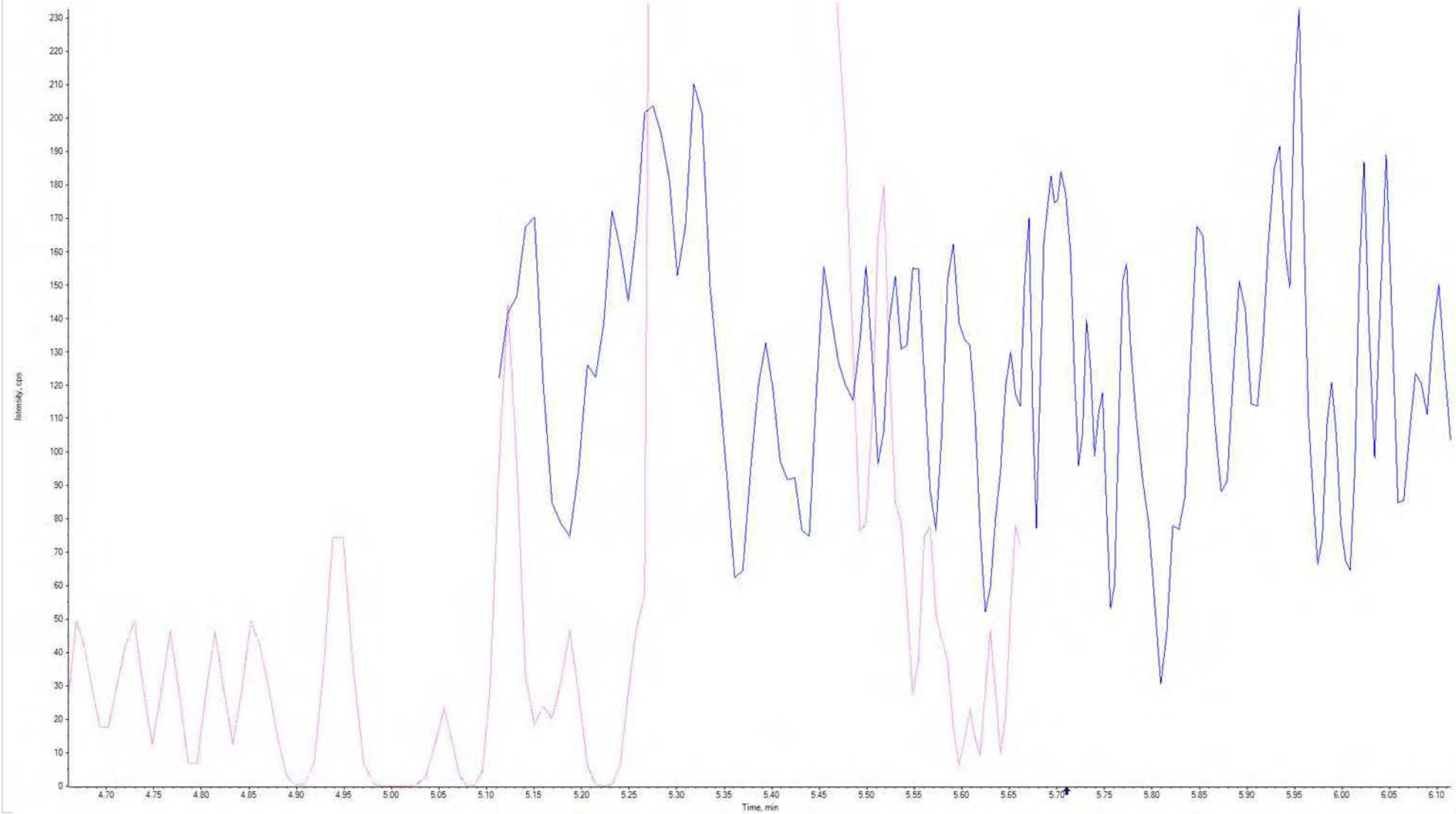

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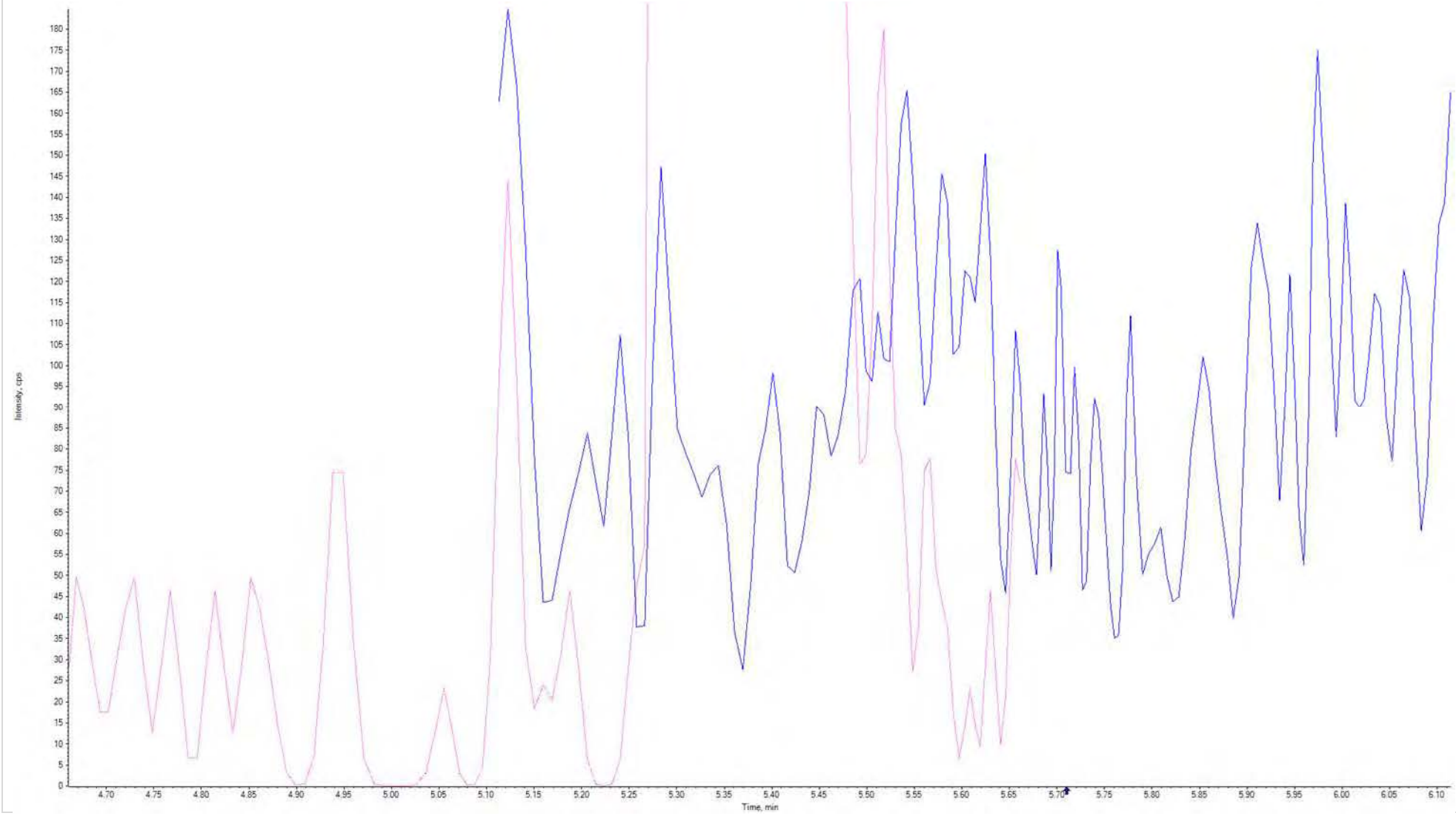

PFMPA
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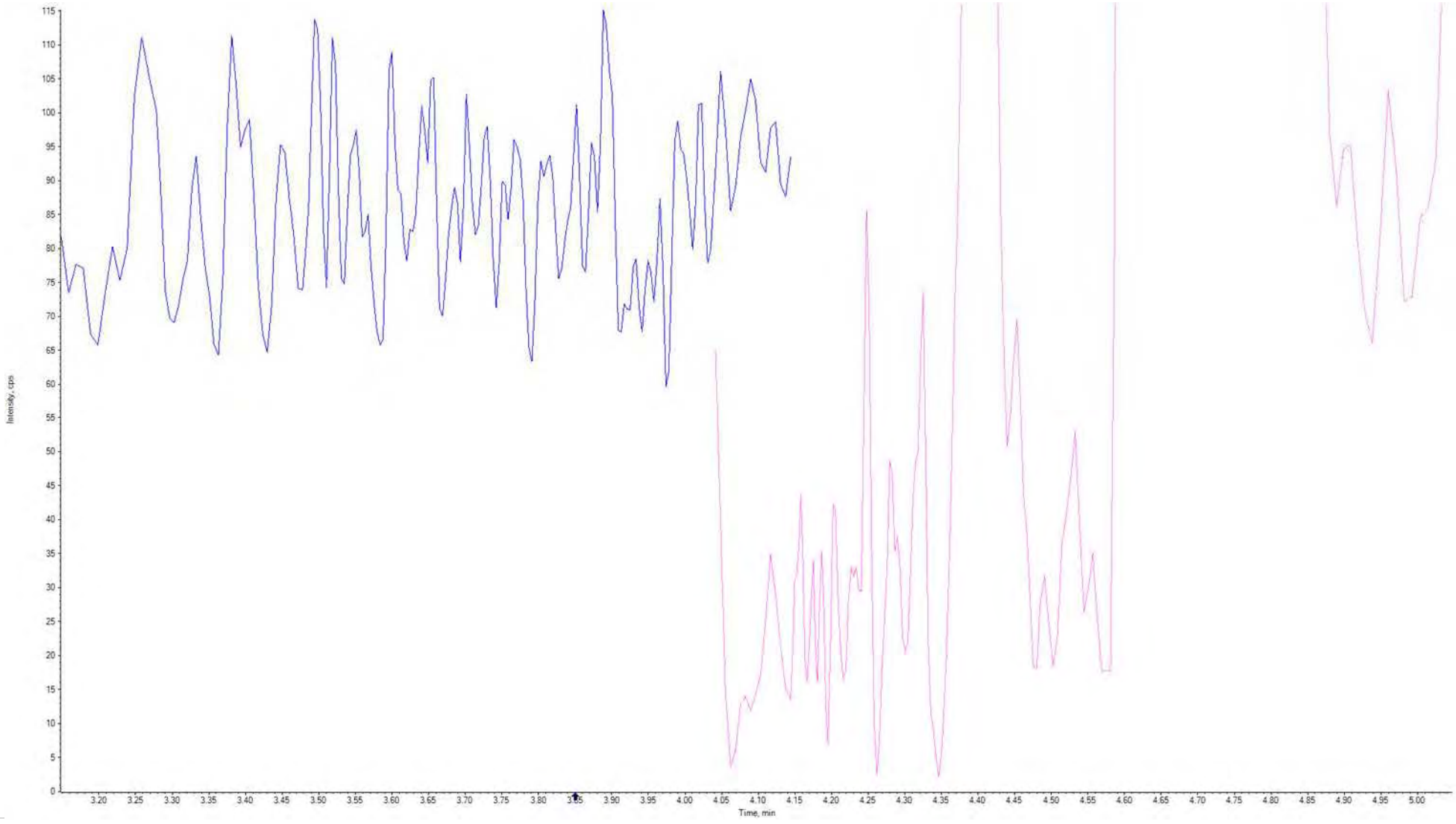

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_84.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

PFMBA
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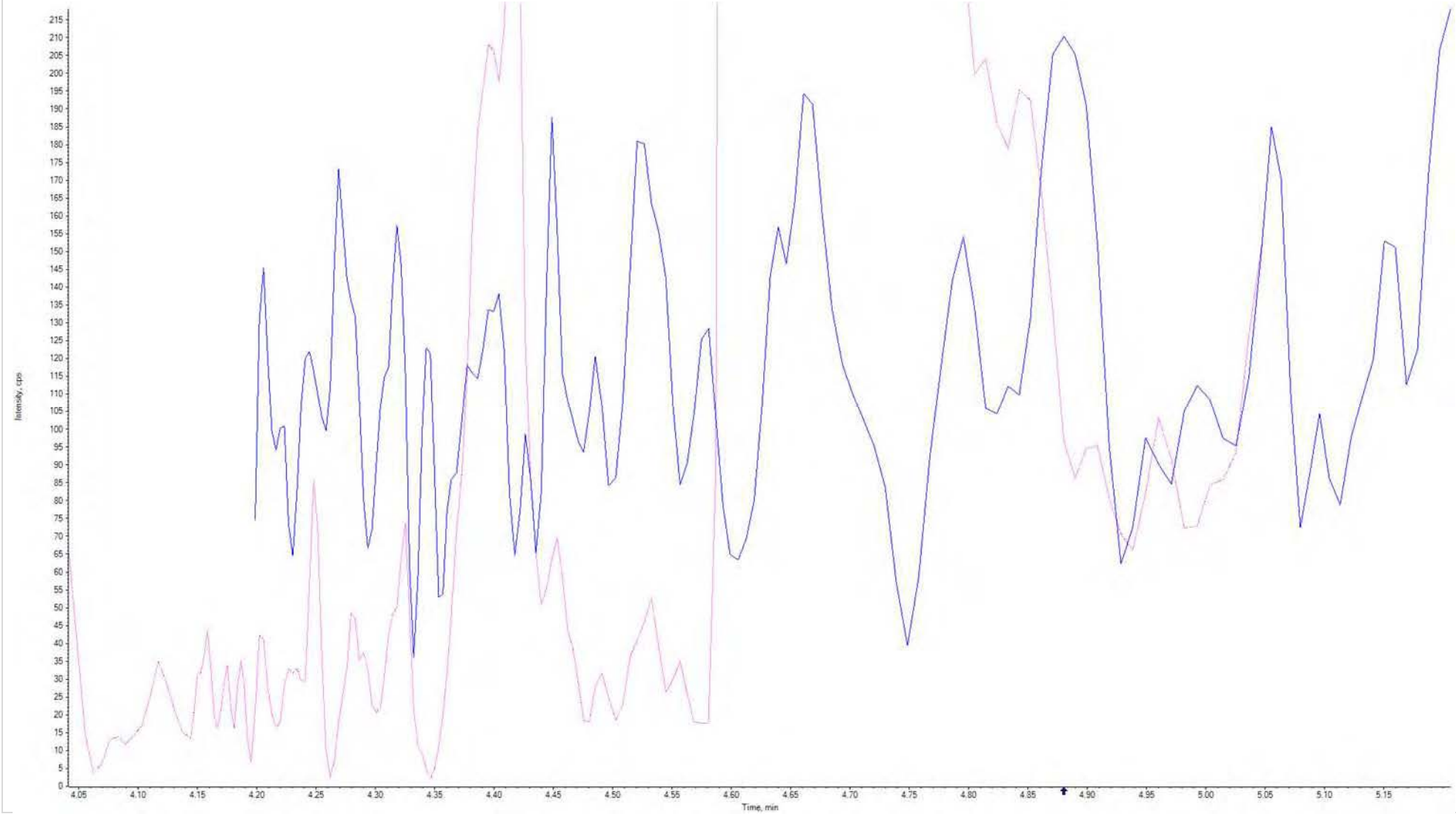

NFDHA
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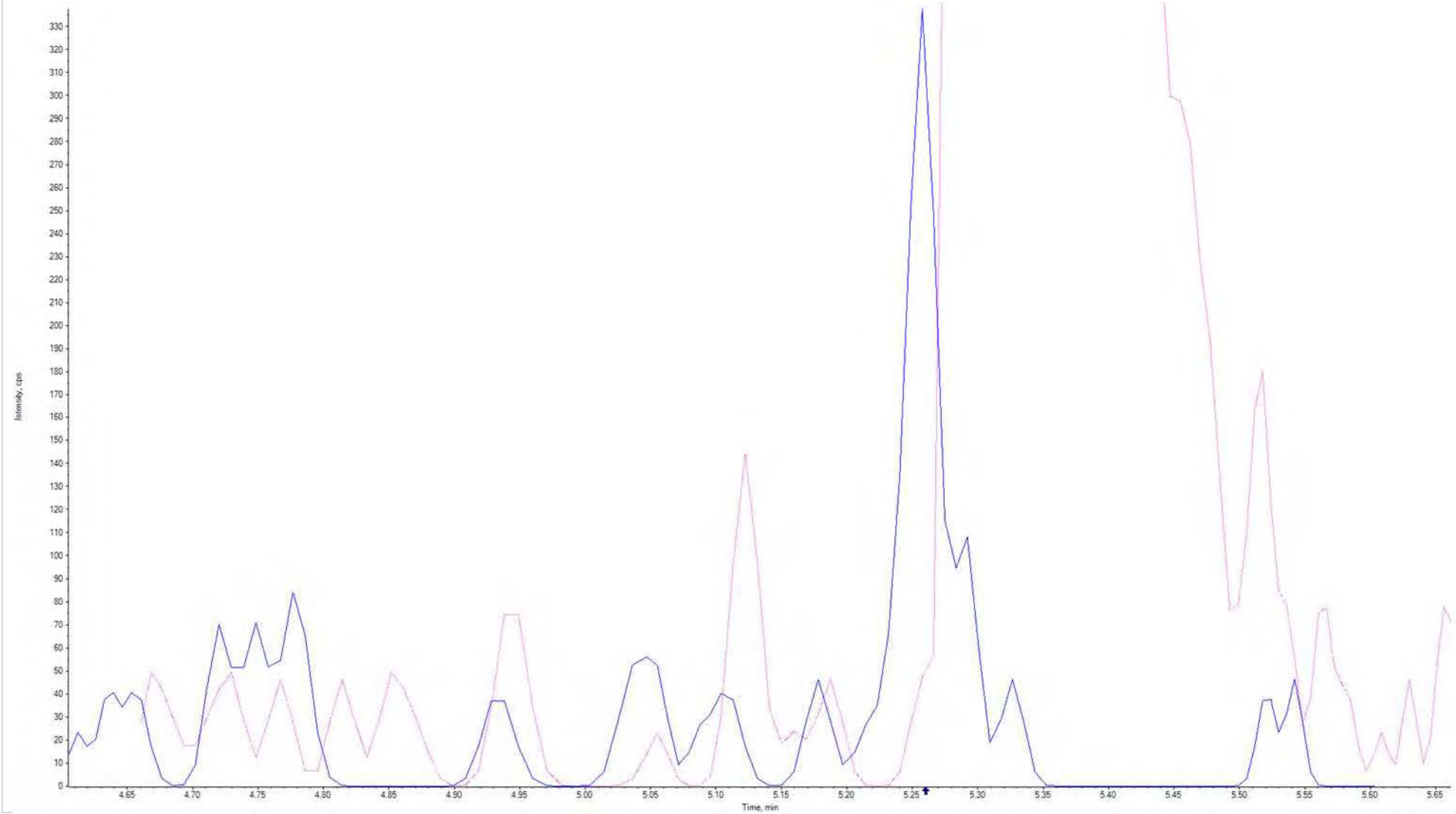

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

NFDHA_2
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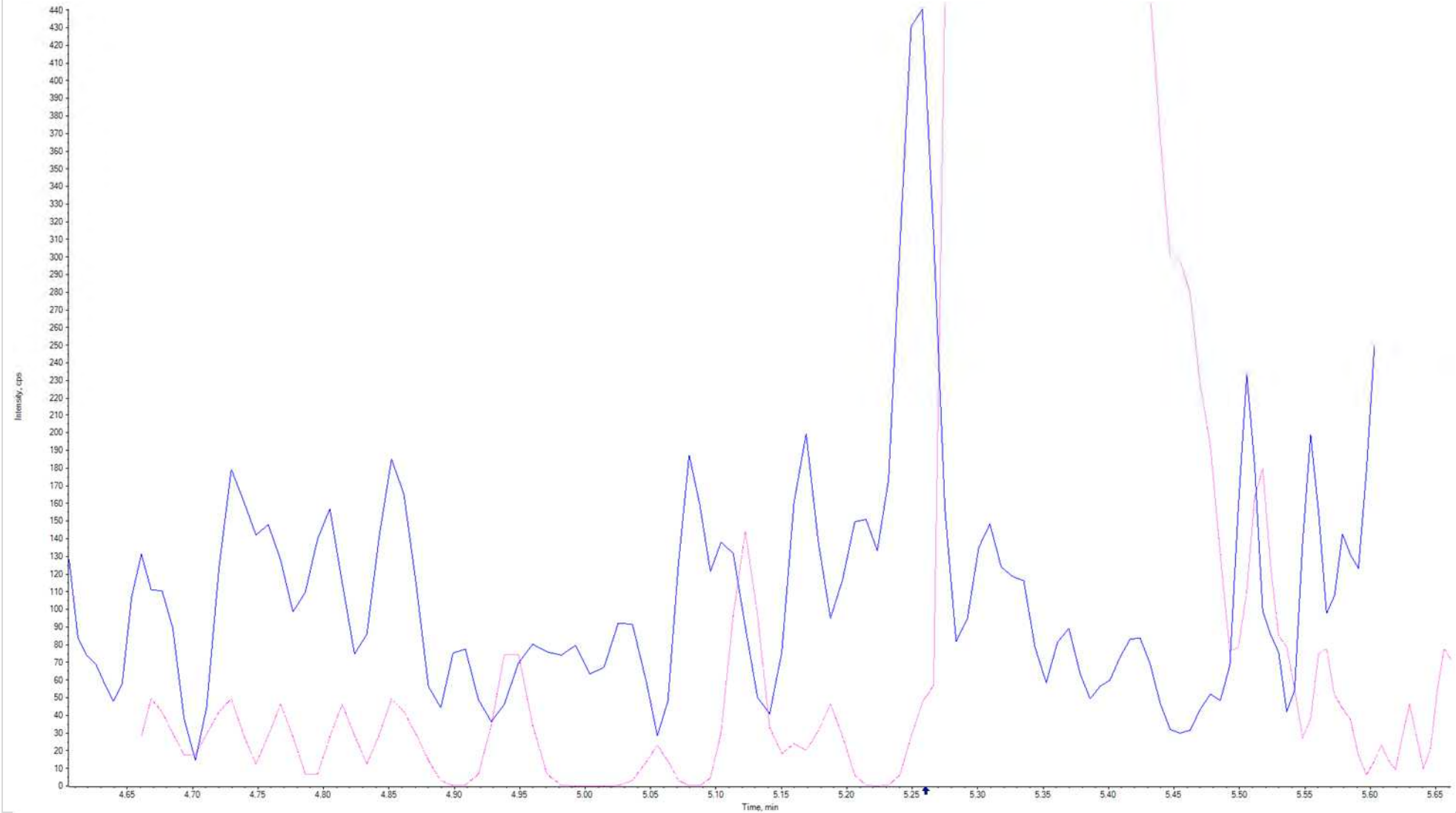

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

TDCA
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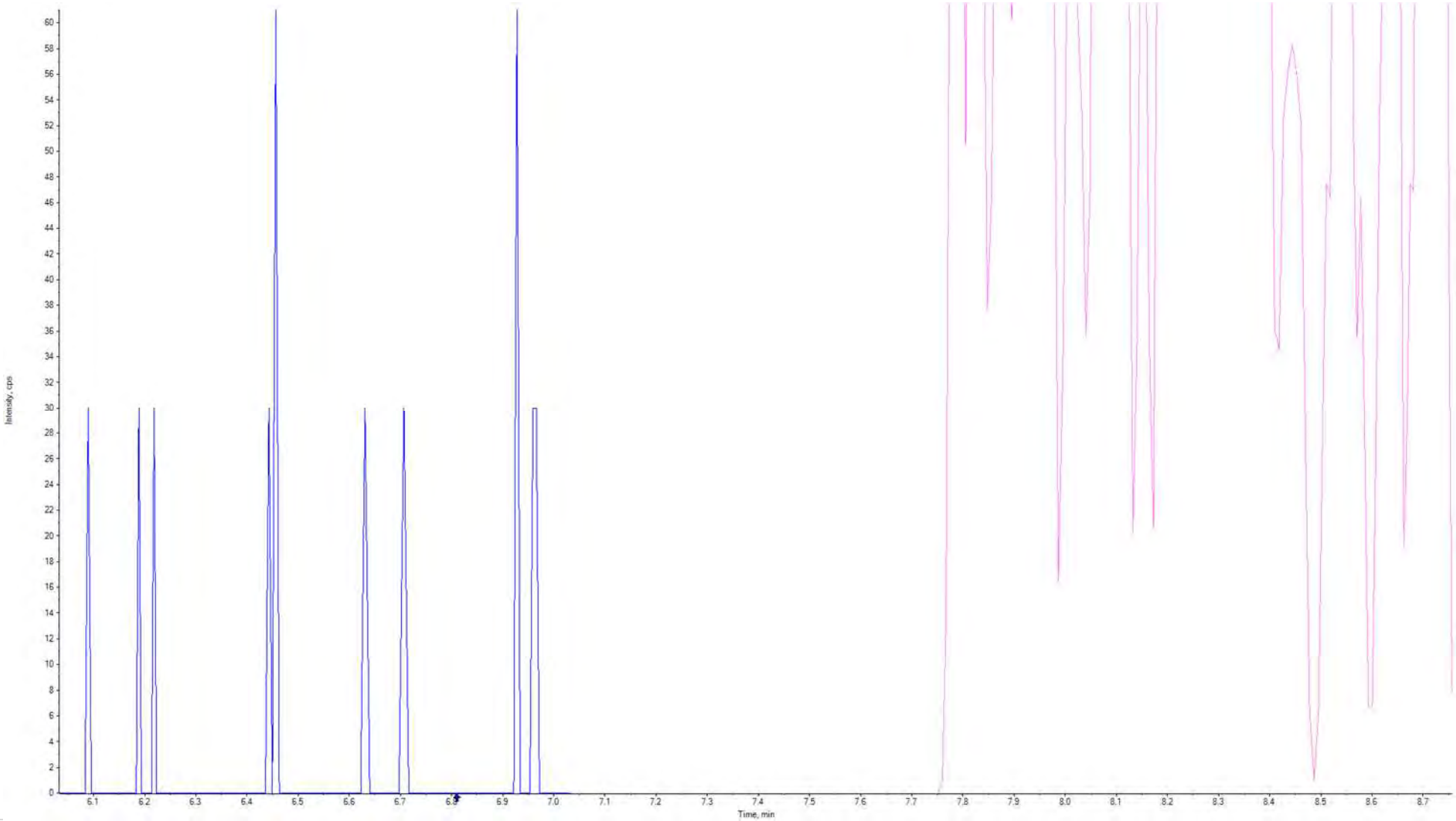
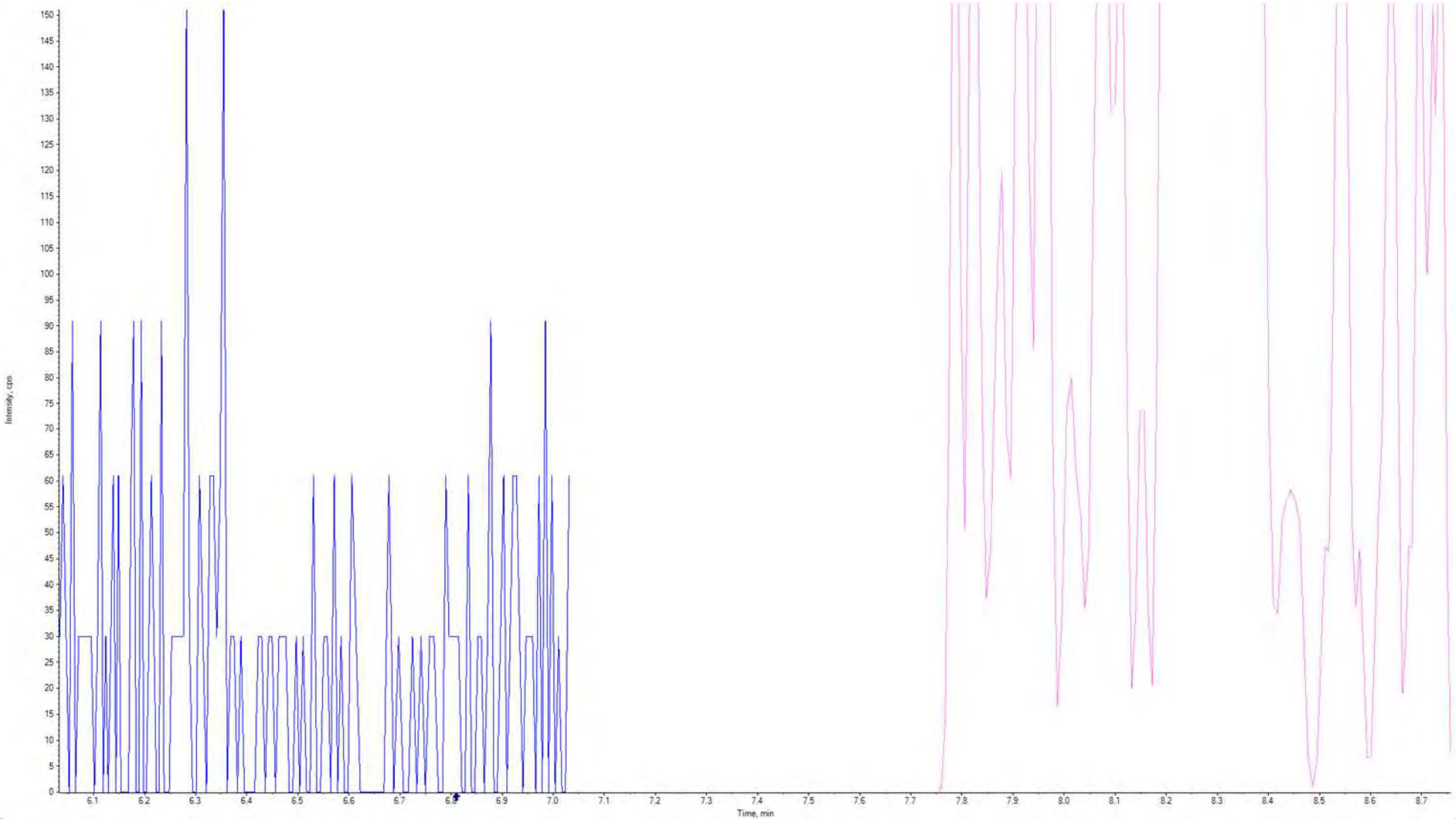


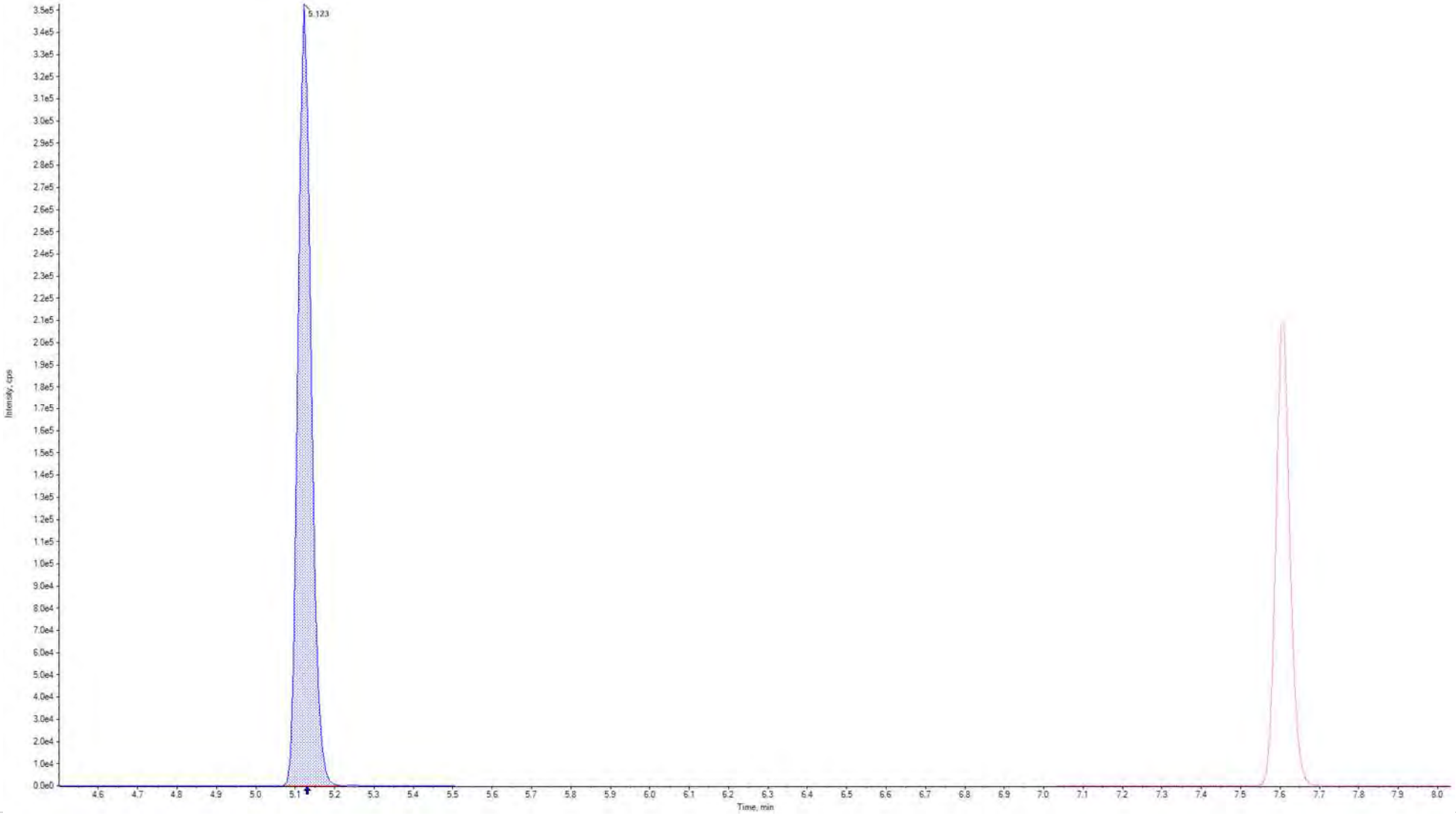
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_84.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

TDCA_2
Sample: WG1958909-6,INSTBLANK S/N:N/A Points Across peak:N/A



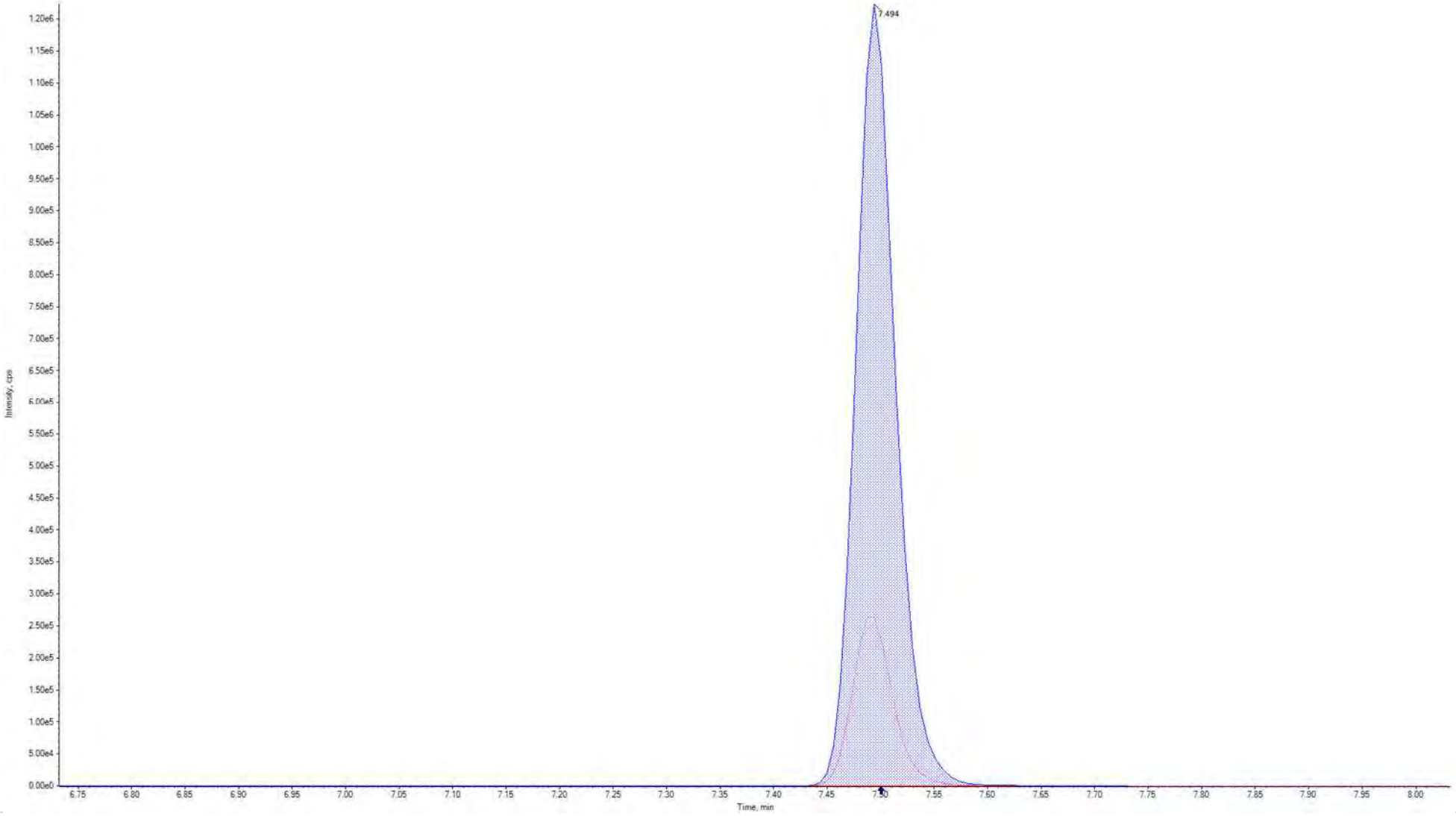
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_84.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

13C2D4-4:2FTS
Sample: WG1958909-6,INSTBLANK S/N:119969.9 Points Across peak:23

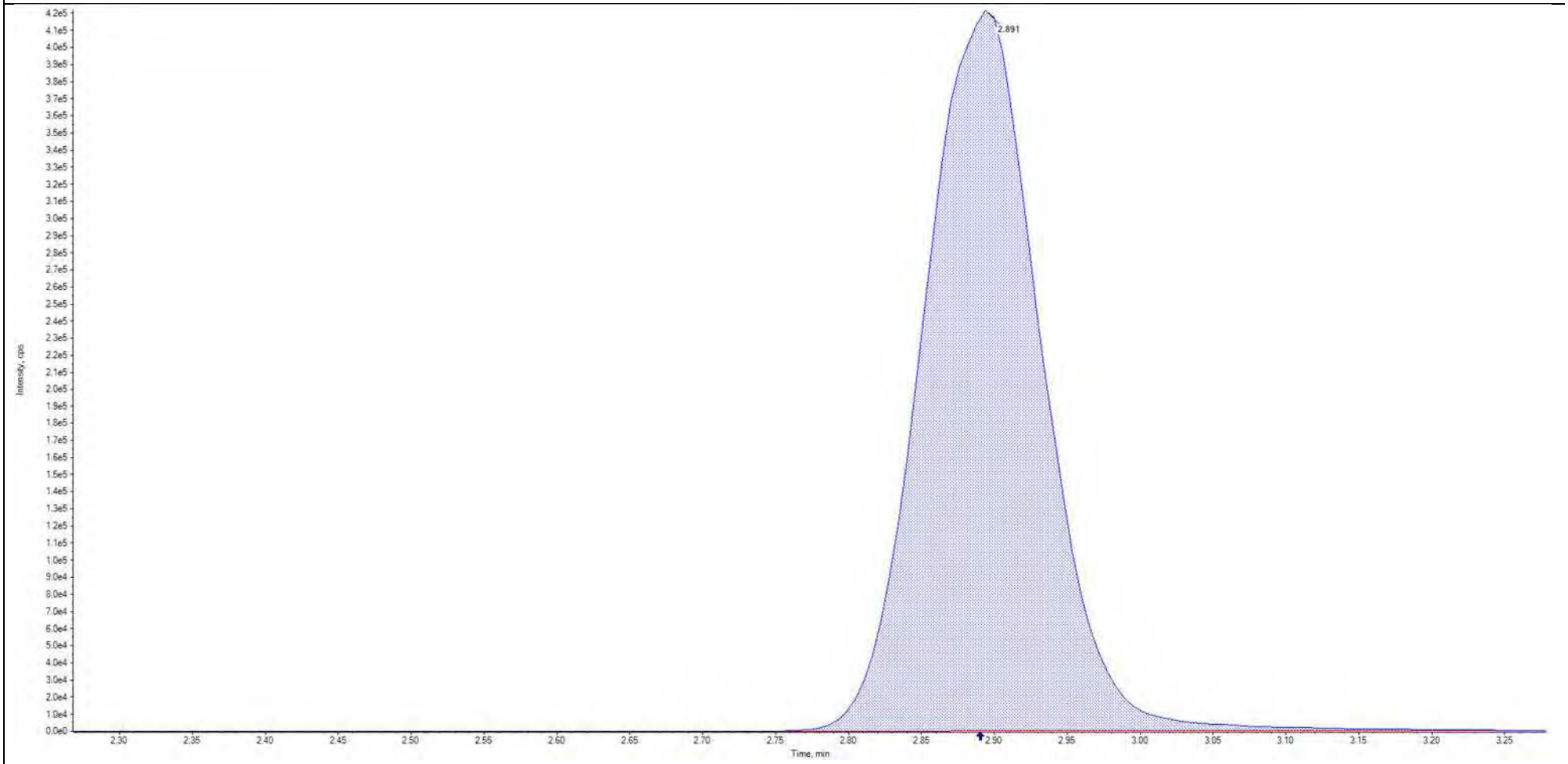


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_84.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

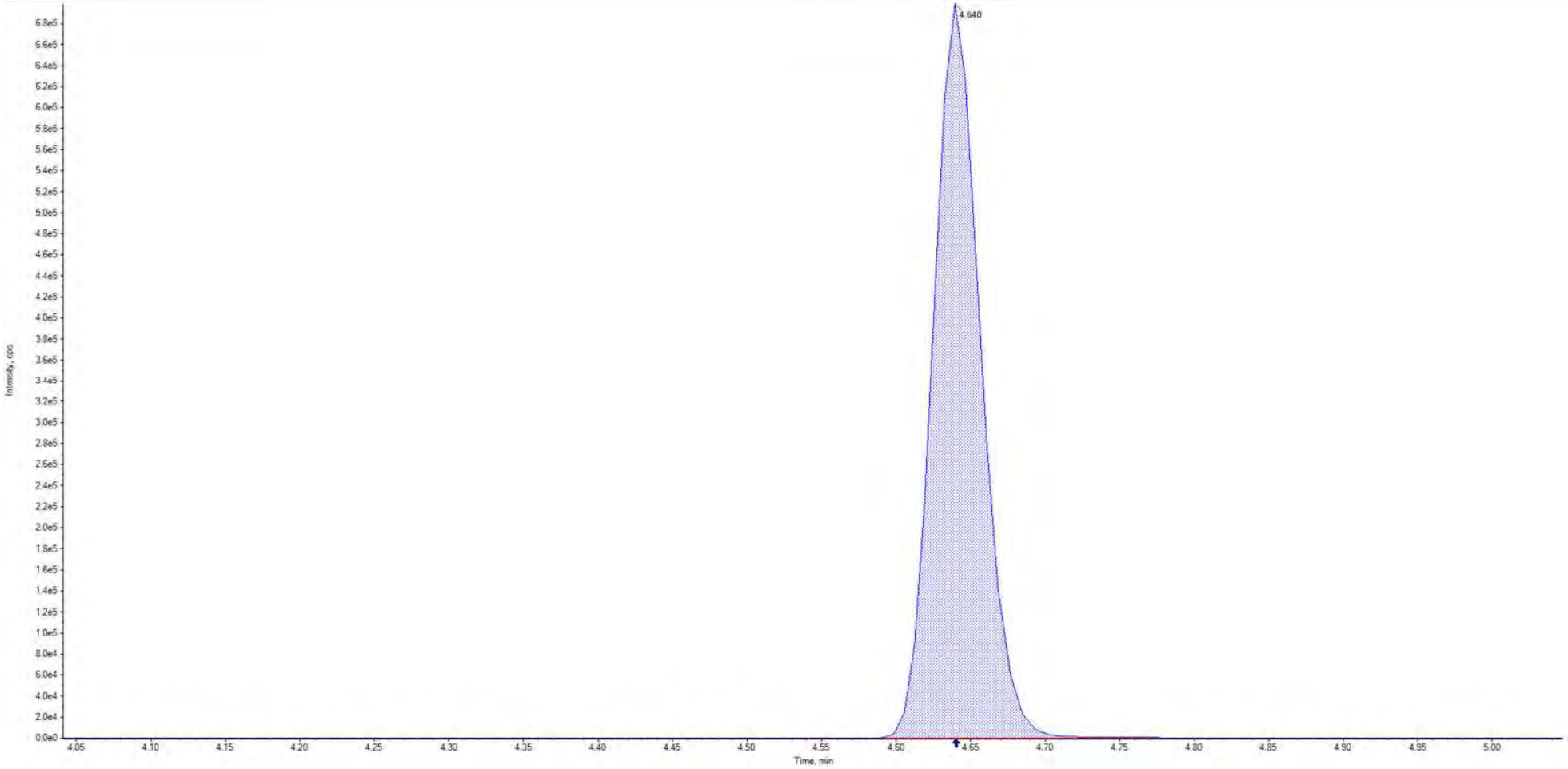
13C2-PFOA
Sample: WG1958909-6,INSTBLANK S/N:10554.5 Points Across peak:38



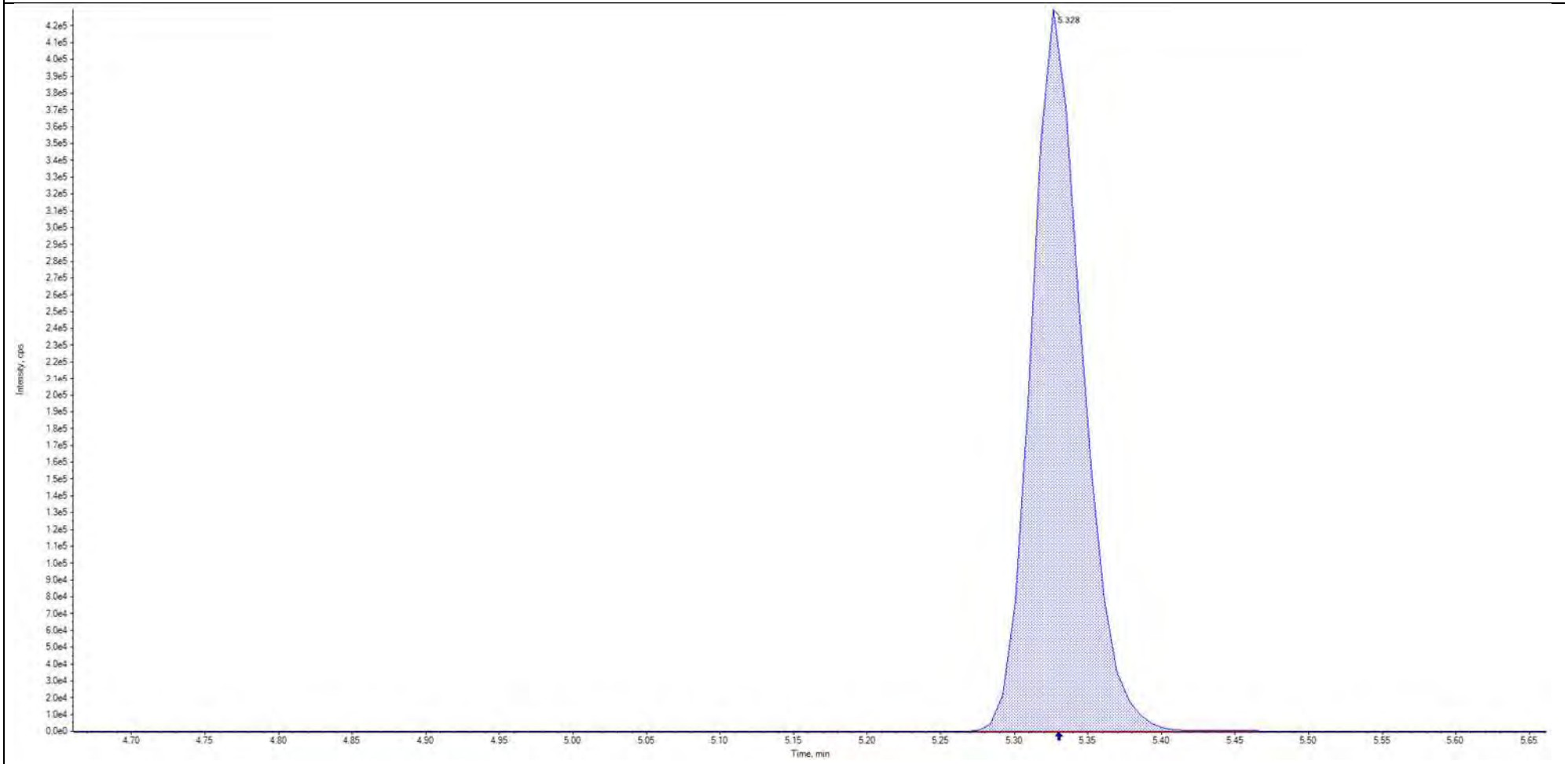
13C4-PFBA
Sample: WG1958909-6,INSTBLANK



13C5-PFPeA
Sample: WG1958909-6,INSTBLANK

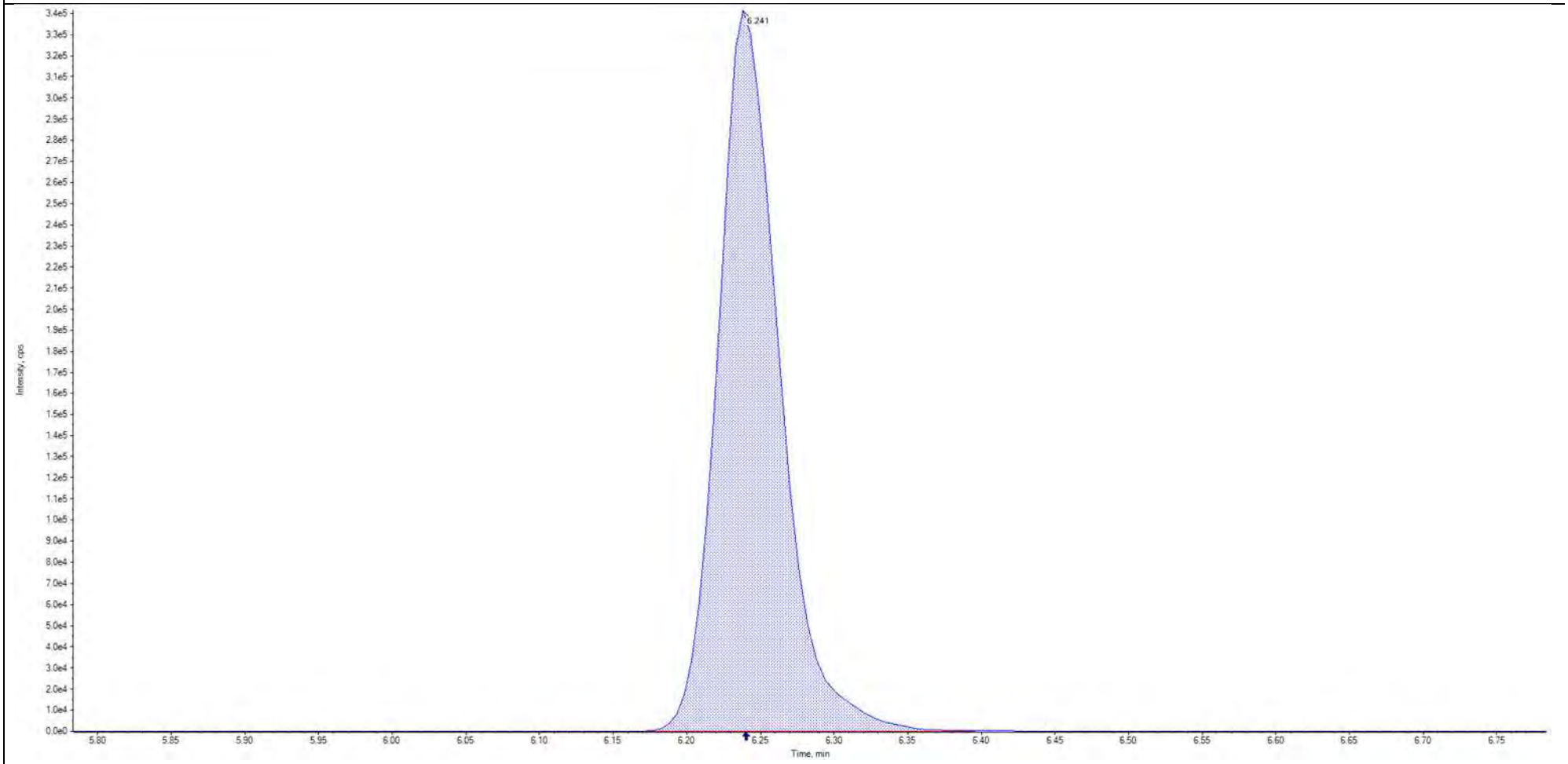


13C5-PFHxA
Sample: WG1958909-6,INSTBLANK



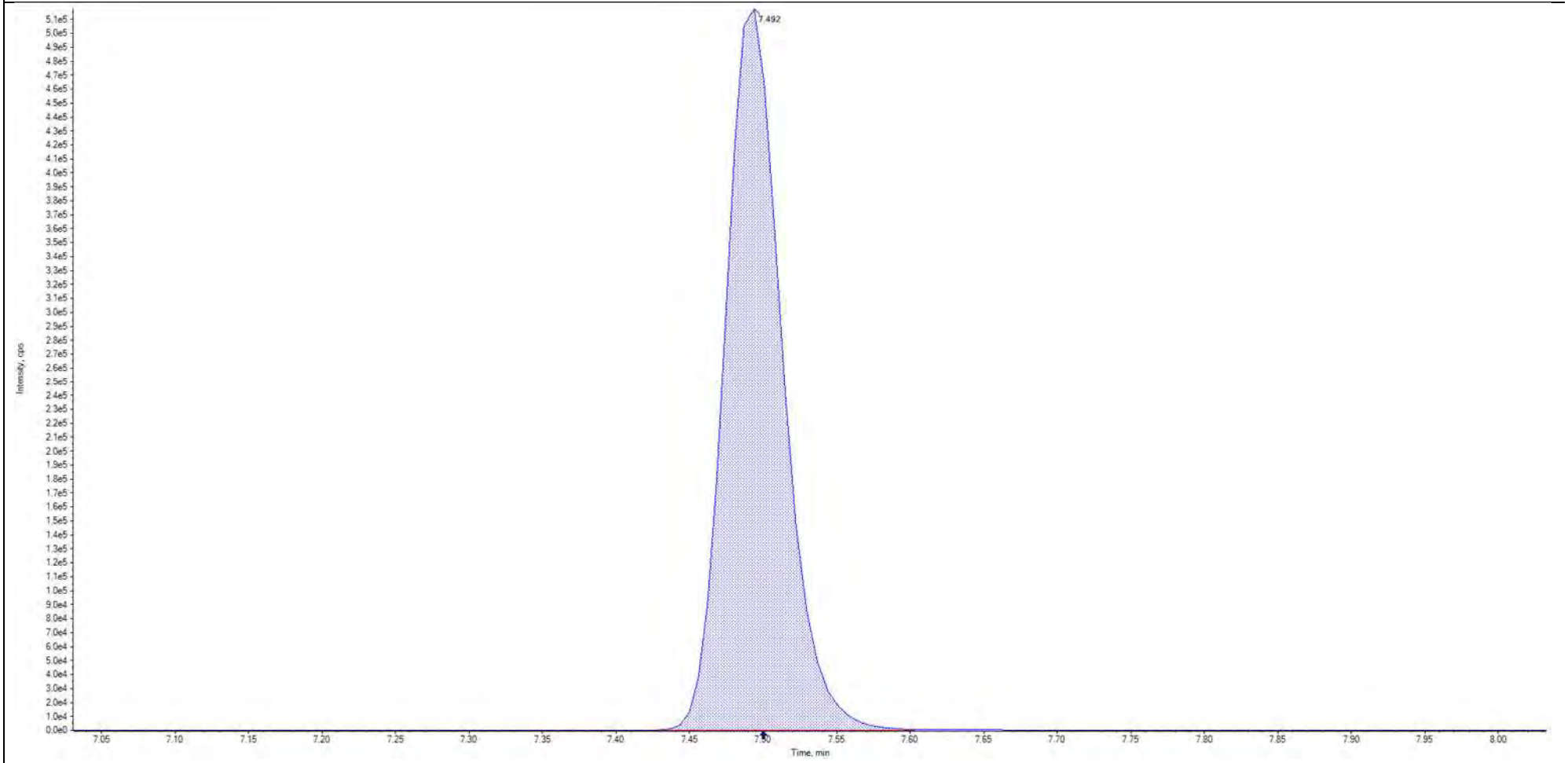
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_84.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

13C4-PFHpA
Sample: WG1958909-6,INSTBLANK

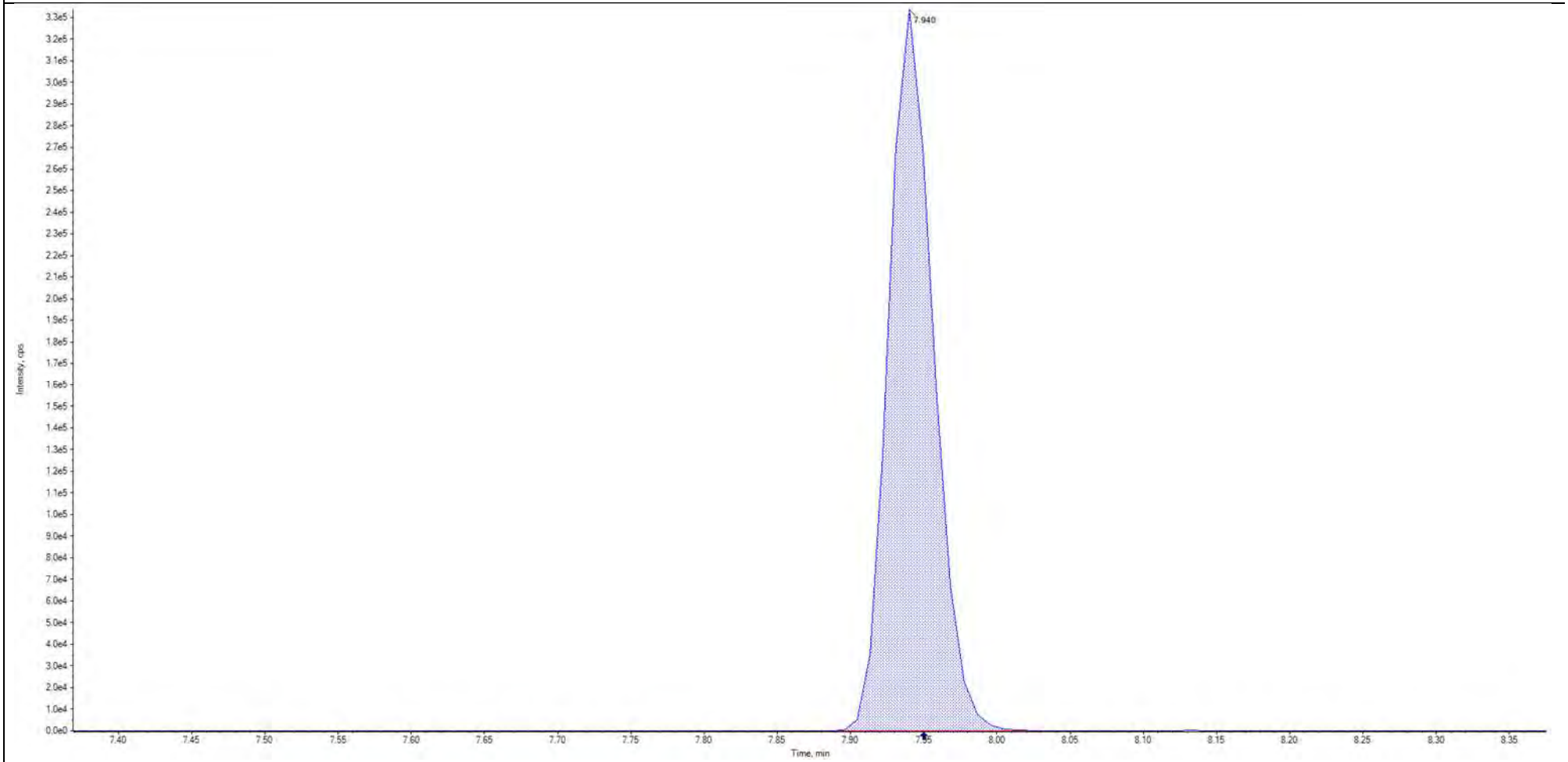


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_84.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

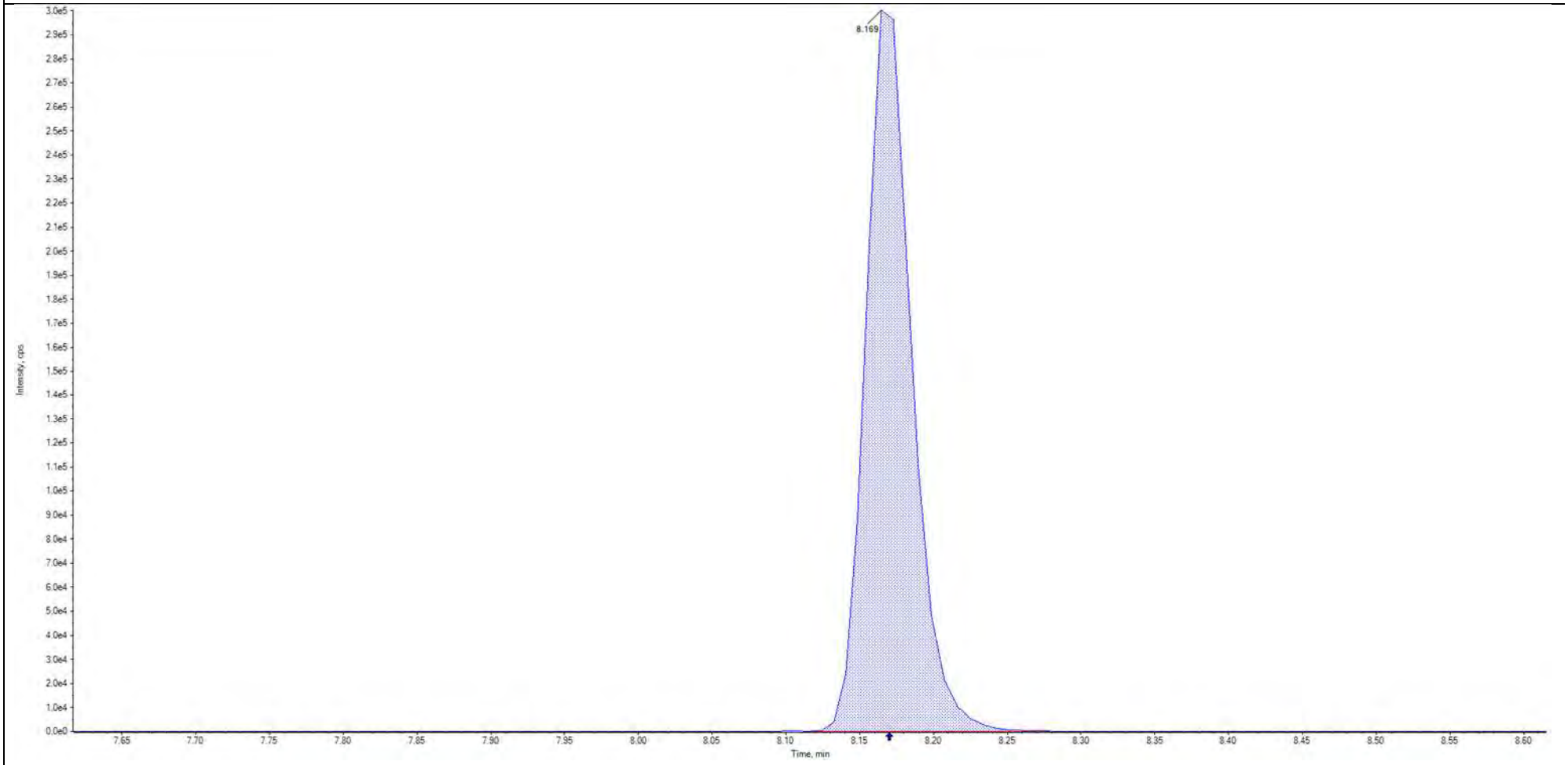
13C8-PFOA
Sample: WG1958909-6,INSTBLANK



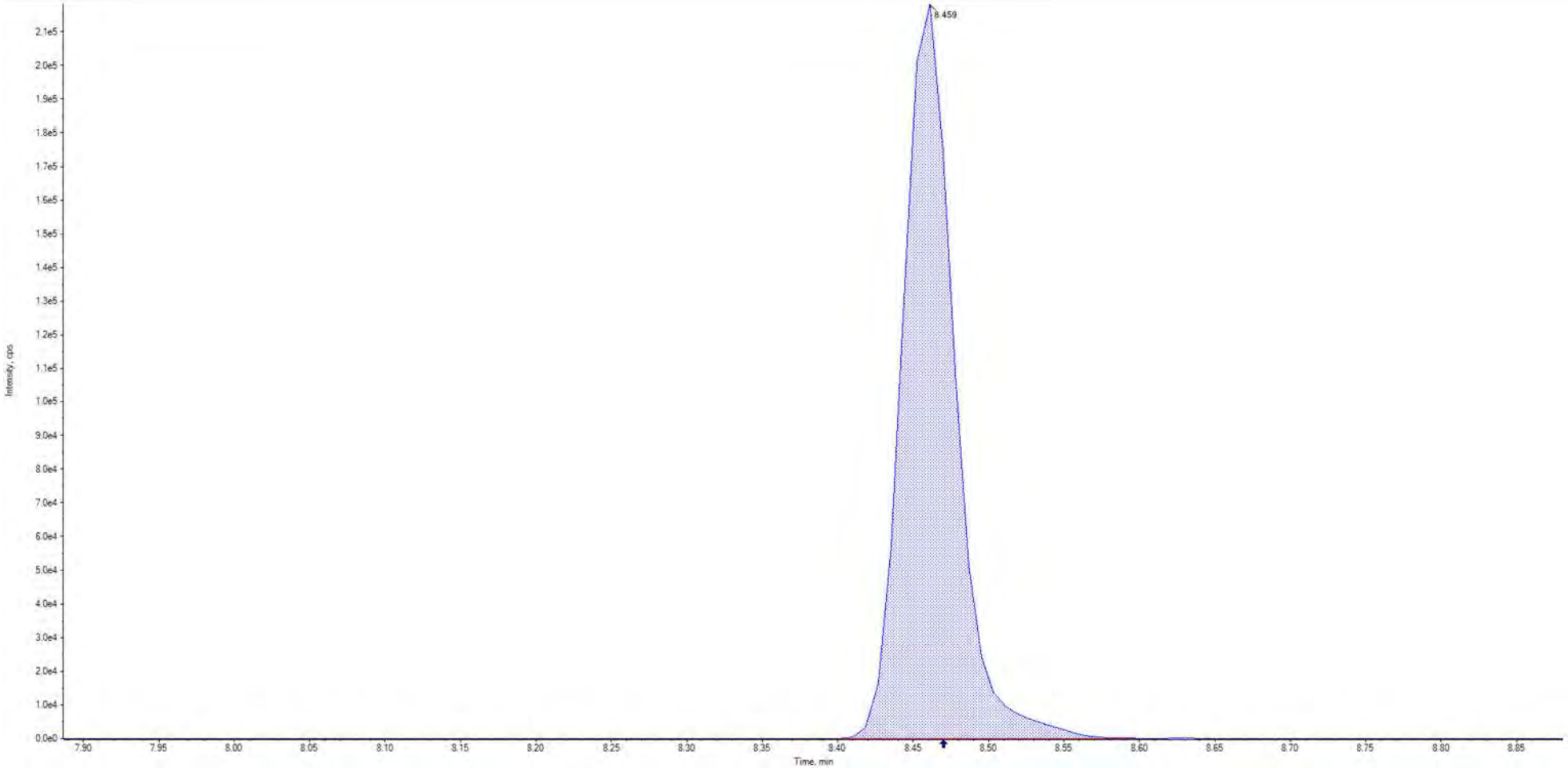
13C9-PFNA
Sample: WG1958909-6,INSTBLANK



13C6-PFDA
Sample: WG1958909-6,INSTBLANK

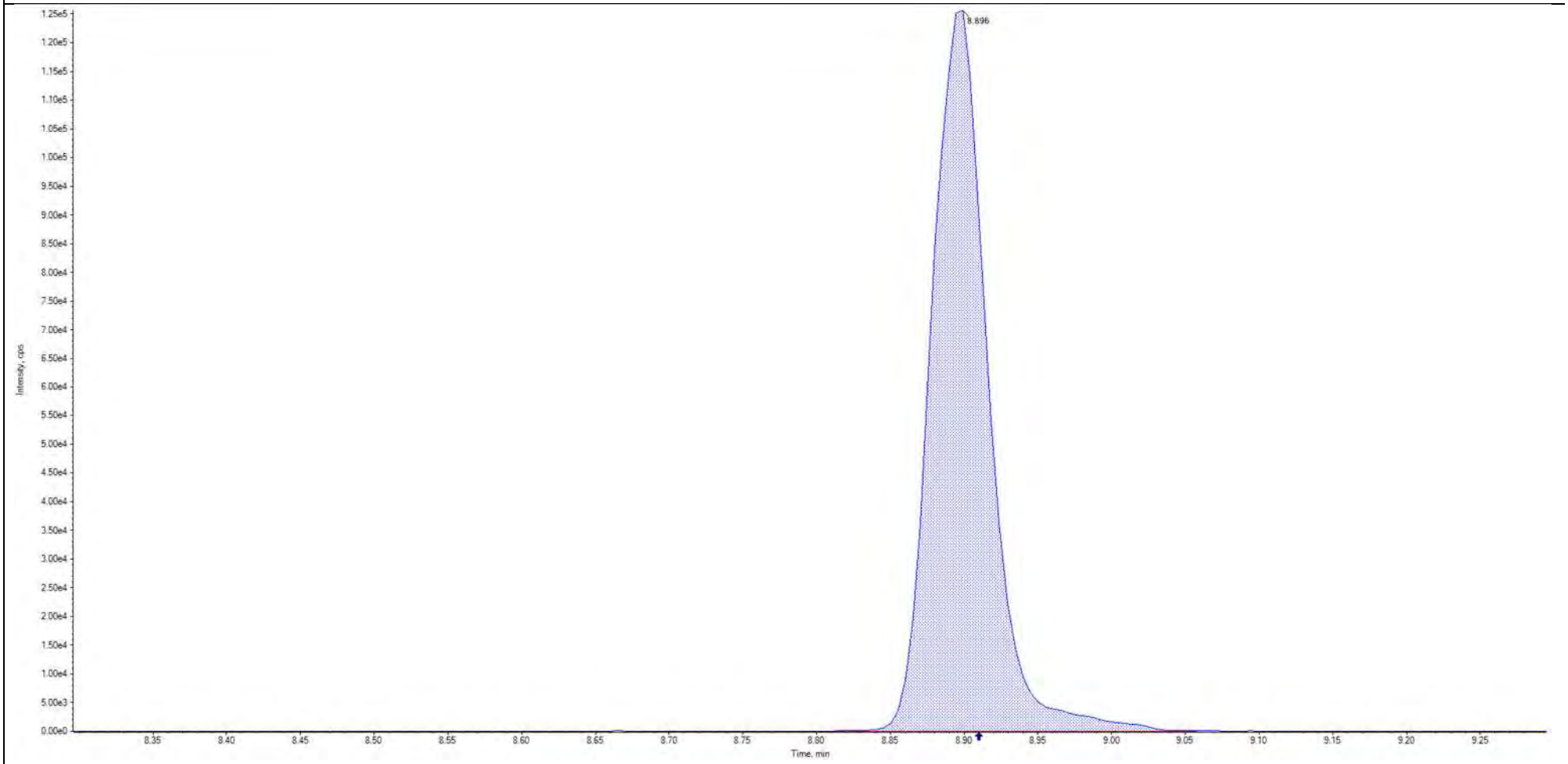


13C7-PFUnA
Sample: WG1958909-6,INSTBLANK



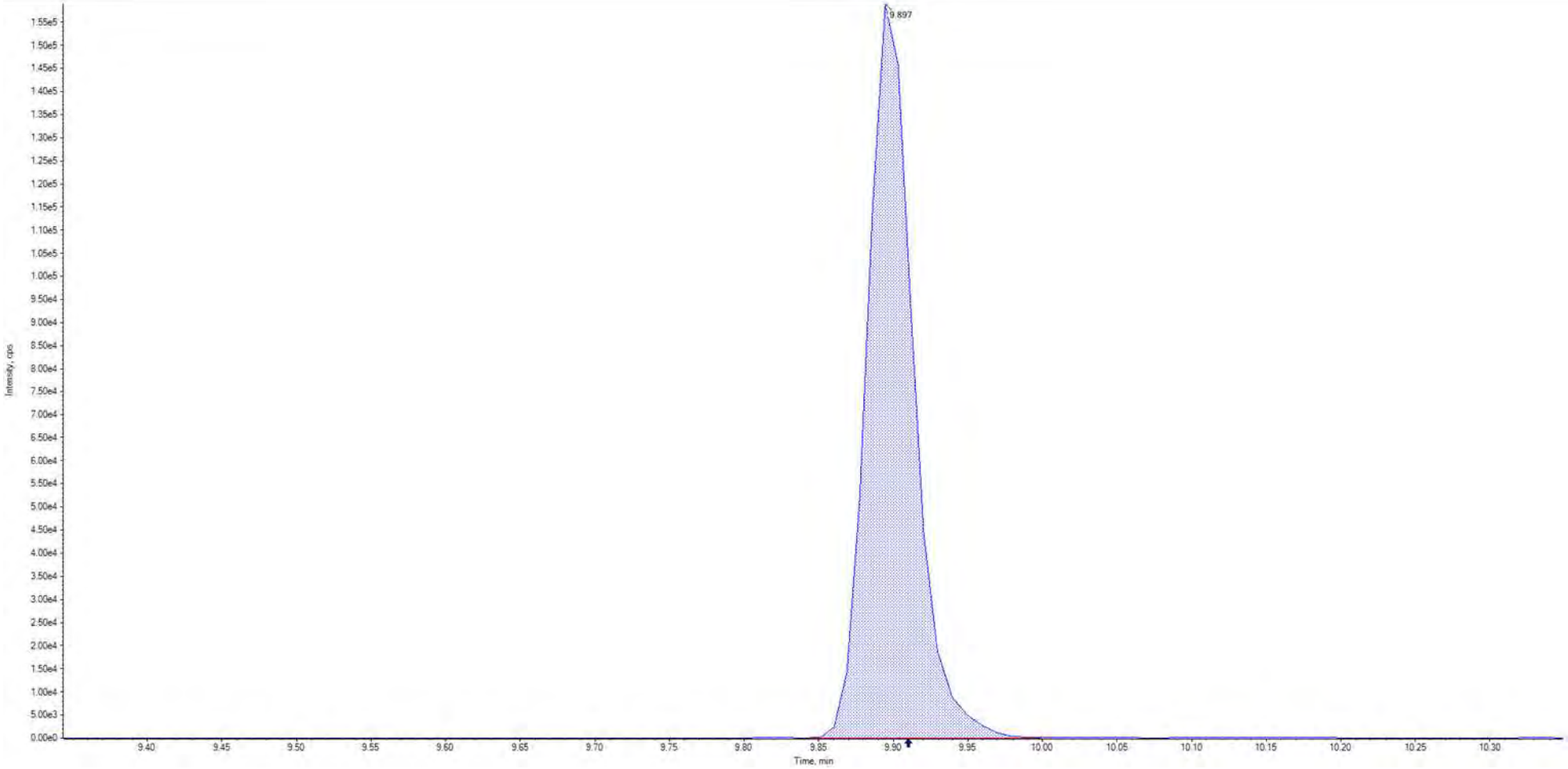
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_84.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

13C2-PFDoA
Sample: WG1958909-6,INSTBLANK

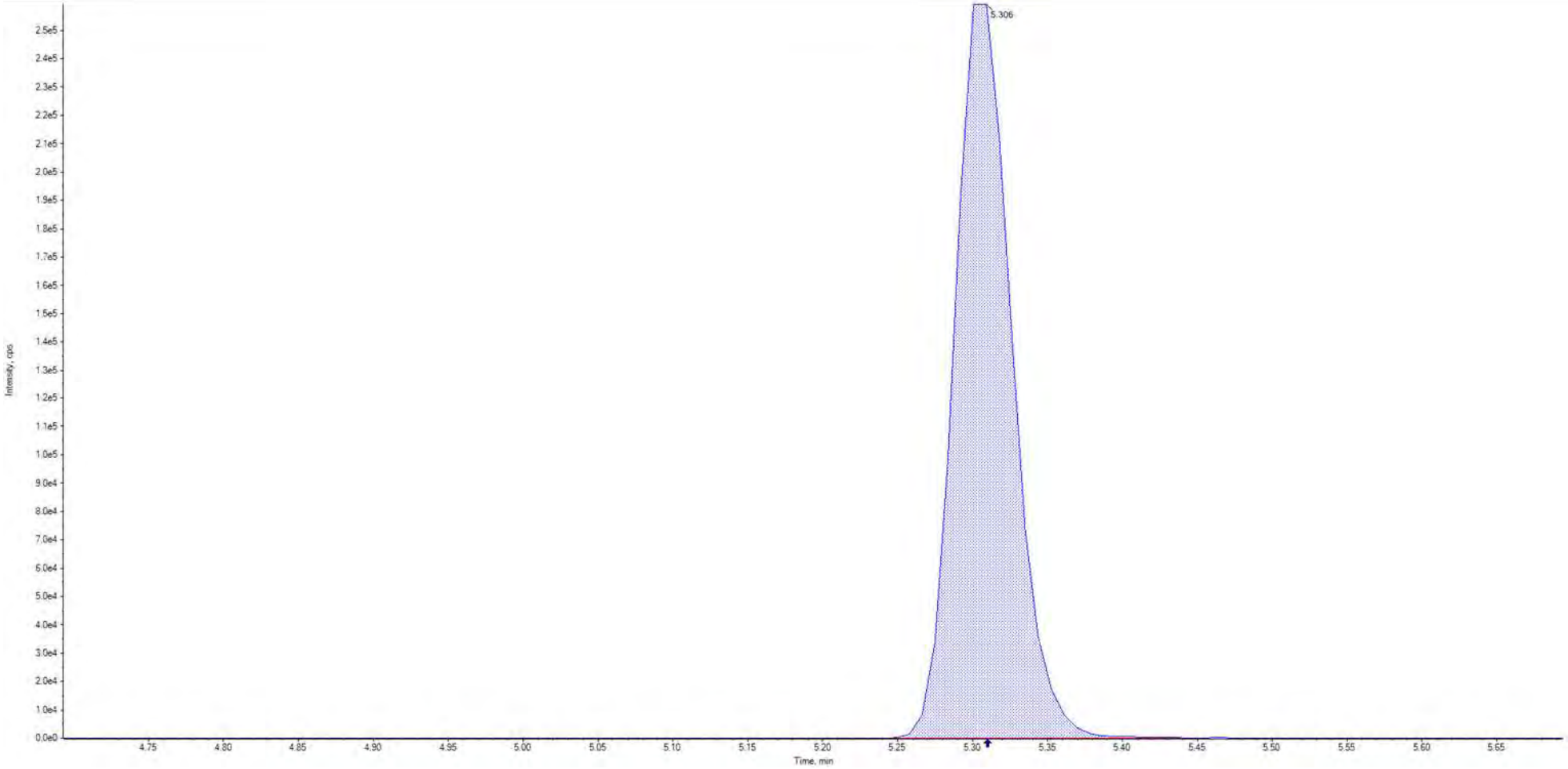


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_84.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

13C2-PFTeDA
Sample: WG1958909-6,INSTBLANK

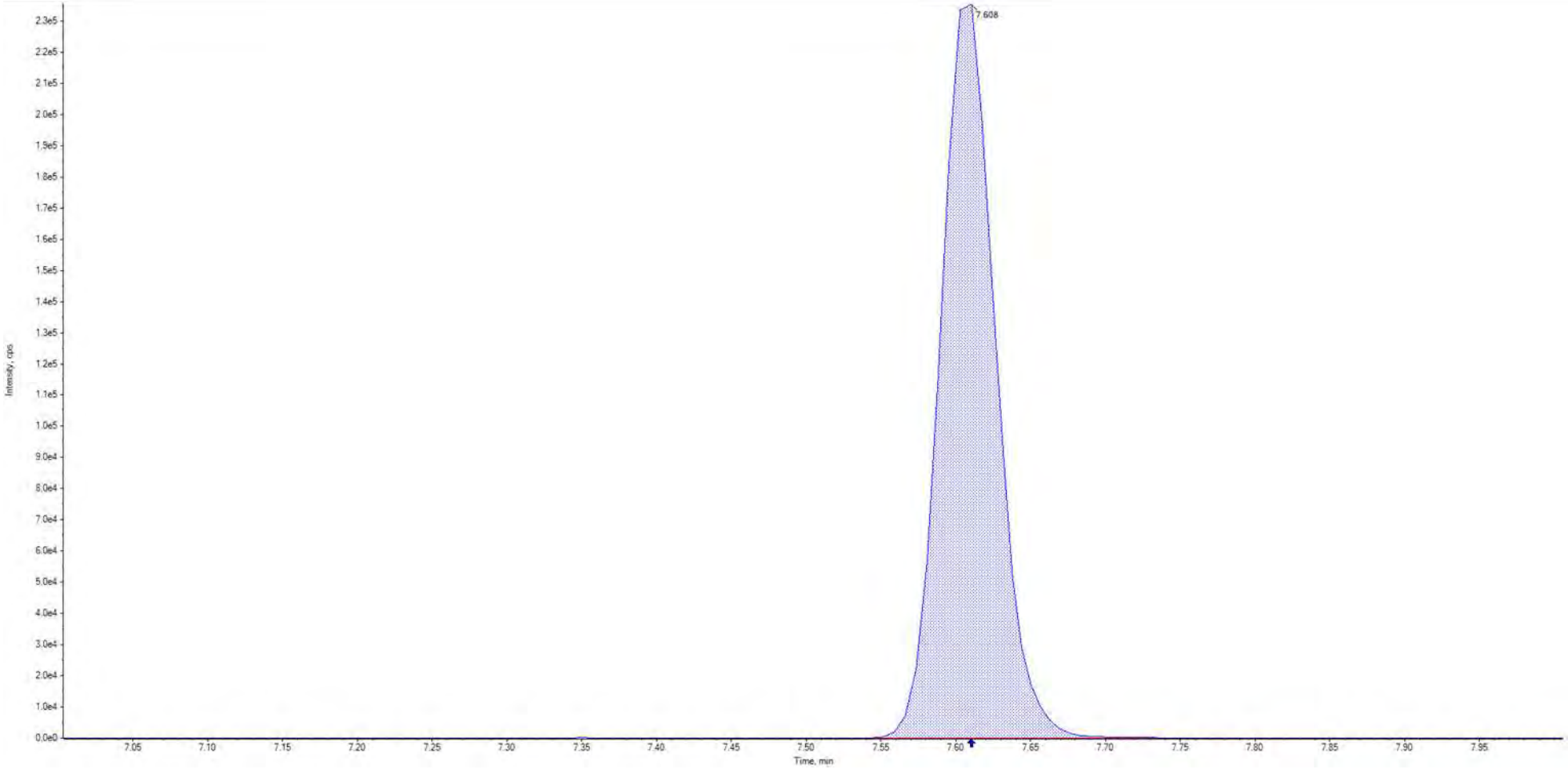


13C3-PFBS
Sample: WG1958909-6,INSTBLANK



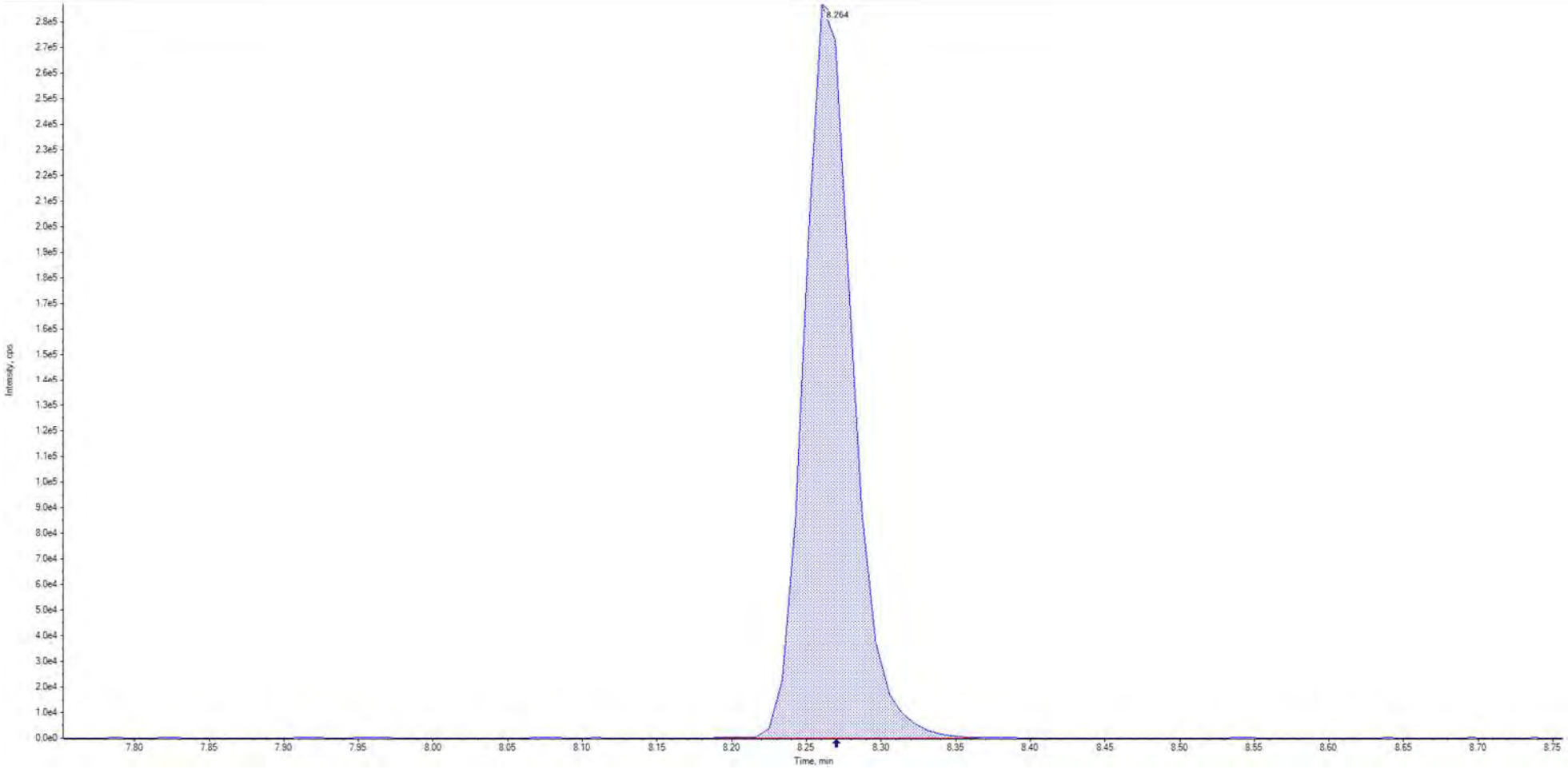
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_84.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

13C3-PFHxS
Sample: WG1958909-6,INSTBLANK



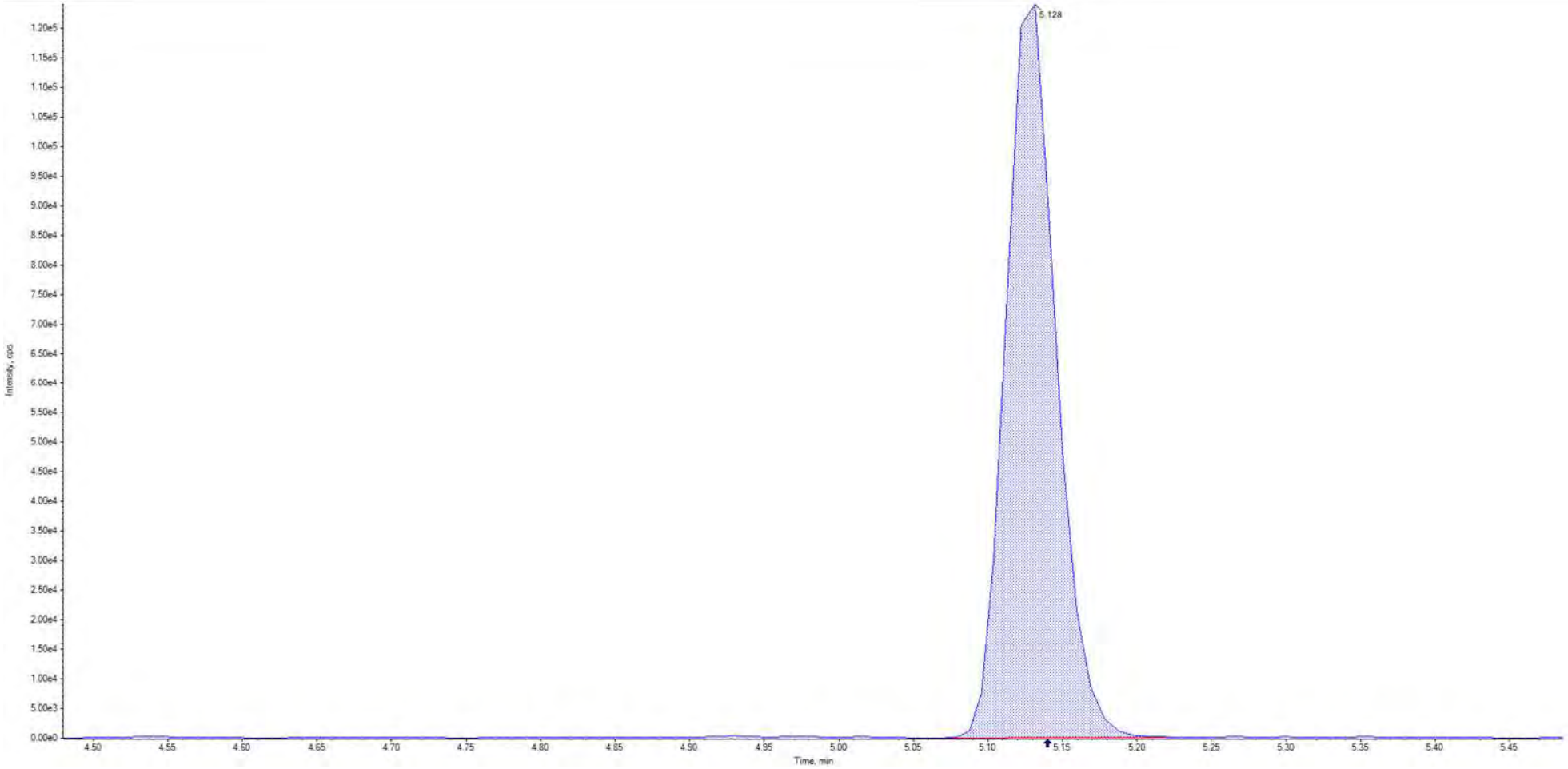
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_84.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

13C8-PFOS
Sample: WG1958909-6,INSTBLANK



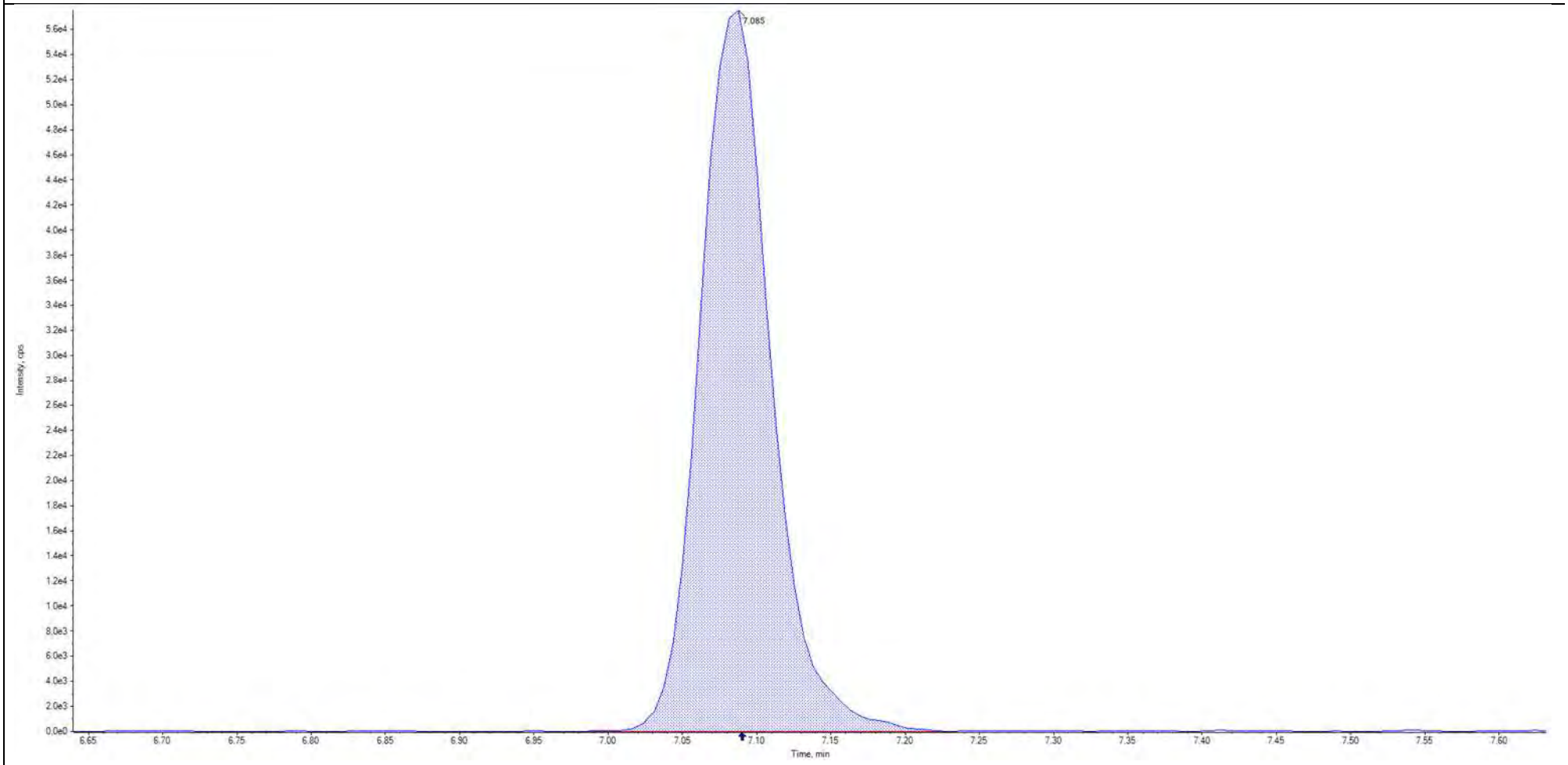
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_84.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

13C2-4:2FTS
Sample: WG1958909-6,INSTBLANK

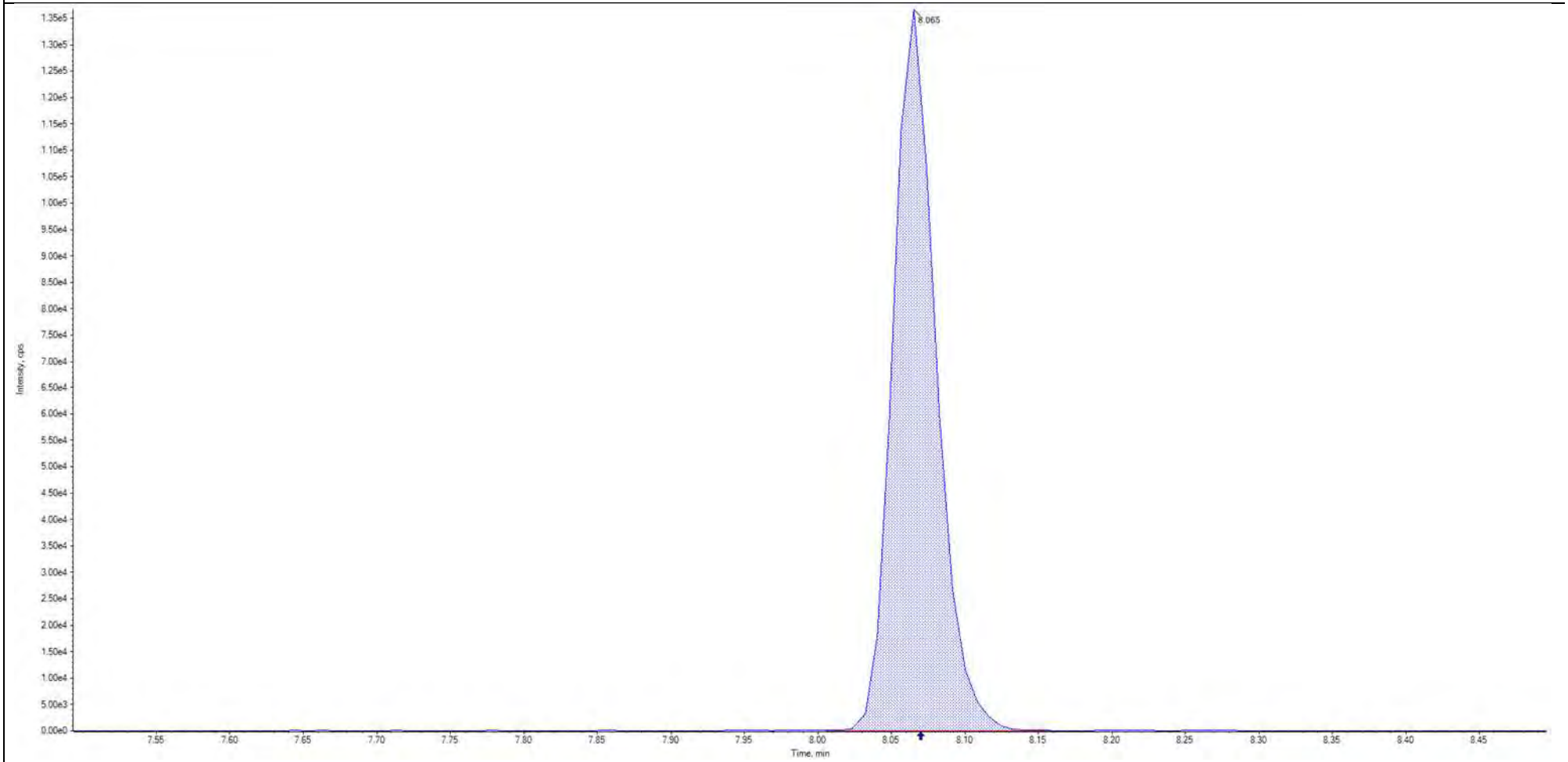


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_84.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

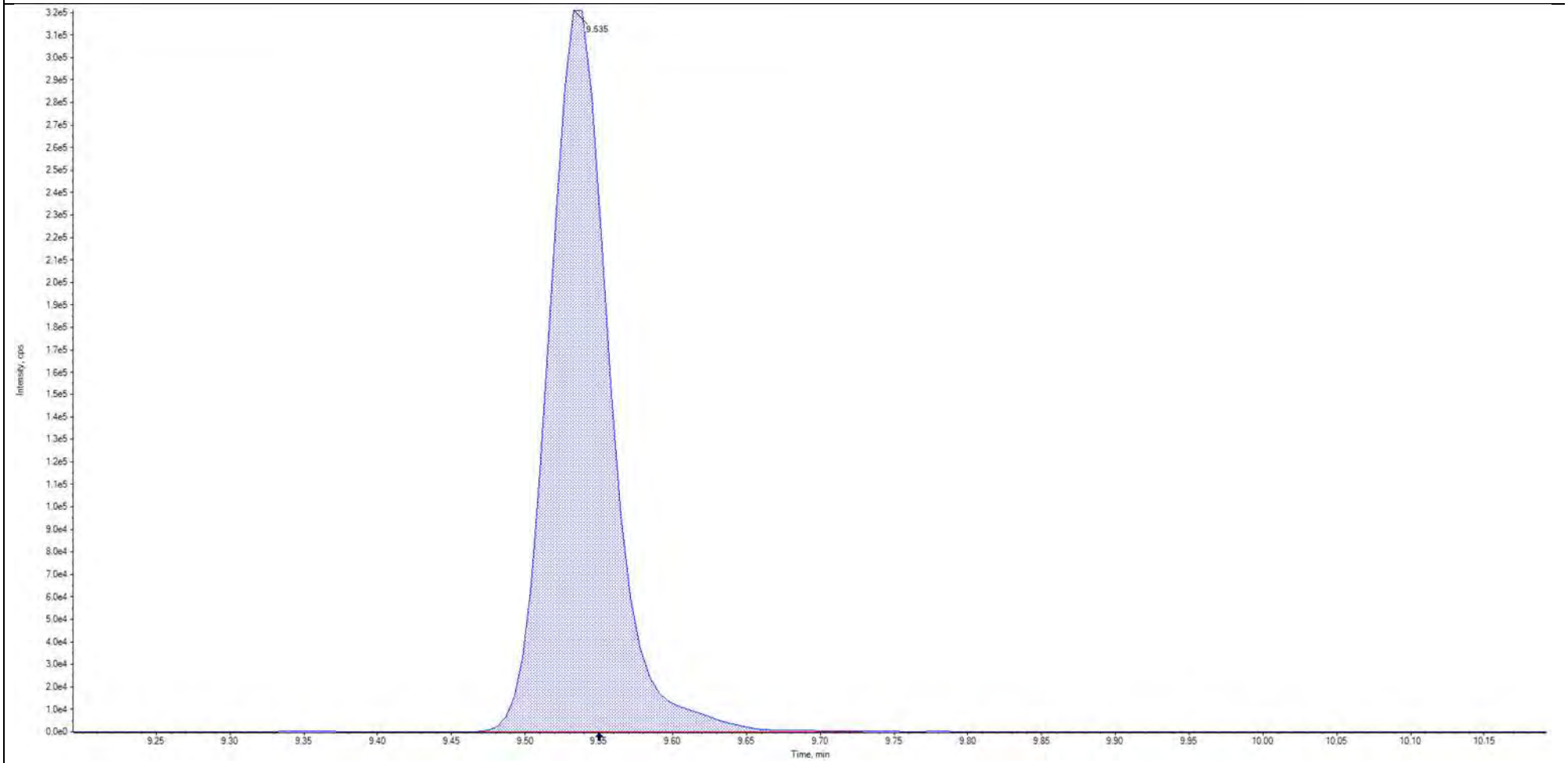
13C2-6:2FTS
Sample: WG1958909-6,INSTBLANK



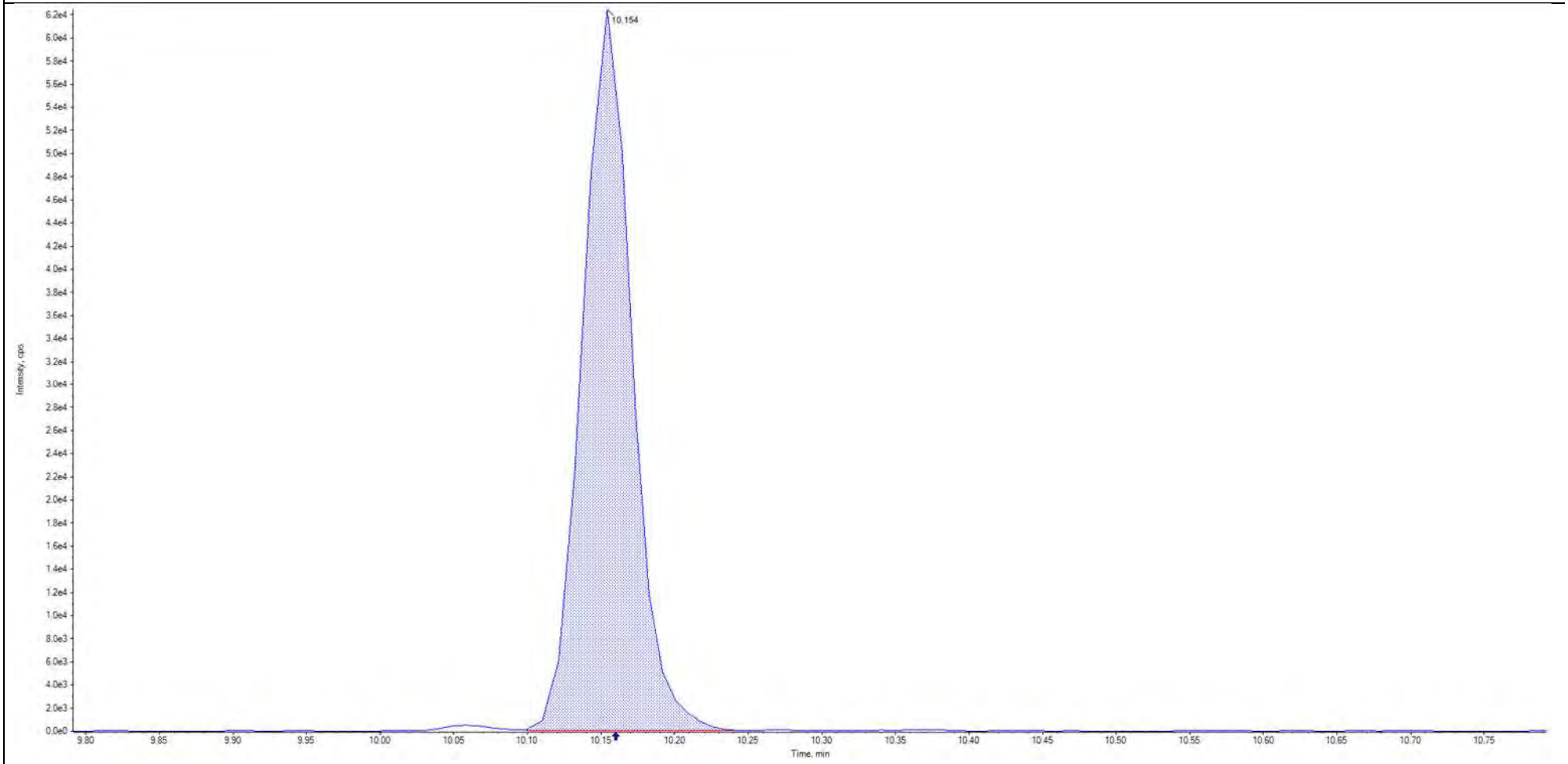
13C2-8:2FTS
Sample: WG1958909-6,INSTBLANK



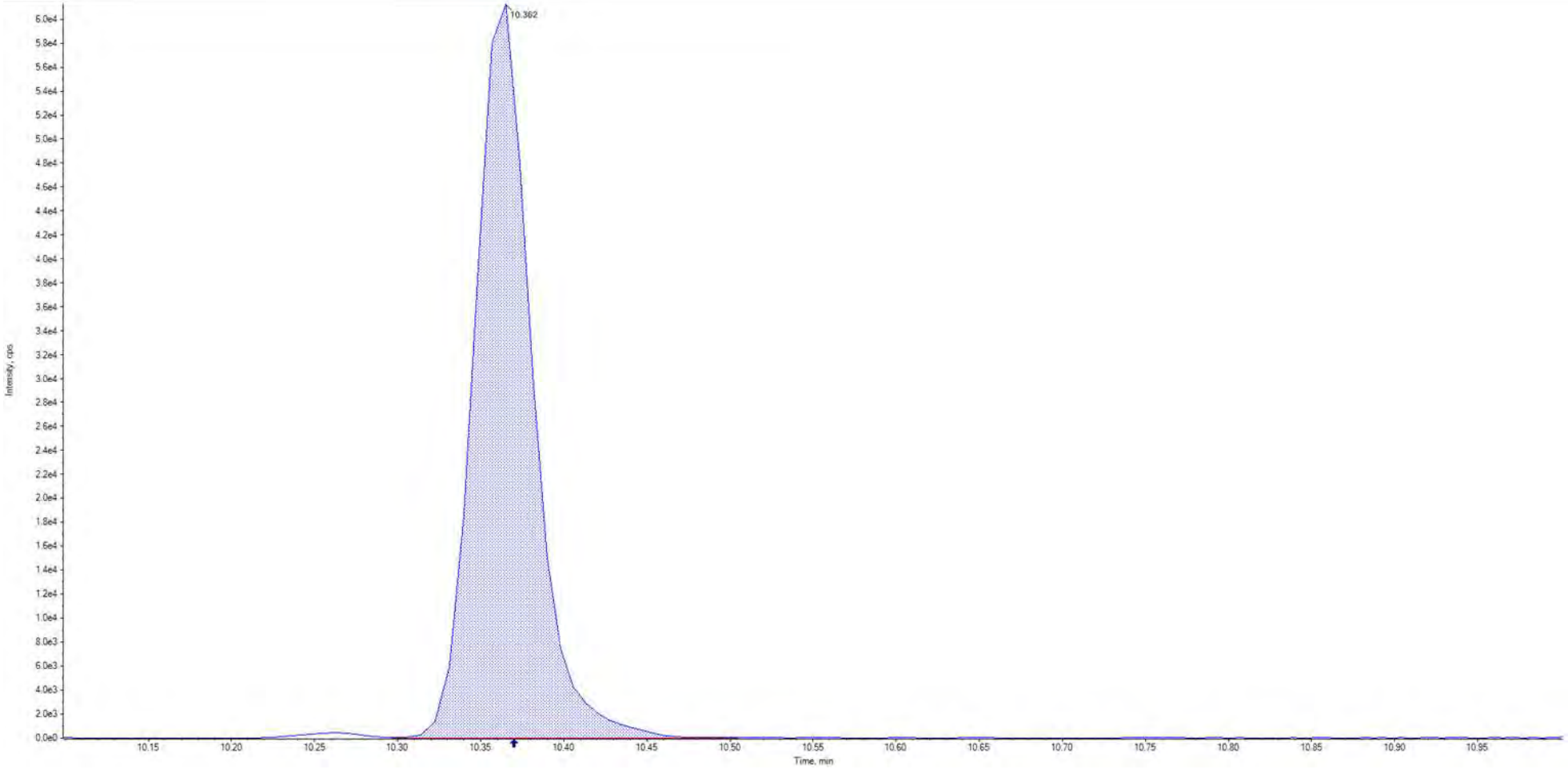
13C8-PFOSA
Sample: WG1958909-6,INSTBLANK



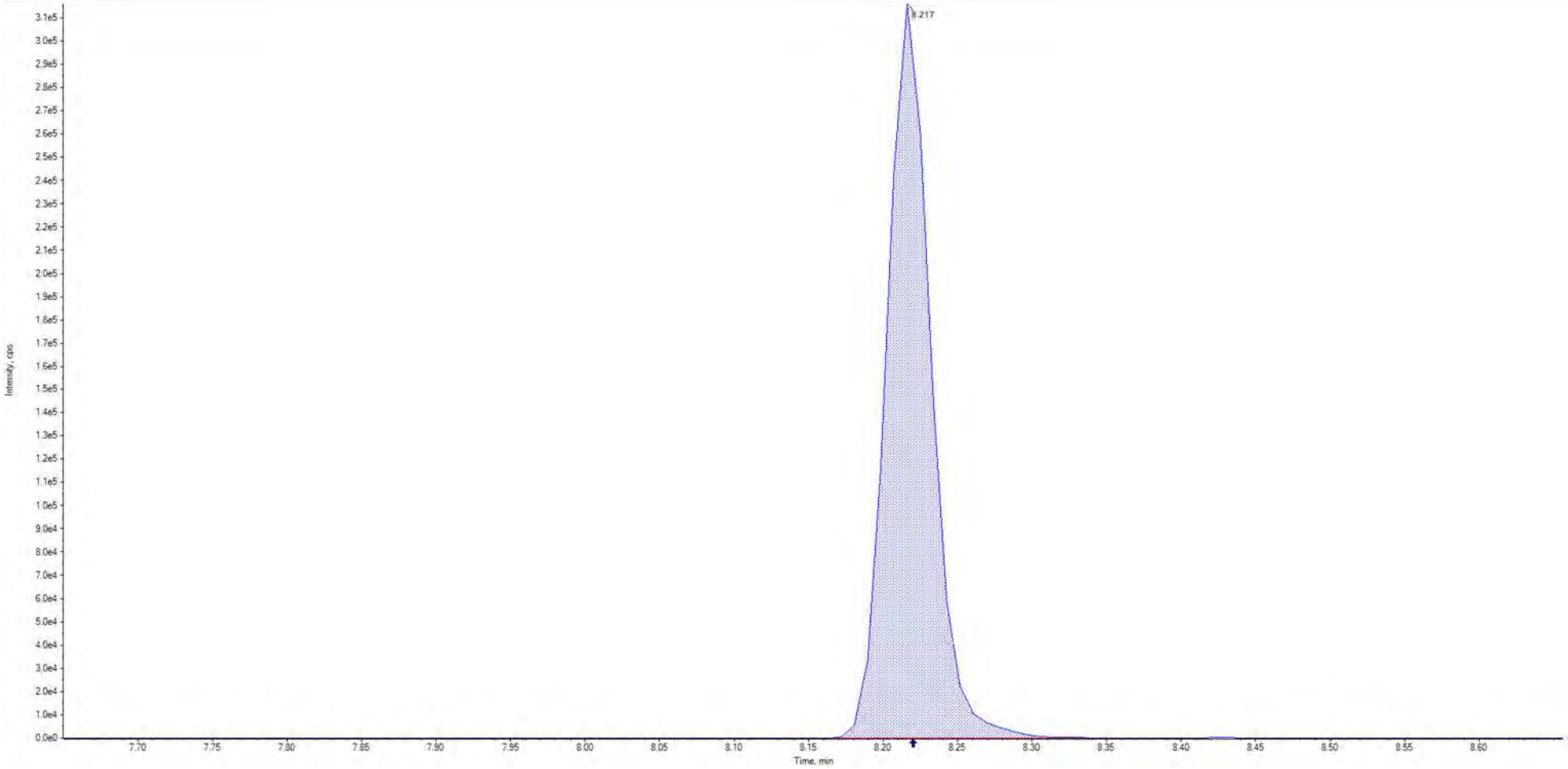
d3-NMeFOSA
Sample: WG1958909-6,INSTBLANK



d5-NEtFOSA
Sample: WG1958909-6,INSTBLANK



d3-NMeFOSAA
Sample: WG1958909-6,INSTBLANK



d5-NEtFOSAA
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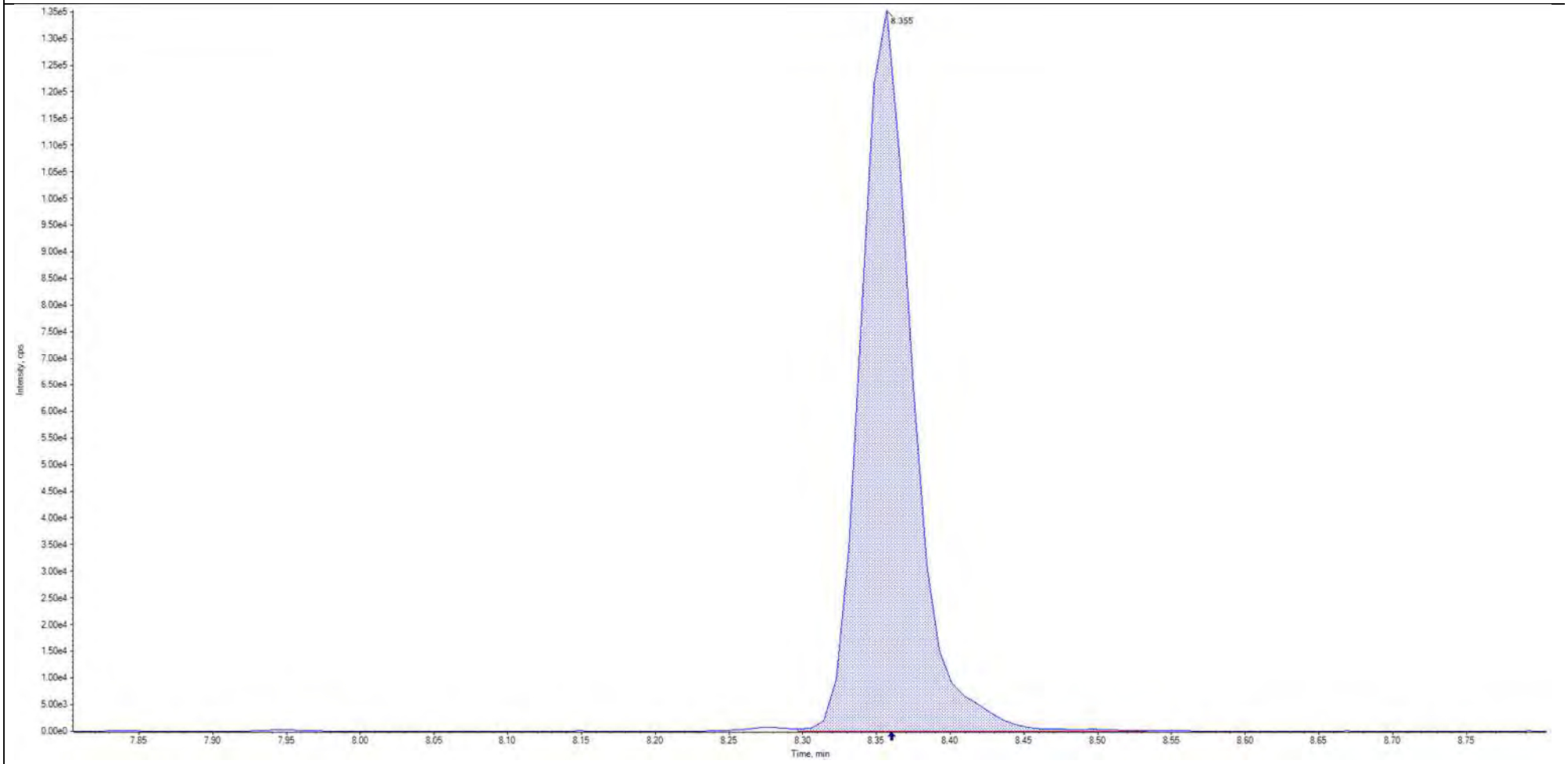
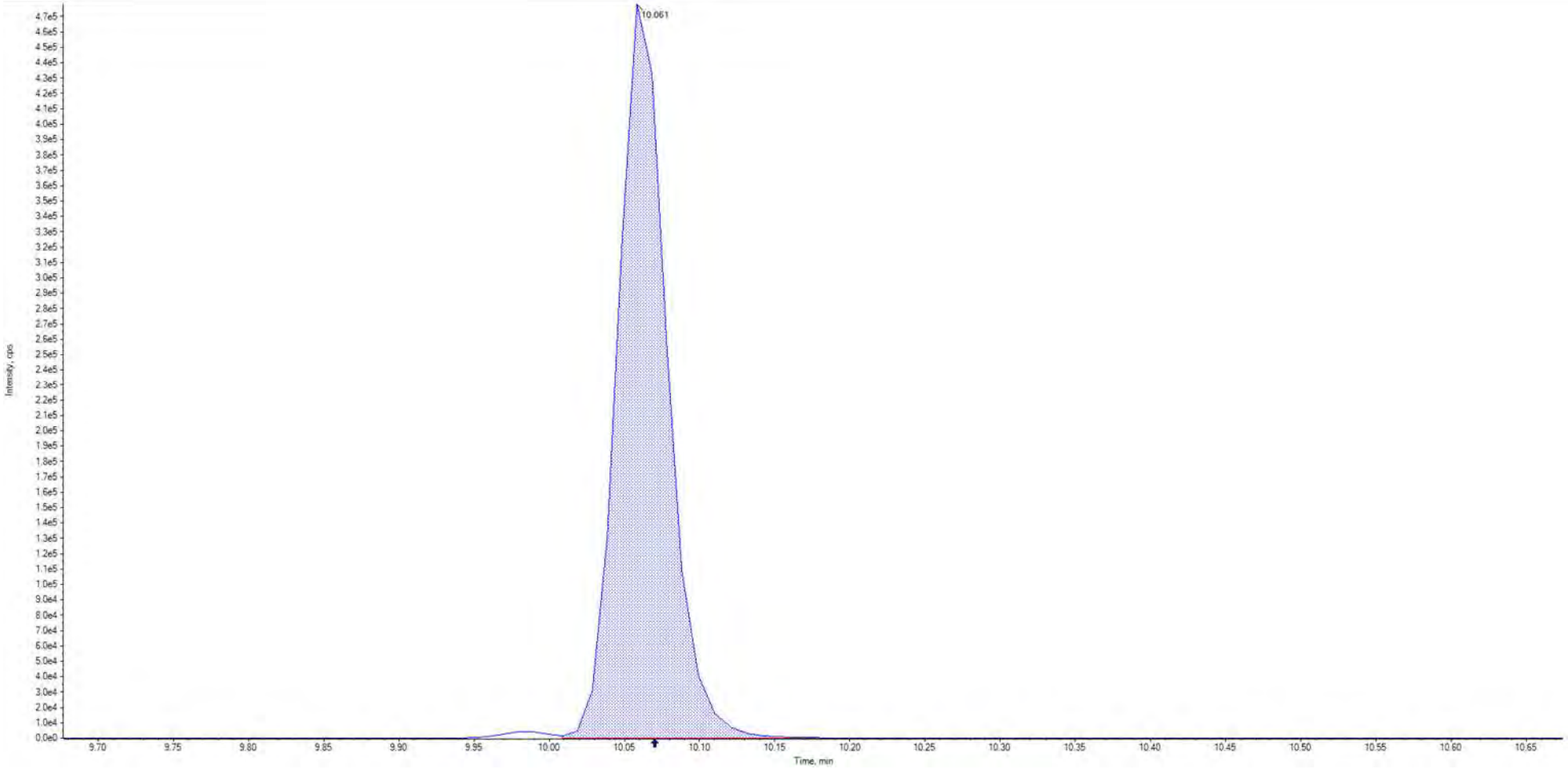
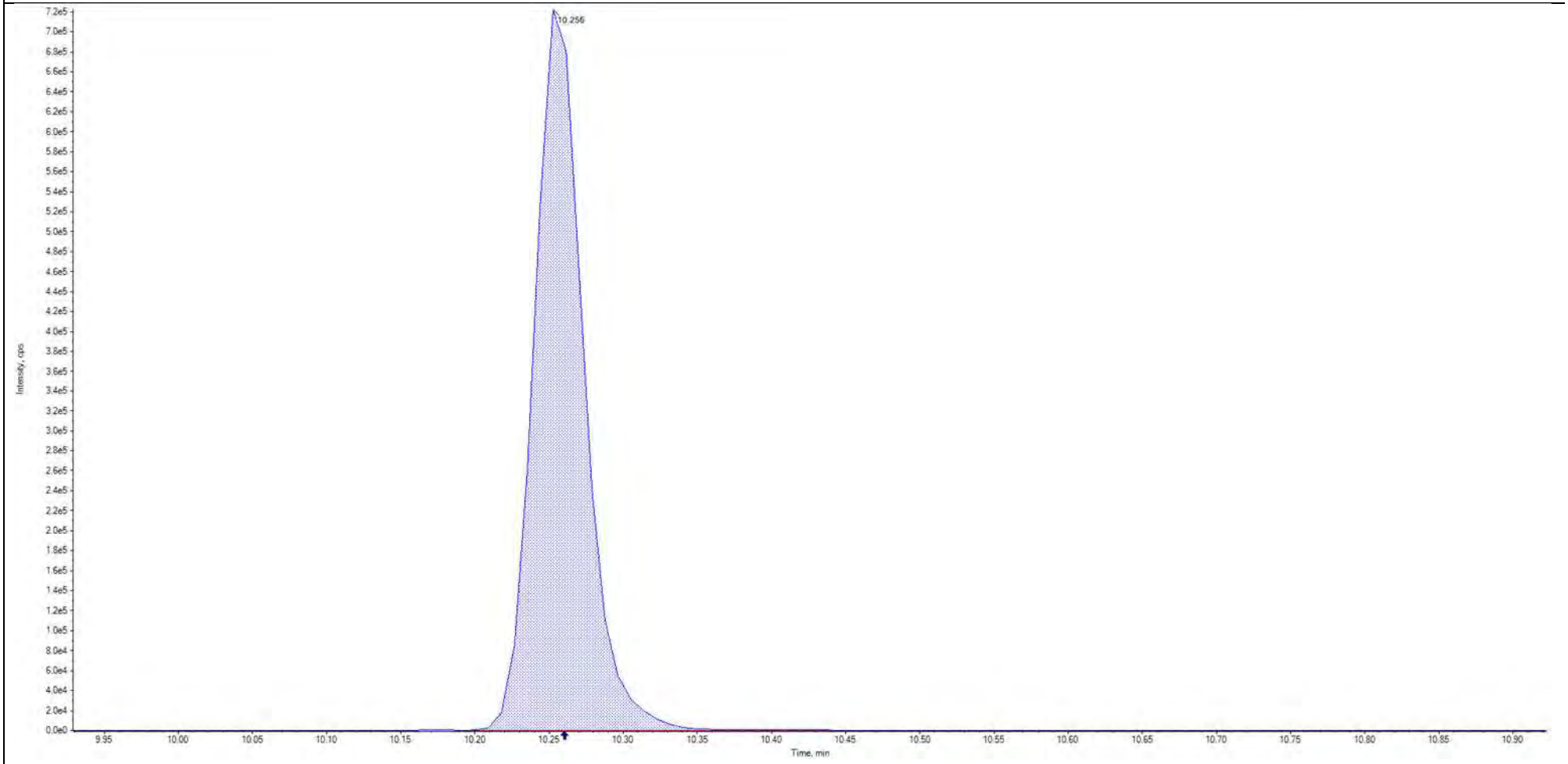


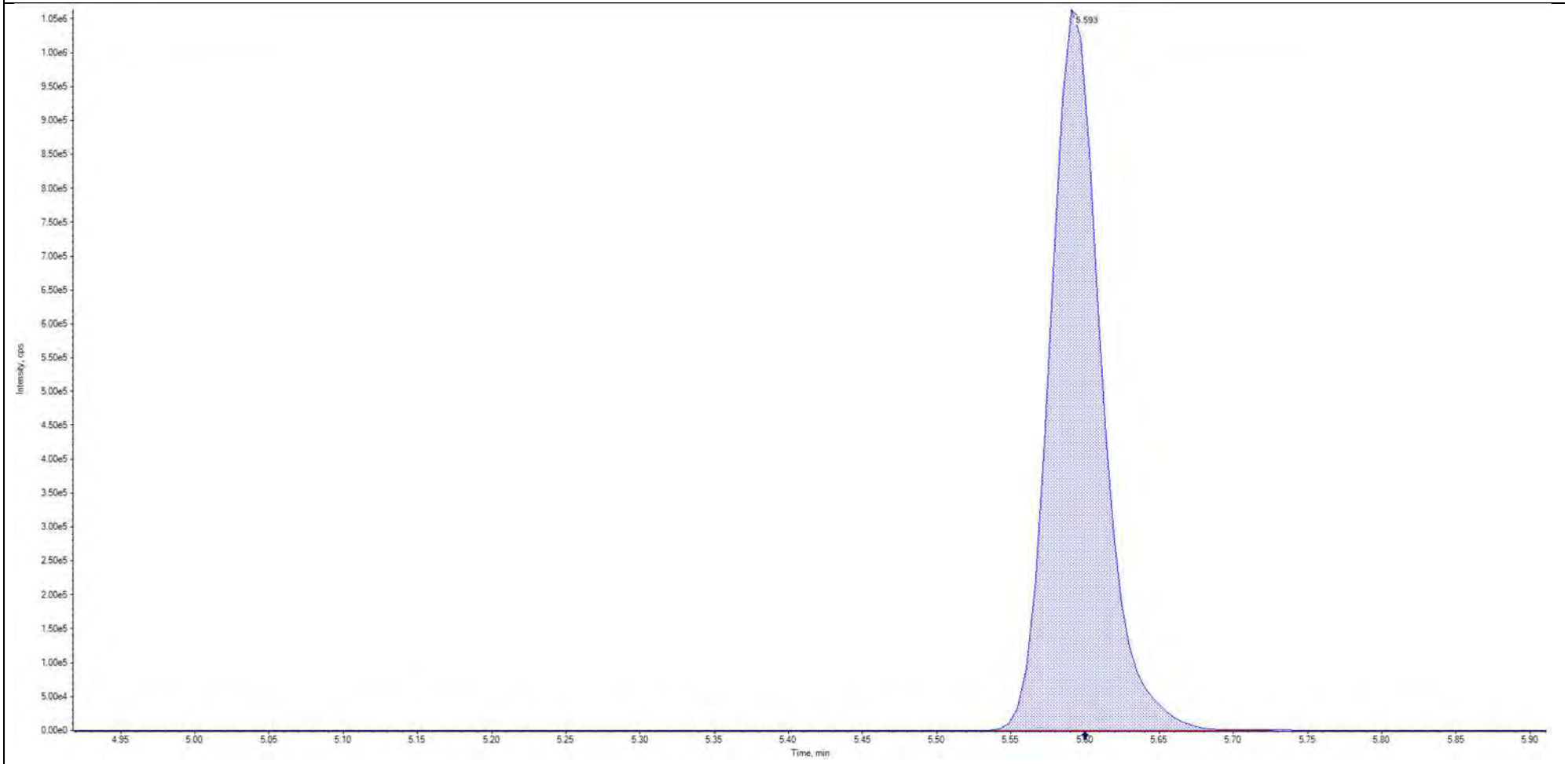
d7-NMeFOSE
Sample: WG1958909-6,INSTBLANK



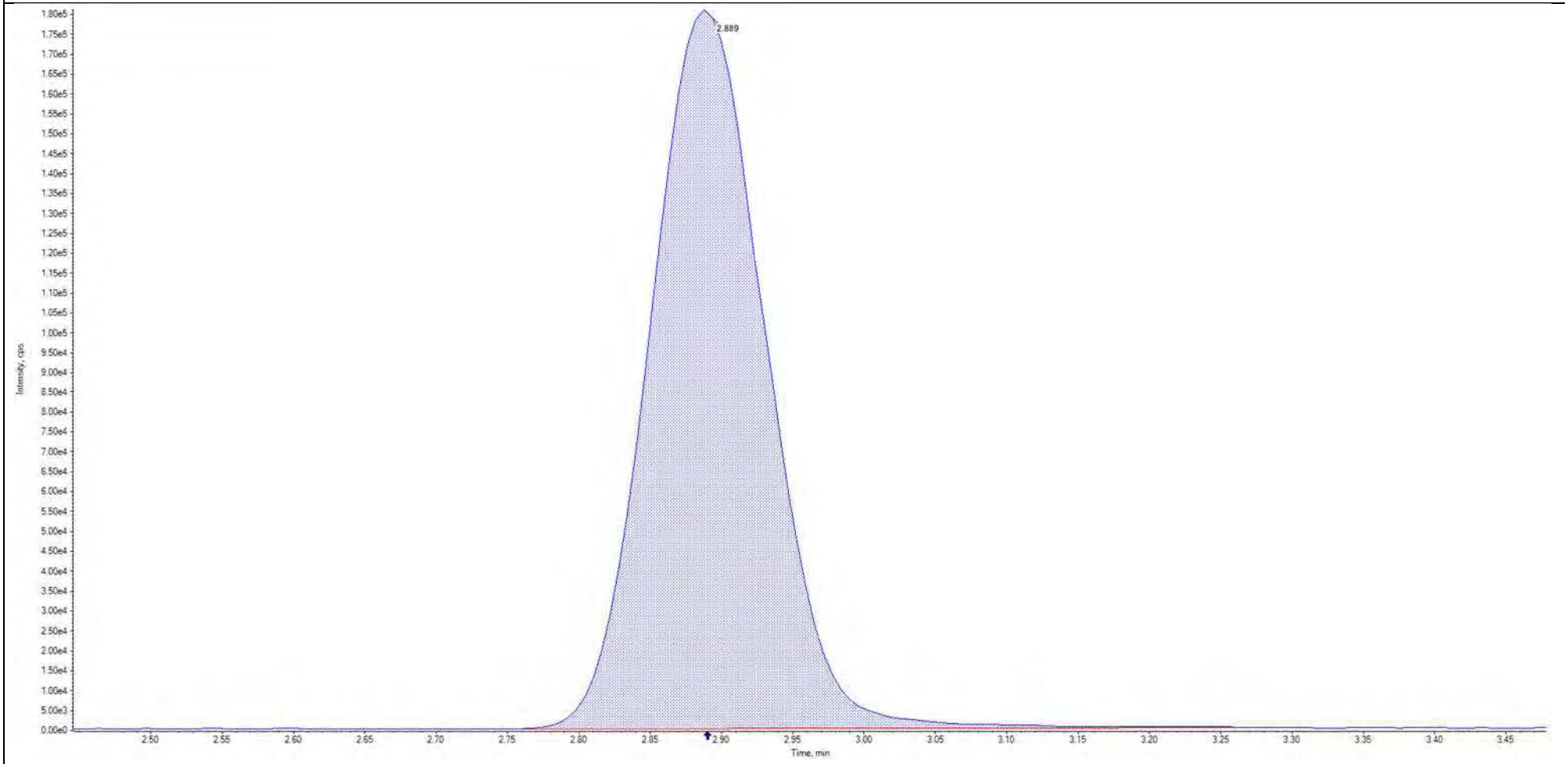
d9-NEtFOSE
Sample: WG1958909-6,INSTBLANK



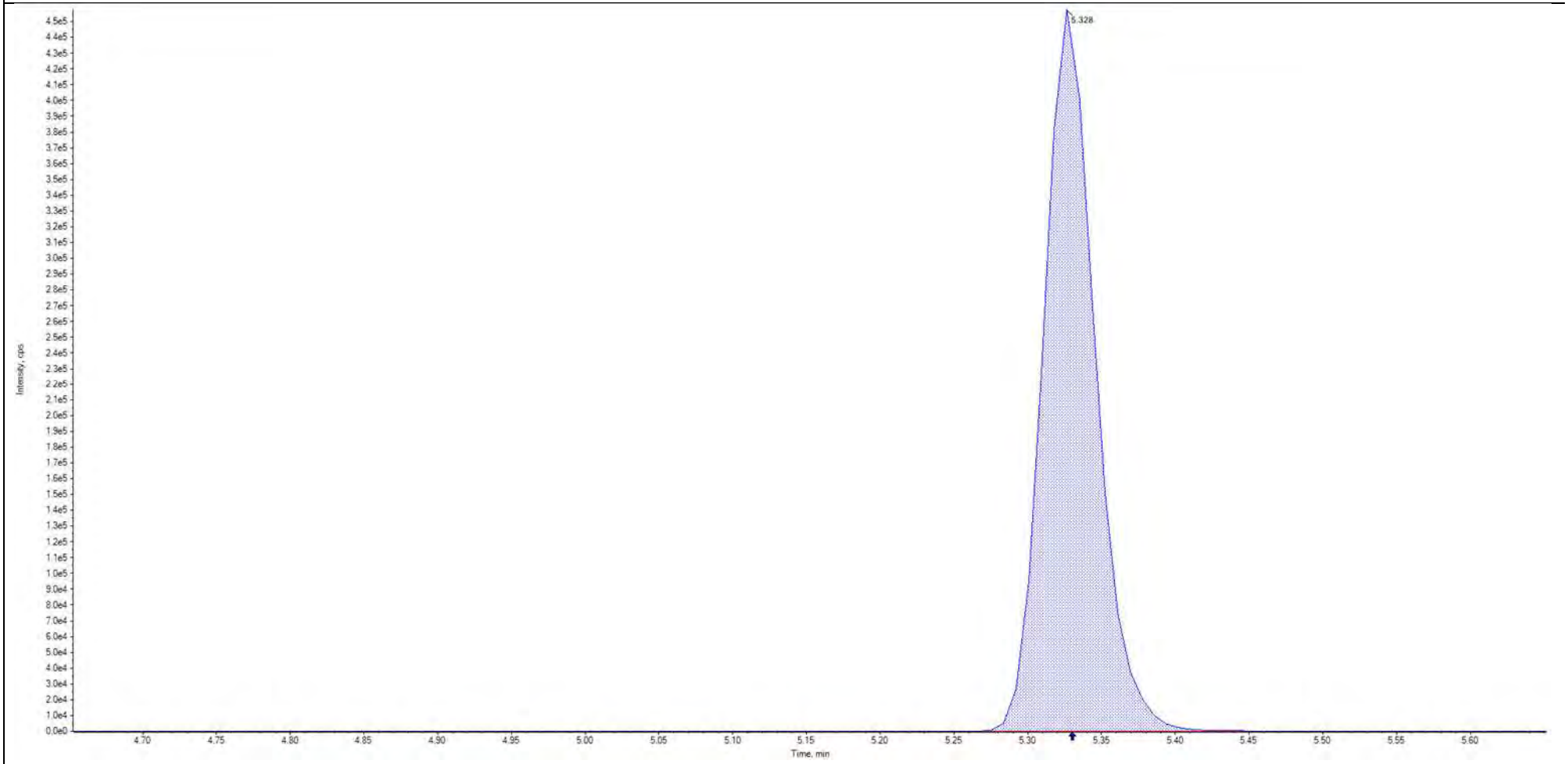
13C3-HFPO-DA
Sample: WG1958909-6,INSTBLANK



13C3-PFBA
Sample: WG1958909-6,INSTBLANK

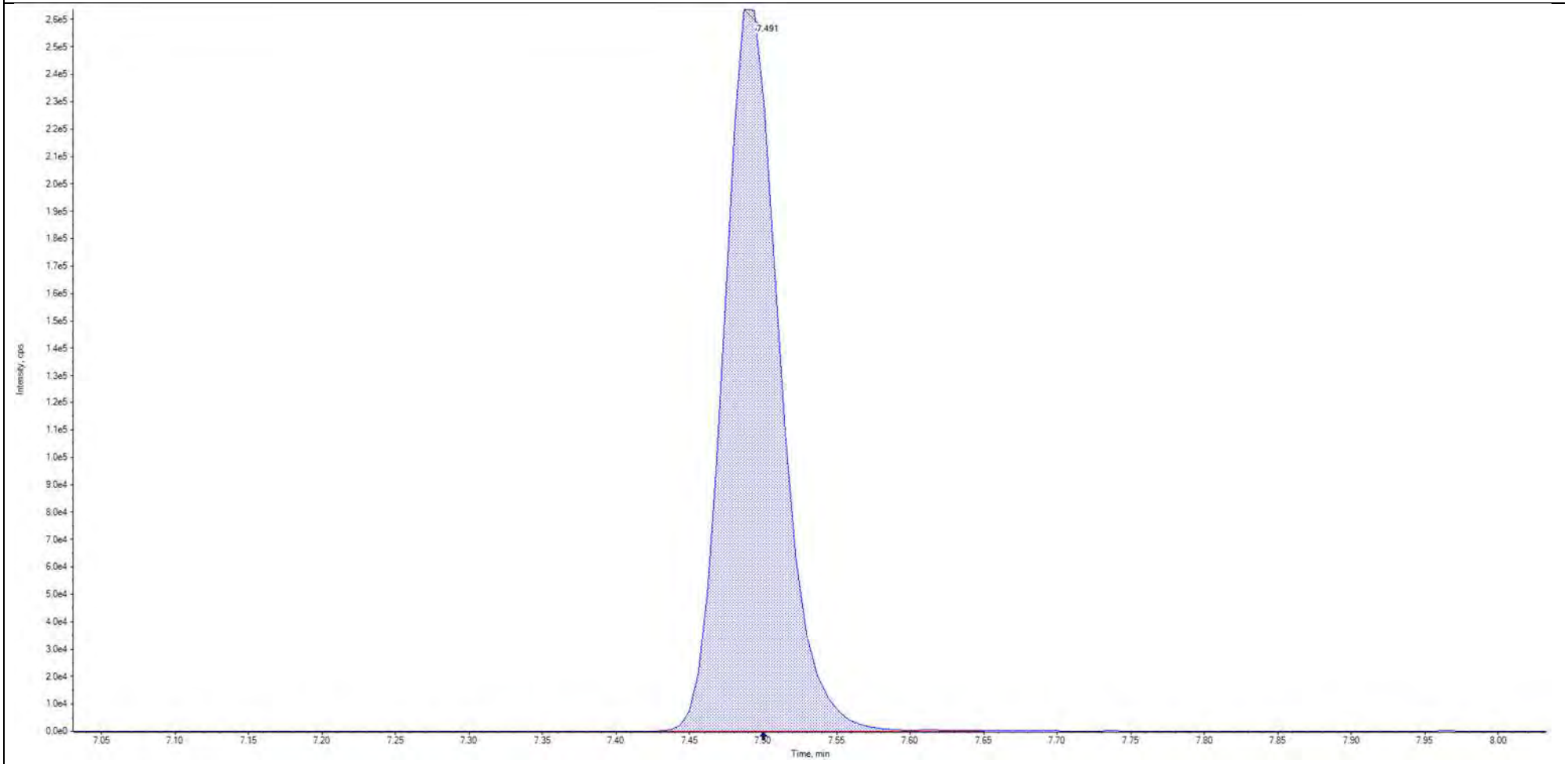


13C2-PFHxA
Sample: WG1958909-6,INSTBLANK

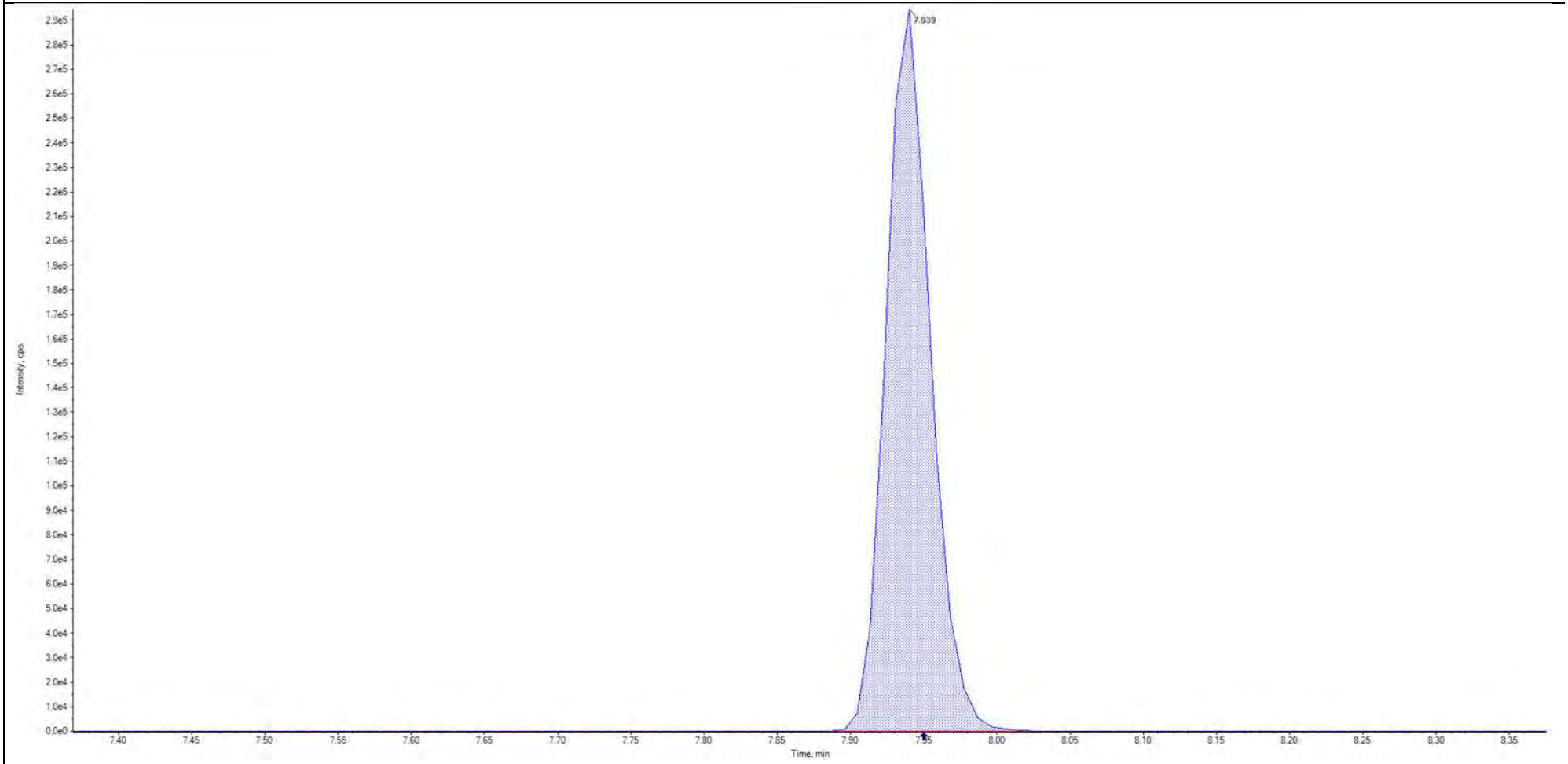


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_84.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

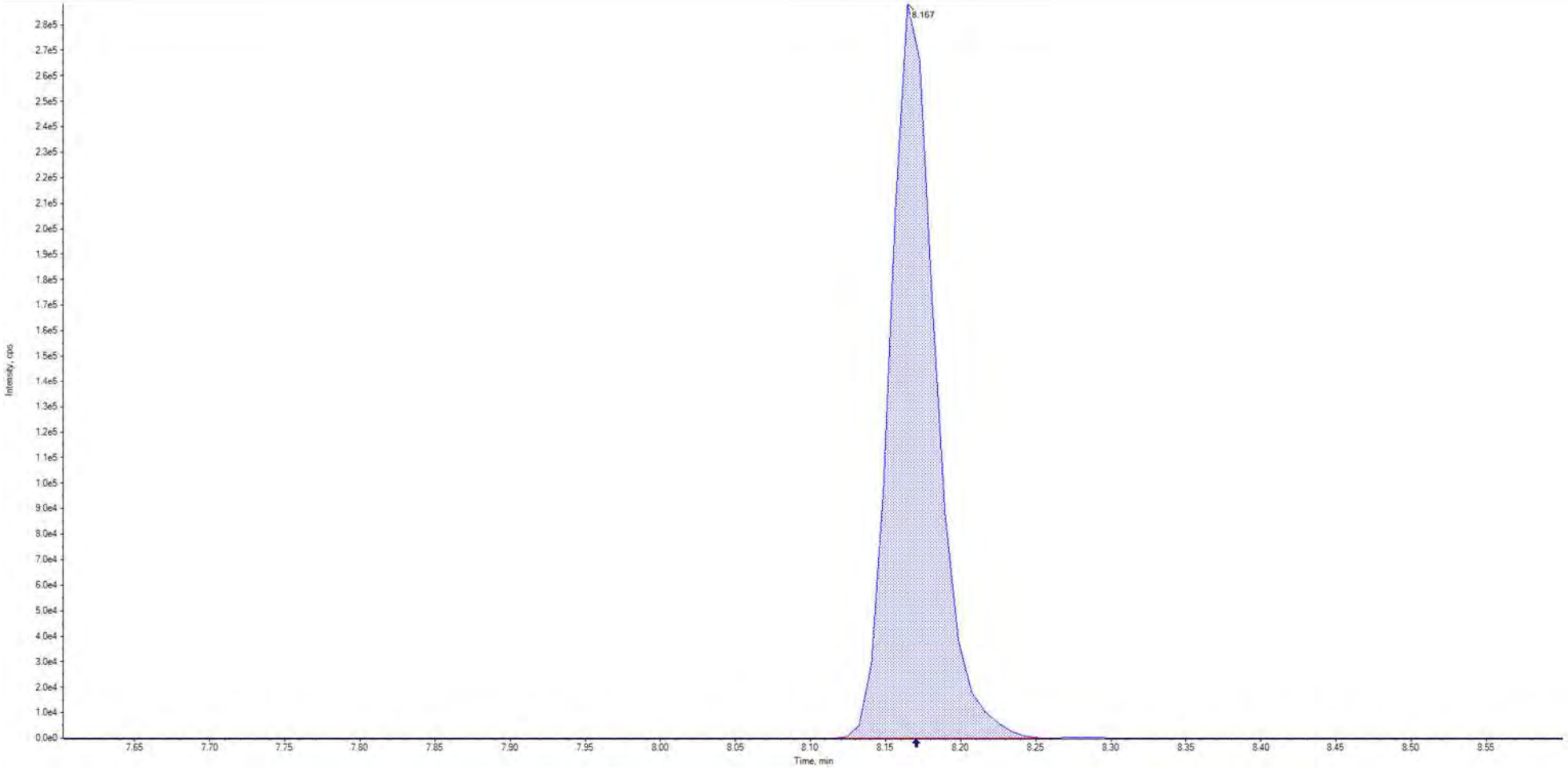
13C4-PFOA
Sample: WG1958909-6,INSTBLANK



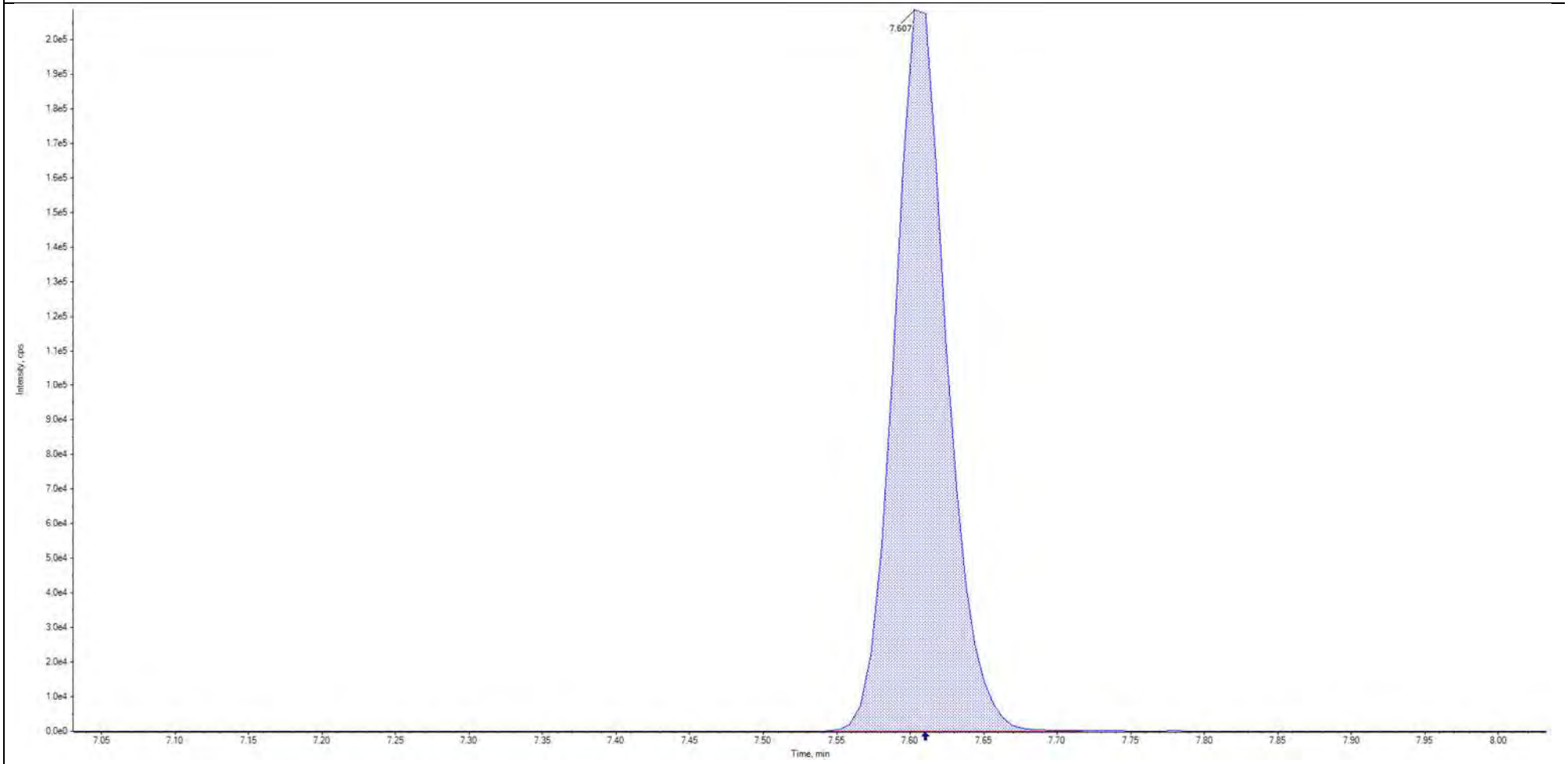
13C5-PFNA
Sample: WG1958909-6,INSTBLANK



13C2-PFDA
Sample: WG1958909-6,INSTBLANK

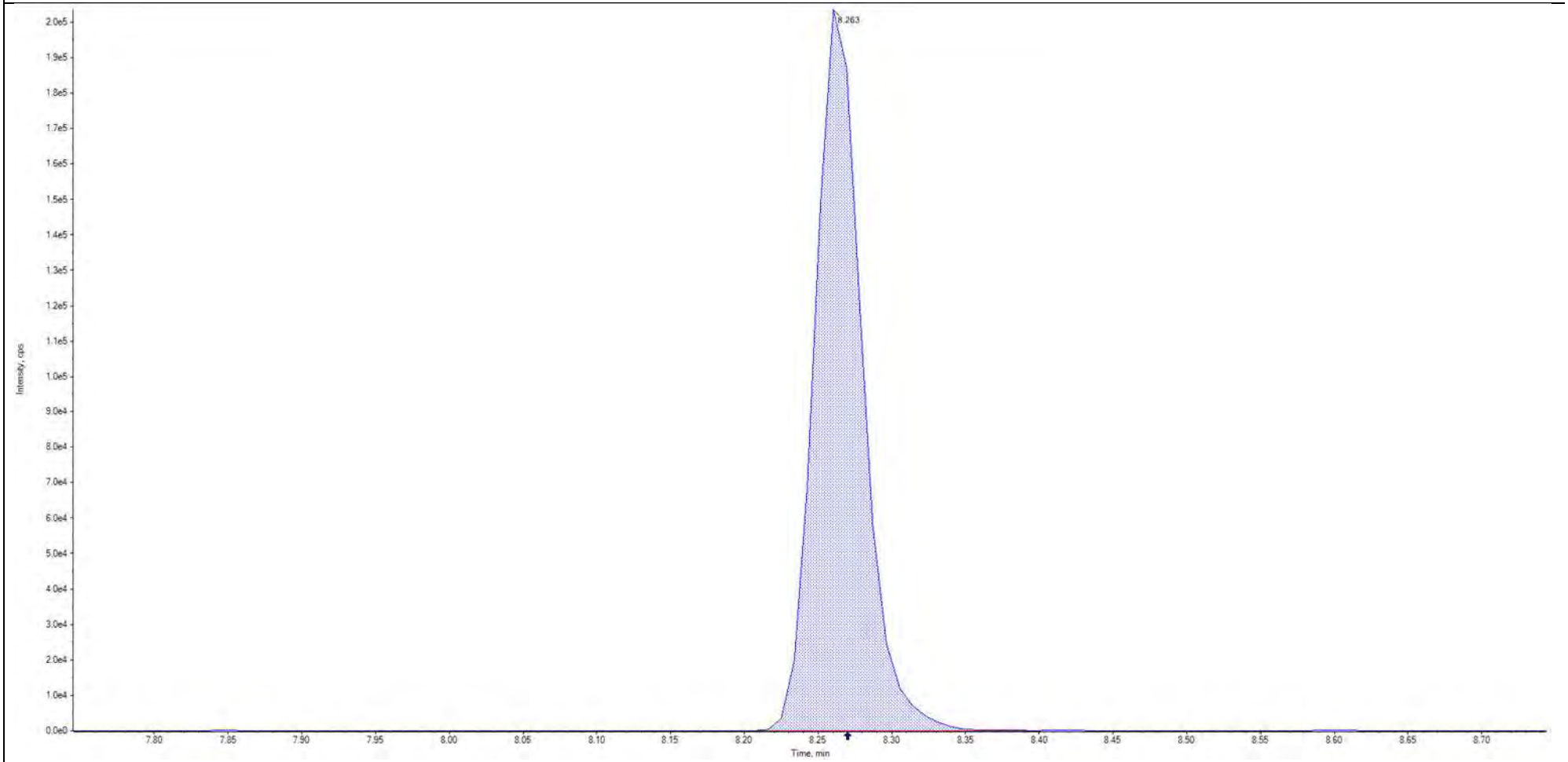


18O2-PFHxS
Sample: WG1958909-6,INSTBLANK



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_84.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

13C4-PFOS
Sample: WG1958909-6,INSTBLANK



Quantity Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_08_13\Data\SCI05_240813_84.wiff
Last Altered: 8/14/2024 9:55:24 AM
Generated: 8/14/2024 9:40:32 AM

Standard Description: **EPA 1633** **Calibration**
Standard Laboratory ID Number: **EPA1633_240813_CAL**

Assigned Lab ID	Chemical Name	Stock Concentration(ug/mL)	Vendor/Part Number/location	Stock Volume (uL)	Final Volume (mL)	Solvent	Standard Concentration (ng/mL)
LCMS240723DV,EJ,LCMS240628CL,CM	U.S. EPA Method 1633 Native PFAS Stock Solution/Mixture	0.250	Wellington/EPA-1633STK/537H	4000.0	10.0	MeOH	100
OS062024C	NH_4OH	100%	AVANTOR/UN2672/Dioxin Lab	316.8	10.0	MeOH	3.2%
2023111300	CH_3OOH	100%	VWR/BDH3098-3.8LP/Dioxin Lab	62.5	10.0	MeOH	0.6%
DI Water	H_2O	100%	DI/Dioxin Lab	160.8	10.0	MeOH	1.6%
Solution Prepared By:	JW		Date Prepared:	August 12, 2024		Expiration Date:	February 9, 2025
Solvent Lot	EI713-US MeOH		Refrigerator / Freezer No:	537H Fridge		Pipettes Used:	247, 342

	WG1958909			LCMS05				
	ICAL	Cal STD		LCMS240724G	LCMS240724AA	ECRD240809	EPA1633_240404_TOP	
	Cal Level	EPA1633_240813_CAL	Serial Dilution	EIS µL	NIS µL	Blank µL	TOP Surr	Final Vol µL
*	IA1633STD-.1	0	80 µl IA1633STD-1.25	5	5	985	5	1000
*	IA1633STD-.2	0	80 µl IA1633STD-2.5	5	5	985	5	1000
*	IA1633STD-.5	0	100 µl IA1633STD-5	5	5	985	5	1000
	IA1633STD-1.25	12.5		5	5	972.5	5	1000
	IA1633STD-2.5	25		5	5	960	5	1000
	IA1633STD-5	50		5	5	935	5	1000
	IA1633STD-12.5	125		5	5	860	5	1000
	IA1633STD-25	250		5	5	735	5	1000
	IA1633STD-62.5	625		5	5	360	5	1000
	CA1633STD-10	5 µl LCMS231120C		5	5	980	5	1000
	WG1950281-4,TRS/-5,BSICS	20 µl EPA1633_240709_BILE		0	0	980	0	1000
	Prepared:	ANH 8/13/2024						

METHOD: 1633
ICAL: 21391
WORKGROUP: 1958909
DATE: 8/13/2024

CAS #	Component Name	*Expected Ratio	Lower Limit	Upper Limit
375-22-4	PFBA	N/A	N/A	N/A
2706-90-3	PFPeA	0.007	N/A	N/A
2706-90-3	PFPeA_2	0.007	N/A	N/A
307-24-4	PFHxA	0.072	0.036	0.108
307-24-4	PFHxA_2	0.072	0.036	0.108
375-85-9	PFHpA	0.297	0.1485	0.4455
375-85-9	PFHpA_2	0.297	0.1485	0.4455
335-67-1	PFOA	0.586	0.293	0.879
335-67-1	PFOA_2	0.586	0.293	0.879
375-95-1	PFNA	0.313	0.1565	0.4695
375-95-1	PFNA_2	0.313	0.1565	0.4695
335-76-2	PFDA	0.142	0.071	0.213
335-76-2	PFDA_2	0.142	0.071	0.213
2058-94-8	PFUnA	0.194	0.097	0.291
2058-94-8	PFUnA_2	0.194	0.097	0.291
307-55-1	PFDoA	0.167	0.0835	0.2505
307-55-1	PFDoA_2	0.167	0.0835	0.2505
72629-94-8	PFTrDA	0.228	0.114	0.342
72629-94-8	PFTrDA_2	0.228	0.114	0.342
376-06-7	PFTeDA	0.137	0.0685	0.2055
376-06-7	PFTeDA_2	0.137	0.0685	0.2055
375-73-5	PFBS	0.396	0.198	0.594
375-73-5	PFBS_2	0.396	0.198	0.594
2706-91-4	PFPeS	0.299	0.1495	0.4485
2706-91-4	PFPeS_2	0.299	0.1495	0.4485
355-46-4	PFHxS	0.315	0.1575	0.4725
355-46-4	PFHxS_2	0.315	0.1575	0.4725
375-92-8	PFHpS	0.287	0.1435	0.4305
375-92-8	PFHpS_2	0.287	0.1435	0.4305
1763-23-1	PFOS	0.238	0.119	0.357
1763-23-1	PFOS_2	0.238	0.119	0.357
68259-12-1	PFNS	0.301	0.1505	0.4515
68259-12-1	PFNS_2	0.301	0.1505	0.4515
335-77-3	PFDS	0.275	0.1375	0.4125
335-77-3	PFDS_2	0.275	0.1375	0.4125
79780-39-5	PFDoS	0.274	0.137	0.411
79780-39-5	PFDoS_2	0.274	0.137	0.411
757124-72-4	4:2FTS	0.516	0.258	0.774
757124-72-4	4:2FTS_2	0.516	0.258	0.774
27619-97-2	6:2FTS	0.565	0.2825	0.8475
27619-97-2	6:2FTS_2	0.565	0.2825	0.8475
39108-34-4	8:2FTS	0.662	0.331	0.993
39108-34-4	8:2FTS_2	0.662	0.331	0.993
754-91-6	PFOSA	0.025	0.0125	0.0375
754-91-6	PFOSA_2	0.025	0.0125	0.0375
31506-32-8	NMeFOSA	1.551	0.7755	2.3265
31506-32-8	NMeFOSA_2	1.551	0.7755	2.3265
4151-50-2	NEtFOSA	1.285	0.6425	1.9275
4151-50-2	NEtFOSA_2	1.285	0.6425	1.9275
2355-31-9	NMeFOSAA	0.7	0.35	1.05
2355-31-9	NMeFOSAA_2	0.7	0.35	1.05
2991-50-6	NEtFOSAA	0.487	0.2435	0.7305
2991-50-6	NEtFOSAA_2	0.487	0.2435	0.7305
24448-09-7	NMeFOSE	N/A	N/A	N/A
1691-99-2	NEtFOSE	N/A	N/A	N/A
13252-13-6	HFPO-DA	0.464	0.232	0.696
13252-13-6	HFPO-DA_2	0.464	0.232	0.696
919005-14-4	ADONA	0.634	0.317	0.951
919005-14-4	ADONA_2	0.634	0.317	0.951
756426-58-1	9Cl-PF3ONS	0.322	0.161	0.483
756426-58-1	9Cl-PF3ONS_2	0.322	0.161	0.483
763051-92-9	11Cl-PF3OUdS	0.331	0.1655	0.4965
763051-92-9	11Cl-PF3OUdS_2	0.331	0.1655	0.4965
356-02-5	3:3FTCA	1.074	0.537	1.611
356-02-5	3:3FTCA_2	1.074	0.537	1.611
914637-49-3	5:3FTCA	0.953	0.4765	1.4295
914637-49-3	5:3FTCA_2	0.953	0.4765	1.4295
812-70-4	7:3FTCA	1.558	0.779	2.337
812-70-4	7:3FTCA_2	1.558	0.779	2.337
113507-82-7	PFEESA	0.087	0.0435	0.1305
113507-82-7	PFEESA_2	0.087	0.0435	0.1305
377-73-1	PFMPA	N/A	N/A	N/A
863090-89-5	PFMBA	N/A	N/A	N/A
151772-58-6	NFDHA	0.91	0.455	1.365
151772-58-6	NFDHA_2	0.91	0.455	1.365
516-50-7	TDCA	40.716	20.358	61.074
516-50-7	TDCA_2	40.716	20.358	61.074

Continuing Calibration

Calibration Verification Summary
Form 7
Semivolatiles

Client	: P. W. Grosser	**Lab Number**	: L2450786		
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504		
Instrument ID	: LCMS05	**Calibration Date**	: 09/19/24 06:19		
Lab File ID	: SCI05_240919_06	**Init. Calib. Date(s)**	: 08/13/24	08/13/24	
Sample No	: WG1973506-2	**Init. Calib. Times**	: 21:50	23:32	
Channel	:				

Compound	Concentration (ng/ml)	True Value (ng/ml)	% Recovery	QC Limits
Perfluorobutanoic Acid (PFBA)	0.838	0.800	104.7	70-130
Perfluoropentanoic Acid (PFPeA)	0.464	0.400	115.9	70-130
Perfluorobutanesulfonic Acid (PFBS)	0.171	0.177	96.4	70-130
Perfluorohexanoic Acid (PFHxA)	0.213	0.200	106.5	70-130
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	0.781	0.750	104.1	70-130
Perfluoropentanesulfonic Acid (PFPeS)	0.195	0.188	103.7	70-130
Perfluoroheptanoic Acid (PFHpA)	0.206	0.200	103.1	70-130
Perfluorohexanesulfonic Acid (PFHxS)	0.201	0.183	110	70-130
Perfluorooctanoic Acid (PFOA)	0.215	0.200	107.4	70-130
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	0.768	0.760	101	70-130
Perfluoroheptanesulfonic Acid (PFHpS)	0.214	0.191	112.1	70-130
Perfluorononanoic Acid (PFNA)	0.218	0.200	109.2	70-130
Perfluorooctanesulfonic Acid (PFOS)	0.218	0.186	117.6	70-130
Perfluorodecanoic Acid (PFDA)	0.209	0.200	104.4	70-130
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	0.917	0.768	119.4	70-130
Perfluorononanesulfonic Acid (PFNS)	0.222	0.192	115.4	70-130
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	0.215	0.200	107.7	70-130
Perfluoroundecanoic Acid (PFUnA)	0.207	0.200	103.7	70-130
Perfluorodecanesulfonic Acid (PFDS)	0.210	0.193	108.6	70-130
Perfluorooctanesulfonamide (PFOSA)	0.197	0.200	98.5	70-130
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	0.208	0.200	104.1	70-130
Perfluorododecanoic Acid (PFDoA)	0.156	0.200	78	70-130
Perfluorotridecanoic Acid (PFTrDA)	0.158	0.200	79.3	70-130
Perfluorotetradecanoic Acid (PFTeDA)	0.237	0.200	118.4	70-130
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	0.842	0.800	105.2	70-130
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	0.794	0.756	105	70-130
Perfluorododecanesulfonic Acid (PFDoS)	0.213	0.194	109.7	70-130
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	0.822	0.748	109.9	70-130
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	0.790	0.756	104.5	70-130
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	0.207	0.200	103.7	70-130
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	0.207	0.200	103.3	70-130
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	2.047	2.000	102.3	70-130
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	2.044	2.000	102.2	70-130
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	0.445	0.400	111.3	70-130
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	0.419	0.400	104.8	70-130
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	0.361	0.356	101.4	70-130
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	0.467	0.400	116.7	70-130
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	1.152	1.000	115.2	70-130
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	5.422	5.000	108.4	70-130
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	5.250	5.000	105	70-130
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	9.890	10.000	98.9	70-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	5.093	5.000	101.9	70-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	2.298	2.330	98.6	70-130

*** Value outside of QC limits.**

Calibration Verification Summary
Form 7
Semivolatiles

Client	: P. W. Grosser		**Lab Number**	: L2450786	
Project Name	: ROANOKE SAND + GRAVEL		**Project Number**	: BSD1504	
Instrument ID	: LCMS05		**Calibration Date**	: 09/19/24 06:19	
Lab File ID	: SCI05_240919_06		**Init. Calib. Date(s)**	: 08/13/24	08/13/24
Sample No	: WG1973506-2		**Init. Calib. Times**	: 21:50	23:32
Channel	:				

Compound	Concentration (ng/ml)	True Value (ng/ml)	% Recovery	QC Limits
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	5.540	4.690	118.1	70-130
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	2.379	2.500	95.2	70-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	2.397	2.500	95.9	70-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	2.219	2.370	93.6	70-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	2.470	2.500	98.8	70-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	4.832	4.755	101.6	70-130
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	1.226	1.250	98.1	70-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	2.300	2.395	96	70-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	1.204	1.250	96.3	70-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	5.622	4.800	117.1	70-130
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	5.190	5.000	103.8	70-130
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	1.248	1.250	99.9	70-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	2.835	2.500	113.4	70-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	5.784	5.000	115.7	70-130
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	1.614	1.250	129.2	70-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	1.087	1.250	87	70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	9.506	10.000	95.1	70-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	2.959	2.500	118.4	70-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	2.997	2.500	119.9	70-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	31.828	25.000	127.3	70-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	32.659	25.000	130.6*	70-130
Perfluoro-[1,2-13C2]octanoic Acid (13C2-PFOA)	1.167	2.500	46.7*	70-130
Perfluoro-n-[1,2-13C2]Hexanoic Acid (13C2-PFHxA)	3.541	2.500	141.6*	70-130
Perfluoro-n-[1,2,3,4-13C4]Octanoic Acid (13C4-PFOA)	3.418	2.500	136.7*	70-130
Perfluoro-n-[1,2,3,4-13C4]Octanesulfonic Acid (13C4-PFOS)	2.846	2.395	118.8	70-130
Perfluoro-n-[1,2-13C2]Decanoic Acid (13C2-PFDA)	1.815	1.250	145.2*	70-130
Perfluoro-n-[2,3,4-13C3]Butanoic Acid (13C3-PFBA)	7.502	5.000	150*	70-130
Perfluoro-n-[1,2,3,4,5-13C5]Nonanoic Acid (13C5-PFNA)	1.805	1.250	144.4*	70-130
Perfluoro-1-hexane[18O2]Sulfonic Acid (18O2-PFHxS)	3.159	2.370	133.3*	70-130
1H,1H,2H,2H-Perfluoro[1,2-13C2D4]Hexanesulfonic Acid (13C2D4-4:2FTS)	2.653	5.000	53.1*	70-130

*** Value outside of QC limits.**

Calibration Verification Summary
Form 7
Semivolatiles

Client	: P. W. Grosser	**Lab Number**	: L2450786		
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504		
Instrument ID	: LCMS05	**Calibration Date**	: 09/19/24 06:49		
Lab File ID	: SCI05_240919_08	**Init. Calib. Date(s)**	: 08/13/24	08/13/24	
Sample No	: WG1973506-3	**Init. Calib. Times**	: 21:50	23:32	
Channel	:				

Compound	Concentration (ng/ml)	True Value (ng/ml)	% Recovery	QC Limits
Perfluorobutanoic Acid (PFBA)	10.601	10.000	106	70-130
Perfluoropentanoic Acid (PFPeA)	6.058	5.000	121.2	70-130
Perfluorobutanesulfonic Acid (PFBS)	2.207	2.217	99.5	70-130
Perfluorohexanoic Acid (PFHxA)	2.763	2.500	110.5	70-130
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	9.274	9.375	98.9	70-130
Perfluoropentanesulfonic Acid (PFPeS)	2.438	2.353	103.6	70-130
Perfluoroheptanoic Acid (PFHpA)	2.650	2.500	106	70-130
Perfluorohexanesulfonic Acid (PFHxS)	2.361	2.285	103.3	70-130
Perfluorooctanoic Acid (PFOA)	2.421	2.500	96.9	70-130
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	10.323	9.500	108.7	70-130
Perfluoroheptanesulfonic Acid (PFHpS)	2.592	2.382	108.8	70-130
Perfluorononanoic Acid (PFNA)	2.753	2.500	110.1	70-130
Perfluorooctanesulfonic Acid (PFOS)	2.448	2.320	105.5	70-130
Perfluorodecanoic Acid (PFDA)	2.669	2.500	106.8	70-130
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	11.878	9.600	123.7	70-130
Perfluorononanesulfonic Acid (PFNS)	2.658	2.405	110.5	70-130
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	3.019	2.500	120.8	70-130
Perfluoroundecanoic Acid (PFUnA)	2.727	2.500	109.1	70-130
Perfluorodecanesulfonic Acid (PFDS)	2.484	2.413	102.9	70-130
Perfluorooctanesulfonamide (PFOSA)	2.596	2.500	103.8	70-130
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2.712	2.500	108.5	70-130
Perfluorododecanoic Acid (PFDoA)	2.046	2.500	81.9	70-130
Perfluorotridecanoic Acid (PFTrDA)	1.994	2.500	79.8	70-130
Perfluorotetradecanoic Acid (PFTeDA)	2.751	2.500	110	70-130
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	11.187	10.000	111.9	70-130
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	10.286	9.450	108.9	70-130
Perfluorododecanesulfonic Acid (PFDoS)	2.616	2.425	107.9	70-130
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	10.676	9.350	114.2	70-130
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	10.238	9.450	108.3	70-130
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	2.718	2.500	108.7	70-130
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	2.658	2.500	106.3	70-130
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	26.842	25.000	107.4	70-130
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	26.216	25.000	104.9	70-130
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	5.608	5.000	112.2	70-130
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	5.236	5.000	104.7	70-130
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	4.743	4.450	106.6	70-130
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	6.452	5.000	129	70-130
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	16.583	12.500	132.7*	70-130
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	68.908	62.500	110.3	70-130
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	47.004	62.500	75.2	70-130
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	10.644	10.000	106.4	70-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	5.530	5.000	110.6	70-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	2.508	2.330	107.6	70-130

*** Value outside of QC limits.**

Calibration Verification Summary
Form 7
Semivolatiles

Client	: P. W. Grosser	**Lab Number**	: L2450786		
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504		
Instrument ID	: LCMS05	**Calibration Date**	: 09/19/24 06:49		
Lab File ID	: SCI05_240919_08	**Init. Calib. Date(s)**	: 08/13/24	08/13/24	
Sample No	: WG1973506-3	**Init. Calib. Times**	: 21:50	23:32	
Channel	:				

Compound	Concentration (ng/ml)	True Value (ng/ml)	% Recovery	QC Limits
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	6.227	4.690	132.8*	70-130
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	2.471	2.500	98.8	70-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	2.538	2.500	101.5	70-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	2.443	2.370	103.1	70-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	2.722	2.500	108.9	70-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	5.150	4.755	108.3	70-130
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	1.280	1.250	102.4	70-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	2.405	2.395	100.4	70-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	1.349	1.250	108	70-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	5.771	4.800	120.2	70-130
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	3.082	5.000	61.6*	70-130
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	1.434	1.250	114.7	70-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	2.633	2.500	105.3	70-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	5.838	5.000	116.8	70-130
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	1.877	1.250	150.2*	70-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	1.297	1.250	103.7	70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	9.931	10.000	99.3	70-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	2.641	2.500	105.6	70-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	2.616	2.500	104.7	70-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	28.590	25.000	114.4	70-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	29.569	25.000	118.3	70-130
Perfluoro-[1,2-13C2]octanoic Acid (13C2-PFOA)	1.159	2.500	46.4*	70-130
Perfluoro-n-[1,2-13C2]Hexanoic Acid (13C2-PFHxA)	2.717	2.500	108.7	70-130
Perfluoro-n-[1,2,3,4-13C4]Octanoic Acid (13C4-PFOA)	2.655	2.500	106.2	70-130
Perfluoro-n-[1,2,3,4-13C4]Octanesulfonic Acid (13C4-PFOS)	2.455	2.395	102.5	70-130
Perfluoro-n-[1,2-13C2]Decanoic Acid (13C2-PFDA)	1.286	1.250	102.9	70-130
Perfluoro-n-[2,3,4-13C3]Butanoic Acid (13C3-PFBA)	5.666	5.000	113.3	70-130
Perfluoro-n-[1,2,3,4,5-13C5]Nonanoic Acid (13C5-PFNA)	1.406	1.250	112.5	70-130
Perfluoro-1-hexane[18O2]Sulfonic Acid (18O2-PFHxS)	2.473	2.370	104.3	70-130
1H,1H,2H,2H-Perfluoro[1,2-13C2D4]Hexanesulfonic Acid (13C2D4-4:2FTS)	2.752	5.000	55*	70-130

*** Value outside of QC limits.**

Calibration Verification Summary
Form 7
Semivolatiles

Client	: P. W. Grosser	**Lab Number**	: L2450786		
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504		
Instrument ID	: LCMS05	**Calibration Date**	: 09/19/24 10:27		
Lab File ID	: SCI05_240919_25	**Init. Calib. Date(s)**	: 08/13/24	08/13/24	
Sample No	: WG1973506-8	**Init. Calib. Times**	: 21:50	23:32	
Channel	:				

Compound	Concentration (ng/ml)	True Value (ng/ml)	% Recovery	QC Limits
Perfluorobutanoic Acid (PFBA)	10.537	10.000	105.4	70-130
Perfluoropentanoic Acid (PFPeA)	5.679	5.000	113.6	70-130
Perfluorobutanesulfonic Acid (PFBS)	2.313	2.217	104.3	70-130
Perfluorohexanoic Acid (PFHxA)	2.503	2.500	100.1	70-130
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	9.043	9.375	96.5	70-130
Perfluoropentanesulfonic Acid (PFPeS)	2.289	2.353	97.3	70-130
Perfluoroheptanoic Acid (PFHpA)	2.685	2.500	107.4	70-130
Perfluorohexanesulfonic Acid (PFHxS)	2.360	2.285	103.3	70-130
Perfluorooctanoic Acid (PFOA)	2.384	2.500	95.4	70-130
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	10.817	9.500	113.9	70-130
Perfluoroheptanesulfonic Acid (PFHpS)	2.221	2.382	93.2	70-130
Perfluorononanoic Acid (PFNA)	2.535	2.500	101.4	70-130
Perfluorooctanesulfonic Acid (PFOS)	2.484	2.320	107.1	70-130
Perfluorodecanoic Acid (PFDA)	2.703	2.500	108.1	70-130
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	11.677	9.600	121.6	70-130
Perfluorononanesulfonic Acid (PFNS)	2.717	2.405	113	70-130
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2.931	2.500	117.2	70-130
Perfluoroundecanoic Acid (PFUnA)	2.817	2.500	112.7	70-130
Perfluorodecanesulfonic Acid (PFDS)	2.634	2.413	109.1	70-130
Perfluorooctanesulfonamide (PFOSA)	2.752	2.500	110.1	70-130
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2.644	2.500	105.7	70-130
Perfluorododecanoic Acid (PFDoA)	2.031	2.500	81.3	70-130
Perfluorotridecanoic Acid (PFTrDA)	2.396	2.500	95.8	70-130
Perfluorotetradecanoic Acid (PFTeDA)	2.419	2.500	96.8	70-130
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	10.844	10.000	108.4	70-130
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	9.937	9.450	105.2	70-130
Perfluorododecanesulfonic Acid (PFDoS)	2.596	2.425	107.1	70-130
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	10.298	9.350	110.1	70-130
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	10.050	9.450	106.3	70-130
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	2.746	2.500	109.8	70-130
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	2.727	2.500	109.1	70-130
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	27.664	25.000	110.7	70-130
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	26.854	25.000	107.4	70-130
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	5.696	5.000	113.9	70-130
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	5.309	5.000	106.2	70-130
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	4.732	4.450	106.3	70-130
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	5.267	5.000	105.3	70-130
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	14.431	12.500	115.5	70-130
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	71.611	62.500	114.6	70-130
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	81.593	62.500	130.6*	70-130
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	10.451	10.000	104.5	70-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	5.513	5.000	110.3	70-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	2.333	2.330	100.1	70-130

*** Value outside of QC limits.**

Calibration Verification Summary
Form 7
Semivolatiles

Client	: P. W. Grosser		**Lab Number**	: L2450786	
Project Name	: ROANOKE SAND + GRAVEL		**Project Number**	: BSD1504	
Instrument ID	: LCMS05		**Calibration Date**	: 09/19/24 10:27	
Lab File ID	: SCI05_240919_25		**Init. Calib. Date(s)**	: 08/13/24	08/13/24
Sample No	: WG1973506-8		**Init. Calib. Times**	: 21:50	23:32
Channel	:				

Compound	Concentration (ng/ml)	True Value (ng/ml)	% Recovery	QC Limits
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	4.731	4.690	100.9	70-130
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	2.574	2.500	102.9	70-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	2.597	2.500	103.9	70-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	2.492	2.370	105.1	70-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	2.580	2.500	103.2	70-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	4.646	4.755	97.7	70-130
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	1.331	1.250	106.4	70-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	2.550	2.395	106.5	70-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	1.300	1.250	104	70-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	11.853	4.800	246.9*	70-130
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	6.518	5.000	130.4*	70-130
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	1.381	1.250	110.5	70-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	3.444	2.500	137.8*	70-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	12.401	5.000	248*	70-130
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	1.945	1.250	155.6*	70-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	1.462	1.250	117	70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	10.567	10.000	105.7	70-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	3.069	2.500	122.8	70-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	2.772	2.500	110.9	70-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	38.942	25.000	155.8*	70-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	34.557	25.000	138.2*	70-130
Perfluoro-[1,2-13C2]octanoic Acid (13C2-PFOA)	1.079	2.500	43.2*	70-130
Perfluoro-n-[1,2-13C2]Hexanoic Acid (13C2-PFHxA)	2.640	2.500	105.6	70-130
Perfluoro-n-[1,2,3,4-13C4]Octanoic Acid (13C4-PFOA)	2.804	2.500	112.2	70-130
Perfluoro-n-[1,2,3,4-13C4]Octanesulfonic Acid (13C4-PFOS)	2.248	2.395	93.8	70-130
Perfluoro-n-[1,2-13C2]Decanoic Acid (13C2-PFDA)	1.518	1.250	121.4	70-130
Perfluoro-n-[2,3,4-13C3]Butanoic Acid (13C3-PFBA)	5.513	5.000	110.3	70-130
Perfluoro-n-[1,2,3,4,5-13C5]Nonanoic Acid (13C5-PFNA)	1.431	1.250	114.5	70-130
Perfluoro-1-hexane[18O2]Sulfonic Acid (18O2-PFHxS)	2.583	2.370	109	70-130
1H,1H,2H,2H-Perfluoro[1,2-13C2D4]Hexanesulfonic Acid (13C2D4-4:2FTS)	2.093	5.000	41.9*	70-130

*** Value outside of QC limits.**

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

Method: EPA1633_NIS_CALC.qmethod
Calibration: 240813_1633_ICAL

ID: WG1973506-2,1633LOW
Name: SCI05_240919_06.wiff
Date & Time: 2024-09-19T06:19:19
Description: WG1973506,WG1970000,ICAL21391,1633LOW
Instrument: Triple Quad 5500+
User: LCMS05:AC

LC/MS-MS Method:EPA_1633.dam

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
1	PFBA	375-22-4	2.85	213.0 / 169.0	246315		0.838	N/A	N/A	N/A	104.7
2	PFPeA	2706-90-3	4.67	263.0 / 219.0	193598		0.464	0.006	0.007	N/A	115.9
3	PFPeA_2	2706-90-3	4.67	263.0 / 68.9	1231		0.418	0.006	0.007	N/A	104.4
4	PFHxA	307-24-4	5.36	313.0 / 269.0	144182	M4	0.213	0.059	0.072	Pass	106.5
5	PFHxA_2	307-24-4	5.36	313.0 / 119.0	8558		0.171	0.059	0.072	Pass	85.5
6	PFHpA	375-85-9	6.27	363.1 / 319.0	135407		0.206	0.312	0.297	Pass	103.1
7	PFHpA_2	375-85-9	6.27	363.1 / 169.0	42214		0.210	0.312	0.297	Pass	105.1

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
8	PFOA	335-67-1	7.49	413.1 / 369.1	90327	M5	0.215	0.567	0.586	Pass	107.4
9	PFOA_2	335-67-1	7.49	413.1 / 169.0	51191	M7	0.222	0.567	0.586	Pass	111.1
10	PFNA	375-95-1	7.93	462.8 / 418.9	127209	M5	0.218	0.304	0.313	Pass	109.2
11	PFNA_2	375-95-1	7.93	462.8 / 218.9	38667	M7	0.217	0.304	0.313	Pass	108.6
12	PFDA	335-76-2	8.15	513.1 / 469.1	137181		0.209	0.159	0.142	Pass	104.4
13	PFDA_2	335-76-2	8.15	513.1 / 219.0	21838		0.222	0.159	0.142	Pass	110.9
14	PFUnA	2058-94-8	8.42	563.1 / 519.1	104823		0.207	0.180	0.194	Pass	103.7
15	PFUnA_2	2058-94-8	8.42	563.1 / 269.0	18888		0.193	0.180	0.194	Pass	96.5
16	PFDoA	307-55-1	8.83	613.1 / 569.1	109194		0.156	0.166	0.167	Pass	78.0
17	PFDoA_2	307-55-1	8.83	613.1 / 319.0	18121		0.153	0.166	0.167	Pass	76.7
18	PFTrDA	72629-94-8	9.39	663.1 / 619.1	66077		0.158	0.213	0.228	Pass	79.3
19	PFTrDA_2	72629-94-8	9.40	663.1 / 169.0	14095		0.152	0.213	0.228	Pass	75.9
20	PFTeDA	376-06-7	9.85	713.1 / 669.1	116709		0.237	0.135	0.137	Pass	118.4
21	PFTeDA_2	376-06-7	9.85	713.1 / 169.0	15771		0.234	0.135	0.137	Pass	117.0
22	PFBS	375-73-5	5.33	299.1 / 80.1	75587		0.171	0.437	0.396	Pass	96.4

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
23	PFBS_2	375-73-5	5.33	299.1 / 99.1	32998		0.187	0.437	0.396	Pass	105.6
24	PFPeS	2706-91-4	6.36	349.1 / 80.1	67249		0.195	0.295	0.299	Pass	103.7
25	PFPeS_2	2706-91-4	6.36	349.1 / 99.1	19828		0.191	0.295	0.299	Pass	101.3
26	PFHxS	355-46-4	7.60	399.1 / 80.1	64885	M5	0.201	0.314	0.315	Pass	110.0
27	PFHxS_2	355-46-4	7.60	399.1 / 99.1	20359	M7	0.203	0.314	0.315	Pass	111.2
28	PFHpS	375-92-8	7.99	449.1 / 80.1	64195		0.214	0.334	0.287	Pass	112.1
29	PFHpS_2	375-92-8	7.99	449.1 / 99.1	21472		0.244	0.334	0.287	Pass	127.9
30	PFOS	1763-23-1	8.24	499.1 / 80.1	69833	M5	0.218	0.243	0.238	Pass	117.6
31	PFOS_2	1763-23-1	8.24	499.1 / 99.1	16981	M7	0.217	0.243	0.238	Pass	116.7
32	PFNS	68259-12-1	8.57	549.1 / 80.1	45623		0.222	0.284	0.301	Pass	115.4
33	PFNS_2	68259-12-1	8.57	549.1 / 99.1	12964		0.208	0.284	0.301	Pass	108.3
34	PFDS	335-77-3	9.05	599.1 / 80.1	42438		0.210	0.297	0.275	Pass	108.6
35	PFDS_2	335-77-3	9.05	599.1 / 99.1	12615		0.226	0.297	0.275	Pass	117.2
36	PFDoS	79780-39-5	9.96	699.2 / 80.1	39439		0.213	0.267	0.274	Pass	109.7
37	PFDoS_2	79780-39-5	9.95	699.2 / 99.1	10536		0.207	0.267	0.274	Pass	106.6

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
38	4:2FTS	757124-72-4	5.16	327.1 / 307.1	147910		0.781	0.518	0.516	Pass	104.1
39	4:2FTS_2	757124-72-4	5.16	327.1 / 81.1	76687		0.757	0.518	0.516	Pass	100.9
40	6:2FTS	27619-97-2	7.11	427.2 / 407.2	76744		0.768	0.561	0.565	Pass	101.0
41	6:2FTS_2	27619-97-2	7.10	427.2 / 81.1	43059		0.796	0.561	0.565	Pass	104.8
42	8:2FTS	39108-34-4	8.05	527.2 / 507.2	119444		0.917	0.652	0.662	Pass	119.4
43	8:2FTS_2	39108-34-4	8.05	527.2 / 81.1	77877		0.881	0.652	0.662	Pass	114.8
44	PFOSA	754-91-6	9.51	498.1 / 78.1	67236	M5	0.197	0.027	0.025	Pass	98.5
45	PFOSA_2	754-91-6	9.52	498.1 / 478.0	1832	M7	0.205	0.027	0.025	Pass	102.3
46	NMeFOSA	31506-32-8	10.15	512.2 / 219.0	19934	M5	0.207	1.648	1.551	Pass	103.7
47	NMeFOSA_2	31506-32-8	10.11	512.2 / 169.0	32851	M7	0.221	1.648	1.551	Pass	110.3
48	NEtFOSA	4151-50-2	10.36	526.2 / 219.0	20139	M5	0.207	1.343	1.285	Pass	103.3
49	NEtFOSA_2	4151-50-2	10.32	526.2 / 169.0	27053	M7	0.207	1.343	1.285	Pass	103.7
50	NMeFOSAA	2355-31-9	8.21	570.2 / 419.1	25197		0.215	0.786	0.700	Pass	107.7
51	NMeFOSAA_2	2355-31-9	8.20	570.2 / 483.0	19806		0.266	0.786	0.700	Pass	133.1
52	NEtFOSAA	2991-50-6	8.33	584.2 / 419.1	20212		0.208	0.477	0.487	Pass	104.1

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
53	NEtFOSAA_2	2991-50-6	8.33	584.2 / 526.2	9635	M7	0.216	0.477	0.487	Pass	107.8
54	NMeFOSE	24448-09-7	10.07	616.1 / 58.9	376304	M5	2.047	N/A	N/A	N/A	102.3
55	NEtFOSE	1691-99-2	10.26	630.0 / 58.9	676294	M5	2.044	N/A	N/A	N/A	102.2
56	HFPO-DA	13252-13-6	5.62	285.0 / 169.0	283807		0.842	0.478	0.464	Pass	105.2
57	HFPO-DA_2	13252-13-6	5.62	285.0 / 184.9	135611		0.865	0.478	0.464	Pass	108.1
58	ADONA	919005-14-4	6.74	377.1 / 251.0	608746		0.794	0.673	0.634	Pass	105.0
59	ADONA_2	919005-14-4	6.74	377.1 / 84.8	409791		0.826	0.673	0.634	Pass	109.2
60	9Cl-PF3ONS	756426-58-1	8.45	530.8 / 351.1	621709		0.822	0.321	0.322	Pass	109.9
61	9Cl-PF3ONS_2	756426-58-1	8.45	532.8 / 353.0	199556		0.810	0.321	0.322	Pass	108.3
62	11Cl-PF3OUdS	763051-92-9	9.47	630.9 / 451.0	377341		0.790	0.327	0.331	Pass	104.5
63	11Cl-PF3OUdS_2	763051-92-9	9.47	632.9 / 452.9	123519		0.768	0.327	0.331	Pass	101.6
64	3:3FTCA	356-02-5	4.95	241.1 / 177.1	41710		1.152	0.953	1.074	Pass	115.2
65	3:3FTCA_2	356-02-5	4.95	241.1 / 117.0	39729		1.095	0.953	1.074	Pass	109.5
66	5:3FTCA	914637-49-3	7.20	341.1 / 237.1	665882		5.422	0.957	0.953	Pass	108.4
67	5:3FTCA_2	914637-49-3	7.20	341.1 / 217.0	637316		5.484	0.957	0.953	Pass	109.7

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
68	7:3FTCA	812-70-4	8.20	441.1 / 316.9	717888		5.250	1.561	1.558	Pass	105.0
69	7:3FTCA_2	812-70-4	8.20	441.1 / 337.1	1120868		5.649	1.561	1.558	Pass	113.0
70	PFEESA	113507-82-7	5.73	315.1 / 135.0	424142		0.361	0.083	0.087	Pass	101.4
71	PFEESA_2	113507-82-7	5.73	315.1 / 82.9	35277		0.348	0.083	0.087	Pass	97.7
72	PFMPA	377-73-1	3.89	229.0 / 85.0	22501		0.445	N/A	N/A	N/A	111.3
73	PFMBA	863090-89-5	4.90	279.0 / 85.0	285738		0.419	N/A	N/A	N/A	104.8
74	NFDHA	151772-58-6	5.28	295.0 / 201.0	57730		0.467	0.996	0.910	Pass	116.7
75	NFDHA_2	151772-58-6	5.28	295.0 / 84.9	57479		0.507	0.996	0.910	Pass	126.8
76	TDCA	516-50-7	N/A	499.1 / 124.1	N/A		N/A	N/A	40.716	N/A	N/A
77	TDCA_2	516-50-7	N/A	499.1 / 79.9	N/A		N/A	N/A	40.716	N/A	N/A
78	13C2D4-4:2FTS	Surr	5.15	333.2 / 312.1	652798		2.653	N/A	N/A	N/A	53.1
79	13C2-PFOA	Surr	7.49	415.0 / 370.0	2113943		1.167	N/A	N/A	N/A	46.7

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C4-PFBA	EIS	2.84	217.0 / 172.0	3626561		9.890	NA	NA	NA	98.9

Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
13C5-PFPeA	EIS	4.66	268.0 / 223.0	2264146		5.093	NA	NA	NA	101.9
13C5-PFHxA	EIS	5.35	318.0 / 273.0	1389139		2.379	NA	NA	NA	95.2
13C4-PFHpA	EIS	6.27	367.0 / 322.0	1401446		2.397	NA	NA	NA	95.9
13C8-PFOA	EIS	7.49	421.0 / 376.0	2020024		2.470	NA	NA	NA	98.8
13C9-PFNA	EIS	7.92	472.0 / 427.0	994533		1.226	NA	NA	NA	98.1
13C6-PFDA	EIS	8.14	519.0 / 474.0	953192		1.204	NA	NA	NA	96.3
13C7-PFUnA	EIS	8.42	570.0 / 525.0	799550		1.248	NA	NA	NA	99.9

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C2-PFDoA	EIS	8.82	615.1 / 570.0	672550		1.614	NA	NA	NA	129.2
	13C2-PFTeDA	EIS	9.85	715.1 / 670.1	491800		1.087	NA	NA	NA	87.0
	13C3-PFBS	EIS	5.33	302.1 / 80.1	1053462		2.298	NA	NA	NA	98.6
	13C3-PFHxS	EIS	7.59	402.1 / 80.1	808095		2.219	NA	NA	NA	93.6
	13C8-PFOS	EIS	8.23	507.1 / 80.1	779089		2.300	NA	NA	NA	96.0
	13C2-4:2FTS	EIS	5.15	329.1 / 81.1	453283		5.540	NA	NA	NA	118.1
	13C2-6:2FTS	EIS	7.10	429.2 / 81.1	289724		4.832	NA	NA	NA	101.6
	13C2-8:2FTS	EIS	8.04	529.2 / 81.1	493312		5.622	NA	NA	NA	117.1

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C8-PFOSA	EIS	9.51	506.1 / 78.1	1276379		2.835	NA	NA	NA	113.4
	d3-NMeFOSA	EIS	10.14	515.2 / 219.0	224305		2.959	NA	NA	NA	118.4
	d5-NEtFOSA	EIS	10.35	531.2 / 219.0	221880		2.997	NA	NA	NA	119.9
	d3-NMeFOSAA	EIS	8.20	573.2 / 419.1	889311		5.190	NA	NA	NA	103.8
	d5-NEtFOSAA	EIS	8.32	589.3 / 419.1	520863		5.784	NA	NA	NA	115.7
	d7-NMeFOSE	EIS	10.05	623.2 / 58.9	1863103		31.828	NA	NA	NA	127.3
	d9-NEtFOSE	EIS	10.25	639.2 / 58.9	2818626		32.659	NA	NA	NA	130.6

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C3-HFPO-DA	EIS	5.62	287.0 / 169.0	3678716		9.506	NA	NA	NA	95.1
	13C3-PFBA	NIS	2.84	216.0 / 172.0	1604103		7.502	NA	NA	NA	150.0
	13C2-PFHxA	NIS	5.35	315.0 / 270.0	1733800		3.541	NA	NA	NA	141.6
	13C4-PFOA	NIS	7.48	417.0 / 372.0	1070013		3.418	NA	NA	NA	136.7
	13C5-PFNA	NIS	7.92	468.0 / 423.0	988583		1.805	NA	NA	NA	144.4
	13C2-PFDA	NIS	8.14	515.1 / 470.1	929892		1.815	NA	NA	NA	145.2
	18O2-PFHxS	NIS	7.59	403.1 / 84.1	740102		3.159	NA	NA	NA	133.3
	13C4-PFOS	NIS	8.23	503.1 / 80.1	599125		2.846	NA	NA	NA	118.8

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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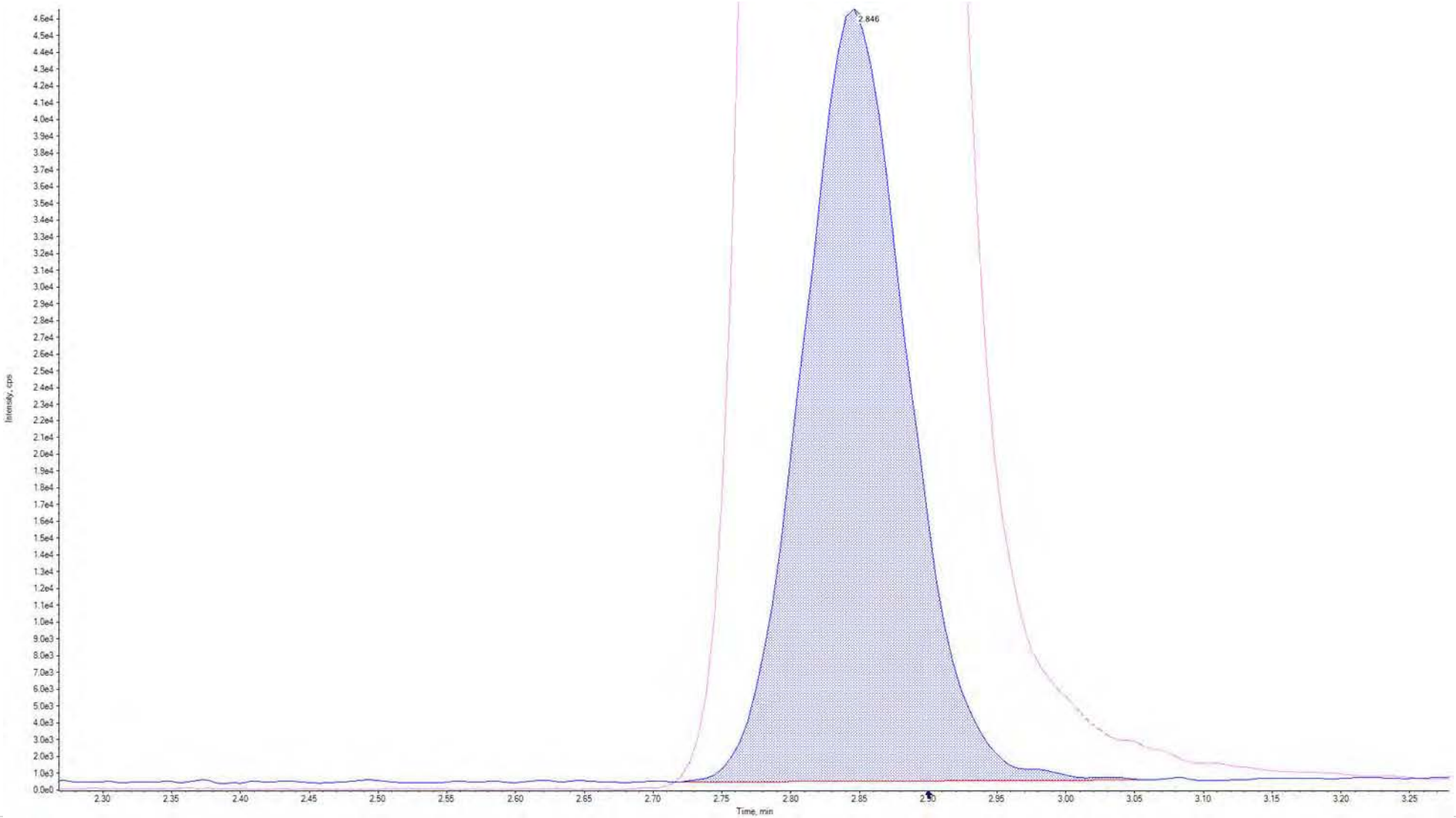
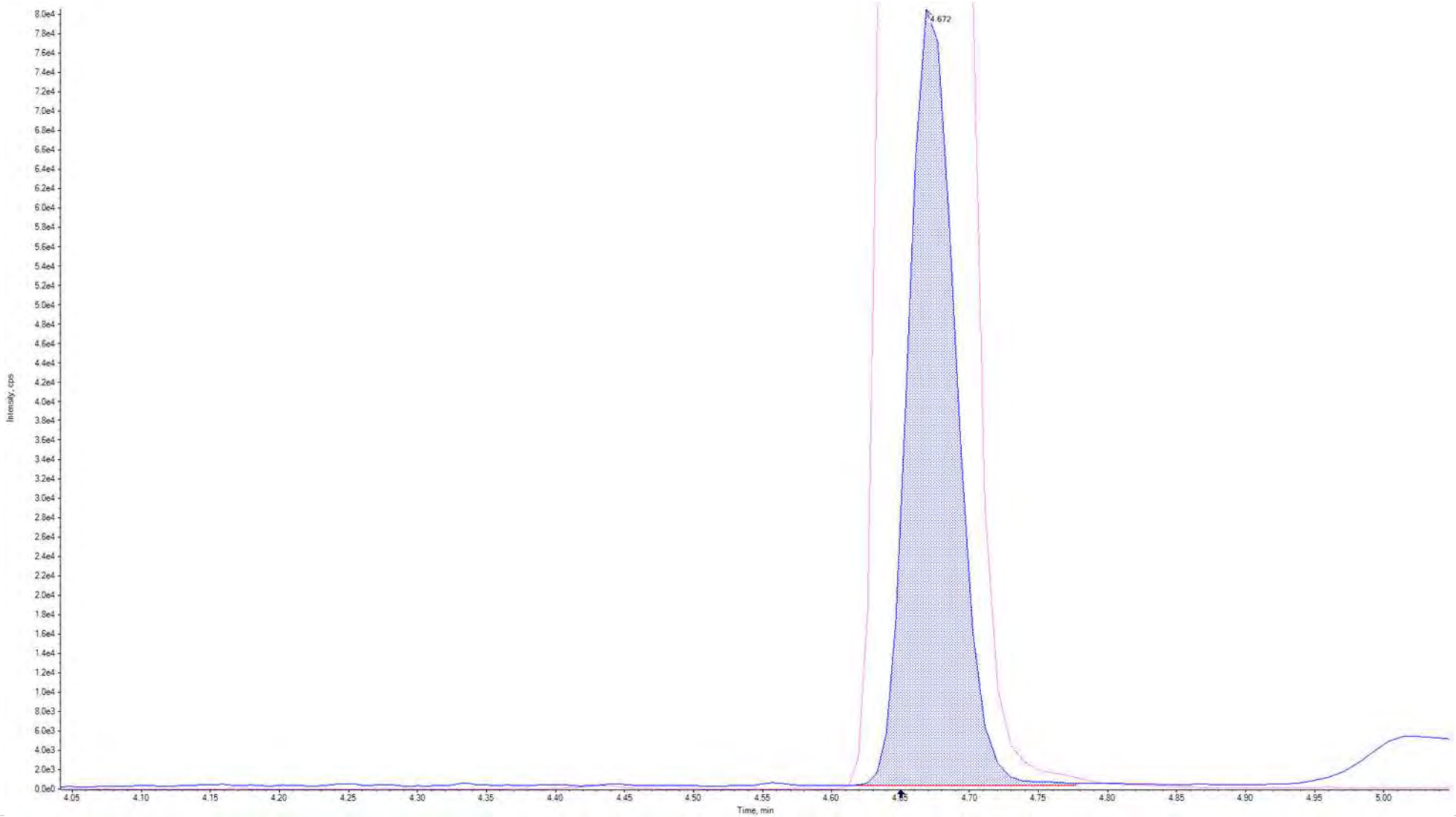
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFBA
Sample: WG1973506-2,1633LOW S/N:1051.7 Points Across peak:58



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFPeA
Sample: WG1973506-2,1633LOW S/N:981.0 Points Across peak:22



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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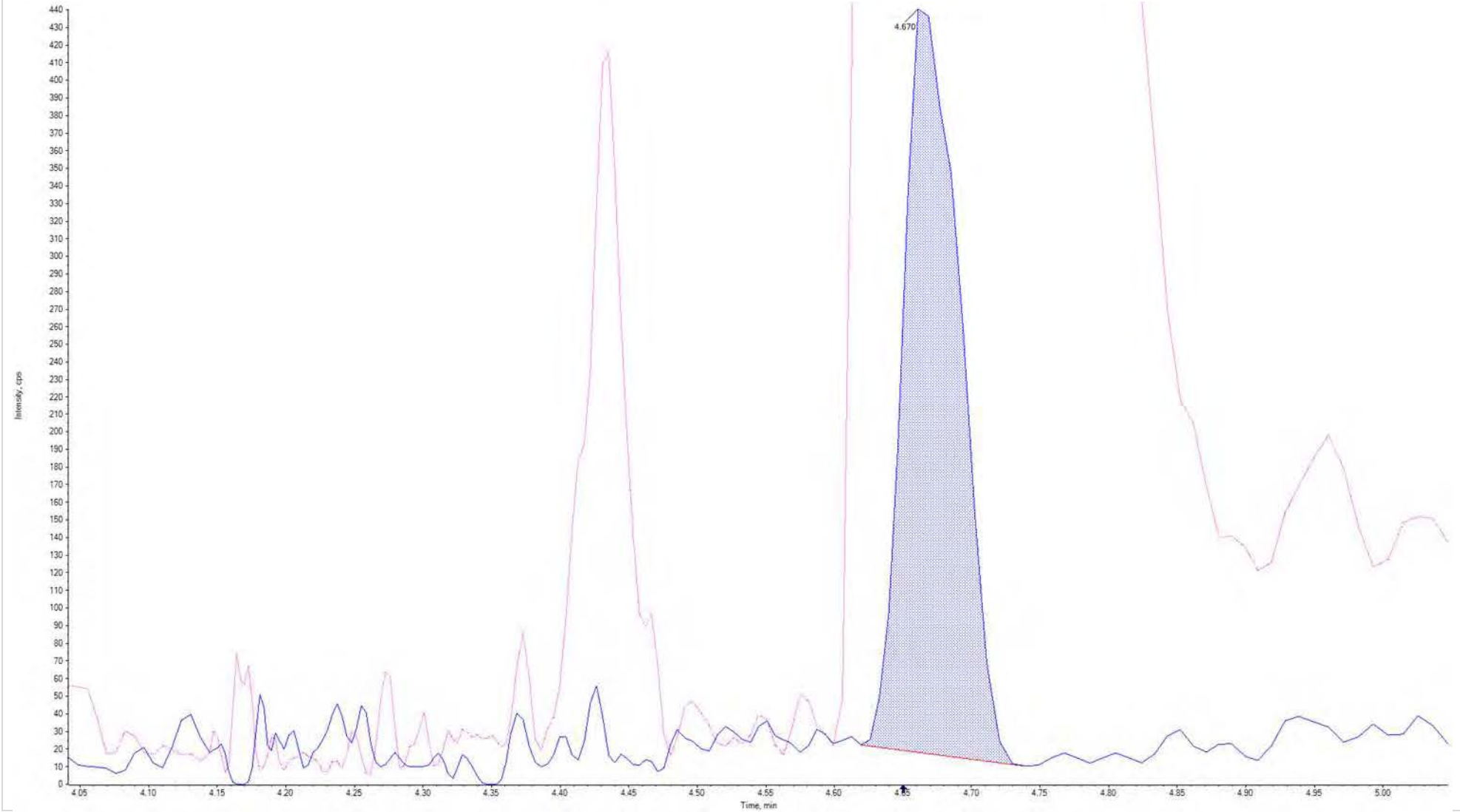
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFPeA_2
Sample: WG1973506-2,1633LOW S/N:3618.0 Points Across peak:16



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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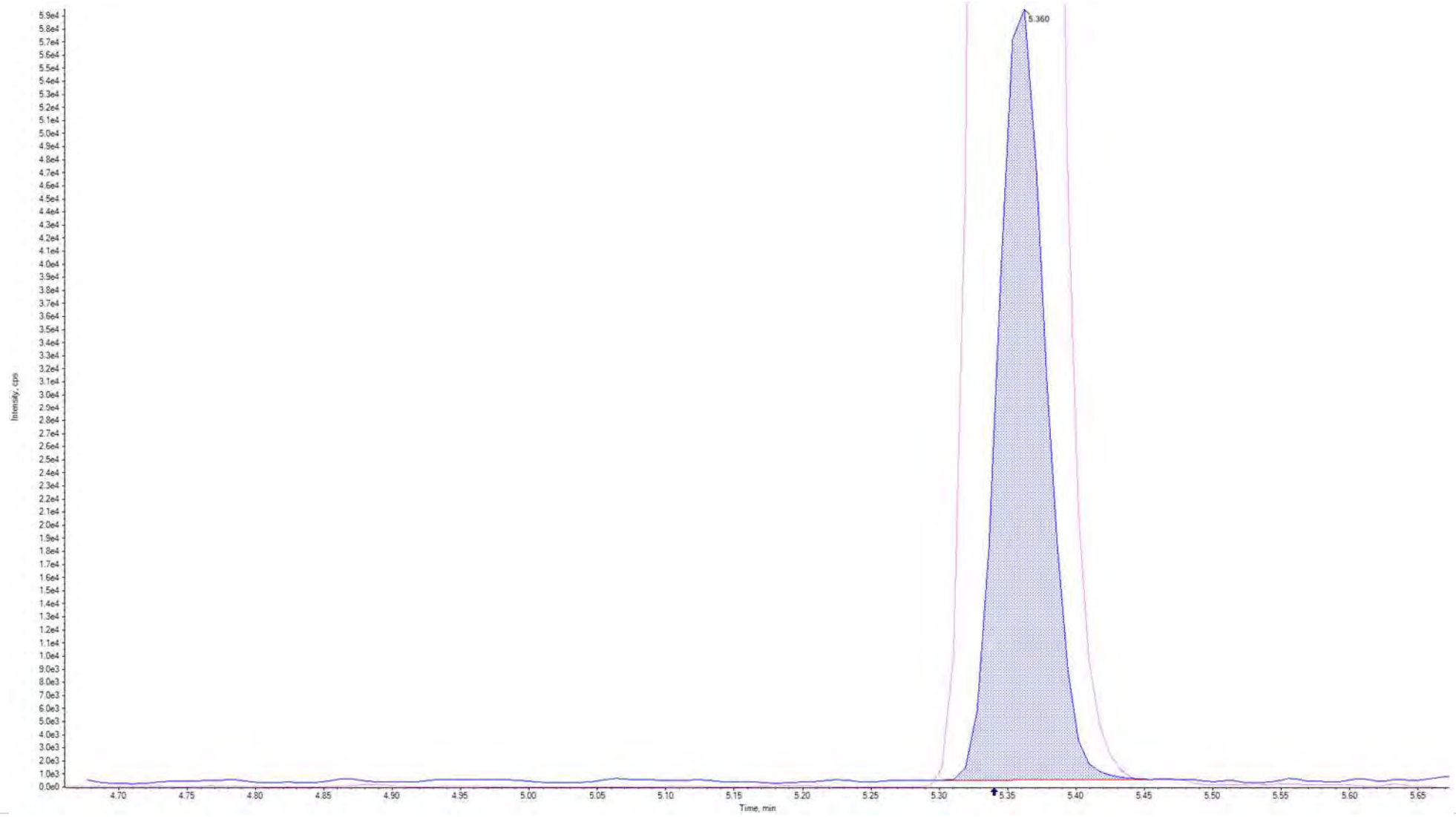
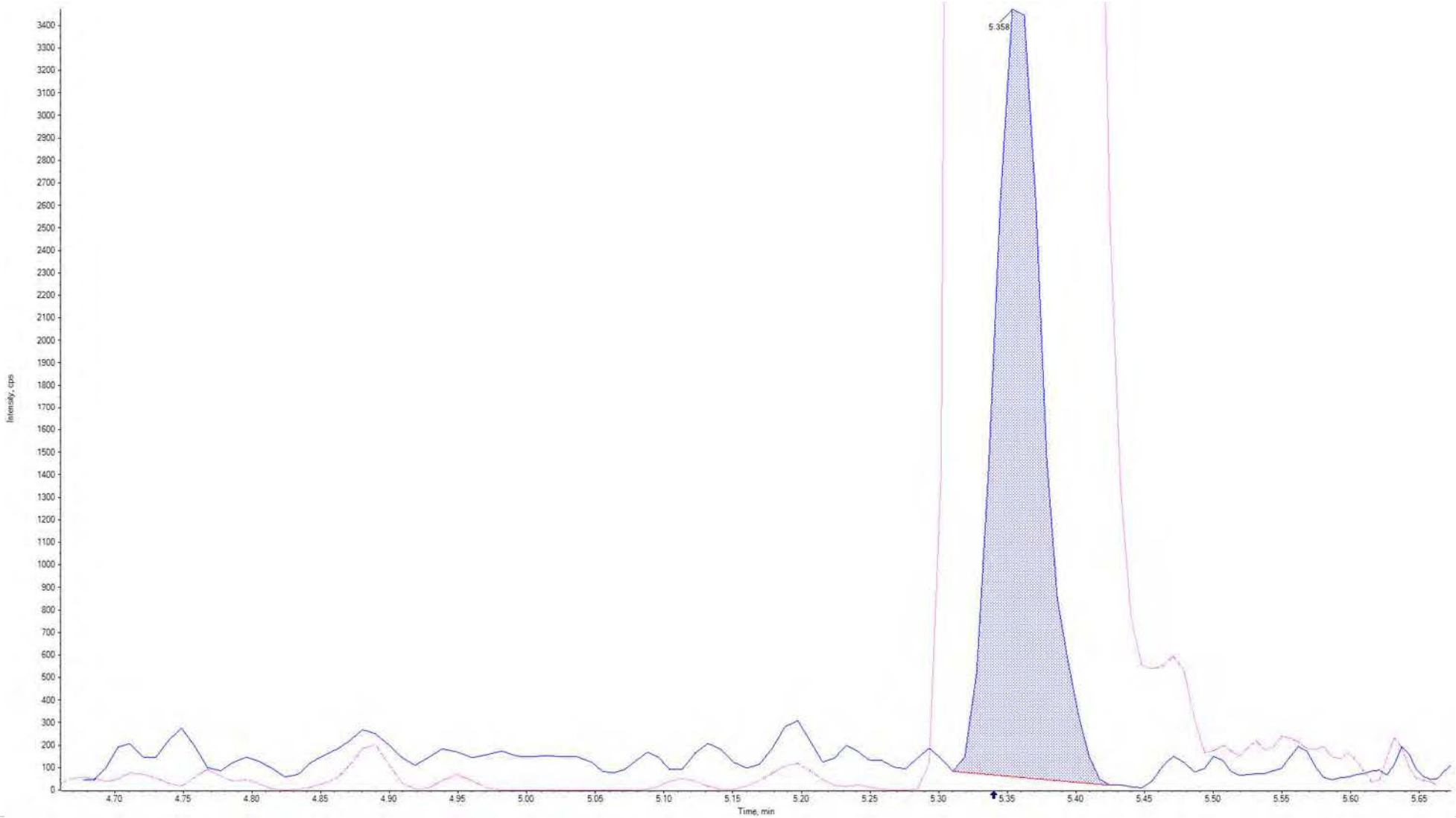
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHxA
Sample: WG1973506-2,1633LOW S/N:479.4 Points Across peak:21



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHxA_2
Sample: WG1973506-2,1633LOW S/N:253.7 Points Across peak:15



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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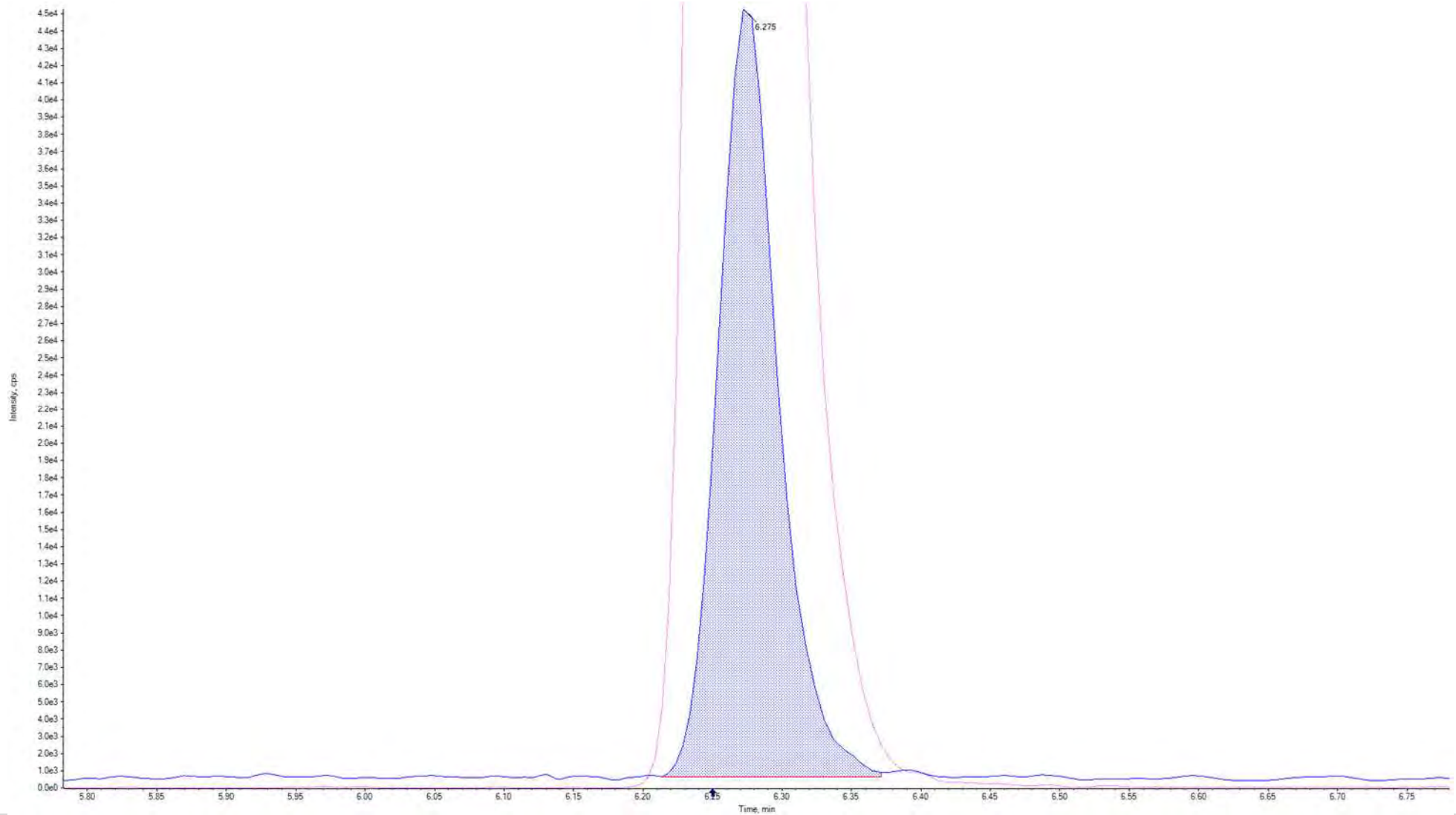
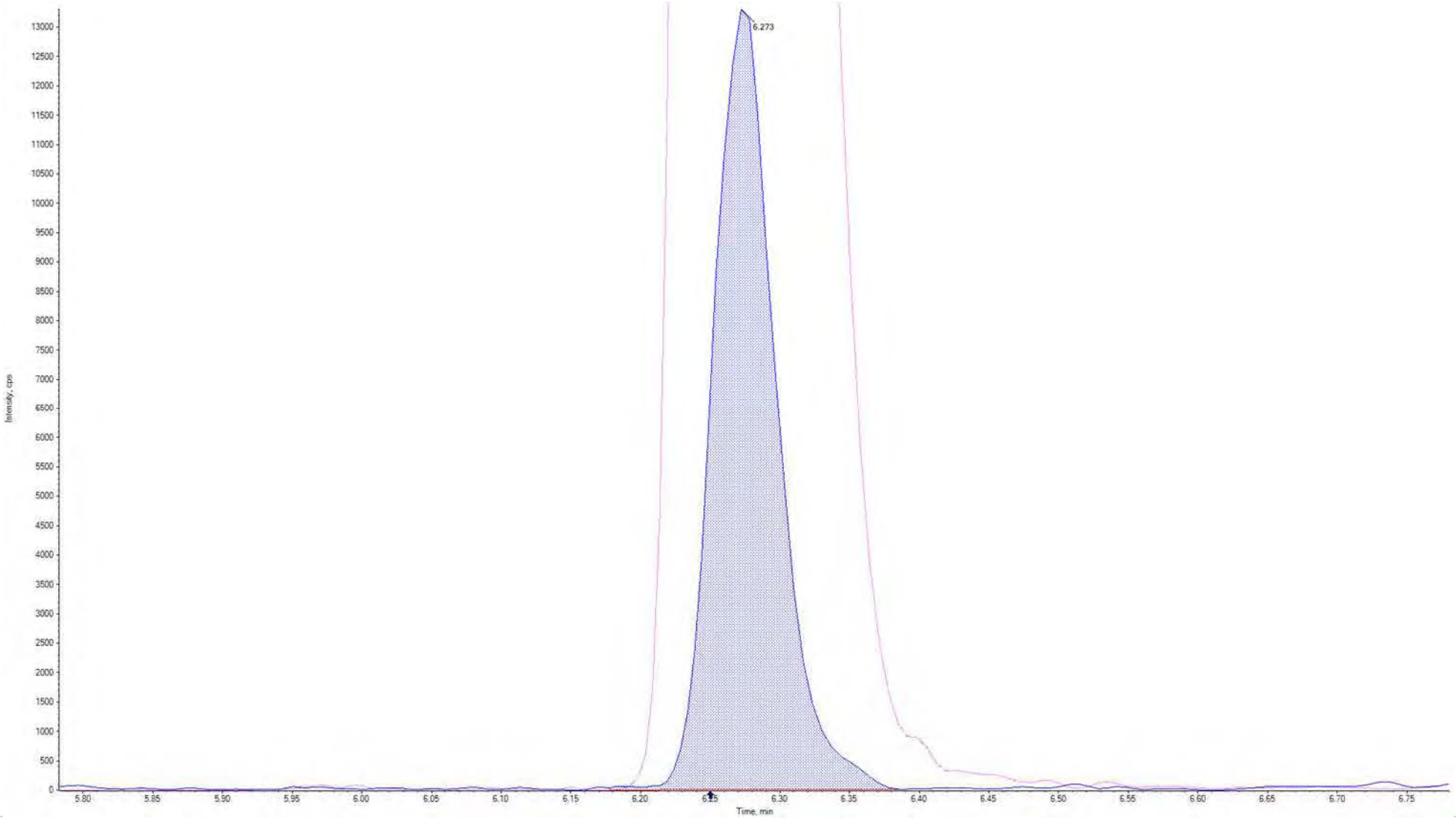
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHpA
Sample: WG1973506-2,1633LOW S/N:596.6 Points Across peak:27



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHpA_2
Sample: WG1973506-2,1633LOW S/N:4717.9 Points Across peak:37



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
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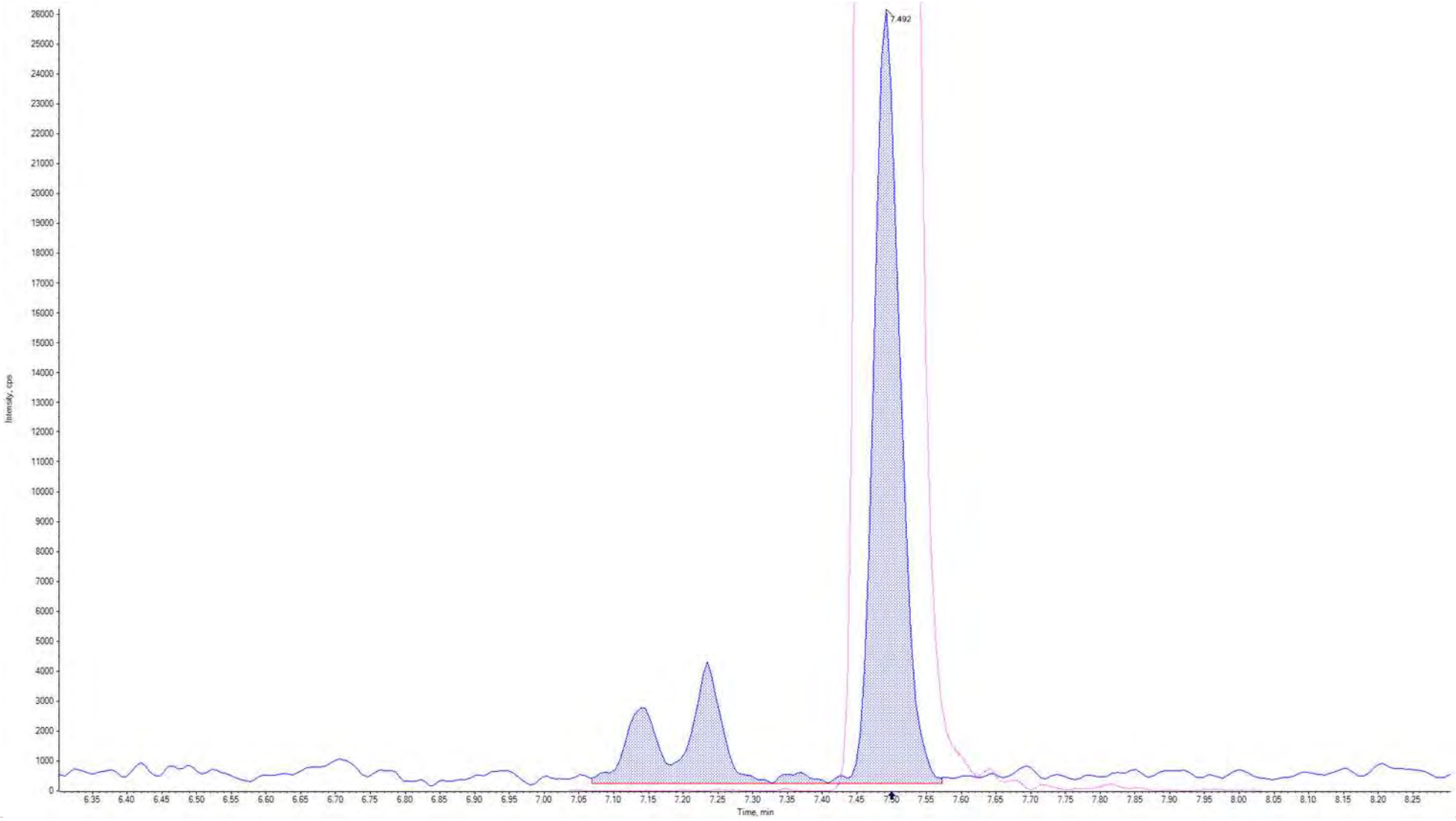
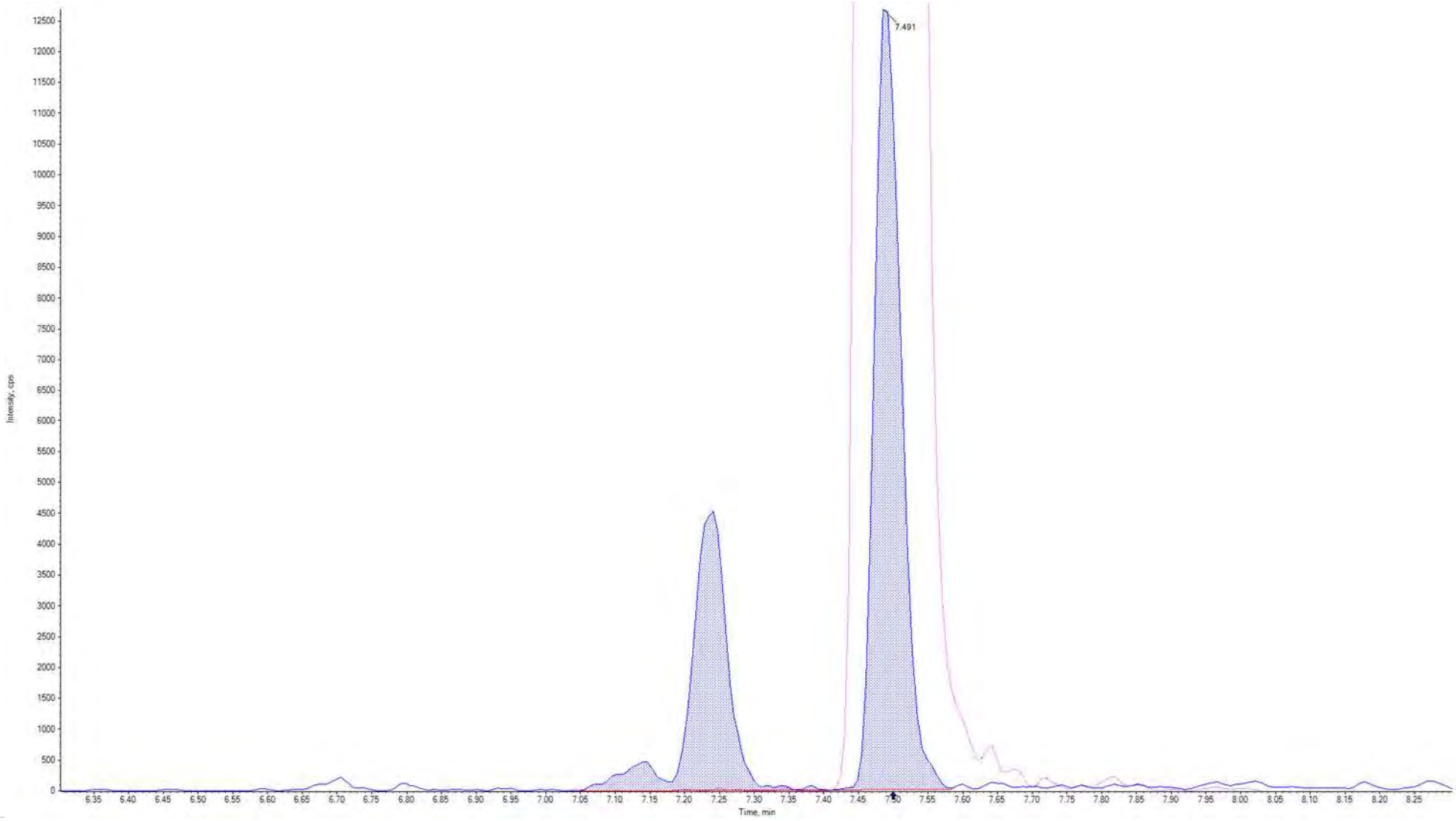
PFOA
Sample: WG1973506-2,1633LOW S/N:474.7 Points Across peak:82



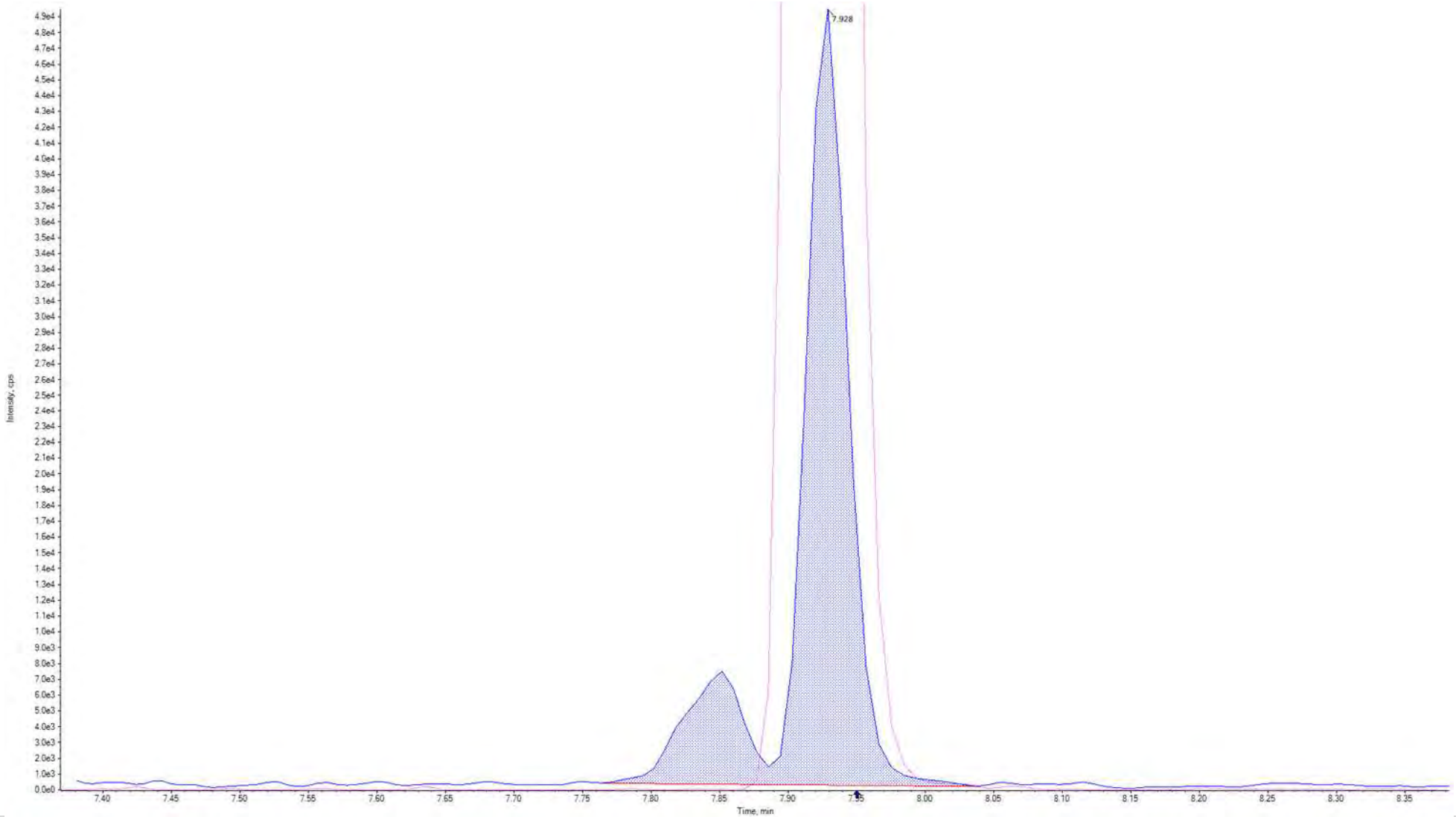
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOA_2
Sample: WG1973506-2,1633LOW S/N:540.3 Points Across peak:86



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFNA
Sample: WG1973506-2,1633LOW S/N:656.2 Points Across peak:33



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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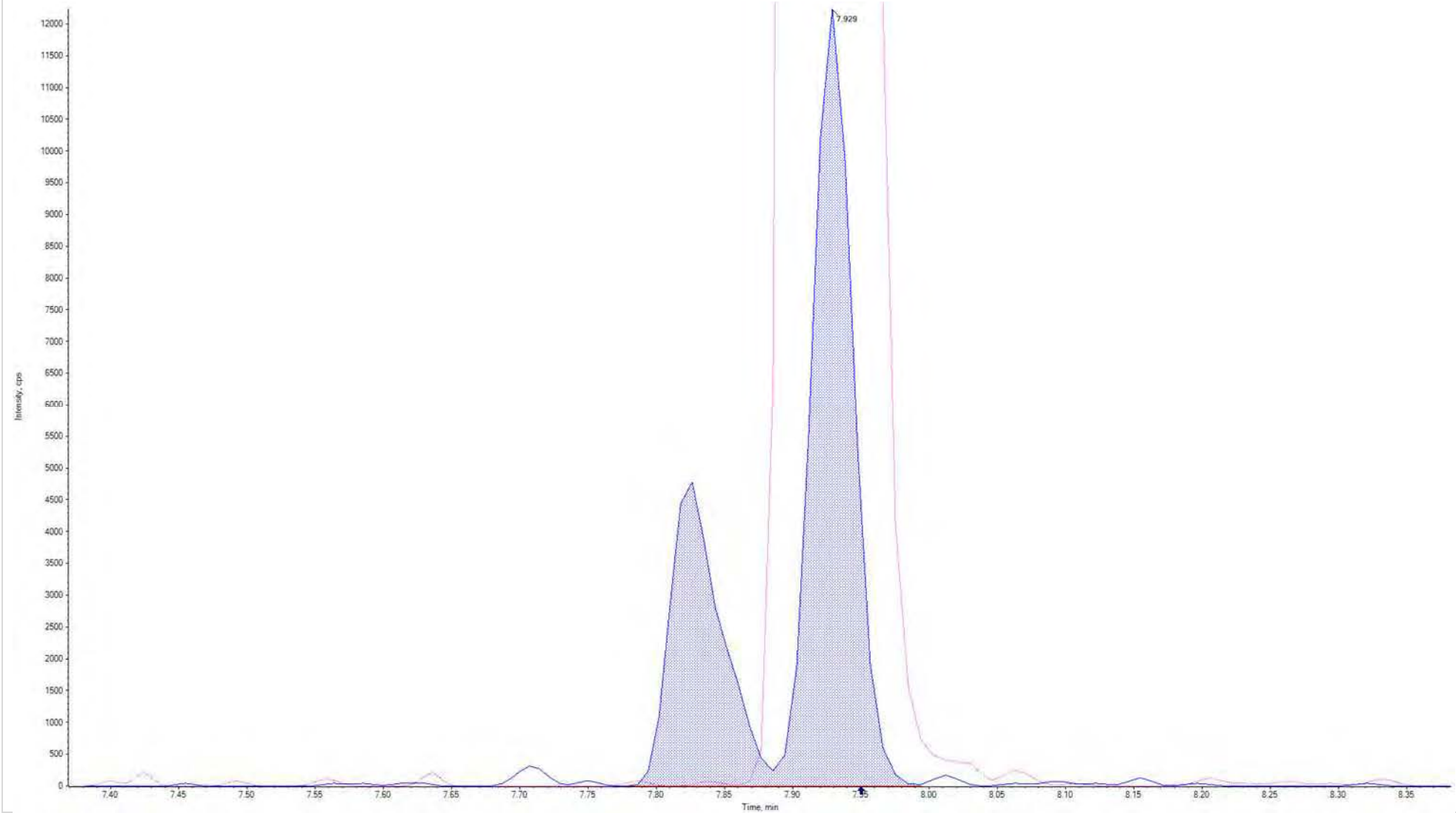
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFNA_2
Sample: WG1973506-2,1633LOW S/N:455.0 Points Across peak:27



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
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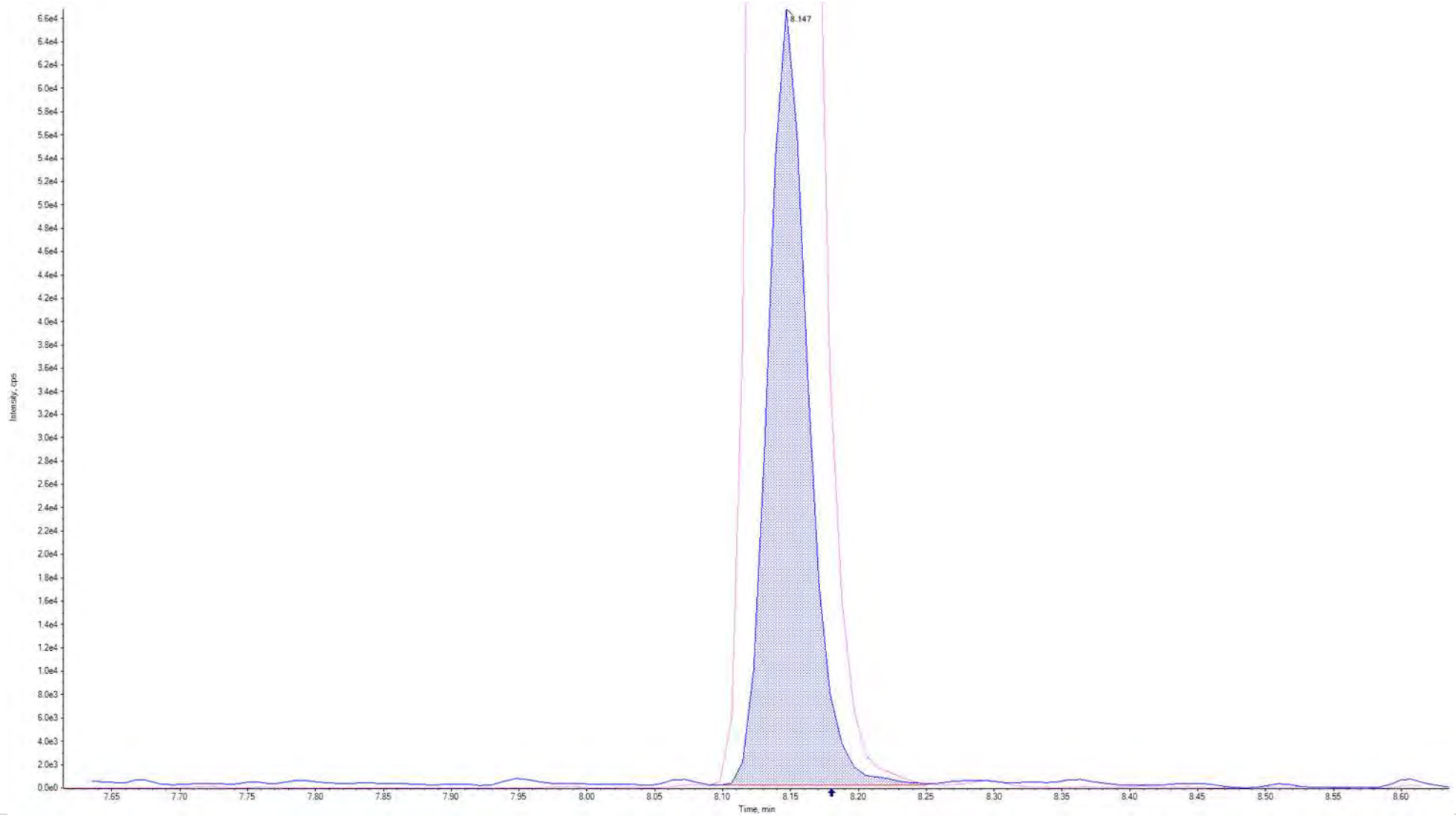
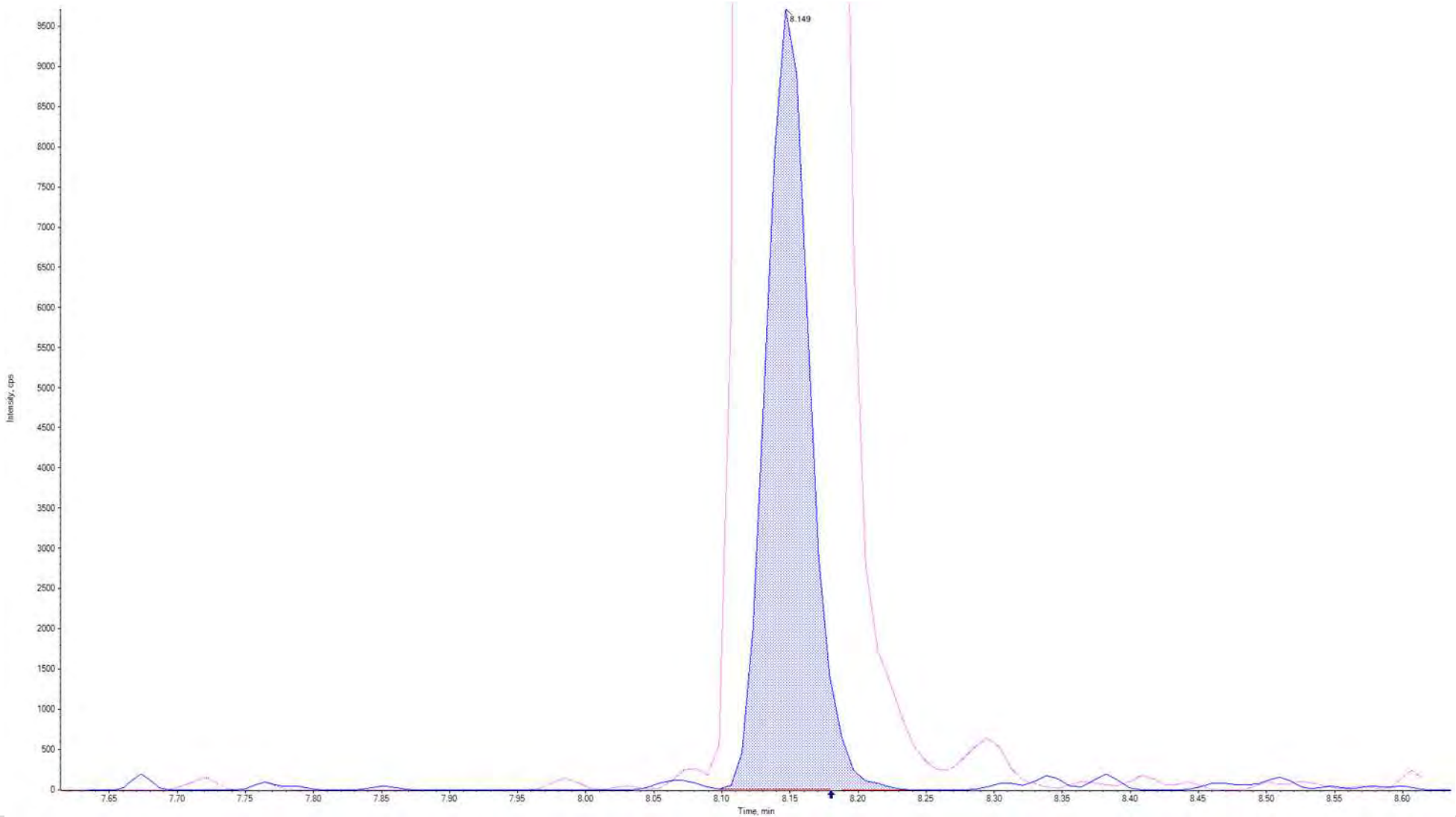
PFDA
Sample: WG1973506-2,1633LOW S/N:967.0 Points Across peak:19



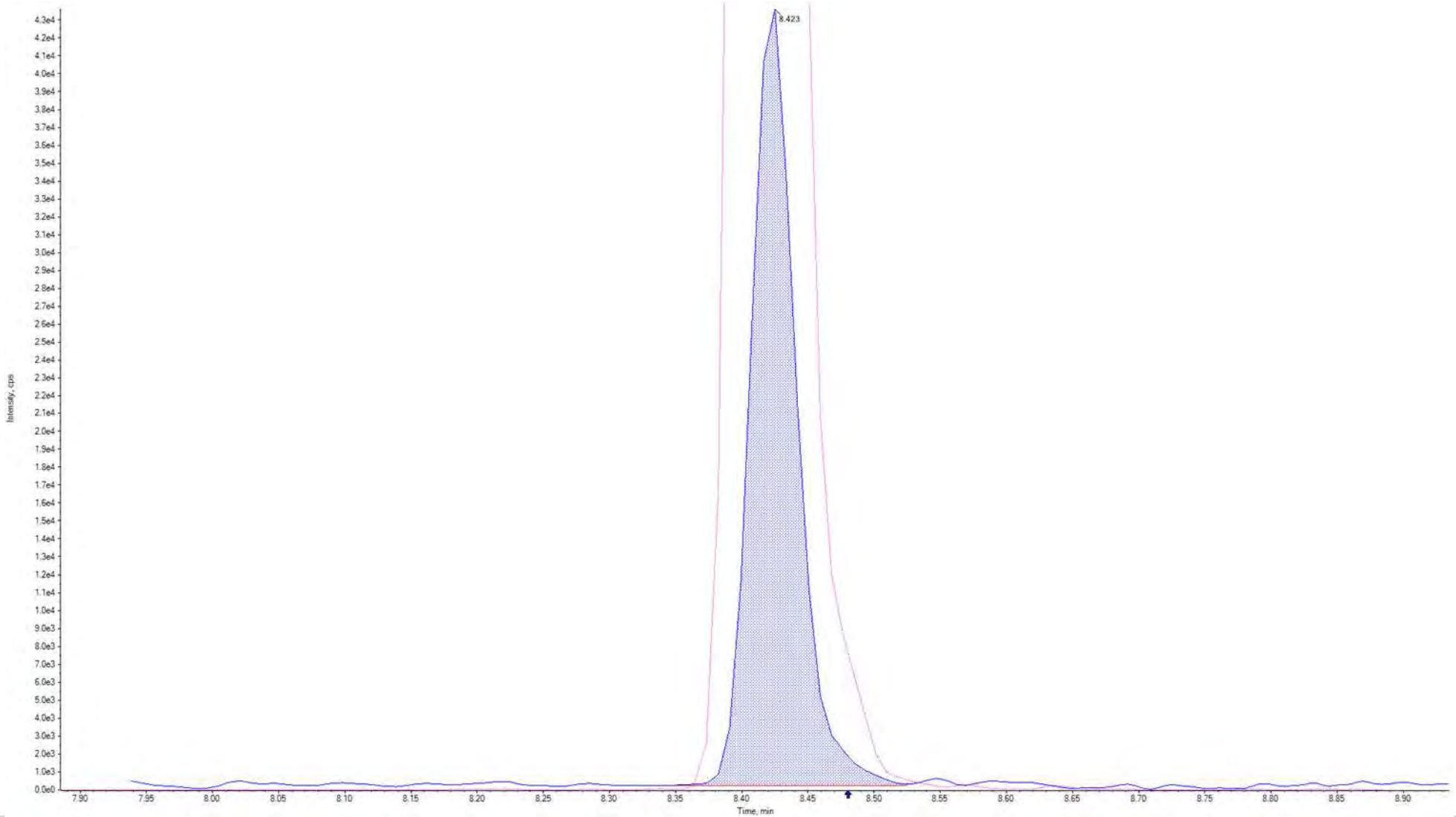
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDA_2
Sample: WG1973506-2,1633LOW S/N:432.9 Points Across peak:18



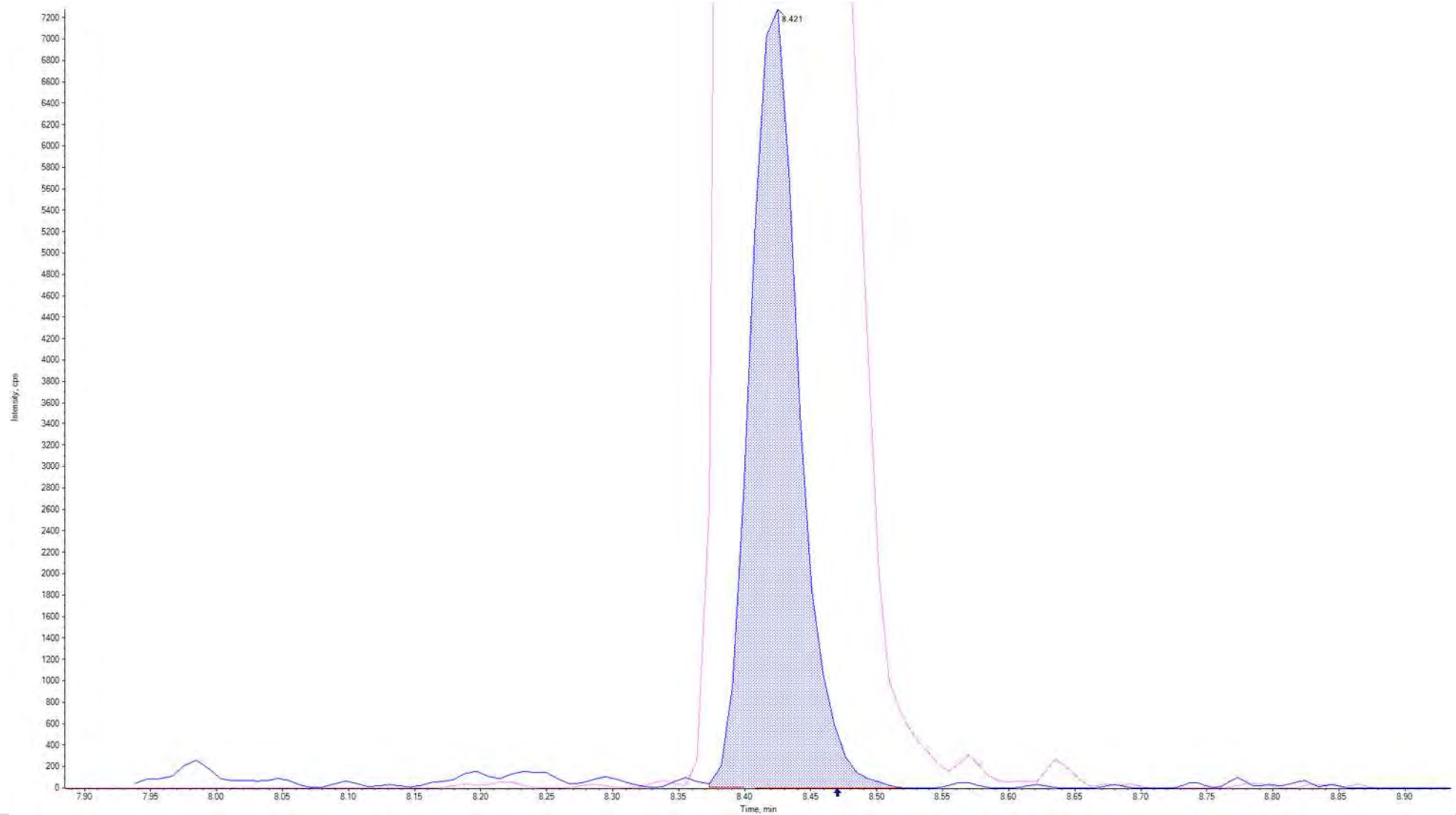
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFUnA
Sample: WG1973506-2,1633LOW S/N:941.6 Points Across peak:22



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFUnA_2
Sample: WG1973506-2,1633LOW S/N:362.1 Points Across peak:20



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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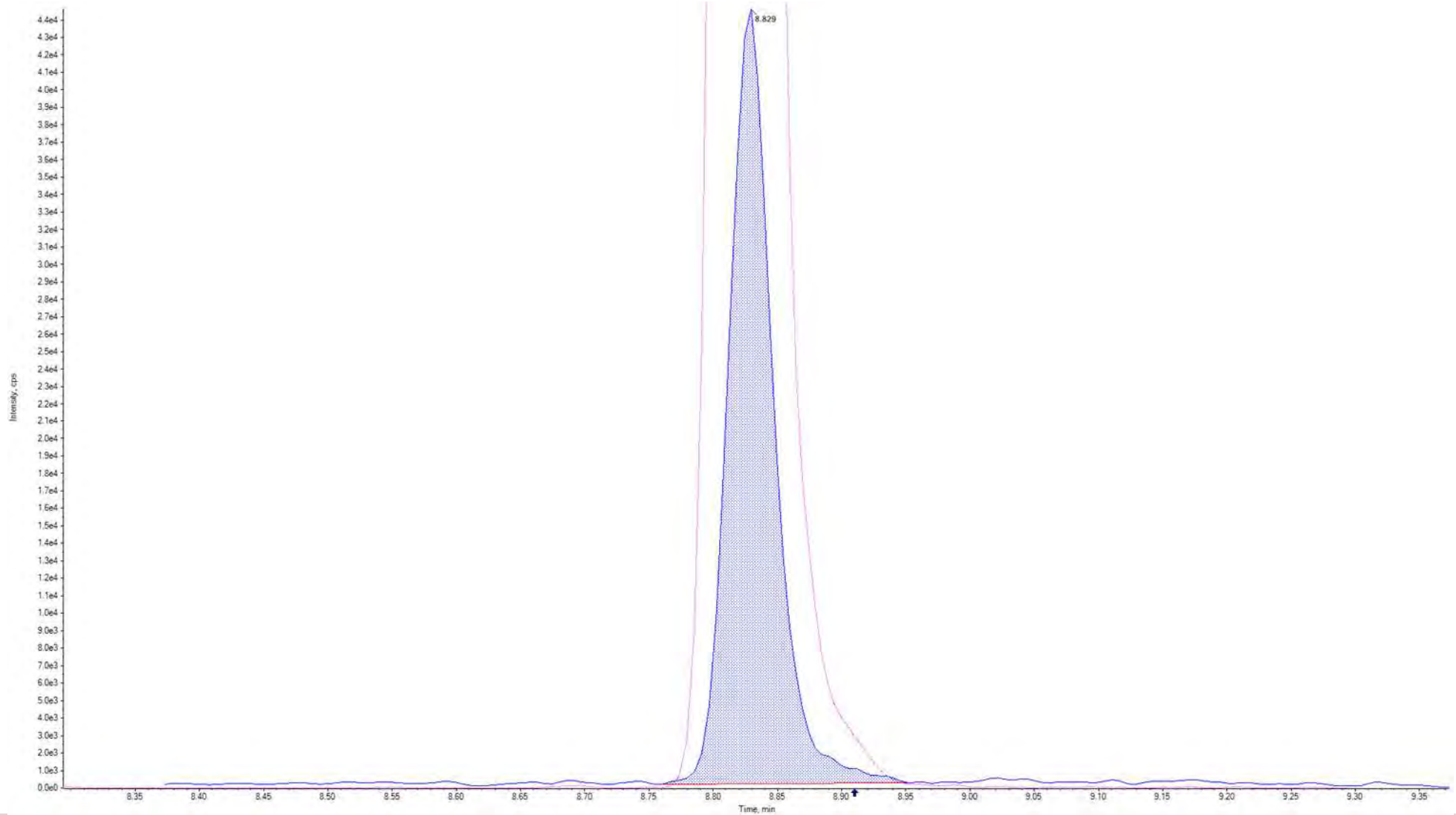
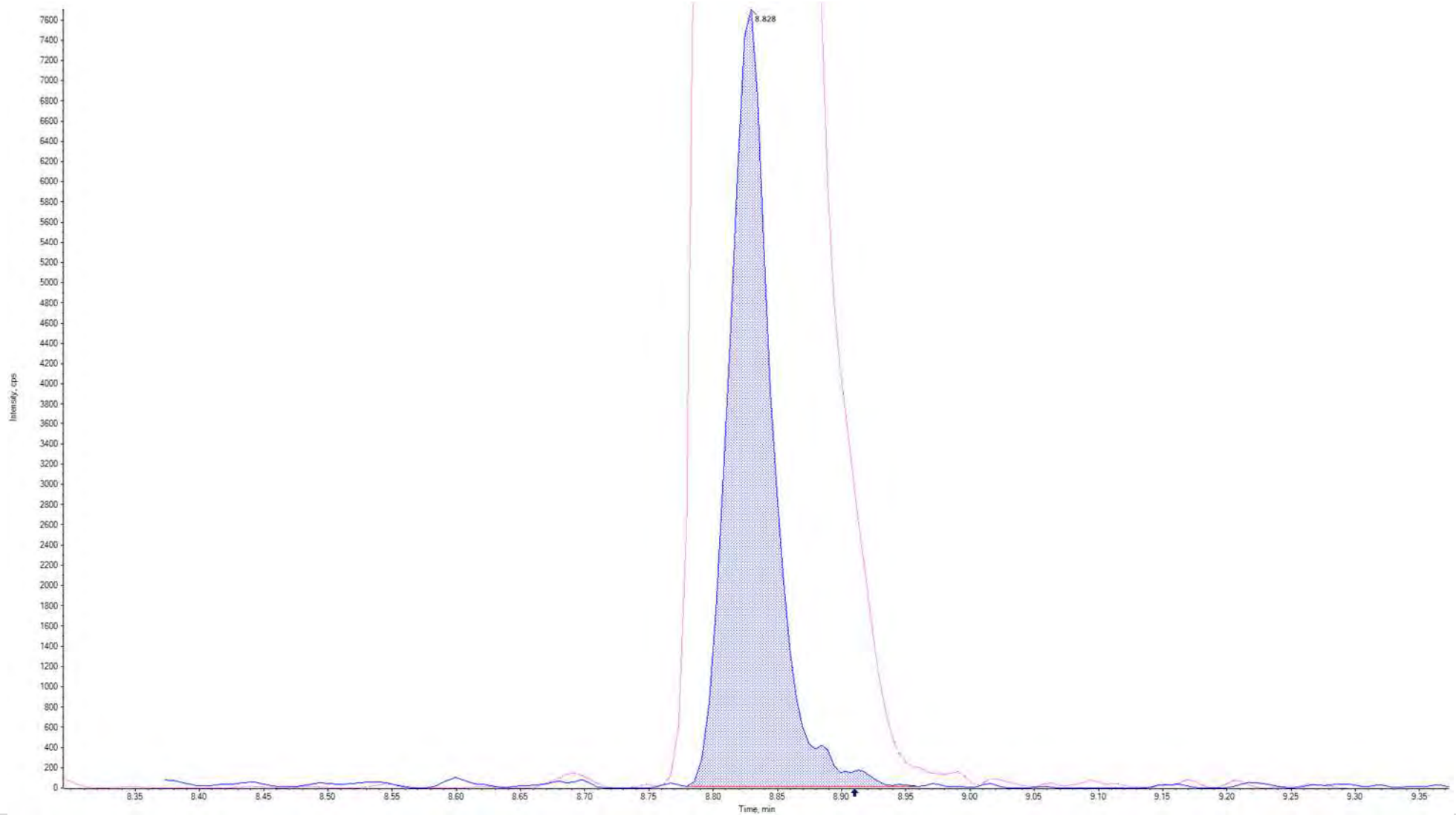
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoA
Sample: WG1973506-2,1633LOW S/N:1389.4 Points Across peak:39



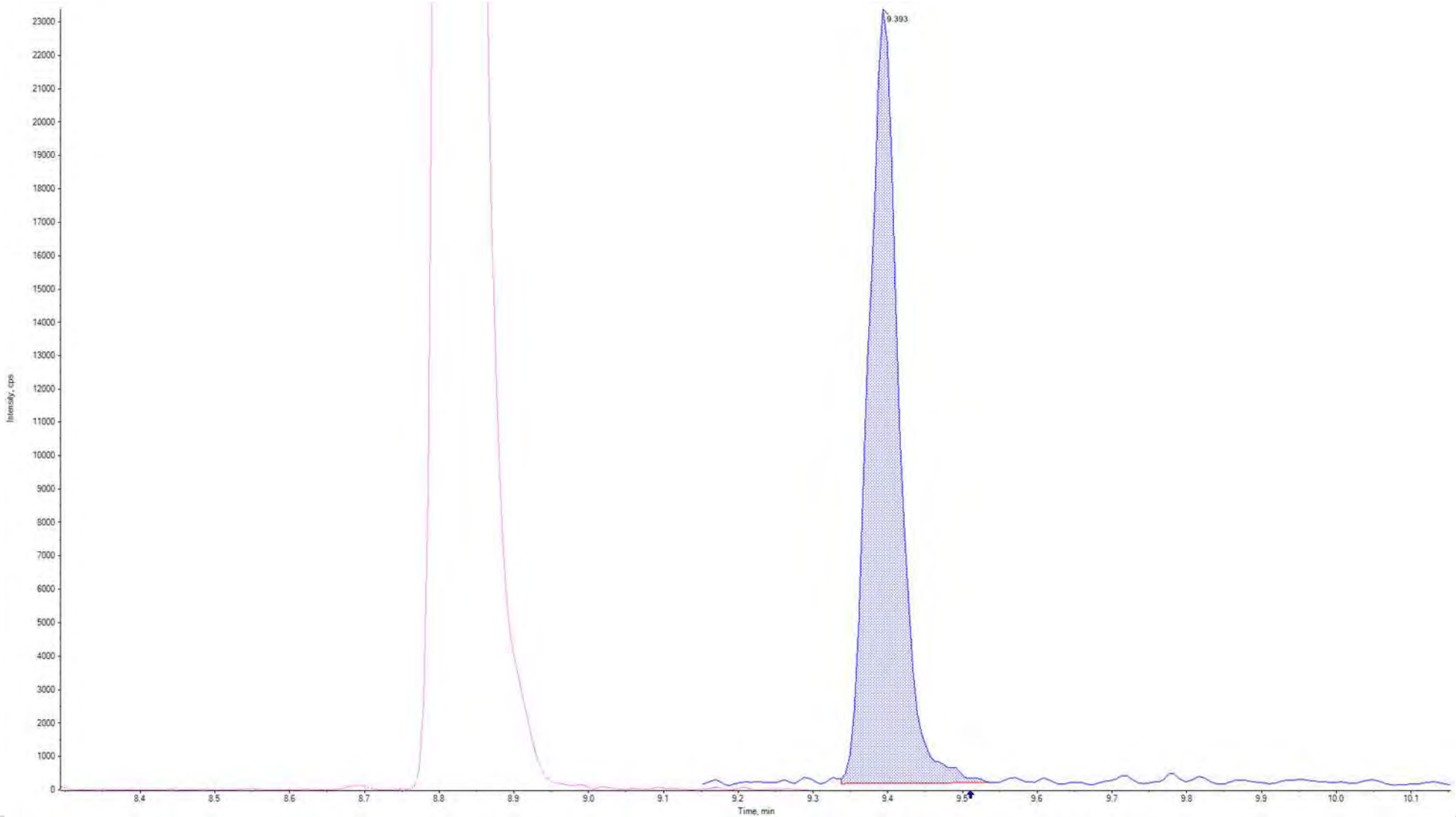
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoA_2
Sample: WG1973506-2,1633LOW S/N:578.8 Points Across peak:36



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFTrDA
Sample: WG1973506-2,1633LOW S/N:548.7 Points Across peak:37



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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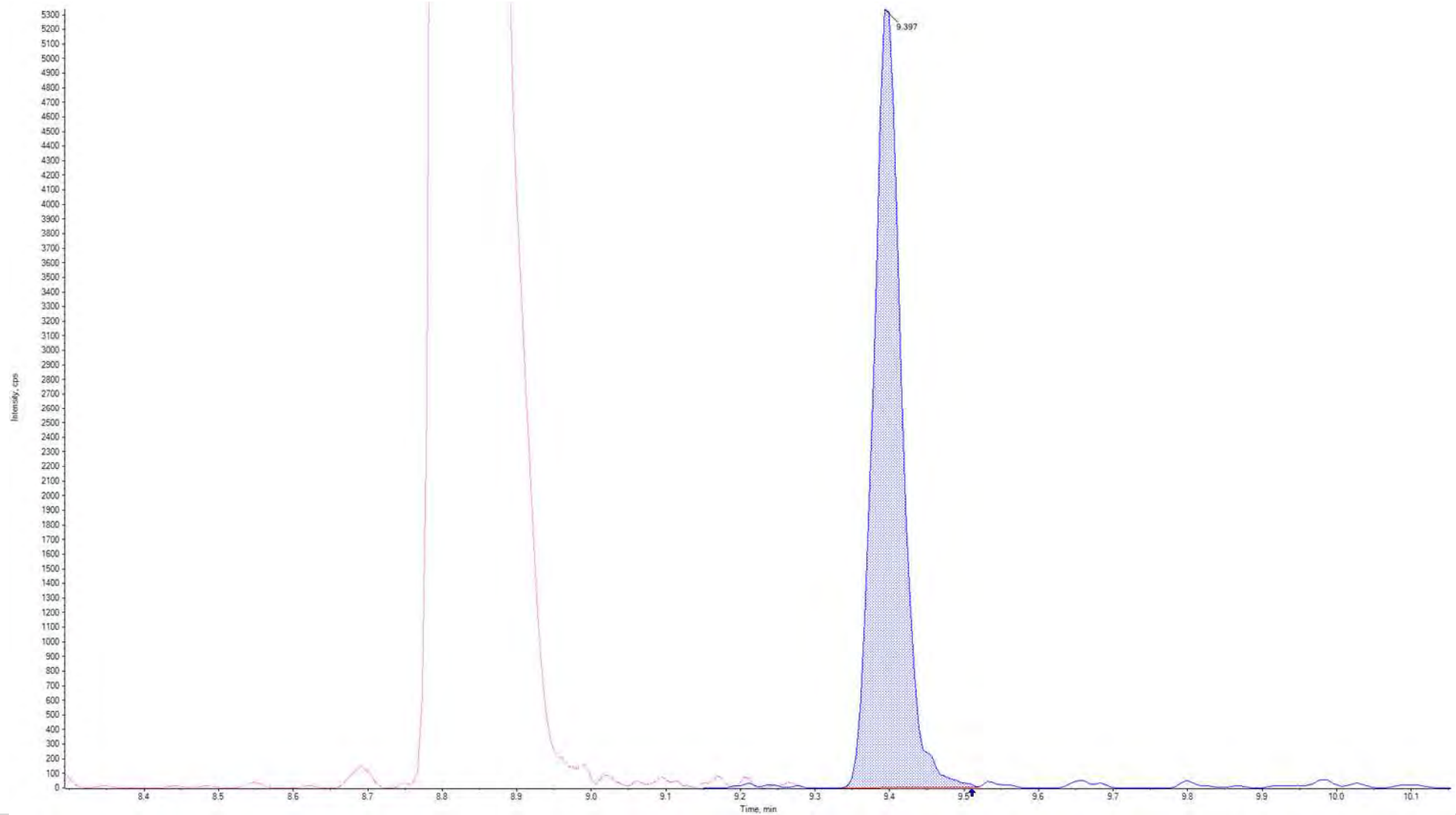
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFTrDA_2
Sample: WG1973506-2,1633LOW S/N:639.4 Points Across peak:34



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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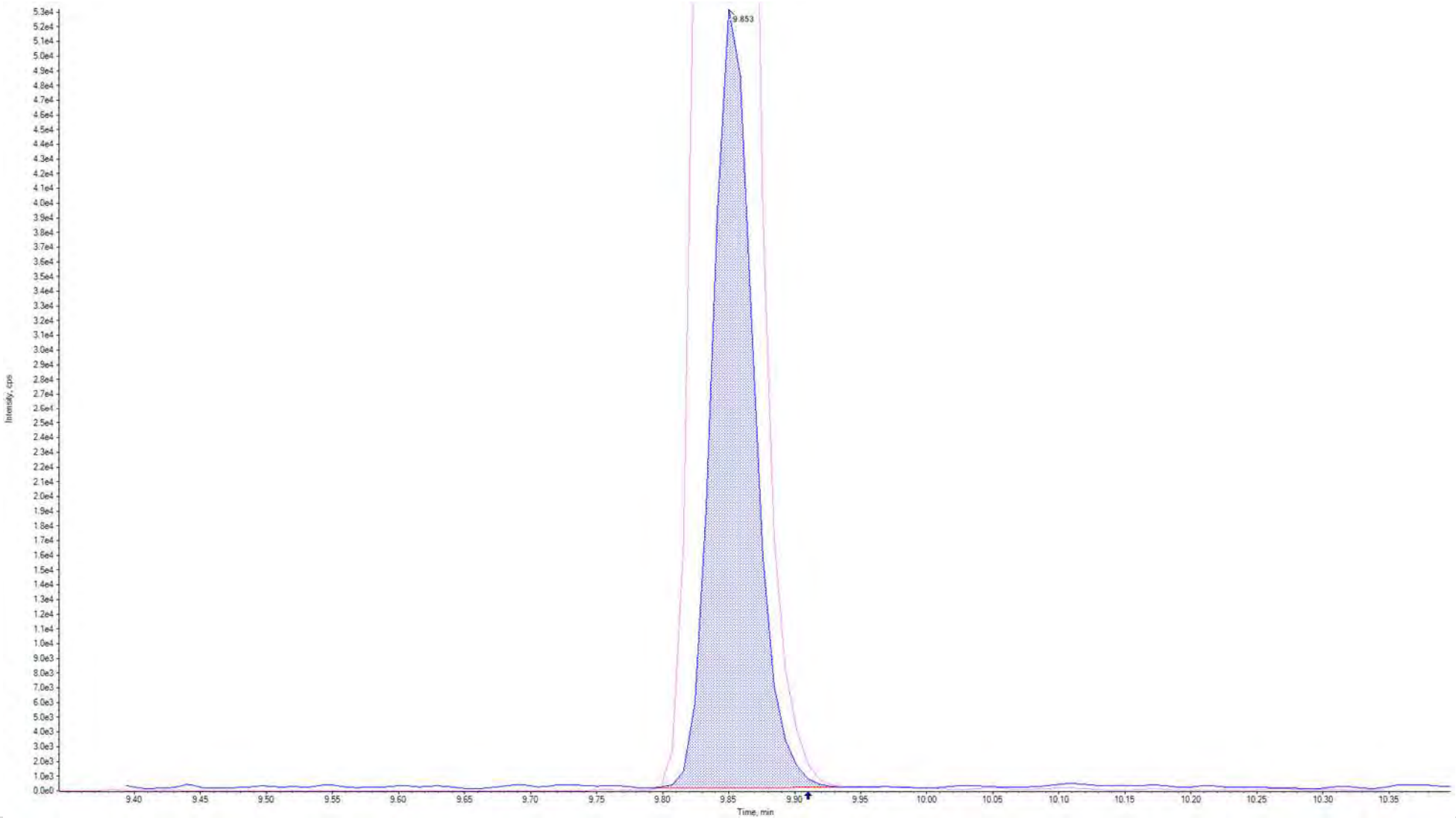
PFTeDA
Sample: WG1973506-2,1633LOW S/N:616.0 Points Across peak:18



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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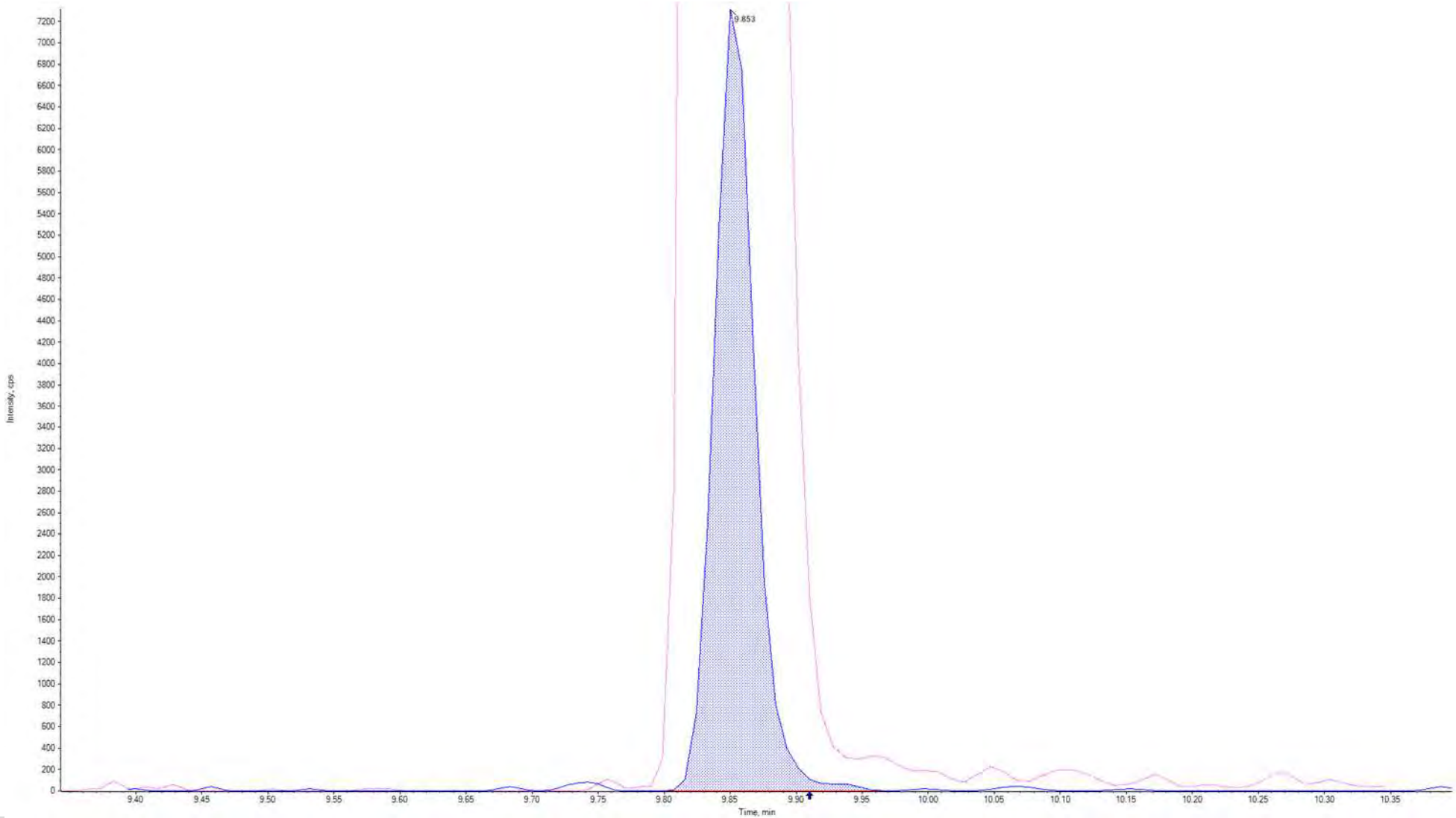
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFTeDA_2
Sample: WG1973506-2,1633LOW S/N:1313.6 Points Across peak:21



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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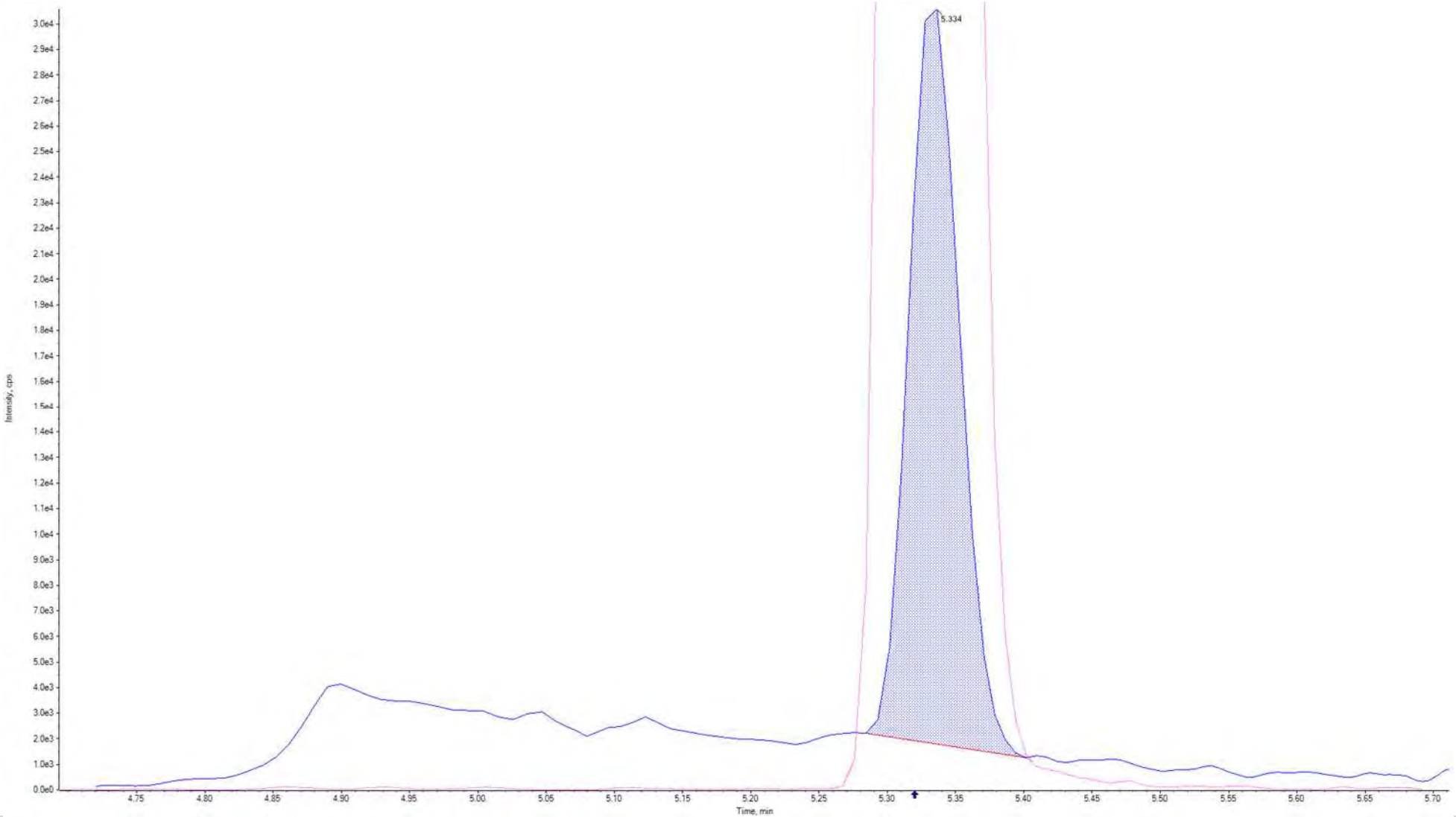
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFBS
Sample: WG1973506-2,1633LOW S/N:66.6 Points Across peak:15



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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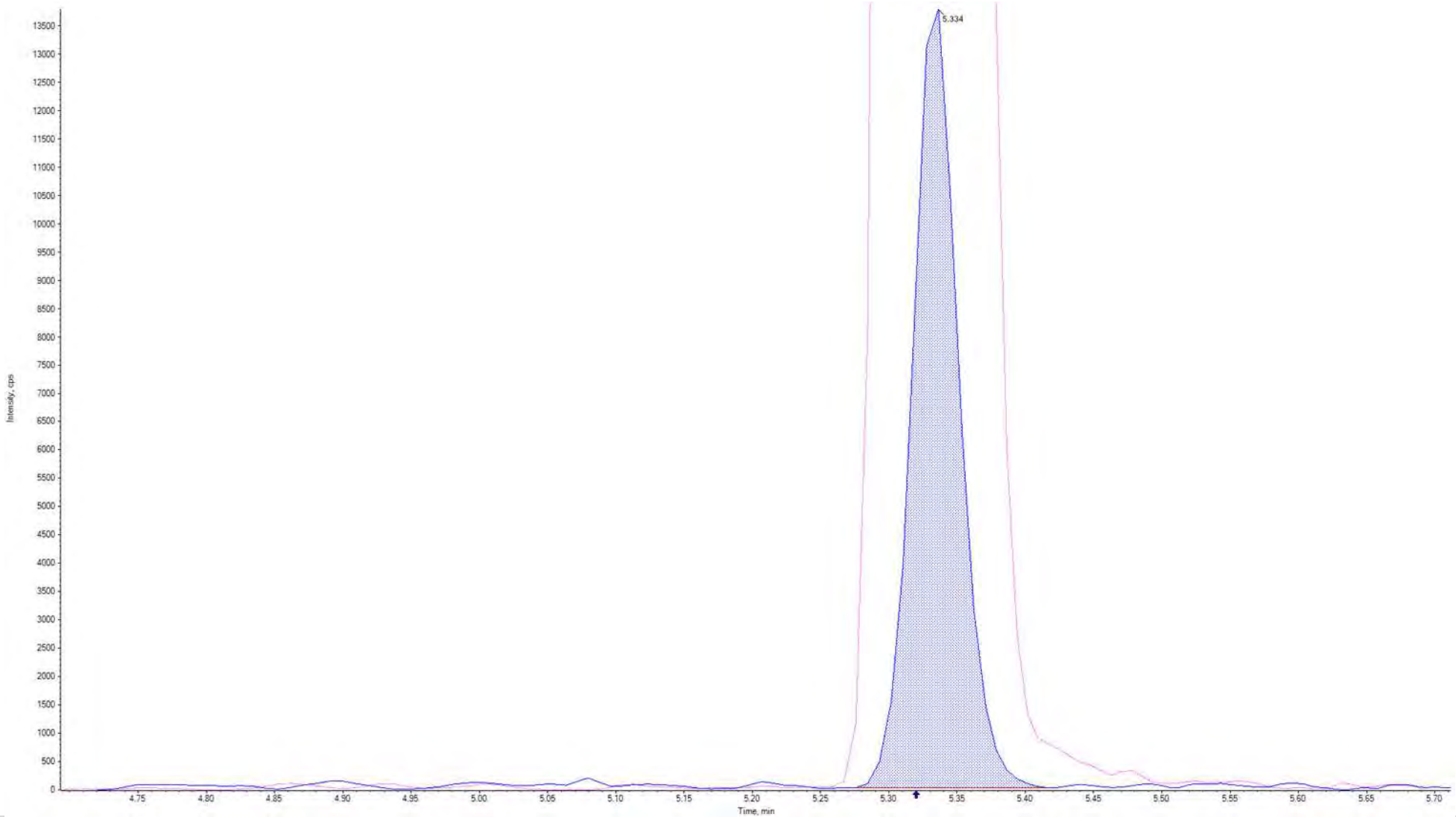
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFBS_2
Sample: WG1973506-2,1633LOW S/N:1652.5 Points Across peak:18



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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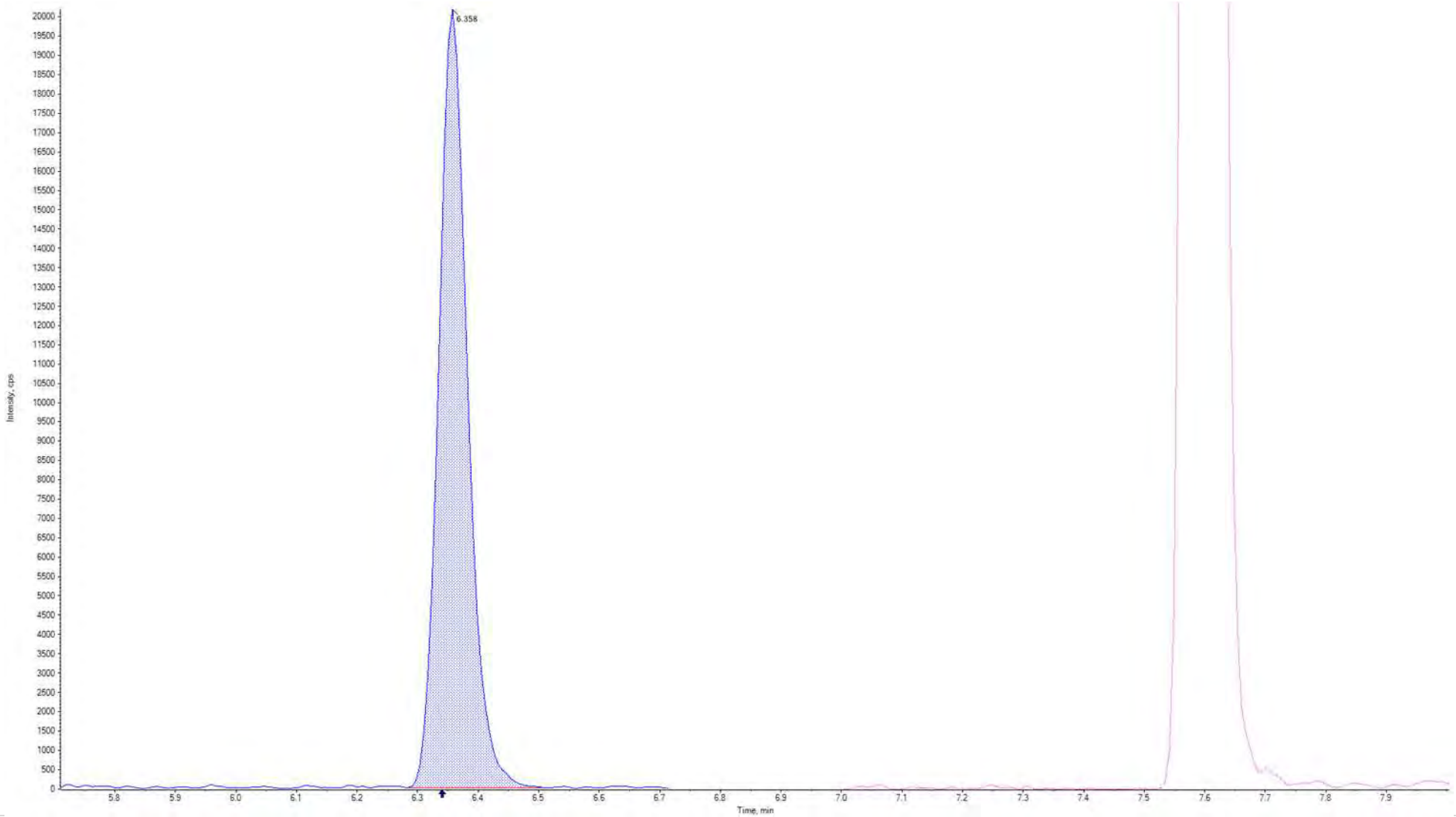
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFPeS
Sample: WG1973506-2,1633LOW S/N:1809.2 Points Across peak:34



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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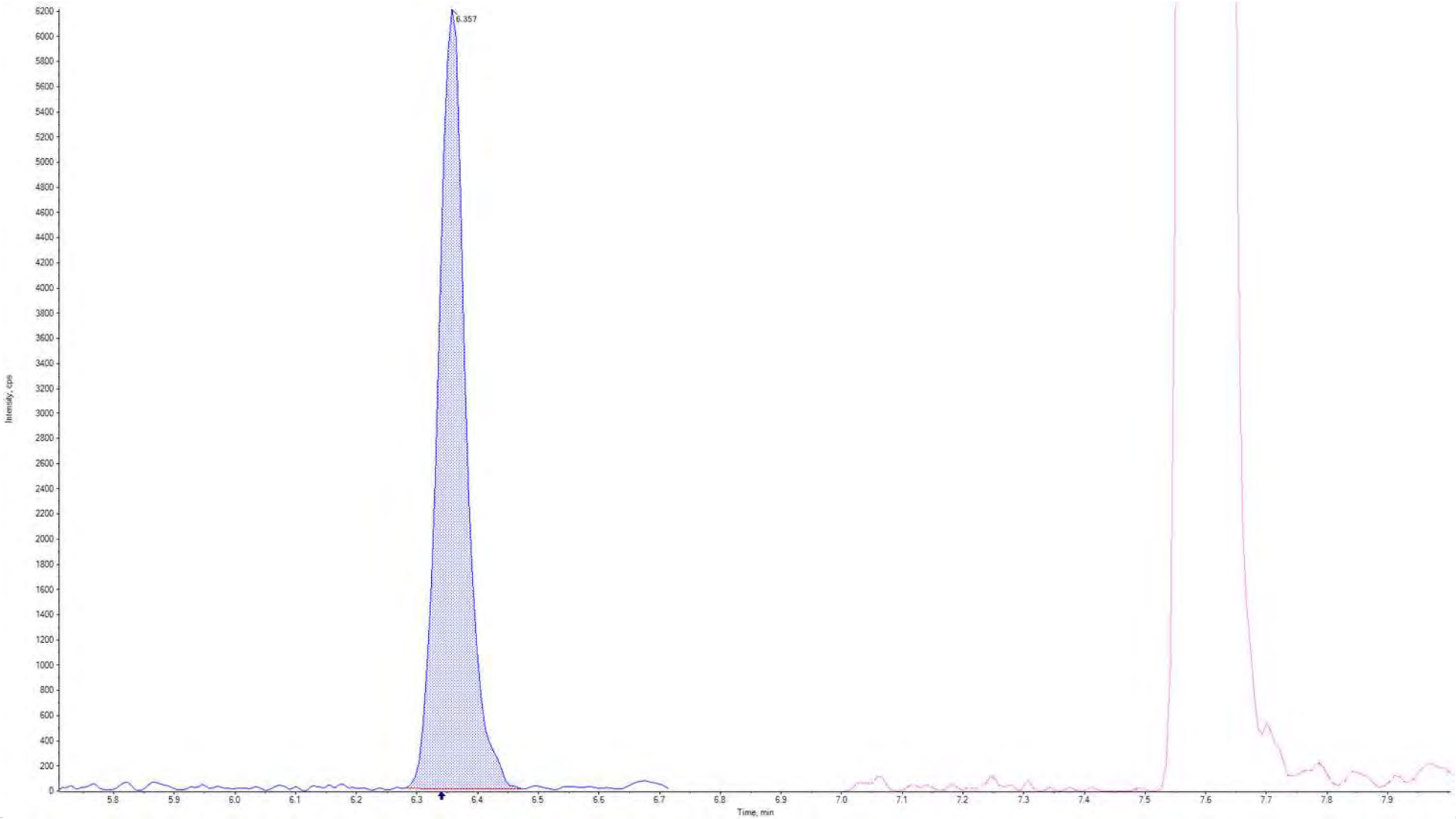
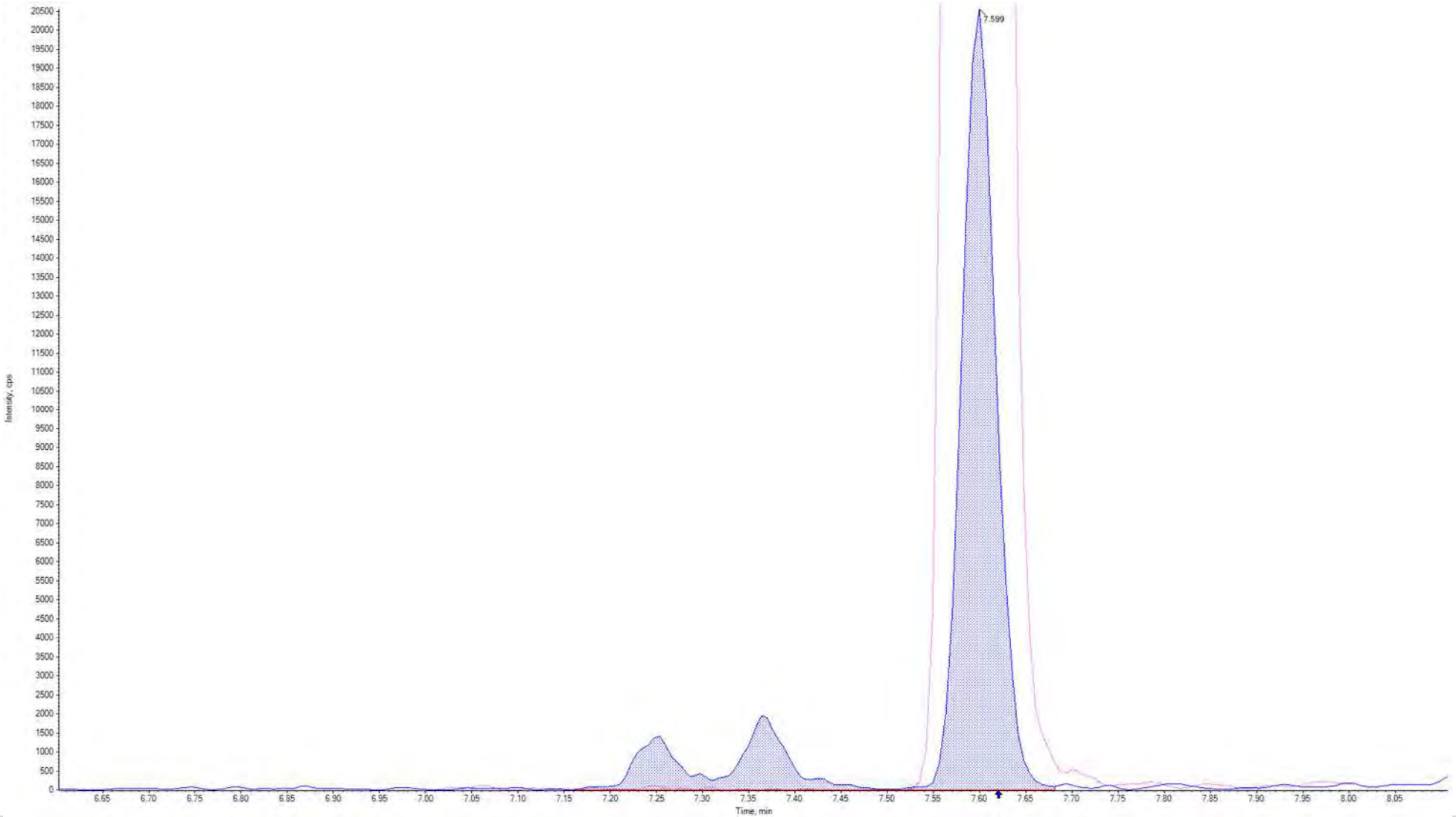
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFPeS_2
Sample: WG1973506-2,1633LOW S/N:1595.8 Points Across peak:30



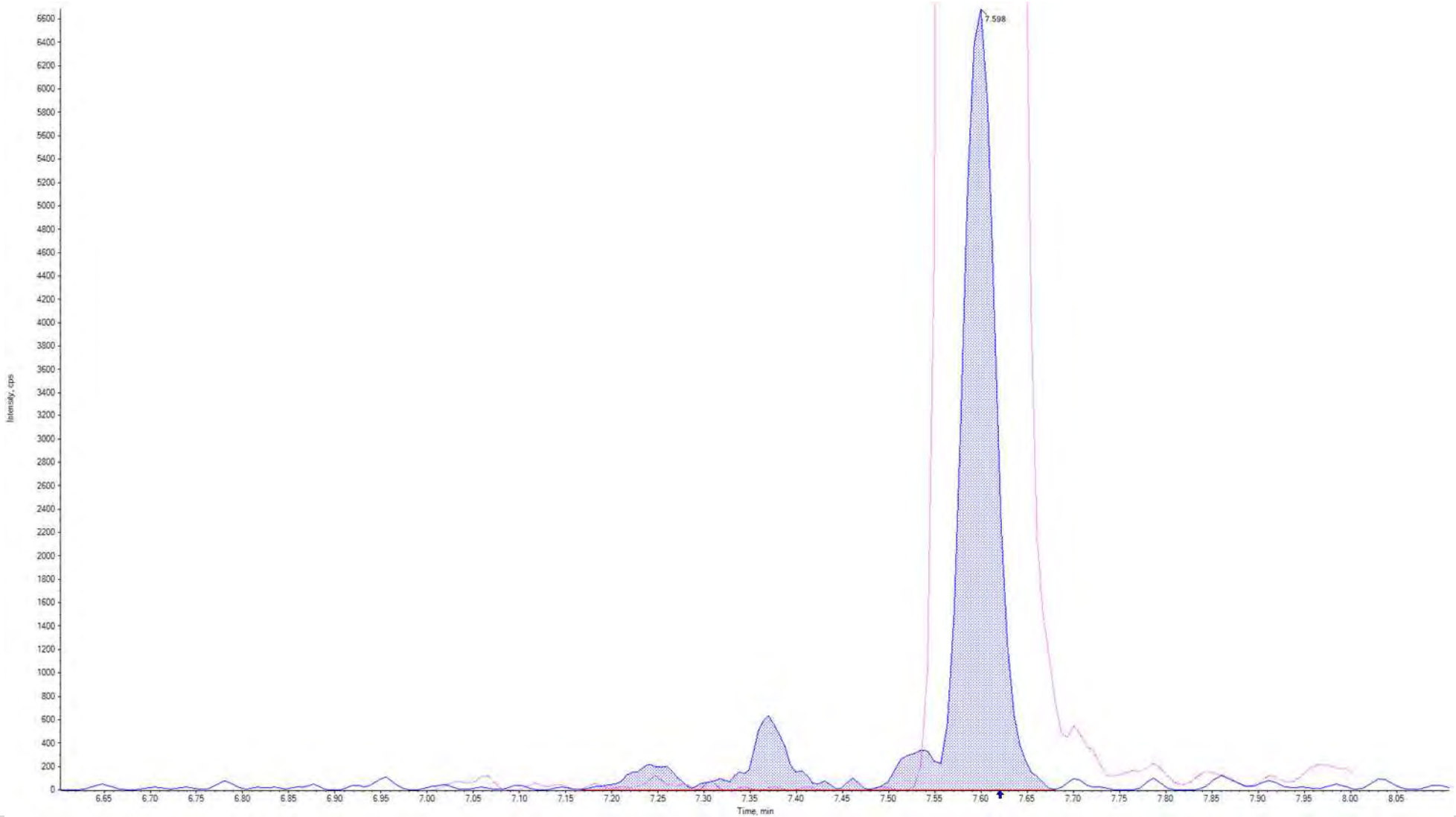
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHxS
Sample: WG1973506-2,1633LOW S/N:7997.7 Points Across peak:86



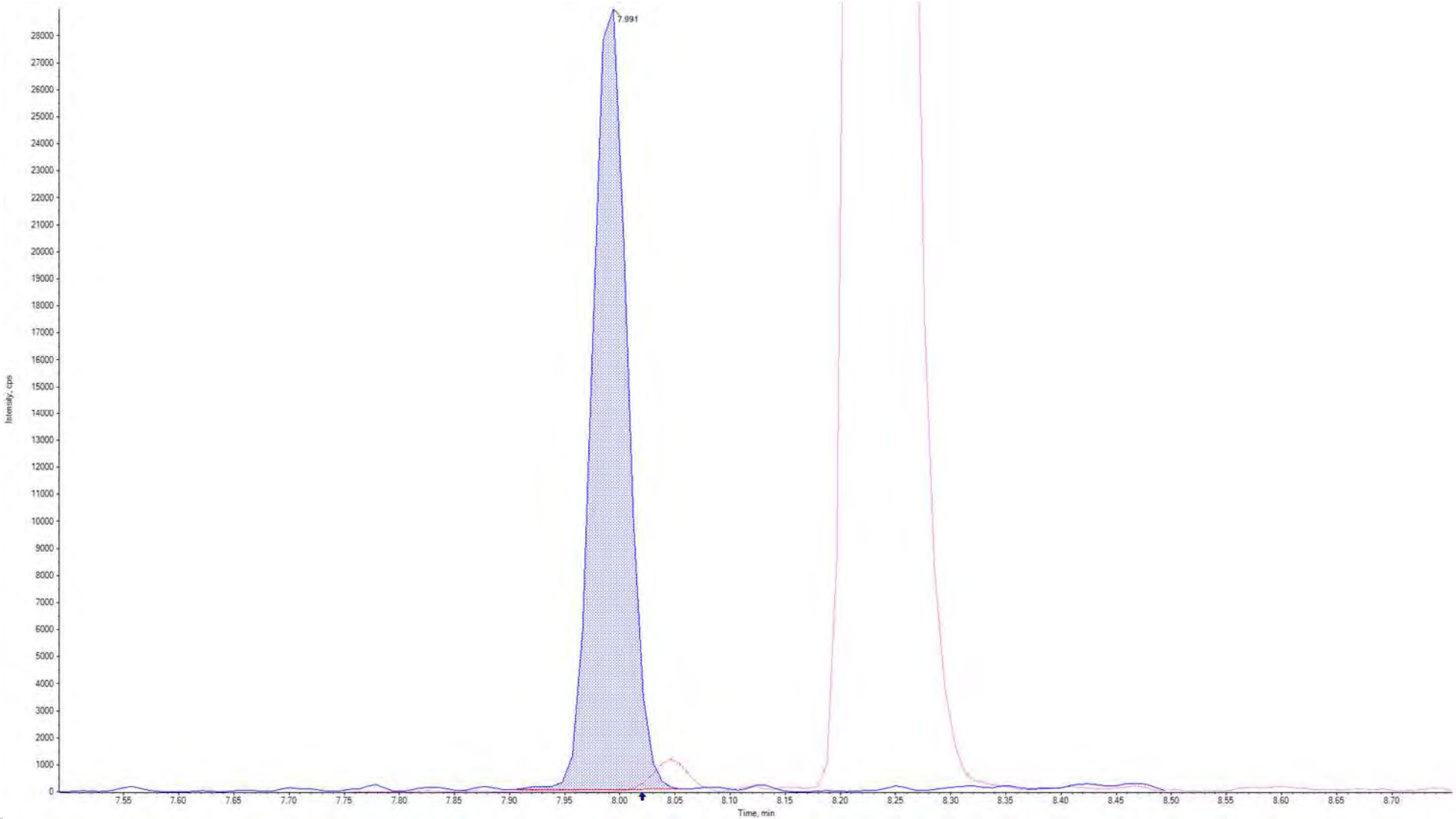
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHxS_2
Sample: WG1973506-2,1633LOW S/N:10878.8 Points Across peak:83



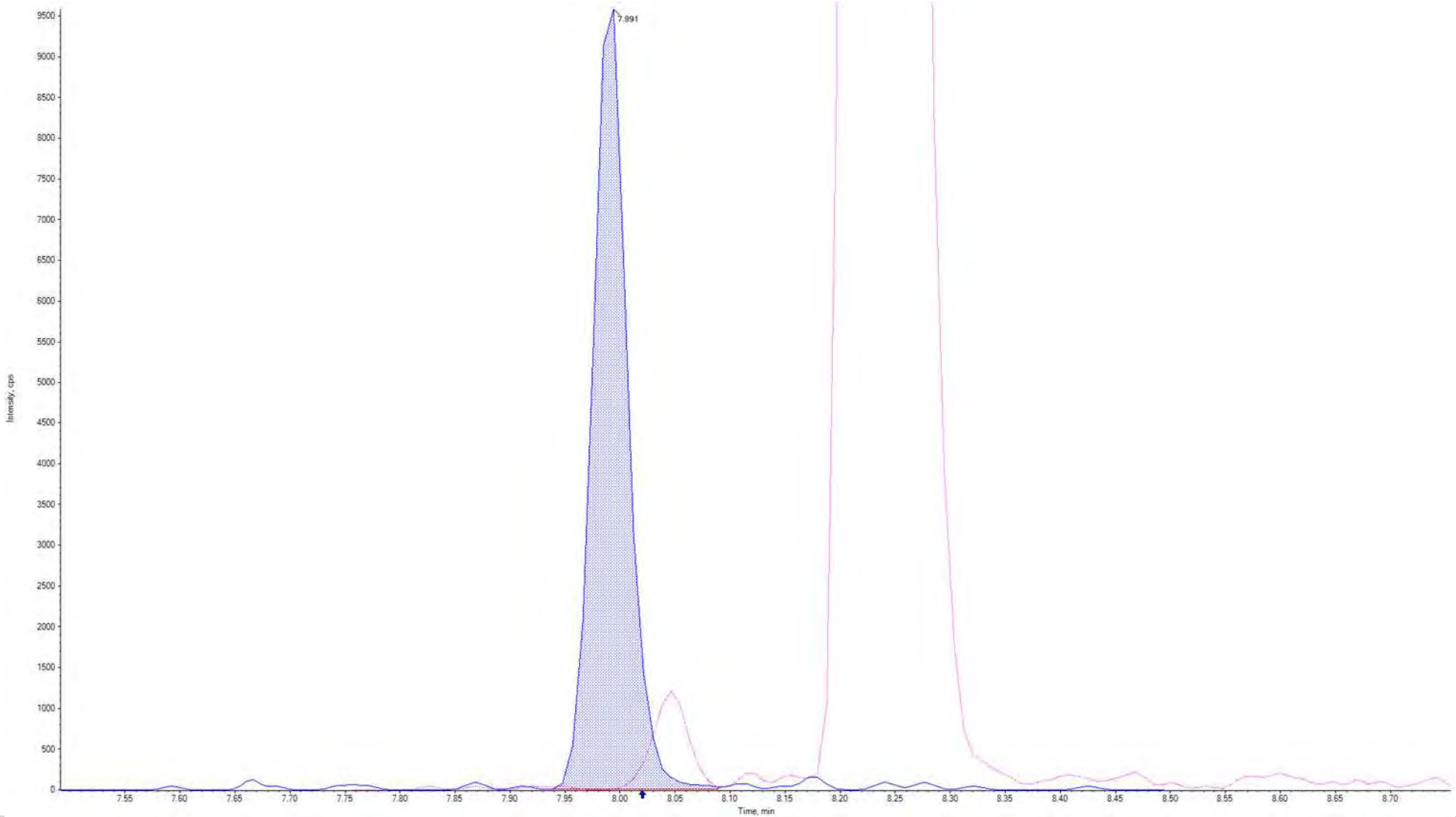
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHpS
Sample: WG1973506-2,1633LOW S/N:6030.5 Points Across peak:19



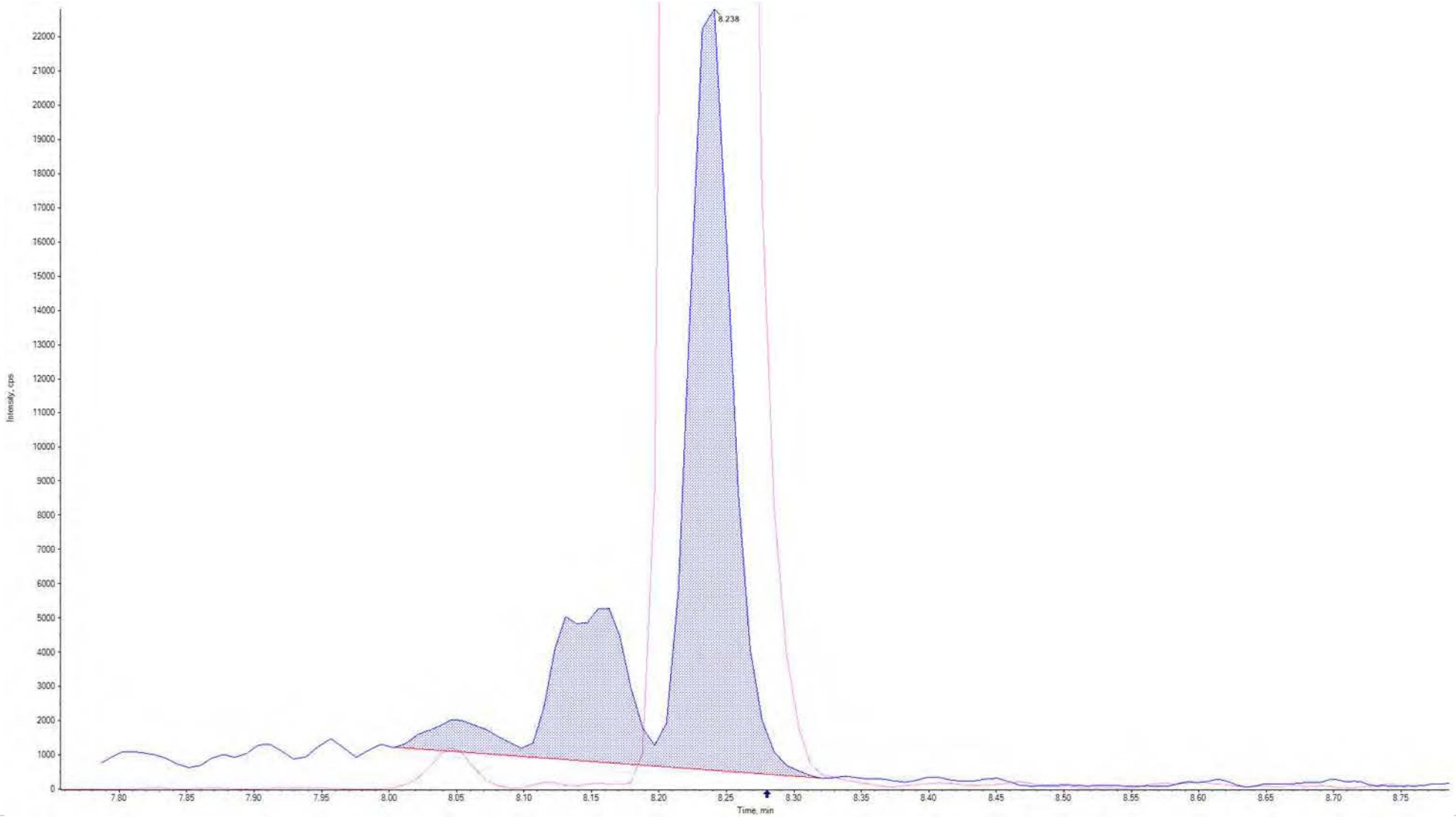
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHpS_2
Sample: WG1973506-2,1633LOW S/N:431.7 Points Across peak:18



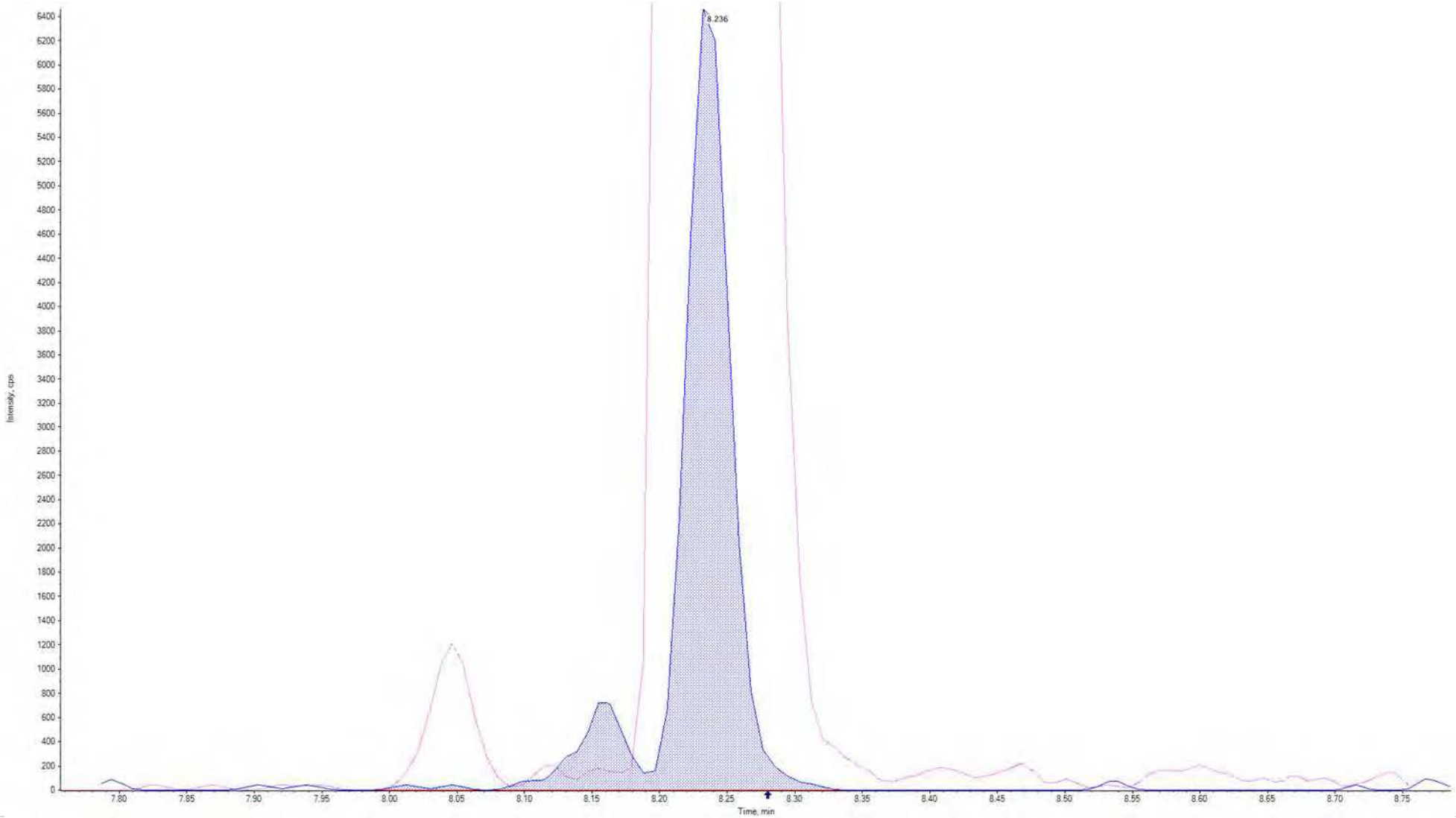
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOS
Sample: WG1973506-2,1633LOW S/N:446.7 Points Across peak:38



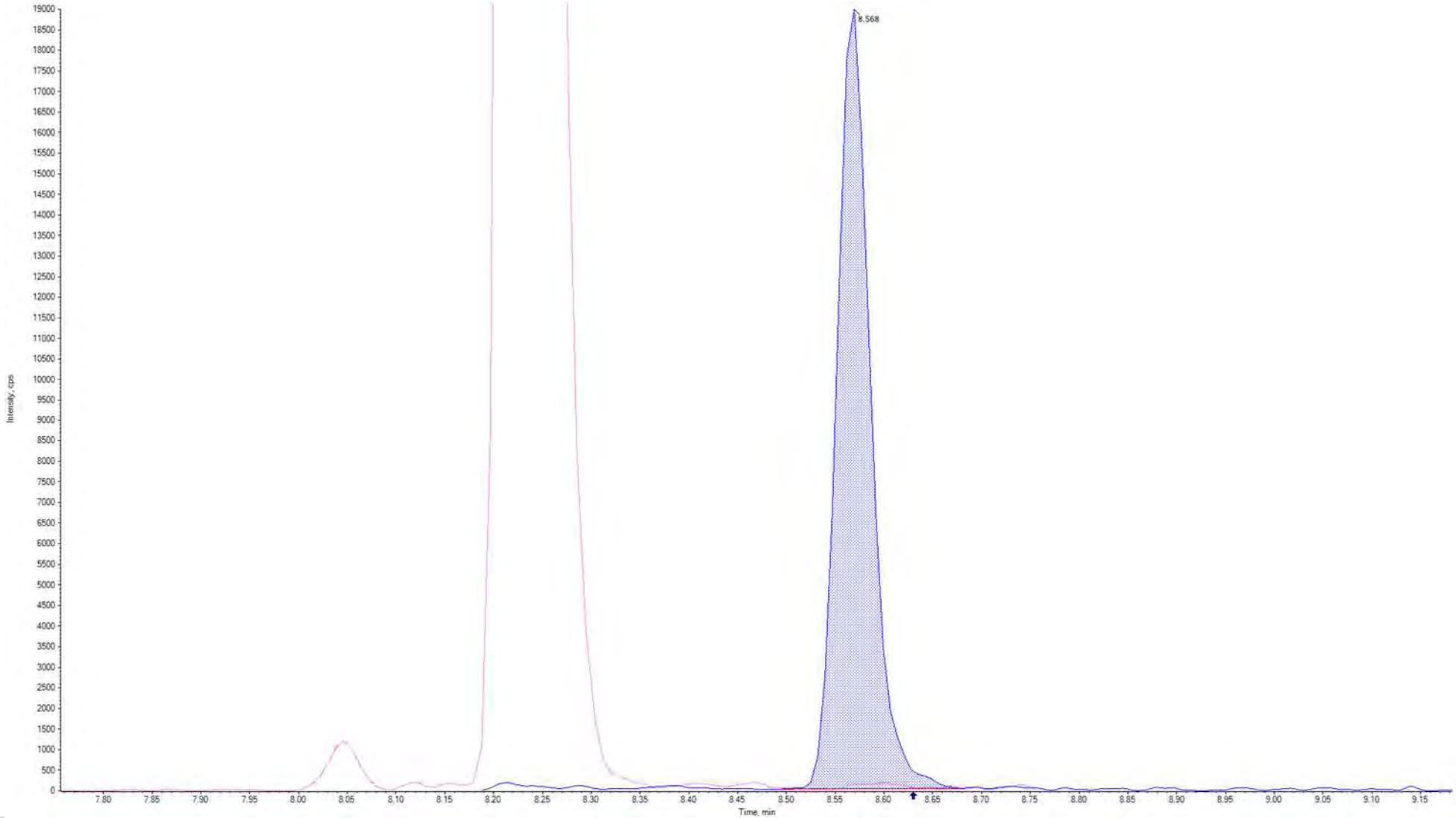
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOS_2
Sample: WG1973506-2,1633LOW S/N:737.5 Points Across peak:42



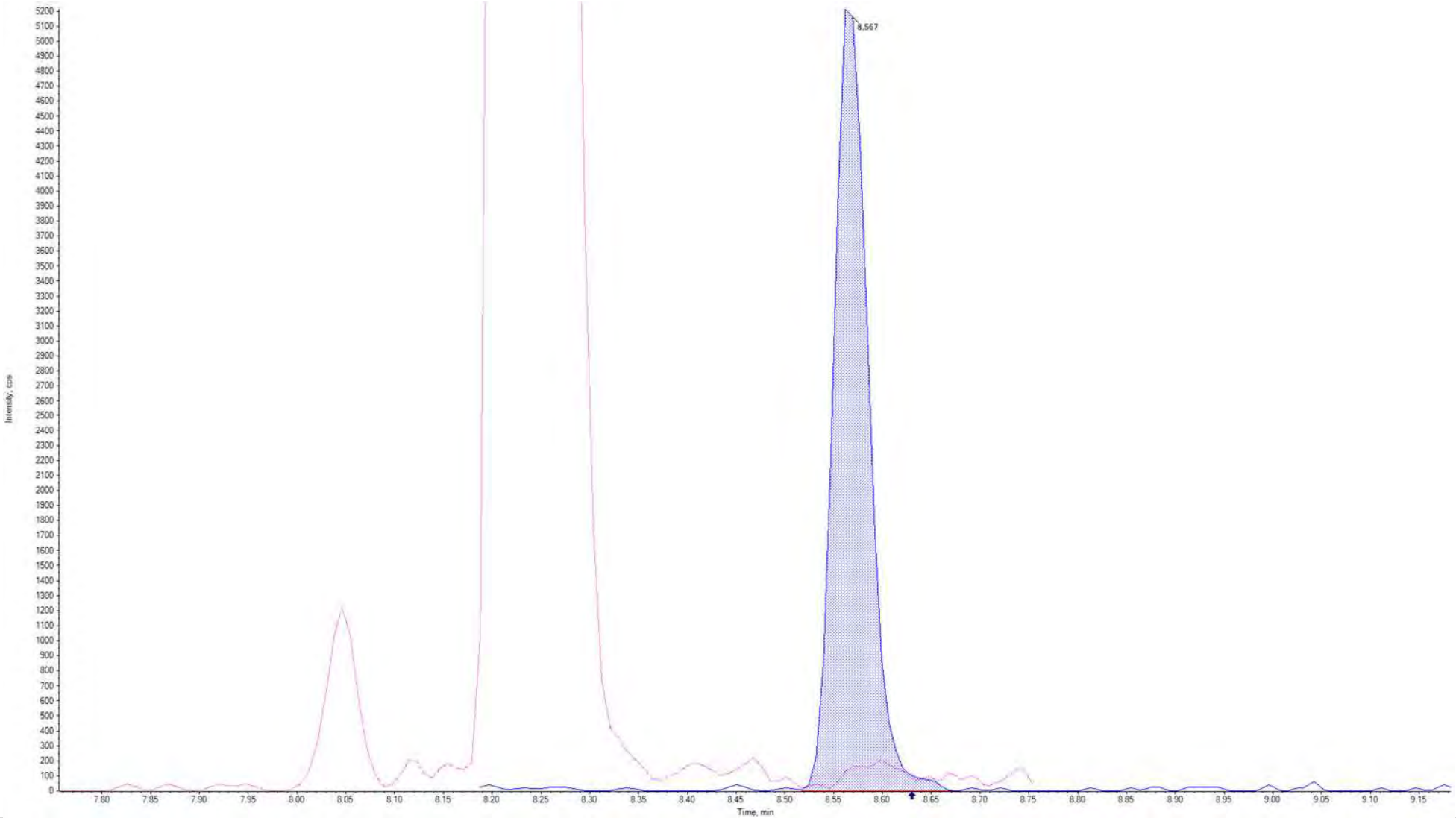
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFNS
Sample: WG1973506-2,1633LOW S/N:2792.7 Points Across peak:27



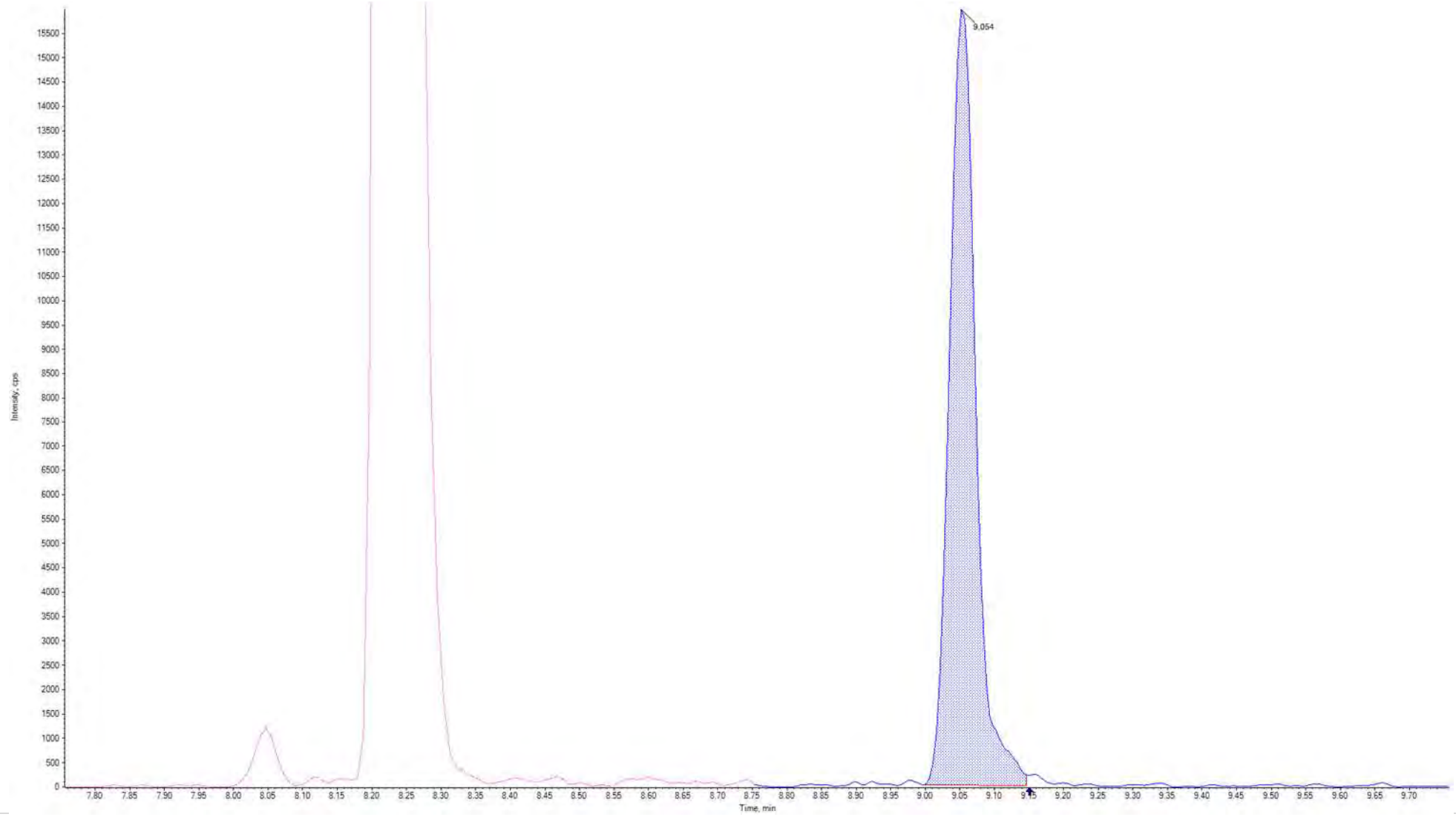
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFNS_2
Sample: WG1973506-2,1633LOW S/N:644.2 Points Across peak:23



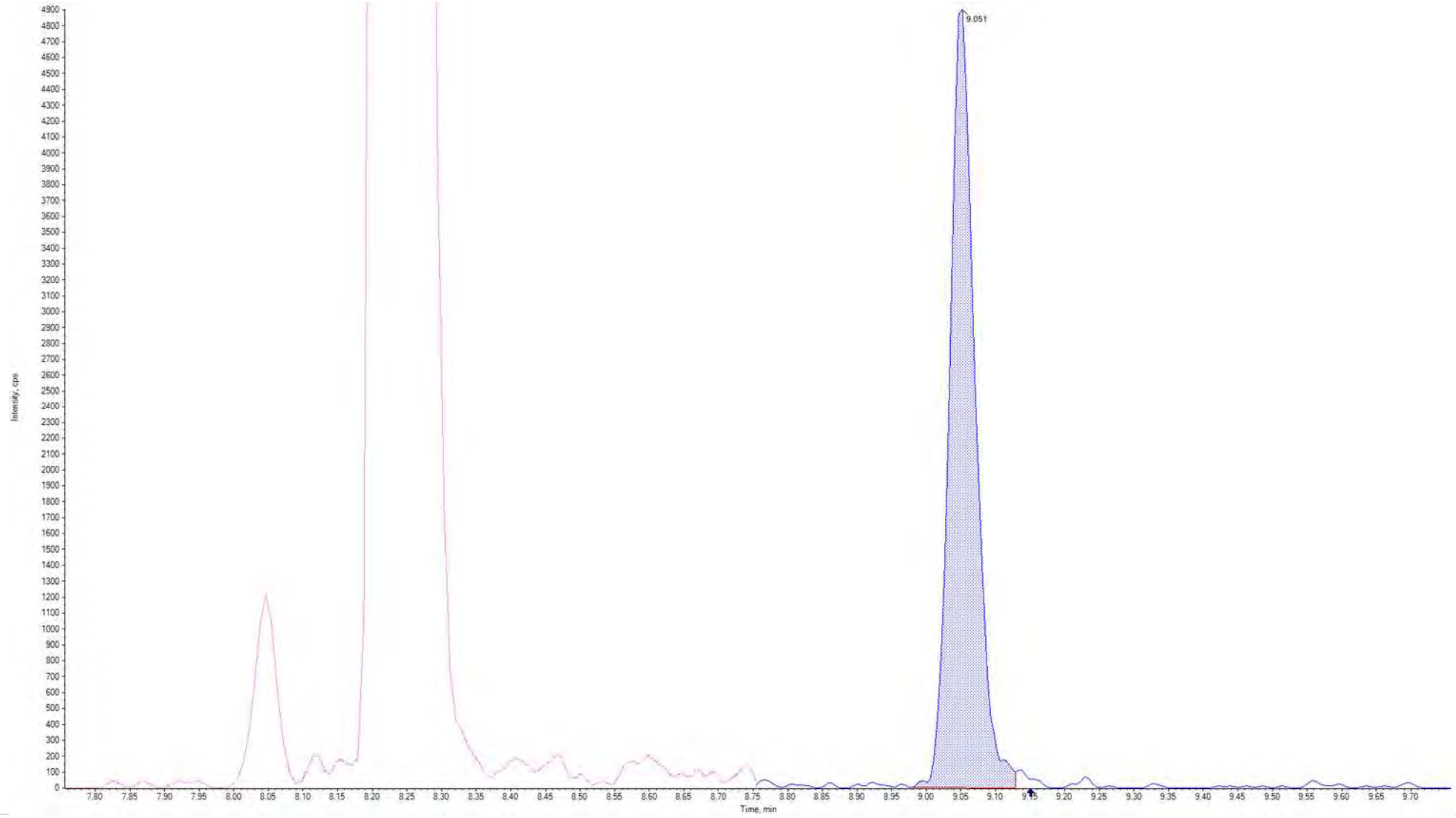
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDS
Sample: WG1973506-2,1633LOW S/N:69207.6 Points Across peak:33



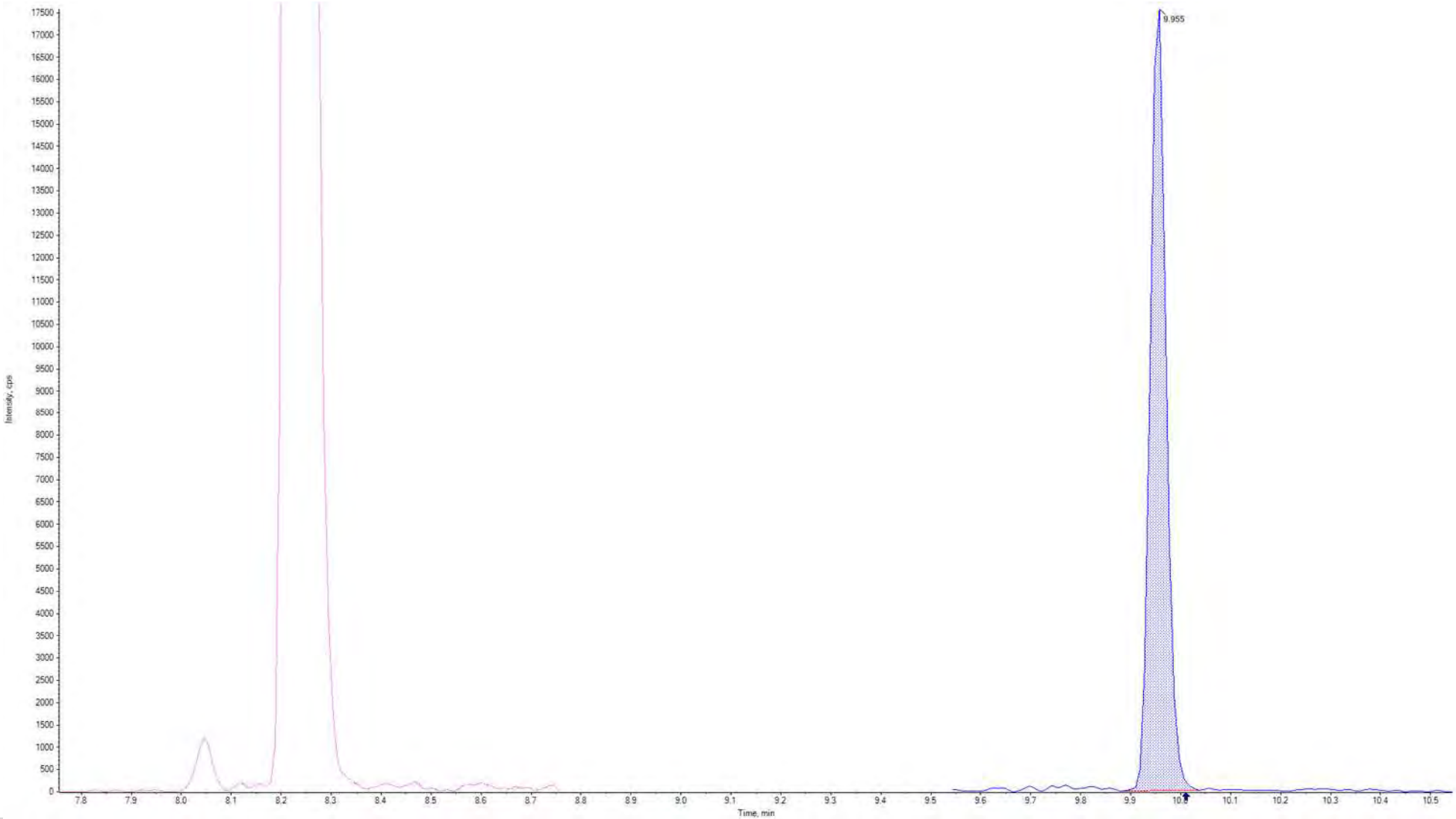
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDS_2
Sample: WG1973506-2,1633LOW S/N:689.7 Points Across peak:33



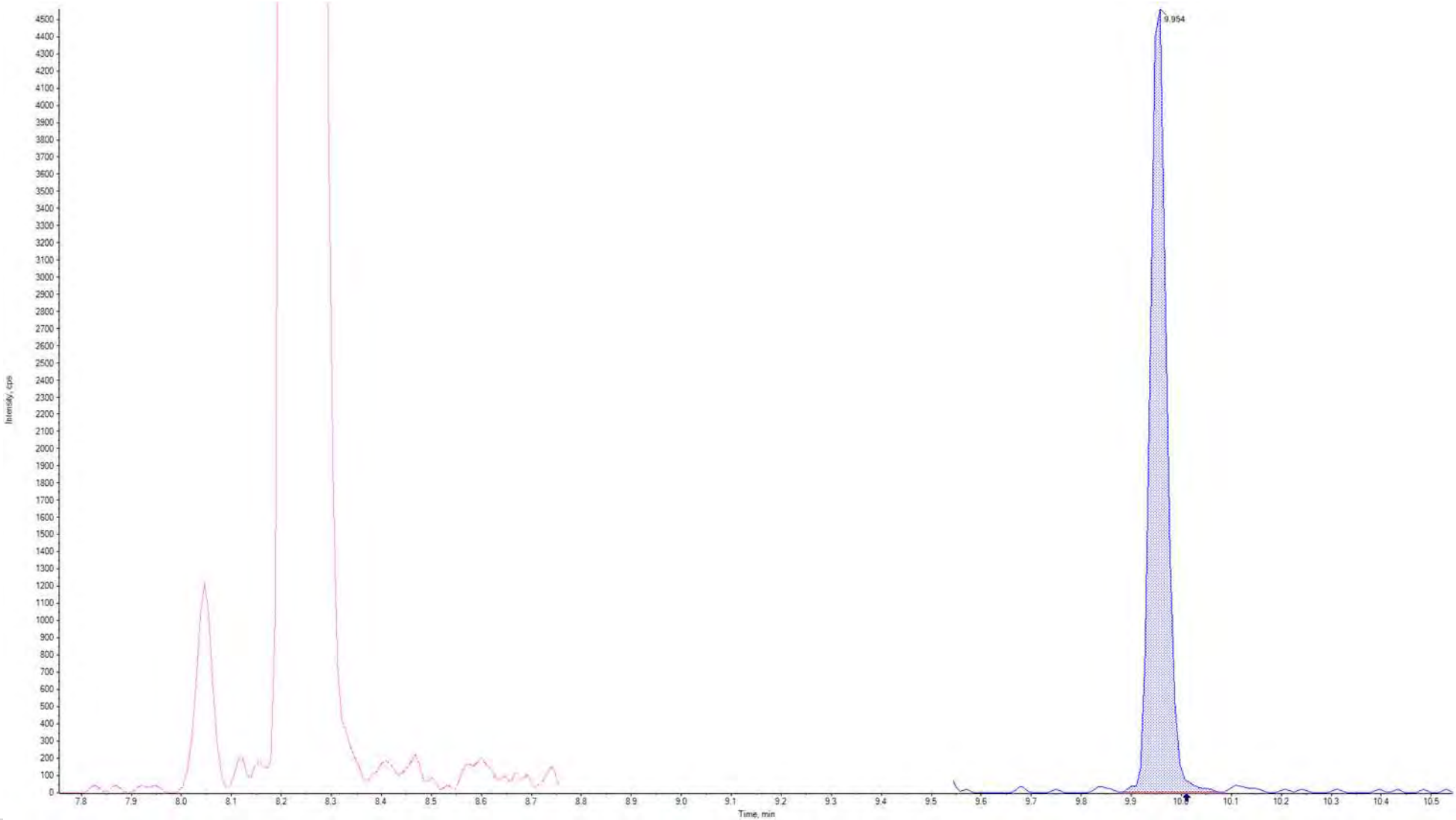
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoS
Sample: WG1973506-2,1633LOW S/N:8107.0 Points Across peak:17



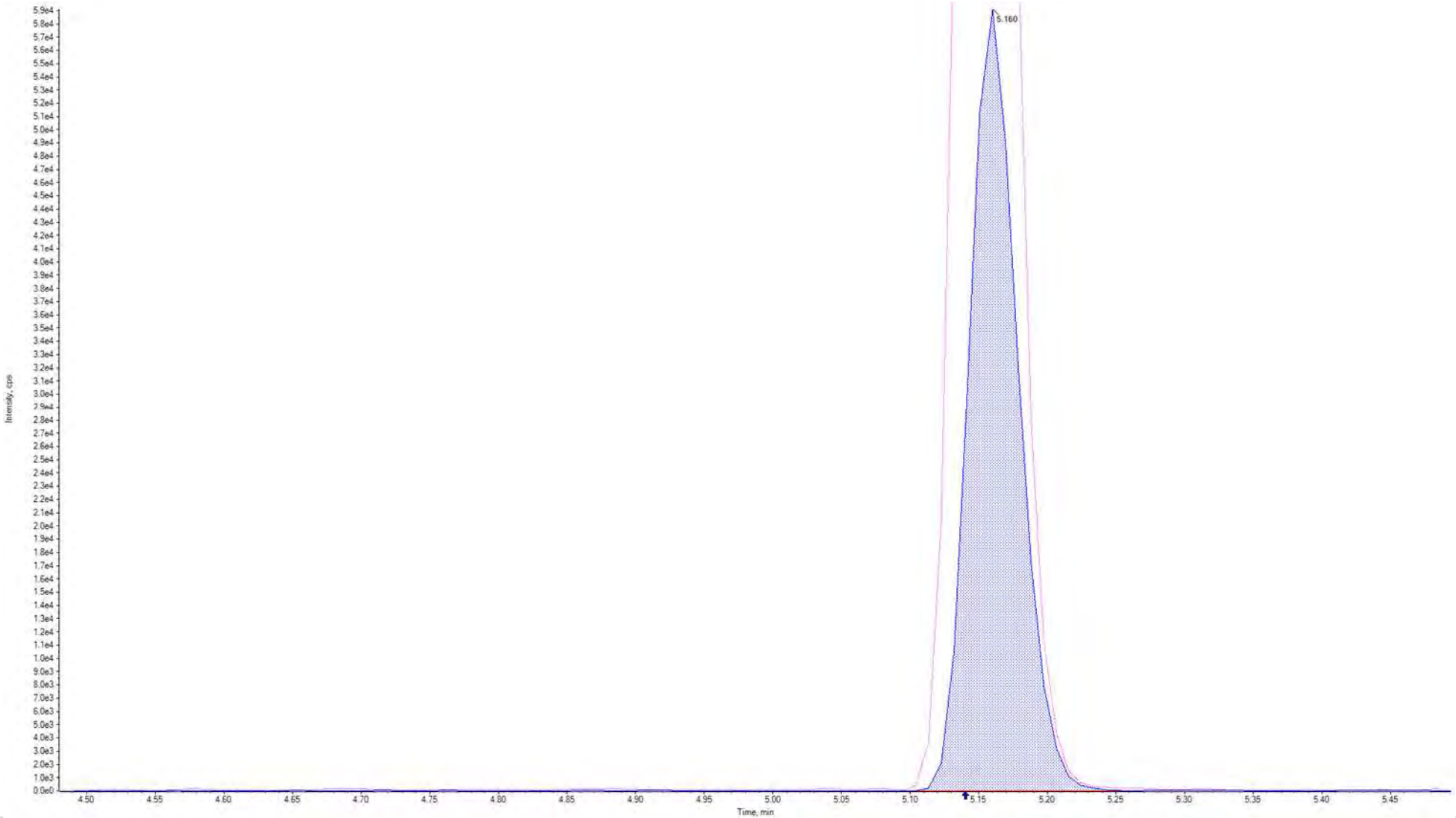
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoS_2
Sample: WG1973506-2,1633LOW S/N:454.0 Points Across peak:22



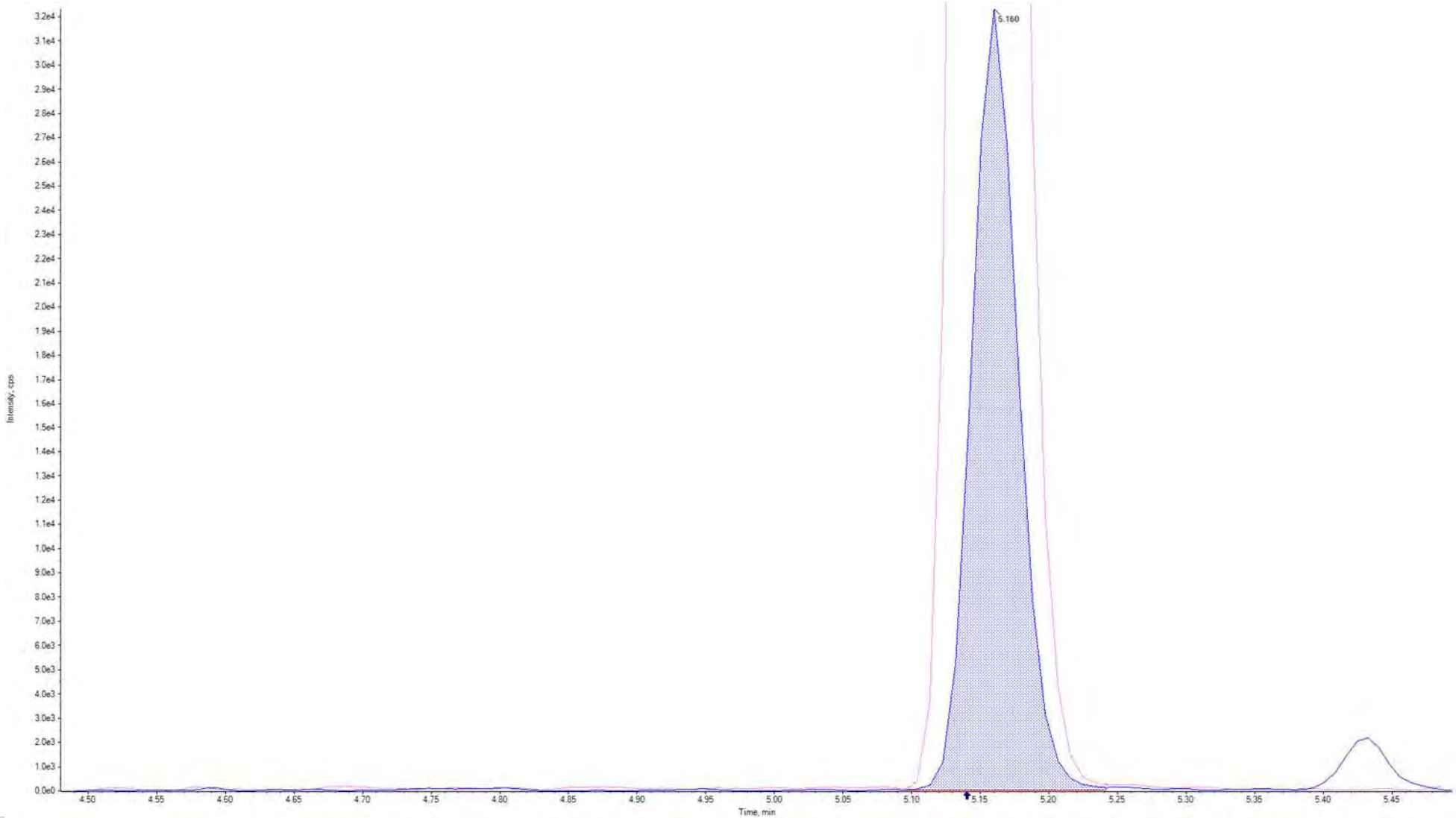
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

4:2FTS
Sample: WG1973506-2,1633LOW S/N:2031.8 Points Across peak:19



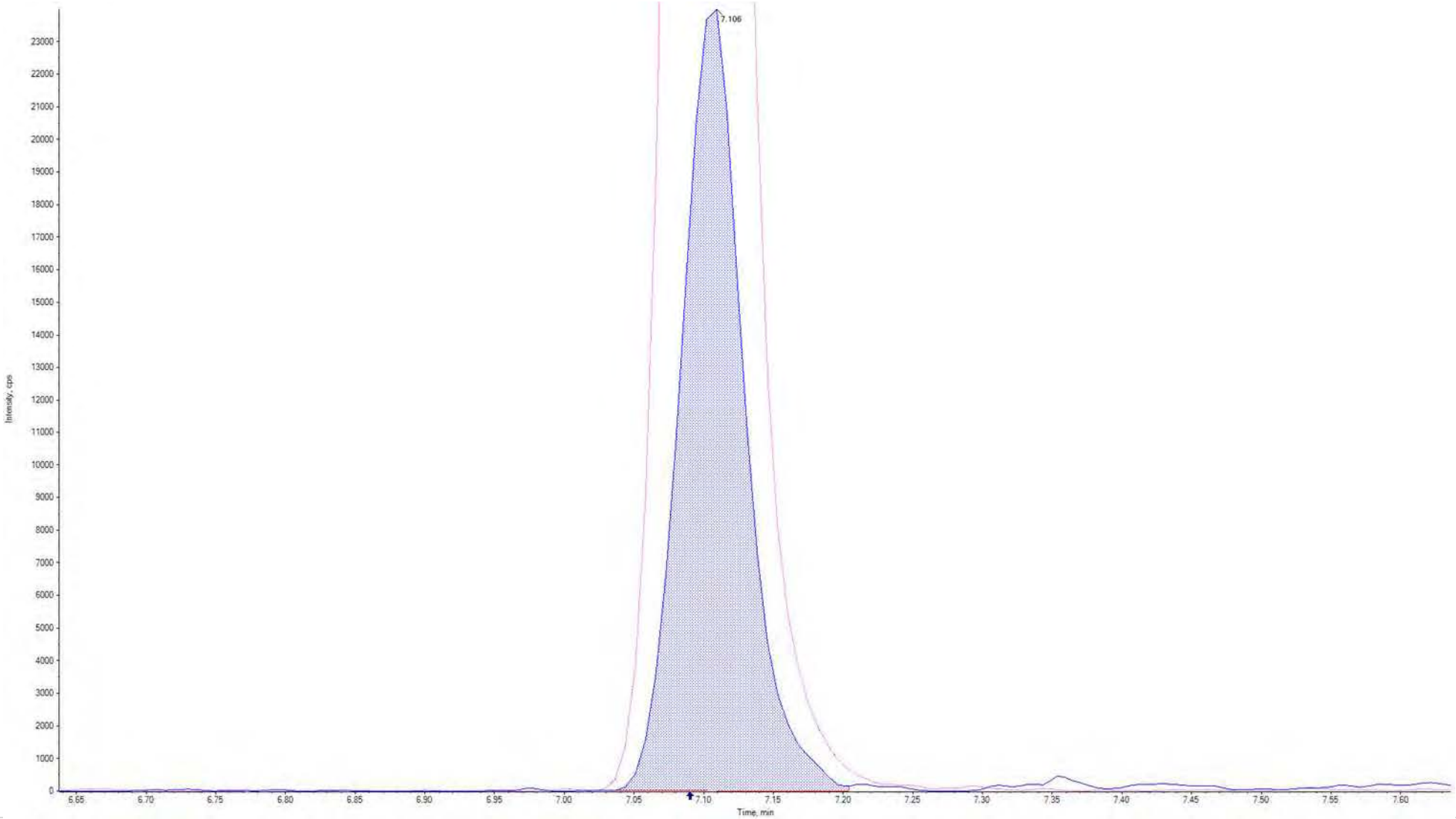
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

4:2FTS_2
Sample: WG1973506-2,1633LOW S/N:4441.3 Points Across peak:17



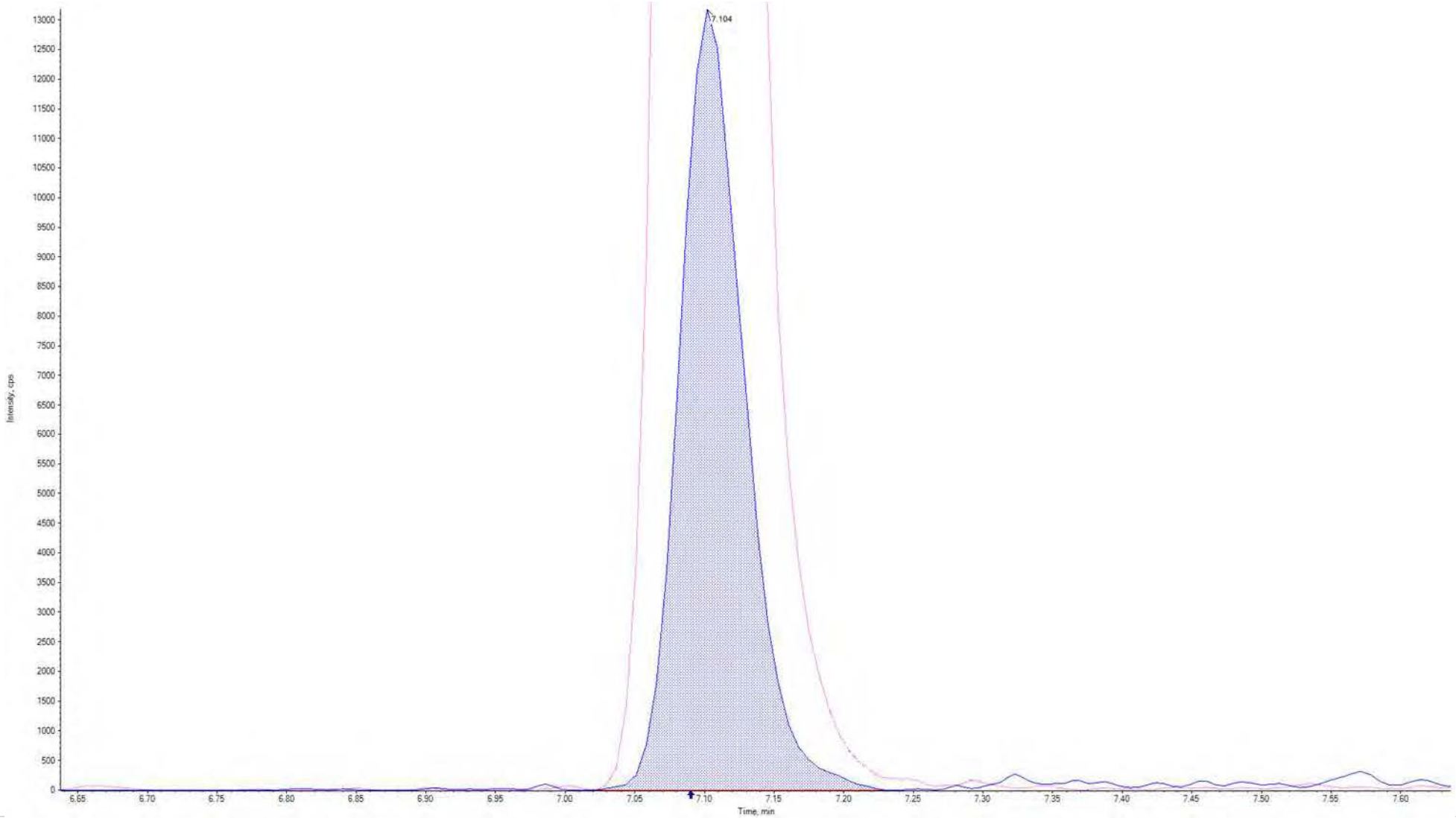
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

6:2FTS
Sample: WG1973506-2,1633LOW S/N:766.6 Points Across peak:25



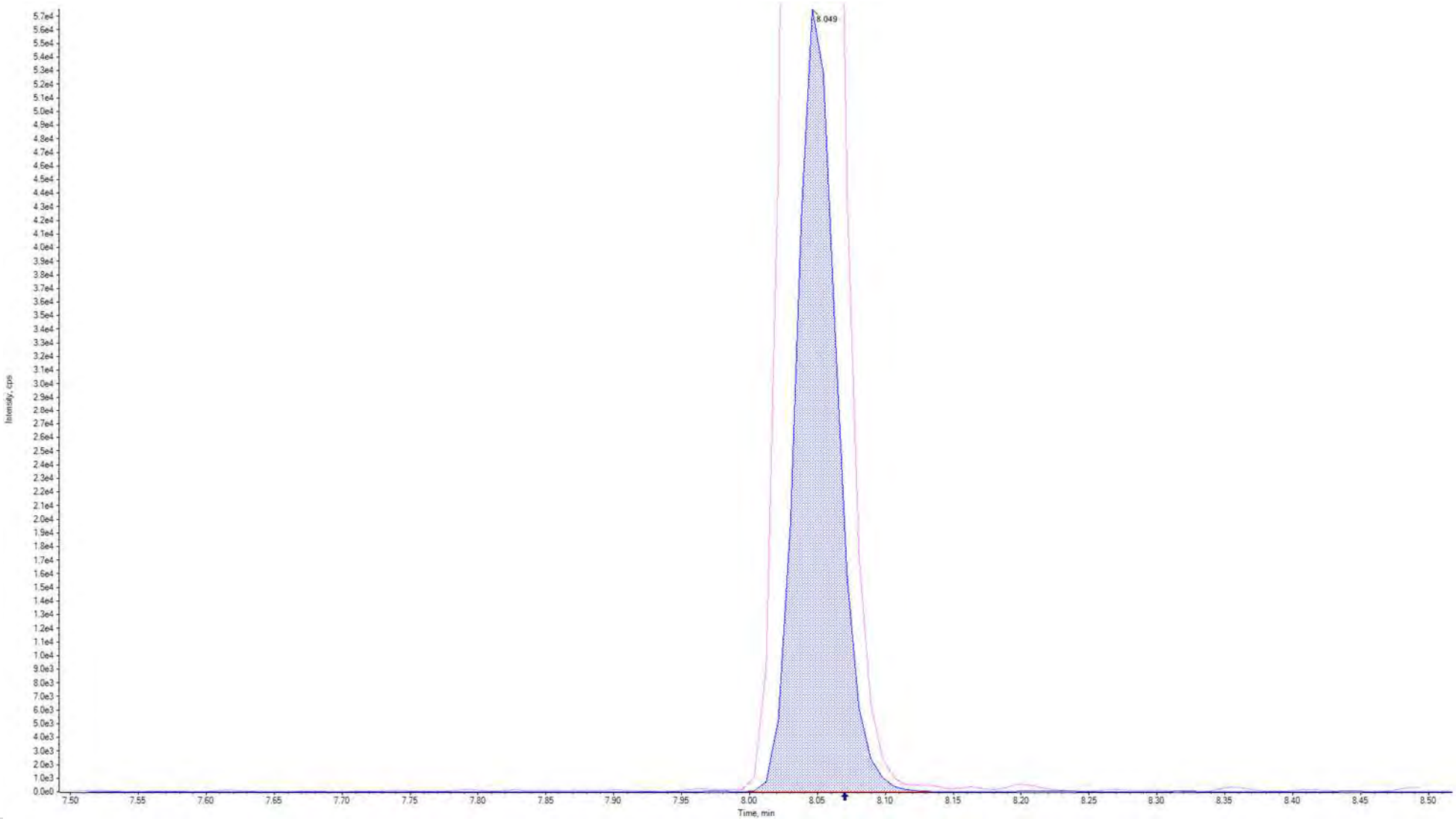
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

6:2FTS_2
Sample: WG1973506-2,1633LOW S/N:495.8 Points Across peak:33



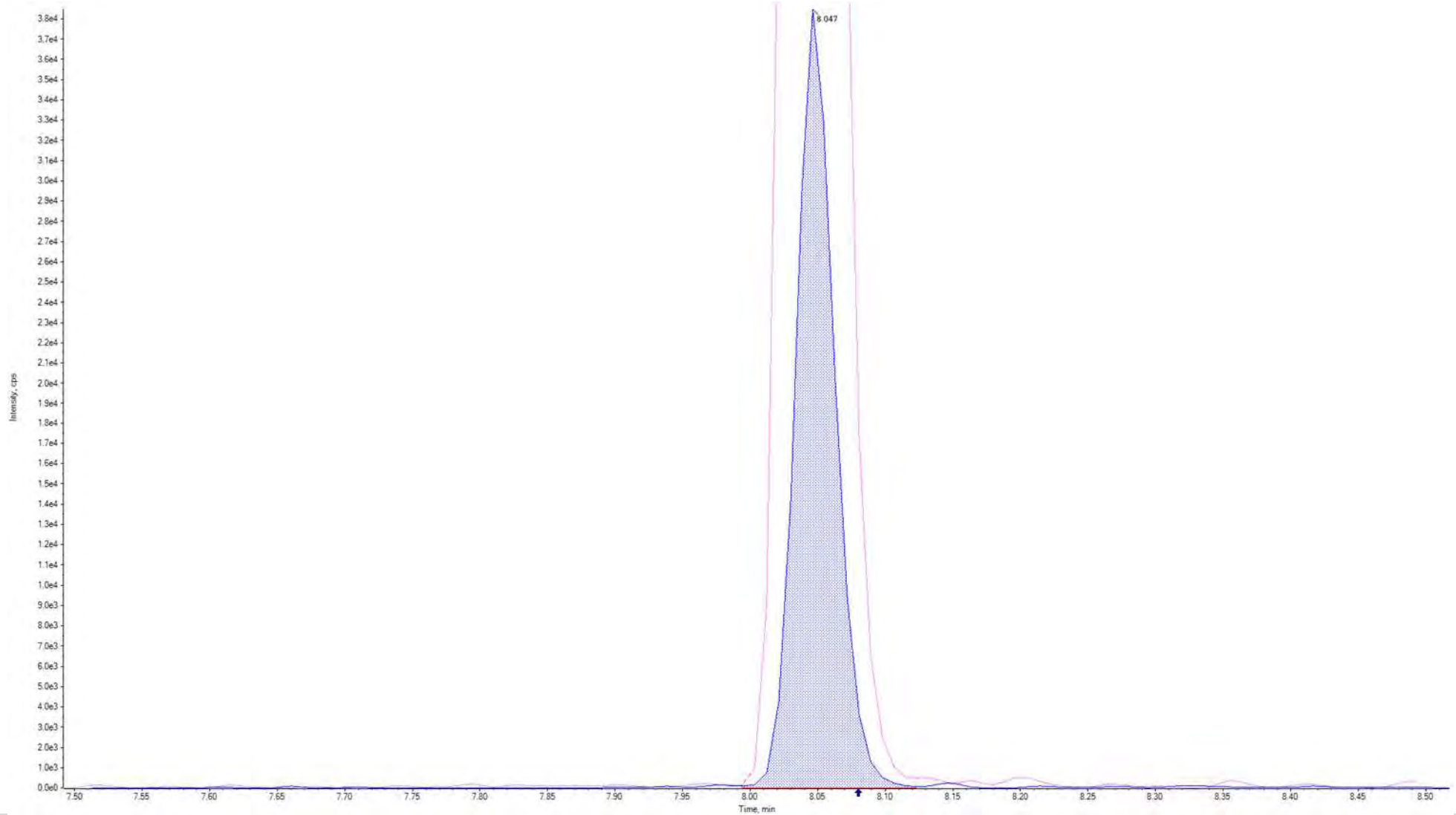
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

8:2FTS
Sample: WG1973506-2,1633LOW S/N:409542.3 Points Across peak:21



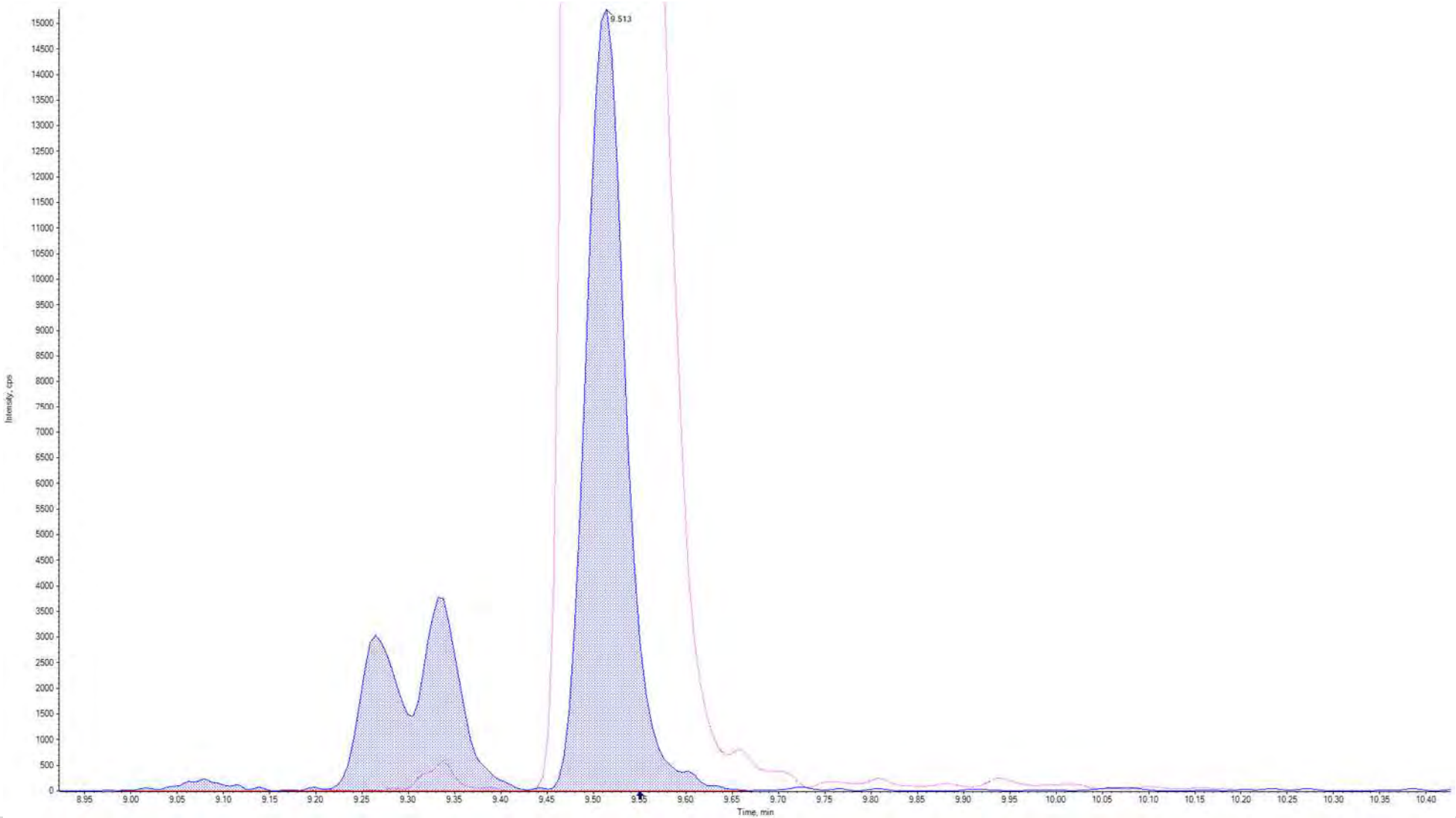
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

8:2FTS_2
Sample: WG1973506-2,1633LOW S/N:1013.2 Points Across peak:16



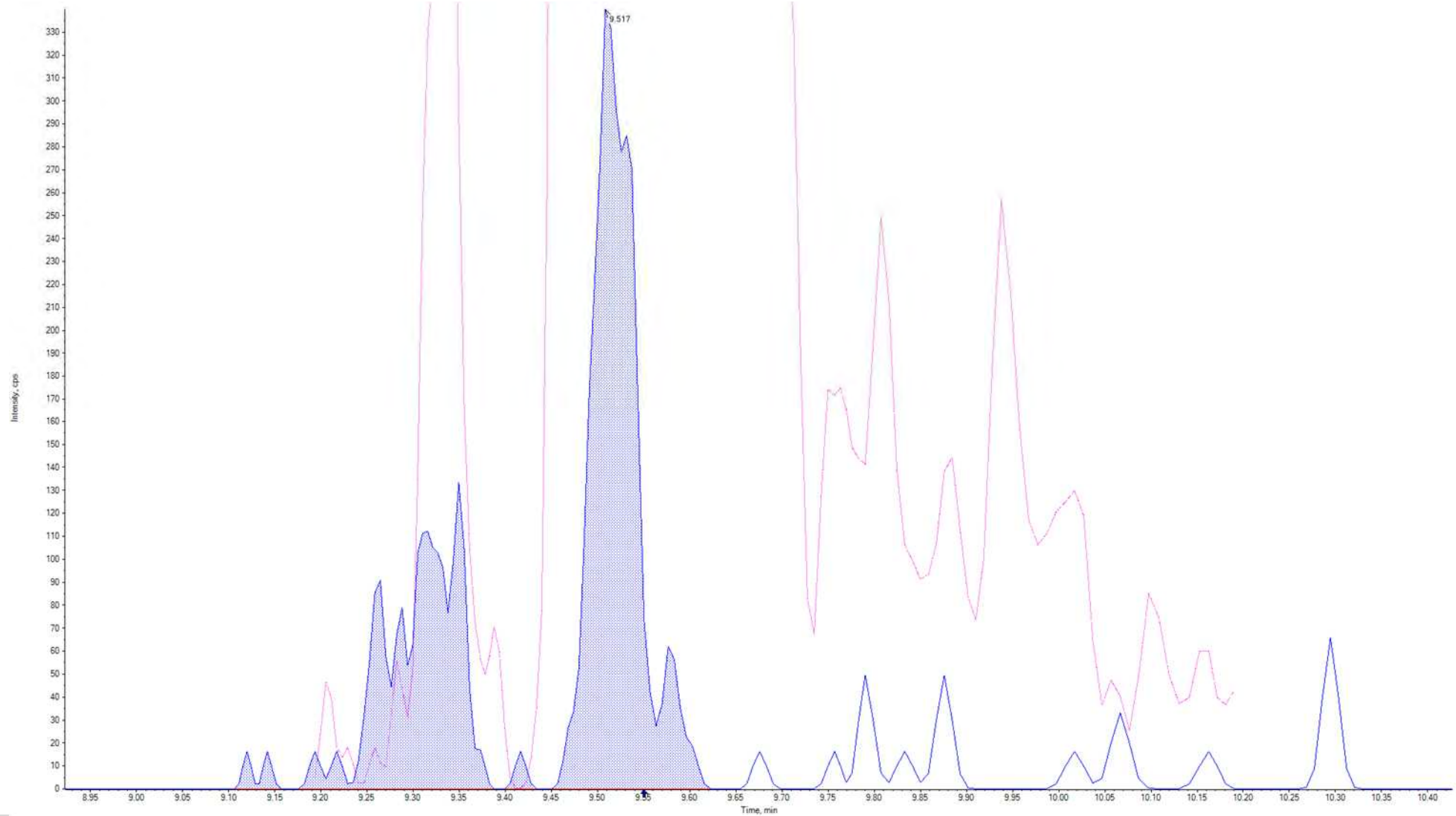
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOSA
Sample: WG1973506-2,1633LOW S/N:687.2 Points Across peak:125



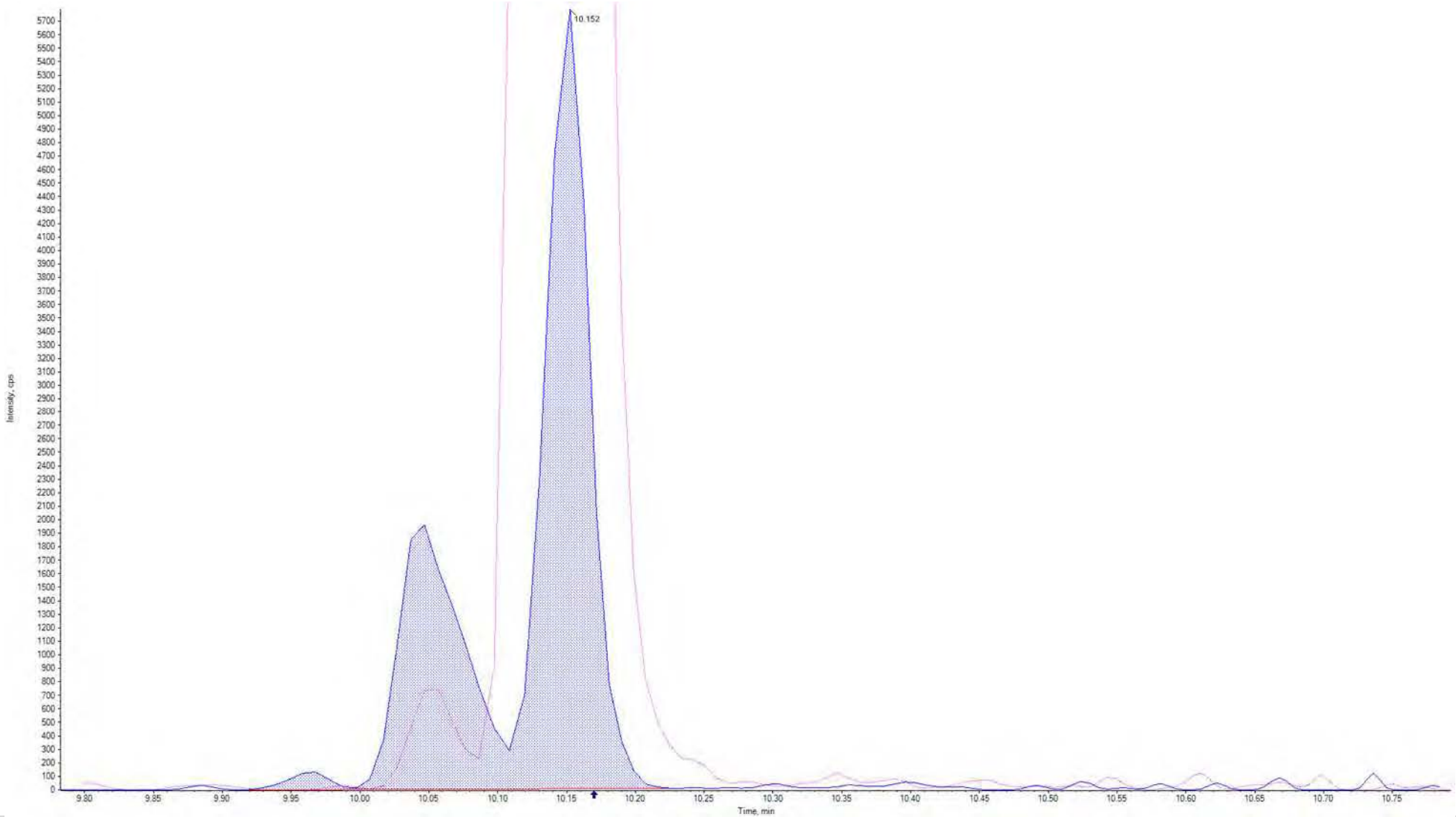
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOSA_2
Sample: WG1973506-2,1633LOW S/N:134.9 Points Across peak:94



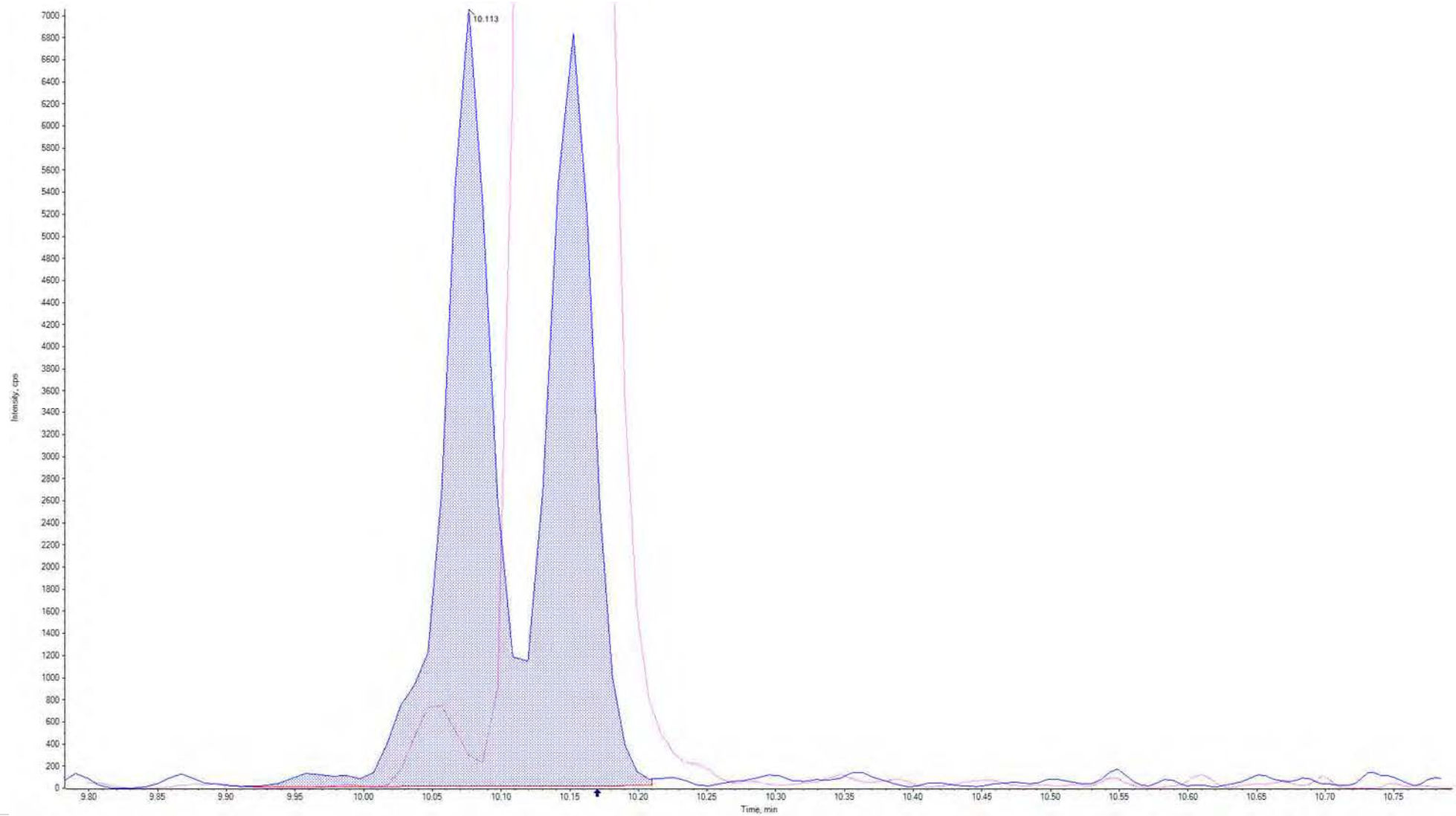
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSA
Sample: WG1973506-2,1633LOW S/N:298.4 Points Across peak:34



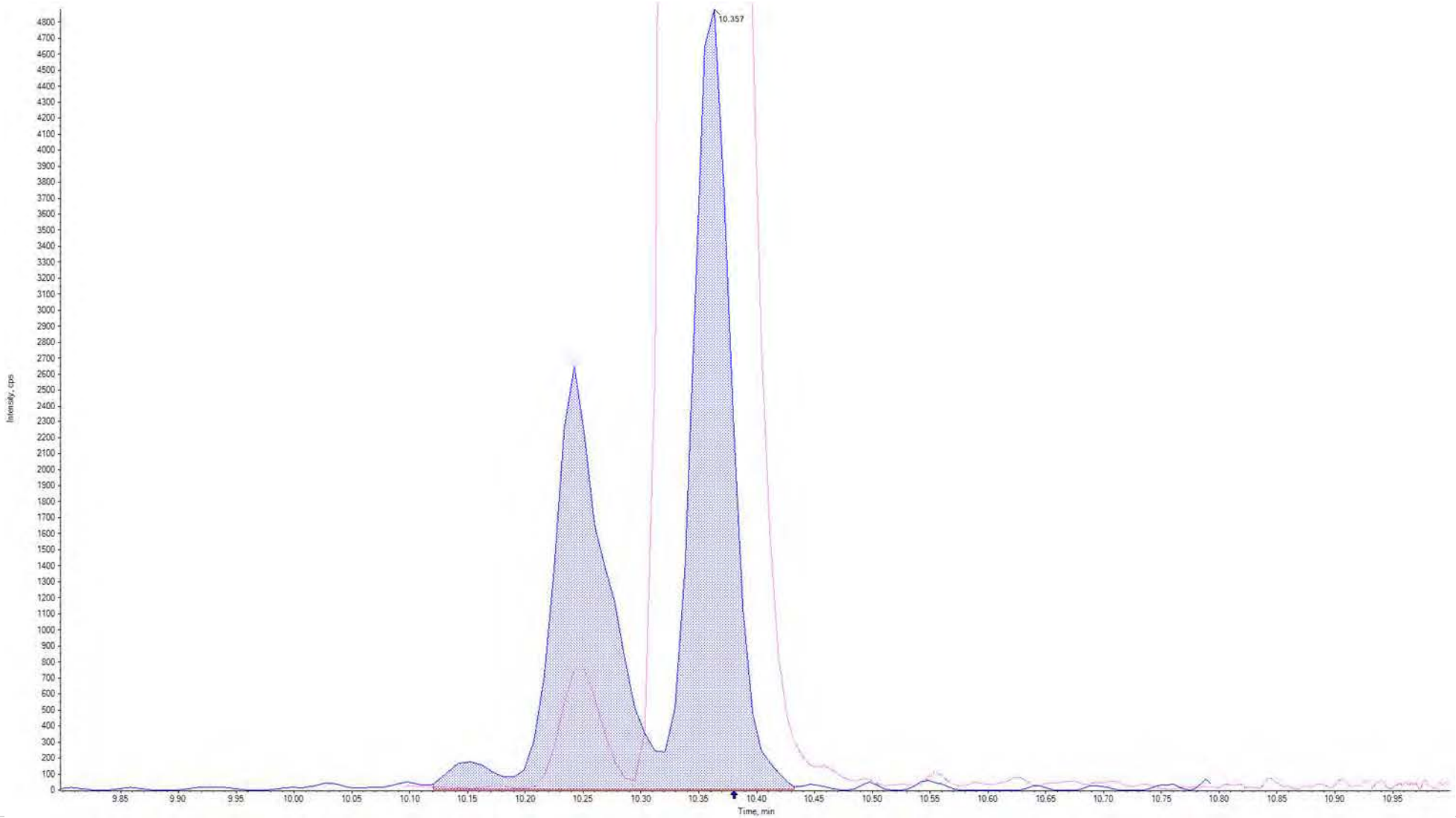
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSA_2
Sample: WG1973506-2,1633LOW S/N:1035.5 Points Across peak:32



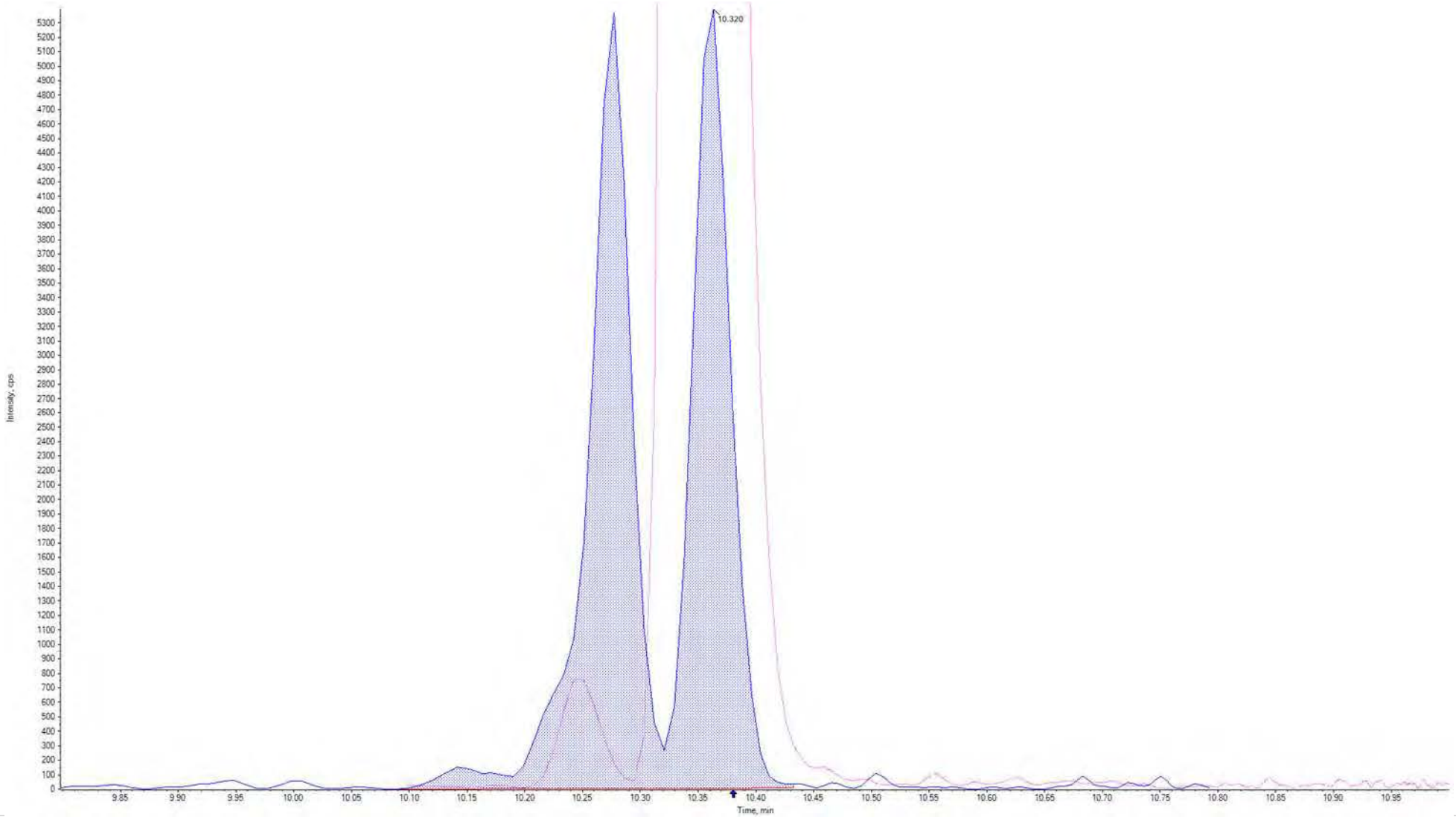
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSA
Sample: WG1973506-2,1633LOW S/N:2580829.6 Points Across peak:37



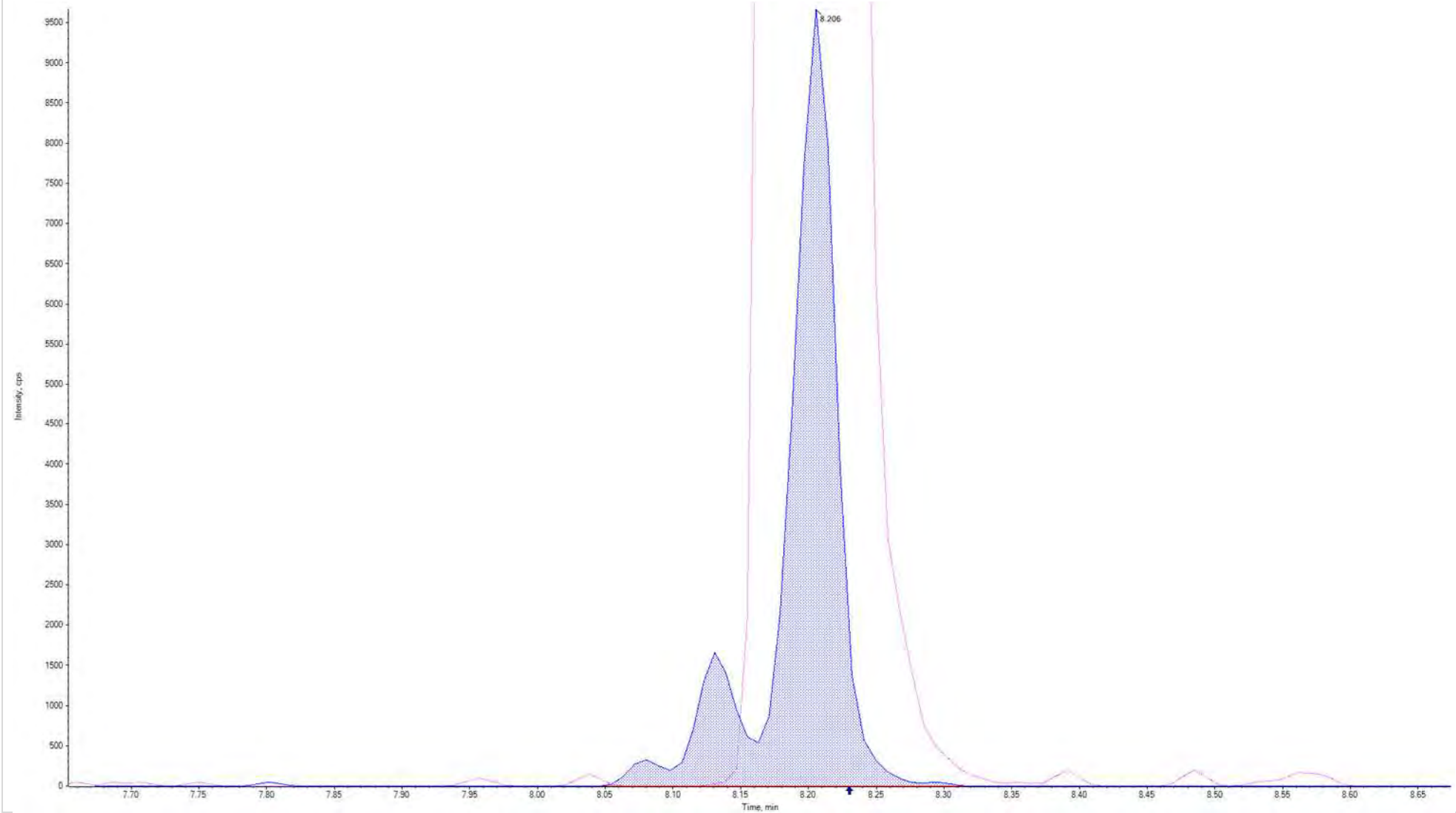
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSA_2
Sample: WG1973506-2,1633LOW S/N:2149.8 Points Across peak:40



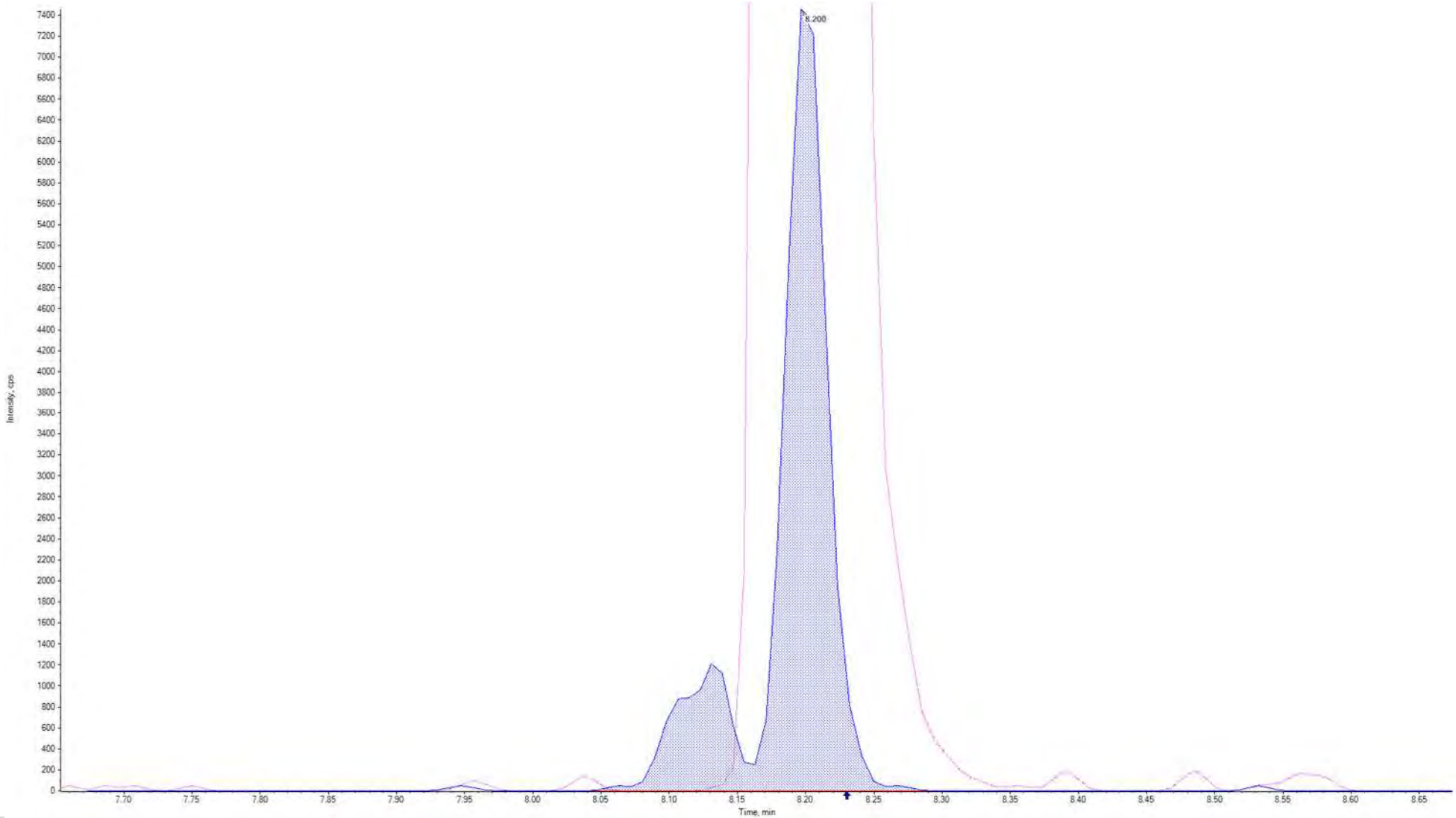
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSAA
Sample: WG1973506-2,1633LOW S/N:2535.0 Points Across peak:43



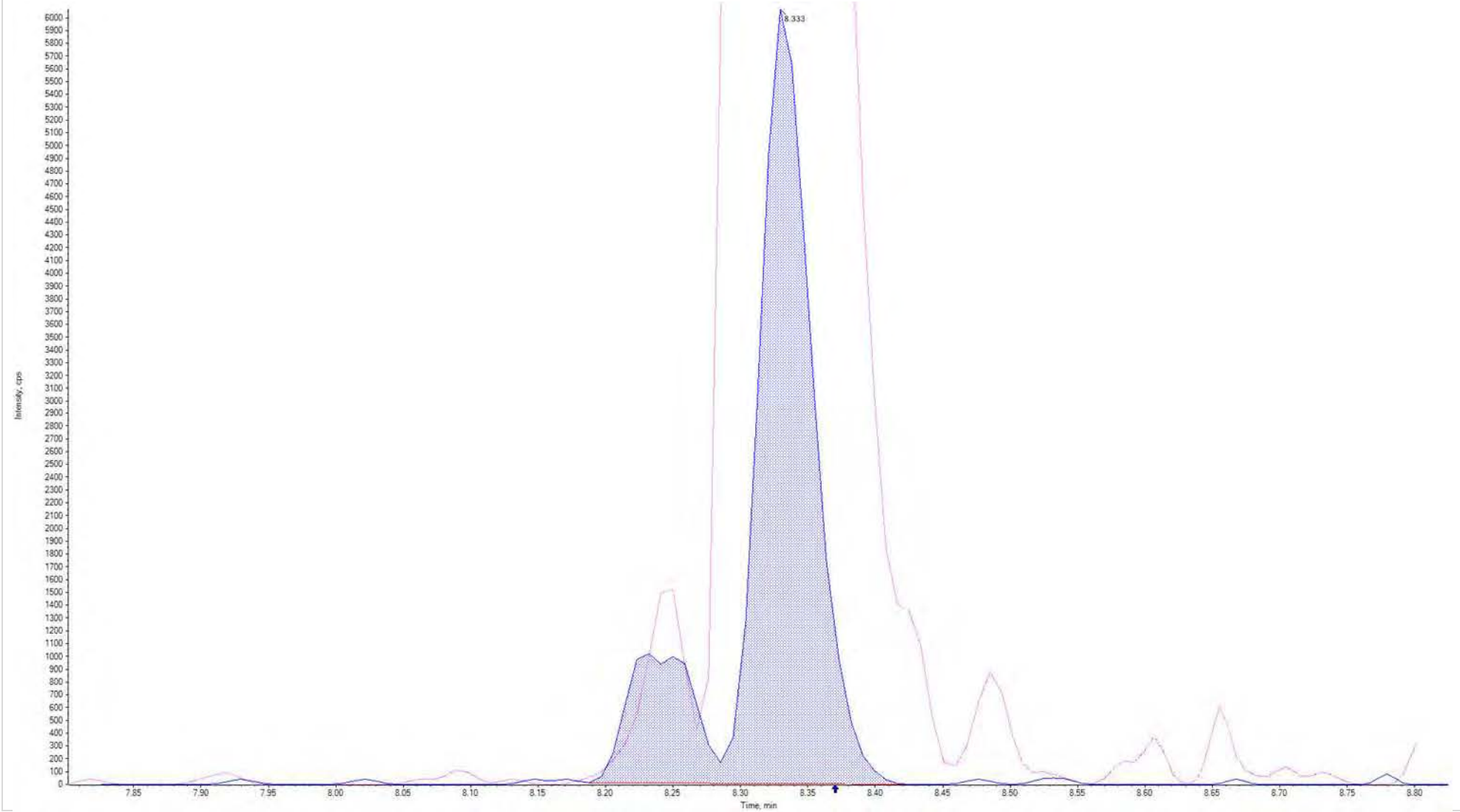
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSAA_2
Sample: WG1973506-2,1633LOW S/N:754.9 Points Across peak:39



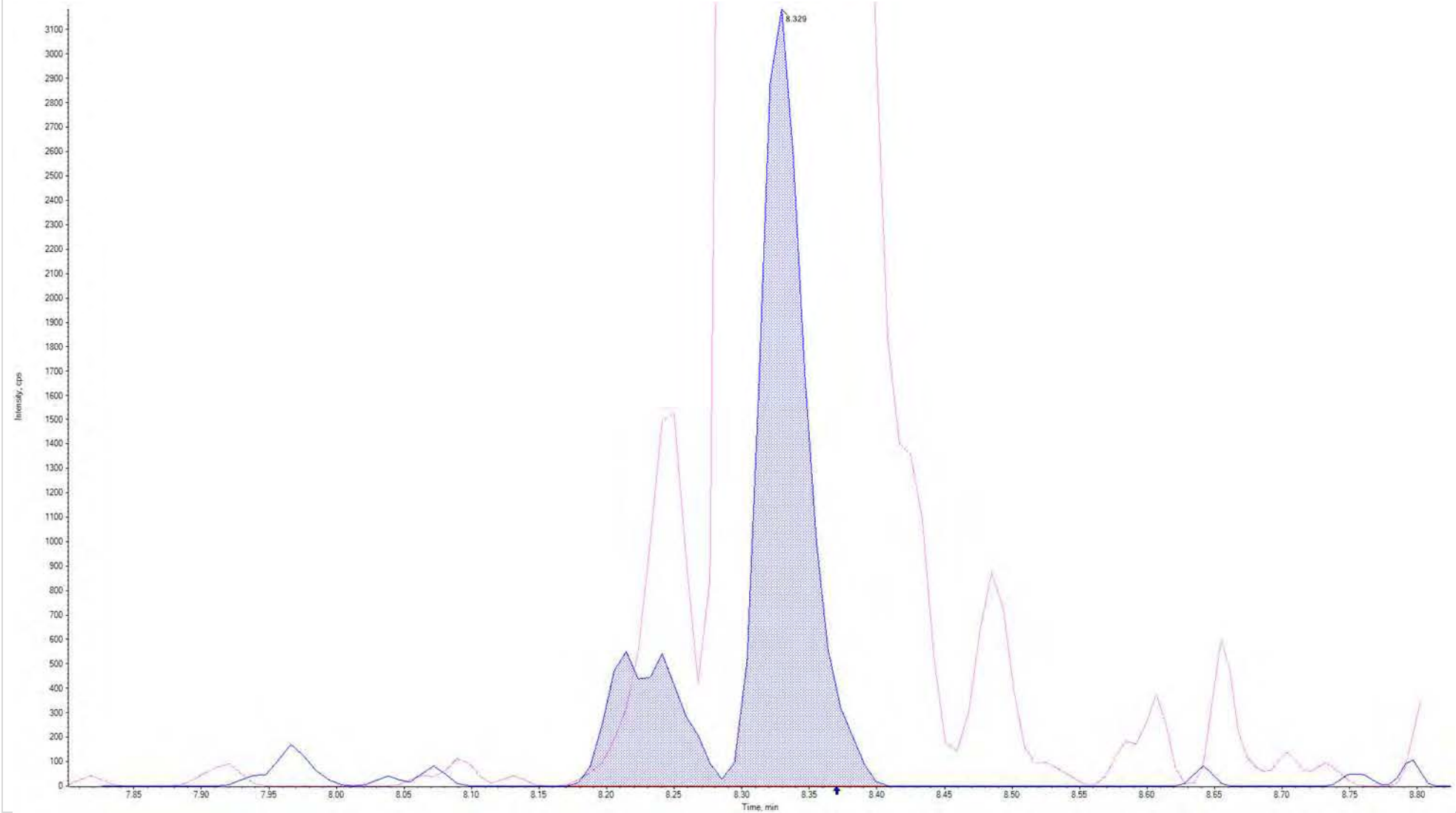
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSAA
Sample: WG1973506-2,1633LOW S/N:290.5 Points Across peak:28



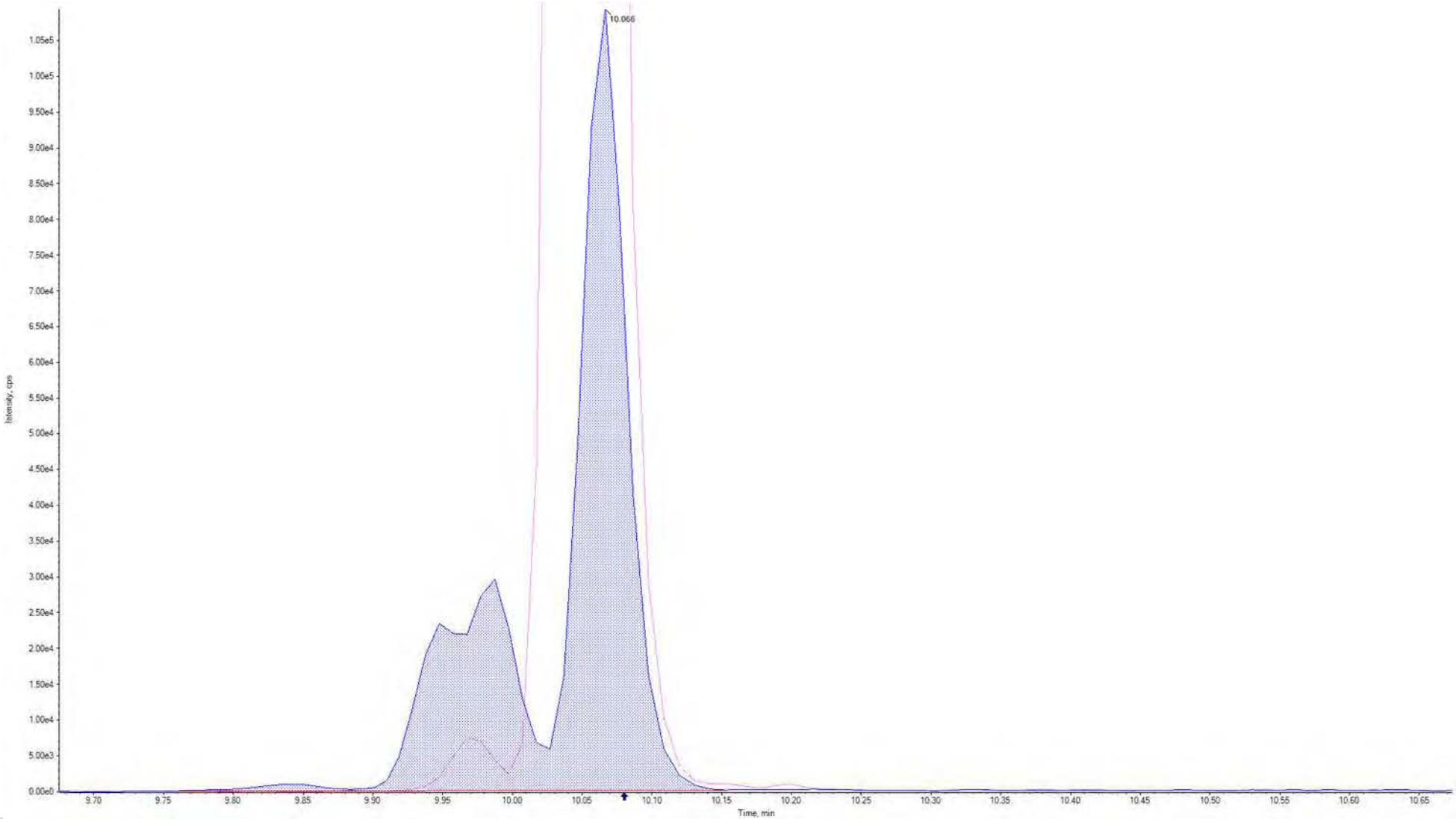
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSAA_2
Sample: WG1973506-2,1633LOW S/N:136.3 Points Across peak:29



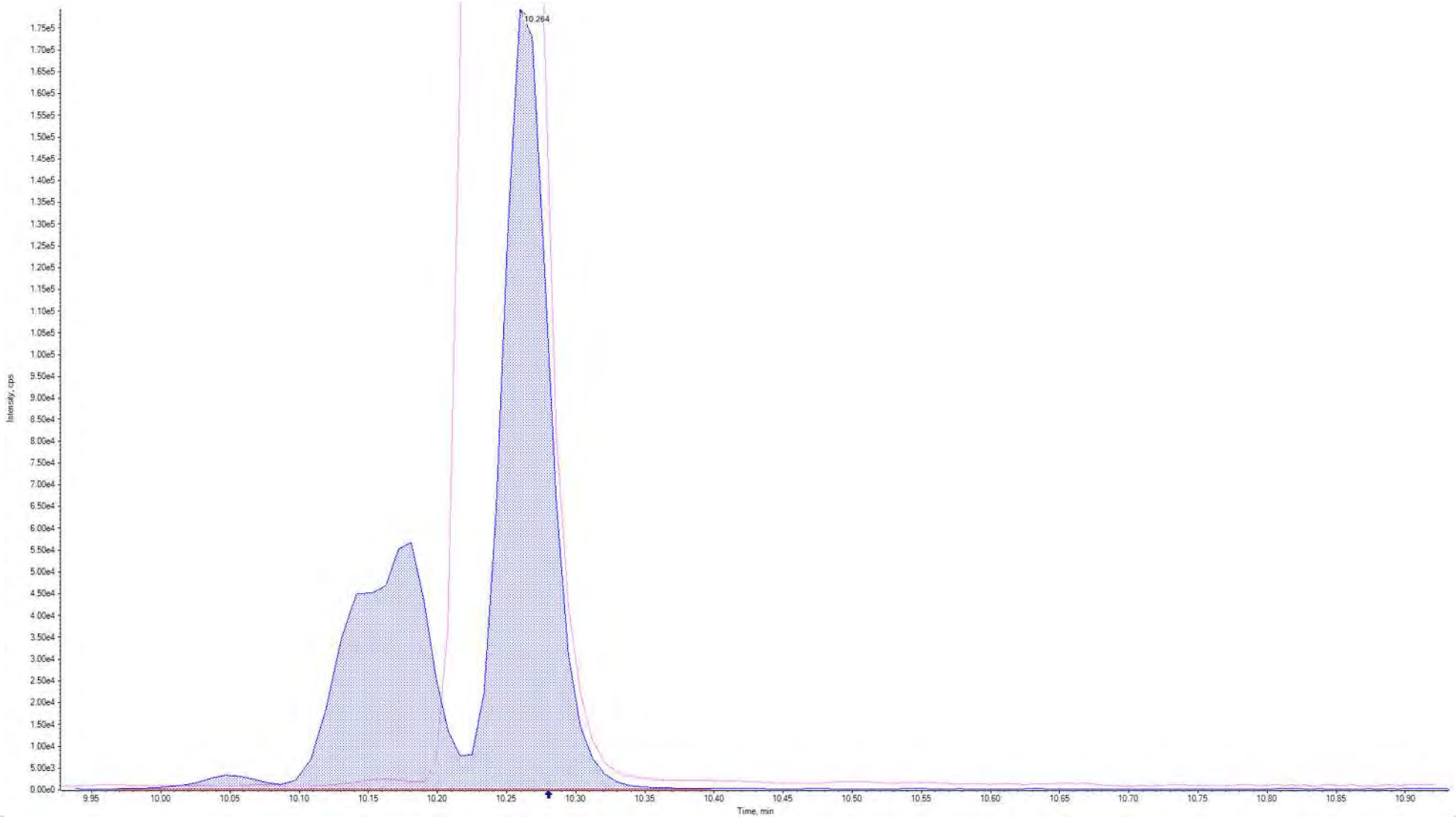
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSE
Sample: WG1973506-2,1633LOW S/N:1723.4 Points Across peak:47



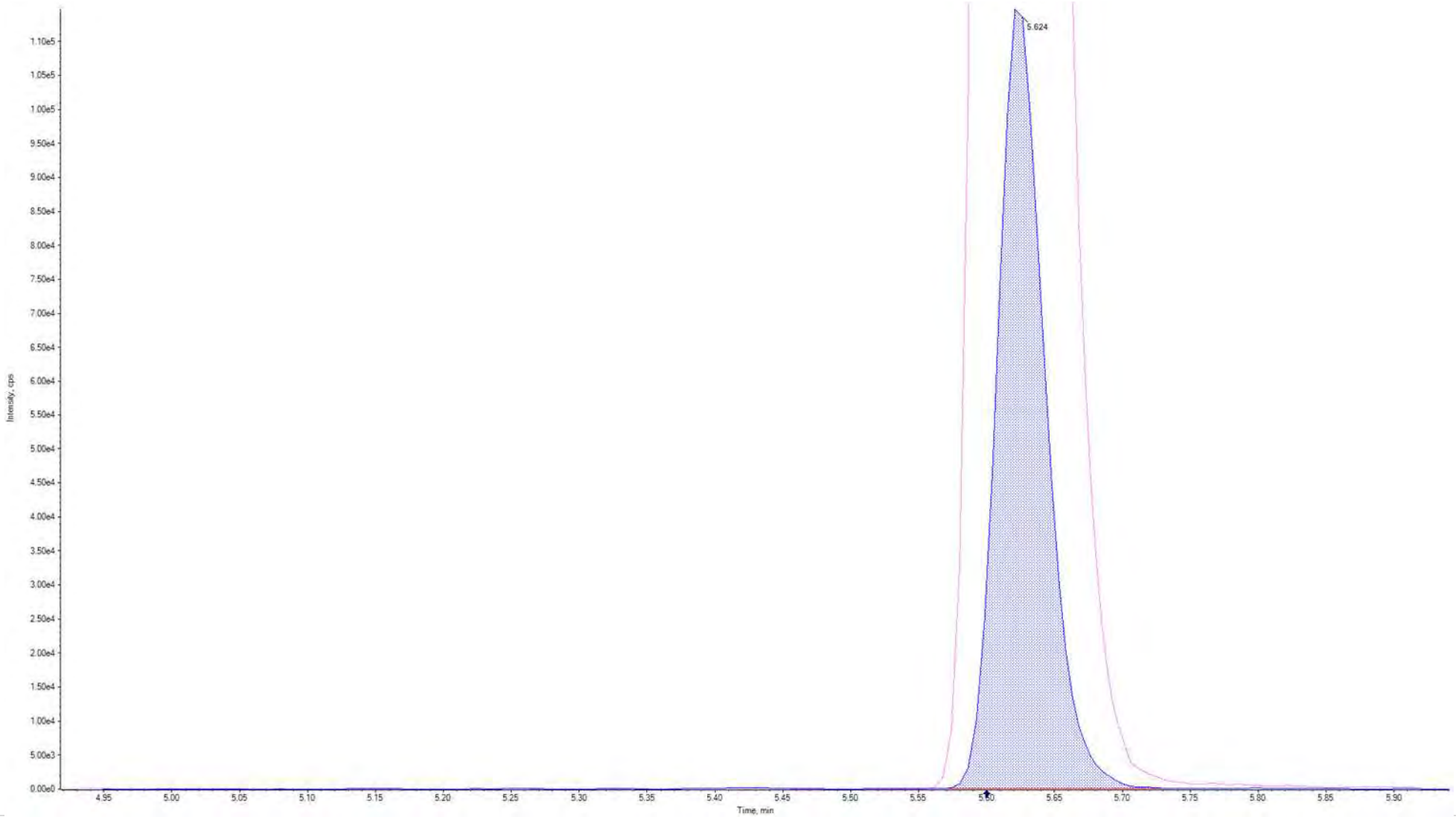
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSE
Sample: WG1973506-2,1633LOW S/N:1291.9 Points Across peak:49



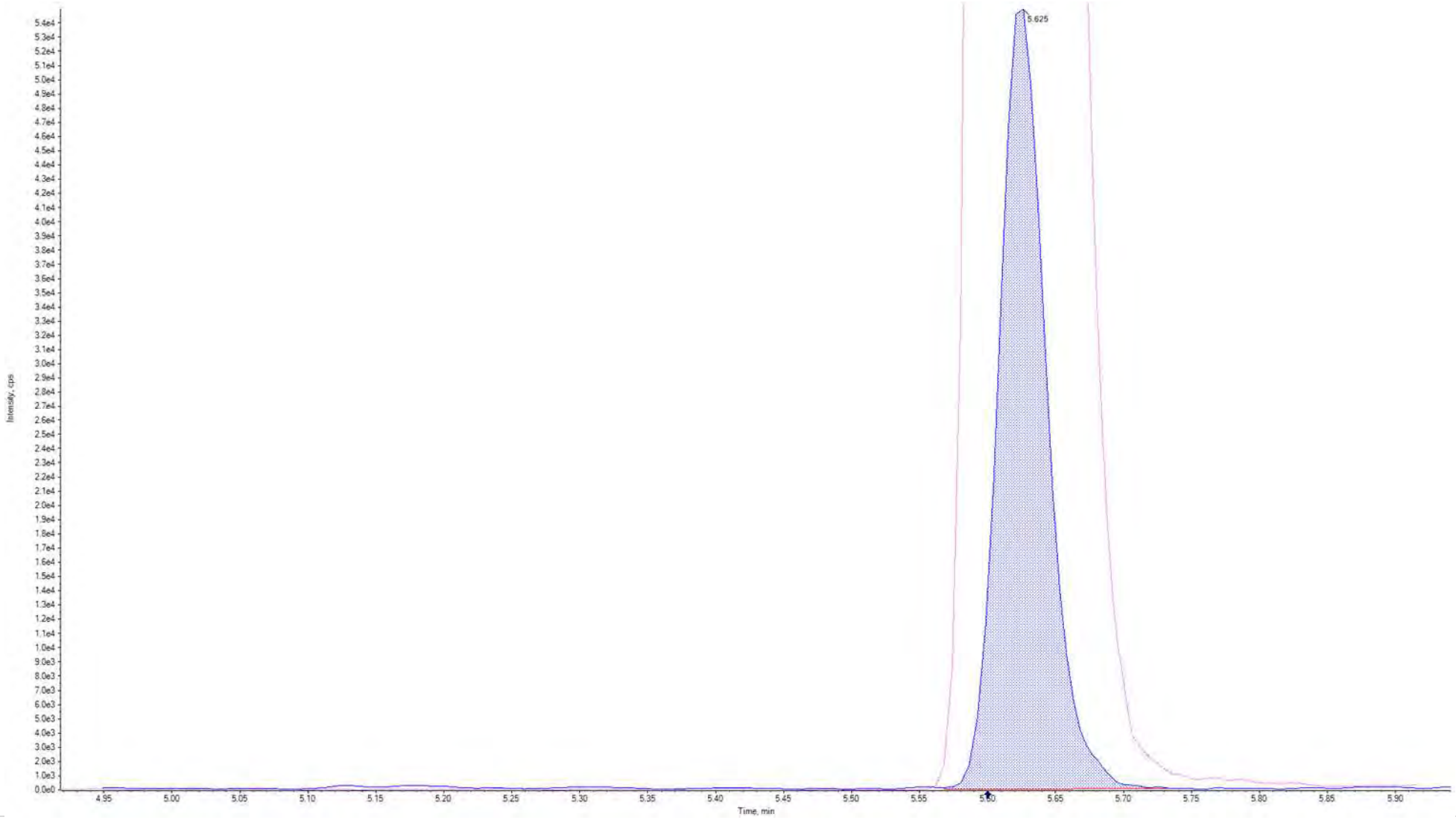
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

HFPO-DA
Sample: WG1973506-2,1633LOW S/N:25627.4 Points Across peak:41



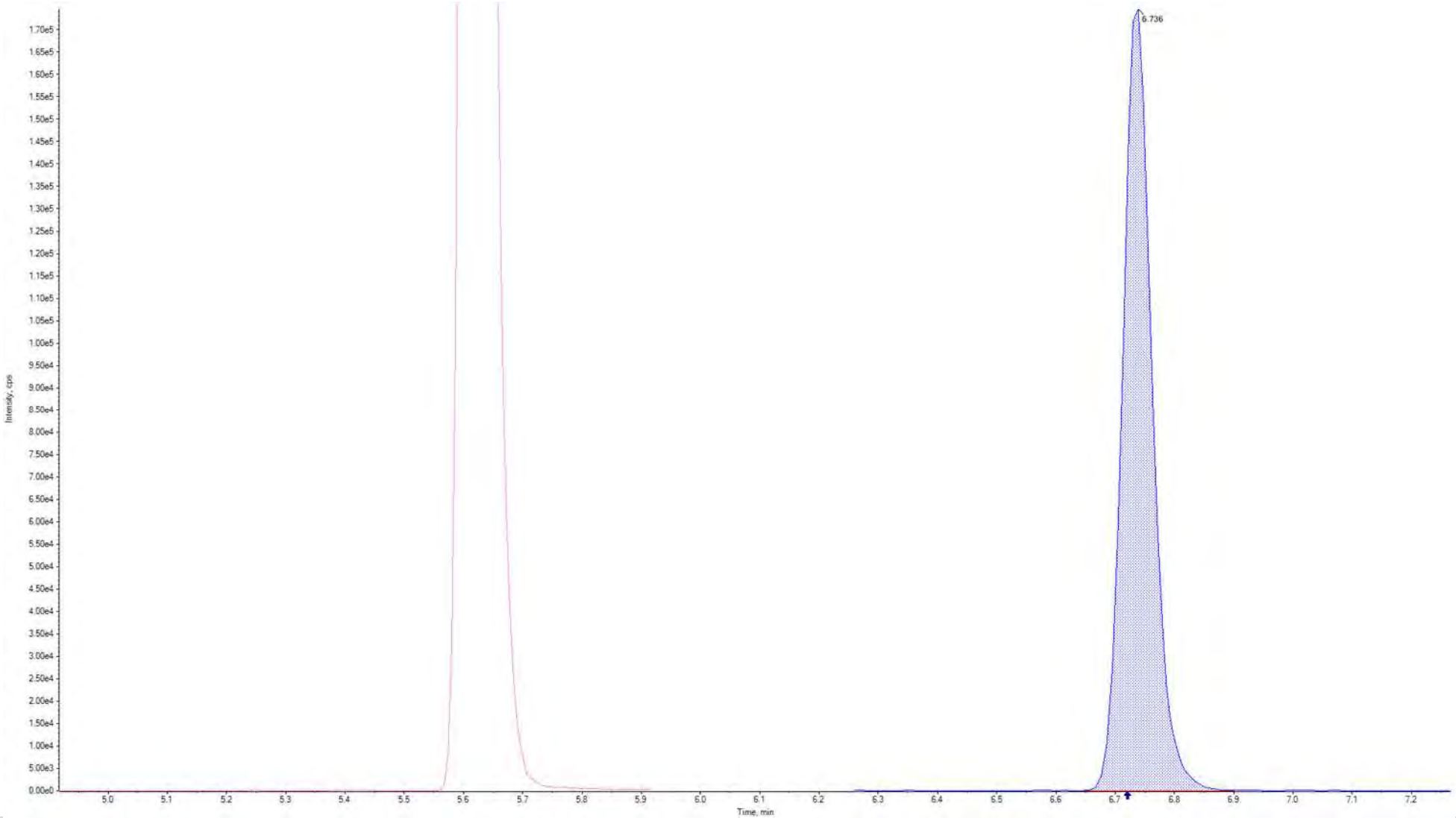
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

HFPO-DA_2
Sample: WG1973506-2,1633LOW S/N:1510.3 Points Across peak:36



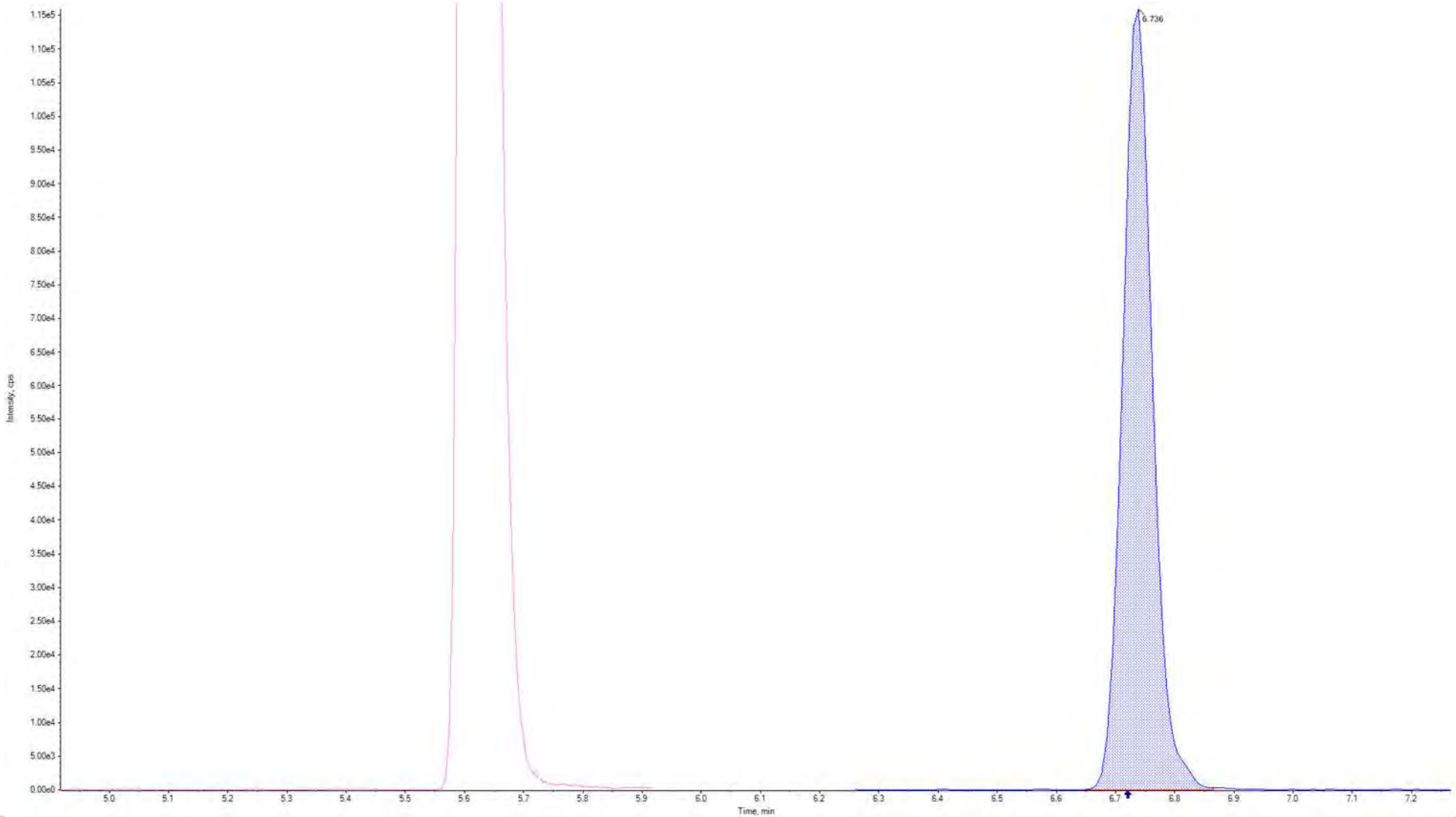
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

ADONA
Sample: WG1973506-2,1633LOW S/N:5853.2 Points Across peak:38



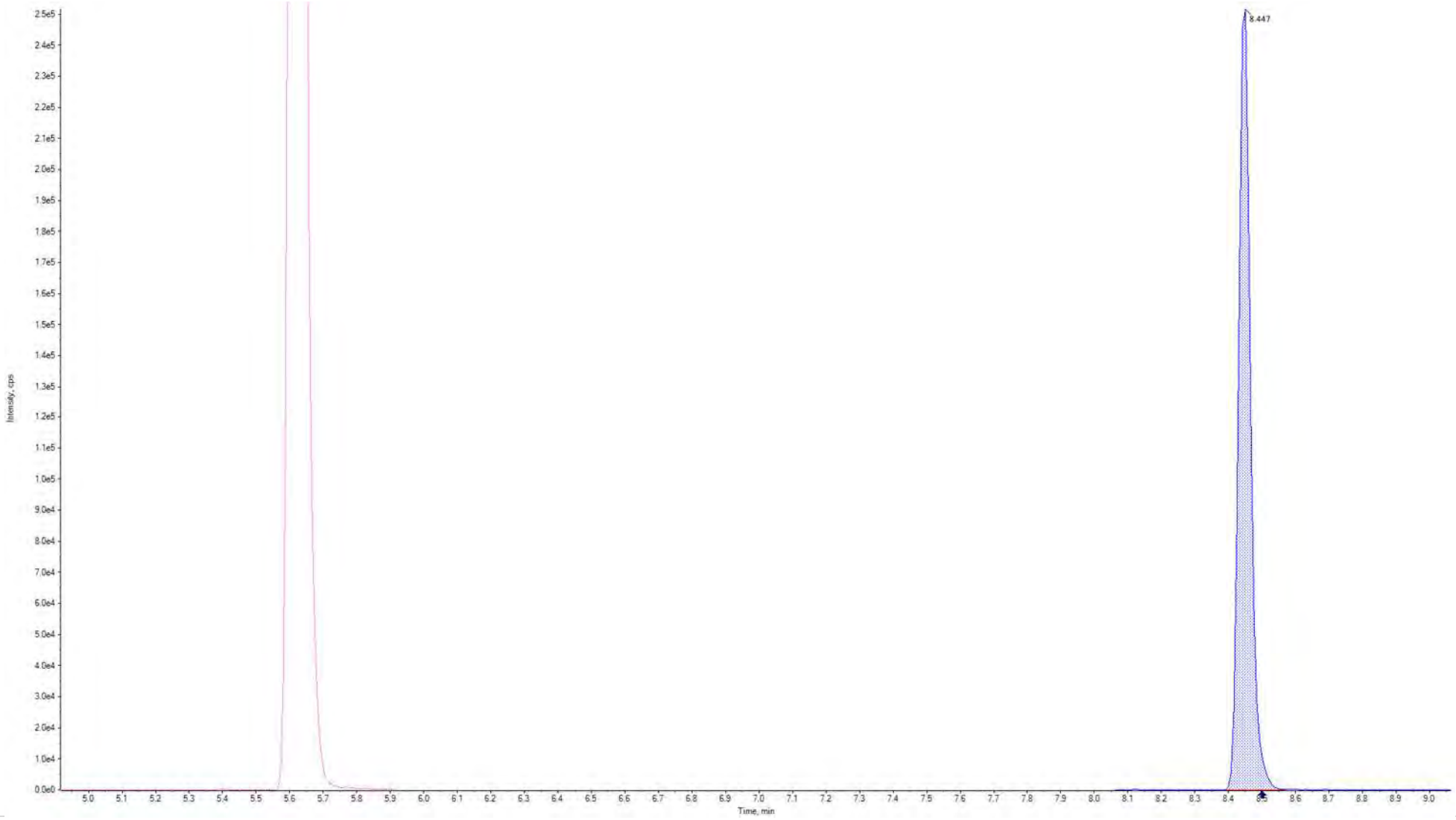
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

ADONA_2
Sample: WG1973506-2,1633LOW S/N:10914.9 Points Across peak:32



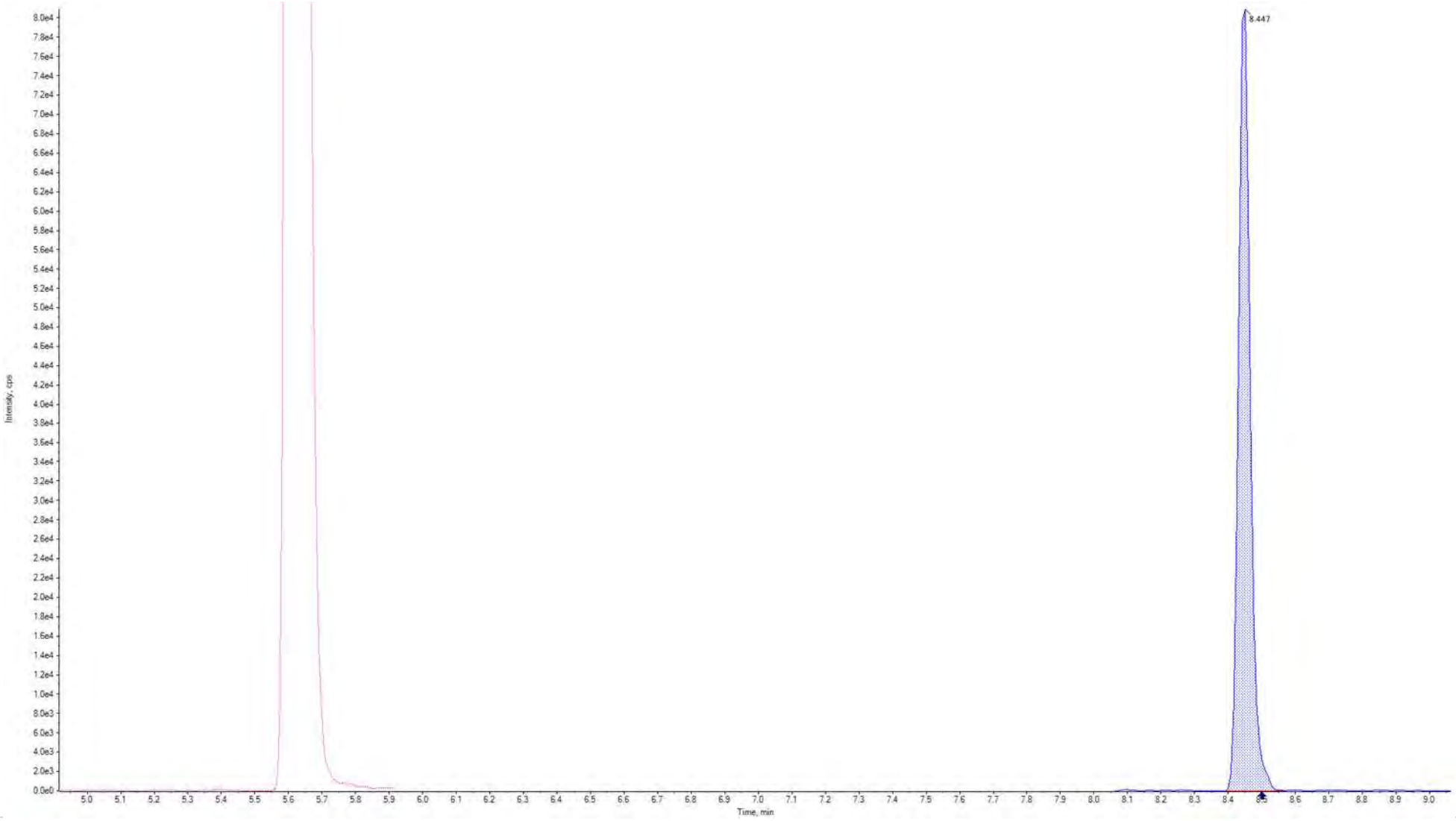
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

9Cl-PF3ONS
Sample: WG1973506-2,1633LOW S/N:29988.4 Points Across peak:25



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

9Cl-PF3ONS_2
Sample: WG1973506-2,1633LOW S/N:19971937.2 Points Across peak:24



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

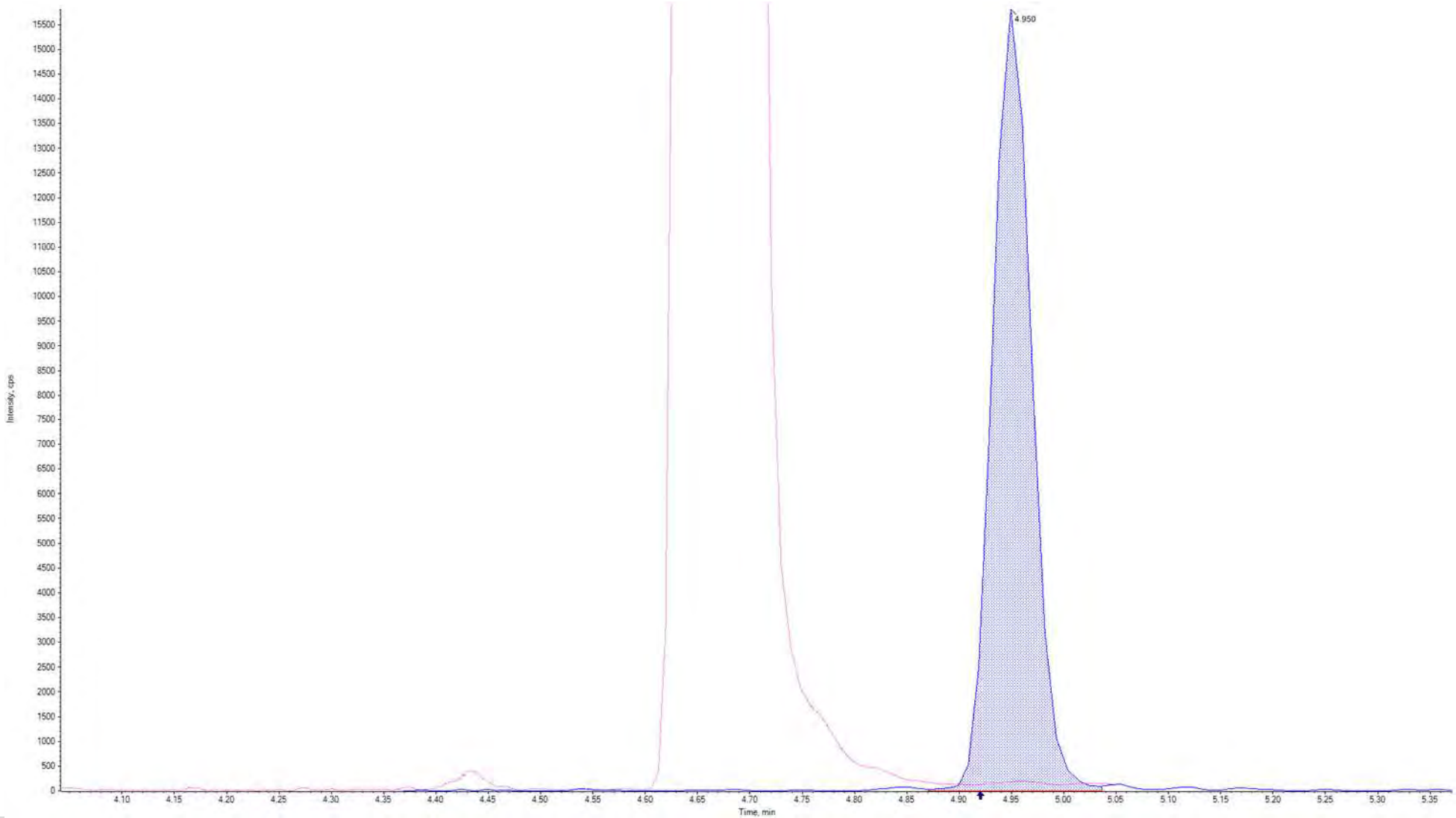
11Cl-PF3OUdS
Sample: WG1973506-2,1633LOW S/N:2201186.0 Points Across peak:44

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

11Cl-PF3OUdS_2
Sample: WG1973506-2,1633LOW S/N:19000255.9 Points Across peak:34

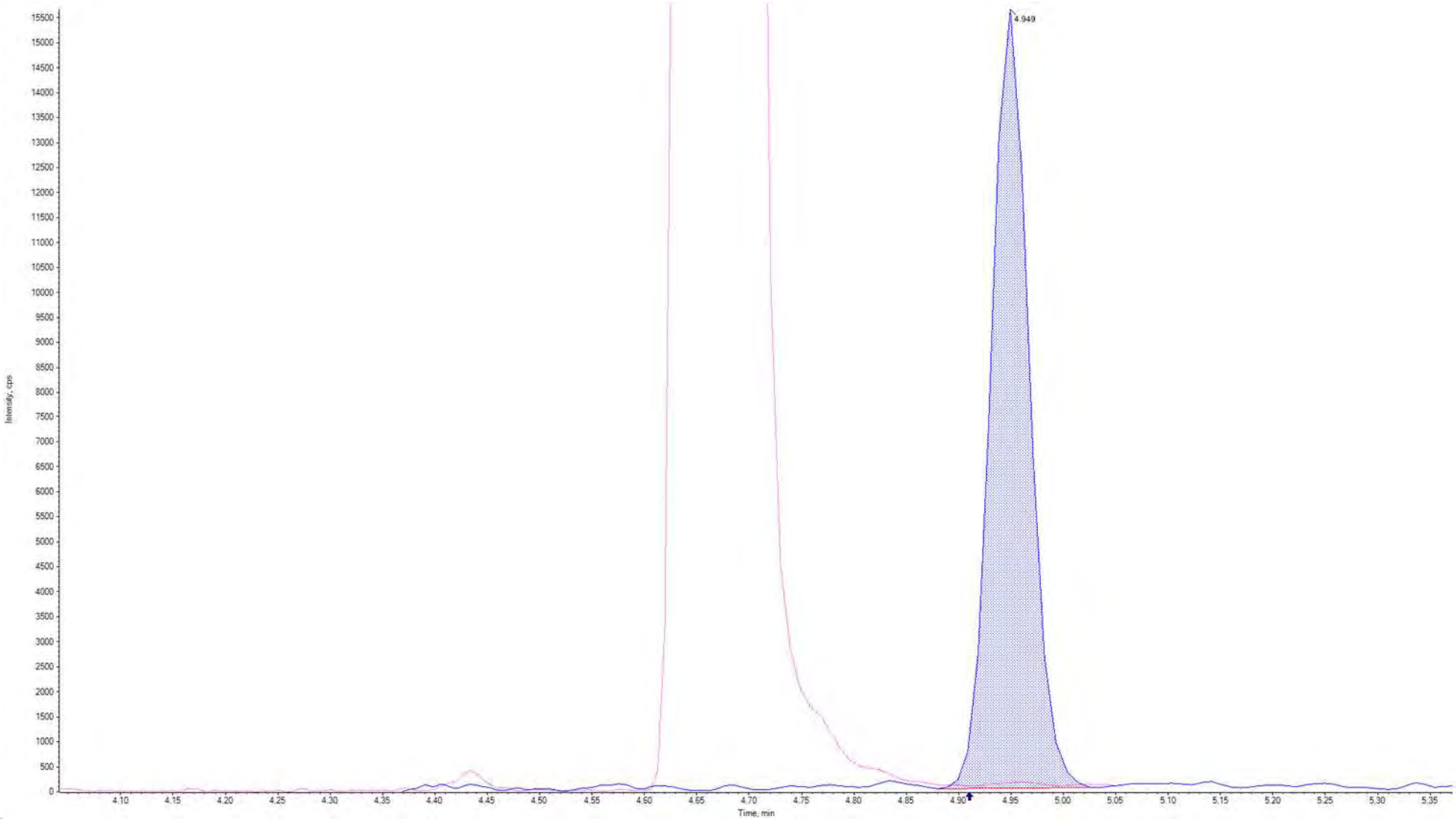
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

3:3FTCA
Sample: WG1973506-2,1633LOW S/N:5509560.4 Points Across peak:17



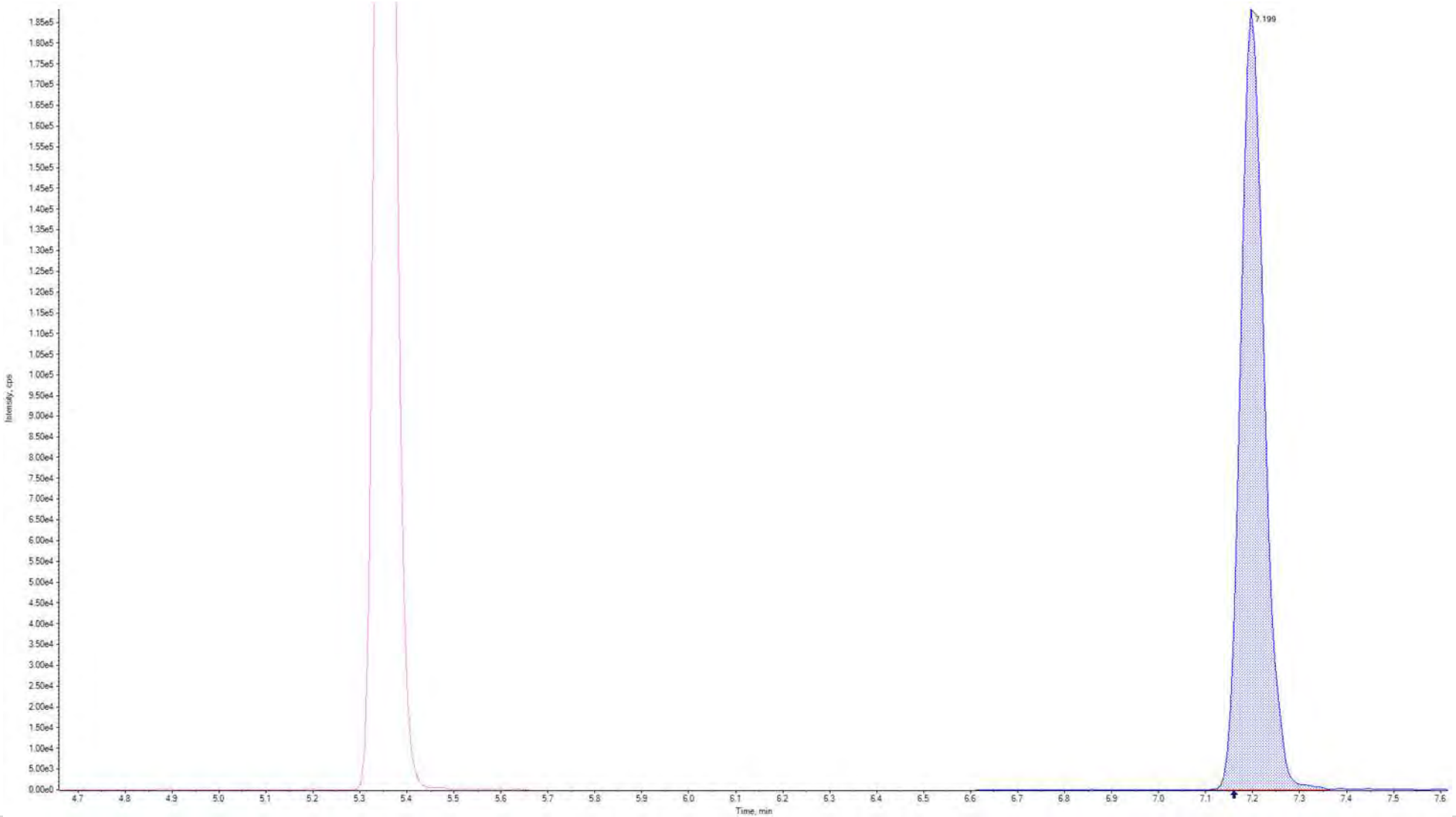
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

3:3FTCA_2
Sample: WG1973506-2,1633LOW S/N:883.7 Points Across peak:16



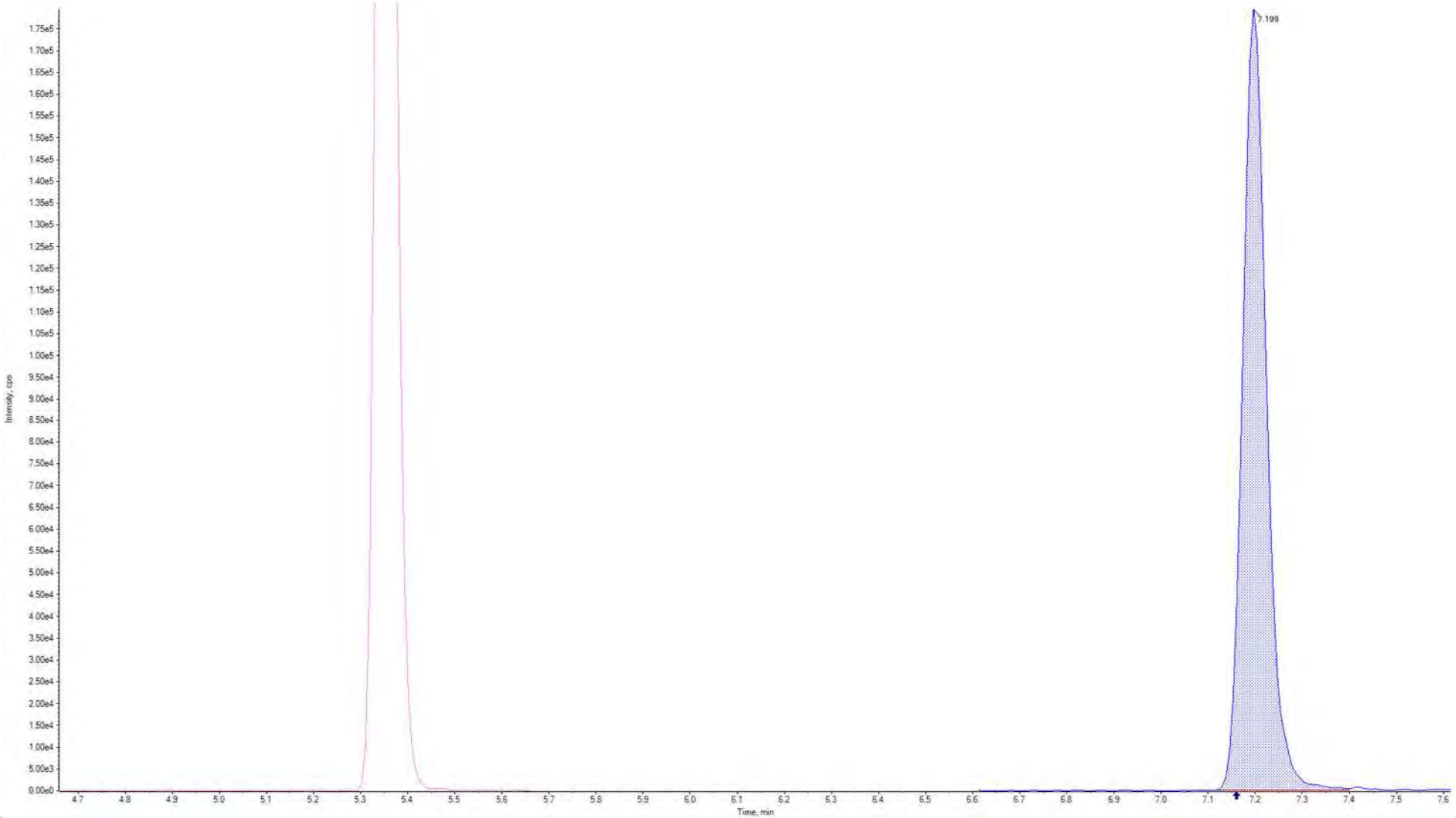
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

5:3FTCA
Sample: WG1973506-2,1633LOW S/N:44860.4 Points Across peak:47



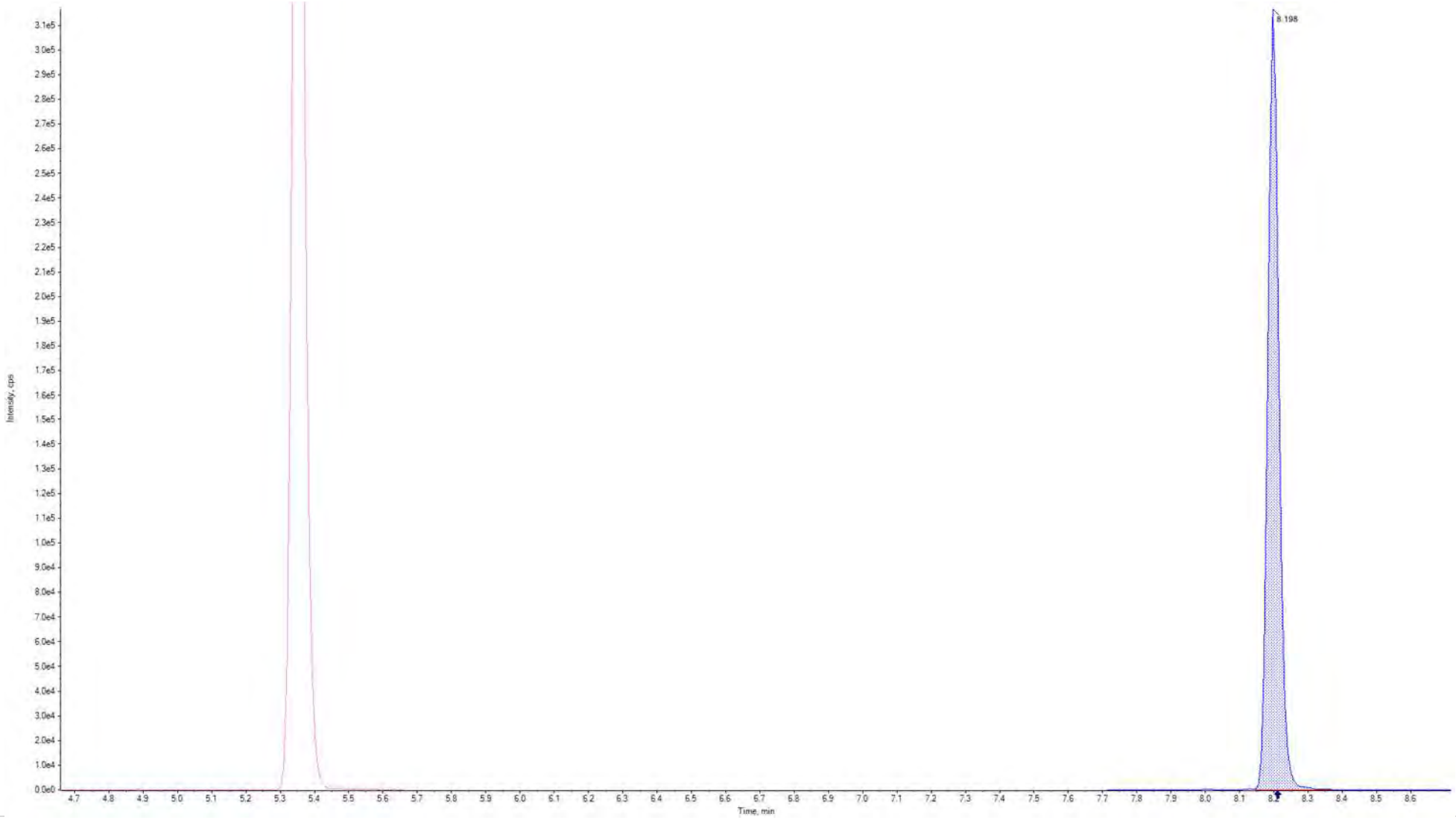
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

5:3FTCA_2
Sample: WG1973506-2,1633LOW S/N:5742.2 Points Across peak:49



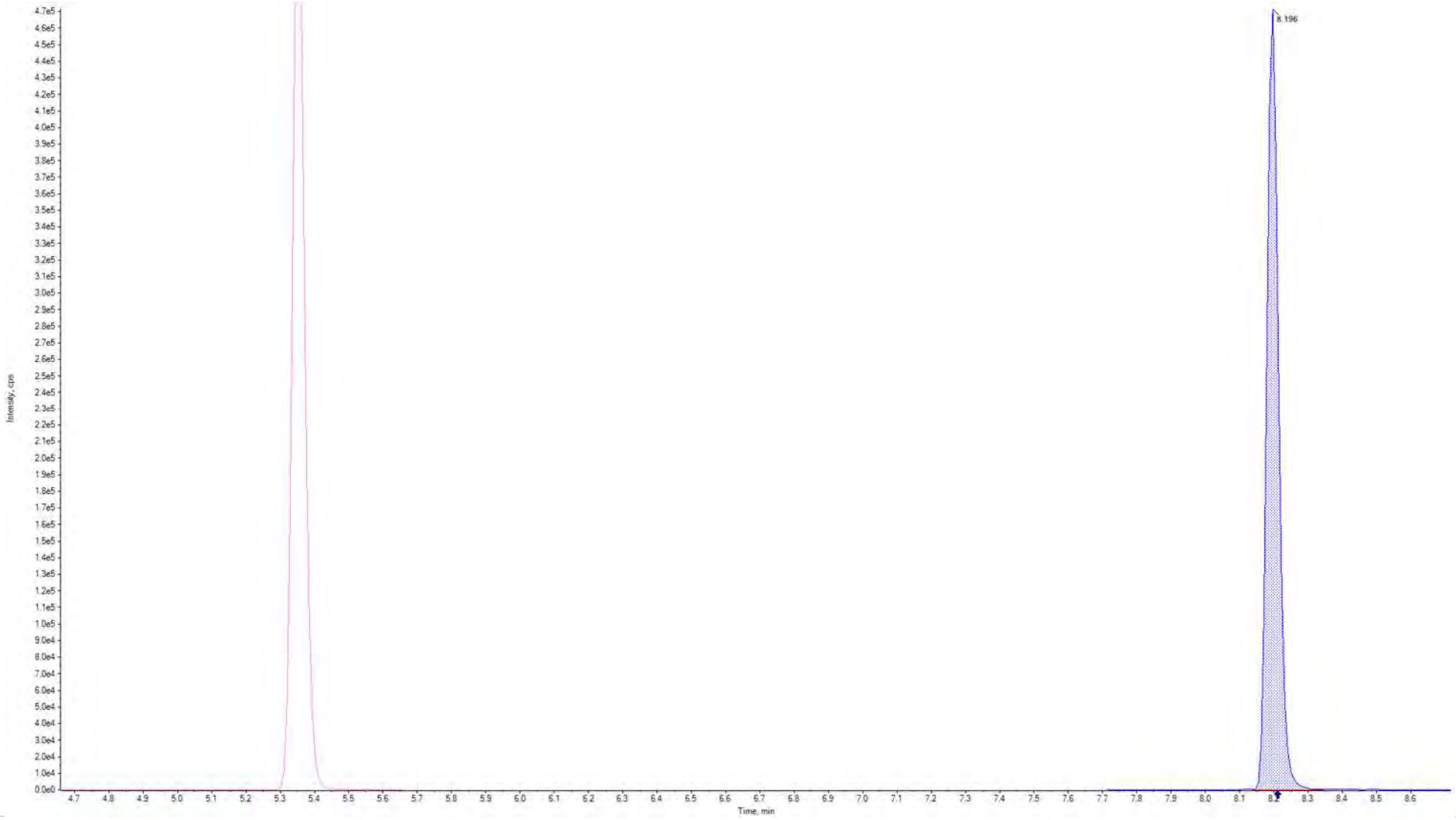
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

7:3FTCA
Sample: WG1973506-2,1633LOW S/N:172802.3 Points Across peak:27



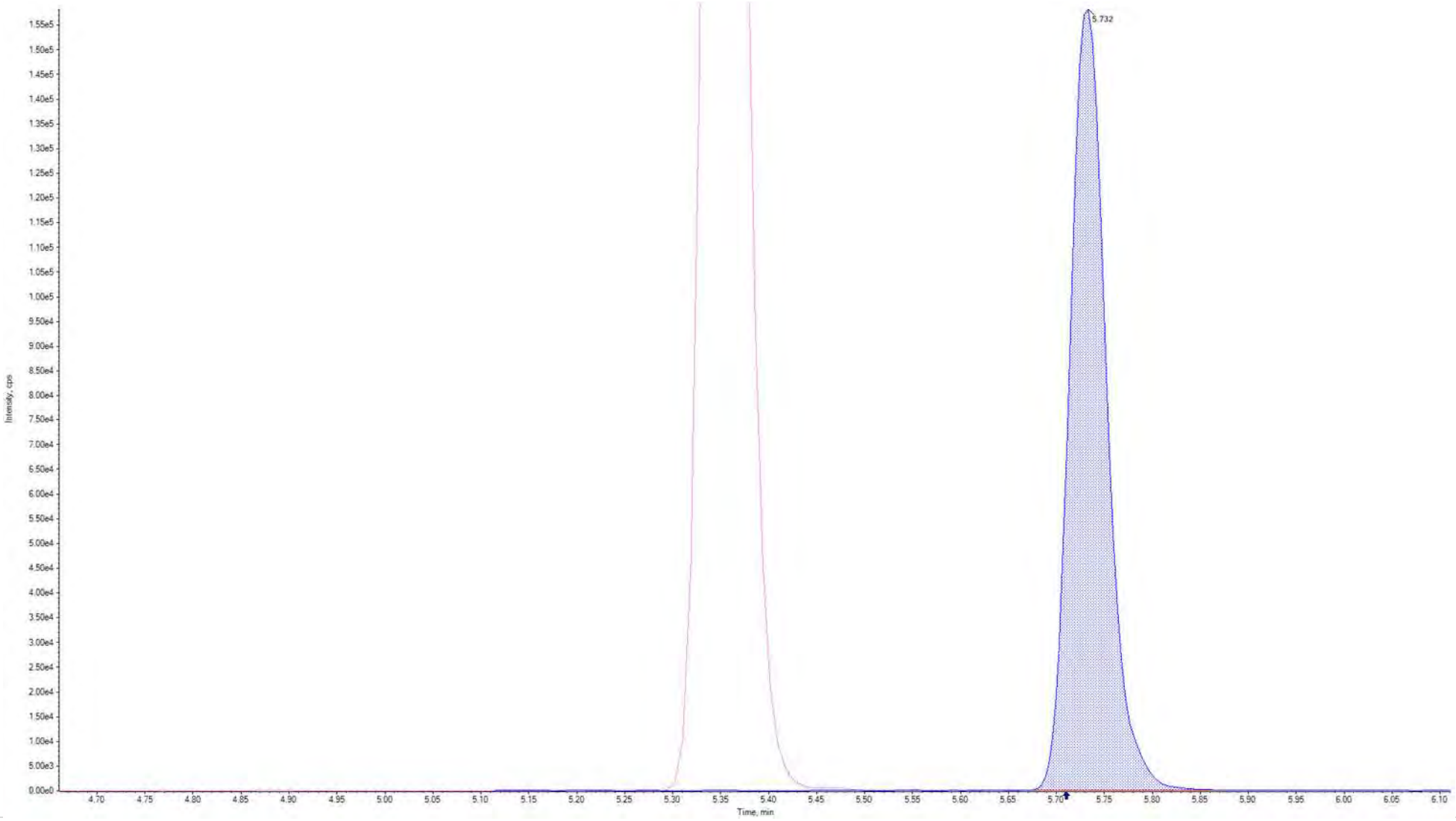
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

7:3FTCA_2
Sample: WG1973506-2,1633LOW S/N:1970866.9 Points Across peak:25



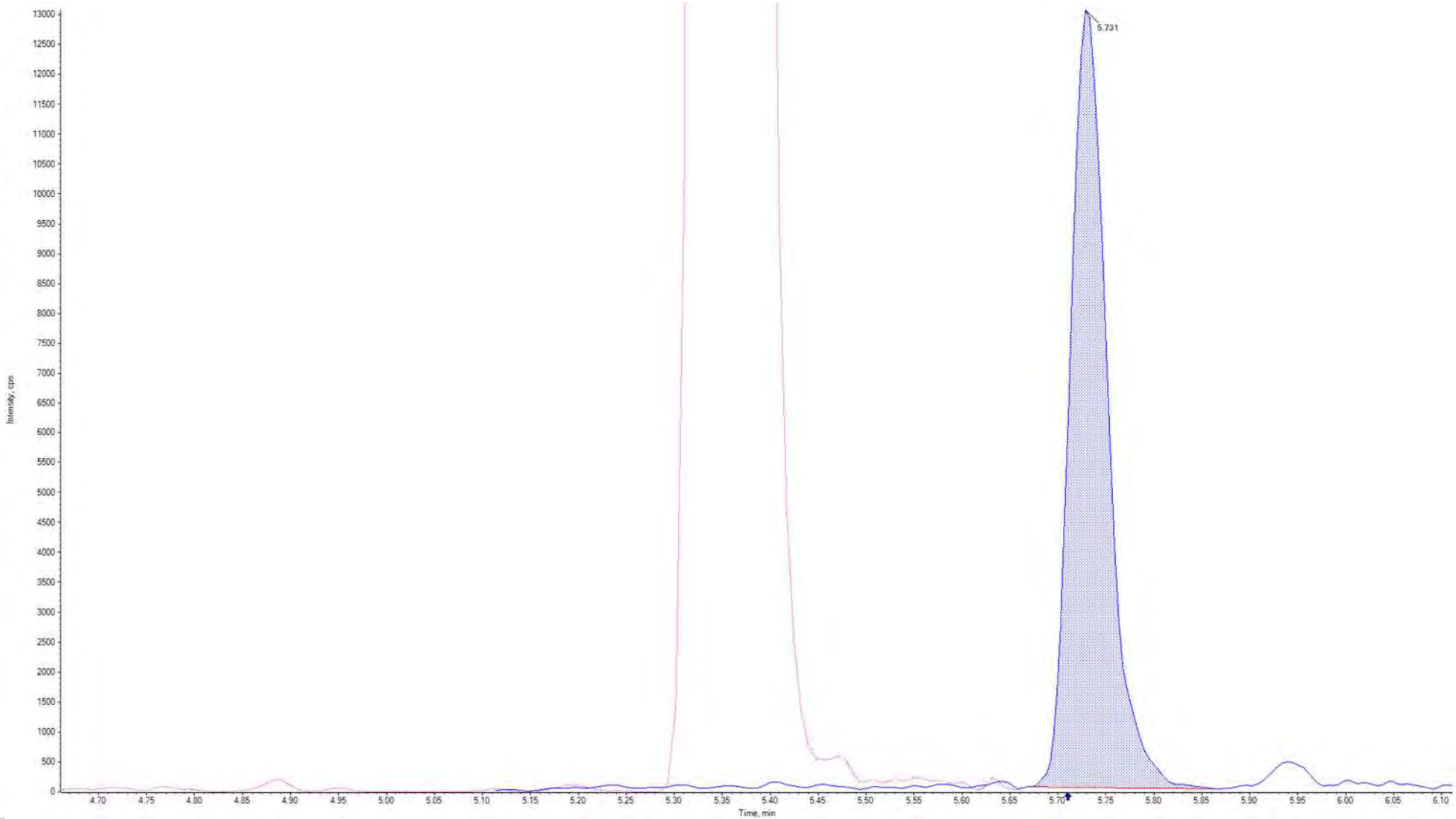
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFEESA
Sample: WG1973506-2,1633LOW S/N:4160.1 Points Across peak:48



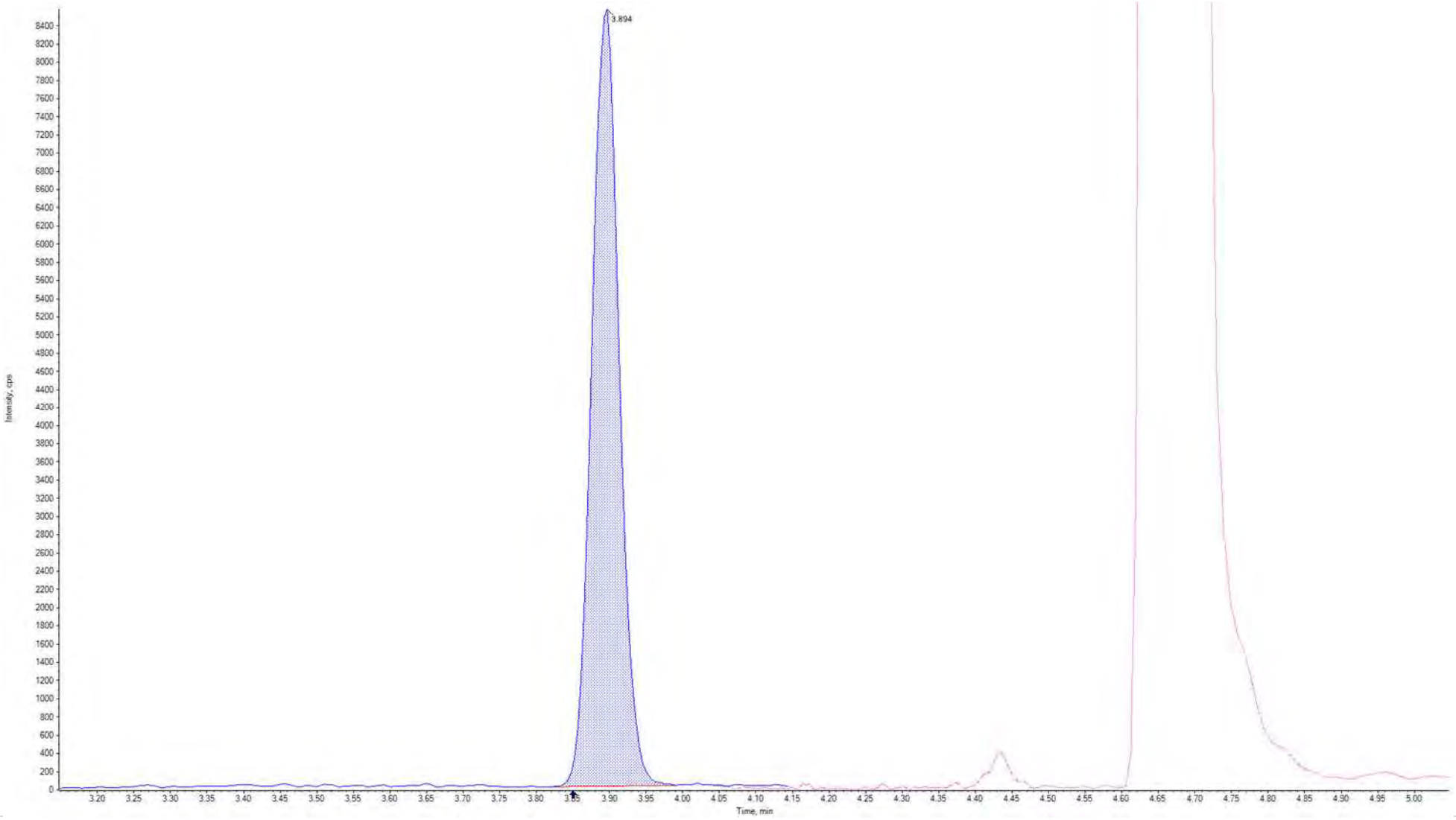
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFEESA_2
Sample: WG1973506-2,1633LOW S/N:1237.2 Points Across peak:40



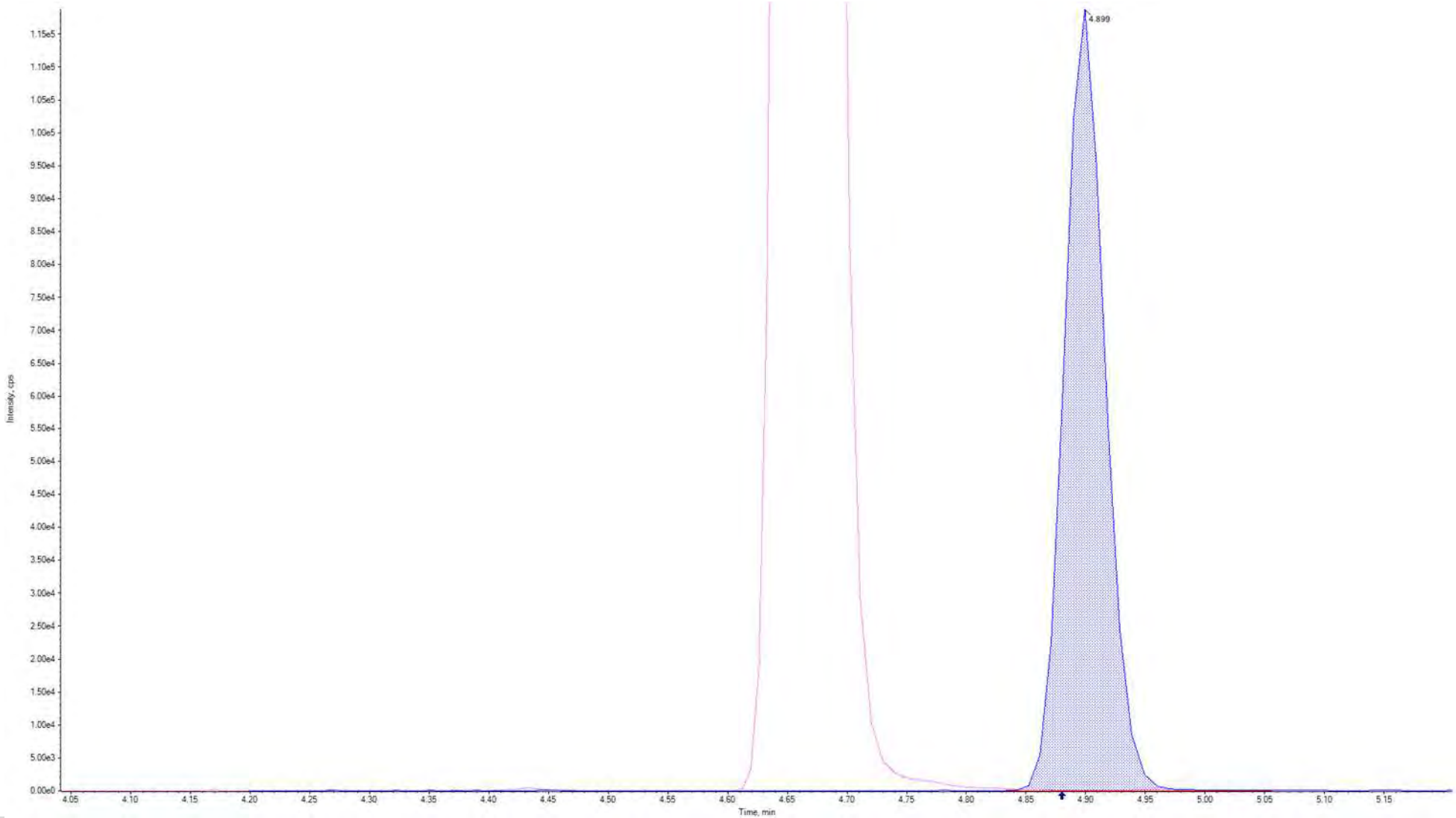
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFMPA
Sample: WG1973506-2,1633LOW S/N:1666.6 Points Across peak:43



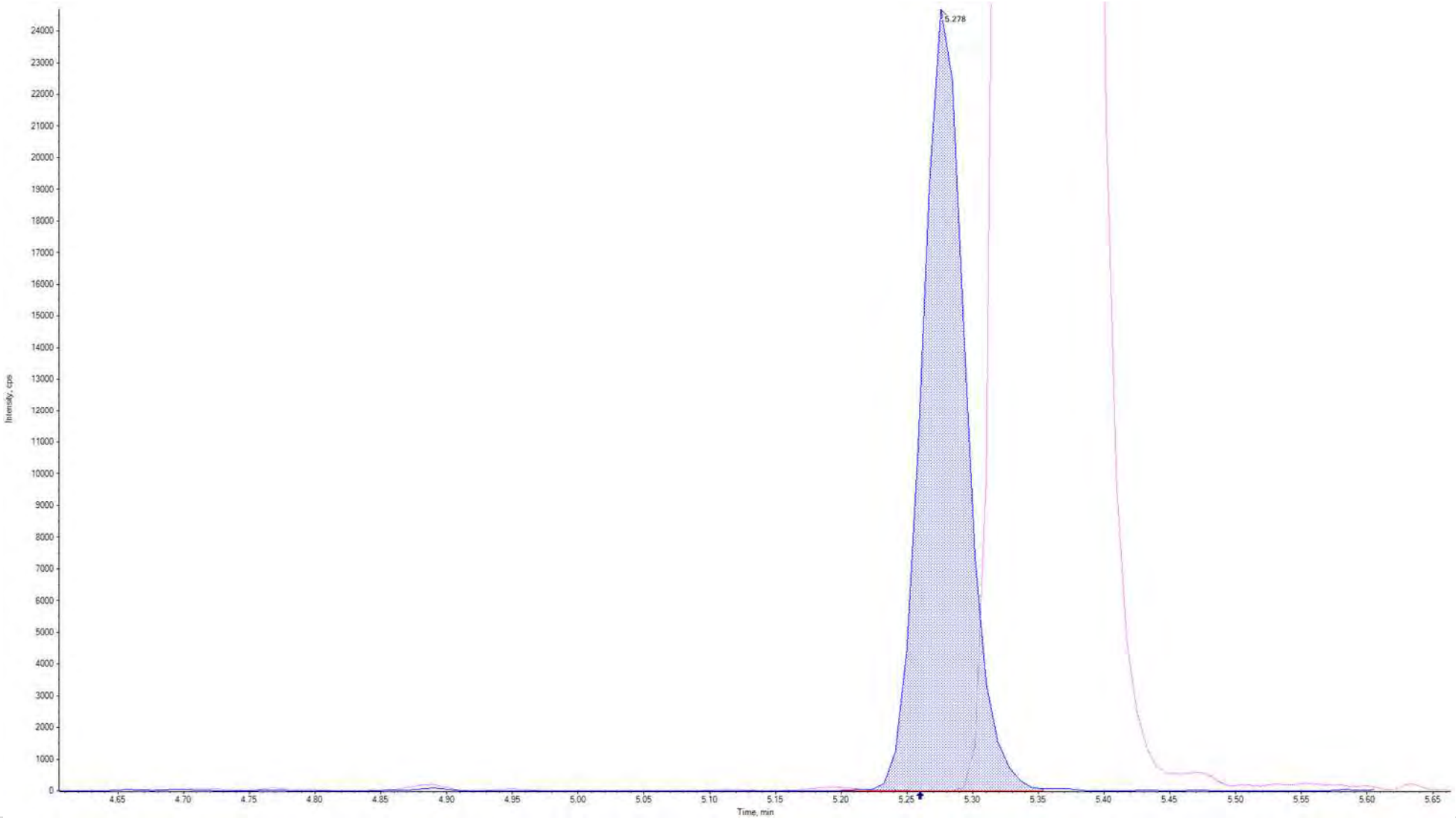
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFMBA
Sample: WG1973506-2,1633LOW S/N:9137.0 Points Across peak:26



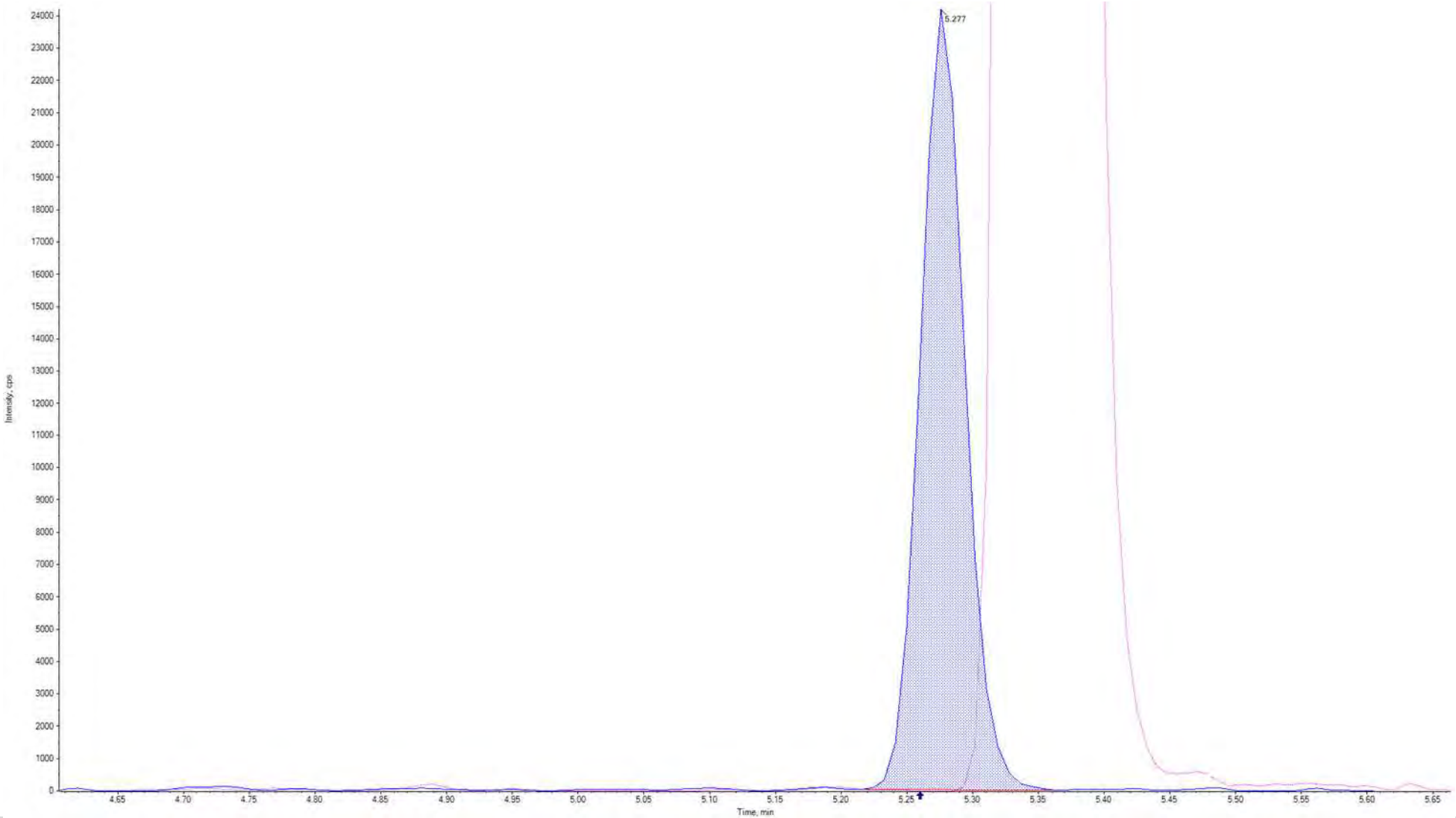
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NFDHA
Sample: WG1973506-2,1633LOW S/N:2634.0 Points Across peak:22



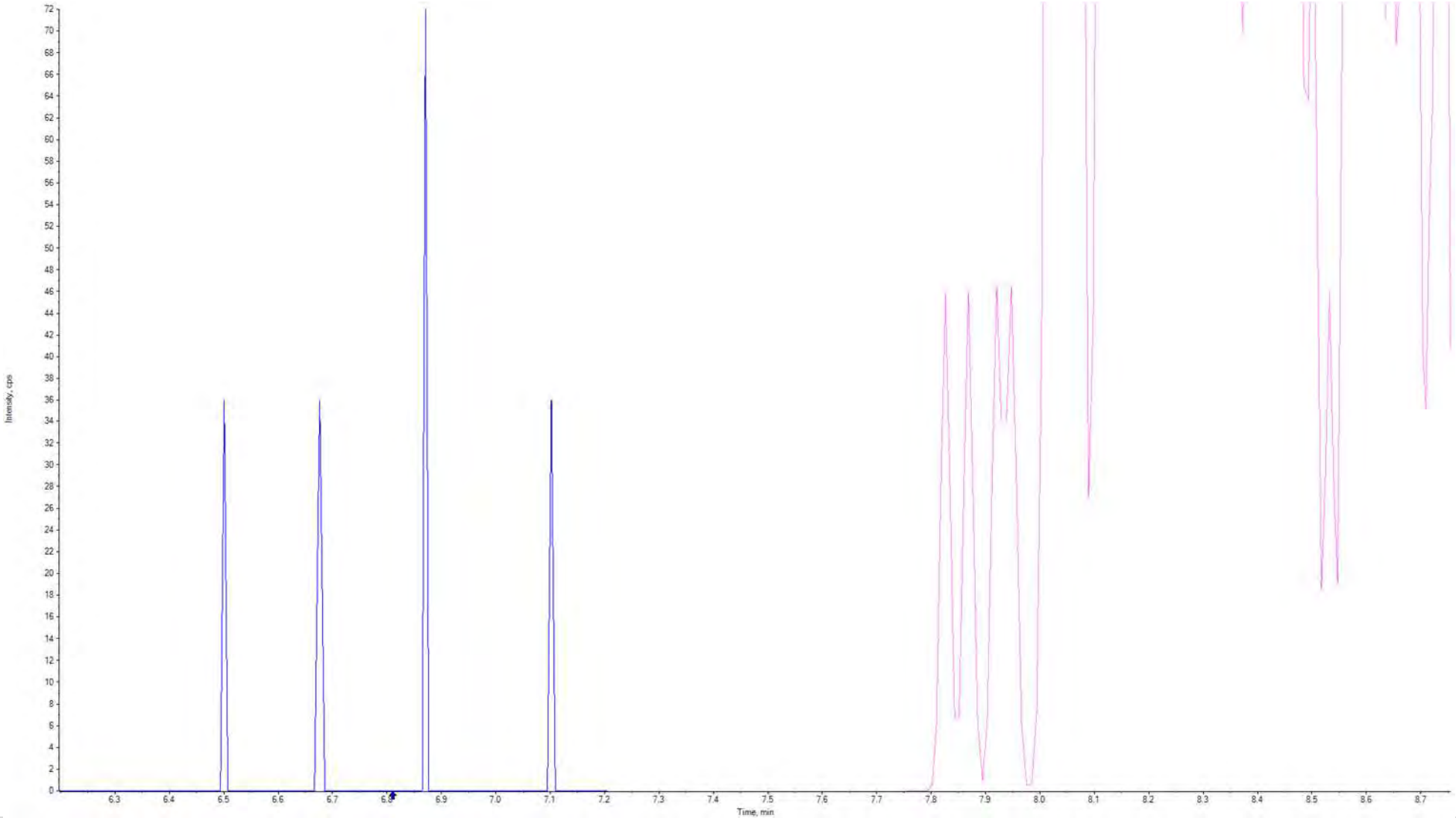
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NFDHA_2
Sample: WG1973506-2,1633LOW S/N:265105.9 Points Across peak:19



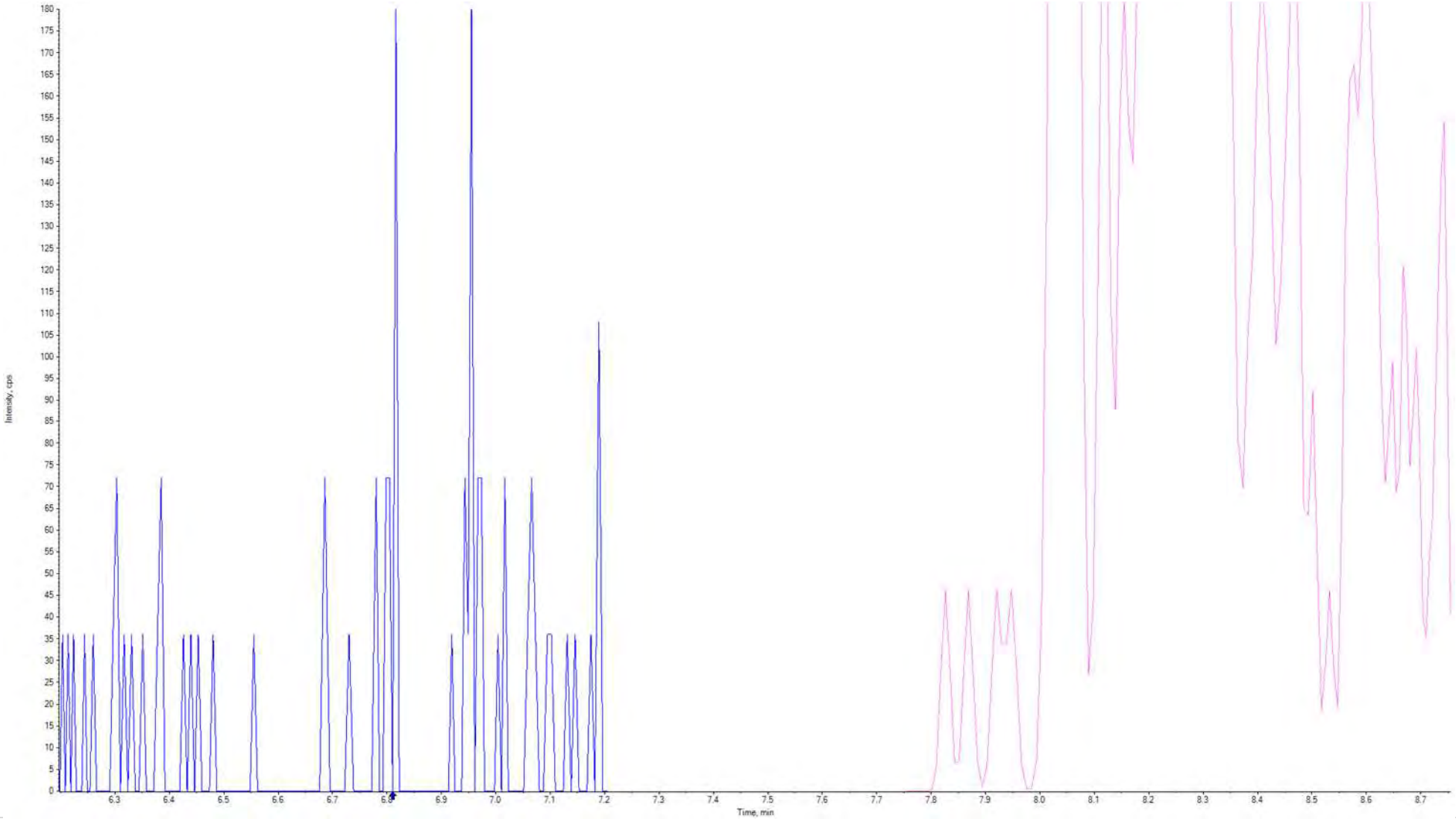
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

TDCA
Sample: WG1973506-2,1633LOW S/N:N/A Points Across peak:N/A



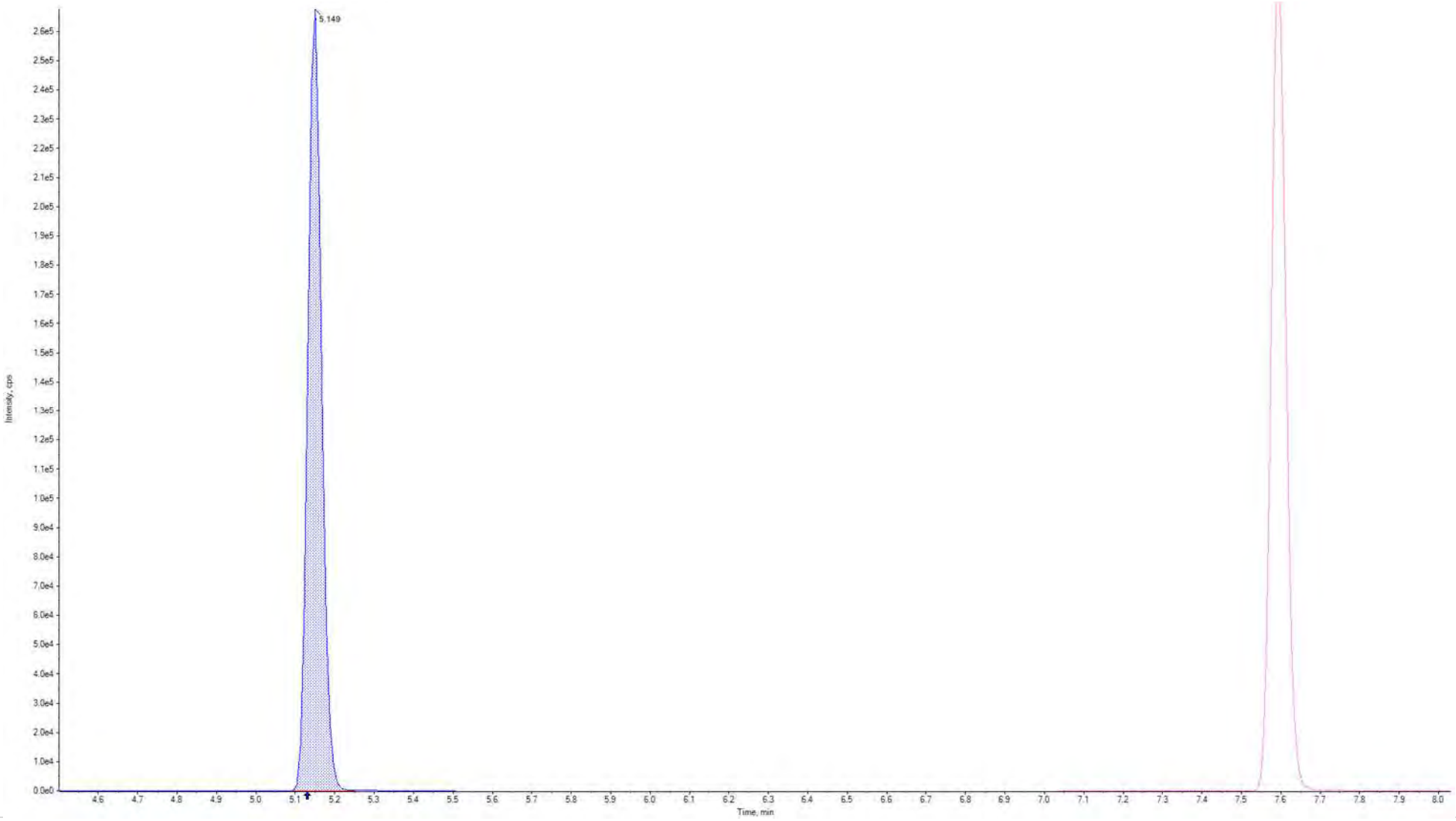
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

TDCA_2
Sample: WG1973506-2,1633LOW S/N:N/A Points Across peak:N/A



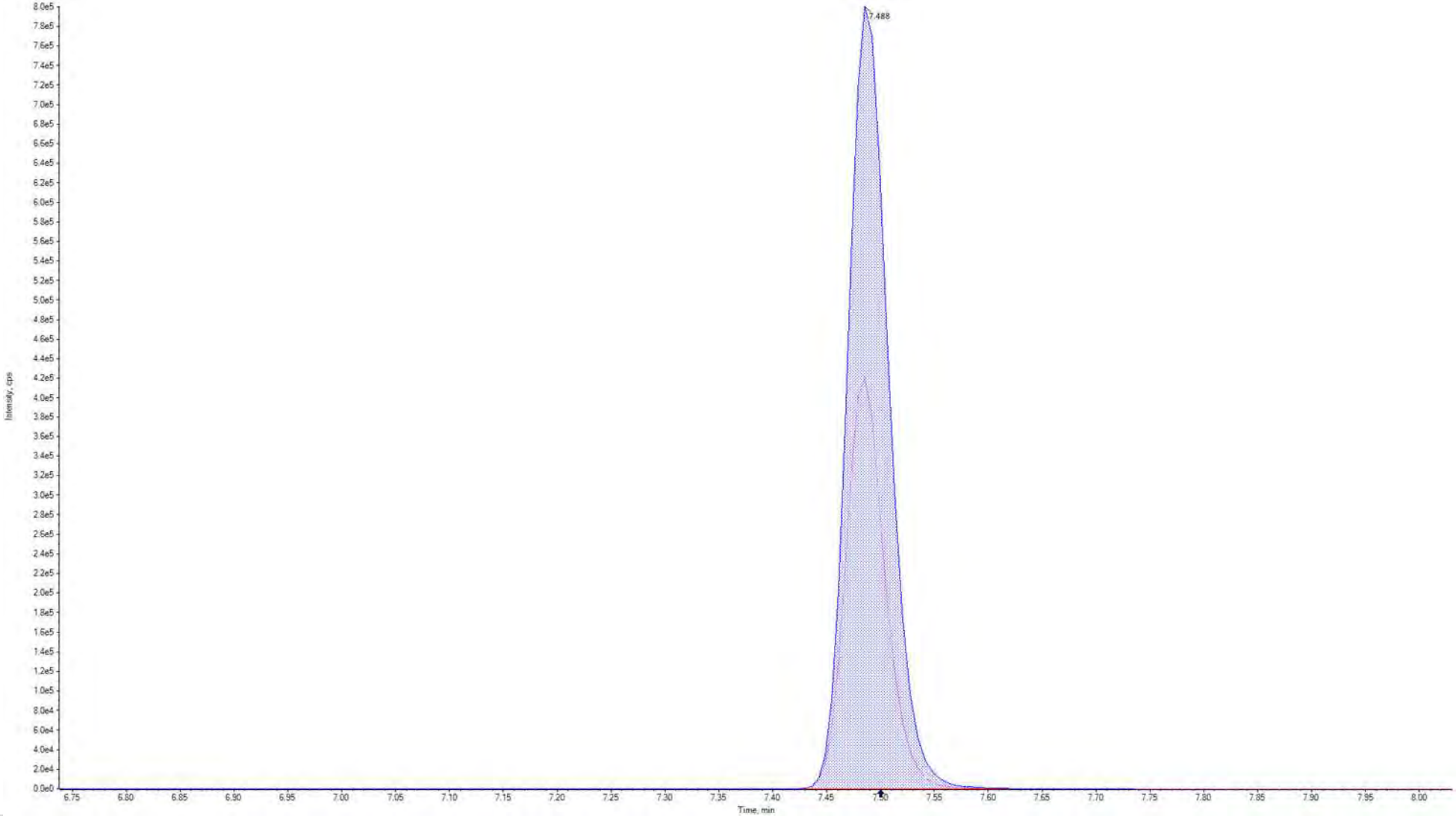
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C2D4-4:2FTS
Sample: WG1973506-2,1633LOW S/N:1241.5 Points Across peak:20



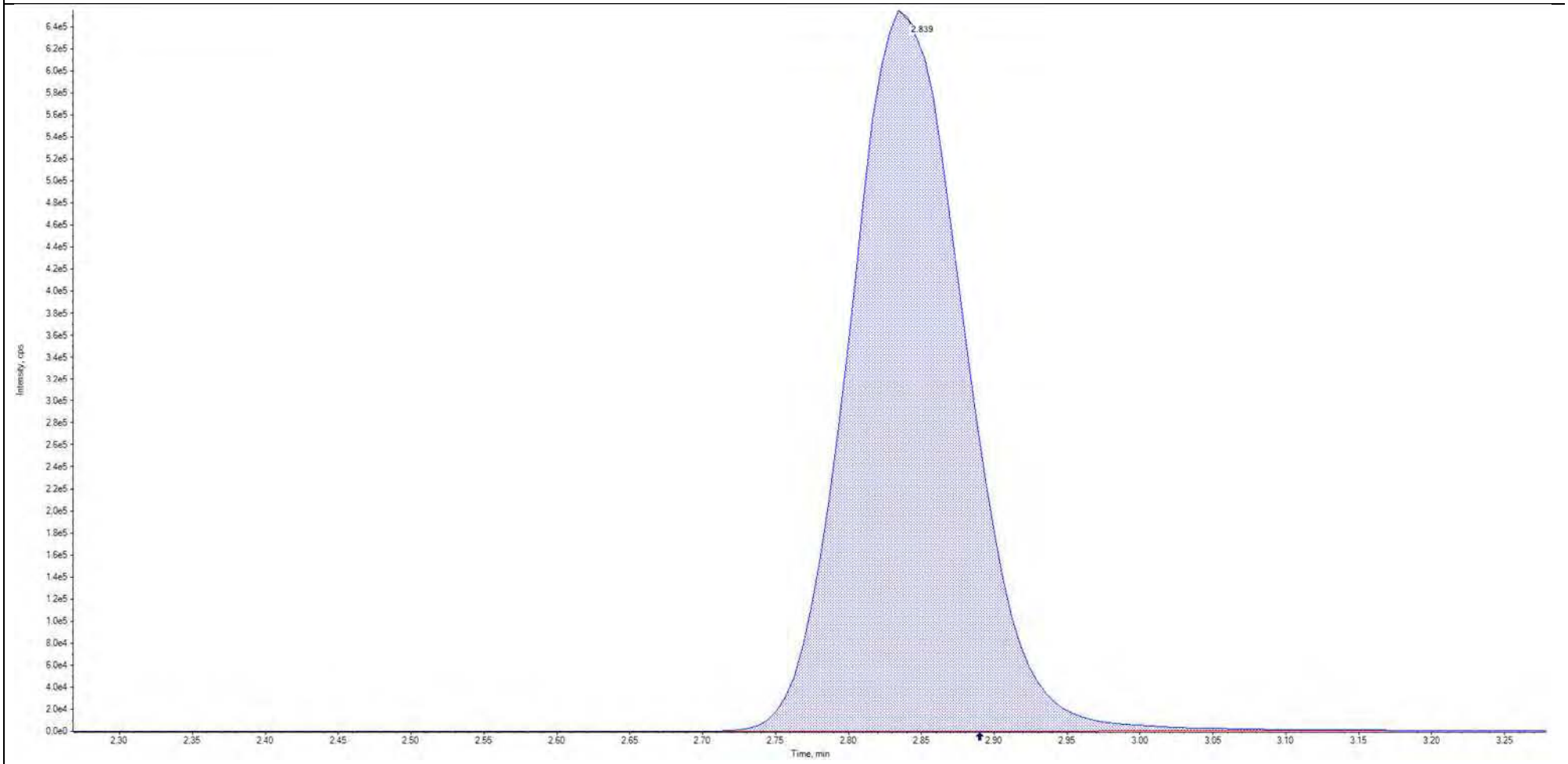
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C2-PFOA
Sample: WG1973506-2,1633LOW S/N:13117.3 Points Across peak:38

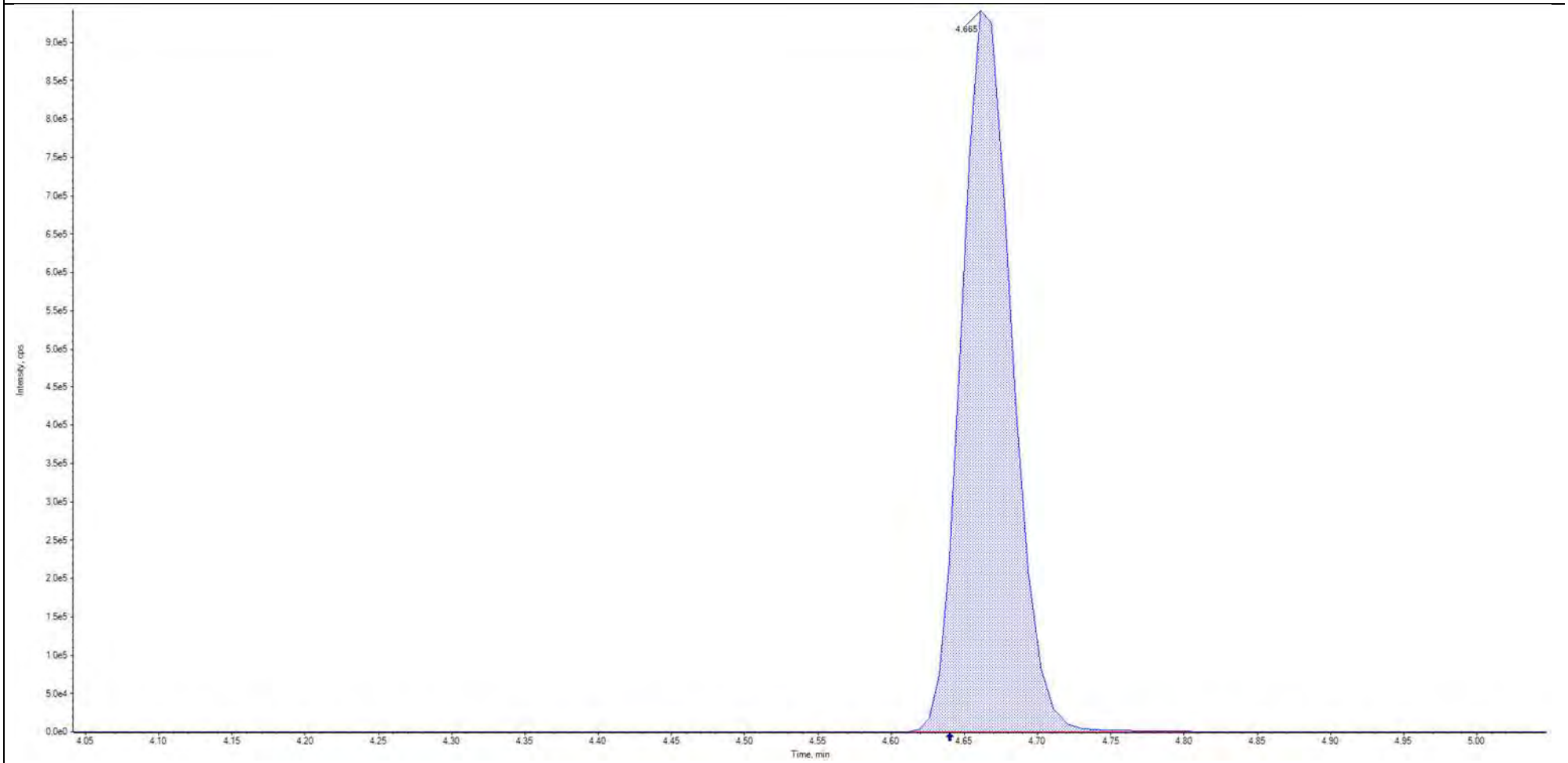


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C4-PFBA
Sample: WG1973506-2,1633LOW

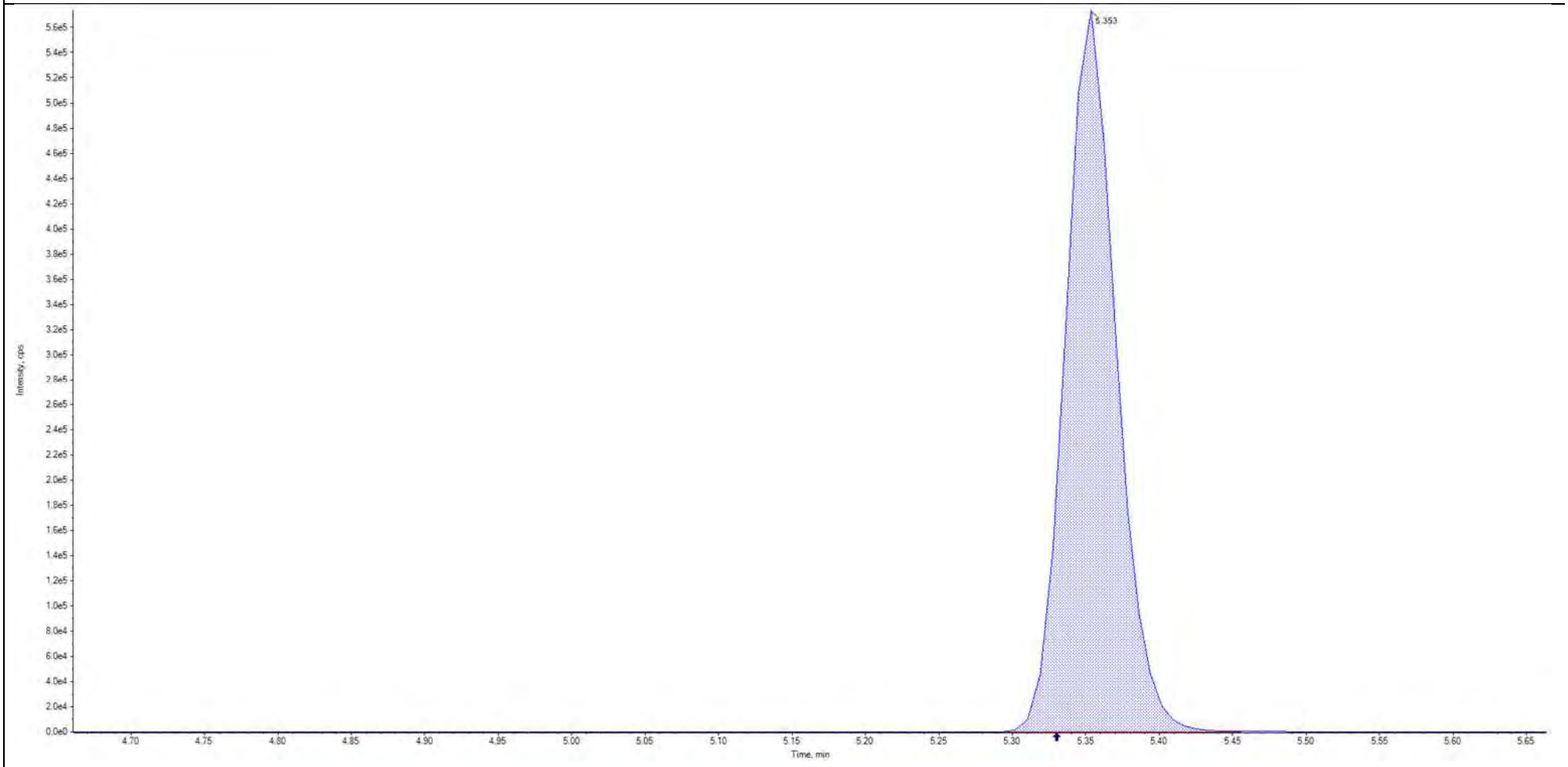


13C5-PFPeA
Sample: WG1973506-2,1633LOW

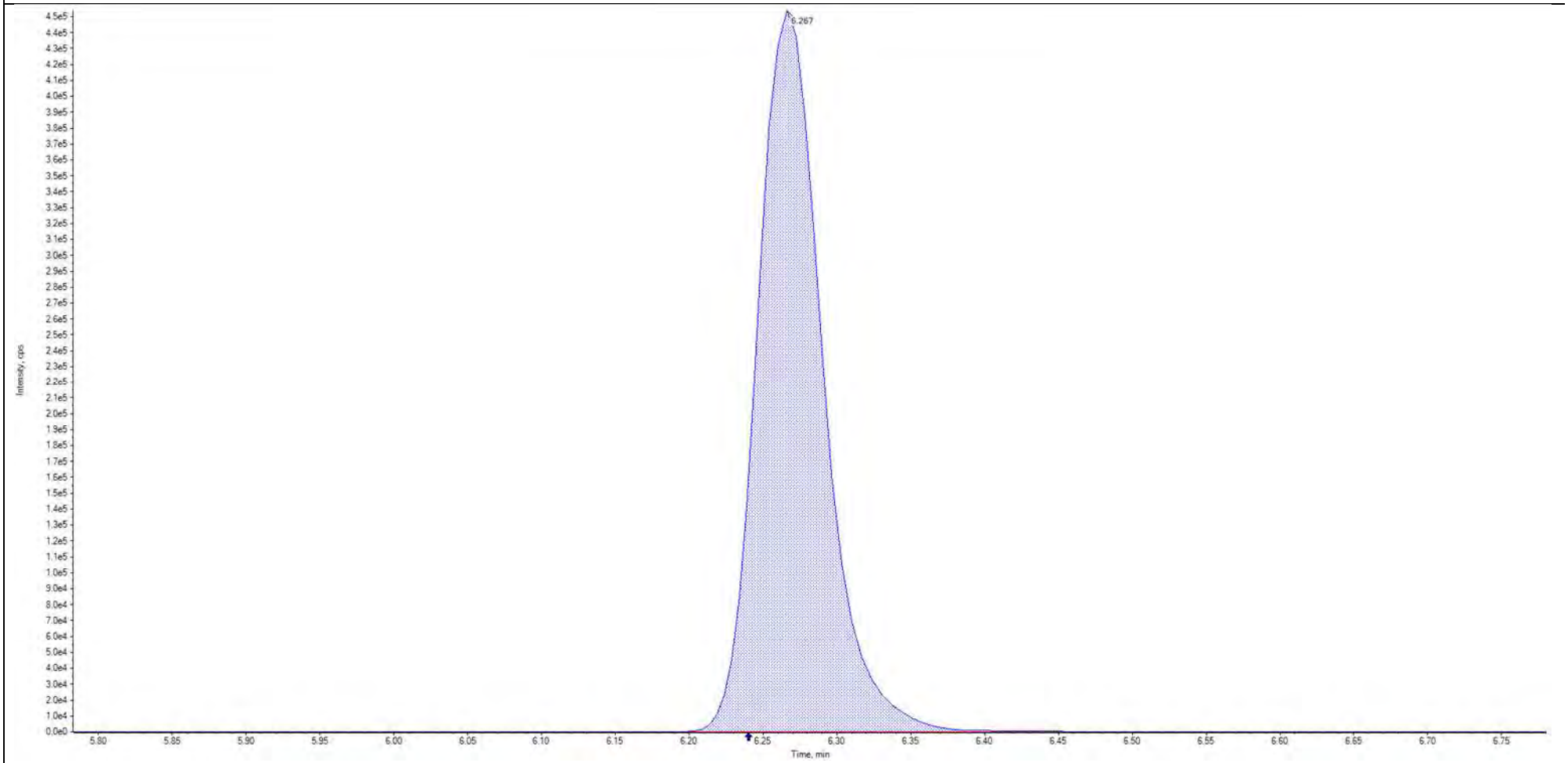


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C5-PFHxA
Sample: WG1973506-2,1633LOW

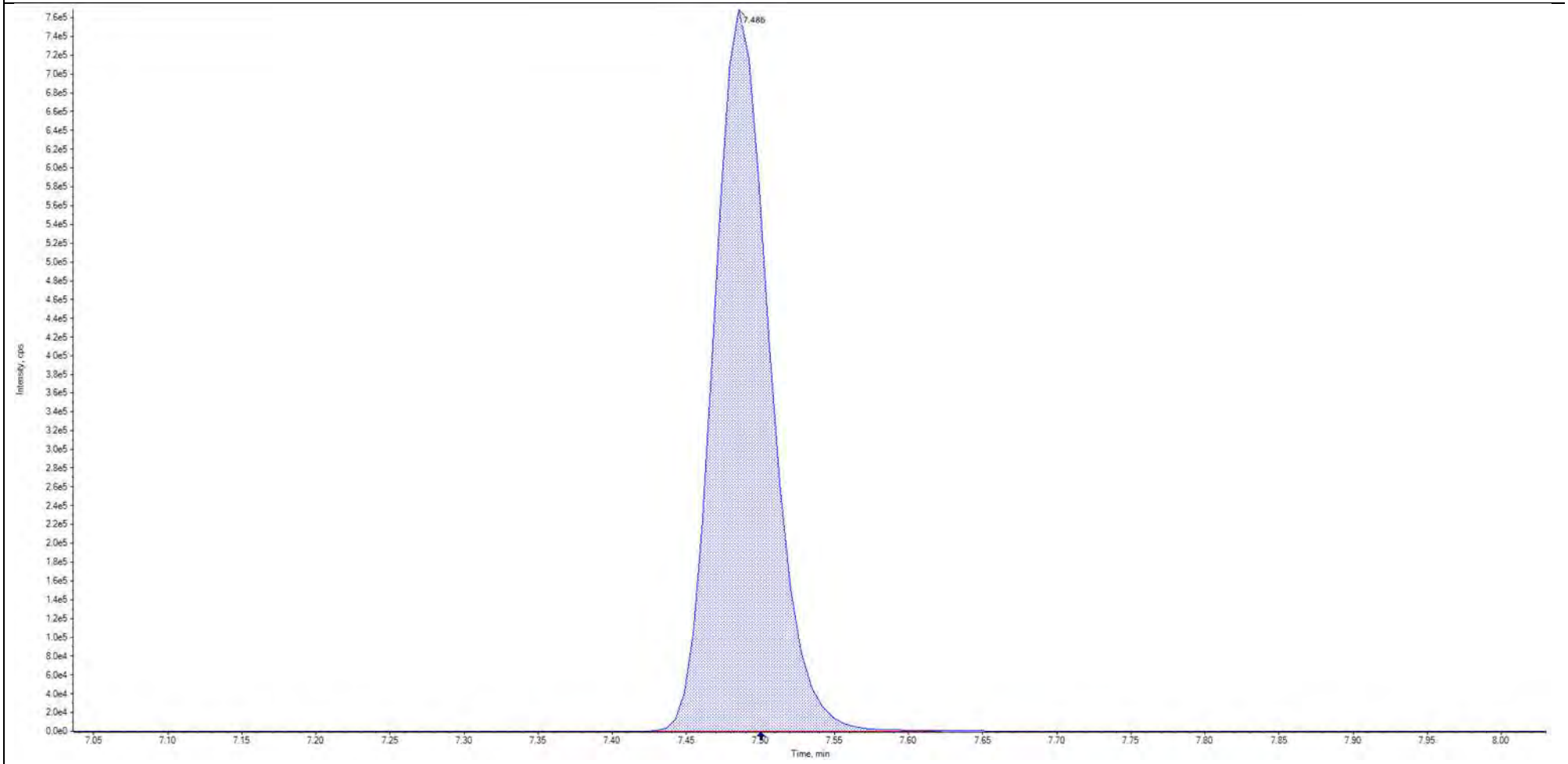


13C4-PFHpA
Sample: WG1973506-2,1633LOW

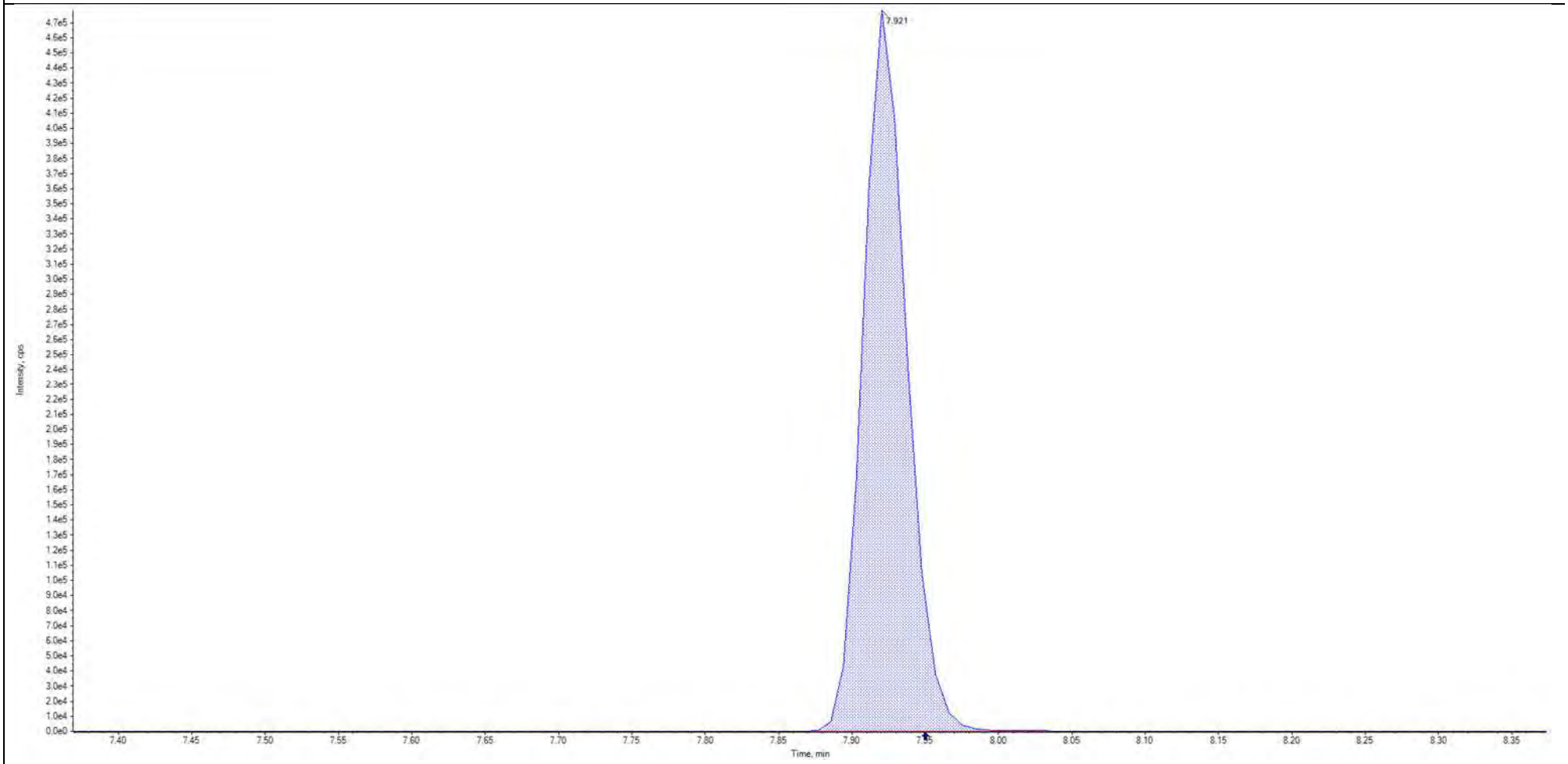


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

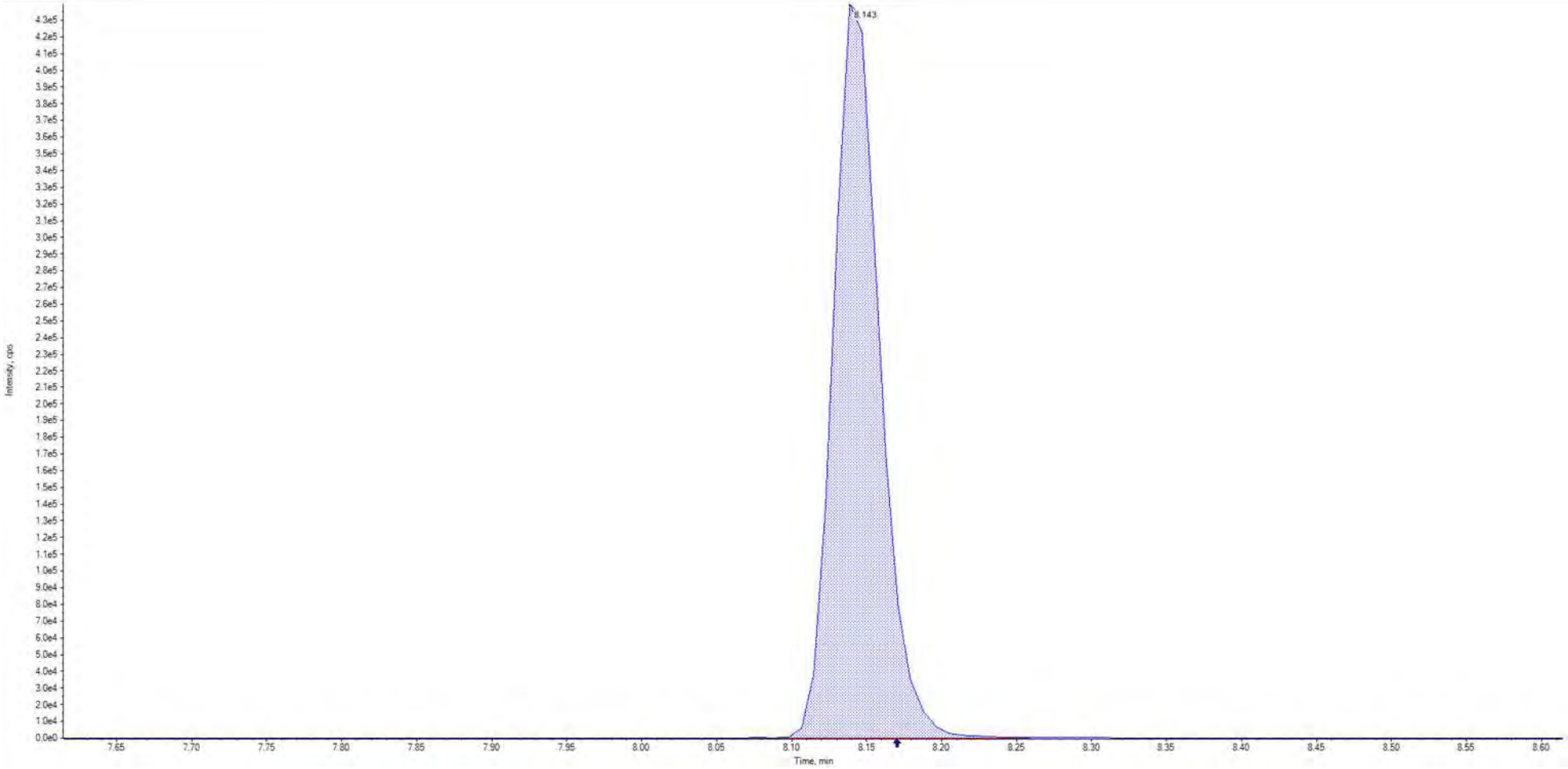
13C8-PFOA
Sample: WG1973506-2,1633LOW



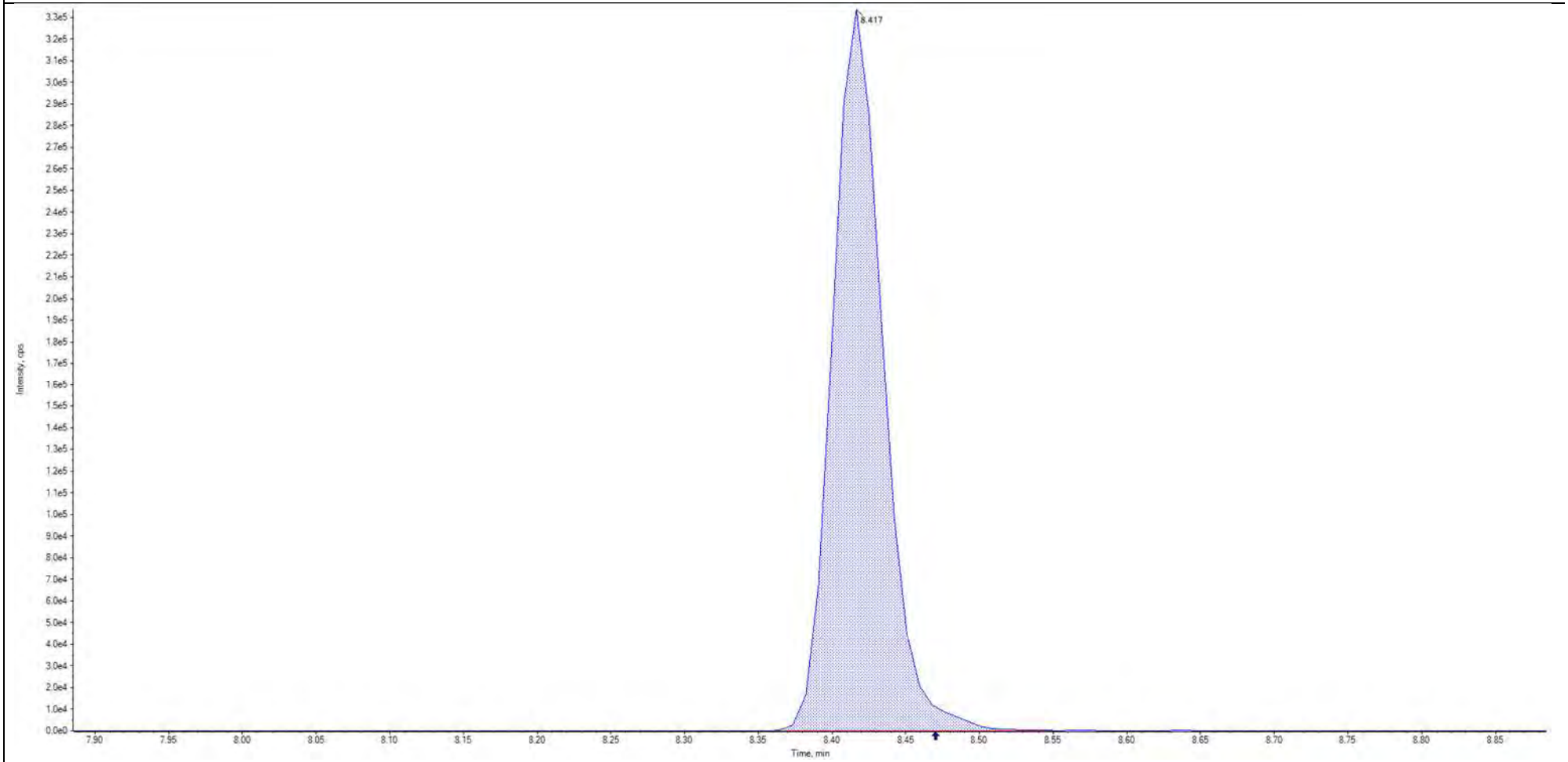
13C9-PFNA
Sample: WG1973506-2,1633LOW



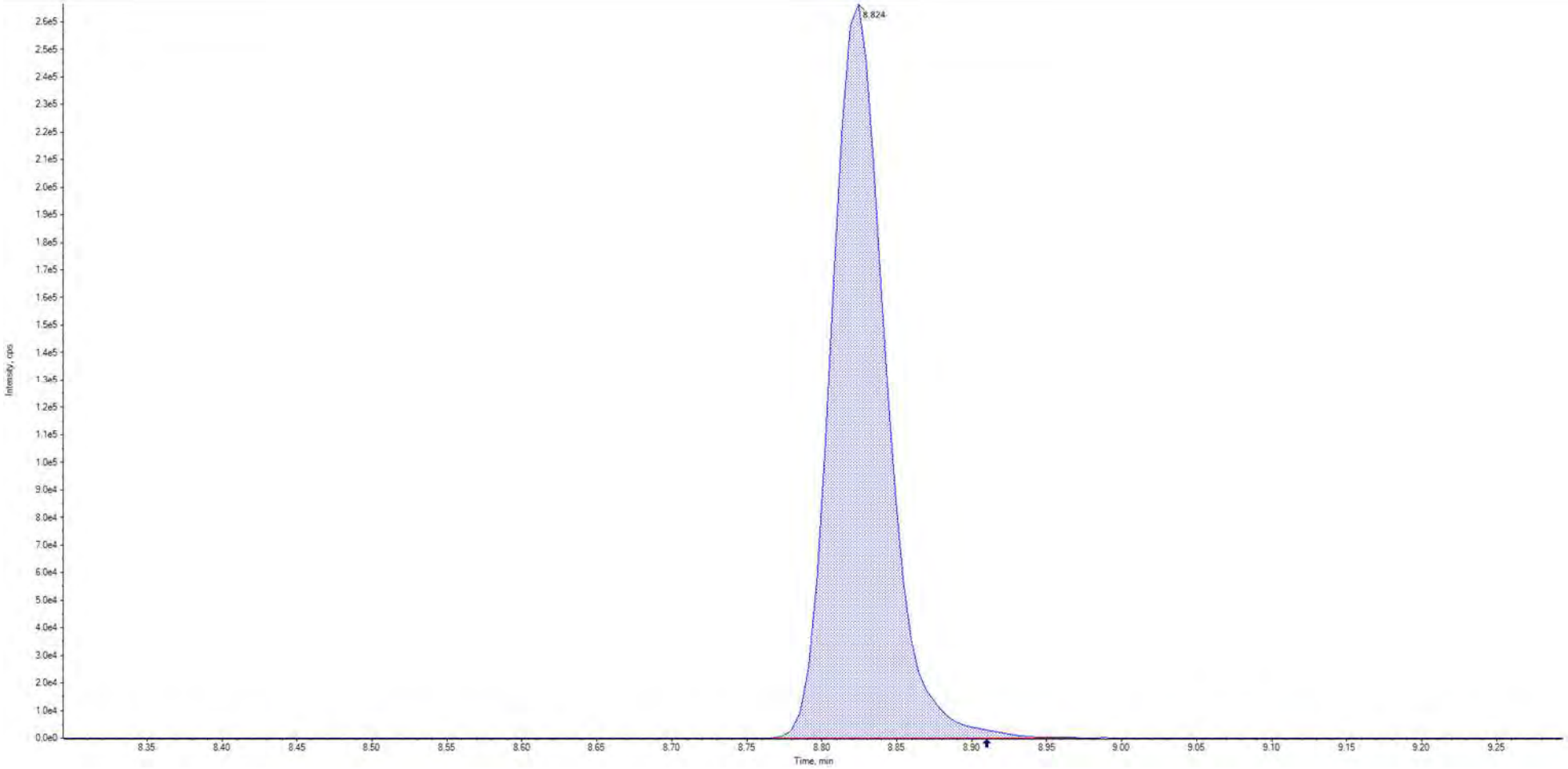
13C6-PFDA
Sample: WG1973506-2,1633LOW



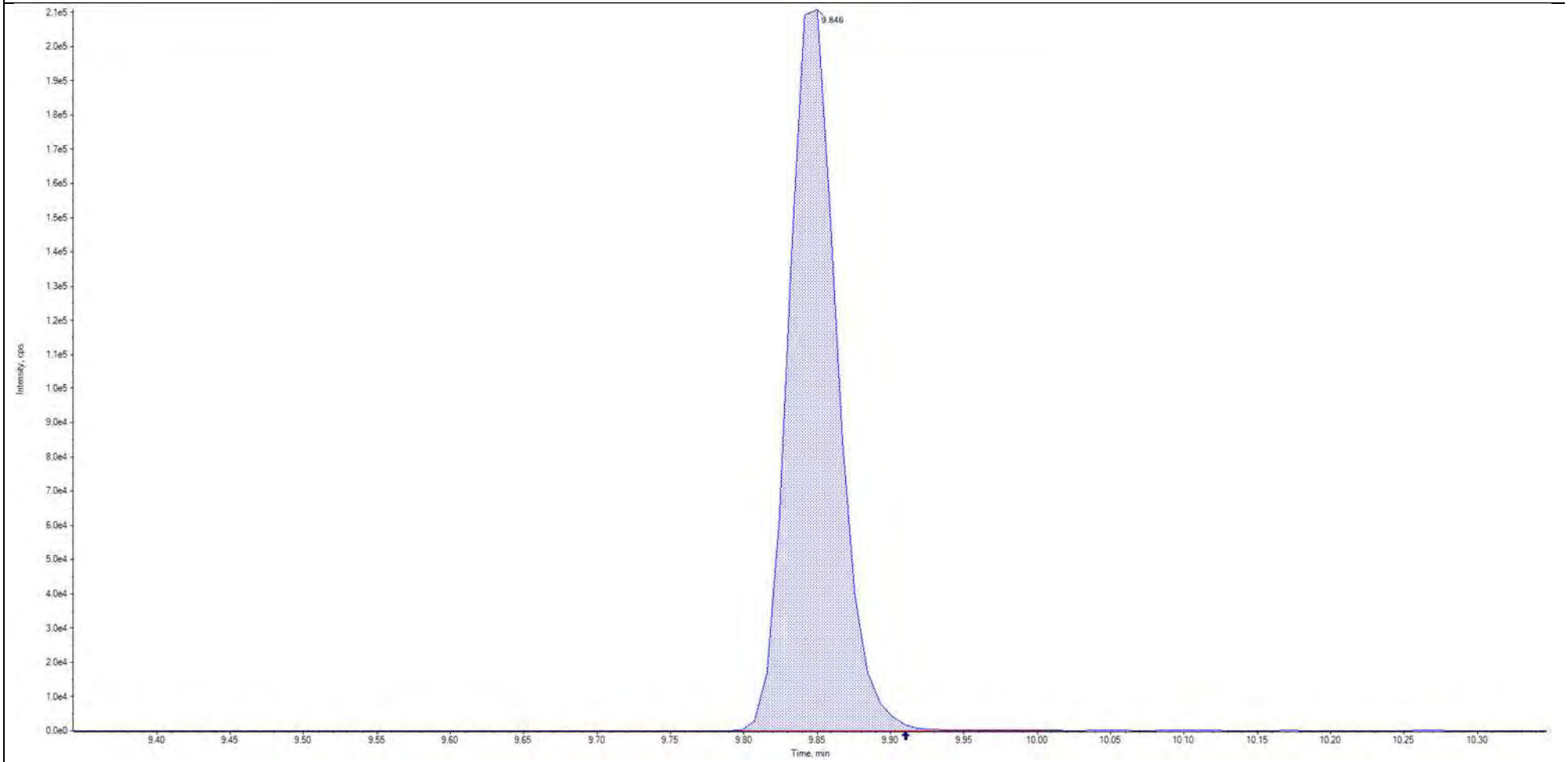
13C7-PFUnA
Sample: WG1973506-2,1633LOW



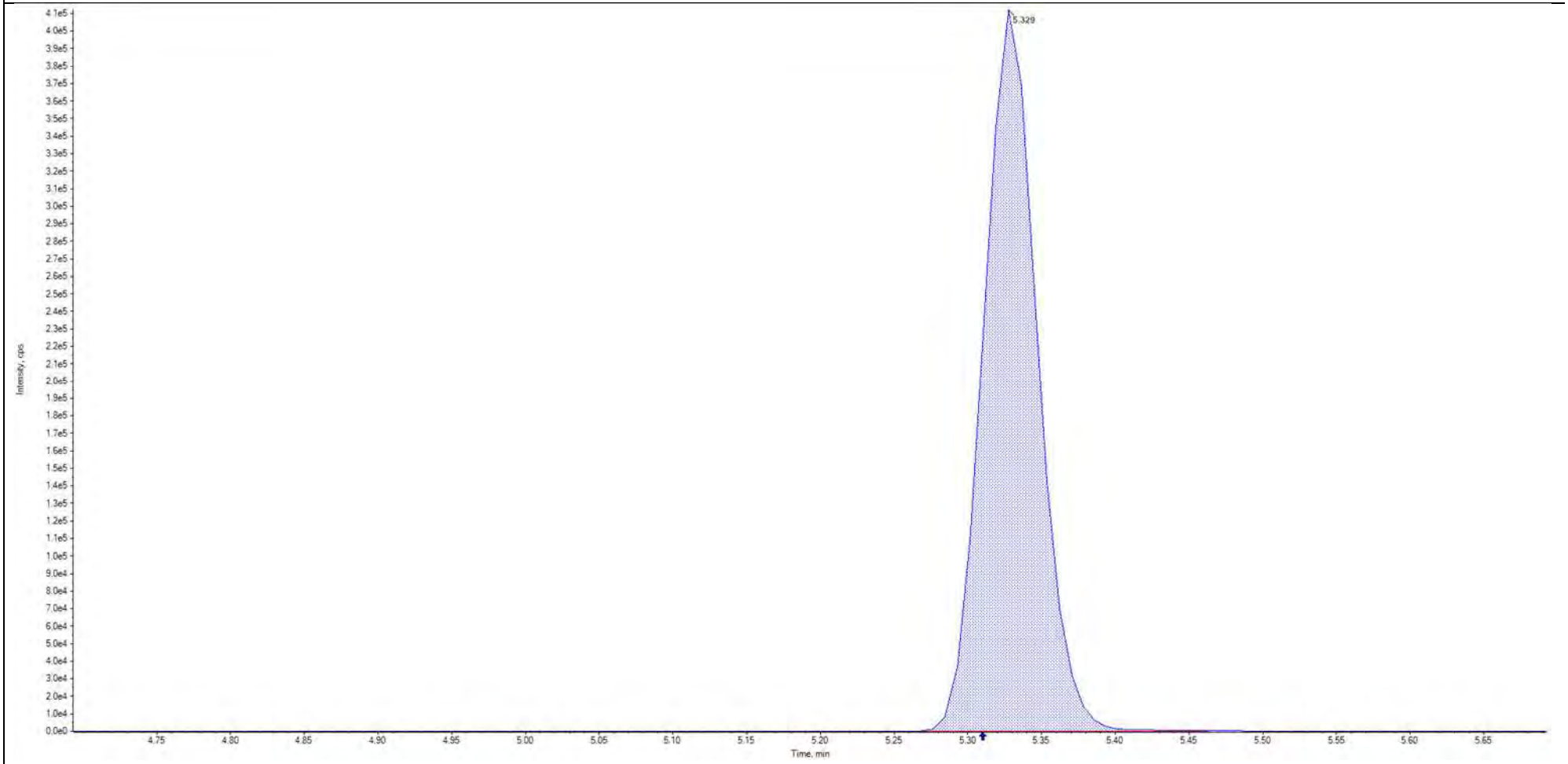
13C2-PFDoA
Sample: WG1973506-2,1633LOW



13C2-PFTeDA
Sample: WG1973506-2,1633LOW



13C3-PFBS
Sample: WG1973506-2,1633LOW



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Alpha Analytical Inc.
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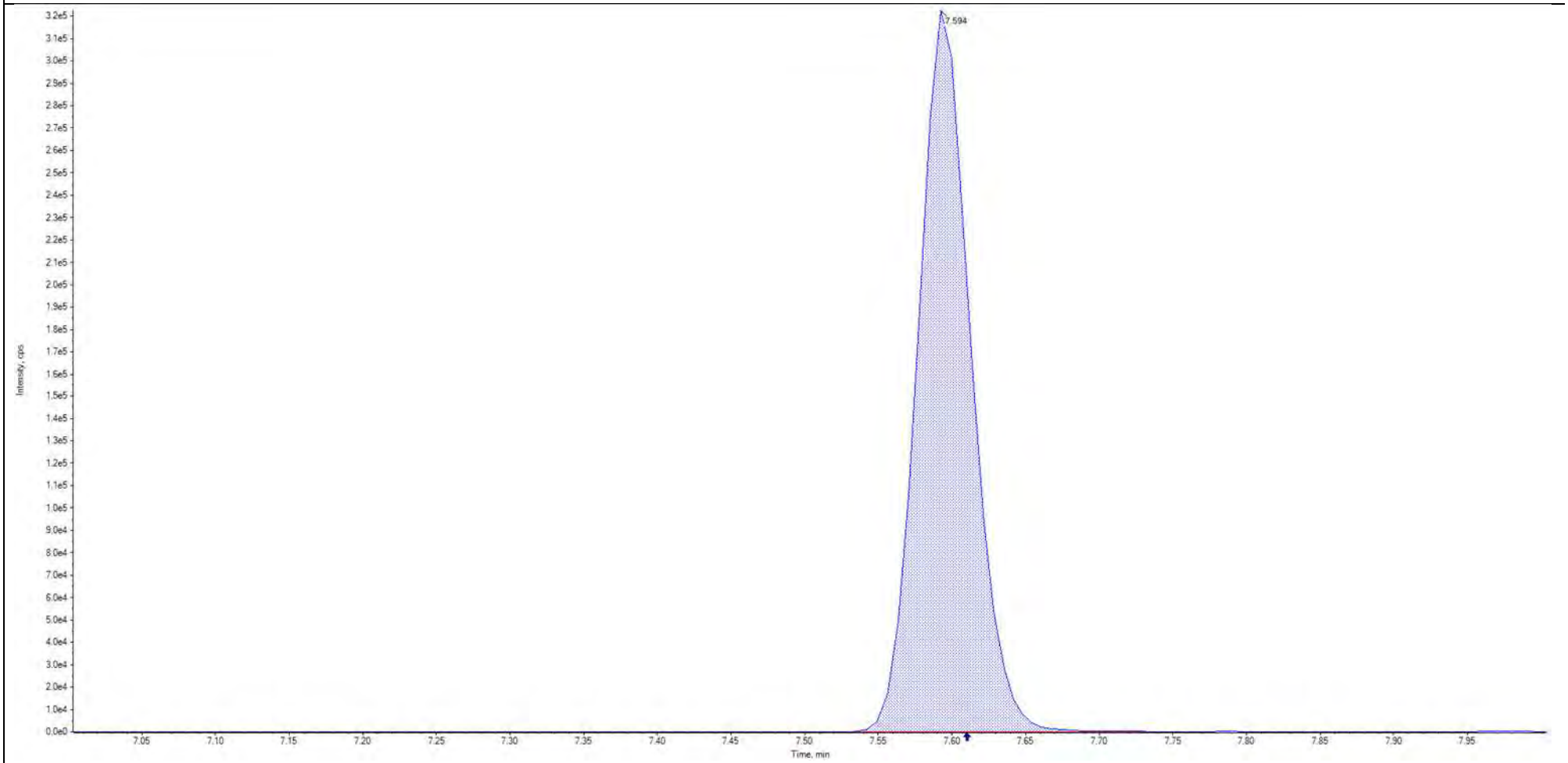
13C3-PFHxS
Sample: WG1973506-2,1633LOW



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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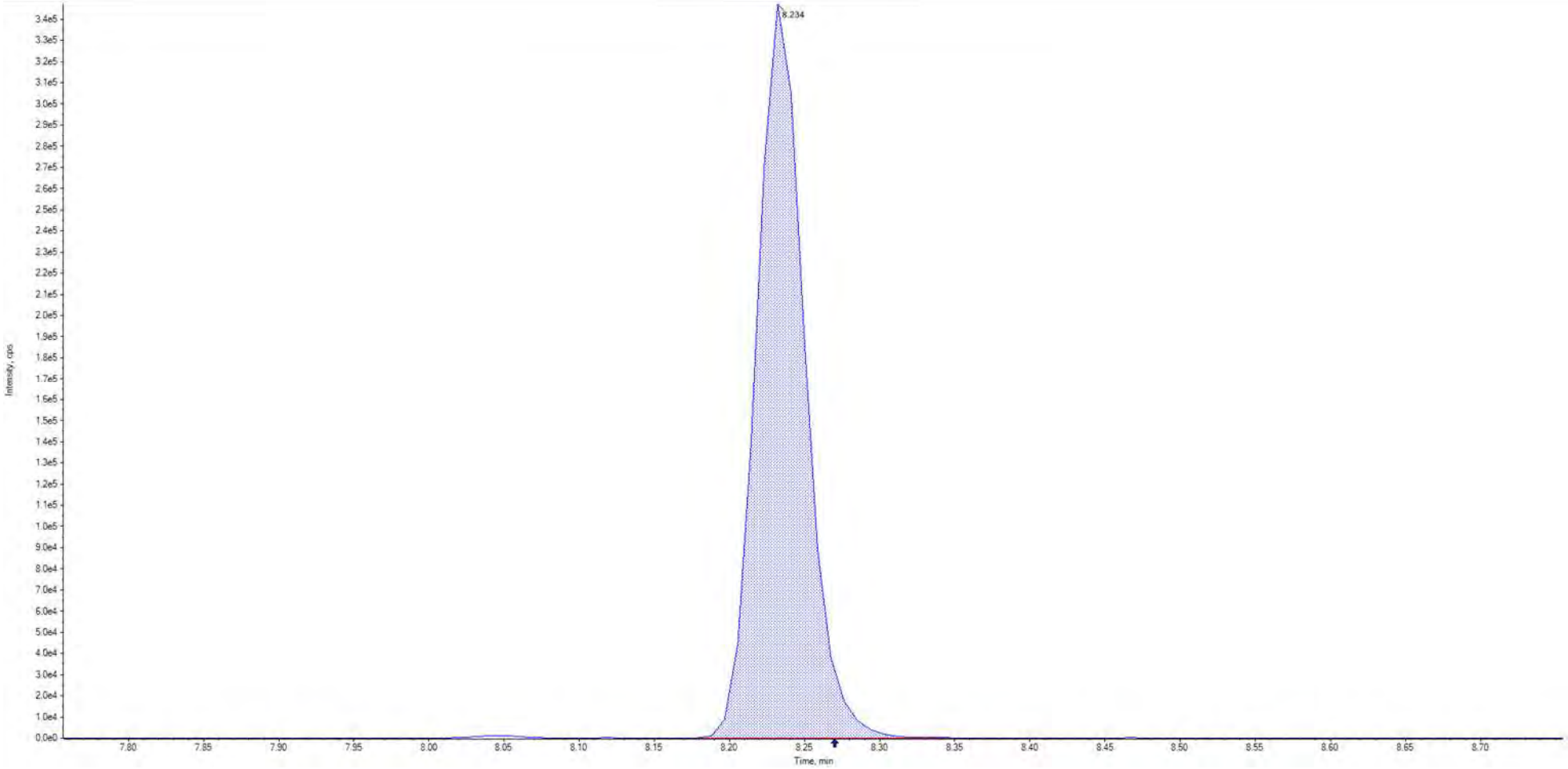
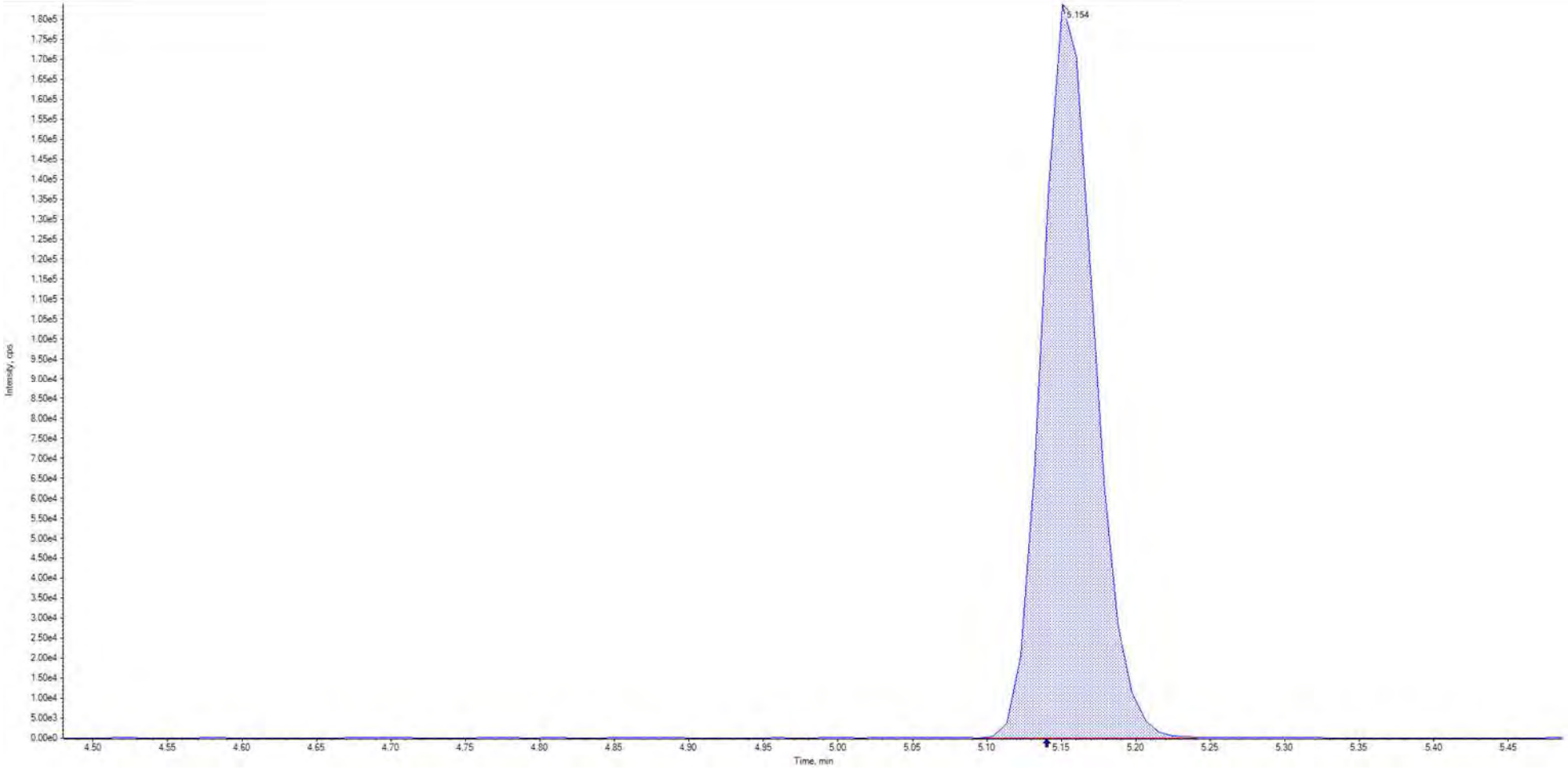
13C8-PFOS
Sample: WG1973506-2,1633LOW



13C2-4:2FTS
Sample: WG1973506-2,1633LOW



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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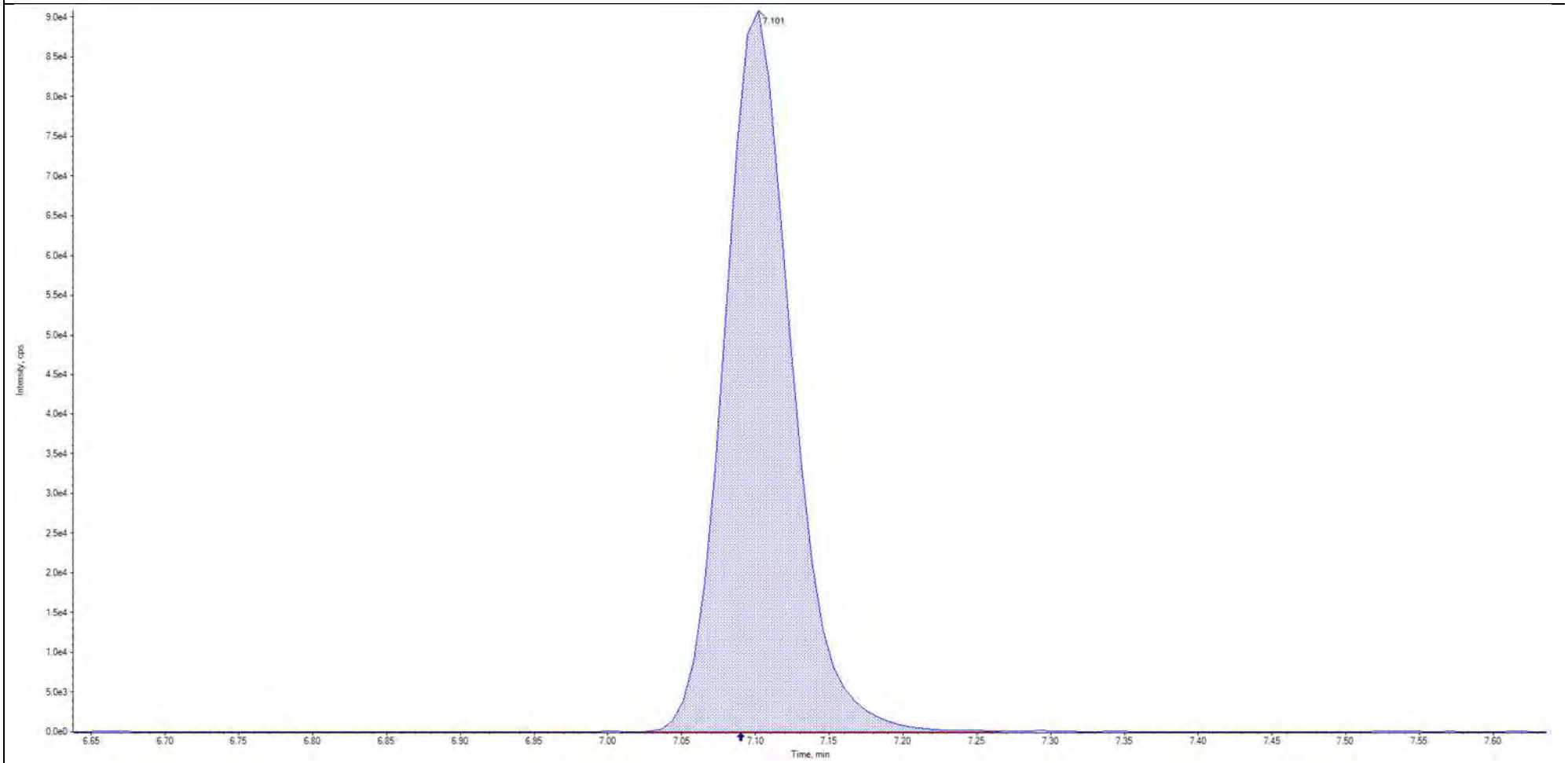
13C2-6:2FTS
Sample: WG1973506-2,1633LOW



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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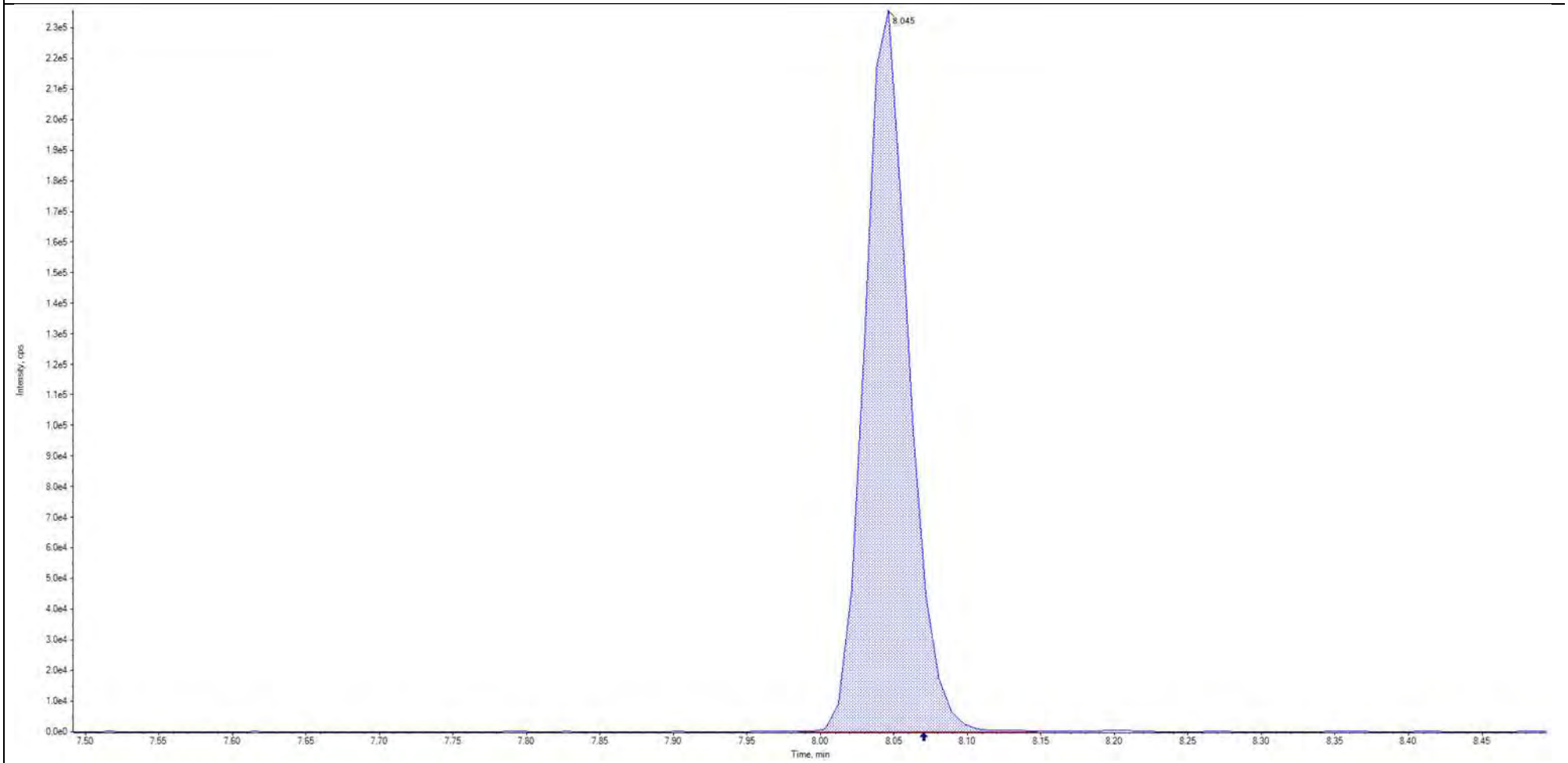
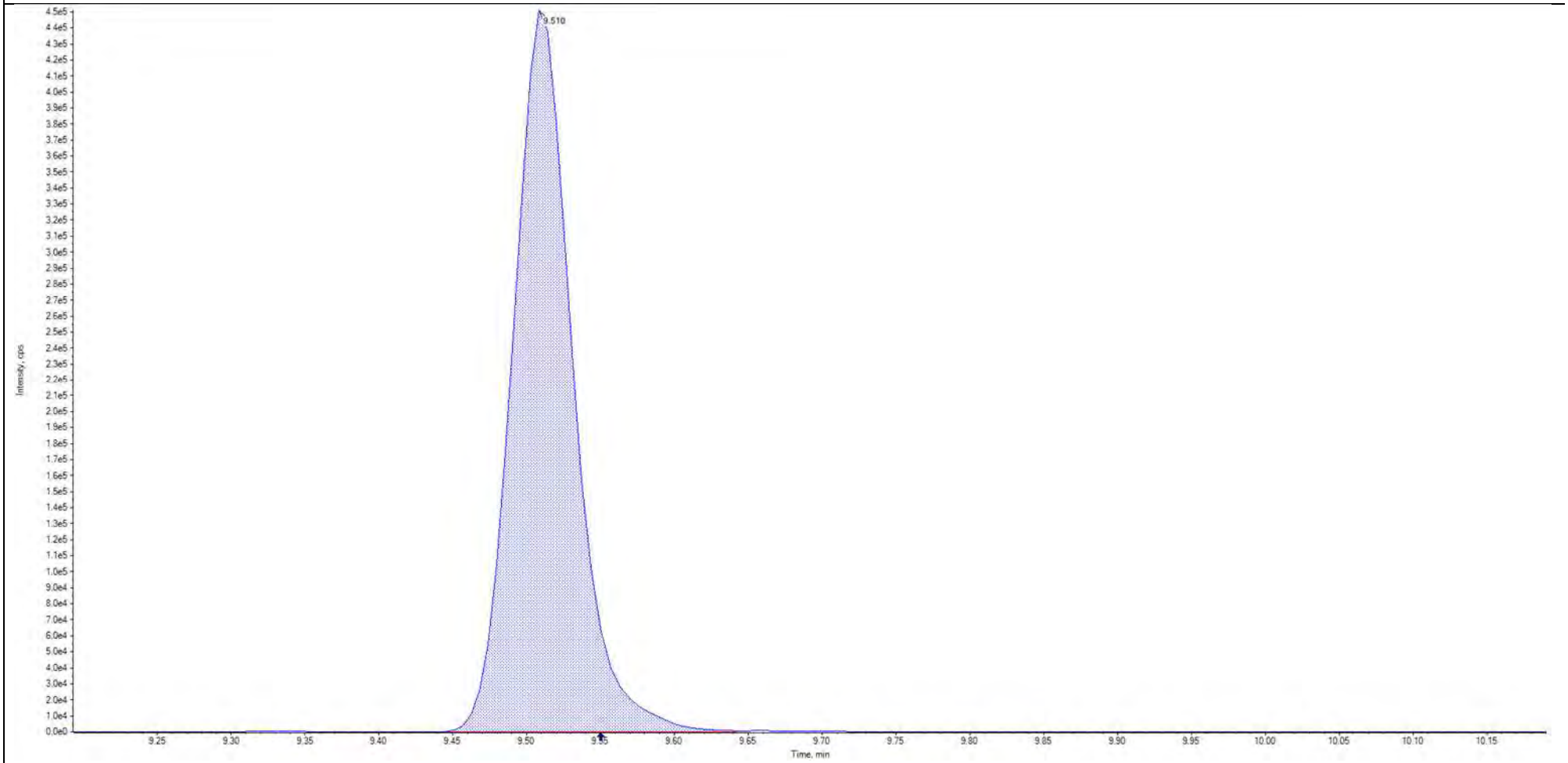
Generated: 9/19/2024 8:04:31 AM

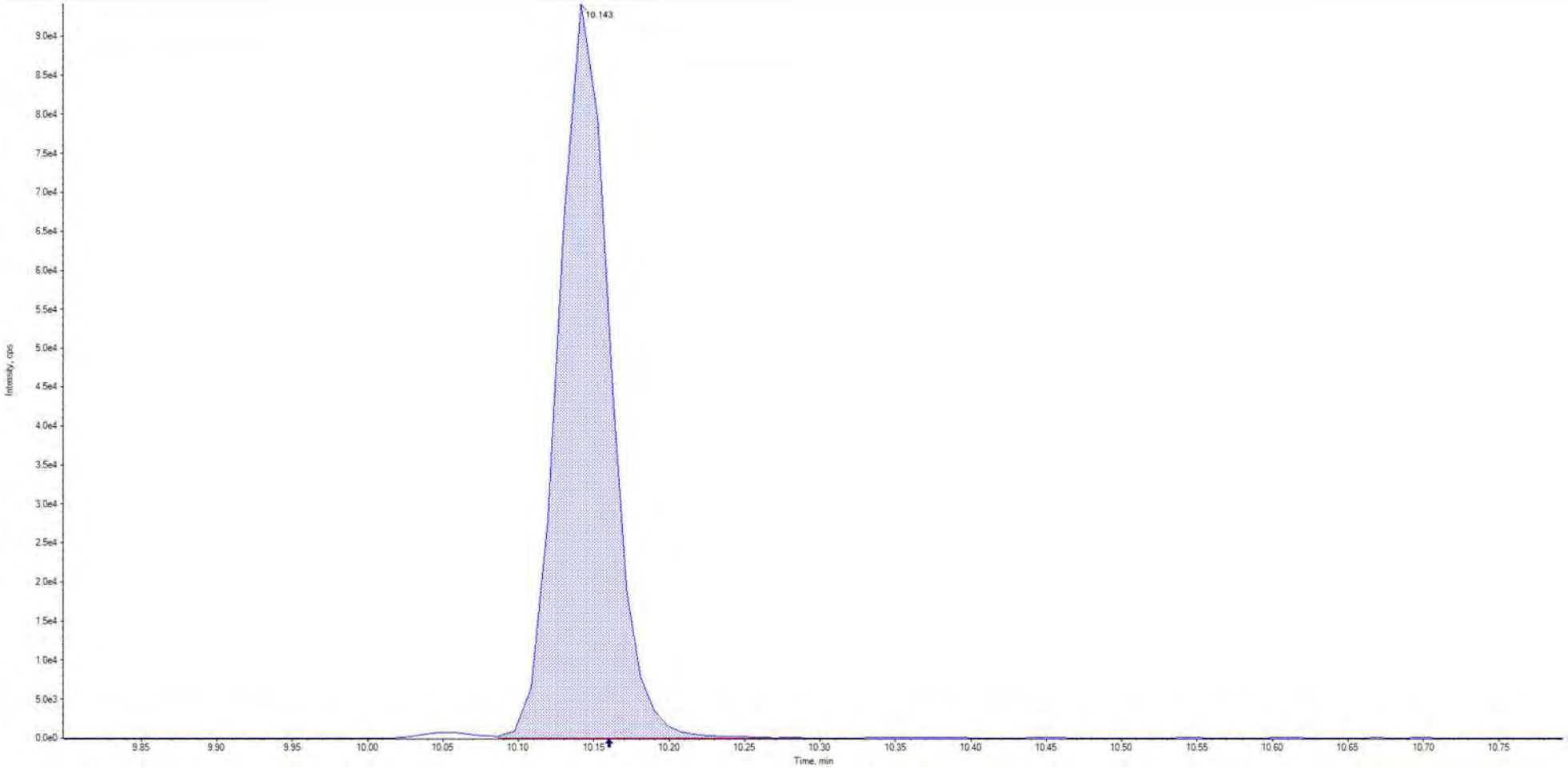
13C2-8:2FTS
Sample: WG1973506-2,1633LOW



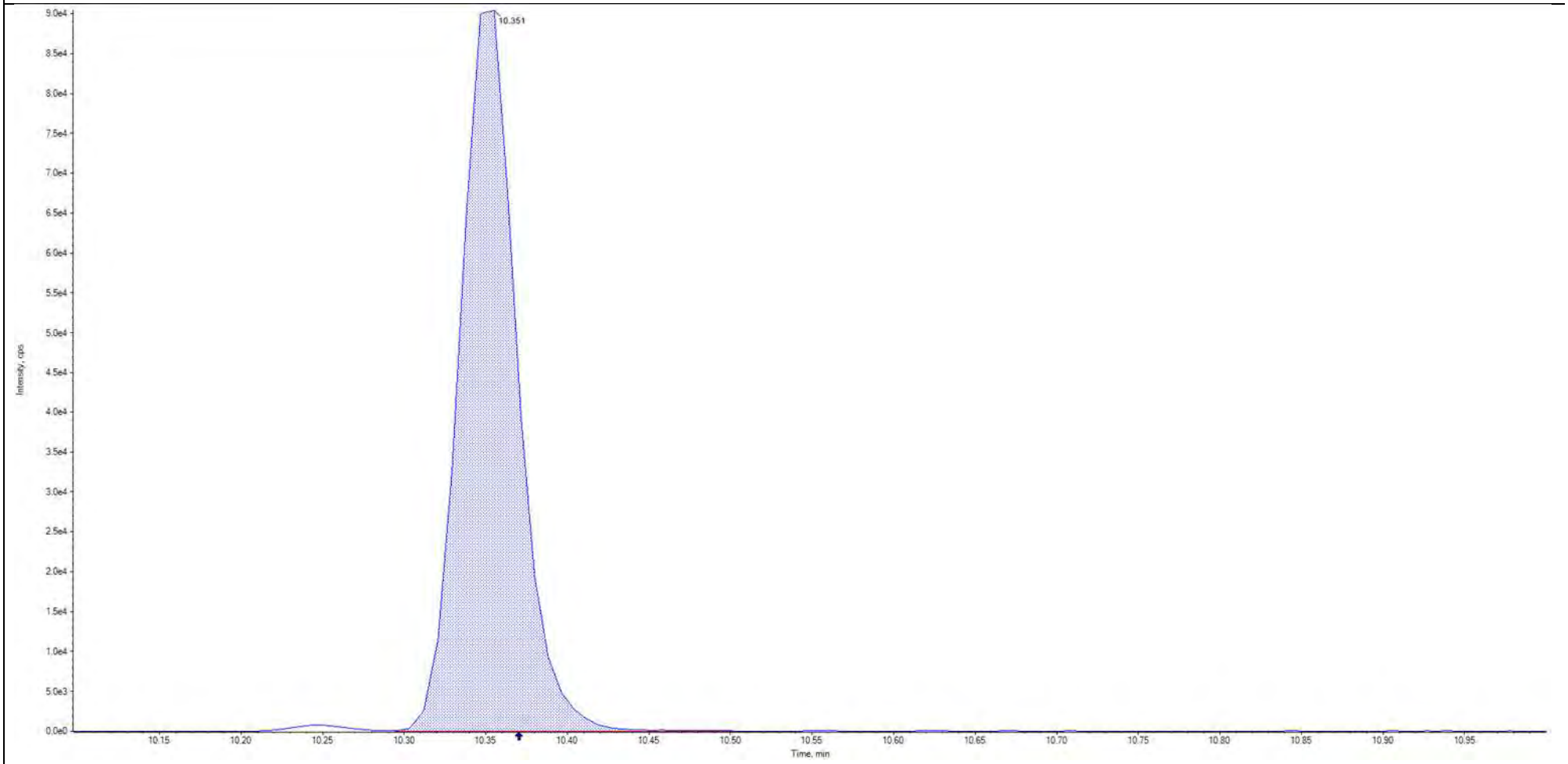
13C8-PFOSA
Sample: WG1973506-2,1633LOW



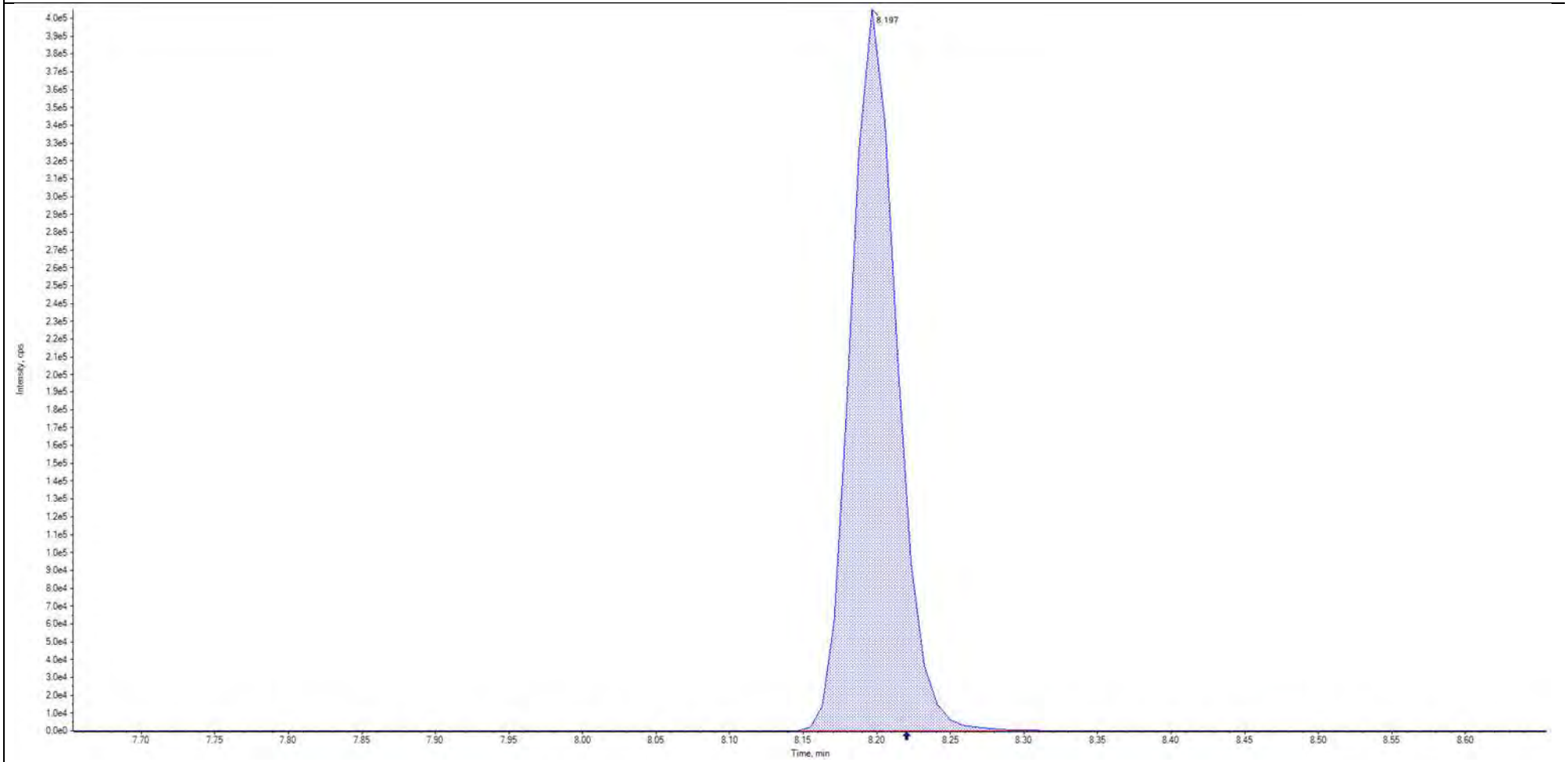
d3-NMeFOSA
Sample: WG1973506-2,1633LOW



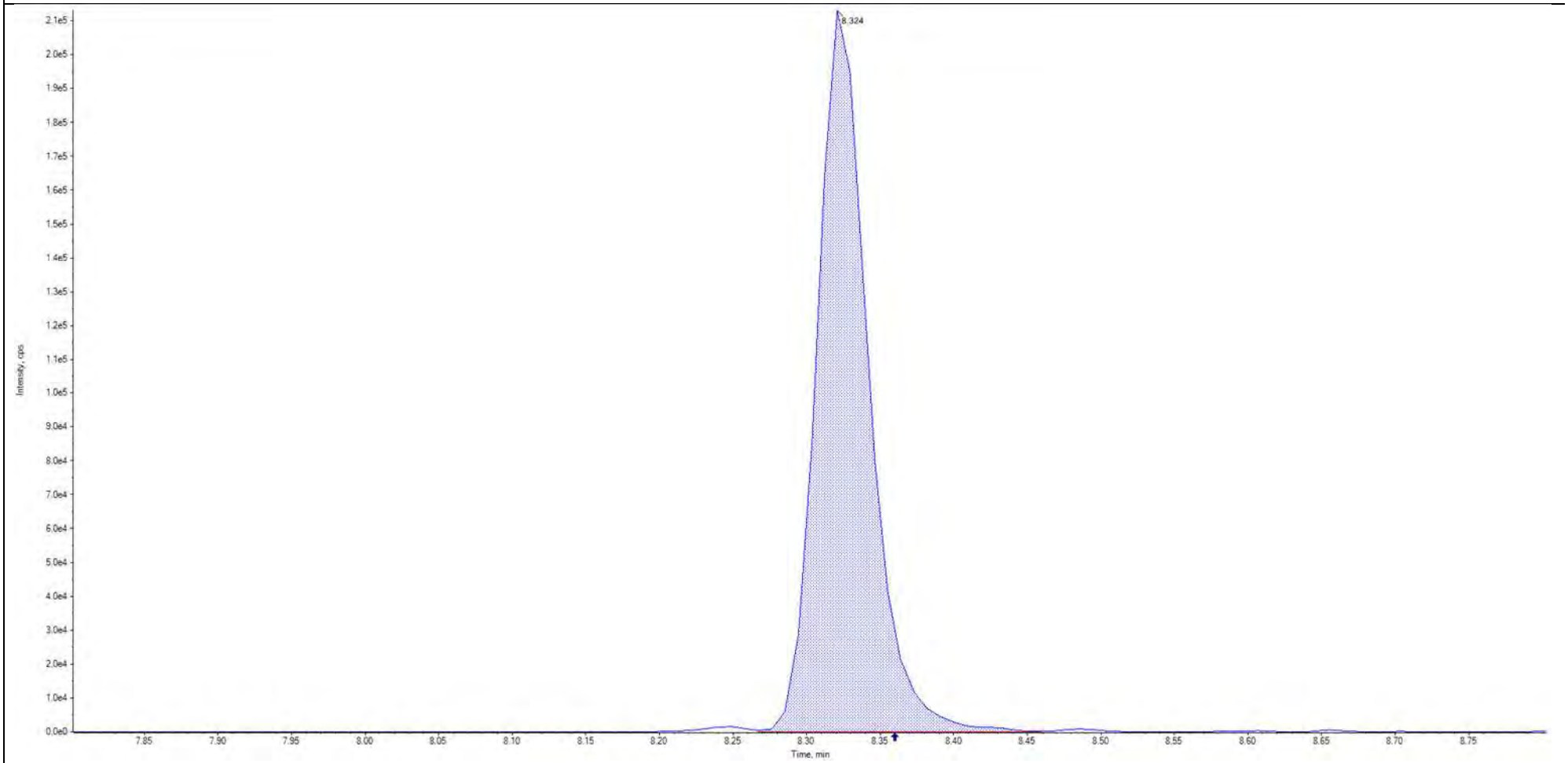
d5-NEtFOSA
Sample: WG1973506-2,1633LOW



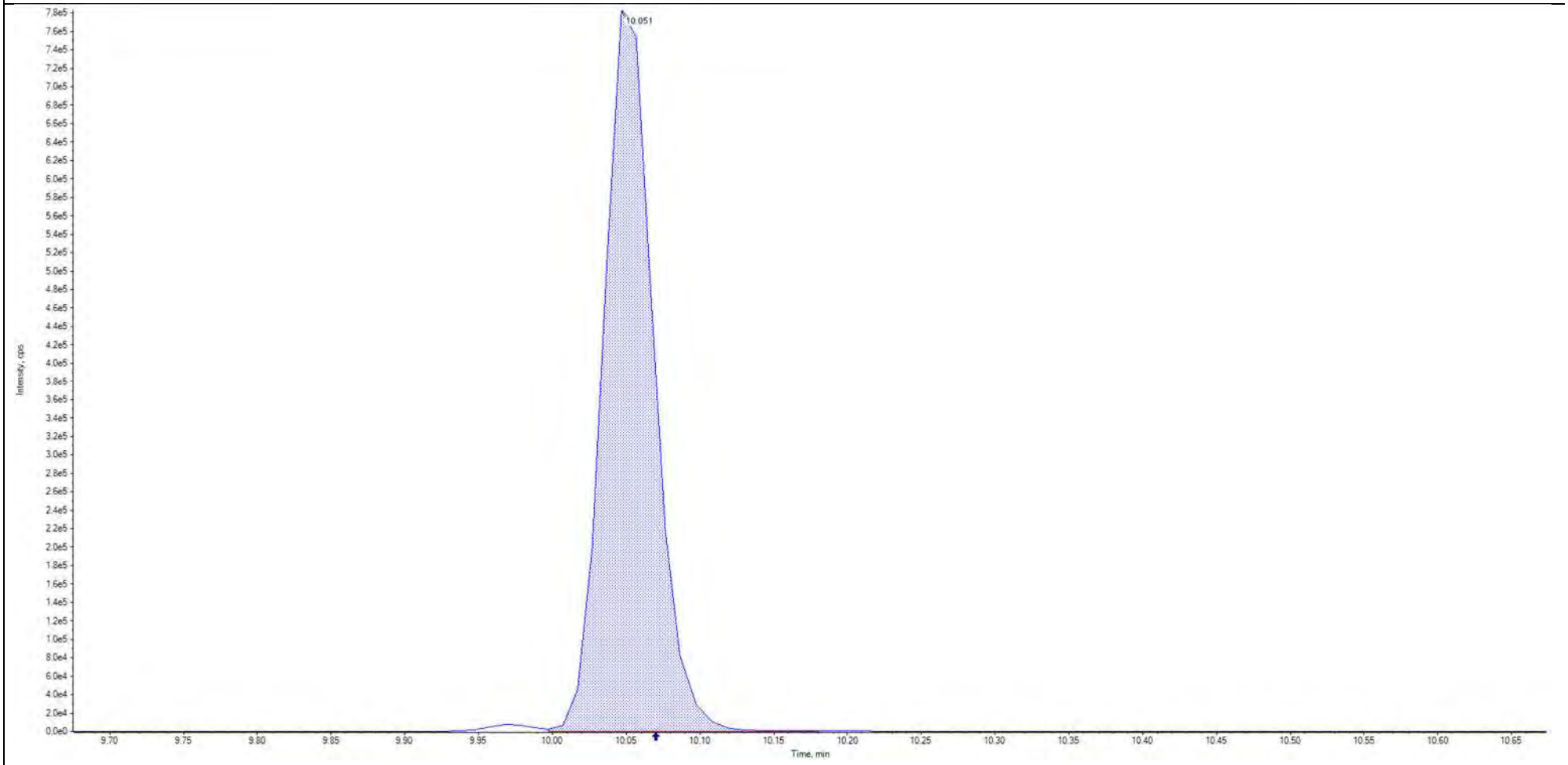
d3-NMeFOSAA
Sample: WG1973506-2,1633LOW



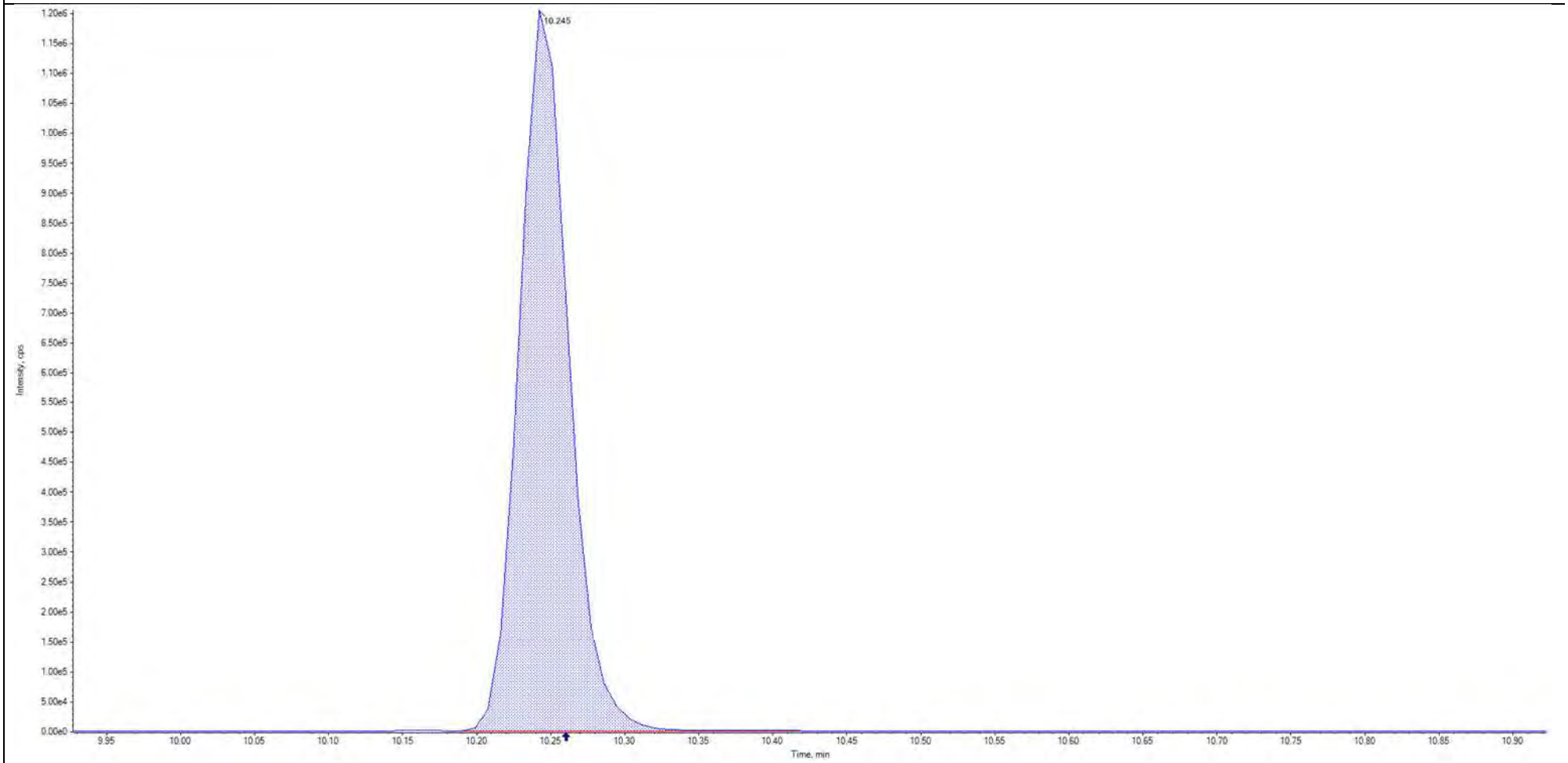
d5-NEtFOSAA
Sample: WG1973506-2,1633LOW



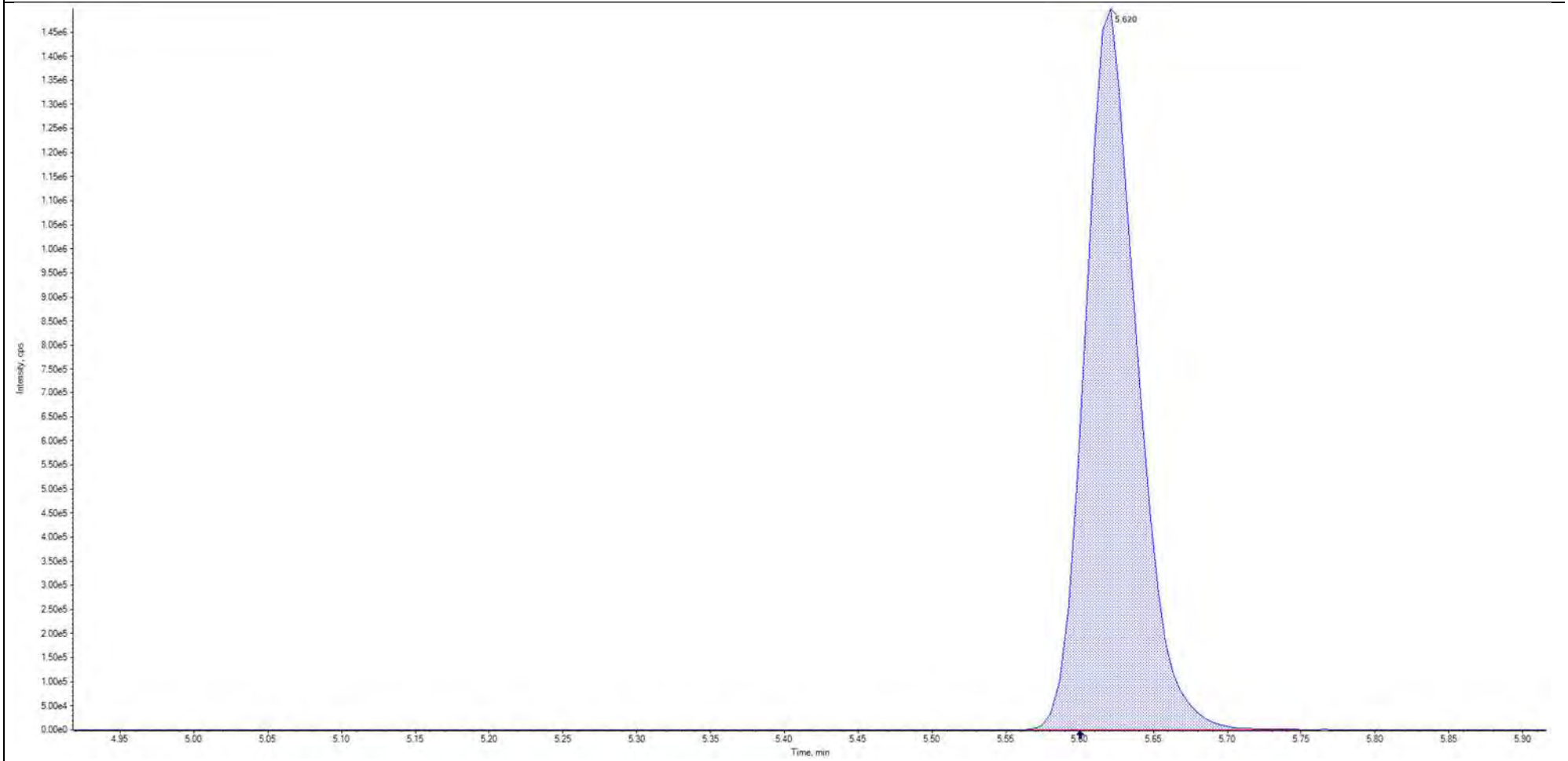
d7-NMeFOSE
Sample: WG1973506-2,1633LOW



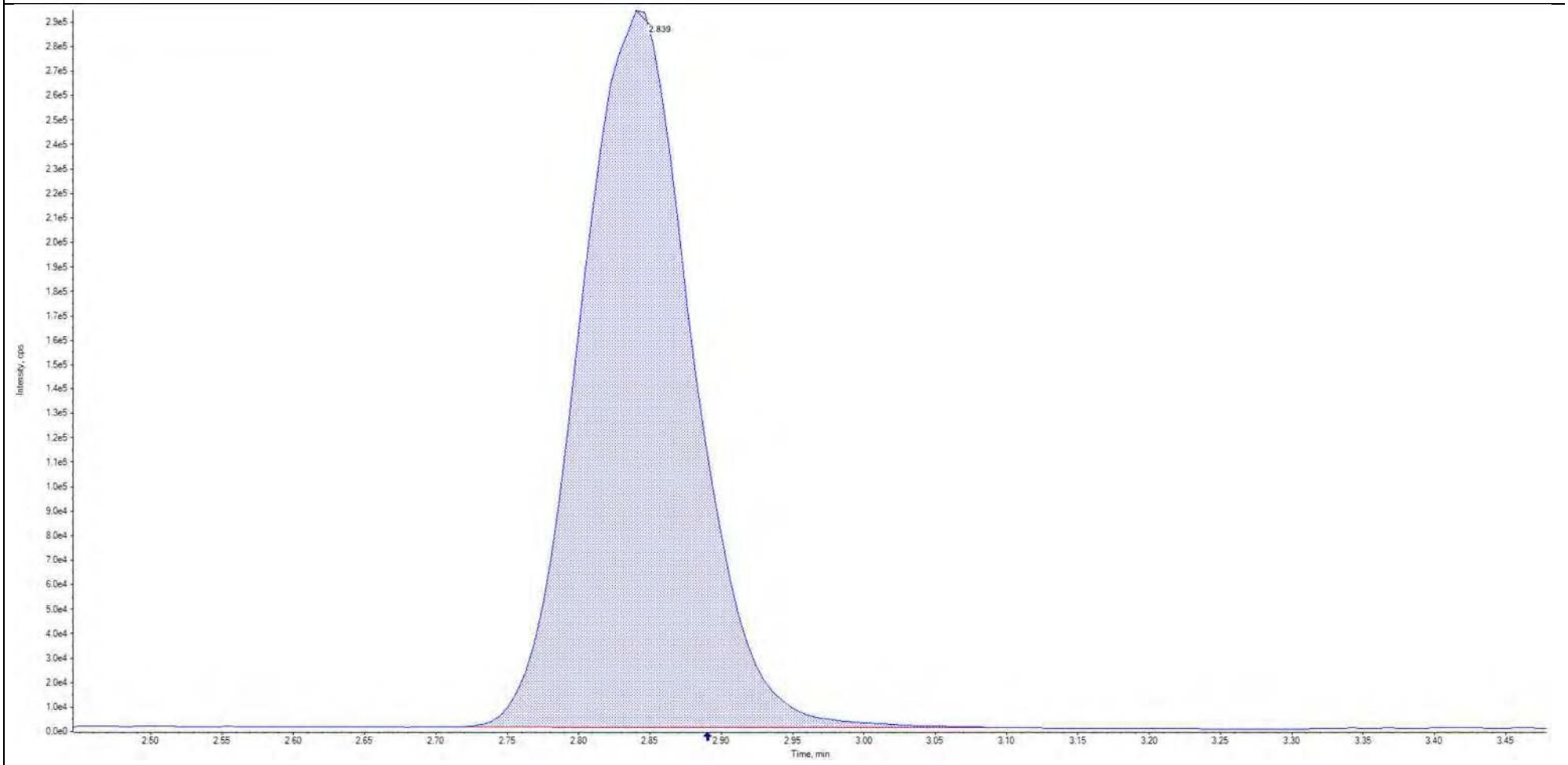
d9-NEtFOSE
Sample: WG1973506-2,1633LOW



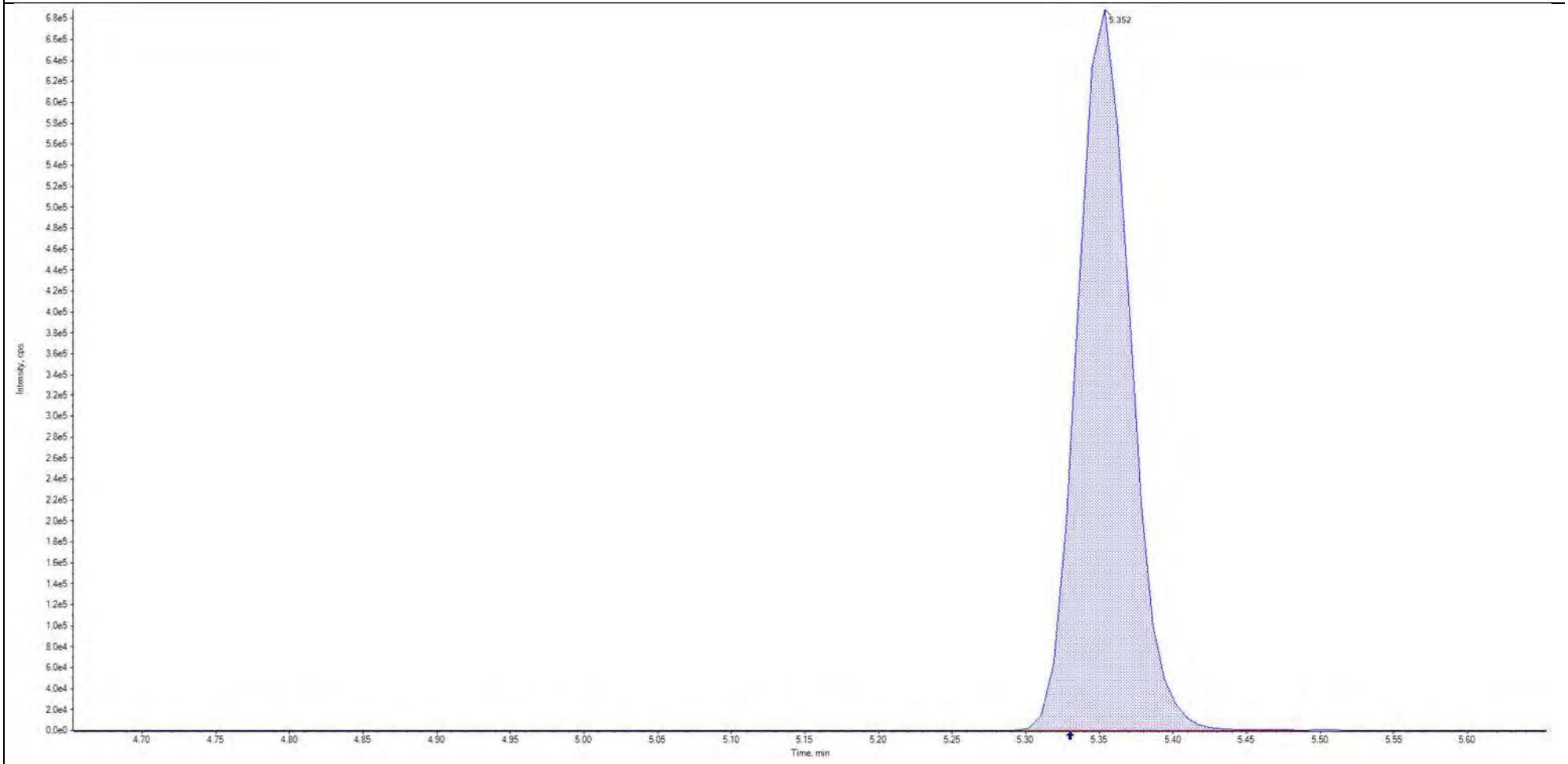
13C3-HFPO-DA
Sample: WG1973506-2,1633LOW



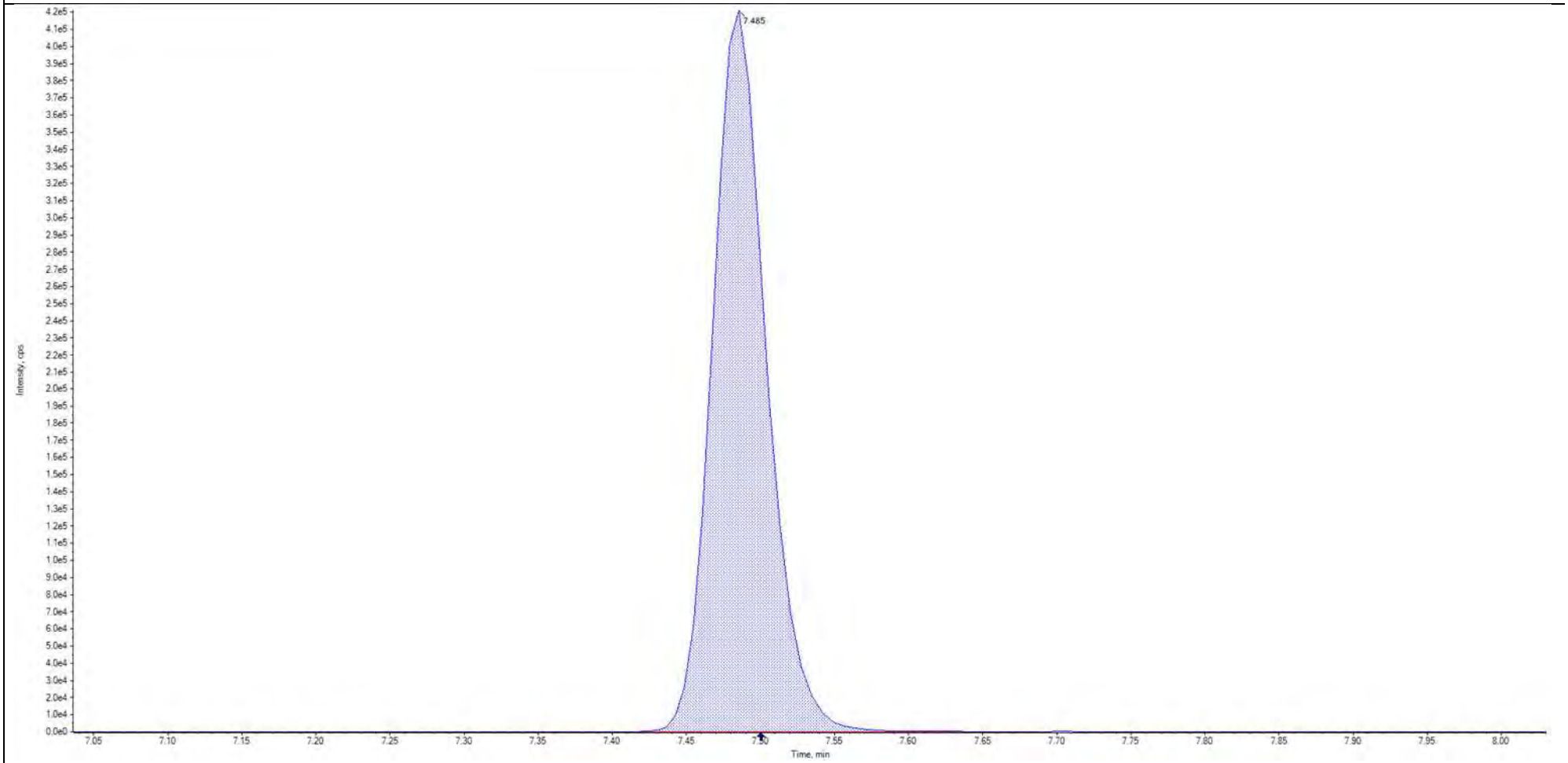
13C3-PFBA
Sample: WG1973506-2,1633LOW



13C2-PFHxA
Sample: WG1973506-2,1633LOW



13C4-PFOA
Sample: WG1973506-2,1633LOW



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_06.wiff
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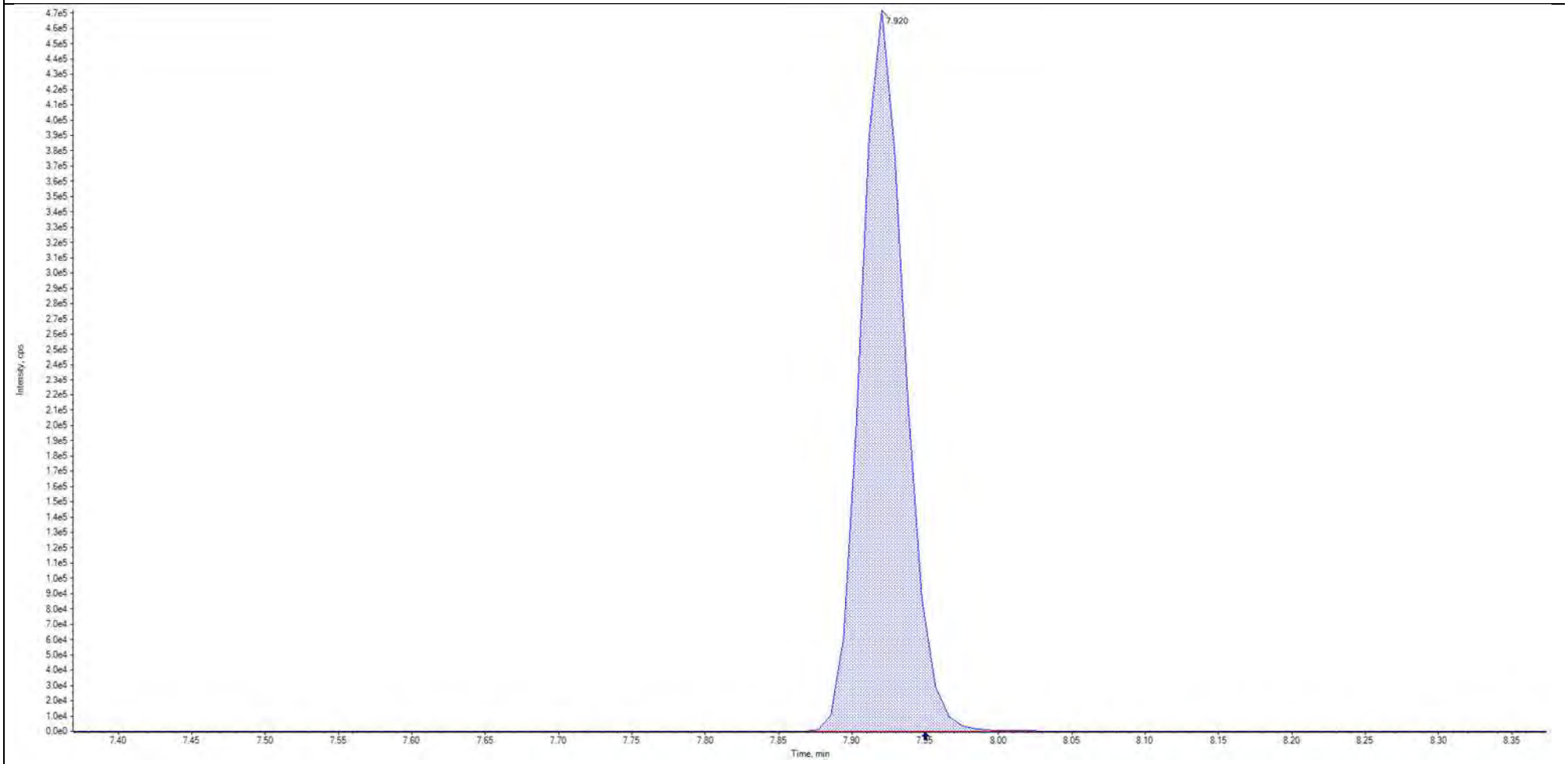
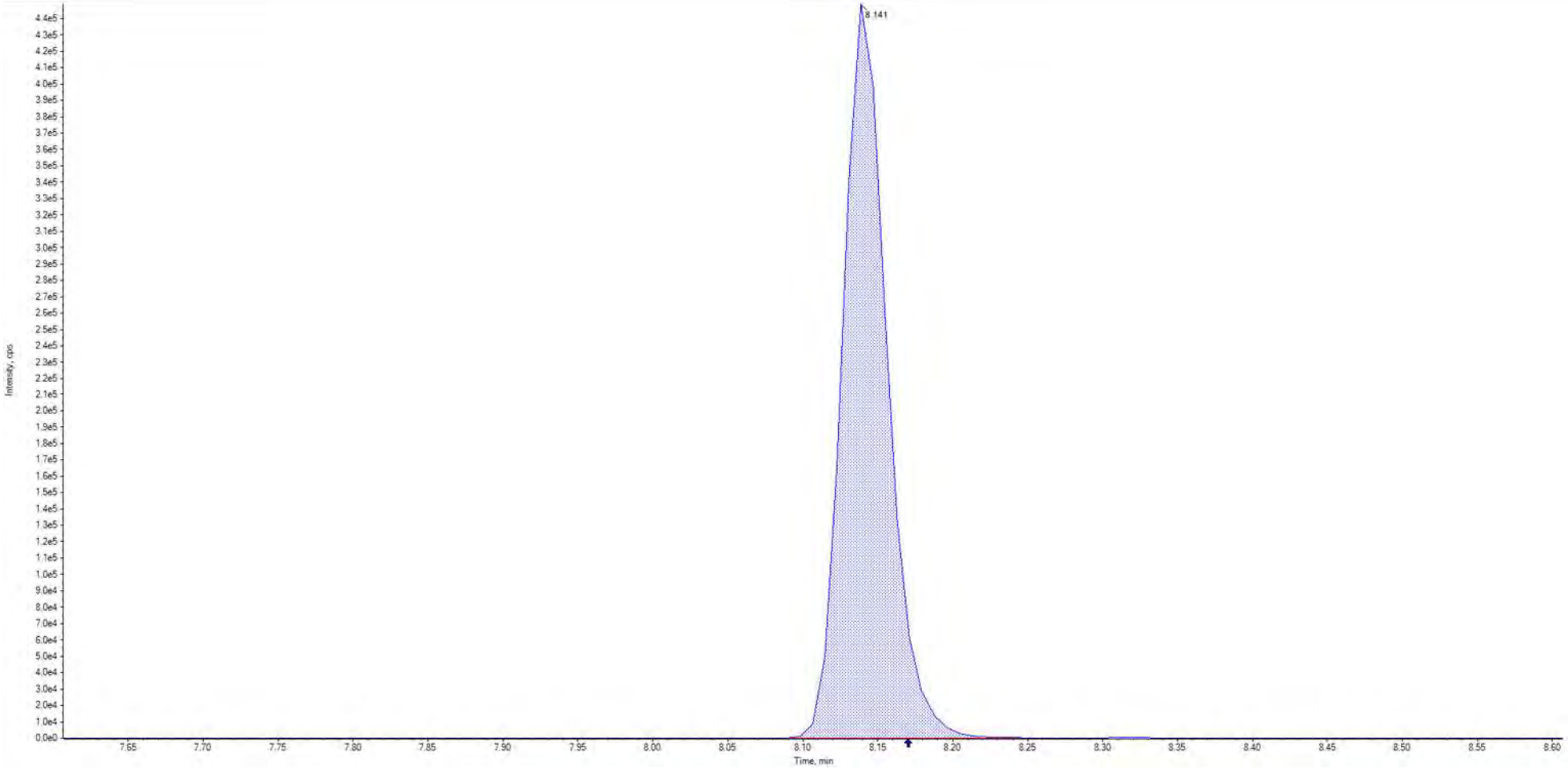
Generated: 9/19/2024 8:04:31 AM

13C5-PFNA
Sample: WG1973506-2,1633LOW



13C2-PFDA
Sample: WG1973506-2,1633LOW



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Last Altered: 9/19/2024 11:40:51 AM
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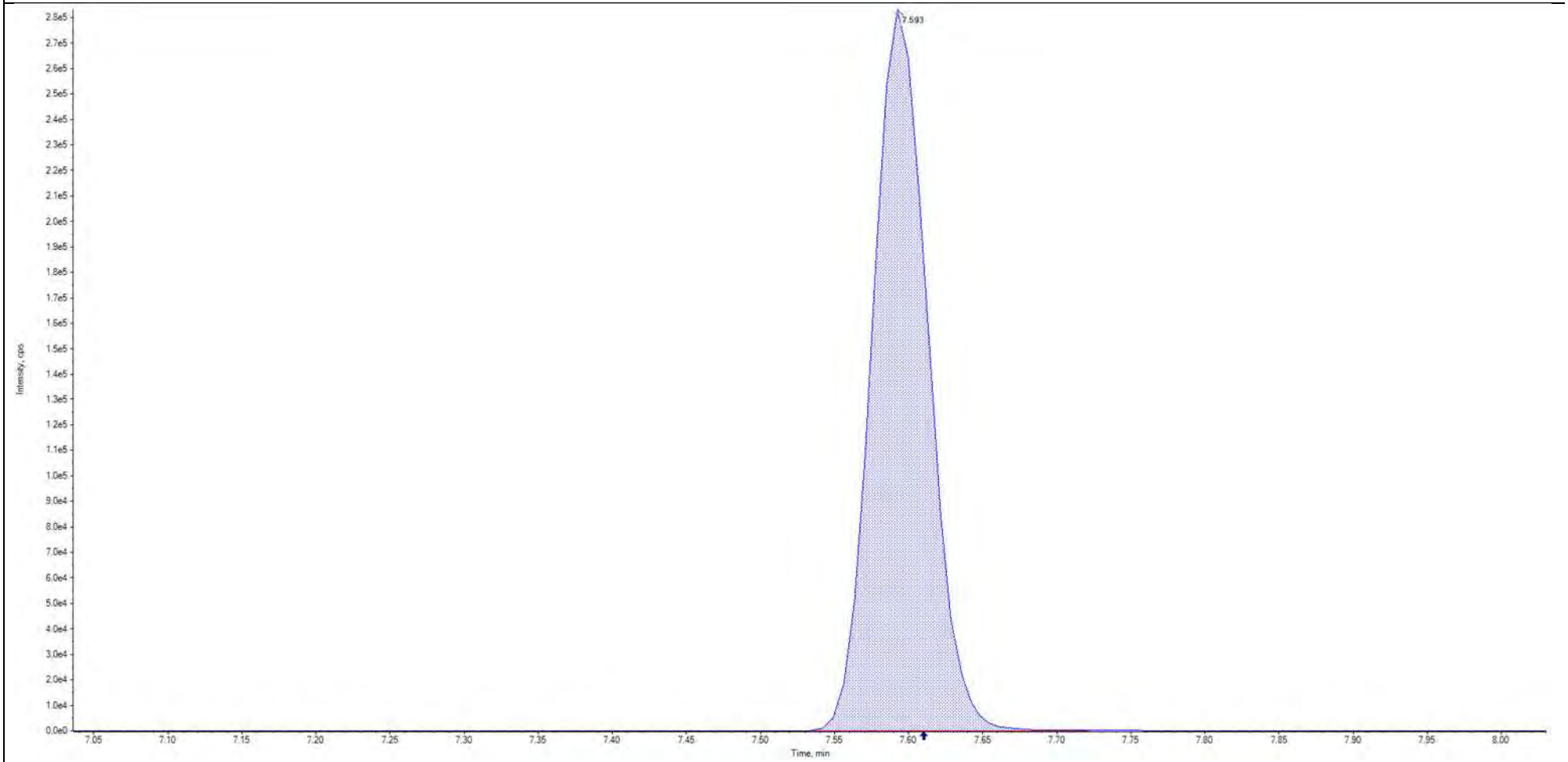
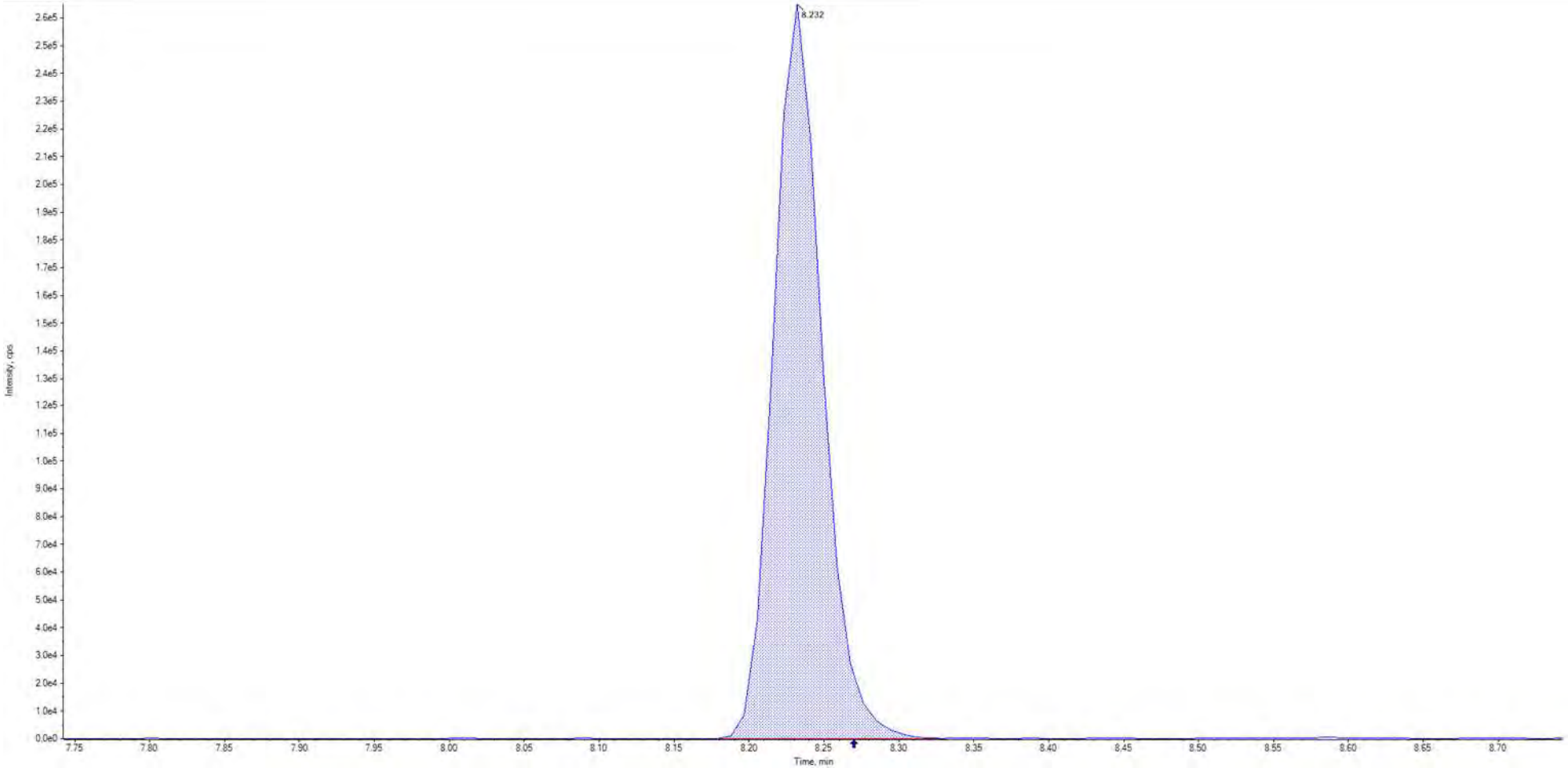
18O2-PFHxS
Sample: WG1973506-2,1633LOW



13C4-PFOS
Sample: WG1973506-2,1633LOW



Quantity Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

Method: EPA1633_NIS_CALC.qmethod
Calibration: 240813_1633_ICAL

ID: WG1973506-3,1633MED
Name: SCI05_240919_08.wiff
Date & Time: 2024-09-19T06:49:49
Description: WG1973506,WG1970000,ICAL21391,1633MED
Instrument: Triple Quad 5500+
User: LCMS05:AC

LC/MS-MS Method:EPA_1633.dam

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
1	PFBA	375-22-4	2.85	213.0 / 169.0	2534206		10.601	N/A	N/A	N/A	106.0
2	PFPeA	2706-90-3	4.68	263.0 / 219.0	2107400		6.058	0.006	0.007	N/A	121.2
3	PFPeA_2	2706-90-3	4.68	263.0 / 68.9	13584		5.531	0.006	0.007	N/A	110.6
4	PFHxA	307-24-4	5.37	313.0 / 269.0	1491046		2.763	0.074	0.072	Pass	110.5
5	PFHxA_2	307-24-4	5.37	313.0 / 119.0	110392		2.769	0.074	0.072	Pass	110.7
6	PFHpA	375-85-9	6.29	363.1 / 319.0	1413672		2.650	0.310	0.297	Pass	106.0
7	PFHpA_2	375-85-9	6.29	363.1 / 169.0	437869		2.682	0.310	0.297	Pass	107.3

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
8	PFOA	335-67-1	7.51	413.1 / 369.1	871533	M5	2.421	0.575	0.586	Pass	96.9
9	PFOA_2	335-67-1	7.51	413.1 / 169.0	501096	M7	2.541	0.575	0.586	Pass	101.6
10	PFNA	375-95-1	7.94	462.8 / 418.9	1304969	M5	2.753	0.297	0.313	Pass	110.1
11	PFNA_2	375-95-1	7.94	462.8 / 218.9	387079	M7	2.672	0.297	0.313	Pass	106.9
12	PFDA	335-76-2	8.15	513.1 / 469.1	1392366		2.669	0.158	0.142	Pass	106.8
13	PFDA_2	335-76-2	8.15	513.1 / 219.0	220513		2.820	0.158	0.142	Pass	112.8
14	PFUnA	2058-94-8	8.43	563.1 / 519.1	1121422		2.727	0.180	0.194	Pass	109.1
15	PFUnA_2	2058-94-8	8.43	563.1 / 269.0	202227		2.539	0.180	0.194	Pass	101.5
16	PFDoA	307-55-1	8.84	613.1 / 569.1	1179440		2.046	0.164	0.167	Pass	81.9
17	PFDoA_2	307-55-1	8.84	613.1 / 319.0	194000		1.992	0.164	0.167	Pass	79.7
18	PFTrDA	72629-94-8	9.41	663.1 / 619.1	684938		1.994	0.217	0.228	Pass	79.8
19	PFTrDA_2	72629-94-8	9.41	663.1 / 169.0	148570		1.942	0.217	0.228	Pass	77.7
20	PFTeDA	376-06-7	9.86	713.1 / 669.1	1145831		2.751	0.132	0.137	Pass	110.0
21	PFTeDA_2	376-06-7	9.86	713.1 / 169.0	150795		2.647	0.132	0.137	Pass	105.9
22	PFBS	375-73-5	5.35	299.1 / 80.1	833216		2.207	0.403	0.396	Pass	99.5

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
23	PFBS_2	375-73-5	5.35	299.1 / 99.1	335712		2.230	0.403	0.396	Pass	100.6
24	PFPeS	2706-91-4	6.37	349.1 / 80.1	723982		2.438	0.304	0.299	Pass	103.6
25	PFPeS_2	2706-91-4	6.37	349.1 / 99.1	219979		2.456	0.304	0.299	Pass	104.4
26	PFHxS	355-46-4	7.61	399.1 / 80.1	656147	M5	2.361	0.308	0.315	Pass	103.3
27	PFHxS_2	355-46-4	7.61	399.1 / 99.1	201955	M7	2.340	0.308	0.315	Pass	102.4
28	PFHpS	375-92-8	8.00	449.1 / 80.1	702798		2.592	0.306	0.287	Pass	108.8
29	PFHpS_2	375-92-8	8.00	449.1 / 99.1	215404		2.711	0.306	0.287	Pass	113.8
30	PFOS	1763-23-1	8.24	499.1 / 80.1	706522	M5	2.448	0.235	0.238	Pass	105.5
31	PFOS_2	1763-23-1	8.24	499.1 / 99.1	166286		2.351	0.235	0.238	Pass	101.4
32	PFNS	68259-12-1	8.58	549.1 / 80.1	492542		2.658	0.297	0.301	Pass	110.5
33	PFNS_2	68259-12-1	8.58	549.1 / 99.1	146514		2.610	0.297	0.301	Pass	108.5
34	PFDS	335-77-3	9.06	599.1 / 80.1	453483		2.484	0.277	0.275	Pass	102.9
35	PFDS_2	335-77-3	9.06	599.1 / 99.1	125422		2.492	0.277	0.275	Pass	103.3
36	PFDoS	79780-39-5	9.96	699.2 / 80.1	437431		2.616	0.275	0.274	Pass	107.9
37	PFDoS_2	79780-39-5	9.96	699.2 / 99.1	120327		2.619	0.275	0.274	Pass	108.0

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
38	4:2FTS	757124-72-4	5.17	327.1 / 307.1	1545532		9.274	0.493	0.516	Pass	98.9
39	4:2FTS_2	757124-72-4	5.17	327.1 / 81.1	761258		8.539	0.493	0.516	Pass	91.1
40	6:2FTS	27619-97-2	7.12	427.2 / 407.2	860820		10.323	0.550	0.565	Pass	108.7
41	6:2FTS_2	27619-97-2	7.12	427.2 / 81.1	473295		10.494	0.550	0.565	Pass	110.5
42	8:2FTS	39108-34-4	8.05	527.2 / 507.2	1243214		11.878	0.652	0.662	Pass	123.7
43	8:2FTS_2	39108-34-4	8.05	527.2 / 81.1	810621		11.419	0.652	0.662	Pass	118.9
44	PFOSA	754-91-6	9.52	498.1 / 78.1	709781	M5	2.596	0.025	0.025	Pass	103.8
45	PFOSA_2	754-91-6	9.52	498.1 / 478.0	17621	M7	2.456	0.025	0.025	Pass	98.2
46	NMeFOSA	31506-32-8	10.16	512.2 / 219.0	200975	M5	2.718	1.504	1.551	Pass	108.7
47	NMeFOSA_2	31506-32-8	10.12	512.2 / 169.0	302248	M7	2.638	1.504	1.551	Pass	105.5
48	NEtFOSA	4151-50-2	10.37	526.2 / 219.0	195163	M5	2.658	1.322	1.285	Pass	106.3
49	NEtFOSA_2	4151-50-2	10.34	526.2 / 169.0	257917	M7	2.624	1.322	1.285	Pass	105.0
50	NMeFOSAA	2355-31-9	8.20	570.2 / 419.1	181012		3.019	0.748	0.700	Pass	120.8
51	NMeFOSAA_2	2355-31-9	8.20	570.2 / 483.0	135442		3.552	0.748	0.700	Pass	142.1
52	NEtFOSAA	2991-50-6	8.34	584.2 / 419.1	229319		2.712	0.461	0.487	Pass	108.5

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
53	NEtFOSAA_2	2991-50-6	8.34	584.2 / 526.2	105791	M7	2.719	0.461	0.487	Pass	108.8
54	NMeFOSE	24448-09-7	10.07	616.1 / 58.9	3823866	M5	26.842	N/A	N/A	N/A	107.4
55	NEtFOSE	1691-99-2	10.27	630.0 / 58.9	6774365	M5	26.216	N/A	N/A	N/A	104.9
56	HFPO-DA	13252-13-6	5.63	285.0 / 169.0	3024325		11.187	0.476	0.464	Pass	111.9
57	HFPO-DA_2	13252-13-6	5.63	285.0 / 184.9	1439315		11.449	0.476	0.464	Pass	114.5
58	ADONA	919005-14-4	6.75	377.1 / 251.0	6324289		10.286	0.668	0.634	Pass	108.9
59	ADONA_2	919005-14-4	6.75	377.1 / 84.8	4221542		10.611	0.668	0.634	Pass	112.3
60	9Cl-PF3ONS	756426-58-1	8.45	530.8 / 351.1	6472311		10.676	0.324	0.322	Pass	114.2
61	9Cl-PF3ONS_2	756426-58-1	8.45	532.8 / 353.0	2097870		10.626	0.324	0.322	Pass	113.7
62	11Cl-PF3OUdS	763051-92-9	9.48	630.9 / 451.0	3920286		10.238	0.332	0.331	Pass	108.3
63	11Cl-PF3OUdS_2	763051-92-9	9.48	632.9 / 452.9	1302654		10.108	0.332	0.331	Pass	107.0
64	3:3FTCA	356-02-5	4.96	241.1 / 177.1	500348		16.583	0.807	1.074	Pass	132.7
65	3:3FTCA_2	356-02-5	4.96	241.1 / 117.0	403809		13.363	0.807	1.074	Pass	106.9
66	5:3FTCA	914637-49-3	7.21	341.1 / 237.1	6745966		68.908	0.958	0.953	Pass	110.3
67	5:3FTCA_2	914637-49-3	7.21	341.1 / 217.0	6464113		69.781	0.958	0.953	Pass	111.7

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
68	7:3FTCA	812-70-4	8.20	441.1 / 316.9	5122811		47.004	1.722	1.558	Pass	75.2
69	7:3FTCA_2	812-70-4	8.20	441.1 / 337.1	8821080		55.776	1.722	1.558	Pass	89.2
70	PFEESA	113507-82-7	5.74	315.1 / 135.0	4440297		4.743	0.085	0.087	Pass	106.6
71	PFEESA_2	113507-82-7	5.74	315.1 / 82.9	379587		4.693	0.085	0.087	Pass	105.5
72	PFMPA	377-73-1	3.91	229.0 / 85.0	236106		5.608	N/A	N/A	N/A	112.2
73	PFMBA	863090-89-5	4.91	279.0 / 85.0	2972557		5.236	N/A	N/A	N/A	104.7
74	NFDHA	151772-58-6	5.29	295.0 / 201.0	635961		6.452	0.801	0.910	Pass	129.0
75	NFDHA_2	151772-58-6	5.29	295.0 / 84.9	509599		5.640	0.801	0.910	Pass	112.8
76	TDCA	516-50-7	N/A	499.1 / 124.1	N/A		N/A	N/A	40.716	N/A	N/A
77	TDCA_2	516-50-7	N/A	499.1 / 79.9	N/A		N/A	N/A	40.716	N/A	N/A
78	13C2D4-4:2FTS	Surr	5.16	333.2 / 312.1	530025		2.752	N/A	N/A	N/A	55.0
79	13C2-PFOA	Surr	7.50	415.0 / 370.0	1630312		1.159	N/A	N/A	N/A	46.4

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C4-PFBA	EIS	2.84	217.0 / 172.0	2947827		10.644	NA	NA	NA	106.4

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C5-PFPeA	EIS	4.67	268.0 / 223.0	1886380		5.530	NA	NA	NA	110.6
	13C5-PFHxA	EIS	5.37	318.0 / 273.0	1107264		2.471	NA	NA	NA	98.8
	13C4-PFHpA	EIS	6.28	367.0 / 322.0	1138856		2.538	NA	NA	NA	101.5
	13C8-PFOA	EIS	7.50	421.0 / 376.0	1729640		2.722	NA	NA	NA	108.9
	13C9-PFNA	EIS	7.93	472.0 / 427.0	809512		1.280	NA	NA	NA	102.4
	13C6-PFDA	EIS	8.15	519.0 / 474.0	756692		1.349	NA	NA	NA	108.0
	13C7-PFUnA	EIS	8.42	570.0 / 525.0	650537		1.434	NA	NA	NA	114.7

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C2-PFDoA	EIS	8.83	615.1 / 570.0	554047		1.877	NA	NA	NA	150.2
	13C2-PFTeDA	EIS	9.85	715.1 / 670.1	415520		1.297	NA	NA	NA	103.7
	13C3-PFBS	EIS	5.34	302.1 / 80.1	899895		2.508	NA	NA	NA	107.6
	13C3-PFHxS	EIS	7.61	402.1 / 80.1	696267		2.443	NA	NA	NA	103.1
	13C8-PFOS	EIS	8.24	507.1 / 80.1	702752		2.405	NA	NA	NA	100.4
	13C2-4:2FTS	EIS	5.17	329.1 / 81.1	398812		6.227	NA	NA	NA	132.8
	13C2-6:2FTS	EIS	7.11	429.2 / 81.1	241702		5.150	NA	NA	NA	108.3
	13C2-8:2FTS	EIS	8.05	529.2 / 81.1	396371		5.771	NA	NA	NA	120.2

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C8-PFOSA	EIS	9.52	506.1 / 78.1	1022761		2.633	NA	NA	NA	105.3
	d3-NMeFOSA	EIS	10.15	515.2 / 219.0	172648		2.641	NA	NA	NA	105.6
	d5-NEtFOSA	EIS	10.36	531.2 / 219.0	167121		2.616	NA	NA	NA	104.7
	d3-NMeFOSAA	EIS	8.20	573.2 / 419.1	455578		3.082	NA	NA	NA	61.6
	d5-NEtFOSAA	EIS	8.33	589.3 / 419.1	453489		5.838	NA	NA	NA	116.8
	d7-NMeFOSE	EIS	10.06	623.2 / 58.9	1443661		28.590	NA	NA	NA	114.4
	d9-NEtFOSE	EIS	10.25	639.2 / 58.9	2201299		29.569	NA	NA	NA	118.3

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C3-HFPO-DA	EIS	5.63	287.0 / 169.0	2949161		9.931	NA	NA	NA	99.3
	13C3-PFBA	NIS	2.84	216.0 / 172.0	1211534		5.666	NA	NA	NA	113.3
	13C2-PFHxA	NIS	5.36	315.0 / 270.0	1330473		2.717	NA	NA	NA	108.7
	13C4-PFOA	NIS	7.50	417.0 / 372.0	831258		2.655	NA	NA	NA	106.2
	13C5-PFNA	NIS	7.93	468.0 / 423.0	770210		1.406	NA	NA	NA	112.5
	13C2-PFDA	NIS	8.15	515.1 / 470.1	658782		1.286	NA	NA	NA	102.9
	18O2-PFHxS	NIS	7.61	403.1 / 84.1	579309		2.473	NA	NA	NA	104.3
	13C4-PFOS	NIS	8.24	503.1 / 80.1	516814		2.455	NA	NA	NA	102.5

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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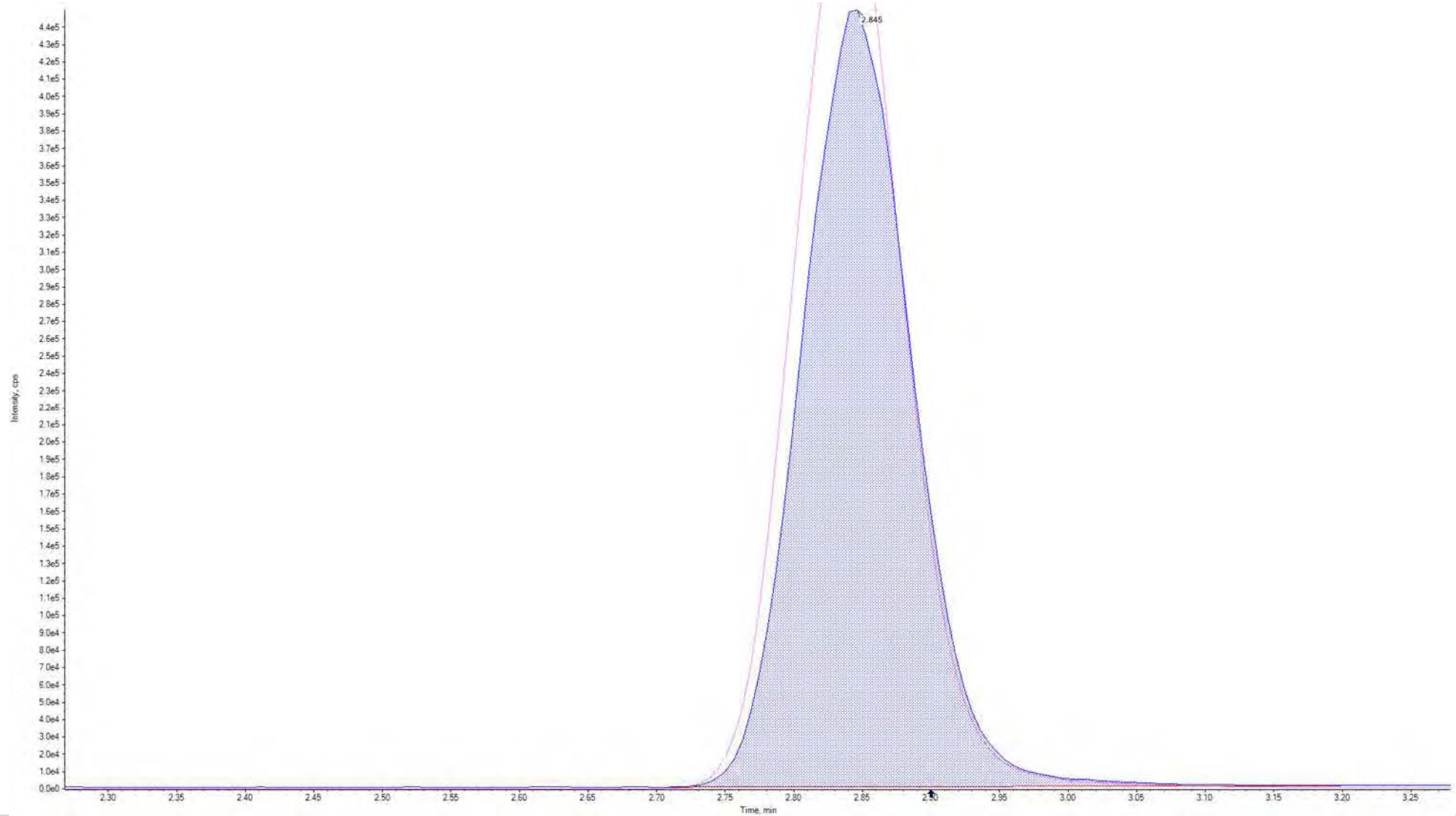
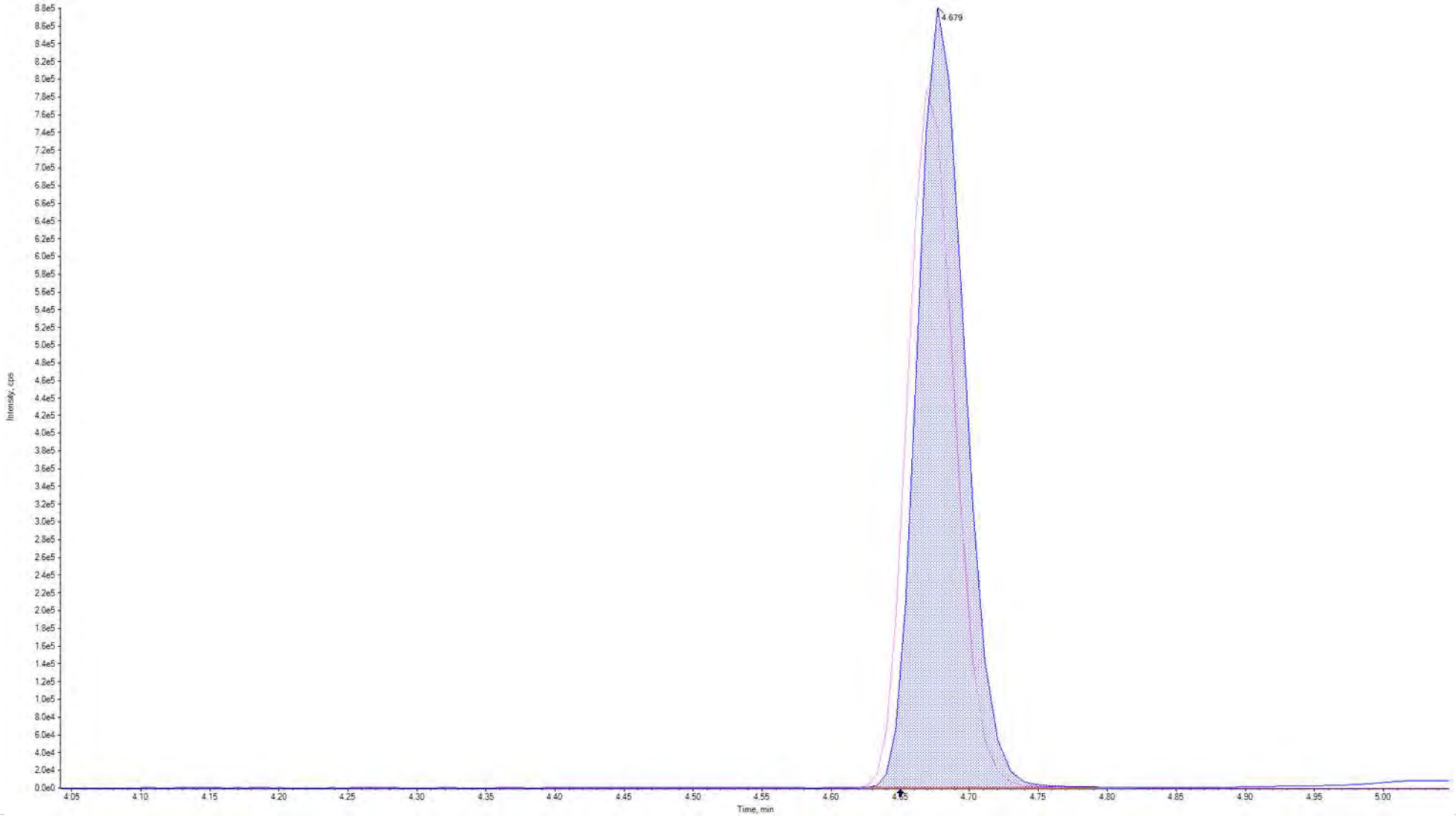
PFBA
Sample: WG1973506-3,1633MED S/N:2142.8 Points Across peak:83



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFPeA
Sample: WG1973506-3,1633MED S/N:2799.3 Points Across peak:29



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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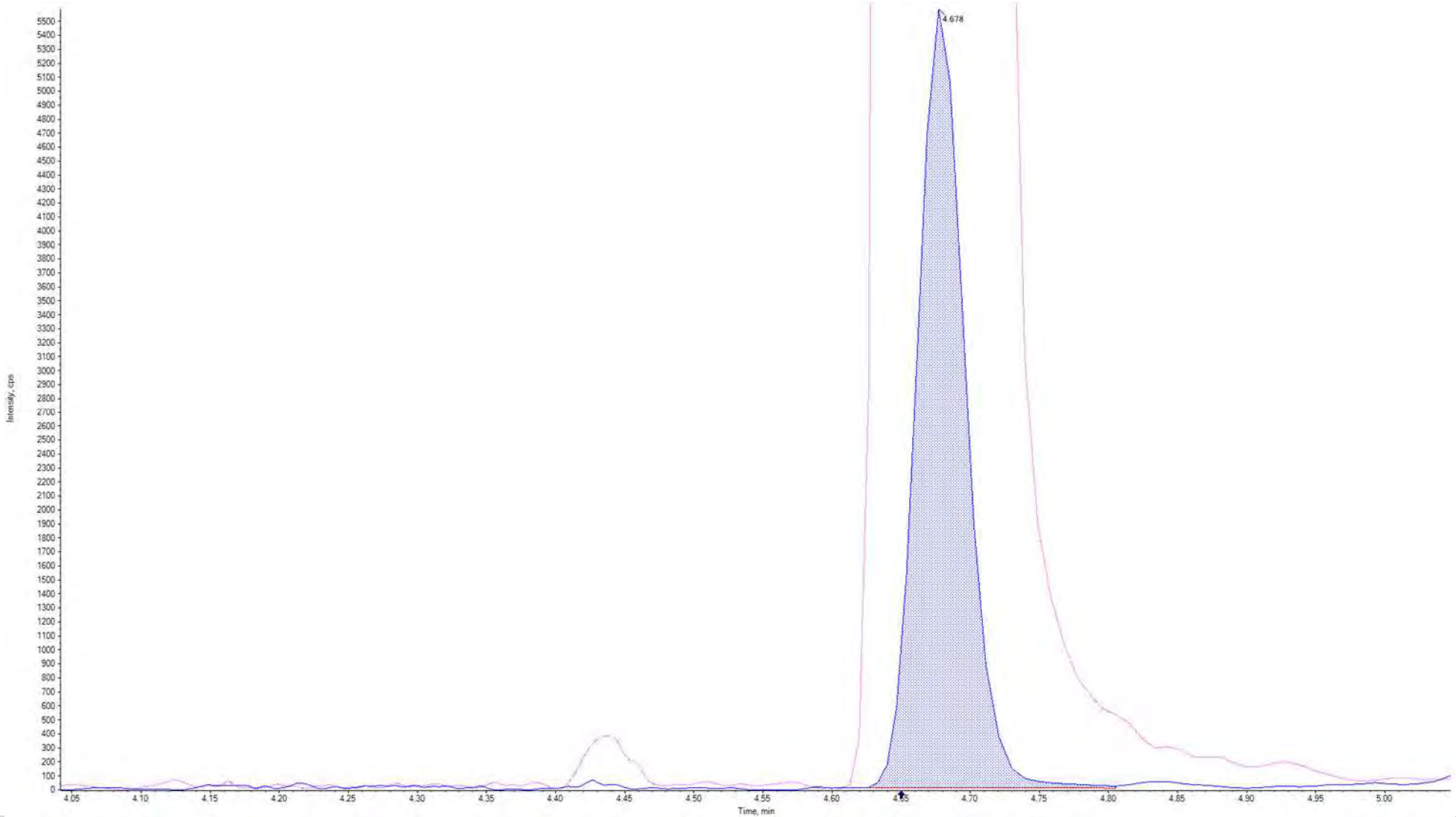
Generated: 9/19/2024 8:04:31 AM

PFPeA_2
Sample: WG1973506-3,1633MED S/N:34515.6 Points Across peak:23



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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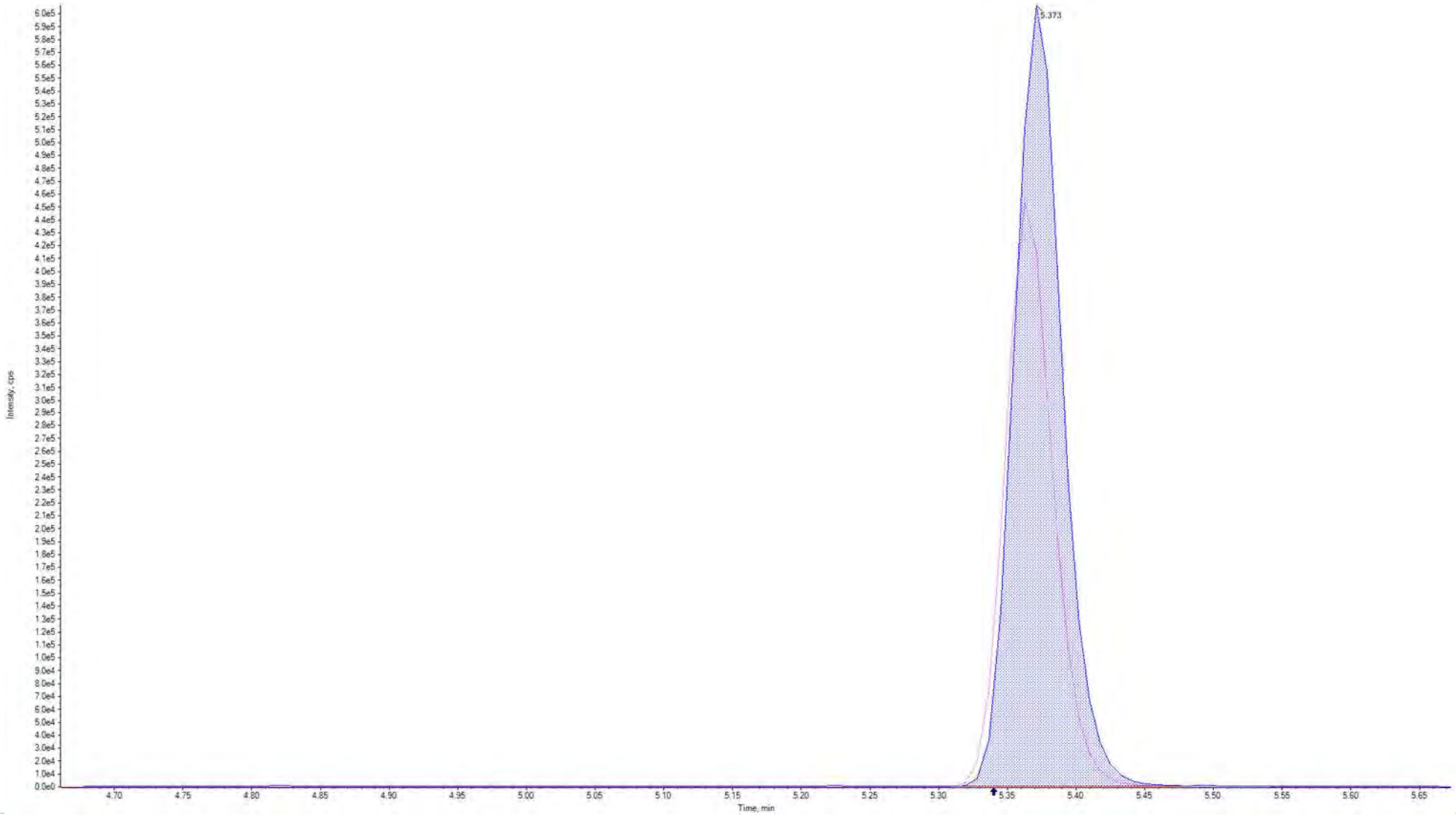
Generated: 9/19/2024 8:04:31 AM

PFHxA
Sample: WG1973506-3,1633MED S/N:1959.9 Points Across peak:23



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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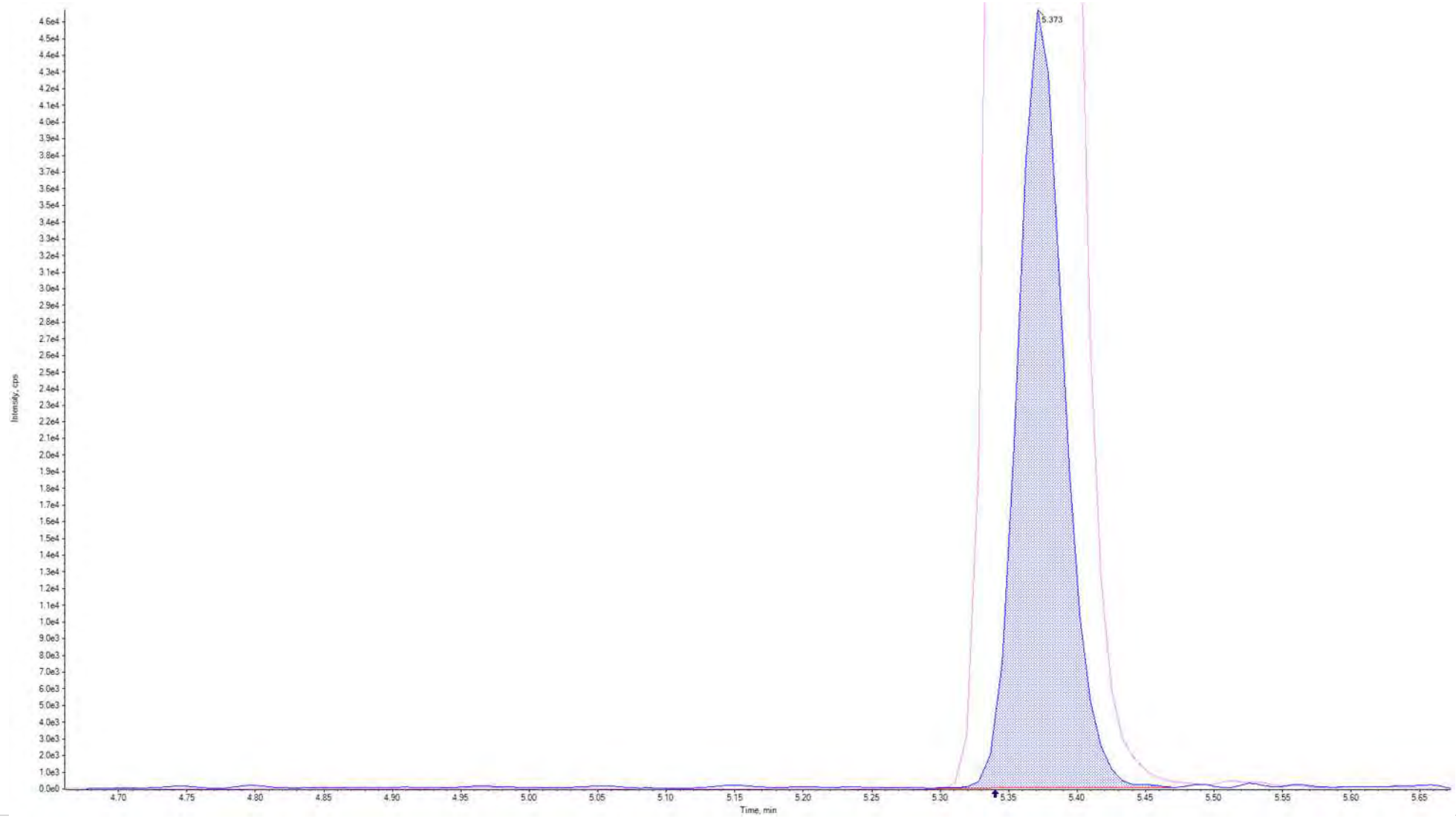
Generated: 9/19/2024 8:04:31 AM

PFHxA_2
Sample: WG1973506-3,1633MED S/N:1374.0 Points Across peak:23



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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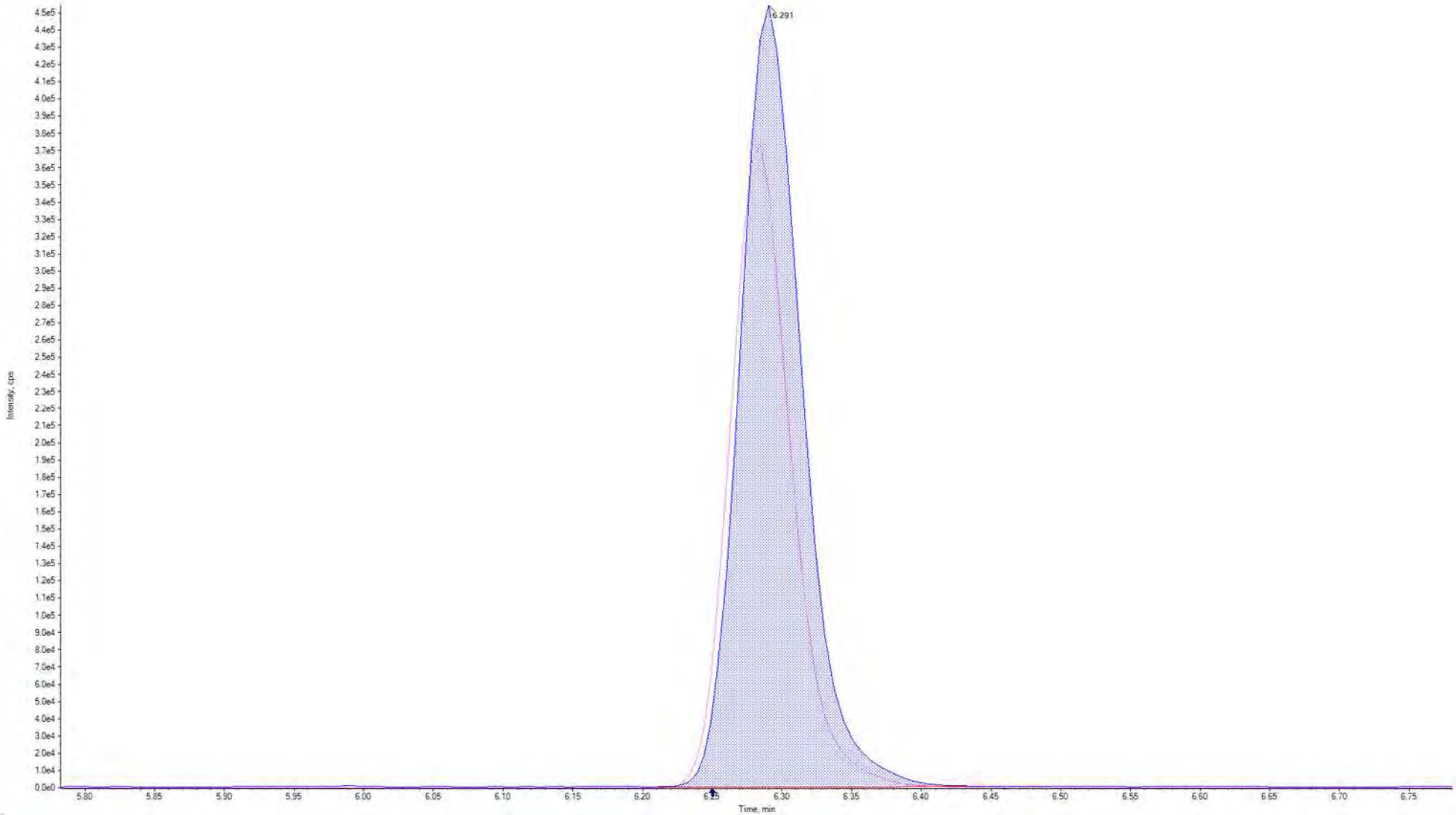
Generated: 9/19/2024 8:04:31 AM

PFHpA
Sample: WG1973506-3,1633MED S/N:2259.0 Points Across peak:40



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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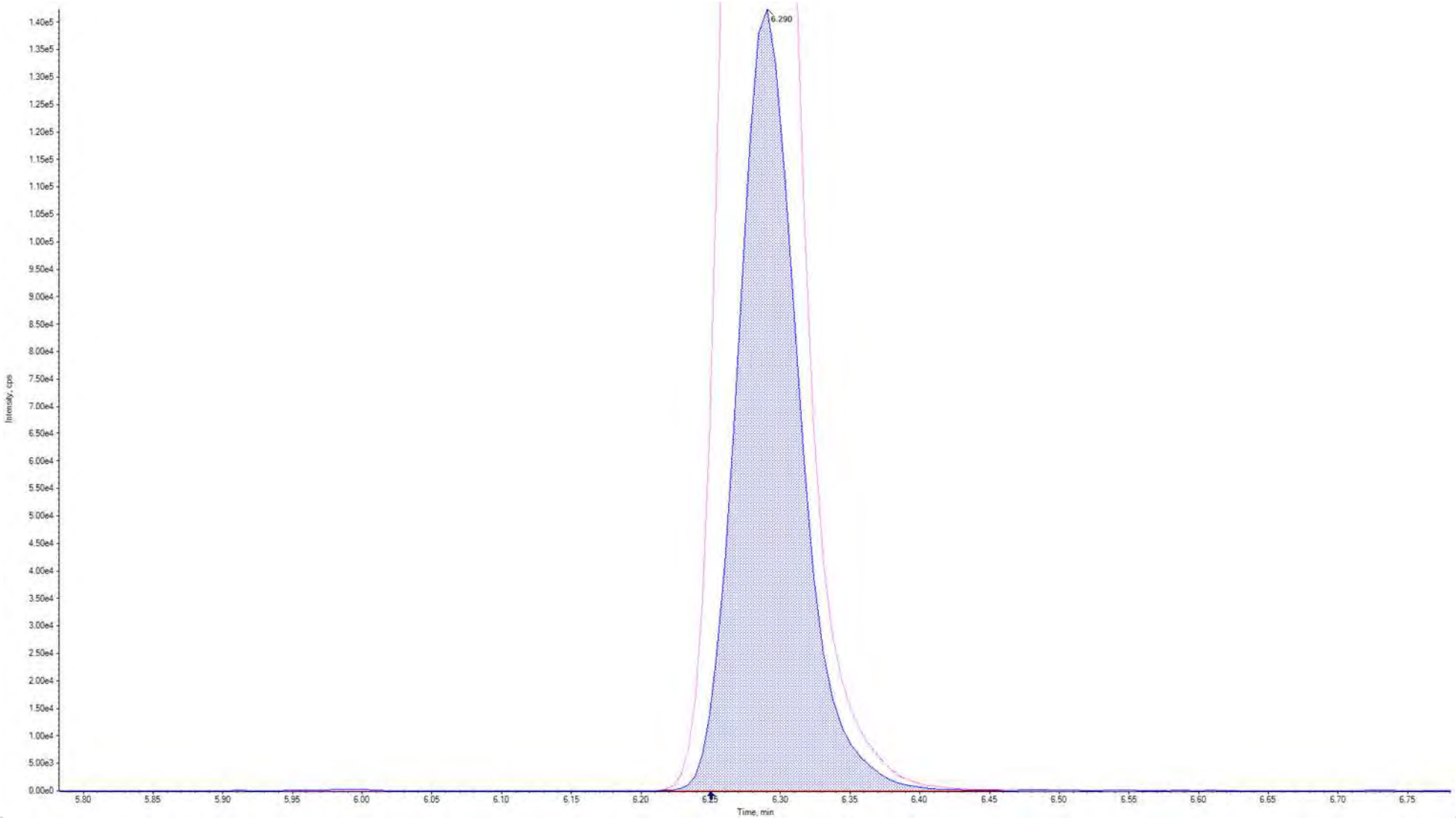
Generated: 9/19/2024 8:04:31 AM

PFHpA_2
Sample: WG1973506-3,1633MED S/N:10986.2 Points Across peak:44



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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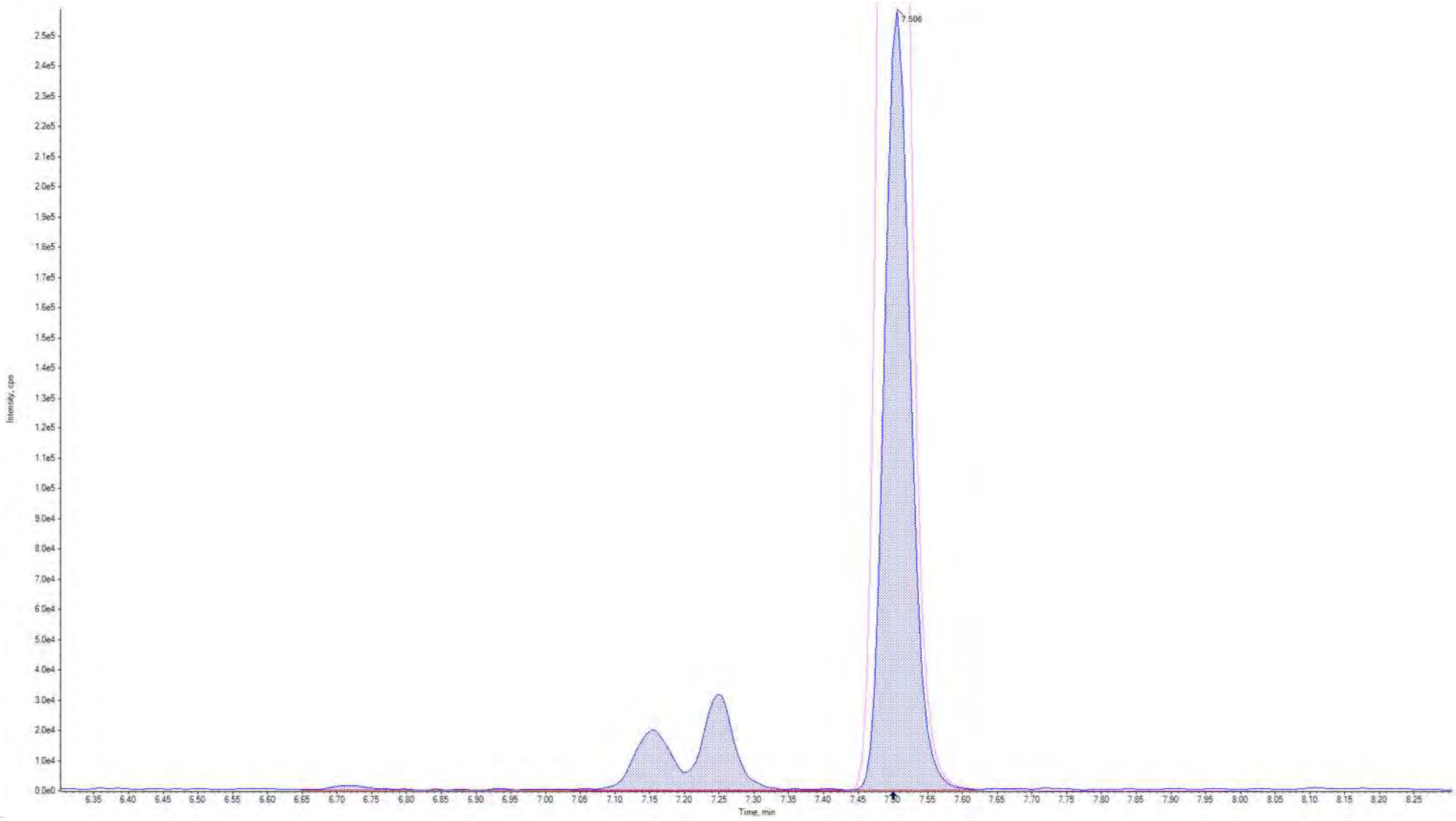
PFOA
Sample: WG1973506-3,1633MED S/N:2039.5 Points Across peak:151



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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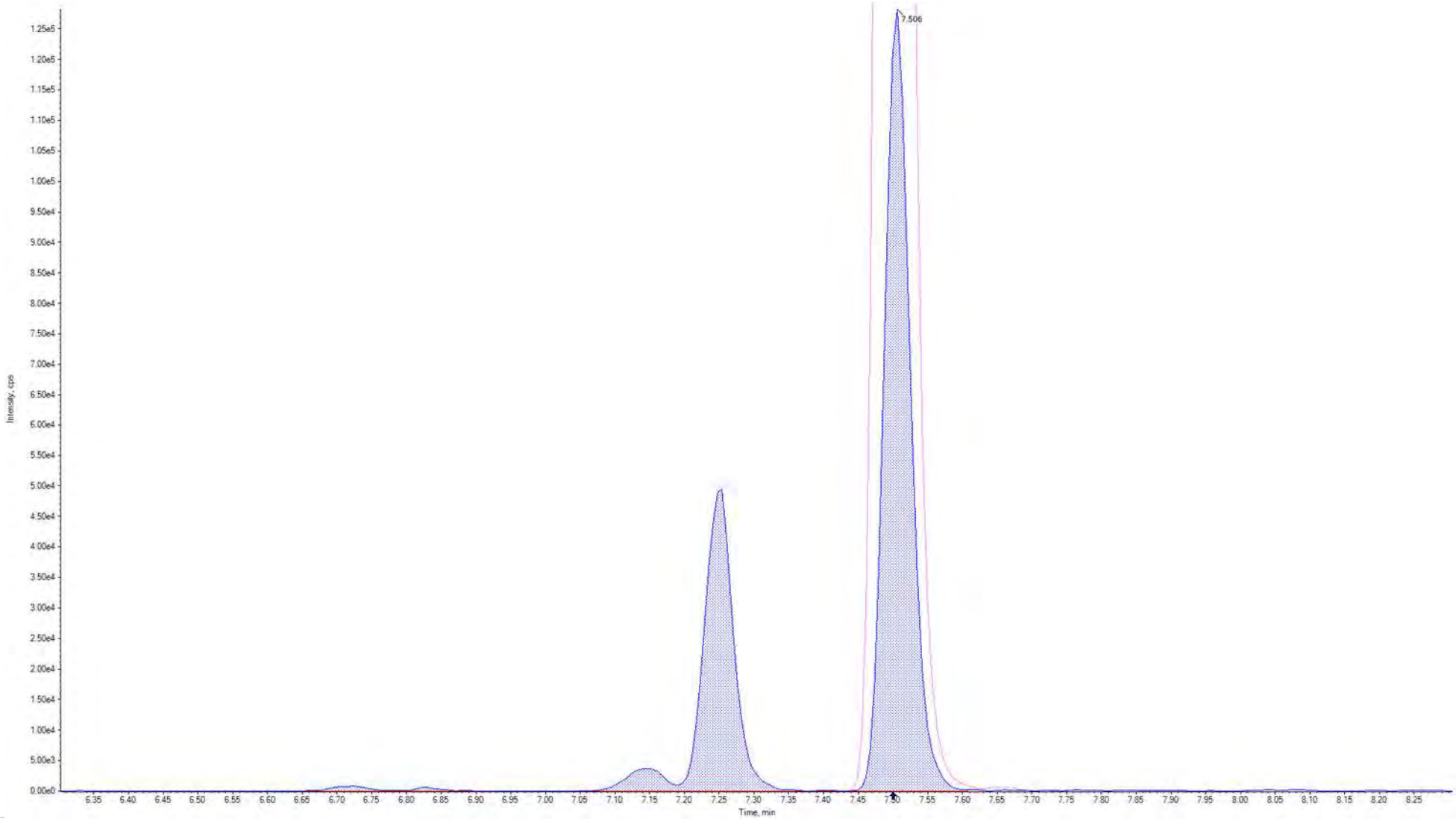
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOA_2
Sample: WG1973506-3,1633MED S/N:1822.5 Points Across peak:149



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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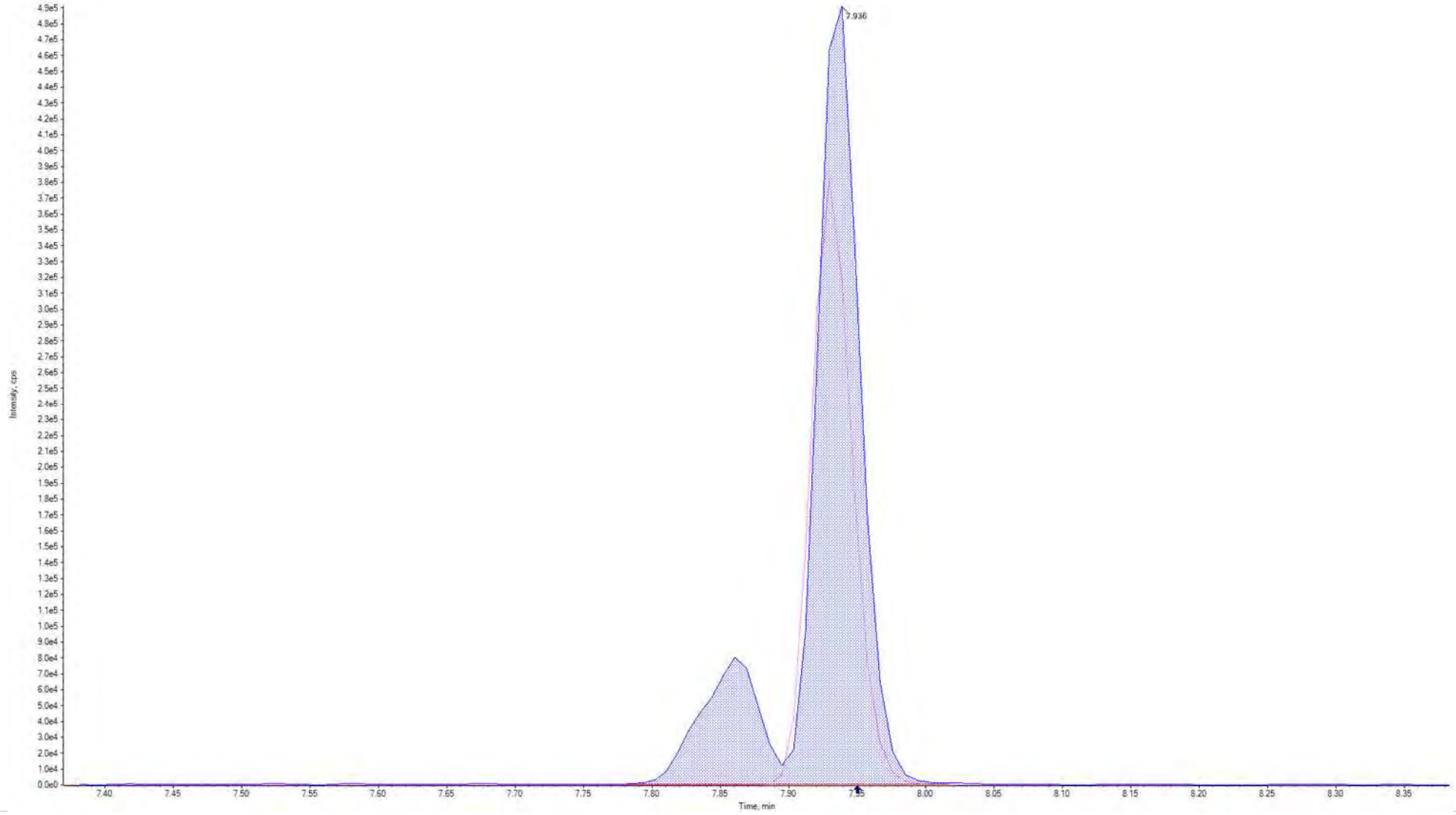
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFNA
Sample: WG1973506-3,1633MED S/N:2014.4 Points Across peak:32



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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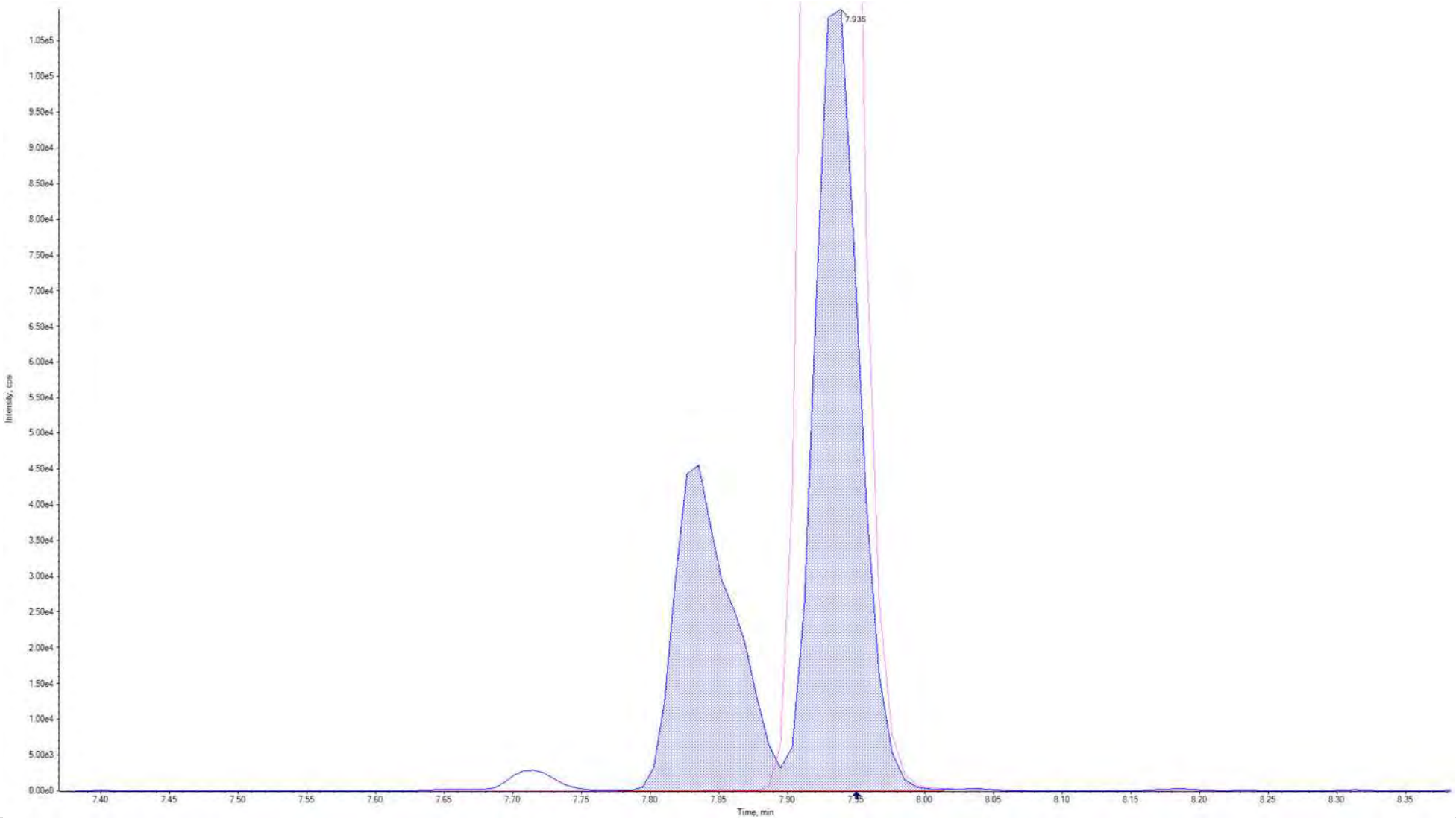
Generated: 9/19/2024 8:04:31 AM

PFNA_2
Sample: WG1973506-3,1633MED S/N:790.0 Points Across peak:30



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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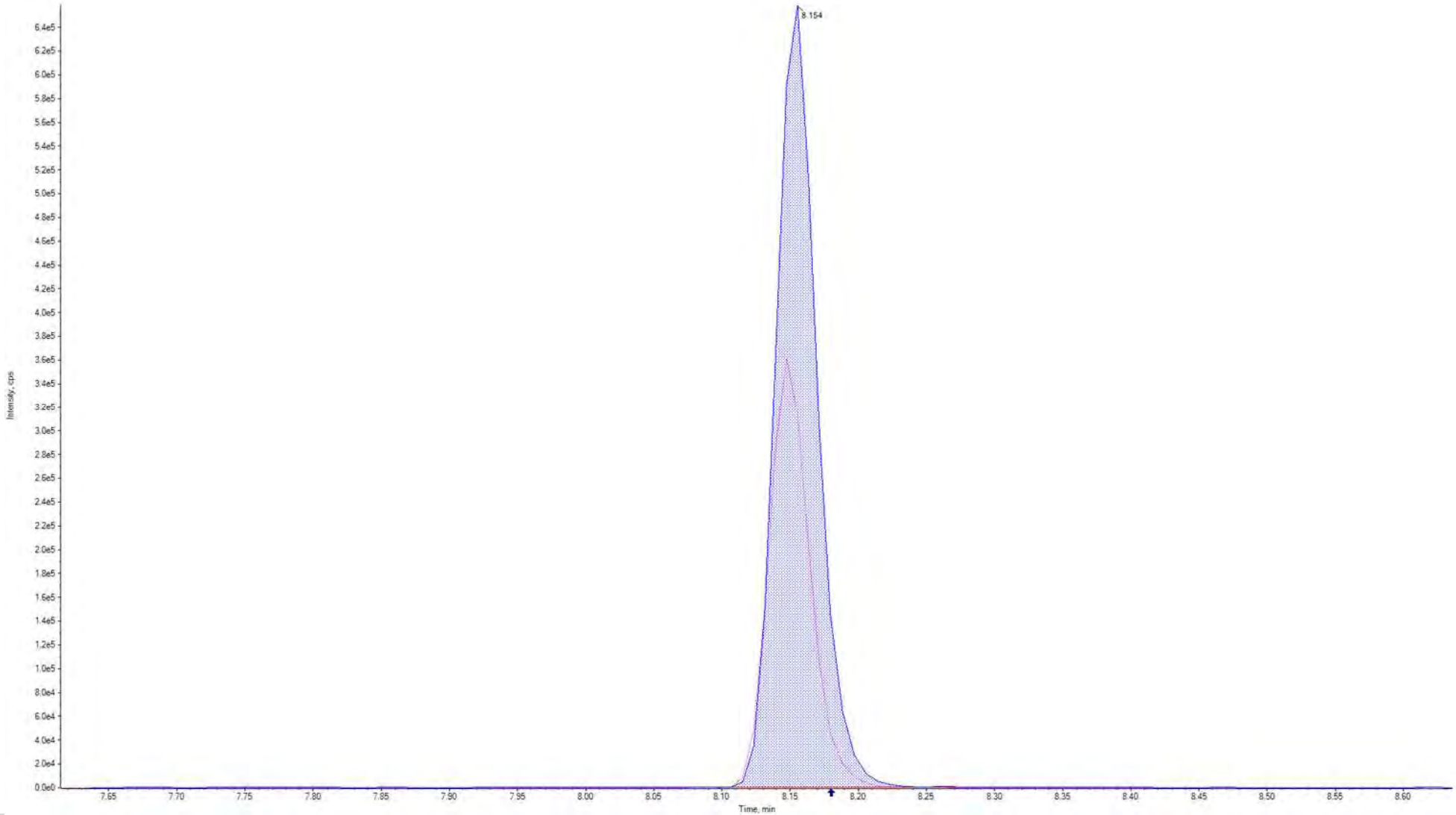
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDA
Sample: WG1973506-3,1633MED S/N:8810.1 Points Across peak:26



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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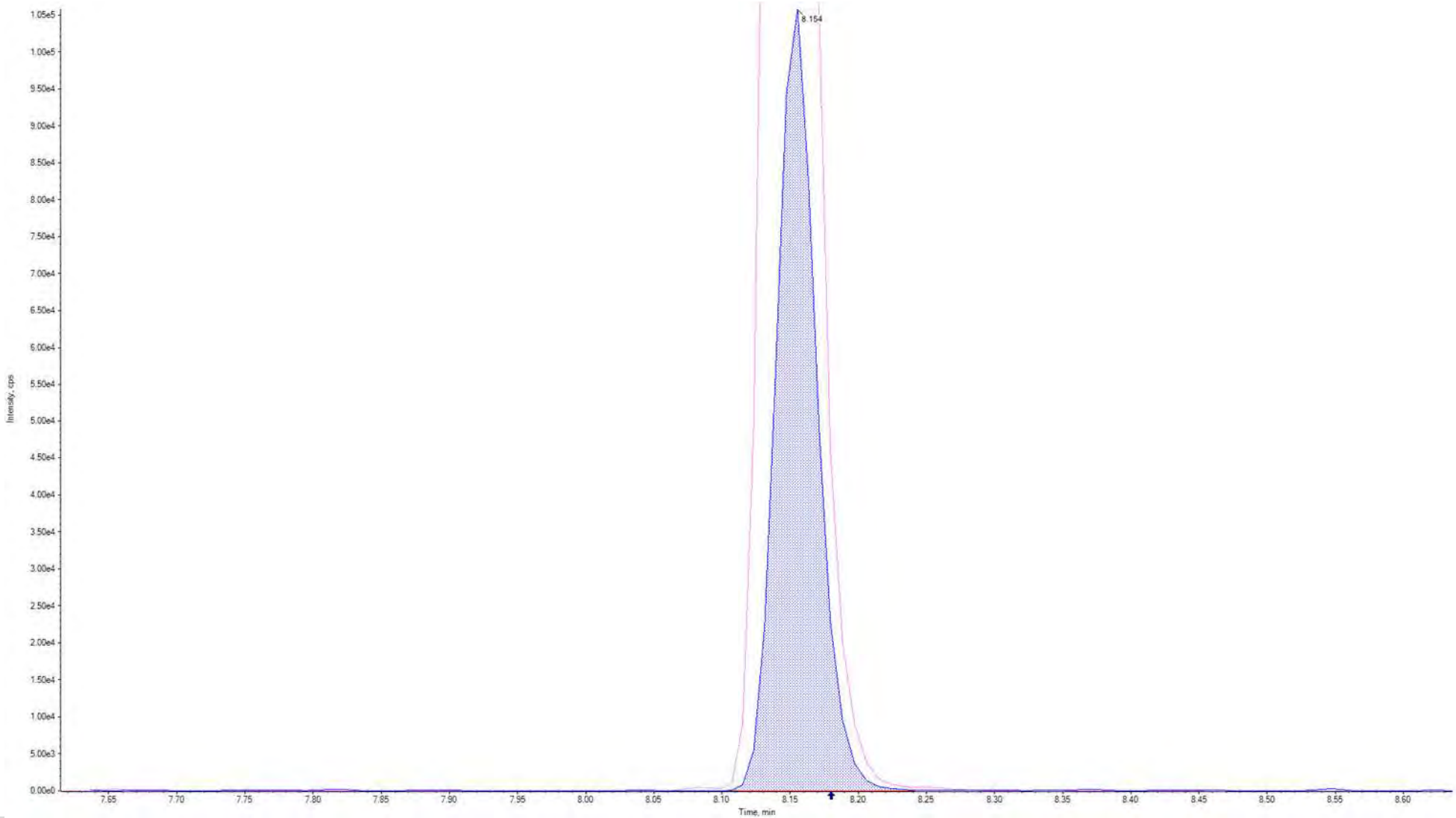
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDA_2
Sample: WG1973506-3,1633MED S/N:83633.0 Points Across peak:19



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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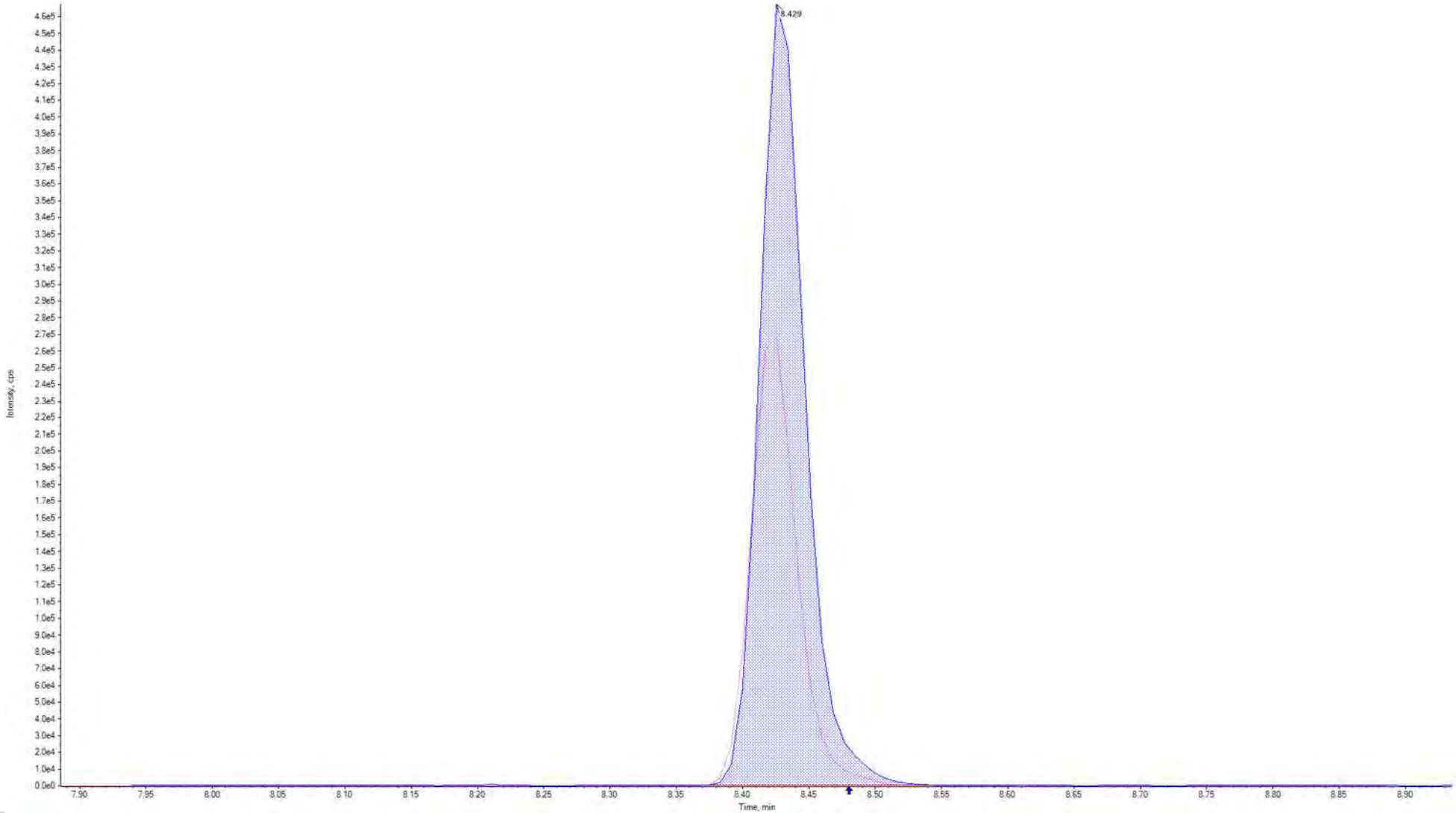
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFUnA
Sample: WG1973506-3,1633MED S/N:2882.4 Points Across peak:33



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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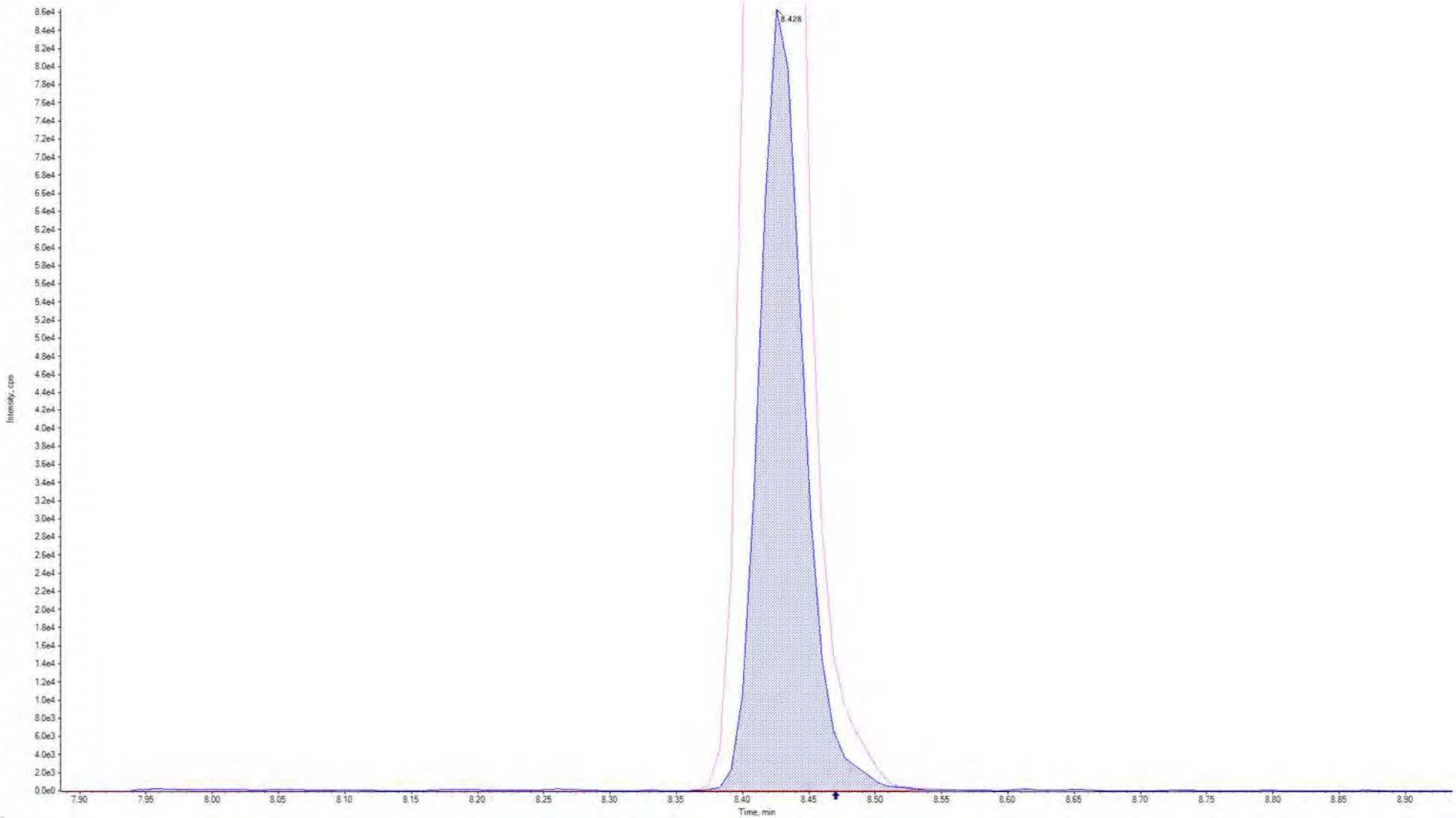
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFUnA_2
Sample: WG1973506-3,1633MED S/N:97896.0 Points Across peak:27



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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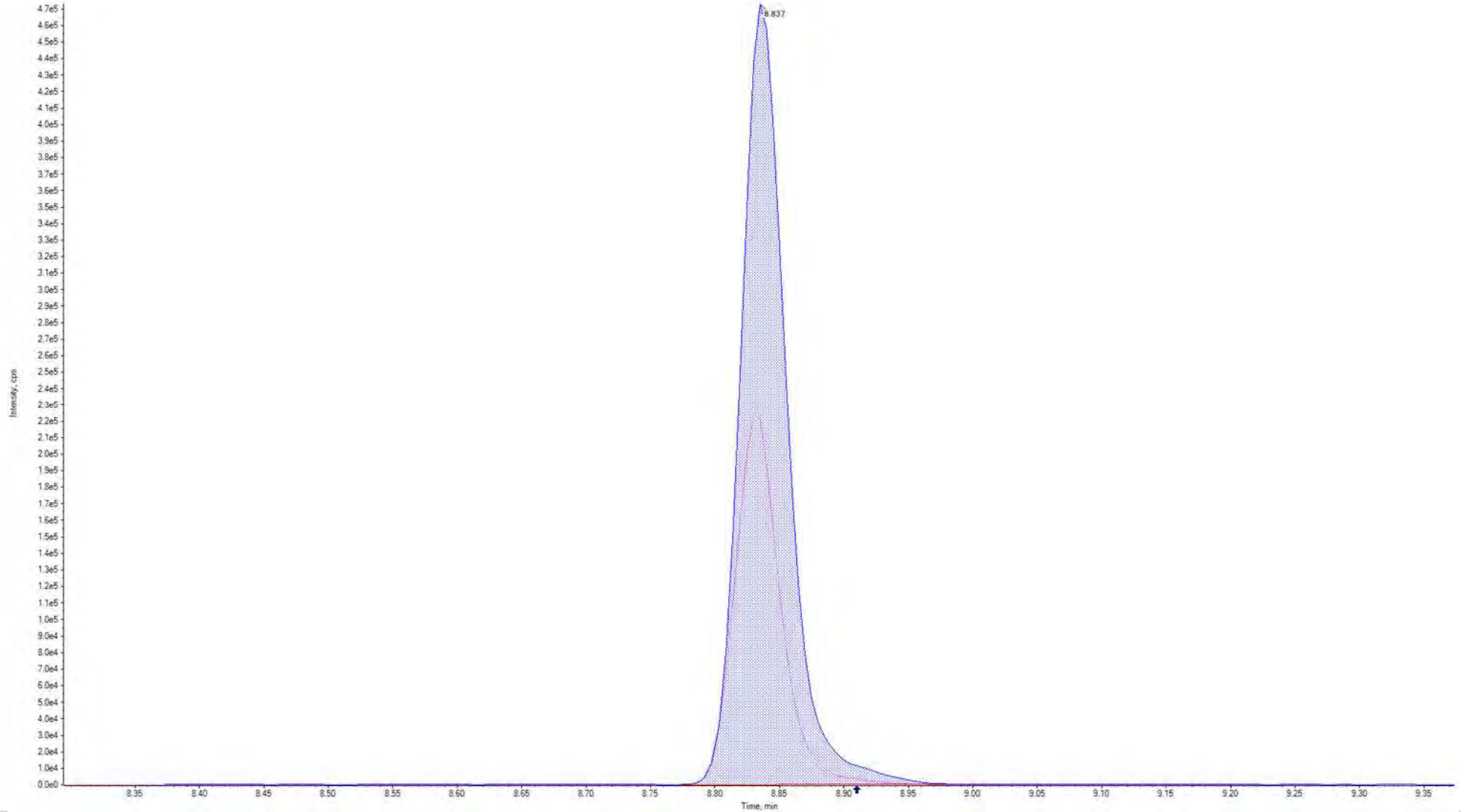
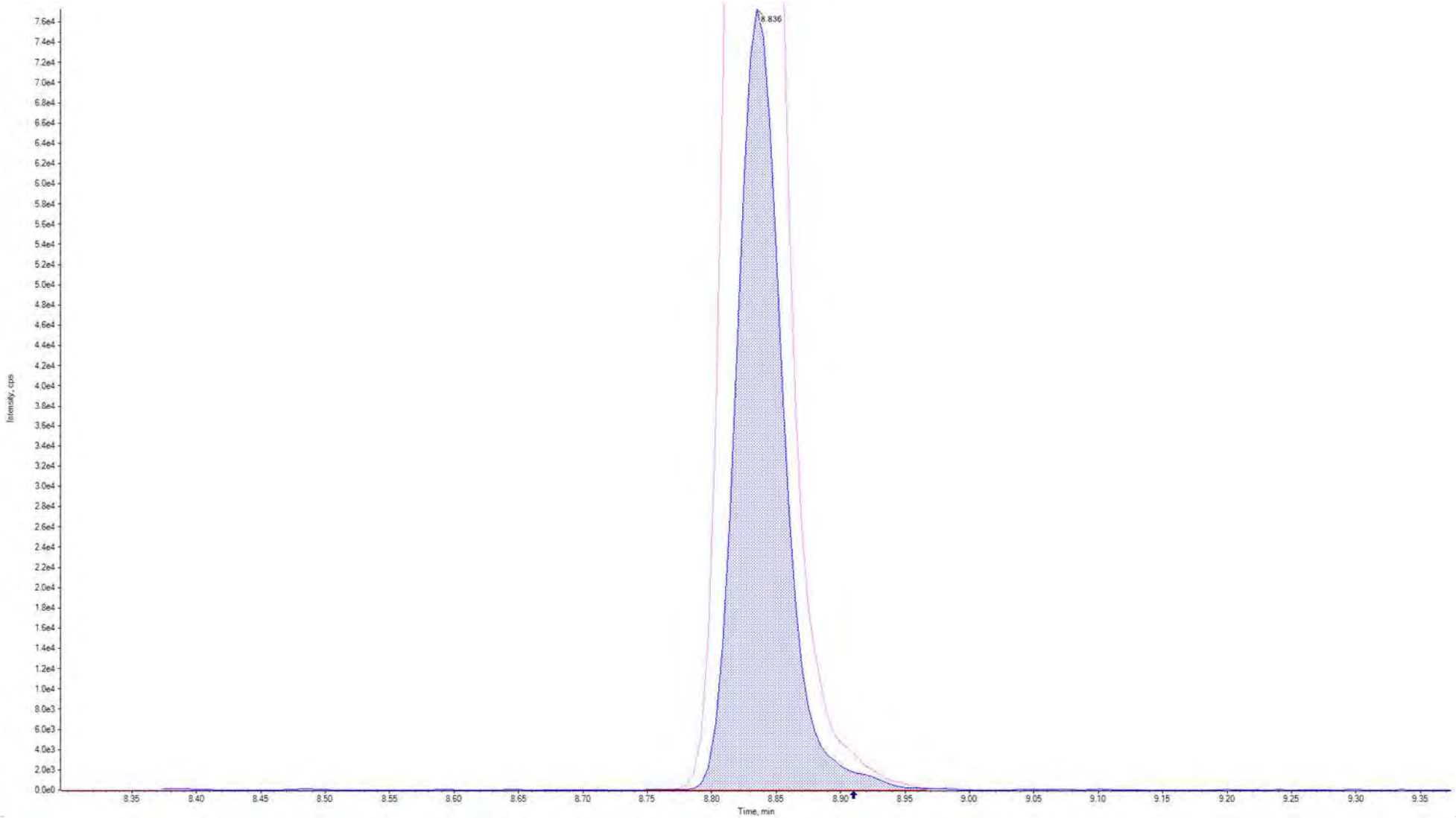
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoA
Sample: WG1973506-3,1633MED S/N:3676.7 Points Across peak:43



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoA_2
Sample: WG1973506-3,1633MED S/N:104989.9 Points Across peak:44



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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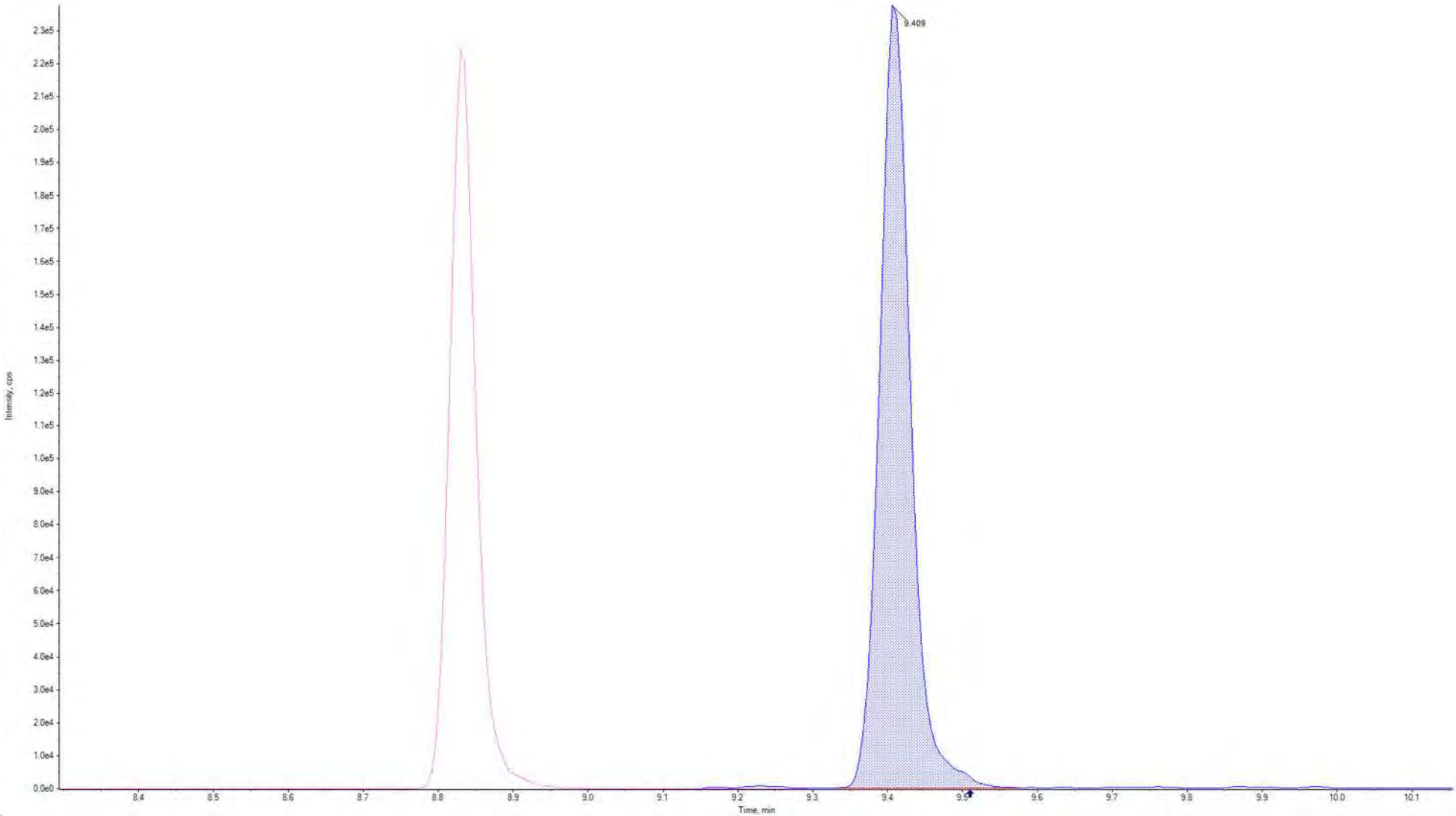
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFTrDA
Sample: WG1973506-3,1633MED S/N:1995.2 Points Across peak:46



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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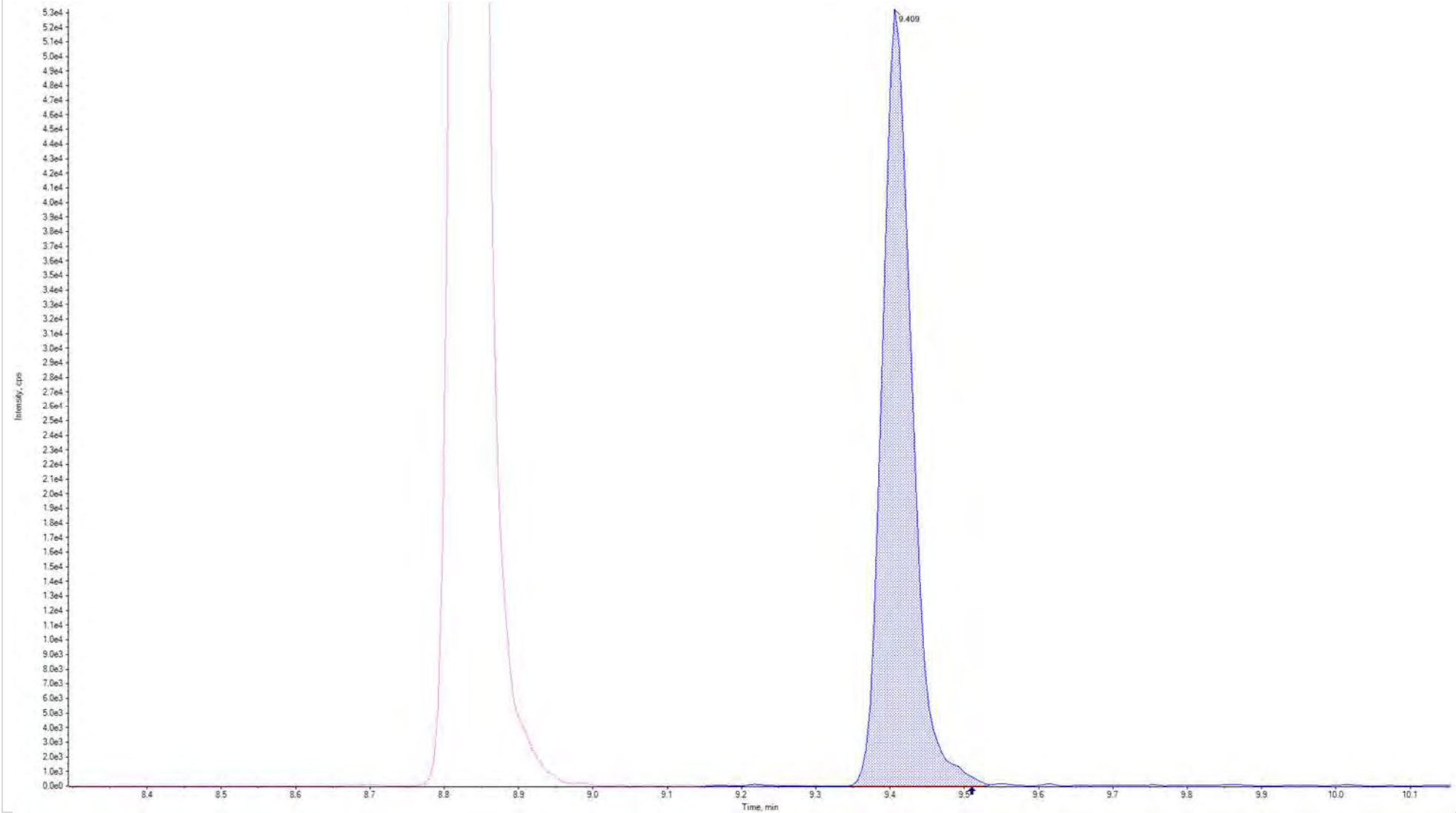
PFTrDA_2
Sample: WG1973506-3,1633MED S/N:1424.7 Points Across peak:36



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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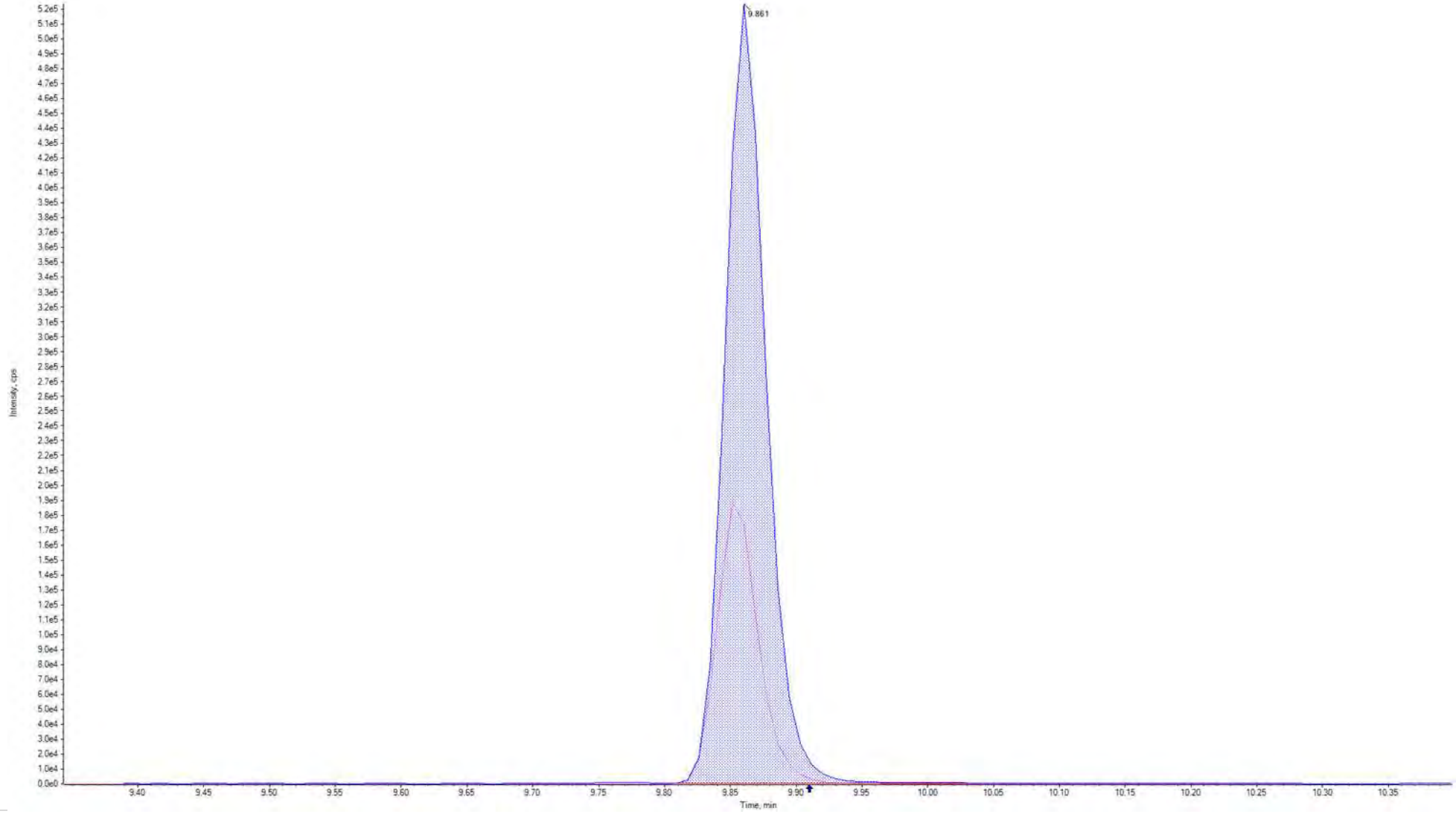
PFTeDA
Sample: WG1973506-3,1633MED S/N:2734.3 Points Across peak:33



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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PFTeDA_2
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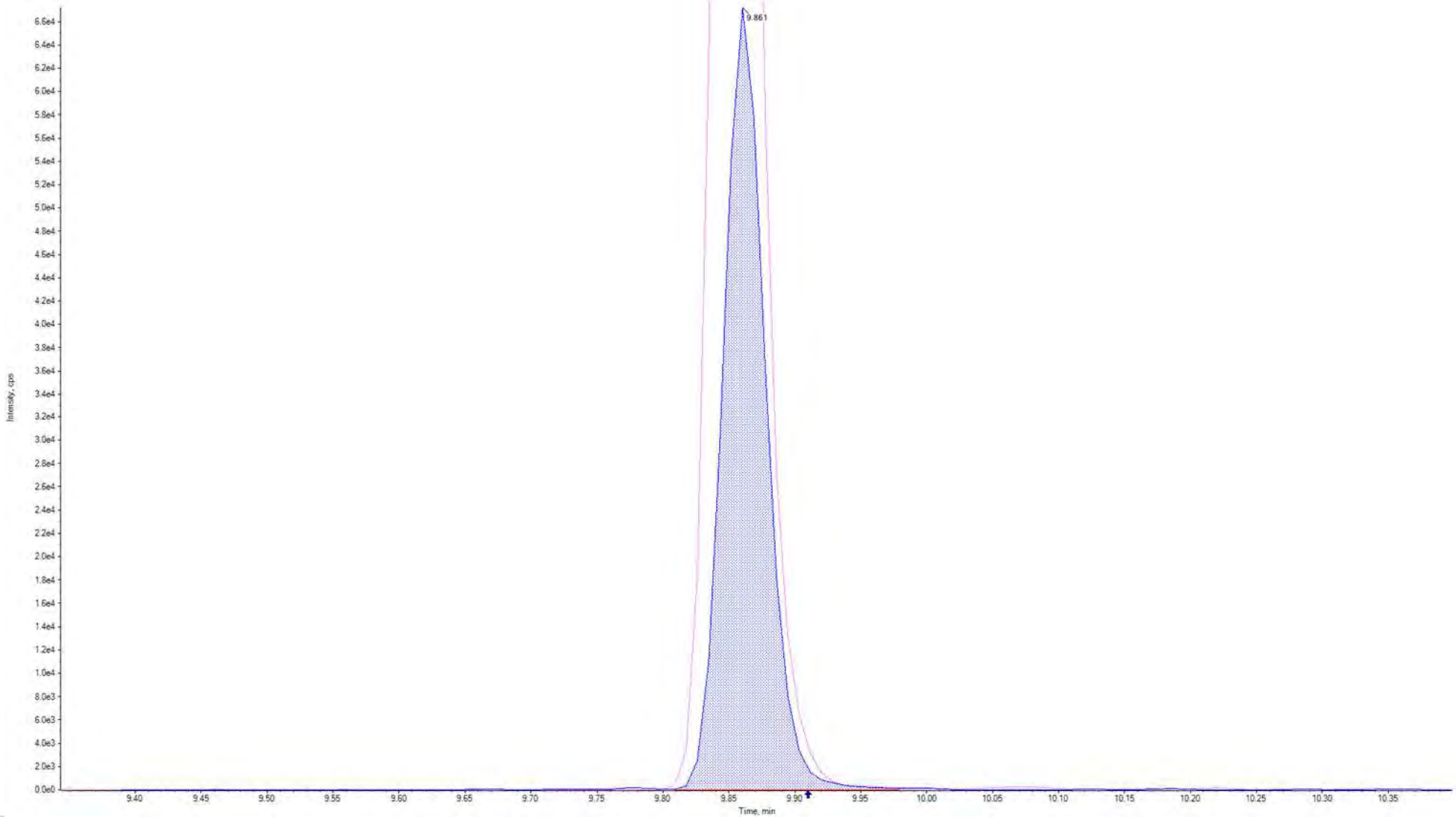

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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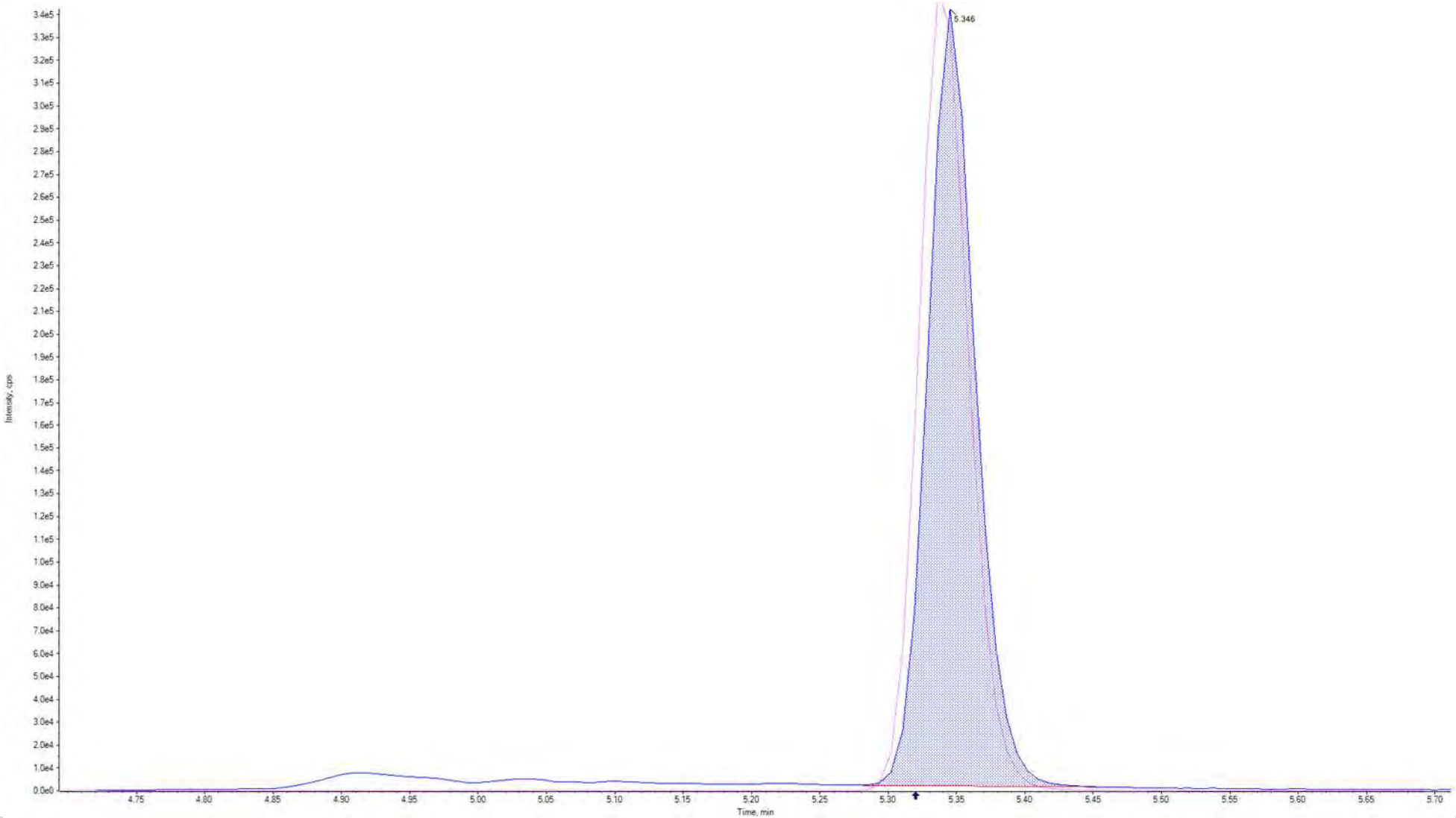
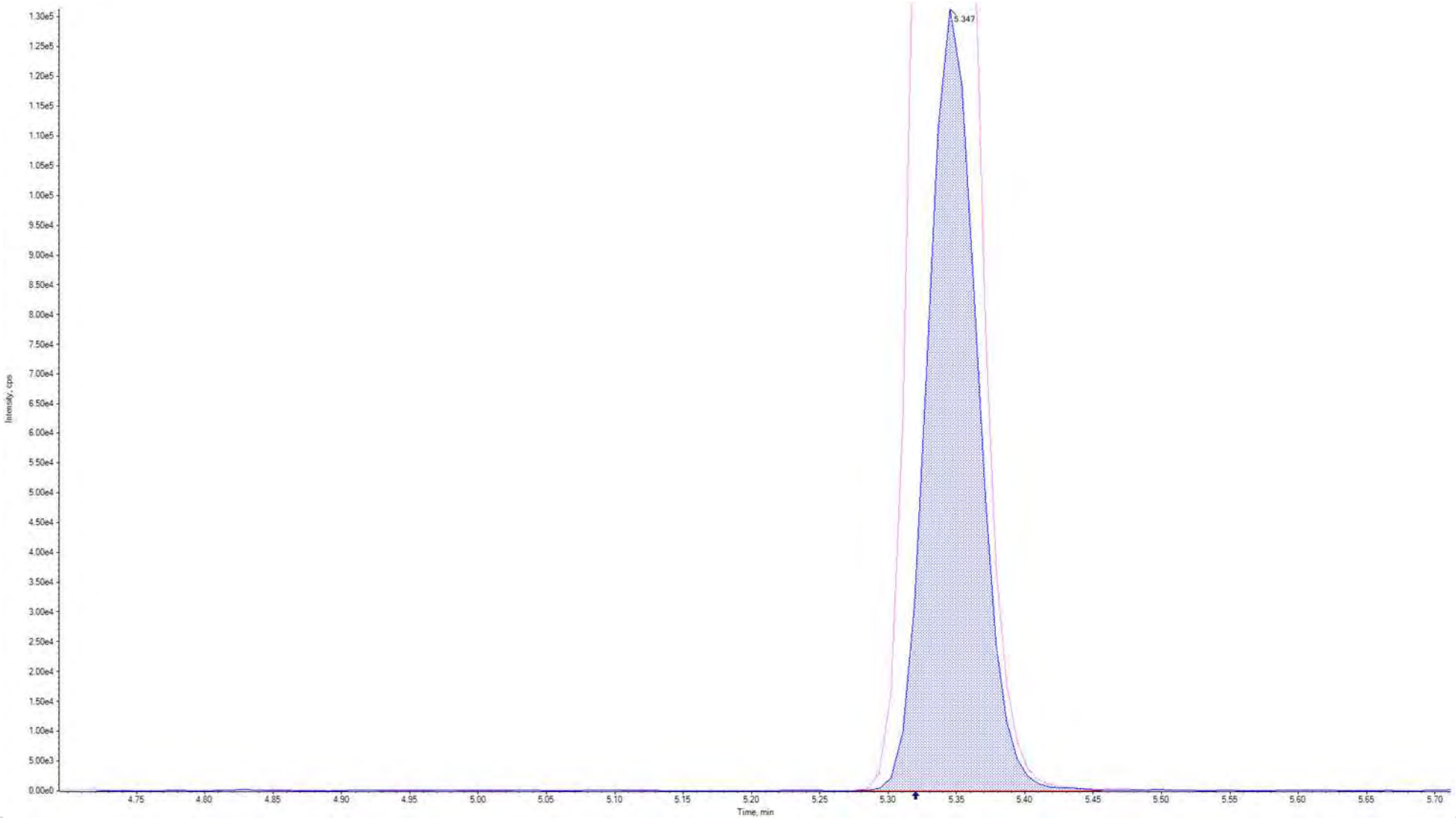
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFBS
Sample: WG1973506-3,1633MED S/N:84.2 Points Across peak:23



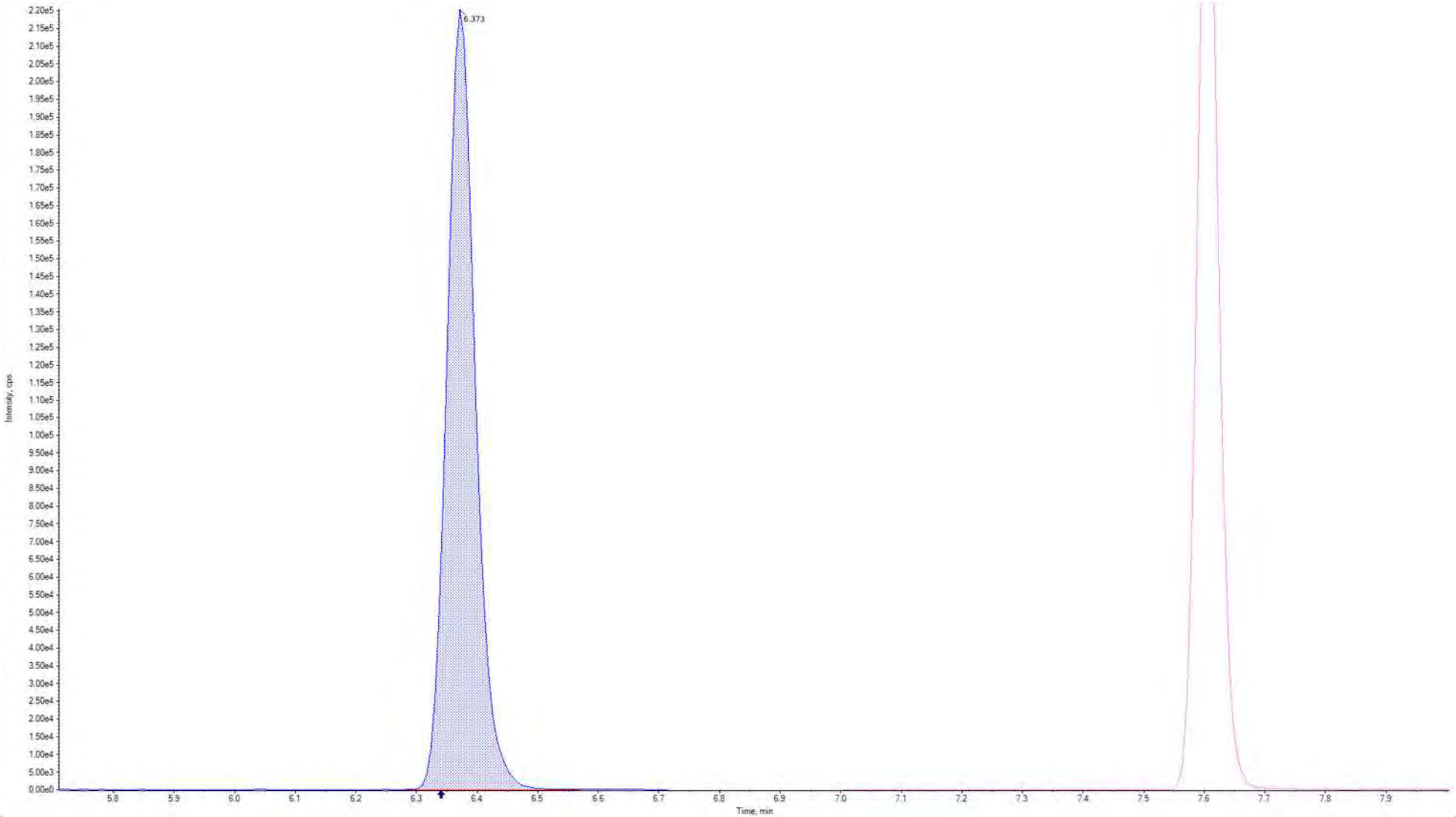
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFBS_2
Sample: WG1973506-3,1633MED S/N:4141.1 Points Across peak:25



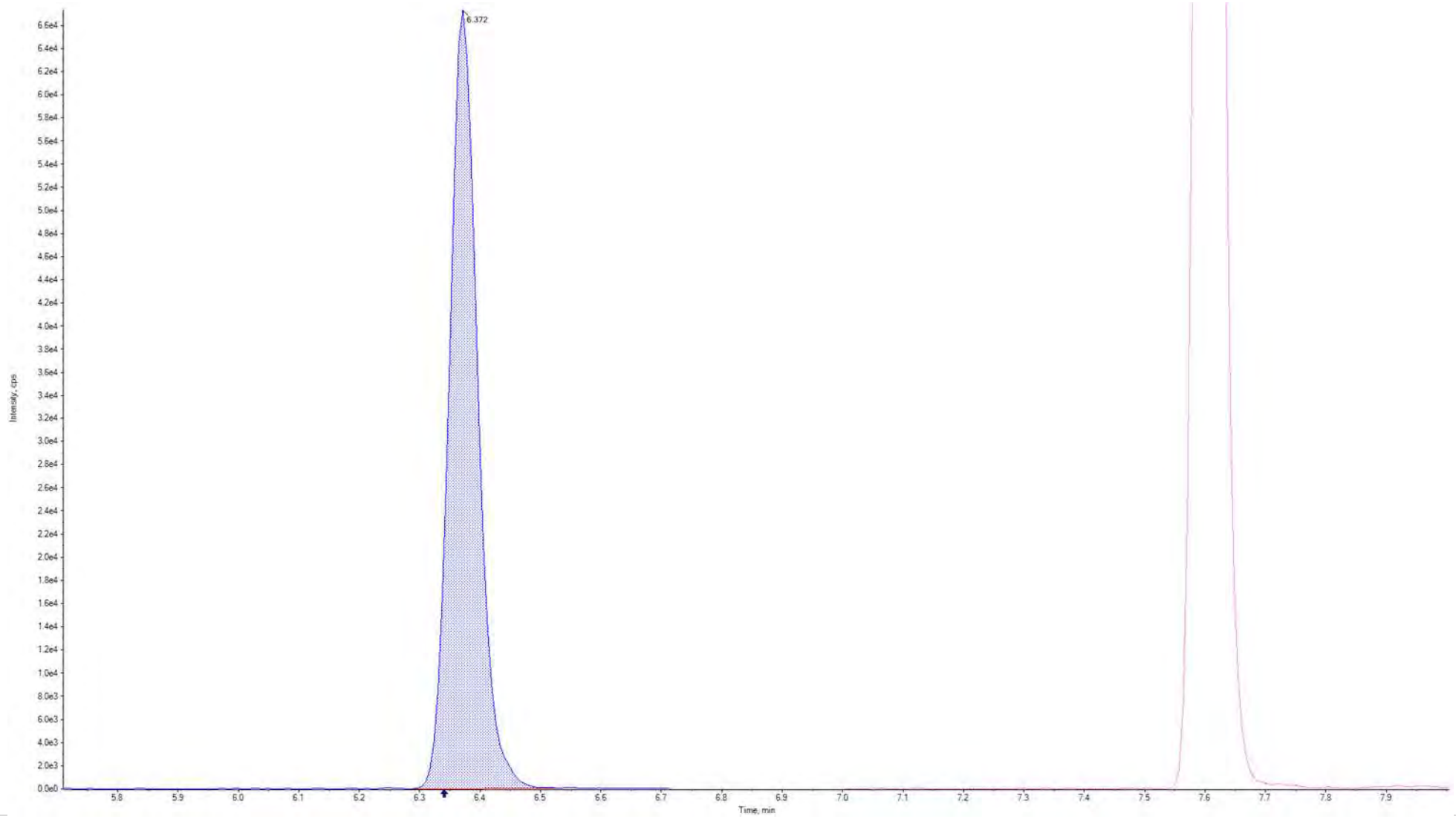
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFPeS
Sample: WG1973506-3,1633MED S/N:5234.2 Points Across peak:47



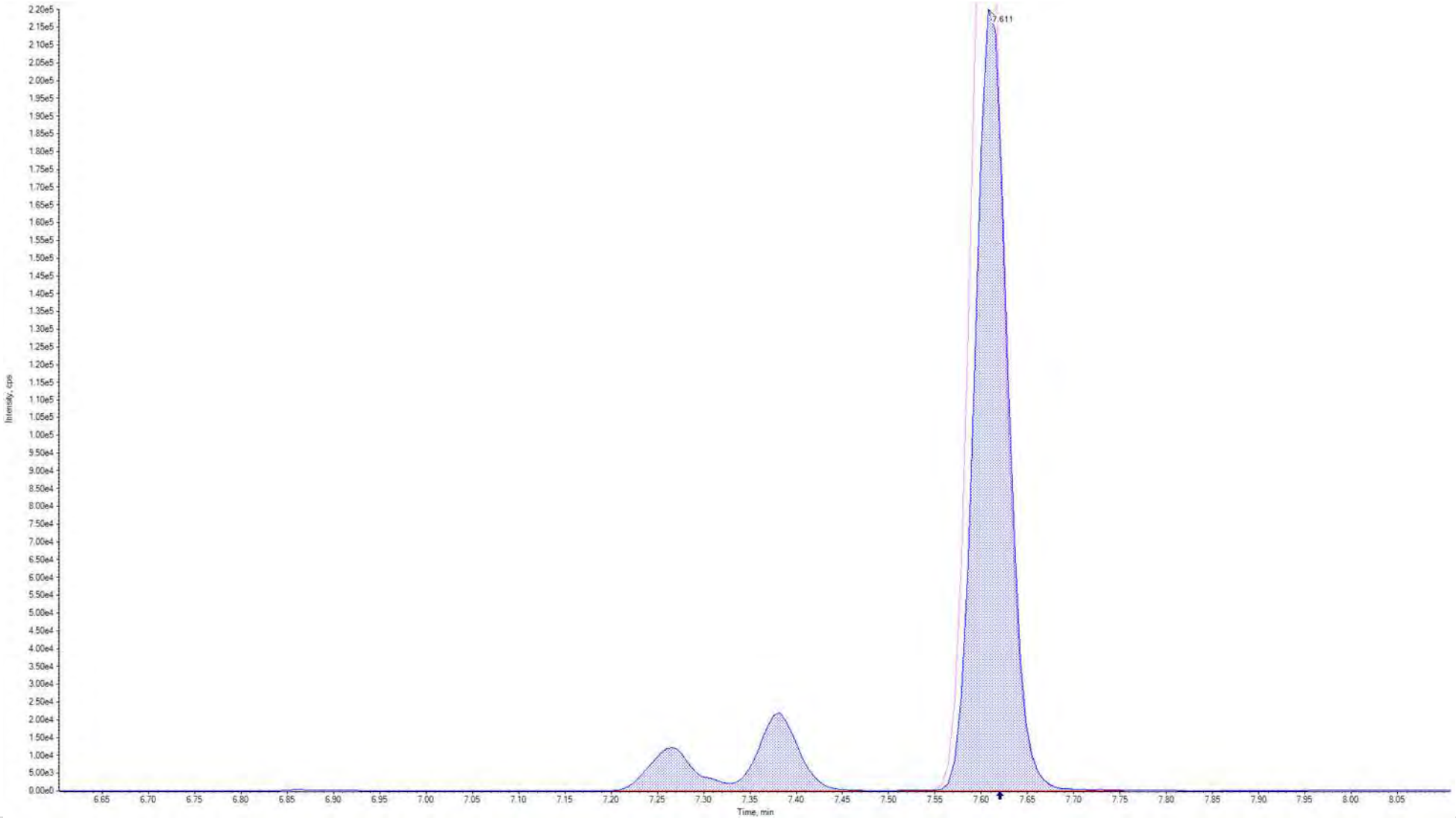
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFPeS_2
Sample: WG1973506-3,1633MED S/N:8425.9 Points Across peak:38



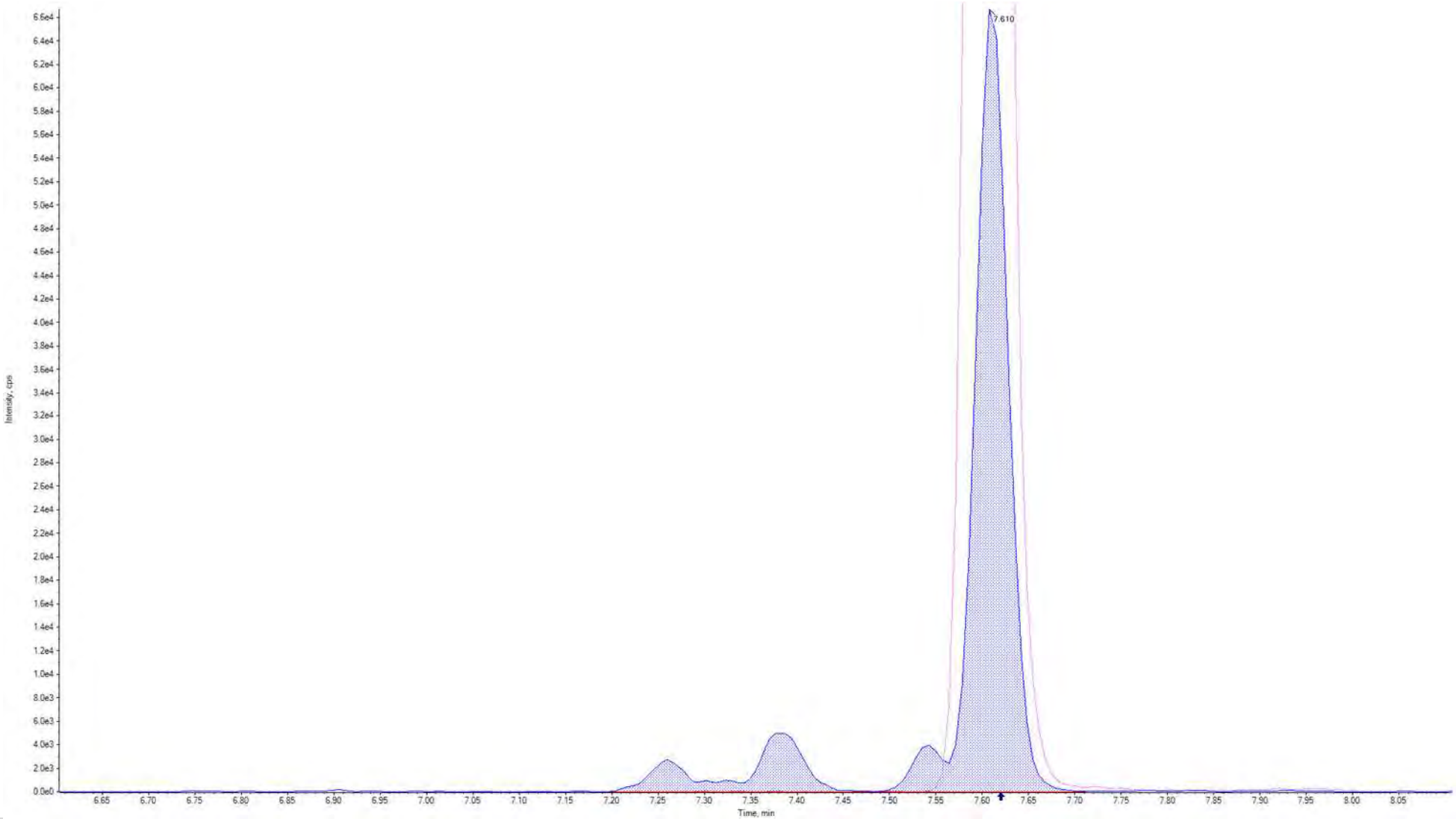
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHxS
Sample: WG1973506-3,1633MED S/N:1371965.8 Points Across peak:91



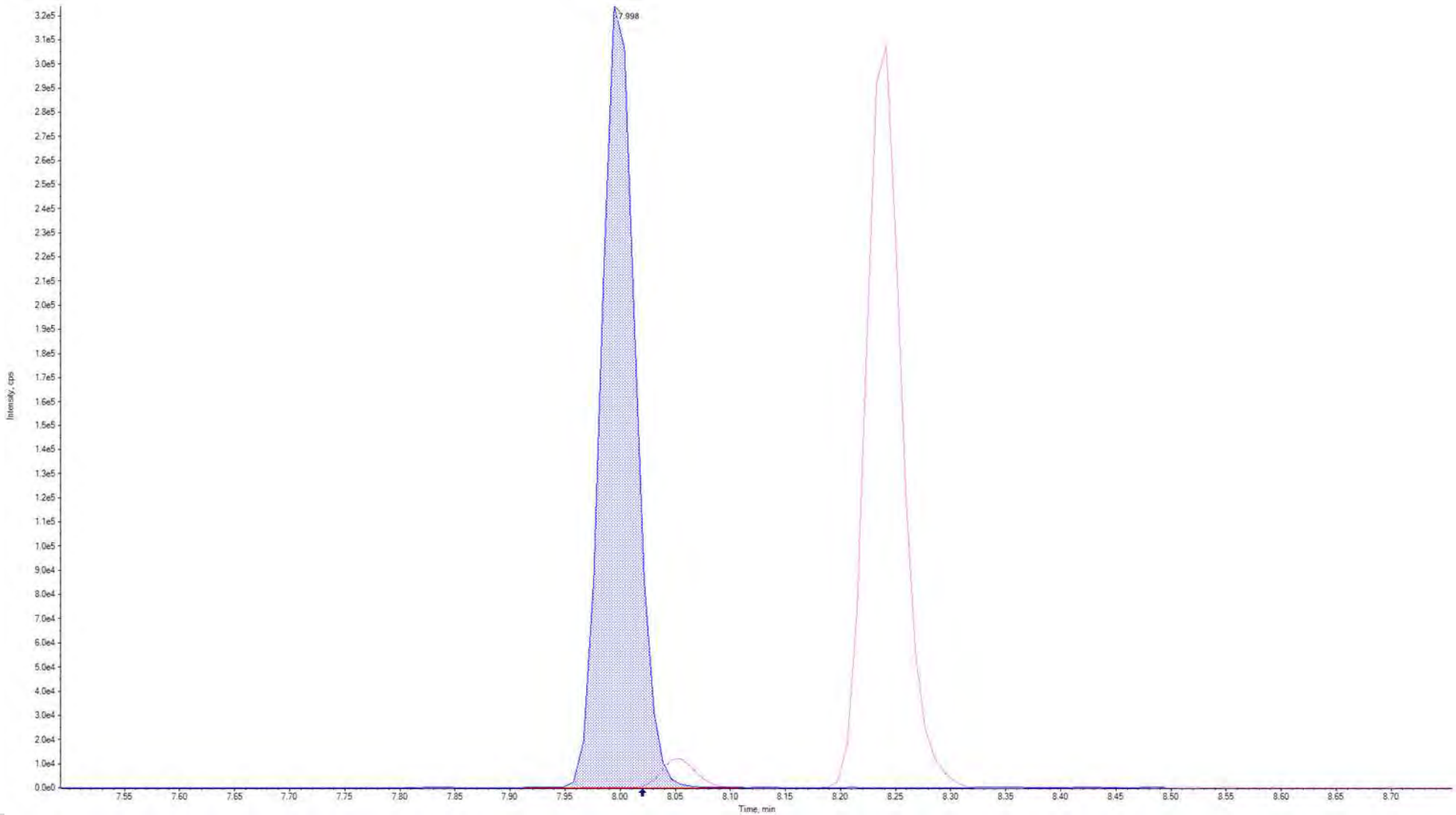
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHxS_2
Sample: WG1973506-3,1633MED S/N:584016.3 Points Across peak:85



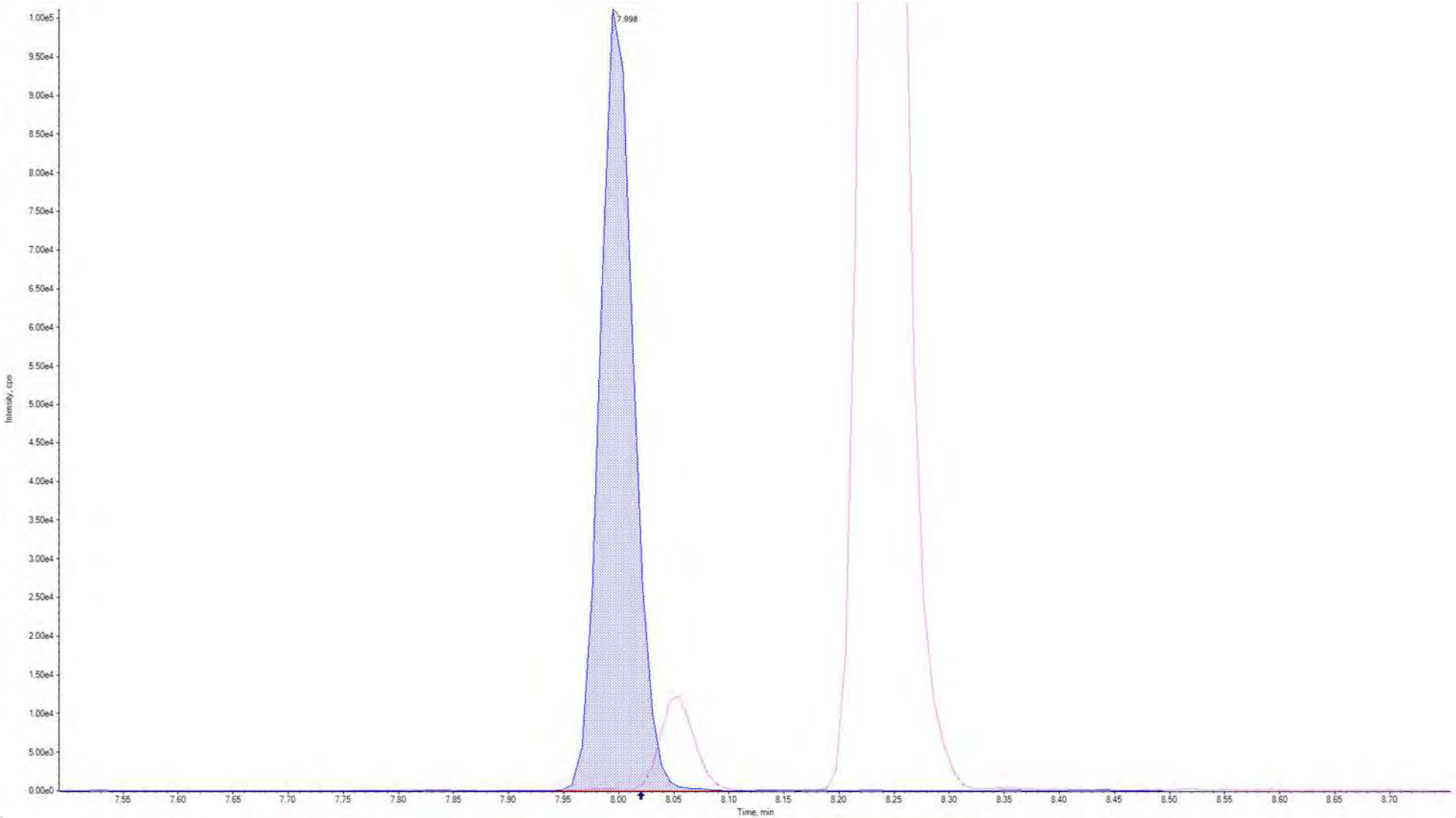
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHpS
Sample: WG1973506-3,1633MED S/N:92450.8 Points Across peak:27



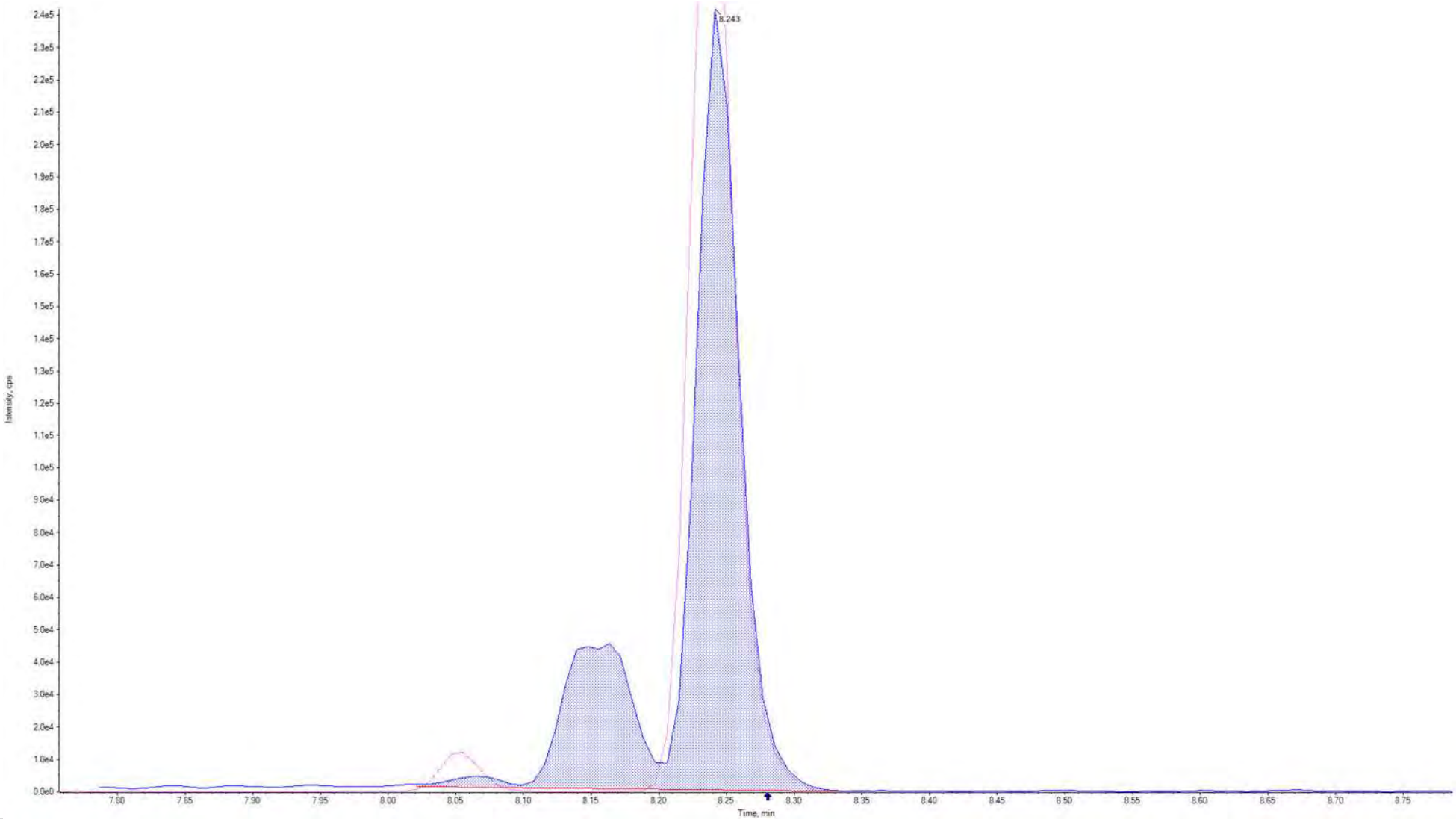
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHpS_2
Sample: WG1973506-3,1633MED S/N:1705.1 Points Across peak:23



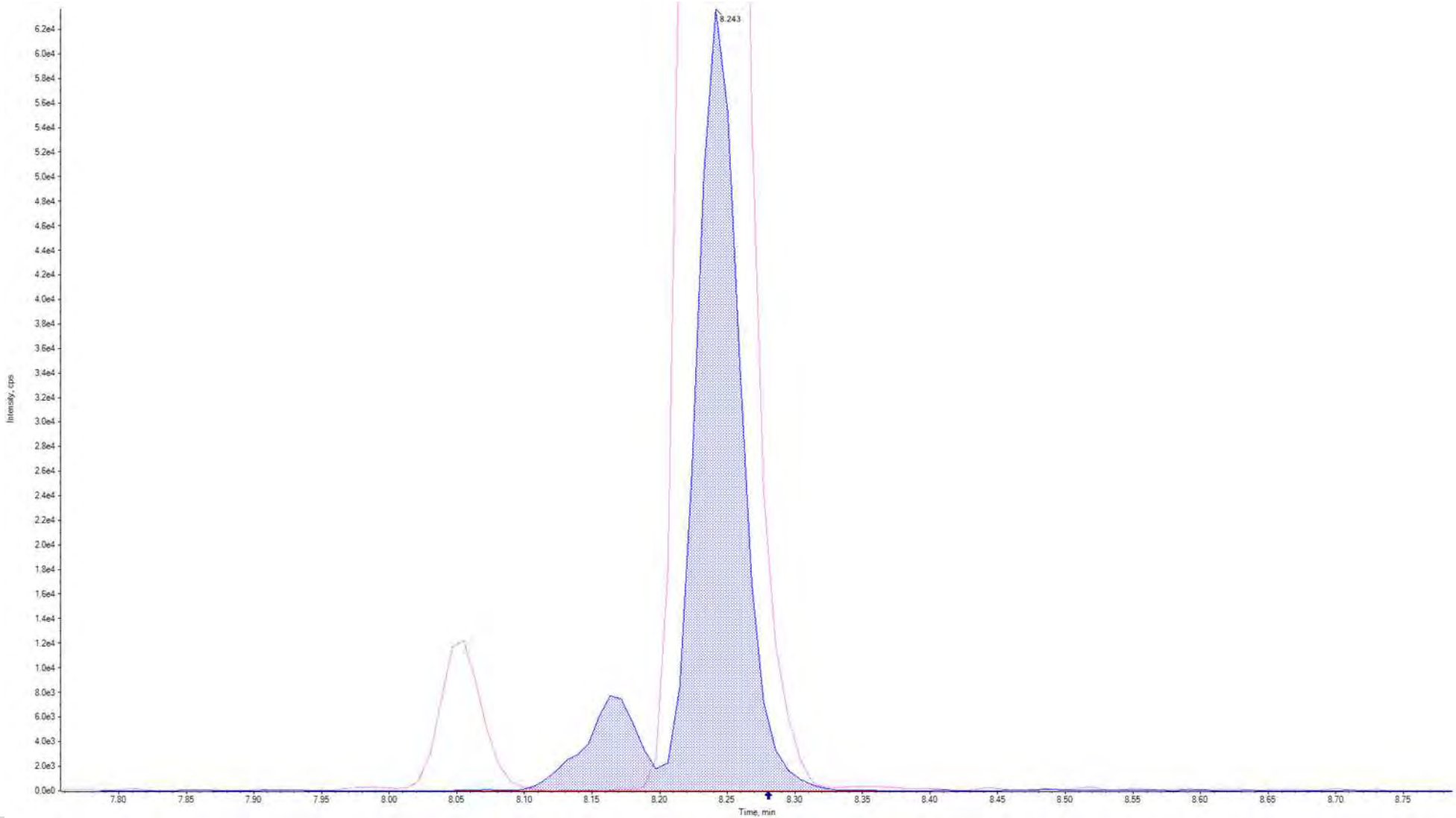
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOS
Sample: WG1973506-3,1633MED S/N:1380.1 Points Across peak:40



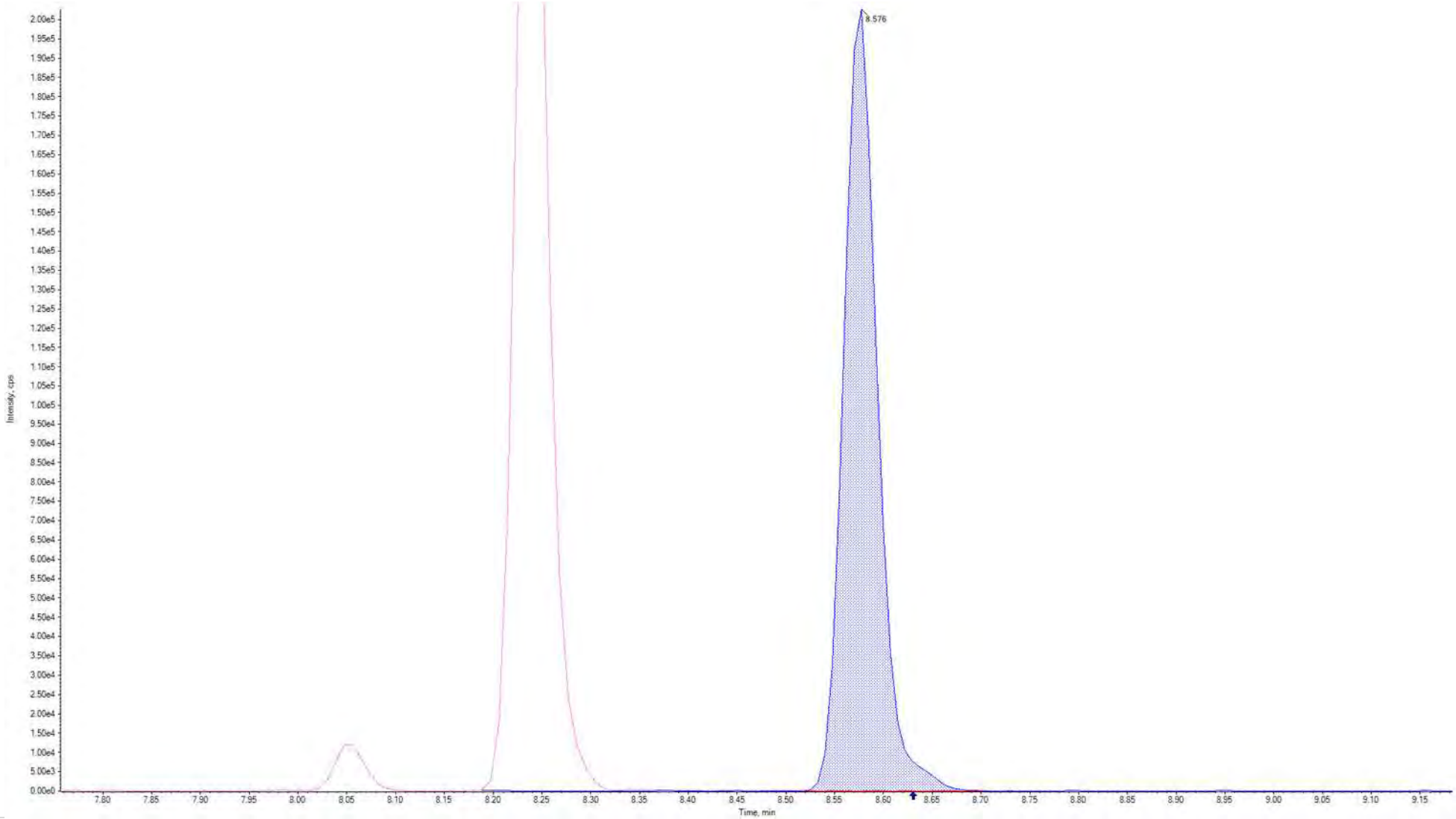
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOS_2
Sample: WG1973506-3,1633MED S/N:1242.3 Points Across peak:44



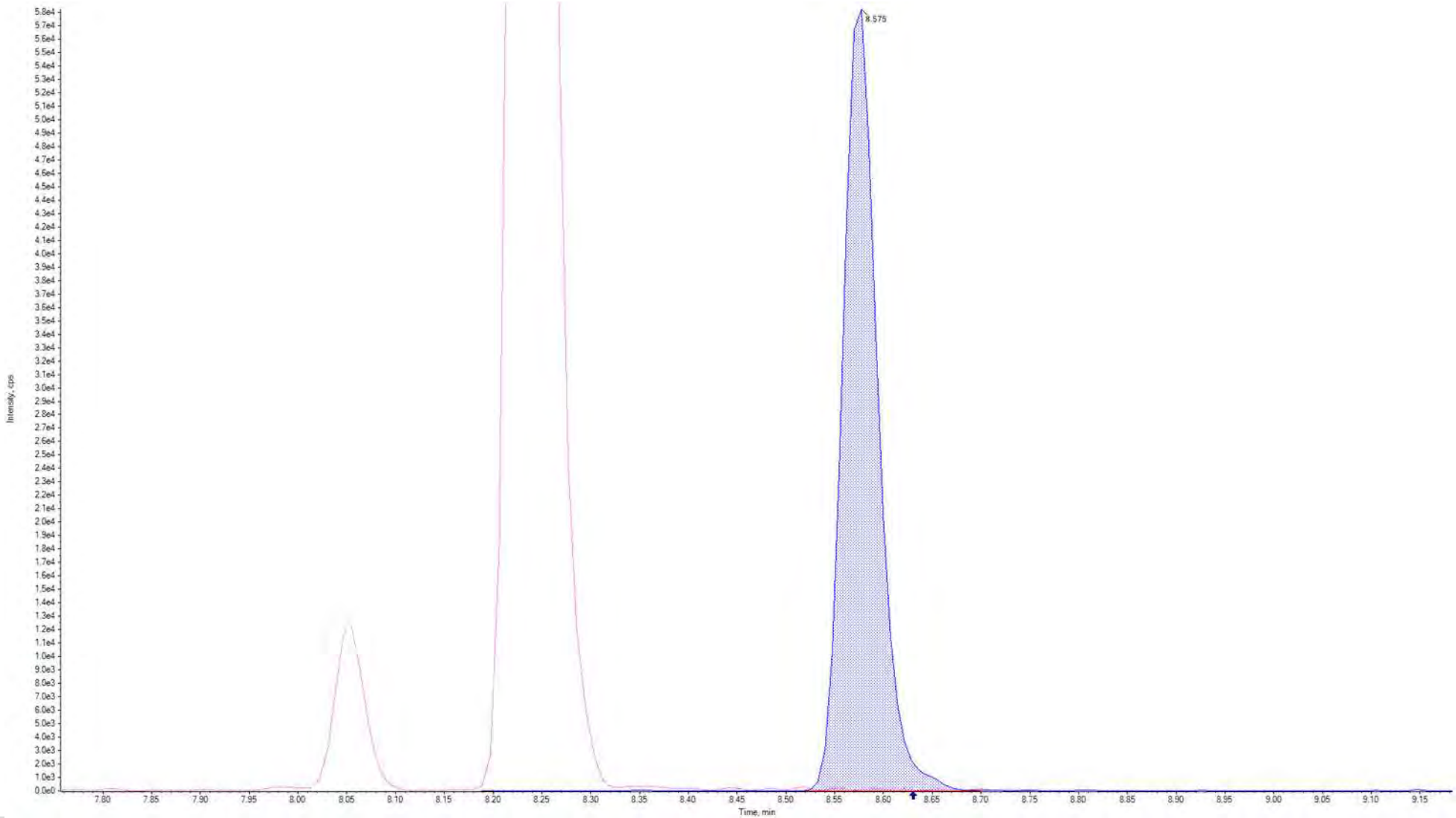
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFNS
Sample: WG1973506-3,1633MED S/N:9463.5 Points Across peak:33



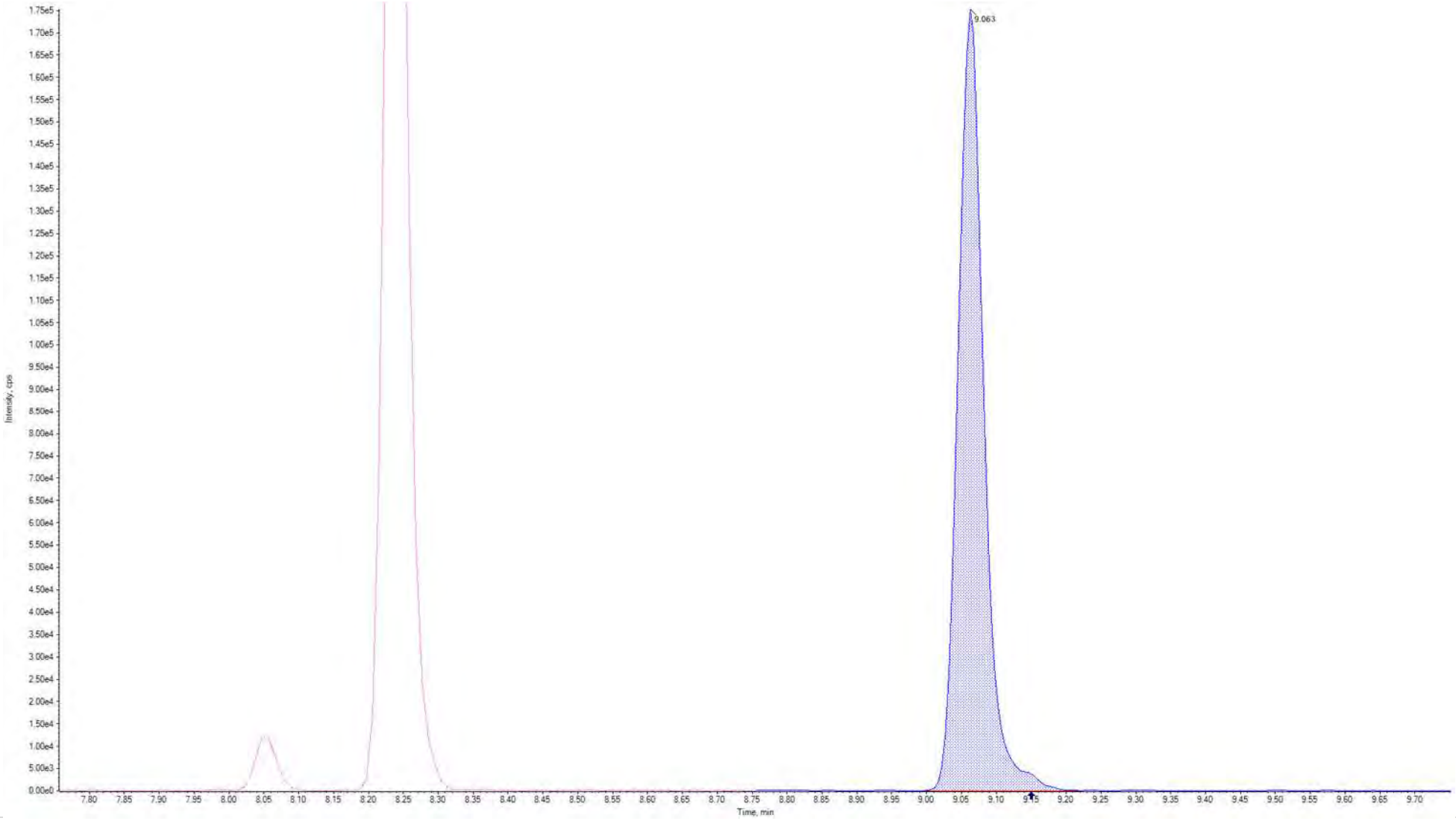
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFNS_2
Sample: WG1973506-3,1633MED S/N:3308.3 Points Across peak:29



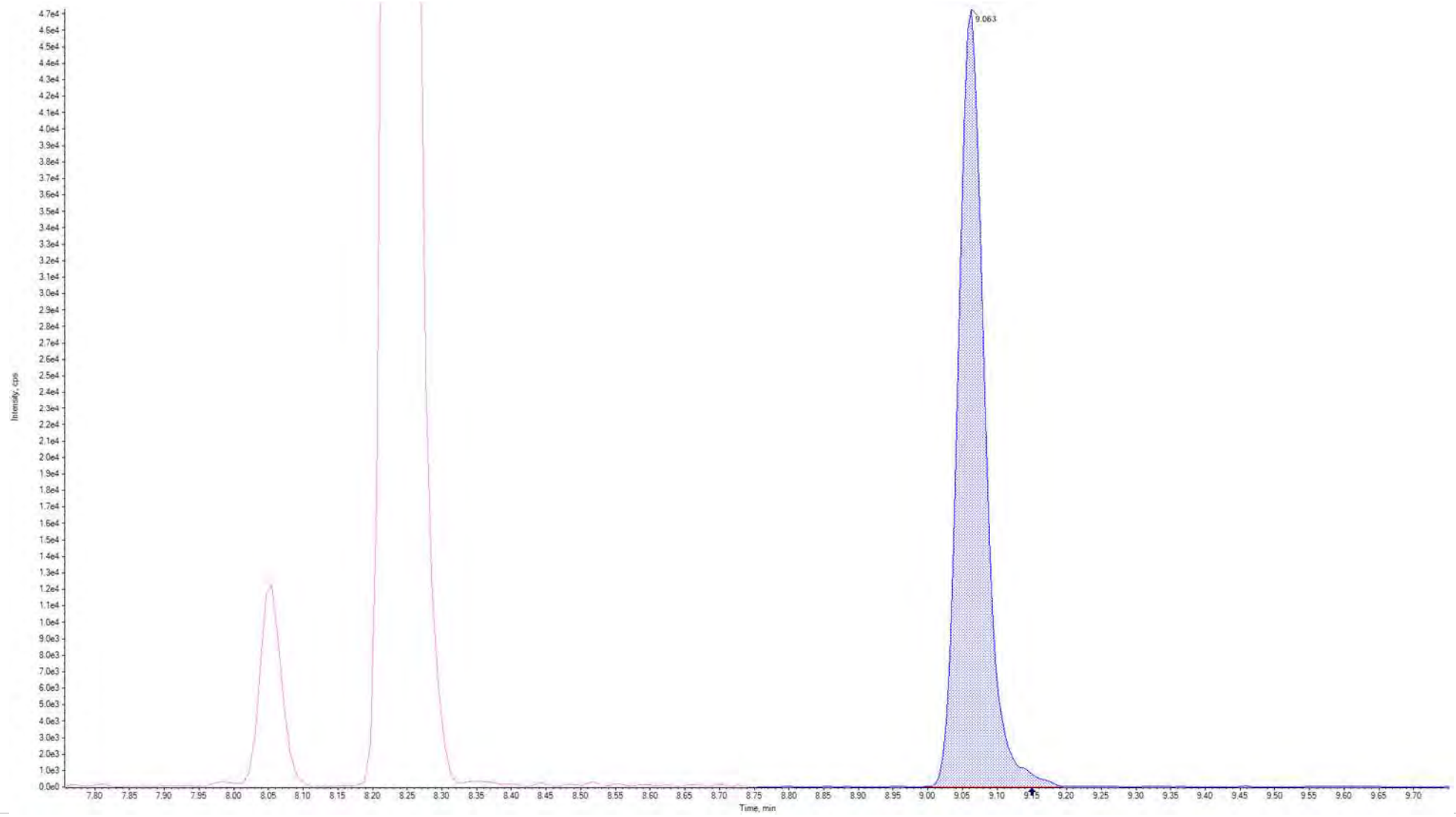
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDS
Sample: WG1973506-3,1633MED S/N:5872.4 Points Across peak:47



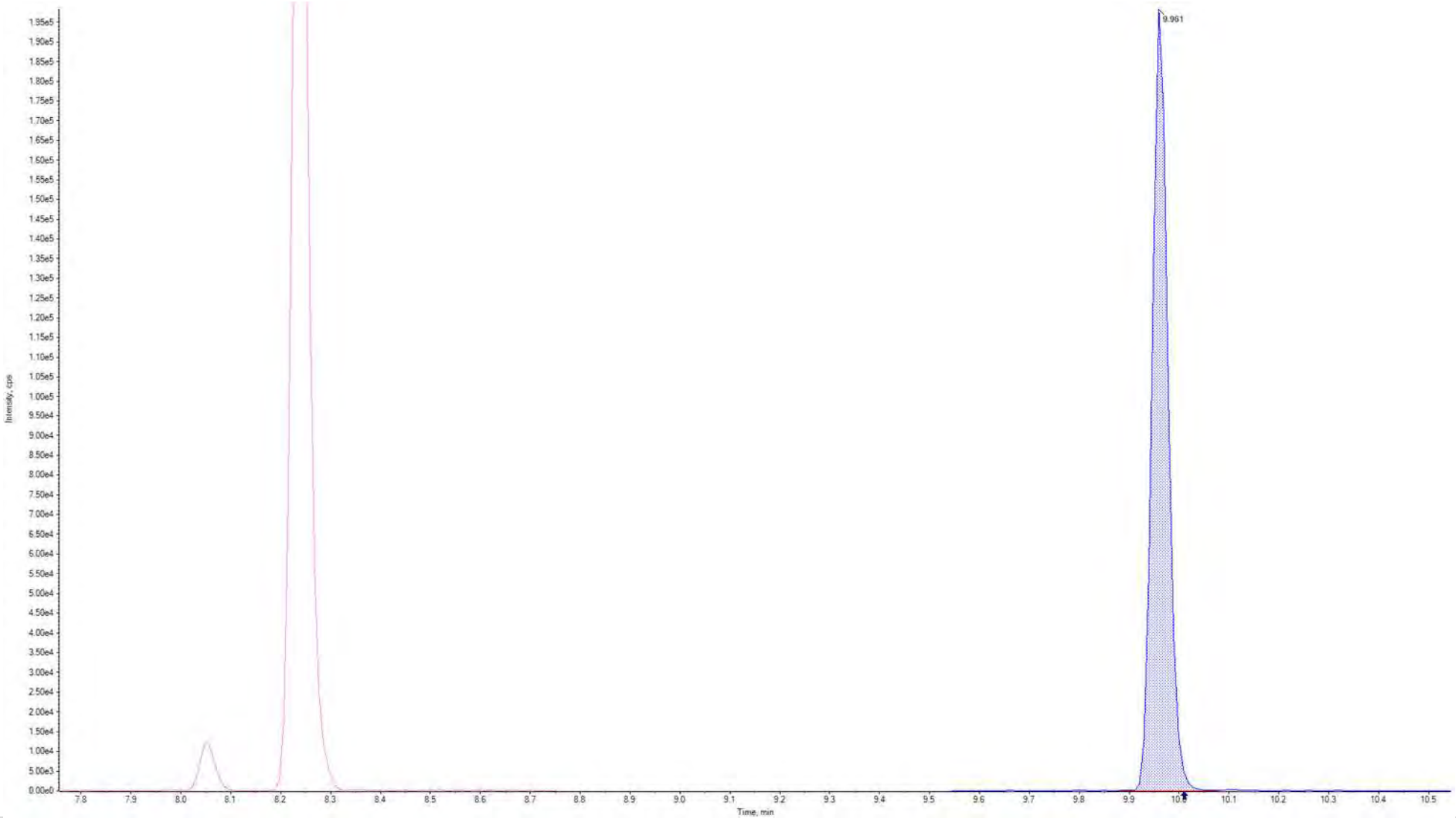
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDS_2
Sample: WG1973506-3,1633MED S/N:195856.5 Points Across peak:44



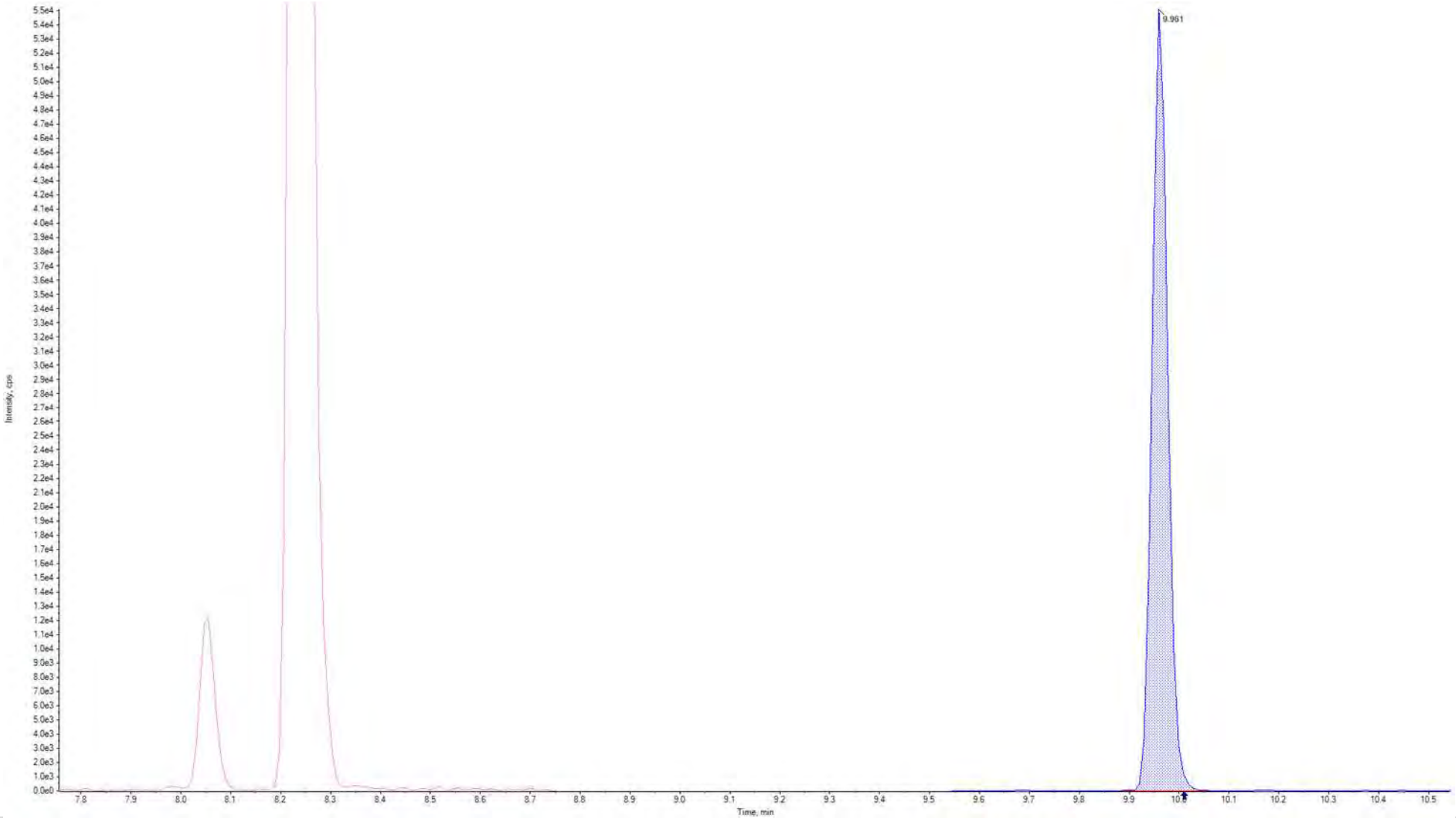
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoS
Sample: WG1973506-3,1633MED S/N:30273.0 Points Across peak:23



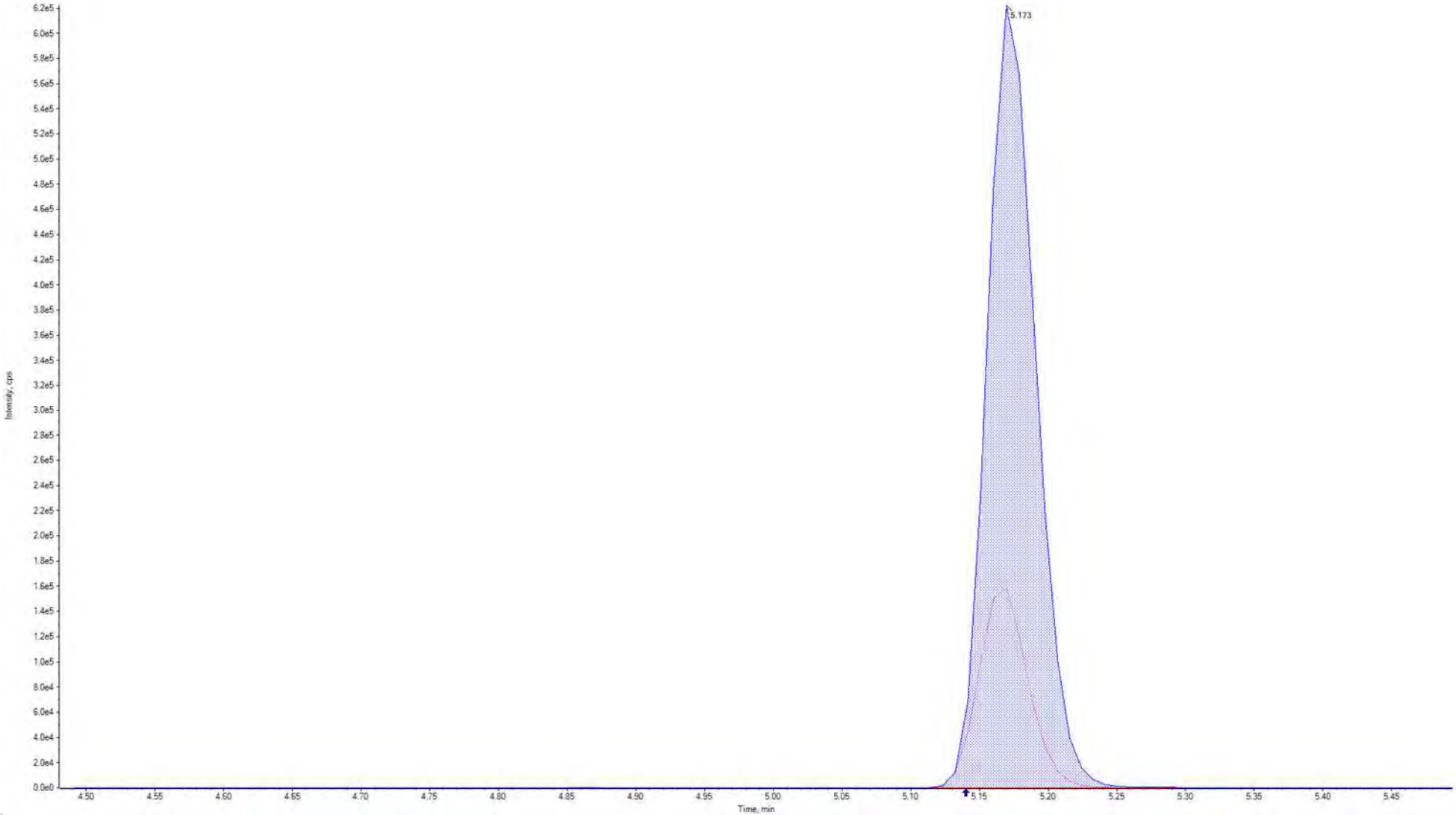
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoS_2
Sample: WG1973506-3,1633MED S/N:2163.3 Points Across peak:25



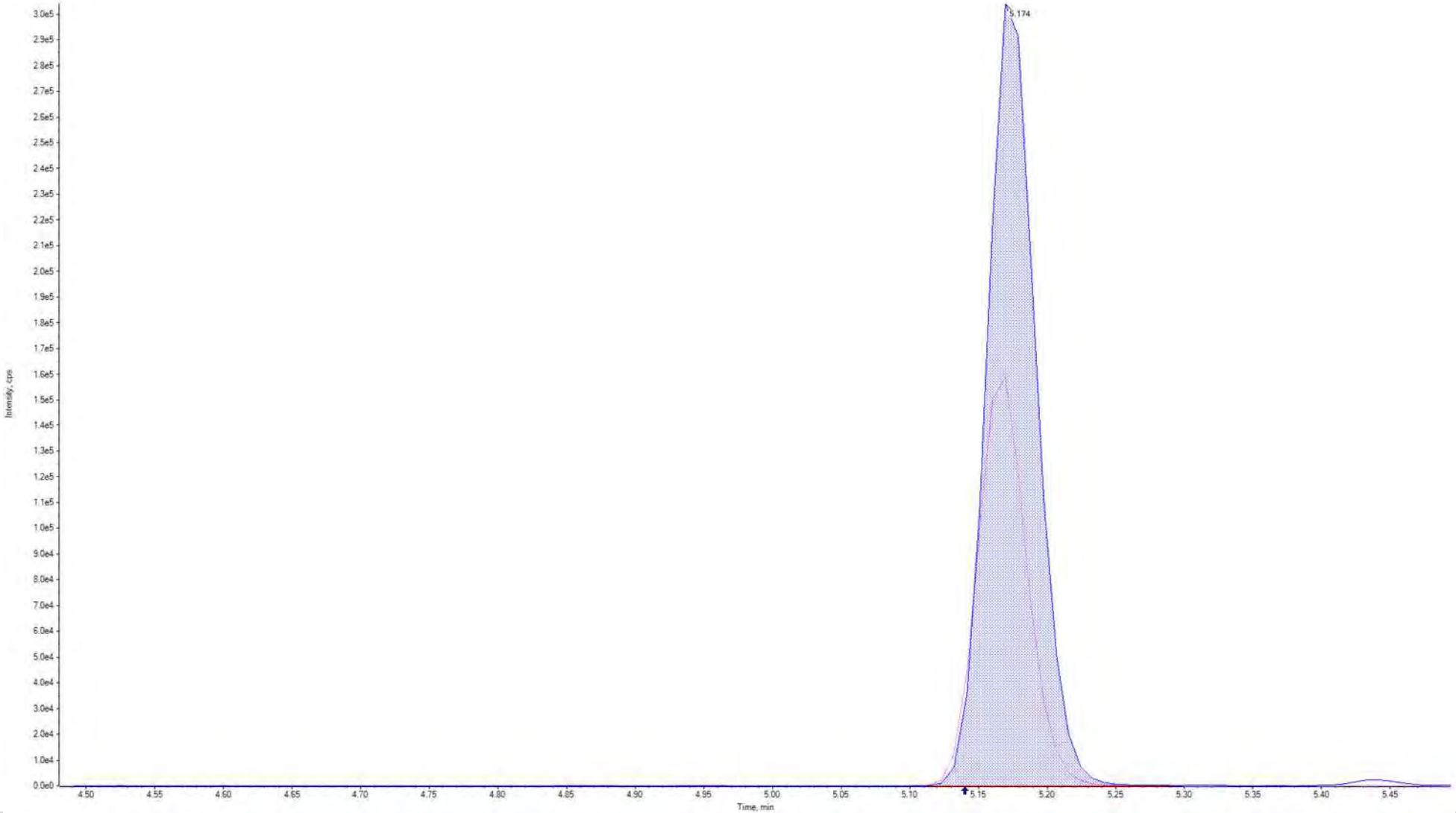
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

4:2FTS
Sample: WG1973506-3,1633MED S/N:4656.0 Points Across peak:24



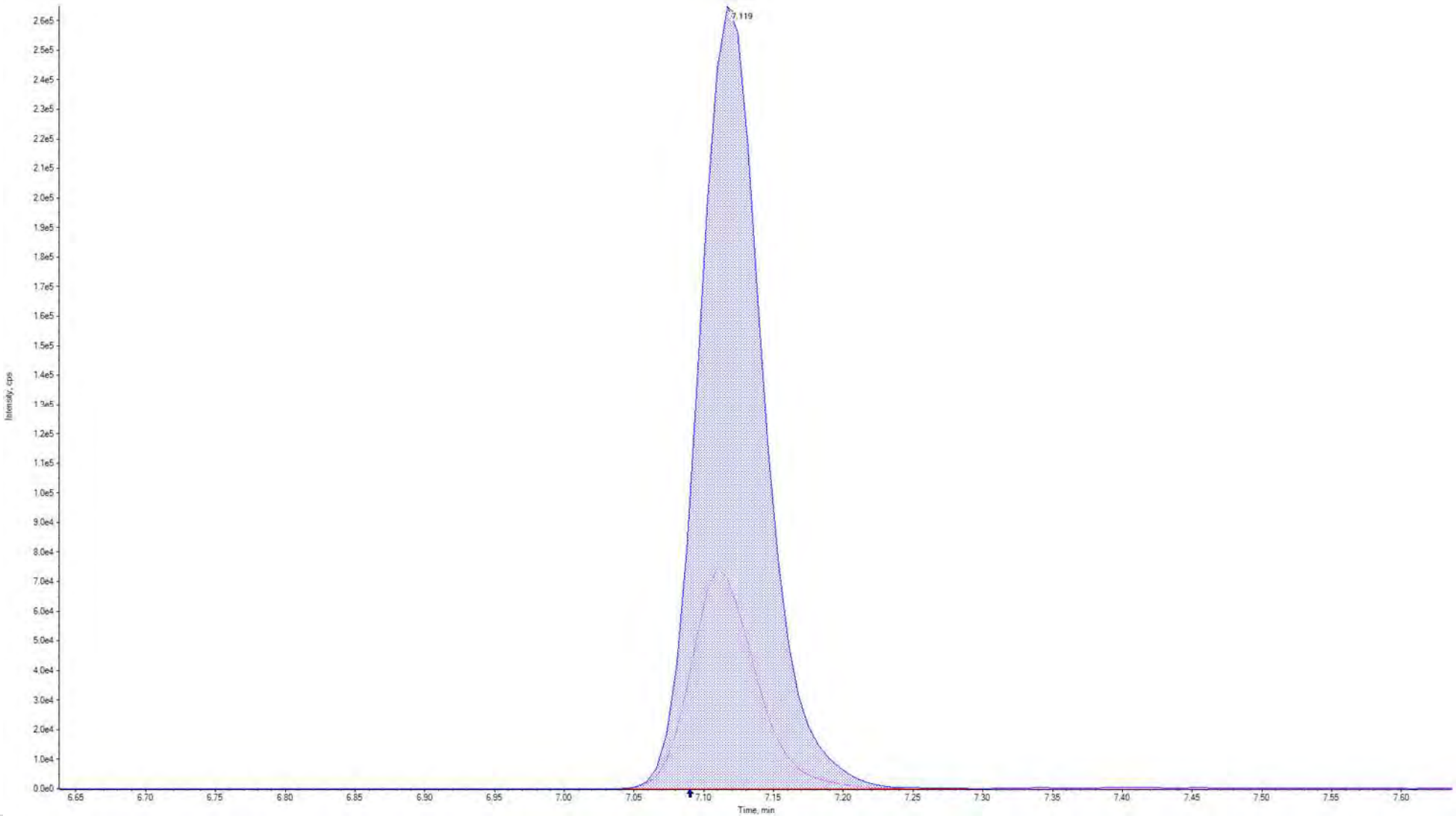
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

4:2FTS_2
Sample: WG1973506-3,1633MED S/N:6227.8 Points Across peak:25



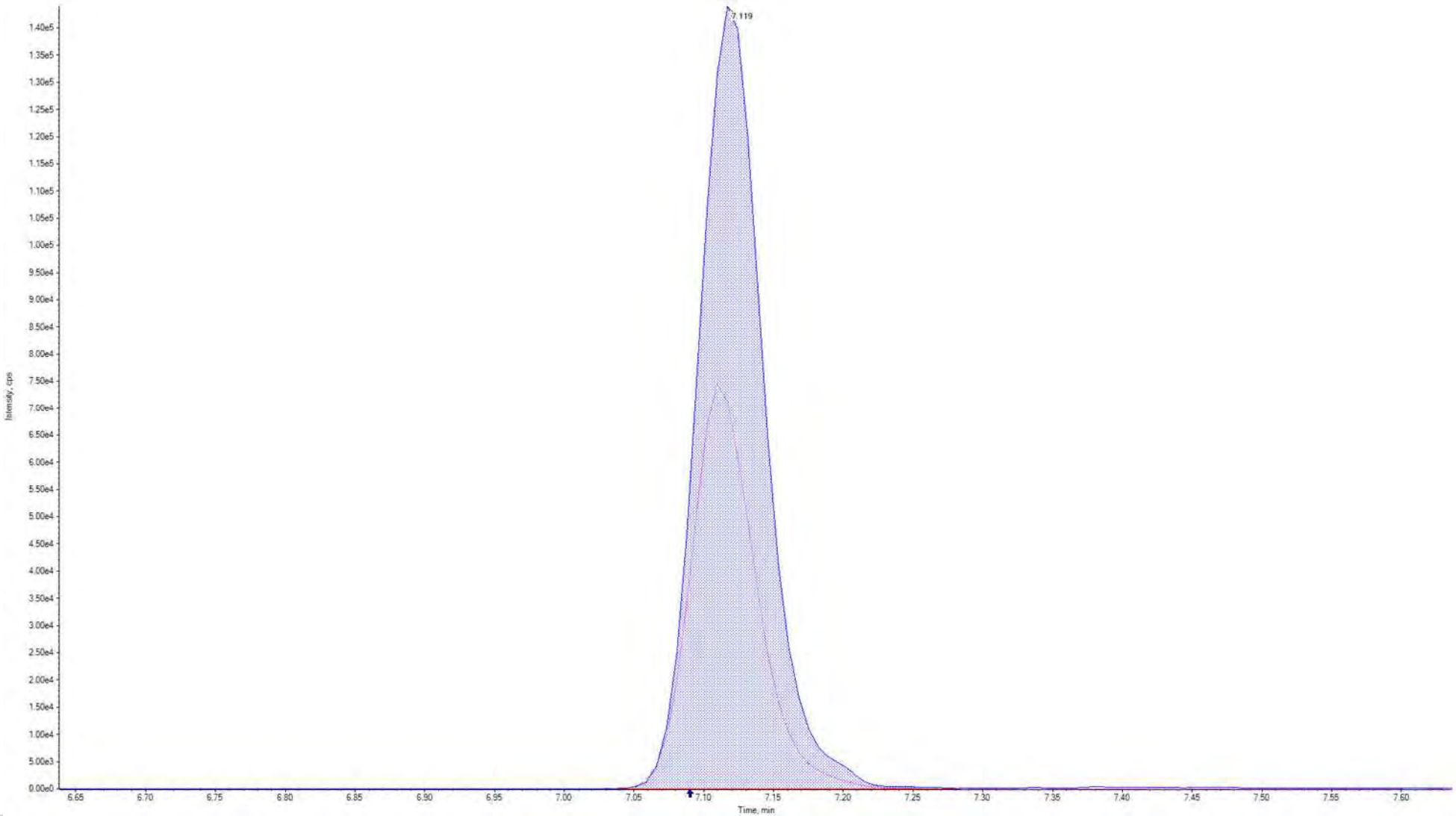
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

6:2FTS
Sample: WG1973506-3,1633MED S/N:1870.1 Points Across peak:42



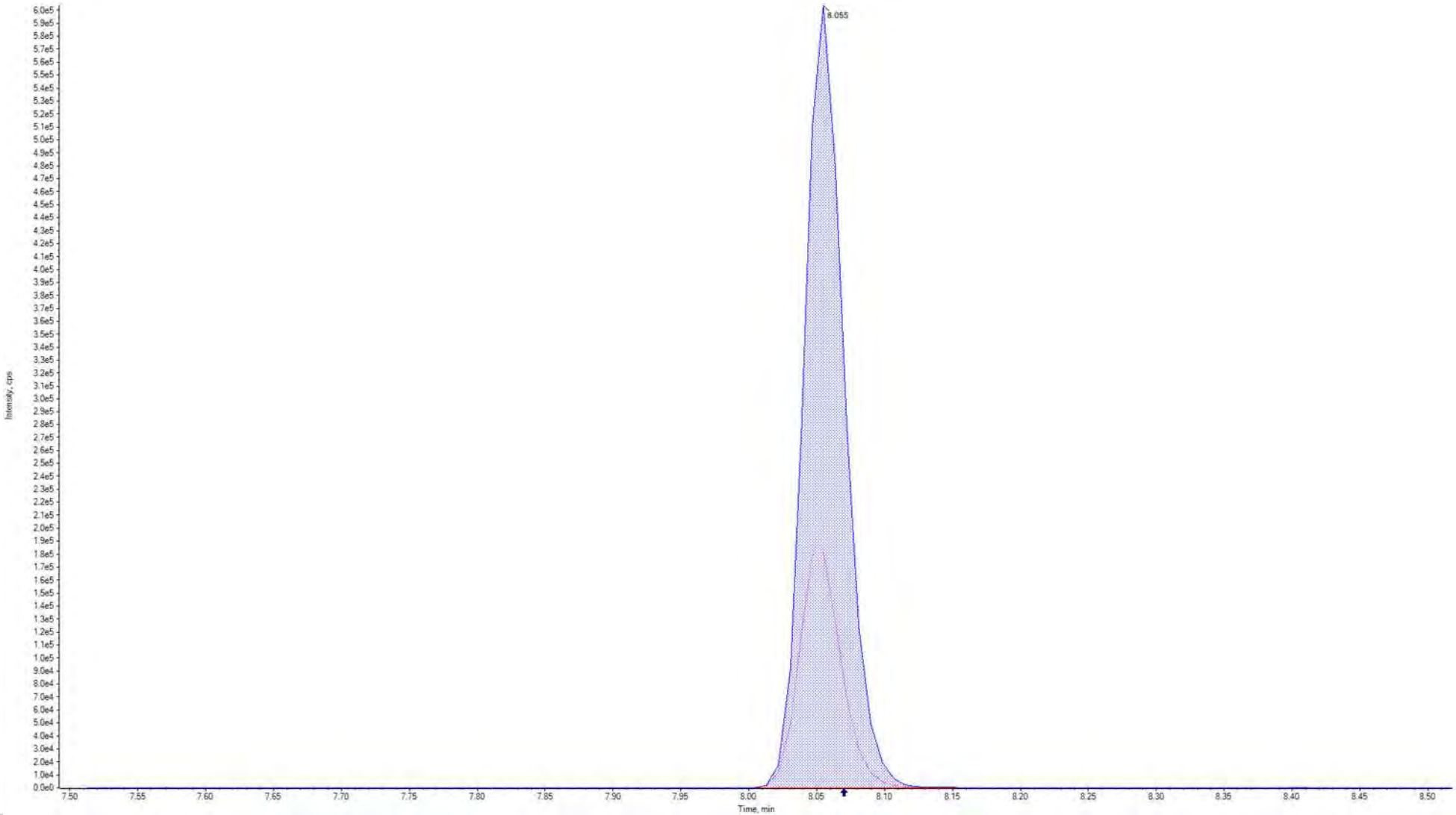
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

6:2FTS_2
Sample: WG1973506-3,1633MED S/N:1861.8 Points Across peak:42



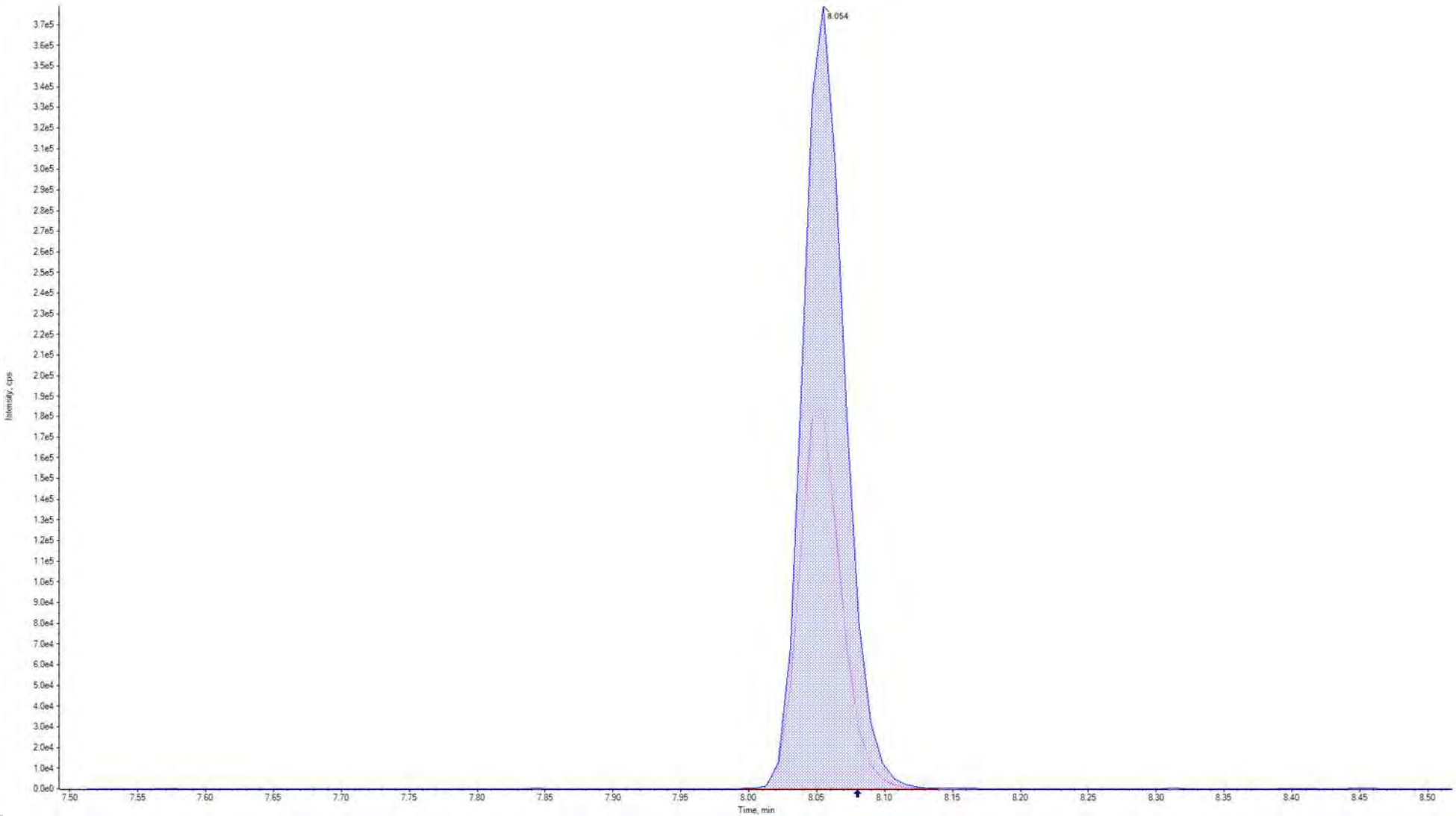
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

8:2FTS
Sample: WG1973506-3,1633MED S/N:9929.0 Points Across peak:21

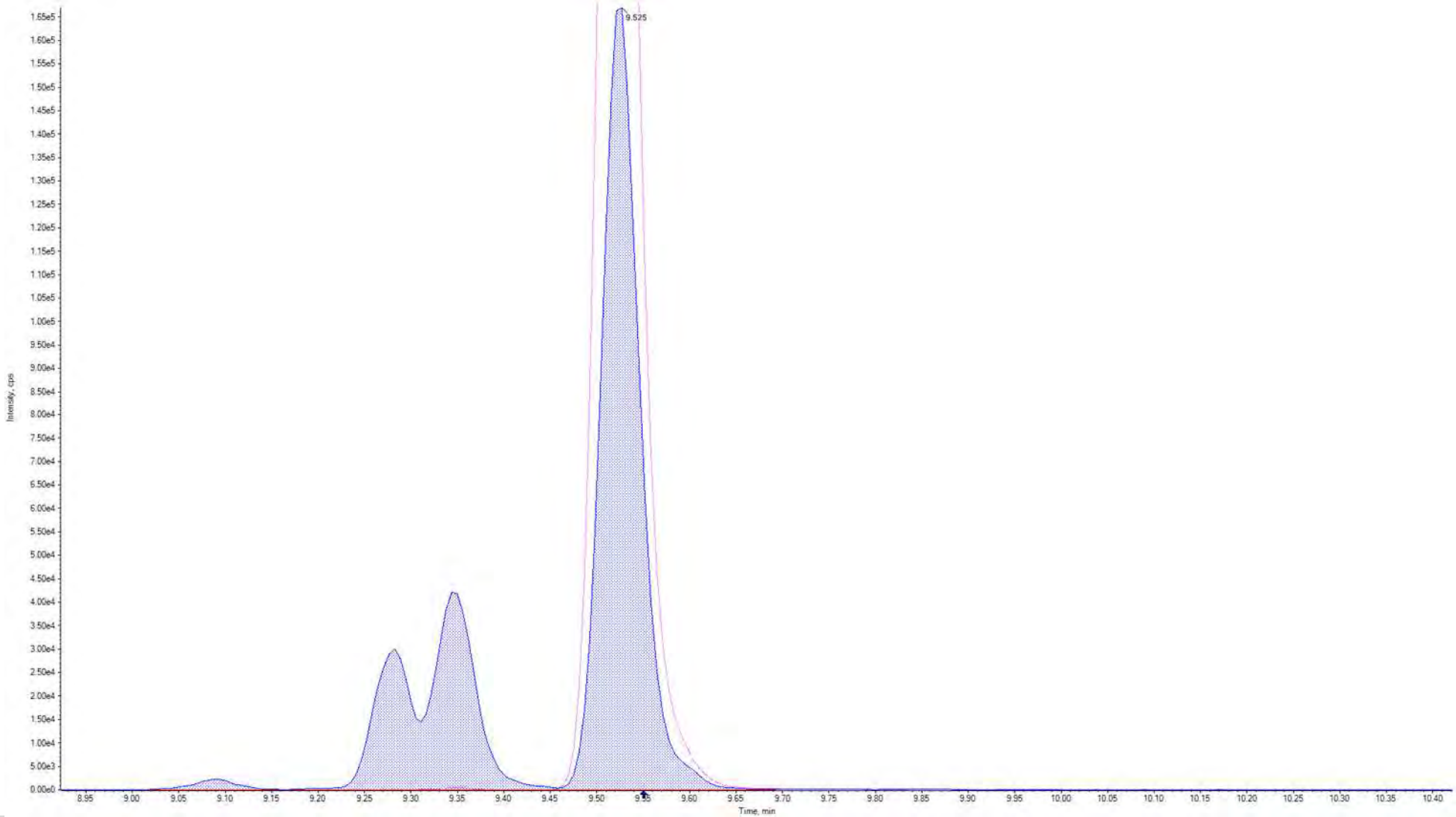


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

8:2FTS_2
Sample: WG1973506-3,1633MED S/N:3051.1 Points Across peak:19

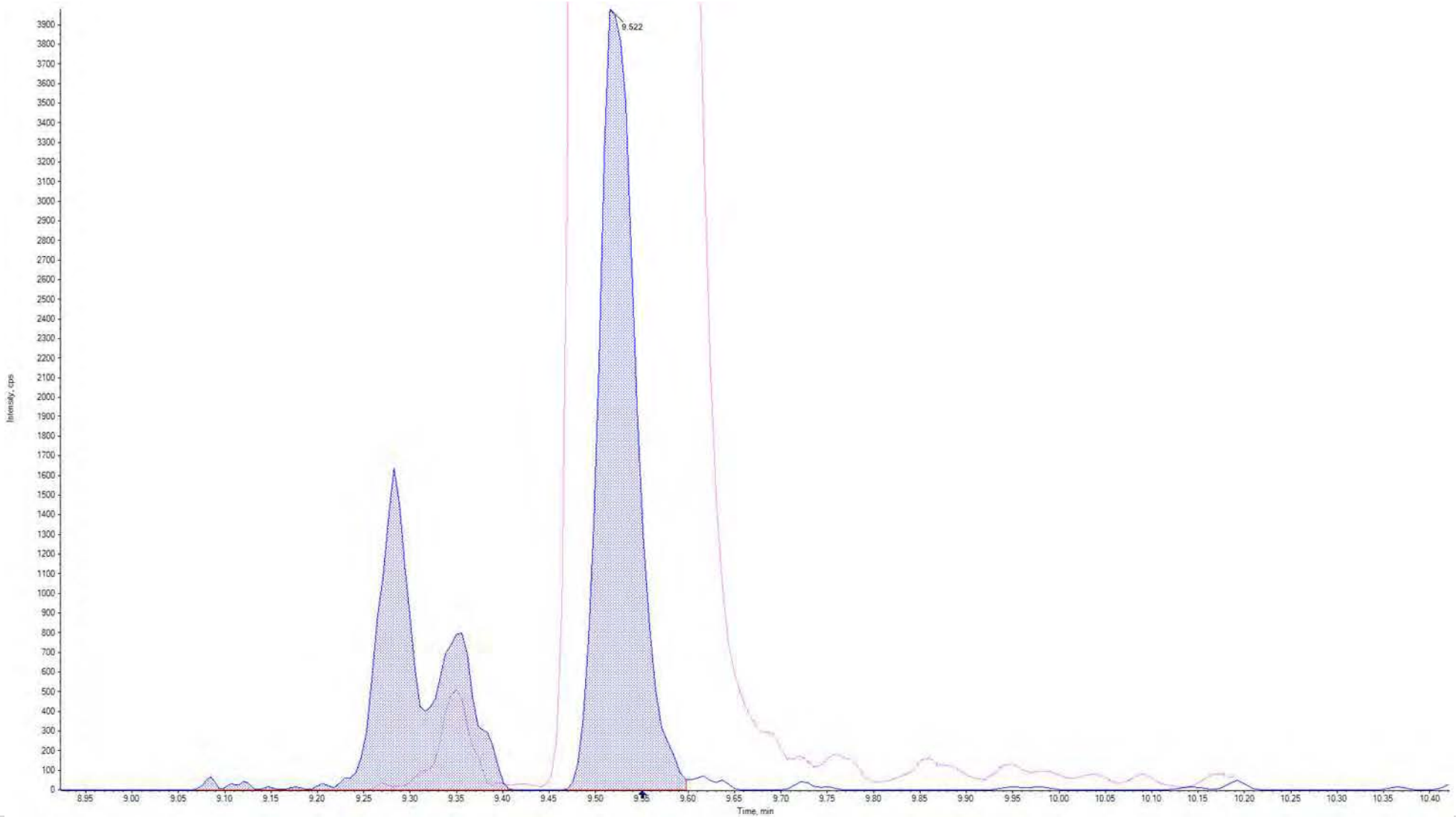


PFOSA
Sample: WG1973506-3,1633MED S/N:1543031.1 Points Across peak:124



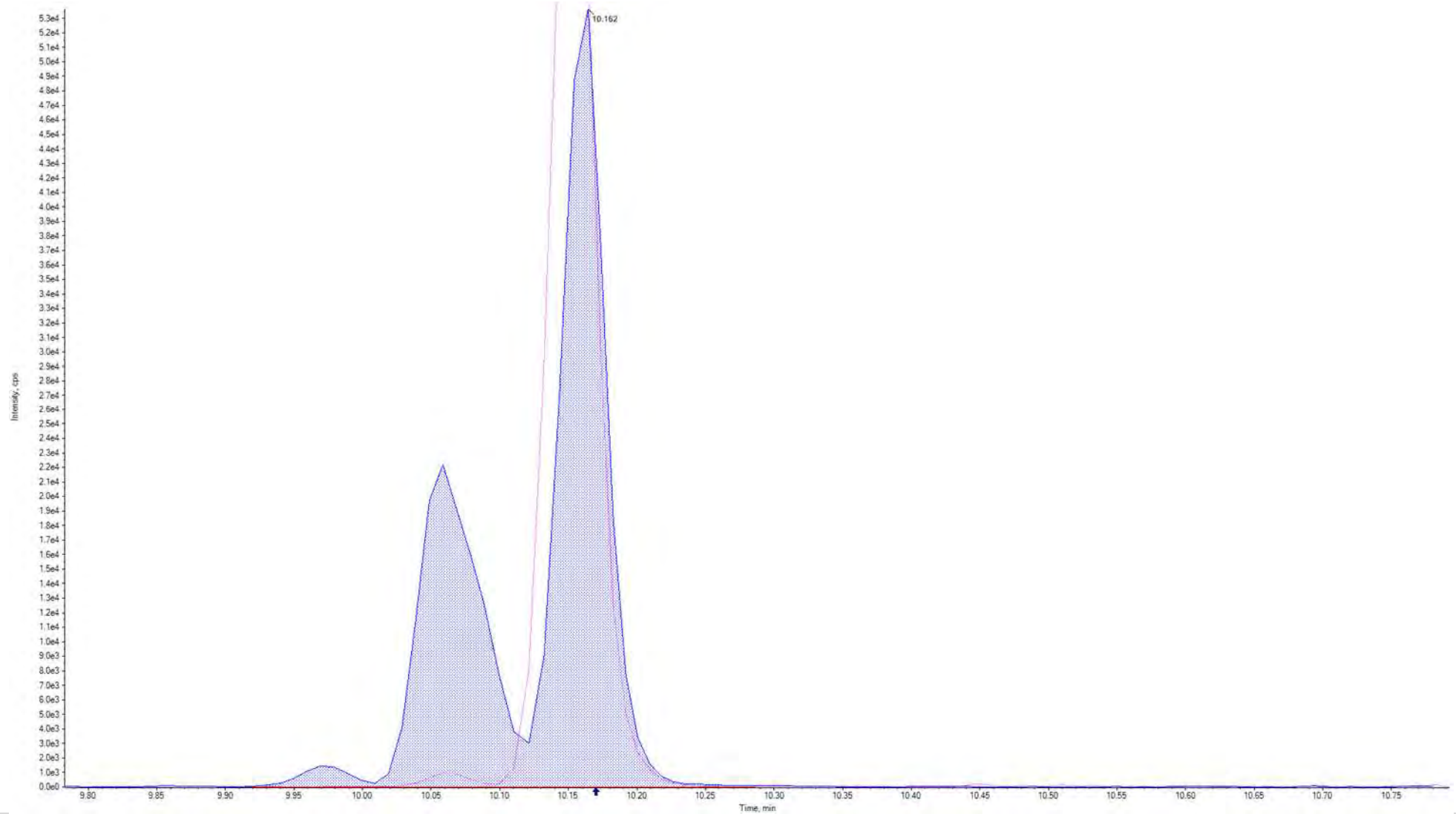
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOSA_2
Sample: WG1973506-3,1633MED S/N:638.4 Points Across peak:98



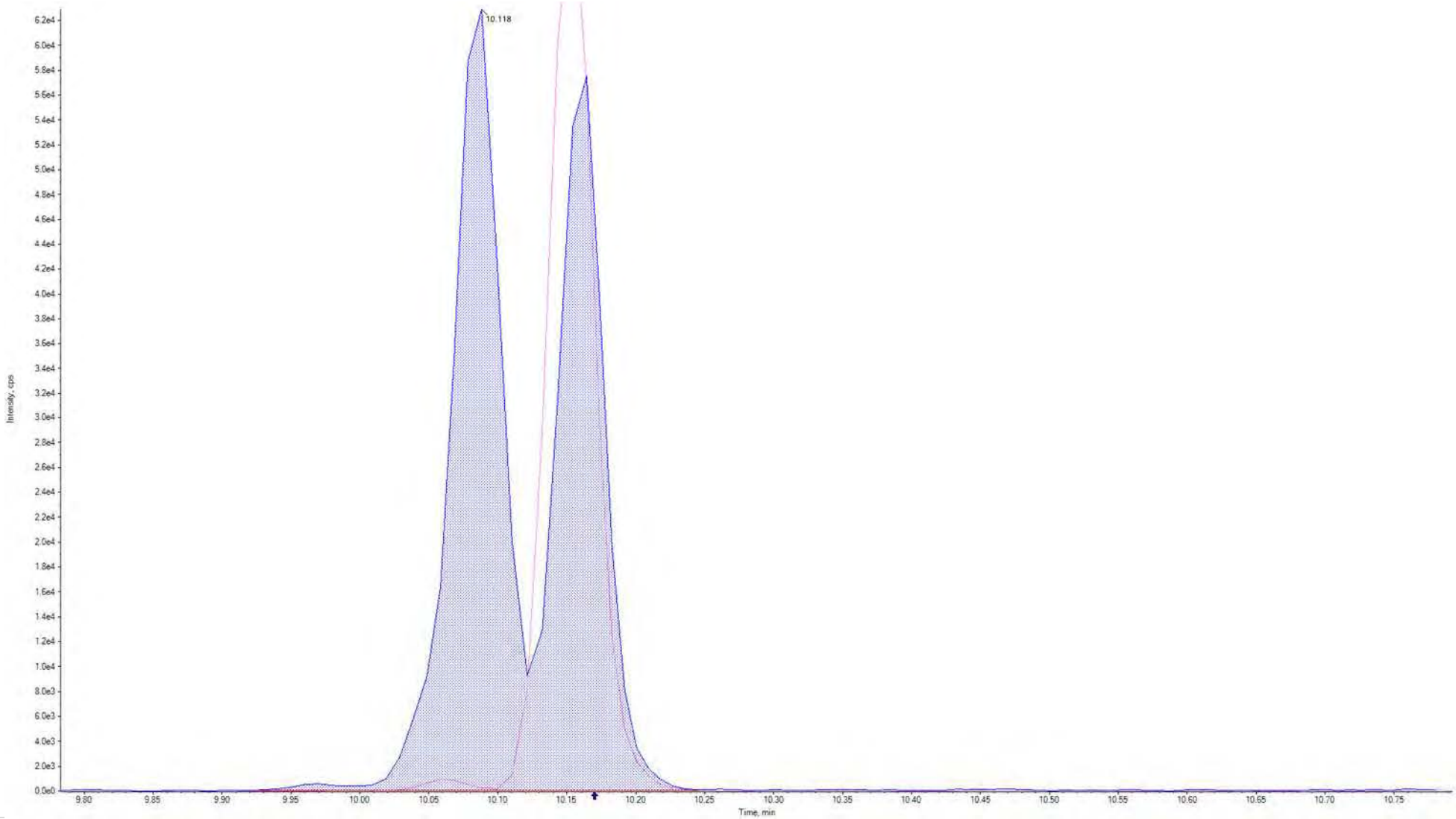
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSA
Sample: WG1973506-3,1633MED S/N:8836.0 Points Across peak:41

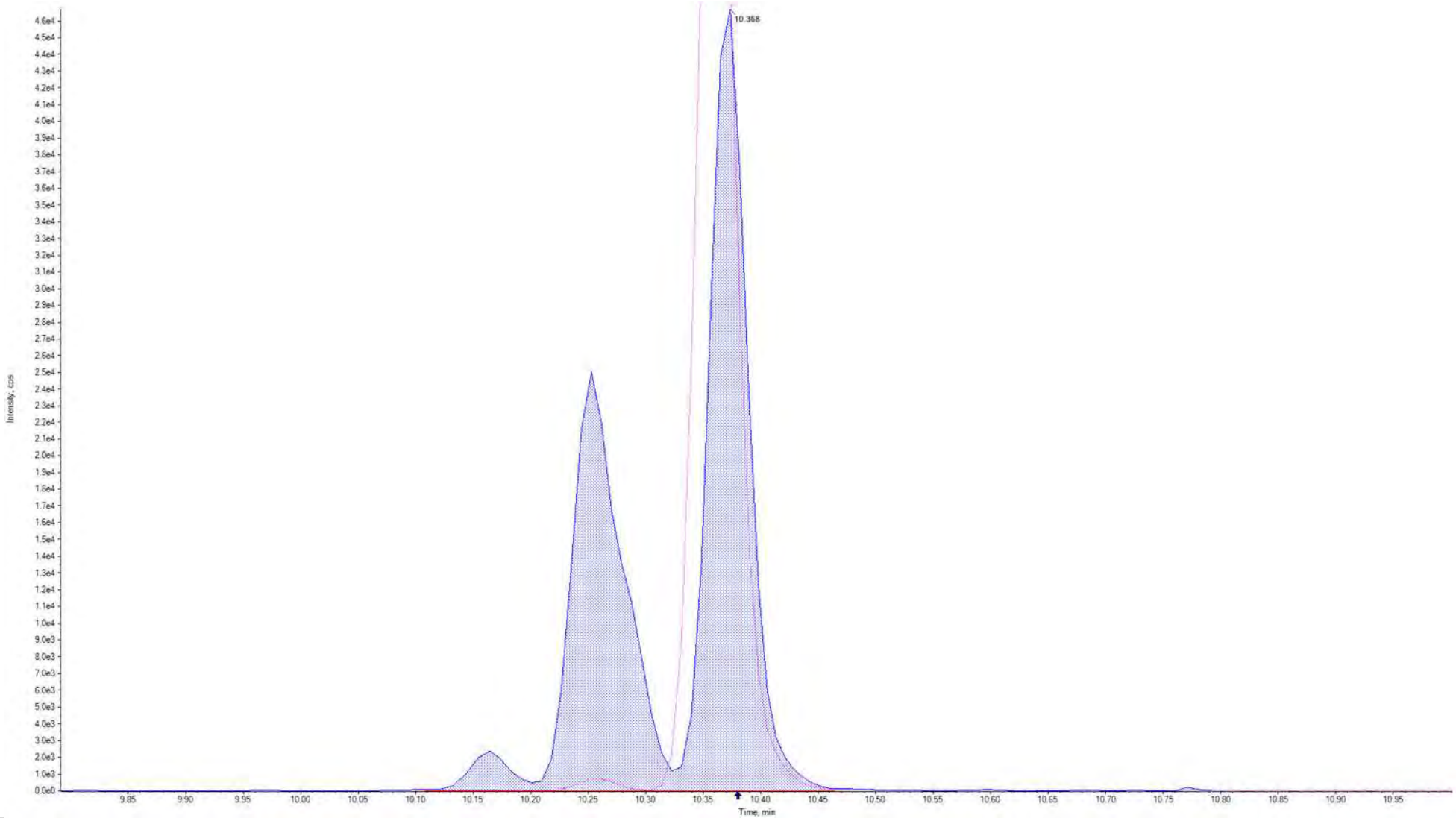


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSA_2
Sample: WG1973506-3,1633MED S/N:1160.6 Points Across peak:36

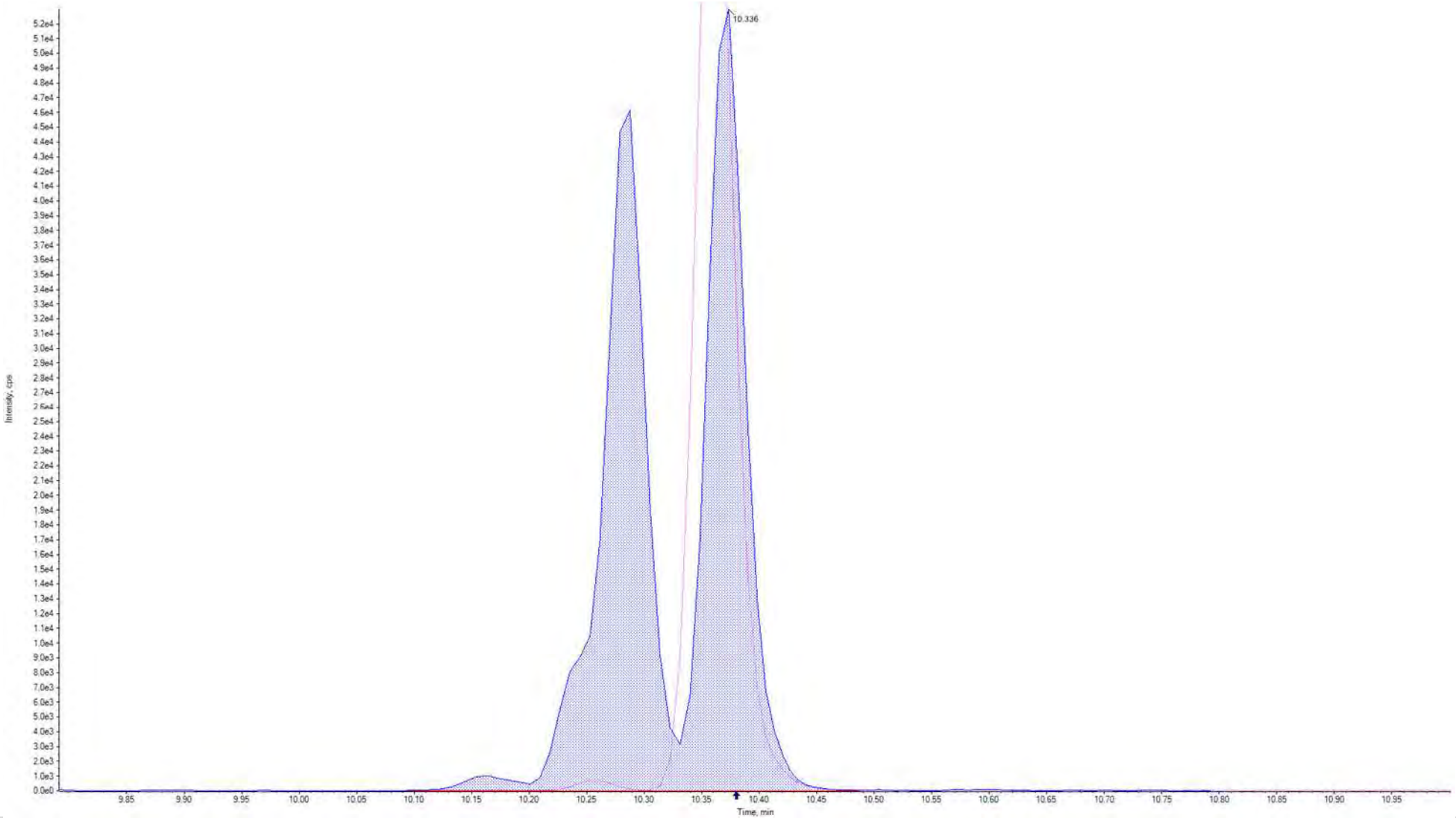


NEtFOSA
Sample: WG1973506-3,1633MED S/N:755.5 Points Across peak:44



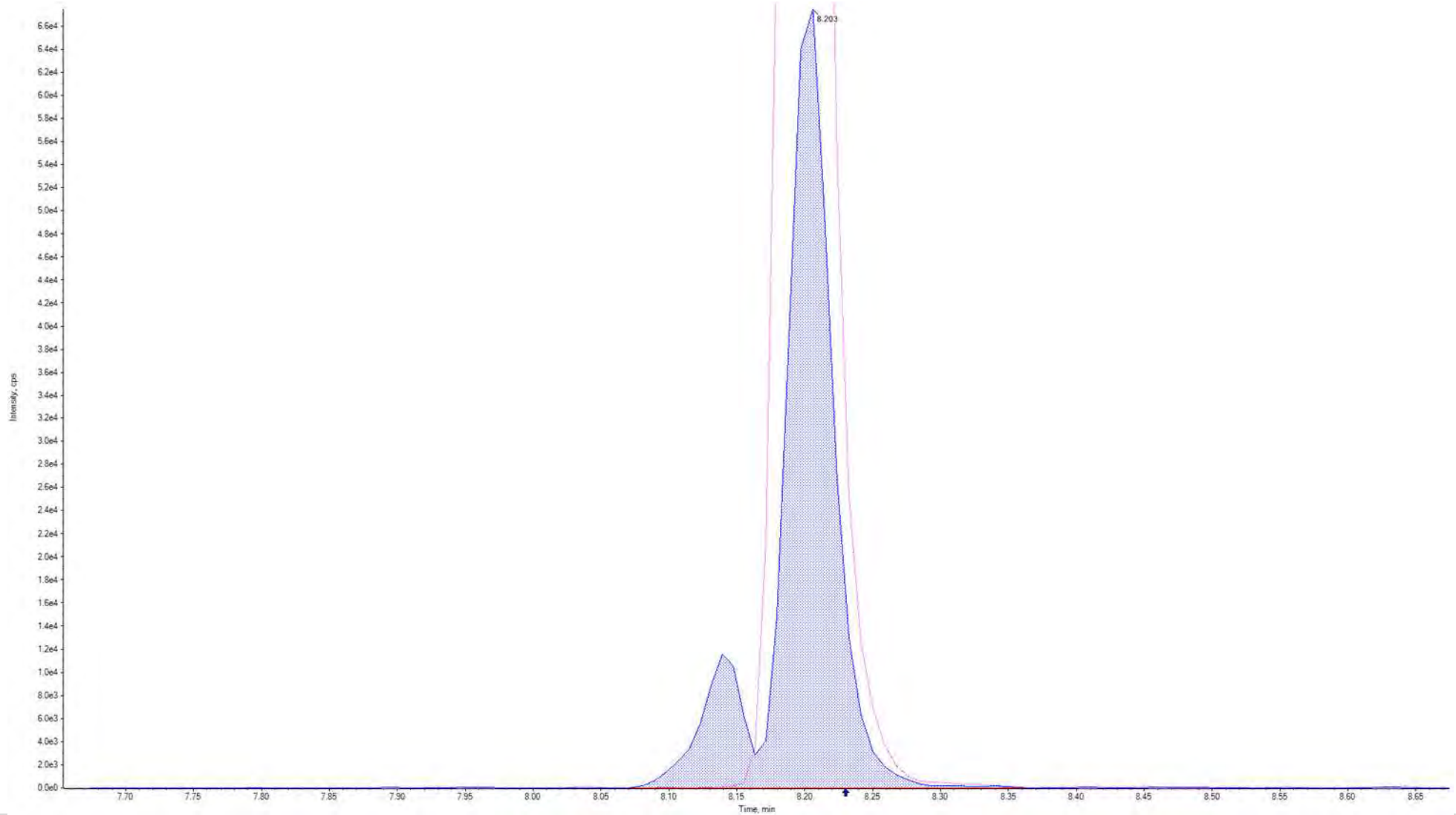
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSA_2
Sample: WG1973506-3,1633MED S/N:594802.4 Points Across peak:50



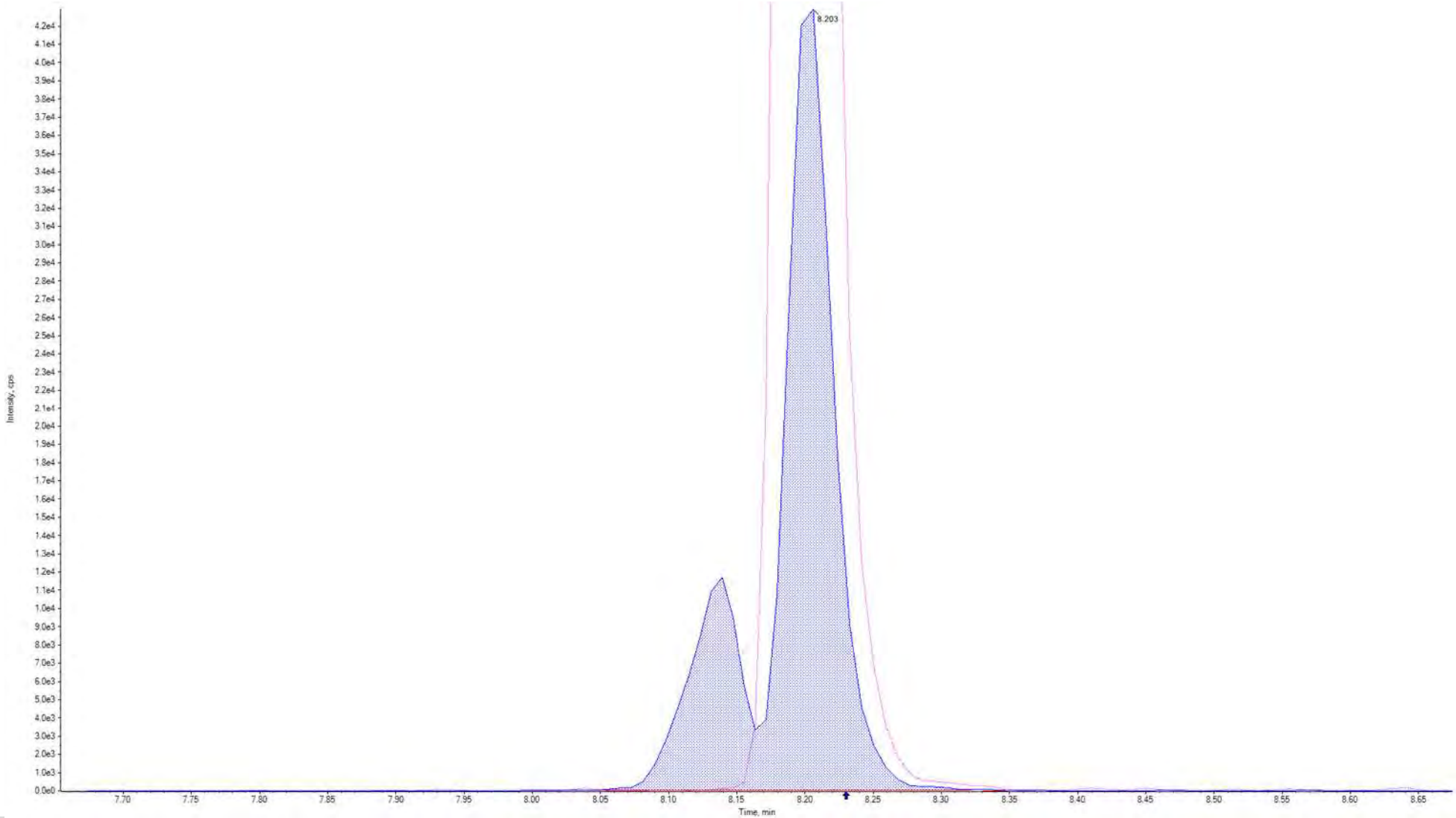
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSAA
Sample: WG1973506-3,1633MED S/N:958.2 Points Across peak:40



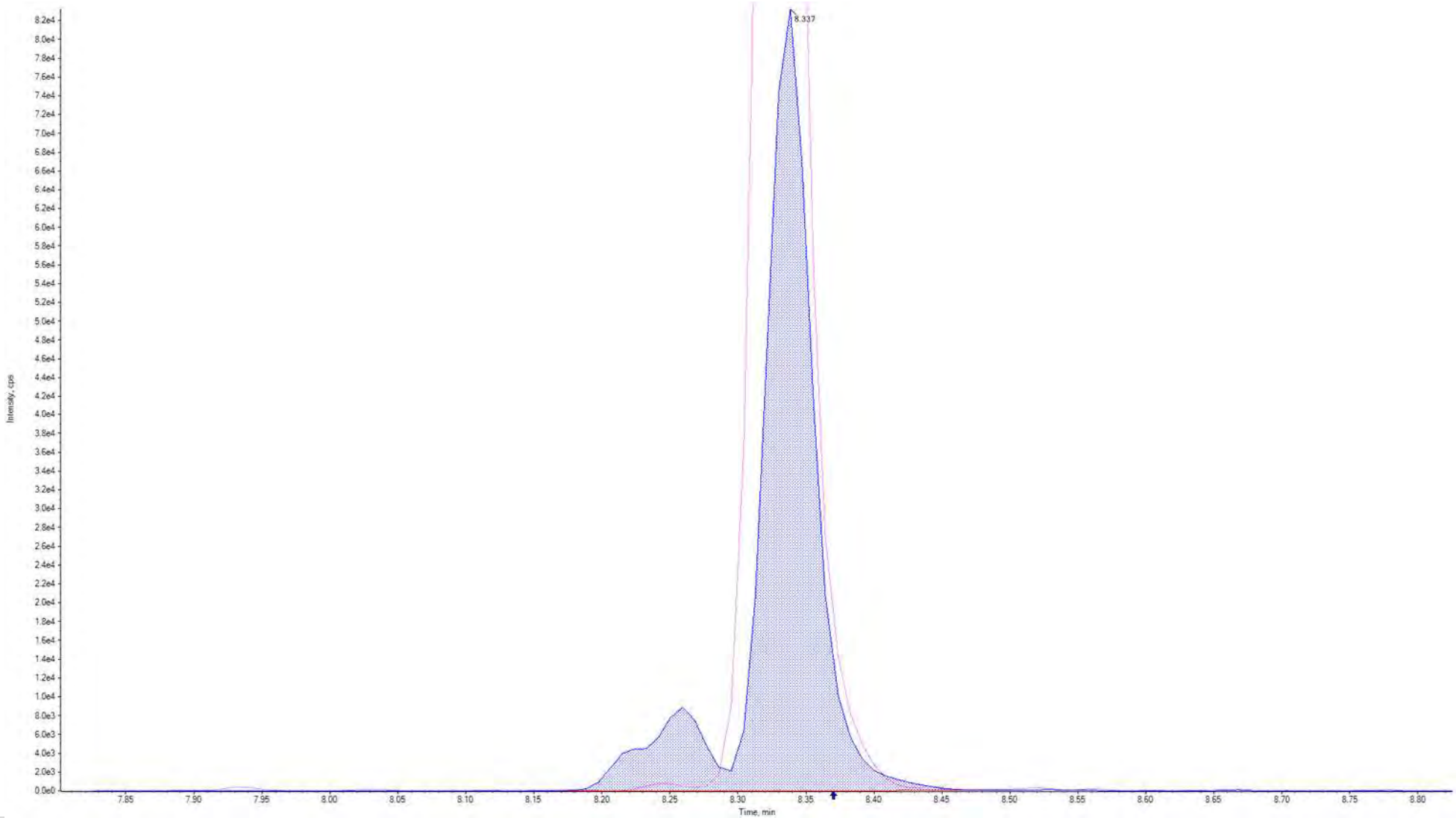
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSAA_2
Sample: WG1973506-3,1633MED S/N:663.4 Points Across peak:36



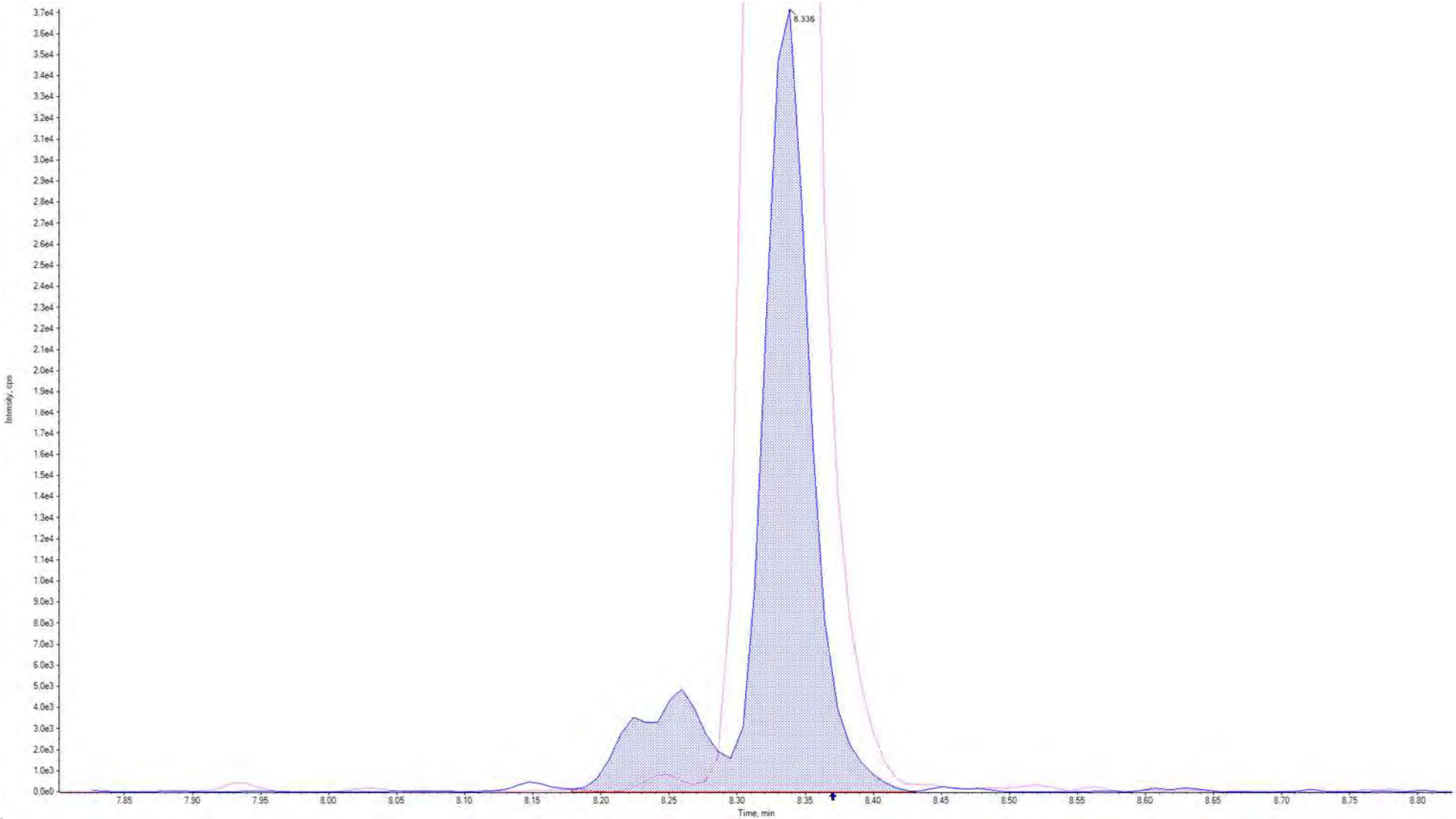
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSAA
Sample: WG1973506-3,1633MED S/N:1055.5 Points Across peak:38



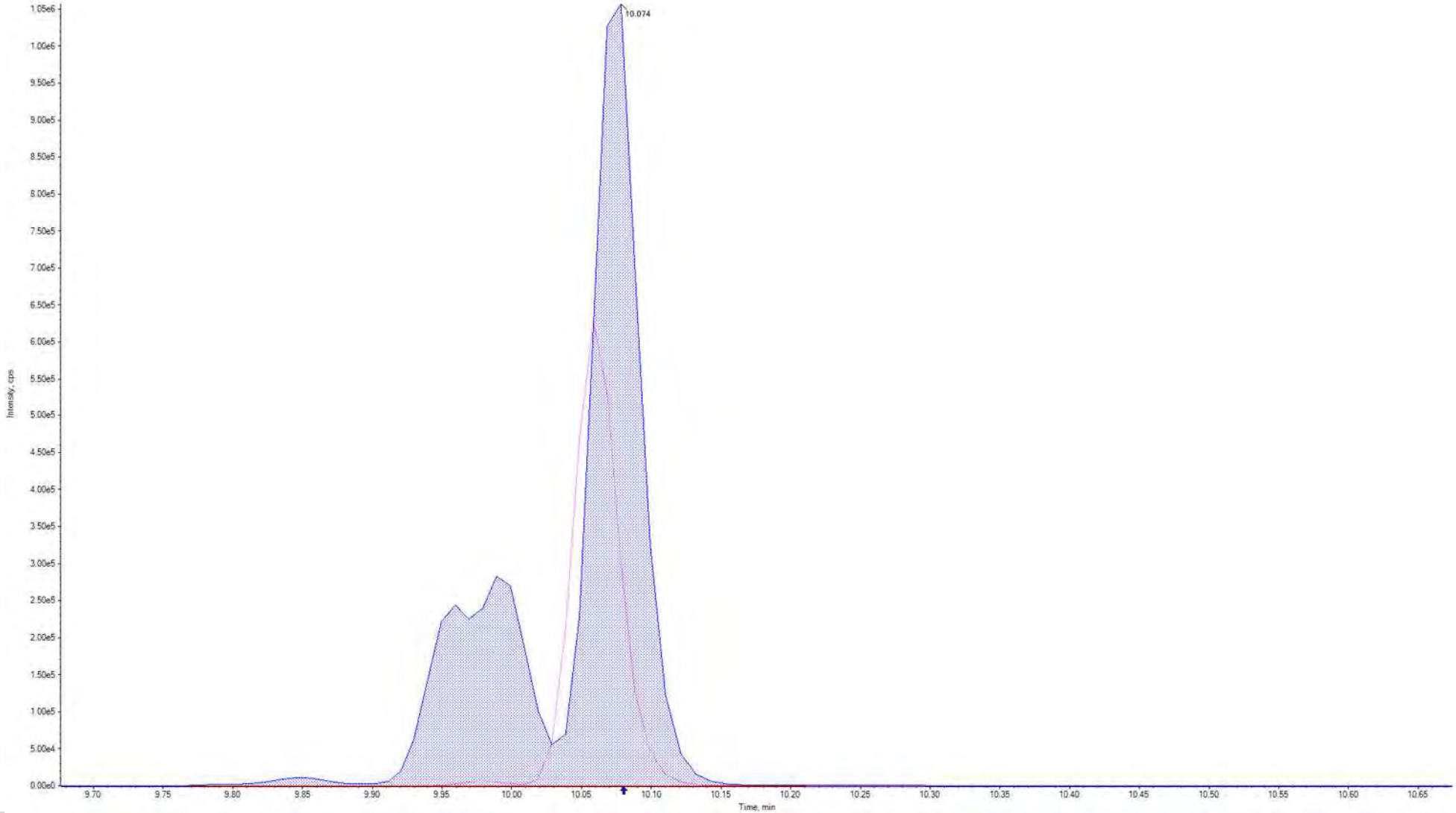
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSAA_2
Sample: WG1973506-3,1633MED S/N:428.5 Points Across peak:31



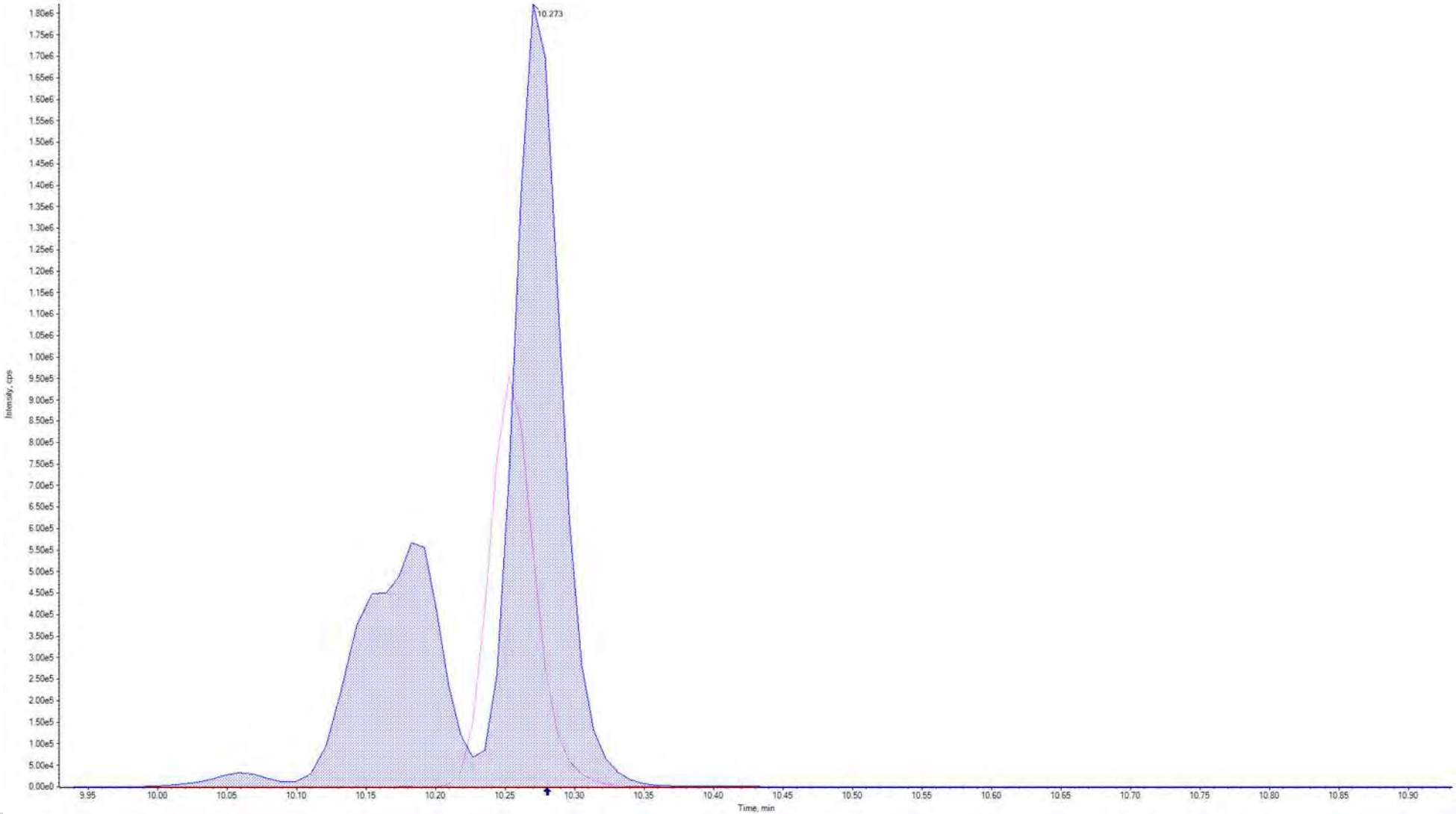
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSE
Sample: WG1973506-3,1633MED S/N:2511.1 Points Across peak:53



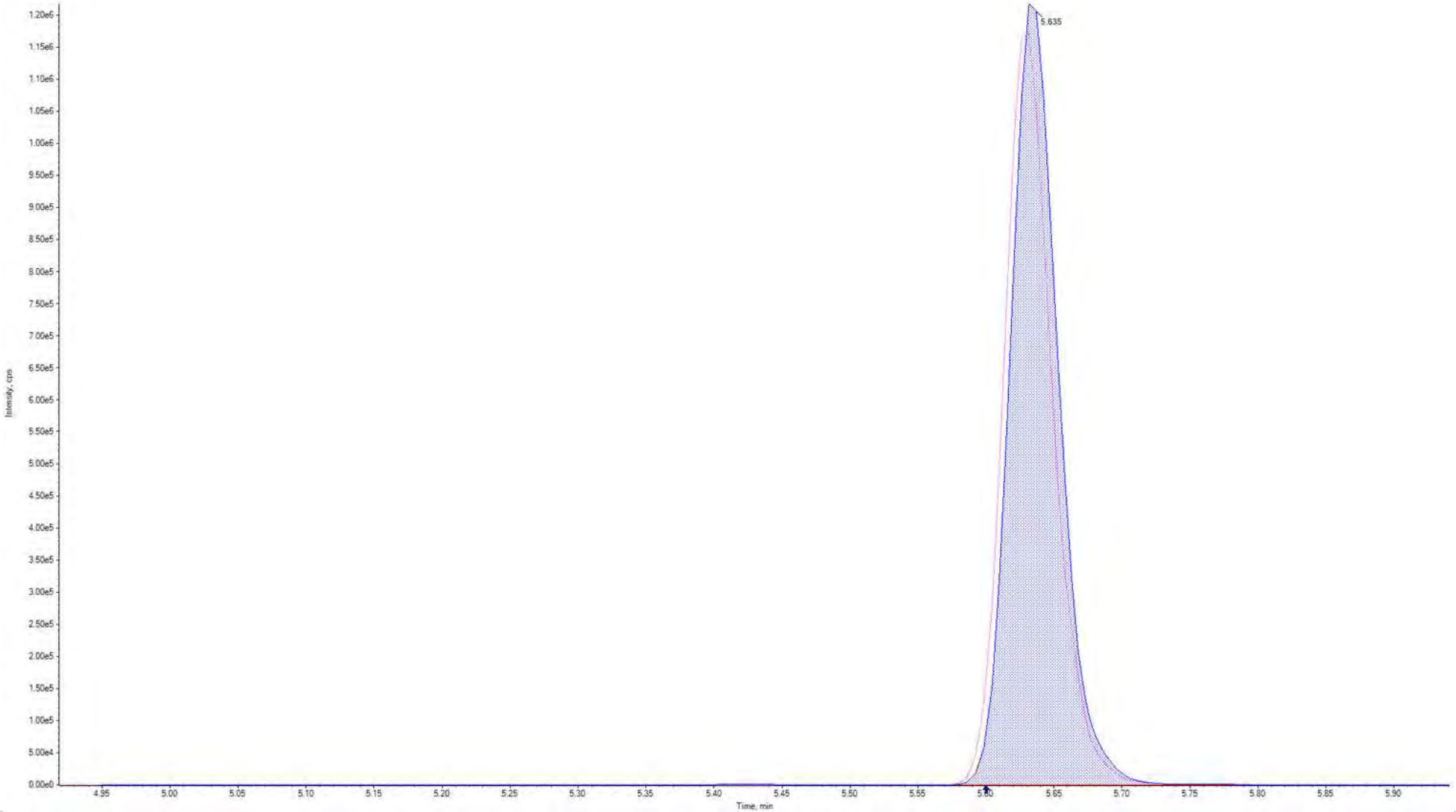
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSE
Sample: WG1973506-3,1633MED S/N:3458.5 Points Across peak:54



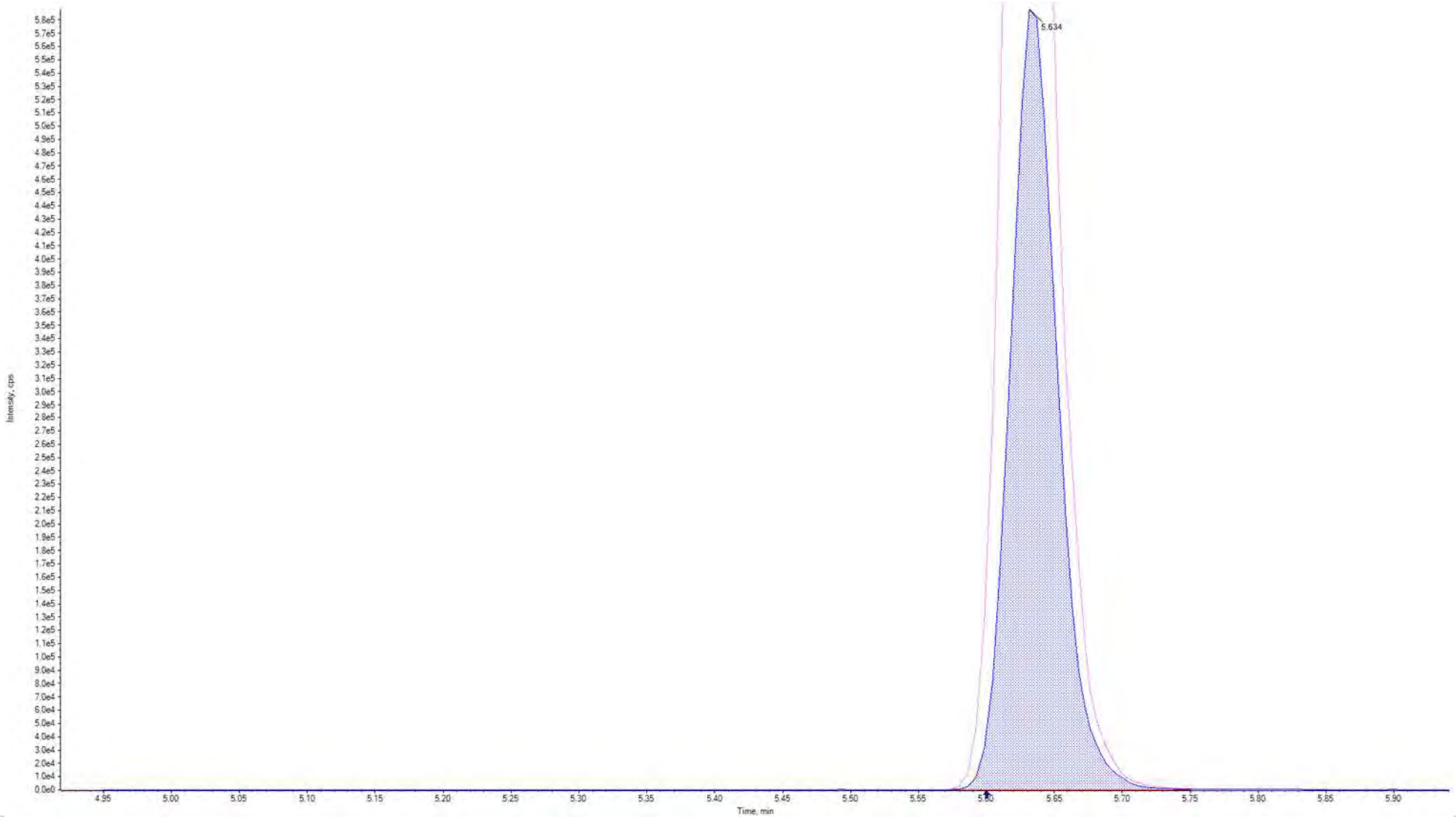
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

HFPO-DA
Sample: WG1973506-3,1633MED S/N:128947.2 Points Across peak:51



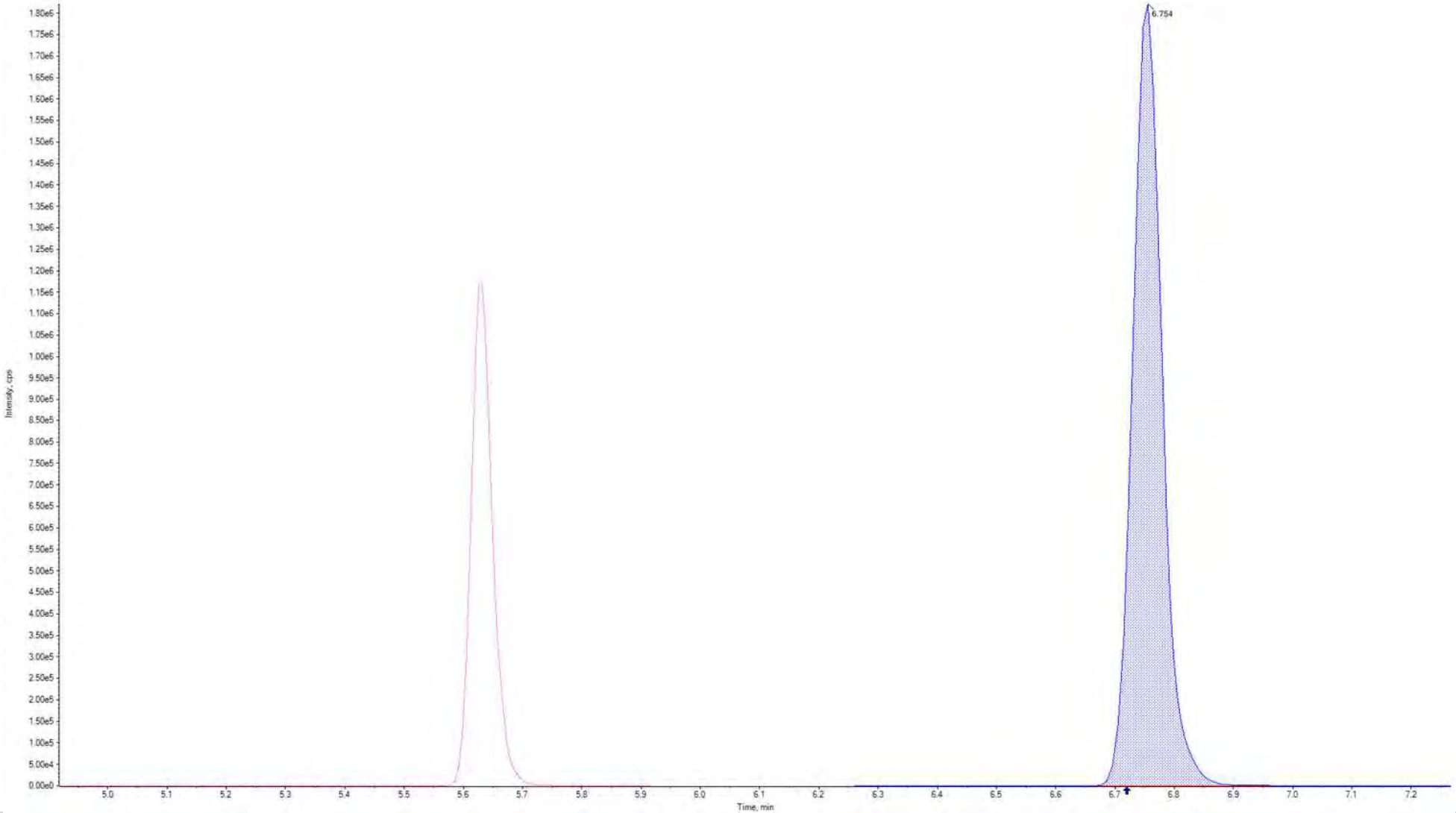
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

HFPO-DA_2
Sample: WG1973506-3,1633MED S/N:6043.4 Points Across peak:41



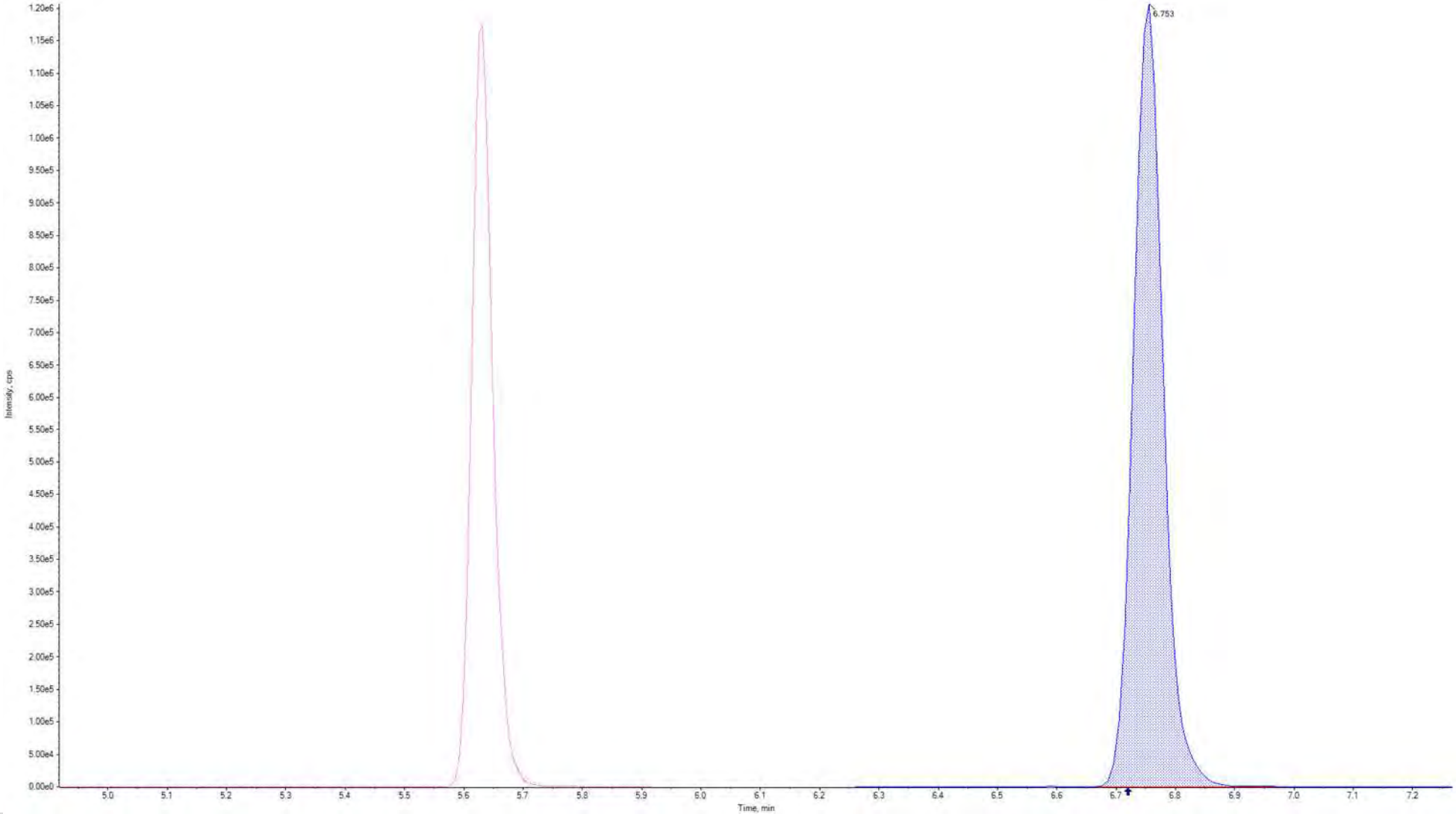
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

ADONA
Sample: WG1973506-3,1633MED S/N:31092.4 Points Across peak:51



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

ADONA_2
Sample: WG1973506-3,1633MED S/N:33636.2 Points Across peak:49

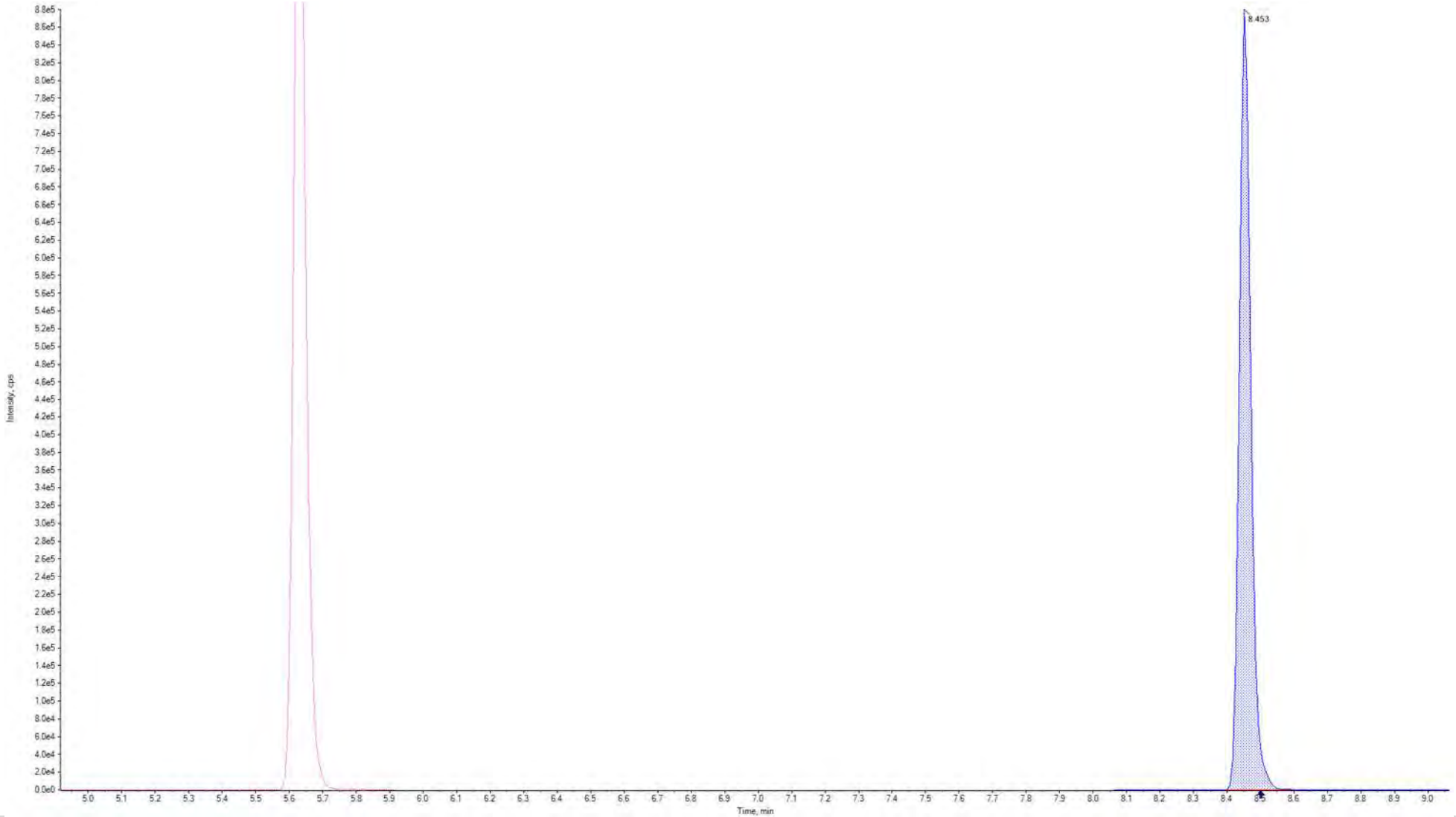


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

9Cl-PF3ONS
Sample: WG1973506-3,1633MED S/N:98718.3 Points Across peak:38

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

9Cl-PF3ONS_2
Sample: WG1973506-3,1633MED S/N:21236.8 Points Across peak:36



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

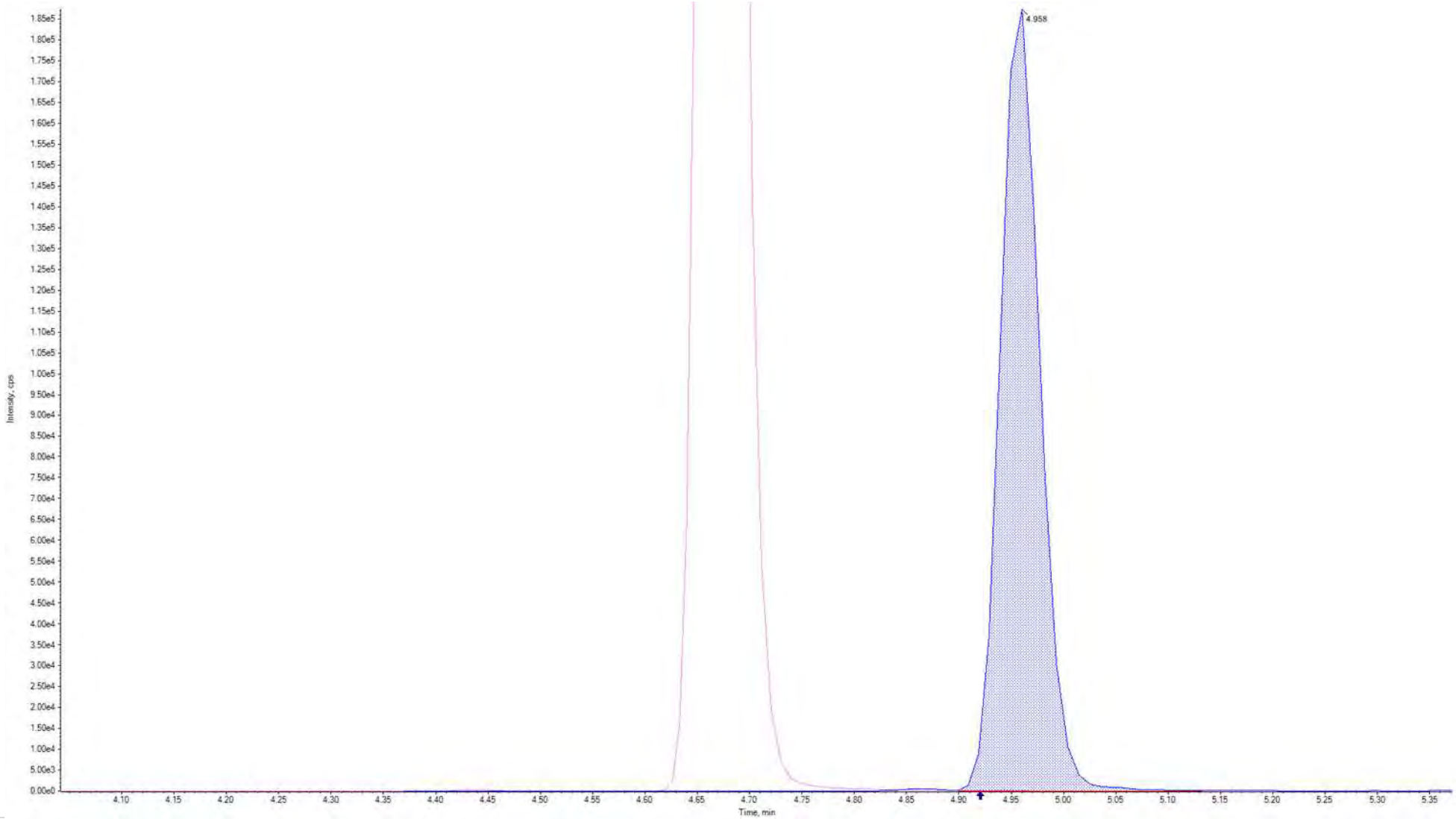
11Cl-PF3OUdS
Sample: WG1973506-3,1633MED S/N:832965.2 Points Across peak:39

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

11Cl-PF3OUdS_2
Sample: WG1973506-3,1633MED S/N:526839.7 Points Across peak:47

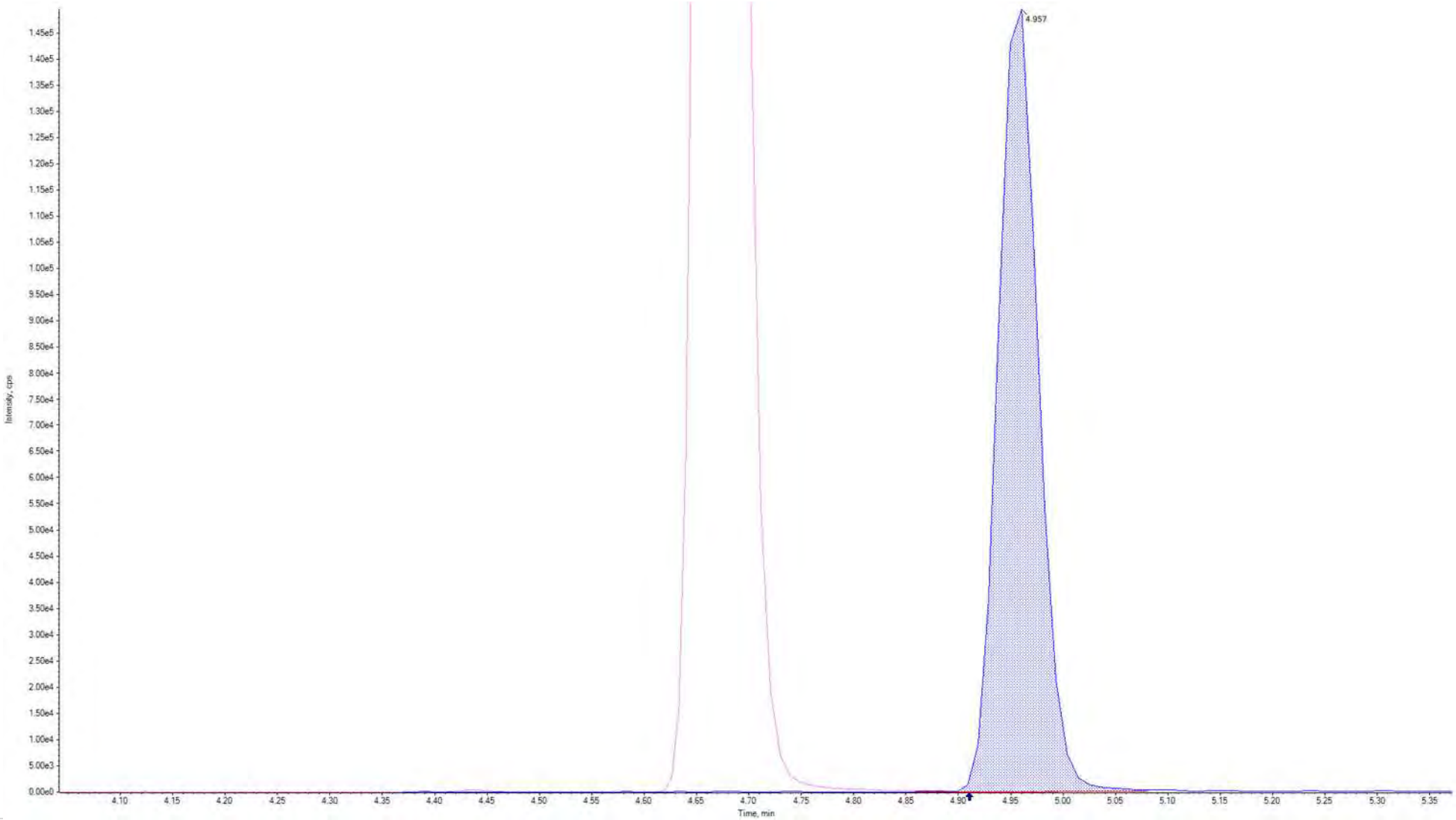
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

3:3FTCA
Sample: WG1973506-3,1633MED S/N:3978.7 Points Across peak:25



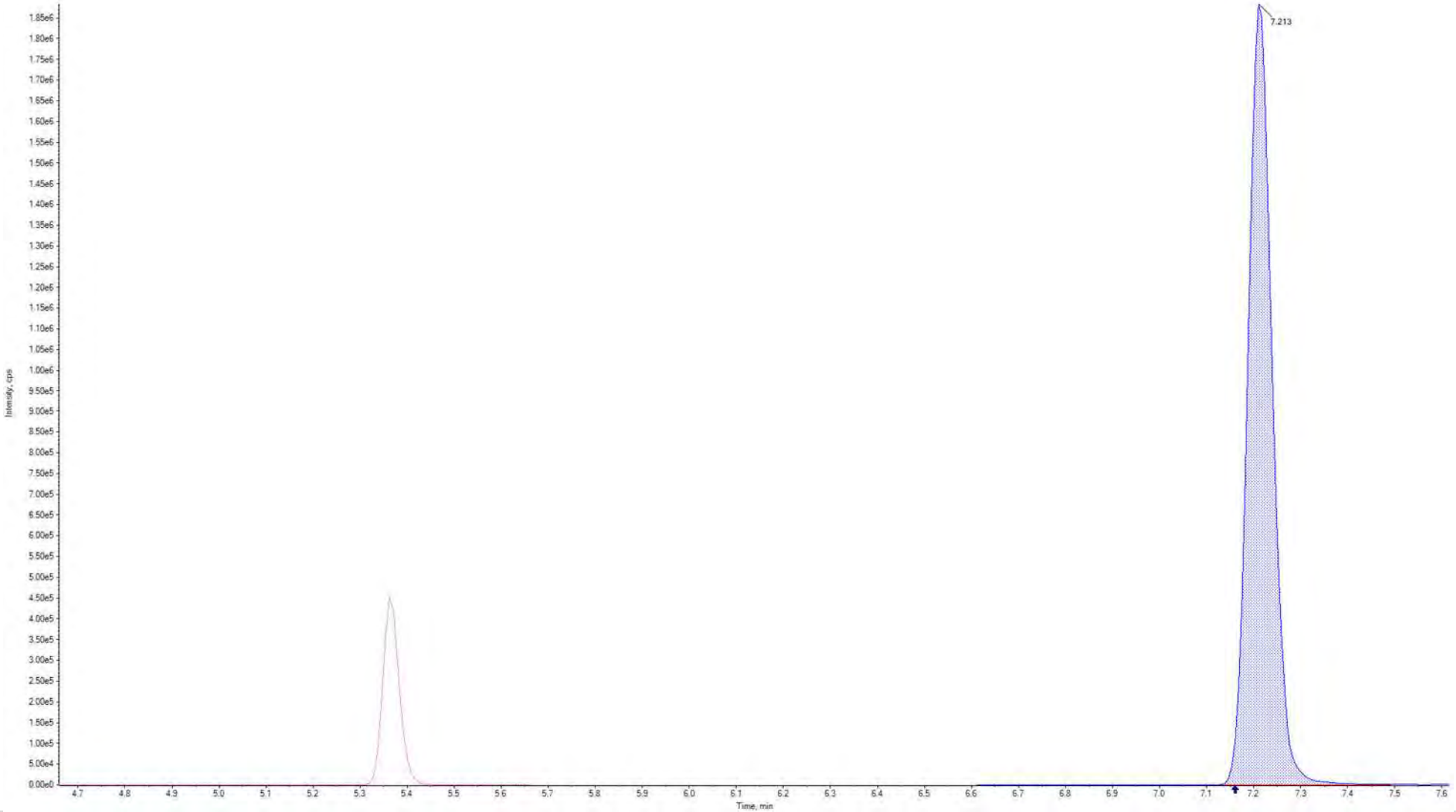
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

3:3FTCA_2
Sample: WG1973506-3,1633MED S/N:18727.8 Points Across peak:25



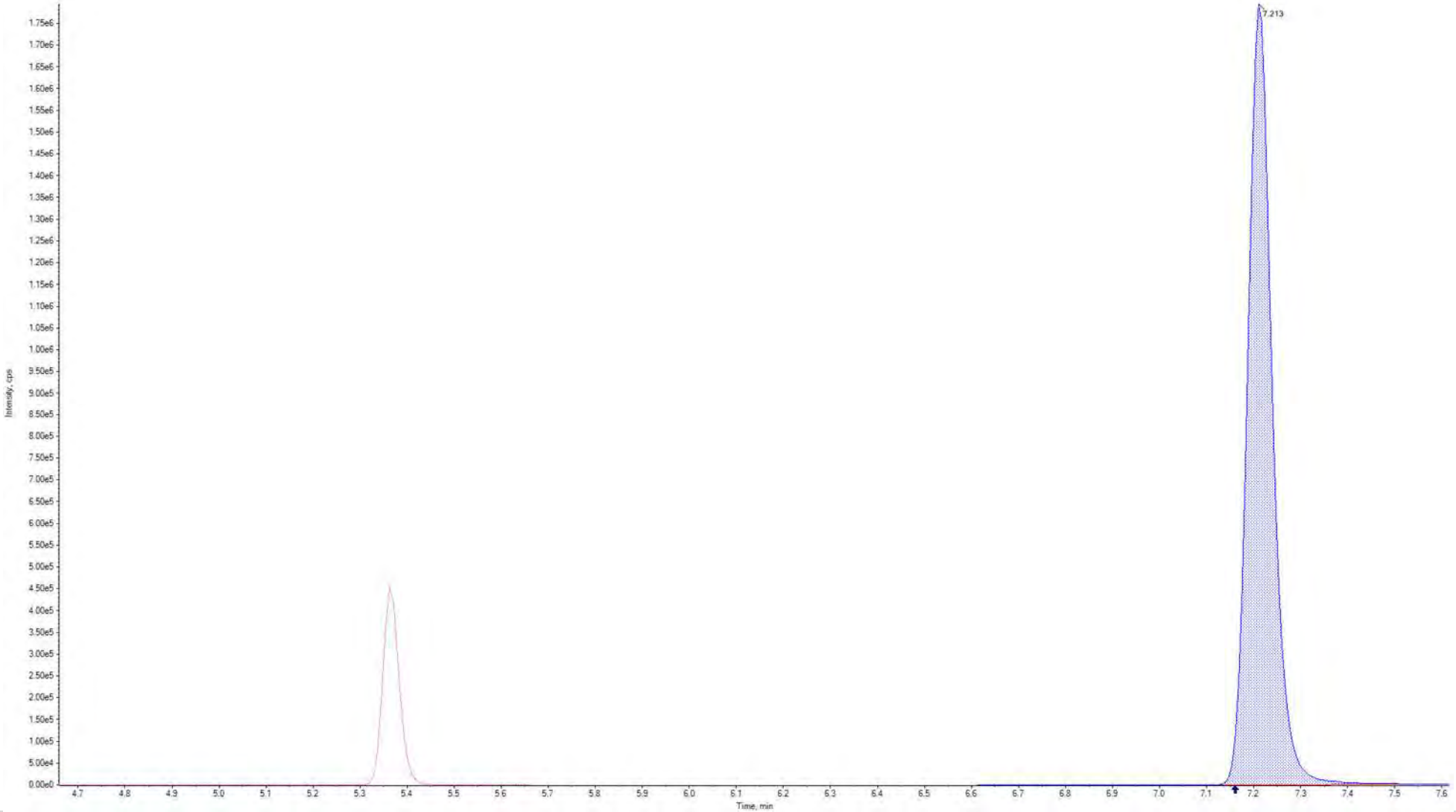
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

5:3FTCA
Sample: WG1973506-3,1633MED S/N:109543.3 Points Across peak:67



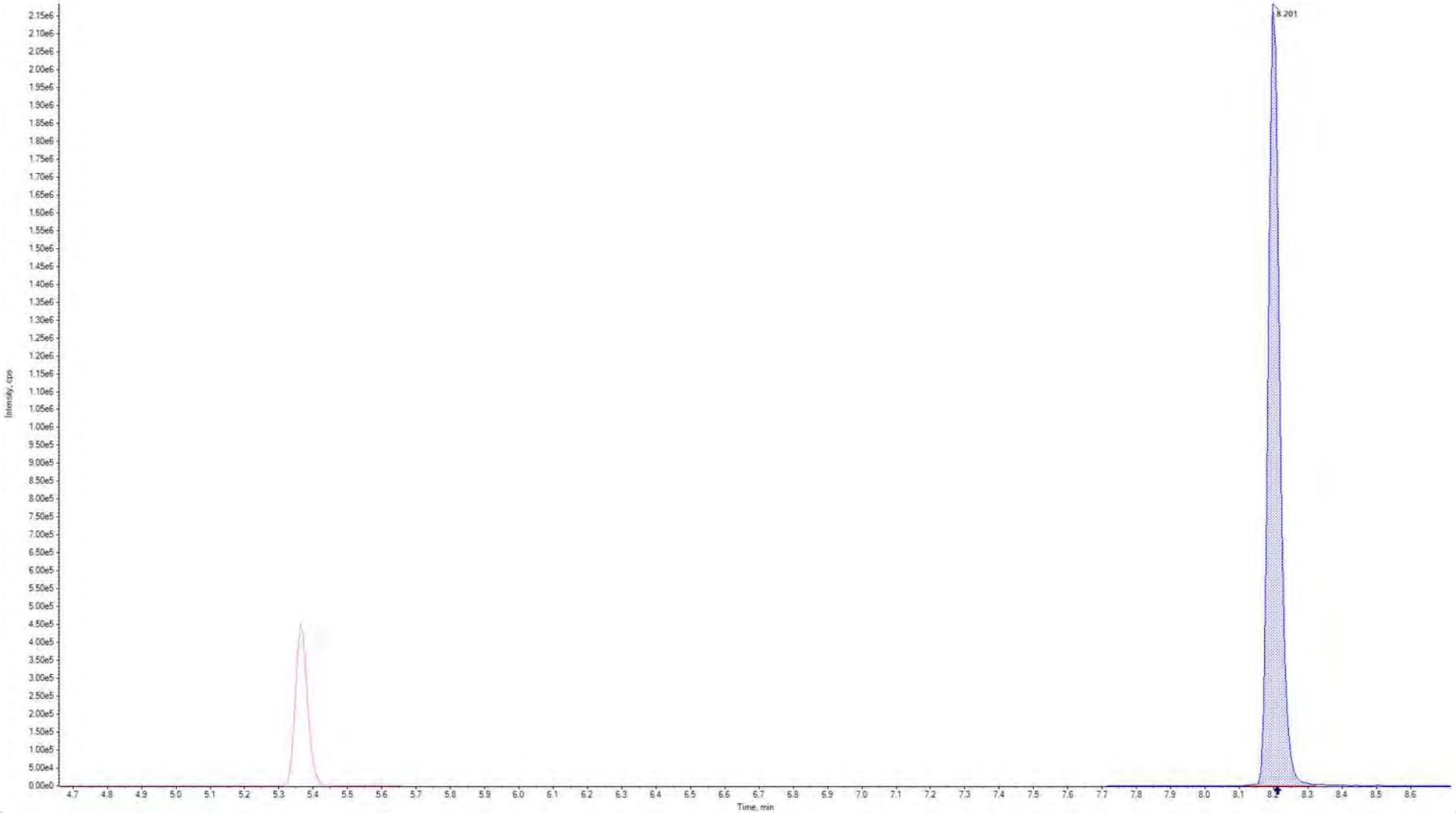
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

5:3FTCA_2
Sample: WG1973506-3,1633MED S/N:15927.8 Points Across peak:71



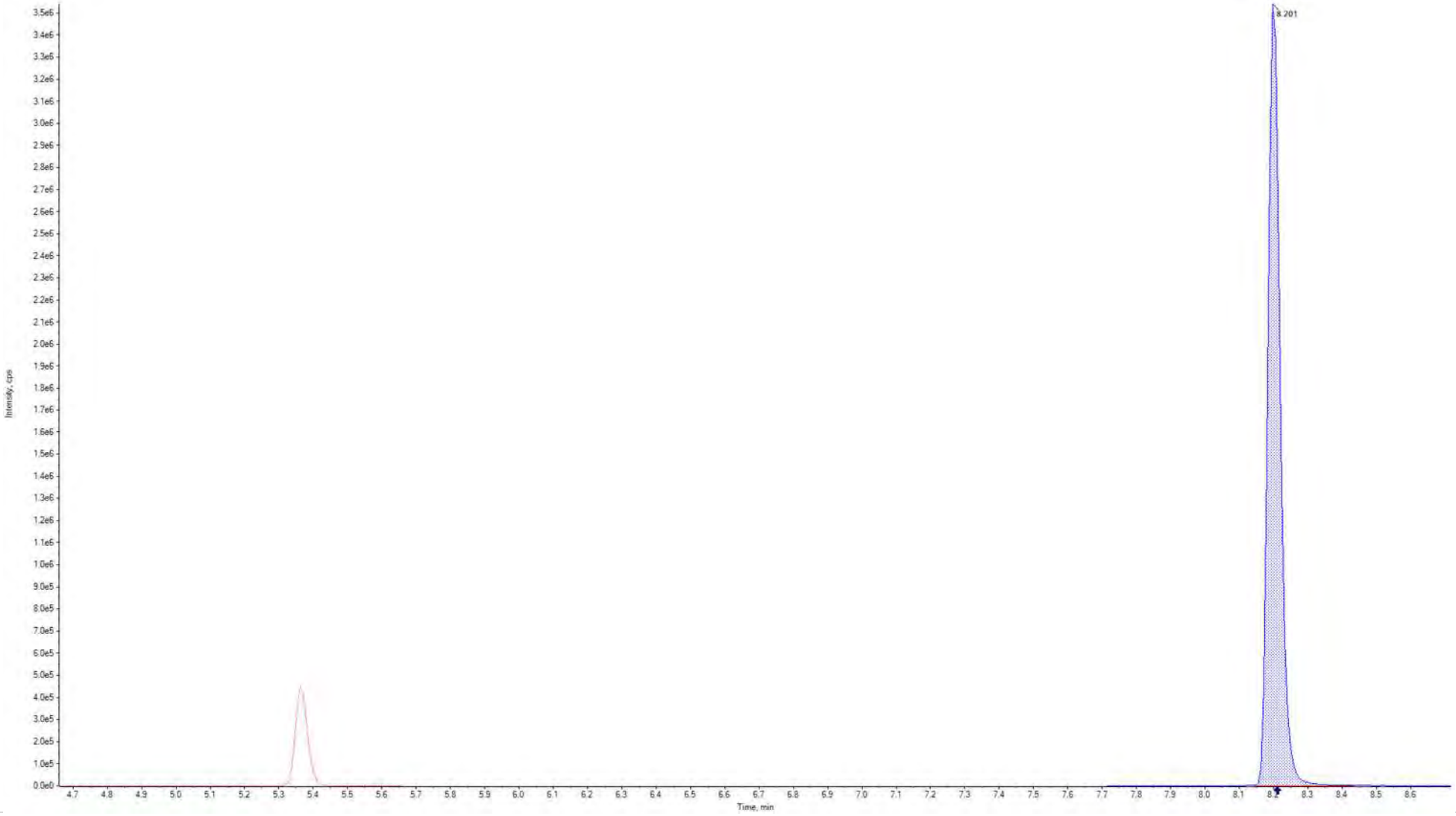
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

7:3FTCA
Sample: WG1973506-3,1633MED S/N:1816376.9 Points Across peak:27



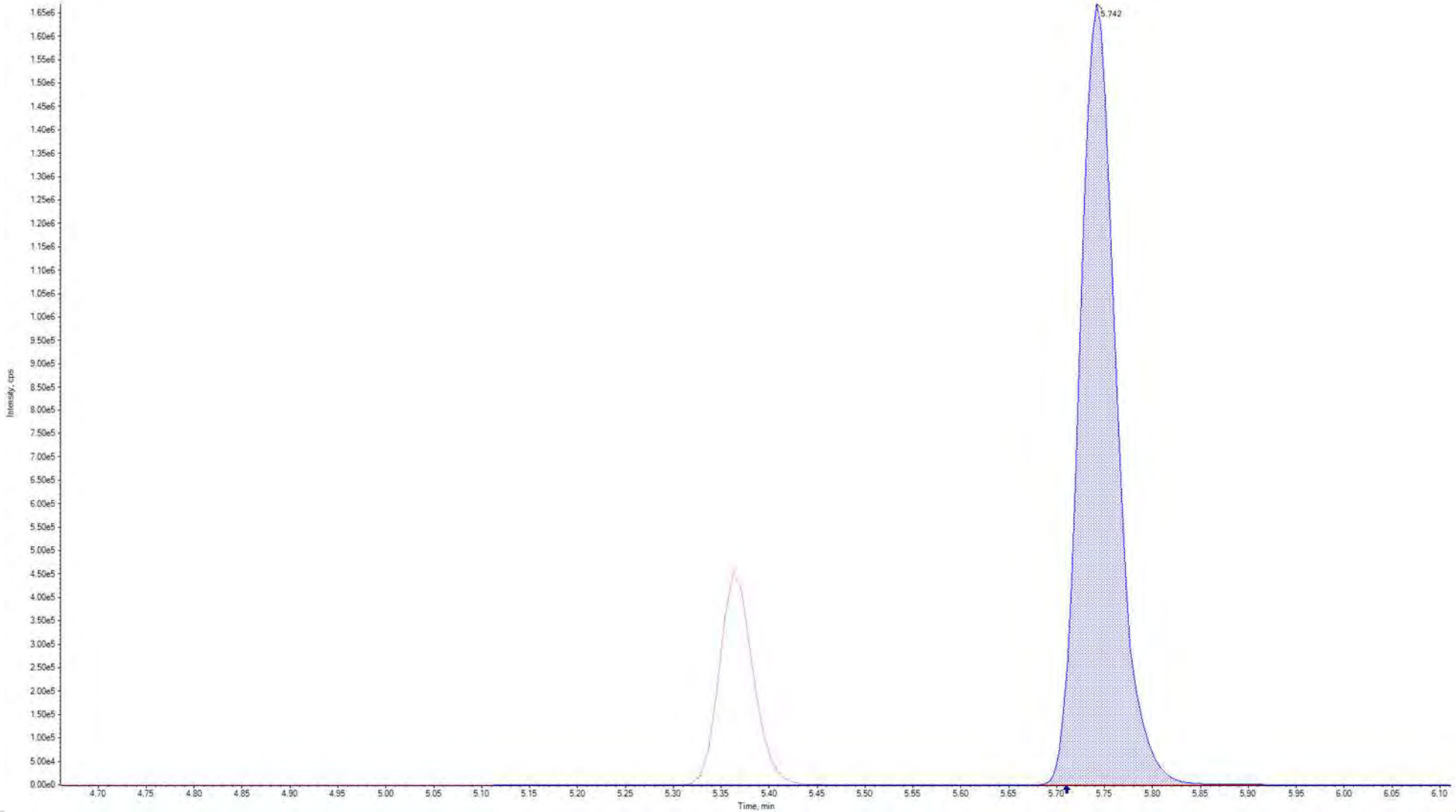
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

7:3FTCA_2
Sample: WG1973506-3,1633MED S/N:21760.6 Points Across peak:34



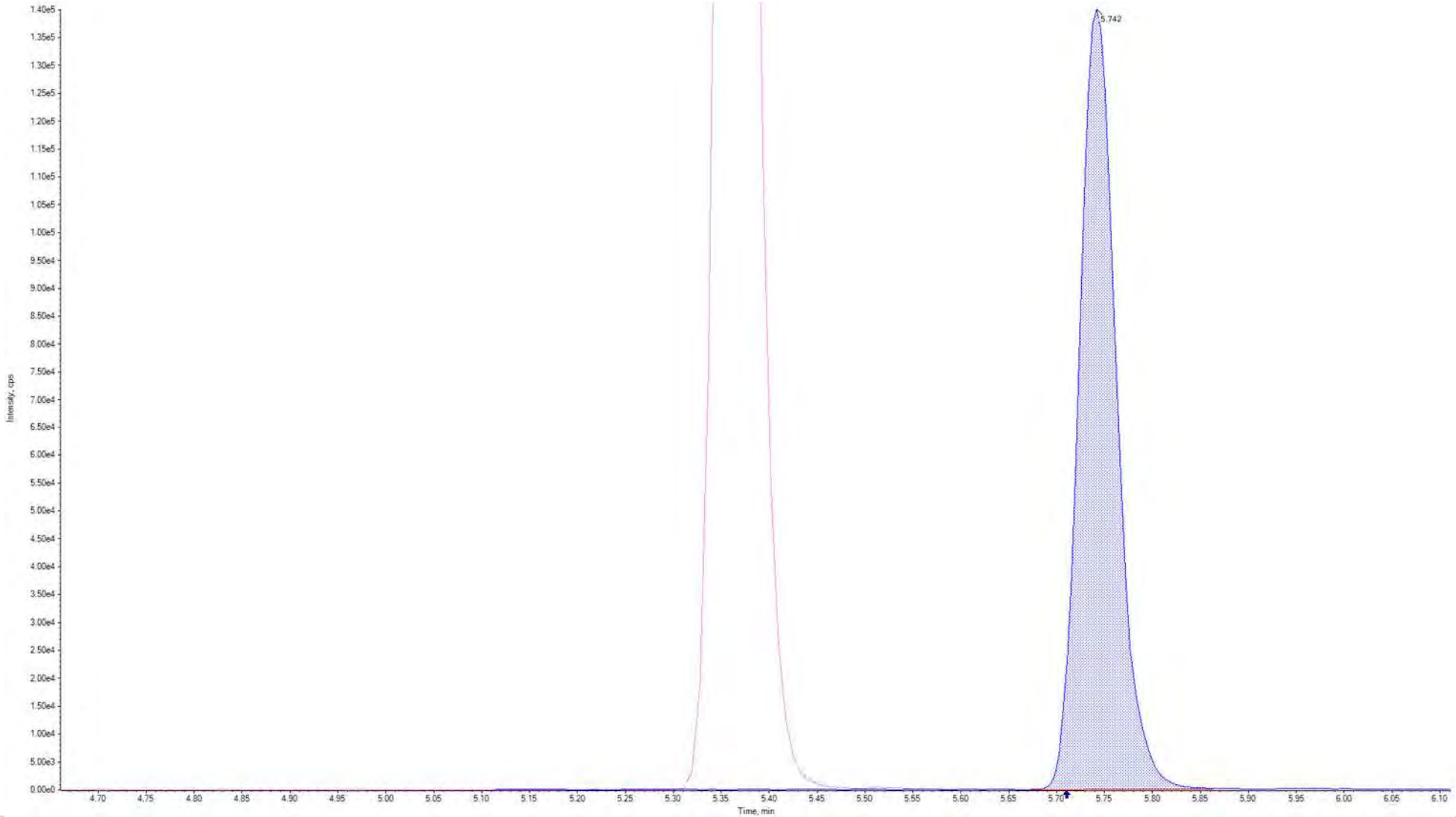
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFEESA
Sample: WG1973506-3,1633MED S/N:12727.4 Points Across peak:51



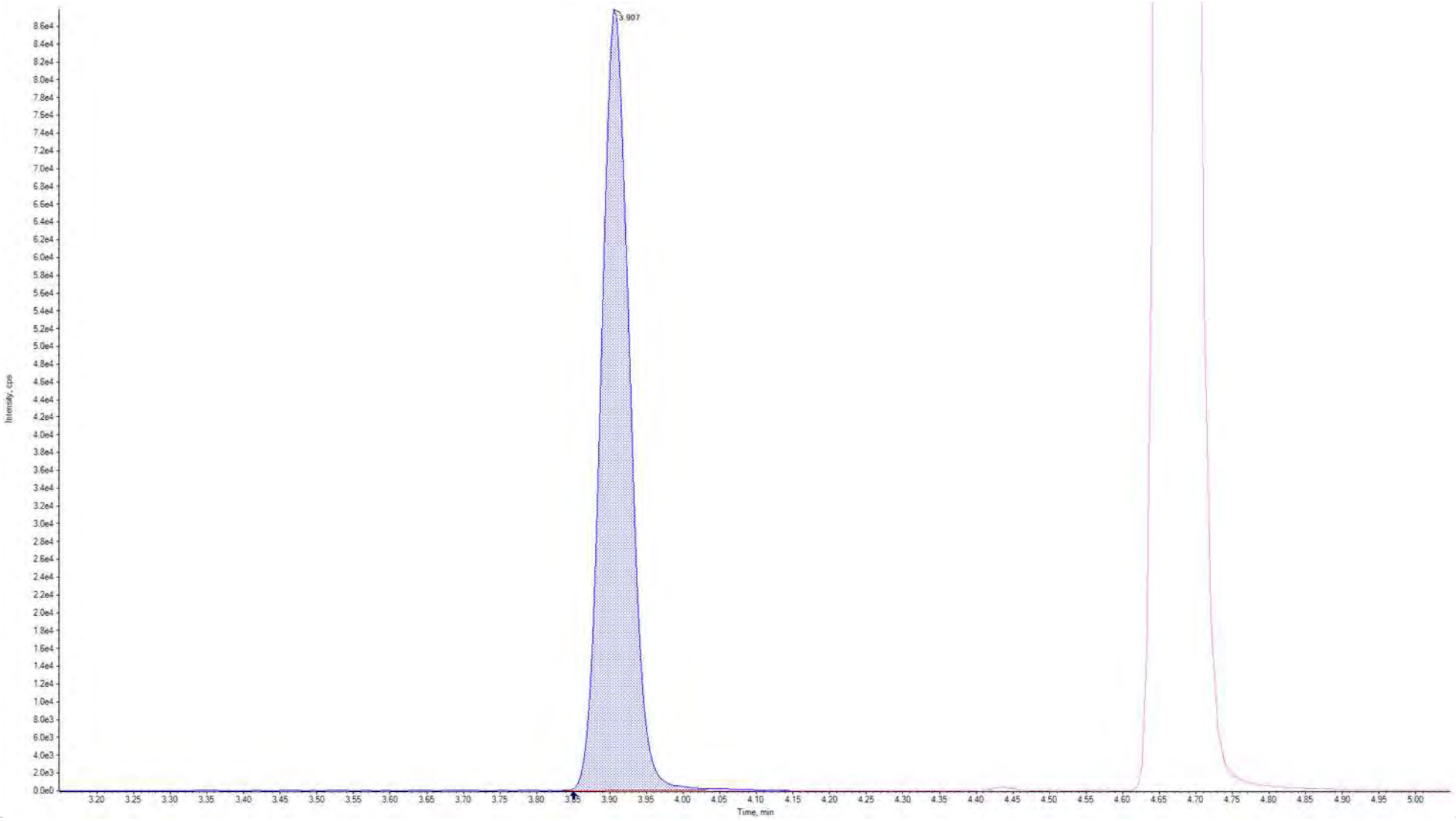
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFEESA_2
Sample: WG1973506-3,1633MED S/N:3543.4 Points Across peak:41



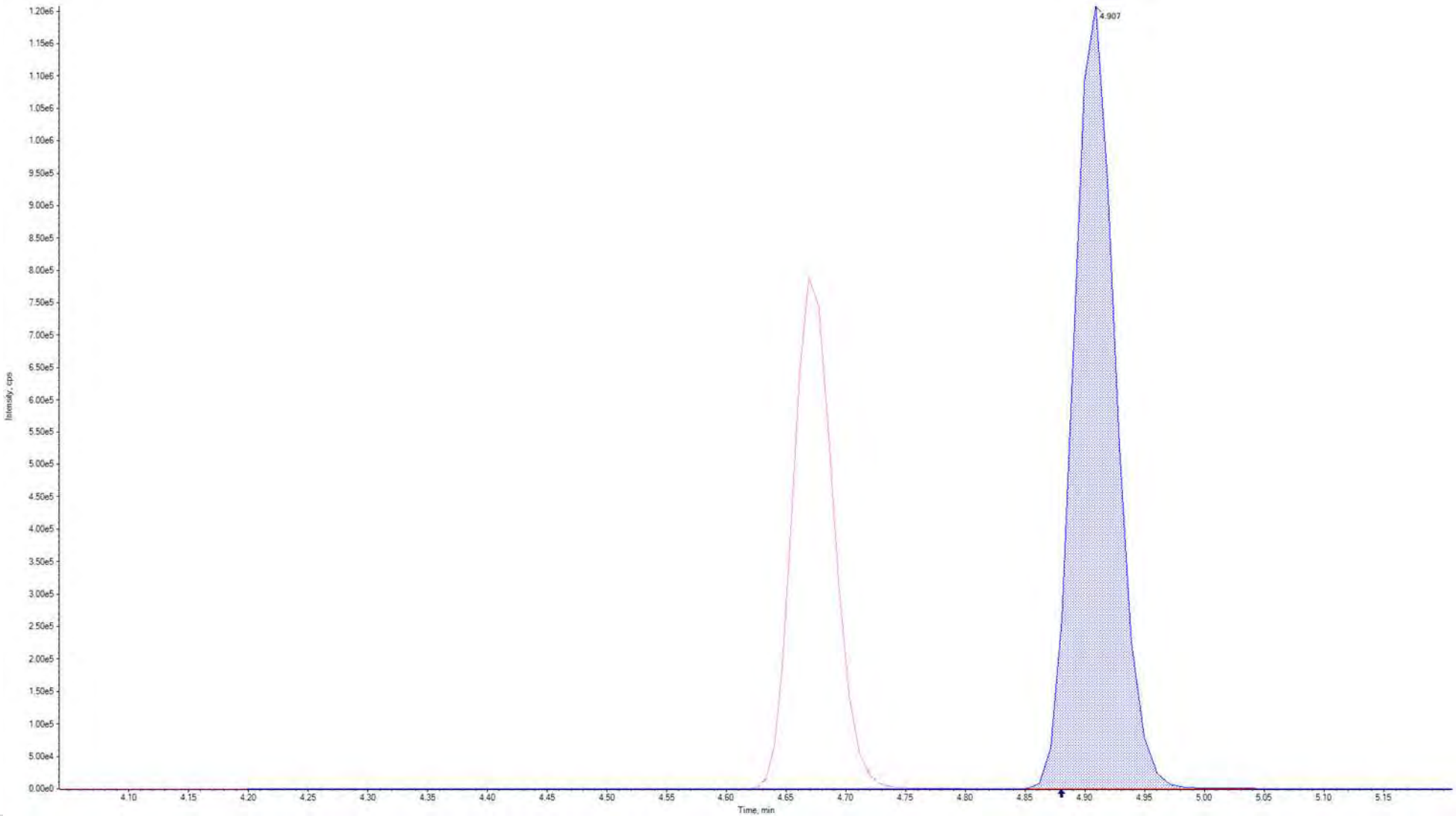
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFMPA
Sample: WG1973506-3,1633MED S/N:5789.8 Points Across peak:51

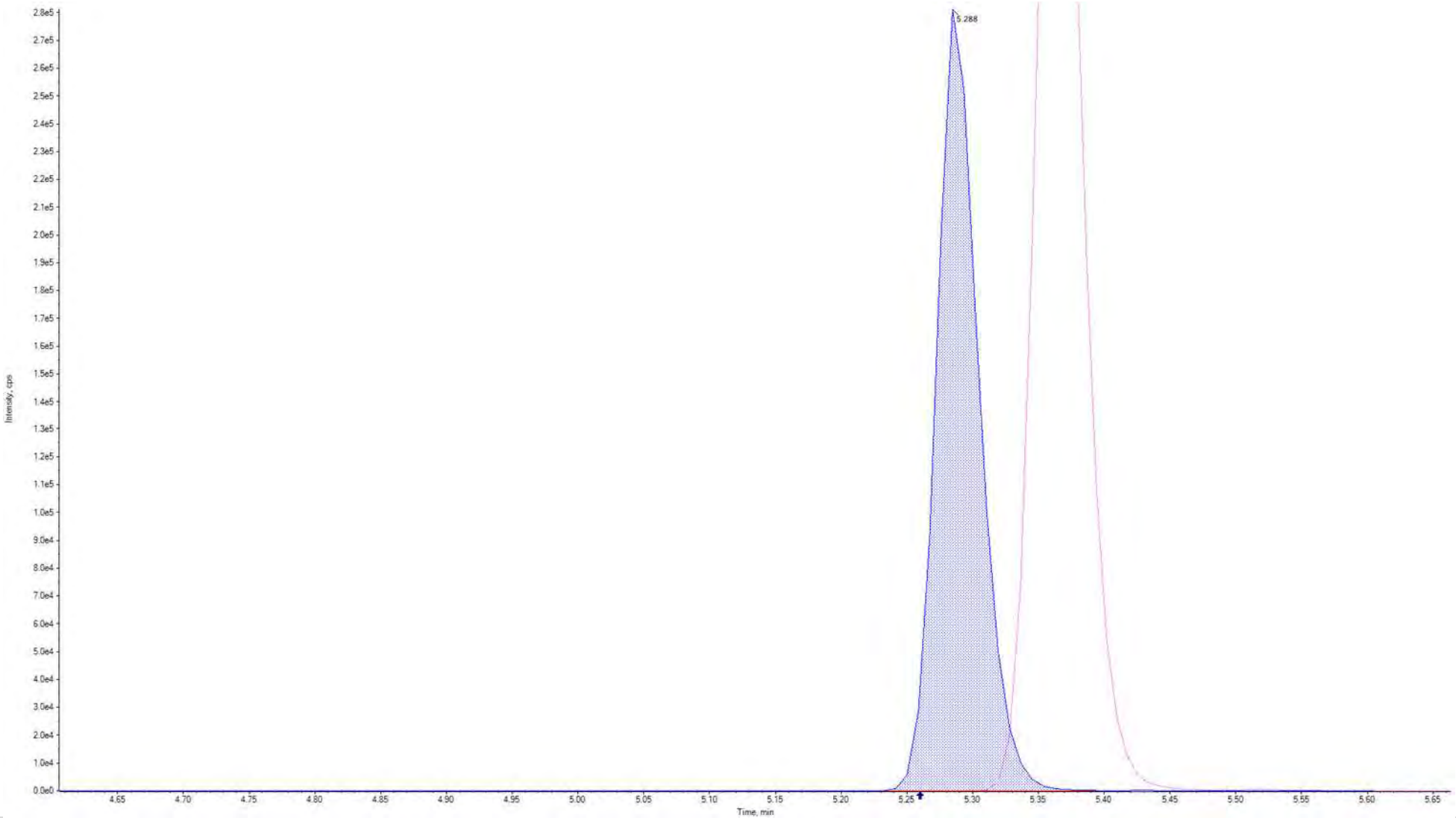


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFMBA
Sample: WG1973506-3,1633MED S/N:26202.8 Points Across peak:39

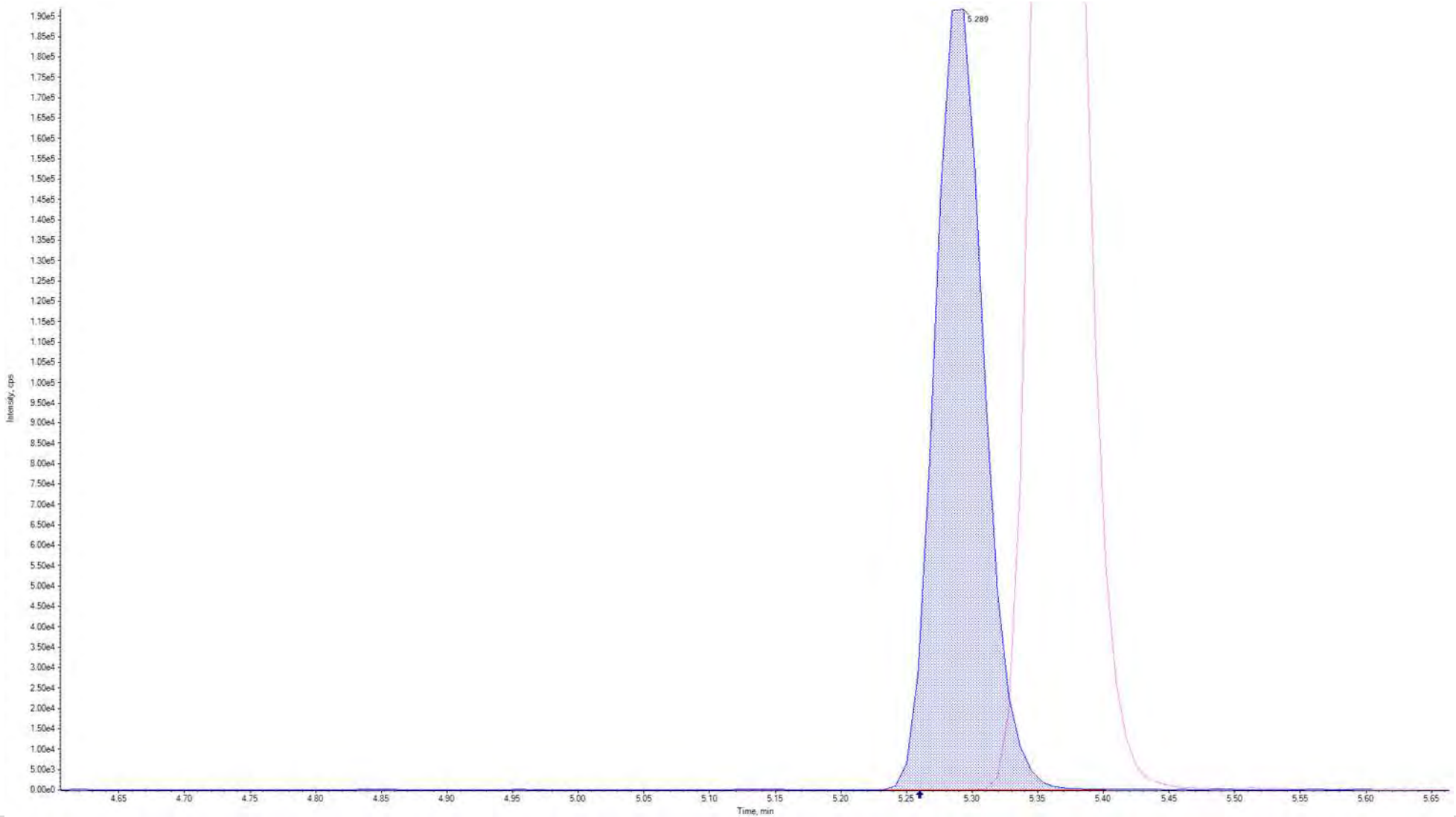


NFDHA
Sample: WG1973506-3,1633MED S/N:4002.1 Points Across peak:25



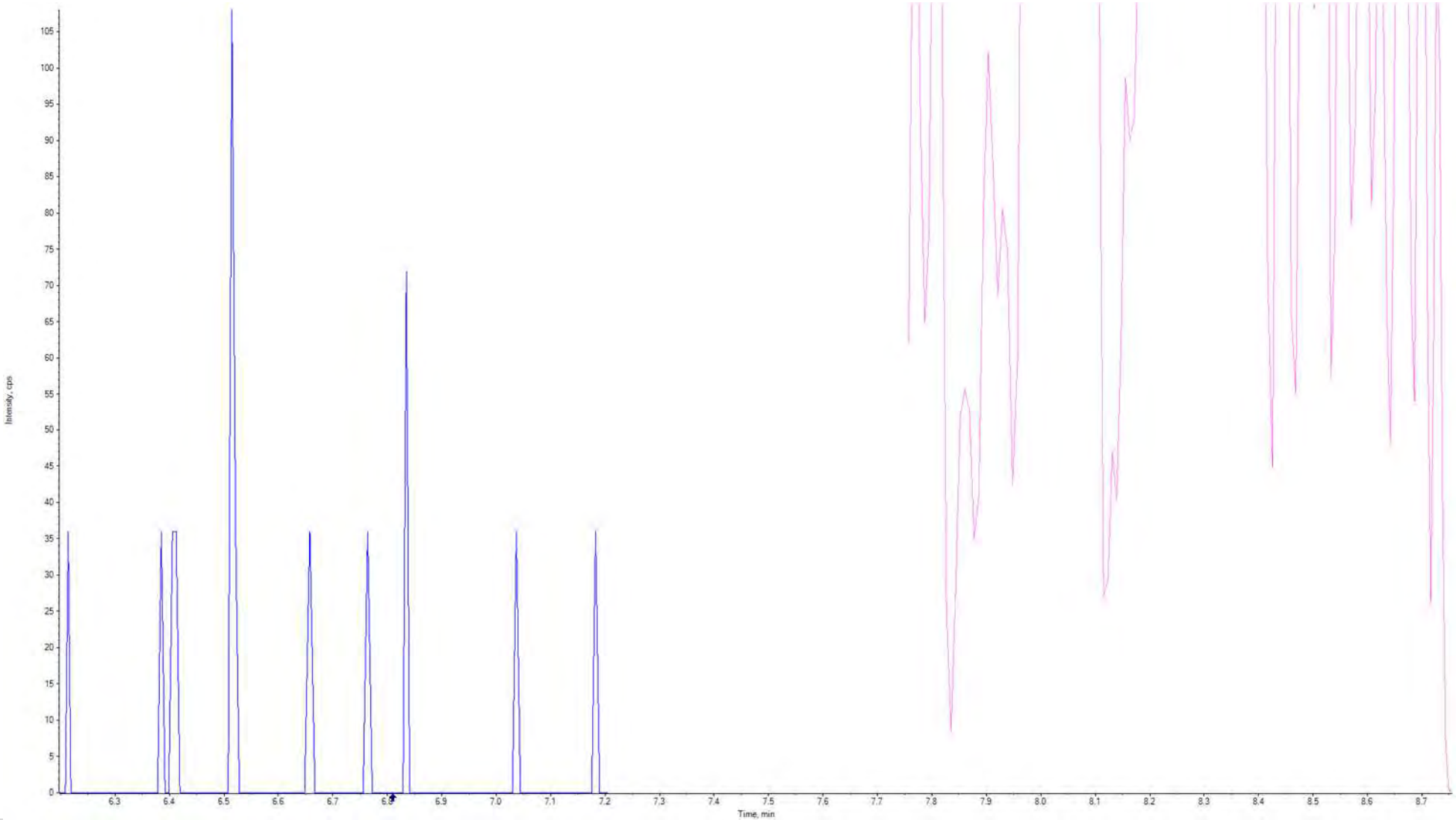
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NFDHA_2
Sample: WG1973506-3,1633MED S/N:12756.1 Points Across peak:22

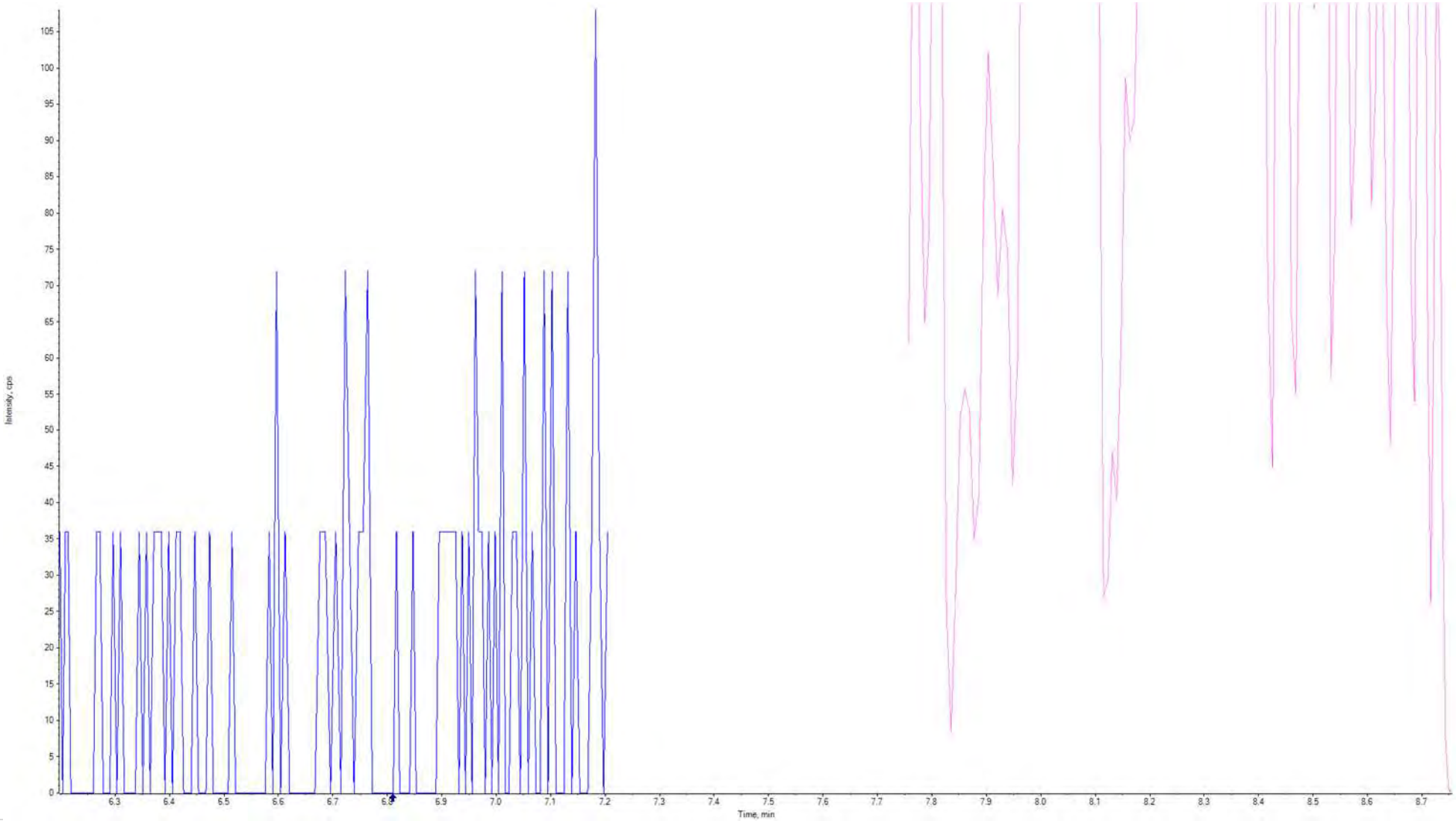


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

TDCA
Sample: WG1973506-3,1633MED S/N:N/A Points Across peak:N/A

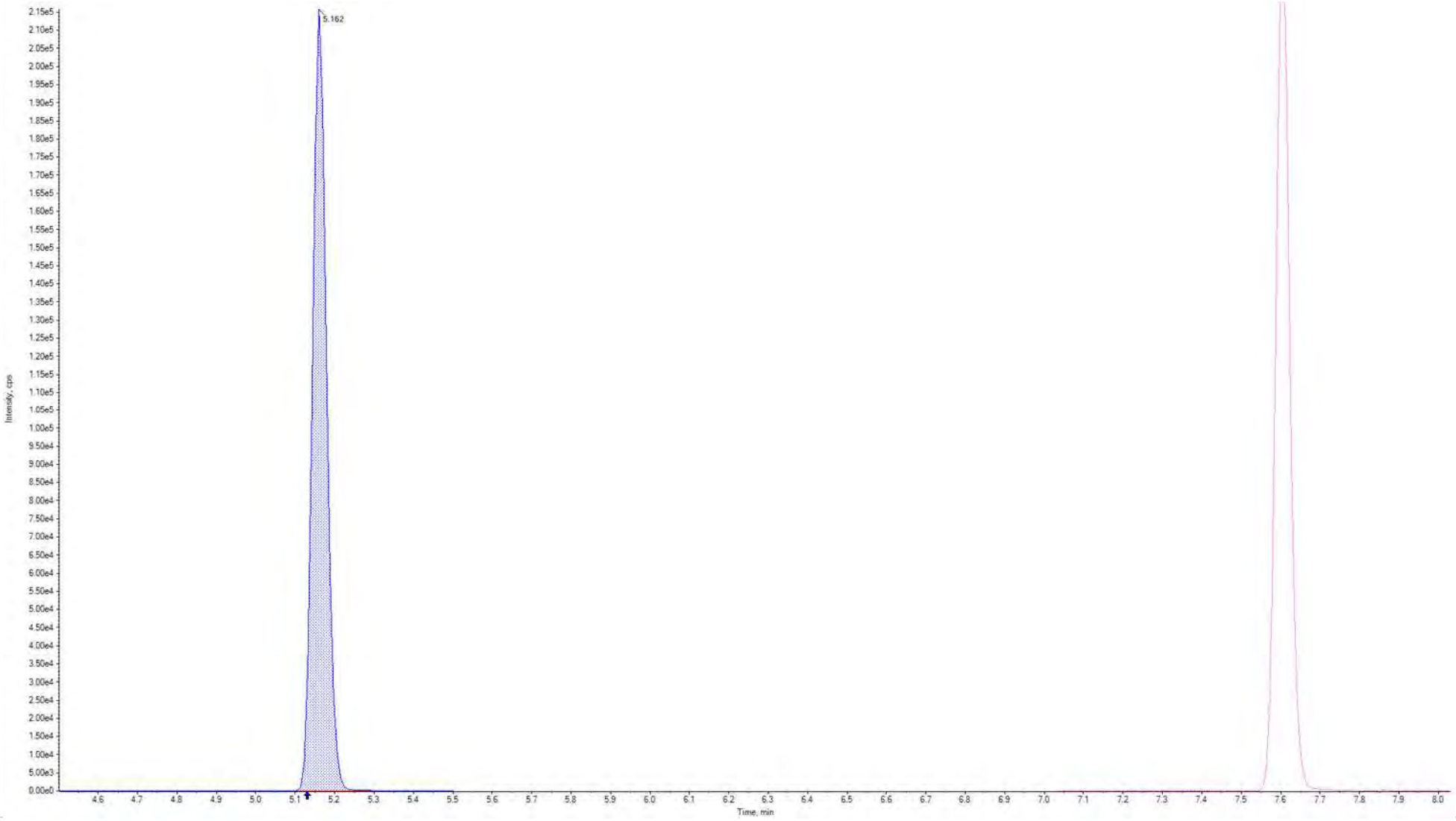


TDCA_2
Sample: WG1973506-3,1633MED S/N:N/A Points Across peak:N/A



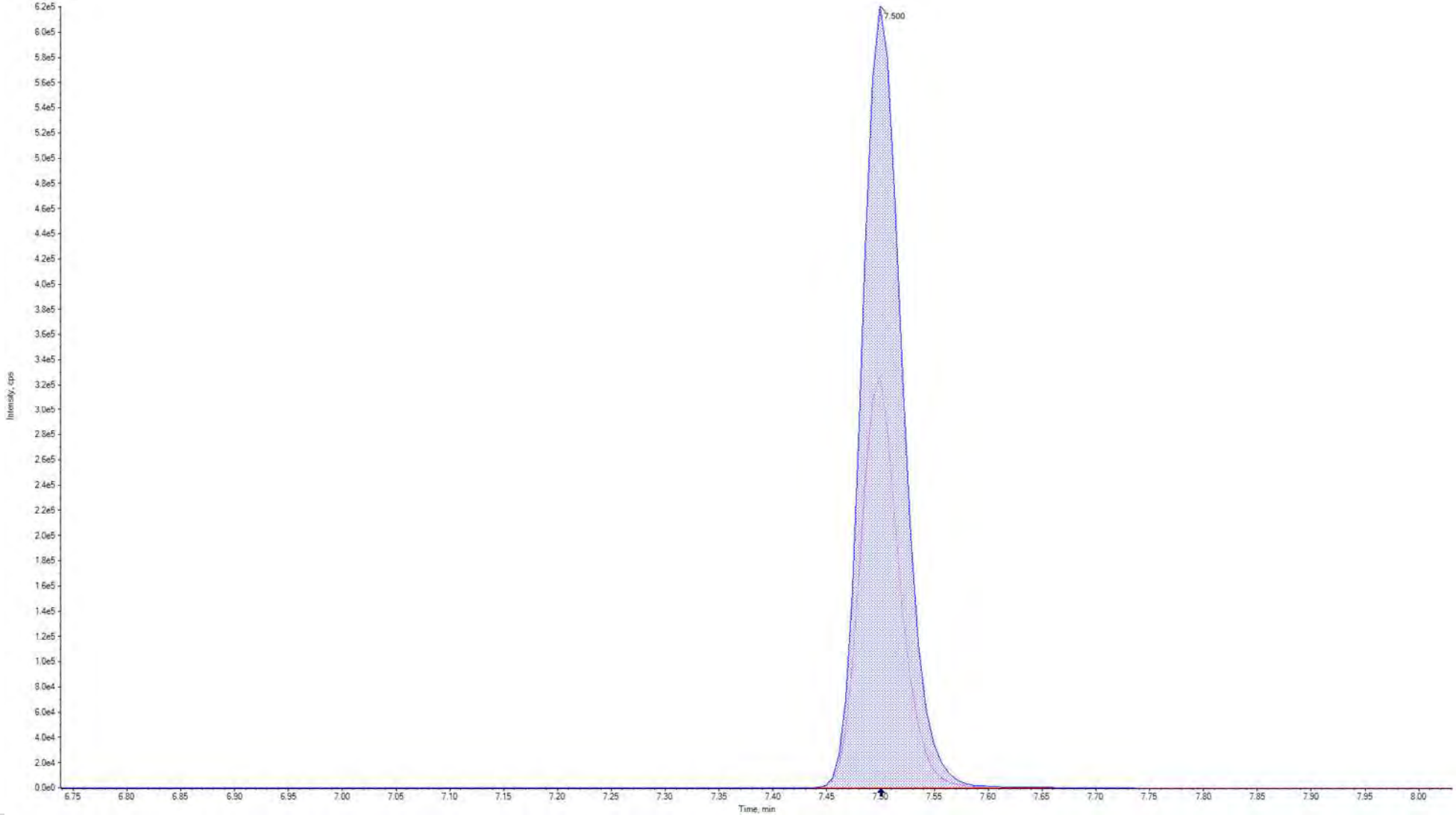
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C2D4-4:2FTS
Sample: WG1973506-3,1633MED S/N:1968.6 Points Across peak:27



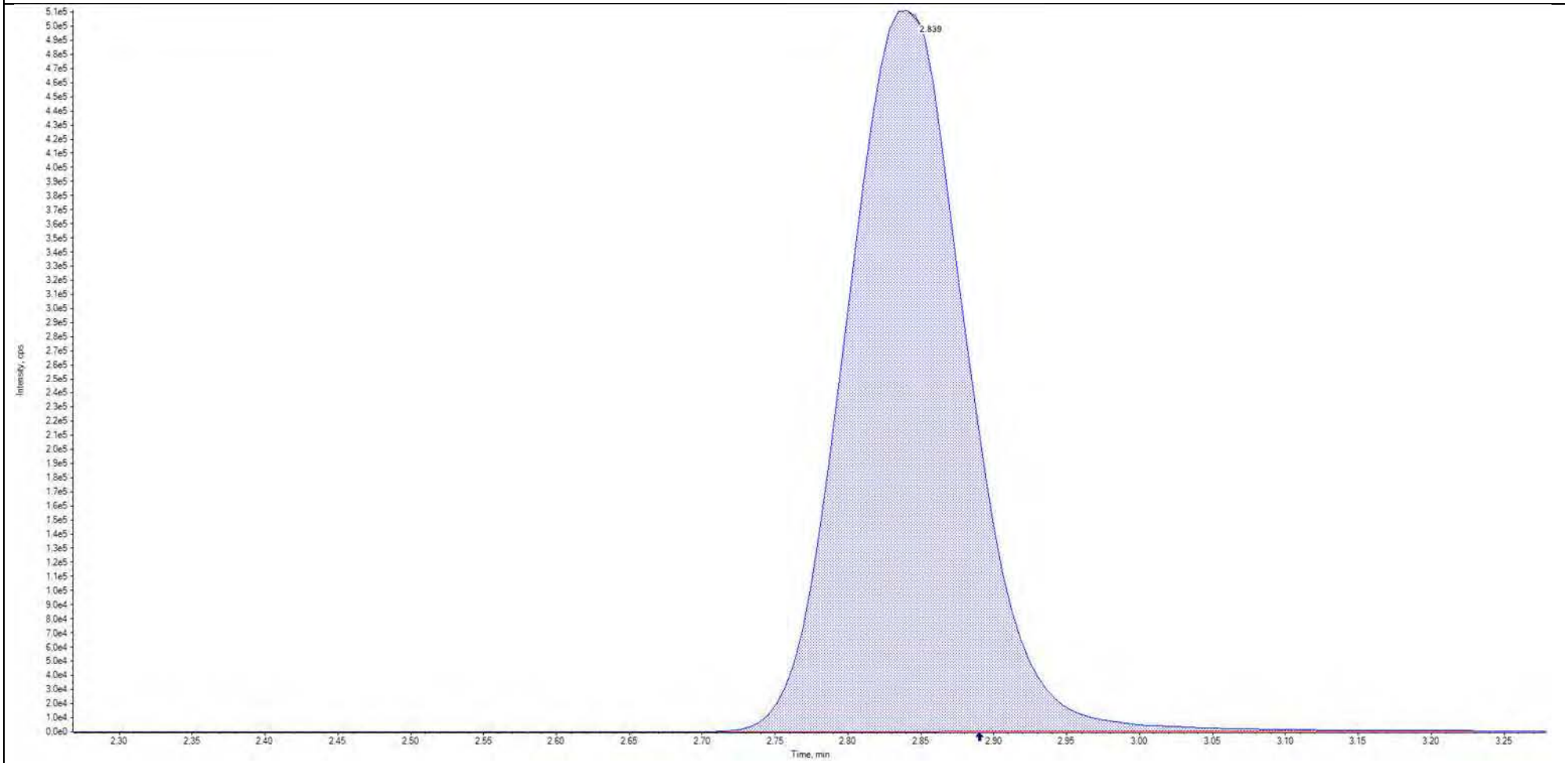
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C2-PFOA
Sample: WG1973506-3,1633MED S/N:10194.3 Points Across peak:45



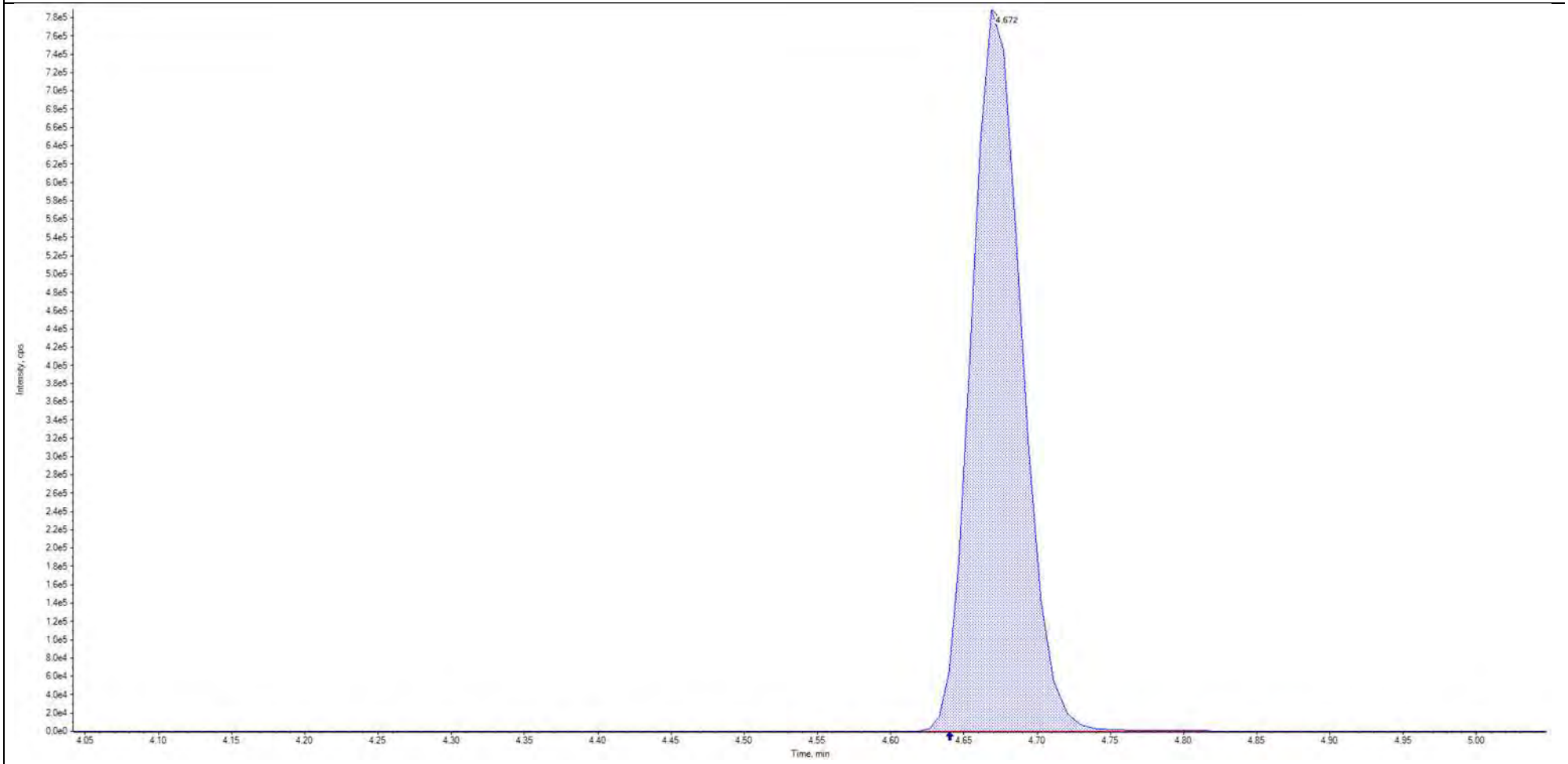
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C4-PFBA
Sample: WG1973506-3,1633MED



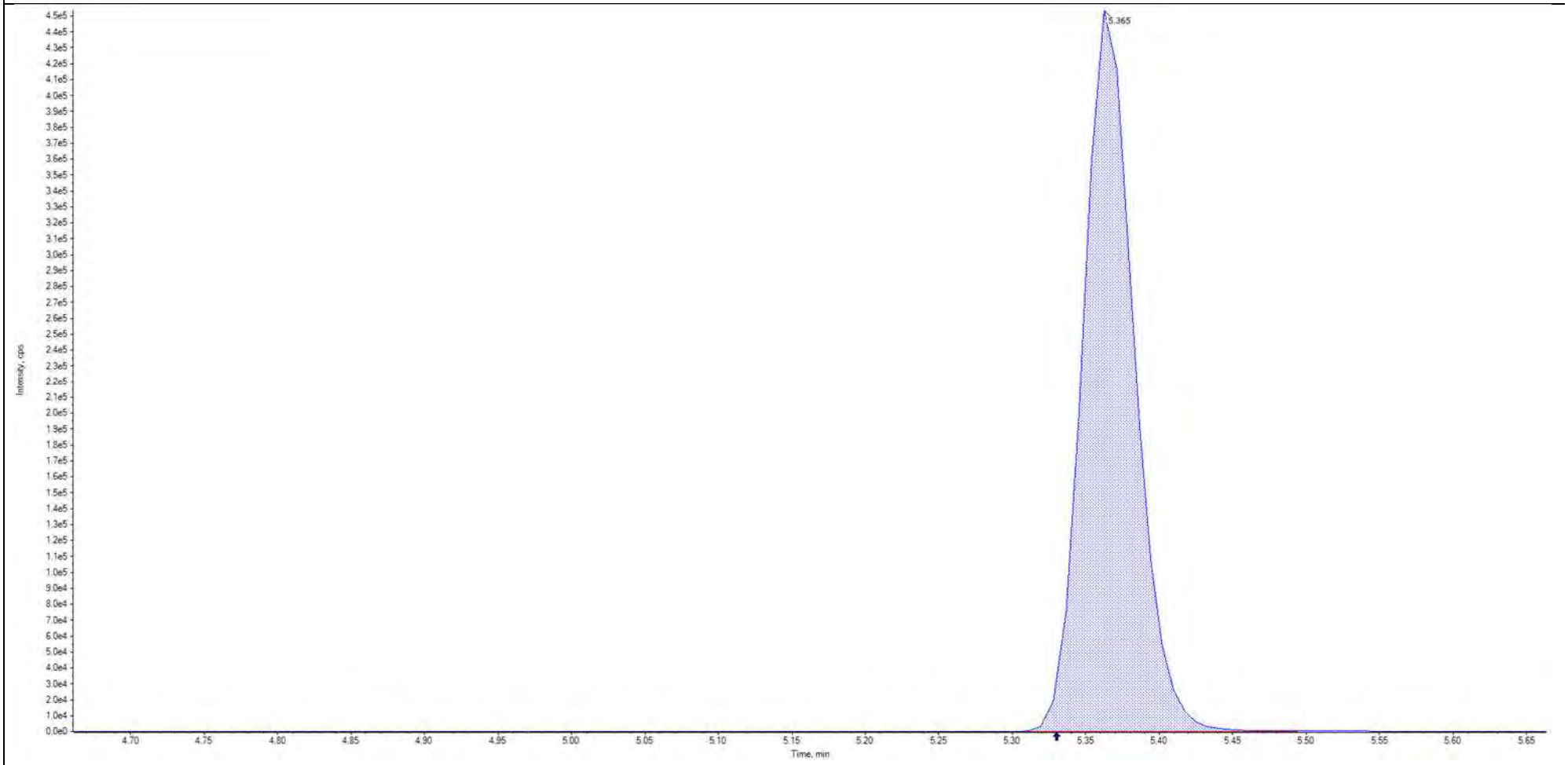
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C5-PFPeA
Sample: WG1973506-3,1633MED



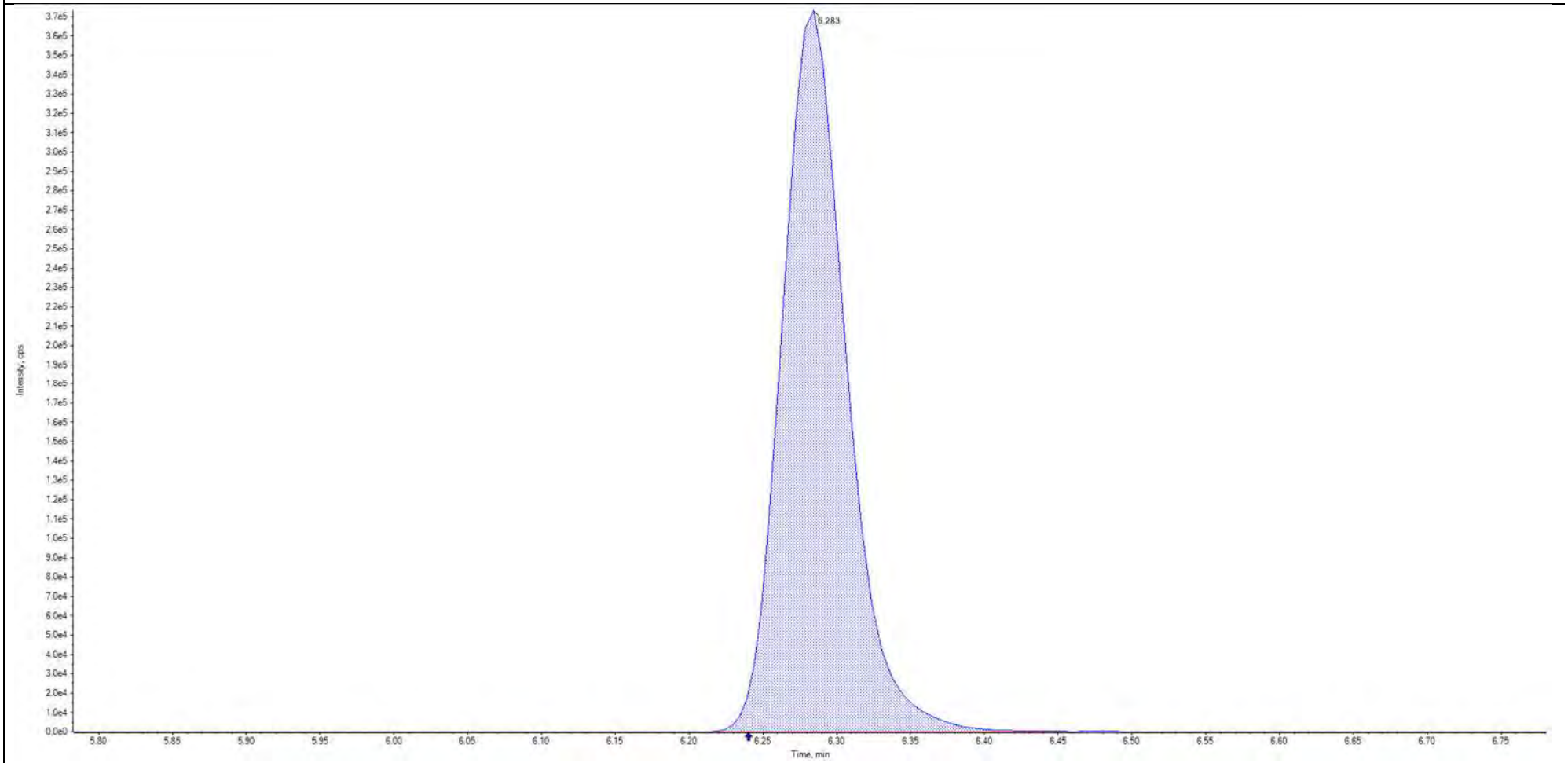
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C5-PFHxA
Sample: WG1973506-3,1633MED



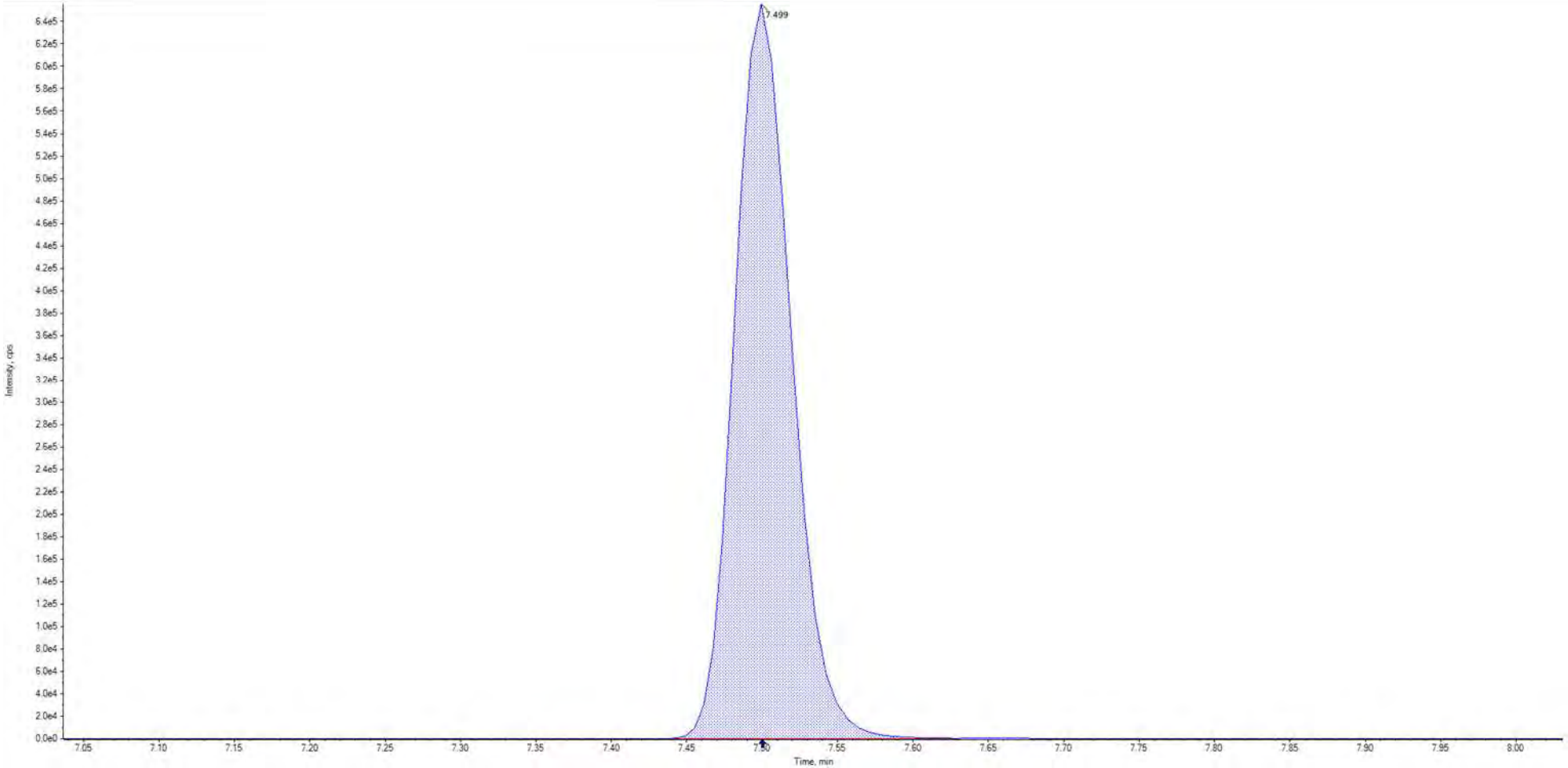
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C4-PFHpA
Sample: WG1973506-3,1633MED

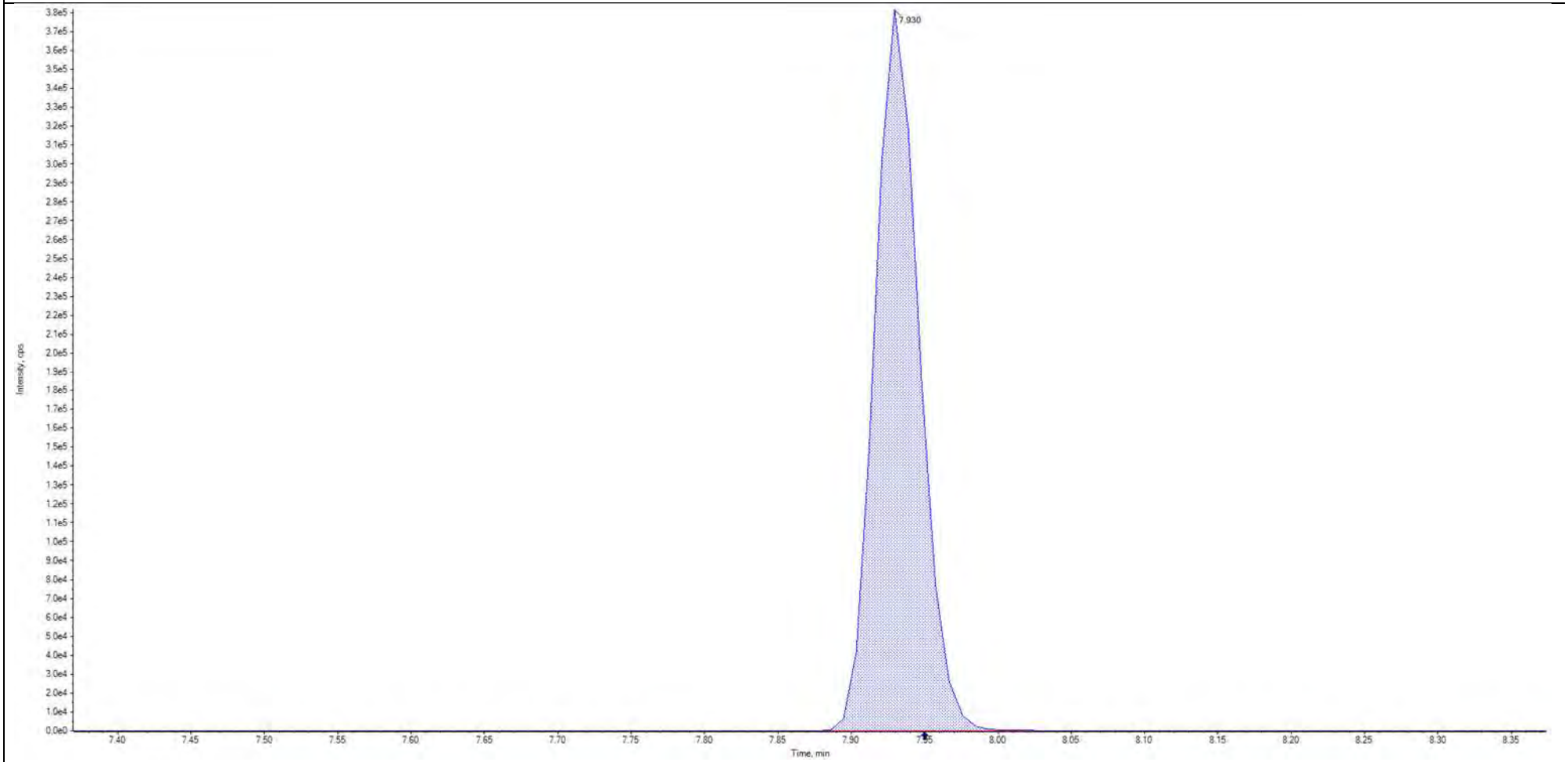


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

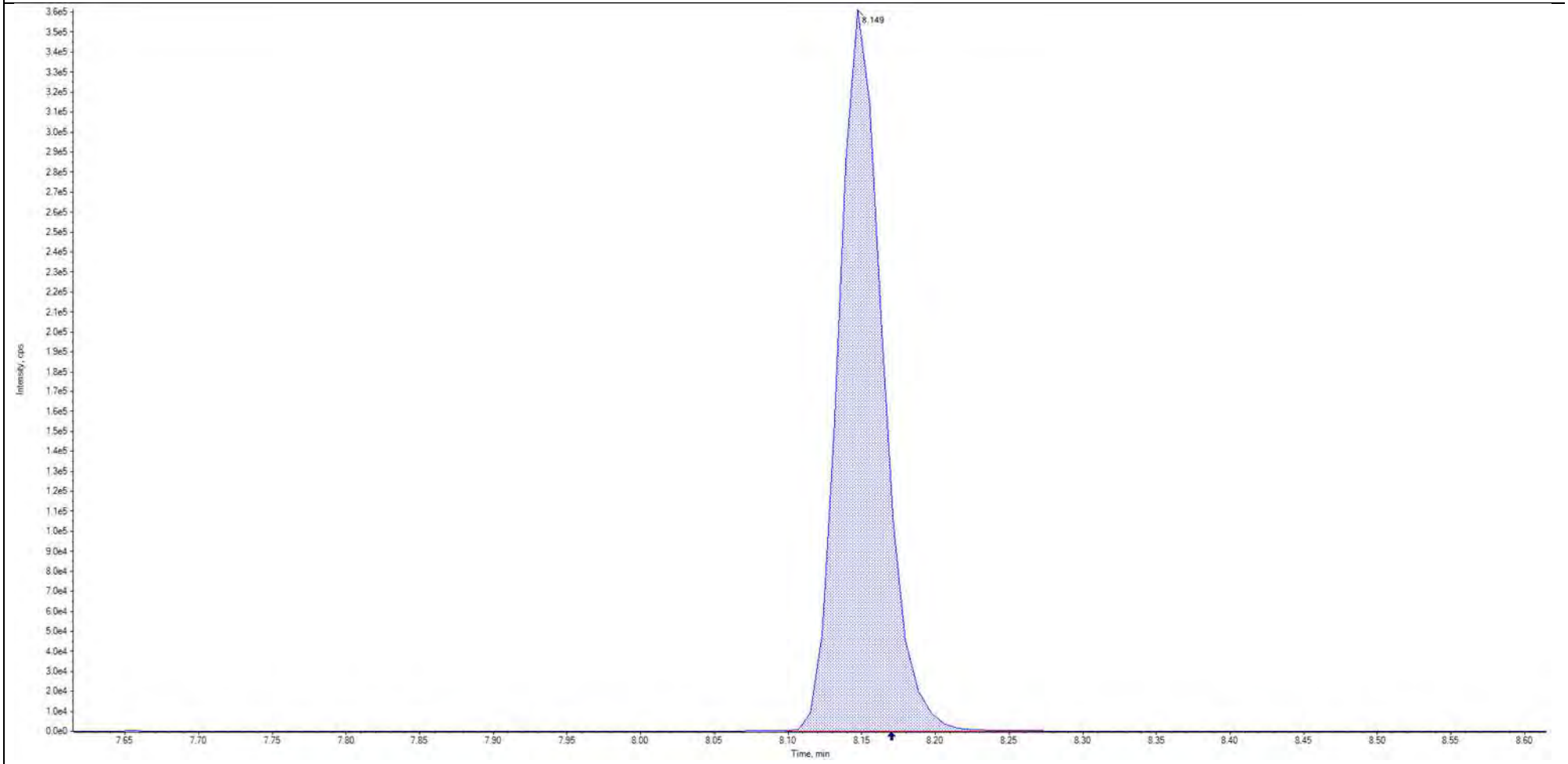
13C8-PFOA
Sample: WG1973506-3,1633MED



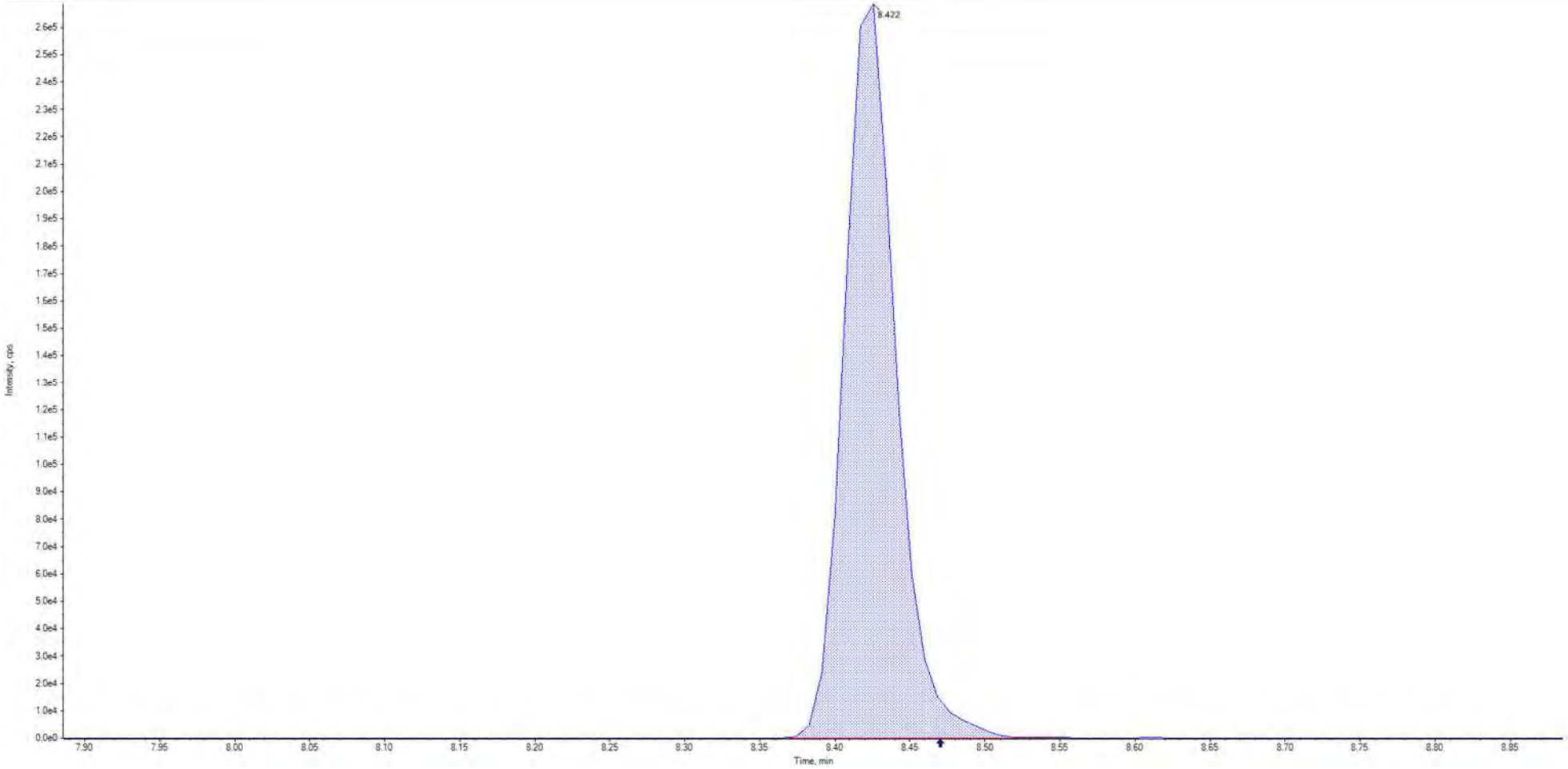
13C9-PFNA
Sample: WG1973506-3,1633MED



13C6-PFDA
Sample: WG1973506-3,1633MED



13C7-PFUnA
Sample: WG1973506-3,1633MED



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
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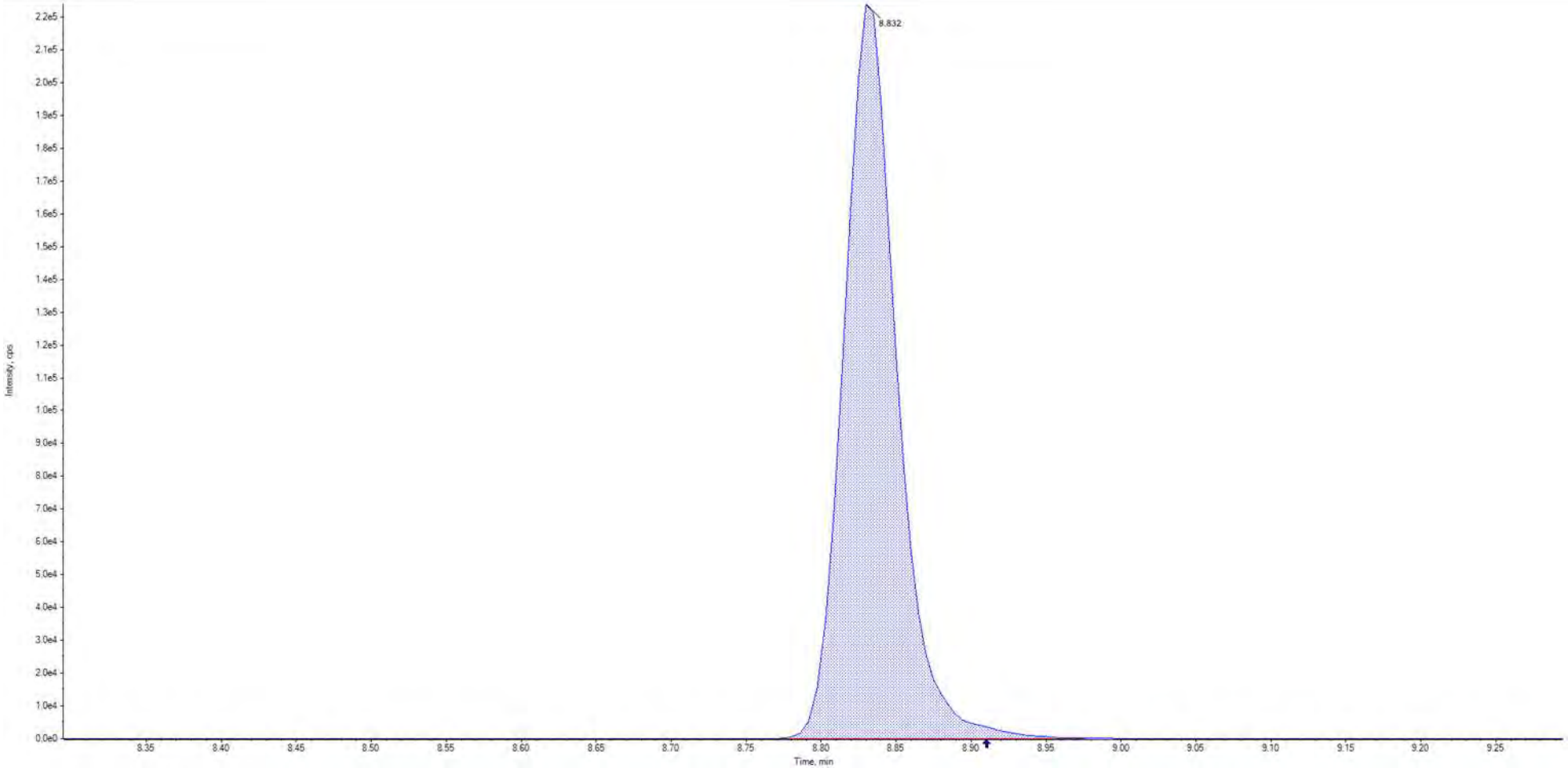
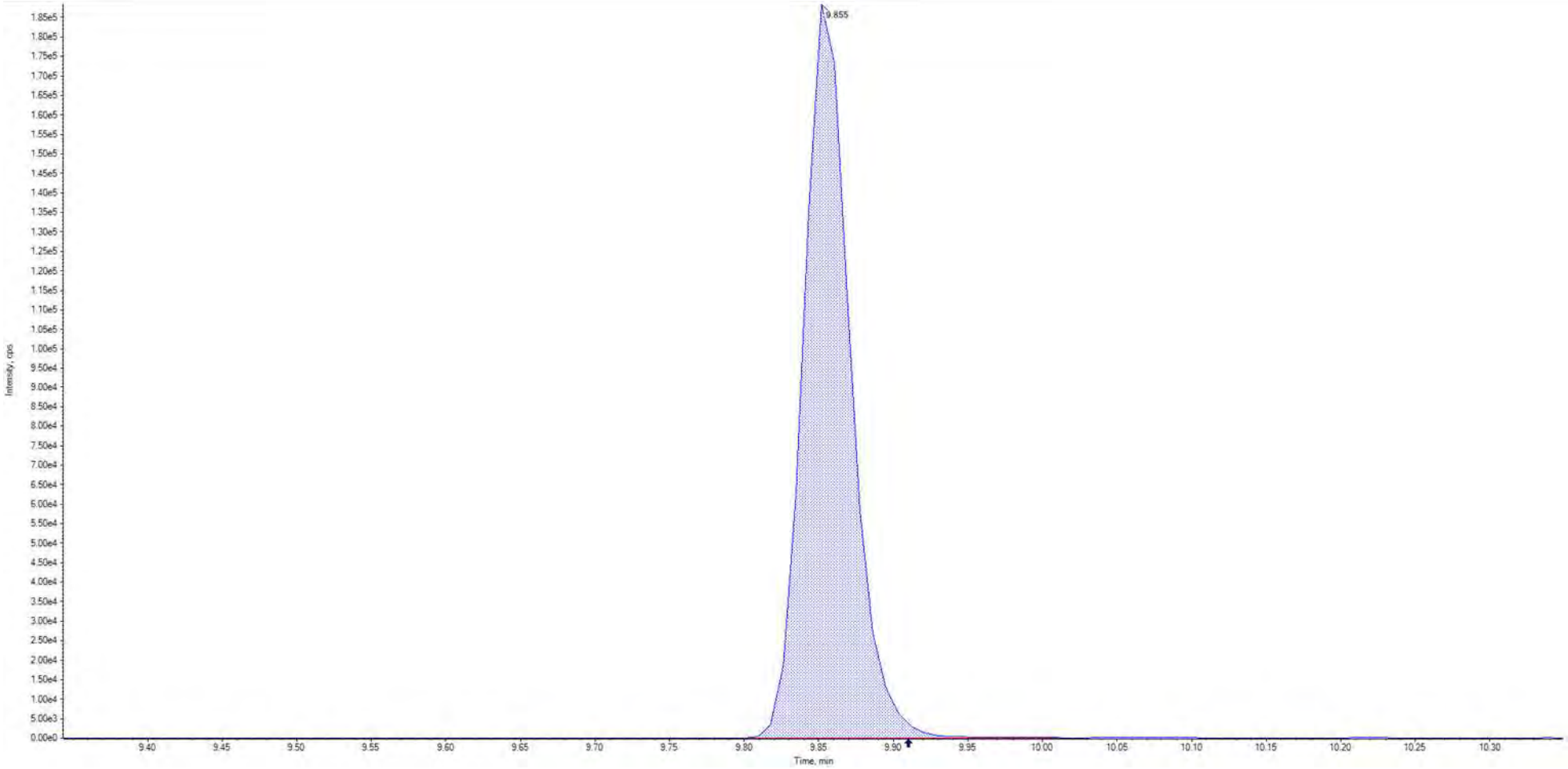
13C2-PFDoA
Sample: WG1973506-3,1633MED



13C2-PFTeDA
Sample: WG1973506-3,1633MED



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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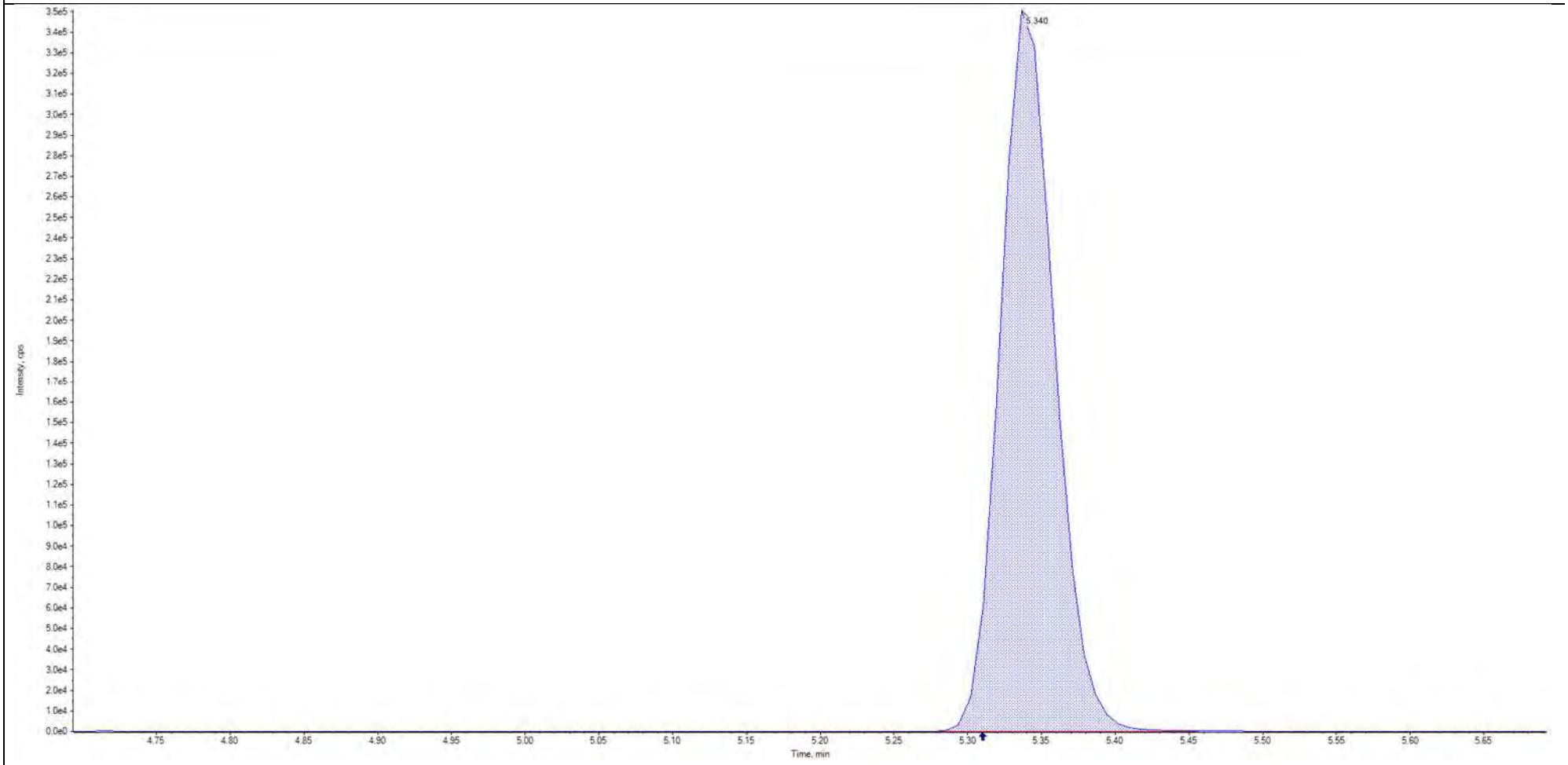
13C3-PFBS
Sample: WG1973506-3,1633MED



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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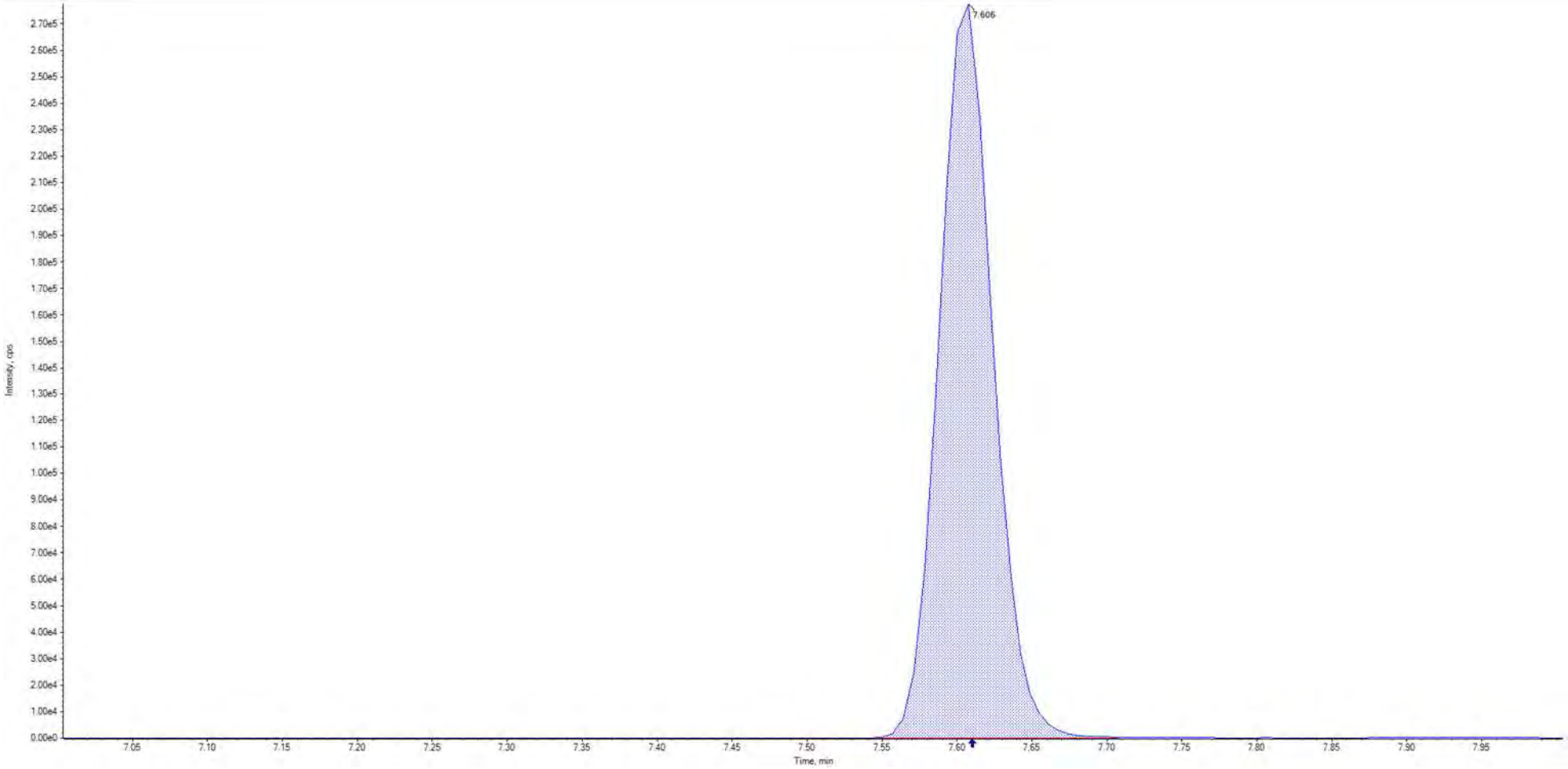
13C3-PFHxS
Sample: WG1973506-3,1633MED



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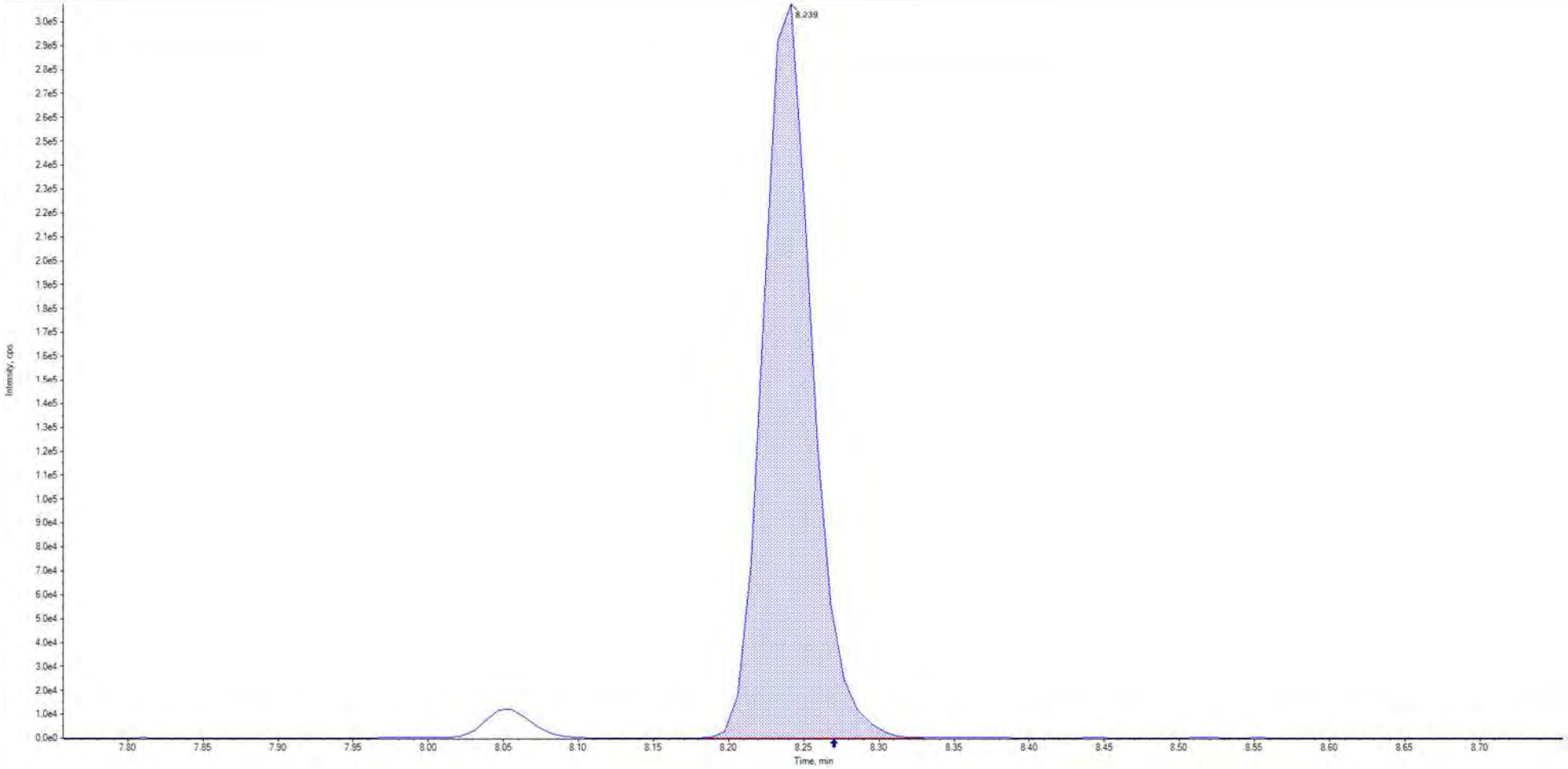
13C8-PFOS
Sample: WG1973506-3,1633MED



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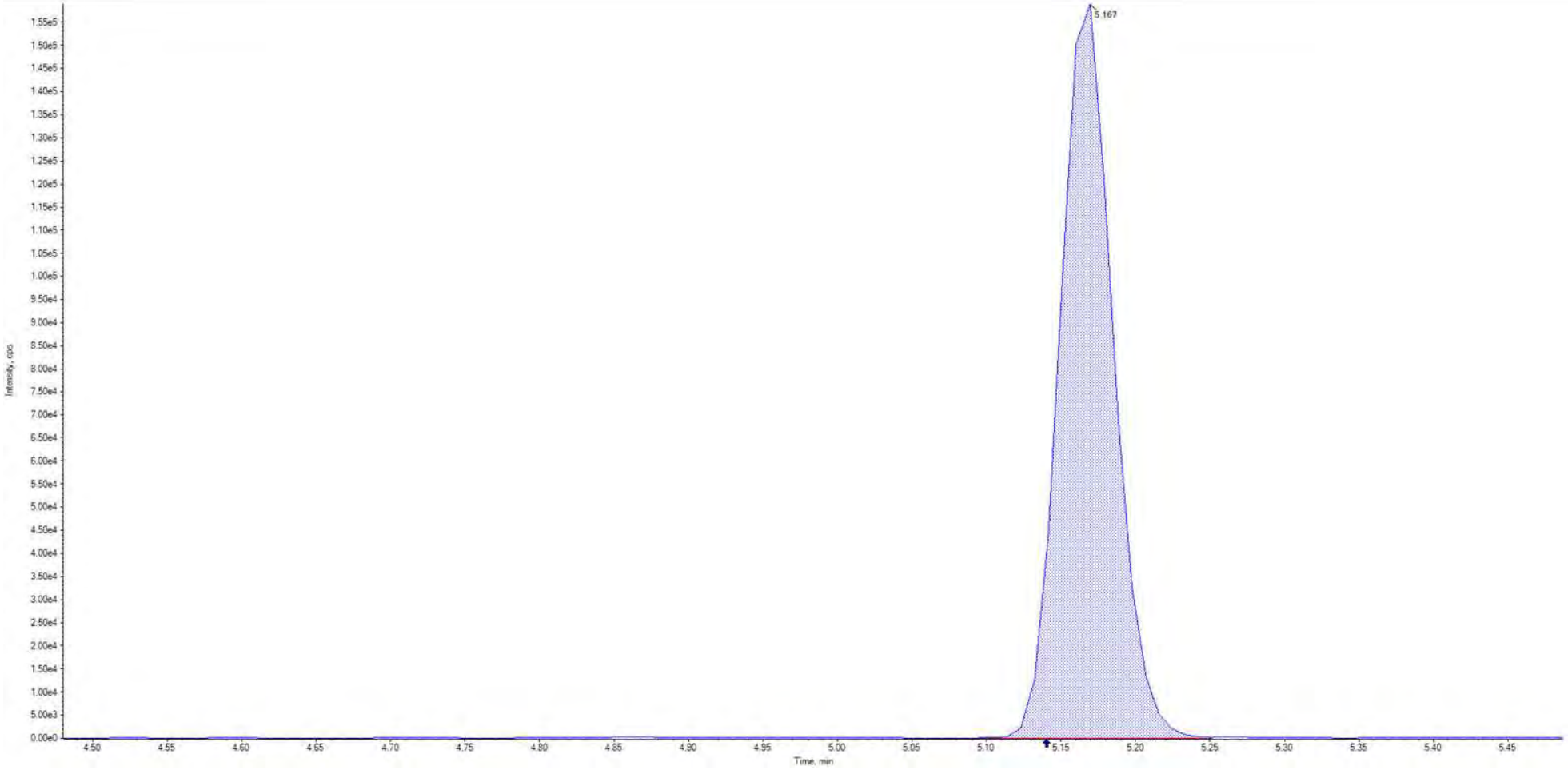
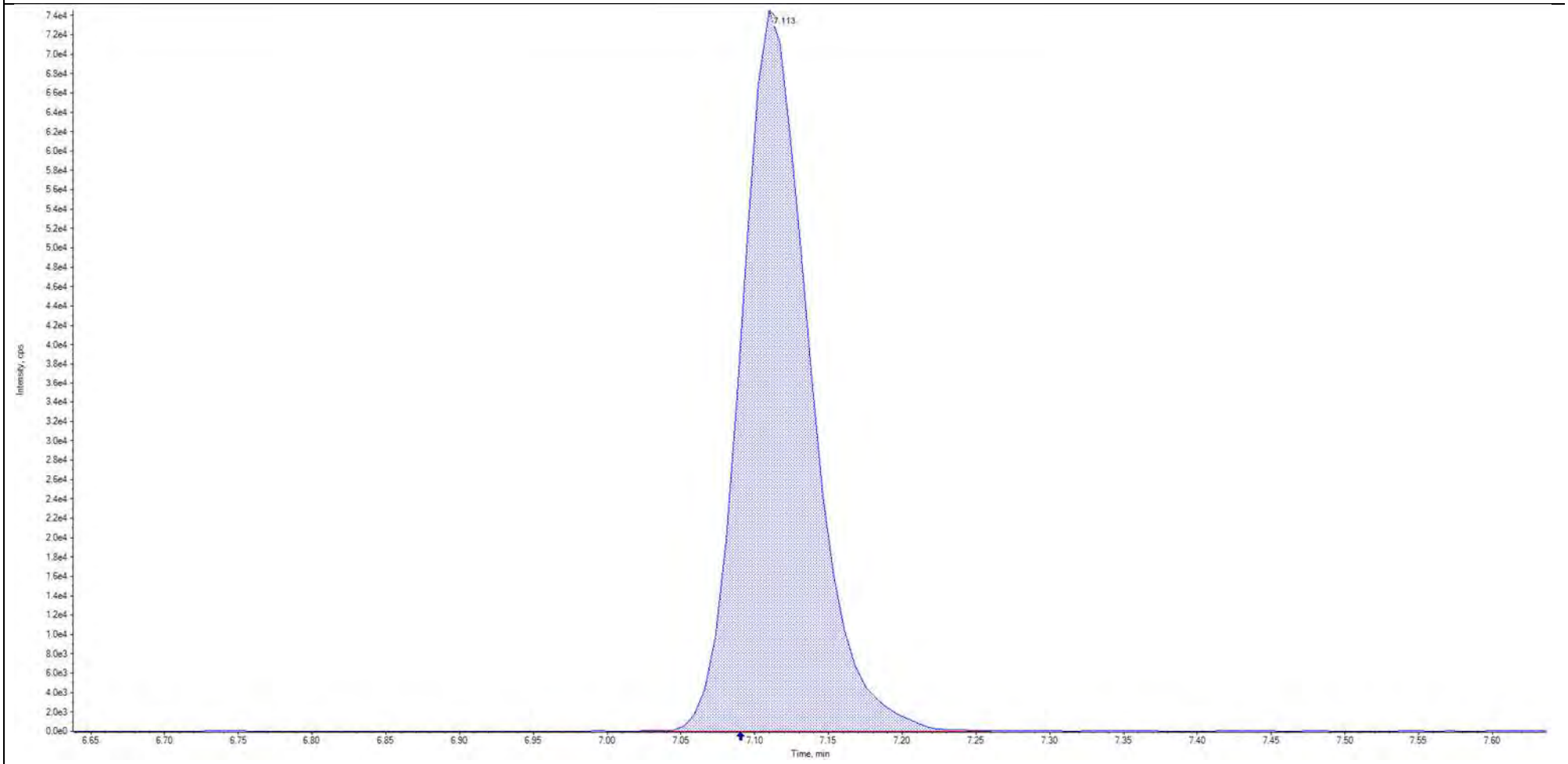
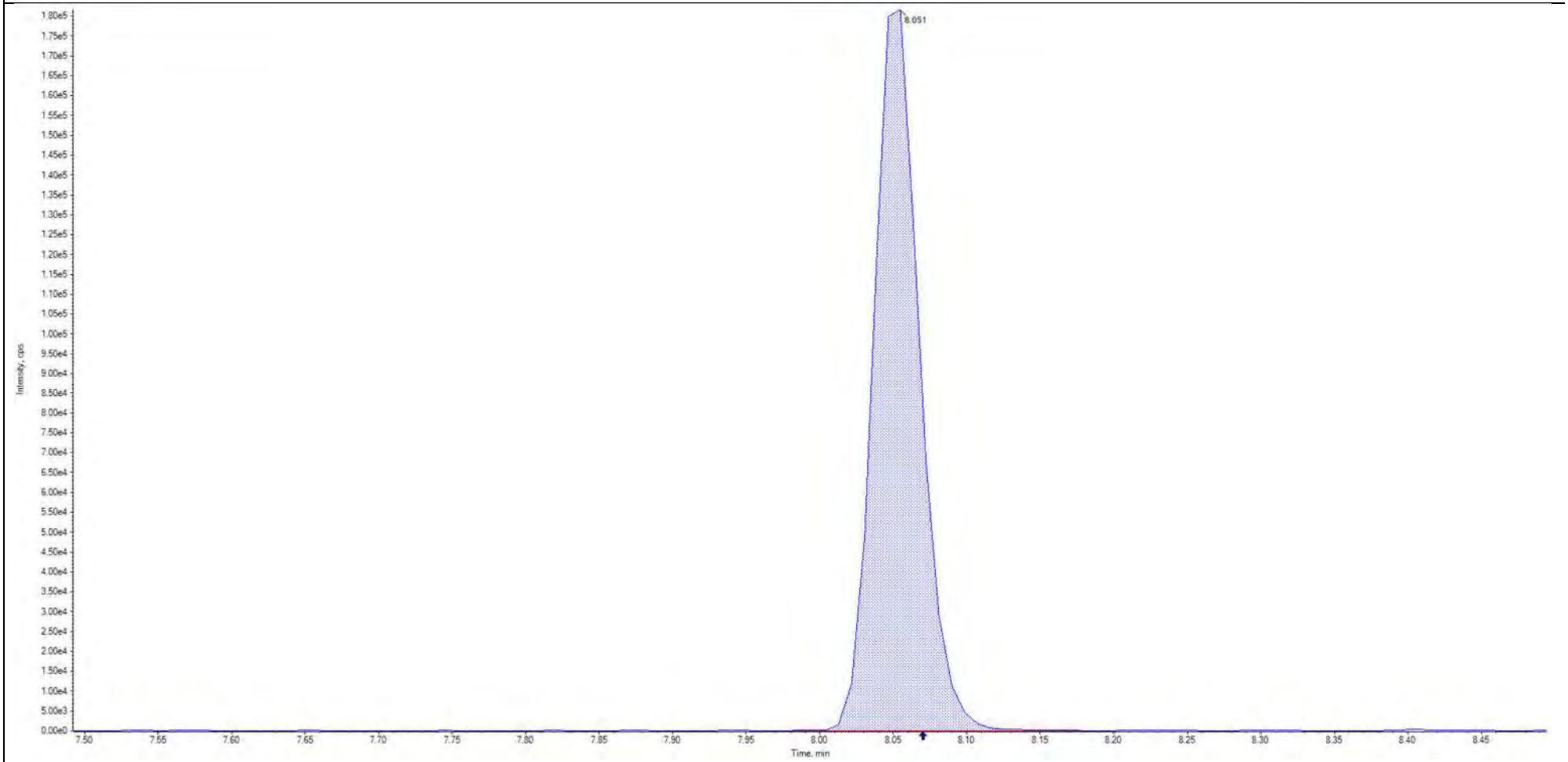
13C2-4:2FTS
Sample: WG1973506-3,1633MED



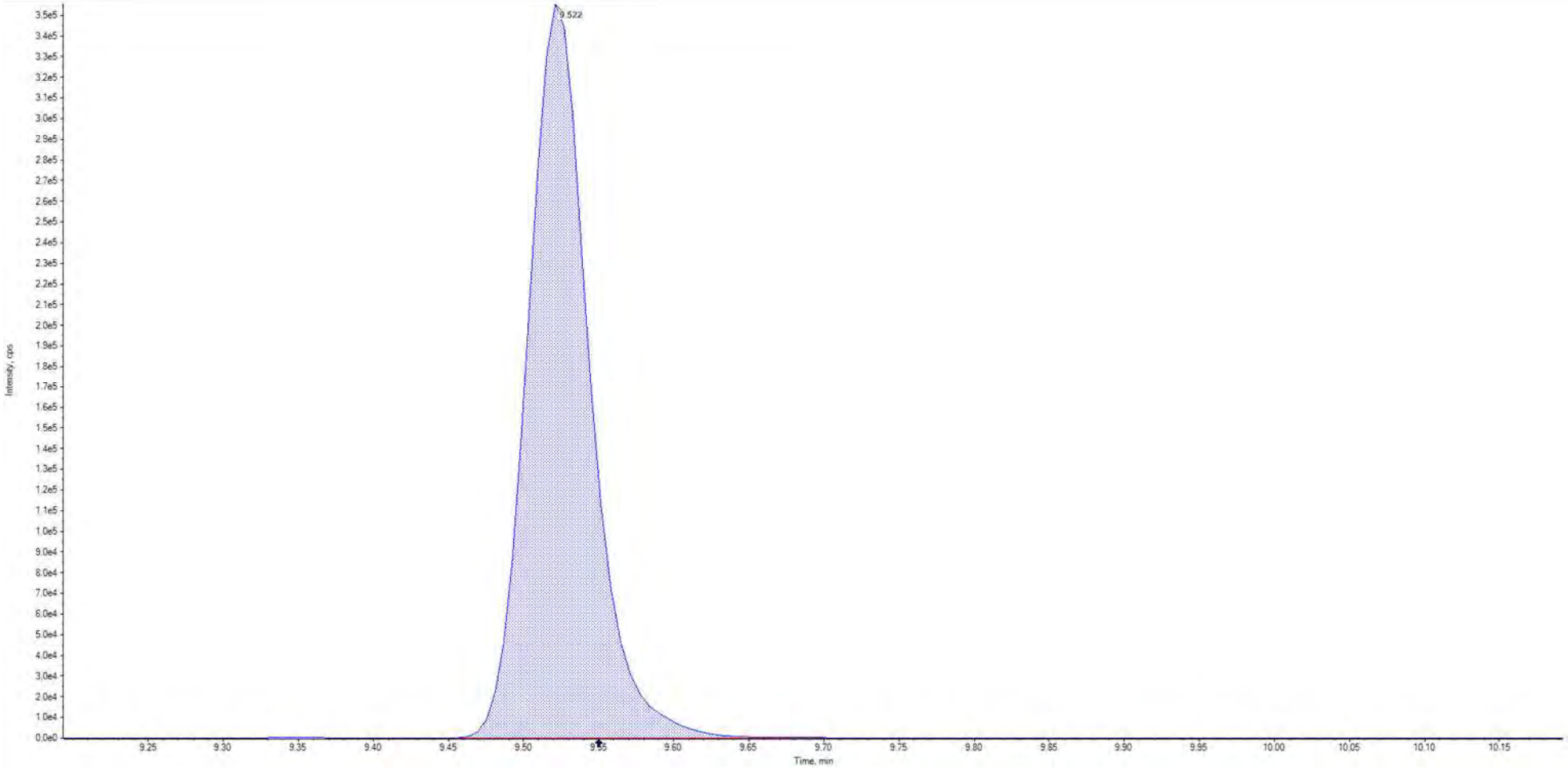
13C2-6:2FTS
Sample: WG1973506-3,1633MED



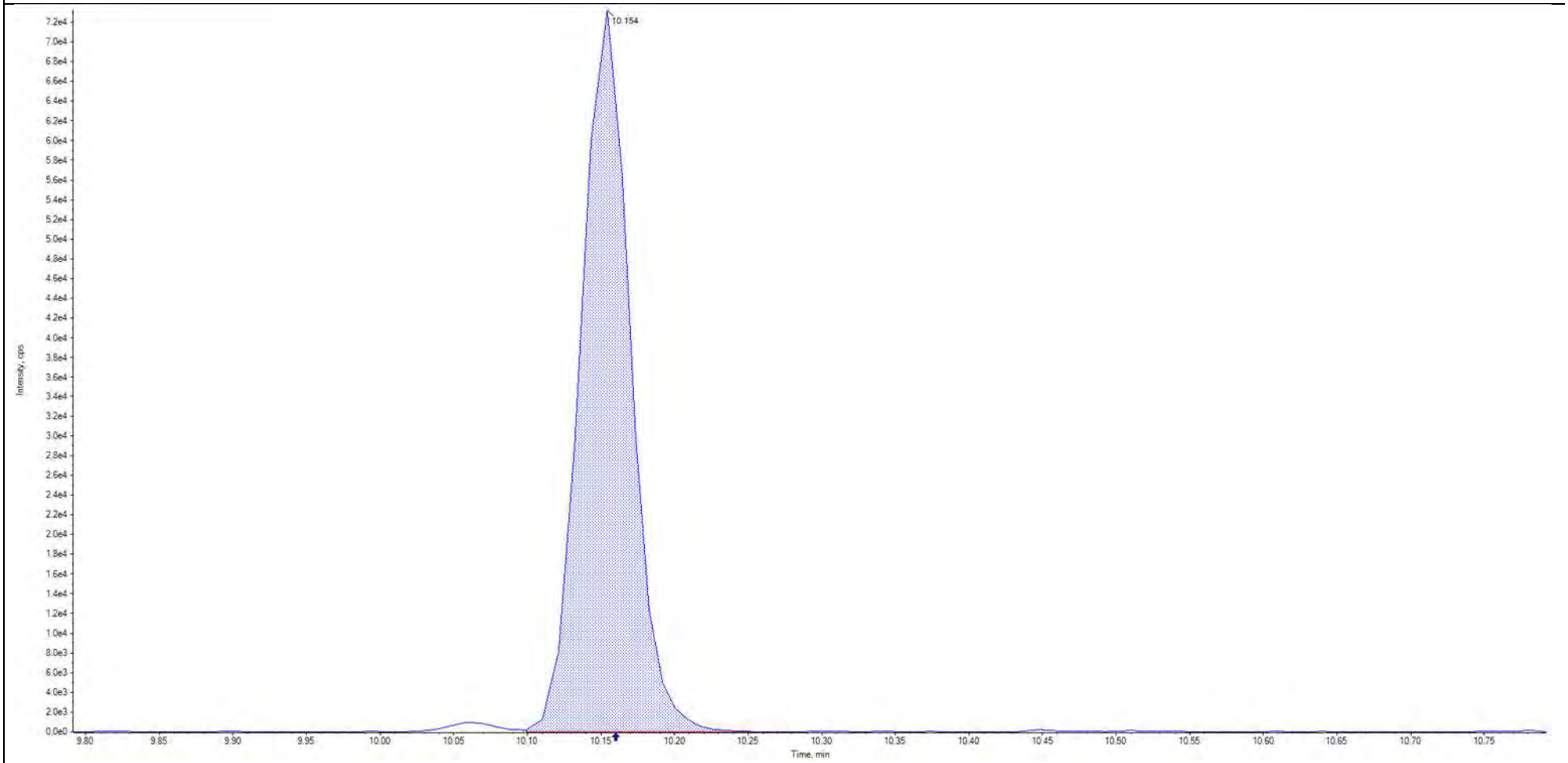
13C2-8:2FTS
Sample: WG1973506-3,1633MED



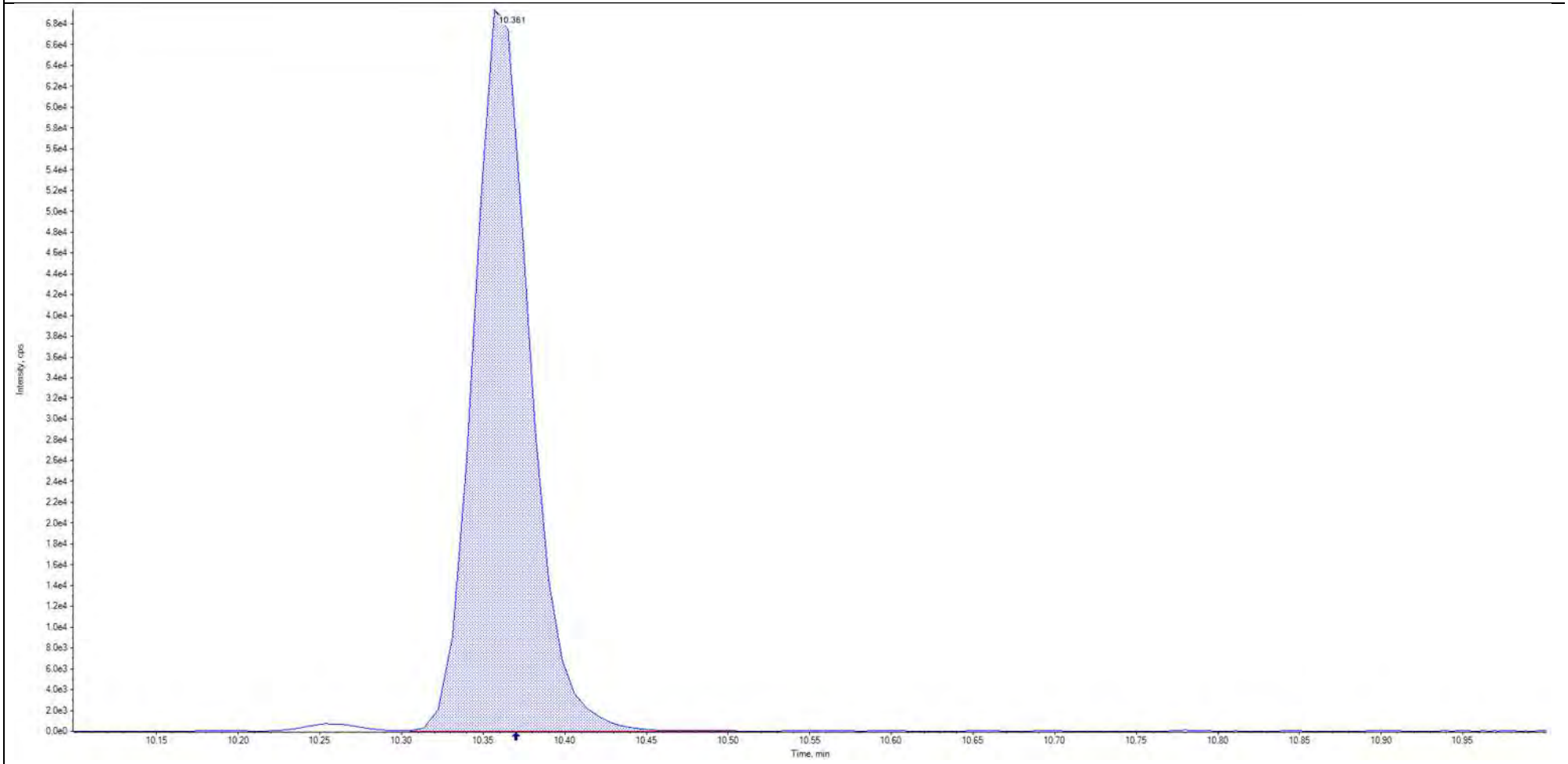
13C8-PFOSA
Sample: WG1973506-3,1633MED



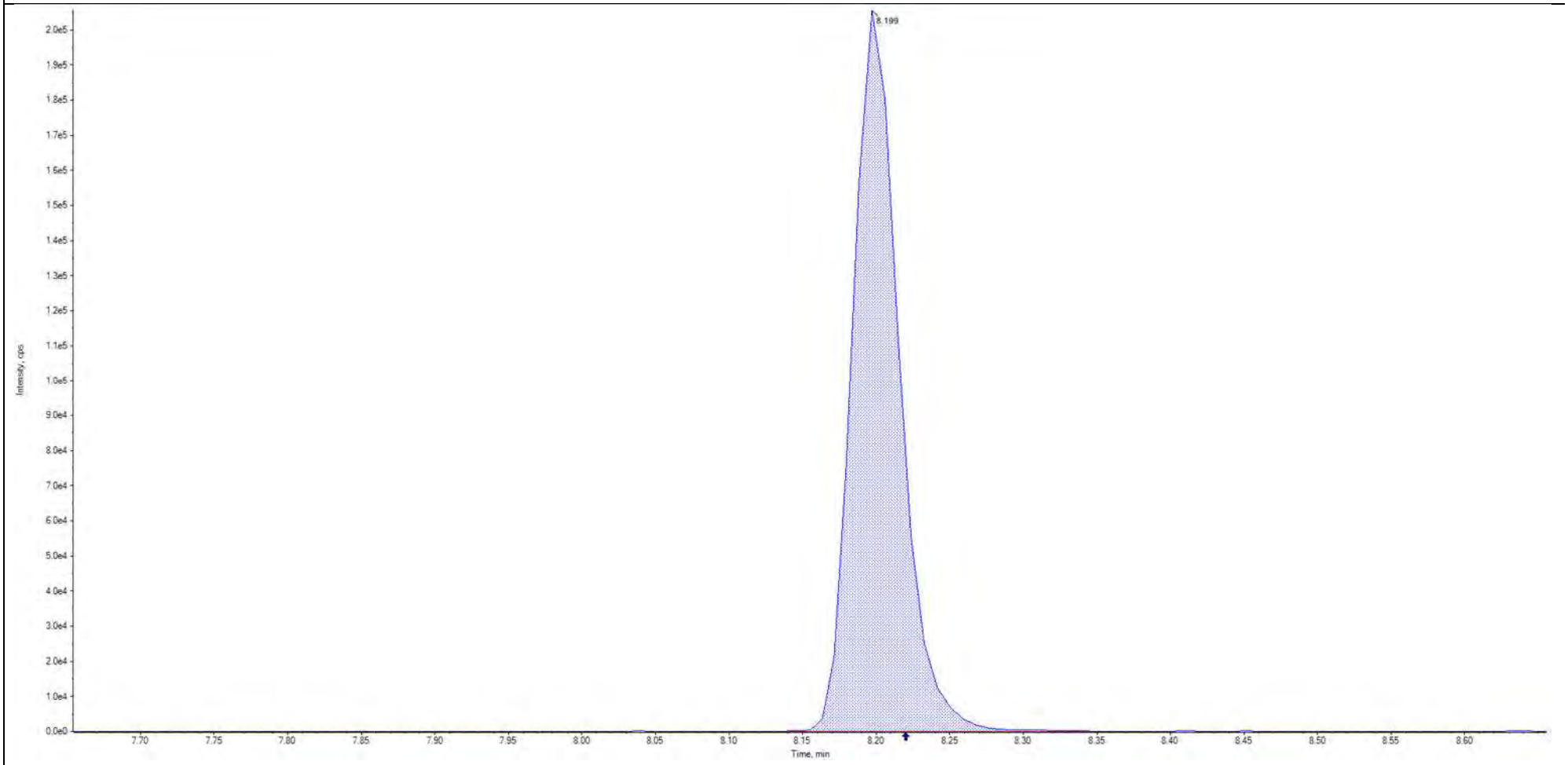
d3-NMeFOSA
Sample: WG1973506-3,1633MED



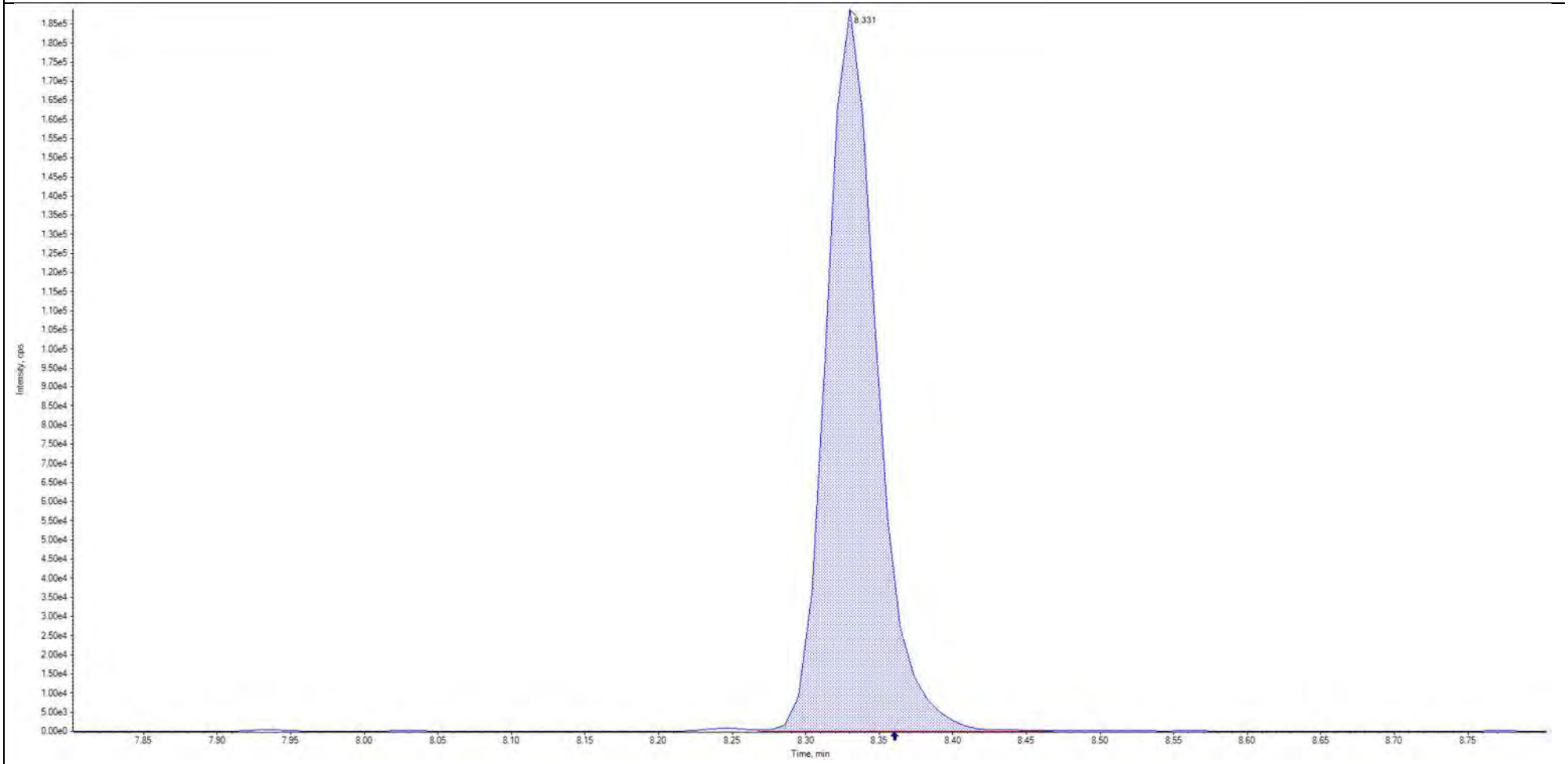
d5-NEtFOSA
Sample: WG1973506-3,1633MED



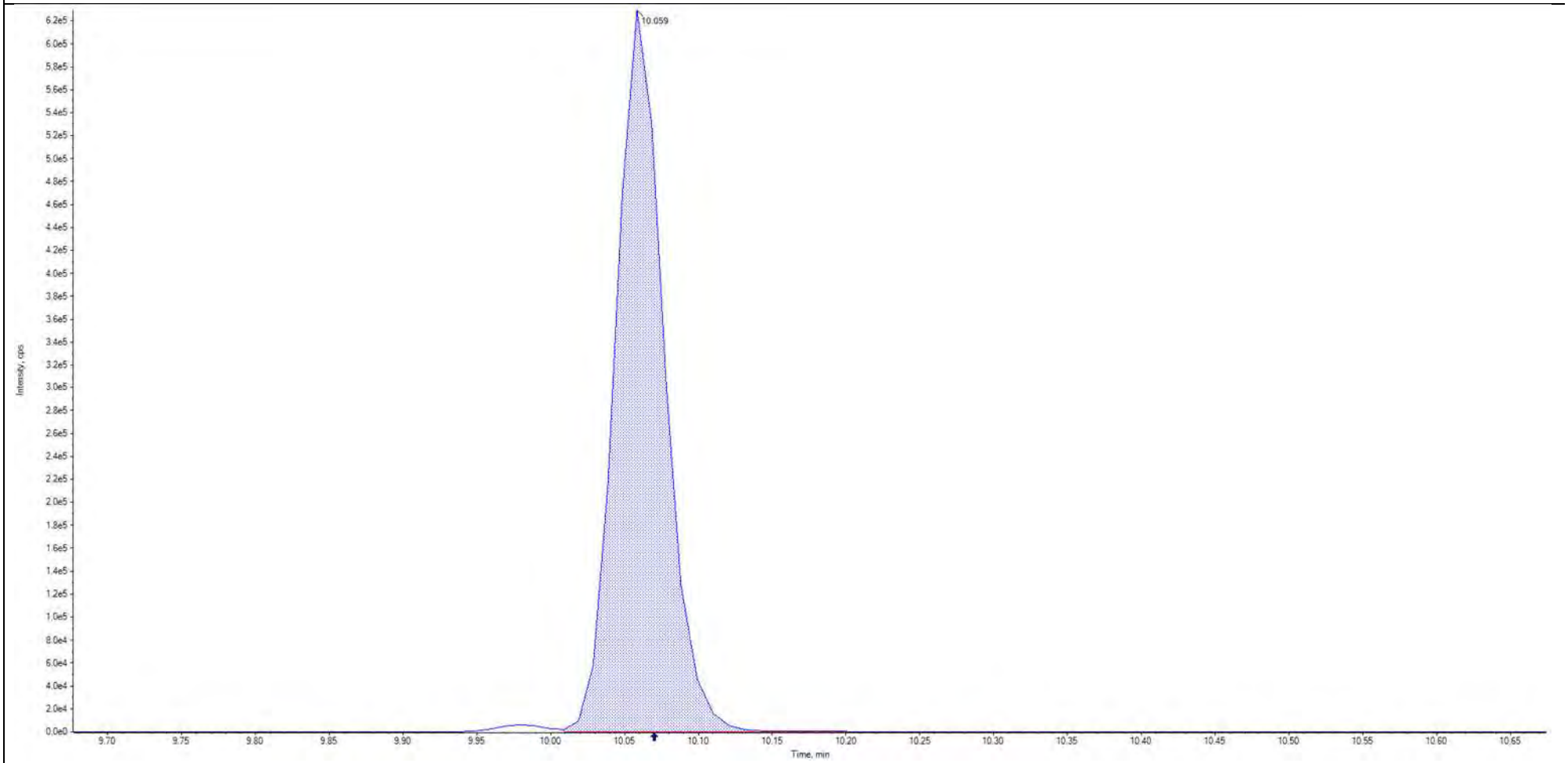
d3-NMeFOSAA
Sample: WG1973506-3,1633MED



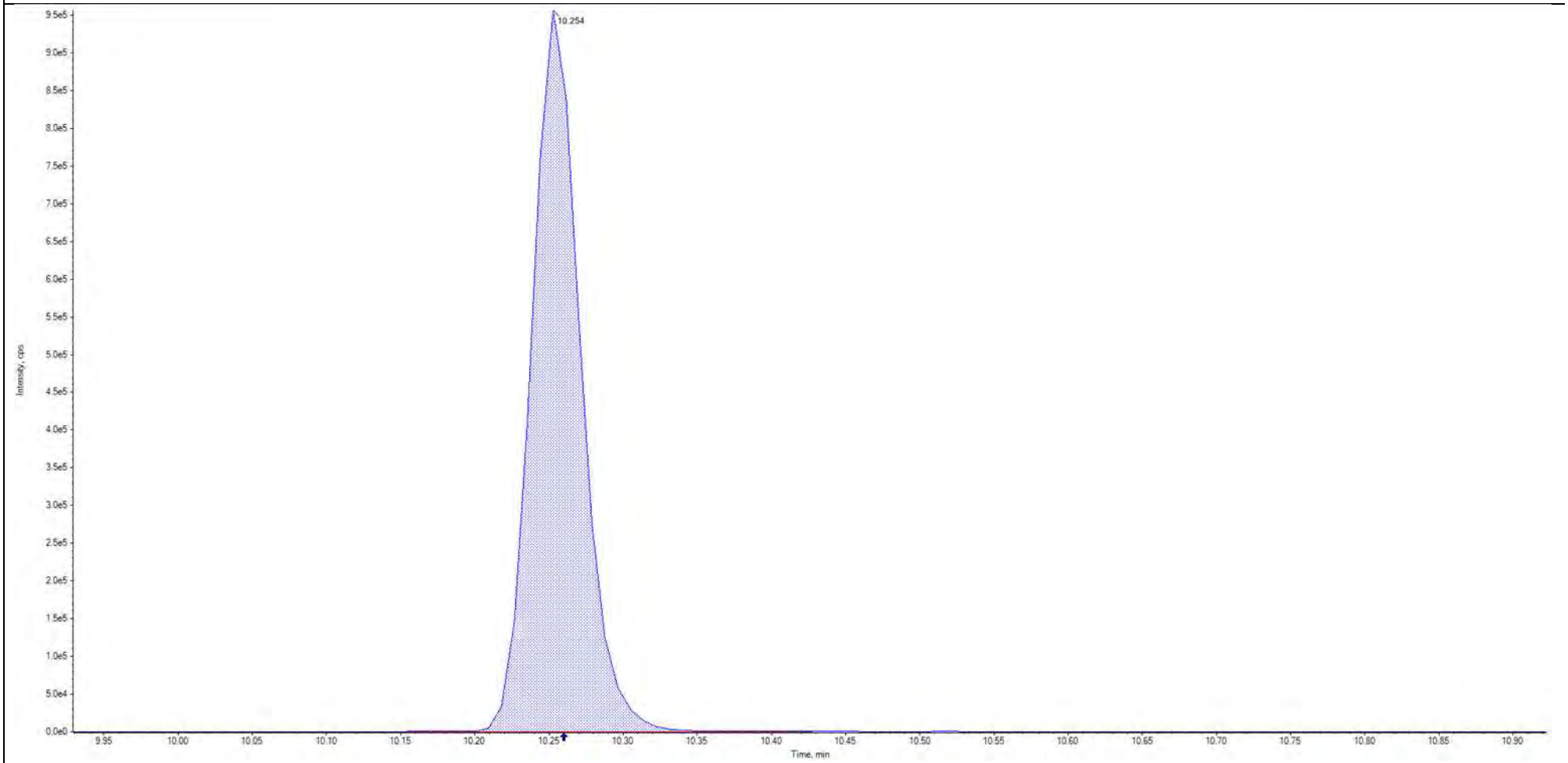
d5-NEtFOSAA
Sample: WG1973506-3,1633MED



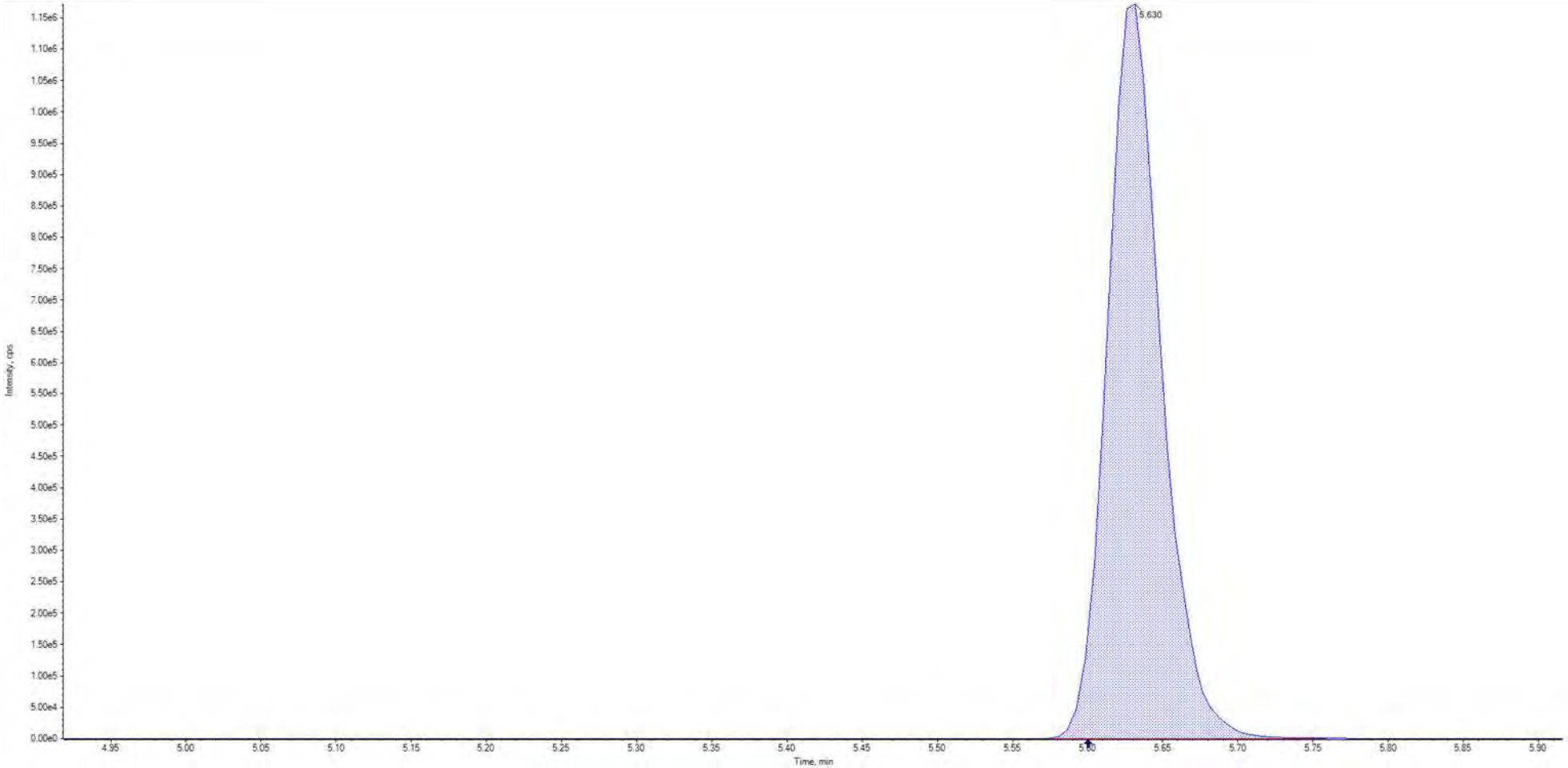
d7-NMeFOSE
Sample: WG1973506-3,1633MED



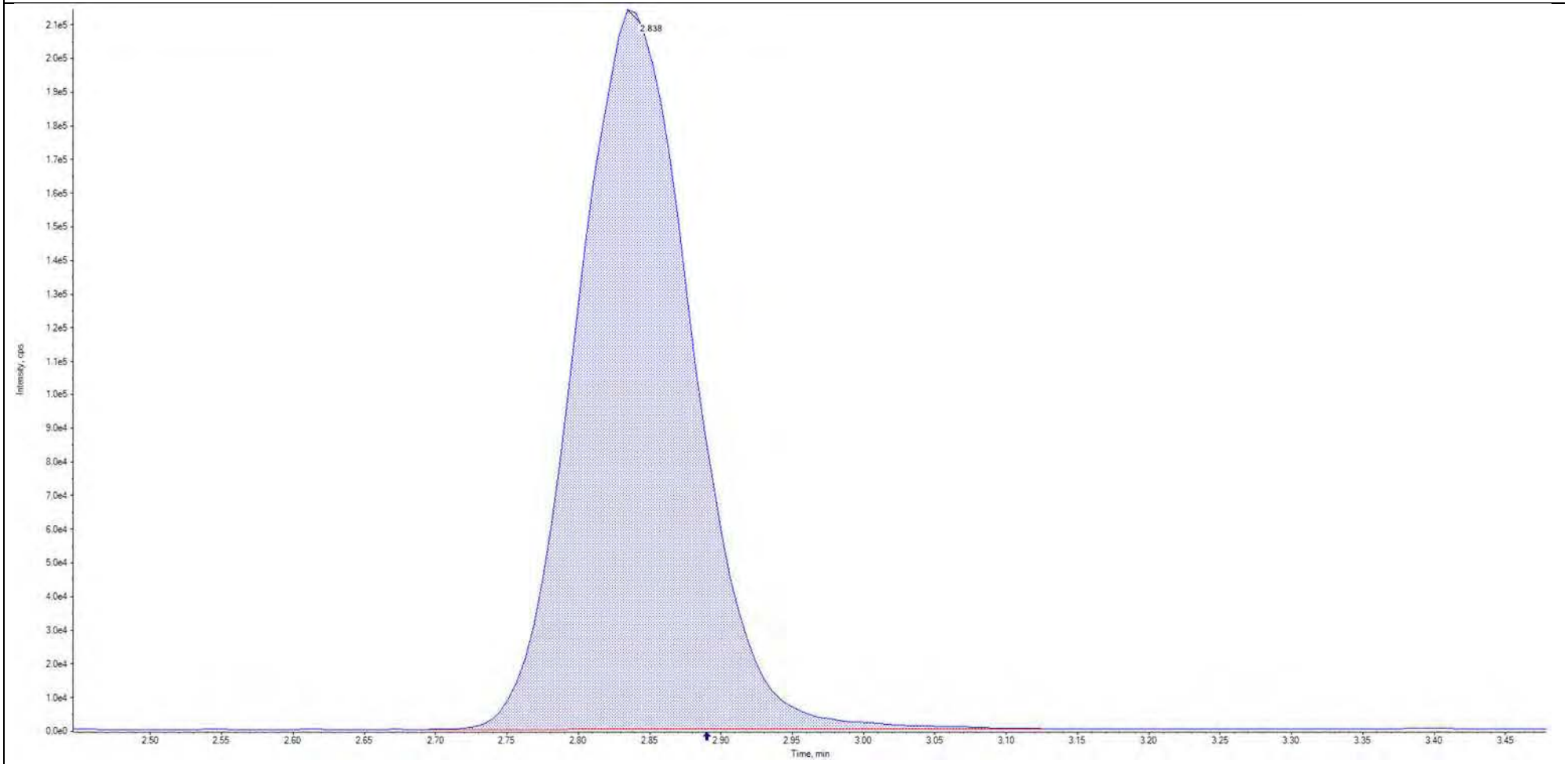
d9-NEtFOSE
Sample: WG1973506-3,1633MED



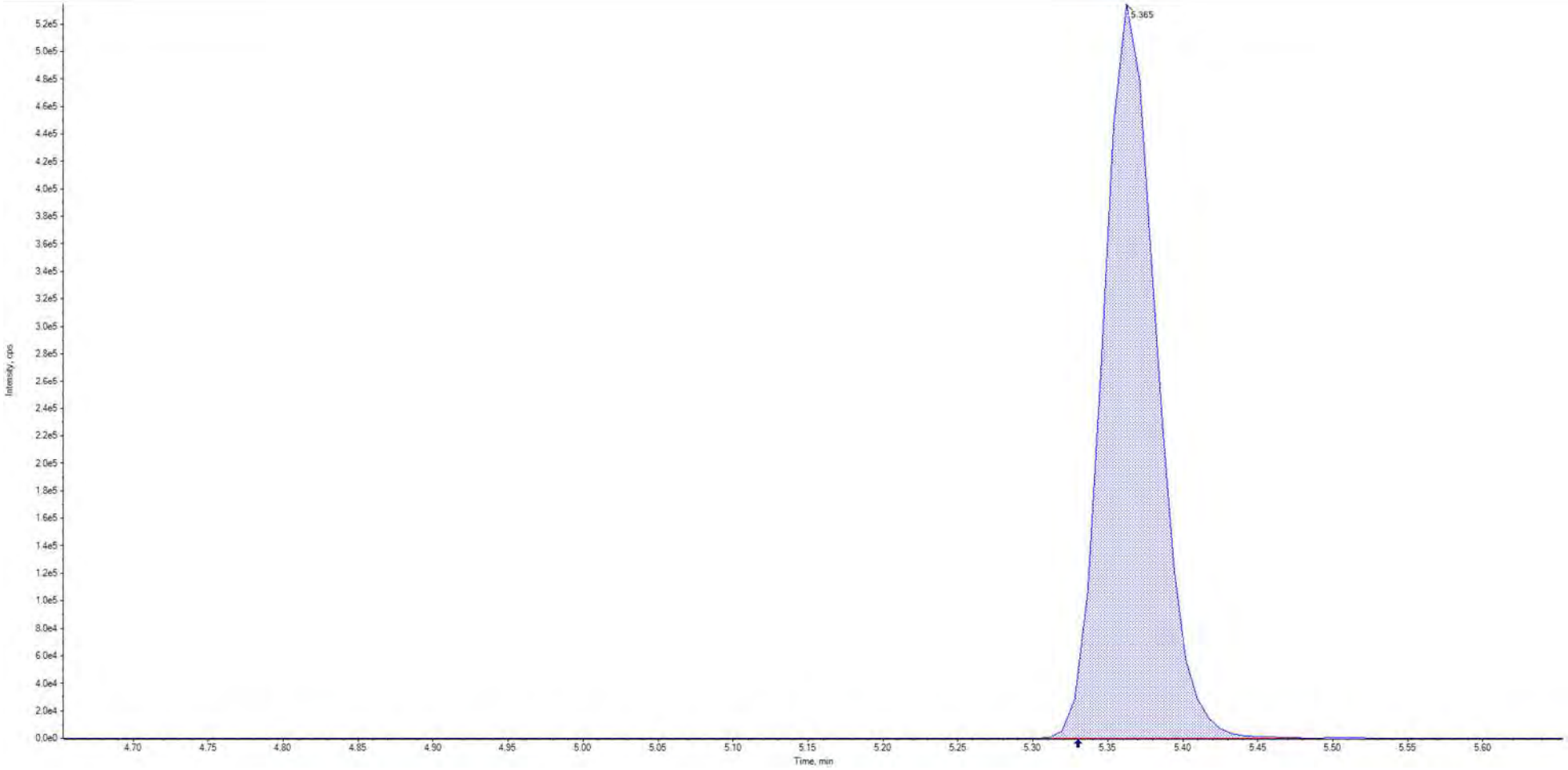
13C3-HFPO-DA
Sample: WG1973506-3,1633MED



13C3-PFBA
Sample: WG1973506-3,1633MED



13C2-PFHxA
Sample: WG1973506-3,1633MED



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
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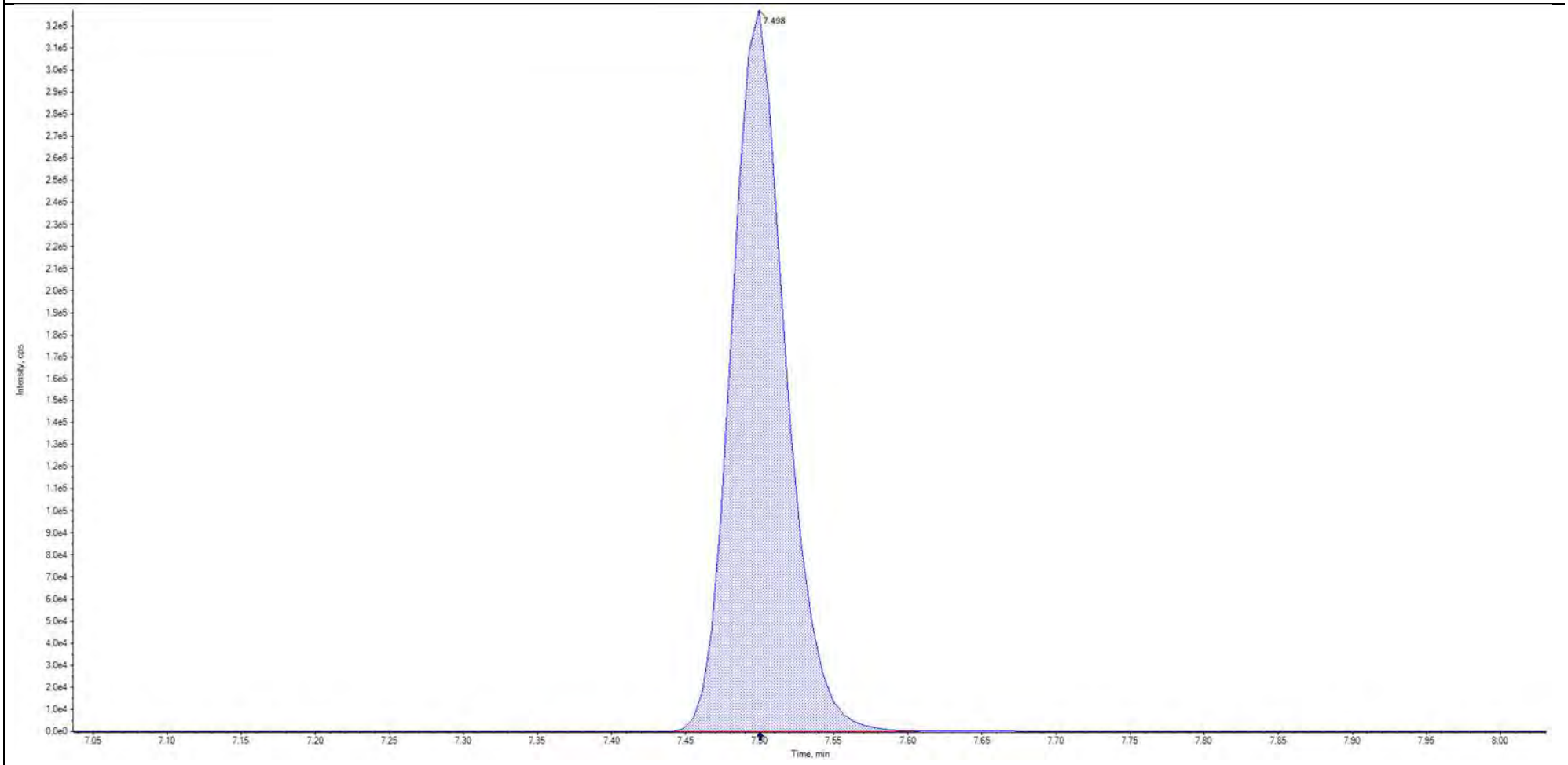
Generated: 9/19/2024 8:04:31 AM

13C4-PFOA
Sample: WG1973506-3,1633MED



13C5-PFNA
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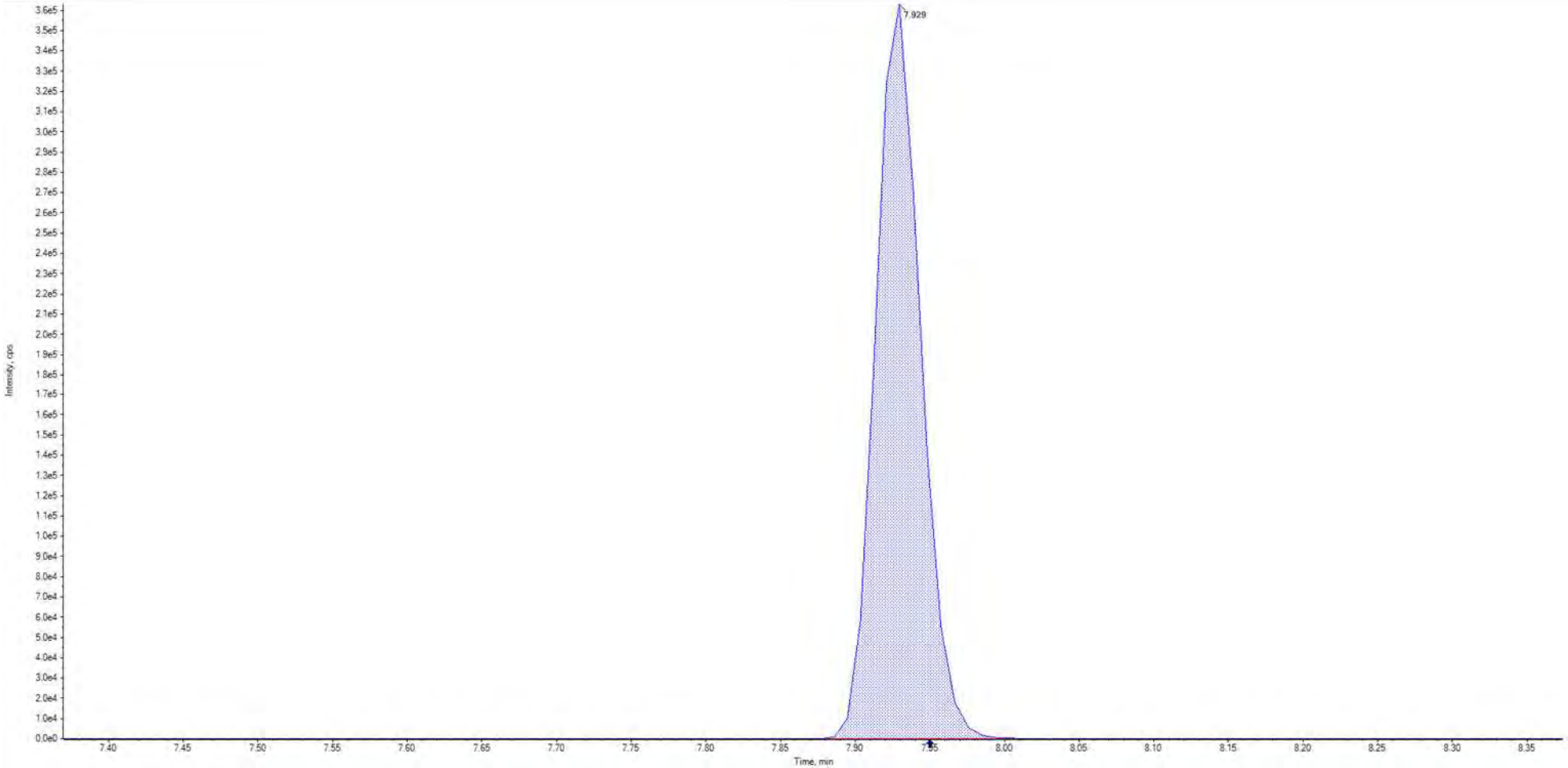
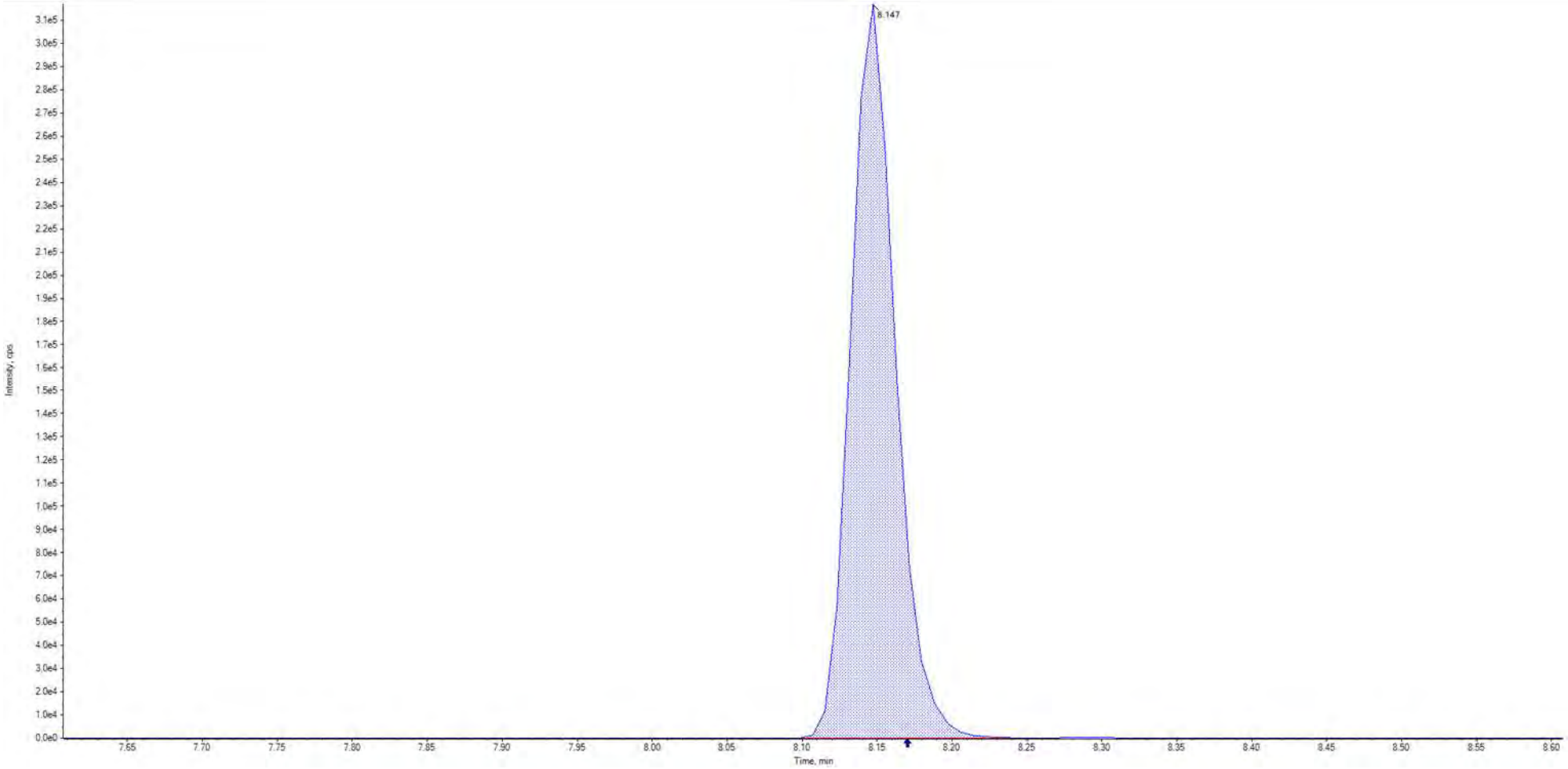
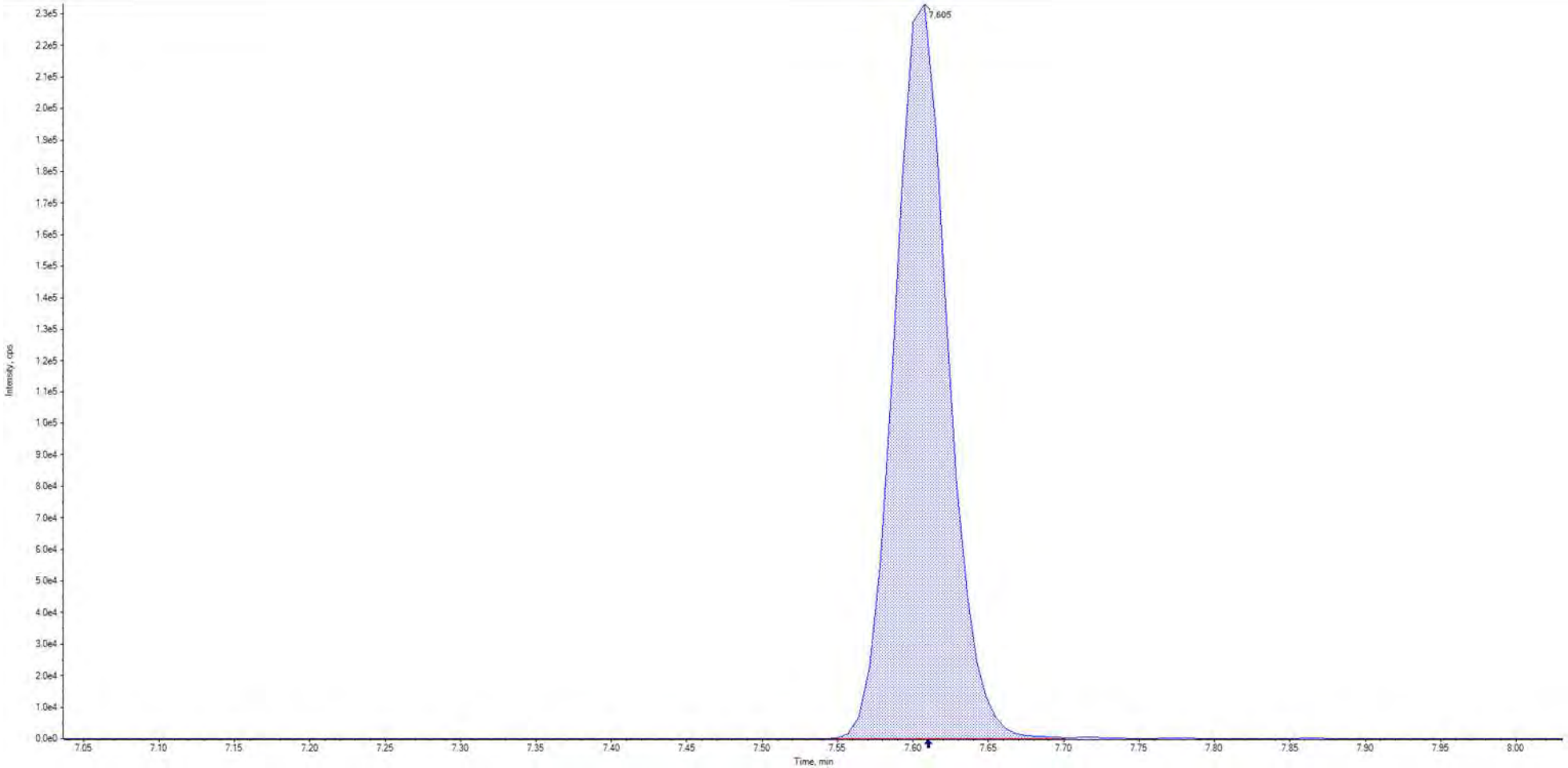


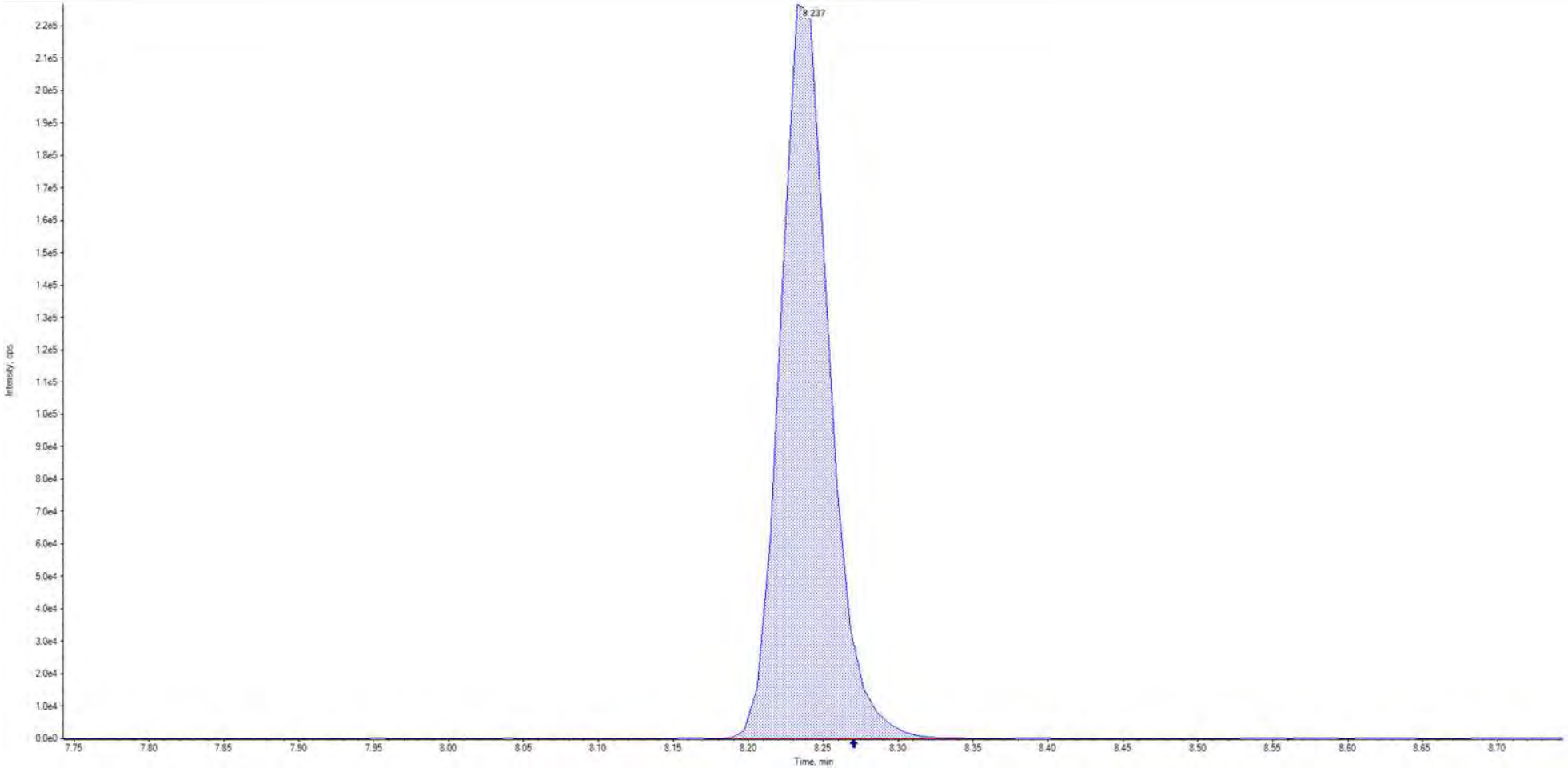
13C2-PFDA
Sample: WG1973506-3,1633MED



18O2-PFHxS
Sample: WG1973506-3,1633MED



13C4-PFOS
Sample: WG1973506-3,1633MED



Quantity Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_08.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

Method: EPA1633_NIS_CALC.qmethod
Calibration: 240813_1633_ICAL

ID: WG1973506-8,1633MED
Name: SCI05_240919_25.wiff
Date & Time: 2024-09-19T10:27:36
Description: WG1973506,WG1970000,ICAL21391,1633MED
Instrument: Triple Quad 5500+
User: LCMS05:AC

LC/MS-MS Method:EPA_1633.dam

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
1	PFBA	375-22-4	2.83	213.0 / 169.0	2406435		10.537	N/A	N/A	N/A	105.4
2	PFPeA	2706-90-3	4.66	263.0 / 219.0	1913387		5.679	0.007	0.007	N/A	113.6
3	PFPeA_2	2706-90-3	4.66	263.0 / 68.9	12948		5.443	0.007	0.007	N/A	108.9
4	PFHxA	307-24-4	5.35	313.0 / 269.0	1366663		2.503	0.084	0.072	Pass	100.1
5	PFHxA_2	307-24-4	5.35	313.0 / 119.0	114800		2.845	0.084	0.072	Pass	113.8
6	PFHpA	375-85-9	6.24	363.1 / 319.0	1424082		2.685	0.302	0.297	Pass	107.4
7	PFHpA_2	375-85-9	6.24	363.1 / 169.0	430100		2.650	0.302	0.297	Pass	106.0

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
8	PFOA	335-67-1	7.47	413.1 / 369.1	858664	M5	2.384	0.585	0.586	Pass	95.4
9	PFOA_2	335-67-1	7.47	413.1 / 169.0	502095	M7	2.544	0.585	0.586	Pass	101.8
10	PFNA	375-95-1	7.92	462.8 / 418.9	1270467	M5	2.535	0.348	0.313	Pass	101.4
11	PFNA_2	375-95-1	7.92	462.8 / 218.9	441989	M7	2.886	0.348	0.313	Pass	115.4
12	PFDA	335-76-2	8.15	513.1 / 469.1	1603047		2.703	0.153	0.142	Pass	108.1
13	PFDA_2	335-76-2	8.15	513.1 / 219.0	245951		2.767	0.153	0.142	Pass	110.7
14	PFUnA	2058-94-8	8.42	563.1 / 519.1	1317525		2.817	0.188	0.194	Pass	112.7
15	PFUnA_2	2058-94-8	8.42	563.1 / 269.0	247518		2.732	0.188	0.194	Pass	109.3
16	PFDoA	307-55-1	8.83	613.1 / 569.1	1432007		2.031	0.164	0.167	Pass	81.3
17	PFDoA_2	307-55-1	8.83	613.1 / 319.0	234364		1.968	0.164	0.167	Pass	78.7
18	PFTrDA	72629-94-8	9.39	663.1 / 619.1	1006473		2.396	0.195	0.228	Pass	95.8
19	PFTrDA_2	72629-94-8	9.39	663.1 / 169.0	196663		2.102	0.195	0.228	Pass	84.1
20	PFTeDA	376-06-7	9.85	713.1 / 669.1	1341073		2.419	0.139	0.137	Pass	96.8
21	PFTeDA_2	376-06-7	9.85	713.1 / 169.0	186635		2.462	0.139	0.137	Pass	98.5
22	PFBS	375-73-5	5.33	299.1 / 80.1	848799		2.313	0.384	0.396	Pass	104.3

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
23	PFBS_2	375-73-5	5.33	299.1 / 99.1	325987		2.228	0.384	0.396	Pass	100.5
24	PFPeS	2706-91-4	6.32	349.1 / 80.1	724108		2.289	0.295	0.299	Pass	97.3
25	PFPeS_2	2706-91-4	6.32	349.1 / 99.1	213614		2.239	0.295	0.299	Pass	95.1
26	PFHxS	355-46-4	7.58	399.1 / 80.1	698703	M5	2.360	0.294	0.315	Pass	103.3
27	PFHxS_2	355-46-4	7.58	399.1 / 99.1	205231	M7	2.232	0.294	0.315	Pass	97.7
28	PFHpS	375-92-8	7.99	449.1 / 80.1	584425		2.221	0.315	0.287	Pass	93.2
29	PFHpS_2	375-92-8	7.99	449.1 / 99.1	183844		2.384	0.315	0.287	Pass	100.0
30	PFOS	1763-23-1	8.24	499.1 / 80.1	695933	M5	2.484	0.237	0.238	Pass	107.1
31	PFOS_2	1763-23-1	8.24	499.1 / 99.1	165170		2.406	0.237	0.238	Pass	103.7
32	PFNS	68259-12-1	8.56	549.1 / 80.1	488803		2.717	0.306	0.301	Pass	113.0
33	PFNS_2	68259-12-1	8.56	549.1 / 99.1	149517		2.744	0.306	0.301	Pass	114.1
34	PFDS	335-77-3	9.05	599.1 / 80.1	466662		2.634	0.273	0.275	Pass	109.1
35	PFDS_2	335-77-3	9.05	599.1 / 99.1	127374		2.608	0.273	0.275	Pass	108.1
36	PFDoS	79780-39-5	9.96	699.2 / 80.1	421362		2.596	0.290	0.274	Pass	107.1
37	PFDoS_2	79780-39-5	9.96	699.2 / 99.1	122008		2.736	0.290	0.274	Pass	112.8

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
38	4:2FTS	757124-72-4	5.16	327.1 / 307.1	1195632		9.043	0.537	0.516	Pass	96.5
39	4:2FTS_2	757124-72-4	5.15	327.1 / 81.1	642244		9.080	0.537	0.516	Pass	96.9
40	6:2FTS	27619-97-2	7.06	427.2 / 407.2	849992		10.817	0.564	0.565	Pass	113.9
41	6:2FTS_2	27619-97-2	7.06	427.2 / 81.1	479385		11.279	0.564	0.565	Pass	118.7
42	8:2FTS	39108-34-4	8.05	527.2 / 507.2	2621848		11.677	0.671	0.662	Pass	121.6
43	8:2FTS_2	39108-34-4	8.05	527.2 / 81.1	1760139		11.557	0.671	0.662	Pass	120.4
44	PFOSA	754-91-6	9.51	498.1 / 78.1	901281	M5	2.752	0.026	0.025	Pass	110.1
45	PFOSA_2	754-91-6	9.51	498.1 / 478.0	23280	M7	2.709	0.026	0.025	Pass	108.4
46	NMeFOSA	31506-32-8	10.16	512.2 / 219.0	216099	M5	2.746	1.423	1.551	Pass	109.8
47	NMeFOSA_2	31506-32-8	10.11	512.2 / 169.0	307608	M7	2.522	1.423	1.551	Pass	100.9
48	NEtFOSA	4151-50-2	10.37	526.2 / 219.0	194261	M5	2.727	1.365	1.285	Pass	109.1
49	NEtFOSA_2	4151-50-2	10.32	526.2 / 169.0	265123	M7	2.781	1.365	1.285	Pass	111.2
50	NMeFOSAA	2355-31-9	8.20	570.2 / 419.1	340282	M4	2.931	0.718	0.700	Pass	117.2
51	NMeFOSAA_2	2355-31-9	8.20	570.2 / 483.0	244259	M7	3.308	0.718	0.700	Pass	132.3
52	NEtFOSAA	2991-50-6	8.33	584.2 / 419.1	434780		2.644	0.448	0.487	Pass	105.7

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
53	NEtFOSAA_2	2991-50-6	8.33	584.2 / 526.2	194903	M7	2.575	0.448	0.487	Pass	103.0
54	NMeFOSE	24448-09-7	10.07	616.1 / 58.9	4915148	M5	27.664	N/A	N/A	N/A	110.7
55	NEtFOSE	1691-99-2	10.27	630.0 / 58.9	7425882	M5	26.854	N/A	N/A	N/A	107.4
56	HFPO-DA	13252-13-6	5.61	285.0 / 169.0	3031010		10.844	0.460	0.464	Pass	108.4
57	HFPO-DA_2	13252-13-6	5.61	285.0 / 184.9	1394529		10.730	0.460	0.464	Pass	107.3
58	ADONA	919005-14-4	6.70	377.1 / 251.0	6316621		9.937	0.654	0.634	Pass	105.2
59	ADONA_2	919005-14-4	6.70	377.1 / 84.8	4133529		10.050	0.654	0.634	Pass	106.4
60	9Cl-PF3ONS	756426-58-1	8.44	530.8 / 351.1	6454609		10.298	0.327	0.322	Pass	110.1
61	9Cl-PF3ONS_2	756426-58-1	8.44	532.8 / 353.0	2112998		10.353	0.327	0.322	Pass	110.7
62	11Cl-PF3OUdS	763051-92-9	9.47	630.9 / 451.0	3978553		10.050	0.329	0.331	Pass	106.3
63	11Cl-PF3OUdS_2	763051-92-9	9.47	632.9 / 452.9	1309017		9.824	0.329	0.331	Pass	104.0
64	3:3FTCA	356-02-5	4.94	241.1 / 177.1	421753		14.431	0.871	1.074	Pass	115.5
65	3:3FTCA_2	356-02-5	4.94	241.1 / 117.0	367332		12.550	0.871	1.074	Pass	100.4
66	5:3FTCA	914637-49-3	7.16	341.1 / 237.1	7094325		71.611	0.926	0.953	Pass	114.6
67	5:3FTCA_2	914637-49-3	7.16	341.1 / 217.0	6570627		70.094	0.926	0.953	Pass	112.2

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
68	7:3FTCA	812-70-4	8.19	441.1 / 316.9	8998670		81.593	1.476	1.558	Pass	130.6
69	7:3FTCA_2	812-70-4	8.19	441.1 / 337.1	13277844		82.965	1.476	1.558	Pass	132.7
70	PFEESA	113507-82-7	5.71	315.1 / 135.0	4482859		4.732	0.085	0.087	Pass	106.3
71	PFEESA_2	113507-82-7	5.71	315.1 / 82.9	383273		4.683	0.085	0.087	Pass	105.2
72	PFMPA	377-73-1	3.87	229.0 / 85.0	232276		5.696	N/A	N/A	N/A	113.9
73	PFMBA	863090-89-5	4.89	279.0 / 85.0	2919441		5.309	N/A	N/A	N/A	106.2
74	NFDHA	151772-58-6	5.27	295.0 / 201.0	525343		5.267	1.025	0.910	Pass	105.3
75	NFDHA_2	151772-58-6	5.27	295.0 / 84.9	538328		5.887	1.025	0.910	Pass	117.8
76	TDCA	516-50-7	N/A	499.1 / 124.1	N/A		N/A	N/A	40.716	N/A	N/A
77	TDCA_2	516-50-7	N/A	499.1 / 79.9	N/A		N/A	N/A	40.716	N/A	N/A
78	13C2D4-4:2FTS	Surr	5.14	333.2 / 312.1	421033		2.093	N/A	N/A	N/A	41.9
79	13C2-PFOA	Surr	7.46	415.0 / 370.0	1603120		1.079	N/A	N/A	N/A	43.2

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C4-PFBA	EIS	2.83	217.0 / 172.0	2816048		10.451	NA	NA	NA	104.5

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C5-PFPeA	EIS	4.65	268.0 / 223.0	1827151		5.513	NA	NA	NA	110.3
	13C5-PFHxA	EIS	5.35	318.0 / 273.0	1120486		2.574	NA	NA	NA	102.9
	13C4-PFHpA	EIS	6.23	367.0 / 322.0	1132194		2.597	NA	NA	NA	103.9
	13C8-PFOA	EIS	7.46	421.0 / 376.0	1730916		2.580	NA	NA	NA	103.2
	13C9-PFNA	EIS	7.92	472.0 / 427.0	855902		1.331	NA	NA	NA	106.4
	13C6-PFDA	EIS	8.14	519.0 / 474.0	860364		1.300	NA	NA	NA	104.0
	13C7-PFUnA	EIS	8.41	570.0 / 525.0	739758		1.381	NA	NA	NA	110.5

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C2-PFDoA	EIS	8.82	615.1 / 570.0	677679		1.945	NA	NA	NA	155.6
	13C2-PFTeDA	EIS	9.85	715.1 / 670.1	552977		1.462	NA	NA	NA	117.0
	13C3-PFBS	EIS	5.32	302.1 / 80.1	874538		2.333	NA	NA	NA	100.1
	13C3-PFHxS	EIS	7.58	402.1 / 80.1	741762		2.492	NA	NA	NA	105.1
	13C8-PFOS	EIS	8.23	507.1 / 80.1	682096		2.550	NA	NA	NA	106.5
	13C2-4:2FTS	EIS	5.15	329.1 / 81.1	316427		4.731	NA	NA	NA	100.9
	13C2-6:2FTS	EIS	7.06	429.2 / 81.1	227760		4.646	NA	NA	NA	97.7
	13C2-8:2FTS	EIS	8.04	529.2 / 81.1	850354		11.853	NA	NA	NA	246.9

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C8-PFOSA	EIS	9.51	506.1 / 78.1	1225025		3.444	NA	NA	NA	137.8
	d3-NMeFOSA	EIS	10.15	515.2 / 219.0	183736		3.069	NA	NA	NA	122.8
	d5-NEtFOSA	EIS	10.36	531.2 / 219.0	162142		2.772	NA	NA	NA	110.9
	d3-NMeFOSAA	EIS	8.19	573.2 / 419.1	882201		6.518	NA	NA	NA	130.4
	d5-NEtFOSAA	EIS	8.32	589.3 / 419.1	882079		12.401	NA	NA	NA	248.0
	d7-NMeFOSE	EIS	10.06	623.2 / 58.9	1800502		38.942	NA	NA	NA	155.8
	d9-NEtFOSE	EIS	10.25	639.2 / 58.9	2355679		34.557	NA	NA	NA	138.2

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C3-HFPO-DA	EIS	5.61	287.0 / 169.0	3049000		10.567	NA	NA	NA	105.7
	13C3-PFBA	NIS	2.83	216.0 / 172.0	1178708		5.513	NA	NA	NA	110.3
	13C2-PFHxA	NIS	5.34	315.0 / 270.0	1292726		2.640	NA	NA	NA	105.6
	13C4-PFOA	NIS	7.46	417.0 / 372.0	877808		2.804	NA	NA	NA	112.2
	13C5-PFNA	NIS	7.92	468.0 / 423.0	783702		1.431	NA	NA	NA	114.5
	13C2-PFDA	NIS	8.14	515.1 / 470.1	777664		1.518	NA	NA	NA	121.4
	18O2-PFHxS	NIS	7.57	403.1 / 84.1	605076		2.583	NA	NA	NA	109.0
	13C4-PFOS	NIS	8.23	503.1 / 80.1	473220		2.248	NA	NA	NA	93.8

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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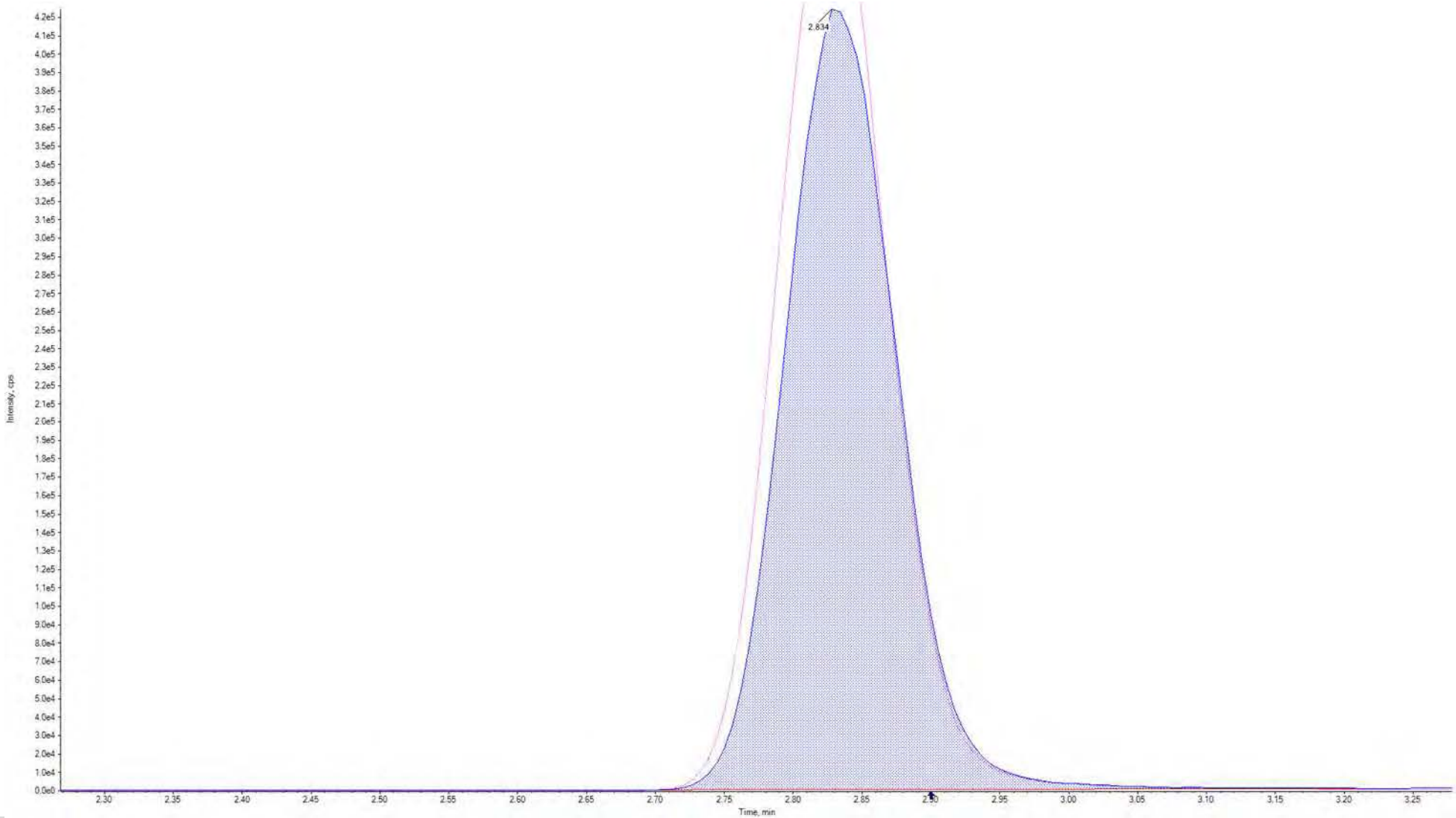
PFBA
Sample: WG1973506-8,1633MED S/N:3203.6 Points Across peak:84



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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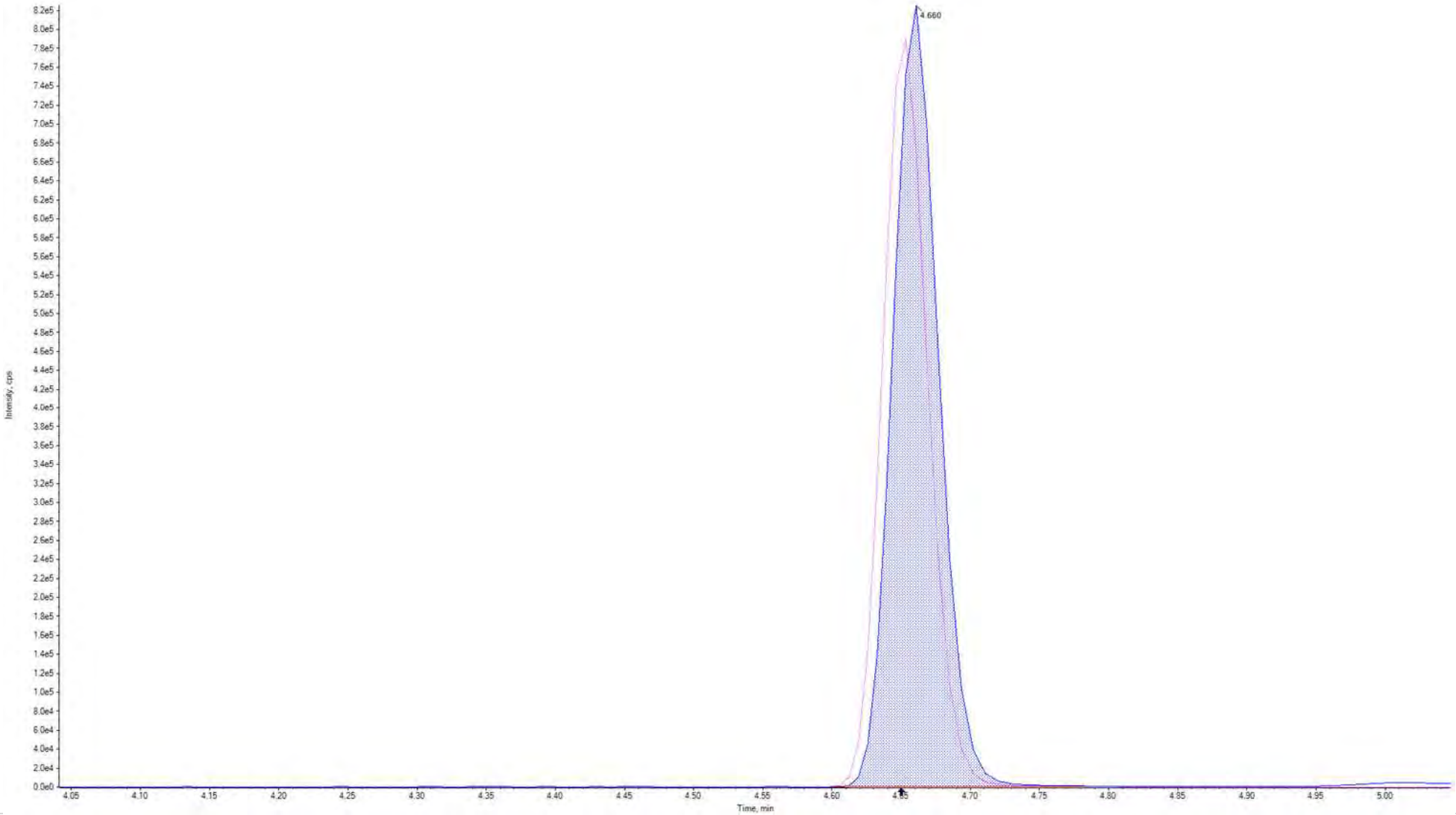
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFPeA
Sample: WG1973506-8,1633MED S/N:3111.4 Points Across peak:31



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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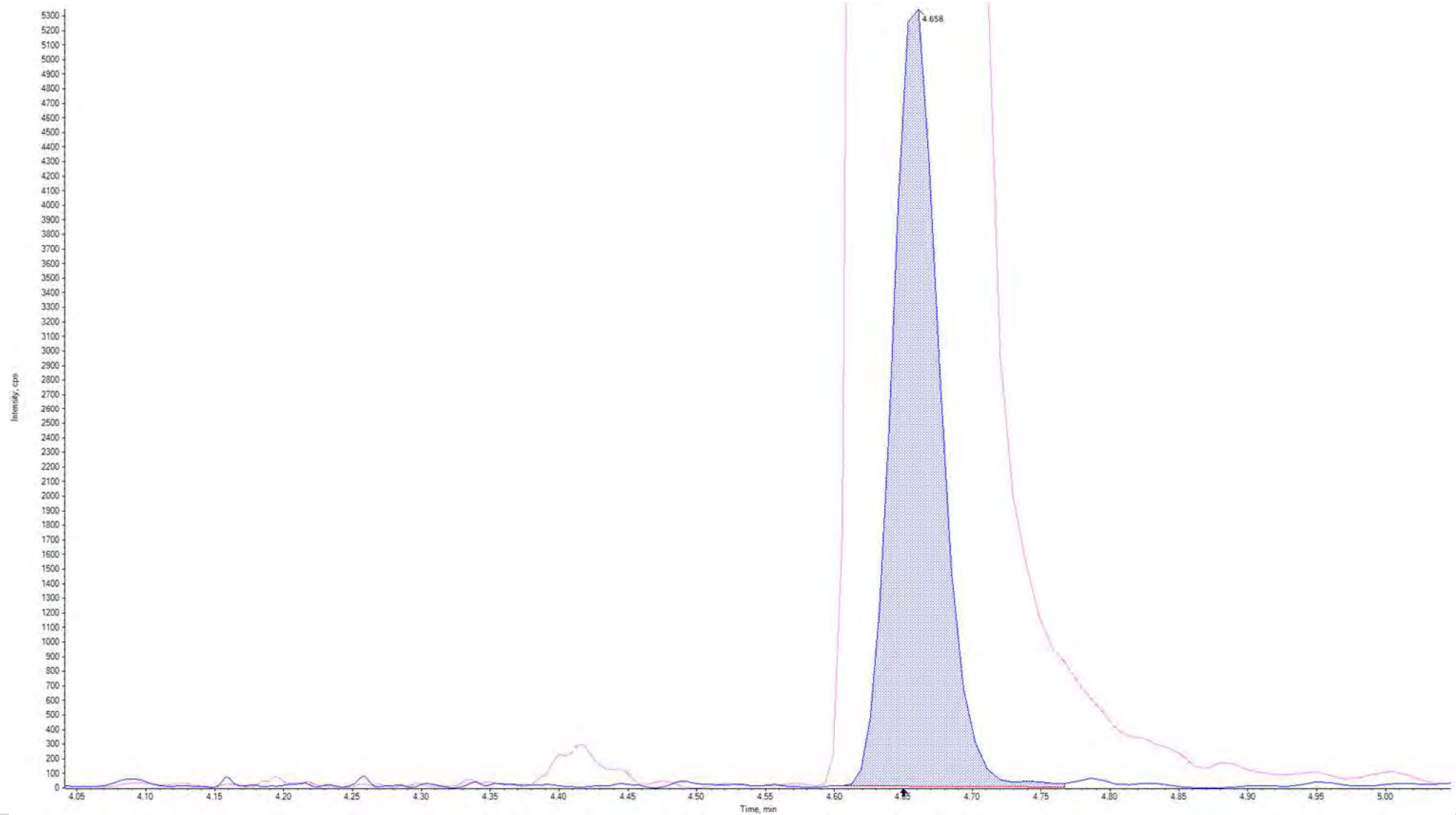
Generated: 9/19/2024 8:04:31 AM

PFPeA_2
Sample: WG1973506-8,1633MED S/N:2271.7 Points Across peak:21



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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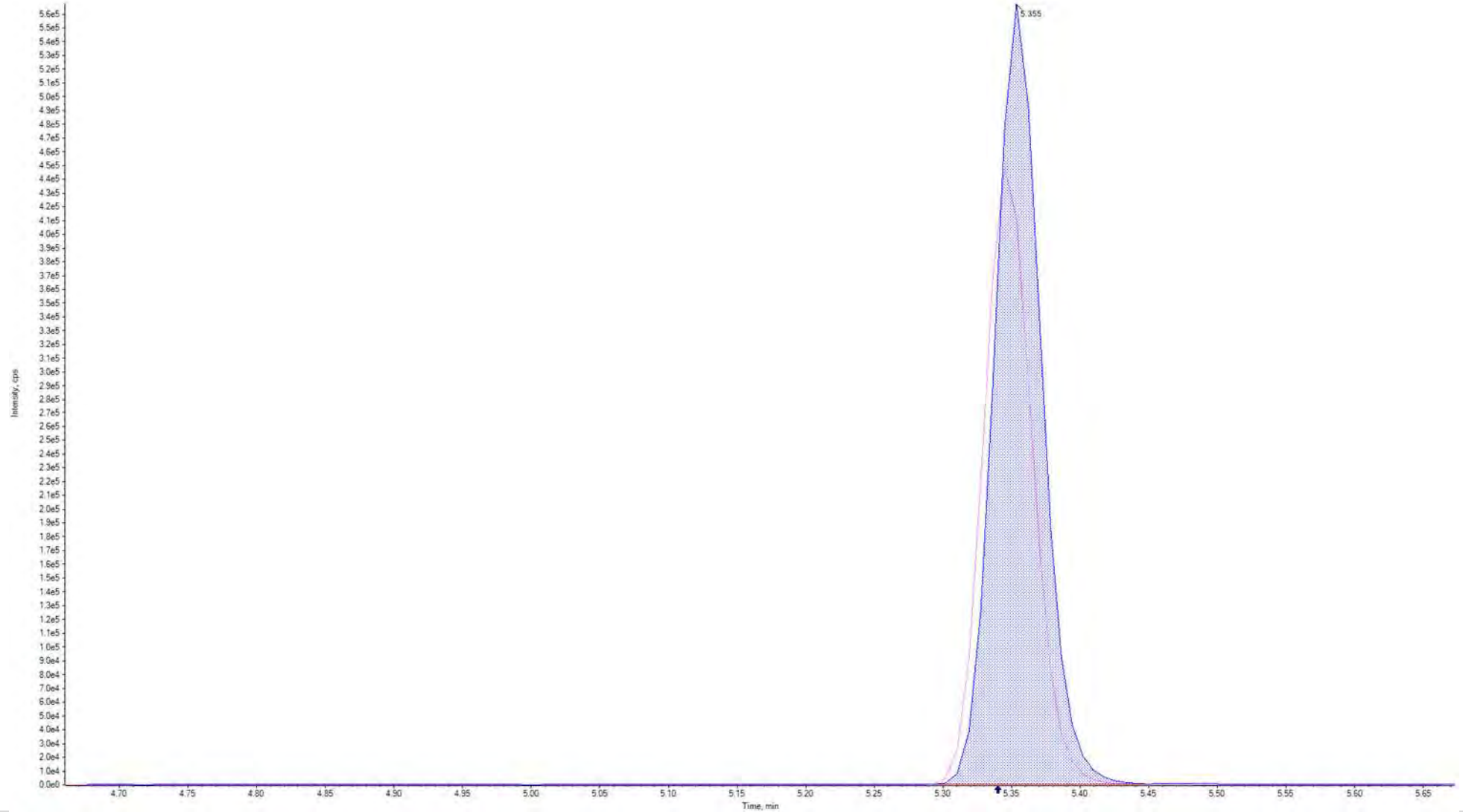
Generated: 9/19/2024 8:04:31 AM

PFHxA
Sample: WG1973506-8,1633MED S/N:1751.7 Points Across peak:21



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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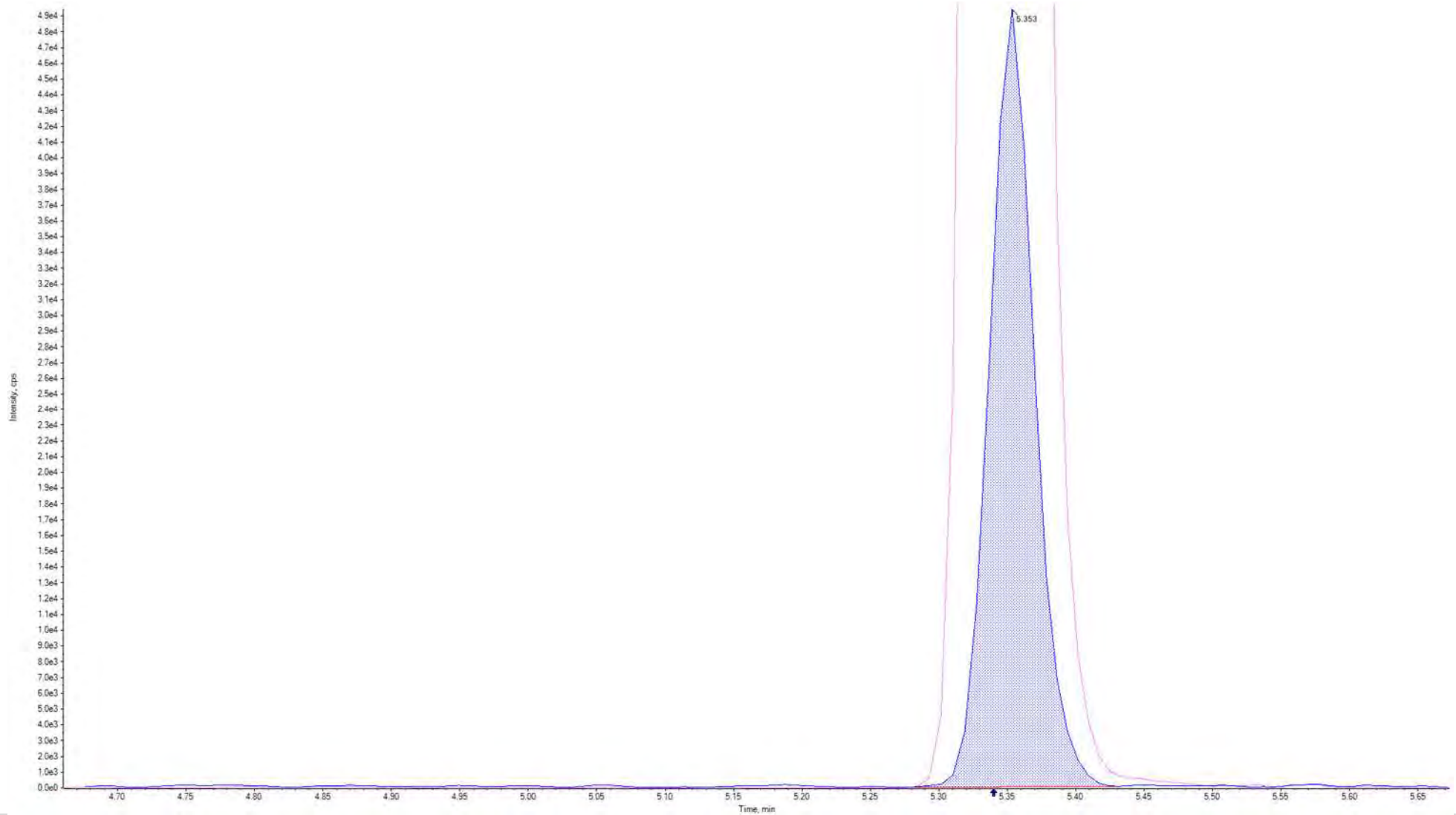
Generated: 9/19/2024 8:04:31 AM

PFHxA_2
Sample: WG1973506-8,1633MED S/N:1363.3 Points Across peak:20



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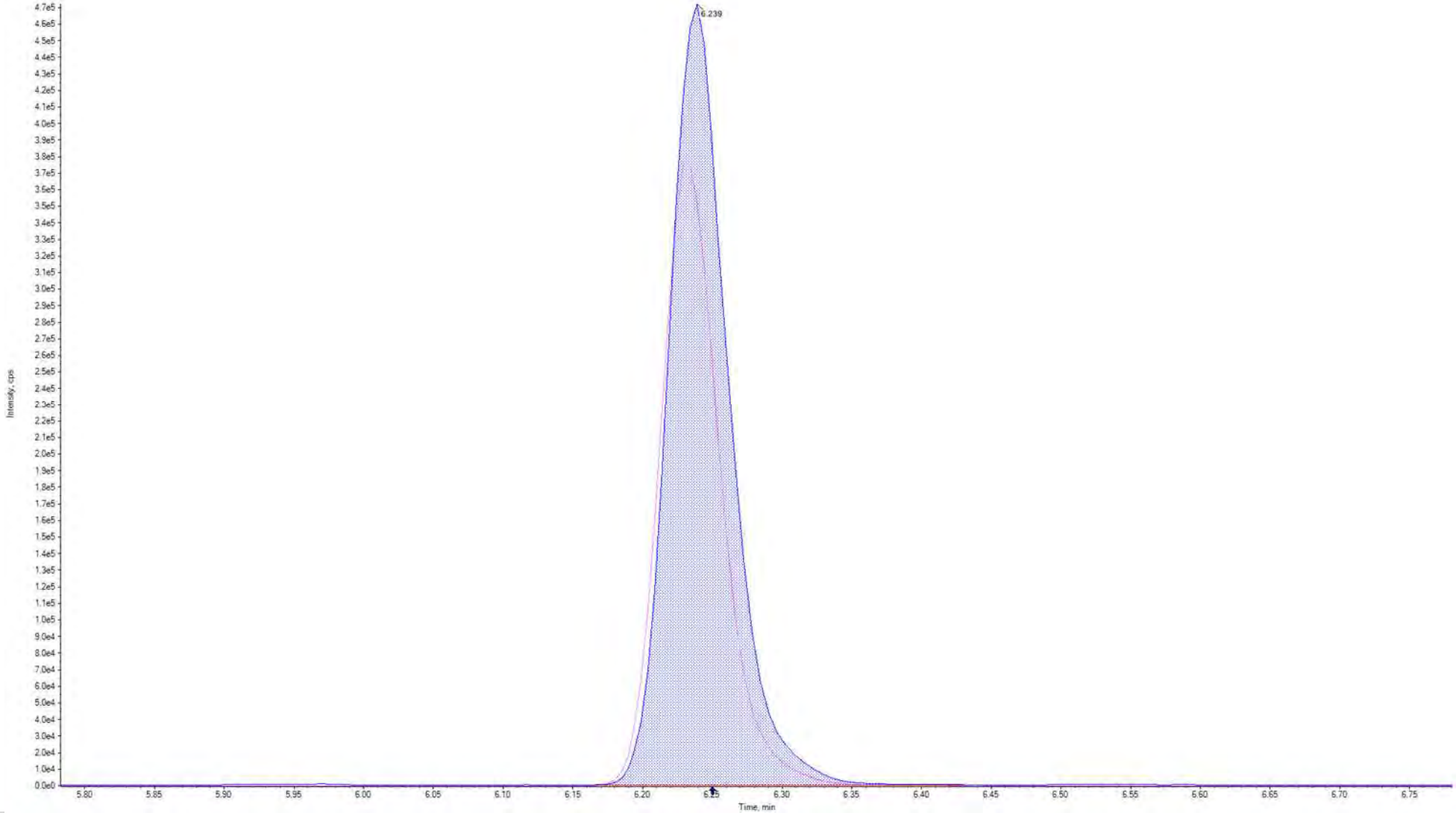
PFHpA
Sample: WG1973506-8,1633MED S/N:2148.7 Points Across peak:53



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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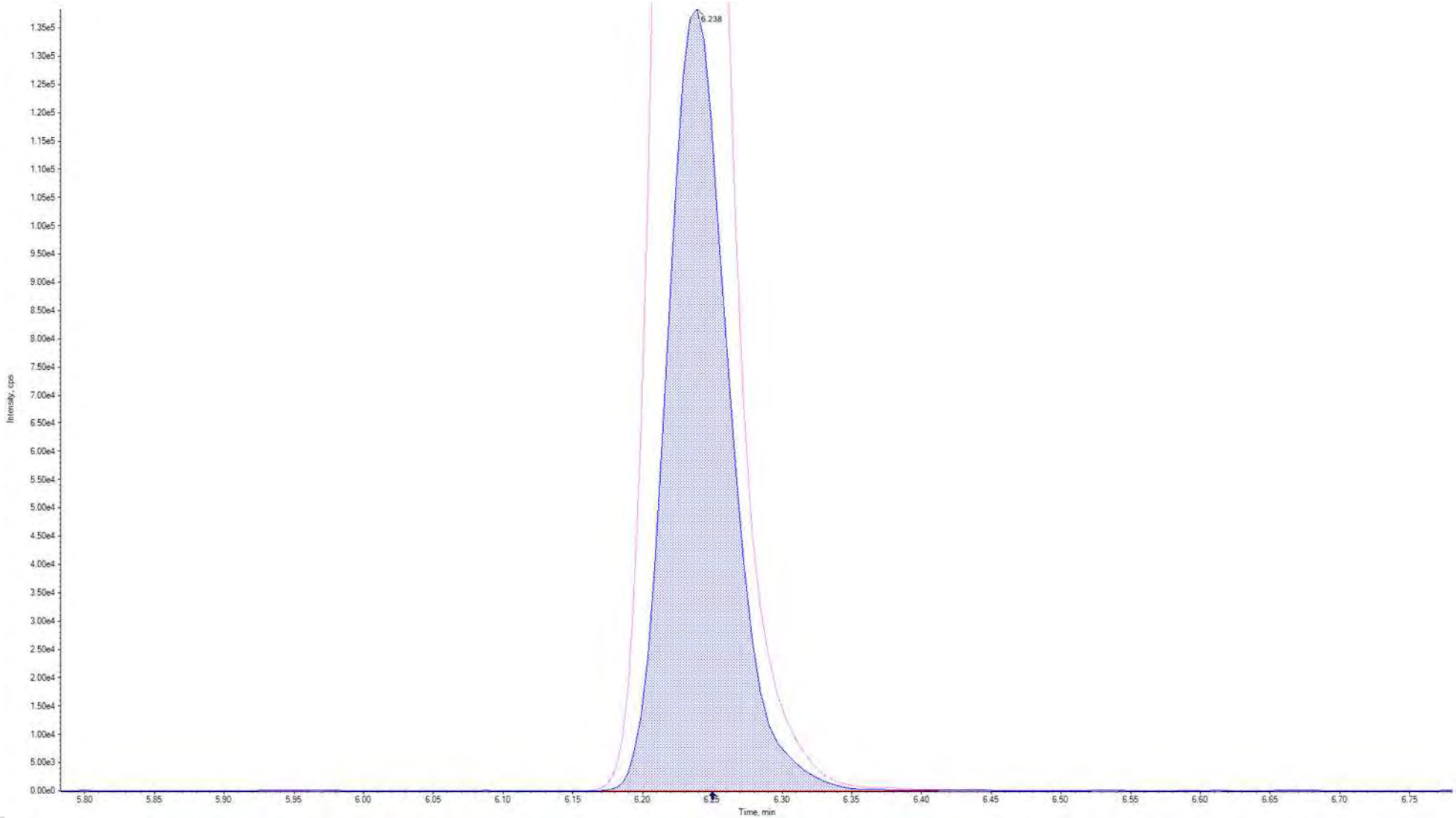
Generated: 9/19/2024 8:04:31 AM

PFHpA_2
Sample: WG1973506-8,1633MED S/N:46815.5 Points Across peak:45



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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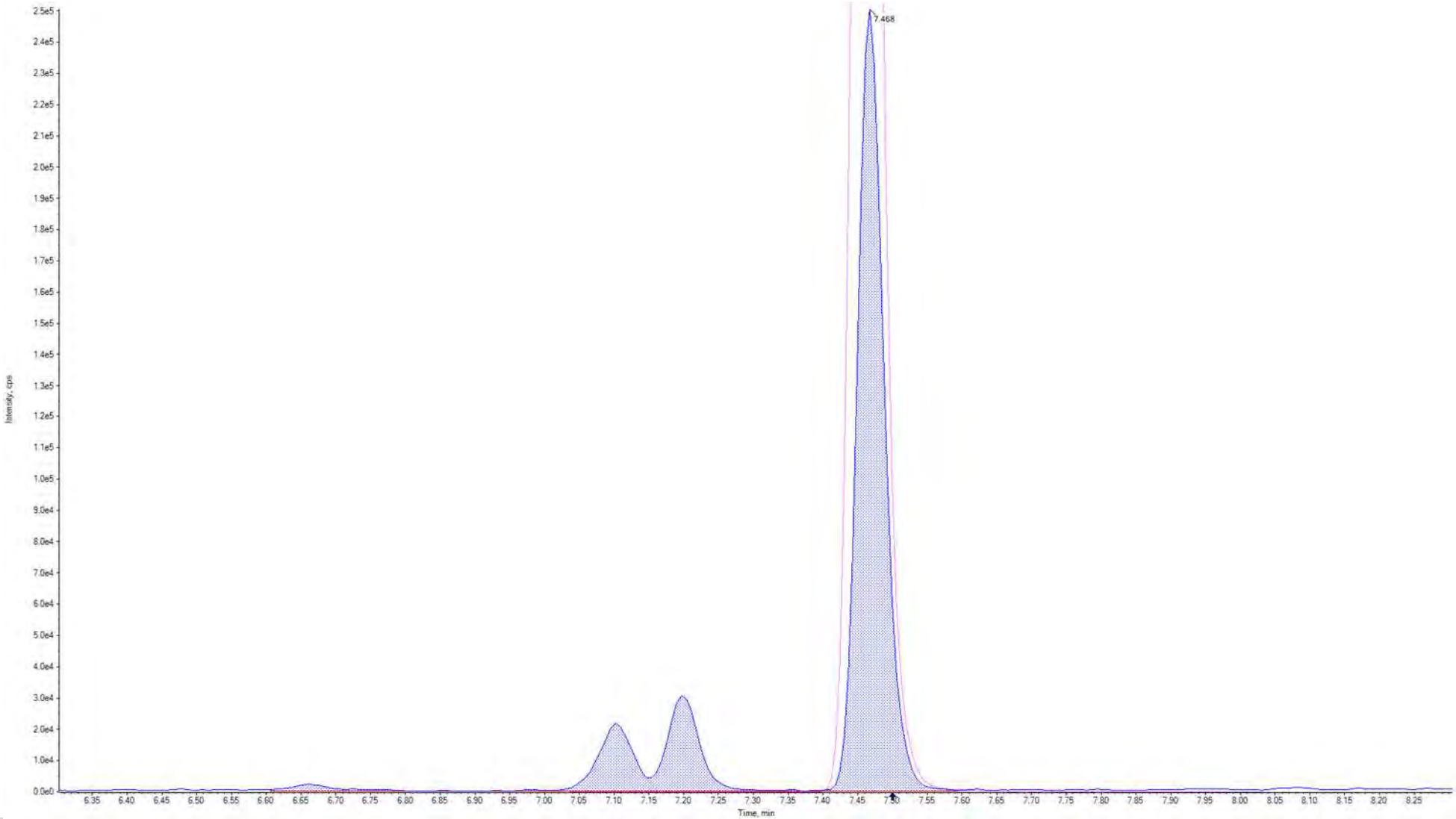
Generated: 9/19/2024 8:04:31 AM

PFOA
Sample: WG1973506-8,1633MED S/N:1870.6 Points Across peak:151



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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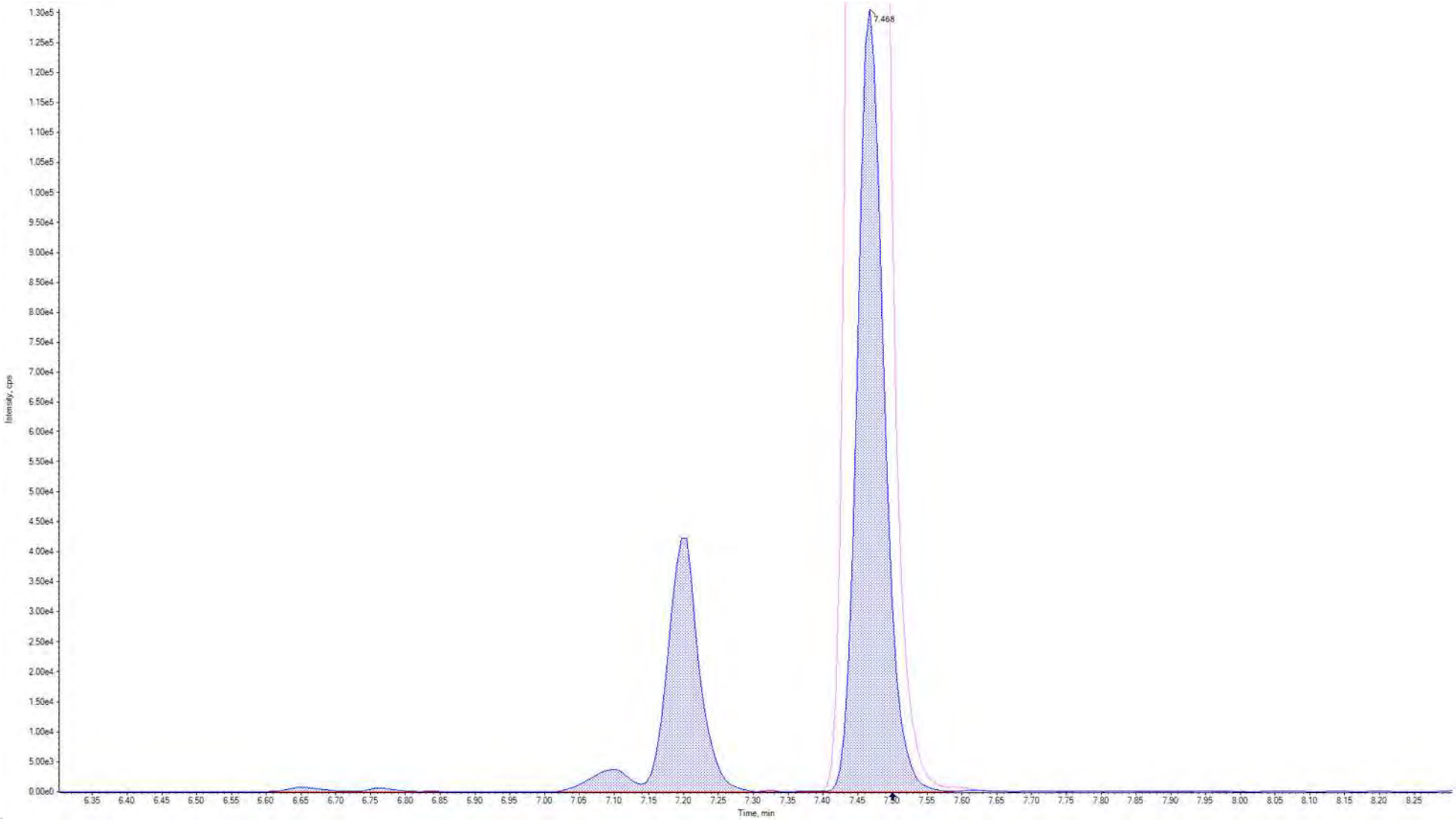
Generated: 9/19/2024 8:04:31 AM

PFOA_2
Sample: WG1973506-8,1633MED S/N:224687.0 Points Across peak:154



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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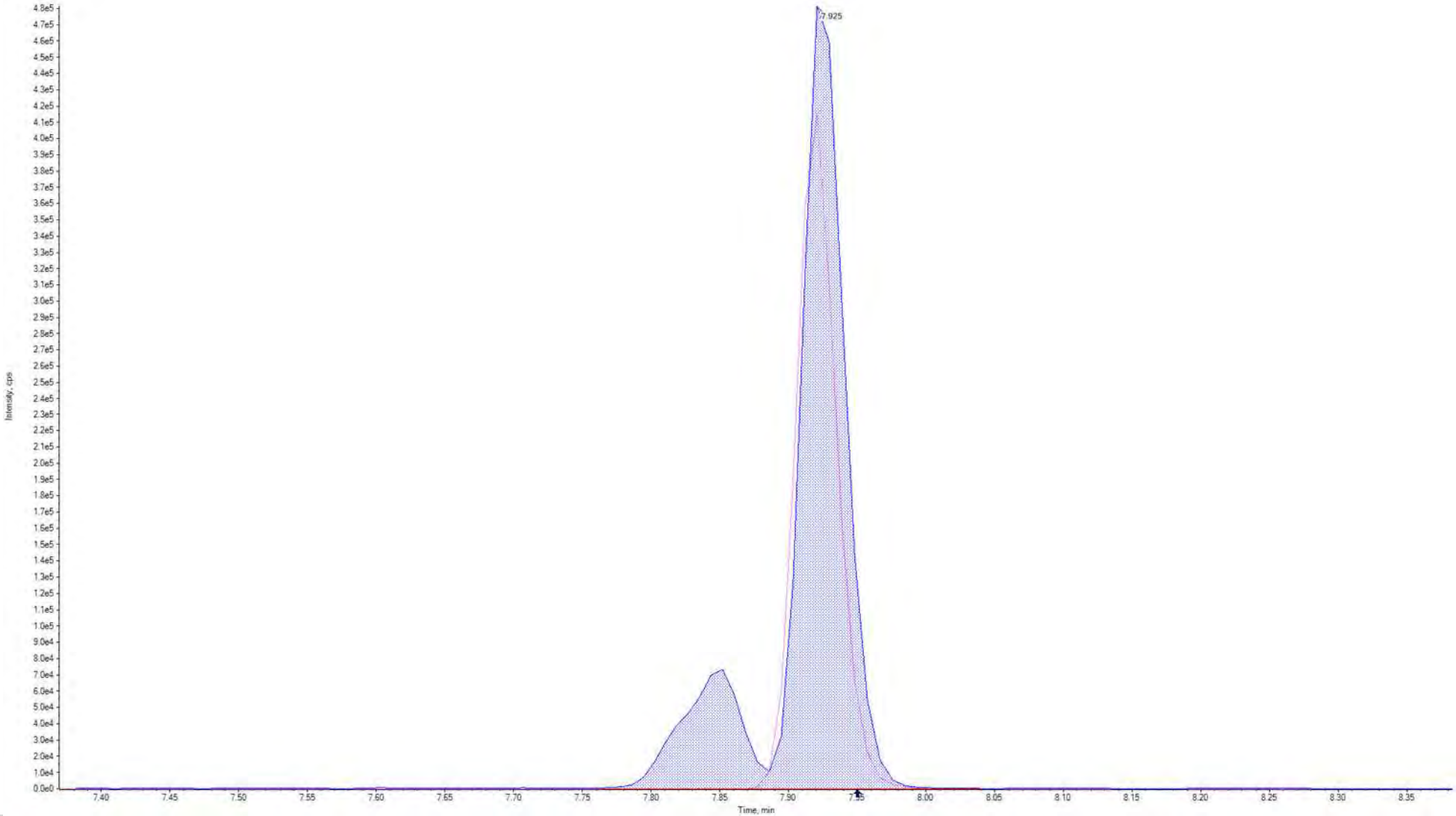
Generated: 9/19/2024 8:04:31 AM

PFNA
Sample: WG1973506-8,1633MED S/N:3230.3 Points Across peak:37



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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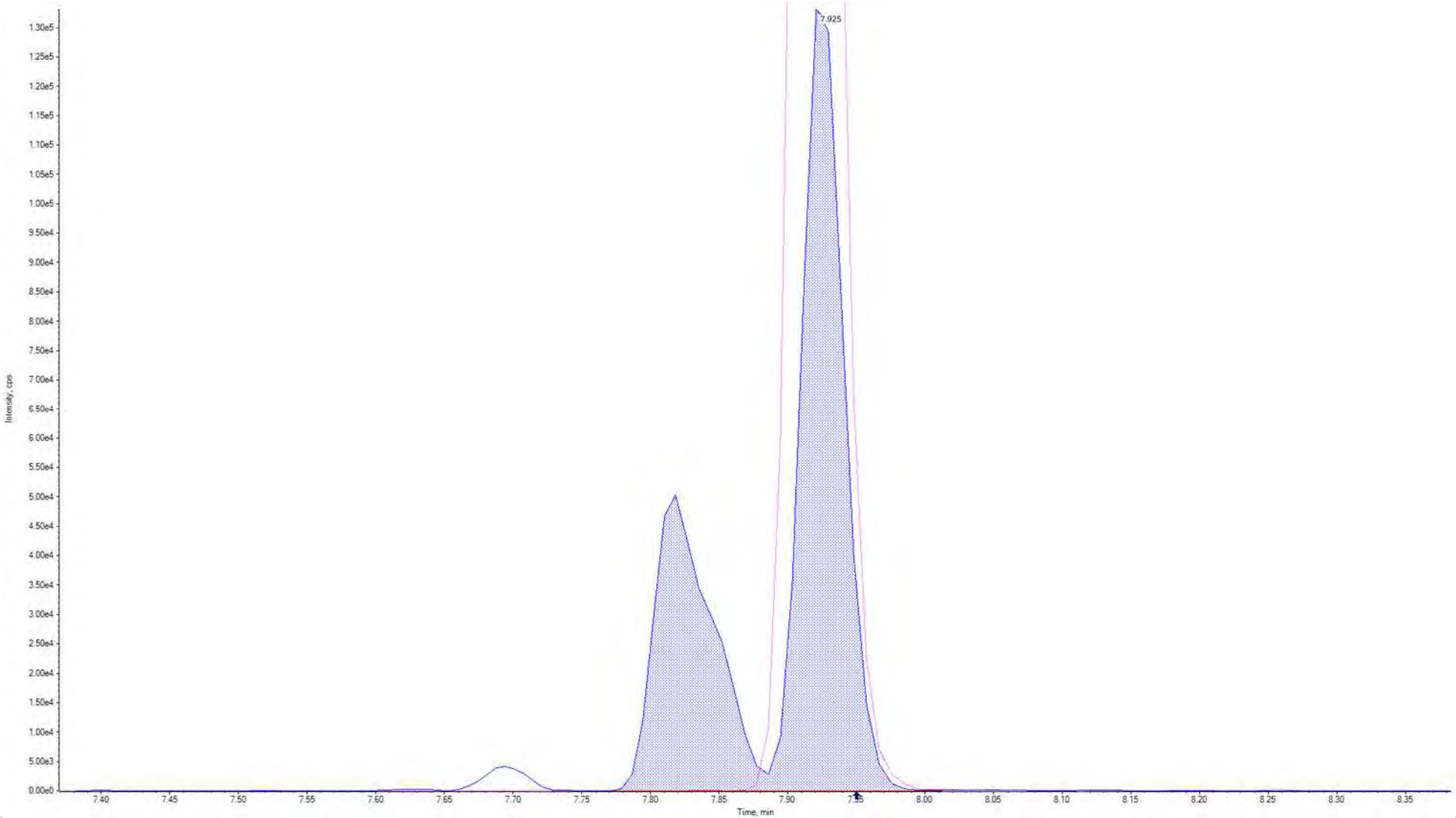
PFNA_2
Sample: WG1973506-8,1633MED S/N:5832204.2 Points Across peak:31



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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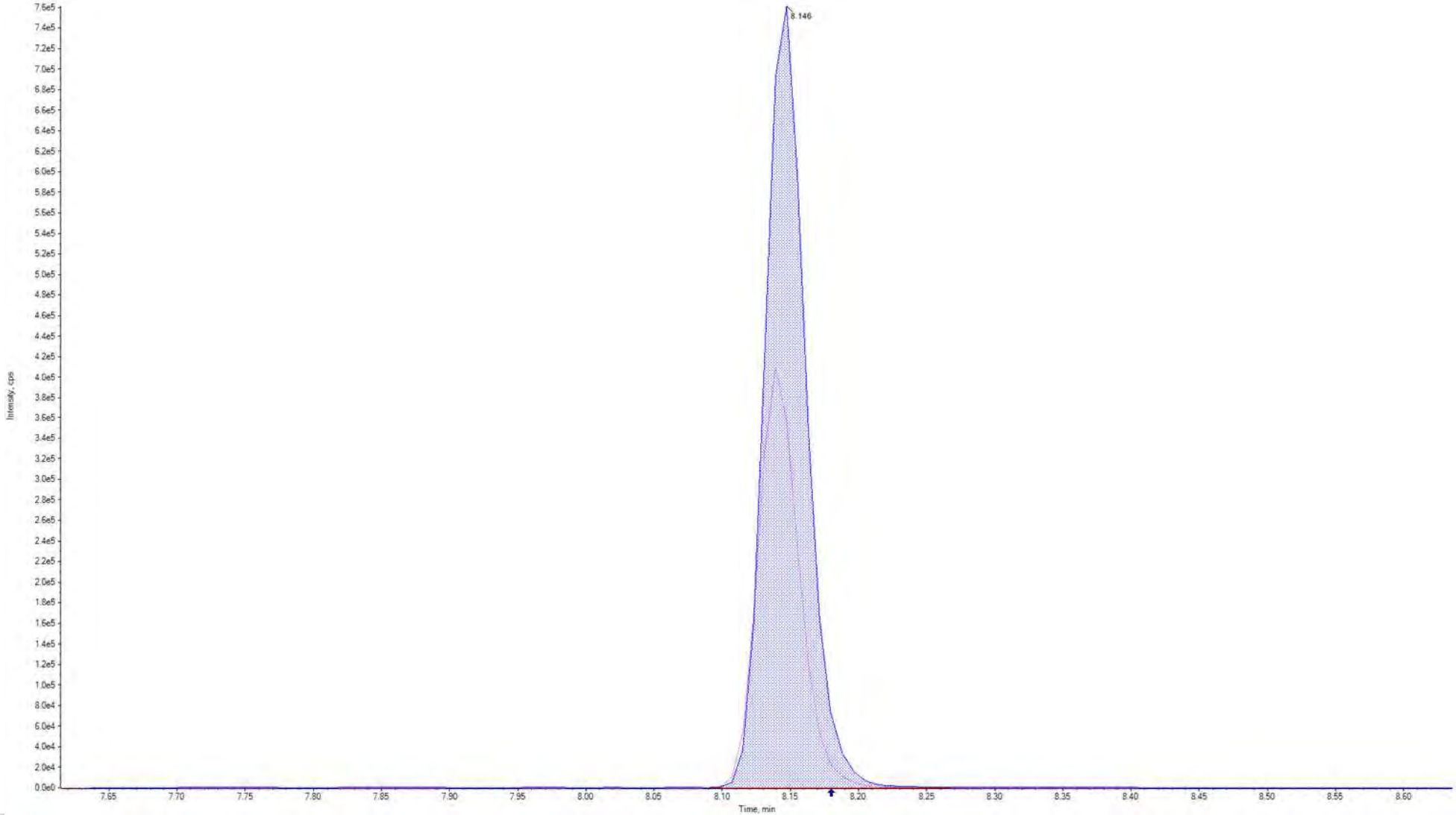
Generated: 9/19/2024 8:04:31 AM

PFDA
Sample: WG1973506-8,1633MED S/N:3047.9 Points Across peak:22



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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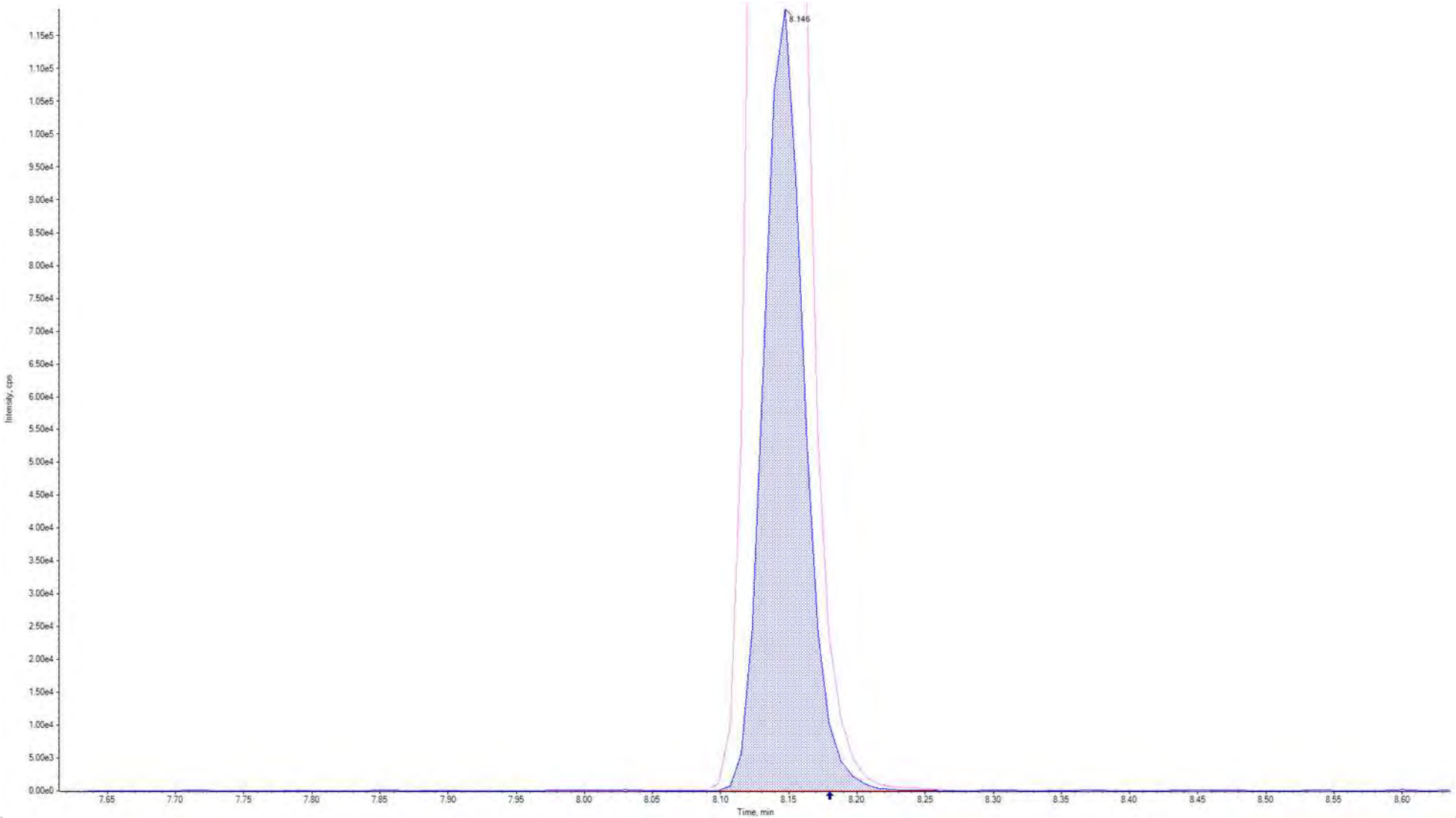
PFDA_2
Sample: WG1973506-8,1633MED S/N:916830.8 Points Across peak:23



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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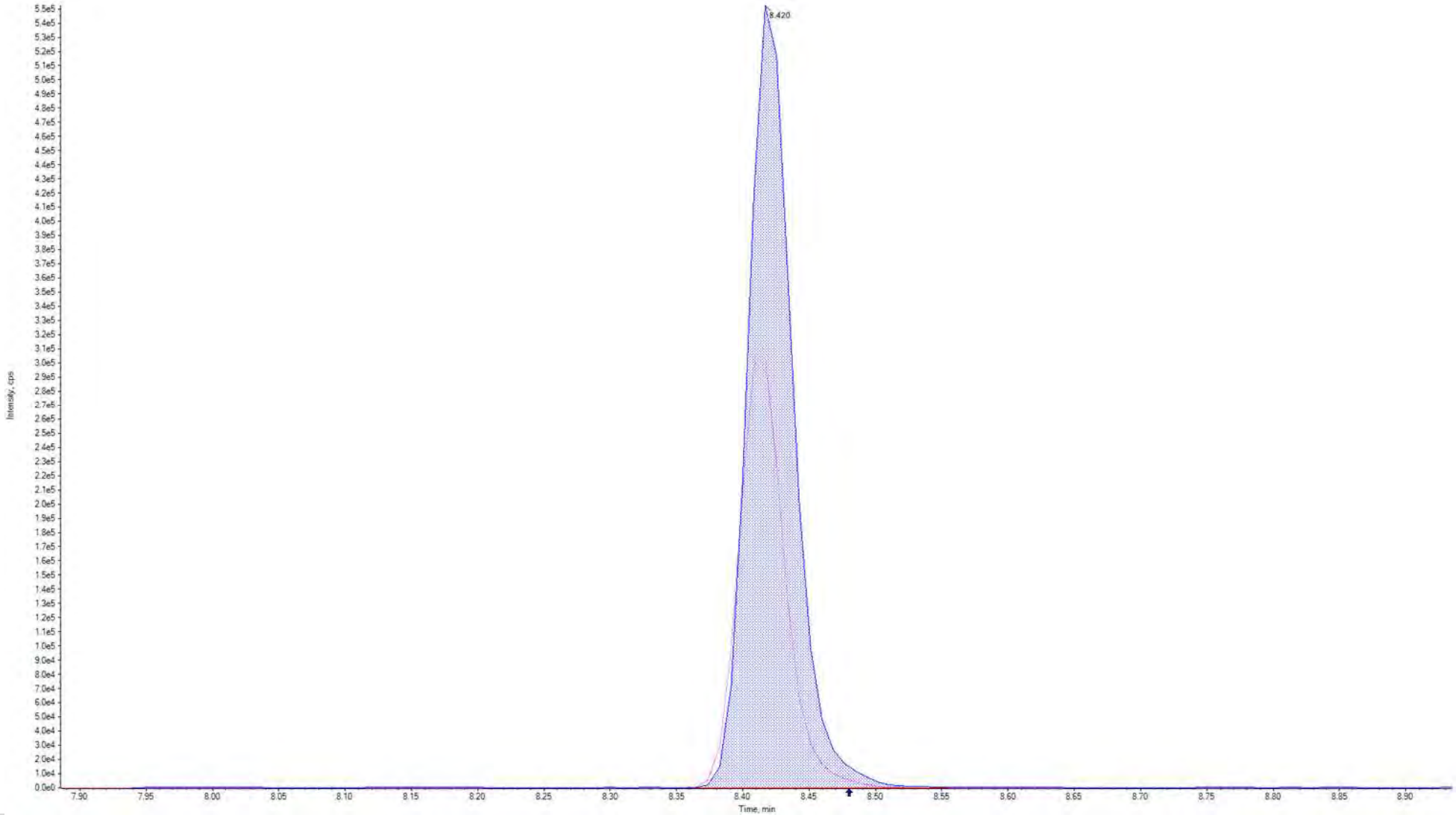
Generated: 9/19/2024 8:04:31 AM

PFUnA
Sample: WG1973506-8,1633MED S/N:3352.7 Points Across peak:25



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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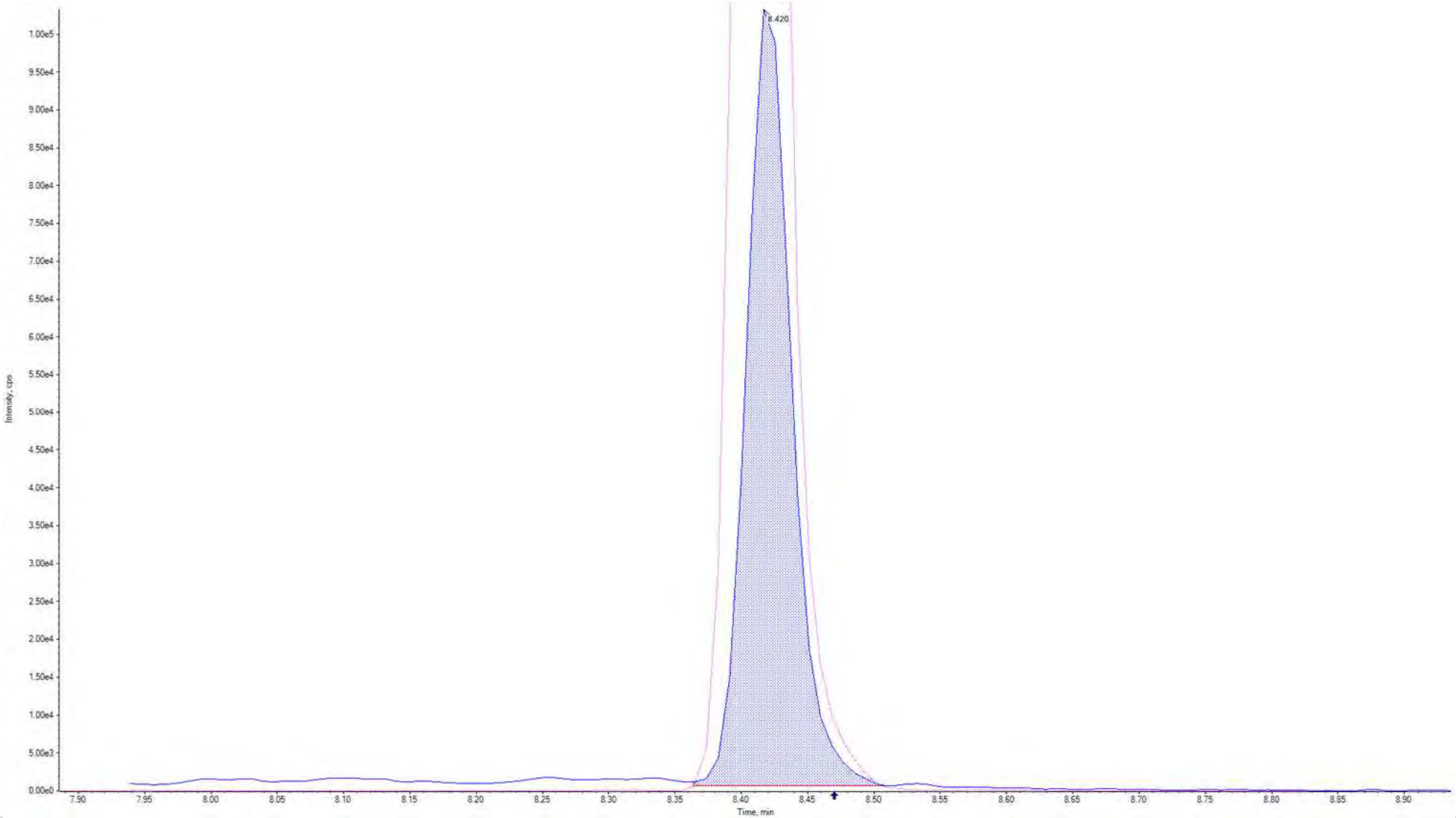
PFUnA_2
Sample: WG1973506-8,1633MED S/N:106146.1 Points Across peak:18



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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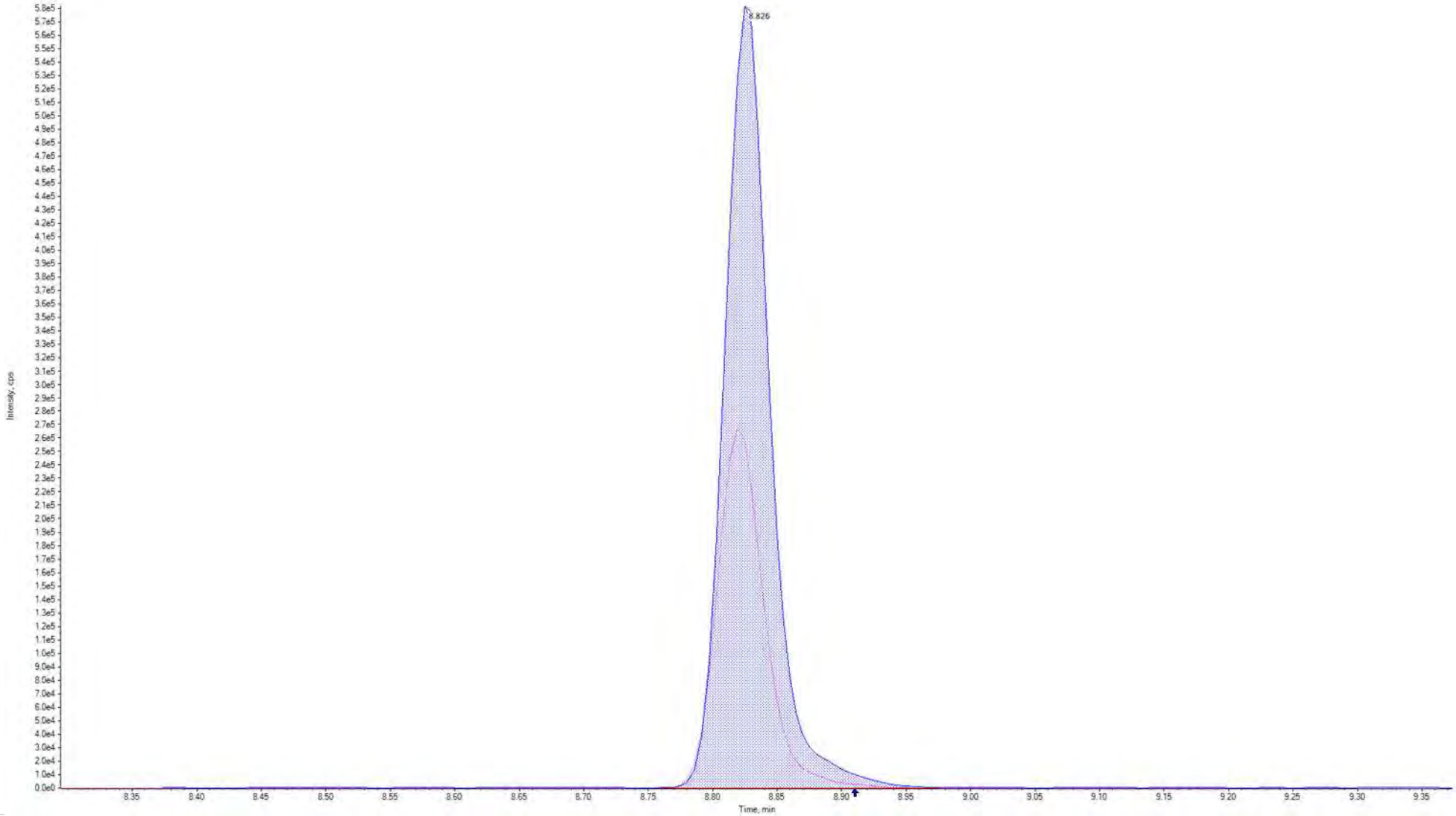
PFDoA
Sample: WG1973506-8,1633MED S/N:4098.3 Points Across peak:45



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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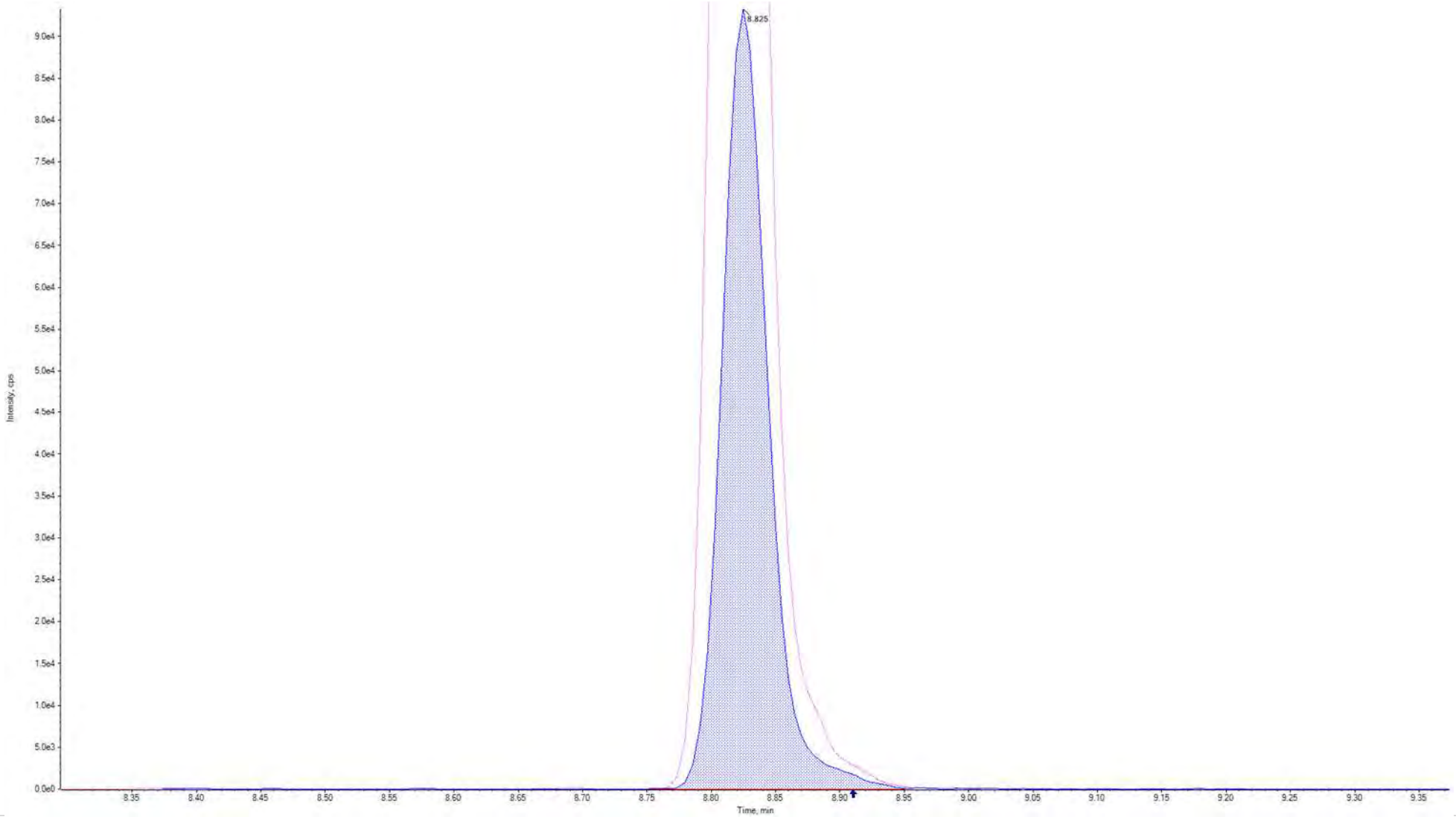
PFDoA_2
Sample: WG1973506-8,1633MED S/N:45754.8 Points Across peak:42



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Generated: 9/19/2024 8:04:31 AM

PFTrDA
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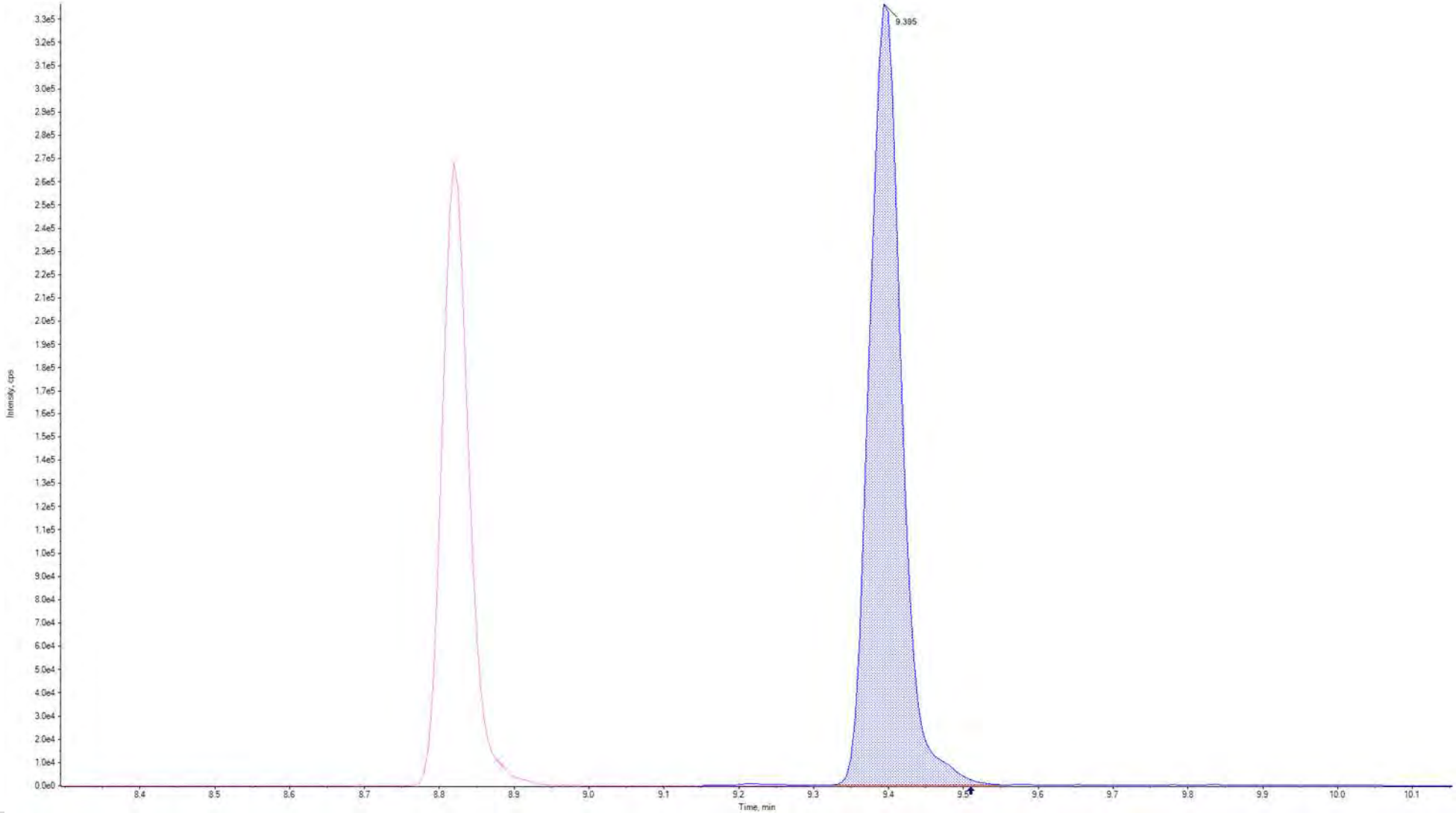

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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PFTrDA_2
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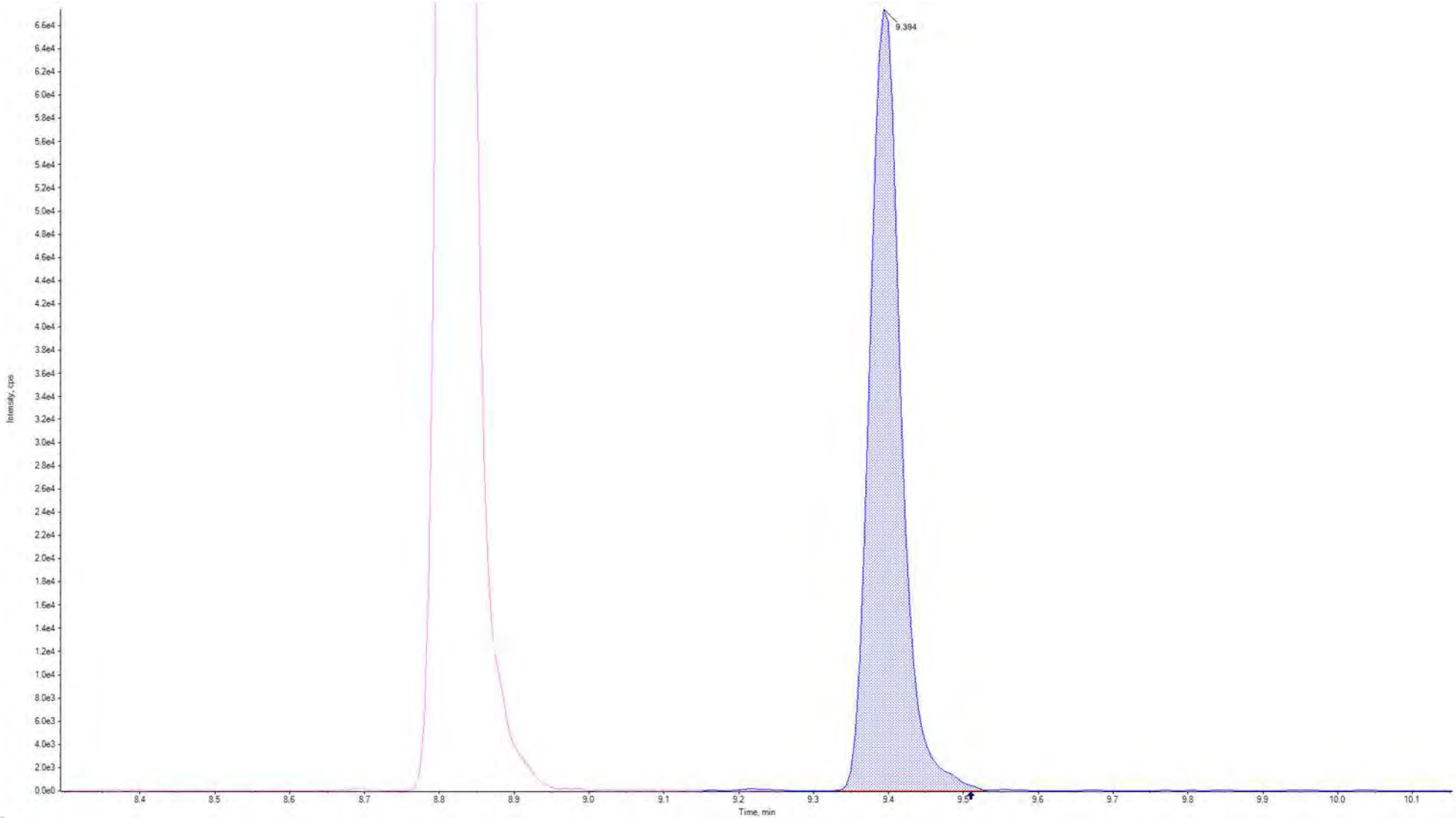

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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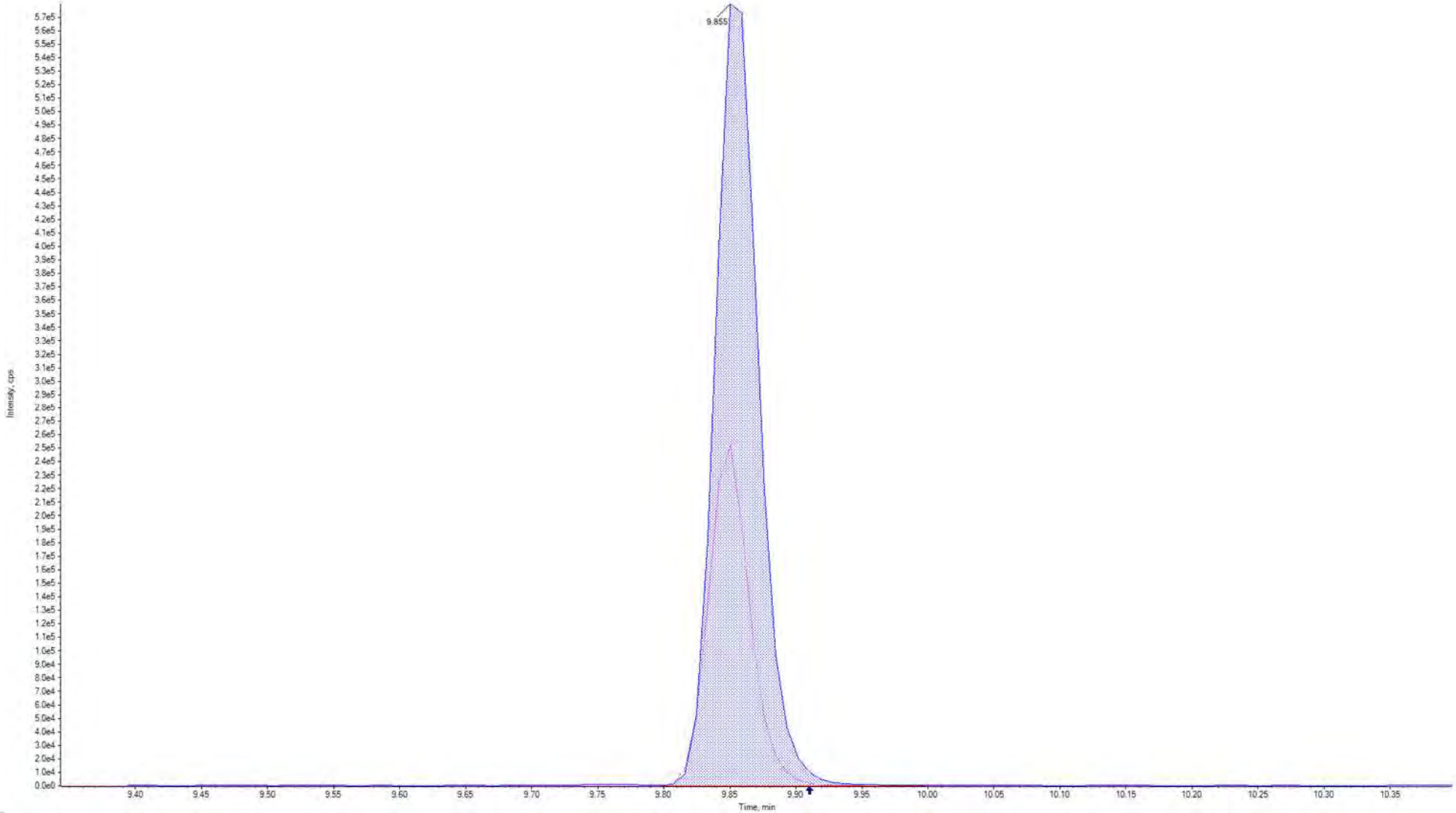
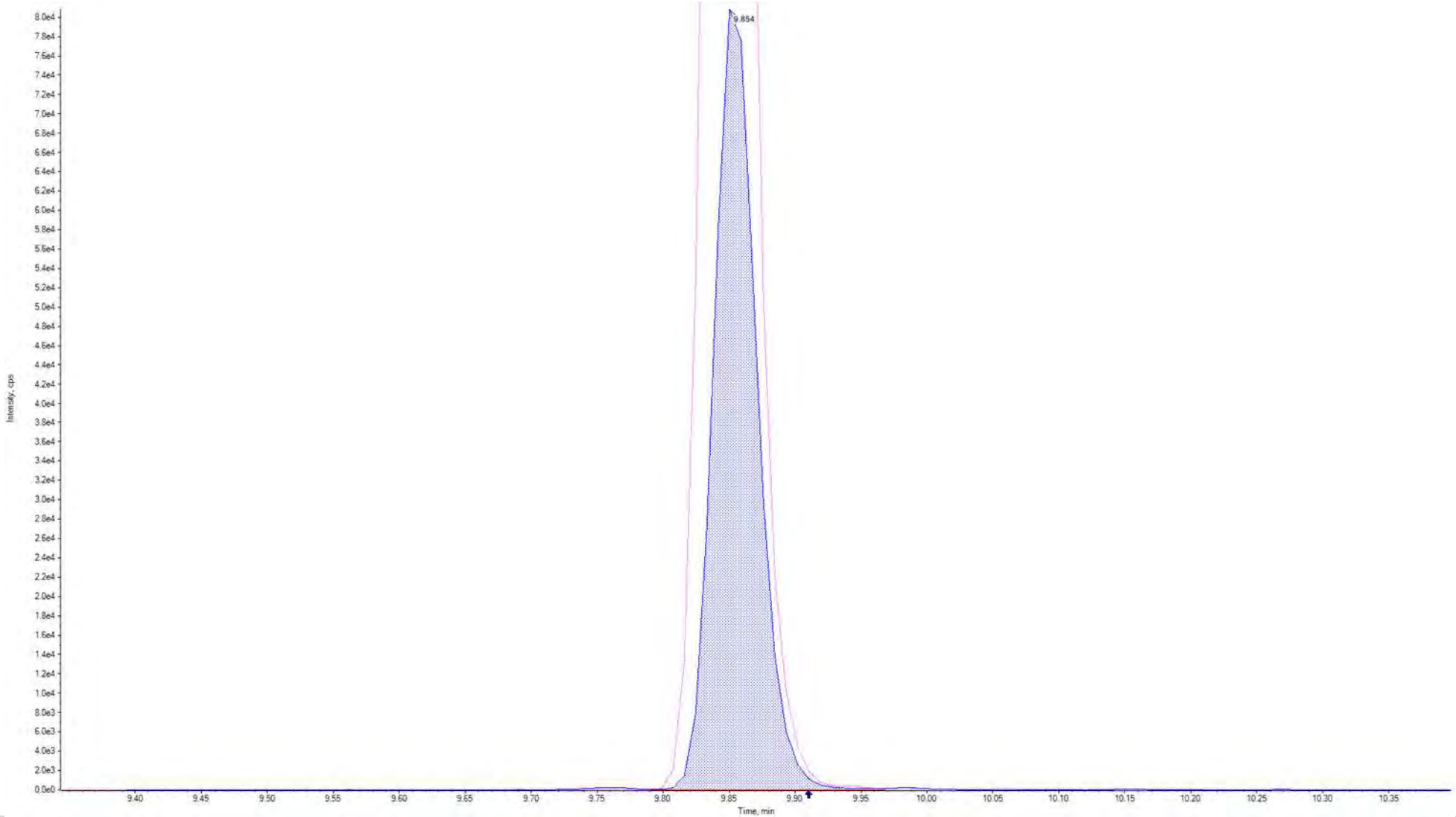
Generated: 9/19/2024 8:04:31 AM

PFTeDA
Sample: WG1973506-8,1633MED S/N:2145.9 Points Across peak:23



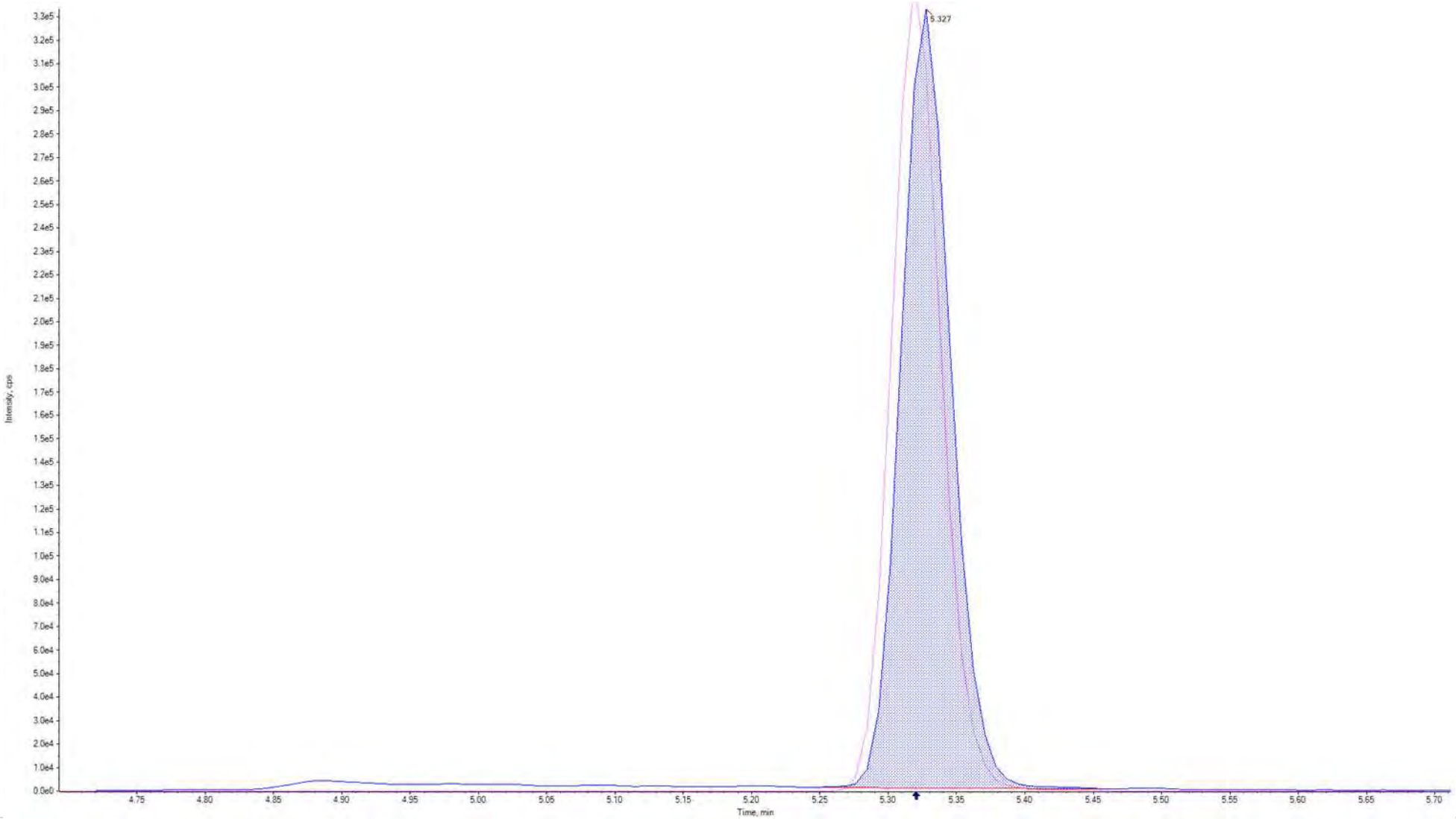
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFTeDA_2
Sample: WG1973506-8,1633MED S/N:1955.3 Points Across peak:21



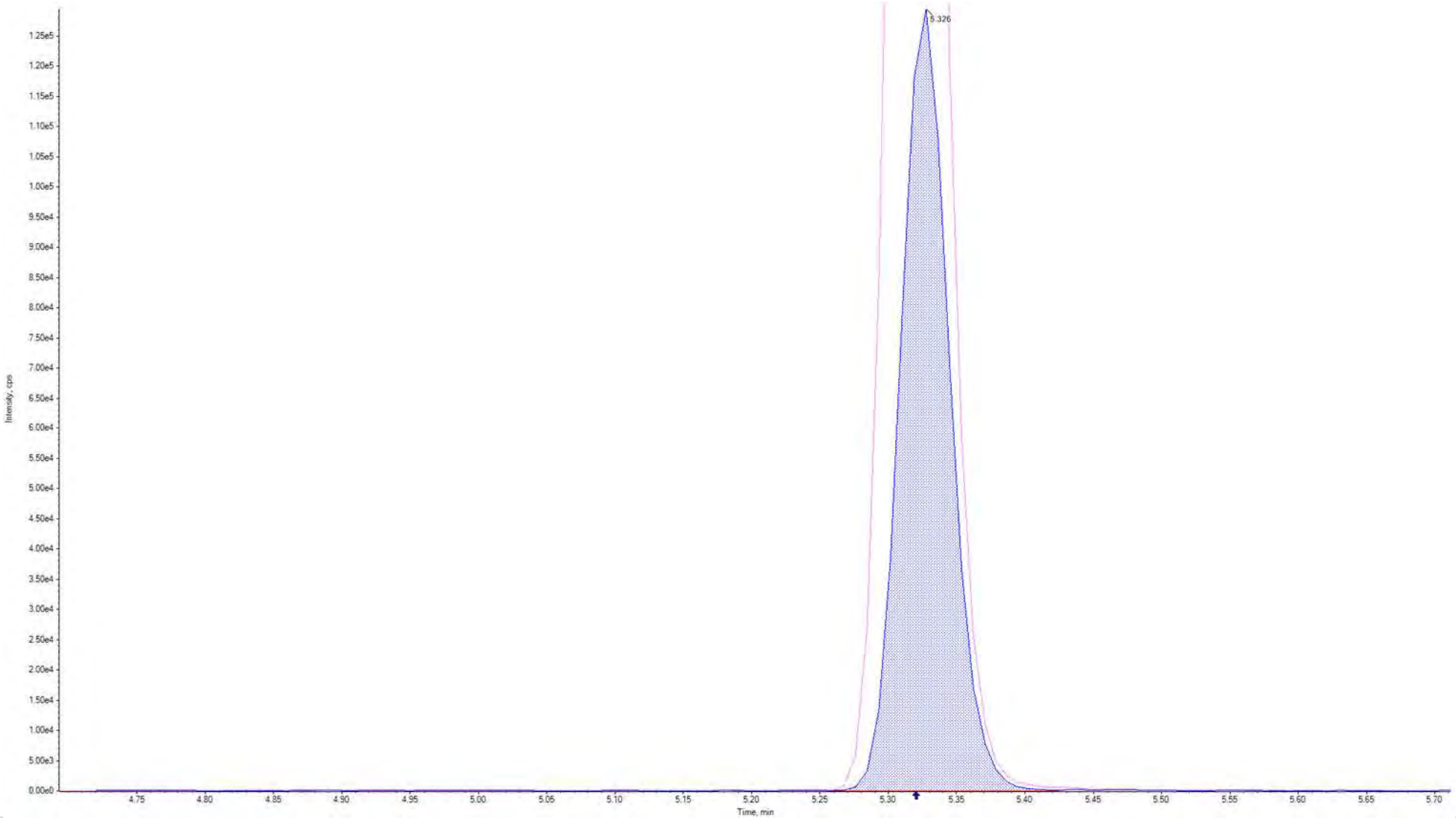
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFBS
Sample: WG1973506-8,1633MED S/N:61.0 Points Across peak:28



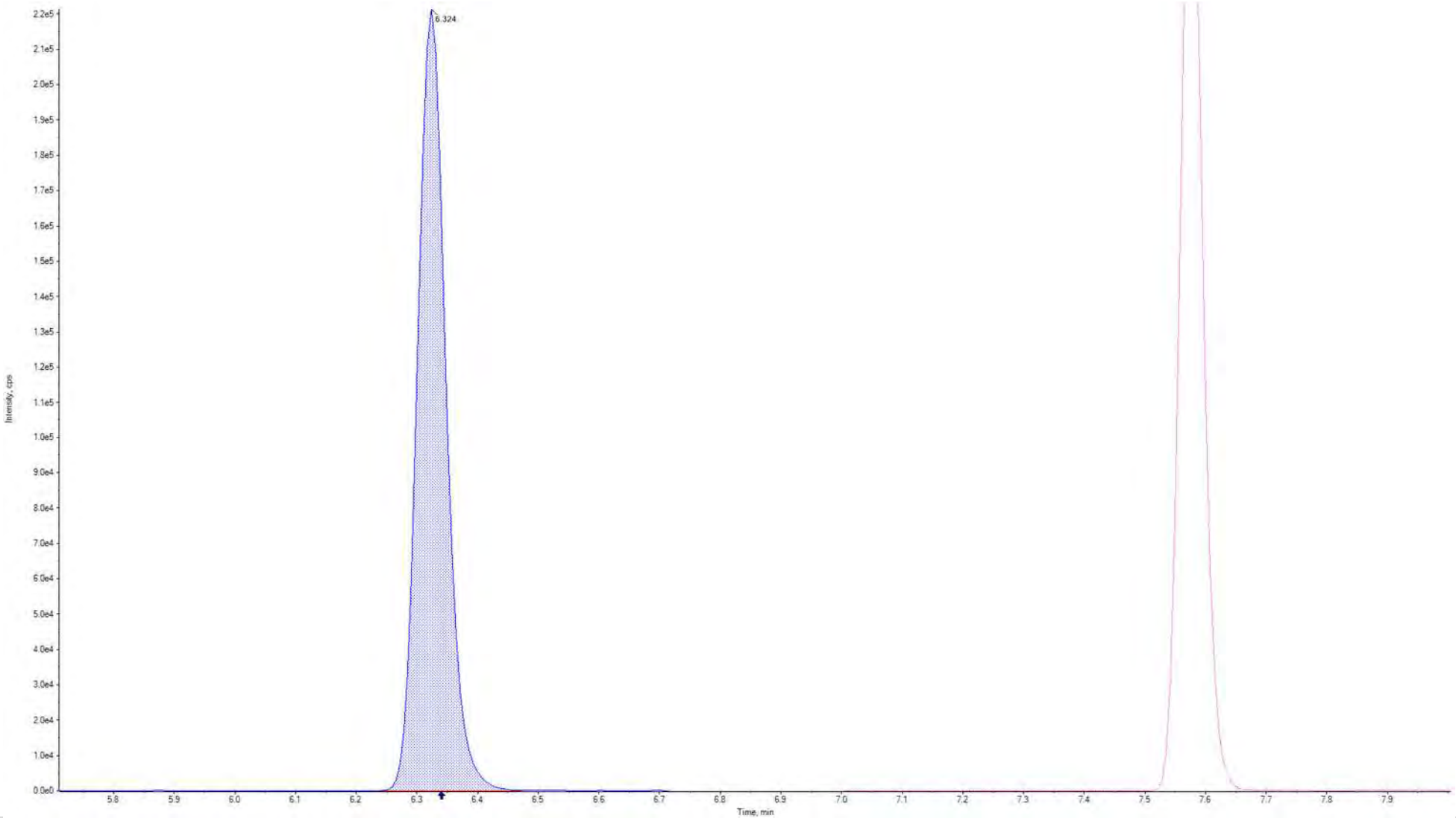
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFBS_2
Sample: WG1973506-8,1633MED S/N:2717.7 Points Across peak:21



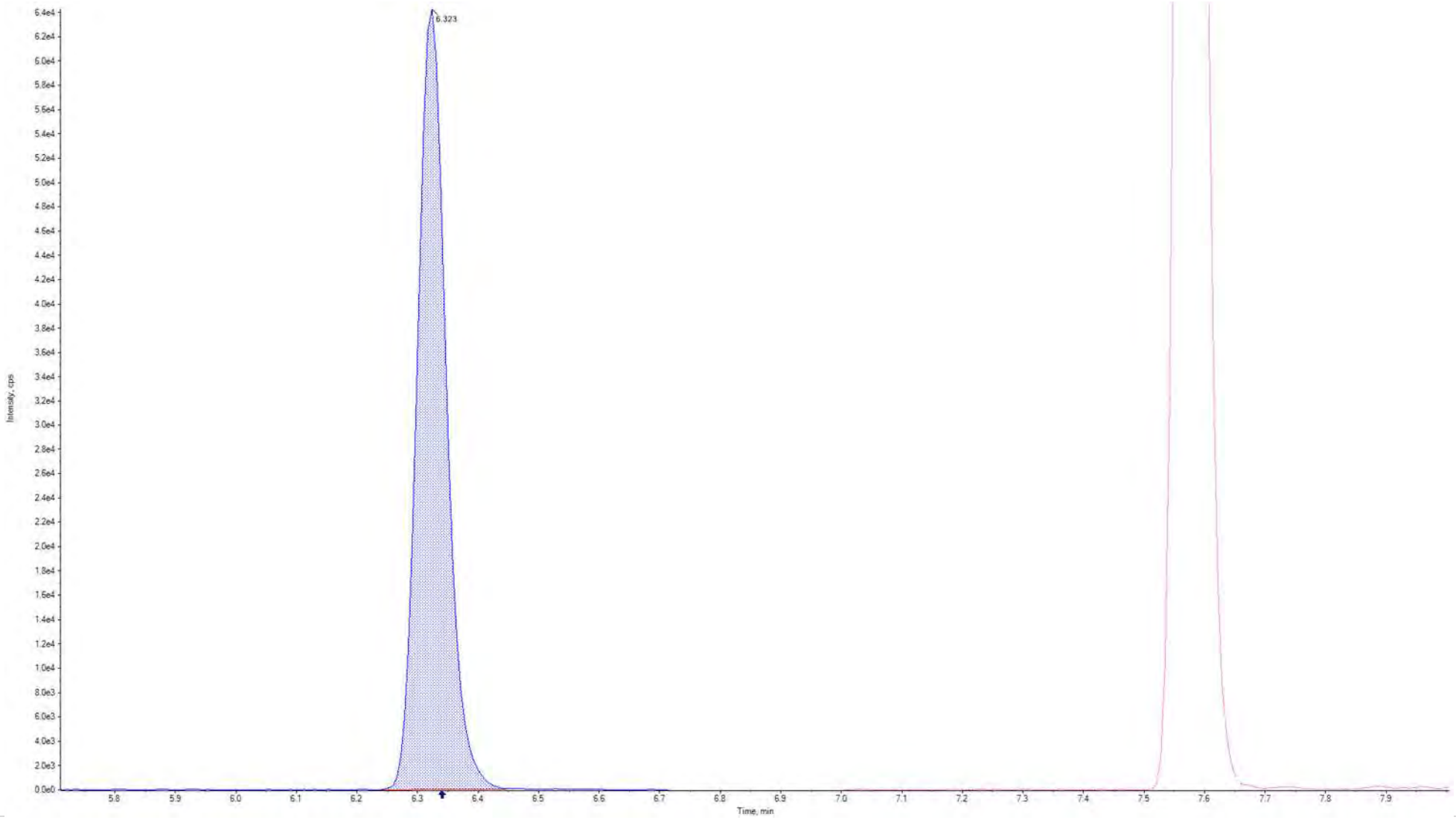
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFPeS
Sample: WG1973506-8,1633MED S/N:8111.0 Points Across peak:41



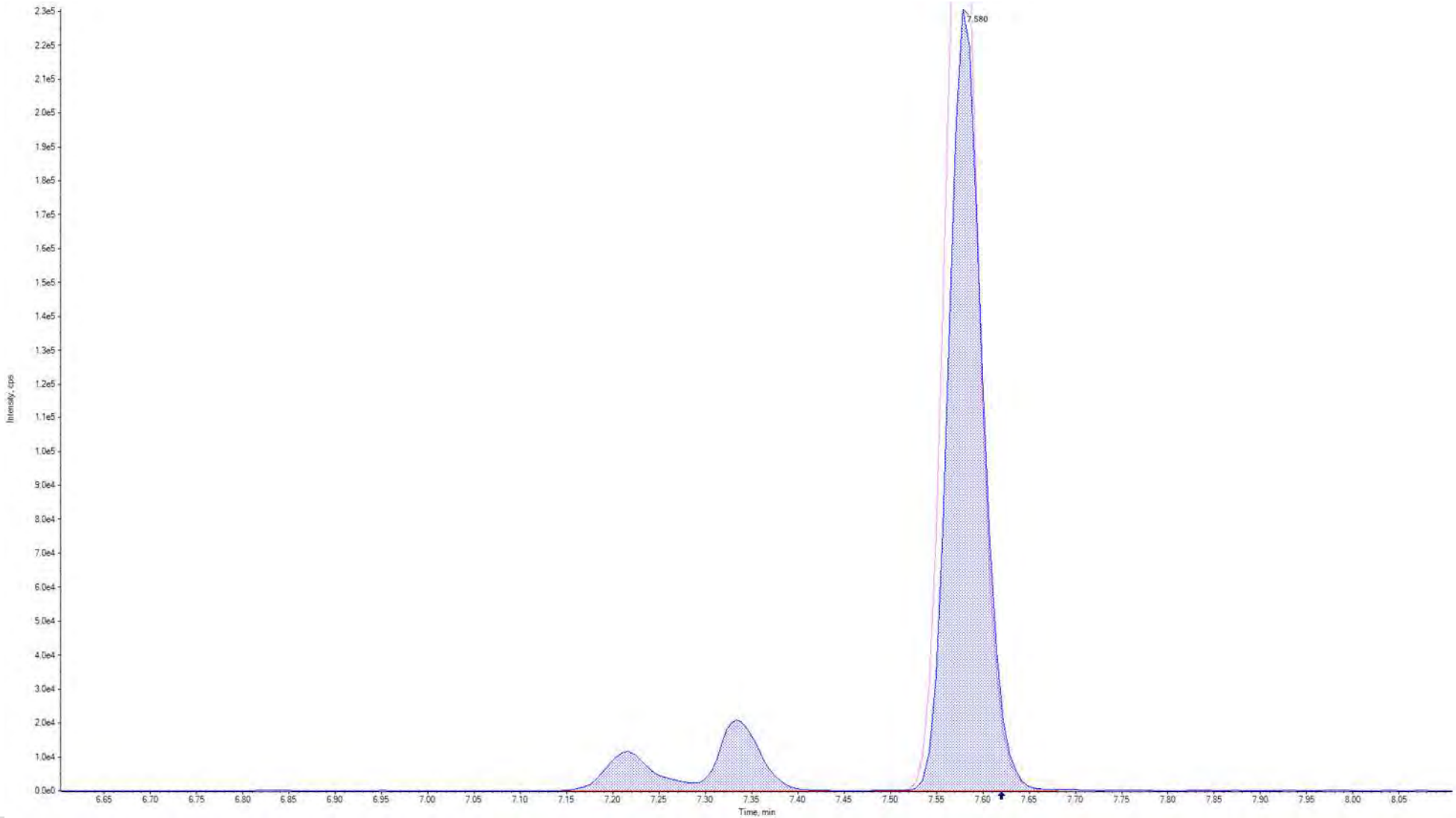
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFPeS_2
Sample: WG1973506-8,1633MED S/N:10096.1 Points Across peak:33



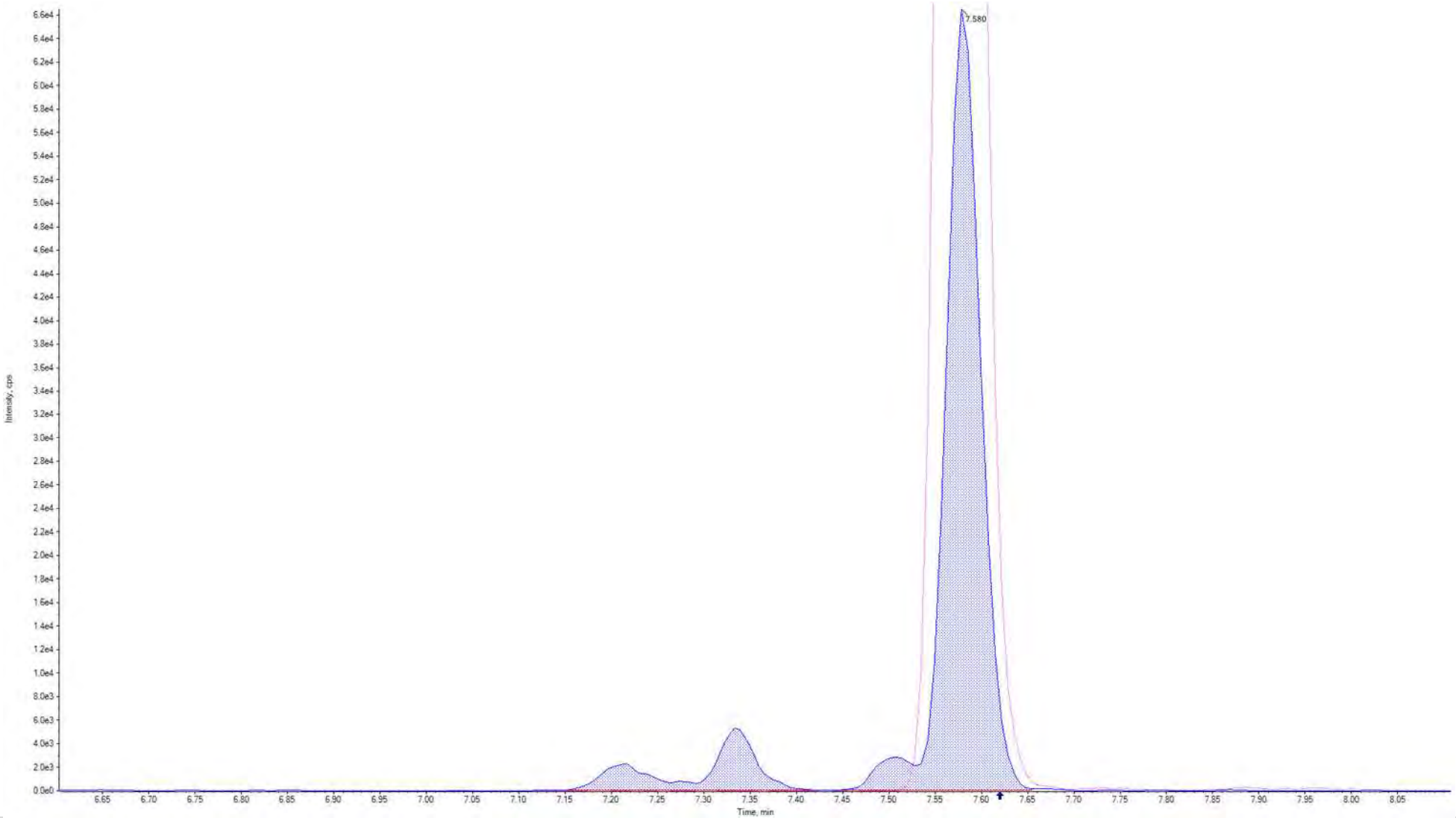
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHxS
Sample: WG1973506-8,1633MED S/N:12984.8 Points Across peak:87



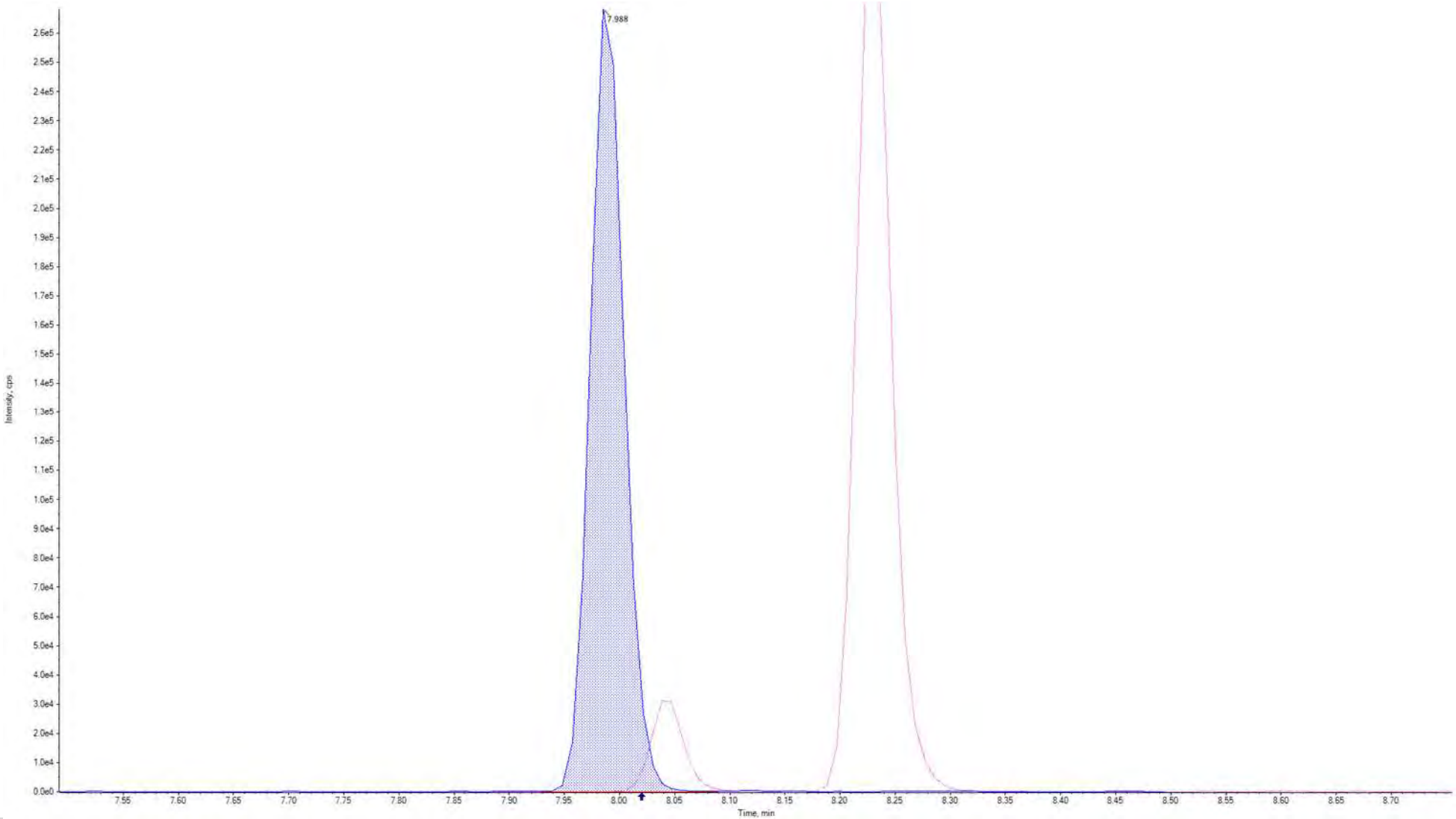
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHxS_2
Sample: WG1973506-8,1633MED S/N:72897.5 Points Across peak:83



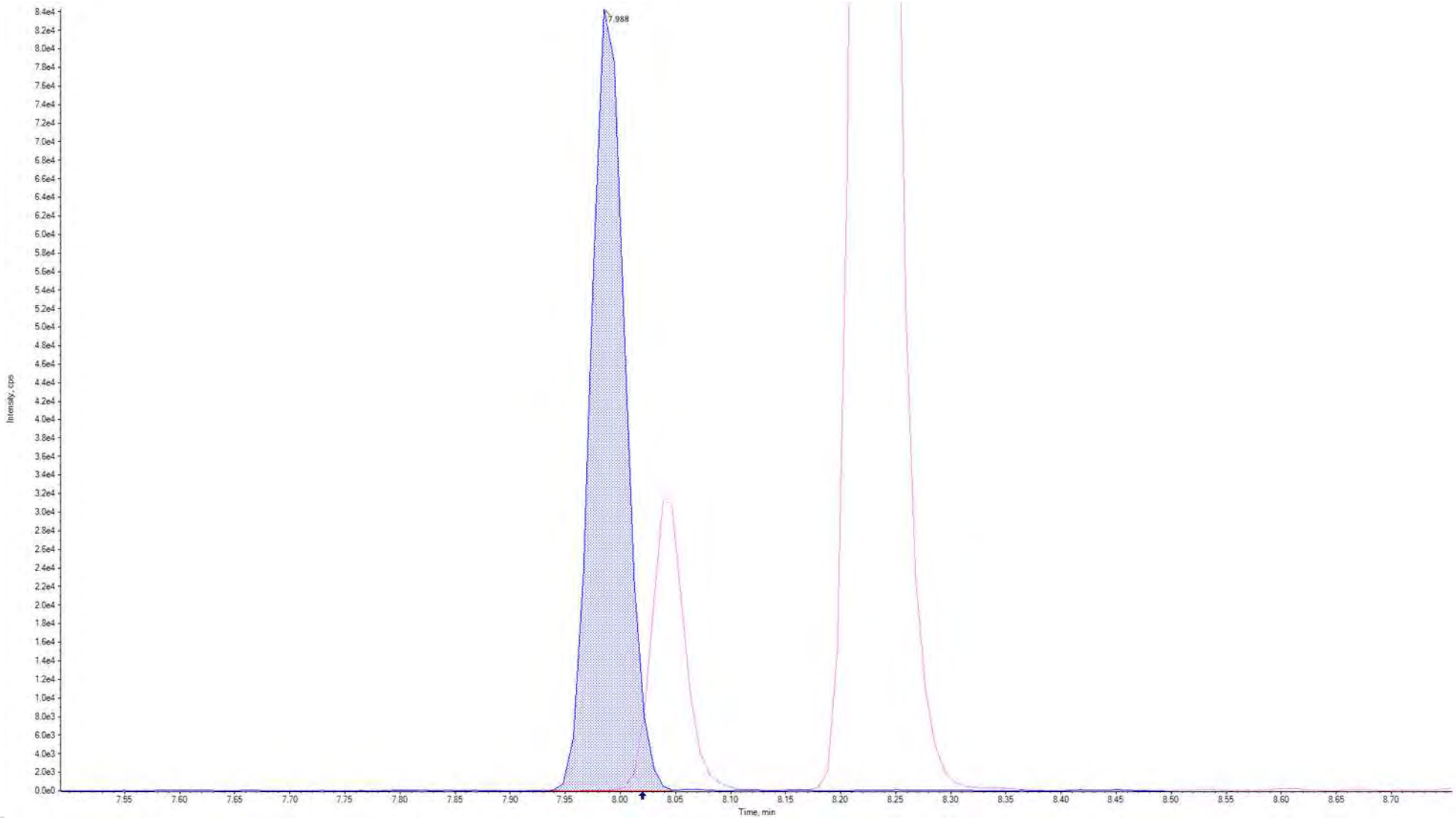
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHpS
Sample: WG1973506-8,1633MED S/N:20848.3 Points Across peak:19



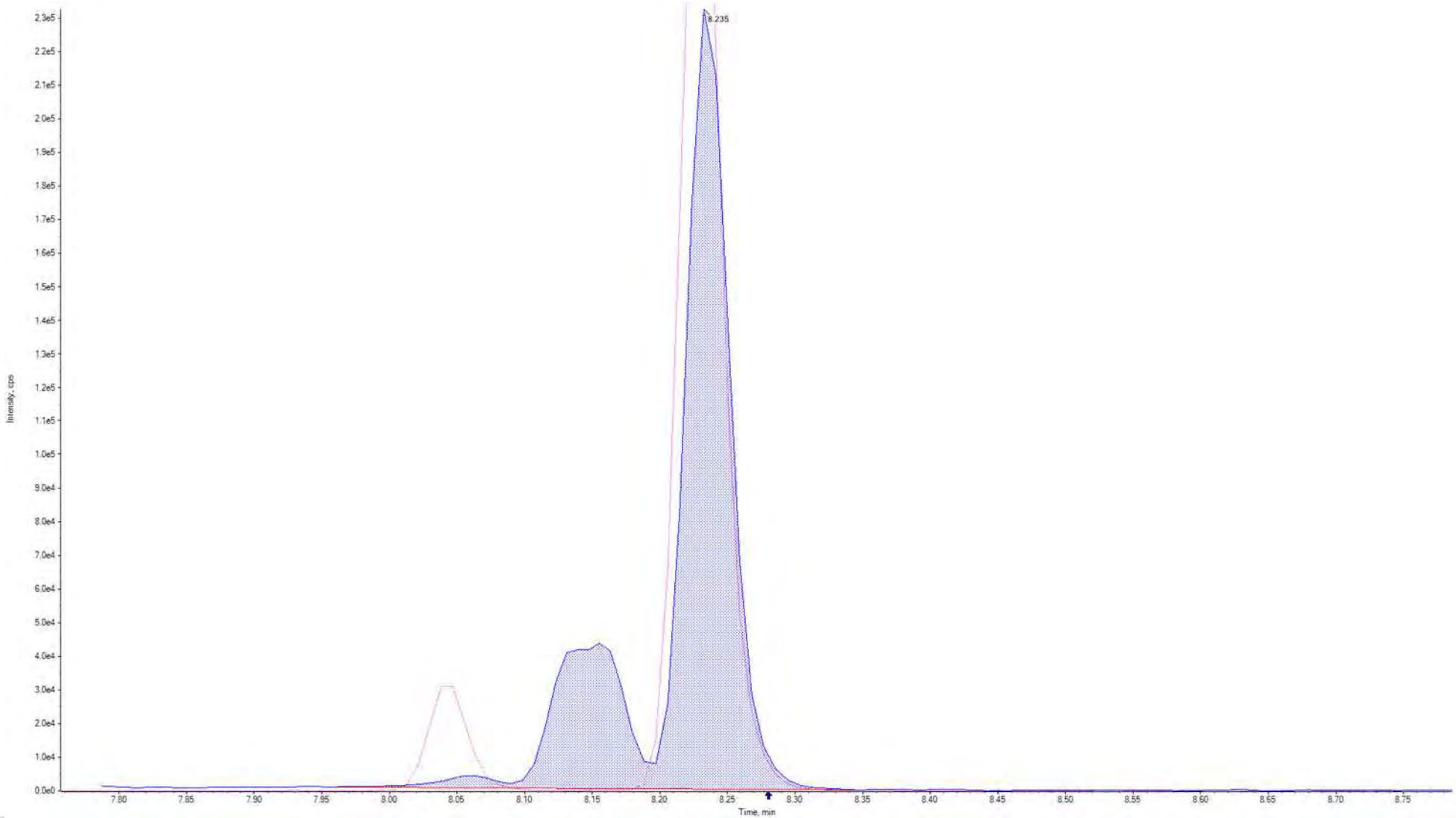
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHpS_2
Sample: WG1973506-8,1633MED S/N:1376.2 Points Across peak:15



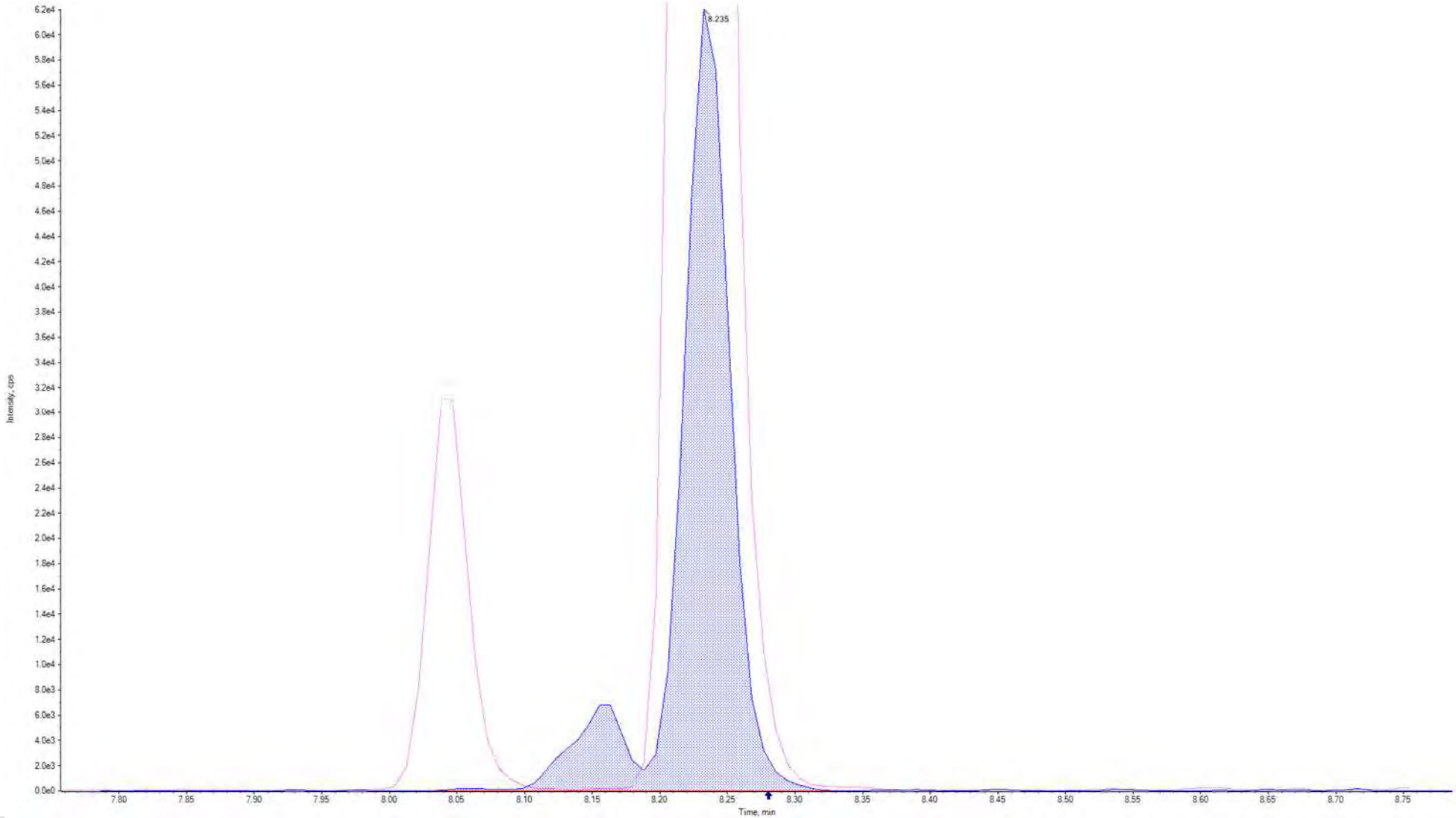
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOS
Sample: WG1973506-8,1633MED S/N:1838.6 Points Across peak:47



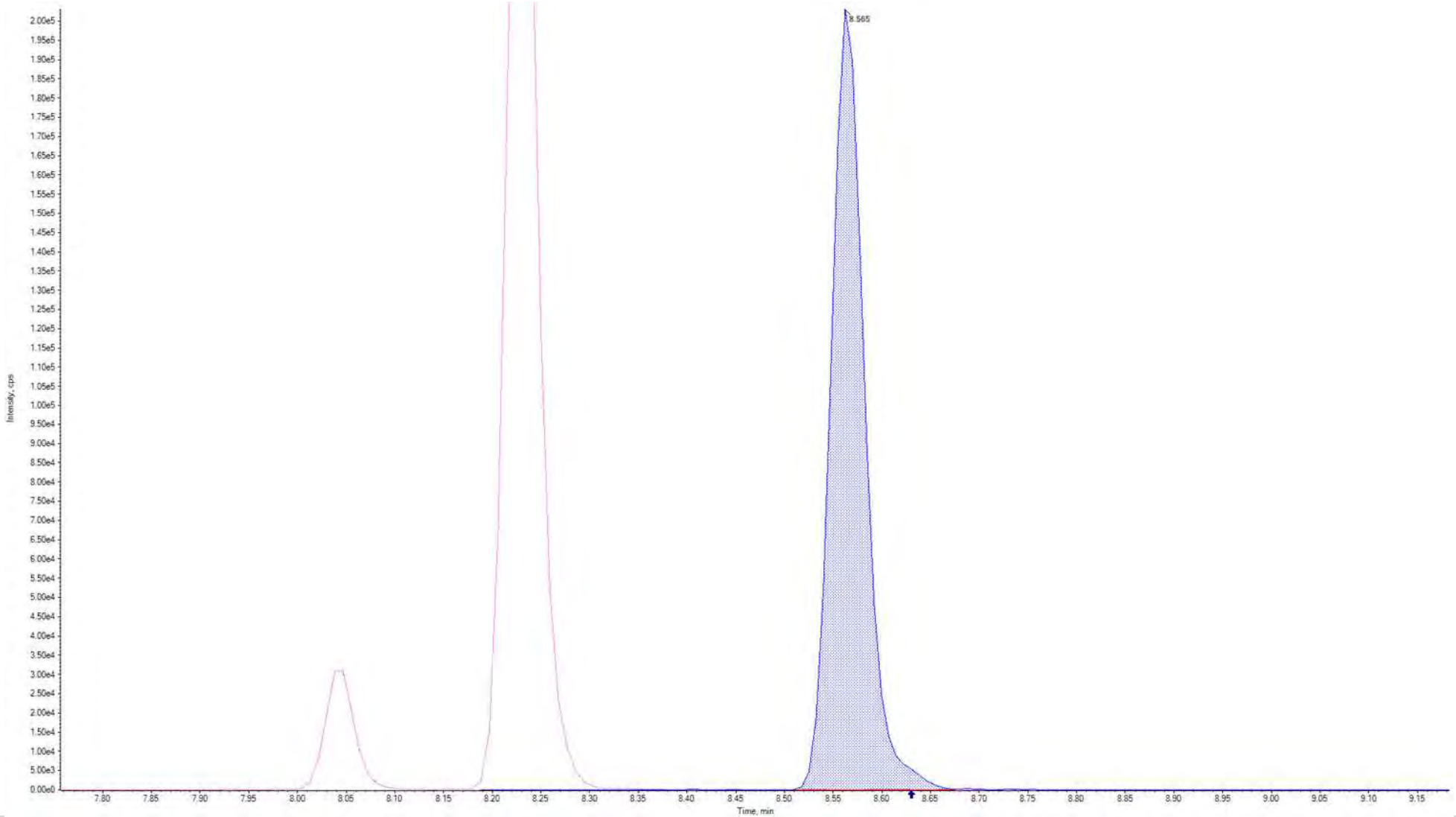
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOS_2
Sample: WG1973506-8,1633MED S/N:1334.7 Points Across peak:39



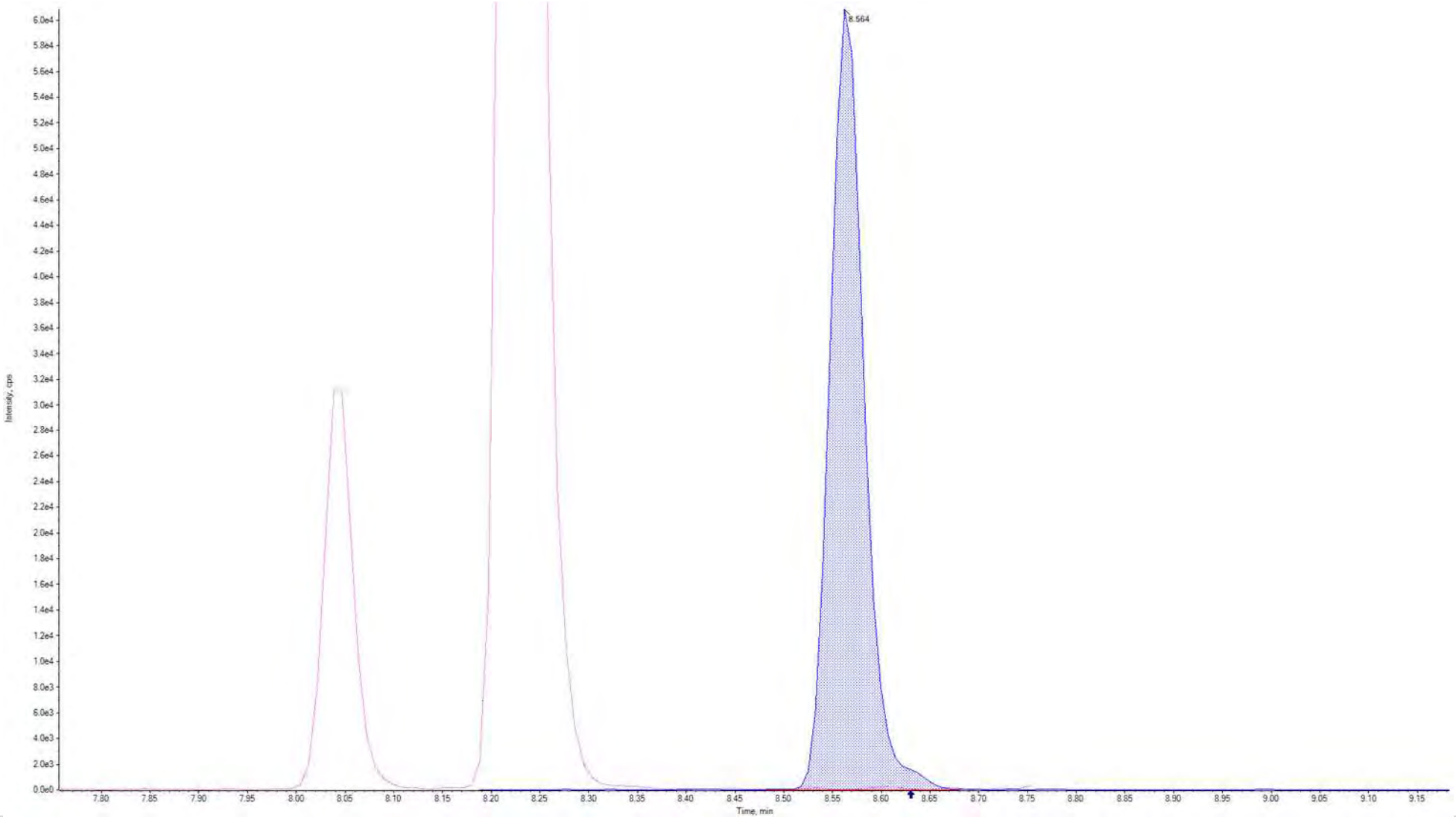
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFNS
Sample: WG1973506-8,1633MED S/N:33327.6 Points Across peak:27



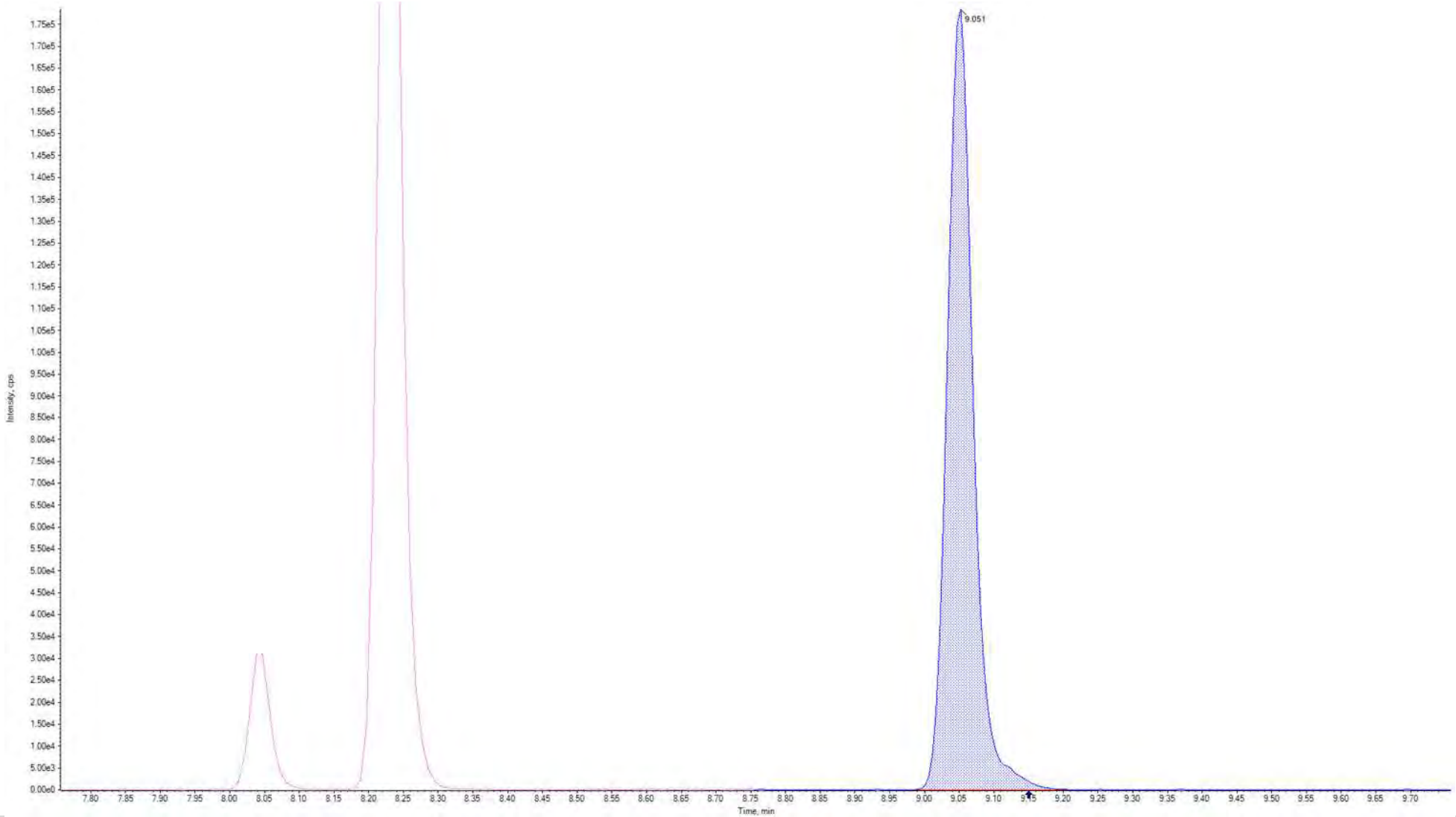
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFNS_2
Sample: WG1973506-8,1633MED S/N:3394.1 Points Across peak:32



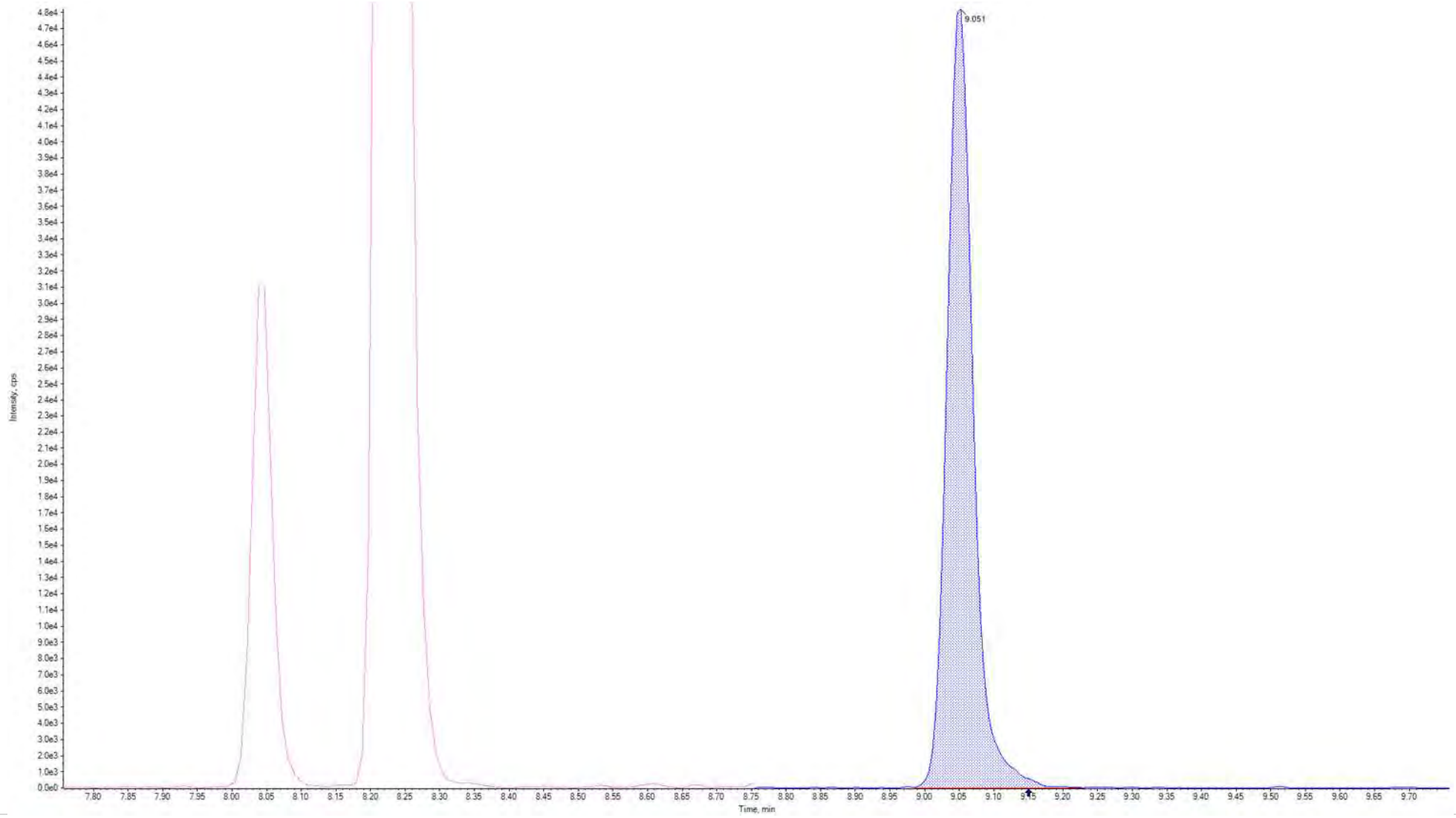
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDS
Sample: WG1973506-8,1633MED S/N:48348.4 Points Across peak:54



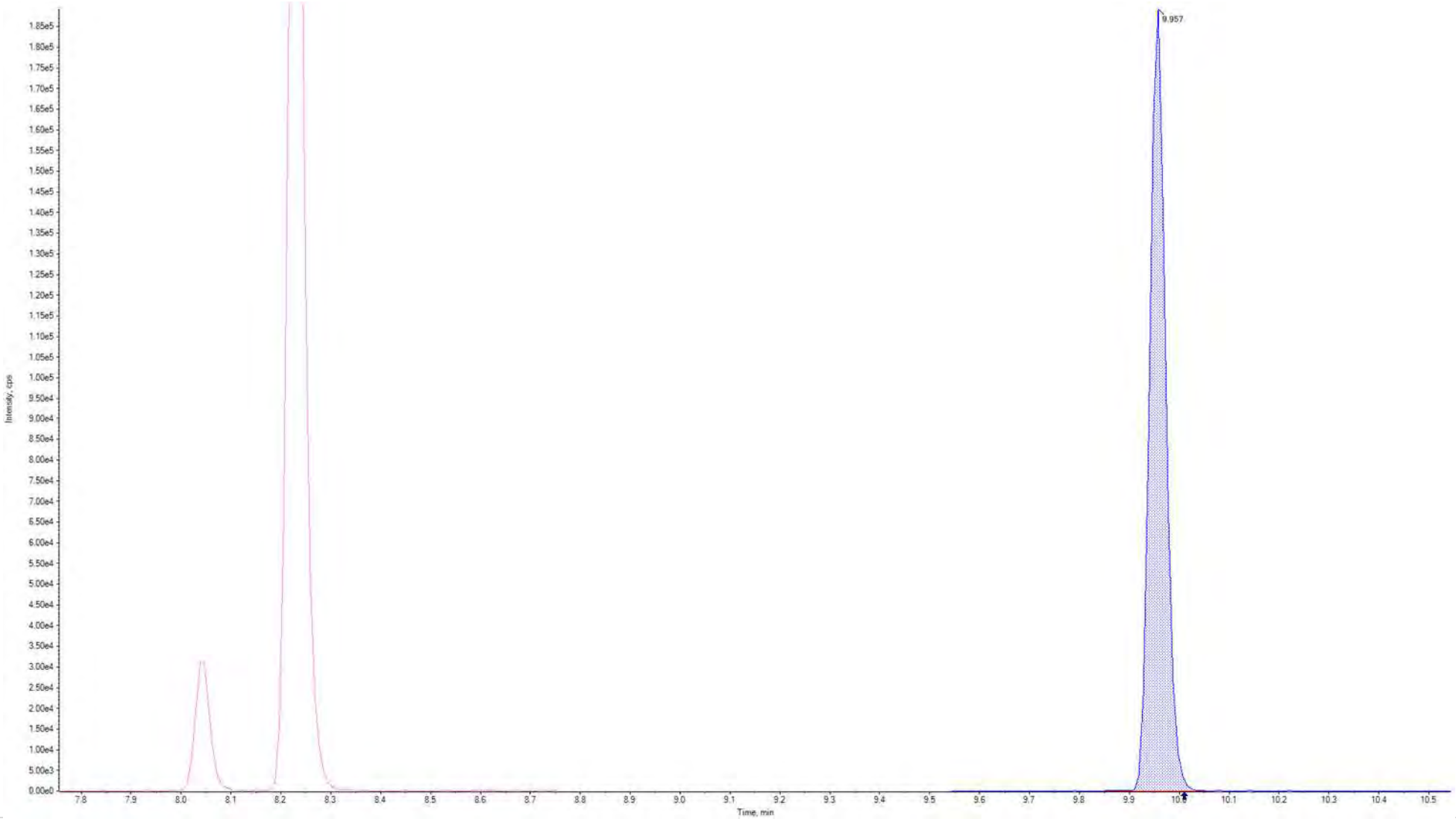
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDS_2
Sample: WG1973506-8,1633MED S/N:186769.6 Points Across peak:49



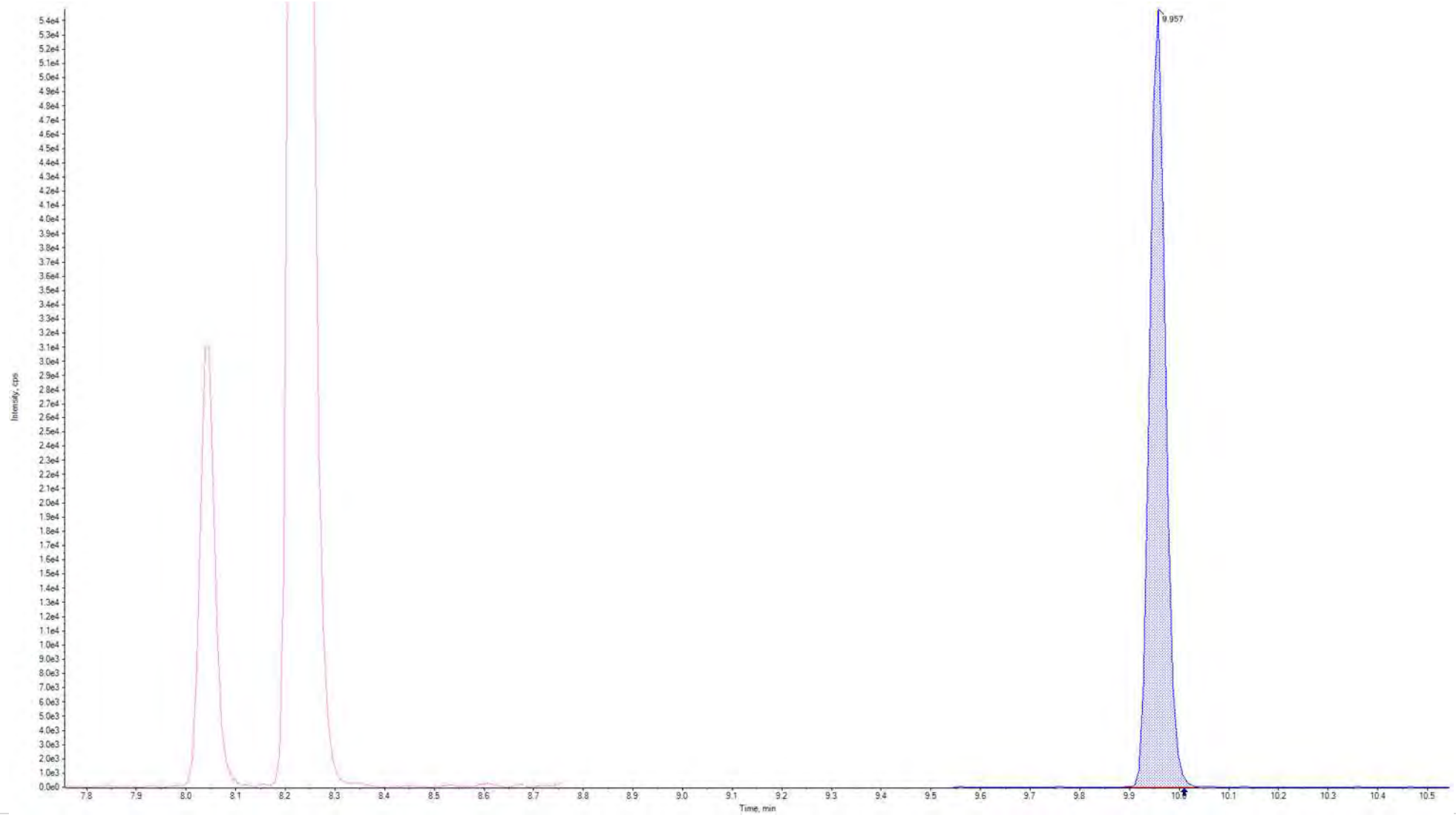
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoS
Sample: WG1973506-8,1633MED S/N:14004.4 Points Across peak:27



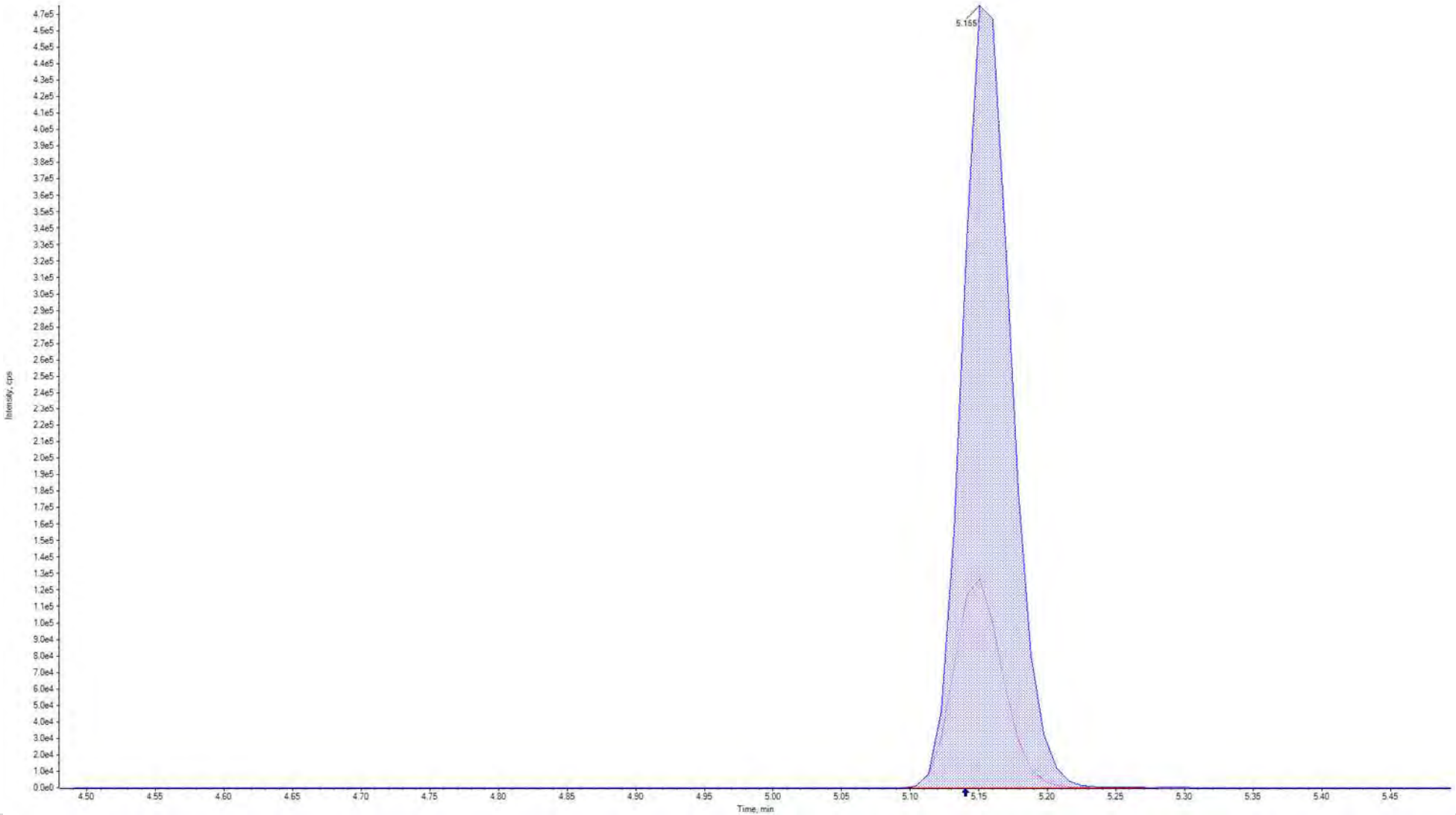
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoS_2
Sample: WG1973506-8,1633MED S/N:3314.4 Points Across peak:20



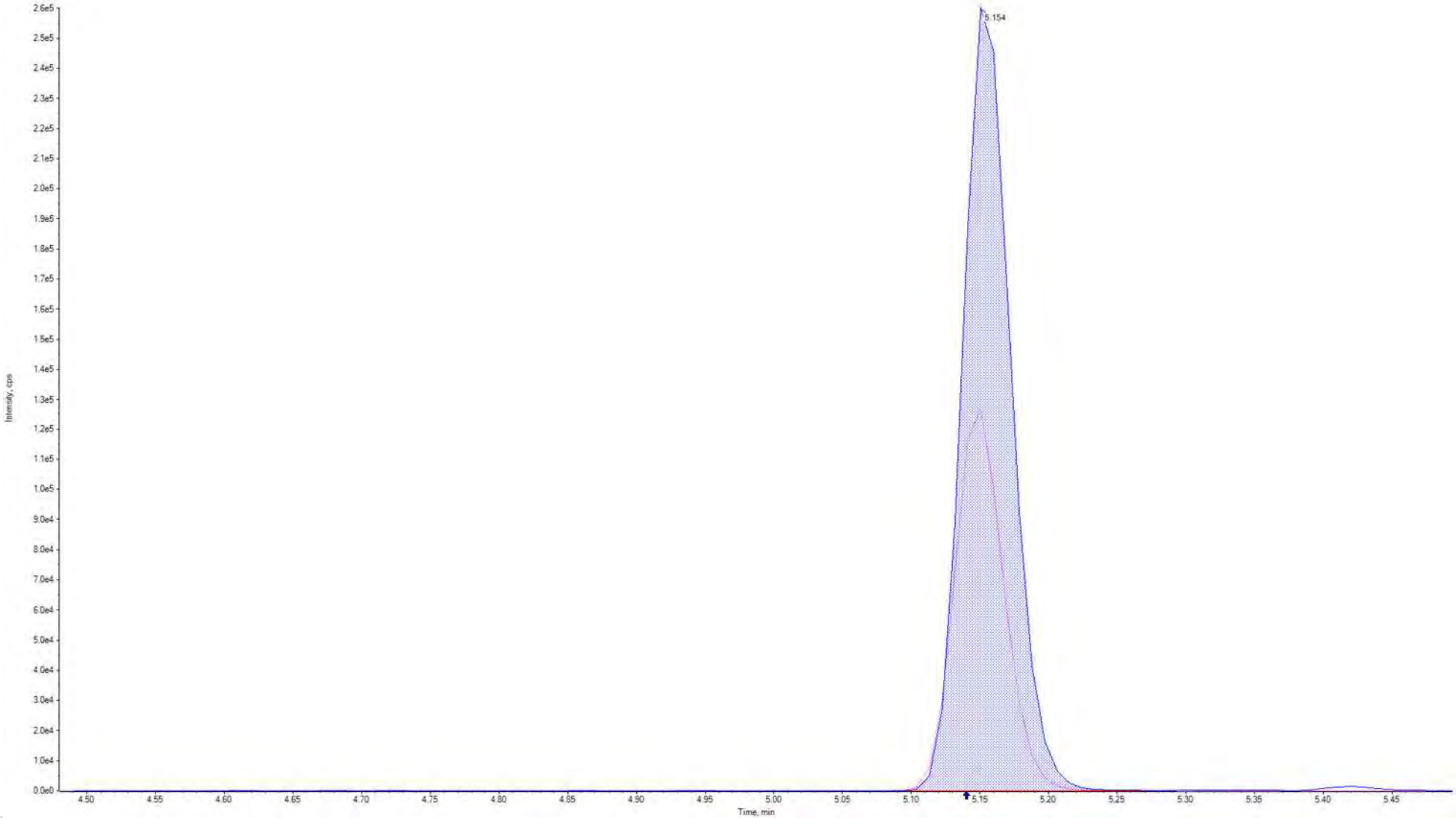
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

4:2FTS
Sample: WG1973506-8,1633MED S/N:2197847.8 Points Across peak:23



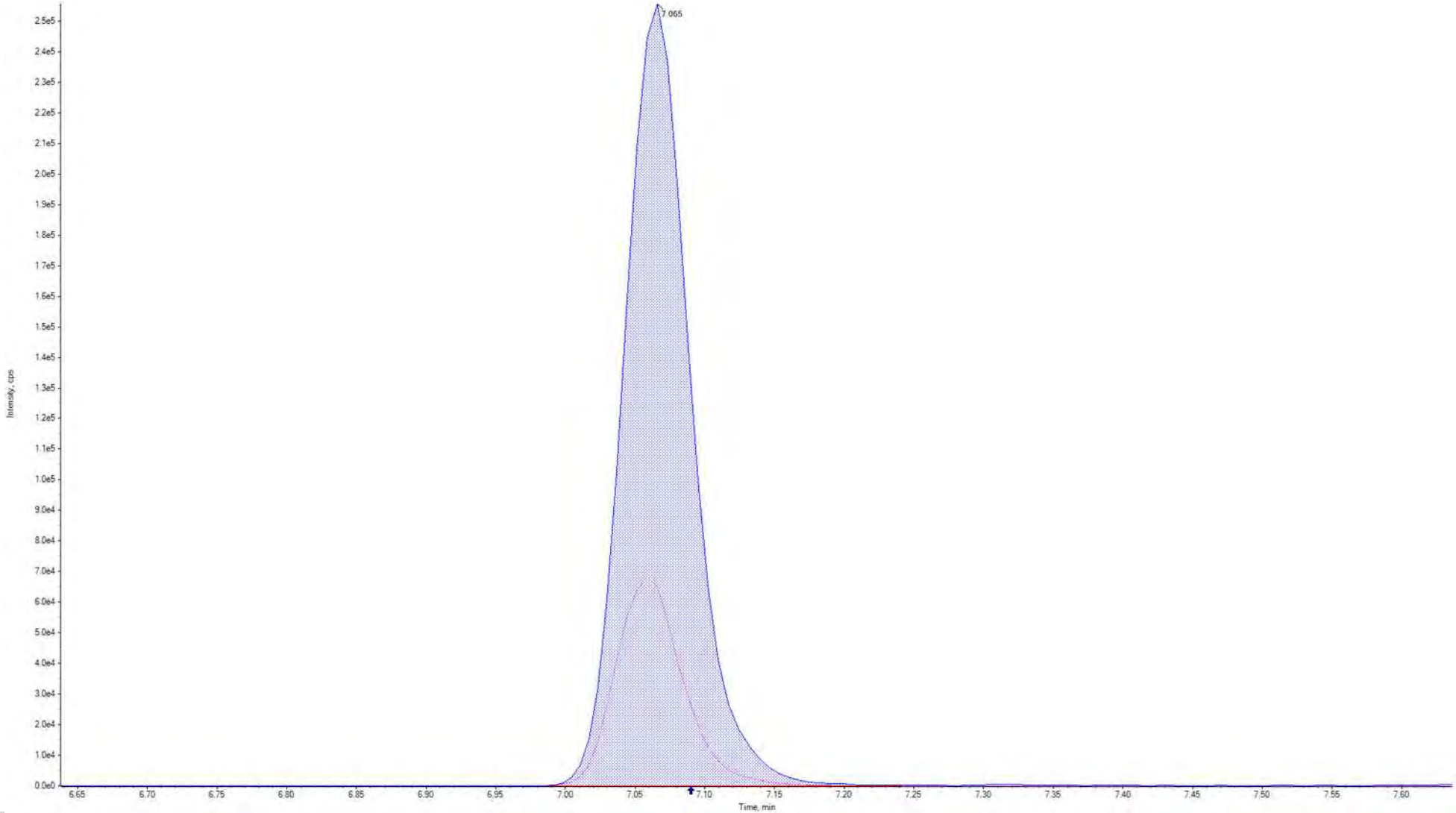
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

4:2FTS_2
Sample: WG1973506-8,1633MED S/N:15550.9 Points Across peak:23



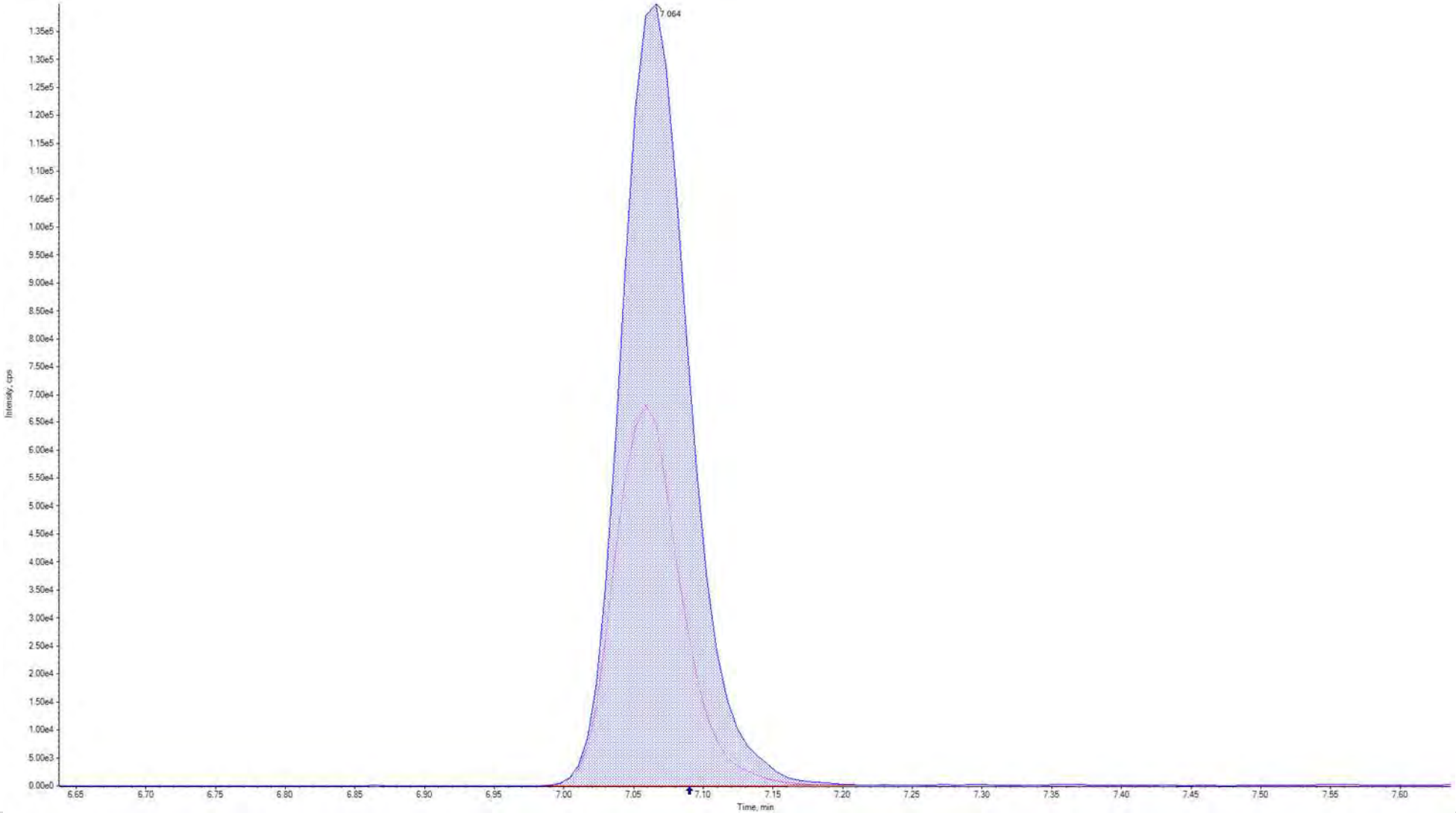
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

6:2FTS
Sample: WG1973506-8,1633MED S/N:2070.4 Points Across peak:41



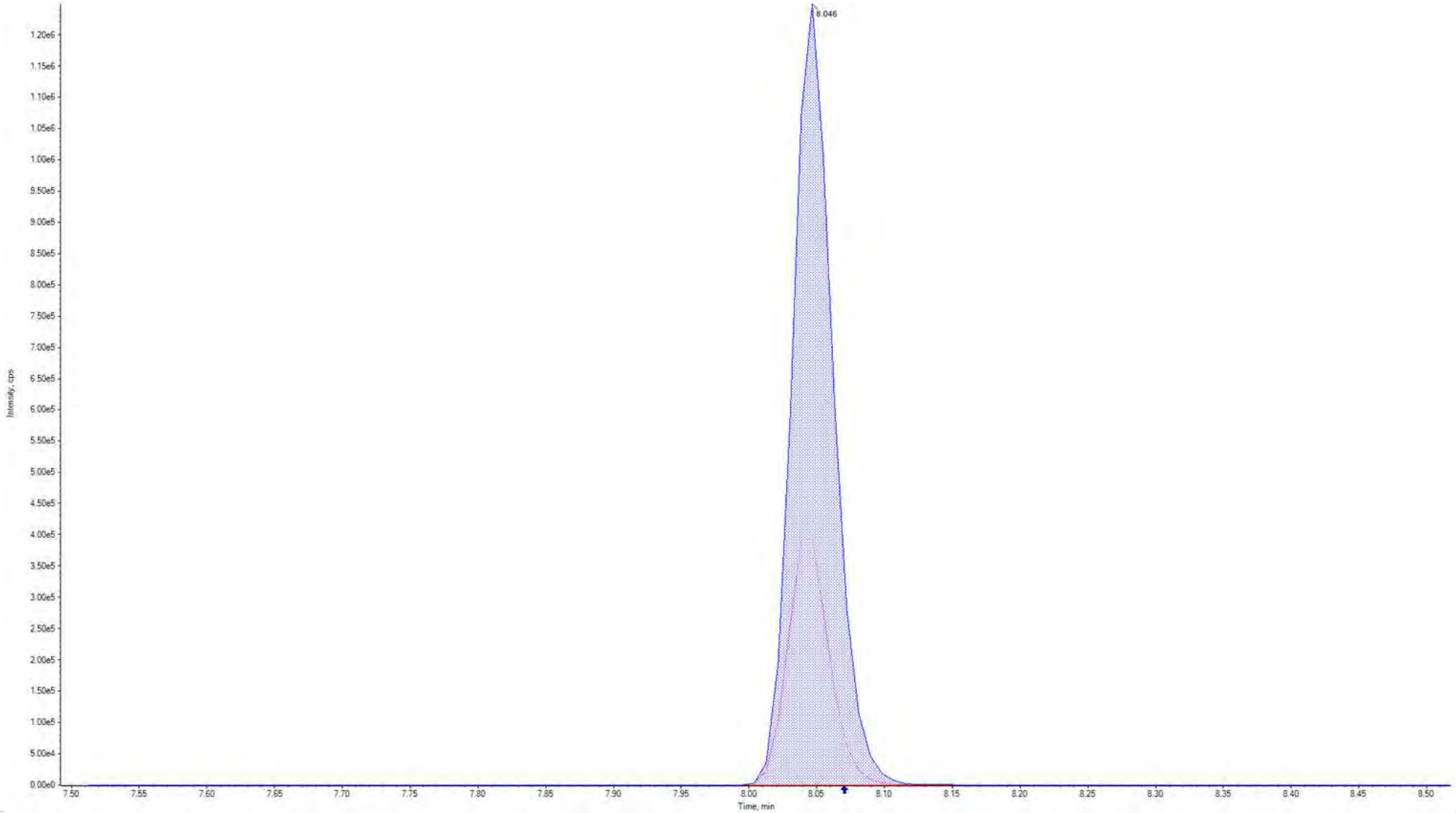
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

6:2FTS_2
Sample: WG1973506-8,1633MED S/N:34850712.2 Points Across peak:39



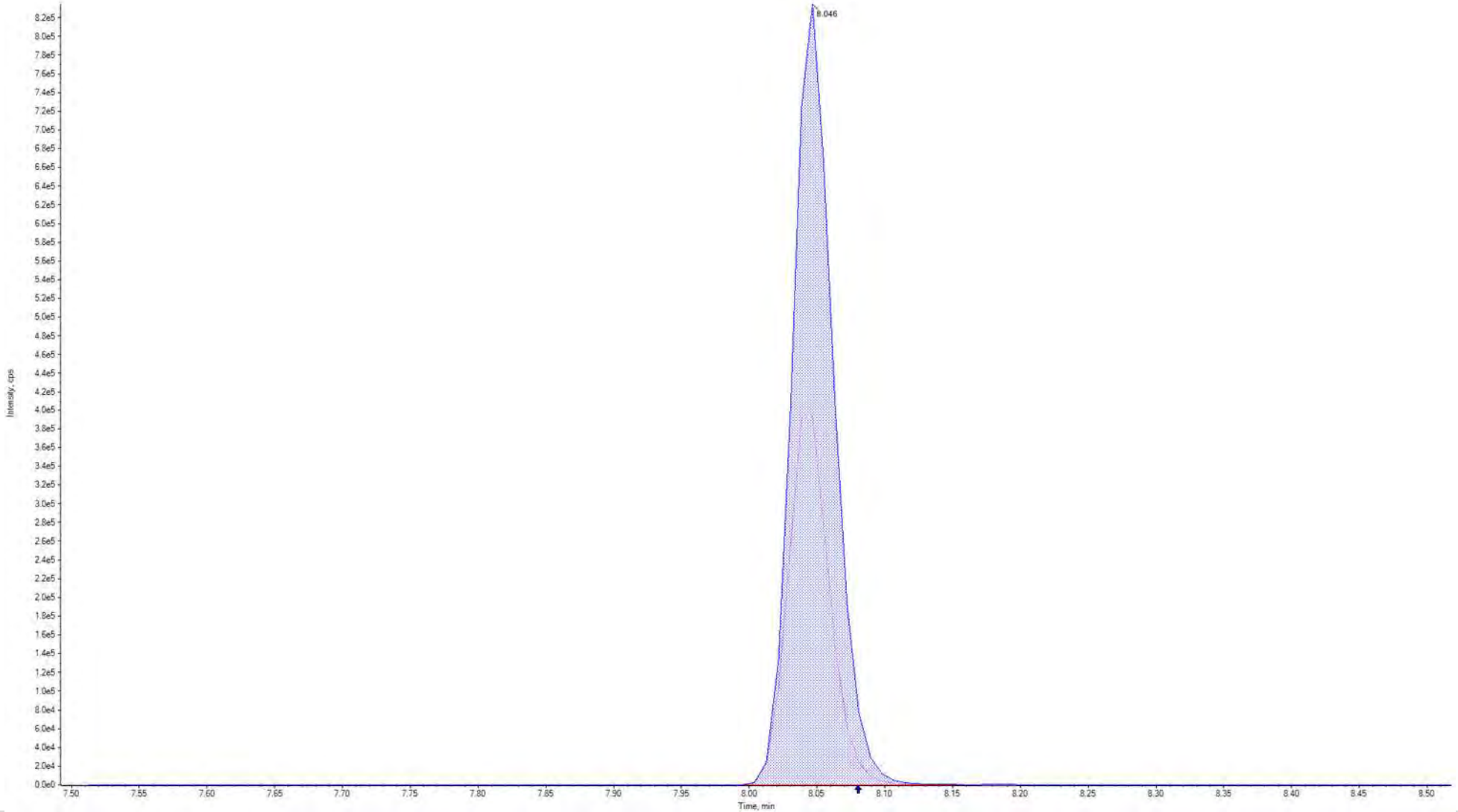
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

8:2FTS
Sample: WG1973506-8,1633MED S/N:16810.8 Points Across peak:32



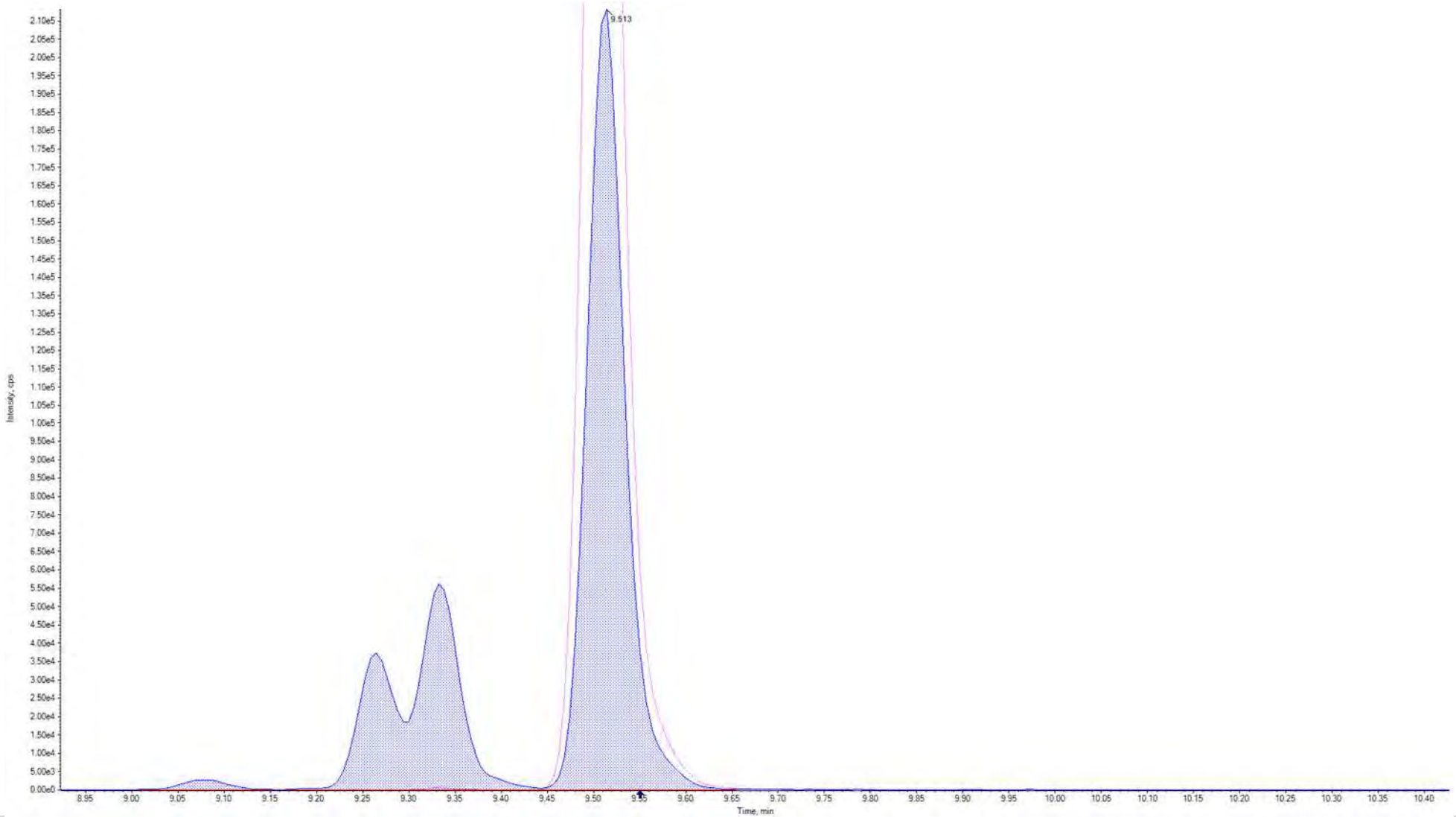
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

8:2FTS_2
Sample: WG1973506-8,1633MED S/N:4559.0 Points Across peak:26



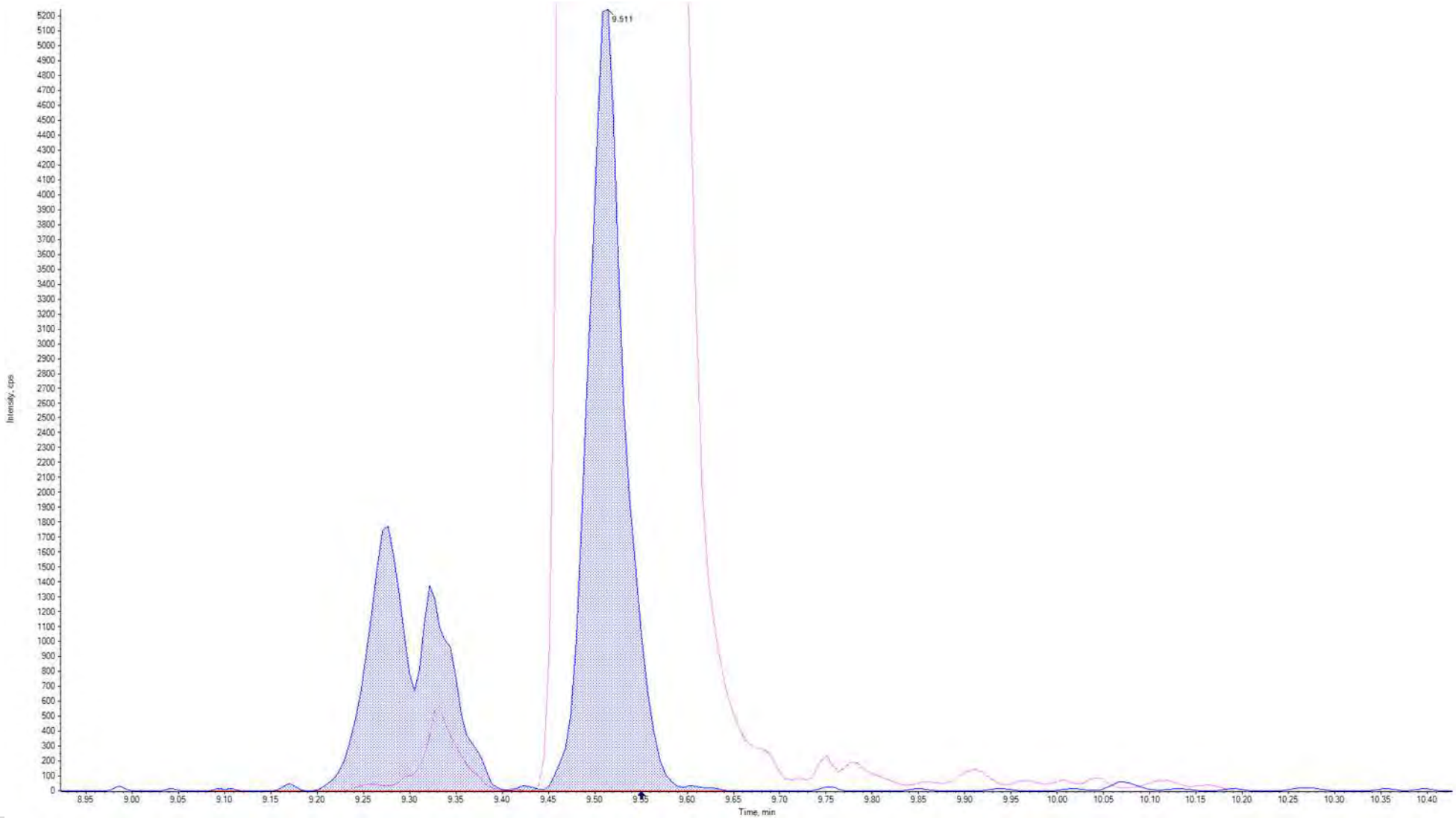
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOSA
Sample: WG1973506-8,1633MED S/N:1307.8 Points Across peak:118



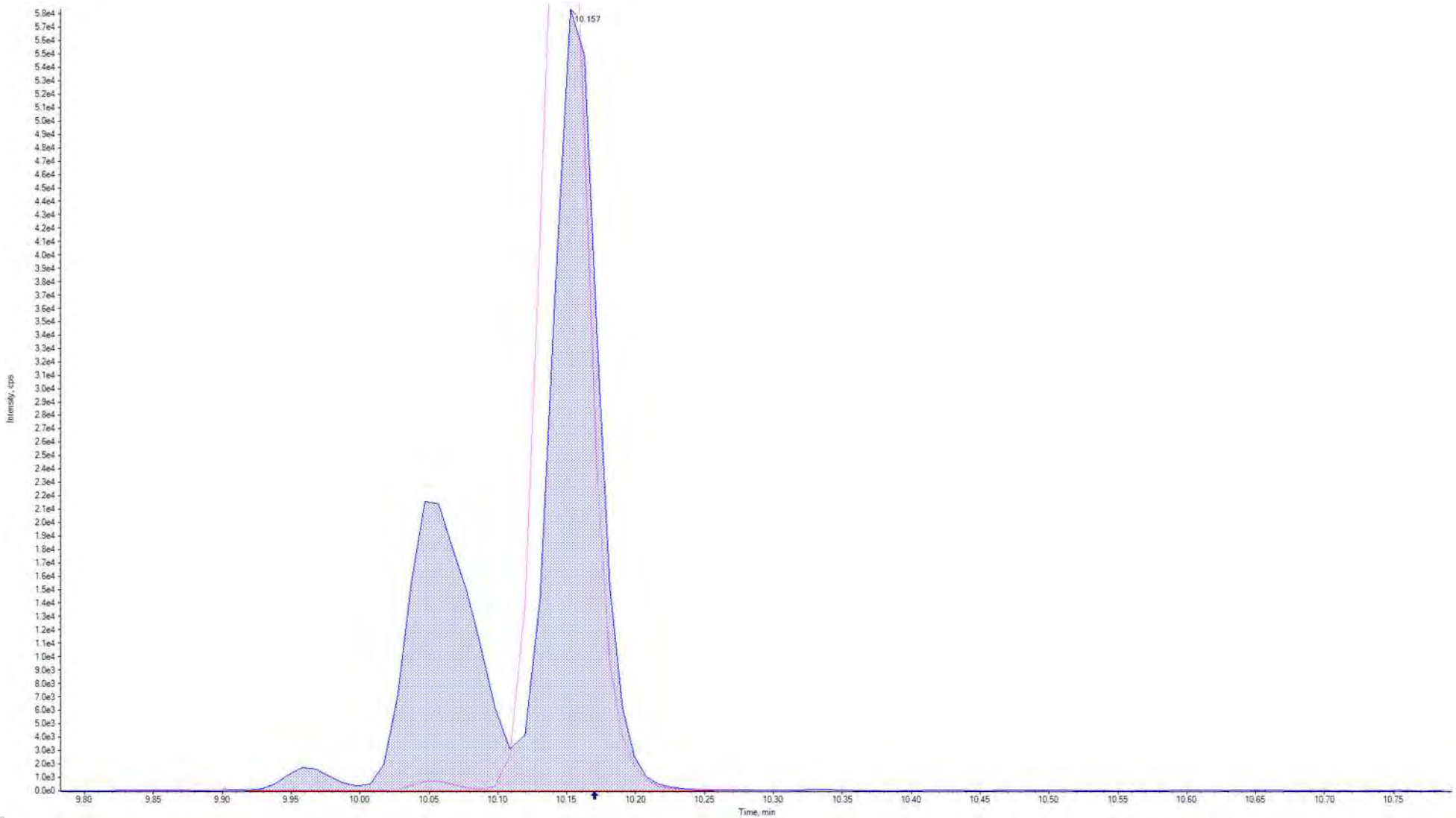
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOSA_2
Sample: WG1973506-8,1633MED S/N:686.7 Points Across peak:102



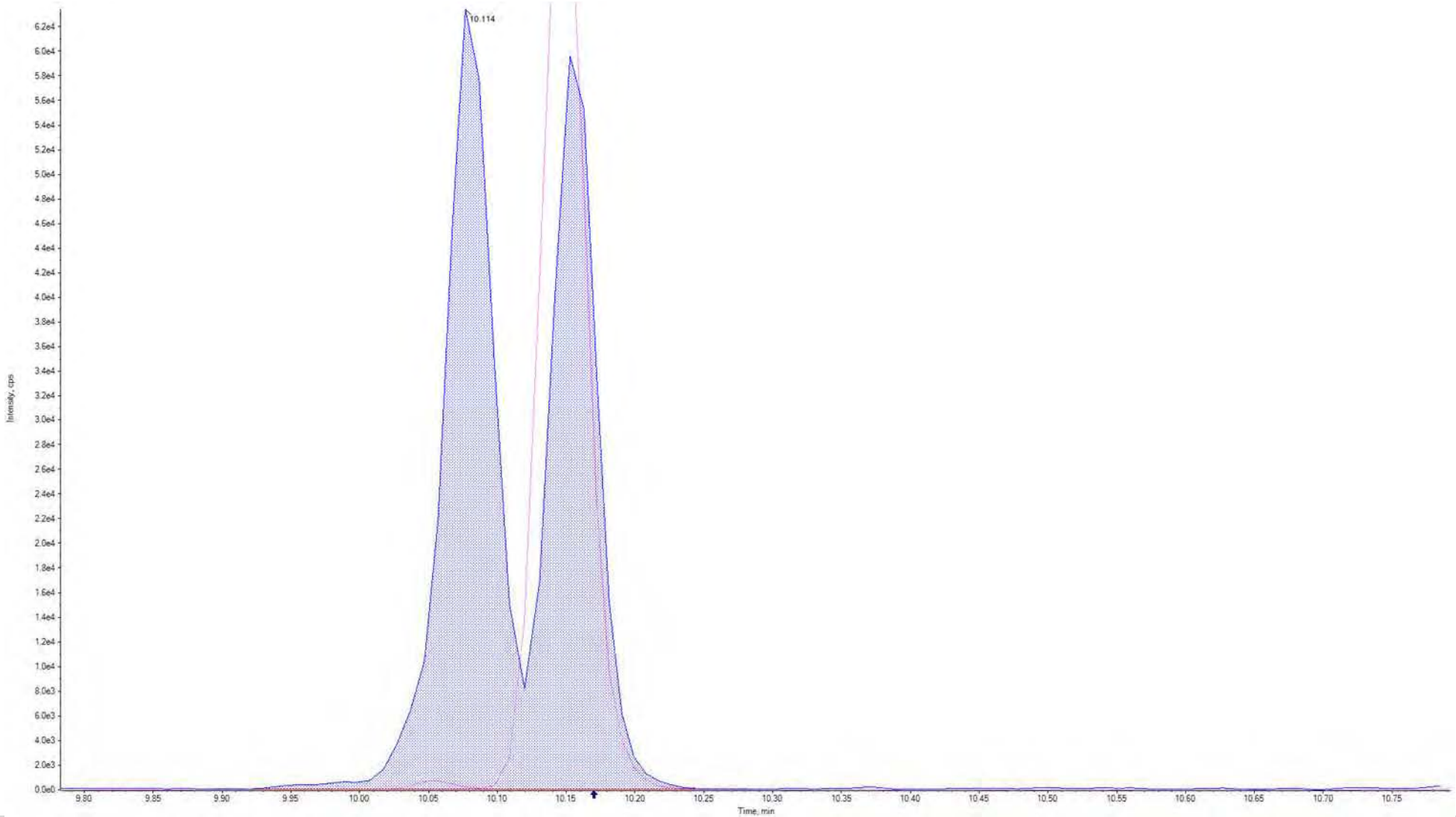
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSA
Sample: WG1973506-8,1633MED S/N:267781.1 Points Across peak:37



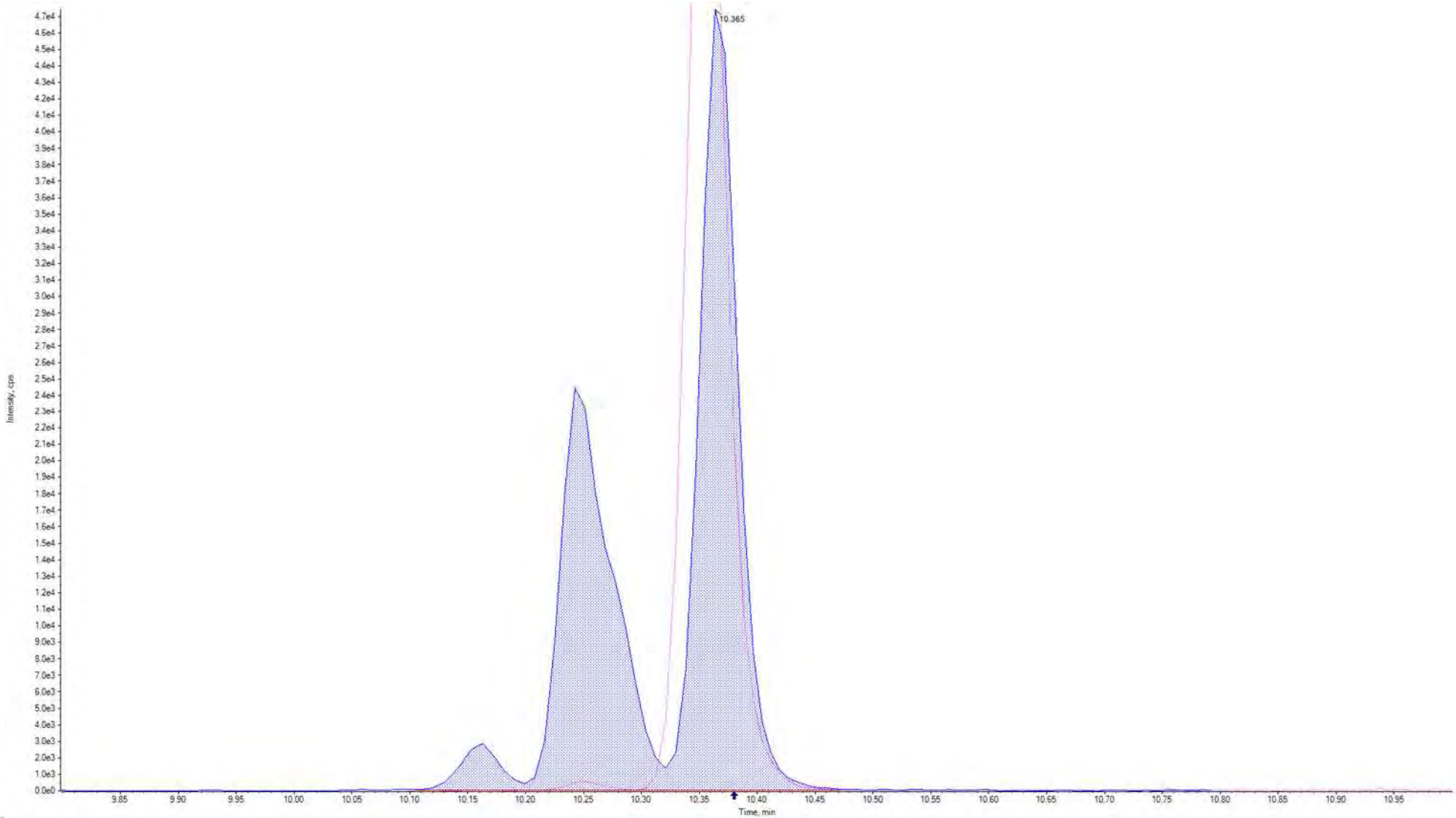
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSA_2
Sample: WG1973506-8,1633MED S/N:1242.5 Points Across peak:37



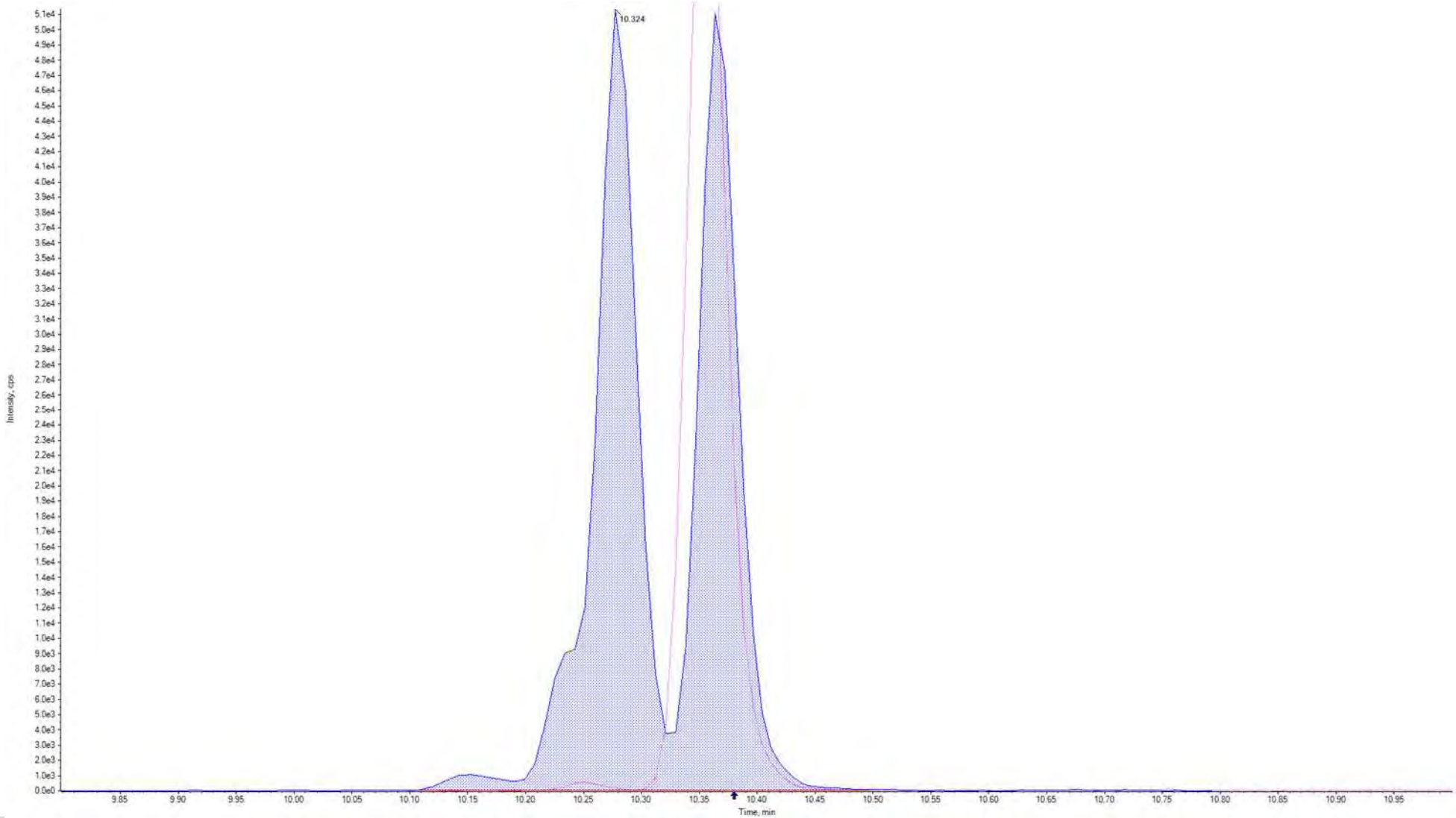
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSA
Sample: WG1973506-8,1633MED S/N:594965.6 Points Across peak:46



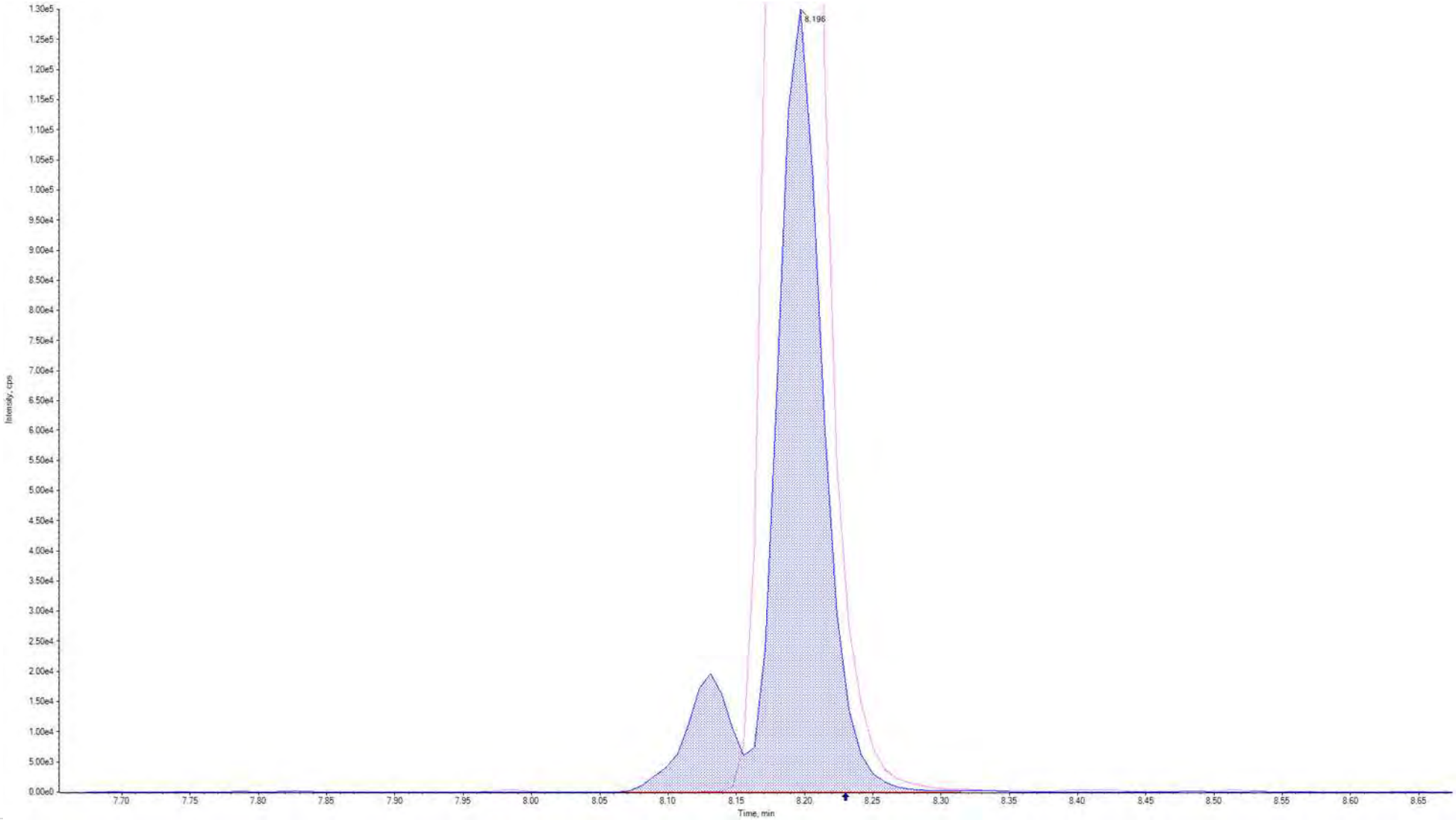
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSA_2
Sample: WG1973506-8,1633MED S/N:12209.0 Points Across peak:50



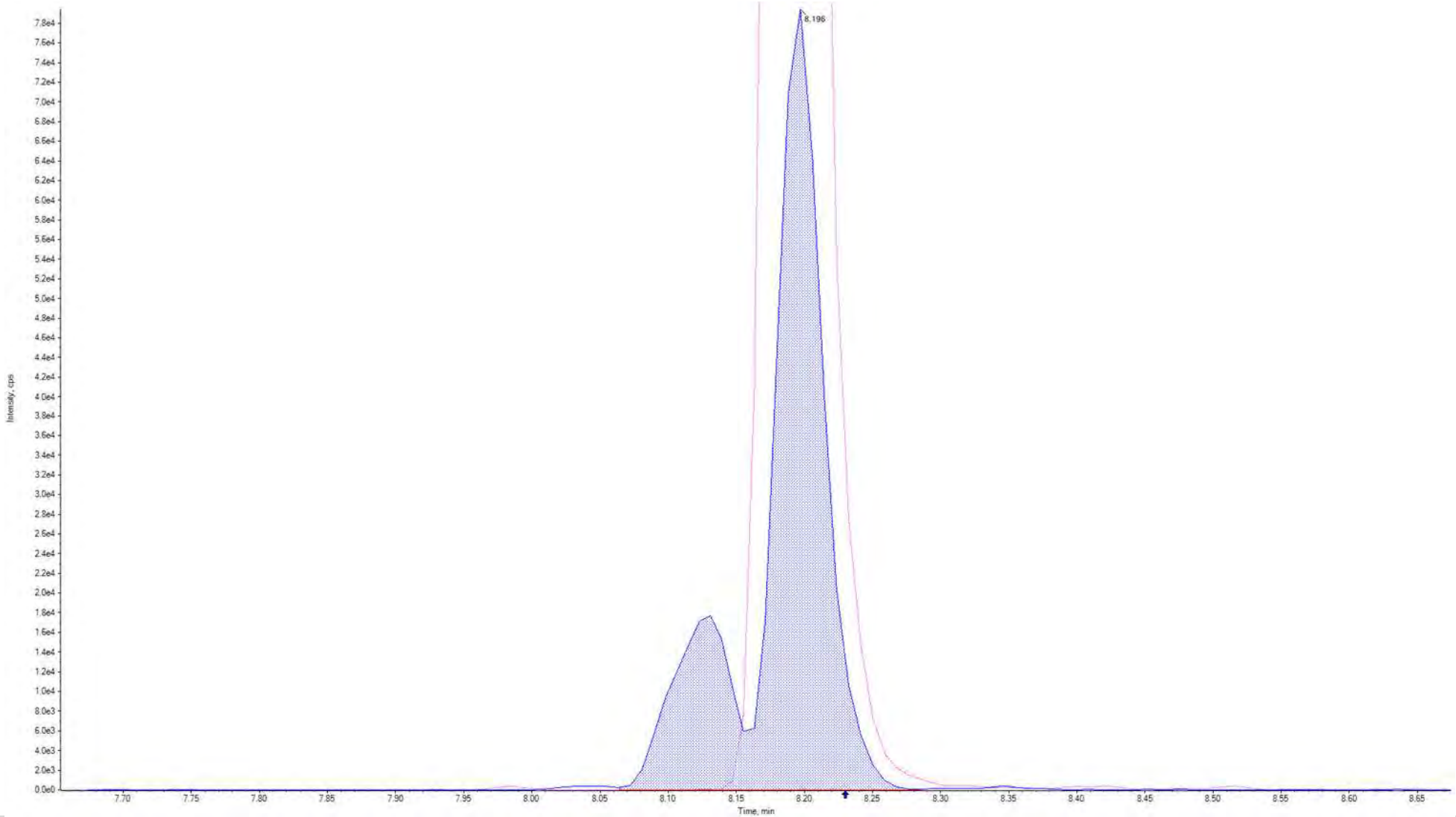
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSAA
Sample: WG1973506-8,1633MED S/N:1196.3 Points Across peak:32



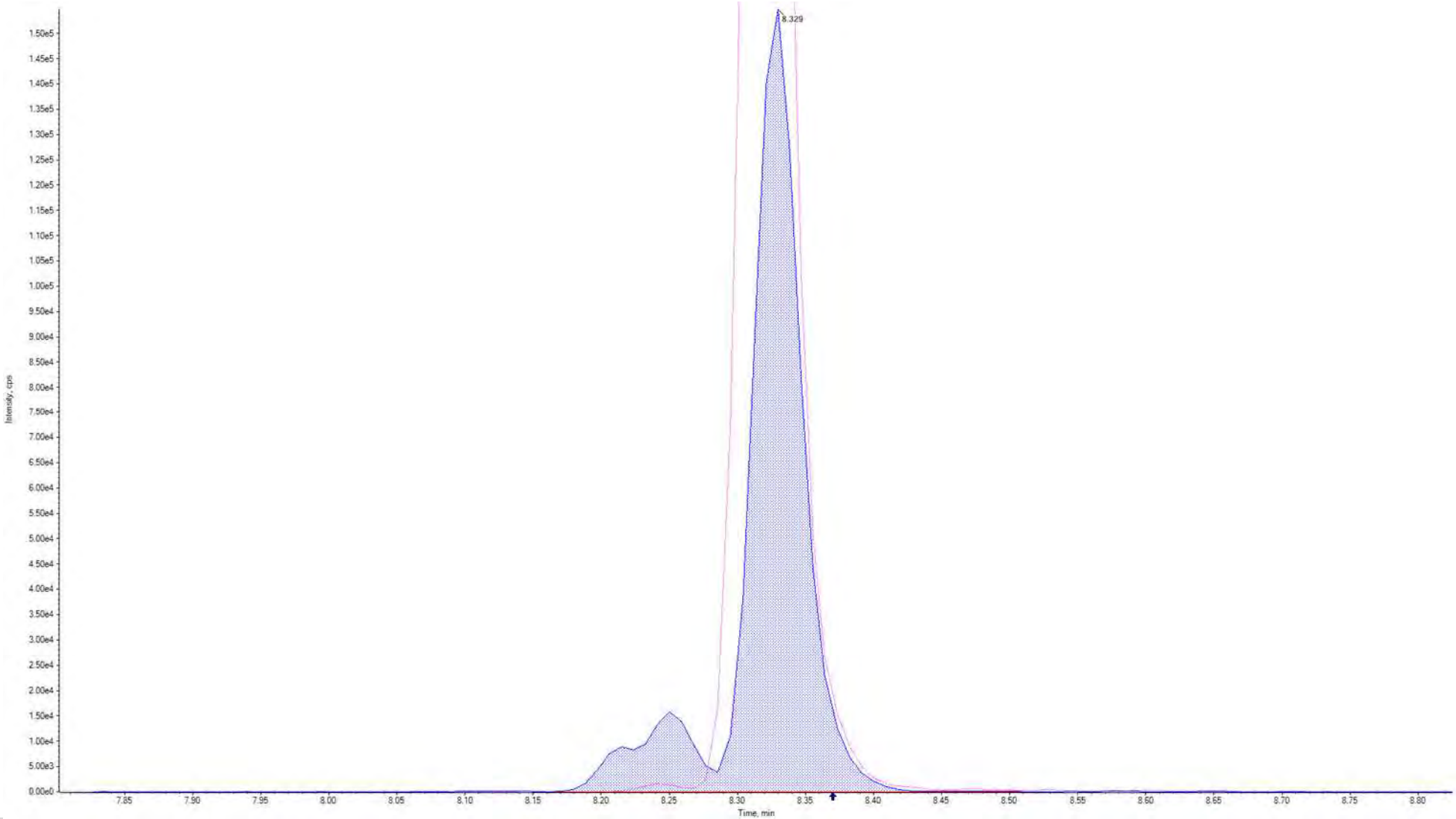
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSAA_2
Sample: WG1973506-8,1633MED S/N:506.0 Points Across peak:28



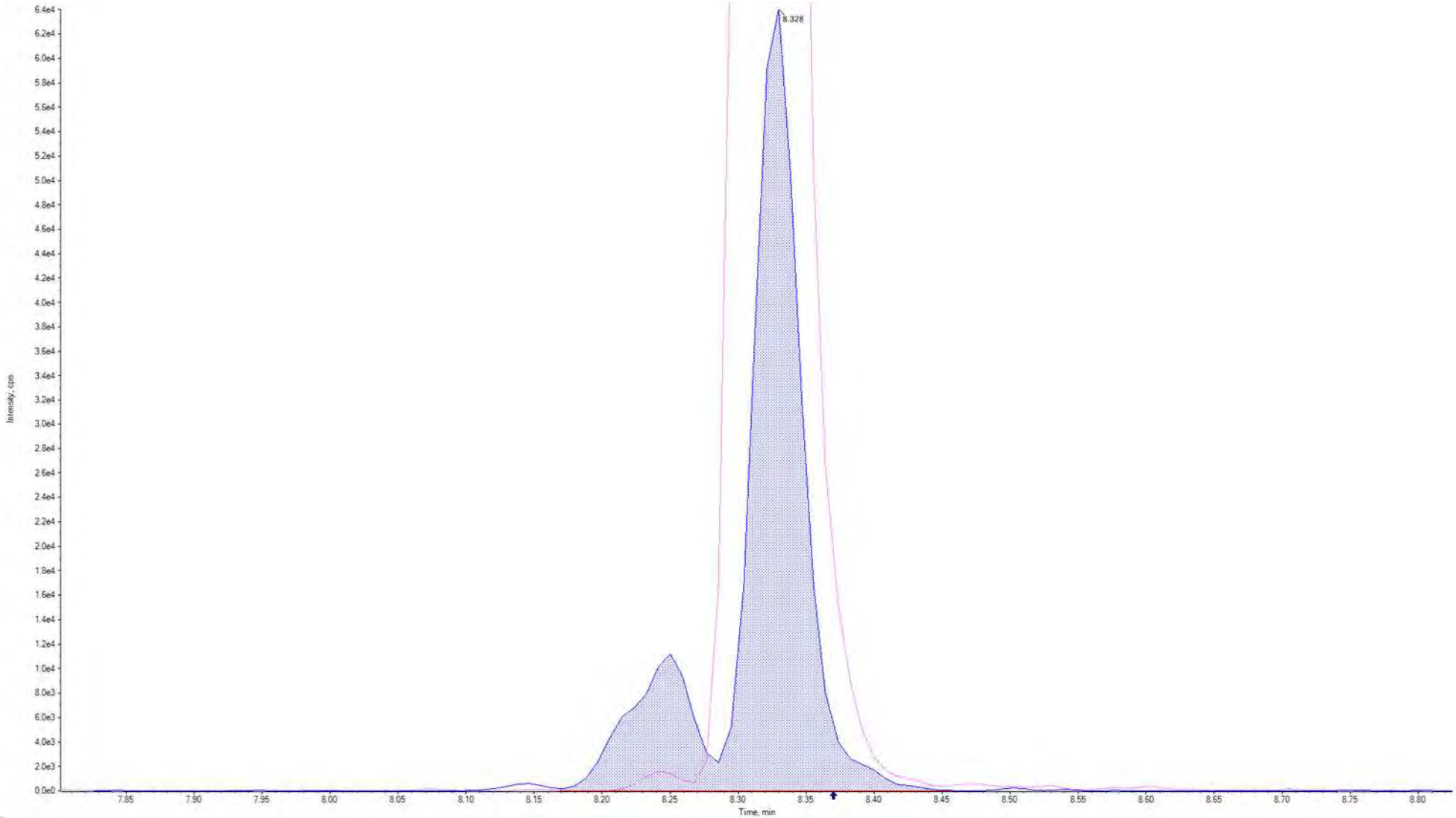
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSAA
Sample: WG1973506-8,1633MED S/N:1032.9 Points Across peak:44



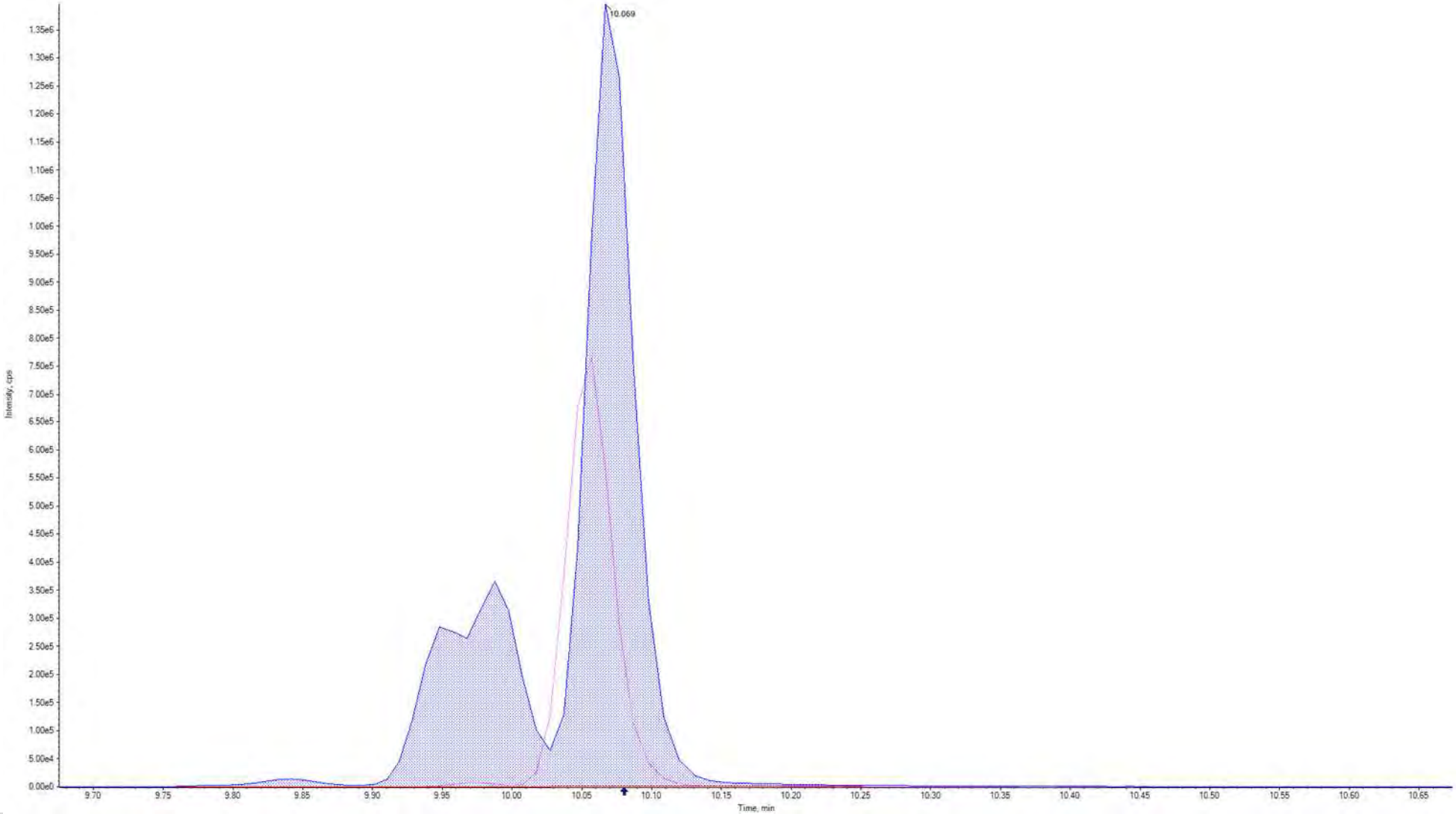
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSAA_2
Sample: WG1973506-8,1633MED S/N:541.9 Points Across peak:36



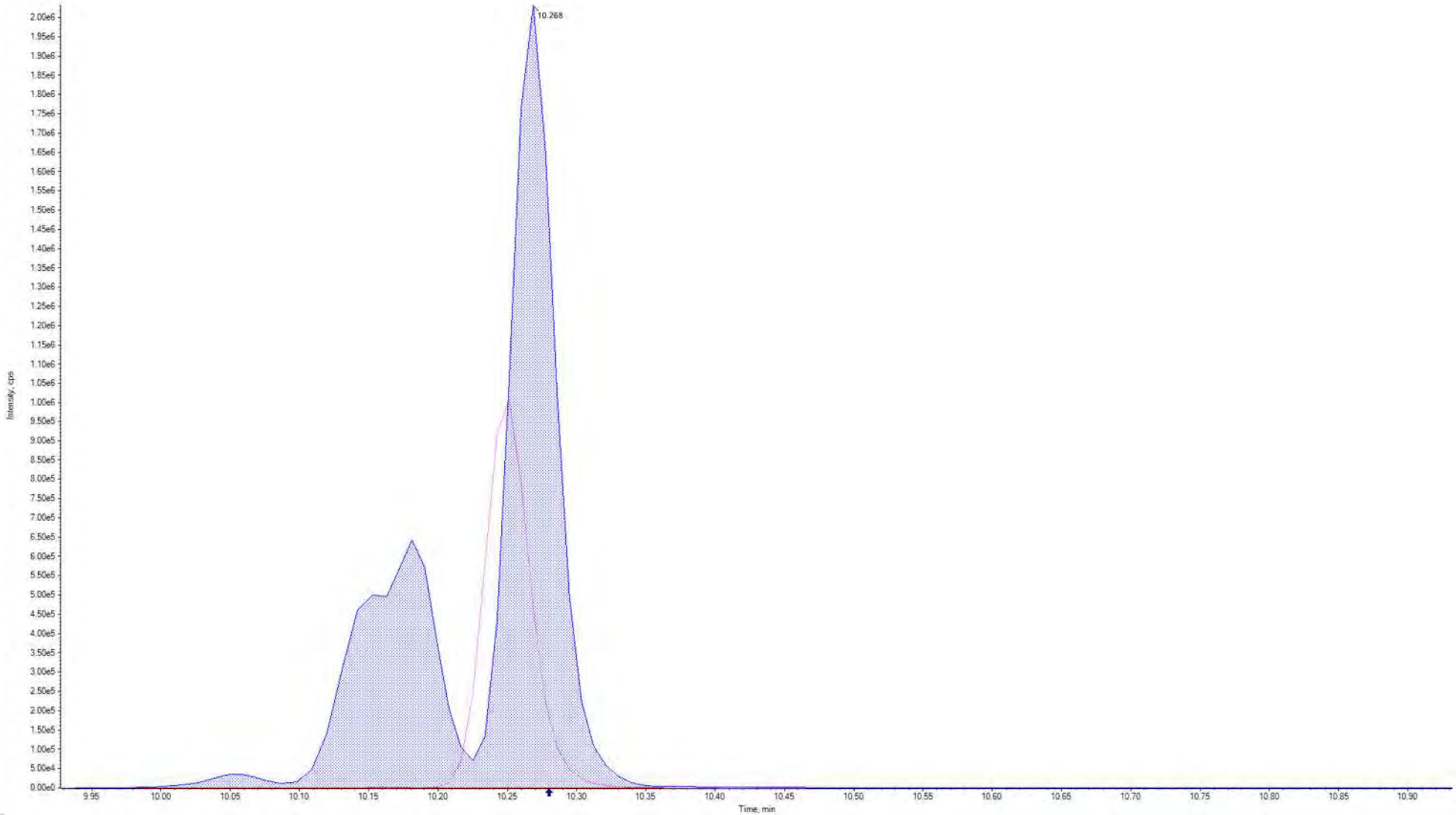
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSE
Sample: WG1973506-8,1633MED S/N:3003.5 Points Across peak:59



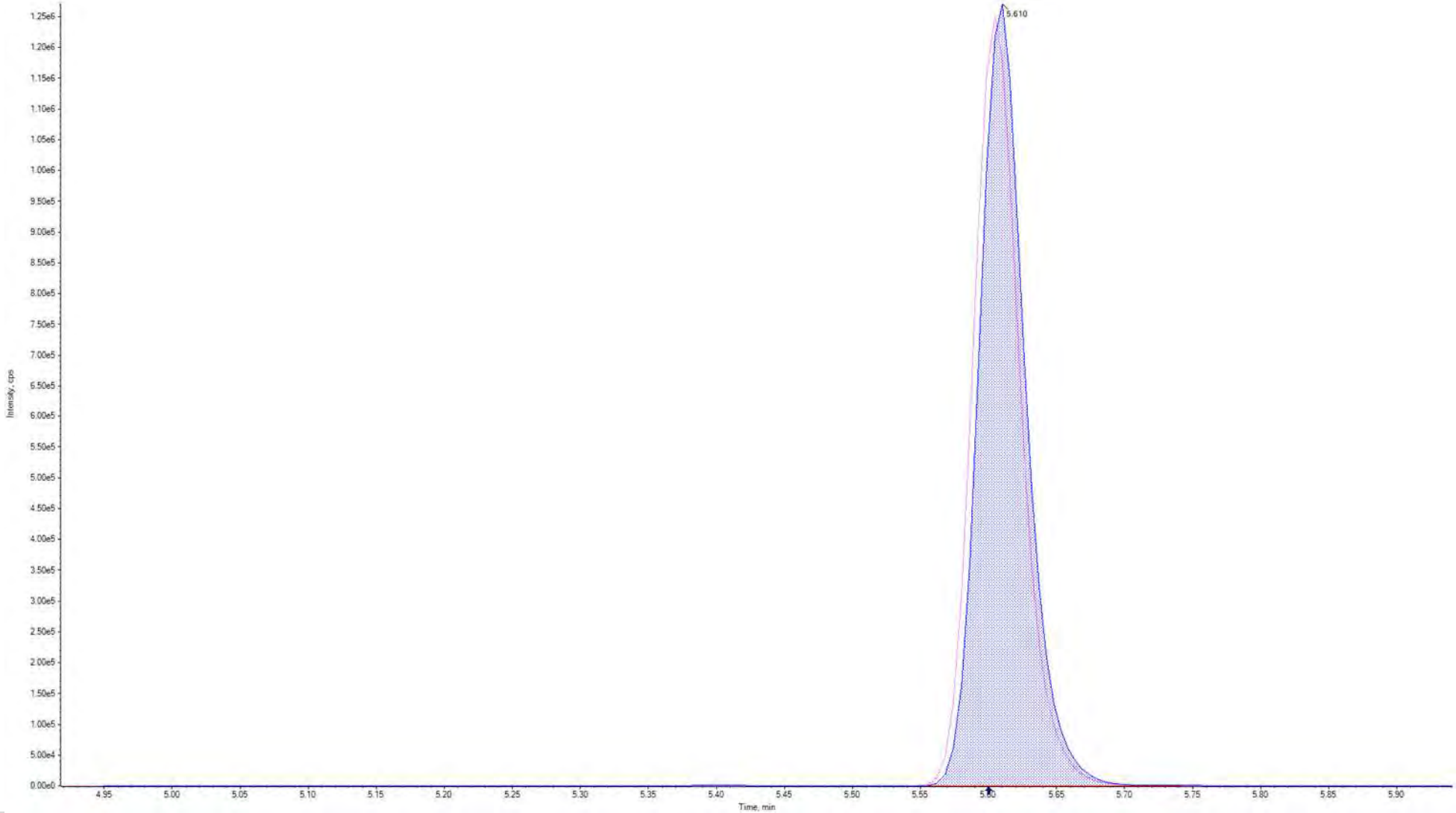
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSE
Sample: WG1973506-8,1633MED S/N:3933.6 Points Across peak:43



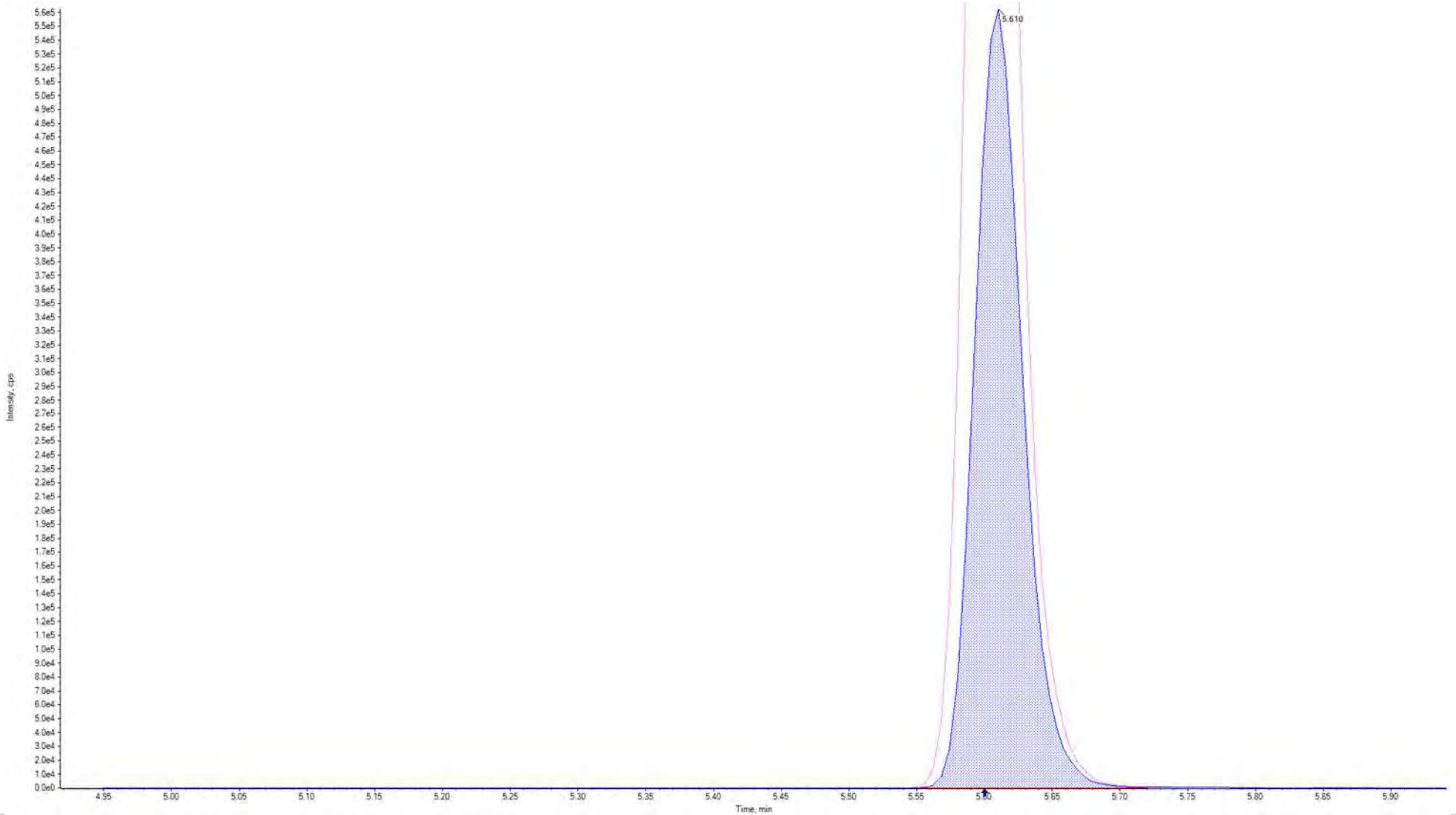
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

HFPO-DA
Sample: WG1973506-8,1633MED S/N:15429.4 Points Across peak:43



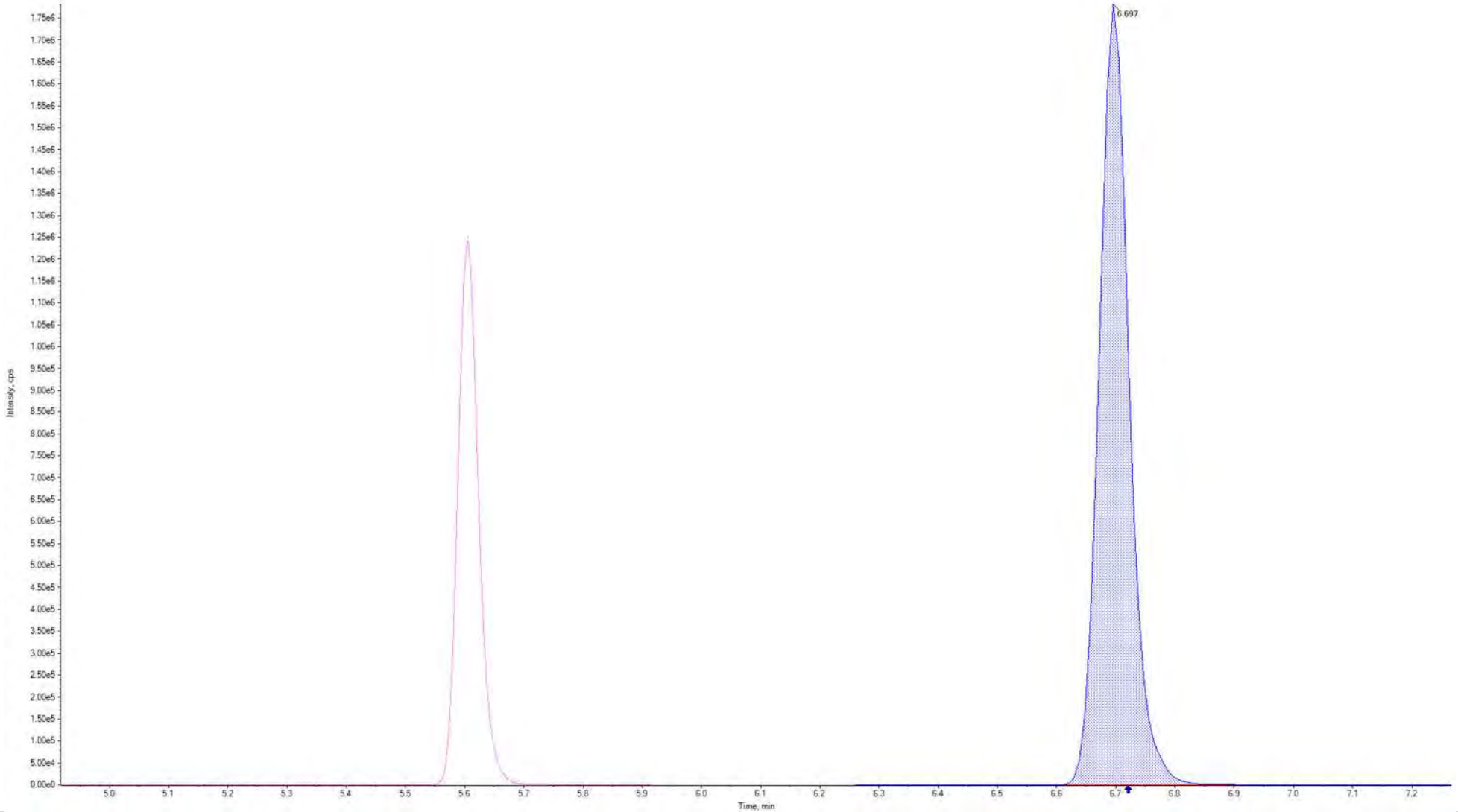
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

HFPO-DA_2
Sample: WG1973506-8,1633MED S/N:6105.4 Points Across peak:39



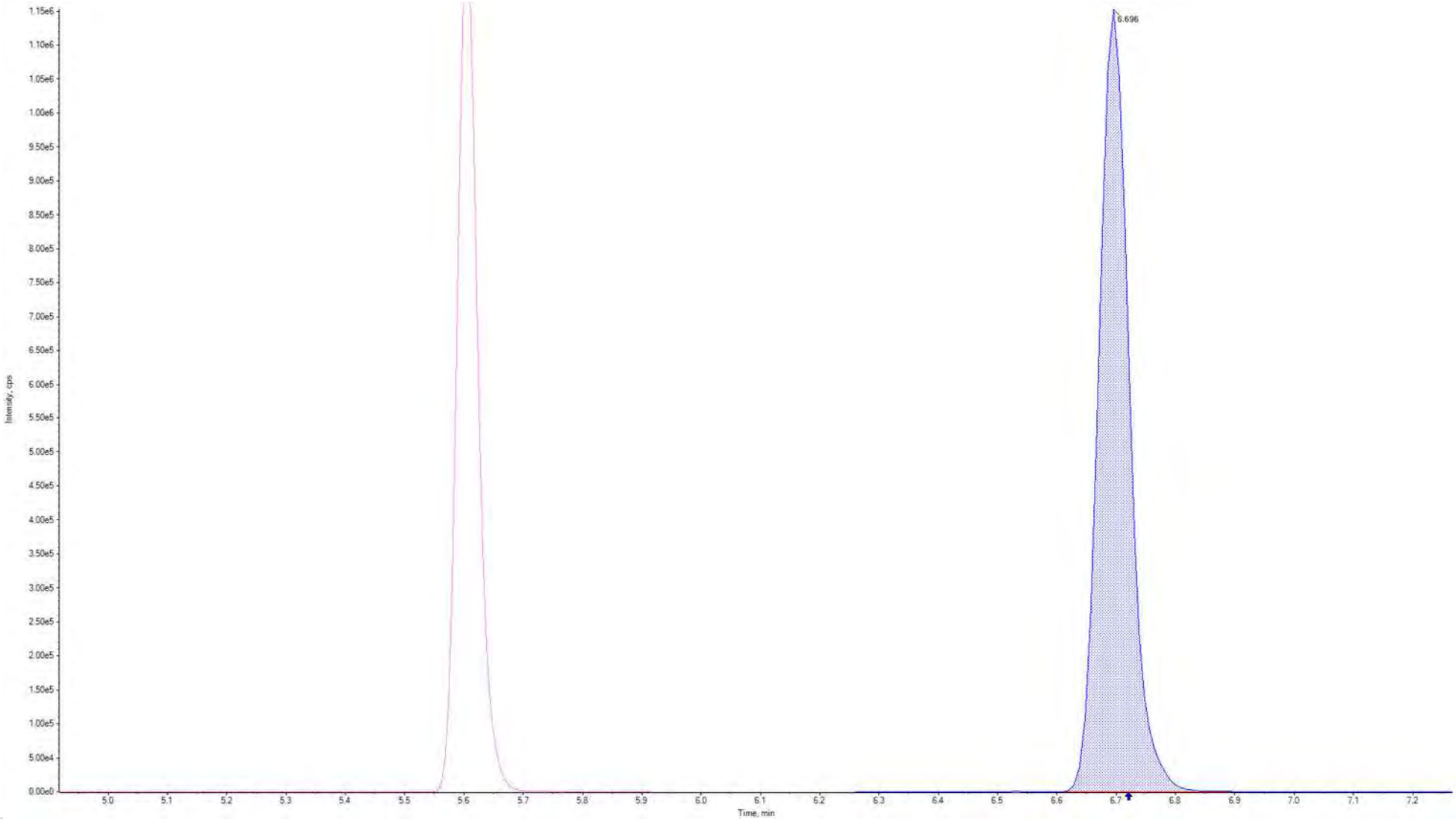
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

ADONA
Sample: WG1973506-8,1633MED S/N:17121.8 Points Across peak:46



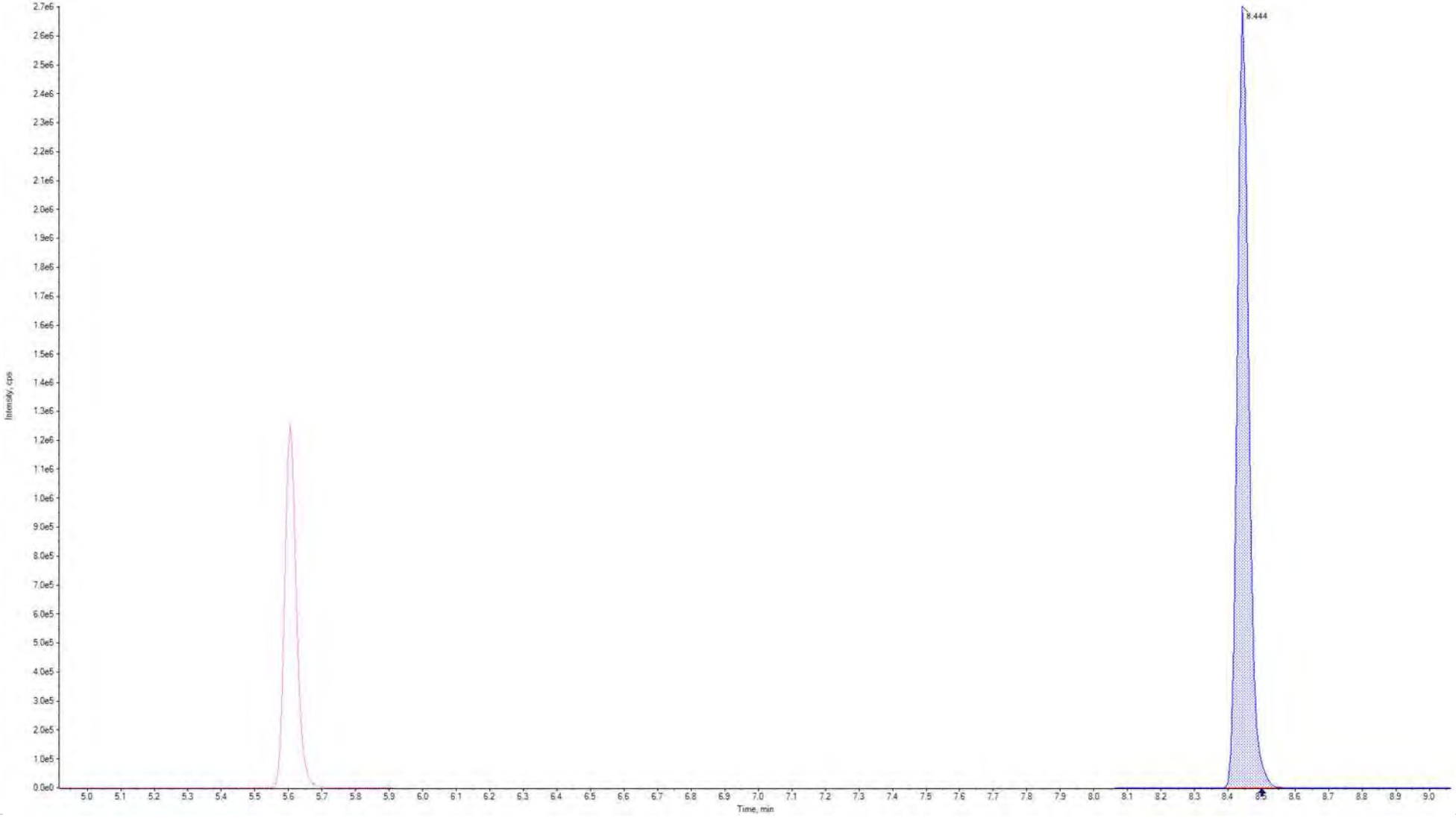
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

ADONA_2
Sample: WG1973506-8,1633MED S/N:24319.8 Points Across peak:51



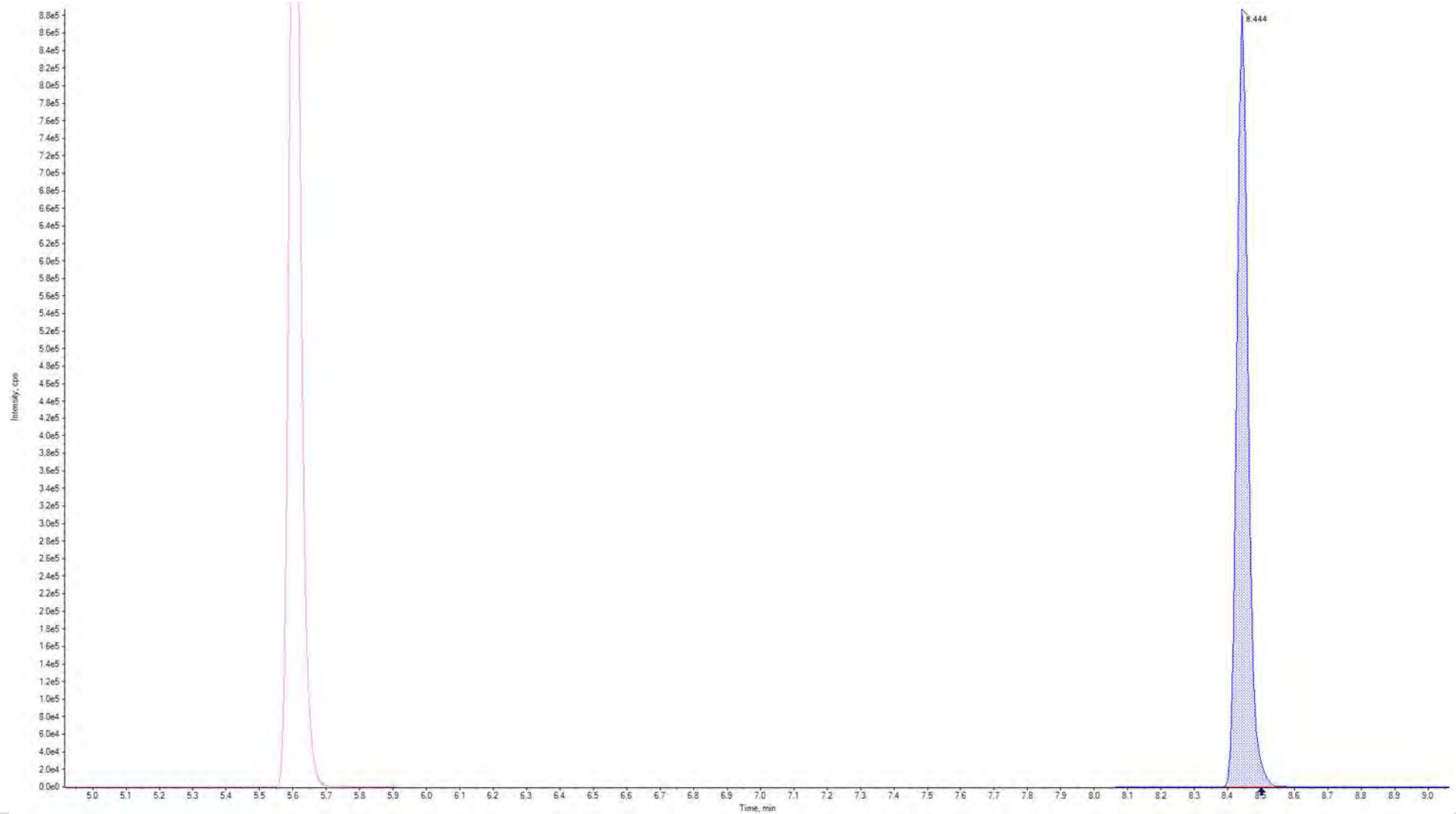
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

9Cl-PF3ONS
Sample: WG1973506-8,1633MED S/N:16171.6 Points Across peak:36



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

9Cl-PF3ONS_2
Sample: WG1973506-8,1633MED S/N:5285.4 Points Across peak:29



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

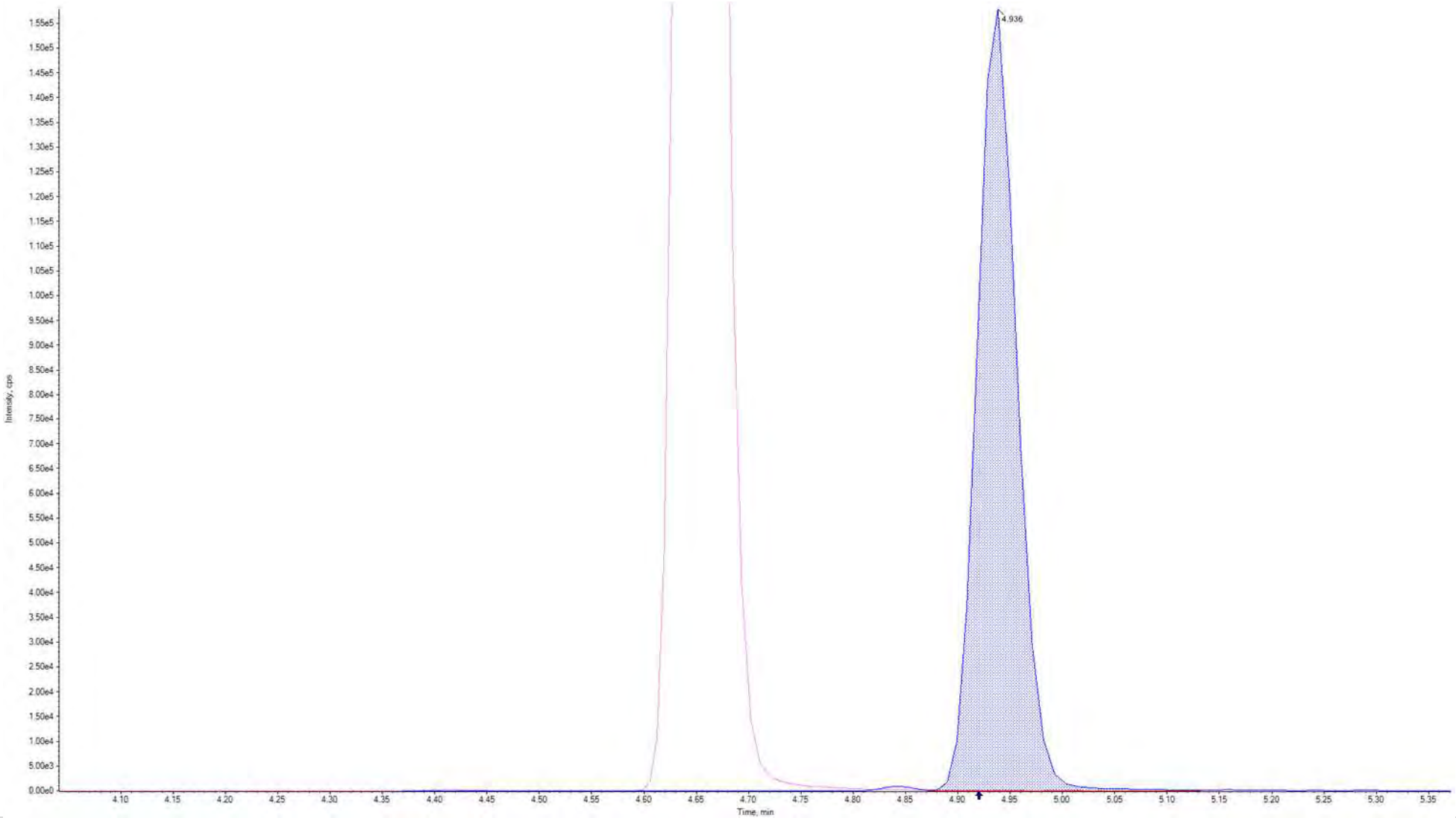
11Cl-PF3OUdS
Sample: WG1973506-8,1633MED S/N:7999595.8 Points Across peak:51

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

11Cl-PF3OUdS_2
Sample: WG1973506-8,1633MED S/N:5626.8 Points Across peak:49

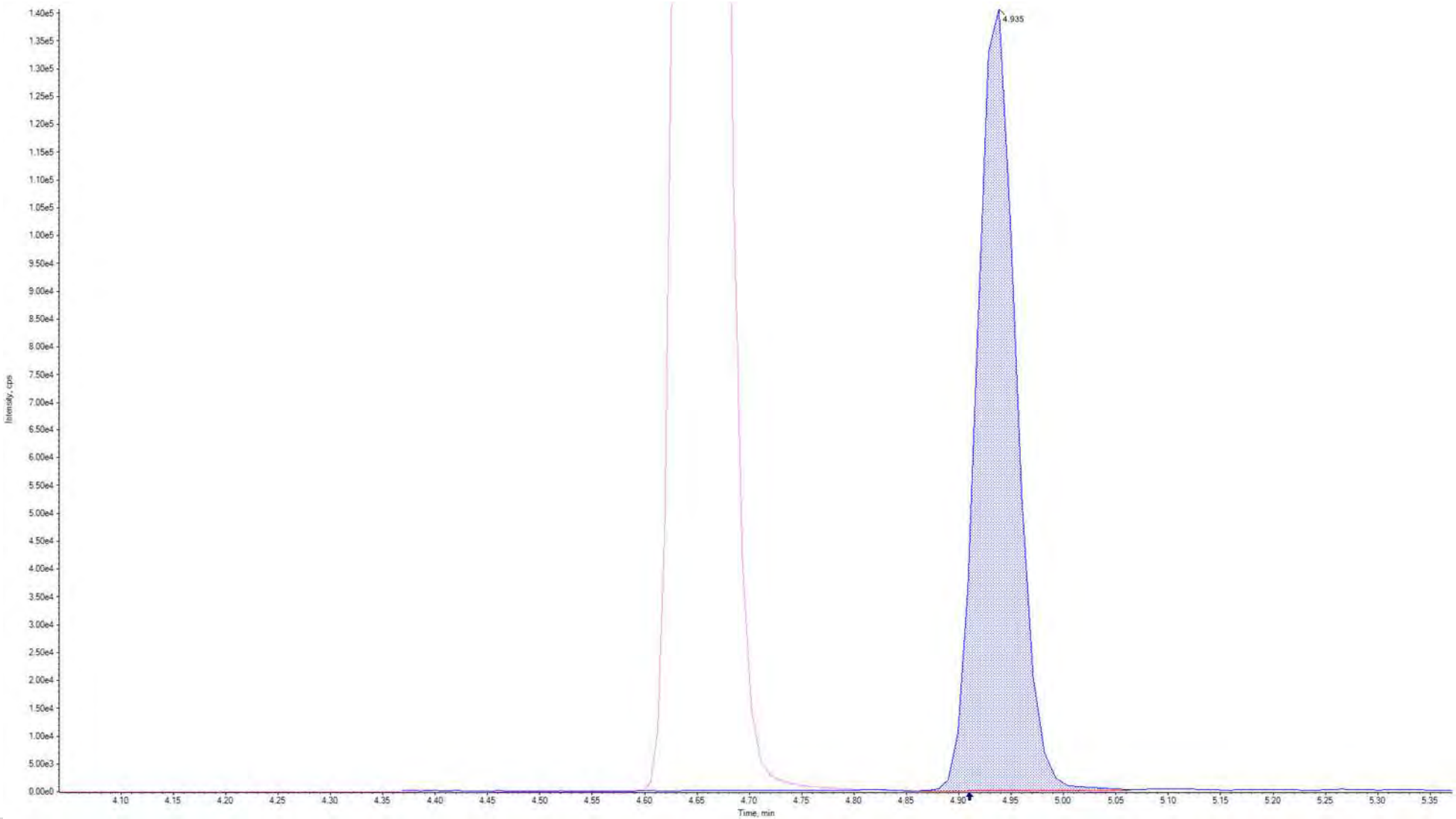
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

3:3FTCA
Sample: WG1973506-8,1633MED S/N:2699.2 Points Across peak:28



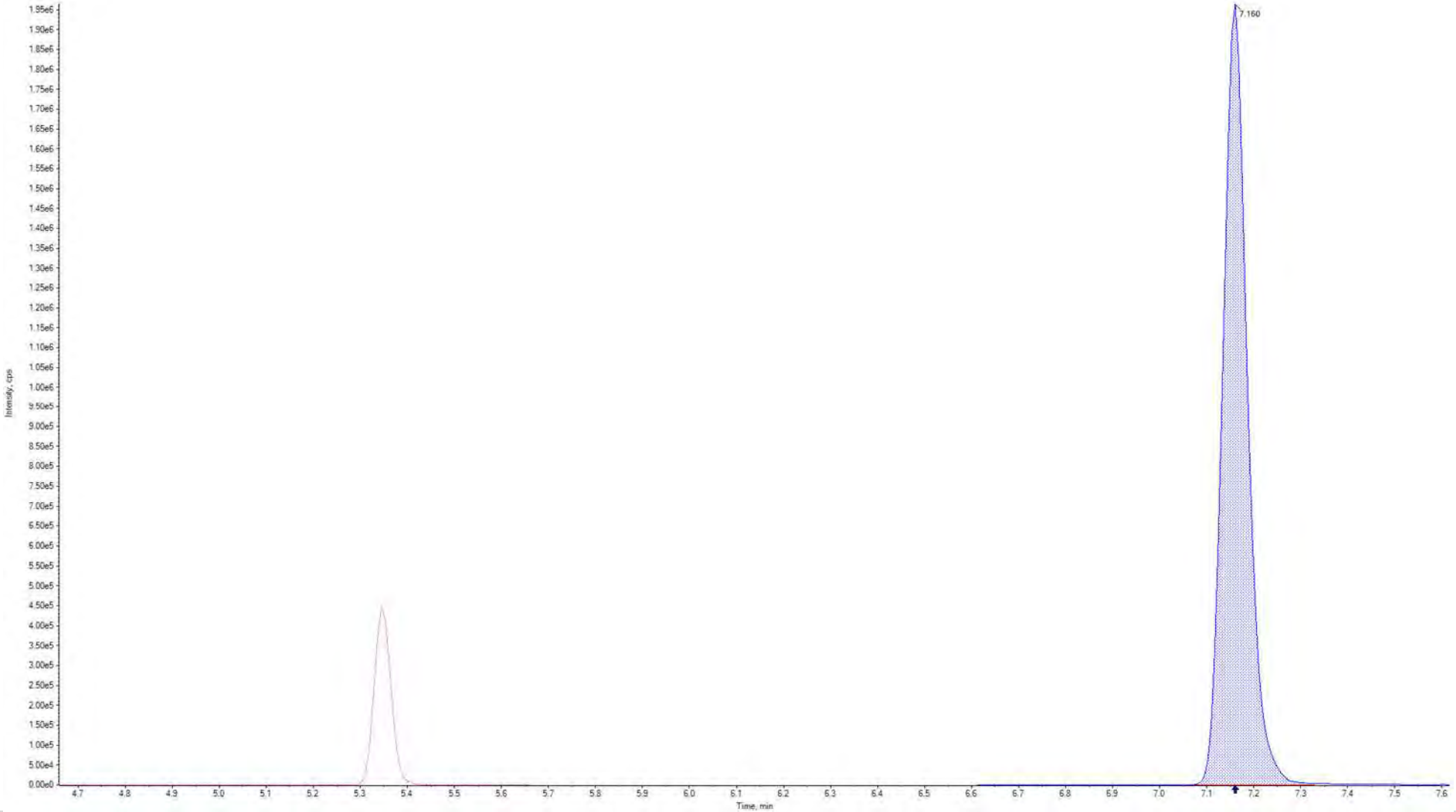
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

3:3FTCA_2
Sample: WG1973506-8,1633MED S/N:1220.4 Points Across peak:22



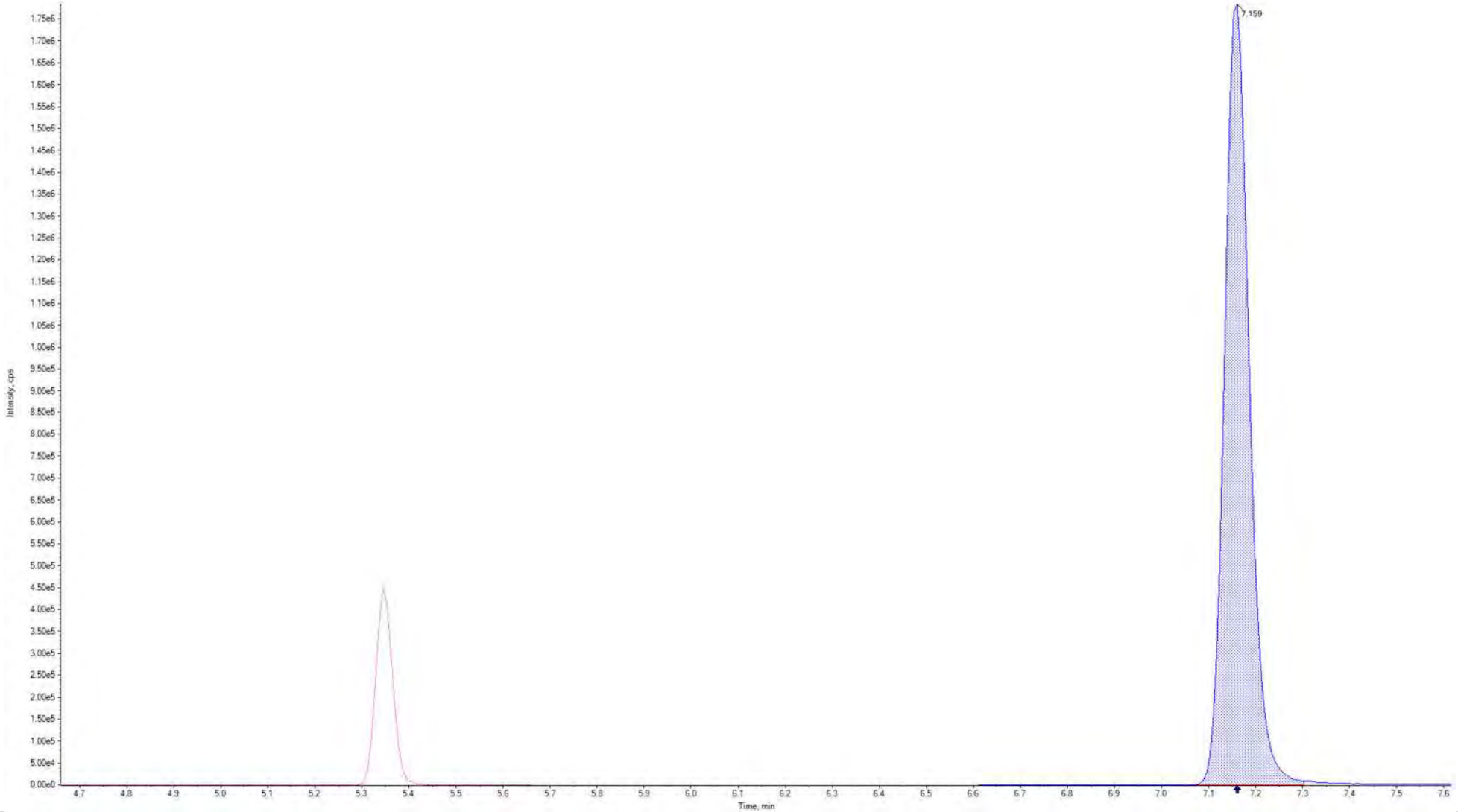
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

5:3FTCA
Sample: WG1973506-8,1633MED S/N:42124.3 Points Across peak:44



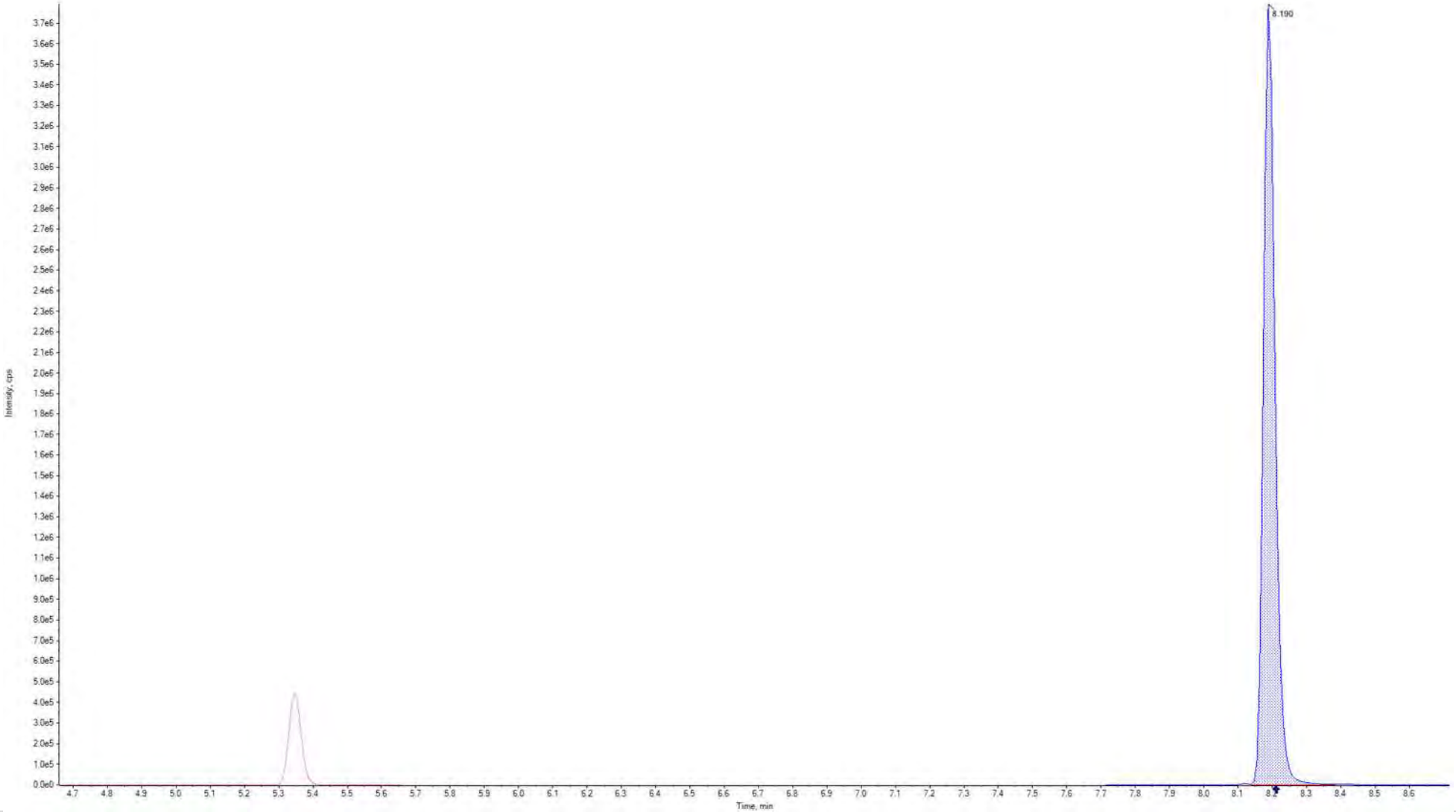
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

5:3FTCA_2
Sample: WG1973506-8,1633MED S/N:21033.5 Points Across peak:38



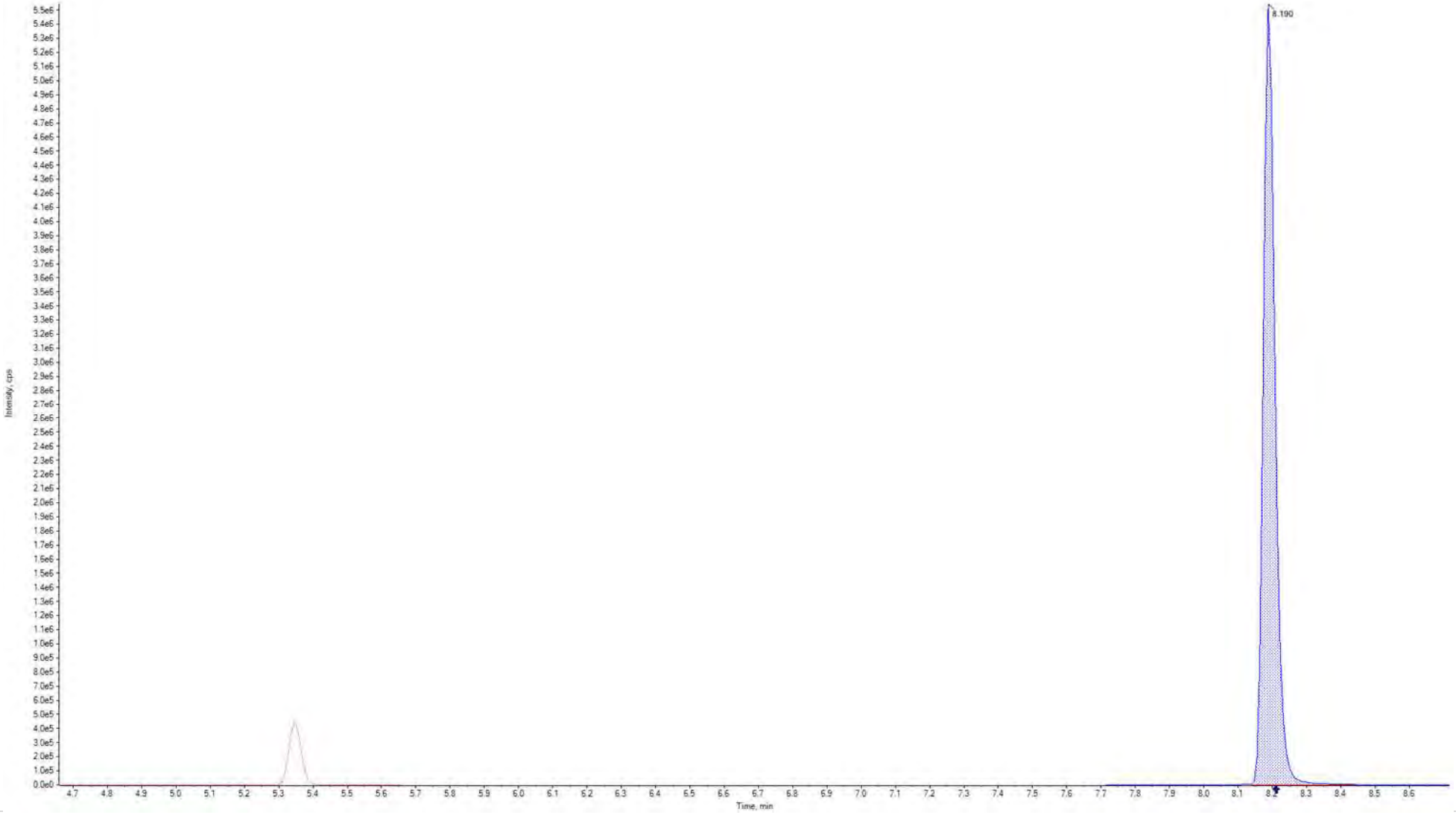
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

7:3FTCA
Sample: WG1973506-8,1633MED S/N:447238.5 Points Across peak:29



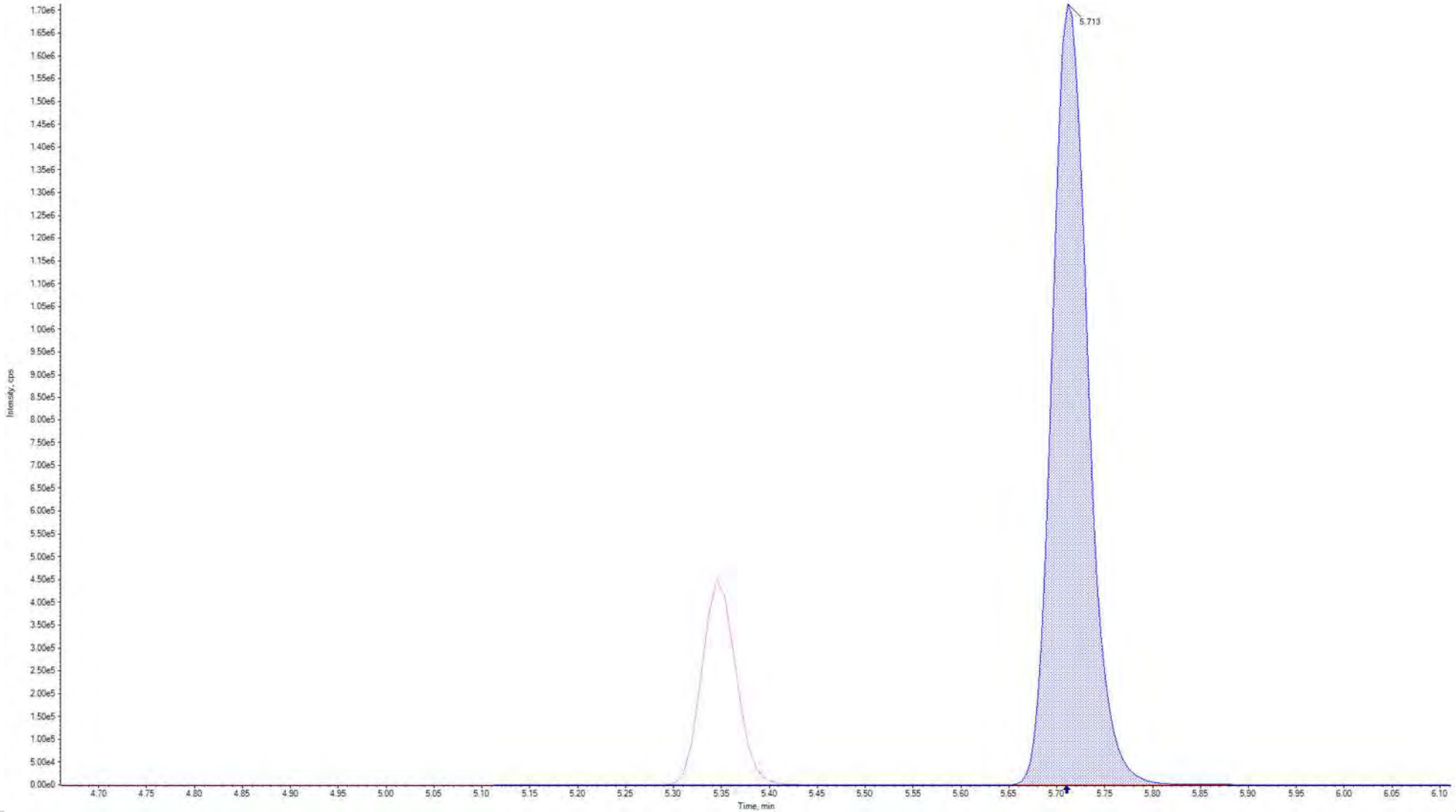
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

7:3FTCA_2
Sample: WG1973506-8,1633MED S/N:37488.1 Points Across peak:40



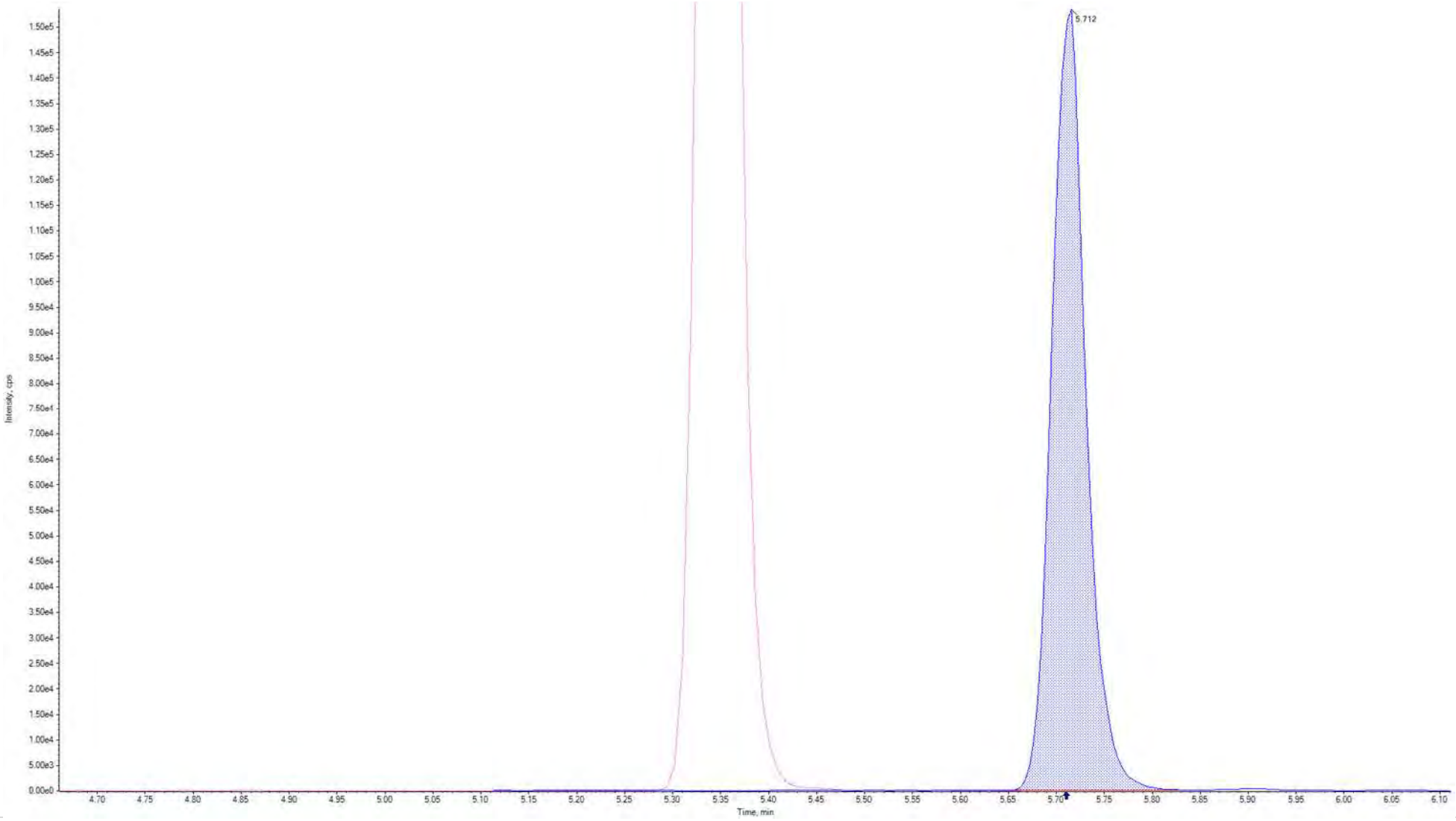
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFEESA
Sample: WG1973506-8,1633MED S/N:12390.8 Points Across peak:59



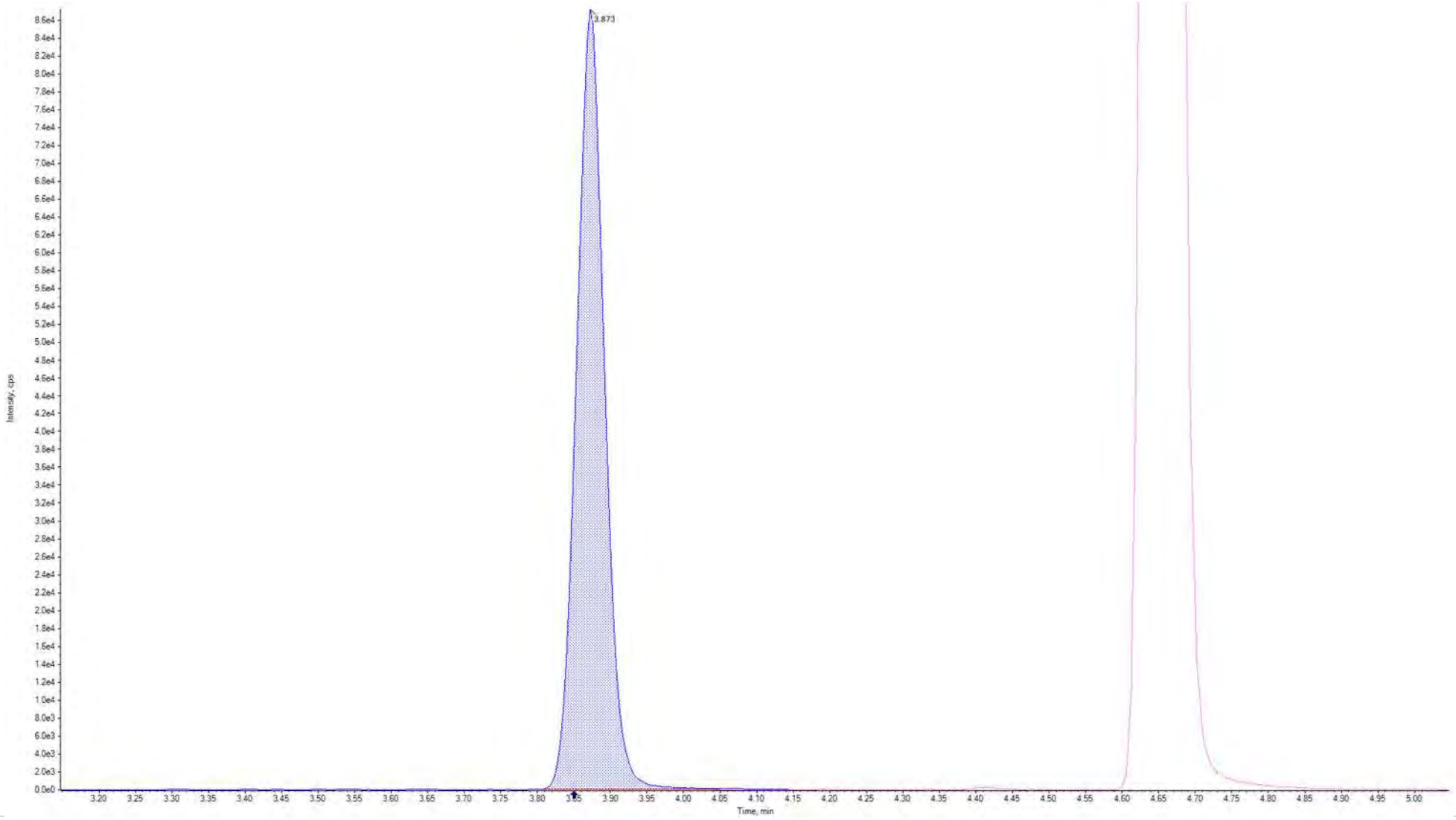
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFEESA_2
Sample: WG1973506-8,1633MED S/N:5089.4 Points Across peak:41



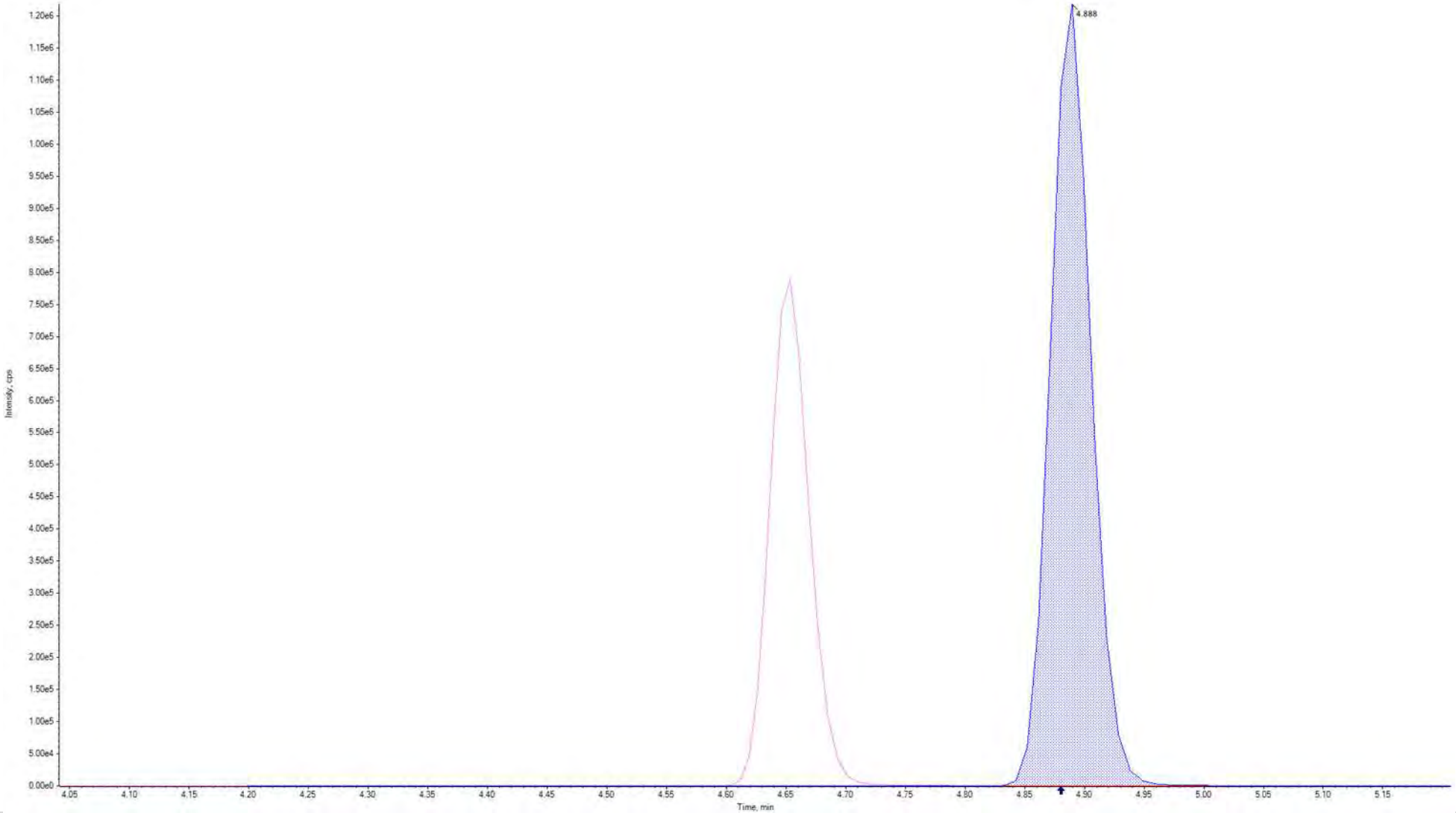
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFMPA
Sample: WG1973506-8,1633MED S/N:6665.3 Points Across peak:61



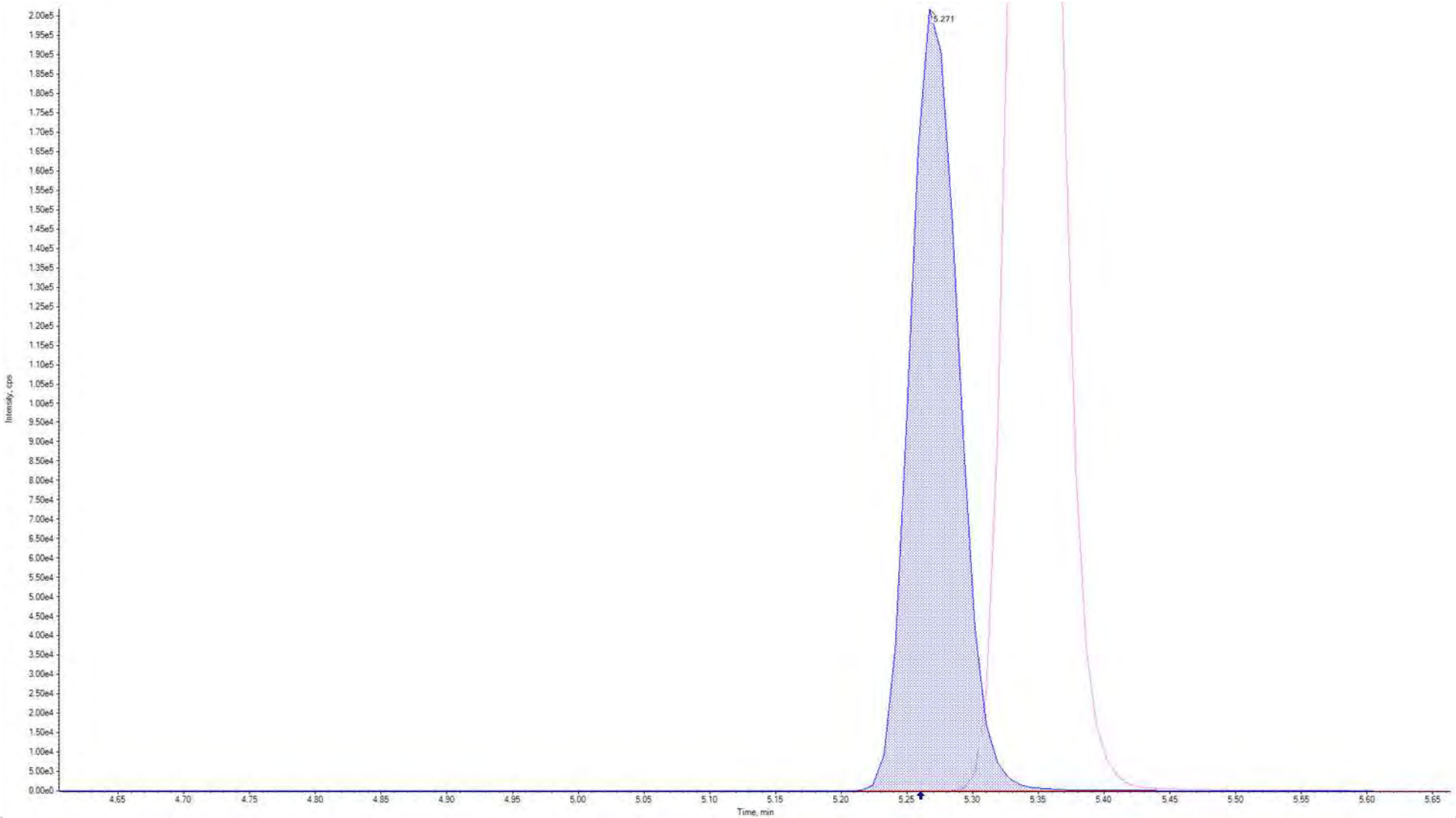
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFMBA
Sample: WG1973506-8,1633MED S/N:15900.8 Points Across peak:32



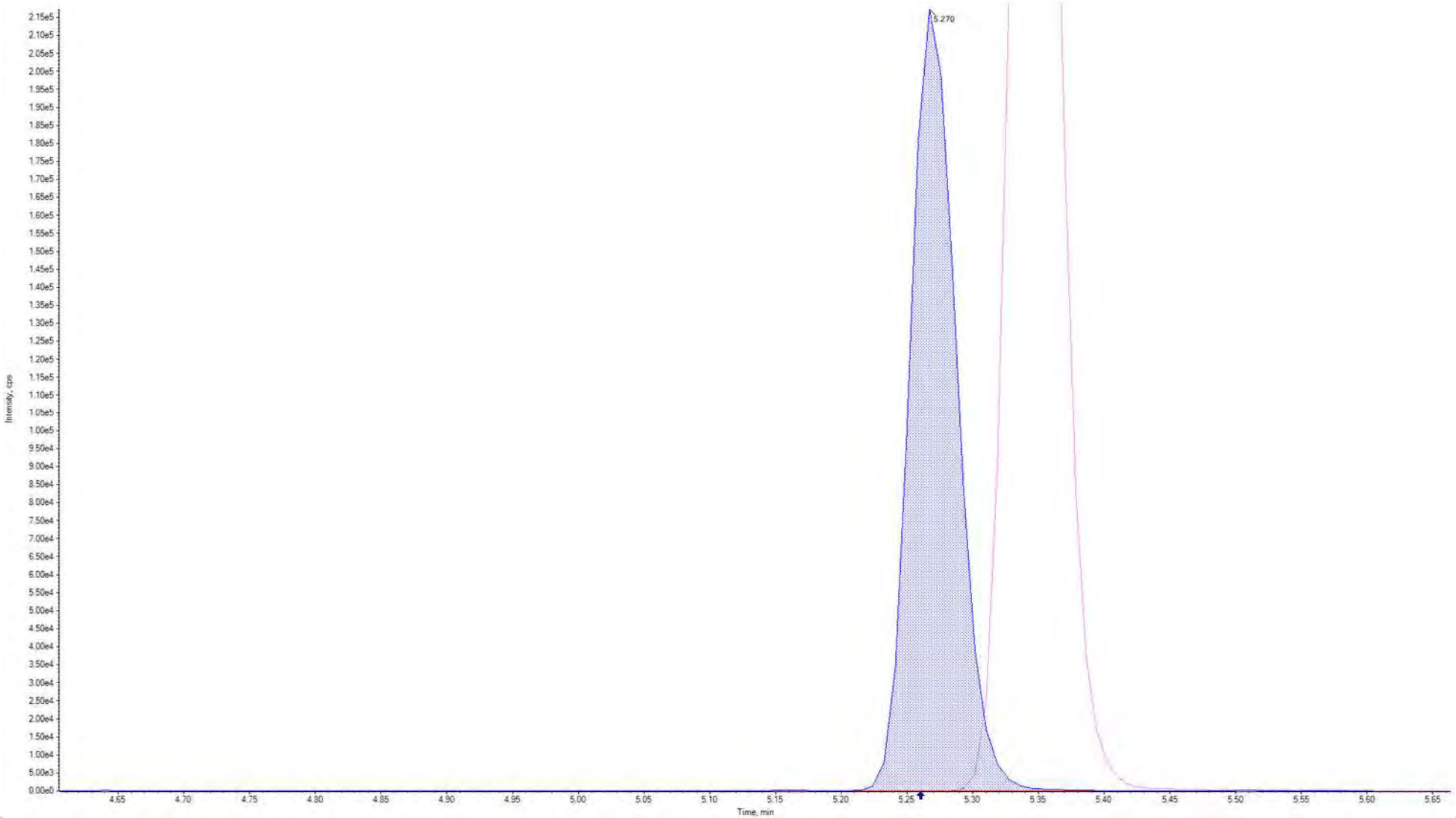
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NFDHA
Sample: WG1973506-8,1633MED S/N:4235.3 Points Across peak:36



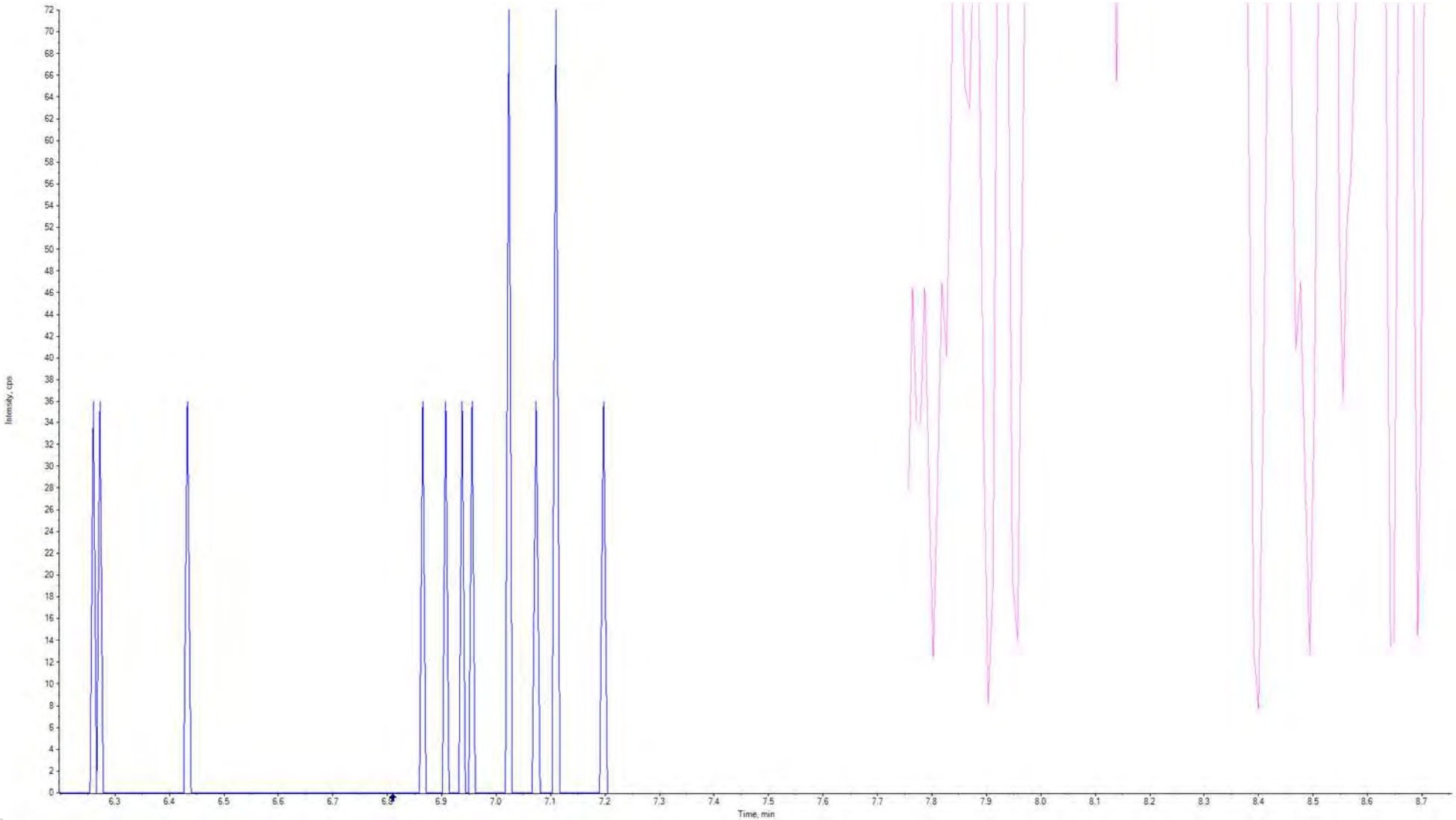
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NFDHA_2
Sample: WG1973506-8,1633MED S/N:84468.3 Points Across peak:24



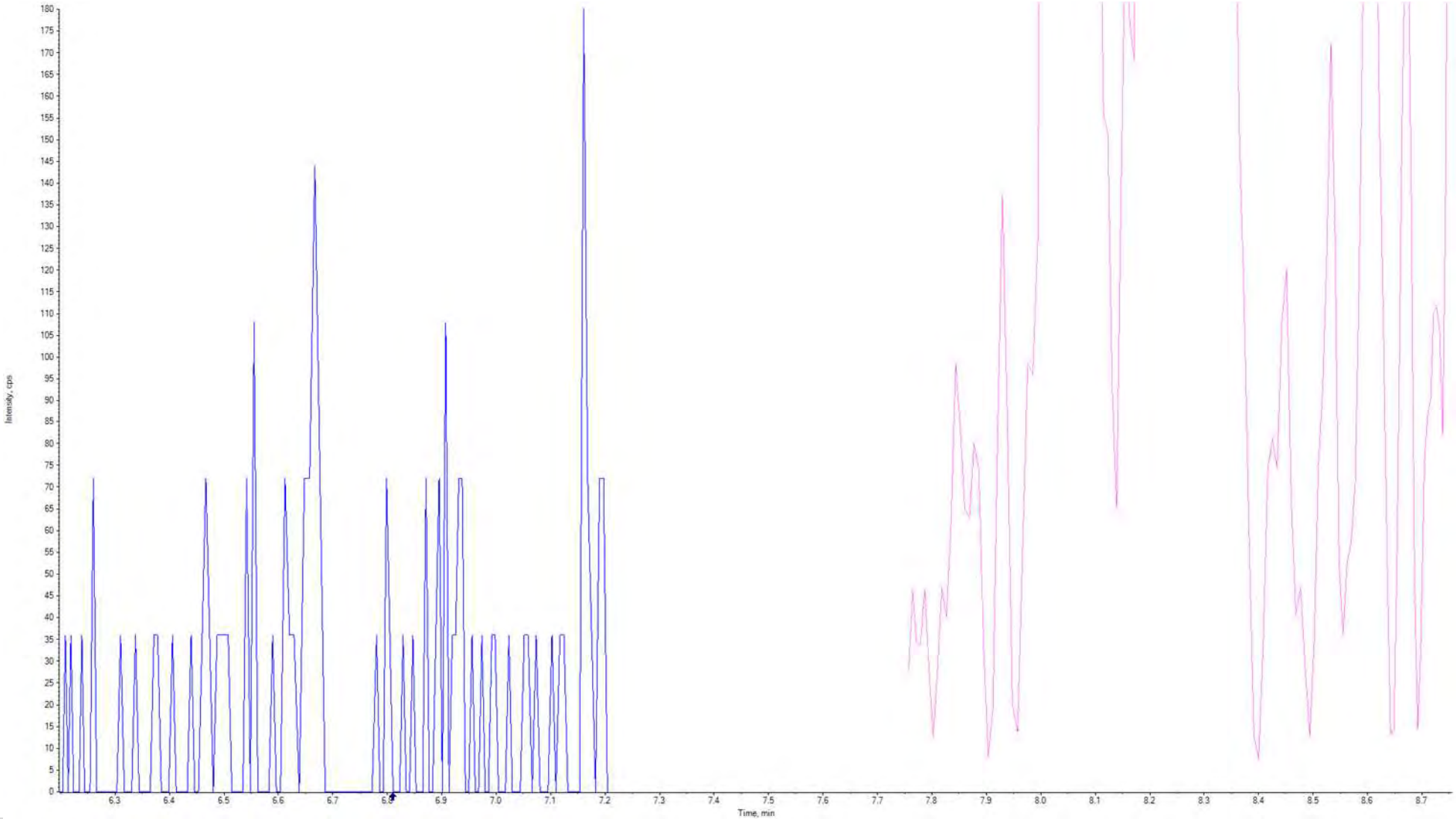
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

TDCA
Sample: WG1973506-8,1633MED S/N:N/A Points Across peak:N/A



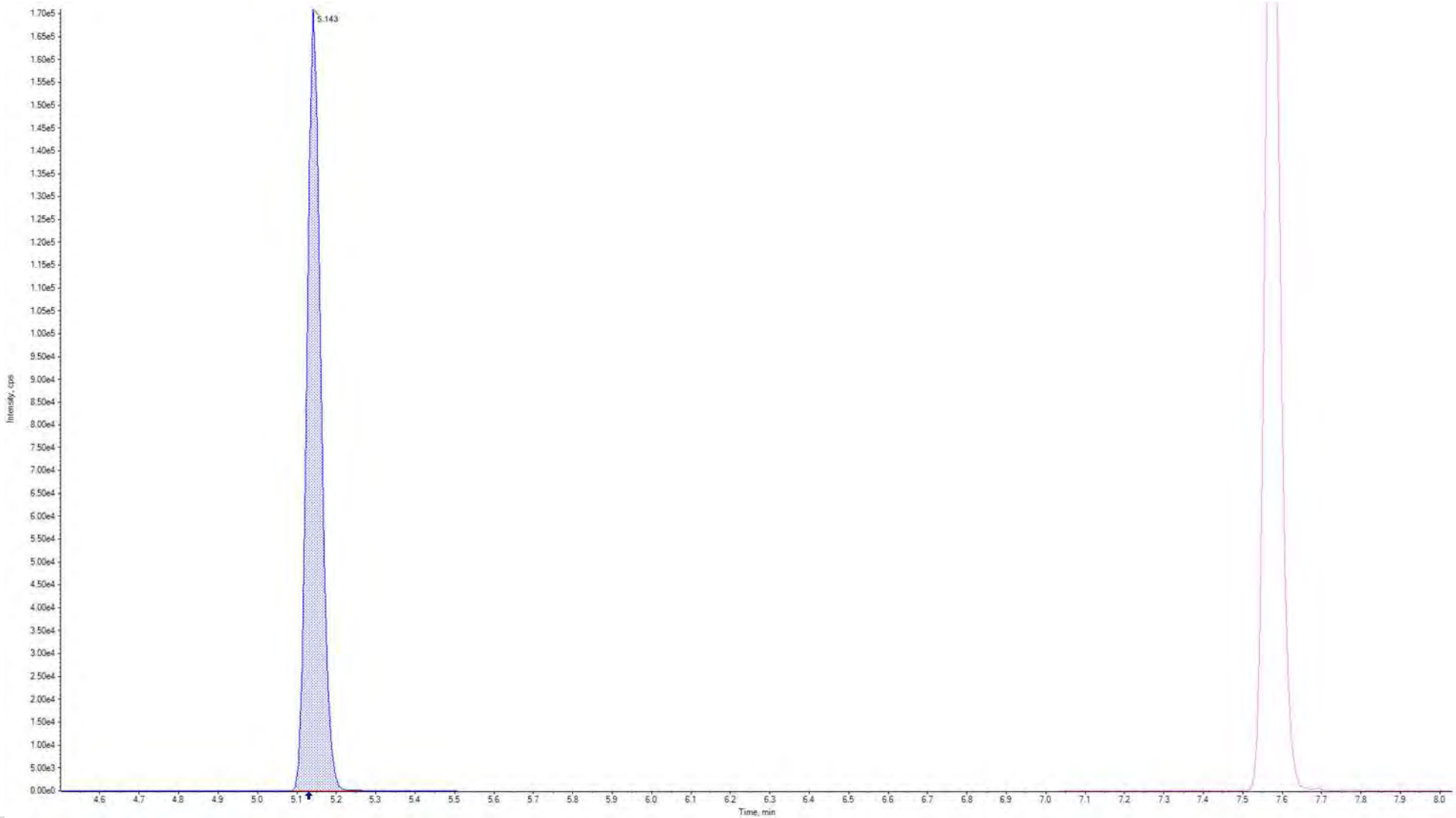
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

TDCA_2
Sample: WG1973506-8,1633MED S/N:N/A Points Across peak:N/A



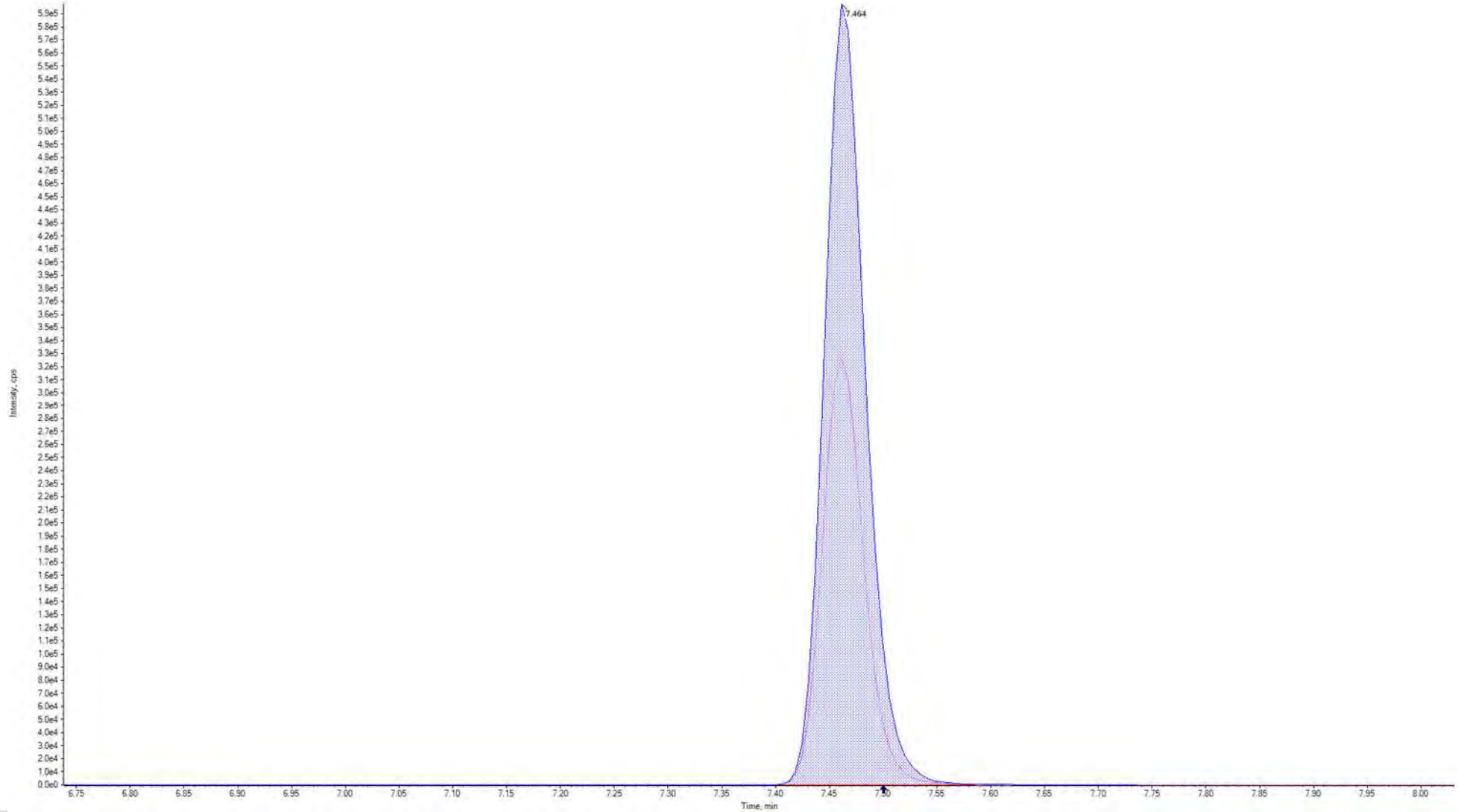
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C2D4-4:2FTS
Sample: WG1973506-8,1633MED S/N:1296805.8 Points Across peak:35

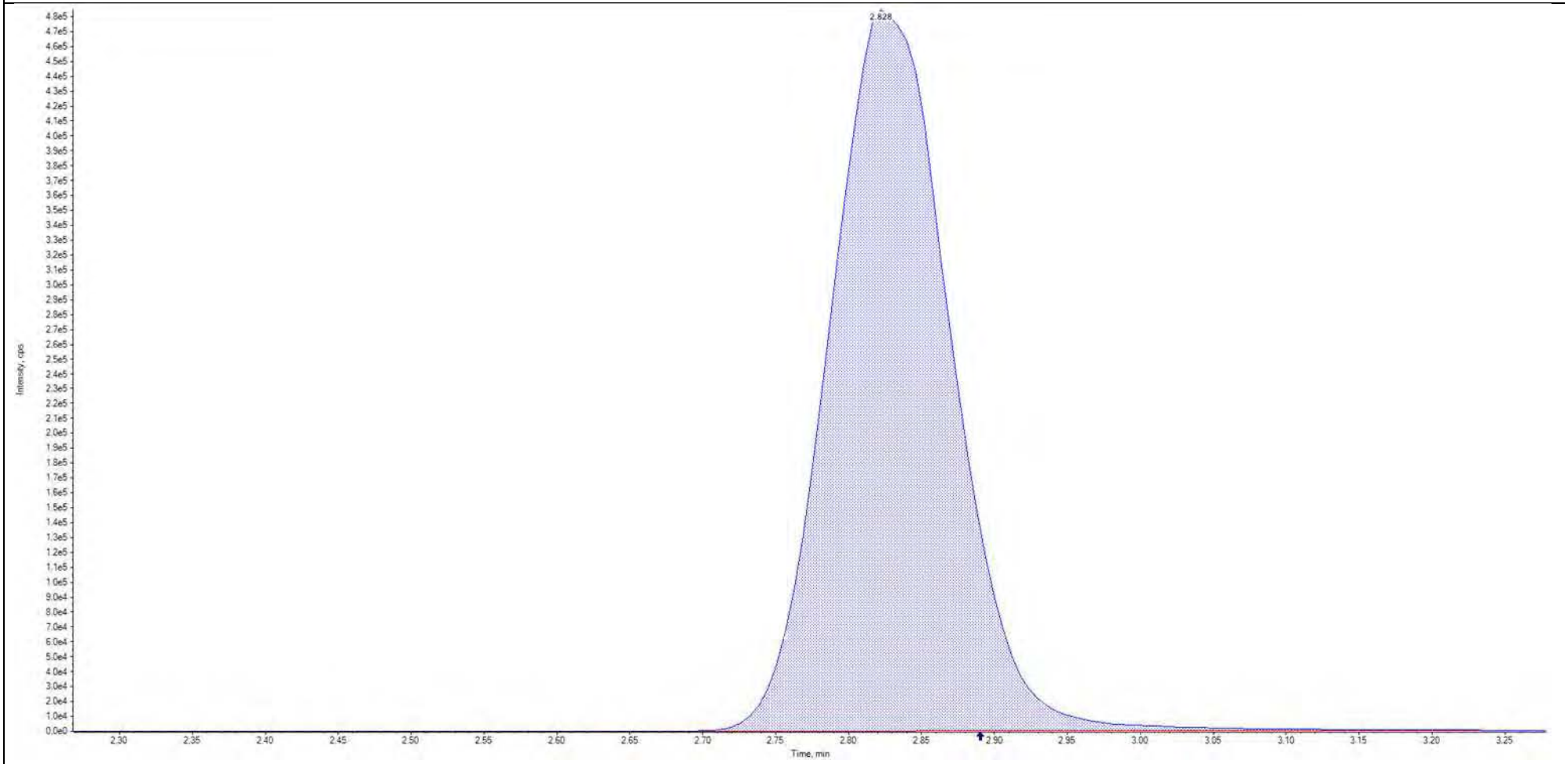


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

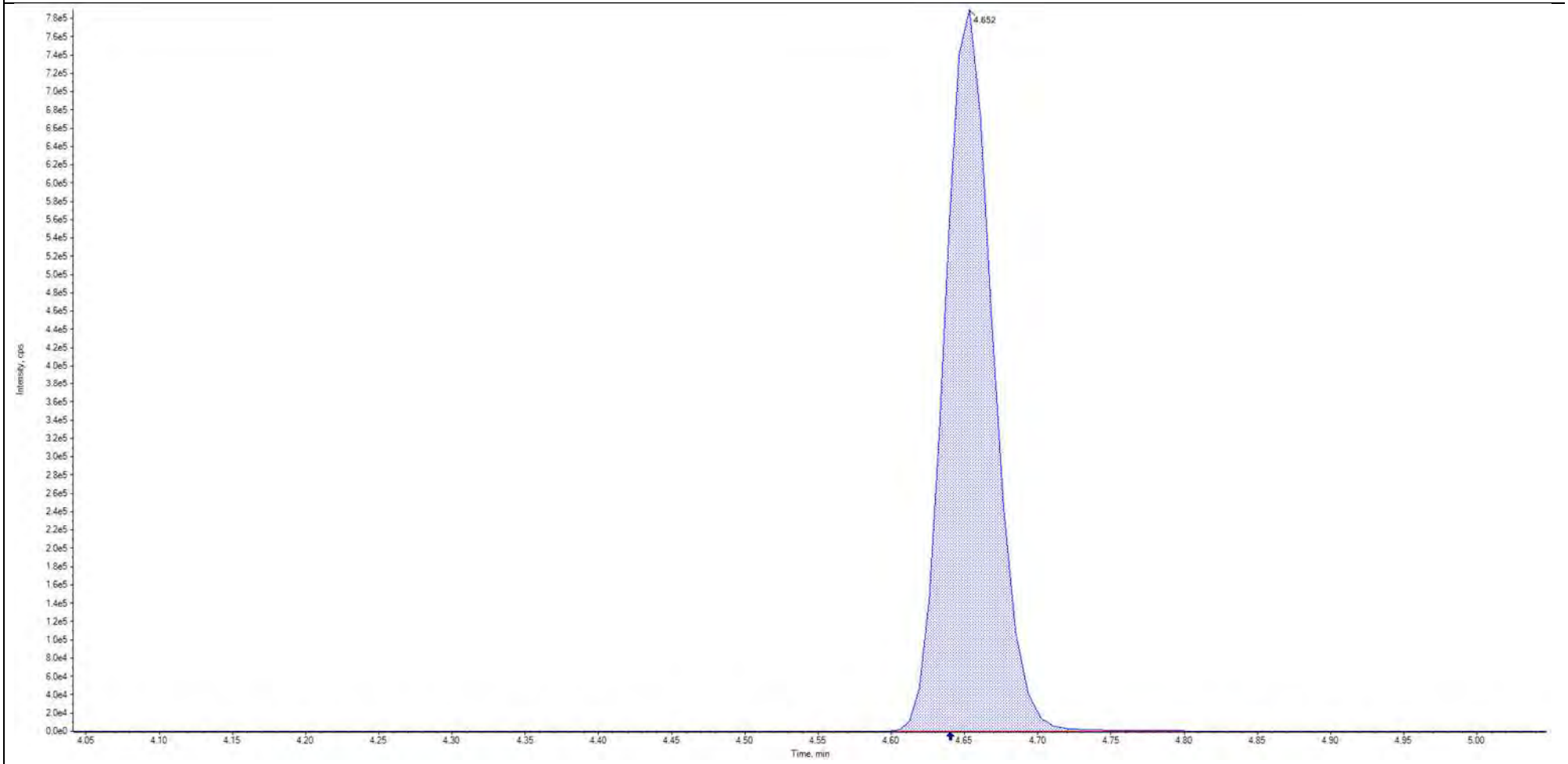
13C2-PFOA
Sample: WG1973506-8,1633MED S/N:9181.1 Points Across peak:33



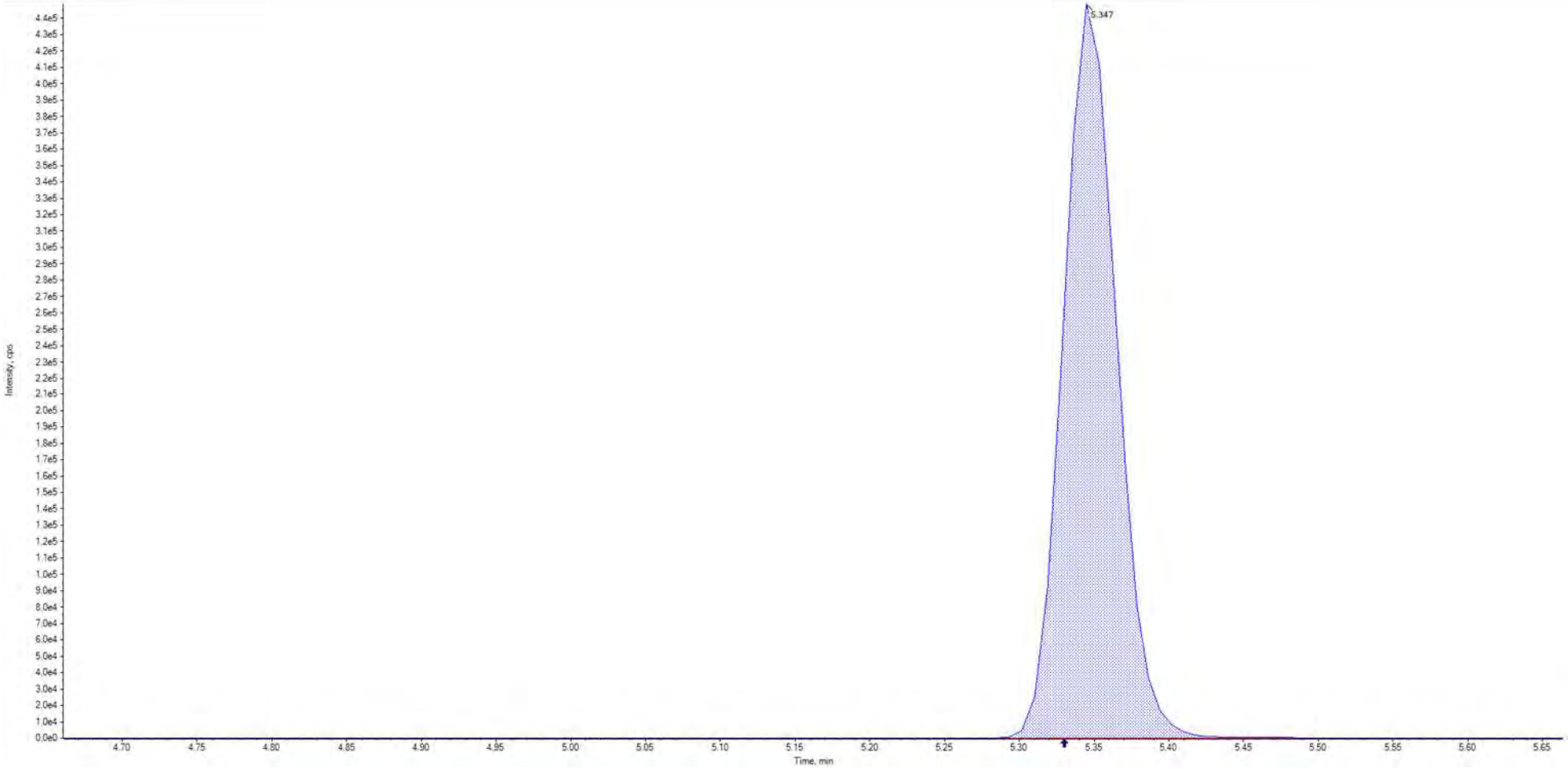
13C4-PFBA
Sample: WG1973506-8,1633MED



13C5-PFPeA
Sample: WG1973506-8,1633MED



13C5-PFHxA
Sample: WG1973506-8,1633MED



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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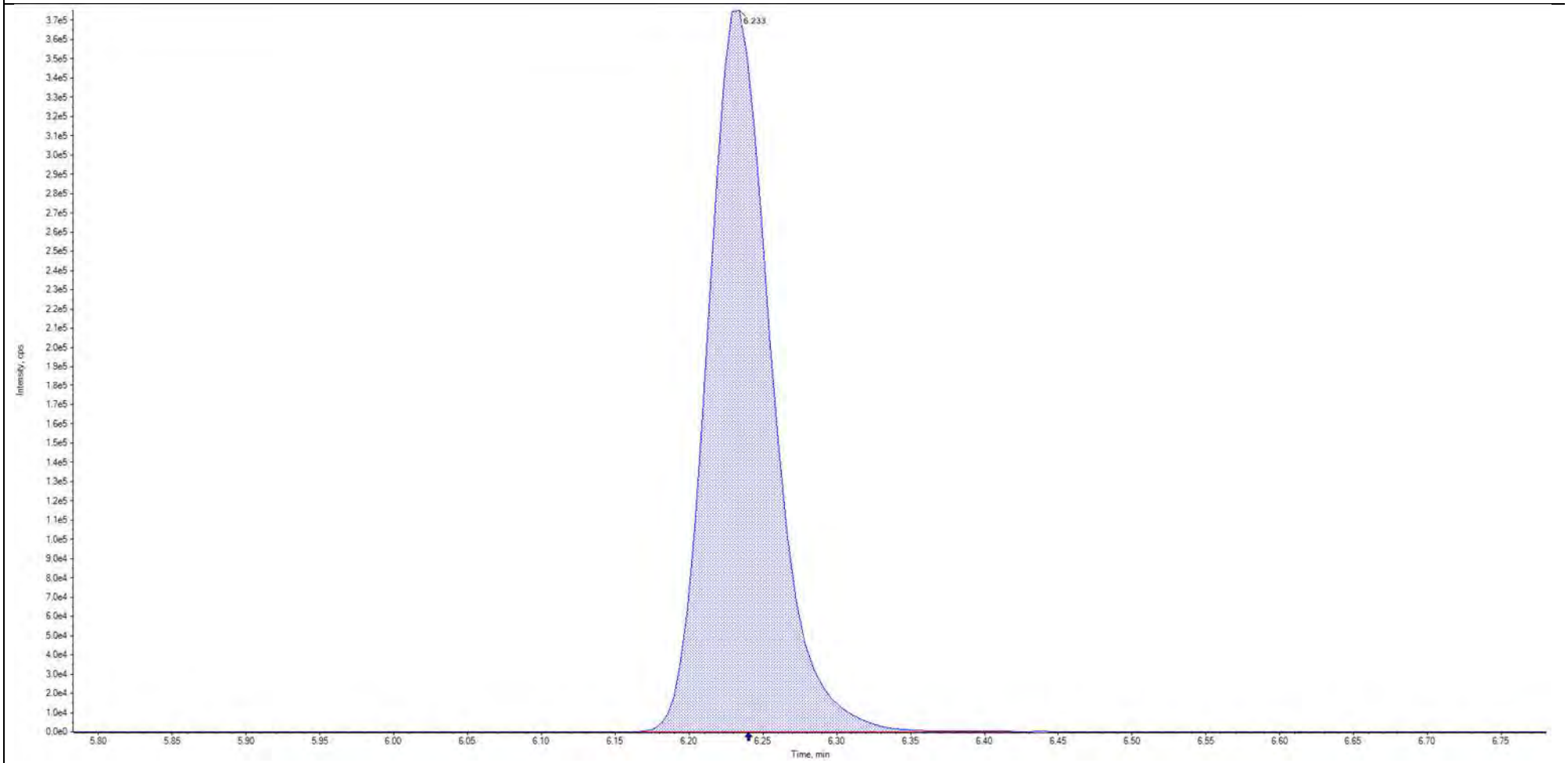
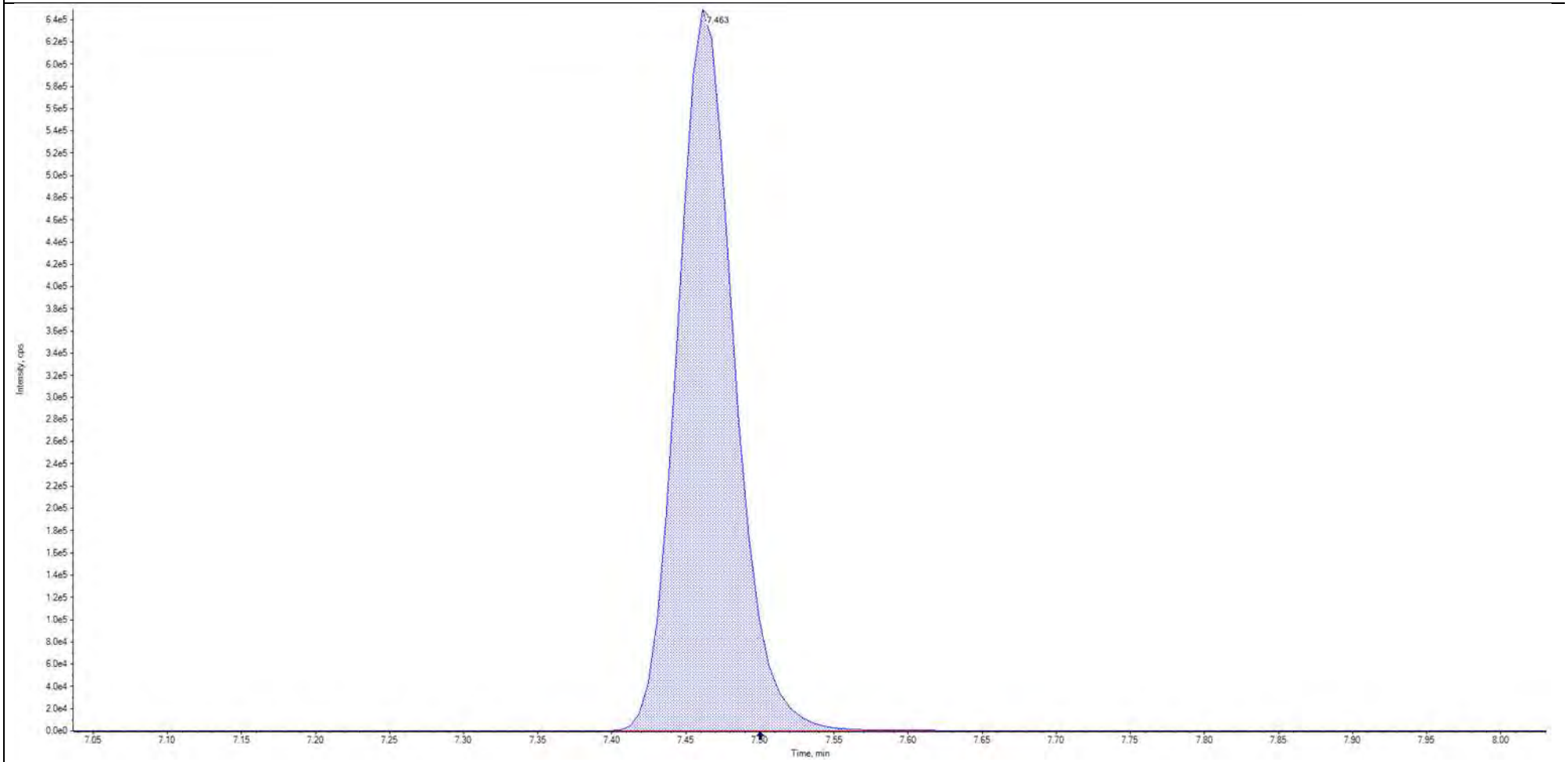
Generated: 9/19/2024 8:04:31 AM

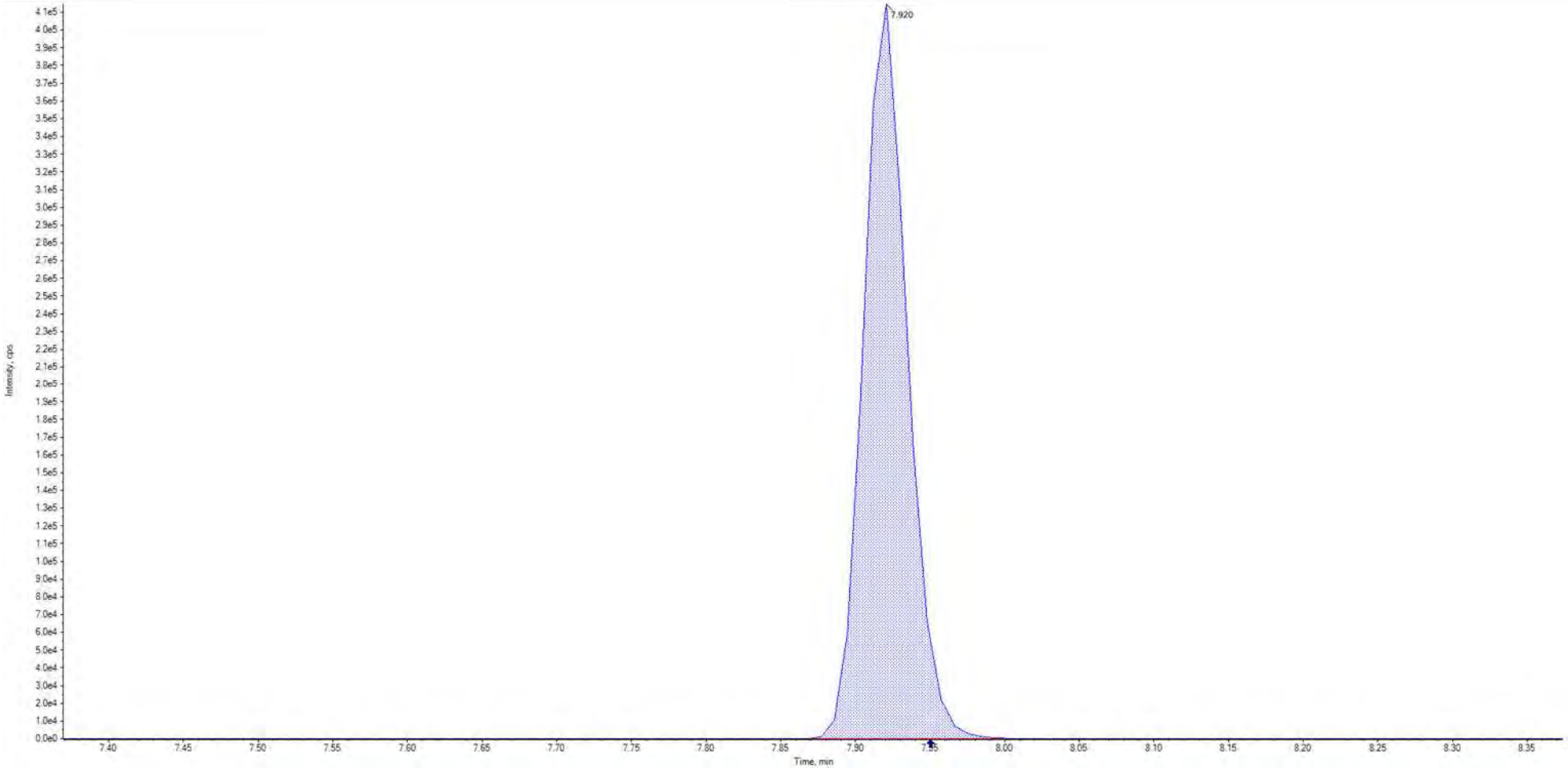
13C4-PFHpA
Sample: WG1973506-8,1633MED



13C8-PFOA
Sample: WG1973506-8,1633MED



13C9-PFNA
Sample: WG1973506-8,1633MED



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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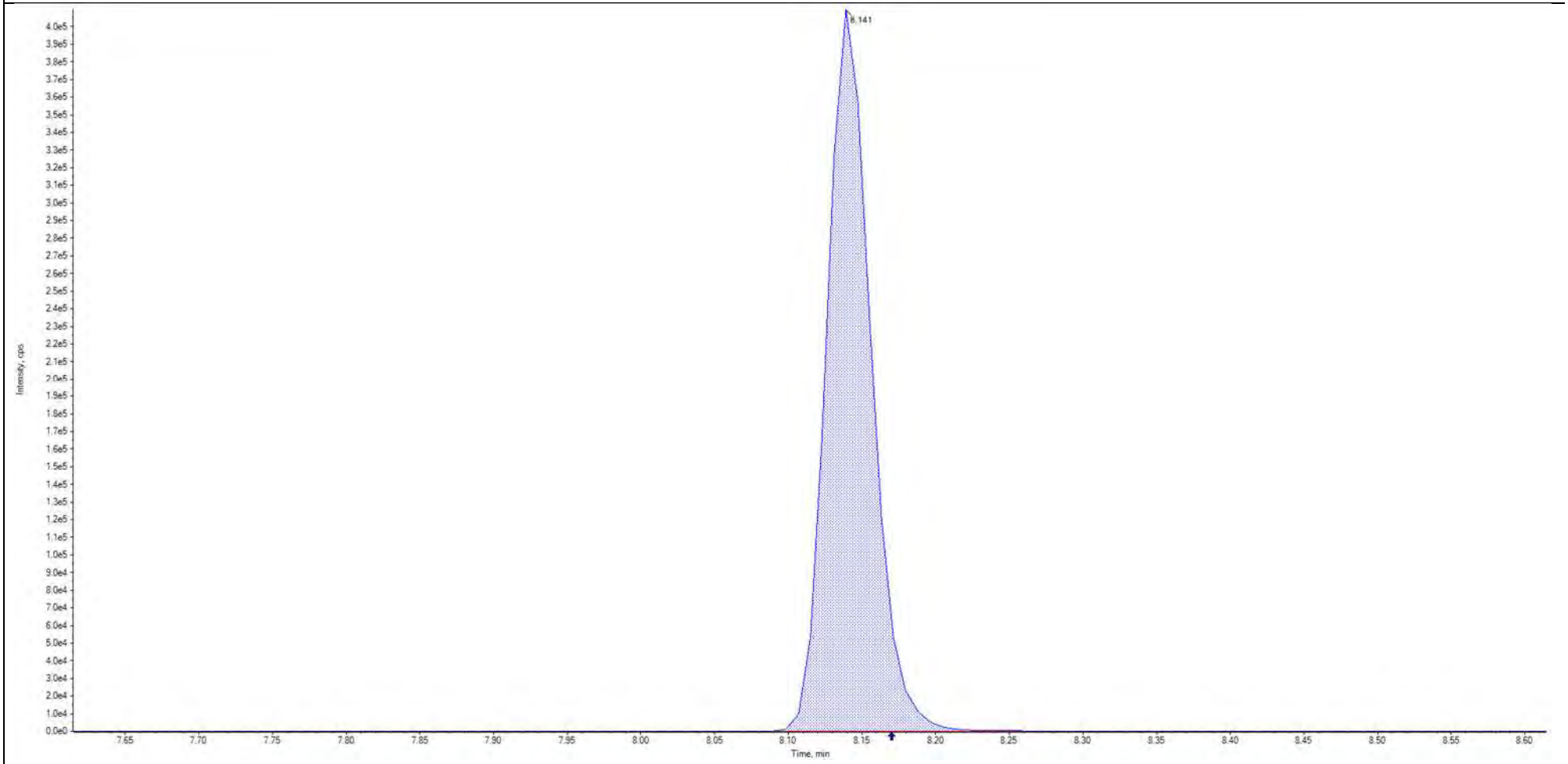
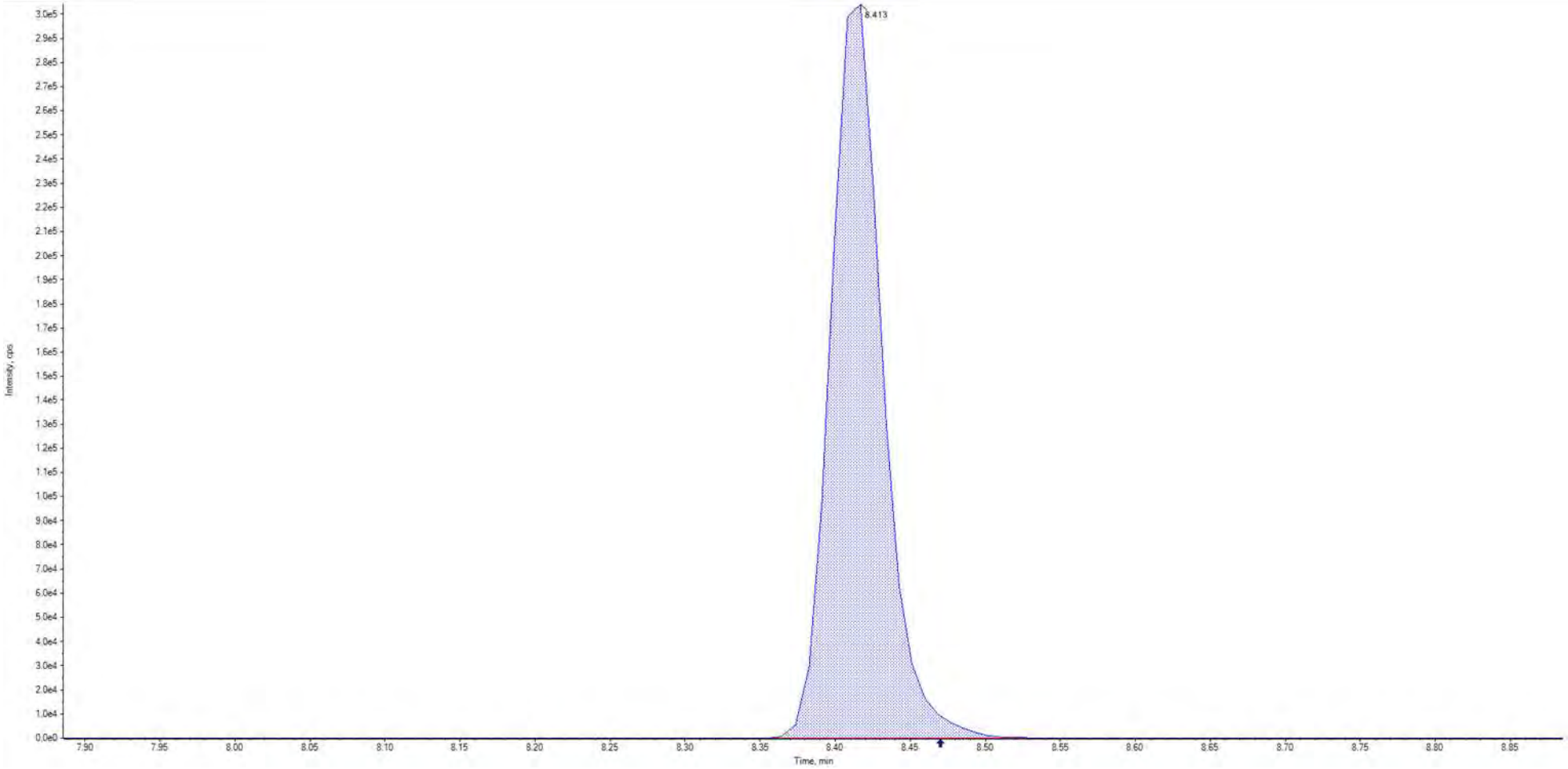
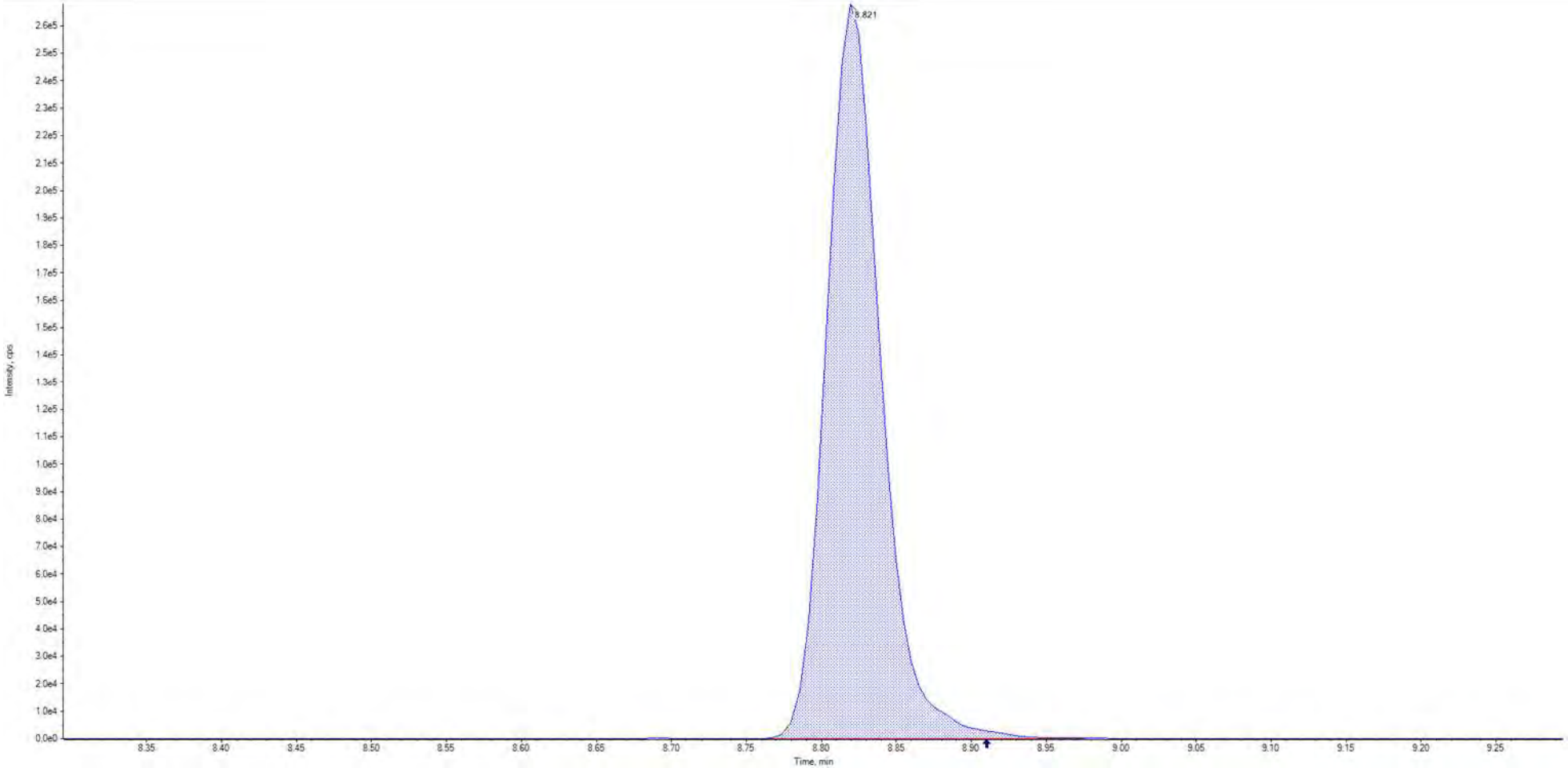
13C6-PFDA
Sample: WG1973506-8,1633MED



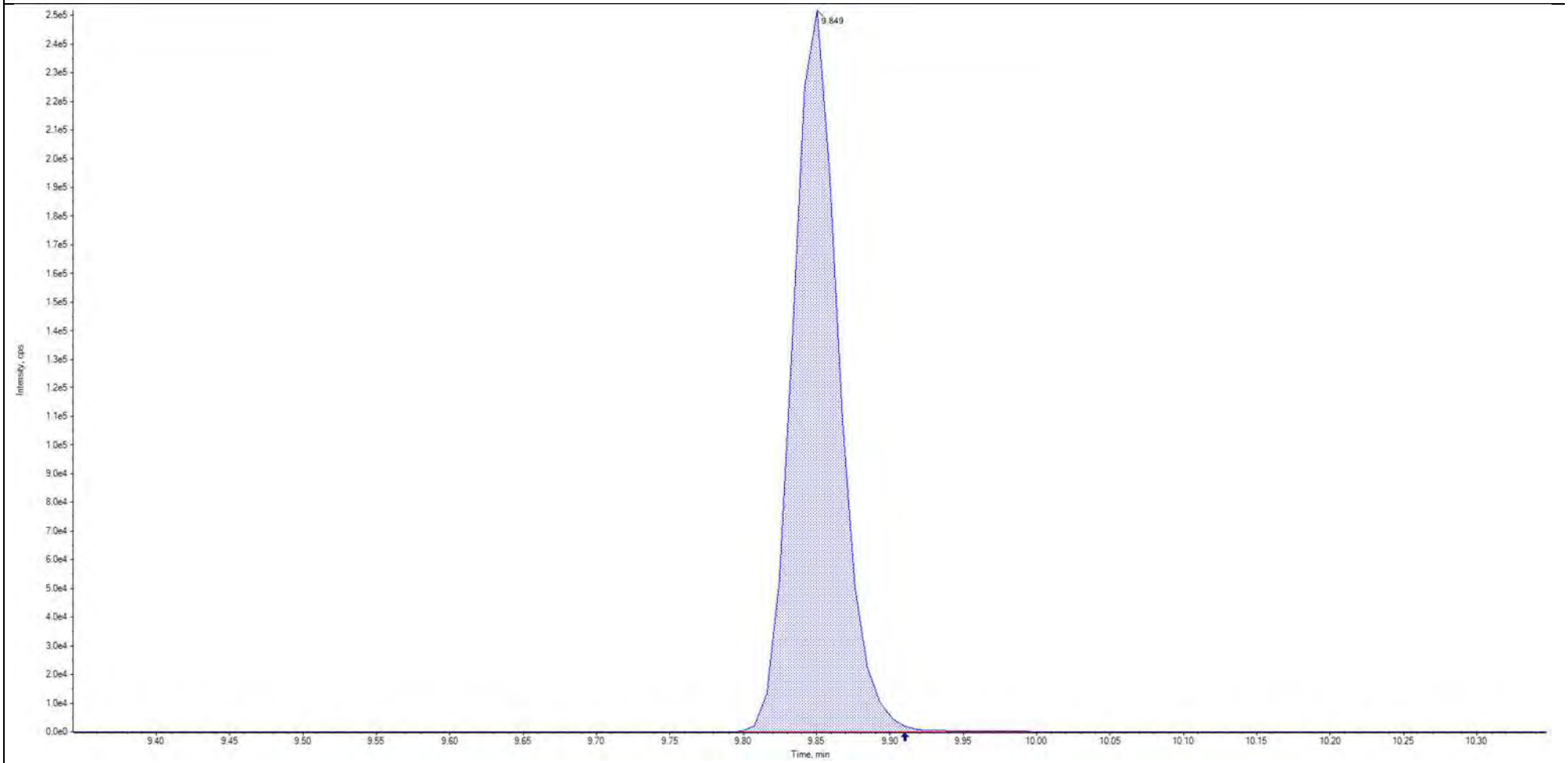
13C7-PFUnA
Sample: WG1973506-8,1633MED



13C2-PFDoA
Sample: WG1973506-8,1633MED



13C2-PFTeDA
Sample: WG1973506-8,1633MED



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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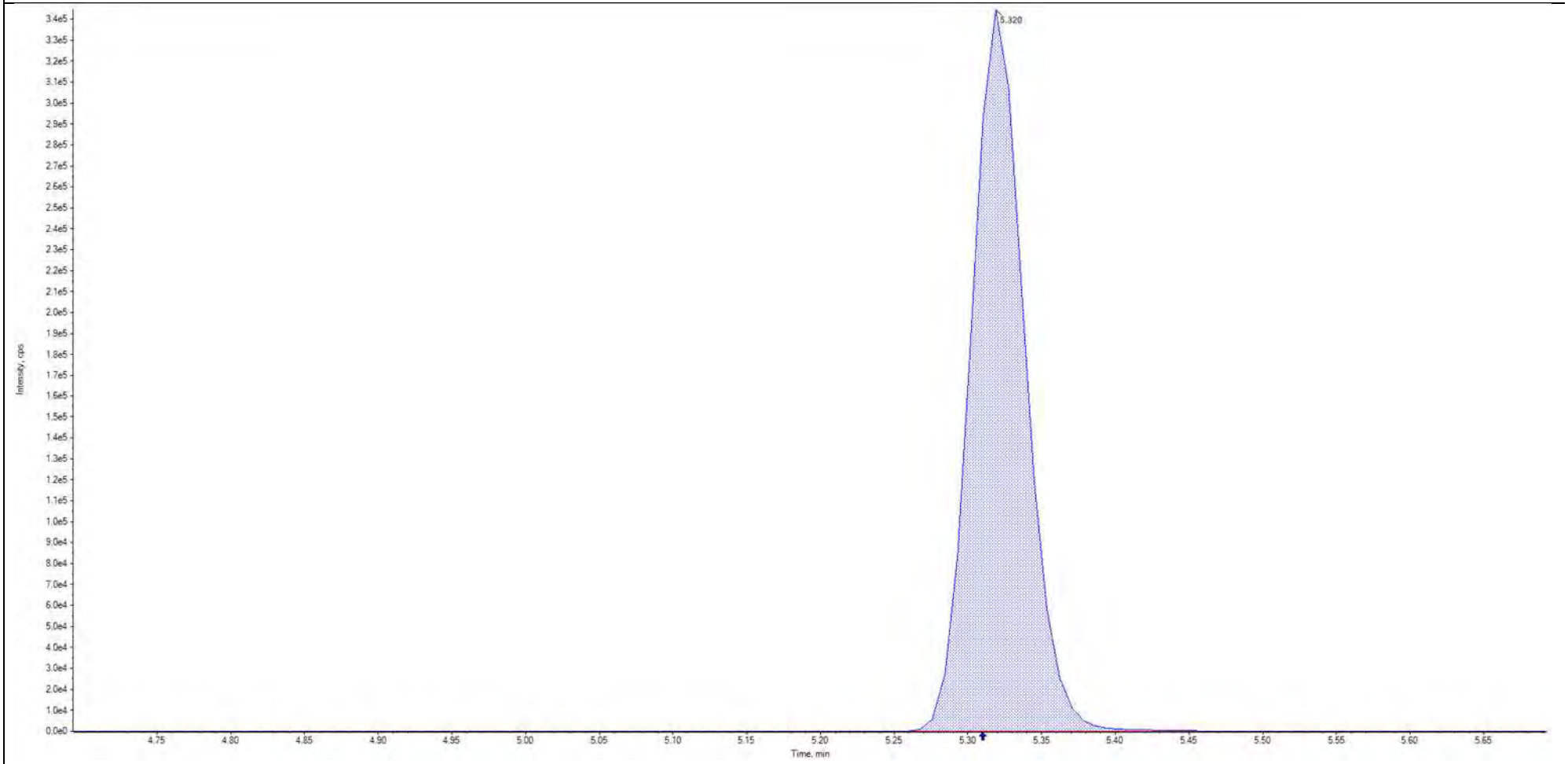
13C3-PFBS
Sample: WG1973506-8,1633MED



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
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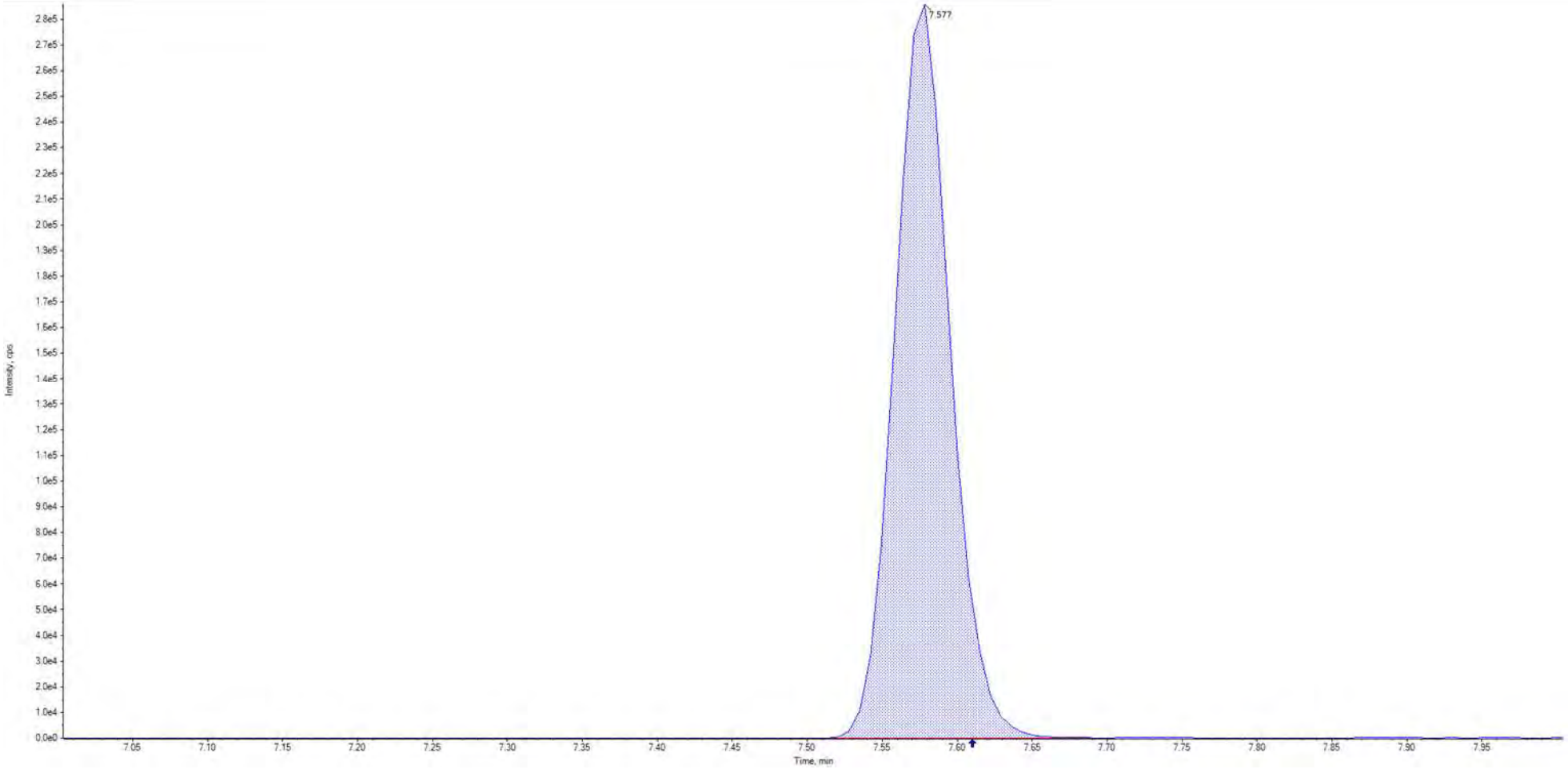
13C3-PFHxS
Sample: WG1973506-8,1633MED



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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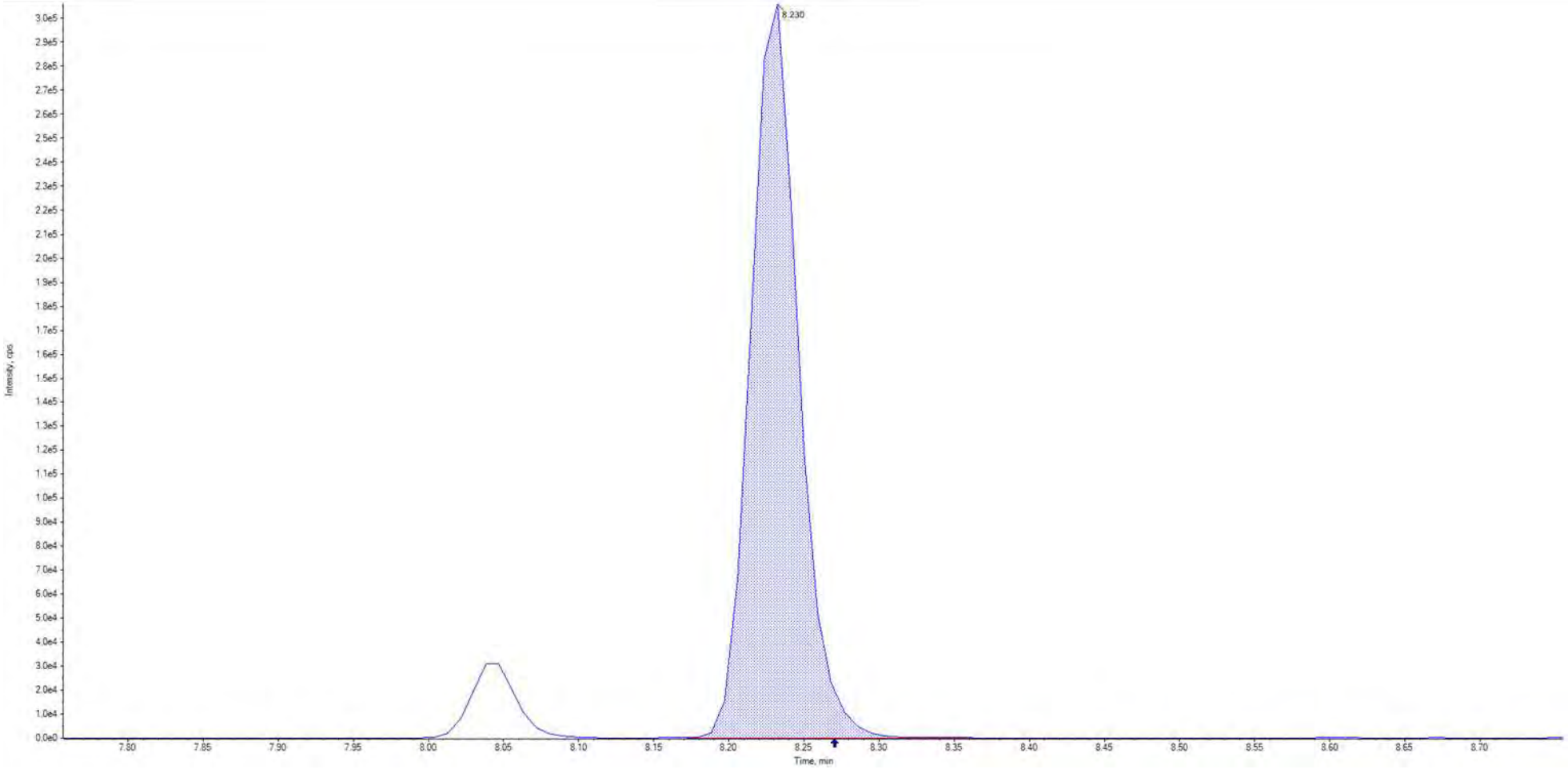
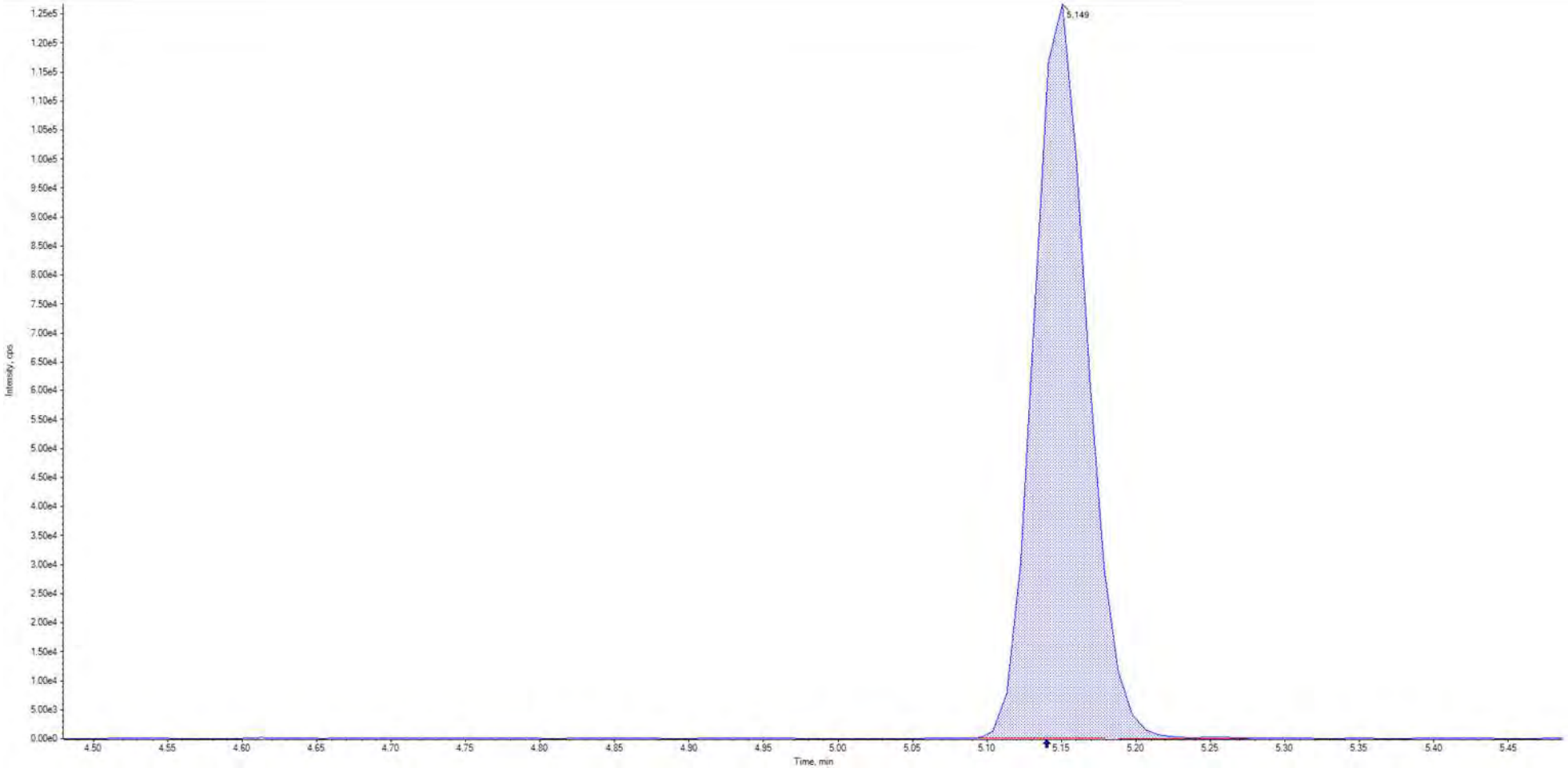
13C8-PFOS
Sample: WG1973506-8,1633MED



13C2-4:2FTS
Sample: WG1973506-8,1633MED



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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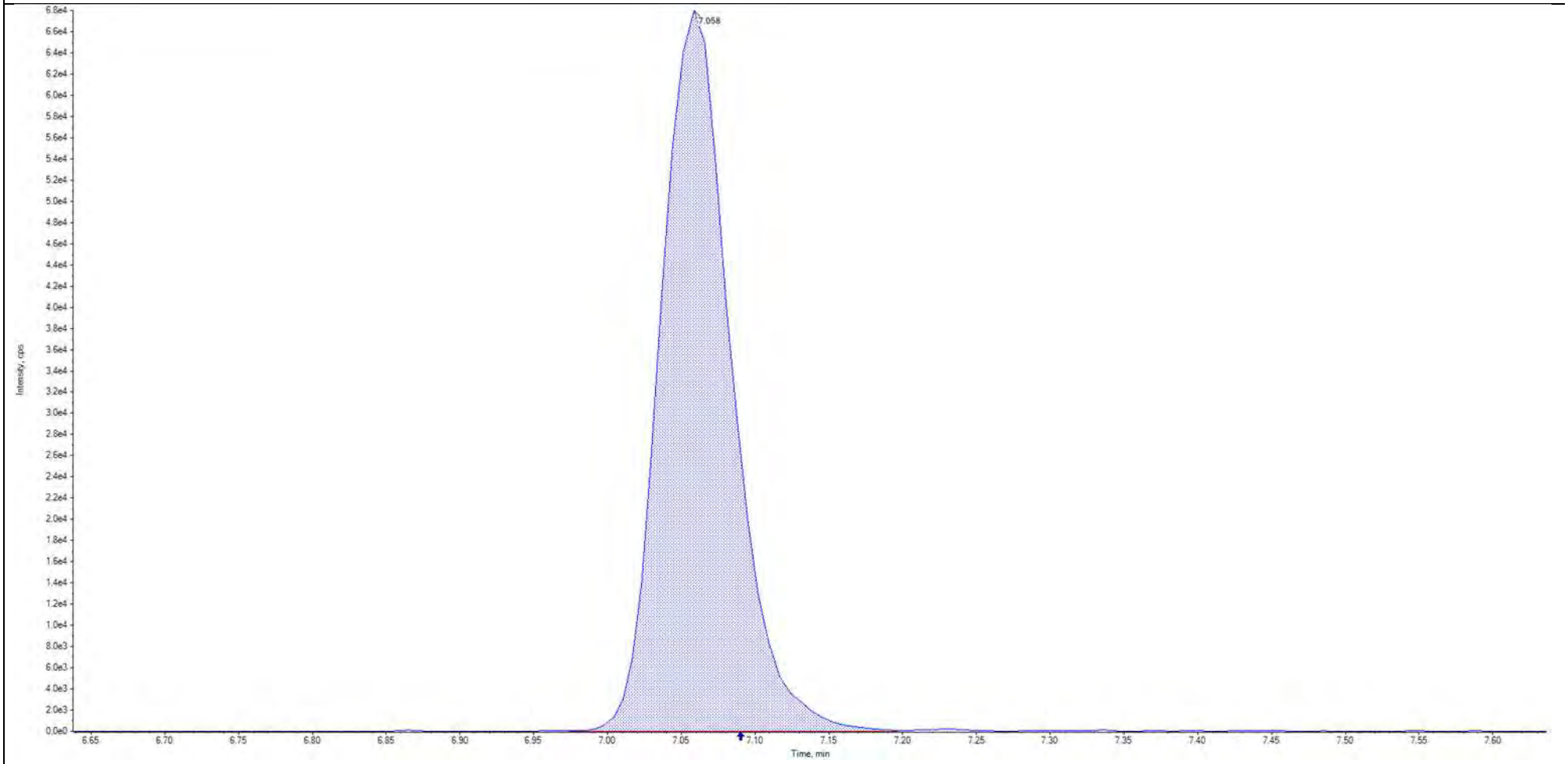
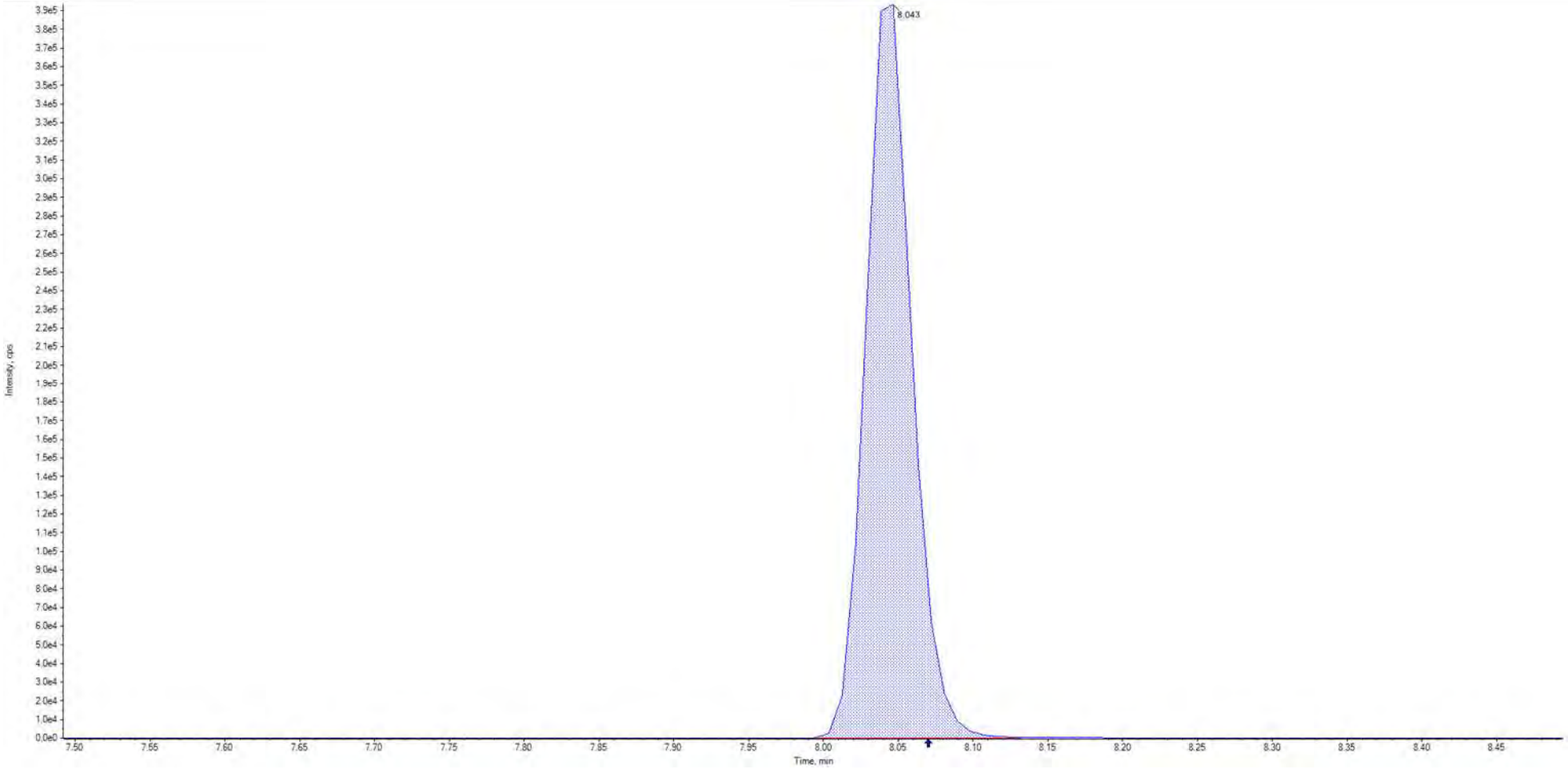
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

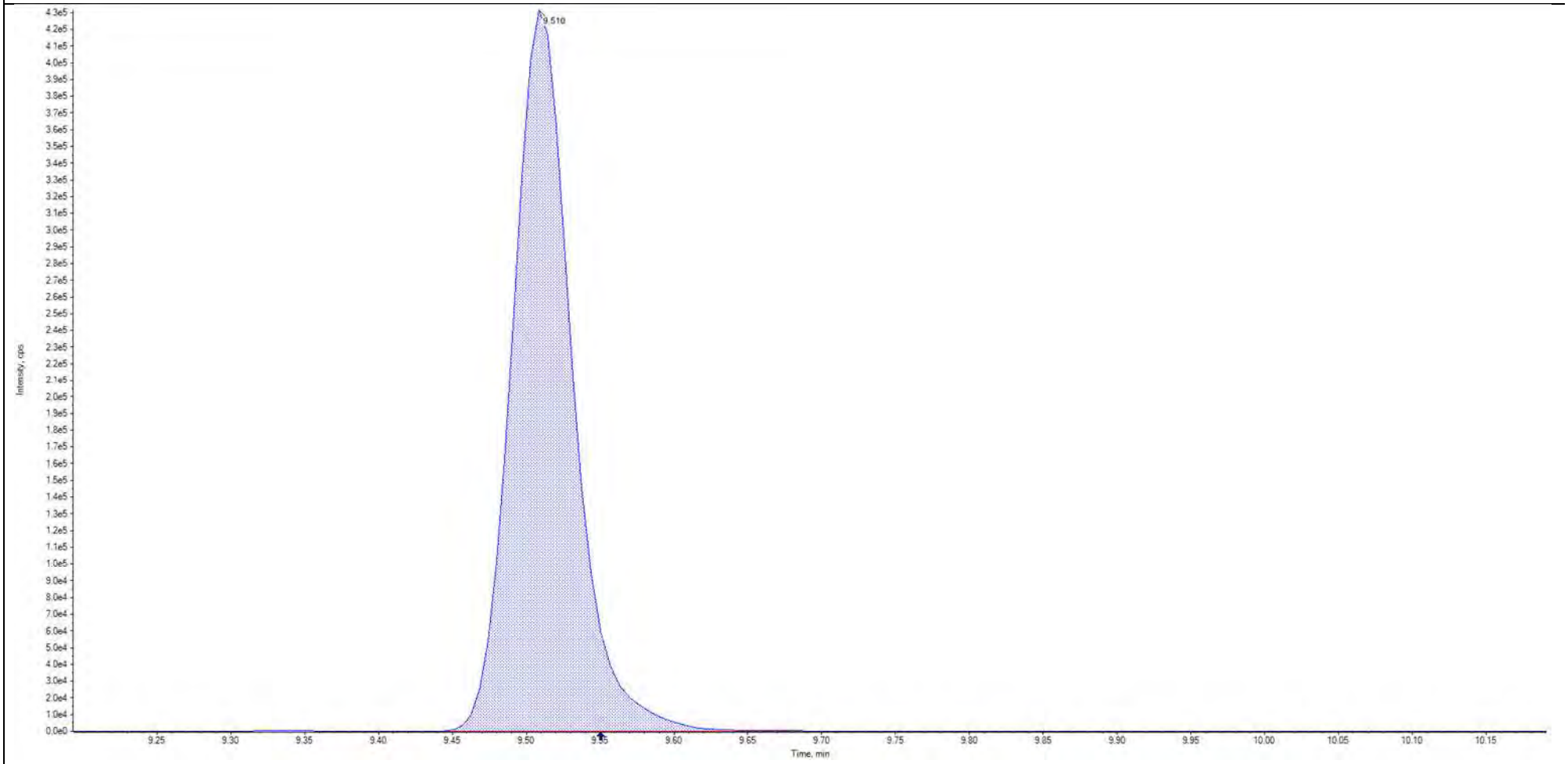
13C2-6:2FTS
Sample: WG1973506-8,1633MED



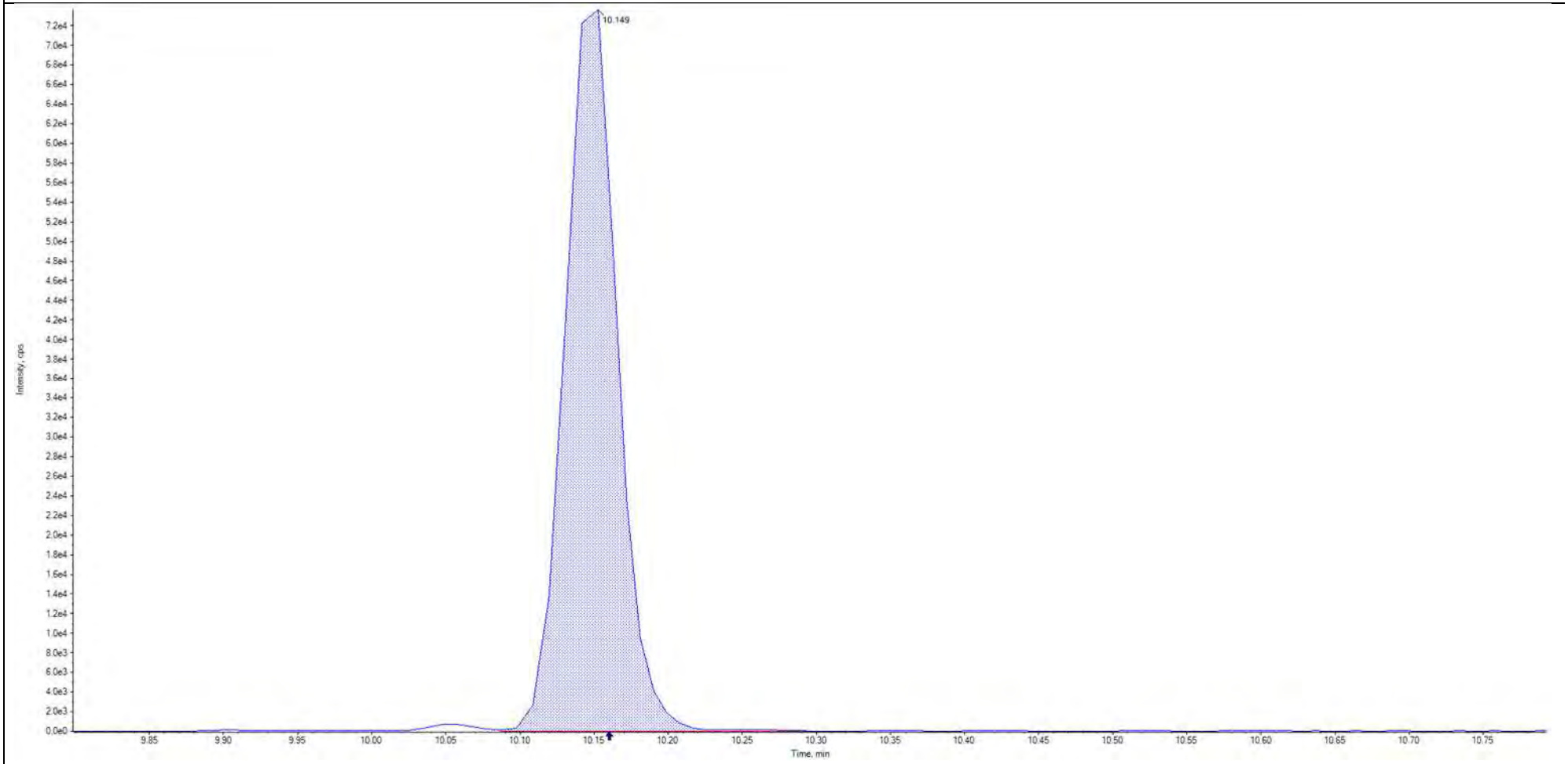
13C2-8:2FTS
Sample: WG1973506-8,1633MED



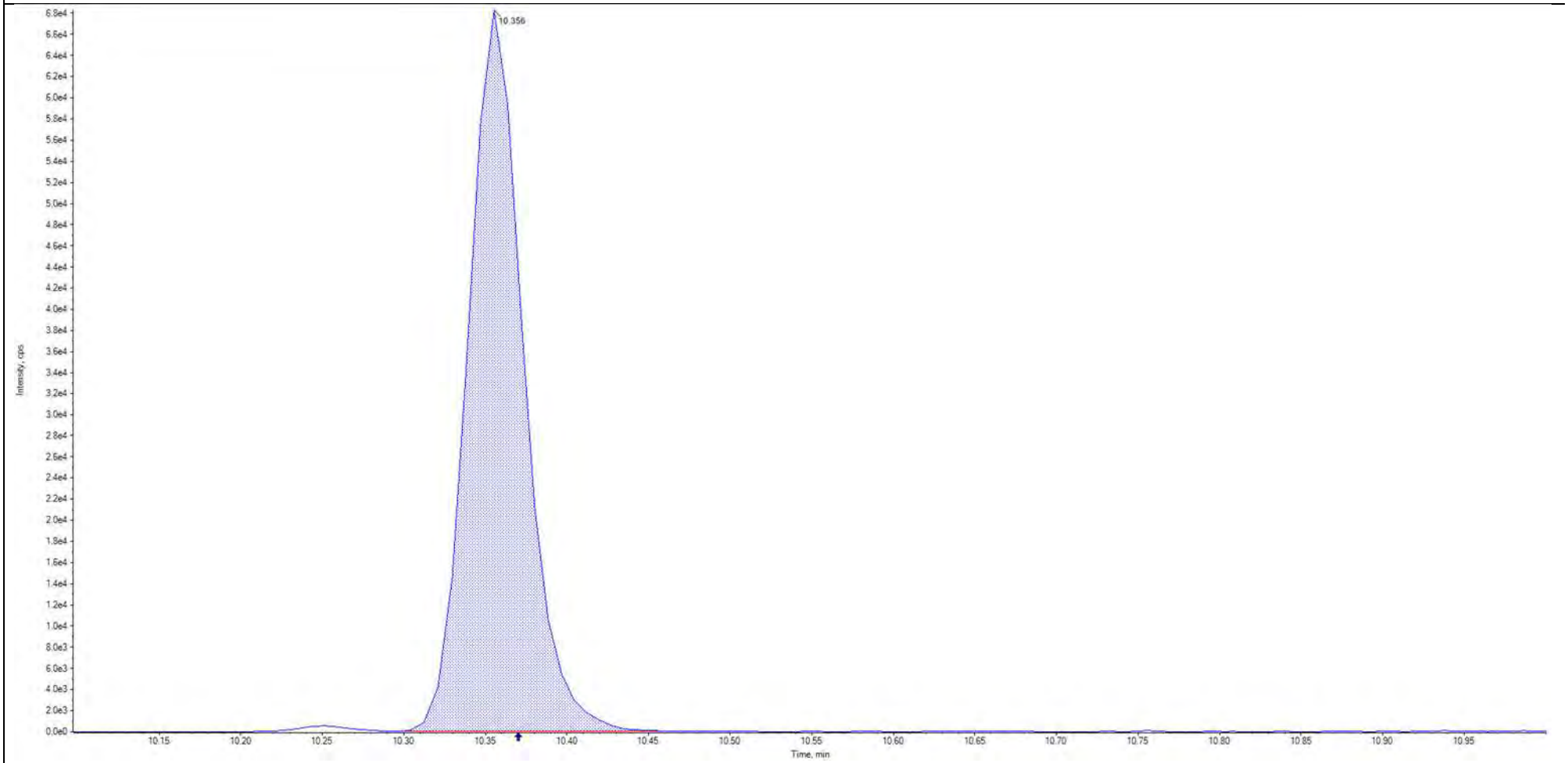
13C8-PFOSA
Sample: WG1973506-8,1633MED



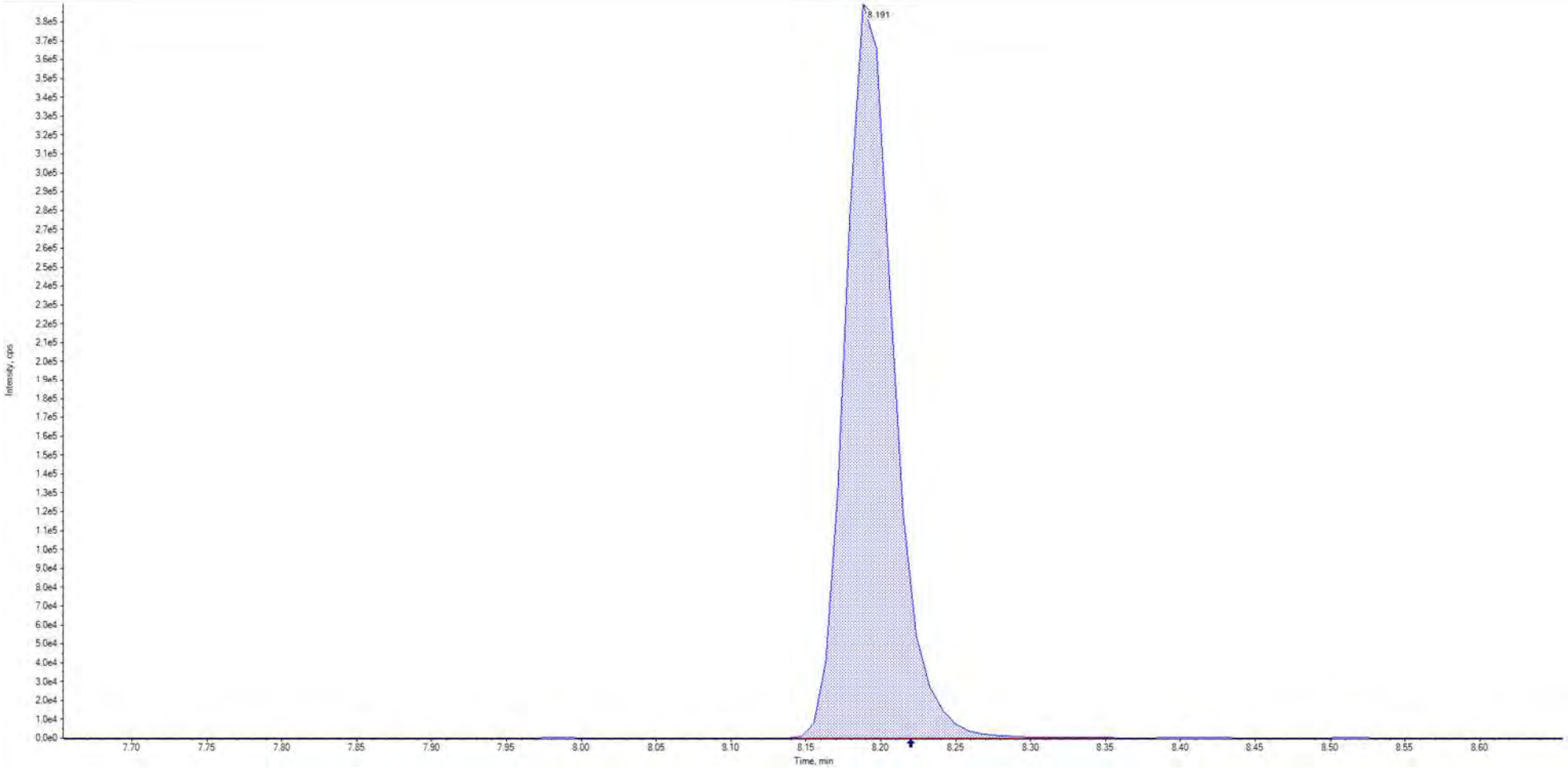
d3-NMeFOSA
Sample: WG1973506-8,1633MED



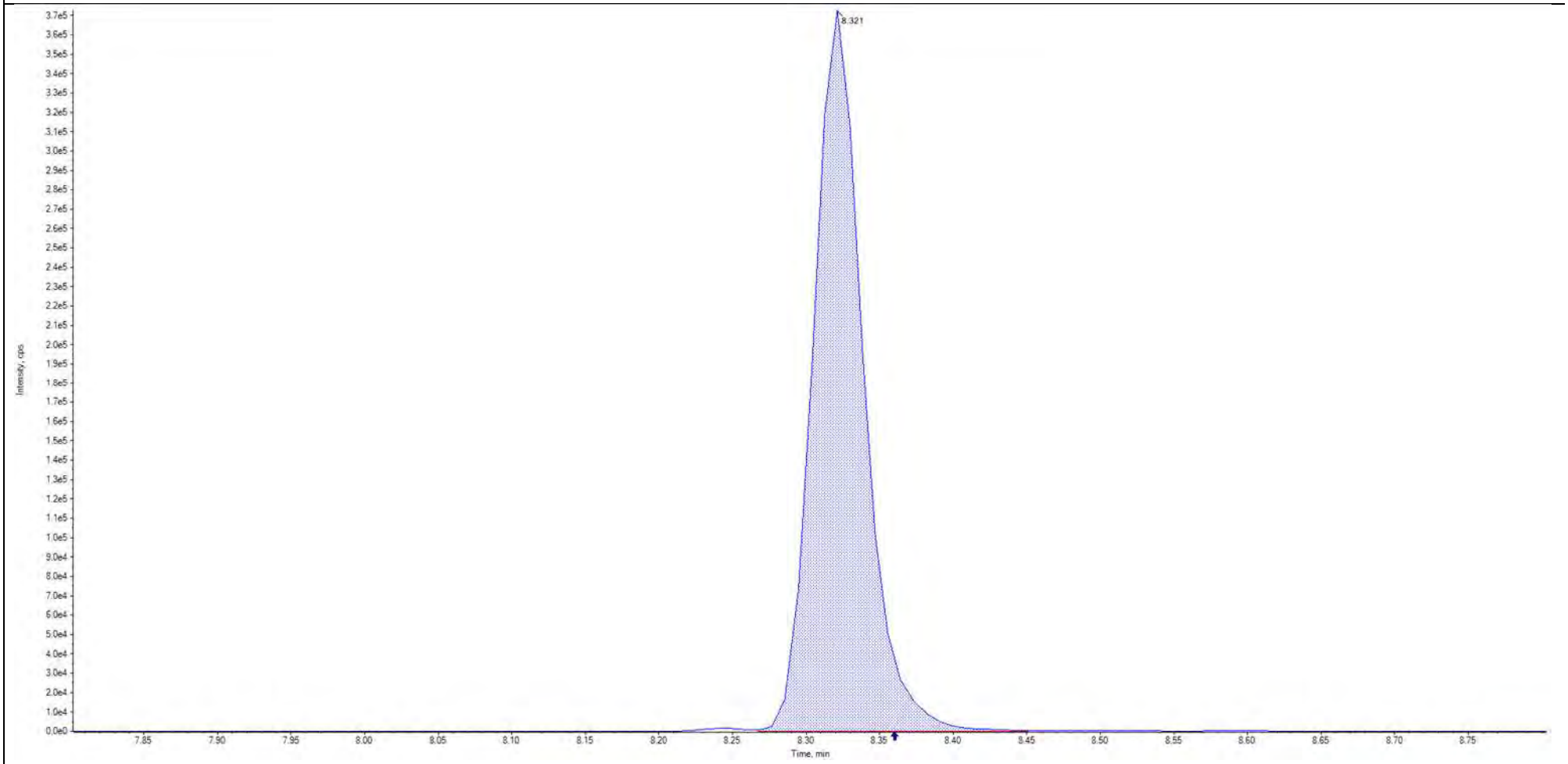
d5-NEtFOSA
Sample: WG1973506-8,1633MED



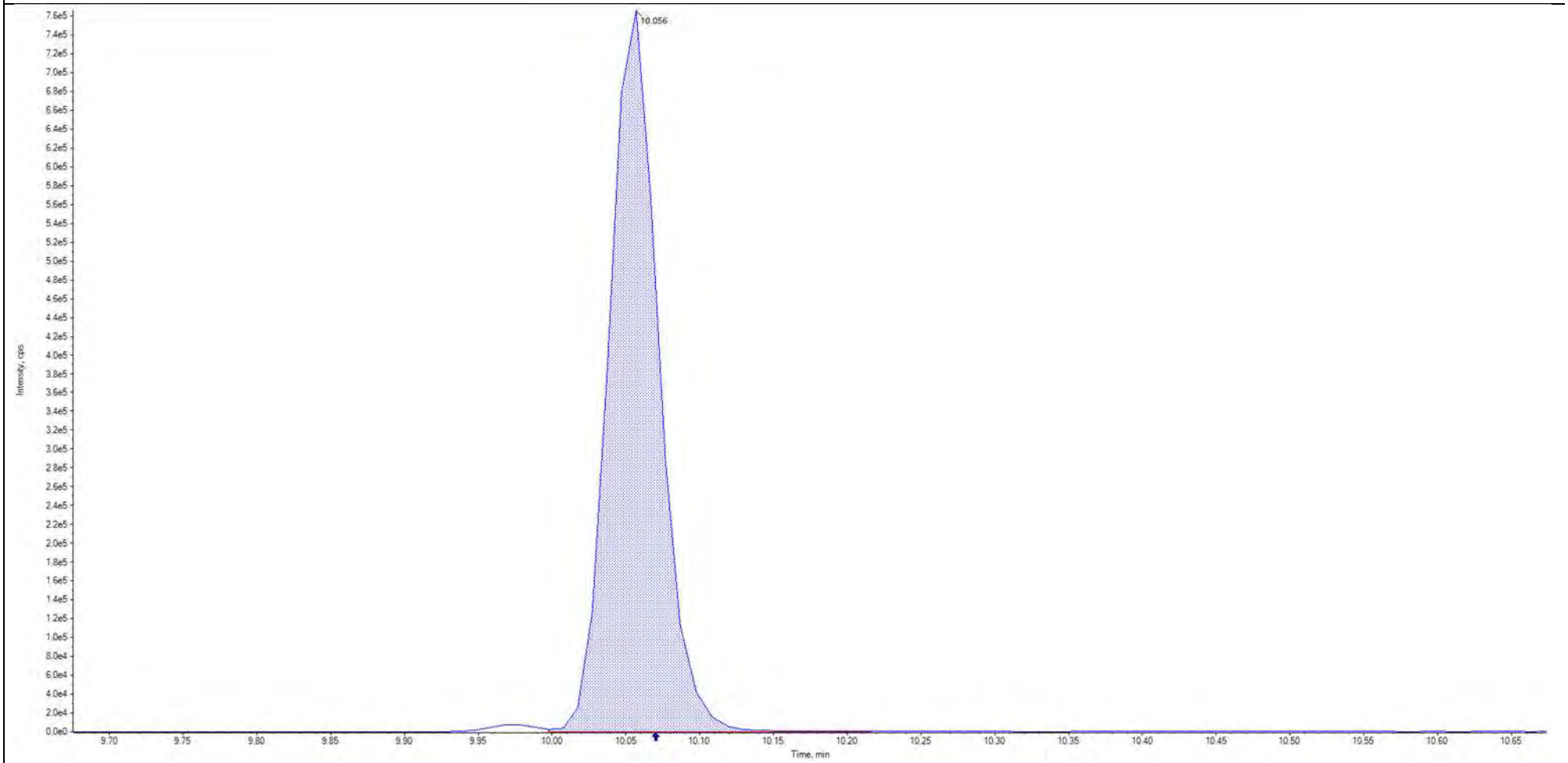
d3-NMeFOSAA
Sample: WG1973506-8,1633MED



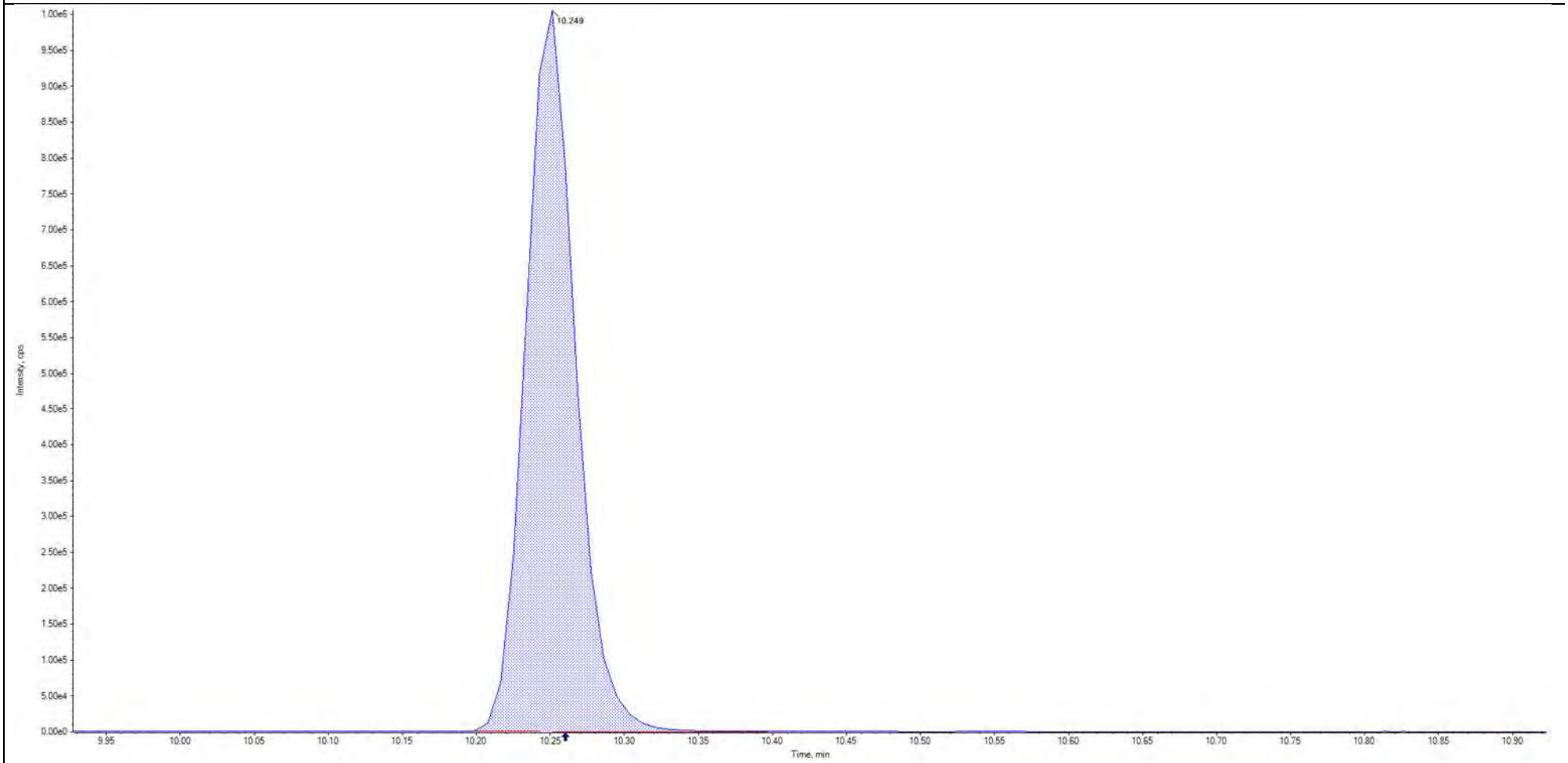
d5-NEtFOSAA
Sample: WG1973506-8,1633MED



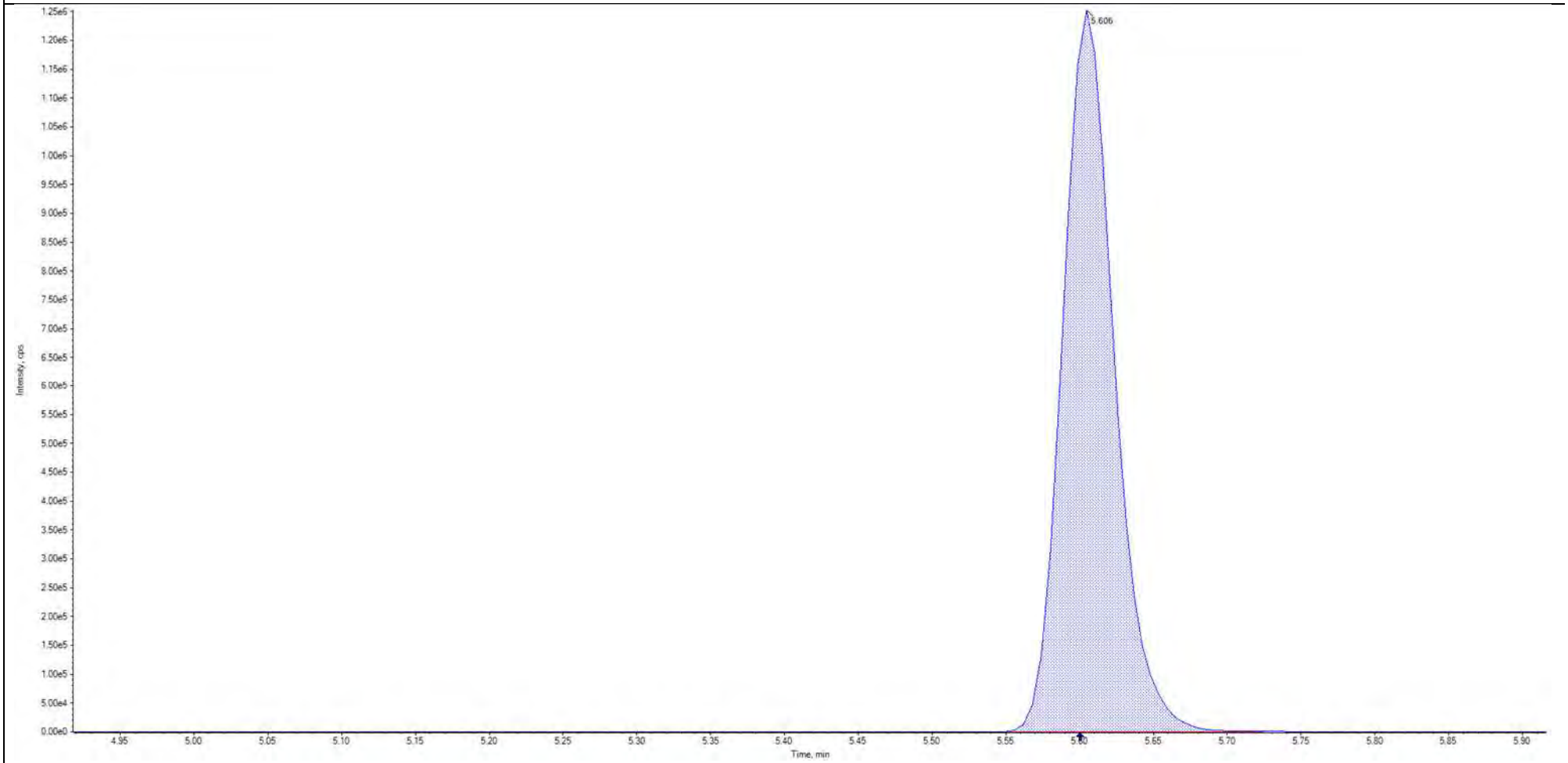
d7-NMeFOSE
Sample: WG1973506-8,1633MED



d9-NEtFOSE
Sample: WG1973506-8,1633MED



13C3-HFPO-DA
Sample: WG1973506-8,1633MED



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
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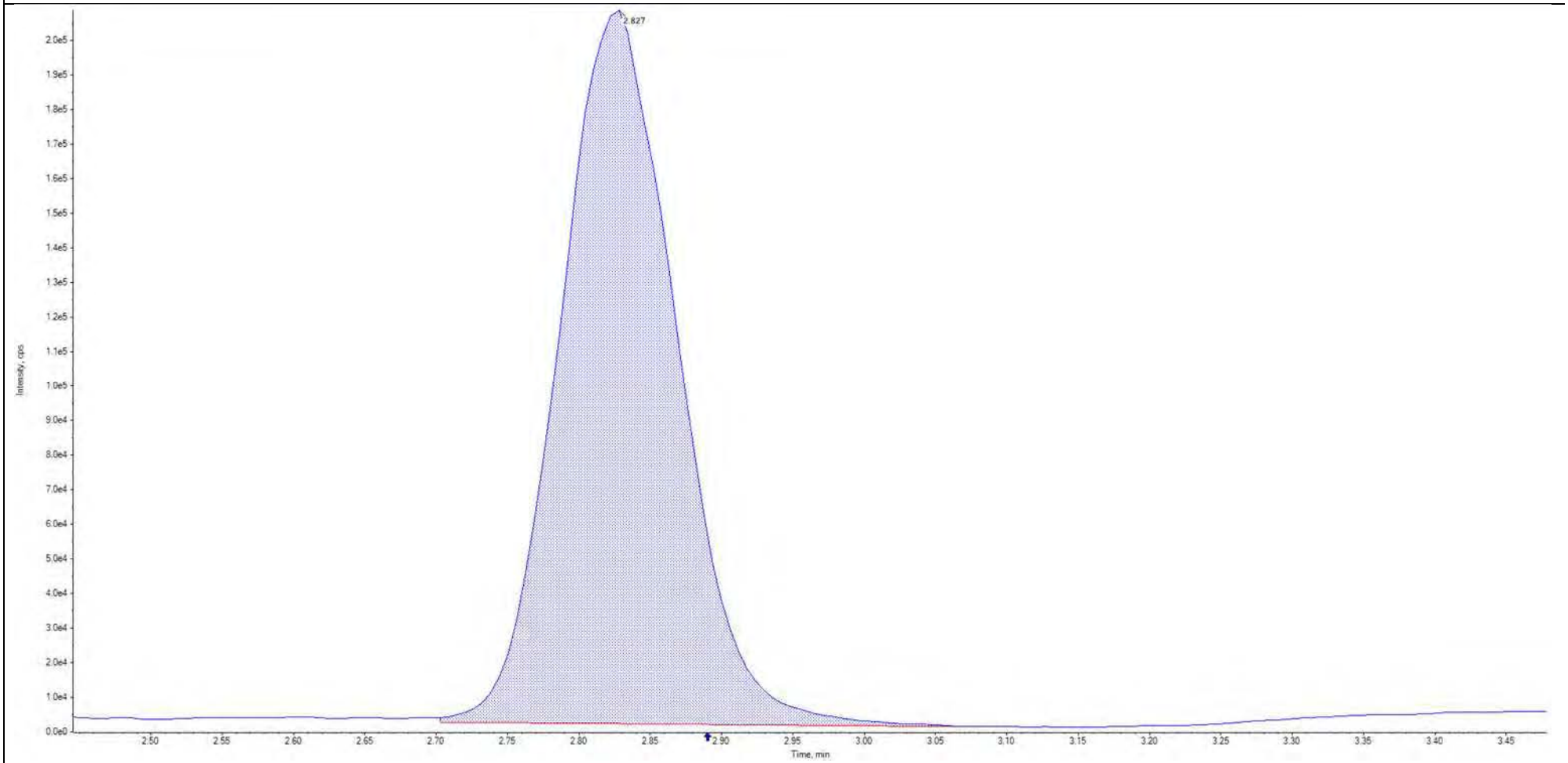
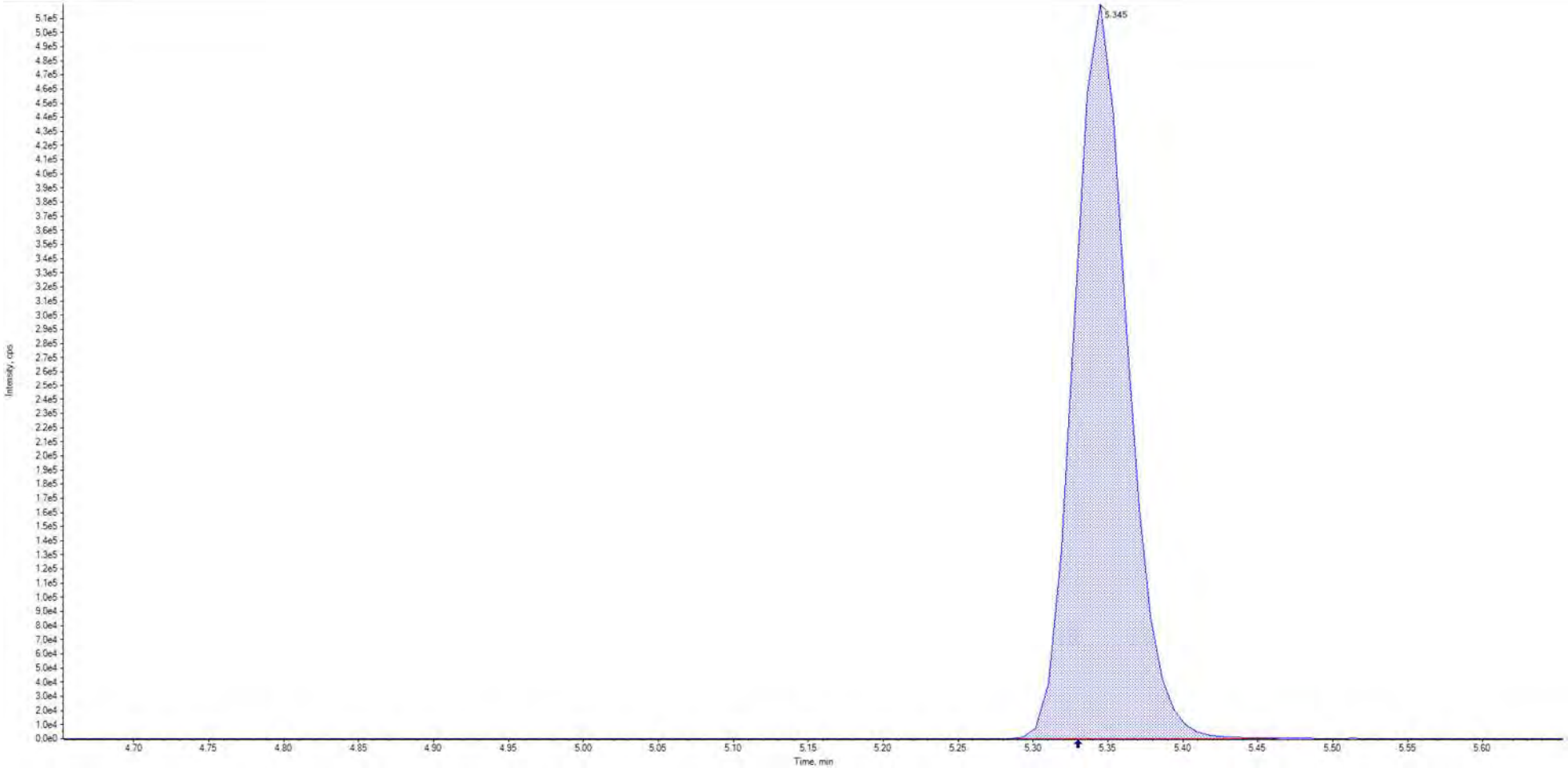
Generated: 9/19/2024 8:04:31 AM

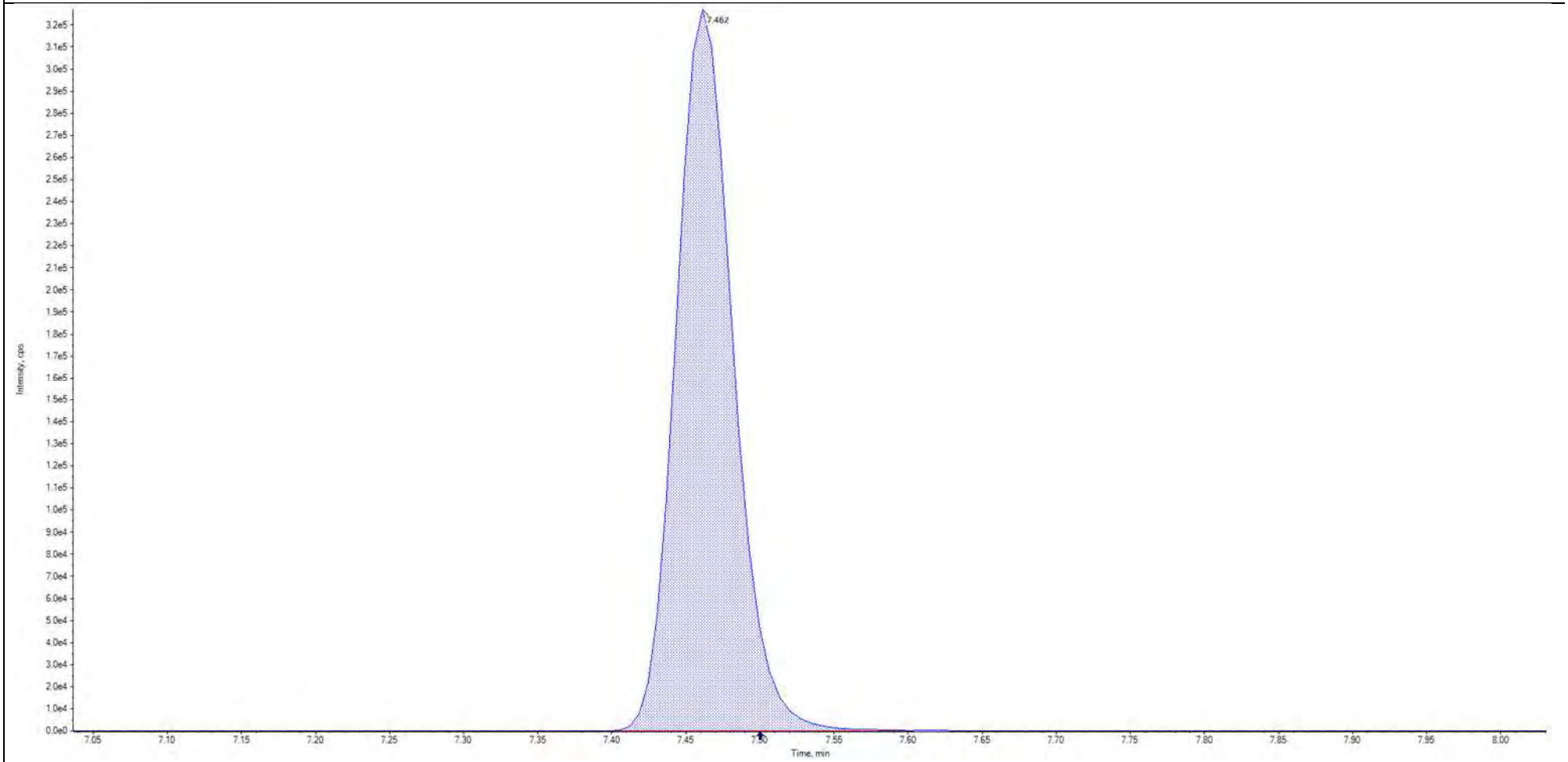
13C3-PFBA
Sample: WG1973506-8,1633MED



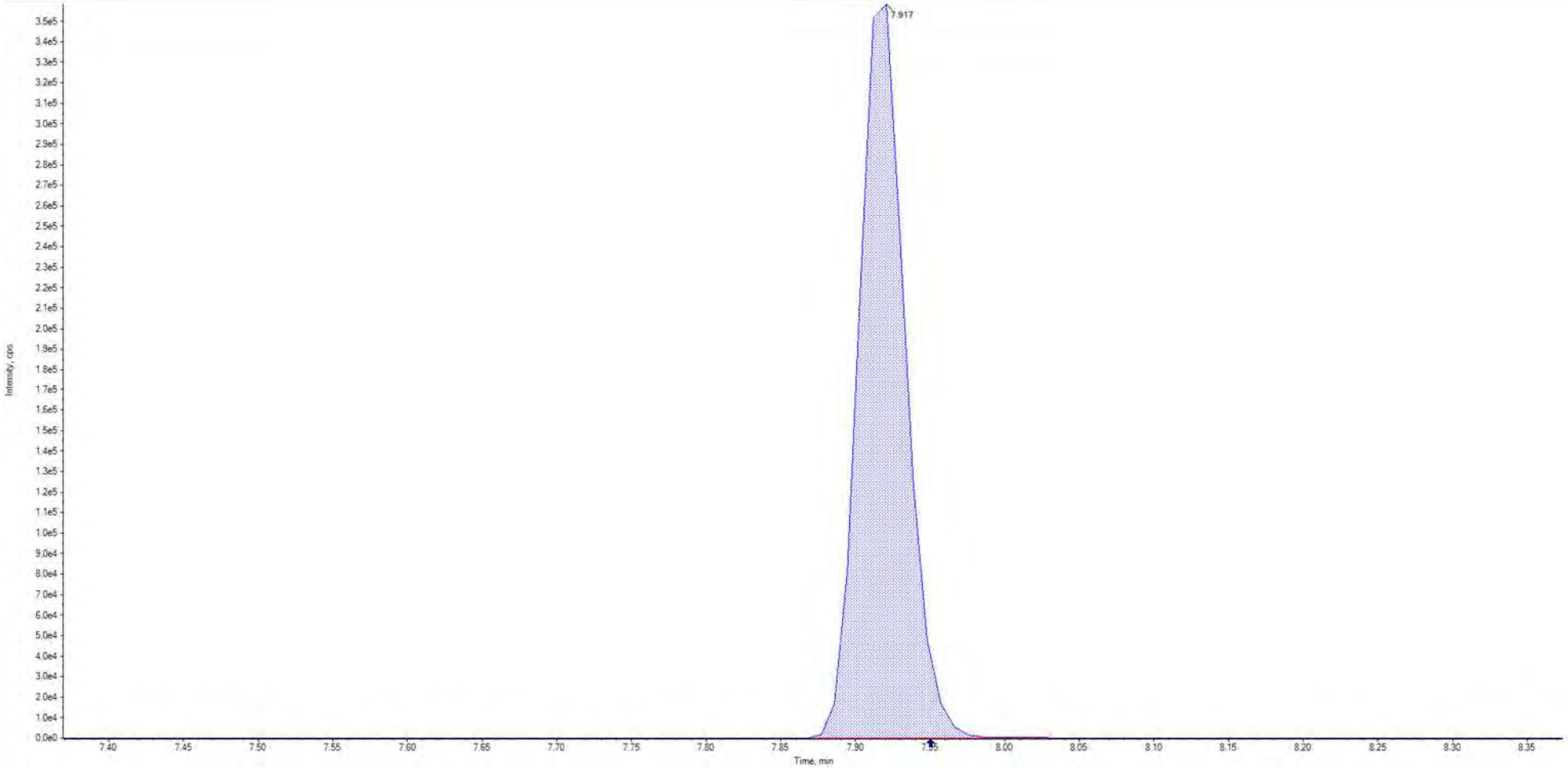
13C2-PFHxA
Sample: WG1973506-8,1633MED



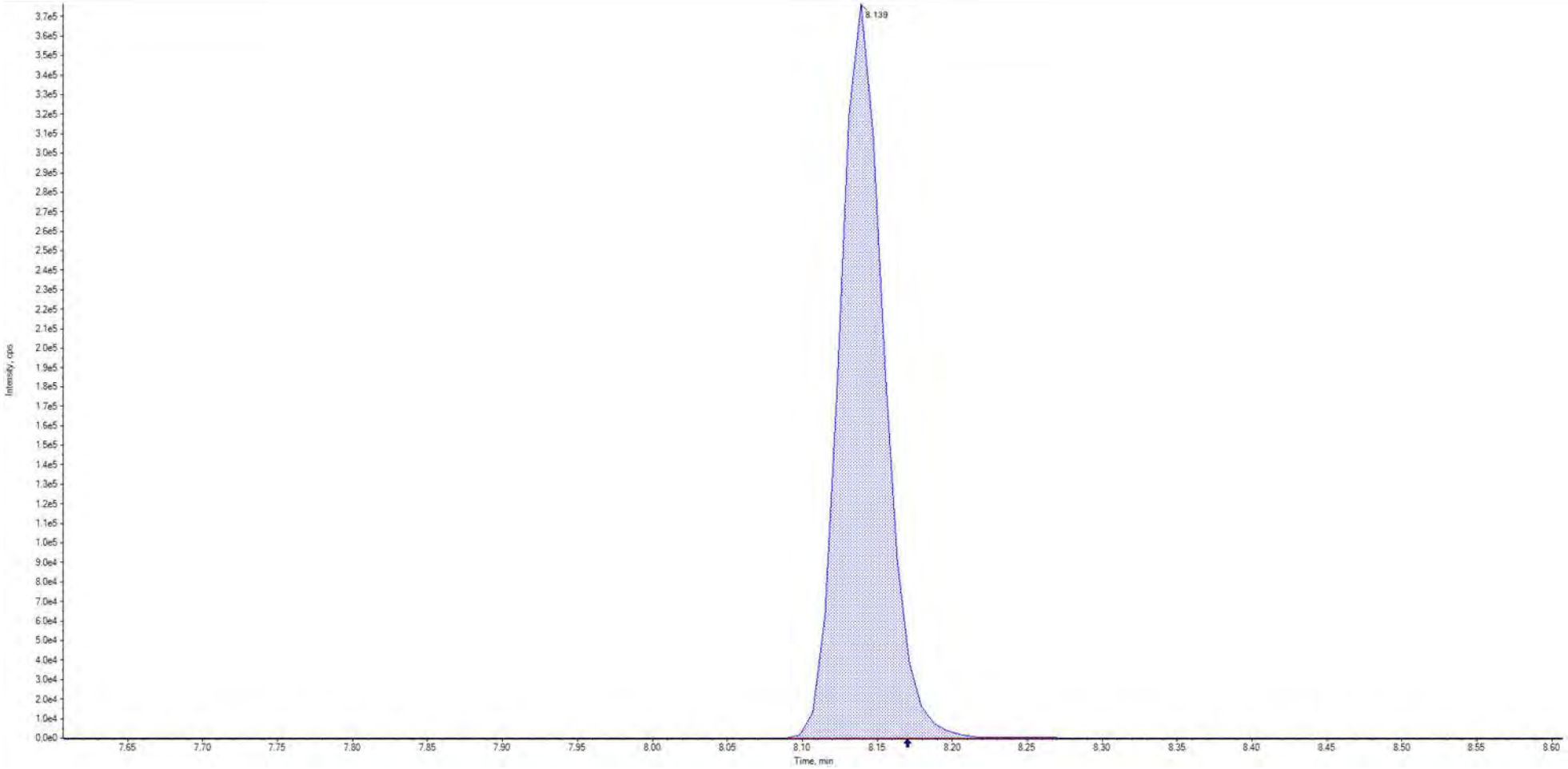
13C4-PFOA
Sample: WG1973506-8,1633MED



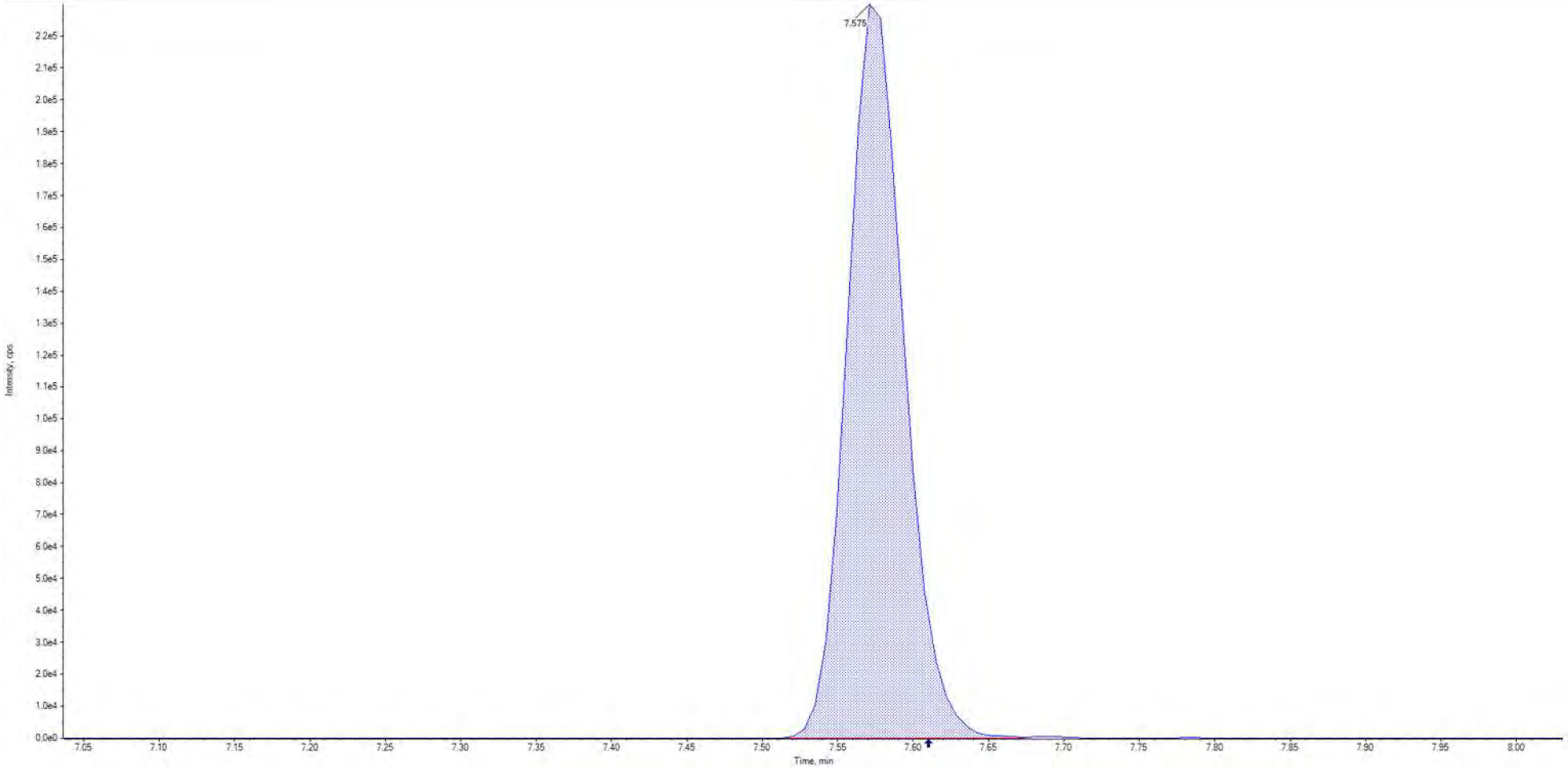
13C5-PFNA
Sample: WG1973506-8,1633MED



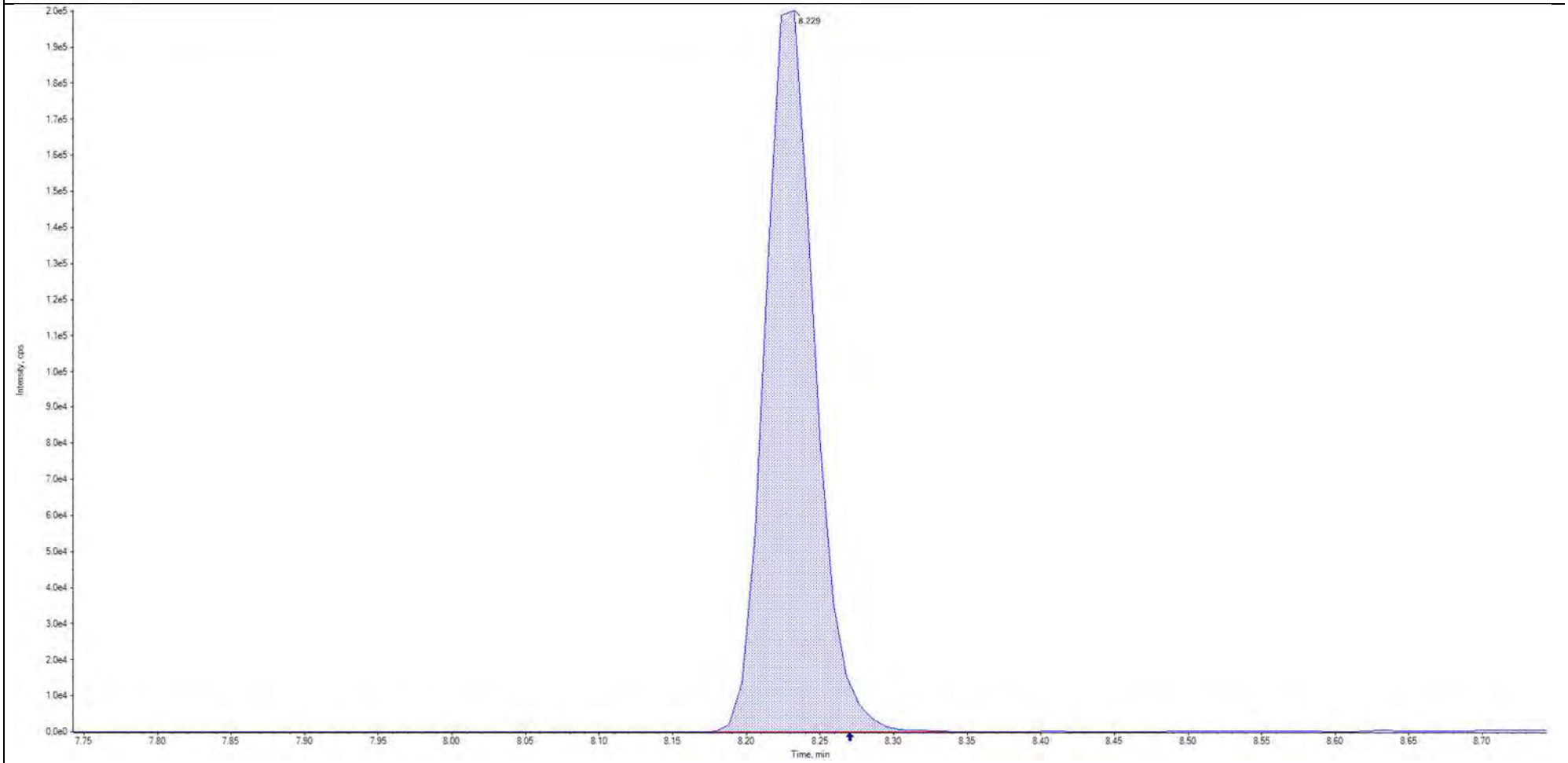
13C2-PFDA
Sample: WG1973506-8,1633MED



18O2-PFHxS
Sample: WG1973506-8,1633MED



13C4-PFOS
Sample: WG1973506-8,1633MED



Quantity Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_25.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

Semivolatiles Raw QC Data

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_13.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

Method: EPA1633_NIS_CALC.qmethod
Calibration: 240813_1633_ICAL

ID: WG1973357-1
Name: SCI05_240919_13.wiff
Date & Time: 2024-09-19T07:54:34
Description: WG1973506,WG1973357,ICAL21391
Instrument: Triple Quad 5500+
User: LCMS05:AC

LC/MS-MS Method:EPA_1633.dam

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
1	PFBA	375-22-4	N/A	213.0 / 169.0	N/A		N/A	N/A	N/A	N/A	N/A
2	PFPeA	2706-90-3	N/A	263.0 / 219.0	N/A		N/A	N/A	0.007	N/A	N/A
3	PFPeA_2	2706-90-3	N/A	263.0 / 68.9	N/A		N/A	N/A	0.007	N/A	N/A
4	PFHxA	307-24-4	N/A	313.0 / 269.0	N/A		N/A	N/A	0.072	N/A	N/A
5	PFHxA_2	307-24-4	N/A	313.0 / 119.0	N/A		N/A	N/A	0.072	N/A	N/A
6	PFHpA	375-85-9	N/A	363.1 / 319.0	N/A		N/A	N/A	0.297	N/A	N/A
7	PFHpA_2	375-85-9	N/A	363.1 / 169.0	N/A		N/A	N/A	0.297	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
8	PFOA	335-67-1	N/A	413.1 / 369.1	N/A		N/A	N/A	0.586	N/A	N/A
9	PFOA_2	335-67-1	N/A	413.1 / 169.0	N/A		N/A	N/A	0.586	N/A	N/A
10	PFNA	375-95-1	N/A	462.8 / 418.9	N/A		N/A	N/A	0.313	N/A	N/A
11	PFNA_2	375-95-1	N/A	462.8 / 218.9	N/A		N/A	N/A	0.313	N/A	N/A
12	PFDA	335-76-2	N/A	513.1 / 469.1	N/A		N/A	N/A	0.142	N/A	N/A
13	PFDA_2	335-76-2	N/A	513.1 / 219.0	N/A		N/A	N/A	0.142	N/A	N/A
14	PFUnA	2058-94-8	N/A	563.1 / 519.1	N/A		N/A	N/A	0.194	N/A	N/A
15	PFUnA_2	2058-94-8	N/A	563.1 / 269.0	N/A		N/A	N/A	0.194	N/A	N/A
16	PFDoA	307-55-1	N/A	613.1 / 569.1	N/A		N/A	N/A	0.167	N/A	N/A
17	PFDoA_2	307-55-1	N/A	613.1 / 319.0	N/A		N/A	N/A	0.167	N/A	N/A
18	PFTrDA	72629-94-8	N/A	663.1 / 619.1	N/A		N/A	N/A	0.228	N/A	N/A
19	PFTrDA_2	72629-94-8	N/A	663.1 / 169.0	N/A		N/A	N/A	0.228	N/A	N/A
20	PFTeDA	376-06-7	N/A	713.1 / 669.1	N/A		N/A	N/A	0.137	N/A	N/A
21	PFTeDA_2	376-06-7	N/A	713.1 / 169.0	N/A		N/A	N/A	0.137	N/A	N/A
22	PFBS	375-73-5	N/A	299.1 / 80.1	N/A		N/A	N/A	0.396	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
23	PFBS_2	375-73-5	N/A	299.1 / 99.1	N/A		N/A	N/A	0.396	N/A	N/A
24	PFPeS	2706-91-4	N/A	349.1 / 80.1	N/A		N/A	N/A	0.299	N/A	N/A
25	PFPeS_2	2706-91-4	N/A	349.1 / 99.1	N/A		N/A	N/A	0.299	N/A	N/A
26	PFHxS	355-46-4	N/A	399.1 / 80.1	N/A		N/A	N/A	0.315	N/A	N/A
27	PFHxS_2	355-46-4	N/A	399.1 / 99.1	N/A		N/A	N/A	0.315	N/A	N/A
28	PFHpS	375-92-8	N/A	449.1 / 80.1	N/A		N/A	N/A	0.287	N/A	N/A
29	PFHpS_2	375-92-8	N/A	449.1 / 99.1	N/A		N/A	N/A	0.287	N/A	N/A
30	PFOS	1763-23-1	N/A	499.1 / 80.1	N/A		N/A	N/A	0.238	N/A	N/A
31	PFOS_2	1763-23-1	N/A	499.1 / 99.1	N/A		N/A	N/A	0.238	N/A	N/A
32	PFNS	68259-12-1	N/A	549.1 / 80.1	N/A		N/A	N/A	0.301	N/A	N/A
33	PFNS_2	68259-12-1	N/A	549.1 / 99.1	N/A		N/A	N/A	0.301	N/A	N/A
34	PFDS	335-77-3	N/A	599.1 / 80.1	N/A		N/A	N/A	0.275	N/A	N/A
35	PFDS_2	335-77-3	N/A	599.1 / 99.1	N/A		N/A	N/A	0.275	N/A	N/A
36	PFDoS	79780-39-5	N/A	699.2 / 80.1	N/A		N/A	N/A	0.274	N/A	N/A
37	PFDoS_2	79780-39-5	N/A	699.2 / 99.1	N/A		N/A	N/A	0.274	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
38	4:2FTS	757124-72-4	N/A	327.1 / 307.1	N/A		N/A	N/A	0.516	N/A	N/A
39	4:2FTS_2	757124-72-4	N/A	327.1 / 81.1	N/A		N/A	N/A	0.516	N/A	N/A
40	6:2FTS	27619-97-2	N/A	427.2 / 407.2	N/A		N/A	N/A	0.565	N/A	N/A
41	6:2FTS_2	27619-97-2	N/A	427.2 / 81.1	N/A		N/A	N/A	0.565	N/A	N/A
42	8:2FTS	39108-34-4	N/A	527.2 / 507.2	N/A		N/A	N/A	0.662	N/A	N/A
43	8:2FTS_2	39108-34-4	N/A	527.2 / 81.1	N/A		N/A	N/A	0.662	N/A	N/A
44	PFOSA	754-91-6	N/A	498.1 / 78.1	N/A		N/A	N/A	0.025	N/A	N/A
45	PFOSA_2	754-91-6	N/A	498.1 / 478.0	N/A		N/A	N/A	0.025	N/A	N/A
46	NMeFOSA	31506-32-8	N/A	512.2 / 219.0	N/A		N/A	N/A	1.551	N/A	N/A
47	NMeFOSA_2	31506-32-8	N/A	512.2 / 169.0	N/A		N/A	N/A	1.551	N/A	N/A
48	NEtFOSA	4151-50-2	N/A	526.2 / 219.0	N/A		N/A	N/A	1.285	N/A	N/A
49	NEtFOSA_2	4151-50-2	N/A	526.2 / 169.0	N/A		N/A	N/A	1.285	N/A	N/A
50	NMeFOSAA	2355-31-9	N/A	570.2 / 419.1	N/A		N/A	N/A	0.700	N/A	N/A
51	NMeFOSAA_2	2355-31-9	N/A	570.2 / 483.0	N/A		N/A	N/A	0.700	N/A	N/A
52	NEtFOSAA	2991-50-6	N/A	584.2 / 419.1	N/A		N/A	N/A	0.487	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
53	NEtFOSAA_2	2991-50-6	N/A	584.2 / 526.2	N/A		N/A	N/A	0.487	N/A	N/A
54	NMeFOSE	24448-09-7	N/A	616.1 / 58.9	N/A		N/A	N/A	N/A	N/A	N/A
55	NEtFOSE	1691-99-2	N/A	630.0 / 58.9	N/A		N/A	N/A	N/A	N/A	N/A
56	HFPO-DA	13252-13-6	N/A	285.0 / 169.0	N/A		N/A	N/A	0.464	N/A	N/A
57	HFPO-DA_2	13252-13-6	N/A	285.0 / 184.9	N/A		N/A	N/A	0.464	N/A	N/A
58	ADONA	919005-14-4	N/A	377.1 / 251.0	N/A		N/A	N/A	0.634	N/A	N/A
59	ADONA_2	919005-14-4	N/A	377.1 / 84.8	N/A		N/A	N/A	0.634	N/A	N/A
60	9Cl-PF3ONS	756426-58-1	N/A	530.8 / 351.1	N/A		N/A	N/A	0.322	N/A	N/A
61	9Cl-PF3ONS_2	756426-58-1	N/A	532.8 / 353.0	N/A		N/A	N/A	0.322	N/A	N/A
62	11Cl-PF3OUdS	763051-92-9	N/A	630.9 / 451.0	N/A		N/A	N/A	0.331	N/A	N/A
63	11Cl-PF3OUdS_2	763051-92-9	N/A	632.9 / 452.9	N/A		N/A	N/A	0.331	N/A	N/A
64	3:3FTCA	356-02-5	N/A	241.1 / 177.1	N/A		N/A	N/A	1.074	N/A	N/A
65	3:3FTCA_2	356-02-5	N/A	241.1 / 117.0	N/A		N/A	N/A	1.074	N/A	N/A
66	5:3FTCA	914637-49-3	N/A	341.1 / 237.1	N/A		N/A	N/A	0.953	N/A	N/A
67	5:3FTCA_2	914637-49-3	N/A	341.1 / 217.0	N/A		N/A	N/A	0.953	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
68	7:3FTCA	812-70-4	N/A	441.1 / 316.9	N/A		N/A	N/A	1.558	N/A	N/A
69	7:3FTCA_2	812-70-4	N/A	441.1 / 337.1	N/A		N/A	N/A	1.558	N/A	N/A
70	PFEESA	113507-82-7	N/A	315.1 / 135.0	N/A		N/A	N/A	0.087	N/A	N/A
71	PFEESA_2	113507-82-7	N/A	315.1 / 82.9	N/A		N/A	N/A	0.087	N/A	N/A
72	PFMPA	377-73-1	N/A	229.0 / 85.0	N/A		N/A	N/A	N/A	N/A	N/A
73	PFMBA	863090-89-5	N/A	279.0 / 85.0	N/A		N/A	N/A	N/A	N/A	N/A
74	NFDHA	151772-58-6	N/A	295.0 / 201.0	N/A		N/A	N/A	0.910	N/A	N/A
75	NFDHA_2	151772-58-6	N/A	295.0 / 84.9	N/A		N/A	N/A	0.910	N/A	N/A
76	TDCA	516-50-7	N/A	499.1 / 124.1	N/A		N/A	N/A	40.716	N/A	N/A
77	TDCA_2	516-50-7	N/A	499.1 / 79.9	N/A		N/A	N/A	40.716	N/A	N/A
78	13C2D4-4:2FTS	Surr	N/A	333.2 / 312.1	N/A		N/A	N/A	N/A	N/A	N/A
79	13C2-PFOA	Surr	N/A	415.0 / 370.0	N/A		N/A	N/A	N/A	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C4-PFBA	EIS	2.84	217.0 / 172.0	2234083		8.237	NA	NA	NA	82.4

Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
13C5-PFPeA	EIS	4.66	268.0 / 223.0	1500578		4.555	NA	NA	NA	91.1
13C5-PFHxA	EIS	5.36	318.0 / 273.0	870912		2.012	NA	NA	NA	80.5
13C4-PFHpA	EIS	6.26	367.0 / 322.0	835928		1.929	NA	NA	NA	77.2
13C8-PFOA	EIS	7.48	421.0 / 376.0	1262297		2.161	NA	NA	NA	86.5
13C9-PFNA	EIS	7.93	472.0 / 427.0	521961		0.891	NA	NA	NA	71.3
13C6-PFDA	EIS	8.15	519.0 / 474.0	502304		0.883	NA	NA	NA	70.6
13C7-PFUnA	EIS	8.42	570.0 / 525.0	406424		0.883	NA	NA	NA	70.6

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C2-PFDoA	EIS	8.83	615.1 / 570.0	329157		1.099	NA	NA	NA	87.9
	13C2-PFTeDA	EIS	9.85	715.1 / 670.1	239724		0.737	NA	NA	NA	59.0
	13C3-PFBS	EIS	5.33	302.1 / 80.1	649928		1.907	NA	NA	NA	81.8
	13C3-PFHxS	EIS	7.59	402.1 / 80.1	488194		1.804	NA	NA	NA	76.1
	13C8-PFOS	EIS	8.24	507.1 / 80.1	463253		1.709	NA	NA	NA	71.4
	13C2-4:2FTS	EIS	5.16	329.1 / 81.1	266310		4.378	NA	NA	NA	93.4
	13C2-6:2FTS	EIS	7.09	429.2 / 81.1	170174		3.818	NA	NA	NA	80.3
	13C2-8:2FTS	EIS	8.05	529.2 / 81.1	239337		3.669	NA	NA	NA	76.4

Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
13C8-PFOSA	EIS	9.52	506.1 / 78.1	676274		1.877	NA	NA	NA	75.1
d3-NMeFOSA	EIS	10.15	515.2 / 219.0	92784		1.530	NA	NA	NA	61.2
d5-NEtFOSA	EIS	10.36	531.2 / 219.0	90403		1.525	NA	NA	NA	61.0
d3-NMeFOSAA	EIS	8.20	573.2 / 419.1	236997		1.728	NA	NA	NA	34.6
d5-NEtFOSAA	EIS	8.33	589.3 / 419.1	237203		3.291	NA	NA	NA	65.8
d7-NMeFOSE	EIS	10.06	623.2 / 58.9	877951		18.740	NA	NA	NA	75.0
d9-NEtFOSE	EIS	10.25	639.2 / 58.9	1355769		19.628	NA	NA	NA	78.5

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C3-HFPO-DA	EIS	5.62	287.0 / 169.0	2255268		7.864	NA	NA	NA	78.6
	13C3-PFBA	NIS	2.84	216.0 / 172.0	1186437		5.549	NA	NA	NA	111.0
	13C2-PFHxA	NIS	5.36	315.0 / 270.0	1284948		2.624	NA	NA	NA	105.0
	13C4-PFOA	NIS	7.48	417.0 / 372.0	764027		2.441	NA	NA	NA	97.6
	13C5-PFNA	NIS	7.92	468.0 / 423.0	713989		1.304	NA	NA	NA	104.3
	13C2-PFDA	NIS	8.15	515.1 / 470.1	668519		1.305	NA	NA	NA	104.4
	18O2-PFHxS	NIS	7.59	403.1 / 84.1	550206		2.349	NA	NA	NA	99.1
	13C4-PFOS	NIS	8.24	503.1 / 80.1	479497		2.277	NA	NA	NA	95.1

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Generated: 9/19/2024 8:04:31 AM

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec

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PFBA
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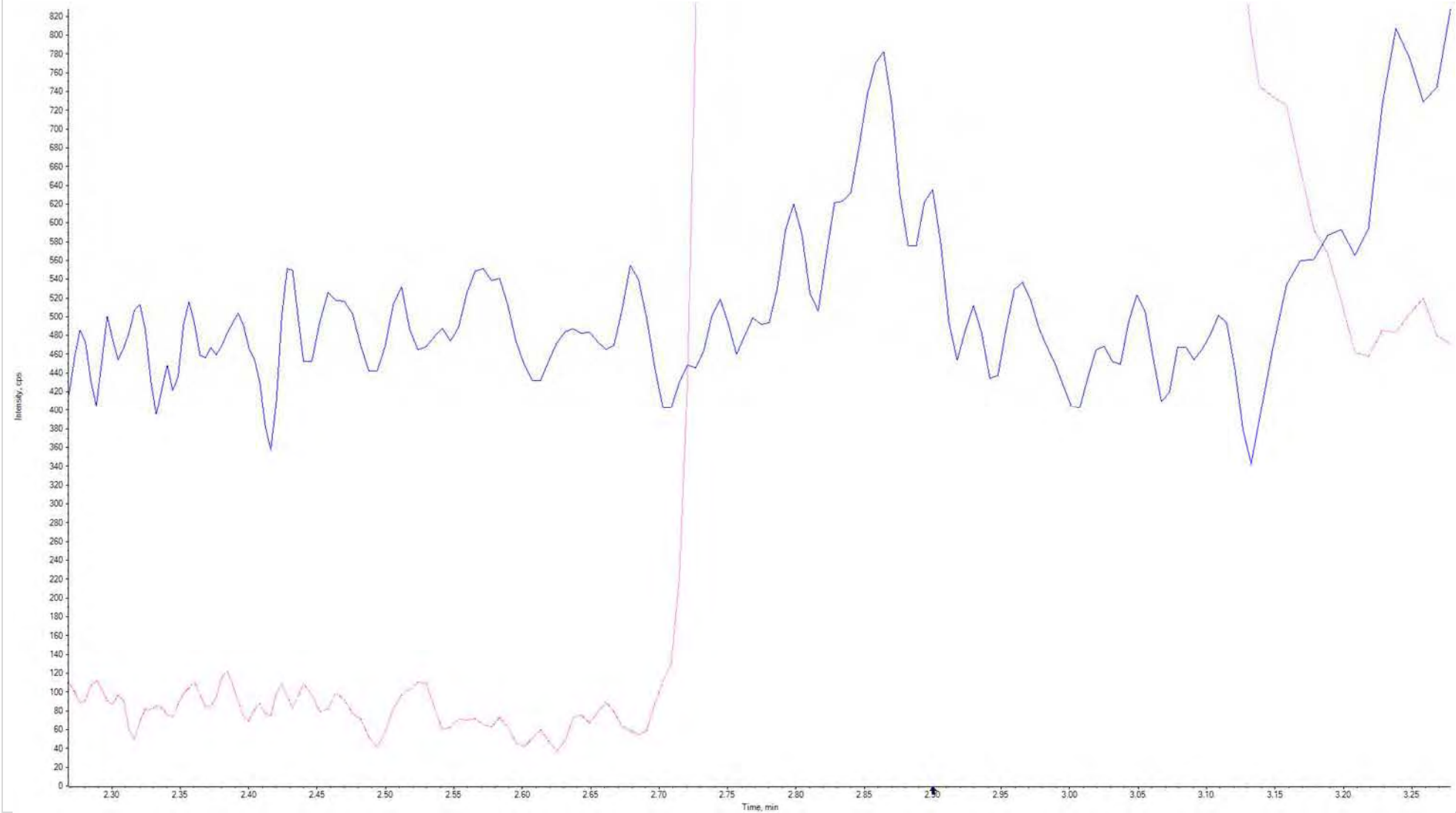

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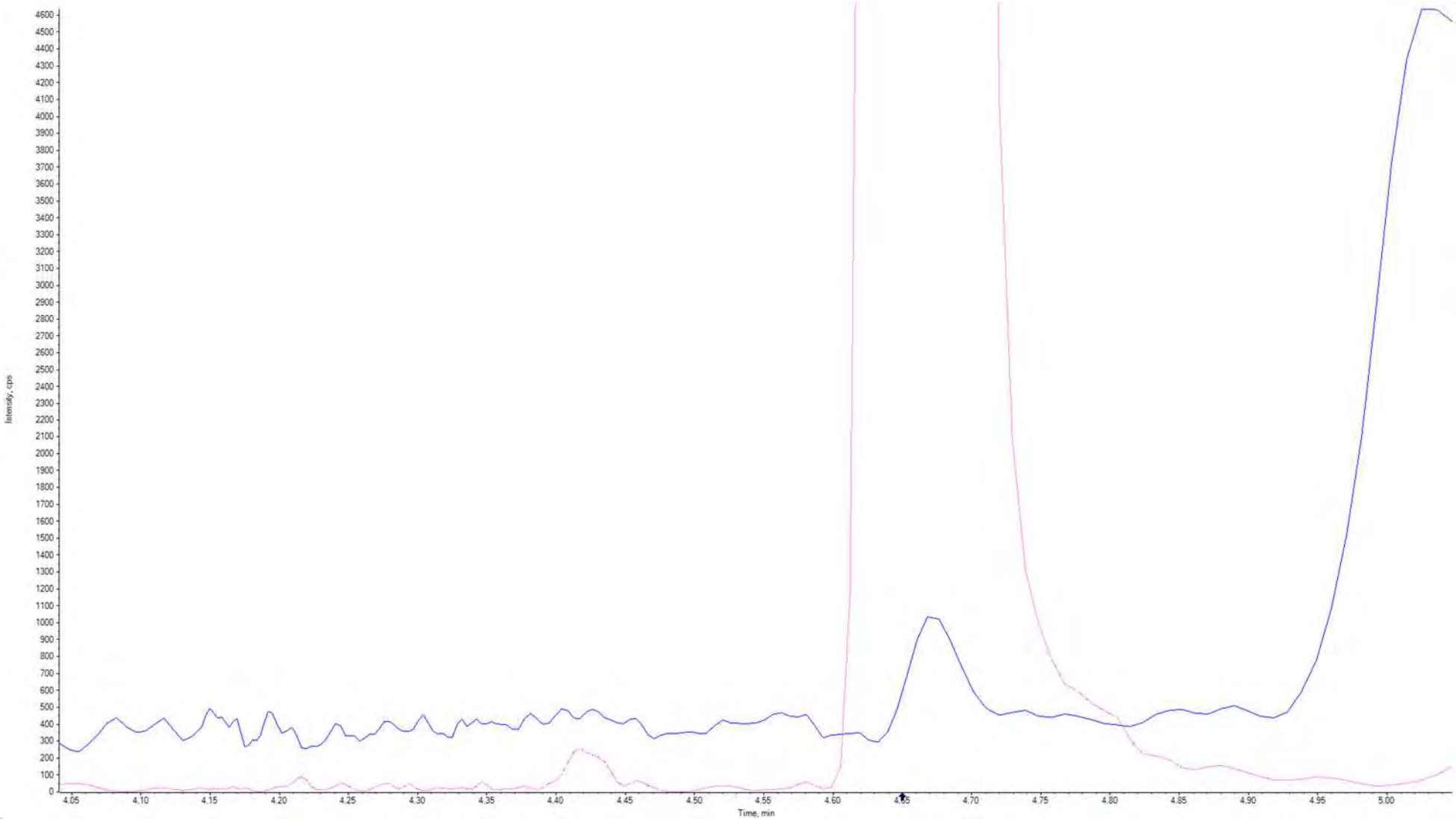

PFPeA_2
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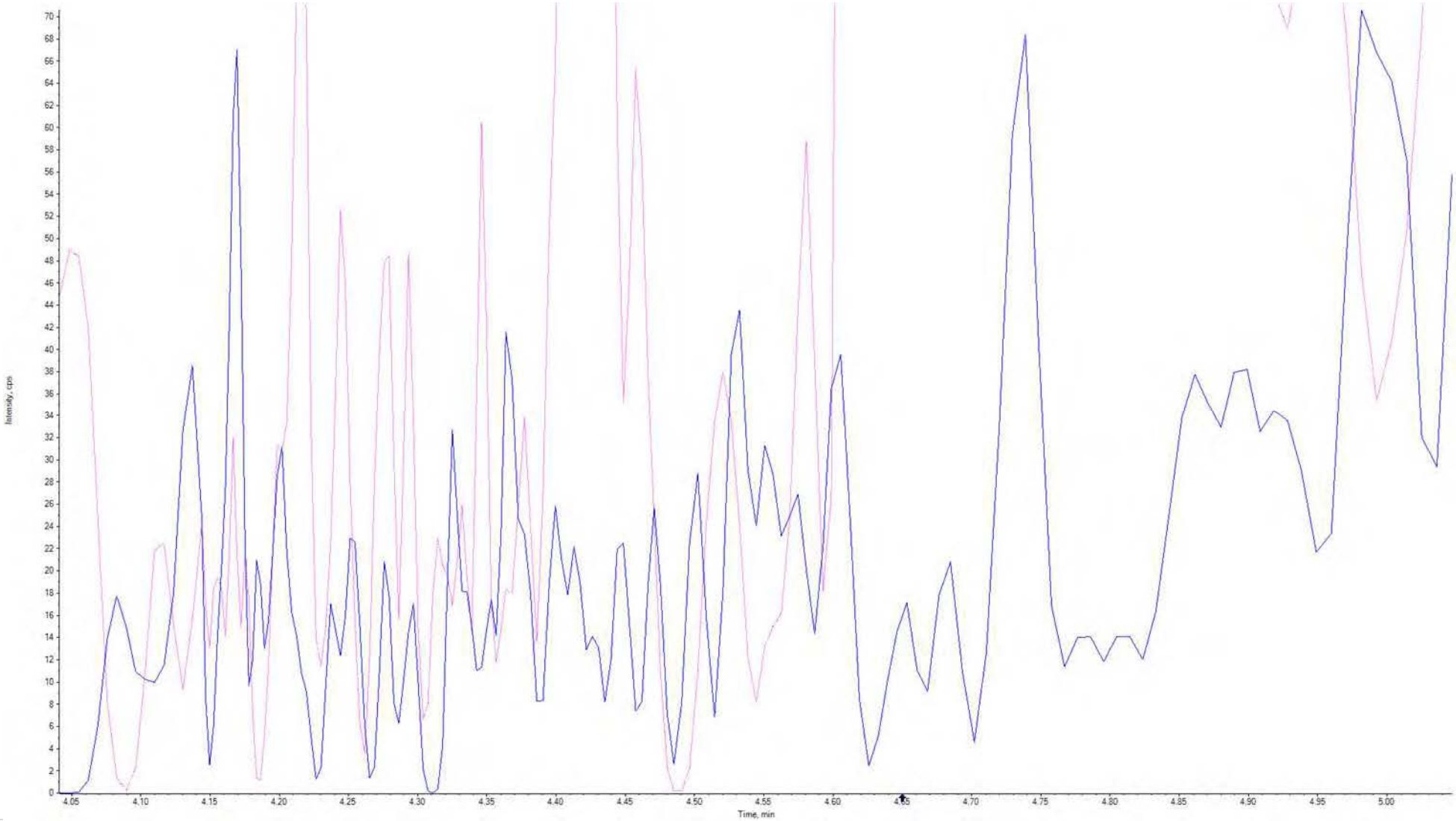

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PFHxA
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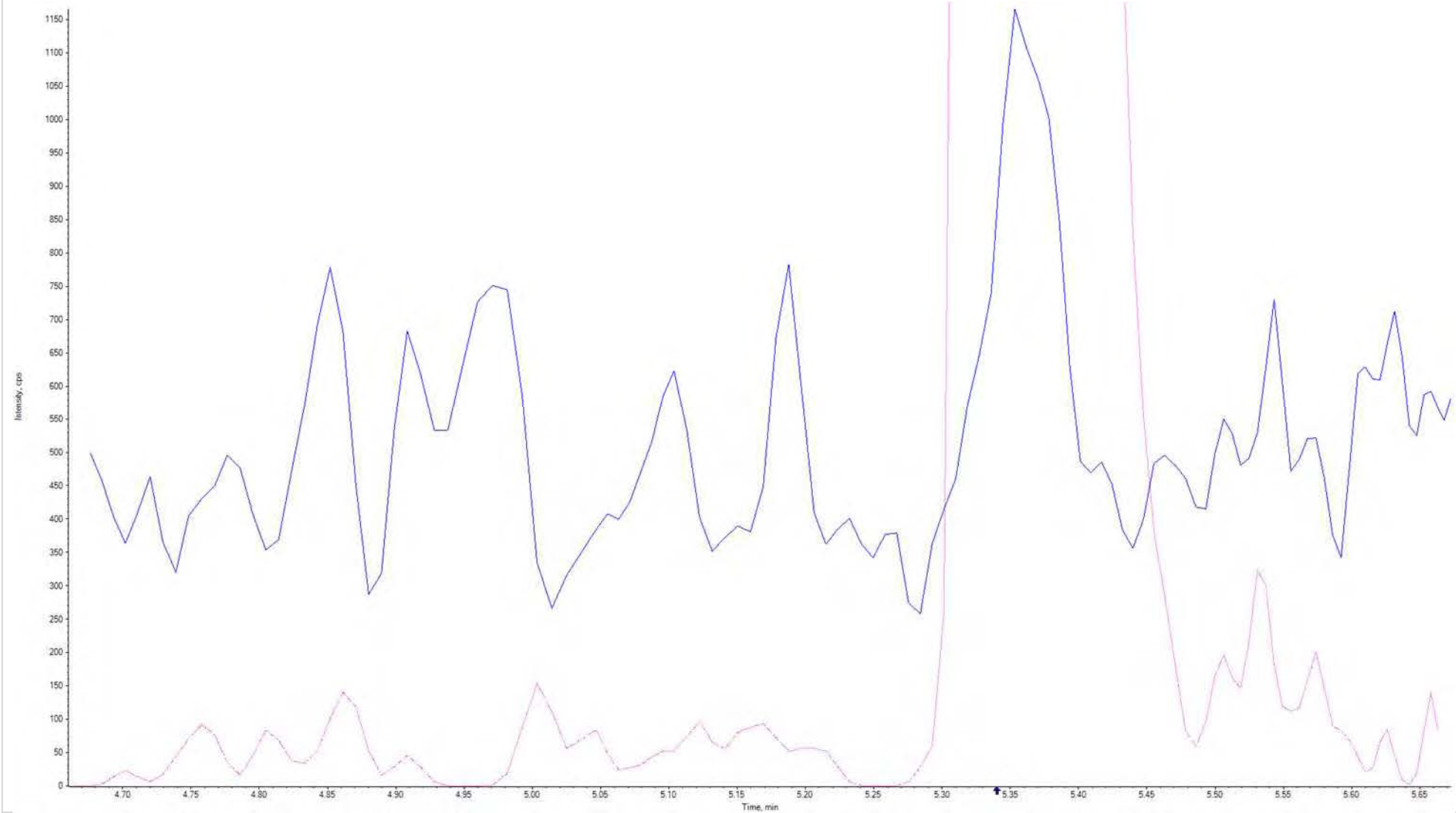

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PFHxA_2
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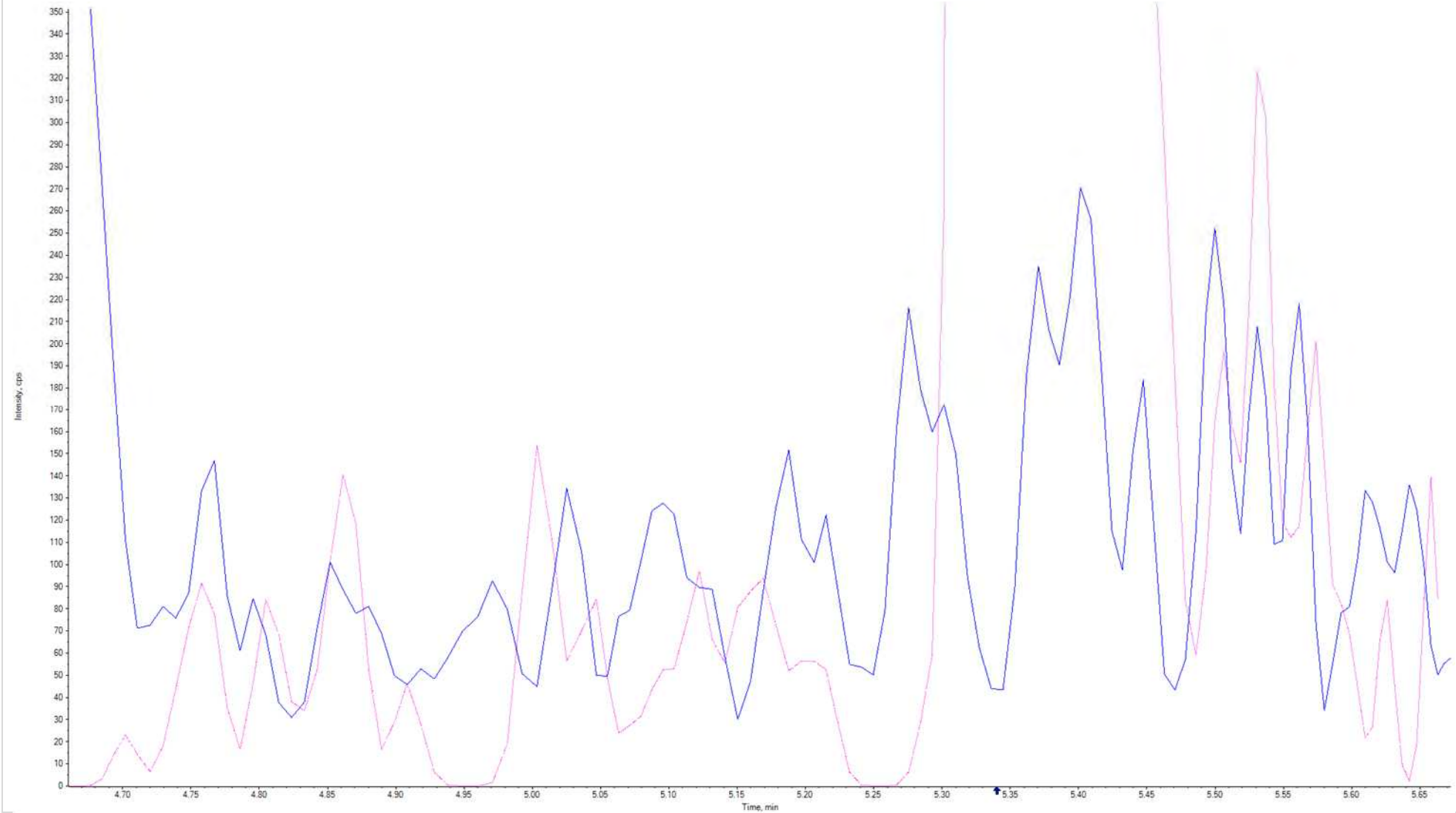

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PFHpA
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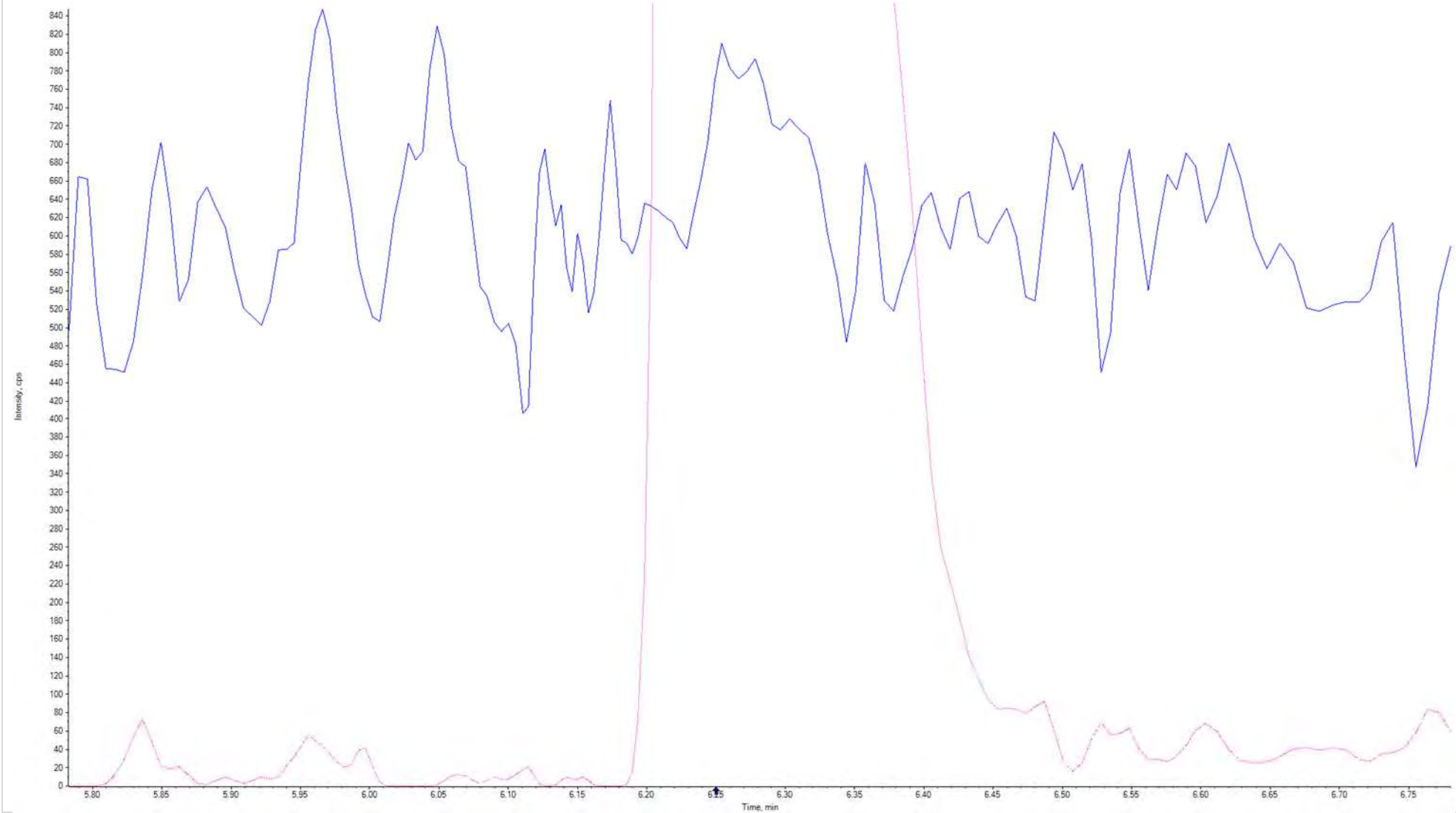

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PFHpA_2
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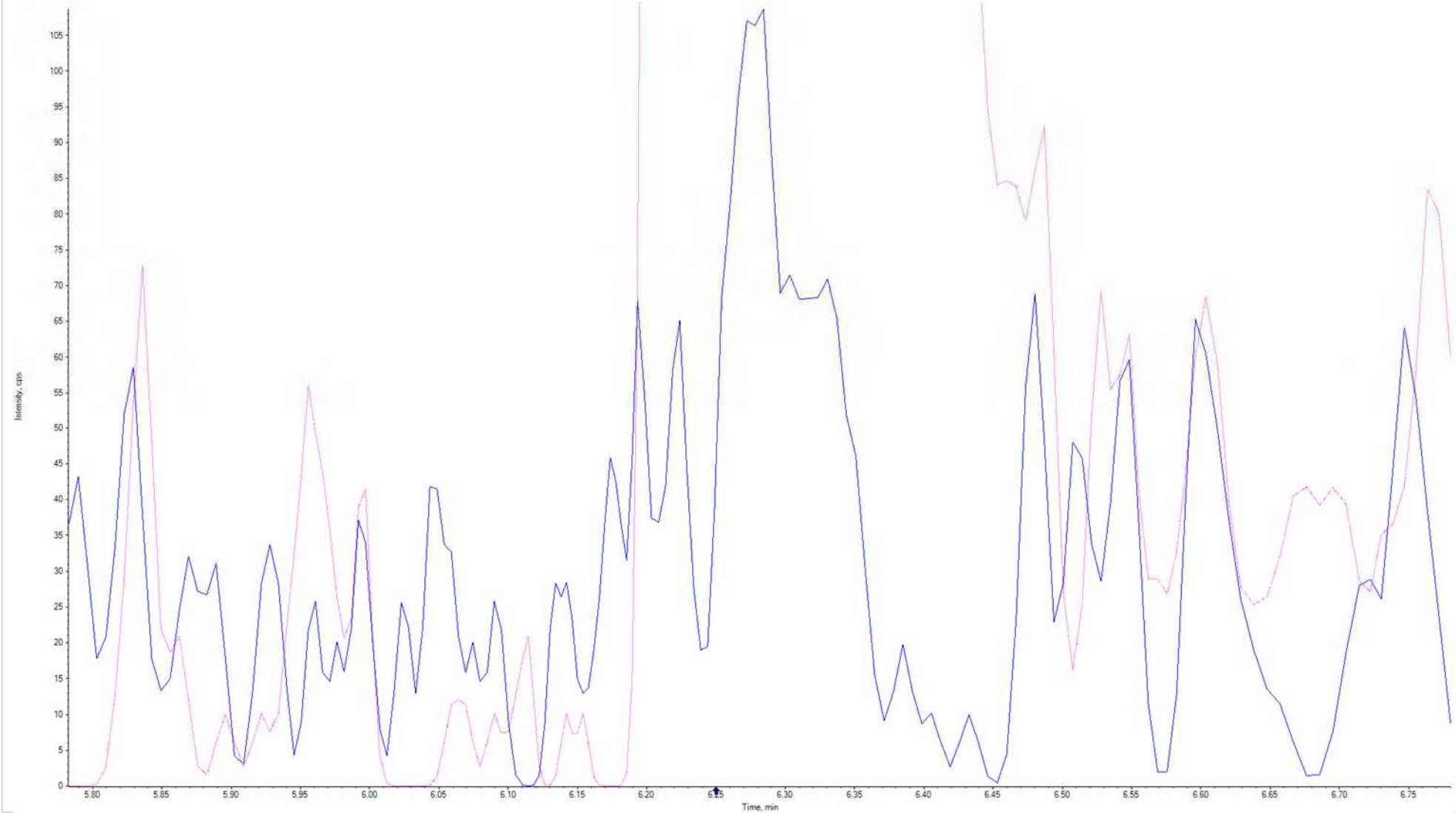

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PFOA
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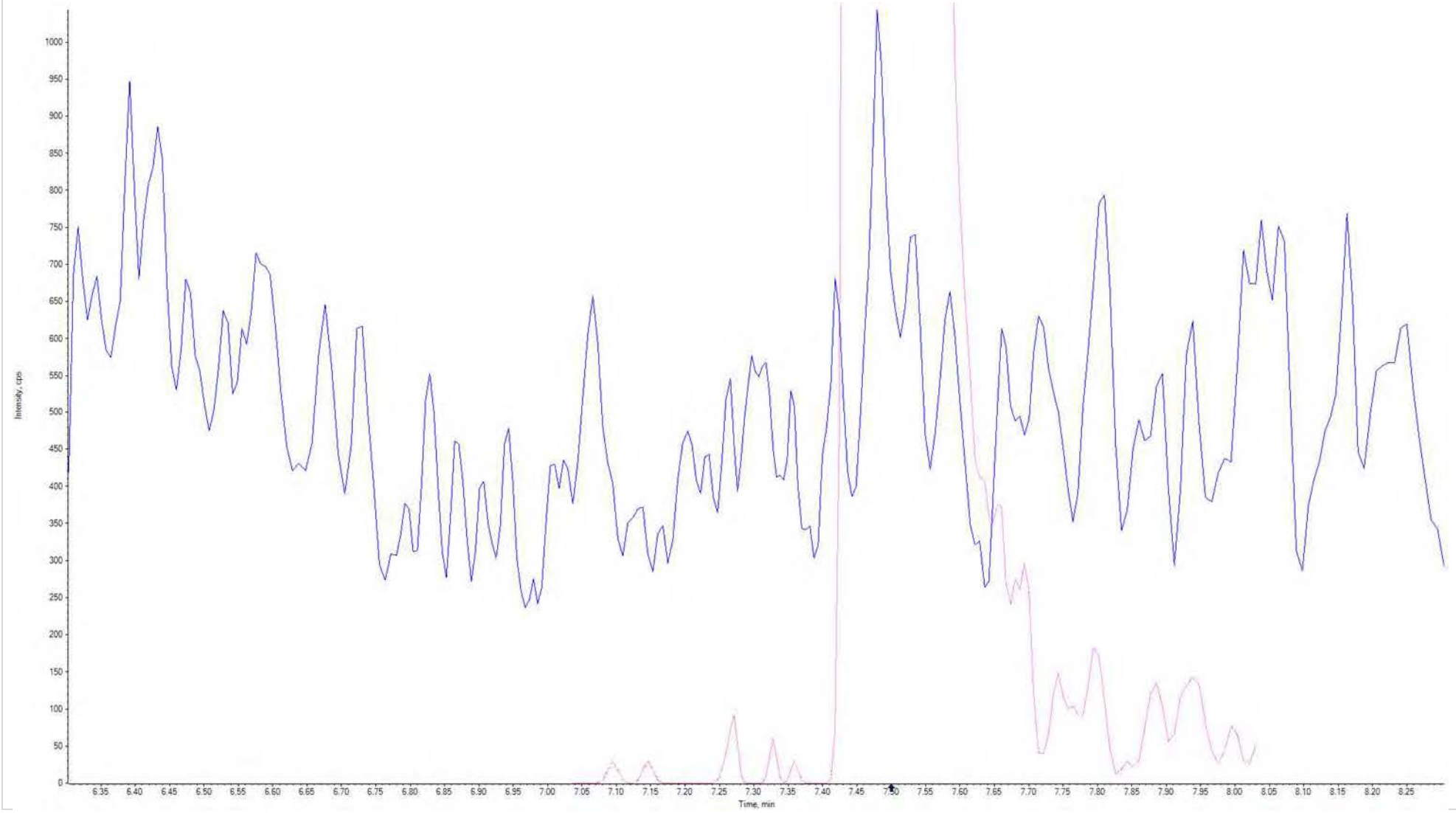

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PFOA_2
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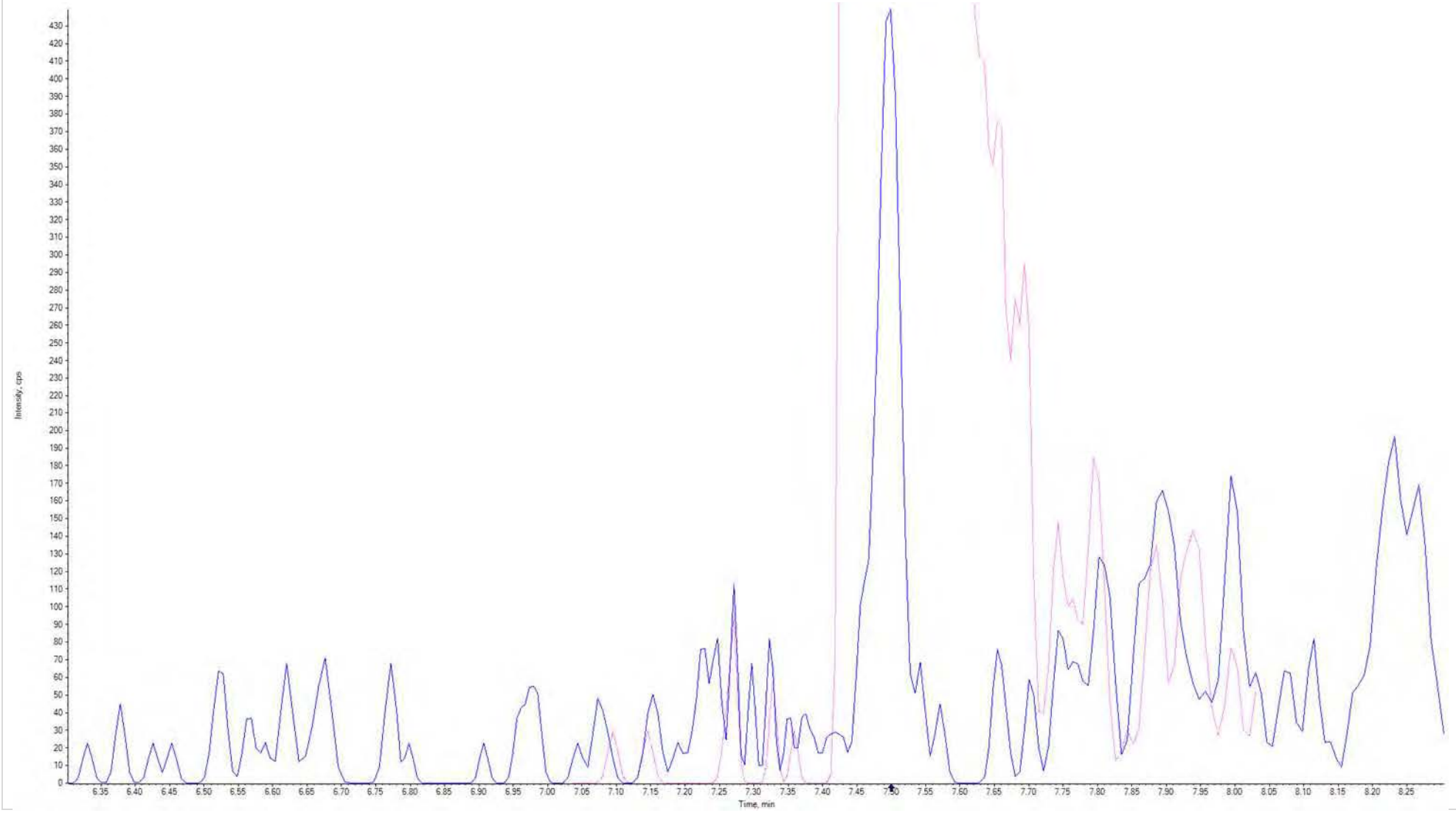

PFNA
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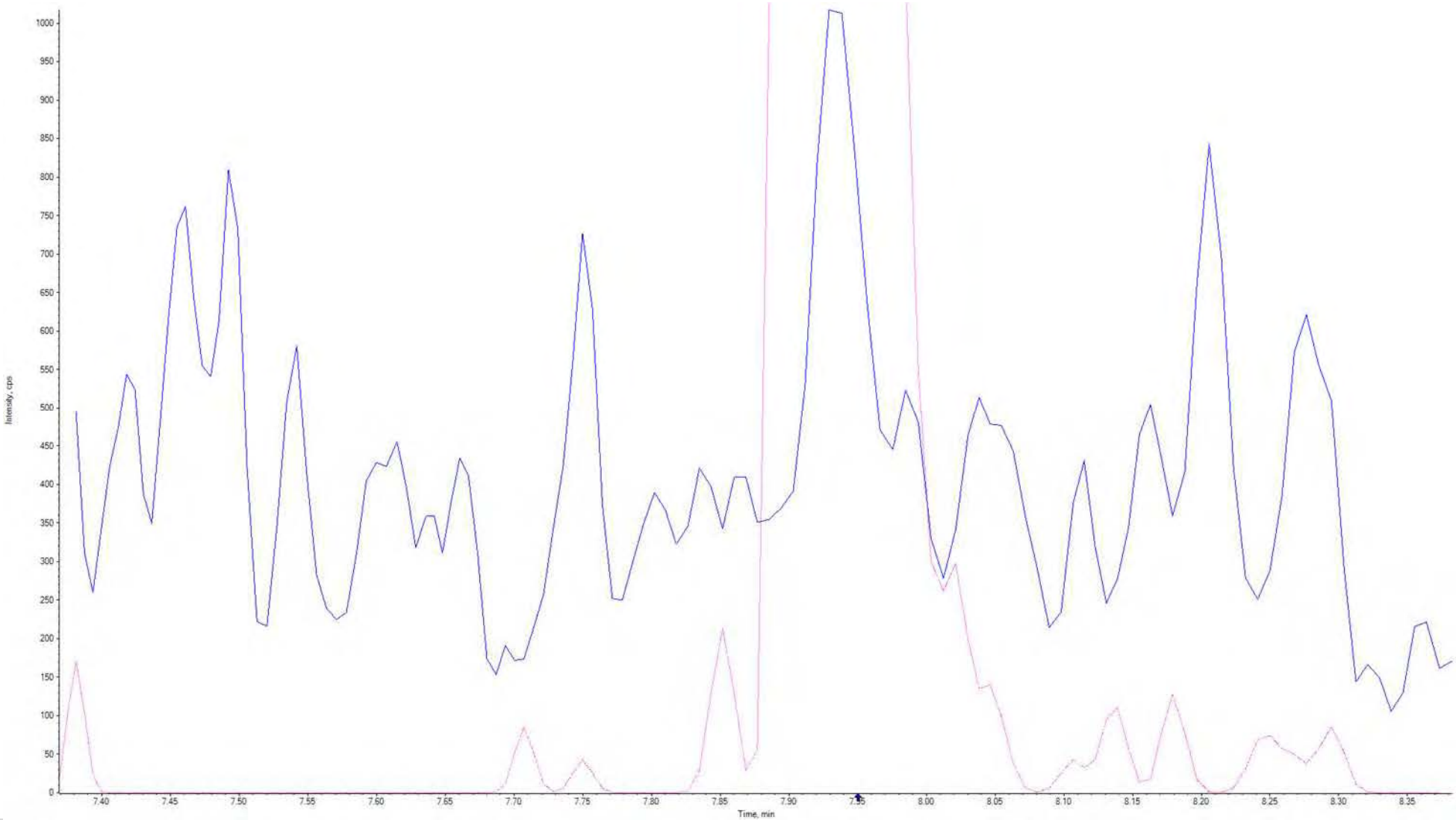

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PFNA_2
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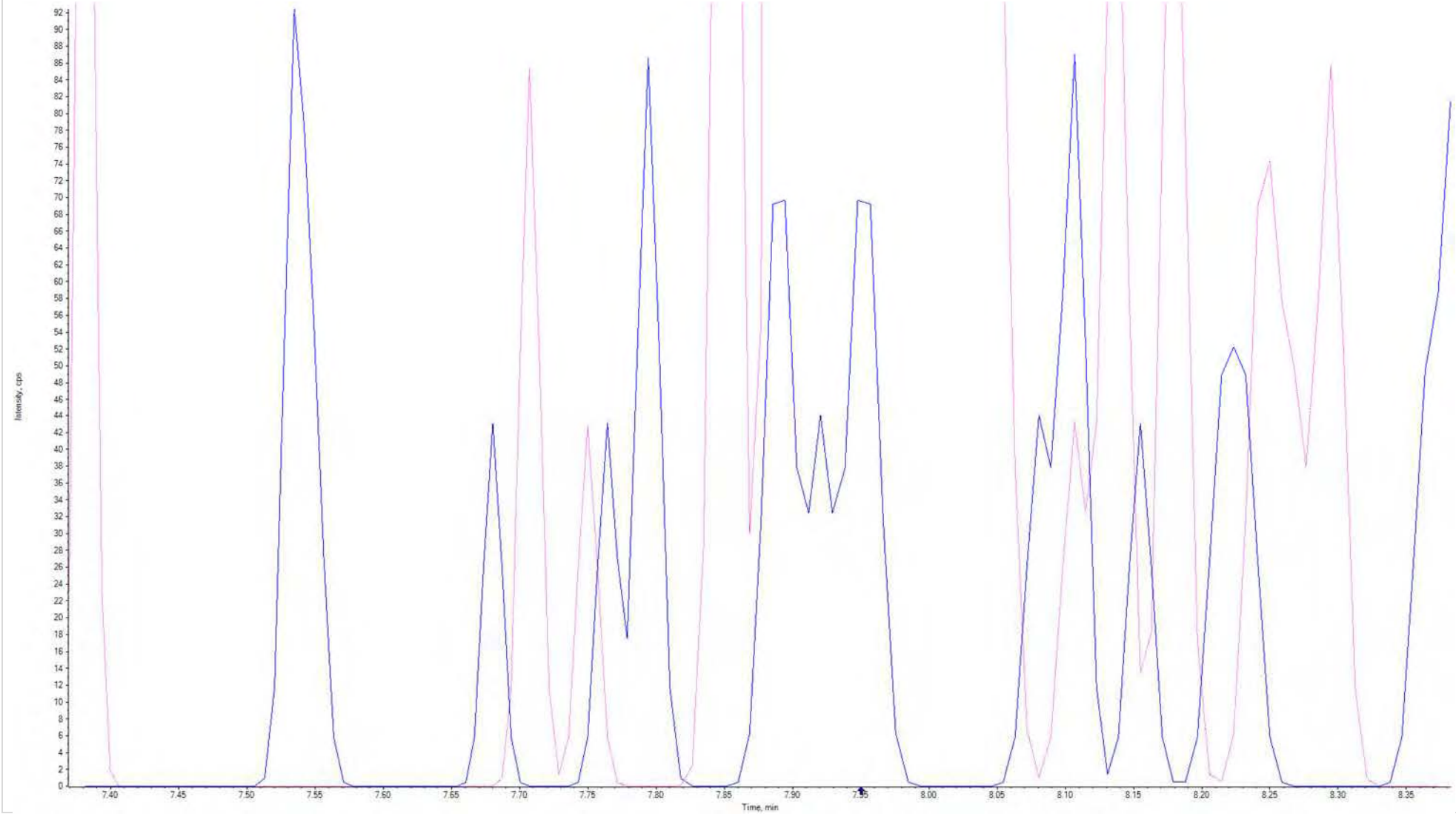

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PFDA
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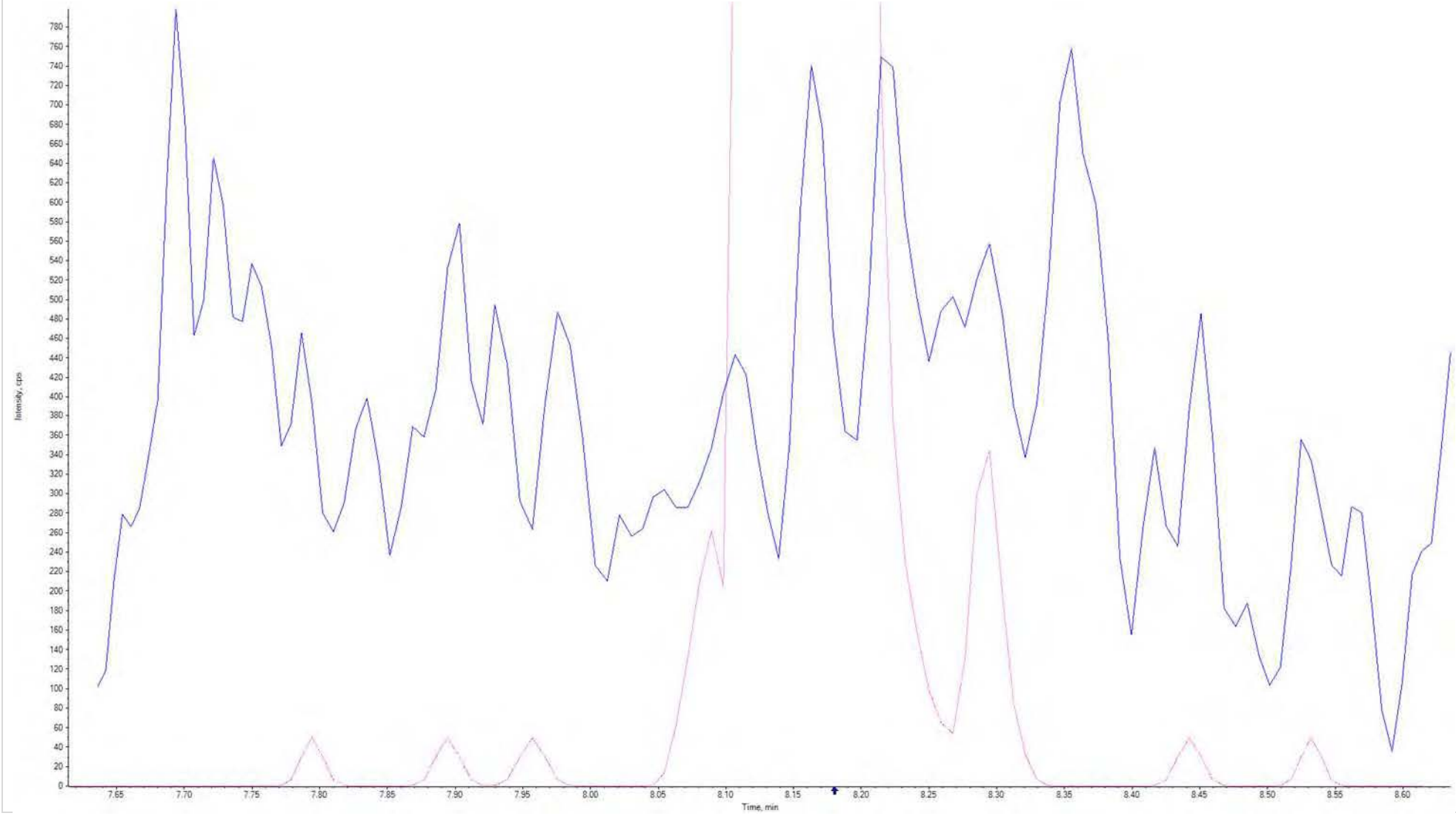

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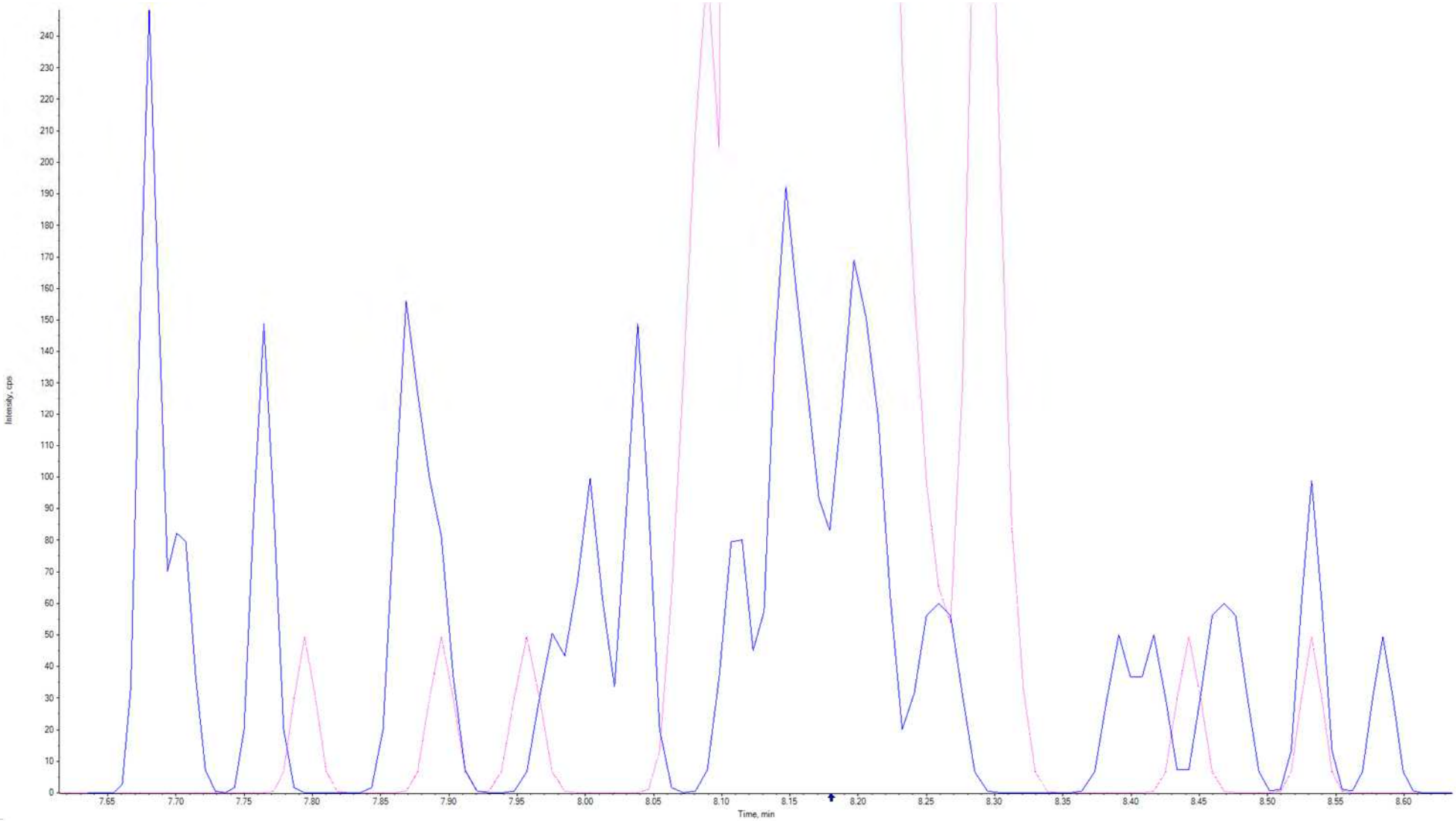

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PFUnA
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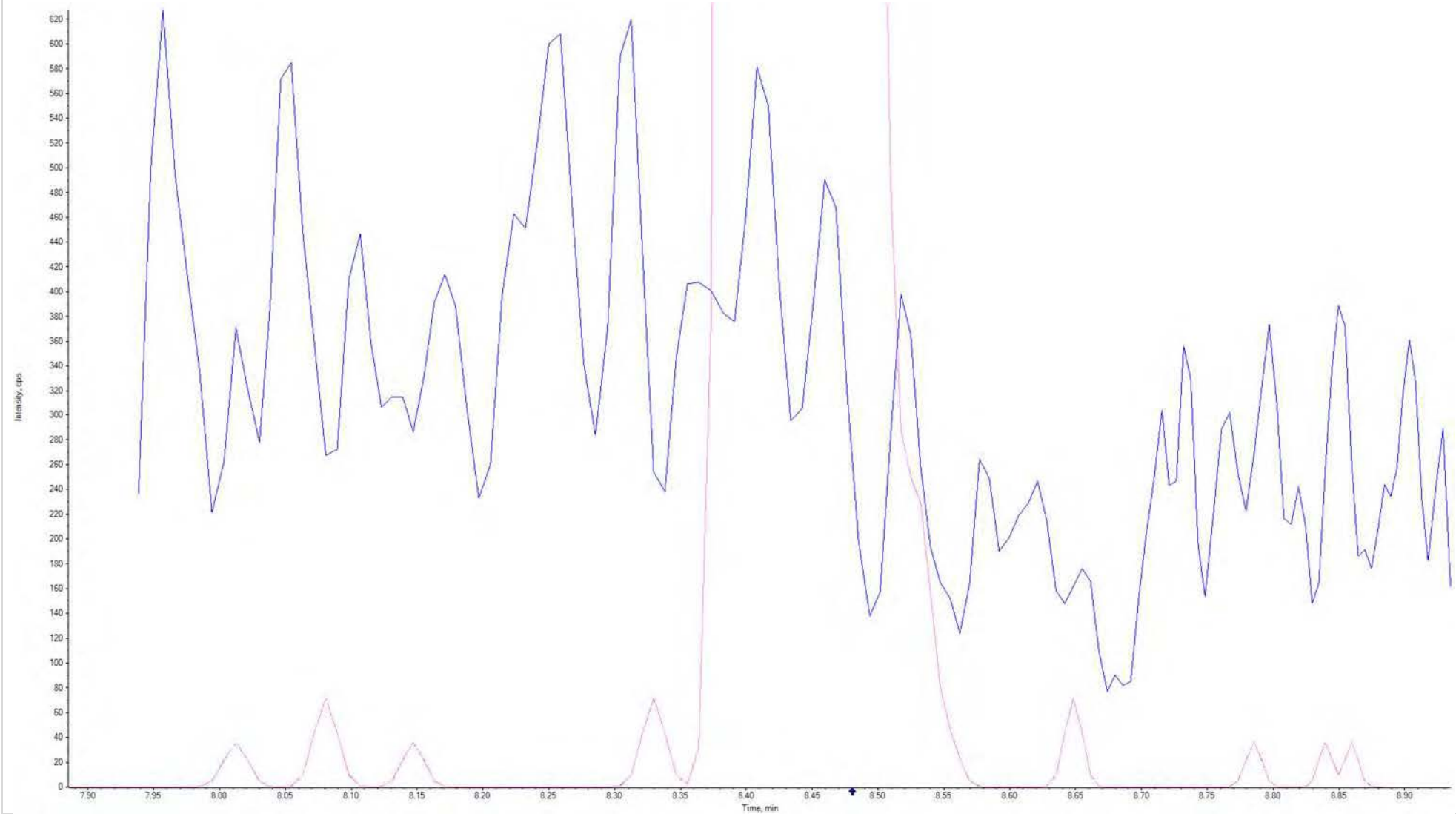

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PFUnA_2
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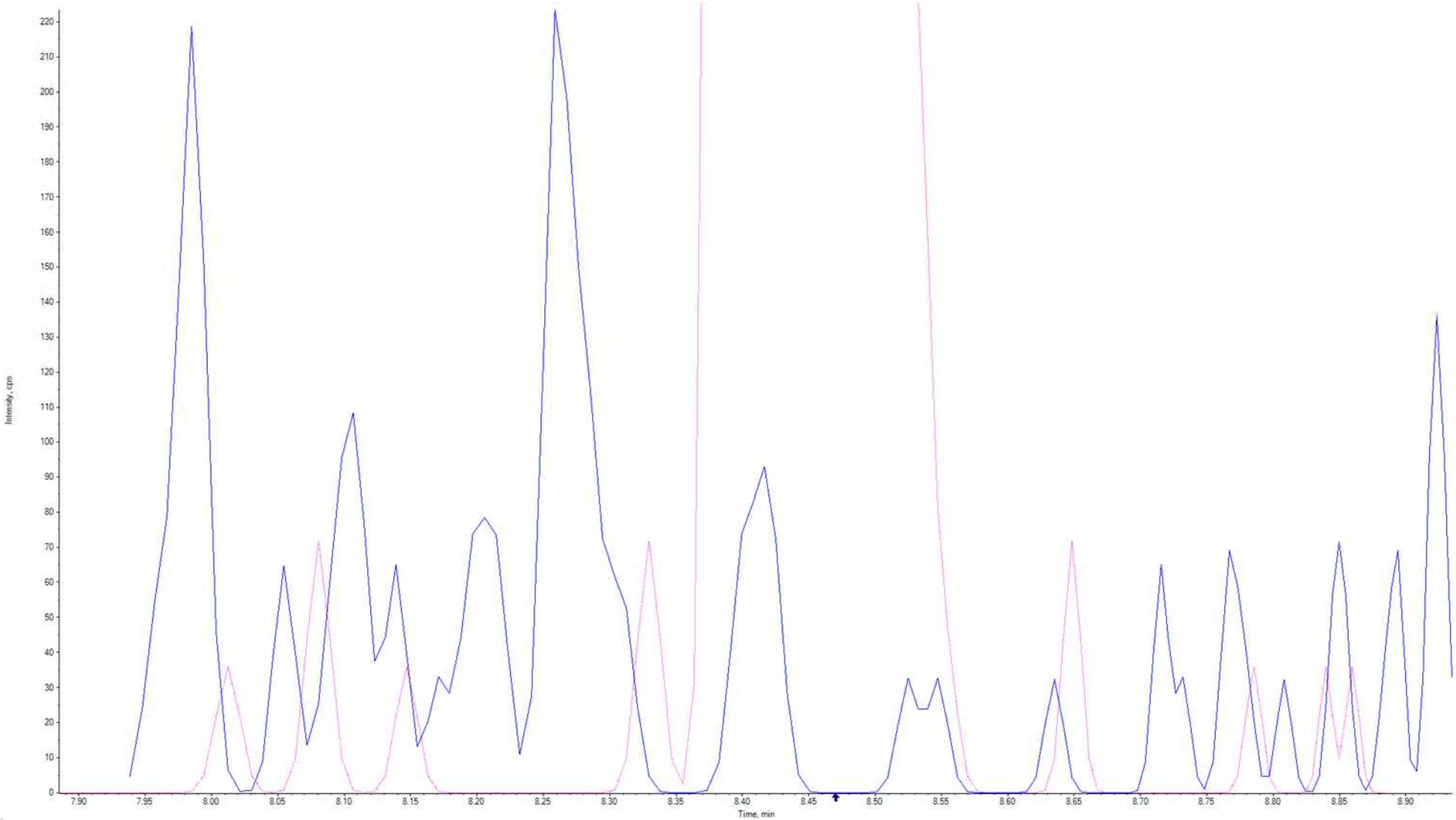

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PFDoA
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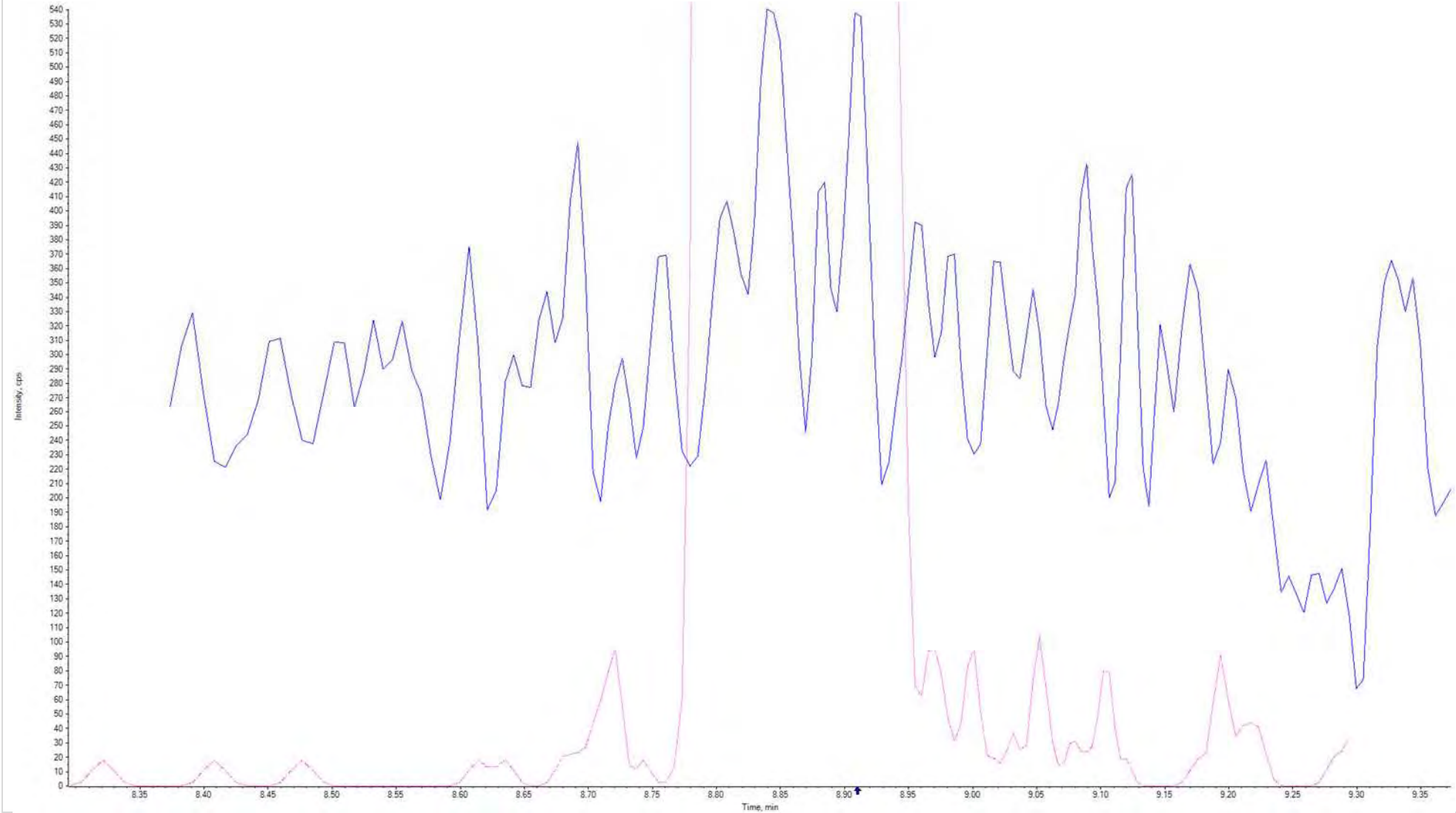

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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PFDoA_2
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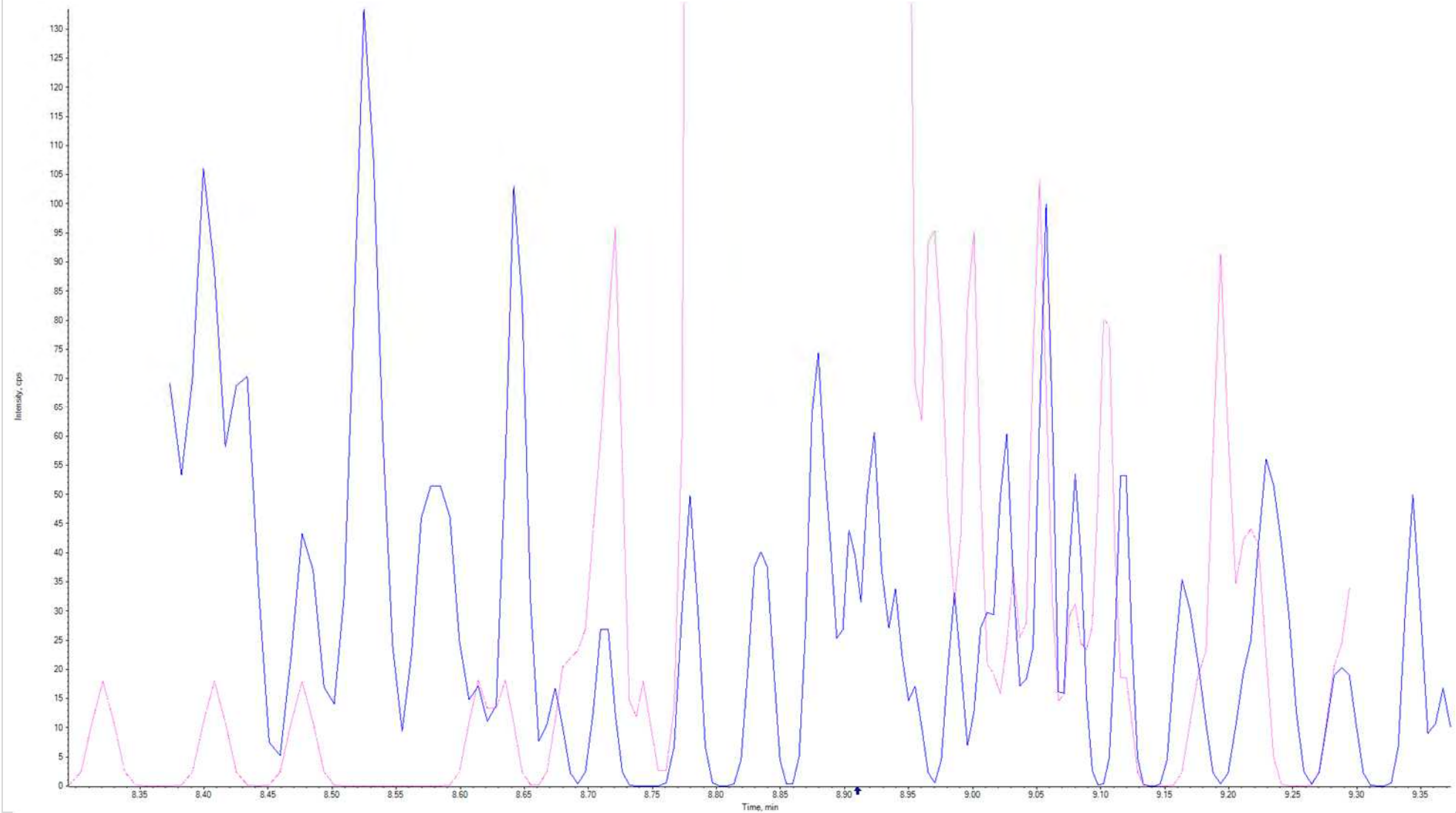

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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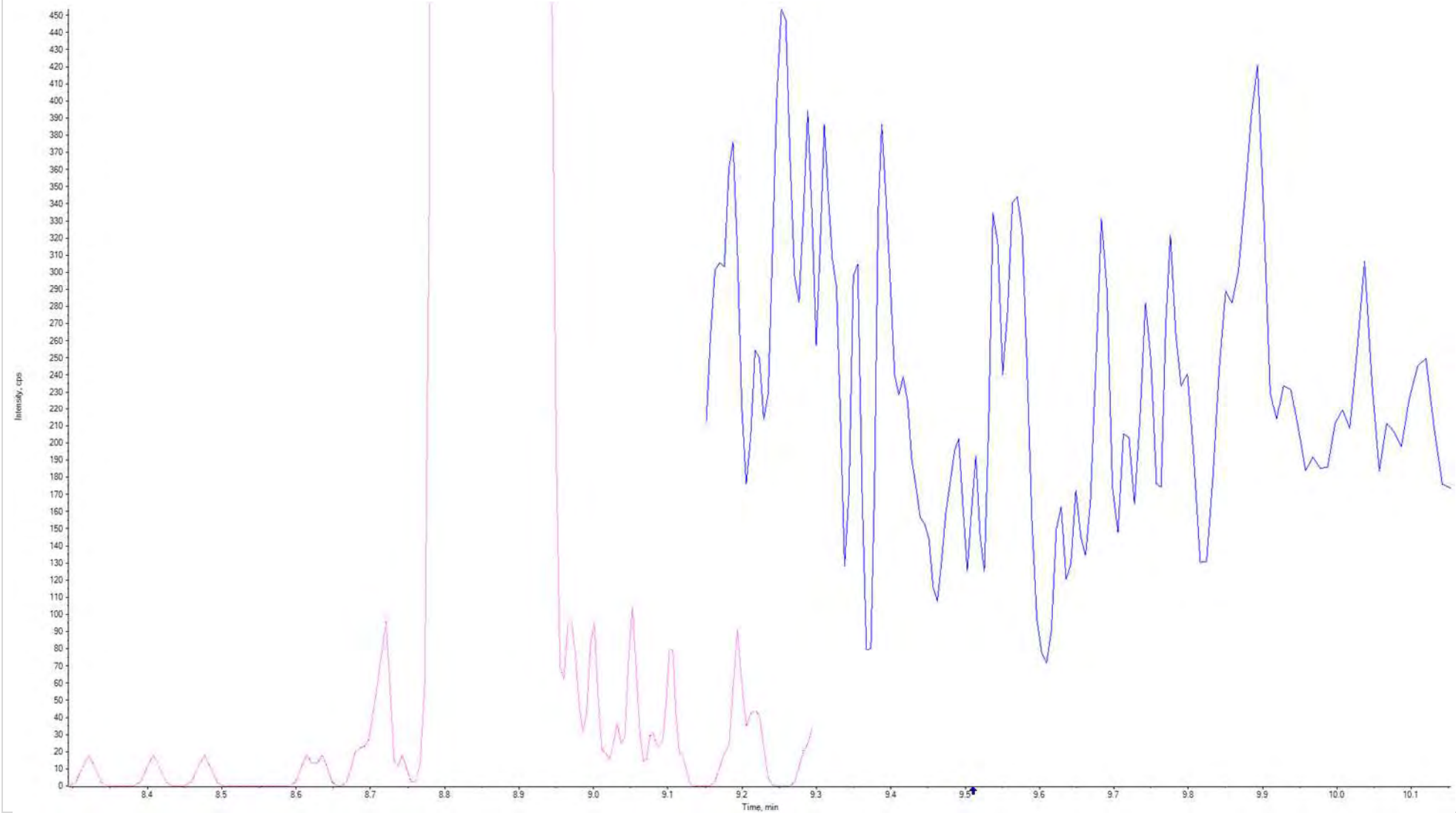
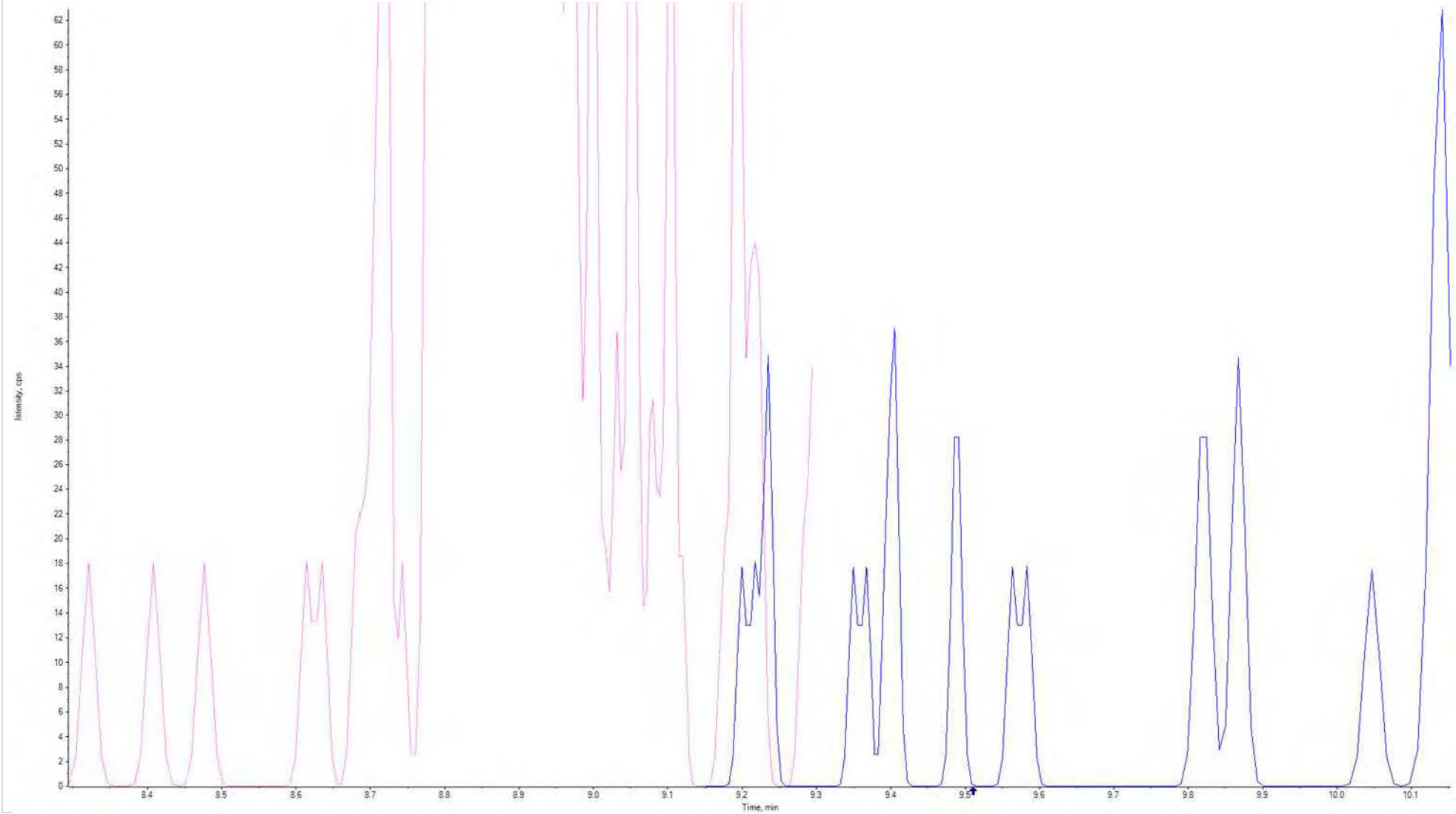
PFTrDA
Sample: WG1973357-1 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_13.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFTrDA_2
Sample: WG1973357-1 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFTeDA
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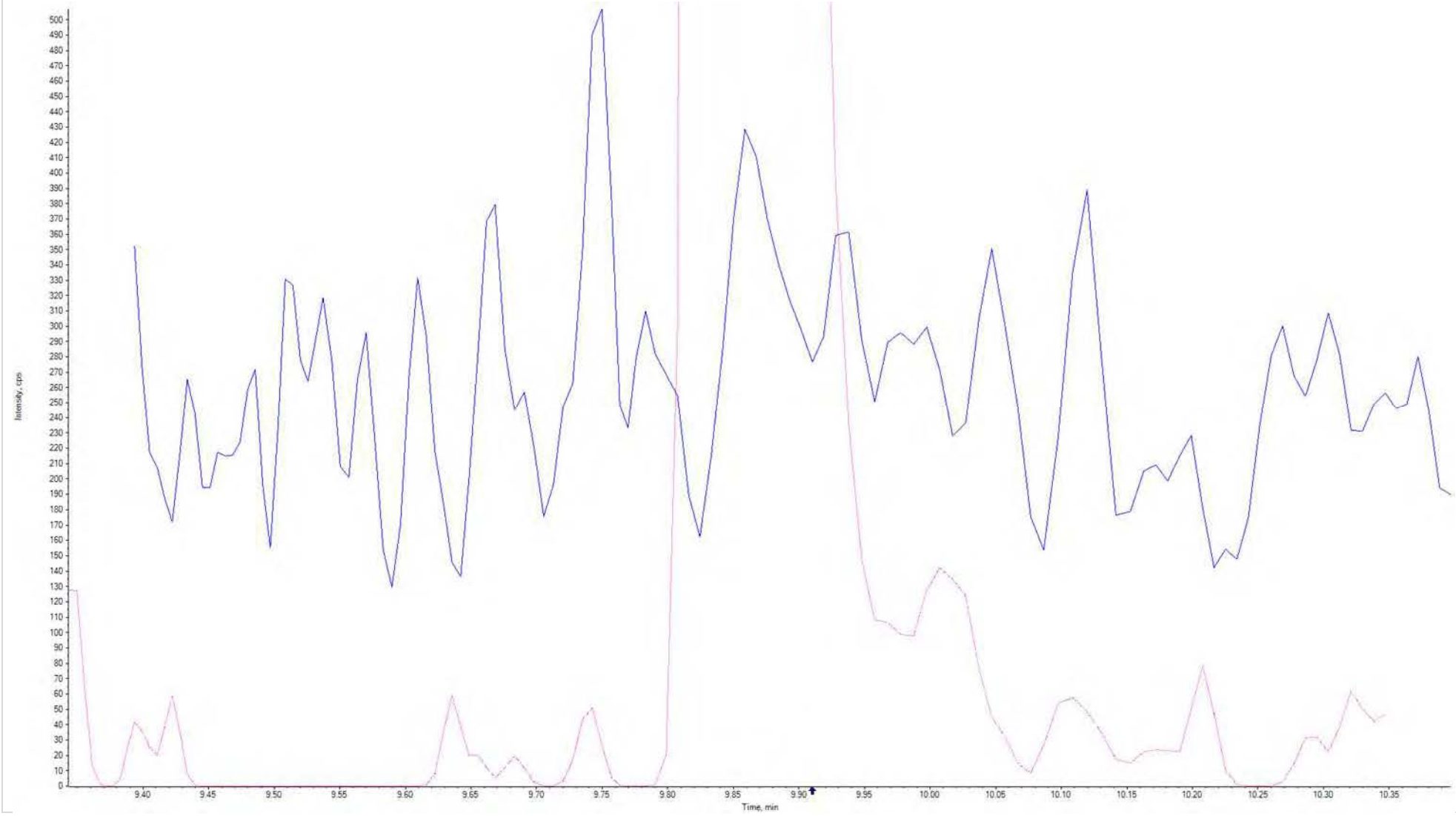

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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PFTeDA_2
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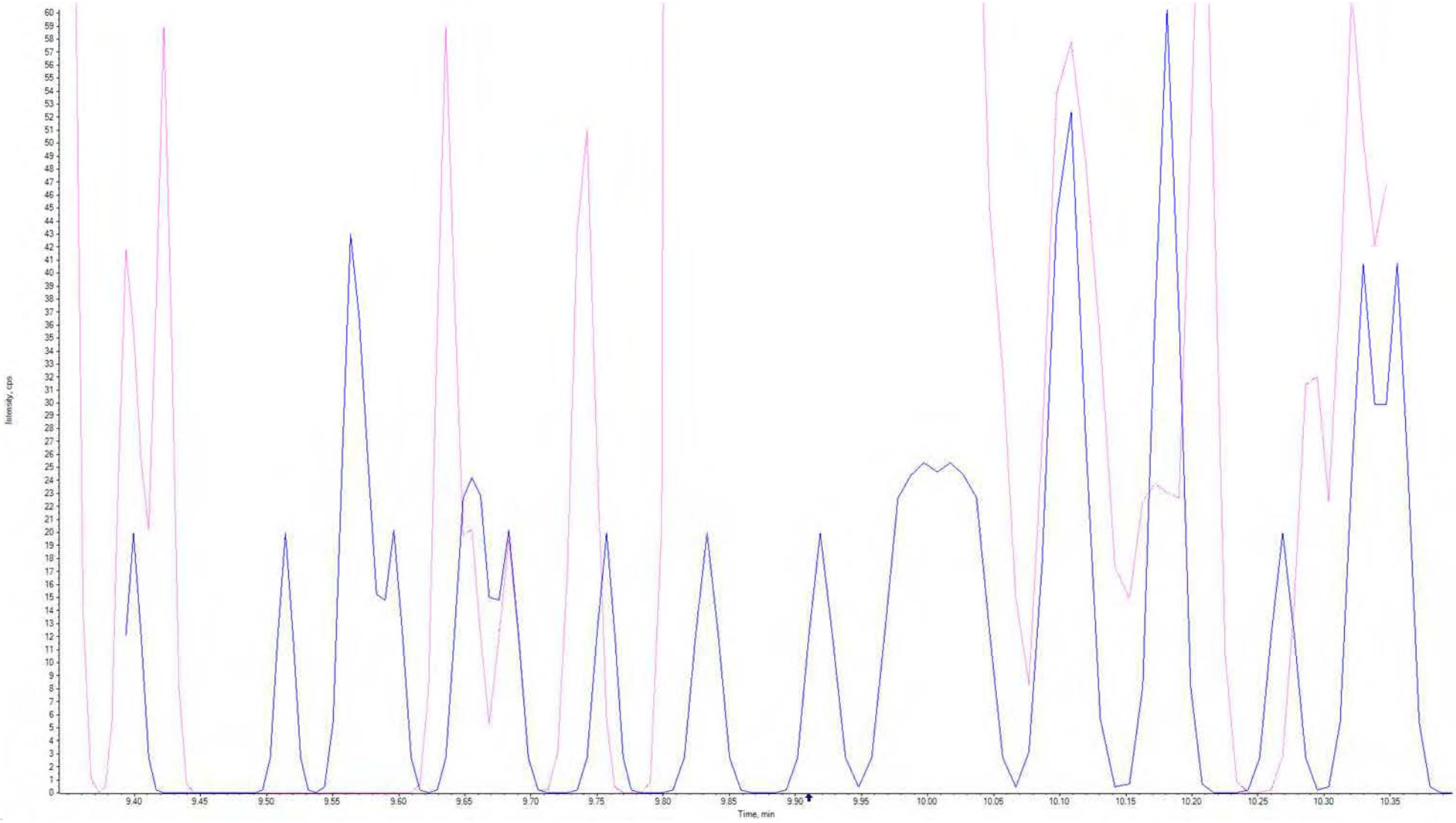

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Generated: 9/19/2024 8:04:31 AM

PFBS
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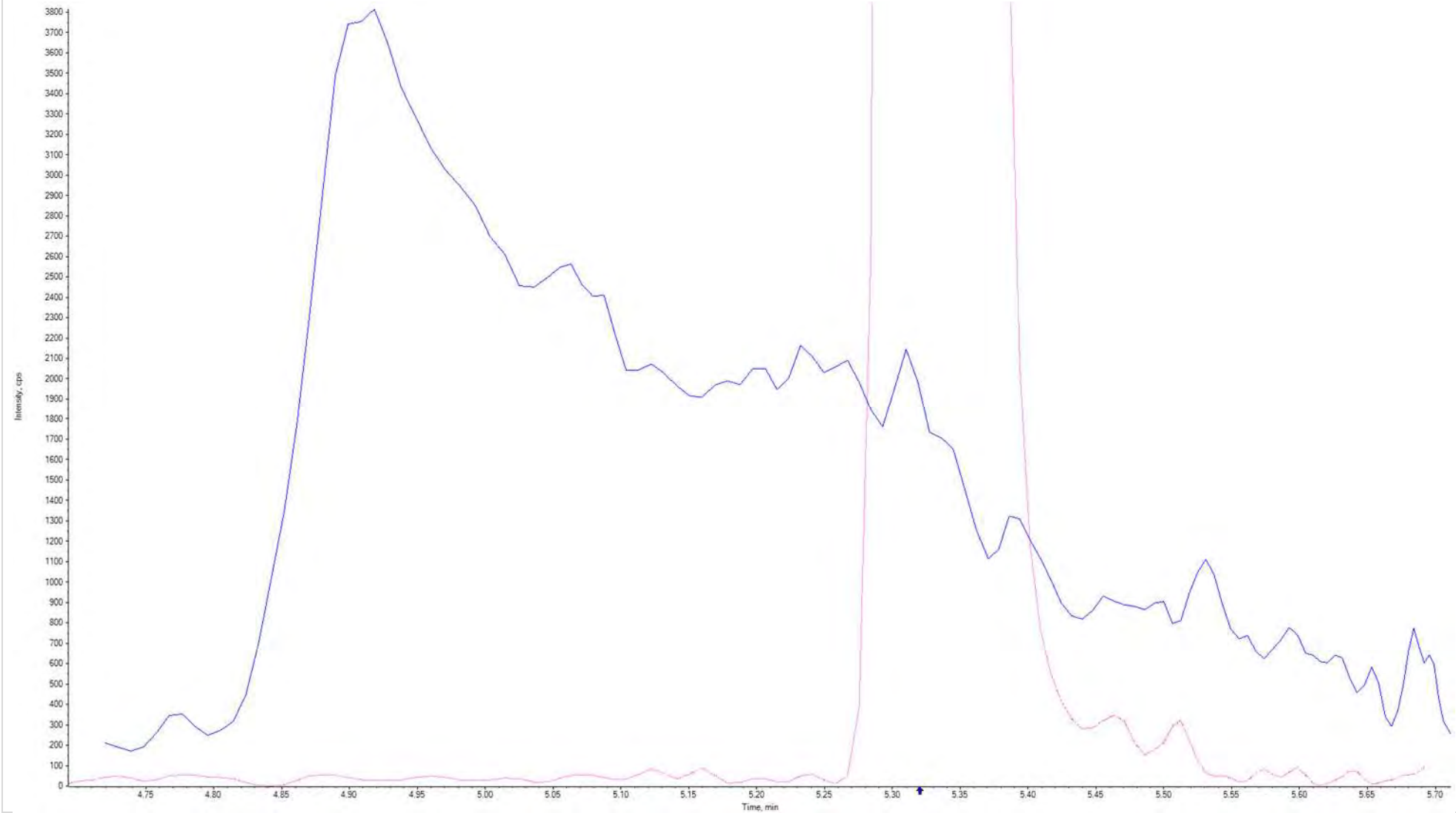

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Alpha Analytical Inc.
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PFBS_2
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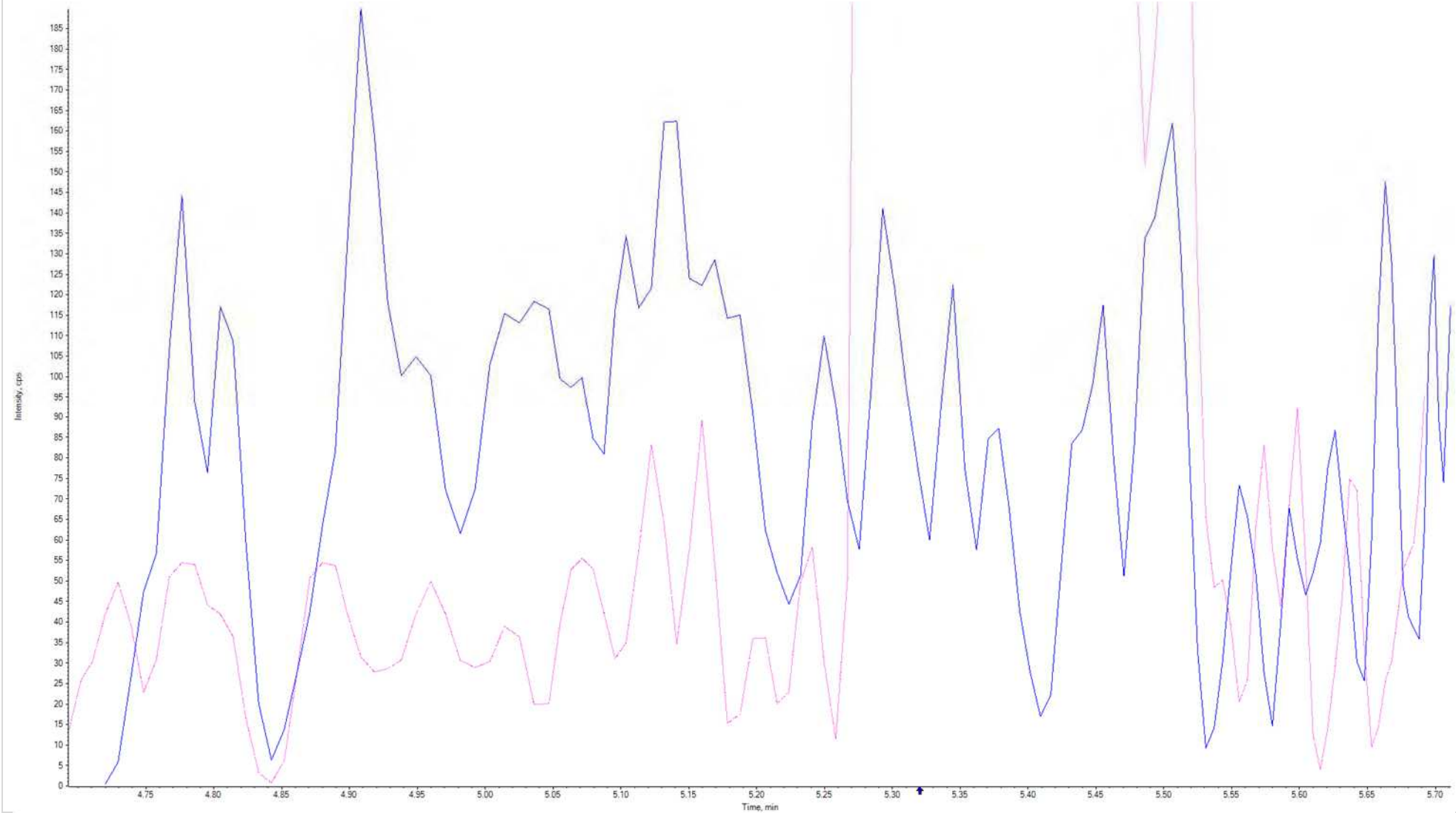

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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFPeS
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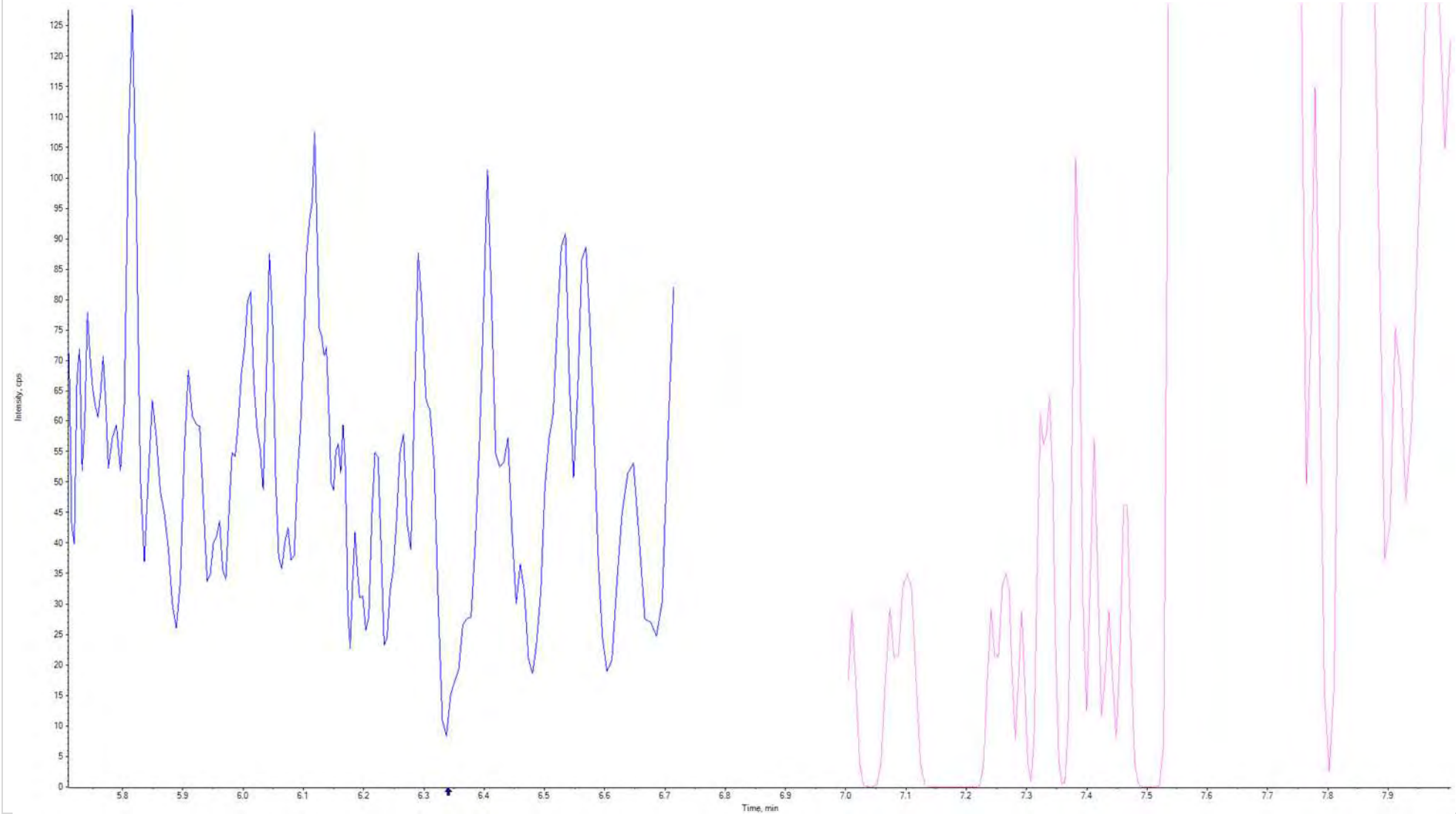

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Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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PFPeS_2
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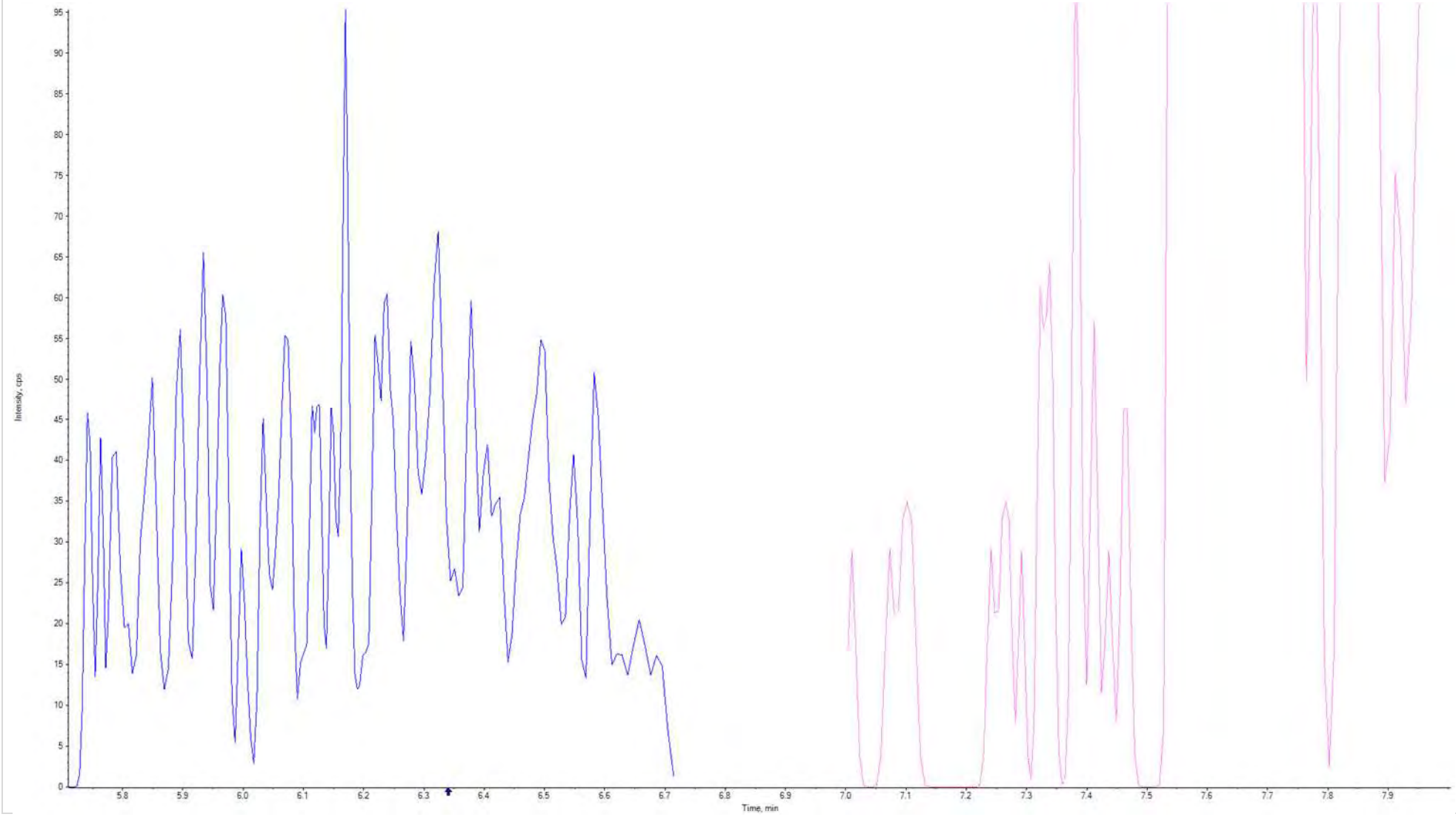

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHxS
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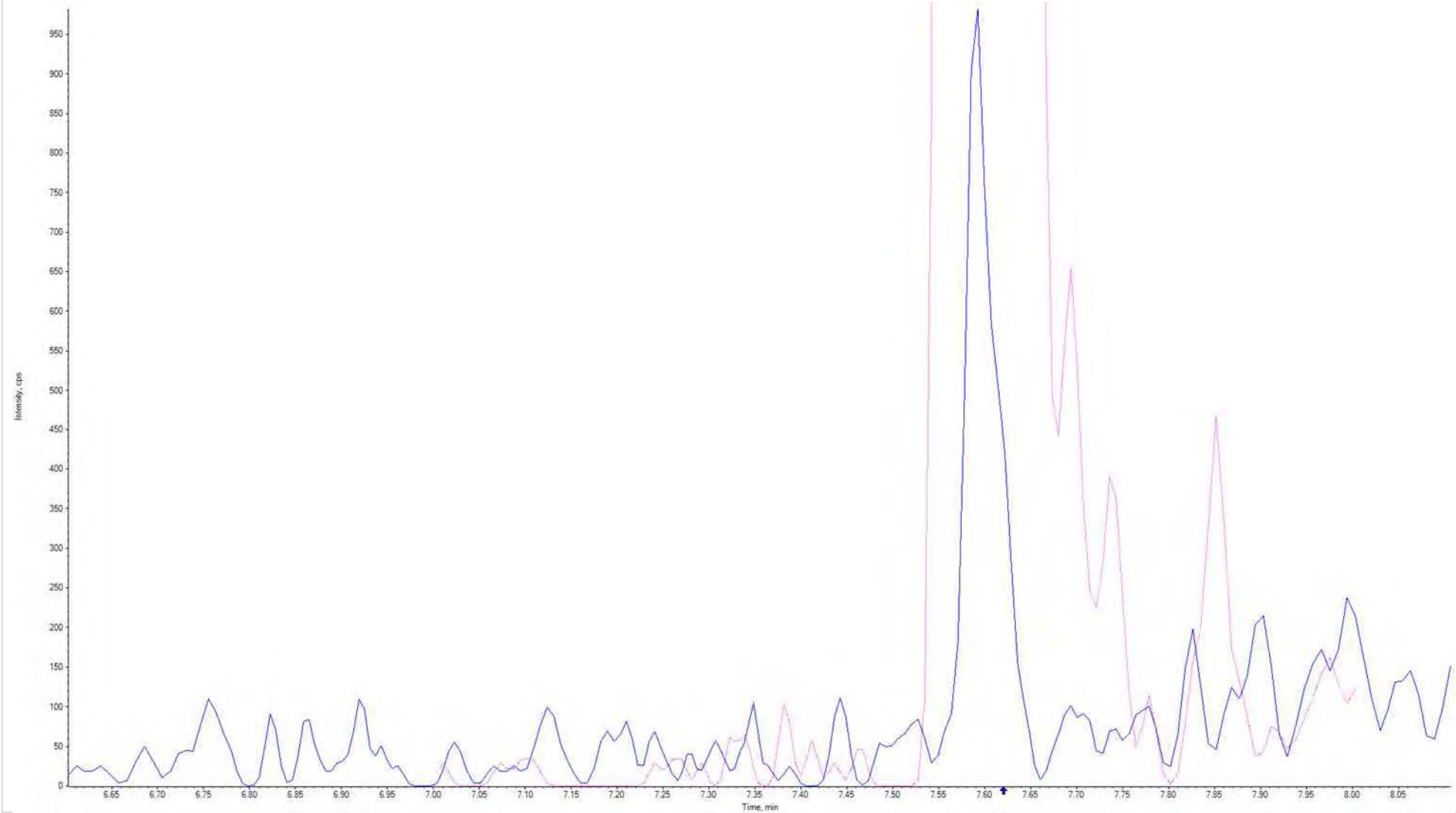

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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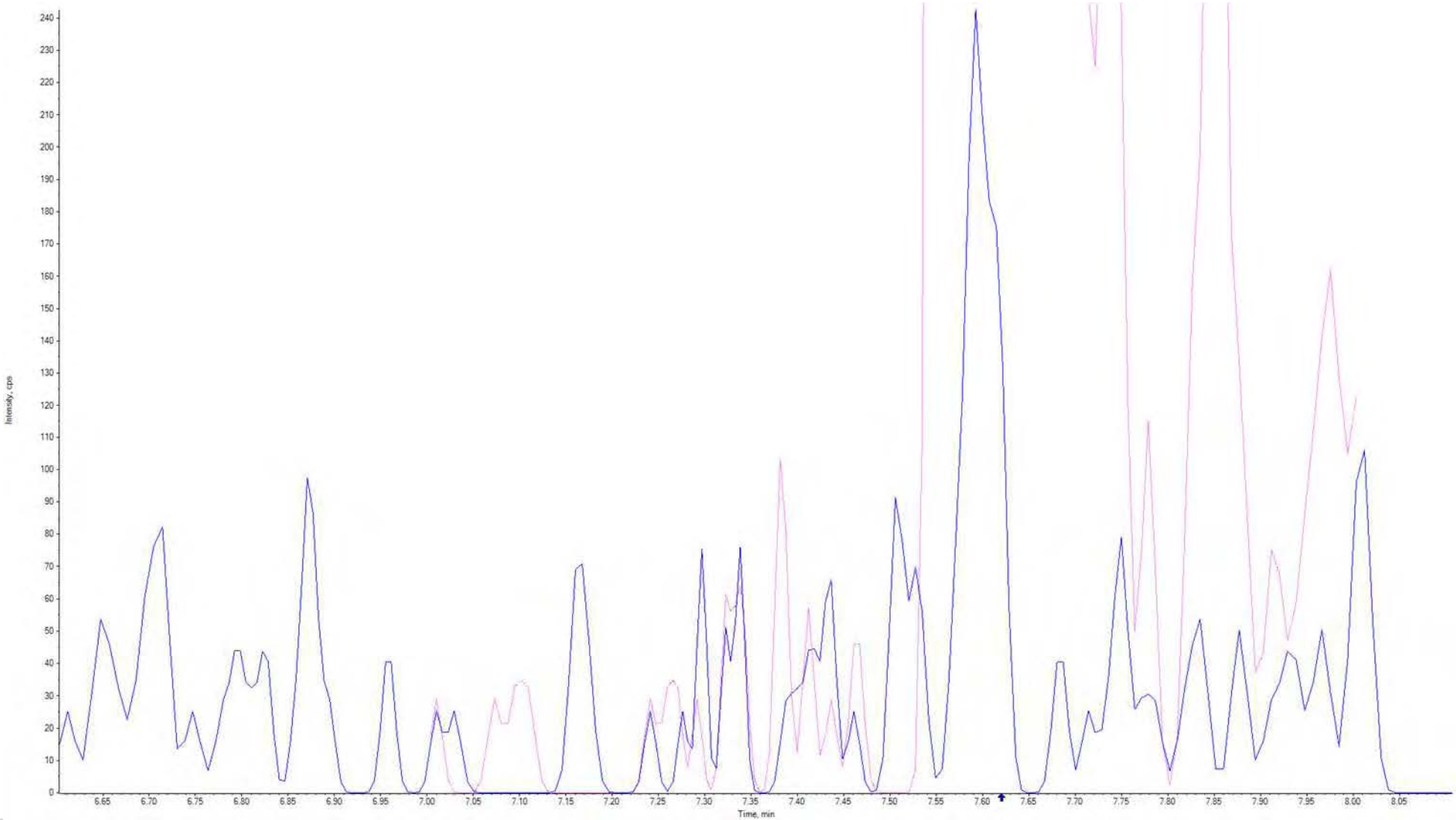
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHxS_2
Sample: WG1973357-1 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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PFHpS
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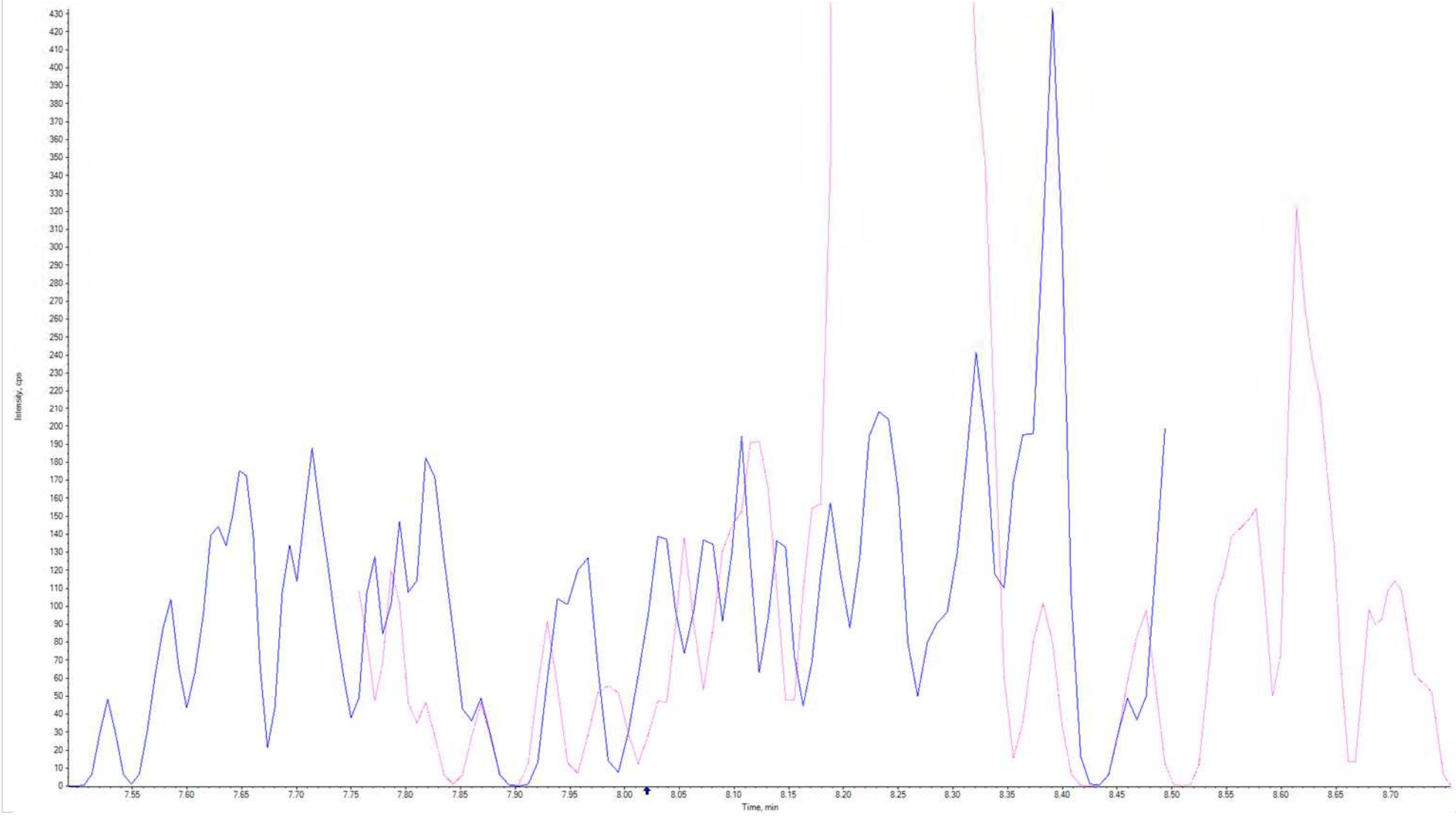

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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PFHpS_2
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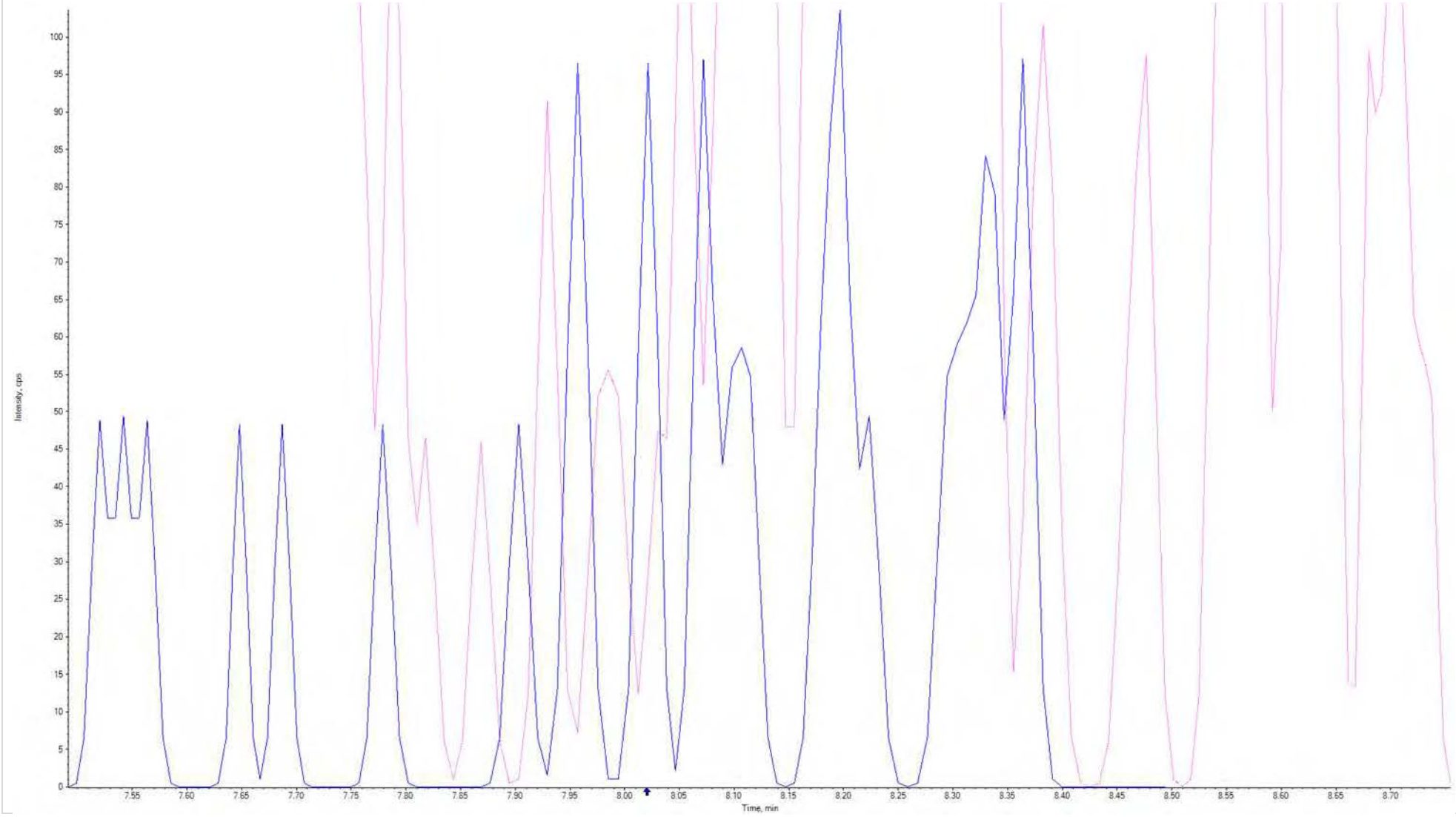

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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PFOS
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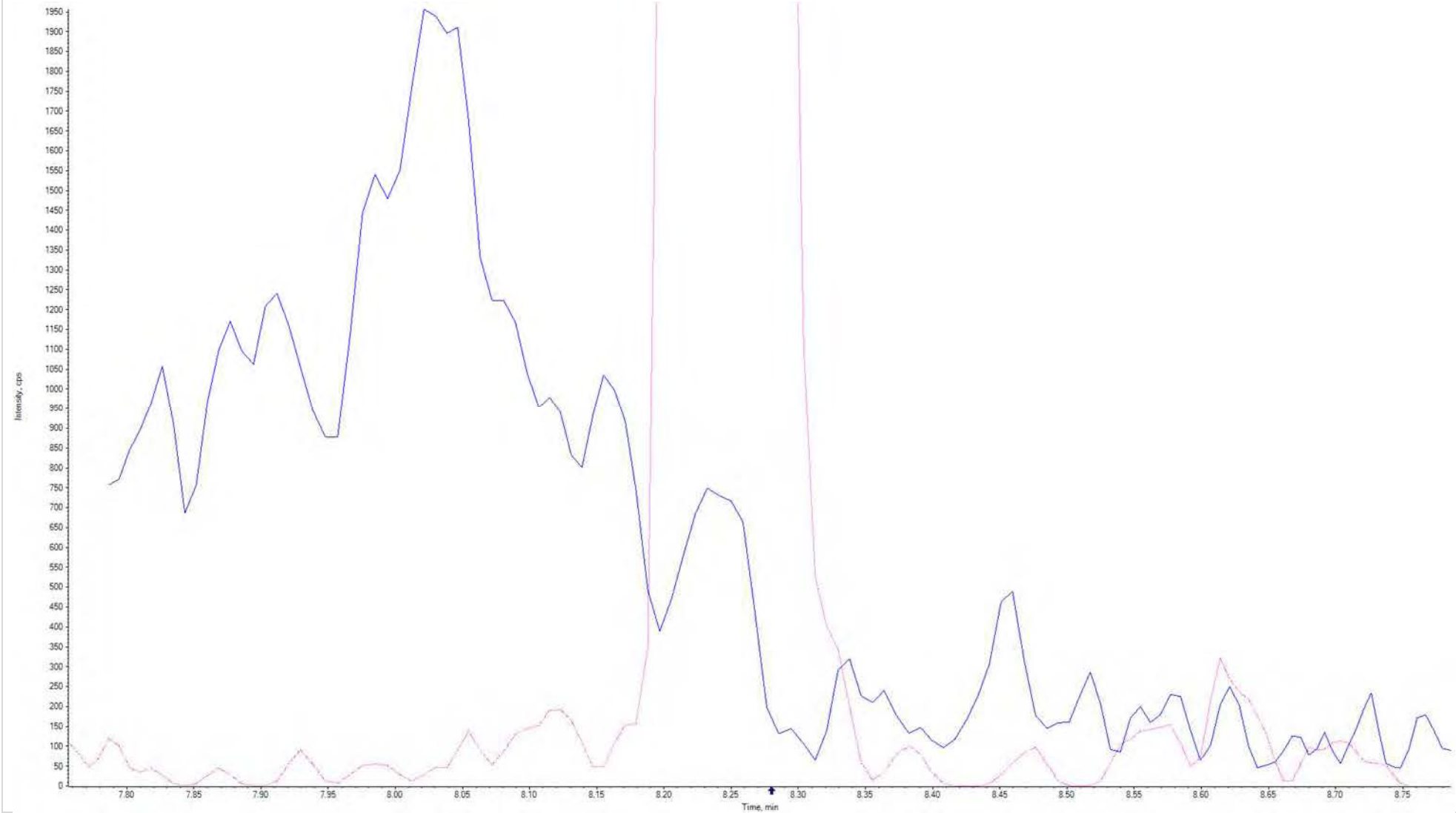

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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PFOS_2
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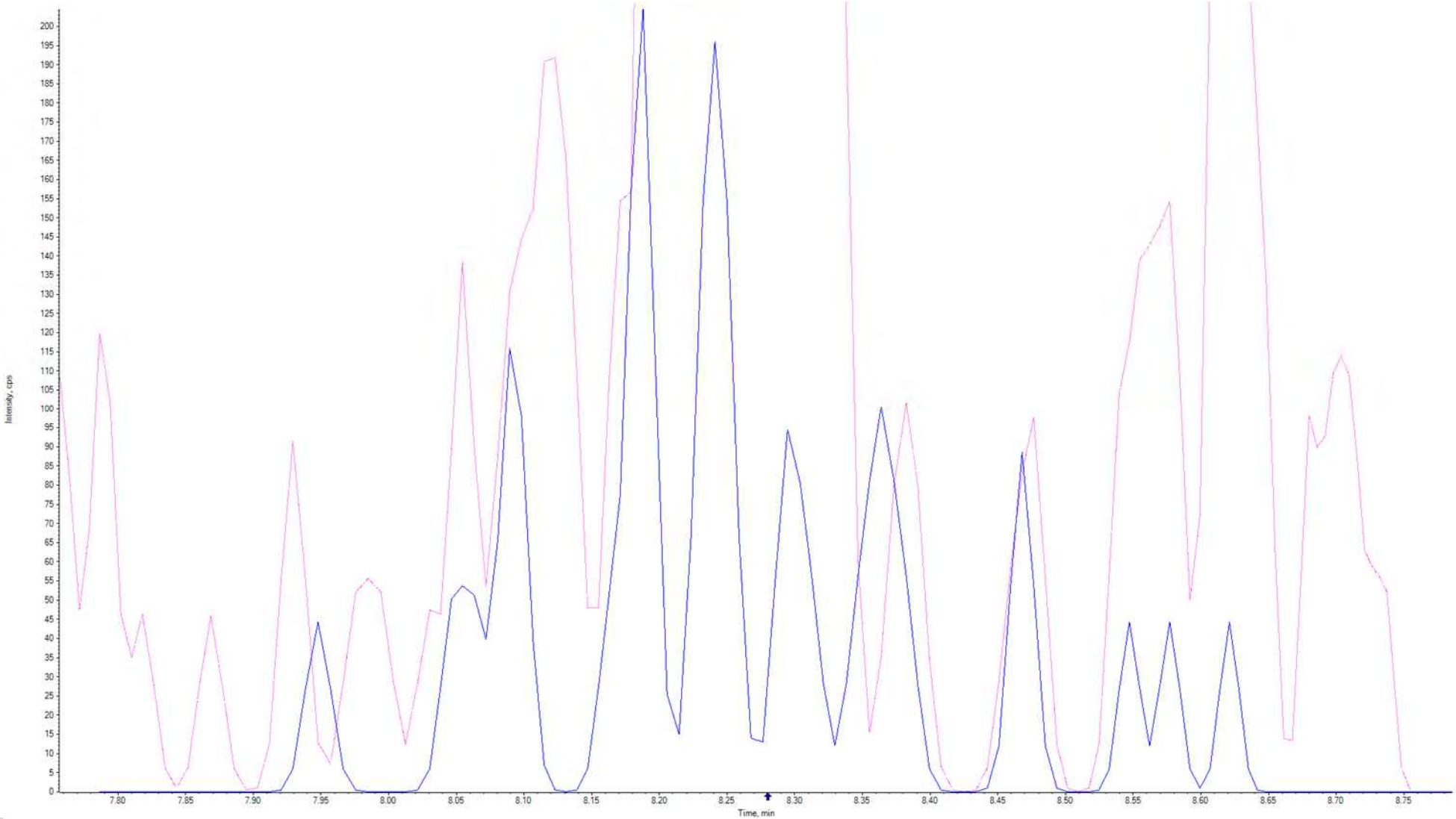

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Generated: 9/19/2024 8:04:31 AM

PFNS
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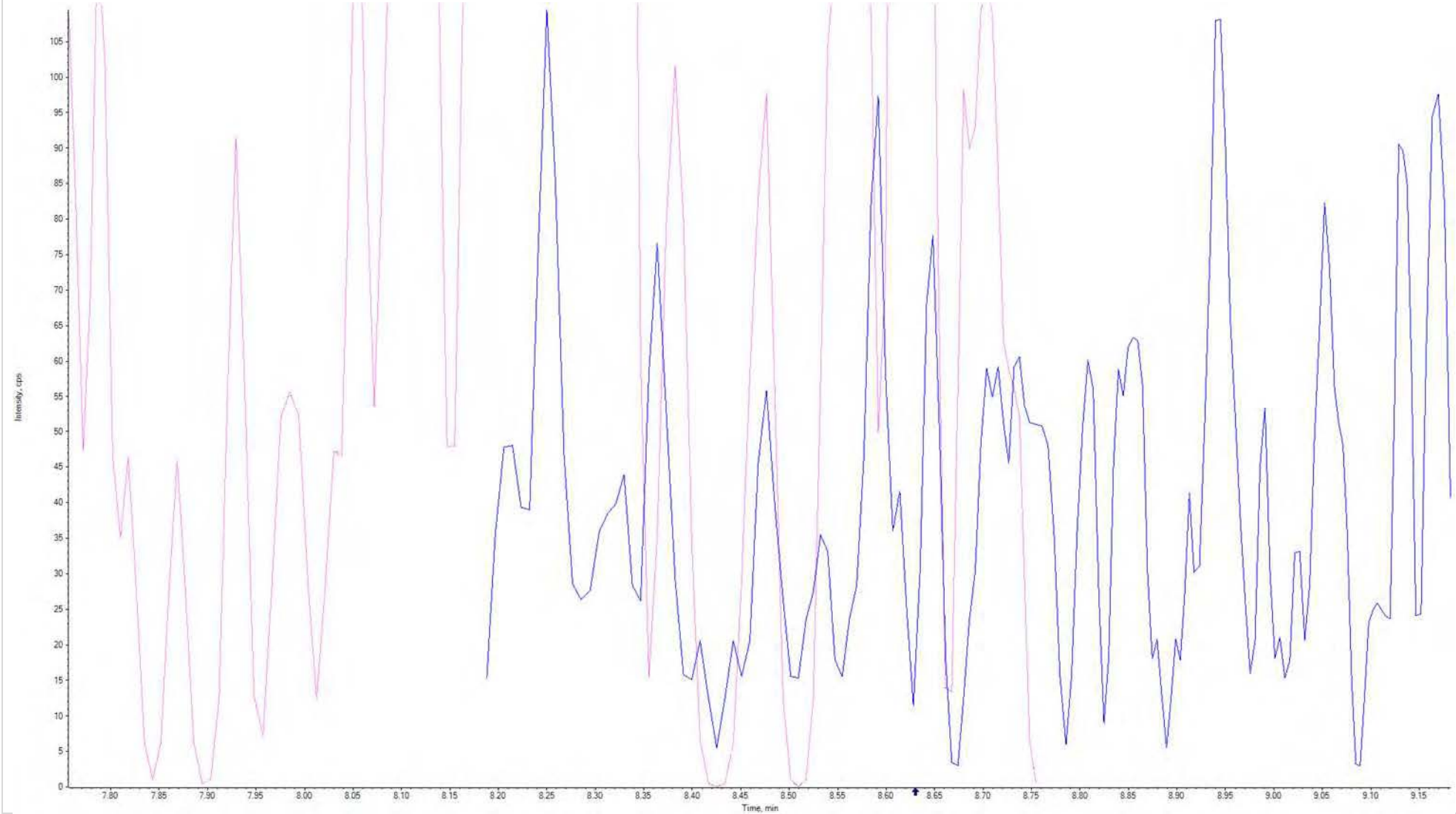

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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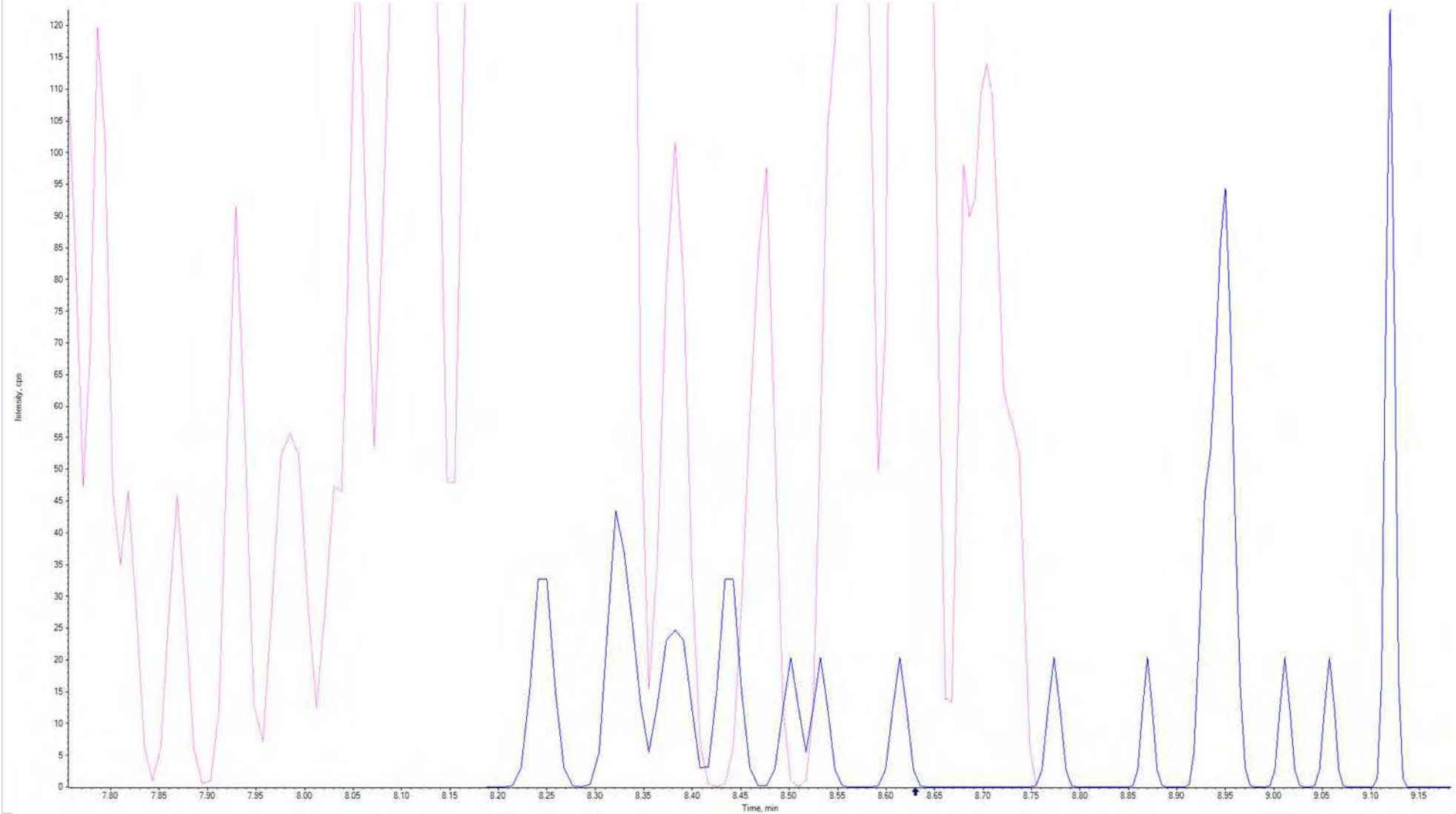

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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PFDS
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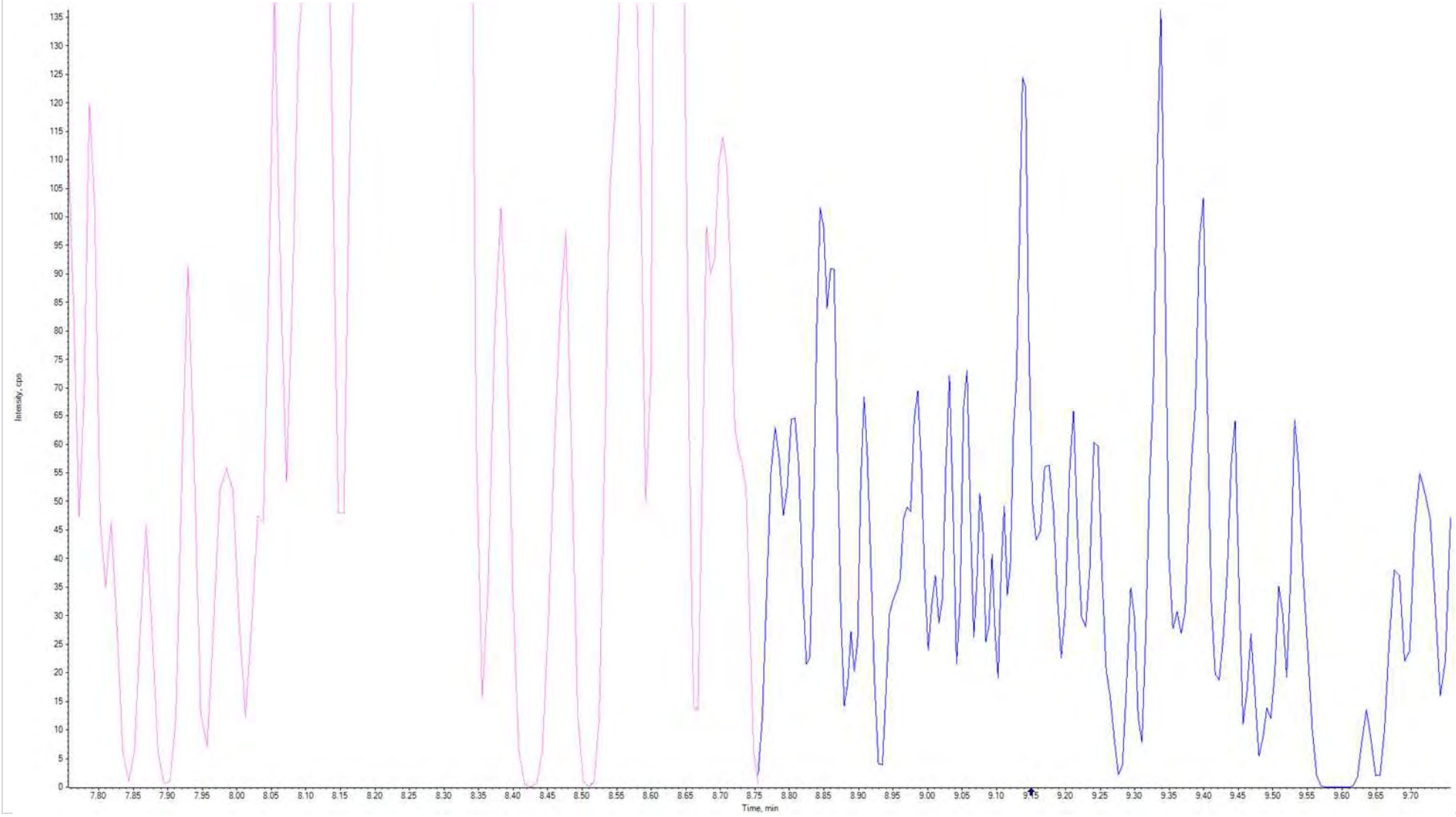

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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PFDS_2
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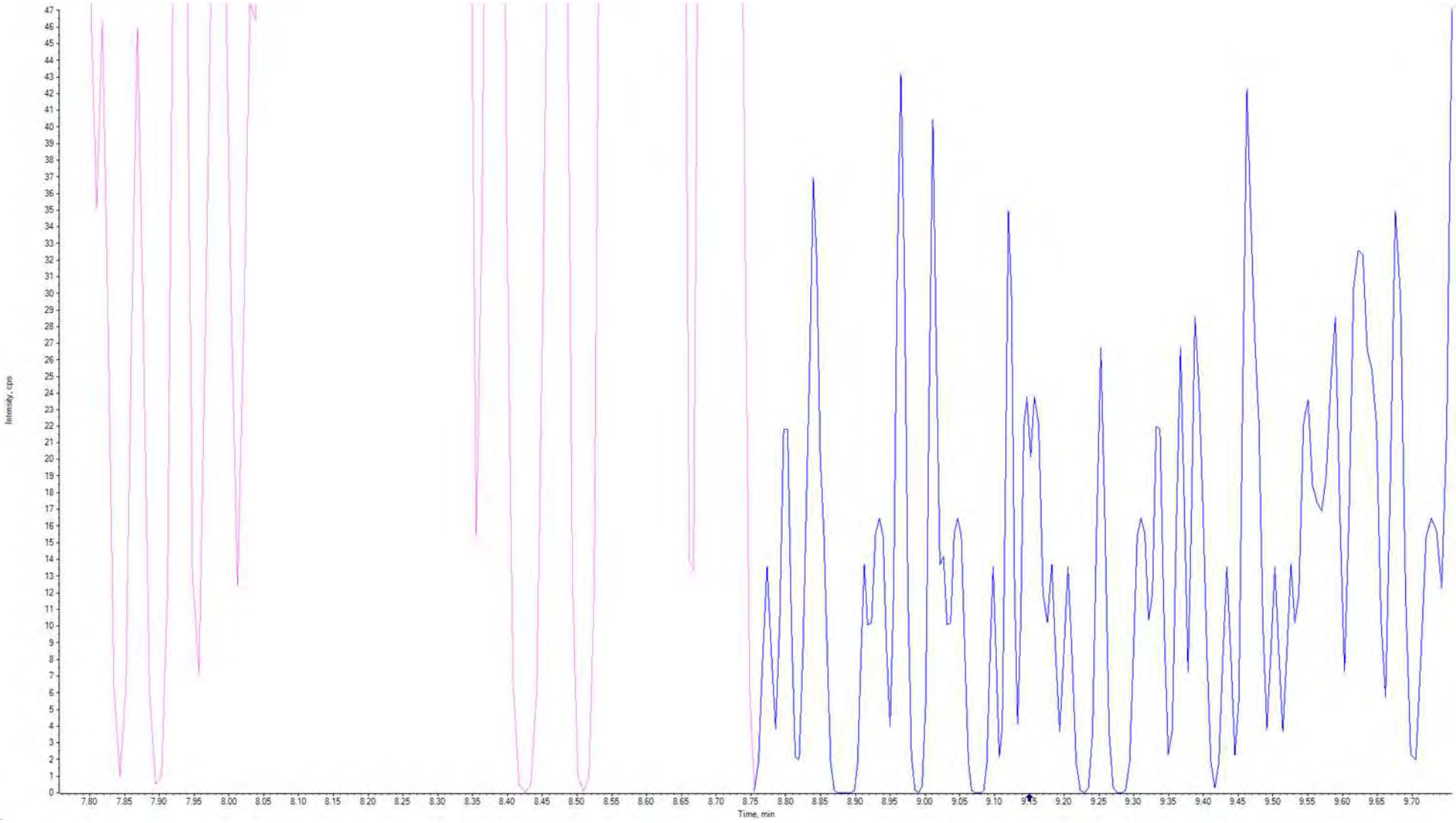

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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PFDoS
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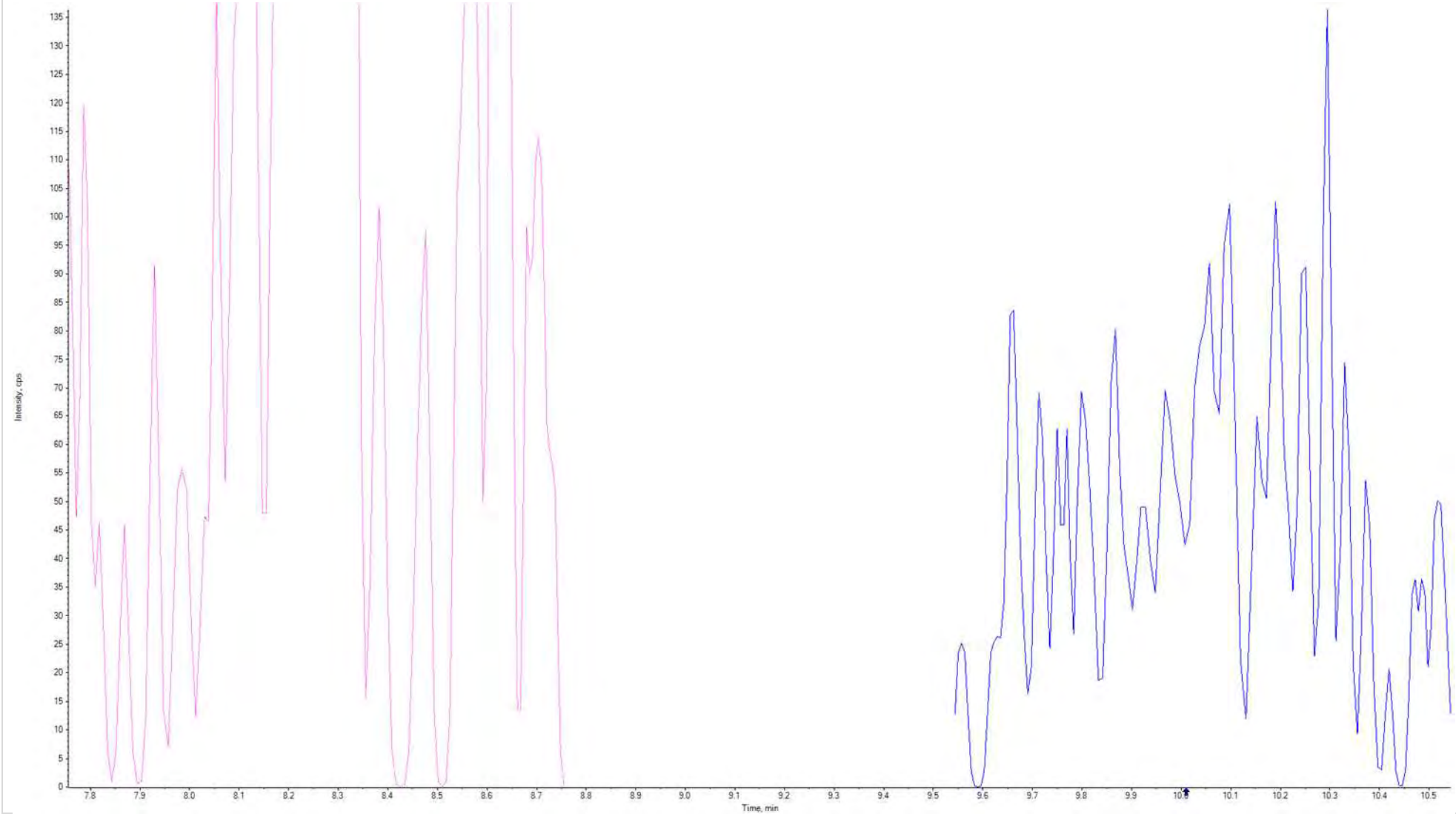

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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PFDoS_2
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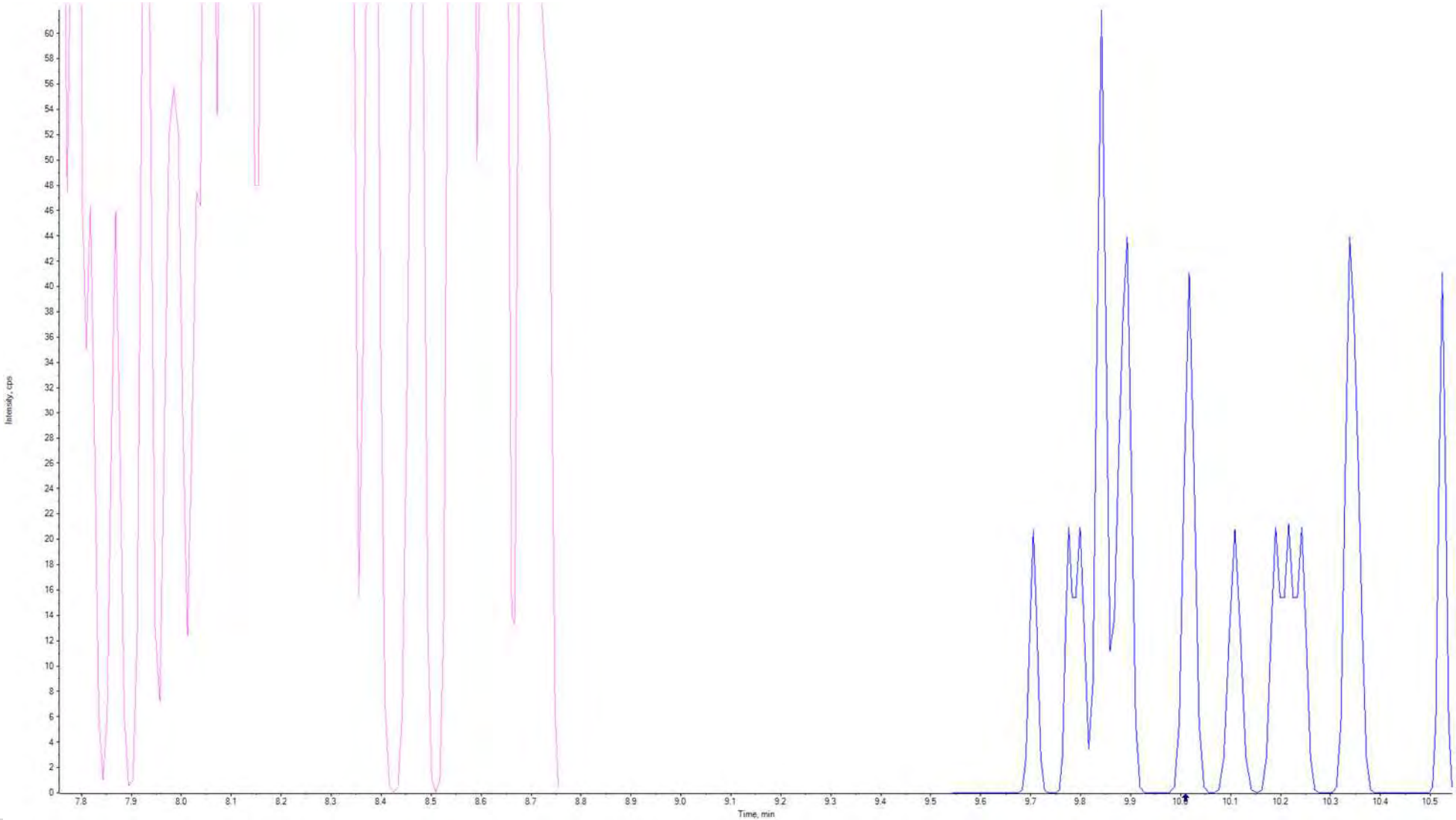

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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4:2FTS
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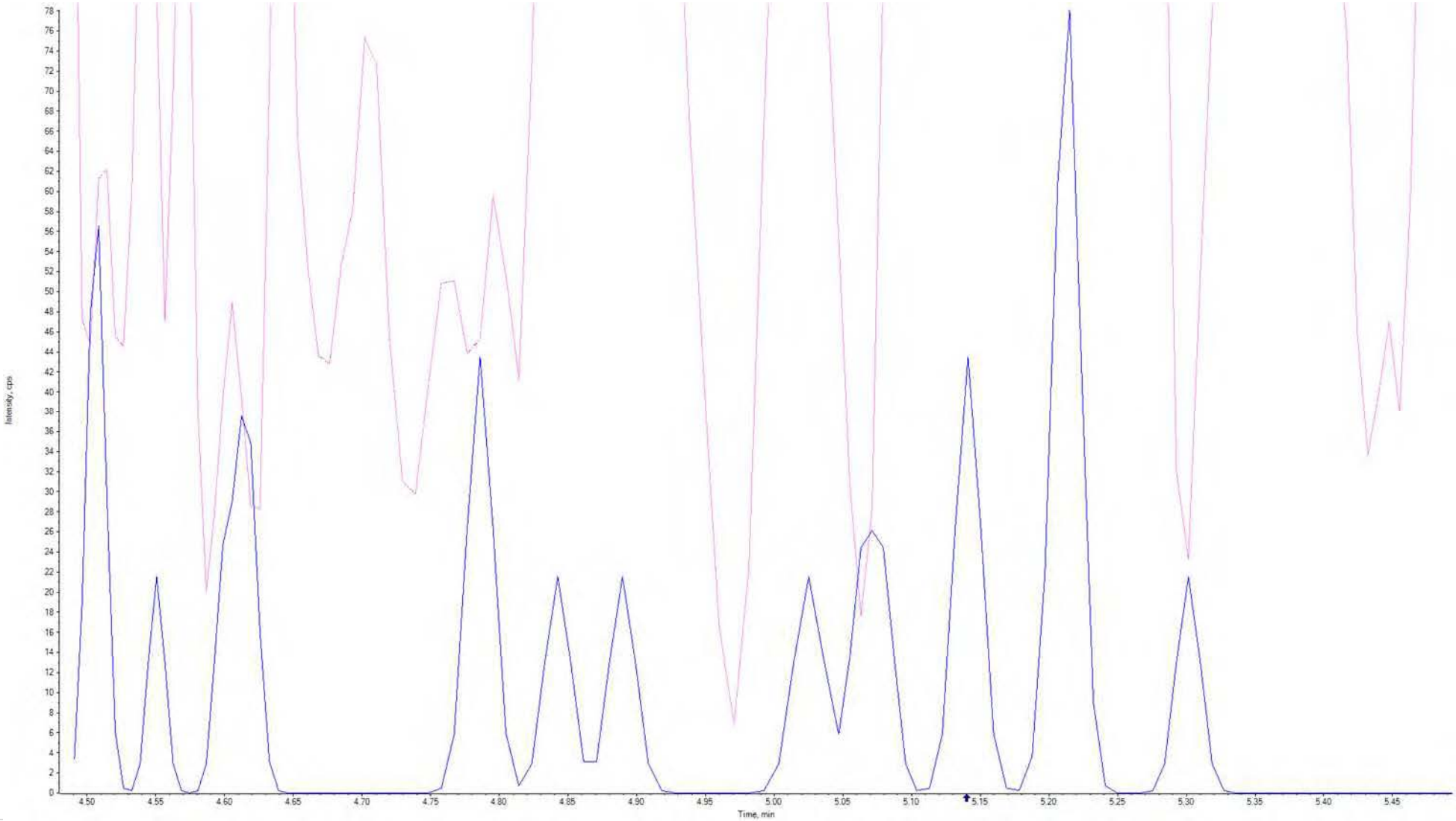

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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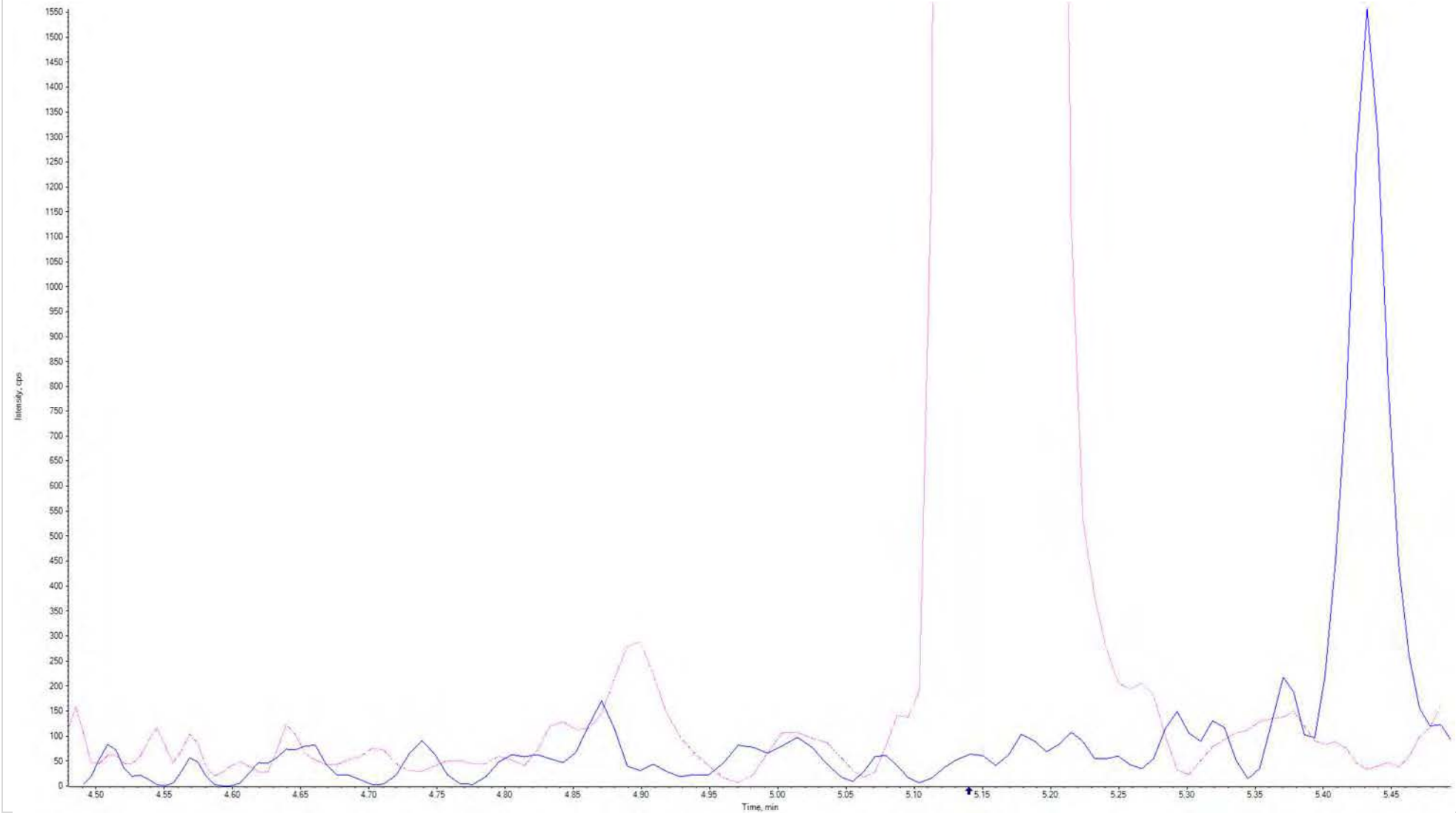

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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6:2FTS
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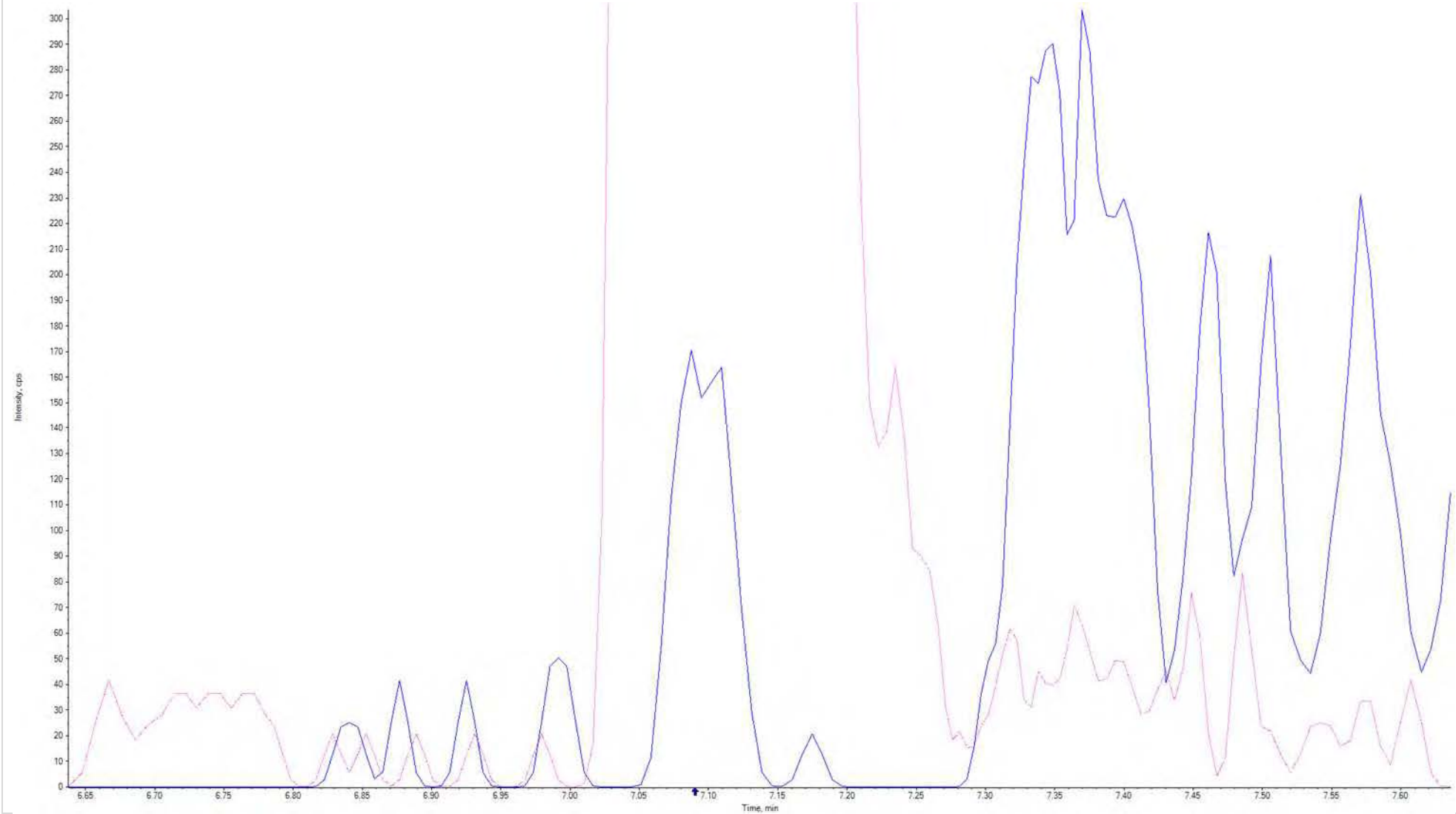

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Generated: 9/19/2024 8:04:31 AM

6:2FTS_2
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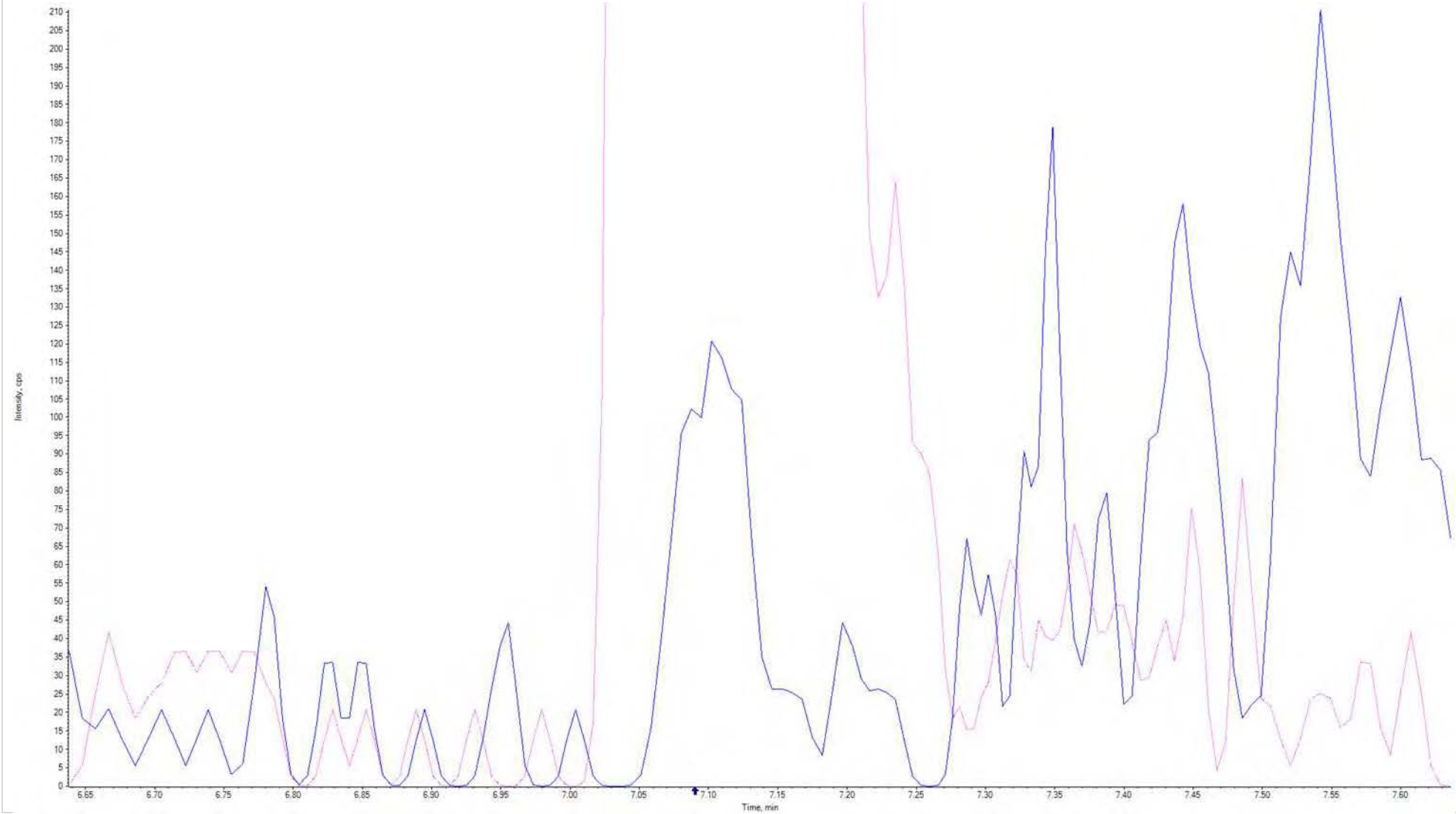

8:2FTS
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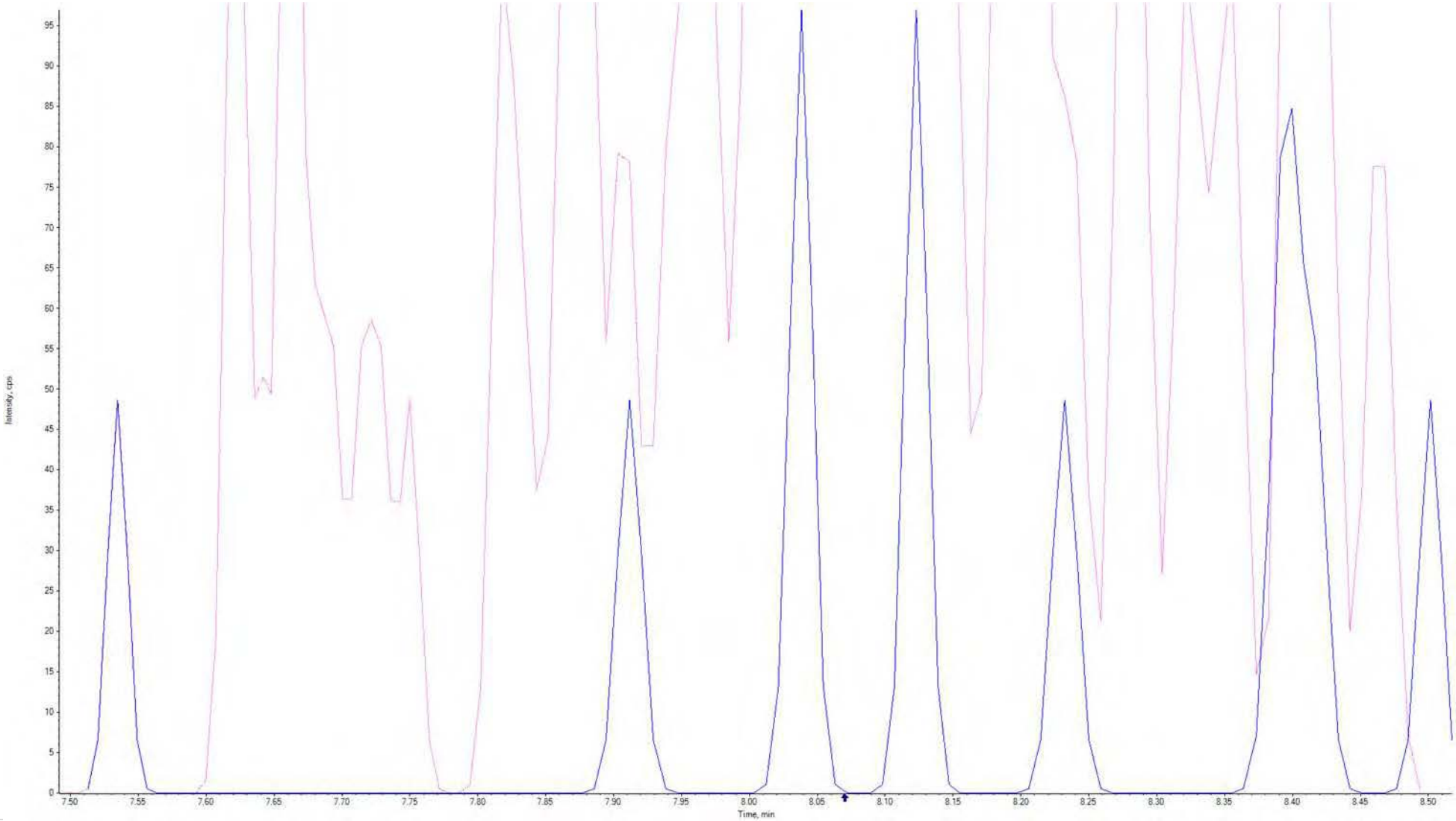

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Generated: 9/19/2024 8:04:31 AM

8:2FTS_2
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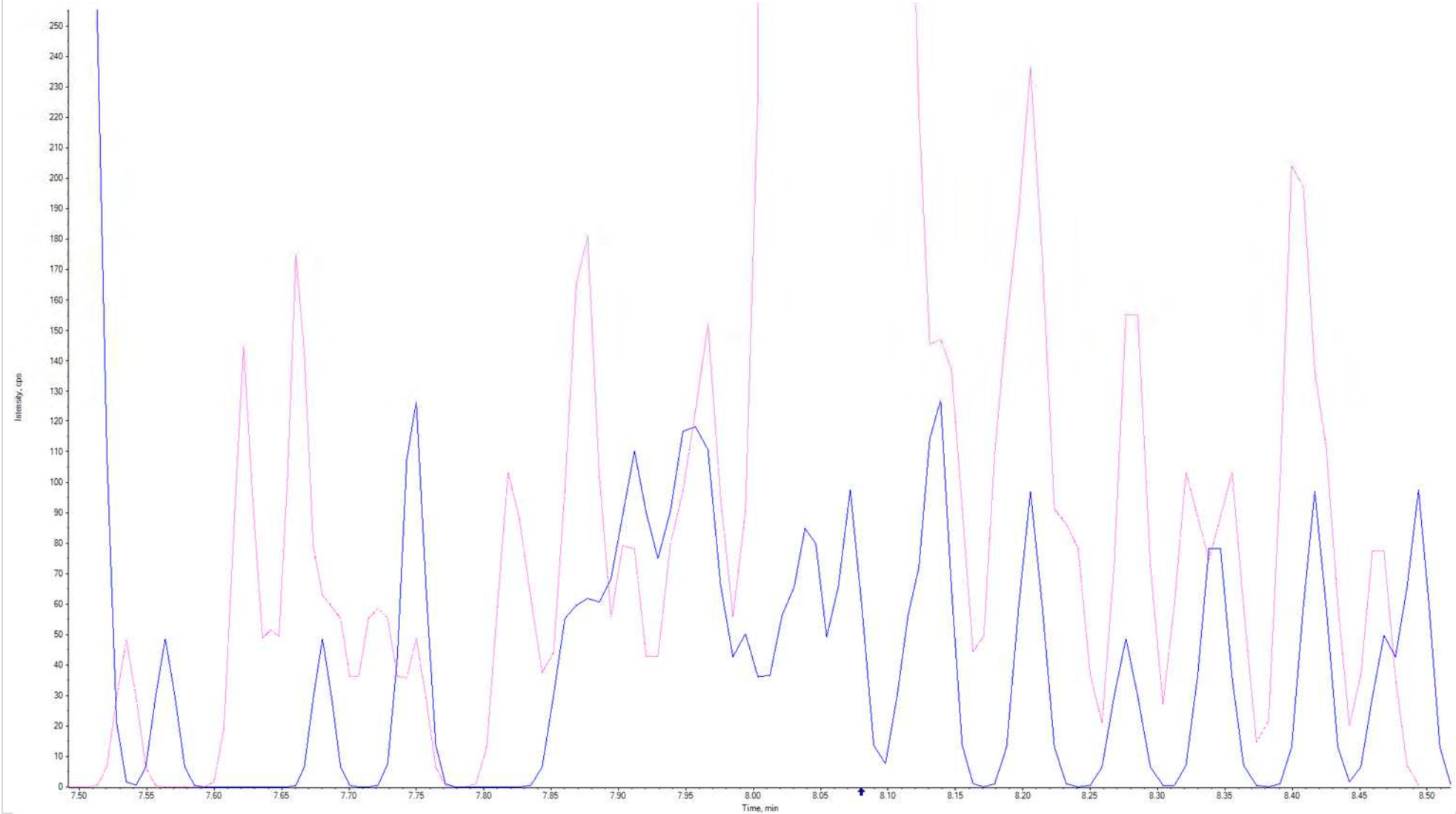

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Generated: 9/19/2024 8:04:31 AM

PFOSA
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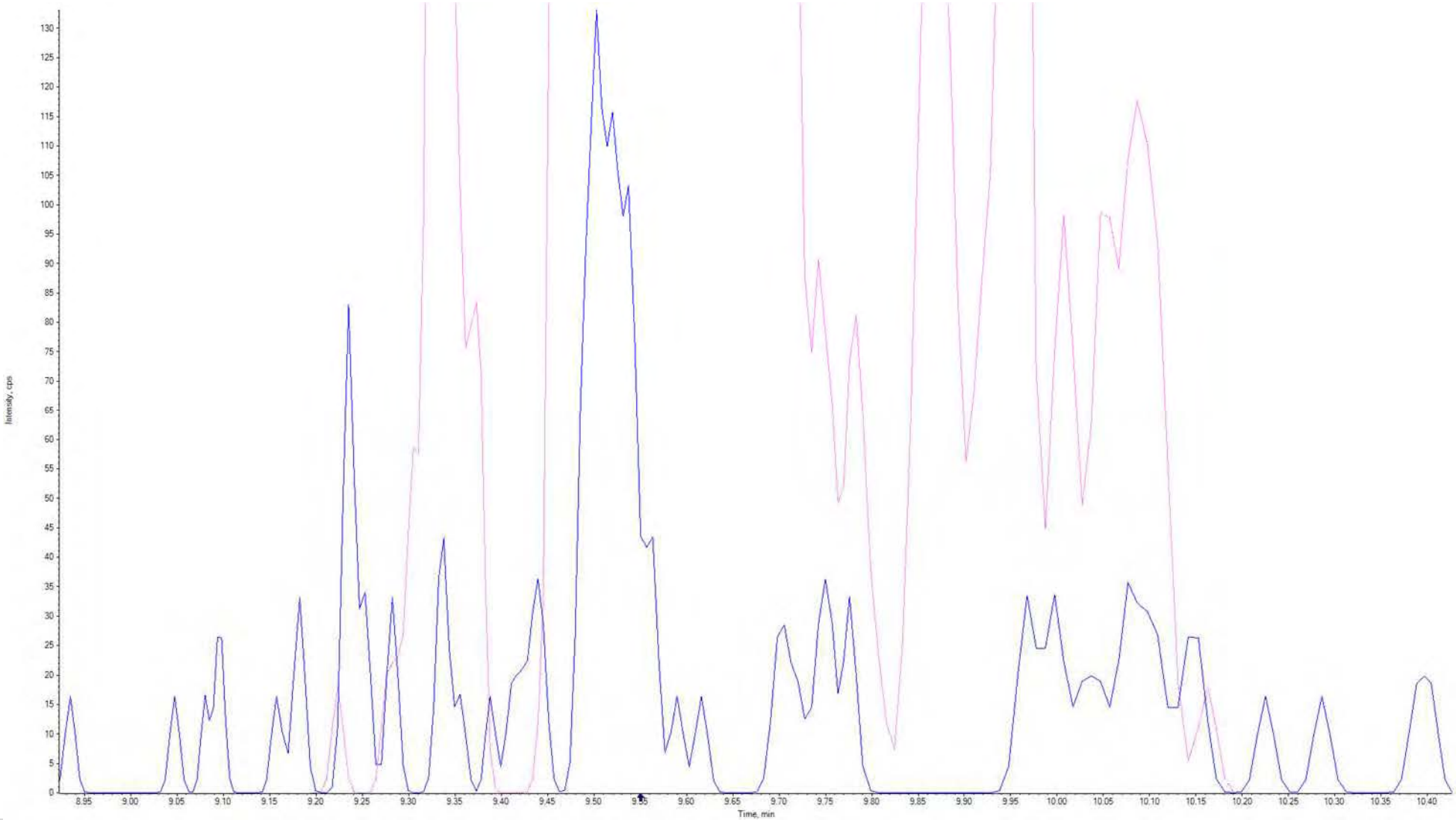

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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PFOSA_2
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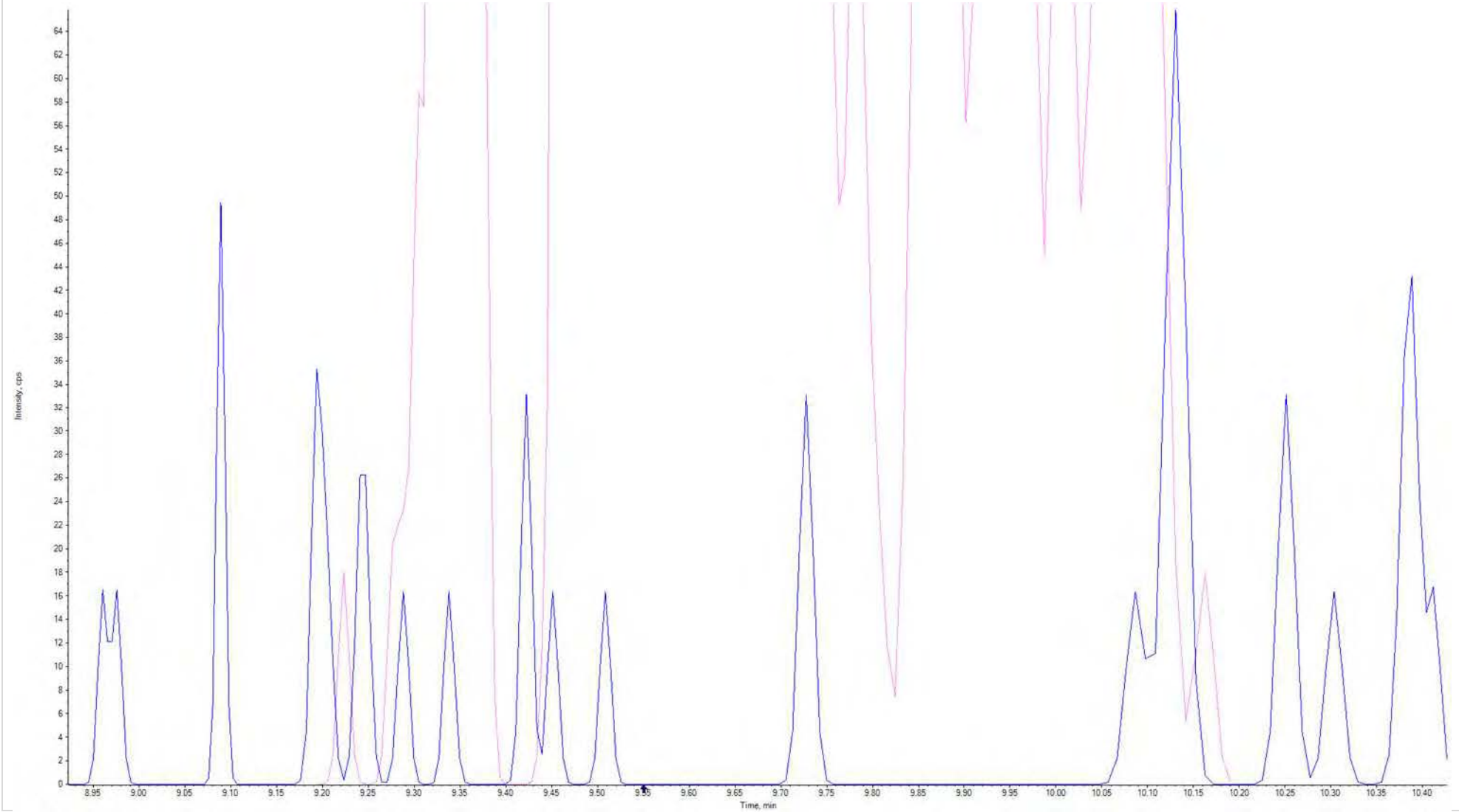

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSA
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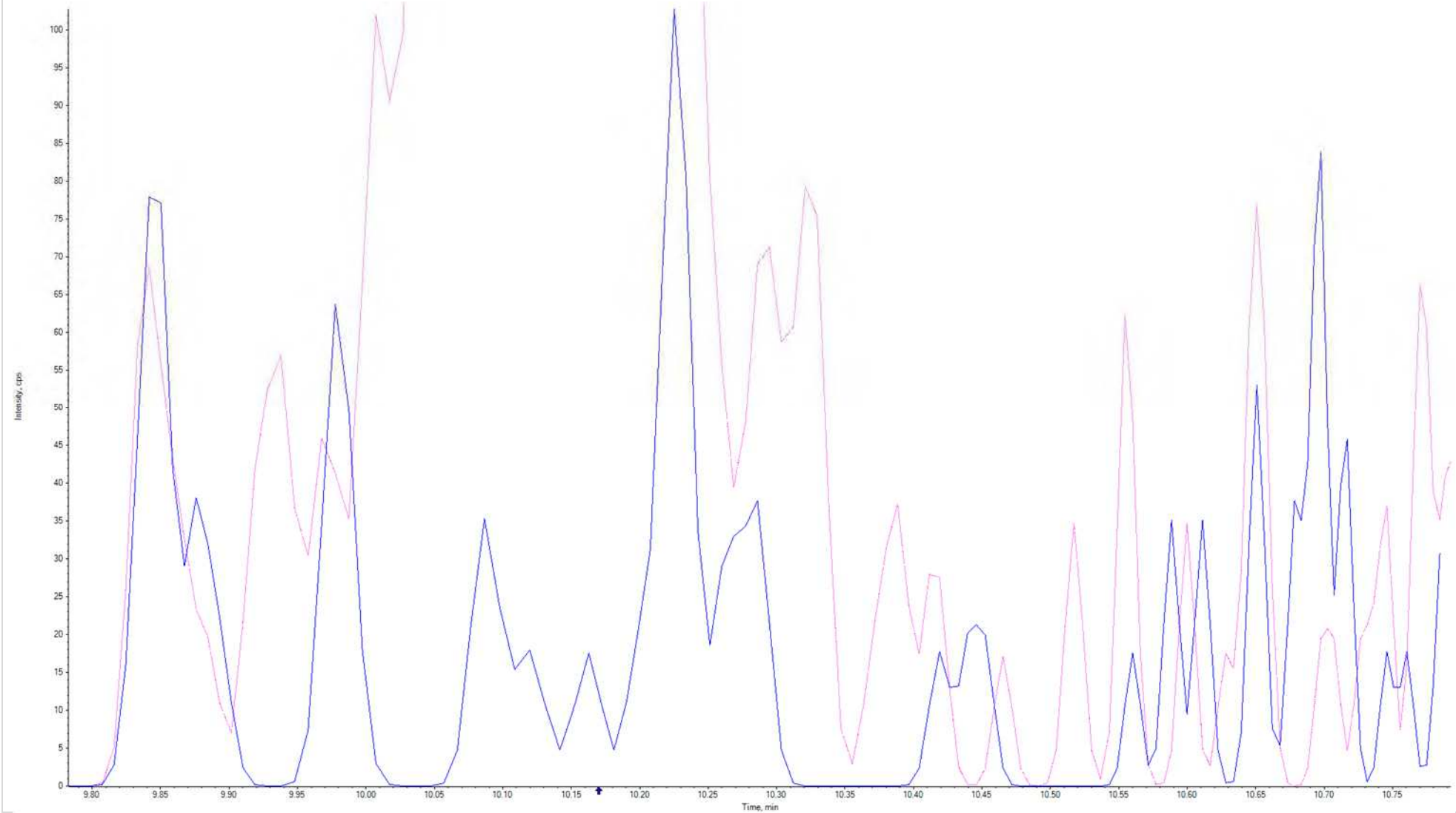

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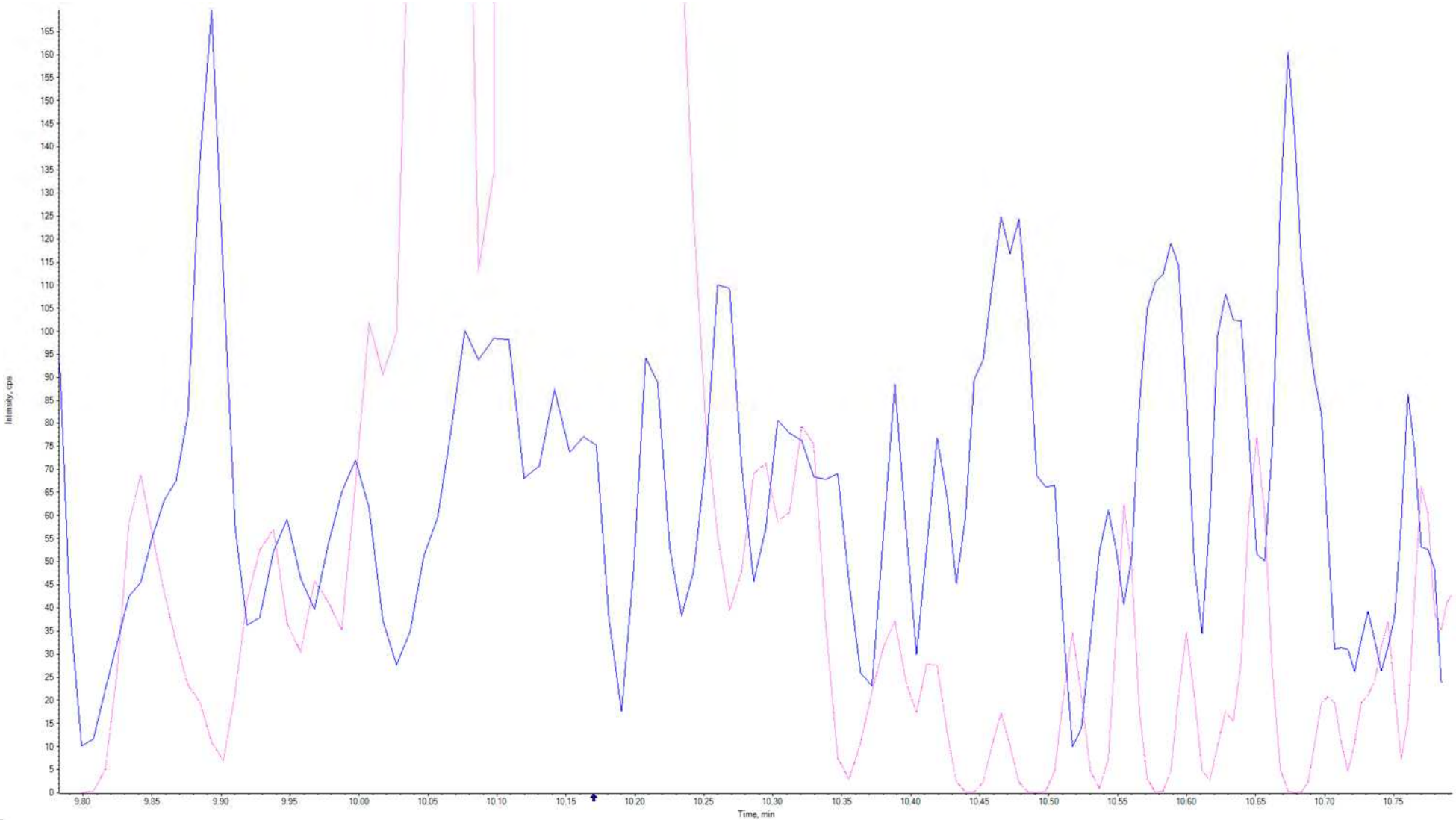

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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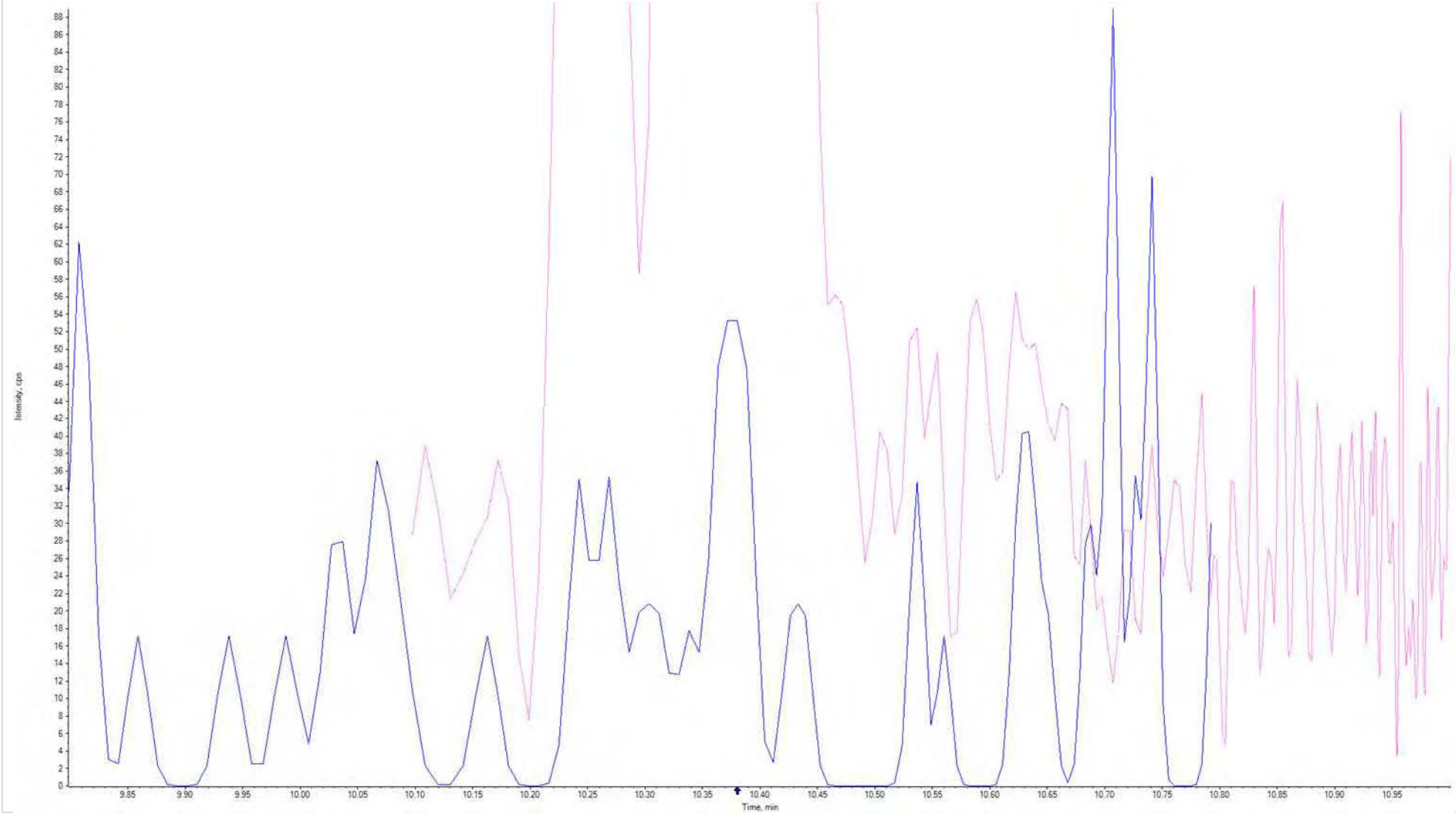

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Generated: 9/19/2024 8:04:31 AM

NEtFOSA_2
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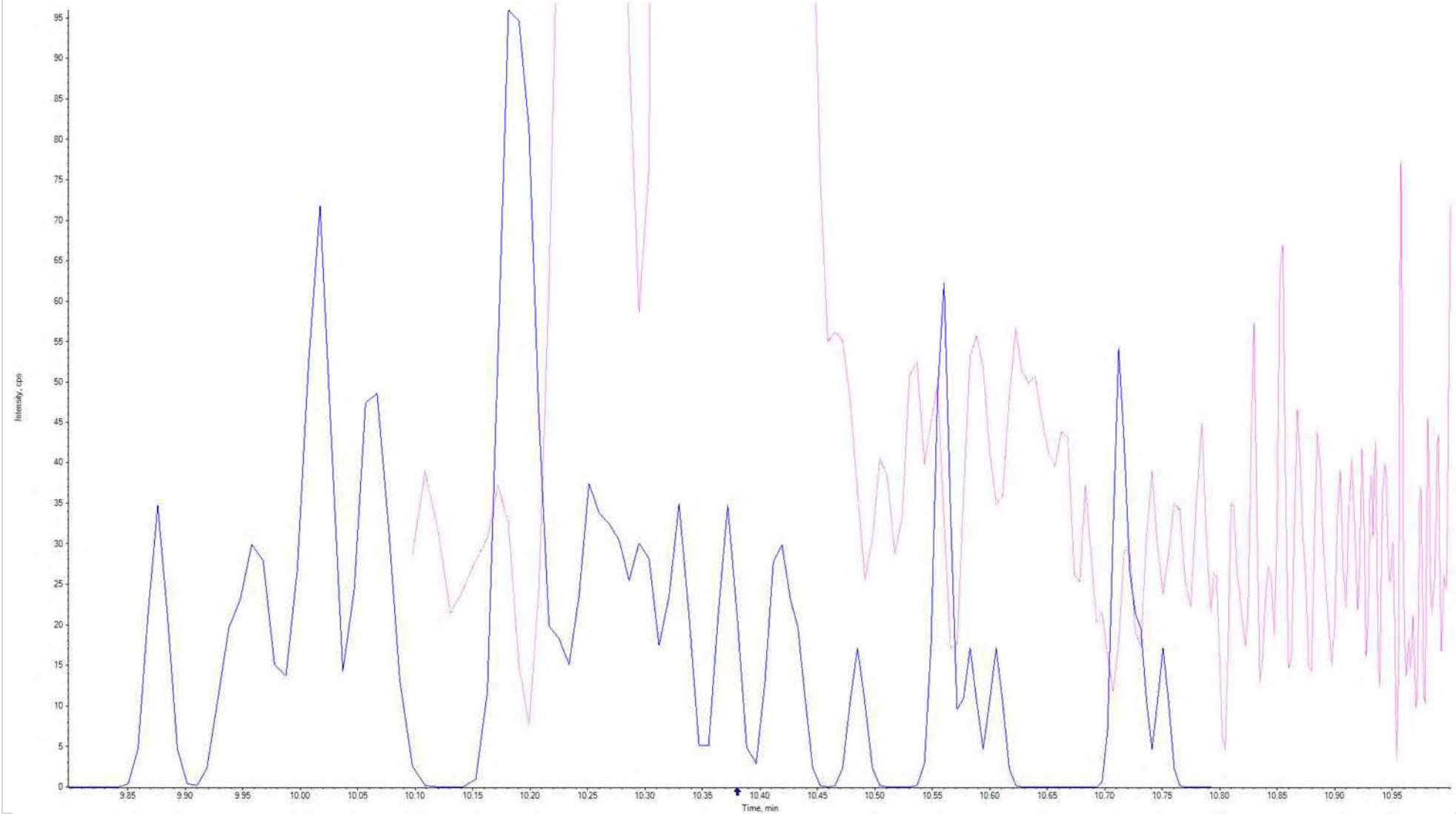

NMeFOSAA
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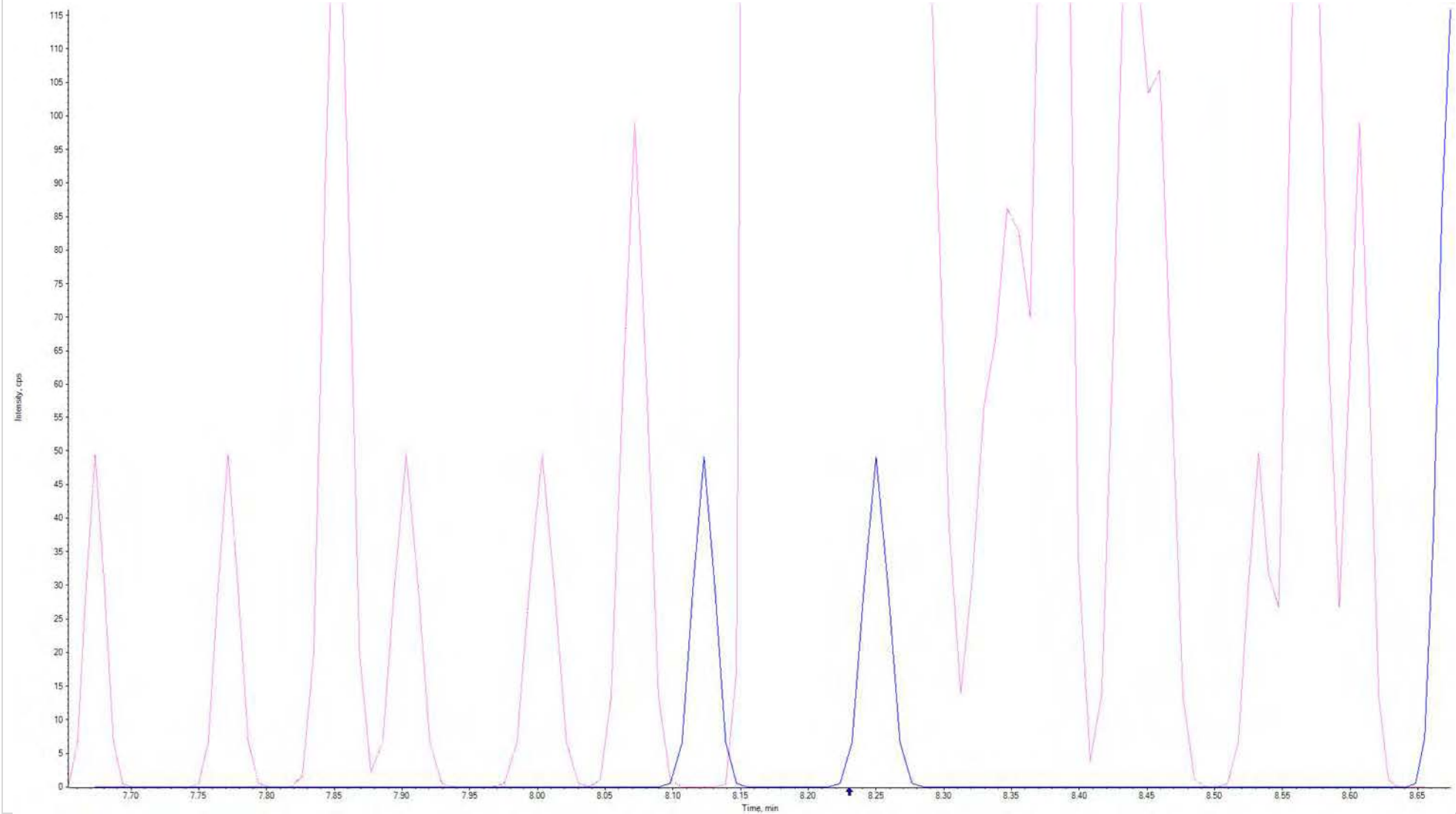

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_13.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSAA_2
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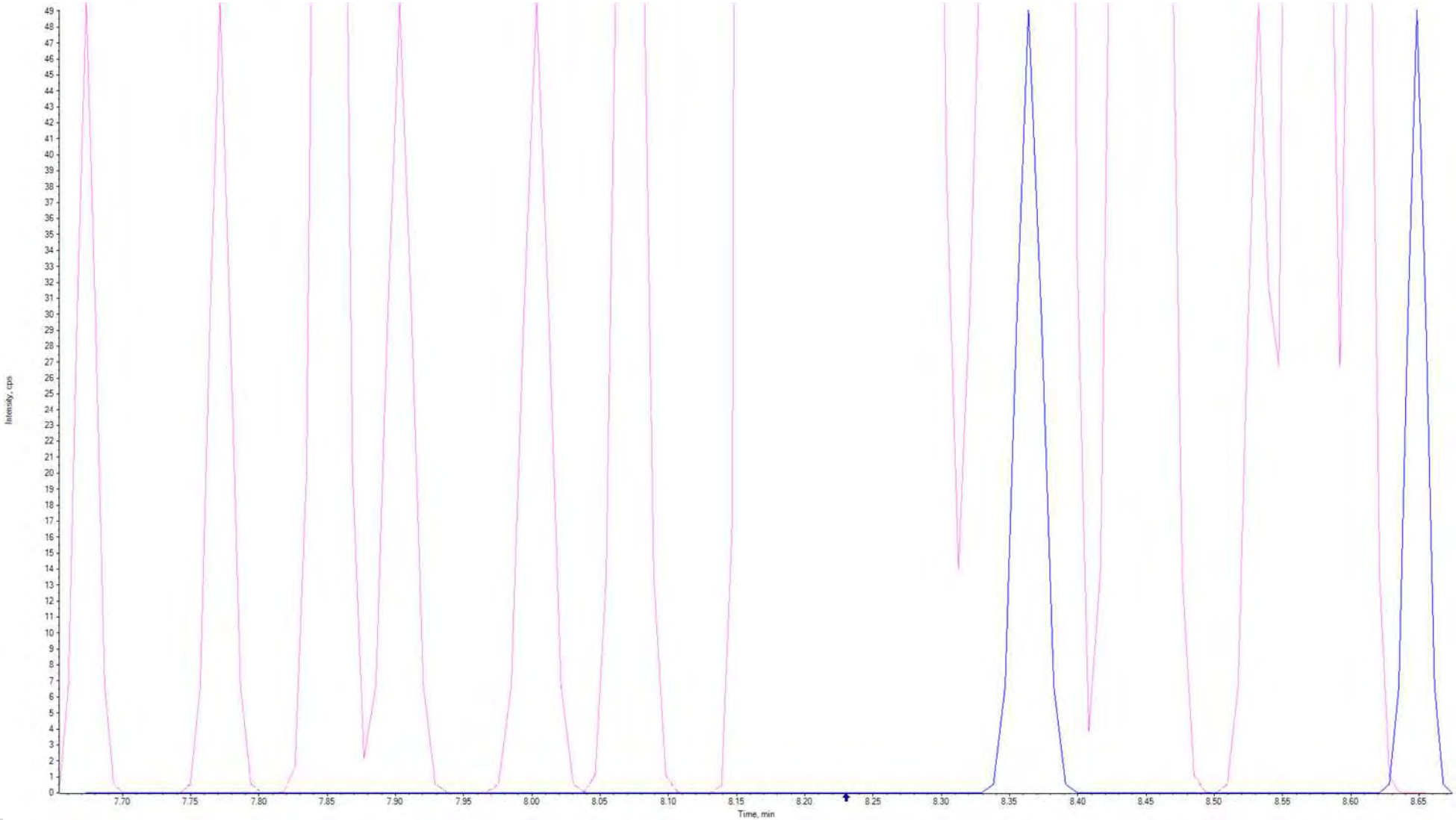

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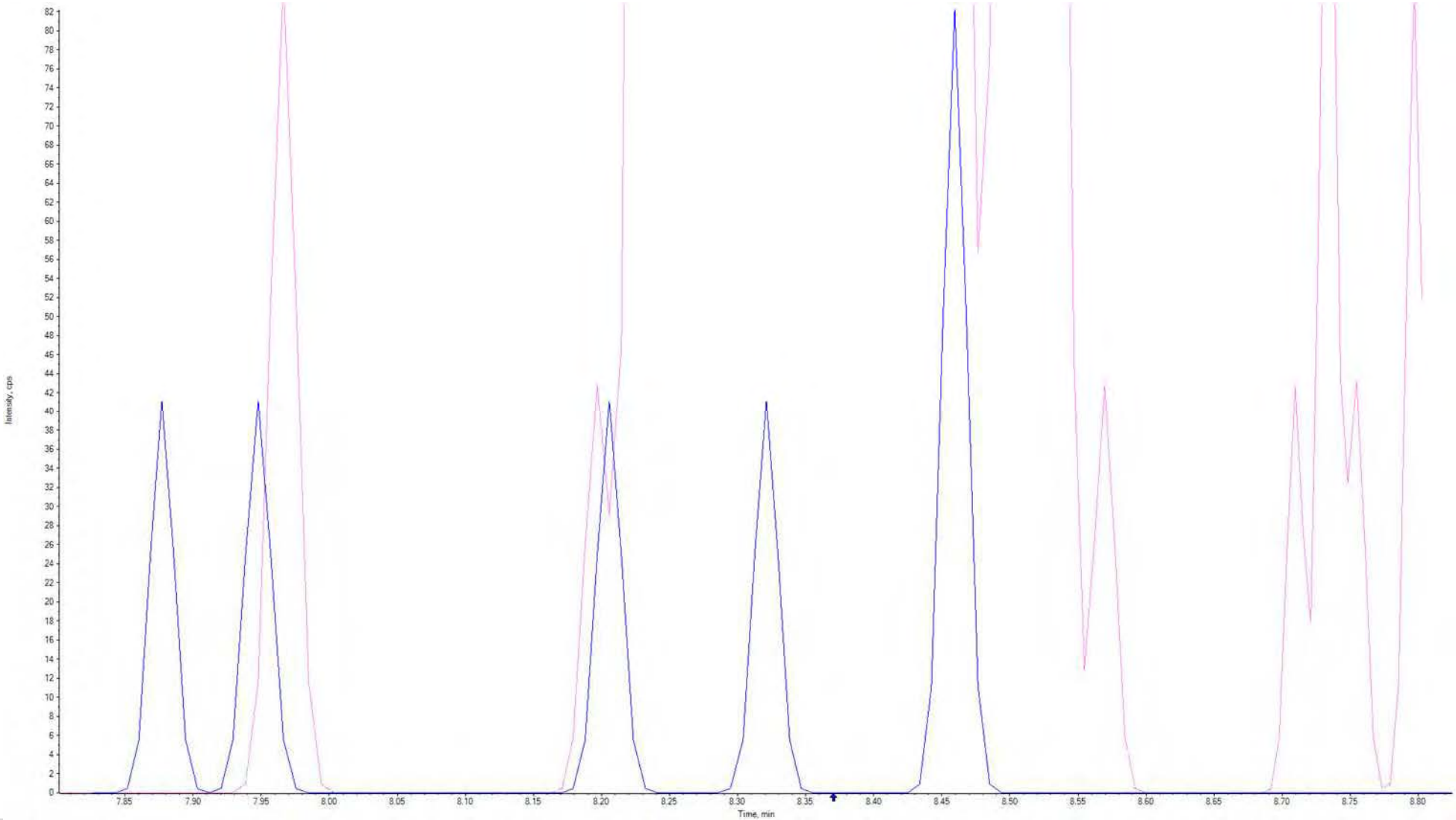

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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NEtFOSAA_2
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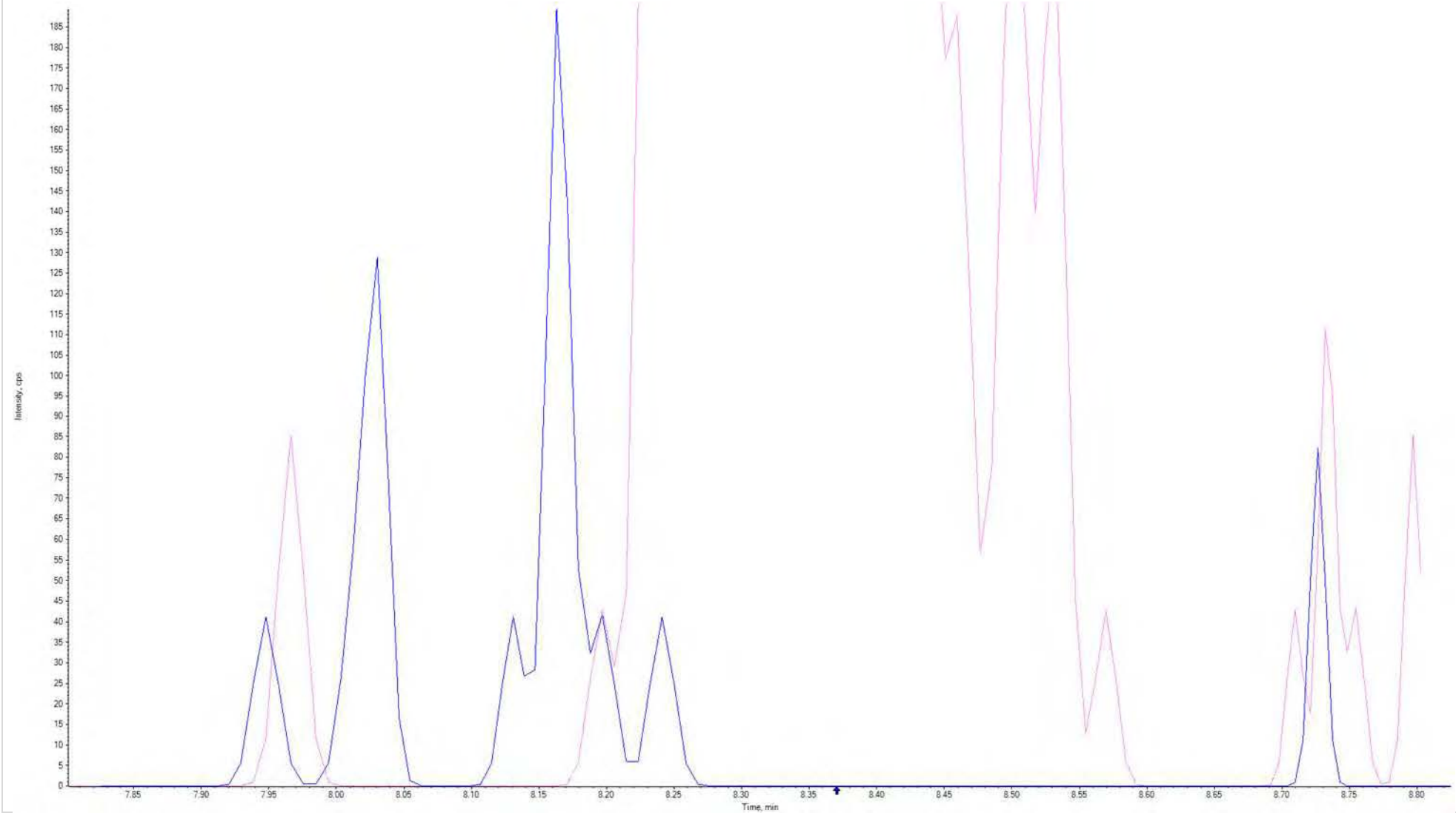

NMeFOSE
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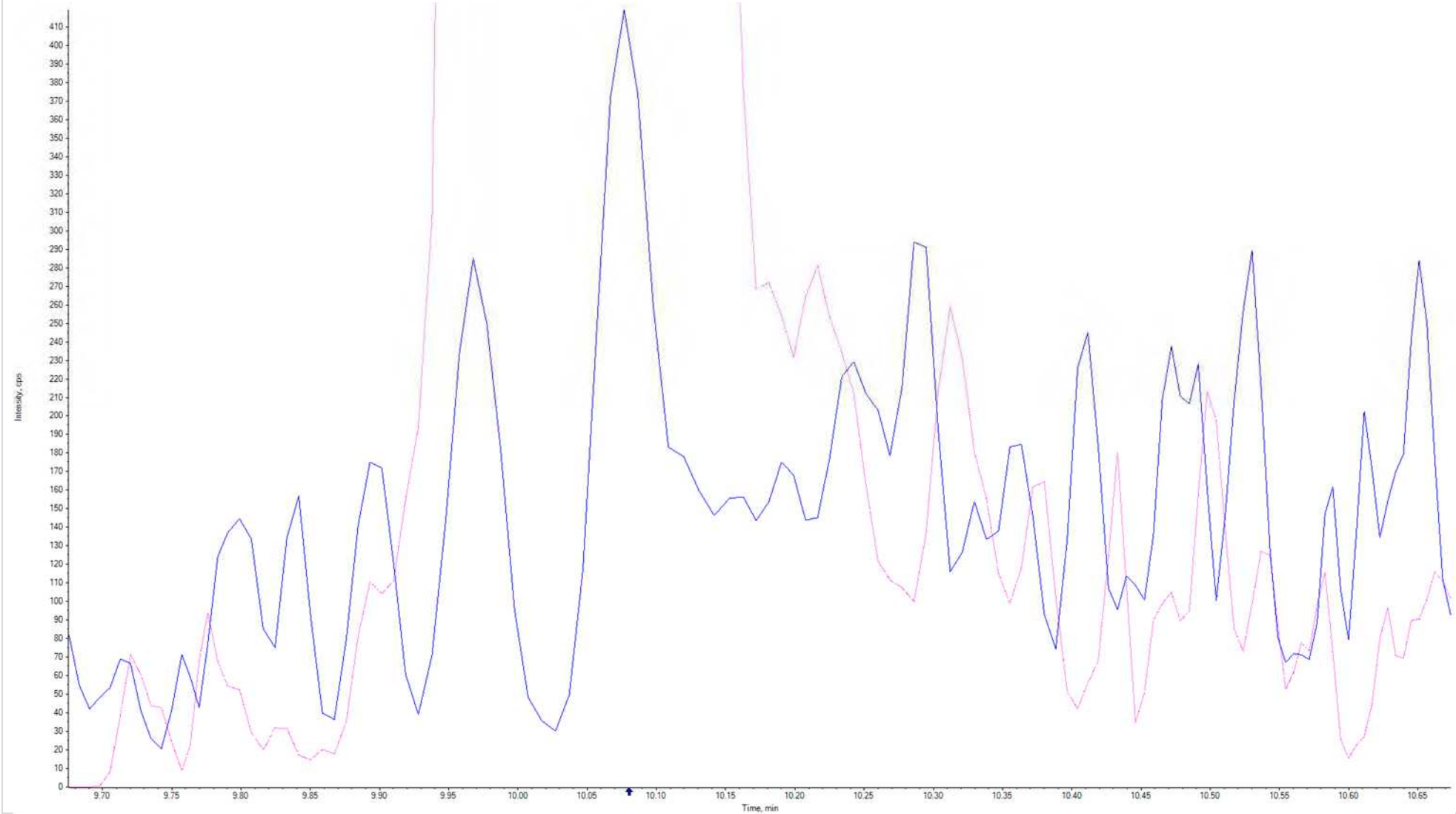

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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NEtFOSE
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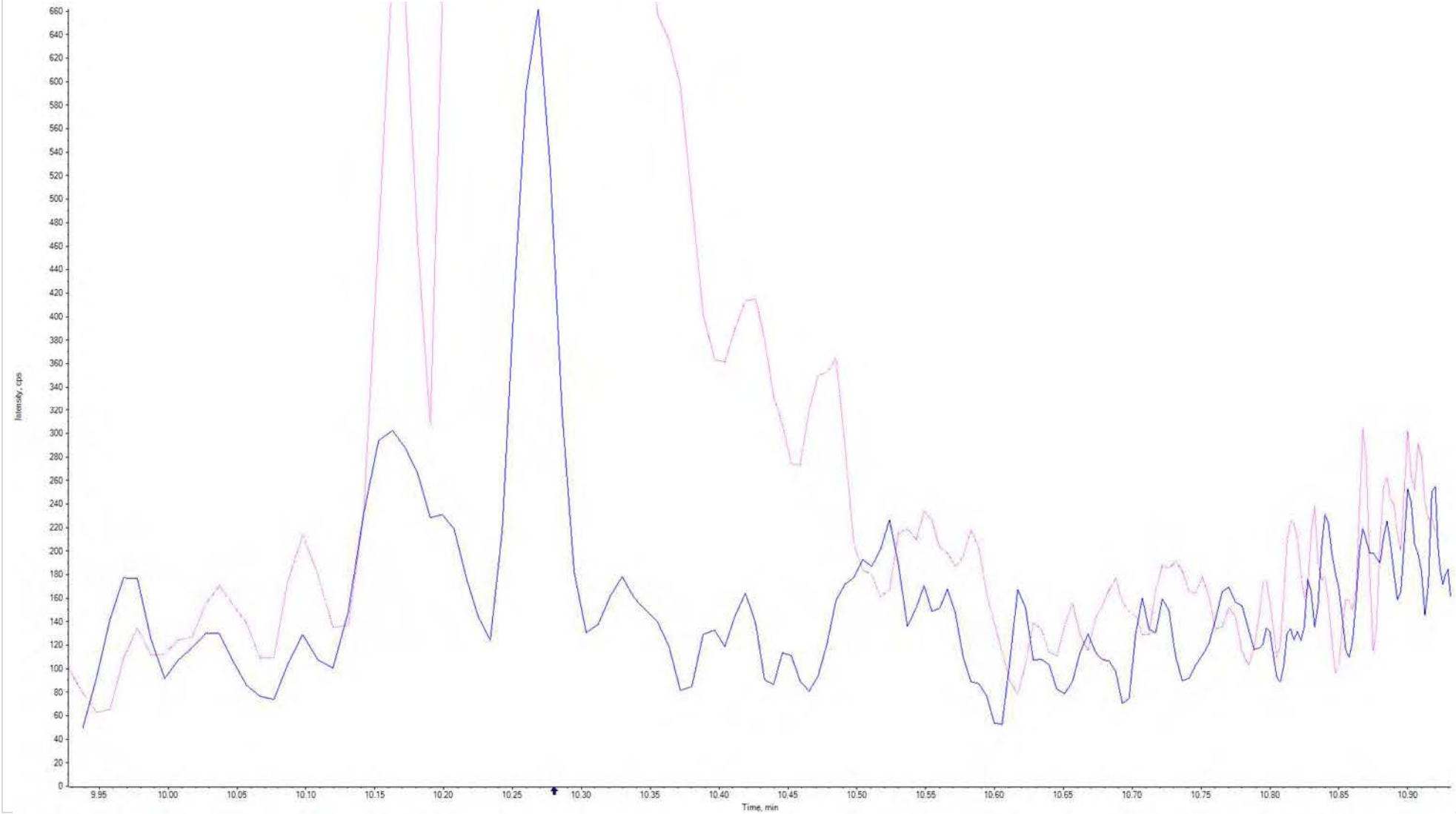

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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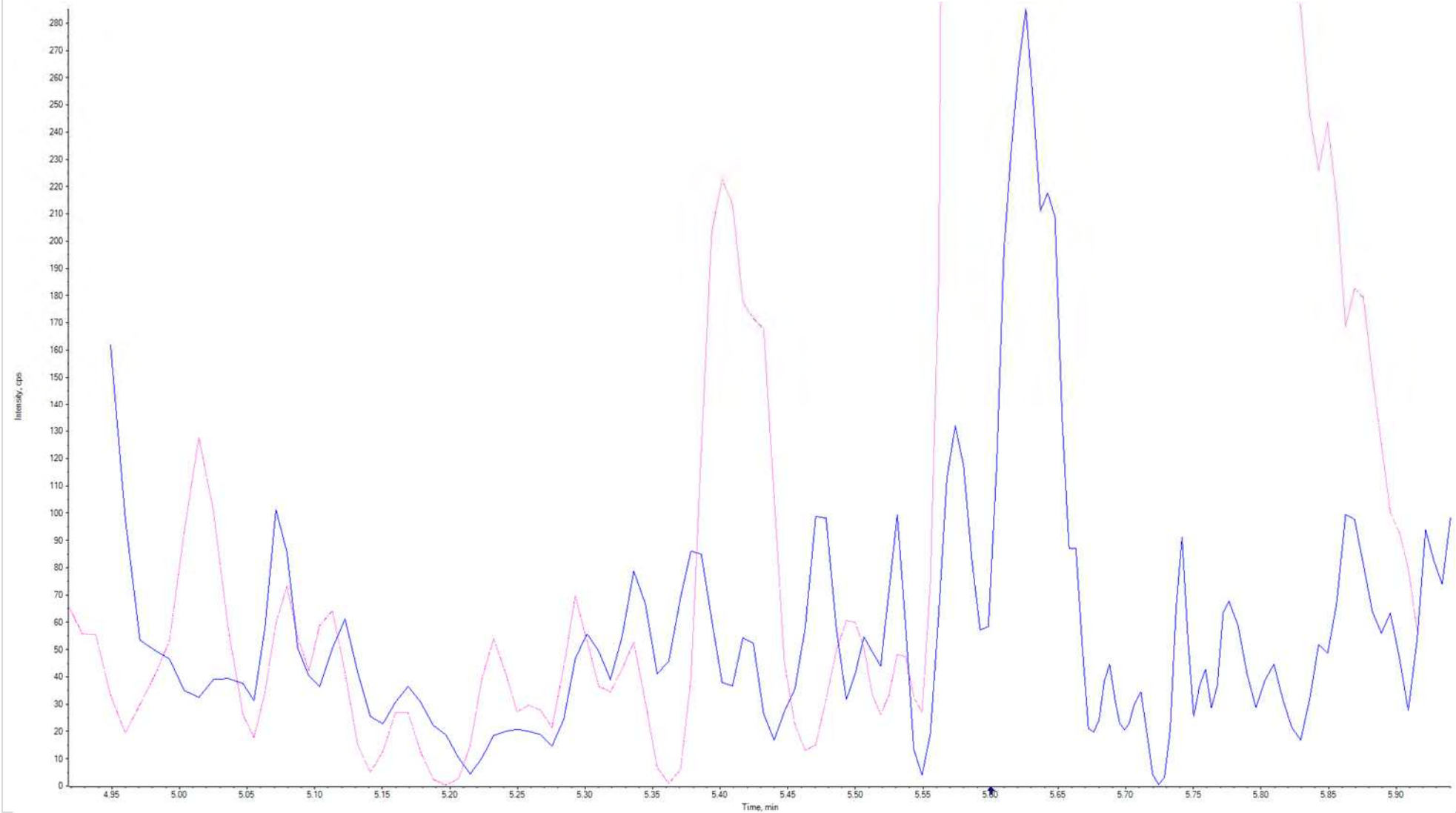
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

HFPO-DA
Sample: WG1973357-1 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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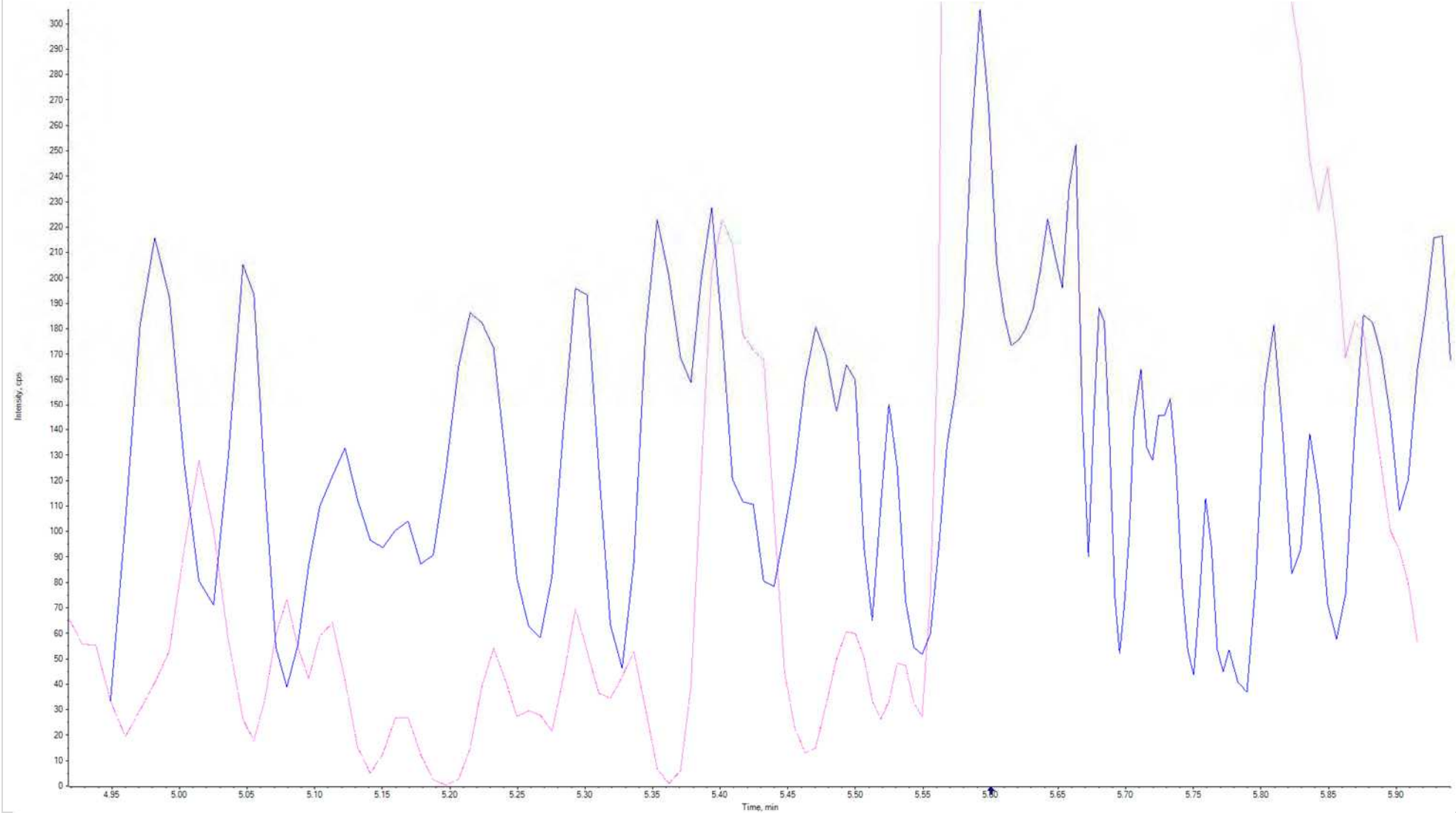
HFPO-DA_2
Sample: WG1973357-1 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Generated: 9/19/2024 8:04:31 AM

ADONA
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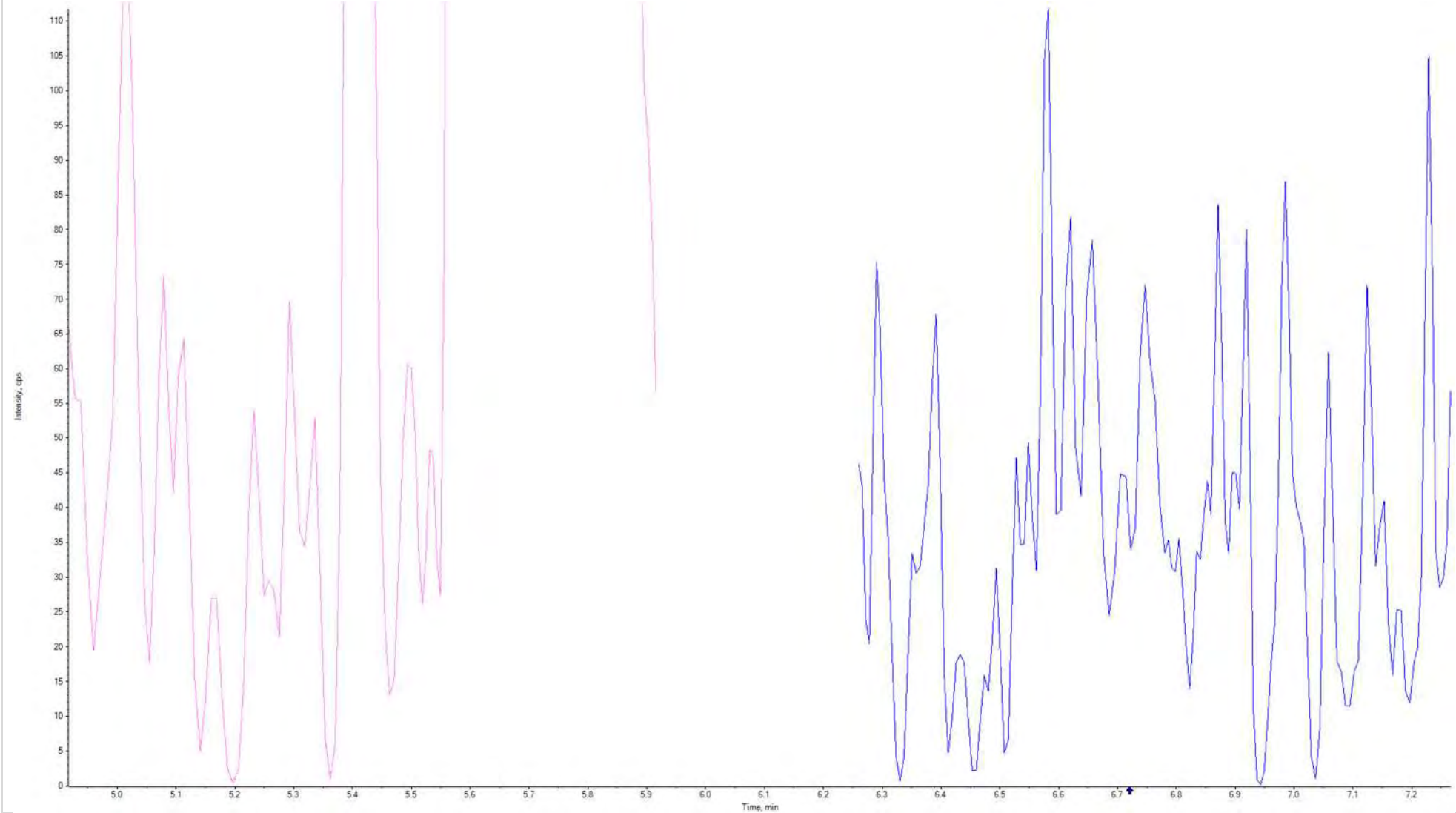

ADONA_2
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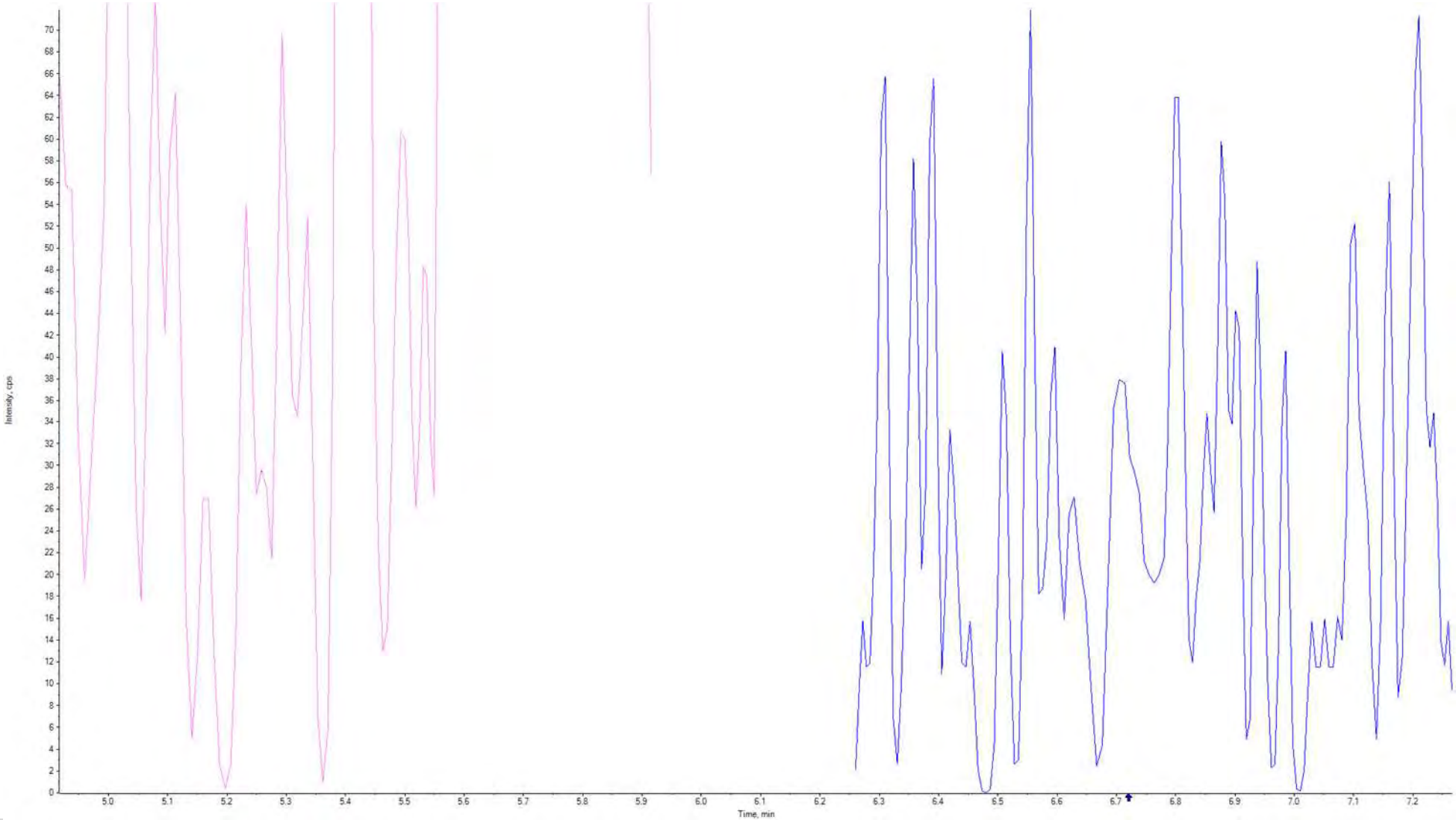

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

9Cl-PF3ONS
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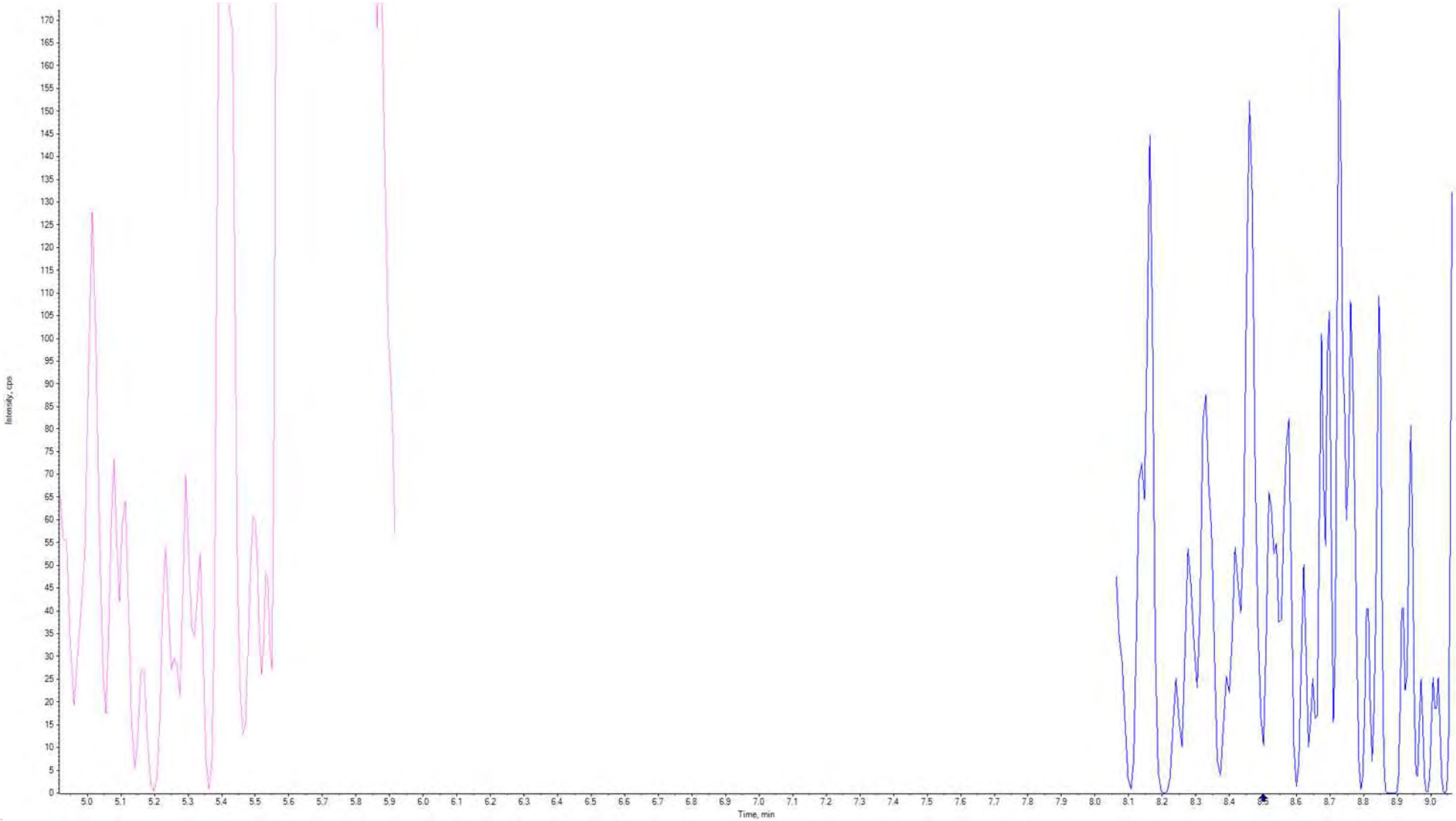

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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9Cl-PF3ONS_2
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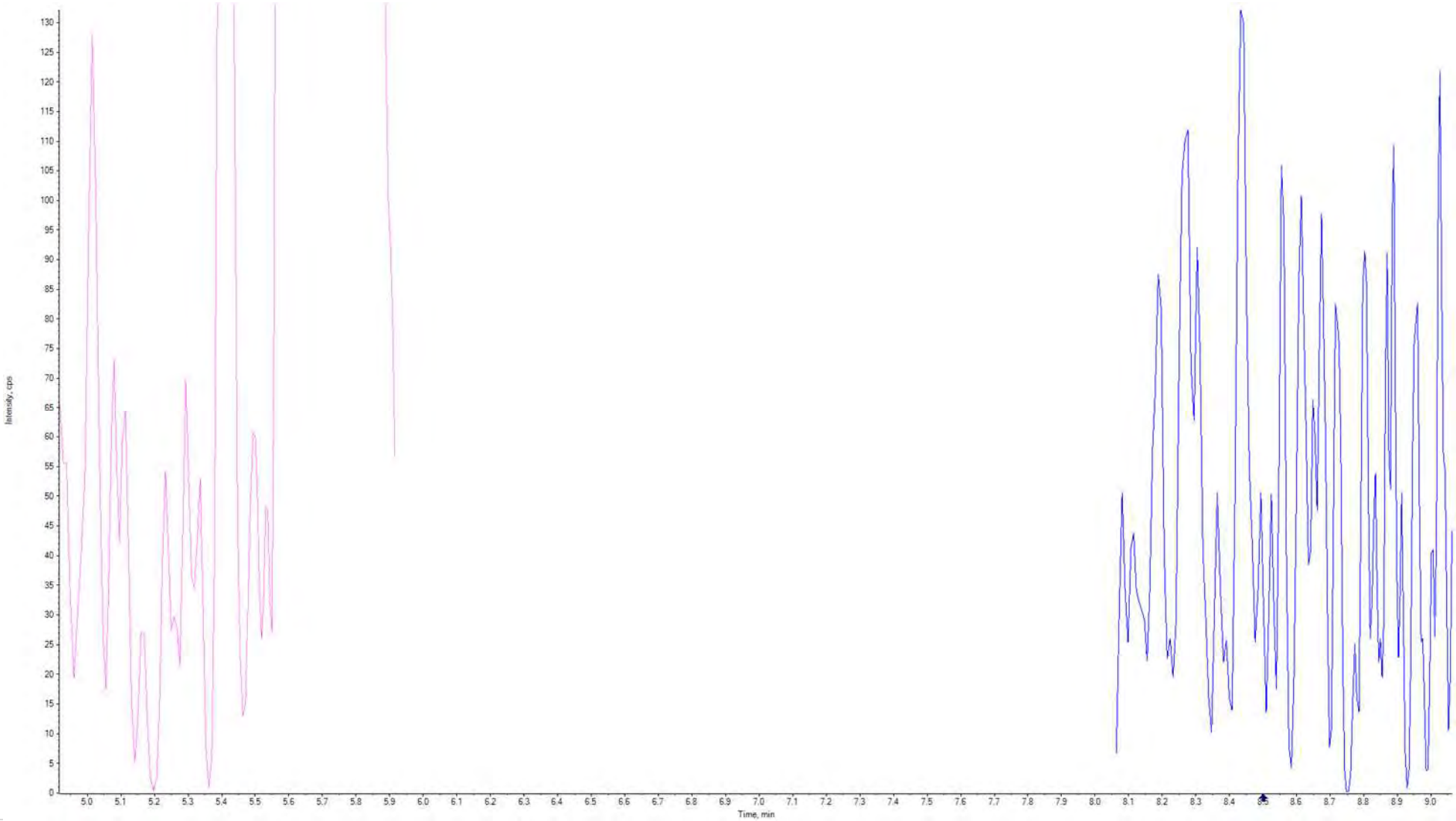

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

11Cl-PF3OUdS
Sample: WG1973357-1 S/N:N/A Points Across peak:N/A

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_13.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

11Cl-PF3OUdS_2
Sample: WG1973357-1 S/N:N/A Points Across peak:N/A

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_13.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

3:3FTCA
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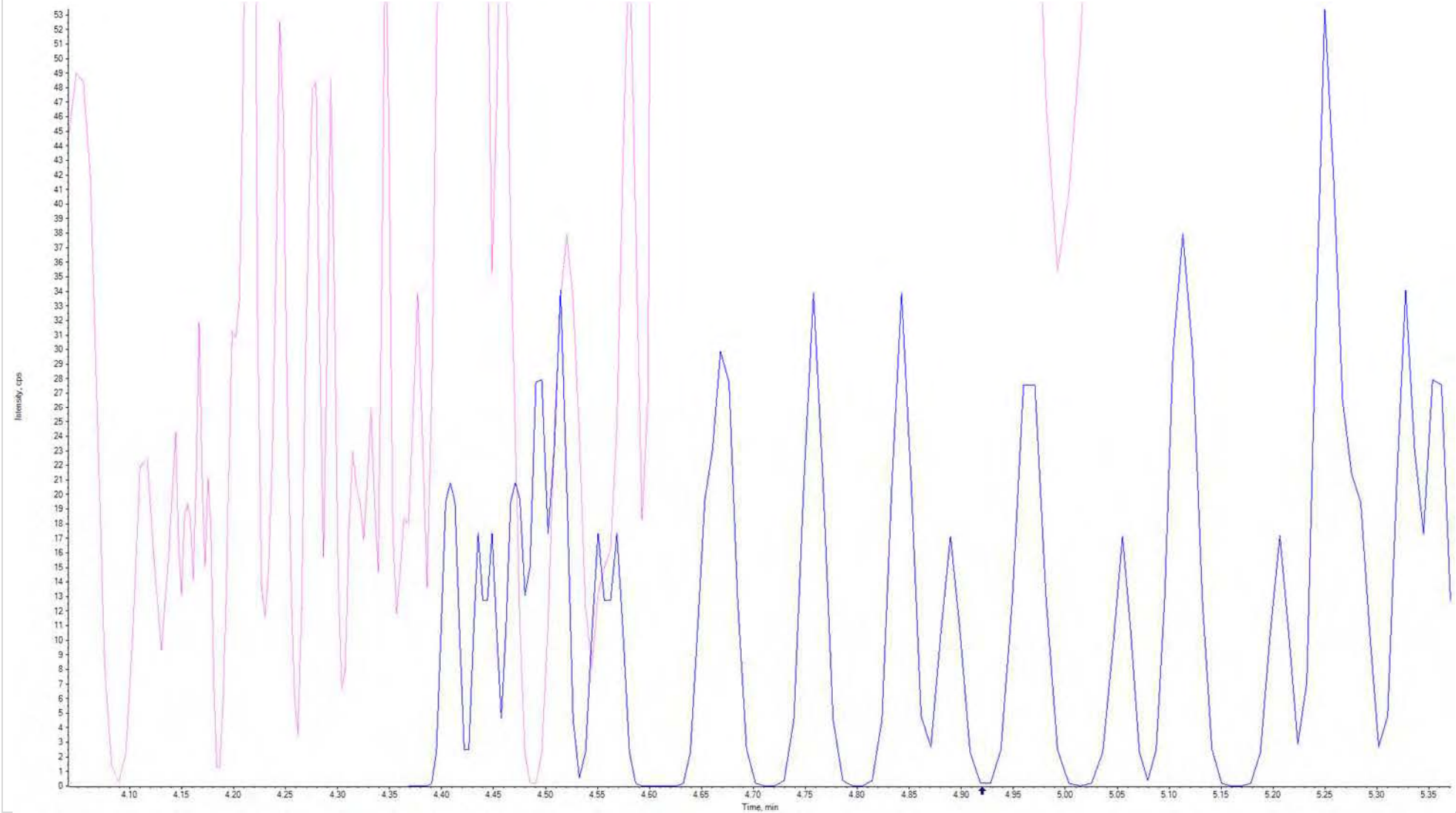
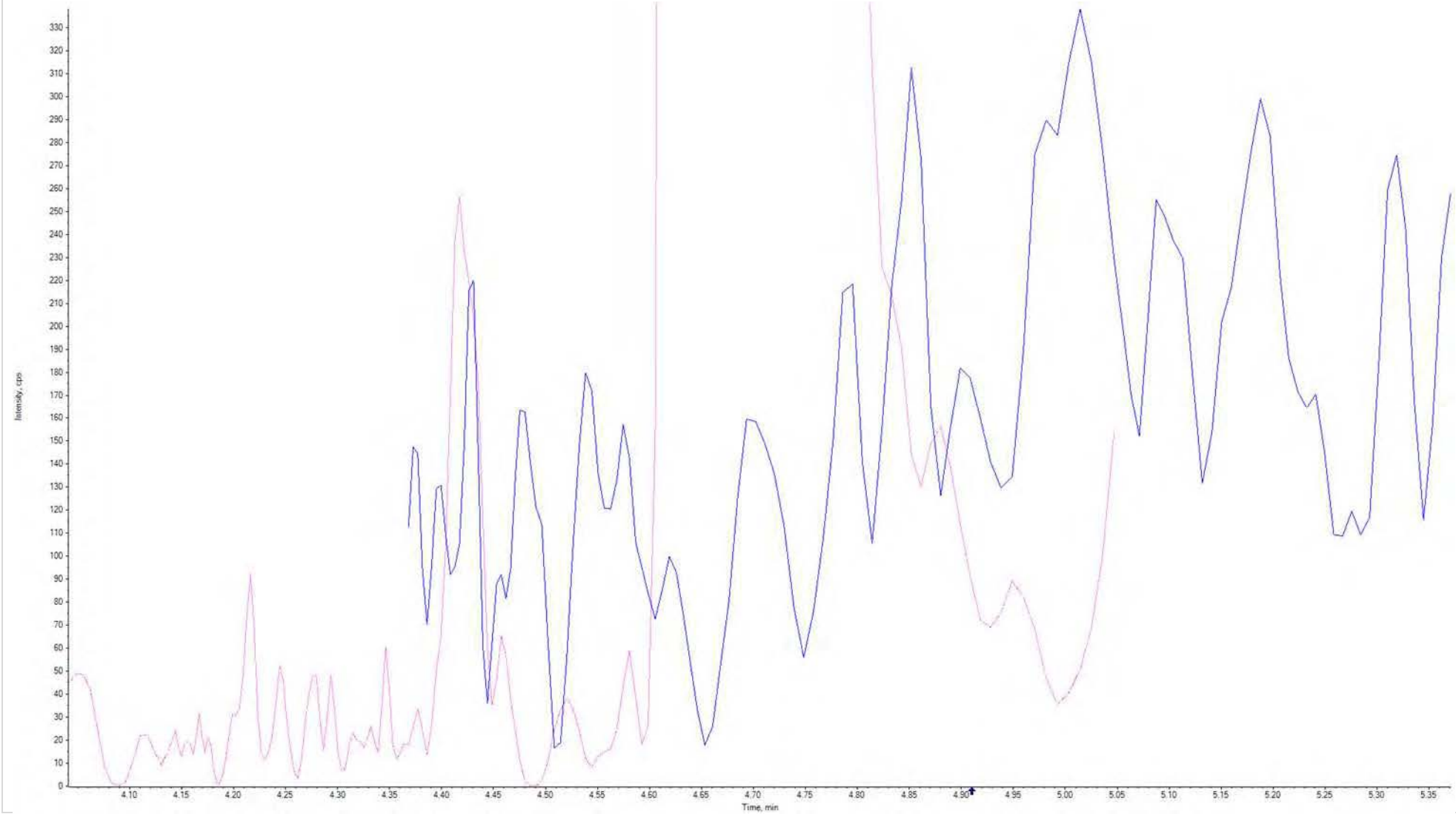


3:3FTCA_2
Sample: WG1973357-1 S/N:N/A Points Across peak:N/A



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Last Altered: 9/19/2024 11:40:51 AM
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5:3FTCA
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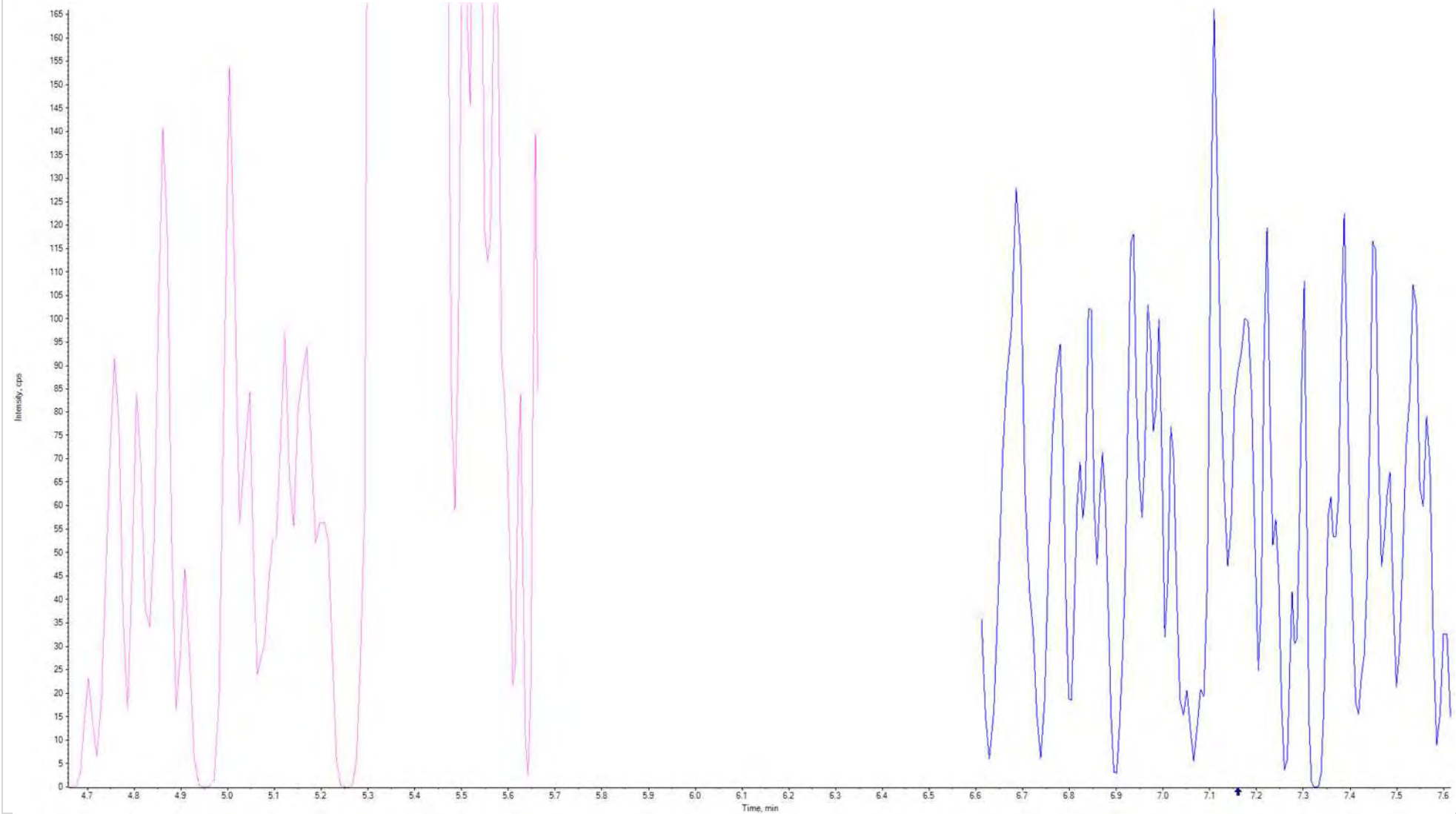

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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5:3FTCA_2
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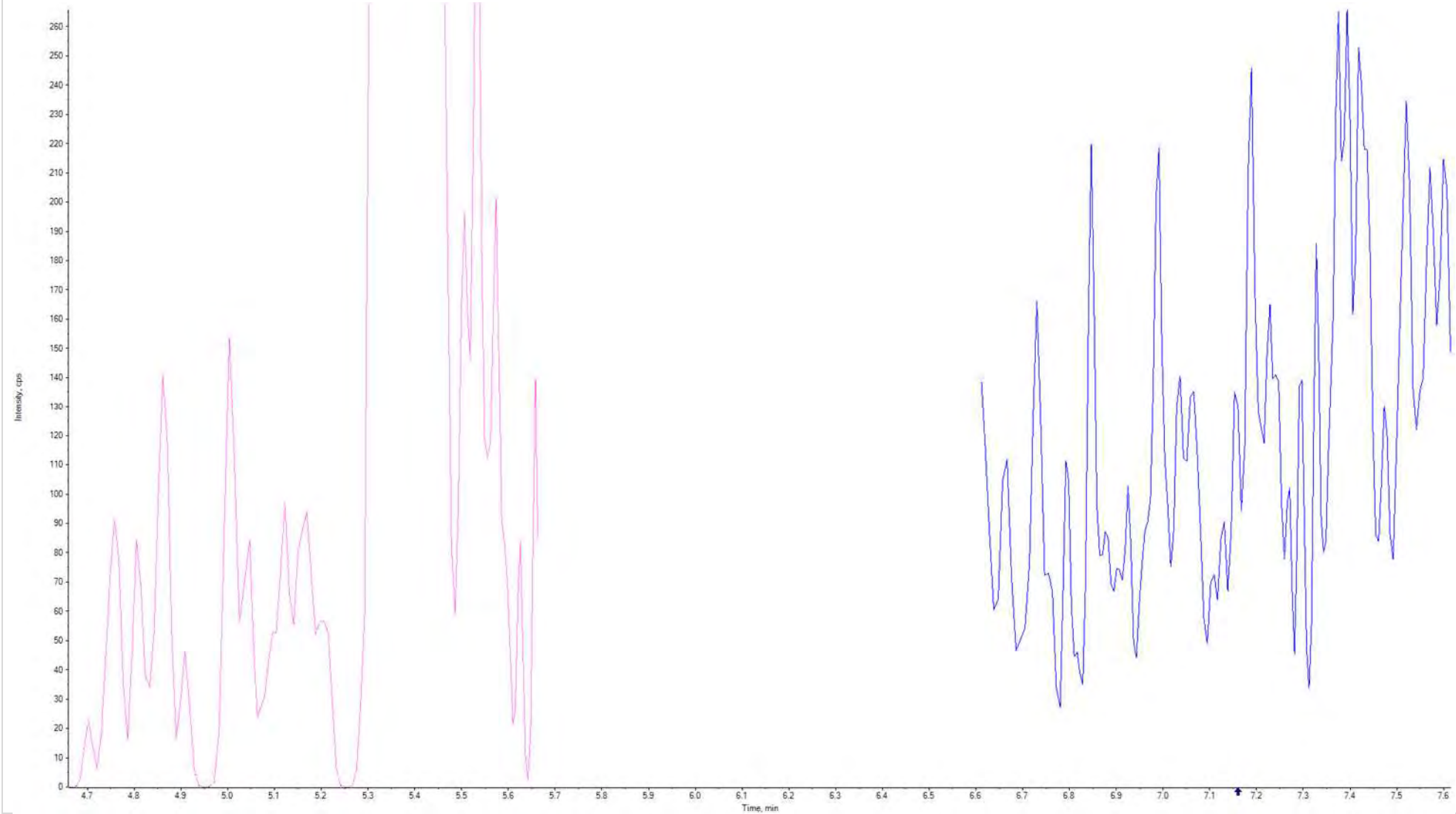

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Last Altered: 9/19/2024 11:40:51 AM
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7:3FTCA
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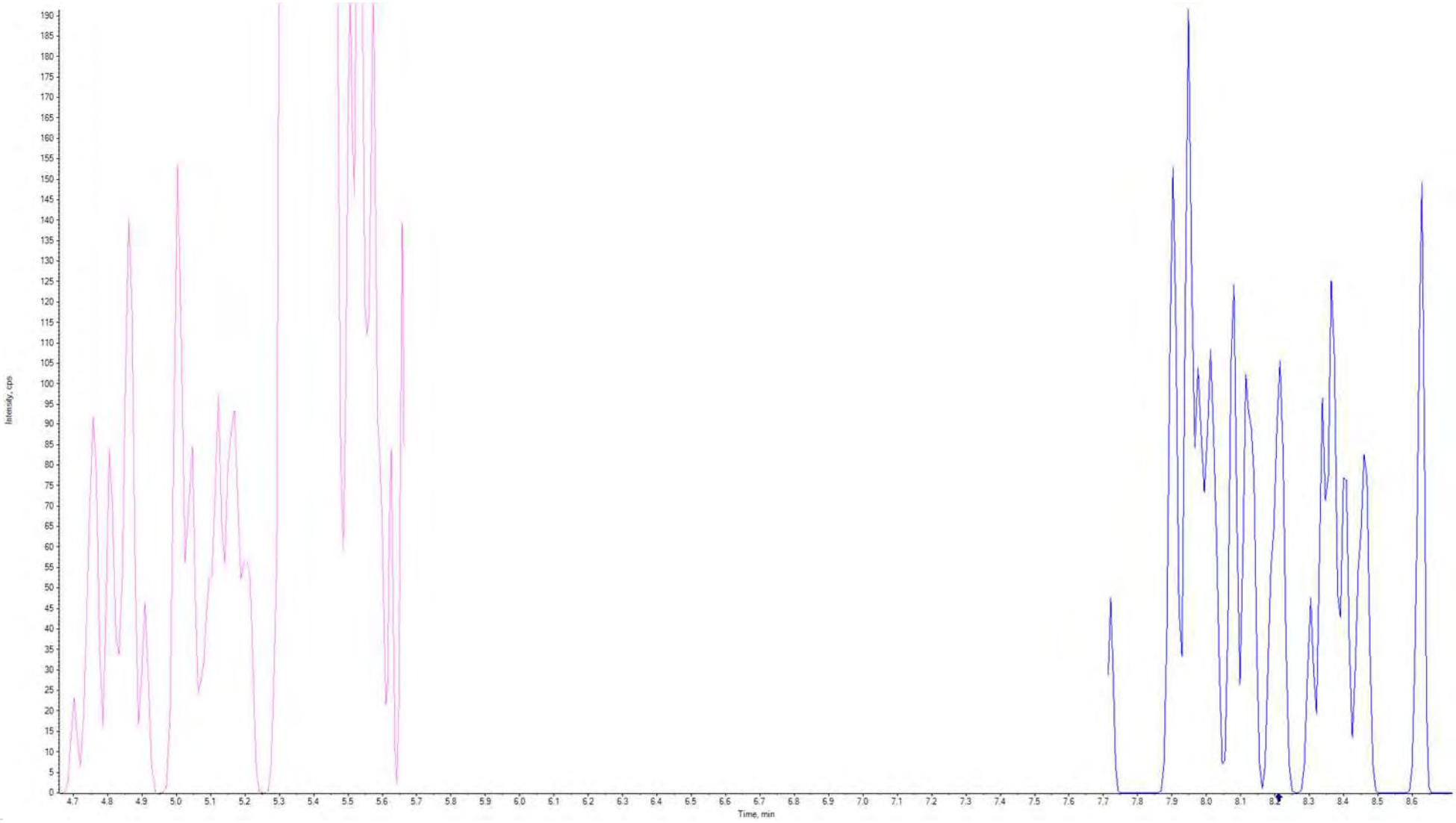

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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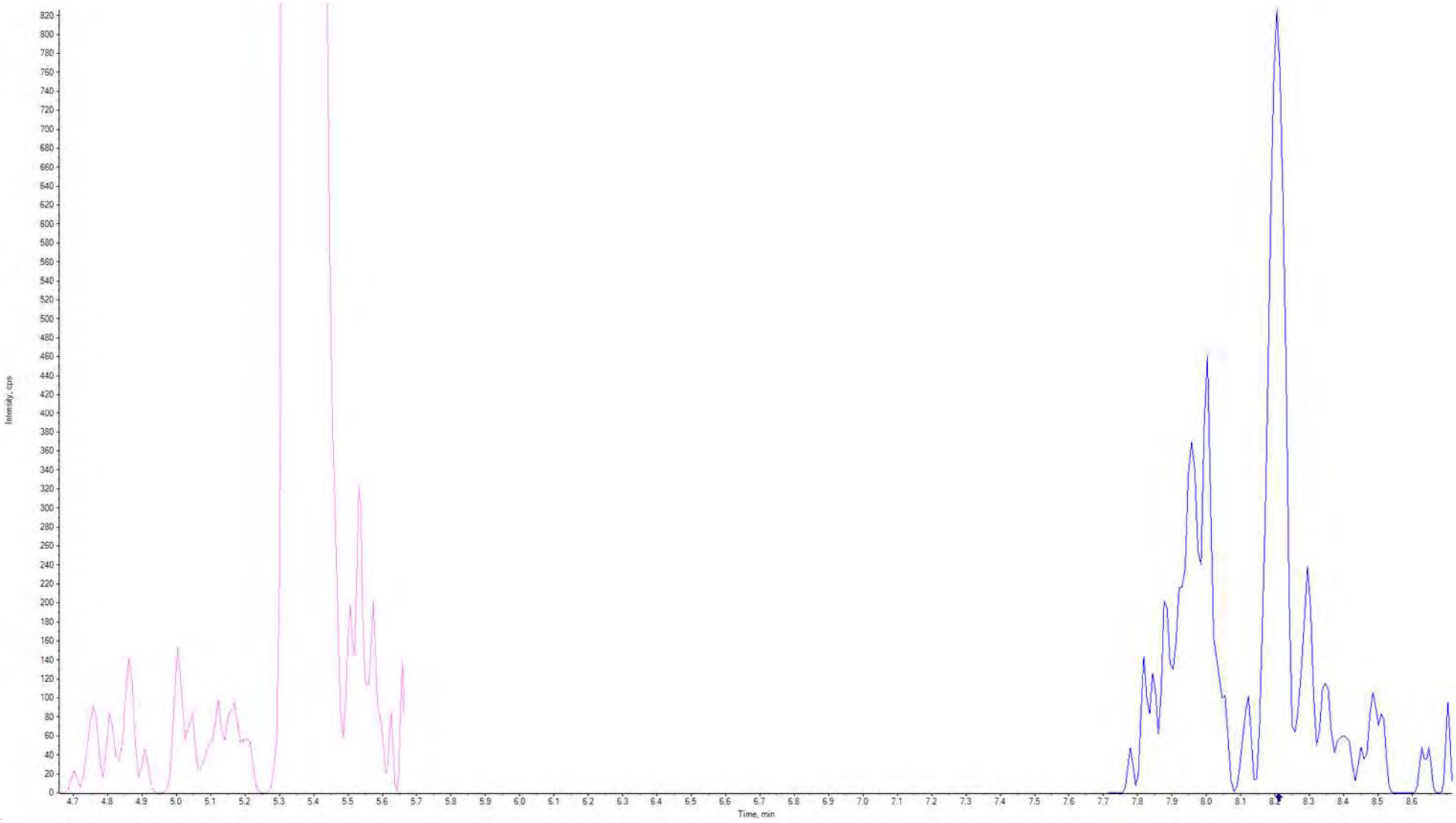

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFEESA
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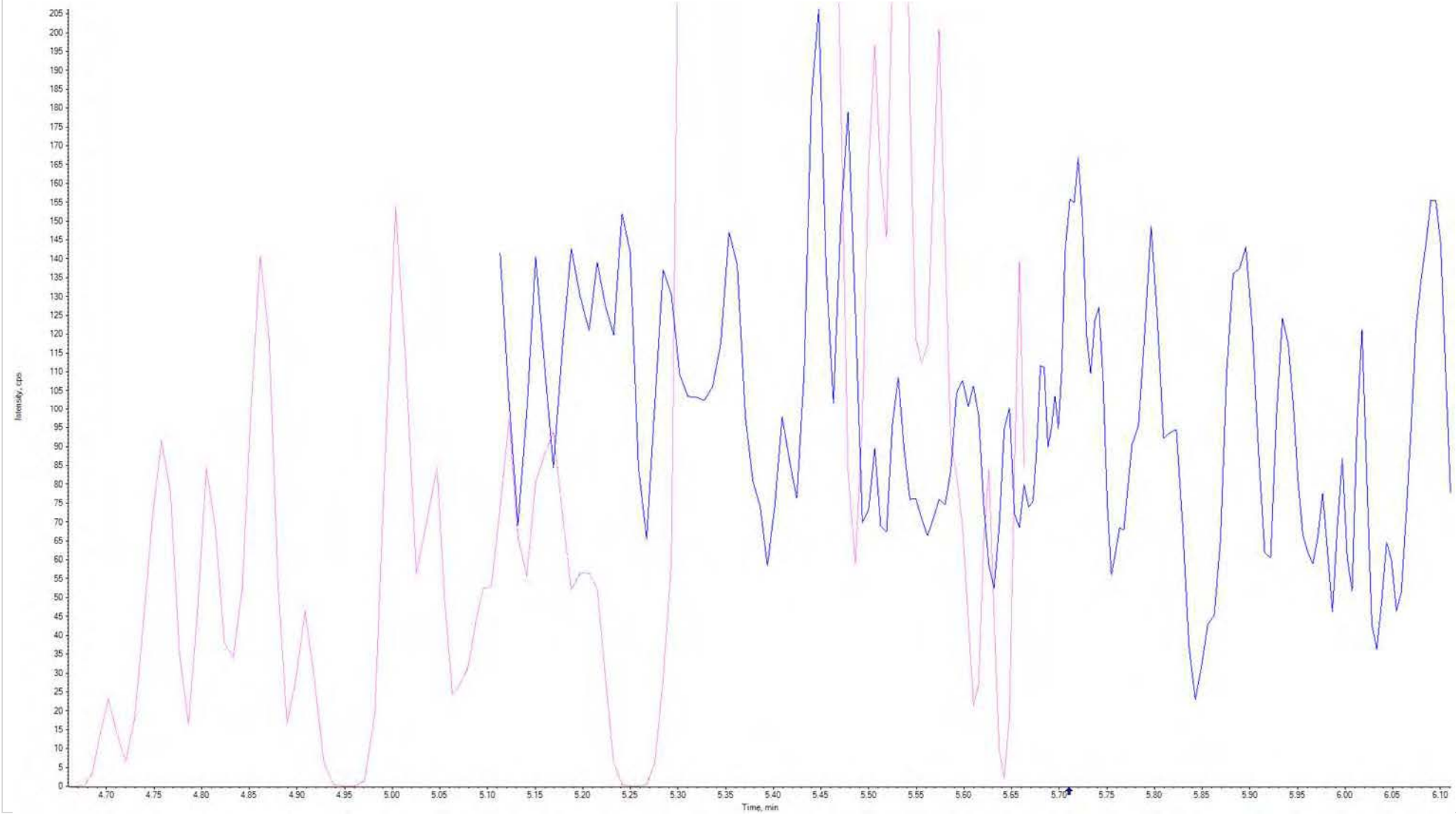

PFEESA_2
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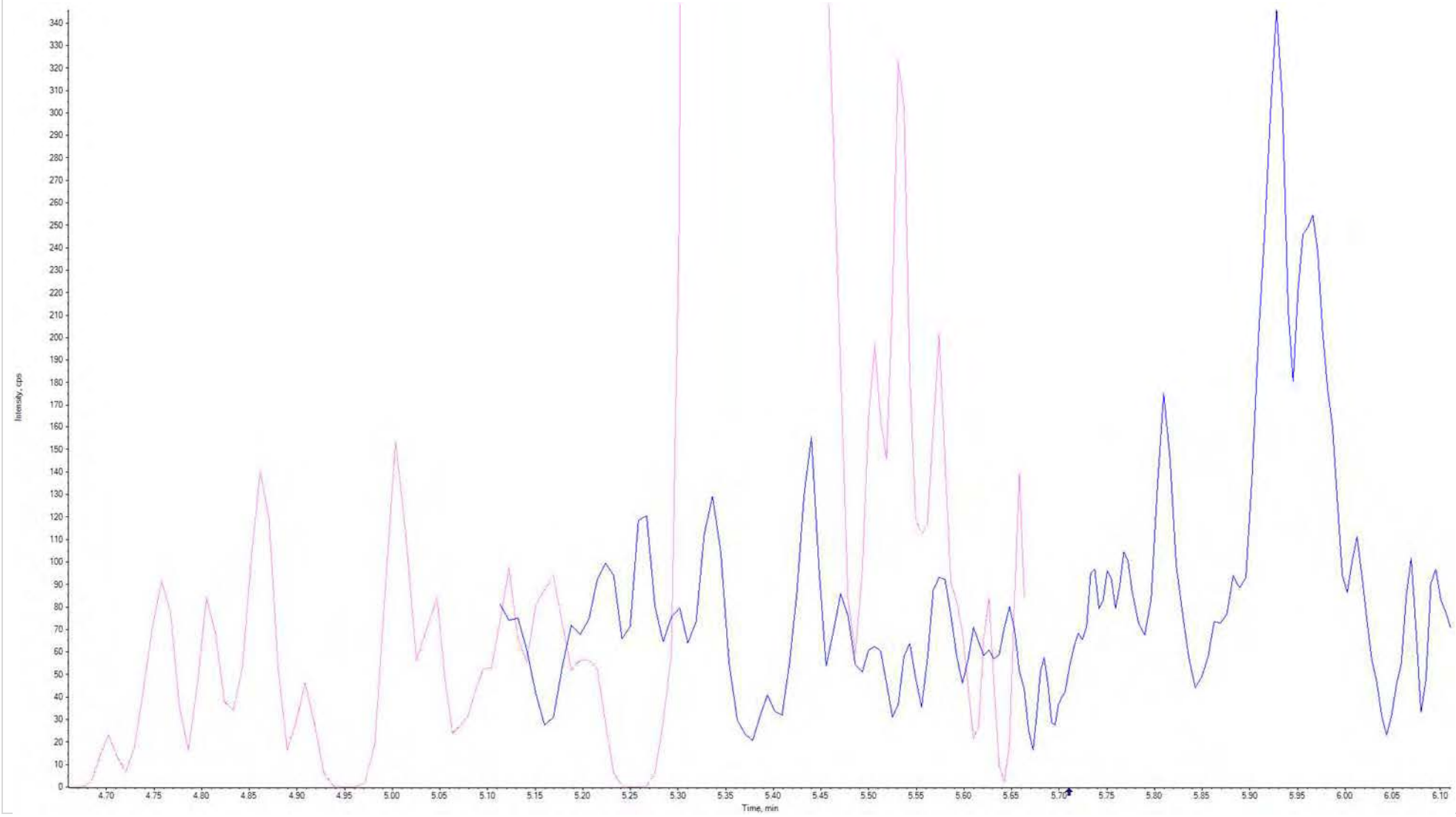

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Generated: 9/19/2024 8:04:31 AM

PFMPA
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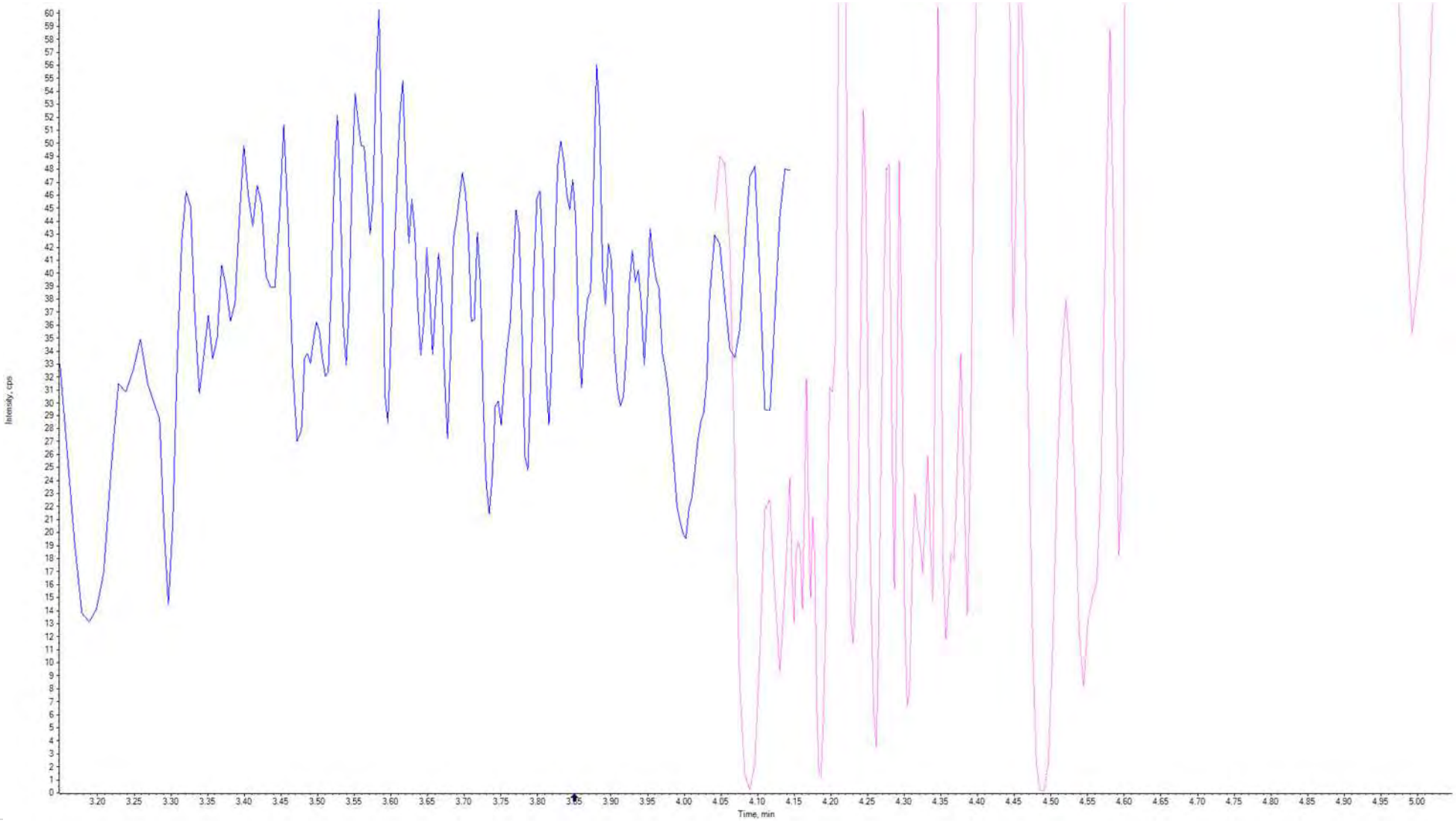

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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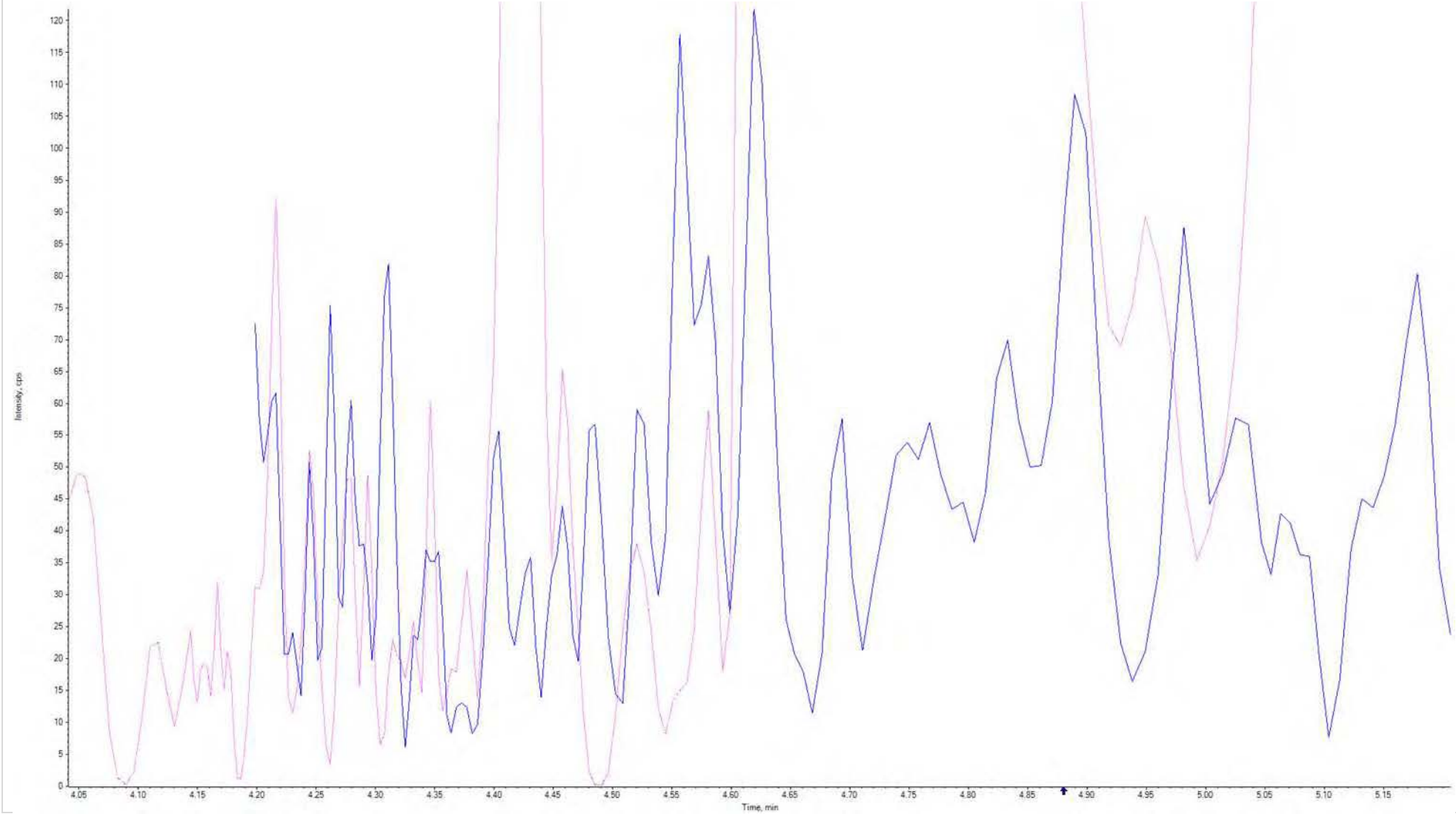

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Generated: 9/19/2024 8:04:31 AM

NFDHA
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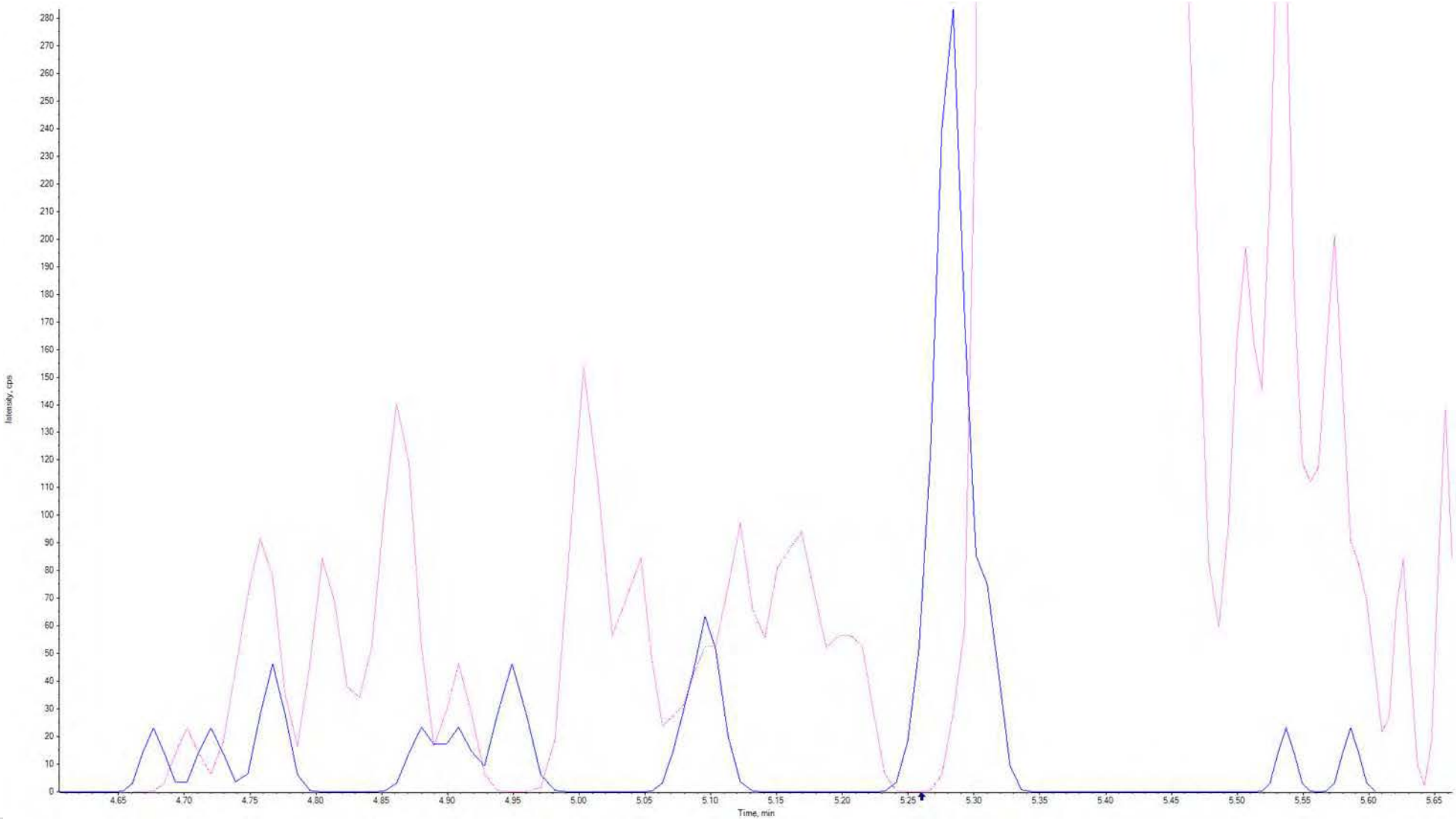

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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NFDHA_2
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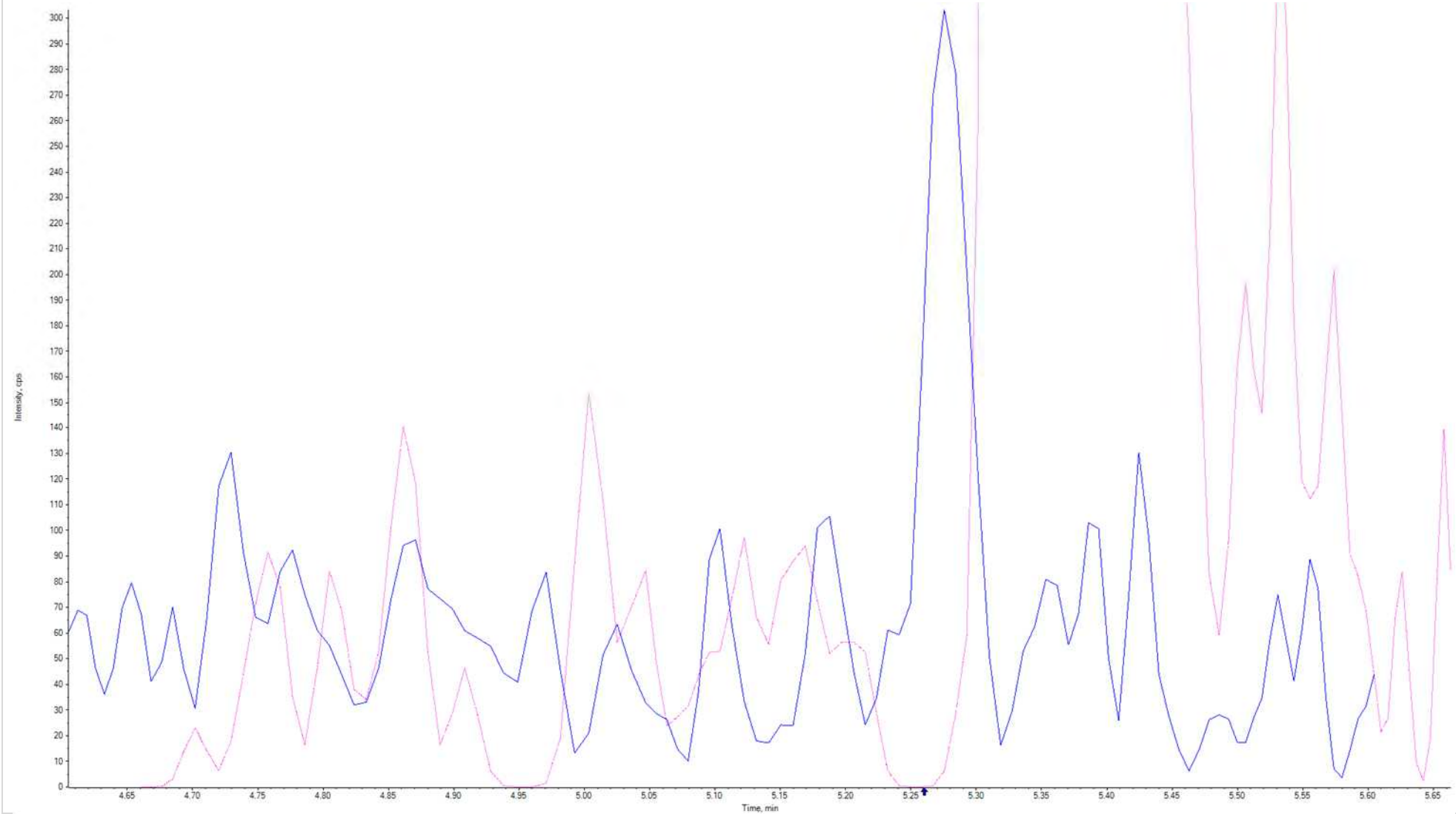

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Generated: 9/19/2024 8:04:31 AM

TDCA
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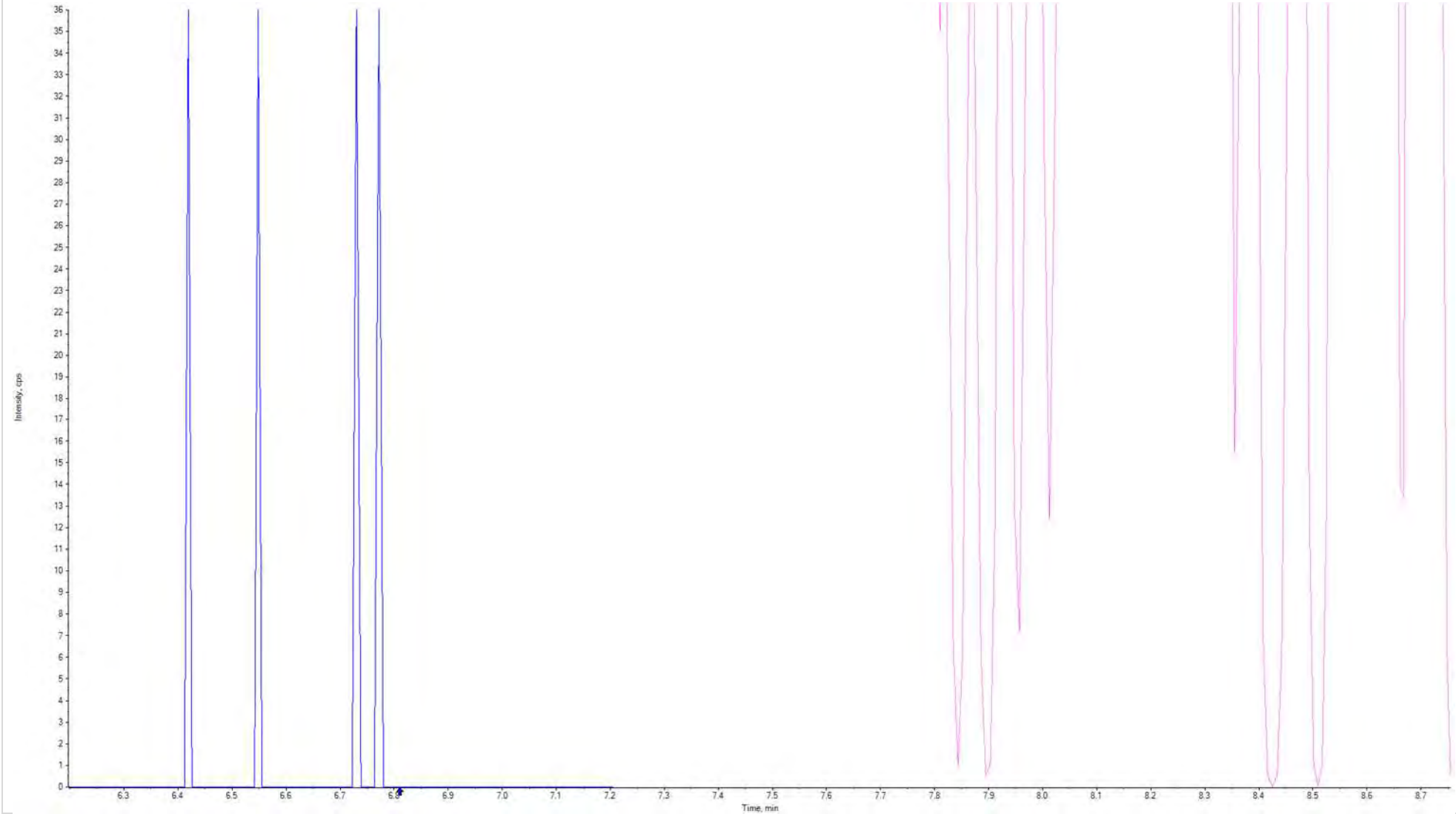

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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TDCA_2
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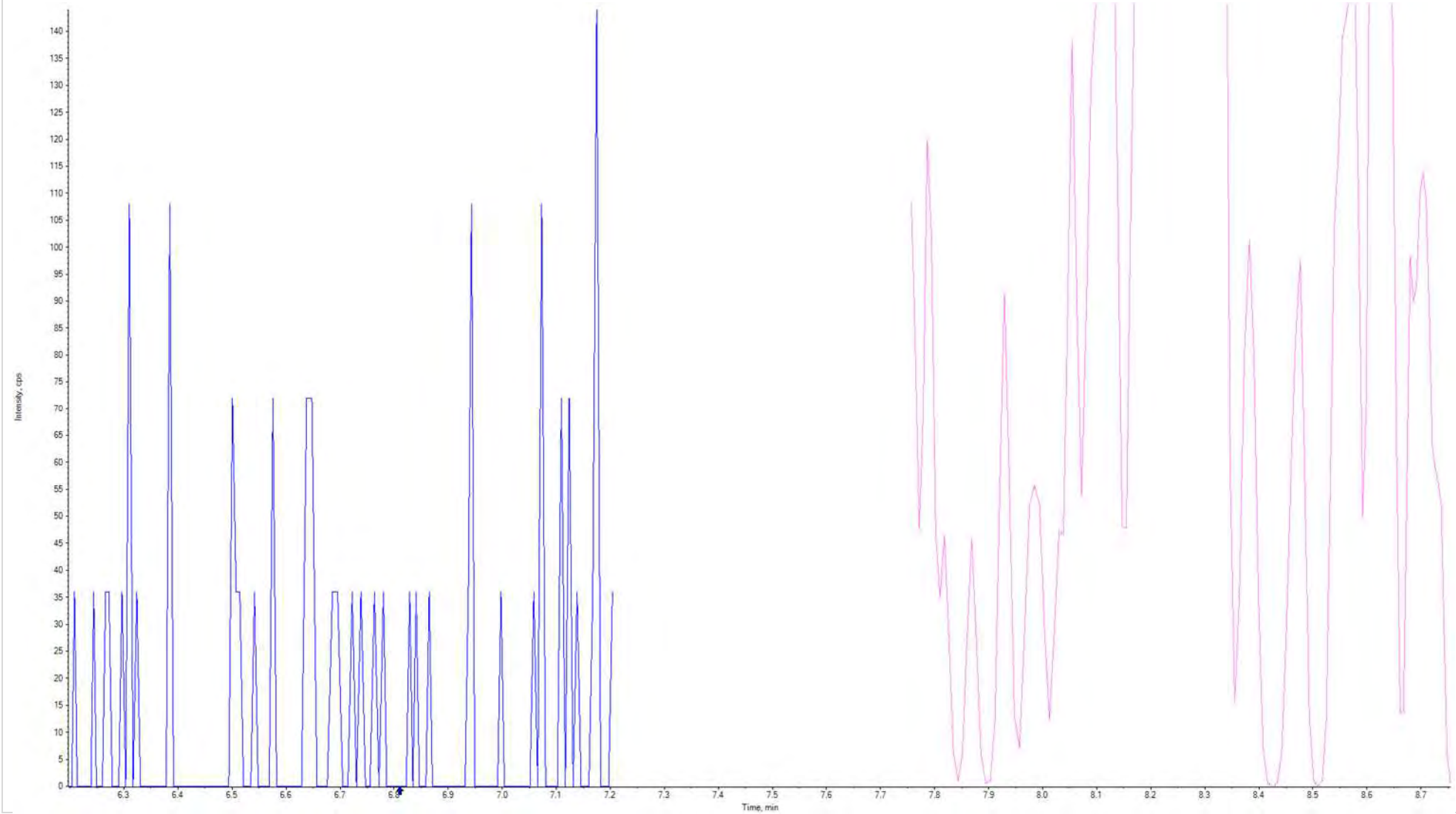

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Generated: 9/19/2024 8:04:31 AM

13C2D4-4:2FTS
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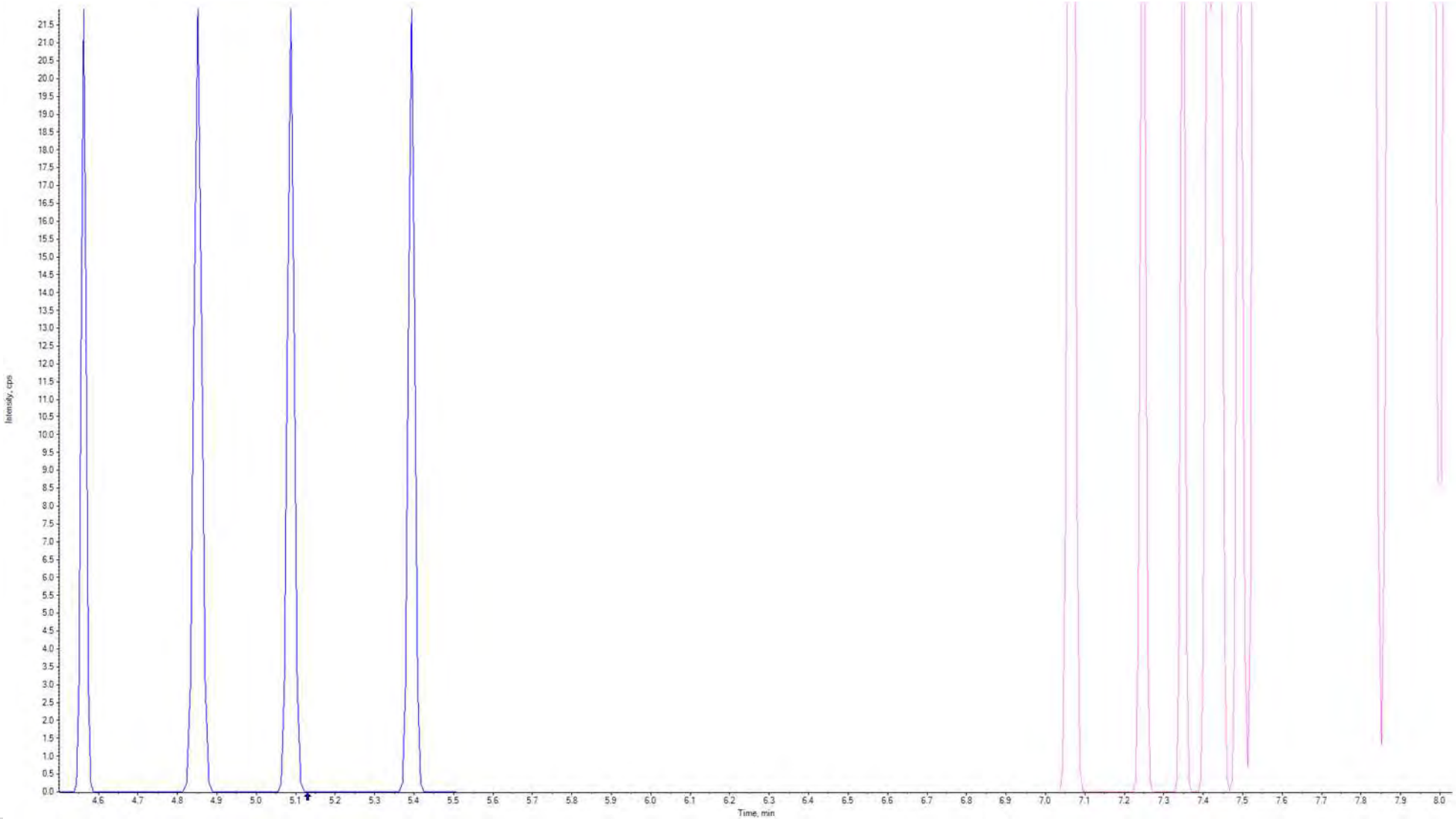

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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13C2-PFOA
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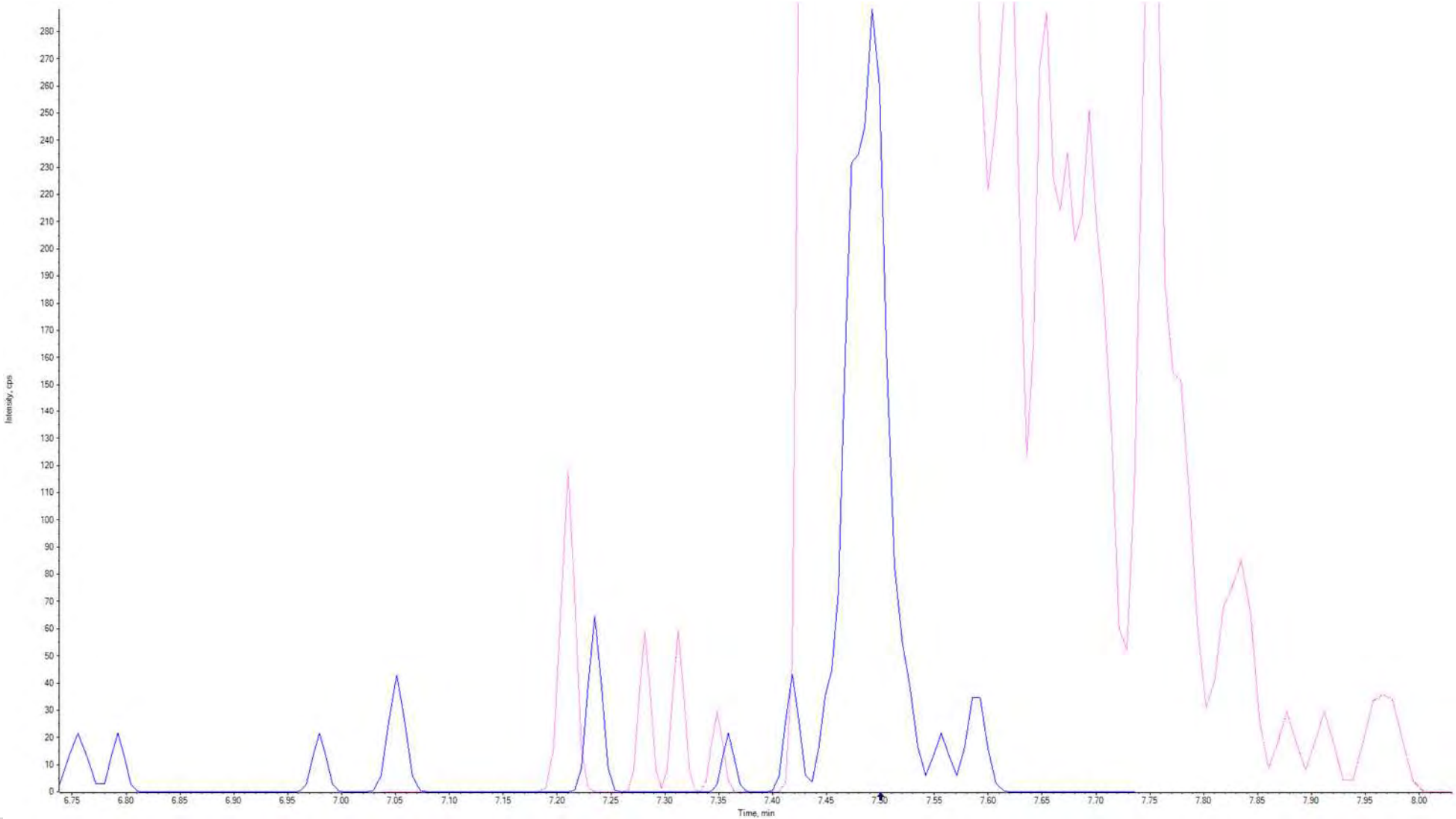
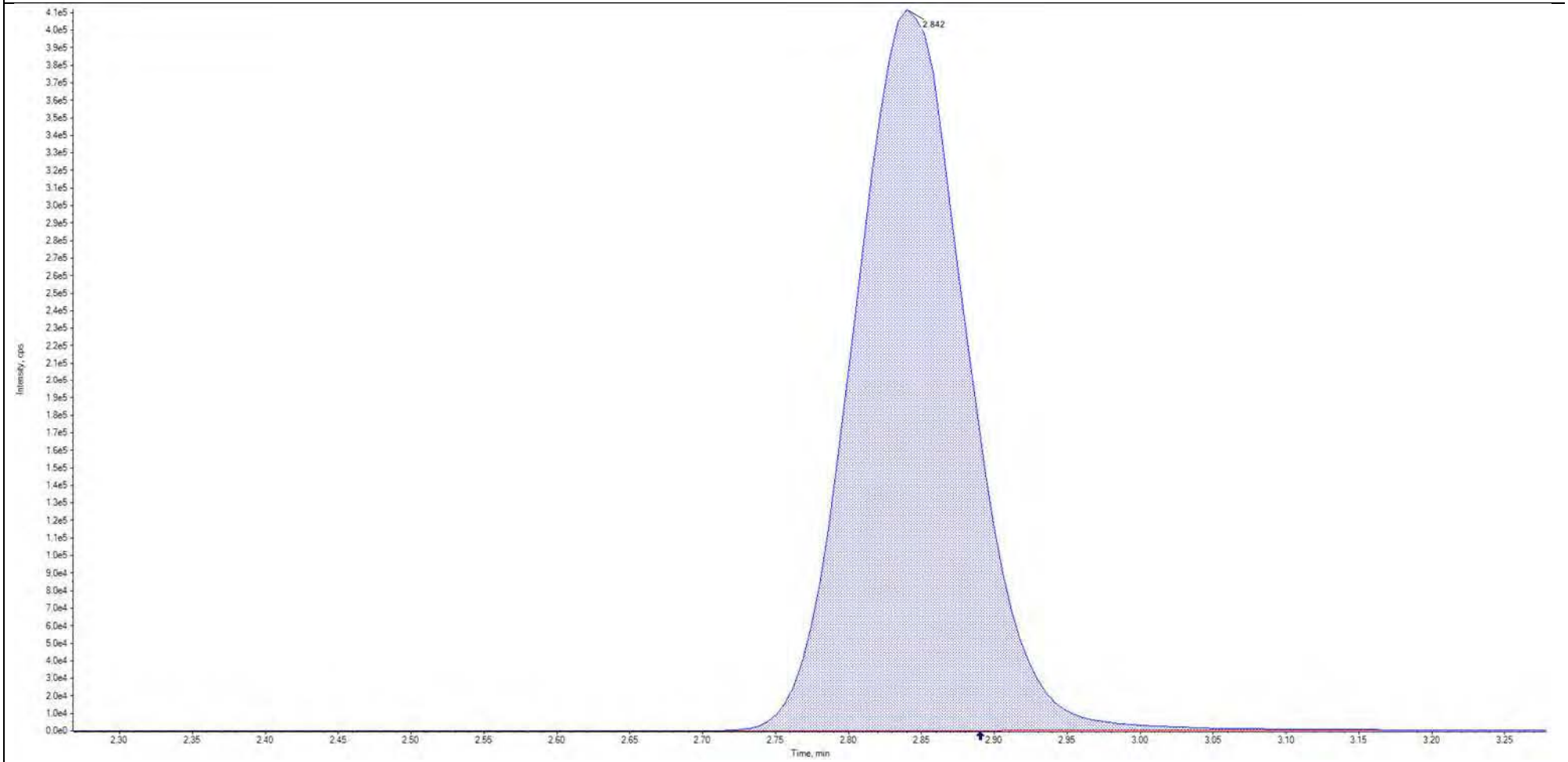


13C4-PFBA
Sample: WG1973357-1



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Generated: 9/19/2024 8:04:31 AM

13C5-PFPeA
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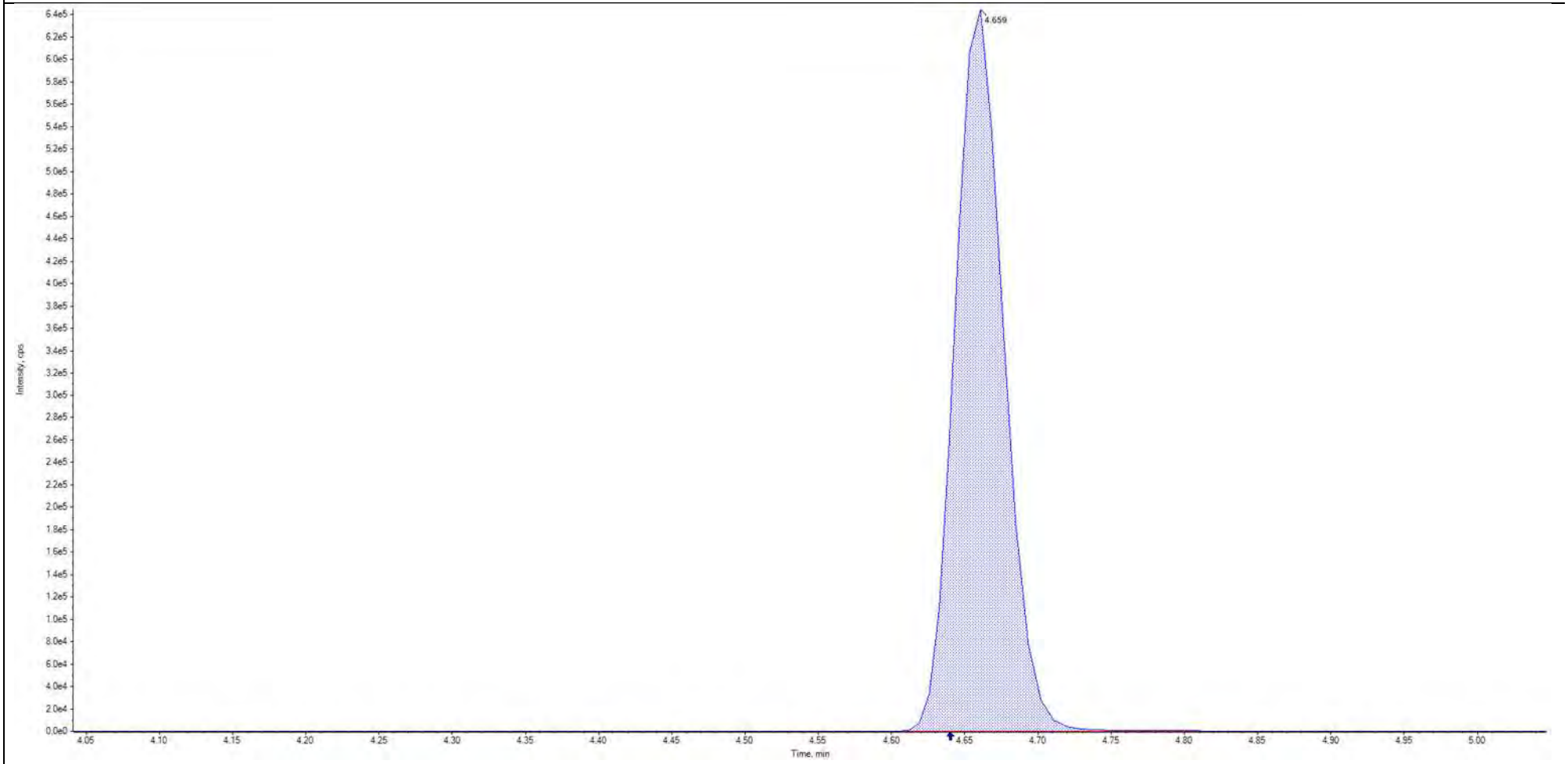

13C5-PFHxA
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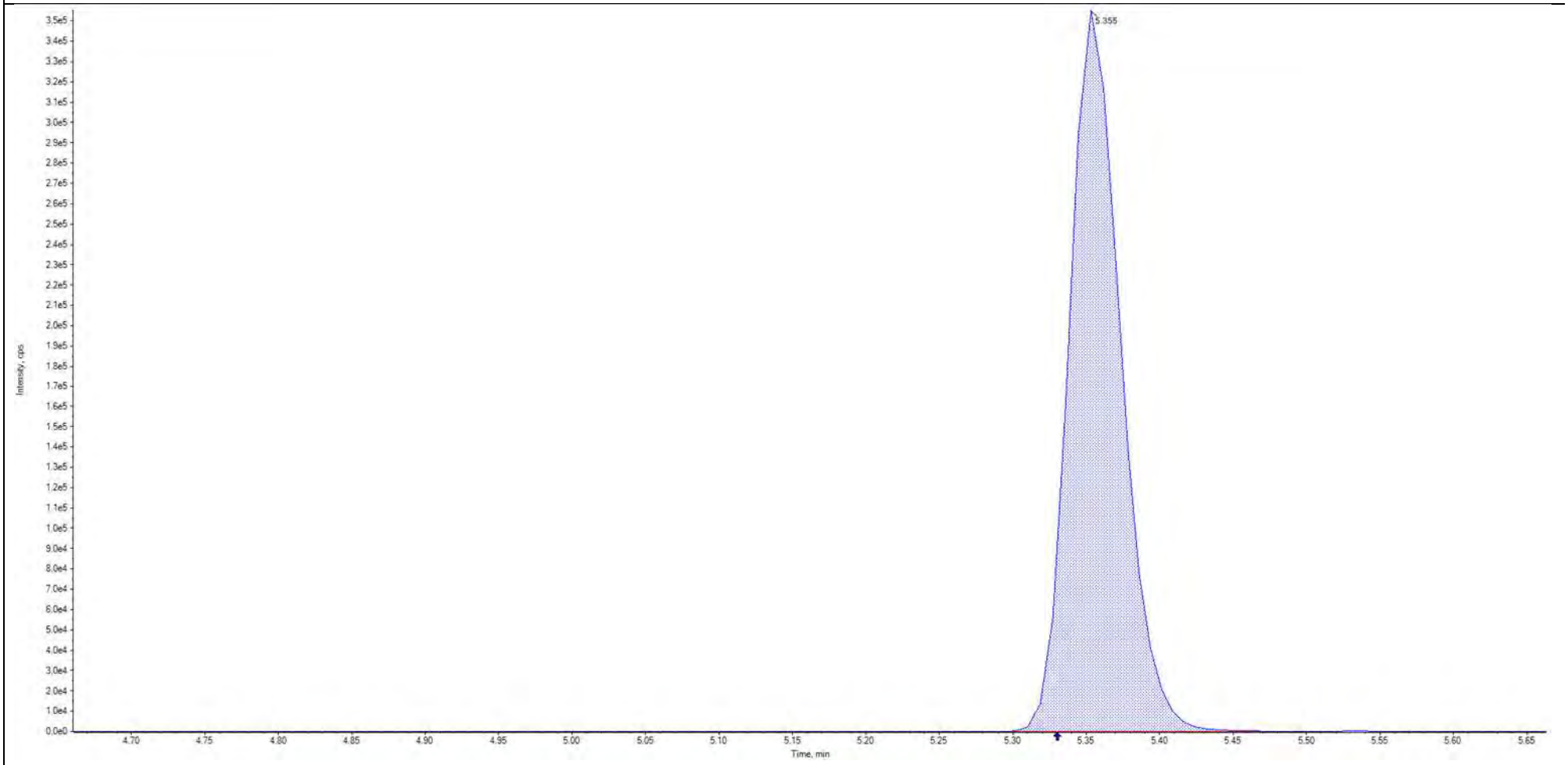

13C4-PFHpA
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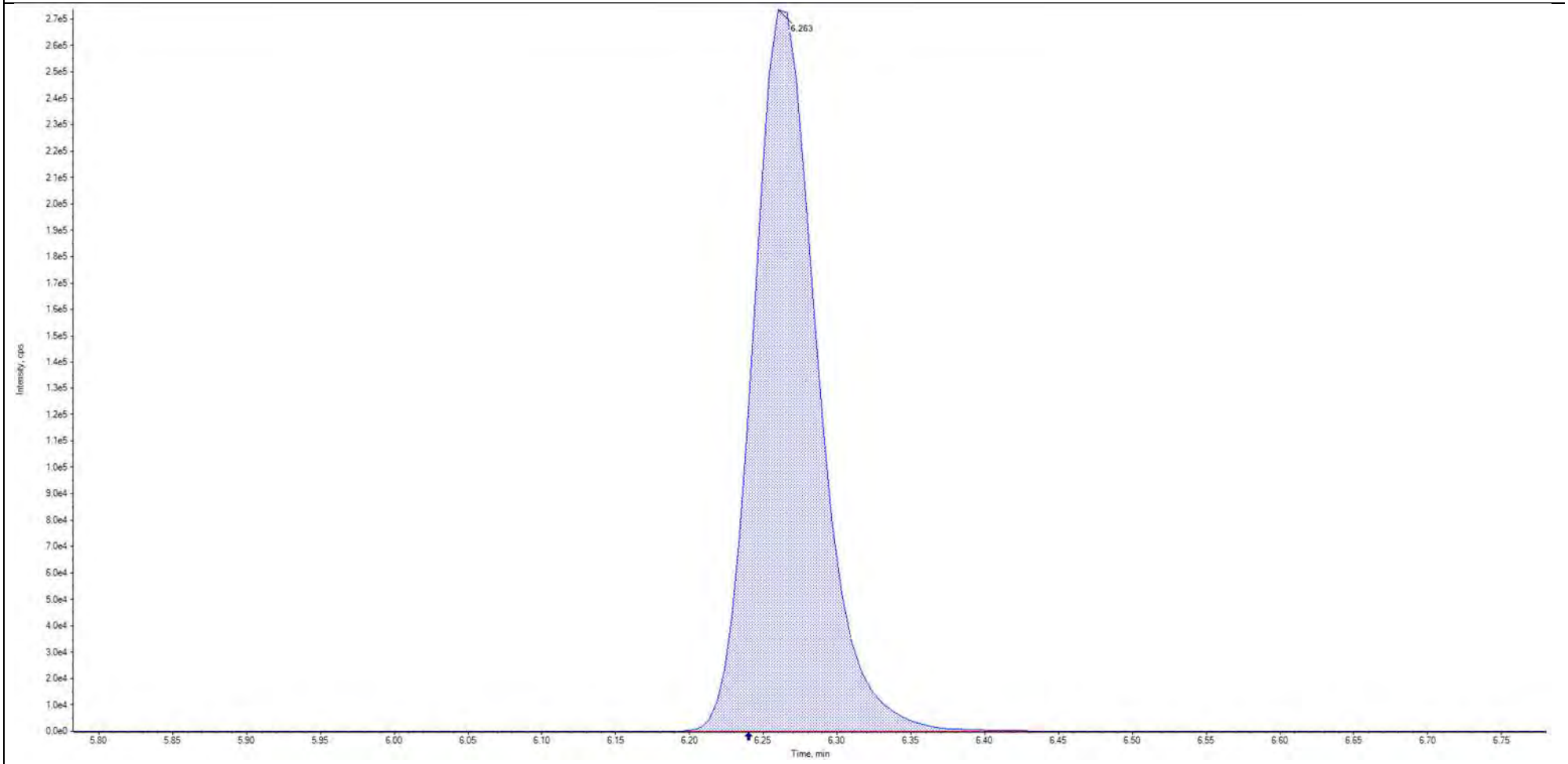

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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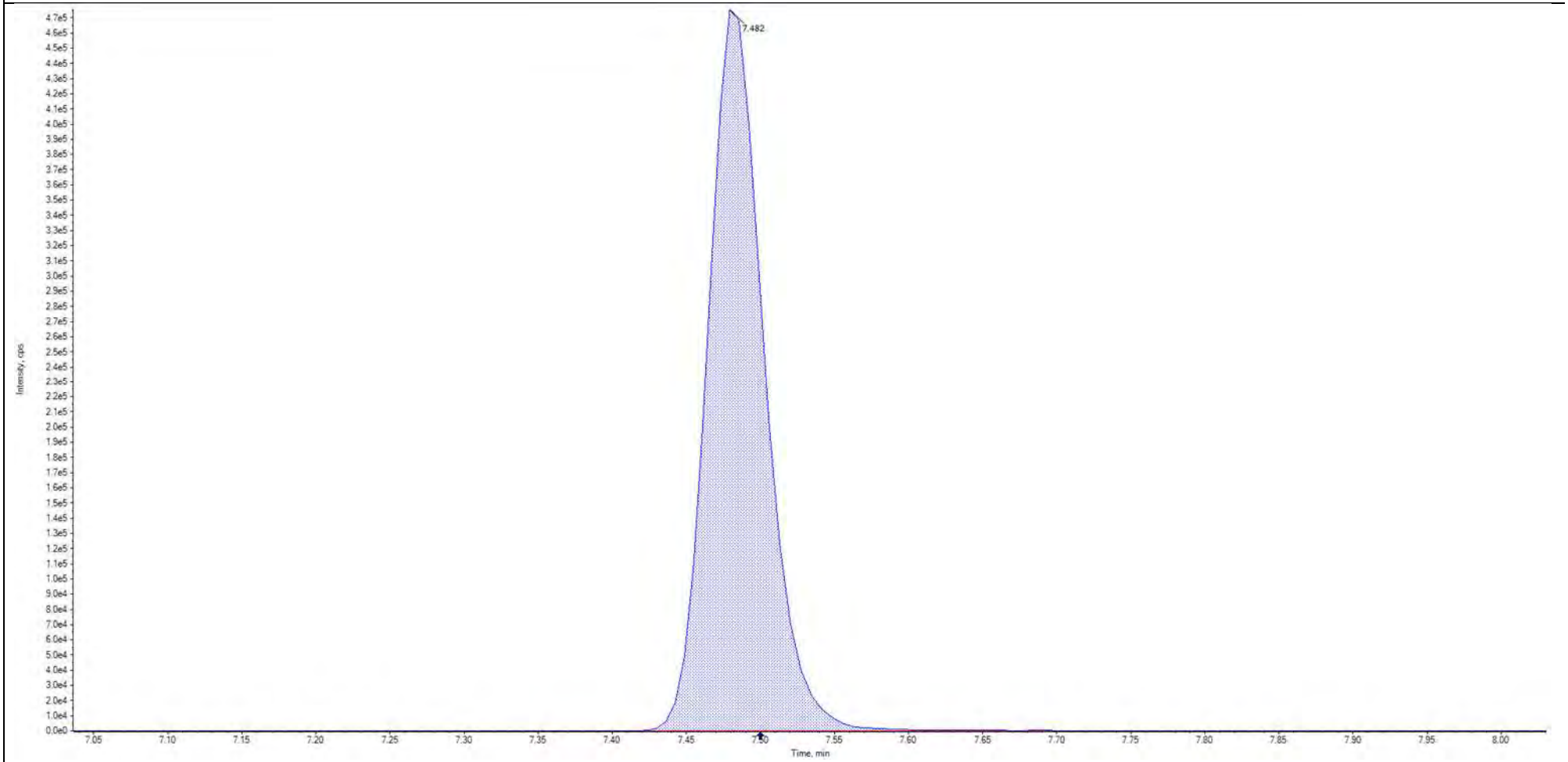
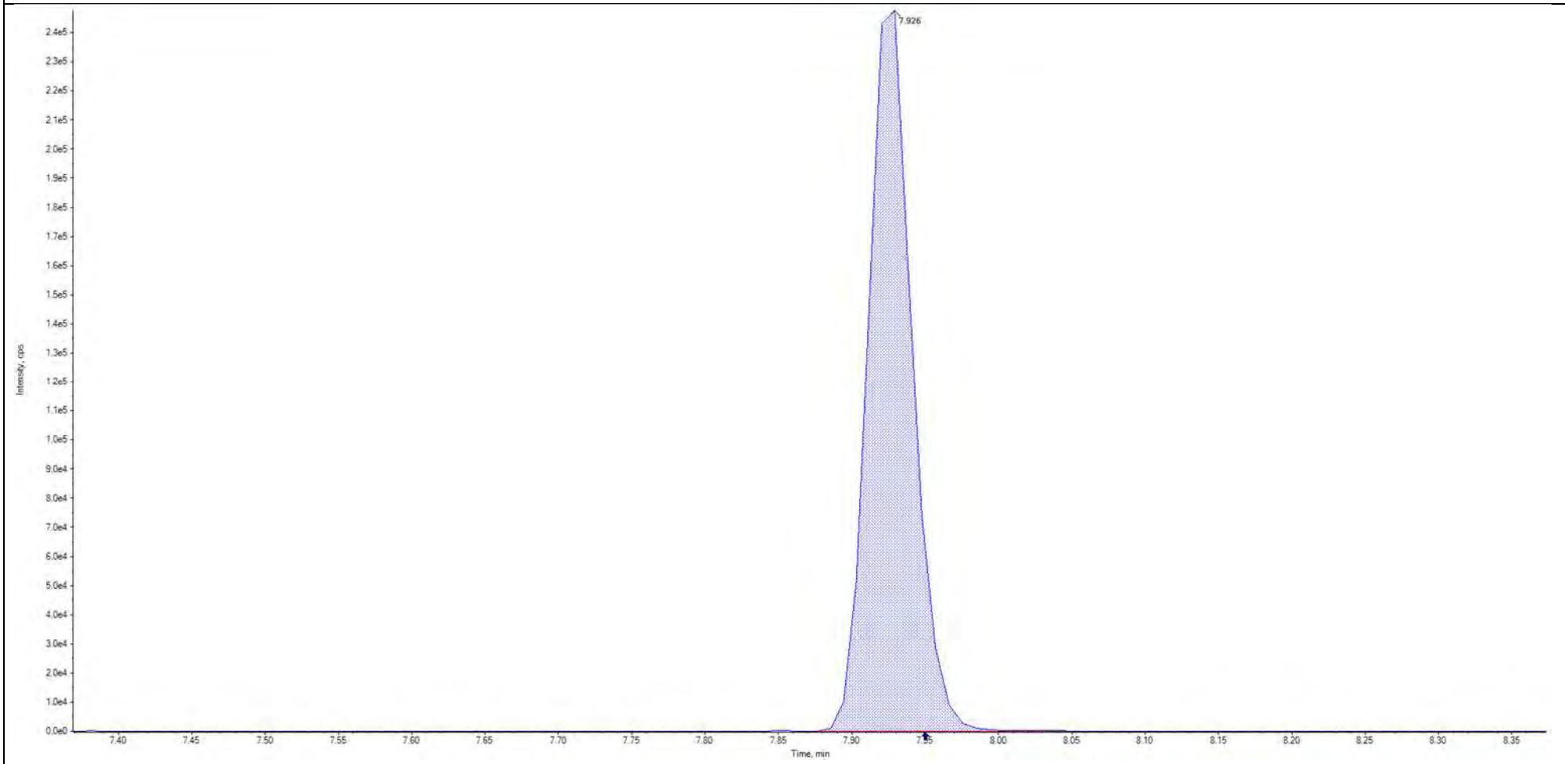
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C8-PFOA
Sample: WG1973357-1



13C9-PFNA
Sample: WG1973357-1



13C6-PFDA
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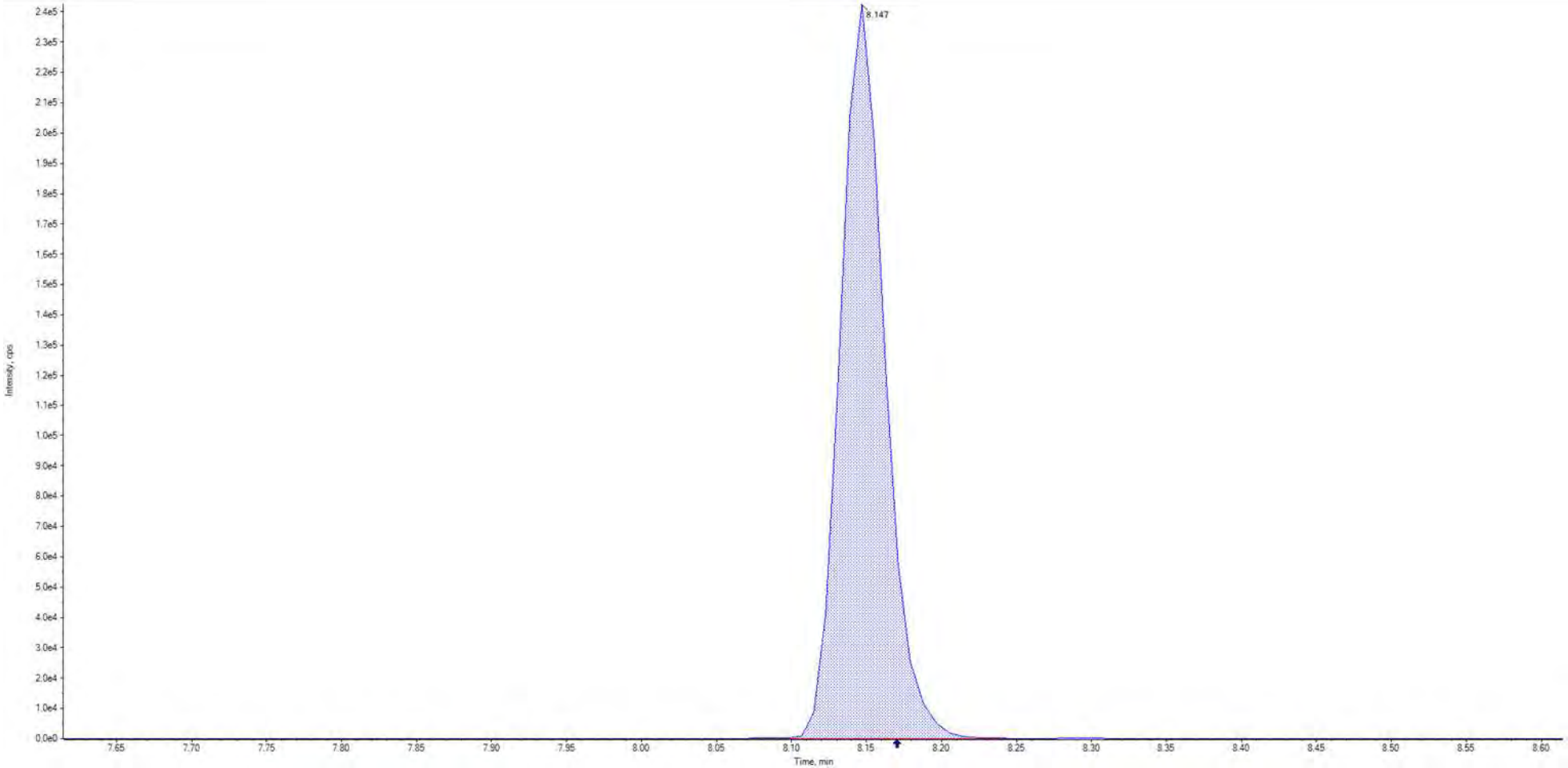
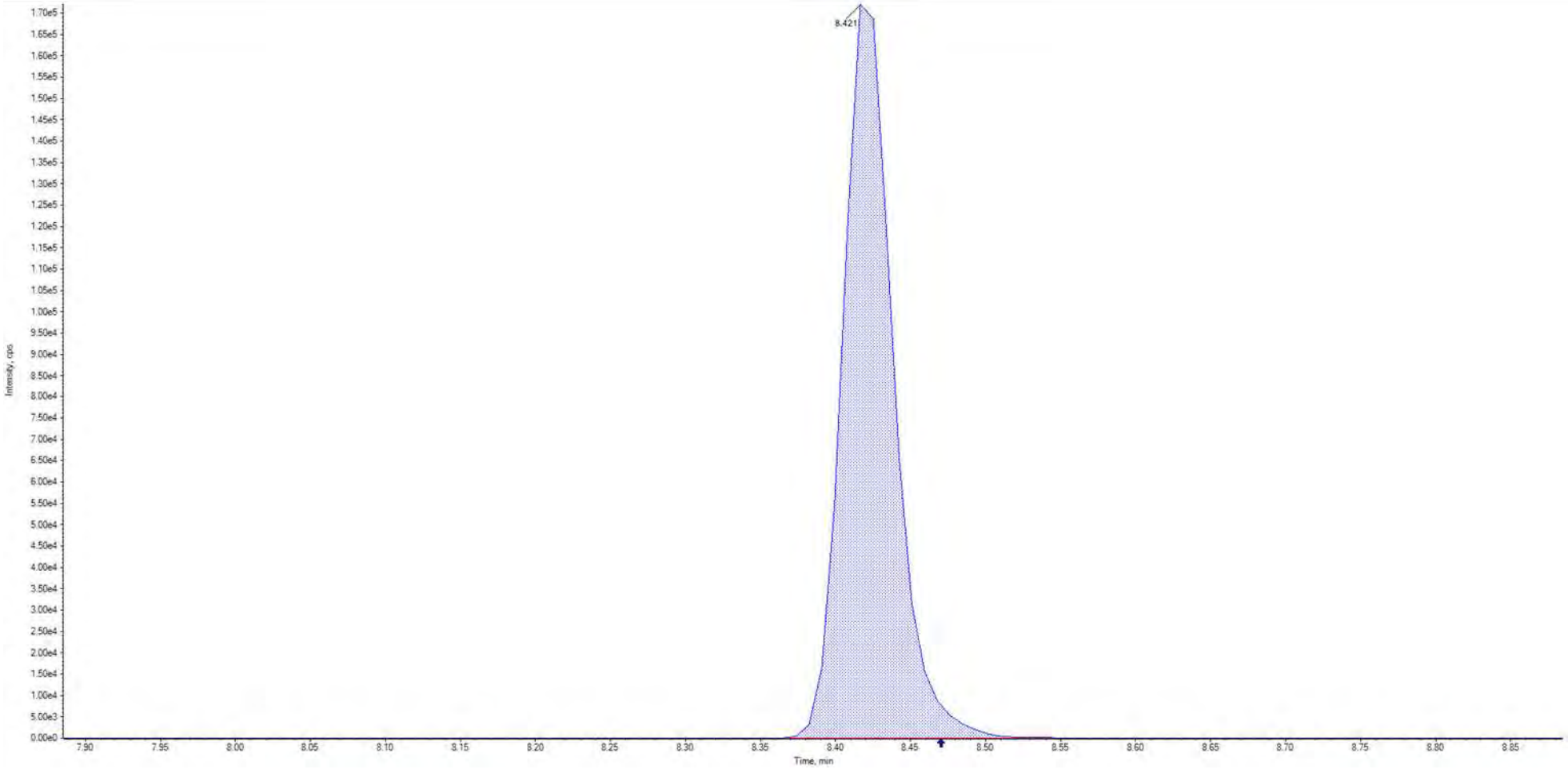


13C7-PFUnA
Sample: WG1973357-1



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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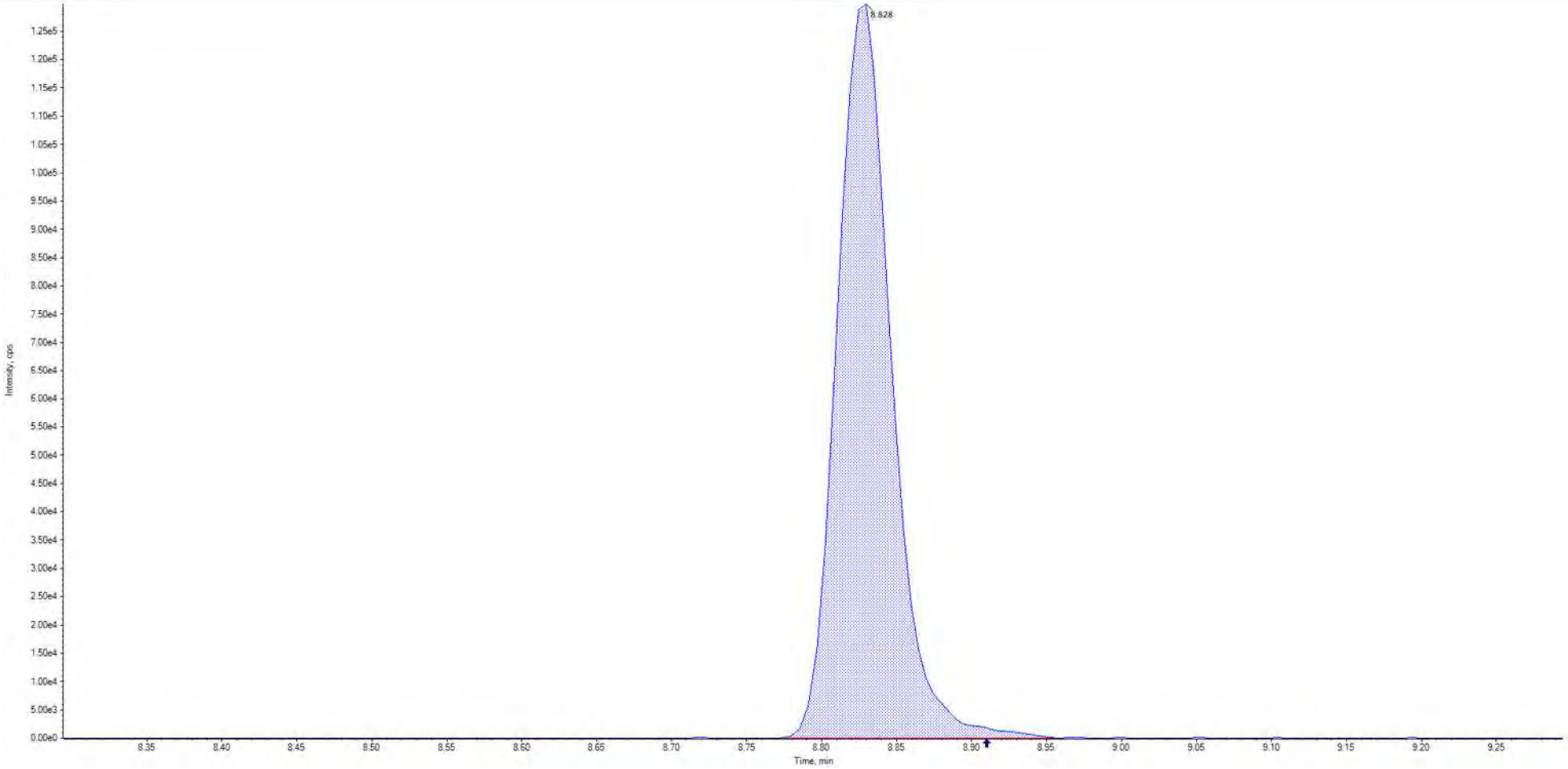
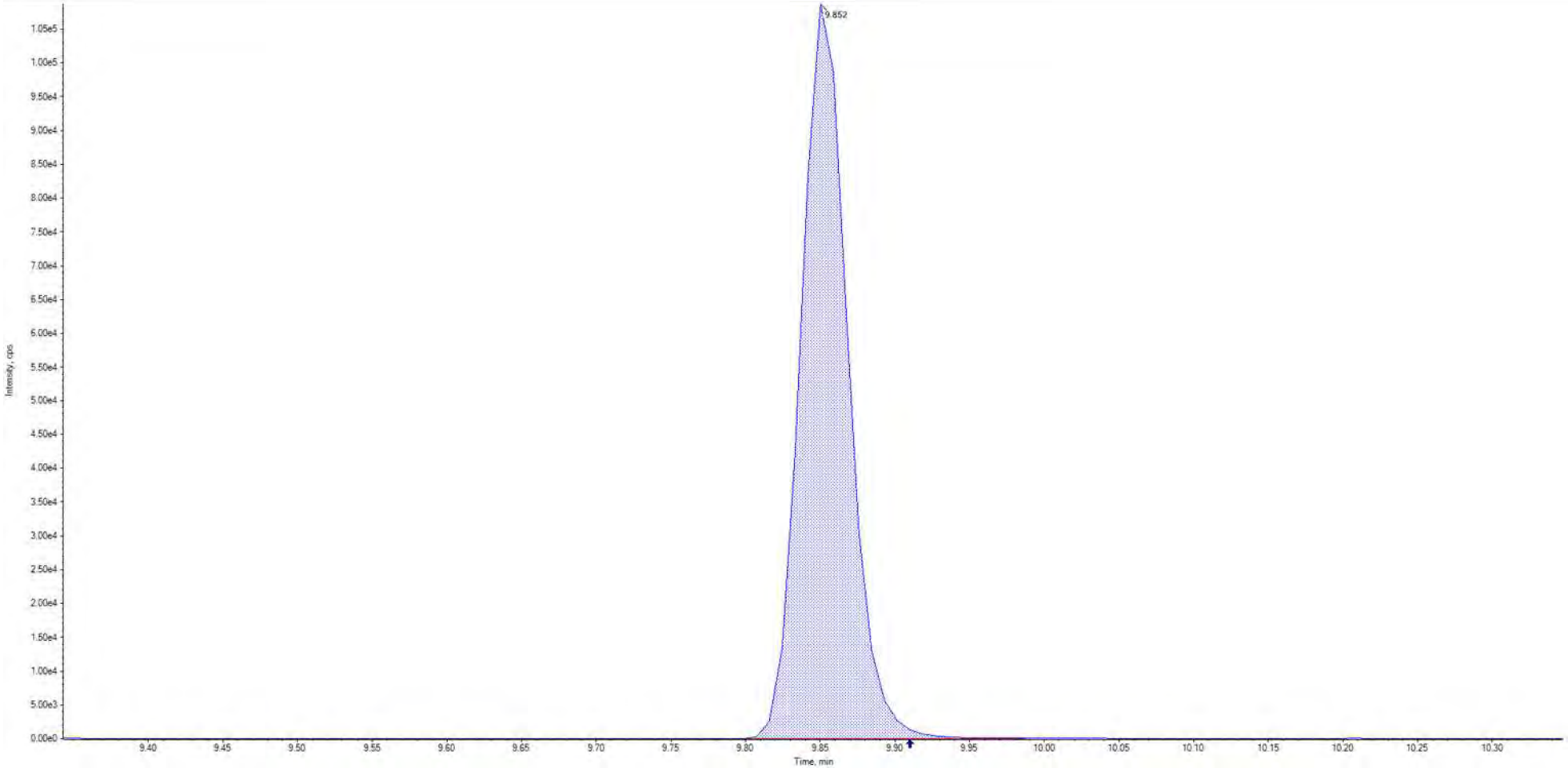
Generated: 9/19/2024 8:04:31 AM

13C2-PFDoA
Sample: WG1973357-1



13C2-PFTeDA
Sample: WG1973357-1



13C3-PFBS
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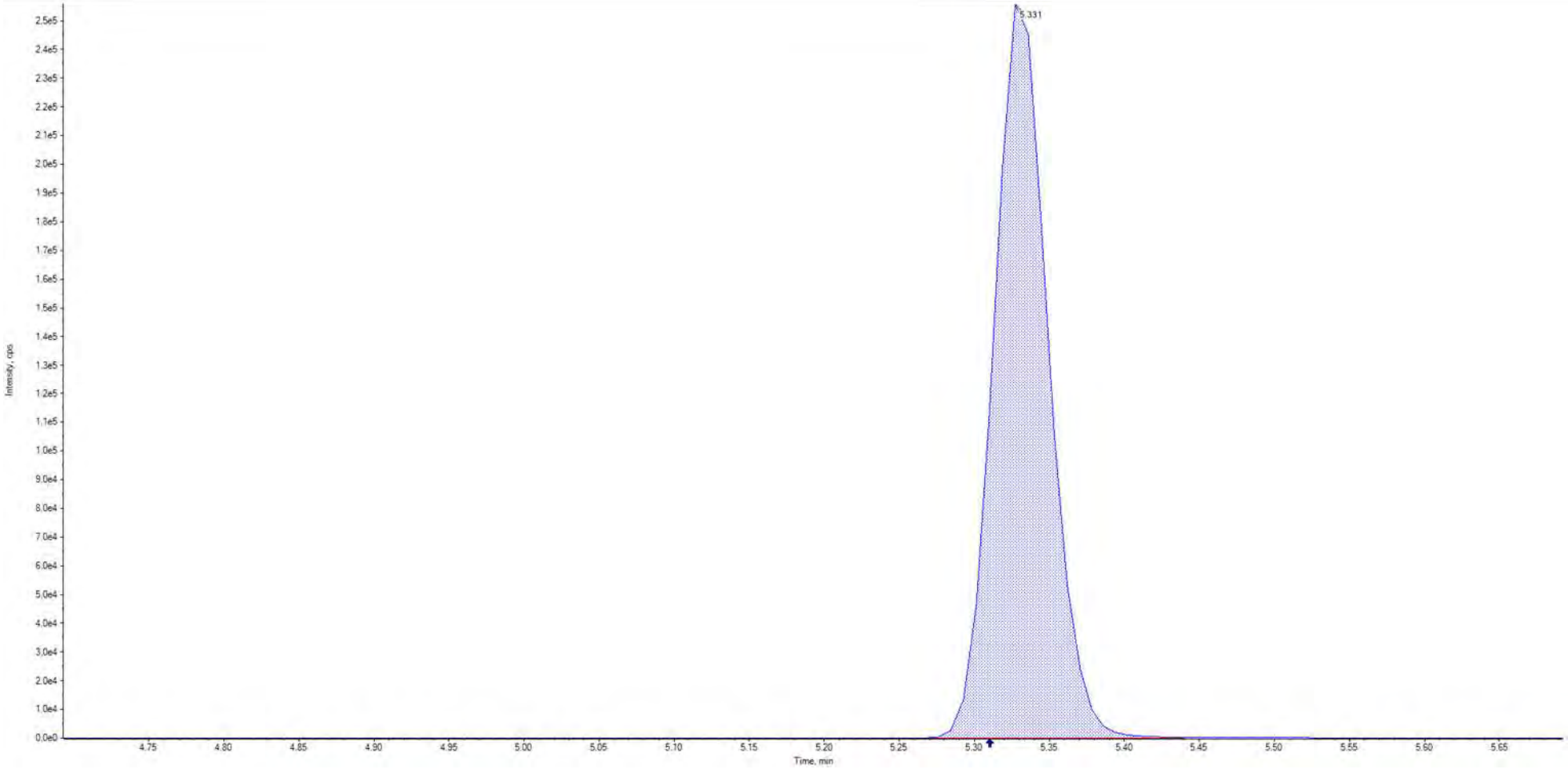
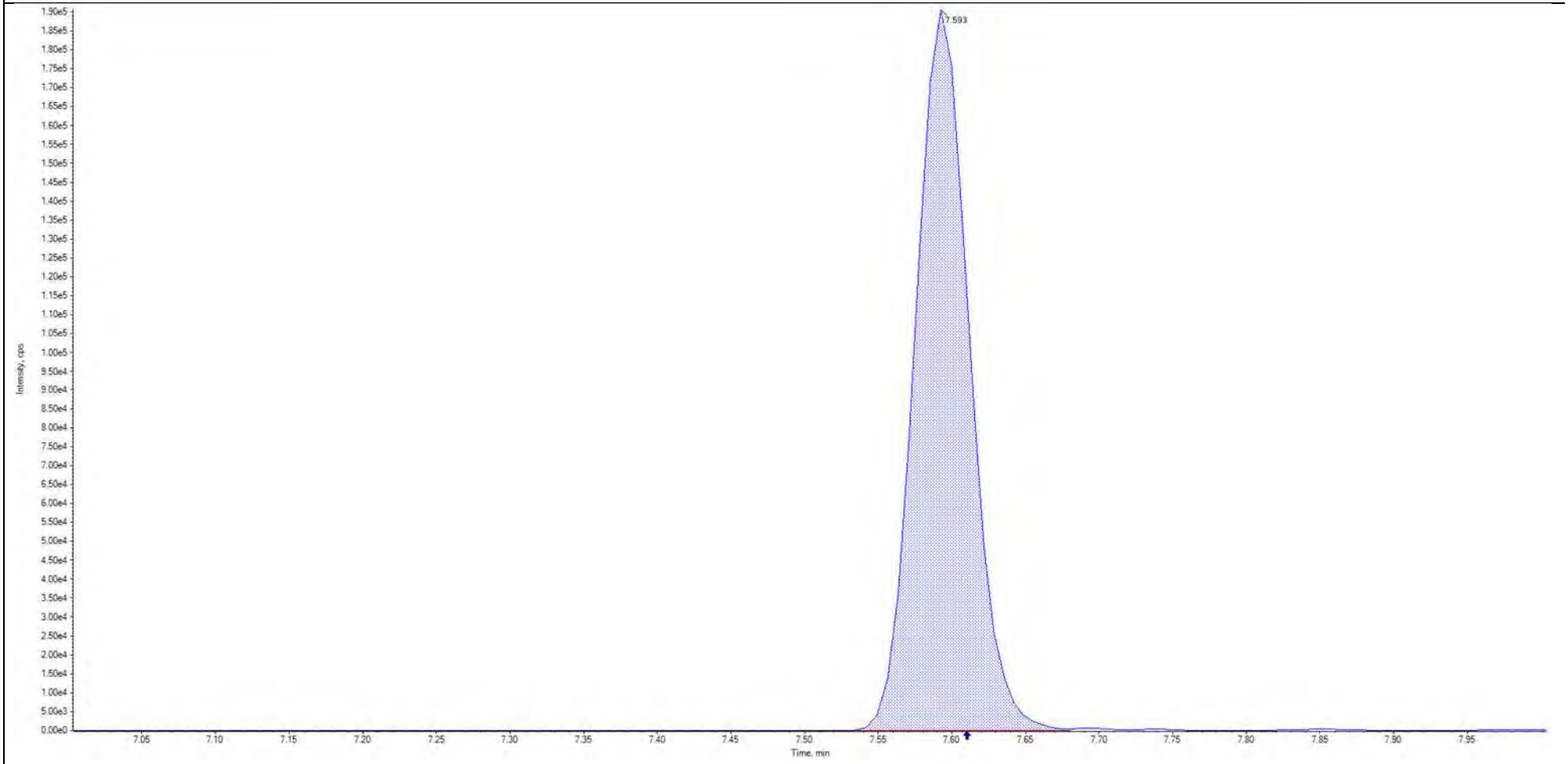


13C3-PFHxS
Sample: WG1973357-1



13C8-PFOS
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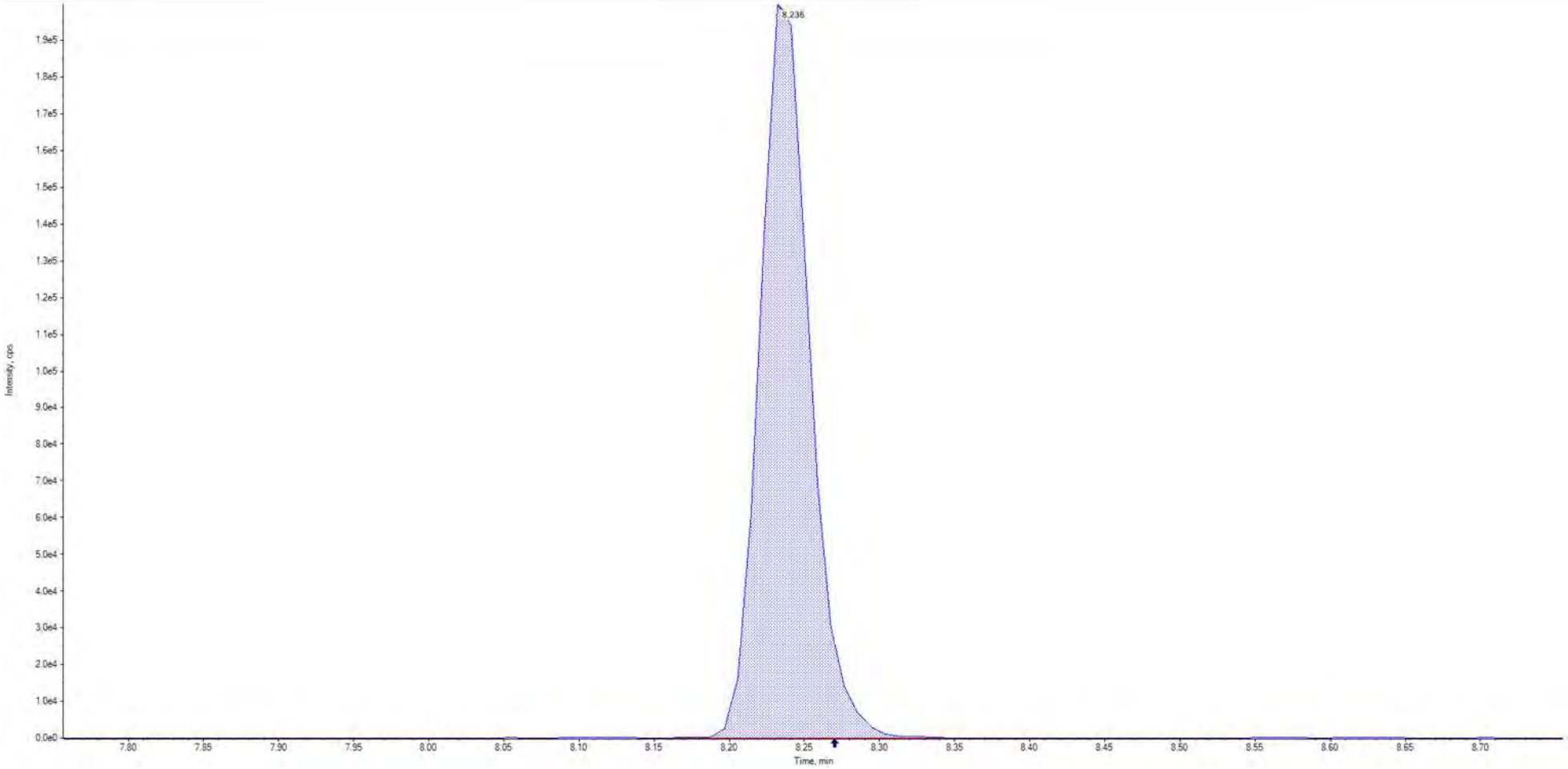
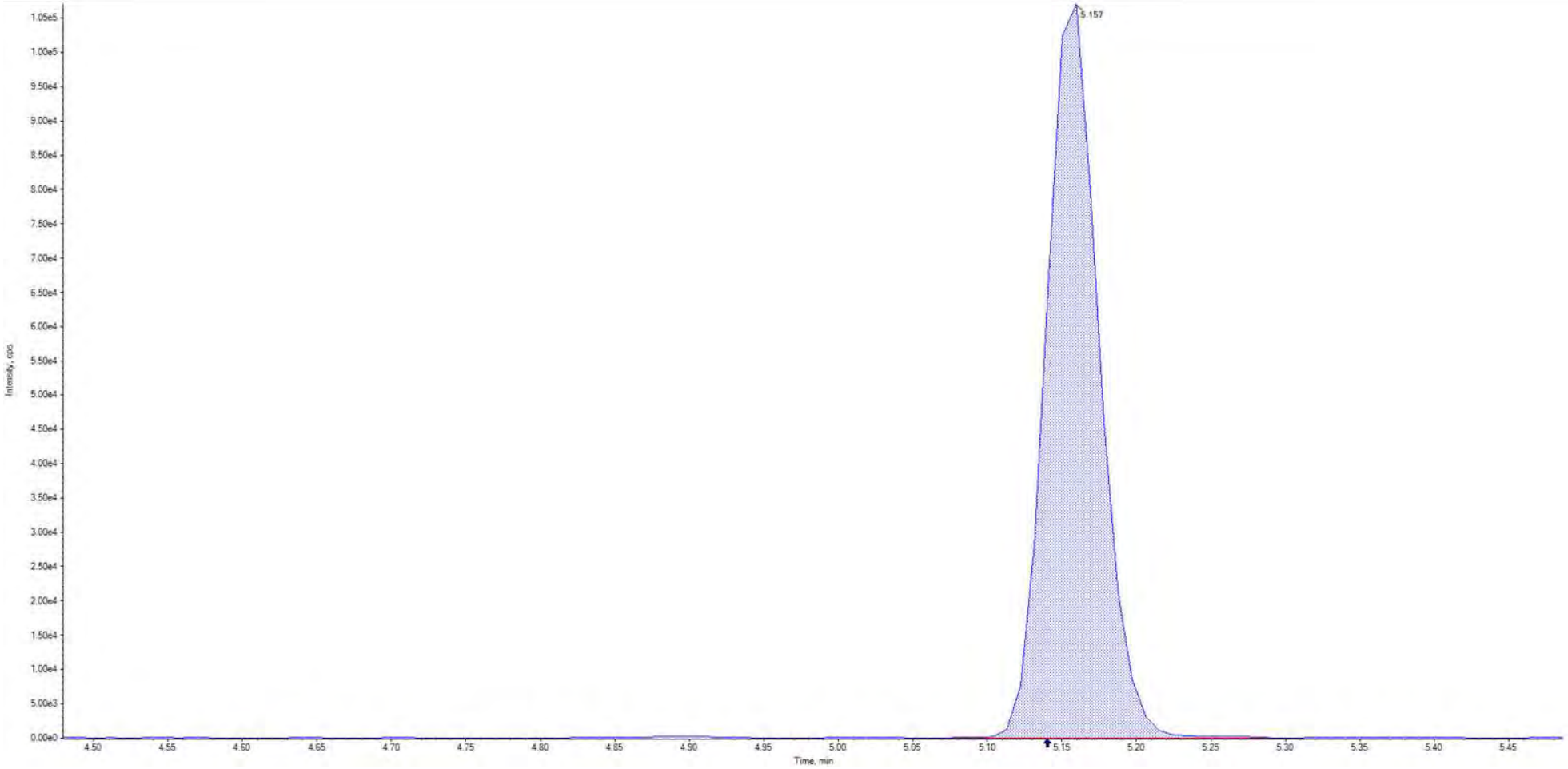


13C2-4:2FTS
Sample: WG1973357-1



13C2-6:2FTS
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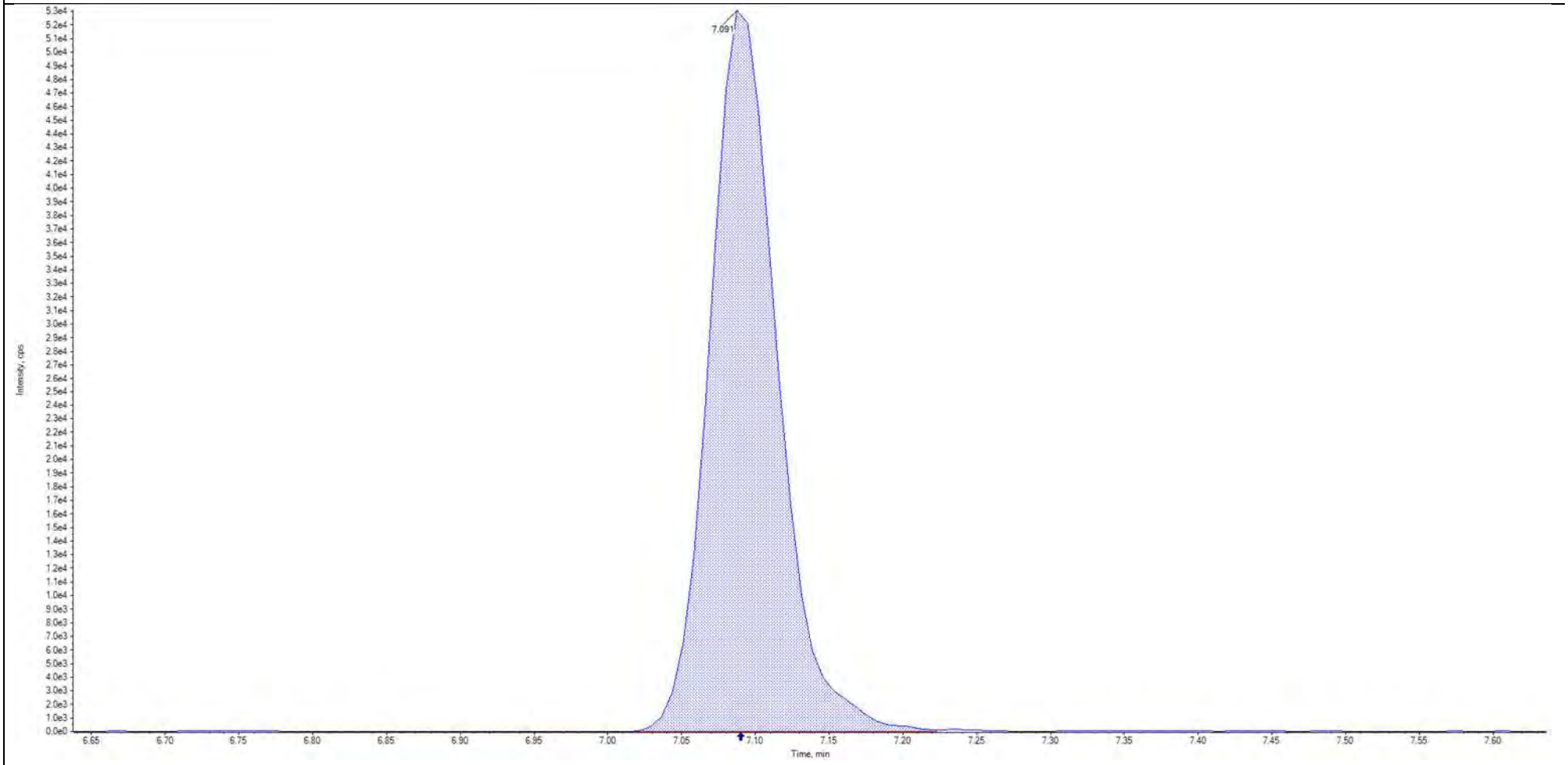
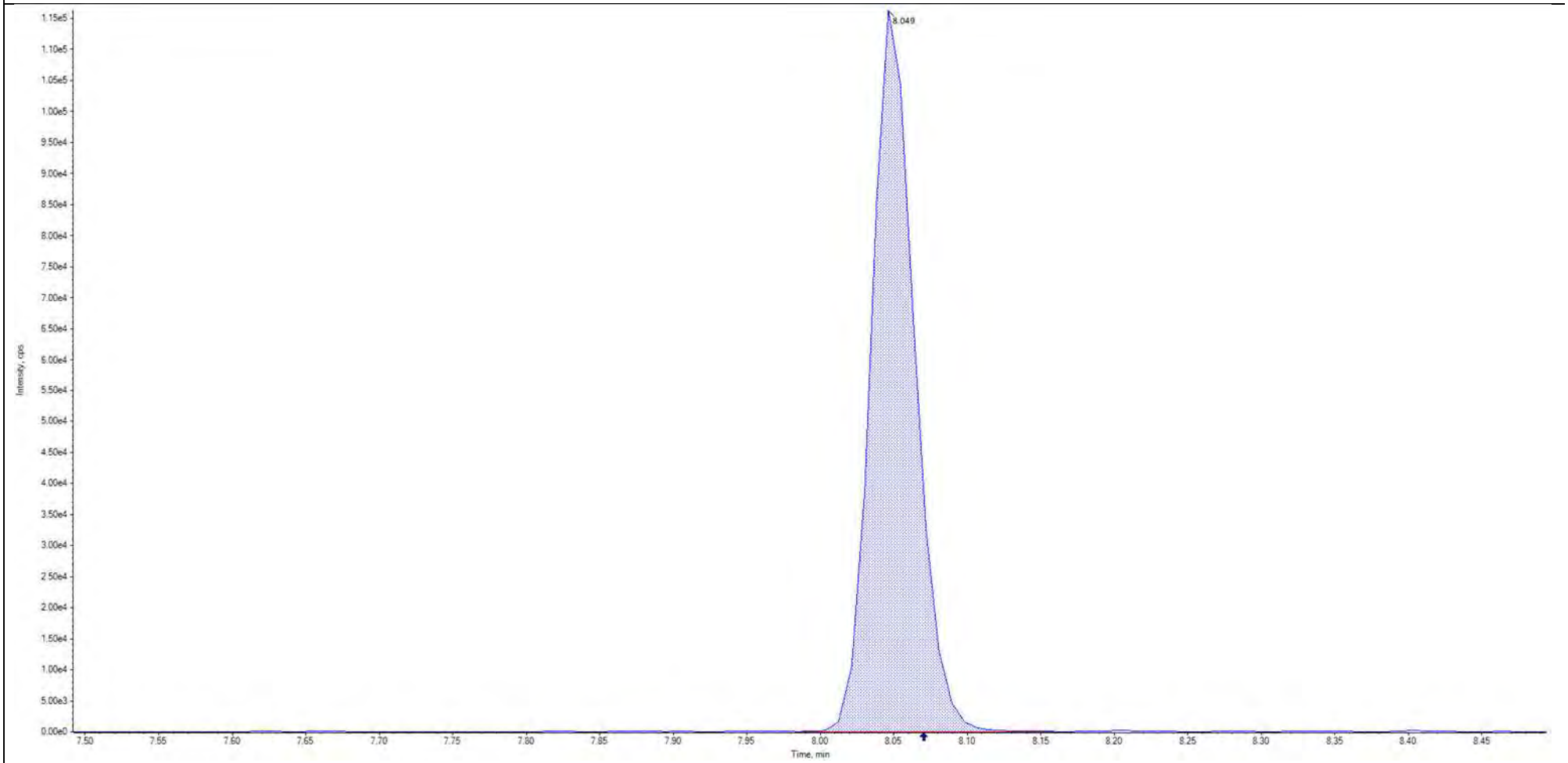
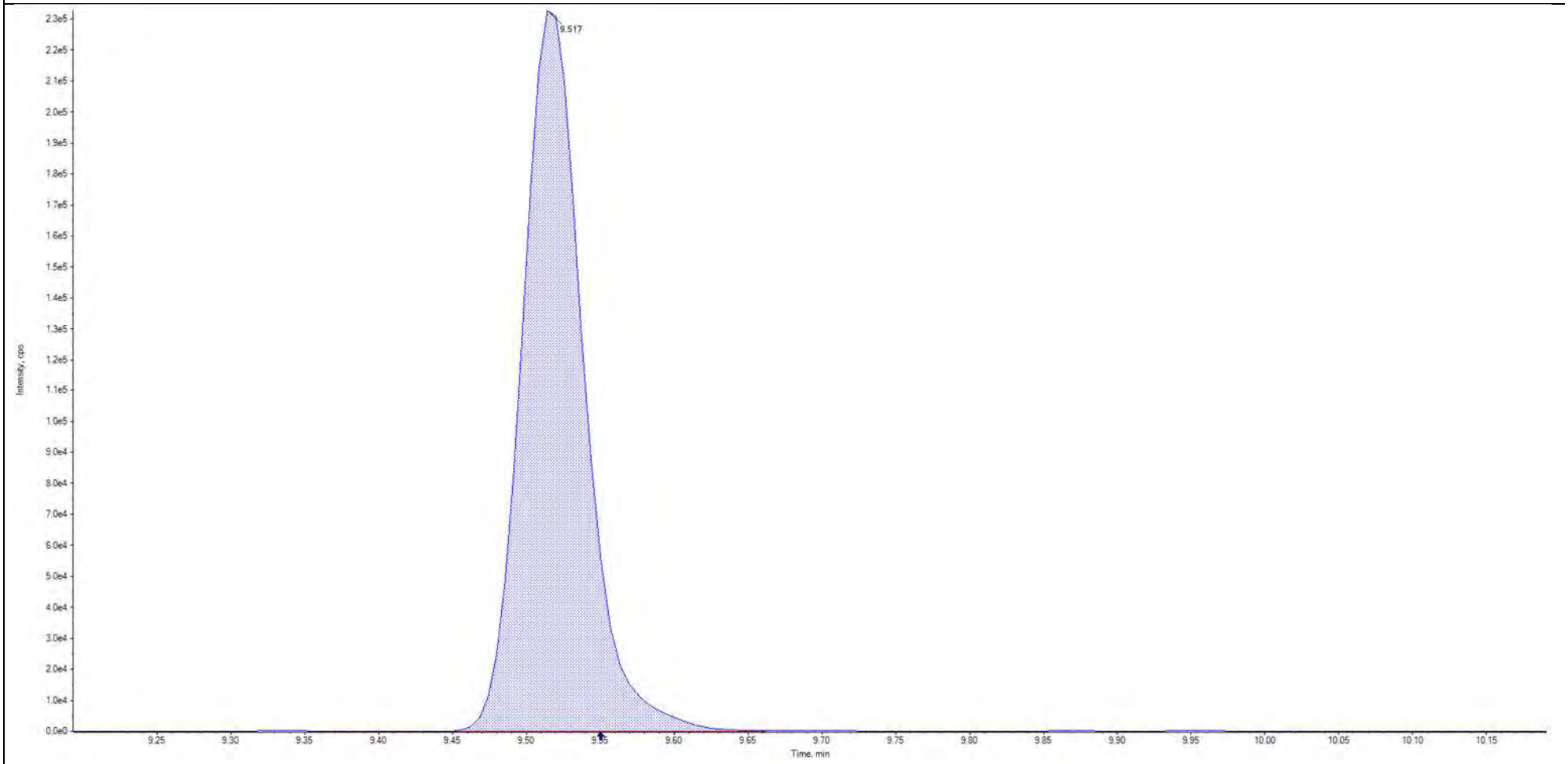


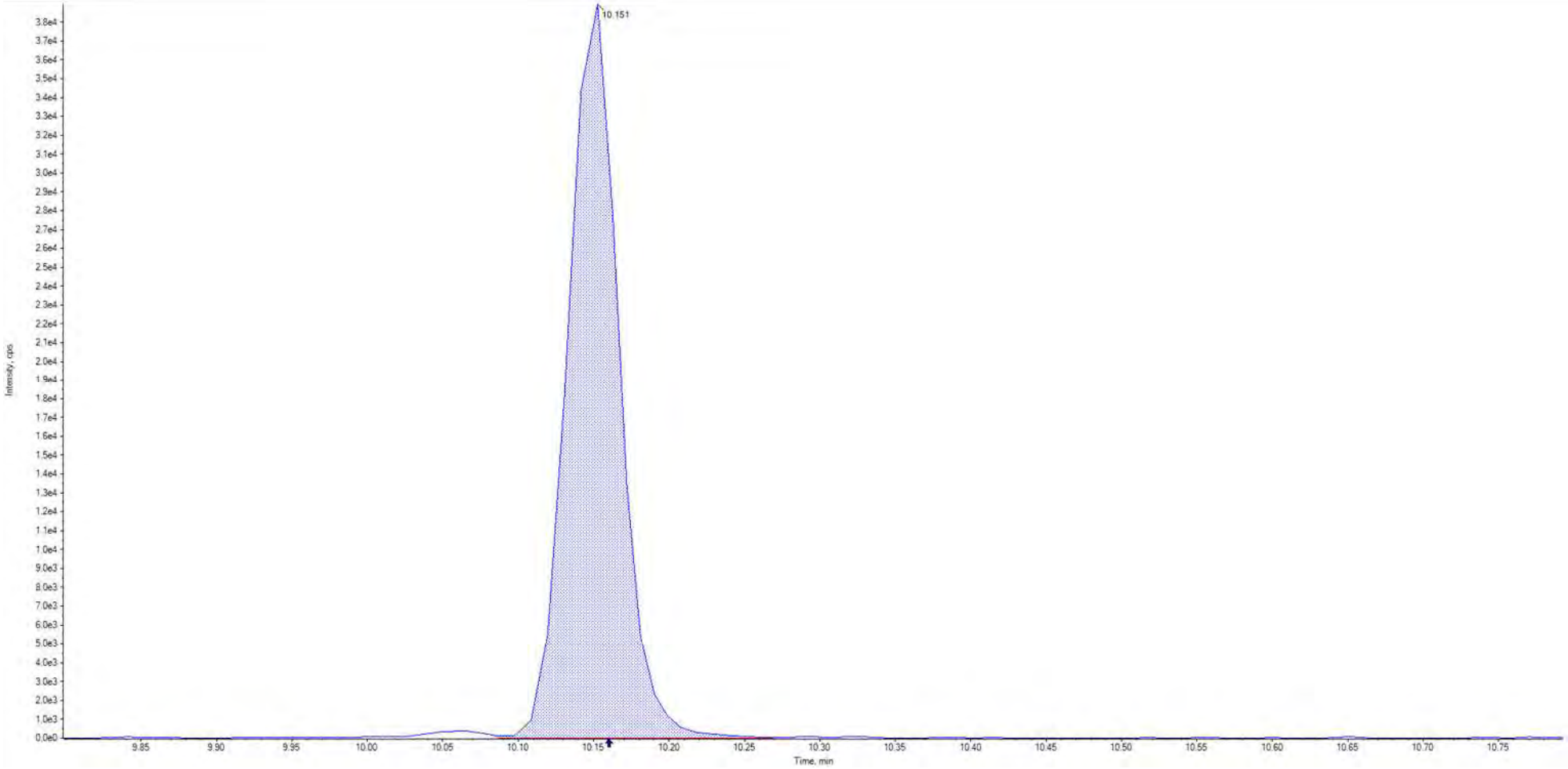
13C2-8:2FTS
Sample: WG1973357-1



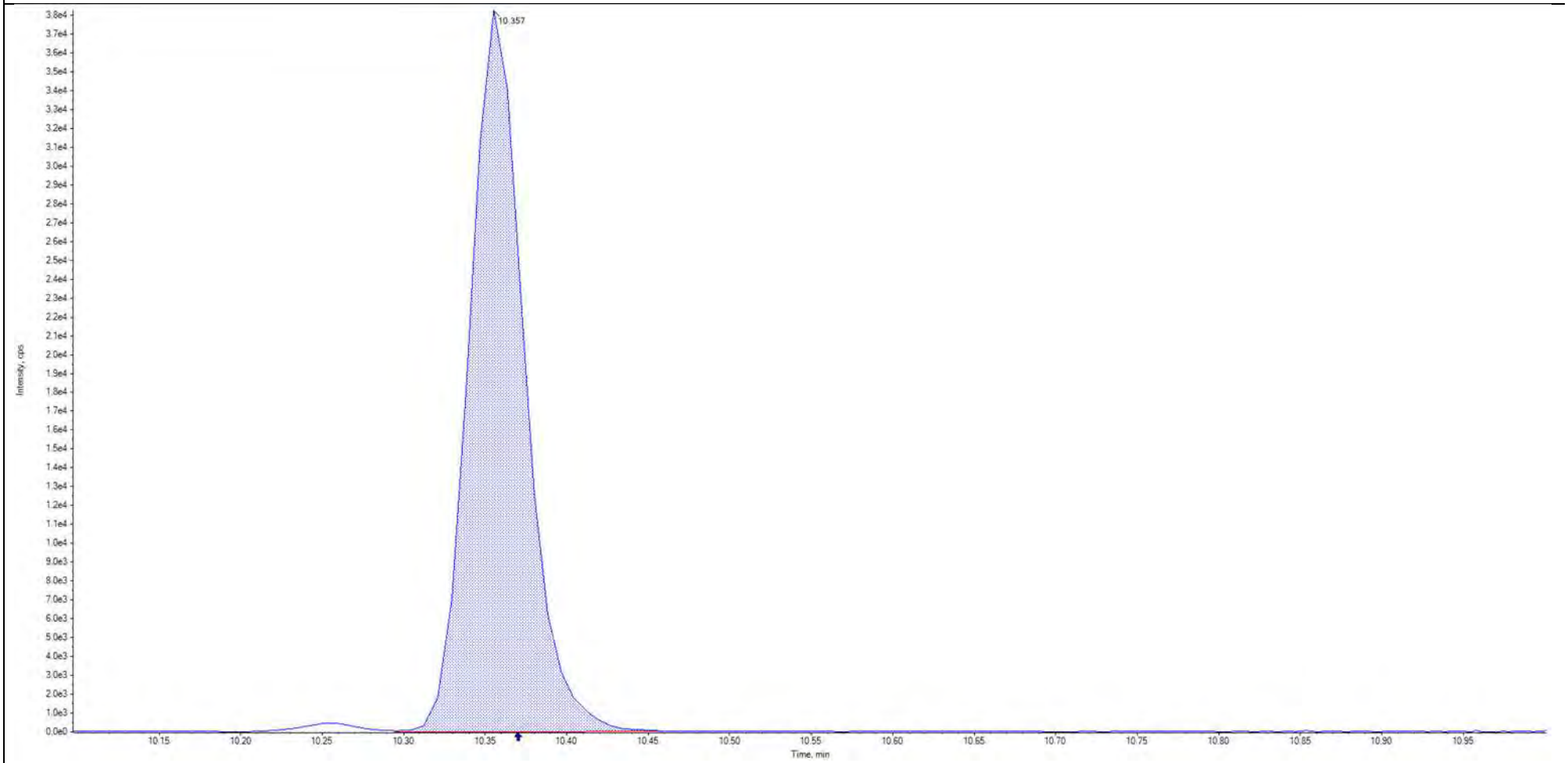
13C8-PFOSA
Sample: WG1973357-1



d3-NMeFOSA
Sample: WG1973357-1



d5-NEtFOSA
Sample: WG1973357-1



d3-NMeFOSAA
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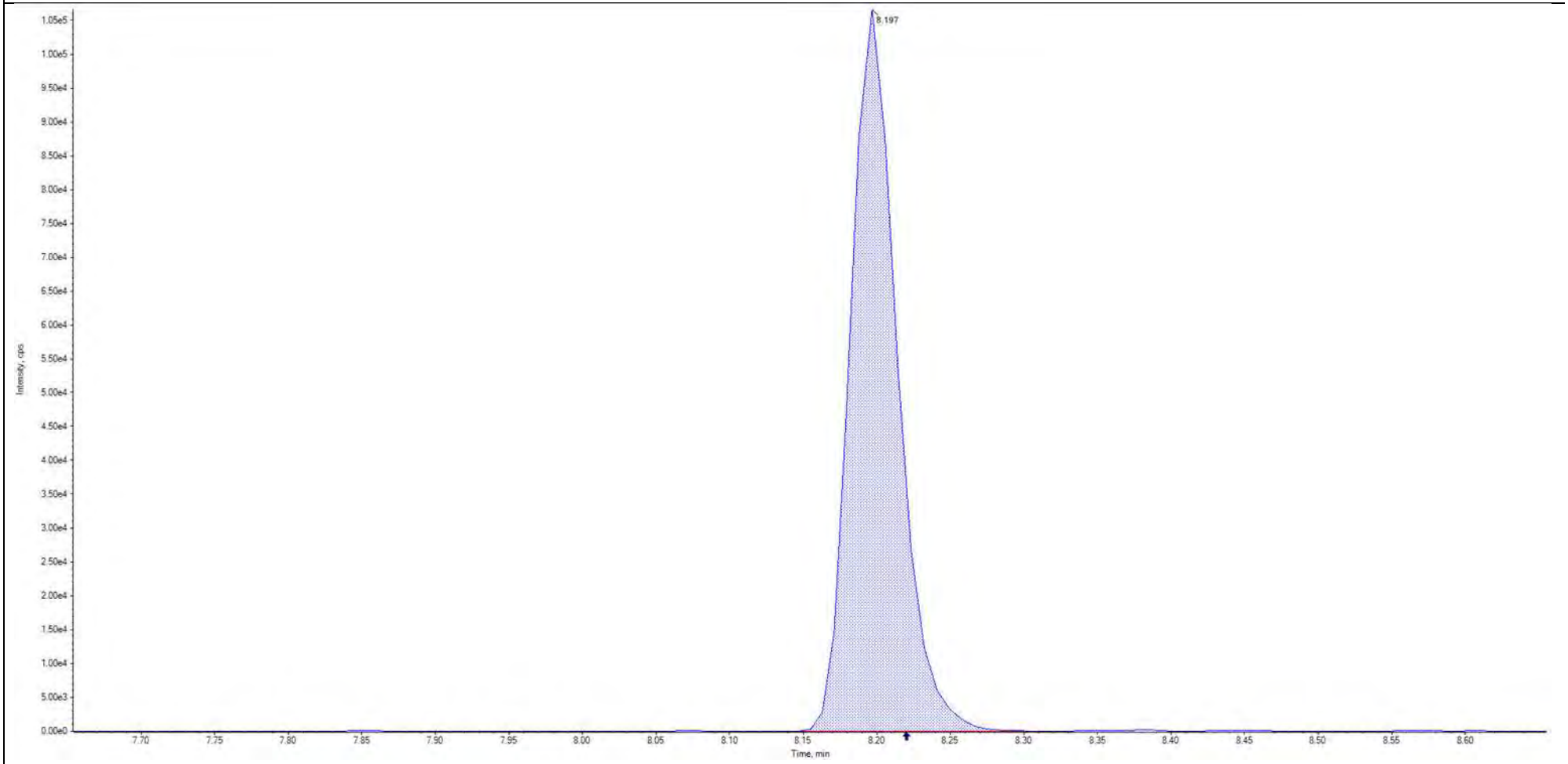
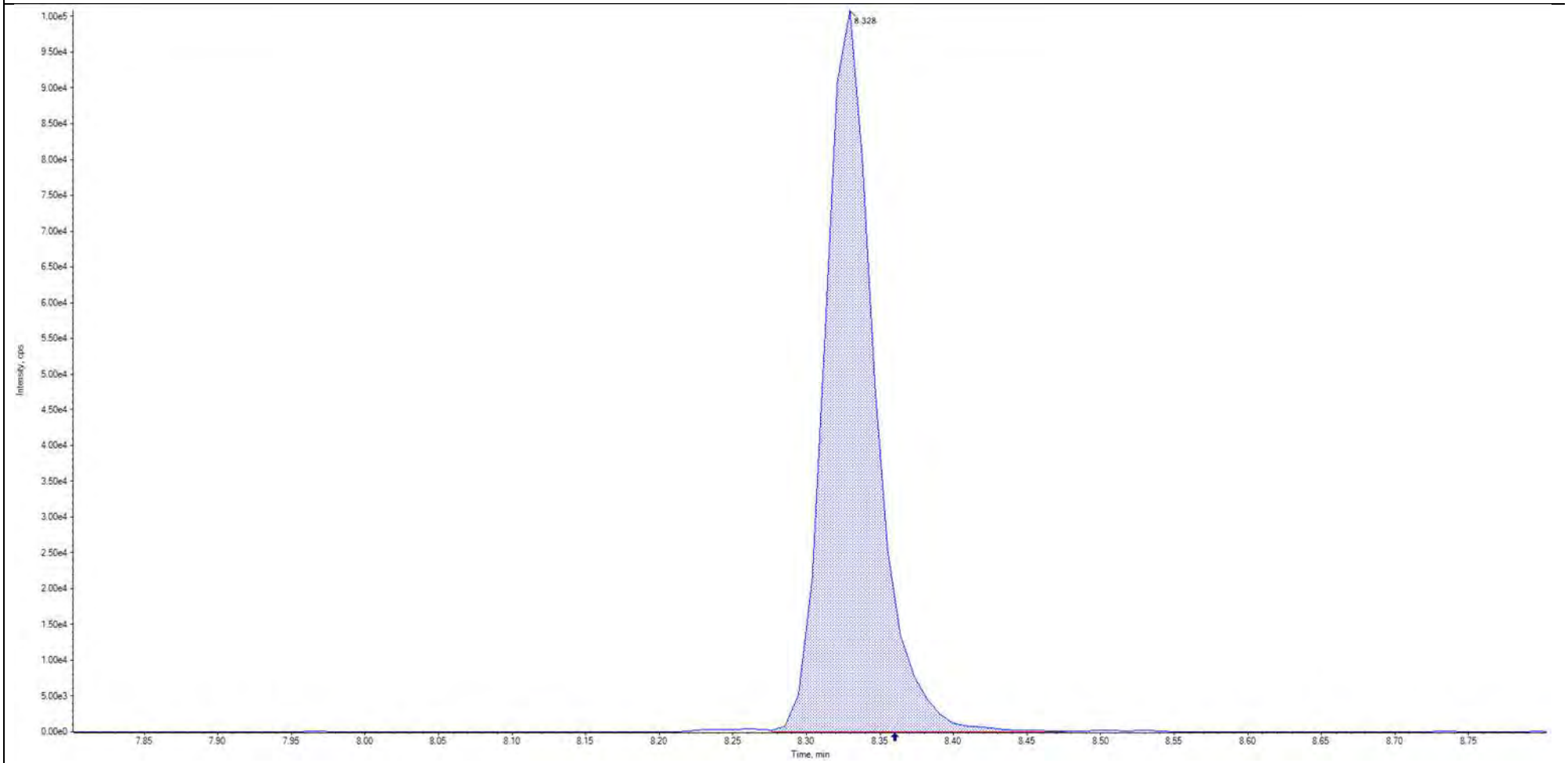
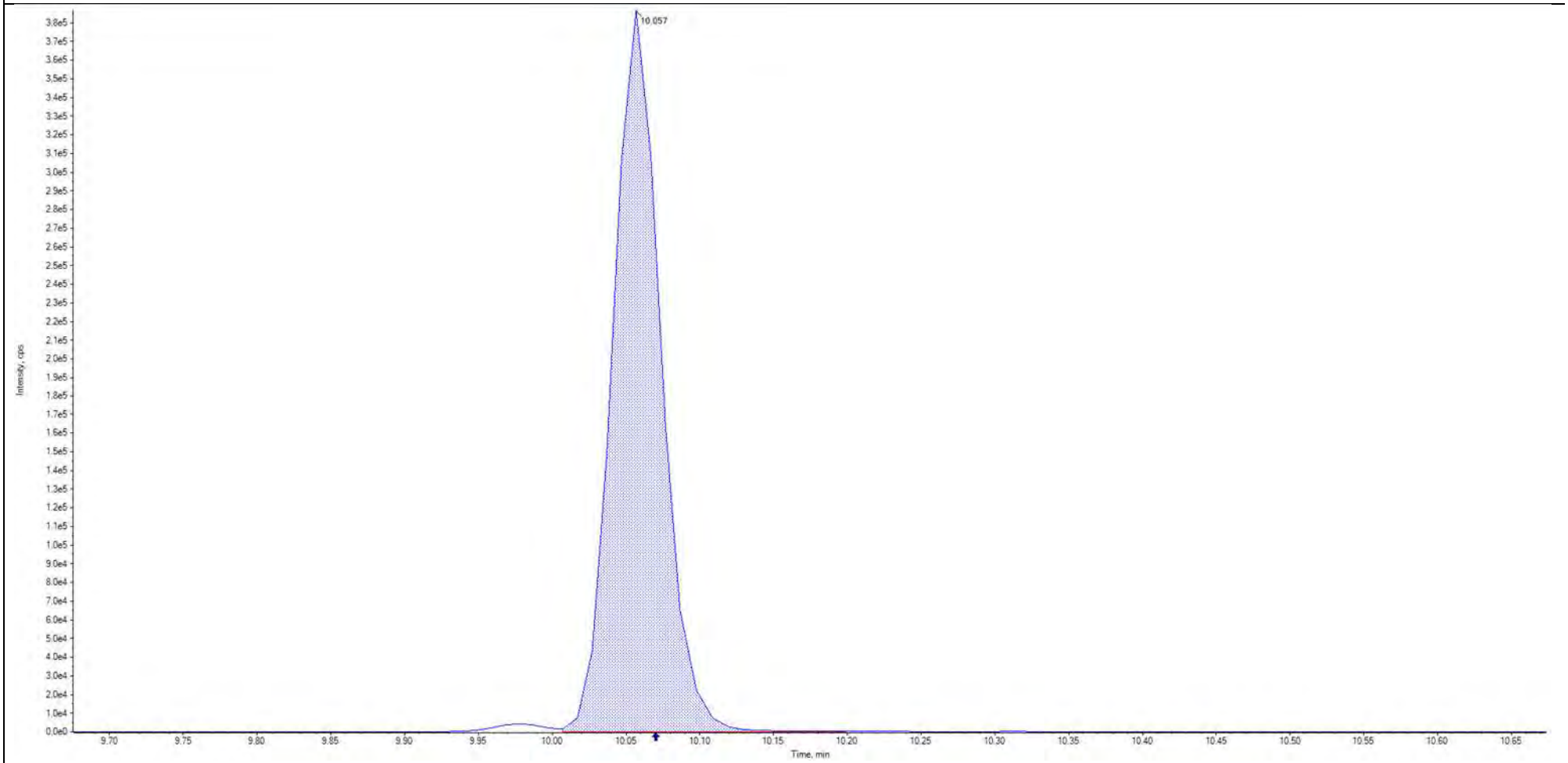


d5-NEtFOSAA
Sample: WG1973357-1



d7-NMeFOSE
Sample: WG1973357-1



d9-NEtFOSE
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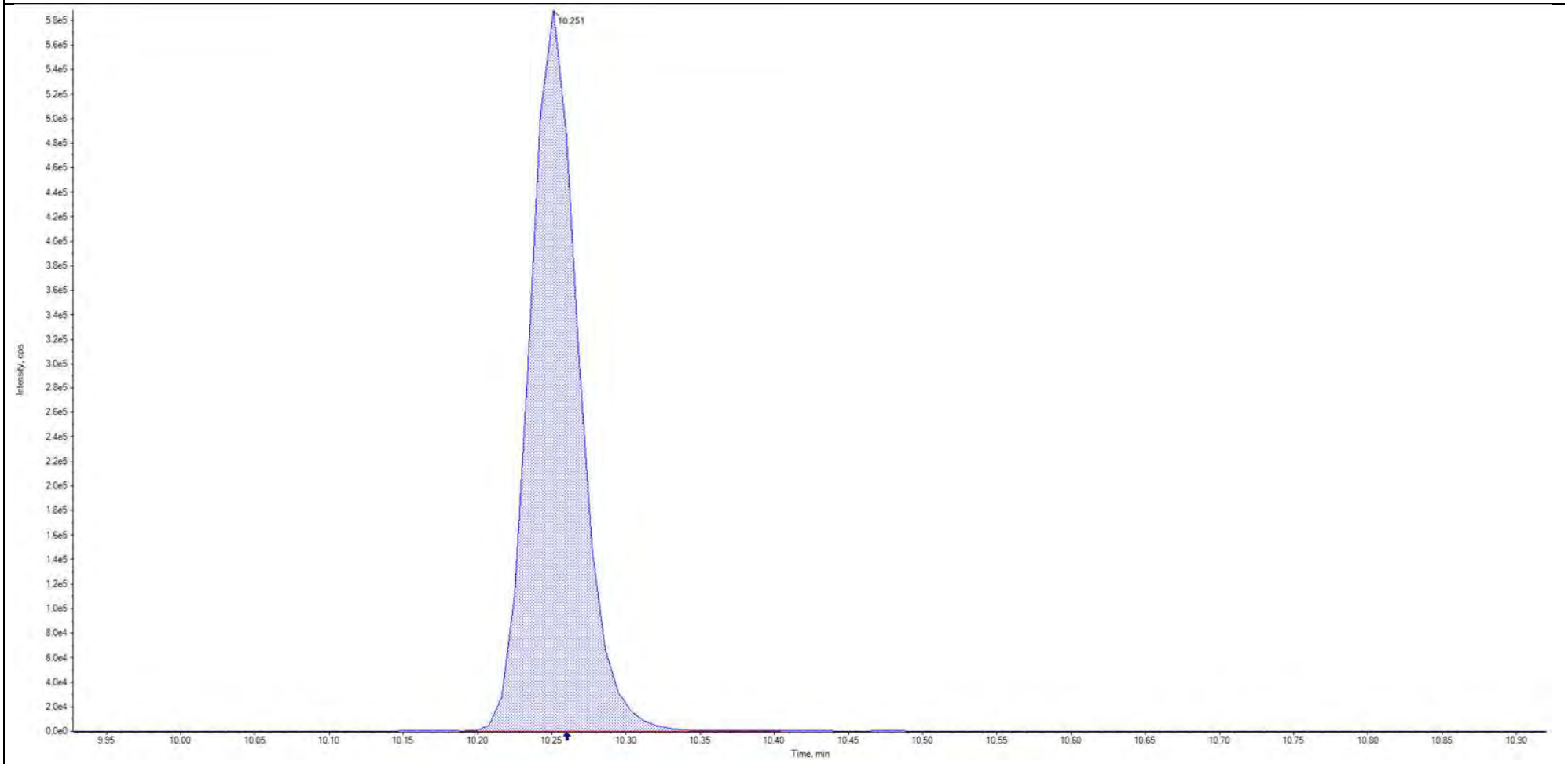

13C3-HFPO-DA
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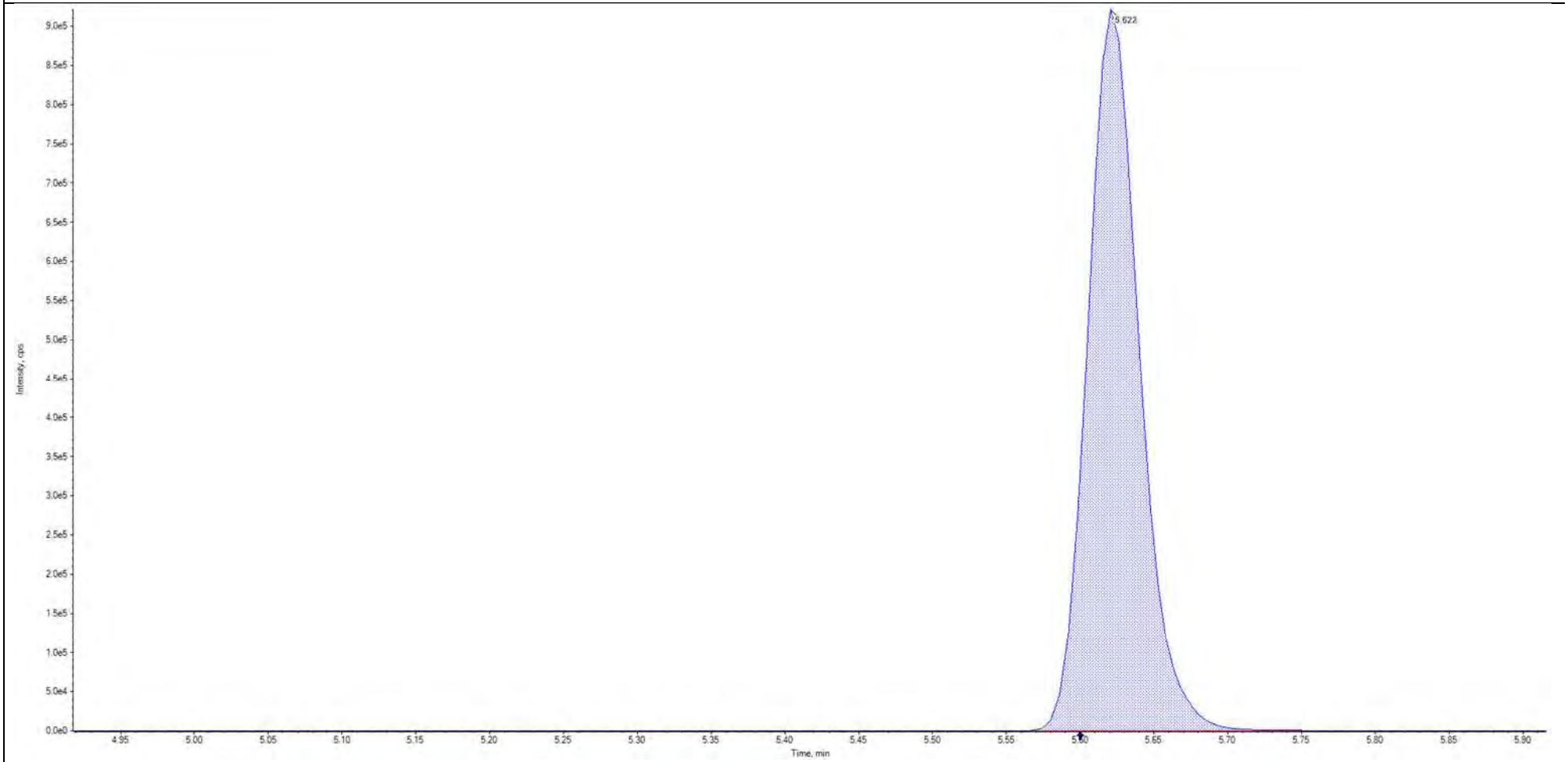

13C3-PFBA
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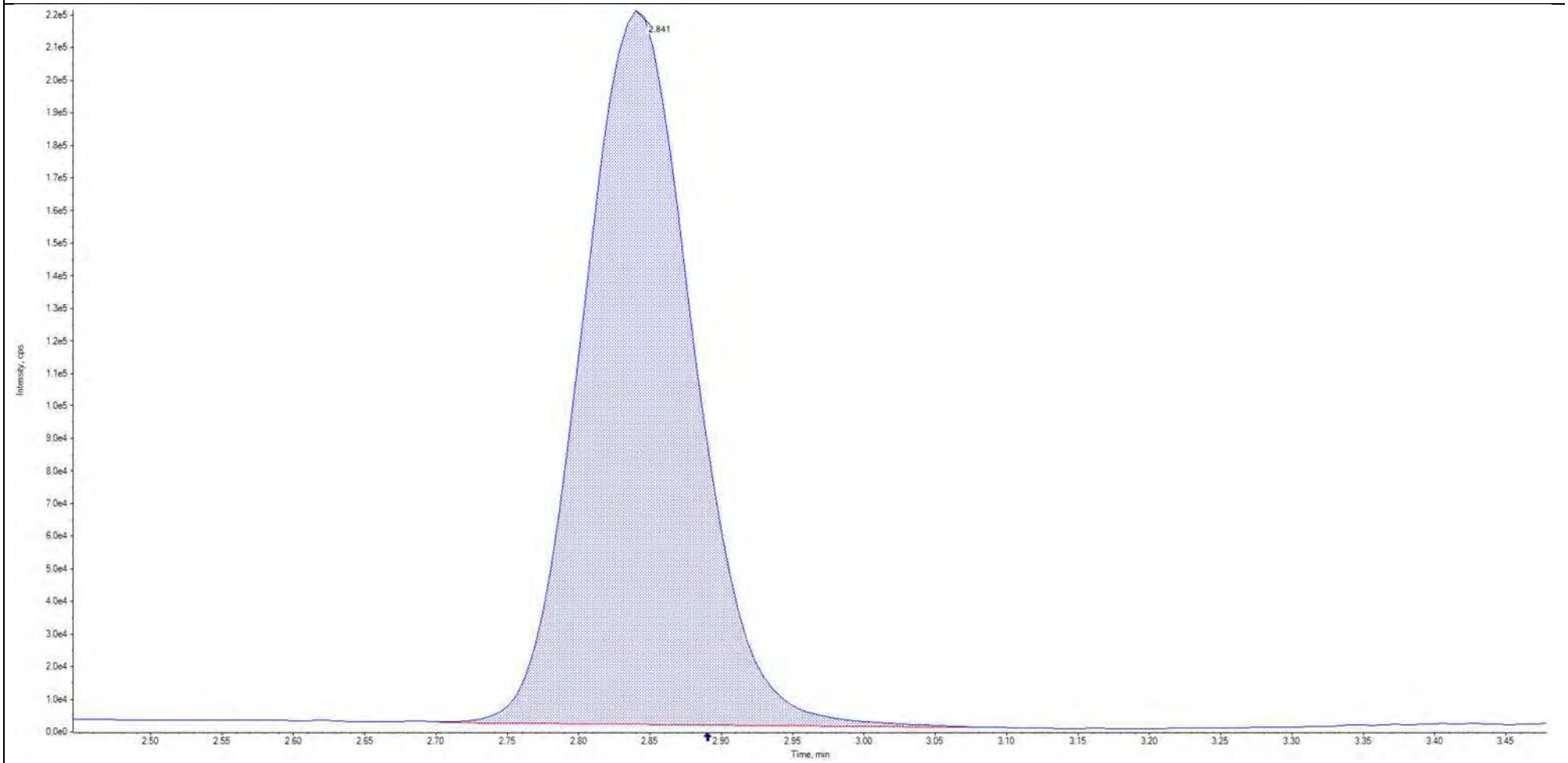

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_13.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C2-PFHxA
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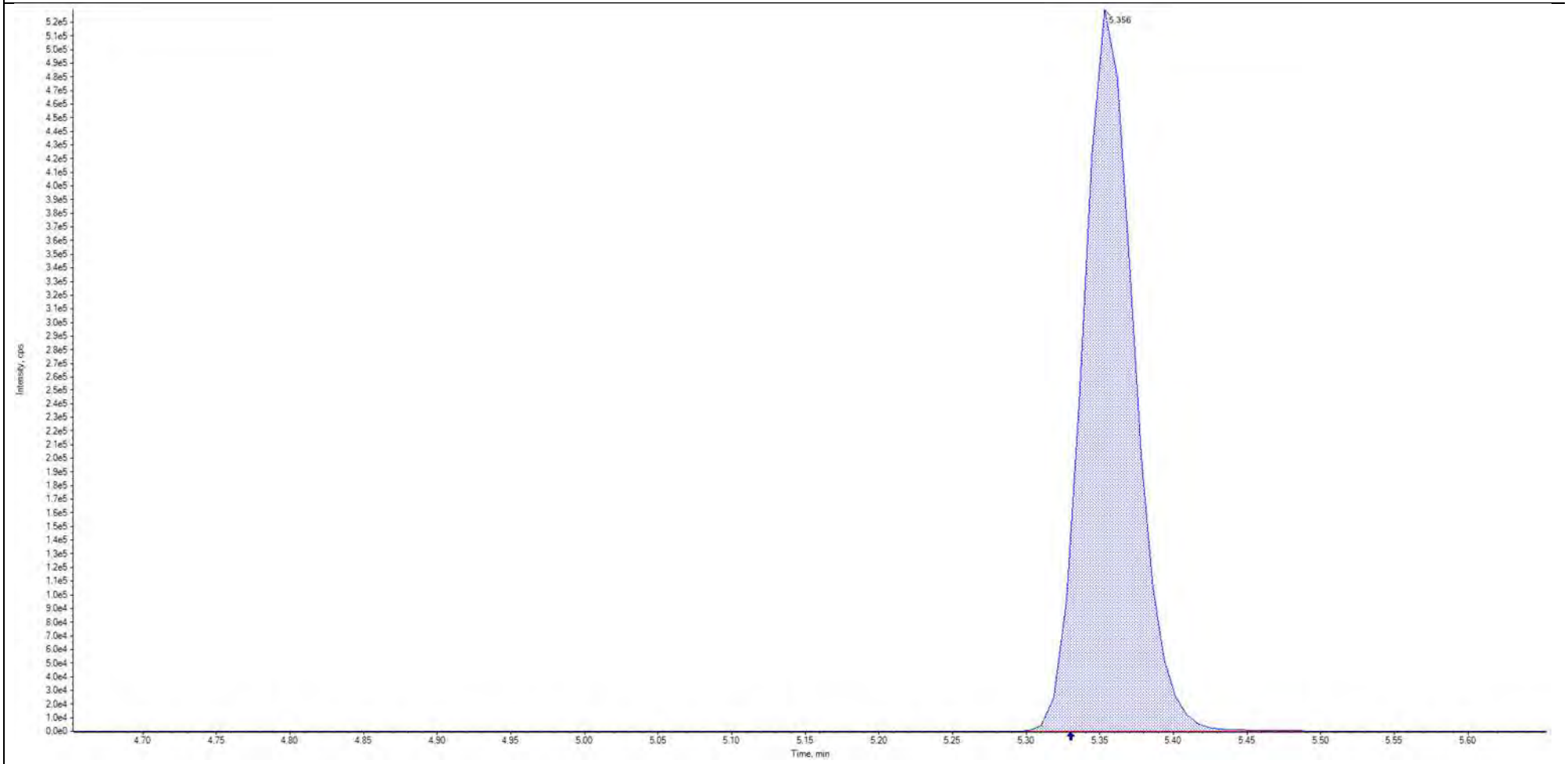

13C4-PFOA
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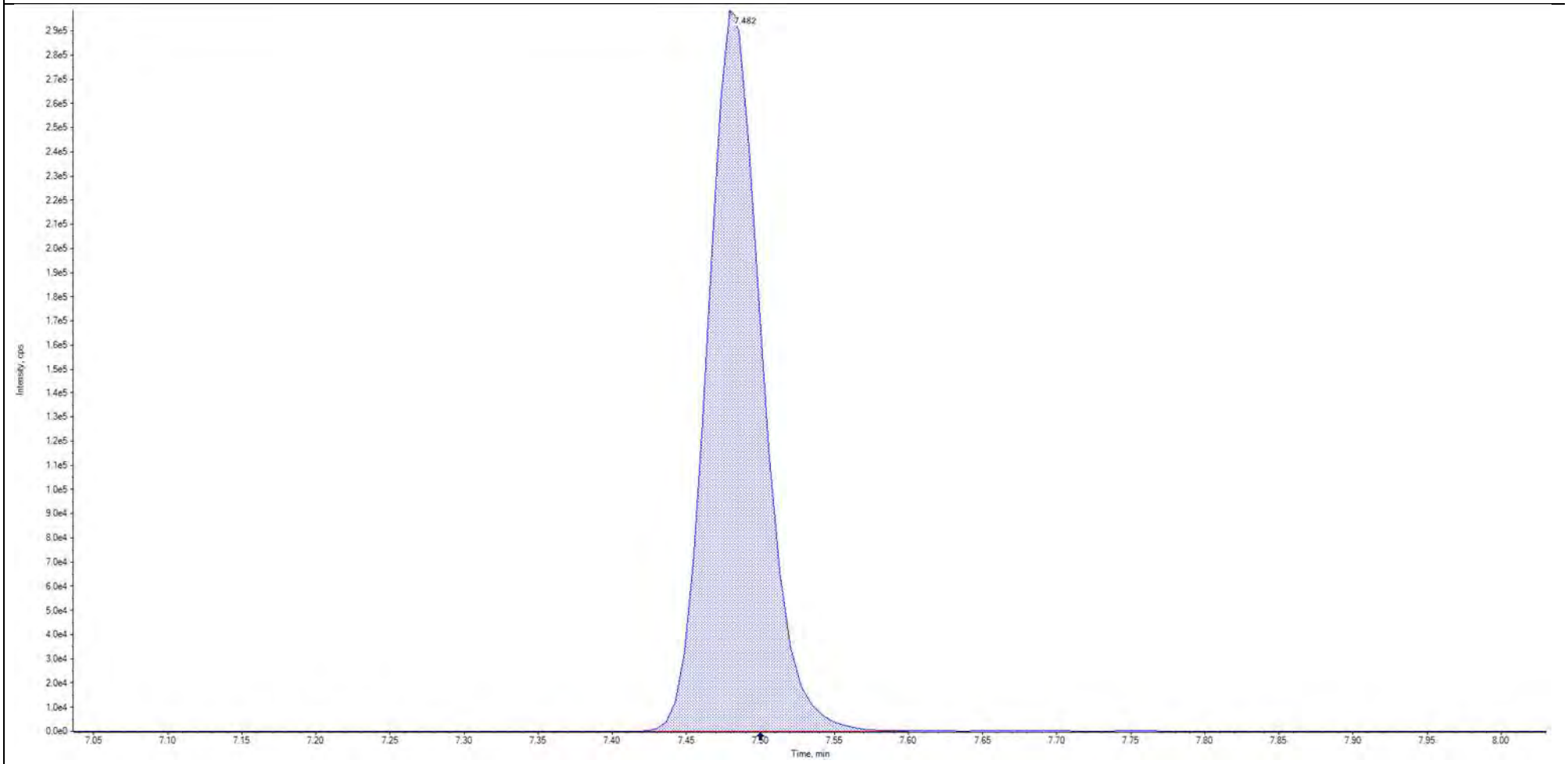

13C5-PFNA
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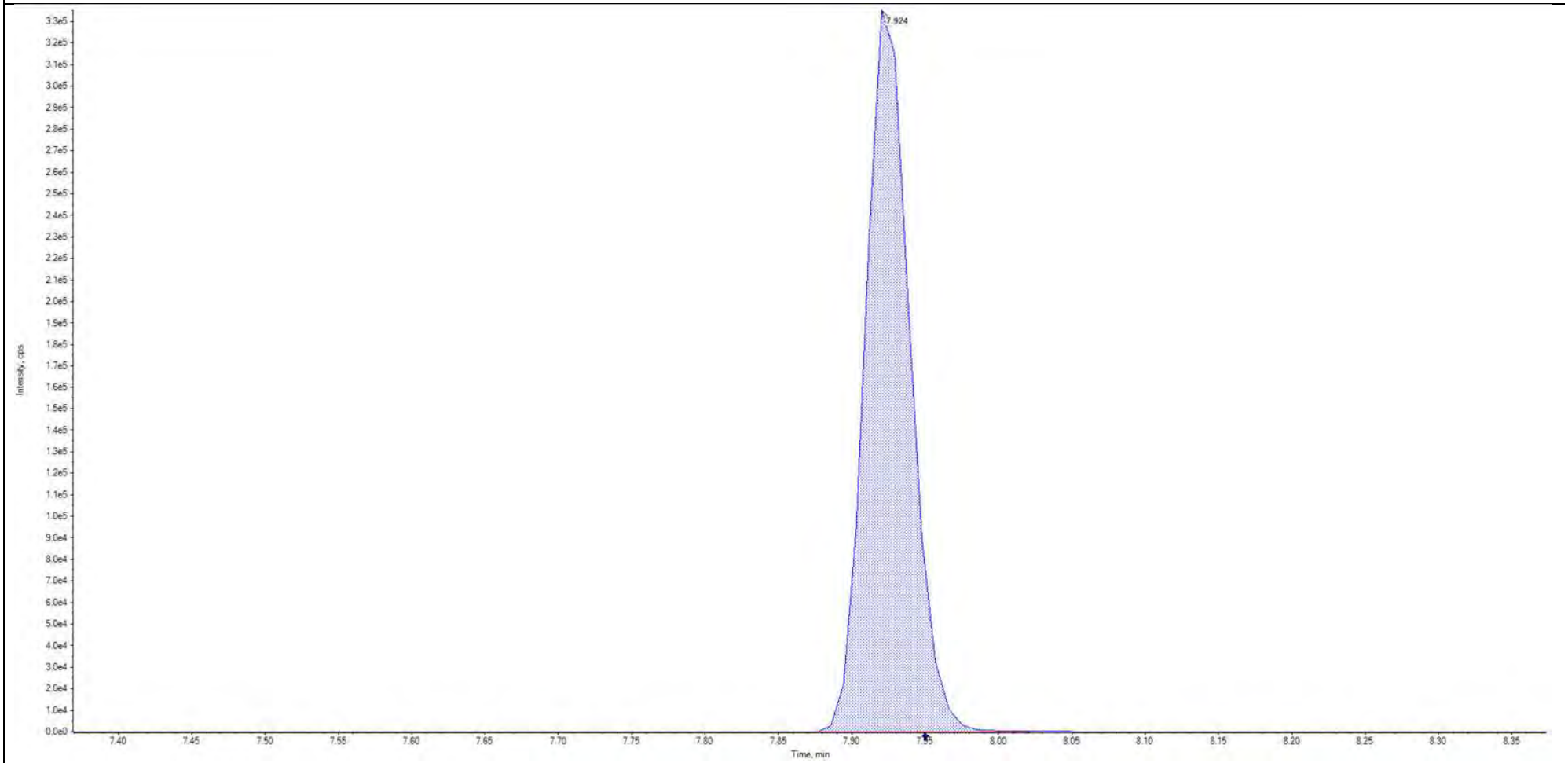

13C2-PFDA
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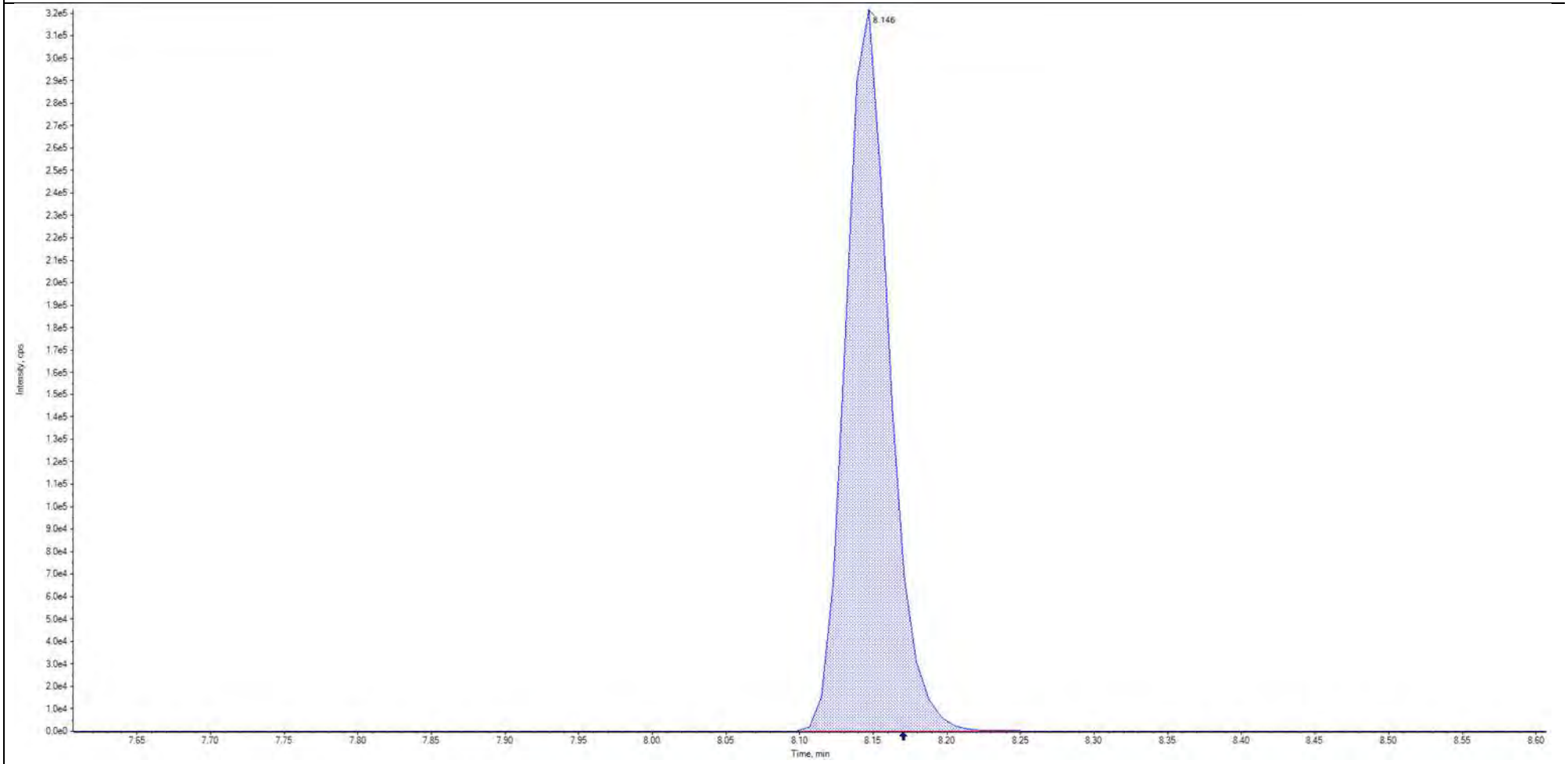

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_13.wiff
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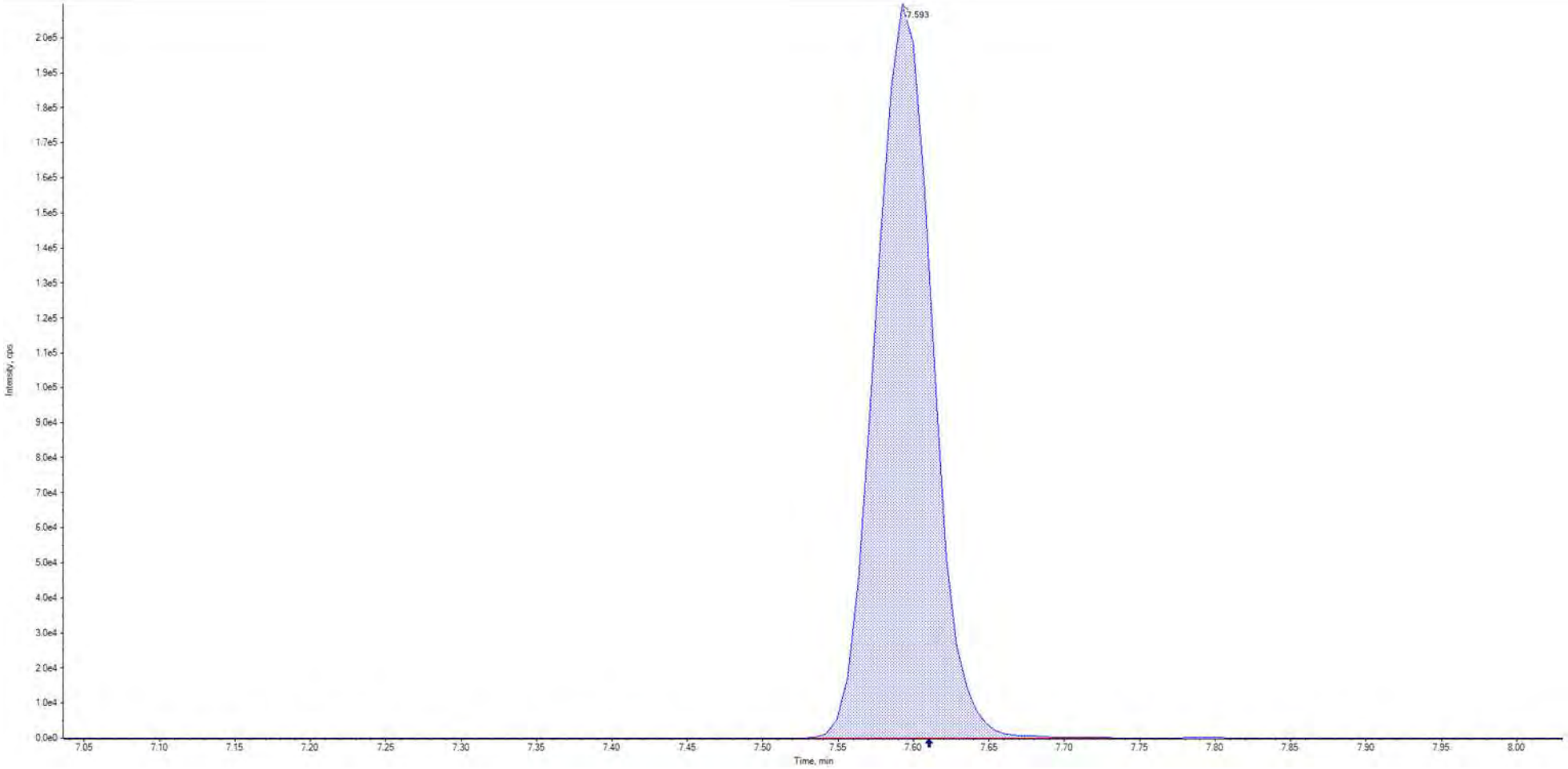
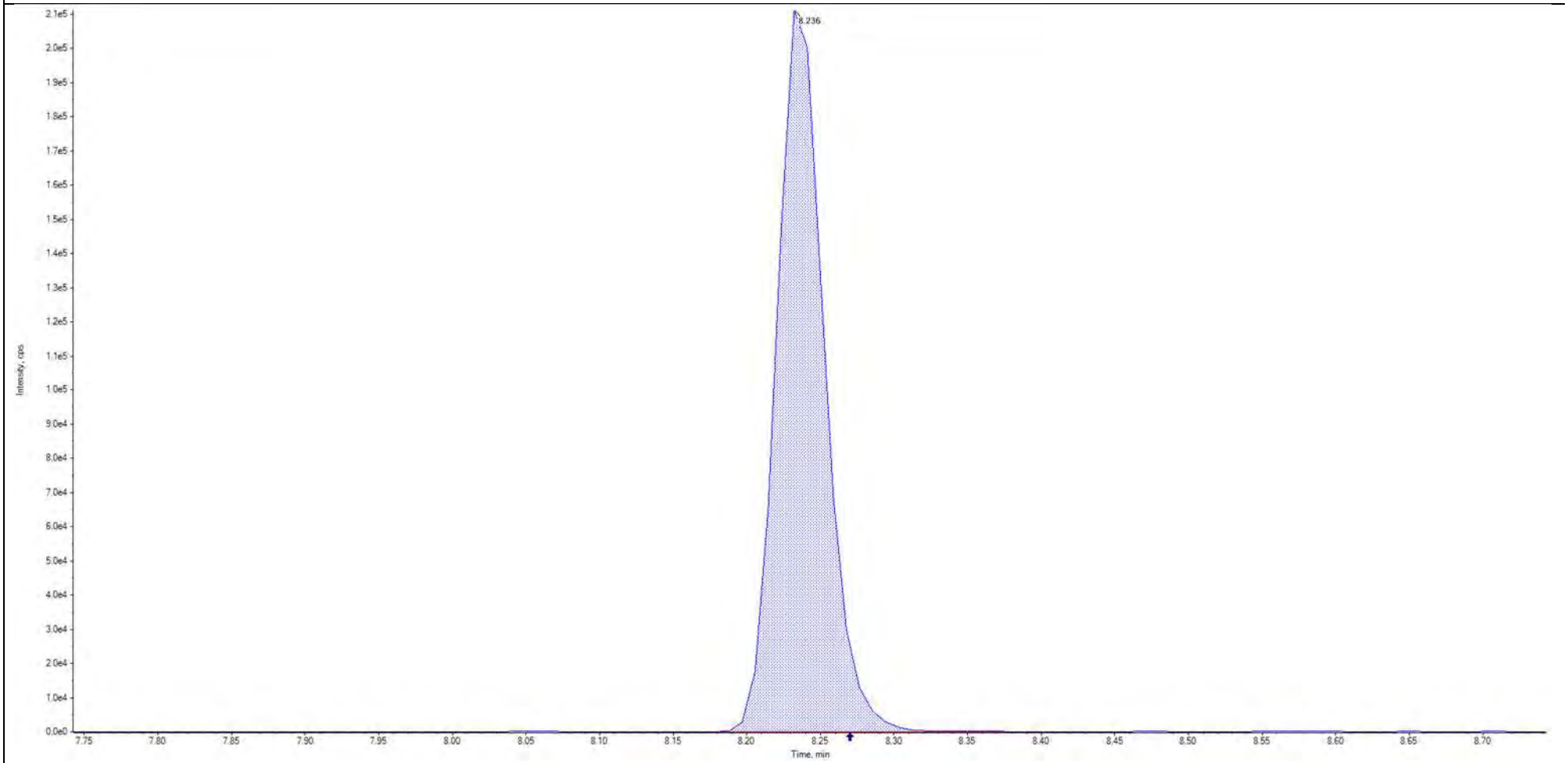
Generated: 9/19/2024 8:04:31 AM

18O2-PFHxS
Sample: WG1973357-1



13C4-PFOS
Sample: WG1973357-1



Quantity Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

Method: EPA1633_NIS_CALC.qmethod
Calibration: 240813_1633_ICAL

ID: WG1973357-2
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Date & Time: 2024-09-19T08:07:20
Description: WG1973506,WG1973357,ICAL21391
Instrument: Triple Quad 5500+
User: LCMS05:AC

LC/MS-MS Method:EPA_1633.dam

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
1	PFBA	375-22-4	2.85	213.0 / 169.0	189422		1.782	N/A	N/A	N/A	111.3
2	PFPeA	2706-90-3	4.66	263.0 / 219.0	149847		0.951	0.006	0.007	N/A	118.8
3	PFPeA_2	2706-90-3	4.66	263.0 / 68.9	899		0.807	0.006	0.007	N/A	100.9
4	PFHxA	307-24-4	5.35	313.0 / 269.0	108630		0.493	0.071	0.072	Pass	123.1
5	PFHxA_2	307-24-4	5.35	313.0 / 119.0	7701		0.473	0.071	0.072	Pass	118.2
6	PFHpA	375-85-9	6.24	363.1 / 319.0	103458		0.467	0.299	0.297	Pass	116.7
7	PFHpA_2	375-85-9	6.24	363.1 / 169.0	30894		0.456	0.299	0.297	Pass	113.9

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
8	PFOA	335-67-1	7.47	413.1 / 369.1	59874	M5	0.397	0.578	0.586	Pass	99.4
9	PFOA_2	335-67-1	7.47	413.1 / 169.0	34596	M7	0.419	0.578	0.586	Pass	104.8
10	PFNA	375-95-1	7.92	462.8 / 418.9	84850	M5	0.441	0.376	0.313	Pass	110.4
11	PFNA_2	375-95-1	7.92	462.8 / 218.9	31940	M7	0.544	0.376	0.313	Pass	135.9
12	PFDA	335-76-2	8.14	513.1 / 469.1	106301		0.507	0.152	0.142	Pass	126.8
13	PFDA_2	335-76-2	8.14	513.1 / 219.0	16153		0.514	0.152	0.142	Pass	128.5
14	PFUnA	2058-94-8	8.42	563.1 / 519.1	76904		0.457	0.188	0.194	Pass	114.2
15	PFUnA_2	2058-94-8	8.42	563.1 / 269.0	14456		0.443	0.188	0.194	Pass	110.8
16	PFDoA	307-55-1	8.83	613.1 / 569.1	76506		0.352	0.181	0.167	Pass	87.9
17	PFDoA_2	307-55-1	8.83	613.1 / 319.0	13825		0.376	0.181	0.167	Pass	94.1
18	PFTrDA	72629-94-8	9.40	663.1 / 619.1	47490		0.366	0.203	0.228	Pass	91.6
19	PFTrDA_2	72629-94-8	9.40	663.1 / 169.0	9626		0.333	0.203	0.228	Pass	83.4
20	PFTeDA	376-06-7	9.85	713.1 / 669.1	71910		0.467	0.140	0.137	Pass	116.7
21	PFTeDA_2	376-06-7	9.85	713.1 / 169.0	10091		0.479	0.140	0.137	Pass	119.8
22	PFBS	375-73-5	5.32	299.1 / 80.1	58792		0.375	0.415	0.396	Pass	105.6

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
23	PFBS_2	375-73-5	5.32	299.1 / 99.1	24405		0.390	0.415	0.396	Pass	110.0
24	PFPeS	2706-91-4	6.33	349.1 / 80.1	50690		0.419	0.307	0.299	Pass	111.3
25	PFPeS_2	2706-91-4	6.33	349.1 / 99.1	15567		0.427	0.307	0.299	Pass	113.4
26	PFHxS	355-46-4	7.58	399.1 / 80.1	49377	M5	0.436	0.310	0.315	Pass	119.3
27	PFHxS_2	355-46-4	7.58	399.1 / 99.1	15331	M7	0.436	0.310	0.315	Pass	119.3
28	PFHpS	375-92-8	7.99	449.1 / 80.1	45131		0.409	0.321	0.287	Pass	107.2
29	PFHpS_2	375-92-8	7.99	449.1 / 99.1	14509		0.448	0.321	0.287	Pass	117.6
30	PFOS	1763-23-1	8.23	499.1 / 80.1	49100	M5	0.417	0.226	0.238	Pass	112.5
31	PFOS_2	1763-23-1	8.23	499.1 / 99.1	11078	M7	0.384	0.226	0.238	Pass	103.6
32	PFNS	68259-12-1	8.57	549.1 / 80.1	34220		0.453	0.320	0.301	Pass	117.8
33	PFNS_2	68259-12-1	8.56	549.1 / 99.1	10953		0.479	0.320	0.301	Pass	124.5
34	PFDS	335-77-3	9.05	599.1 / 80.1	29194		0.393	0.292	0.275	Pass	101.7
35	PFDS_2	335-77-3	9.05	599.1 / 99.1	8521		0.416	0.292	0.275	Pass	107.7
36	PFDoS	79780-39-5	9.95	699.2 / 80.1	28152		0.413	0.287	0.274	Pass	106.5
37	PFDoS_2	79780-39-5	9.95	699.2 / 99.1	8088		0.432	0.287	0.274	Pass	111.4

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
38	4:2FTS	757124-72-4	5.15	327.1 / 307.1	85741		1.415	0.560	0.516	Pass	94.4
39	4:2FTS_2	757124-72-4	5.15	327.1 / 81.1	48016		1.481	0.560	0.516	Pass	98.8
40	6:2FTS	27619-97-2	7.07	427.2 / 407.2	58484		1.810	0.533	0.565	Pass	119.1
41	6:2FTS_2	27619-97-2	7.07	427.2 / 81.1	31172		1.784	0.533	0.565	Pass	117.4
42	8:2FTS	39108-34-4	8.05	527.2 / 507.2	71862		2.027	0.694	0.662	Pass	132.0
43	8:2FTS_2	39108-34-4	8.04	527.2 / 81.1	49890		2.075	0.694	0.662	Pass	135.1
44	PFOSA	754-91-6	9.51	498.1 / 78.1	50492	M5	0.434	0.028	0.025	Pass	108.5
45	PFOSA_2	754-91-6	9.47	498.1 / 478.0	1436	M7	0.471	0.028	0.025	Pass	117.6
46	NMeFOSA	31506-32-8	10.15	512.2 / 219.0	11585	M5	0.501	1.598	1.551	Pass	125.3
47	NMeFOSA_2	31506-32-8	10.12	512.2 / 169.0	18512	M7	0.517	1.598	1.551	Pass	129.2
48	NEtFOSA	4151-50-2	10.36	526.2 / 219.0	11338	M5	0.432	1.304	1.285	Pass	108.1
49	NEtFOSA_2	4151-50-2	10.34	526.2 / 169.0	14790	M7	0.421	1.304	1.285	Pass	105.3
50	NMeFOSAA	2355-31-9	8.20	570.2 / 419.1	10640	M4	0.511	0.753	0.700	Pass	127.7
51	NMeFOSAA_2	2355-31-9	8.19	570.2 / 483.0	8016	M7	0.605	0.753	0.700	Pass	151.2
52	NEtFOSAA	2991-50-6	8.33	584.2 / 419.1	13635		0.478	0.459	0.487	Pass	119.5

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
53	NEtFOSAA_2	2991-50-6	8.33	584.2 / 526.2	6258		0.477	0.459	0.487	Pass	119.2
54	NMeFOSE	24448-09-7	10.07	616.1 / 58.9	258908	M5	4.328	N/A	N/A	N/A	108.2
55	NEtFOSE	1691-99-2	10.26	630.0 / 58.9	481621	M5	4.405	N/A	N/A	N/A	110.1
56	HFPO-DA	13252-13-6	5.61	285.0 / 169.0	218889		1.860	0.484	0.464	Pass	116.3
57	HFPO-DA_2	13252-13-6	5.61	285.0 / 184.9	106020		1.937	0.484	0.464	Pass	121.1
58	ADONA	919005-14-4	6.70	377.1 / 251.0	461115		1.723	0.654	0.634	Pass	114.0
59	ADONA_2	919005-14-4	6.70	377.1 / 84.8	301741		1.742	0.654	0.634	Pass	115.2
60	9Cl-PF3ONS	756426-58-1	8.44	530.8 / 351.1	452662		1.715	0.317	0.322	Pass	114.7
61	9Cl-PF3ONS_2	756426-58-1	8.44	532.8 / 353.0	143404		1.669	0.317	0.322	Pass	111.5
62	11Cl-PF3OUdS	763051-92-9	9.47	630.9 / 451.0	271714		1.630	0.328	0.331	Pass	107.8
63	11Cl-PF3OUdS_2	763051-92-9	9.47	632.9 / 452.9	89225		1.590	0.328	0.331	Pass	105.2
64	3:3FTCA	356-02-5	4.94	241.1 / 177.1	26407		1.931	0.907	1.074	Pass	96.6
65	3:3FTCA_2	356-02-5	4.94	241.1 / 117.0	23964		1.750	0.907	1.074	Pass	87.5
66	5:3FTCA	914637-49-3	7.16	341.1 / 237.1	469174		11.727	0.943	0.953	Pass	117.3
67	5:3FTCA_2	914637-49-3	7.16	341.1 / 217.0	442288		11.683	0.943	0.953	Pass	116.8

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
68	7:3FTCA	812-70-4	8.19	441.1 / 316.9	246078		5.525	1.968	1.558	Pass	55.3
69	7:3FTCA_2	812-70-4	8.19	441.1 / 337.1	484239		7.492	1.968	1.558	Pass	74.9
70	PFEESA	113507-82-7	5.71	315.1 / 135.0	321301		0.840	0.085	0.087	Pass	117.9
71	PFEESA_2	113507-82-7	5.71	315.1 / 82.9	27364		0.828	0.085	0.087	Pass	116.3
72	PFMPA	377-73-1	3.88	229.0 / 85.0	17731		0.929	N/A	N/A	N/A	116.2
73	PFMBA	863090-89-5	4.89	279.0 / 85.0	216305		0.841	N/A	N/A	N/A	105.1
74	NFDHA	151772-58-6	5.27	295.0 / 201.0	42347		1.051	0.918	0.910	Pass	131.4
75	NFDHA_2	151772-58-6	5.27	295.0 / 84.9	38887		1.053	0.918	0.910	Pass	131.6
76	TDCA	516-50-7	N/A	499.1 / 124.1	N/A		N/A	N/A	40.716	N/A	N/A
77	TDCA_2	516-50-7	N/A	499.1 / 79.9	N/A		N/A	N/A	40.716	N/A	N/A
78	13C2D4-4:2FTS	Surr	N/A	333.2 / 312.1	N/A		N/A	N/A	N/A	N/A	N/A
79	13C2-PFOA	Surr	N/A	415.0 / 370.0	N/A		N/A	N/A	N/A	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C4-PFBA	EIS	2.84	217.0 / 172.0	1311132		5.000	NA	NA	NA	50.0

Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
13C5-PFPeA	EIS	4.65	268.0 / 223.0	854868		2.704	NA	NA	NA	54.1
13C5-PFHxA	EIS	5.34	318.0 / 273.0	452513		1.089	NA	NA	NA	43.6
13C4-PFHpA	EIS	6.24	367.0 / 322.0	473022		1.138	NA	NA	NA	45.5
13C8-PFOA	EIS	7.47	421.0 / 376.0	723895		1.263	NA	NA	NA	50.5
13C9-PFNA	EIS	7.92	472.0 / 427.0	328217		0.571	NA	NA	NA	45.7
13C6-PFDA	EIS	8.14	519.0 / 474.0	304066		0.582	NA	NA	NA	46.6
13C7-PFUnA	EIS	8.41	570.0 / 525.0	266423		0.630	NA	NA	NA	50.4

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C2-PFDoA	EIS	8.82	615.1 / 570.0	209073		0.761	NA	NA	NA	60.9
	13C2-PFTeDA	EIS	9.85	715.1 / 670.1	153647		0.515	NA	NA	NA	41.2
	13C3-PFBS	EIS	5.32	302.1 / 80.1	373939		1.151	NA	NA	NA	49.4
	13C3-PFHxS	EIS	7.58	402.1 / 80.1	283573		1.099	NA	NA	NA	46.4
	13C8-PFOS	EIS	8.23	507.1 / 80.1	286318		0.985	NA	NA	NA	41.1
	13C2-4:2FTS	EIS	5.15	329.1 / 81.1	144989		2.500	NA	NA	NA	53.3
	13C2-6:2FTS	EIS	7.06	429.2 / 81.1	93645		2.204	NA	NA	NA	46.3
	13C2-8:2FTS	EIS	8.04	529.2 / 81.1	134252		2.159	NA	NA	NA	45.0

Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
13C8-PFOSA	EIS	9.51	506.1 / 78.1	435102		1.126	NA	NA	NA	45.1
d3-NMeFOSA	EIS	10.14	515.2 / 219.0	53979		0.830	NA	NA	NA	33.2
d5-NEtFOSA	EIS	10.35	531.2 / 219.0	59695		0.940	NA	NA	NA	37.6
d3-NMeFOSAA	EIS	8.19	573.2 / 419.1	158344		1.077	NA	NA	NA	21.5
d5-NEtFOSAA	EIS	8.32	589.3 / 419.1	153047		1.981	NA	NA	NA	39.6
d7-NMeFOSE	EIS	10.05	623.2 / 58.9	606241		12.073	NA	NA	NA	48.3
d9-NEtFOSE	EIS	10.25	639.2 / 58.9	931358		12.580	NA	NA	NA	50.3

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C3-HFPO-DA	EIS	5.61	287.0 / 169.0	1283775		4.664	NA	NA	NA	46.6
	13C3-PFBA	NIS	2.84	216.0 / 172.0	1147044		5.364	NA	NA	NA	107.3
	13C2-PFHxA	NIS	5.34	315.0 / 270.0	1233222		2.519	NA	NA	NA	100.7
	13C4-PFOA	NIS	7.47	417.0 / 372.0	749583		2.394	NA	NA	NA	95.8
	13C5-PFNA	NIS	7.92	468.0 / 423.0	700011		1.278	NA	NA	NA	102.2
	13C2-PFDA	NIS	8.14	515.1 / 470.1	613495		1.197	NA	NA	NA	95.8
	18O2-PFHxS	NIS	7.58	403.1 / 84.1	524567		2.239	NA	NA	NA	94.5
	13C4-PFOS	NIS	8.23	503.1 / 80.1	513943		2.441	NA	NA	NA	101.9

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec

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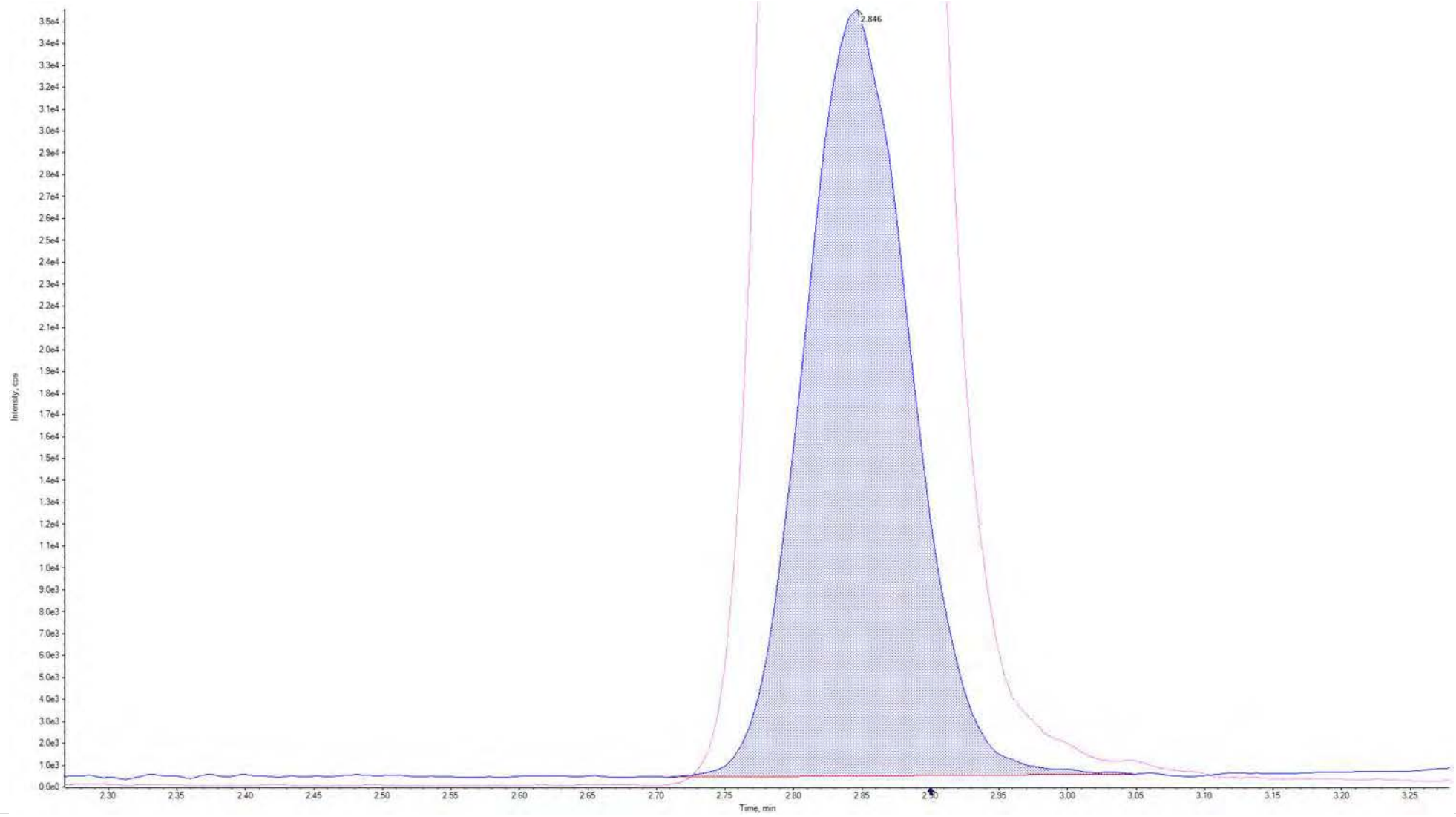
PFBA
Sample: WG1973357-2 S/N:837.7 Points Across peak:58



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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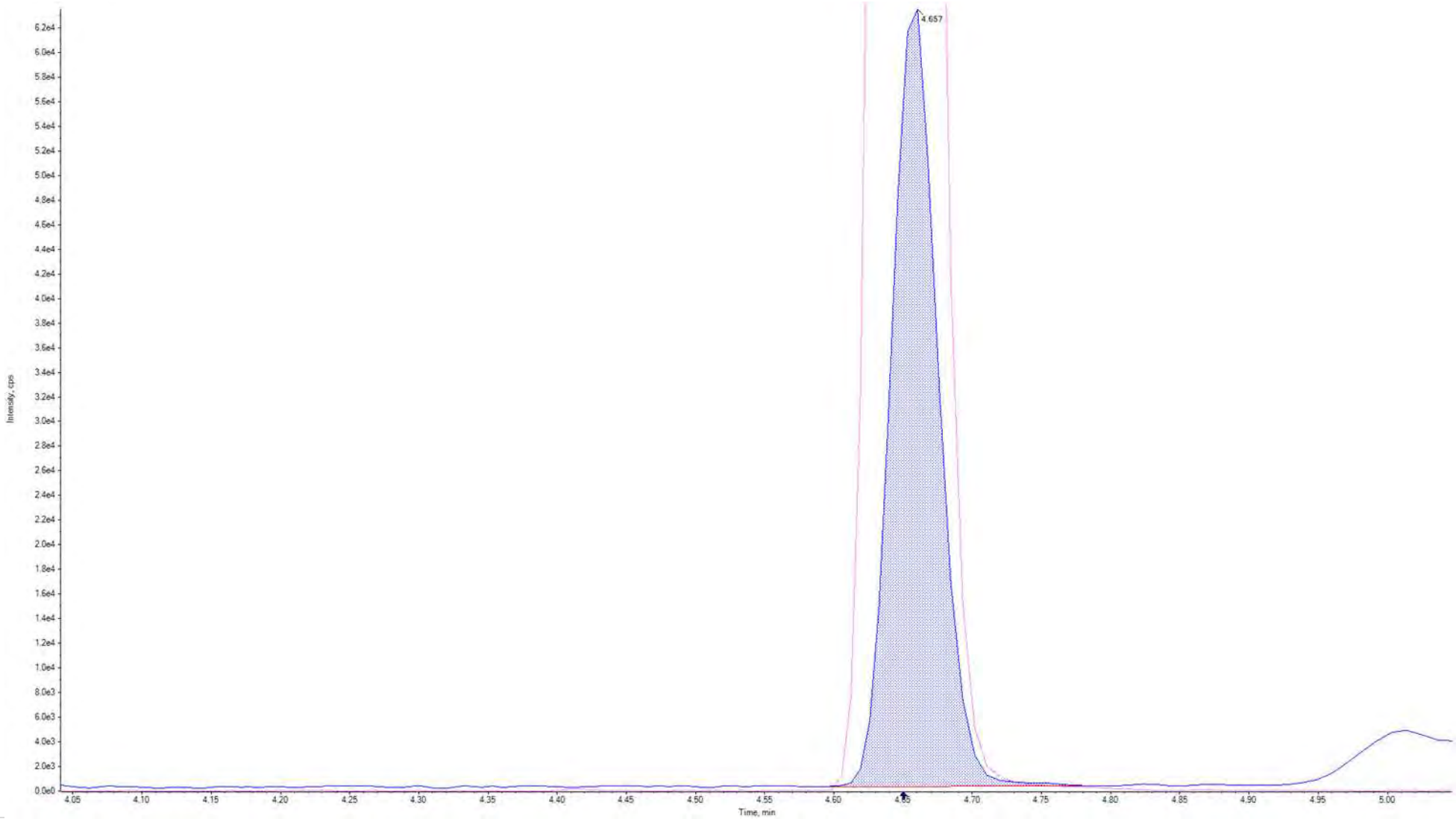
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFPeA
Sample: WG1973357-2 S/N:867.3 Points Across peak:28



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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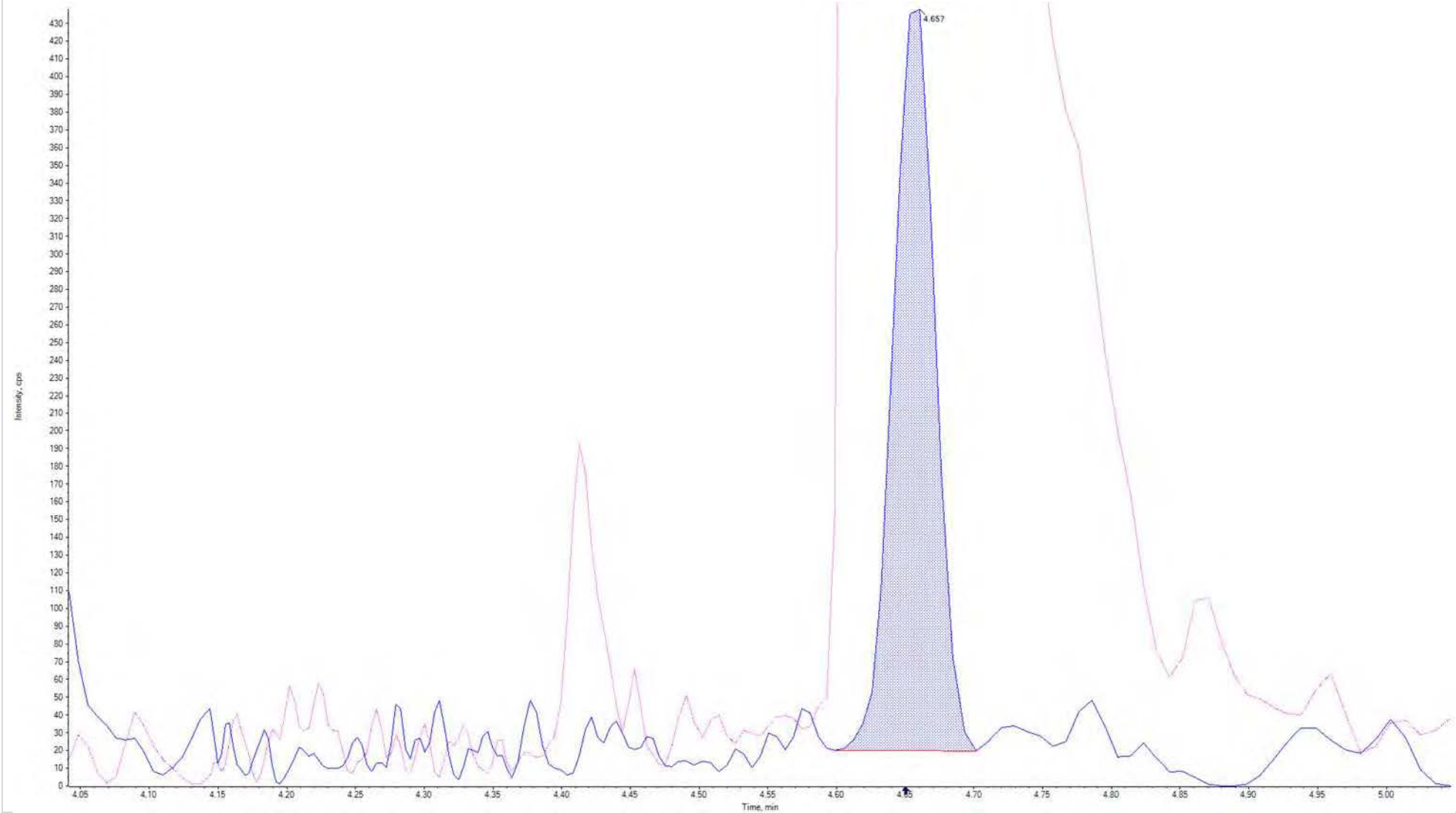
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFPeA_2
Sample: WG1973357-2 S/N:878.6 Points Across peak:15



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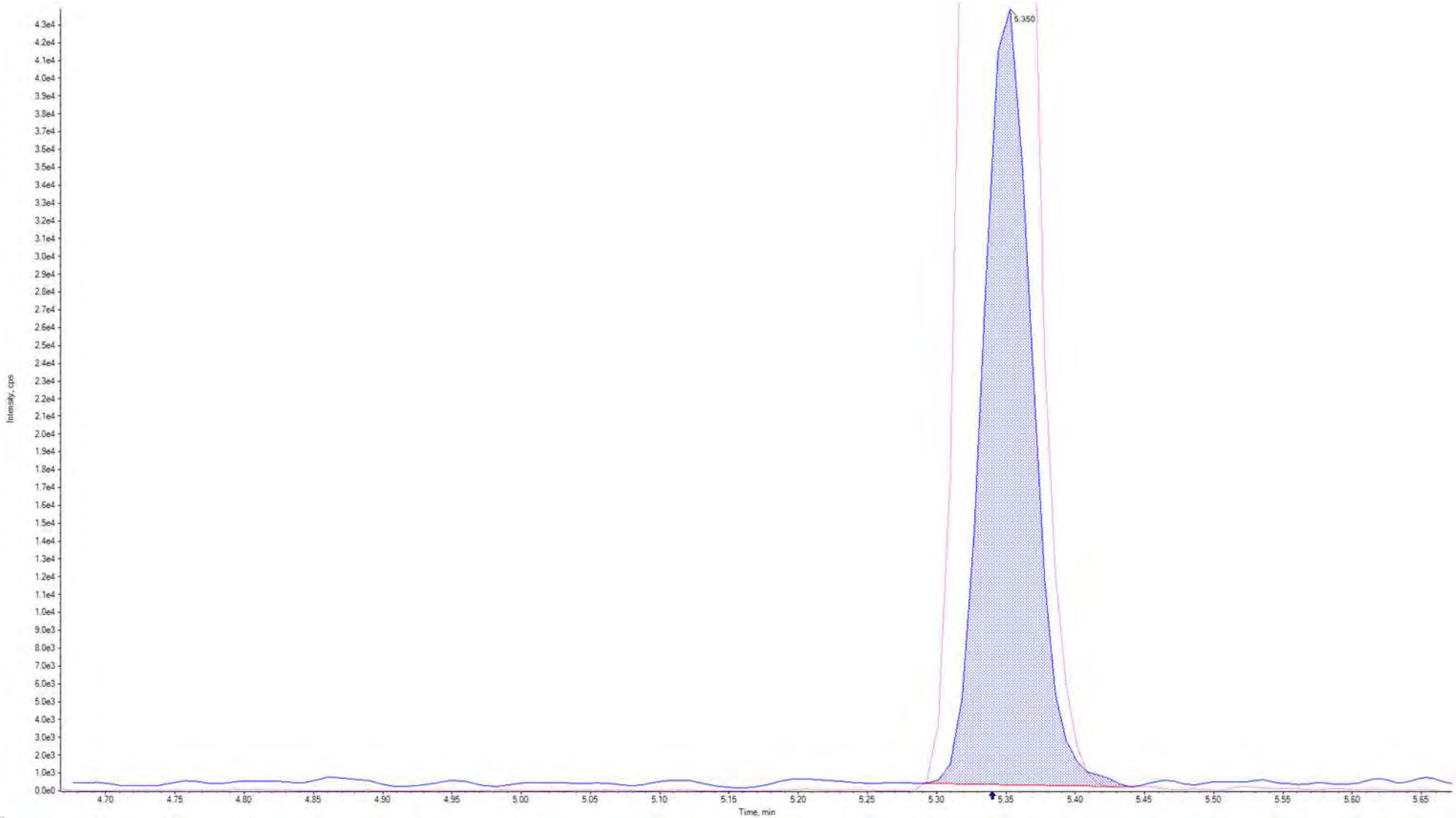
PFHxA
Sample: WG1973357-2 S/N:449.2 Points Across peak:20



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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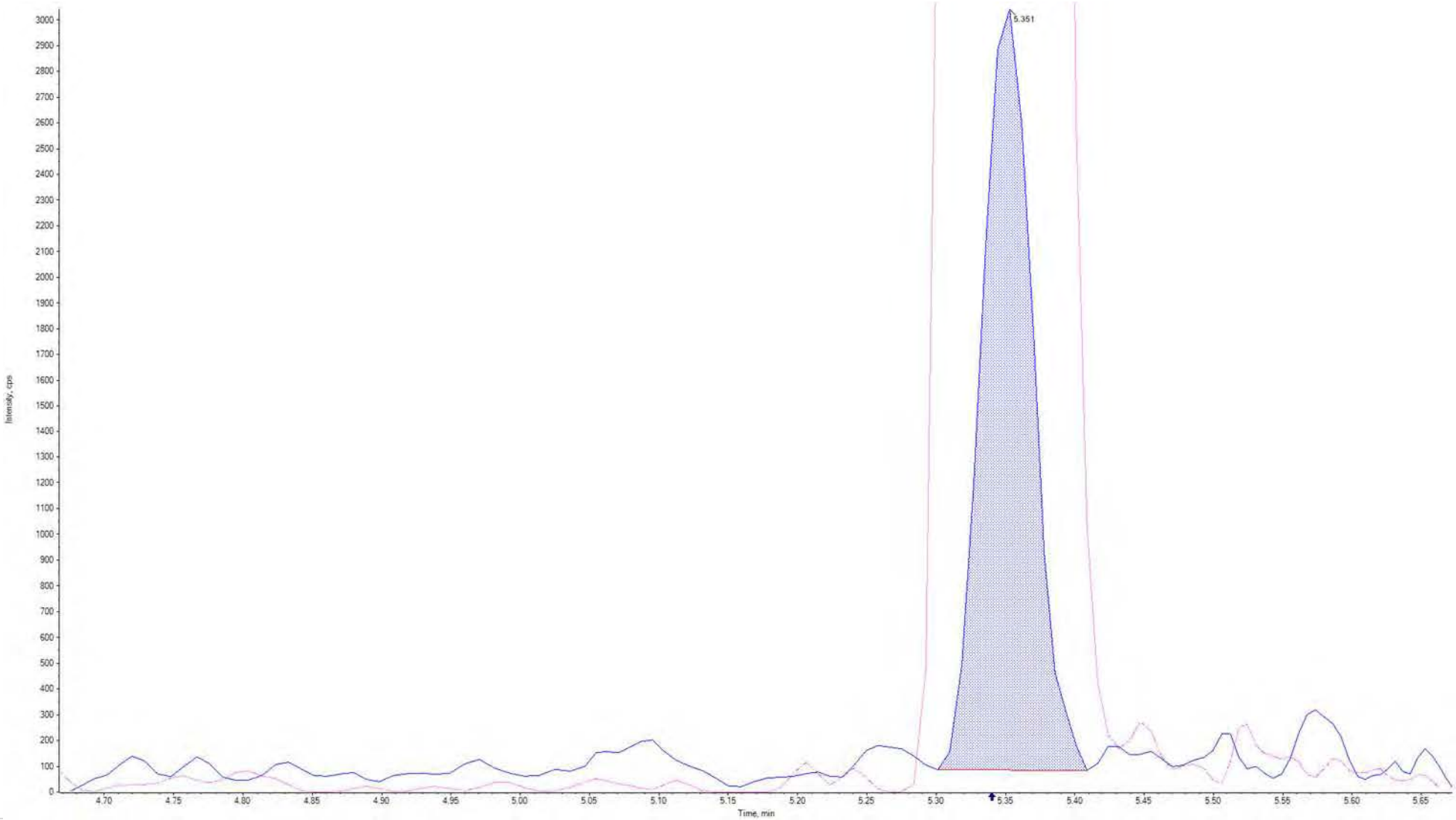
Generated: 9/19/2024 8:04:31 AM

PFHxA_2
Sample: WG1973357-2 S/N:213.4 Points Across peak:14



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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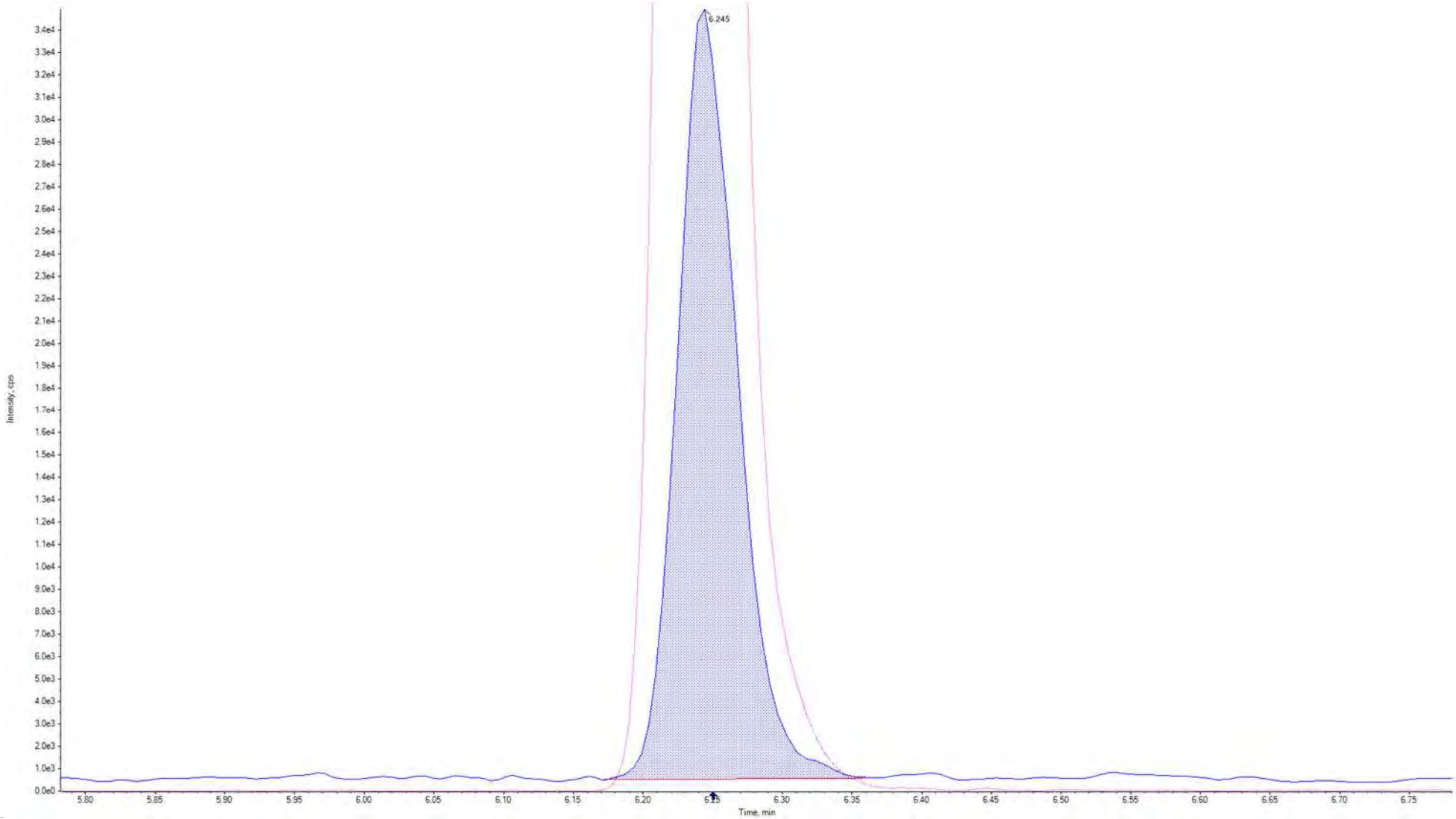
Generated: 9/19/2024 8:04:31 AM

PFHpA
Sample: WG1973357-2 S/N:576.5 Points Across peak:36



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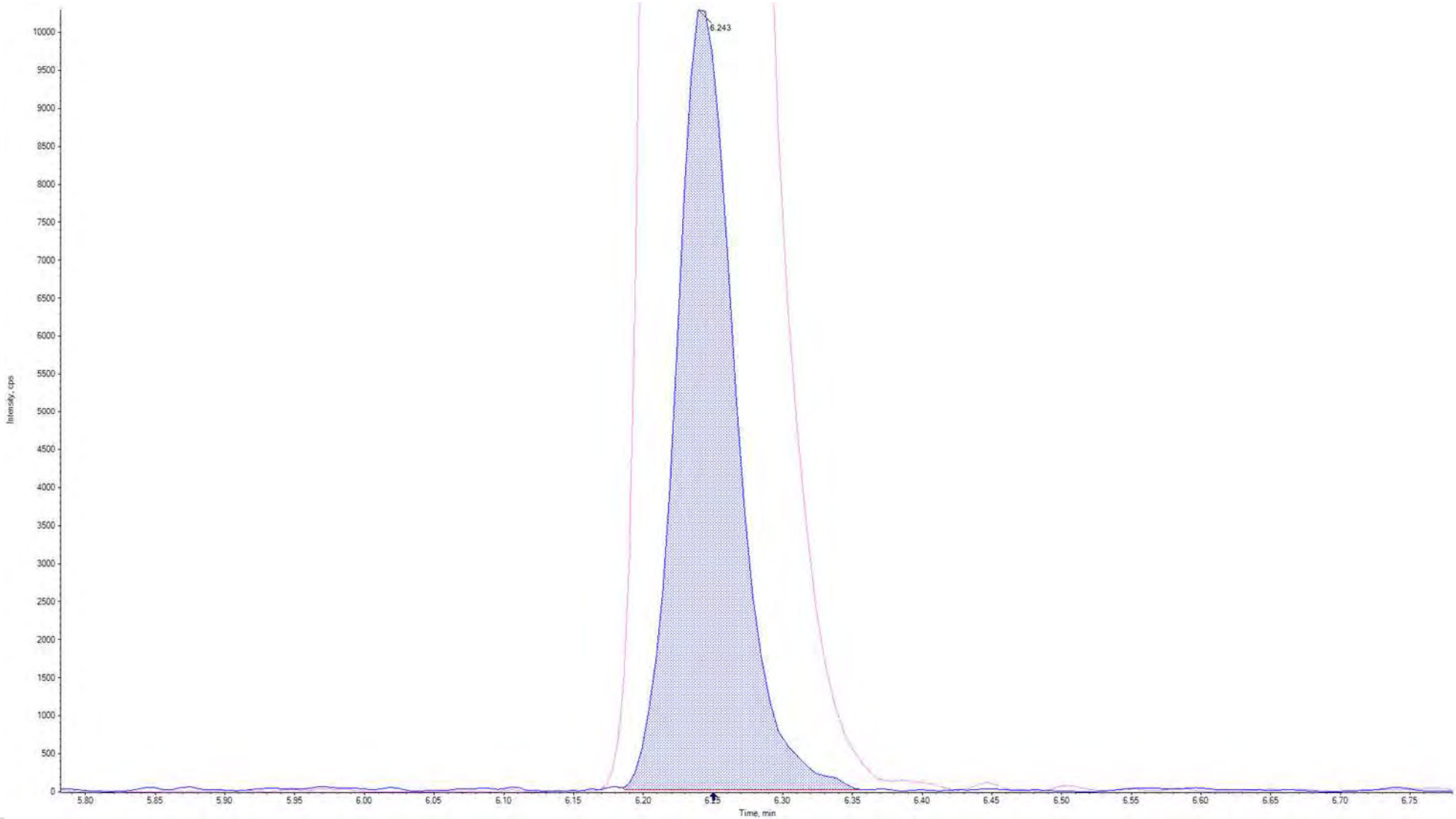
PFHpA_2
Sample: WG1973357-2 S/N:3992.4 Points Across peak:31



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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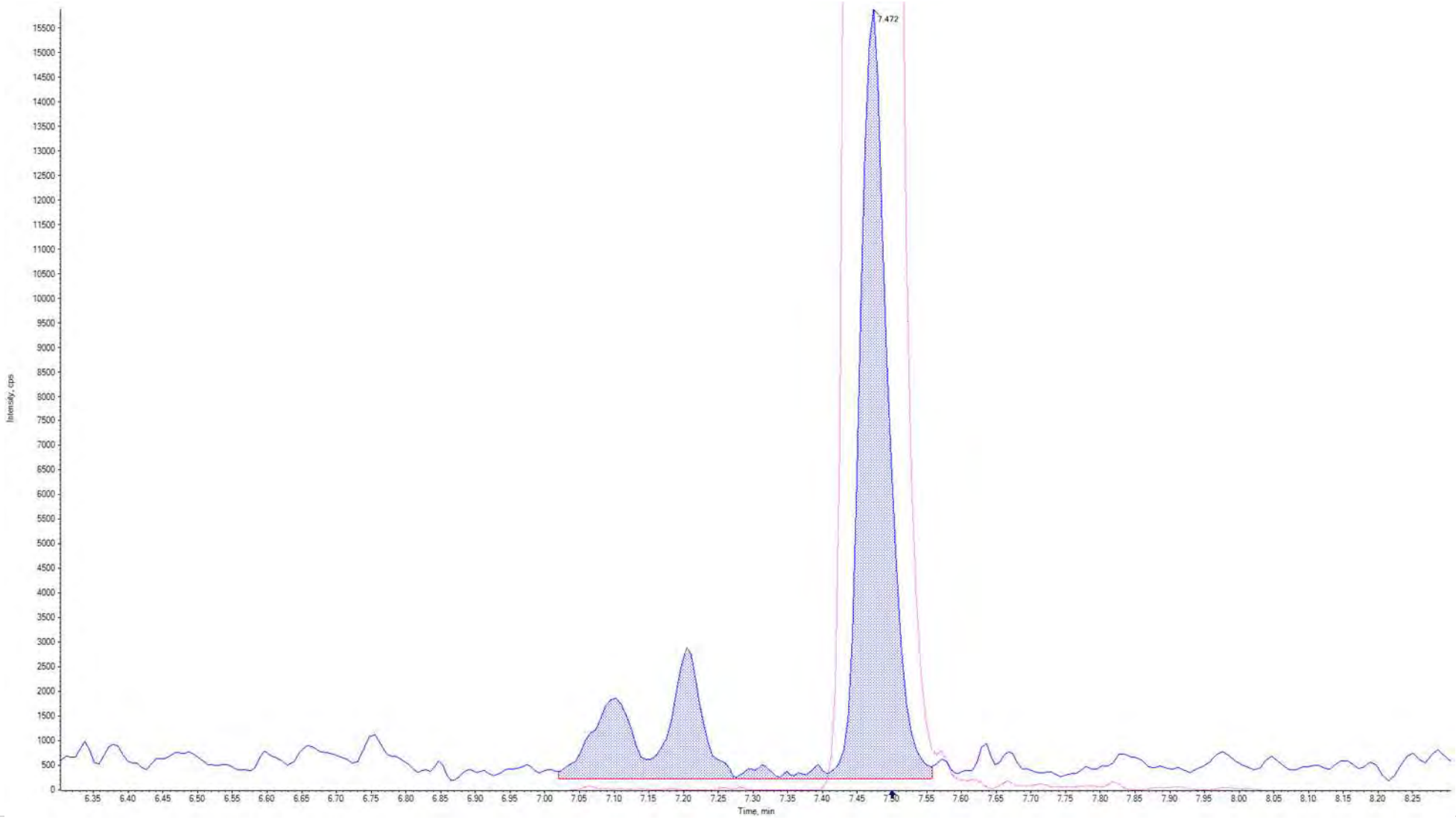
Generated: 9/19/2024 8:04:31 AM

PFOA
Sample: WG1973357-2 S/N:301.3 Points Across peak:87



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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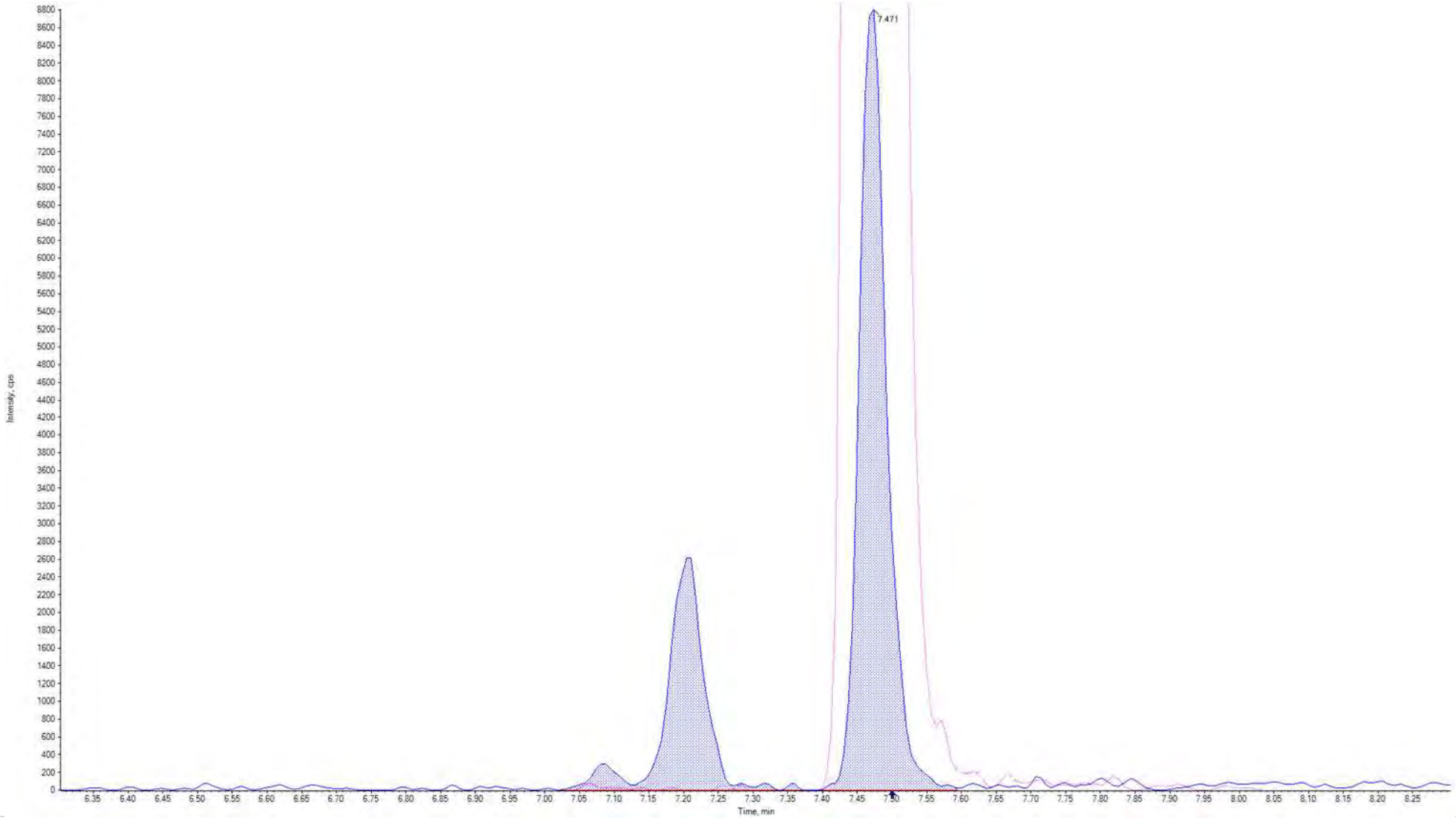
Generated: 9/19/2024 8:04:31 AM

PFOA_2
Sample: WG1973357-2 S/N:222281.4 Points Across peak:92



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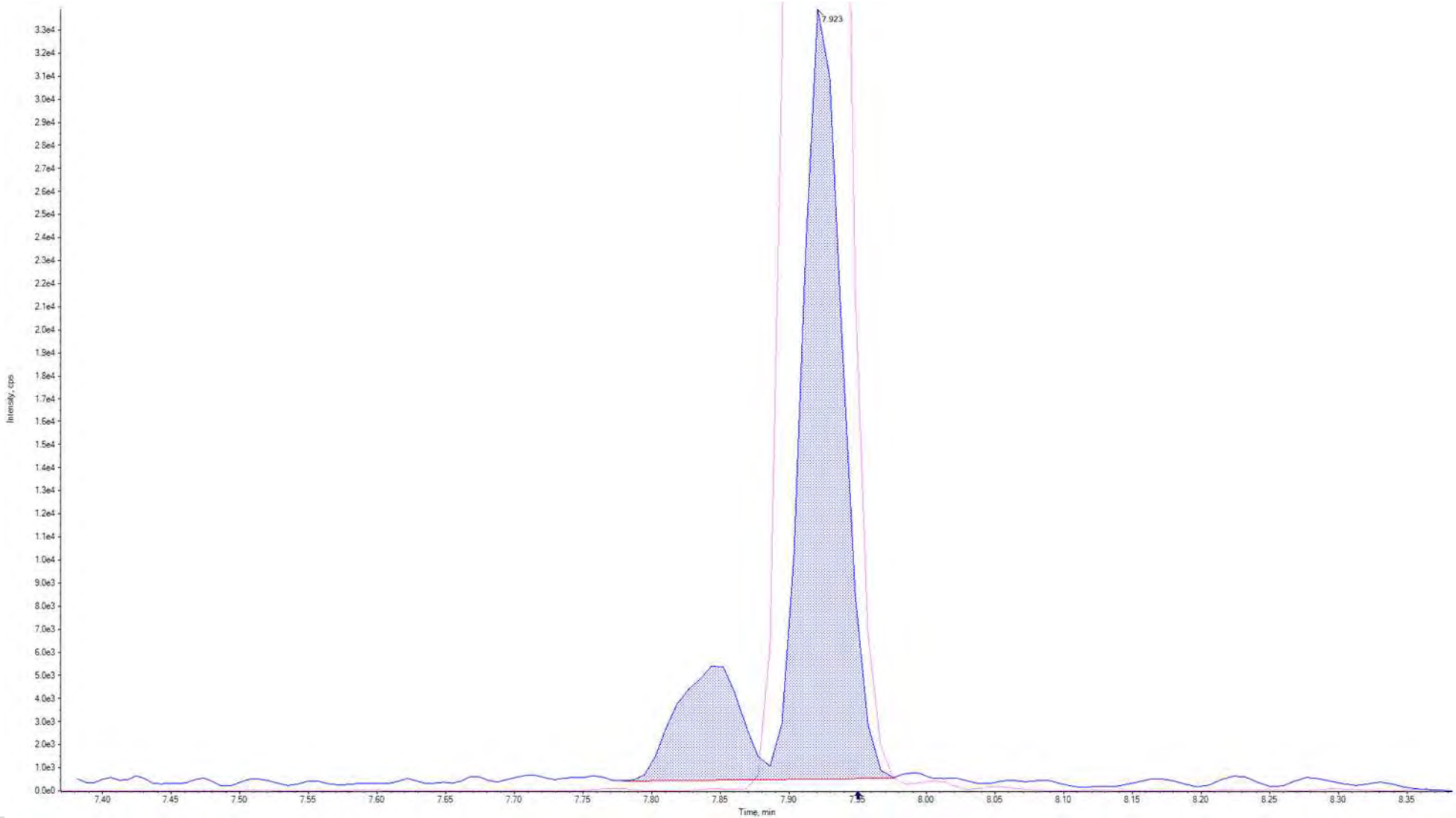
Generated: 9/19/2024 8:04:31 AM

PFNA
Sample: WG1973357-2 S/N:915.8 Points Across peak:25



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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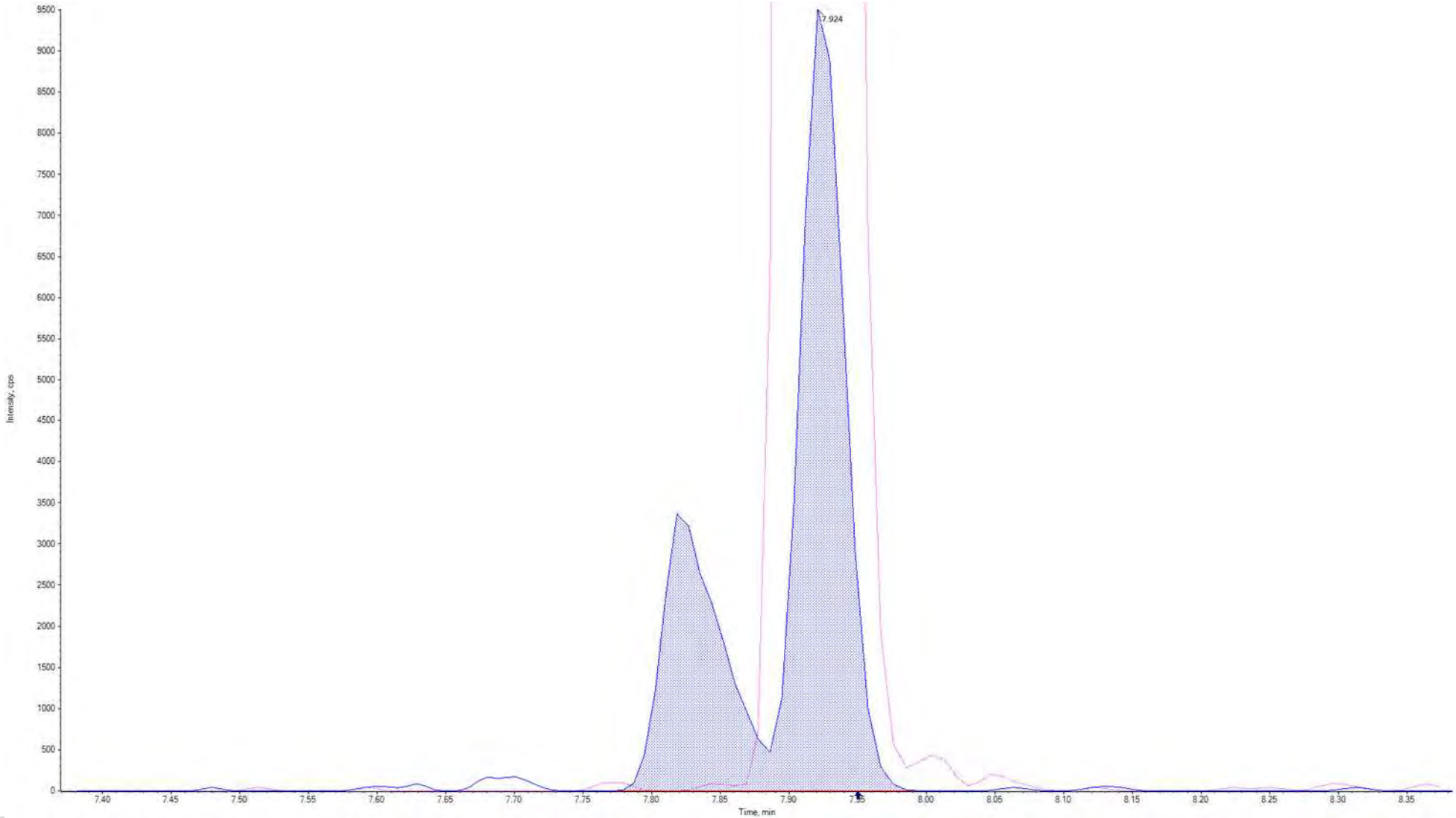
Generated: 9/19/2024 8:04:31 AM

PFNA_2
Sample: WG1973357-2 S/N:829.0 Points Across peak:29



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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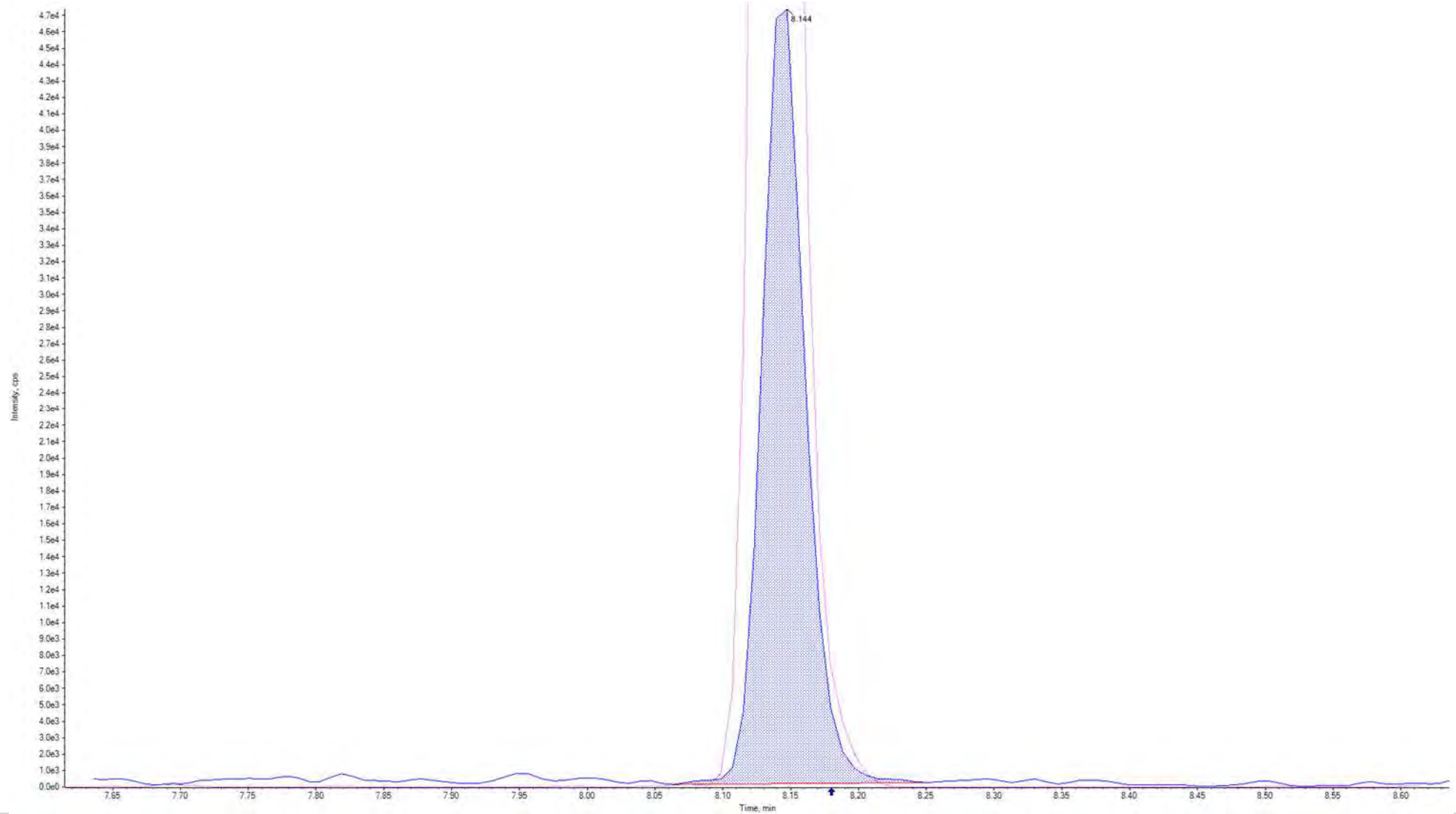
Generated: 9/19/2024 8:04:31 AM

PFDA
Sample: WG1973357-2 S/N:882.8 Points Across peak:23



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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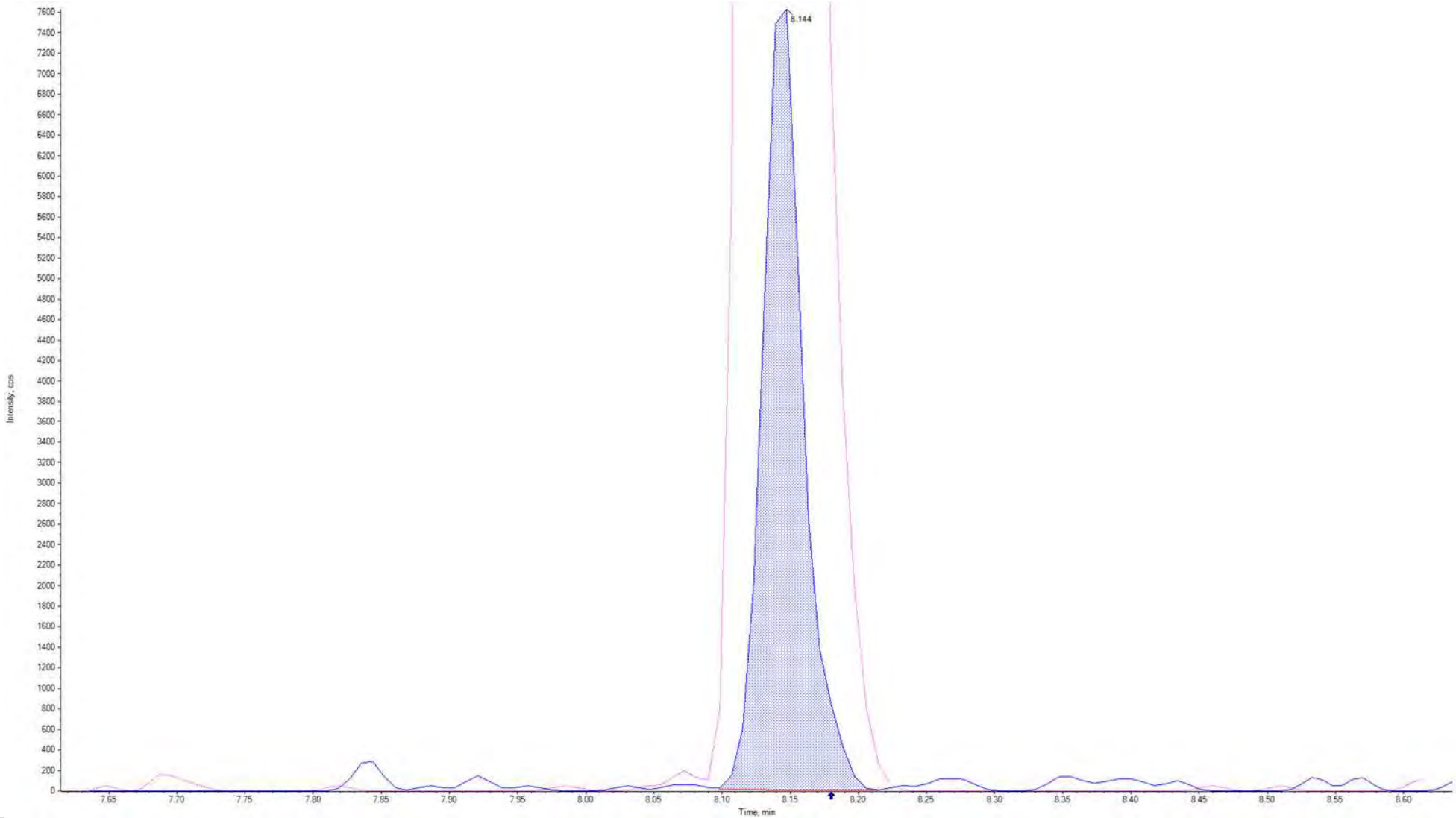
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDA_2
Sample: WG1973357-2 S/N:269.6 Points Across peak:15



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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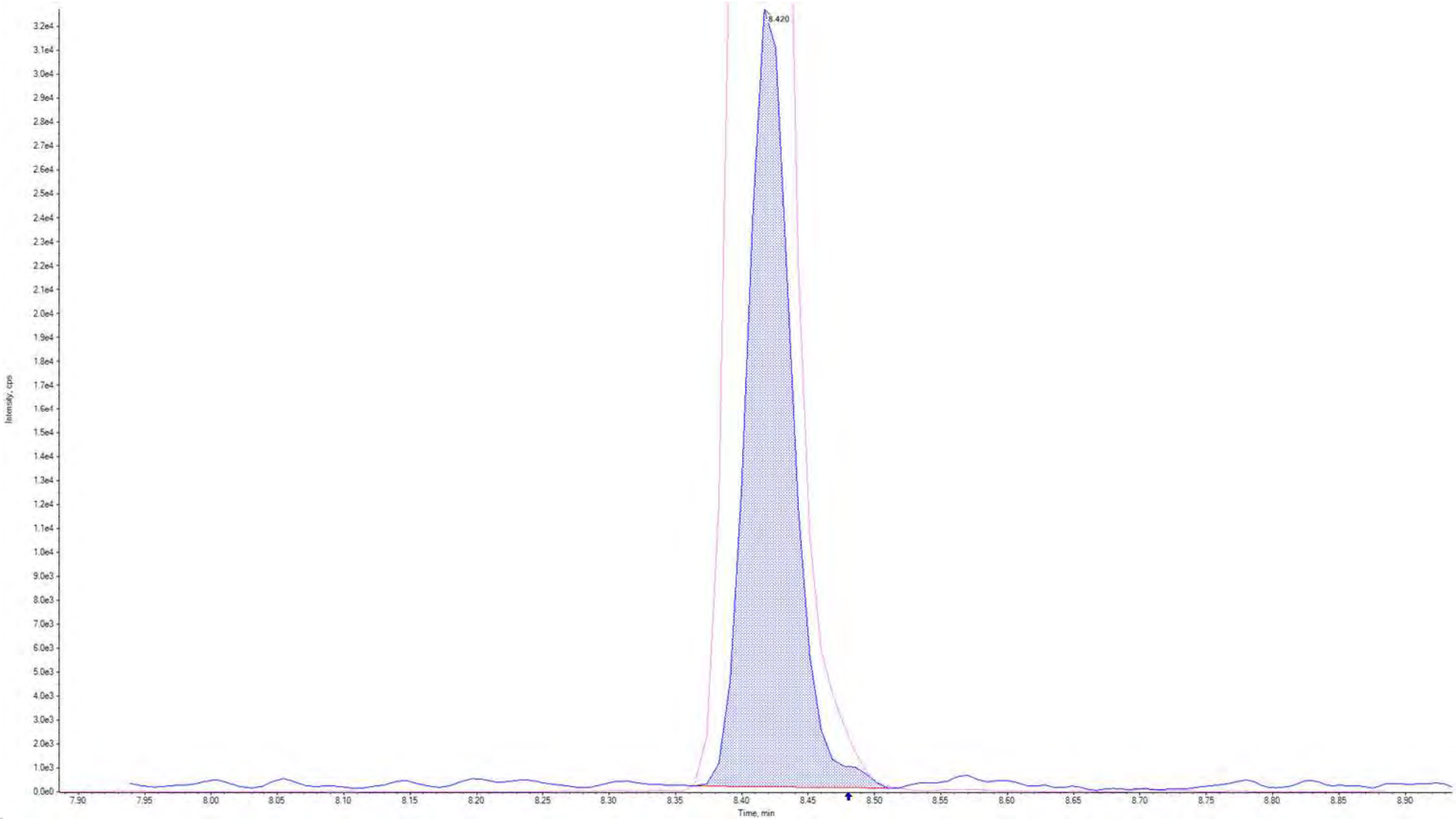
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFUnA
Sample: WG1973357-2 S/N:596.0 Points Across peak:19



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Last Altered: 9/19/2024 11:40:51 AM
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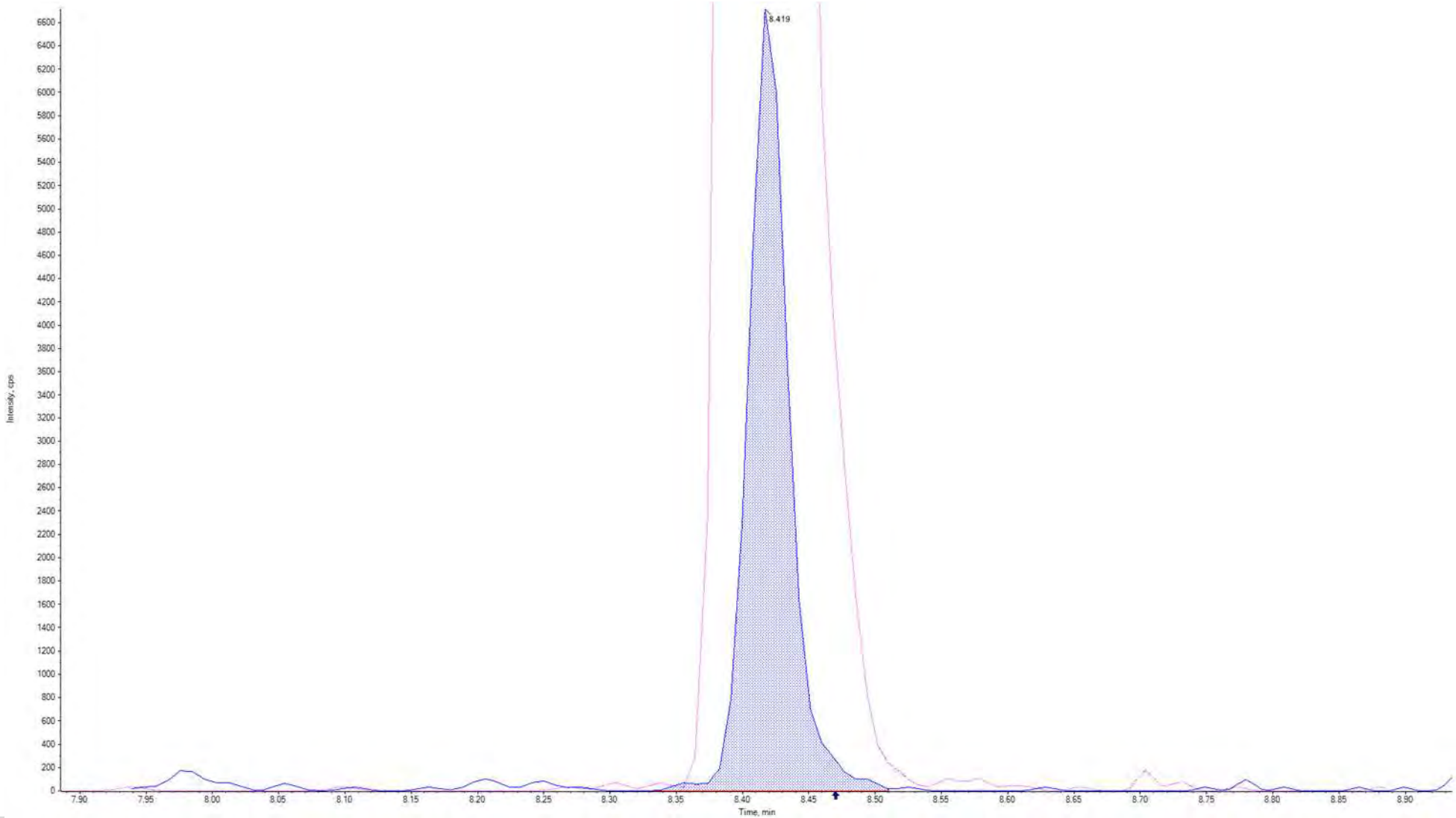
PFUnA_2
Sample: WG1973357-2 S/N:487.4 Points Across peak:24



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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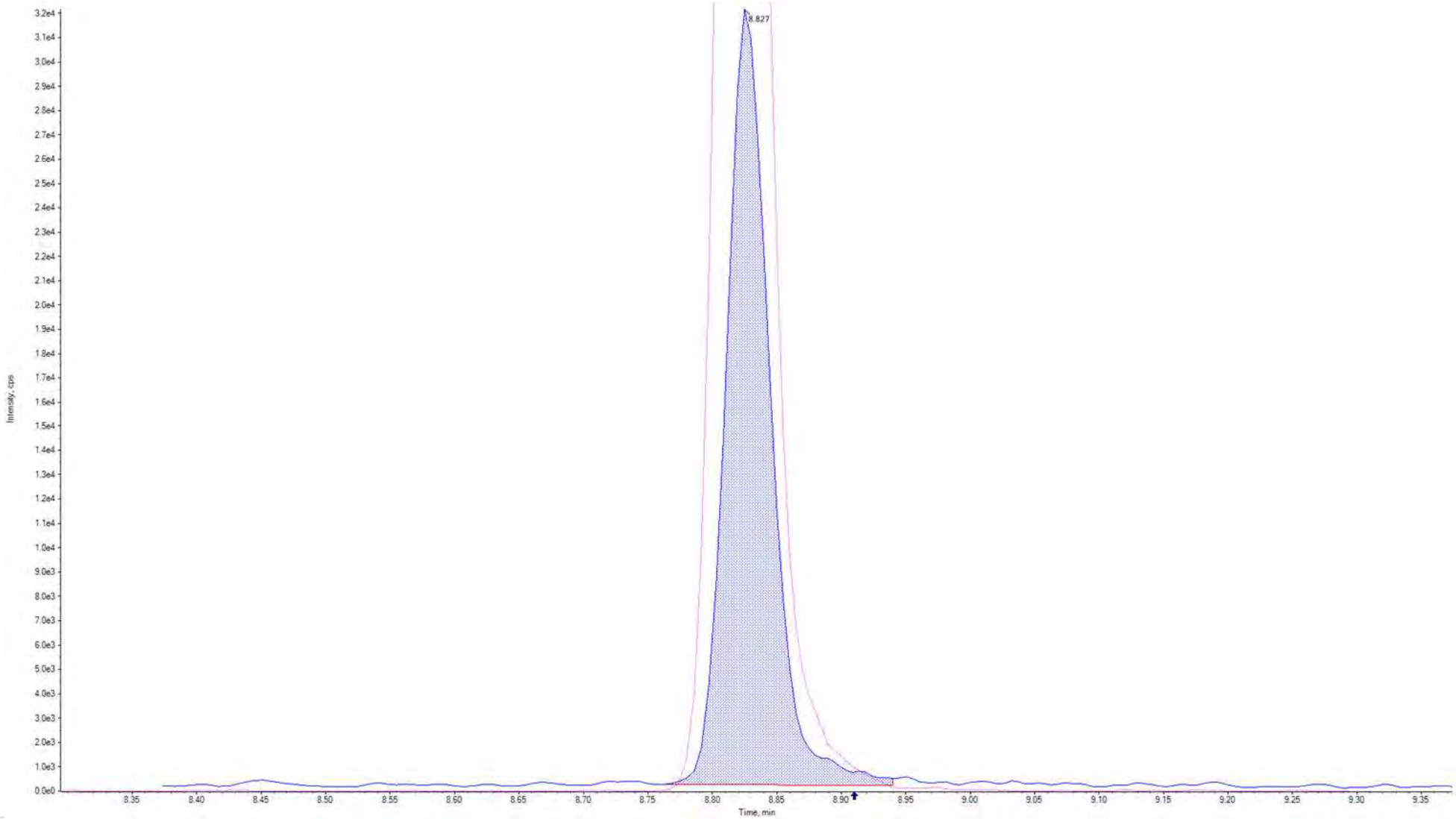
Generated: 9/19/2024 8:04:31 AM

PFDoA
Sample: WG1973357-2 S/N:844.3 Points Across peak:36



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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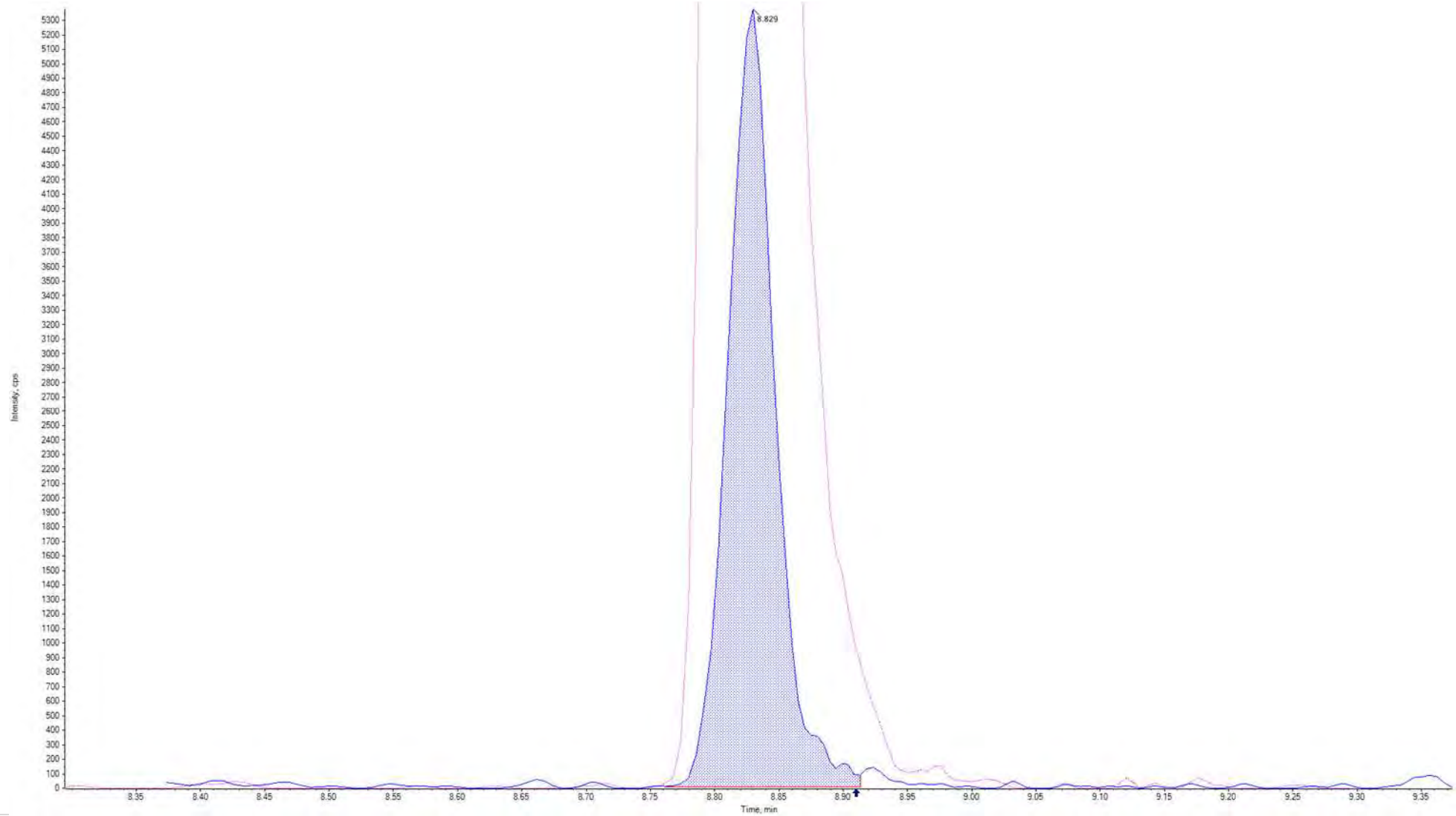
PFDoA_2
Sample: WG1973357-2 S/N:21414.9 Points Across peak:30



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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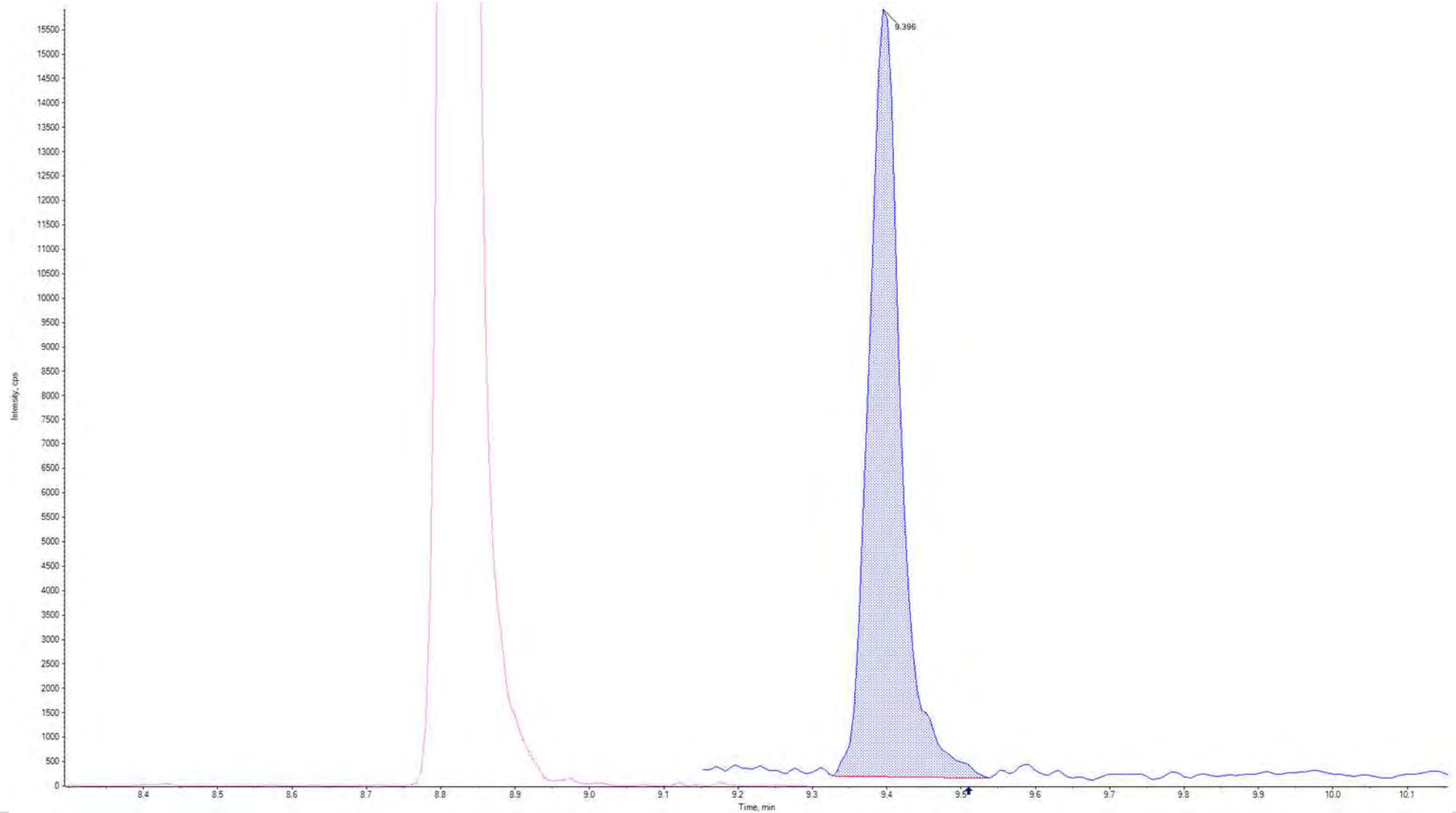
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFTrDA
Sample: WG1973357-2 S/N:525.8 Points Across peak:38



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFTrDA_2
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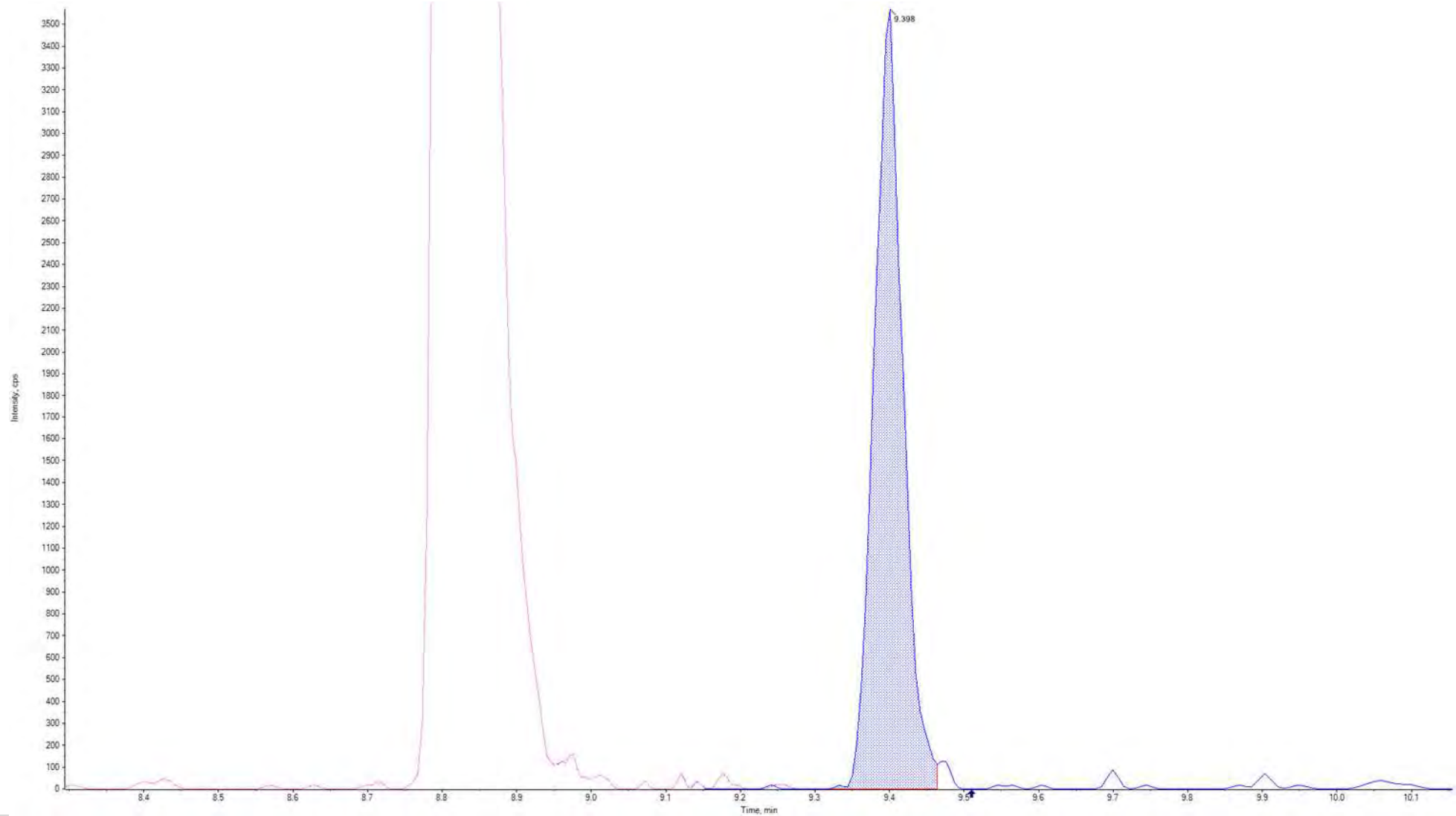

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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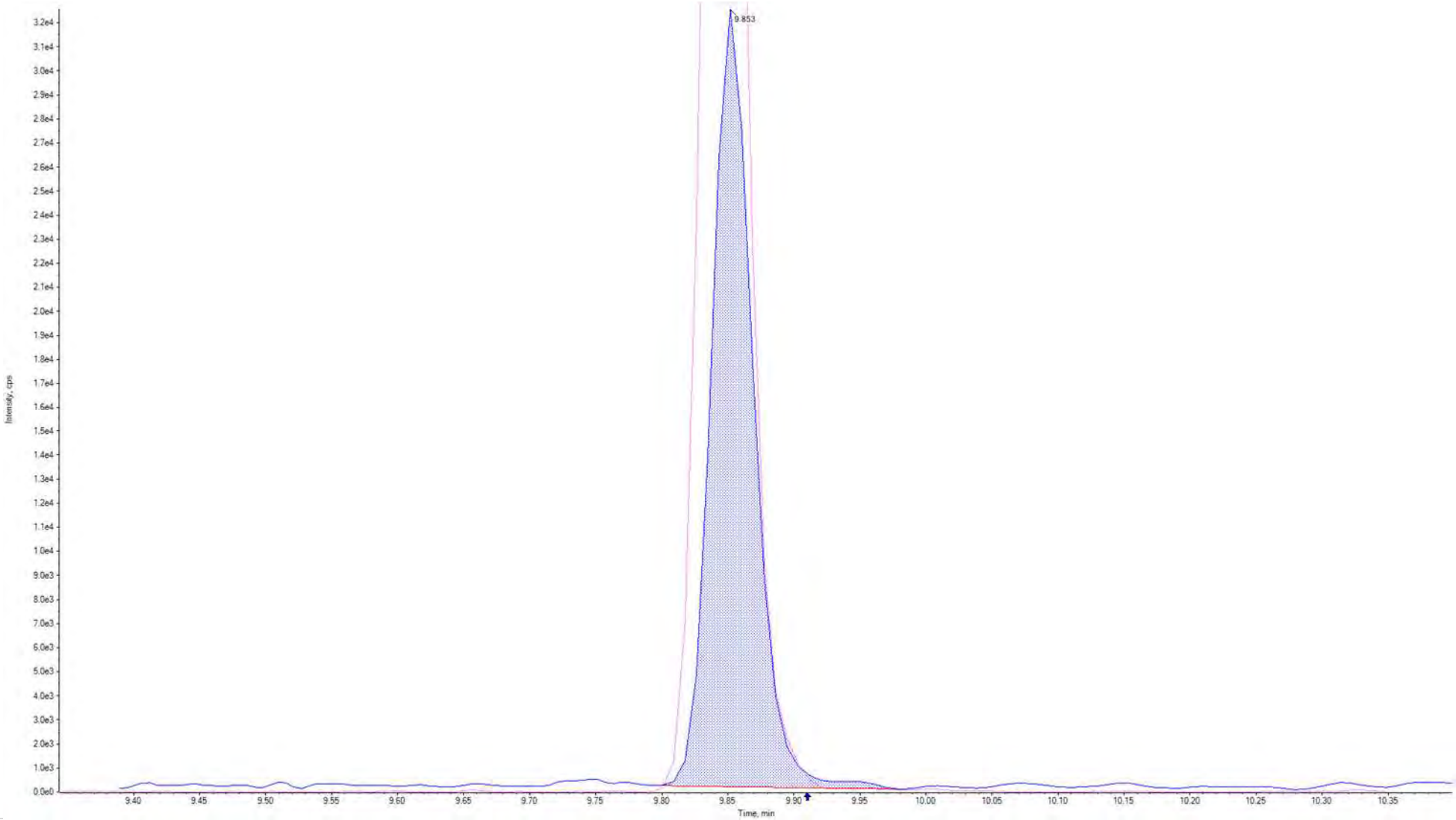
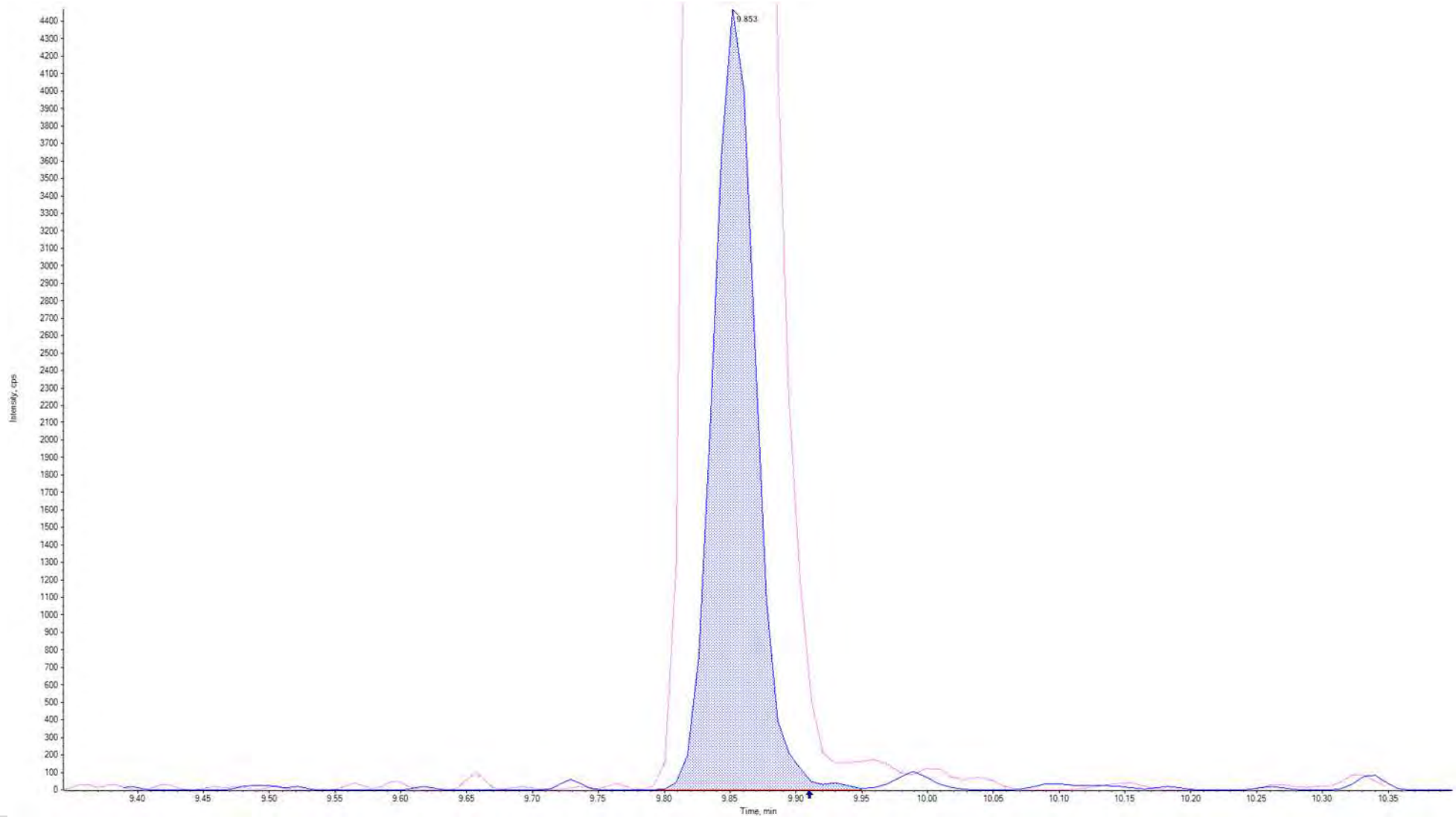
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFTeDA
Sample: WG1973357-2 S/N:477.3 Points Across peak:22



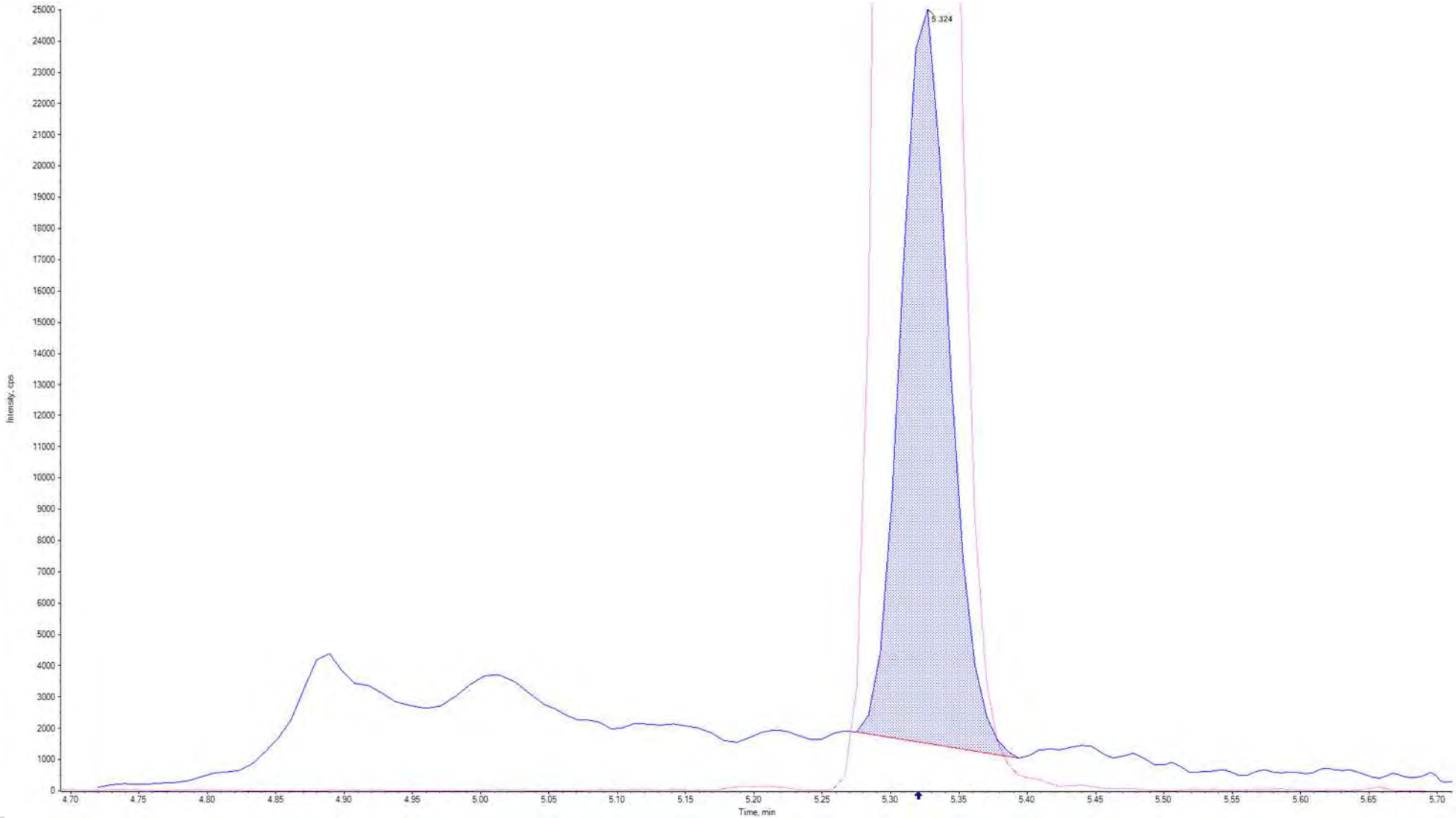
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFTeDA_2
Sample: WG1973357-2 S/N:677.6 Points Across peak:21



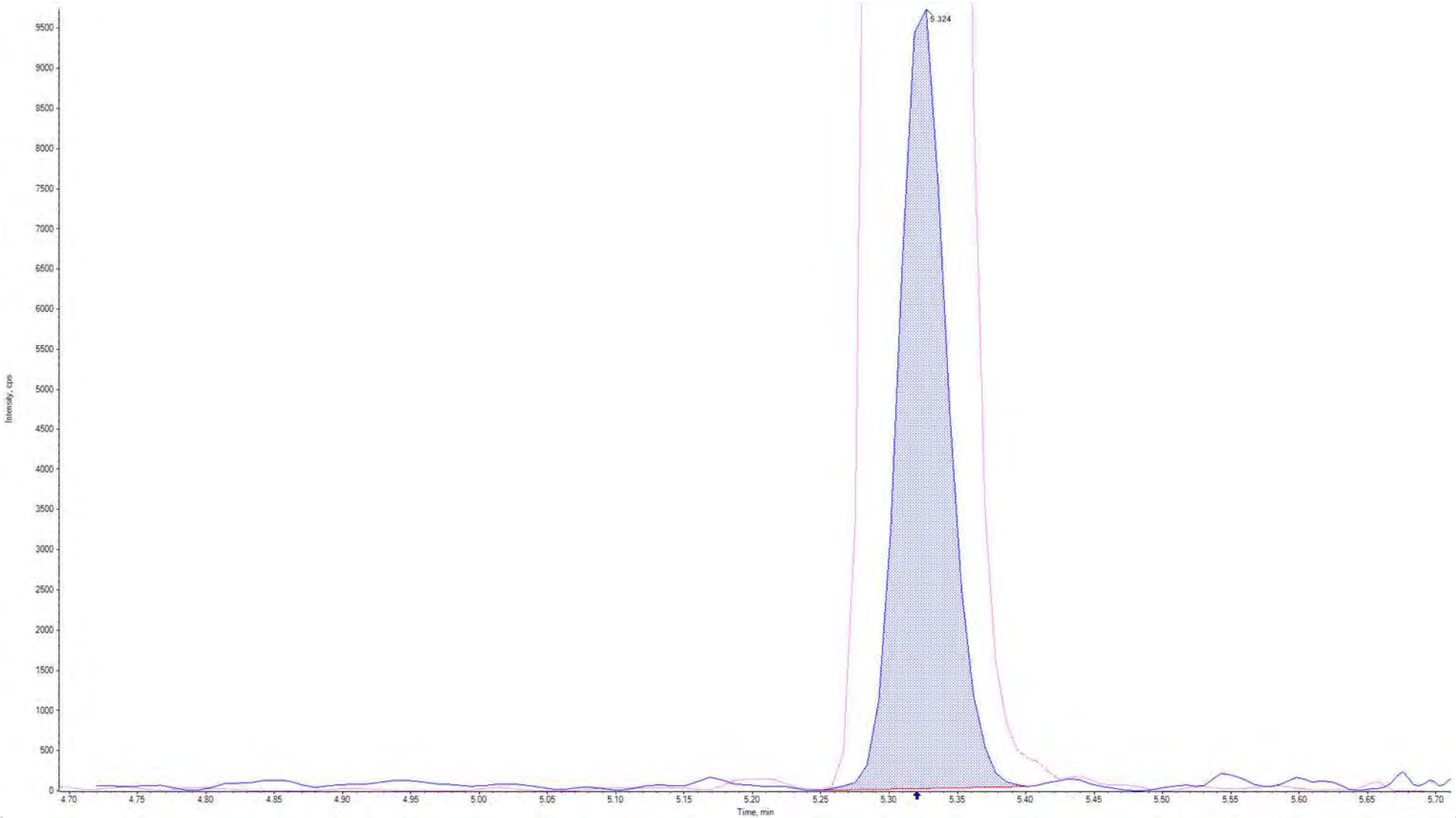
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFBS
Sample: WG1973357-2 S/N:56.0 Points Across peak:15



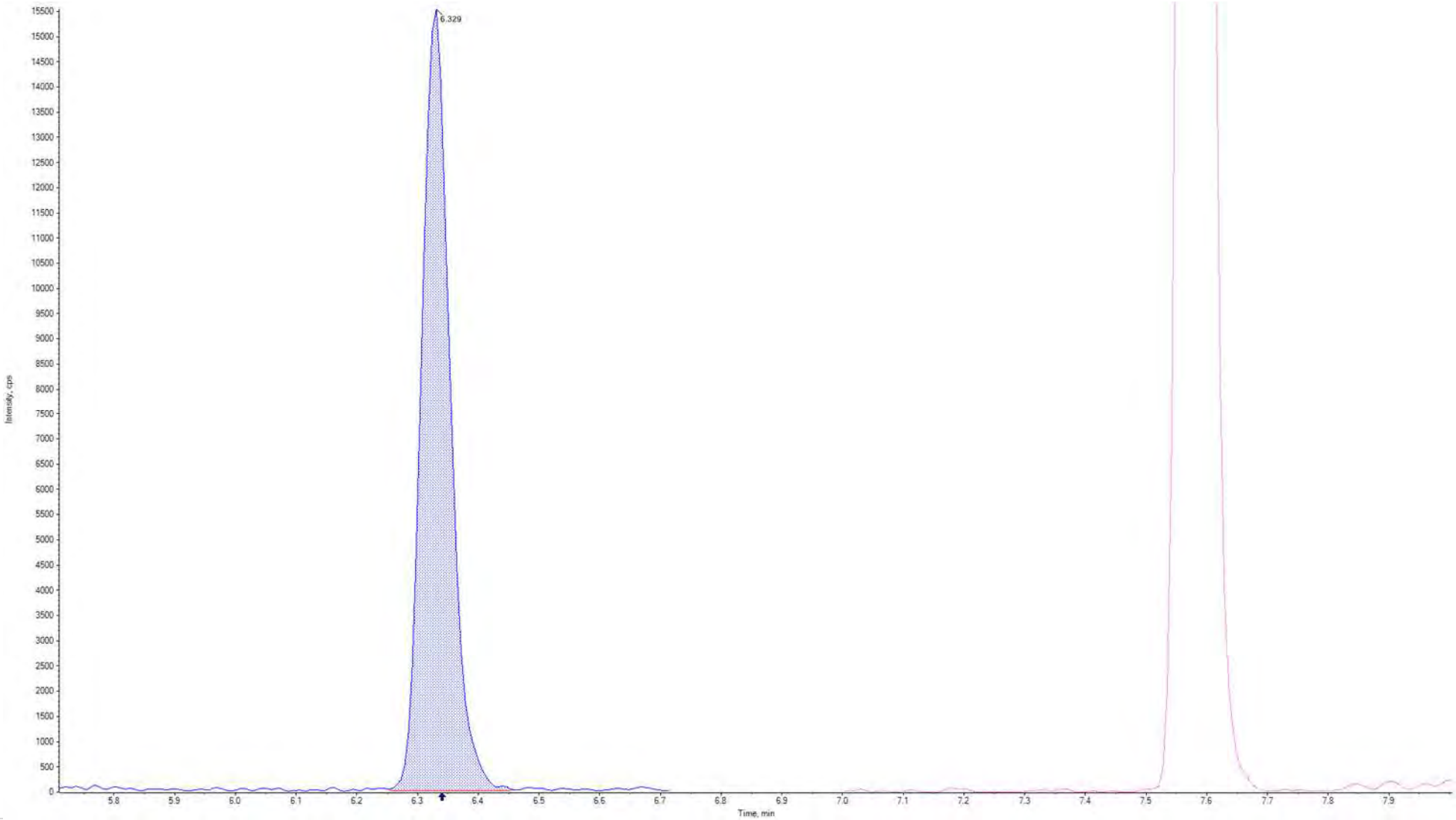
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFBS_2
Sample: WG1973357-2 S/N:1283.9 Points Across peak:19



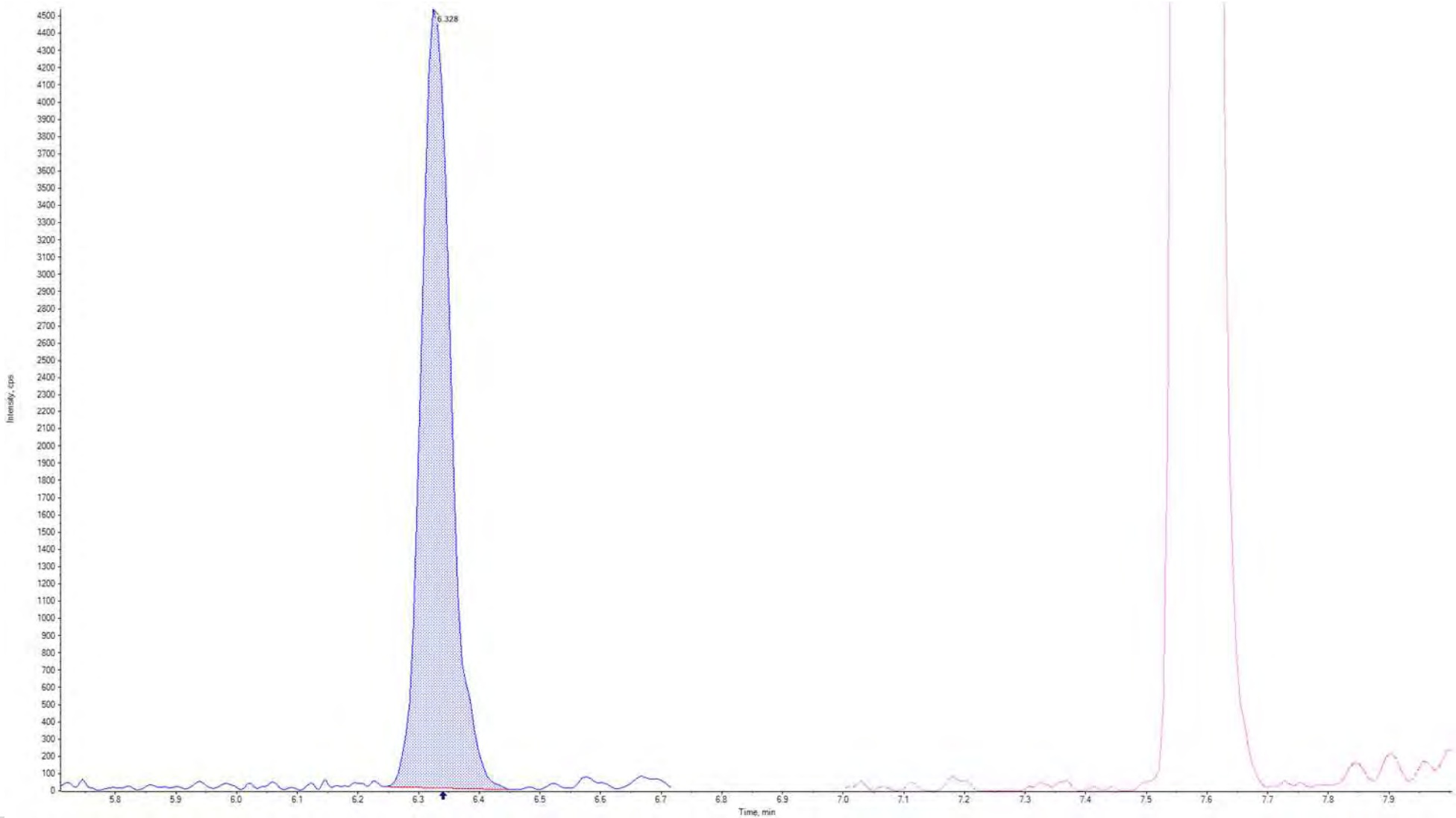
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFPeS
Sample: WG1973357-2 S/N:1412.5 Points Across peak:32



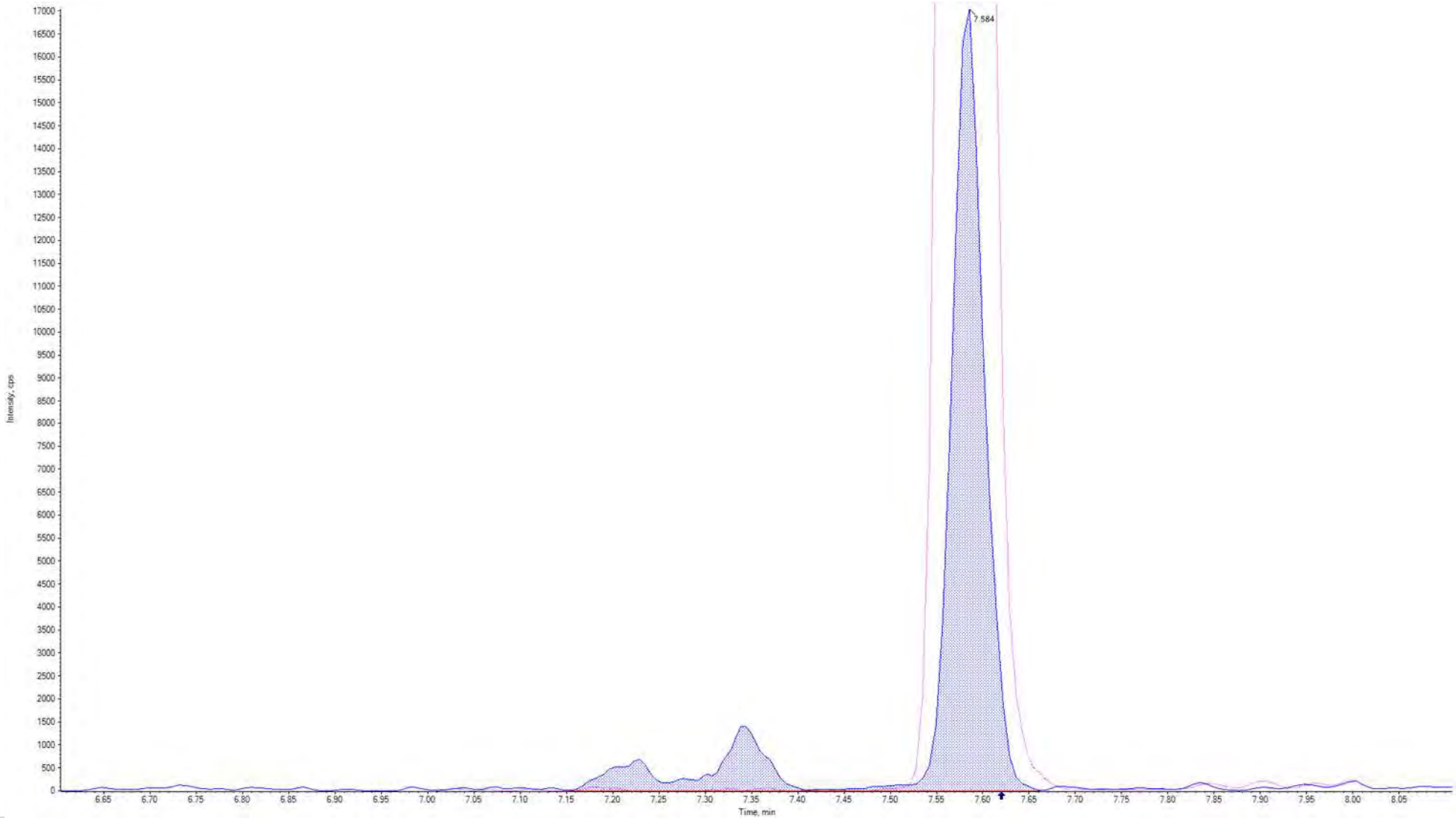
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFPeS_2
Sample: WG1973357-2 S/N:1055.6 Points Across peak:33



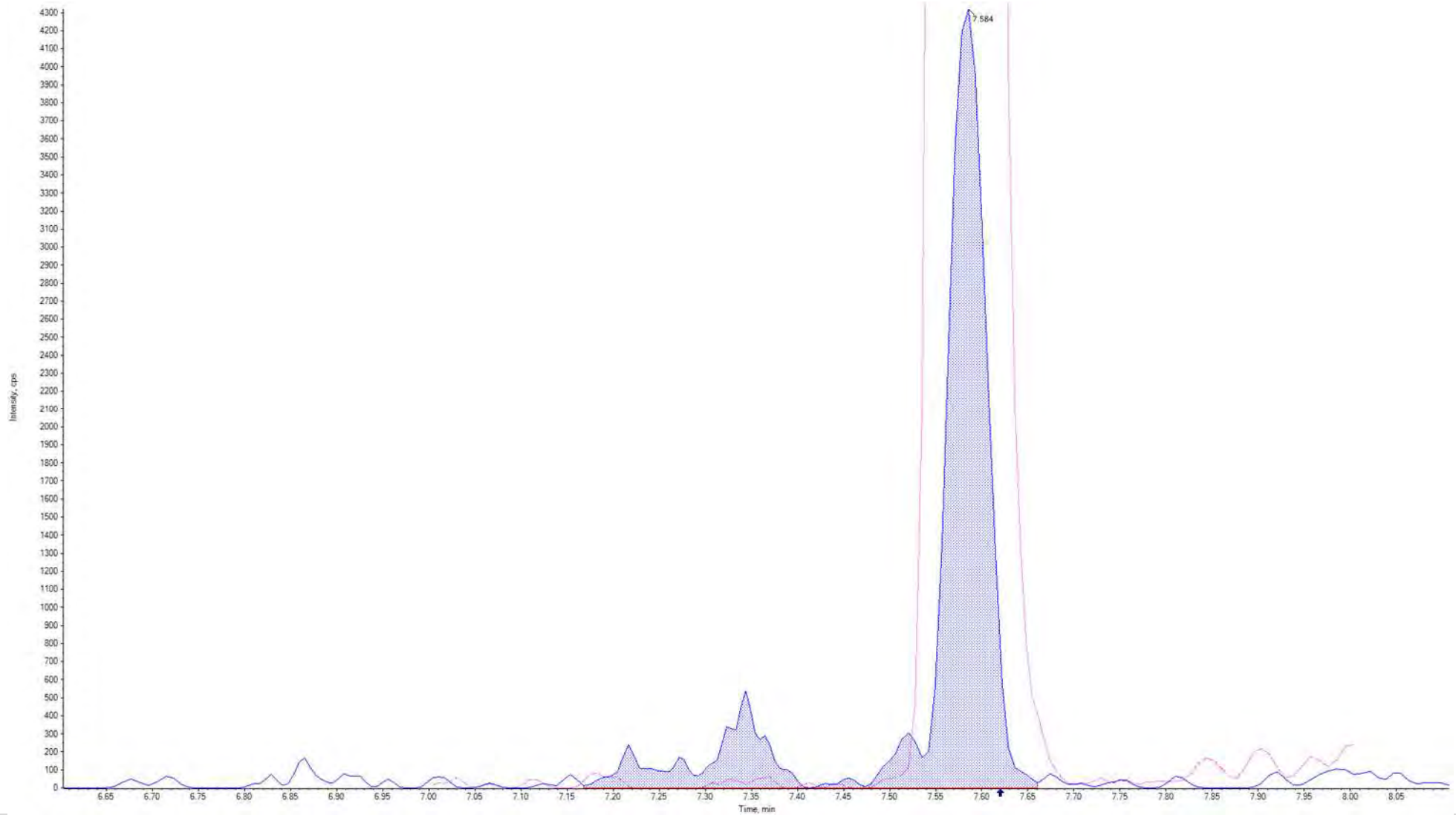
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHxS
Sample: WG1973357-2 S/N:57974.8 Points Across peak:83



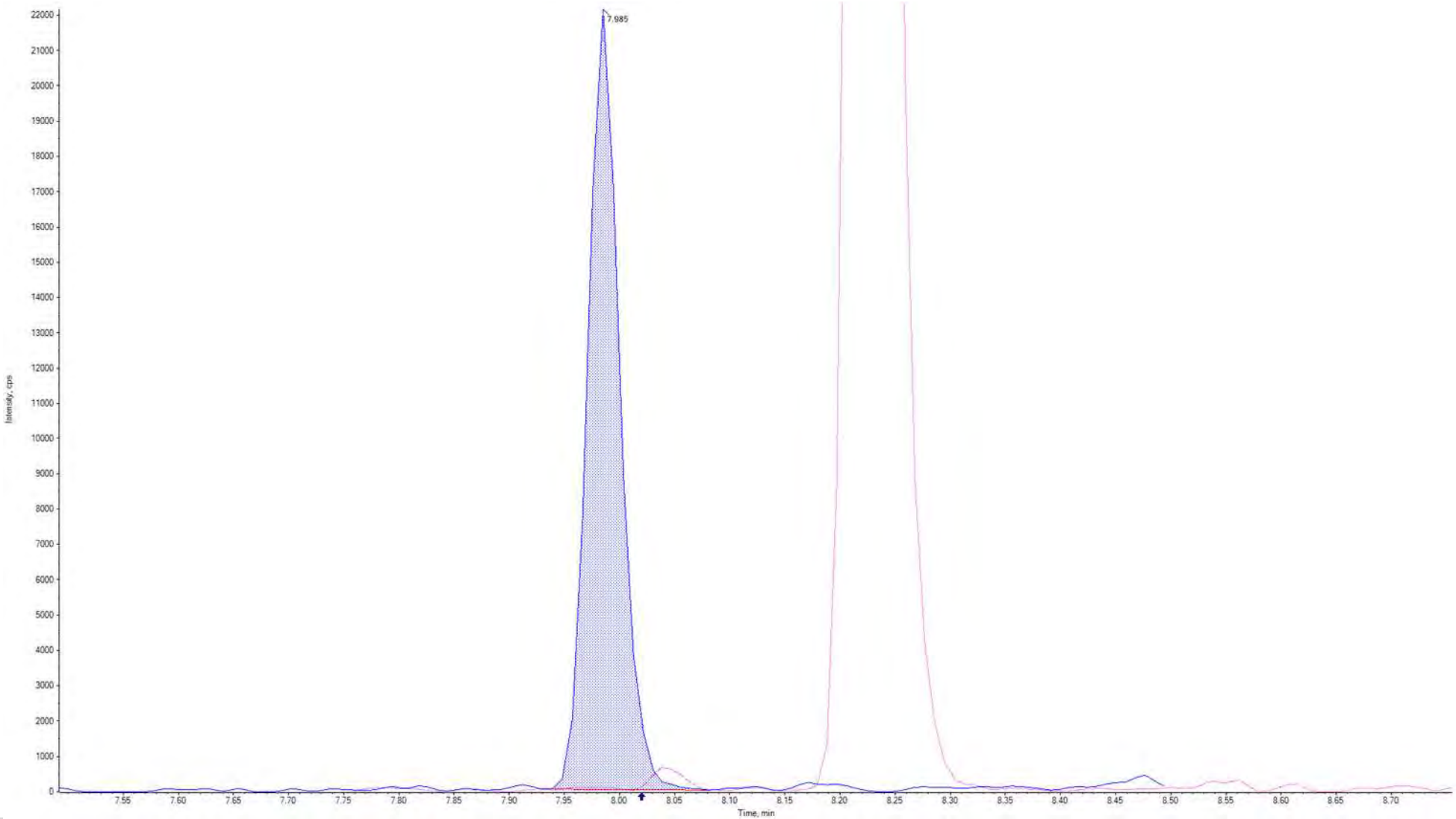
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHxS_2
Sample: WG1973357-2 S/N:1786753.1 Points Across peak:80



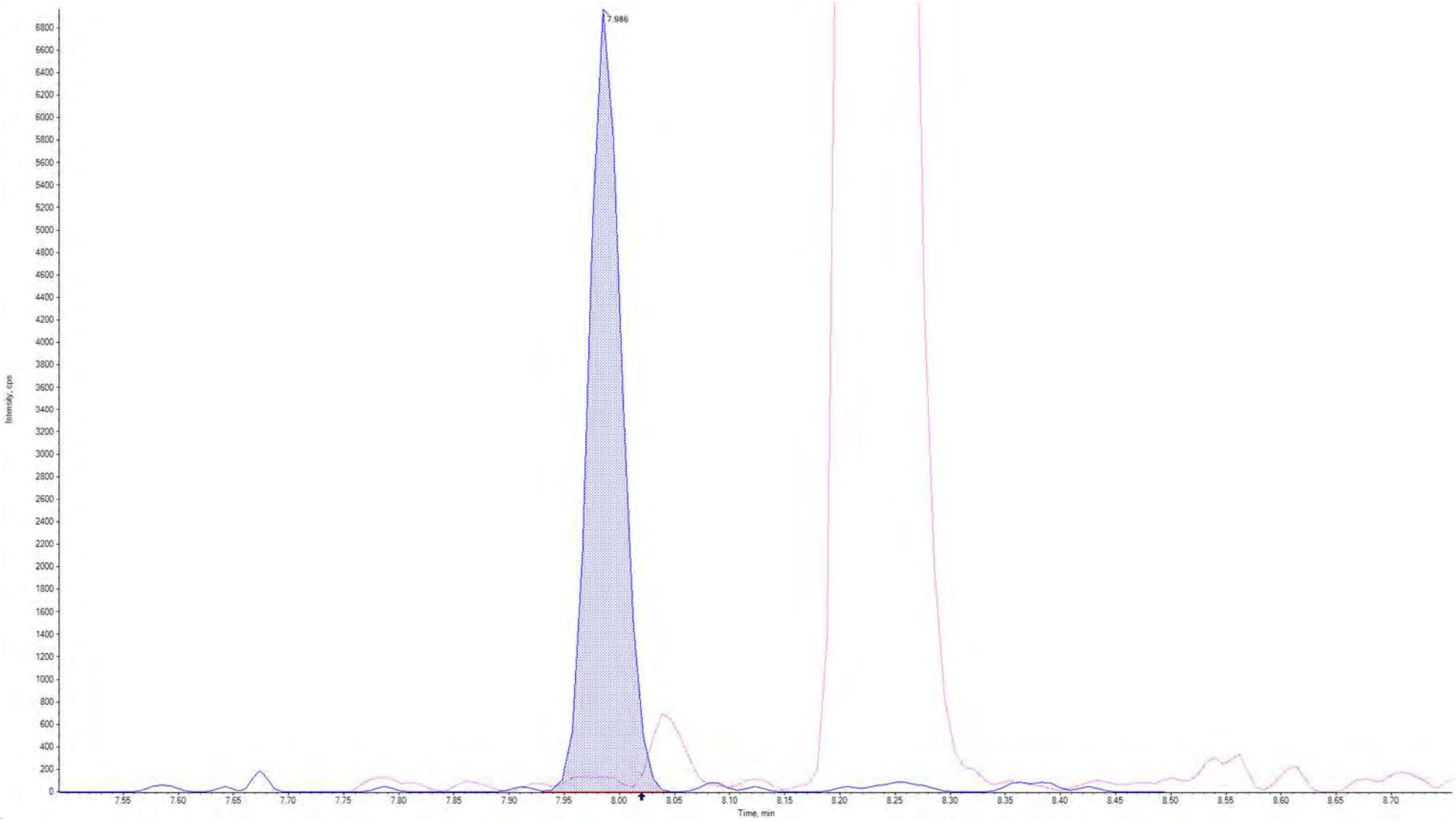
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHpS
Sample: WG1973357-2 S/N:337212.0 Points Across peak:18



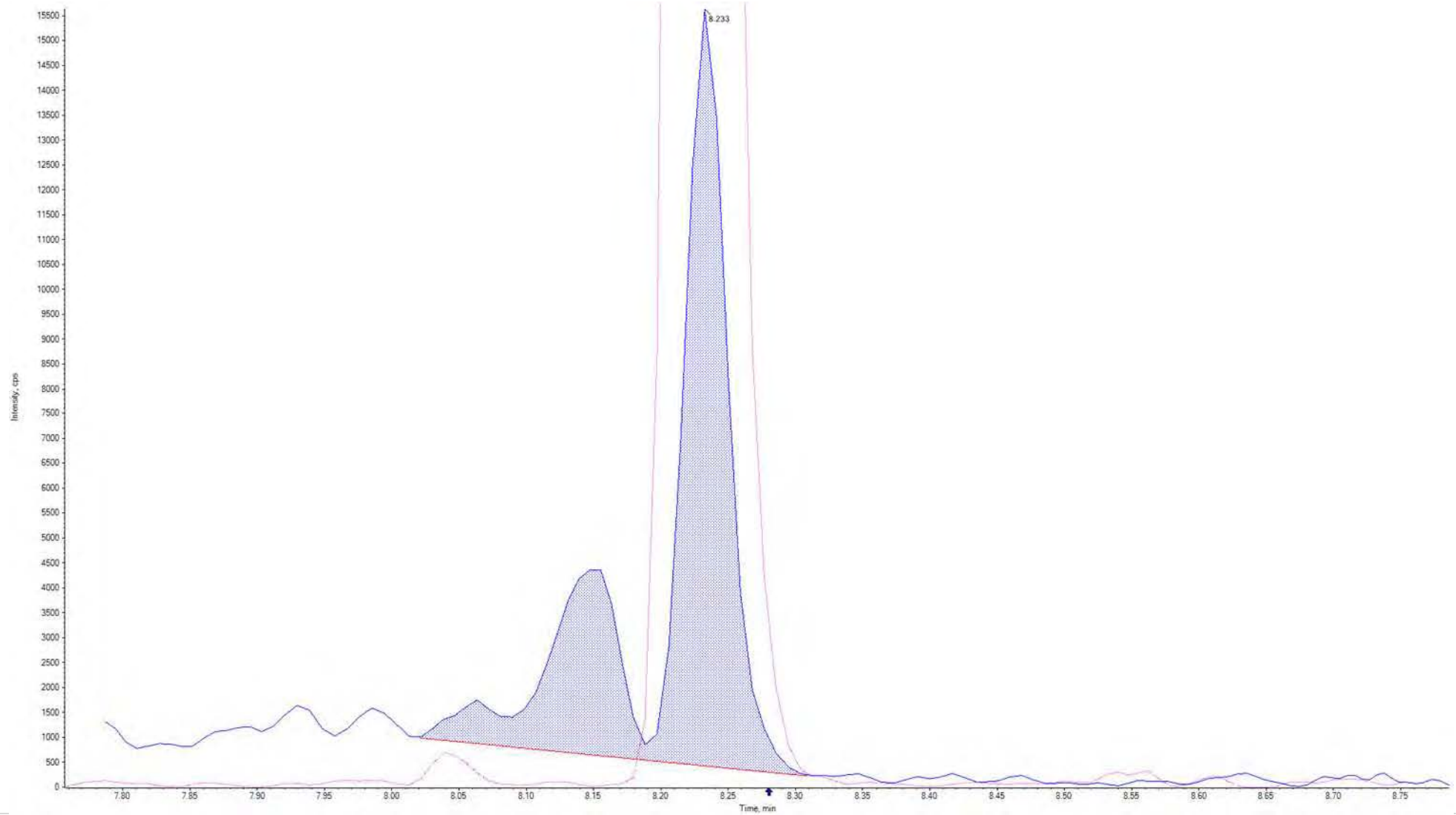
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHpS_2
Sample: WG1973357-2 S/N:599.4 Points Across peak:15



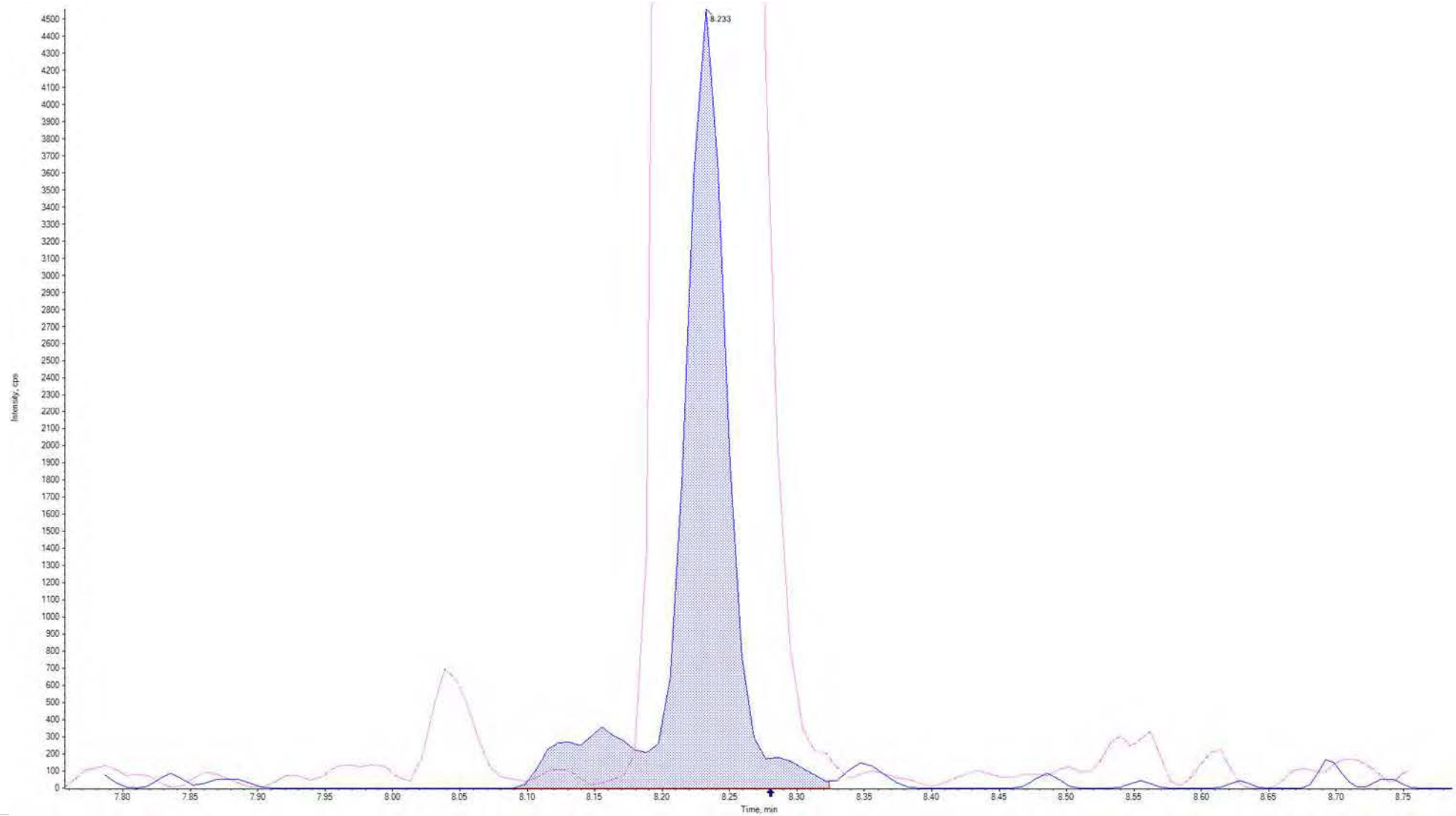
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOS
Sample: WG1973357-2 S/N:566.9 Points Across peak:36



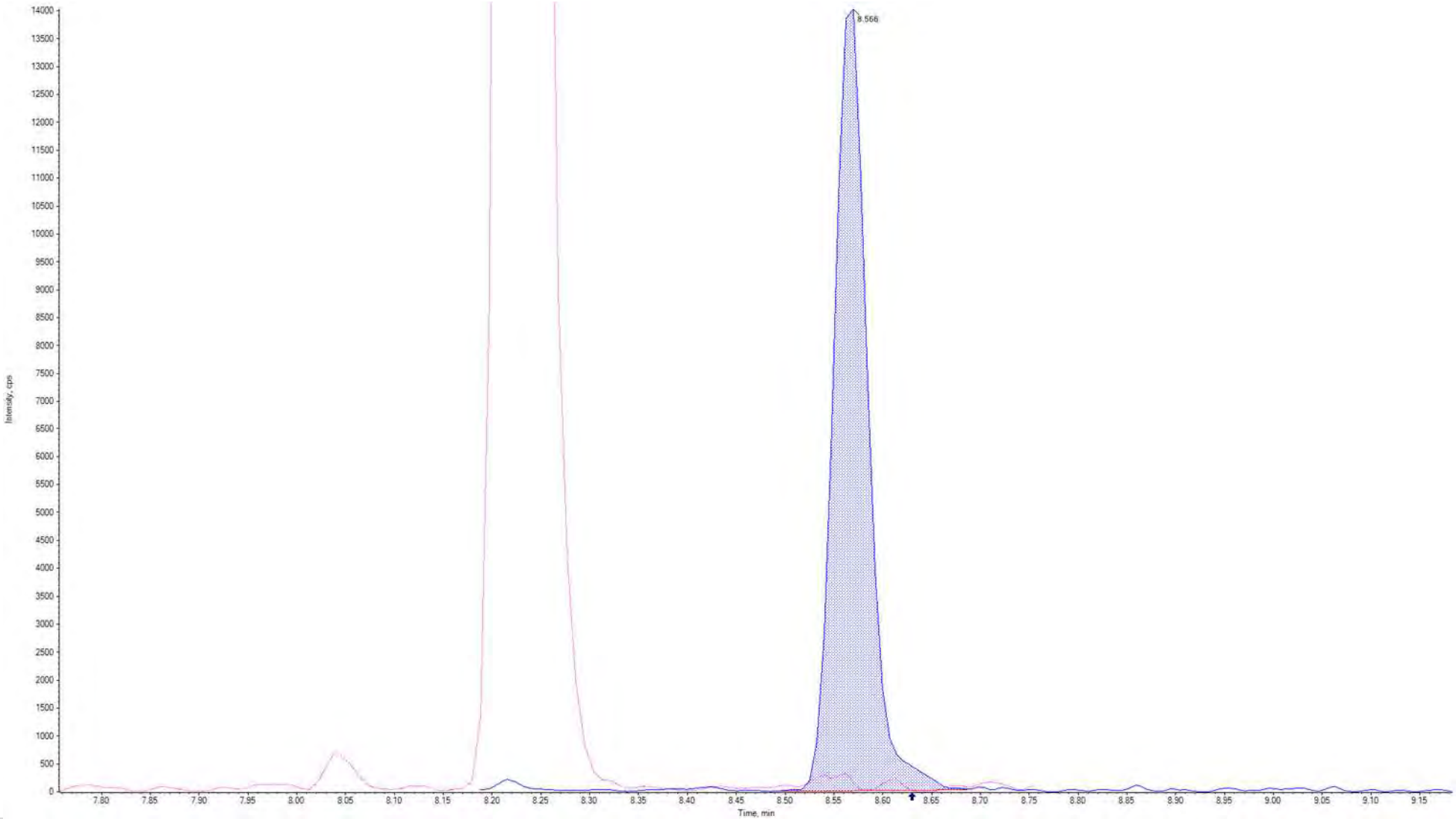
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOS_2
Sample: WG1973357-2 S/N:343.0 Points Across peak:29



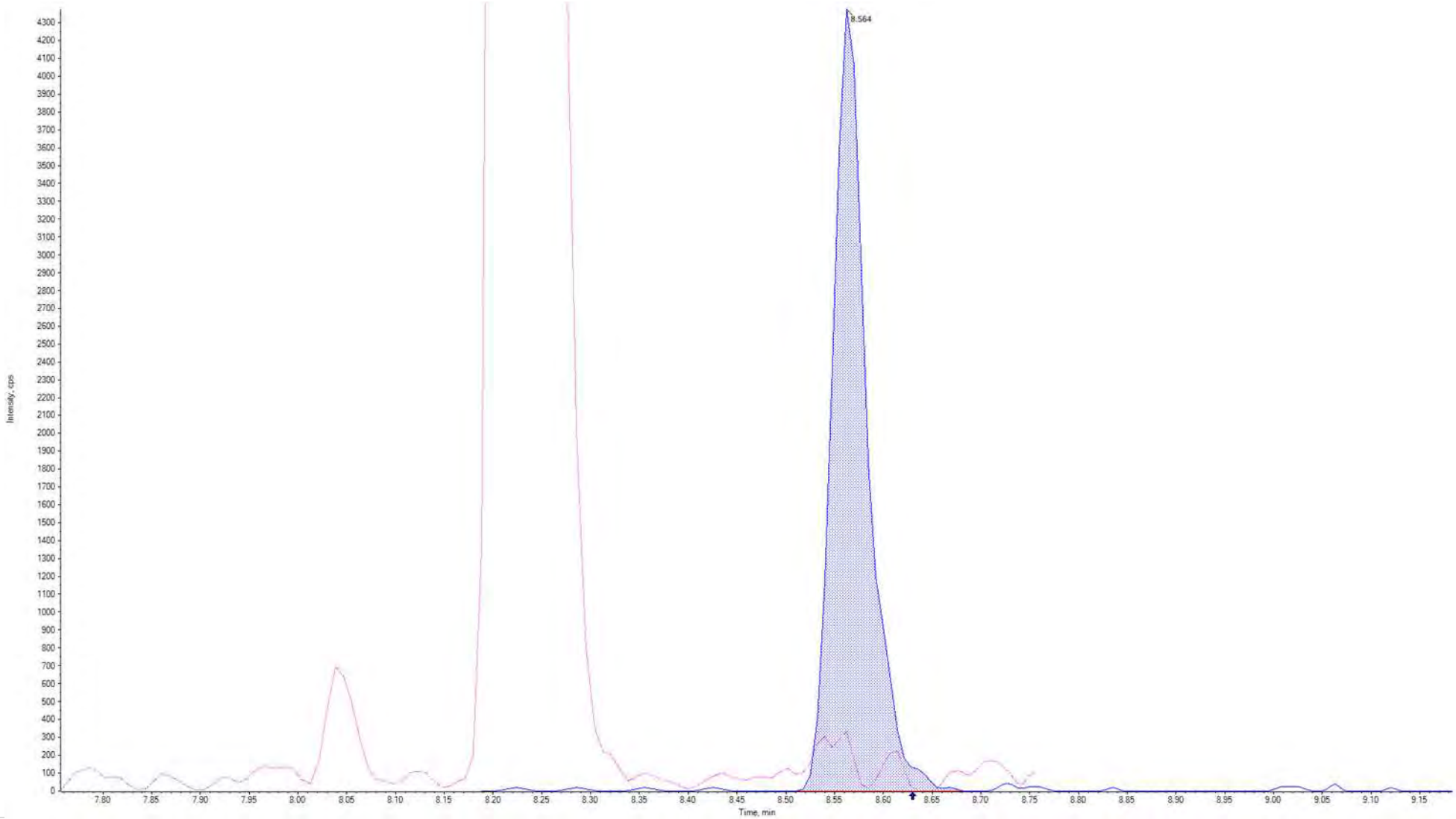
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFNS
Sample: WG1973357-2 S/N:5201.5 Points Across peak:29



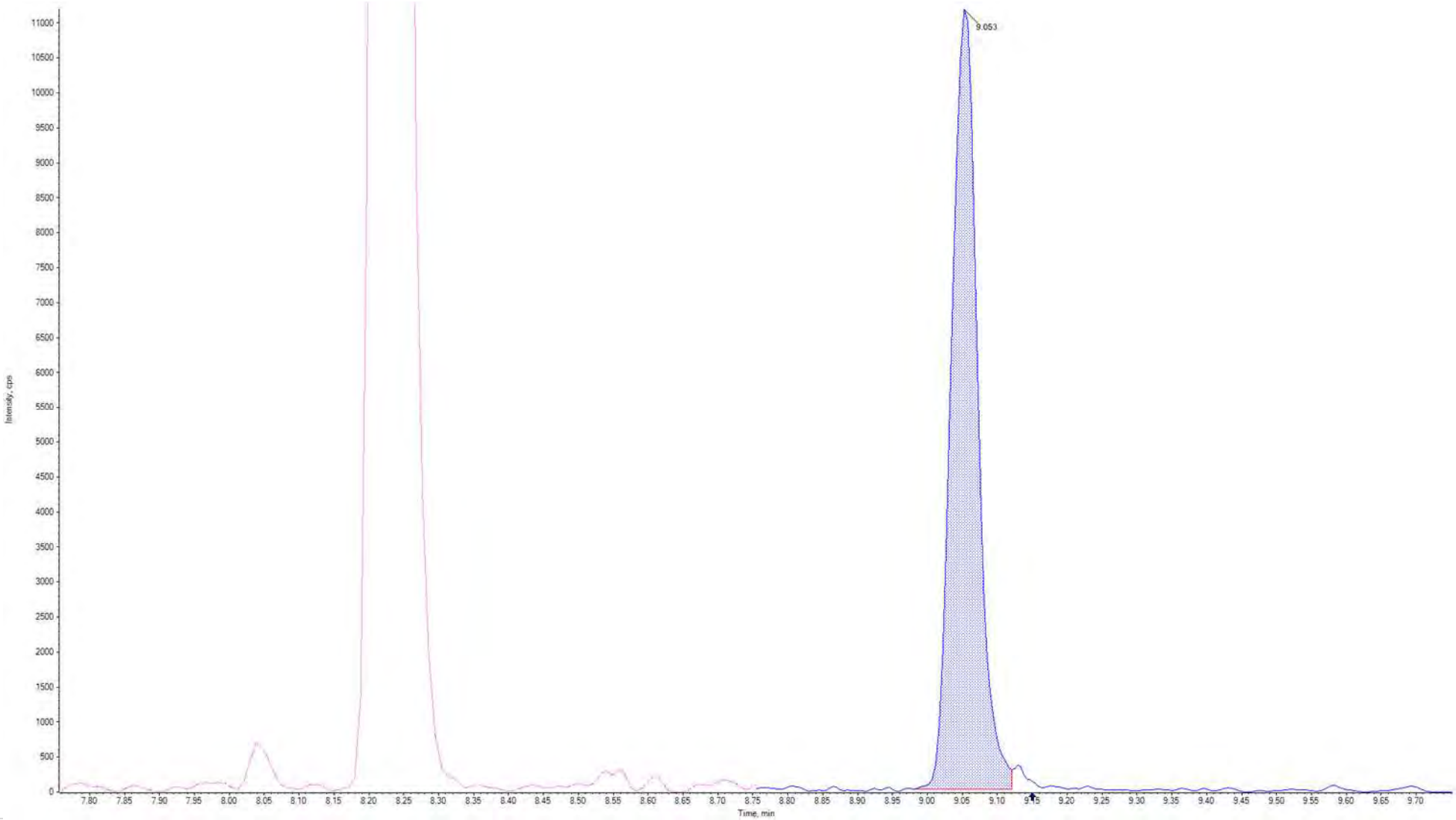
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFNS_2
Sample: WG1973357-2 S/N:1238.4 Points Across peak:29



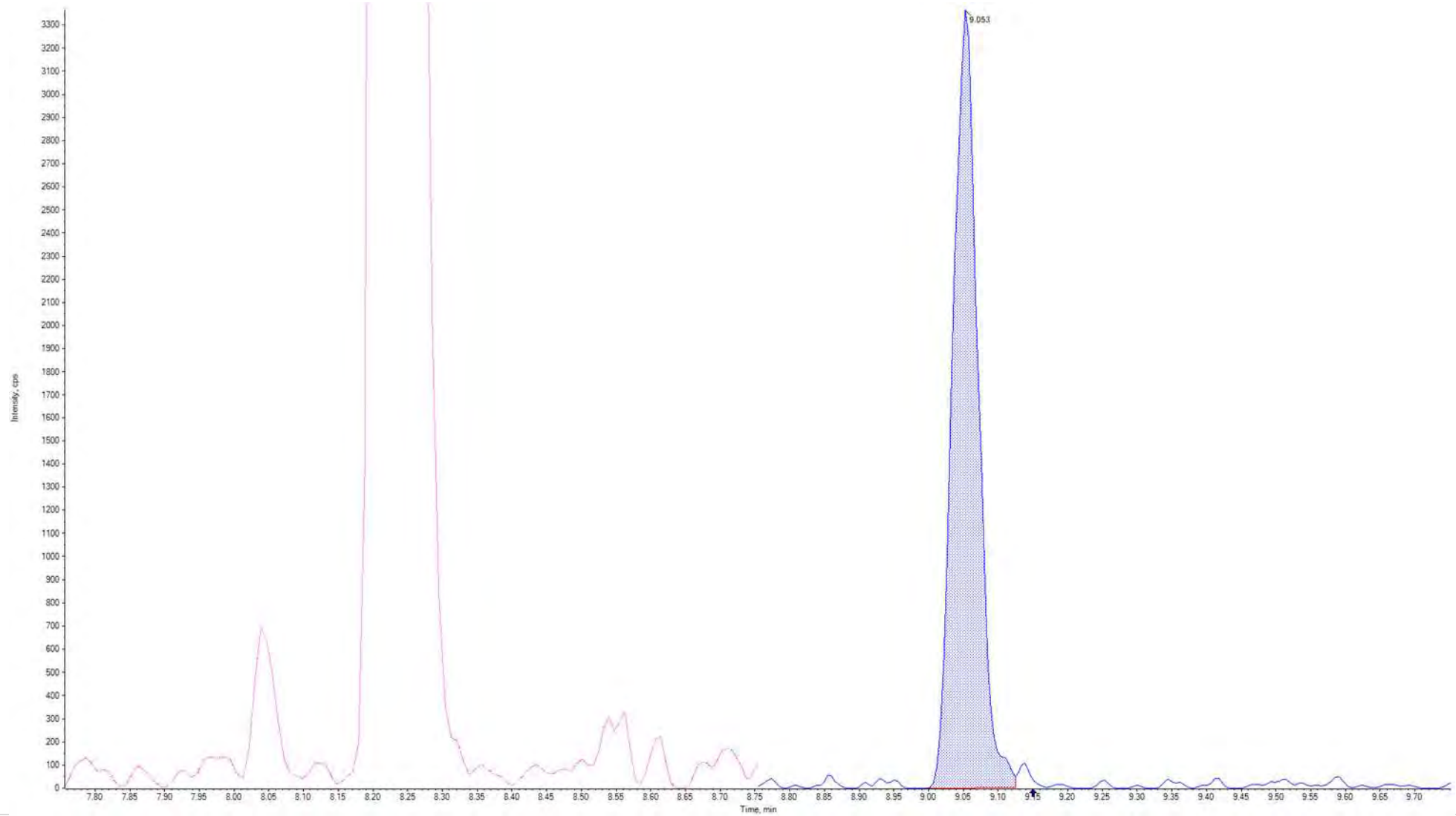
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDS
Sample: WG1973357-2 S/N:699926.0 Points Across peak:30



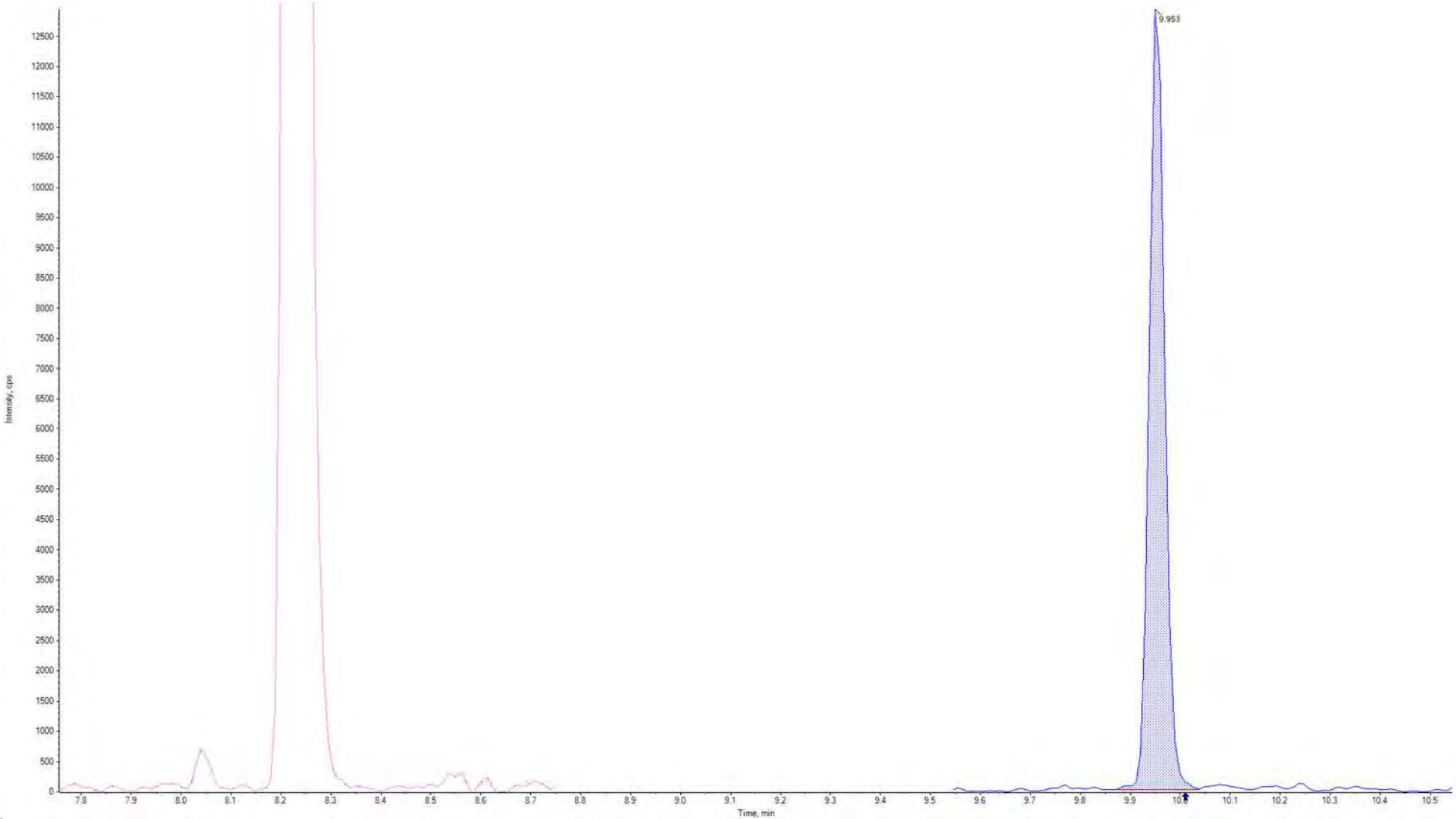
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDS_2
Sample: WG1973357-2 S/N:232959.2 Points Across peak:29



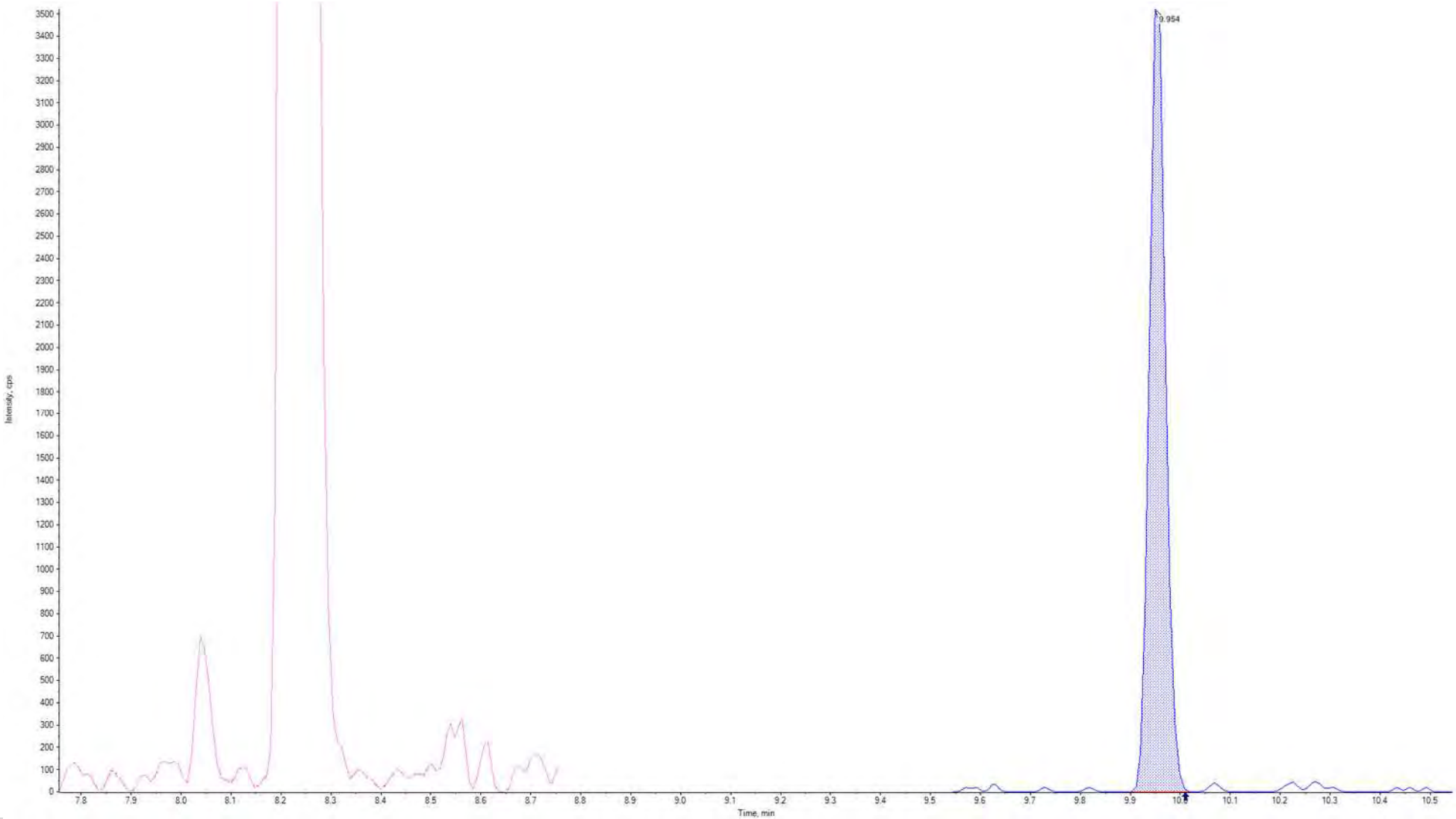
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoS
Sample: WG1973357-2 S/N:4836.1 Points Across peak:19



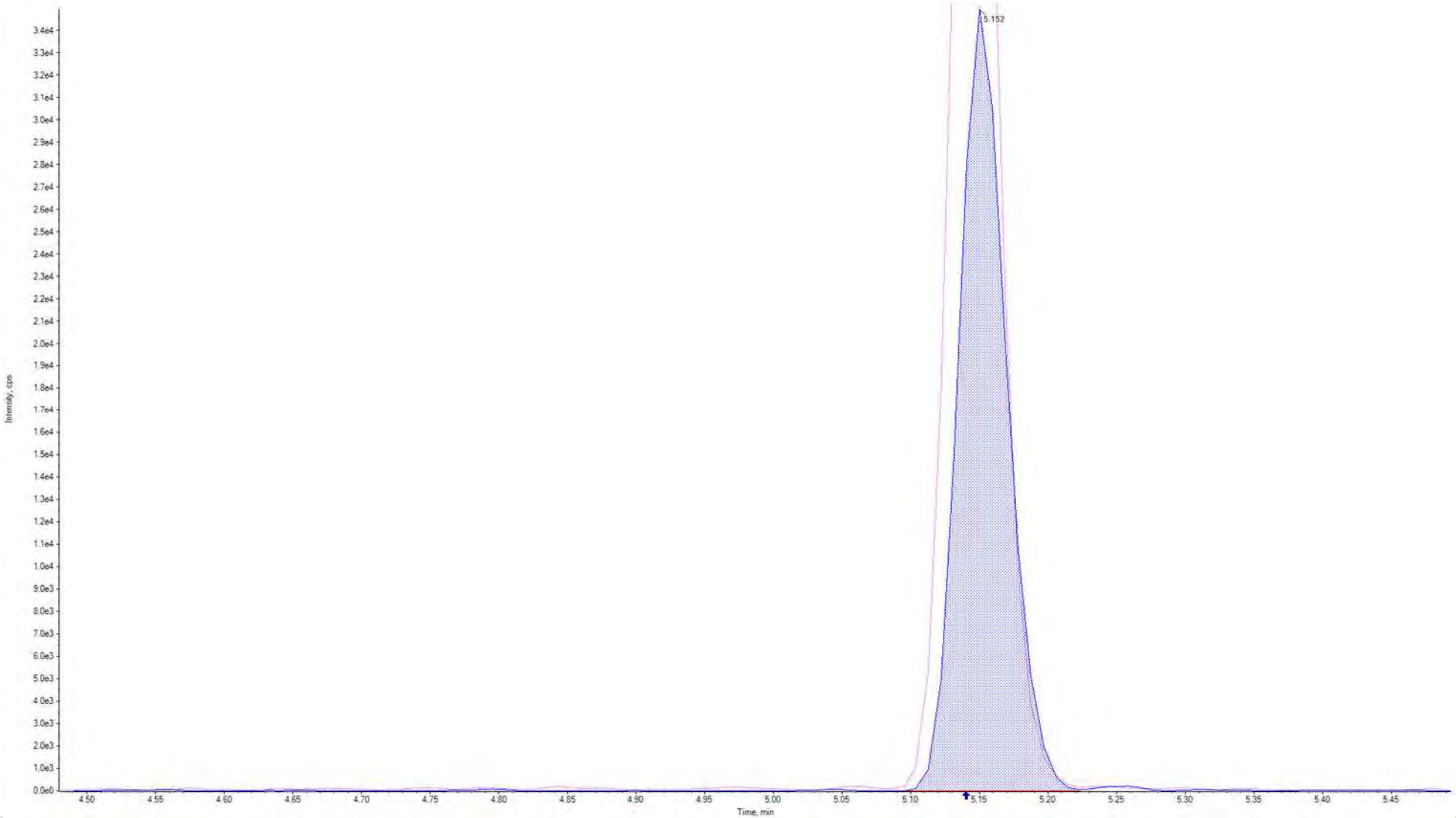
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoS_2
Sample: WG1973357-2 S/N:799.0 Points Across peak:16



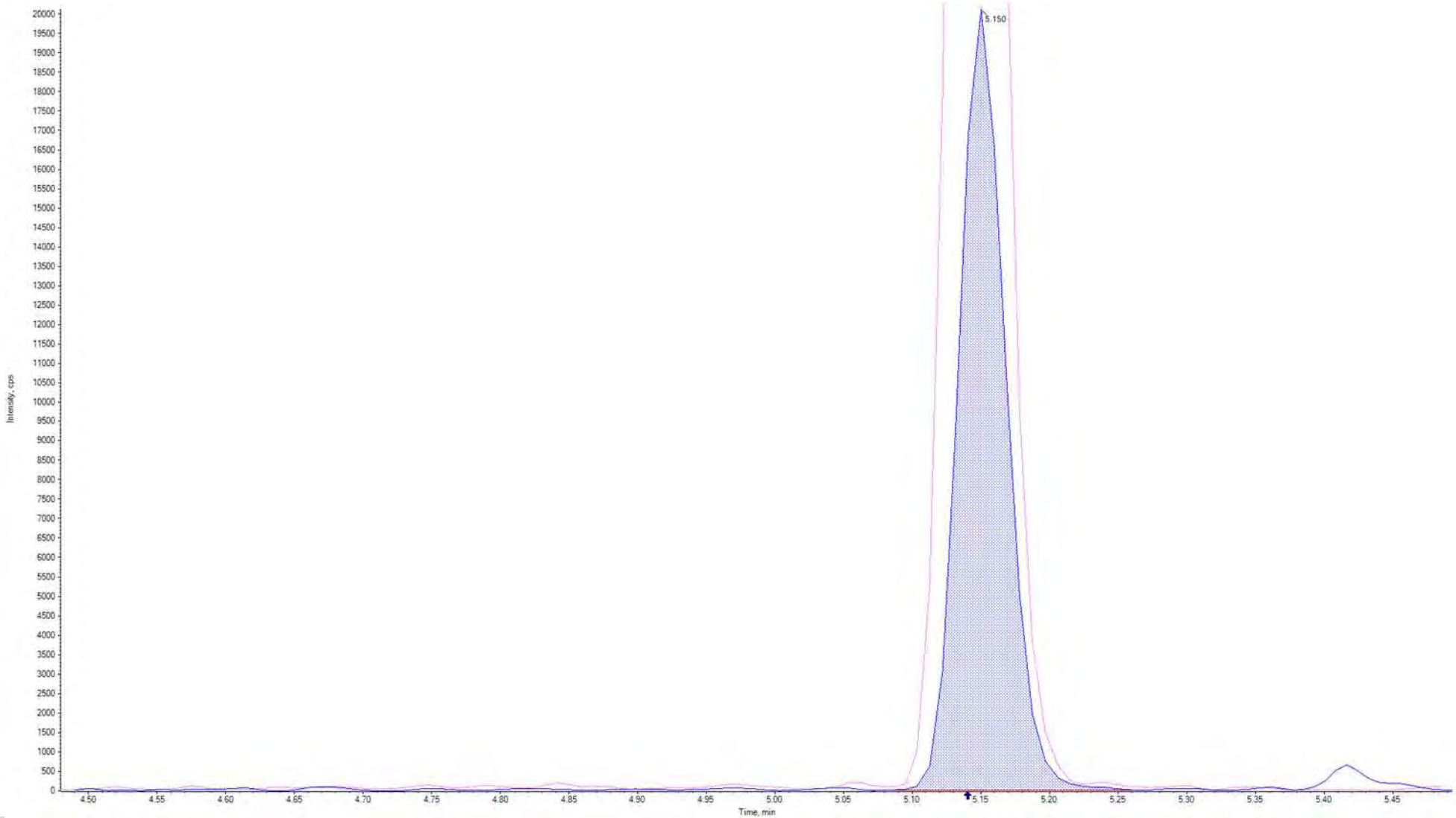
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

4:2FTS
Sample: WG1973357-2 S/N:6839303.7 Points Across peak:16



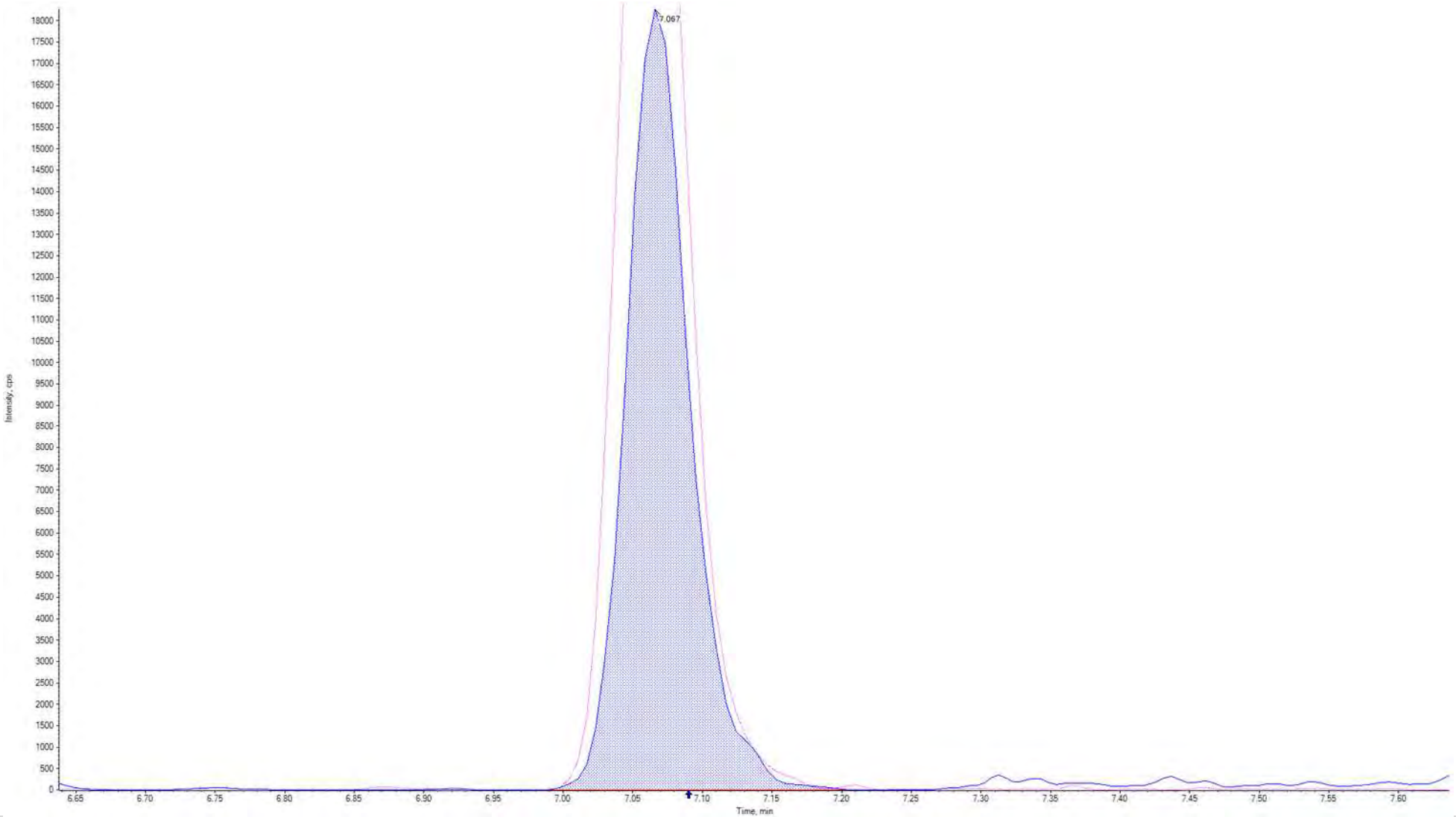
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

4:2FTS_2
Sample: WG1973357-2 S/N:3563.1 Points Across peak:23



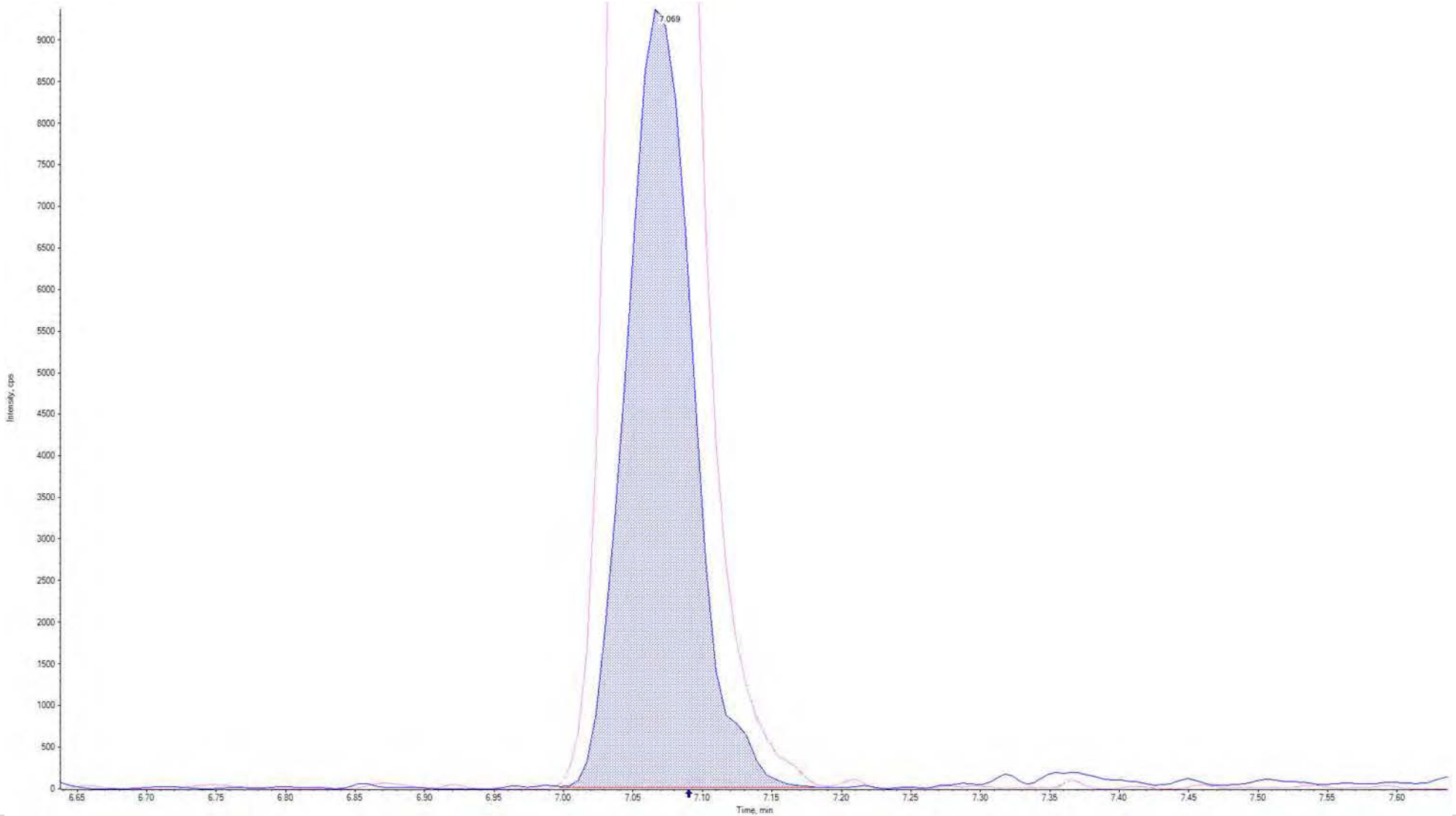
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

6:2FTS
Sample: WG1973357-2 S/N:556.7 Points Across peak:41



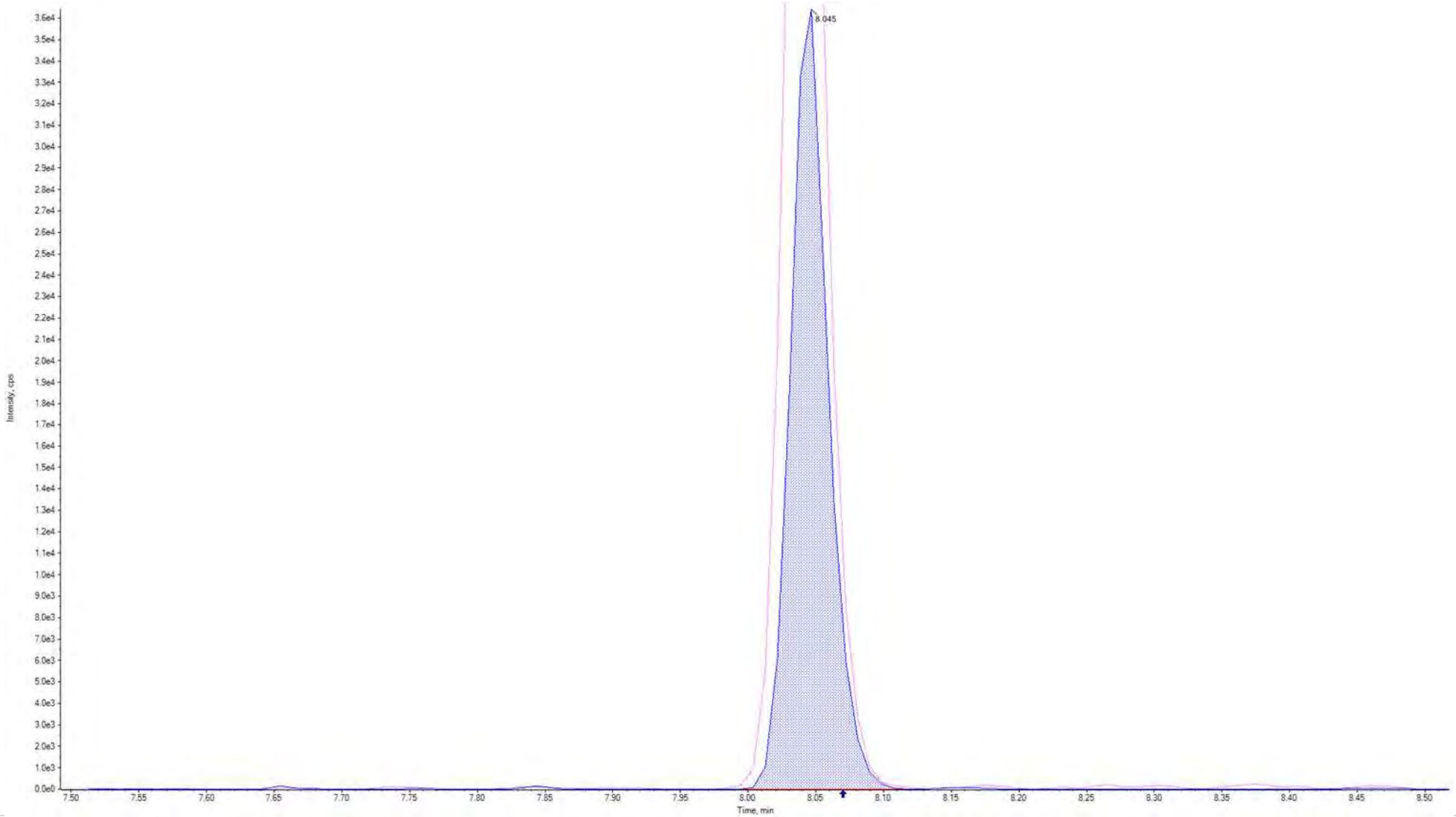
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

6:2FTS_2
Sample: WG1973357-2 S/N:420251.5 Points Across peak:28



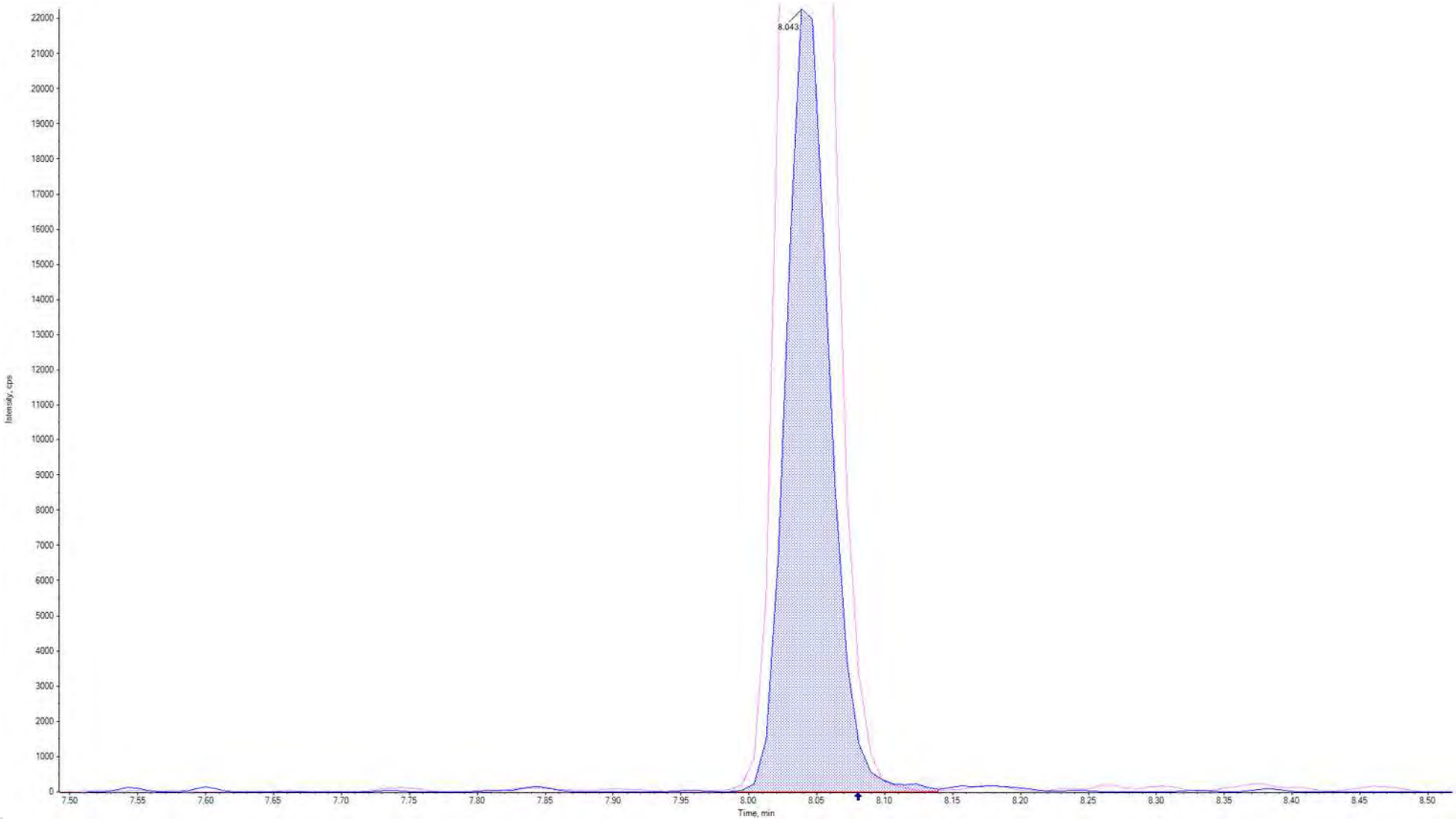
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

8:2FTS
Sample: WG1973357-2 S/N:25514.8 Points Across peak:21



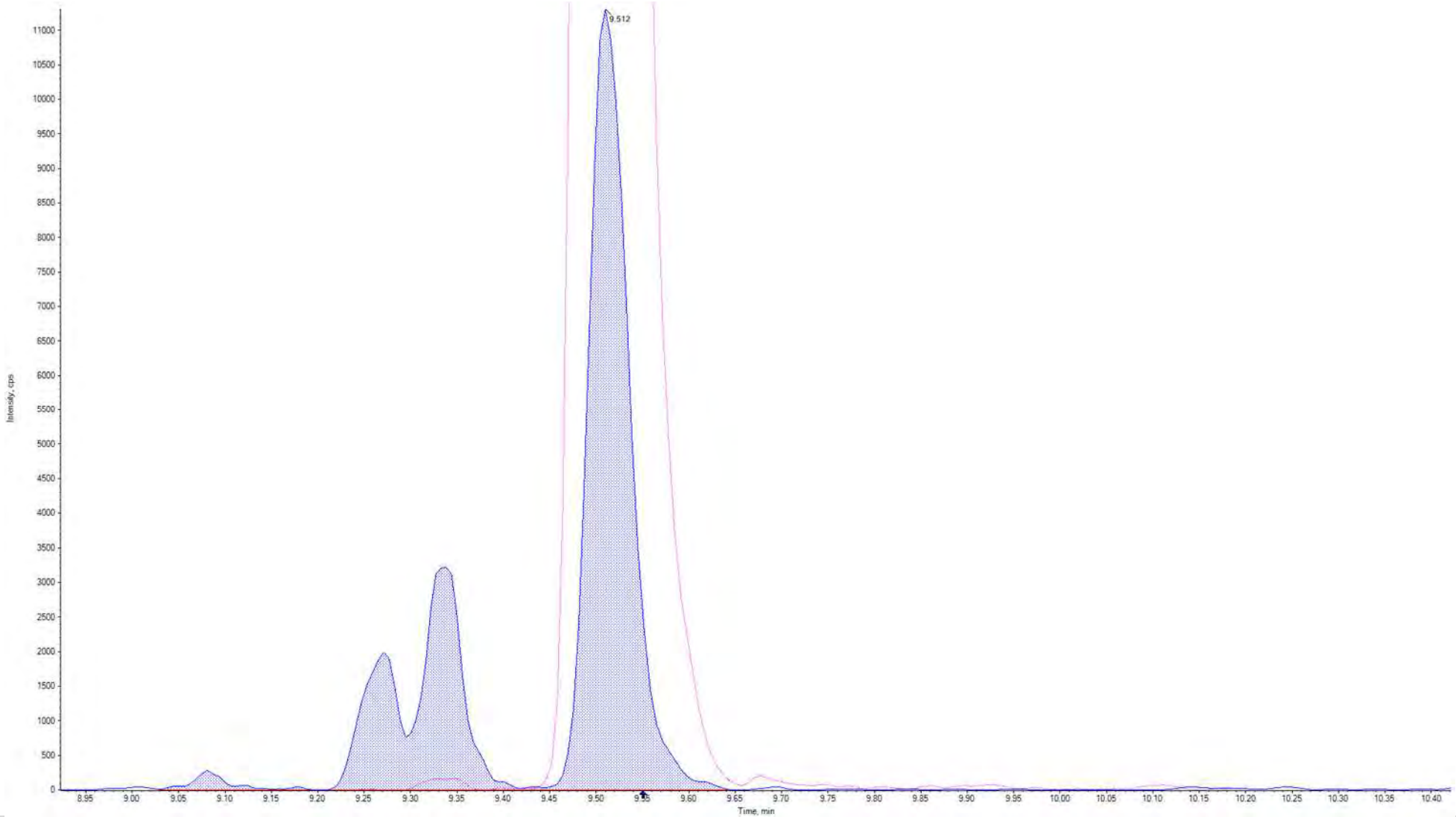
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

8:2FTS_2
Sample: WG1973357-2 S/N:1084.6 Points Across peak:20



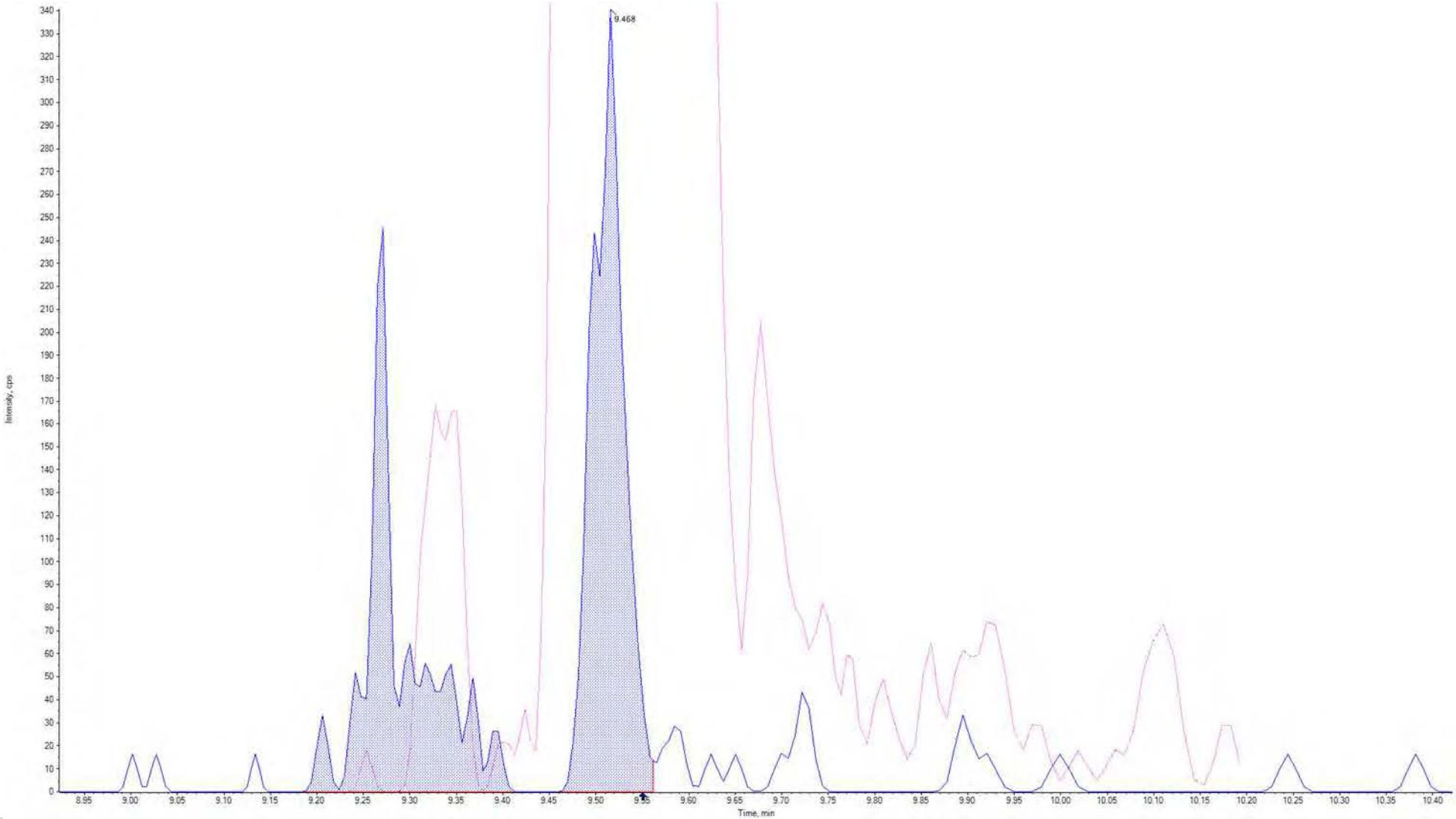
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOSA
Sample: WG1973357-2 S/N:716.2 Points Across peak:111



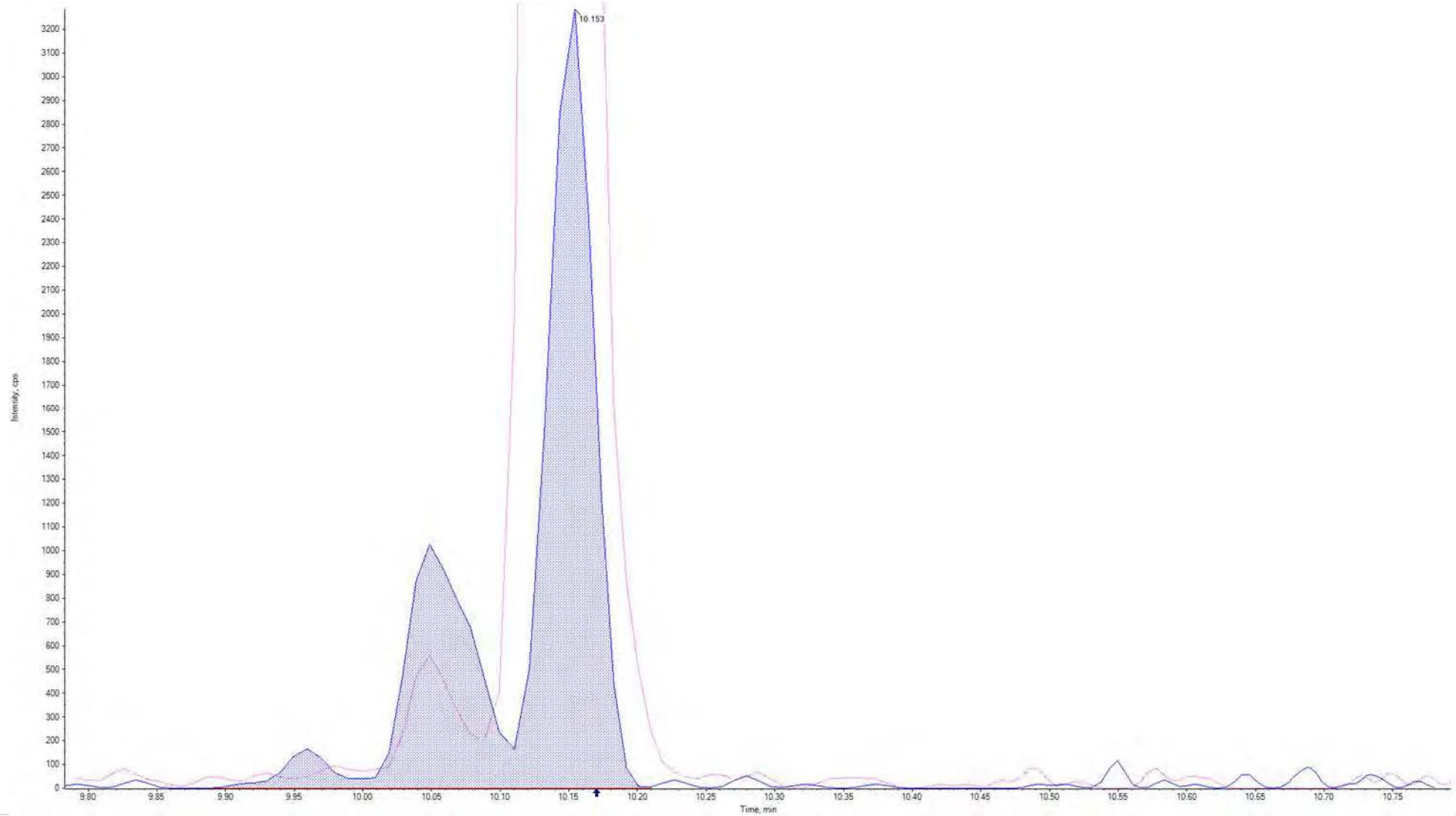
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOSA_2
Sample: WG1973357-2 S/N:156.5 Points Across peak:67



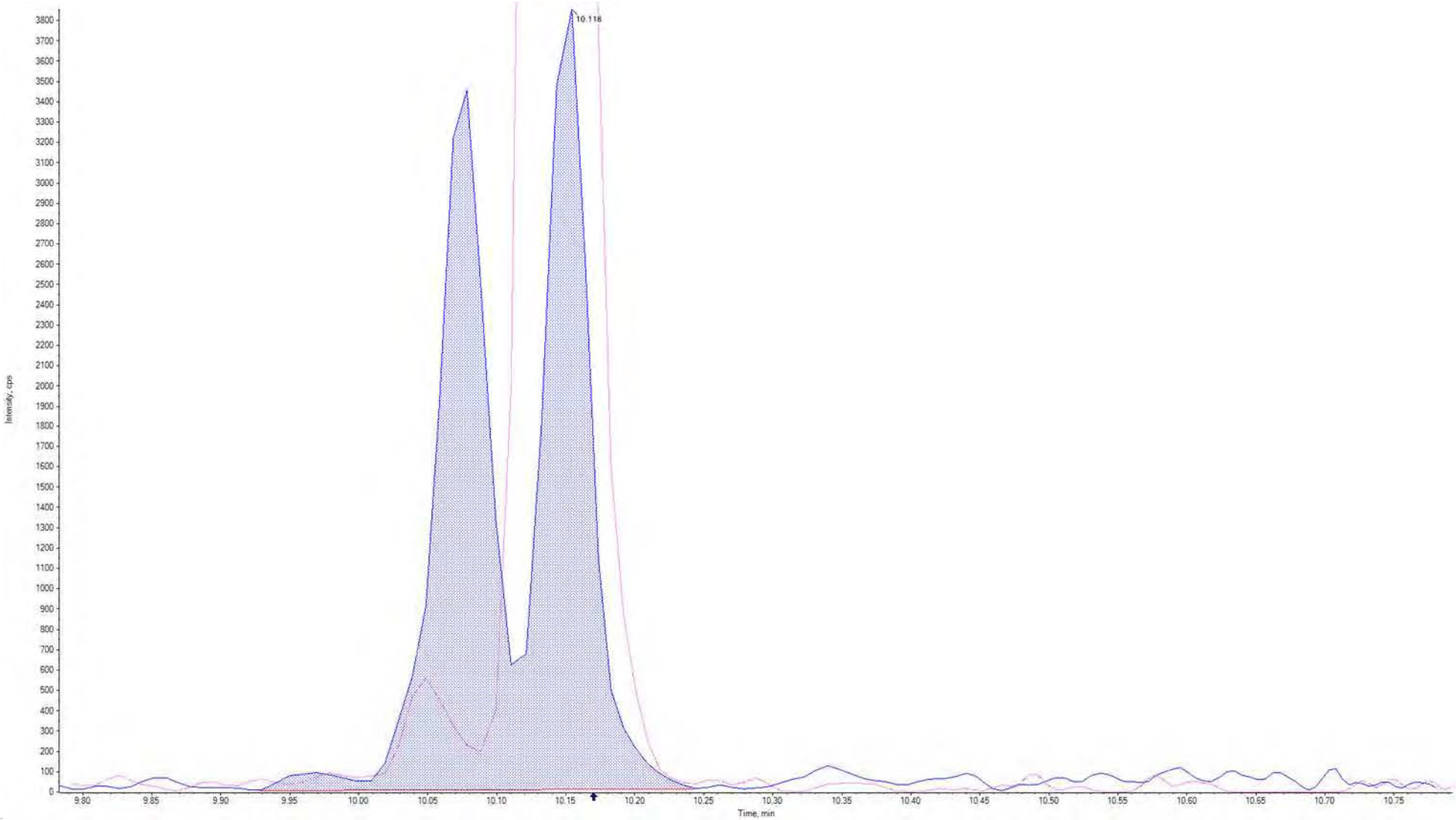
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSA
Sample: WG1973357-2 S/N:229.2 Points Across peak:34



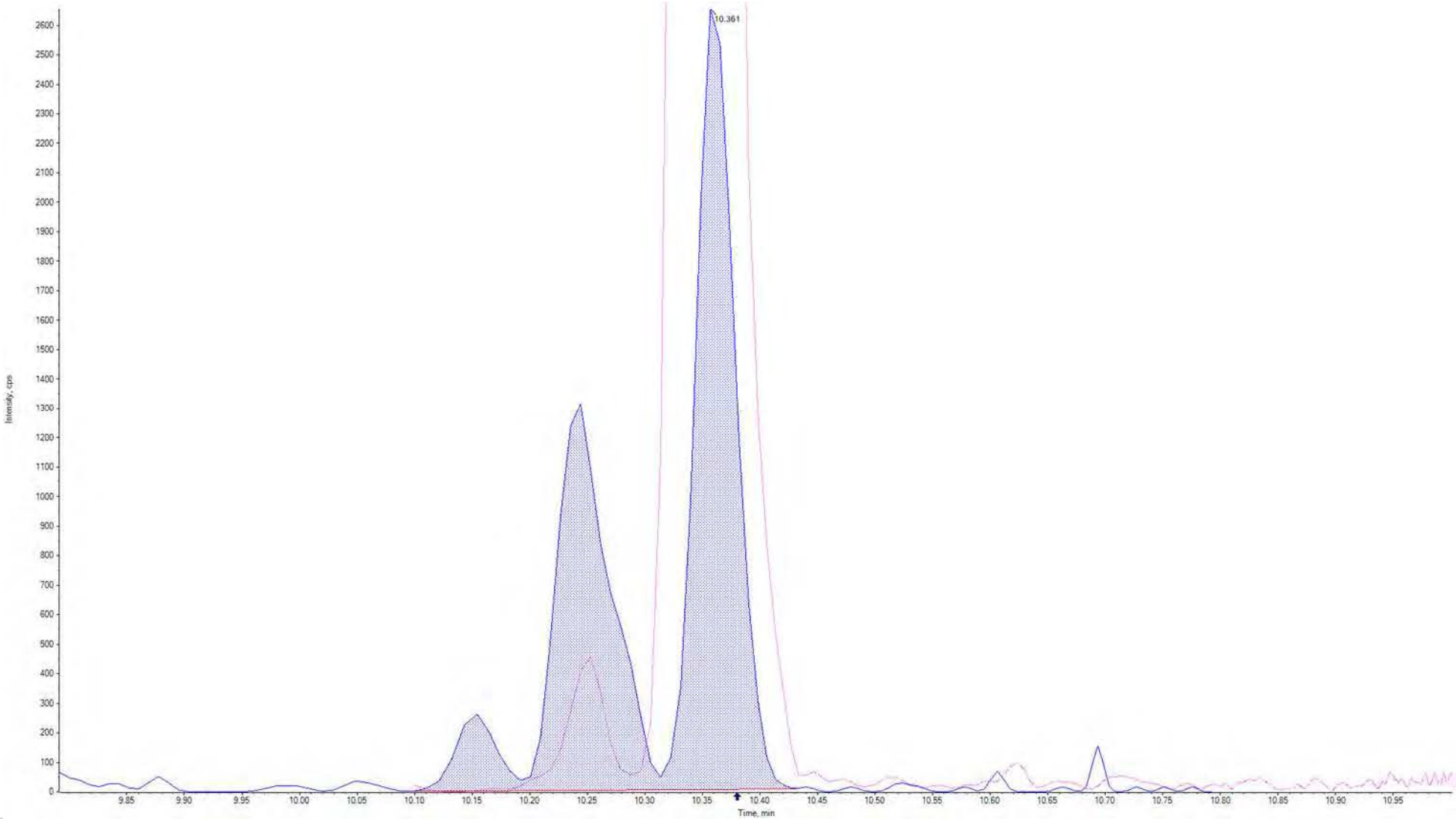
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSA_2
Sample: WG1973357-2 S/N:328.1 Points Across peak:34



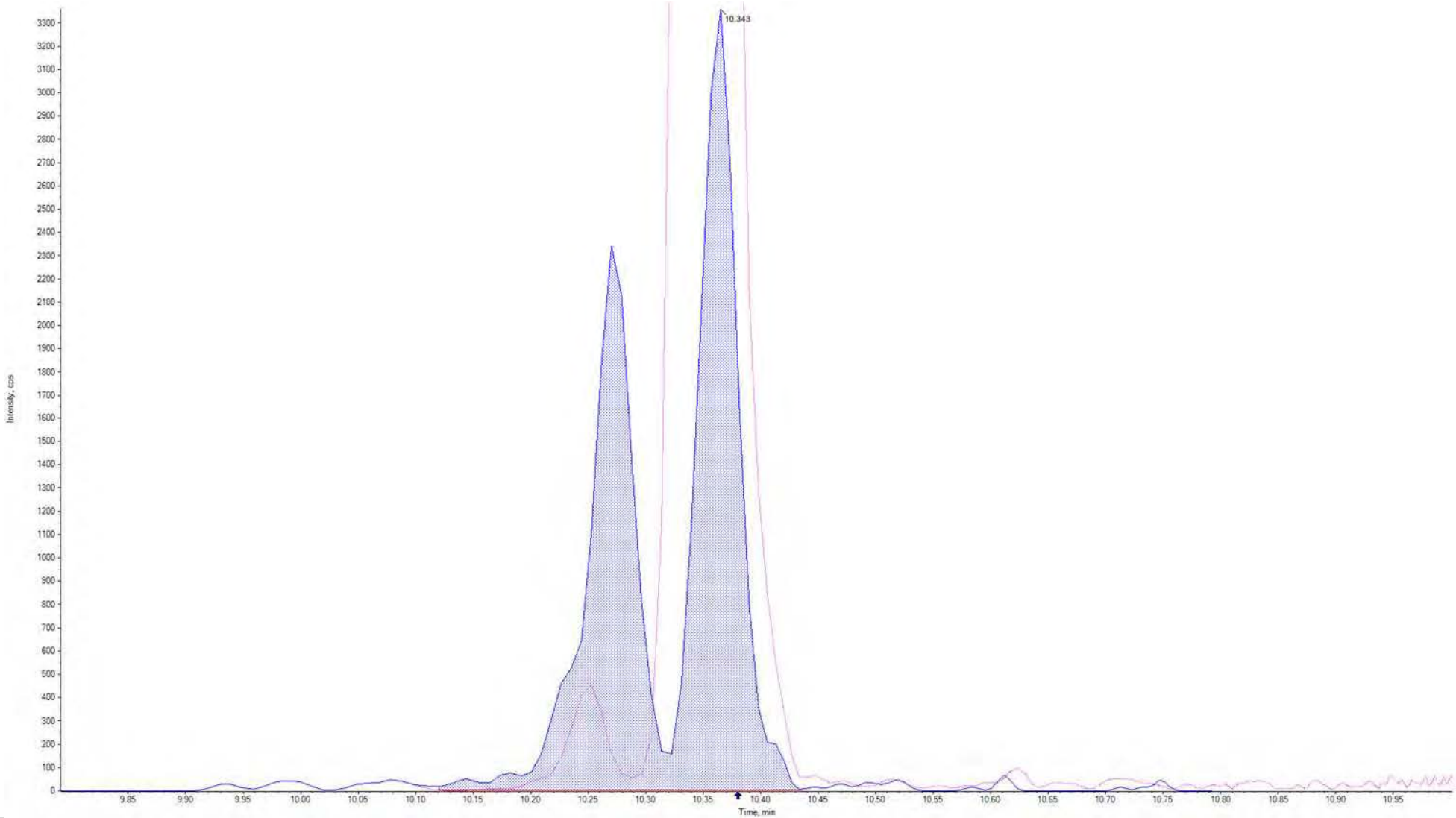
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSA
Sample: WG1973357-2 S/N:55277.1 Points Across peak:40



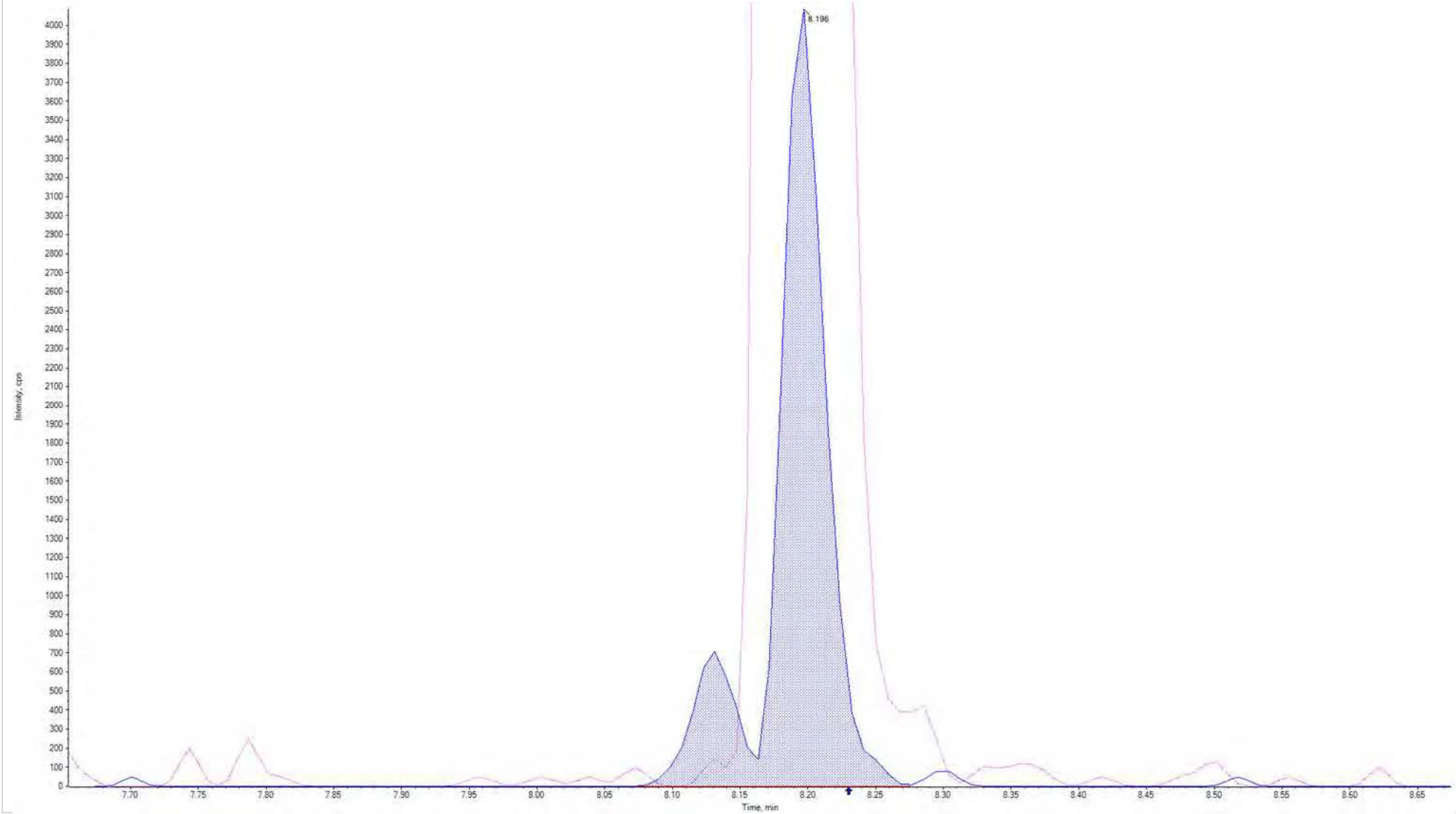
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSA_2
Sample: WG1973357-2 S/N:292.3 Points Across peak:39



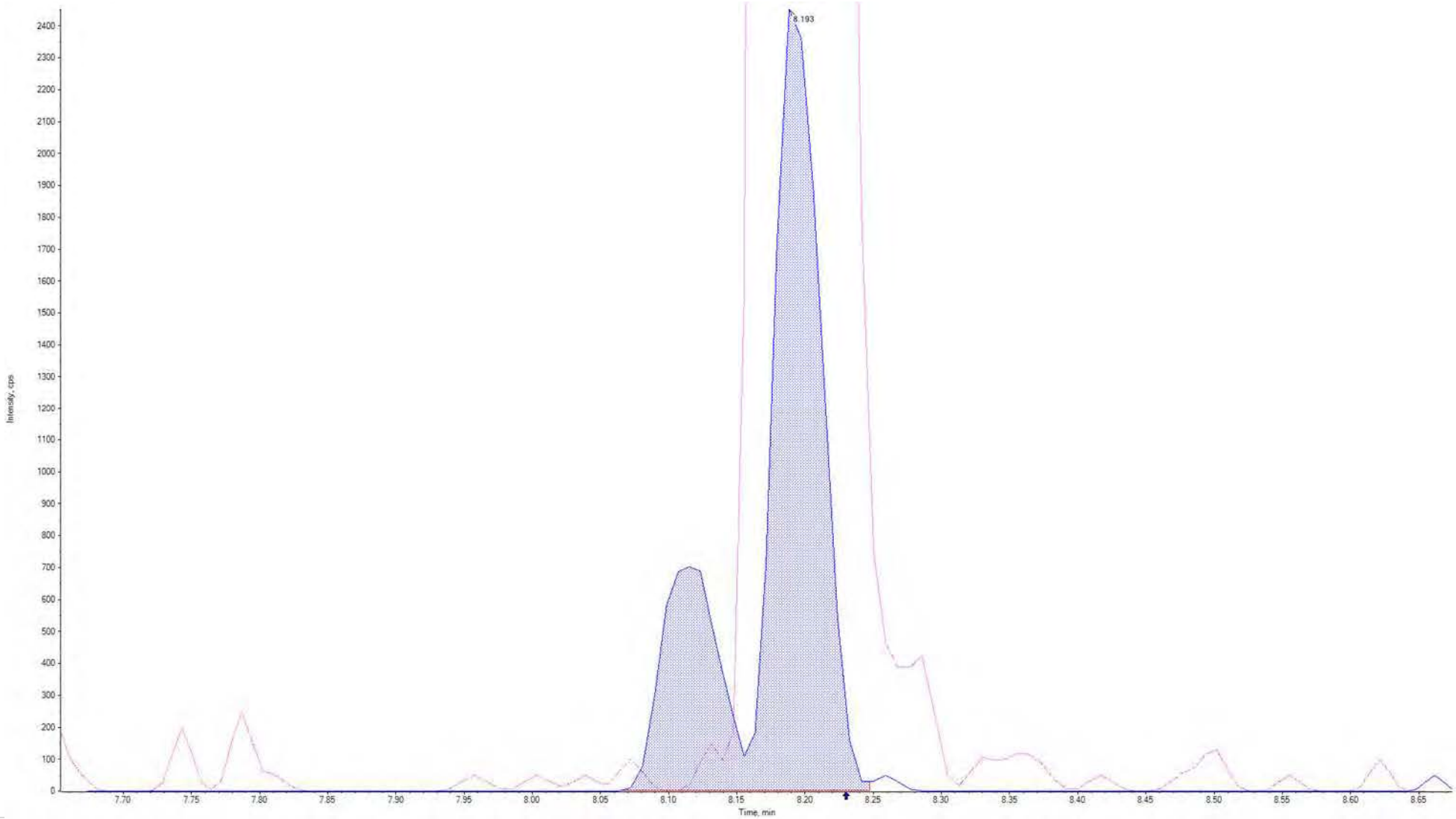
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSAA
Sample: WG1973357-2 S/N:556.3 Points Across peak:26



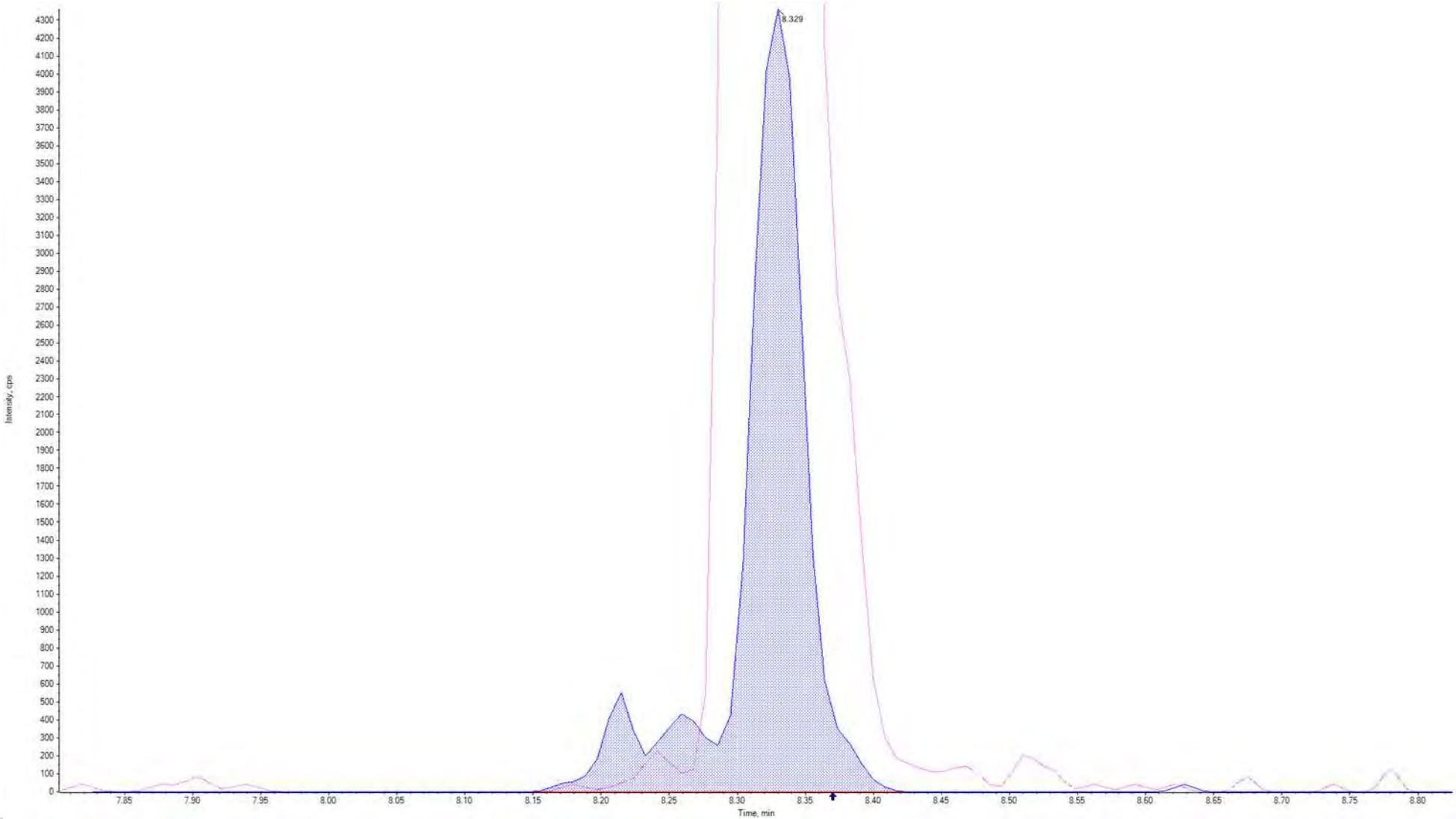
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSAA_2
Sample: WG1973357-2 S/N:51097.9 Points Across peak:23



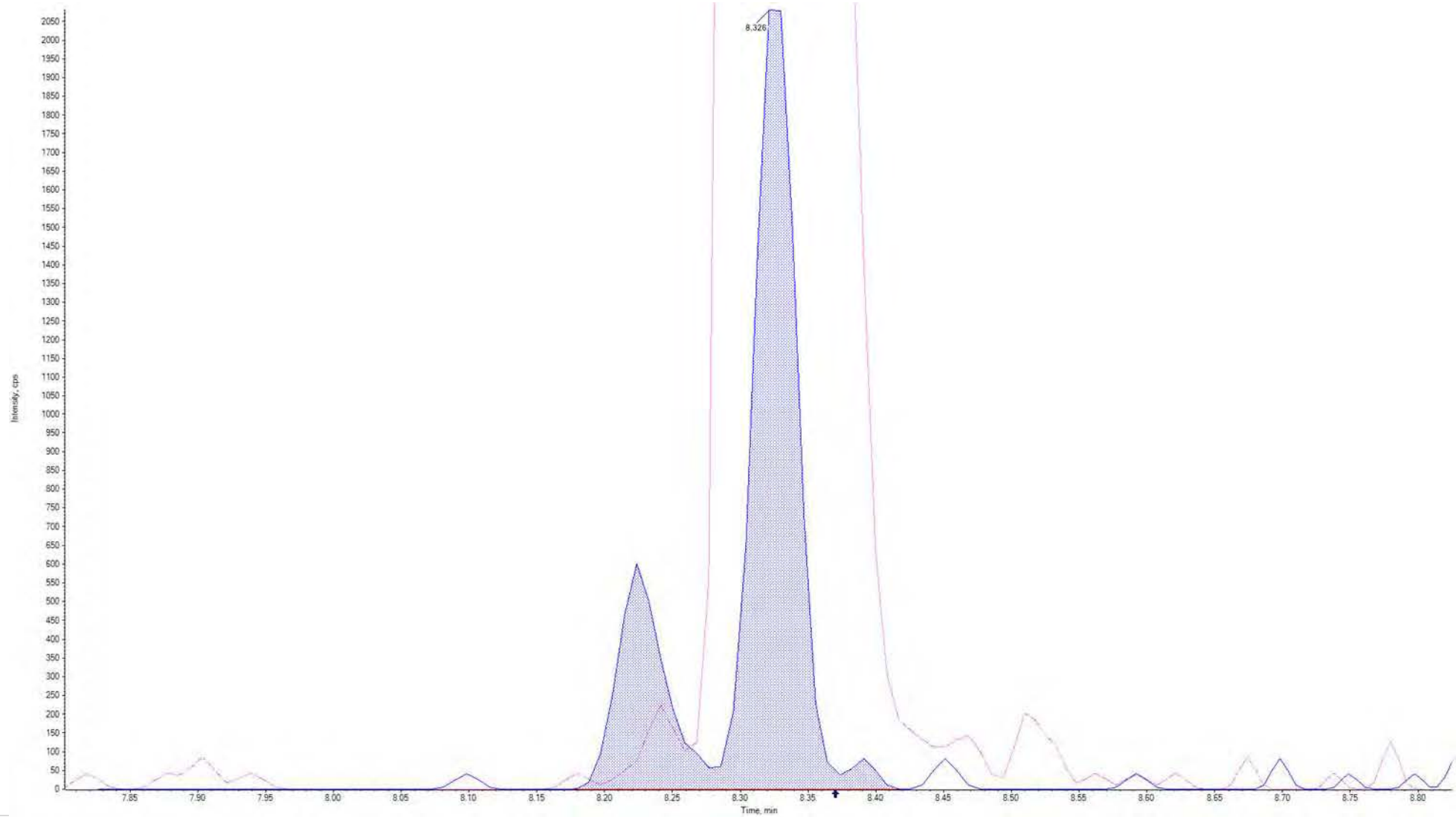
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSAA
Sample: WG1973357-2 S/N:2084.8 Points Across peak:43



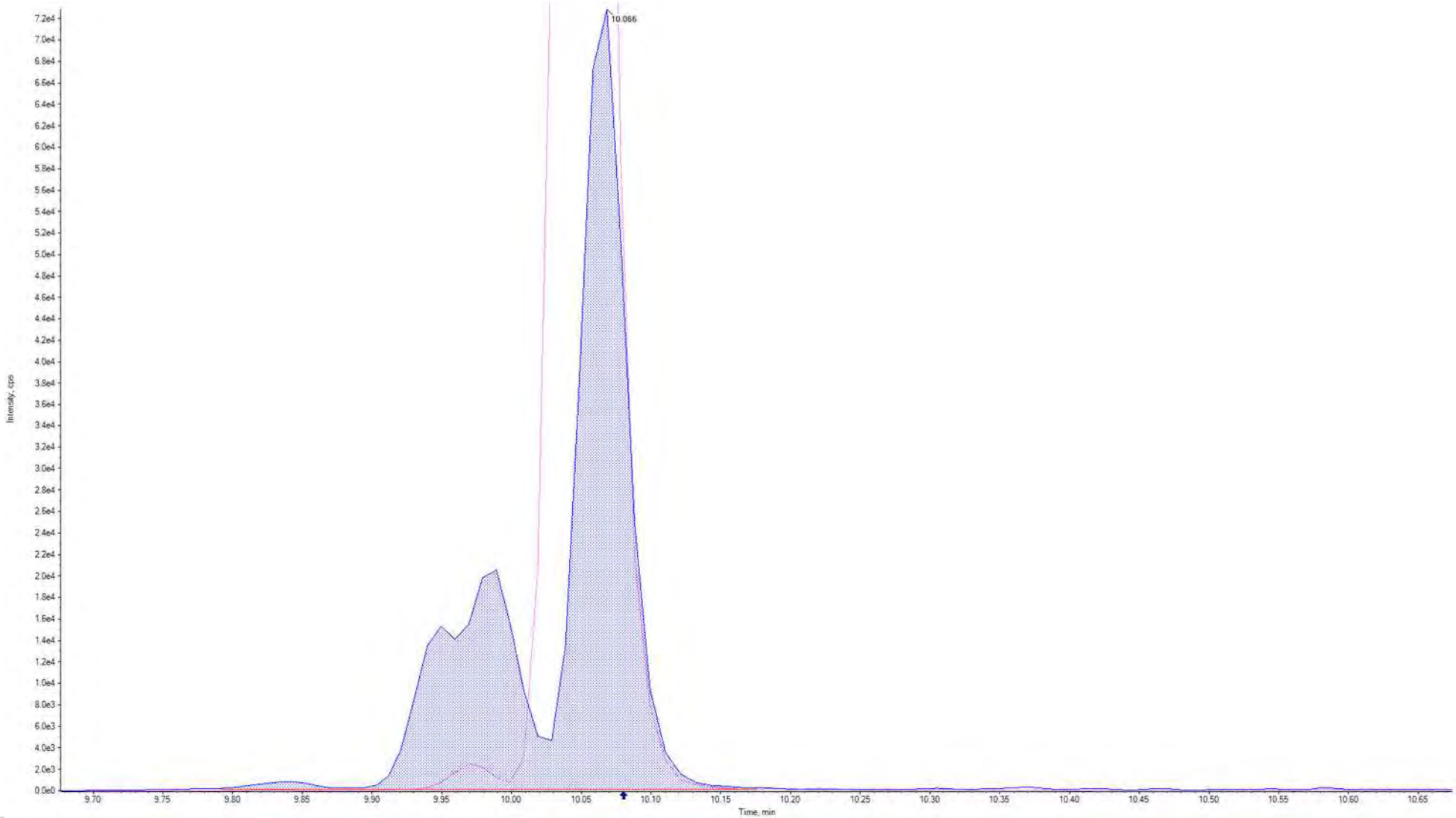
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSAA_2
Sample: WG1973357-2 S/N:120.6 Points Across peak:31



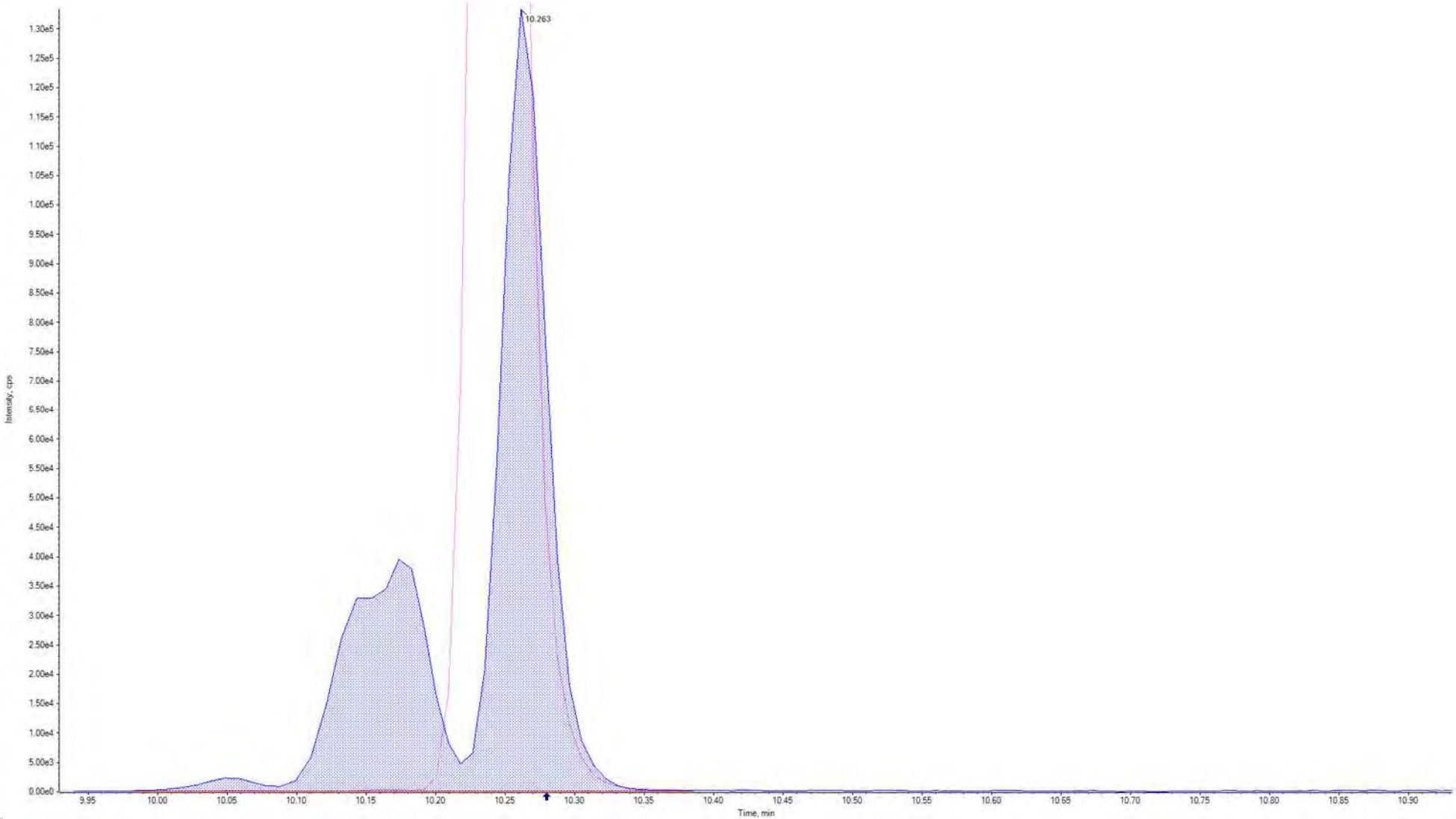
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSE
Sample: WG1973357-2 S/N:1822.7 Points Across peak:42



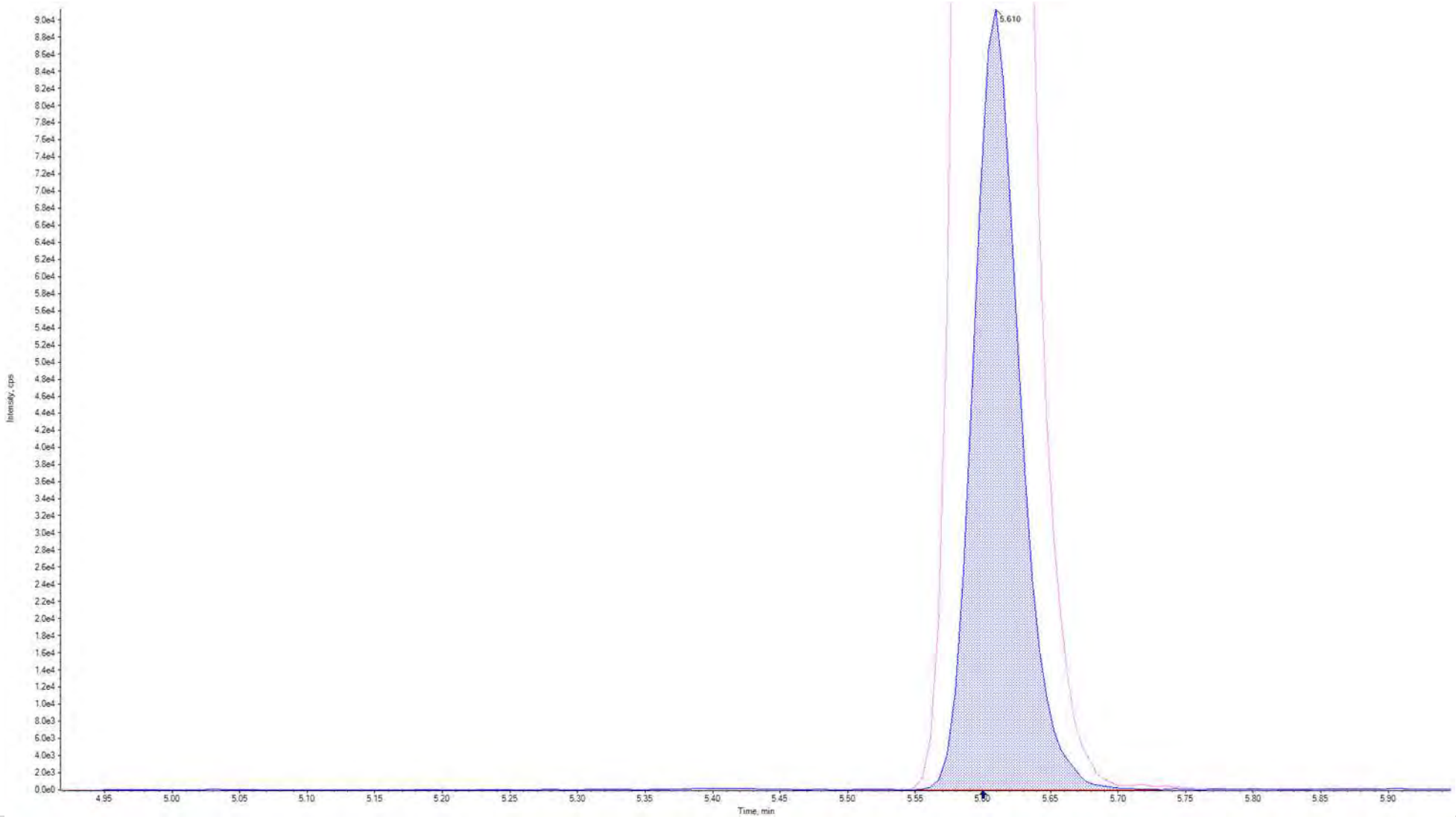
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSE
Sample: WG1973357-2 S/N:1389.6 Points Across peak:47



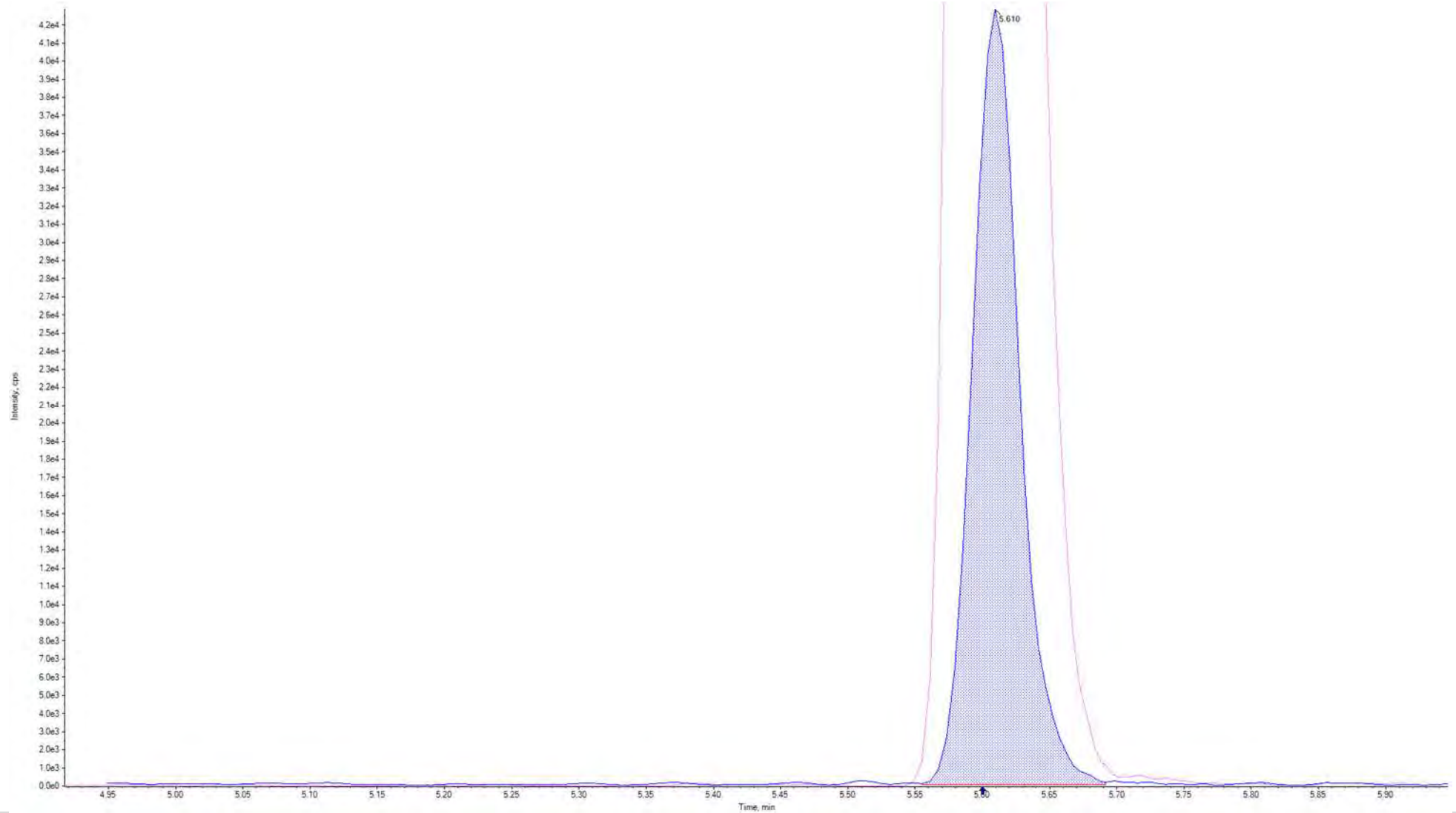
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

HFPO-DA
Sample: WG1973357-2 S/N:28277.1 Points Across peak:39



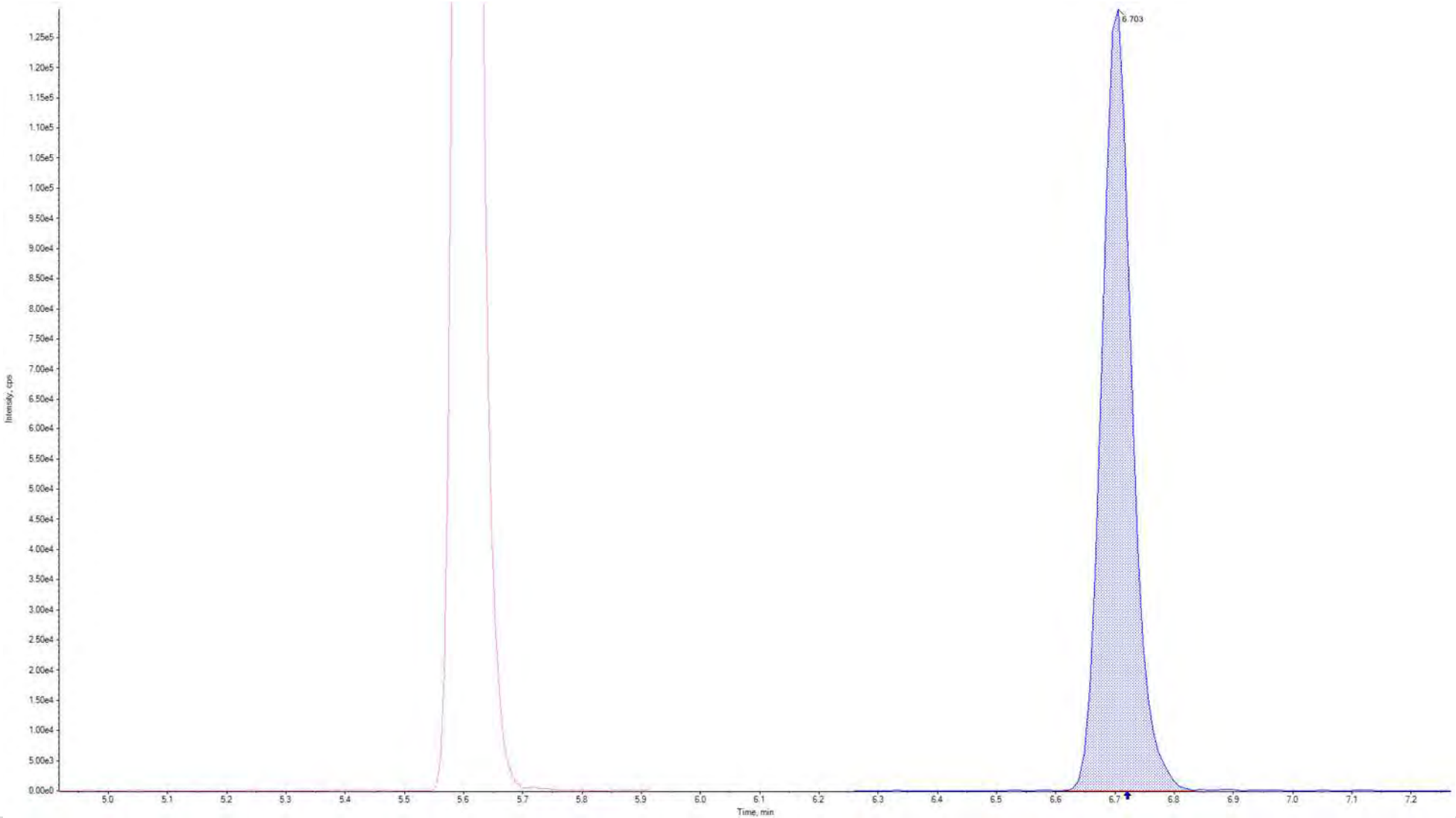
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

HFPO-DA_2
Sample: WG1973357-2 S/N:1370.4 Points Across peak:27



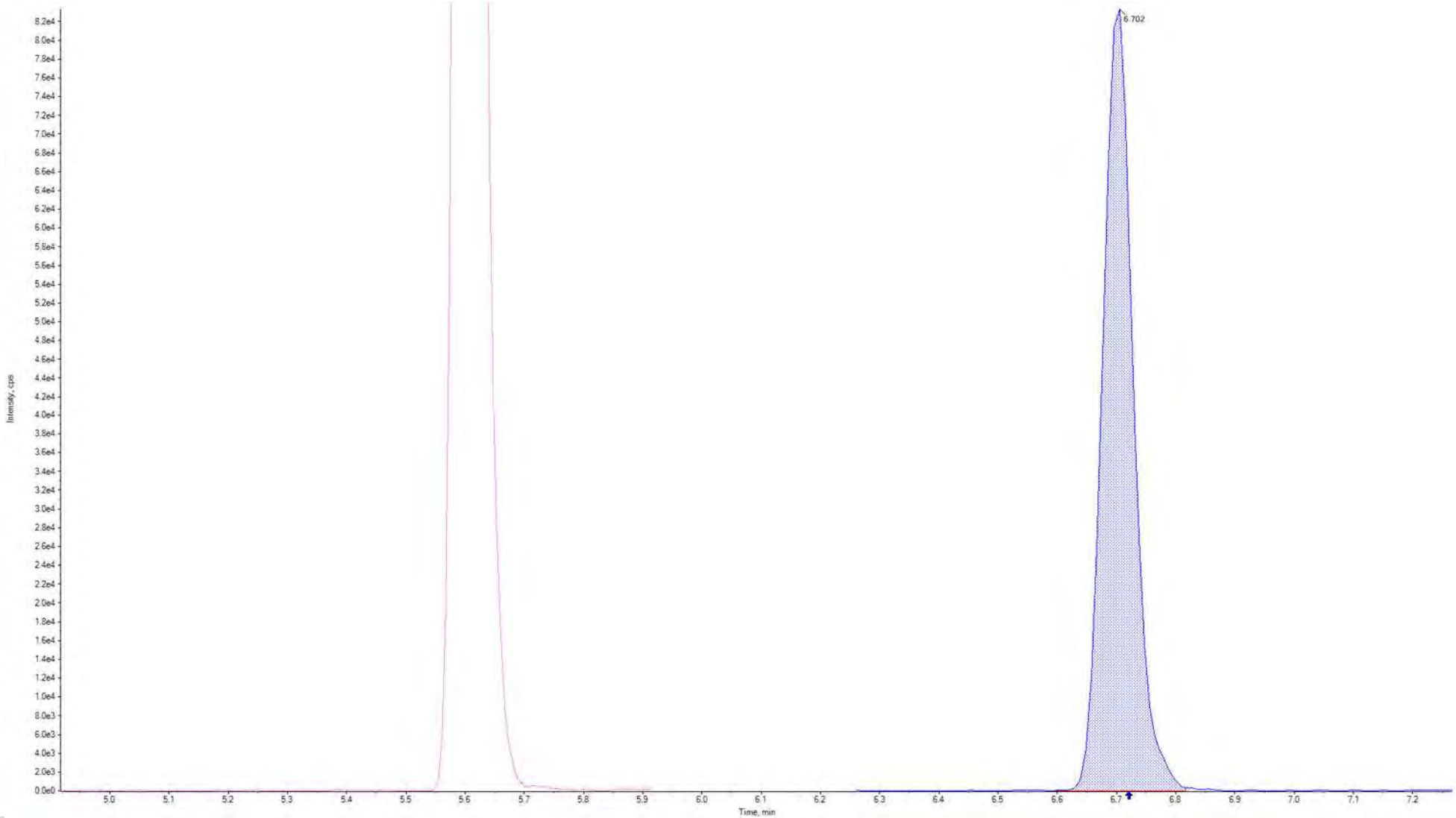
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

ADONA
Sample: WG1973357-2 S/N:7809.3 Points Across peak:30



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

ADONA_2
Sample: WG1973357-2 S/N:6584.7 Points Across peak:29

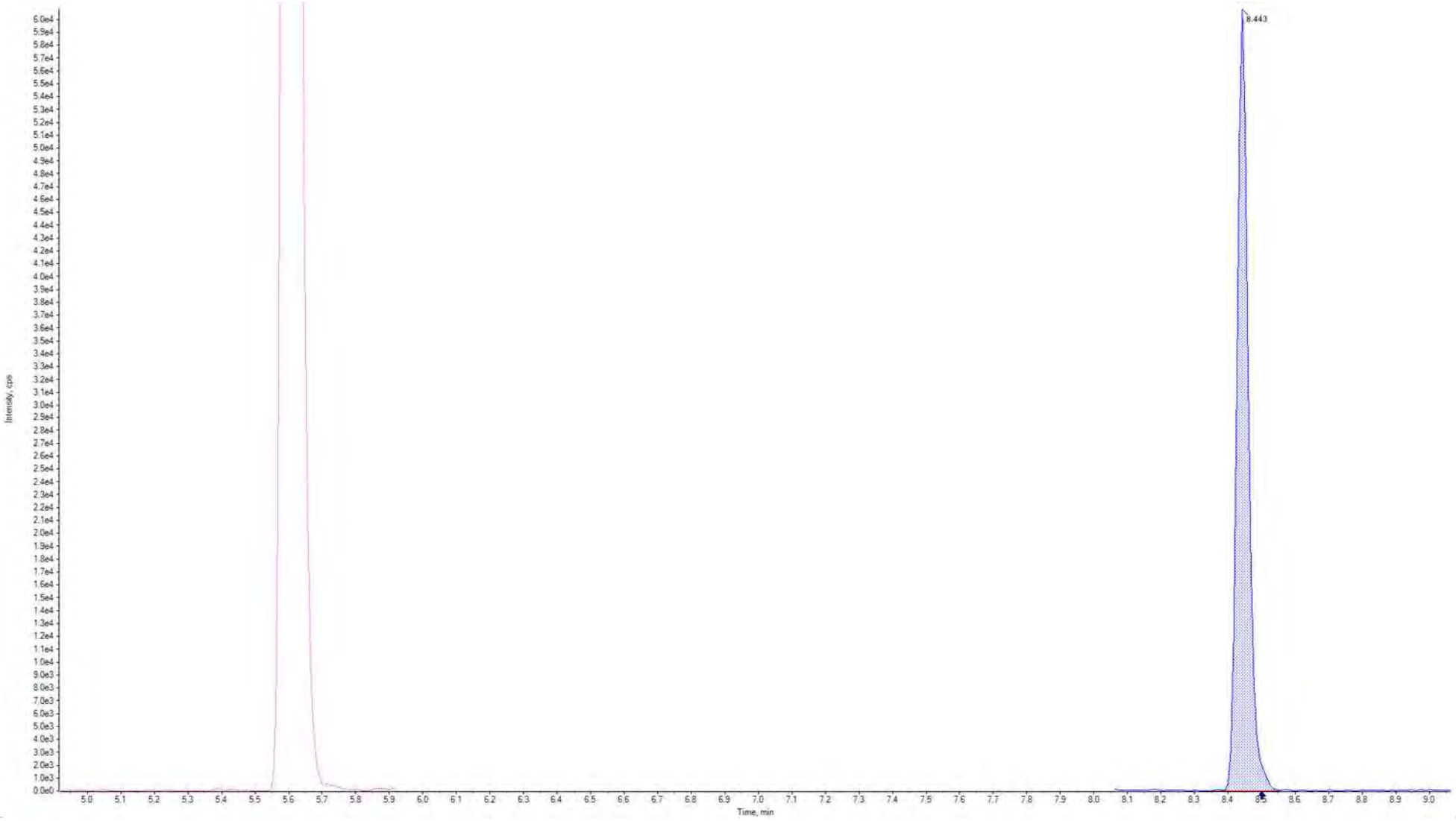


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

9Cl-PF3ONS
Sample: WG1973357-2 S/N:31517236.8 Points Across peak:27

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

9Cl-PF3ONS_2
Sample: WG1973357-2 S/N:13838.9 Points Across peak:27



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

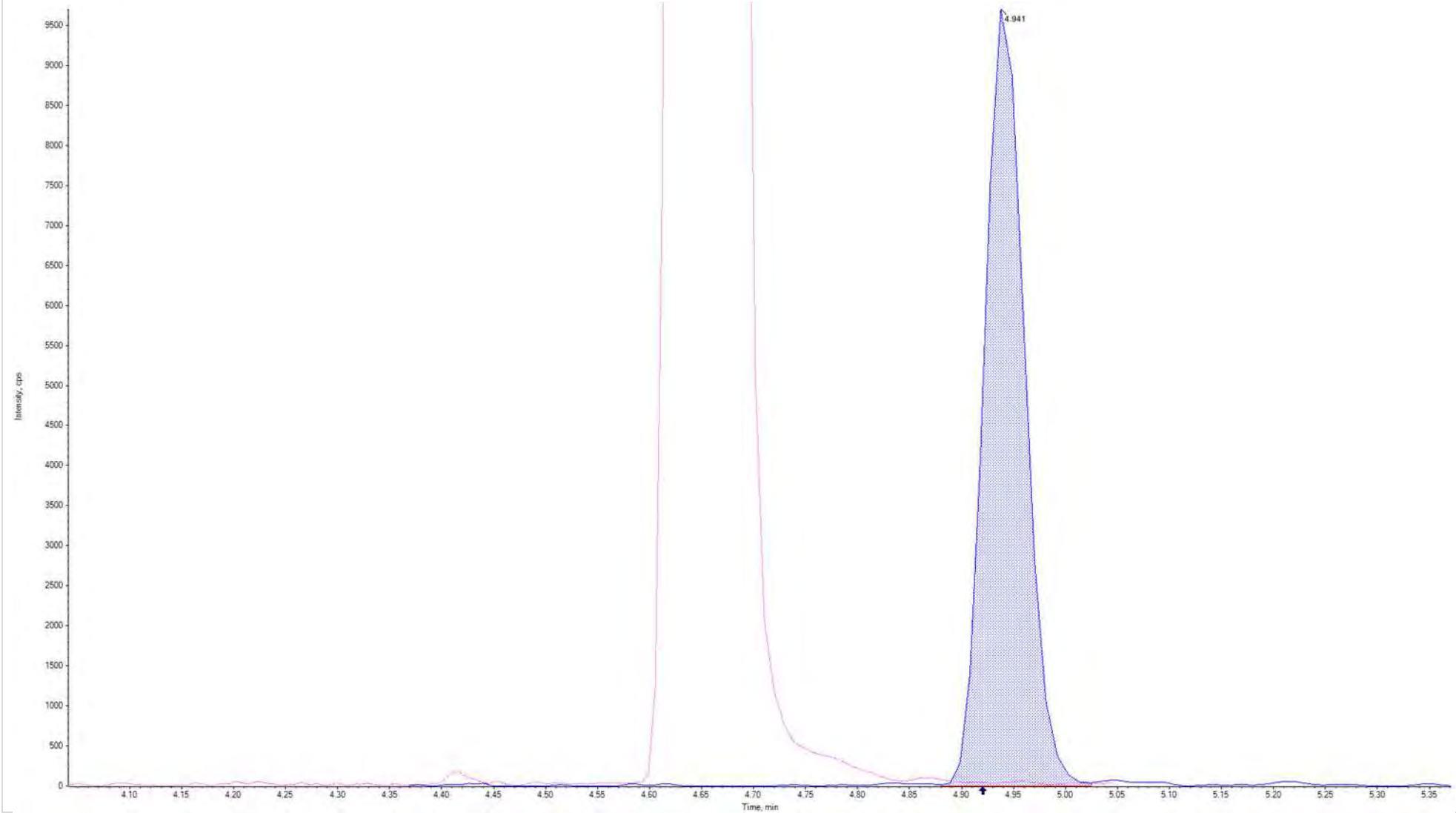
11Cl-PF3OUdS
Sample: WG1973357-2 S/N:211117.1 Points Across peak:43

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

11Cl-PF3OUdS_2
Sample: WG1973357-2 S/N:103954.9 Points Across peak:35

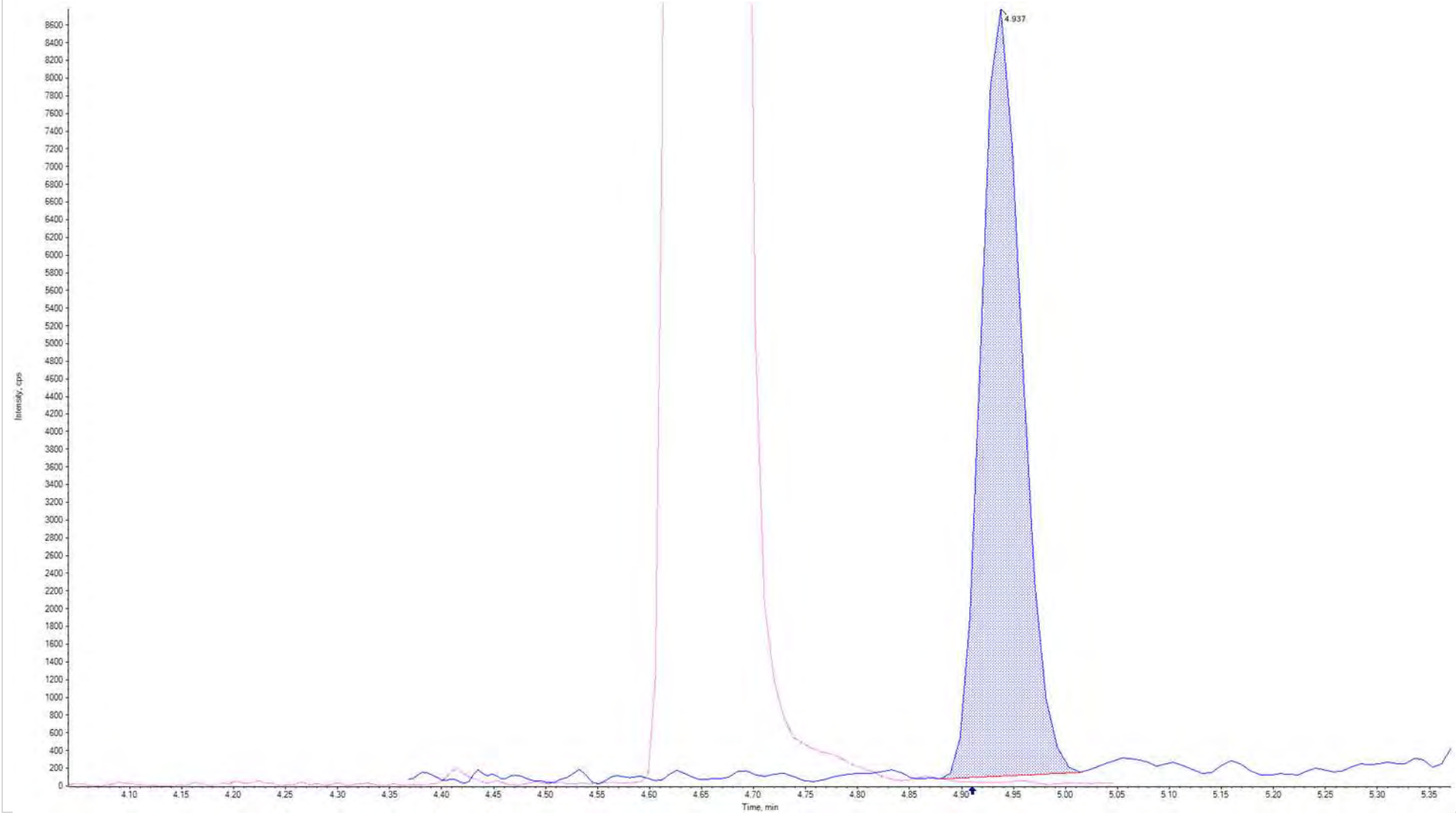
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

3:3FTCA
Sample: WG1973357-2 S/N:786.9 Points Across peak:15



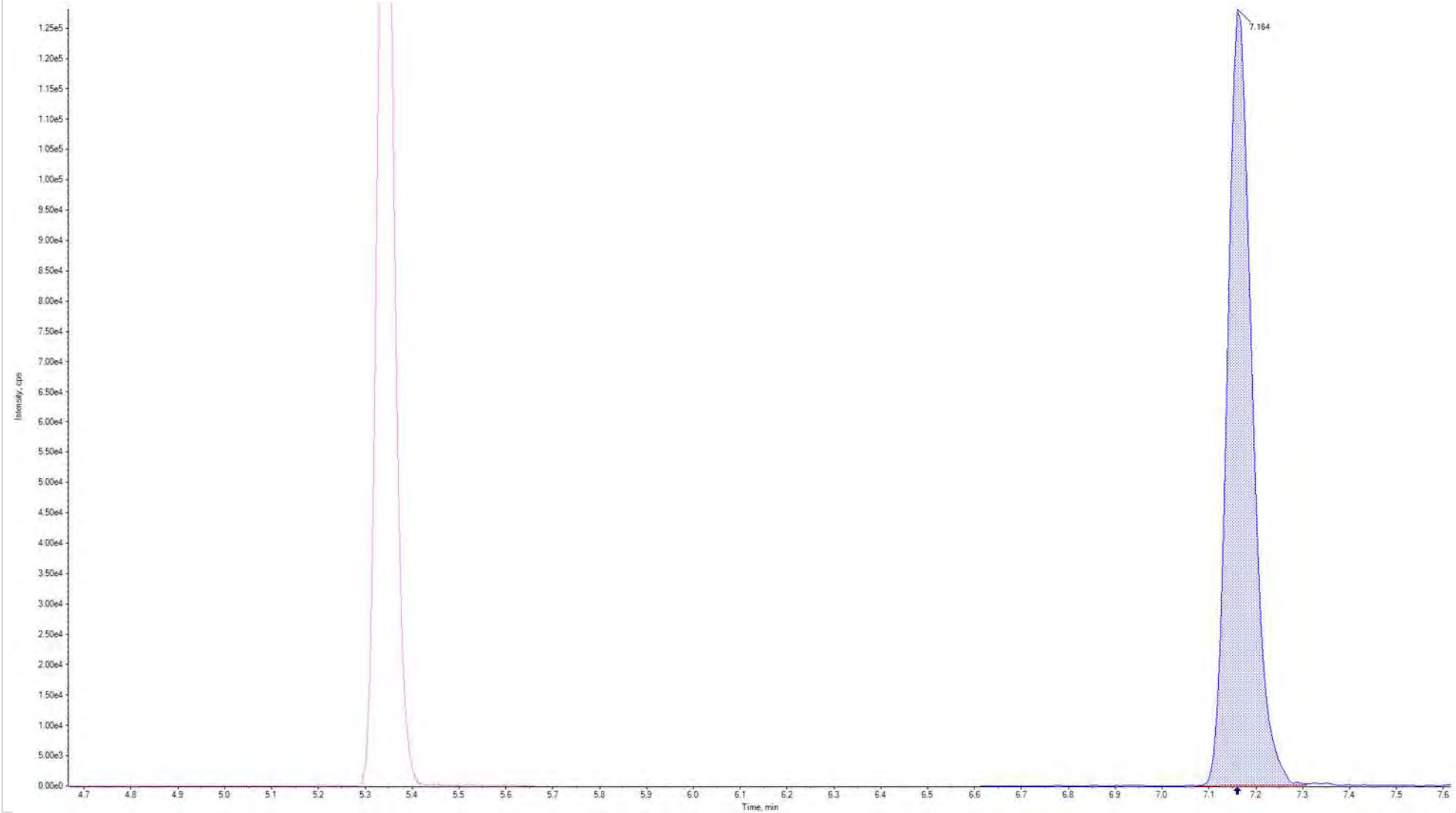
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

3:3FTCA_2
Sample: WG1973357-2 S/N:471.2 Points Across peak:14



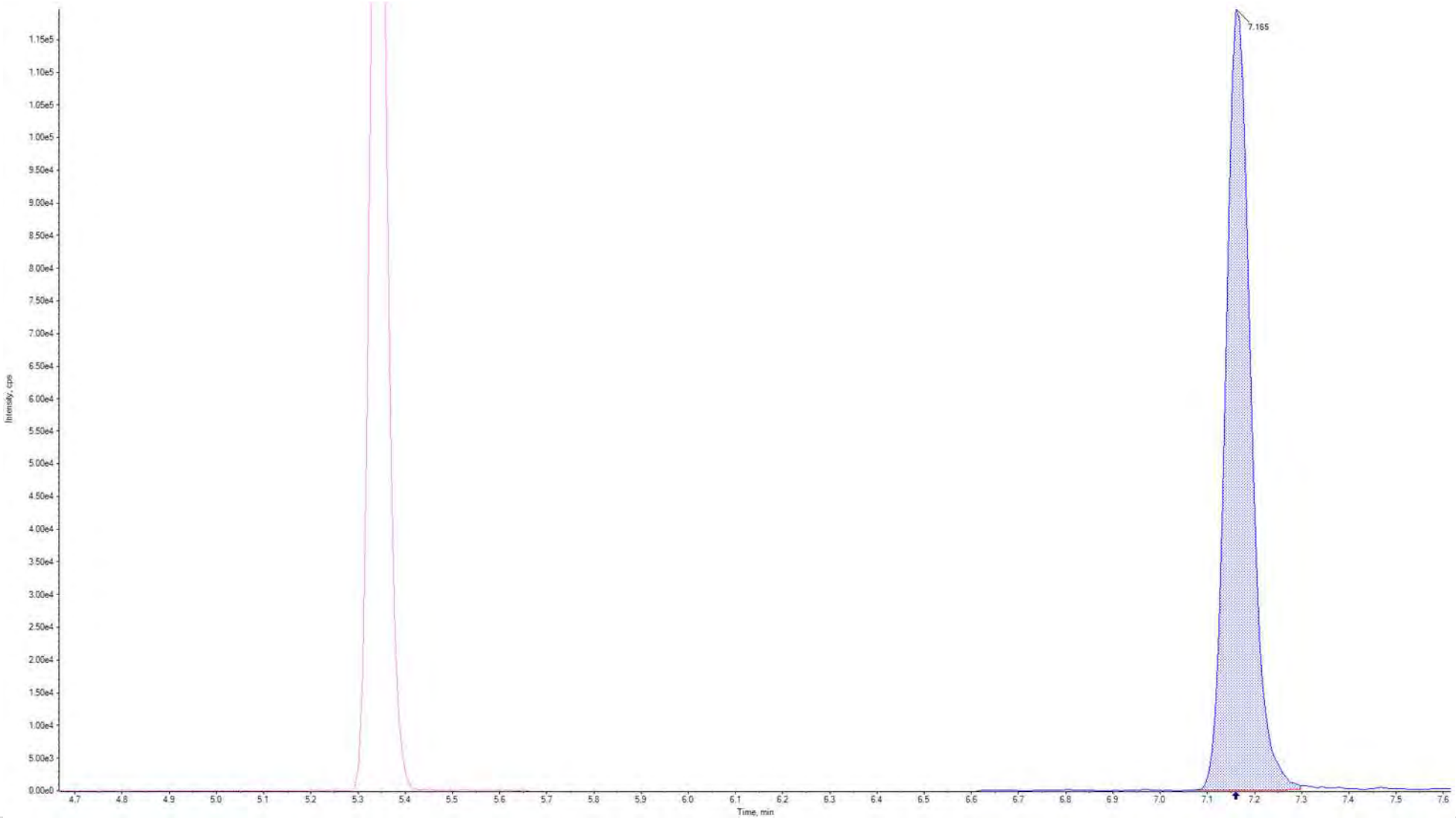
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

5:3FTCA
Sample: WG1973357-2 S/N:9712.1 Points Across peak:37



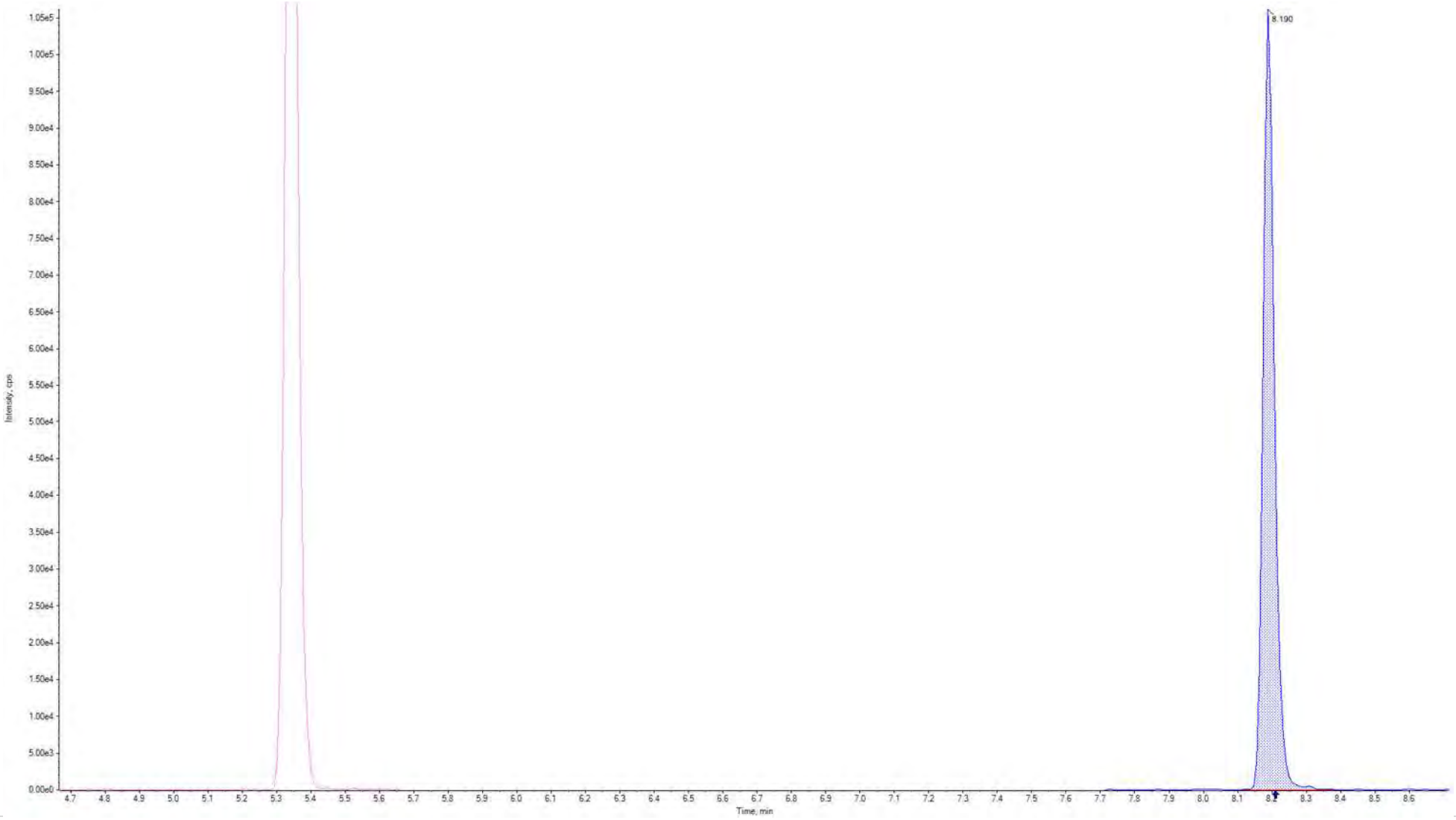
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

5:3FTCA_2
Sample: WG1973357-2 S/N:4258.1 Points Across peak:37



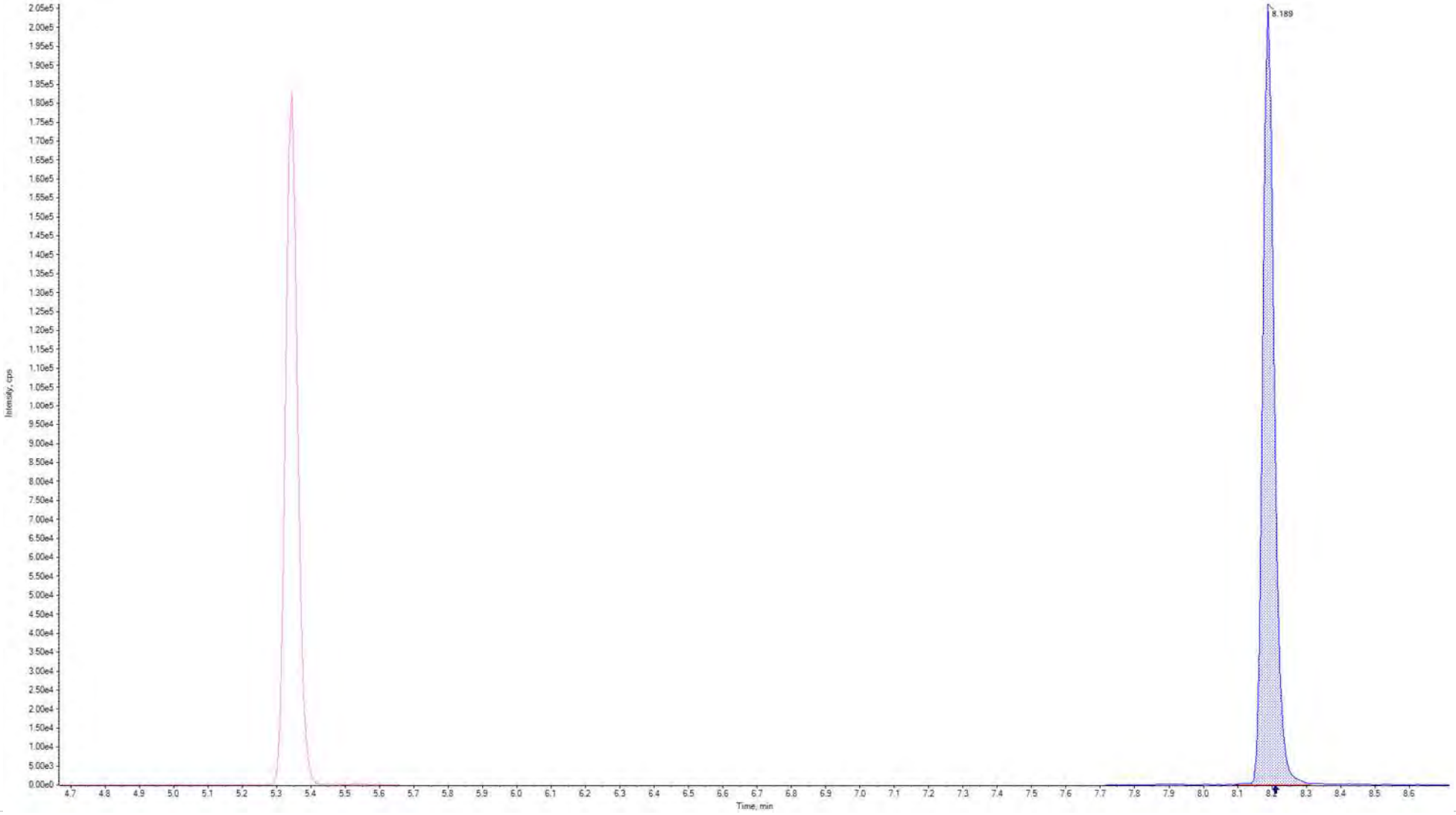
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

7:3FTCA
Sample: WG1973357-2 S/N:69726.0 Points Across peak:37



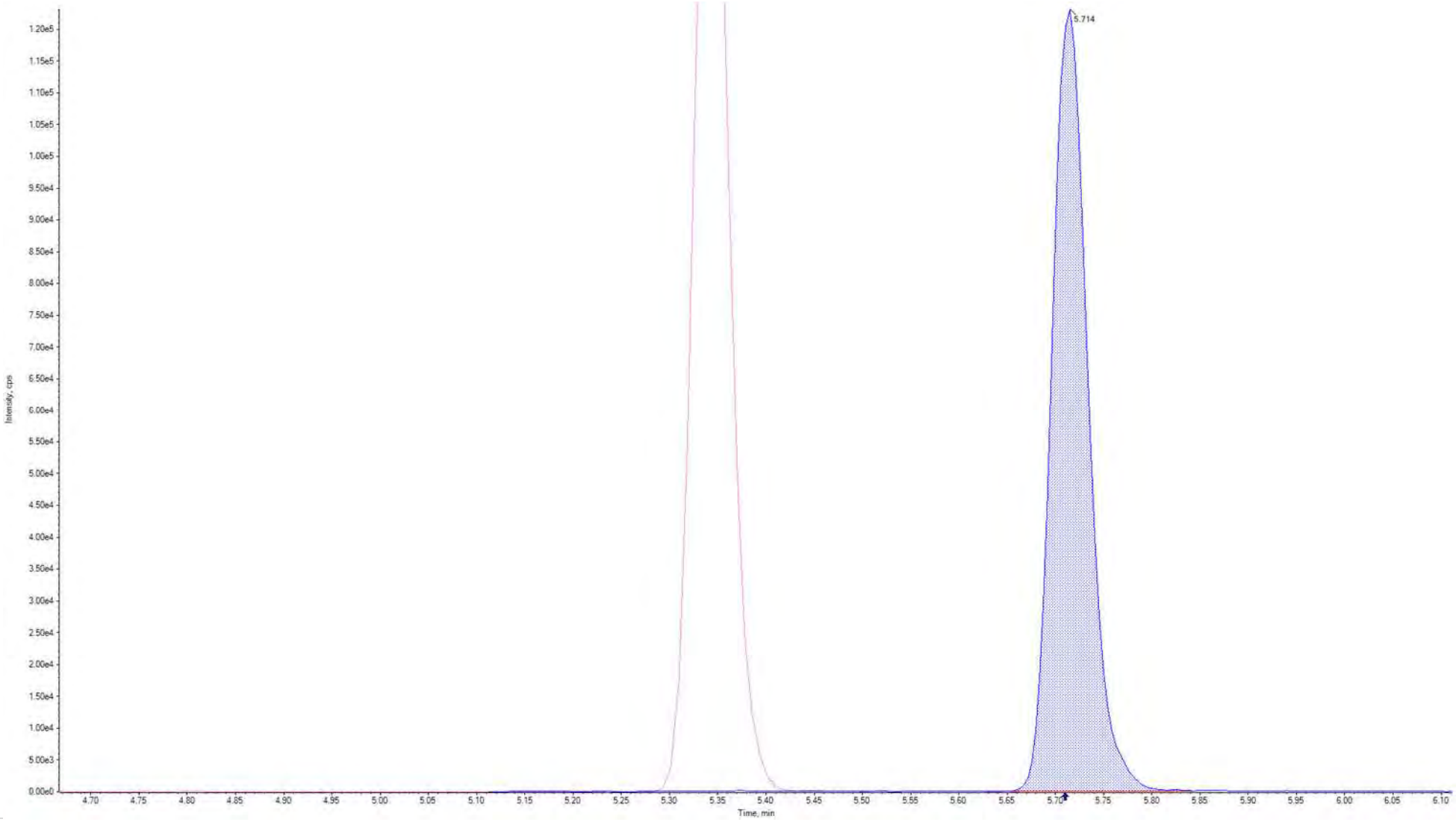
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

7:3FTCA_2
Sample: WG1973357-2 S/N:1430.8 Points Across peak:27



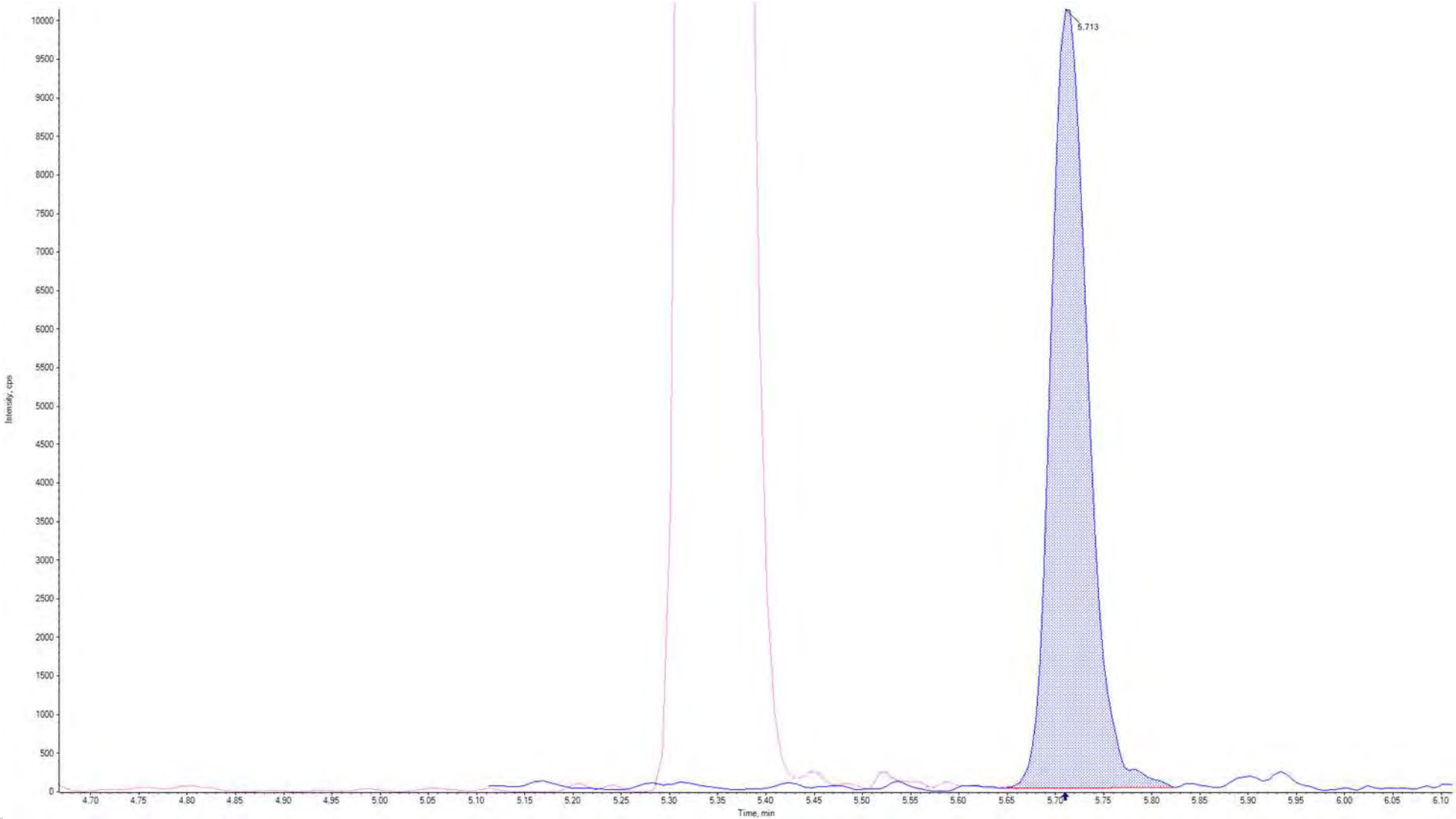
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFEESA
Sample: WG1973357-2 S/N:4136.4 Points Across peak:40



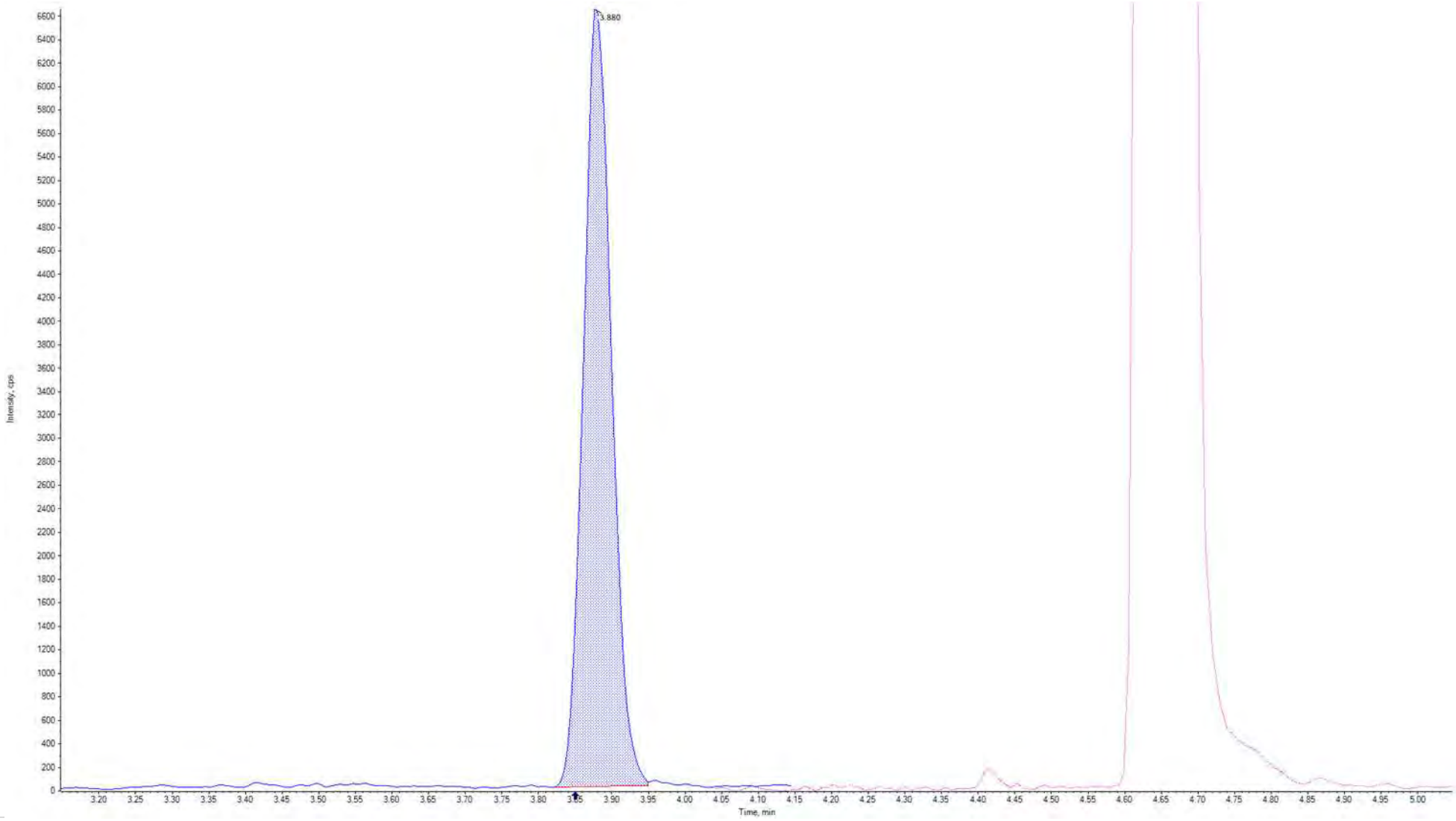
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFEESA_2
Sample: WG1973357-2 S/N:1242.2 Points Across peak:38



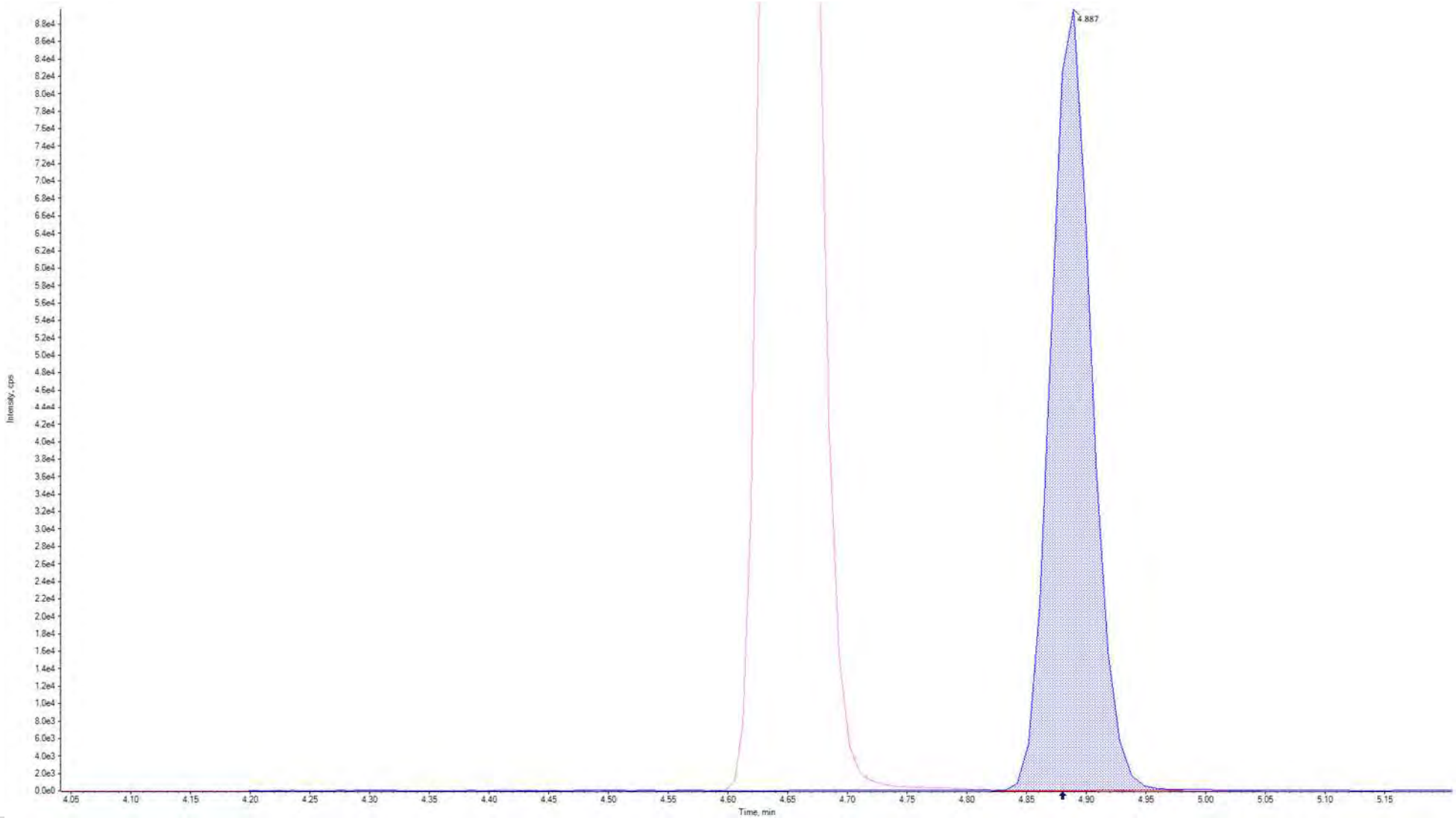
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFMPA
Sample: WG1973357-2 S/N:1482.2 Points Across peak:33



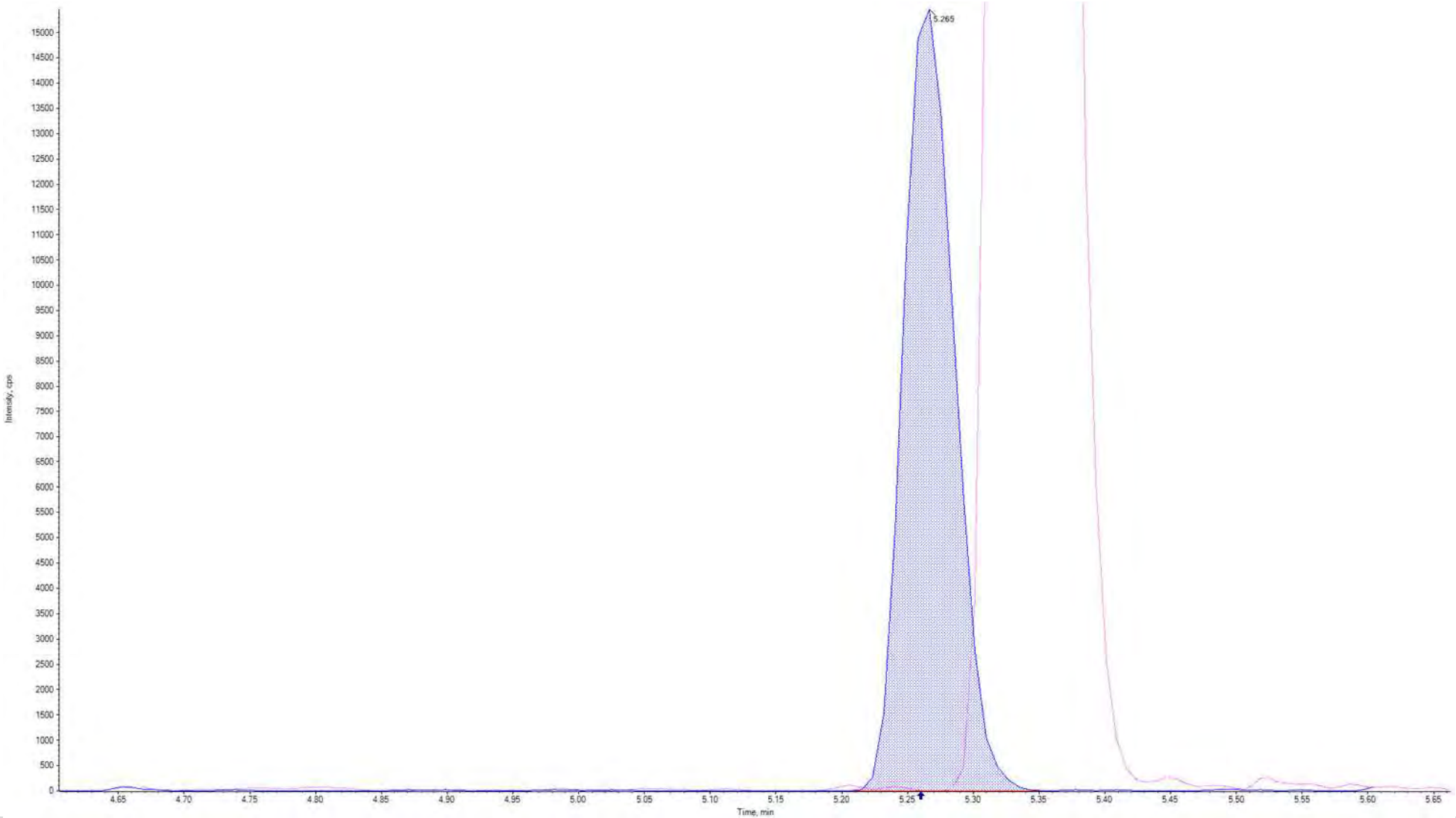
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFMBA
Sample: WG1973357-2 S/N:5299.4 Points Across peak:17



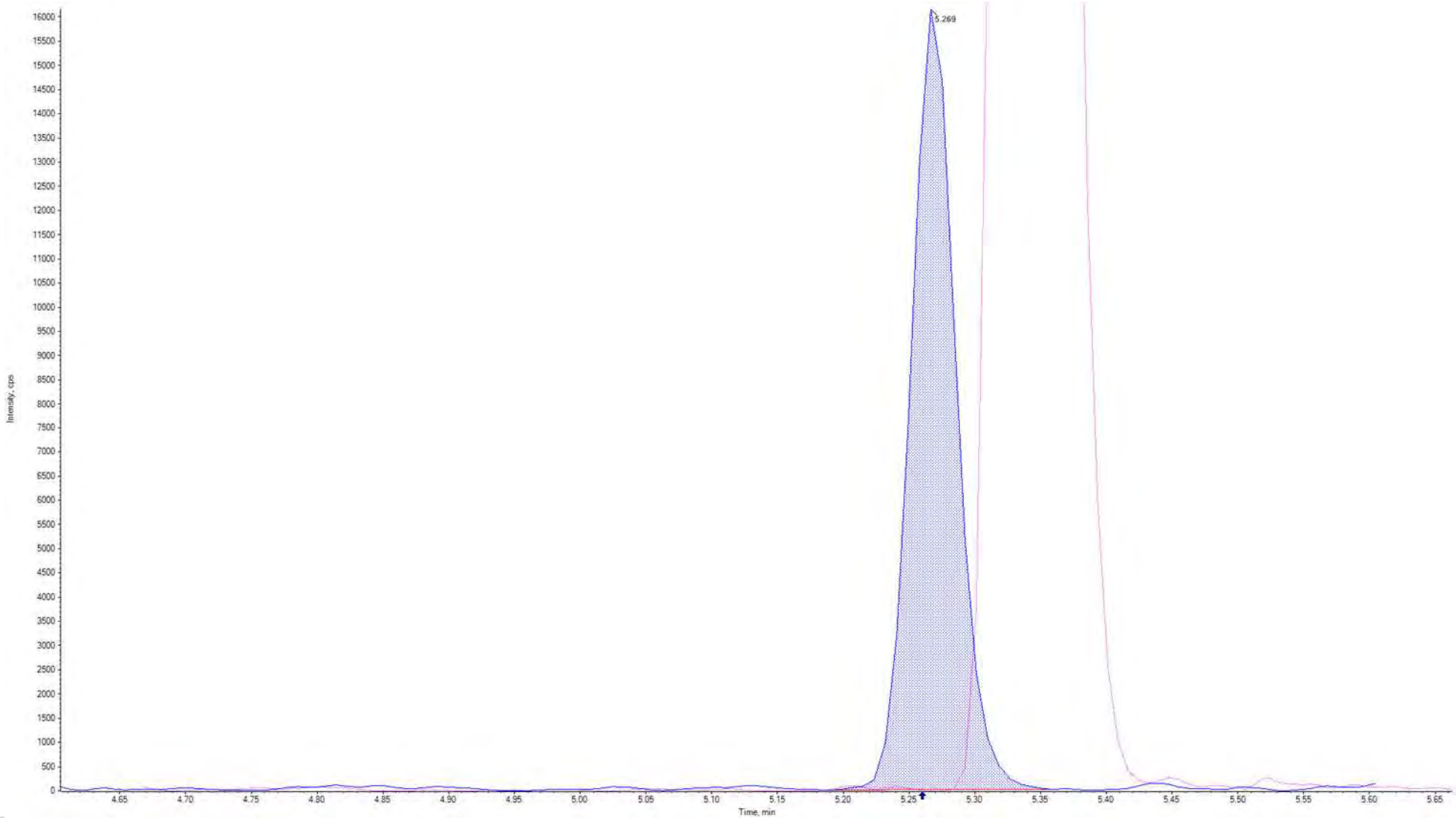
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NFDHA
Sample: WG1973357-2 S/N:1472.5 Points Across peak:22

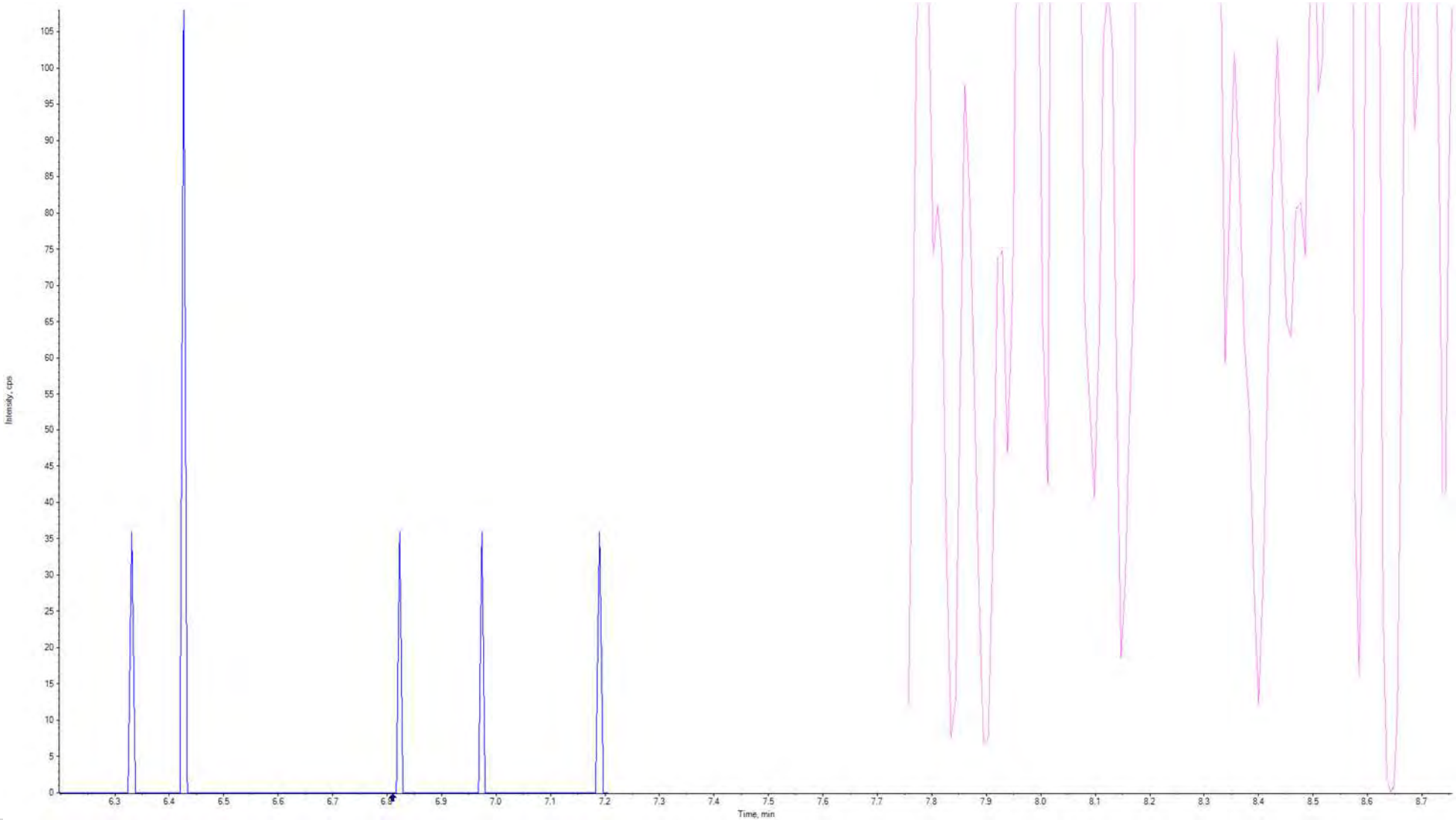


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NFDHA_2
Sample: WG1973357-2 S/N:2221.5 Points Across peak:21

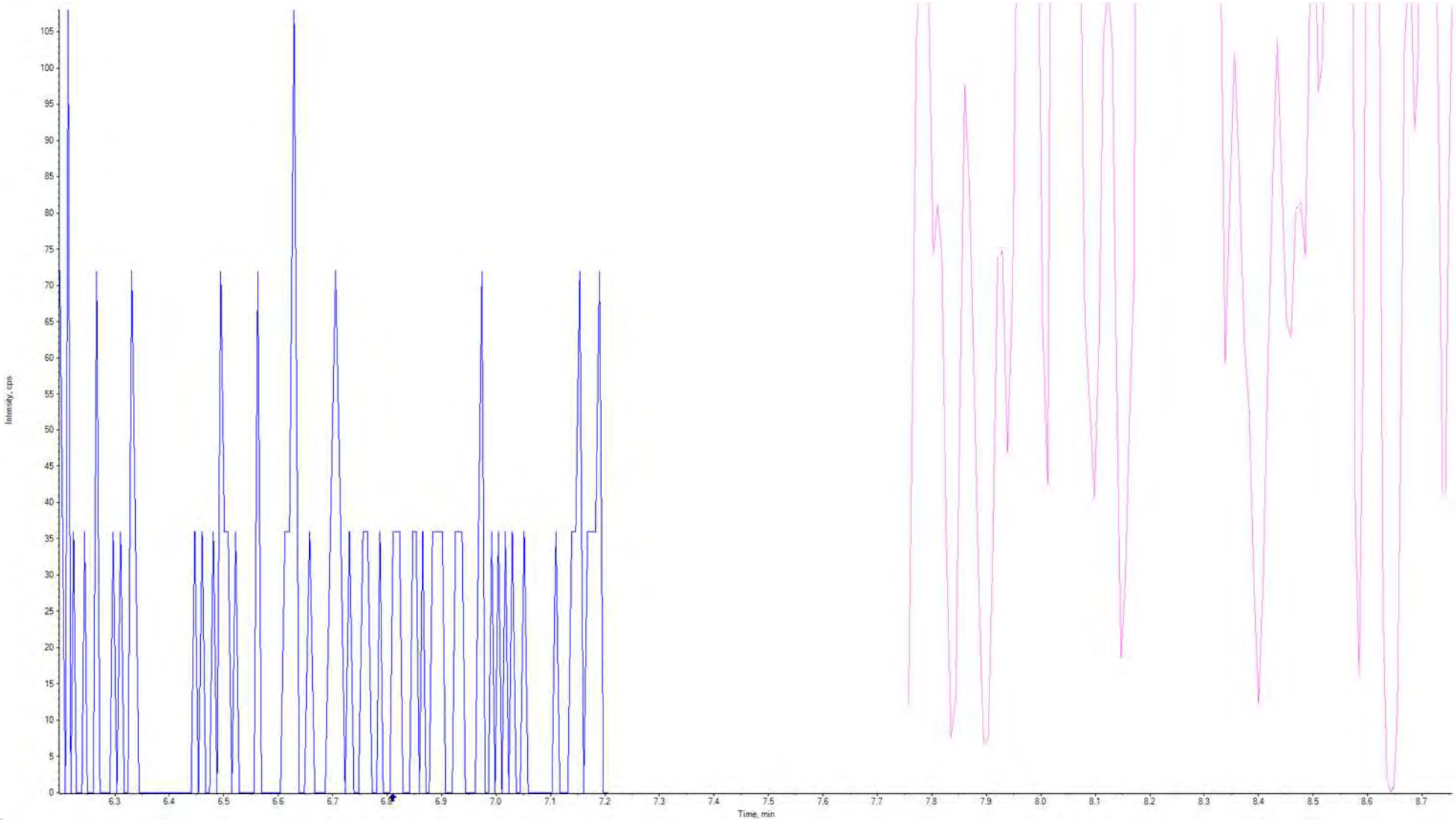


TDCA
Sample: WG1973357-2 S/N:N/A Points Across peak:N/A



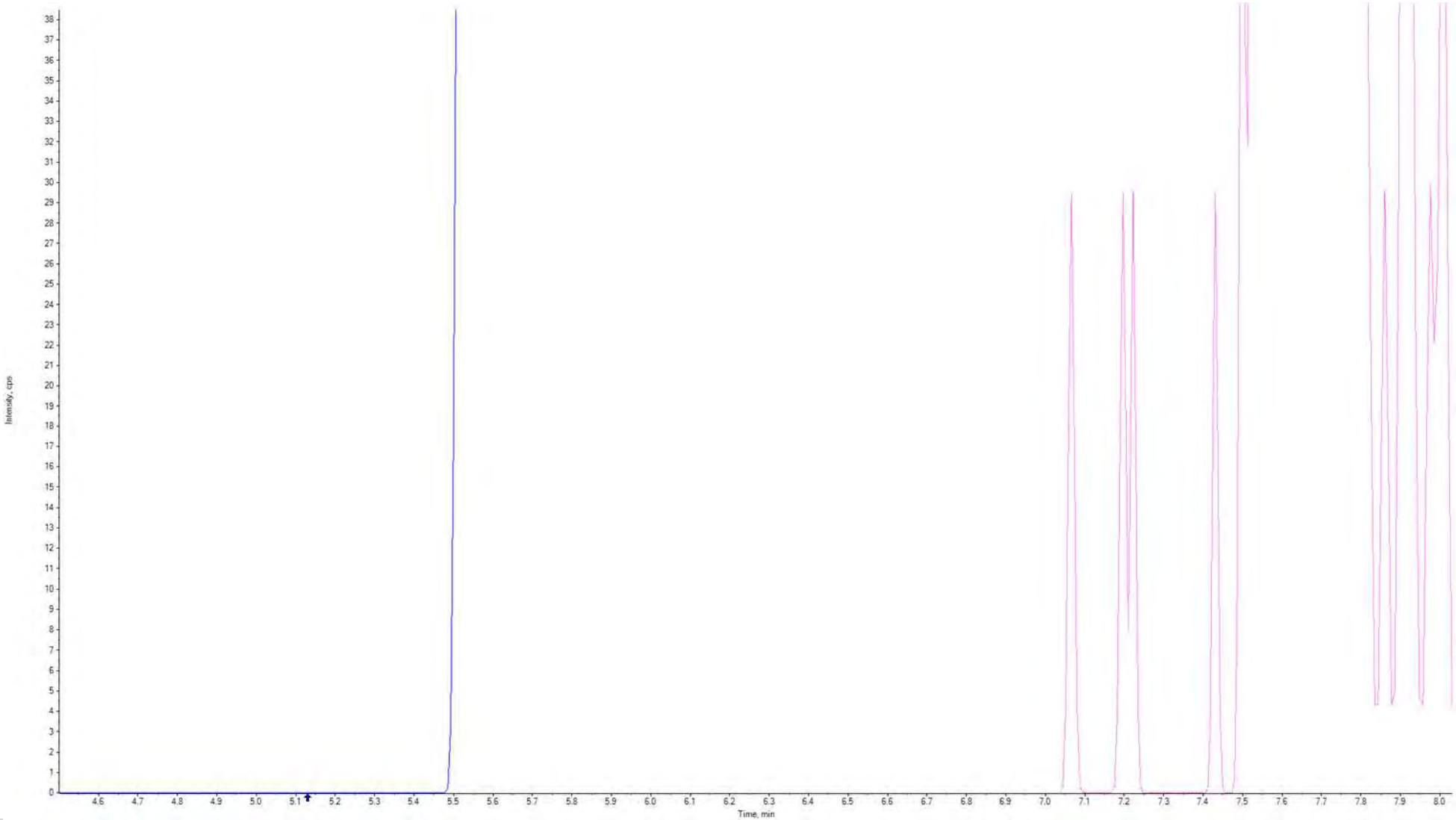
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

TDCA_2
Sample: WG1973357-2 S/N:N/A Points Across peak:N/A



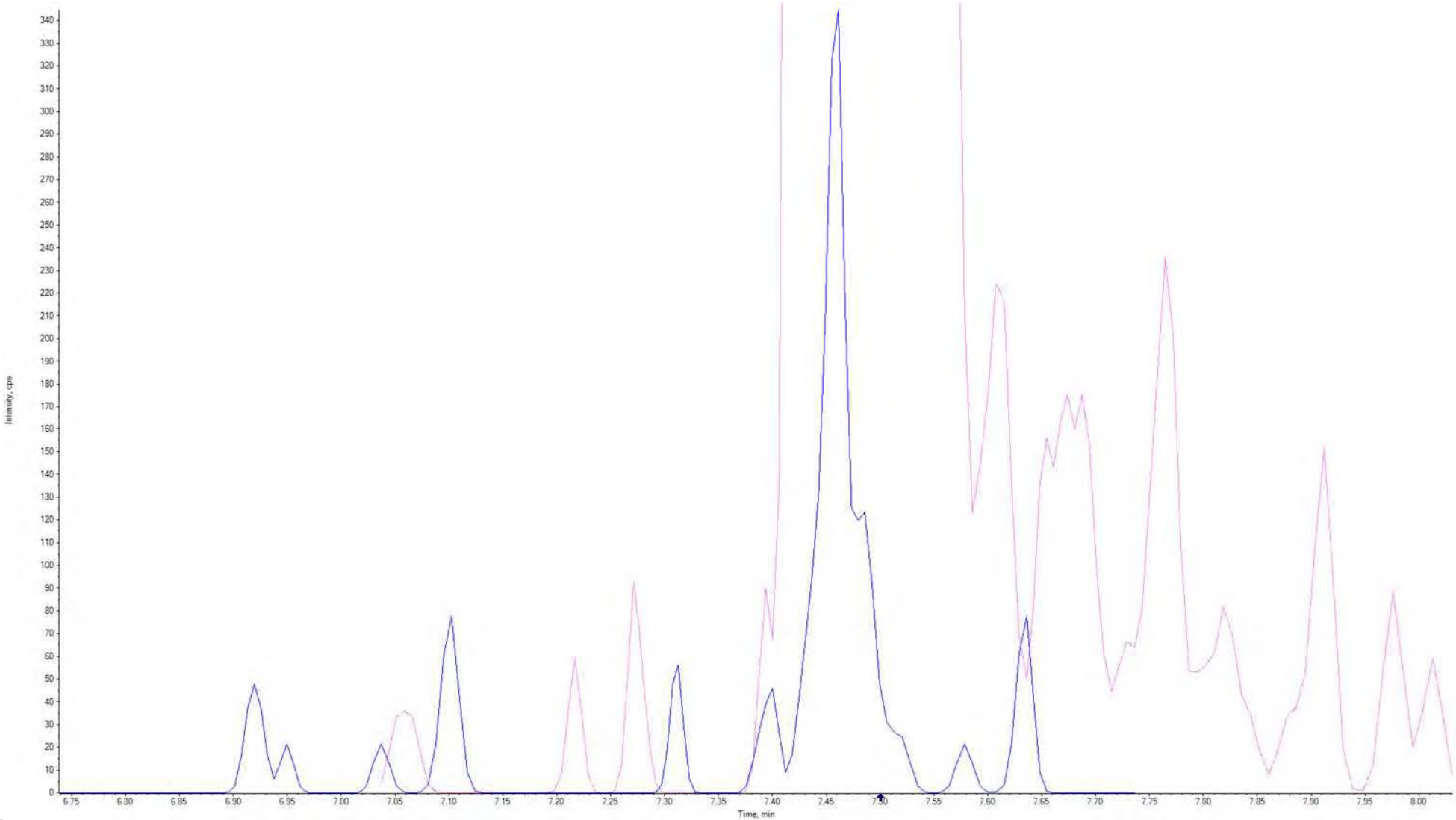
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C2D4-4:2FTS
Sample: WG1973357-2 S/N:N/A Points Across peak:N/A

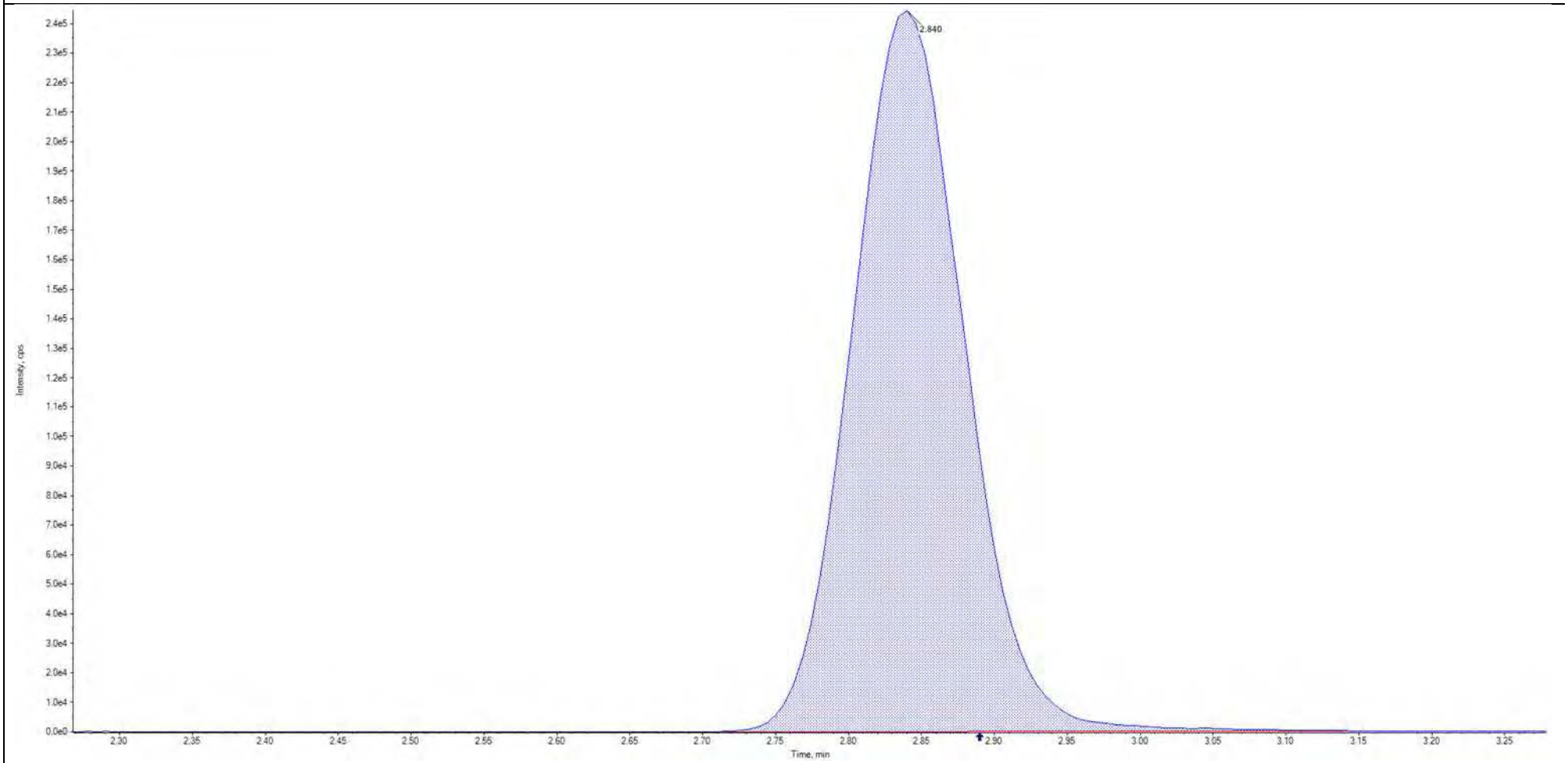


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_14.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

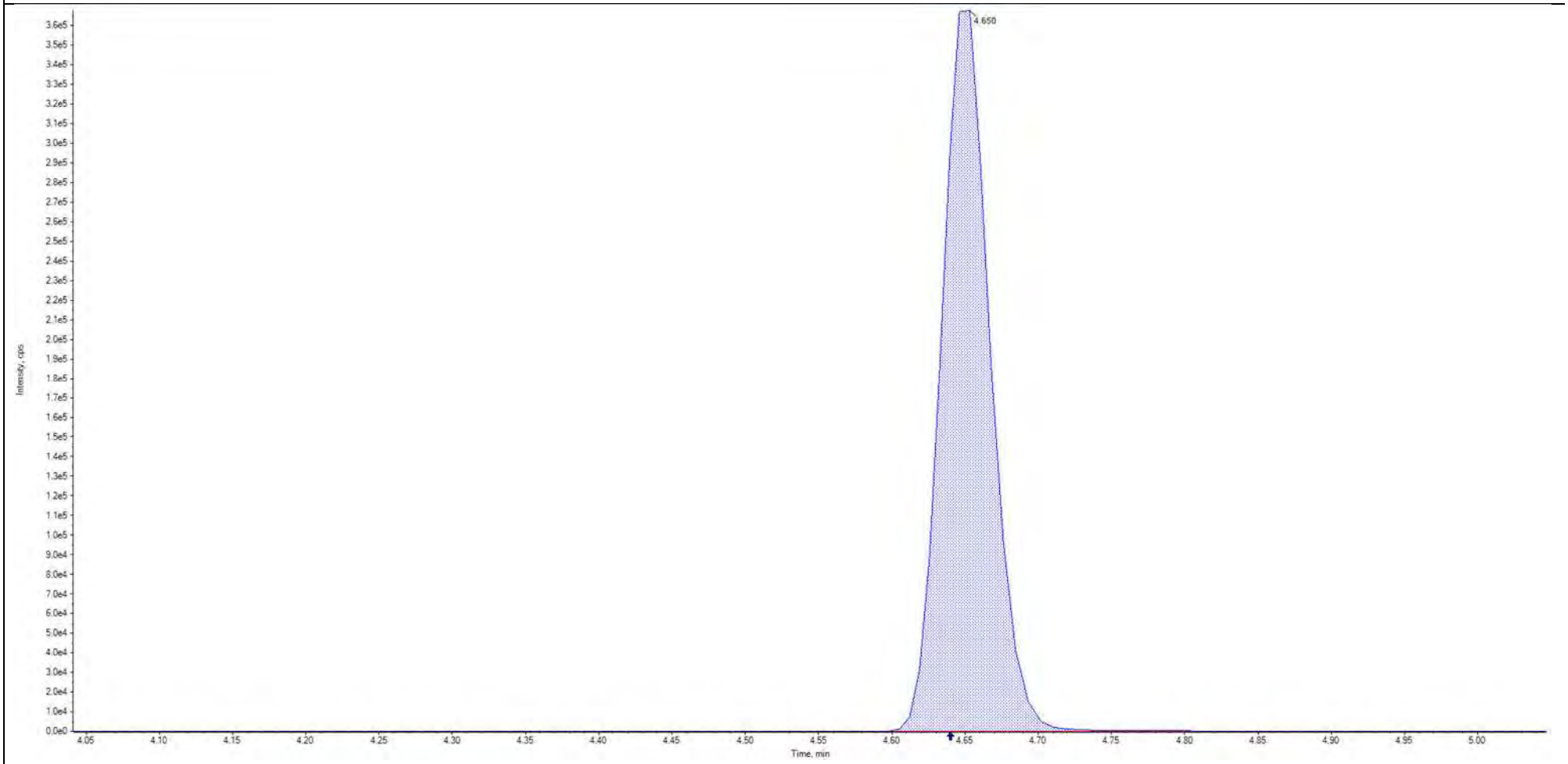
13C2-PFOA
Sample: WG1973357-2 S/N:N/A Points Across peak:N/A



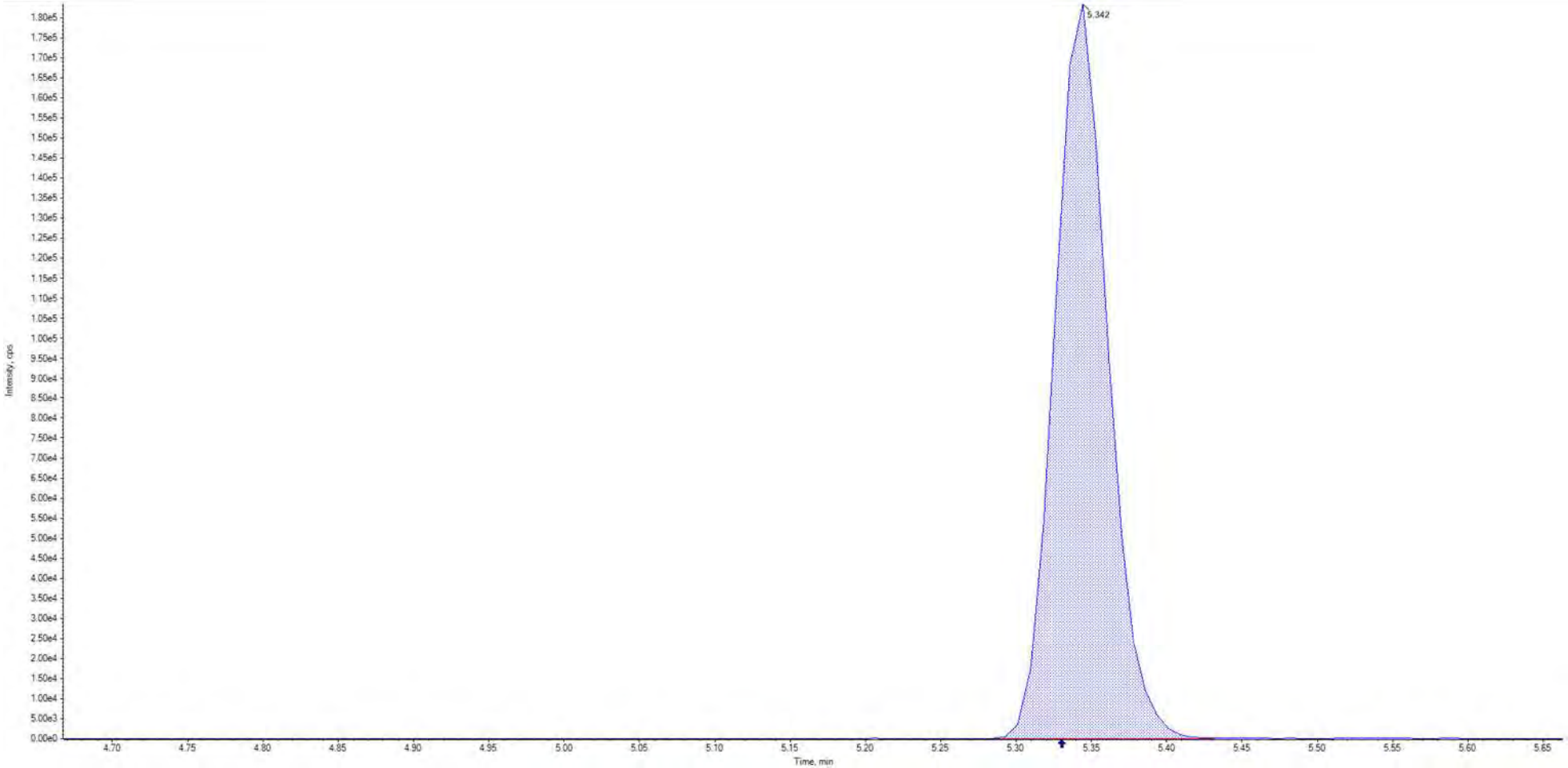
13C4-PFBA
Sample: WG1973357-2



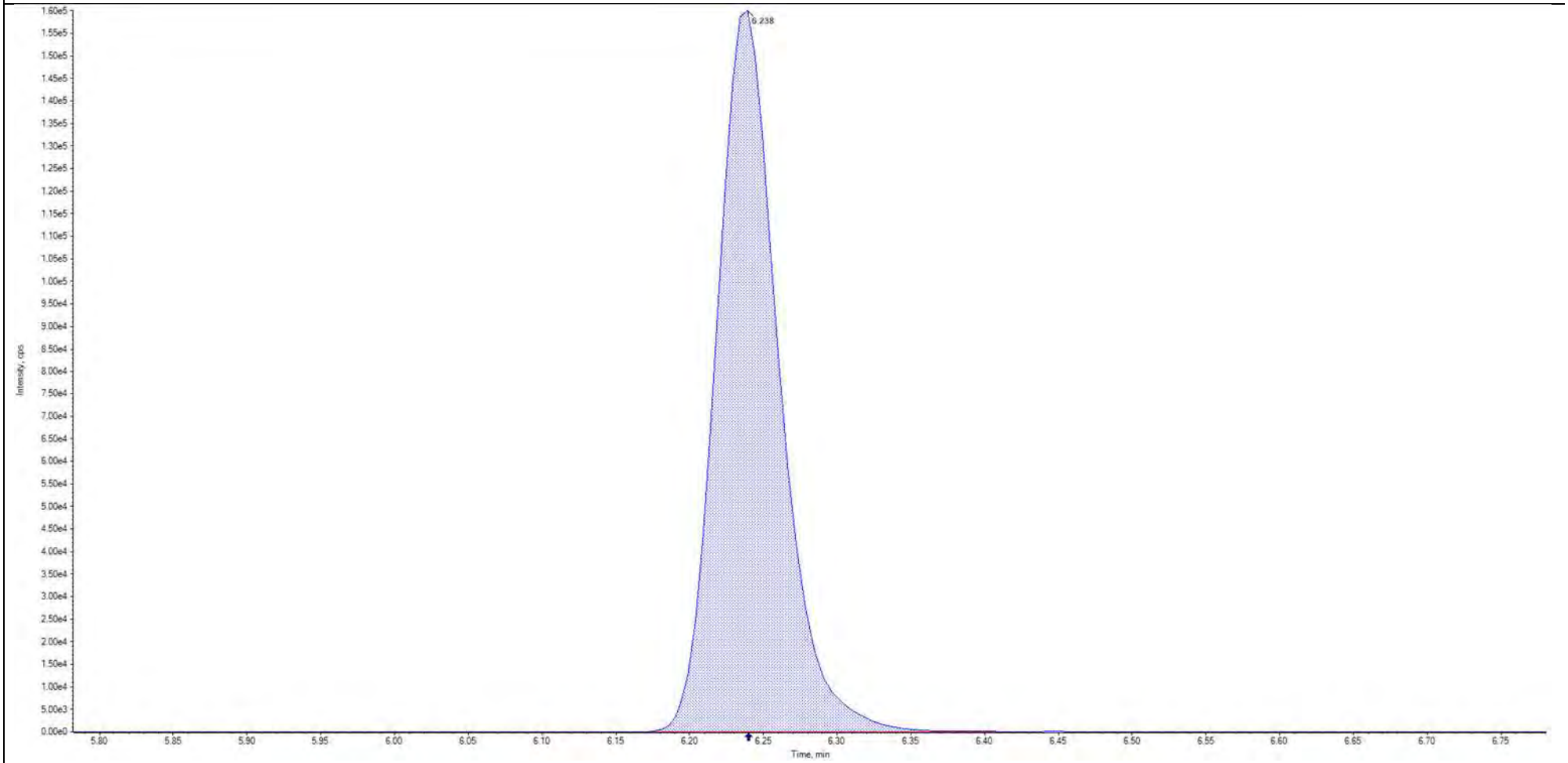
13C5-PFPeA
Sample: WG1973357-2



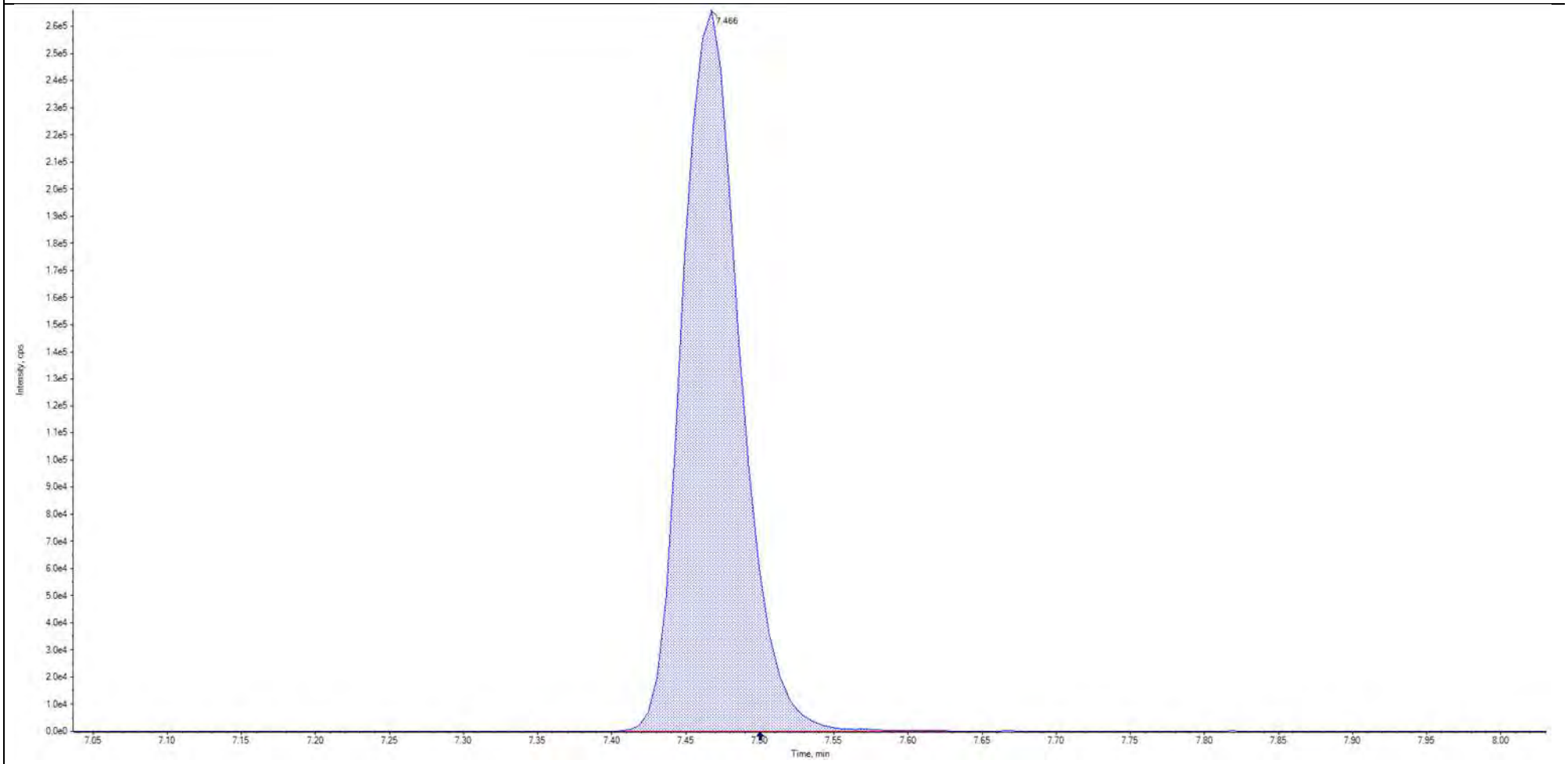
13C5-PFHxA
Sample: WG1973357-2



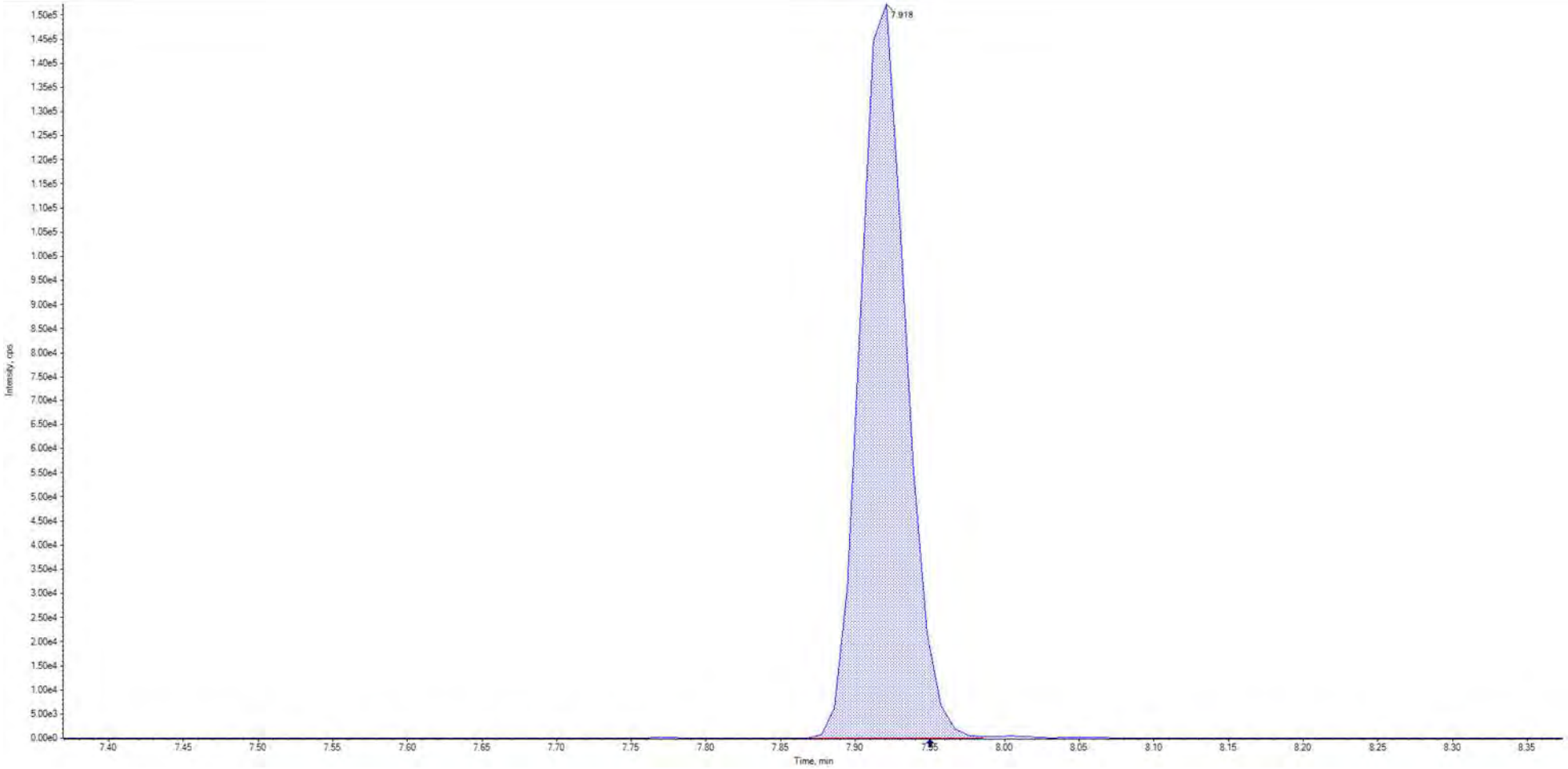
13C4-PFHpA
Sample: WG1973357-2



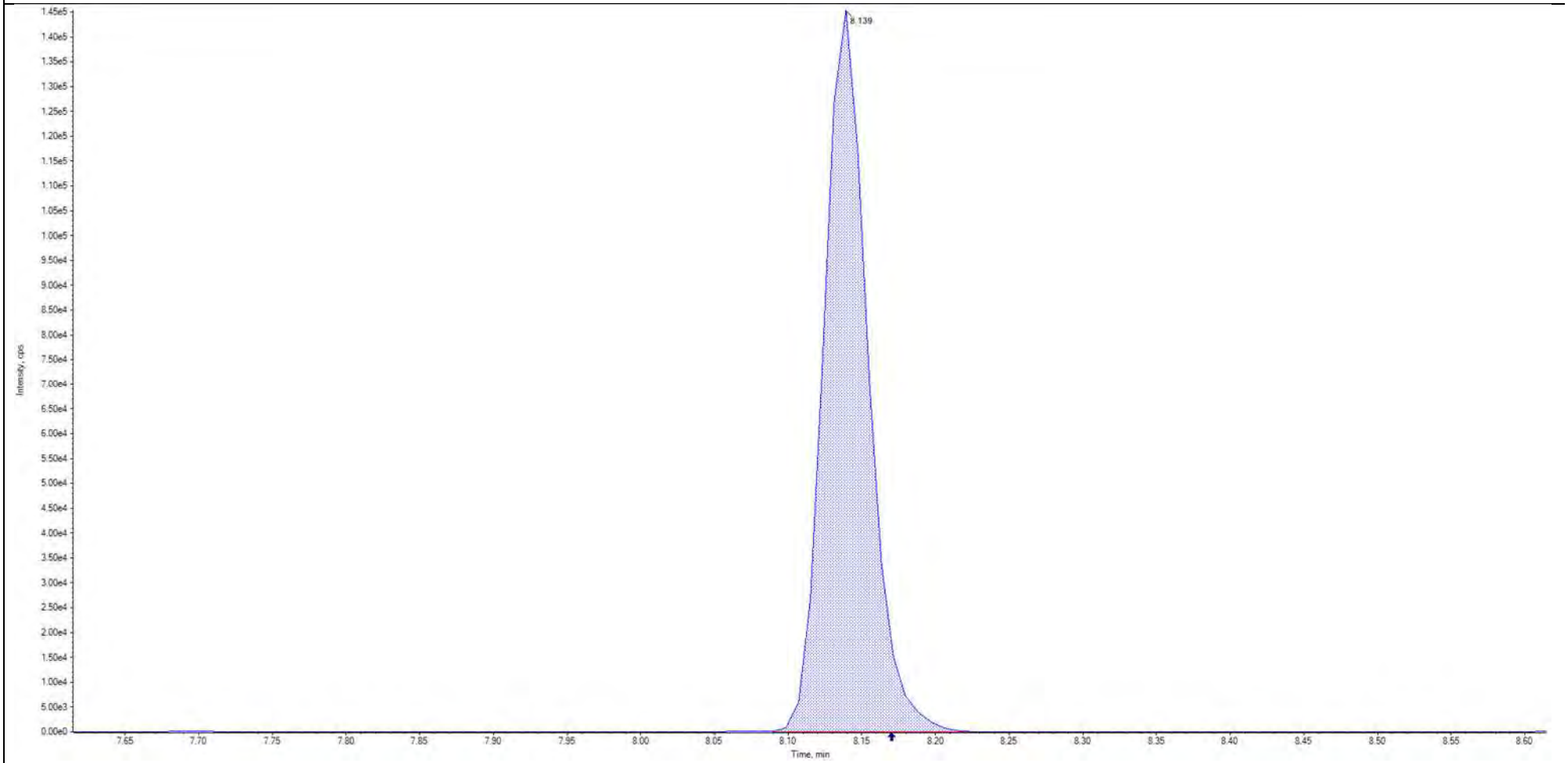
13C8-PFOA
Sample: WG1973357-2



13C9-PFNA
Sample: WG1973357-2



13C6-PFDA
Sample: WG1973357-2



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13C7-PFUnA
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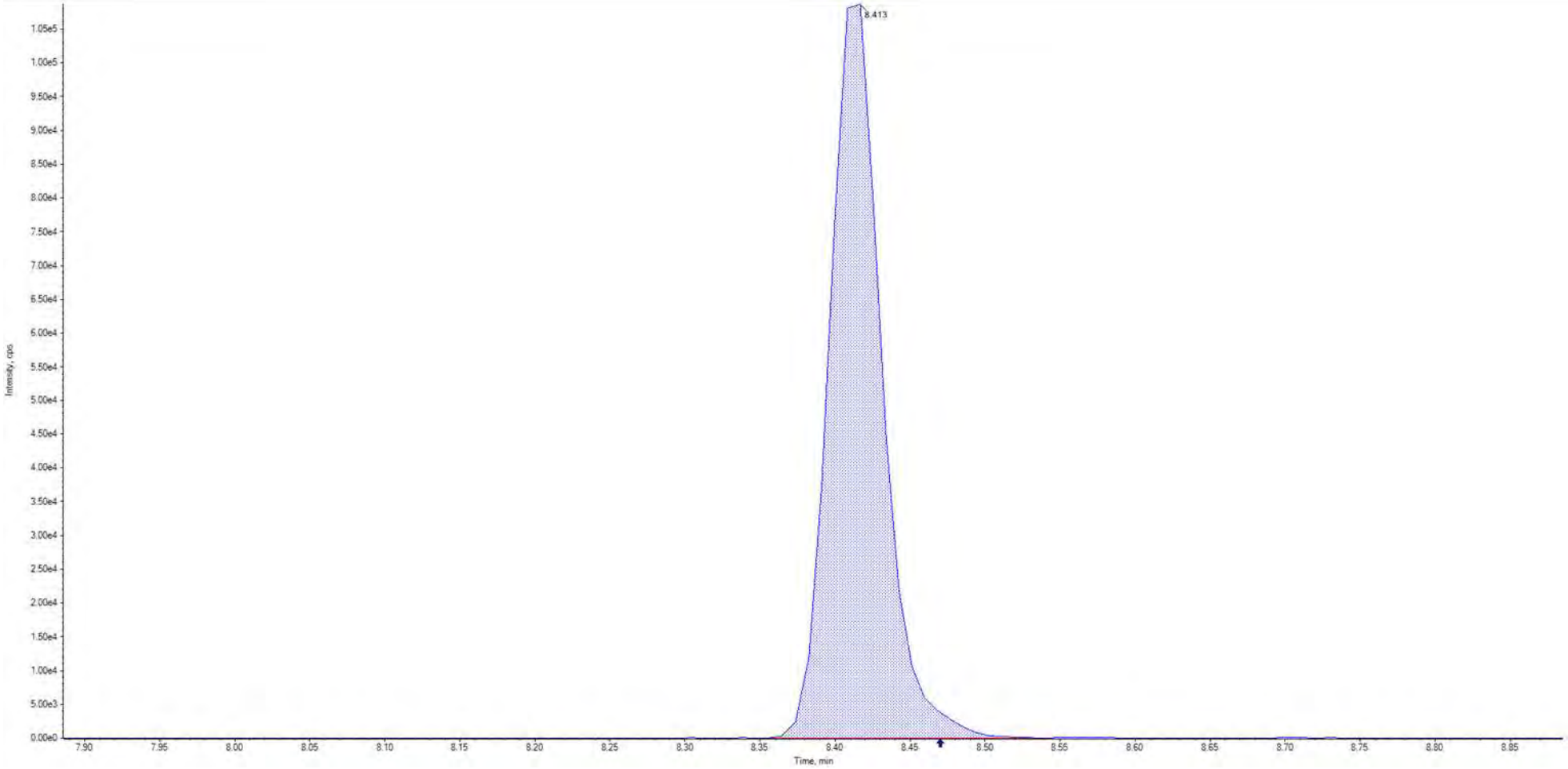

13C2-PFDoA
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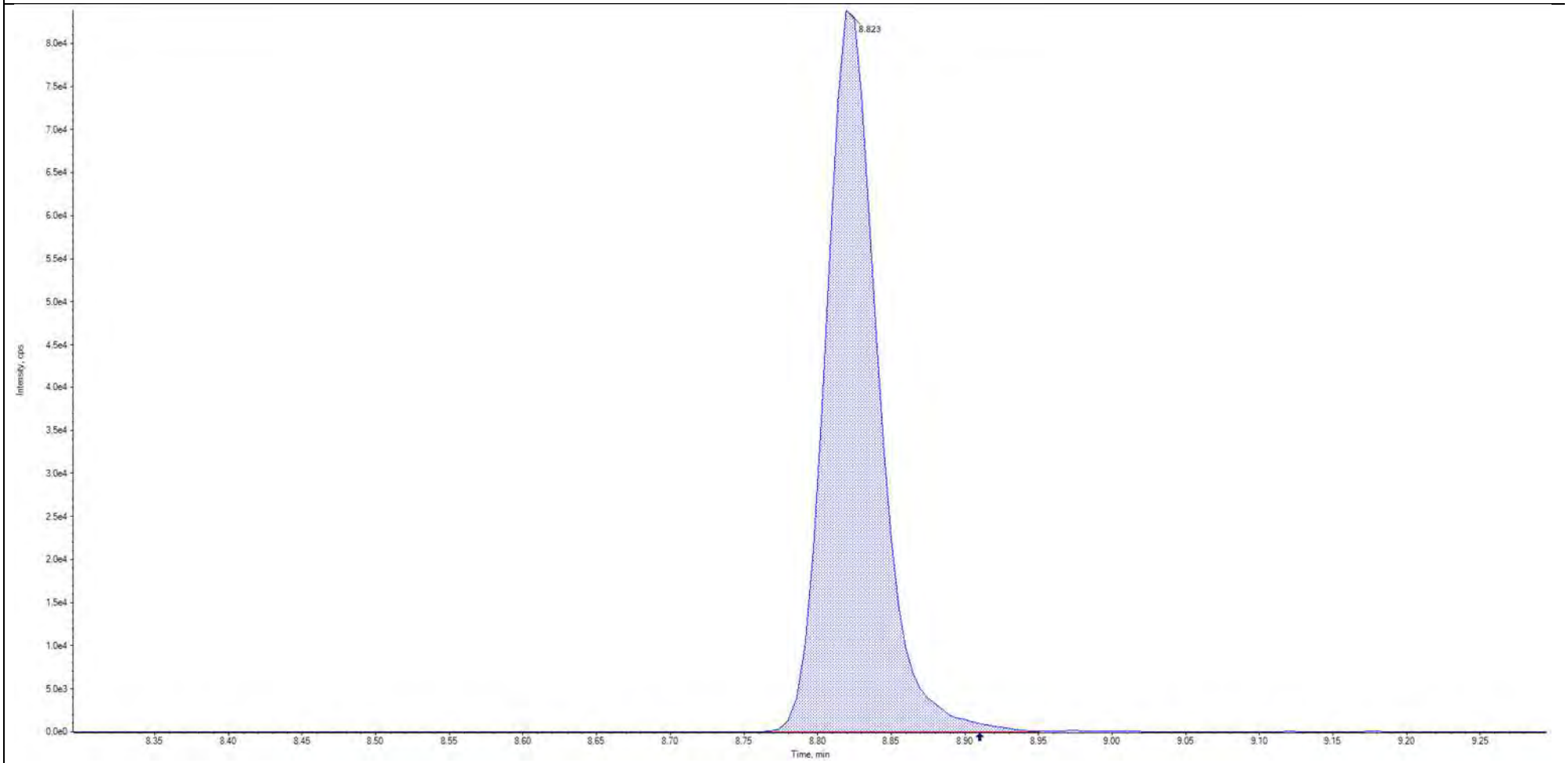
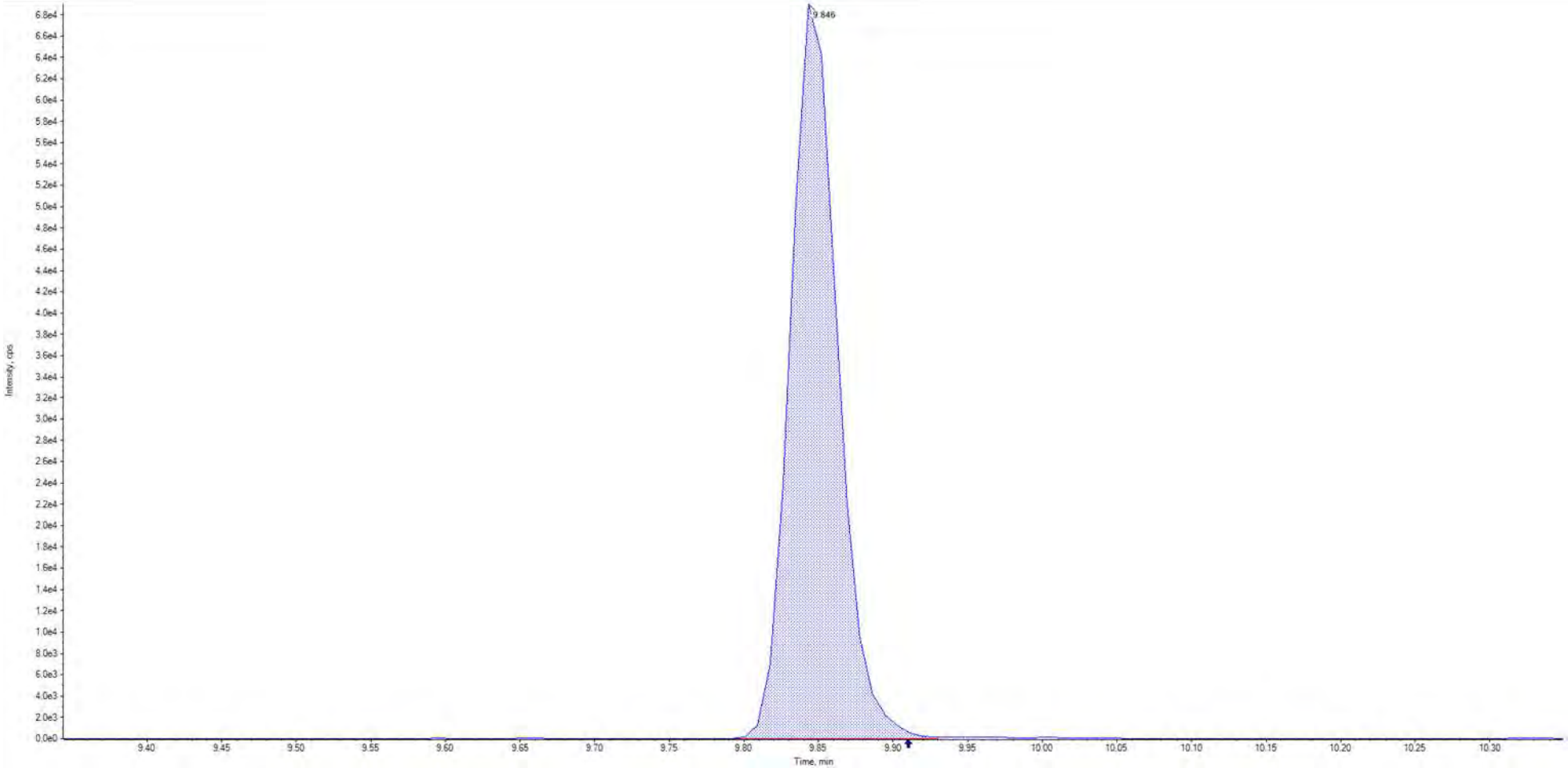


13C2-PFTeDA
Sample: WG1973357-2



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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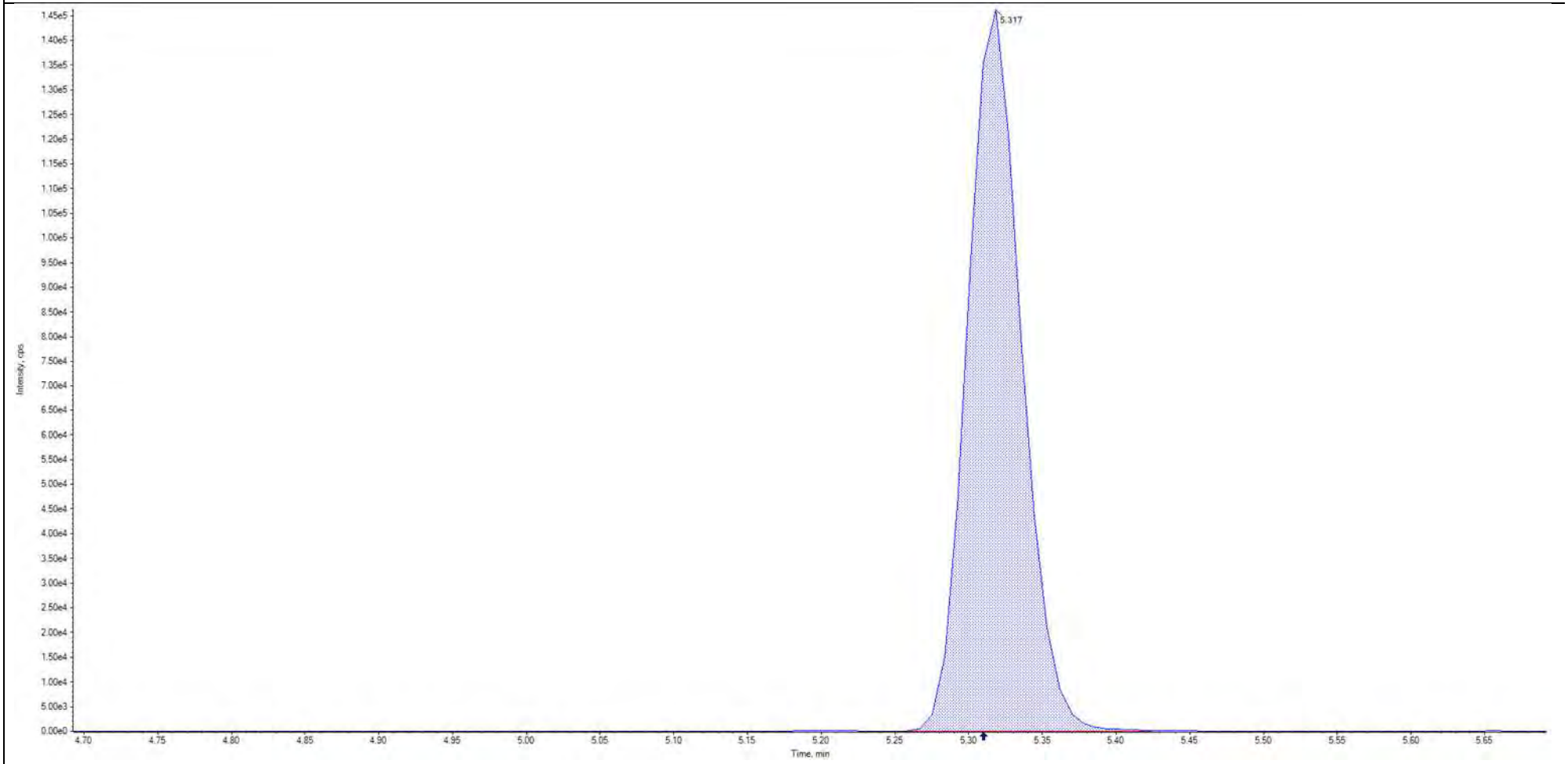
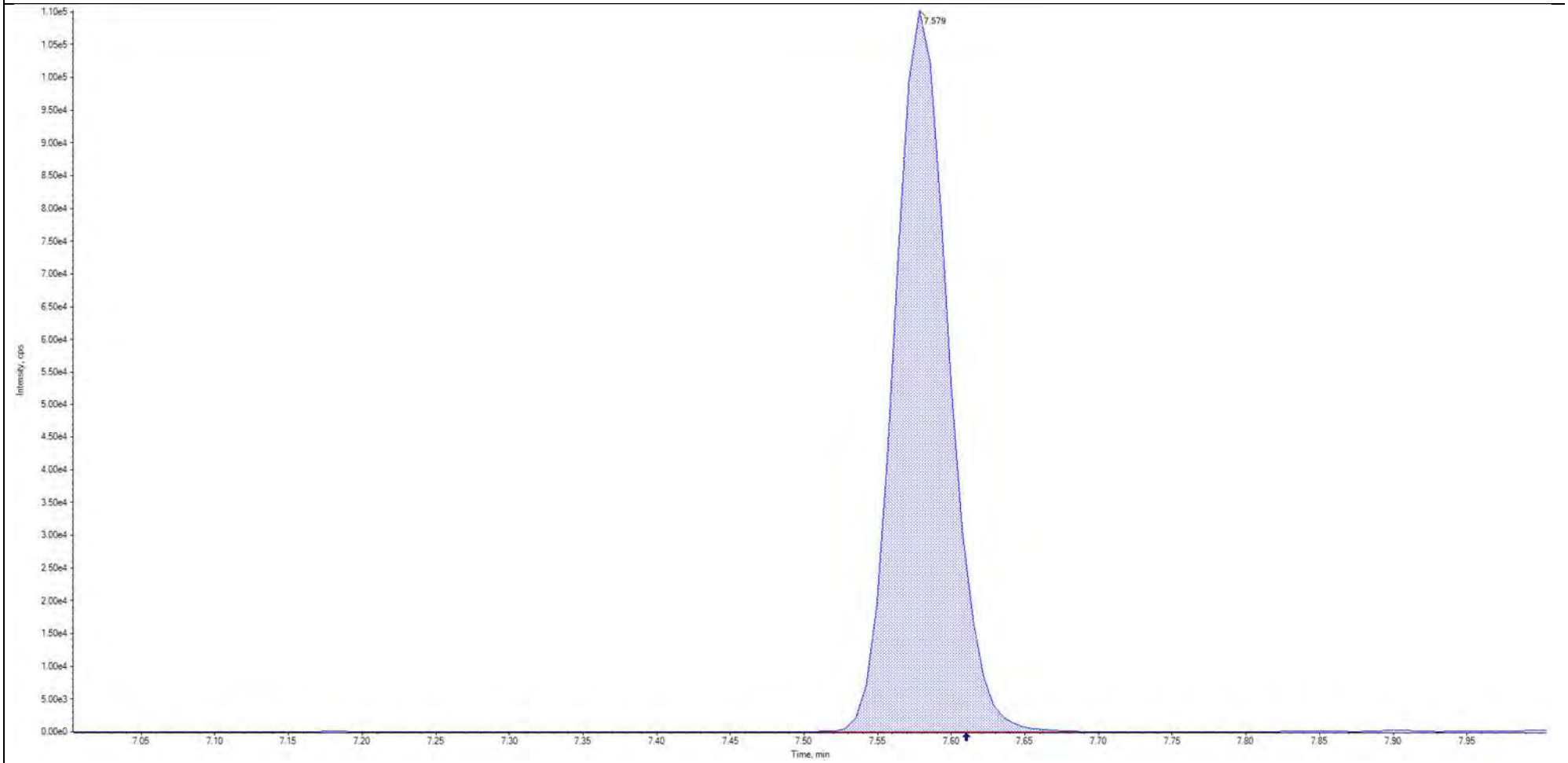
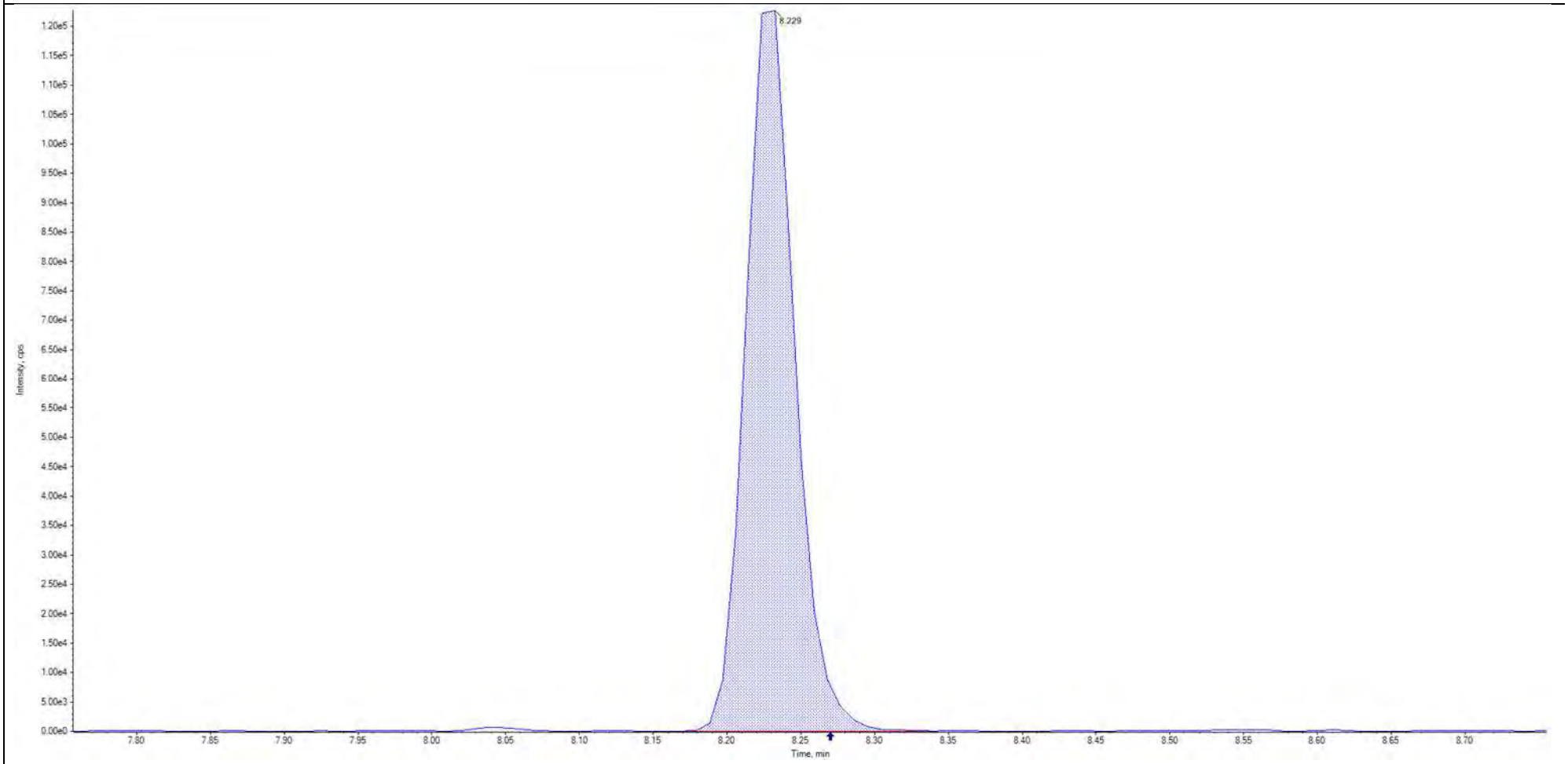
13C3-PFBS
Sample: WG1973357-2



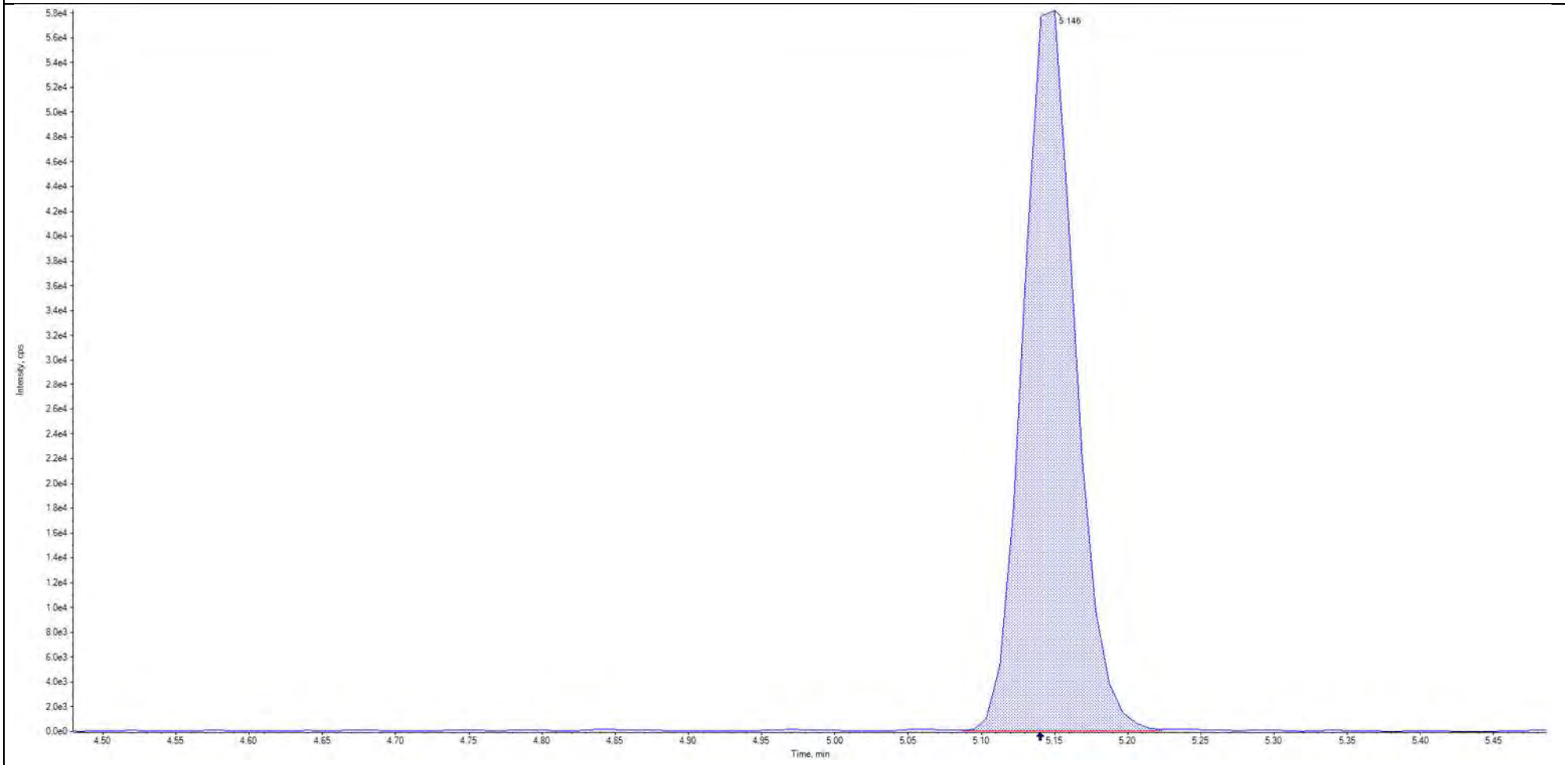
13C3-PFHxS
Sample: WG1973357-2



13C8-PFOS
Sample: WG1973357-2



13C2-4:2FTS
Sample: WG1973357-2



13C2-6:2FTS
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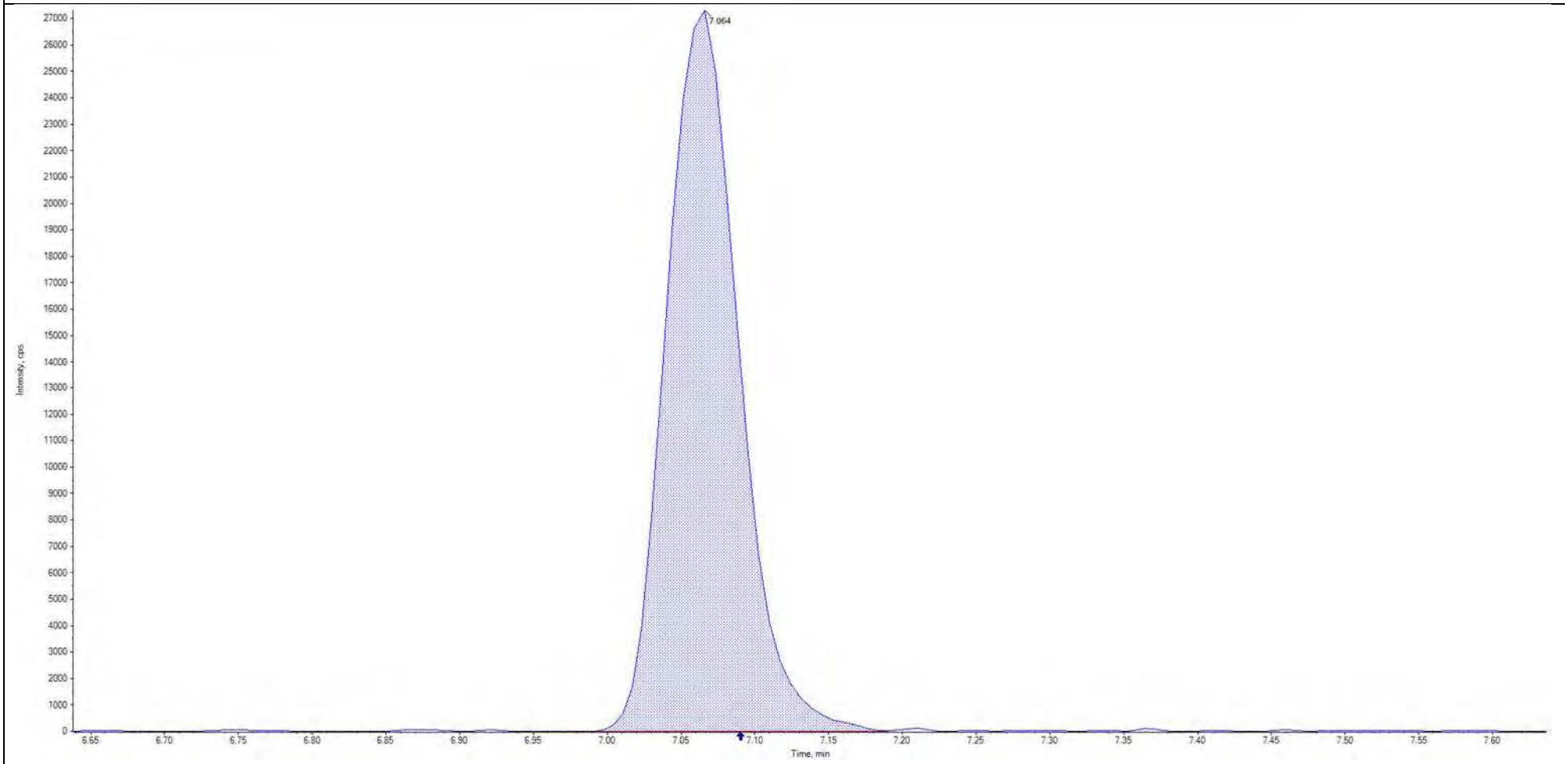
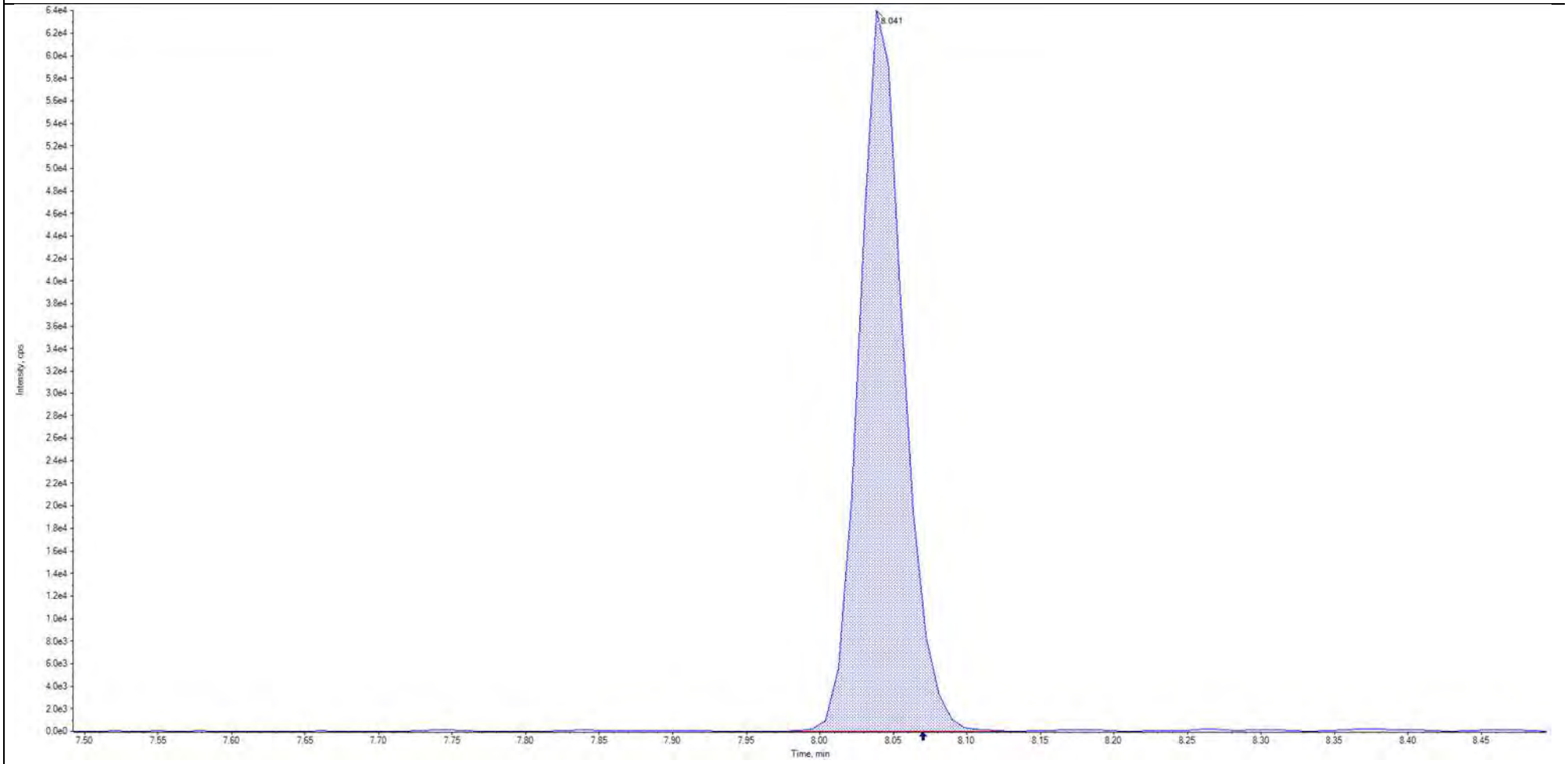


13C2-8:2FTS
Sample: WG1973357-2



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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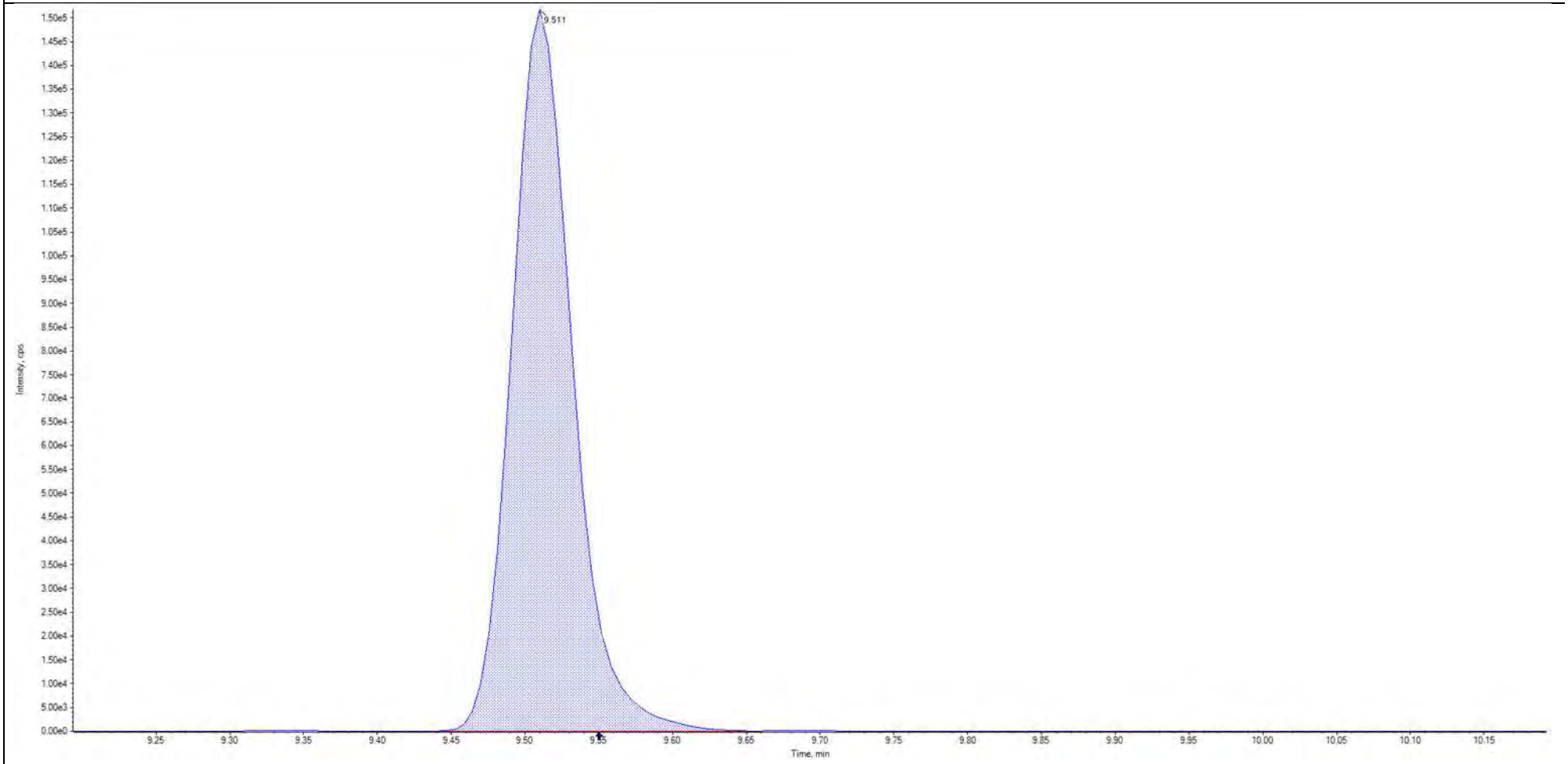
Generated: 9/19/2024 8:04:31 AM

13C8-PFOSA
Sample: WG1973357-2



d3-NMeFOSA
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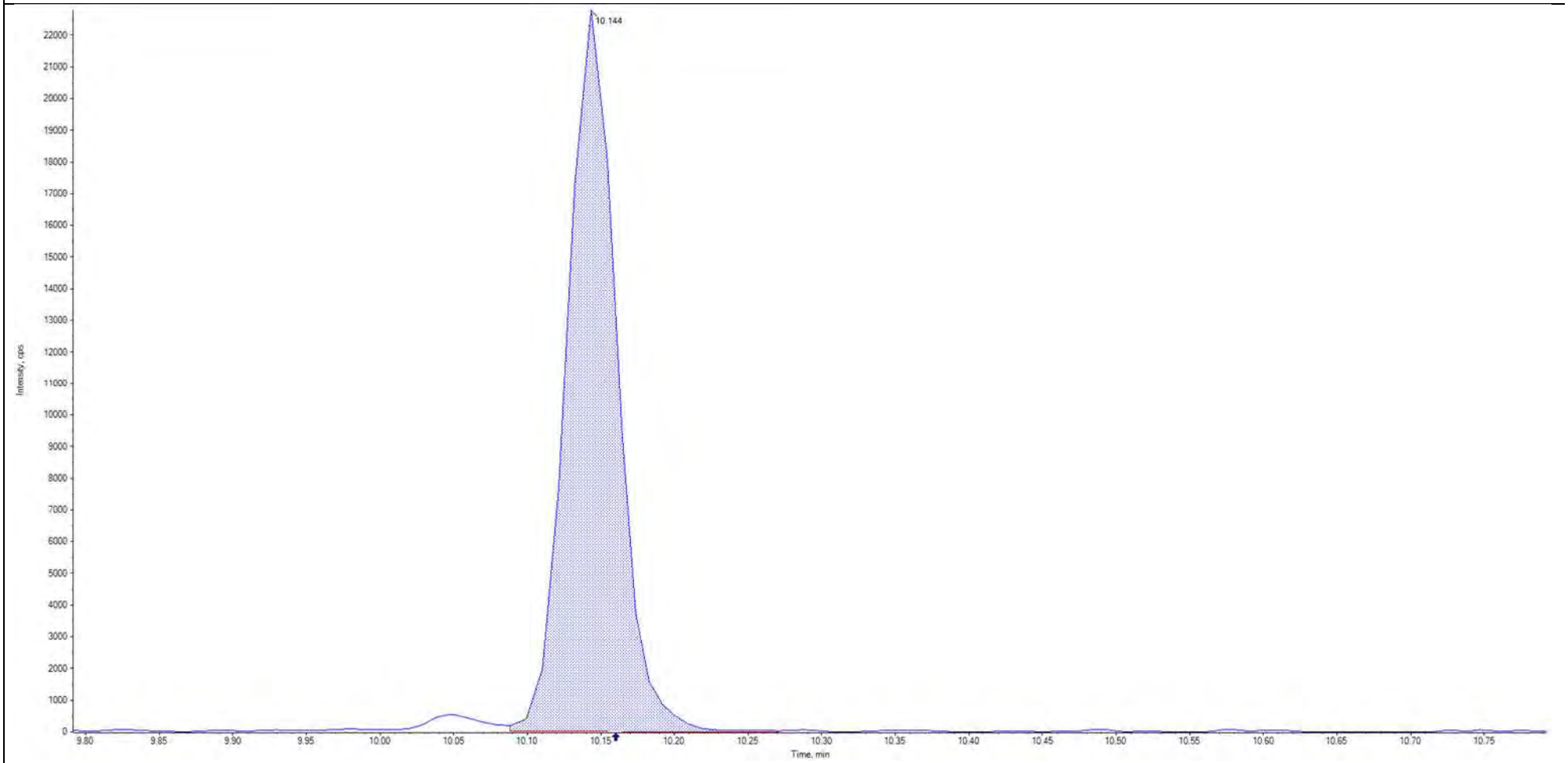
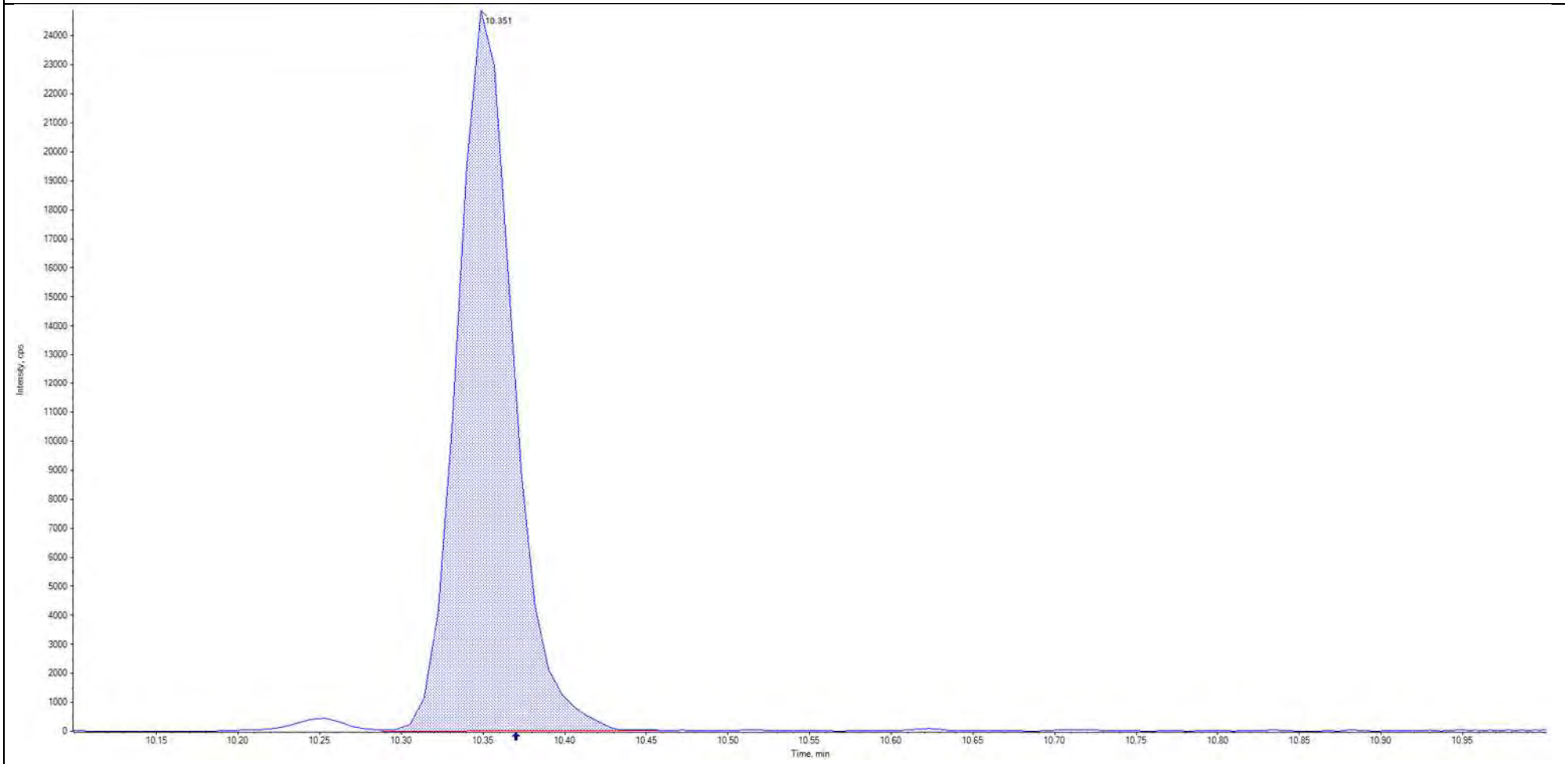
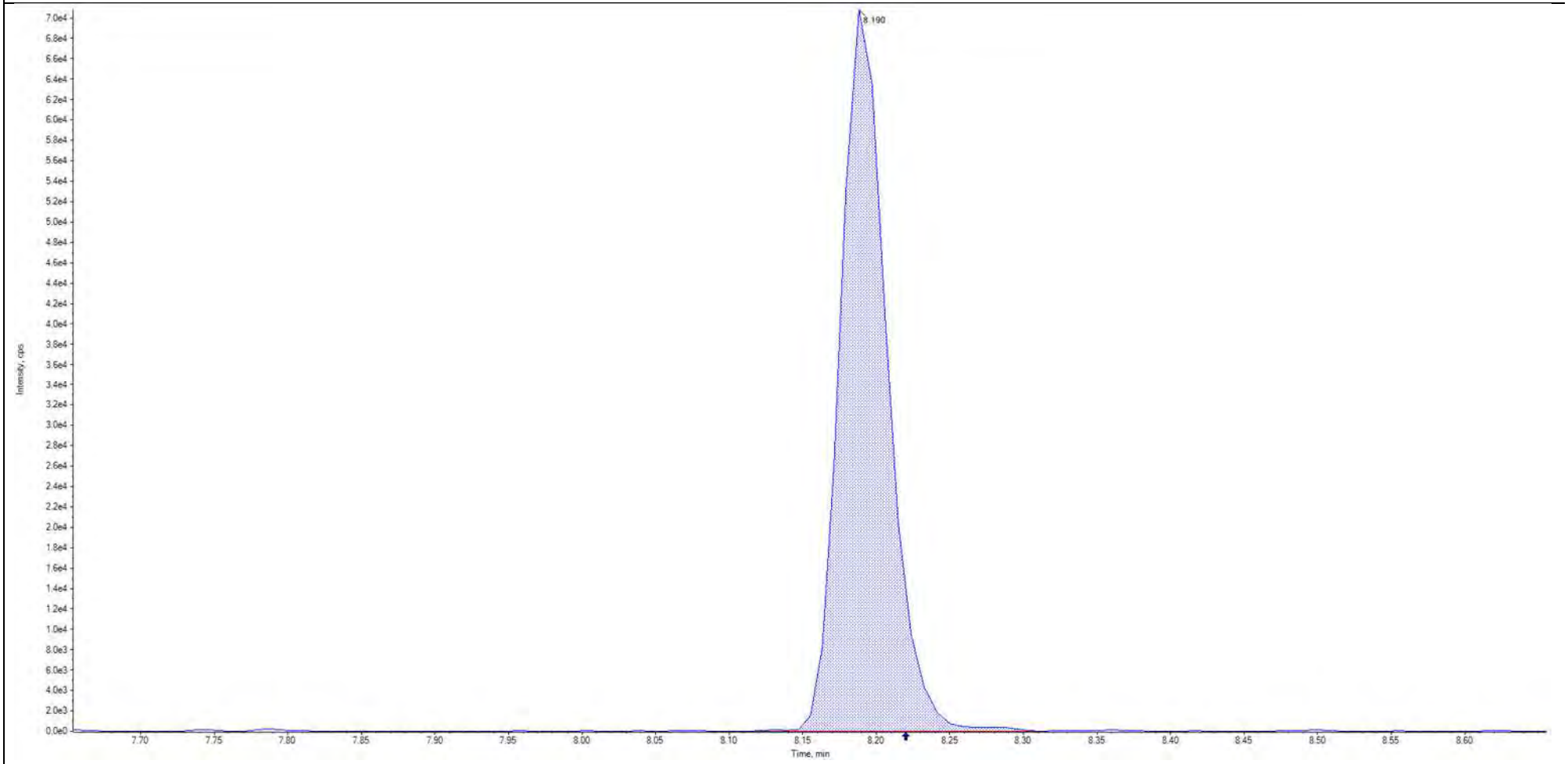


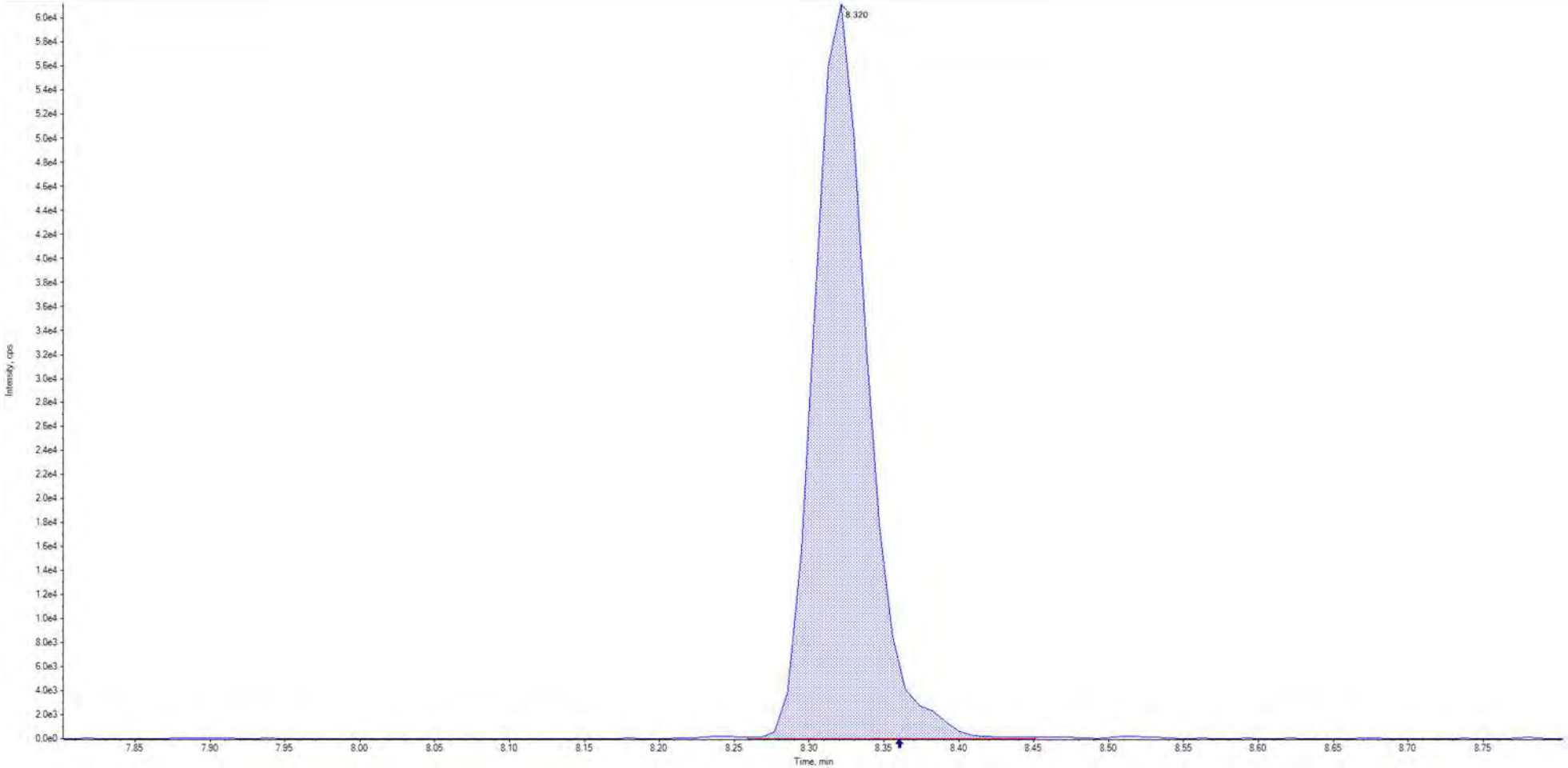
d5-NEtFOSA
Sample: WG1973357-2



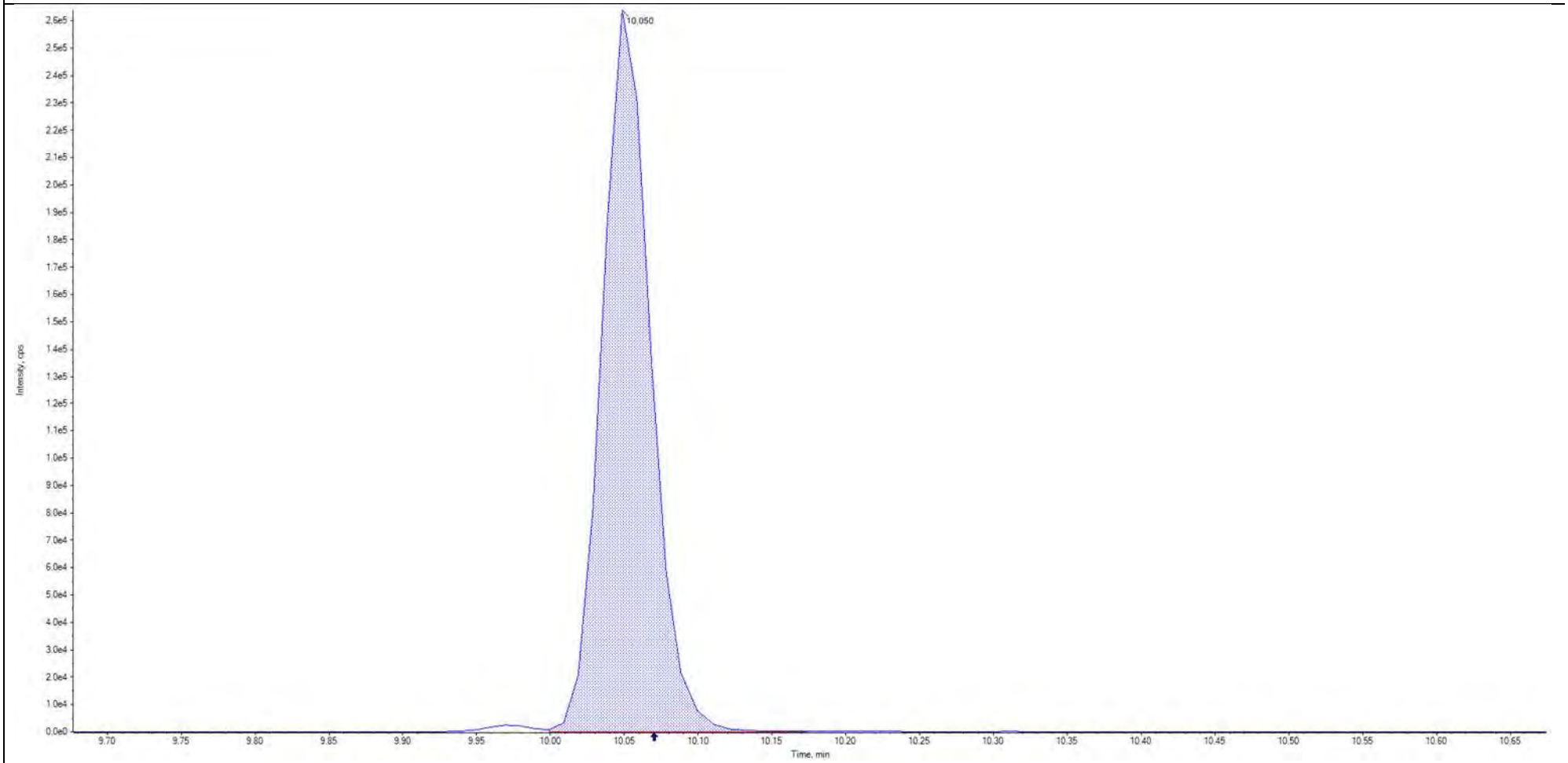
d3-NMeFOSAA
Sample: WG1973357-2



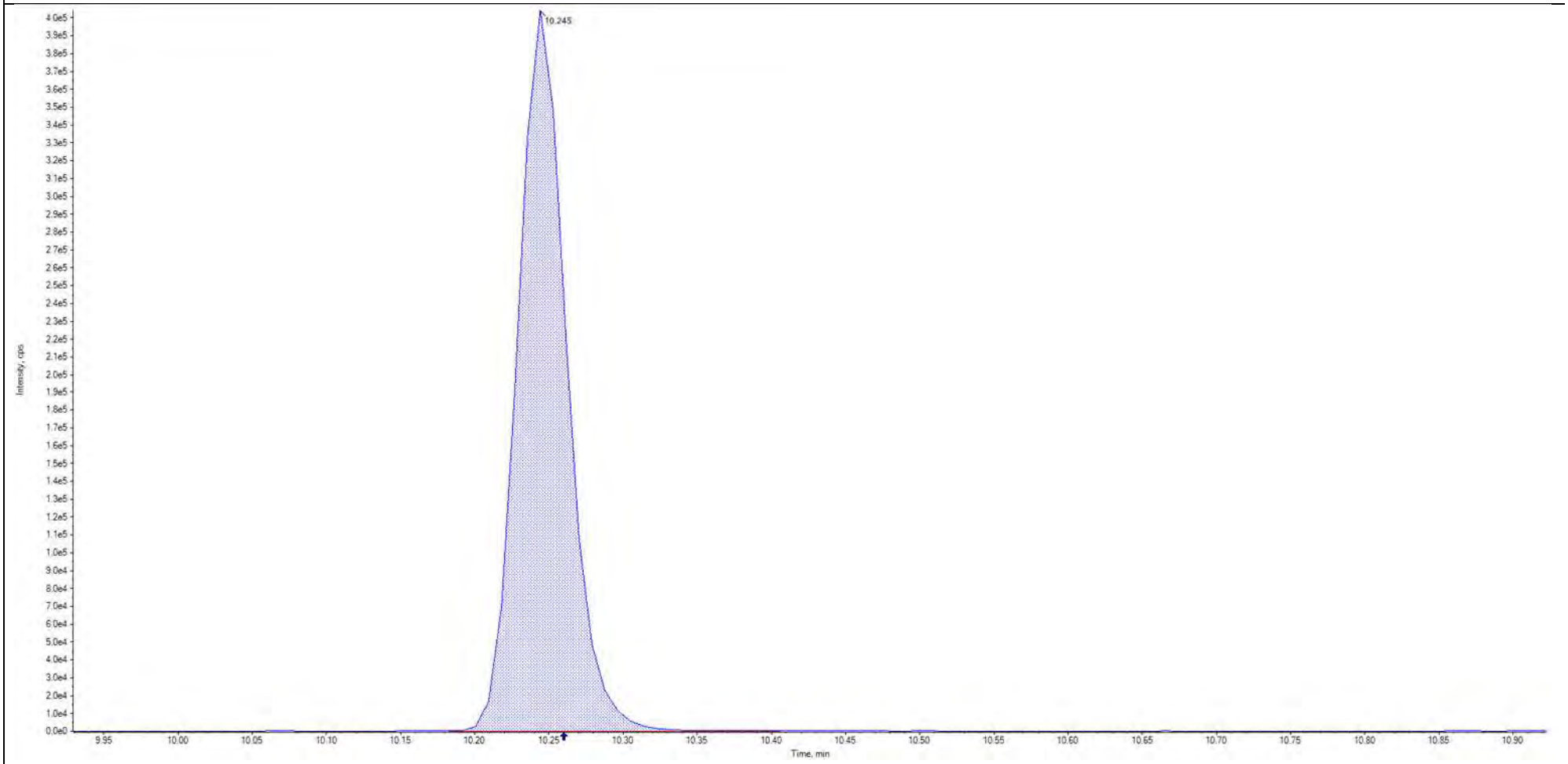
d5-NEtFOSAA
Sample: WG1973357-2



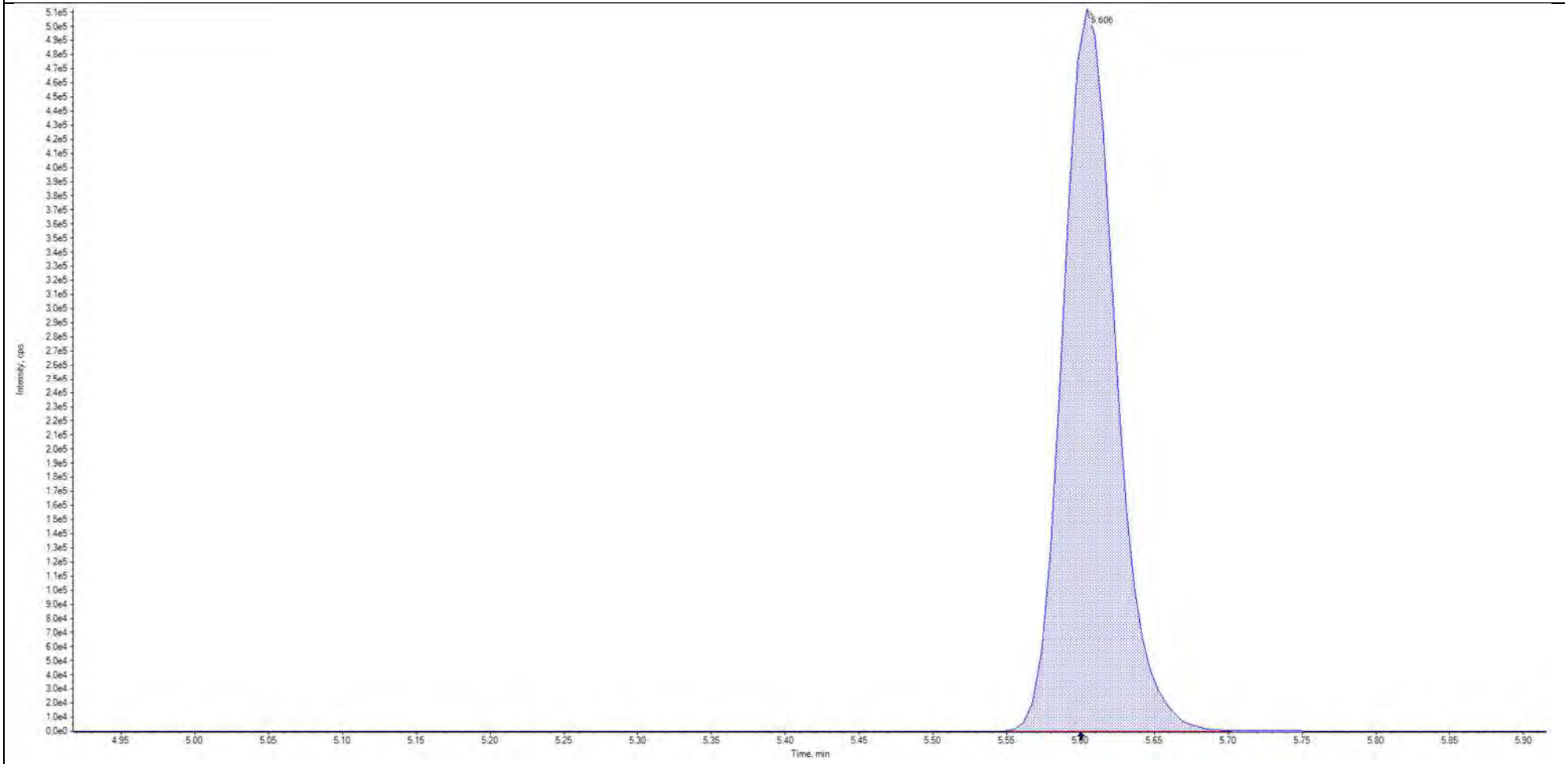
d7-NMeFOSE
Sample: WG1973357-2



d9-NEtFOSE
Sample: WG1973357-2



13C3-HFPO-DA
Sample: WG1973357-2



13C3-PFBA
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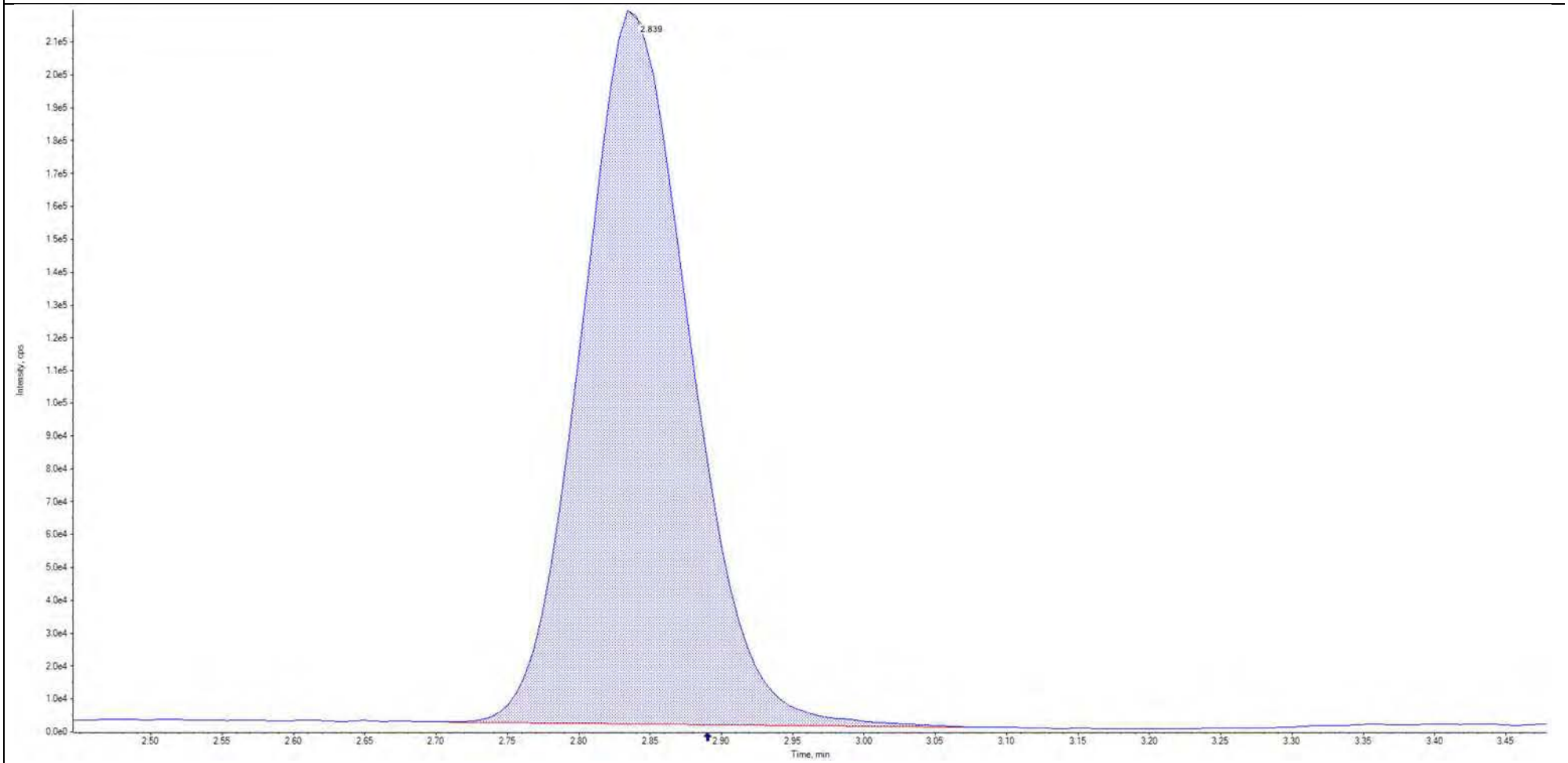

13C2-PFHxA
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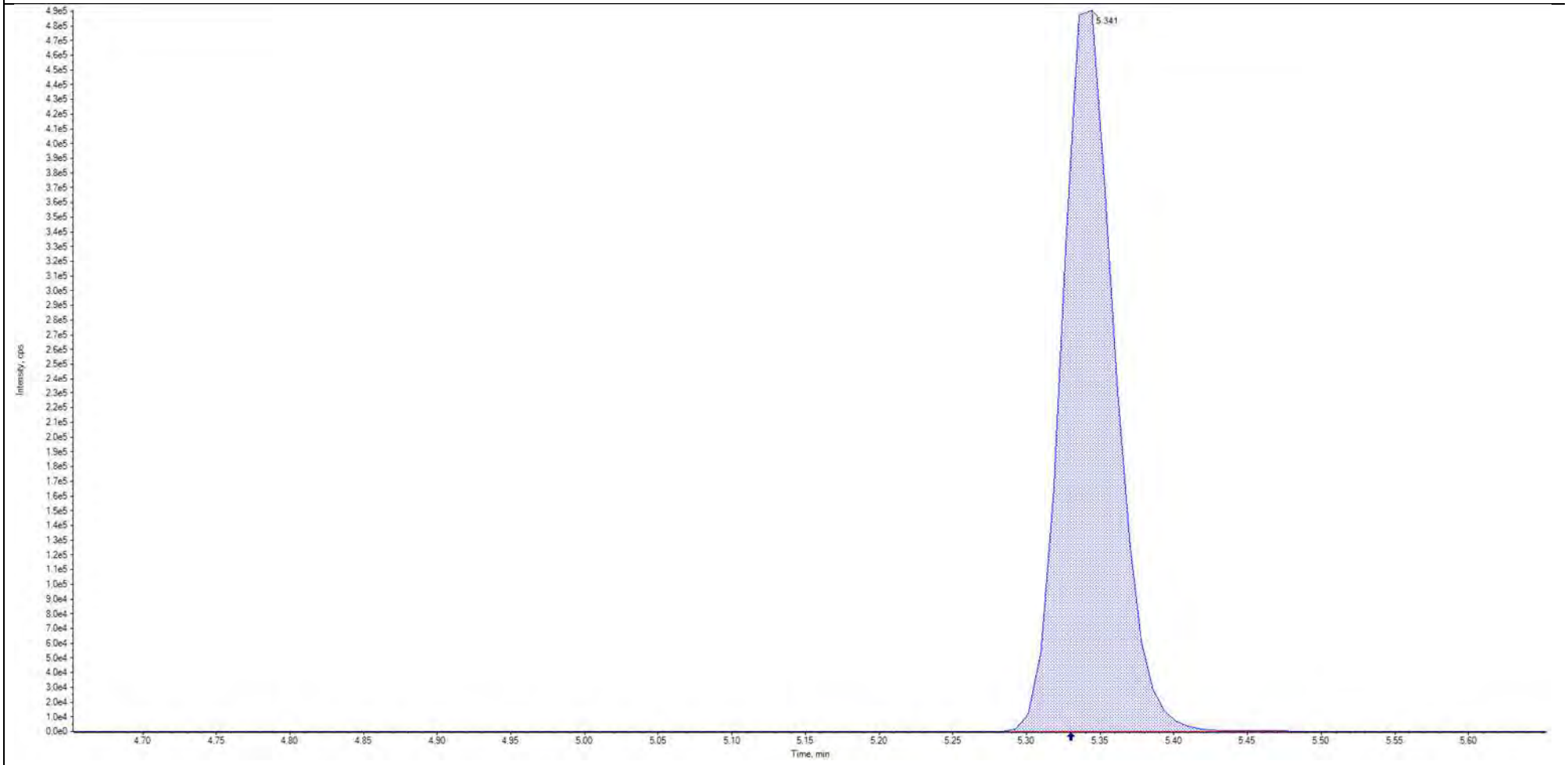

13C4-PFOA
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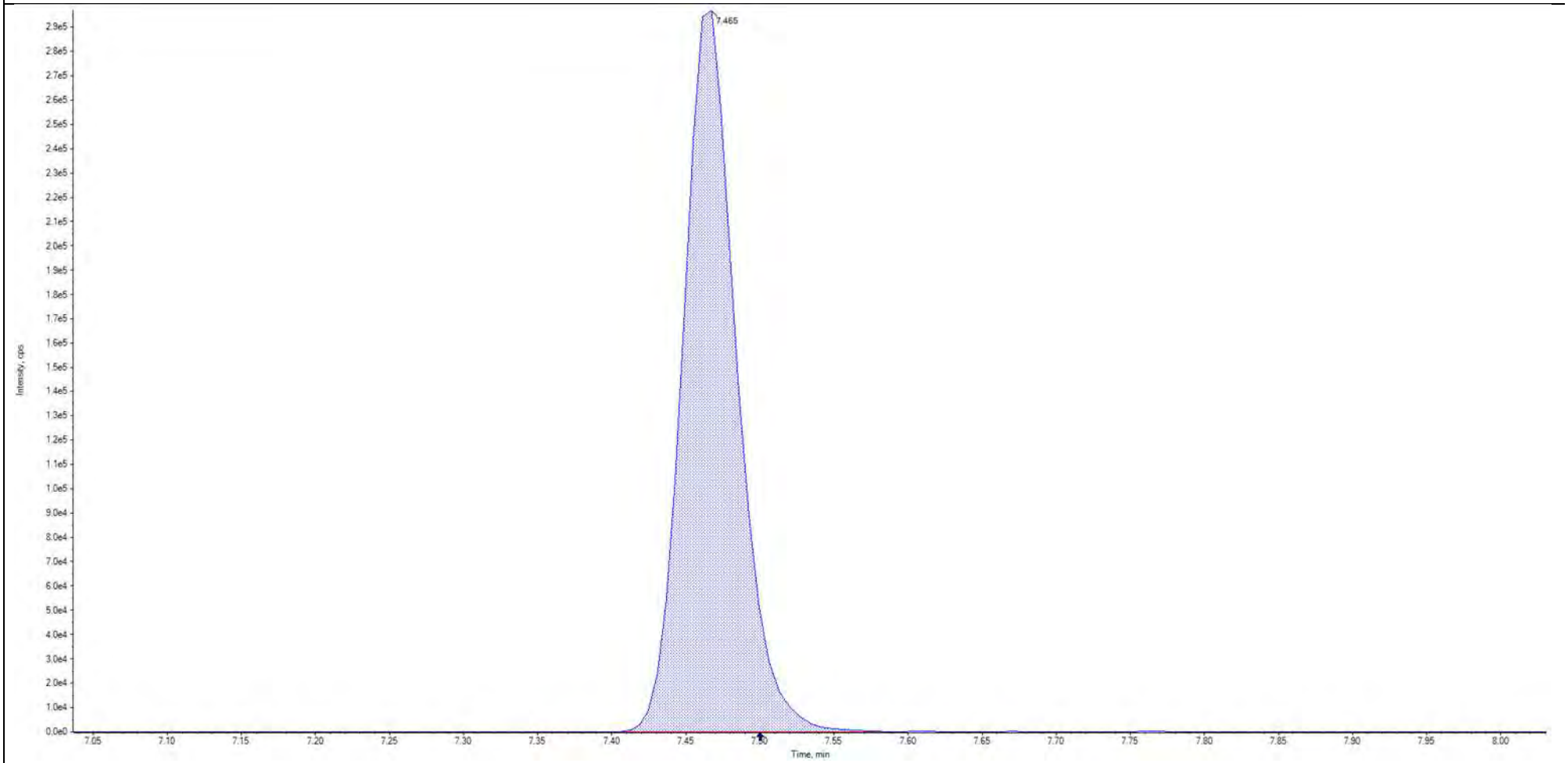
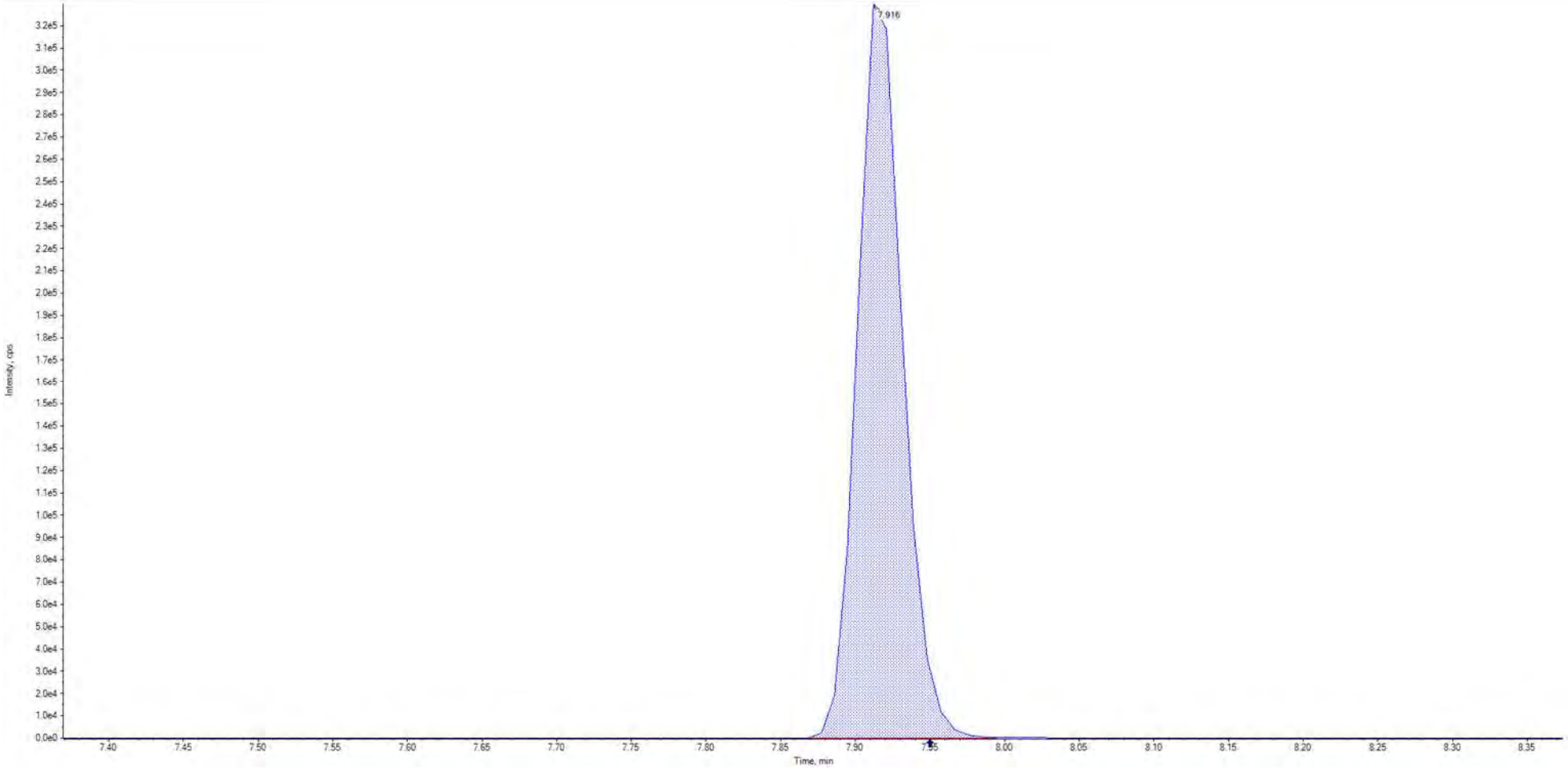


13C5-PFNA
Sample: WG1973357-2



13C2-PFDA
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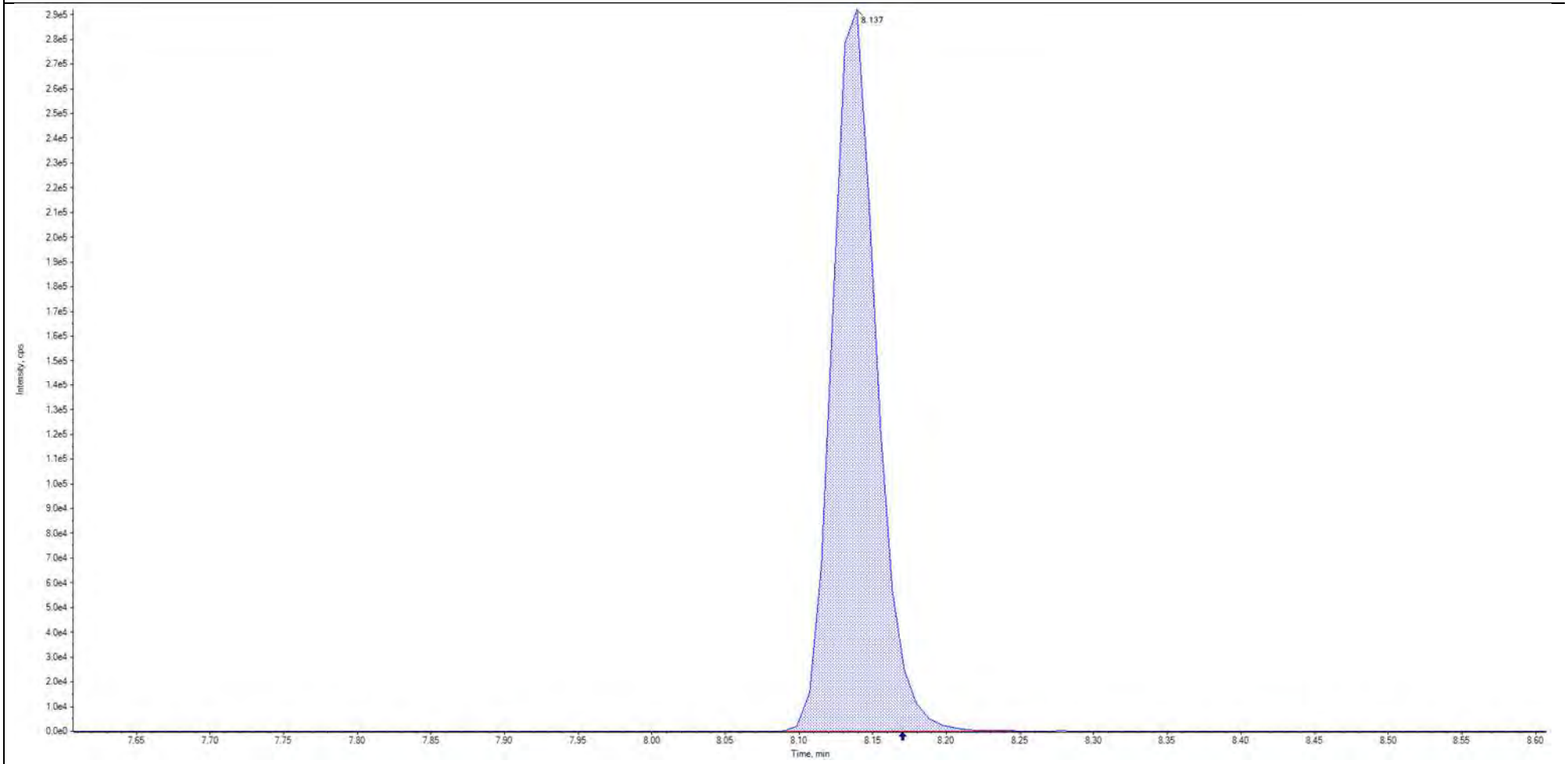
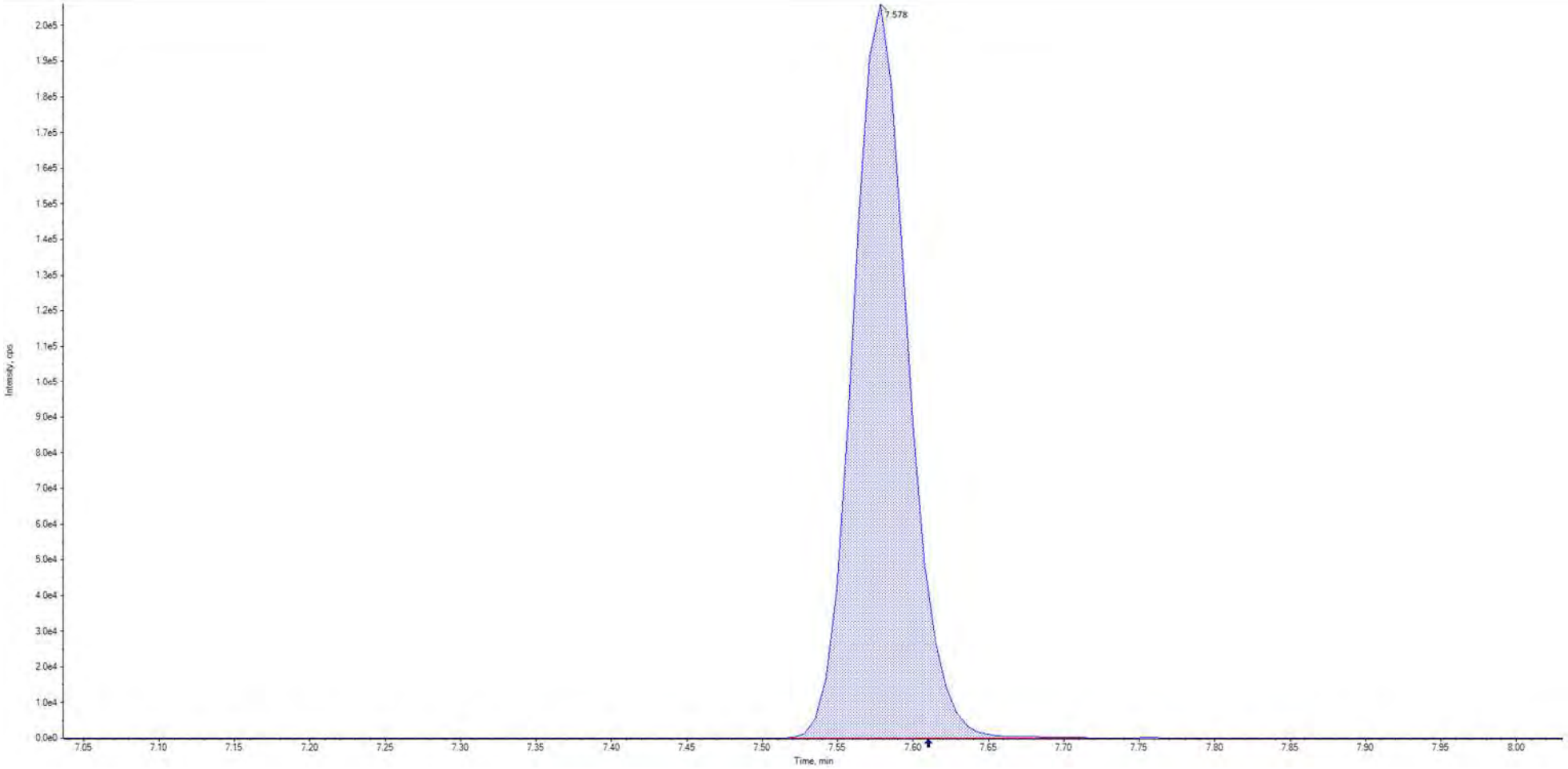
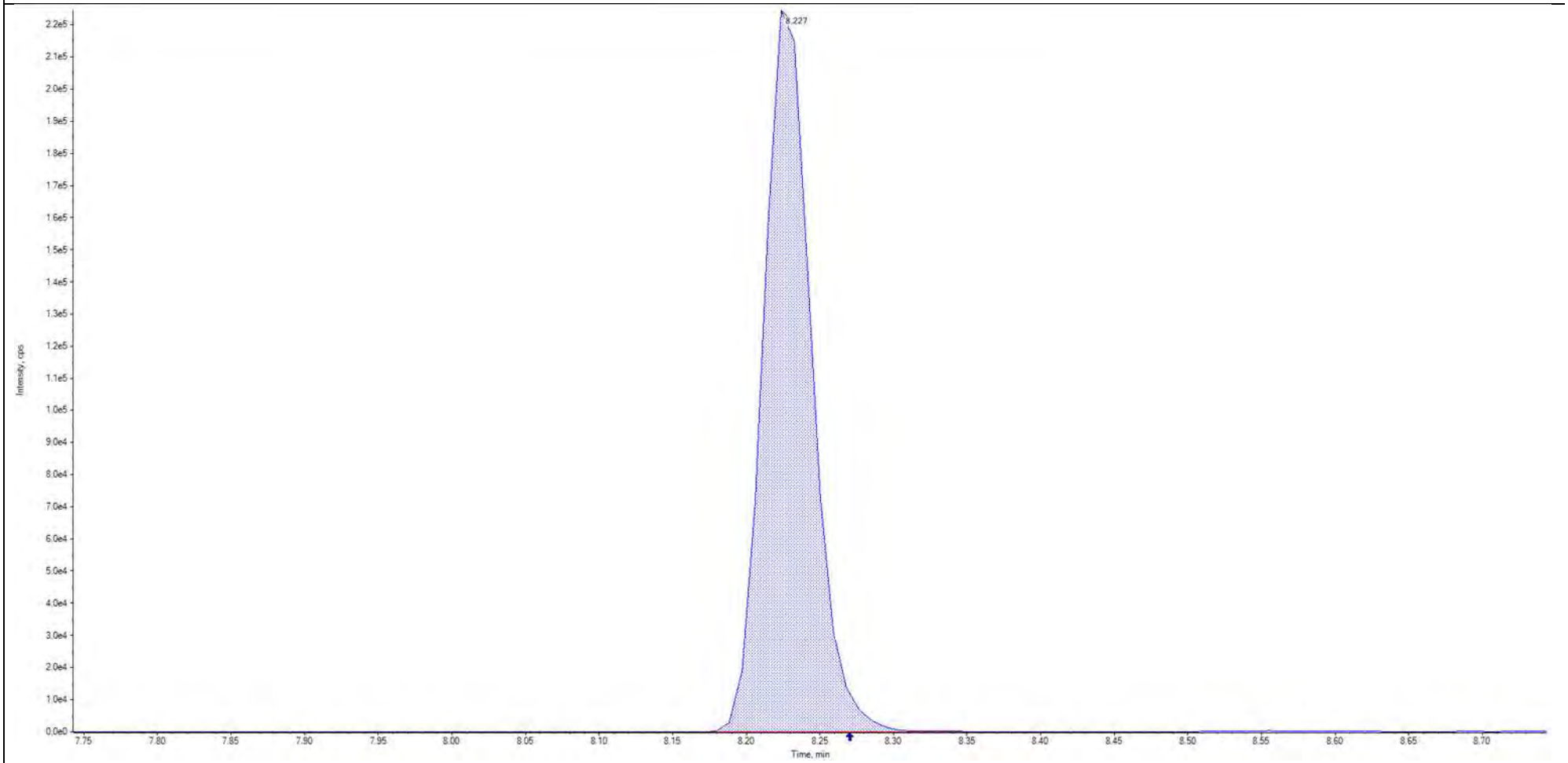


18O2-PFHxS
Sample: WG1973357-2



13C4-PFOS
Sample: WG1973357-2



Quantity Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Generated: 9/19/2024 8:04:31 AM

Method: EPA1633_NIS_CALC.qmethod
Calibration: 240813_1633_ICAL

ID: WG1973357-3
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Date & Time: 2024-09-19T08:20:05
Description: WG1973506,WG1973357,ICAL21391
Instrument: Triple Quad 5500+
User: LCMS05:AC

LC/MS-MS Method:EPA_1633.dam

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
1	PFBA	375-22-4	2.85	213.0 / 169.0	1555079		11.794	N/A	N/A	N/A	117.9
2	PFPeA	2706-90-3	4.66	263.0 / 219.0	1240211		6.181	0.006	0.007	N/A	123.6
3	PFPeA_2	2706-90-3	4.66	263.0 / 68.9	8030		5.668	0.006	0.007	N/A	113.4
4	PFHxA	307-24-4	5.36	313.0 / 269.0	818807		3.005	0.079	0.072	Pass	120.2
5	PFHxA_2	307-24-4	5.36	313.0 / 119.0	64943		3.226	0.079	0.072	Pass	129.0
6	PFHpA	375-85-9	6.27	363.1 / 319.0	822913		2.881	0.308	0.297	Pass	115.2
7	PFHpA_2	375-85-9	6.27	363.1 / 169.0	253216		2.896	0.308	0.297	Pass	115.9

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
8	PFOA	335-67-1	7.49	413.1 / 369.1	495558	M5	2.720	0.558	0.586	Pass	108.8
9	PFOA_2	335-67-1	7.49	413.1 / 169.0	276729	M7	2.772	0.558	0.586	Pass	110.9
10	PFNA	375-95-1	7.93	462.8 / 418.9	745337	M5	3.120	0.326	0.313	Pass	124.8
11	PFNA_2	375-95-1	7.93	462.8 / 218.9	242916	M7	3.328	0.326	0.313	Pass	133.1
12	PFDA	335-76-2	8.15	513.1 / 469.1	842805		3.069	0.153	0.142	Pass	122.8
13	PFDA_2	335-76-2	8.15	513.1 / 219.0	129142		3.138	0.153	0.142	Pass	125.5
14	PFUnA	2058-94-8	8.42	563.1 / 519.1	652898		3.086	0.190	0.194	Pass	123.4
15	PFUnA_2	2058-94-8	8.42	563.1 / 269.0	123883		3.023	0.190	0.194	Pass	120.9
16	PFDoA	307-55-1	8.83	613.1 / 569.1	649245		2.127	0.168	0.167	Pass	85.1
17	PFDoA_2	307-55-1	8.83	613.1 / 319.0	108823		2.111	0.168	0.167	Pass	84.4
18	PFTrDA	72629-94-8	9.40	663.1 / 619.1	385760		2.121	0.222	0.228	Pass	84.9
19	PFTrDA_2	72629-94-8	9.40	663.1 / 169.0	85756		2.117	0.222	0.228	Pass	84.7
20	PFTeDA	376-06-7	9.85	713.1 / 669.1	616647		2.912	0.141	0.137	Pass	116.5
21	PFTeDA_2	376-06-7	9.85	713.1 / 169.0	86739		2.994	0.141	0.137	Pass	119.8
22	PFBS	375-73-5	5.33	299.1 / 80.1	437941		2.510	0.422	0.396	Pass	113.2

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
23	PFBS_2	375-73-5	5.33	299.1 / 99.1	184636		2.654	0.422	0.396	Pass	119.7
24	PFPeS	2706-91-4	6.35	349.1 / 80.1	382476		2.703	0.307	0.299	Pass	114.9
25	PFPeS_2	2706-91-4	6.35	349.1 / 99.1	117353		2.750	0.307	0.299	Pass	116.9
26	PFHxS	355-46-4	7.60	399.1 / 80.1	353233	M5	2.668	0.301	0.315	Pass	116.8
27	PFHxS_2	355-46-4	7.60	399.1 / 99.1	106443	M7	2.589	0.301	0.315	Pass	113.3
28	PFHpS	375-92-8	7.99	449.1 / 80.1	370177		2.765	0.307	0.287	Pass	116.0
29	PFHpS_2	375-92-8	7.99	449.1 / 99.1	113626		2.896	0.307	0.287	Pass	121.5
30	PFOS	1763-23-1	8.24	499.1 / 80.1	369016	M5	2.589	0.245	0.238	Pass	111.6
31	PFOS_2	1763-23-1	8.24	499.1 / 99.1	90287		2.585	0.245	0.238	Pass	111.4
32	PFNS	68259-12-1	8.57	549.1 / 80.1	278221		3.040	0.293	0.301	Pass	126.4
33	PFNS_2	68259-12-1	8.57	549.1 / 99.1	81632		2.945	0.293	0.301	Pass	122.5
34	PFDS	335-77-3	9.05	599.1 / 80.1	248477		2.756	0.275	0.275	Pass	114.2
35	PFDS_2	335-77-3	9.05	599.1 / 99.1	68436	M7	2.754	0.275	0.275	Pass	114.1
36	PFDoS	79780-39-5	9.95	699.2 / 80.1	234976		2.846	0.275	0.274	Pass	117.4
37	PFDoS_2	79780-39-5	9.95	699.2 / 99.1	64711		2.852	0.275	0.274	Pass	117.6

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
38	4:2FTS	757124-72-4	5.16	327.1 / 307.1	658594		9.715	0.567	0.516	Pass	103.6
39	4:2FTS_2	757124-72-4	5.16	327.1 / 81.1	373501		10.299	0.567	0.516	Pass	109.9
40	6:2FTS	27619-97-2	7.10	427.2 / 407.2	429128		10.785	0.577	0.565	Pass	113.5
41	6:2FTS_2	27619-97-2	7.09	427.2 / 81.1	247809		11.515	0.577	0.565	Pass	121.2
42	8:2FTS	39108-34-4	8.05	527.2 / 507.2	542248		12.107	0.685	0.662	Pass	126.1
43	8:2FTS_2	39108-34-4	8.05	527.2 / 81.1	371513		12.229	0.685	0.662	Pass	127.4
44	PFOSA	754-91-6	9.51	498.1 / 78.1	469571	M5	2.732	0.026	0.025	Pass	109.3
45	PFOSA_2	754-91-6	9.51	498.1 / 478.0	12102	M7	2.683	0.026	0.025	Pass	107.3
46	NMeFOSA	31506-32-8	10.15	512.2 / 219.0	102248	M5	2.550	1.594	1.551	Pass	102.0
47	NMeFOSA_2	31506-32-8	10.11	512.2 / 169.0	163002	M7	2.623	1.594	1.551	Pass	104.9
48	NEtFOSA	4151-50-2	10.36	526.2 / 219.0	106518	M5	2.769	1.301	1.285	Pass	110.8
49	NEtFOSA_2	4151-50-2	10.32	526.2 / 169.0	138556	M7	2.691	1.301	1.285	Pass	107.6
50	NMeFOSAA	2355-31-9	8.20	570.2 / 419.1	84293		3.213	0.831	0.700	Pass	128.5
51	NMeFOSAA_2	2355-31-9	8.20	570.2 / 483.0	70009		4.196	0.831	0.700	Pass	167.8
52	NEtFOSAA	2991-50-6	8.33	584.2 / 419.1	95700	M5	2.757	0.534	0.487	Pass	110.3

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
53	NEtFOSAA_2	2991-50-6	8.33	584.2 / 526.2	51127	M7	3.201	0.534	0.487	Pass	128.1
54	NMeFOSE	24448-09-7	10.07	616.1 / 58.9	2412262	M5	26.833	N/A	N/A	N/A	107.3
55	NEtFOSE	1691-99-2	10.26	630.0 / 58.9	4340805	M5	28.469	N/A	N/A	N/A	113.9
56	HFPO-DA	13252-13-6	5.62	285.0 / 169.0	1906495		11.940	0.473	0.464	Pass	119.4
57	HFPO-DA_2	13252-13-6	5.62	285.0 / 184.9	900981		12.134	0.473	0.464	Pass	121.3
58	ADONA	919005-14-4	6.73	377.1 / 251.0	3798887		10.461	0.680	0.634	Pass	110.7
59	ADONA_2	919005-14-4	6.73	377.1 / 84.8	2583863		10.997	0.680	0.634	Pass	116.4
60	9Cl-PF3ONS	756426-58-1	8.45	530.8 / 351.1	3606357		10.072	0.318	0.322	Pass	107.7
61	9Cl-PF3ONS_2	756426-58-1	8.45	532.8 / 353.0	1146979		9.837	0.318	0.322	Pass	105.2
62	11Cl-PF3OUdS	763051-92-9	9.47	630.9 / 451.0	2199114		9.723	0.335	0.331	Pass	102.9
63	11Cl-PF3OUdS_2	763051-92-9	9.47	632.9 / 452.9	736963		9.682	0.335	0.331	Pass	102.5
64	3:3FTCA	356-02-5	4.94	241.1 / 177.1	260677		14.978	0.941	1.074	Pass	119.8
65	3:3FTCA_2	356-02-5	4.94	241.1 / 117.0	245378		14.078	0.941	1.074	Pass	112.6
66	5:3FTCA	914637-49-3	7.19	341.1 / 237.1	3897037		78.849	0.948	0.953	Pass	126.2
67	5:3FTCA_2	914637-49-3	7.19	341.1 / 217.0	3693539		78.978	0.948	0.953	Pass	126.4

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
68	7:3FTCA	812-70-4	8.19	441.1 / 316.9	2316399		42.100	2.005	1.558	Pass	67.4
69	7:3FTCA_2	812-70-4	8.19	441.1 / 337.1	4643555		58.158	2.005	1.558	Pass	93.1
70	PFEESA	113507-82-7	5.72	315.1 / 135.0	2552778		5.401	0.088	0.087	Pass	121.4
71	PFEESA_2	113507-82-7	5.72	315.1 / 82.9	225276		5.517	0.088	0.087	Pass	124.0
72	PFMPA	377-73-1	3.88	229.0 / 85.0	153891		6.337	N/A	N/A	N/A	126.7
73	PFMBA	863090-89-5	4.89	279.0 / 85.0	1833061		5.598	N/A	N/A	N/A	112.0
74	NFDHA	151772-58-6	5.27	295.0 / 201.0	351910		7.072	0.919	0.910	Pass	141.4
75	NFDHA_2	151772-58-6	5.27	295.0 / 84.9	323521		7.092	0.919	0.910	Pass	141.8
76	TDCA	516-50-7	N/A	499.1 / 124.1	N/A		N/A	N/A	40.716	N/A	N/A
77	TDCA_2	516-50-7	N/A	499.1 / 79.9	N/A		N/A	N/A	40.716	N/A	N/A
78	13C2D4-4:2FTS	Surr	N/A	333.2 / 312.1	N/A		N/A	N/A	N/A	N/A	N/A
79	13C2-PFOA	Surr	N/A	415.0 / 370.0	N/A		N/A	N/A	N/A	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C4-PFBA	EIS	2.84	217.0 / 172.0	1625847		6.557	NA	NA	NA	65.6

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C5-PFPeA	EIS	4.65	268.0 / 223.0	1088070		3.856	NA	NA	NA	77.1
	13C5-PFHxA	EIS	5.35	318.0 / 273.0	559006		1.508	NA	NA	NA	60.3
	13C4-PFHpA	EIS	6.26	367.0 / 322.0	609864		1.643	NA	NA	NA	65.7
	13C8-PFOA	EIS	7.48	421.0 / 376.0	875363		1.680	NA	NA	NA	67.2
	13C9-PFNA	EIS	7.92	472.0 / 427.0	407909		0.736	NA	NA	NA	58.9
	13C6-PFDA	EIS	8.14	519.0 / 474.0	398276		0.796	NA	NA	NA	63.7
	13C7-PFUnA	EIS	8.42	570.0 / 525.0	334703		0.827	NA	NA	NA	66.1

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C2-PFDoA	EIS	8.82	615.1 / 570.0	293367		1.114	NA	NA	NA	89.1
	13C2-PFTeDA	EIS	9.85	715.1 / 670.1	211284		0.739	NA	NA	NA	59.1
	13C3-PFBS	EIS	5.32	302.1 / 80.1	415901		1.329	NA	NA	NA	57.0
	13C3-PFHxS	EIS	7.59	402.1 / 80.1	331705		1.335	NA	NA	NA	56.3
	13C8-PFOS	EIS	8.23	507.1 / 80.1	347038		1.333	NA	NA	NA	55.7
	13C2-4:2FTS	EIS	5.15	329.1 / 81.1	162234		2.905	NA	NA	NA	61.9
	13C2-6:2FTS	EIS	7.09	429.2 / 81.1	115329		2.818	NA	NA	NA	59.3
	13C2-8:2FTS	EIS	8.04	529.2 / 81.1	169616		2.832	NA	NA	NA	59.0

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C8-PFOSA	EIS	9.51	506.1 / 78.1	642931		1.858	NA	NA	NA	74.3
	d3-NMeFOSA	EIS	10.14	515.2 / 219.0	93629		1.607	NA	NA	NA	64.3
	d5-NEtFOSA	EIS	10.35	531.2 / 219.0	87569		1.539	NA	NA	NA	61.5
	d3-NMeFOSAA	EIS	8.19	573.2 / 419.1	199357		1.514	NA	NA	NA	30.3
	d5-NEtFOSAA	EIS	8.32	589.3 / 419.1	186138		2.689	NA	NA	NA	53.8
	d7-NMeFOSE	EIS	10.05	623.2 / 58.9	911033		20.247	NA	NA	NA	81.0
	d9-NEtFOSE	EIS	10.25	639.2 / 58.9	1298896		19.579	NA	NA	NA	78.3

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C3-HFPO-DA	EIS	5.62	287.0 / 169.0	1741827		7.090	NA	NA	NA	70.9
	13C3-PFBA	NIS	2.84	216.0 / 172.0	1084640		5.073	NA	NA	NA	101.5
	13C2-PFHxA	NIS	5.35	315.0 / 270.0	1100658		2.248	NA	NA	NA	89.9
	13C4-PFOA	NIS	7.48	417.0 / 372.0	681466		2.177	NA	NA	NA	87.1
	13C5-PFNA	NIS	7.92	468.0 / 423.0	675459		1.233	NA	NA	NA	98.7
	13C2-PFDA	NIS	8.14	515.1 / 470.1	587790		1.147	NA	NA	NA	91.8
	18O2-PFHxS	NIS	7.59	403.1 / 84.1	505164		2.156	NA	NA	NA	91.0
	13C4-PFOS	NIS	8.23	503.1 / 80.1	460534		2.187	NA	NA	NA	91.3

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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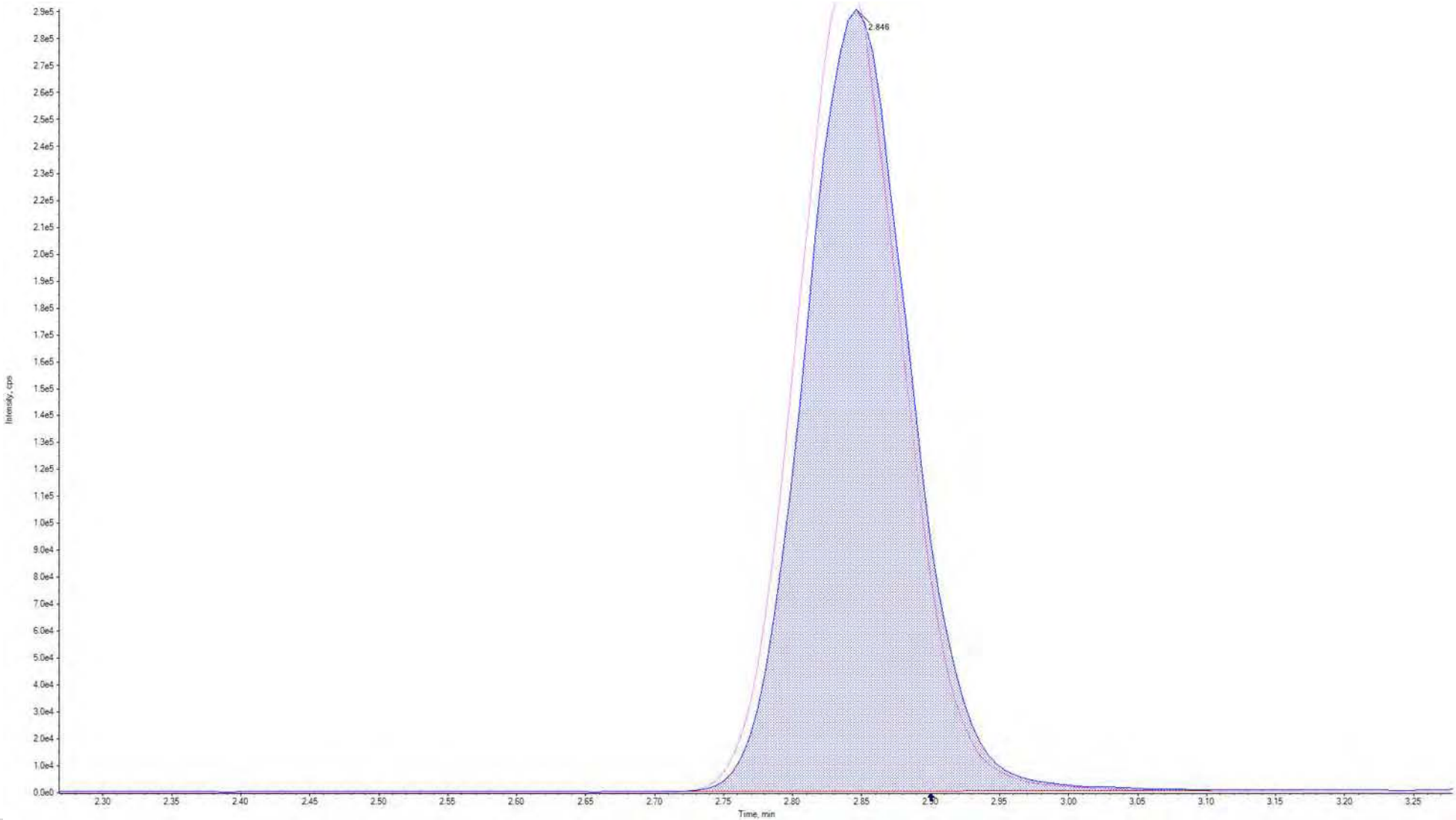
PFBA
Sample: WG1973357-3 S/N:2364.6 Points Across peak:69



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
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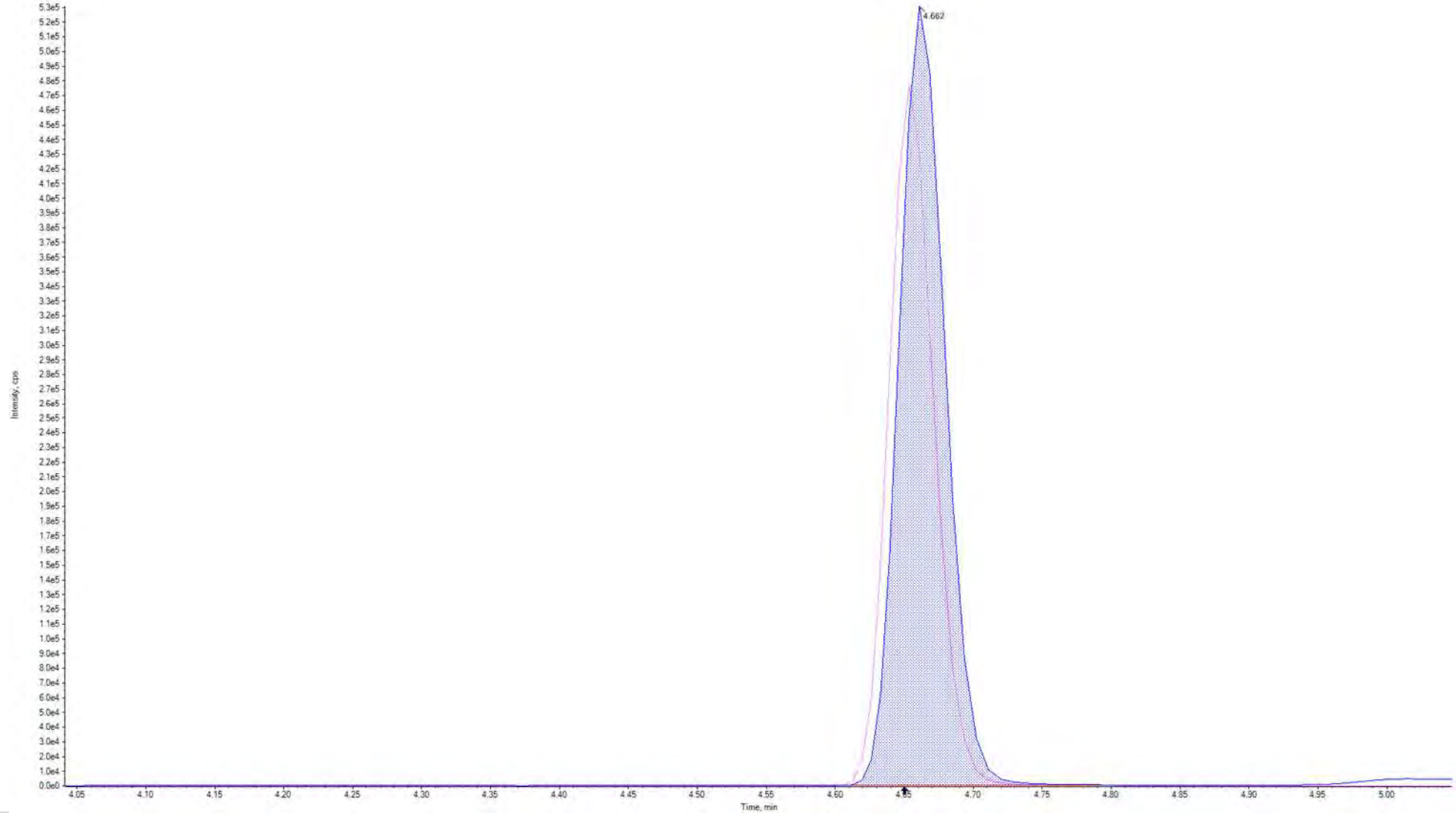
PFPeA
Sample: WG1973357-3 S/N:2344.3 Points Across peak:29



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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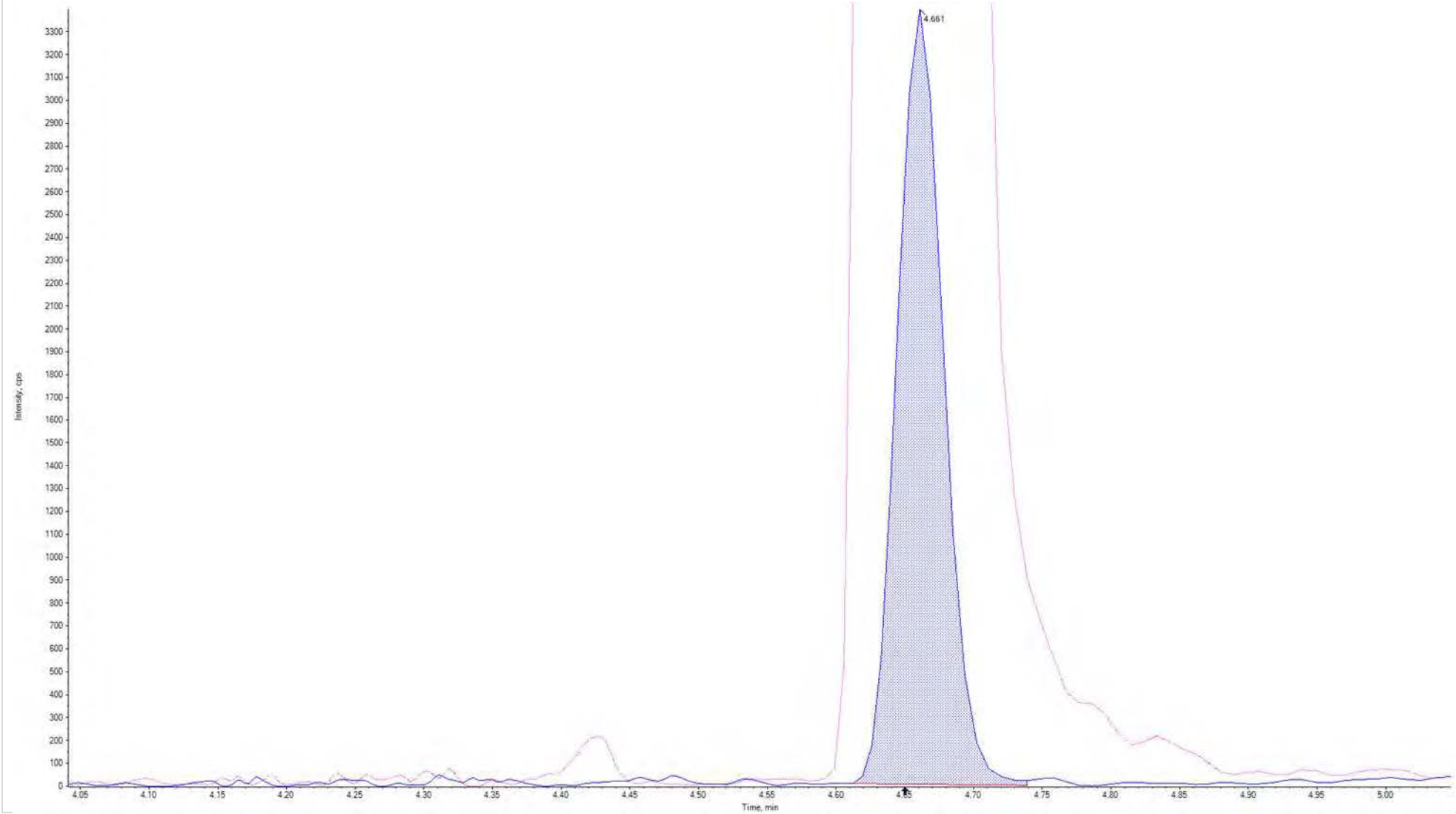
PFPeA_2
Sample: WG1973357-3 S/N:5631.2 Points Across peak:17



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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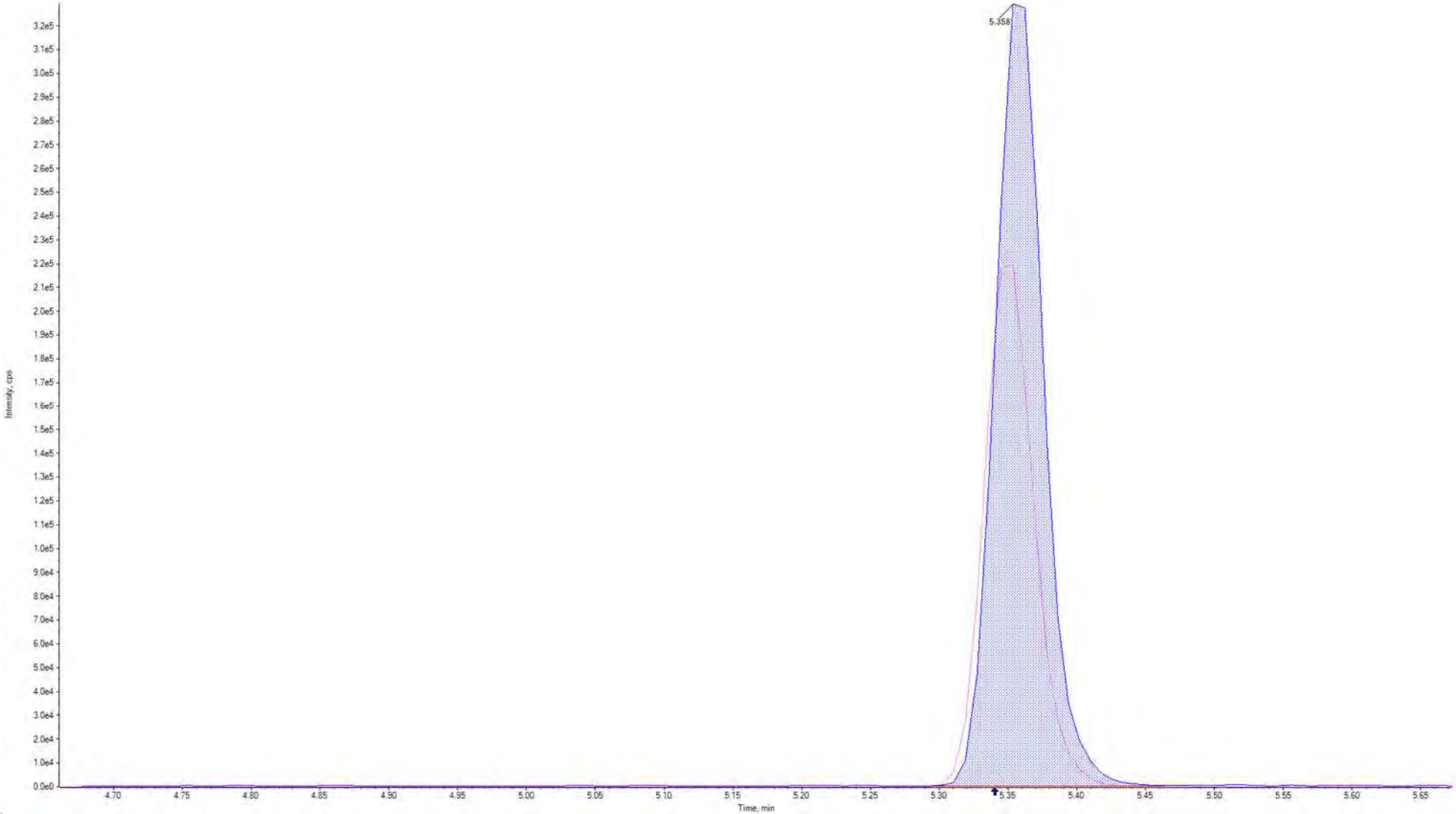
PFHxA
Sample: WG1973357-3 S/N:1399.2 Points Across peak:25



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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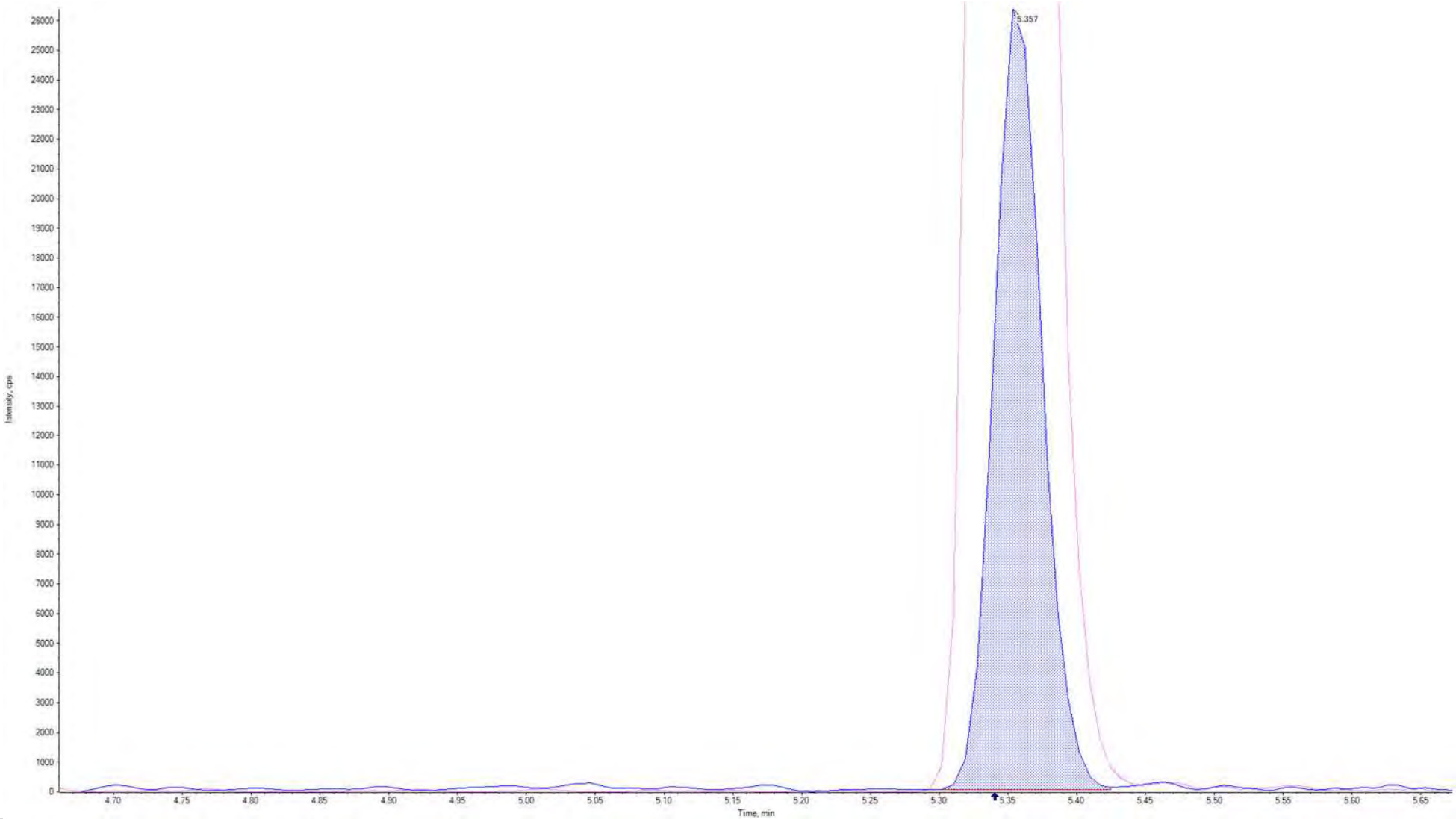
PFHxA_2
Sample: WG1973357-3 S/N:1273.5 Points Across peak:16



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Alpha Analytical Inc.
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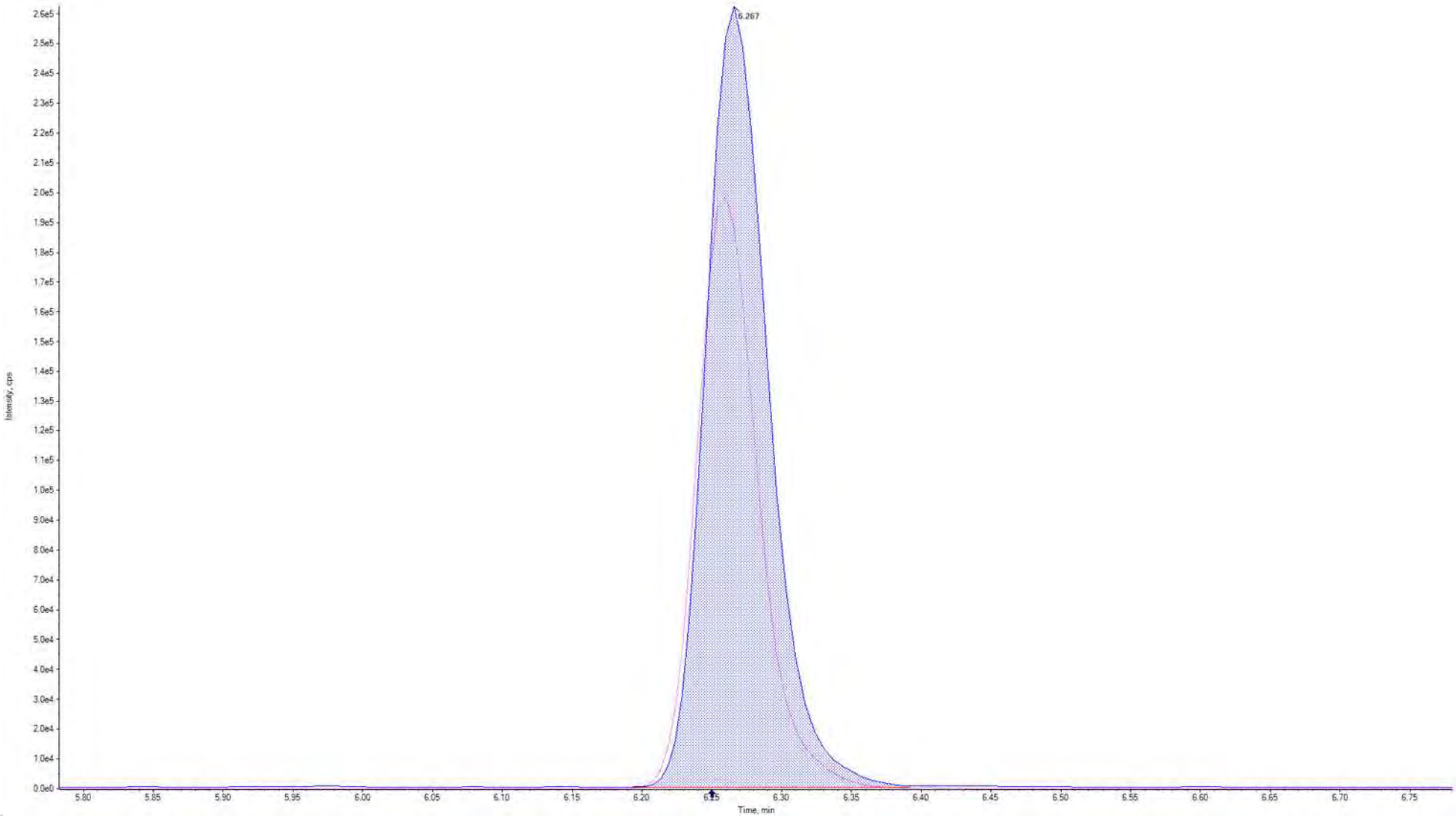
PFHpA
Sample: WG1973357-3 S/N:1800.9 Points Across peak:42



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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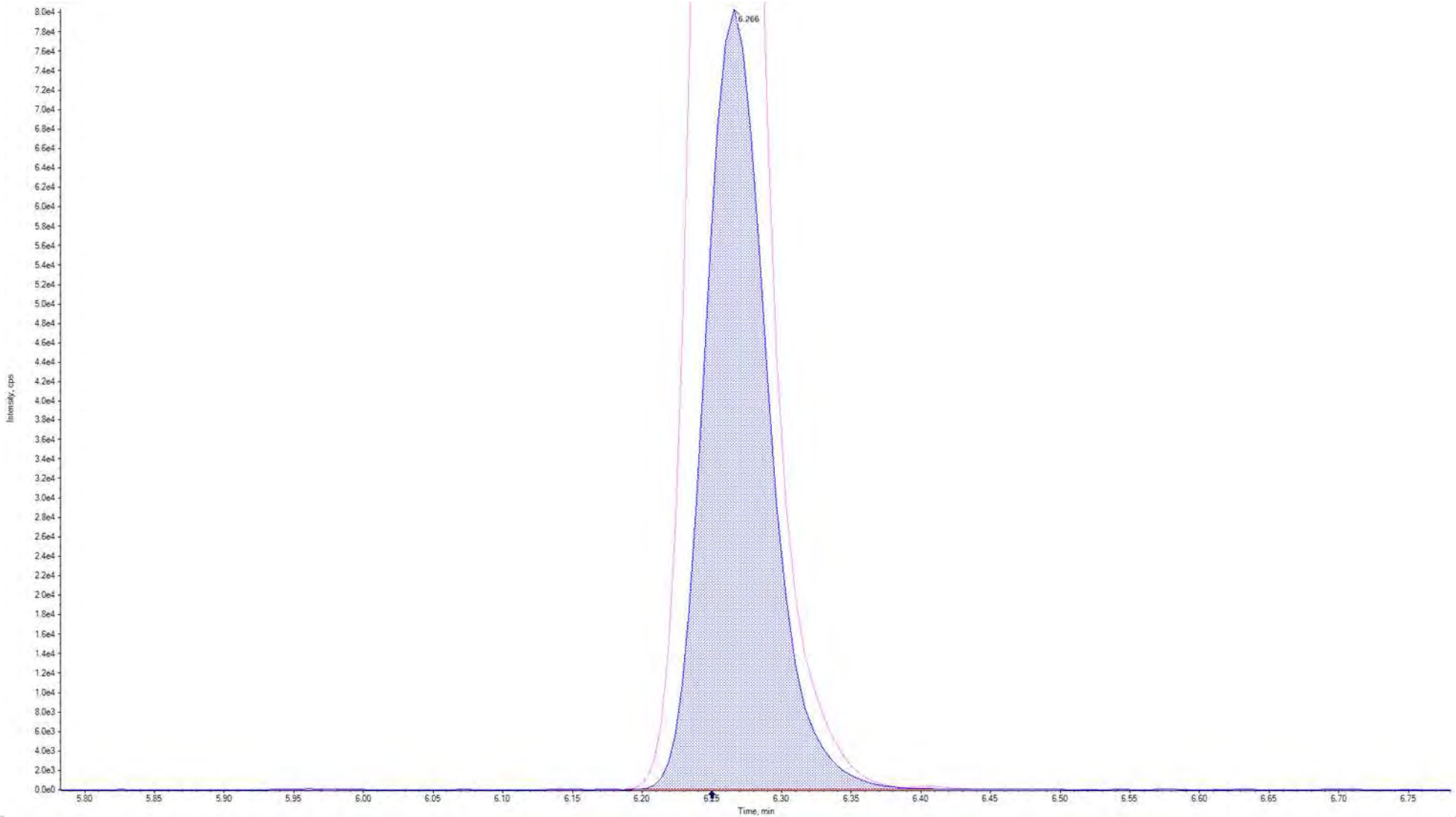
PFHpA_2
Sample: WG1973357-3 S/N:14998.1 Points Across peak:44



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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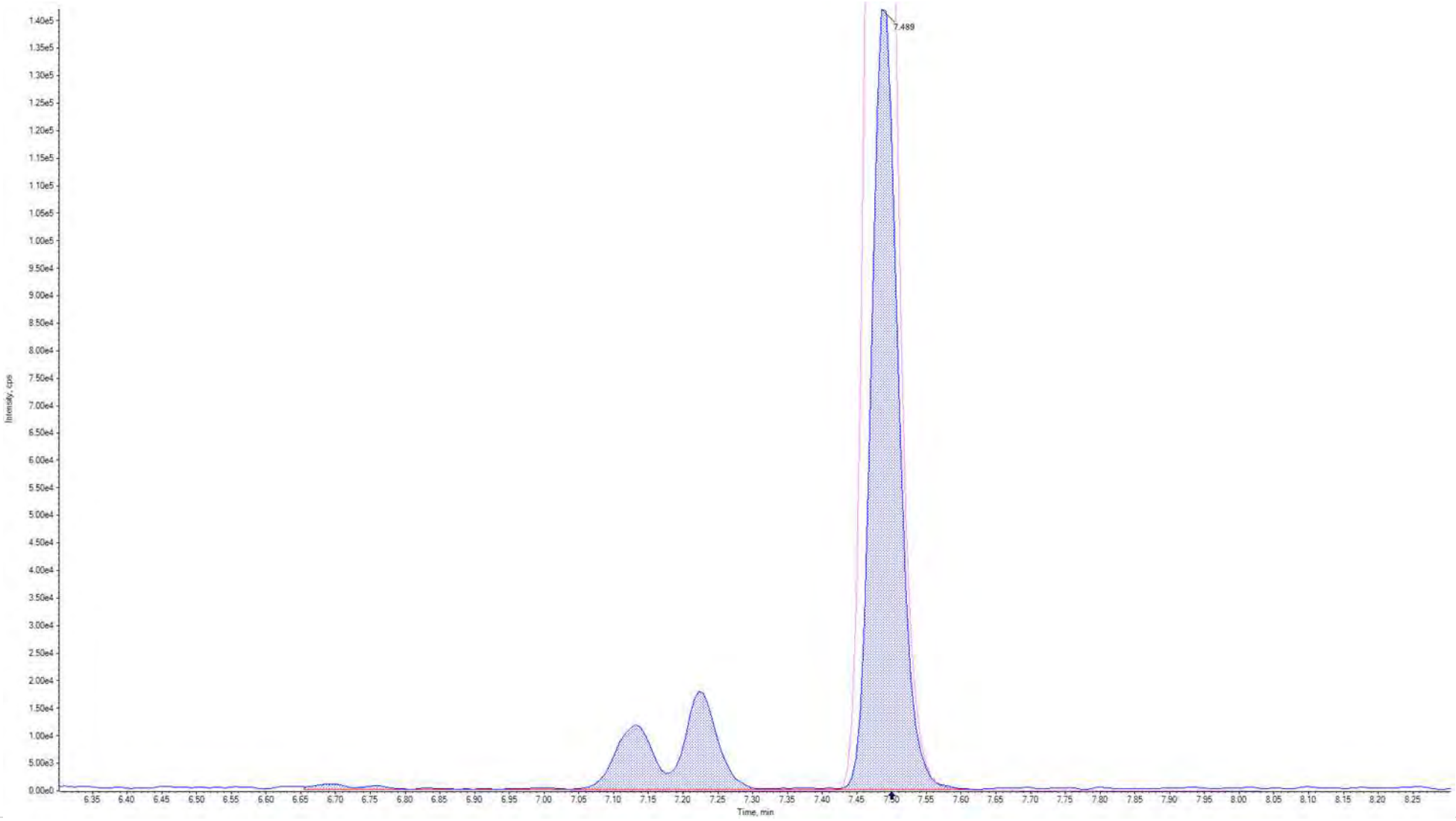
PFOA
Sample: WG1973357-3 S/N:1217.3 Points Across peak:150



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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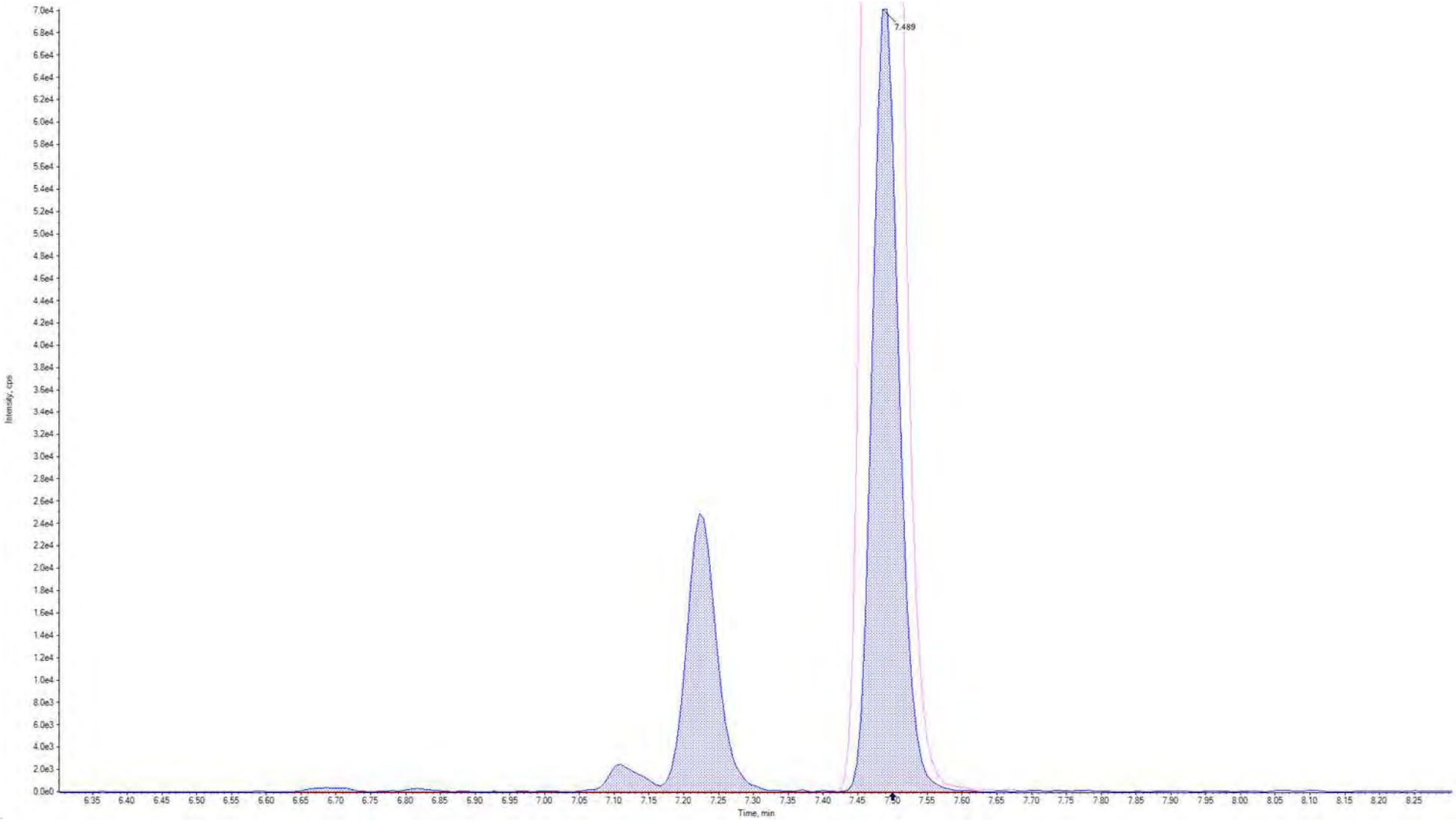
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOA_2
Sample: WG1973357-3 S/N:1548.3 Points Across peak:152



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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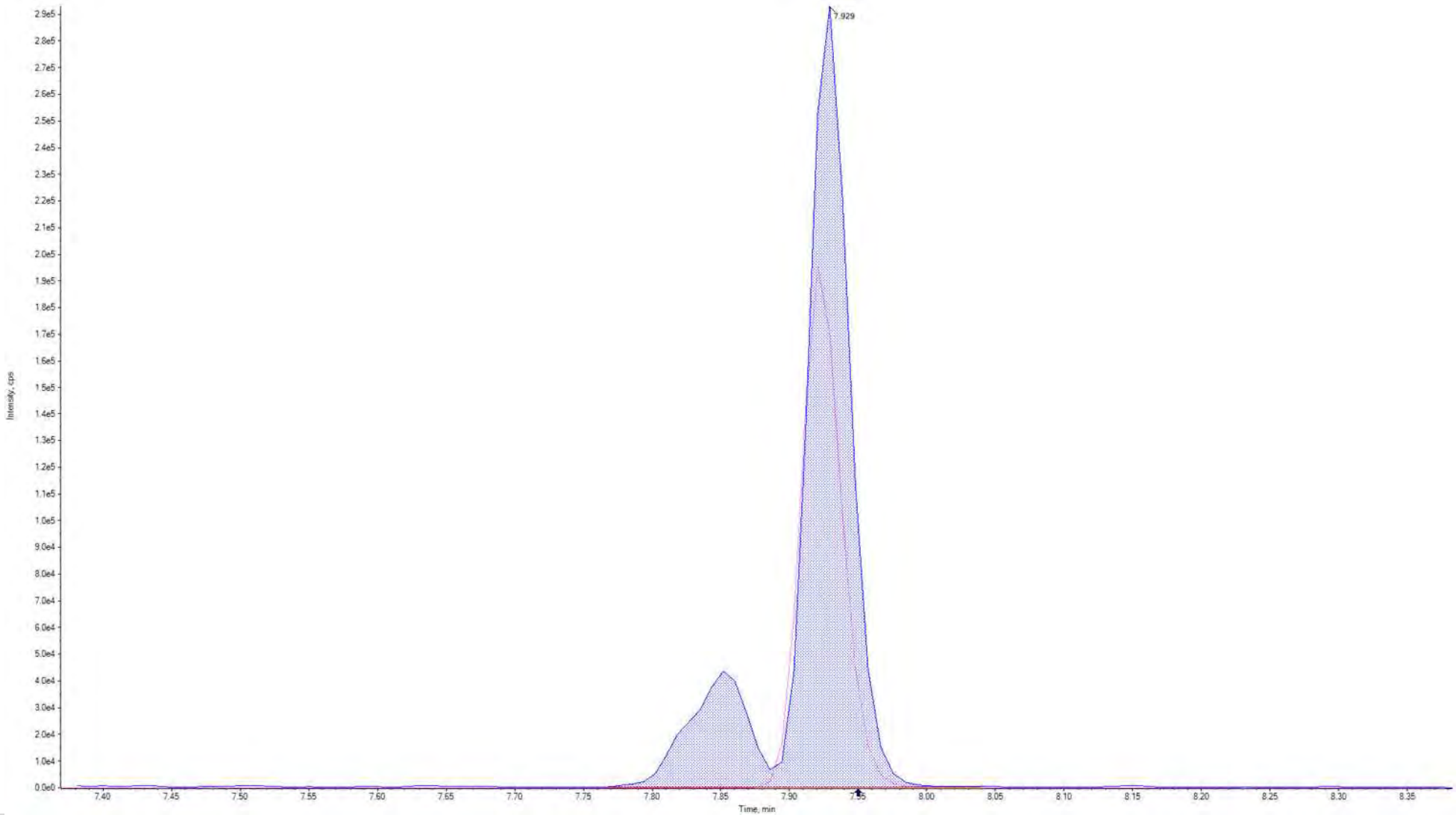
Generated: 9/19/2024 8:04:31 AM

PFNA
Sample: WG1973357-3 S/N:1469.0 Points Across peak:34



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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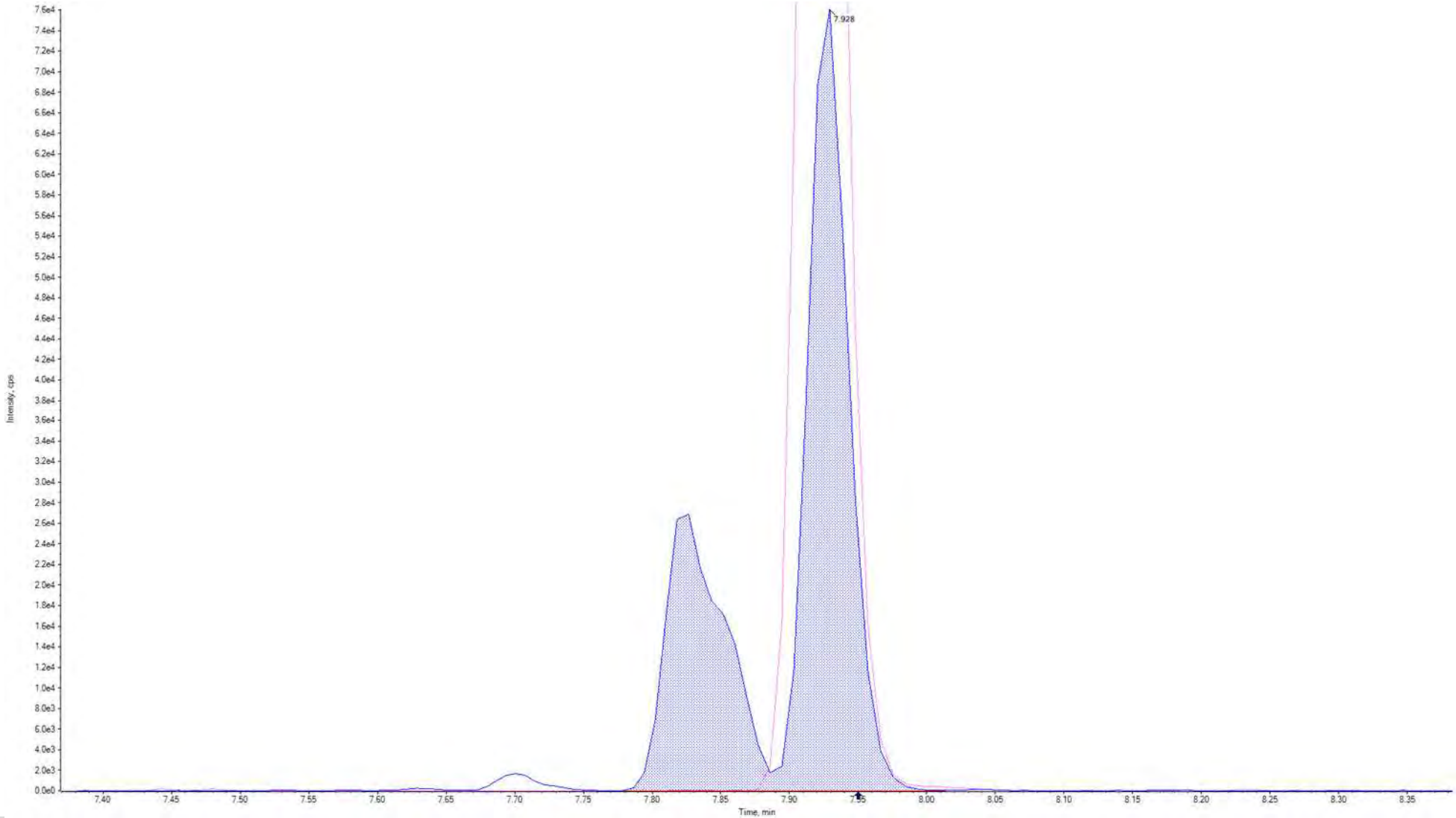
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFNA_2
Sample: WG1973357-3 S/N:895.5 Points Across peak:31



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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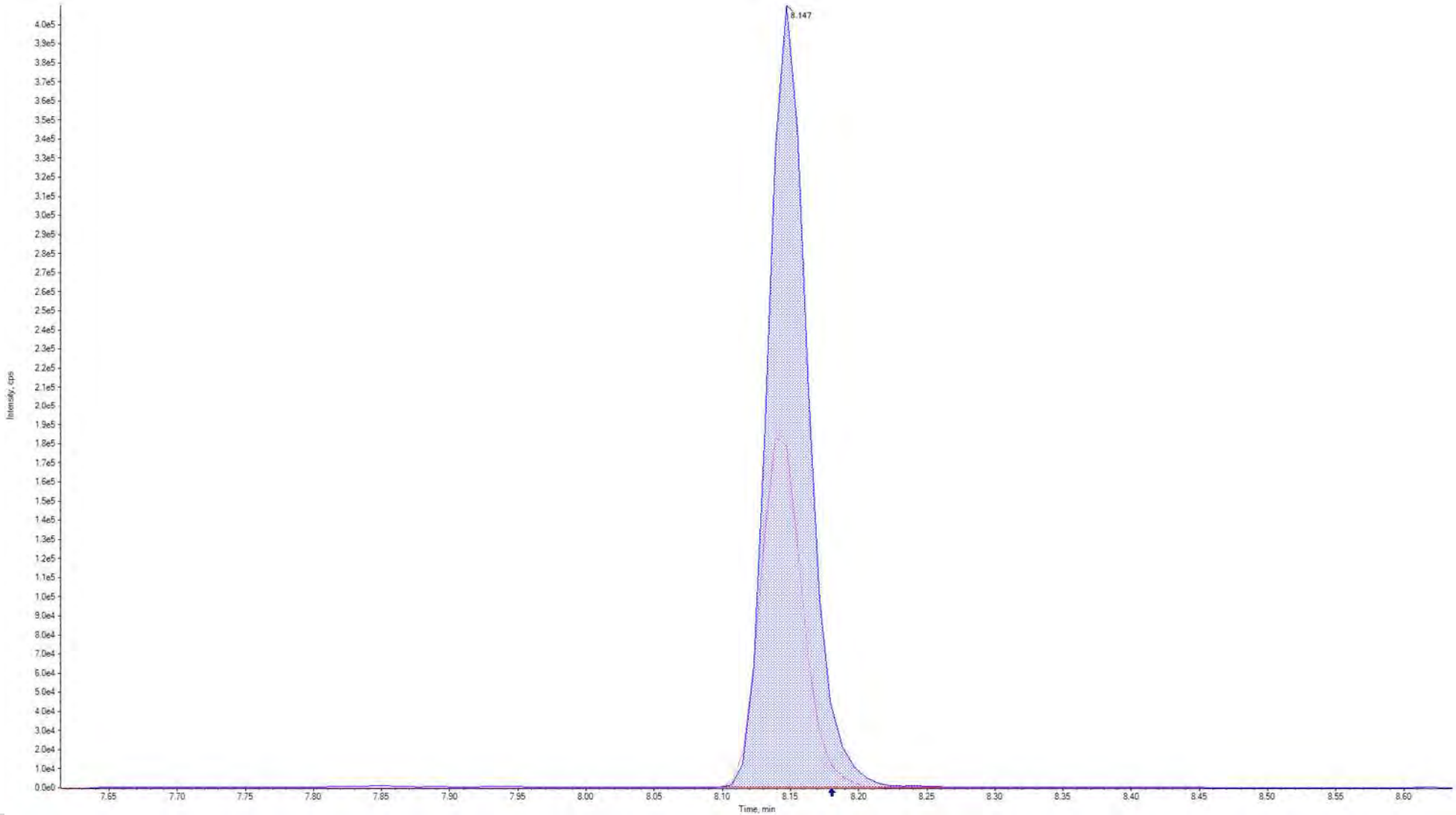
PFDA
Sample: WG1973357-3 S/N:4187.0 Points Across peak:23



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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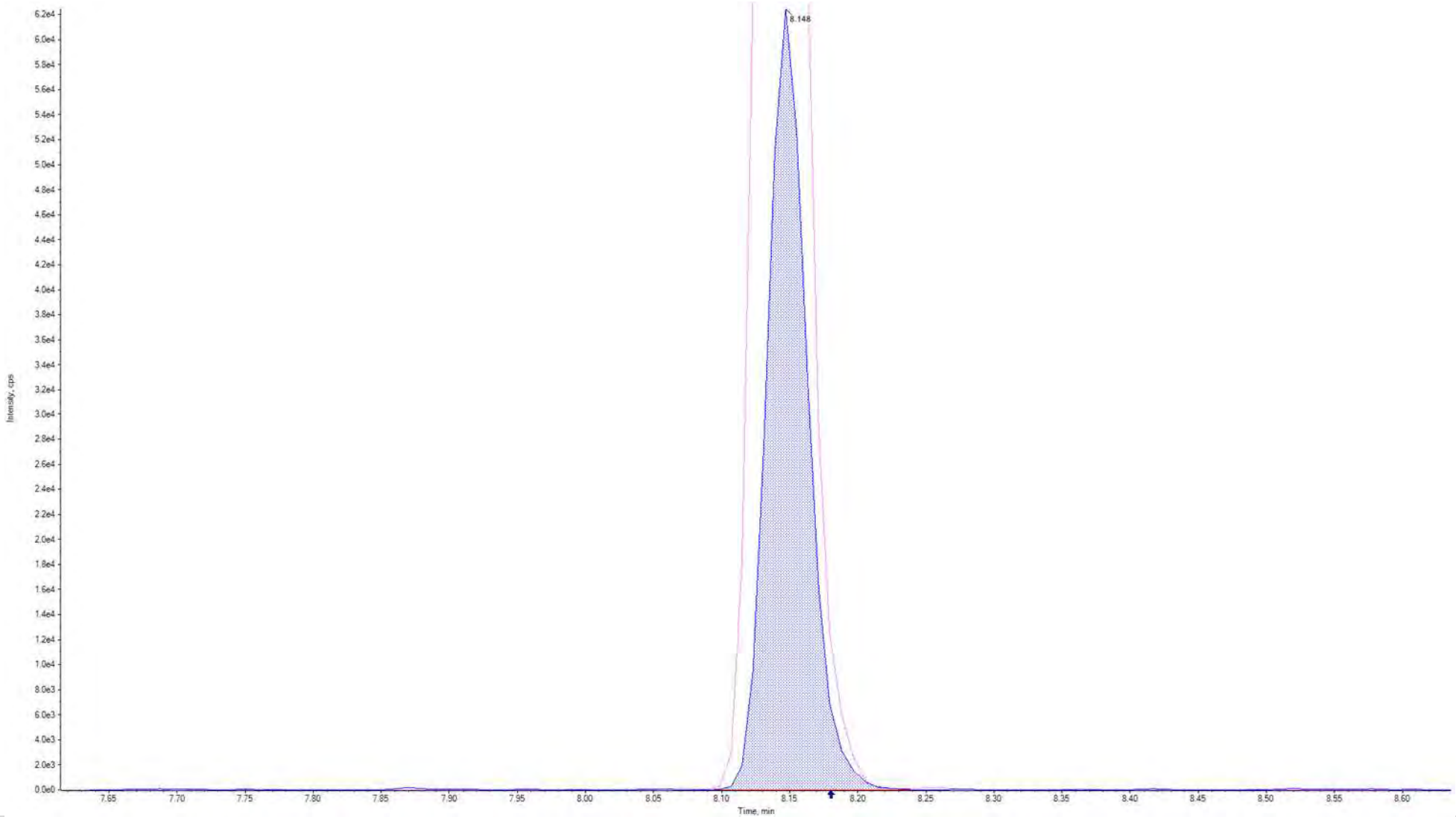
PFDA_2
Sample: WG1973357-3 S/N:1268.6 Points Across peak:21



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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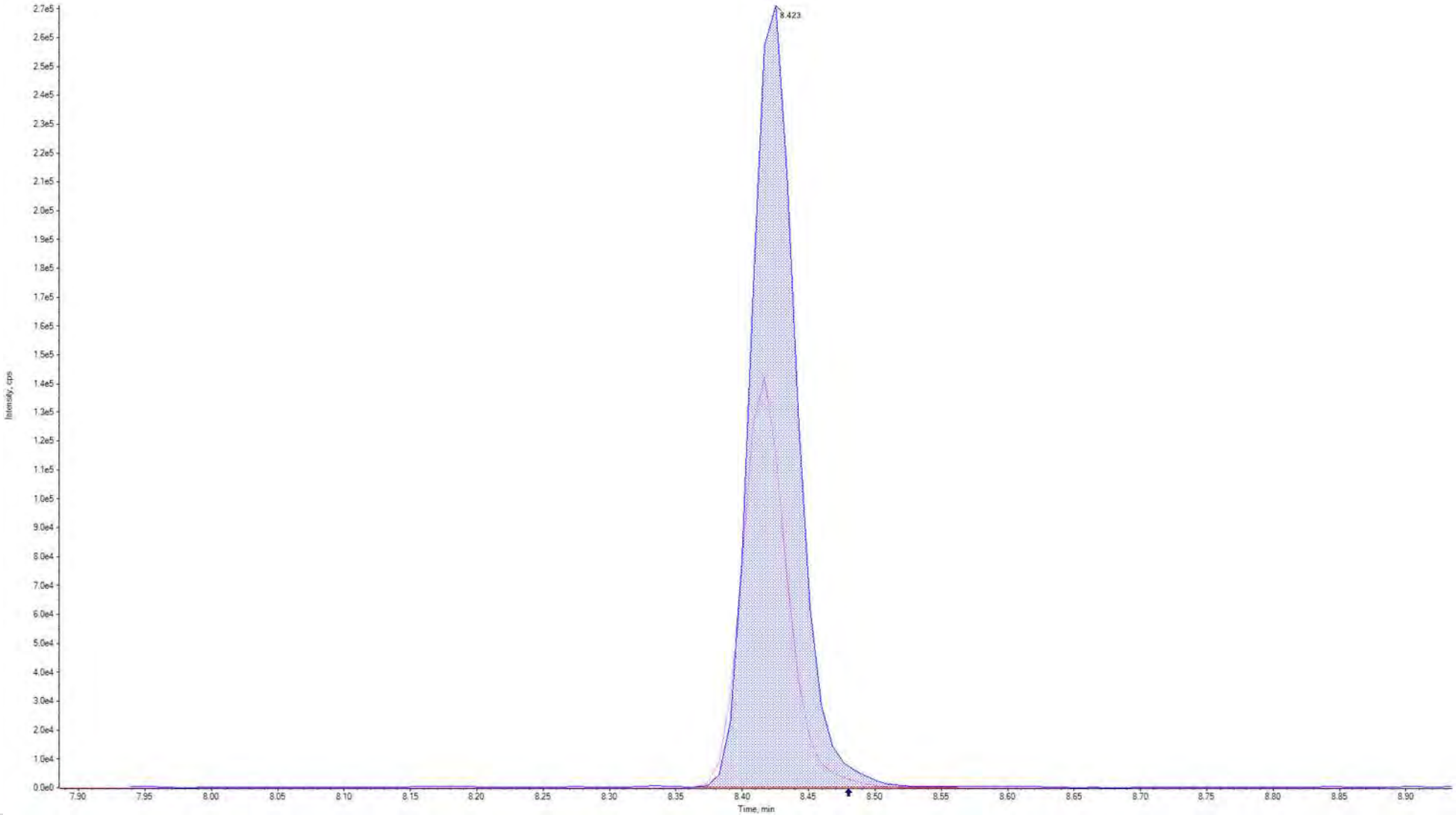
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFUnA
Sample: WG1973357-3 S/N:2859.3 Points Across peak:25



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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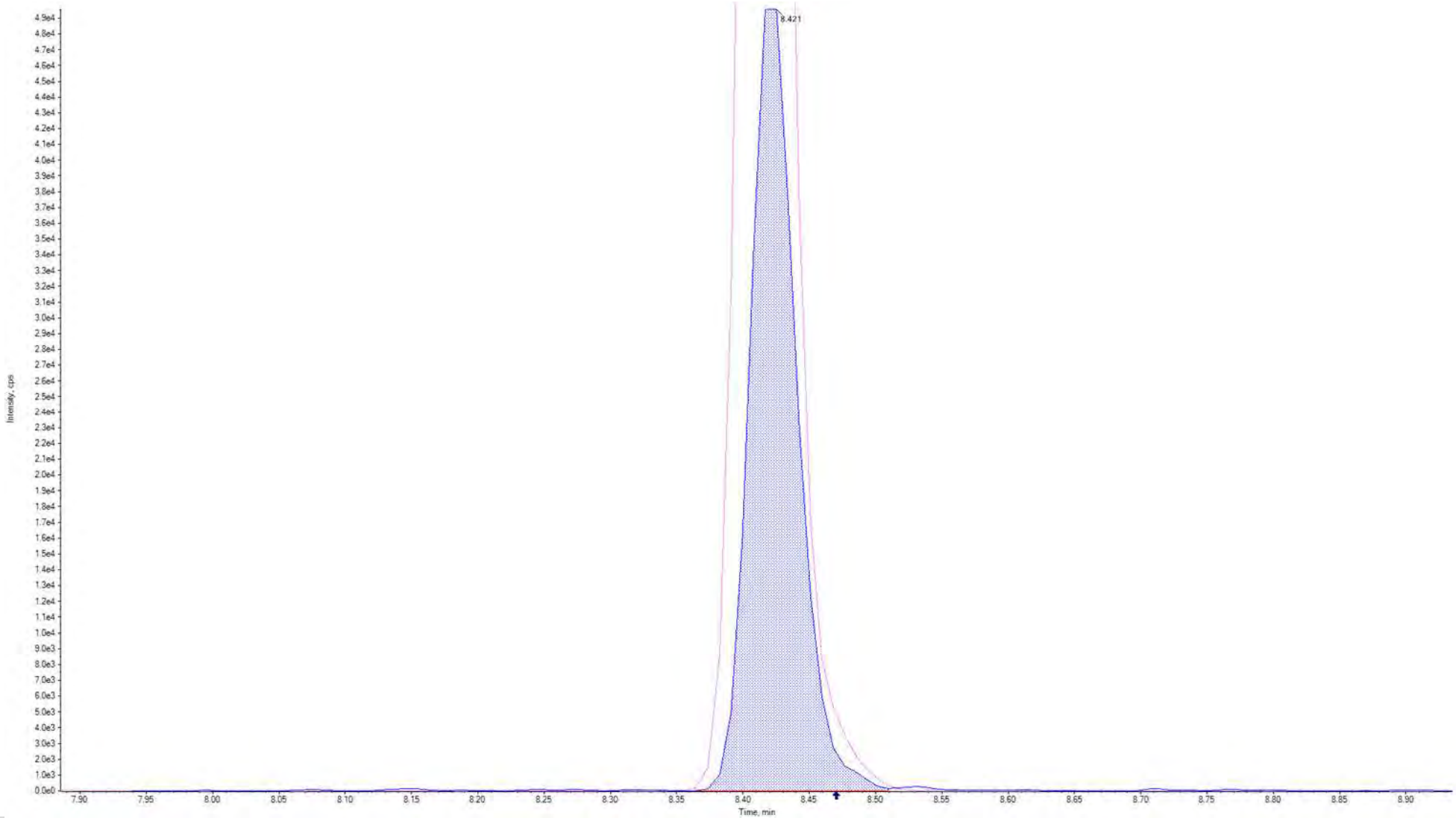
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFUnA_2
Sample: WG1973357-3 S/N:1384.4 Points Across peak:19



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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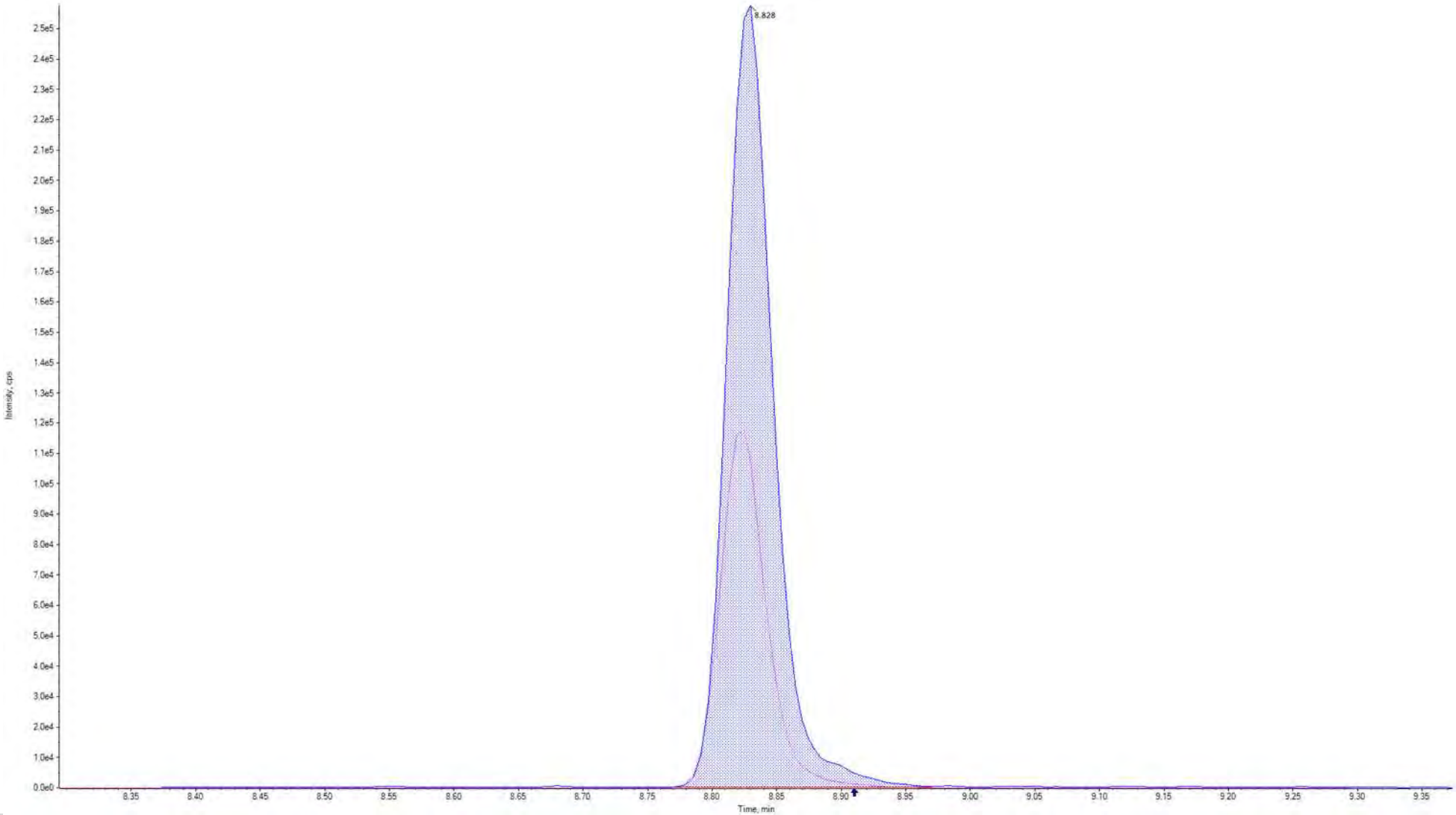
Generated: 9/19/2024 8:04:31 AM

PFDoA
Sample: WG1973357-3 S/N:2732.2 Points Across peak:41



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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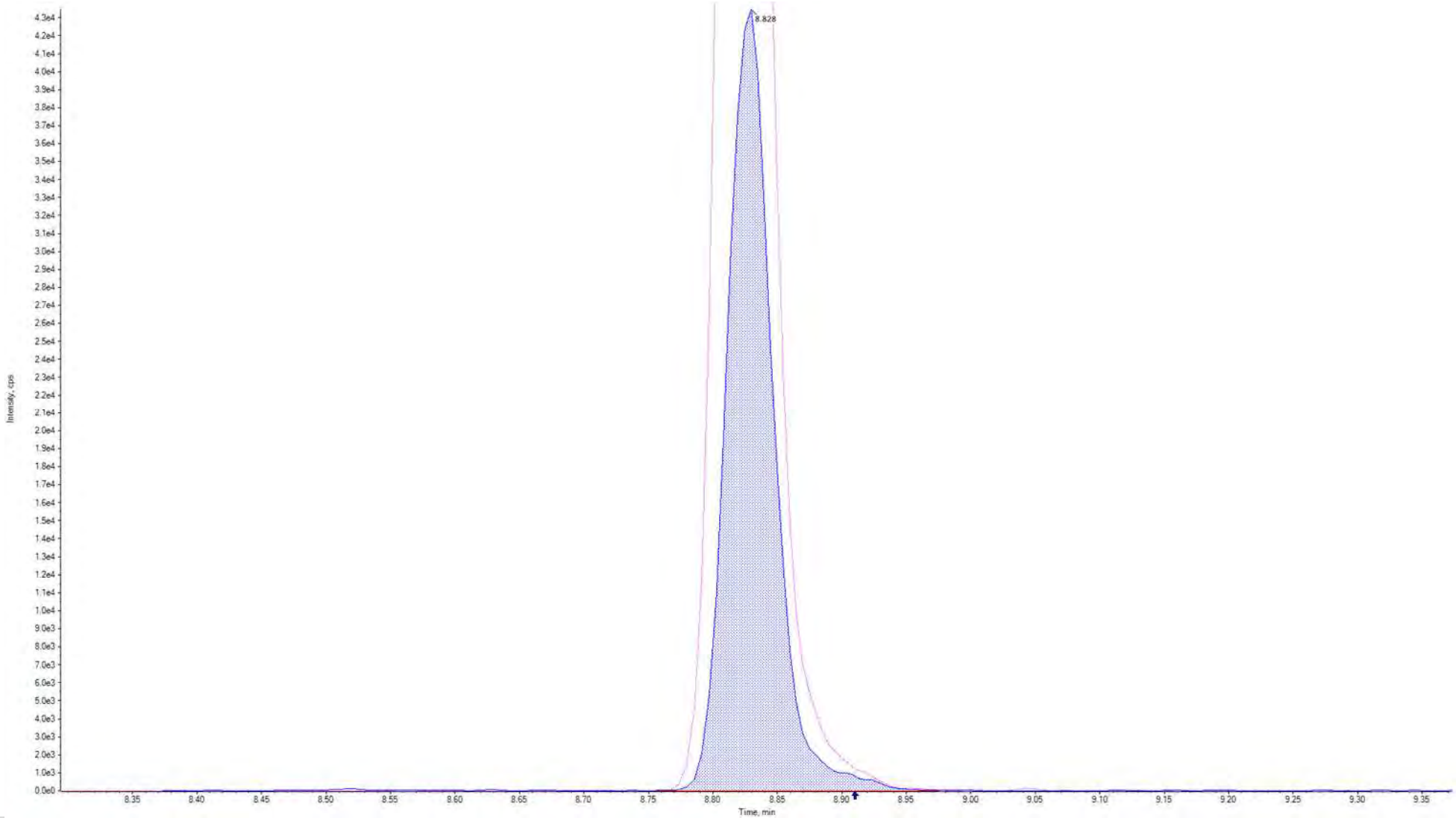
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoA_2
Sample: WG1973357-3 S/N:153128.5 Points Across peak:44



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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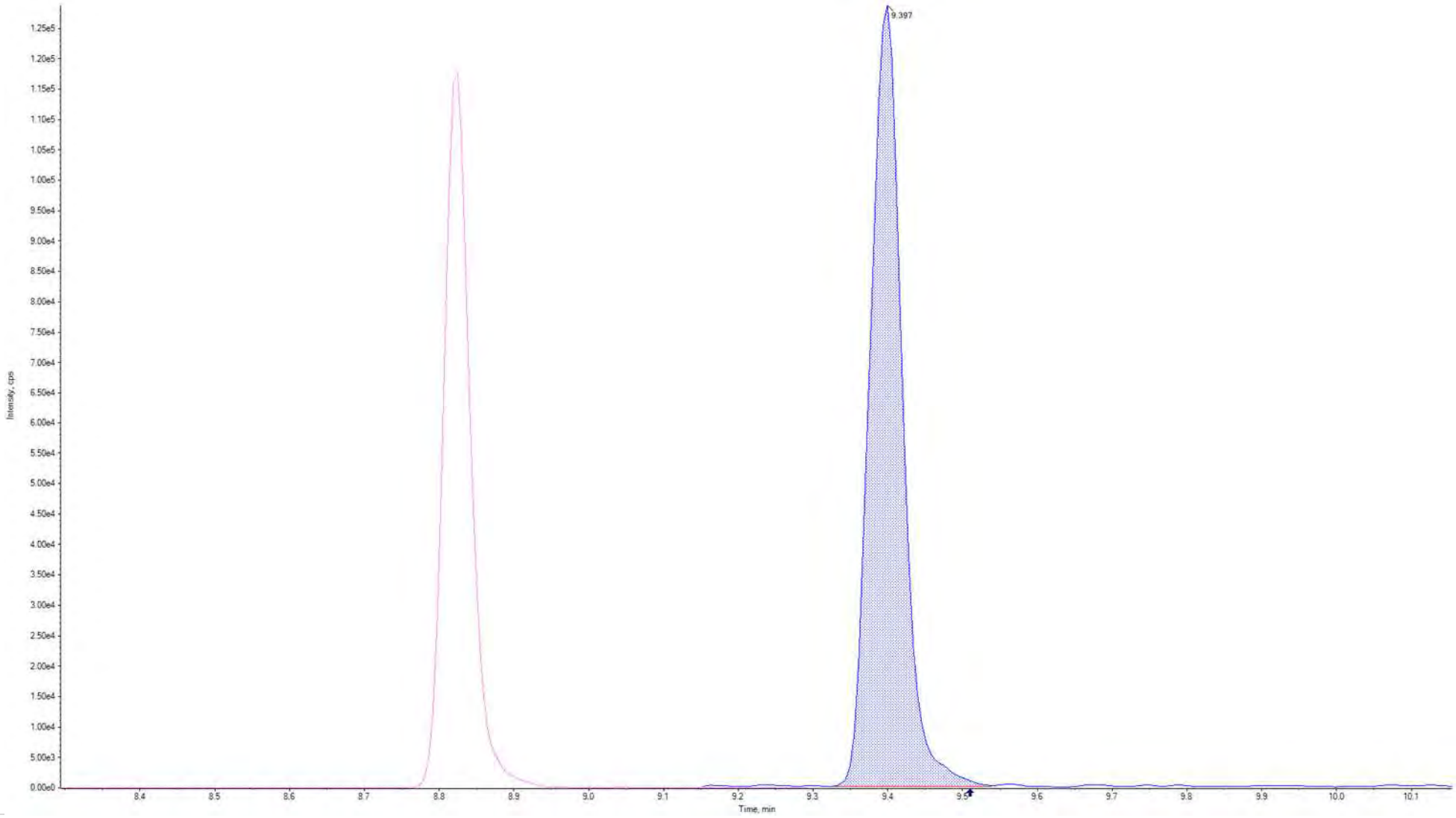
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFTrDA
Sample: WG1973357-3 S/N:1742.3 Points Across peak:38



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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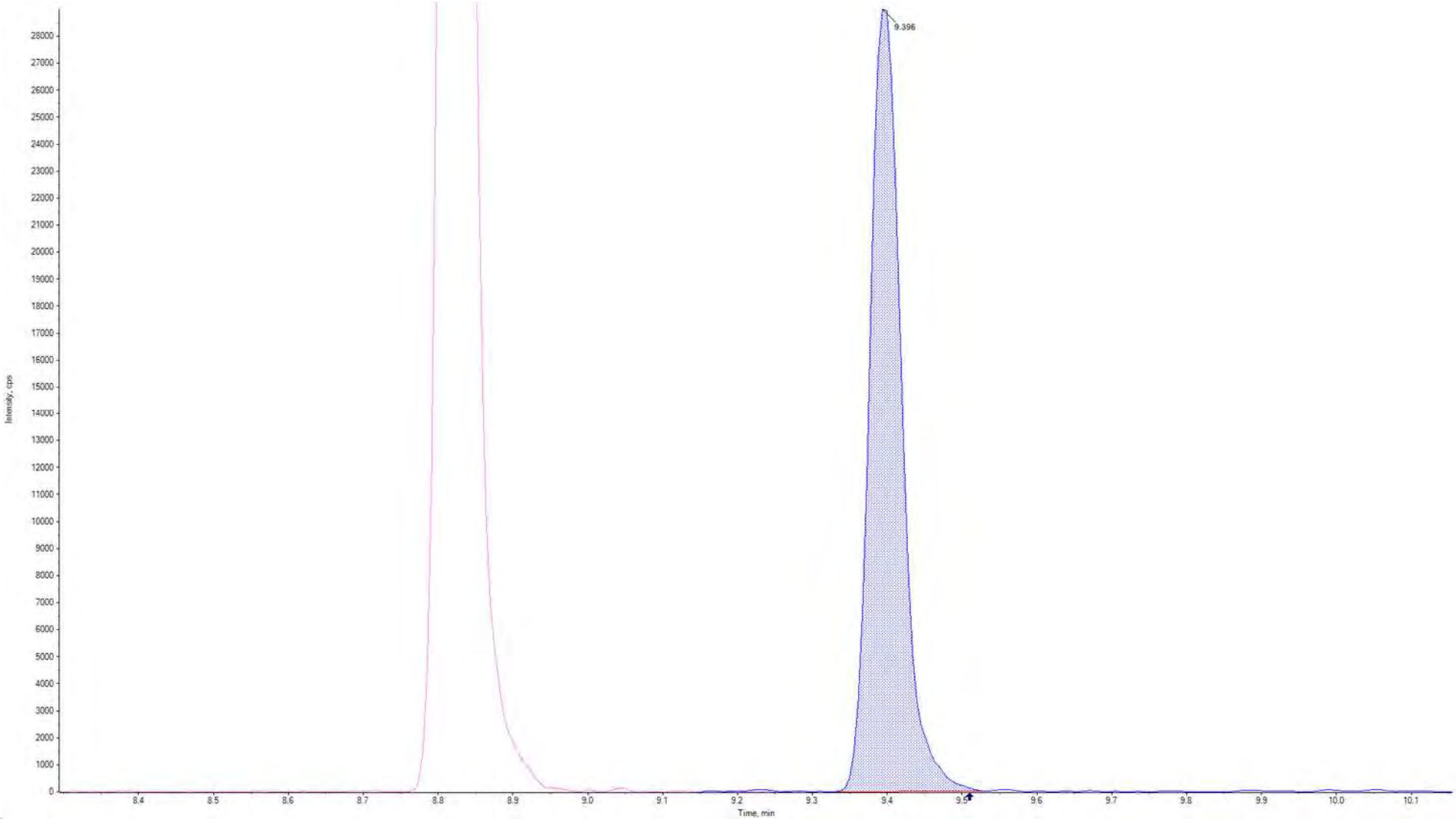
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFTrDA_2
Sample: WG1973357-3 S/N:101177.5 Points Across peak:37



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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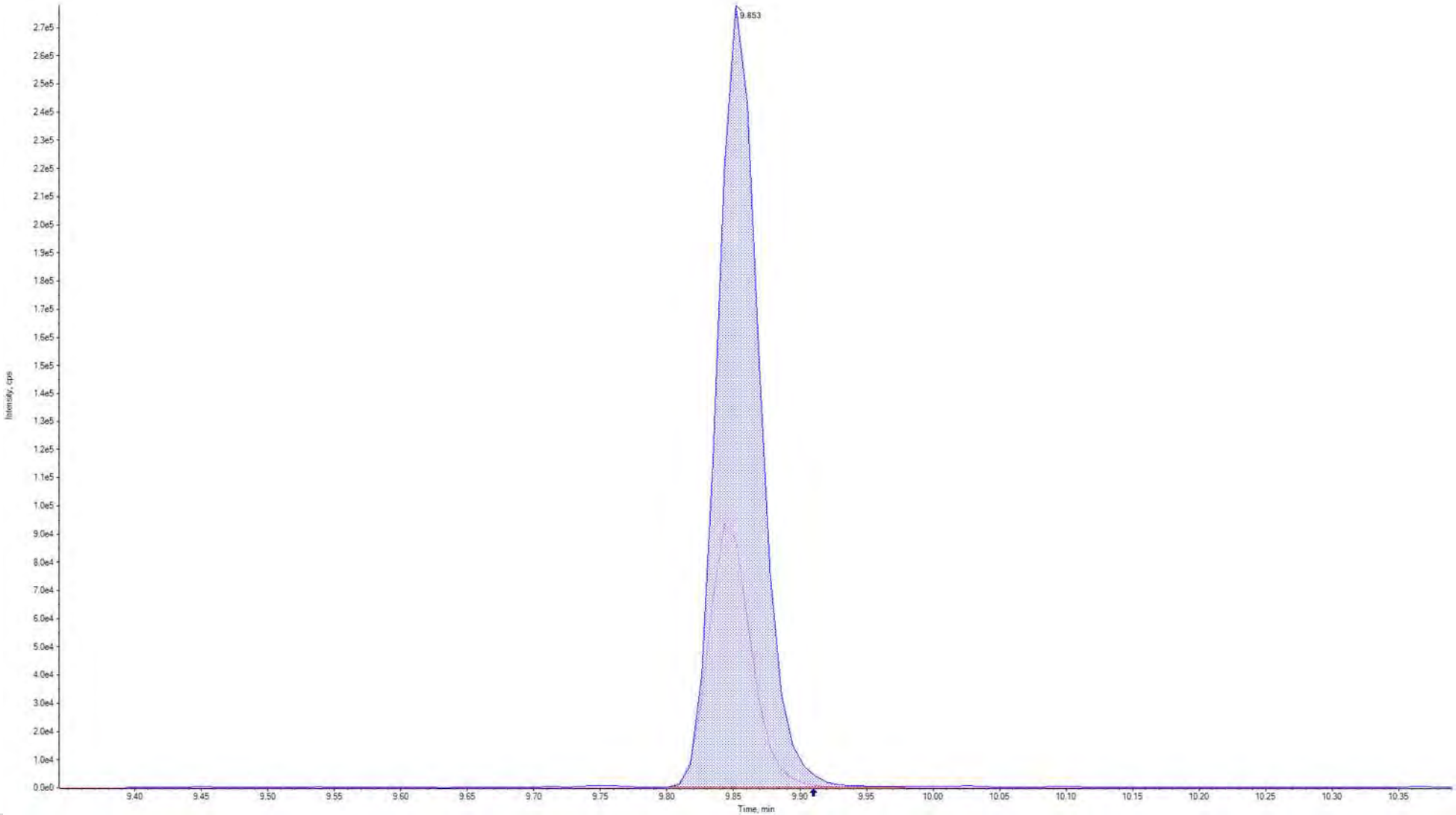
Generated: 9/19/2024 8:04:31 AM

PFTeDA
Sample: WG1973357-3 S/N:1549.7 Points Across peak:21



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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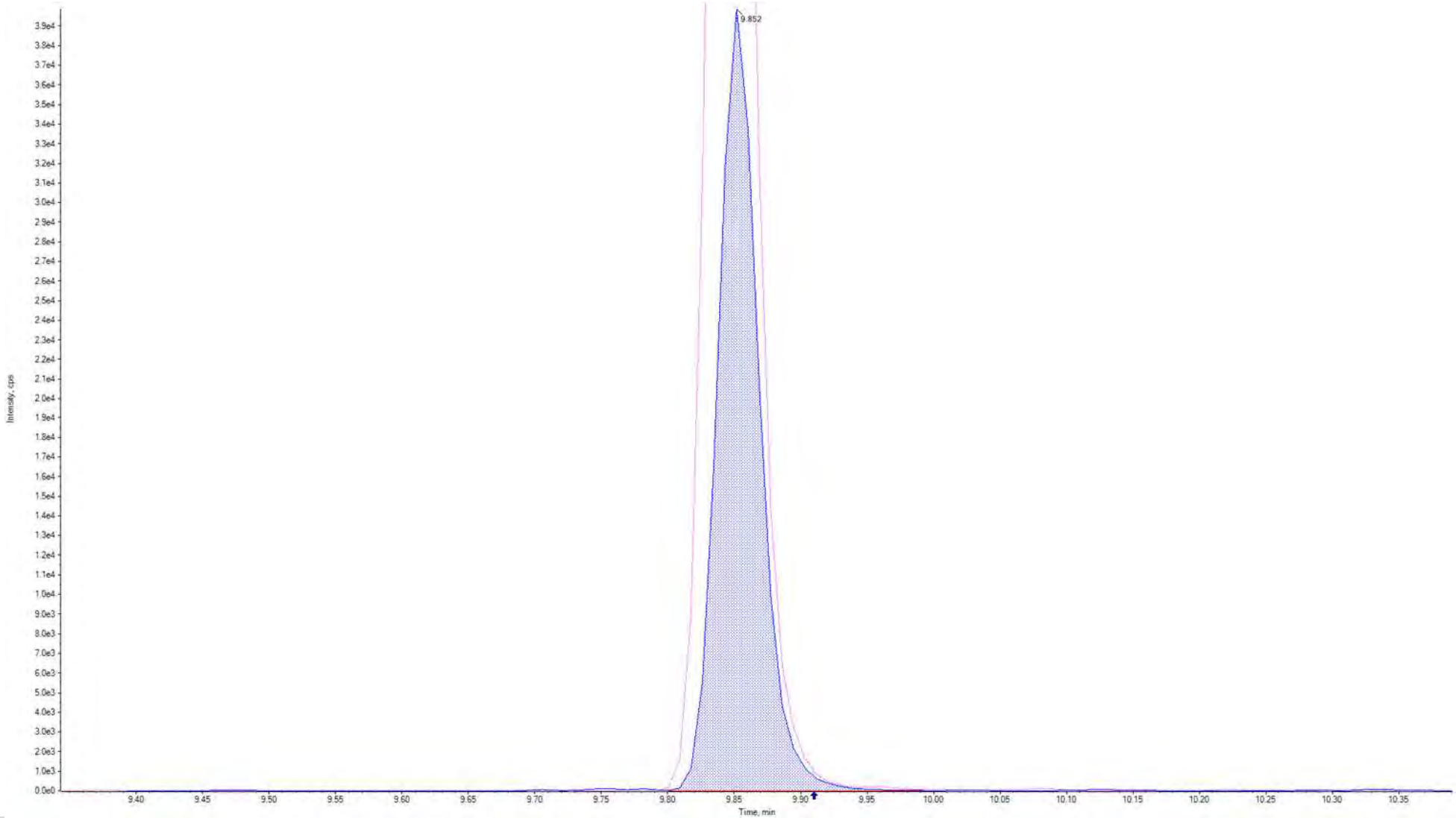
PFTeDA_2
Sample: WG1973357-3 S/N:1844.2 Points Across peak:23



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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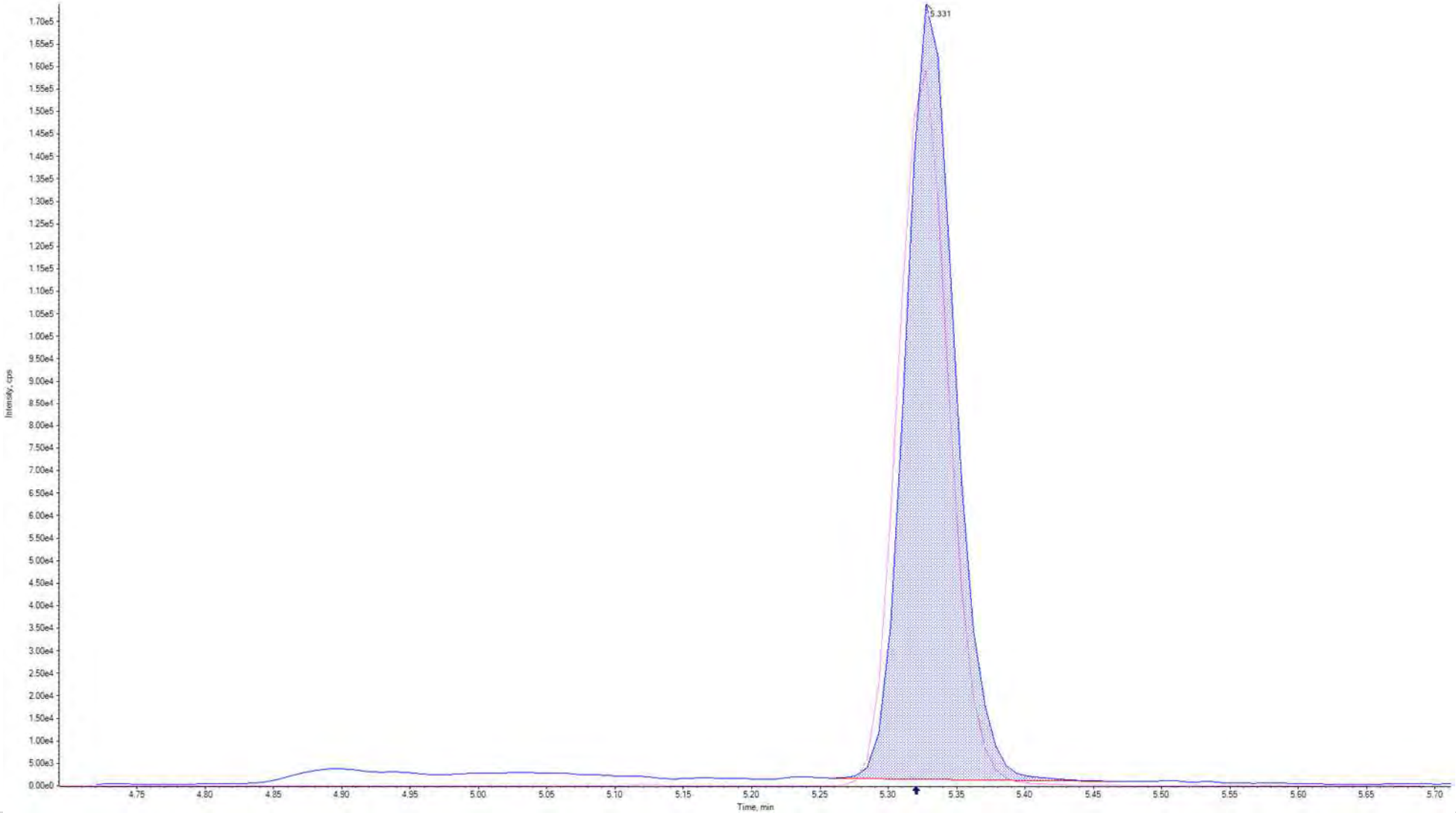
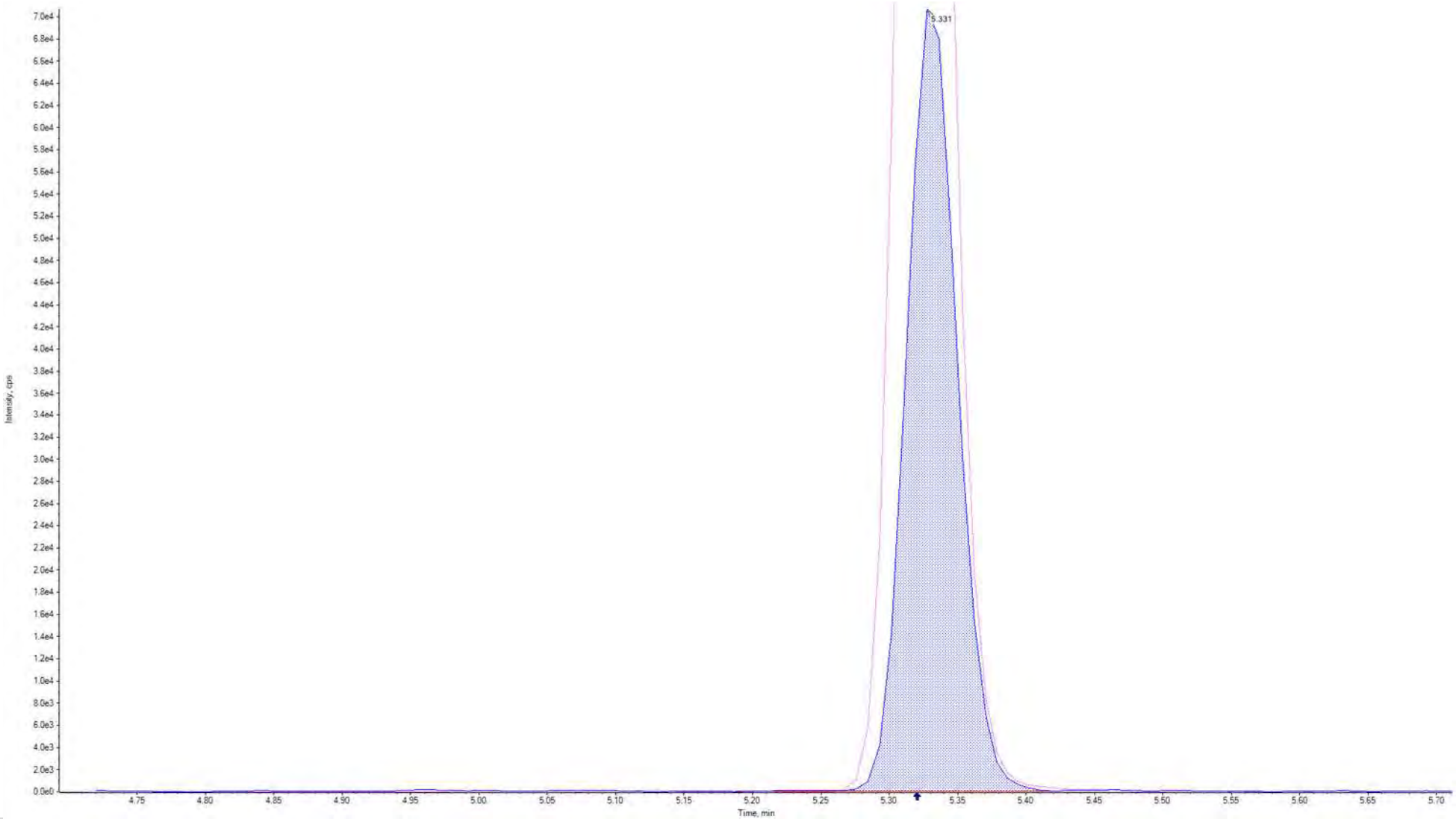
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFBS
Sample: WG1973357-3 S/N:86.0 Points Across peak:26



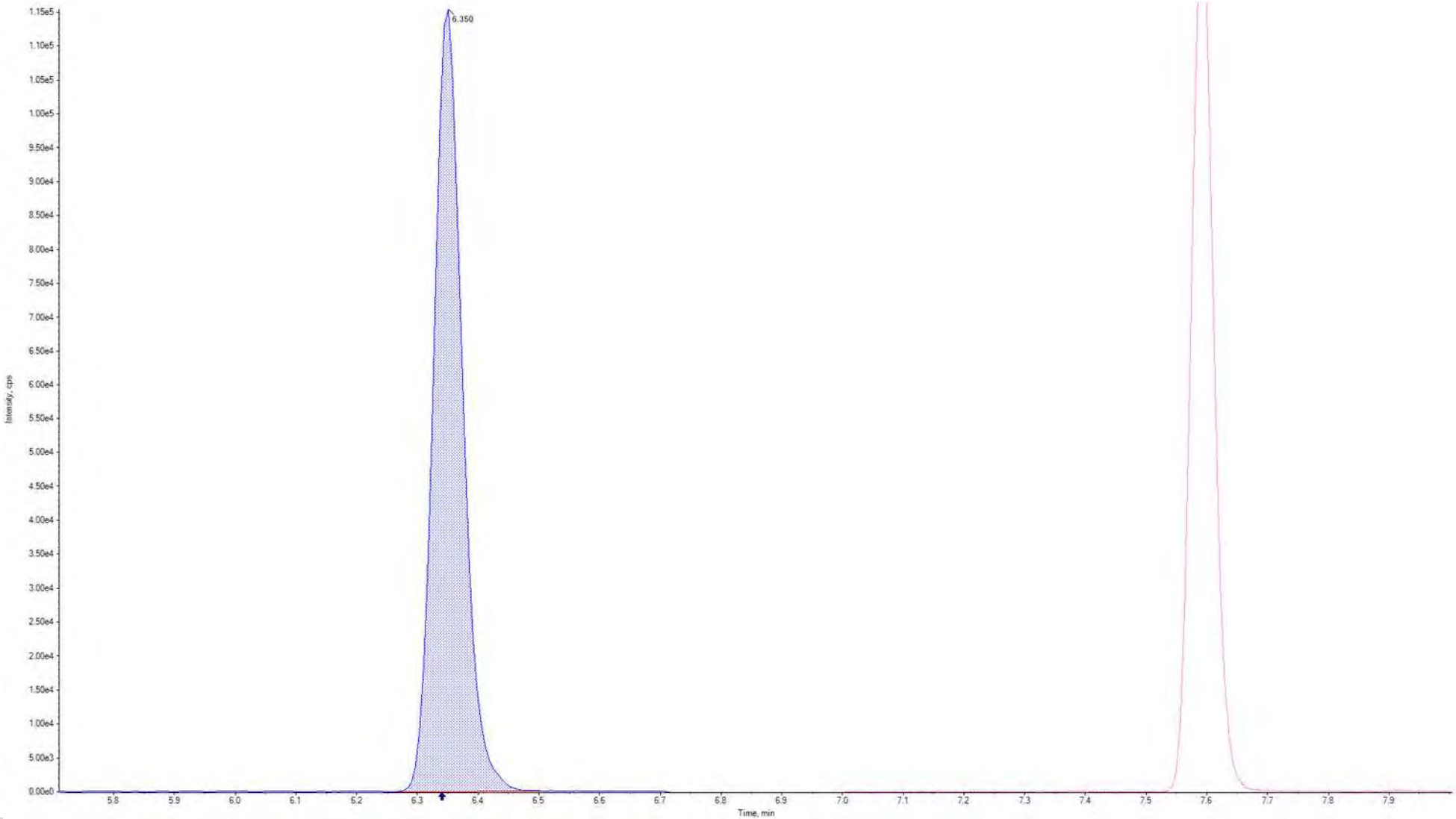
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFBS_2
Sample: WG1973357-3 S/N:2729.1 Points Across peak:29



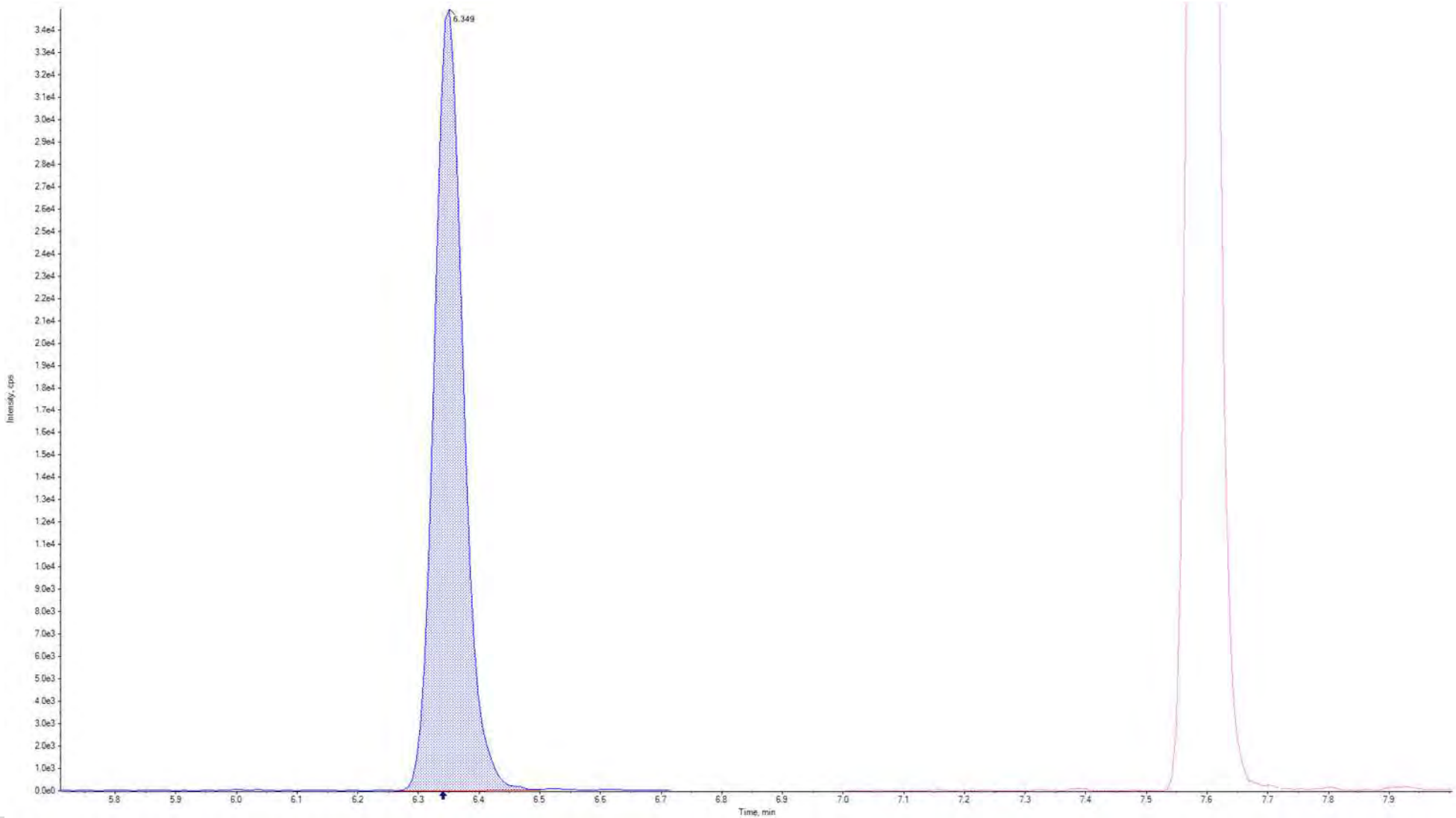
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFPeS
Sample: WG1973357-3 S/N:4839.4 Points Across peak:37



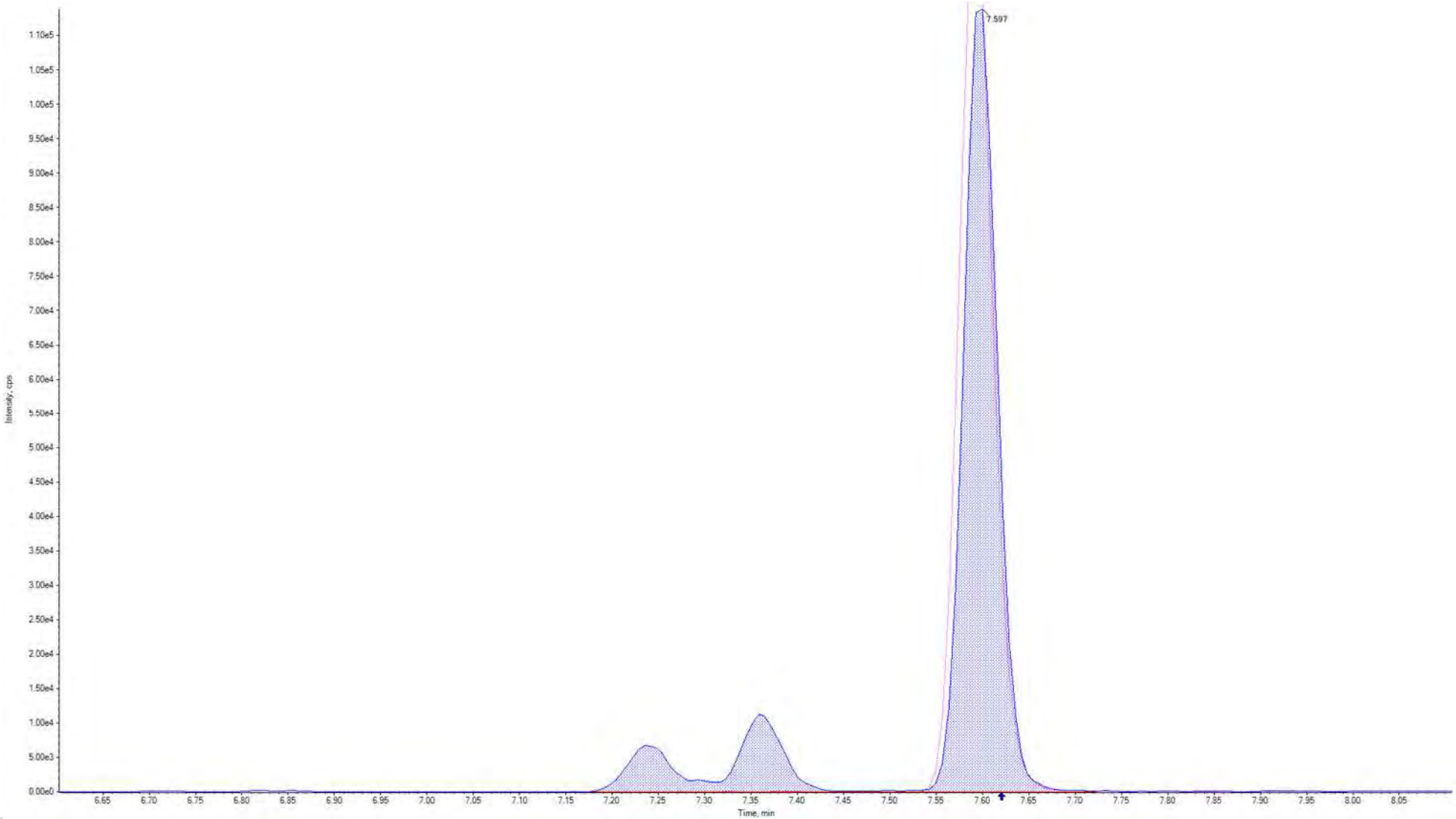
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFPeS_2
Sample: WG1973357-3 S/N:6352.3 Points Across peak:36



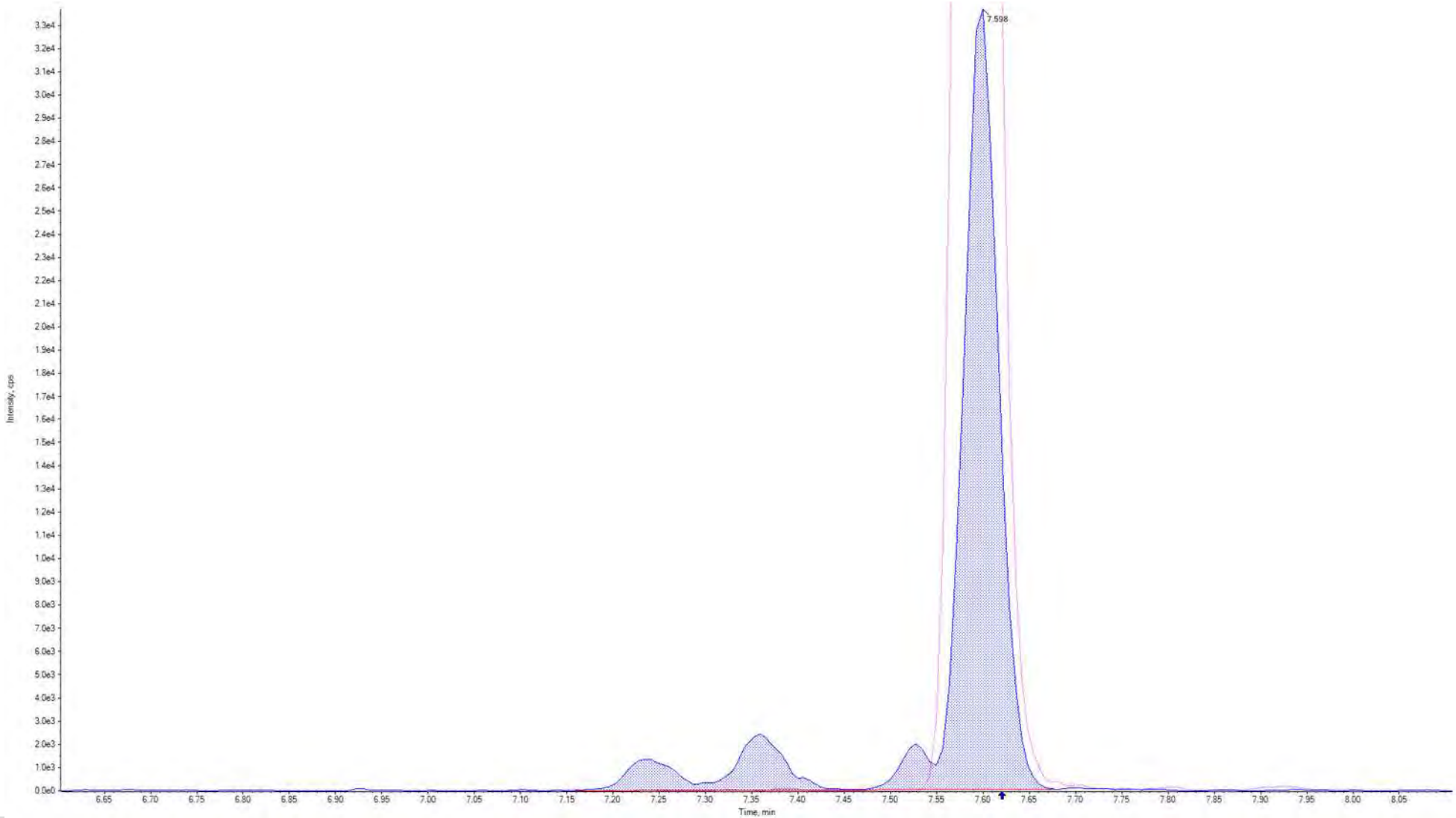
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHxS
Sample: WG1973357-3 S/N:28450451.3 Points Across peak:90



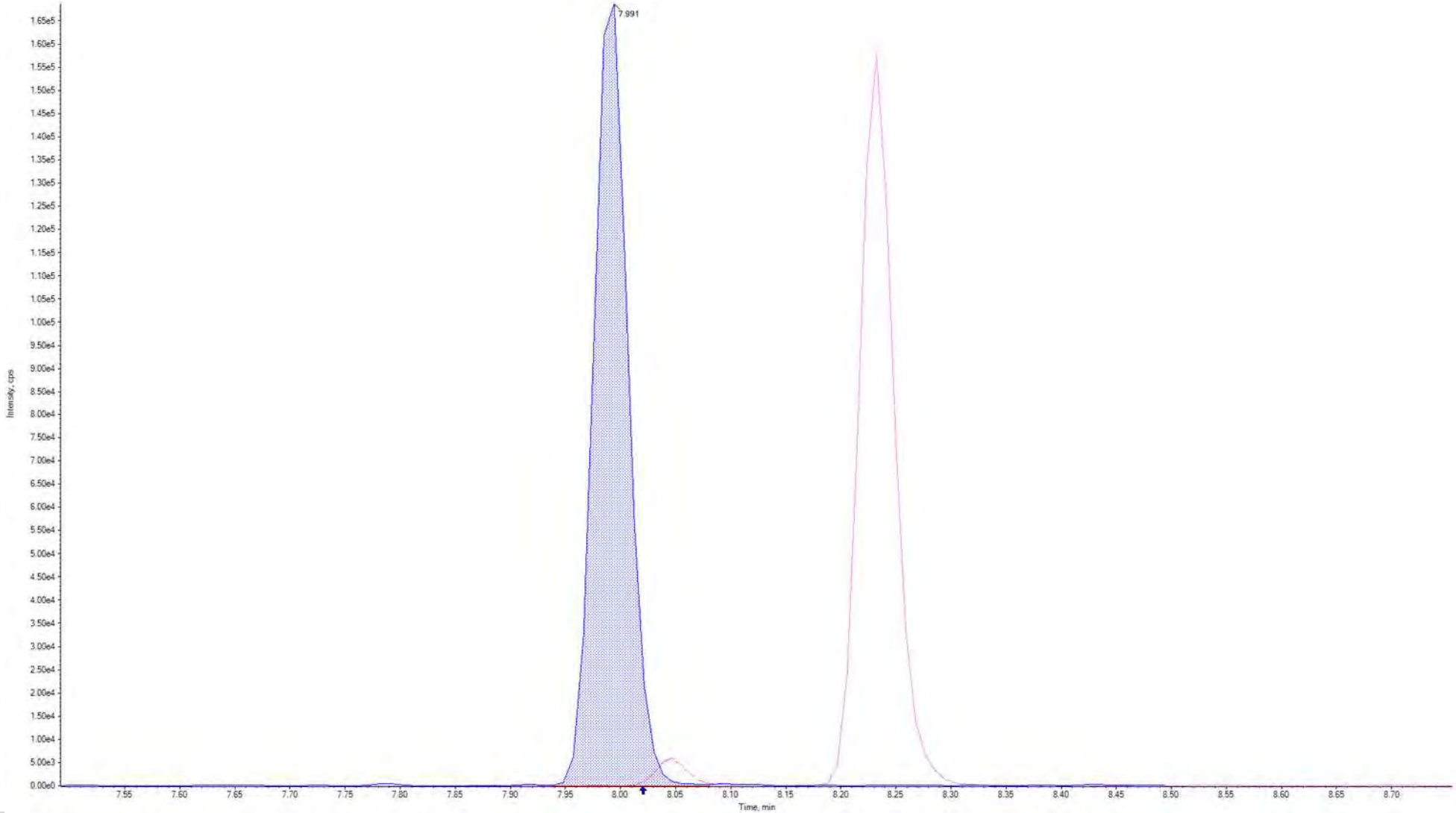
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHxS_2
Sample: WG1973357-3 S/N:1310.7 Points Across peak:85



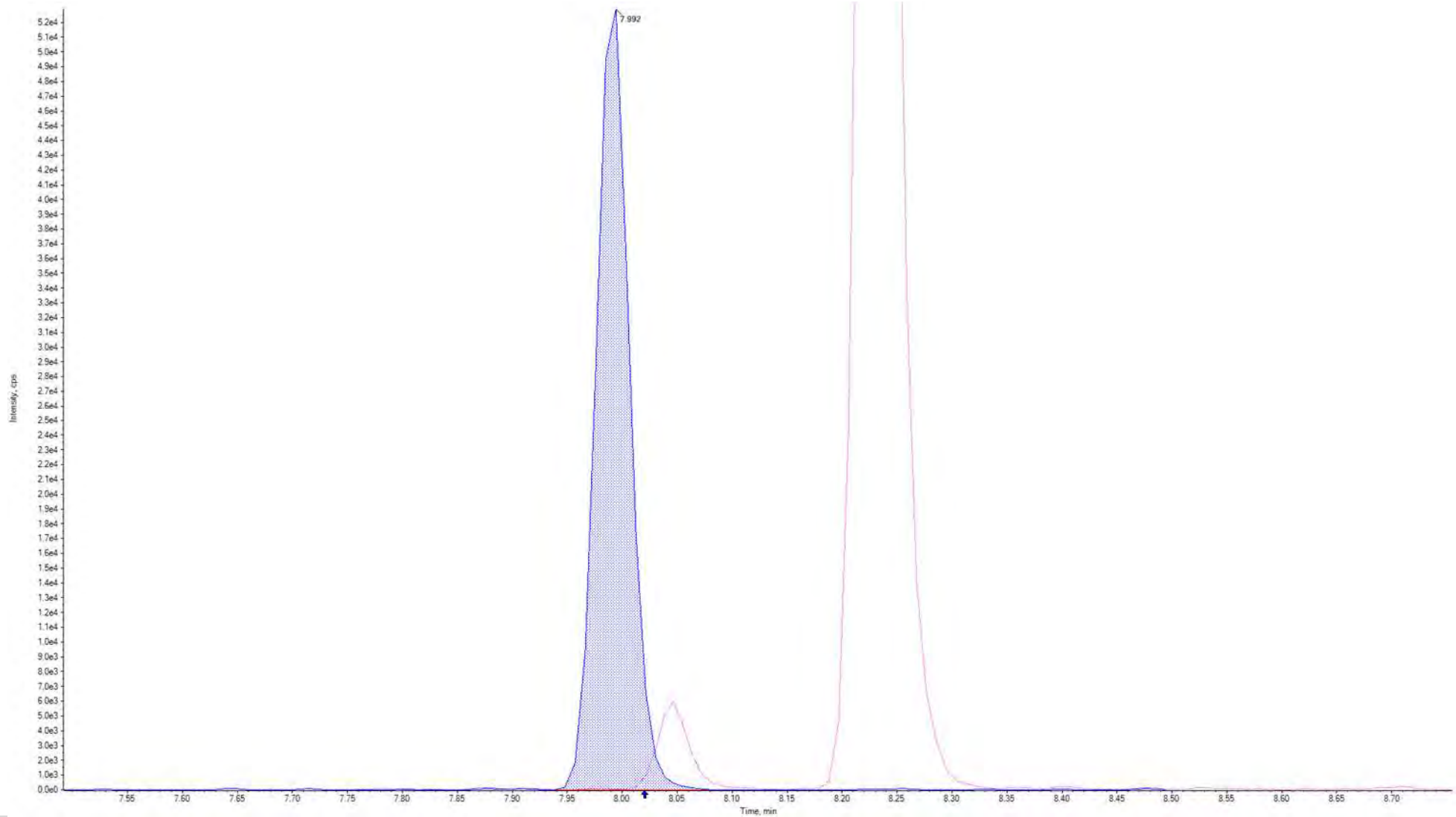
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHpS
Sample: WG1973357-3 S/N:81742.4 Points Across peak:17



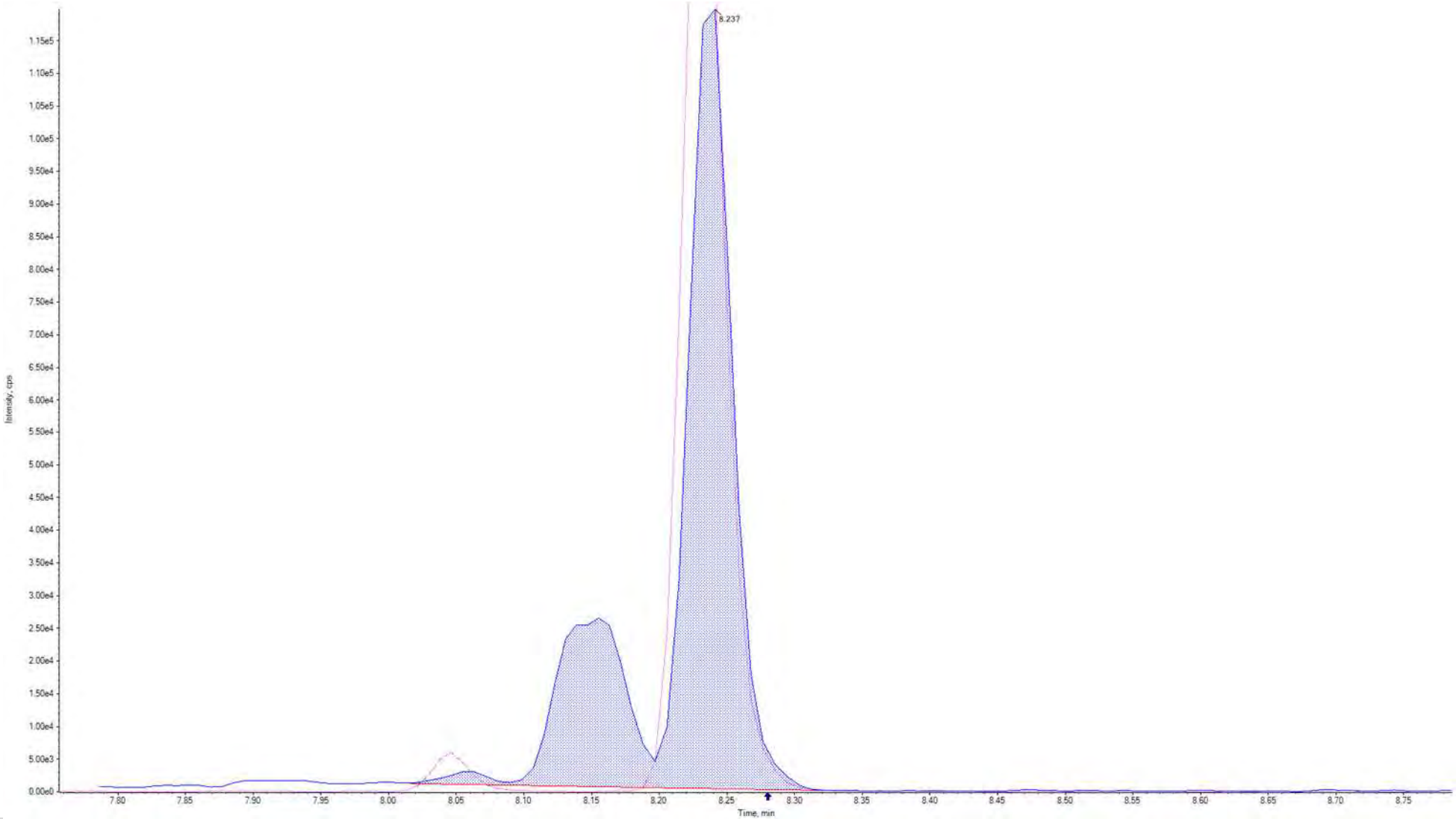
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHpS_2
Sample: WG1973357-3 S/N:3122.1 Points Across peak:21



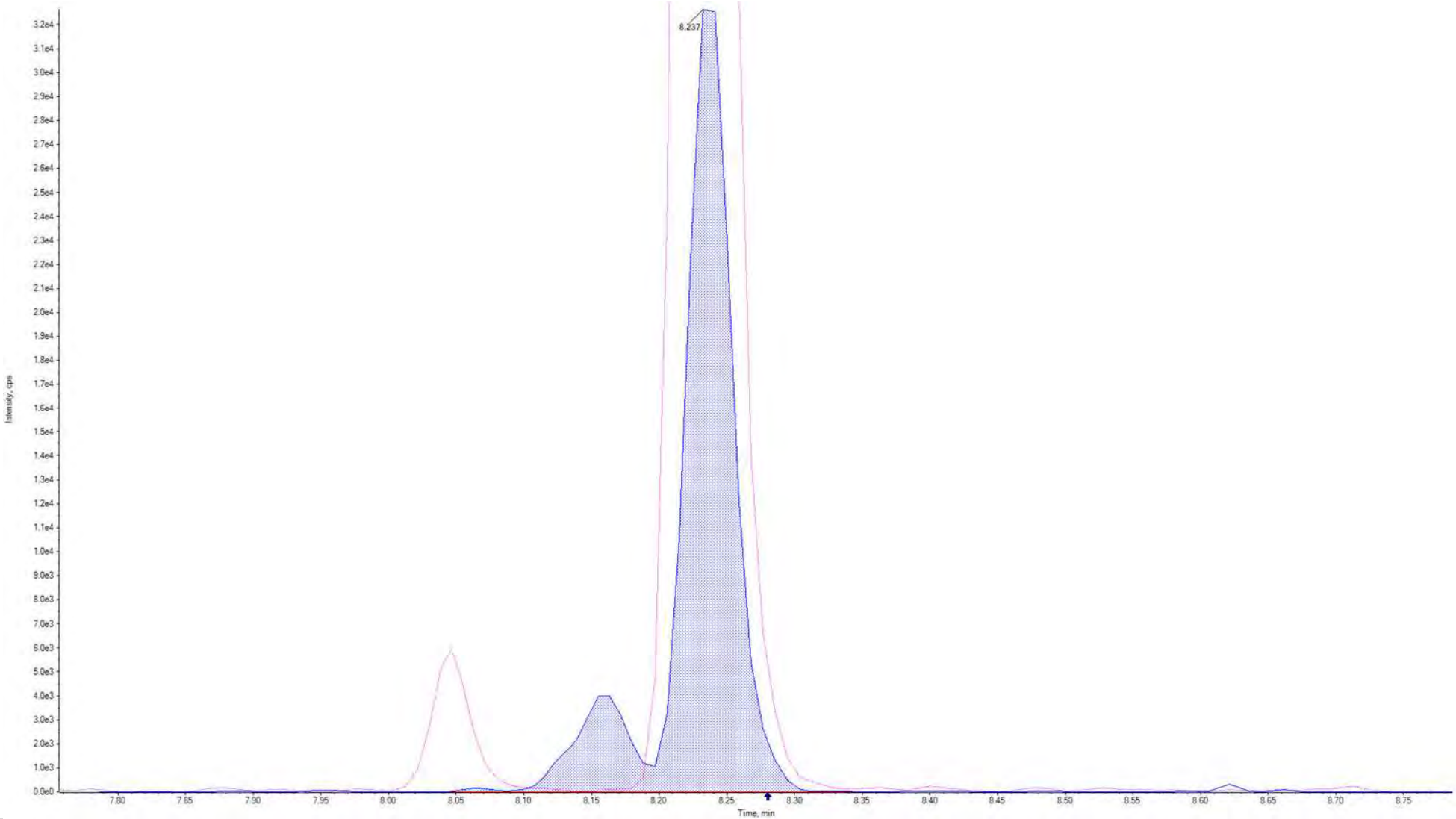
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOS
Sample: WG1973357-3 S/N:1168.2 Points Across peak:38



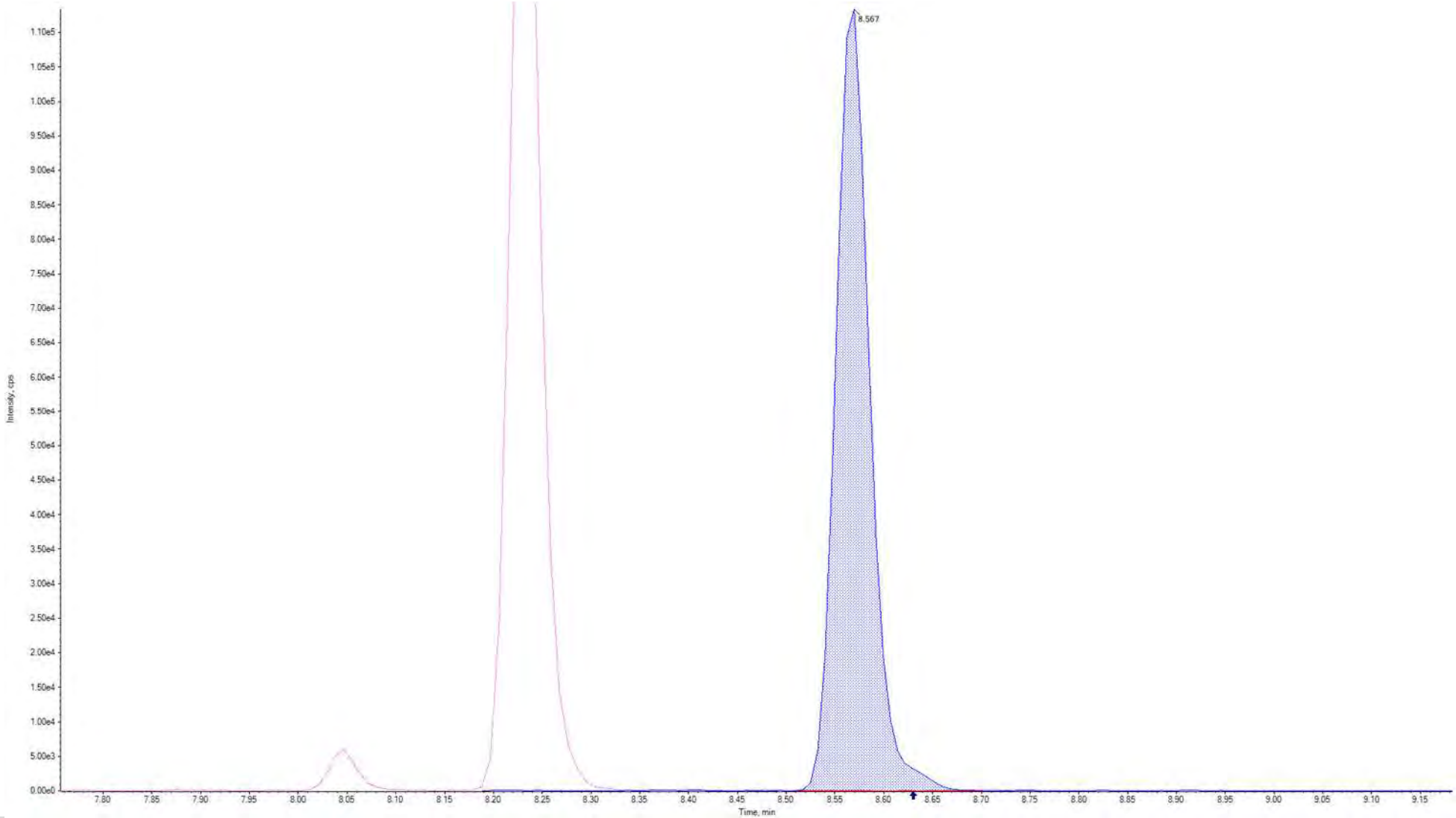
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOS_2
Sample: WG1973357-3 S/N:1212.9 Points Across peak:40



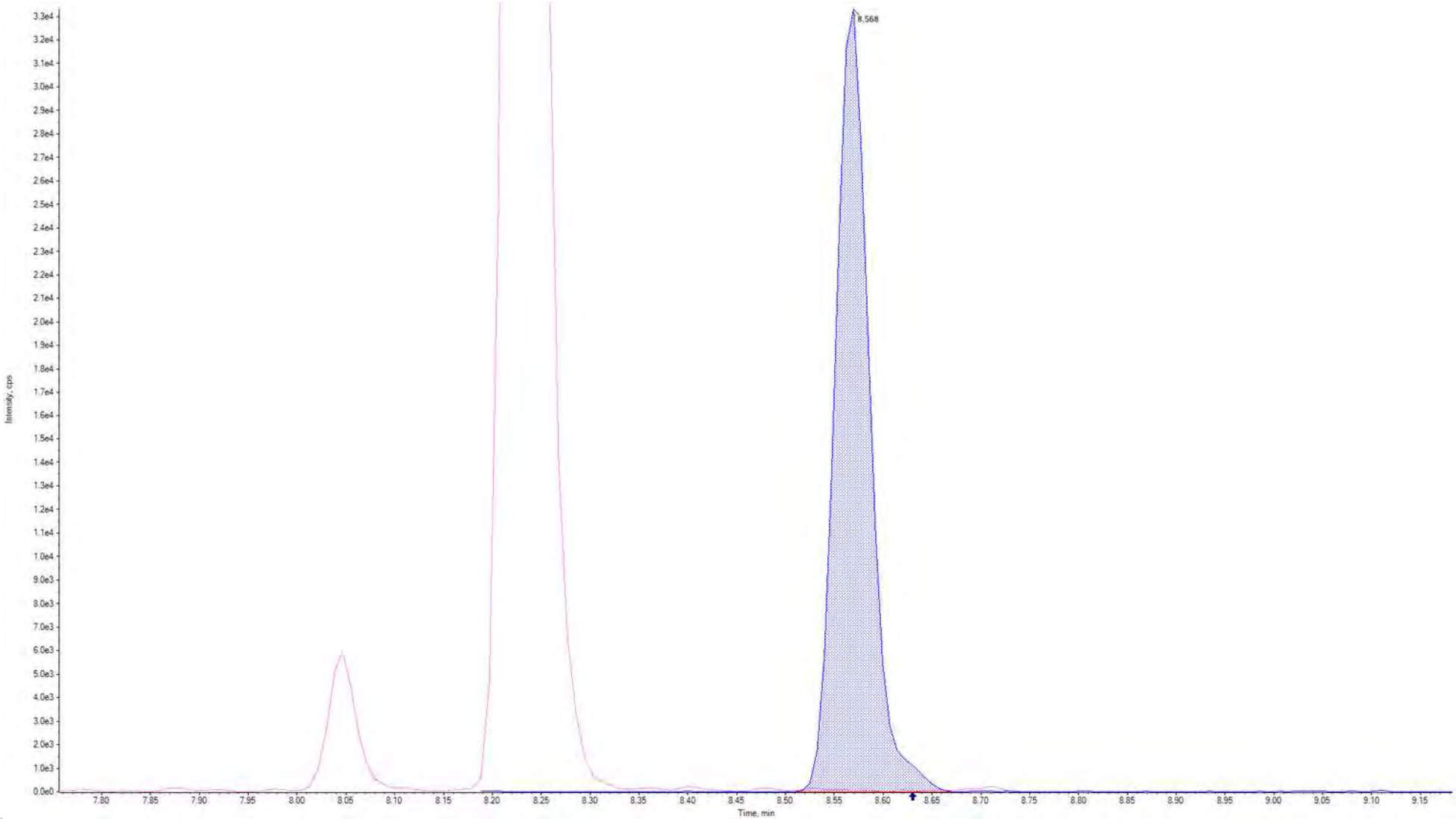
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFNS
Sample: WG1973357-3 S/N:33703.6 Points Across peak:33



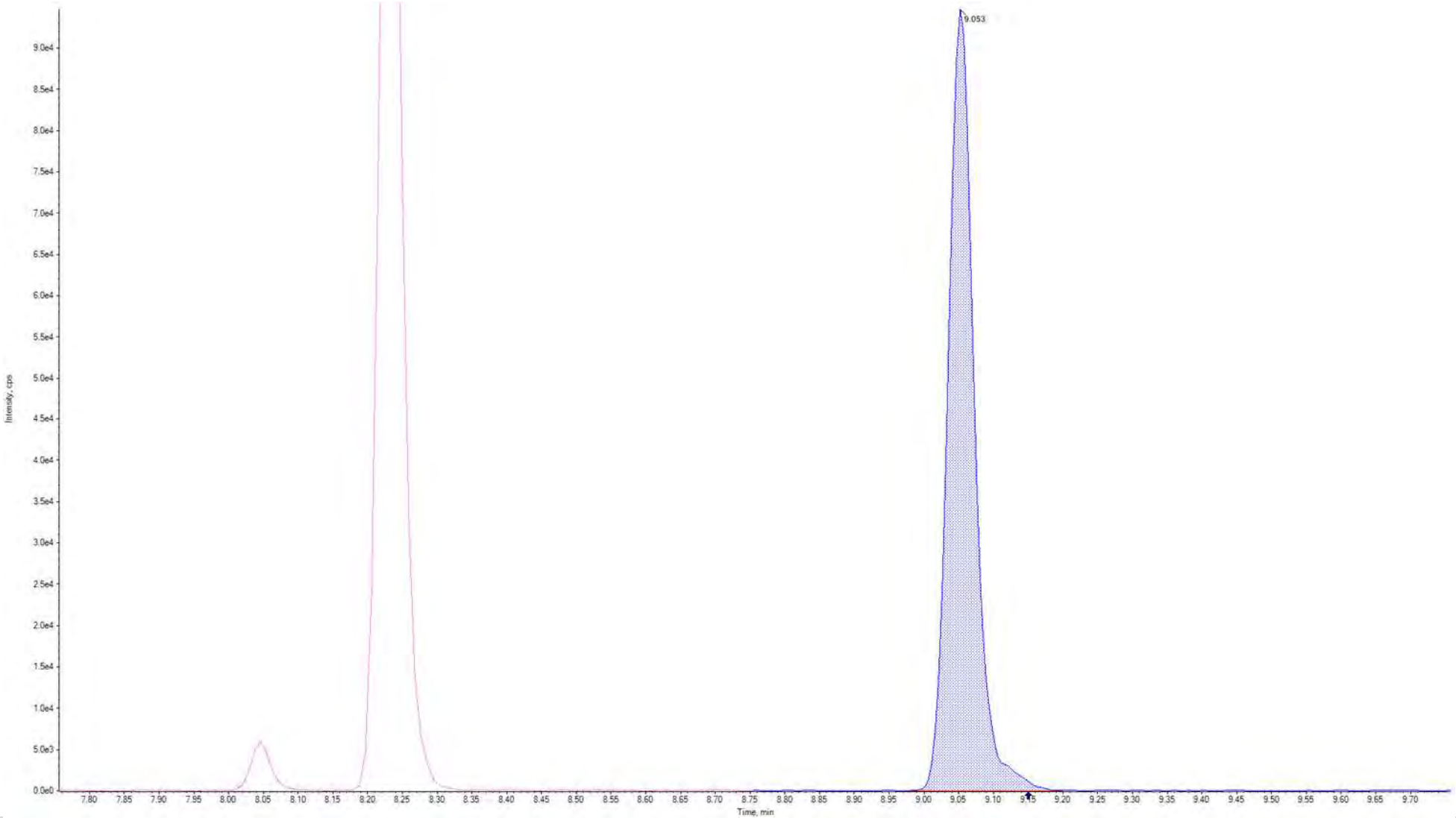
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFNS_2
Sample: WG1973357-3 S/N:4992.0 Points Across peak:31



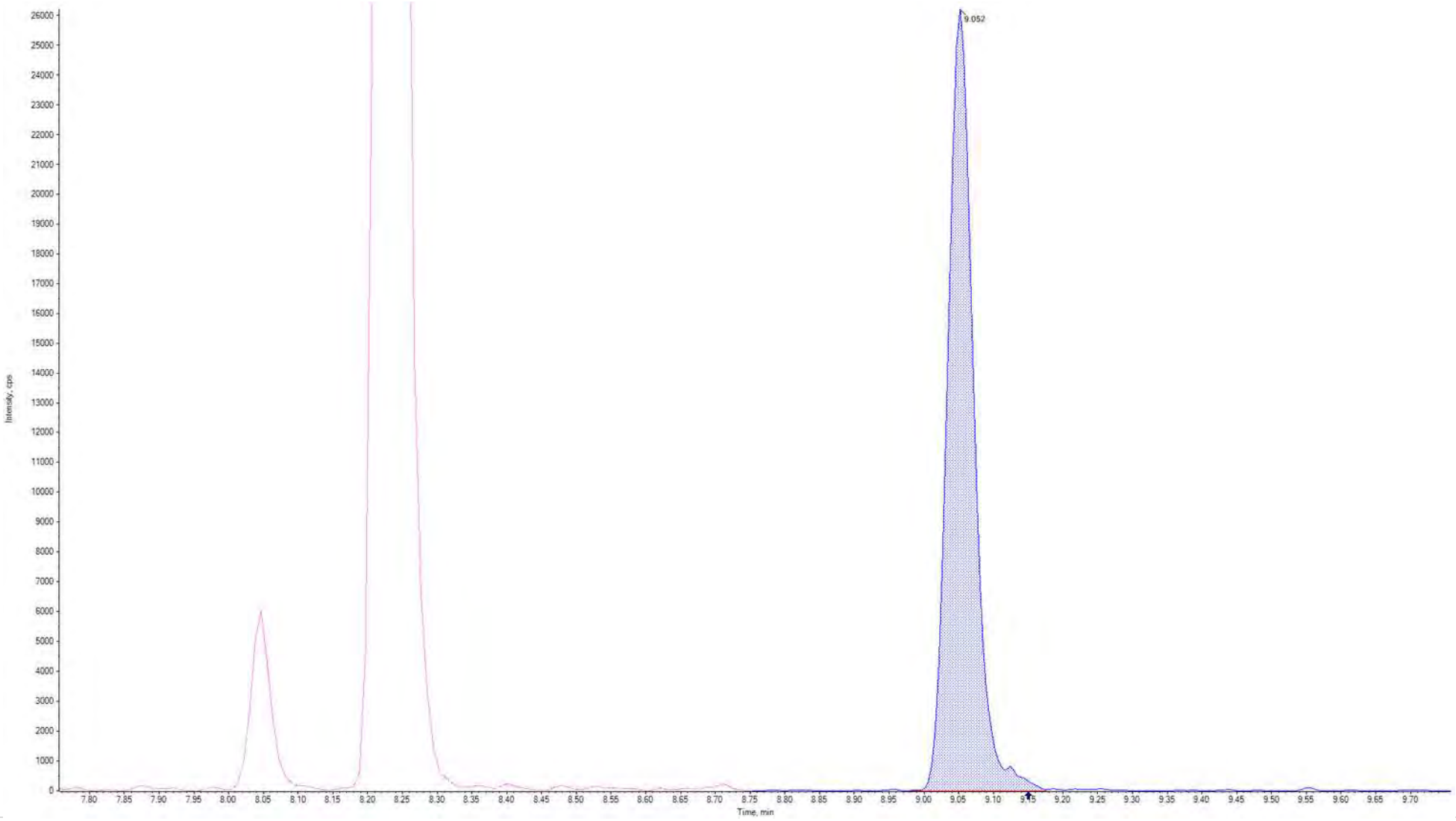
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDS
Sample: WG1973357-3 S/N:13017.9 Points Across peak:47



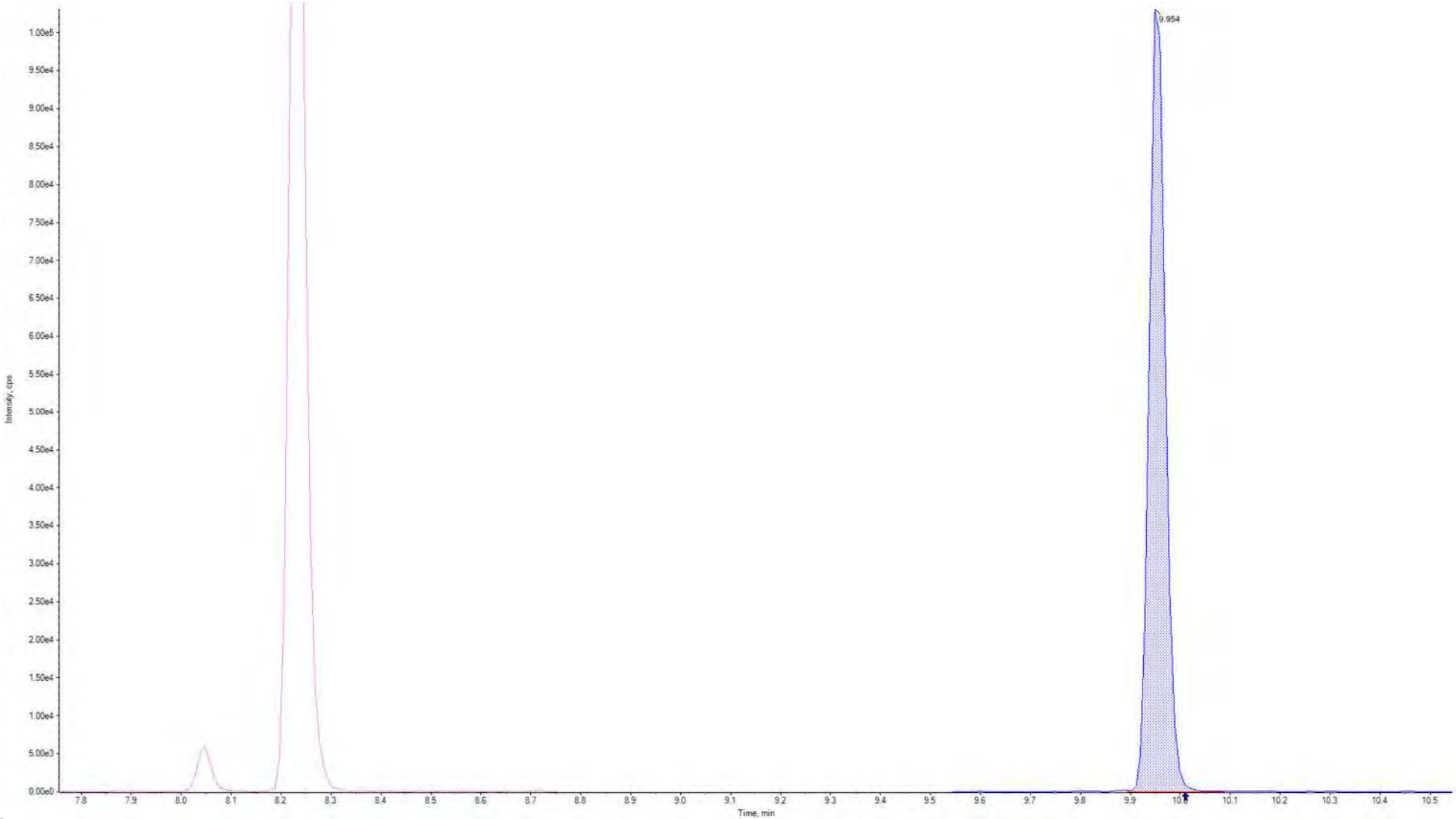
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDS_2
Sample: WG1973357-3 S/N:18418329.7 Points Across peak:42



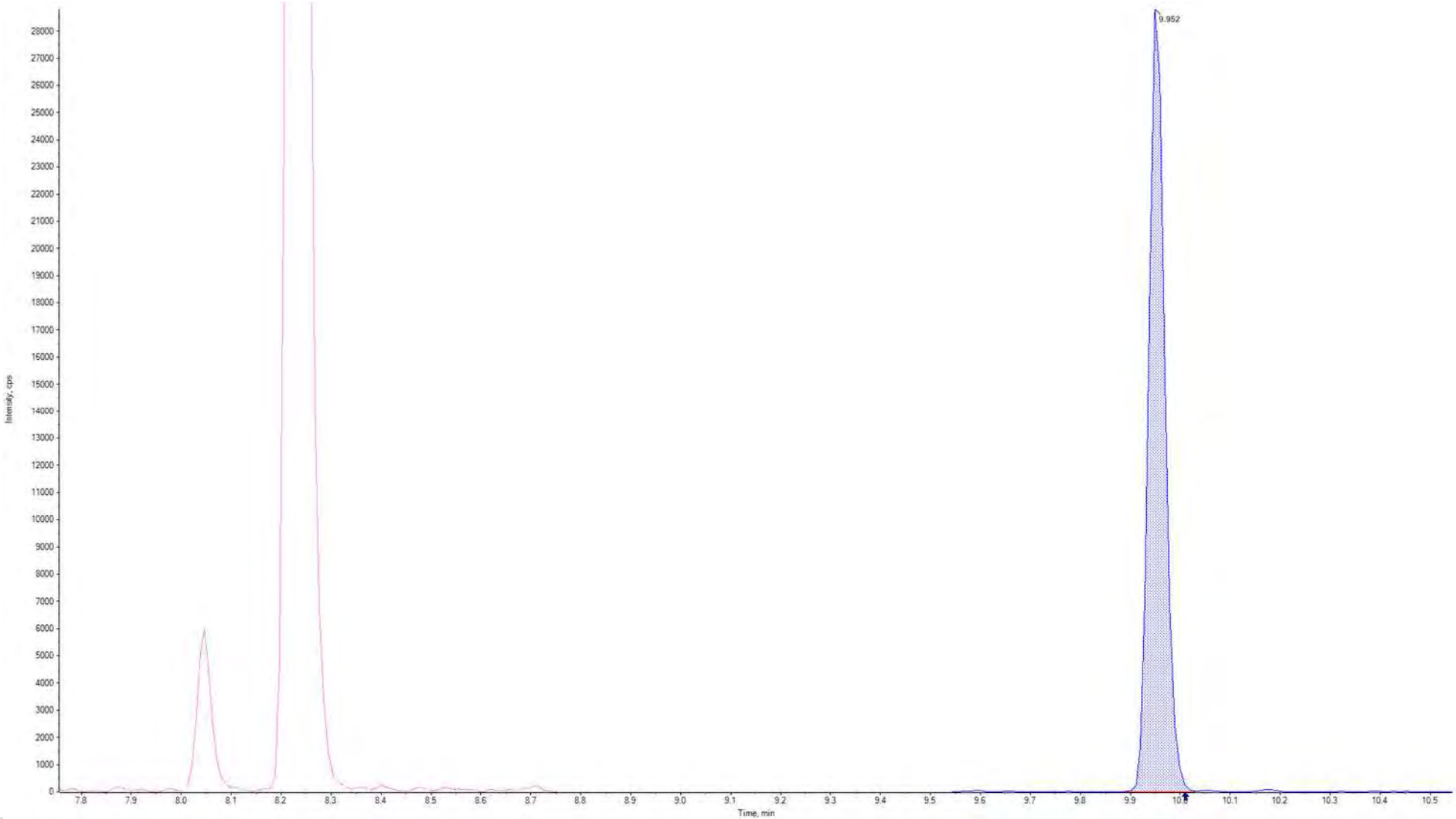
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoS
Sample: WG1973357-3 S/N:5497.2 Points Across peak:21



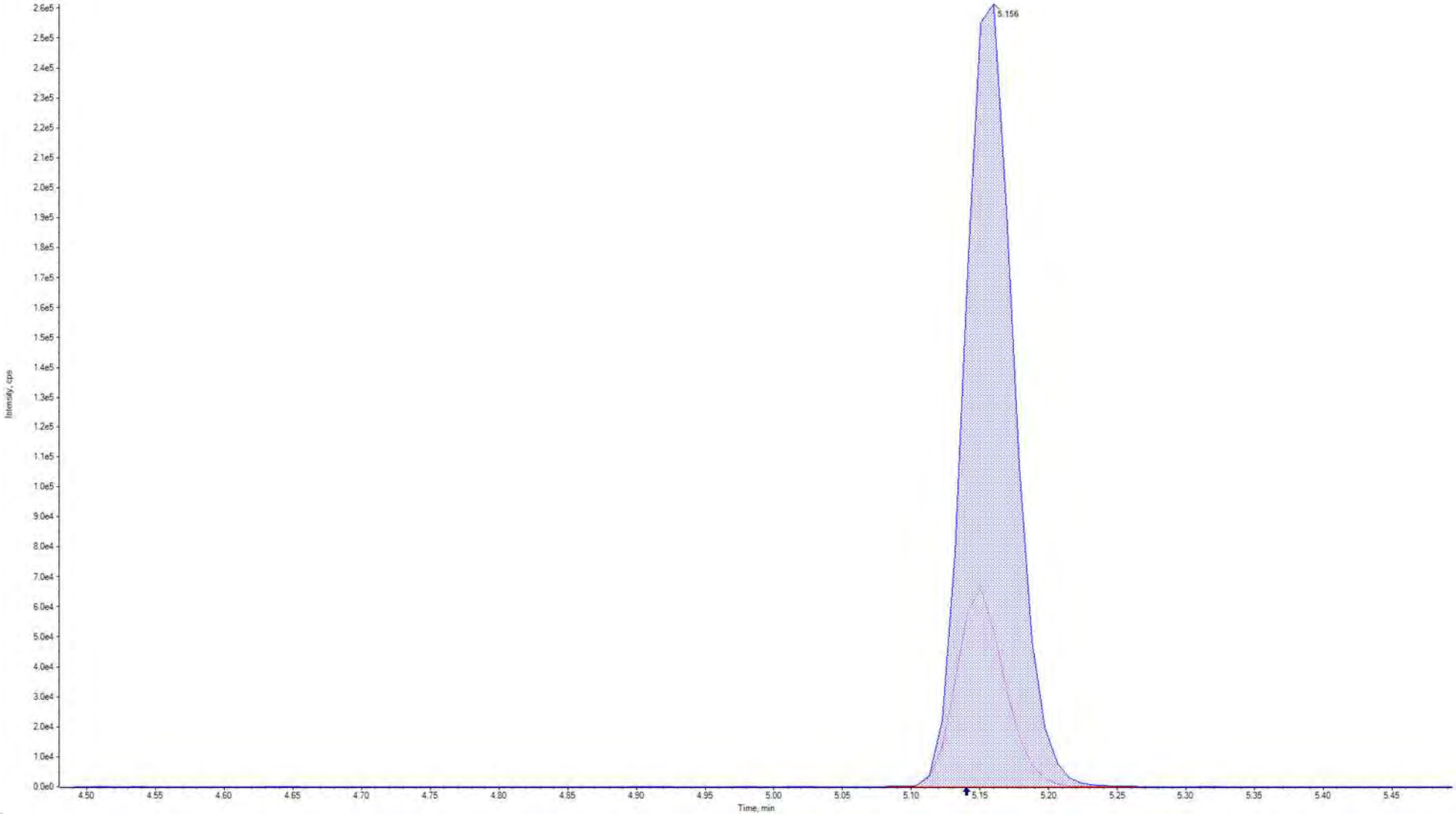
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoS_2
Sample: WG1973357-3 S/N:2669.1 Points Across peak:19



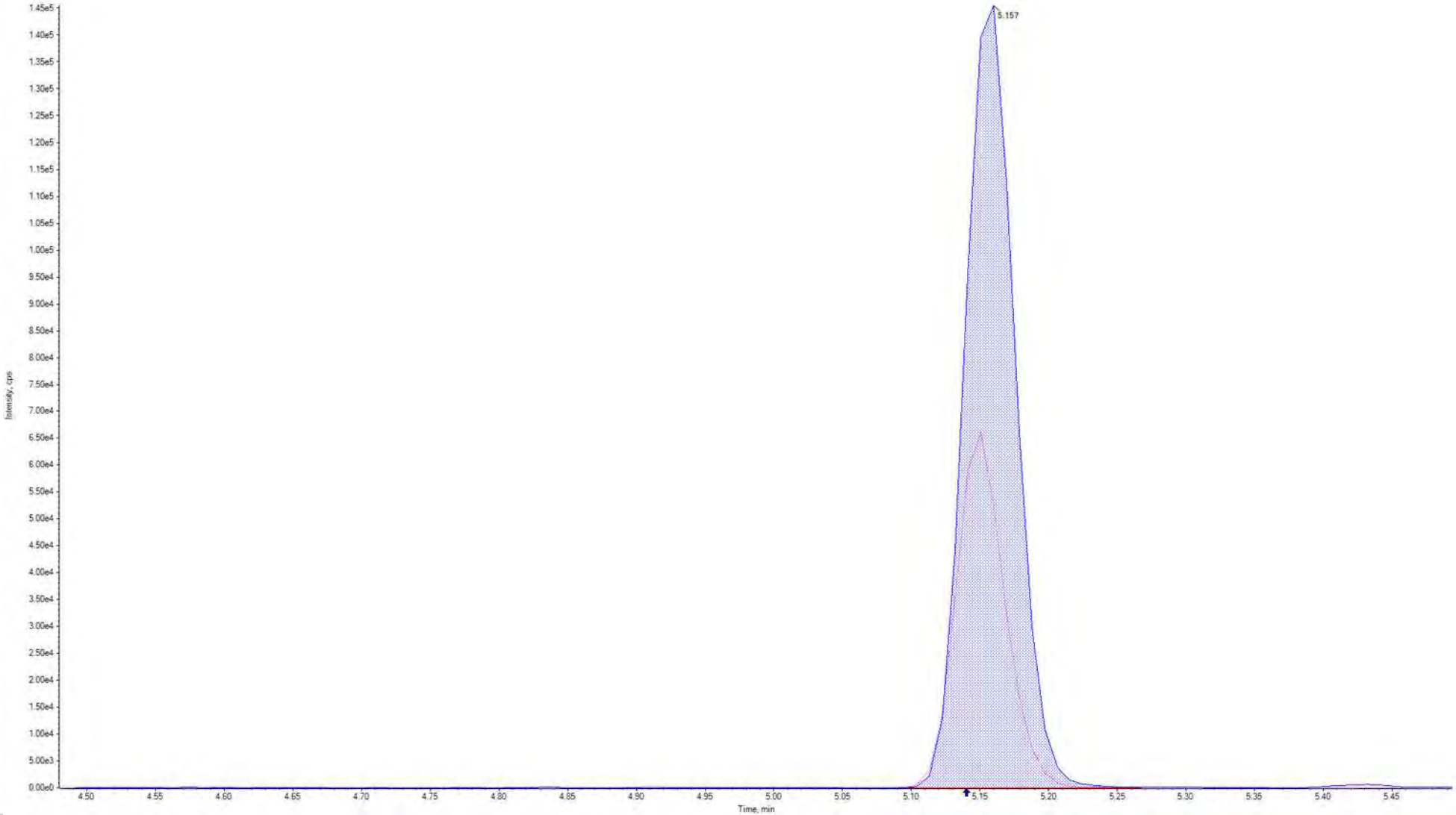
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

4:2FTS
Sample: WG1973357-3 S/N:3131.3 Points Across peak:28



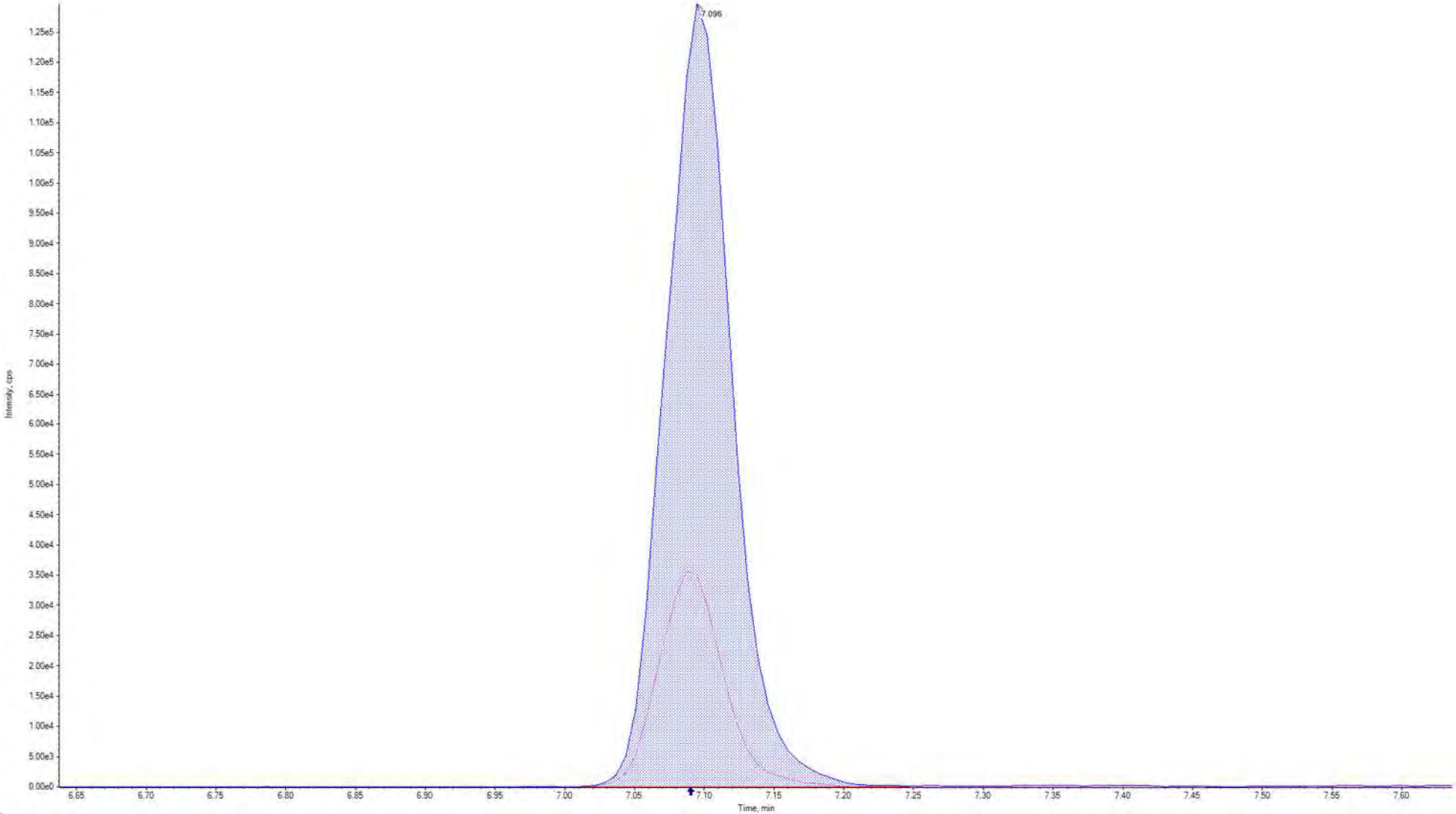
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

4:2FTS_2
Sample: WG1973357-3 S/N:12827.4 Points Across peak:22



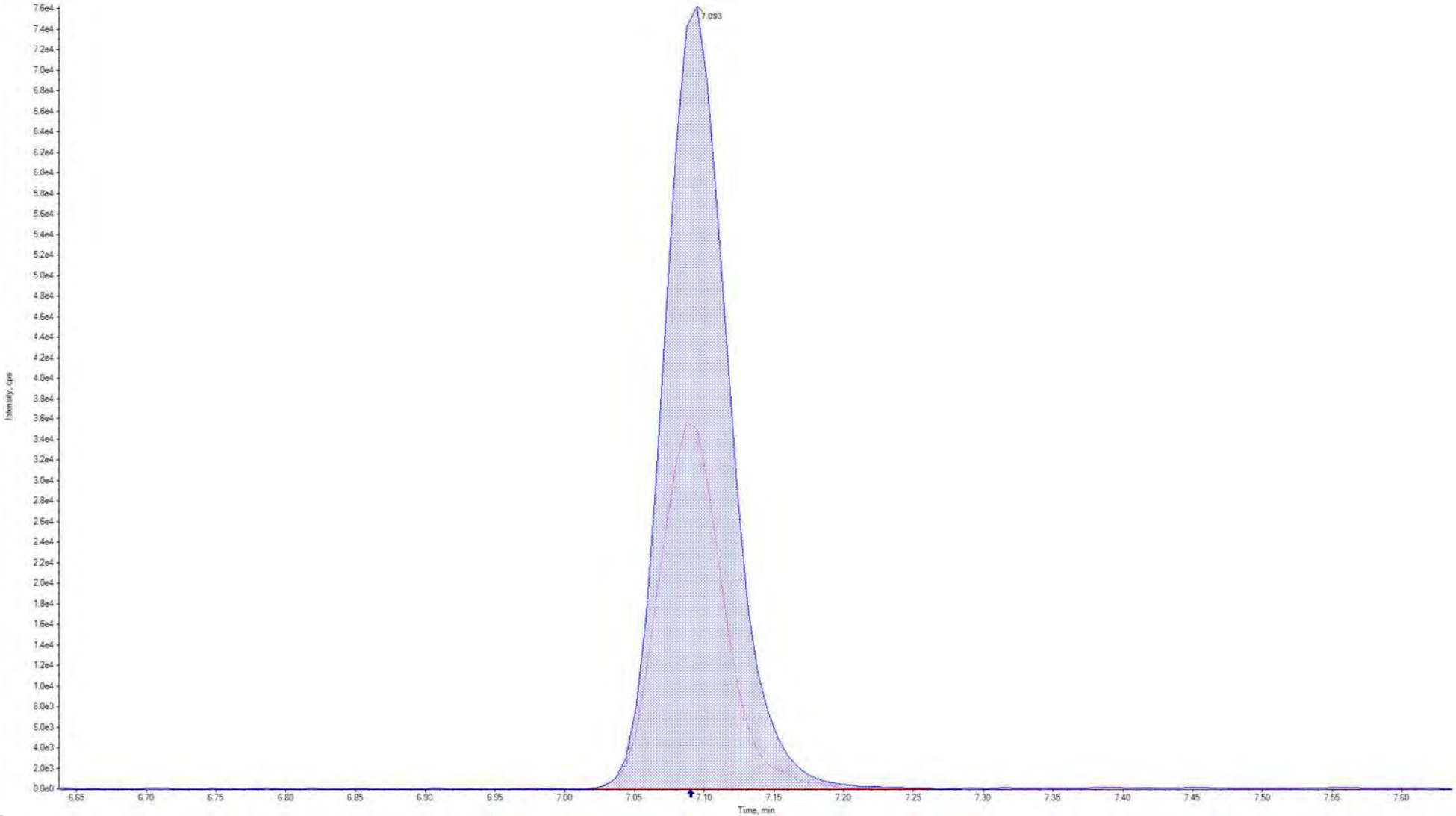
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

6:2FTS
Sample: WG1973357-3 S/N:1986.2 Points Across peak:37



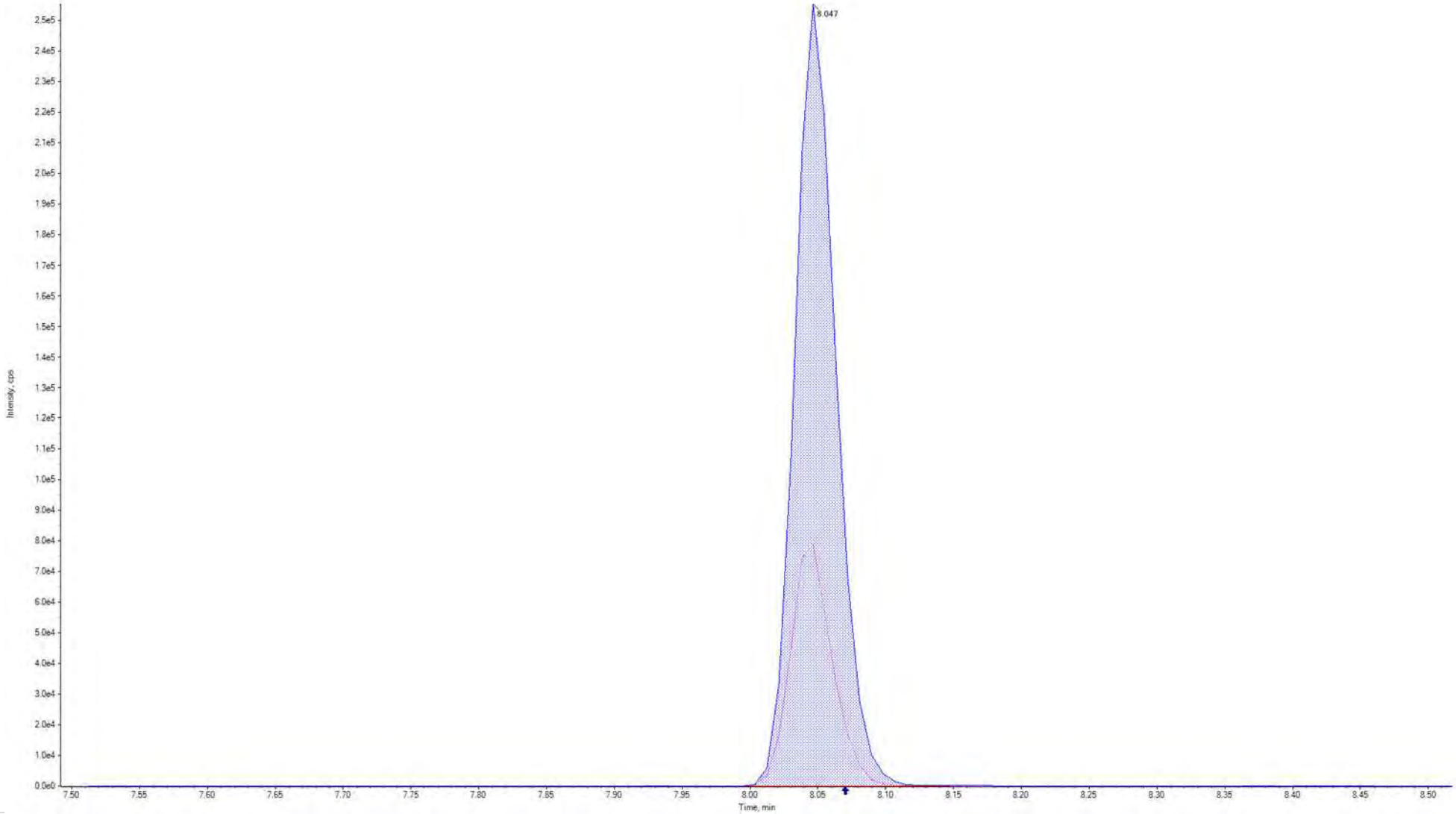
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

6:2FTS_2
Sample: WG1973357-3 S/N:28171.1 Points Across peak:40



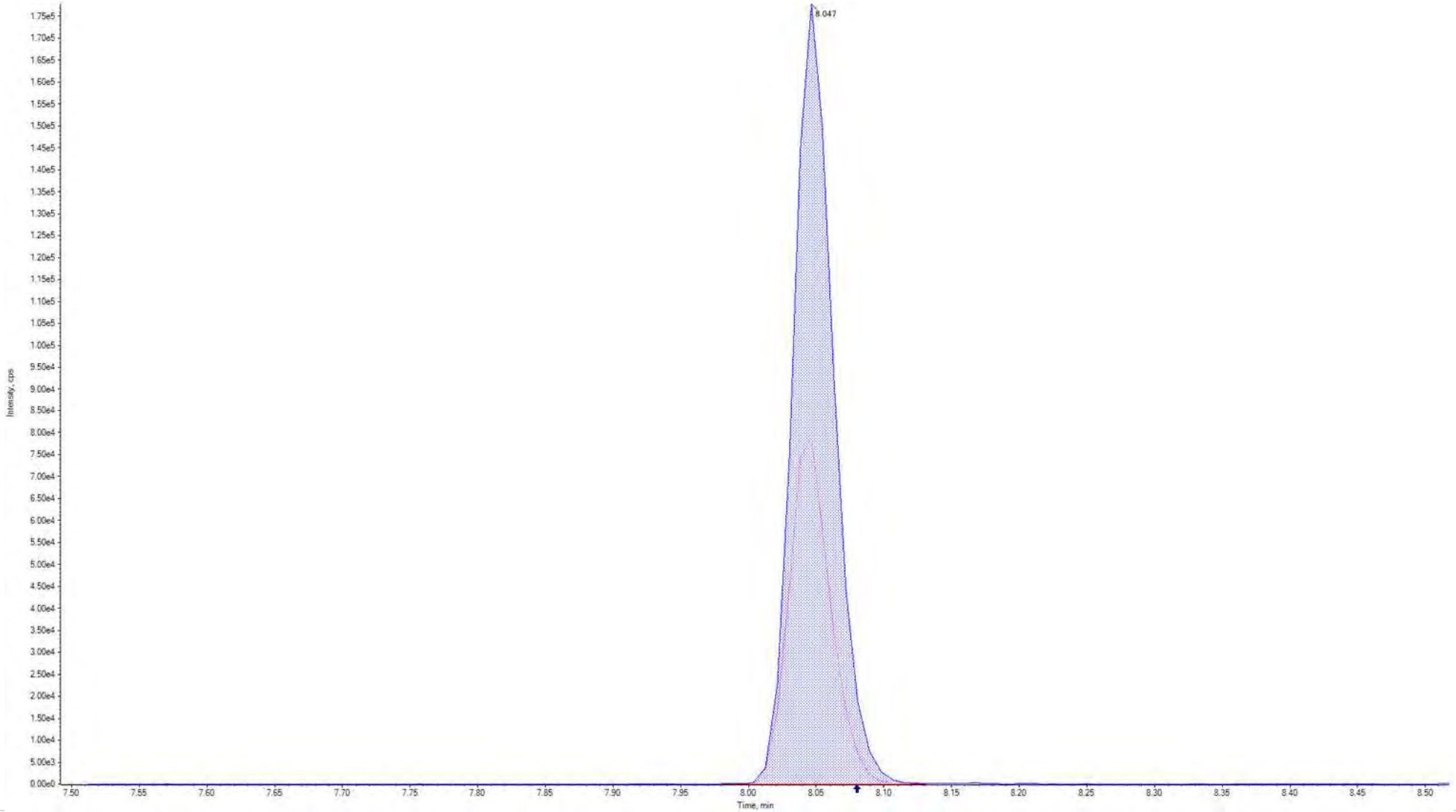
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

8:2FTS
Sample: WG1973357-3 S/N:2333099.7 Points Across peak:24



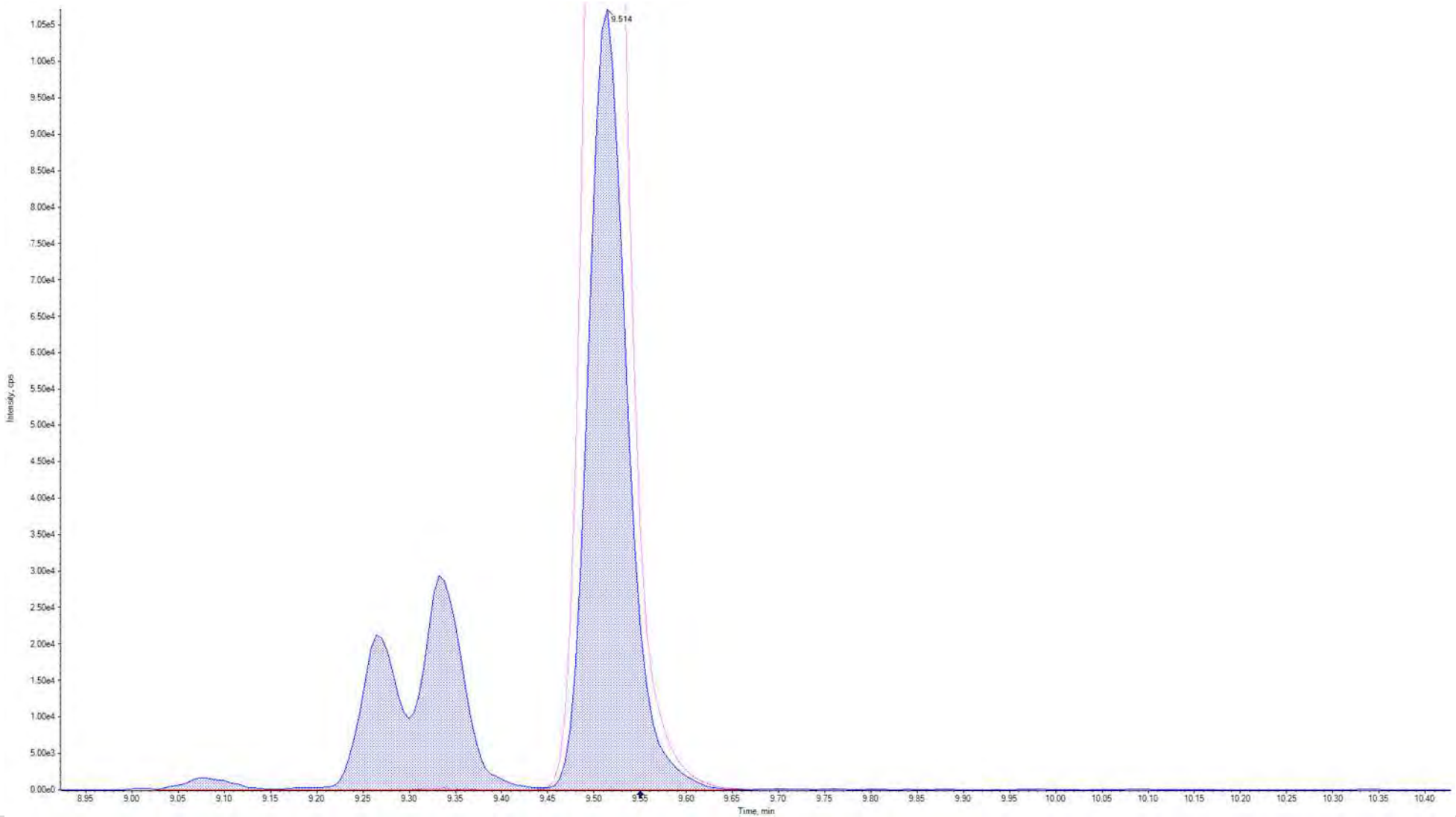
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

8:2FTS_2
Sample: WG1973357-3 S/N:3054.7 Points Across peak:20



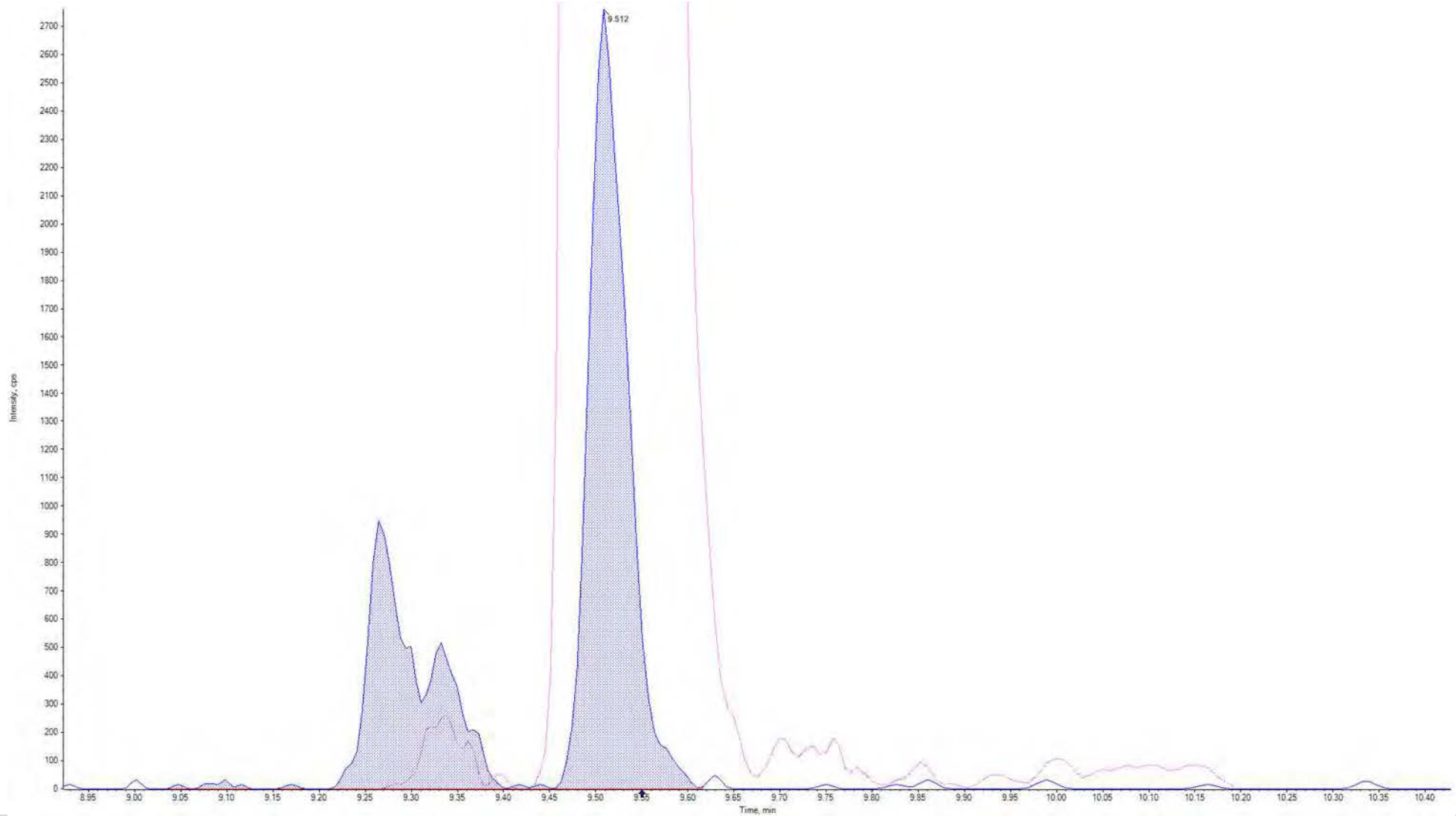
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOSA
Sample: WG1973357-3 S/N:1178491.7 Points Across peak:116



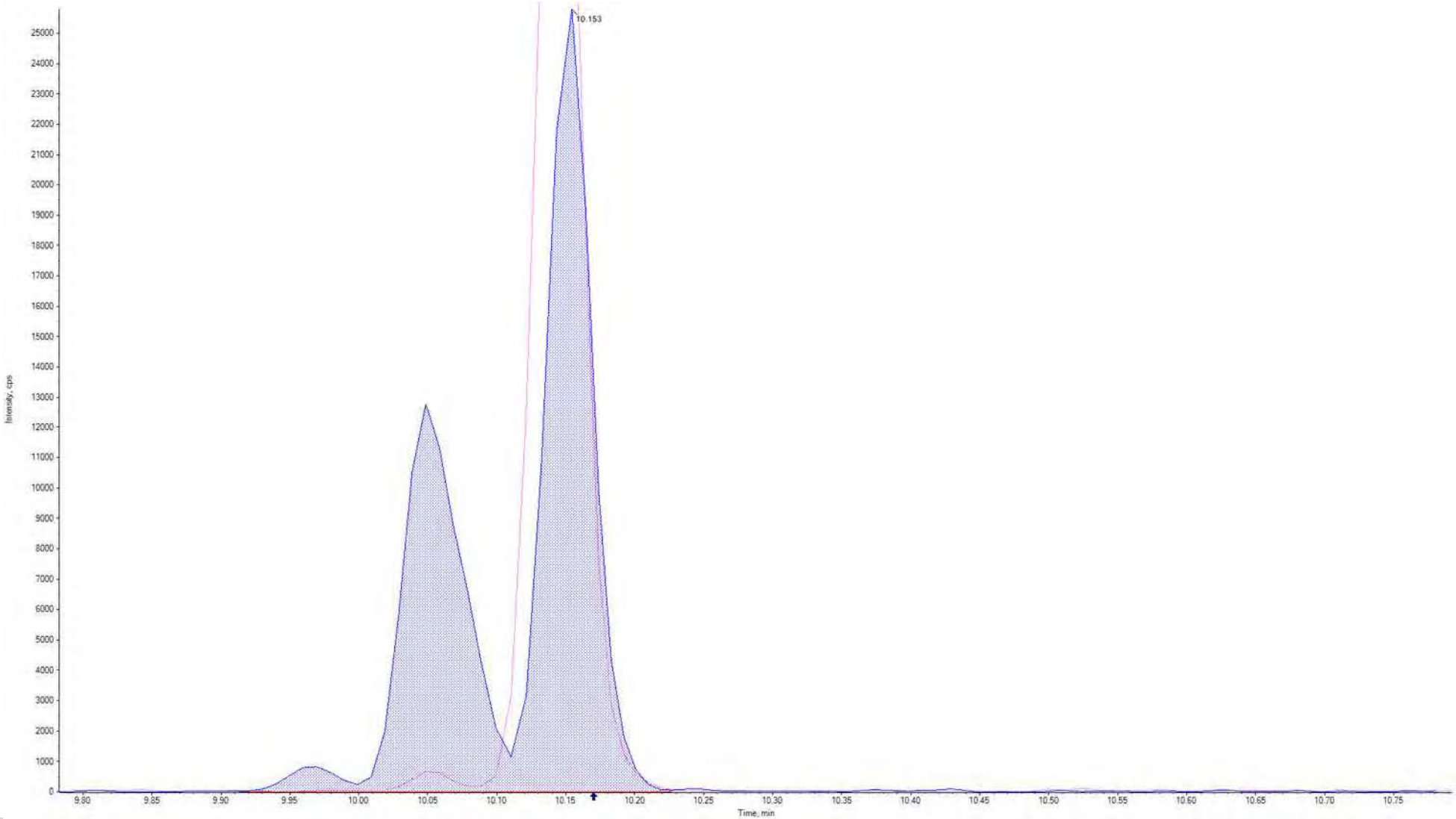
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOSA_2
Sample: WG1973357-3 S/N:555.4 Points Across peak:108



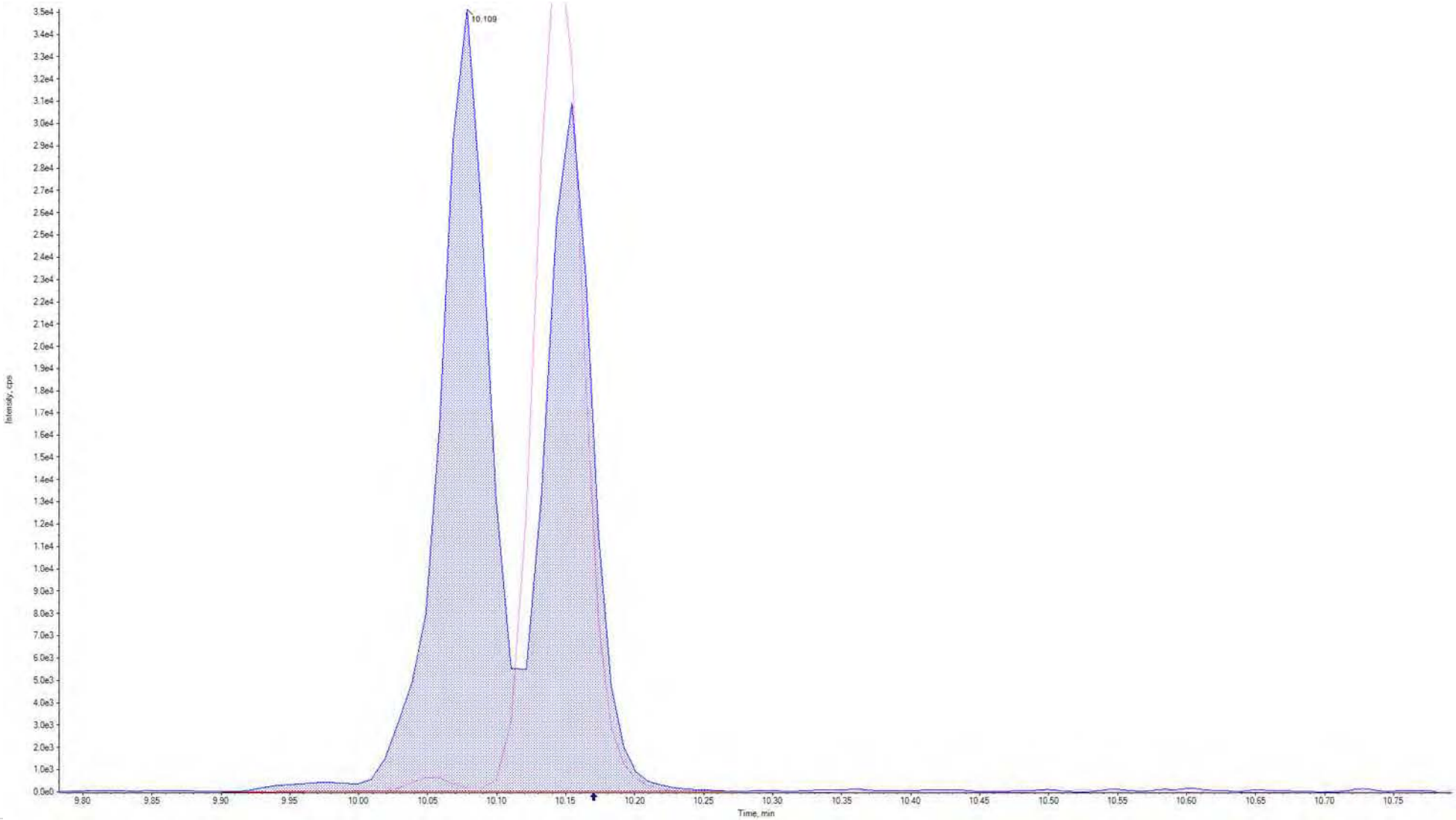
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSA
Sample: WG1973357-3 S/N:274549.2 Points Across peak:33



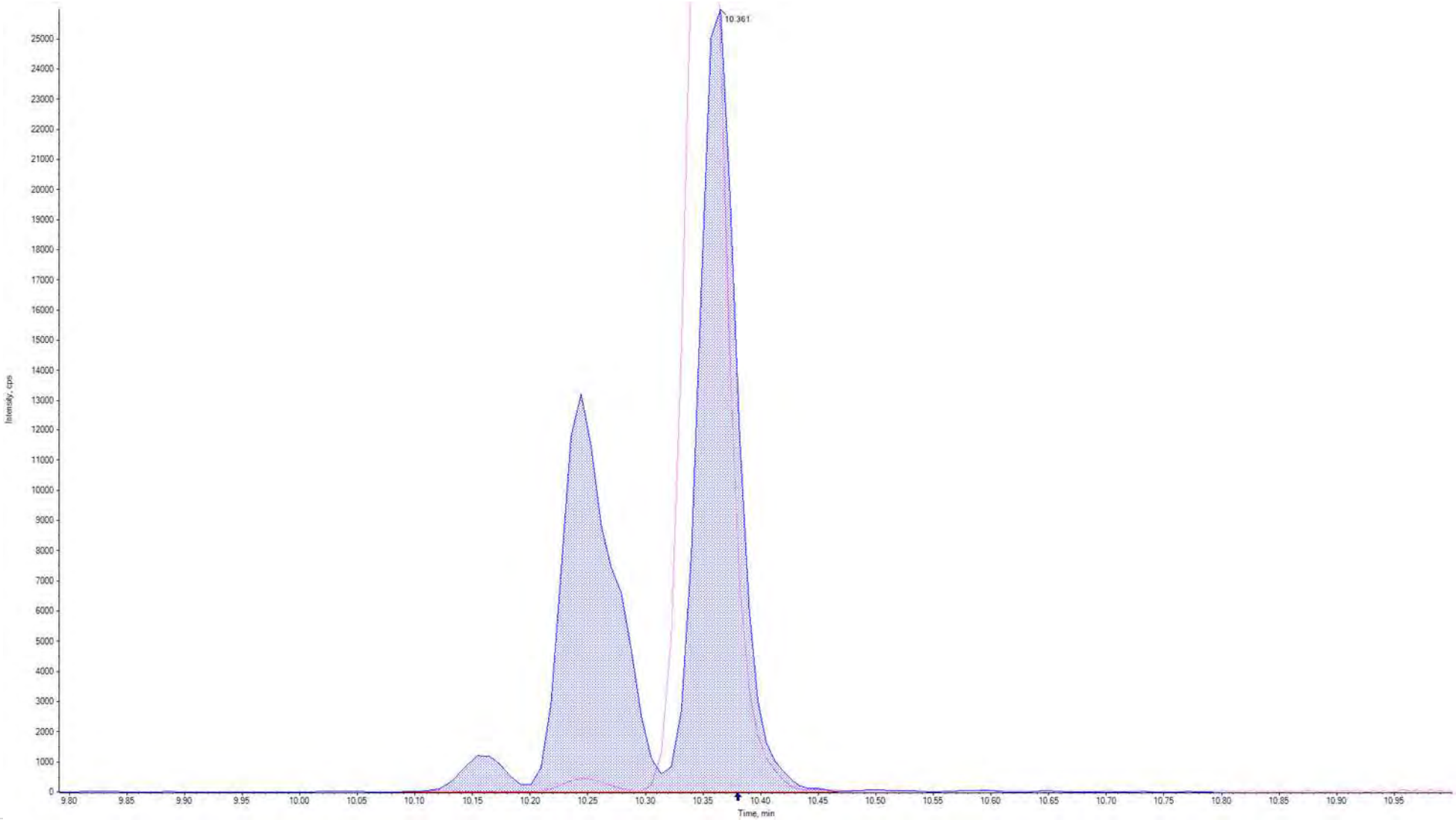
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSA_2
Sample: WG1973357-3 S/N:2415.8 Points Across peak:40



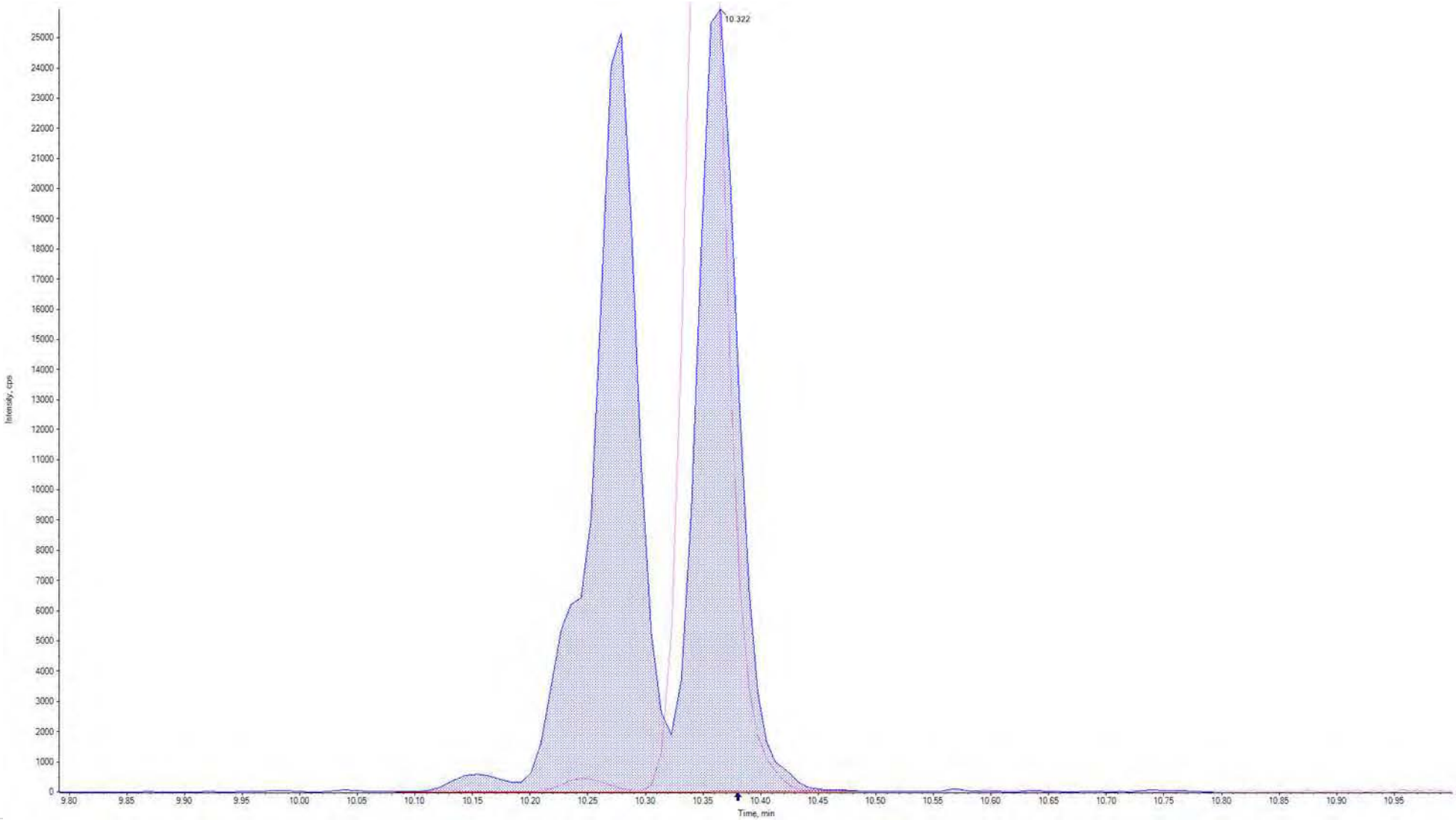
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSA
Sample: WG1973357-3 S/N:657.7 Points Across peak:48



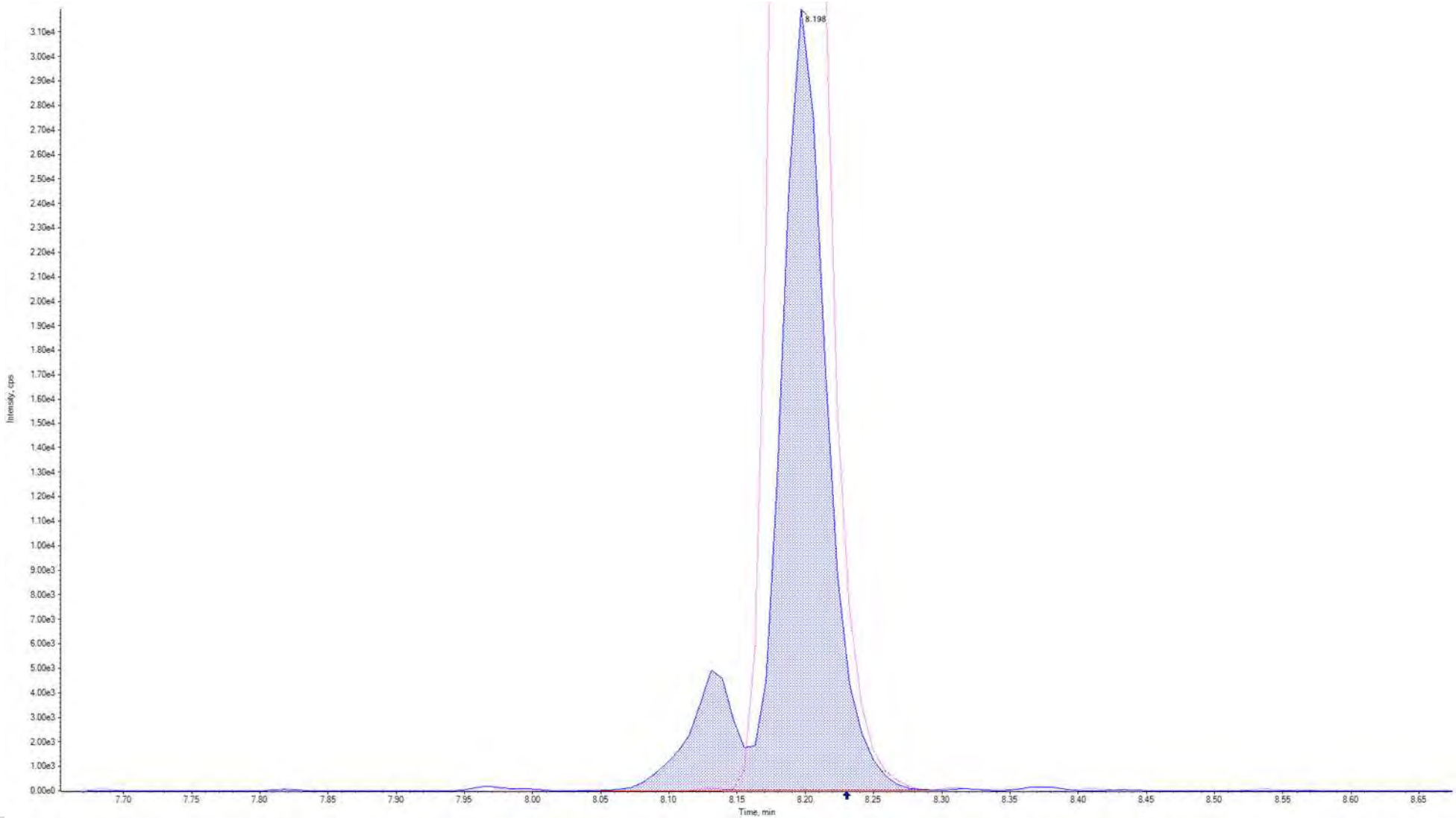
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSA_2
Sample: WG1973357-3 S/N:529.8 Points Across peak:52



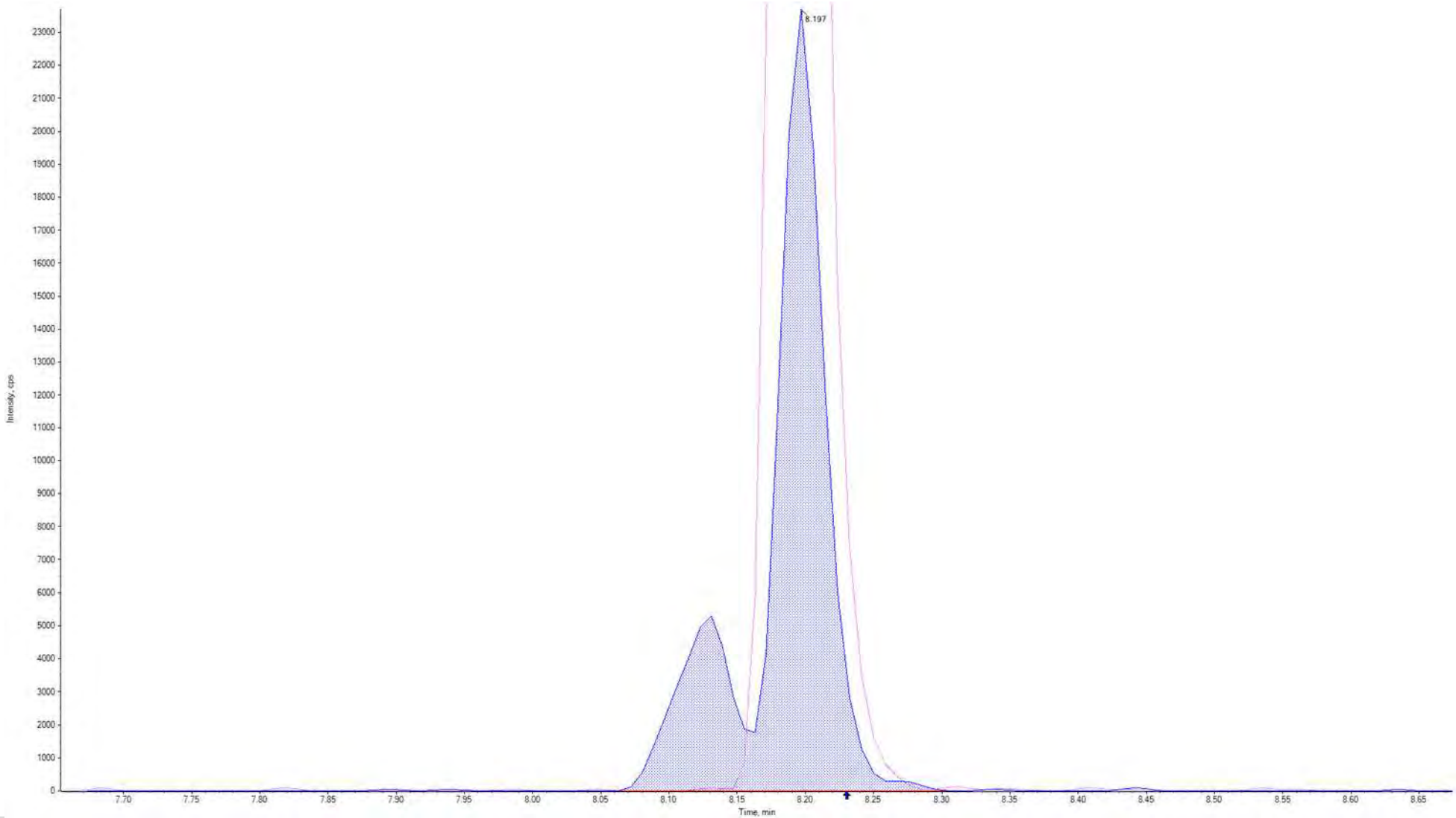
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSAA
Sample: WG1973357-3 S/N:564.3 Points Across peak:31



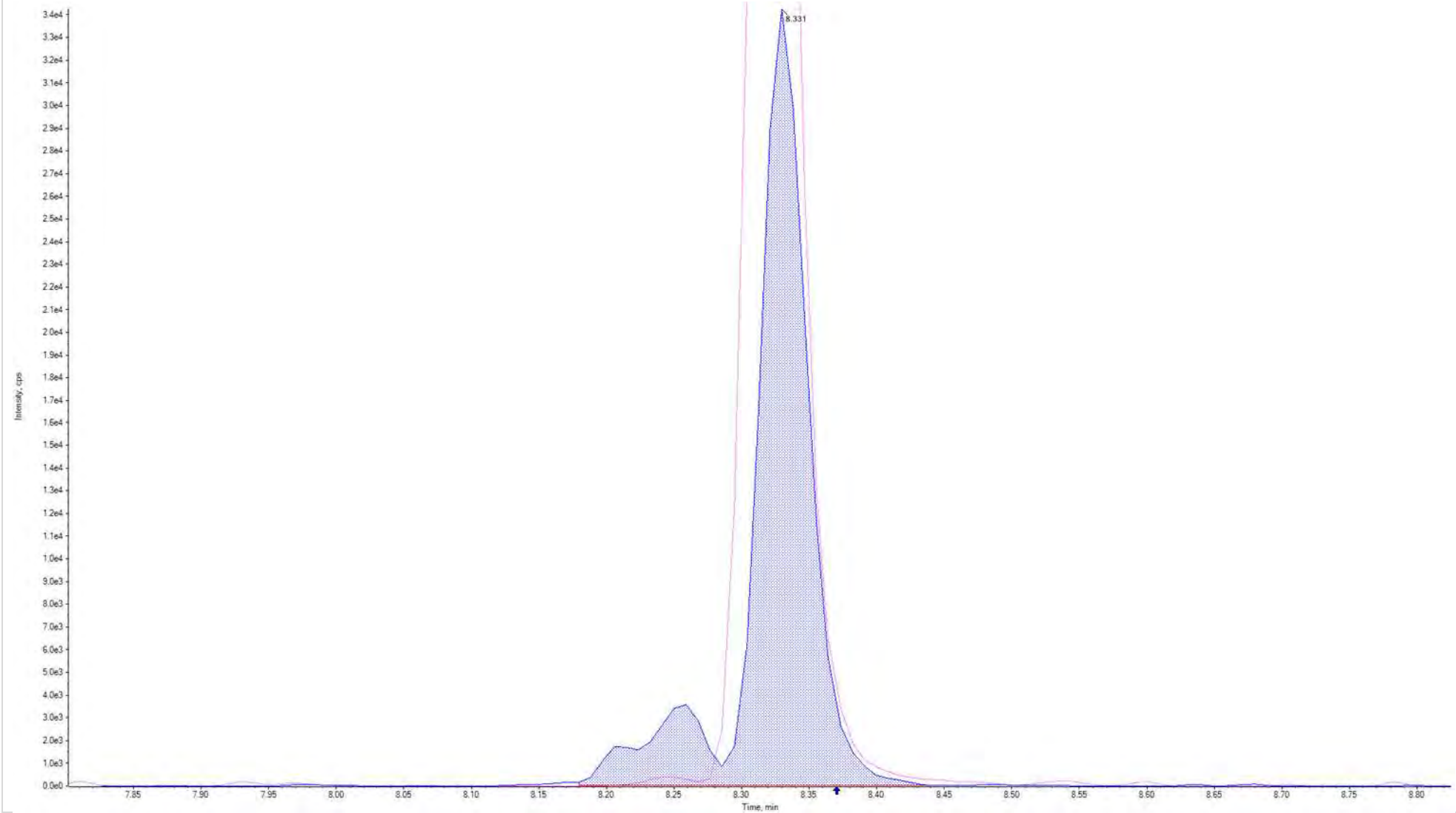
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSAA_2
Sample: WG1973357-3 S/N:684.4 Points Across peak:32



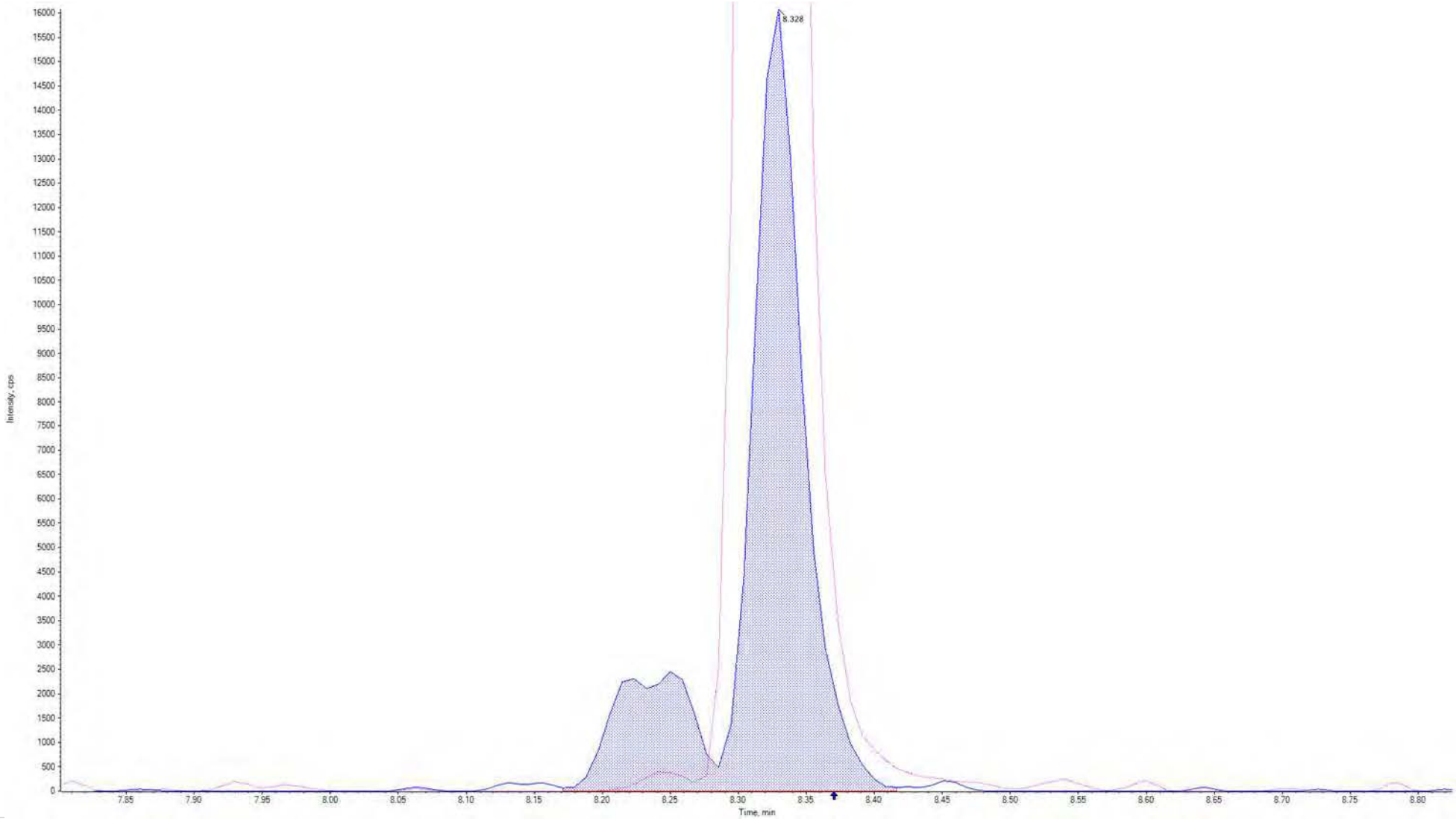
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSAA
Sample: WG1973357-3 S/N:763.8 Points Across peak:31



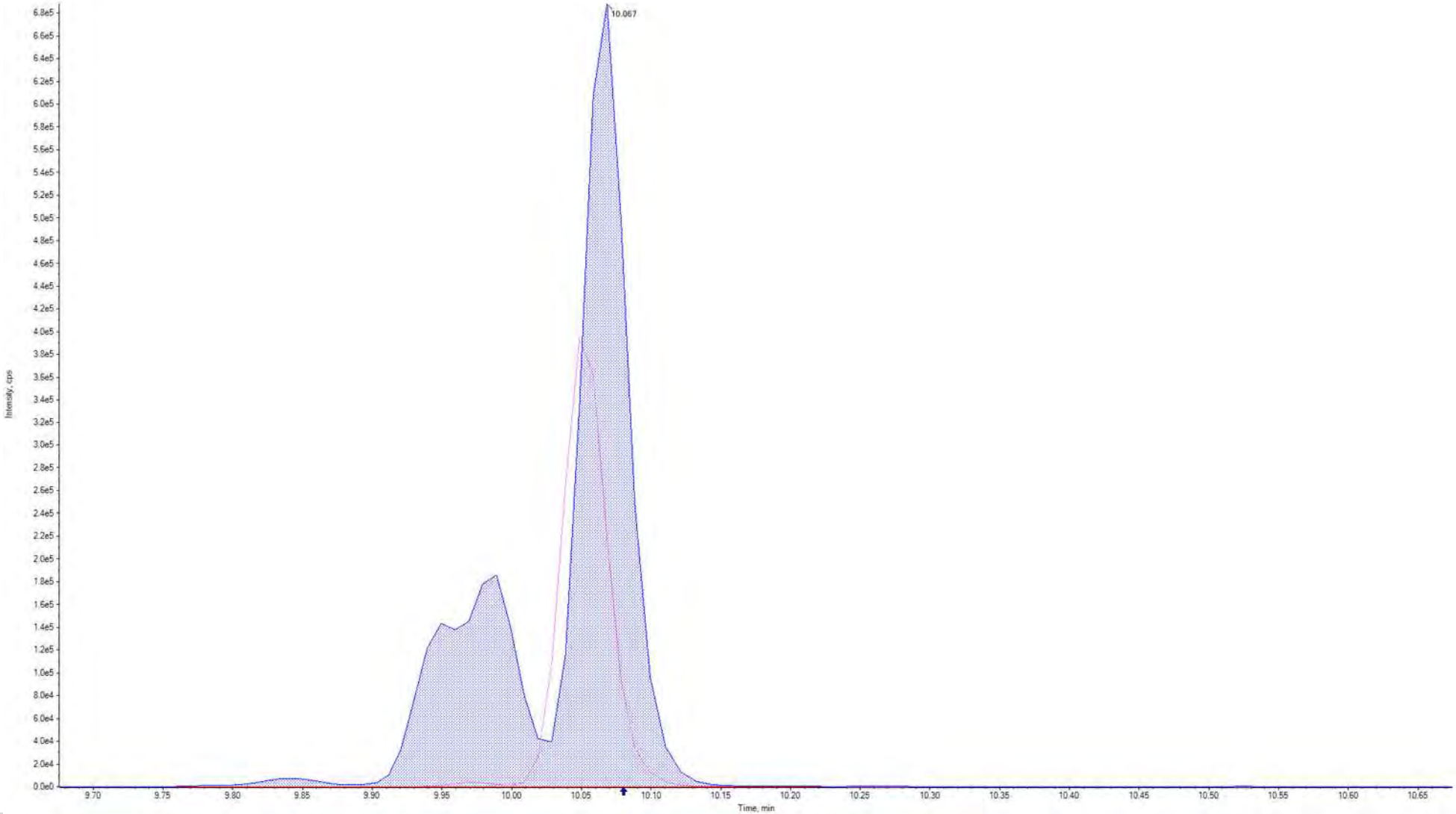
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSAA_2
Sample: WG1973357-3 S/N:324.2 Points Across peak:29



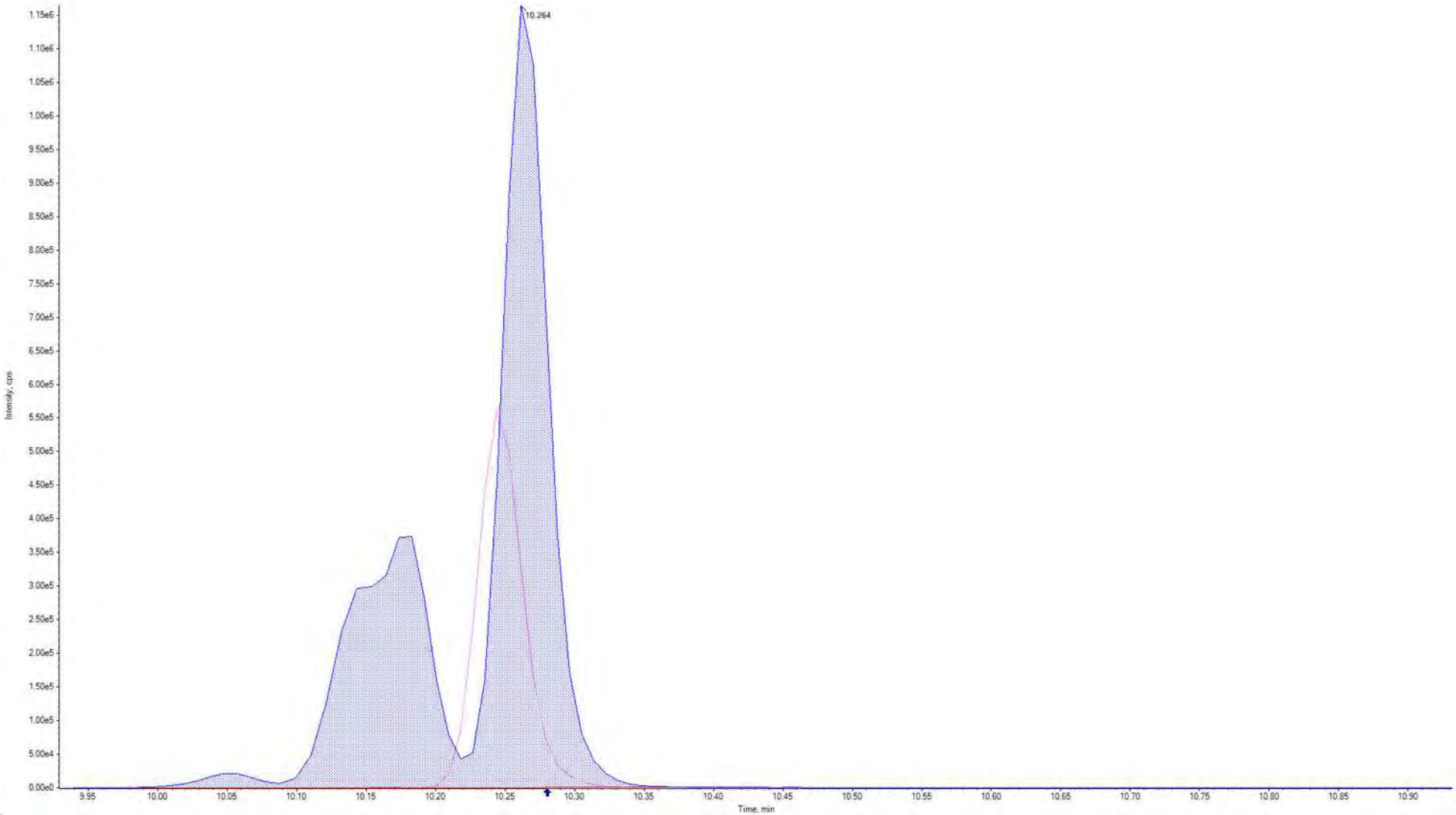
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSE
Sample: WG1973357-3 S/N:4838.4 Points Across peak:56



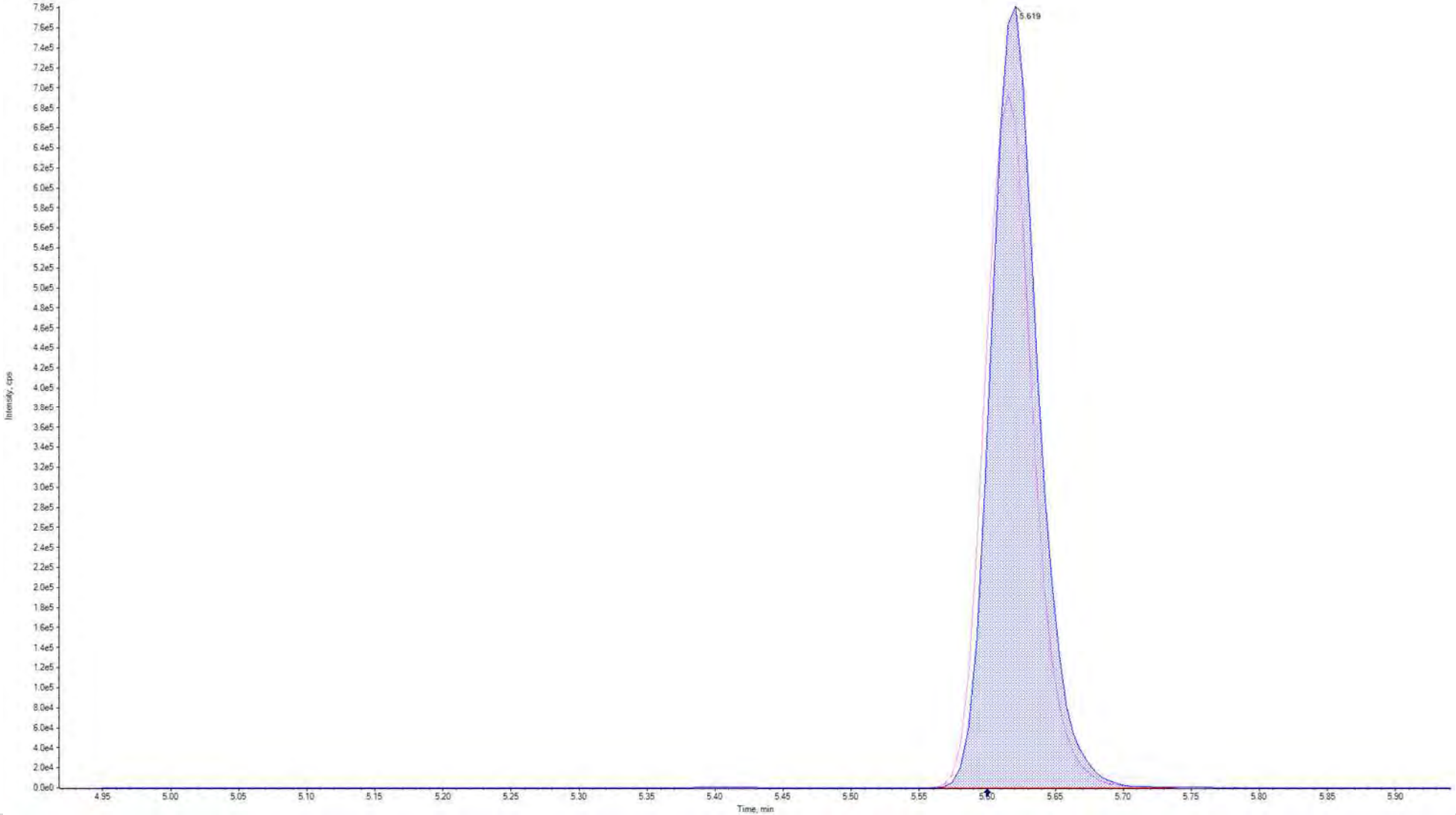
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSE
Sample: WG1973357-3 S/N:3566.6 Points Across peak:50



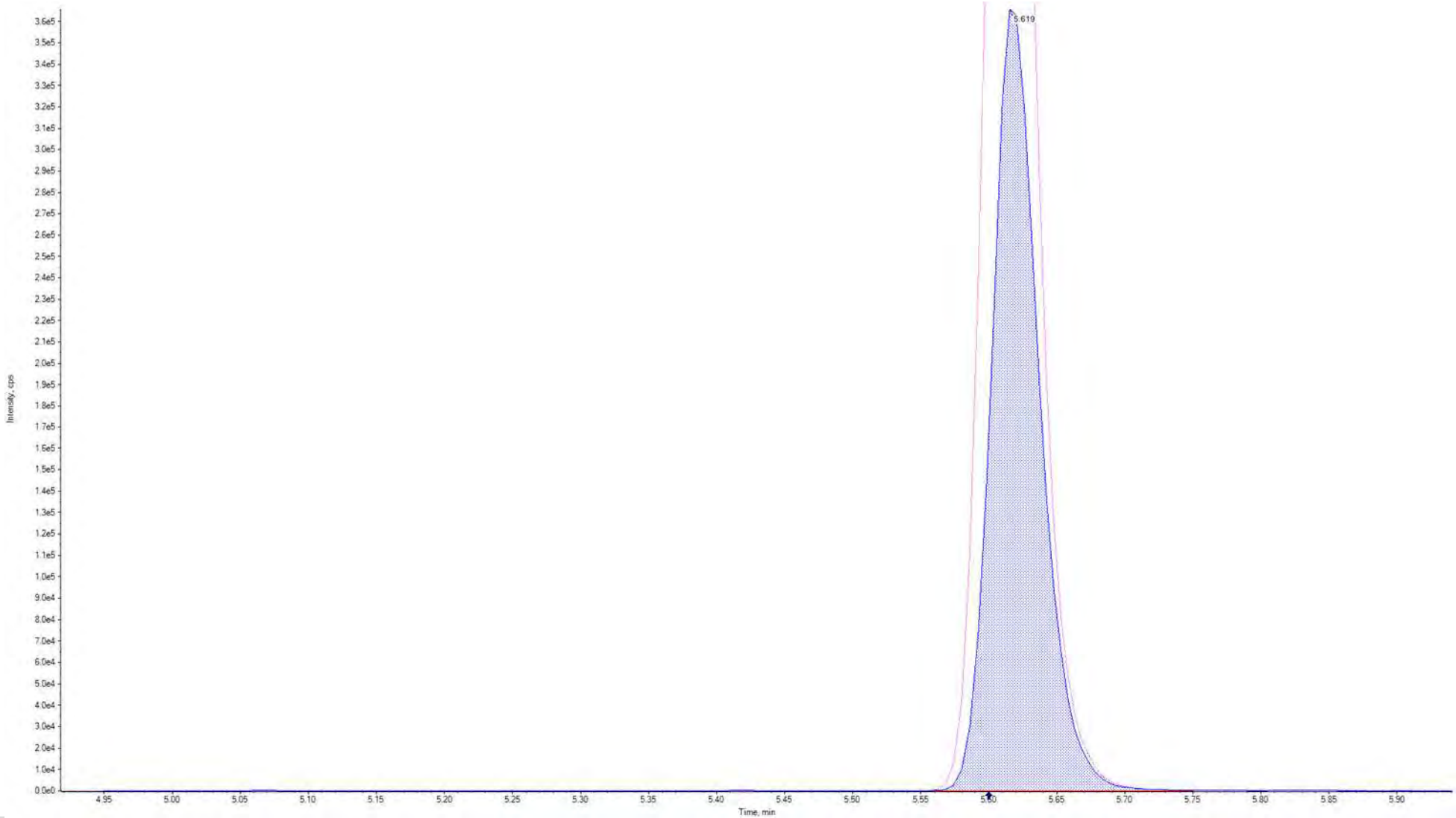
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

HFPO-DA
Sample: WG1973357-3 S/N:45150.5 Points Across peak:38



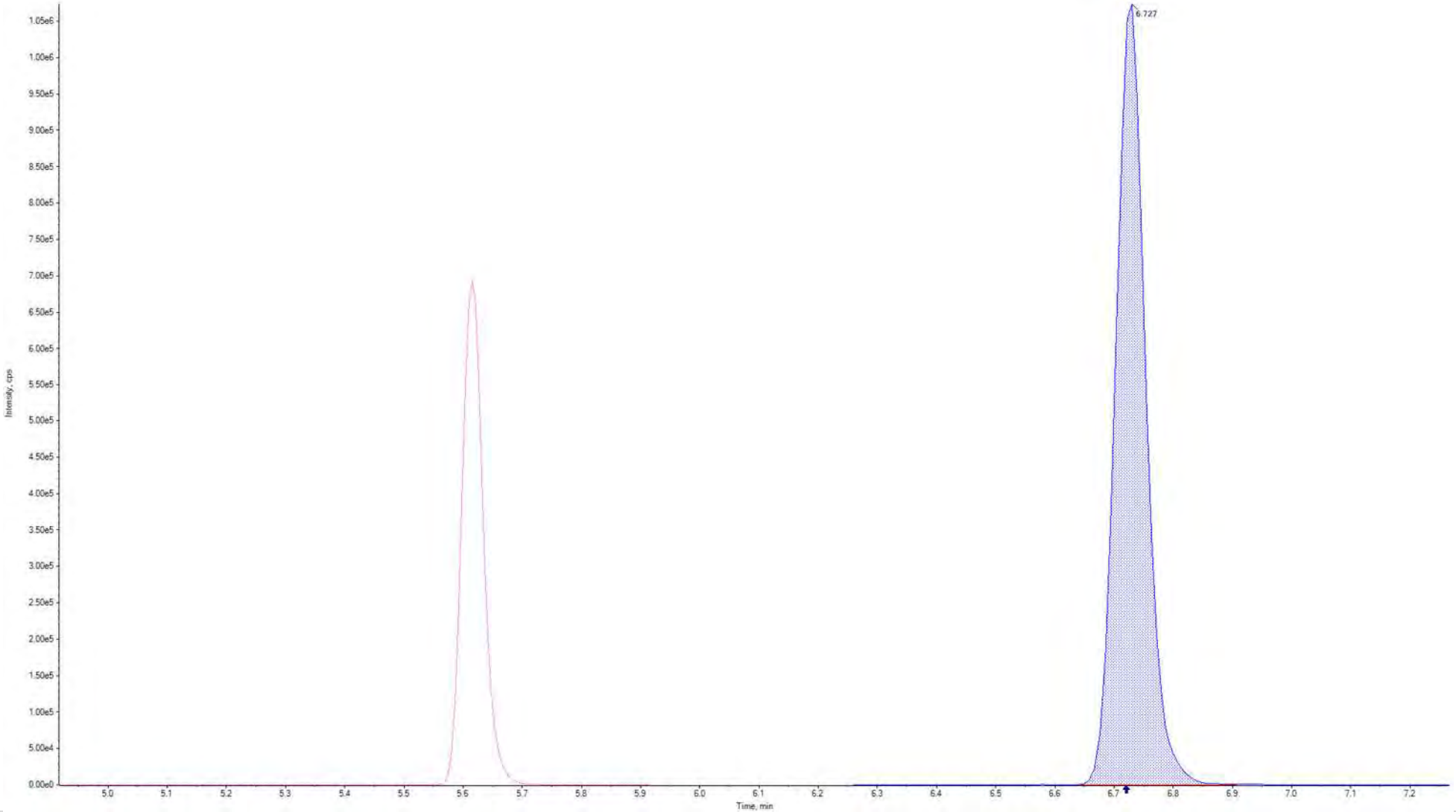
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

HFPO-DA_2
Sample: WG1973357-3 S/N:3629.8 Points Across peak:44



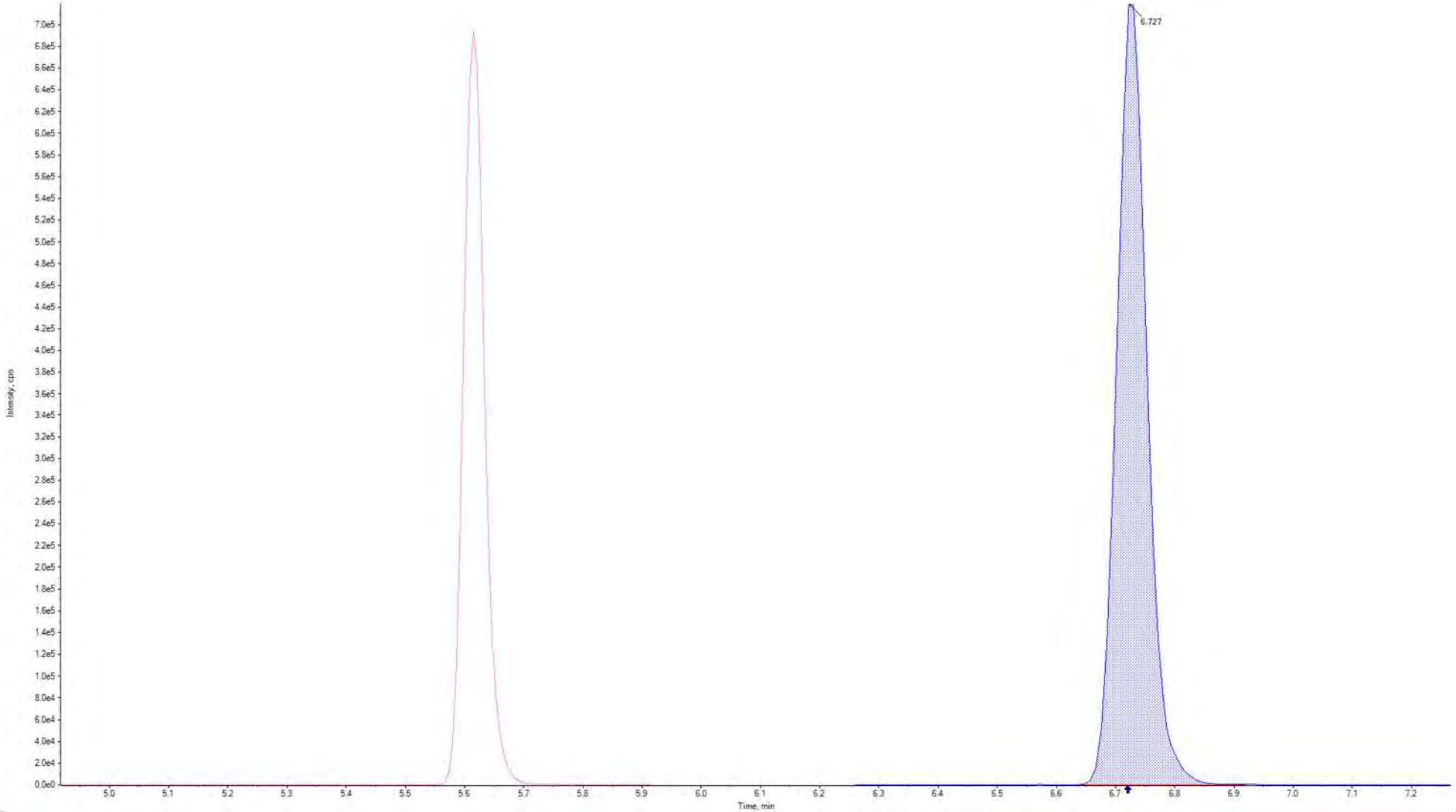
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

ADONA
Sample: WG1973357-3 S/N:14478.4 Points Across peak:39



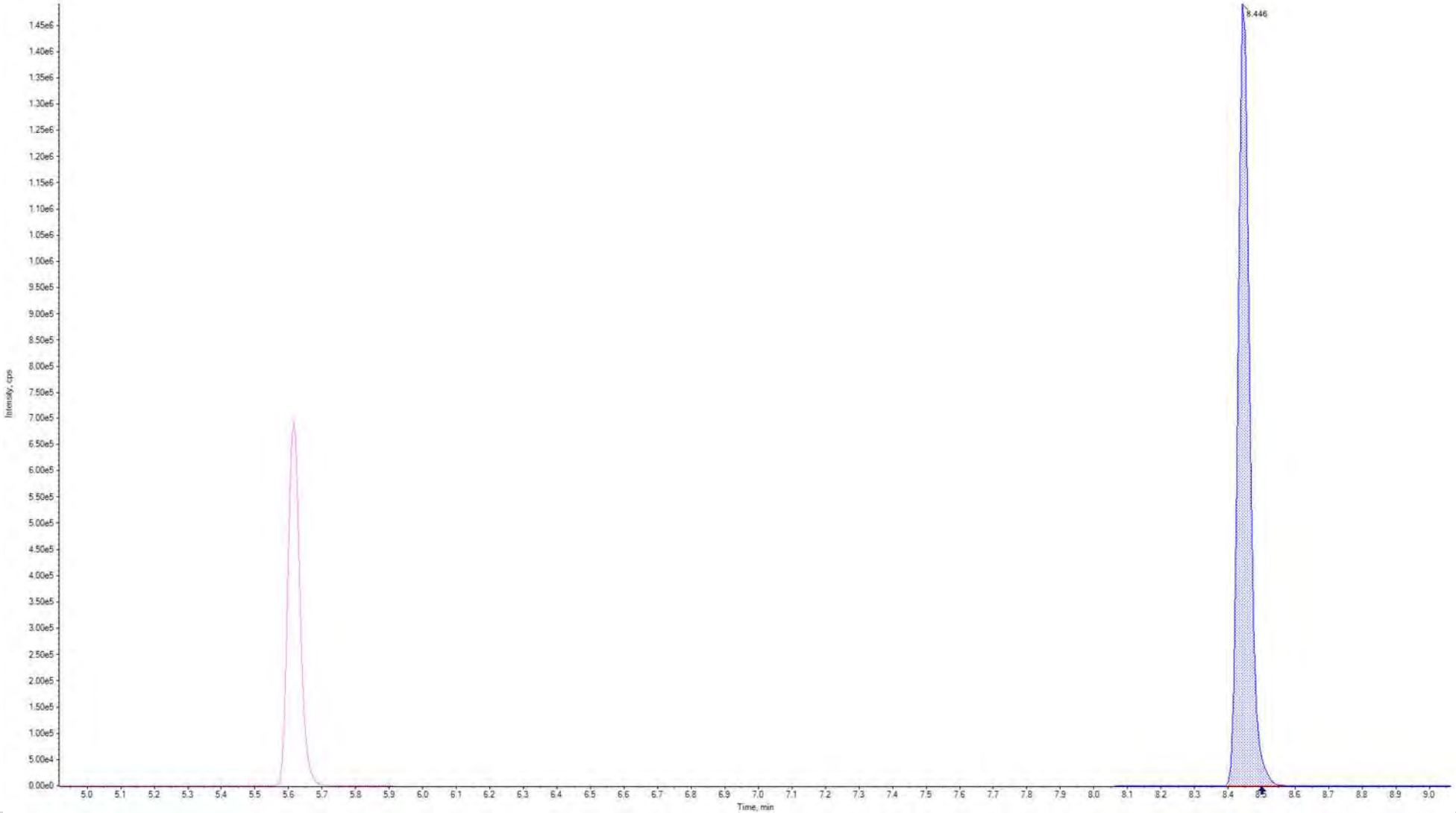
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

ADONA_2
Sample: WG1973357-3 S/N:4134716.7 Points Across peak:42



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

9Cl-PF3ONS
Sample: WG1973357-3 S/N:98011.9 Points Across peak:28



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

9Cl-PF3ONS_2
Sample: WG1973357-3 S/N:22165.7 Points Across peak:30

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

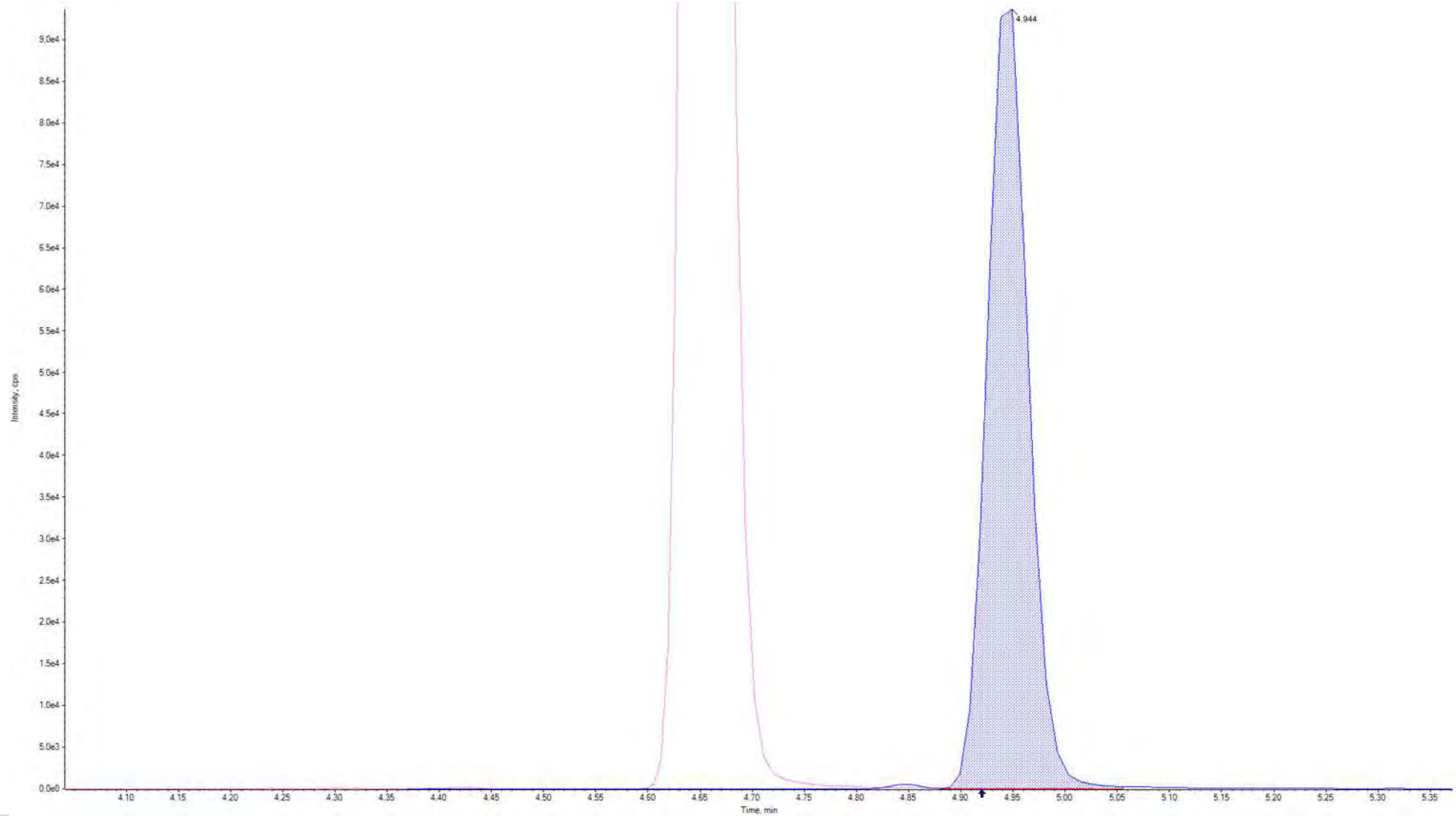
11Cl-PF3OUdS
Sample: WG1973357-3 S/N:5839683.4 Points Across peak:45

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

11Cl-PF3OUdS_2
Sample: WG1973357-3 S/N:44027863.8 Points Across peak:39

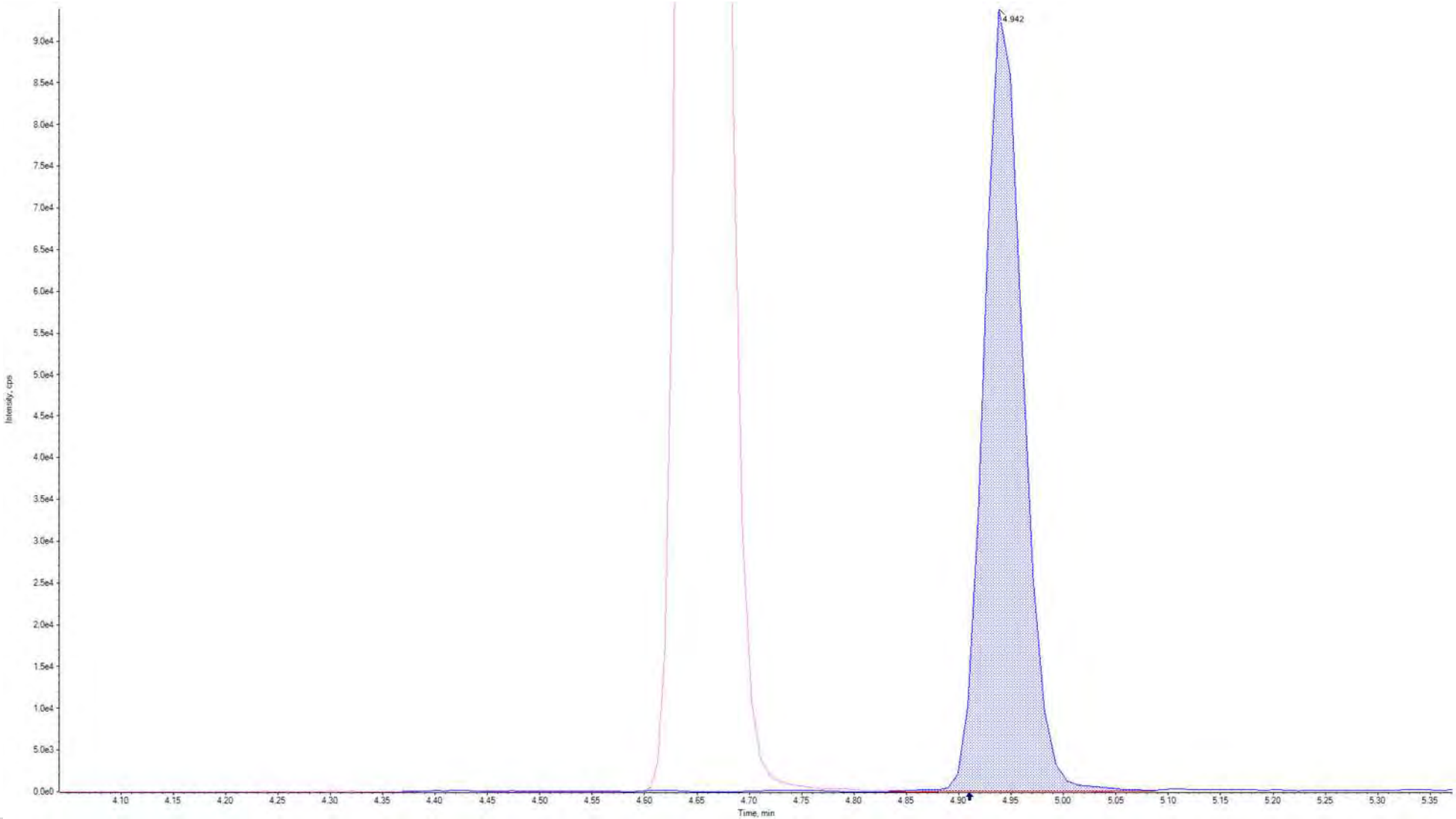
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

3:3FTCA
Sample: WG1973357-3 S/N:2503.8 Points Across peak:18



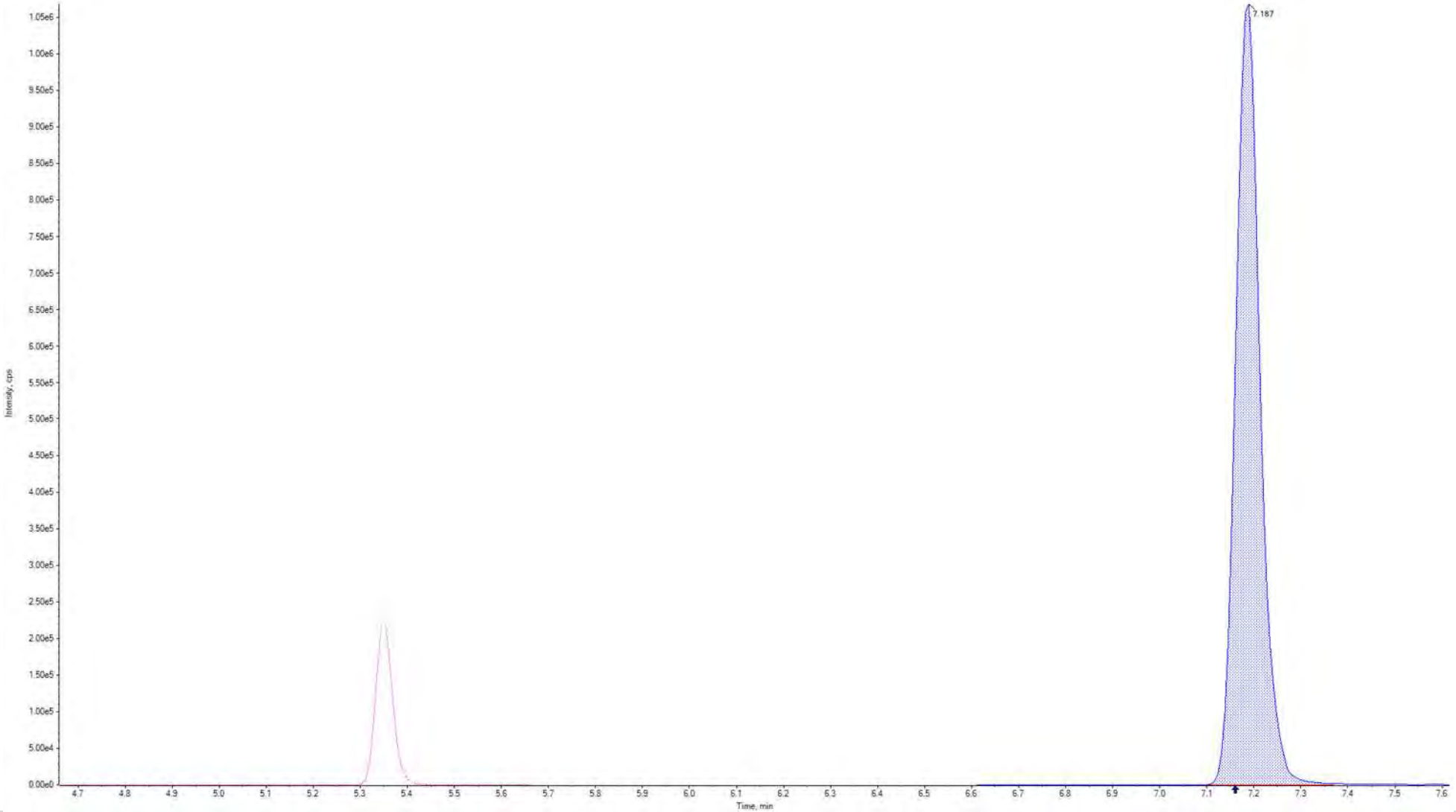
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

3:3FTCA_2
Sample: WG1973357-3 S/N:5713.0 Points Across peak:29



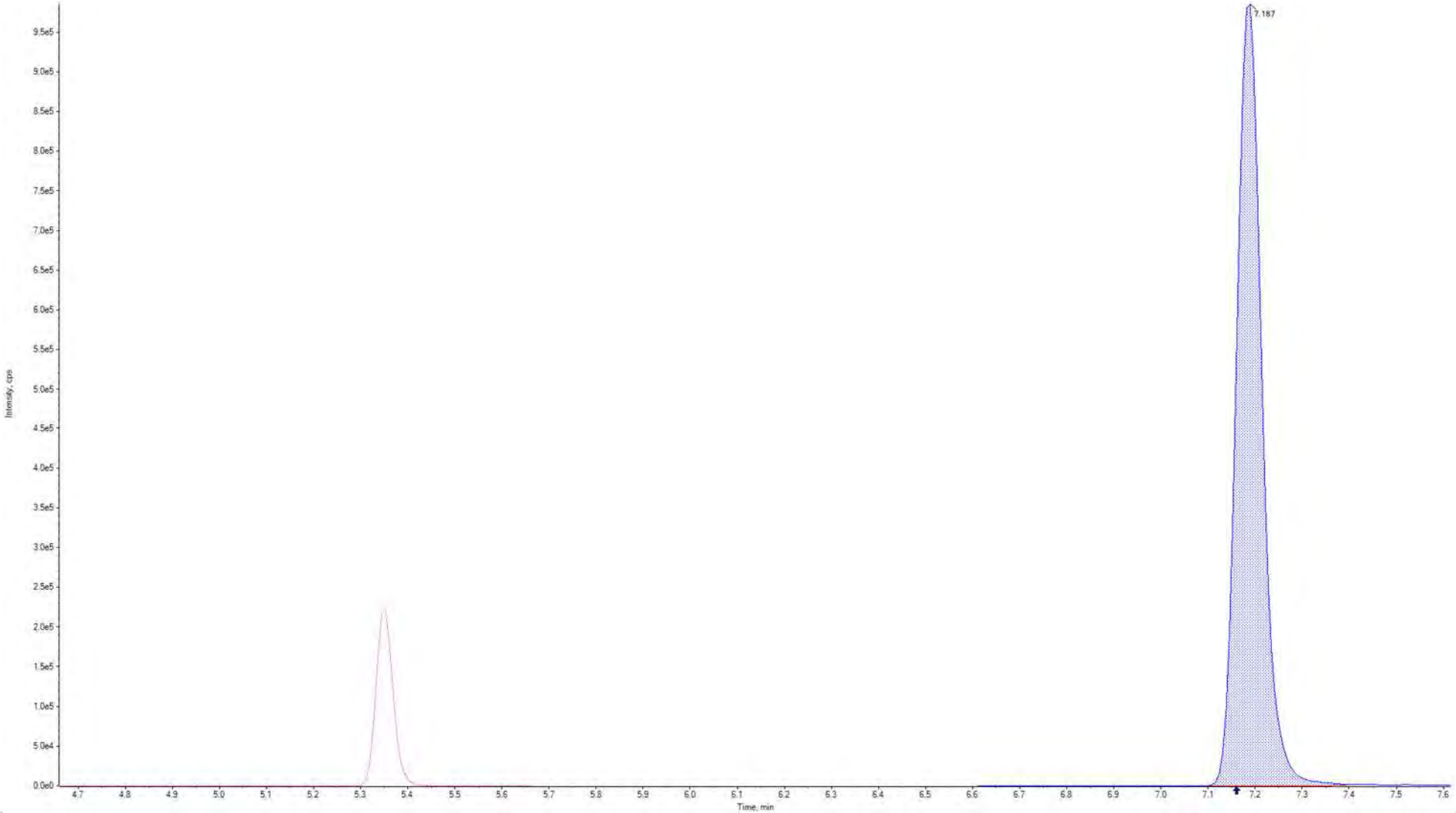
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

5:3FTCA
Sample: WG1973357-3 S/N:16326.2 Points Across peak:48



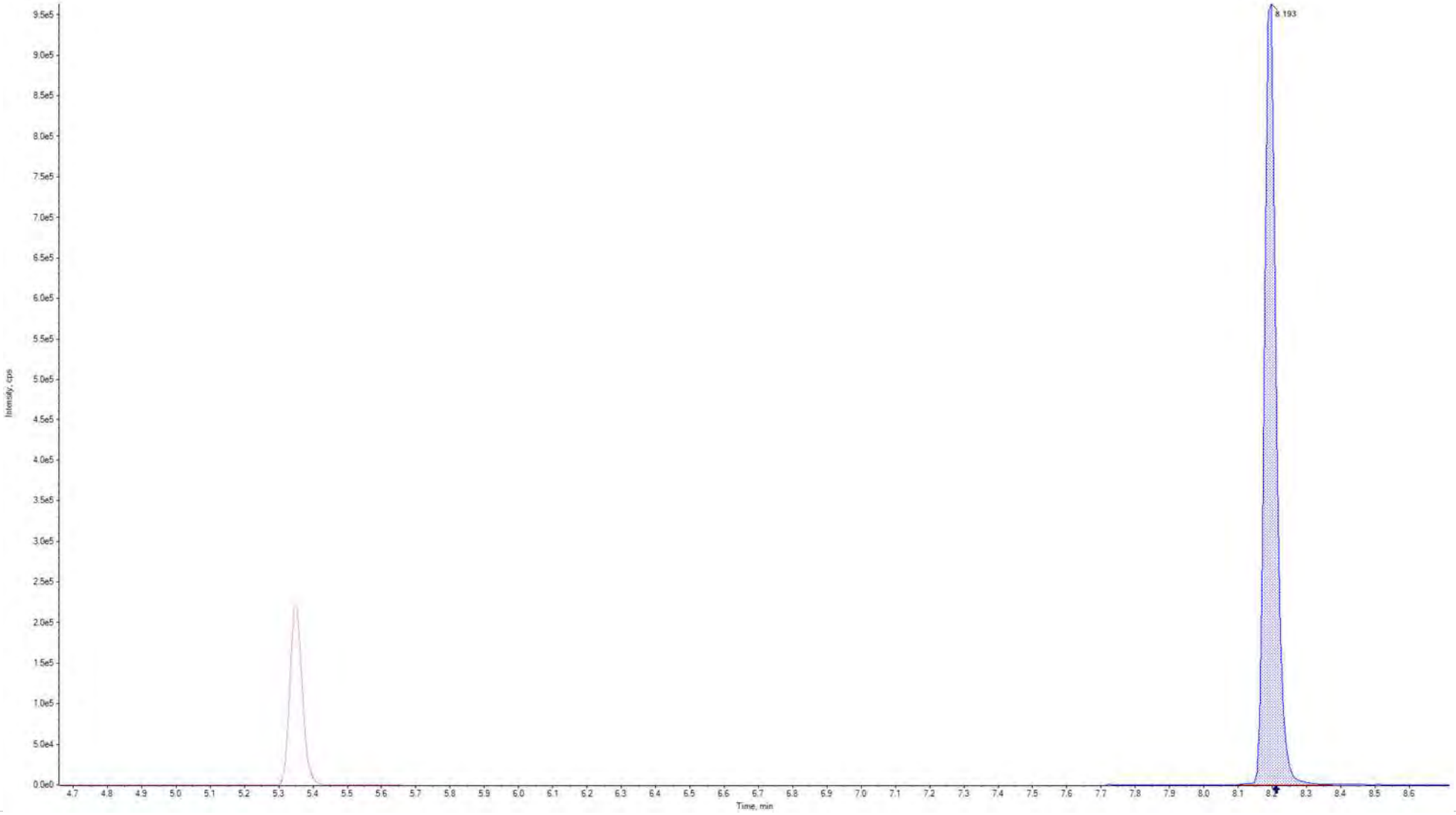
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

5:3FTCA_2
Sample: WG1973357-3 S/N:12753.3 Points Across peak:51



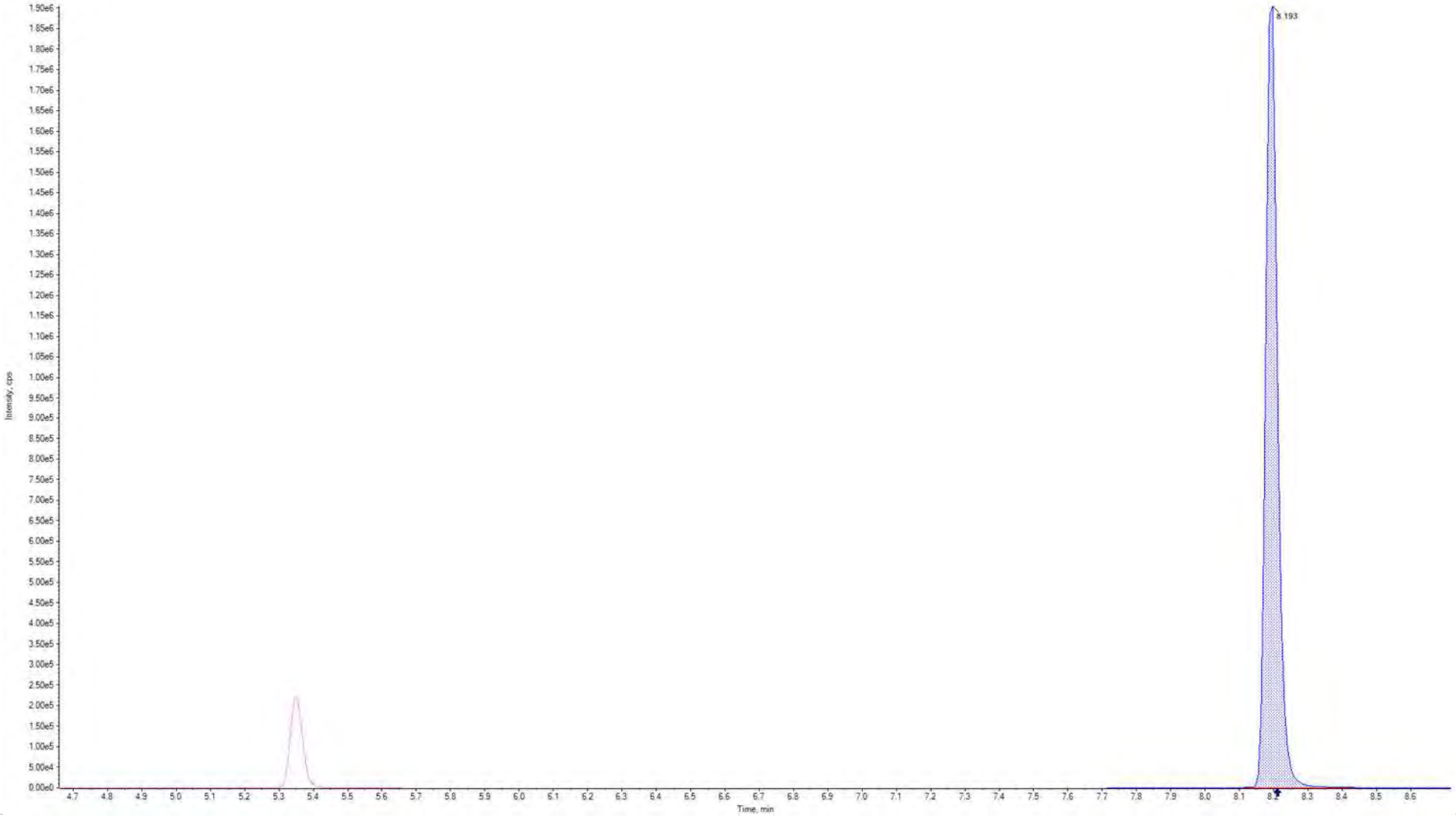
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

7:3FTCA
Sample: WG1973357-3 S/N:35169530.5 Points Across peak:37



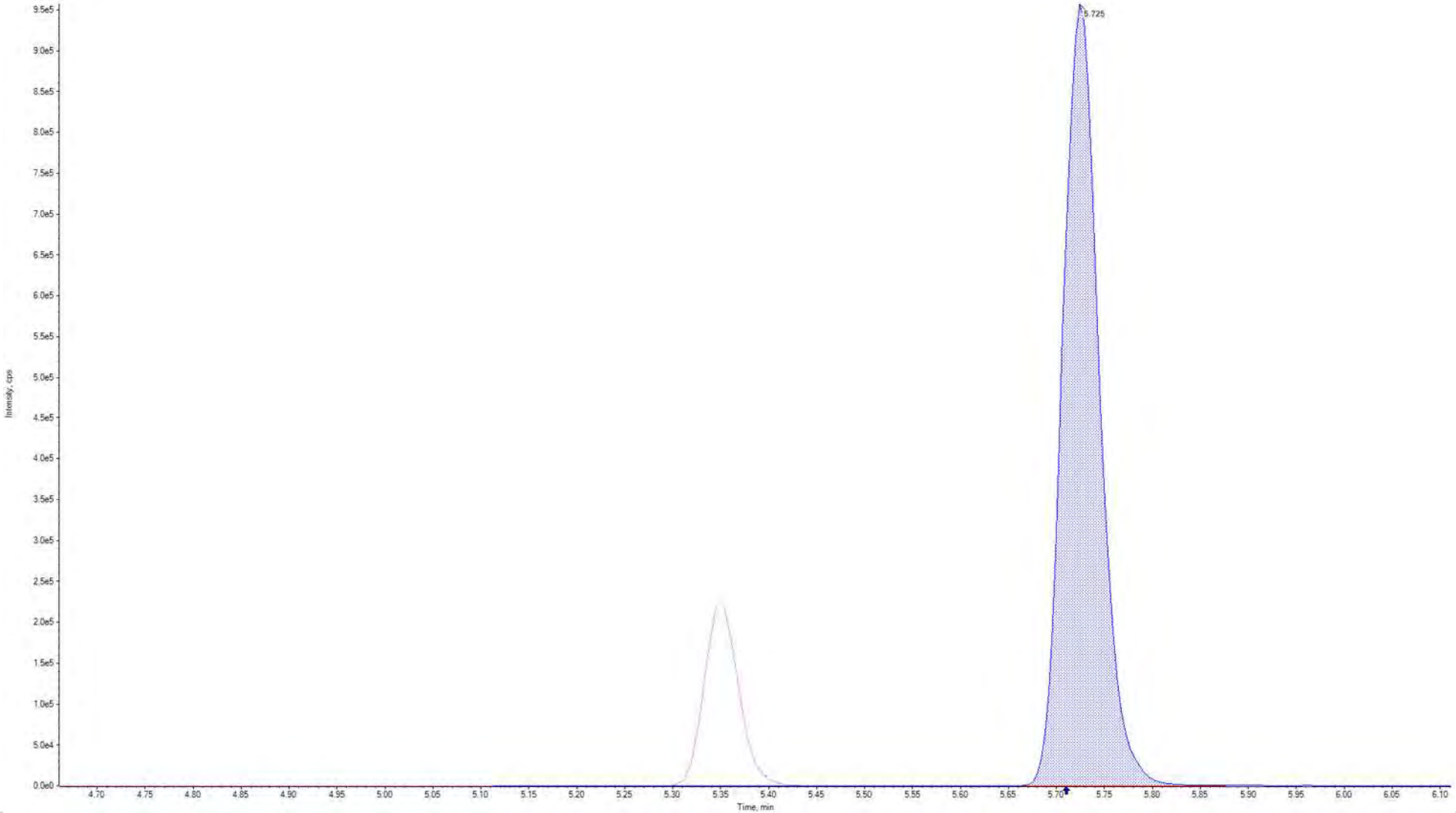
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

7:3FTCA_2
Sample: WG1973357-3 S/N:65632.7 Points Across peak:45



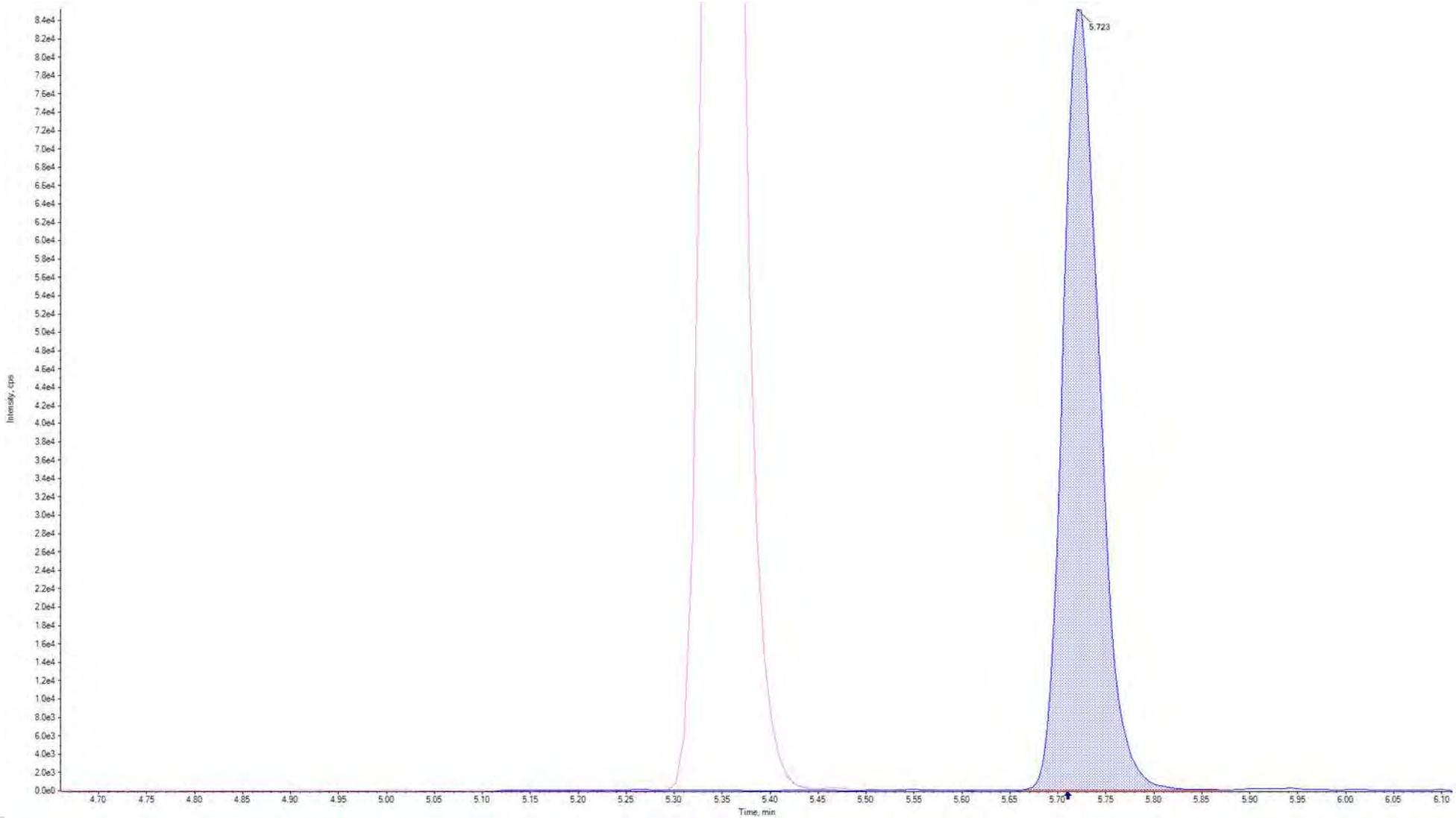
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFEESA
Sample: WG1973357-3 S/N:7892.8 Points Across peak:46



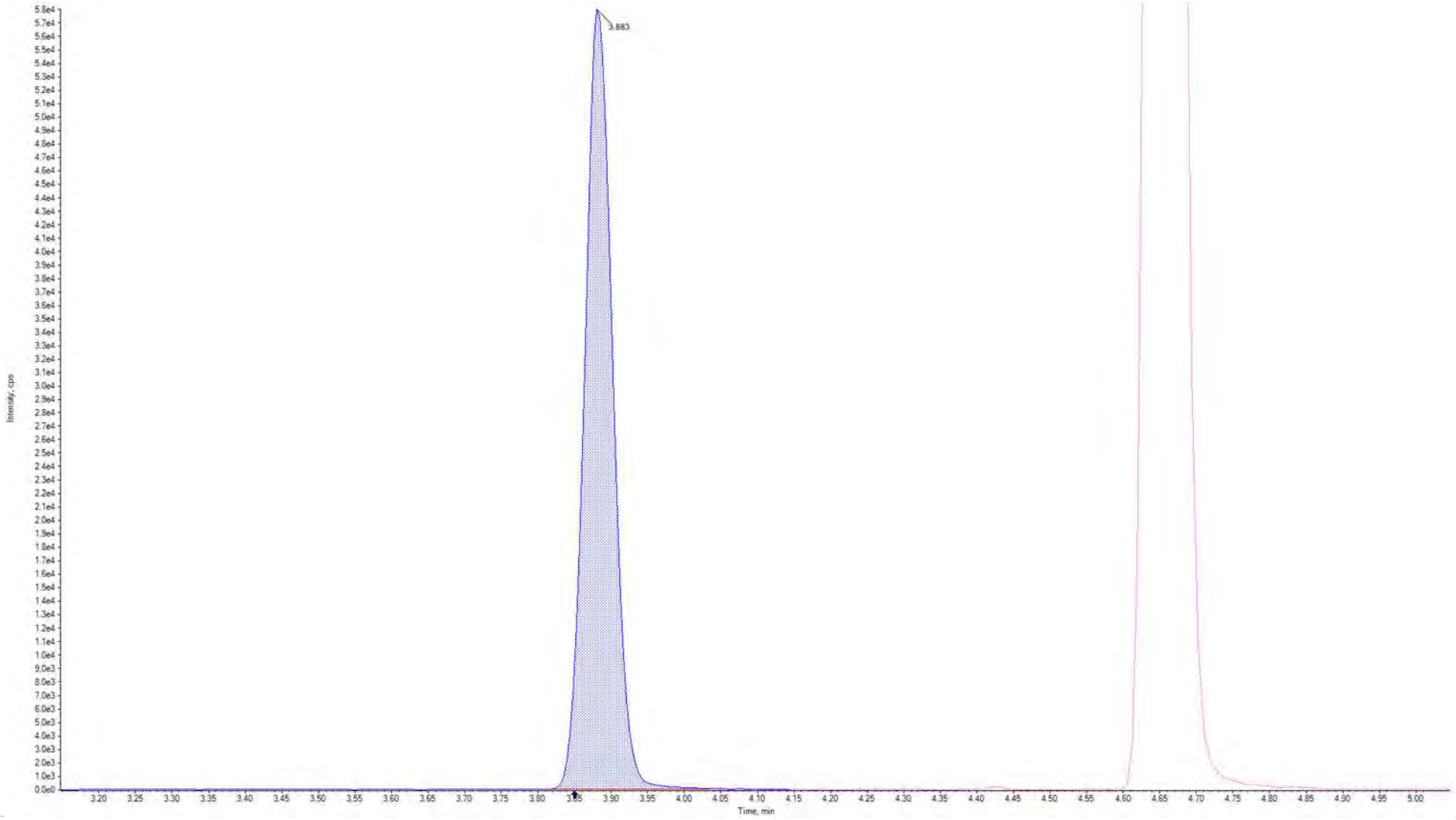
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFEESA_2
Sample: WG1973357-3 S/N:5827.7 Points Across peak:46



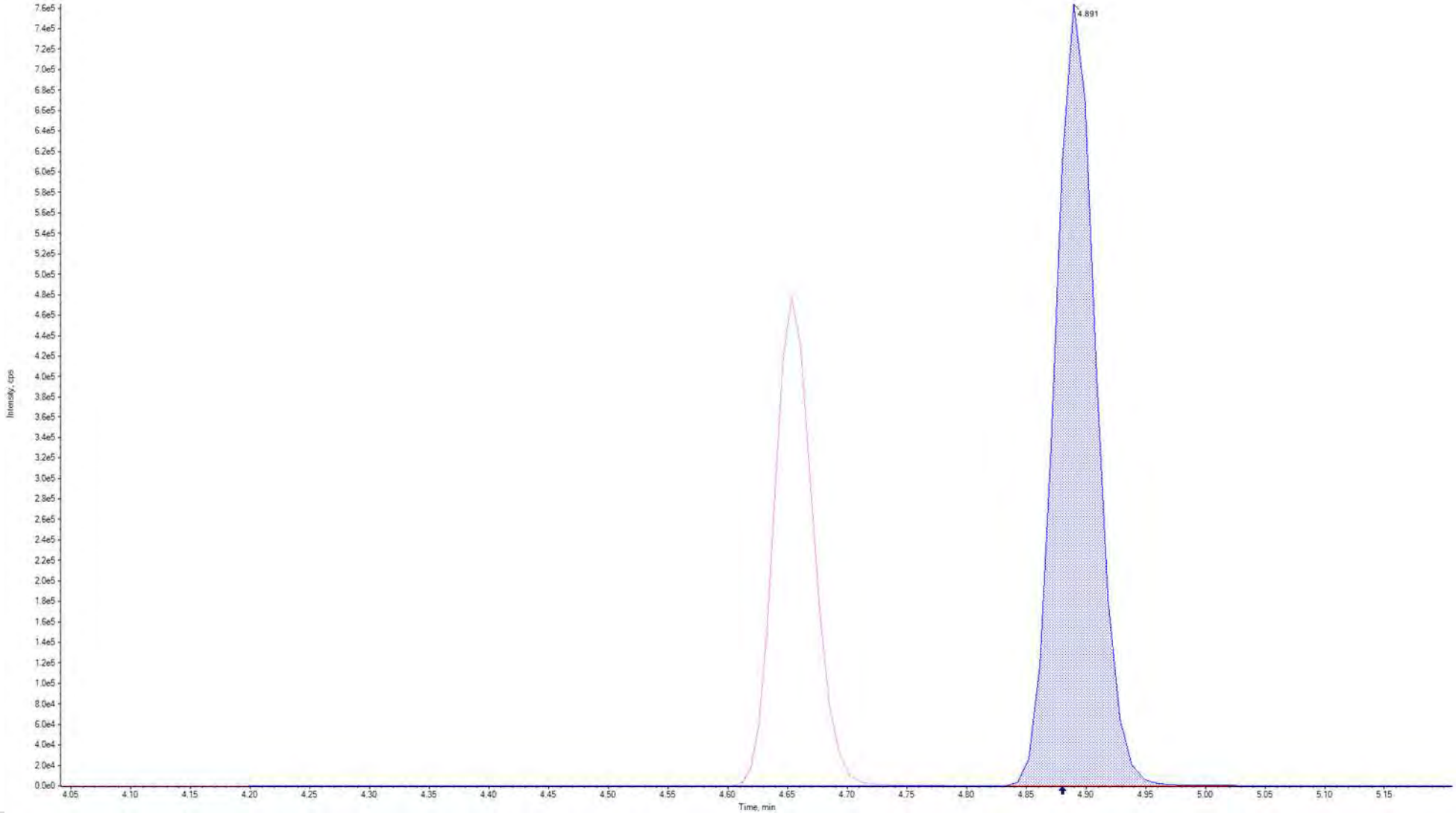
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFMPA
Sample: WG1973357-3 S/N:4592.8 Points Across peak:55



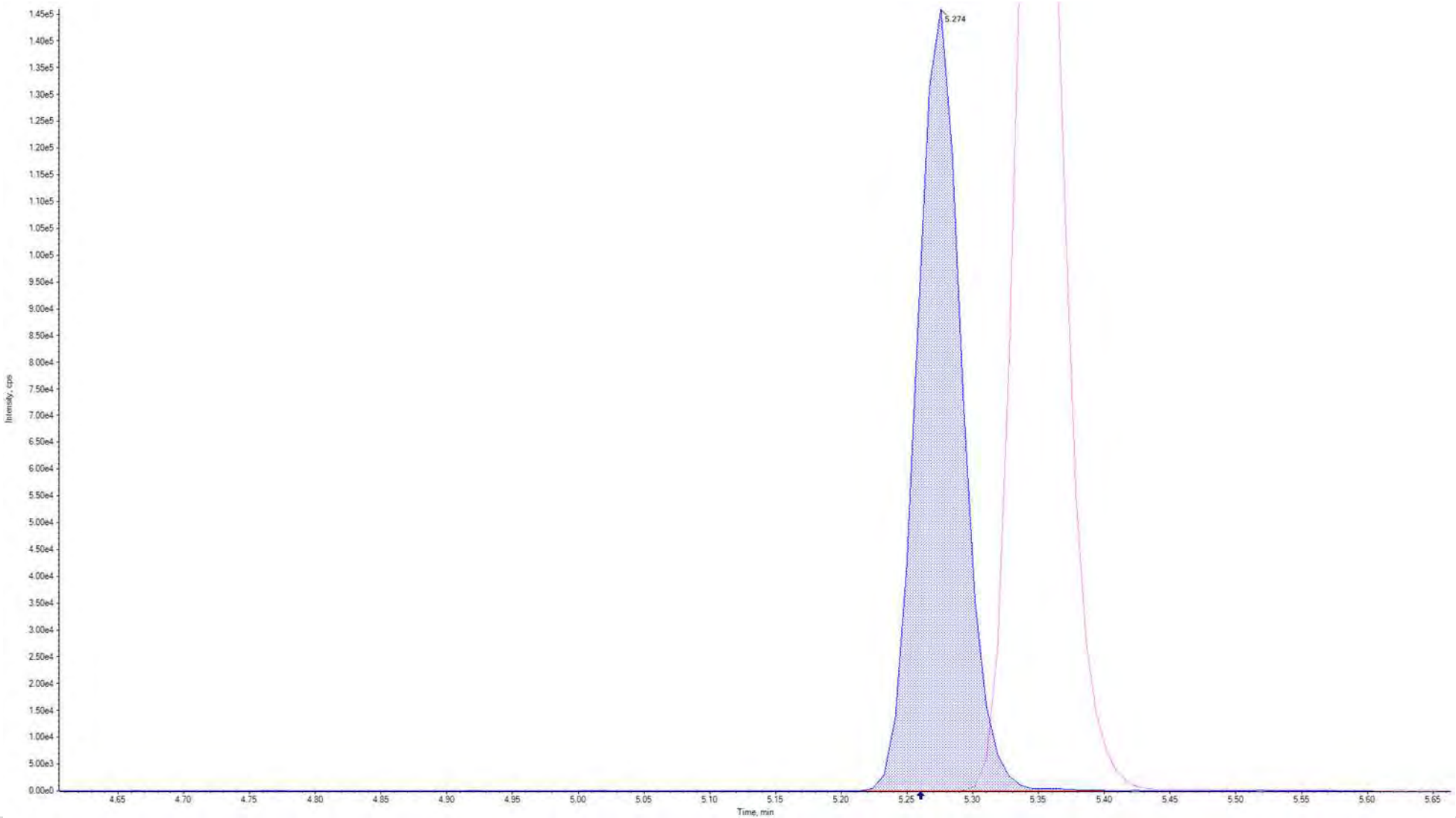
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFMBA
Sample: WG1973357-3 S/N:26096.2 Points Across peak:24



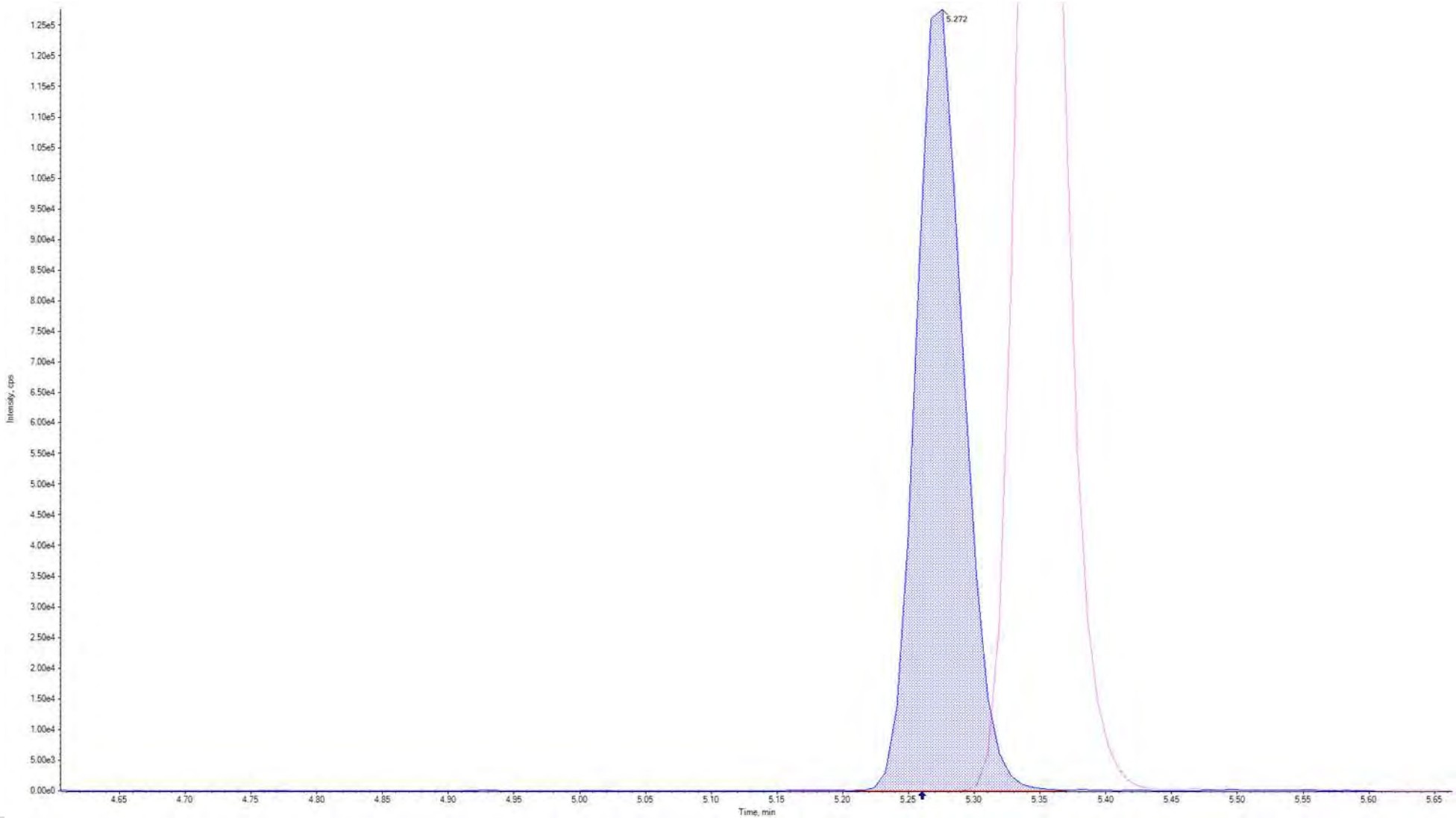
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NFDHA
Sample: WG1973357-3 S/N:4004.7 Points Across peak:30



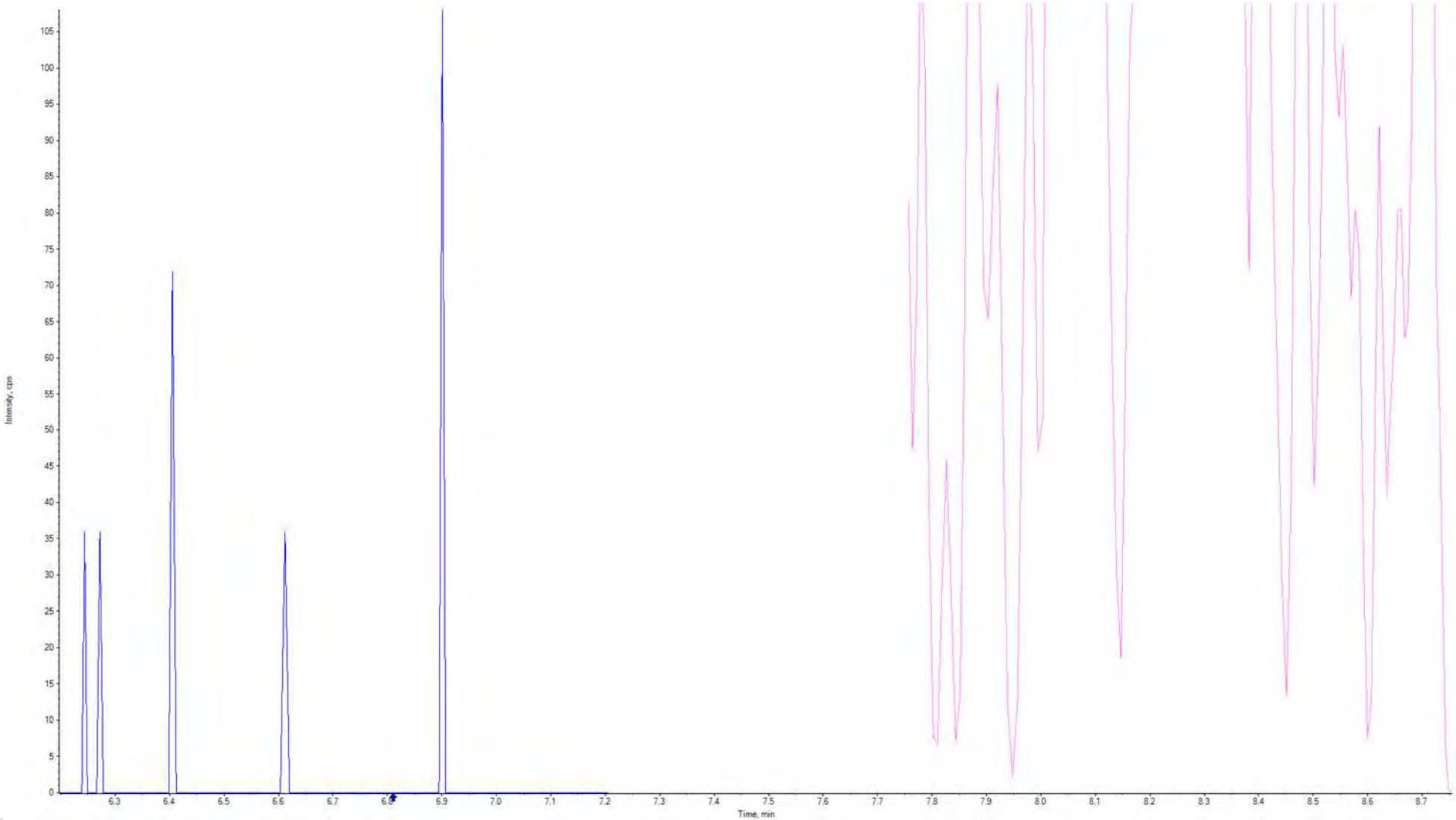
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NFDHA_2
Sample: WG1973357-3 S/N:3344.4 Points Across peak:20



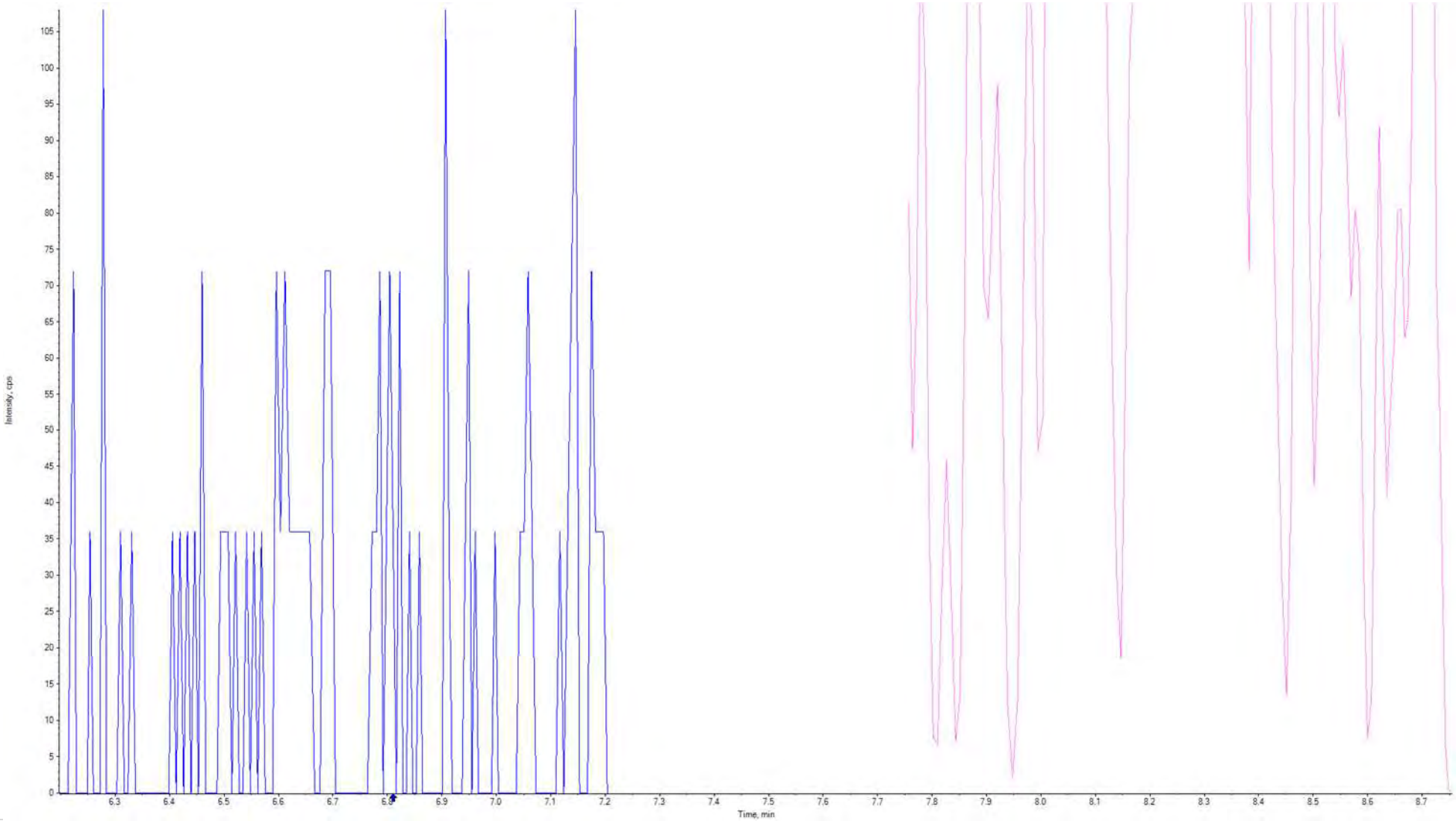
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

TDCA
Sample: WG1973357-3 S/N:N/A Points Across peak:N/A



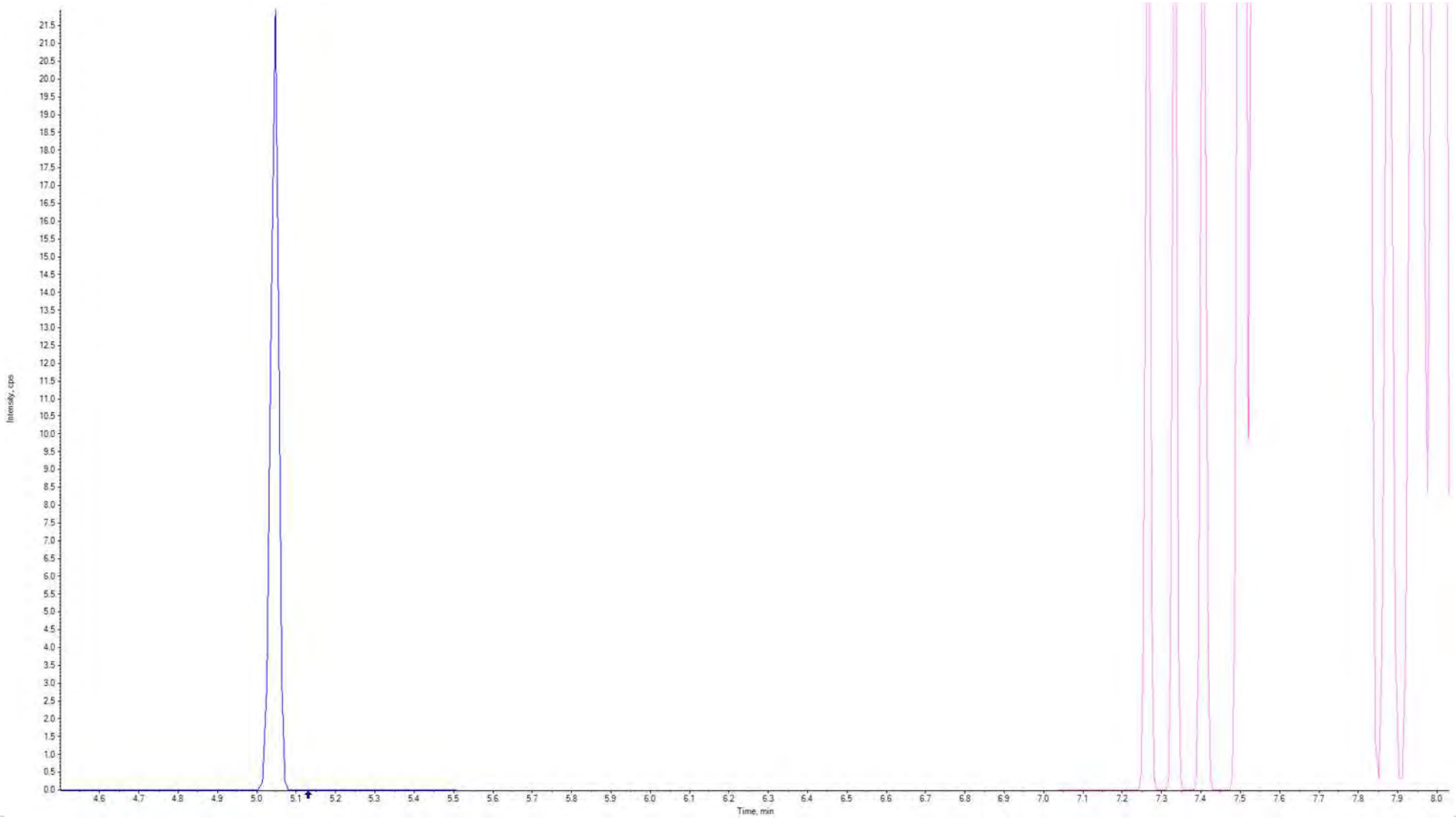
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

TDCA_2
Sample: WG1973357-3 S/N:N/A Points Across peak:N/A



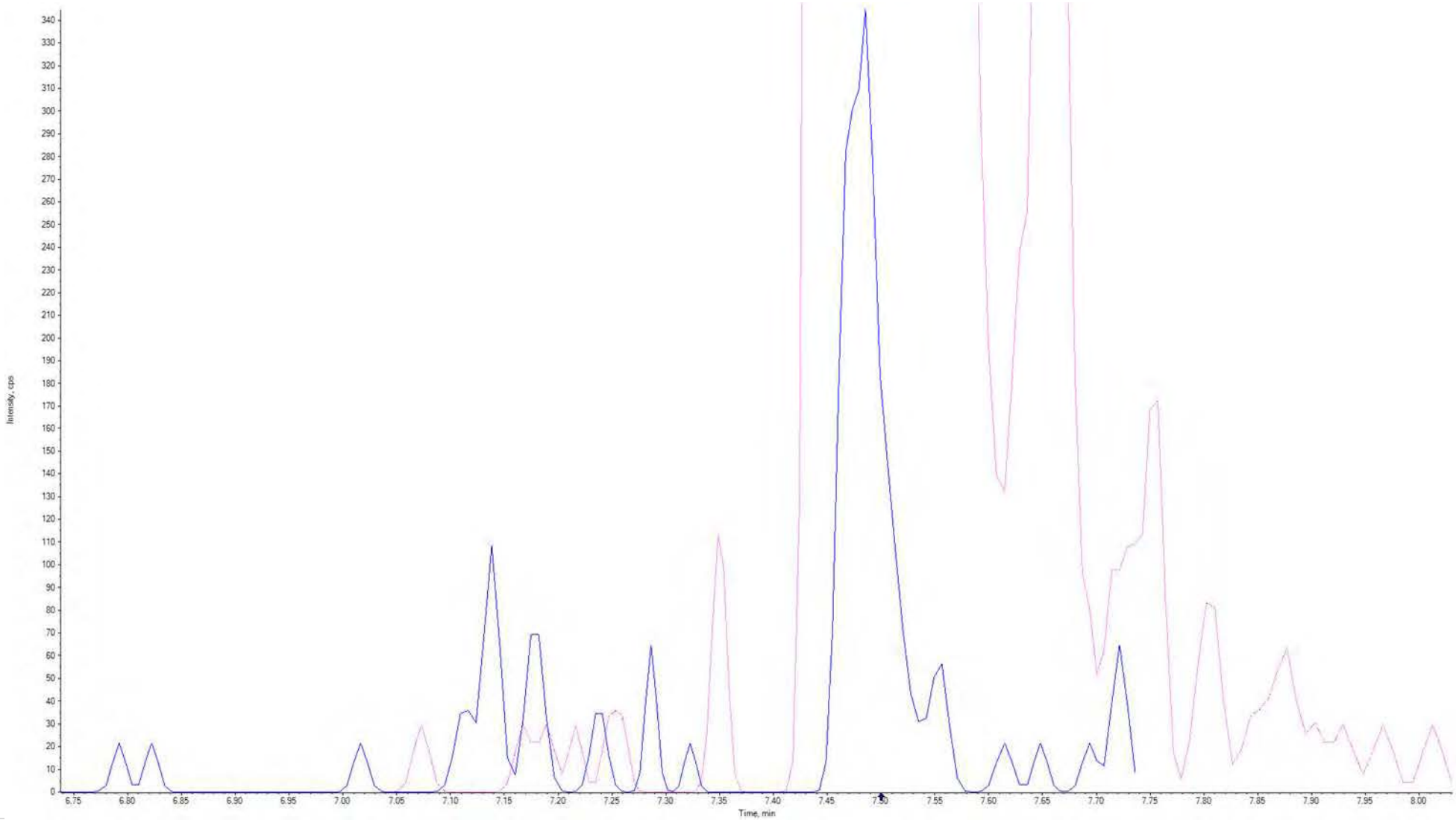
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C2D4-4:2FTS
Sample: WG1973357-3 S/N:N/A Points Across peak:N/A

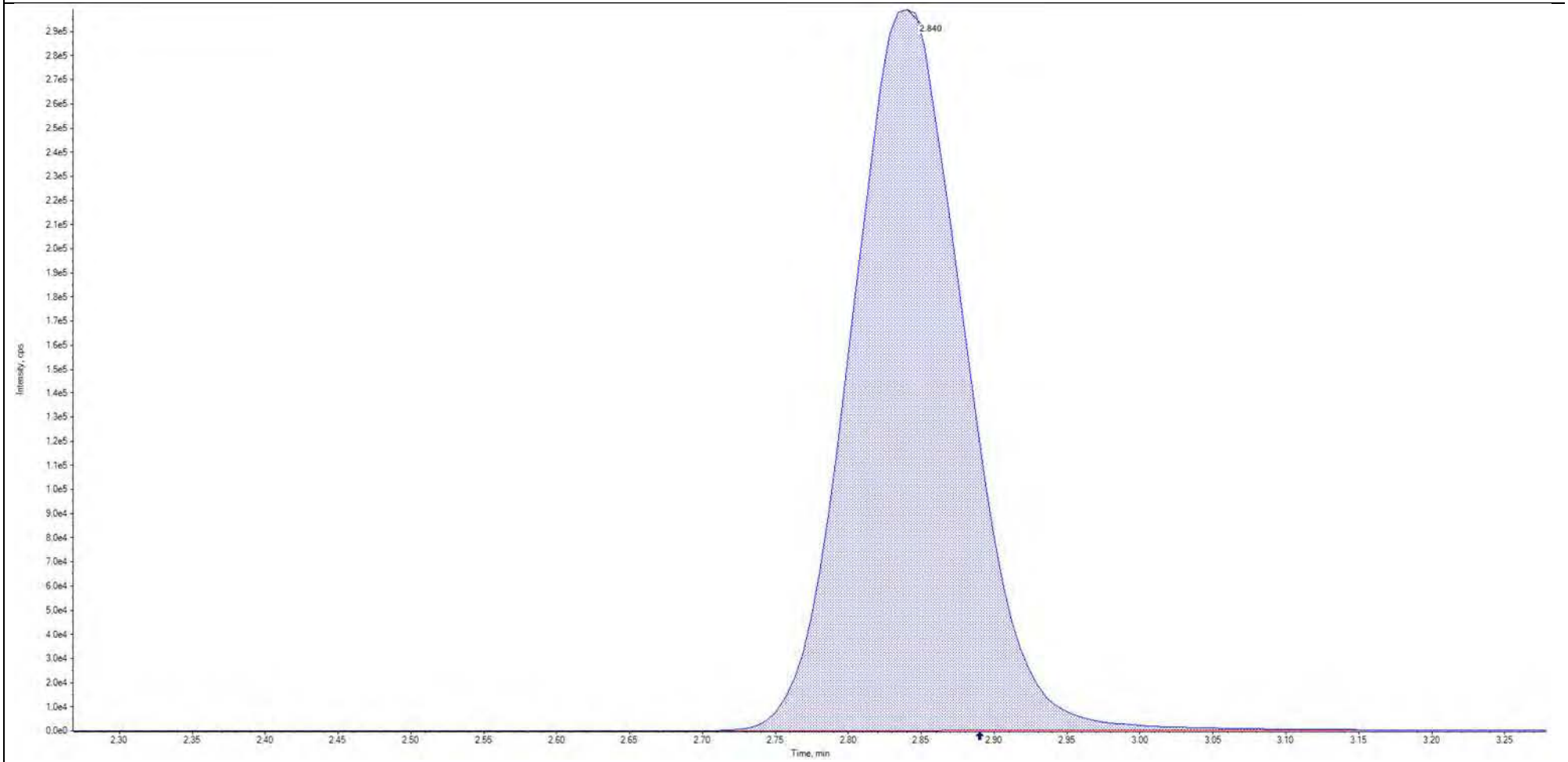


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_15.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

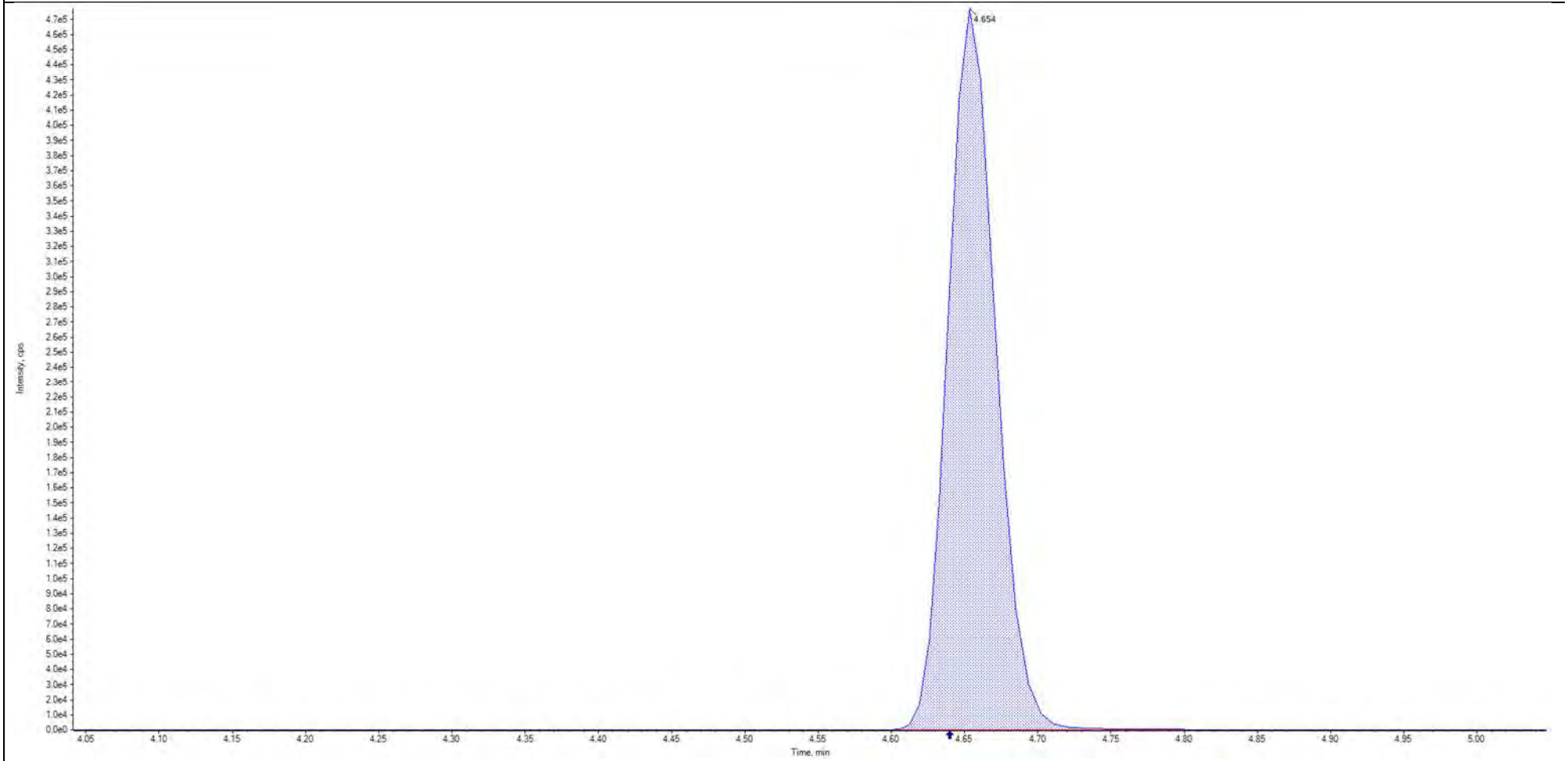
13C2-PFOA
Sample: WG1973357-3 S/N:N/A Points Across peak:N/A



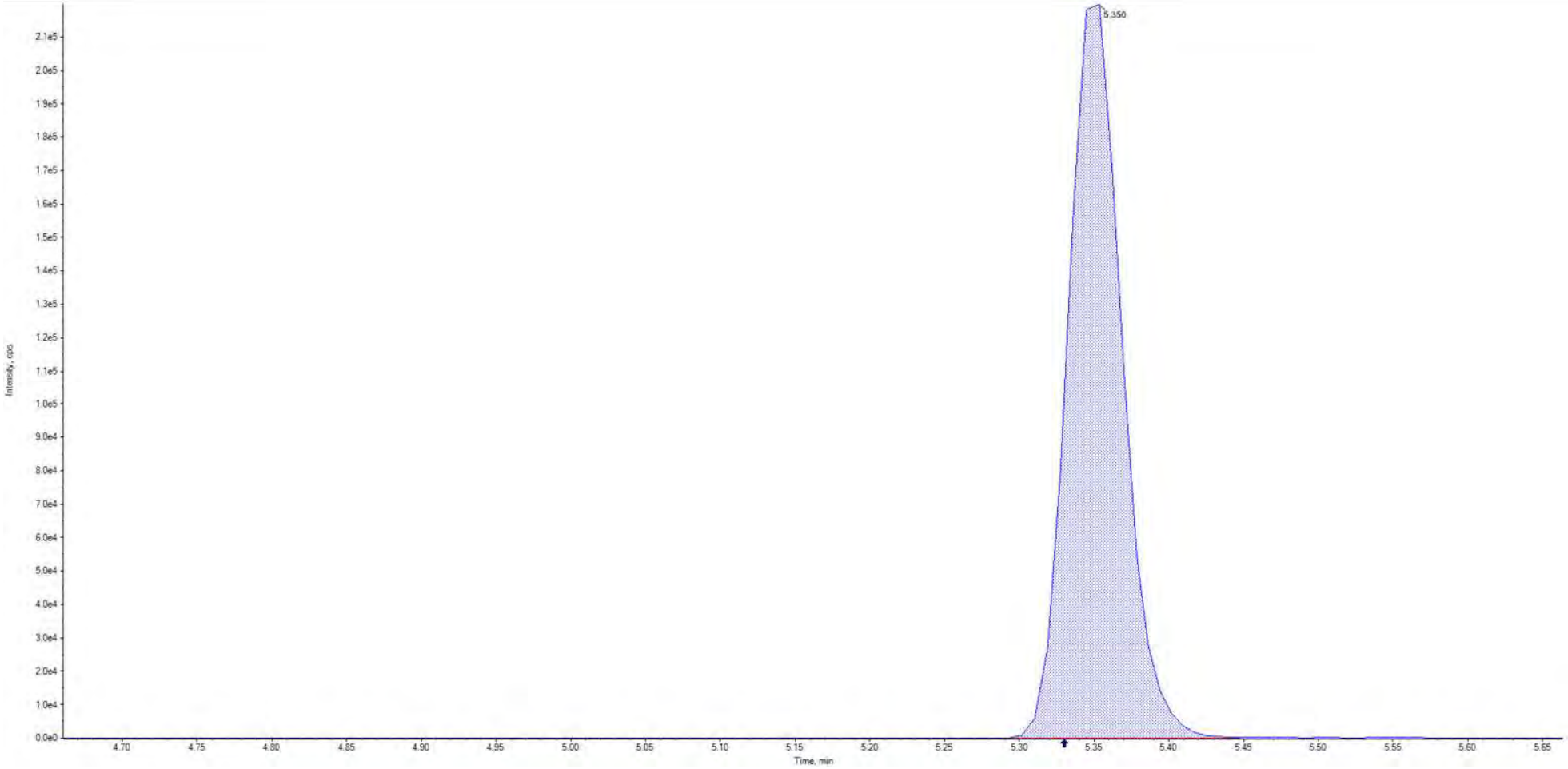
13C4-PFBA
Sample: WG1973357-3



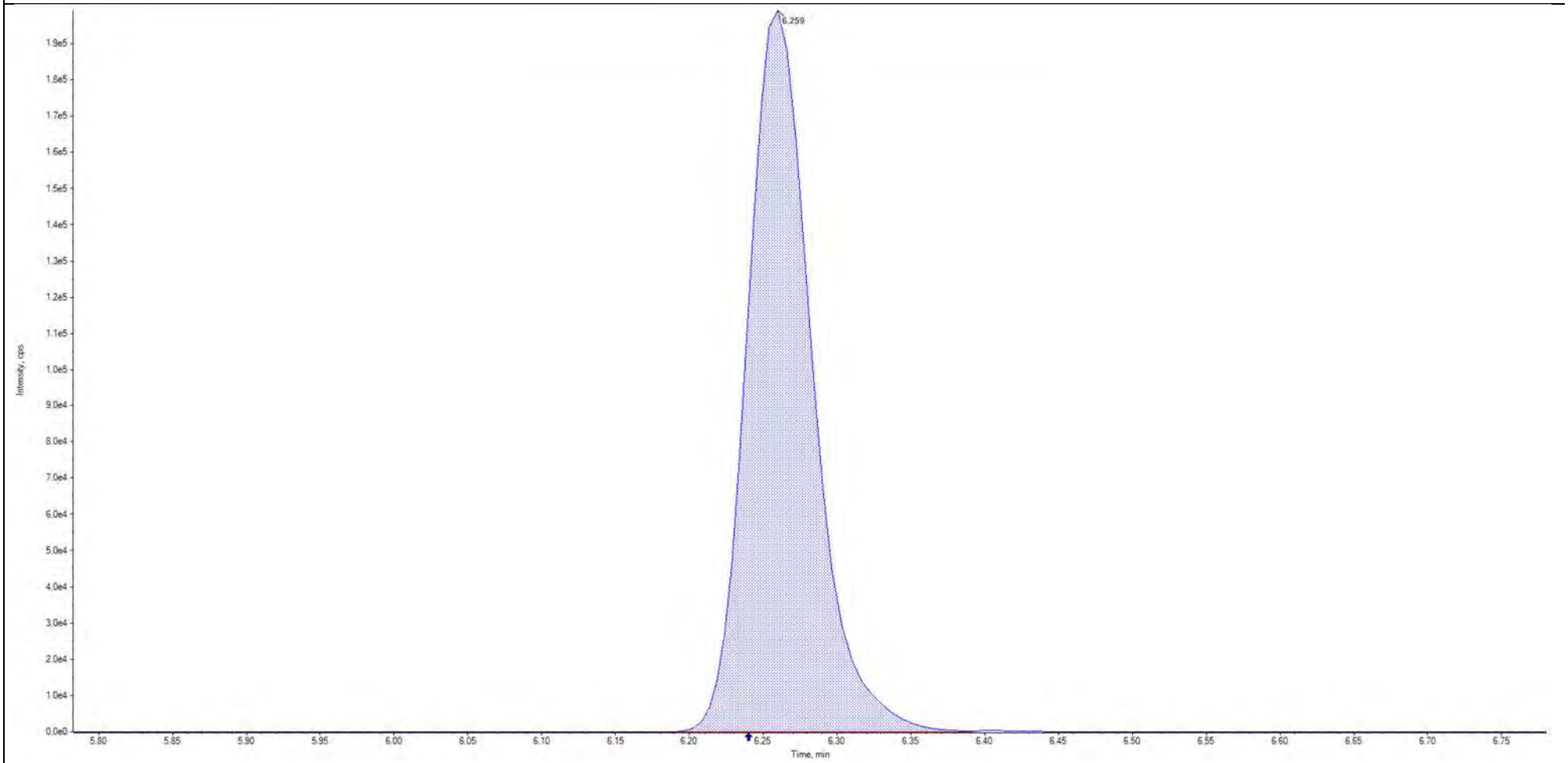
13C5-PFPeA
Sample: WG1973357-3



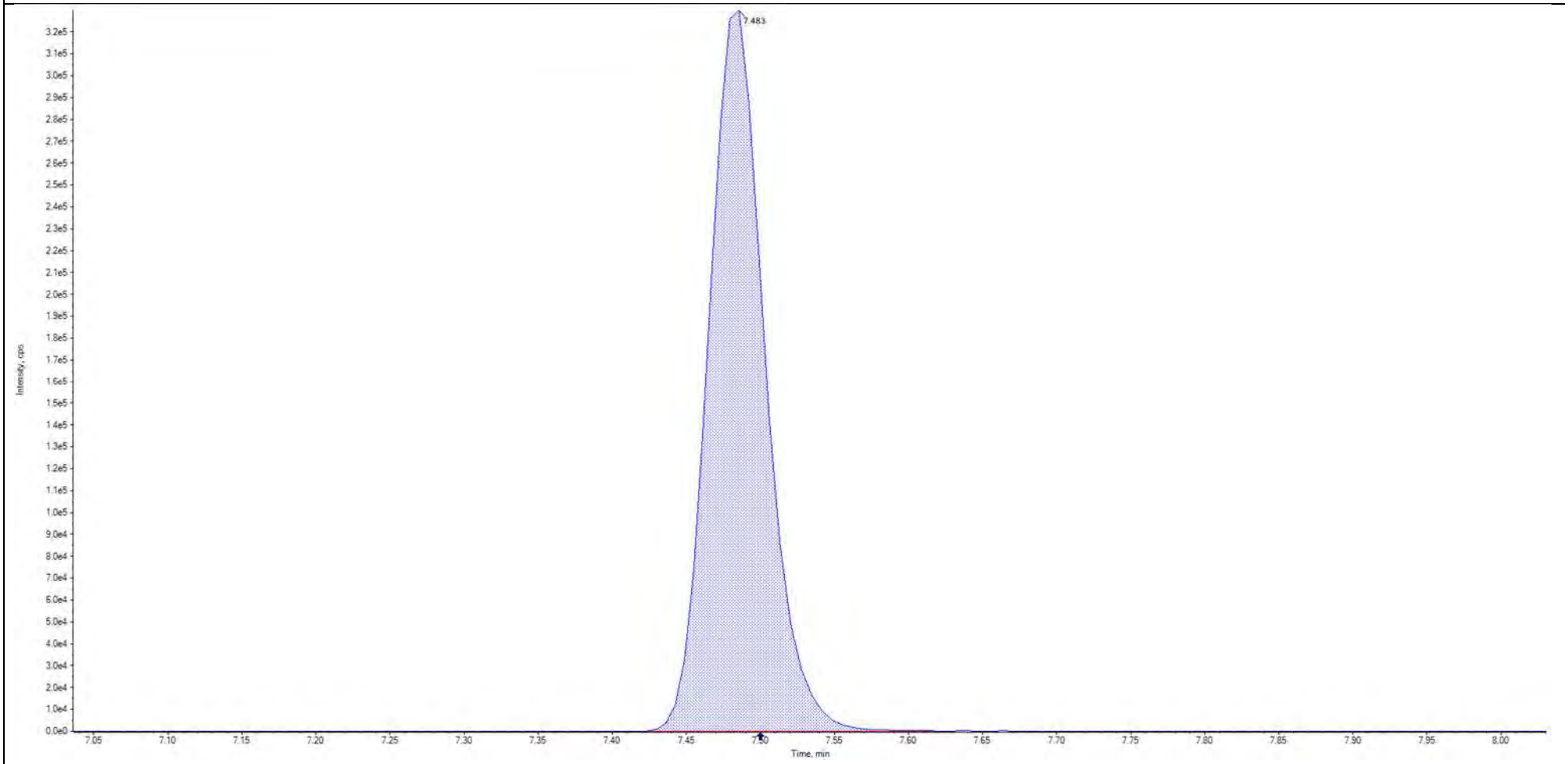
13C5-PFHxA
Sample: WG1973357-3



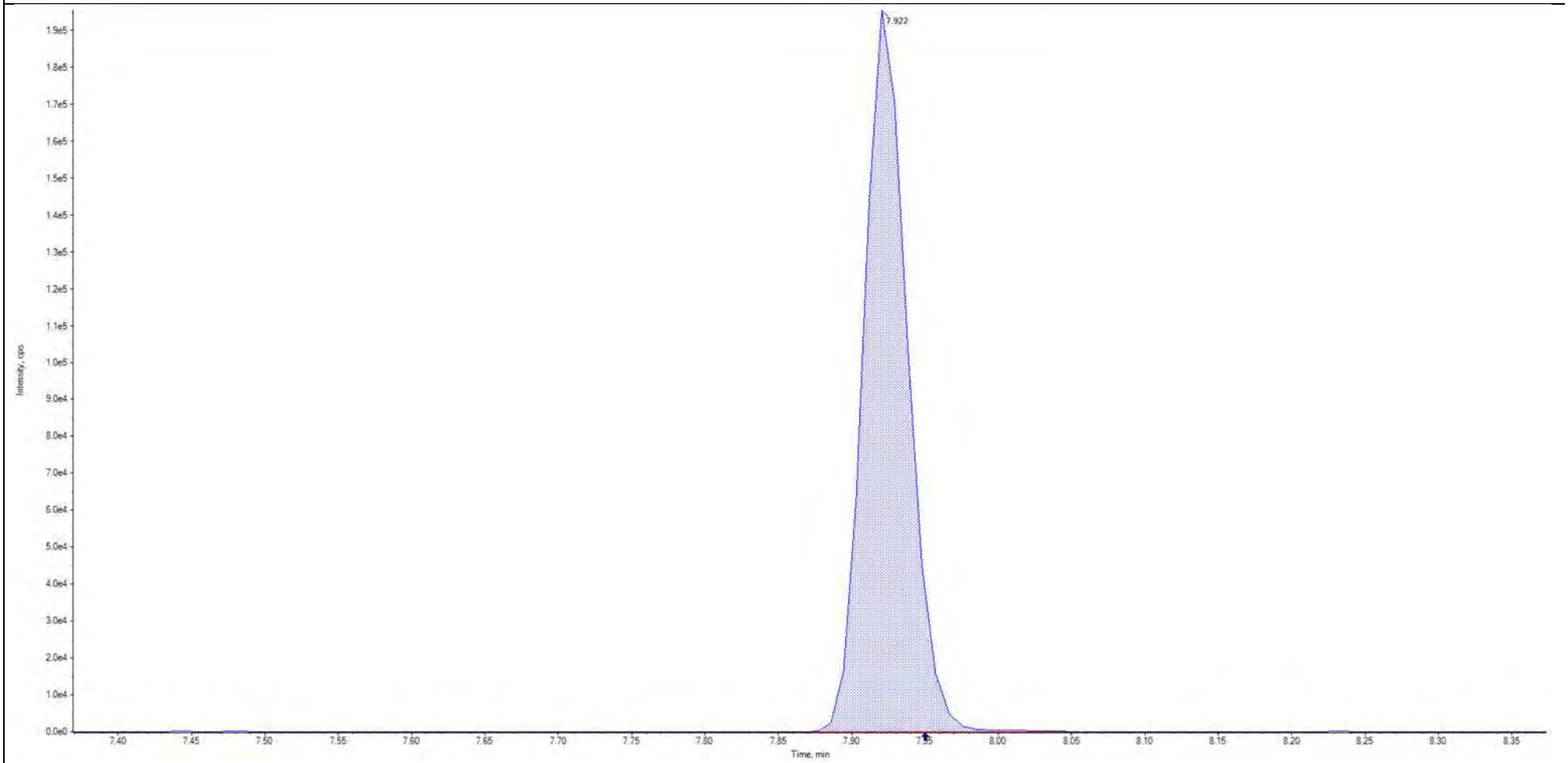
13C4-PFHpA
Sample: WG1973357-3



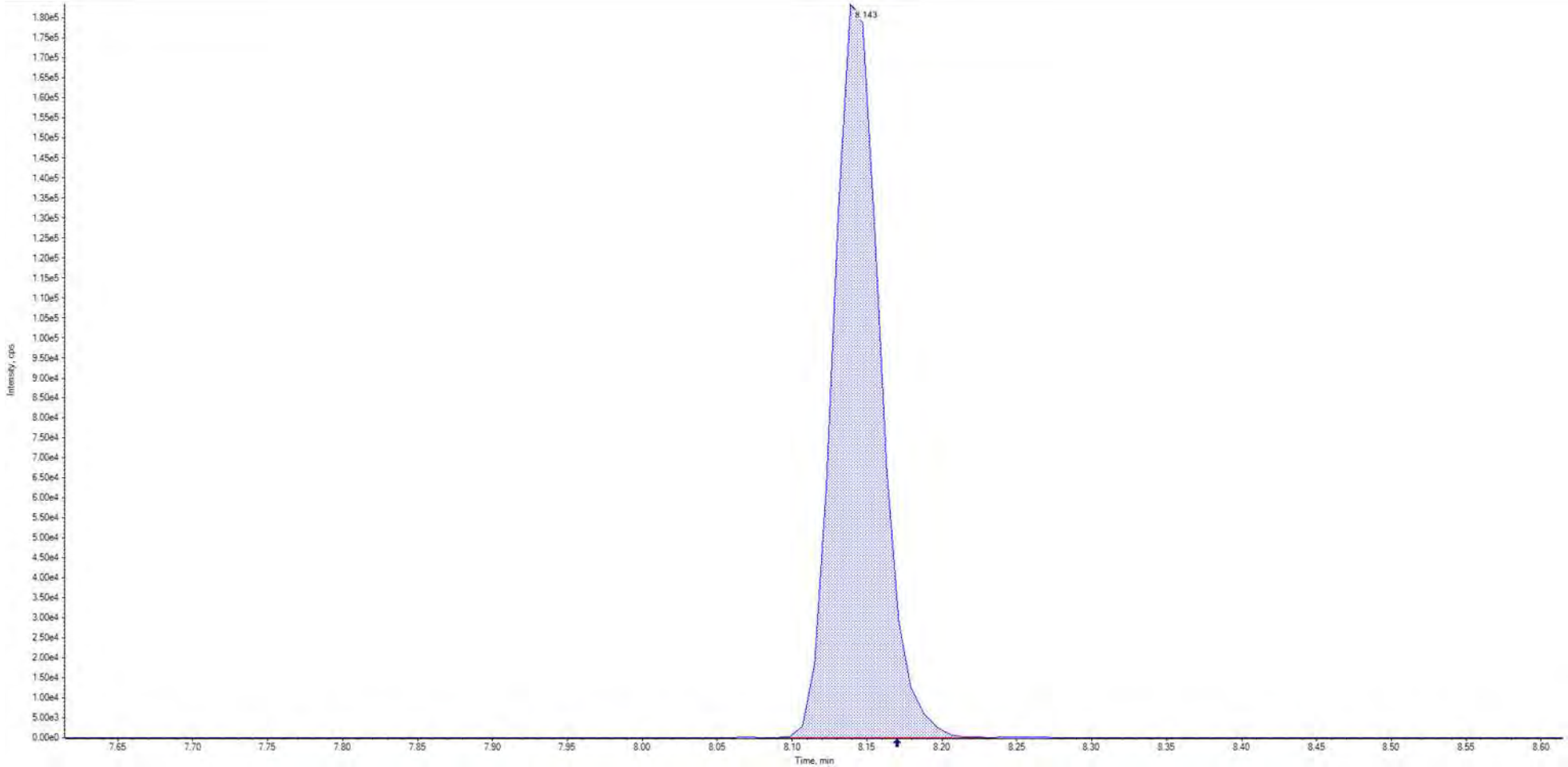
13C8-PFOA
Sample: WG1973357-3



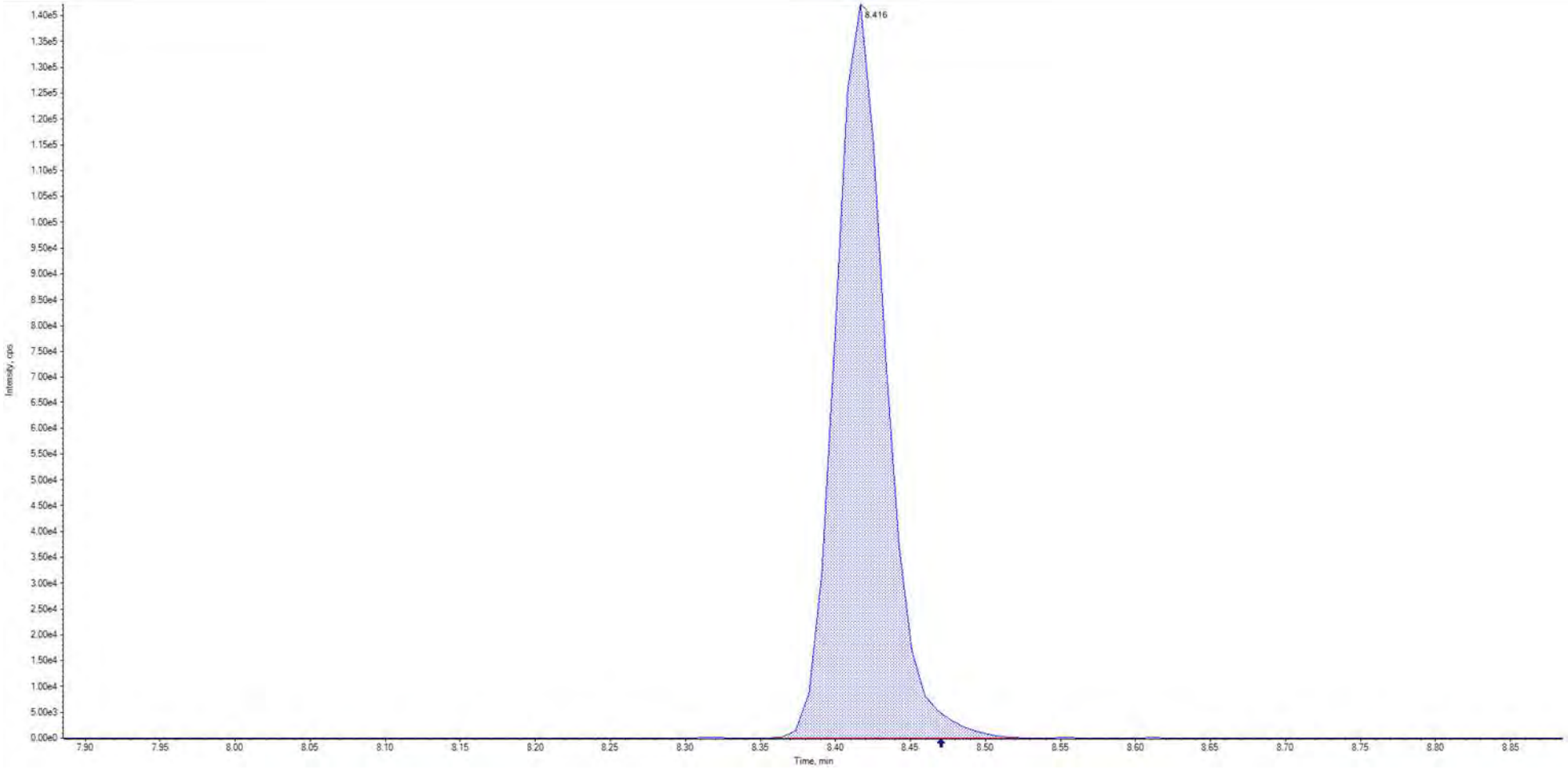
13C9-PFNA
Sample: WG1973357-3



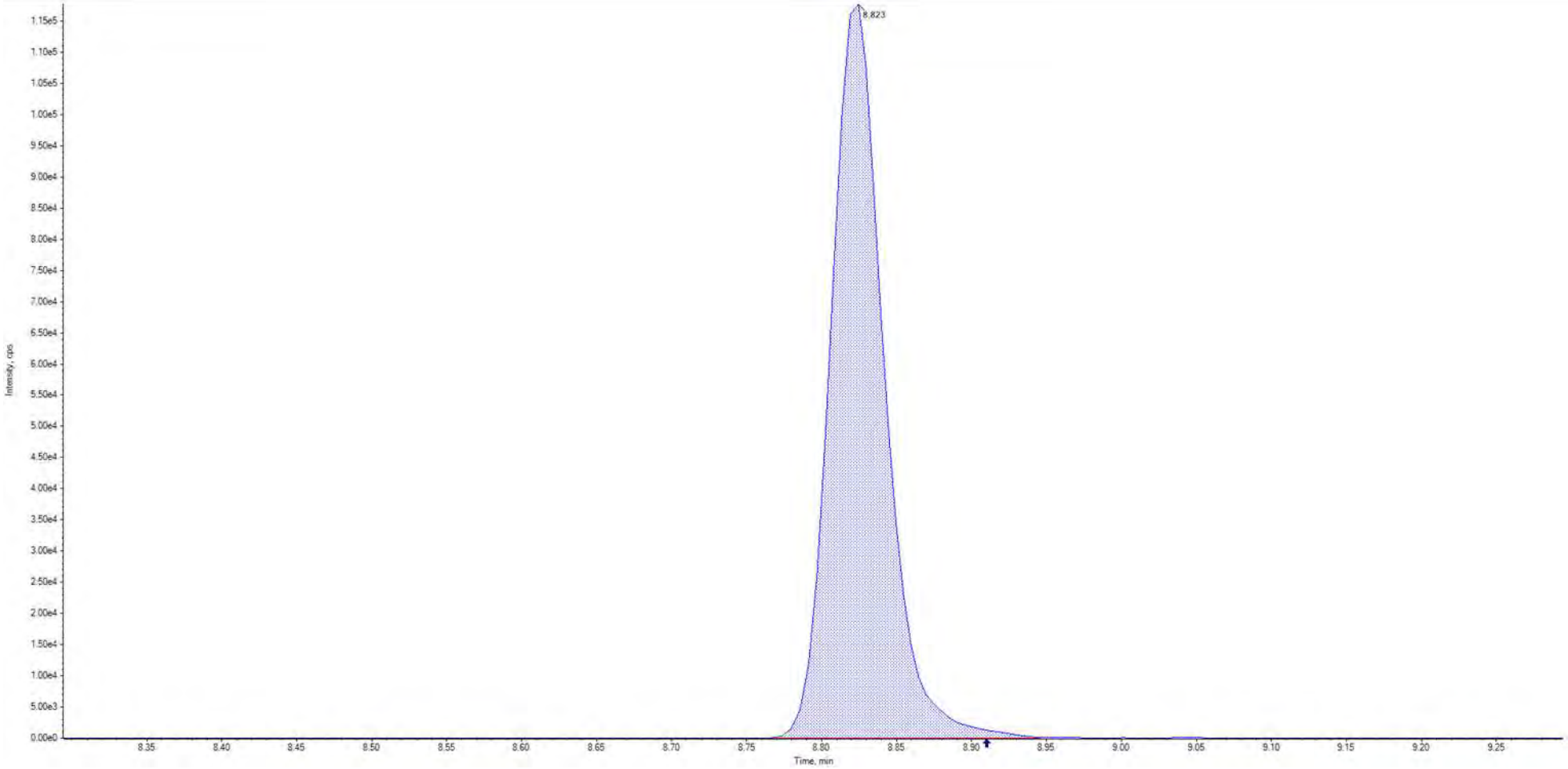
13C6-PFDA
Sample: WG1973357-3



13C7-PFUnA
Sample: WG1973357-3



13C2-PFDoA
Sample: WG1973357-3



13C2-PFTeDA
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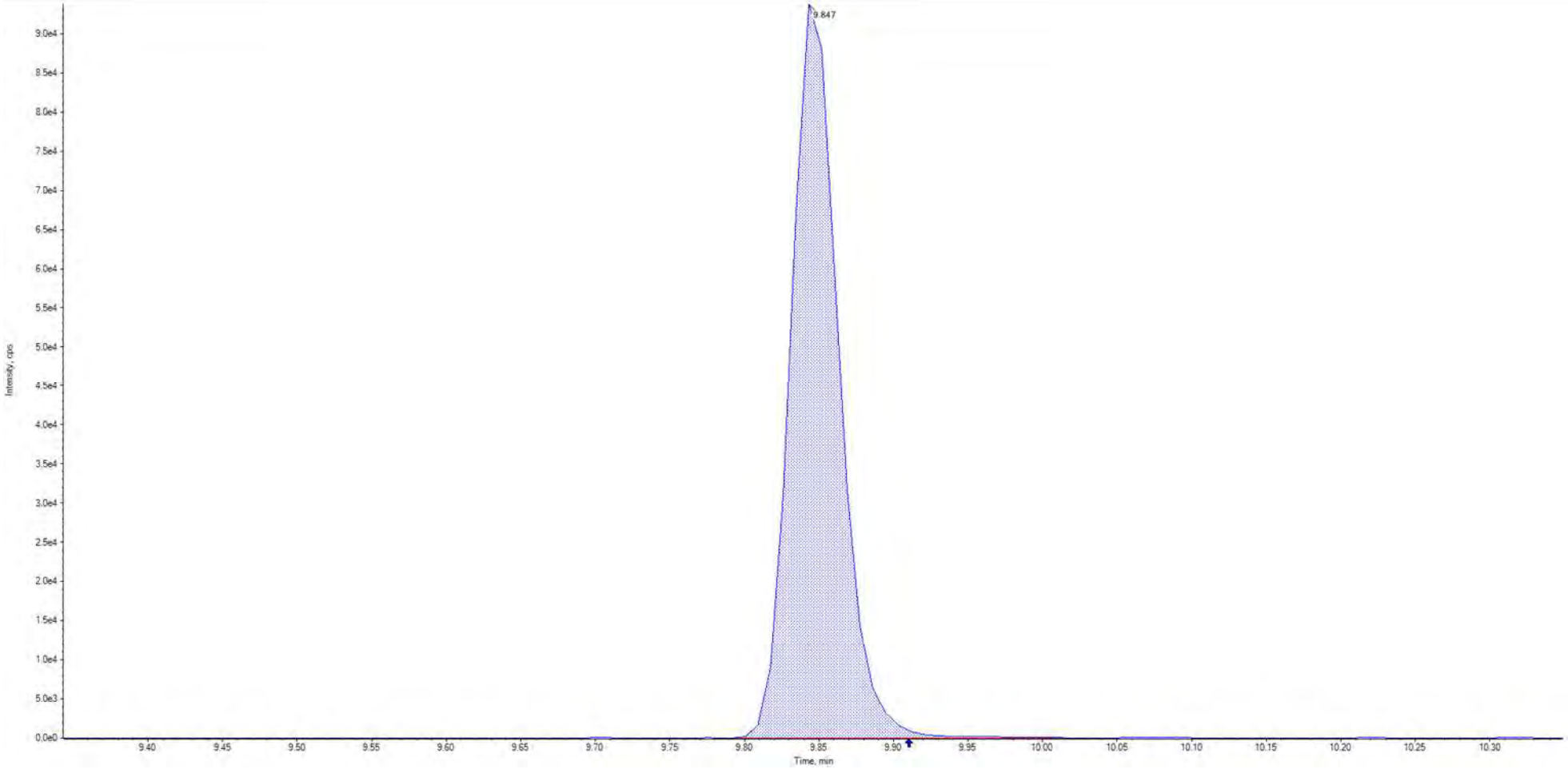

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Generated: 9/19/2024 8:04:31 AM

13C3-PFBS
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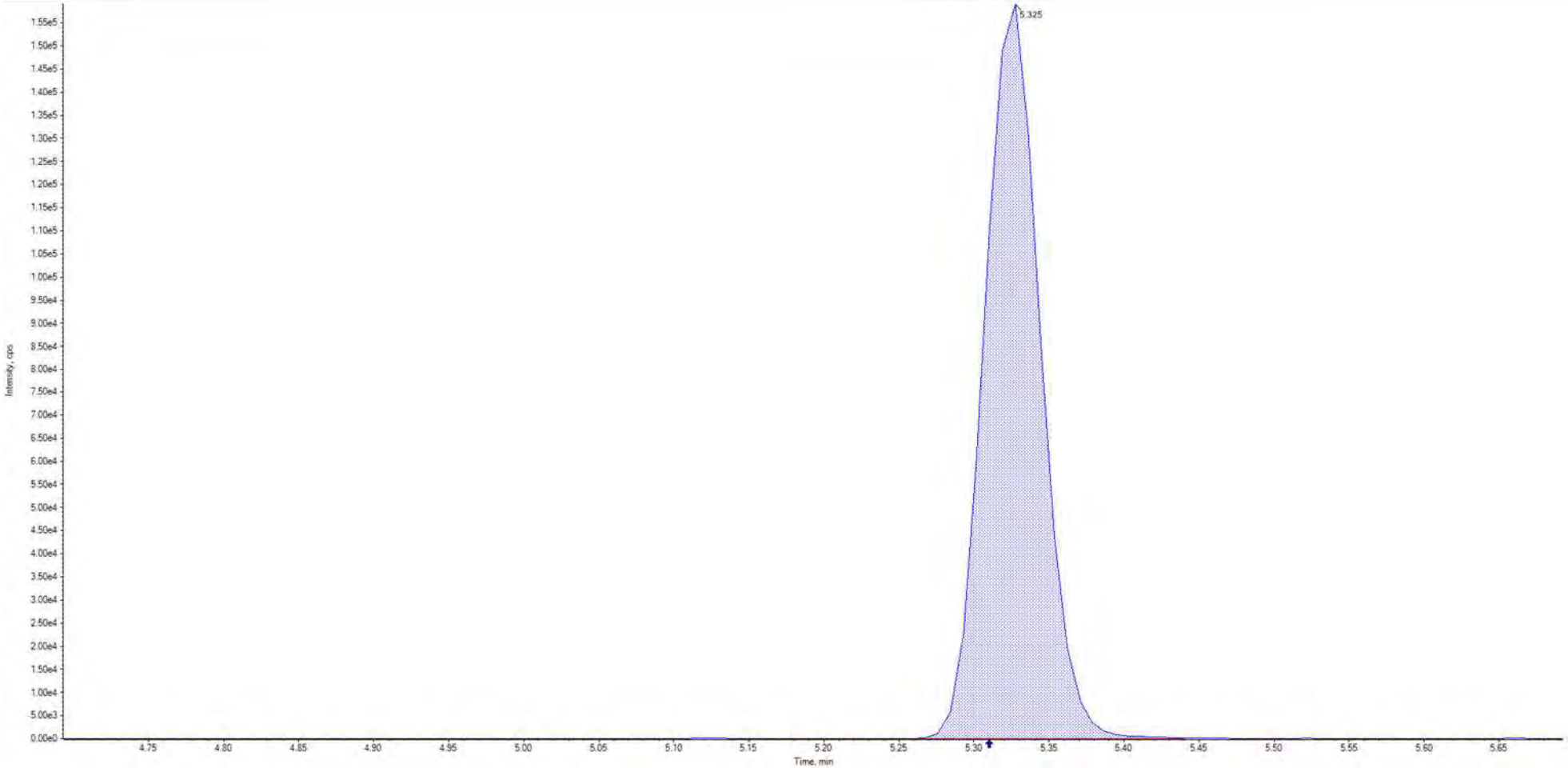

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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13C3-PFHxS
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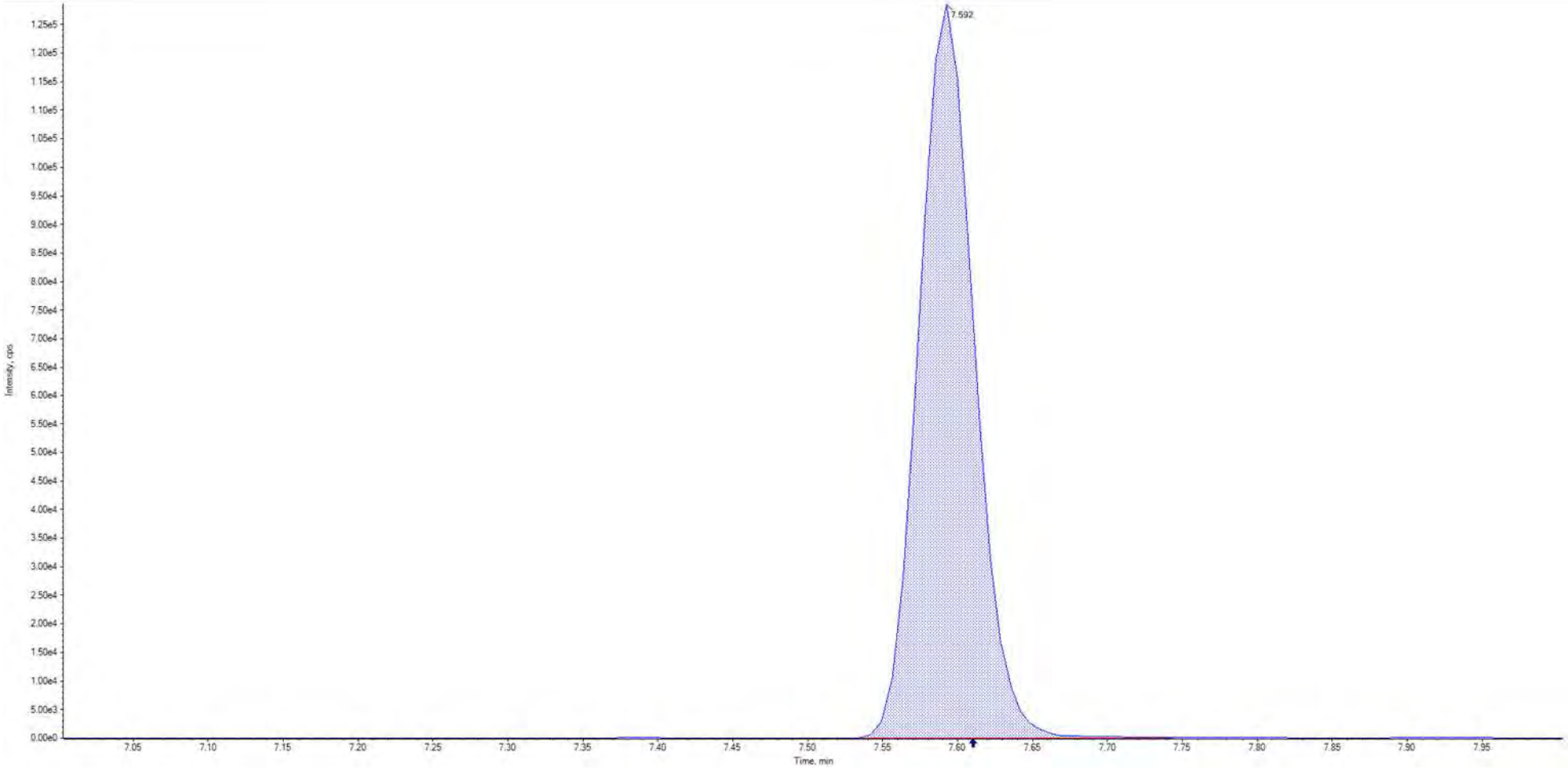

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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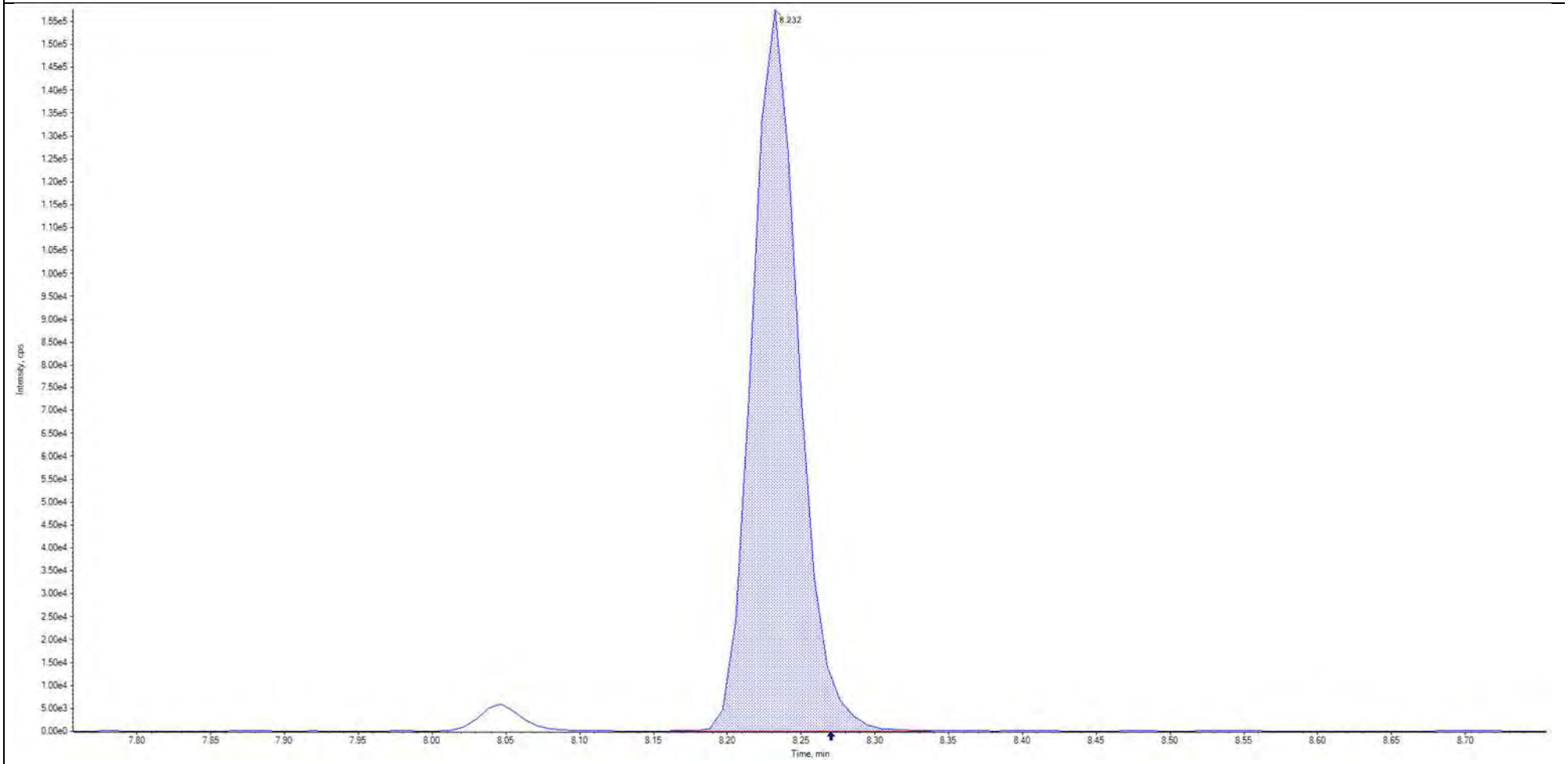
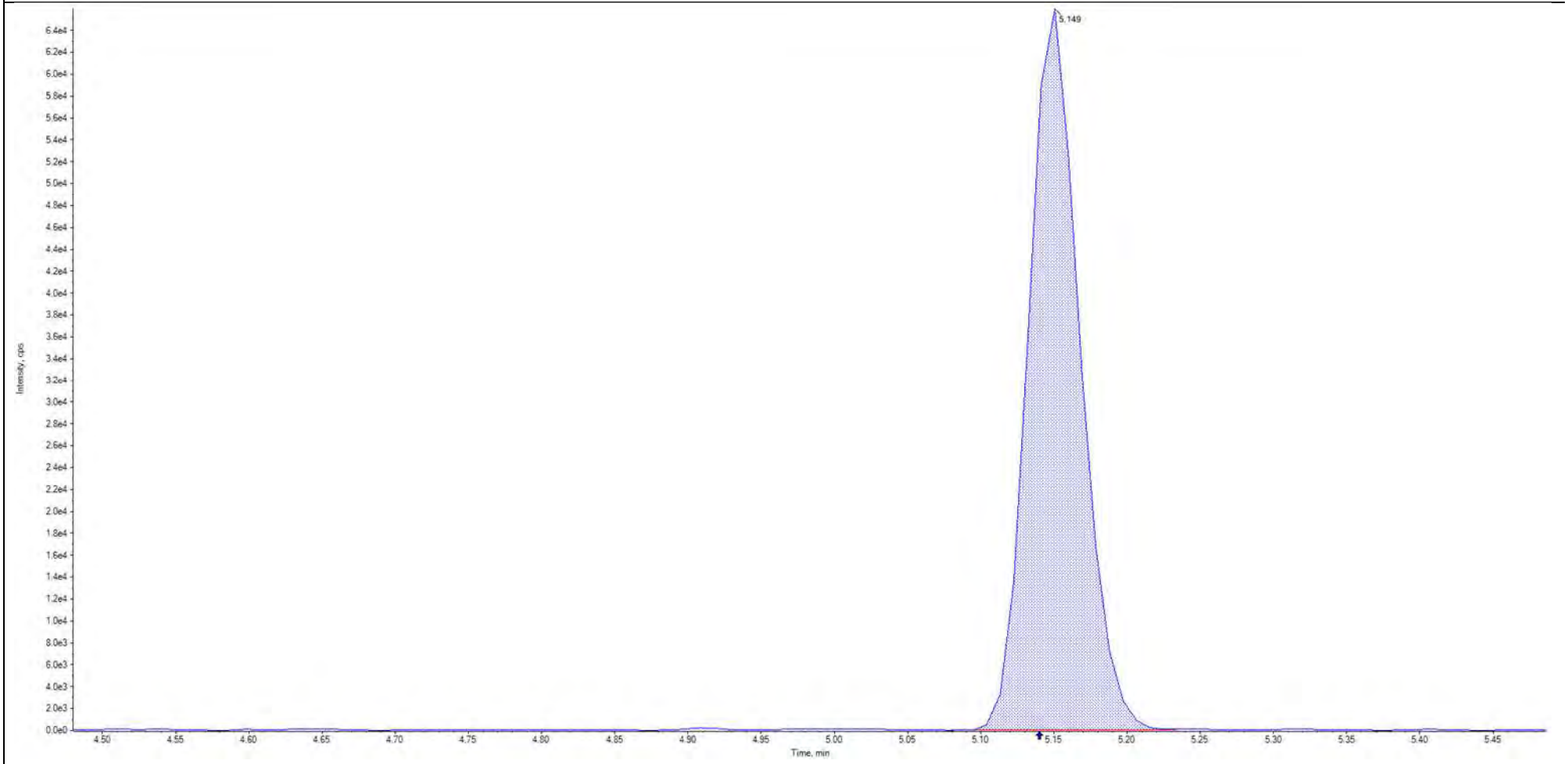
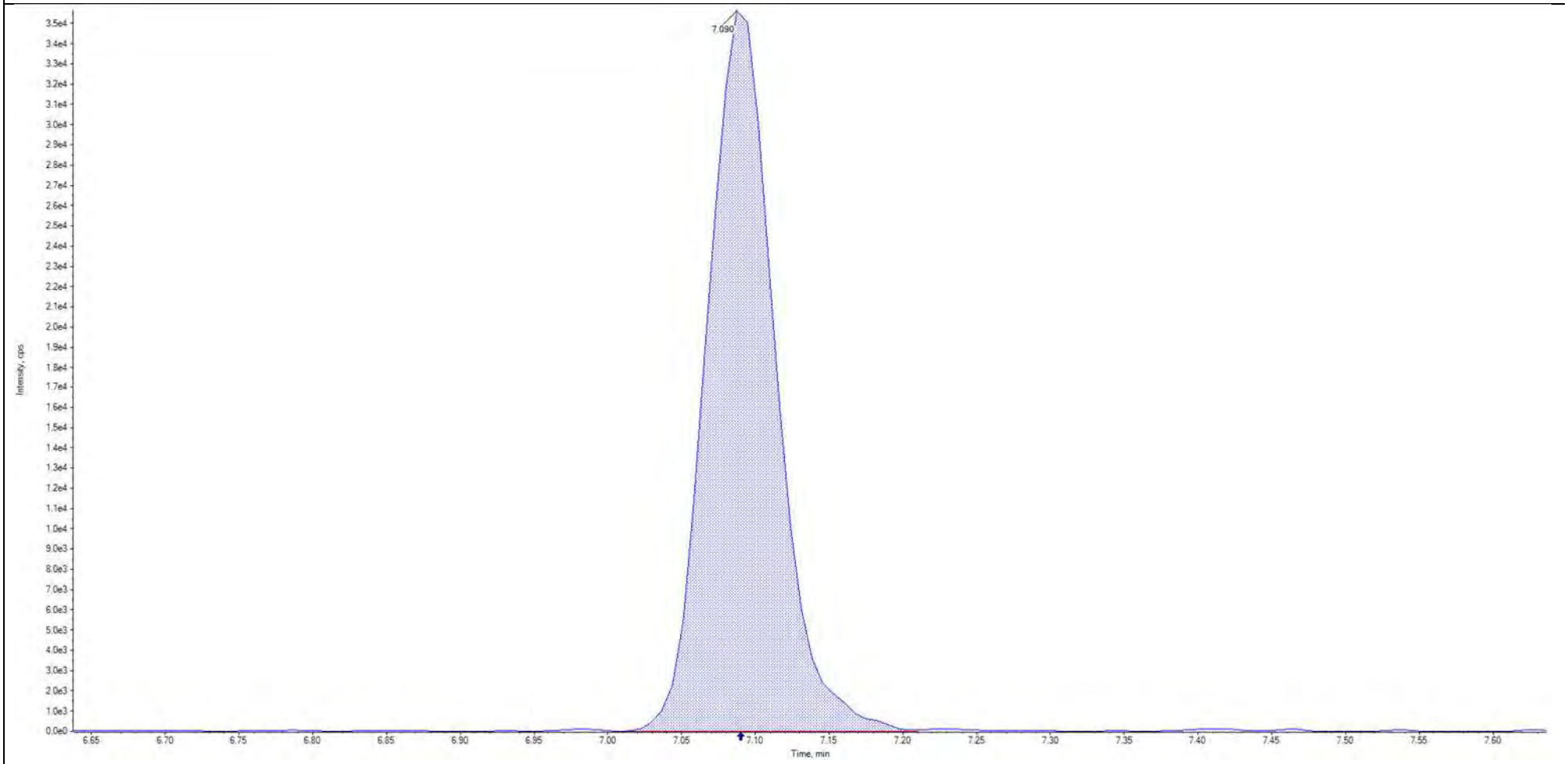
13C8-PFOS
Sample: WG1973357-3



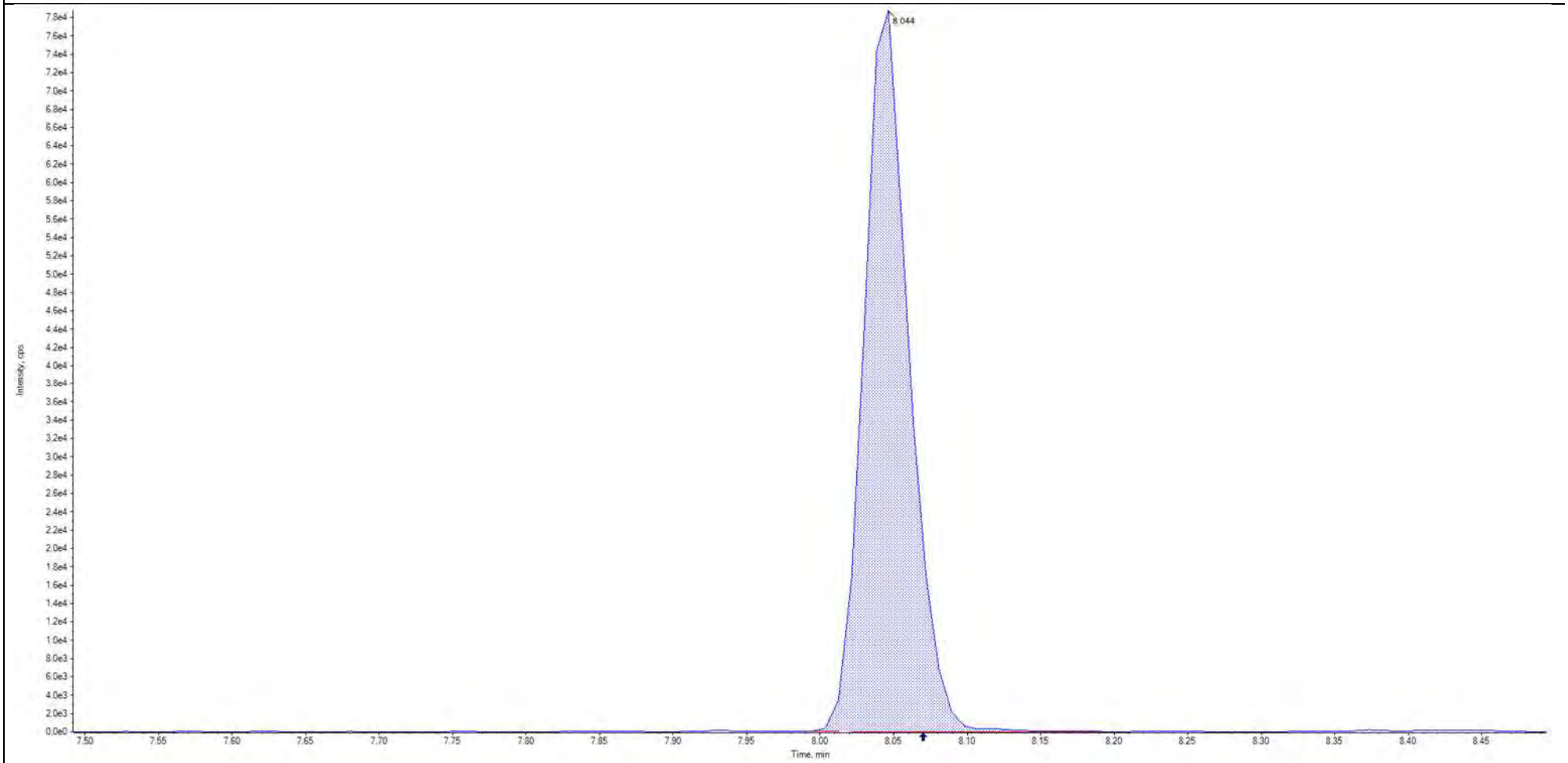
13C2-4:2FTS
Sample: WG1973357-3



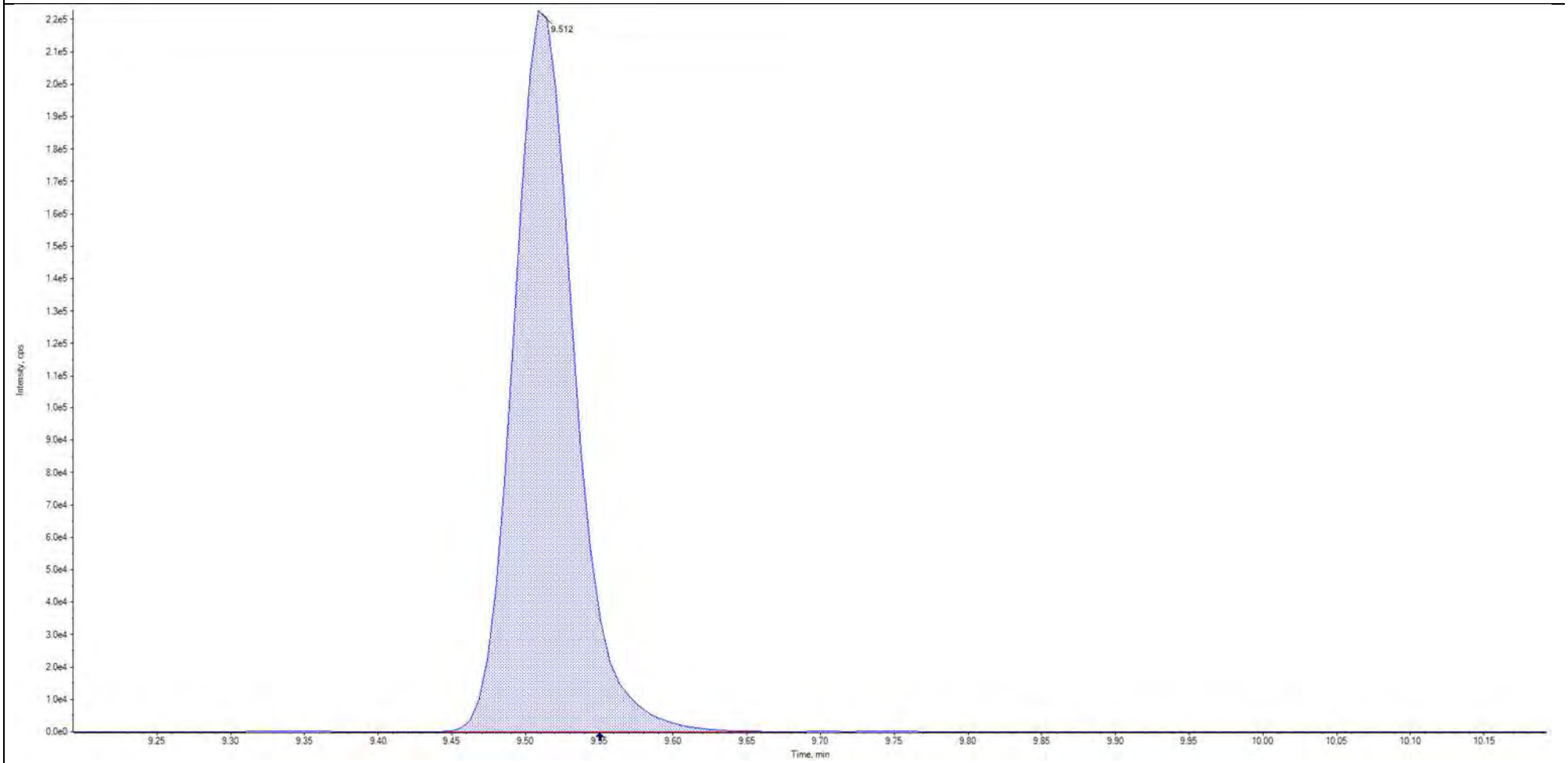
13C2-6:2FTS
Sample: WG1973357-3



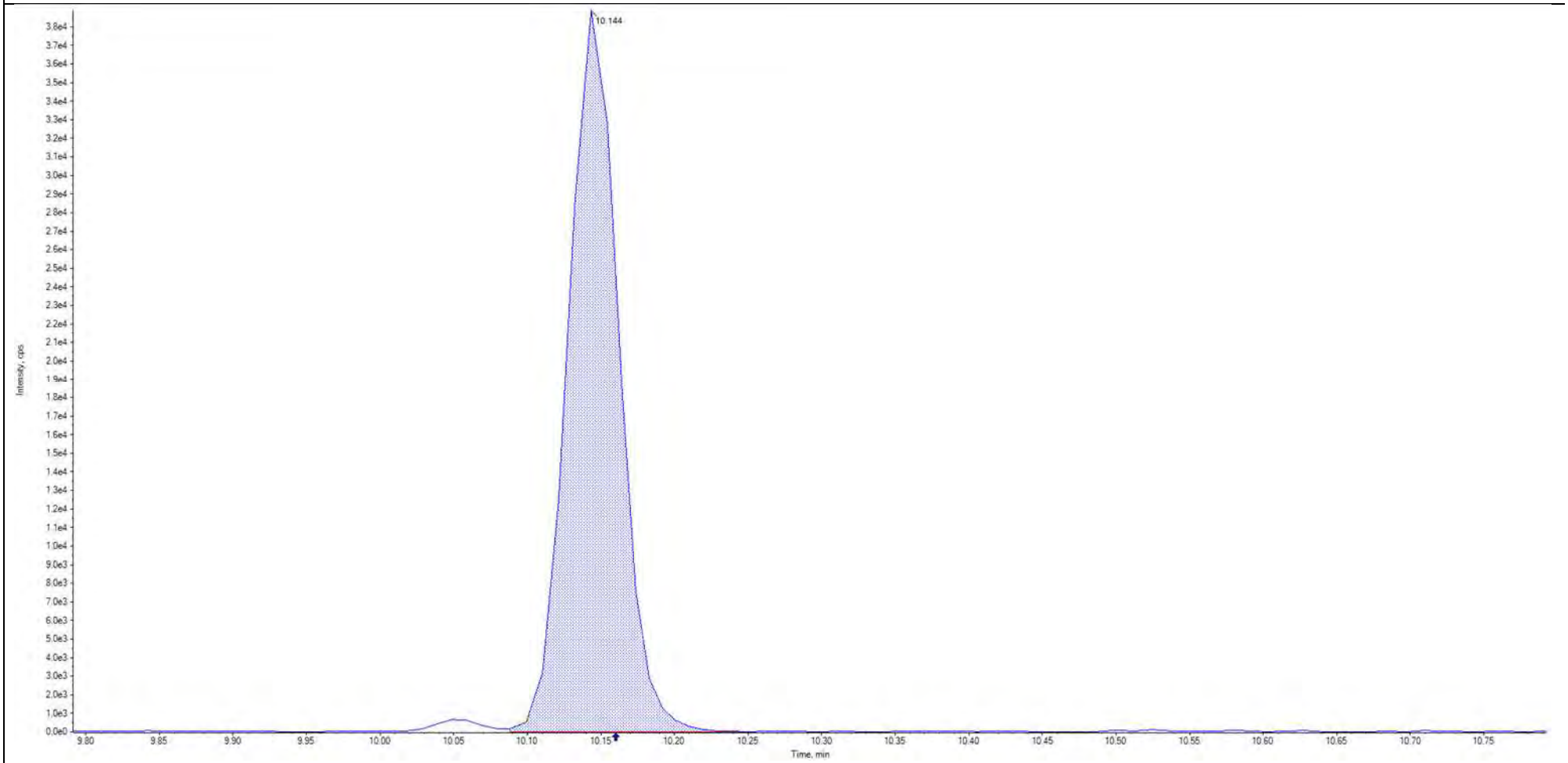
13C2-8:2FTS
Sample: WG1973357-3



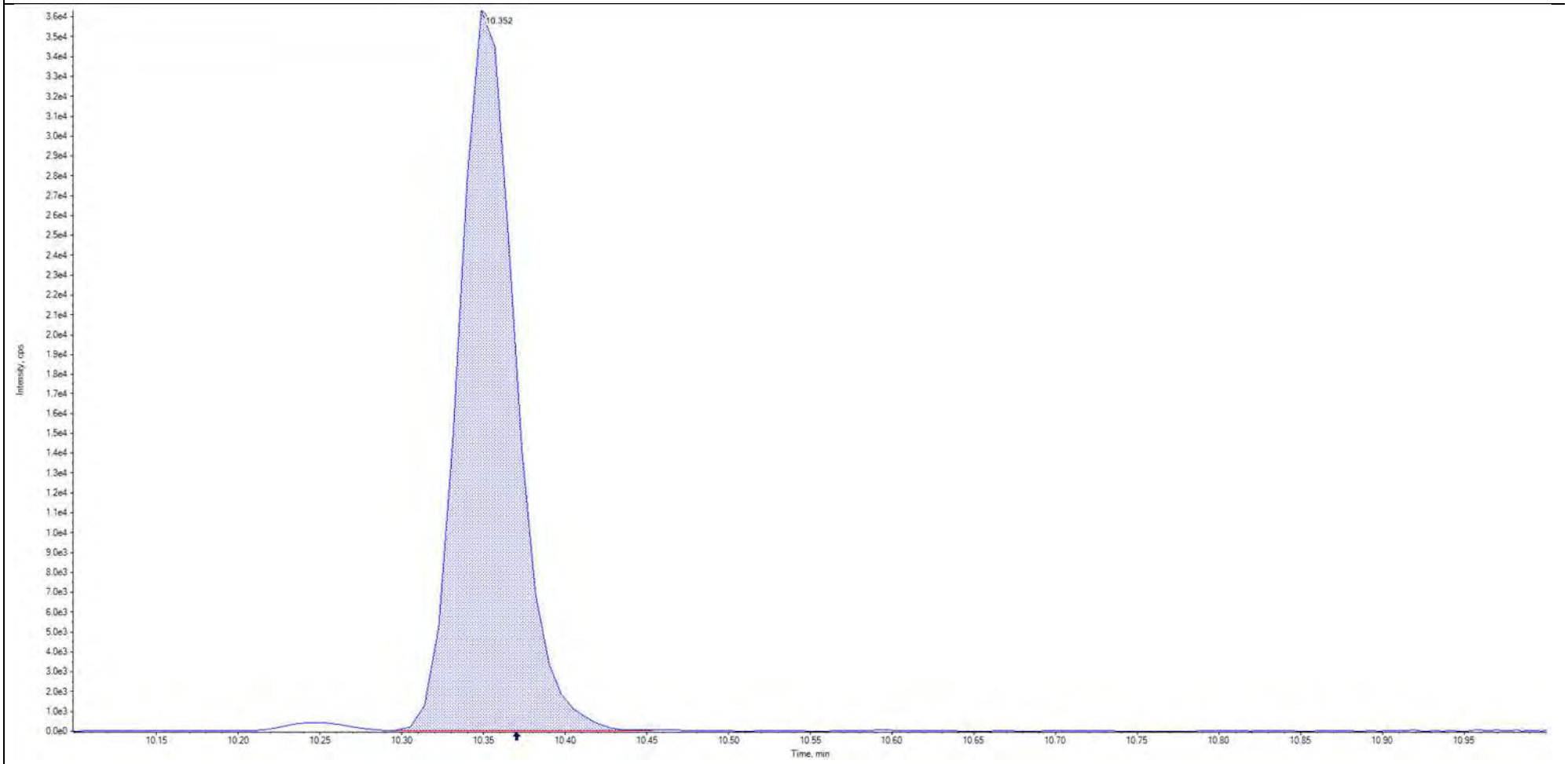
13C8-PFOSA
Sample: WG1973357-3



d3-NMeFOSA
Sample: WG1973357-3



d5-NEtFOSA
Sample: WG1973357-3



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Generated: 9/19/2024 8:04:31 AM

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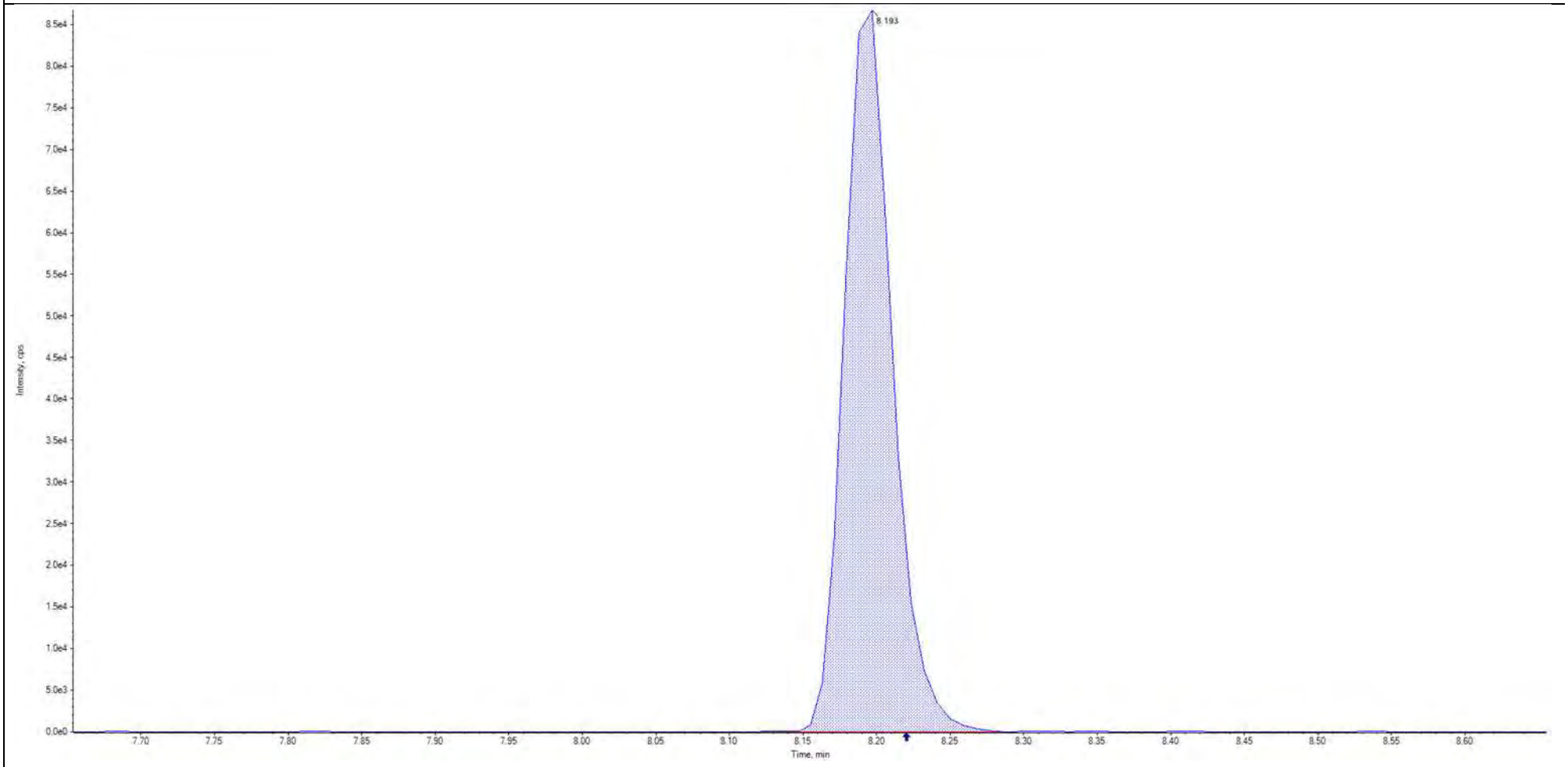

d5-NEtFOSAA
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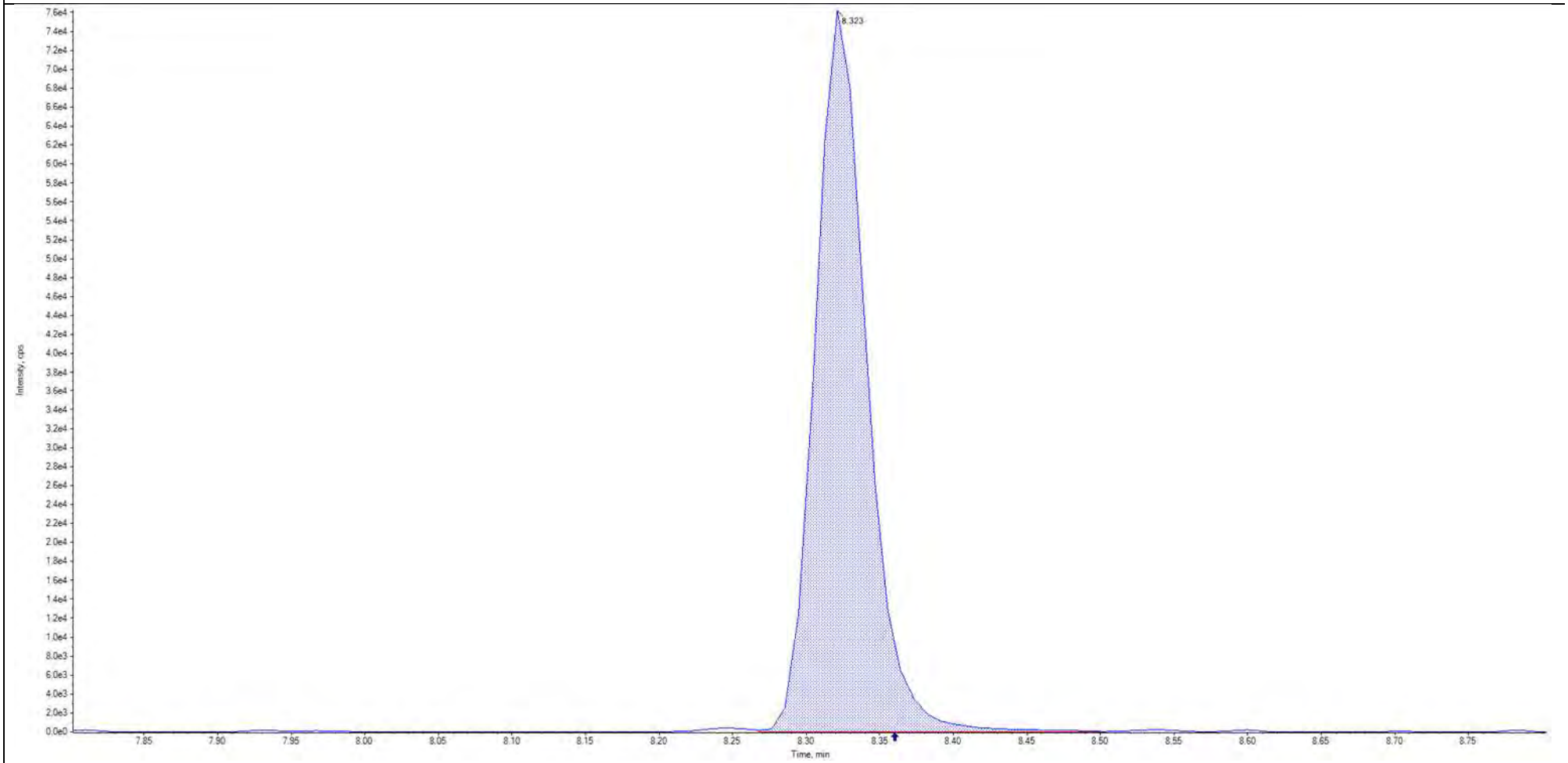
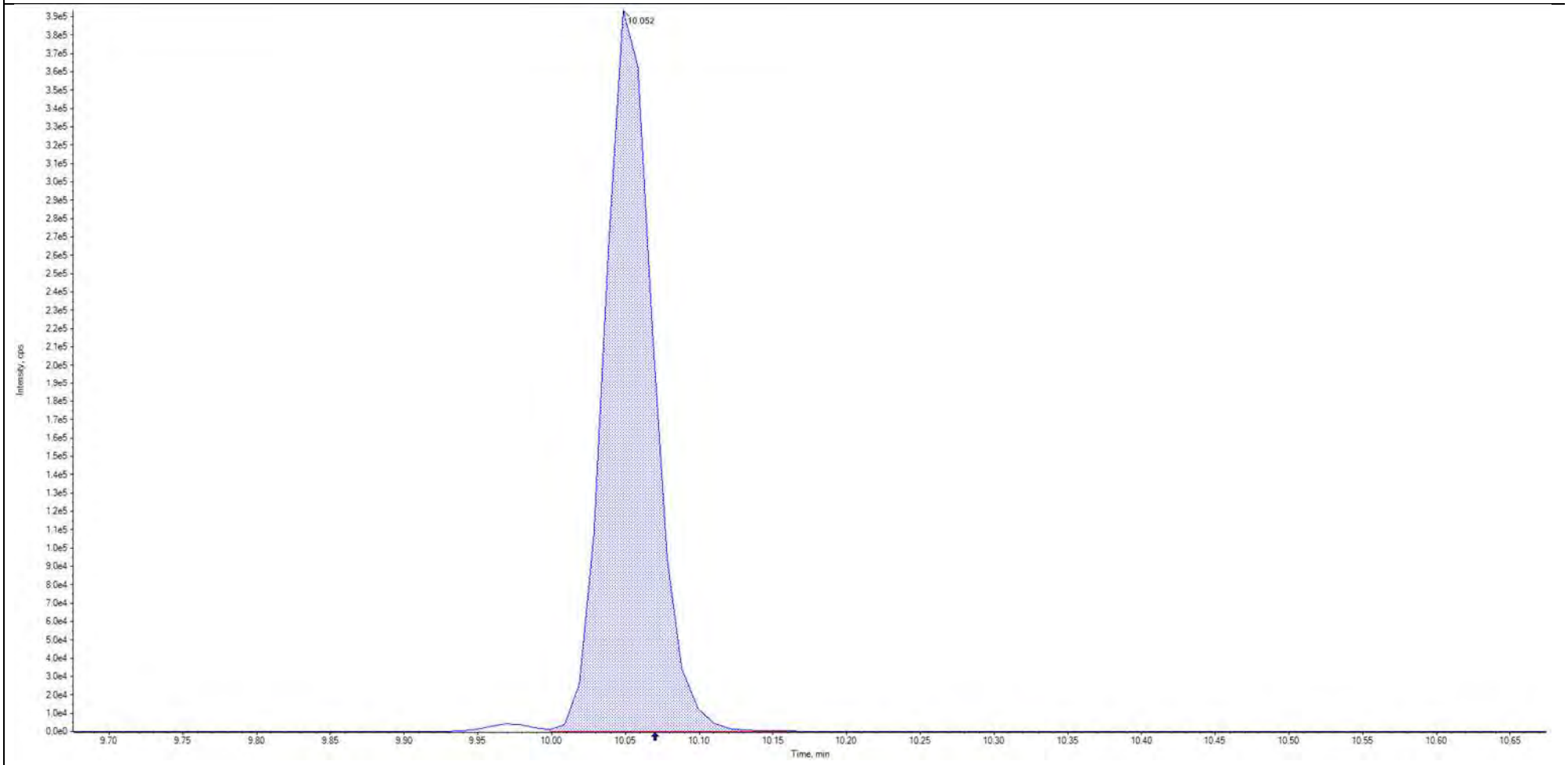
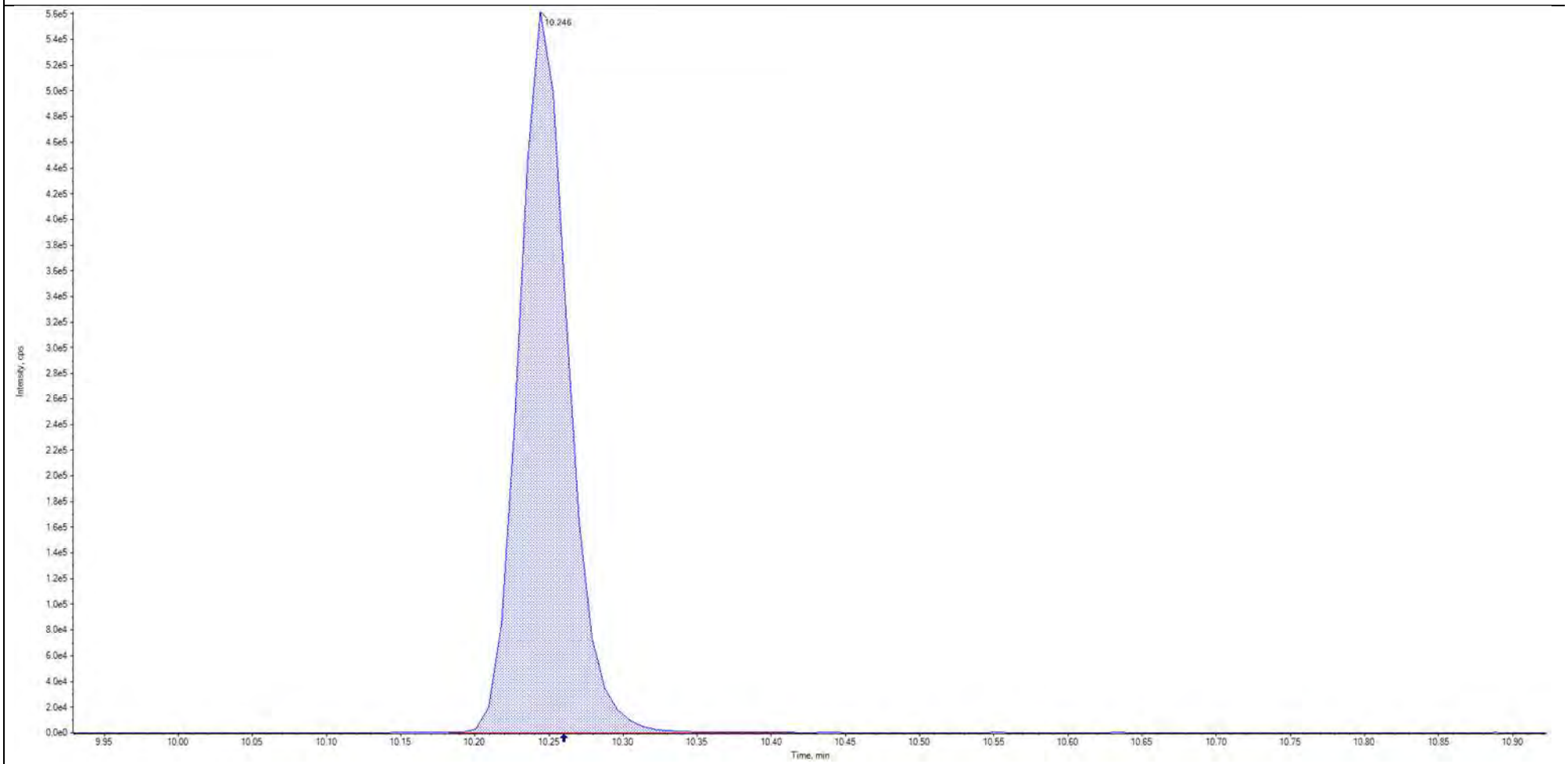


d7-NMeFOSE
Sample: WG1973357-3



d9-NEtFOSE
Sample: WG1973357-3



13C3-HFPO-DA
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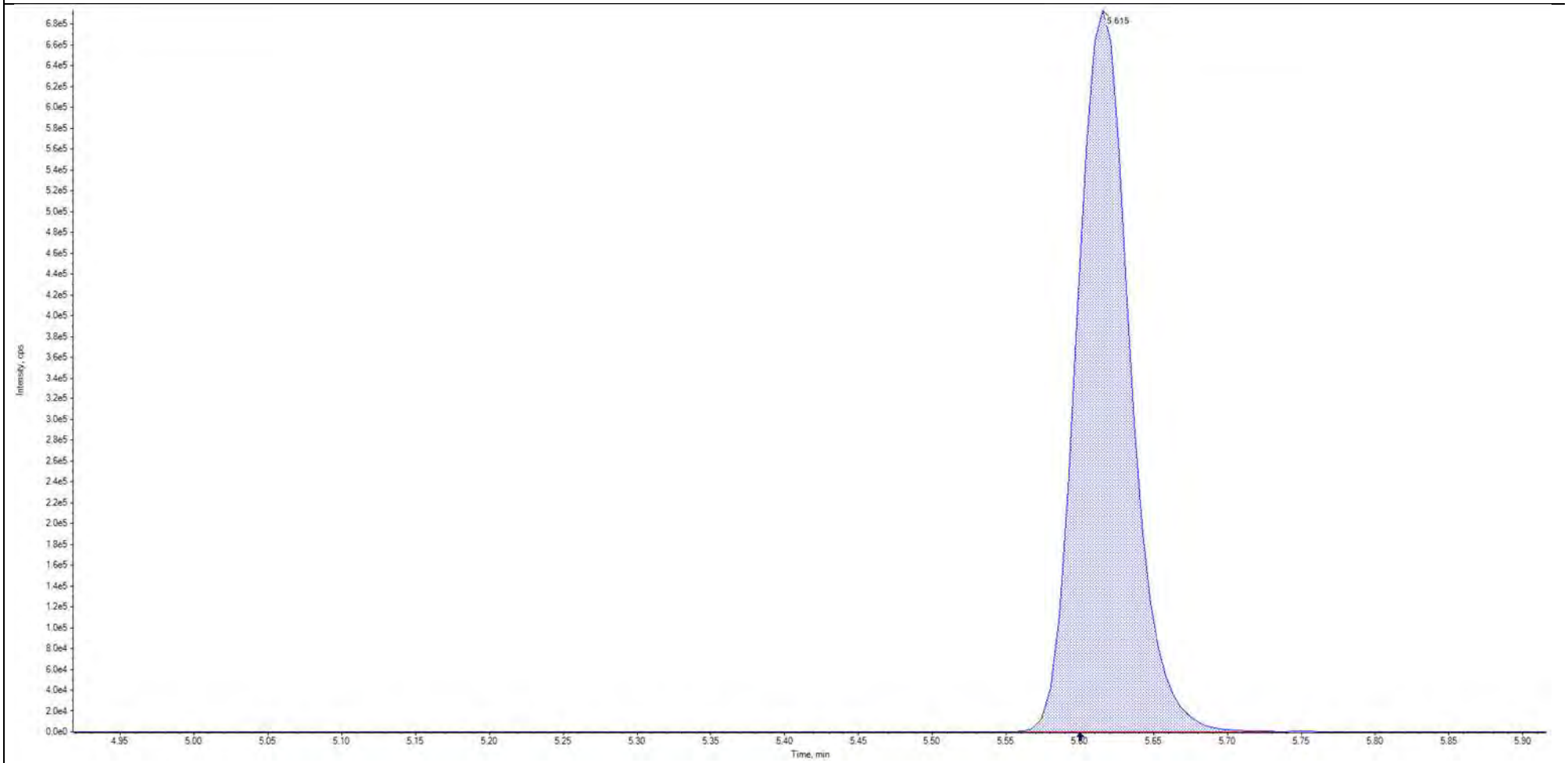
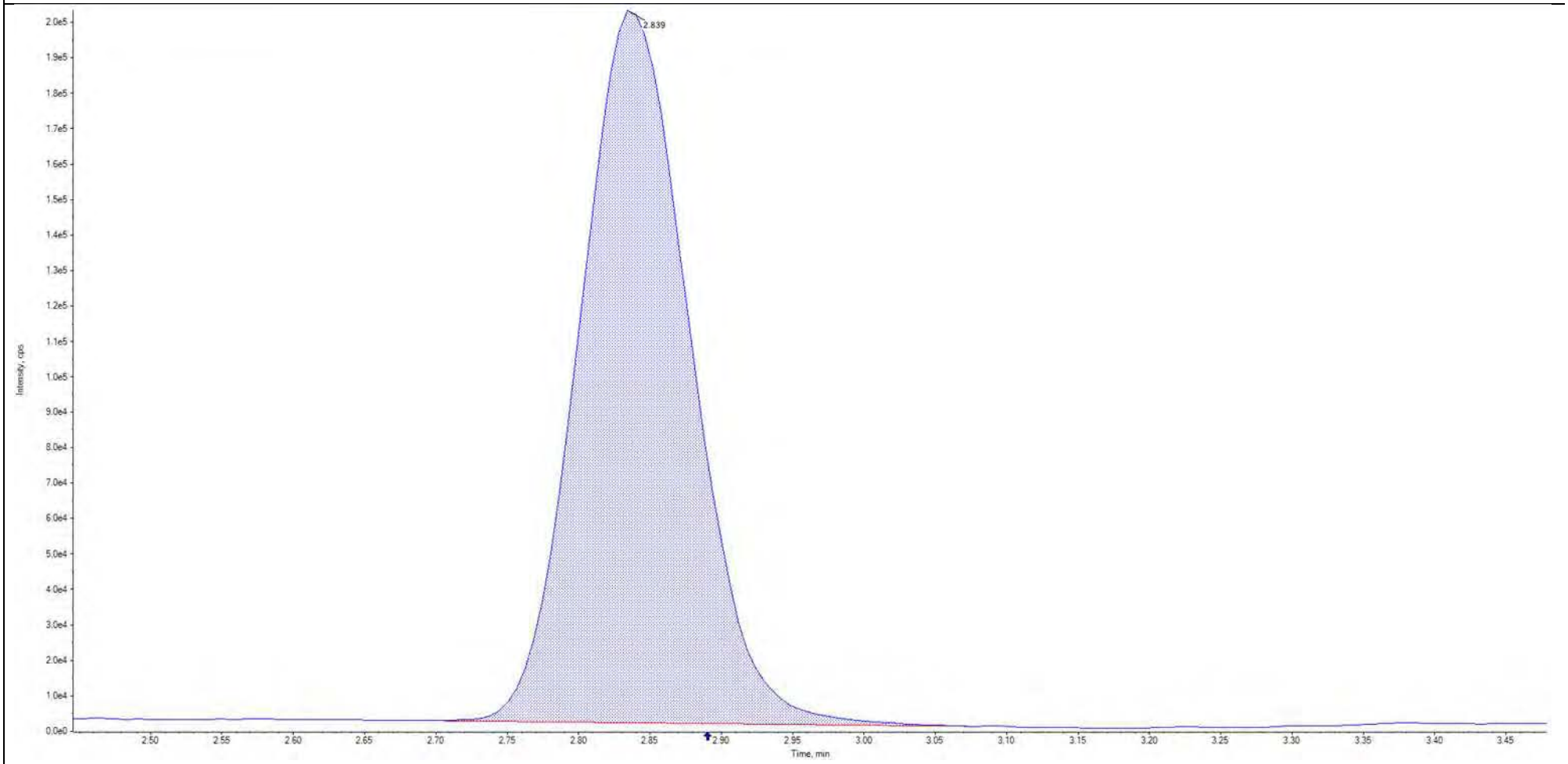
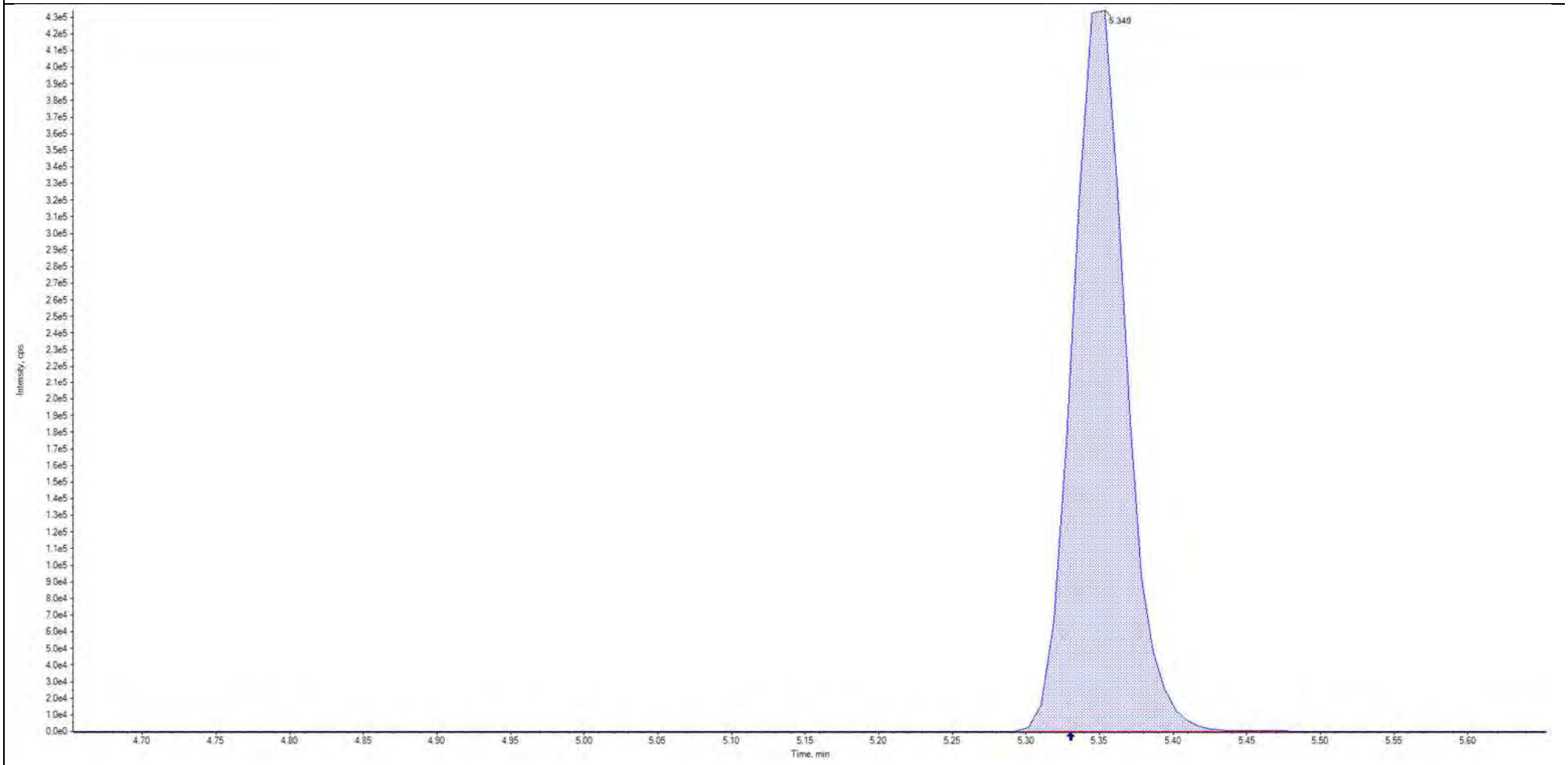


13C3-PFBA
Sample: WG1973357-3



13C2-PFHxA
Sample: WG1973357-3



13C4-PFOA
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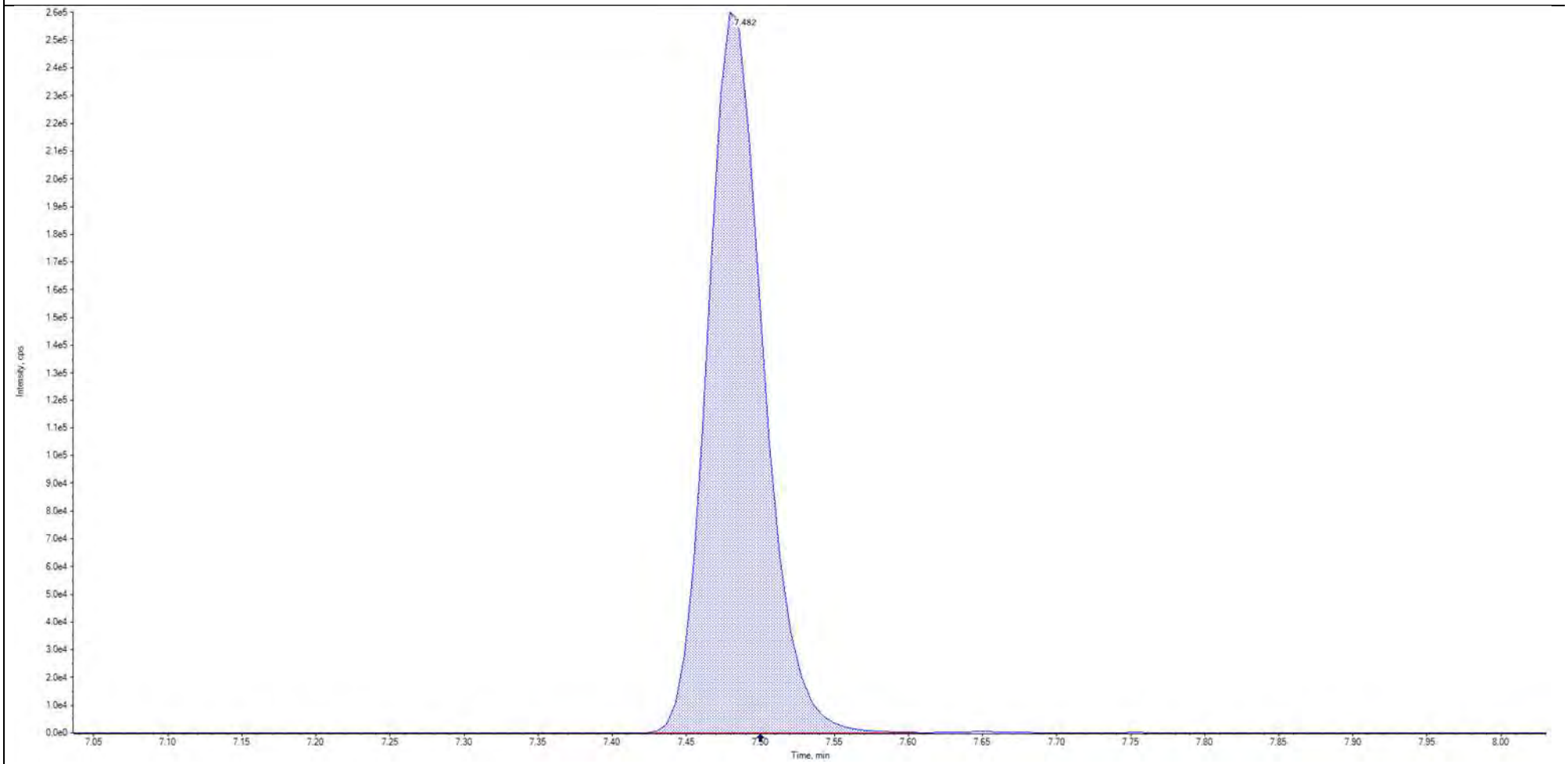

13C5-PFNA
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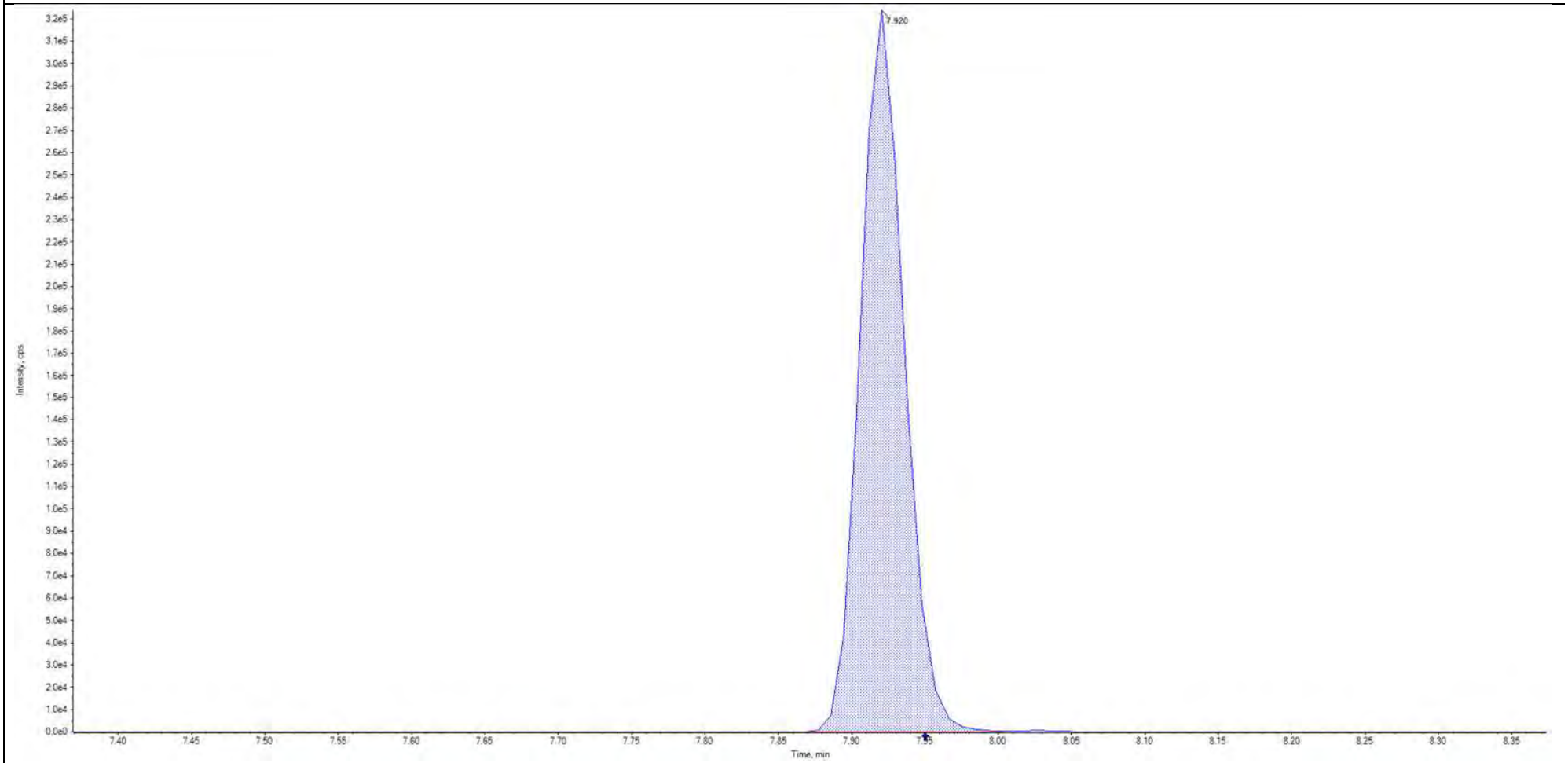
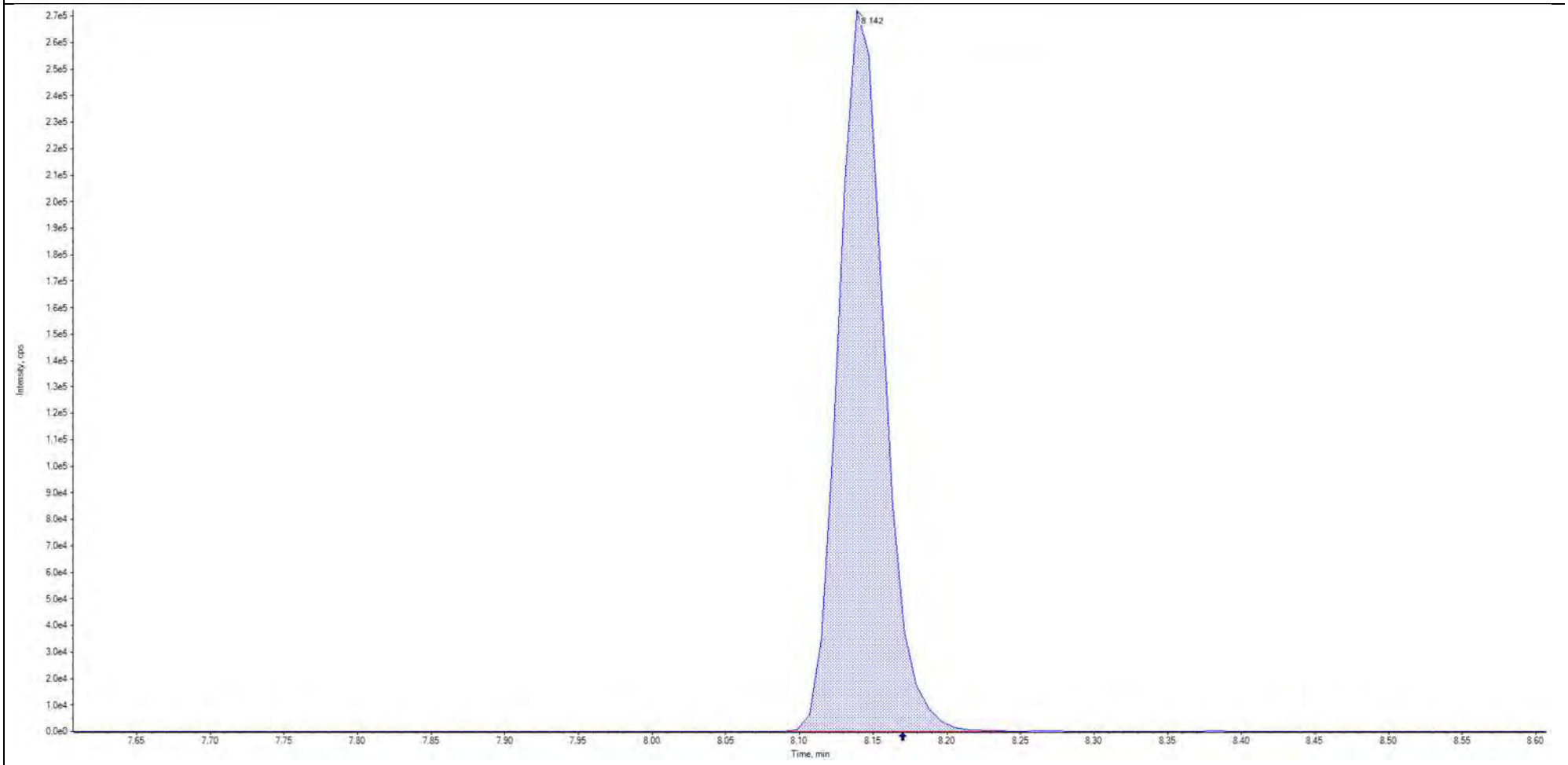
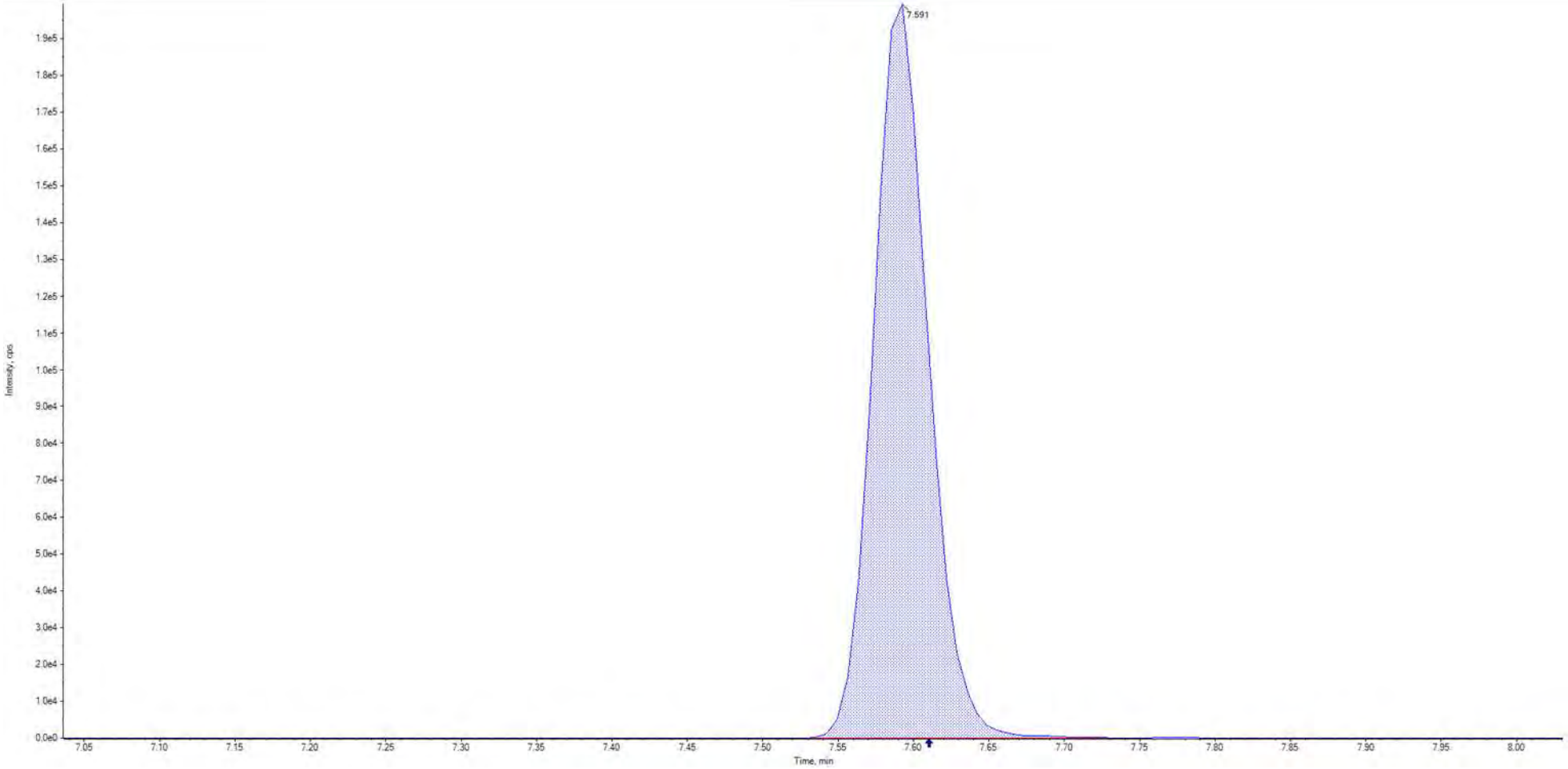


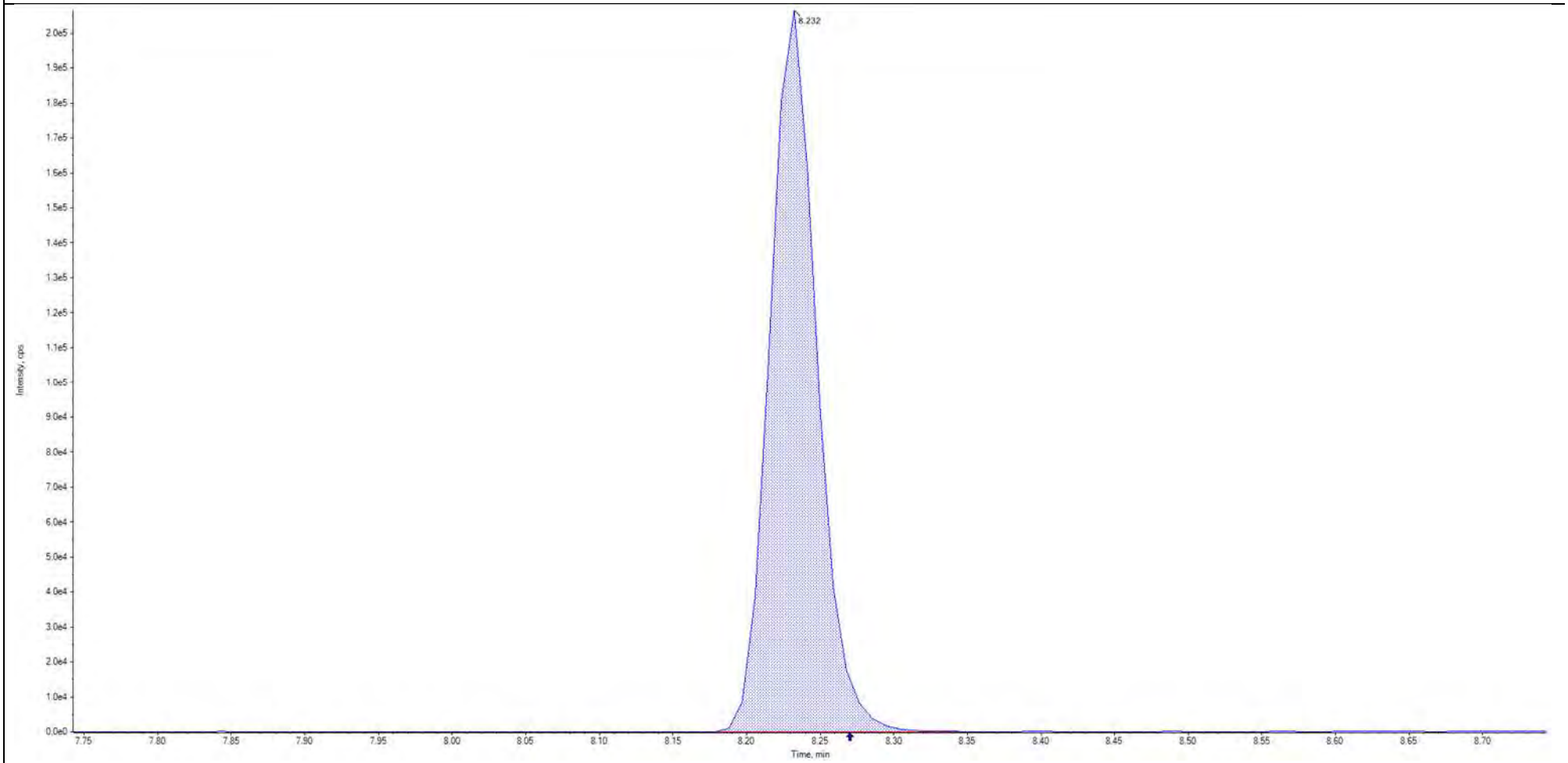
13C2-PFDA
Sample: WG1973357-3



18O2-PFHxS
Sample: WG1973357-3



13C4-PFOS
Sample: WG1973357-3



Quantity Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

Method: EPA1633_NIS_CALC.qmethod
Calibration: 240813_1633_ICAL

ID: WG1973357-4
Name: SCI05_240919_17.wiff
Date & Time: 2024-09-19T08:45:35
Description: WG1973506,WG1973357,ICAL21391
Instrument: Triple Quad 5500+
User: LCMS05:AC

LC/MS-MS Method:EPA_1633.dam

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
1	PFBA	375-22-4	2.84	213.0 / 169.0	1422144		12.144	N/A	N/A	N/A	121.4
2	PFPeA	2706-90-3	4.66	263.0 / 219.0	1062762		6.150	0.007	0.007	N/A	123.0
3	PFPeA_2	2706-90-3	4.66	263.0 / 68.9	7099		5.818	0.007	0.007	N/A	116.4
4	PFHxA	307-24-4	5.35	313.0 / 269.0	863869		3.349	0.072	0.072	Pass	133.9
5	PFHxA_2	307-24-4	5.35	313.0 / 119.0	62430		3.275	0.072	0.072	Pass	131.0
6	PFHpA	375-85-9	6.25	363.1 / 319.0	779165		3.159	0.305	0.297	Pass	126.4
7	PFHpA_2	375-85-9	6.25	363.1 / 169.0	237863		3.151	0.305	0.297	Pass	126.0

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
8	PFOA	335-67-1	7.48	413.1 / 369.1	549608	M5	3.435	0.555	0.586	Pass	137.4
9	PFOA_2	335-67-1	7.48	413.1 / 169.0	305266	M7	3.482	0.555	0.586	Pass	139.3
10	PFNA	375-95-1	7.93	462.8 / 418.9	716717	M5	3.546	0.291	0.313	Pass	141.8
11	PFNA_2	375-95-1	7.93	462.8 / 218.9	208452	M7	3.375	0.291	0.313	Pass	135.0
12	PFDA	335-76-2	8.15	513.1 / 469.1	700131		2.975	0.154	0.142	Pass	119.0
13	PFDA_2	335-76-2	8.15	513.1 / 219.0	108060		3.063	0.154	0.142	Pass	122.5
14	PFUnA	2058-94-8	8.42	563.1 / 519.1	534448		2.960	0.186	0.194	Pass	118.4
15	PFUnA_2	2058-94-8	8.42	563.1 / 269.0	99271		2.839	0.186	0.194	Pass	113.5
16	PFDoA	307-55-1	8.83	613.1 / 569.1	533131		2.147	0.171	0.167	Pass	85.9
17	PFDoA_2	307-55-1	8.83	613.1 / 319.0	91097		2.172	0.171	0.167	Pass	86.9
18	PFTrDA	72629-94-8	9.40	663.1 / 619.1	317639		2.147	0.225	0.228	Pass	85.9
19	PFTrDA_2	72629-94-8	9.40	663.1 / 169.0	71386		2.166	0.225	0.228	Pass	86.7
20	PFTeDA	376-06-7	9.86	713.1 / 669.1	497933		2.935	0.139	0.137	Pass	117.4
21	PFTeDA_2	376-06-7	9.86	713.1 / 169.0	69123		2.979	0.139	0.137	Pass	119.2
22	PFBS	375-73-5	5.33	299.1 / 80.1	475194		2.734	0.389	0.396	Pass	123.3

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
23	PFBS_2	375-73-5	5.33	299.1 / 99.1	184653		2.664	0.389	0.396	Pass	120.1
24	PFPeS	2706-91-4	6.33	349.1 / 80.1	378131		2.883	0.294	0.299	Pass	122.5
25	PFPeS_2	2706-91-4	6.33	349.1 / 99.1	111239		2.811	0.294	0.299	Pass	119.5
26	PFHxS	355-46-4	7.59	399.1 / 80.1	373844	M5	3.045	0.294	0.315	Pass	133.3
27	PFHxS_2	355-46-4	7.59	399.1 / 99.1	110039	M7	2.886	0.294	0.315	Pass	126.3
28	PFHpS	375-92-8	7.99	449.1 / 80.1	334232		2.768	0.292	0.287	Pass	116.2
29	PFHpS_2	375-92-8	7.99	449.1 / 99.1	97656		2.759	0.292	0.287	Pass	115.8
30	PFOS	1763-23-1	8.24	499.1 / 80.1	650449	M5	5.059	0.215	0.238	Pass	218.1
31	PFOS_2	1763-23-1	8.24	499.1 / 99.1	140067		4.447	0.215	0.238	Pass	191.7
32	PFNS	68259-12-1	8.57	549.1 / 80.1	233182		2.825	0.299	0.301	Pass	117.5
33	PFNS_2	68259-12-1	8.57	549.1 / 99.1	69675		2.787	0.299	0.301	Pass	115.9
34	PFDS	335-77-3	9.06	599.1 / 80.1	221693		2.727	0.278	0.275	Pass	113.0
35	PFDS_2	335-77-3	9.05	599.1 / 99.1	61586		2.748	0.278	0.275	Pass	113.9
36	PFDoS	79780-39-5	9.96	699.2 / 80.1	209768		2.817	0.257	0.274	Pass	116.2
37	PFDoS_2	79780-39-5	9.96	699.2 / 99.1	53945		2.636	0.257	0.274	Pass	108.7

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
38	4:2FTS	757124-72-4	5.15	327.1 / 307.1	705631		9.674	0.534	0.516	Pass	103.2
39	4:2FTS_2	757124-72-4	5.15	327.1 / 81.1	376714		9.654	0.534	0.516	Pass	103.0
40	6:2FTS	27619-97-2	7.08	427.2 / 407.2	397394		11.741	0.564	0.565	Pass	123.6
41	6:2FTS_2	27619-97-2	7.08	427.2 / 81.1	224033		12.237	0.564	0.565	Pass	128.8
42	8:2FTS	39108-34-4	8.05	527.2 / 507.2	511758		13.751	0.671	0.662	Pass	143.2
43	8:2FTS_2	39108-34-4	8.05	527.2 / 81.1	343289		13.600	0.671	0.662	Pass	141.7
44	PFOSA	754-91-6	9.52	498.1 / 78.1	334741	M5	2.859	0.026	0.025	Pass	114.4
45	PFOSA_2	754-91-6	9.52	498.1 / 478.0	8601	M7	2.800	0.026	0.025	Pass	112.0
46	NMeFOSA	31506-32-8	10.16	512.2 / 219.0	81460	M5	3.281	1.503	1.551	Pass	131.2
47	NMeFOSA_2	31506-32-8	10.11	512.2 / 169.0	122421	M7	3.182	1.503	1.551	Pass	127.3
48	NEtFOSA	4151-50-2	10.37	526.2 / 219.0	80650	M5	3.109	1.300	1.285	Pass	124.4
49	NEtFOSA_2	4151-50-2	10.33	526.2 / 169.0	104885	M7	3.020	1.300	1.285	Pass	120.8
50	NMeFOSAA	2355-31-9	8.20	570.2 / 419.1	84720		3.670	0.715	0.700	Pass	146.8
51	NMeFOSAA_2	2355-31-9	8.20	570.2 / 483.0	60583	M7	4.127	0.715	0.700	Pass	165.1
52	NEtFOSAA	2991-50-6	8.33	584.2 / 419.1	96509		2.918	0.452	0.487	Pass	116.7

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
53	NEtFOSAA_2	2991-50-6	8.33	584.2 / 526.2	43582		2.864	0.452	0.487	Pass	114.6
54	NMeFOSE	24448-09-7	10.07	616.1 / 58.9	1684787	M5	29.752	N/A	N/A	N/A	119.0
55	NEtFOSE	1691-99-2	10.27	630.0 / 58.9	3115687	M5	29.272	N/A	N/A	N/A	117.1
56	HFPO-DA	13252-13-6	5.61	285.0 / 169.0	1636158		12.745	0.453	0.464	Pass	127.5
57	HFPO-DA_2	13252-13-6	5.61	285.0 / 184.9	741011		12.413	0.453	0.464	Pass	124.1
58	ADONA	919005-14-4	6.71	377.1 / 251.0	3210923		10.998	0.670	0.634	Pass	116.4
59	ADONA_2	919005-14-4	6.71	377.1 / 84.8	2151184		11.387	0.670	0.634	Pass	120.5
60	9Cl-PF3ONS	756426-58-1	8.45	530.8 / 351.1	3233025		11.230	0.315	0.322	Pass	120.1
61	9Cl-PF3ONS_2	756426-58-1	8.45	532.8 / 353.0	1019605		10.876	0.315	0.322	Pass	116.3
62	11Cl-PF3OUdS	763051-92-9	9.47	630.9 / 451.0	1944782		10.695	0.330	0.331	Pass	113.2
63	11Cl-PF3OUdS_2	763051-92-9	9.47	632.9 / 452.9	641091		10.475	0.330	0.331	Pass	110.9
64	3:3FTCA	356-02-5	4.94	241.1 / 177.1	229078		15.282	0.891	1.074	Pass	122.3
65	3:3FTCA_2	356-02-5	4.94	241.1 / 117.0	204125		13.597	0.891	1.074	Pass	108.8
66	5:3FTCA	914637-49-3	7.18	341.1 / 237.1	3480807		74.376	0.950	0.953	Pass	119.0
67	5:3FTCA_2	914637-49-3	7.18	341.1 / 217.0	3308343		74.708	0.950	0.953	Pass	119.5

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
68	7:3FTCA	812-70-4	8.19	441.1 / 316.9	2358390		45.266	1.864	1.558	Pass	72.4
69	7:3FTCA_2	812-70-4	8.19	441.1 / 337.1	4395572		58.139	1.864	1.558	Pass	93.0
70	PFEESA	113507-82-7	5.72	315.1 / 135.0	2319232		5.182	0.085	0.087	Pass	116.4
71	PFEESA_2	113507-82-7	5.72	315.1 / 82.9	196960		5.094	0.085	0.087	Pass	114.5
72	PFMPA	377-73-1	3.88	229.0 / 85.0	165826		7.928	N/A	N/A	N/A	158.6
73	PFMBA	863090-89-5	4.89	279.0 / 85.0	1560595		5.533	N/A	N/A	N/A	110.7
74	NFDHA	151772-58-6	5.27	295.0 / 201.0	295409		6.269	0.976	0.910	Pass	125.4
75	NFDHA_2	151772-58-6	5.27	295.0 / 84.9	288447		6.678	0.976	0.910	Pass	133.6
76	TDCA	516-50-7	N/A	499.1 / 124.1	N/A		N/A	N/A	40.716	N/A	N/A
77	TDCA_2	516-50-7	N/A	499.1 / 79.9	N/A		N/A	N/A	40.716	N/A	N/A
78	13C2D4-4:2FTS	Surr	N/A	333.2 / 312.1	N/A		N/A	N/A	N/A	N/A	N/A
79	13C2-PFOA	Surr	N/A	415.0 / 370.0	N/A		N/A	N/A	N/A	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C4-PFBA	EIS	2.83	217.0 / 172.0	1444112		5.127	NA	NA	NA	51.3

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C5-PFPeA	EIS	4.65	268.0 / 223.0	937166		2.613	NA	NA	NA	52.3
	13C5-PFHxA	EIS	5.35	318.0 / 273.0	529325		1.123	NA	NA	NA	44.9
	13C4-PFHpA	EIS	6.24	367.0 / 322.0	526590		1.116	NA	NA	NA	44.7
	13C8-PFOA	EIS	7.47	421.0 / 376.0	768918		1.203	NA	NA	NA	48.1
	13C9-PFNA	EIS	7.92	472.0 / 427.0	345182		0.554	NA	NA	NA	44.3
	13C6-PFDA	EIS	8.14	519.0 / 474.0	341404		0.585	NA	NA	NA	46.8
	13C7-PFUnA	EIS	8.42	570.0 / 525.0	285593		0.605	NA	NA	NA	48.4

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C2-PFDoA	EIS	8.82	615.1 / 570.0	238661		0.777	NA	NA	NA	62.2
	13C2-PFTeDA	EIS	9.85	715.1 / 670.1	169256		0.508	NA	NA	NA	40.6
	13C3-PFBS	EIS	5.32	302.1 / 80.1	414310		1.171	NA	NA	NA	50.3
	13C3-PFHxS	EIS	7.59	402.1 / 80.1	307548		1.094	NA	NA	NA	46.2
	13C8-PFOS	EIS	8.23	507.1 / 80.1	313000		1.087	NA	NA	NA	45.4
	13C2-4:2FTS	EIS	5.15	329.1 / 81.1	174562		2.764	NA	NA	NA	58.9
	13C2-6:2FTS	EIS	7.08	429.2 / 81.1	98108		2.120	NA	NA	NA	44.6
	13C2-8:2FTS	EIS	8.05	529.2 / 81.1	140937		2.081	NA	NA	NA	43.4

Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
13C8-PFOSA	EIS	9.51	506.1 / 78.1	437924		1.144	NA	NA	NA	45.8
d3-NMeFOSA	EIS	10.15	515.2 / 219.0	57969		0.900	NA	NA	NA	36.0
d5-NEtFOSA	EIS	10.36	531.2 / 219.0	59054		0.938	NA	NA	NA	37.5
d3-NMeFOSAA	EIS	8.19	573.2 / 419.1	175413		1.204	NA	NA	NA	24.1
d5-NEtFOSAA	EIS	8.32	589.3 / 419.1	177367		2.317	NA	NA	NA	46.3
d7-NMeFOSE	EIS	10.06	623.2 / 58.9	573869		11.533	NA	NA	NA	46.1
d9-NEtFOSE	EIS	10.25	639.2 / 58.9	906731		12.360	NA	NA	NA	49.4

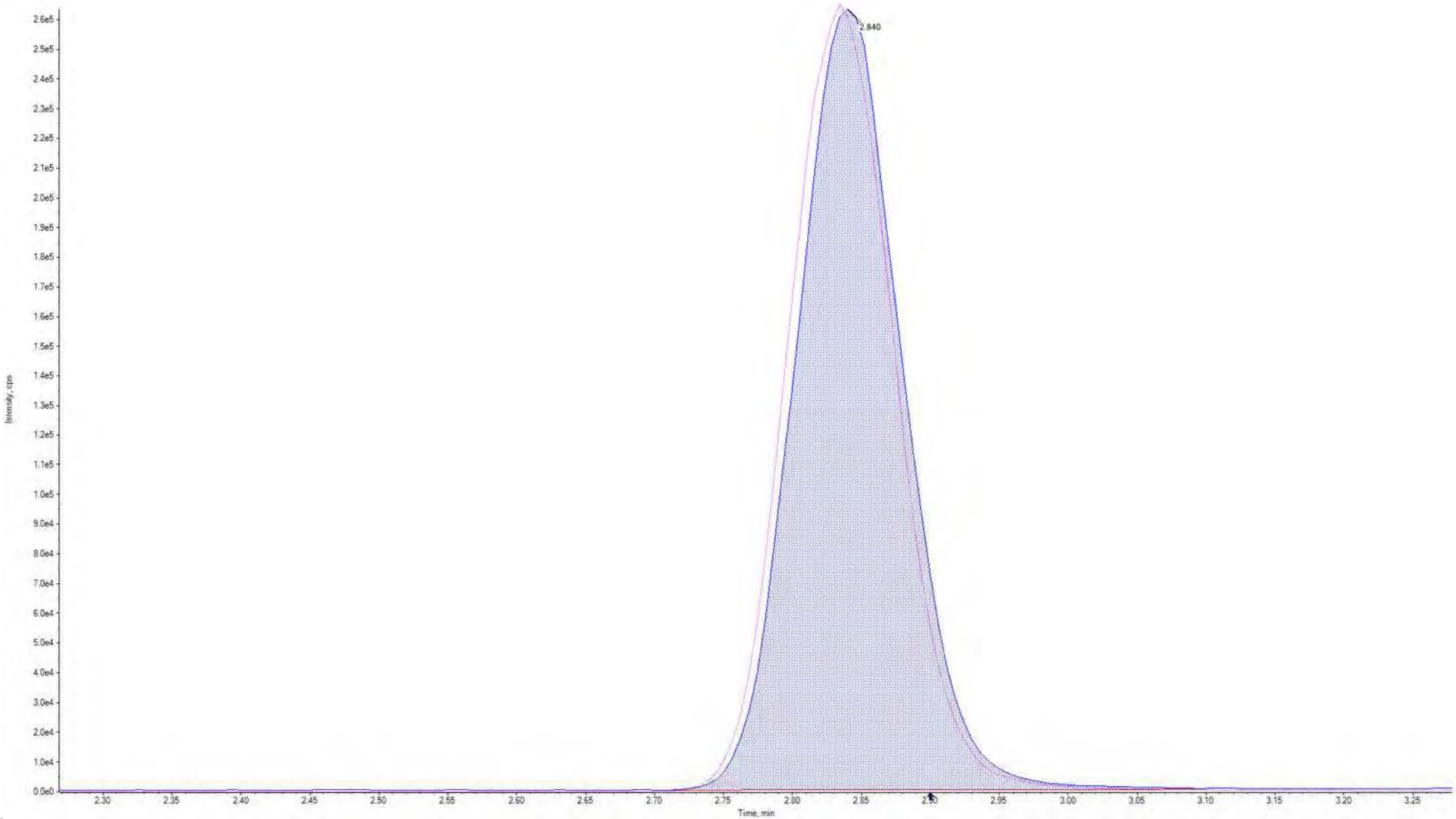
	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C3-HFPO-DA	EIS	5.61	287.0 / 169.0	1400461		4.485	NA	NA	NA	44.9
	13C3-PFBA	NIS	2.83	216.0 / 172.0	1232056		5.762	NA	NA	NA	115.2
	13C2-PFHxA	NIS	5.34	315.0 / 270.0	1398910		2.857	NA	NA	NA	114.3
	13C4-PFOA	NIS	7.47	417.0 / 372.0	836032		2.671	NA	NA	NA	106.8
	13C5-PFNA	NIS	7.92	468.0 / 423.0	759226		1.386	NA	NA	NA	110.9
	13C2-PFDA	NIS	8.14	515.1 / 470.1	685424		1.338	NA	NA	NA	107.0
	18O2-PFHxS	NIS	7.58	403.1 / 84.1	571239		2.438	NA	NA	NA	102.9
	13C4-PFOS	NIS	8.23	503.1 / 80.1	509283		2.419	NA	NA	NA	101.0

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec

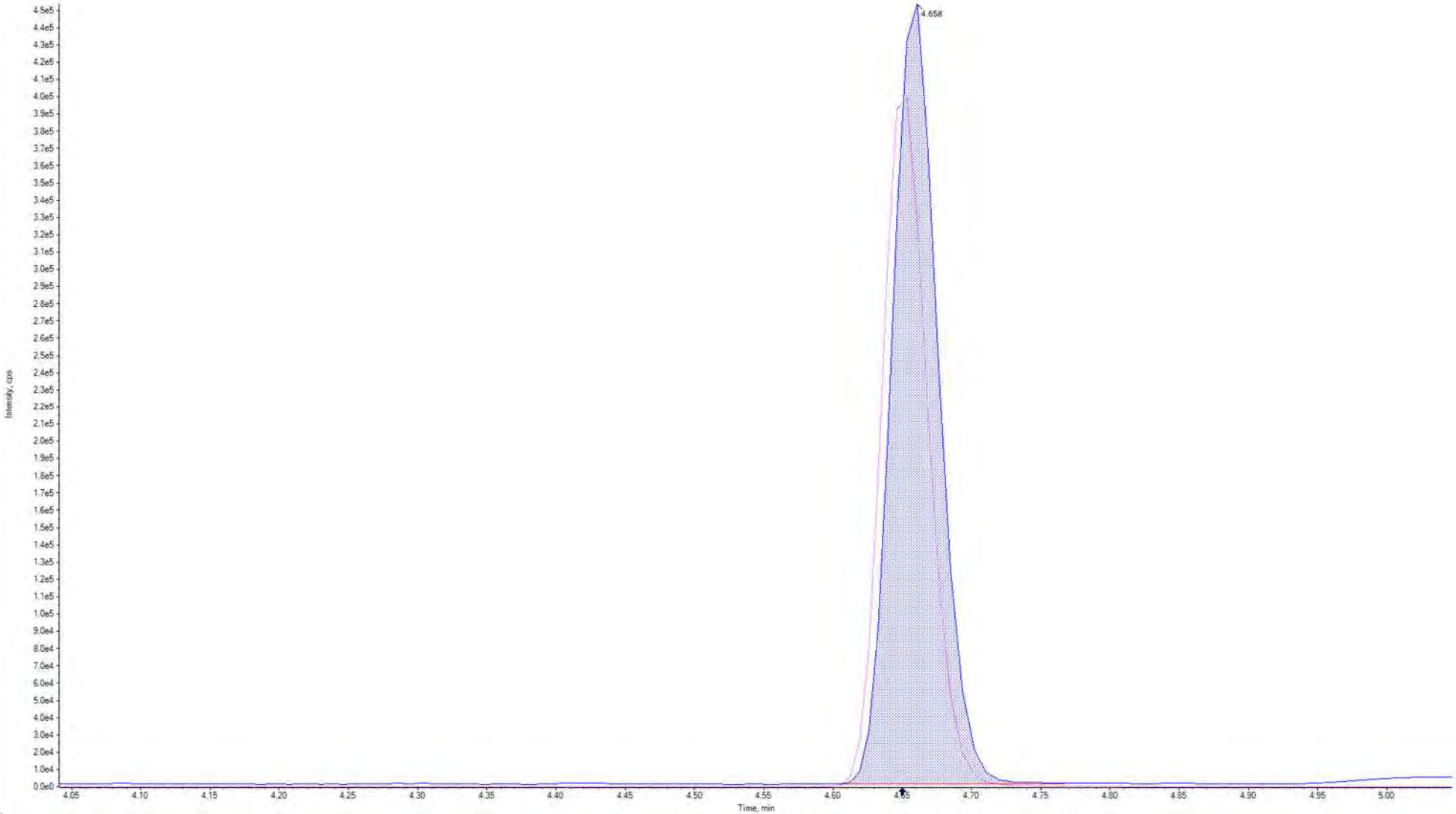
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFBA
Sample: WG1973357-4 S/N:2406.0 Points Across peak:66



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFPeA
Sample: WG1973357-4 S/N:1276.6 Points Across peak:25



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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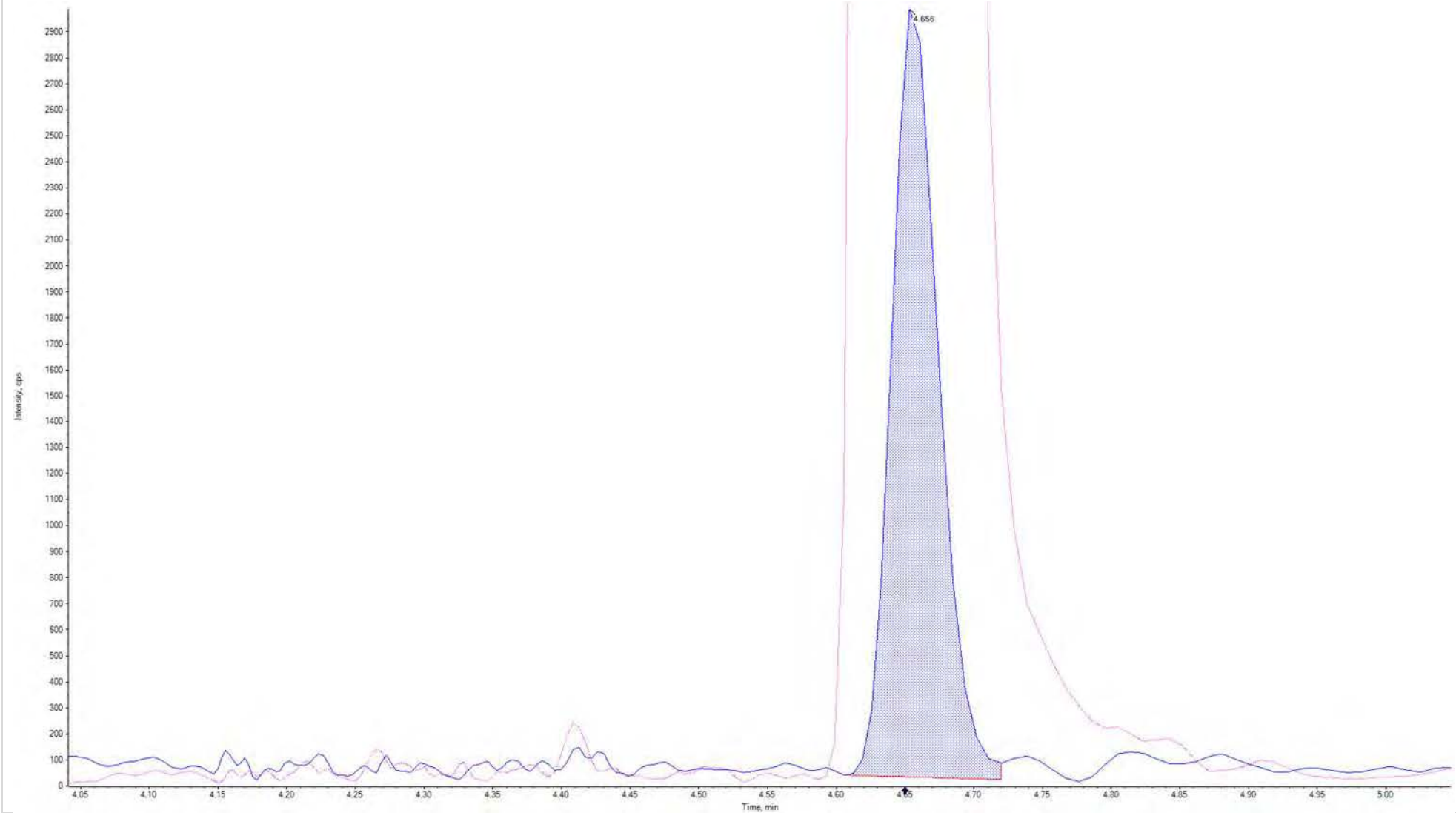
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFPeA_2
Sample: WG1973357-4 S/N:295.0 Points Across peak:16



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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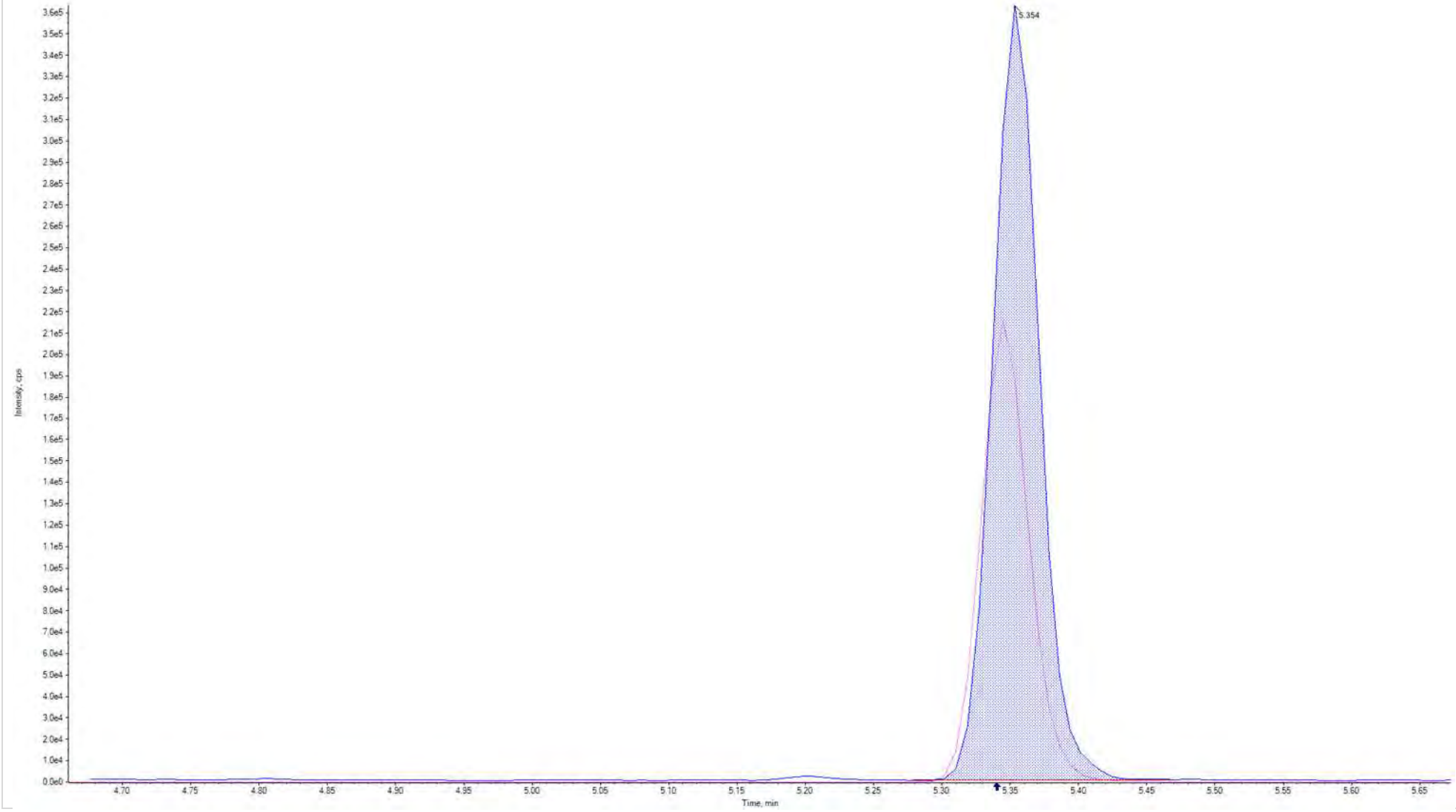
PFHxA
Sample: WG1973357-4 S/N:777.7 Points Across peak:25



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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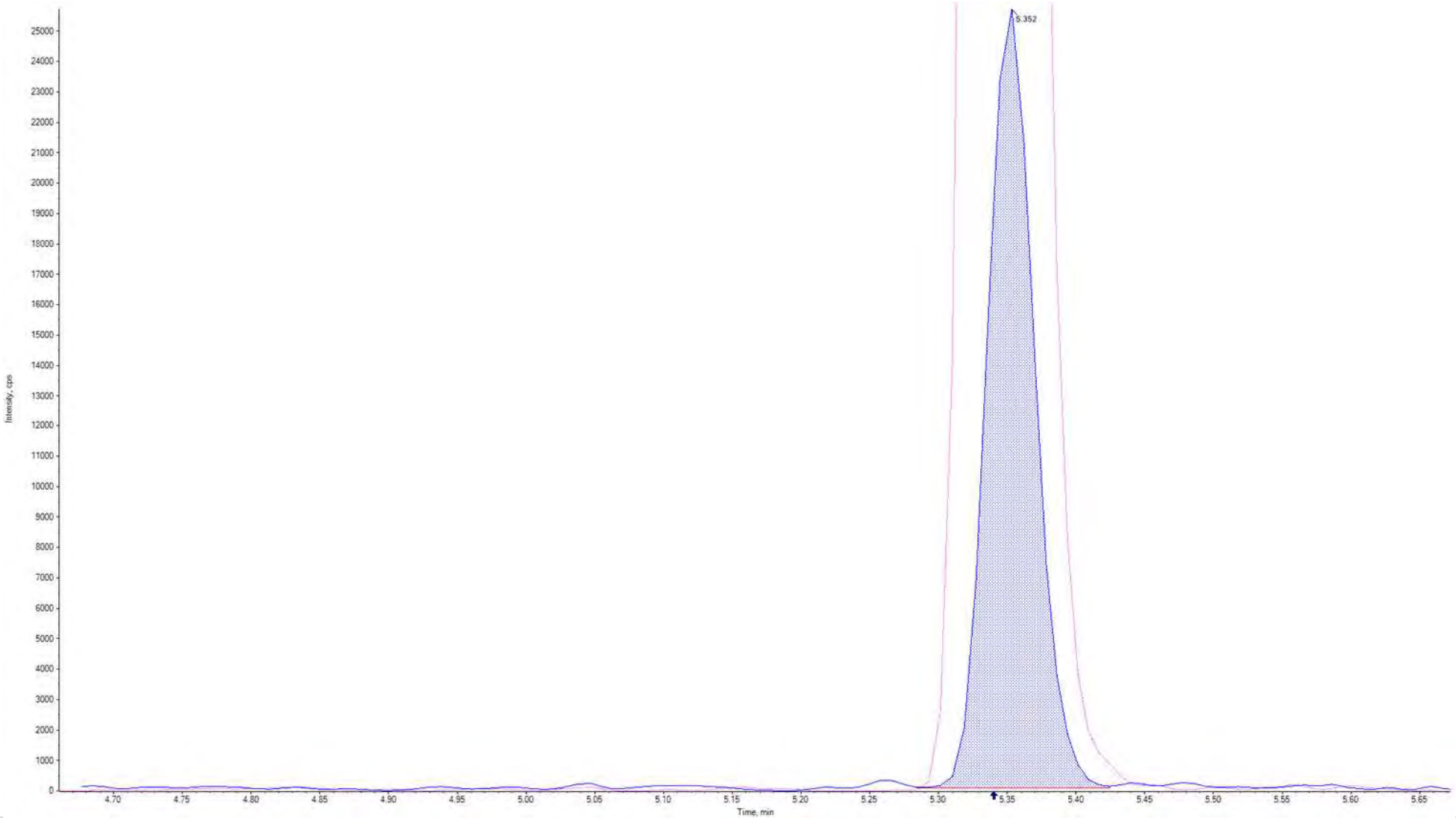
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHxA_2
Sample: WG1973357-4 S/N:1754.4 Points Across peak:18



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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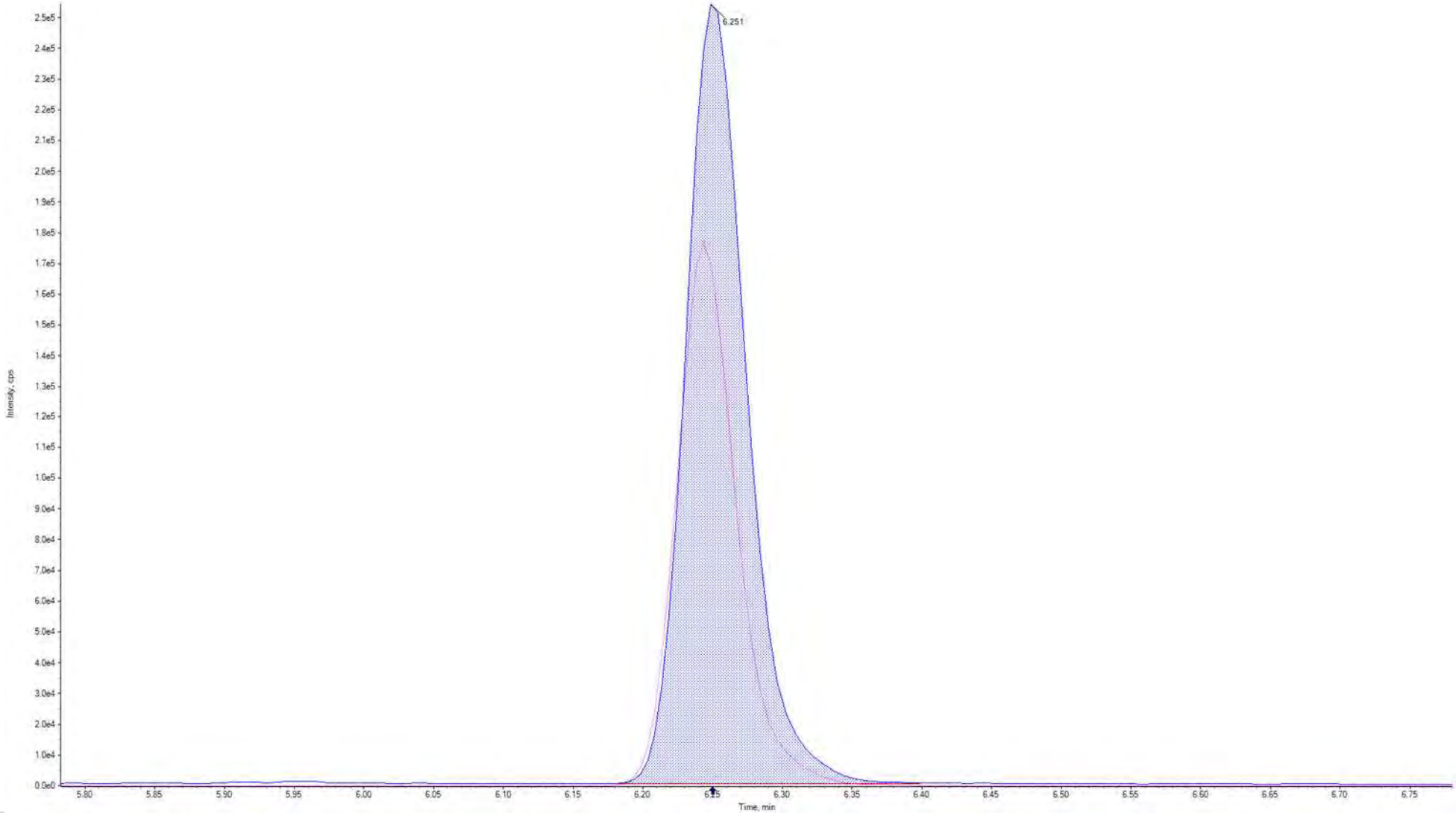
PFHpA
Sample: WG1973357-4 S/N:1473.1 Points Across peak:40



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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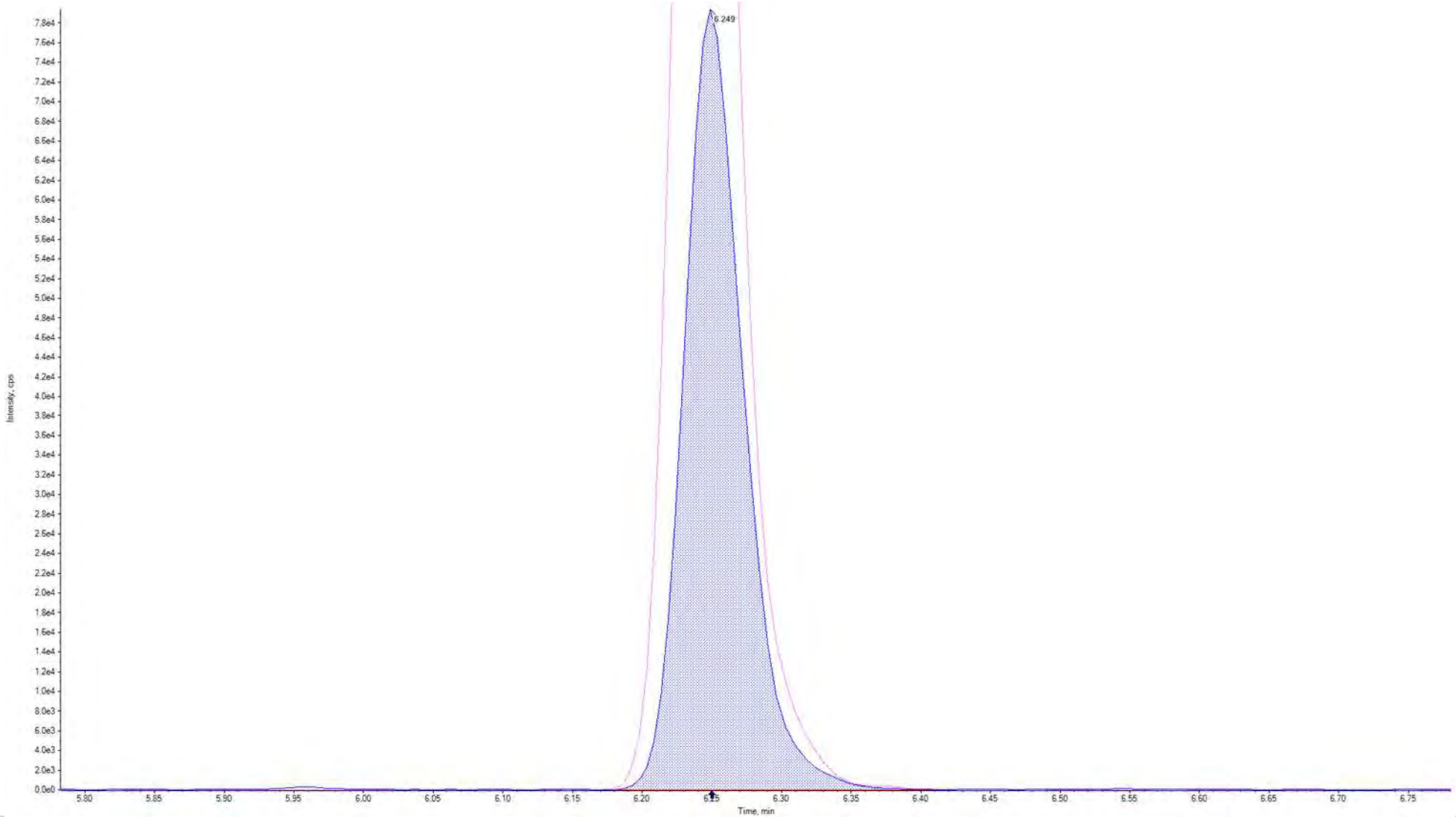
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHpA_2
Sample: WG1973357-4 S/N:4652.8 Points Across peak:42



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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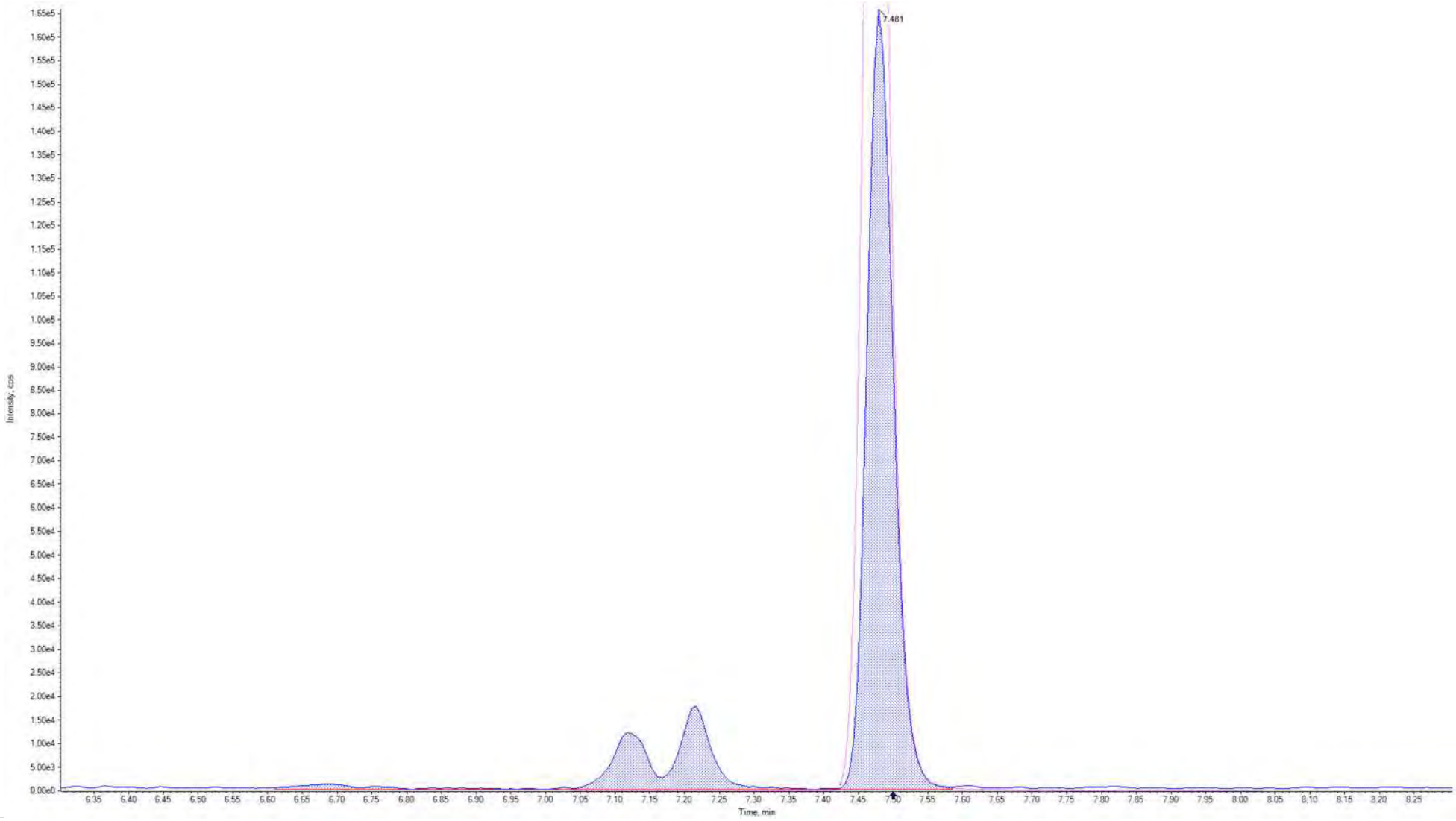
Generated: 9/19/2024 8:04:31 AM

PFOA
Sample: WG1973357-4 S/N:1254.2 Points Across peak:149



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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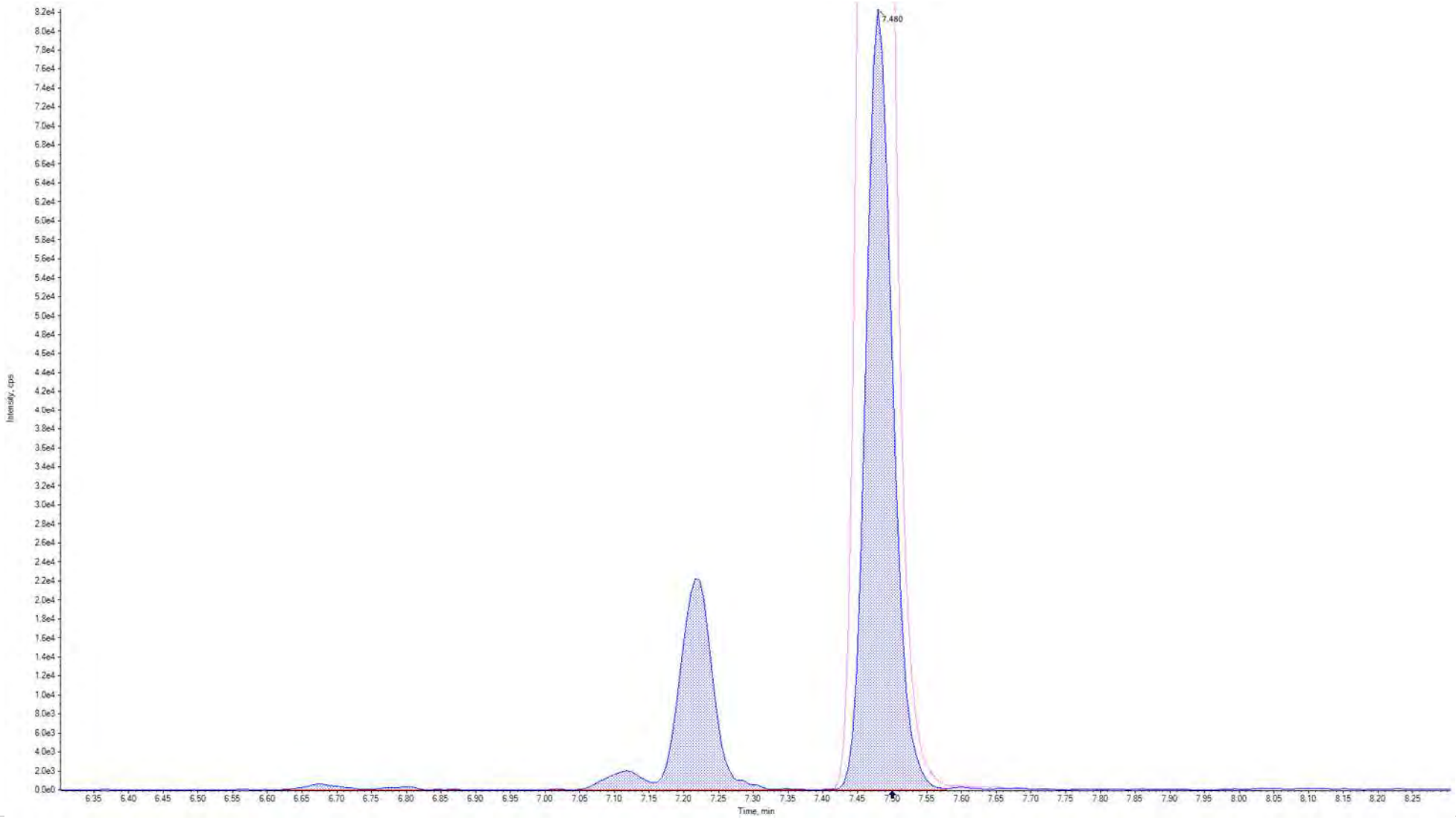
Generated: 9/19/2024 8:04:31 AM

PFOA_2
Sample: WG1973357-4 S/N:111648.6 Points Across peak:149



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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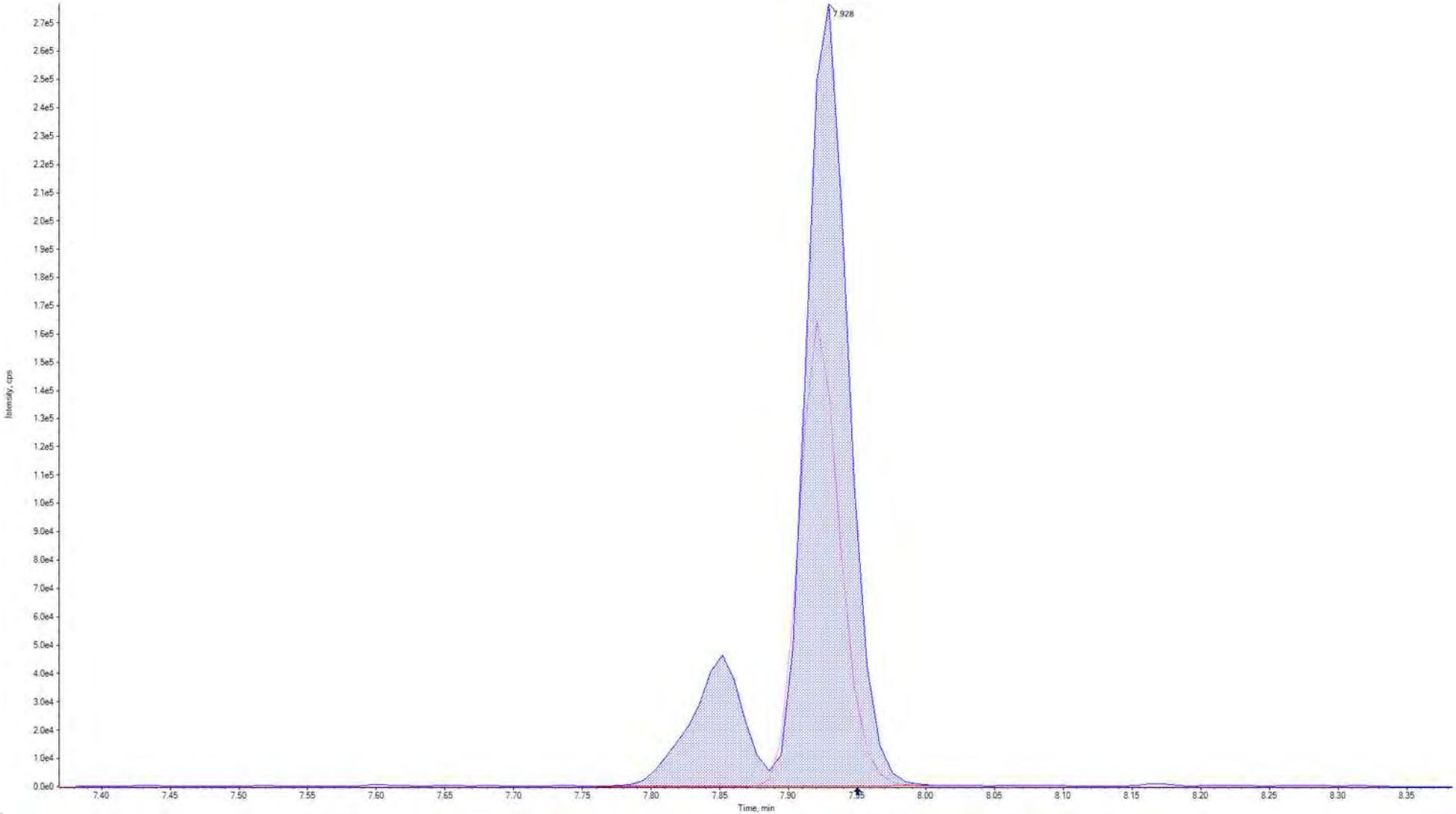
Generated: 9/19/2024 8:04:31 AM

PFNA
Sample: WG1973357-4 S/N:1767.5 Points Across peak:31



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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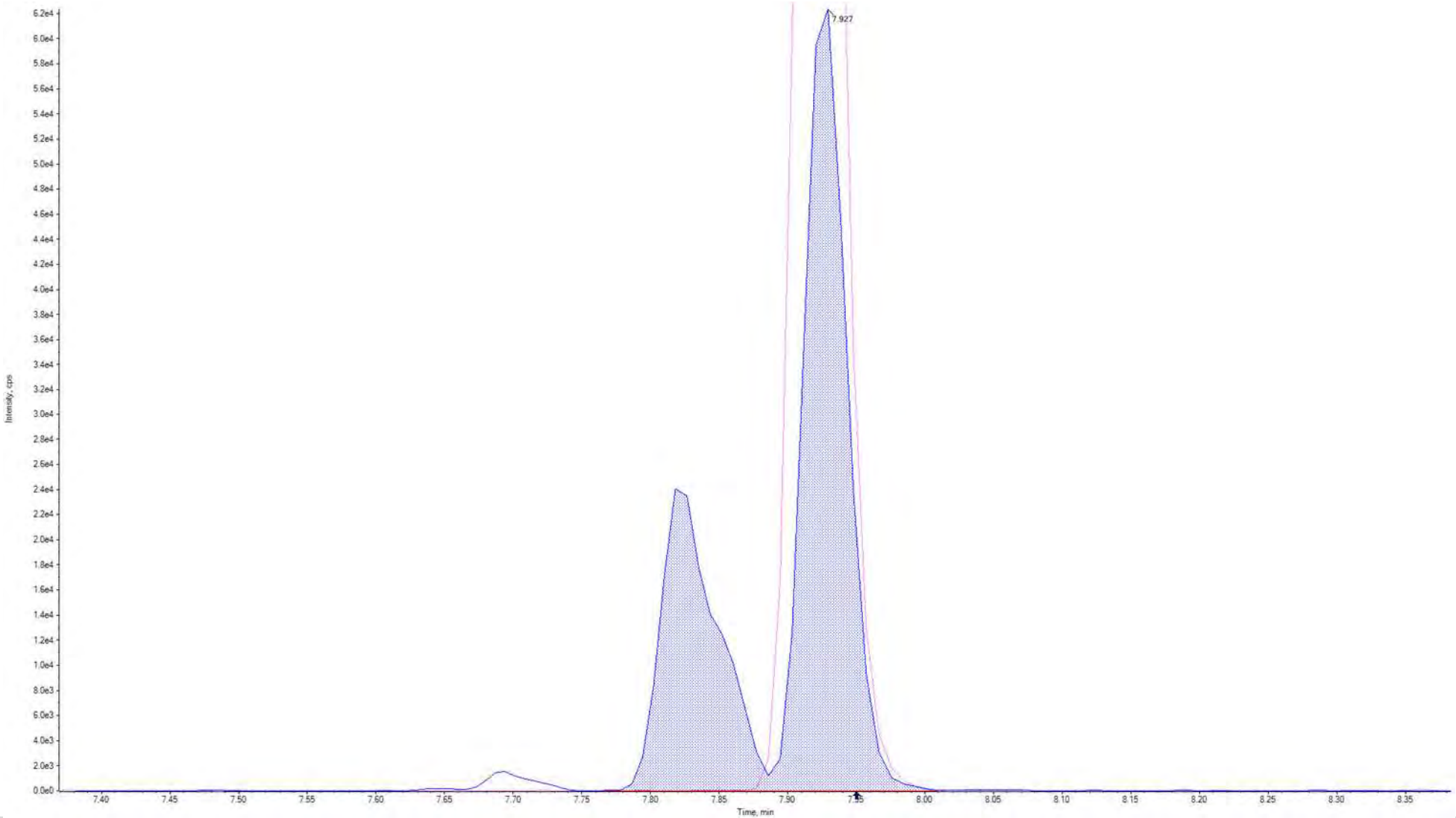
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFNA_2
Sample: WG1973357-4 S/N:1011.3 Points Across peak:31



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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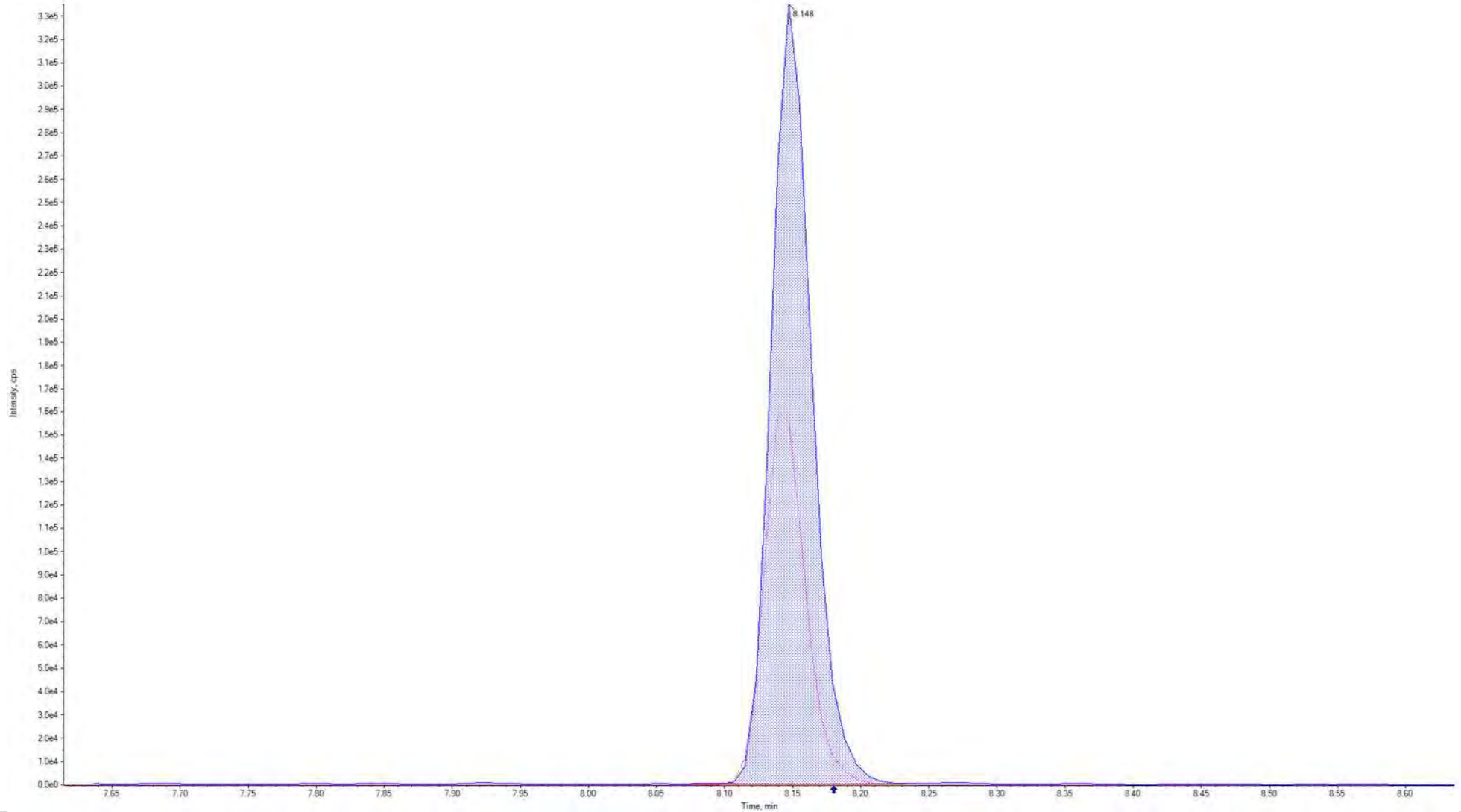
Generated: 9/19/2024 8:04:31 AM

PFDA
Sample: WG1973357-4 S/N:2083.4 Points Across peak:20



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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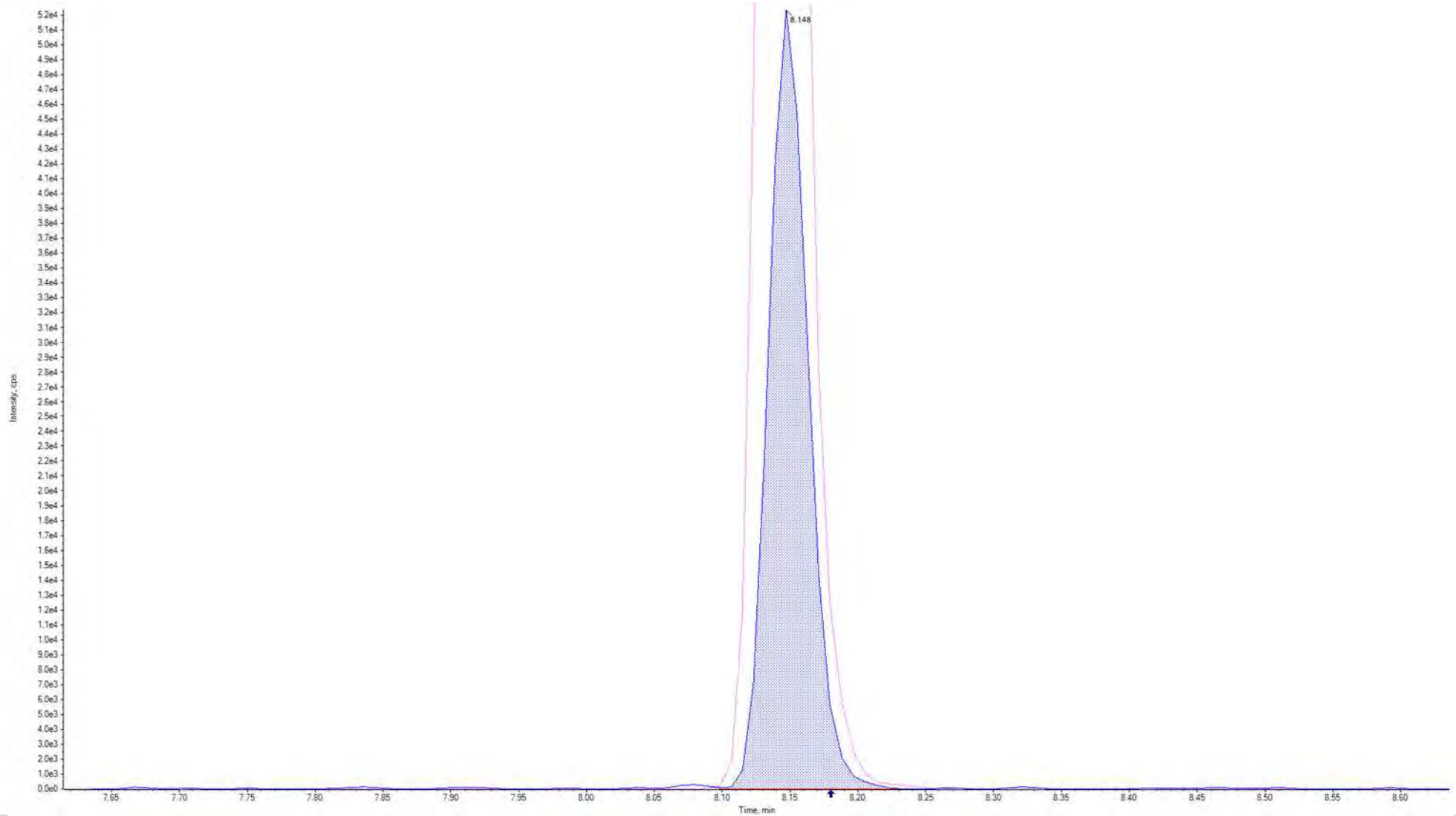
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDA_2
Sample: WG1973357-4 S/N:514079.4 Points Across peak:18



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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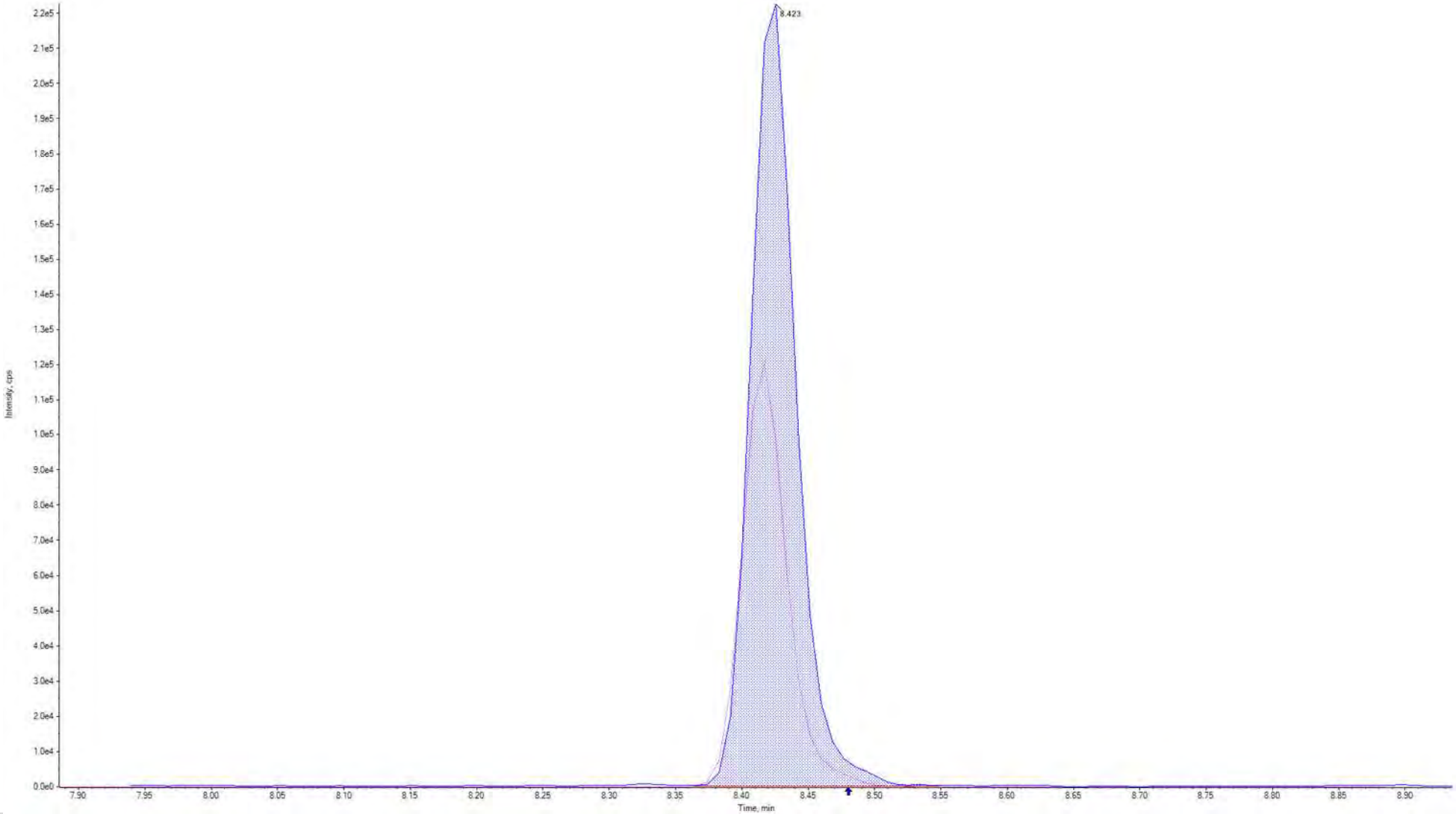
Generated: 9/19/2024 8:04:31 AM

PFUnA
Sample: WG1973357-4 S/N:2059.0 Points Across peak:23



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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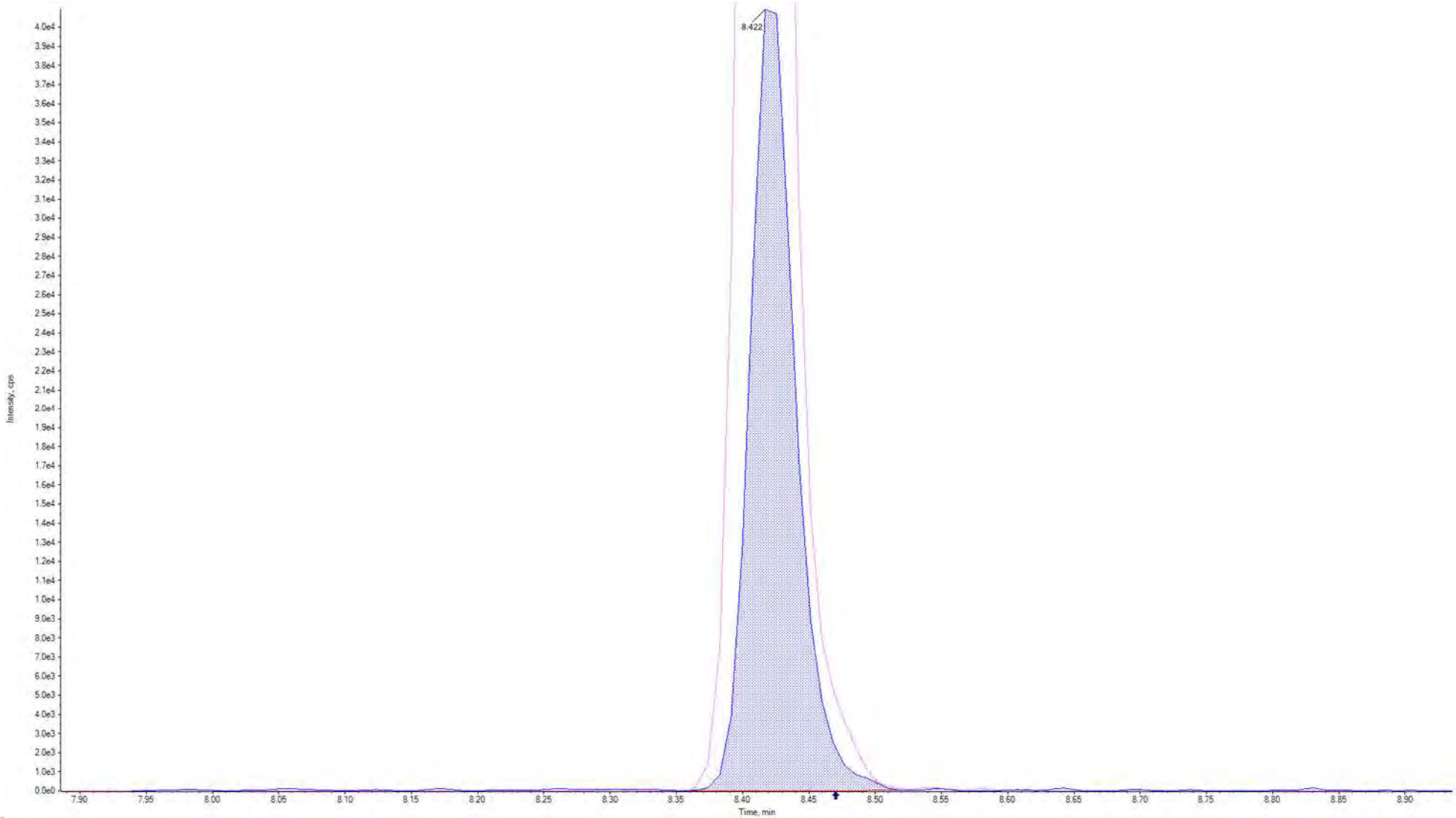
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFUnA_2
Sample: WG1973357-4 S/N:531727.5 Points Across peak:22



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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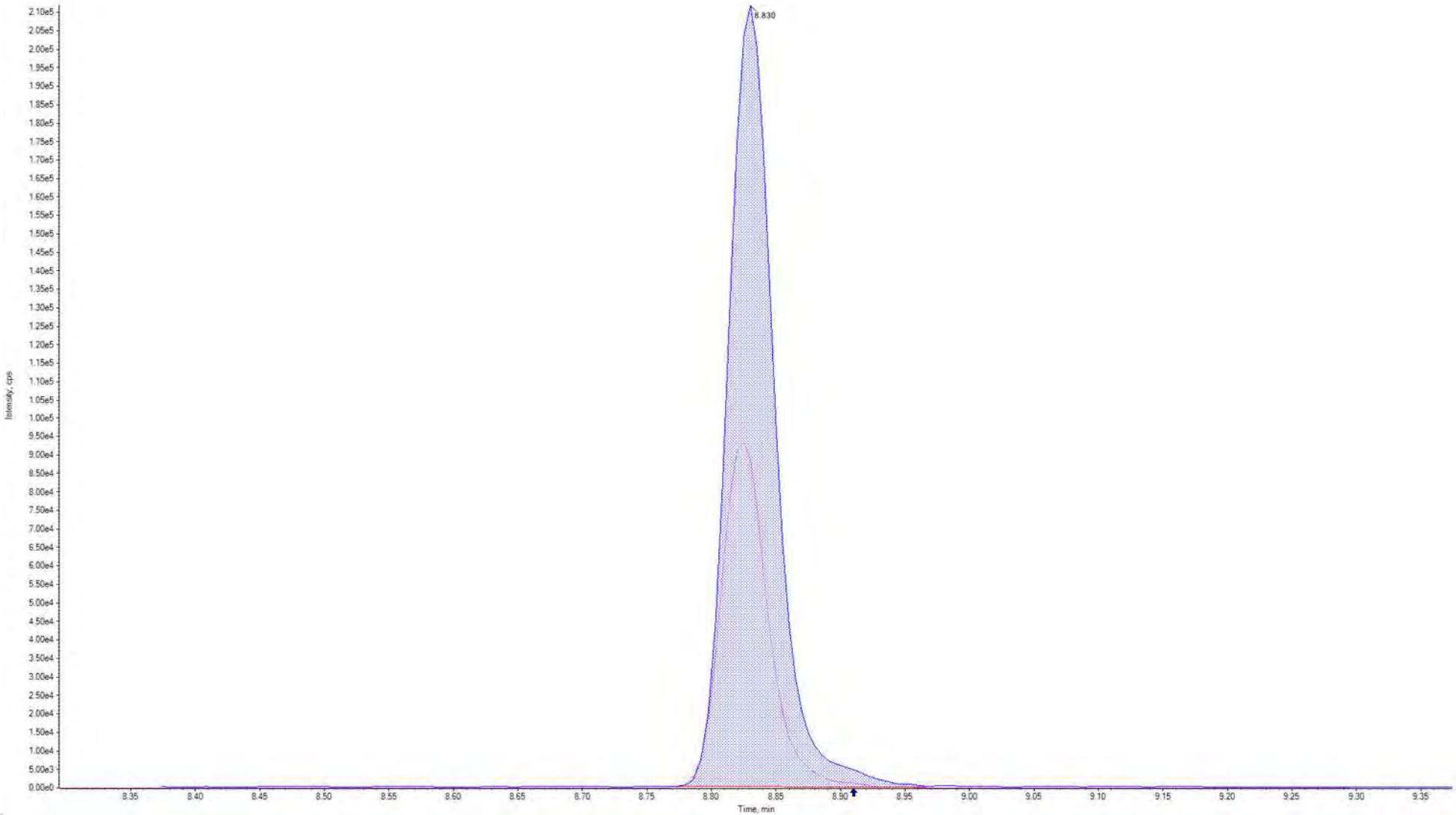
Generated: 9/19/2024 8:04:31 AM

PFDoA
Sample: WG1973357-4 S/N:2643.5 Points Across peak:41



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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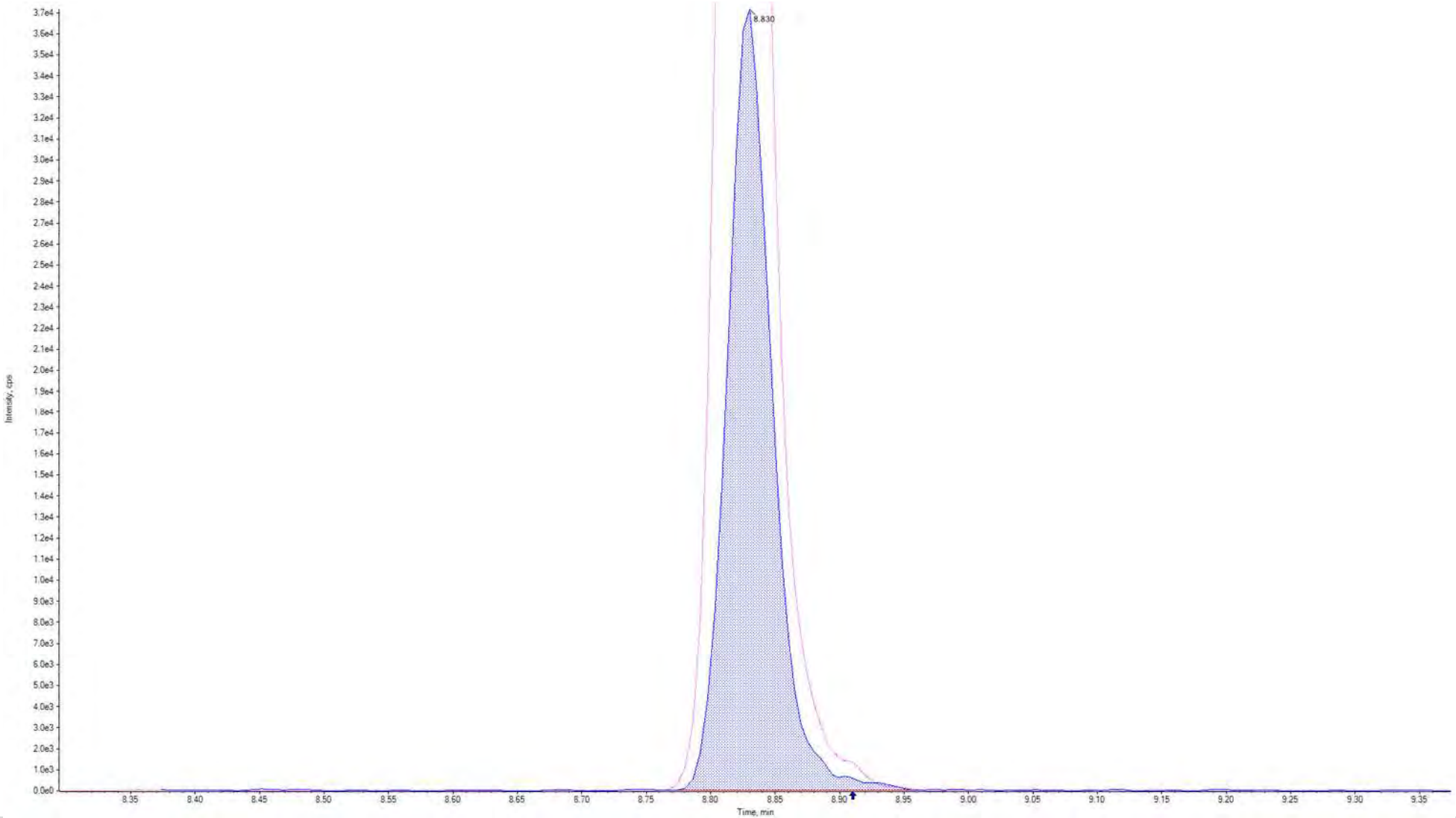
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoA_2
Sample: WG1973357-4 S/N:68173.2 Points Across peak:38



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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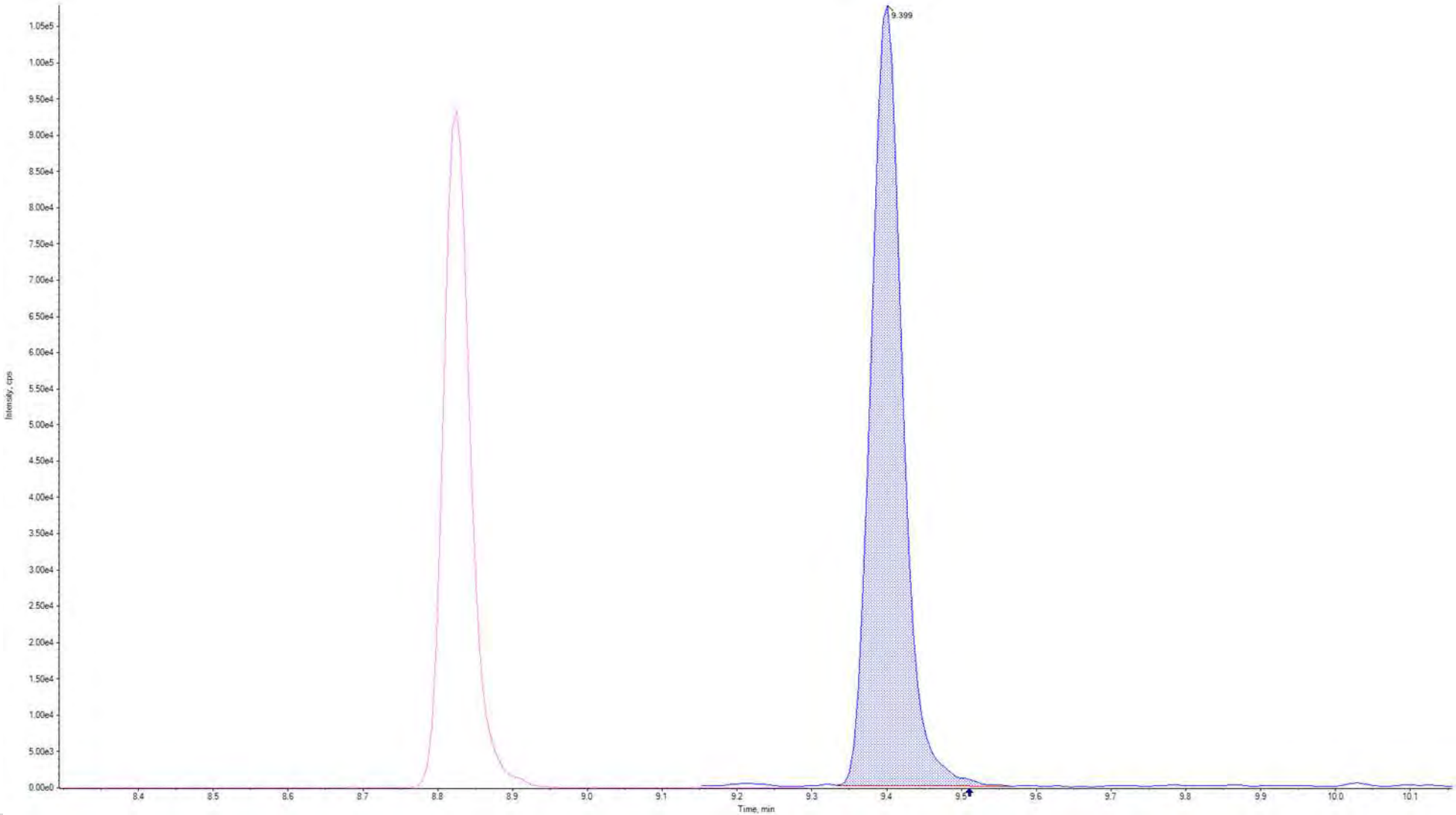
Generated: 9/19/2024 8:04:31 AM

PFTrDA
Sample: WG1973357-4 S/N:1398.5 Points Across peak:41



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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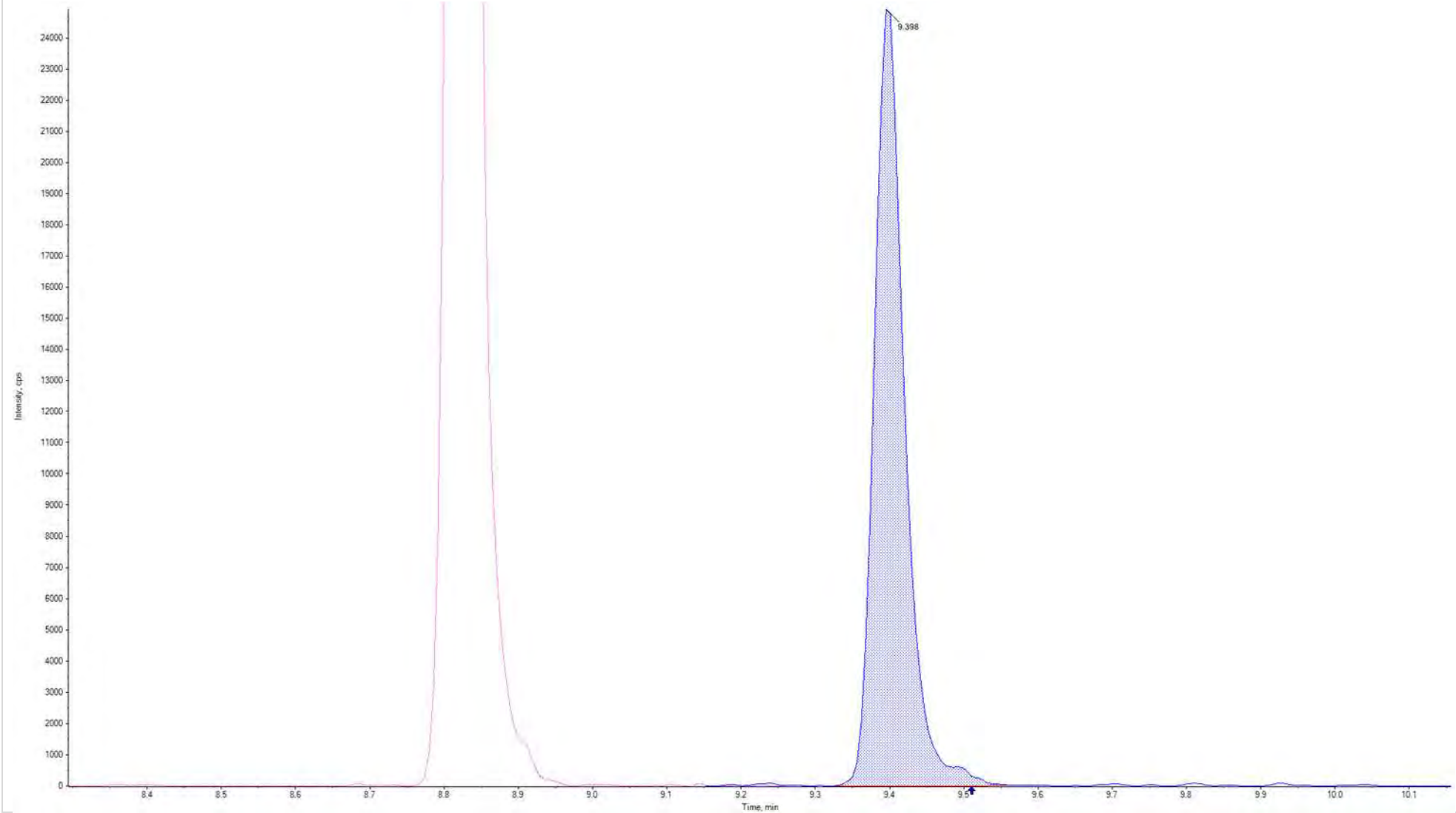
PFTrDA_2
Sample: WG1973357-4 S/N:1128.4 Points Across peak:44



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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PFTeDA
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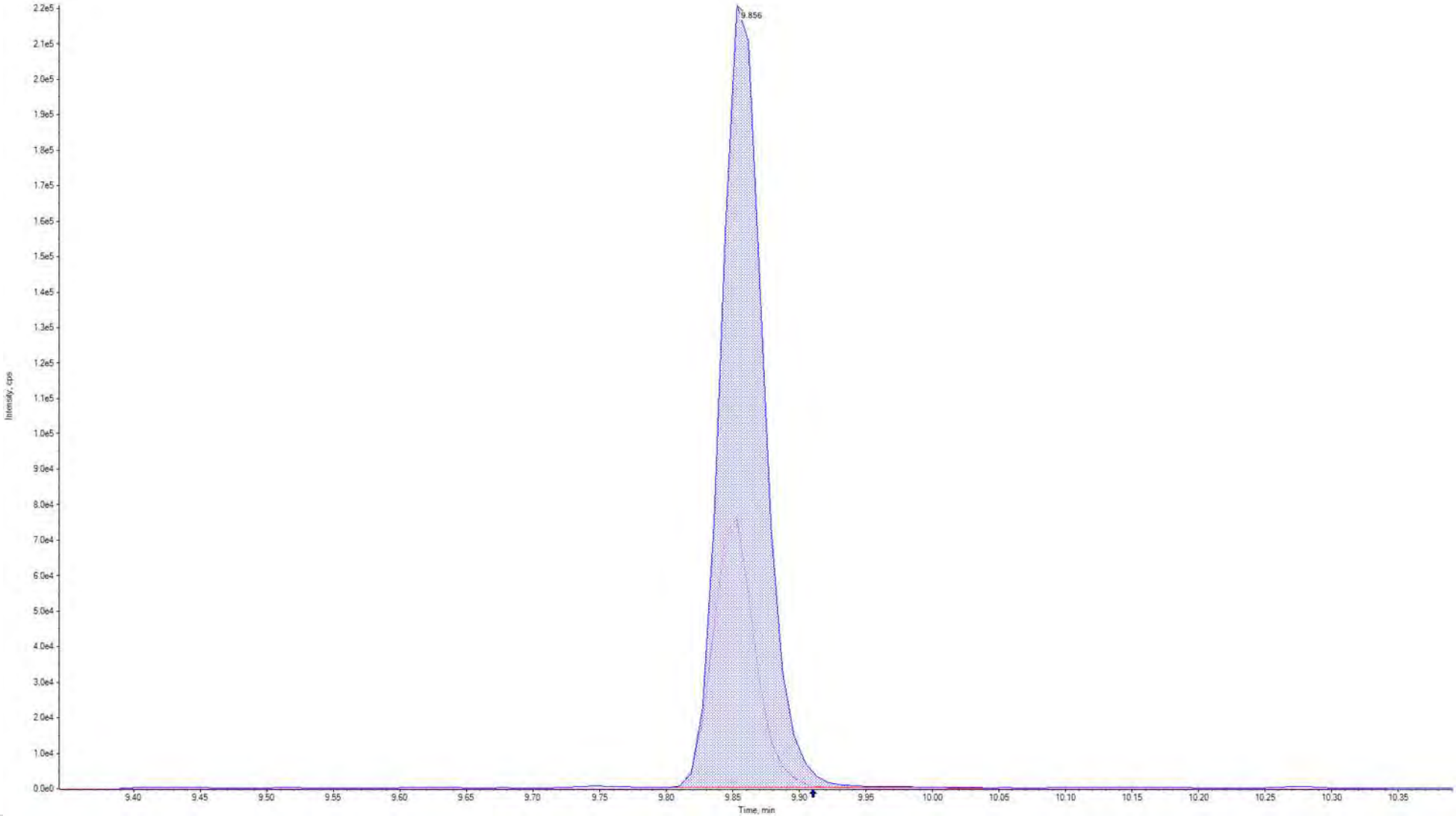

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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PFTeDA_2
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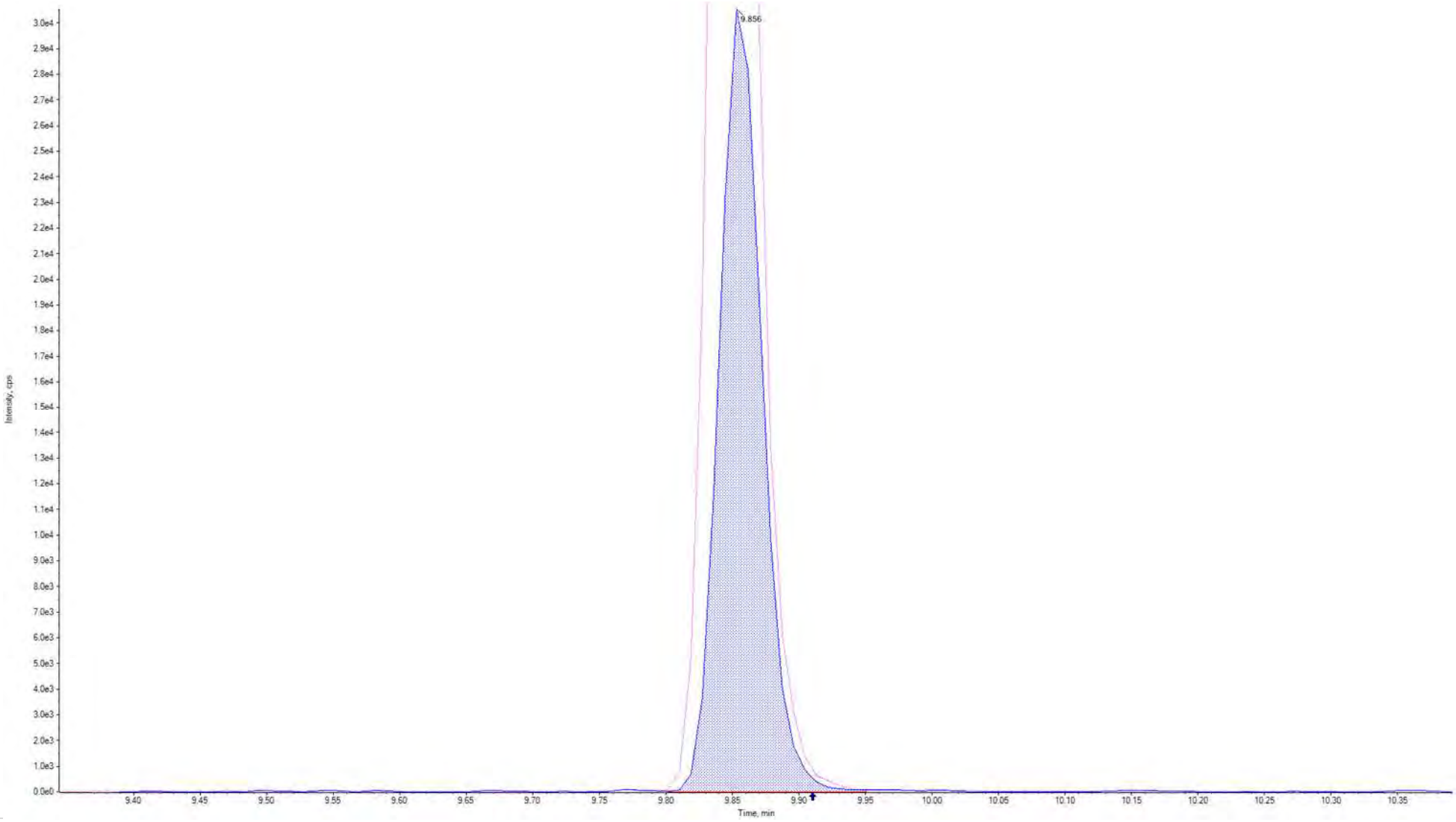

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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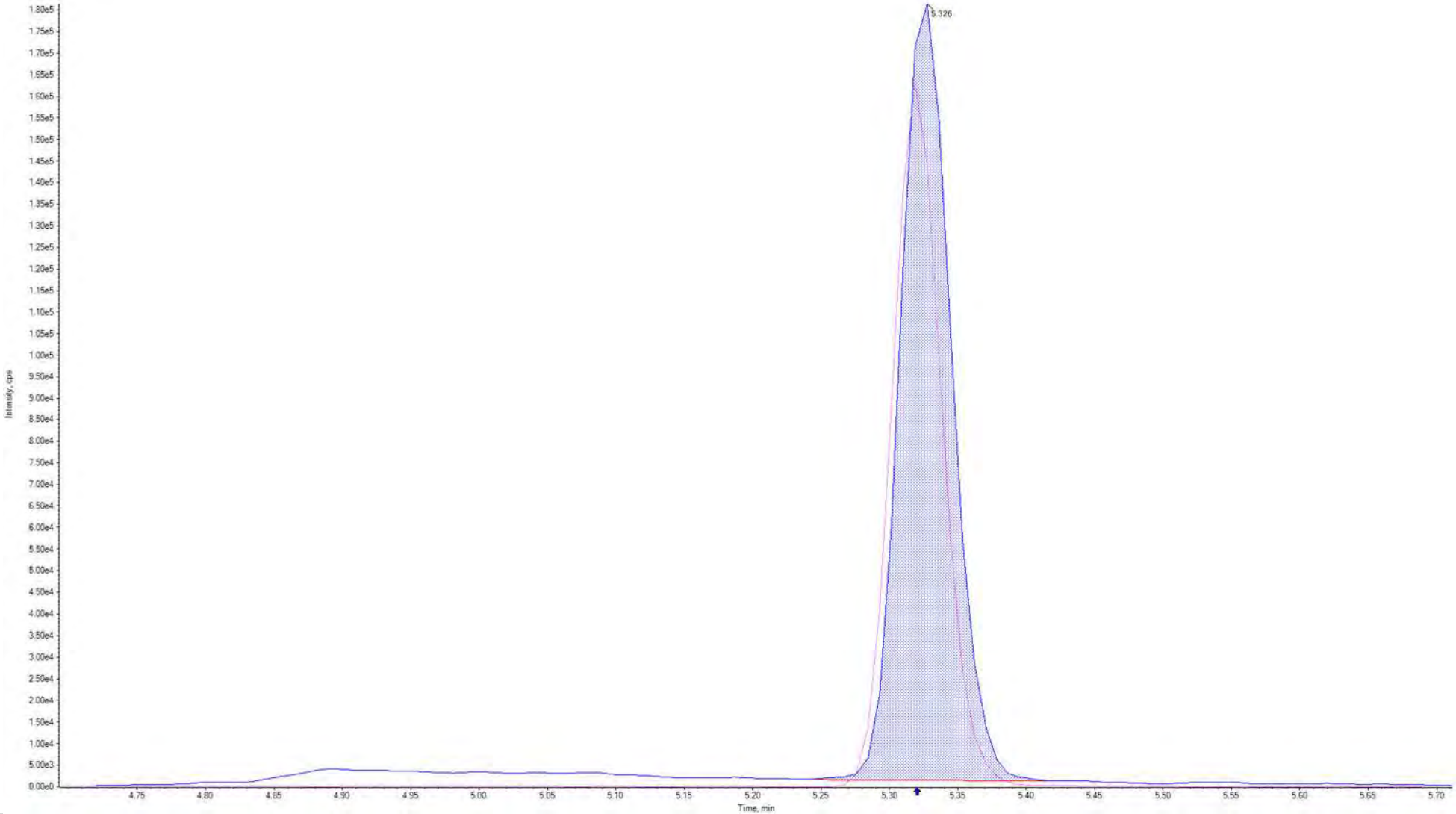
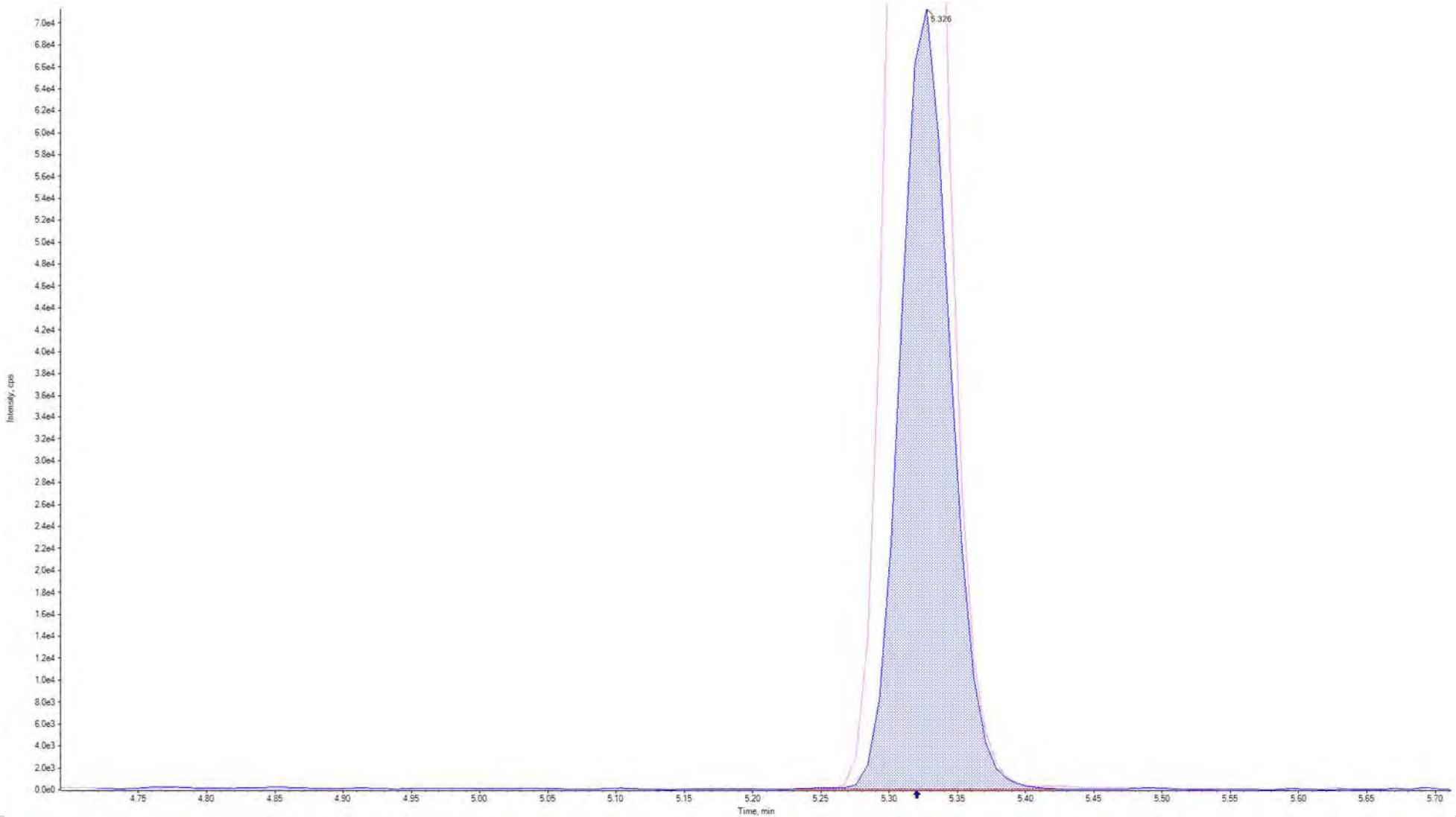
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFBS
Sample: WG1973357-4 S/N:57.9 Points Across peak:23



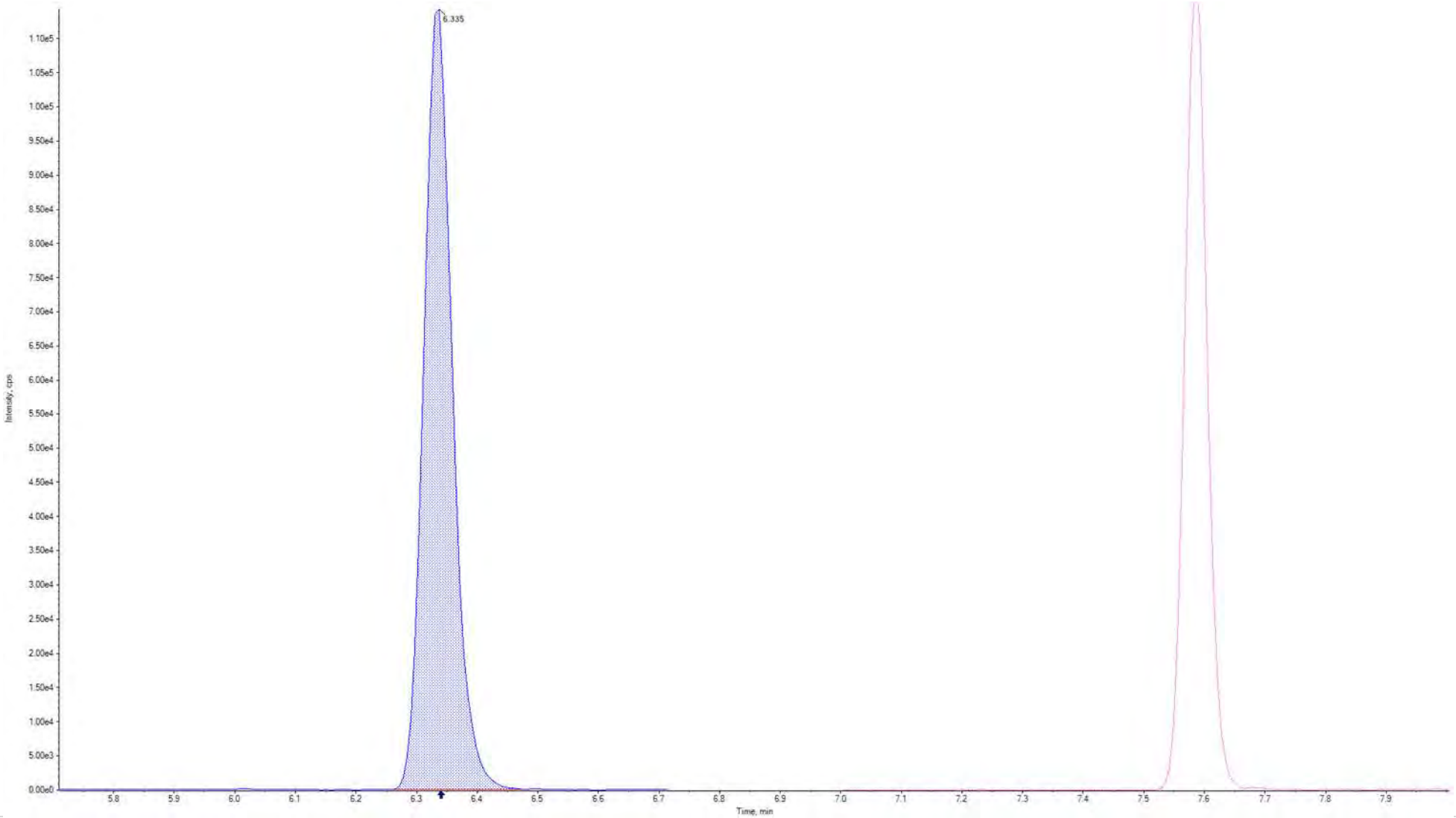
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFBS_2
Sample: WG1973357-4 S/N:1862.1 Points Across peak:29



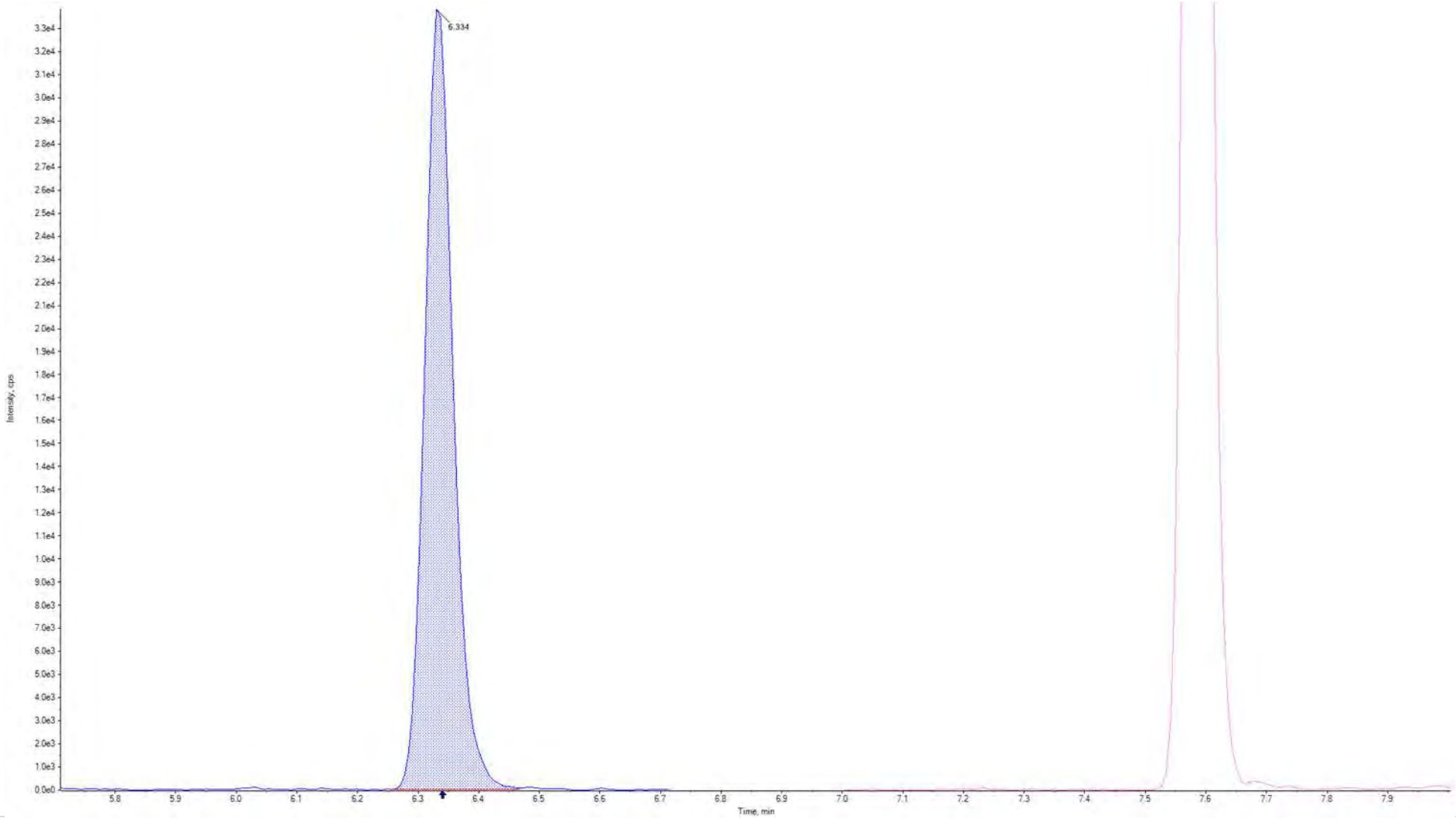
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFPeS
Sample: WG1973357-4 S/N:3173.5 Points Across peak:35



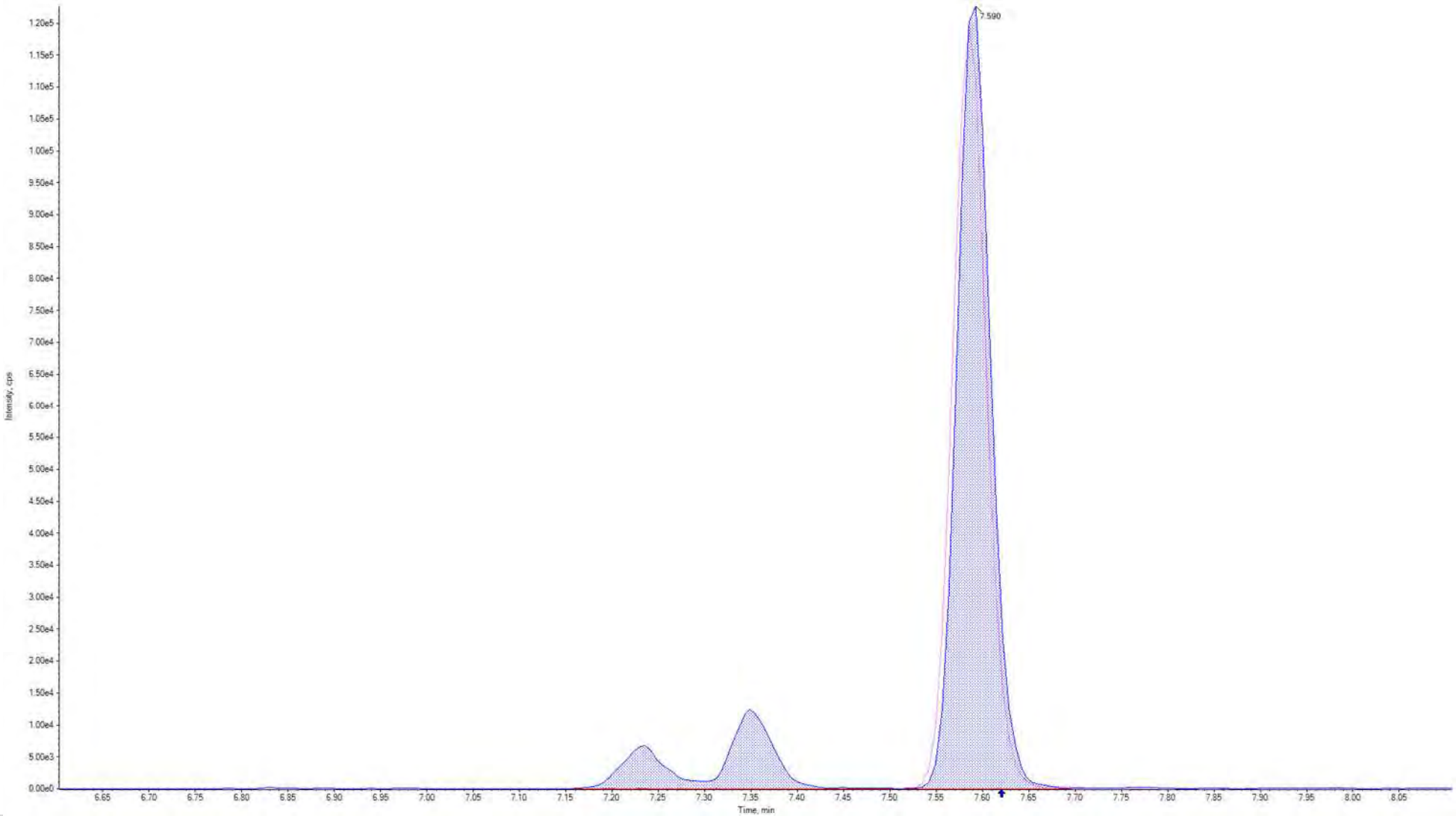
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFPeS_2
Sample: WG1973357-4 S/N:4581.9 Points Across peak:32



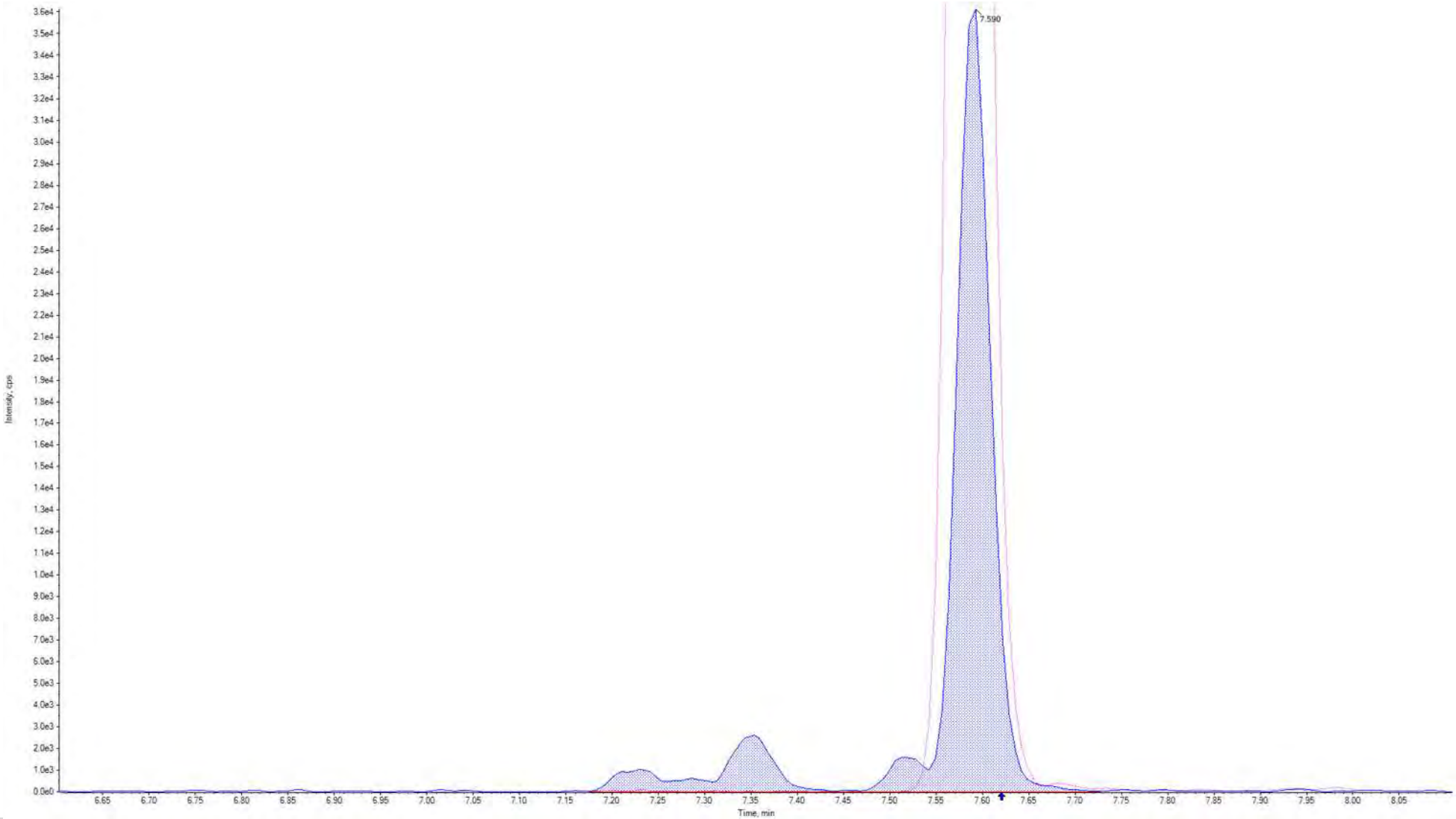
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHxS
Sample: WG1973357-4 S/N:1797829.0 Points Across peak:89



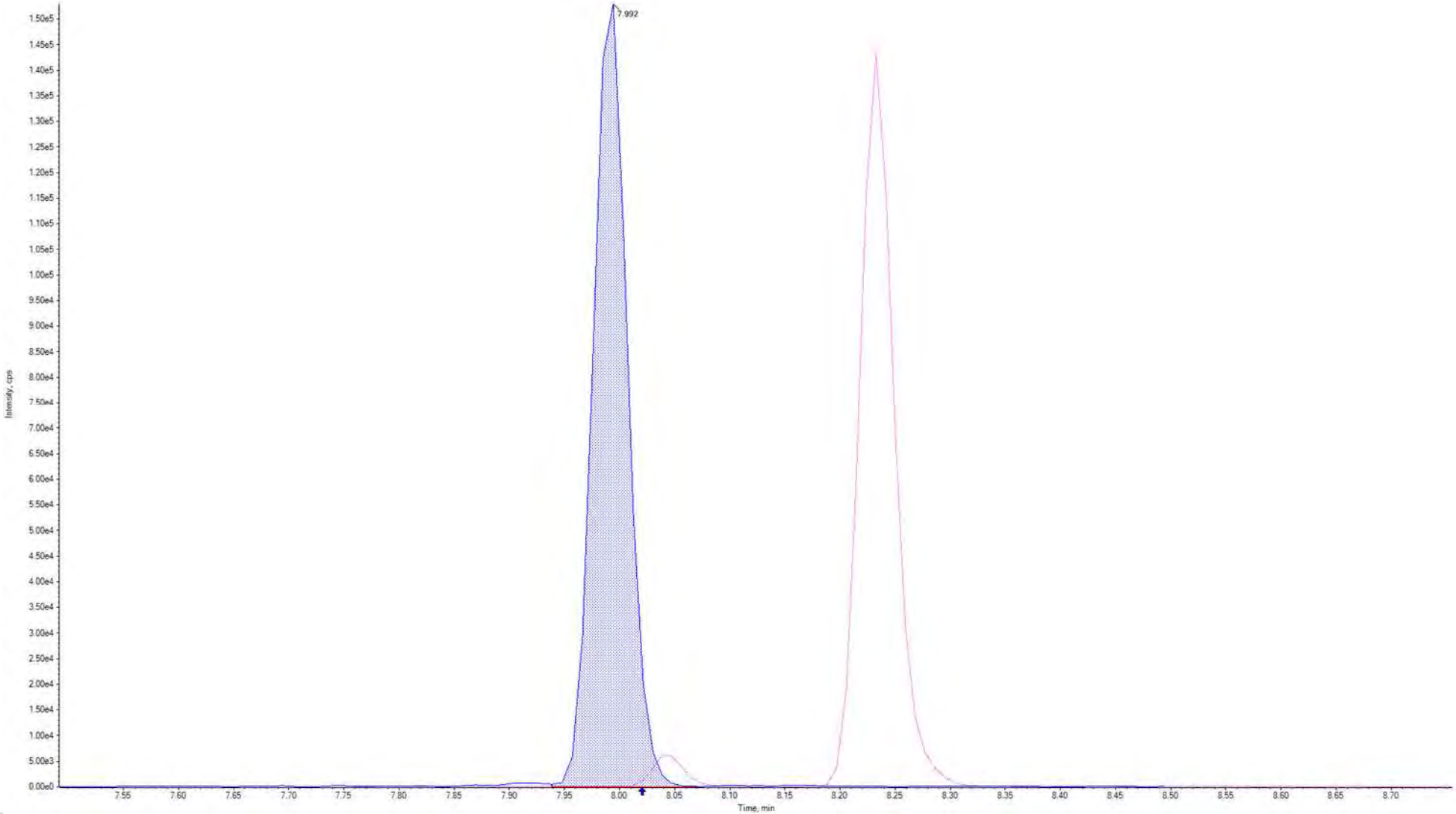
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHxS_2
Sample: WG1973357-4 S/N:14516333.6 Points Across peak:90



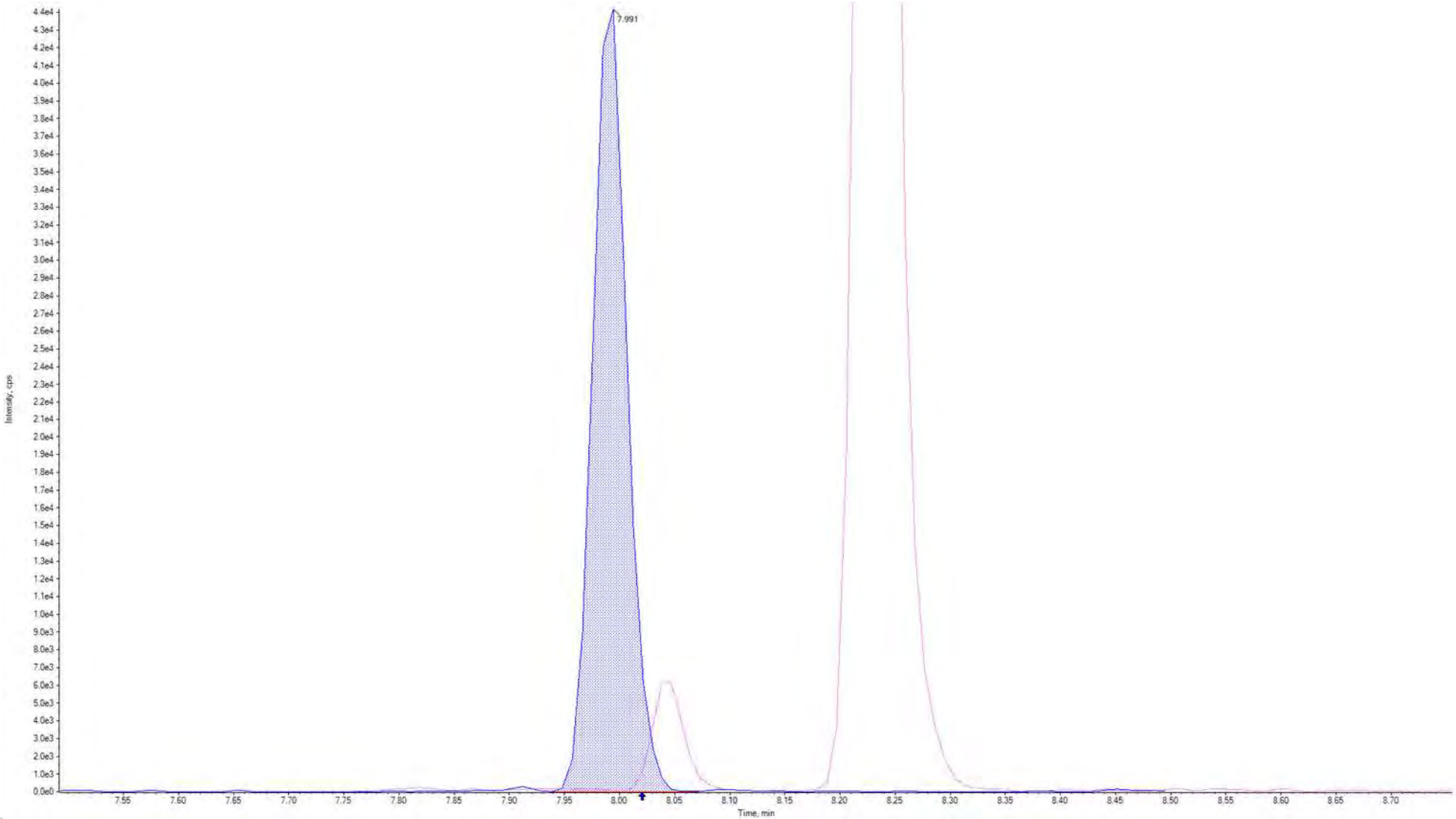
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHpS
Sample: WG1973357-4 S/N:13967.2 Points Across peak:16



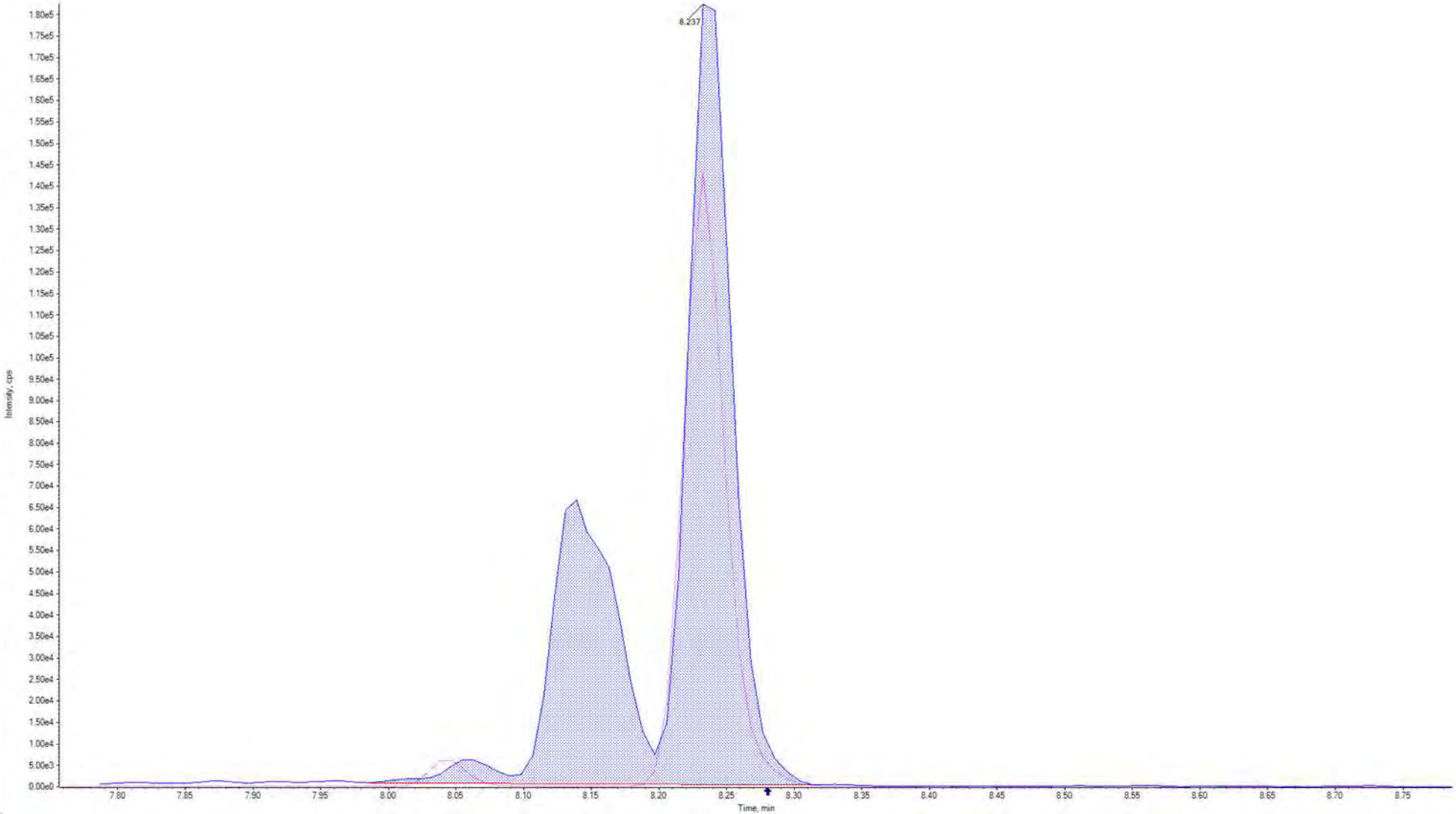
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHpS_2
Sample: WG1973357-4 S/N:1128.0 Points Across peak:16



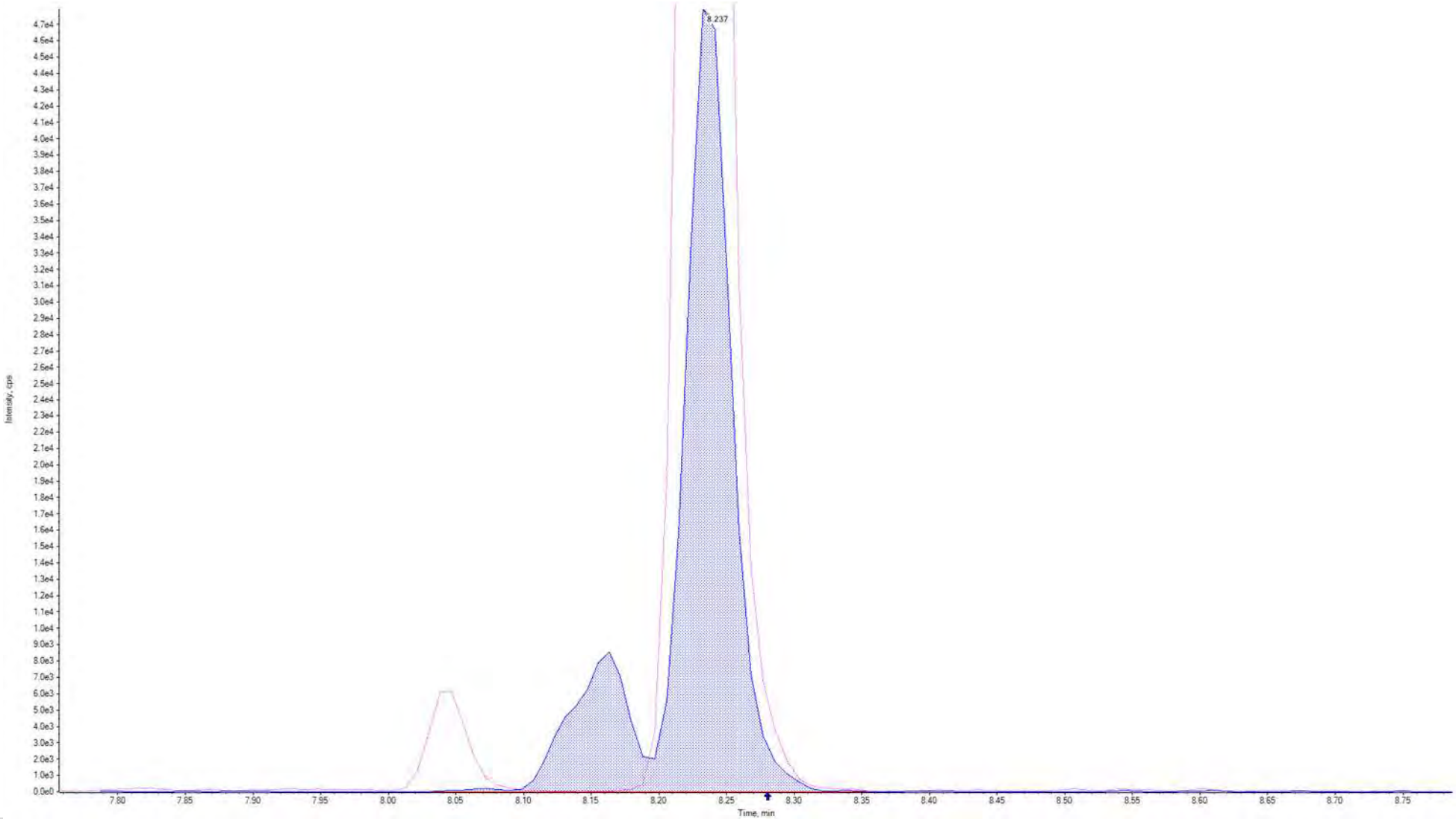
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOS
Sample: WG1973357-4 S/N:1567.2 Points Across peak:40



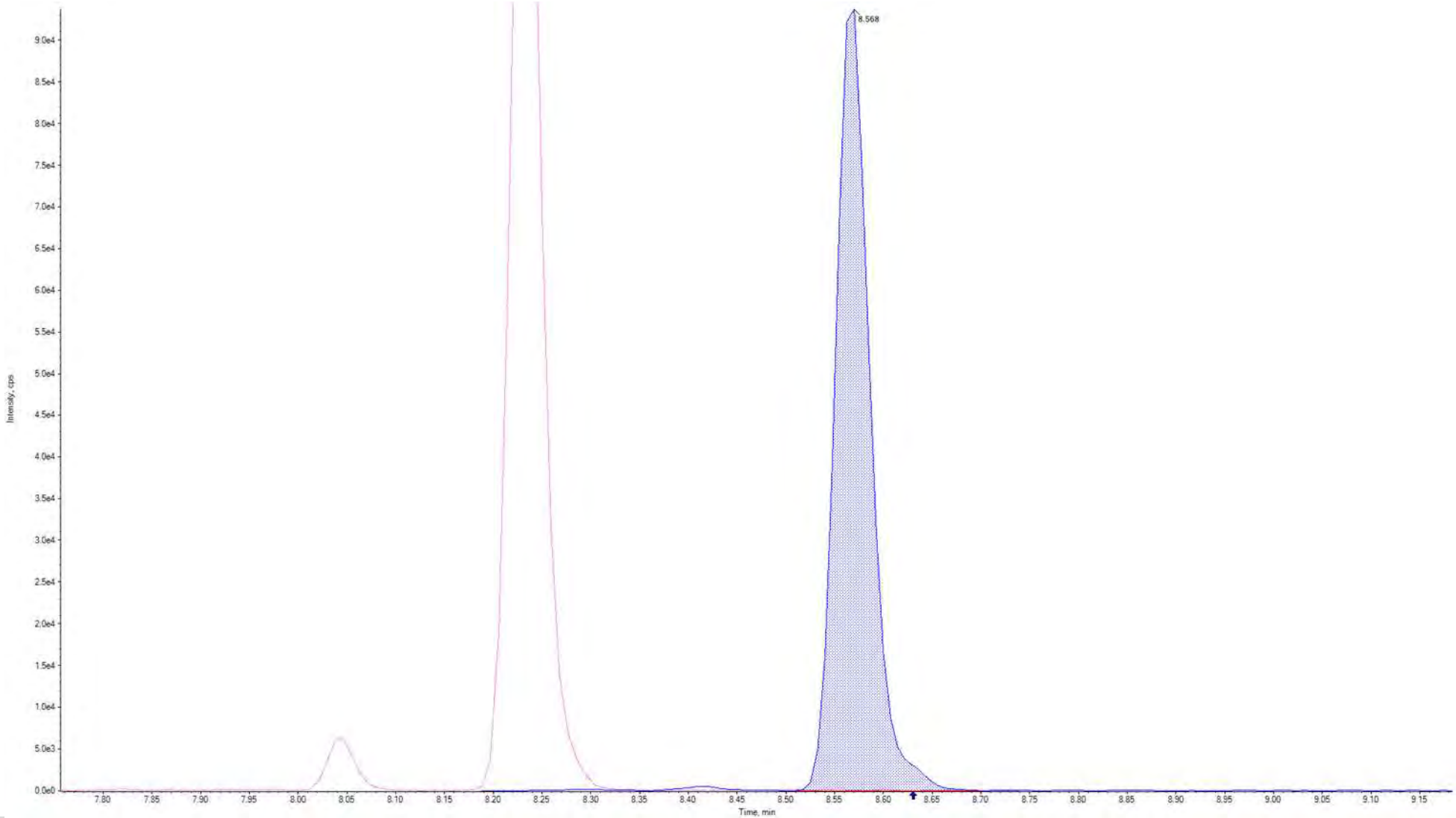
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOS_2
Sample: WG1973357-4 S/N:1049.4 Points Across peak:42



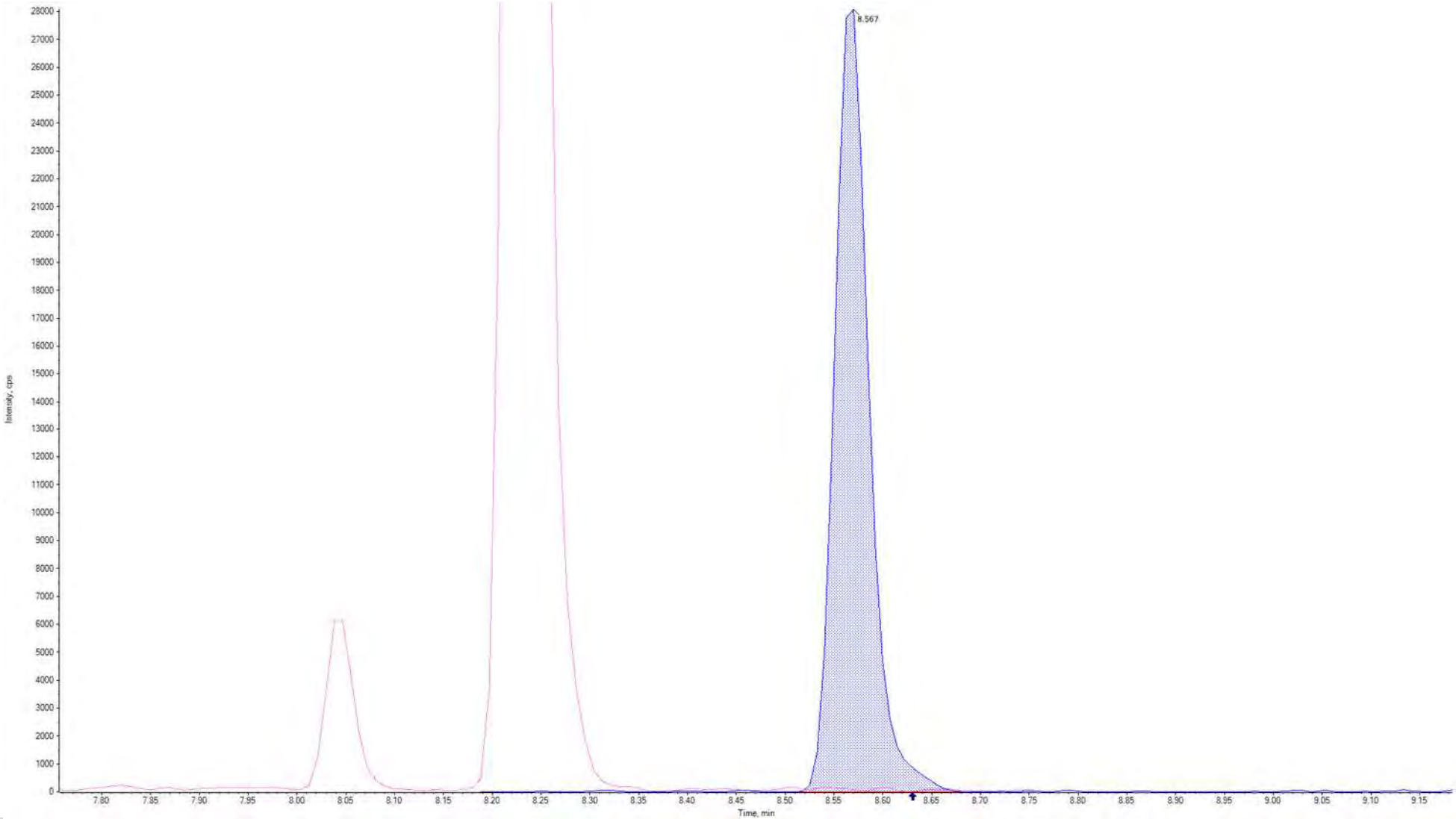
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFNS
Sample: WG1973357-4 S/N:5131.0 Points Across peak:30



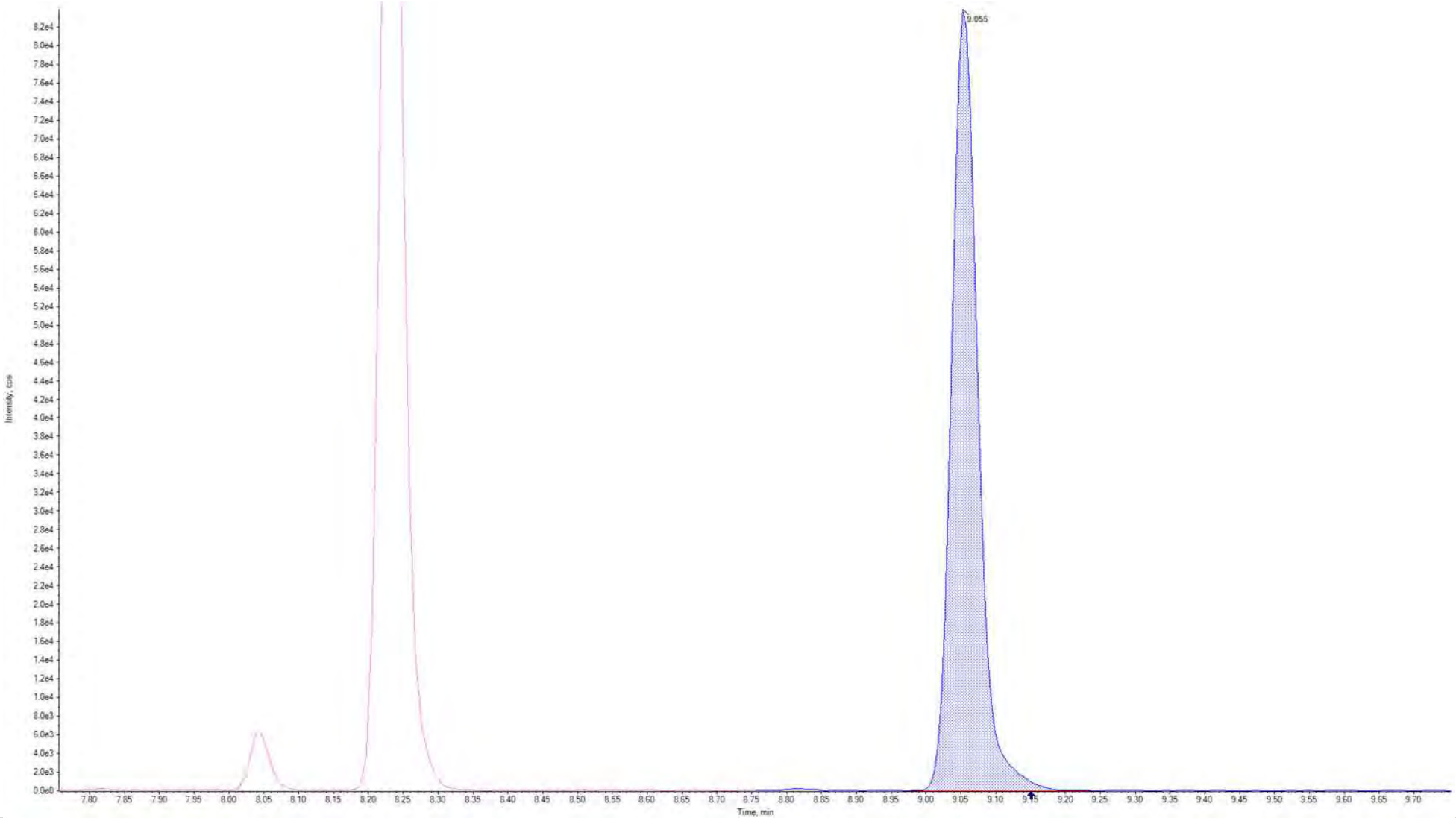
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFNS_2
Sample: WG1973357-4 S/N:2053.5 Points Across peak:30



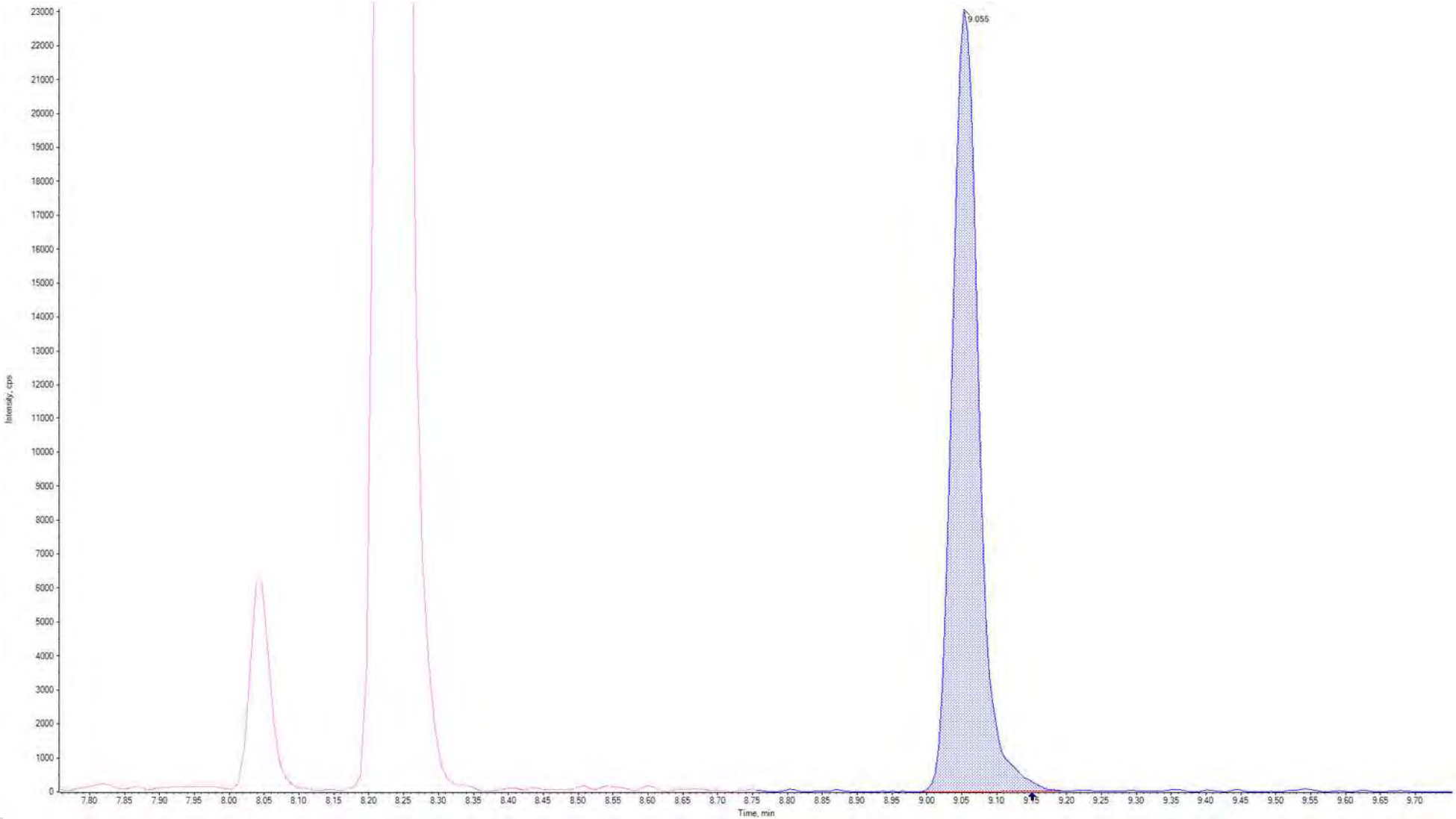
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDS
Sample: WG1973357-4 S/N:7497.2 Points Across peak:55



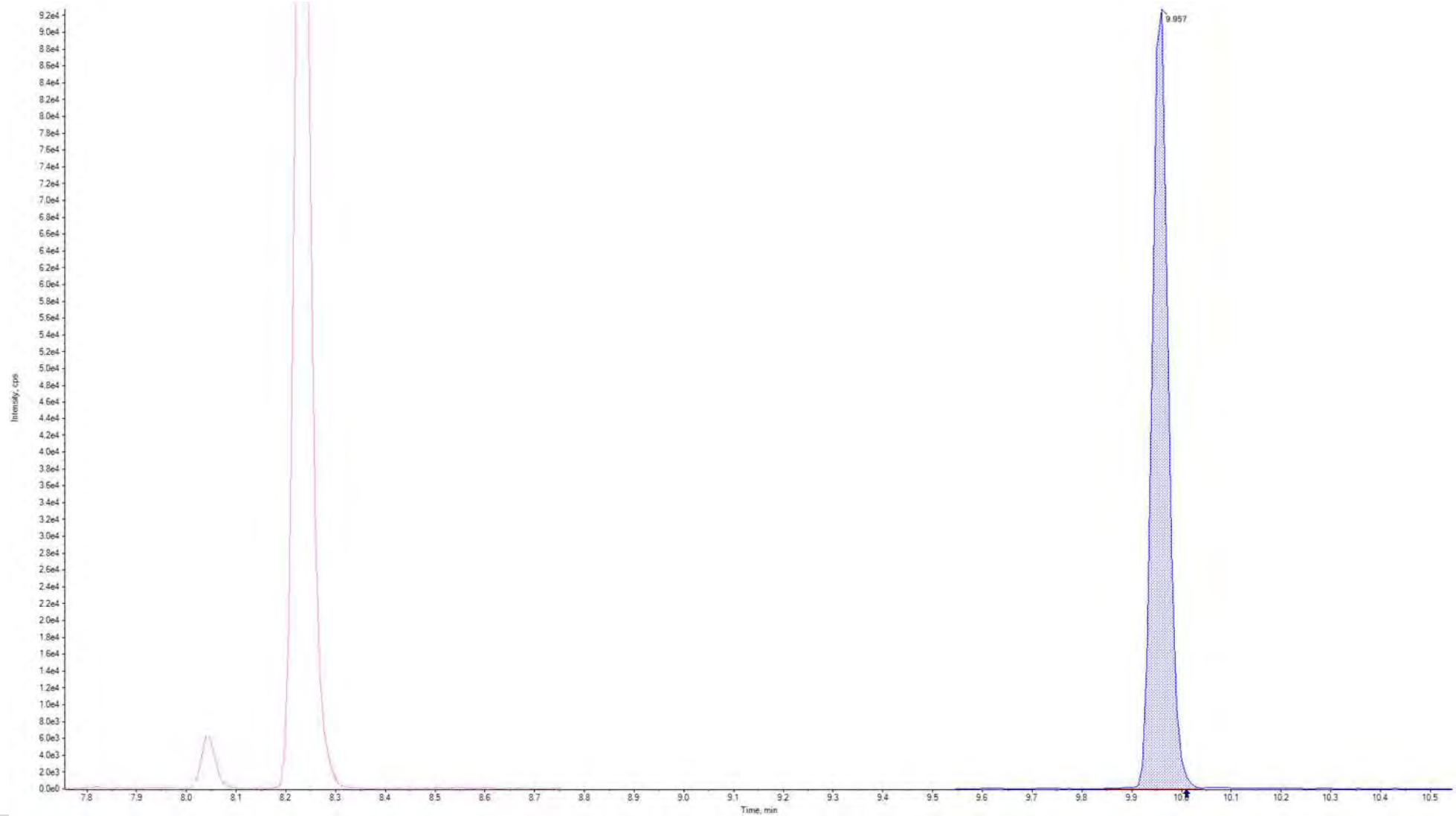
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDS_2
Sample: WG1973357-4 S/N:1527.4 Points Across peak:44



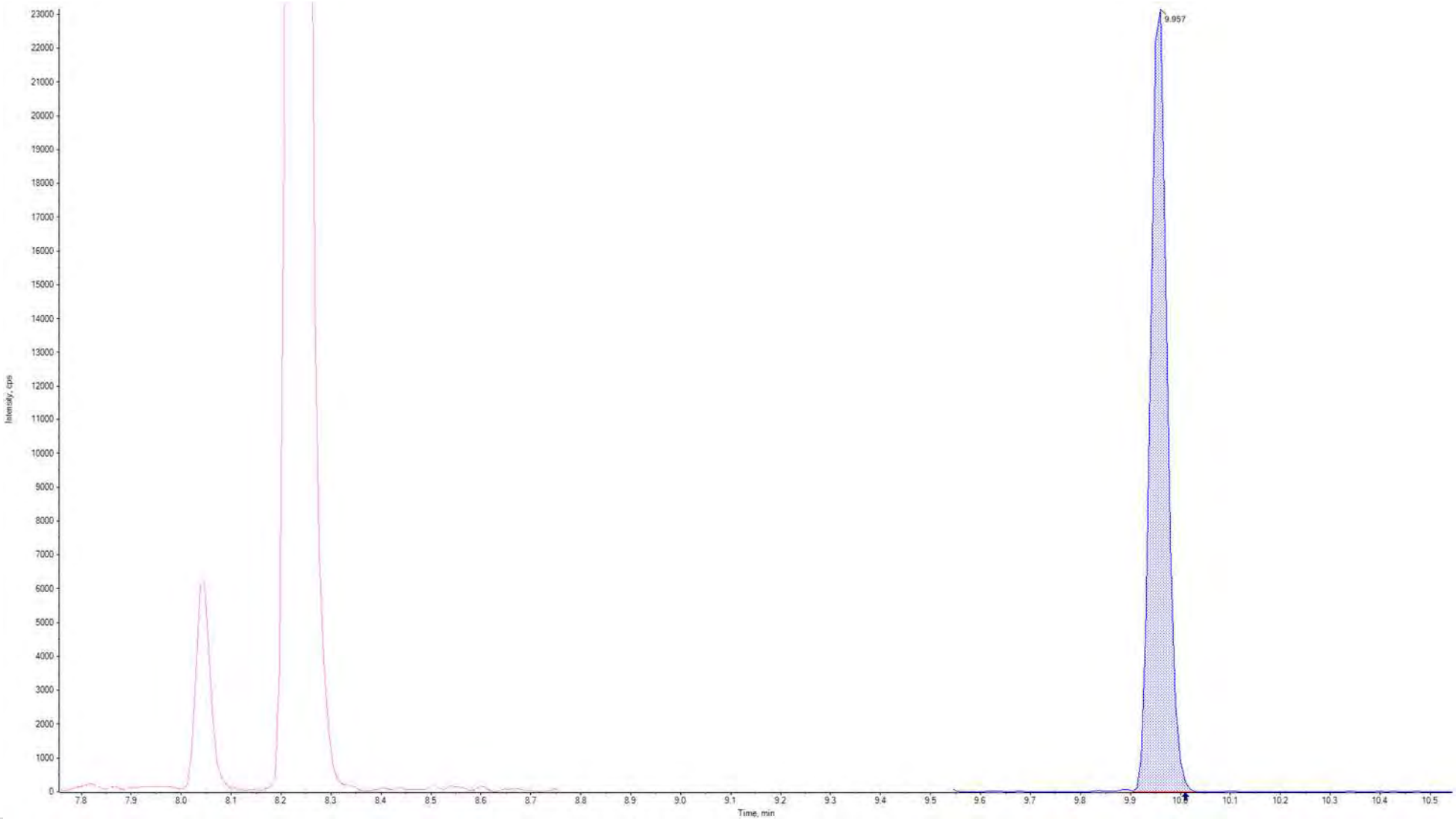
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoS
Sample: WG1973357-4 S/N:58162.4 Points Across peak:24



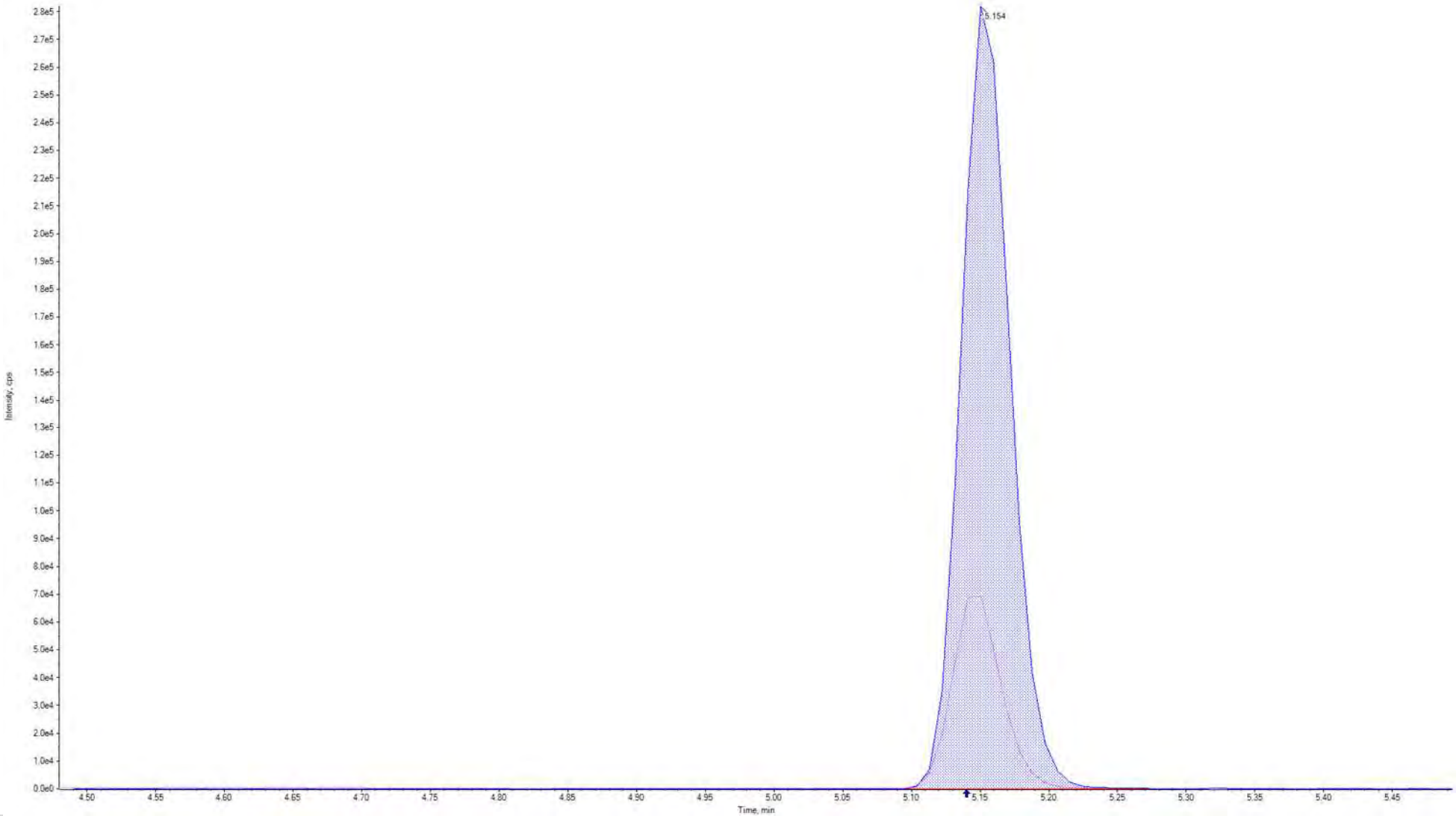
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoS_2
Sample: WG1973357-4 S/N:3059.0 Points Across peak:17



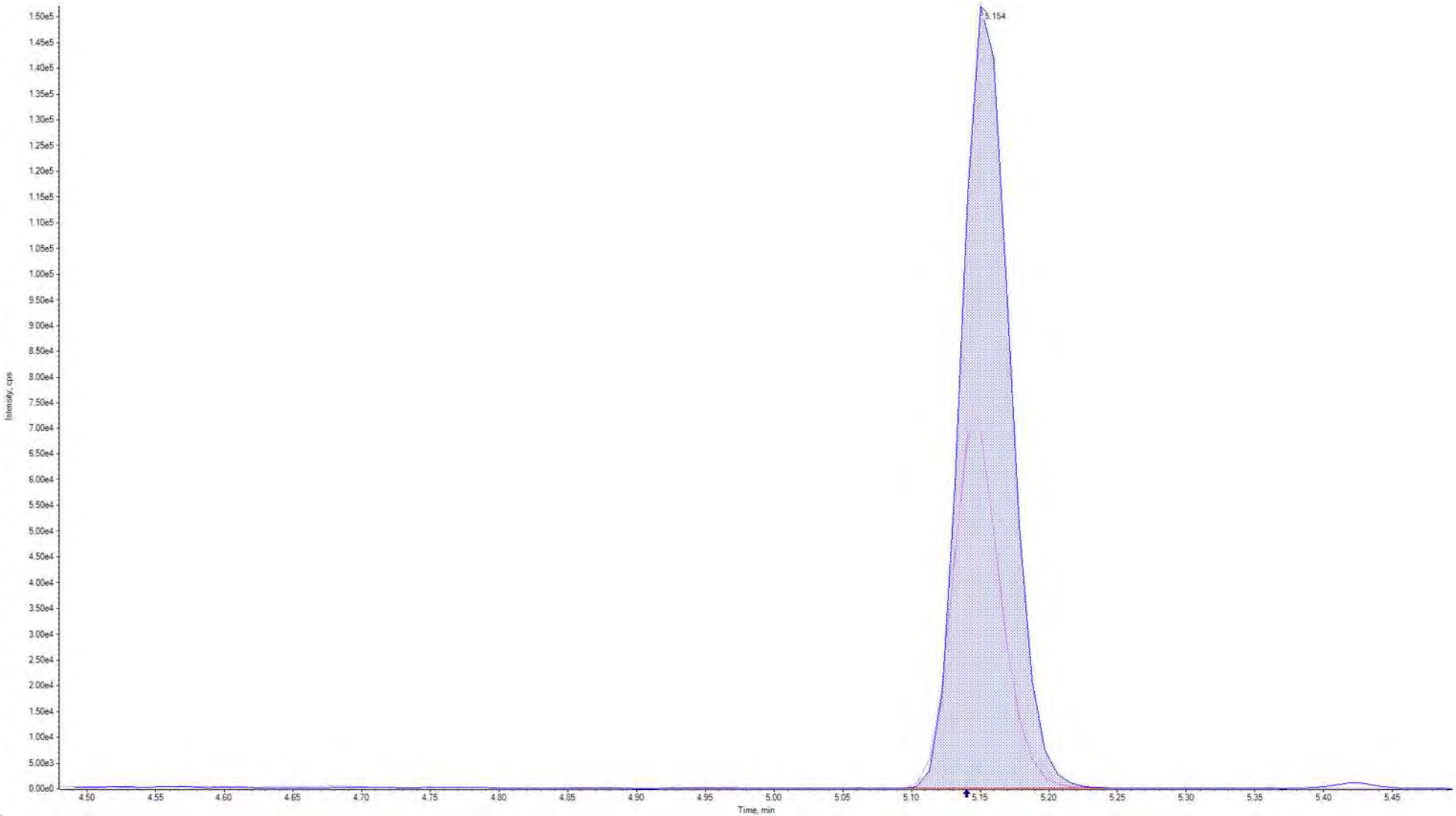
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

4:2FTS
Sample: WG1973357-4 S/N:2869.3 Points Across peak:28

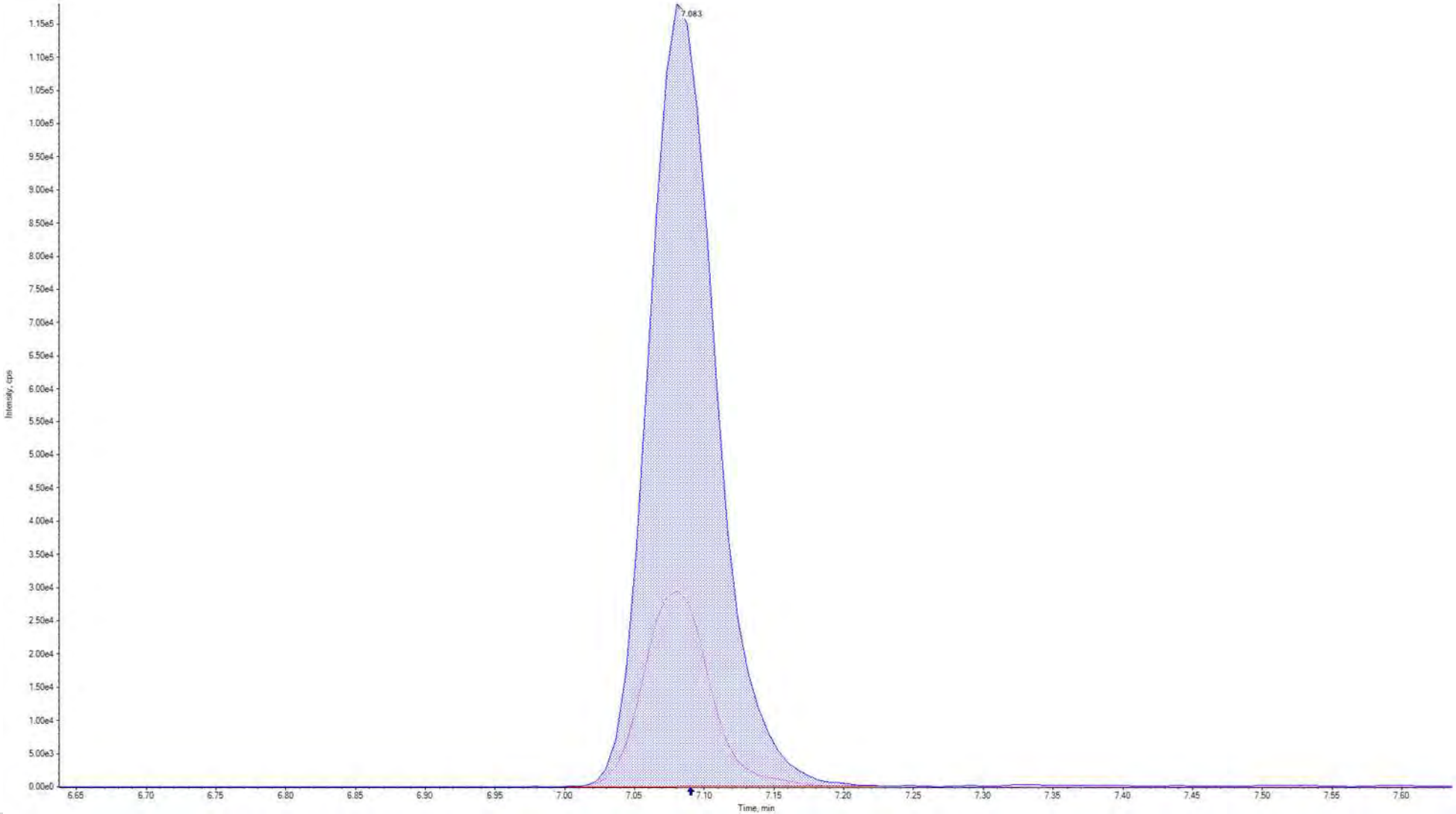


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

4:2FTS_2
Sample: WG1973357-4 S/N:1726.8 Points Across peak:22

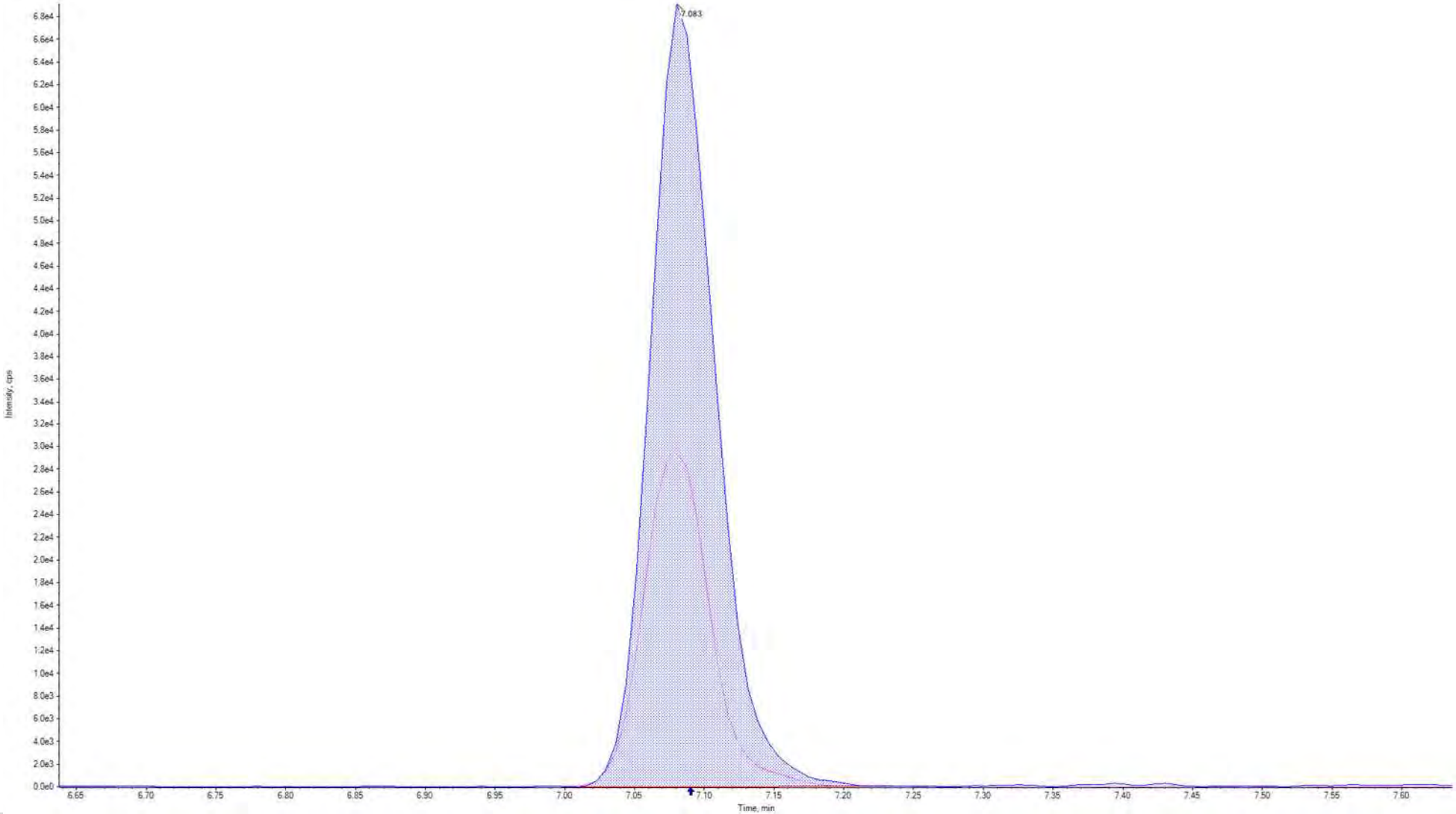


6:2FTS
Sample: WG1973357-4 S/N:34532984.8 Points Across peak:36



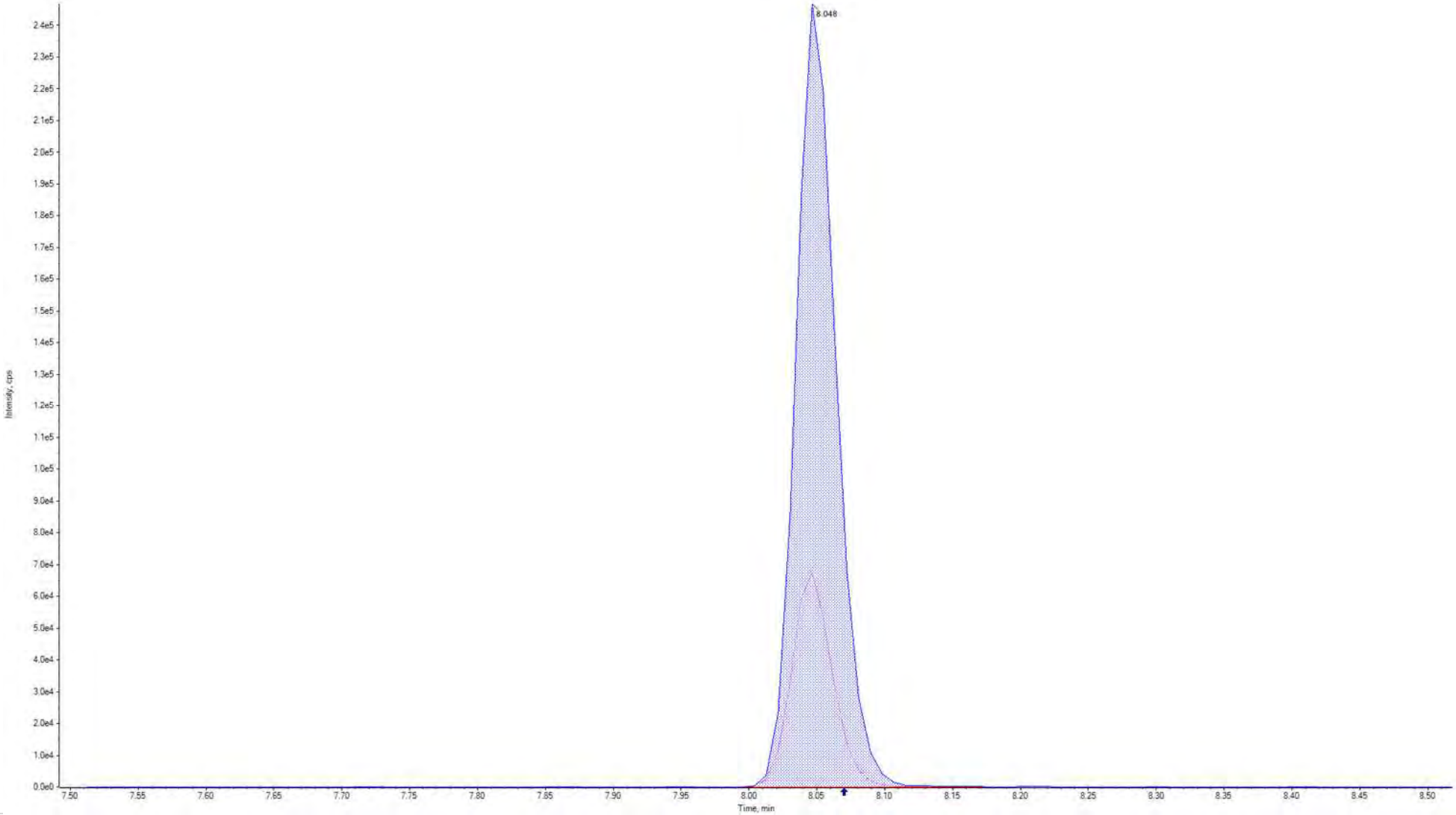
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

6:2FTS_2
Sample: WG1973357-4 S/N:1551475.3 Points Across peak:33



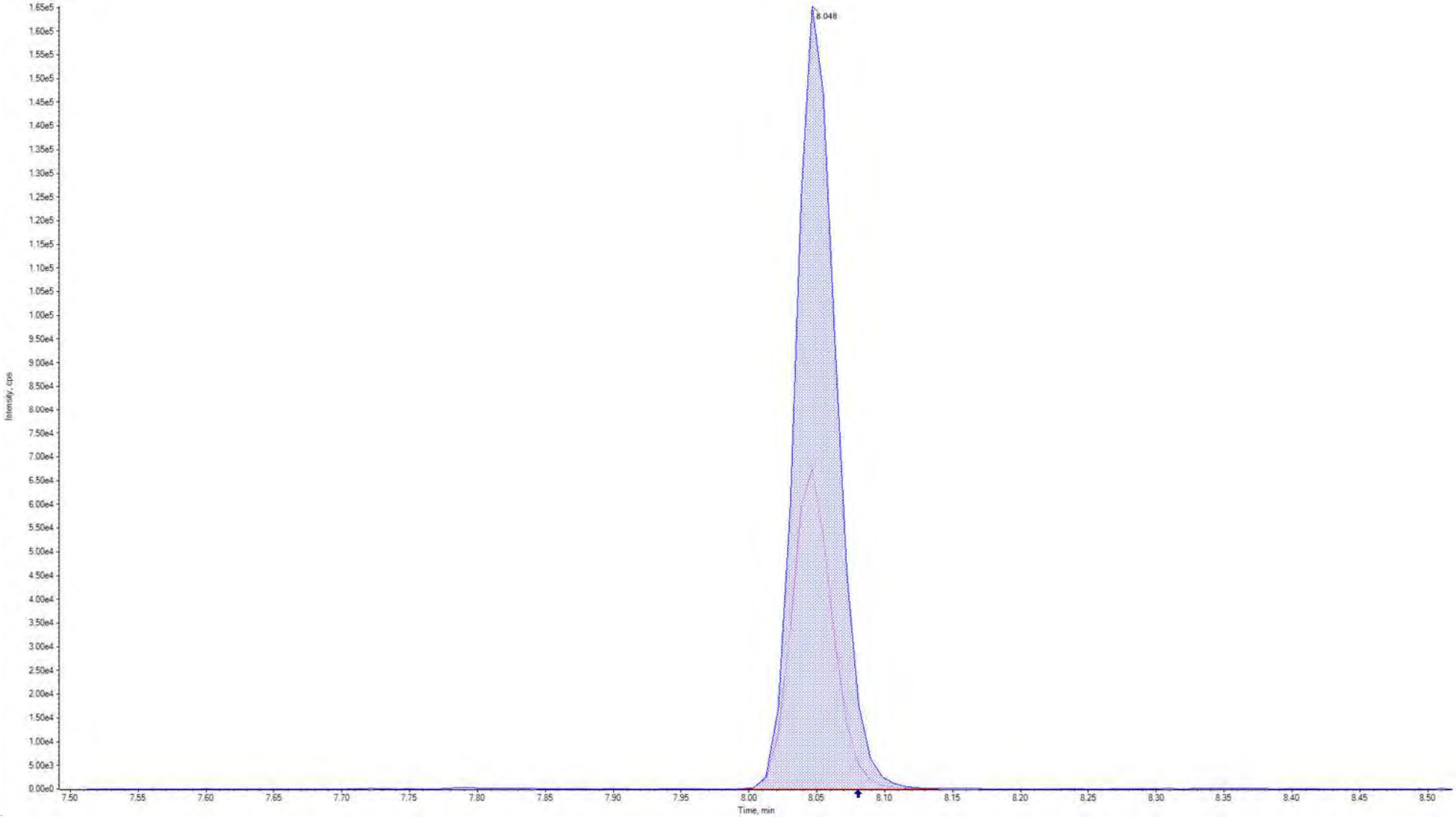
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

8:2FTS
Sample: WG1973357-4 S/N:15421.0 Points Across peak:25



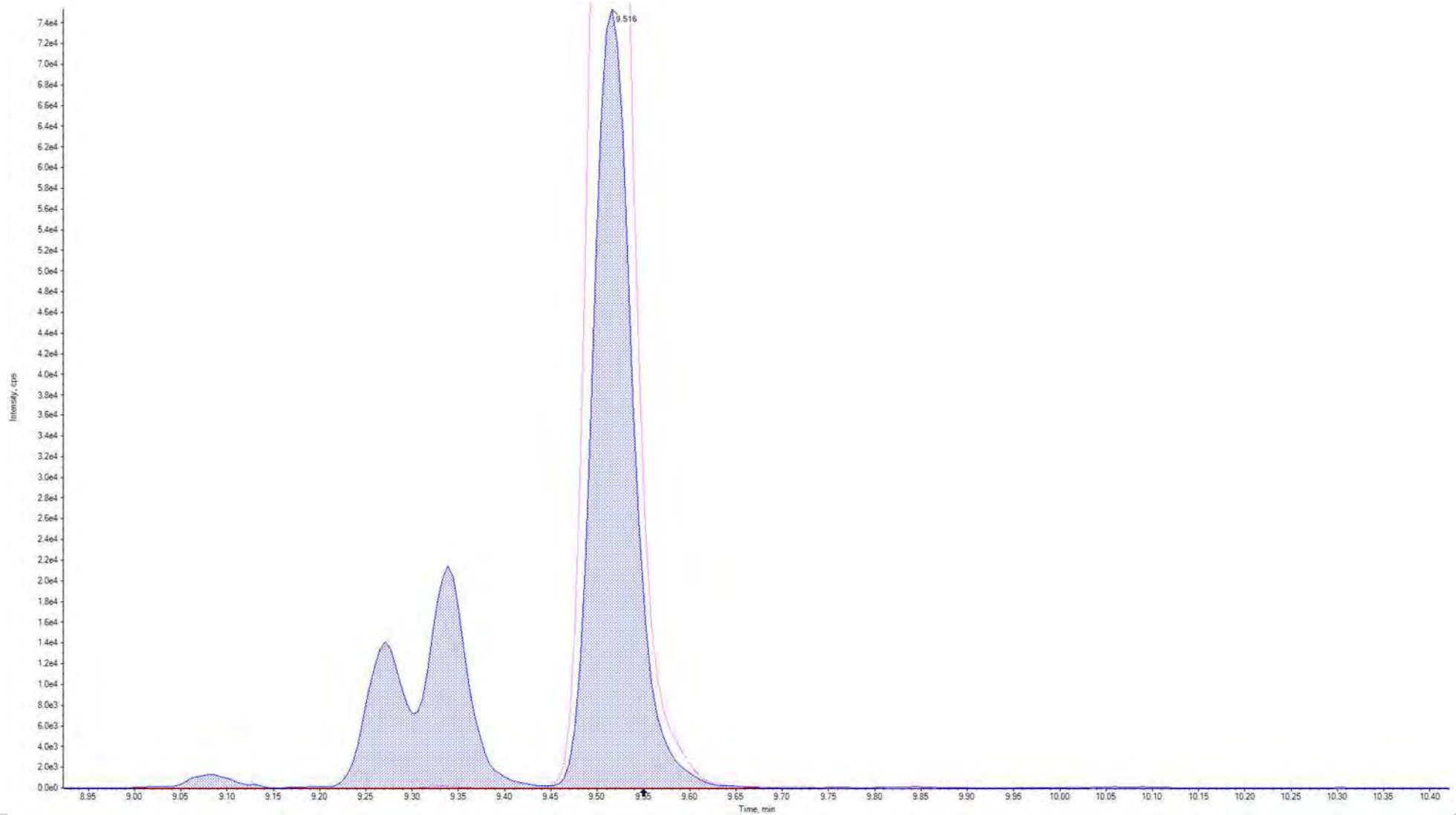
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

8:2FTS_2
Sample: WG1973357-4 S/N:964682.8 Points Across peak:20



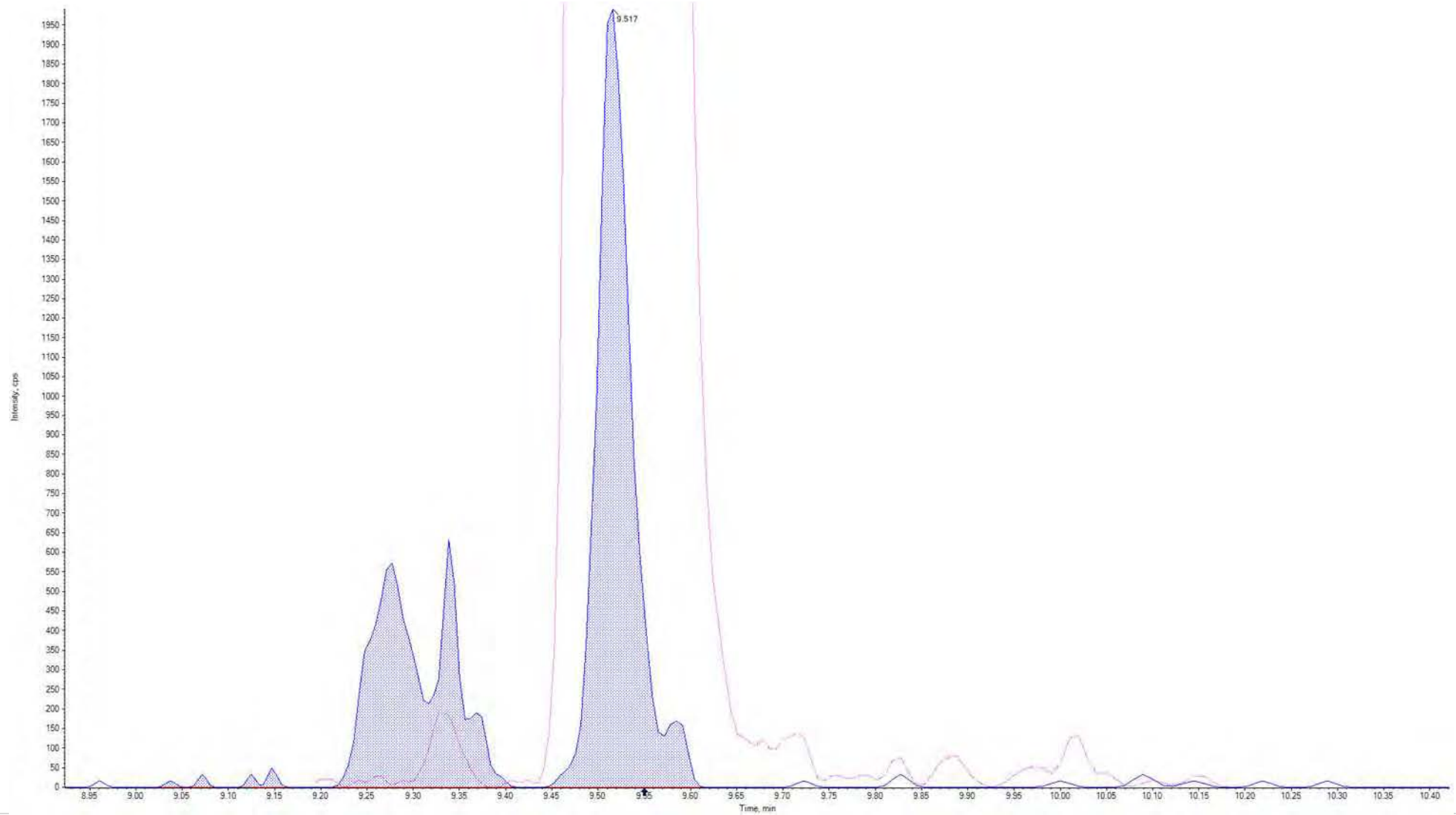
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOSA
Sample: WG1973357-4 S/N:155006.9 Points Across peak:127



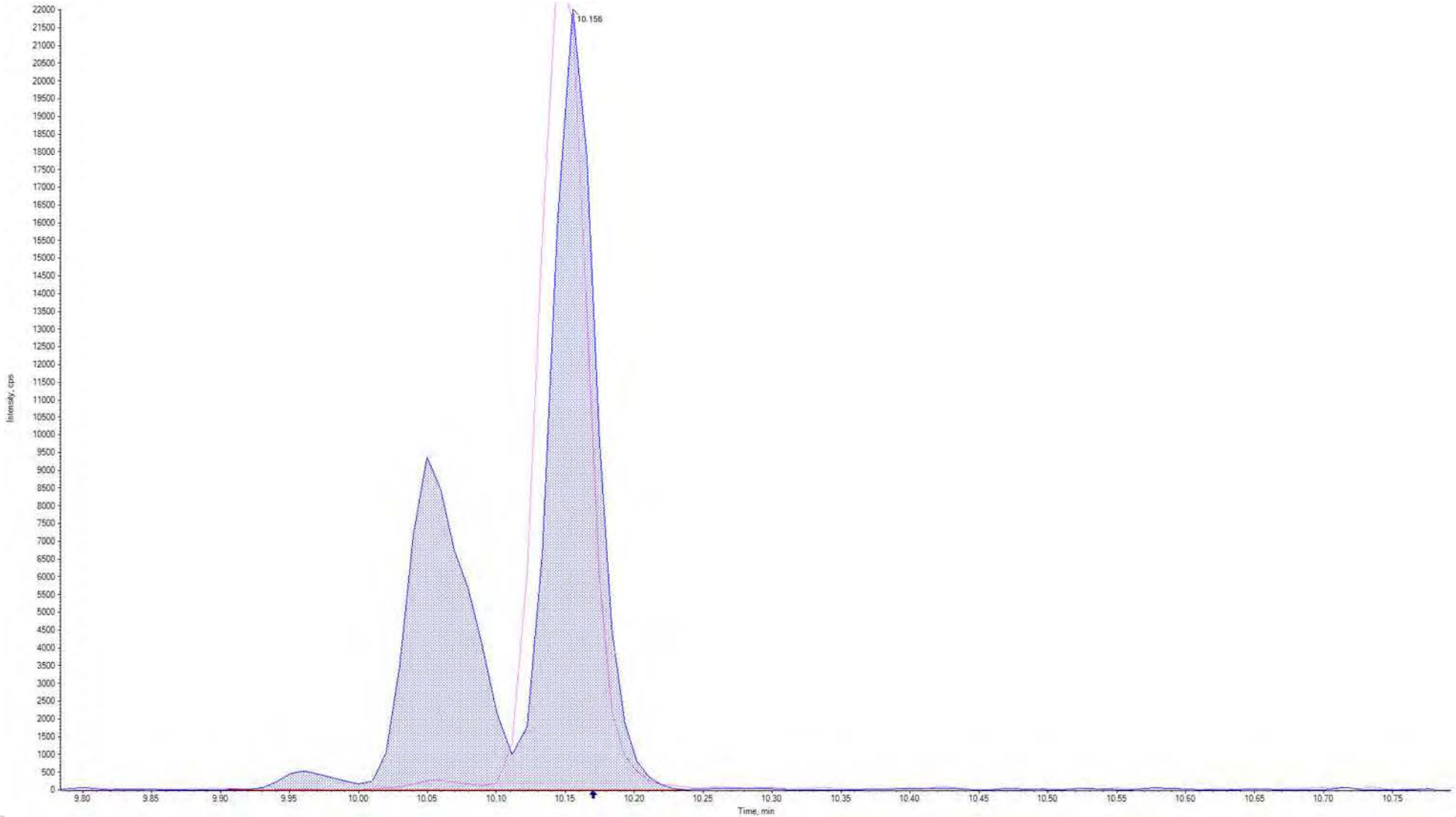
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOSA_2
Sample: WG1973357-4 S/N:654.7 Points Across peak:109



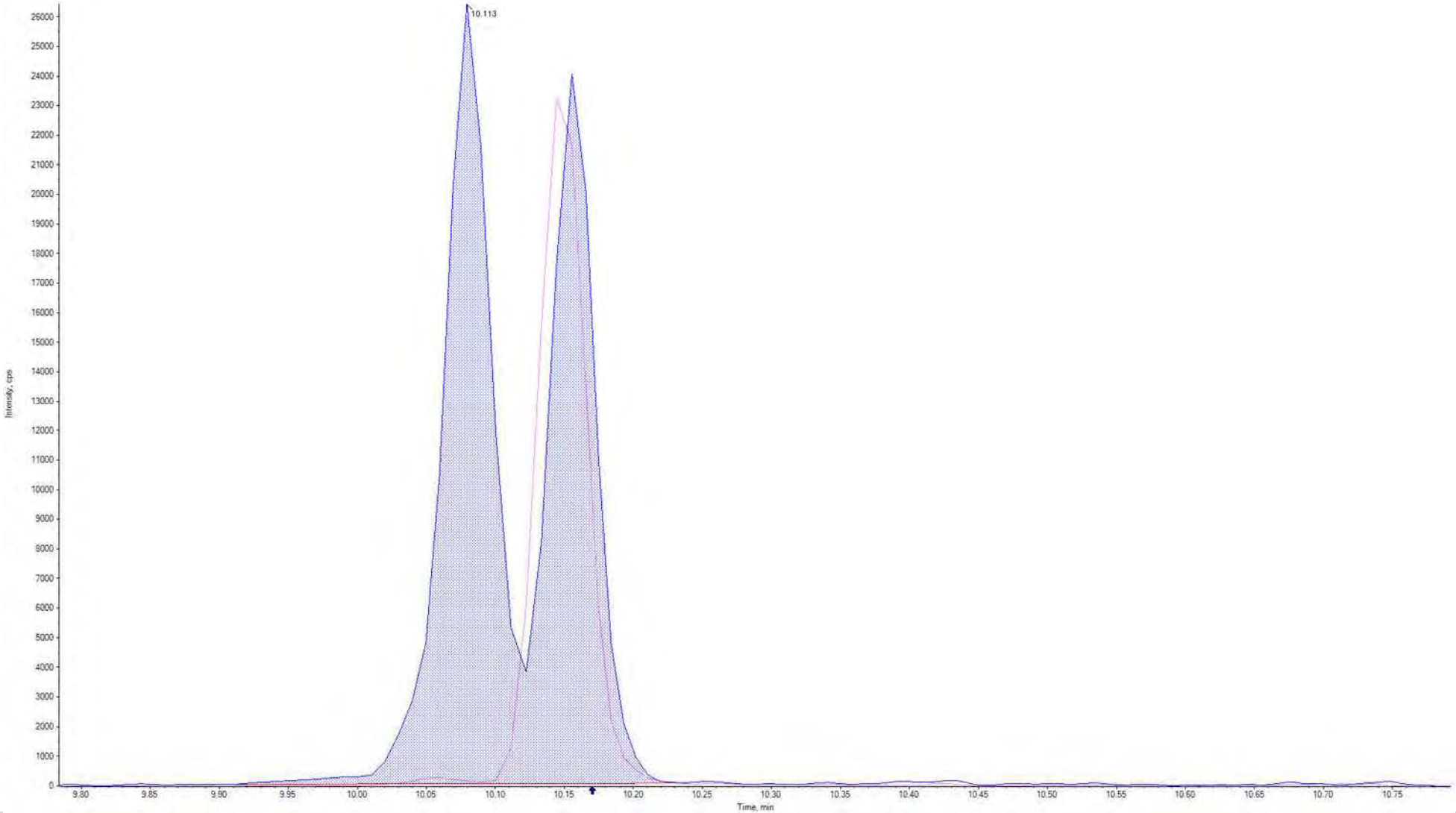
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSA
Sample: WG1973357-4 S/N:296560.0 Points Across peak:37



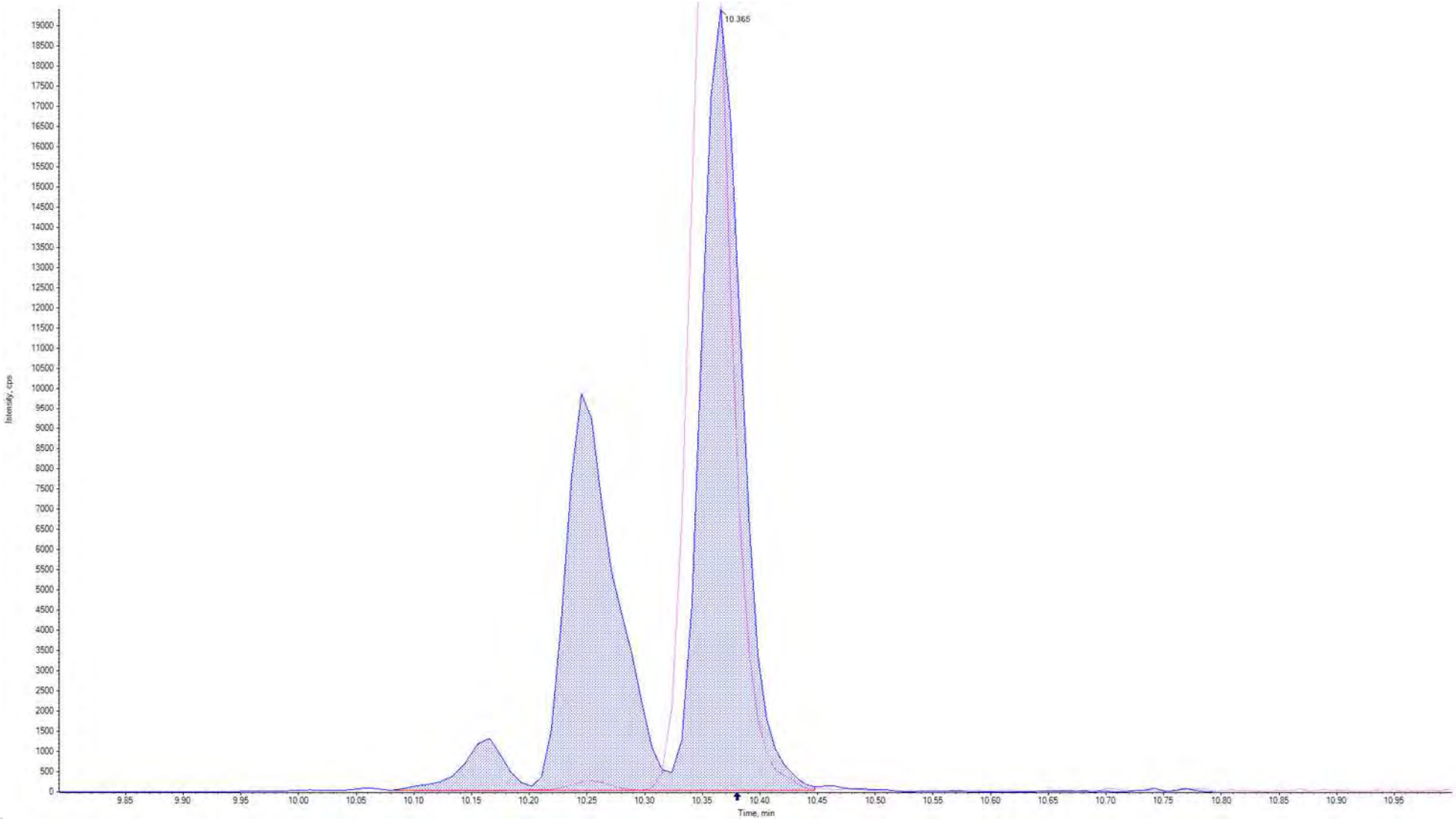
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSA_2
Sample: WG1973357-4 S/N:1365.9 Points Across peak:35



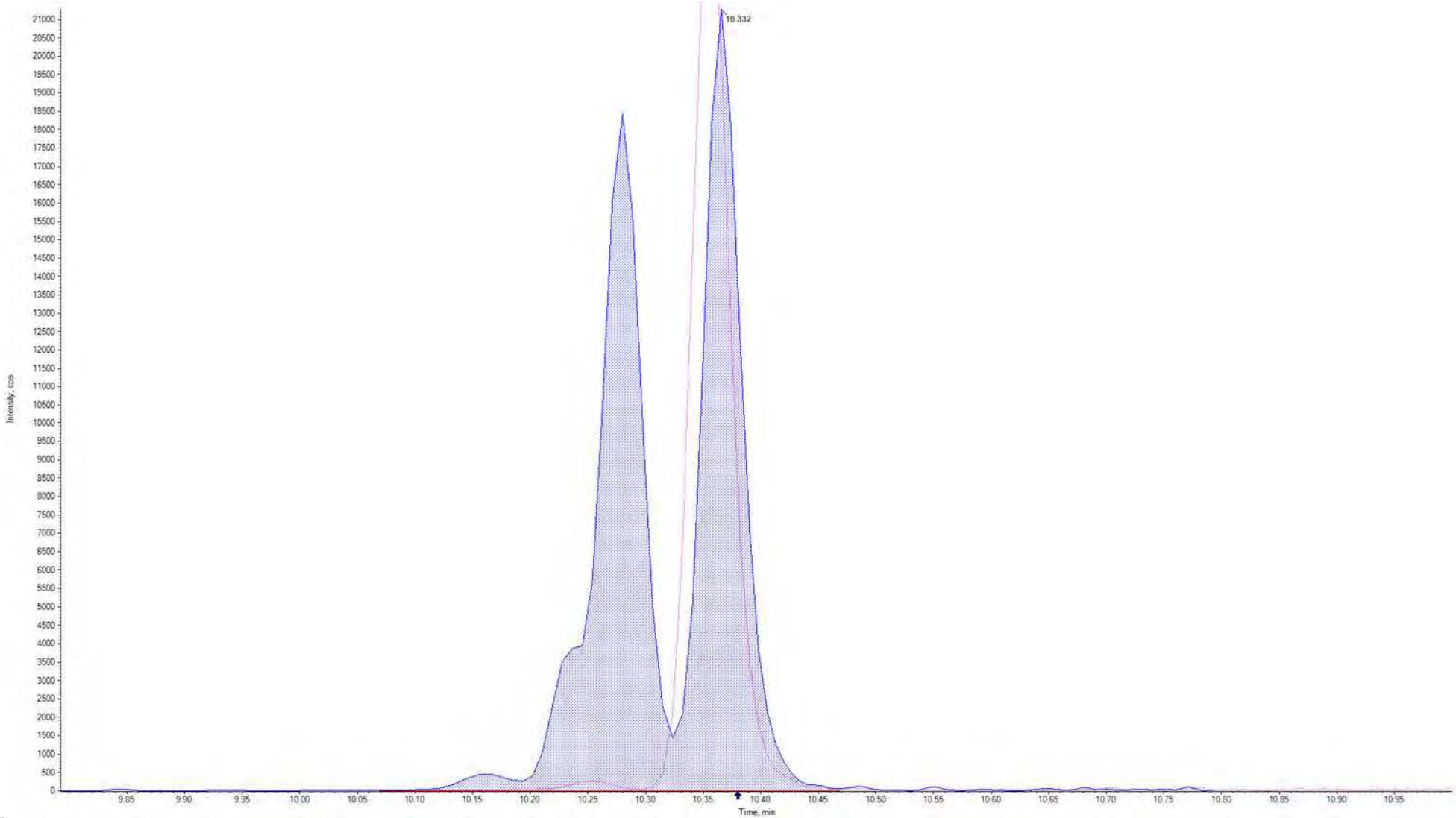
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSA
Sample: WG1973357-4 S/N:591.9 Points Across peak:44



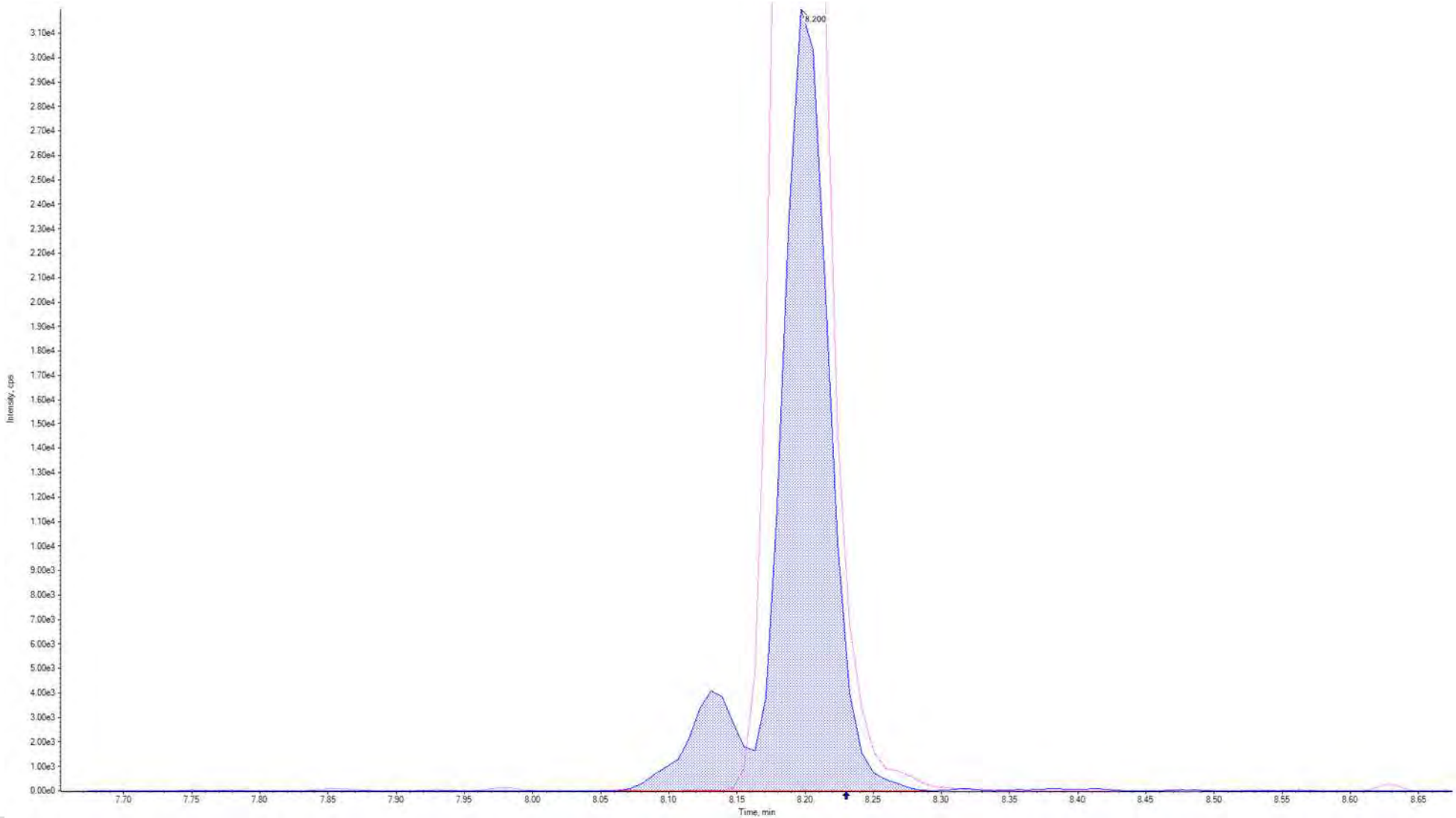
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSA_2
Sample: WG1973357-4 S/N:219991.4 Points Across peak:49



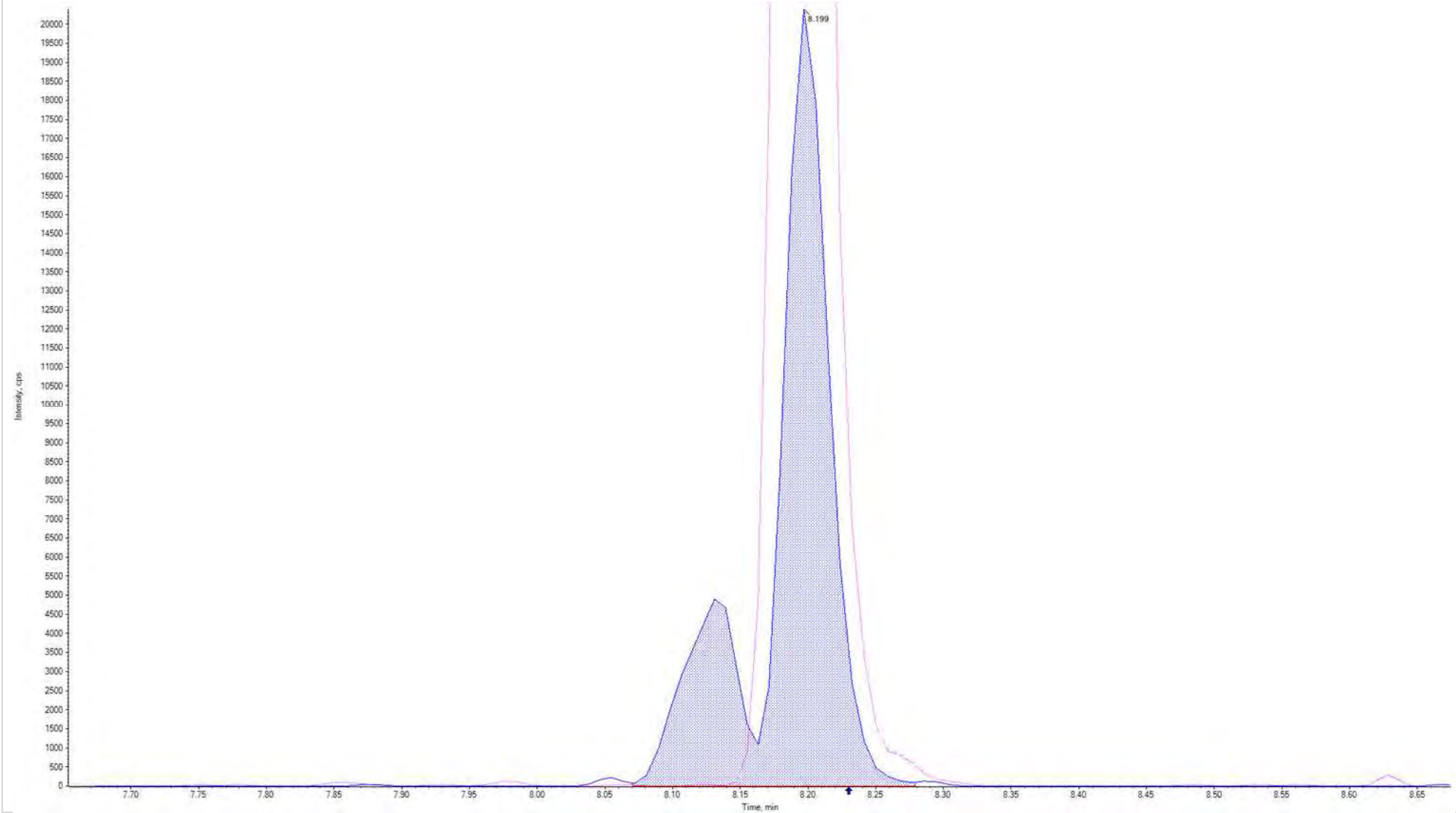
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSAA
Sample: WG1973357-4 S/N:597.6 Points Across peak:30



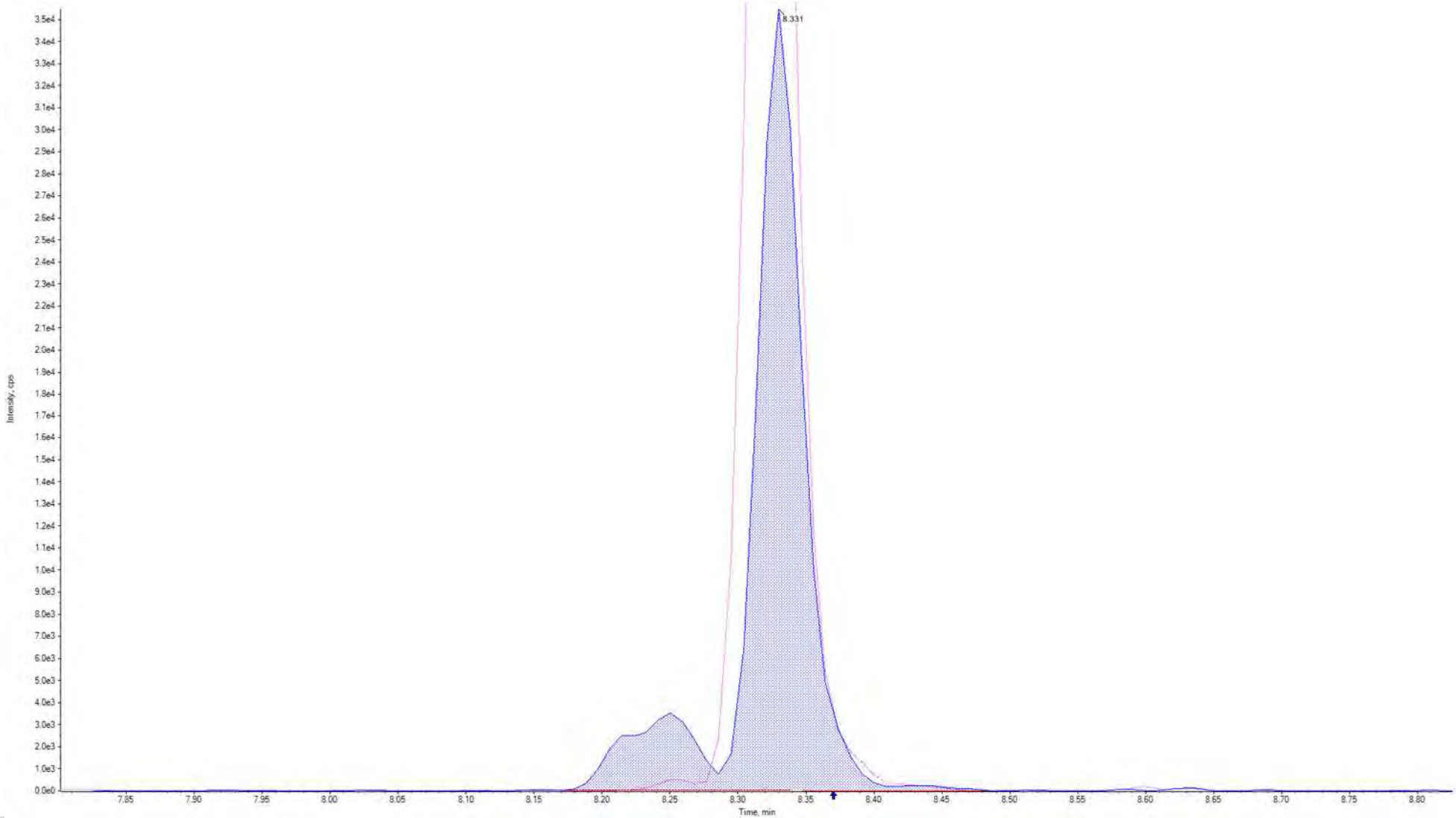
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSAA_2
Sample: WG1973357-4 S/N:607.4 Points Across peak:27



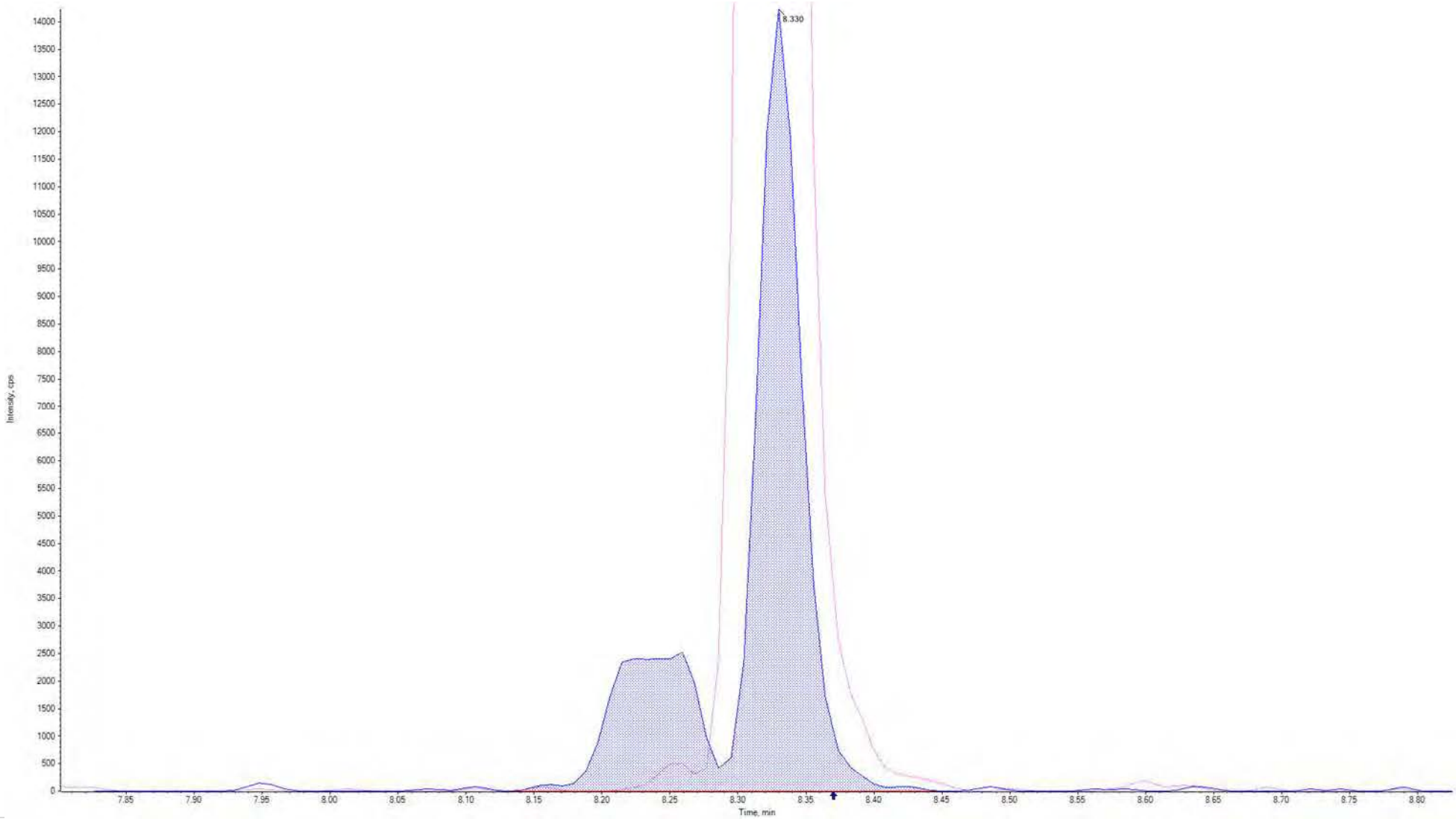
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSAA
Sample: WG1973357-4 S/N:614.3 Points Across peak:38



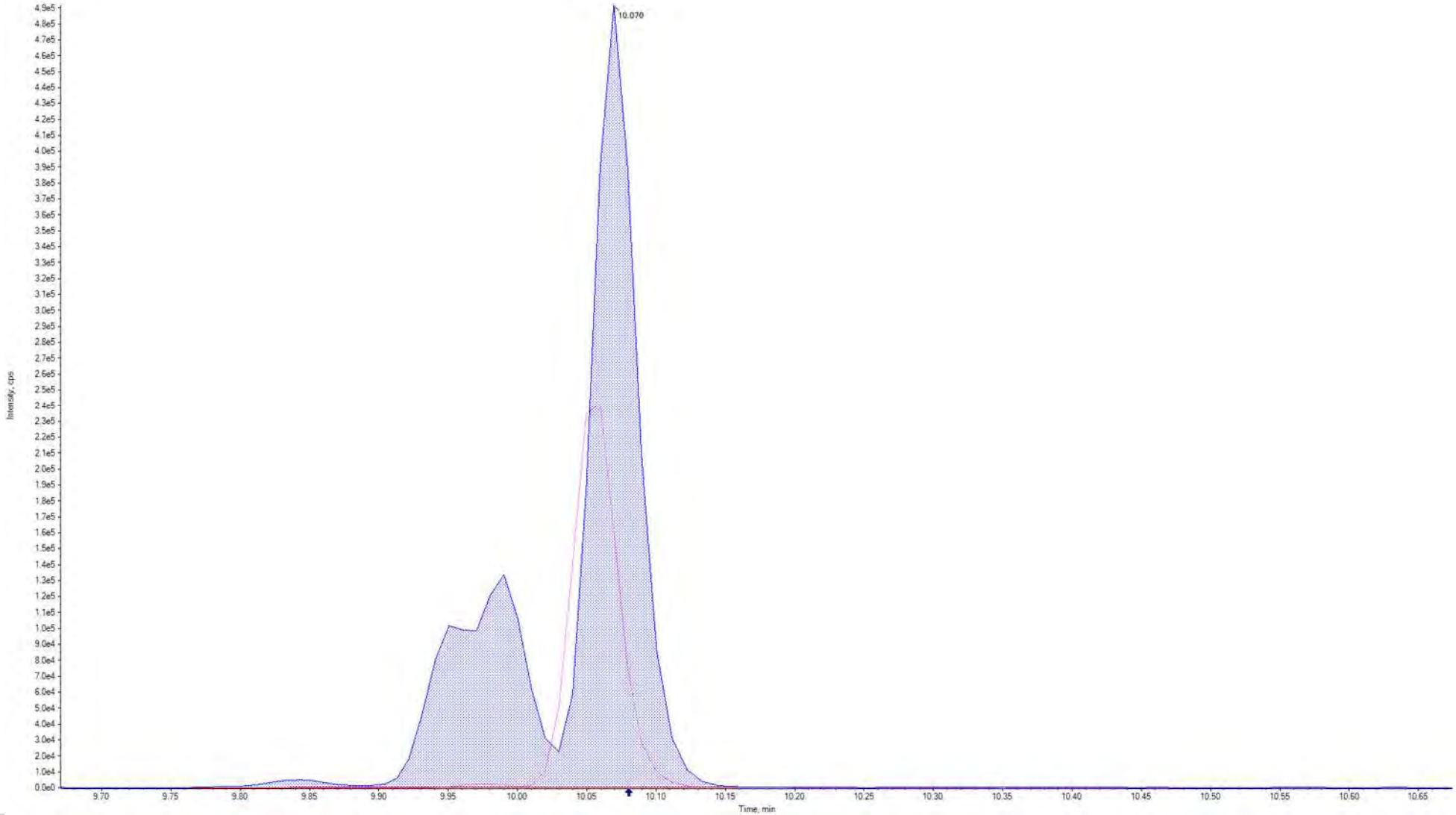
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSAA_2
Sample: WG1973357-4 S/N:333.1 Points Across peak:38



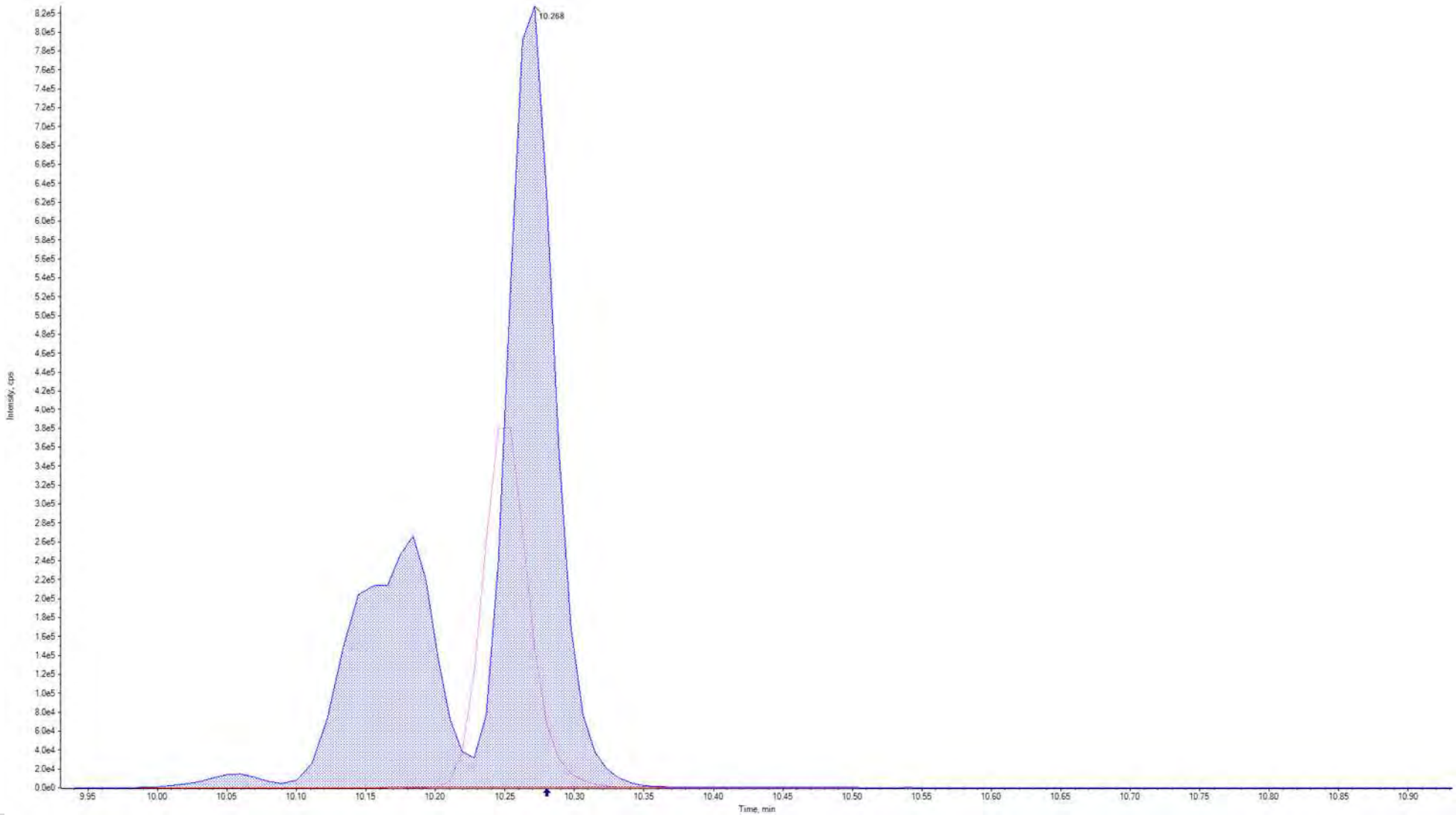
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSE
Sample: WG1973357-4 S/N:2074.4 Points Across peak:46



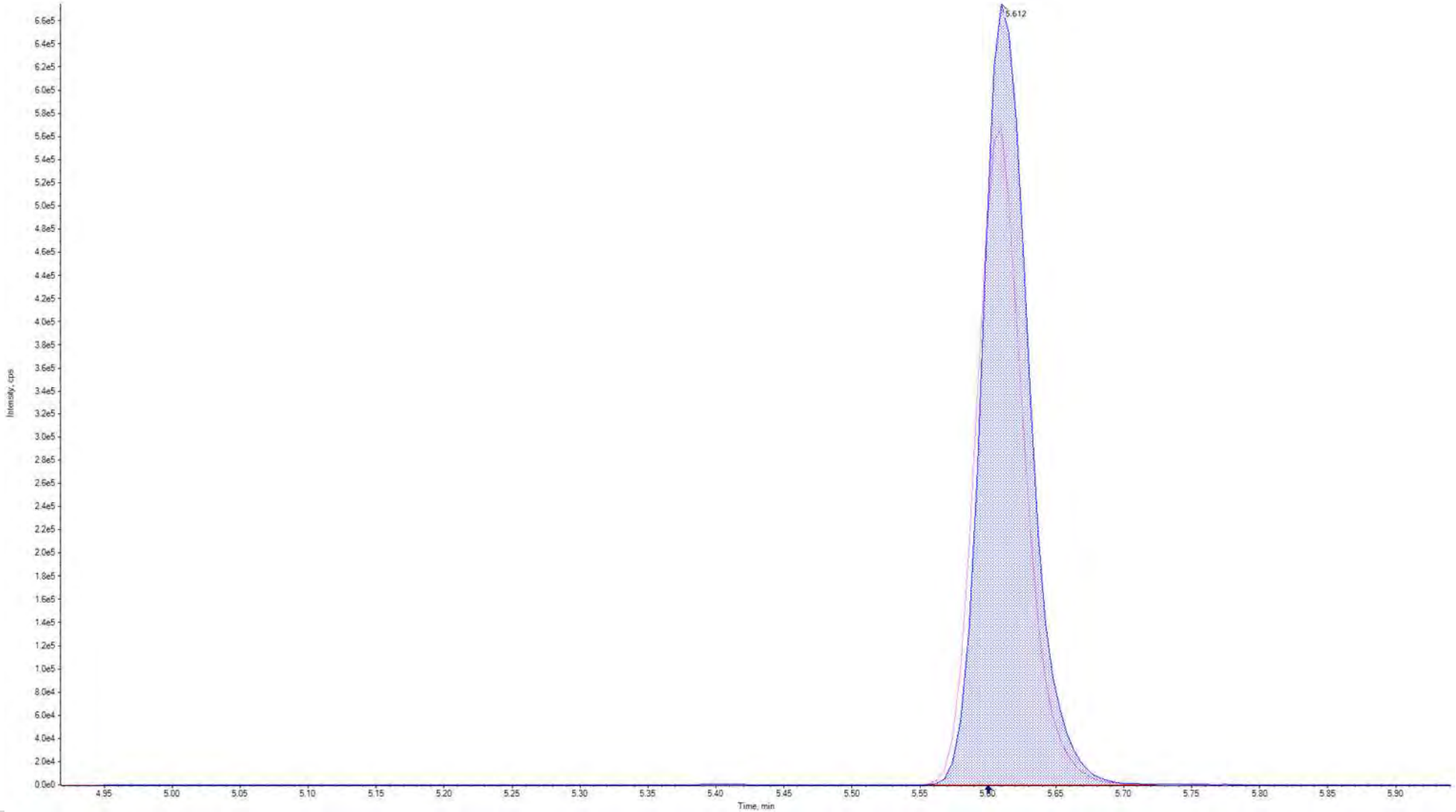
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSE
Sample: WG1973357-4 S/N:2310.8 Points Across peak:45



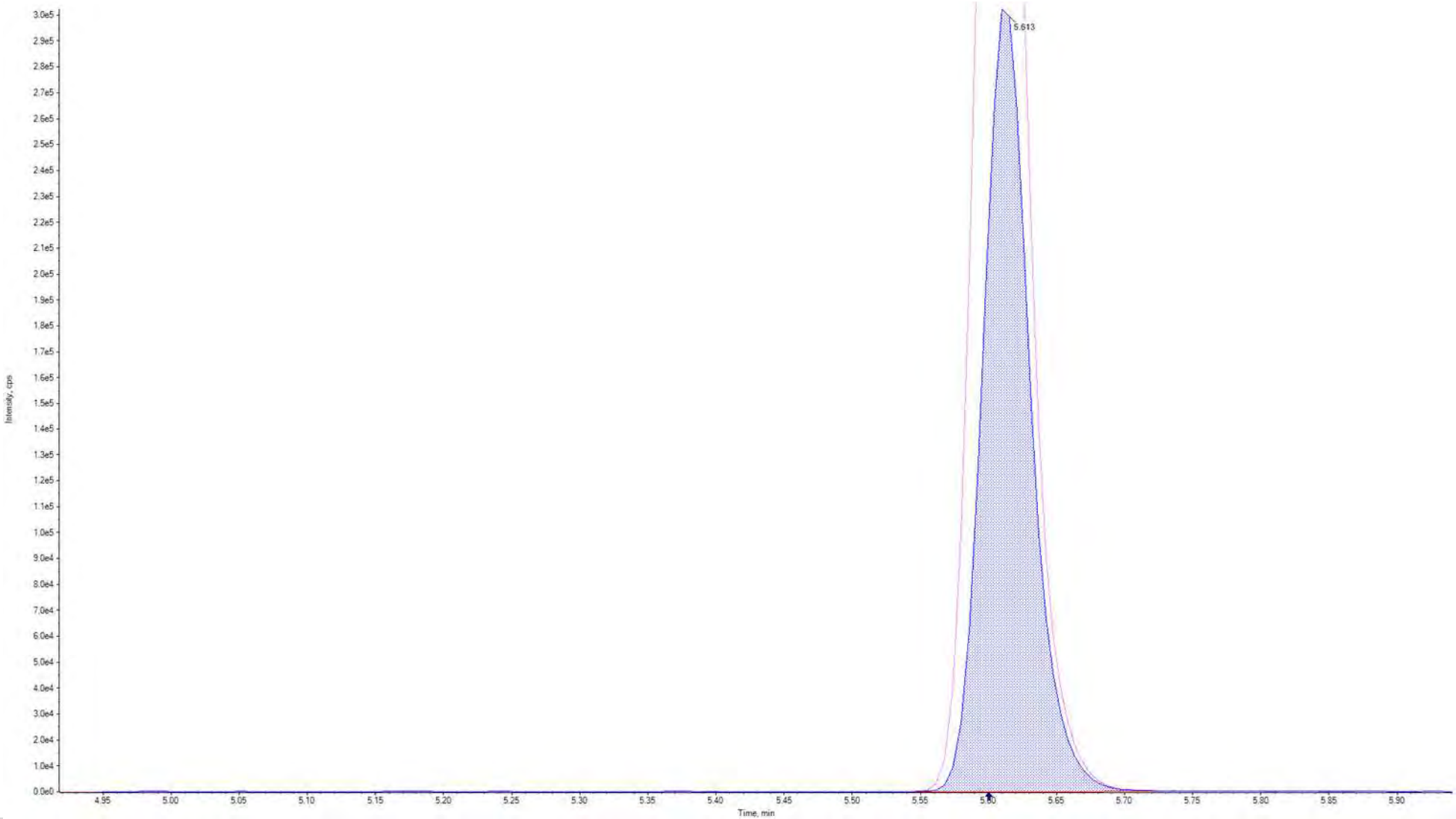
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

HFPO-DA
Sample: WG1973357-4 S/N:61885.3 Points Across peak:39



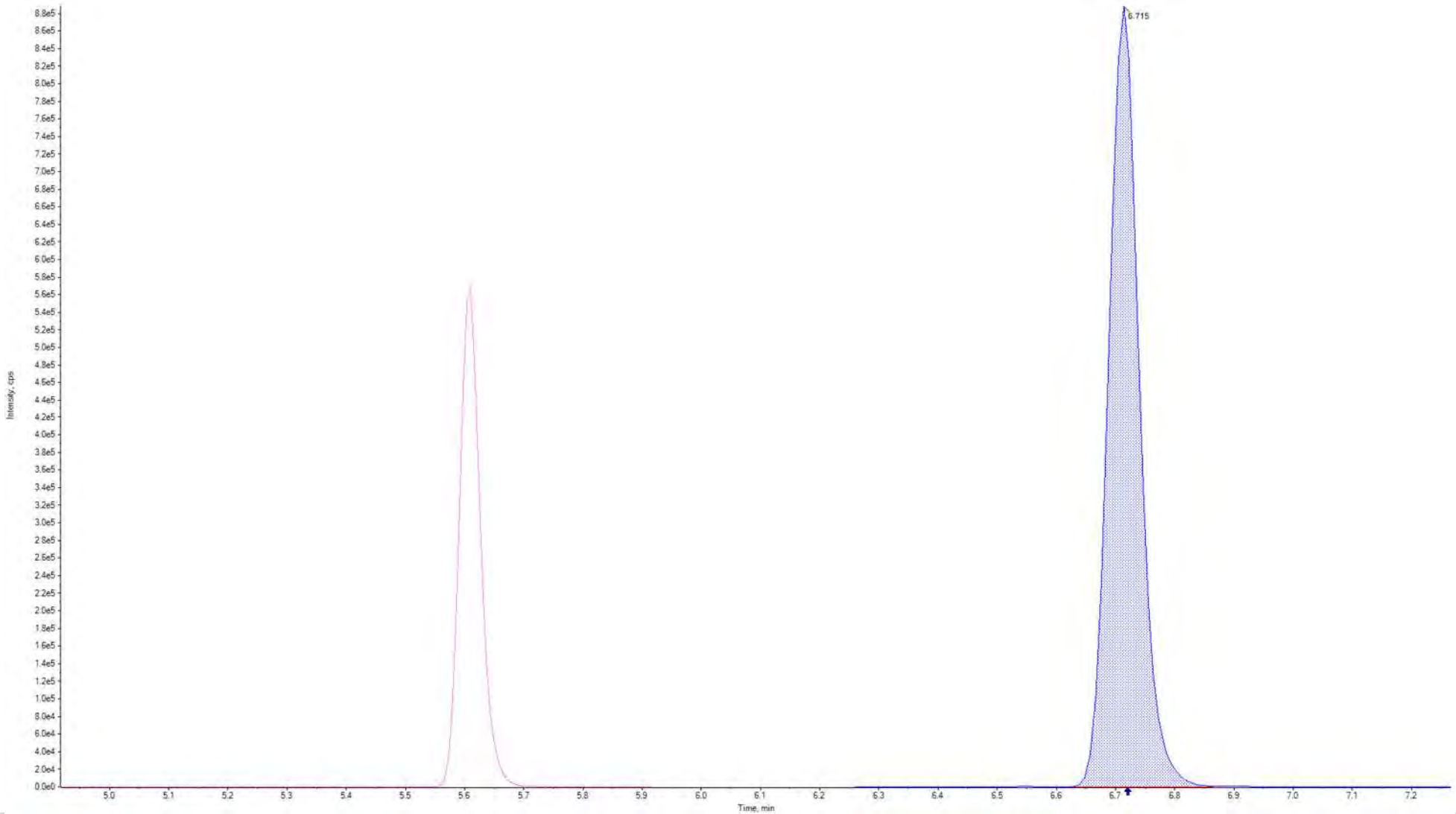
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

HFPO-DA_2
Sample: WG1973357-4 S/N:3376.7 Points Across peak:44



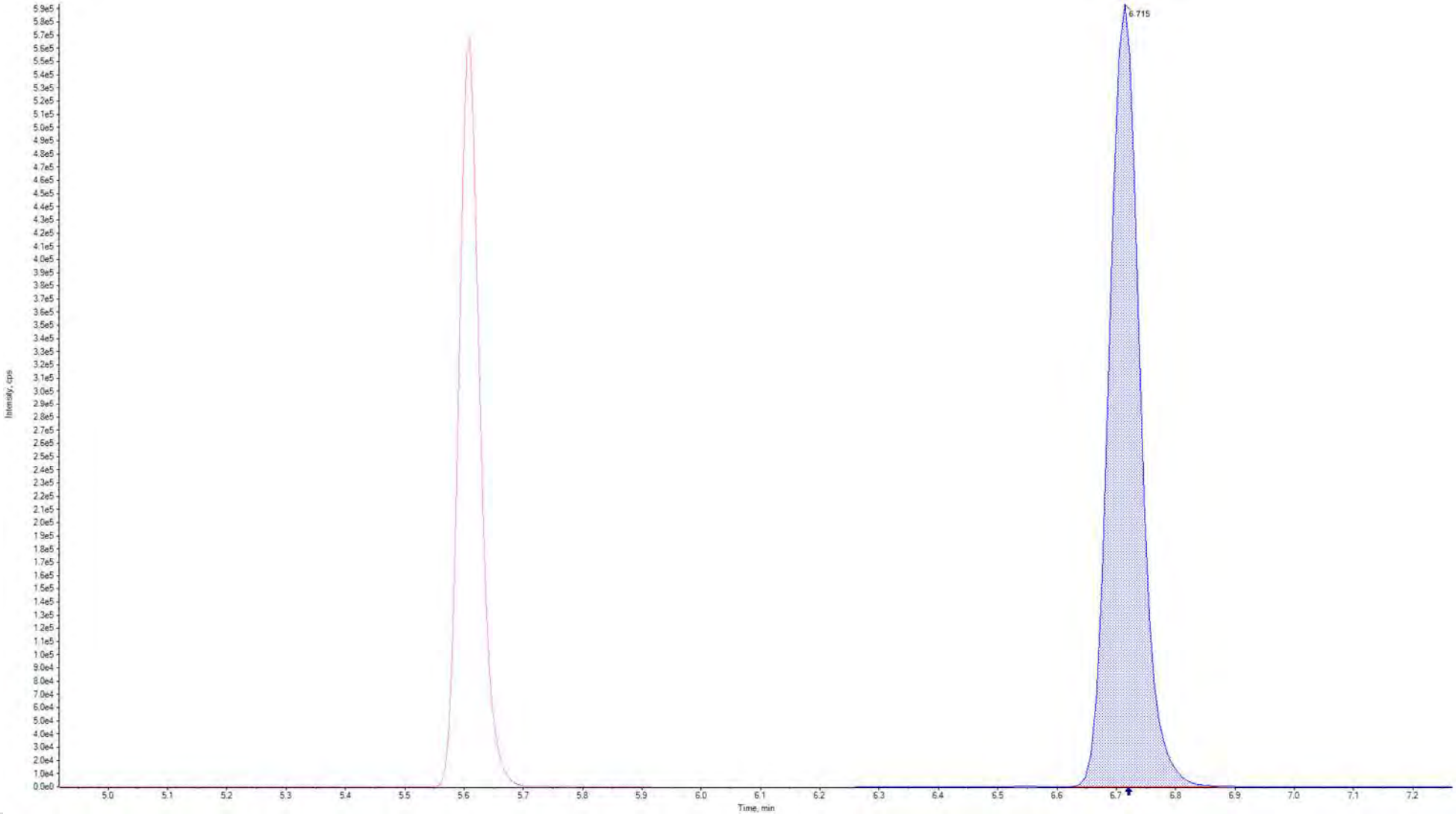
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

ADONA
Sample: WG1973357-4 S/N:23543.8 Points Across peak:34



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

ADONA_2
Sample: WG1973357-4 S/N:12546.0 Points Across peak:37

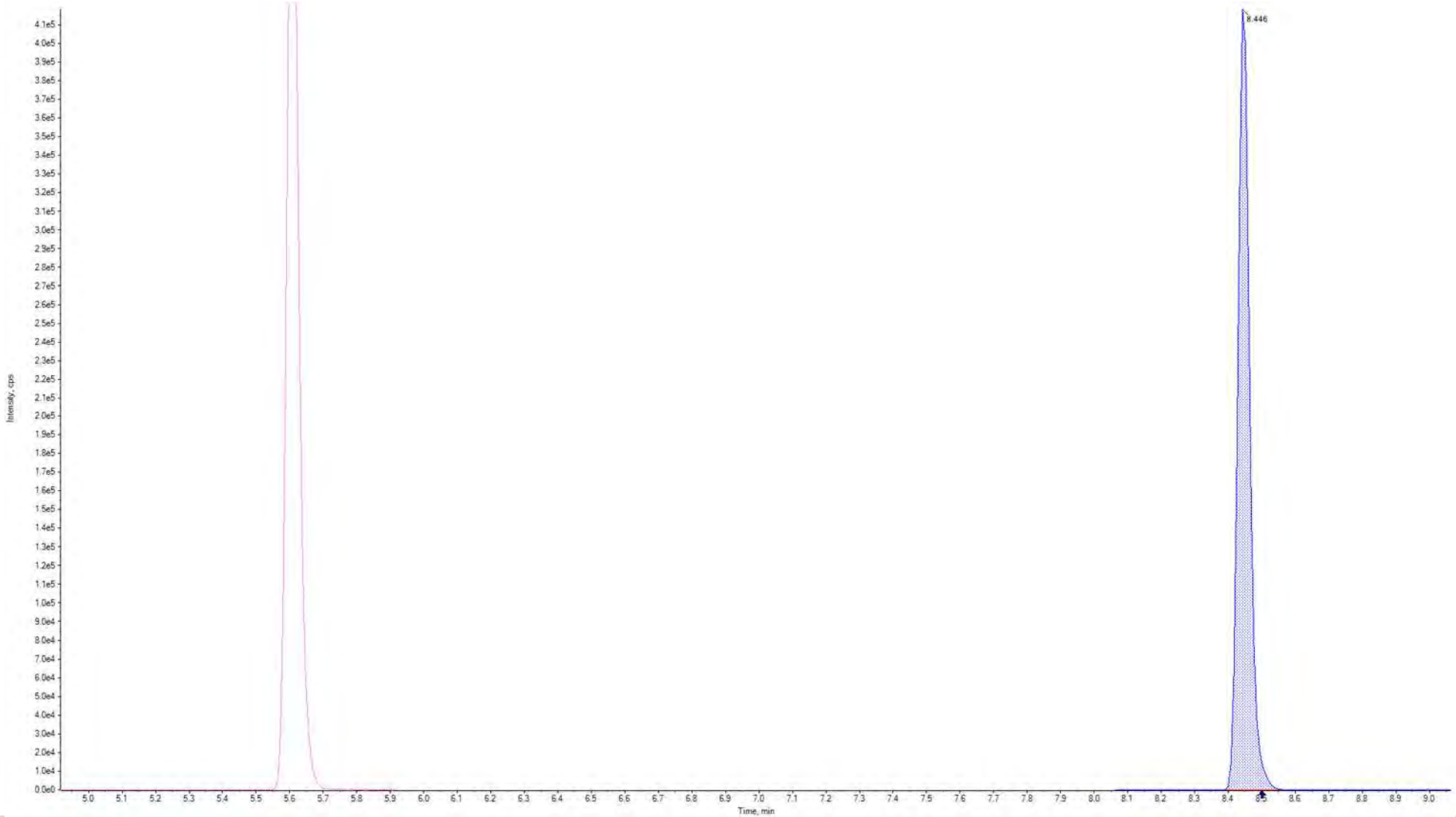


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

9Cl-PF3ONS
Sample: WG1973357-4 S/N:106784.2 Points Across peak:24

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

9Cl-PF3ONS_2
Sample: WG1973357-4 S/N:9921.8 Points Across peak:25



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

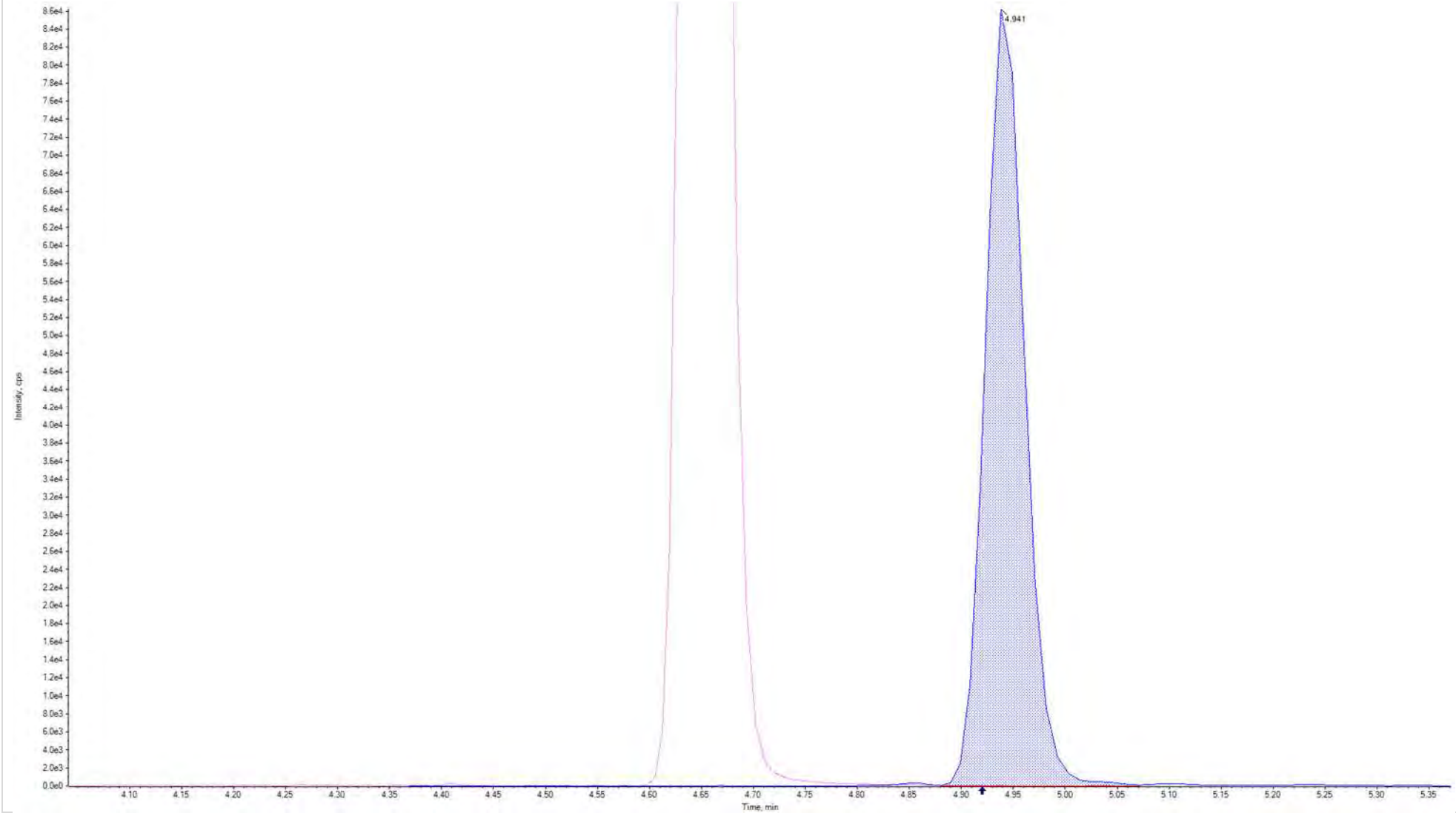
11Cl-PF3OUdS
Sample: WG1973357-4 S/N:84446543.8 Points Across peak:43

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

11Cl-PF3OUdS_2
Sample: WG1973357-4 S/N:31394642.3 Points Across peak:42

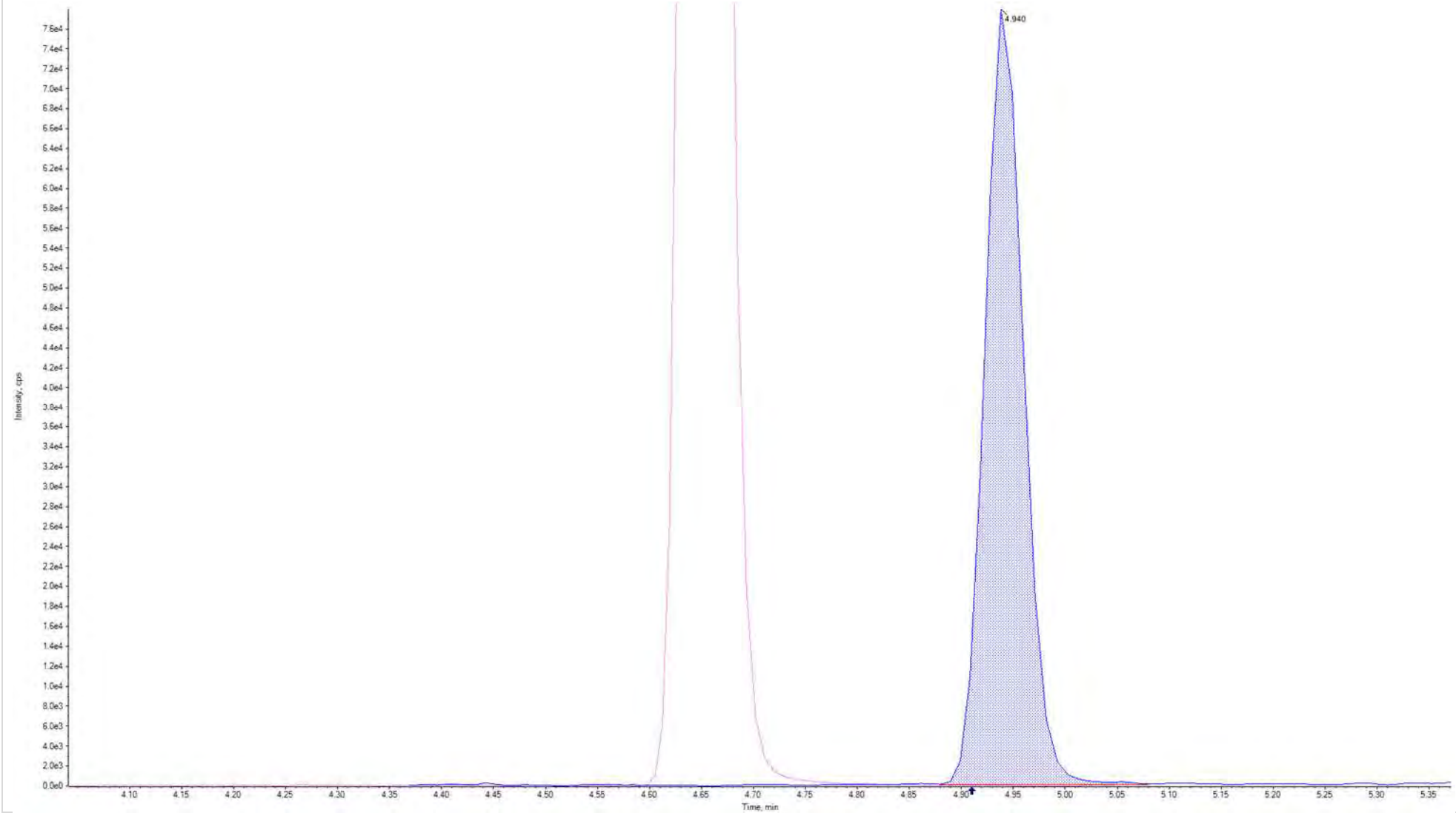
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

3:3FTCA
Sample: WG1973357-4 S/N:2020.0 Points Across peak:20



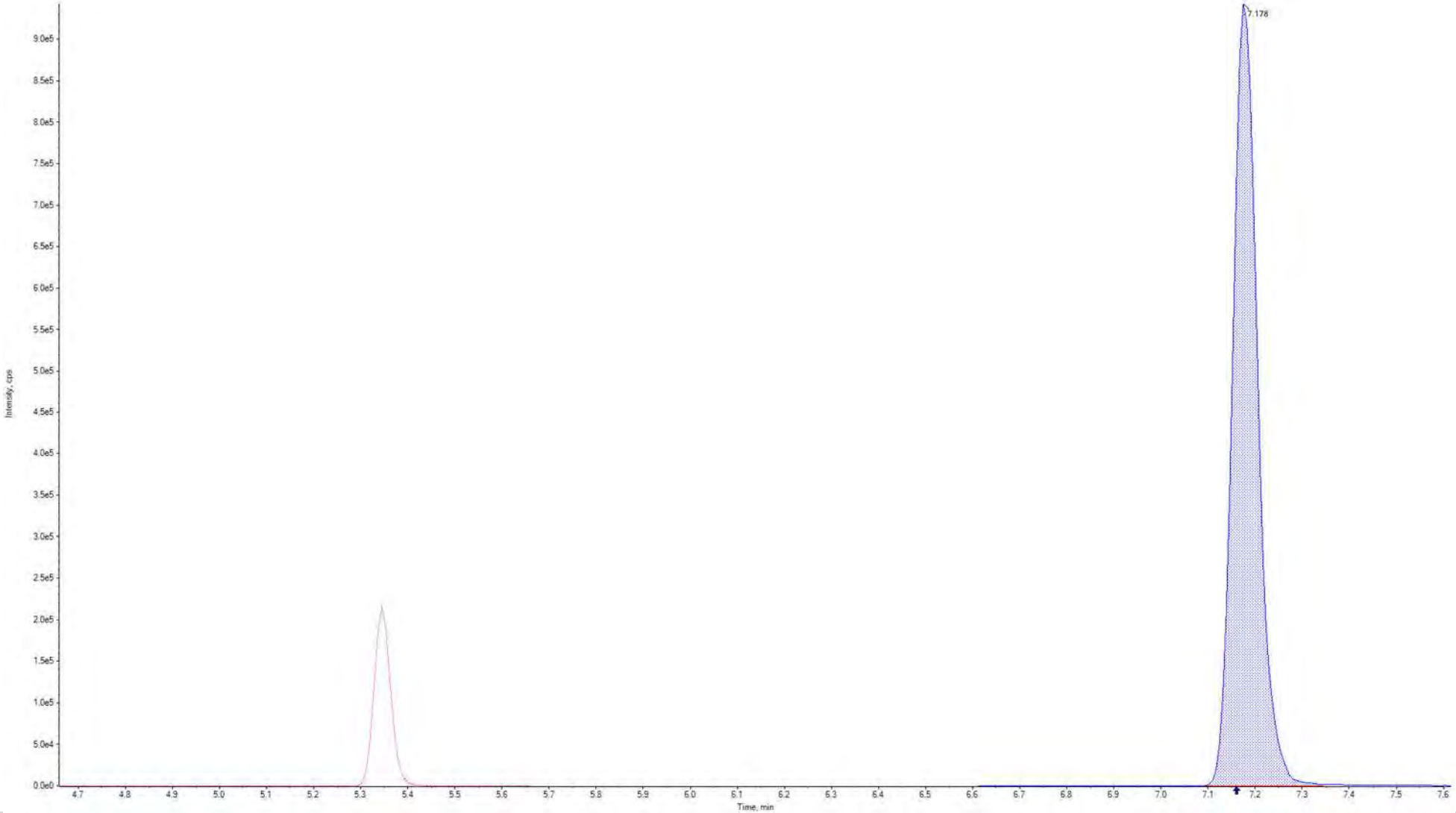
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

3:3FTCA_2
Sample: WG1973357-4 S/N:2607.1 Points Across peak:21



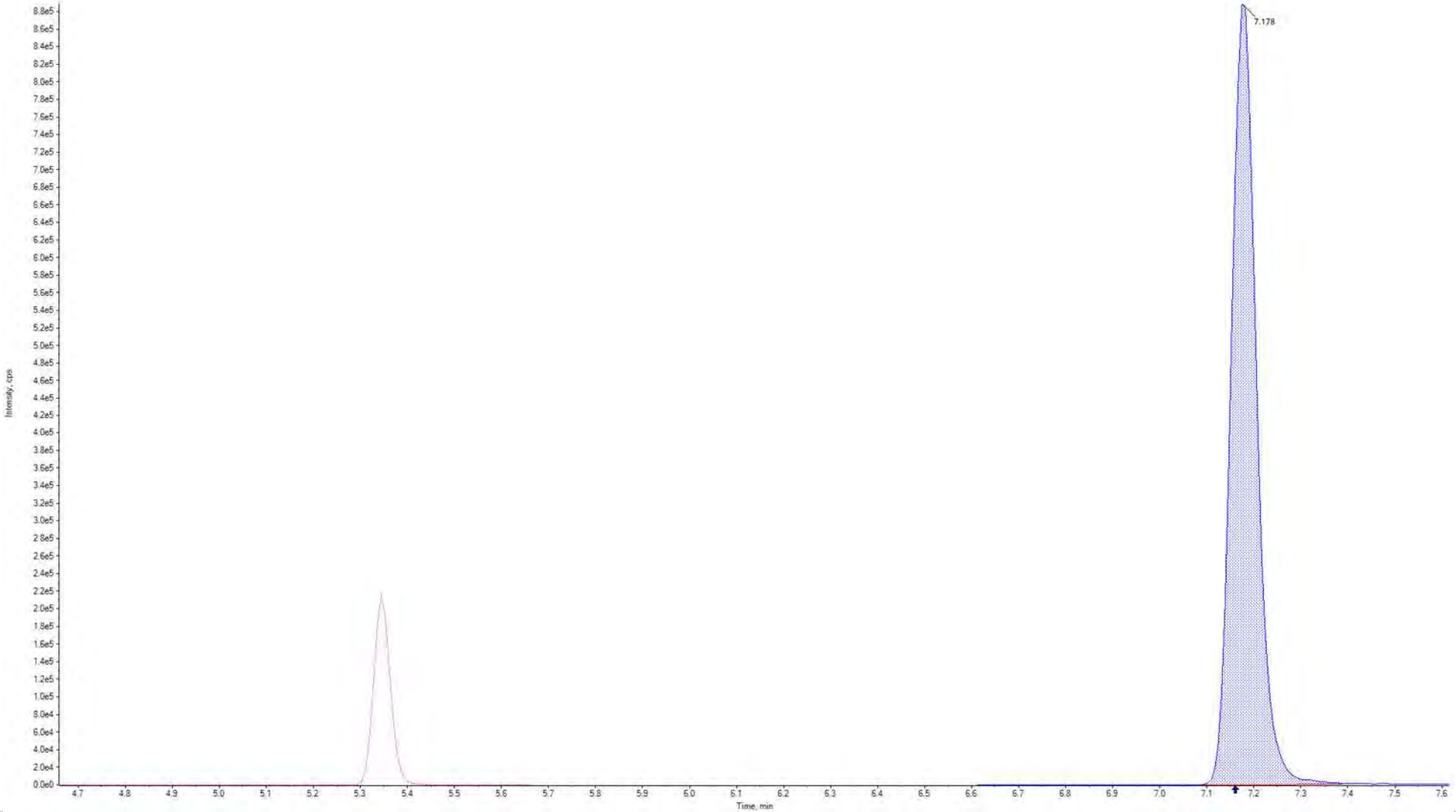
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

5:3FTCA
Sample: WG1973357-4 S/N:29084.3 Points Across peak:43



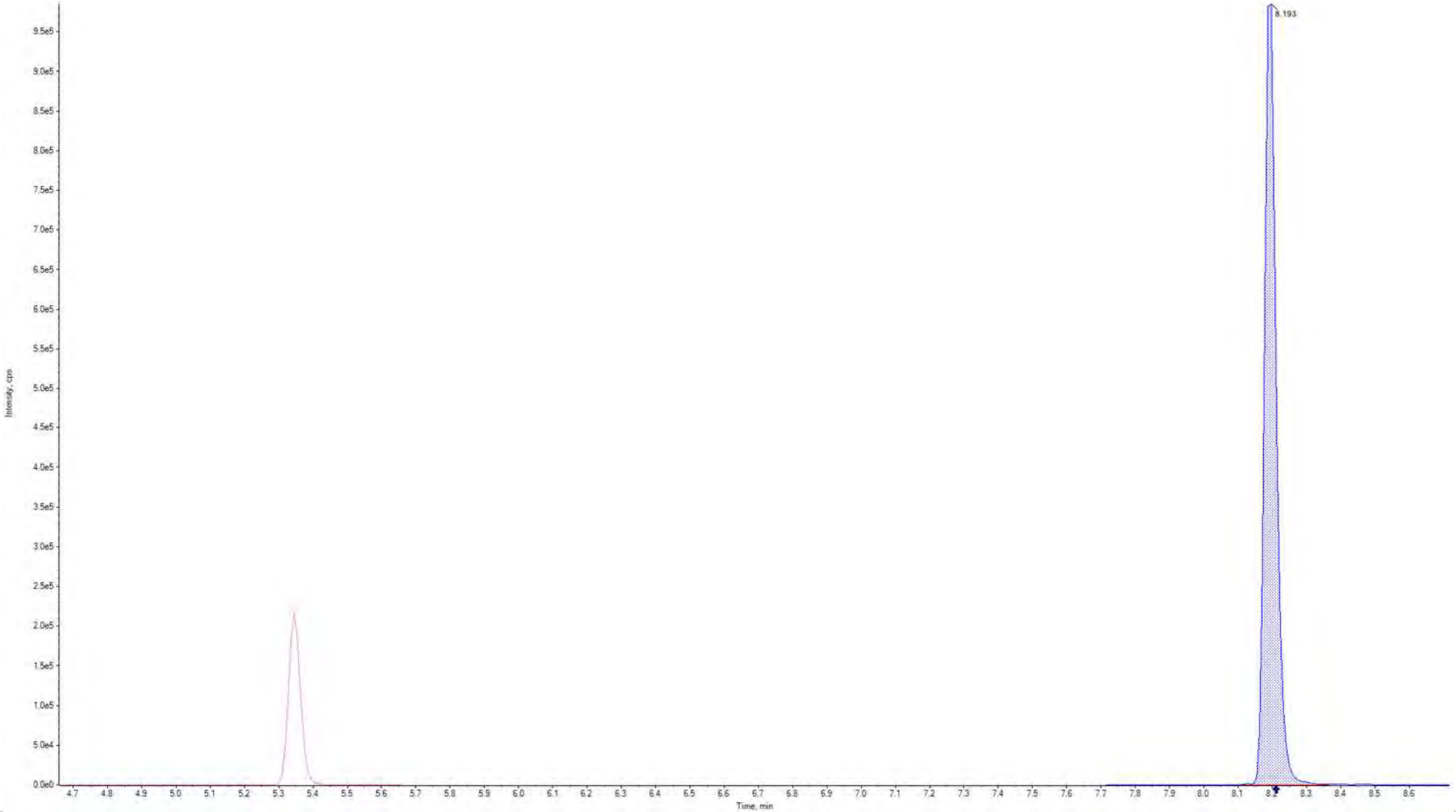
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

5:3FTCA_2
Sample: WG1973357-4 S/N:10255.8 Points Across peak:56



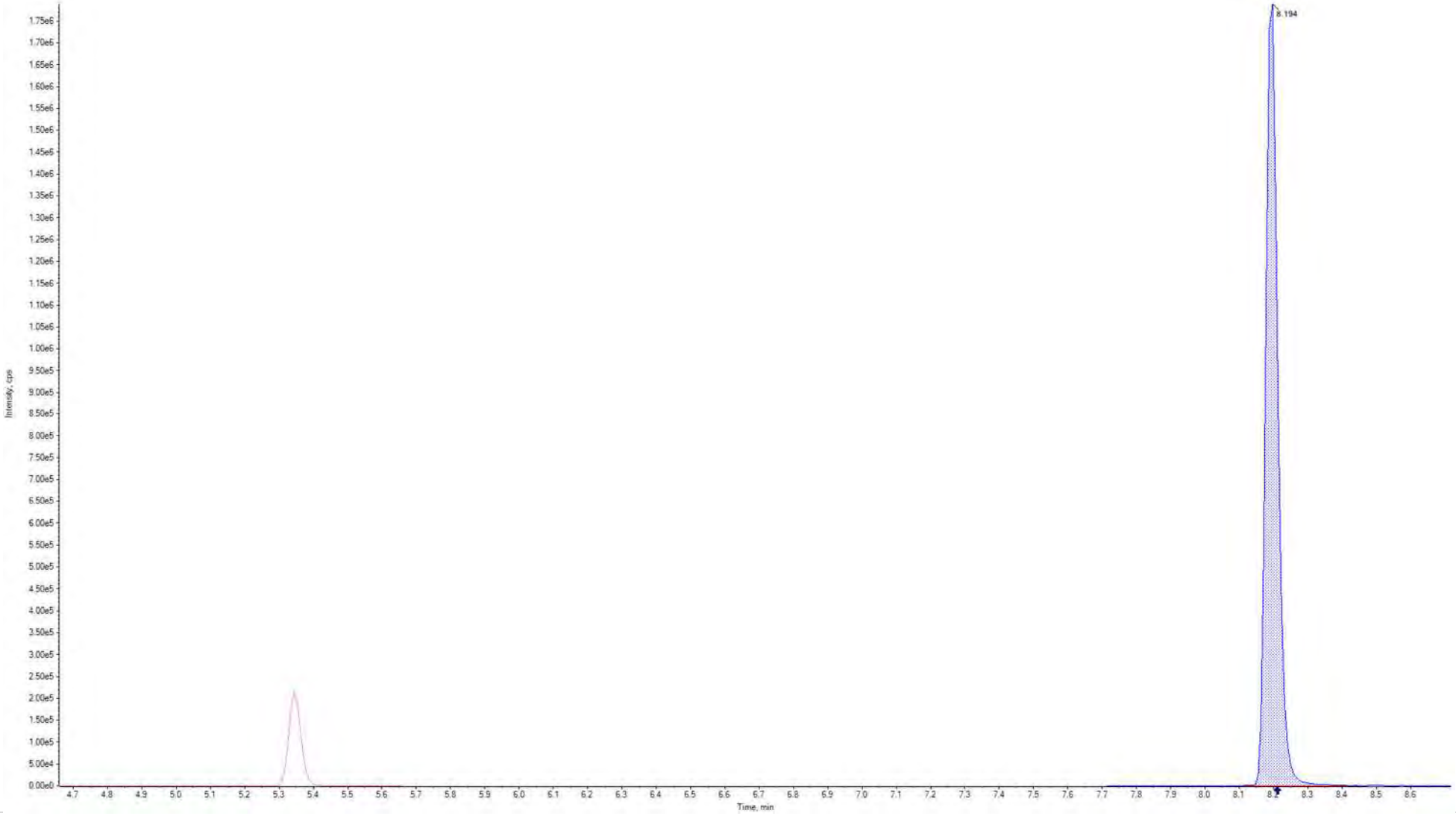
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

7:3FTCA
Sample: WG1973357-4 S/N:1831691.6 Points Across peak:37



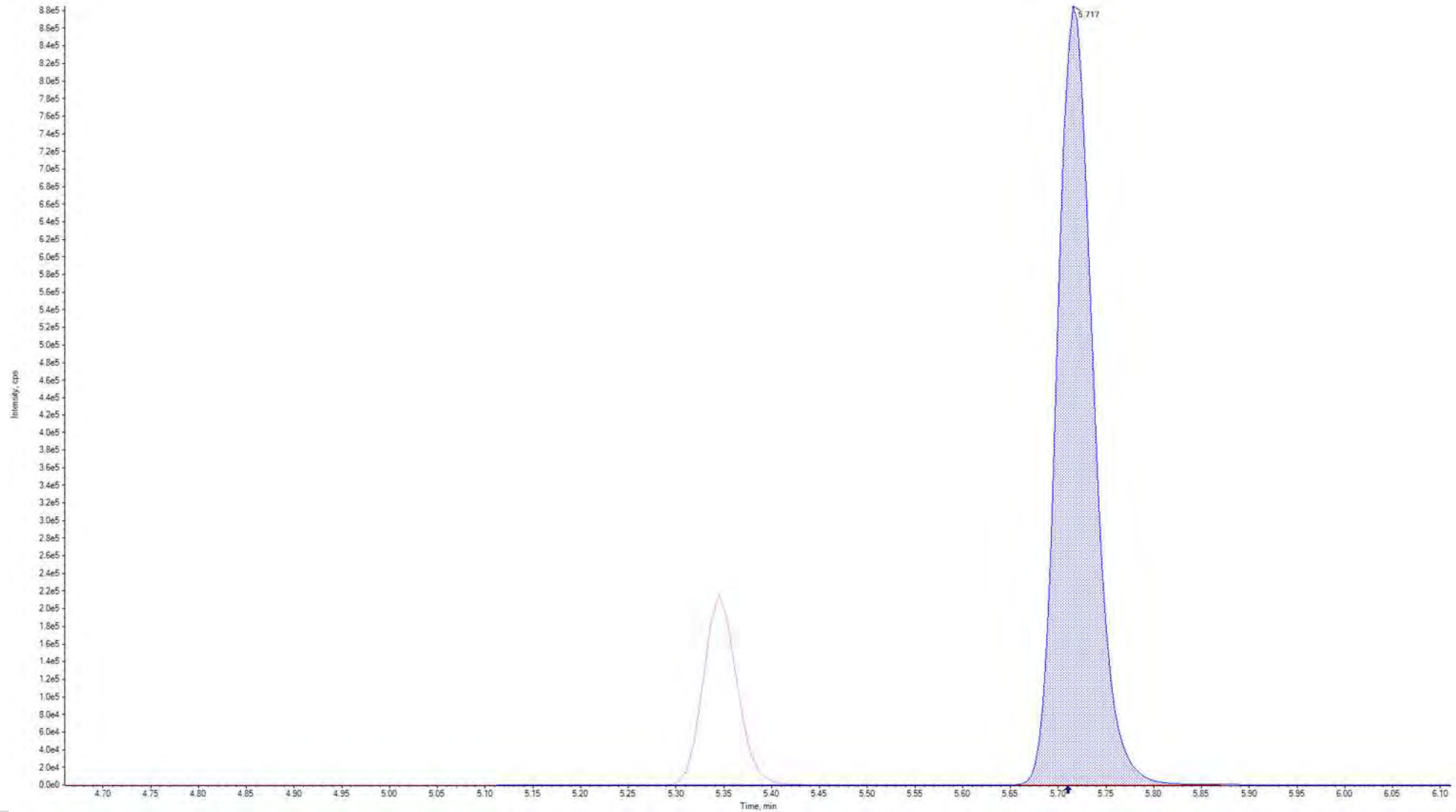
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

7:3FTCA_2
Sample: WG1973357-4 S/N:16210.0 Points Across peak:48



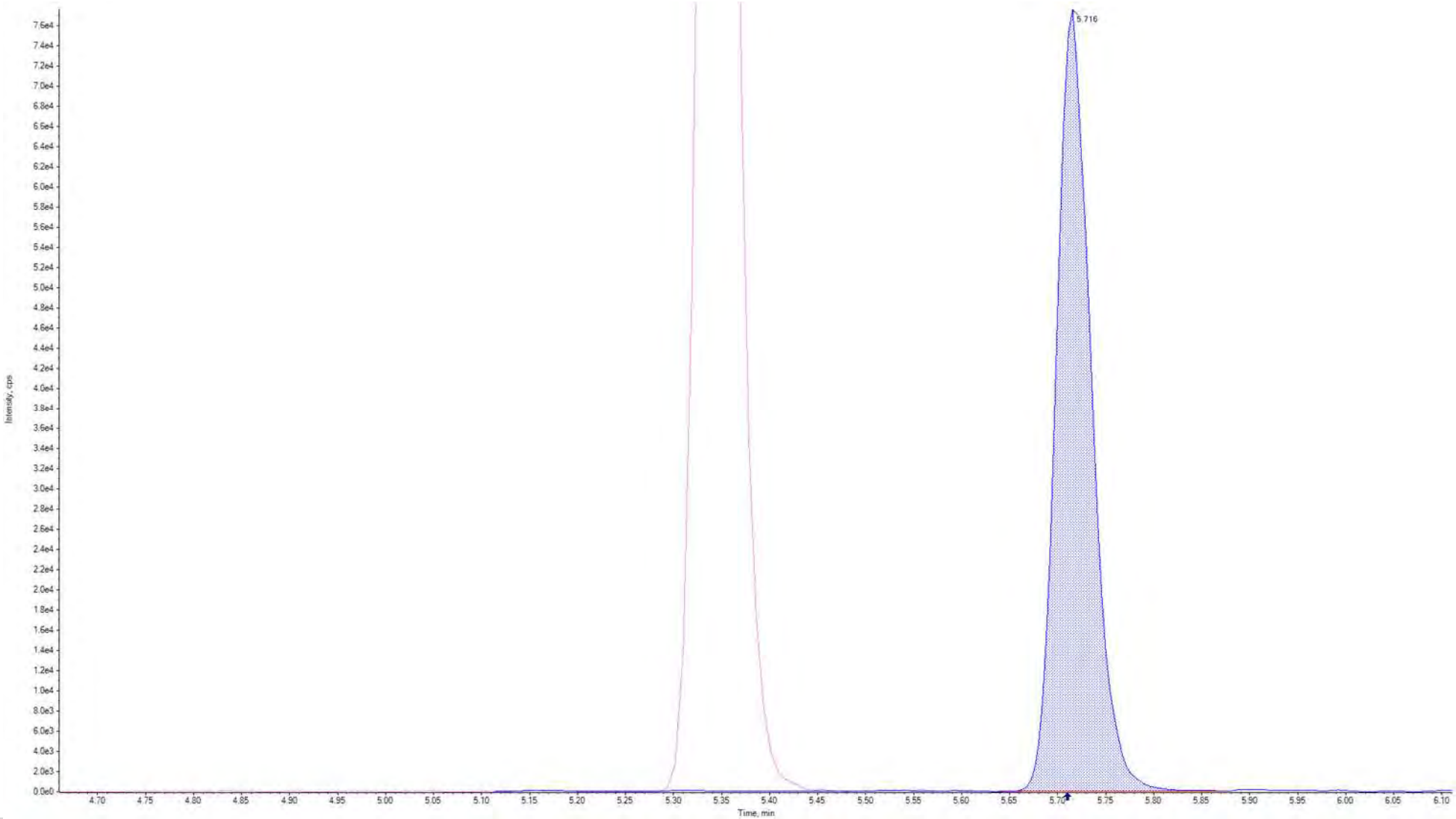
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFEESA
Sample: WG1973357-4 S/N:7179.3 Points Across peak:46



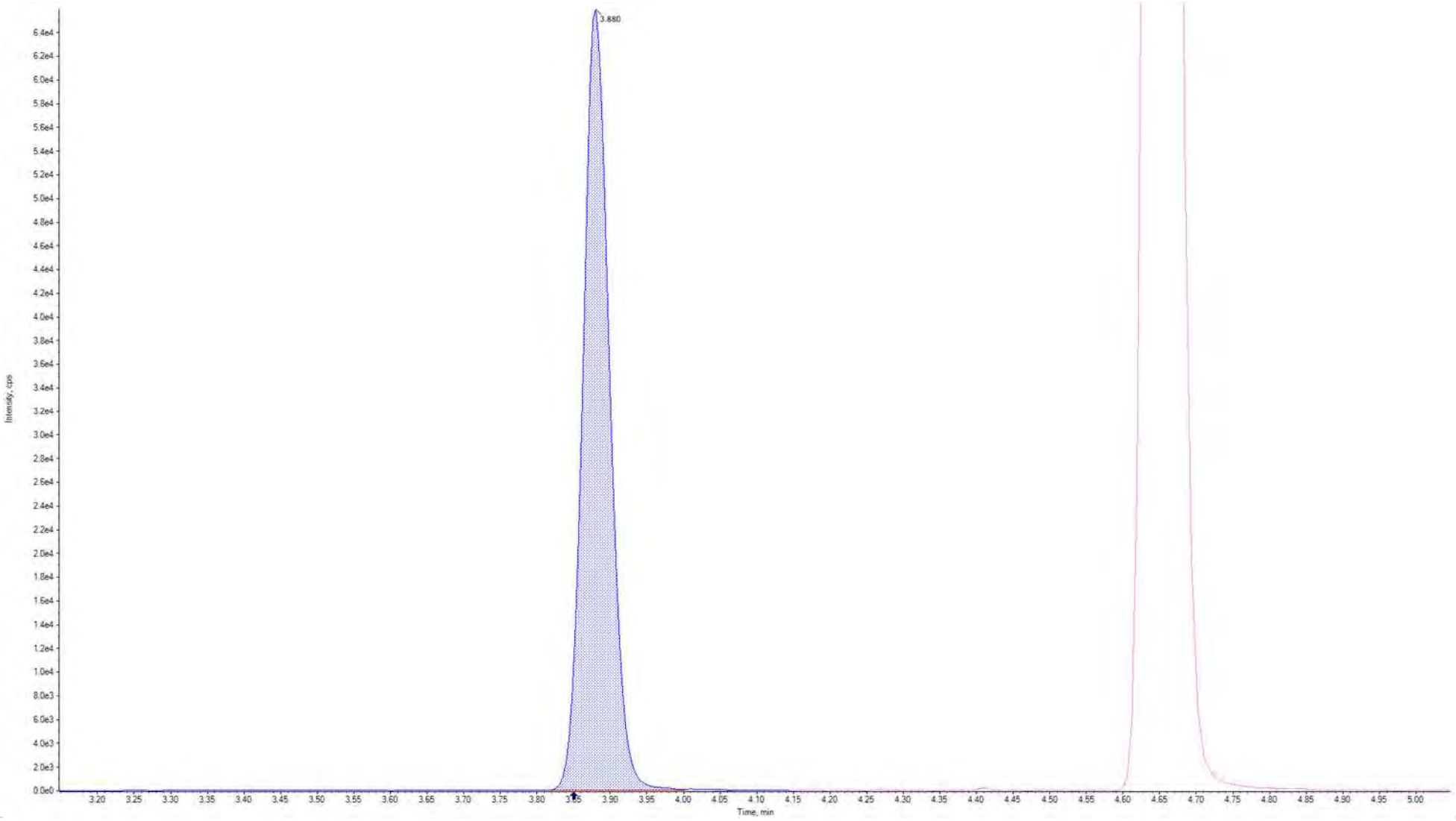
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFEESA_2
Sample: WG1973357-4 S/N:3901.8 Points Across peak:49



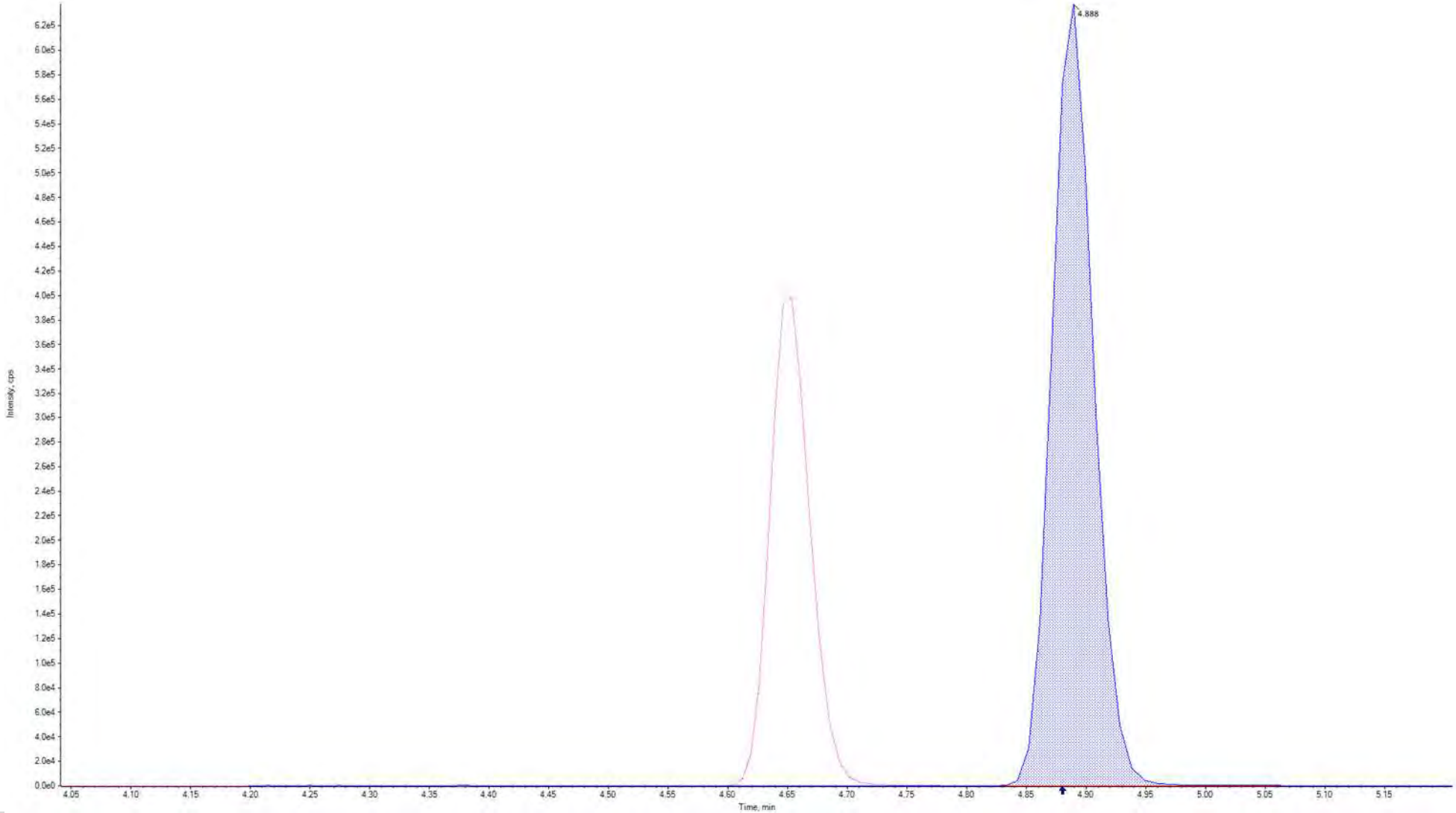
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFMPA
Sample: WG1973357-4 S/N:4223.6 Points Across peak:50



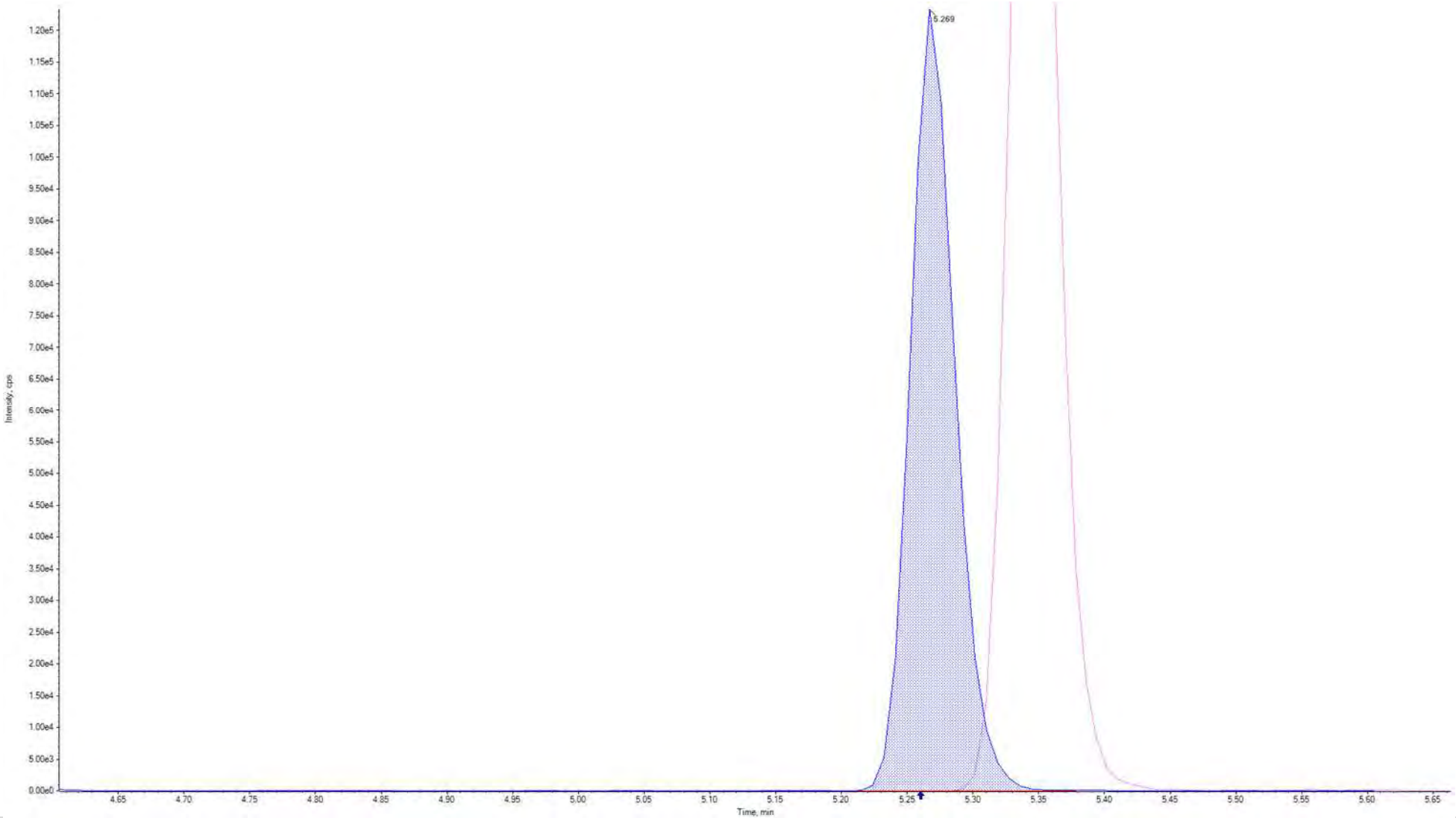
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFMBA
Sample: WG1973357-4 S/N:4446.2 Points Across peak:29



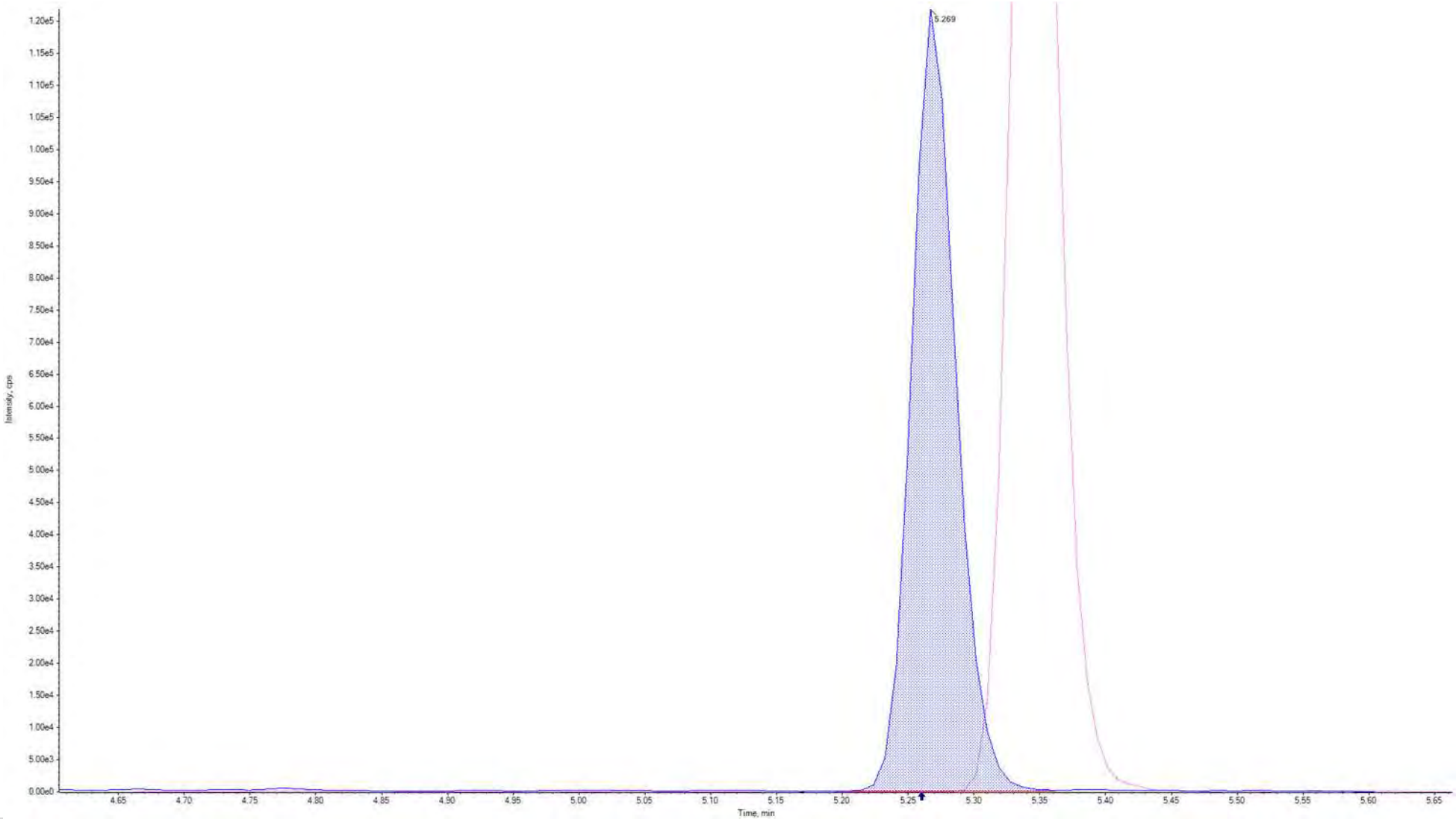
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NFDHA
Sample: WG1973357-4 S/N:3038.3 Points Across peak:22



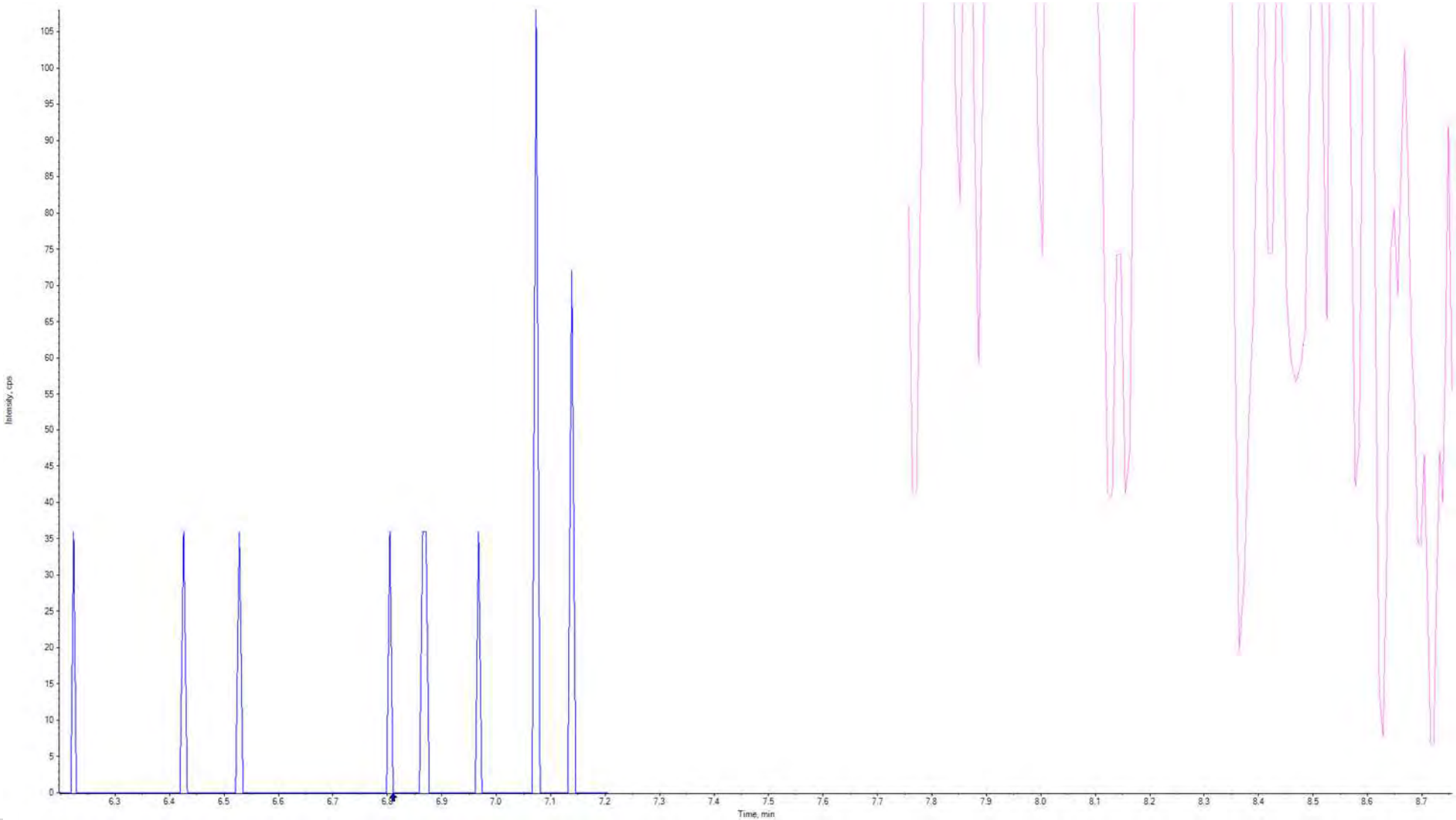
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NFDHA_2
Sample: WG1973357-4 S/N:1728.6 Points Across peak:23



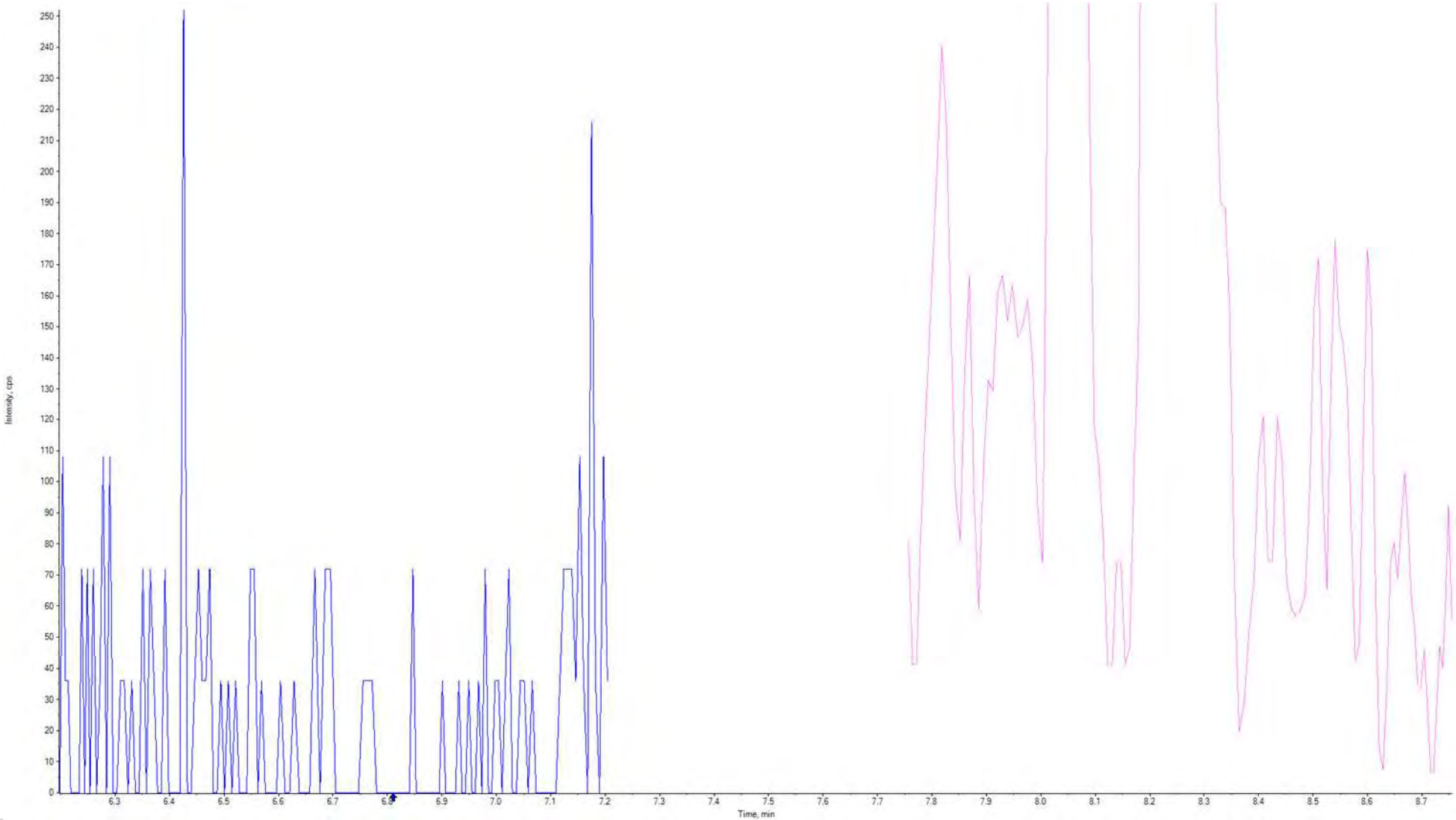
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

TDCA
Sample: WG1973357-4 S/N:N/A Points Across peak:N/A



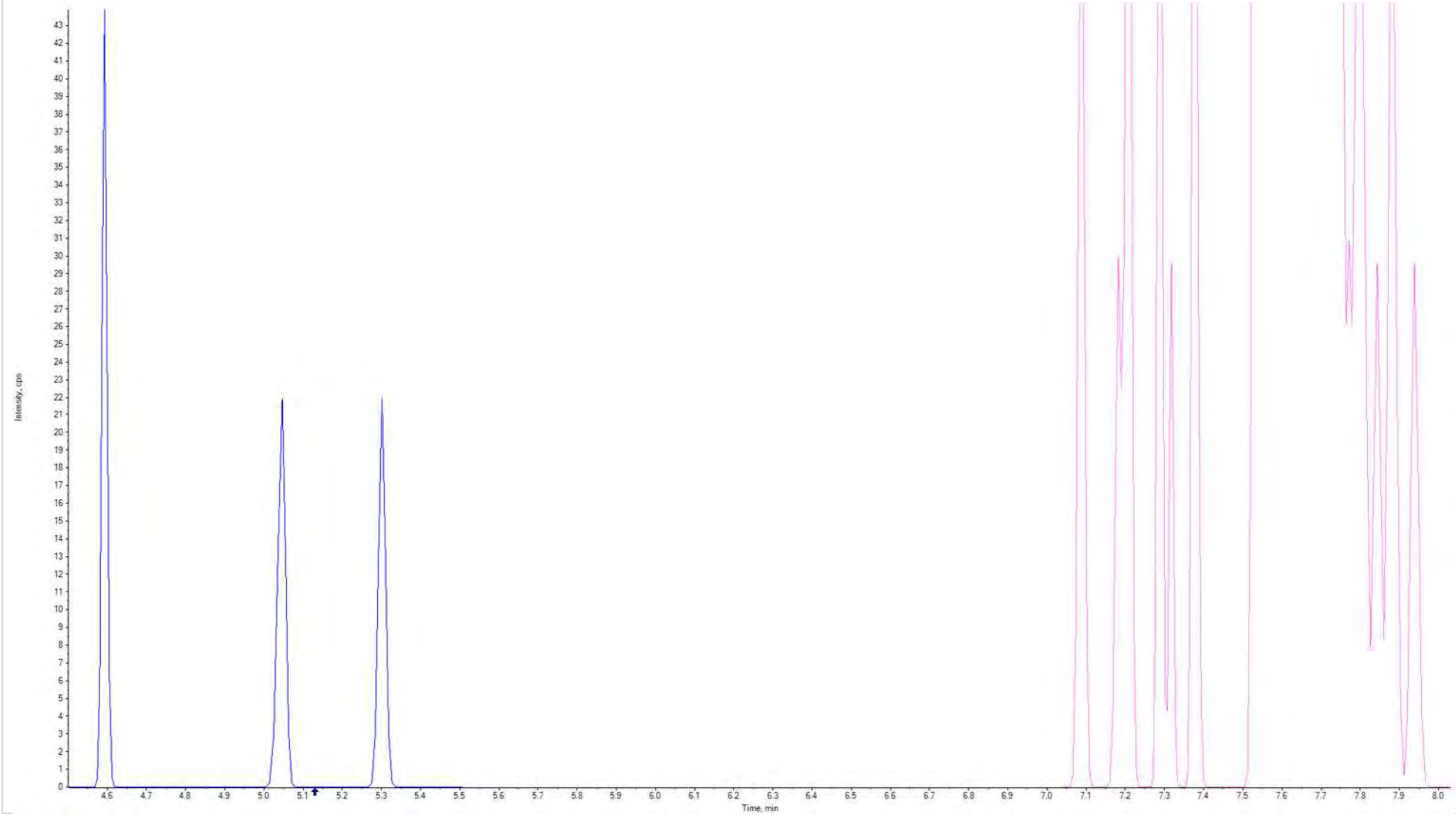
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

TDCA_2
Sample: WG1973357-4 S/N:N/A Points Across peak:N/A



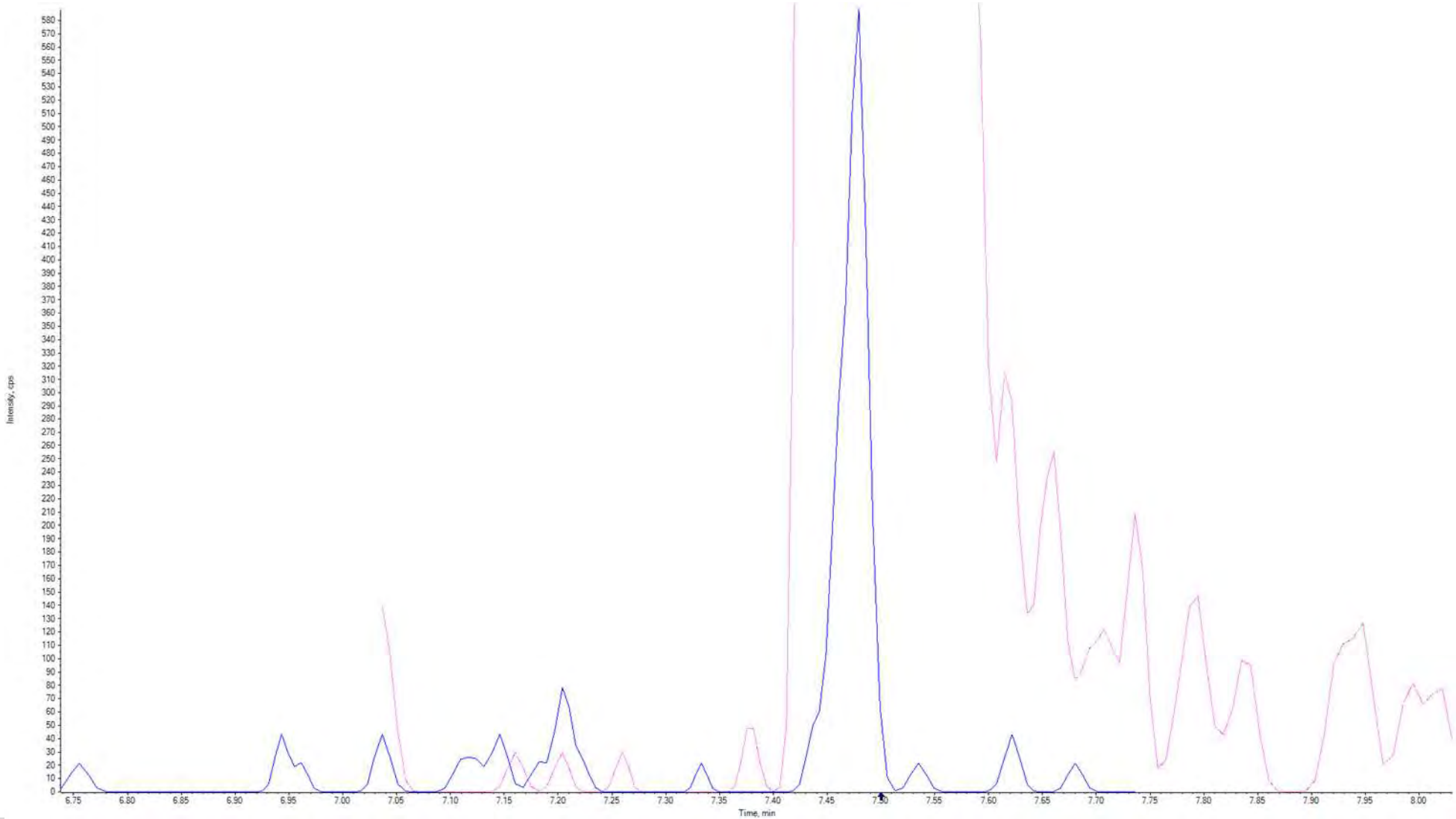
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C2D4-4:2FTS
Sample: WG1973357-4 S/N:N/A Points Across peak:N/A

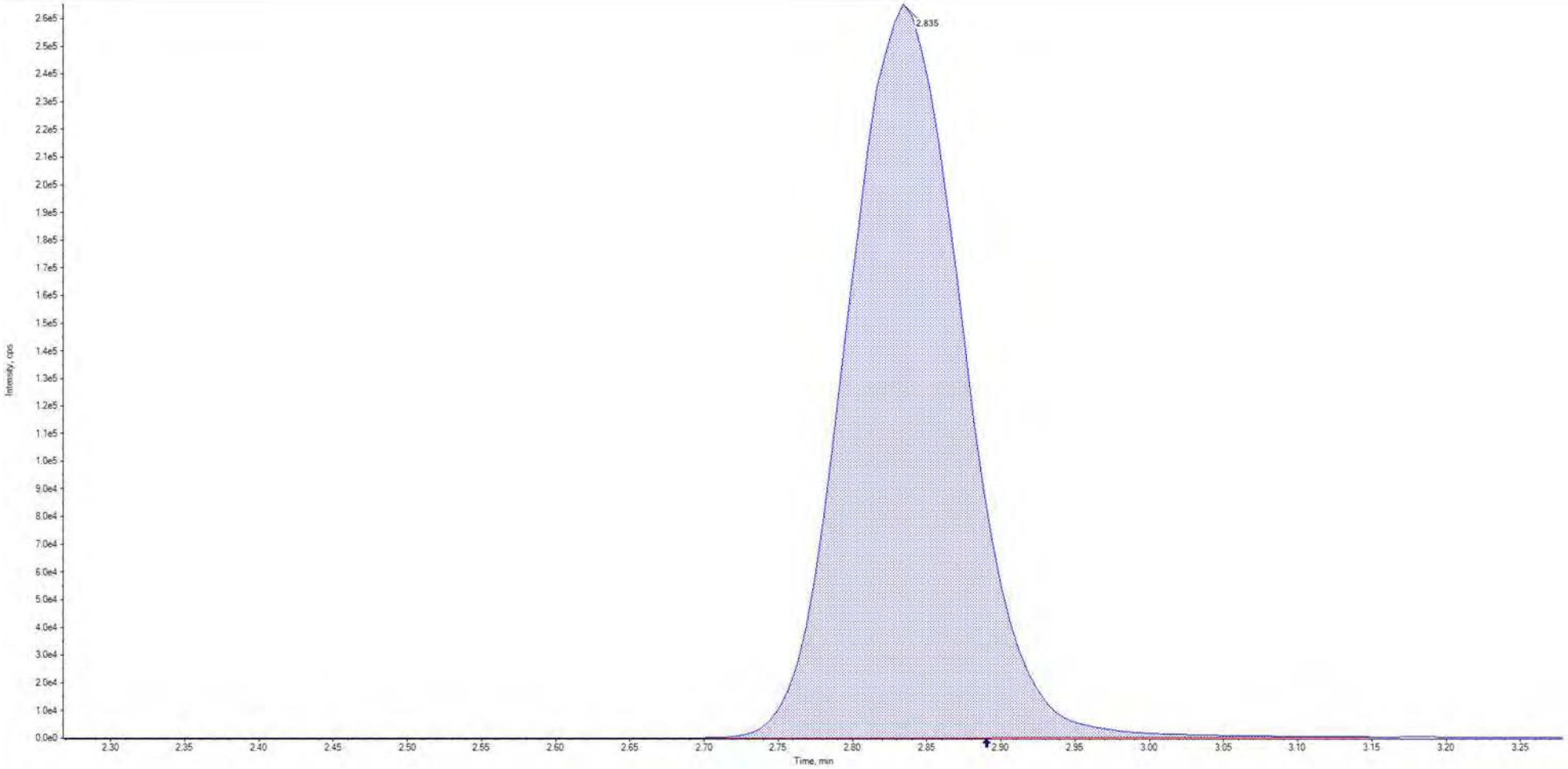


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C2-PFOA
Sample: WG1973357-4 S/N:N/A Points Across peak:N/A

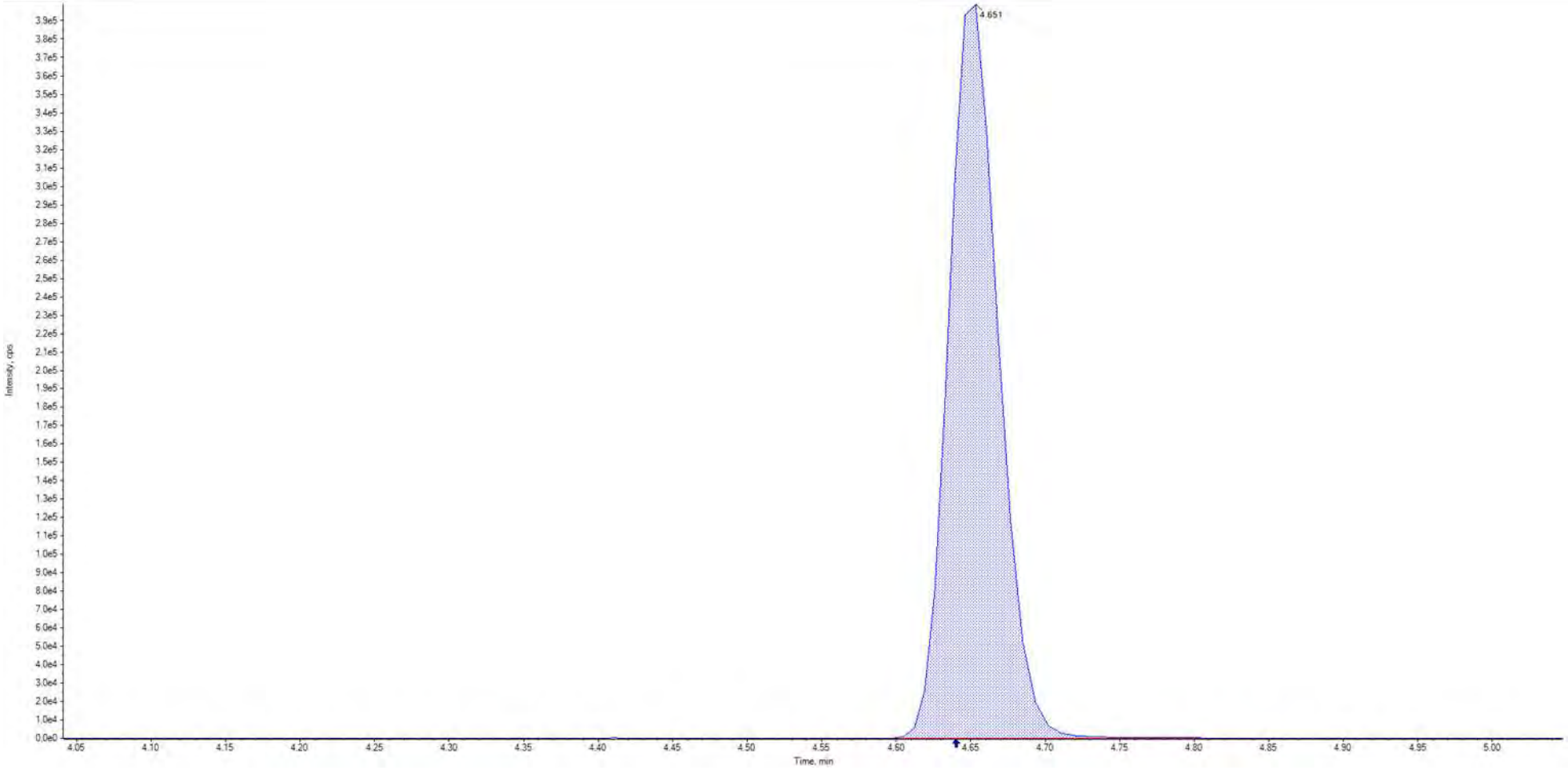


13C4-PFBA
Sample: WG1973357-4

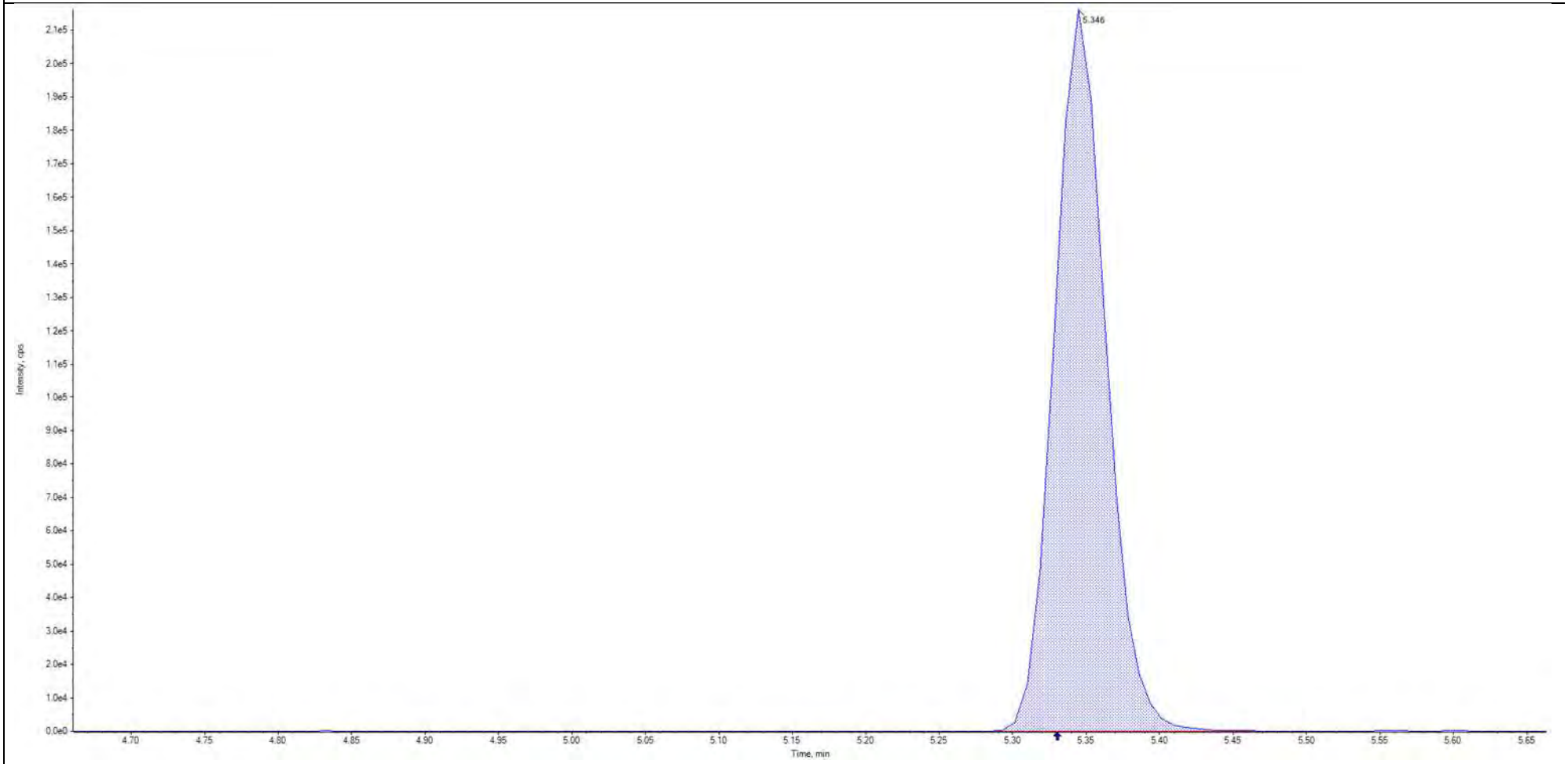


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

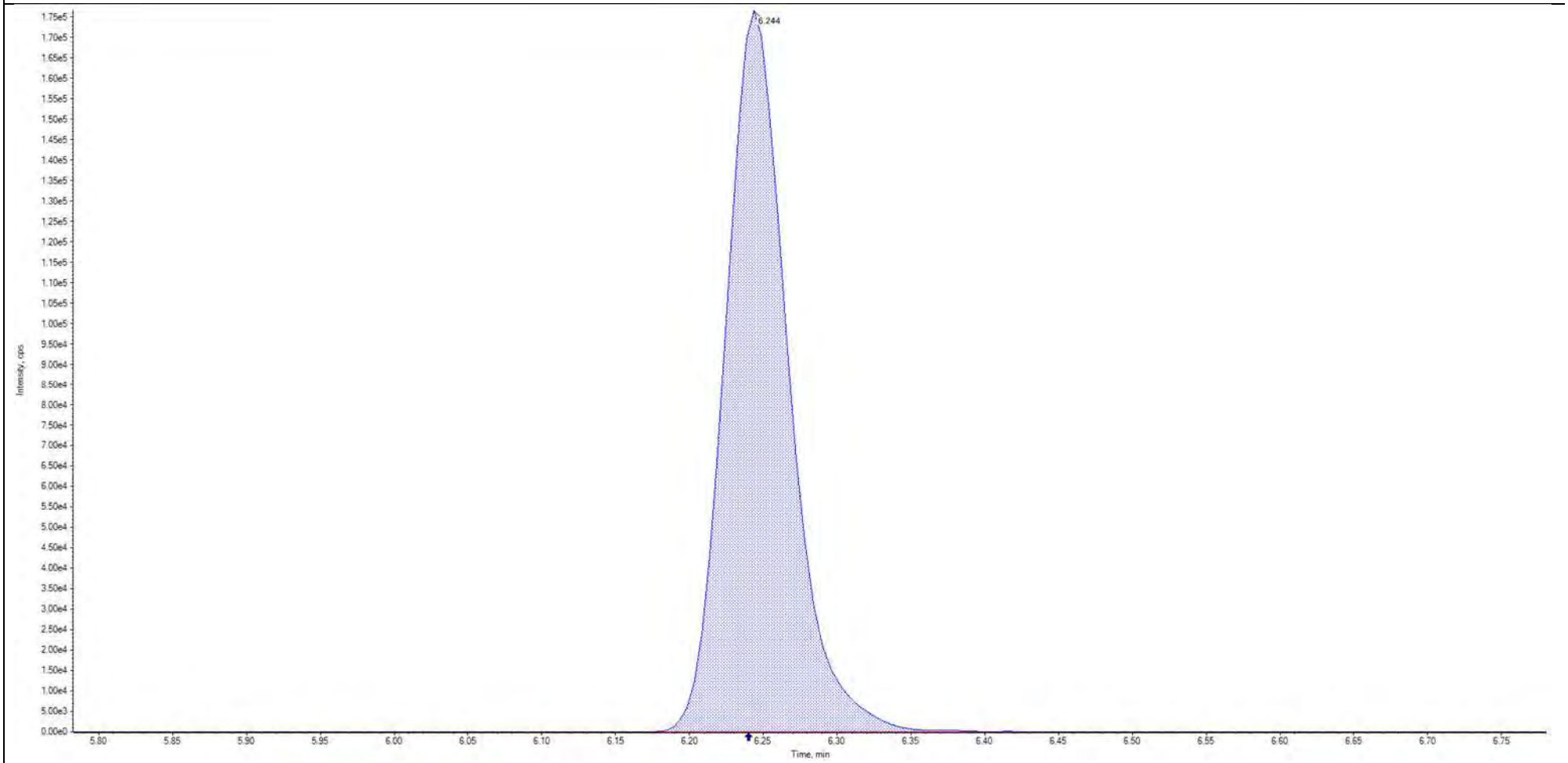
13C5-PFPeA
Sample: WG1973357-4



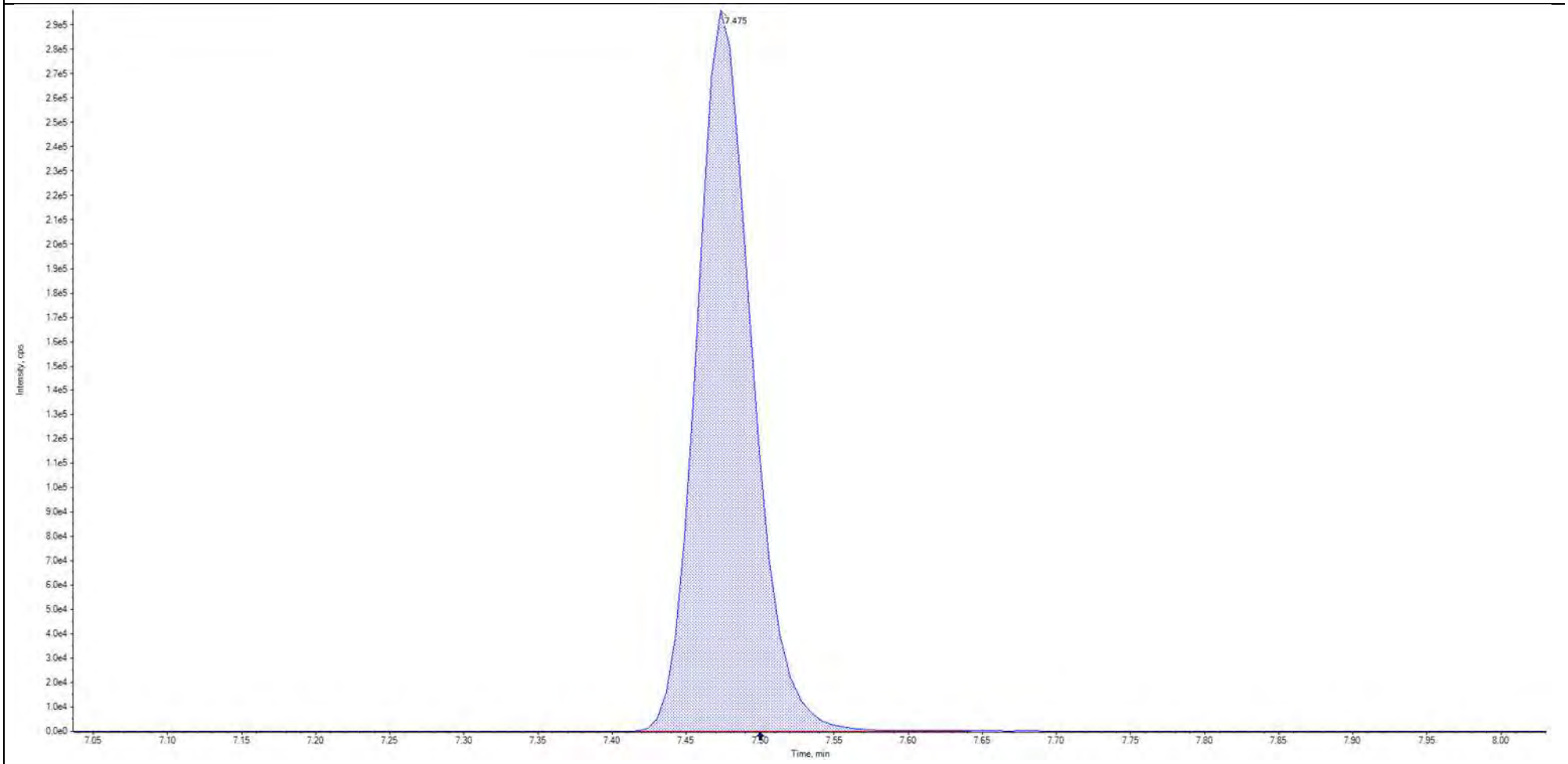
13C5-PFHxA
Sample: WG1973357-4



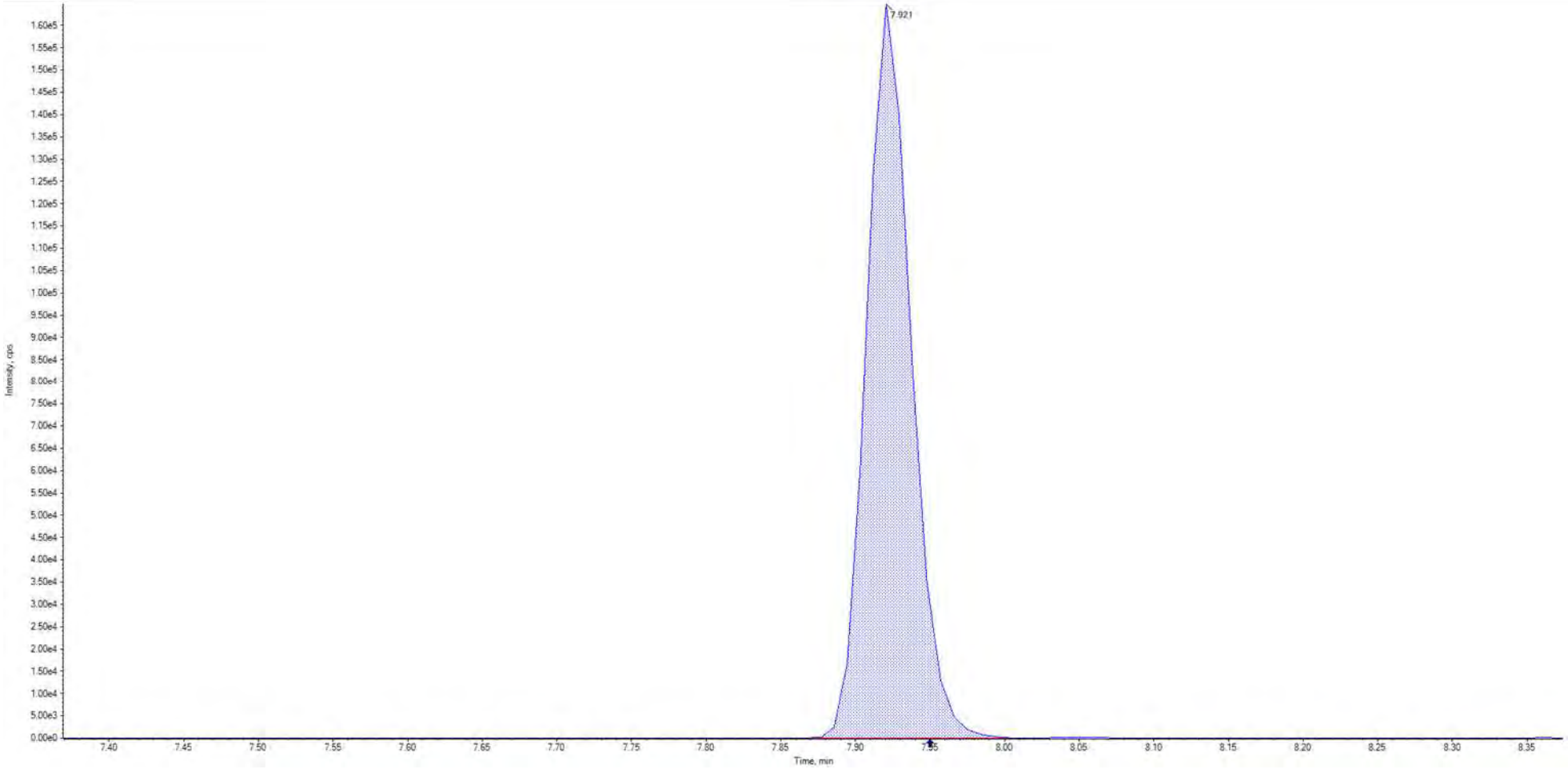
13C4-PFHpA
Sample: WG1973357-4



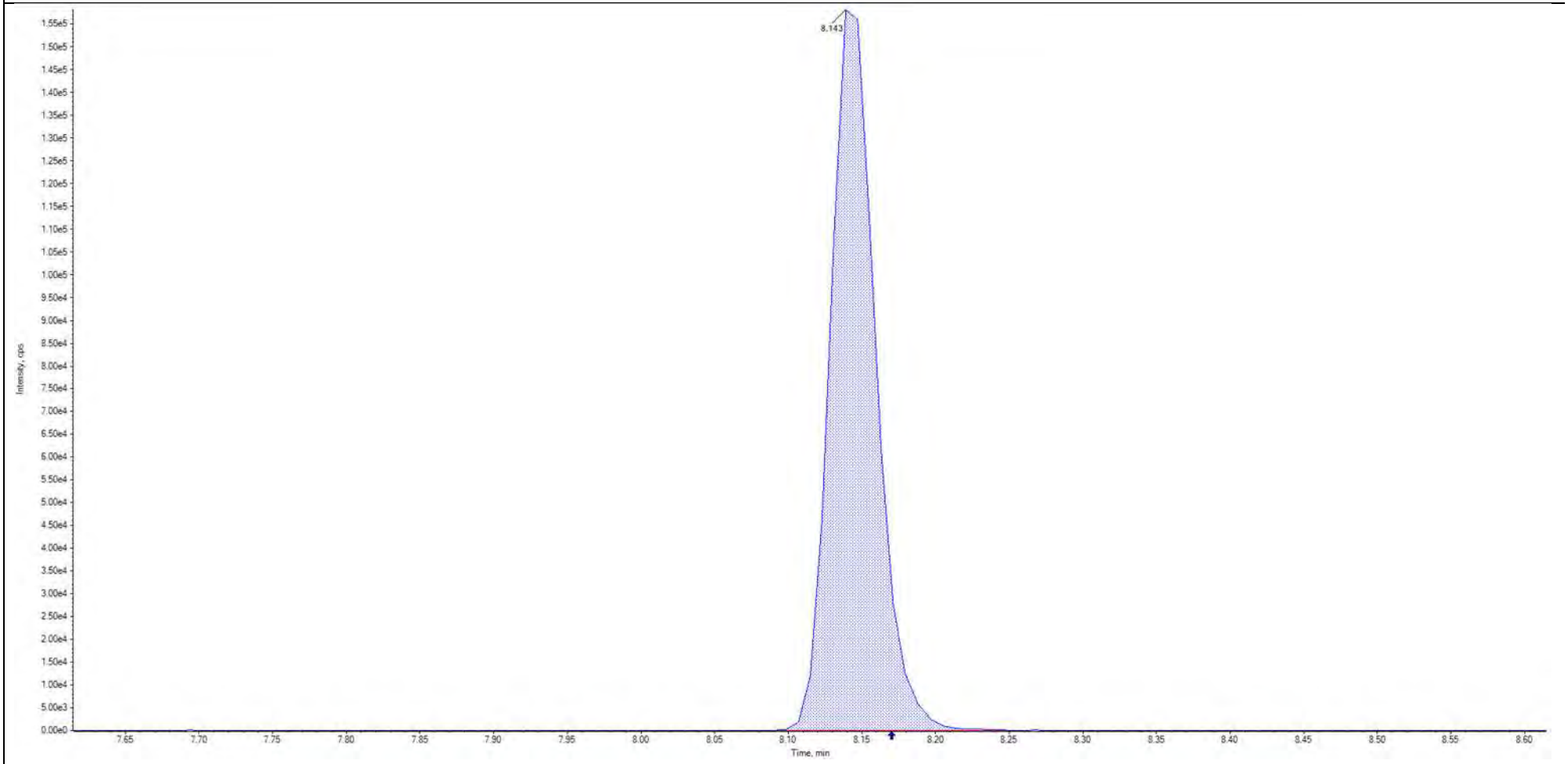
13C8-PFOA
Sample: WG1973357-4



13C9-PFNA
Sample: WG1973357-4

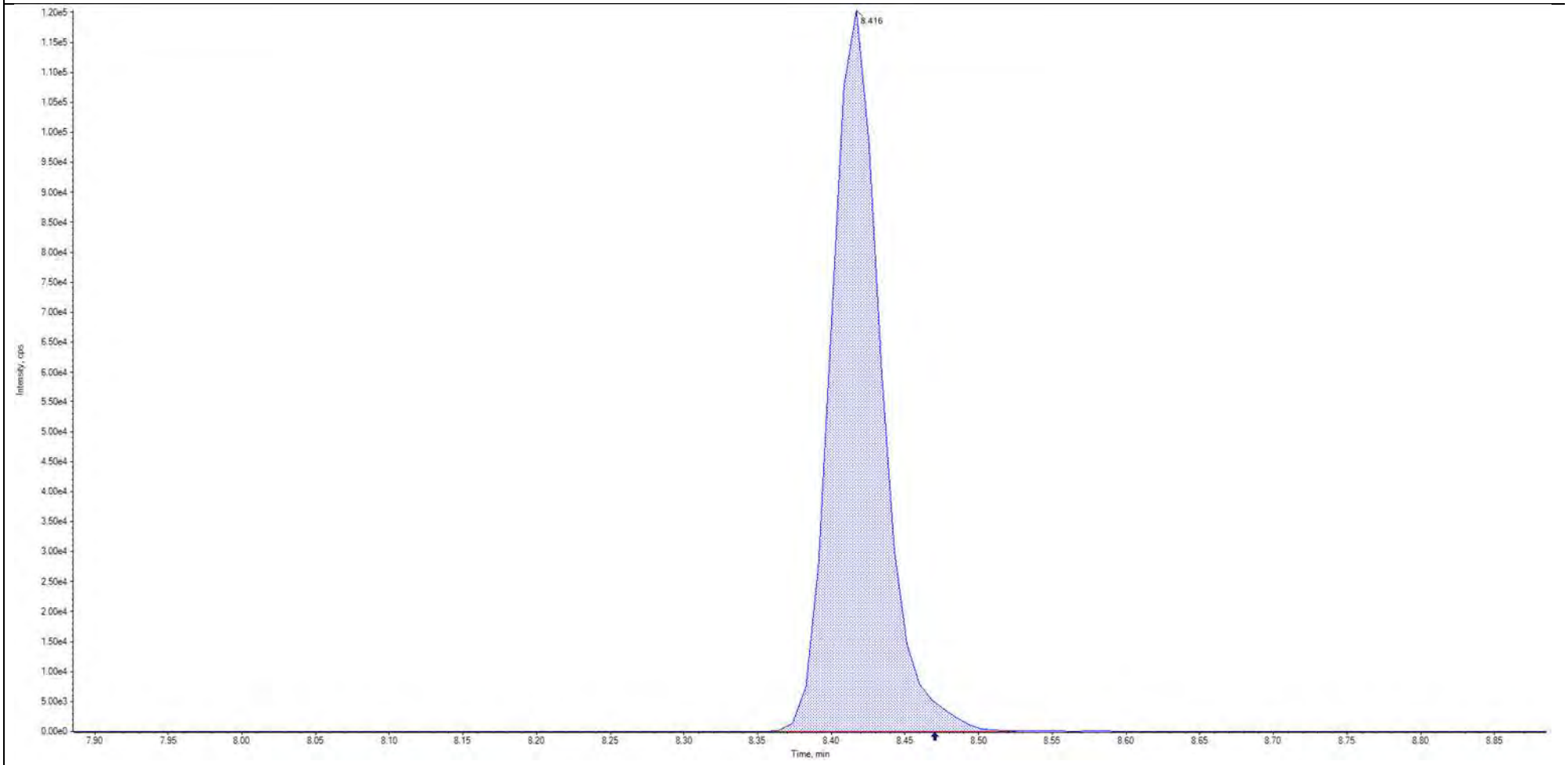


13C6-PFDA
Sample: WG1973357-4



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_17.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C7-PFUnA
Sample: WG1973357-4



13C2-PFDoA
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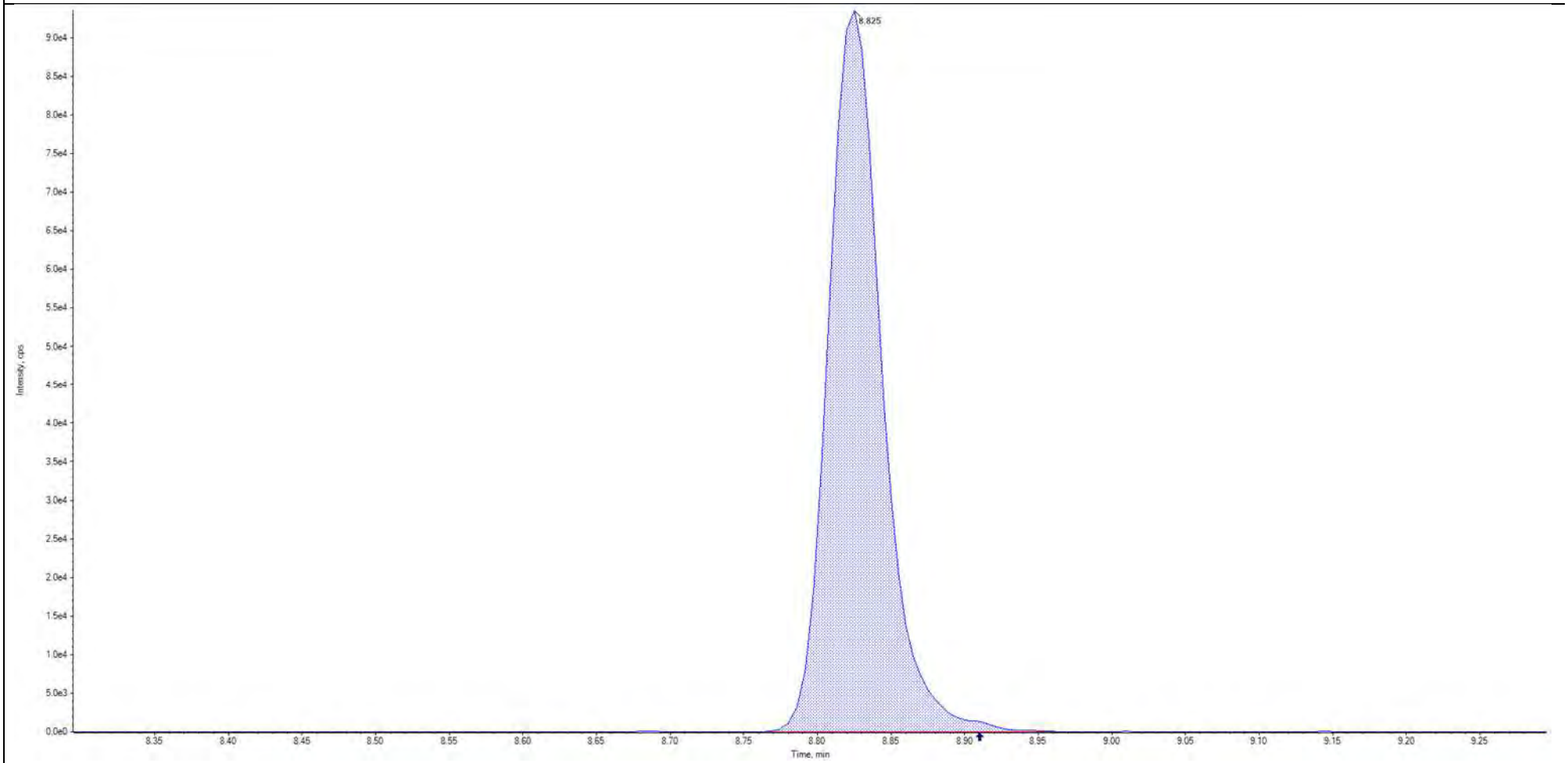

13C2-PFTeDA
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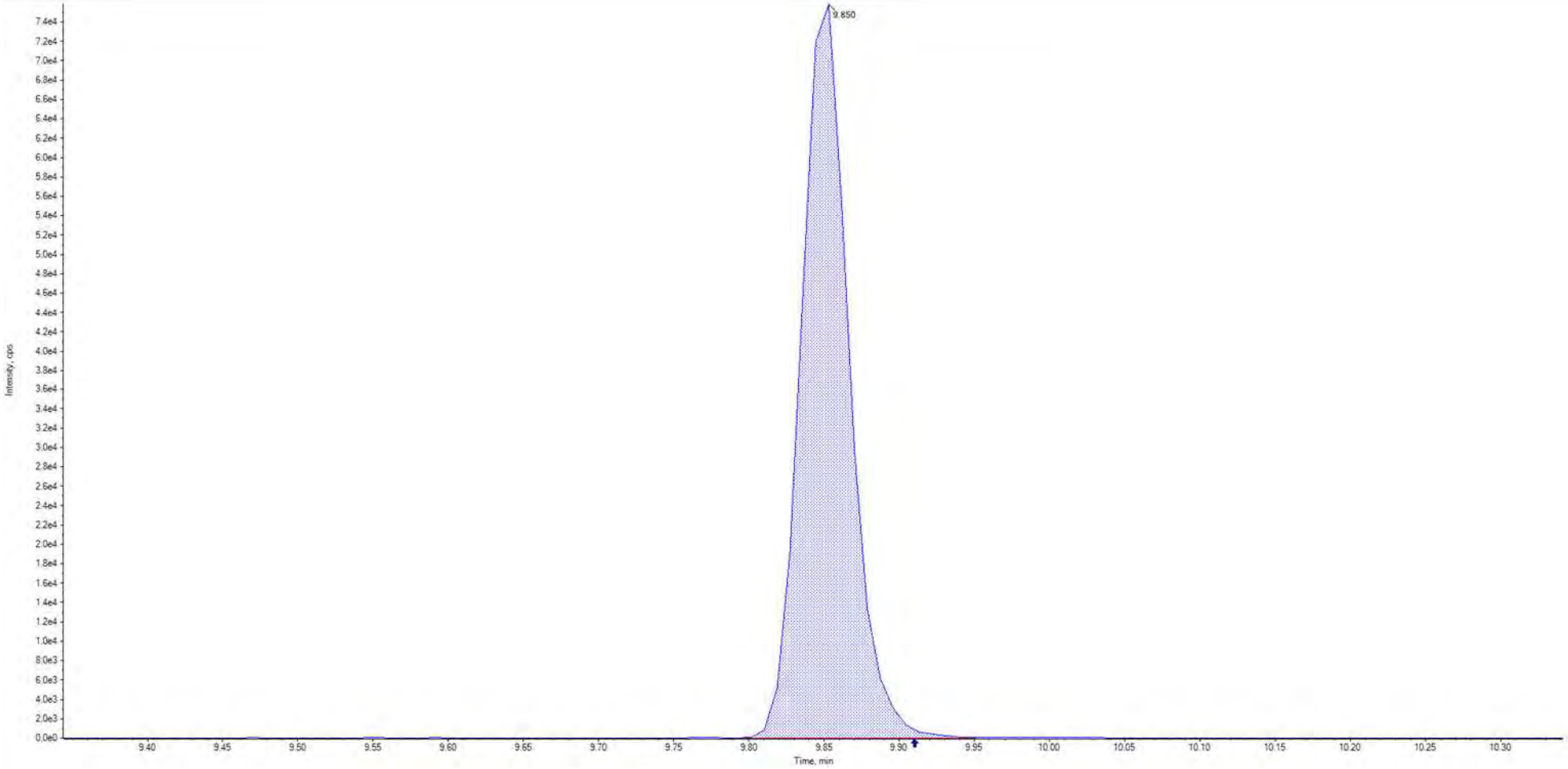

13C3-PFBS
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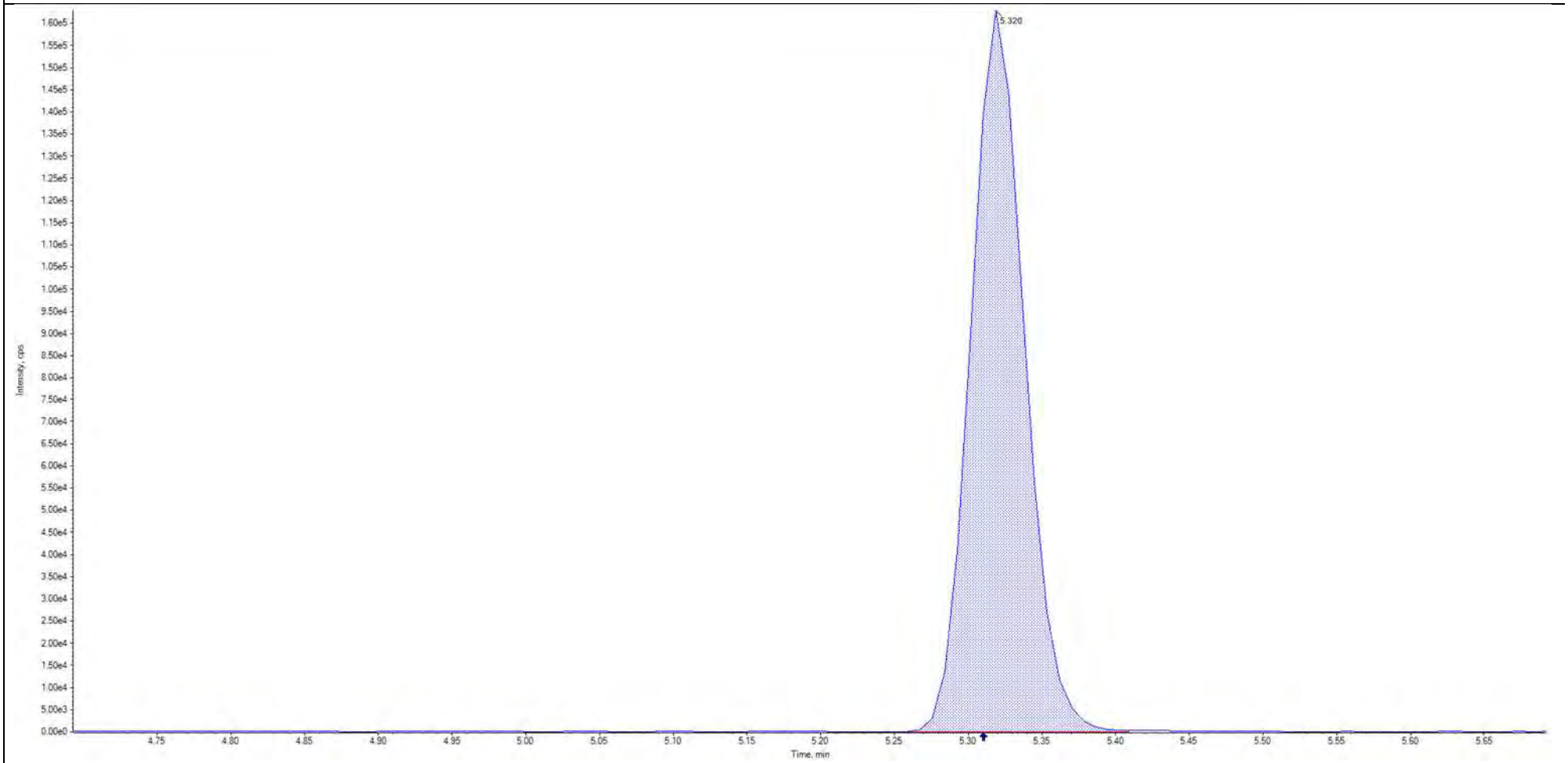

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13C3-PFHxS
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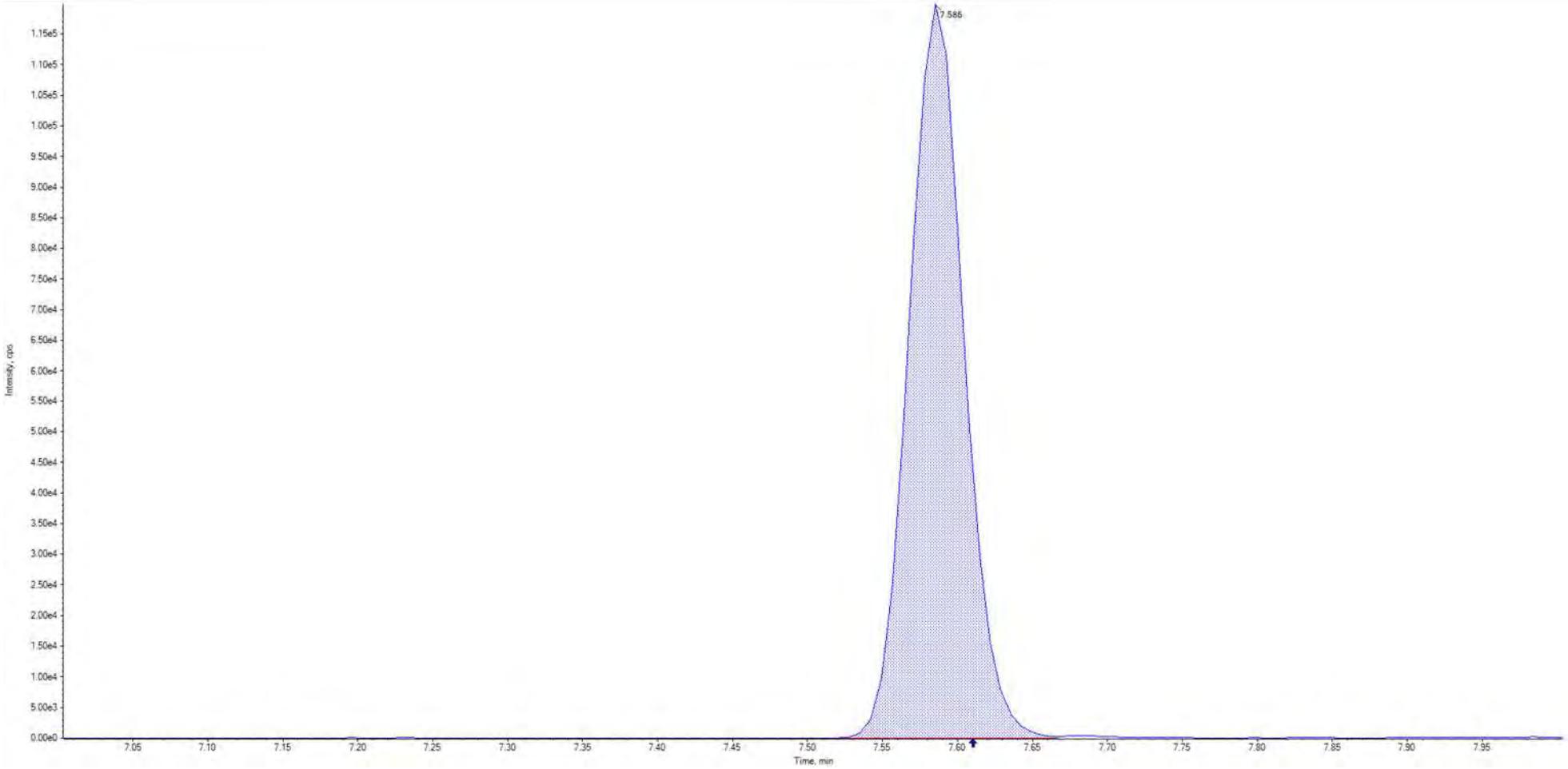

13C8-PFOS
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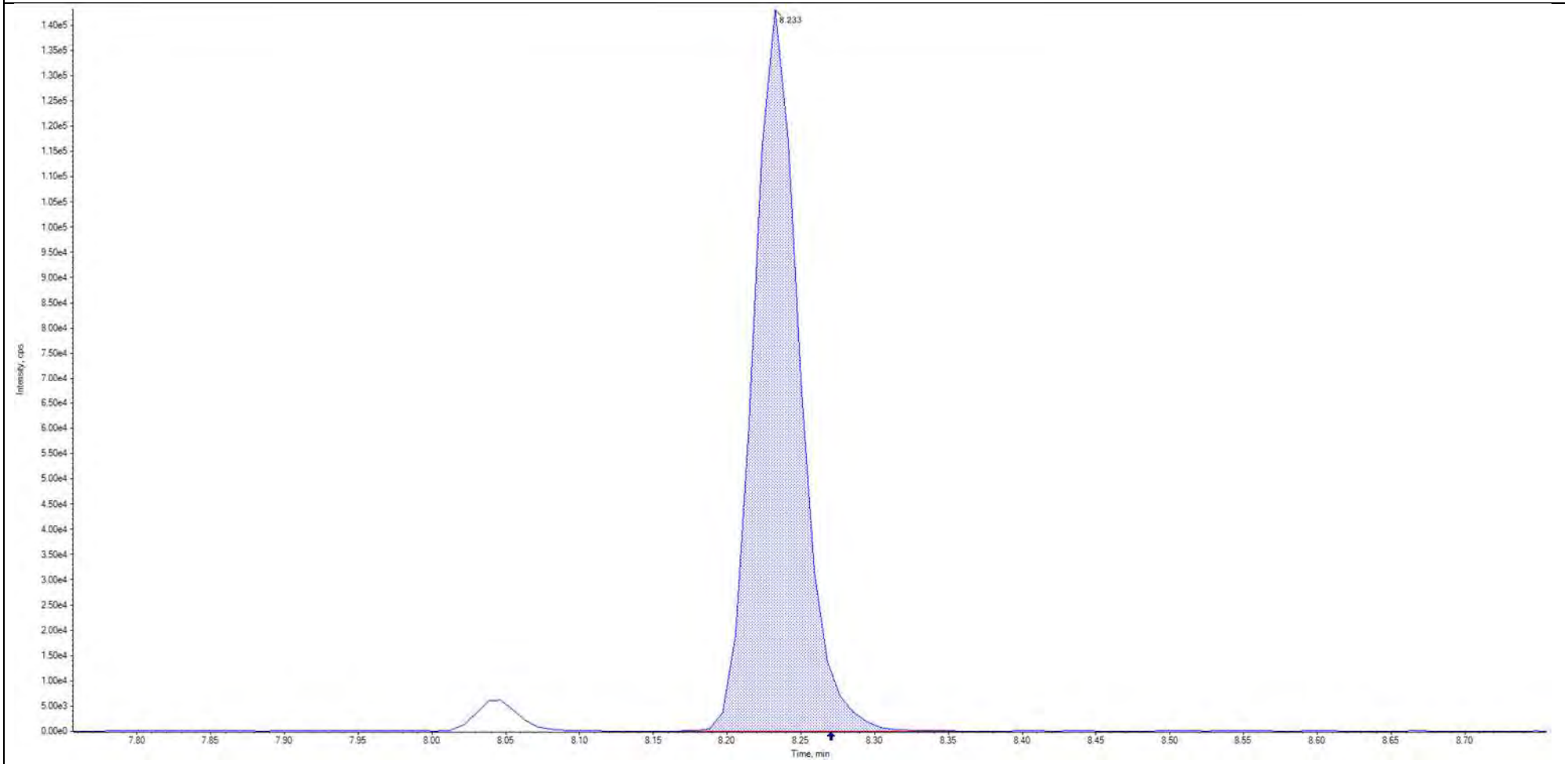

13C2-4:2FTS
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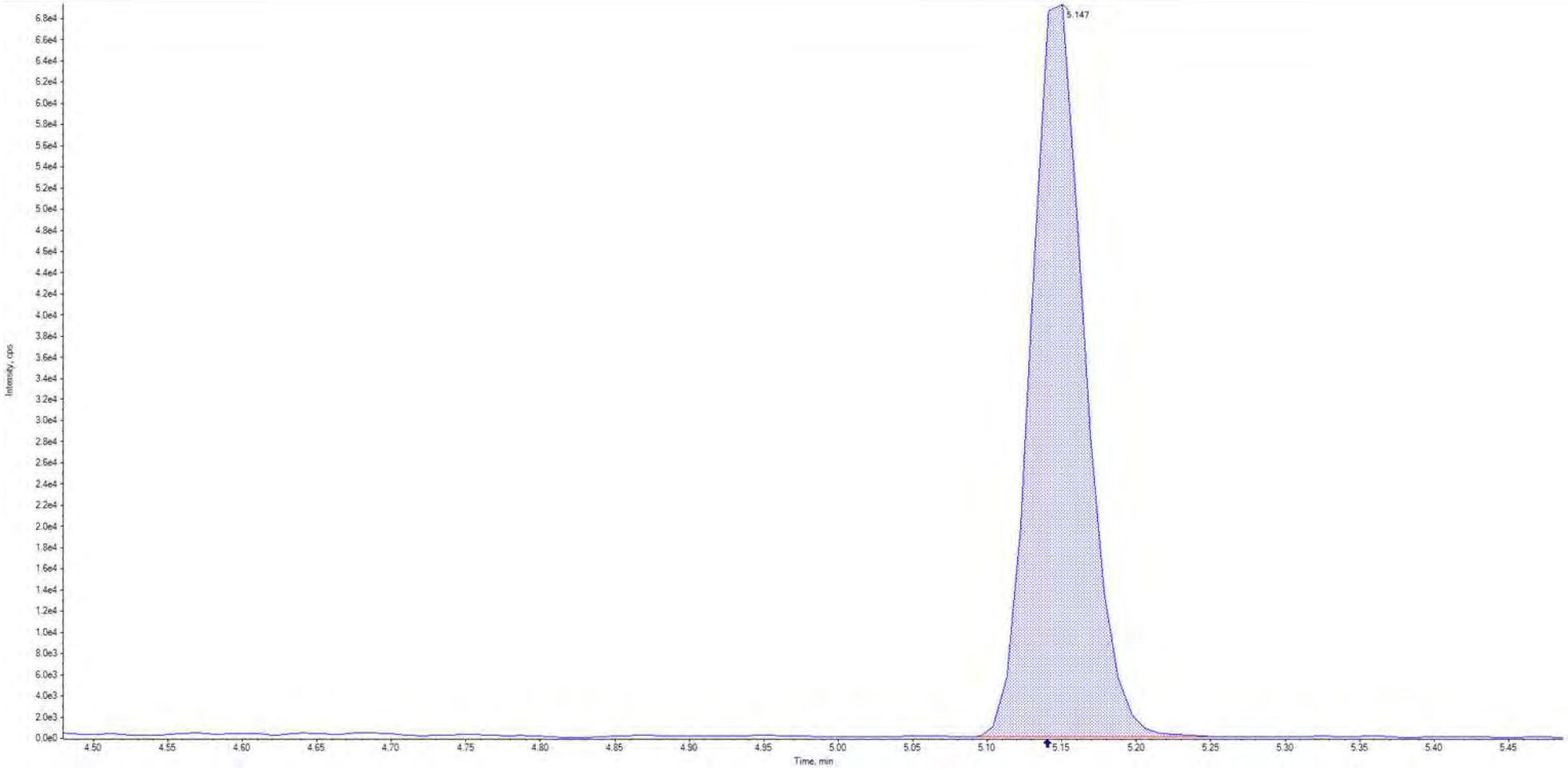

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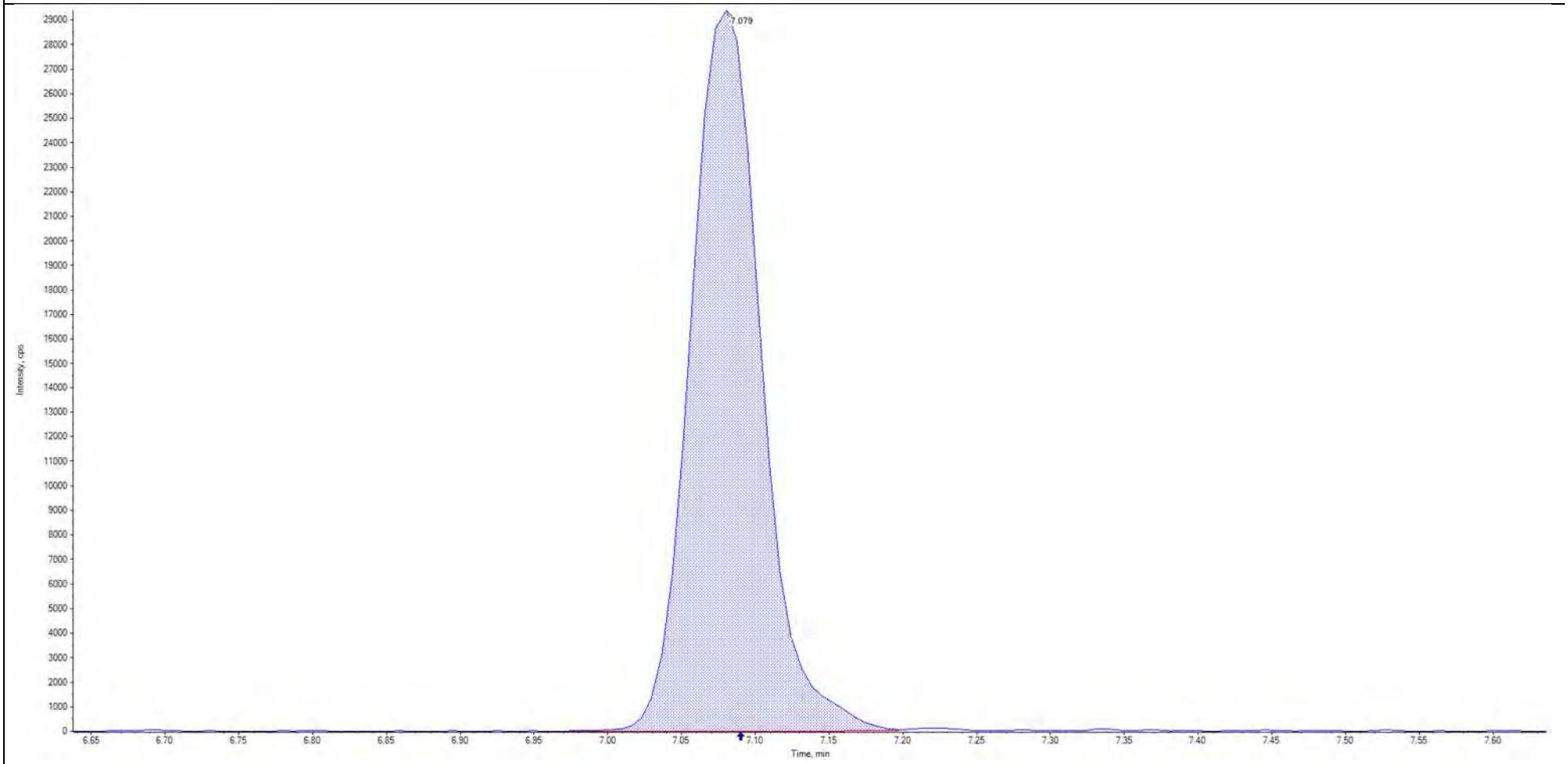

13C2-8:2FTS
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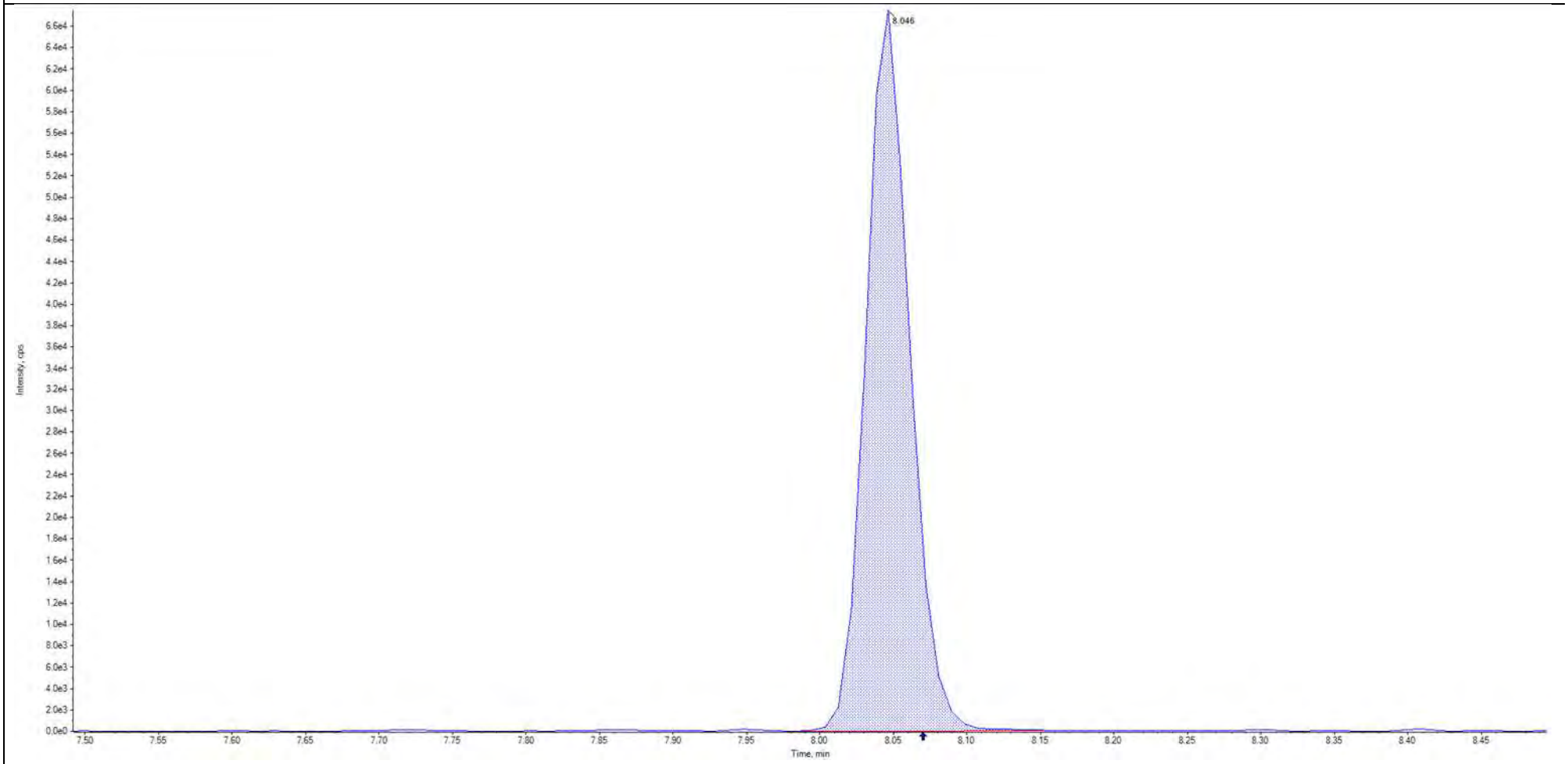

13C8-PFOSA
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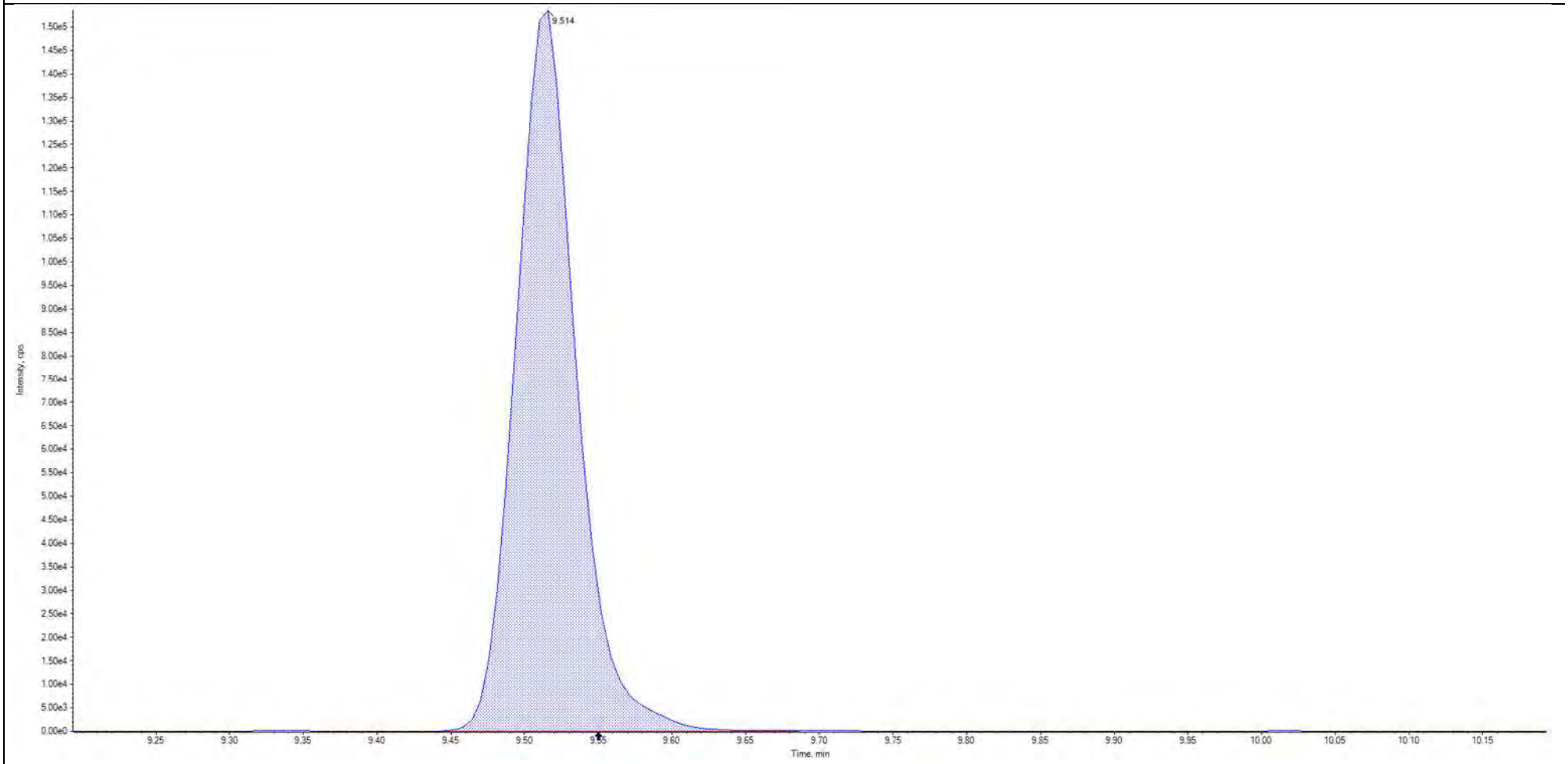

d3-NMeFOSA
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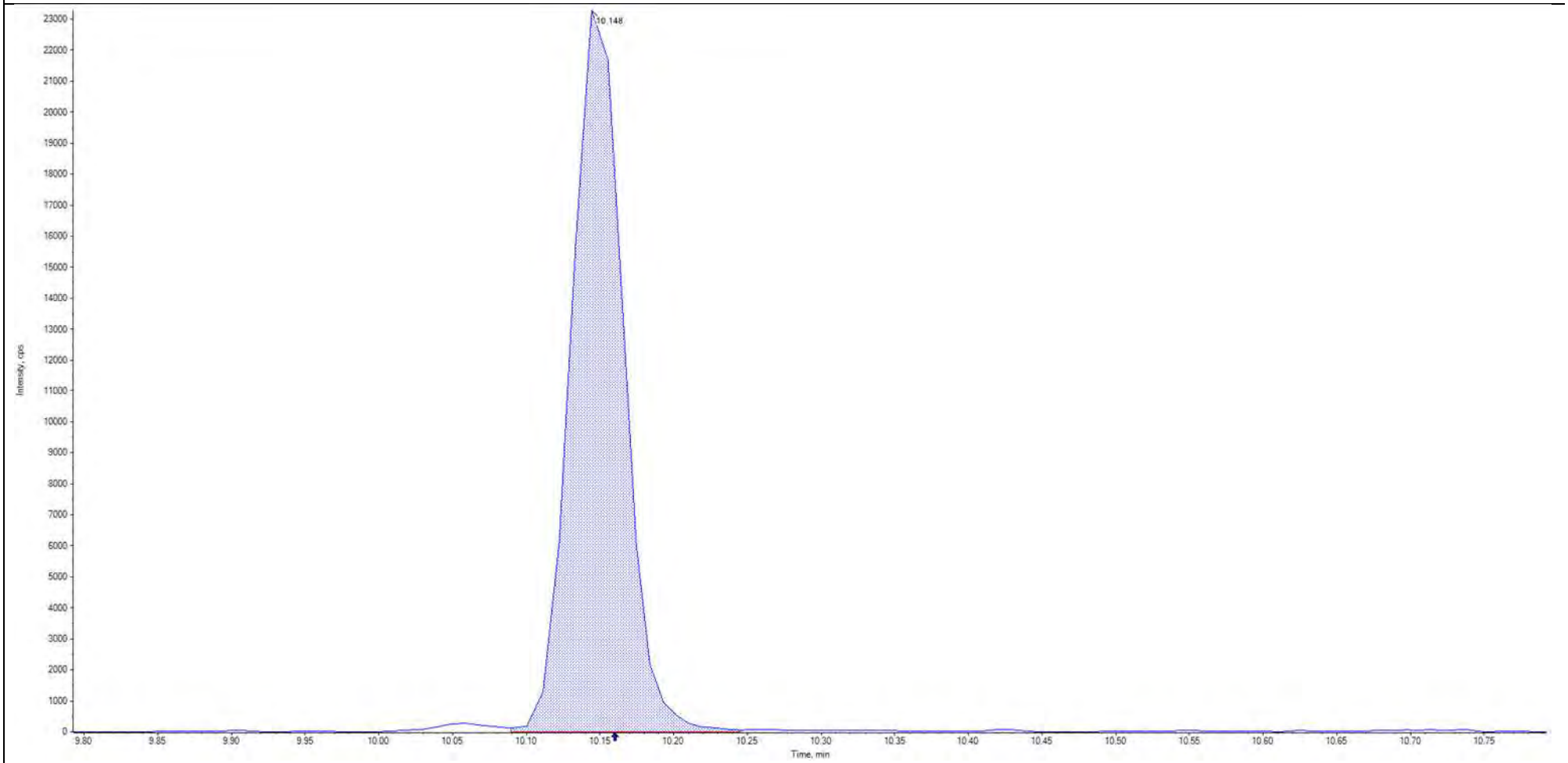

d5-NEtFOSA
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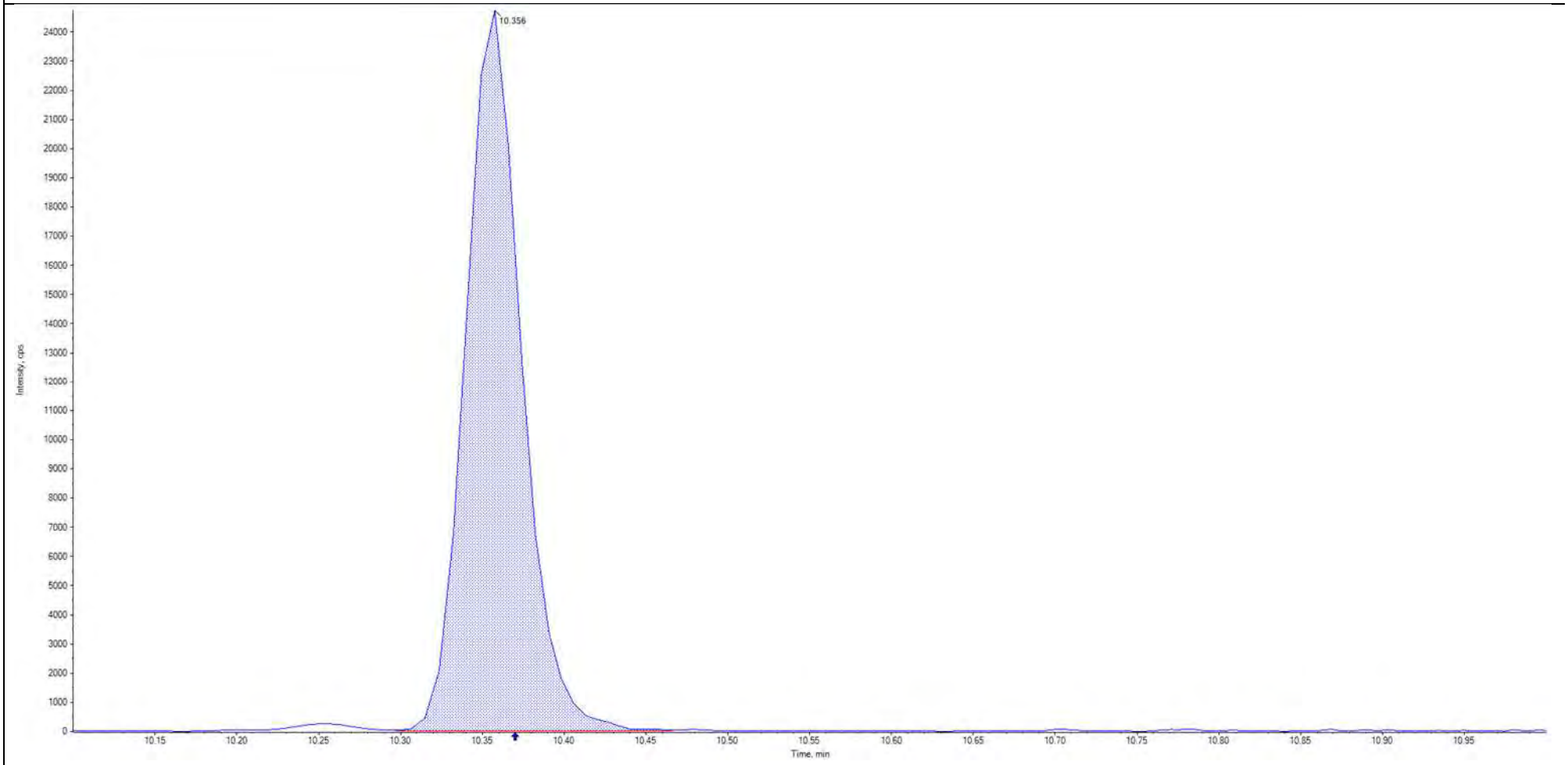

d3-NMeFOSAA
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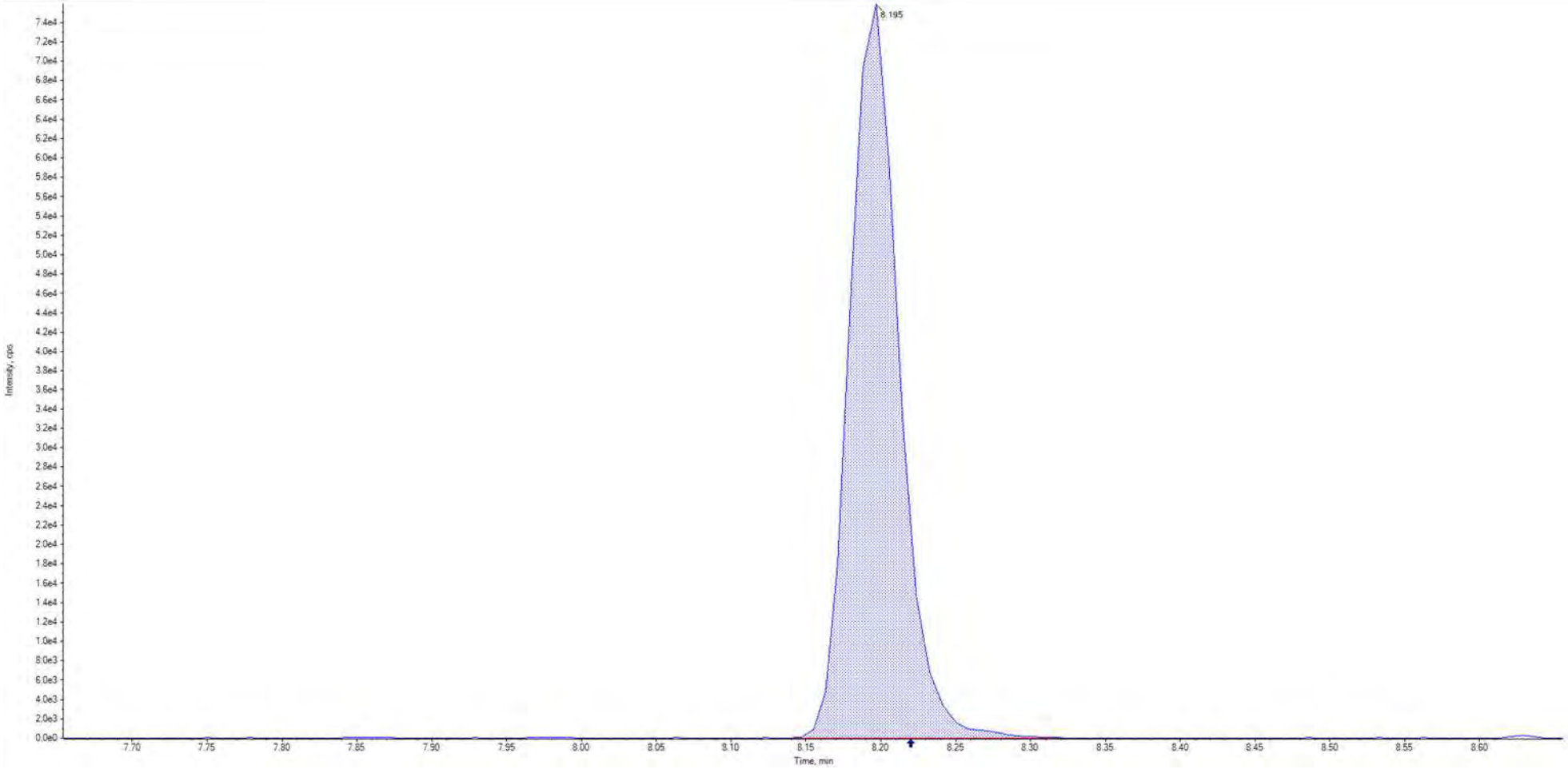

d5-NEtFOSAA
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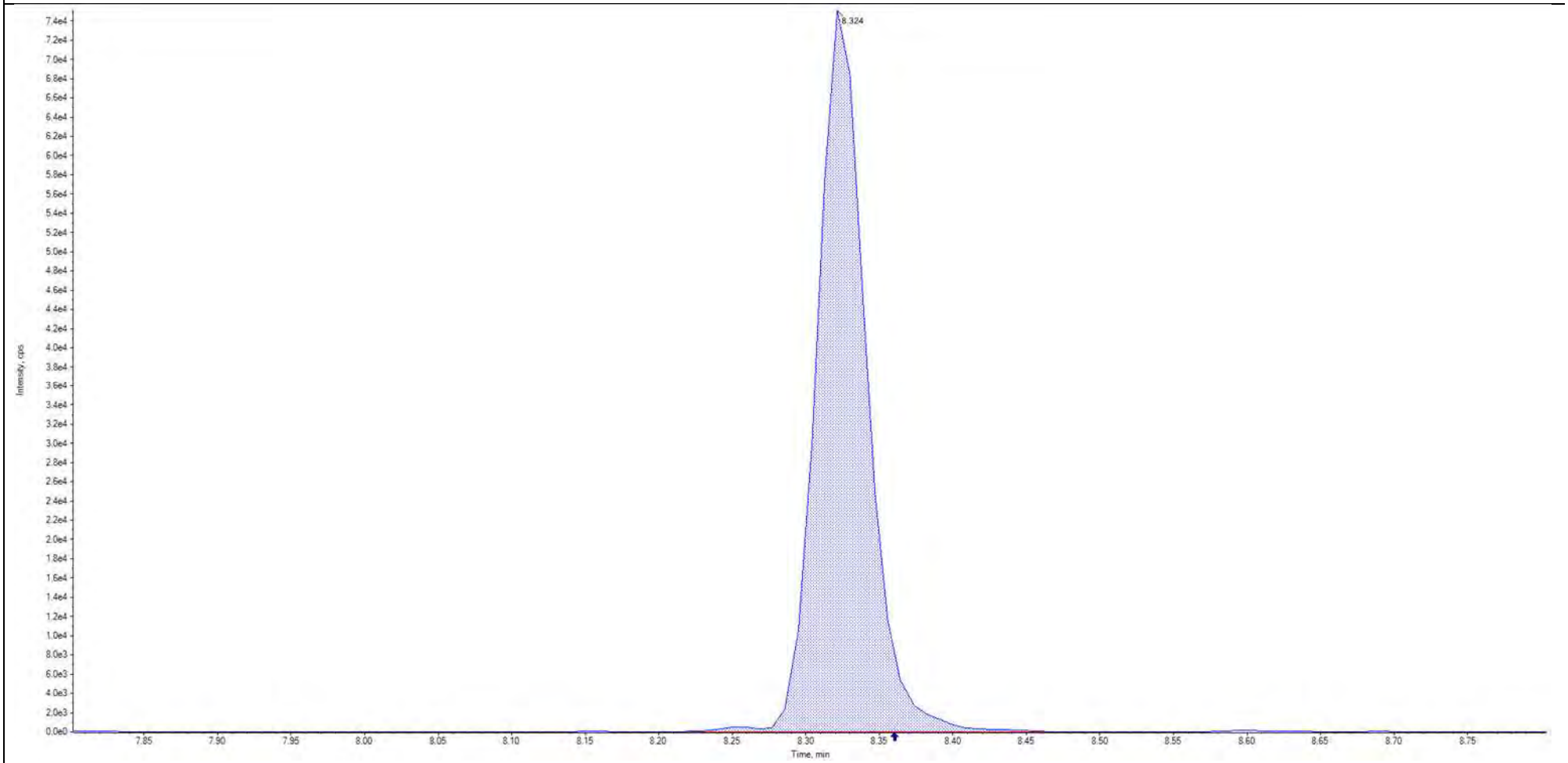

d7-NMeFOSE
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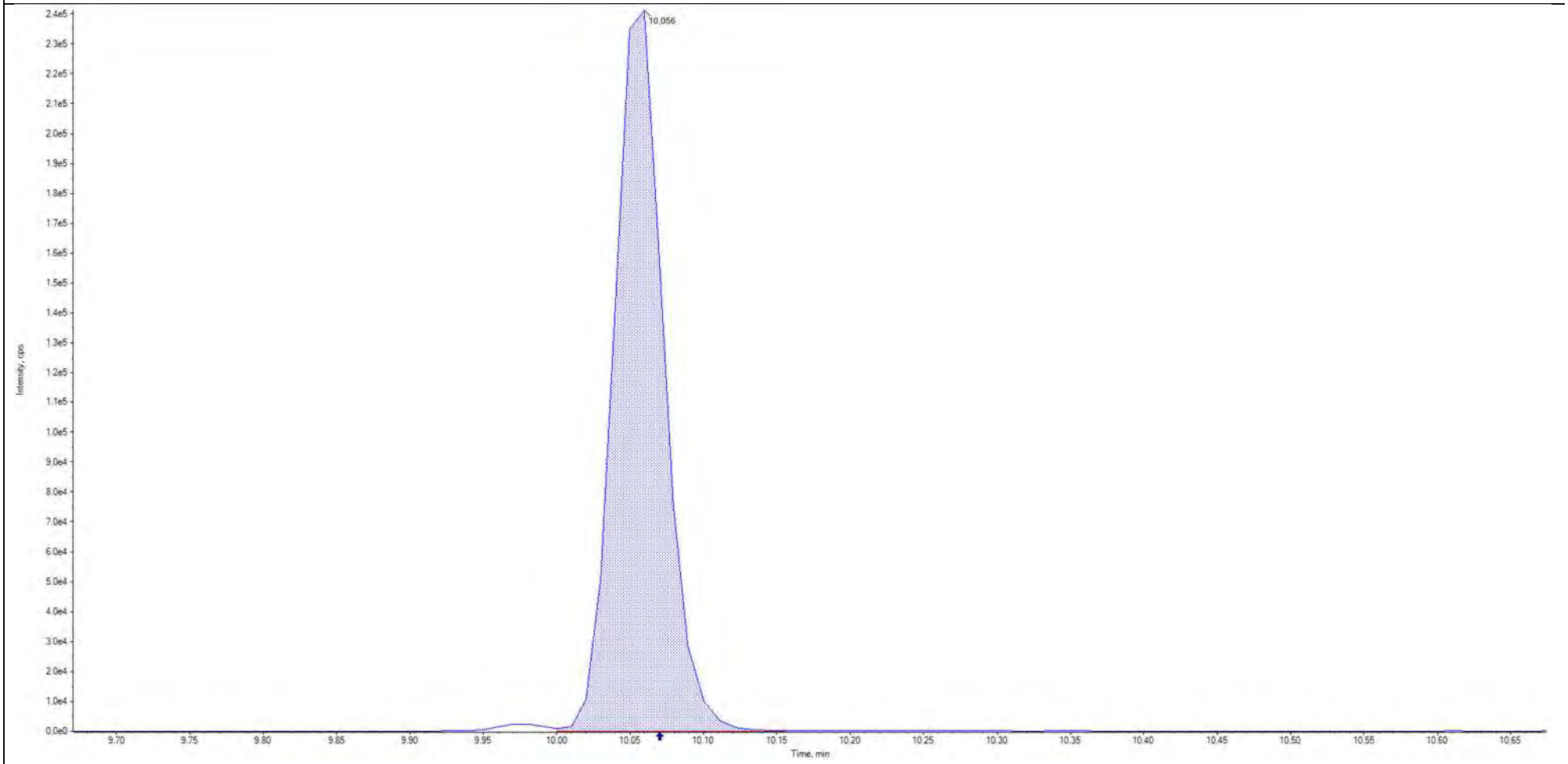

d9-NEtFOSE
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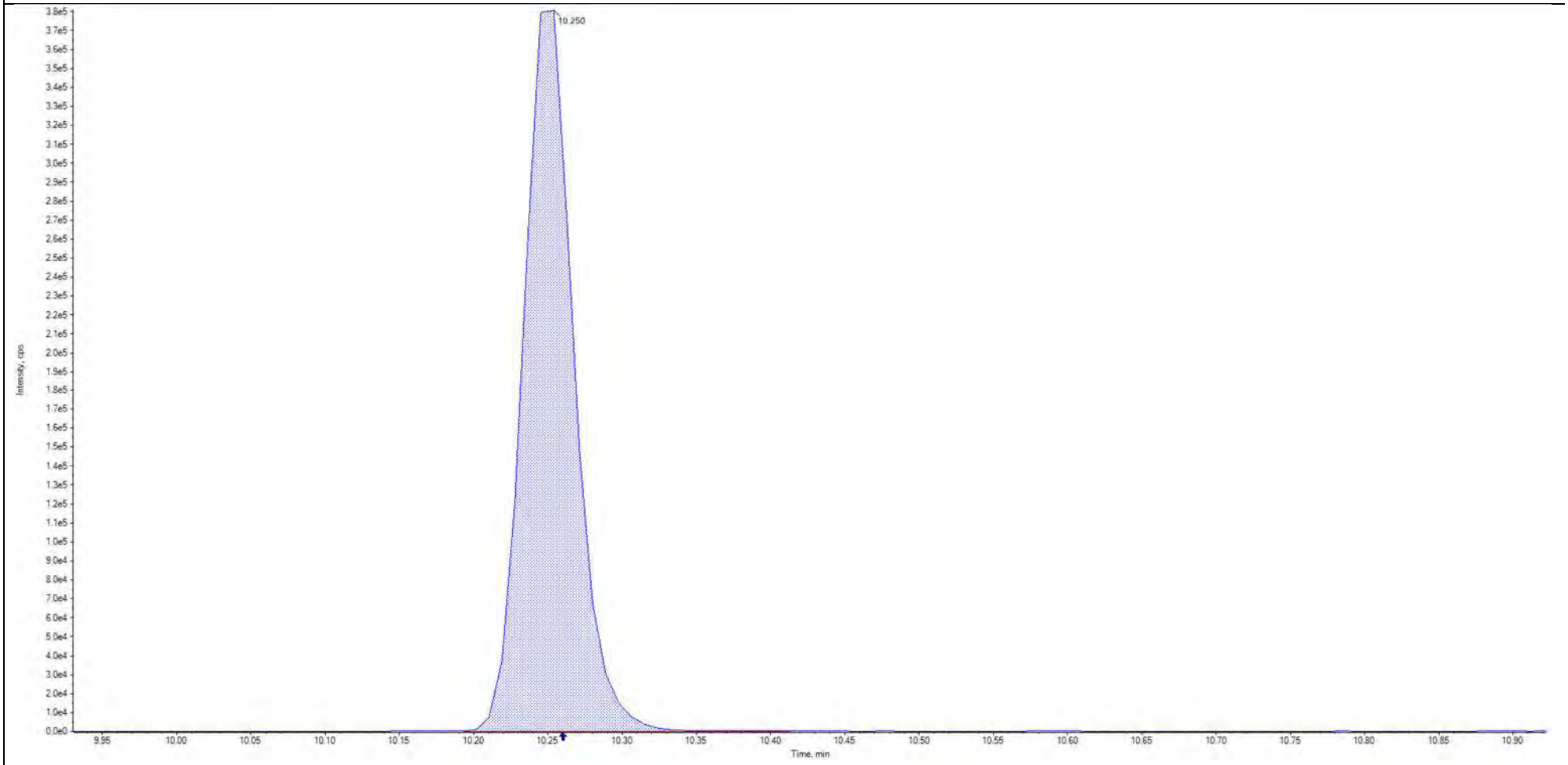

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13C3-HFPO-DA
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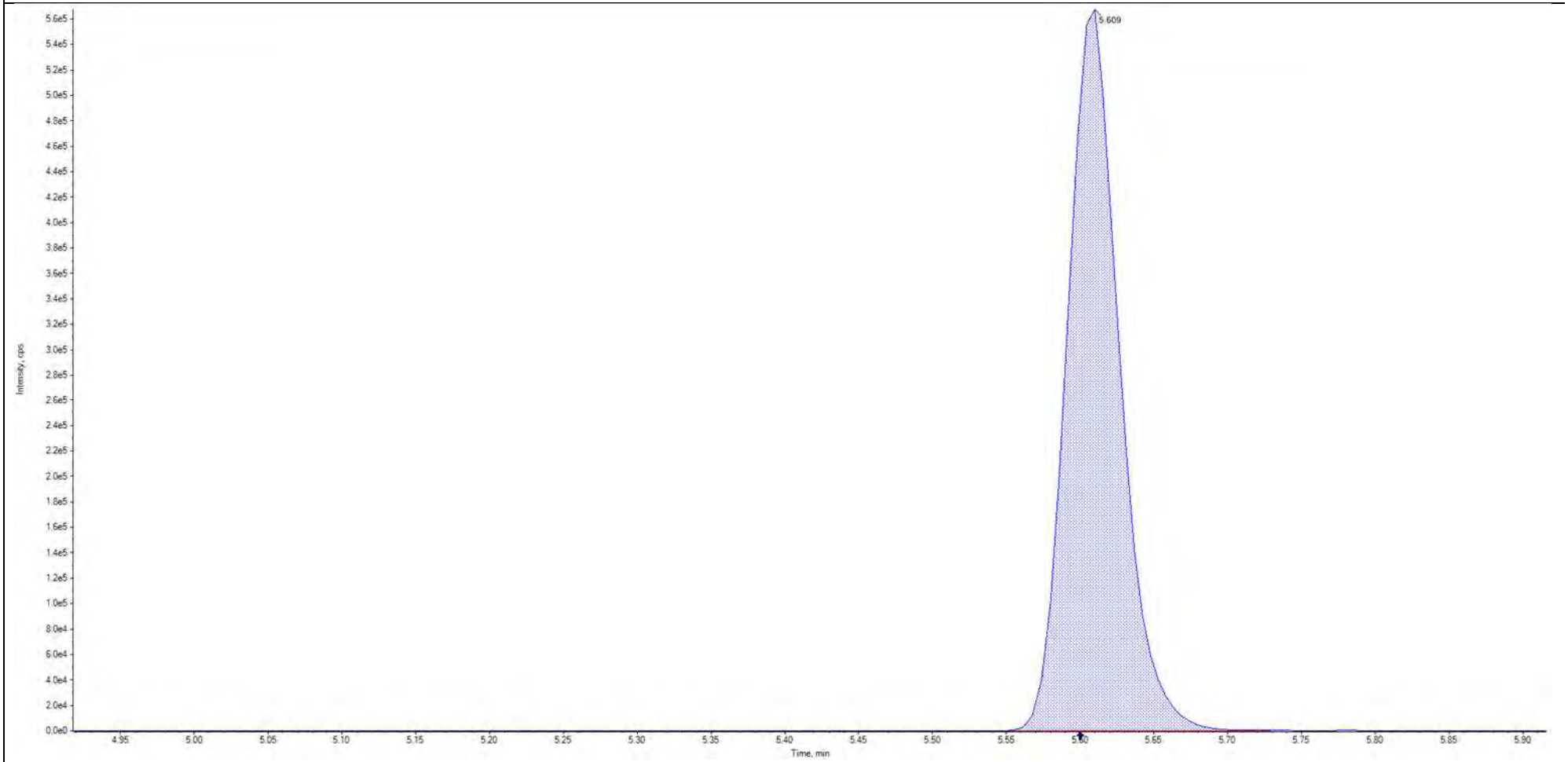

13C3-PFBA
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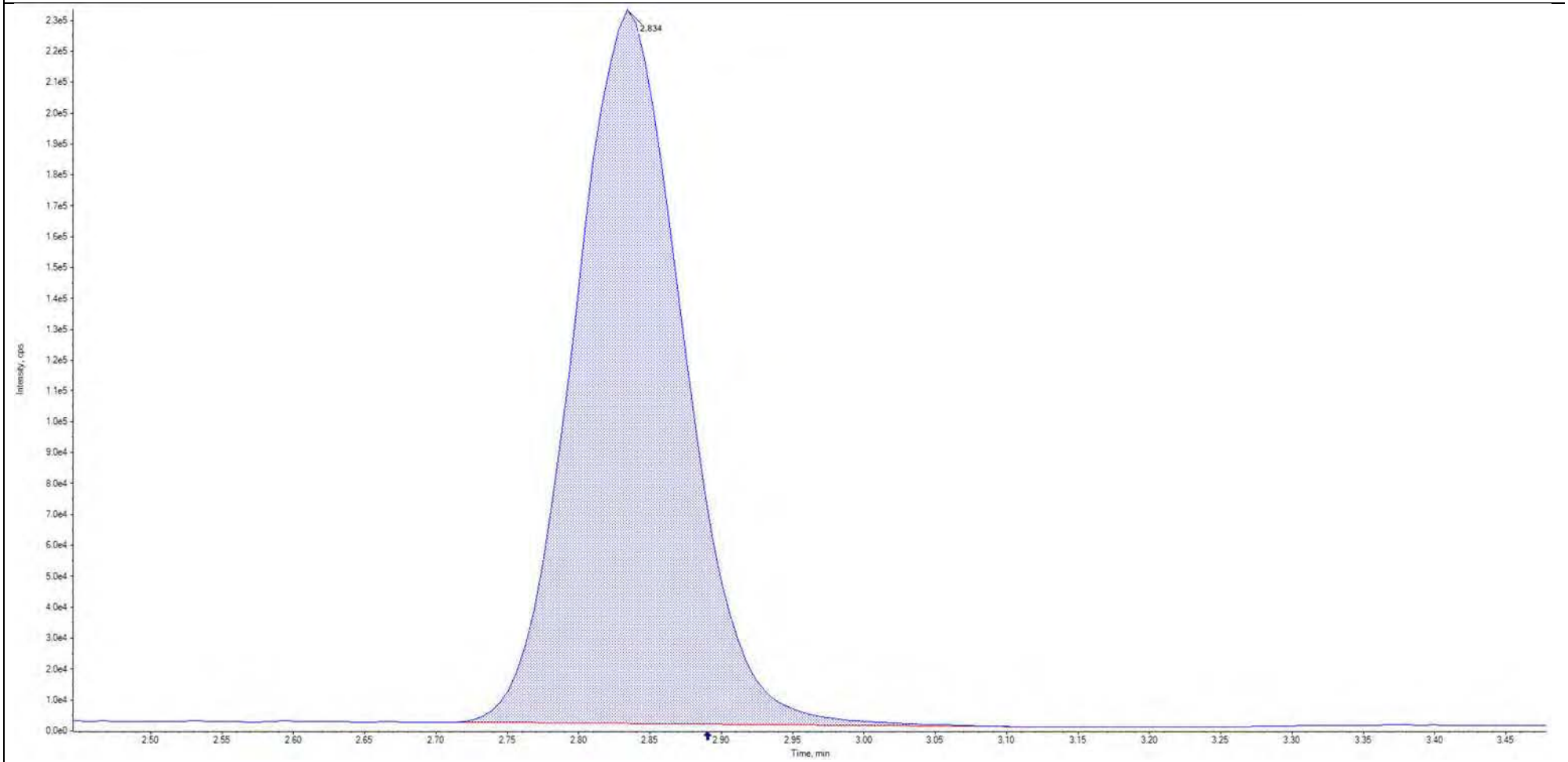

13C2-PFHxA
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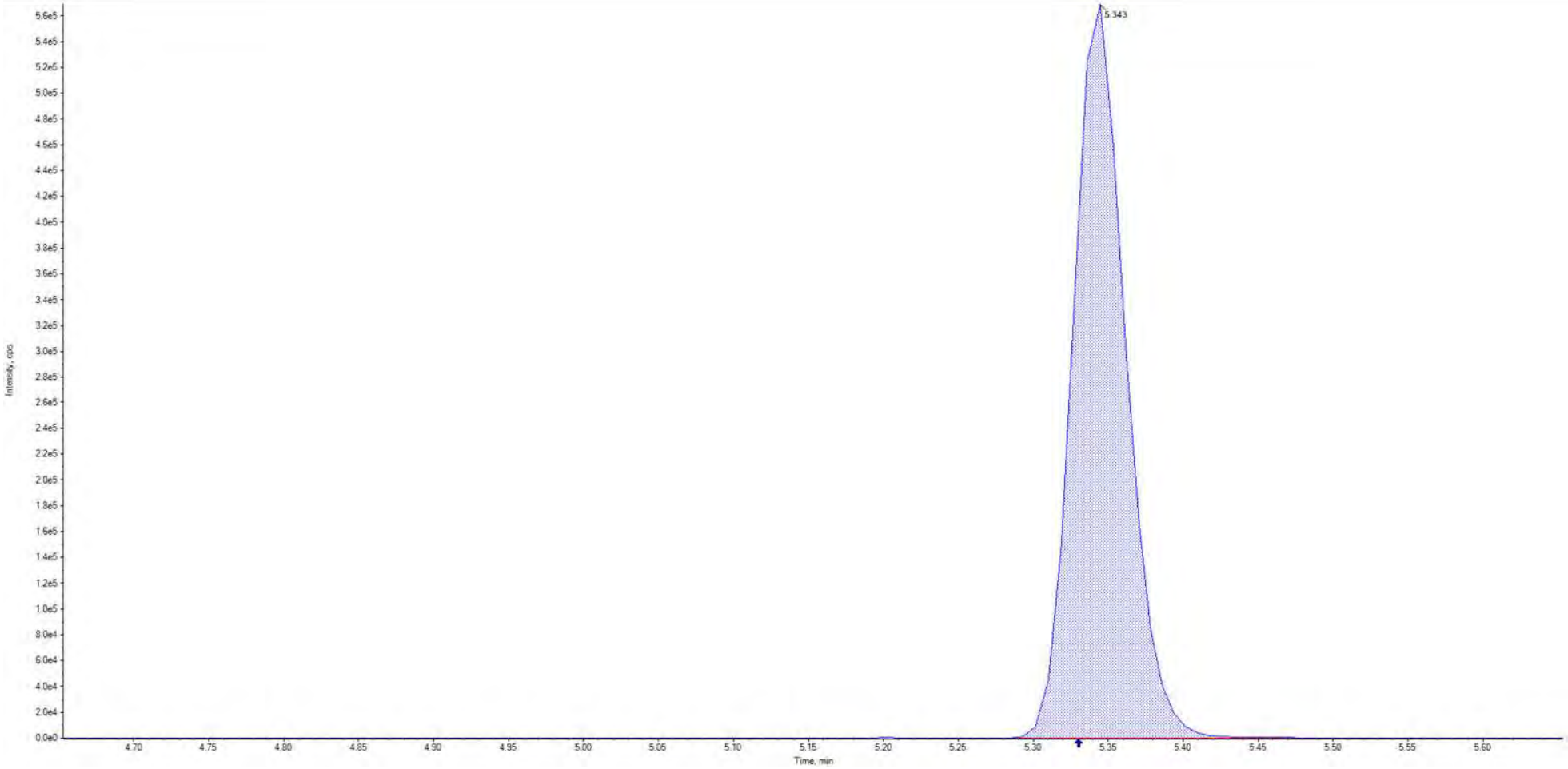

13C4-PFOA
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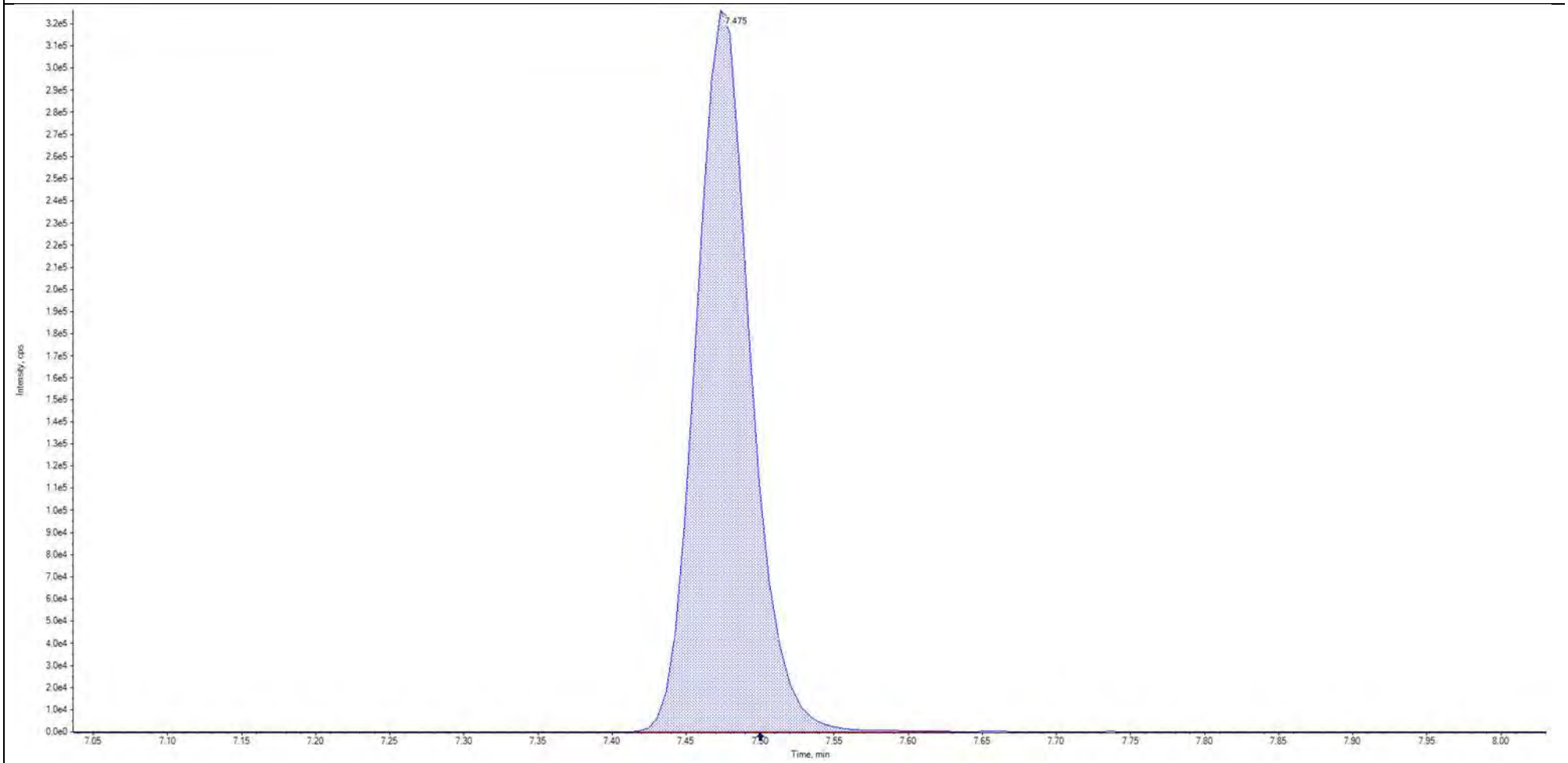

13C5-PFNA
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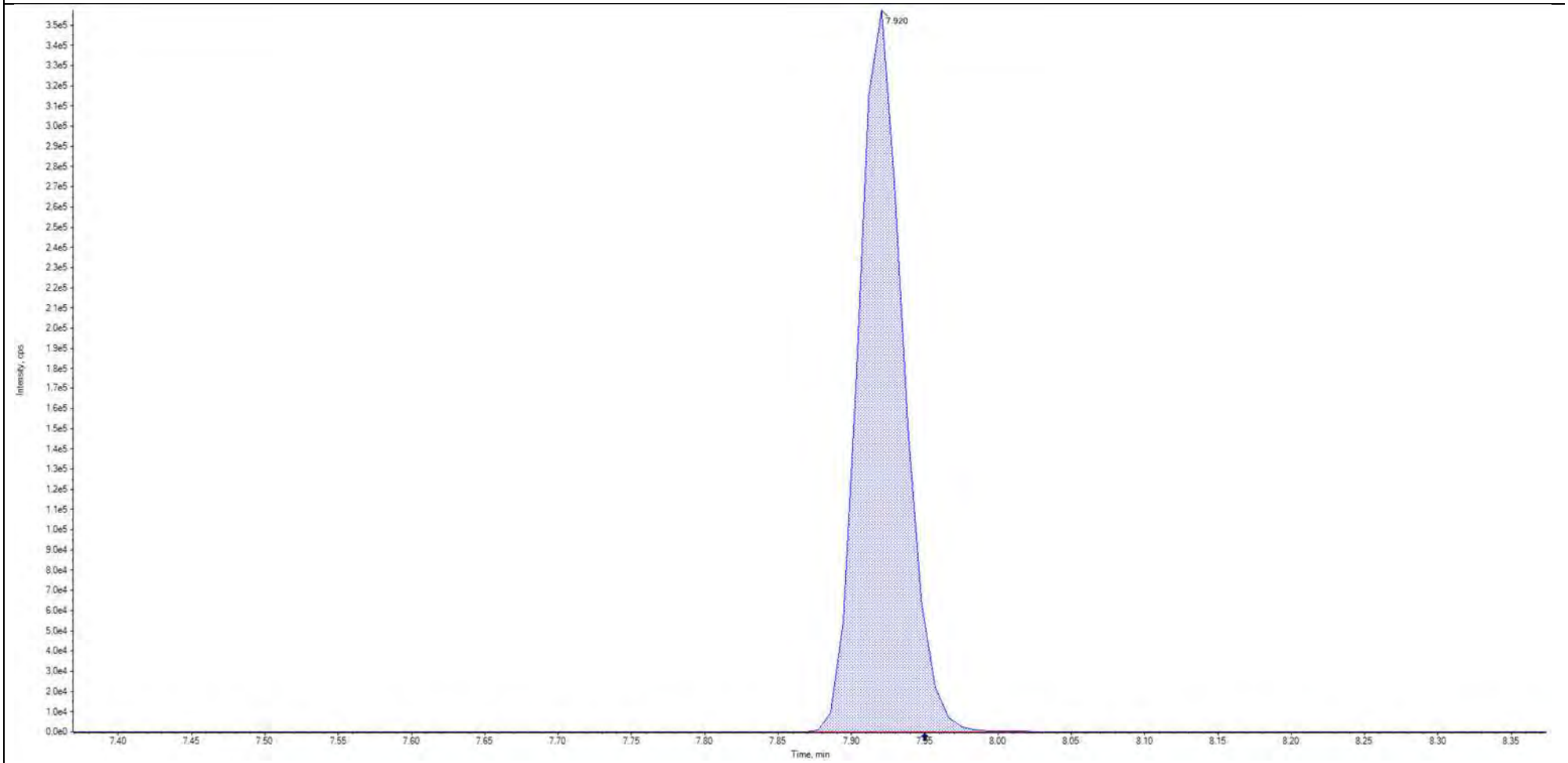

13C2-PFDA
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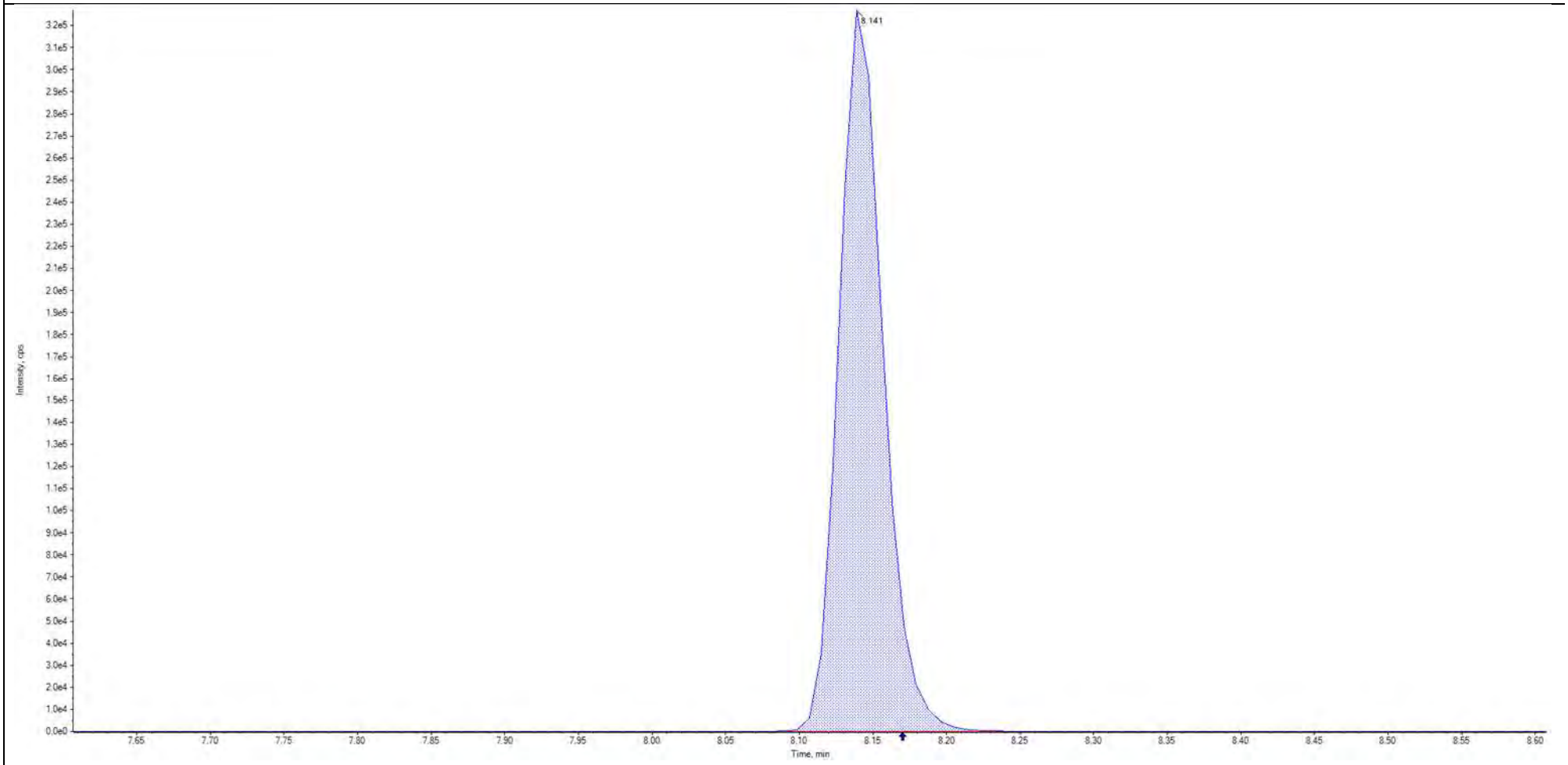
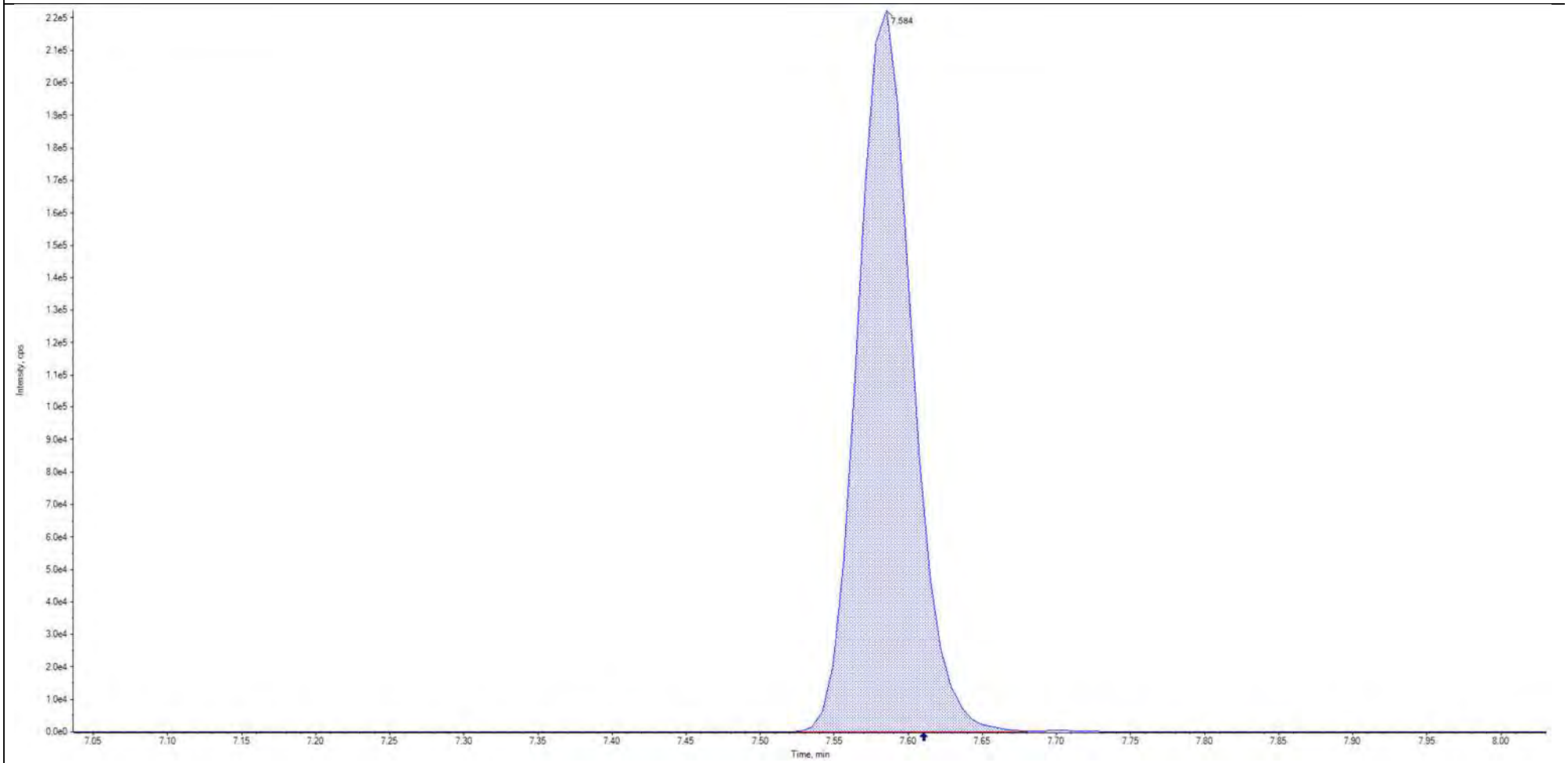


18O2-PFHxS
Sample: WG1973357-4



13C4-PFOS
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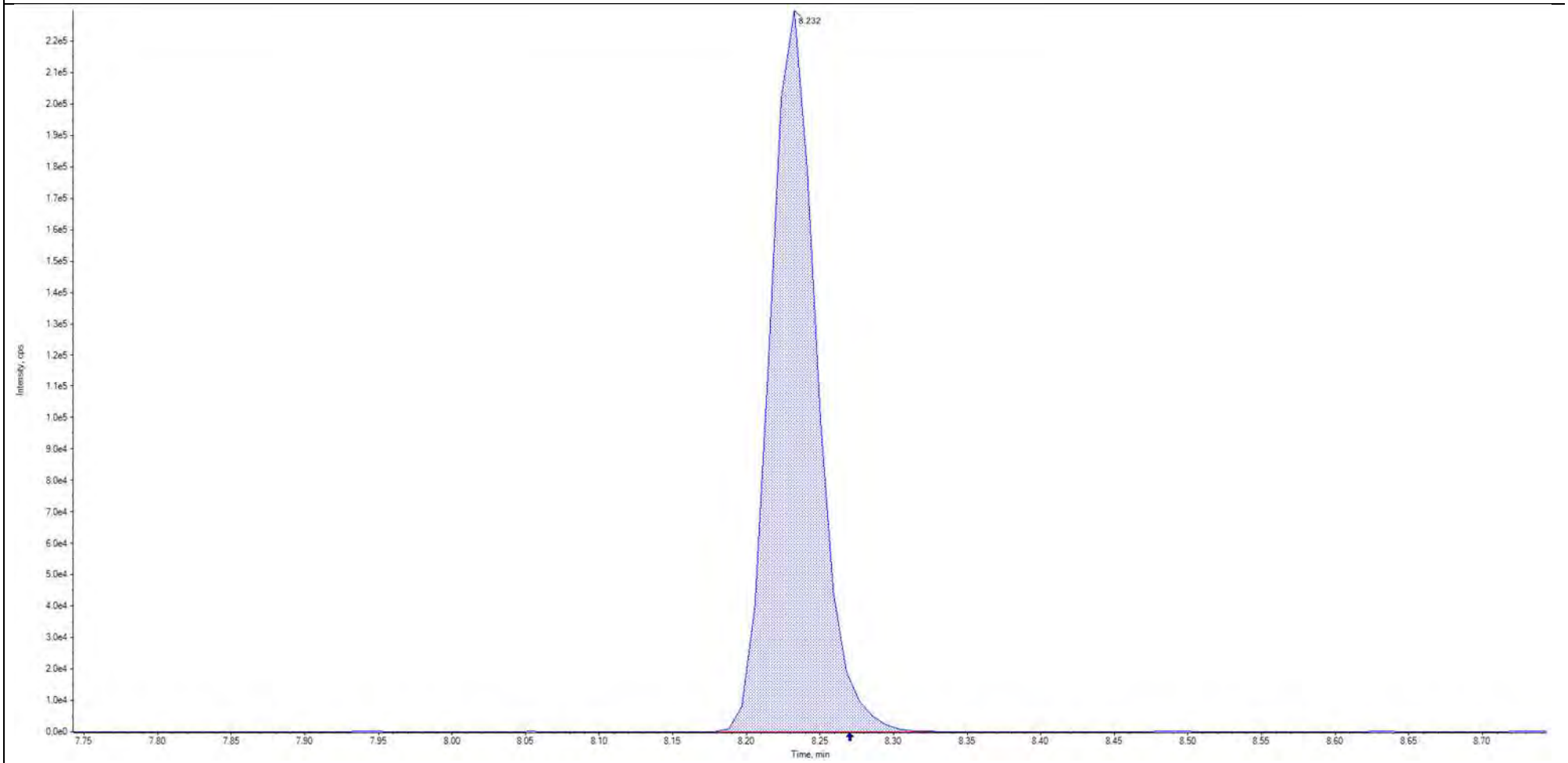

Quantity Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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Method: EPA1633_NIS_CALC.qmethod
Calibration: 240813_1633_ICAL

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Description: WG1973506,WG1973357,ICAL21391
Instrument: Triple Quad 5500+
User: LCMS05:AC

LC/MS-MS Method:EPA_1633.dam

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
1	PFBA	375-22-4	2.84	213.0 / 169.0	2230380		12.248	N/A	N/A	N/A	122.5
2	PFPeA	2706-90-3	4.66	263.0 / 219.0	1668098		6.239	0.007	0.007	N/A	124.8
3	PFPeA_2	2706-90-3	4.66	263.0 / 68.9	10990		5.821	0.007	0.007	N/A	116.4
4	PFHxA	307-24-4	5.36	313.0 / 269.0	1371698		3.289	0.077	0.072	Pass	131.6
5	PFHxA_2	307-24-4	5.36	313.0 / 119.0	105128		3.412	0.077	0.072	Pass	136.5
6	PFHpA	375-85-9	6.25	363.1 / 319.0	1243335		3.136	0.311	0.297	Pass	125.4
7	PFHpA_2	375-85-9	6.25	363.1 / 169.0	386169		3.183	0.311	0.297	Pass	127.3

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
8	PFOA	335-67-1	7.48	413.1 / 369.1	888716	M5	3.537	0.571	0.586	Pass	141.5
9	PFOA_2	335-67-1	7.48	413.1 / 169.0	507819	M7	3.688	0.571	0.586	Pass	147.5
10	PFNA	375-95-1	7.93	462.8 / 418.9	1114953	M5	3.466	0.307	0.313	Pass	138.7
11	PFNA_2	375-95-1	7.93	462.8 / 218.9	342311	M7	3.482	0.307	0.313	Pass	139.3
12	PFDA	335-76-2	8.15	513.1 / 469.1	1108909		2.937	0.156	0.142	Pass	117.5
13	PFDA_2	335-76-2	8.15	513.1 / 219.0	173192		3.061	0.156	0.142	Pass	122.4
14	PFUnA	2058-94-8	8.42	563.1 / 519.1	801485		3.072	0.187	0.194	Pass	122.9
15	PFUnA_2	2058-94-8	8.42	563.1 / 269.0	149666		2.961	0.187	0.194	Pass	118.4
16	PFDoA	307-55-1	8.83	613.1 / 569.1	800795		2.218	0.160	0.167	Pass	88.7
17	PFDoA_2	307-55-1	8.83	613.1 / 319.0	128074		2.099	0.160	0.167	Pass	84.0
18	PFTrDA	72629-94-8	9.39	663.1 / 619.1	493806		2.295	0.210	0.228	Pass	91.8
19	PFTrDA_2	72629-94-8	9.39	663.1 / 169.0	103744		2.165	0.210	0.228	Pass	86.6
20	PFTeDA	376-06-7	9.86	713.1 / 669.1	779390		2.900	0.141	0.137	Pass	116.0
21	PFTeDA_2	376-06-7	9.86	713.1 / 169.0	109786		2.987	0.141	0.137	Pass	119.5
22	PFBS	375-73-5	5.33	299.1 / 80.1	760986		2.767	0.389	0.396	Pass	124.8

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
23	PFBS_2	375-73-5	5.33	299.1 / 99.1	295697		2.697	0.389	0.396	Pass	121.6
24	PFPeS	2706-91-4	6.33	349.1 / 80.1	594791		2.861	0.298	0.299	Pass	121.6
25	PFPeS_2	2706-91-4	6.33	349.1 / 99.1	177360		2.829	0.298	0.299	Pass	120.2
26	PFHxS	355-46-4	7.59	399.1 / 80.1	612899	M5	3.151	0.309	0.315	Pass	137.9
27	PFHxS_2	355-46-4	7.59	399.1 / 99.1	189322	M7	3.134	0.309	0.315	Pass	137.2
28	PFHpS	375-92-8	7.99	449.1 / 80.1	565787		3.070	0.292	0.287	Pass	128.8
29	PFHpS_2	375-92-8	7.99	449.1 / 99.1	164930		3.054	0.292	0.287	Pass	128.1
30	PFOS	1763-23-1	8.24	499.1 / 80.1	1059398	M5	5.399	0.223	0.238	Pass	232.7
31	PFOS_2	1763-23-1	8.24	499.1 / 99.1	236142	M7	4.912	0.223	0.238	Pass	211.7
32	PFNS	68259-12-1	8.57	549.1 / 80.1	375888		2.984	0.302	0.301	Pass	124.1
33	PFNS_2	68259-12-1	8.57	549.1 / 99.1	113687		2.980	0.302	0.301	Pass	123.9
34	PFDS	335-77-3	9.05	599.1 / 80.1	331277		2.670	0.288	0.275	Pass	110.6
35	PFDS_2	335-77-3	9.05	599.1 / 99.1	95429		2.790	0.288	0.275	Pass	115.6
36	PFDoS	79780-39-5	9.96	699.2 / 80.1	311026		2.737	0.267	0.274	Pass	112.9
37	PFDoS_2	79780-39-5	9.96	699.2 / 99.1	82907		2.655	0.267	0.274	Pass	109.5

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
38	4:2FTS	757124-72-4	5.16	327.1 / 307.1	1168171		10.108	0.548	0.516	Pass	107.8
39	4:2FTS_2	757124-72-4	5.16	327.1 / 81.1	640549		10.360	0.548	0.516	Pass	110.5
40	6:2FTS	27619-97-2	7.08	427.2 / 407.2	692025		12.090	0.593	0.565	Pass	127.3
41	6:2FTS_2	27619-97-2	7.08	427.2 / 81.1	410423		13.256	0.593	0.565	Pass	139.5
42	8:2FTS	39108-34-4	8.05	527.2 / 507.2	800317		12.581	0.699	0.662	Pass	131.1
43	8:2FTS_2	39108-34-4	8.05	527.2 / 81.1	559044		12.956	0.699	0.662	Pass	135.0
44	PFOSA	754-91-6	9.51	498.1 / 78.1	536217	M5	2.944	0.029	0.025	Pass	117.8
45	PFOSA_2	754-91-6	9.51	498.1 / 478.0	15563	M7	3.257	0.029	0.025	Pass	130.3
46	NMeFOSA	31506-32-8	10.16	512.2 / 219.0	145896	M5	3.141	1.486	1.551	Pass	125.6
47	NMeFOSA_2	31506-32-8	10.11	512.2 / 169.0	216847	M7	3.013	1.486	1.551	Pass	120.5
48	NEtFOSA	4151-50-2	10.37	526.2 / 219.0	141373	M5	2.956	1.357	1.285	Pass	118.3
49	NEtFOSA_2	4151-50-2	10.33	526.2 / 169.0	191885	M7	2.997	1.357	1.285	Pass	119.9
50	NMeFOSAA	2355-31-9	8.20	570.2 / 419.1	131092		3.391	0.735	0.700	Pass	135.7
51	NMeFOSAA_2	2355-31-9	8.20	570.2 / 483.0	96368	M7	3.920	0.735	0.700	Pass	156.8
52	NEtFOSAA	2991-50-6	8.33	584.2 / 419.1	146405		3.141	0.468	0.487	Pass	125.6

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
53	NEtFOSAA_2	2991-50-6	8.33	584.2 / 526.2	68567	M7	3.197	0.468	0.487	Pass	127.9
54	NMeFOSE	24448-09-7	10.07	616.1 / 58.9	2713787	M5	30.044	N/A	N/A	N/A	120.2
55	NEtFOSE	1691-99-2	10.27	630.0 / 58.9	4871309	M5	29.655	N/A	N/A	N/A	118.6
56	HFPO-DA	13252-13-6	5.62	285.0 / 169.0	2539754		12.460	0.478	0.464	Pass	124.6
57	HFPO-DA_2	13252-13-6	5.61	285.0 / 184.9	1214662		12.815	0.478	0.464	Pass	128.2
58	ADONA	919005-14-4	6.71	377.1 / 251.0	5294606		11.422	0.661	0.634	Pass	120.9
59	ADONA_2	919005-14-4	6.71	377.1 / 84.8	3498876		11.665	0.661	0.634	Pass	123.4
60	9Cl-PF3ONS	756426-58-1	8.45	530.8 / 351.1	5144774		11.256	0.315	0.322	Pass	120.4
61	9Cl-PF3ONS_2	756426-58-1	8.45	532.8 / 353.0	1620095		10.884	0.315	0.322	Pass	116.4
62	11Cl-PF3OUdS	763051-92-9	9.47	630.9 / 451.0	2904499		10.060	0.332	0.331	Pass	106.5
63	11Cl-PF3OUdS_2	763051-92-9	9.47	632.9 / 452.9	963028		9.911	0.332	0.331	Pass	104.9
64	3:3FTCA	356-02-5	4.94	241.1 / 177.1	371704		16.027	0.869	1.074	Pass	128.2
65	3:3FTCA_2	356-02-5	4.94	241.1 / 117.0	322855		13.900	0.869	1.074	Pass	111.2
66	5:3FTCA	914637-49-3	7.18	341.1 / 237.1	5547947		73.336	0.929	0.953	Pass	117.3
67	5:3FTCA_2	914637-49-3	7.18	341.1 / 217.0	5156296		72.032	0.929	0.953	Pass	115.3

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
68	7:3FTCA	812-70-4	8.19	441.1 / 316.9	3950676		46.909	1.779	1.558	Pass	75.1
69	7:3FTCA_2	812-70-4	8.19	441.1 / 337.1	7028325		57.509	1.779	1.558	Pass	92.0
70	PFEESA	113507-82-7	5.72	315.1 / 135.0	3784963		5.231	0.085	0.087	Pass	117.6
71	PFEESA_2	113507-82-7	5.72	315.1 / 82.9	320456		5.127	0.085	0.087	Pass	115.2
72	PFMPA	377-73-1	3.88	229.0 / 85.0	246969		7.631	N/A	N/A	N/A	152.6
73	PFMBA	863090-89-5	4.89	279.0 / 85.0	2451628		5.618	N/A	N/A	N/A	112.4
74	NFDHA	151772-58-6	5.27	295.0 / 201.0	473165		6.212	1.030	0.910	Pass	124.2
75	NFDHA_2	151772-58-6	5.27	295.0 / 84.9	487386		6.980	1.030	0.910	Pass	139.6
76	TDCA	516-50-7	N/A	499.1 / 124.1	N/A		N/A	N/A	40.716	N/A	N/A
77	TDCA_2	516-50-7	N/A	499.1 / 79.9	N/A		N/A	N/A	40.716	N/A	N/A
78	13C2D4-4:2FTS	Surr	N/A	333.2 / 312.1	N/A		N/A	N/A	N/A	N/A	N/A
79	13C2-PFOA	Surr	N/A	415.0 / 370.0	N/A		N/A	N/A	N/A	N/A	N/A

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C4-PFBA	EIS	2.84	217.0 / 172.0	2245578		8.417	NA	NA	NA	84.2

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C5-PFPeA	EIS	4.65	268.0 / 223.0	1449950		4.407	NA	NA	NA	88.1
	13C5-PFHxA	EIS	5.35	318.0 / 273.0	855645		1.980	NA	NA	NA	79.2
	13C4-PFHpA	EIS	6.24	367.0 / 322.0	846460		1.956	NA	NA	NA	78.3
	13C8-PFOA	EIS	7.47	421.0 / 376.0	1207446		2.048	NA	NA	NA	81.9
	13C9-PFNA	EIS	7.92	472.0 / 427.0	549300		0.930	NA	NA	NA	74.4
	13C6-PFDA	EIS	8.14	519.0 / 474.0	547612		1.010	NA	NA	NA	80.8
	13C7-PFUnA	EIS	8.42	570.0 / 525.0	412757		0.940	NA	NA	NA	75.2

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C2-PFDoA	EIS	8.82	615.1 / 570.0	347122		1.216	NA	NA	NA	97.3
	13C2-PFTeDA	EIS	9.85	715.1 / 670.1	268099		0.865	NA	NA	NA	69.2
	13C3-PFBS	EIS	5.32	302.1 / 80.1	655457		1.958	NA	NA	NA	84.0
	13C3-PFHxS	EIS	7.59	402.1 / 80.1	487339		1.833	NA	NA	NA	77.3
	13C8-PFOS	EIS	8.23	507.1 / 80.1	477676		1.675	NA	NA	NA	69.9
	13C2-4:2FTS	EIS	5.15	329.1 / 81.1	276583		4.629	NA	NA	NA	98.7
	13C2-6:2FTS	EIS	7.08	429.2 / 81.1	165914		3.789	NA	NA	NA	79.7
	13C2-8:2FTS	EIS	8.05	529.2 / 81.1	240910		3.759	NA	NA	NA	78.3

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C8-PFOSA	EIS	9.51	506.1 / 78.1	681177		1.796	NA	NA	NA	71.9
	d3-NMeFOSA	EIS	10.15	515.2 / 219.0	108452		1.699	NA	NA	NA	68.0
	d5-NEtFOSA	EIS	10.35	531.2 / 219.0	108860		1.746	NA	NA	NA	69.8
	d3-NMeFOSAA	EIS	8.19	573.2 / 419.1	293734		2.035	NA	NA	NA	40.7
	d5-NEtFOSAA	EIS	8.32	589.3 / 419.1	249993		3.296	NA	NA	NA	65.9
	d7-NMeFOSE	EIS	10.06	623.2 / 58.9	915377		18.569	NA	NA	NA	74.3
	d9-NEtFOSE	EIS	10.25	639.2 / 58.9	1399329		19.253	NA	NA	NA	77.0

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec
	13C3-HFPO-DA	EIS	5.61	287.0 / 169.0	2223531		7.764	NA	NA	NA	77.6
	13C3-PFBA	NIS	2.84	216.0 / 172.0	1167073		5.458	NA	NA	NA	109.2
	13C2-PFHxA	NIS	5.35	315.0 / 270.0	1283072		2.621	NA	NA	NA	104.8
	13C4-PFOA	NIS	7.47	417.0 / 372.0	771181		2.463	NA	NA	NA	98.5
	13C5-PFNA	NIS	7.92	468.0 / 423.0	719417		1.313	NA	NA	NA	105.1
	13C2-PFDA	NIS	8.14	515.1 / 470.1	637194		1.244	NA	NA	NA	99.5
	18O2-PFHxS	NIS	7.58	403.1 / 84.1	540493		2.307	NA	NA	NA	97.3
	13C4-PFOS	NIS	8.23	503.1 / 80.1	504560		2.396	NA	NA	NA	100.1

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

	Analyte Name	CAS	RT	Trace	Area	M Flag	Conc (ng/mL)	Ion Ratio	Expected Ratio	Ion Q	%Rec

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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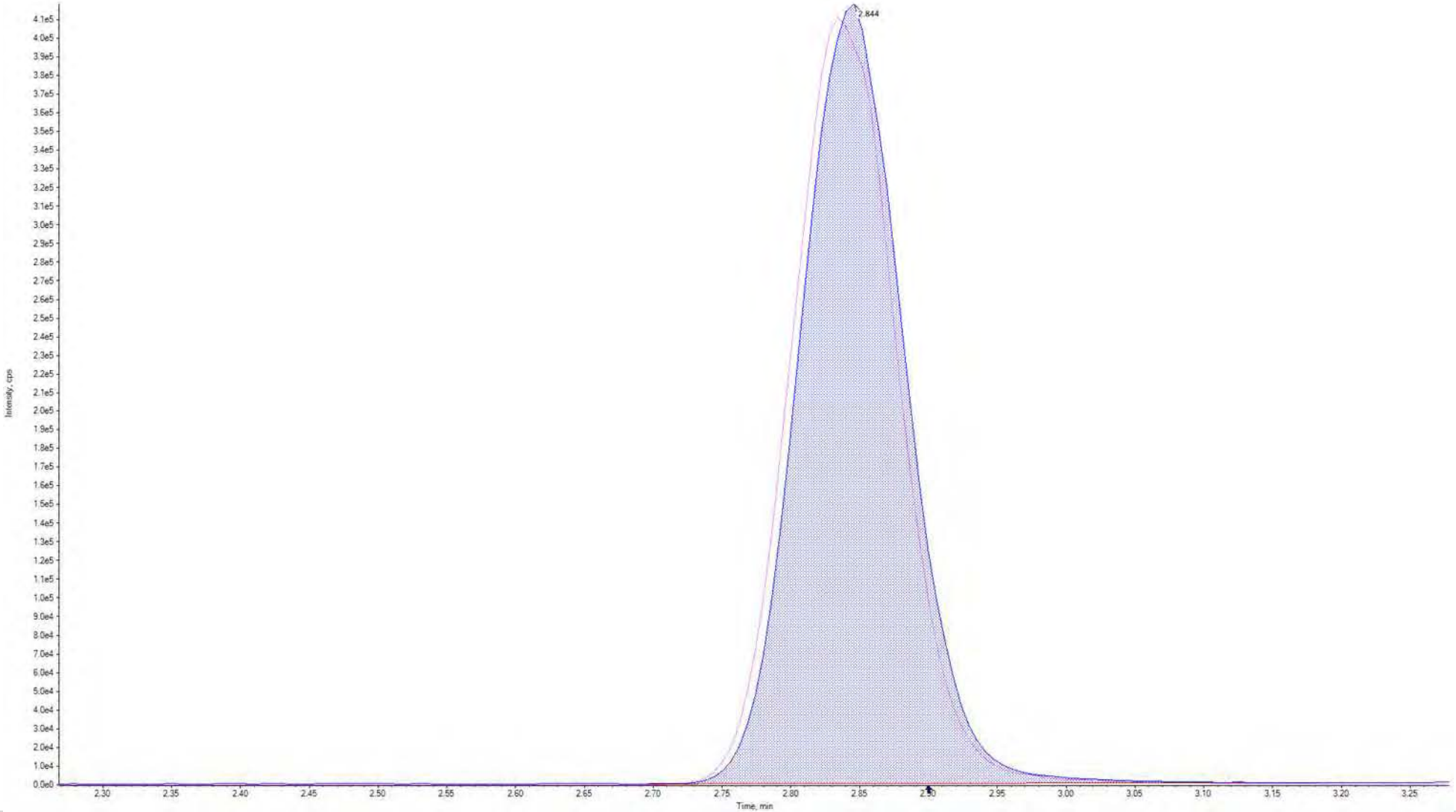
PFBA
Sample: WG1973357-5 S/N:2444.7 Points Across peak:78



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
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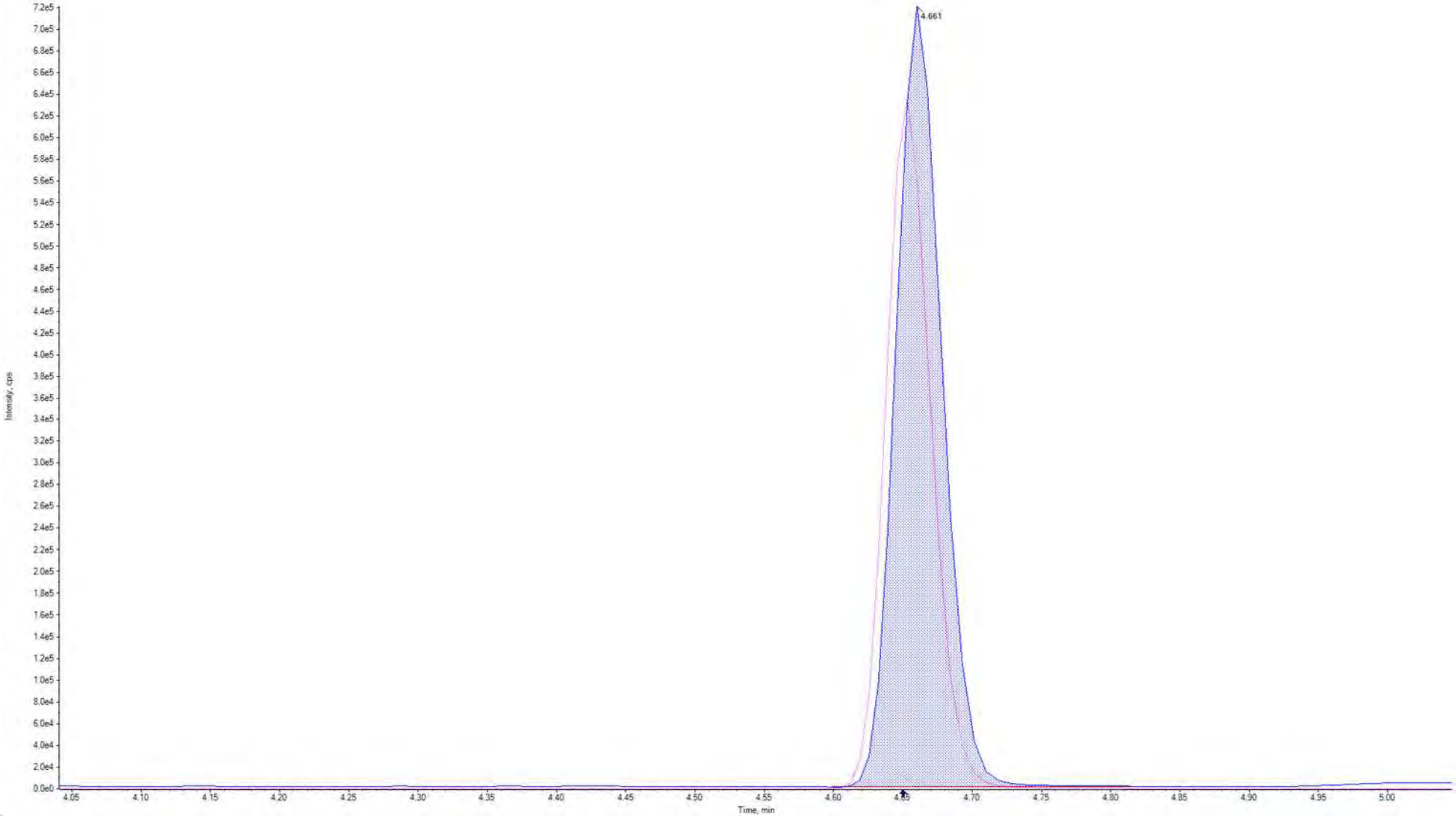
PFPeA
Sample: WG1973357-5 S/N:1040.8 Points Across peak:31



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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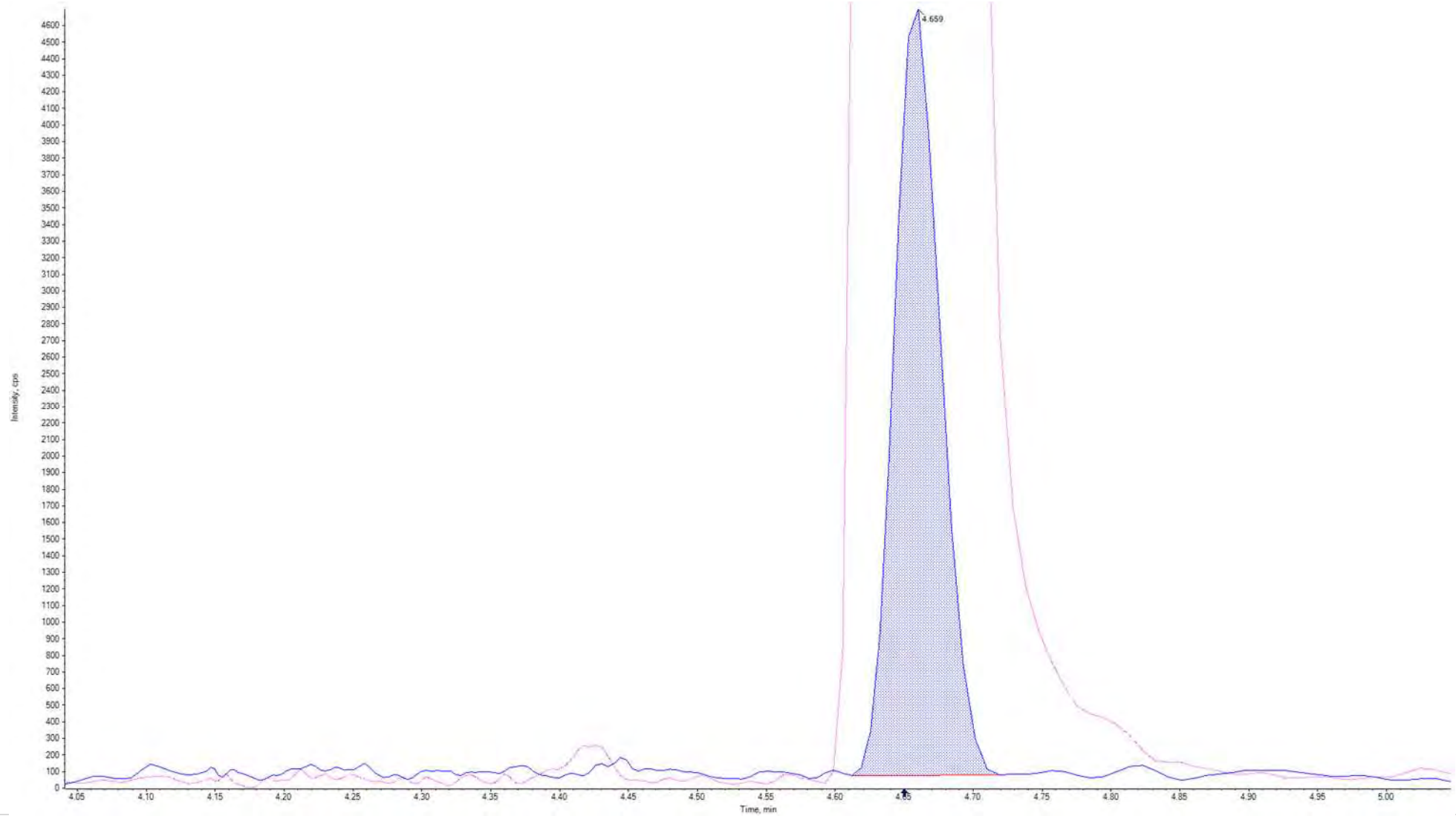
PFPeA_2
Sample: WG1973357-5 S/N:395.9 Points Across peak:15



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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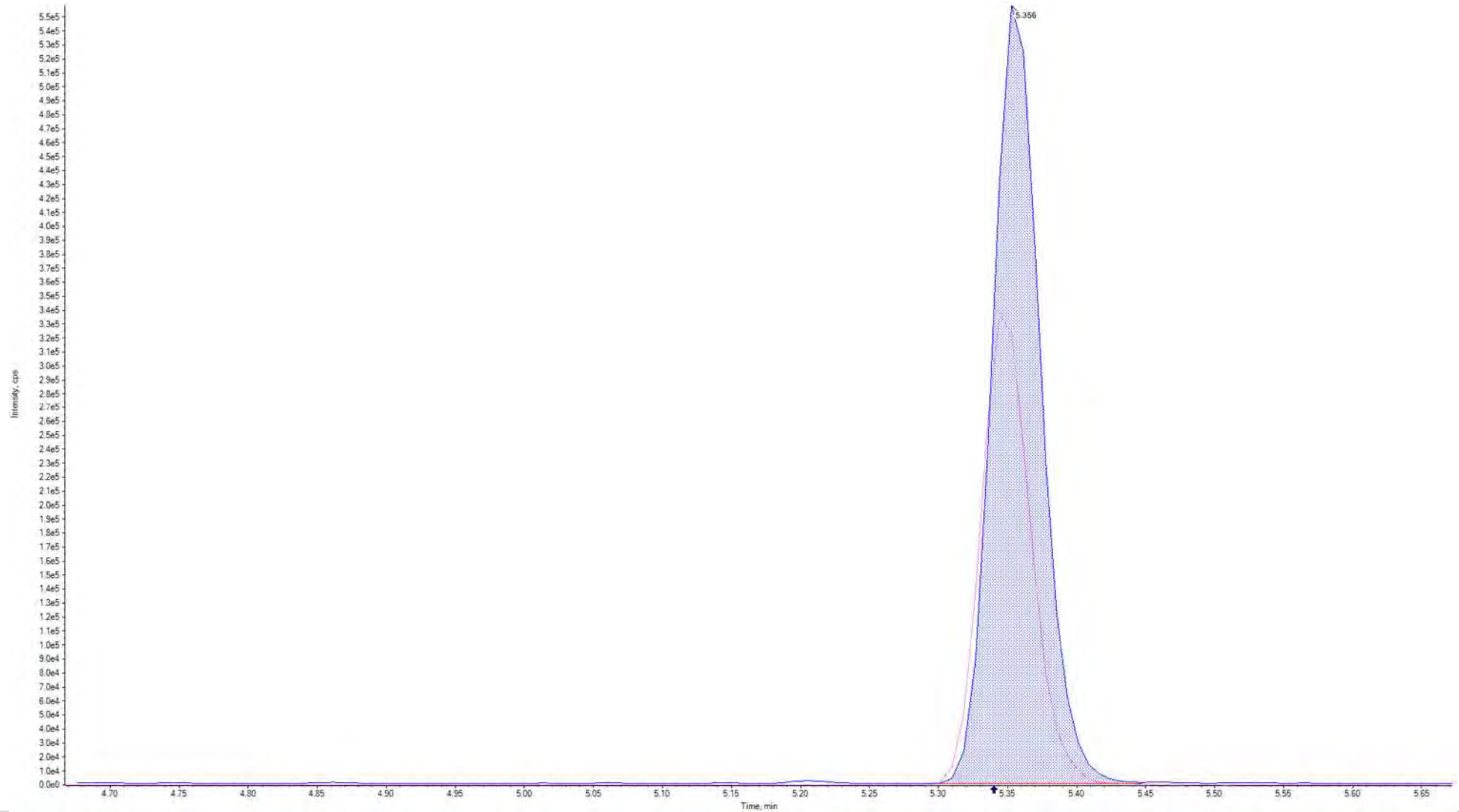
PFHxA
Sample: WG1973357-5 S/N:935.5 Points Across peak:20



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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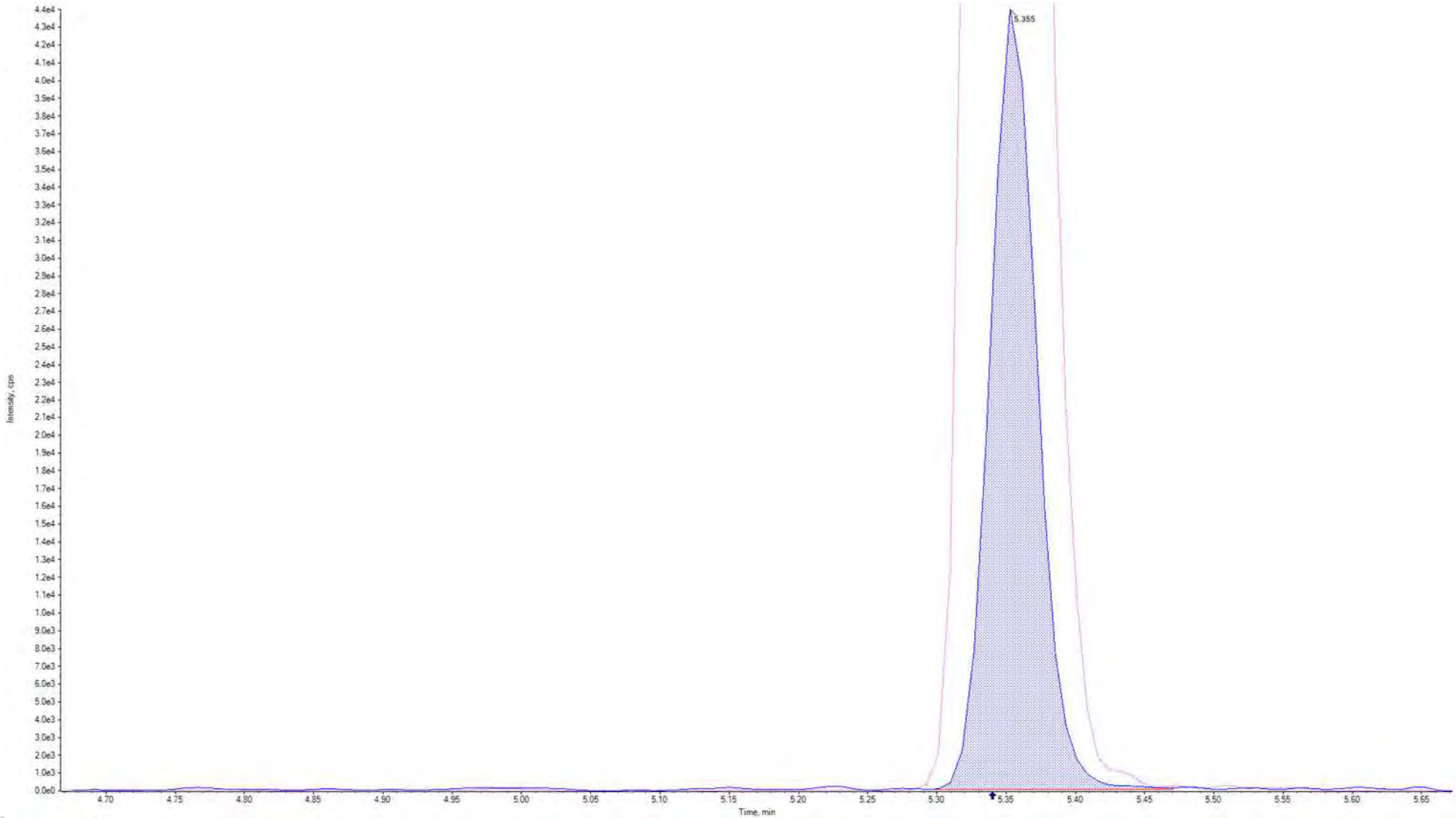
PFHxA_2
Sample: WG1973357-5 S/N:3842.4 Points Across peak:23



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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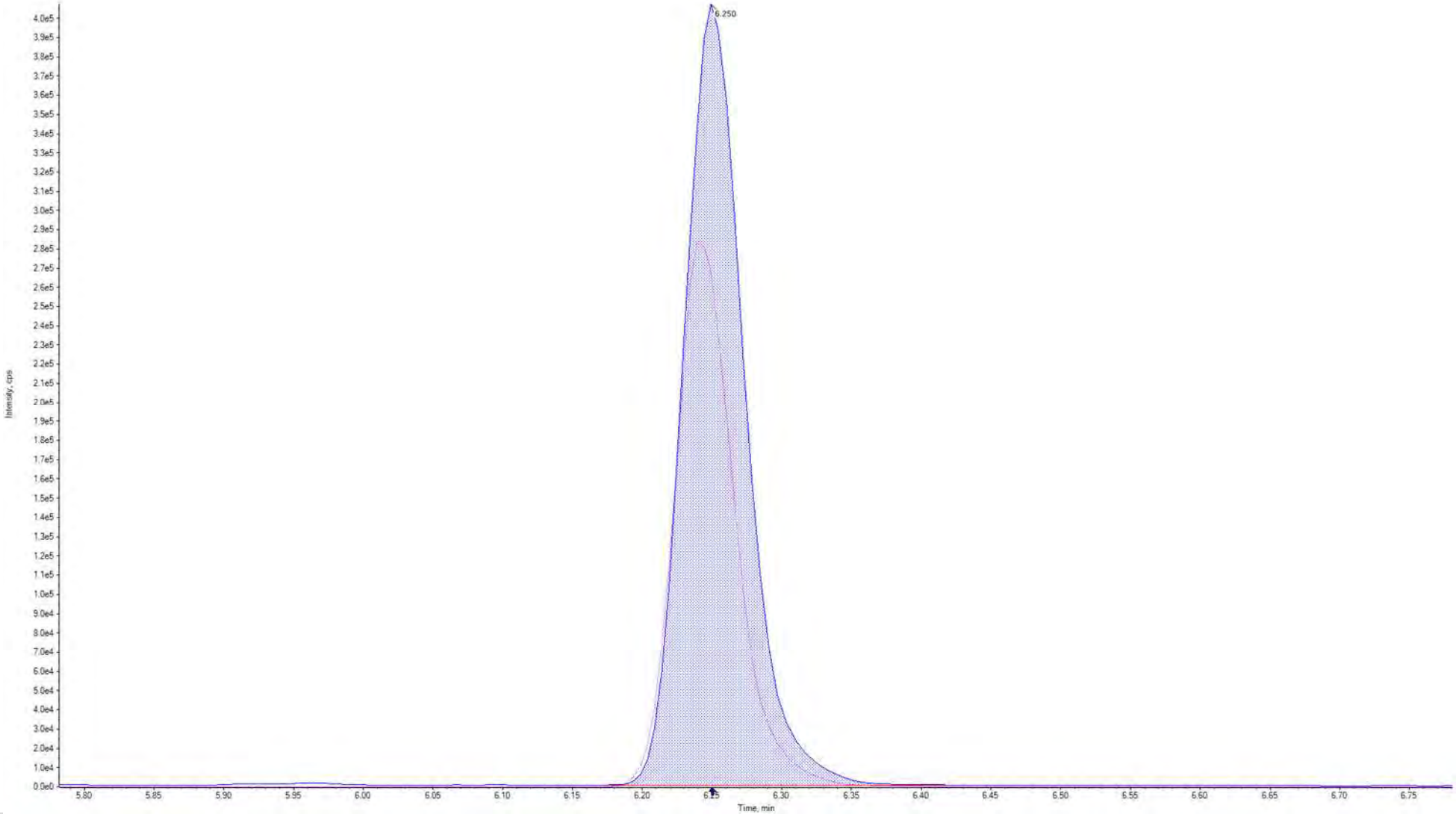
PFHpA
Sample: WG1973357-5 S/N:1912.2 Points Across peak:49



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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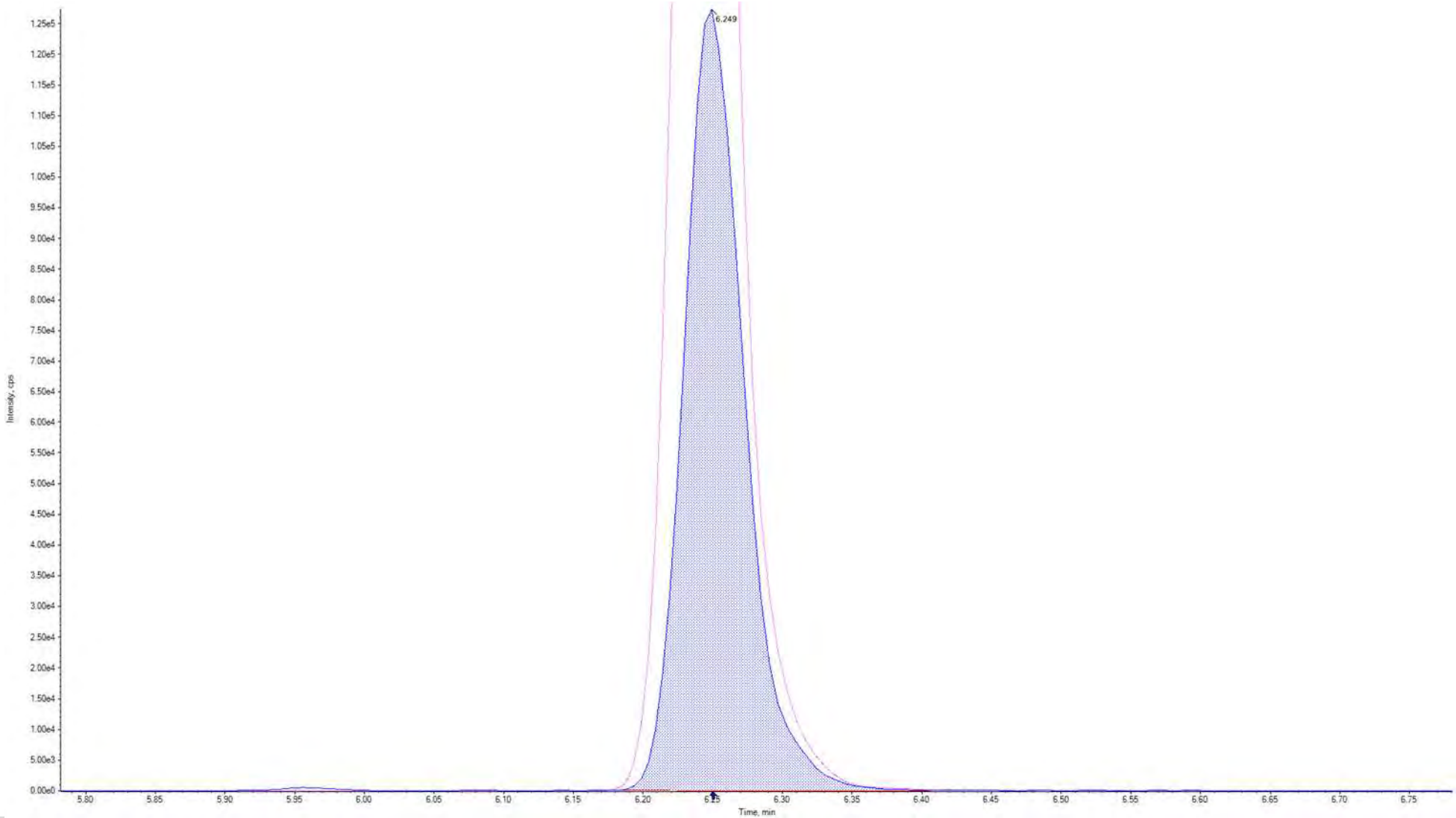
PFHpA_2
Sample: WG1973357-5 S/N:6659.9 Points Across peak:42



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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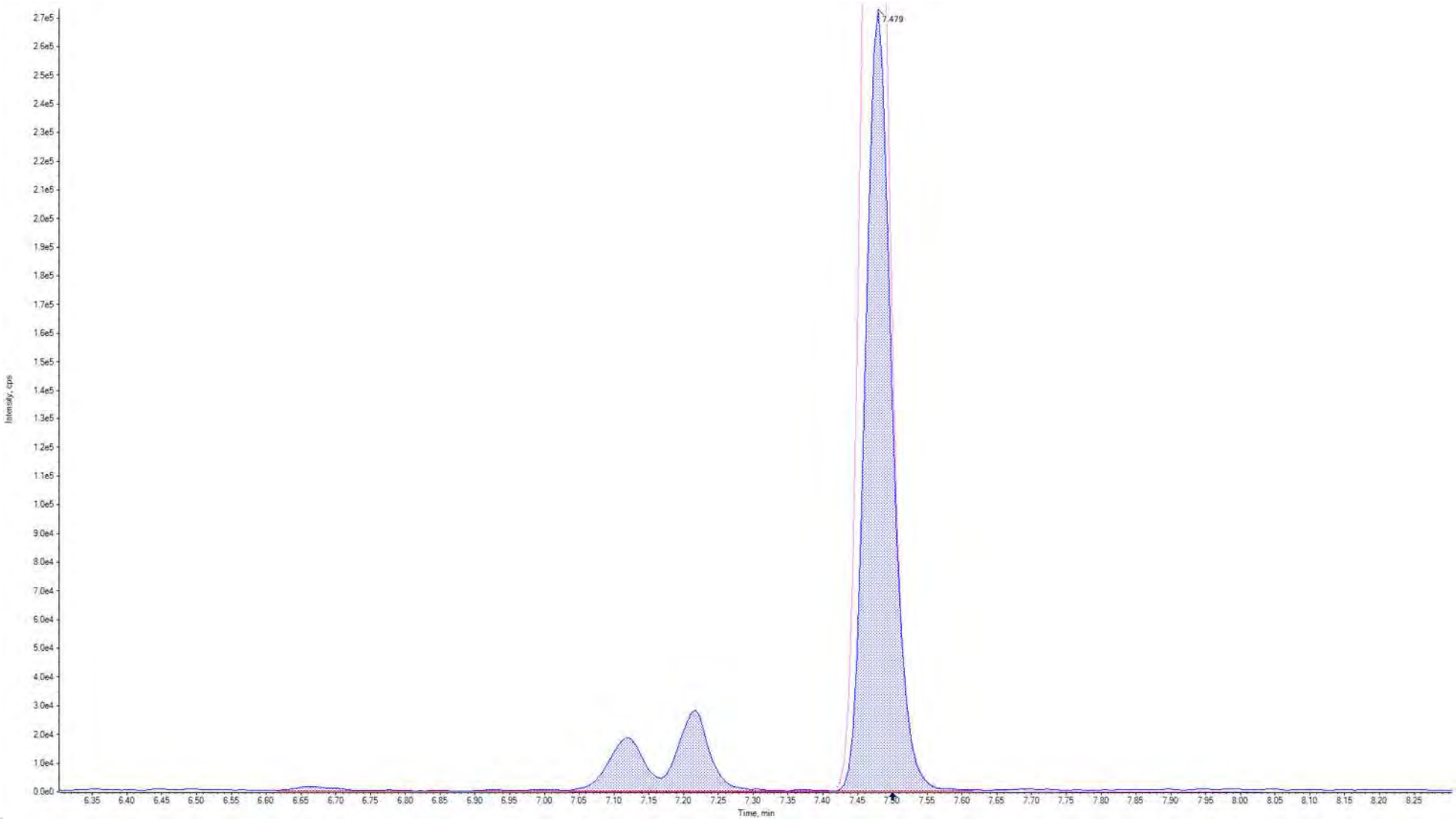
PFOA
Sample: WG1973357-5 S/N:1770.9 Points Across peak:152



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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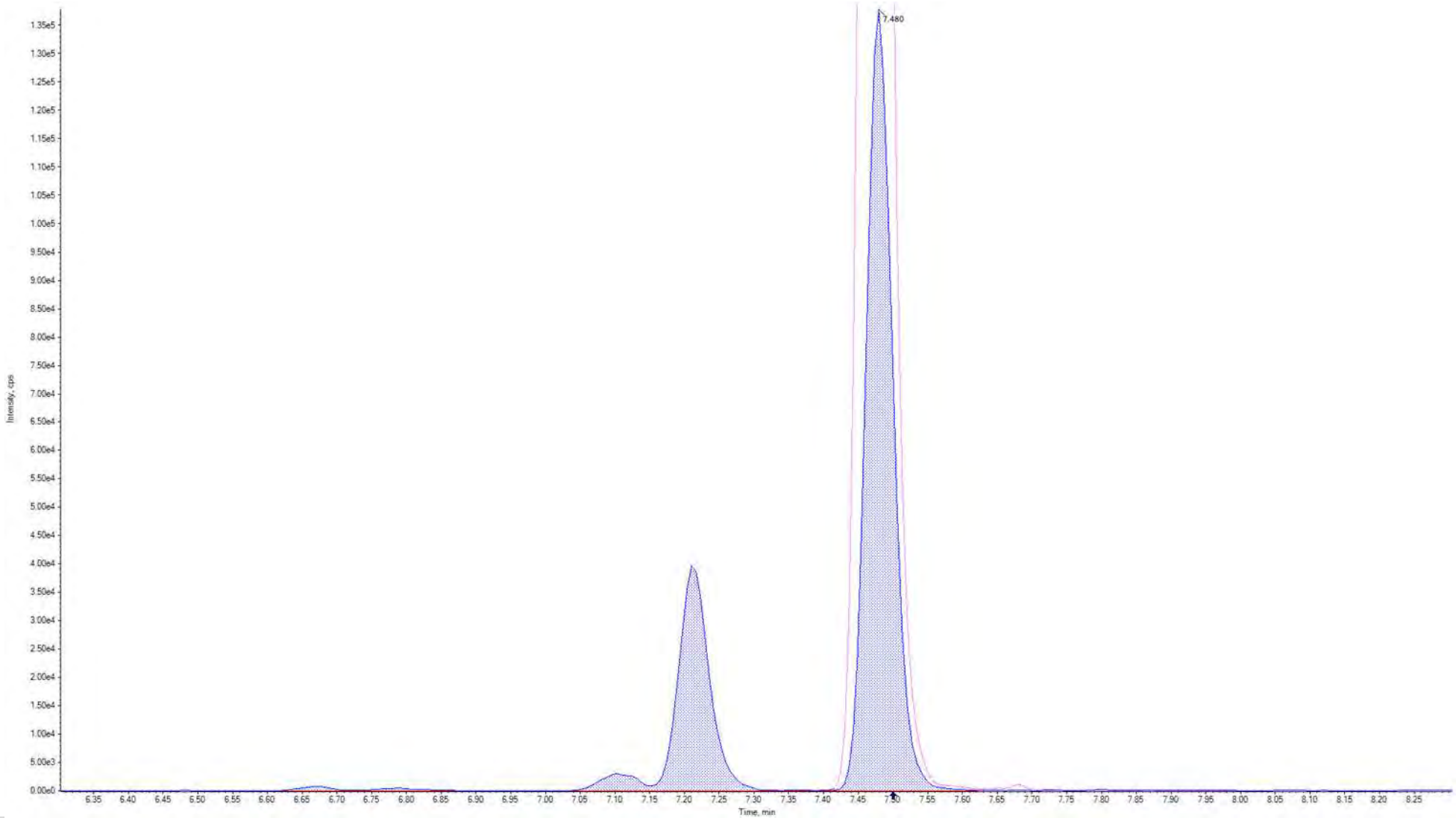
PFOA_2
Sample: WG1973357-5 S/N:135931.6 Points Across peak:154



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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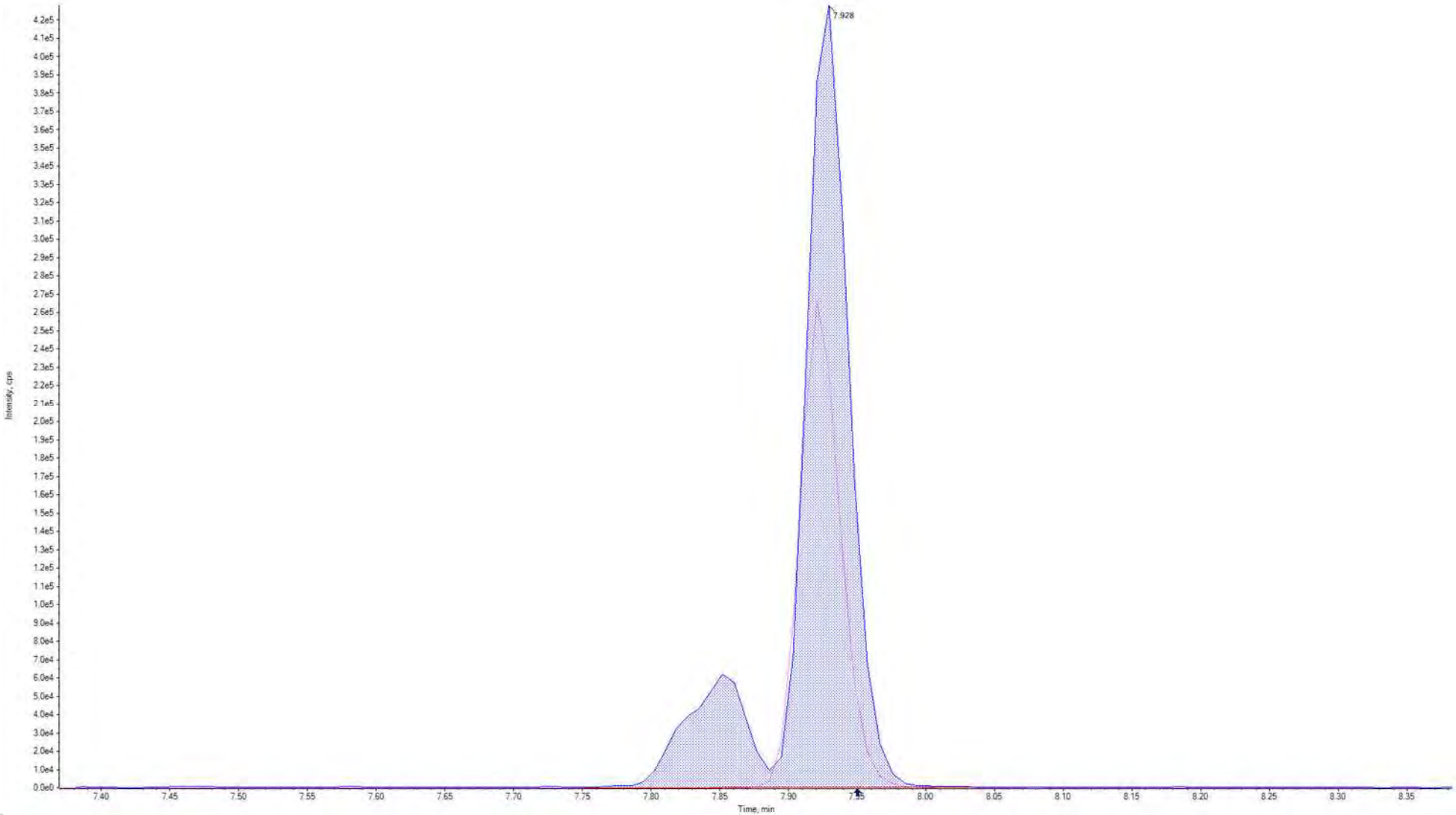
PFNA
Sample: WG1973357-5 S/N:1473.5 Points Across peak:36



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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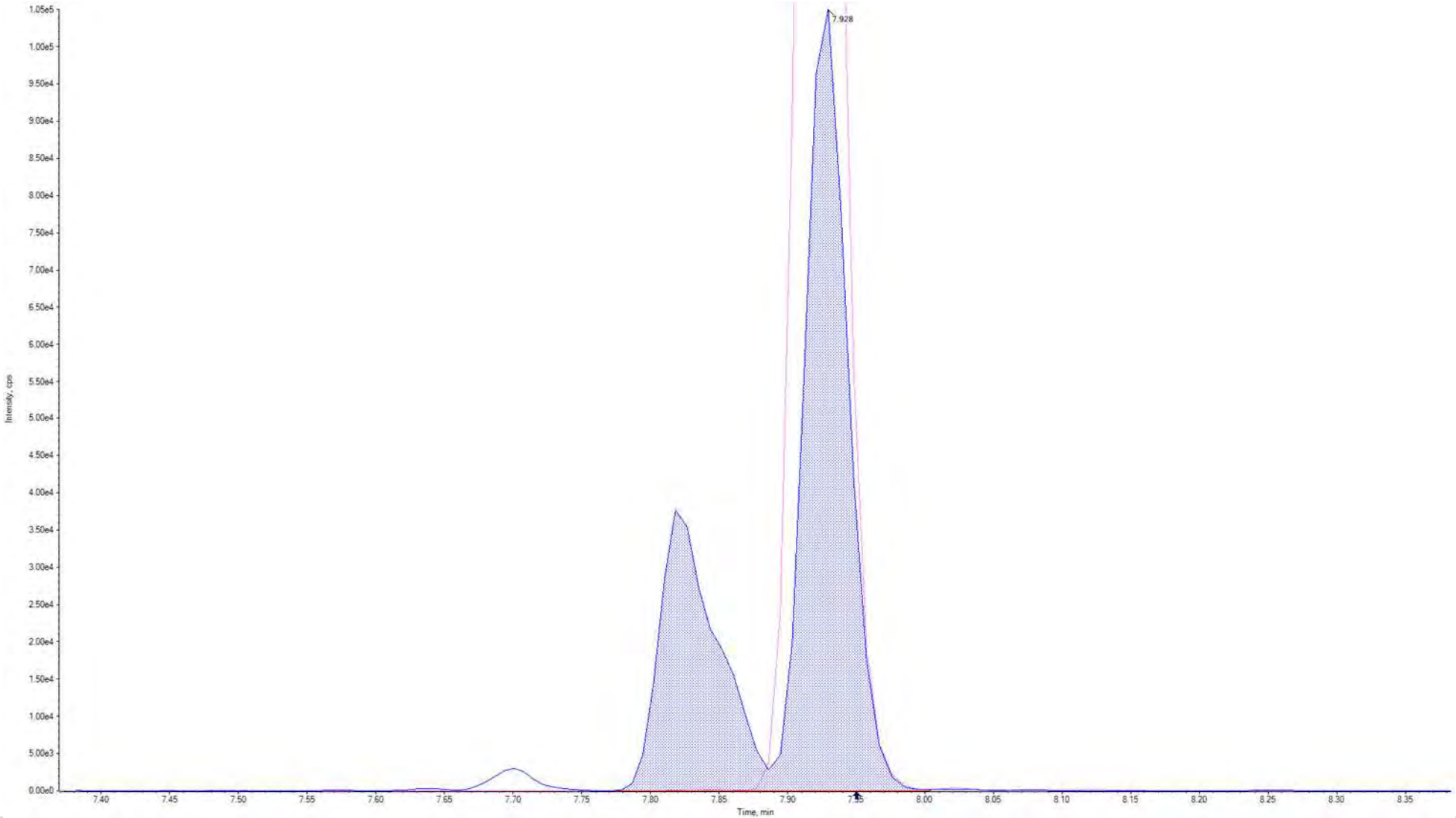
PFNA_2
Sample: WG1973357-5 S/N:899.3 Points Across peak:29



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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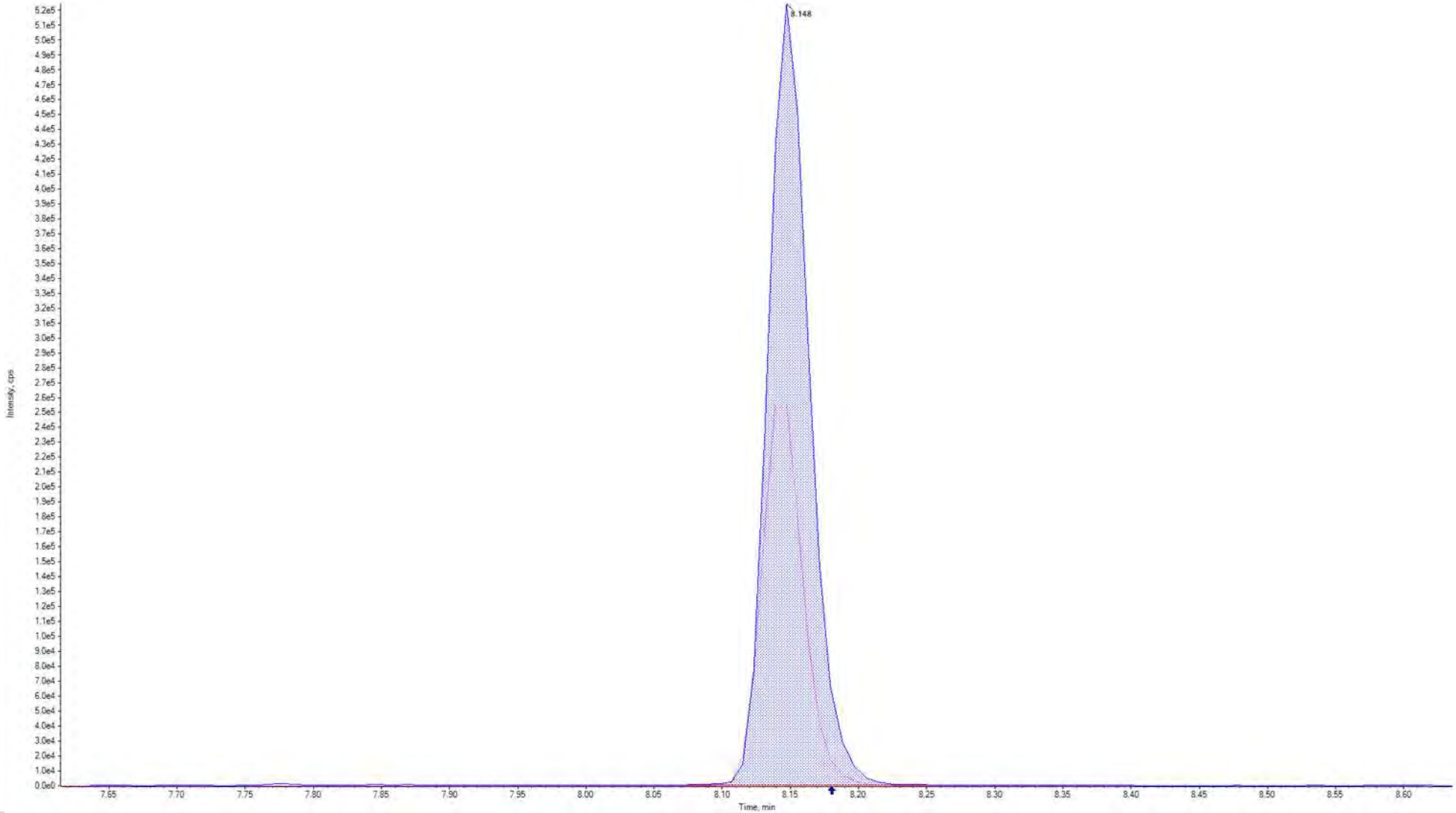
PFDA
Sample: WG1973357-5 S/N:4003.5 Points Across peak:28



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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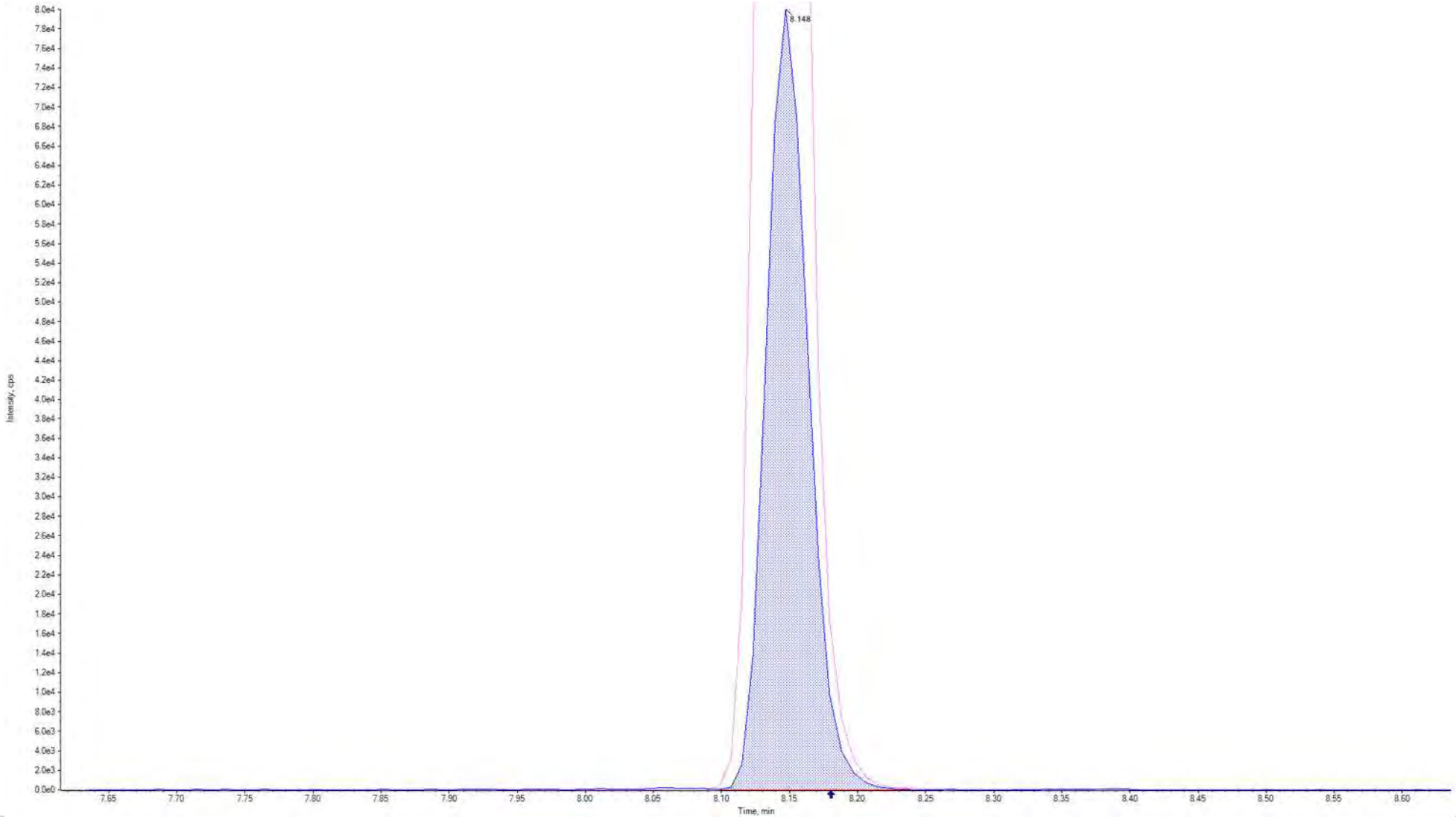
PFDA_2
Sample: WG1973357-5 S/N:1555.6 Points Across peak:19



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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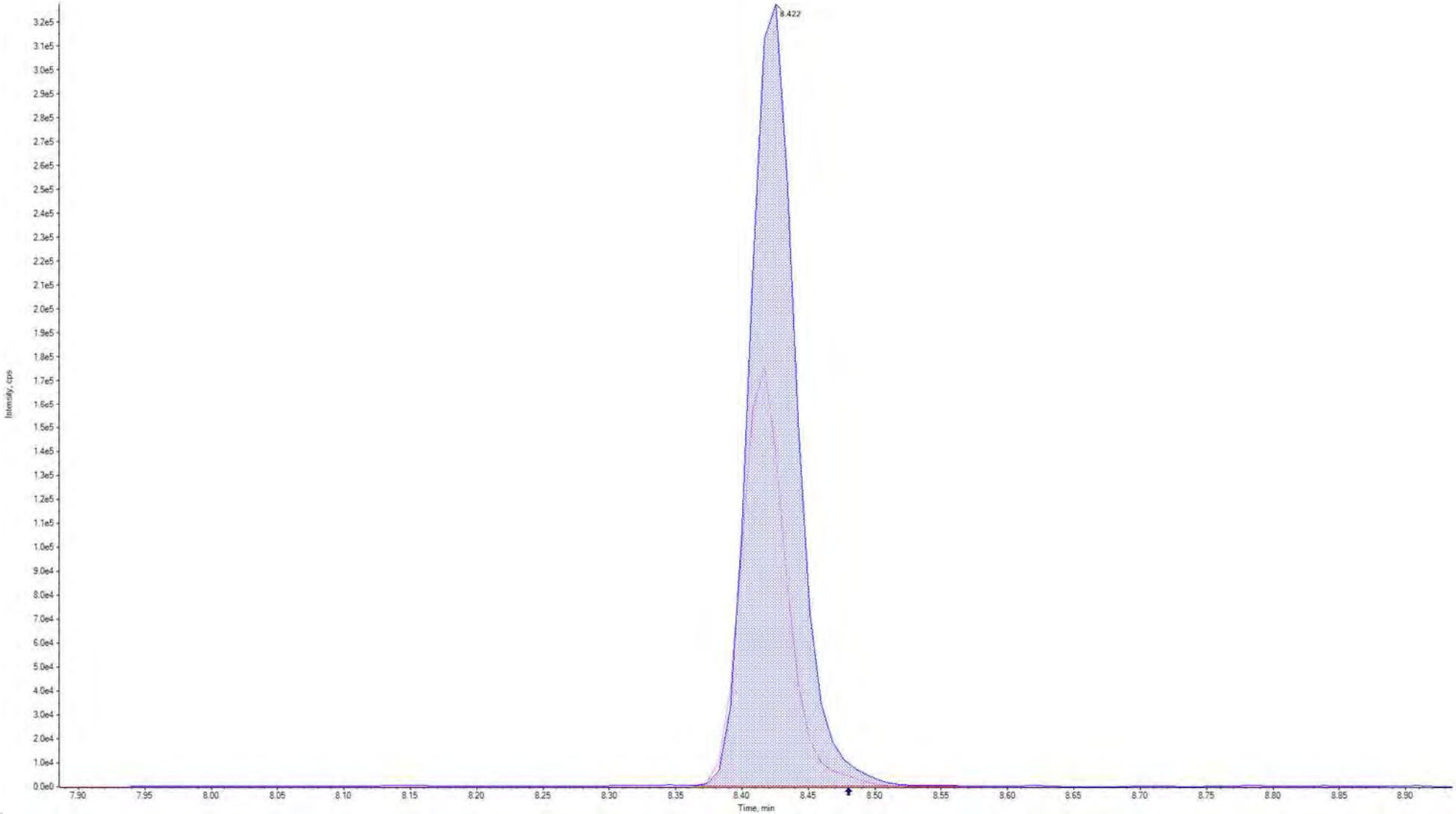
PFUnA
Sample: WG1973357-5 S/N:2263.0 Points Across peak:29



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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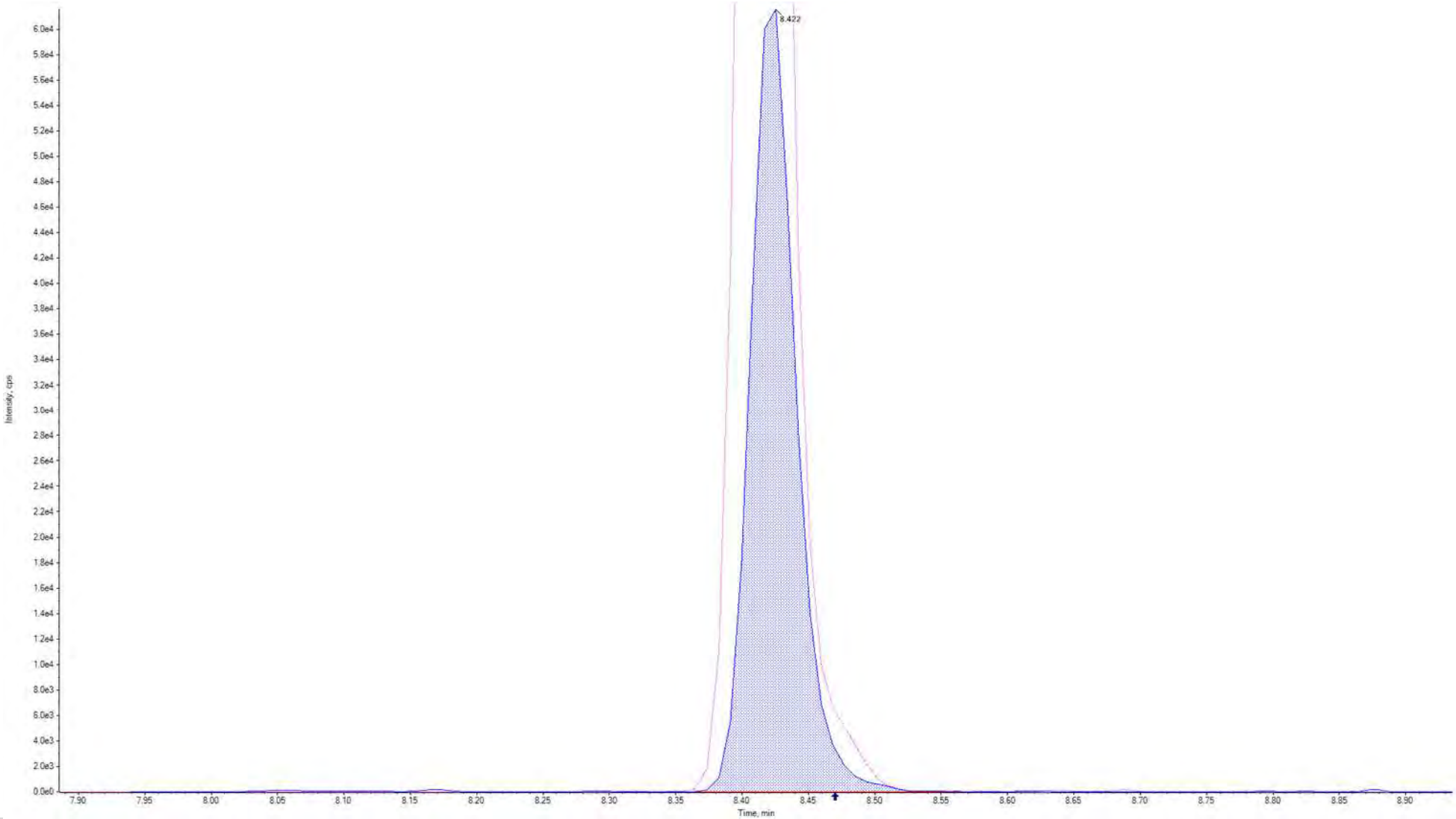
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFUnA_2
Sample: WG1973357-5 S/N:1570.8 Points Across peak:28



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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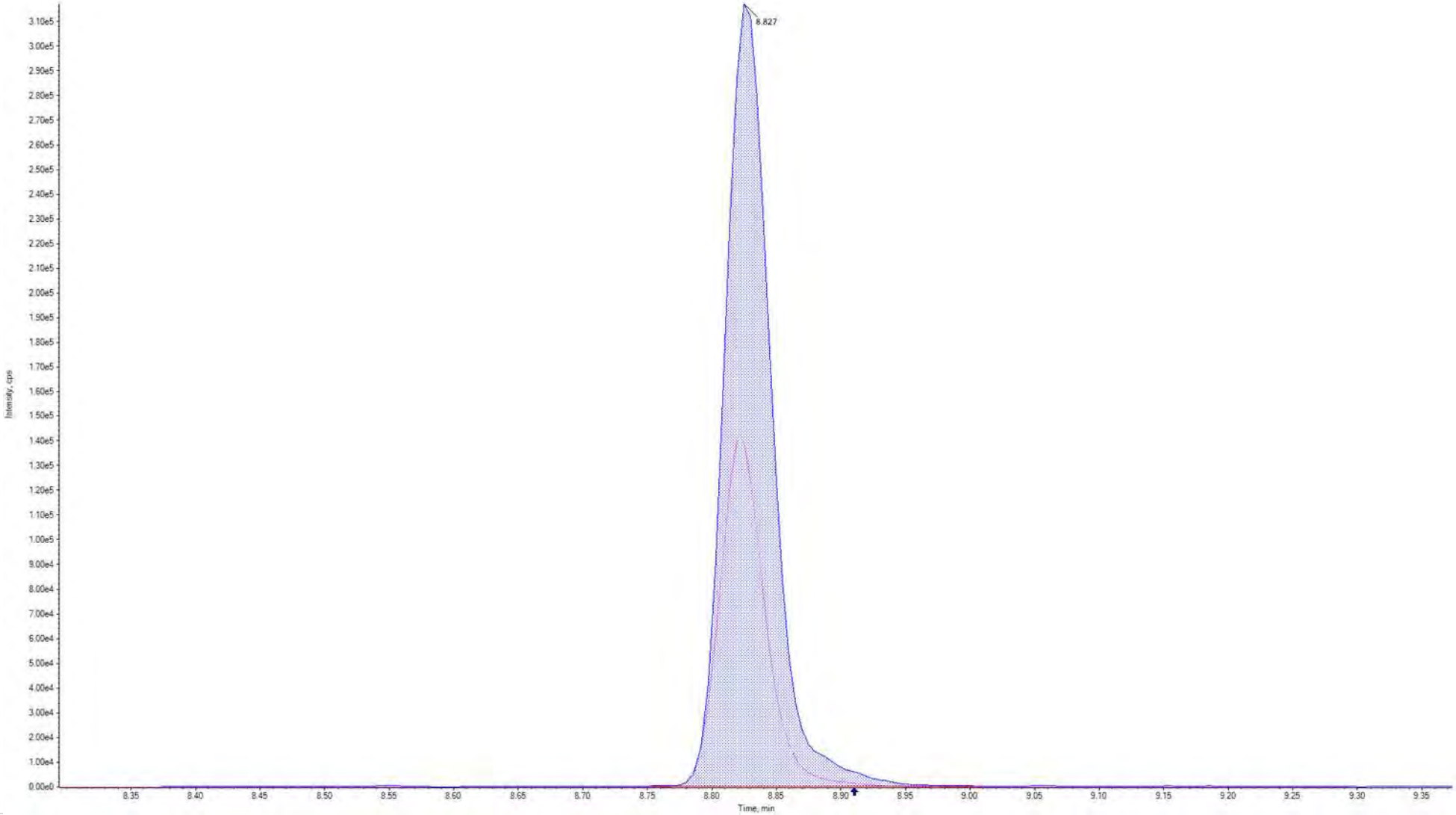
Generated: 9/19/2024 8:04:31 AM

PFDoA
Sample: WG1973357-5 S/N:4493.1 Points Across peak:53



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
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Last Altered: 9/19/2024 11:40:51 AM
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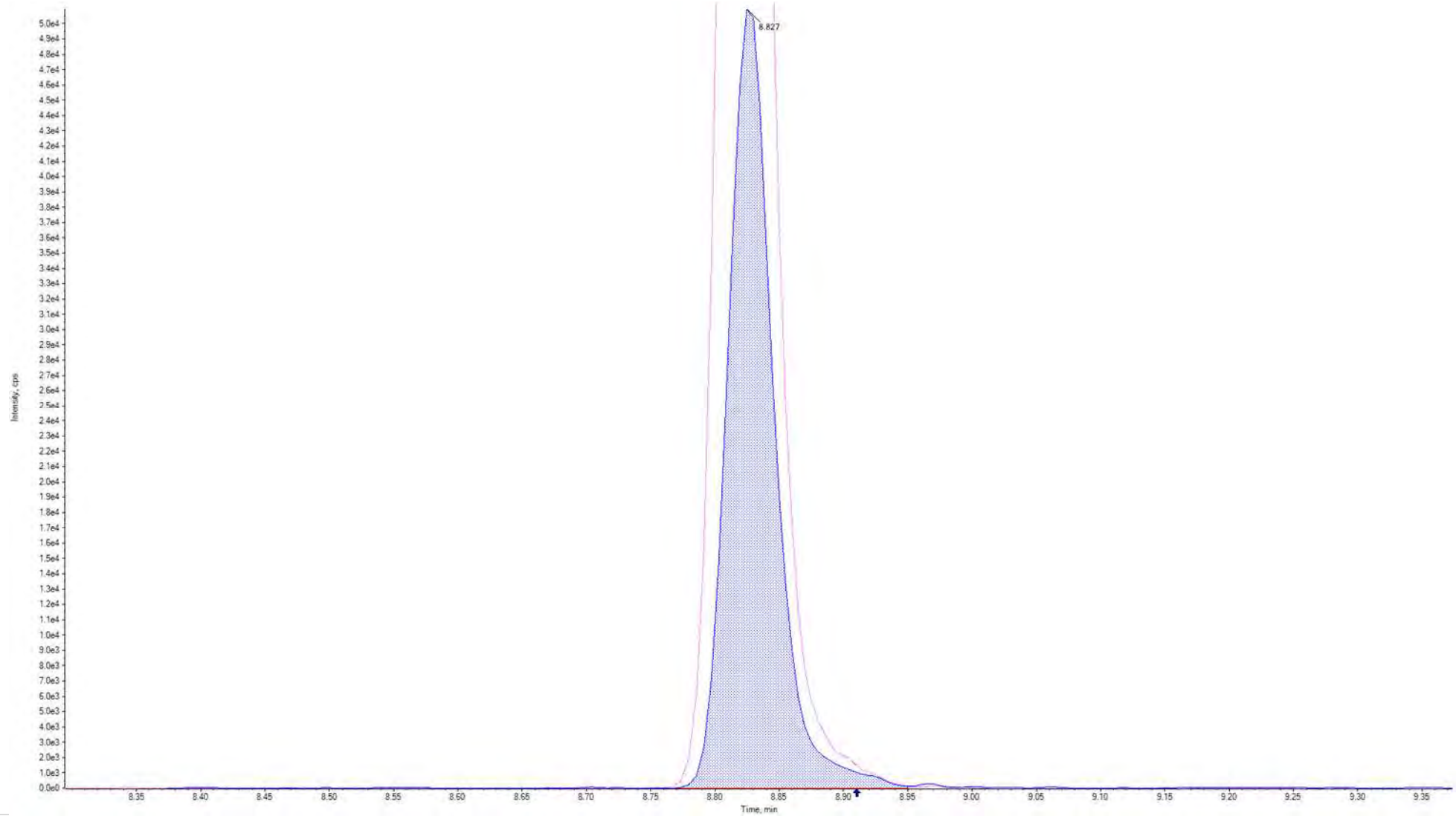
PFDoA_2
Sample: WG1973357-5 S/N:2030.5 Points Across peak:37



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Generated: 9/19/2024 8:04:31 AM

PFTrDA
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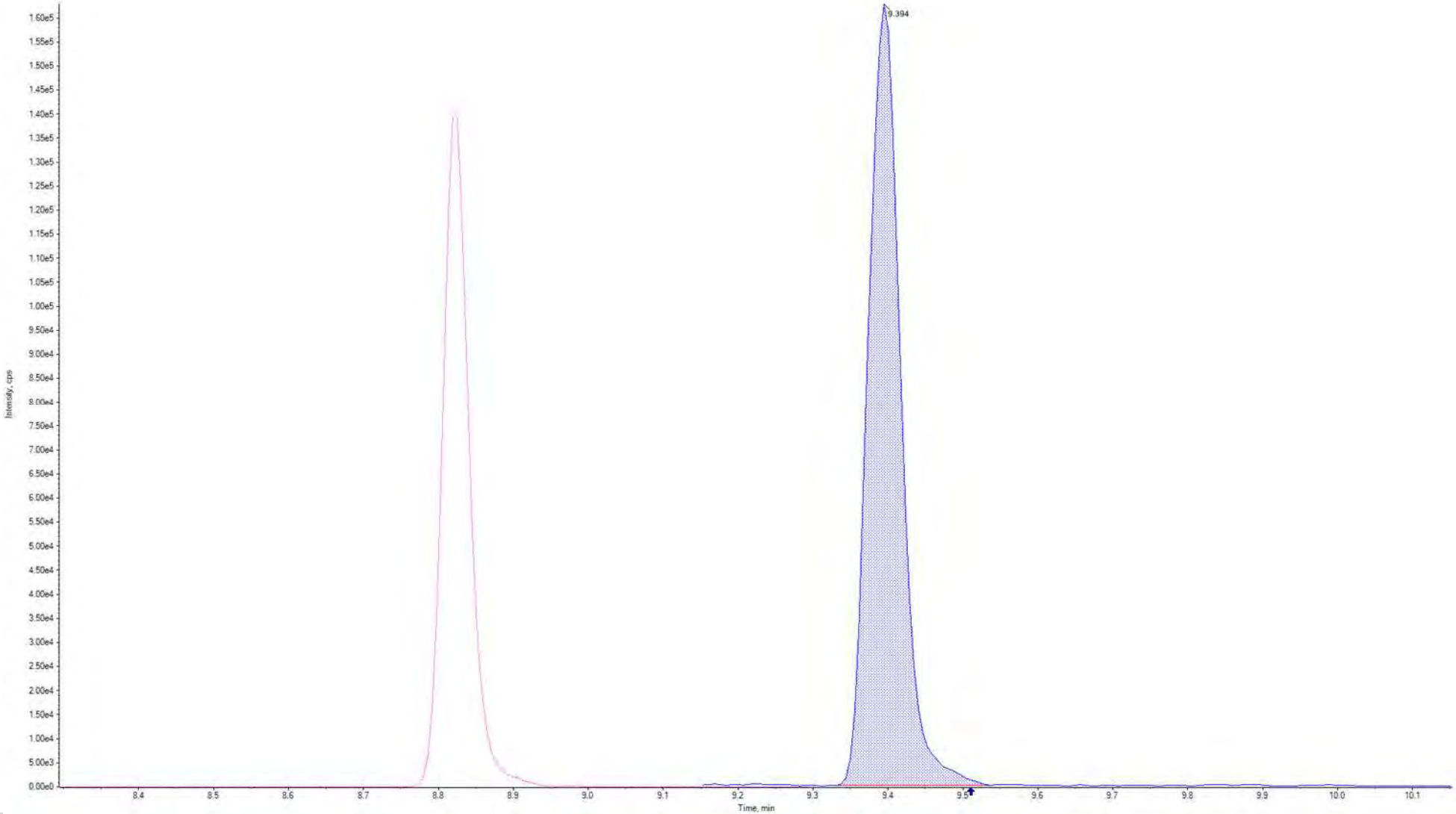

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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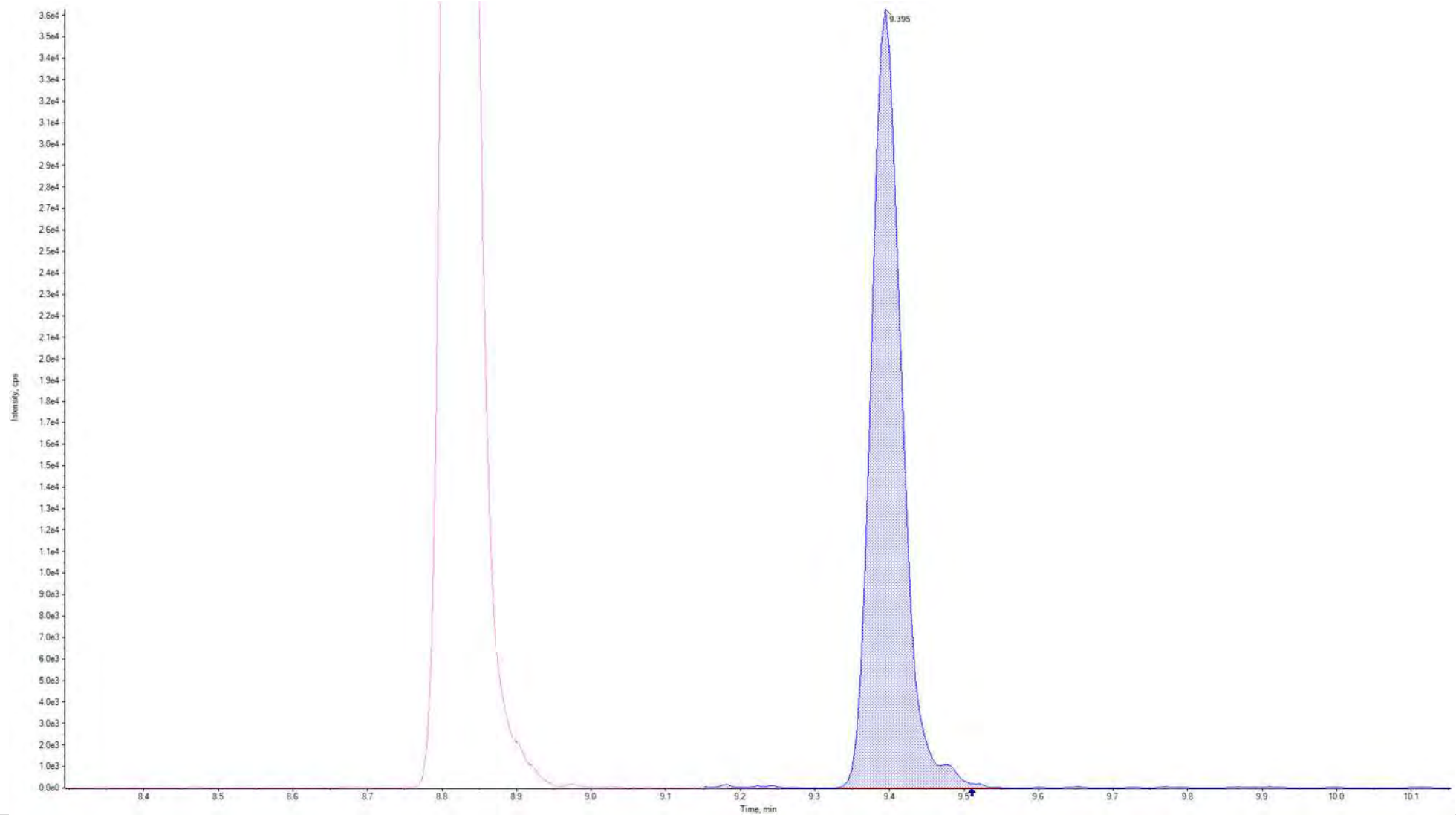
PFTrDA_2
Sample: WG1973357-5 S/N:740313.2 Points Across peak:43



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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Last Altered: 9/19/2024 11:40:51 AM
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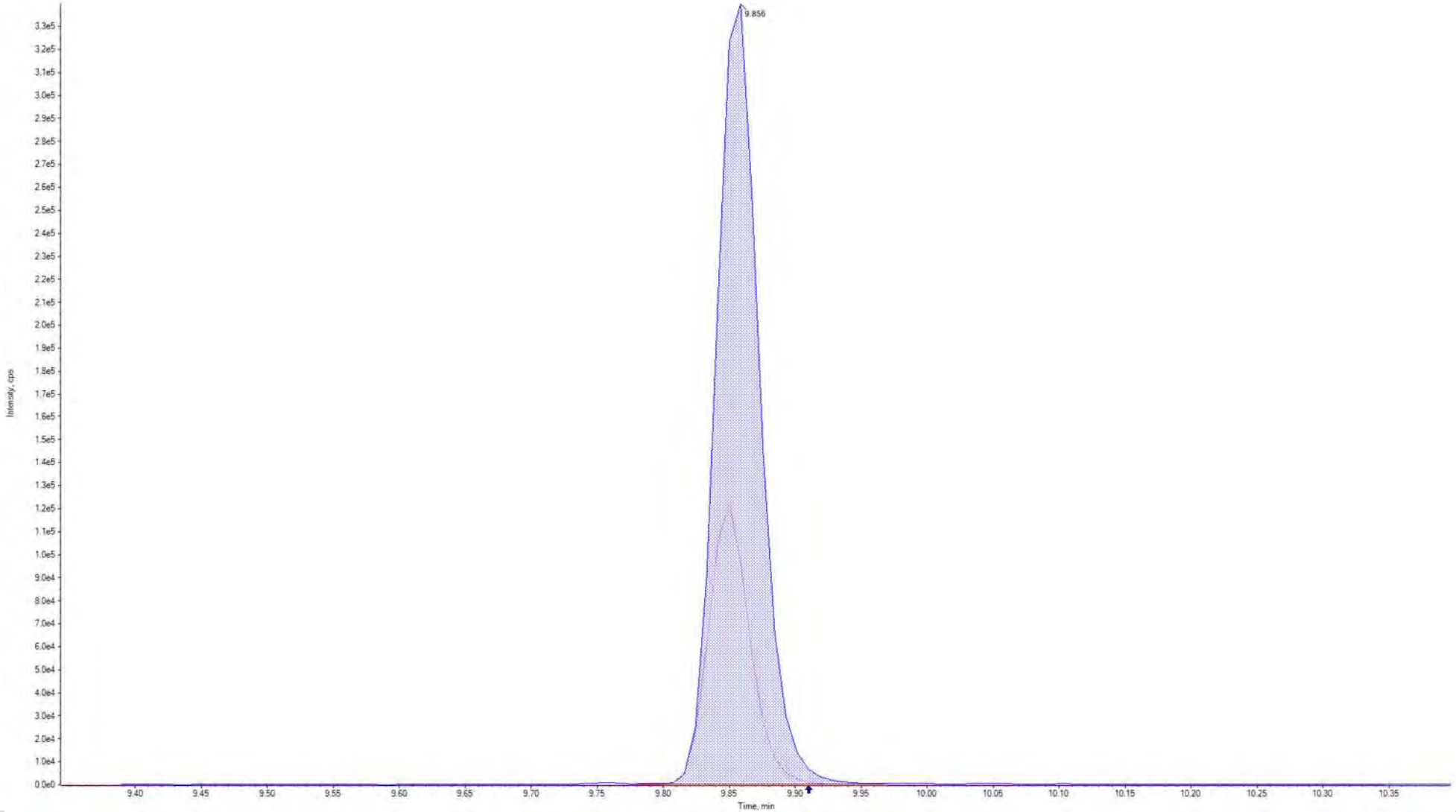
PFTeDA
Sample: WG1973357-5 S/N:1821.2 Points Across peak:23



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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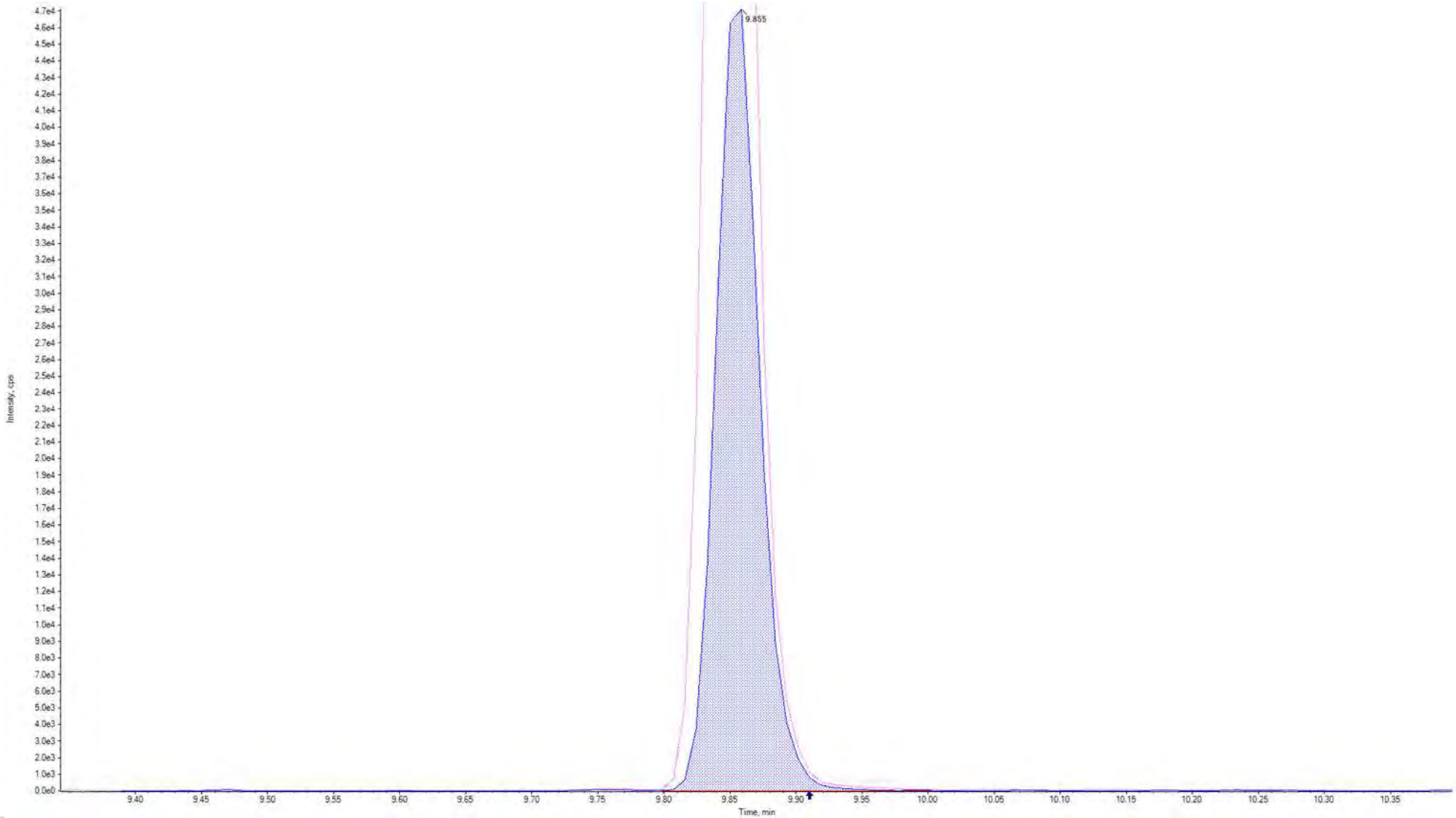
PFTeDA_2
Sample: WG1973357-5 S/N:1634.5 Points Across peak:27



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
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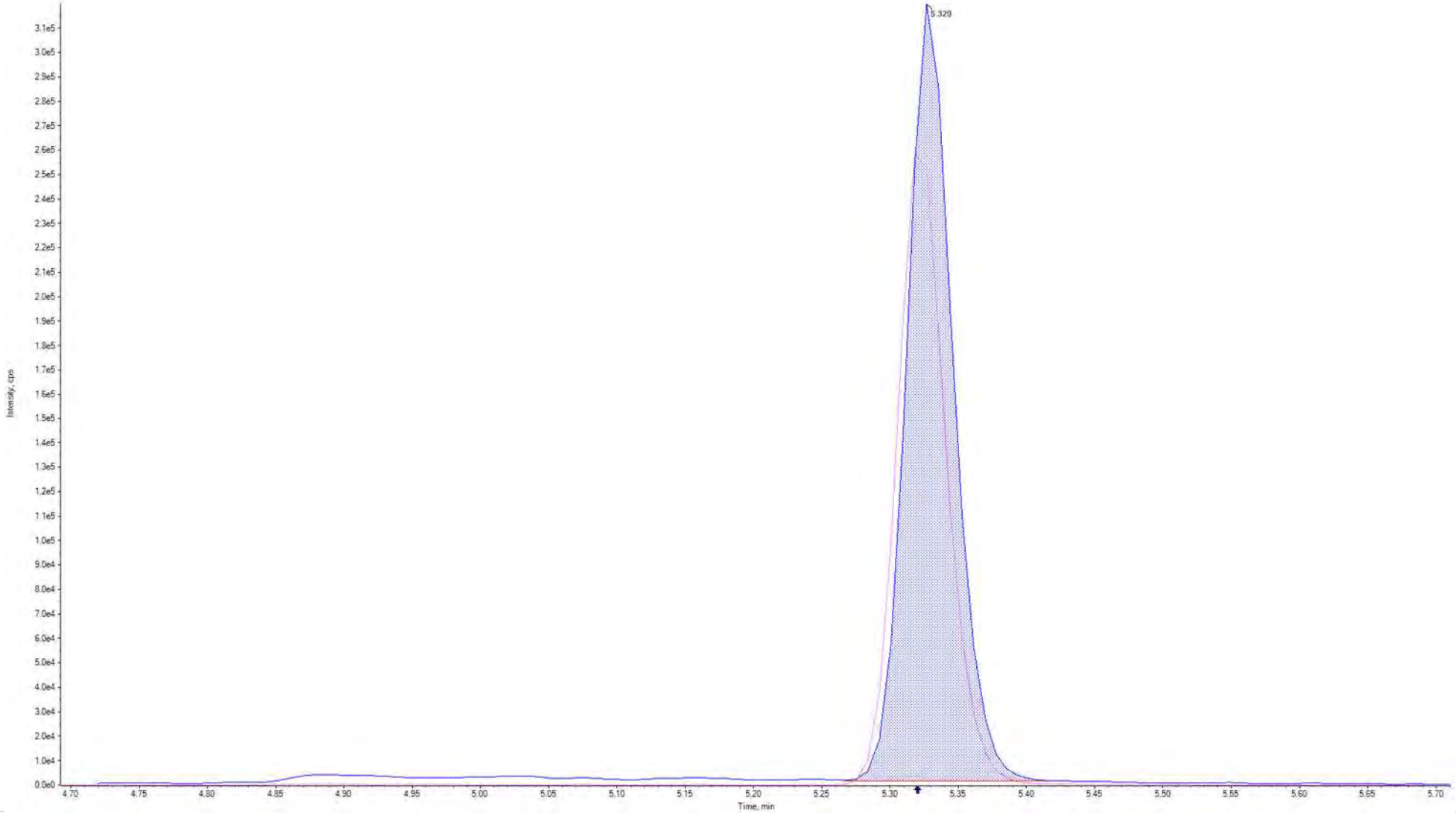
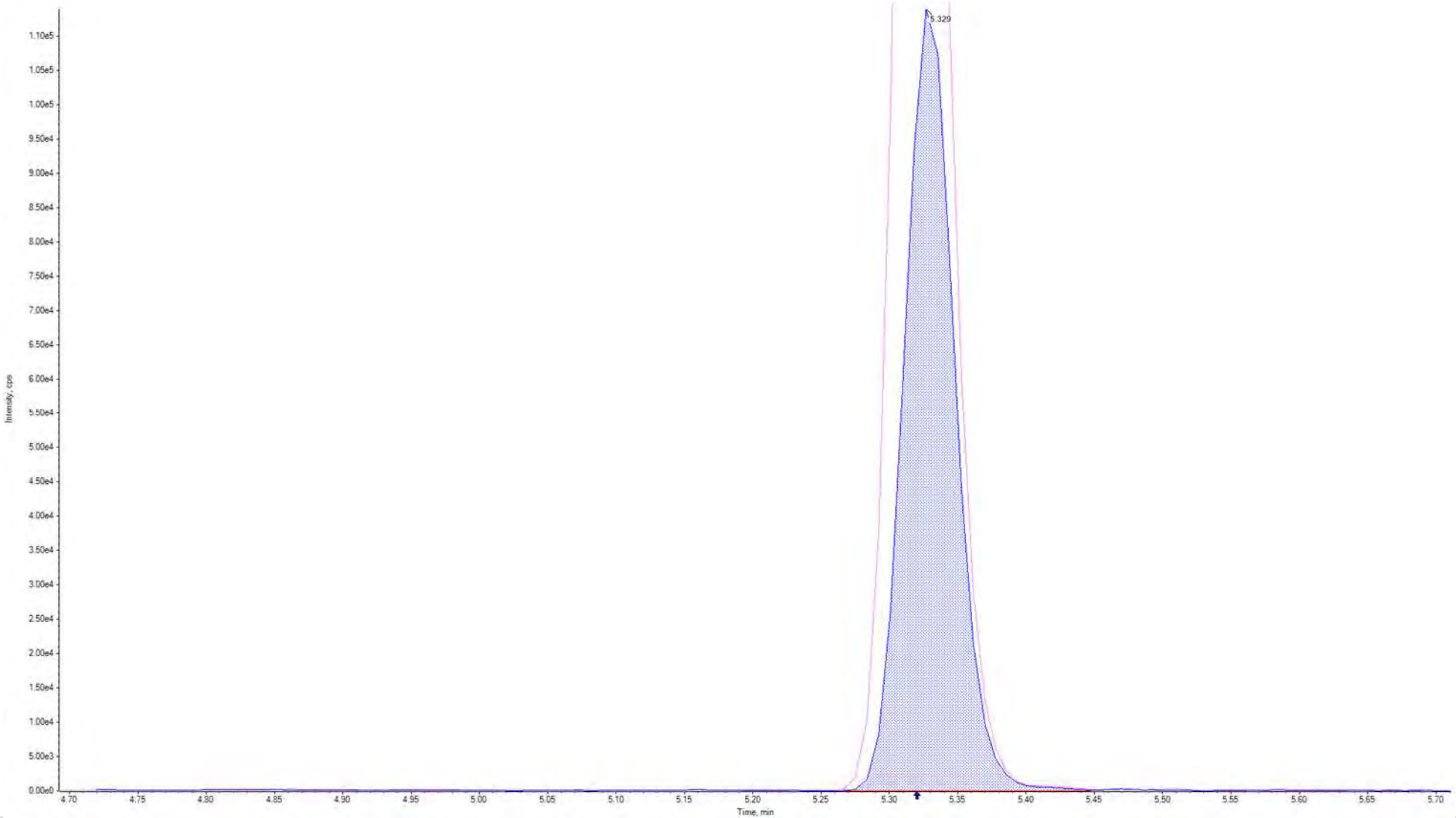
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFBS
Sample: WG1973357-5 S/N:95.7 Points Across peak:19



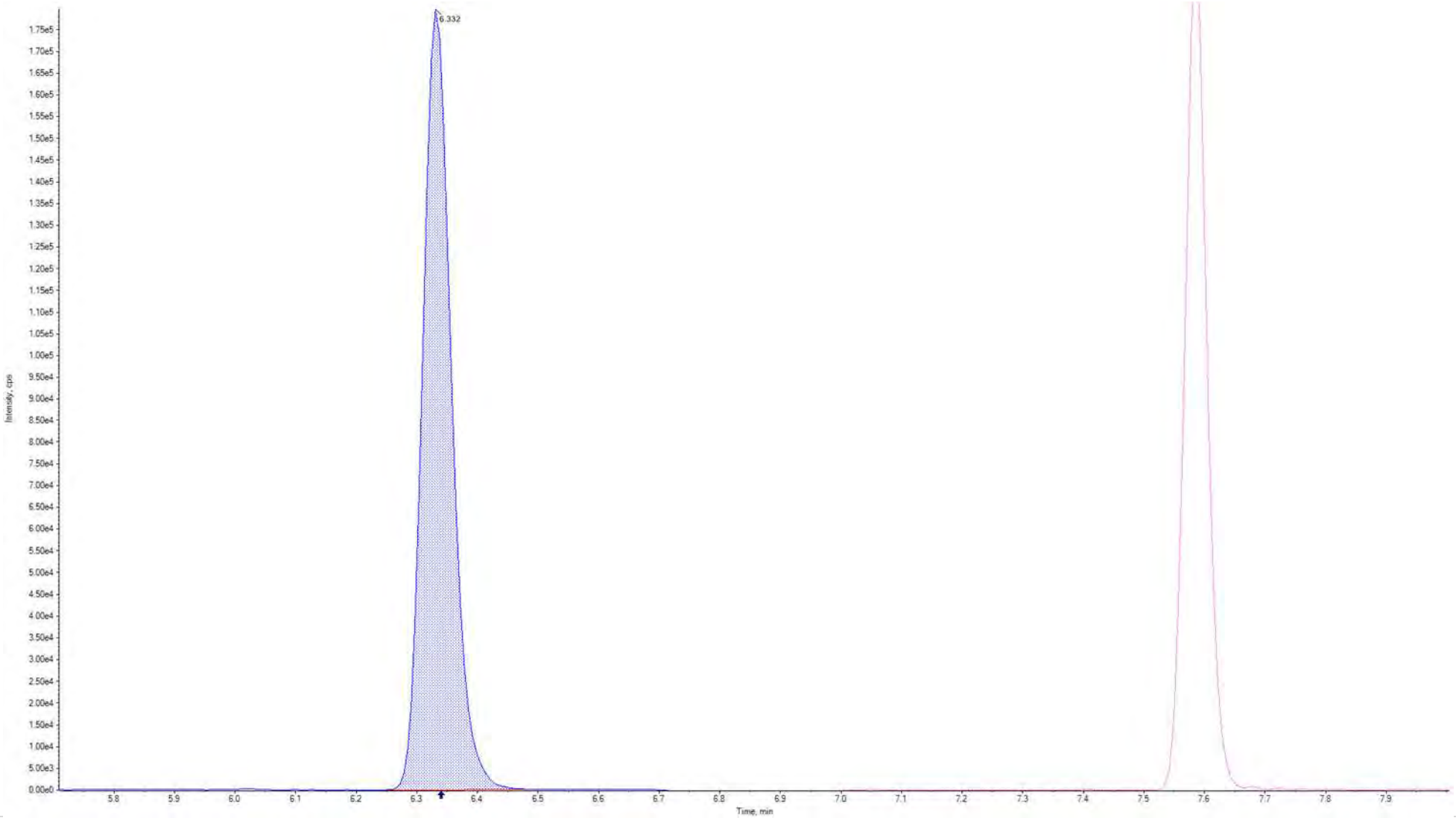
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFBS_2
Sample: WG1973357-5 S/N:2368.1 Points Across peak:24



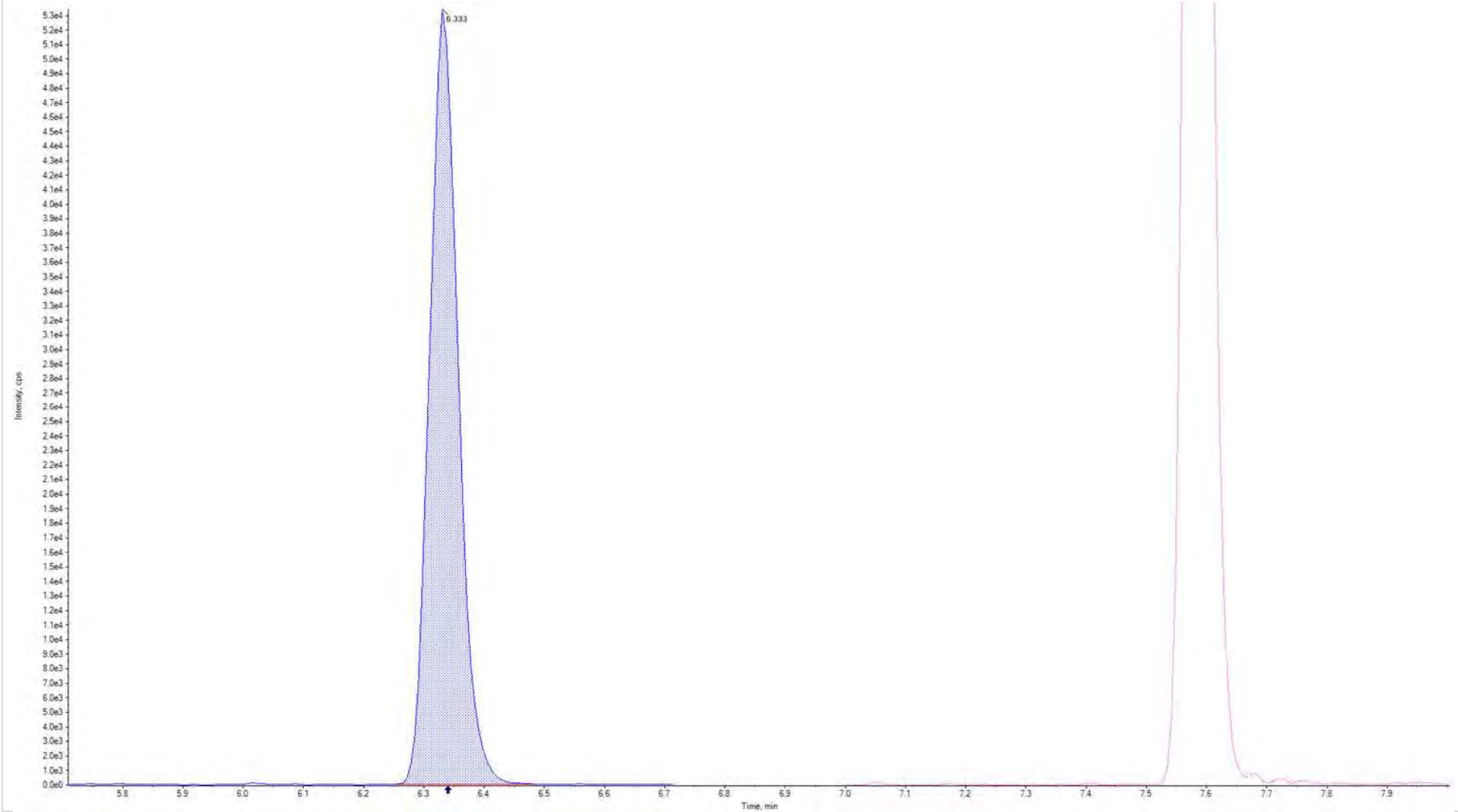
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFPeS
Sample: WG1973357-5 S/N:5479.2 Points Across peak:41



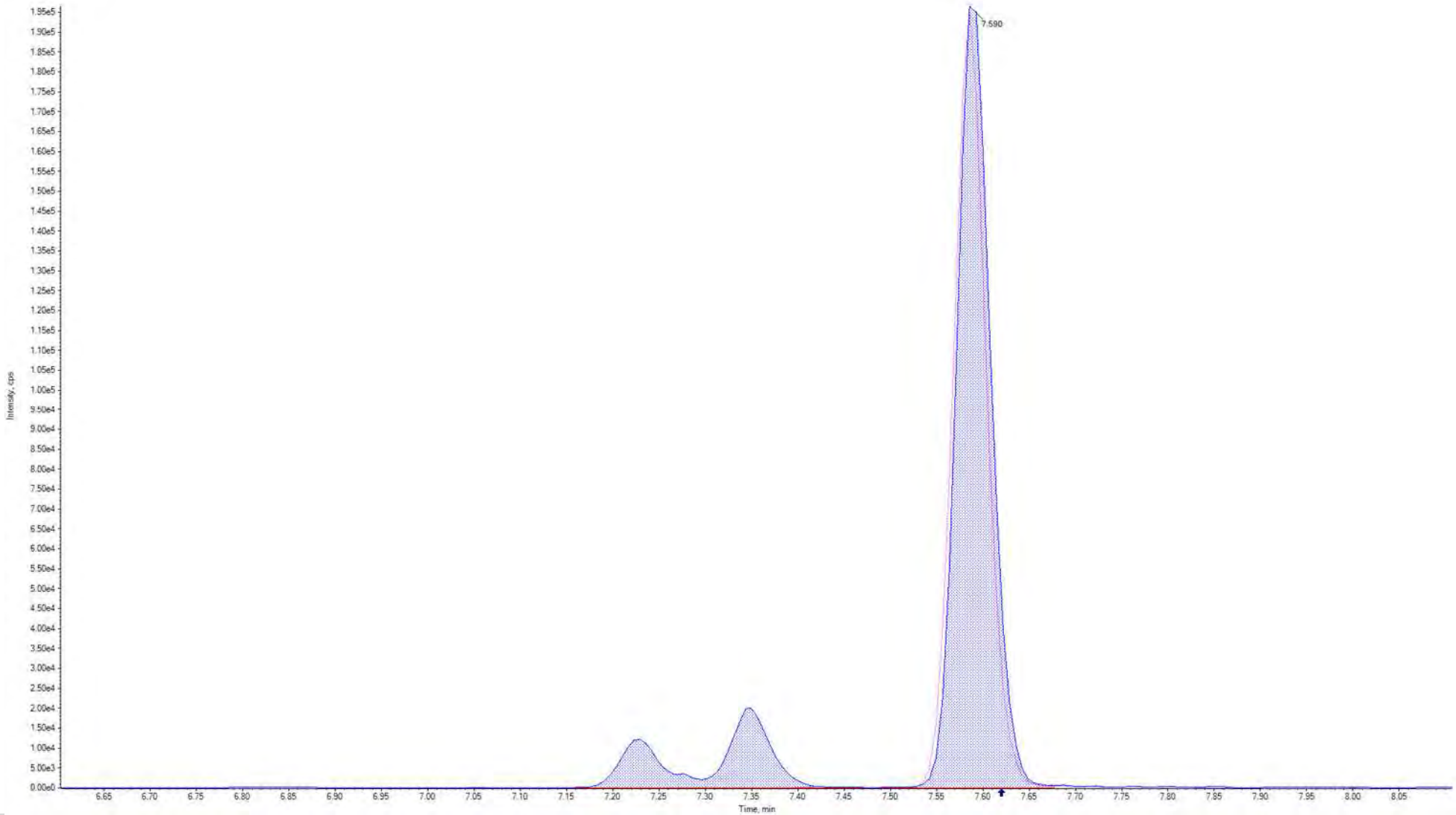
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFPeS_2
Sample: WG1973357-5 S/N:6493.6 Points Across peak:39



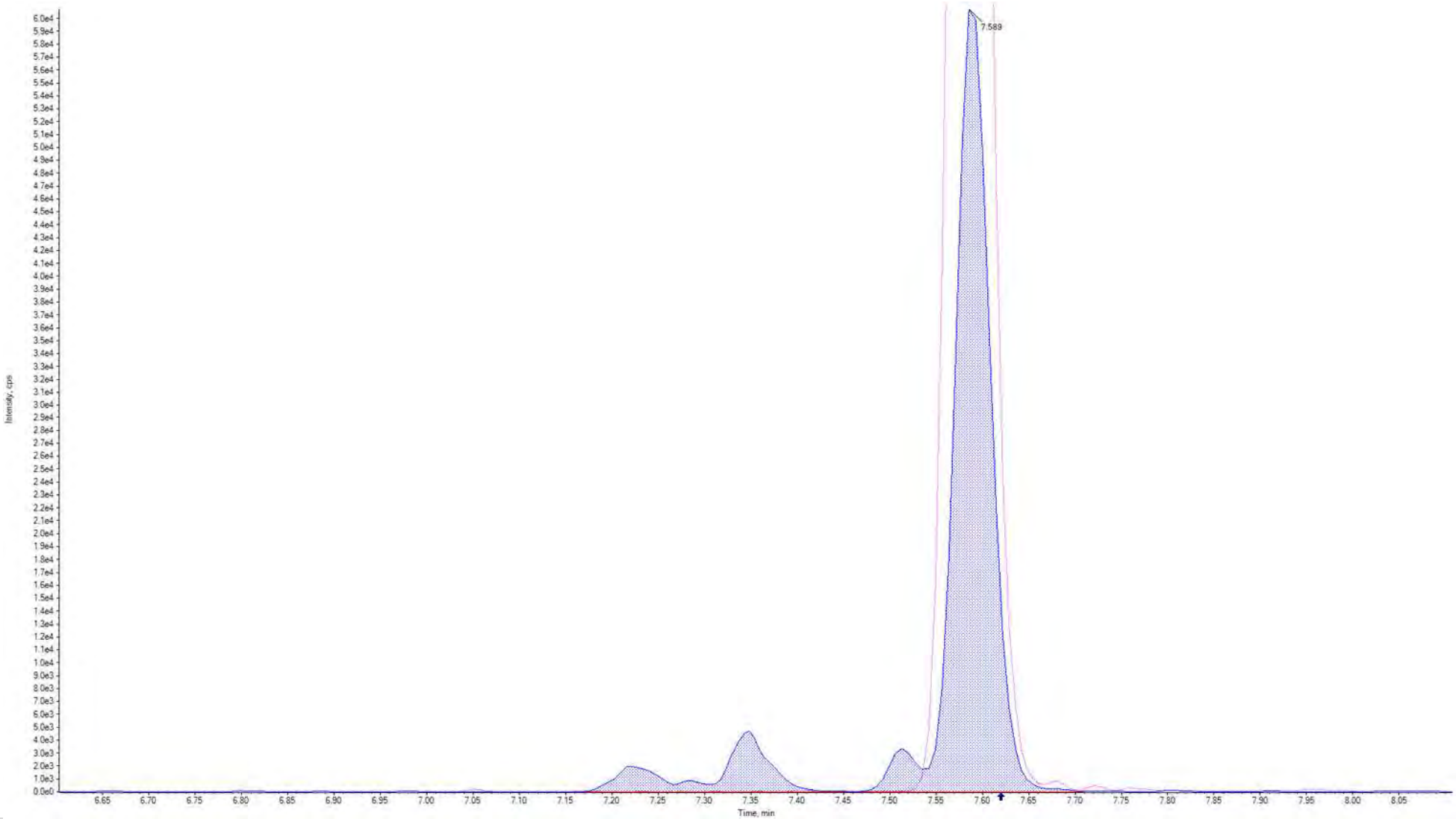
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHxS
Sample: WG1973357-5 S/N:20345.0 Points Across peak:86



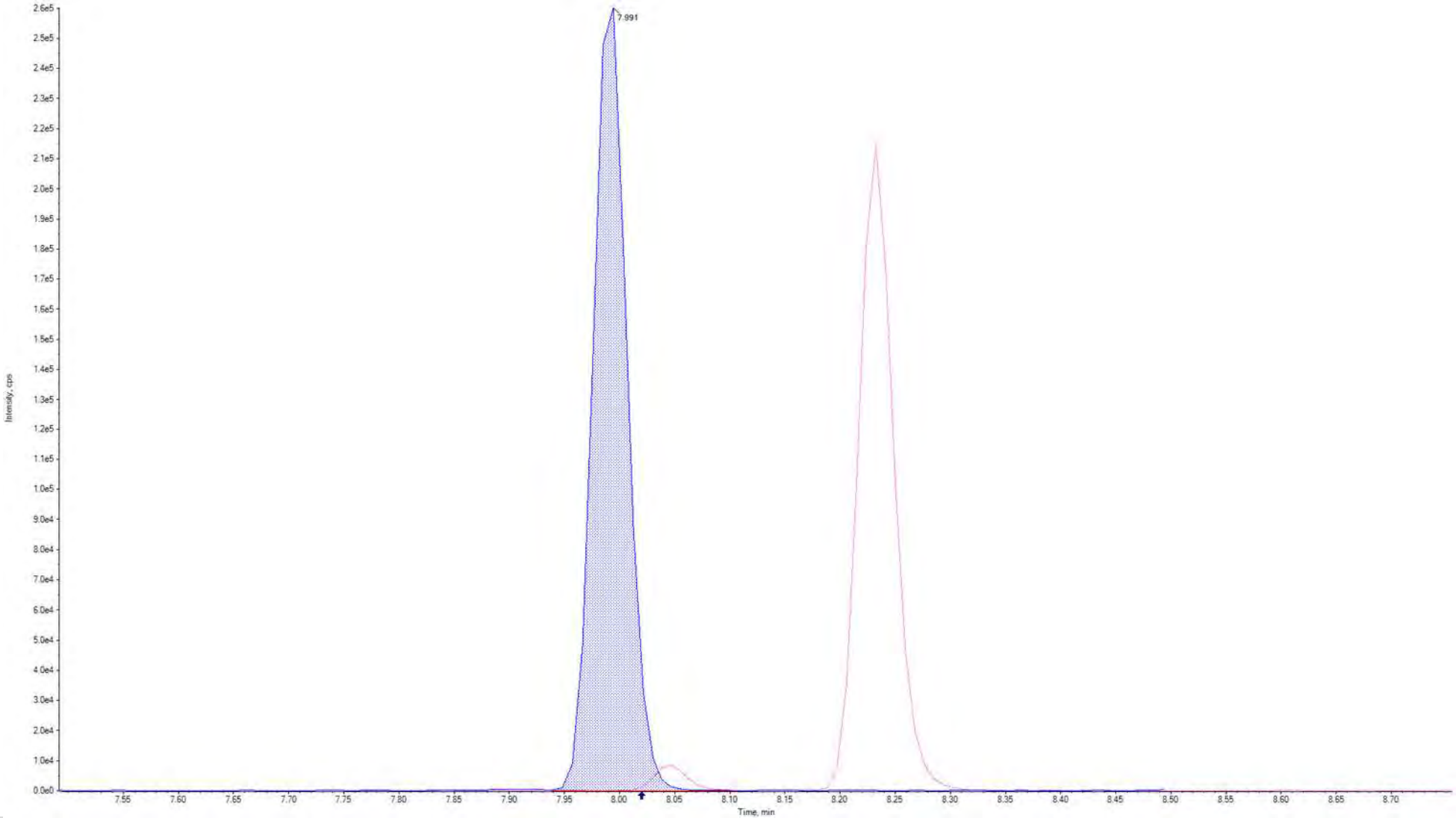
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHxS_2
Sample: WG1973357-5 S/N:689037.5 Points Across peak:88



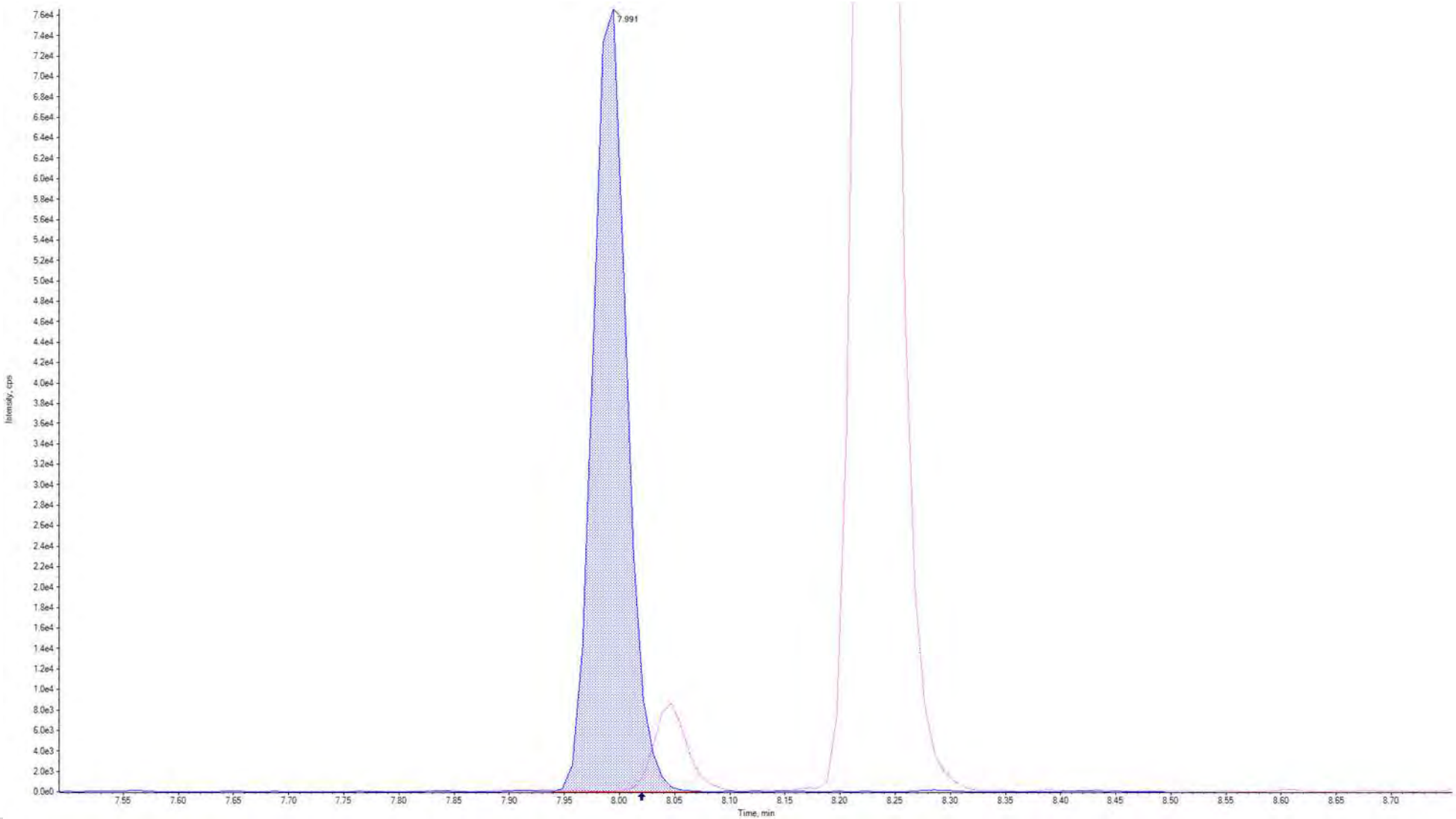
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHpS
Sample: WG1973357-5 S/N:5229.2 Points Across peak:21



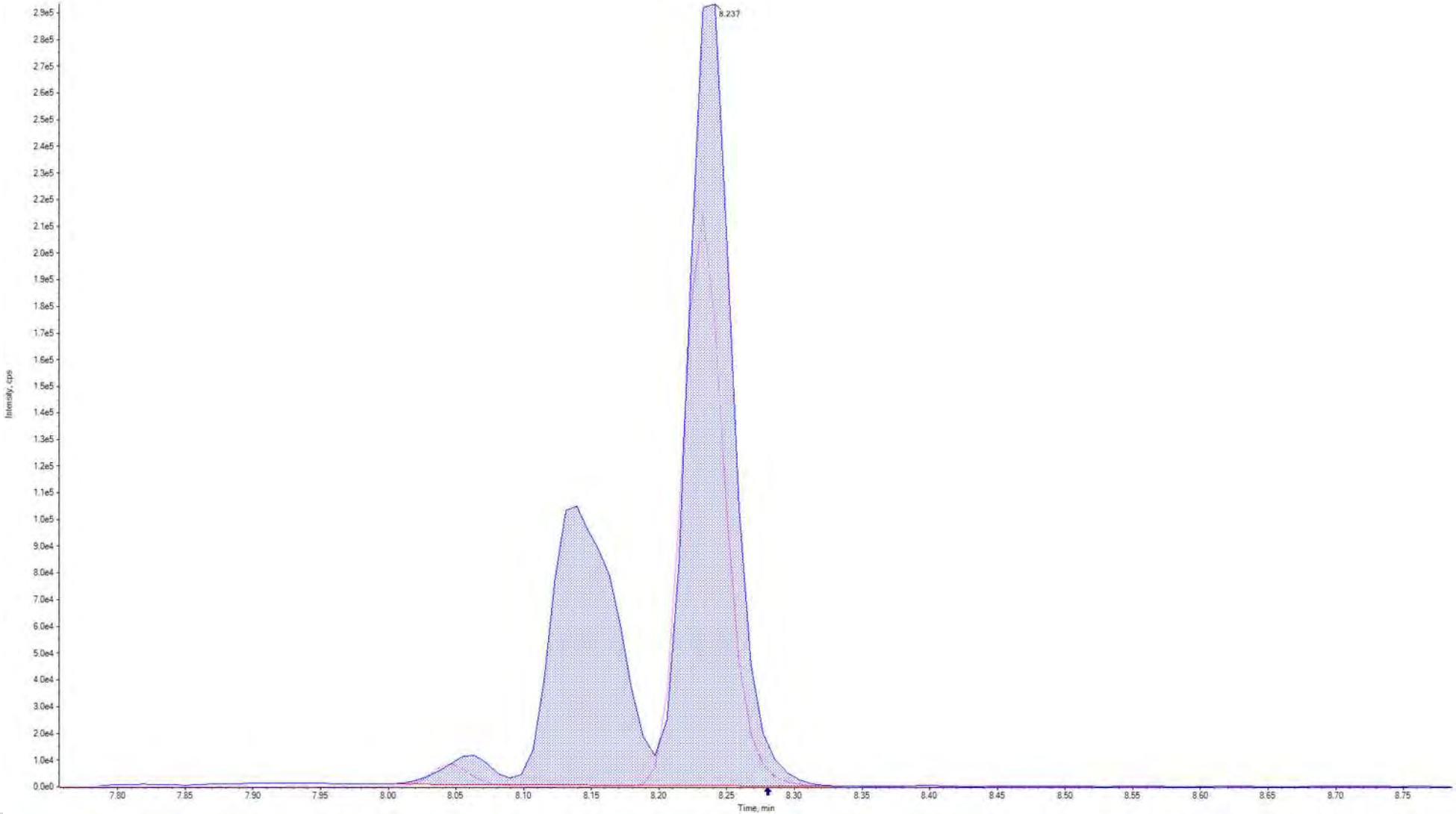
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFHpS_2
Sample: WG1973357-5 S/N:609550.5 Points Across peak:17



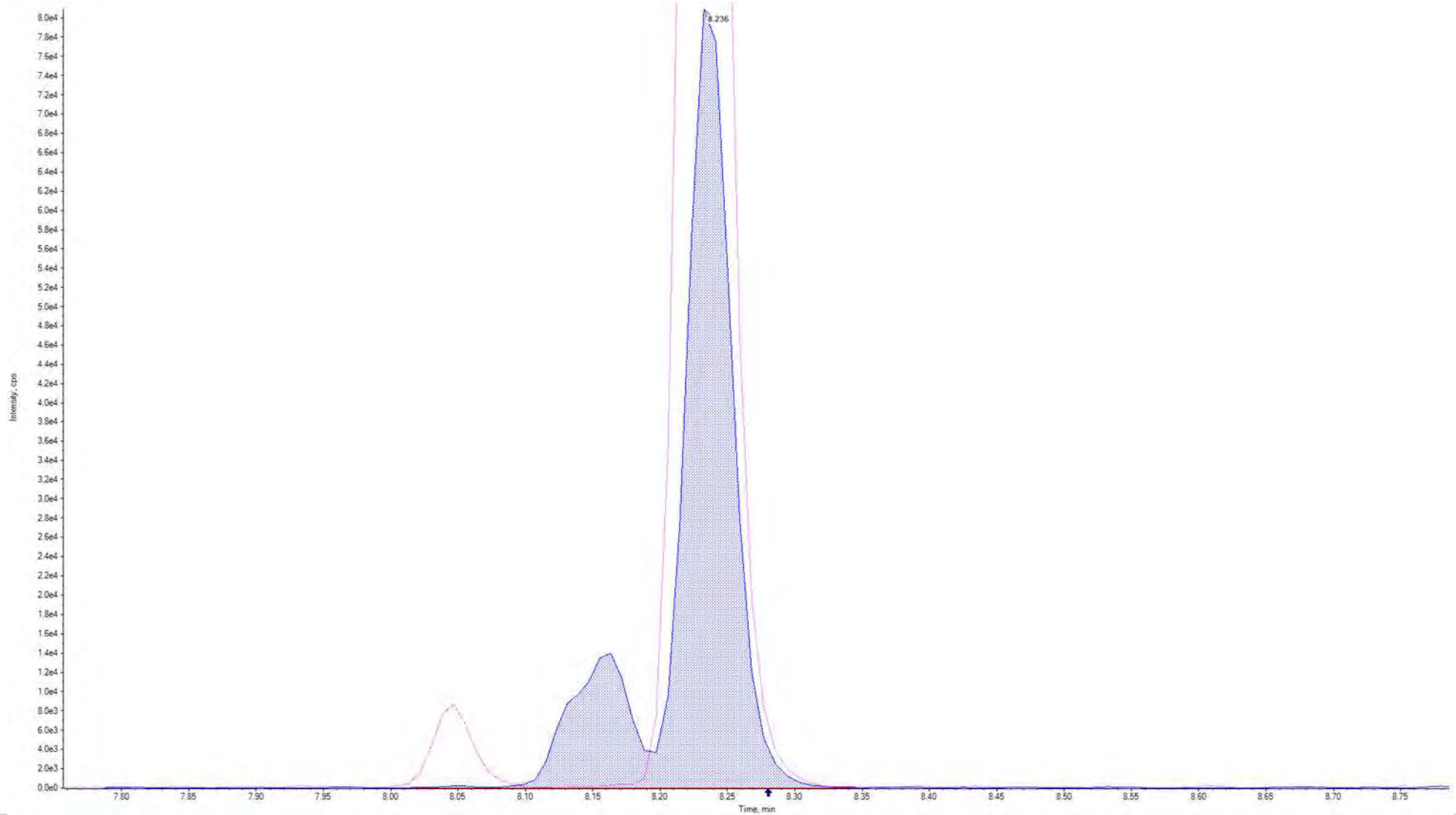
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOS
Sample: WG1973357-5 S/N:1134.3 Points Across peak:41



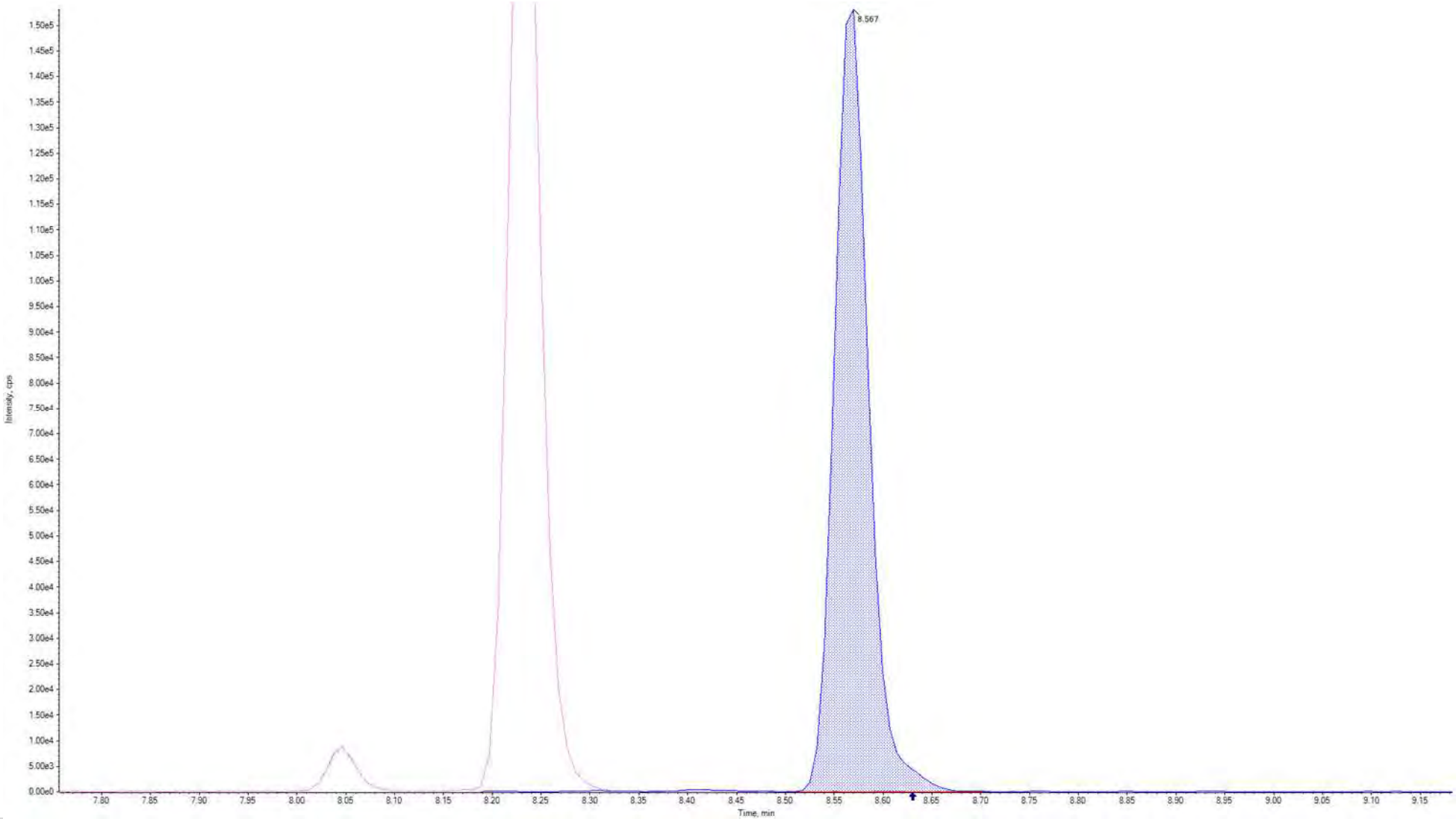
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOS_2
Sample: WG1973357-5 S/N:9370829.6 Points Across peak:43



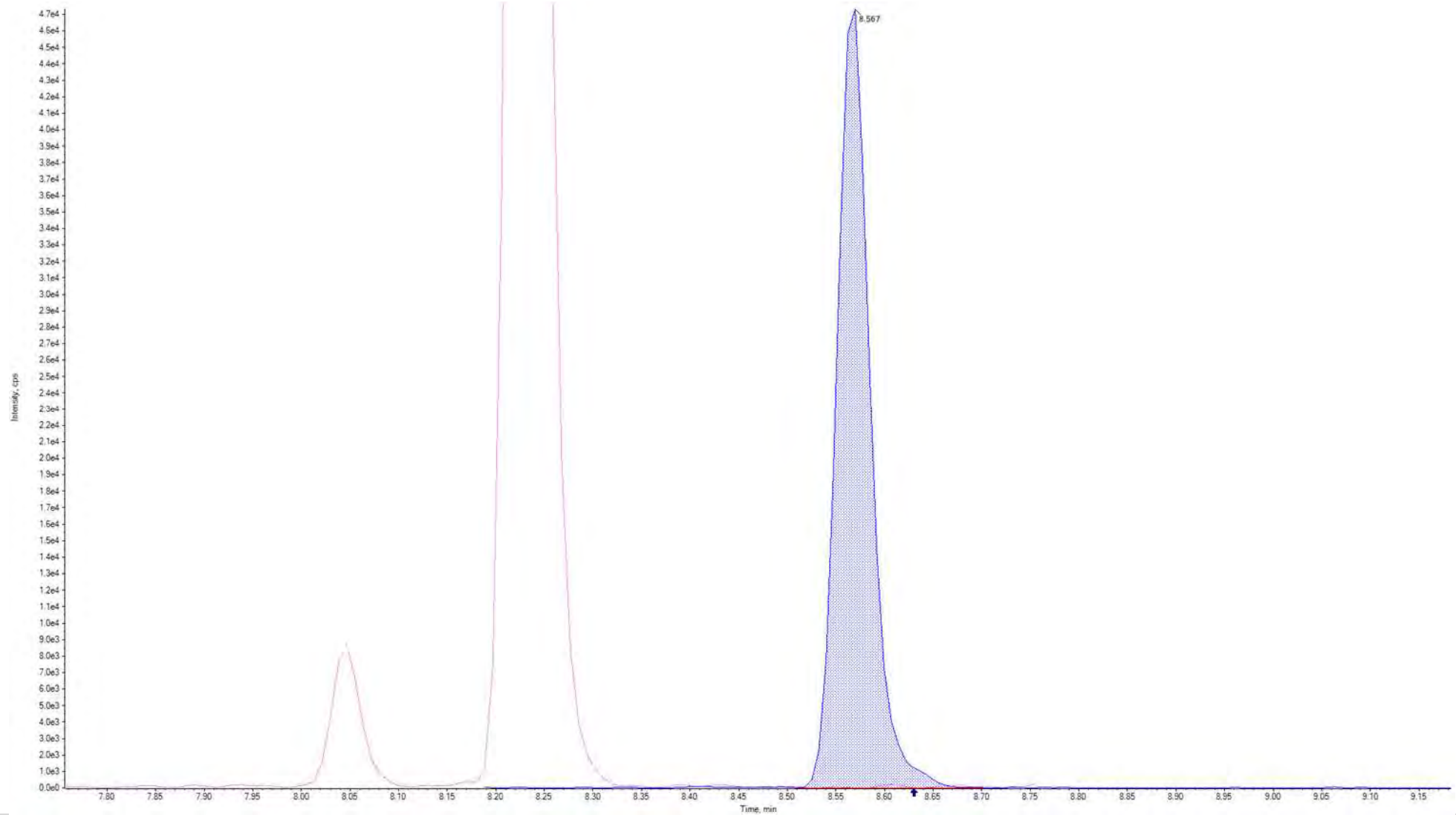
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFNS
Sample: WG1973357-5 S/N:6728.6 Points Across peak:32



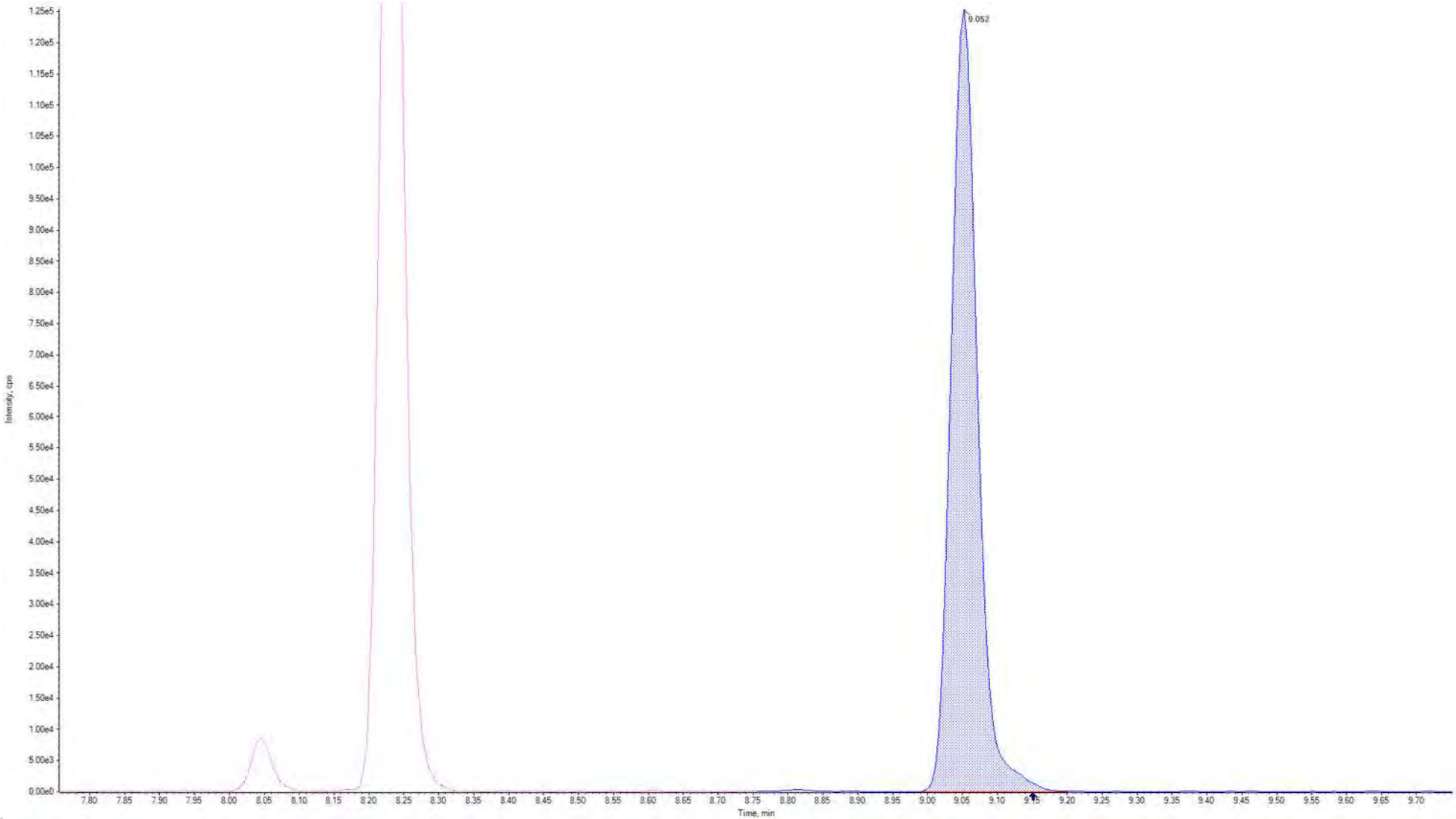
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFNS_2
Sample: WG1973357-5 S/N:2245.8 Points Across peak:31



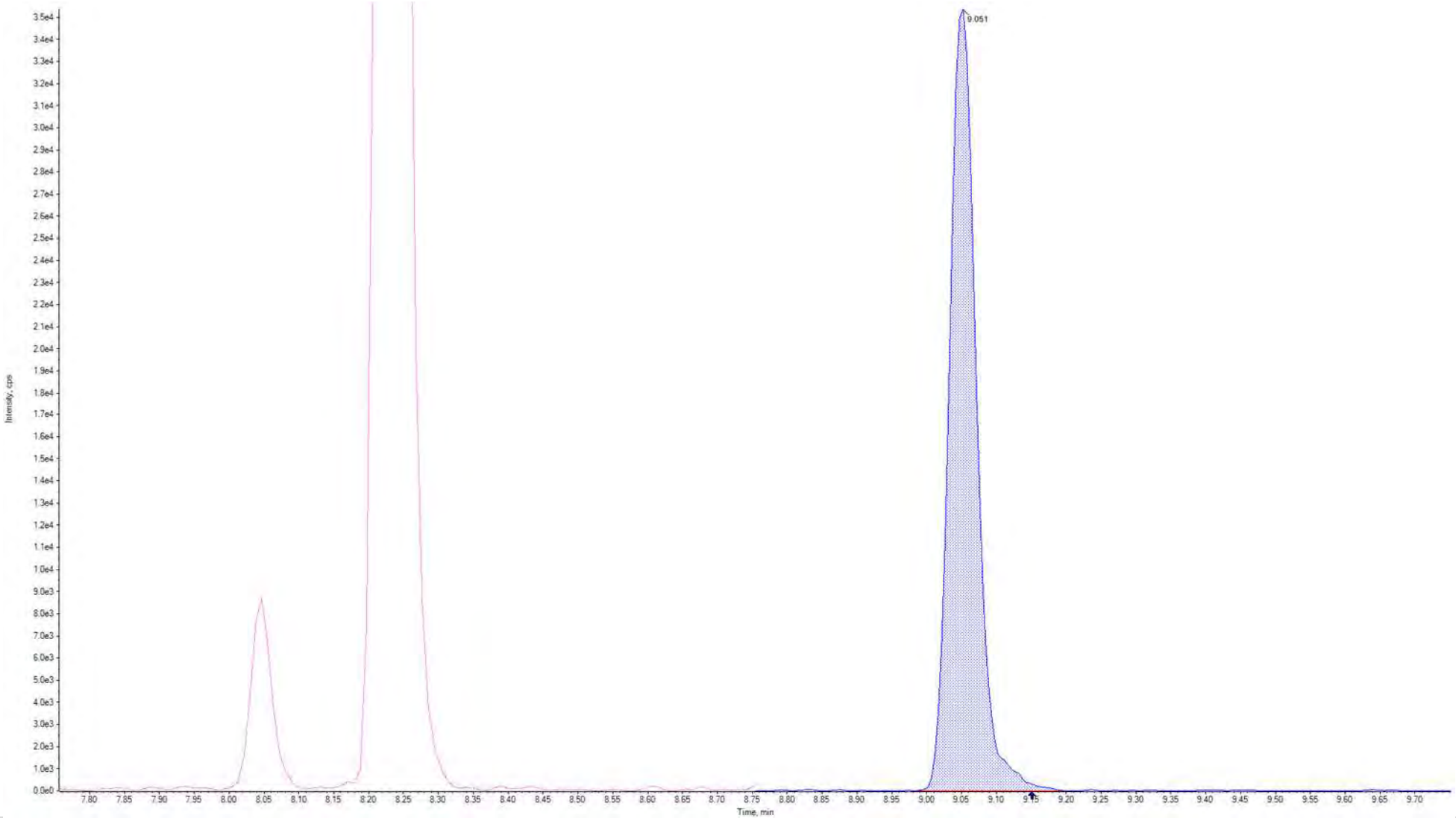
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDS
Sample: WG1973357-5 S/N:218334.5 Points Across peak:44



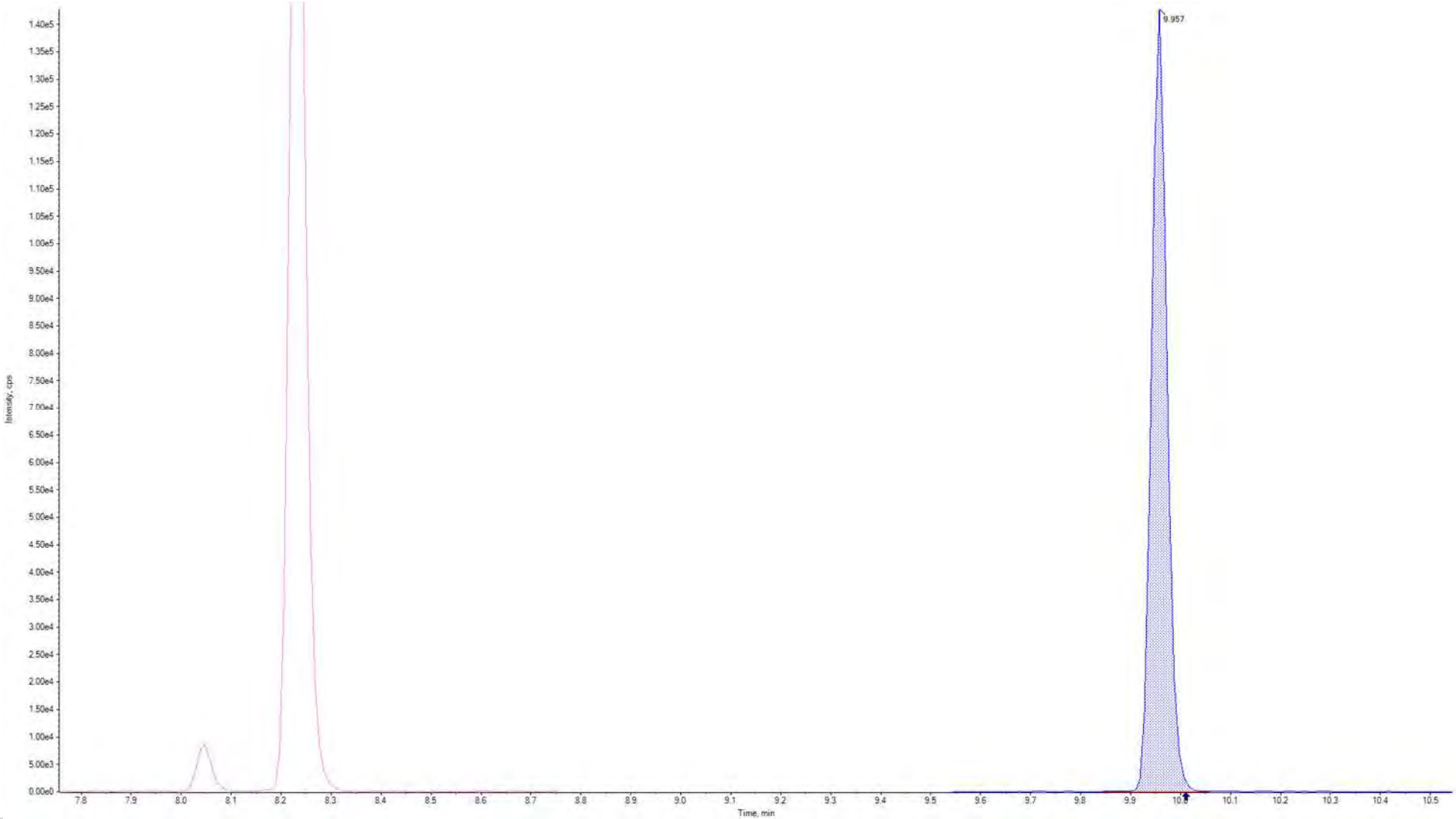
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDS_2
Sample: WG1973357-5 S/N:2374.4 Points Across peak:45



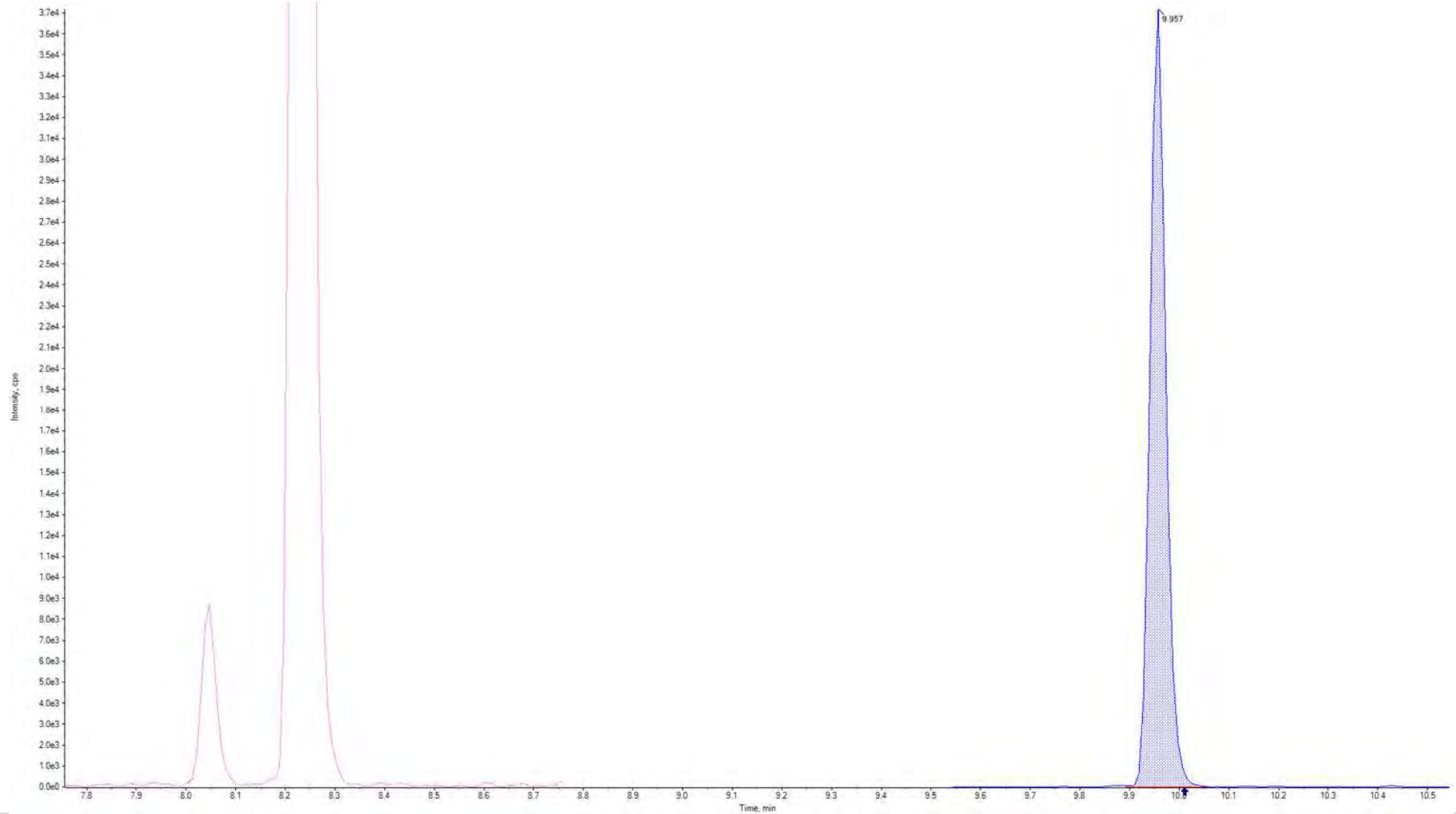
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoS
Sample: WG1973357-5 S/N:26563.0 Points Across peak:27



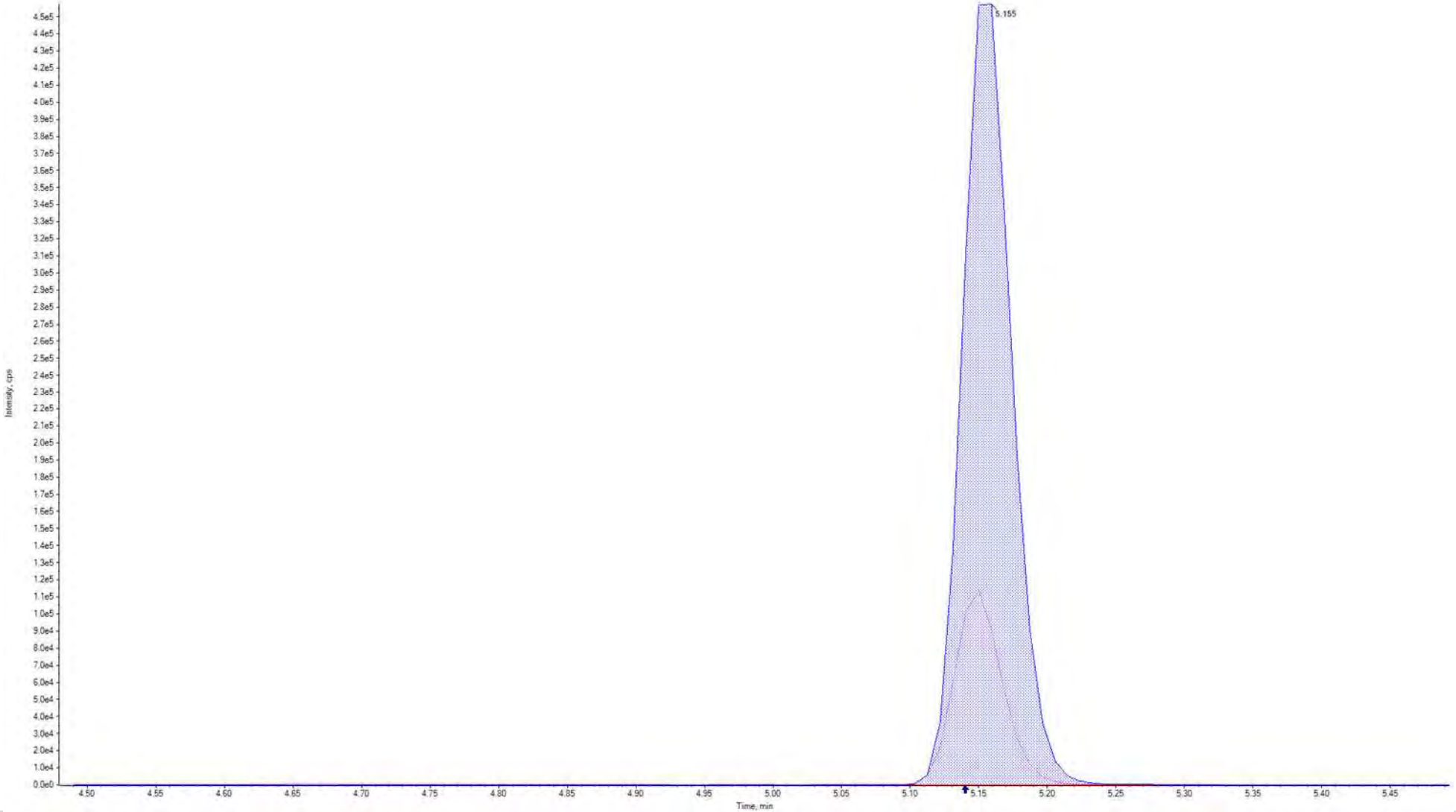
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFDoS_2
Sample: WG1973357-5 S/N:4072.0 Points Across peak:18



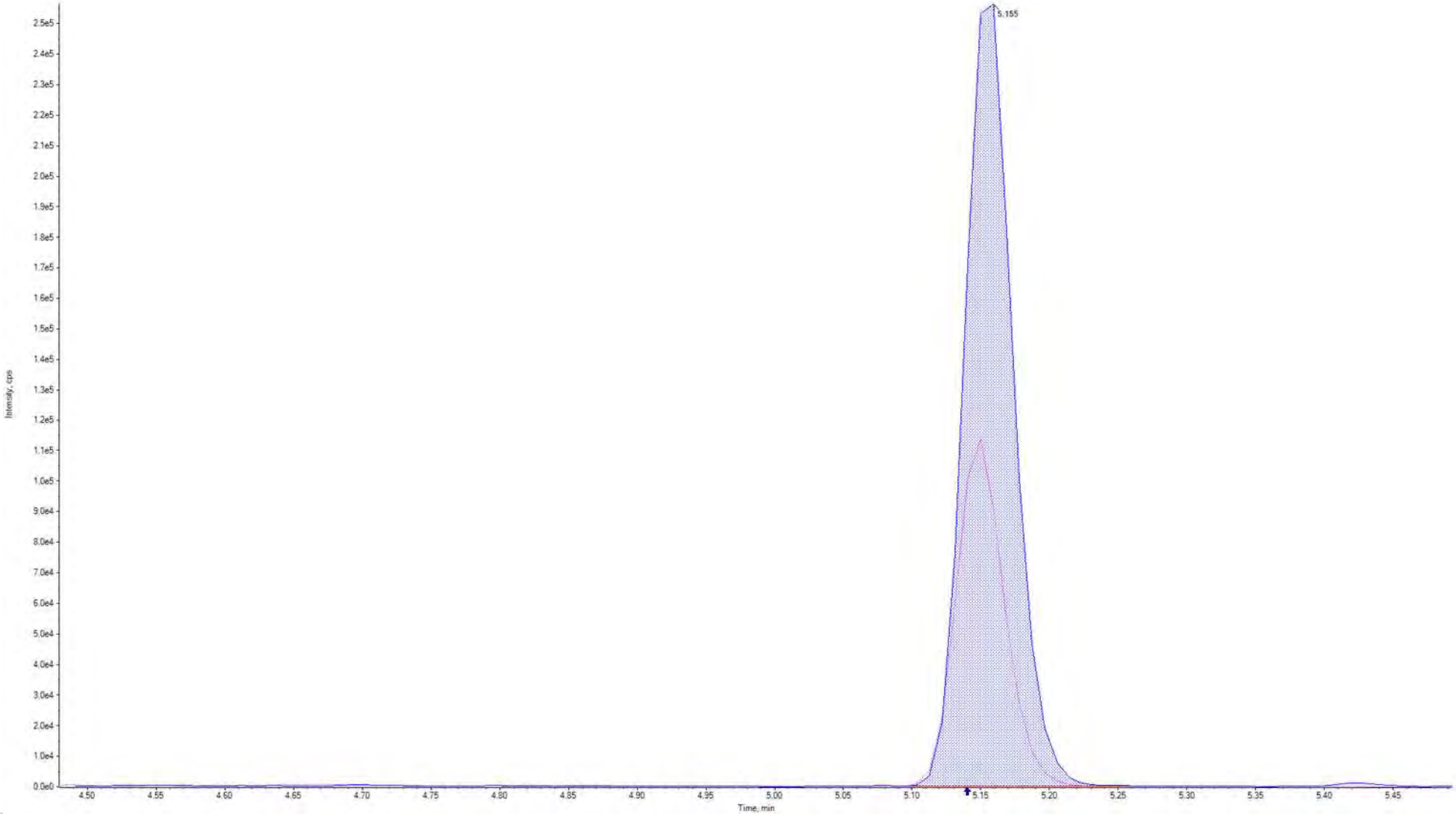
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

4:2FTS
Sample: WG1973357-5 S/N:246516.6 Points Across peak:23



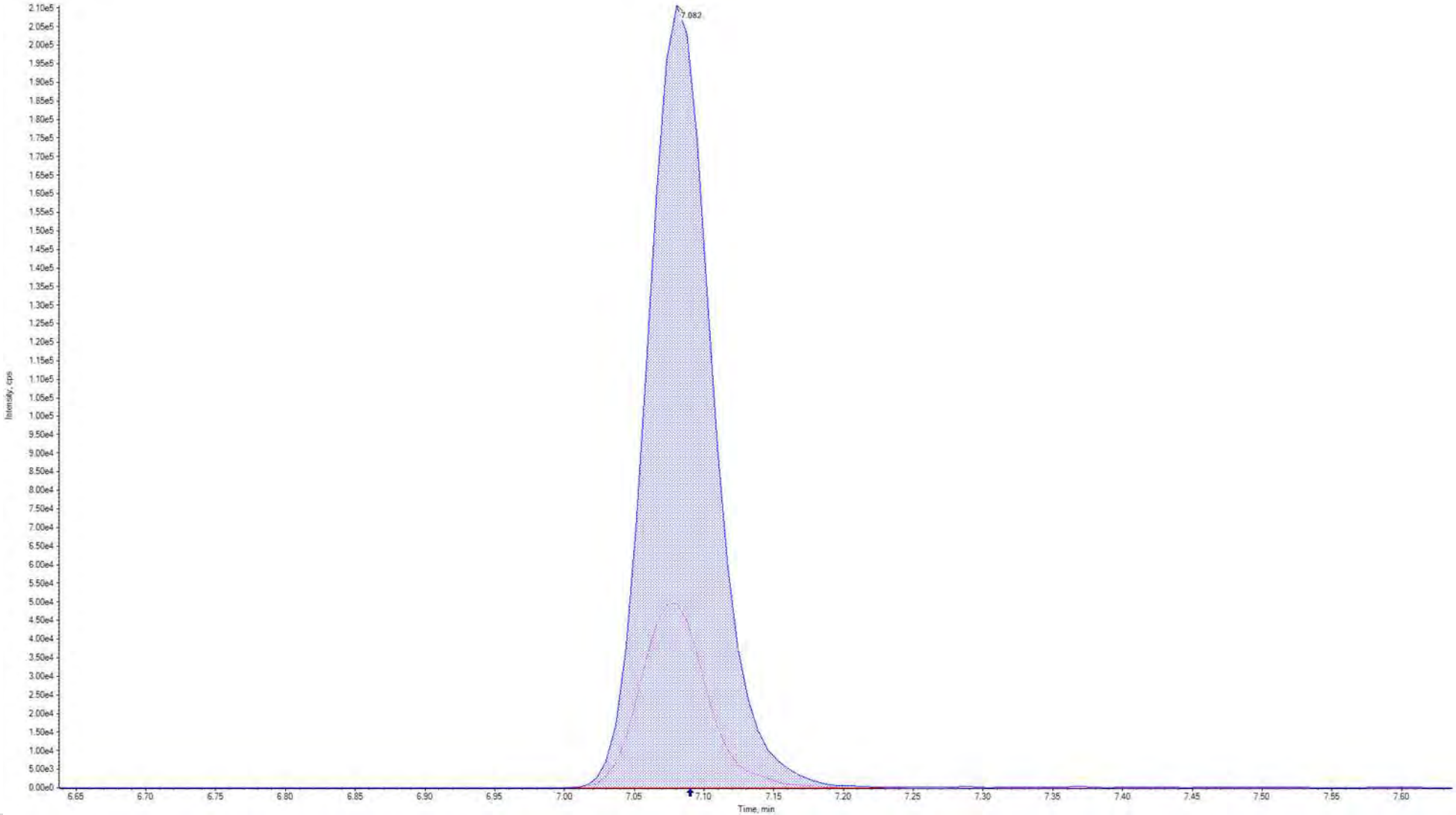
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

4:2FTS_2
Sample: WG1973357-5 S/N:1510.6 Points Across peak:25



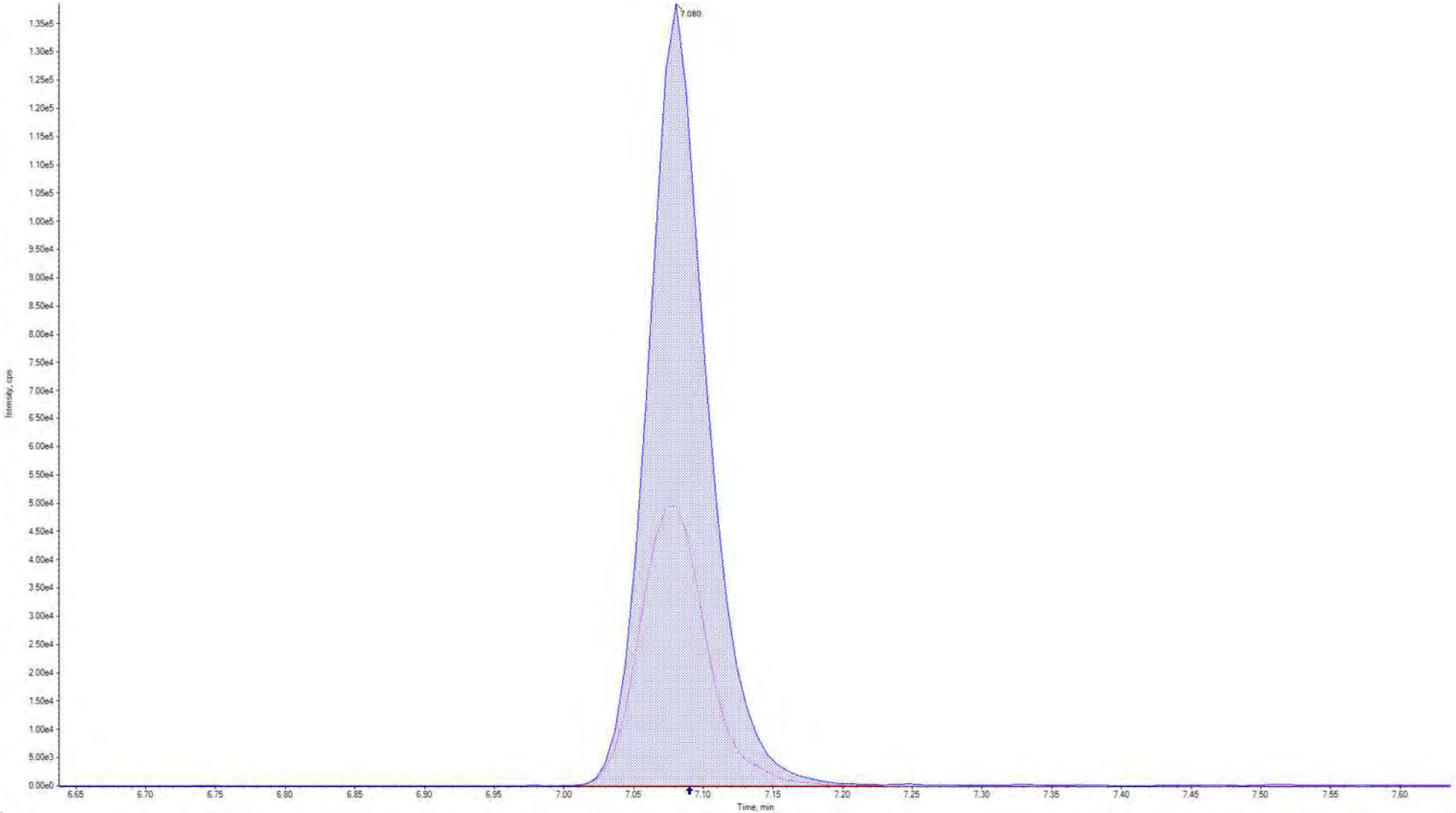
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

6:2FTS
Sample: WG1973357-5 S/N:2228.1 Points Across peak:37



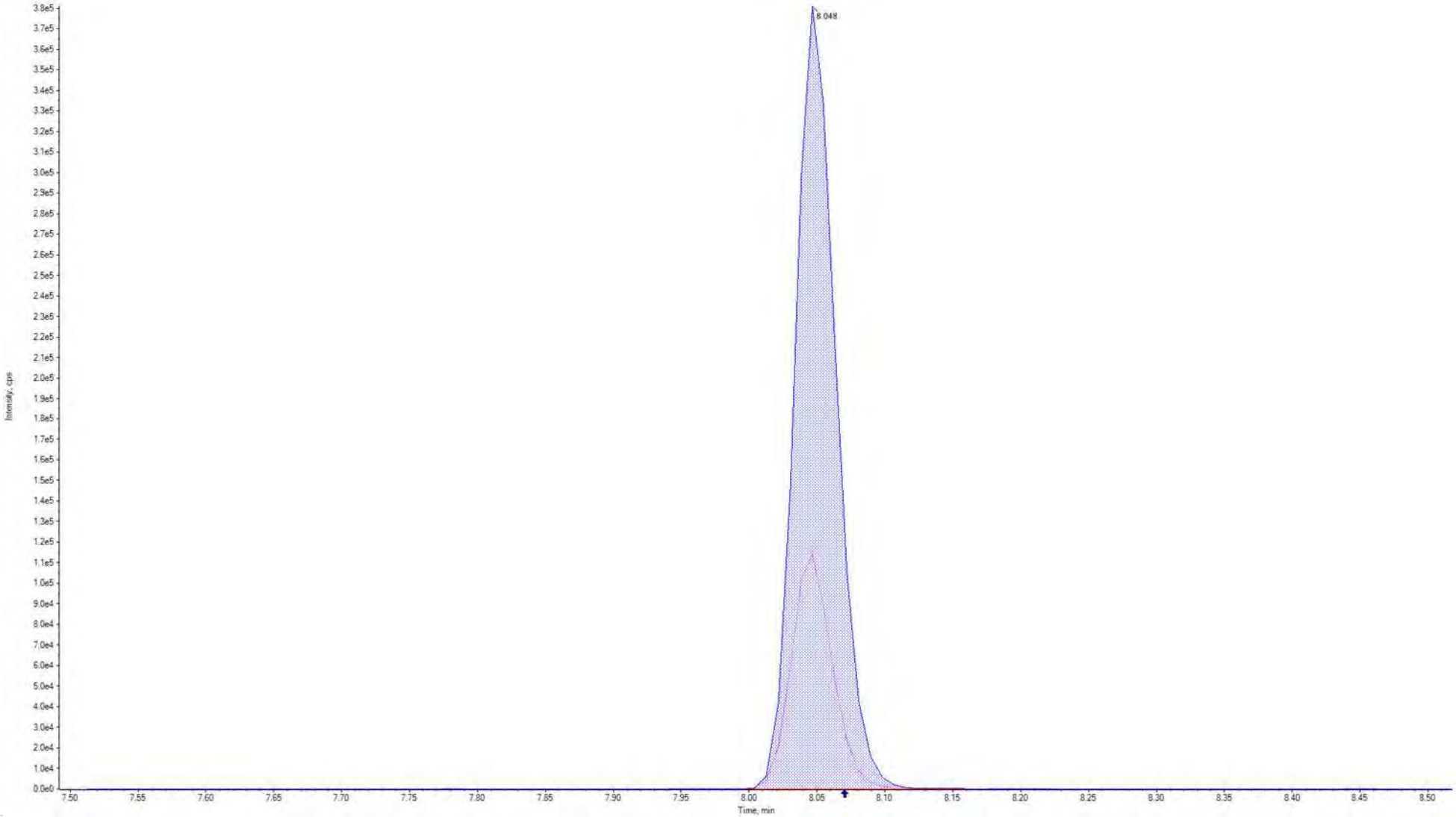
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

6:2FTS_2
Sample: WG1973357-5 S/N:1940805.4 Points Across peak:34



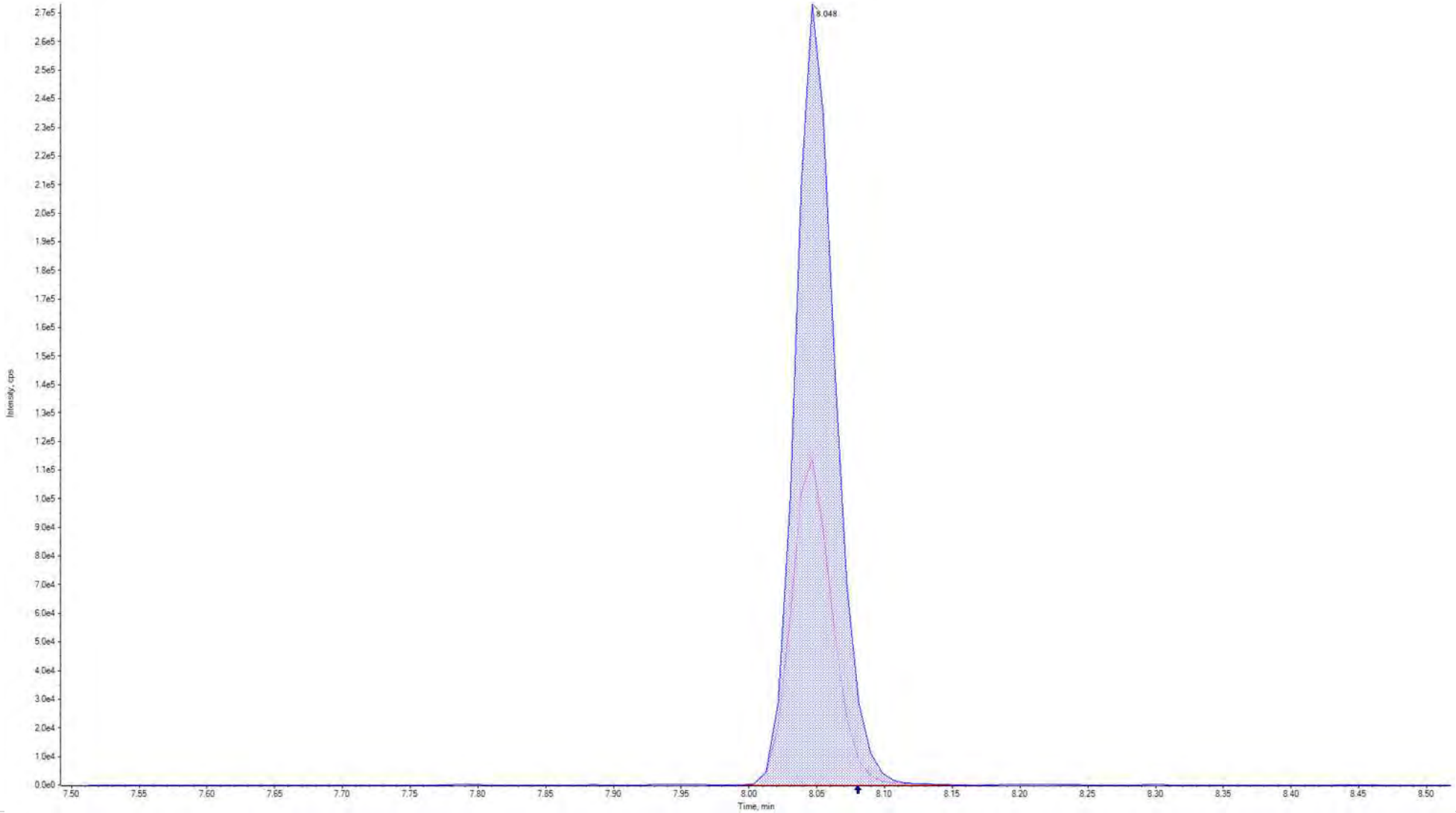
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

8:2FTS
Sample: WG1973357-5 S/N:26562.2 Points Across peak:34



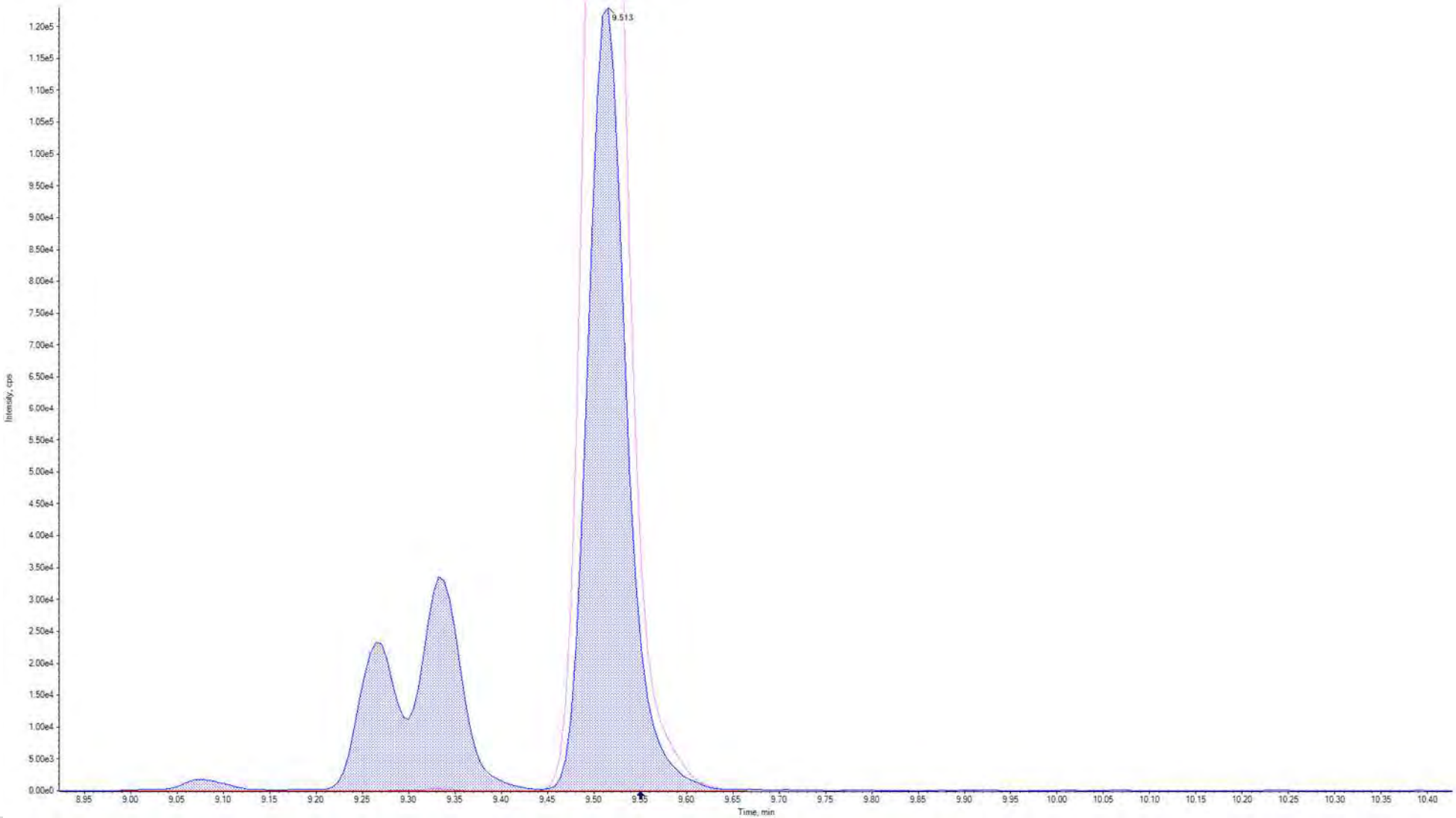
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

8:2FTS_2
Sample: WG1973357-5 S/N:19678255.6 Points Across peak:21



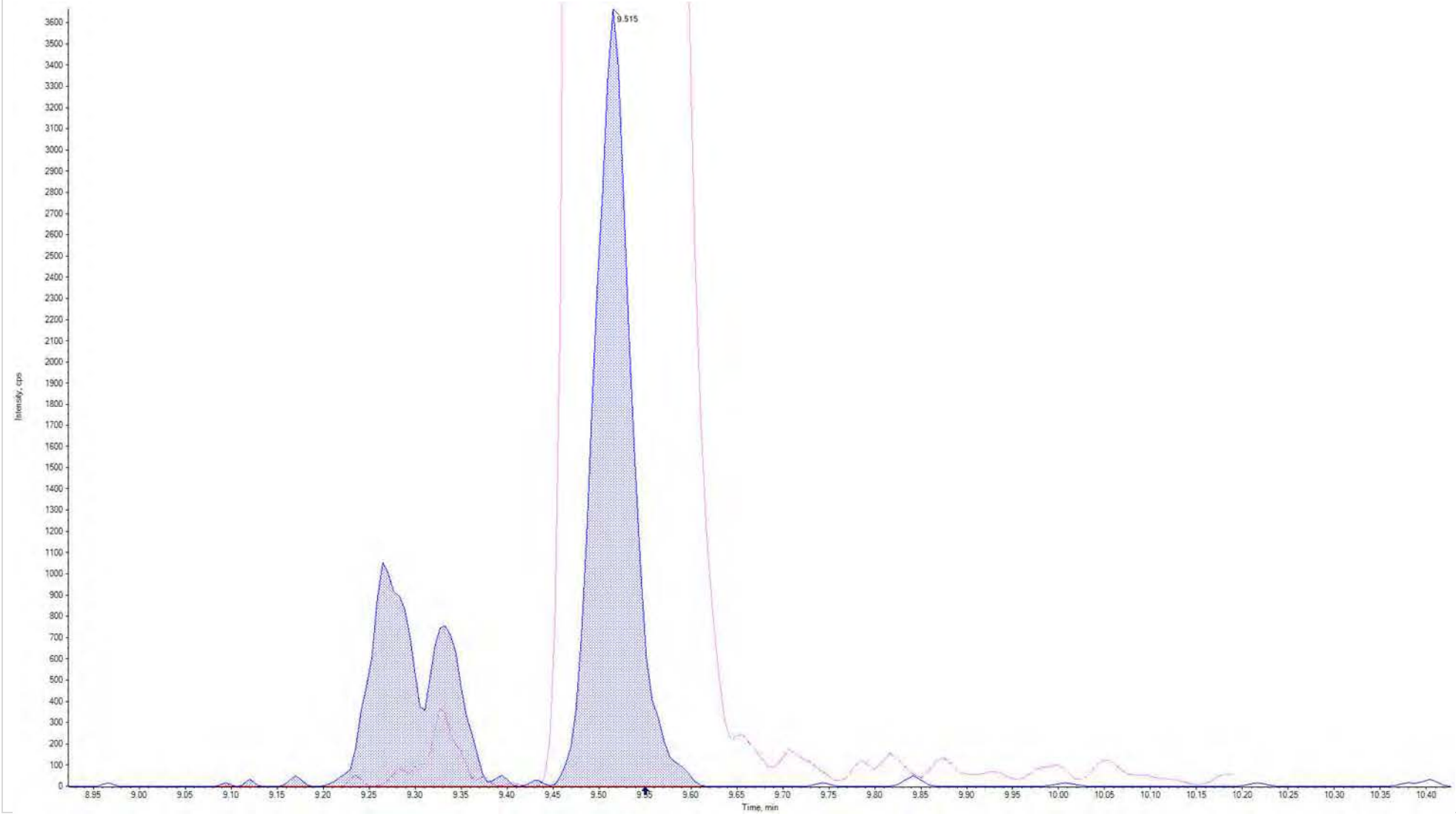
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOSA
Sample: WG1973357-5 S/N:972.1 Points Across peak:124



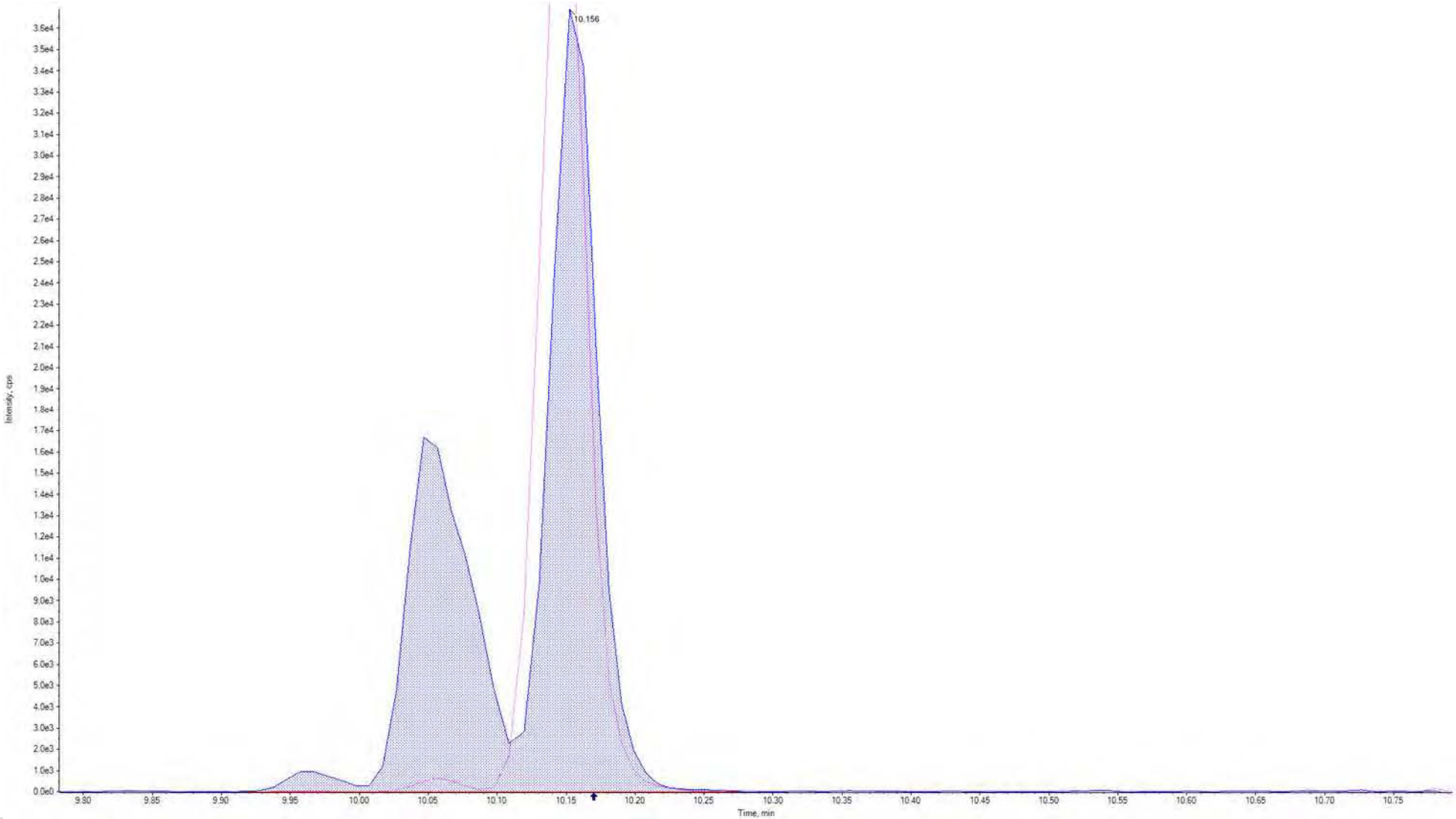
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFOSA_2
Sample: WG1973357-5 S/N:1200.1 Points Across peak:99



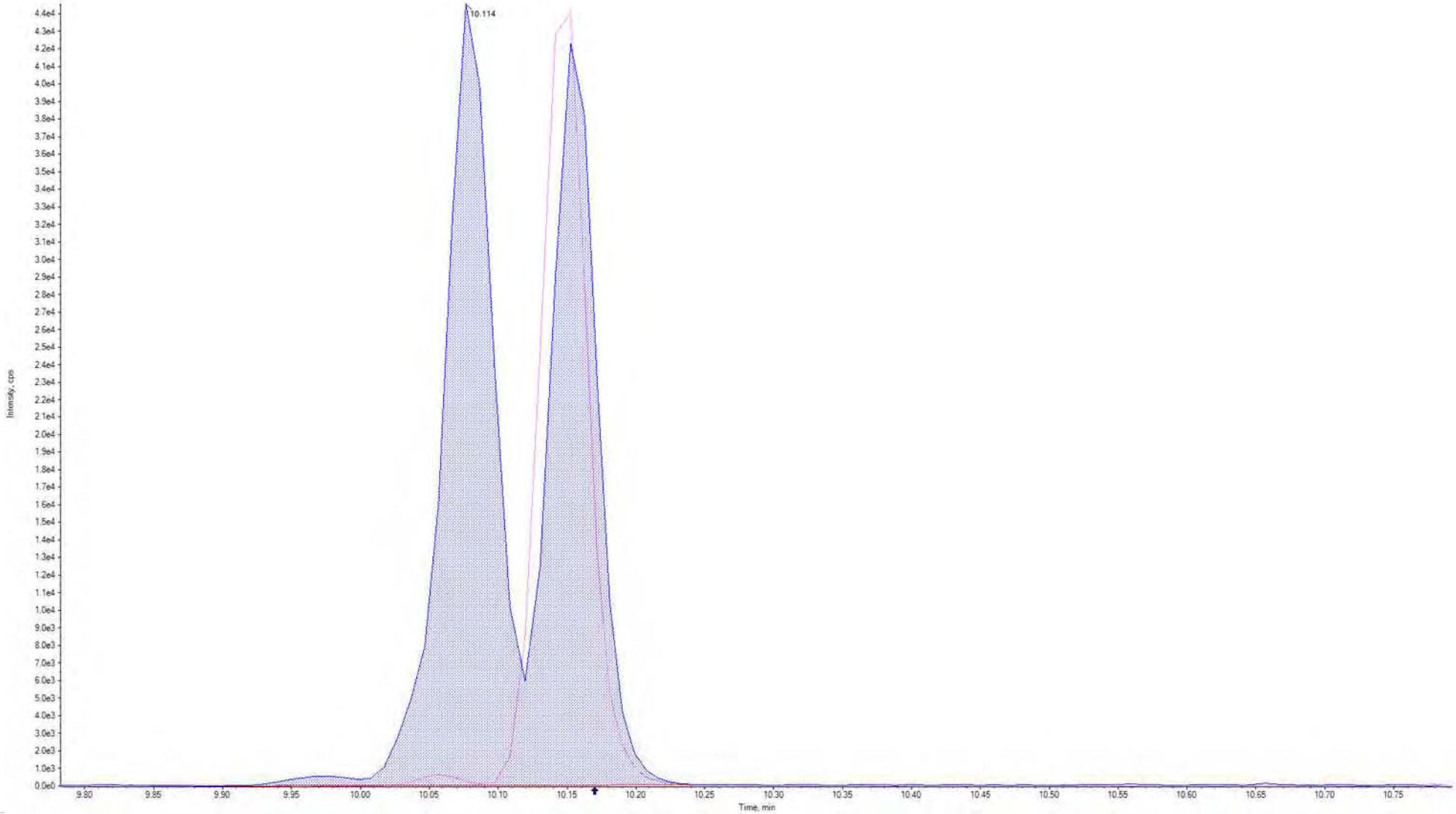
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSA
Sample: WG1973357-5 S/N:285794.6 Points Across peak:41



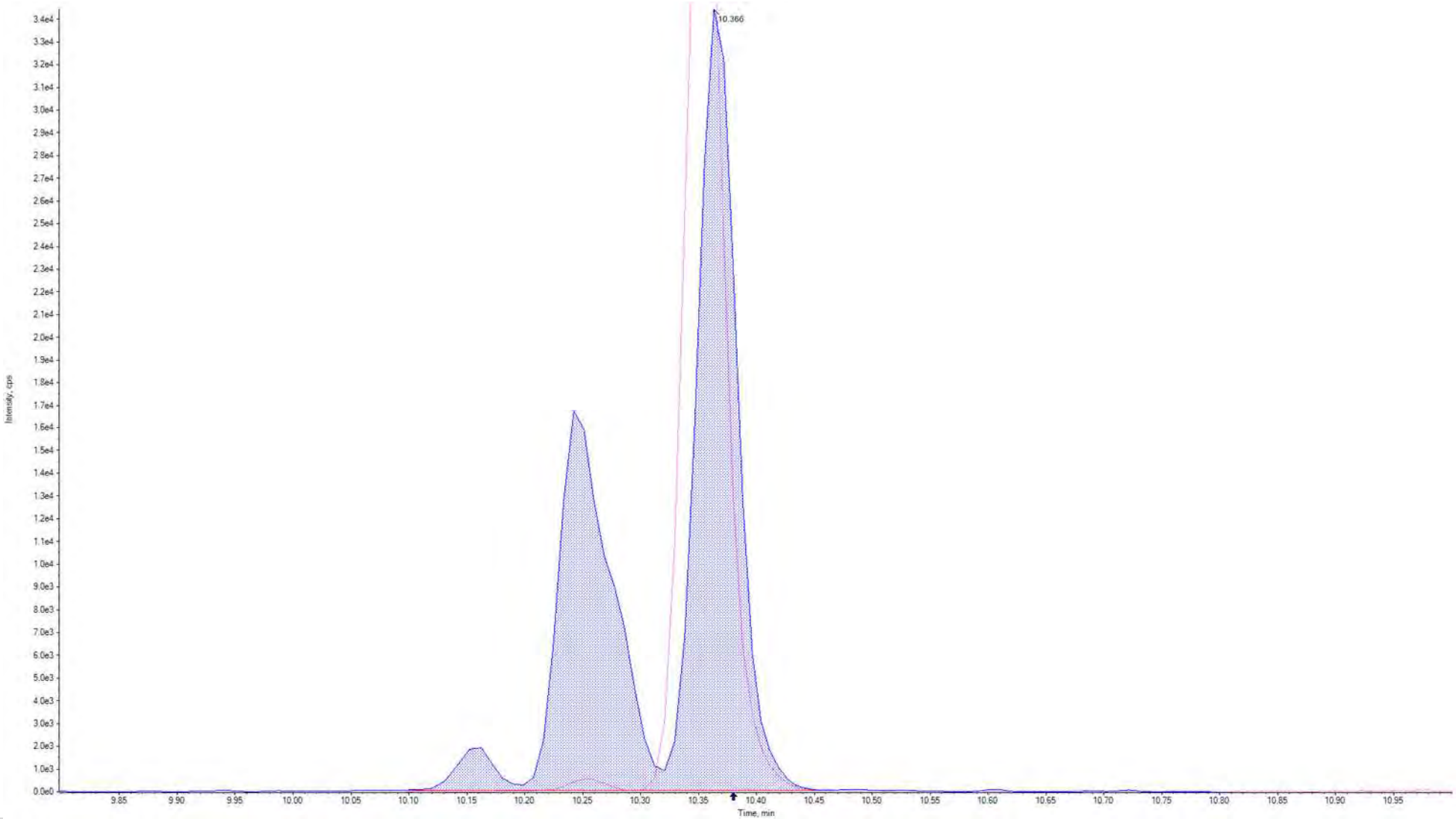
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSA_2
Sample: WG1973357-5 S/N:1311.7 Points Across peak:39

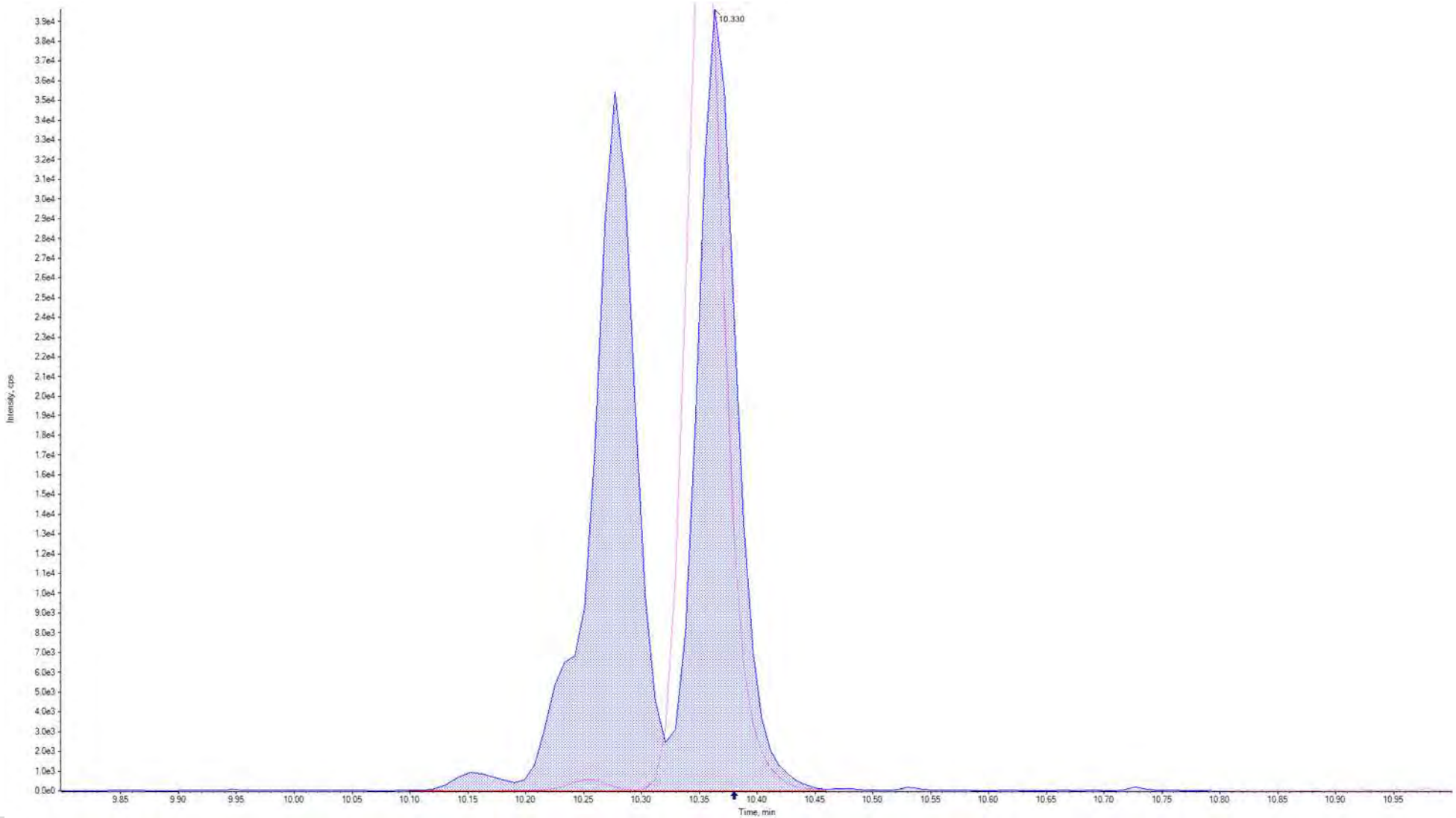


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSA
Sample: WG1973357-5 S/N:557.6 Points Across peak:46

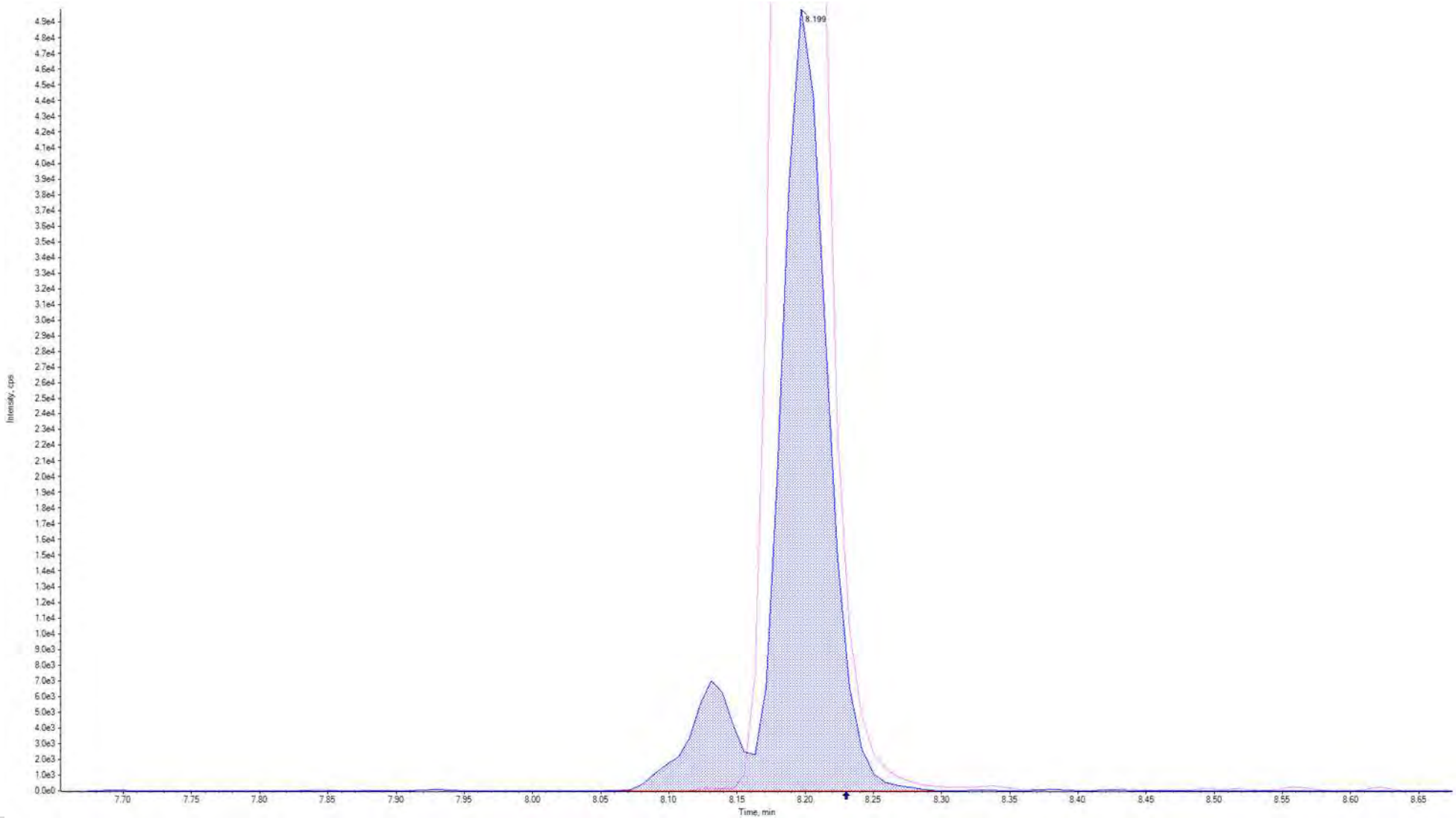


NEtFOSA_2
Sample: WG1973357-5 S/N:53676.9 Points Across peak:44



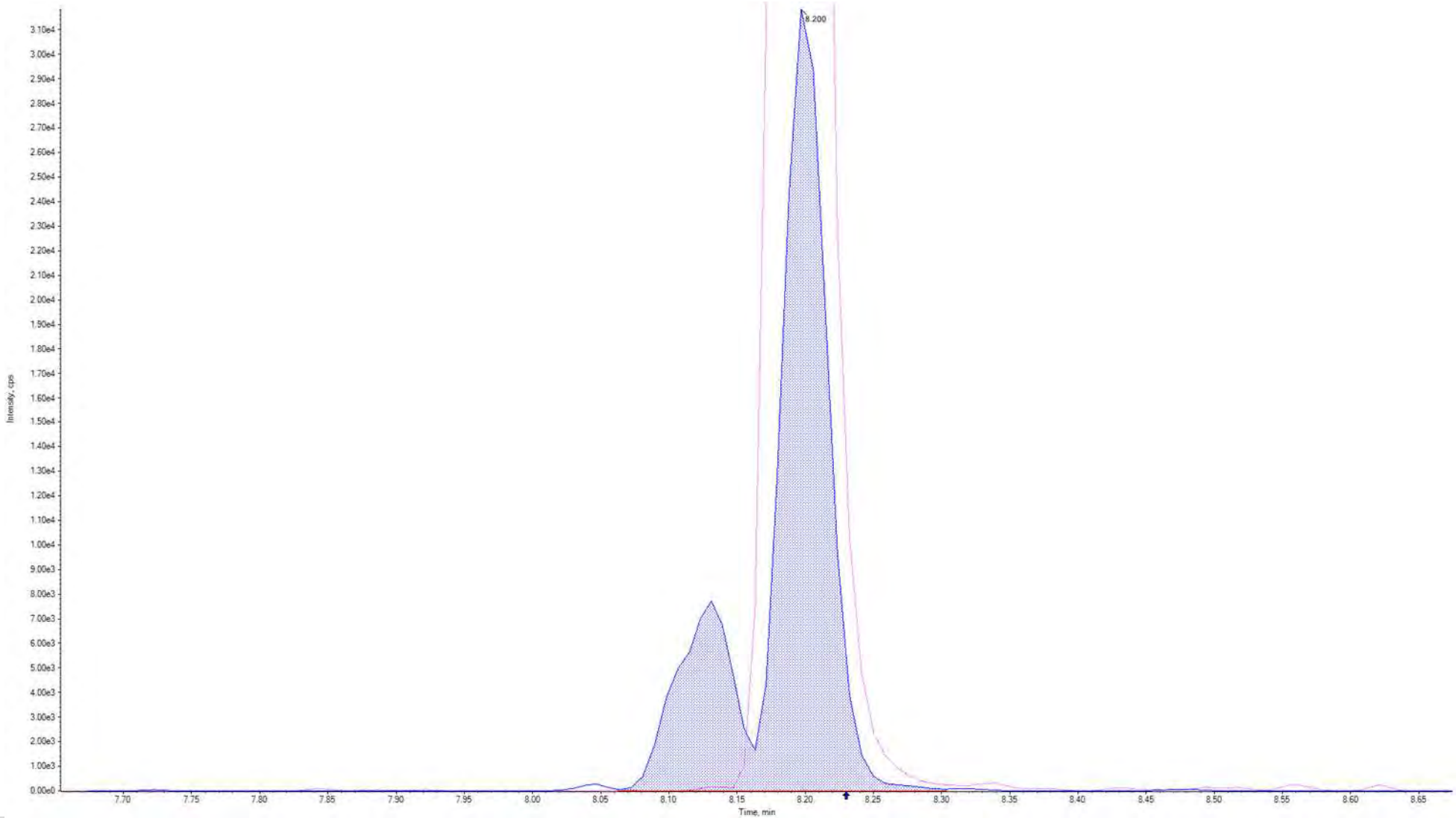
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSAA
Sample: WG1973357-5 S/N:1173.7 Points Across peak:31



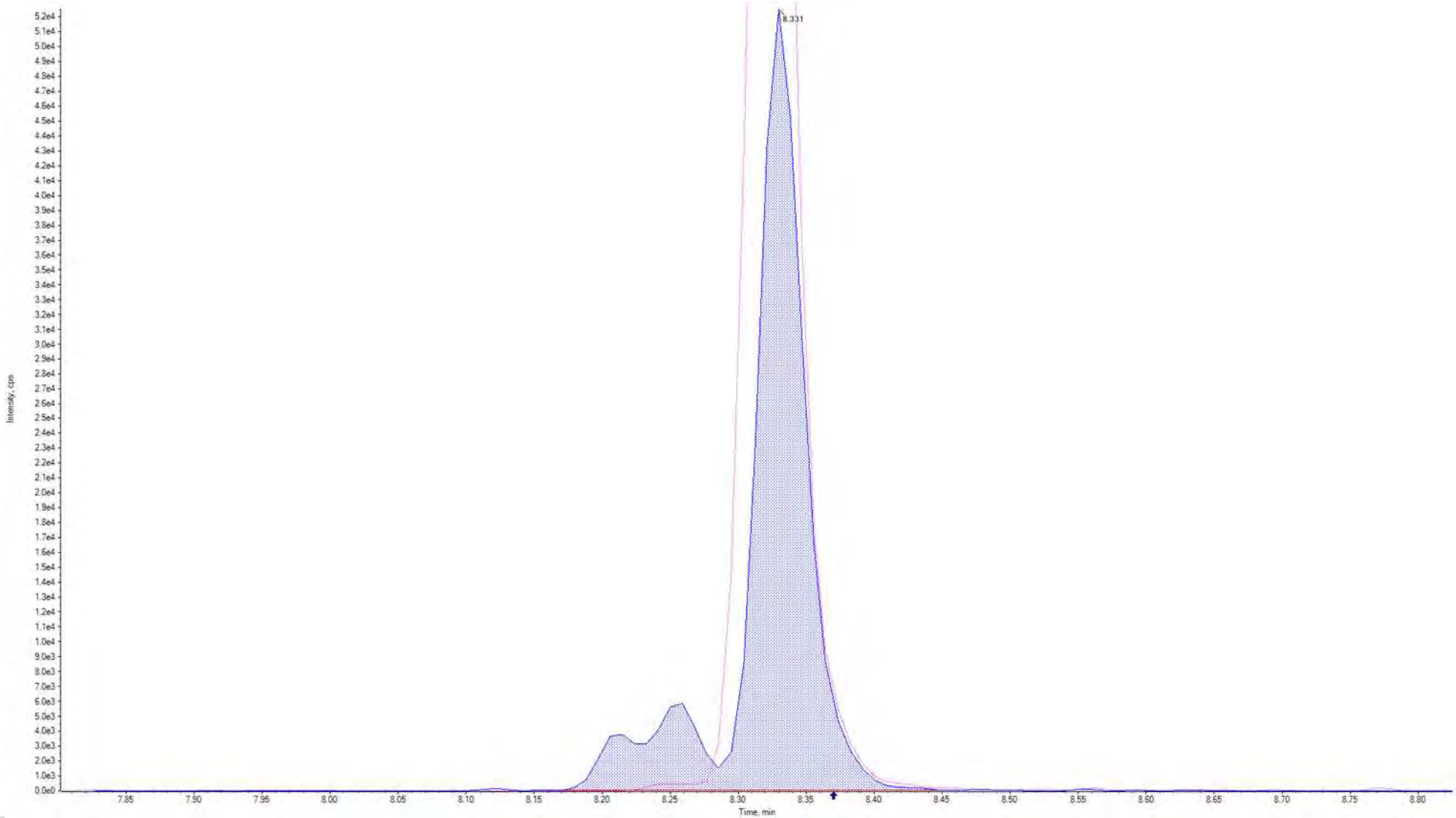
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSAA_2
Sample: WG1973357-5 S/N:615.1 Points Across peak:30



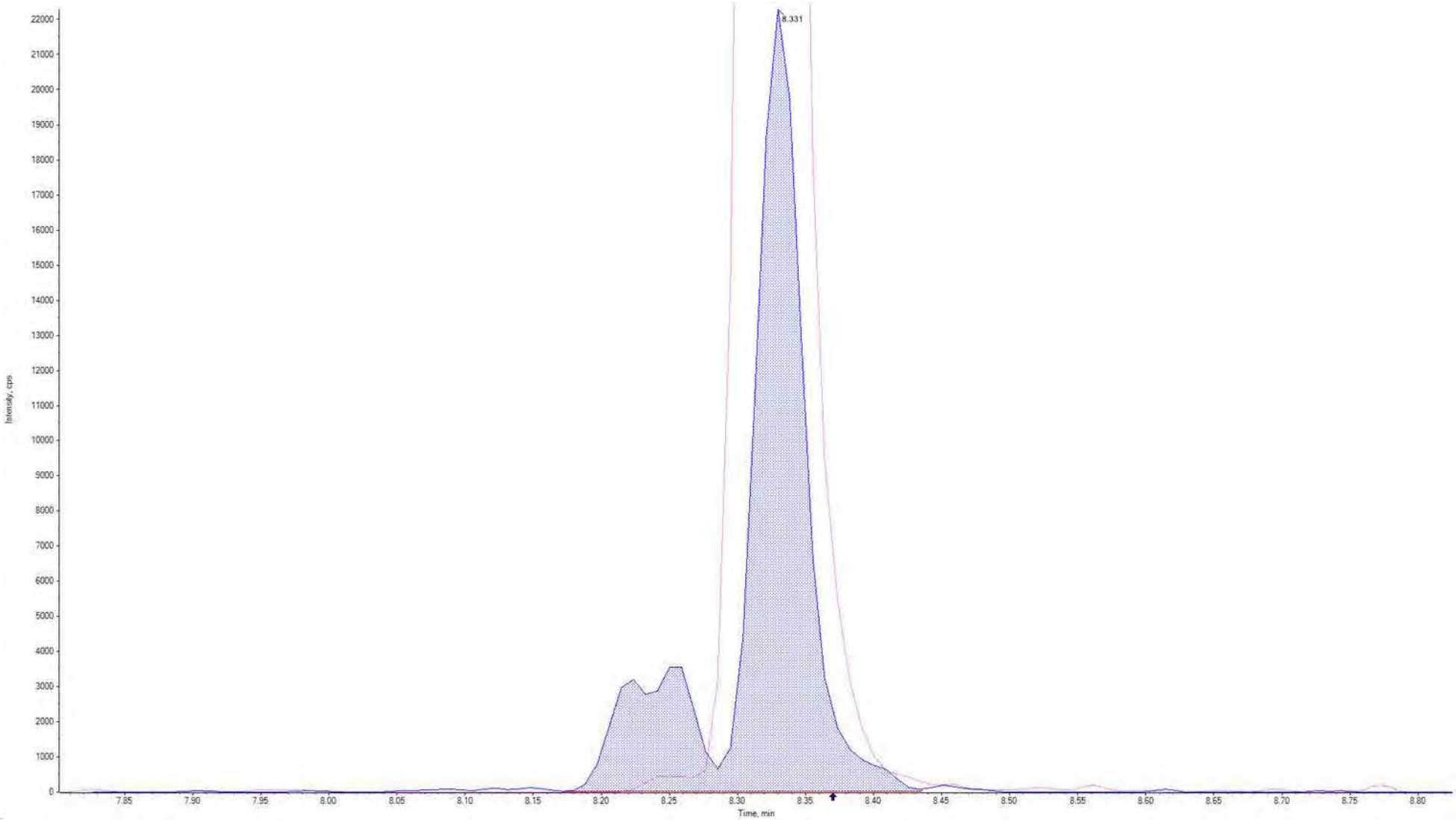
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSAA
Sample: WG1973357-5 S/N:665.7 Points Across peak:34



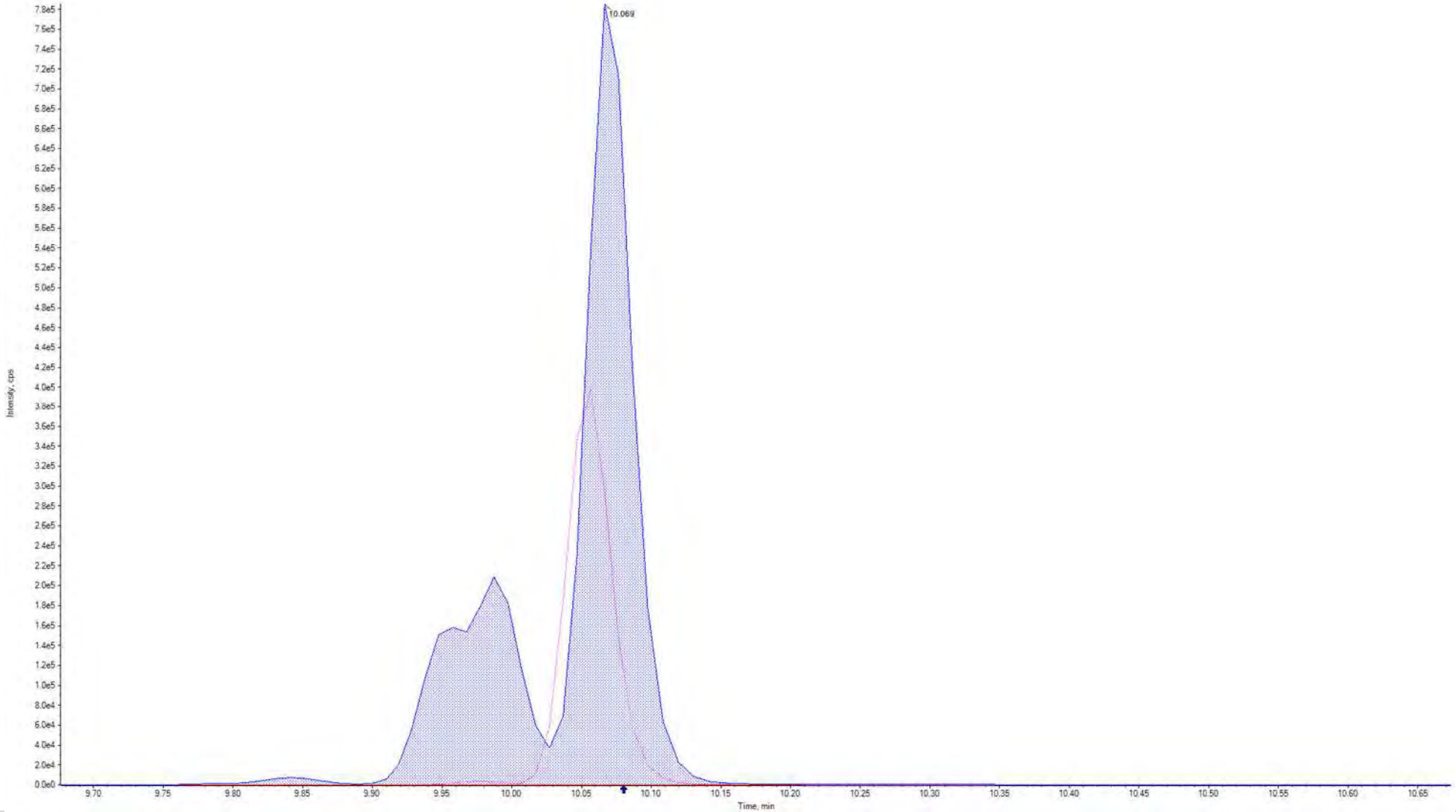
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSAA_2
Sample: WG1973357-5 S/N:427.8 Points Across peak:32



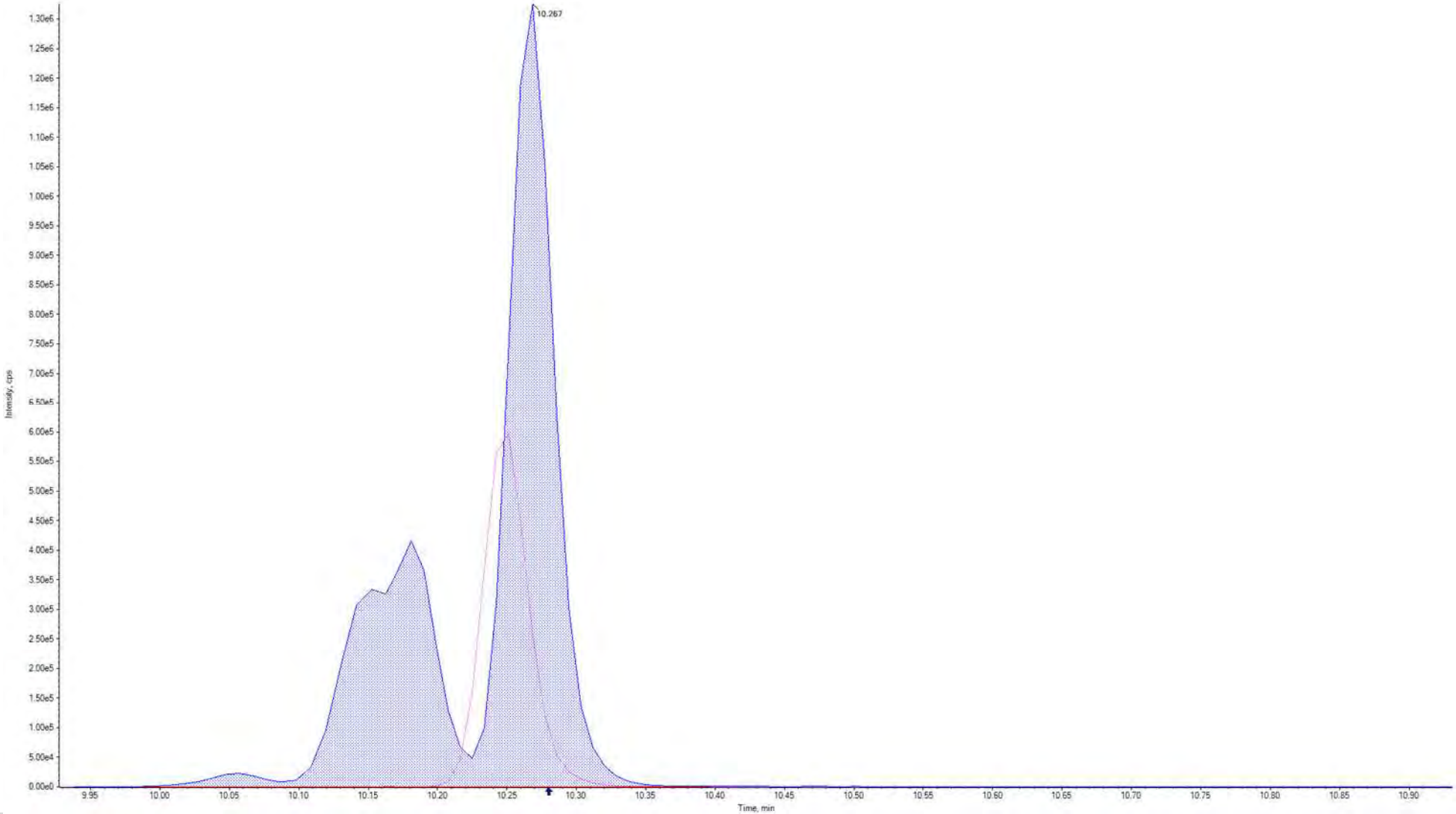
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NMeFOSE
Sample: WG1973357-5 S/N:3278.9 Points Across peak:56



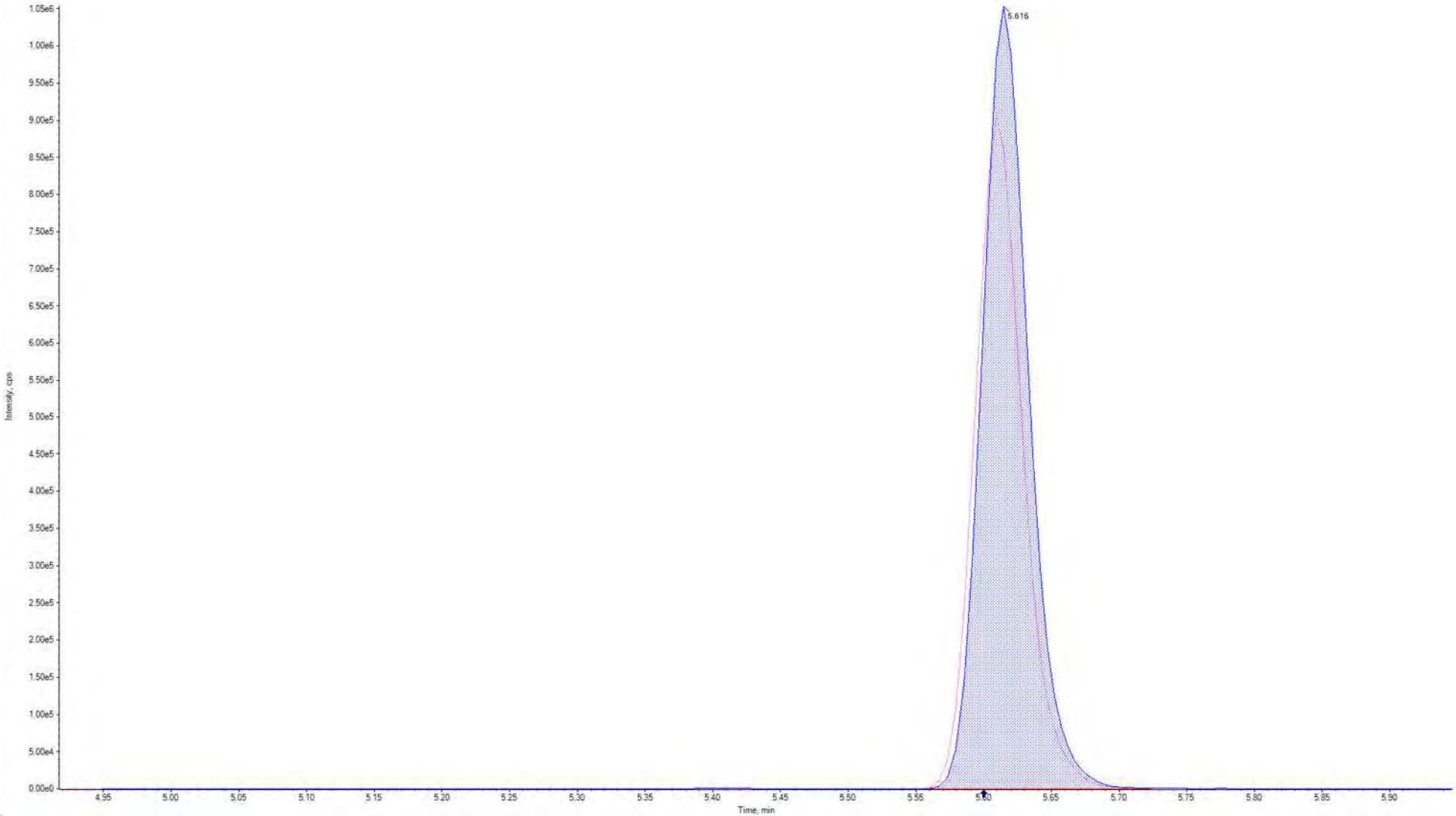
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NEtFOSE
Sample: WG1973357-5 S/N:2433.1 Points Across peak:48



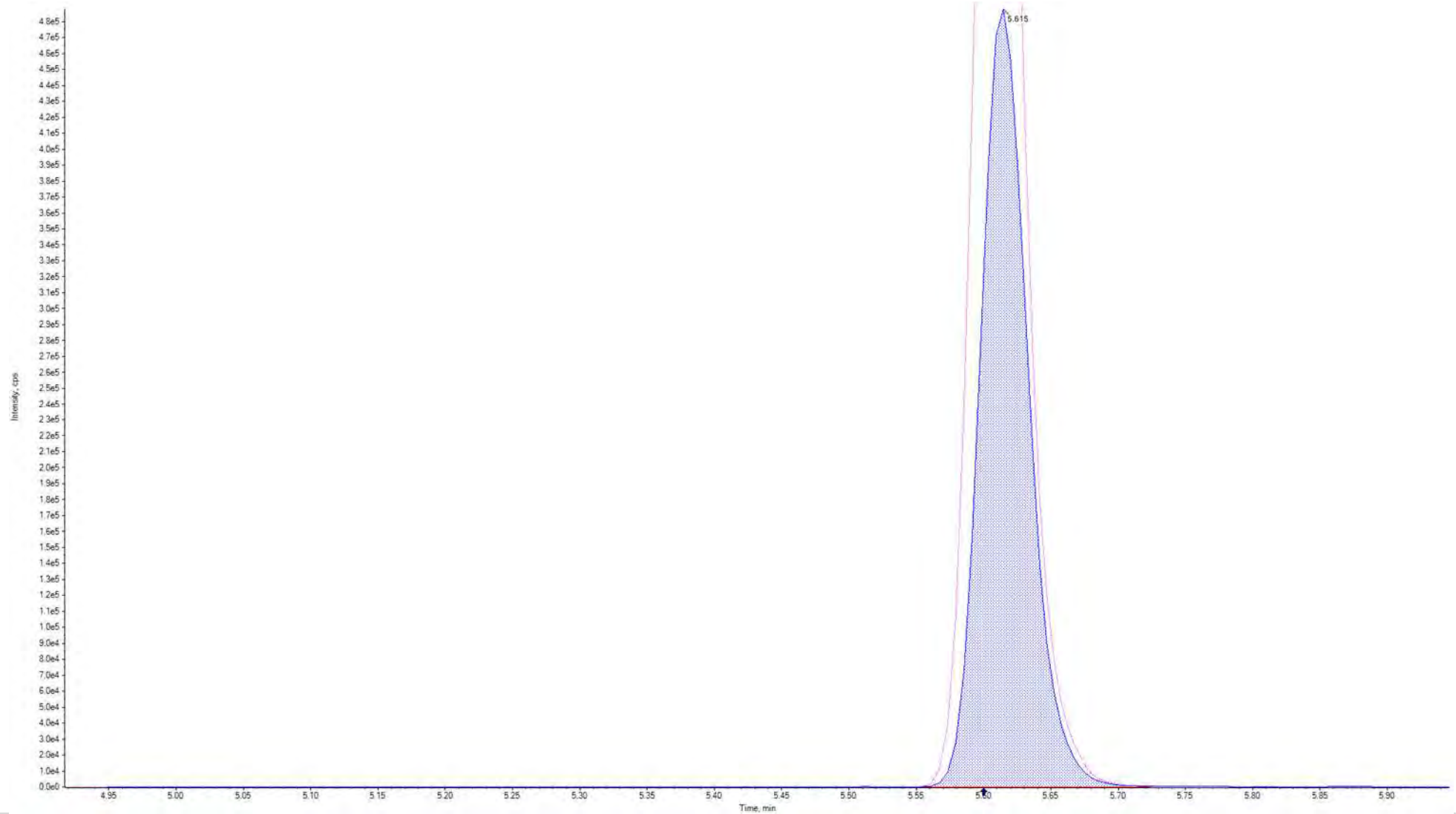
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

HFPO-DA
Sample: WG1973357-5 S/N:20912.6 Points Across peak:37



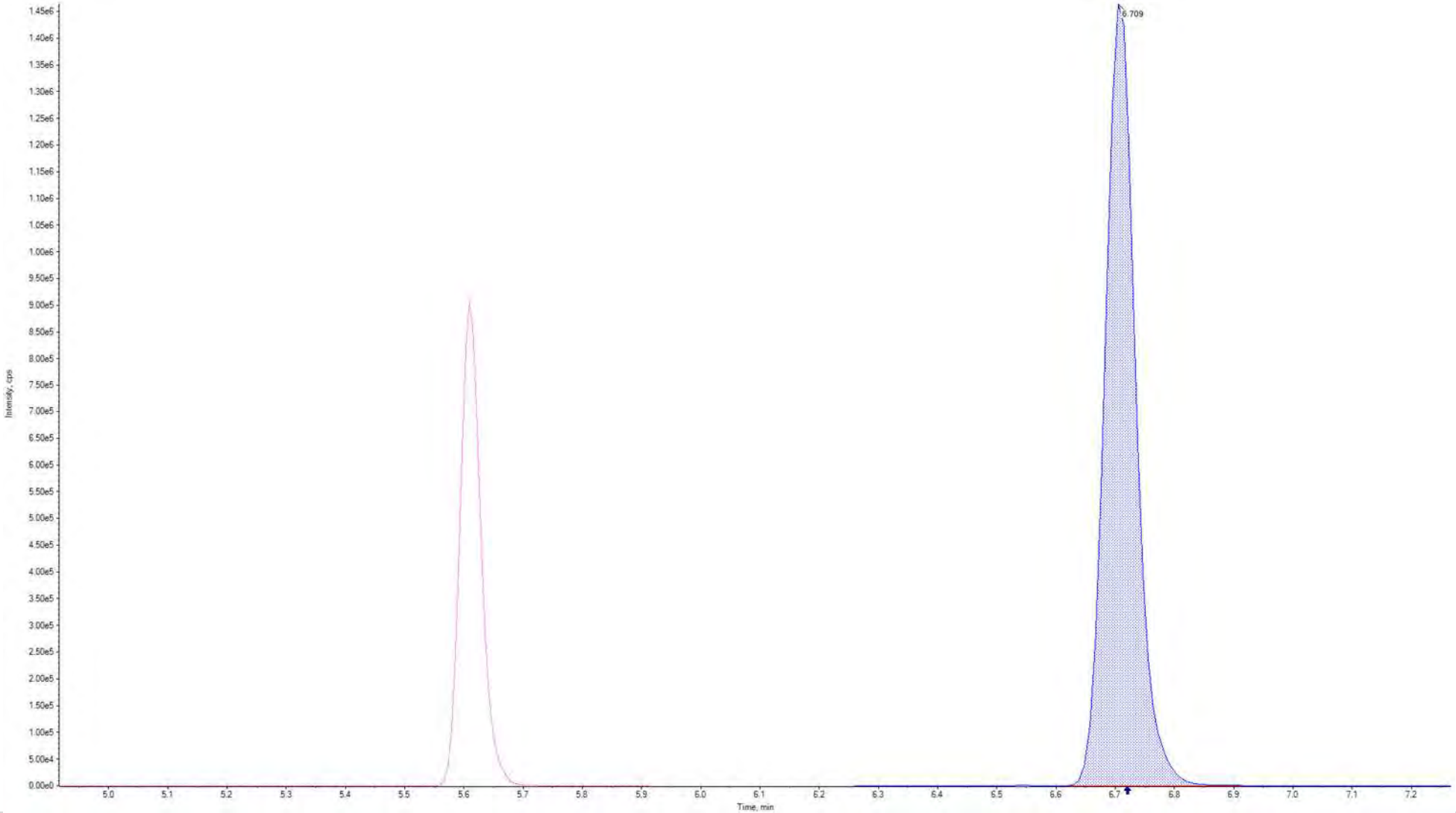
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

HFPO-DA_2
Sample: WG1973357-5 S/N:4820.7 Points Across peak:37



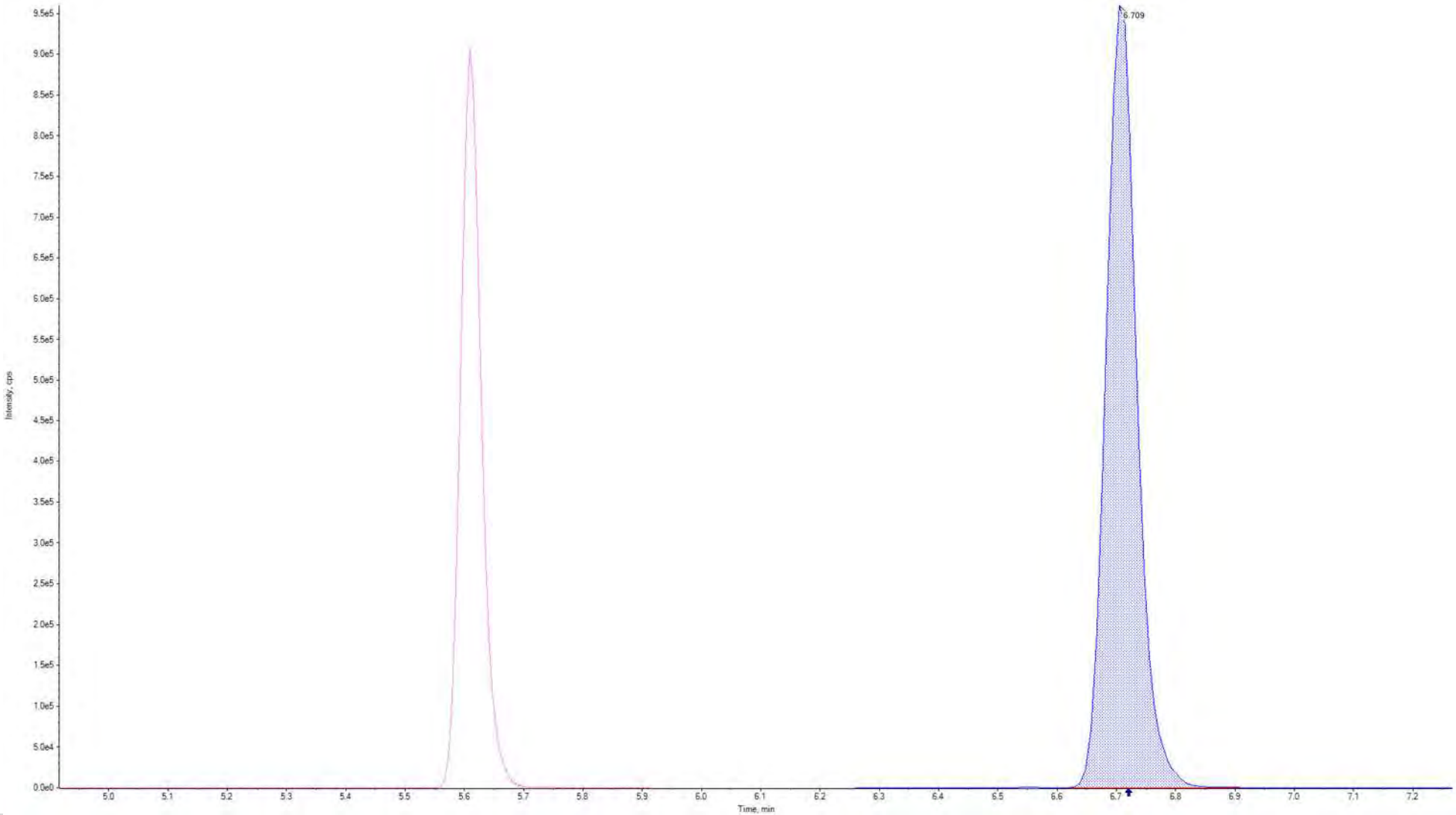
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

ADONA
Sample: WG1973357-5 S/N:14331.4 Points Across peak:54



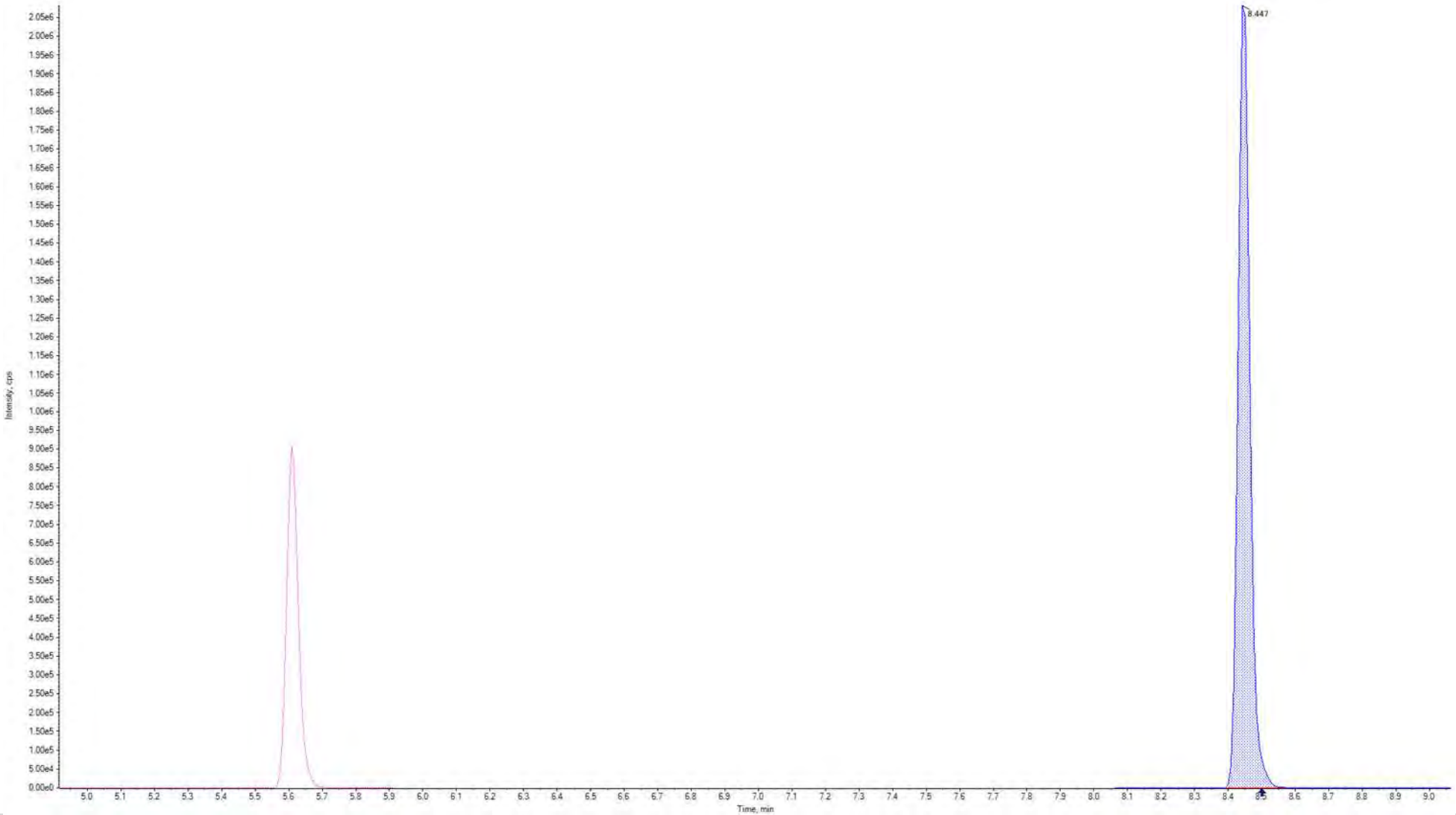
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

ADONA_2
Sample: WG1973357-5 S/N:16525.4 Points Across peak:43



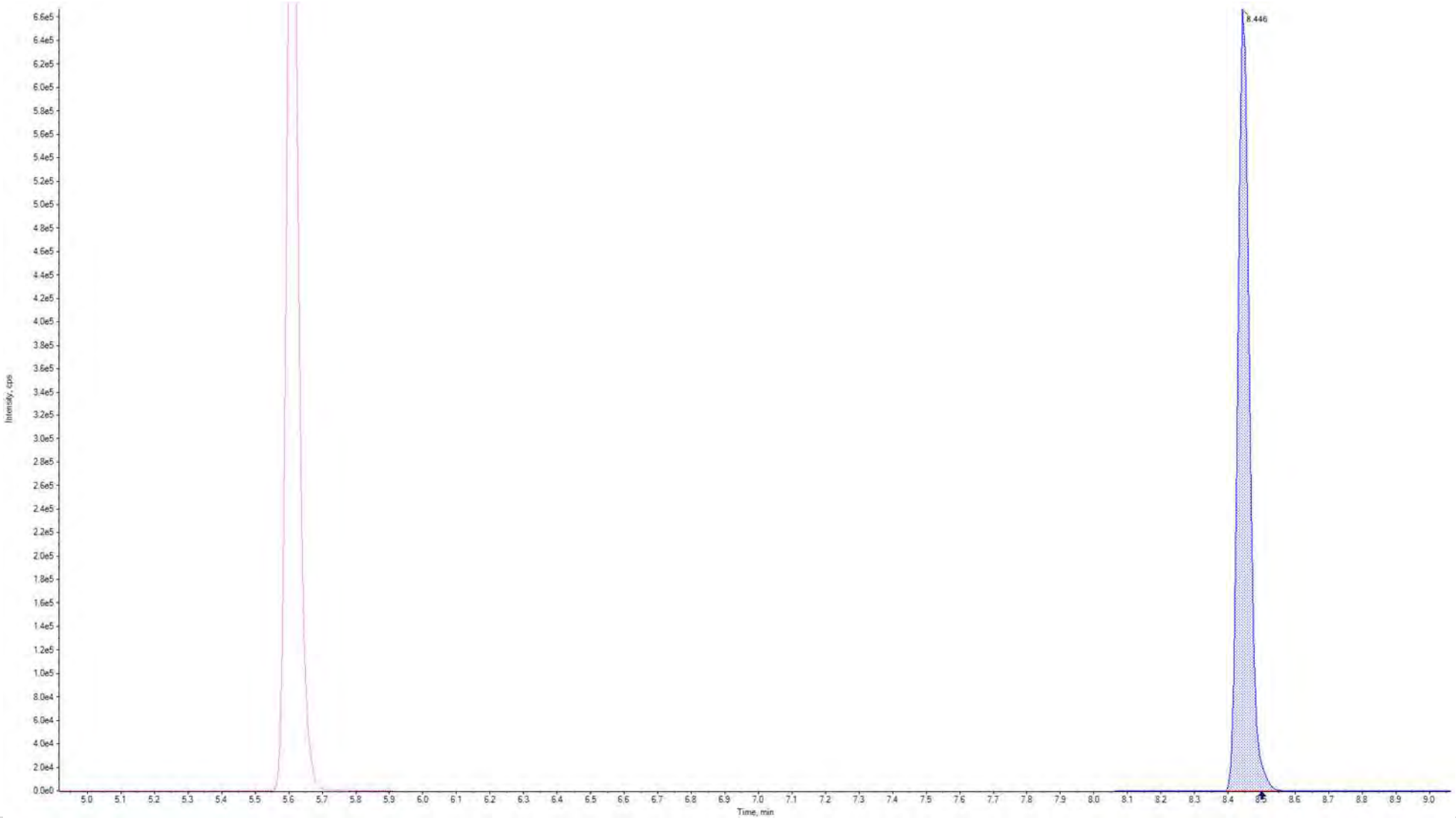
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

9Cl-PF3ONS
Sample: WG1973357-5 S/N:57687920.4 Points Across peak:32



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

9Cl-PF3ONS_2
Sample: WG1973357-5 S/N:394233.1 Points Across peak:32



Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

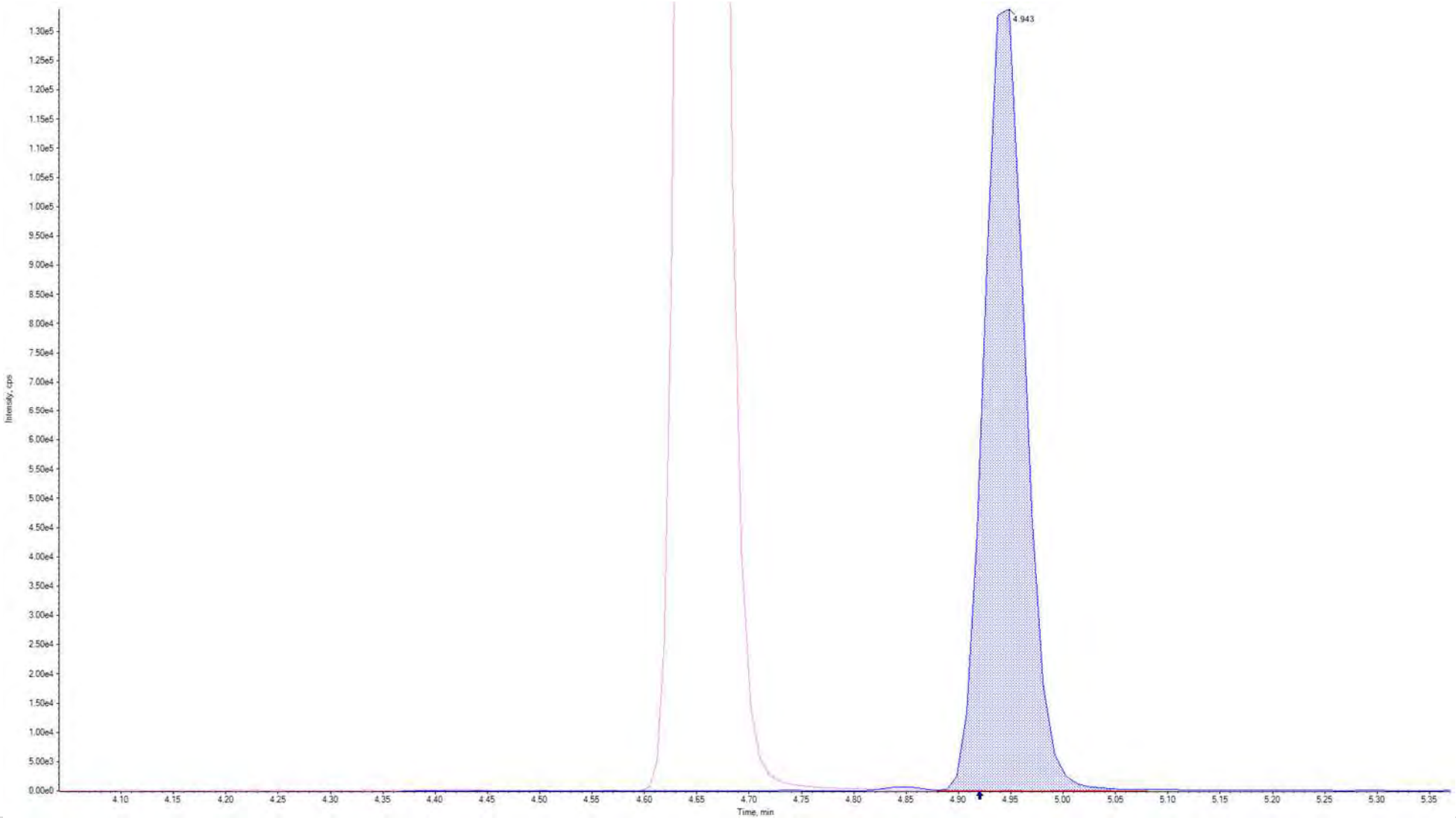
11Cl-PF3OUdS
Sample: WG1973357-5 S/N:565912.4 Points Across peak:46

Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

11Cl-PF3OUdS_2
Sample: WG1973357-5 S/N:276048.9 Points Across peak:43

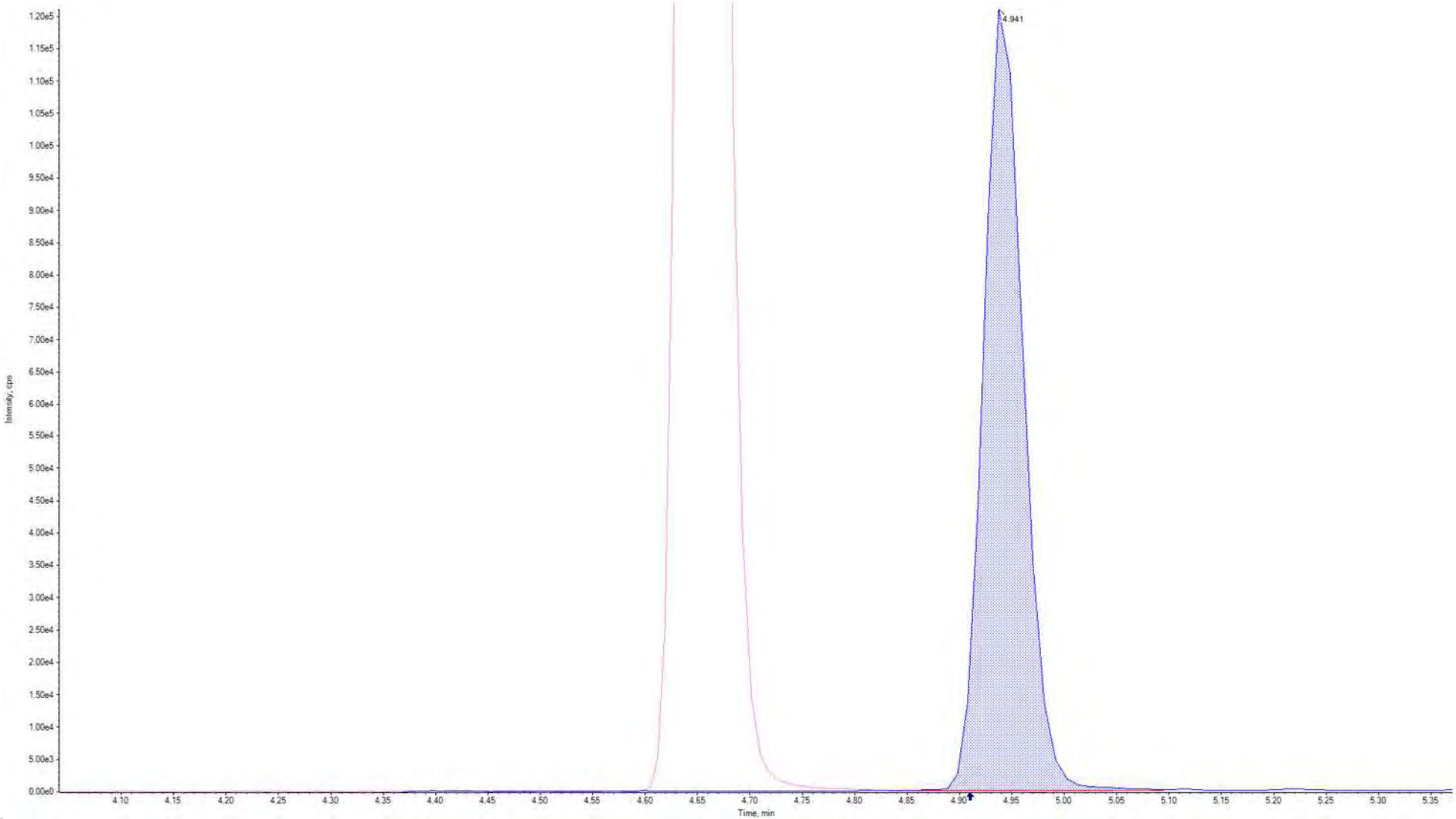
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

3:3FTCA
Sample: WG1973357-5 S/N:28258.6 Points Across peak:21



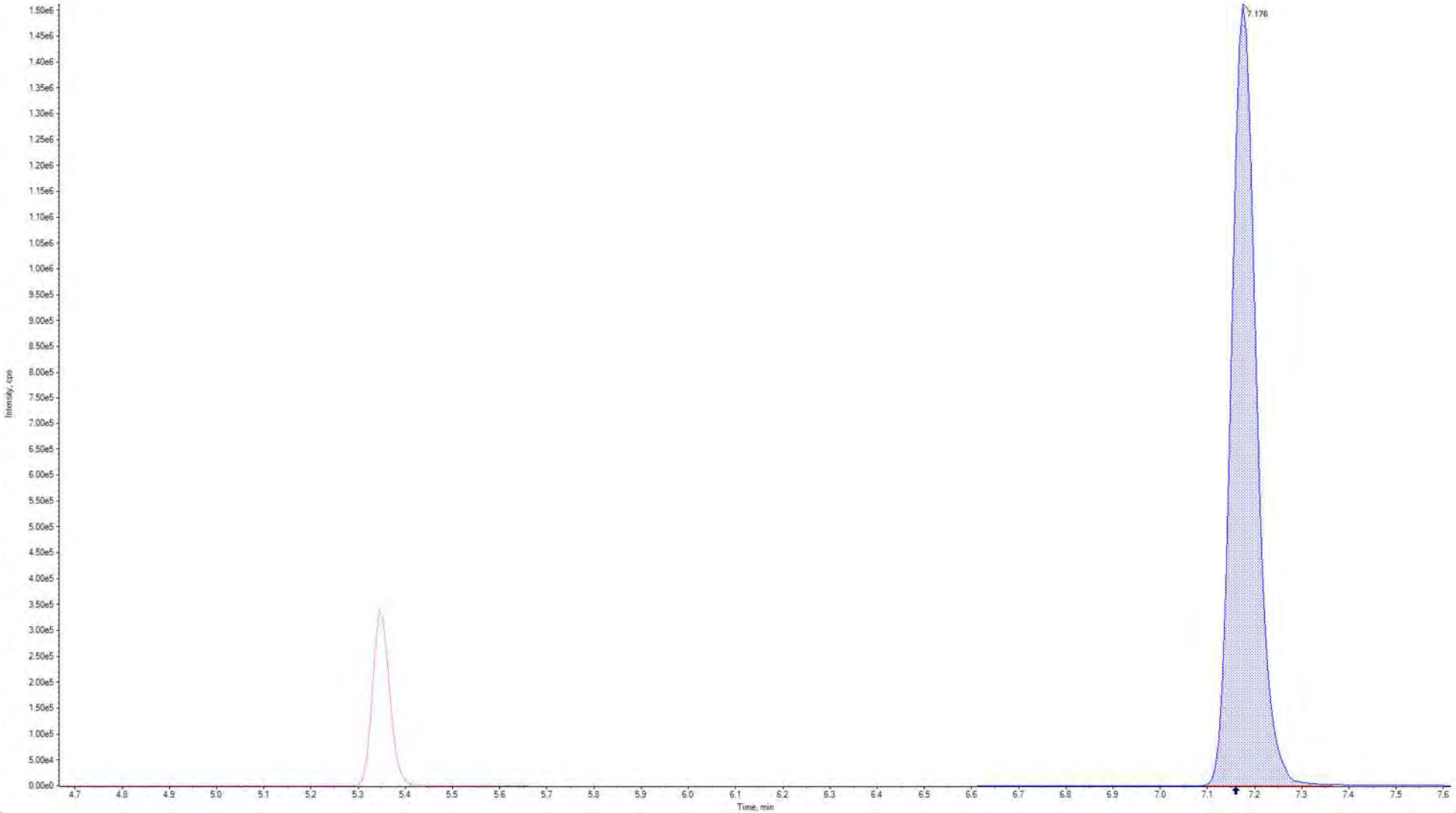
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

3:3FTCA_2
Sample: WG1973357-5 S/N:1614.4 Points Across peak:27



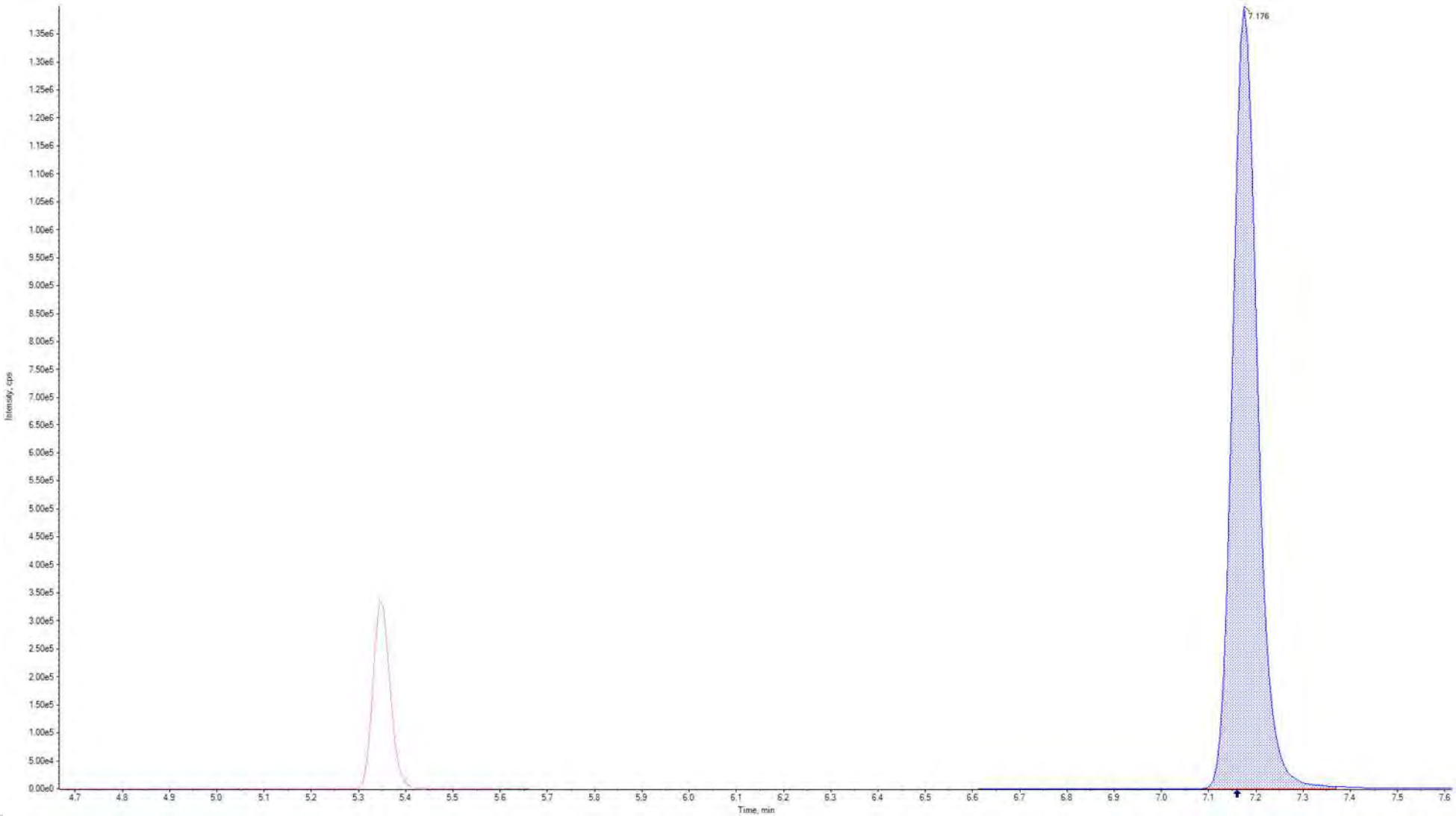
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

5:3FTCA
Sample: WG1973357-5 S/N:15698.6 Points Across peak:50



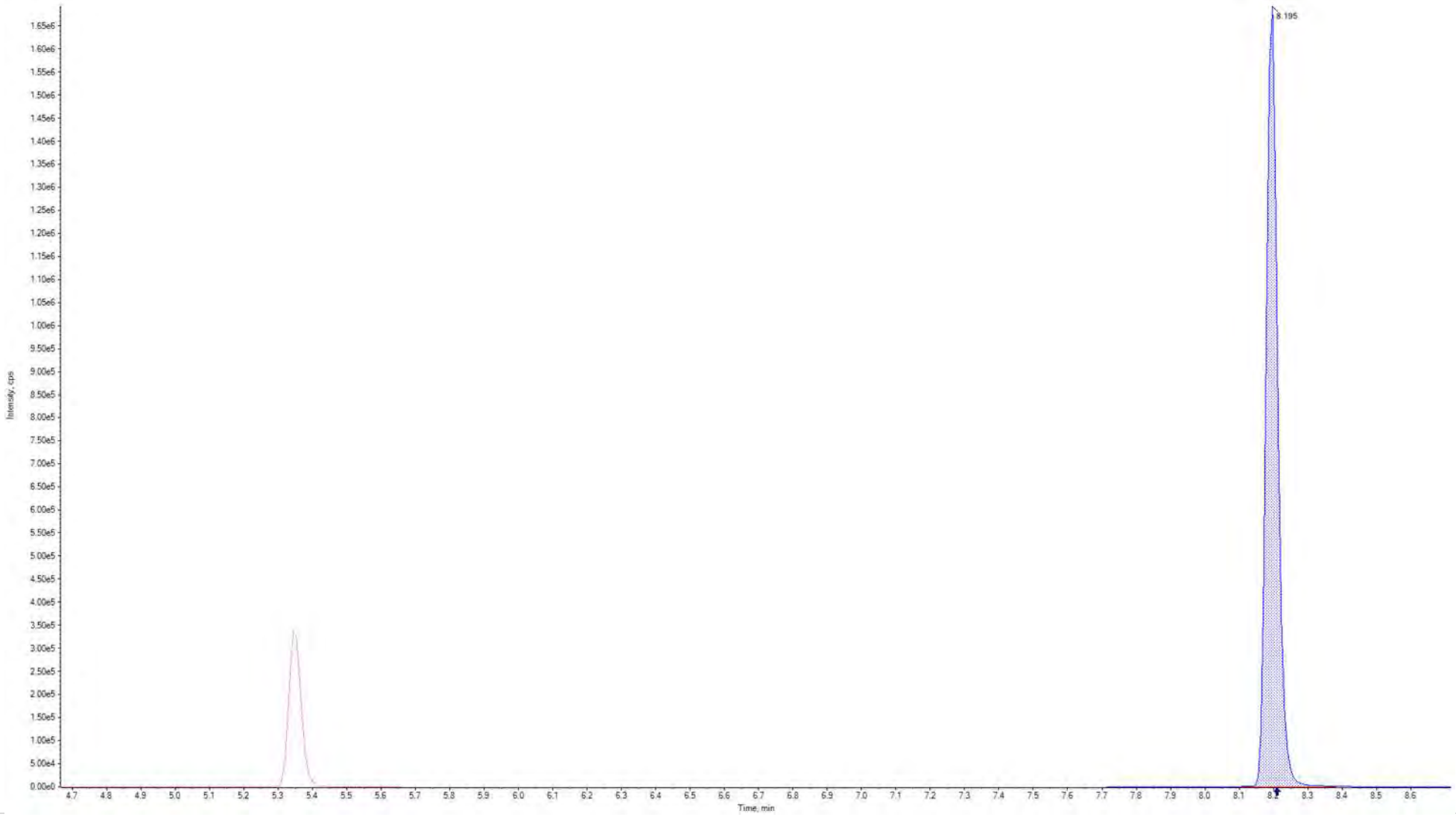
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

5:3FTCA_2
Sample: WG1973357-5 S/N:10815.4 Points Across peak:50



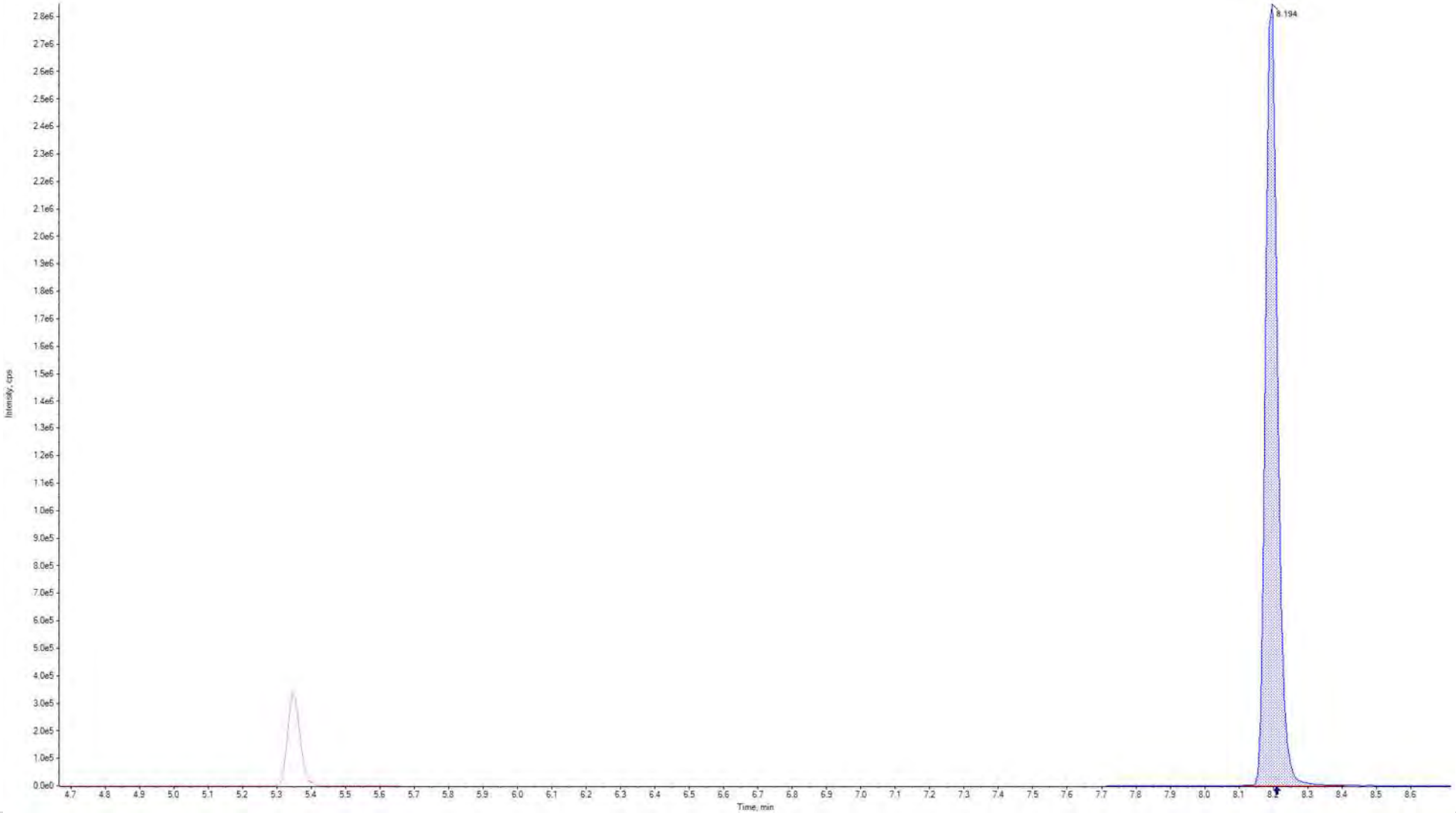
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

7:3FTCA
Sample: WG1973357-5 S/N:67275.3 Points Across peak:35



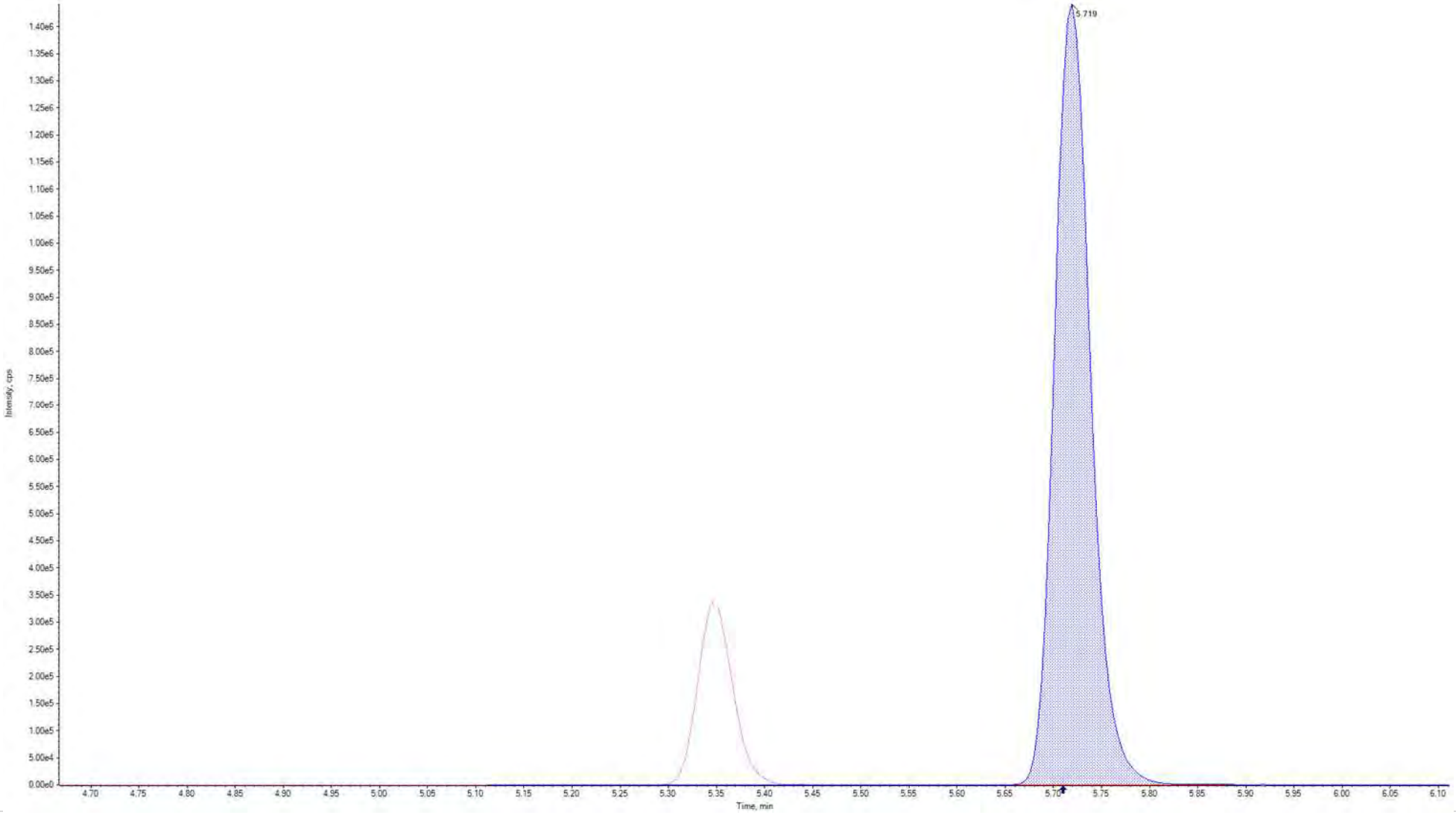
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

7:3FTCA_2
Sample: WG1973357-5 S/N:9357.3 Points Across peak:39



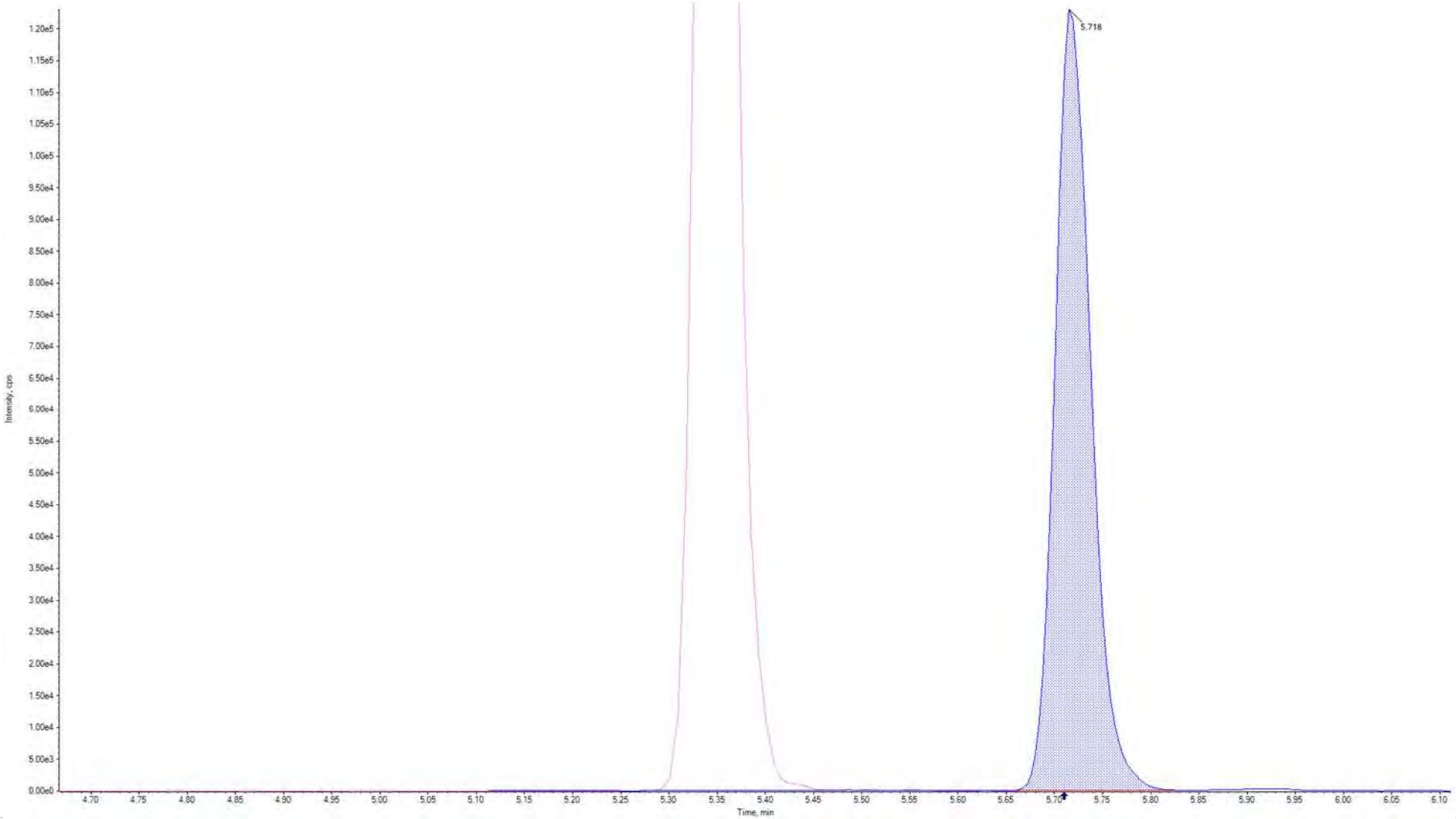
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFEESA
Sample: WG1973357-5 S/N:8029.4 Points Across peak:52



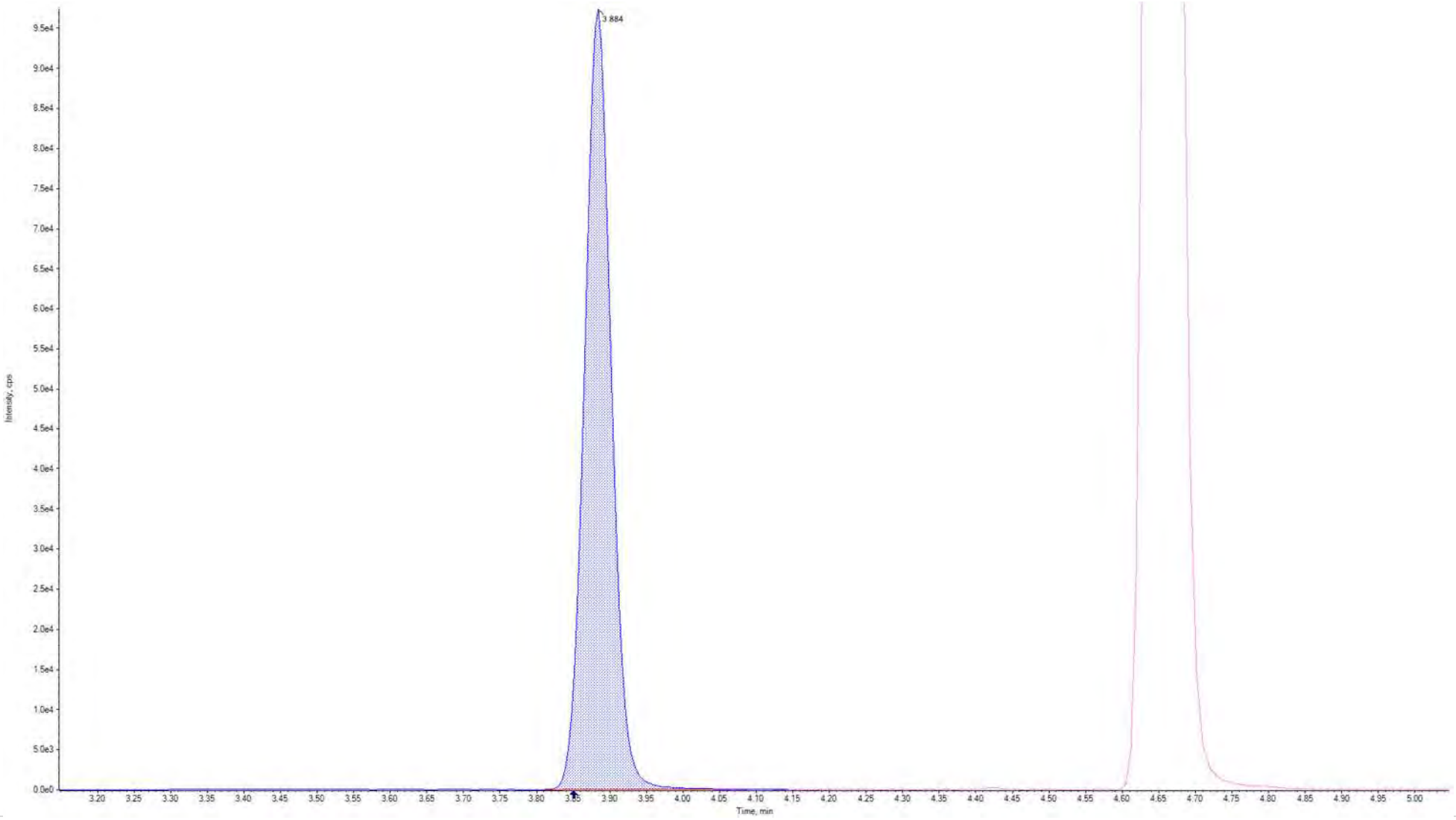
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFEESA_2
Sample: WG1973357-5 S/N:3182.1 Points Across peak:41



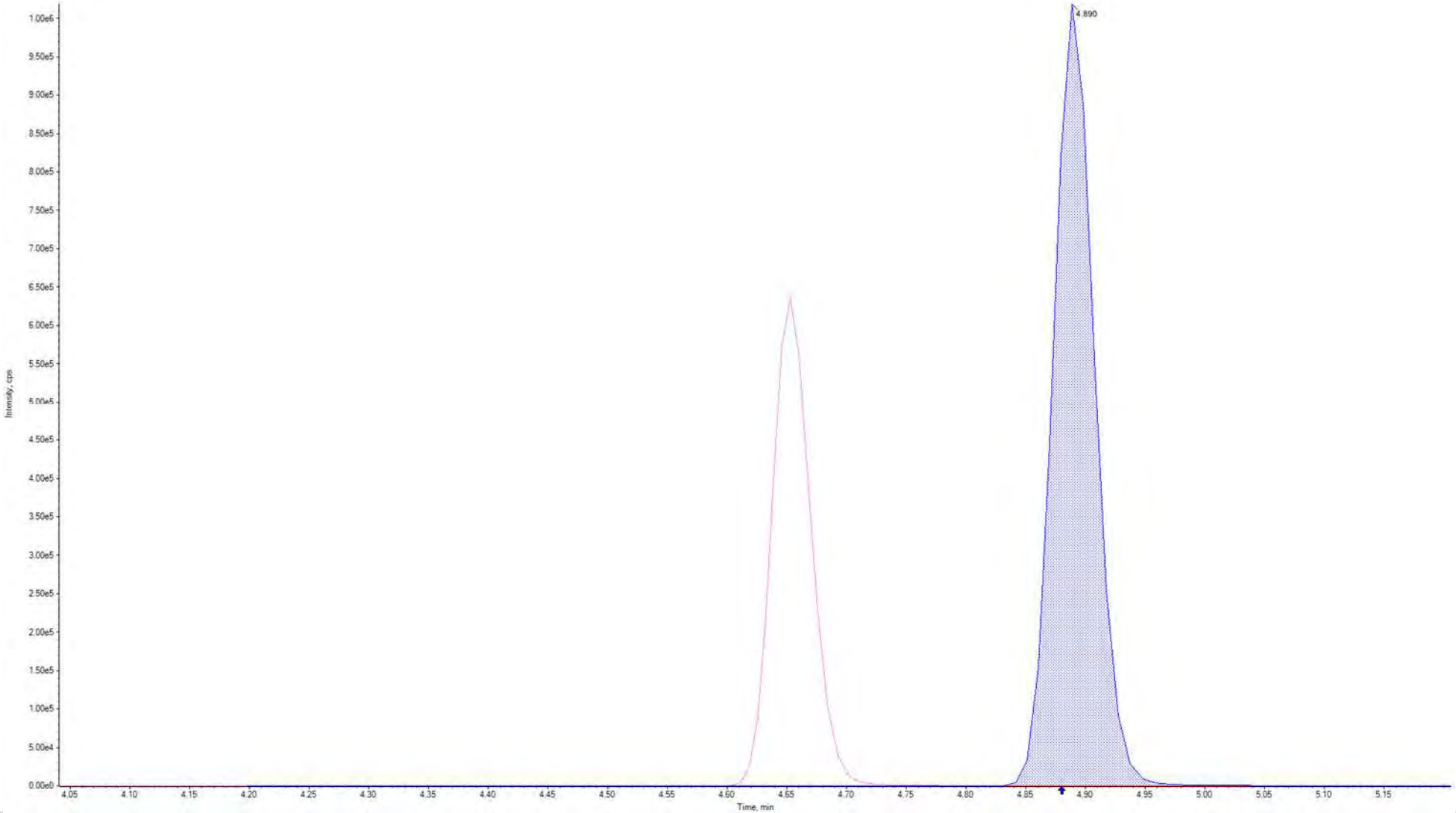
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFMPA
Sample: WG1973357-5 S/N:5159.7 Points Across peak:65



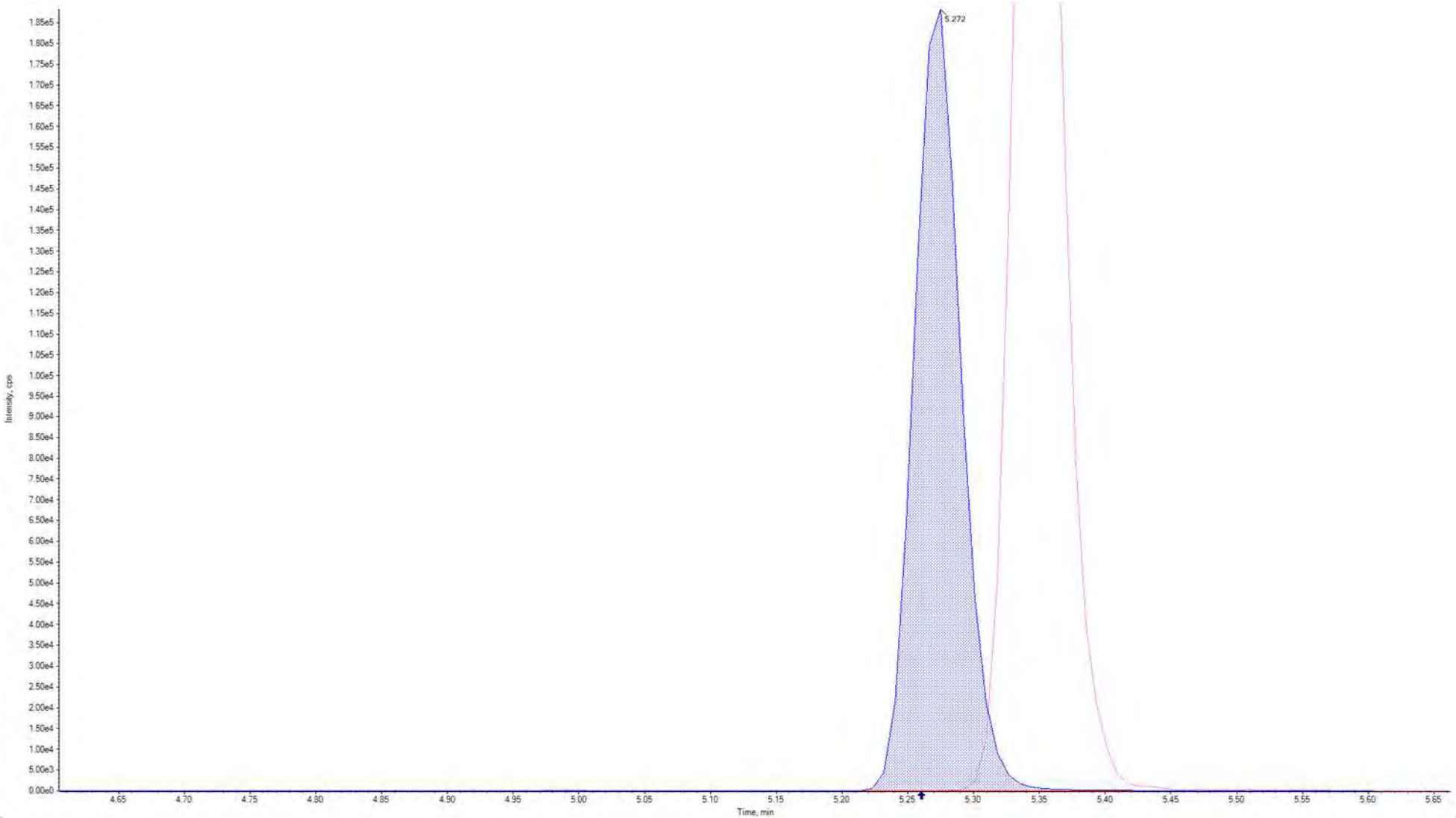
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

PFMBA
Sample: WG1973357-5 S/N:4804.2 Points Across peak:24



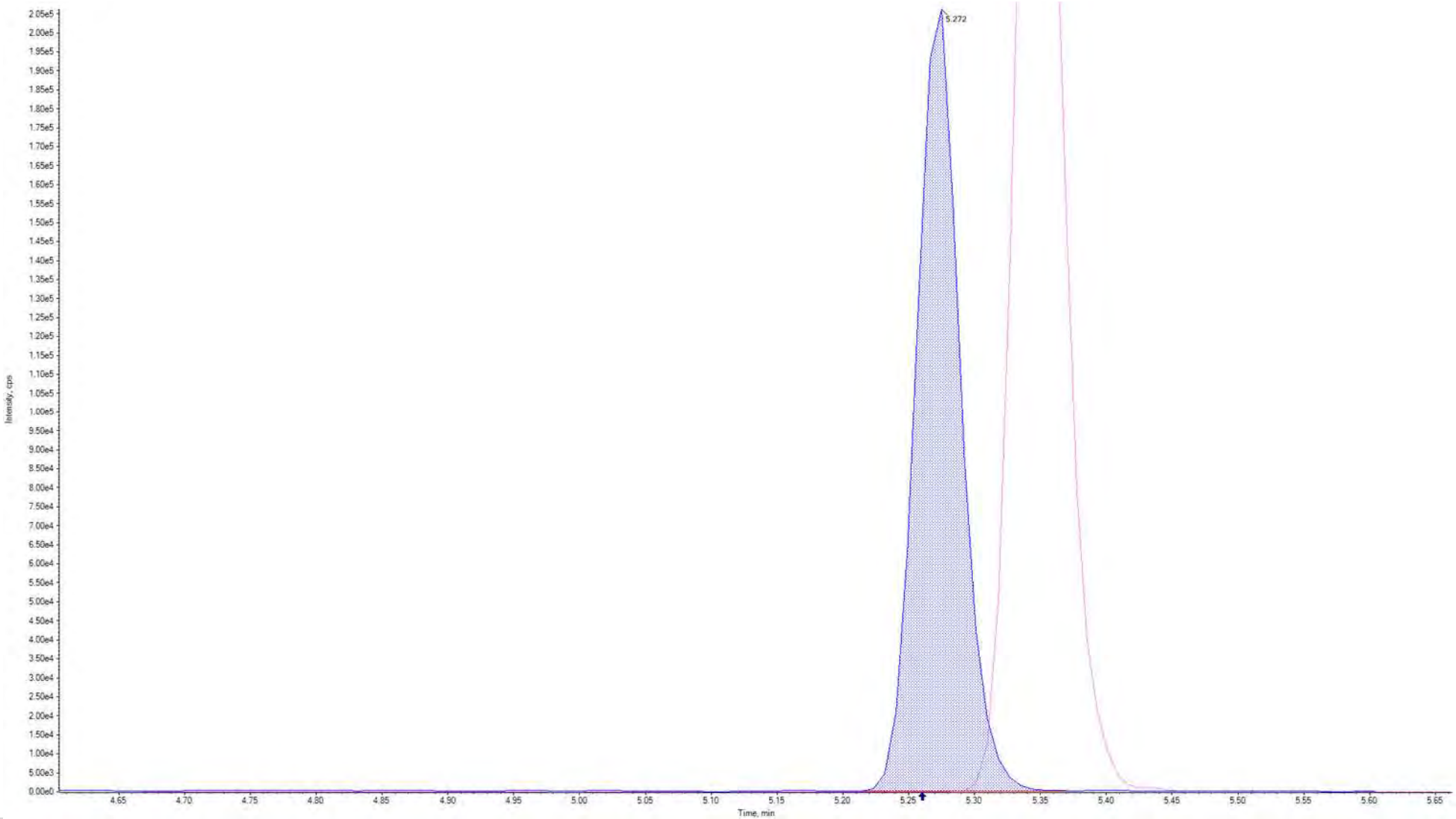
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NFDHA
Sample: WG1973357-5 S/N:3693.3 Points Across peak:30

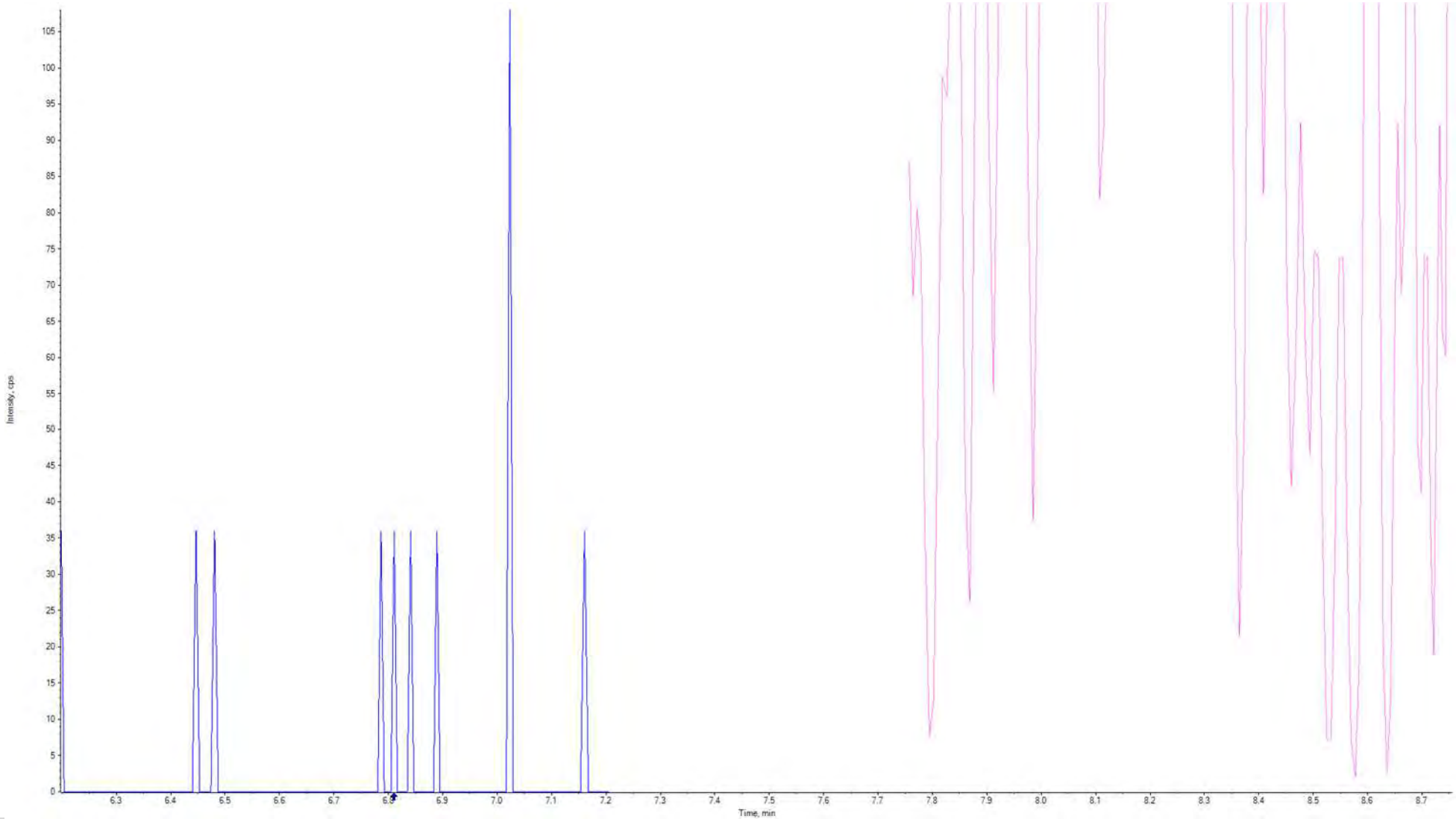


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

NFDHA_2
Sample: WG1973357-5 S/N:2812.0 Points Across peak:21

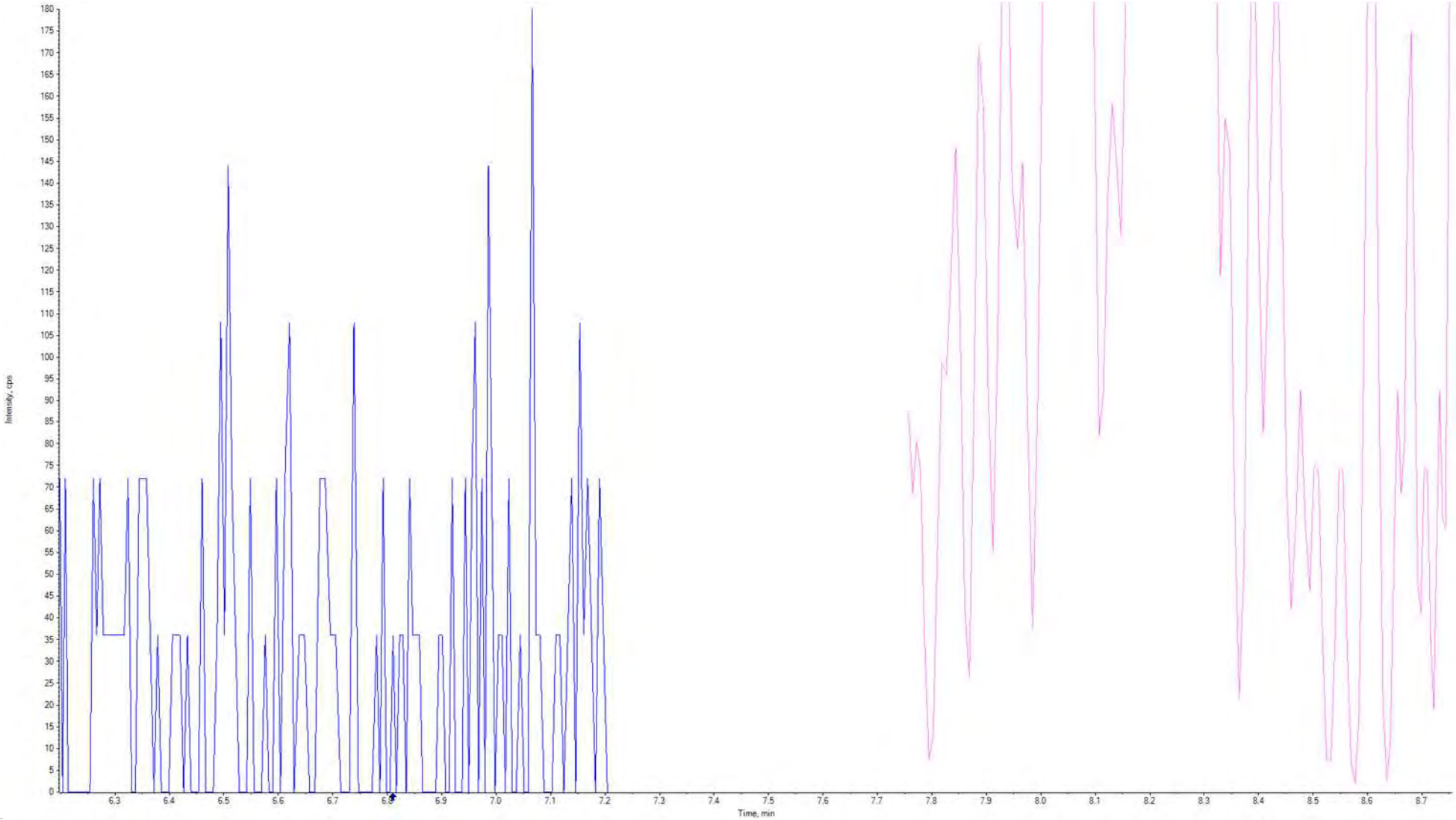


TDCA
Sample: WG1973357-5 S/N:N/A Points Across peak:N/A



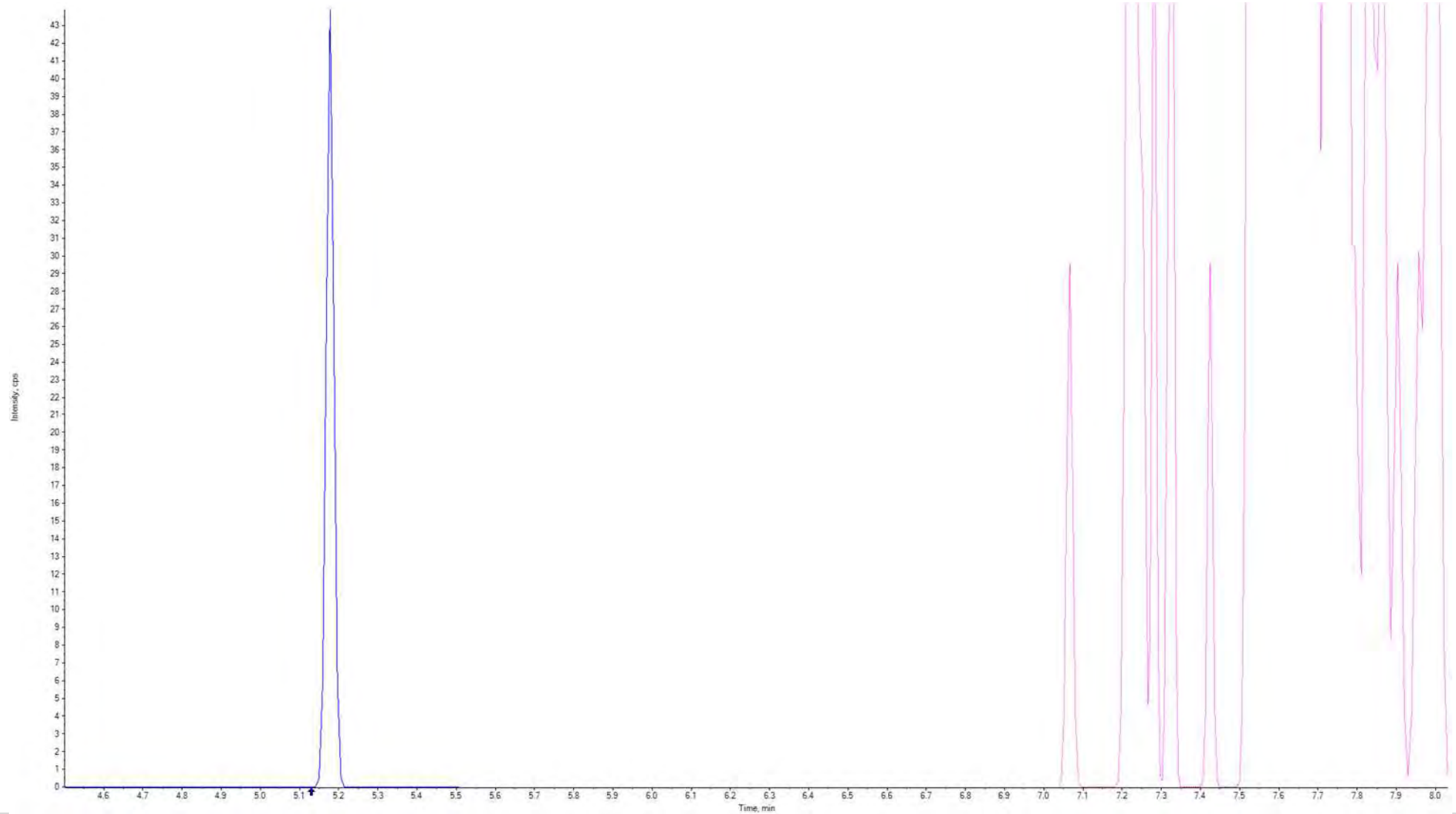
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

TDCA_2
Sample: WG1973357-5 S/N:N/A Points Across peak:N/A



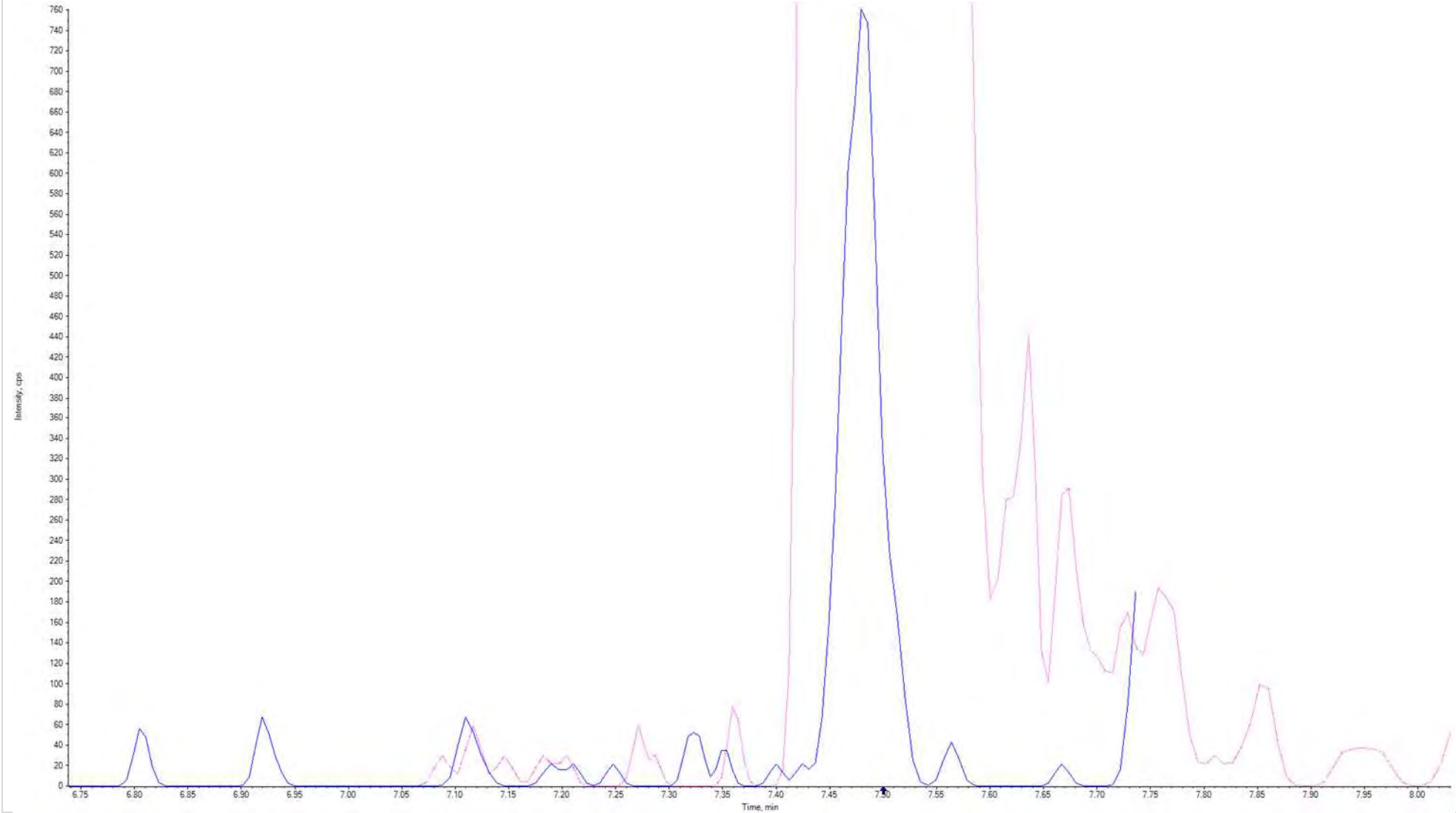
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C2D4-4:2FTS
Sample: WG1973357-5 S/N:N/A Points Across peak:N/A

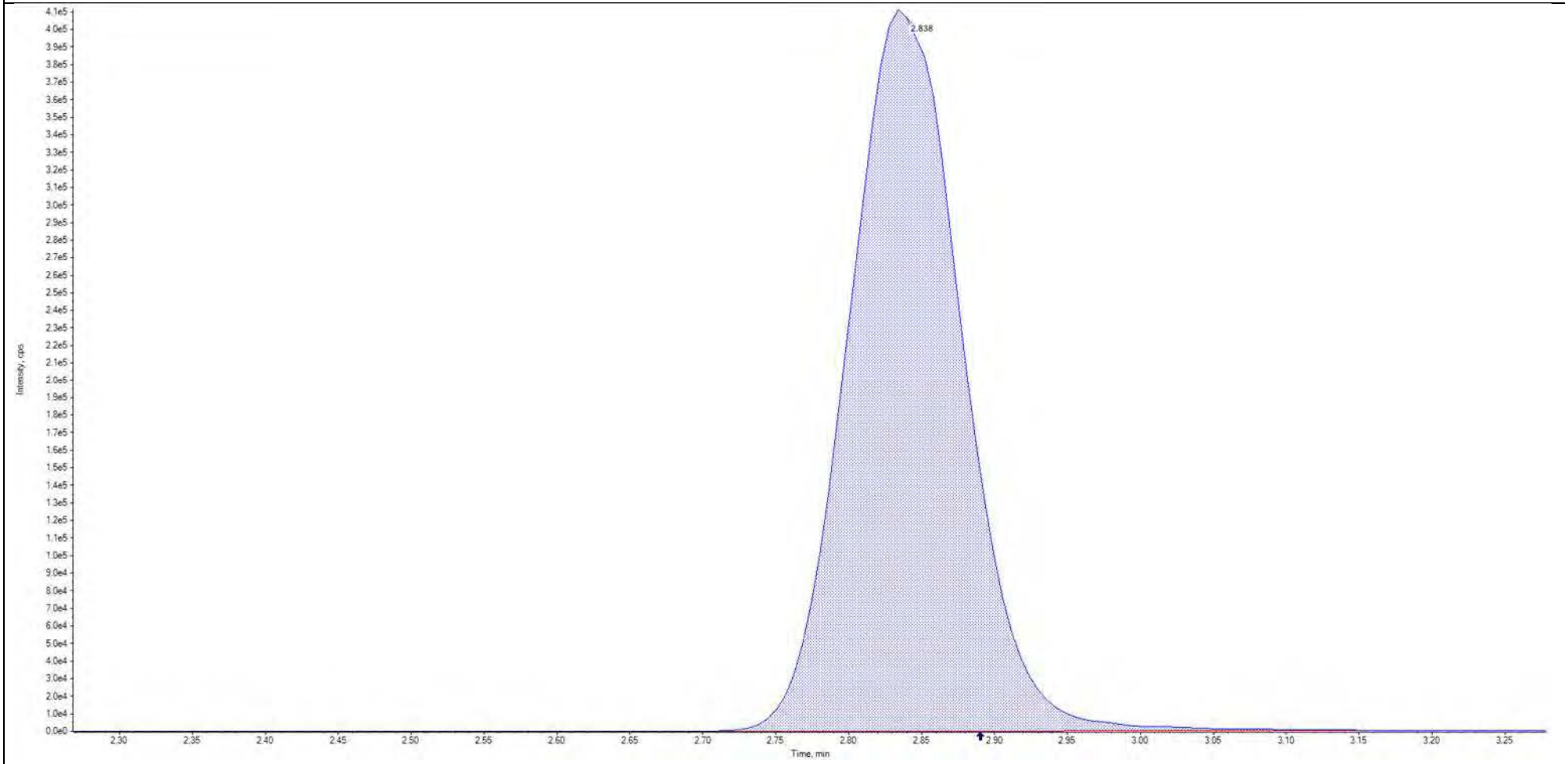


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C2-PFOA
Sample: WG1973357-5 S/N:N/A Points Across peak:N/A

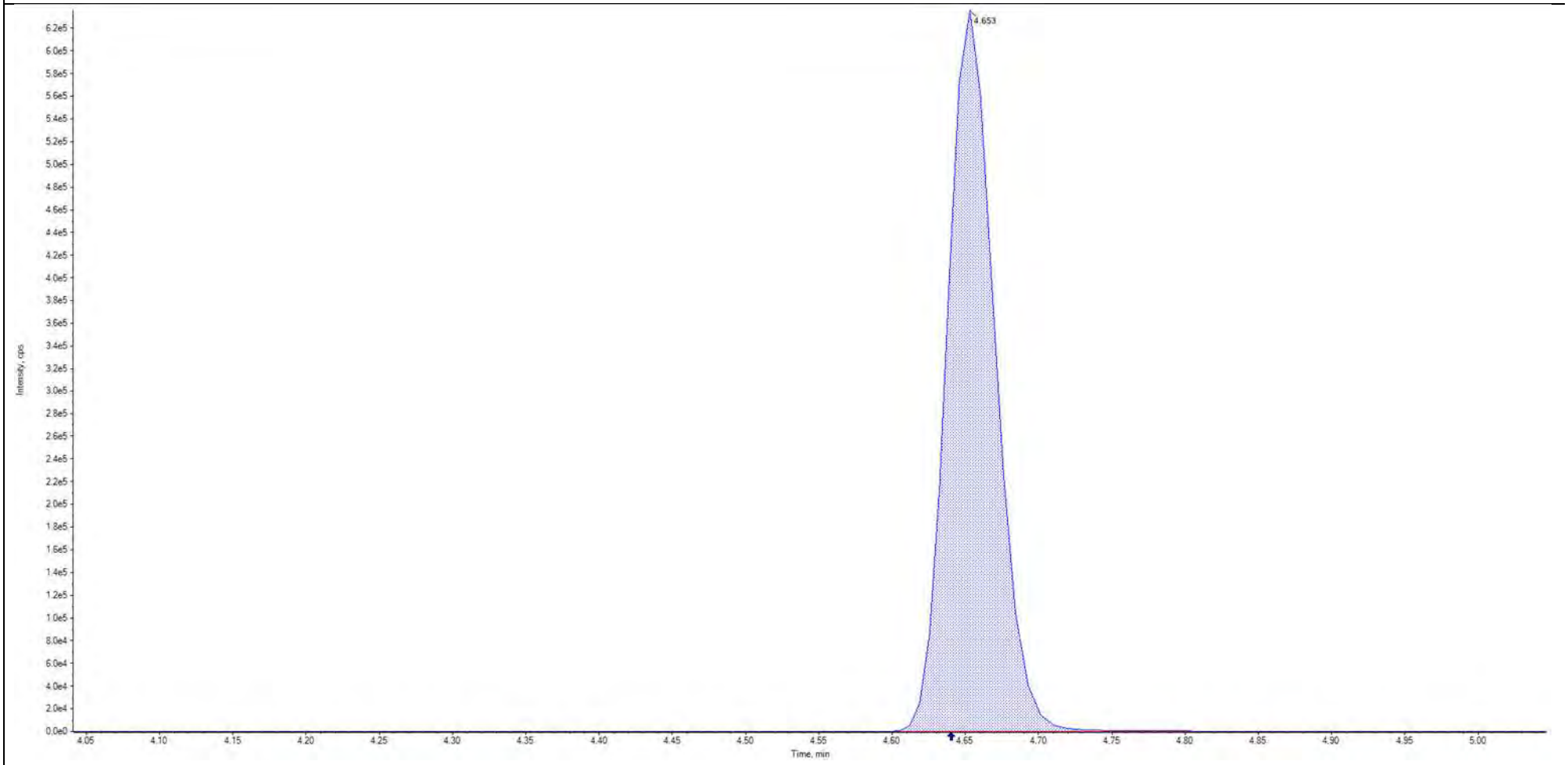


13C4-PFBA
Sample: WG1973357-5



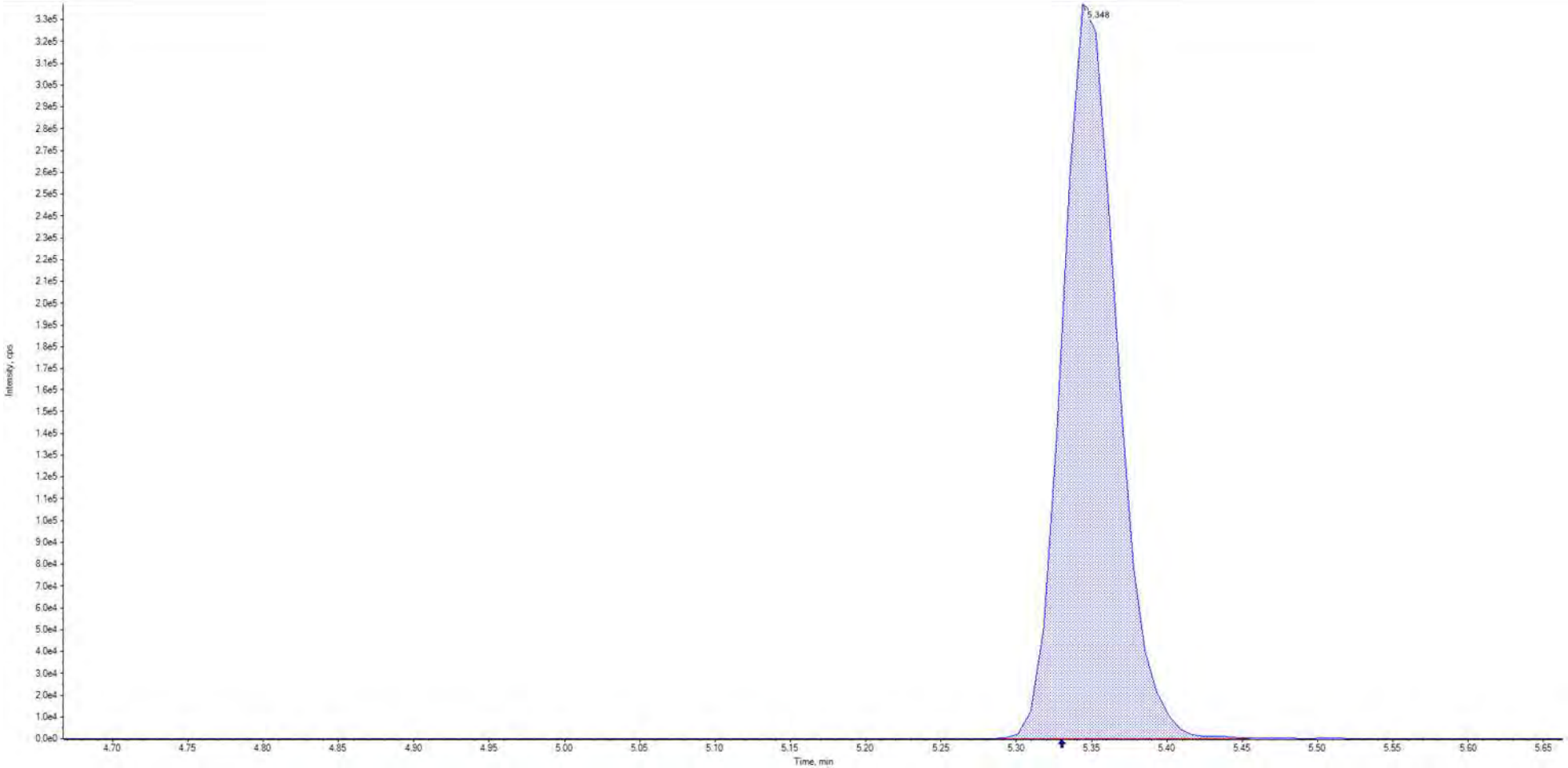
Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C5-PFPeA
Sample: WG1973357-5

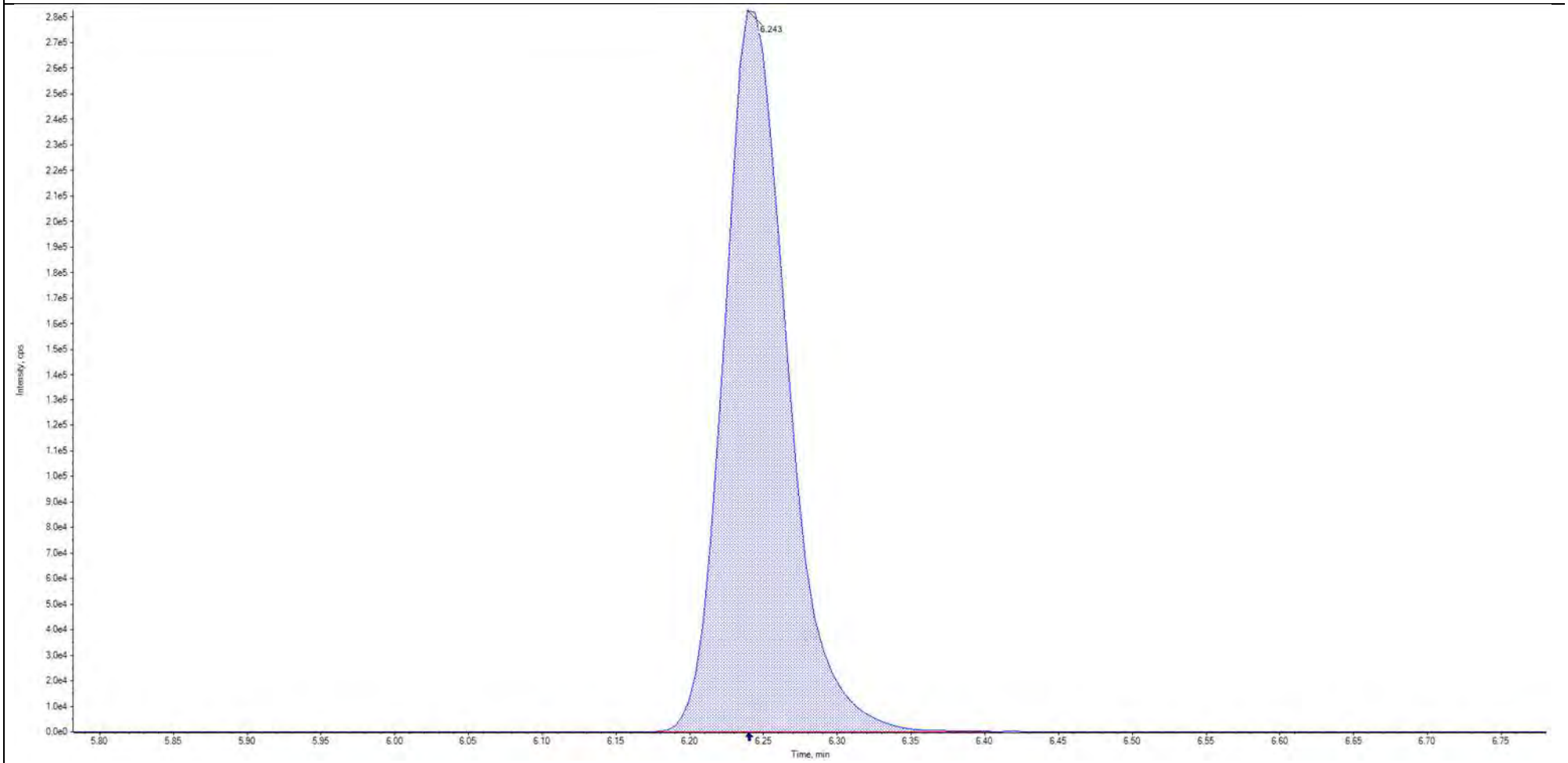


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

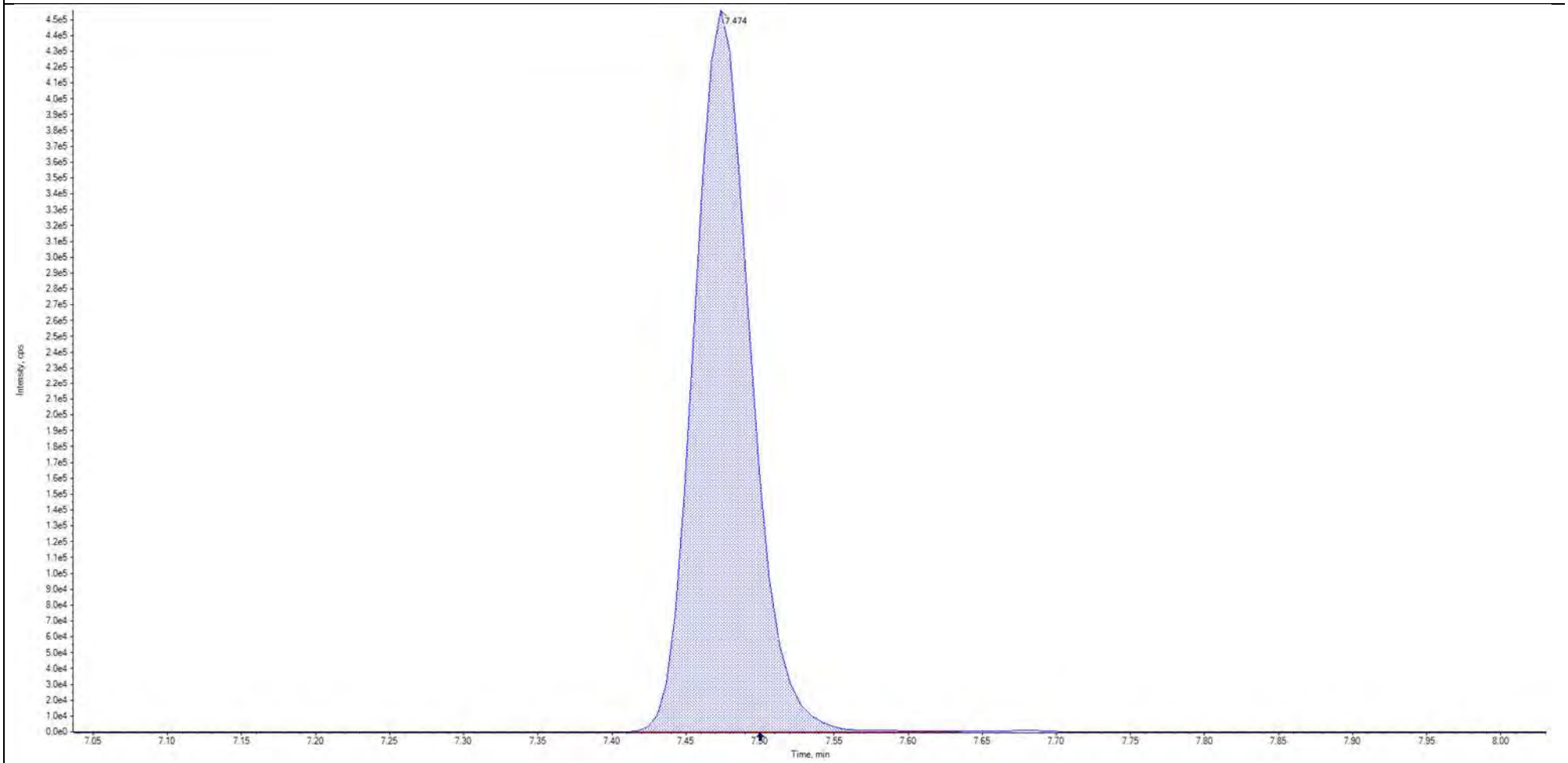
13C5-PFHxA
Sample: WG1973357-5



13C4-PFHpA
Sample: WG1973357-5

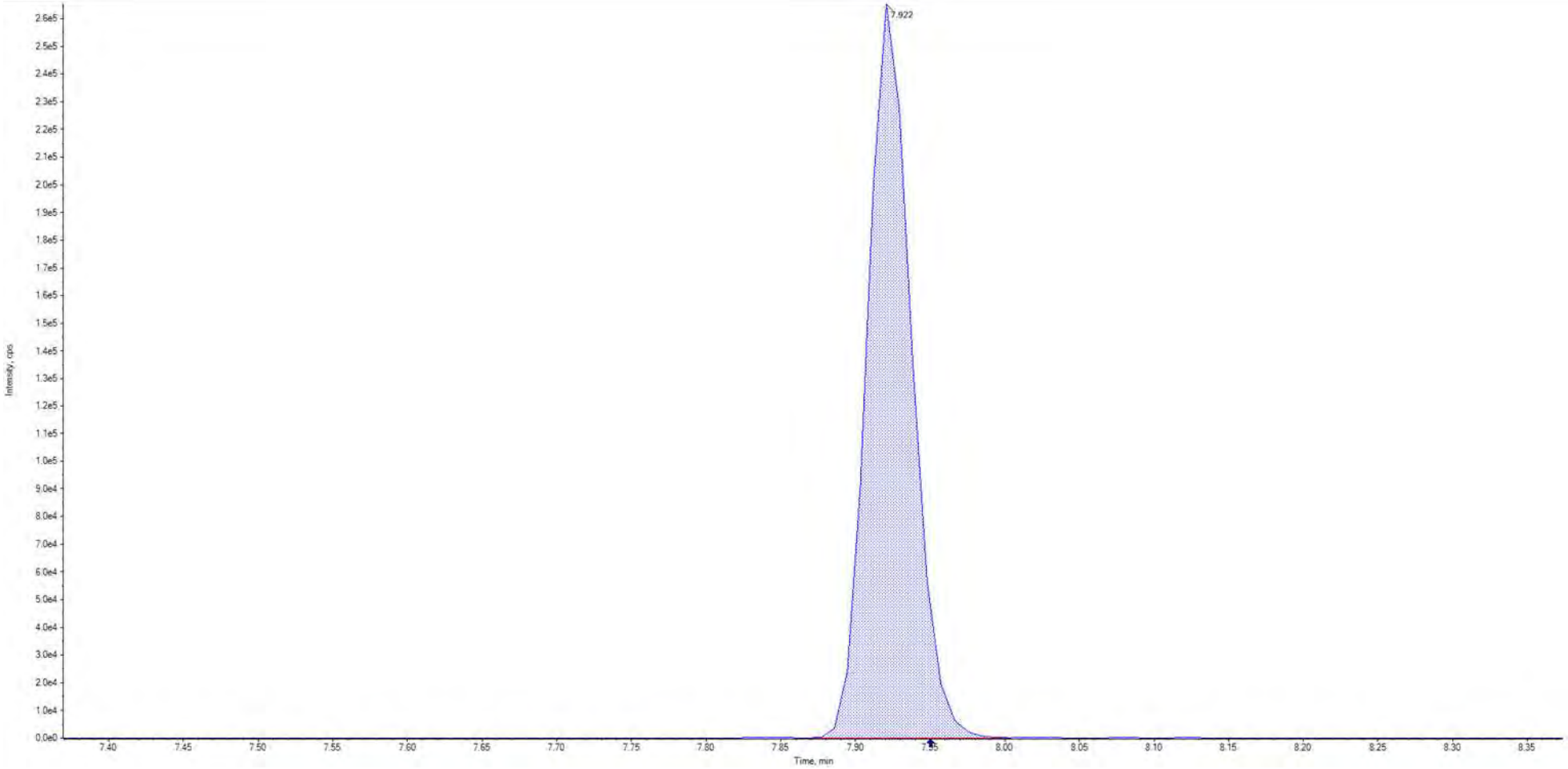


13C8-PFOA
Sample: WG1973357-5

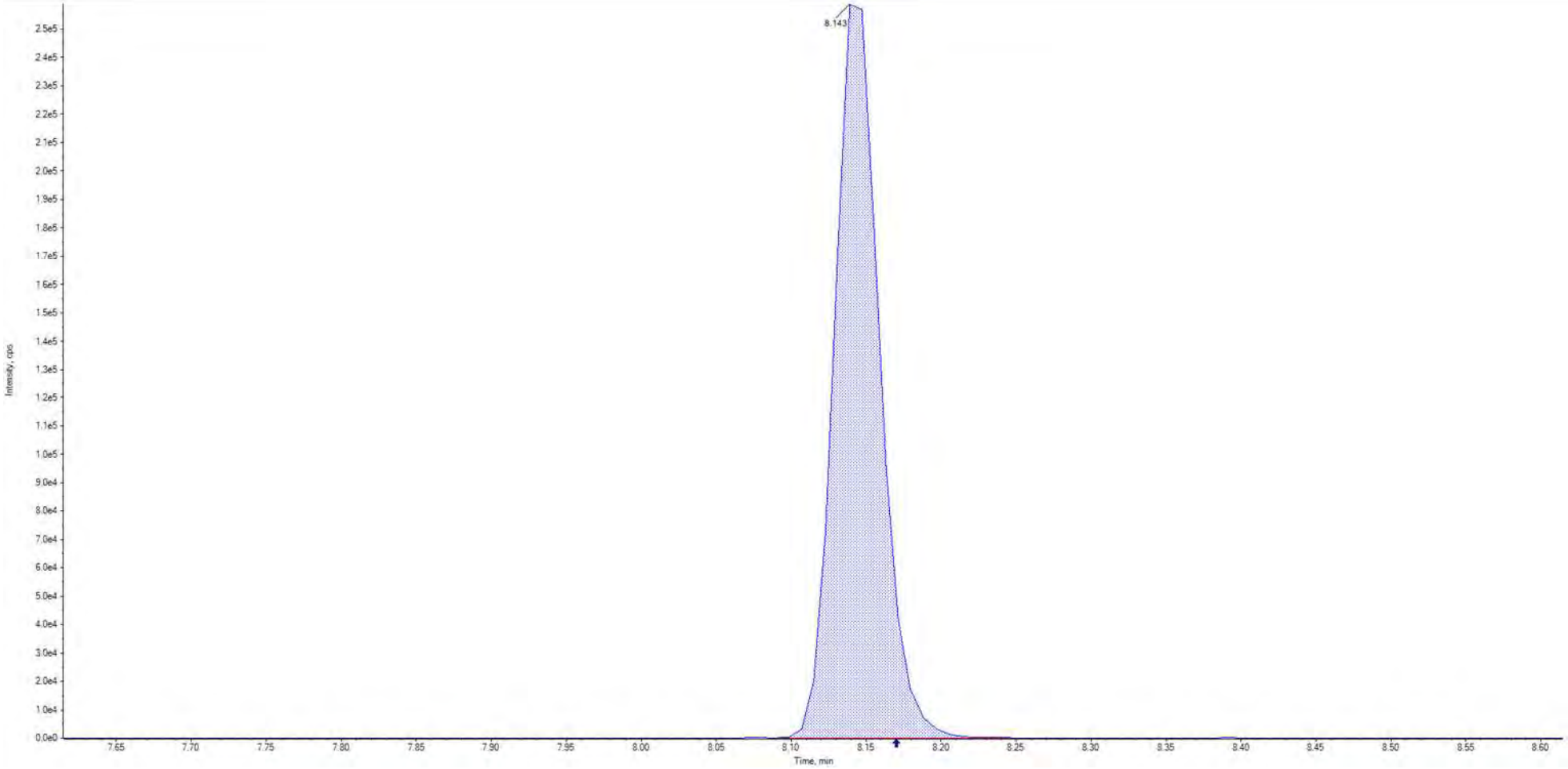


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

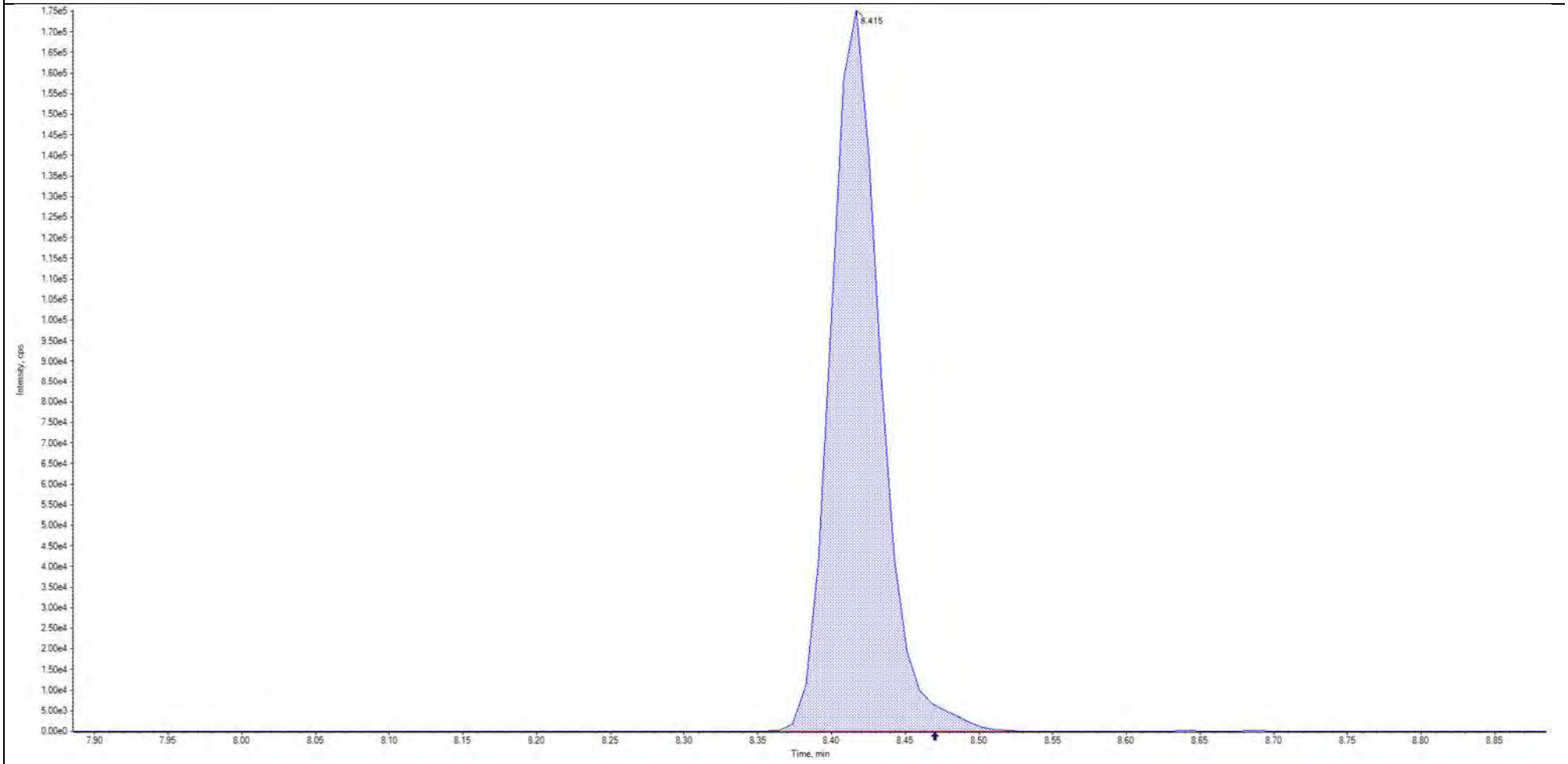
13C9-PFNA
Sample: WG1973357-5



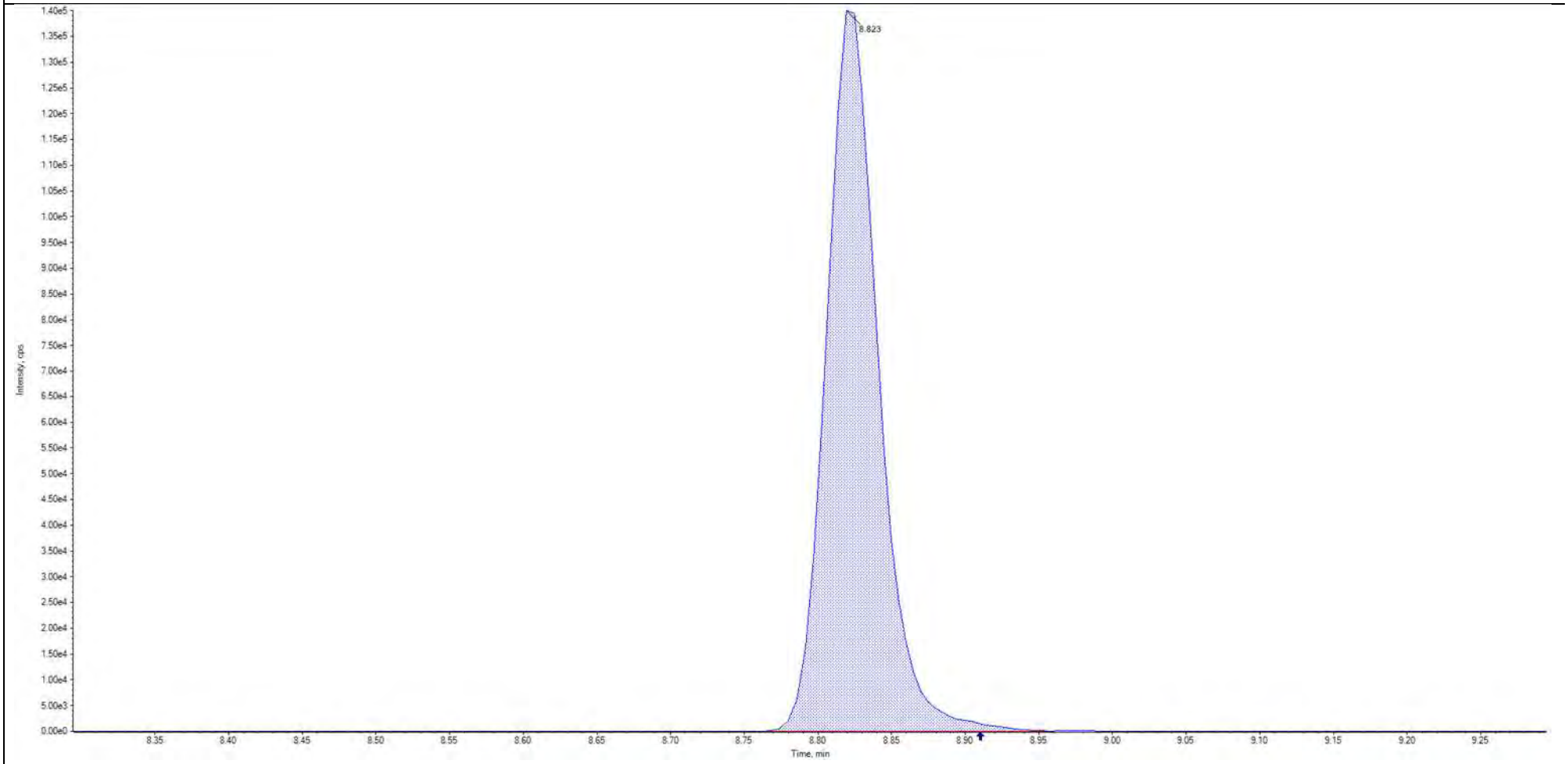
13C6-PFDA
Sample: WG1973357-5



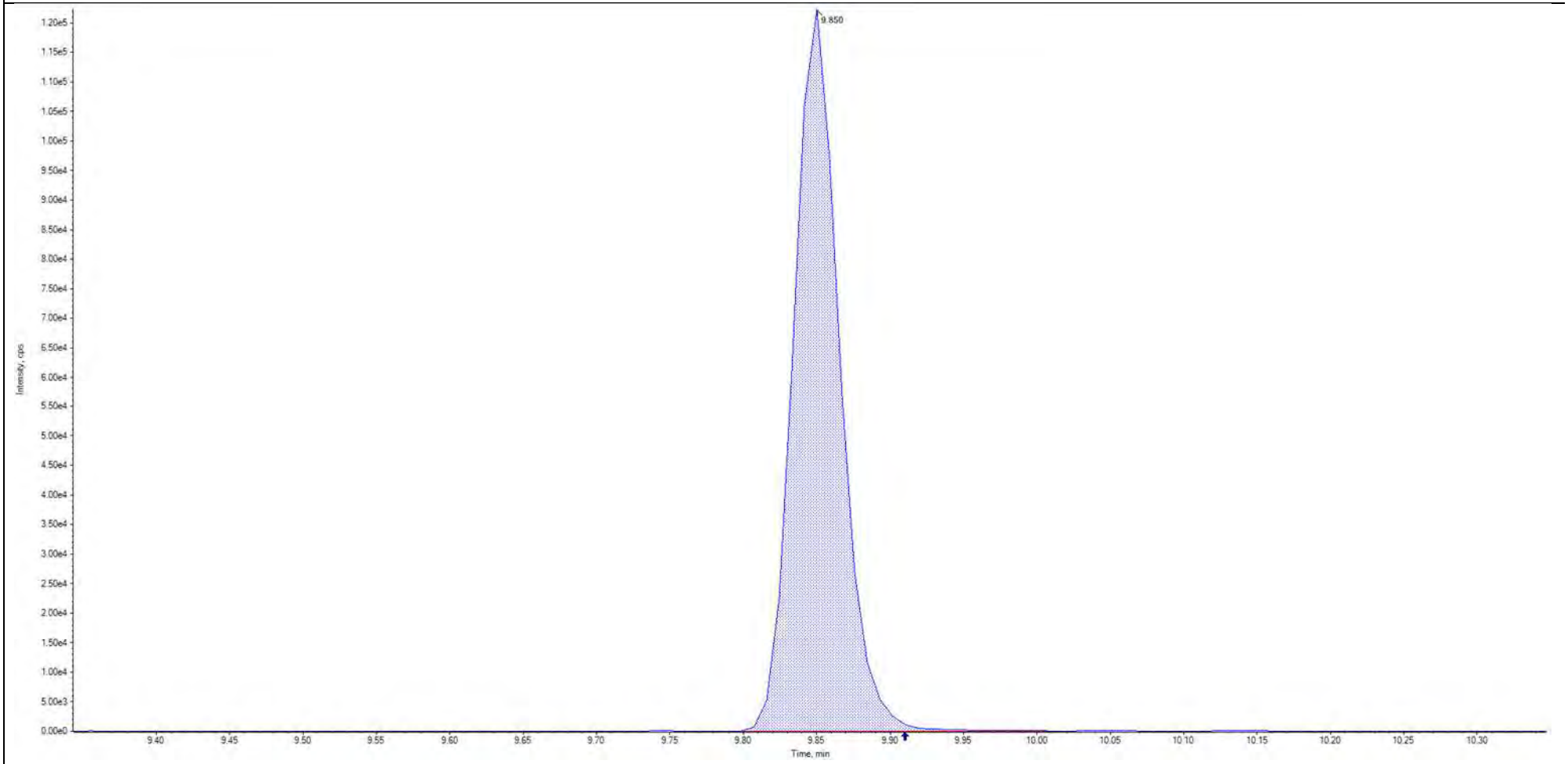
13C7-PFUnA
Sample: WG1973357-5



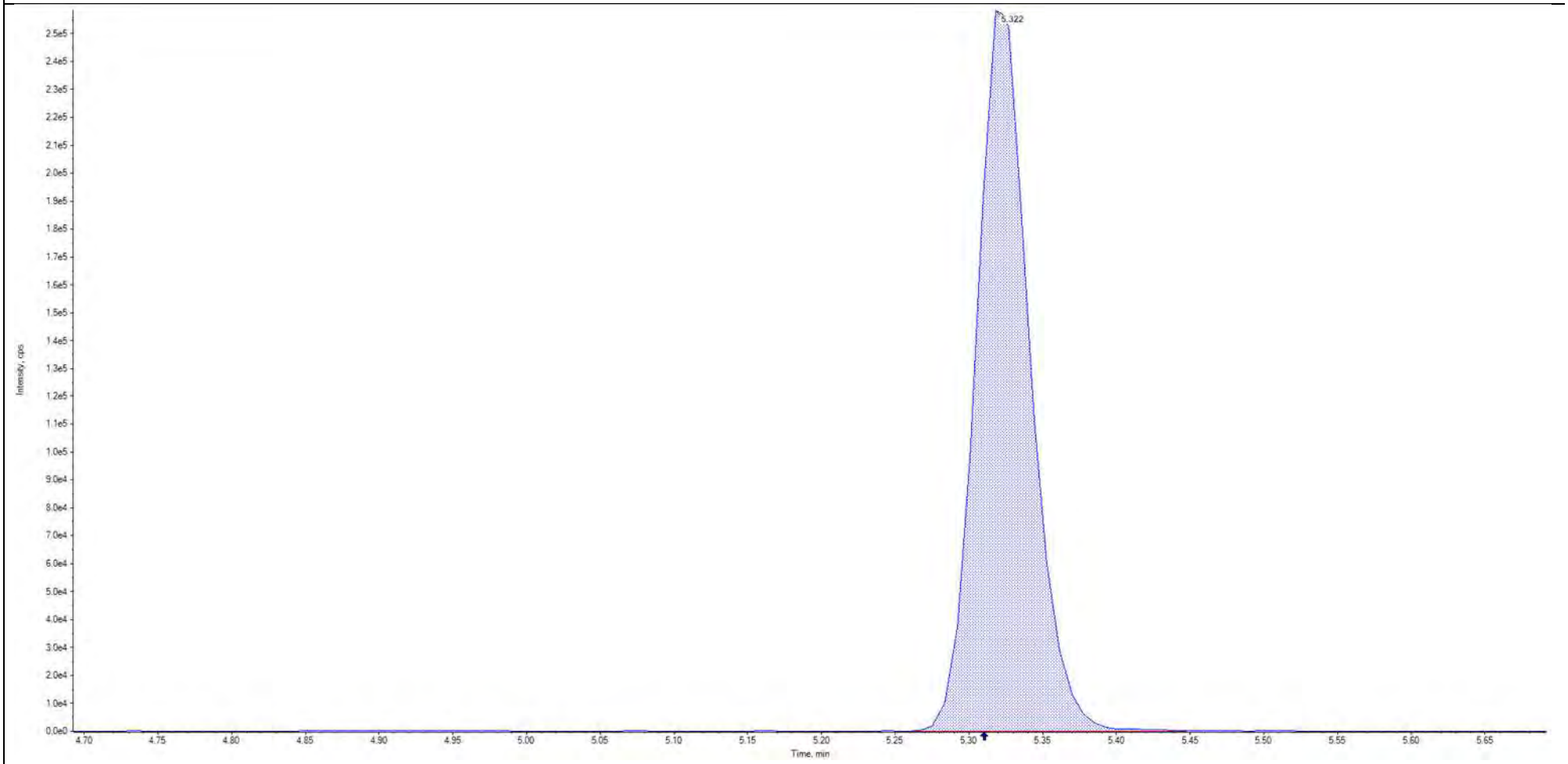
13C2-PFDoA
Sample: WG1973357-5



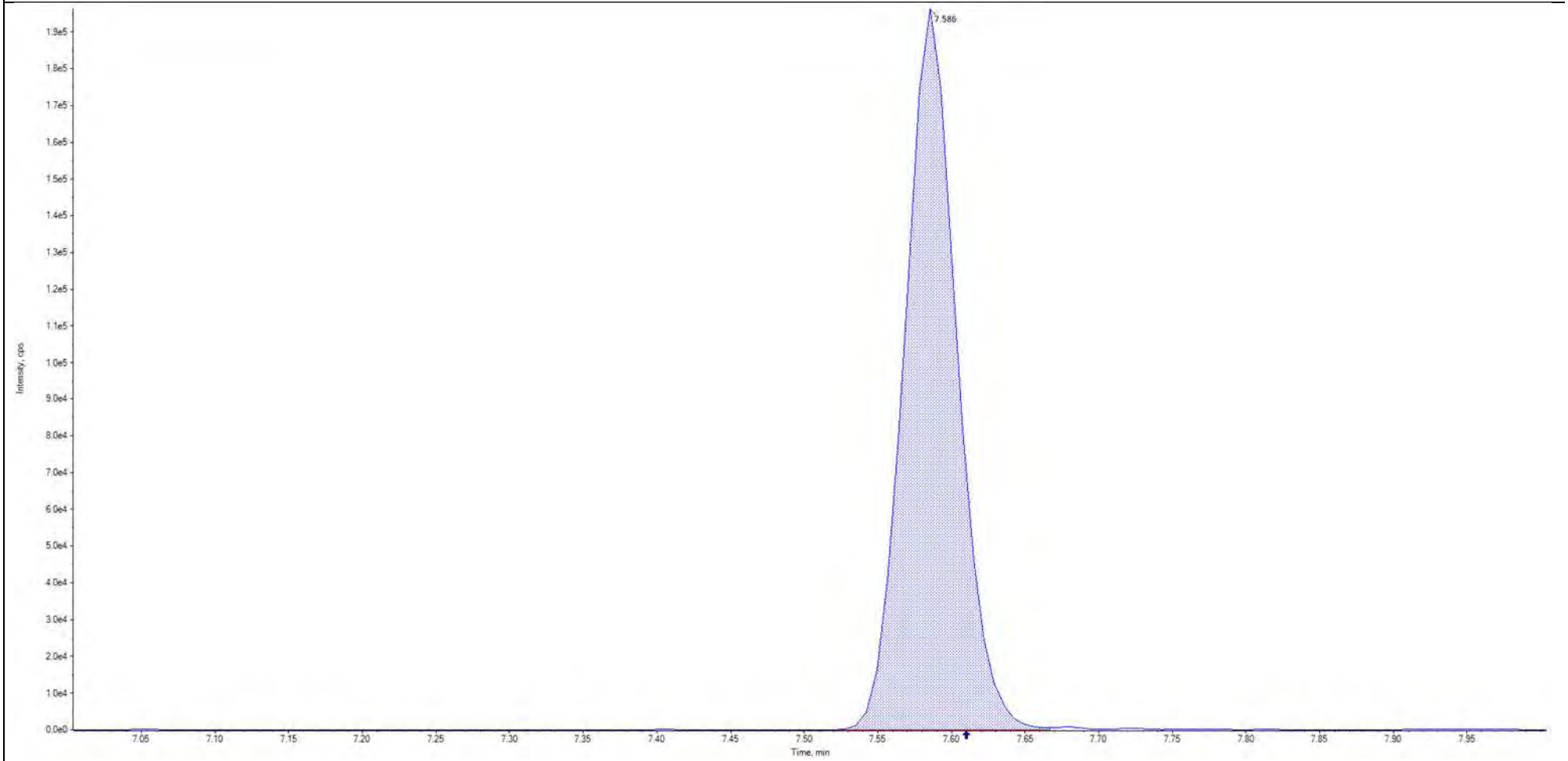
13C2-PFTeDA
Sample: WG1973357-5



13C3-PFBS
Sample: WG1973357-5

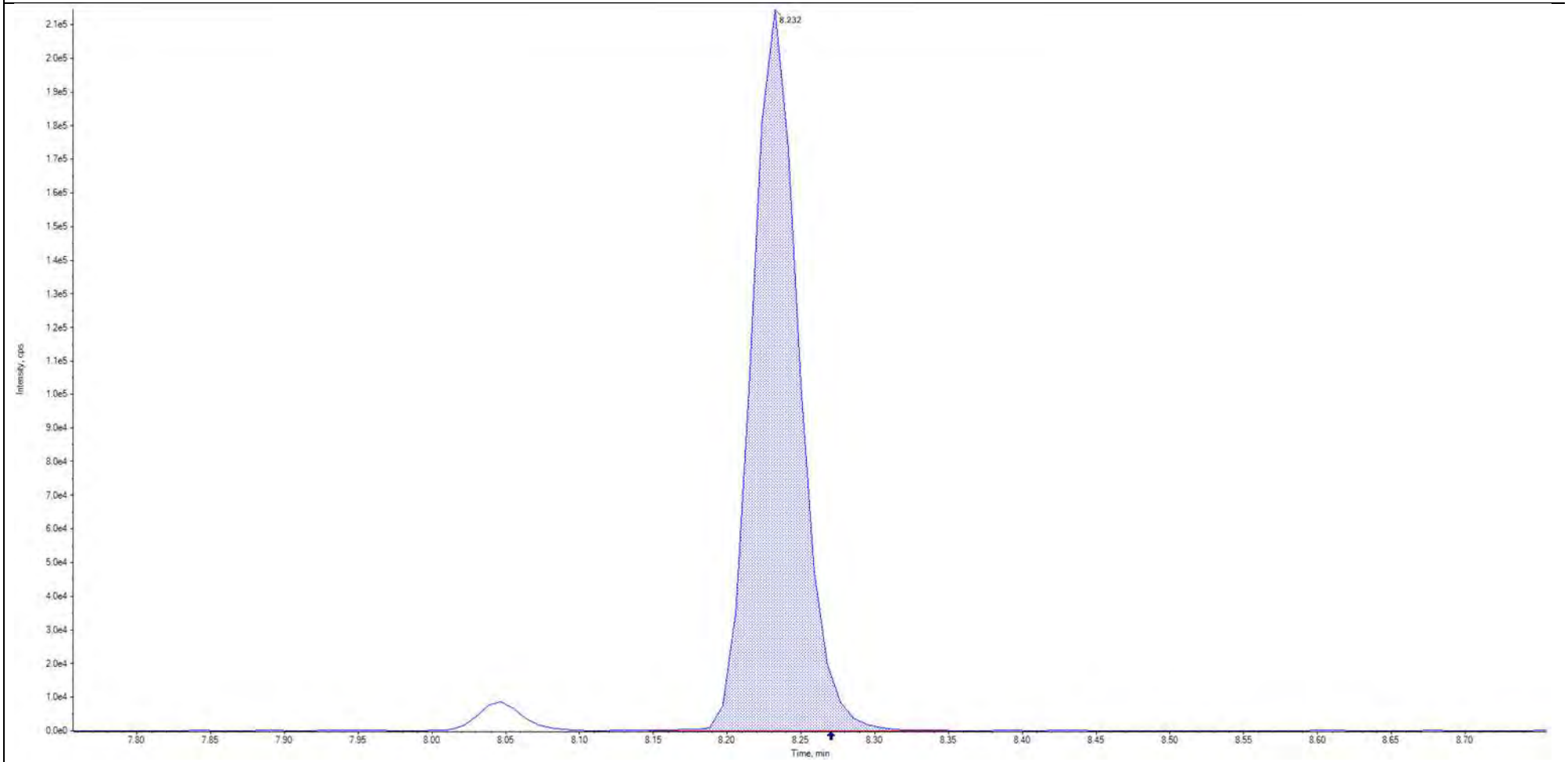


13C3-PFHxS
Sample: WG1973357-5

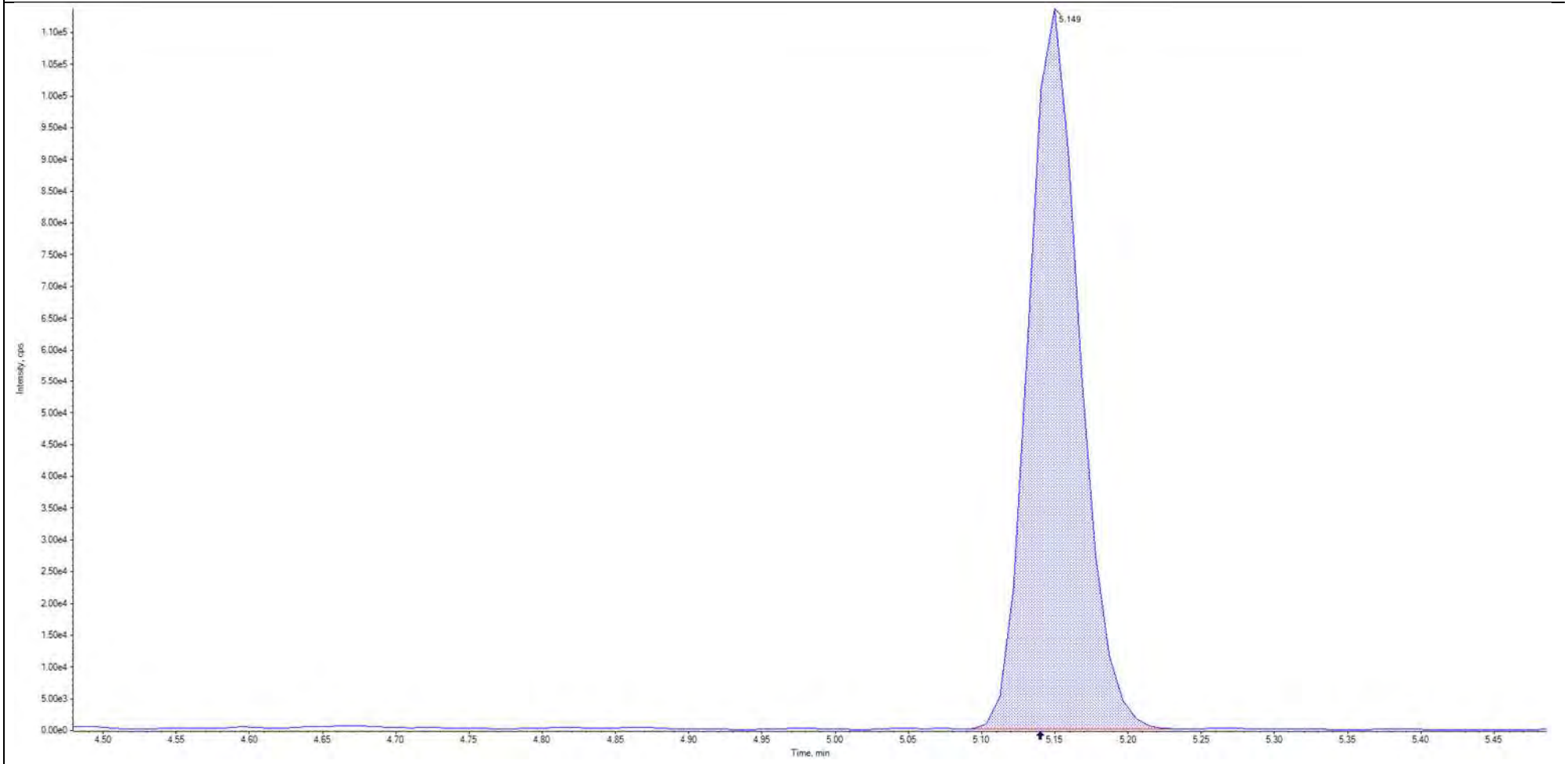


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

13C8-PFOS
Sample: WG1973357-5

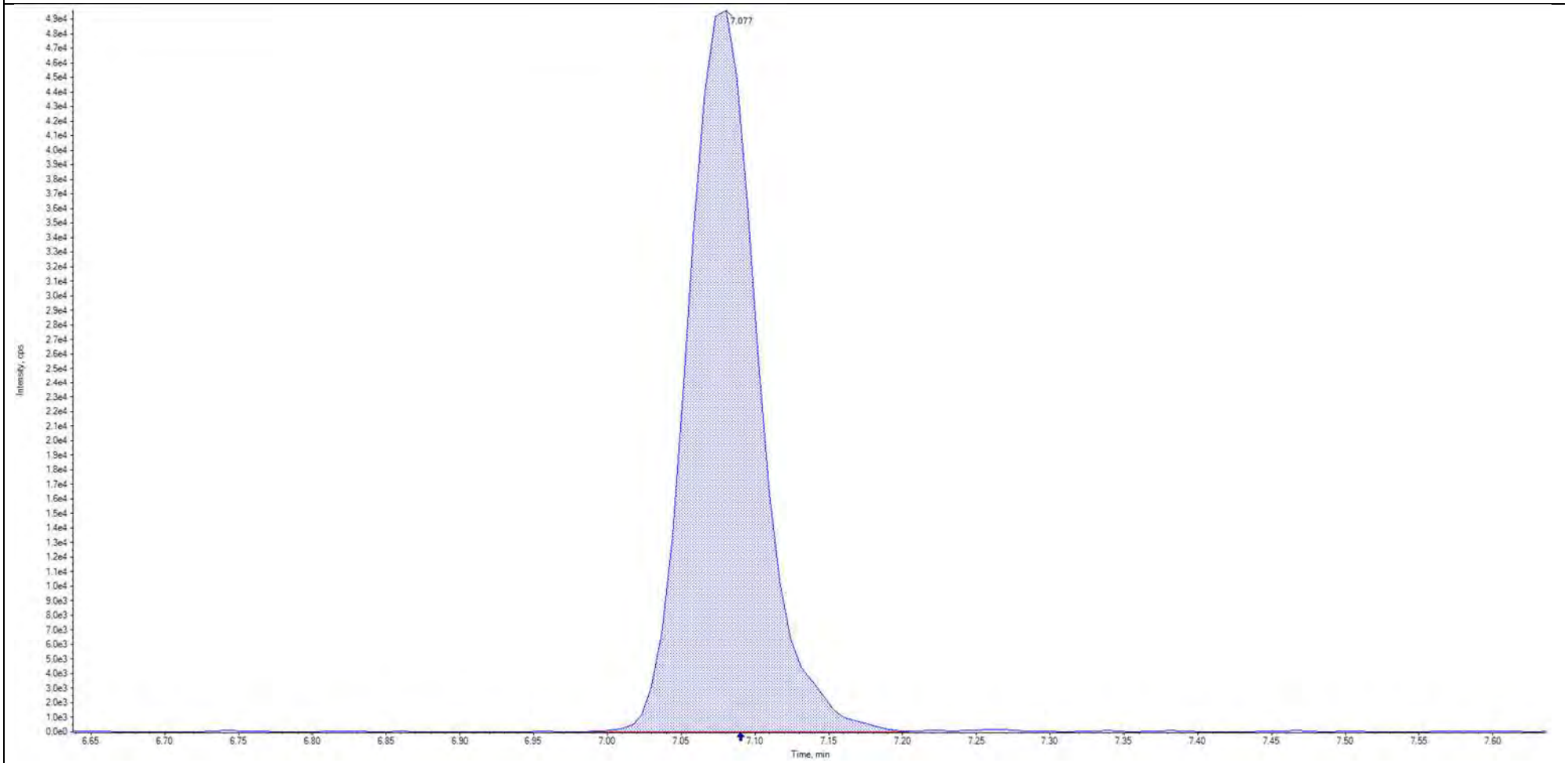


13C2-4:2FTS
Sample: WG1973357-5

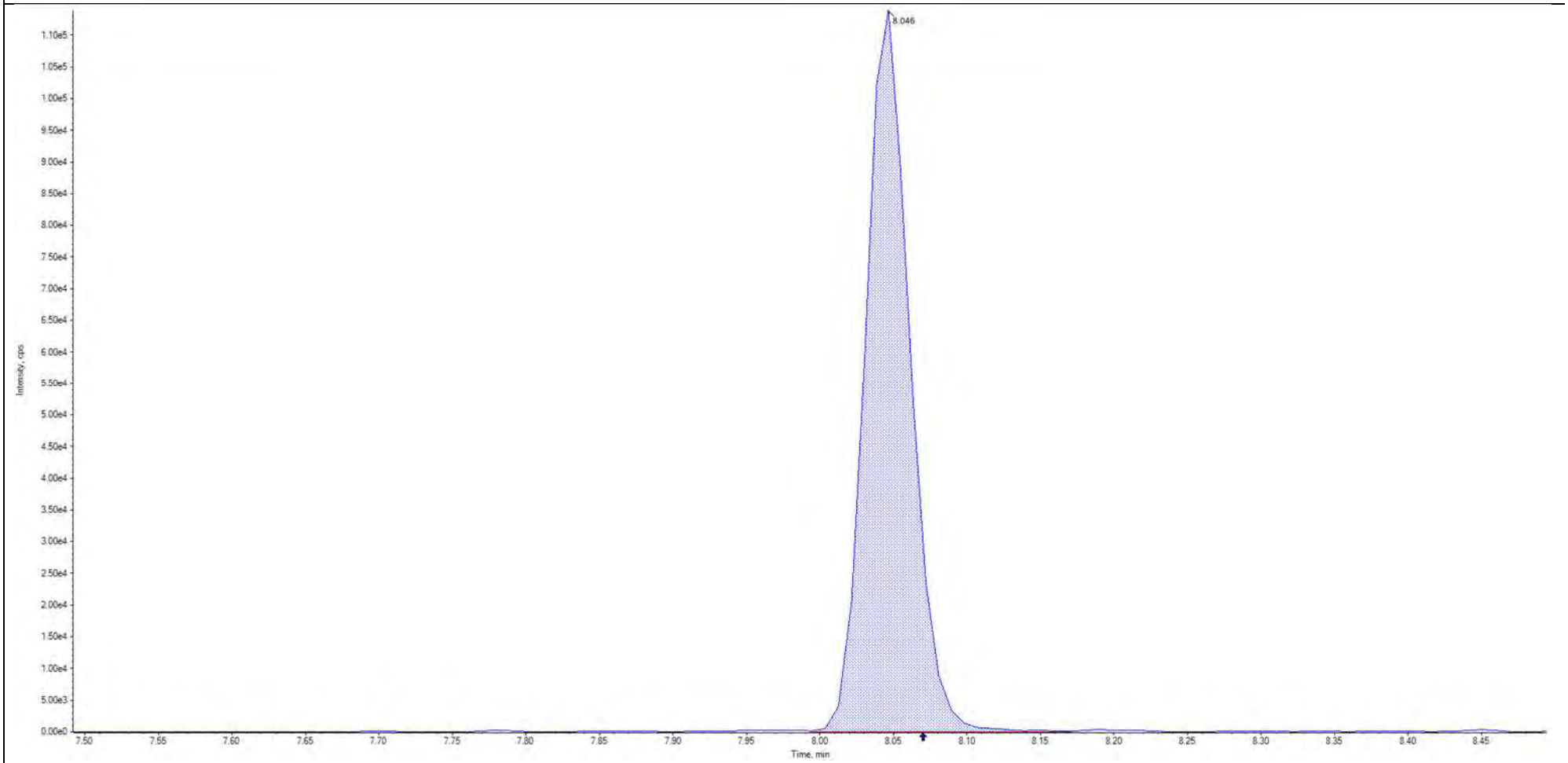


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

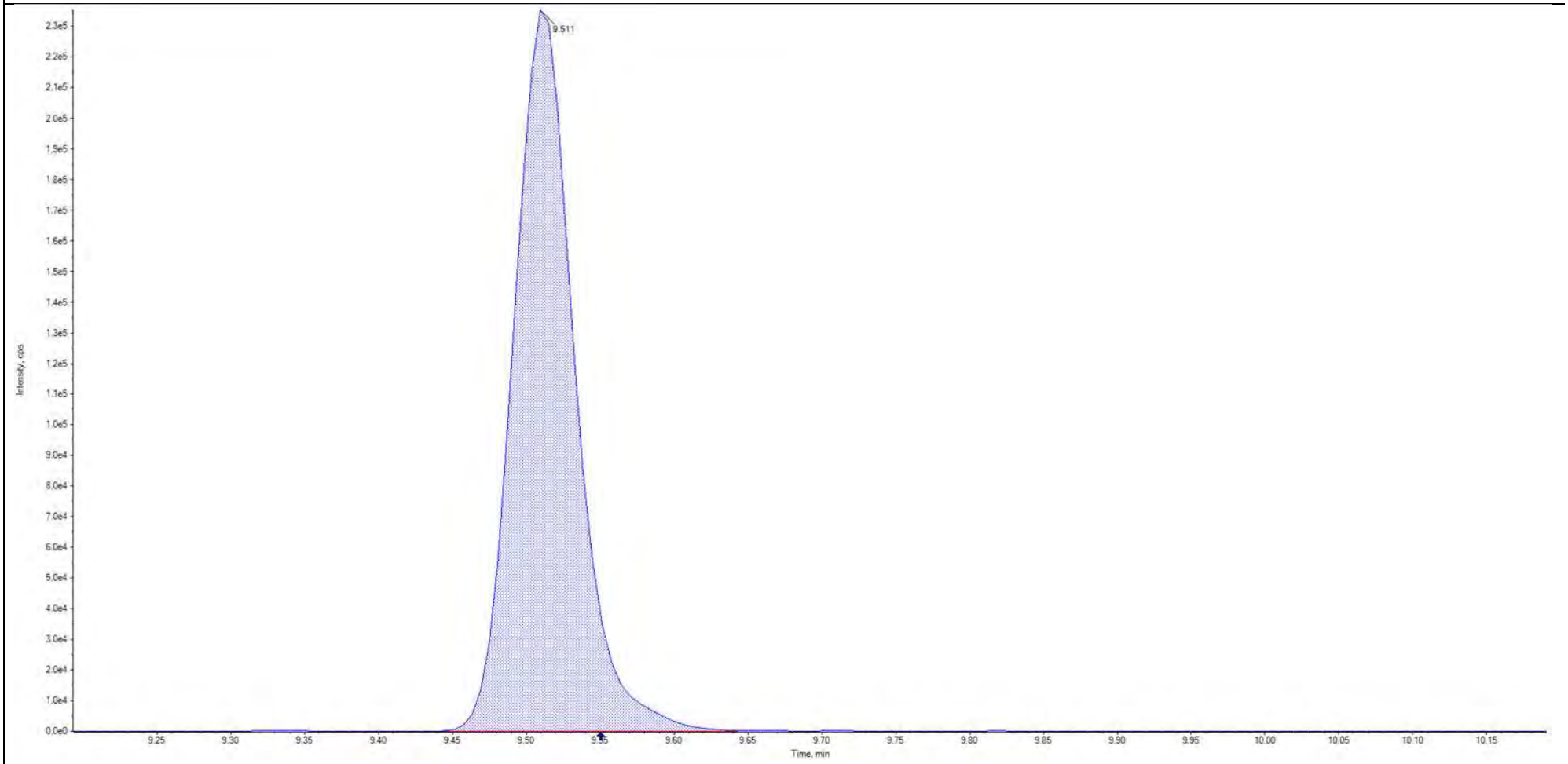
13C2-6:2FTS
Sample: WG1973357-5



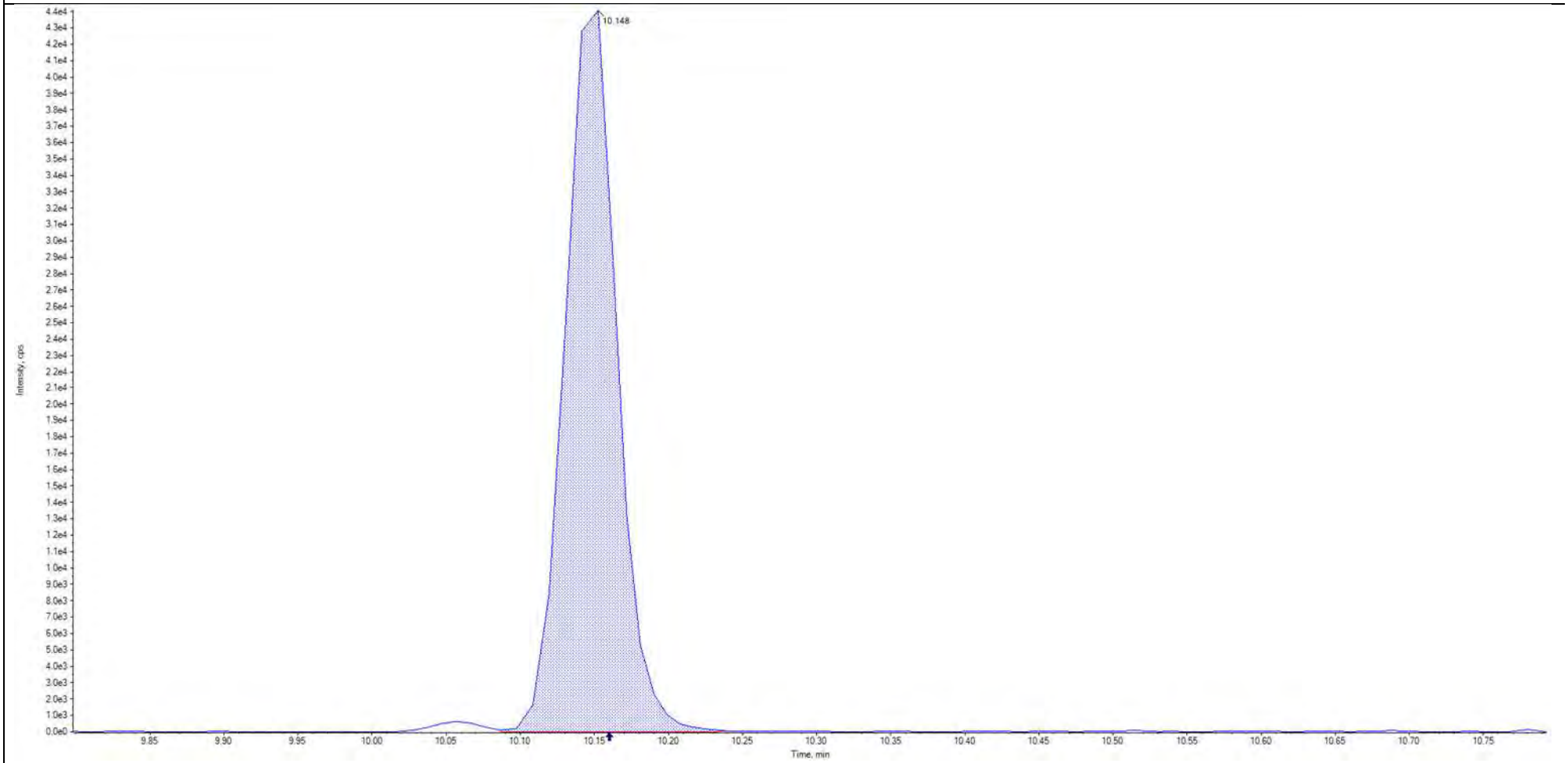
13C2-8:2FTS
Sample: WG1973357-5



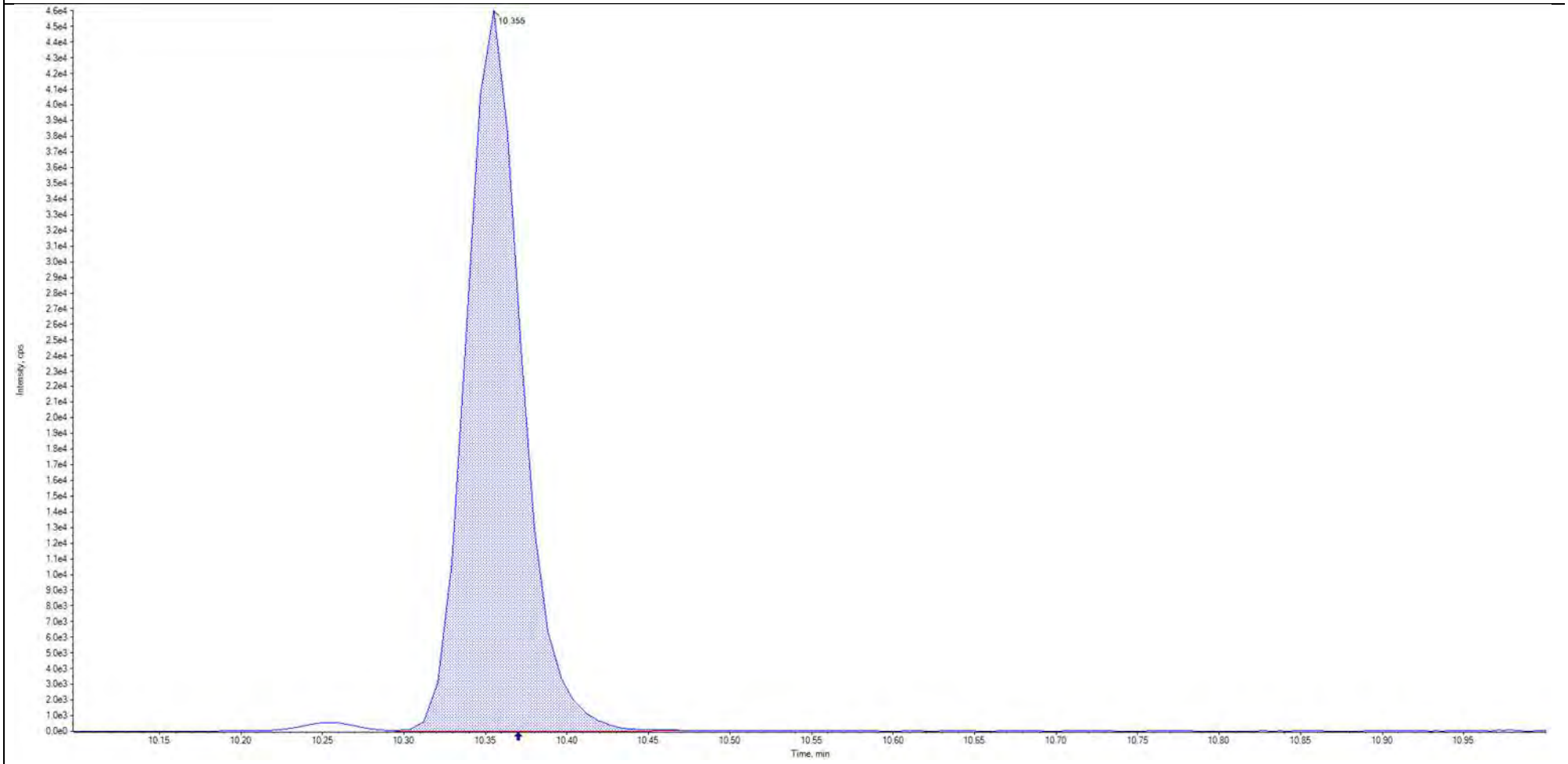
13C8-PFOSA
Sample: WG1973357-5



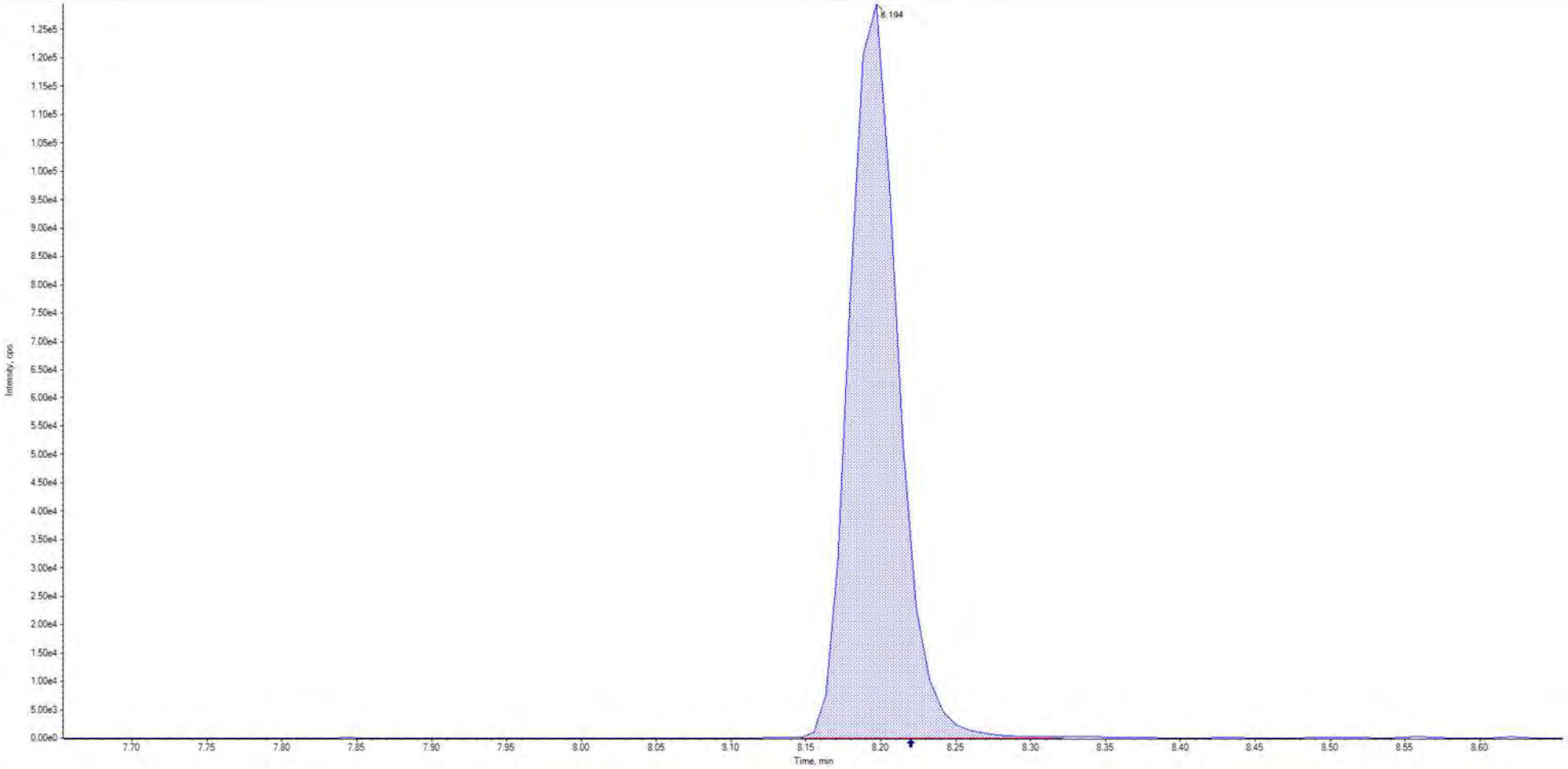
d3-NMeFOSA
Sample: WG1973357-5



d5-NEtFOSA
Sample: WG1973357-5

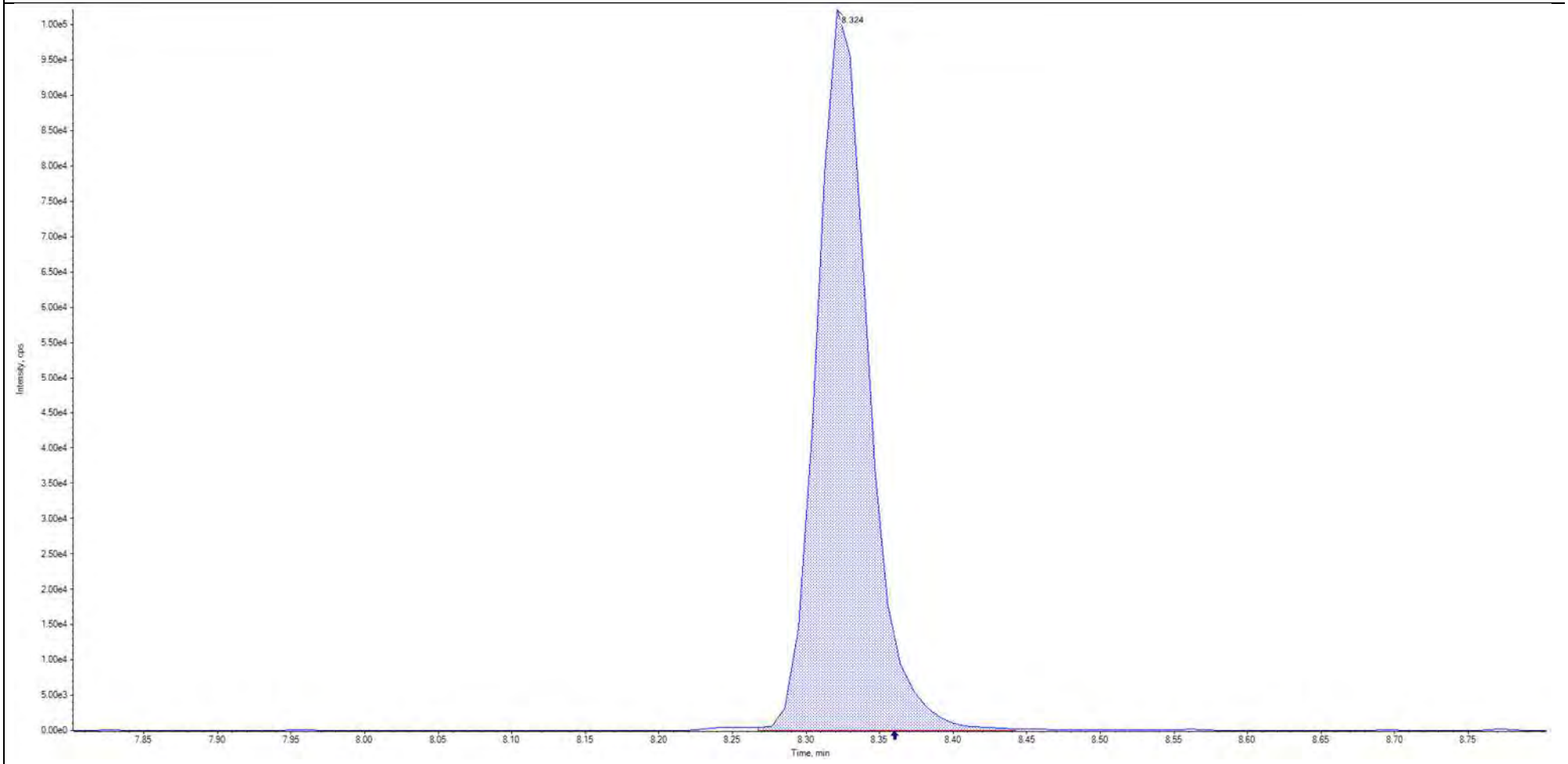


d3-NMeFOSAA
Sample: WG1973357-5

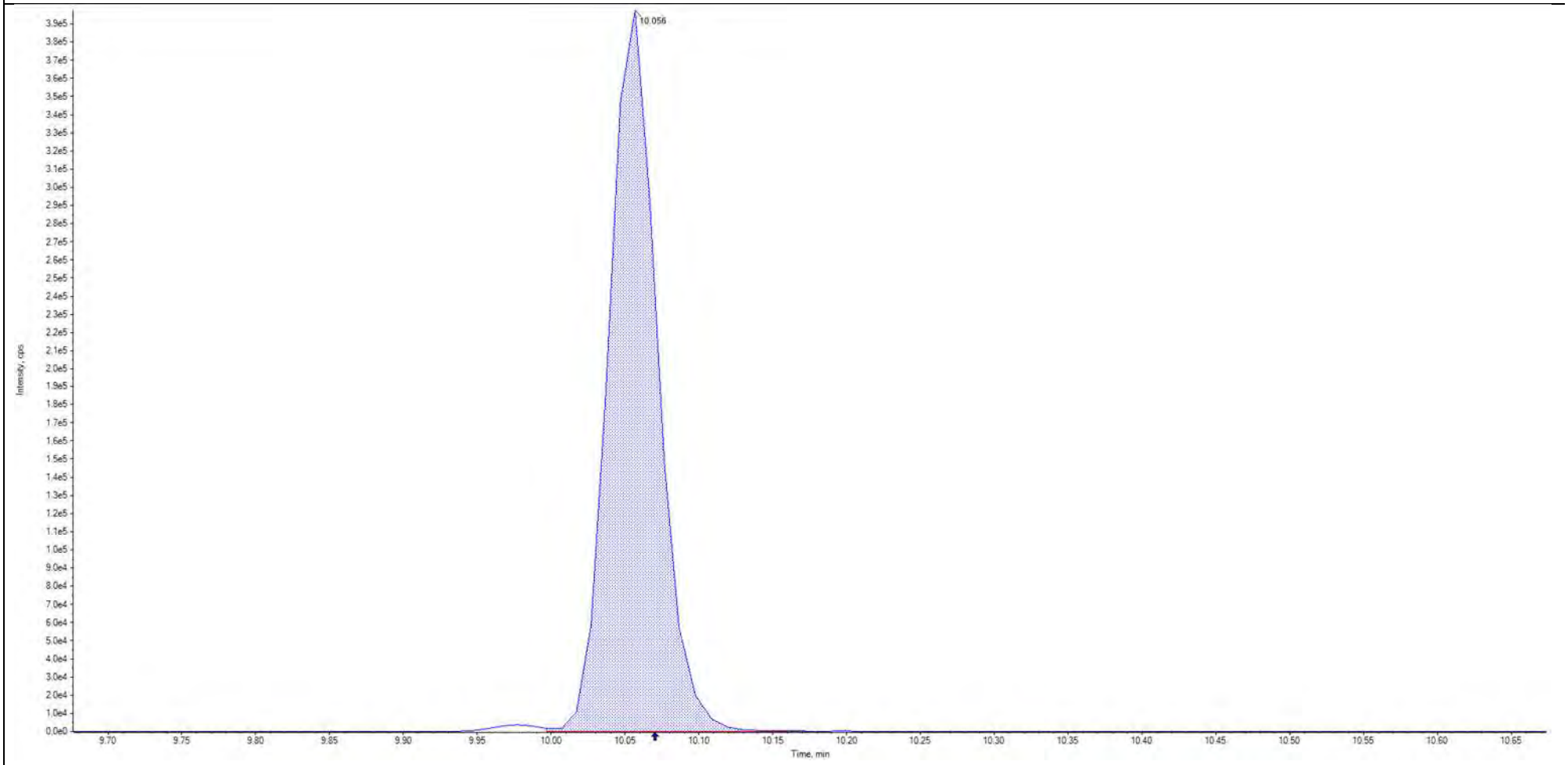


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

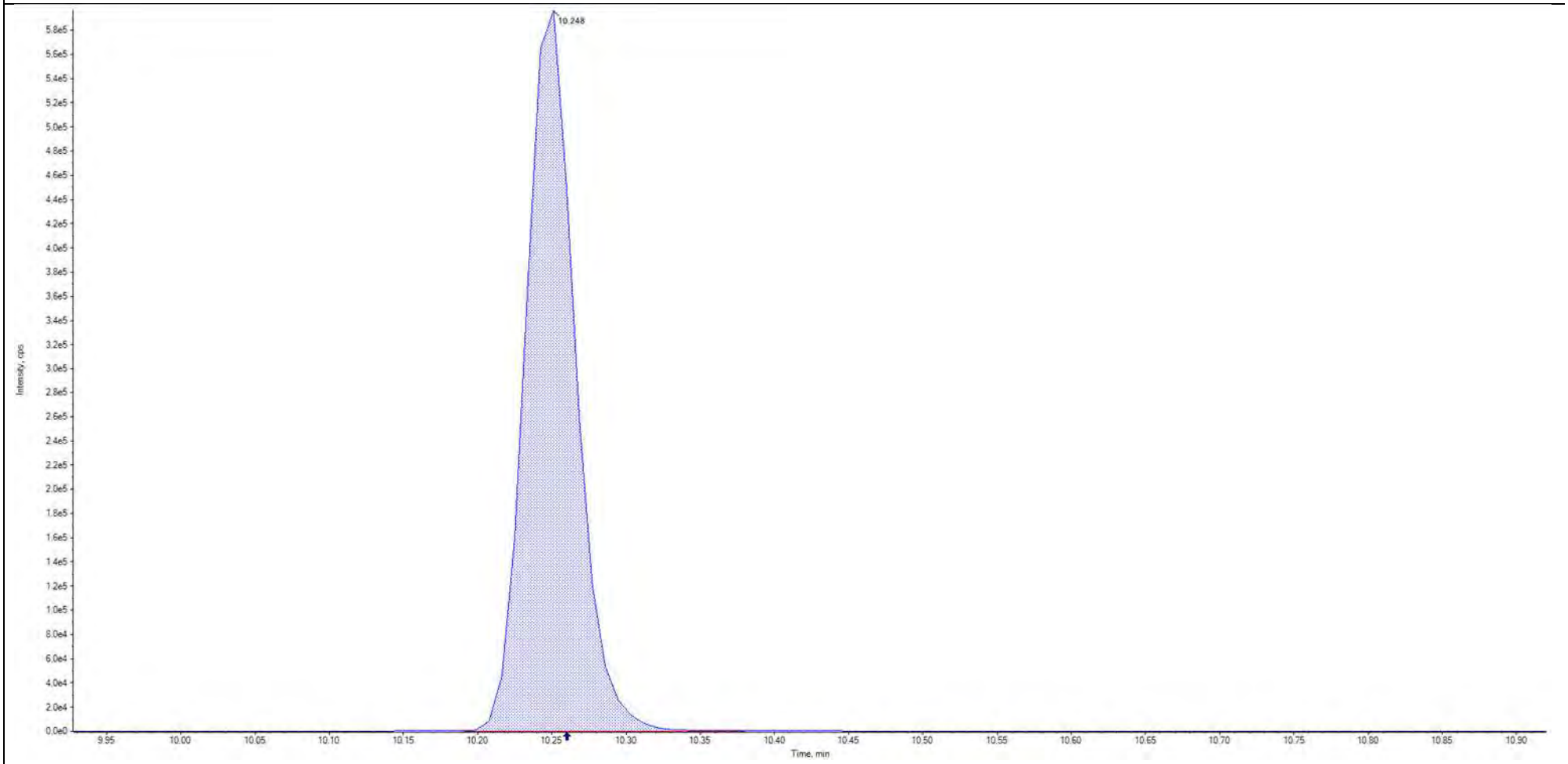
d5-NEtFOSAA
Sample: WG1973357-5



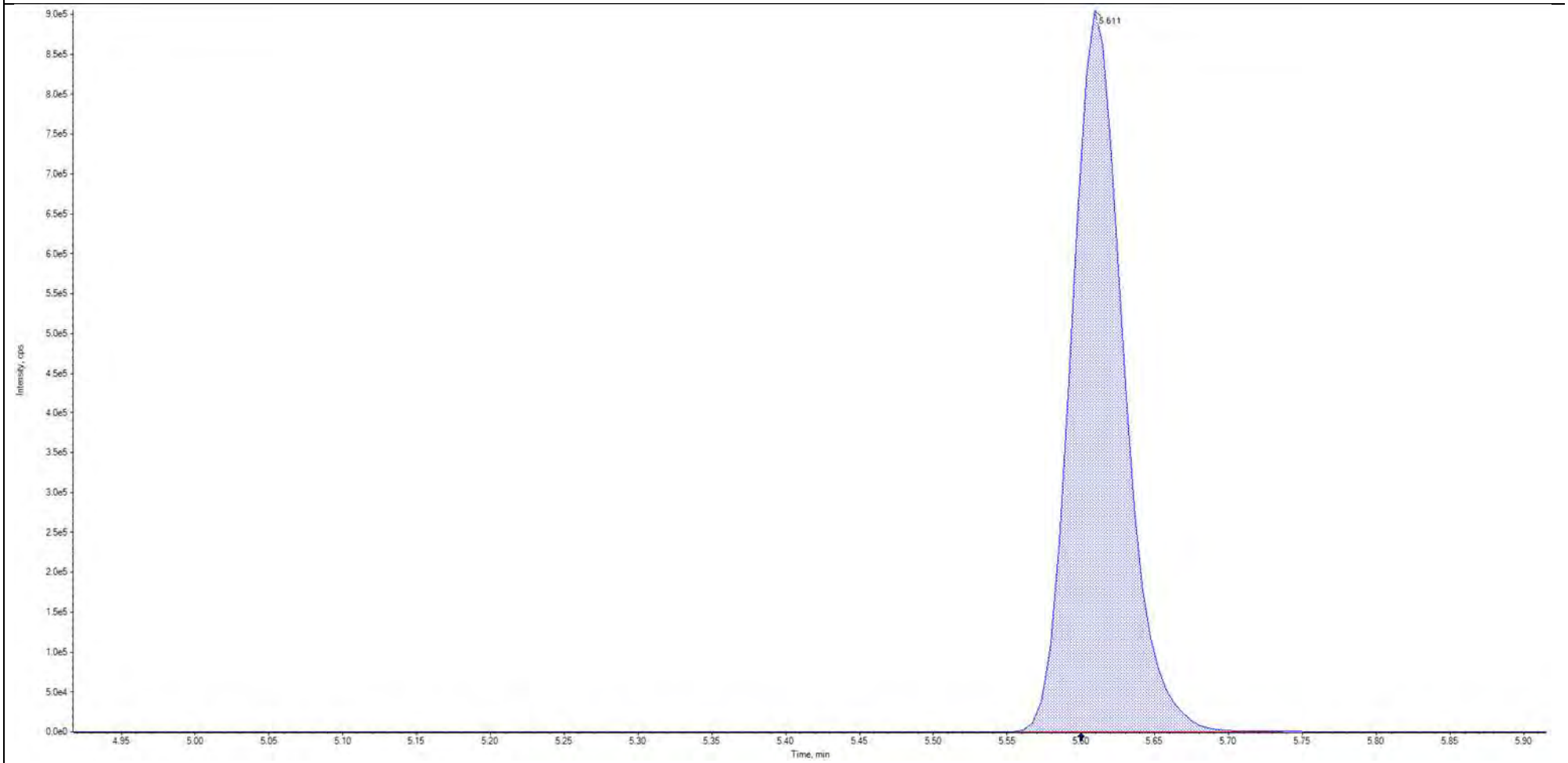
d7-NMeFOSE
Sample: WG1973357-5



d9-NEtFOSE
Sample: WG1973357-5

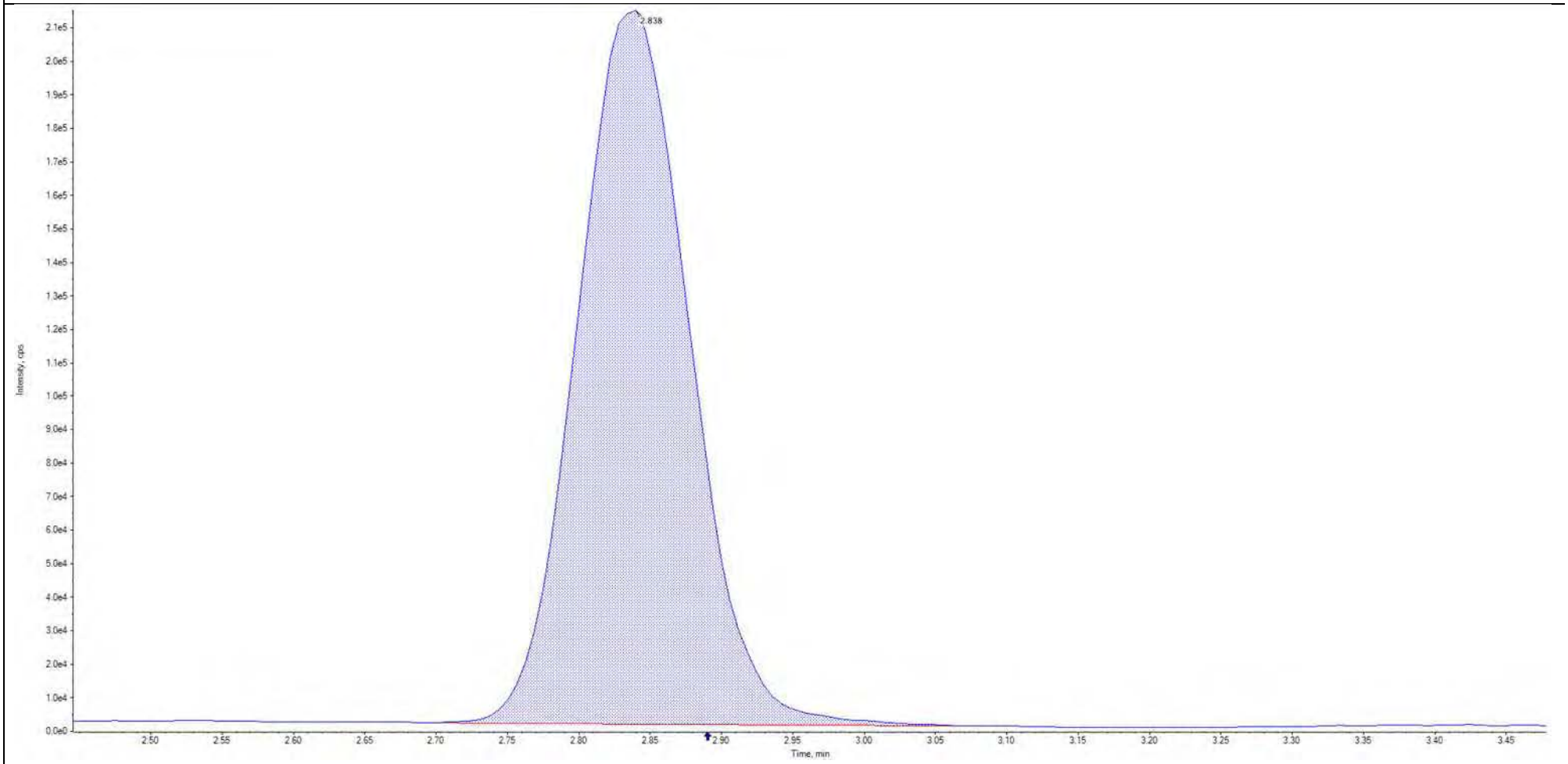


13C3-HFPO-DA
Sample: WG1973357-5

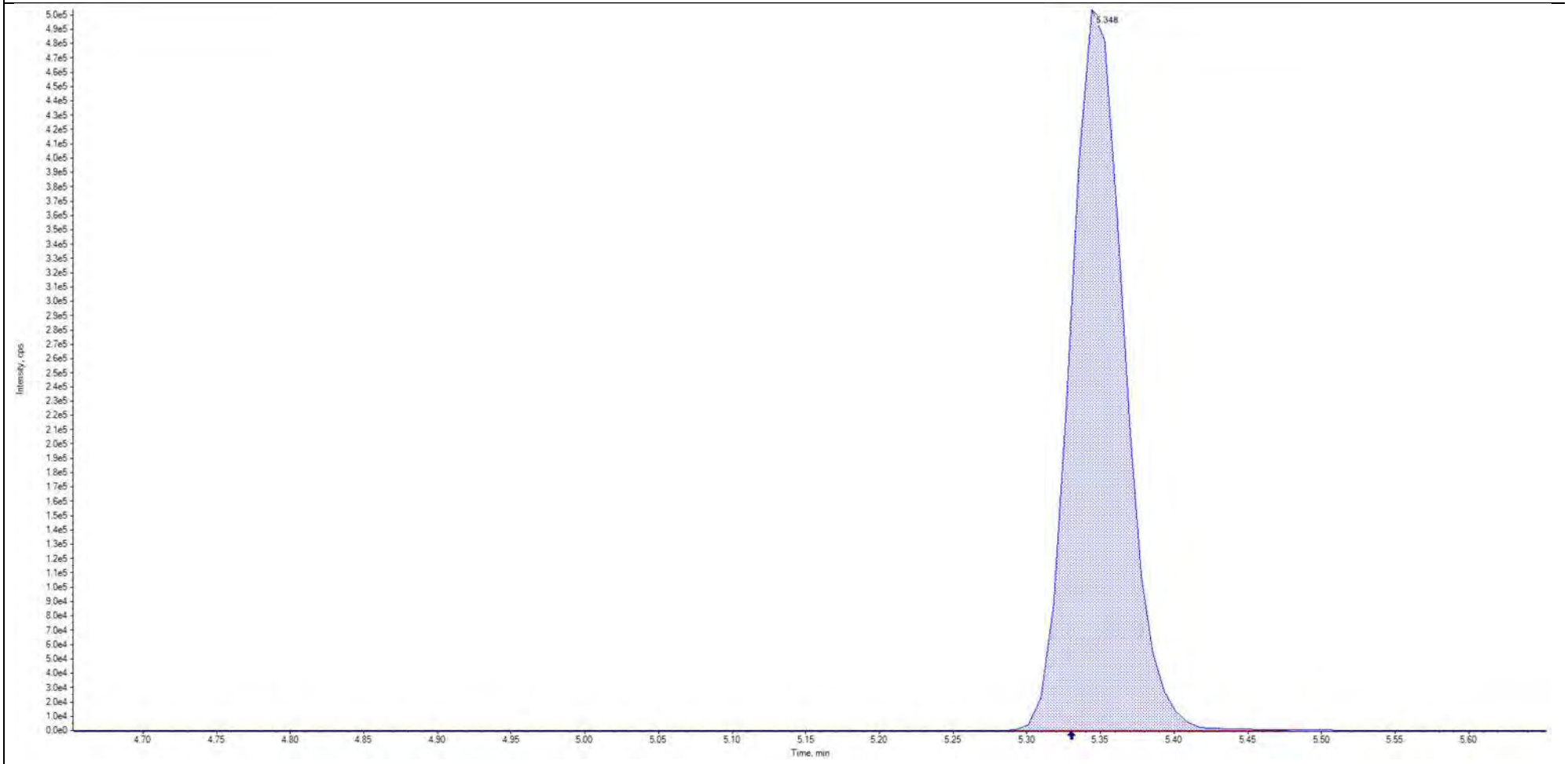


Quantify Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

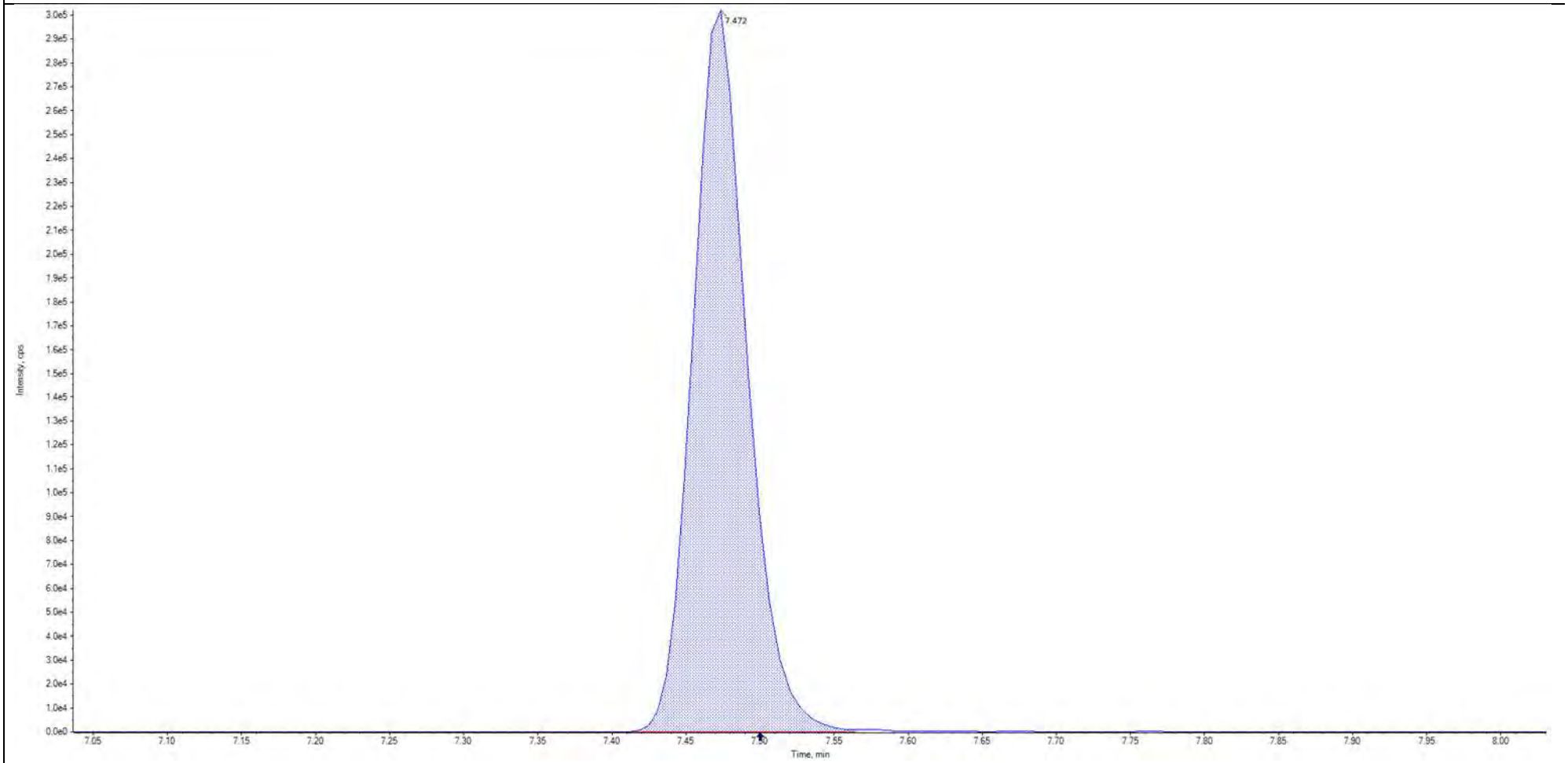
13C3-PFBA
Sample: WG1973357-5



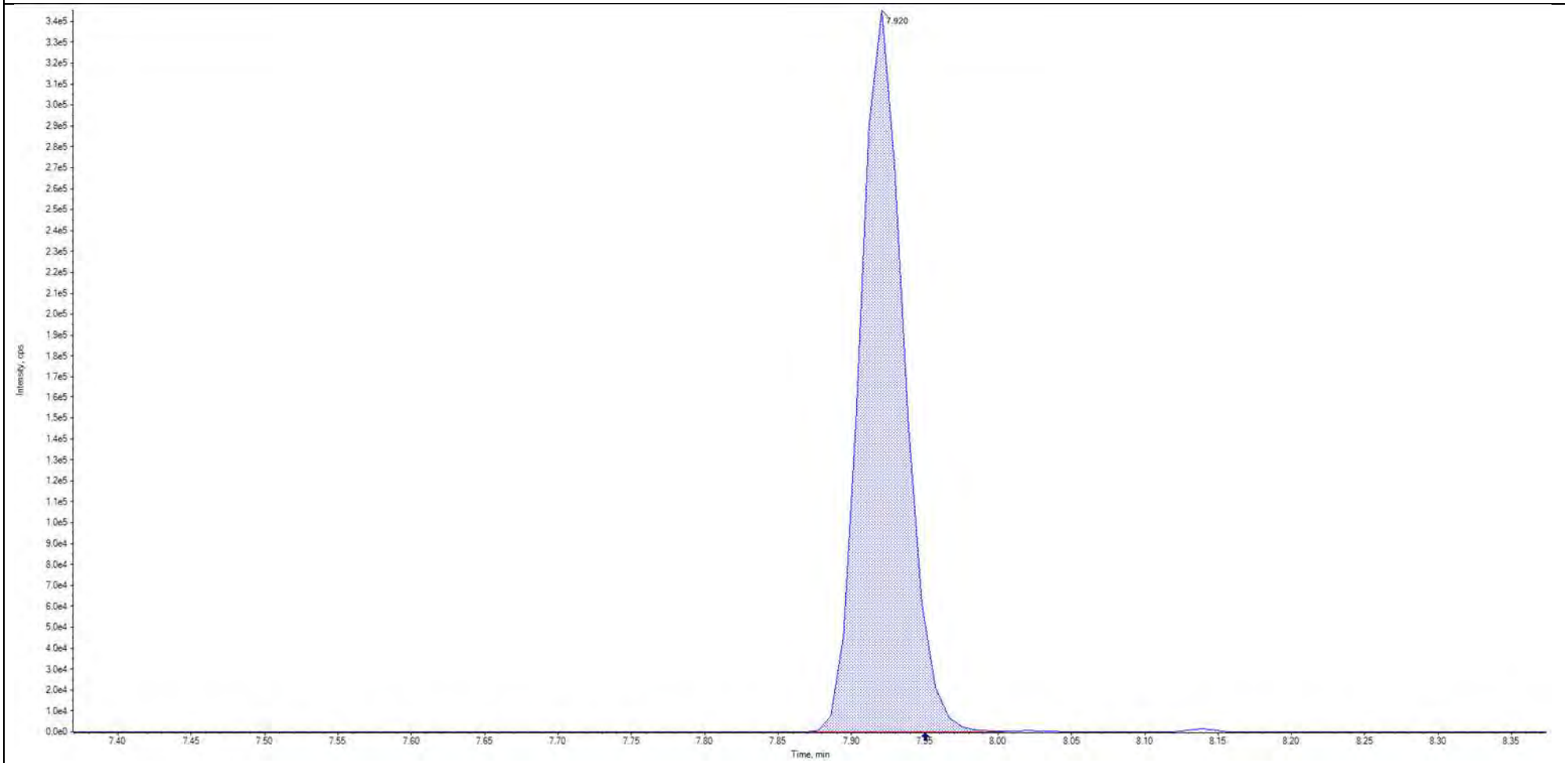
13C2-PFHxA
Sample: WG1973357-5



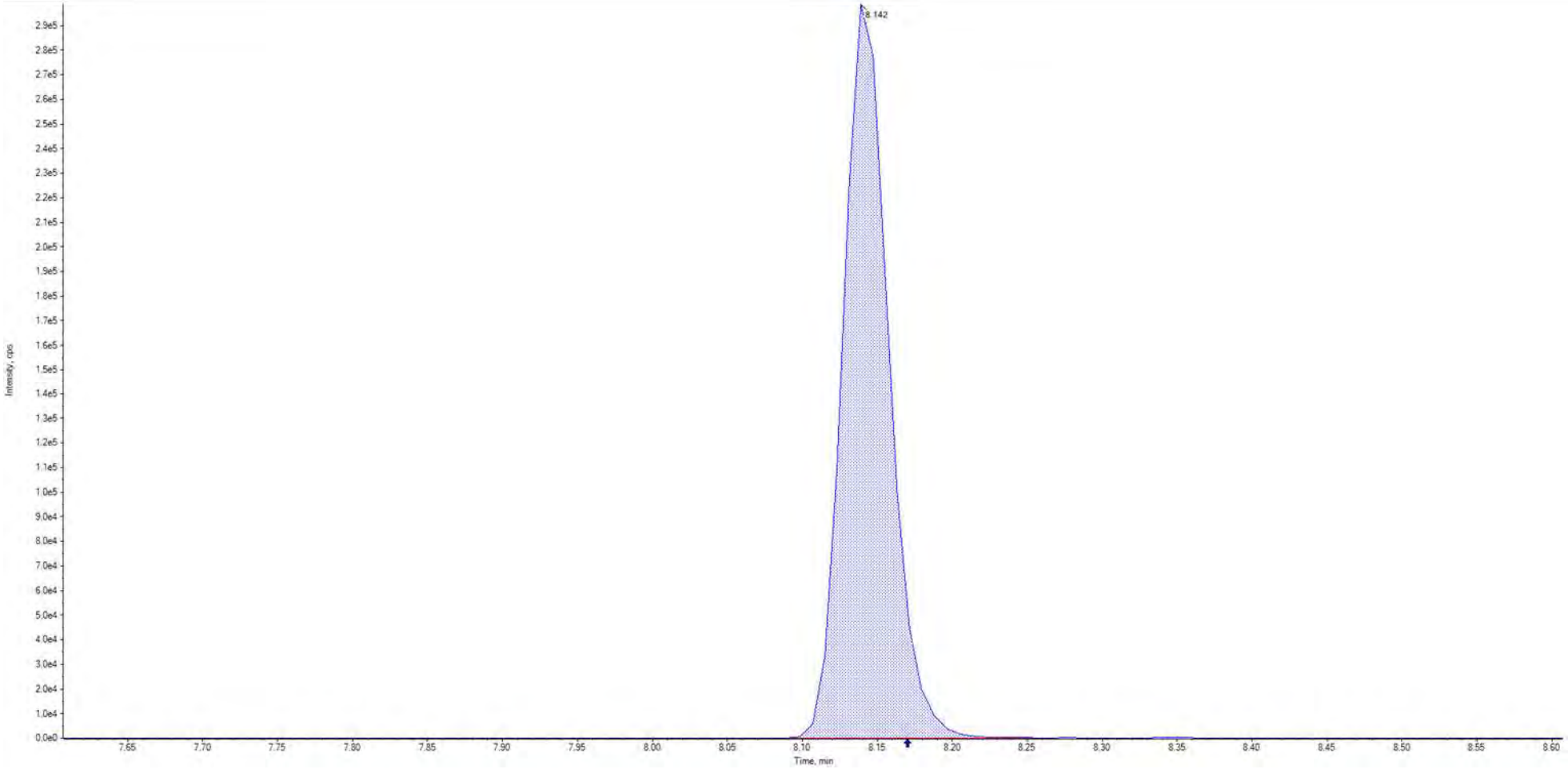
13C4-PFOA
Sample: WG1973357-5



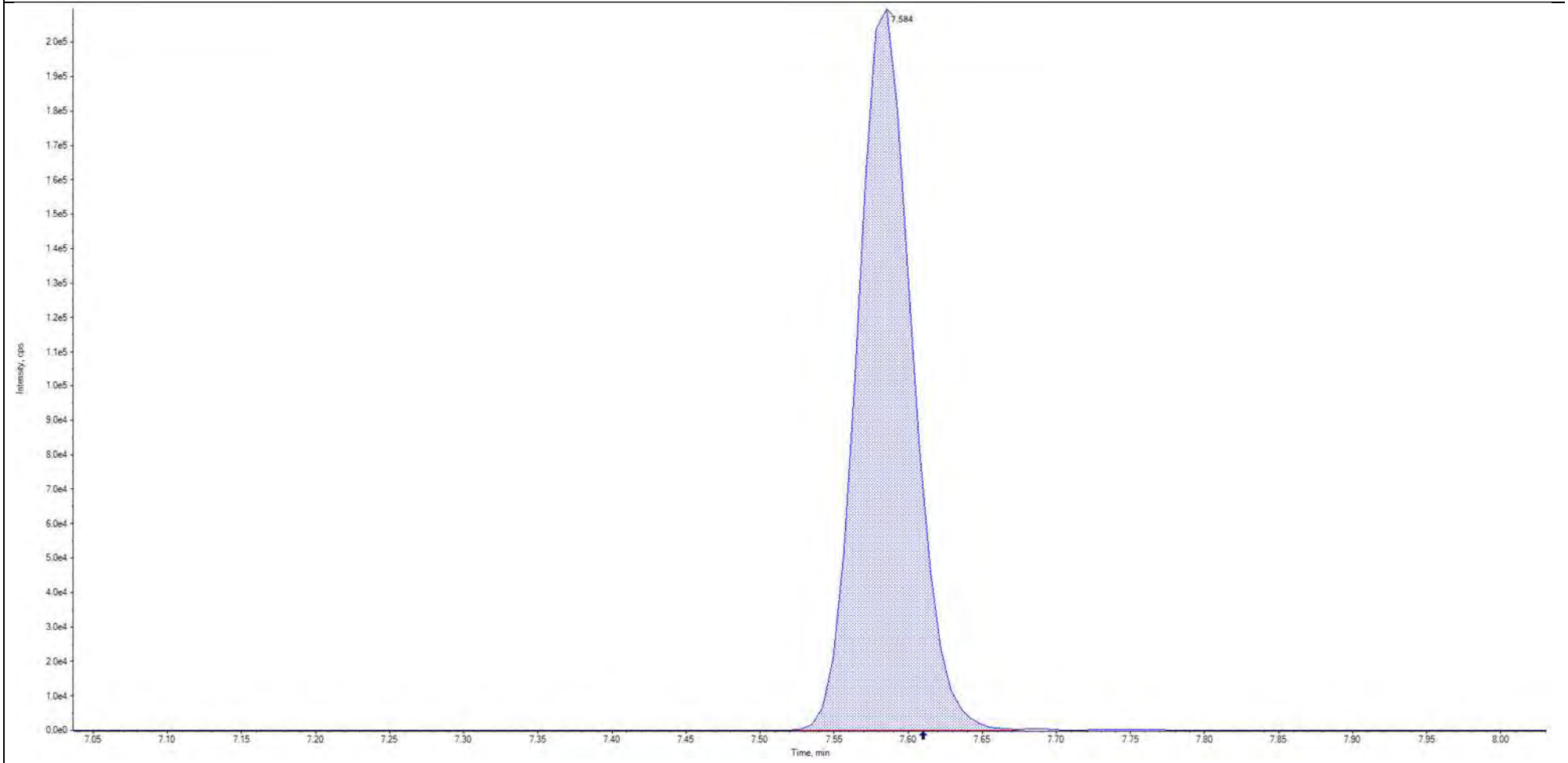
13C5-PFNA
Sample: WG1973357-5



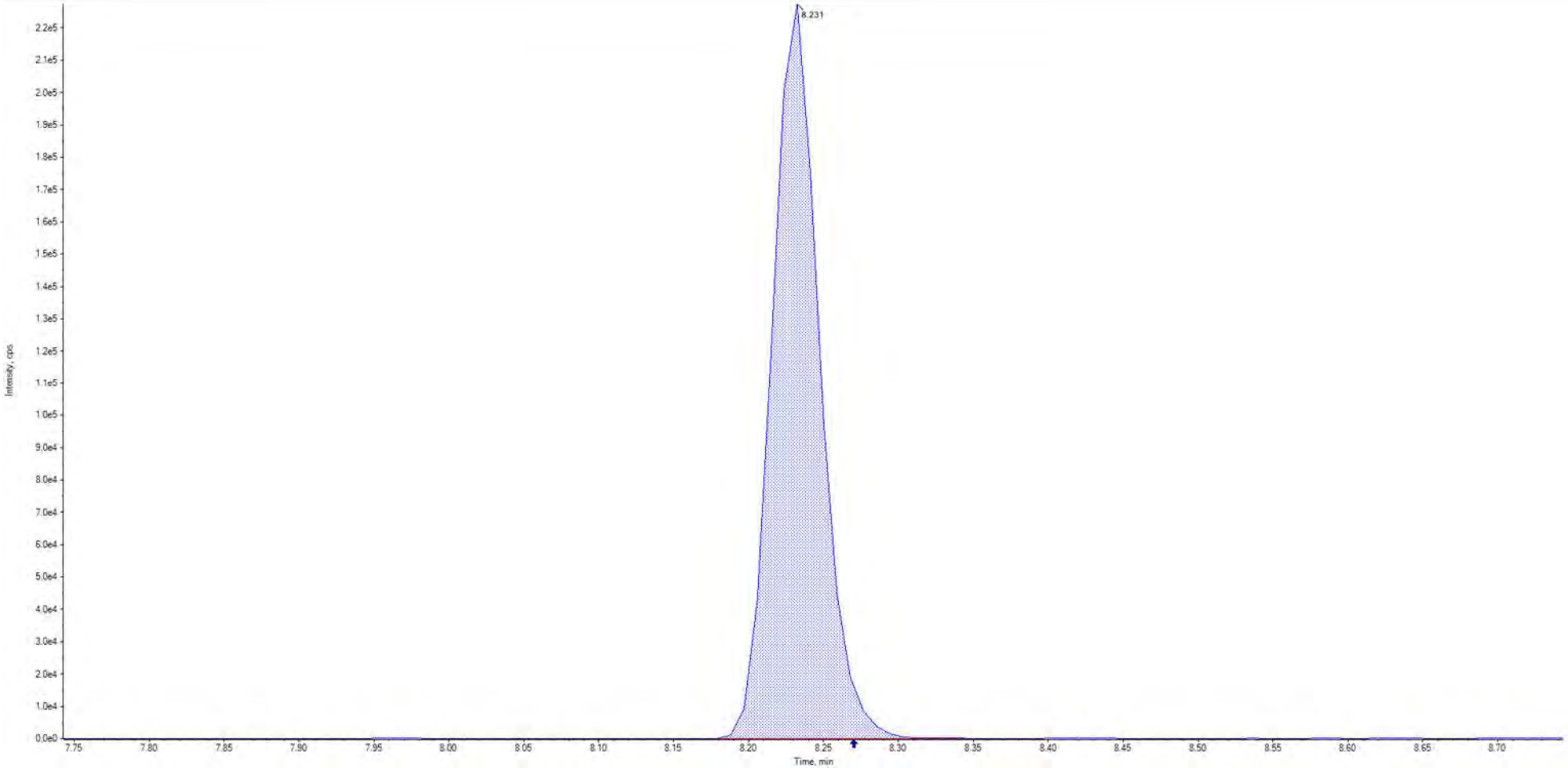
13C2-PFDA
Sample: WG1973357-5



18O2-PFHxS
Sample: WG1973357-5



13C4-PFOS
Sample: WG1973357-5



Quantity Sample Summary Report SCIEX OS Version 3.0.0.3339
Alpha Analytical Inc.
Dataset: D:\Analyst Data\Projects\PFAS\2024_09_19\Data\SCI05_240919_18.wiff
Last Altered: 9/19/2024 11:40:51 AM
Generated: 9/19/2024 8:04:31 AM

Calculation of Semi Volatile Organic Compounds

Aqueous Concentration Formula: Amt * DF * 1000 * (1/Vo) * Vf

Where:
DF = Dilution Factor
Vo = Volume of Sample (mL)
Vf = Extraction Lab Final Volume (mL)

Soil Concentration Formula: Amt * DF * 1000 * (1/Wt) * Vf * (100/TS)
Where:
DF = Dilution Factor
Wt = Weight of Sample (g)
Vf = Extraction Lab Final Volume (mL)
TS = Total Solids

ALPHA ANALYTICAL LABORATORIES, INC.

Alpha WORK GROUP REPORT (wk02)

Oct 21 2024, 04:11 pm

Work Group: WG1973357 for Department: 2 Organic Preparation

Created: 18-SEP-24 Due: Operator: ERW

Sample	Client ID	C	Product	Matrix	Stat	UA	HOLD	DUE	PR	Location
L2450786-03	MW-6A	S	A2-1633-DRAFT	WATER	DONE	U	1003	1002	S0	Plastic-A.5
L2450786-07	MW-8A	S	A2-1633-DRAFT	WATER	DONE	U	1003	1002	S0	Plastic-A.5
L2450786-09	MW-10A	S	A2-1633-DRAFT	WATER	DONE	U	1003	1002	S0	Plastic-A.5
L2450786-11	FIELD BLANK	S	A2-1633-DRAFT	WATER	DONE	U	1002	1002	S0	Plastic-A.5
L2450786-13	MW-3A	S	A2-1633-DRAFT	WATER	DONE	U	1002	1002	S0	Plastic-A.5
L2451191-03	MW-15R	S	A2-1633-DRAFT	WATER	DONE	U	1003	0920	S0	Plastic-A.5
L2451191-10	DUP-01	S	A2-1633-DRAFT	WATER	DONE	U	1003	0920	S0	Plastic-A.5
L2451191-11	MW-7	S	A2-1633-DRAFT	WATER	DONE	U	1003	0920	S0	Plastic-A.5
L2451191-14	MW-2	S	A2-1633-DRAFT	WATER	DONE	U	1004	0920	S0	Plastic-A.5
L2451191-16	MW-4	S	A2-1633-DRAFT	WATER	DONE	U	1004	0920	S0	Plastic-A.5
L2451191-18	MW-13D	S	A2-1633-DRAFT	WATER	DONE	U	1004	0920	S0	Plastic-A.5
L2451191-19	MW-4D	S	A2-1633-DRAFT	WATER	DONE	U	1004	0920	S0	Plastic-A.5
L2451191-20	MW-13	S	A2-1633-DRAFT	WATER	DONE	U	1004	0920	S0	Plastic-A.5
L2451191-23	FIELD BLANK-202040906	S	A2-1633-DRAFT	WATER	DONE	U	1004	0920	S0	Plastic-A.5
L2451191-27	MW-12	S	A2-1633-DRAFT	WATER	DONE	U	1004	0920	S0	Plastic-A.5
WG1973357-1	Laboratory Method Bl	S	A2-1633-DRAFT	WATER	DONE	U				
WG1973357-2	Laboratory Control S	S	A2-1633-DRAFT	WATER	DONE	U				
WG1973357-3	Laboratory Control S	S	A2-1633-DRAFT	WATER	DONE	U				
WG1973357-4	Matrix Spike	S	A2-1633-DRAFT	WATER	DONE	U				
WG1973357-5	Matrix Spike Duplica	S	A2-1633-DRAFT	WATER	DONE	U				

Comments:

WG1973357-4 L2450786-03
WG1973357-5 L2450786-03

Product:	**1633**
Run Date:	**8/13/2024**
Instrument:	**LCMS05**

ICAL info:	**ical21391**
CCAL LOTS:	40724G IS: 240724AA TOP: 240404 SOLV
Mobile Phase A:	EC081324A
Mobile Phase B:	64094
Bile Salts Standard:	240709_BILE , 240226_TRS

SAMPLE NAME	SAMPLE ID	VIAL	DATA FILE	SITUATION
Blank	WG1958909	2	SCI05_240813_70	
IA1633STD-.1	WG1958909,,,80ul IA1633STD-1.25	3	SCI05_240813_71	
IA1633STD-.2	WG1958909,,,80 ul IA1633STD-2.5	4	SCI05_240813_72	
IA1633STD-.5	WG1958909,,,100 ul IA1633STD-5	5	SCI05_240813_73	
IA1633STD-1.25	WG1958909,,,12.5 ul EPA1633_240813_CAL	6	SCI05_240813_74	
IA1633STD-2.5	WG1958909,,,25 ul EPA1633_240813_CAL	7	SCI05_240813_75	
IA1633STD-5	WG1958909,,,50 ul EPA1633_240813_CAL	8	SCI05_240813_76	
IA1633STD-12.5	WG1958909,,,125 ul EPA1633_240813_CAL	9	SCI05_240813_77	
IA1633STD-25	WG1958909,,,250 ul EPA1633_240813_CAL	10	SCI05_240813_78	
IA1633STD-62.5	WG1958909,,,625 ul EPA1633_240813_CAL	11	SCI05_240813_79	
WG1958909-2,INSTBLANK	WG1958909	12	SCI05_240813_80	
WG1958909-3,INSTBLANK	WG1958909	12	SCI05_240813_81	
CA1633STD-10	WG1958909,,,5 µl LCMS231120C	13	SCI05_240813_82	
WG1958909-4,TRS/-5,BSICS	WG1958909	14	SCI05_240813_83	
WG1958909-6,INSTBLANK	WG1958909	12	SCI05_240813_84	

Product:	1633
Run Date:	9/19/2024
Instrument:	LCMS05

ICAL info:	ICAL21391
CCAL LOTS:	40916C IS: LCMS240827AT/240913A TO
Mobile Phase A:	EC091624A/ EC091824C
Mobile Phase B:	64179
Bile Salts Standard:	240822_BILE , 240829_TRS

SAMPLE NAME	SAMPLE ID	VIAL	DATA FILE	SITUATION
BLANK	BLANK	2	SCI05_240919_05	**MCV: 6:04**
WG1973506-2,1633LOW	***WG1973506,WG1970000,ICAL21391,1633LOW***	3	SCI05_240919_06	**EIS HIGH**
WG1973506-3,1633MED	***WG1973506,WG1970000,ICAL21391,1633MED***	4	SCI05_240919_07	**NMEFOSAA HIGH, EIS LOW - RERUN**
WG1973506-3,1633MED	***WG1973506,WG1970000,ICAL21391,1633MED***	4	SCI05_240919_08	**TARGET HIGH**
WG1973506-4,INSTBLANK	WG1973506,WG1970000,ICAL21391	6	SCI05_240919_09	
WG1973506-5,TRS/-6,BSICS	WG1973506,WG1970000,ICAL21391	5	SCI05_240919_10	
WG1973506-7,INSTBLANK	WG1973506,WG1970000,ICAL21391	6	SCI05_240919_11	
L2450621-11D,,10	WG1973506,WG1972774,ICAL21391	7	SCI05_240919_12	
WG1973357-1	WG1973506,WG1973357,ICAL21391	8	SCI05_240919_13	
WG1973357-2	WG1973506,WG1973357,ICAL21391	9	SCI05_240919_14	
WG1973357-3	WG1973506,WG1973357,ICAL21391	10	SCI05_240919_15	
L2450786-03	WG1973506,WG1973357,ICAL21391	11	SCI05_240919_16	
WG1973357-4	WG1973506,WG1973357,ICAL21391	12	SCI05_240919_17	
WG1973357-5	WG1973506,WG1973357,ICAL21391	13	SCI05_240919_18	
SPIKECHECK1	240919 LCS CHECK	29	SCI05_240919_19	
L2450786-07	WG1973506,WG1973357,ICAL21391	14	SCI05_240919_20	
L2450786-09	WG1973506,WG1973357,ICAL21391	15	SCI05_240919_21	
L2450786-11	WG1973506,WG1973357,ICAL21391	16	SCI05_240919_22	
L2450786-13	WG1973506,WG1973357,ICAL21391	17	SCI05_240919_23	
L2451690-01	WG1973506,WG1973357,ICAL21391	18	SCI05_240919_24	
WG1973506-8,1633MED	***WG1973506,WG1970000,ICAL21391,1633MED***	4	SCI05_240919_25	**TARGET HIGH**
WG1973506-9,INSTBLANK	WG1973506,WG1970000,ICAL21391	6	SCI05_240919_26	
L2451191-03	WG1973506,WG1973357,ICAL21391	19	SCI05_240919_27	
L2451191-10	WG1973506,WG1973357,ICAL21391	20	SCI05_240919_28	
L2451191-11	WG1973506,WG1973357,ICAL21391	21	SCI05_240919_29	
L2451191-14	WG1973506,WG1973357,ICAL21391	22	SCI05_240919_30	
L2450241-03R	WG1973506,WG1962641,ICAL21391,SPLP	30	SCI05_240919_31	
WG1973506-10,1633MED	***WG1973506,WG1970000,ICAL21391,1633MED***	4	SCI05_240919_32	**EIS HIGH**
WG1973506-11,INSTBLANK	WG1973506,WG1970000,ICAL21391	6	SCI05_240919_33	
L2451191-16	WG1973506,WG1973357,ICAL21391	23	SCI05_240919_34	
L2451191-18	WG1973506,WG1973357,ICAL21391	24	SCI05_240919_35	
L2451191-19	WG1973506,WG1973357,ICAL21391	25	SCI05_240919_36	
L2451191-20	WG1973506,WG1973357,ICAL21391	26	SCI05_240919_37	

L2451191-23	WG1973506,WG1973357,ICAL21391	27	SCI05_240919_38	
L2451191-27	WG1973506,WG1973357,ICAL21391	28	SCI05_240919_39	
WG1973506-12,1633MED	***WG1973506,WG1970000,ICAL21391,1633MED***	4	SCI05_240919_40	

ORGANIC ELN REPORT

Workgroup: WG1973357

Prep Method: EPA 1633
Solvent Type: 1% NH4OH/MeOH **Lot #:** ECP091324I,091524C
Surrogate Type: 1633 **Lot #:** LCMS240916D,E
Spike Type: 1633 **Lot #:** EPA1633_240908_CAL
Spike Verify by: RSB
Lims Spikelot: 1633

Additional Reagents/Stds

0.1M Formic Acid	ECP090124C
0.3M Formic Acid	ECP090624F
1:1 Formic Acid:MeOH	ECP091524E
1:1 Formic Aid:MeOH	
Acetic Acid	2023111300
Filter	
GCB	B24-001445
IS	LCMS240913B
pH Strip	10BDH5131

Conc.Method: NA
Solvent Type: NA
Lot #: N/A

Additional Reagents/Stds

Cleanup 1

Cleanup Method 1:
Cleanup Method 2:
Solvent Type: **Lot #:**

Additional Reagents/Stds

Extraction | **Concentration**

Sample/ Type	Extract Date	Analyst	Initial Sample Weight	Final Weight g	Sample Vol g	Ph	Balance Id	Surr Amt ml	Spike Amt ml	Pipette Id	Lot: Spe Cartridge	Flow Rate mL/min	Final Vol ml
L2450786-03 SAMP	09/18/24 18:45 **11-4,802.**	Emma Witbeck	564.05	42.15	521.9	6	BAL-27	.02		351	S308-0174;S24-002930	4	4
L2450786-07 SAMP	09/18/24 18:45 **12-2,612.**	Emma Witbeck	572.11	41.61	530.5	6	BAL-27	.02		351	S308-0174;S24-002930	4	4
L2450786-09 SAMP	09/18/24 18:45 **12-3,920.**	Emma Witbeck	562.32	42.25	520.07	6	BAL-27	.02		351	S308-0174;S24-002930	4	4
L2450786-11 SAMP	09/18/24 18:45 **12-4,715.**	Emma Witbeck	603.05	42.12	560.93	6	BAL-27	.02		351	S308-0174;S24-002930	4	4
L2450786-13 SAMP	09/18/24 18:45 **12-5,925.**	Emma Witbeck	570.77	41.85	528.92	6	BAL-27	.02		351	S308-0174;S24-002930	4	4

Reported: 21-OCT-24 04:11 PM

ORGANIC ELN REPORT

Workgroup: WG1973357

Sample/ Type	Extraction											Concentration
	Extract Date	Analyst	Initial Sample Weight	Final Weight g	Sample Vol g	Ph	Balance Id	Surr Amt ml	Spike Amt ml	Pipette Id	Lot: Spe Cartridge	Flow Rate mL/min	Final Vol ml
L2451191-03 WATER	09/18/24 18:45	Emma Witbeck	599.36	43.00	556.36	6	BAL-27	.02		351	S308-0174;S24-002930	4	4
	9-1,416.												
L2451191-10 SAMP	09/18/24 18:45	Emma Witbeck	583.86	42.16	541.7	6	BAL-27	.02		351	S308-0174;S24-002930	4	4
	9-2,420.												
L2451191-11 SAMP	09/18/24 18:45	Emma Witbeck	526.49	42.85	483.64	6	BAL-27	.02		351	S308-0174;S24-002930	4	4
	9-3,701.												
L2451191-14 SAMP	09/18/24 18:45	Emma Witbeck	541.54	39.03	502.51	6	BAL-27	.02		351	S308-0174;S24-002930	4	4
	9-4,501. CENTRIFUGED AND DECANTED DUE TO SEDIMENT IN MATRIX 09/18/2024 ERW.												
L2451191-16 SAMP	09/18/24 18:45	Emma Witbeck	548.80	42.55	506.25	6	BAL-27	.02		351	S308-0174;S24-002930	4	4
	9-5,418.												
L2451191-18 SAMP	09/18/24 18:45	Emma Witbeck	577.87	42.40	535.47	6	BAL-27	.02		351	S308-0174;S24-002930	4	4
	10-1,403.												
L2451191-19 SAMP	09/18/24 18:45	Emma Witbeck	536.68	42.54	494.14	6	BAL-27	.02		351	S308-0174;S24-002930	4	4
	10-2,14.												
L2451191-20 SAMP	09/18/24 18:45	Emma Witbeck	571.41	42.36	529.05	6	BAL-27	.02		351	S308-0174;S24-002930	4	4
	10-3,305.												
L2451191-23 SAMP	09/18/24 18:45	Emma Witbeck	579.96	42.45	537.51	6	BAL-27	.02		351	S308-0174;S24-002930	4	4
	10-4,210.												
L2451191-27 SAMP	09/18/24 18:45	Emma Witbeck	596.30	42.49	553.81	6	BAL-27	.02		351	S308-0174;S24-002930	4	4
	10-5,600.												

Reported: 21-OCT-24 04:11 PM

ORGANIC ELN REPORT

Workgroup: WG1973357

Sample/ Type	Extraction												Concentration
	Extract Date	Analyst	Initial Sample Weight	Final Weight **g**	Sample Vol **g**	Ph	Balance Id	Surr Amt **ml**	Spike Amt **ml**	Pipette Id	Lot: Spe Cartridge	Flow Rate **ml/min**	Final Vol **ml**
L2451690-01	09/18/24 18:45	Emma Witbeck	595.84	269.75	326.09	6	BAL-27	.012		351	S308-0174;S24-002930	4	4
	10-6,300. SAMPLE PULLED EARLY DUE TO CLOGGING, RINSED AND ELUTED THROUGH THE CARTRIDGE DUE TO CLOGGING 09/18/2024 ERW.												
WG1973357-1 BLANK	09/18/24 18:45	Emma Witbeck	540	40	500	6	BAL-27	.02		351	S308-0174;S24-002930	4	4
	11-1,605.												**TRANSFER SPIKE WITNESS: AJR 09/19/2024 ERW.**
WG1973357-2 LCS	09/18/24 18:45	Emma Witbeck	540	40	500	6	BAL-27	.02	.016	351	S308-0174;S24-002930	4	4
	11-2,921.												
WG1973357-3 LCS	09/18/24 18:45	Emma Witbeck	540	40	500	6	BAL-27	.02	.1	351, 342	S308-0174;S24-002930	4	4
	11-3,917.												
WG1973357-4 MS	09/18/24 18:45	Emma Witbeck	558.96	41.95	517.01	6	BAL-27	.02	.1	351, 342	S308-0174;S24-002930	4	4
	11-5,712.												
WG1973357-5 MSD	09/18/24 18:45	Emma Witbeck	554.90	42.08	512.82	6	BAL-27	.02	.1	351, 342	S308-0174;S24-002930	4	4
	12-1,508.												

Reported: 21-OCT-24 04:11 PM

Metals

Inorganic Data
(ICP Analysis)

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-01	**Date Collected**	: 09/05/24 13:53
Client ID	: MW-5A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 20:49
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 19,200.7	**Analyst**	: CEY
Lab File ID	: WG1969717.pdf	**Instrument ID**	: TRACE8
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Dissolved	ND	0.100	0.0318	U
7440-36-0	Antimony, Dissolved	ND	0.0500	0.0071	U
7440-38-2	Arsenic, Dissolved	ND	0.0050	0.0019	U
7440-39-3	Barium, Dissolved	0.0161	0.0100	0.0021	
7440-41-7	Beryllium, Dissolved	ND	0.0050	0.0009	U
7440-43-9	Cadmium, Dissolved	ND	0.0050	0.0010	U
7440-70-2	Calcium, Dissolved	23.8	0.100	0.0350	
7440-47-3	Chromium, Dissolved	ND	0.0100	0.0021	U
7440-48-4	Cobalt, Dissolved	ND	0.0200	0.0017	U
7440-50-8	Copper, Dissolved	0.0023	0.0100	0.0022	J
7439-89-6	Iron, Dissolved	ND	0.0500	0.0090	U
7439-92-1	Lead, Dissolved	ND	0.0100	0.0027	U
7439-95-4	Magnesium, Dissolved	4.95	0.100	0.0153	
7439-96-5	Manganese, Dissolved	ND	0.0100	0.0016	U
7440-02-0	Nickel, Dissolved	ND	0.0250	0.0024	U
7440-09-7	Potassium, Dissolved	2.04	2.50	0.237	J
7782-49-2	Selenium, Dissolved	ND	0.0100	0.0035	U
7440-22-4	Silver, Dissolved	ND	0.0070	0.0028	U
7440-23-5	Sodium, Dissolved	10.3	2.00	0.120	
7440-28-0	Thallium, Dissolved	ND	0.0200	0.0025	U
7440-62-2	Vanadium, Dissolved	ND	0.0100	0.0020	U
7440-66-6	Zinc, Dissolved	ND	0.0050	0.0021	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-02	**Date Collected**	: 09/05/24 13:55
Client ID	: MW-5B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 21:51
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 19,200.7	**Analyst**	: CEY
Lab File ID	: WG1969717.pdf	**Instrument ID**	: TRACE8
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Dissolved	ND	0.100	0.0318	U
7440-36-0	Antimony, Dissolved	ND	0.0500	0.0071	U
7440-38-2	Arsenic, Dissolved	ND	0.0050	0.0019	U
7440-39-3	Barium, Dissolved	0.0695	0.0100	0.0021	
7440-41-7	Beryllium, Dissolved	ND	0.0050	0.0009	U
7440-43-9	Cadmium, Dissolved	ND	0.0050	0.0010	U
7440-70-2	Calcium, Dissolved	14.6	0.100	0.0350	
7440-47-3	Chromium, Dissolved	ND	0.0100	0.0021	U
7440-48-4	Cobalt, Dissolved	ND	0.0200	0.0017	U
7440-50-8	Copper, Dissolved	0.0239	0.0100	0.0022	
7439-89-6	Iron, Dissolved	ND	0.0500	0.0090	U
7439-92-1	Lead, Dissolved	ND	0.0100	0.0027	U
7439-95-4	Magnesium, Dissolved	6.28	0.100	0.0153	
7439-96-5	Manganese, Dissolved	ND	0.0100	0.0016	U
7440-02-0	Nickel, Dissolved	ND	0.0250	0.0024	U
7440-09-7	Potassium, Dissolved	1.22	2.50	0.237	J
7782-49-2	Selenium, Dissolved	ND	0.0100	0.0035	U
7440-22-4	Silver, Dissolved	ND	0.0070	0.0028	U
7440-23-5	Sodium, Dissolved	13.0	2.00	0.120	
7440-28-0	Thallium, Dissolved	ND	0.0200	0.0025	U
7440-62-2	Vanadium, Dissolved	ND	0.0100	0.0020	U
7440-66-6	Zinc, Dissolved	0.0244	0.0050	0.0021	

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-03	**Date Collected**	: 09/05/24 12:50
Client ID	: MW-6A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 21:35
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 19,200.7	**Analyst**	: CEY
Lab File ID	: WG1969717.pdf	**Instrument ID**	: TRACE8
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Dissolved	ND	0.100	0.0318	U
7440-36-0	Antimony, Dissolved	ND	0.0500	0.0071	U
7440-38-2	Arsenic, Dissolved	ND	0.0050	0.0019	U
7440-39-3	Barium, Dissolved	0.0166	0.0100	0.0021	
7440-41-7	Beryllium, Dissolved	ND	0.0050	0.0009	U
7440-43-9	Cadmium, Dissolved	ND	0.0050	0.0010	U
7440-70-2	Calcium, Dissolved	22.4	0.100	0.0350	
7440-47-3	Chromium, Dissolved	ND	0.0100	0.0021	U
7440-48-4	Cobalt, Dissolved	ND	0.0200	0.0017	U
7440-50-8	Copper, Dissolved	0.0067	0.0100	0.0022	J
7439-89-6	Iron, Dissolved	ND	0.0500	0.0090	U
7439-92-1	Lead, Dissolved	ND	0.0100	0.0027	U
7439-95-4	Magnesium, Dissolved	4.88	0.100	0.0153	
7439-96-5	Manganese, Dissolved	ND	0.0100	0.0016	U
7440-02-0	Nickel, Dissolved	ND	0.0250	0.0024	U
7440-09-7	Potassium, Dissolved	1.16	2.50	0.237	J
7782-49-2	Selenium, Dissolved	ND	0.0100	0.0035	U
7440-22-4	Silver, Dissolved	ND	0.0070	0.0028	U
7440-23-5	Sodium, Dissolved	8.53	2.00	0.120	
7440-28-0	Thallium, Dissolved	ND	0.0200	0.0025	U
7440-62-2	Vanadium, Dissolved	ND	0.0100	0.0020	U
7440-66-6	Zinc, Dissolved	0.0068	0.0050	0.0021	

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-04	**Date Collected**	: 09/05/24 12:47
Client ID	: MW-6B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 21:39
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 19,200.7	**Analyst**	: CEY
Lab File ID	: WG1969717.pdf	**Instrument ID**	: TRACE8
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Dissolved	ND	0.100	0.0318	U
7440-36-0	Antimony, Dissolved	ND	0.0500	0.0071	U
7440-38-2	Arsenic, Dissolved	ND	0.0050	0.0019	U
7440-39-3	Barium, Dissolved	0.0454	0.0100	0.0021	
7440-41-7	Beryllium, Dissolved	ND	0.0050	0.0009	U
7440-43-9	Cadmium, Dissolved	ND	0.0050	0.0010	U
7440-70-2	Calcium, Dissolved	23.1	0.100	0.0350	
7440-47-3	Chromium, Dissolved	ND	0.0100	0.0021	U
7440-48-4	Cobalt, Dissolved	ND	0.0200	0.0017	U
7440-50-8	Copper, Dissolved	0.0071	0.0100	0.0022	J
7439-89-6	Iron, Dissolved	0.0127	0.0500	0.0090	J
7439-92-1	Lead, Dissolved	ND	0.0100	0.0027	U
7439-95-4	Magnesium, Dissolved	5.63	0.100	0.0153	
7439-96-5	Manganese, Dissolved	0.0031	0.0100	0.0016	J
7440-02-0	Nickel, Dissolved	0.0273	0.0250	0.0024	
7440-09-7	Potassium, Dissolved	1.26	2.50	0.237	J
7782-49-2	Selenium, Dissolved	ND	0.0100	0.0035	U
7440-22-4	Silver, Dissolved	ND	0.0070	0.0028	U
7440-23-5	Sodium, Dissolved	10.7	2.00	0.120	
7440-28-0	Thallium, Dissolved	ND	0.0200	0.0025	U
7440-62-2	Vanadium, Dissolved	ND	0.0100	0.0020	U
7440-66-6	Zinc, Dissolved	0.0150	0.0050	0.0021	

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-05	**Date Collected**	: 09/05/24 11:55
Client ID	: MW-7A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 21:43
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 19,200.7	**Analyst**	: CEY
Lab File ID	: WG1969717.pdf	**Instrument ID**	: TRACE8
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Dissolved	ND	0.100	0.0318	U
7440-36-0	Antimony, Dissolved	ND	0.0500	0.0071	U
7440-38-2	Arsenic, Dissolved	ND	0.0050	0.0019	U
7440-39-3	Barium, Dissolved	0.0984	0.0100	0.0021	
7440-41-7	Beryllium, Dissolved	ND	0.0050	0.0009	U
7440-43-9	Cadmium, Dissolved	ND	0.0050	0.0010	U
7440-70-2	Calcium, Dissolved	64.7	0.100	0.0350	
7440-47-3	Chromium, Dissolved	ND	0.0100	0.0021	U
7440-48-4	Cobalt, Dissolved	ND	0.0200	0.0017	U
7440-50-8	Copper, Dissolved	0.0165	0.0100	0.0022	
7439-89-6	Iron, Dissolved	ND	0.0500	0.0090	U
7439-92-1	Lead, Dissolved	ND	0.0100	0.0027	U
7439-95-4	Magnesium, Dissolved	12.4	0.100	0.0153	
7439-96-5	Manganese, Dissolved	2.64	0.0100	0.0016	
7440-02-0	Nickel, Dissolved	ND	0.0250	0.0024	U
7440-09-7	Potassium, Dissolved	10.1	2.50	0.237	
7782-49-2	Selenium, Dissolved	ND	0.0100	0.0035	U
7440-22-4	Silver, Dissolved	ND	0.0070	0.0028	U
7440-23-5	Sodium, Dissolved	12.5	2.00	0.120	
7440-28-0	Thallium, Dissolved	ND	0.0200	0.0025	U
7440-62-2	Vanadium, Dissolved	ND	0.0100	0.0020	U
7440-66-6	Zinc, Dissolved	0.0198	0.0050	0.0021	

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-06	**Date Collected**	: 09/05/24 12:00
Client ID	: MW-7B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 21:47
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 19,200.7	**Analyst**	: CEY
Lab File ID	: WG1969717.pdf	**Instrument ID**	: TRACE8
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Dissolved	ND	0.100	0.0318	U
7440-36-0	Antimony, Dissolved	ND	0.0500	0.0071	U
7440-38-2	Arsenic, Dissolved	ND	0.0050	0.0019	U
7440-39-3	Barium, Dissolved	0.0586	0.0100	0.0021	
7440-41-7	Beryllium, Dissolved	ND	0.0050	0.0009	U
7440-43-9	Cadmium, Dissolved	ND	0.0050	0.0010	U
7440-70-2	Calcium, Dissolved	71.6	0.100	0.0350	
7440-47-3	Chromium, Dissolved	ND	0.0100	0.0021	U
7440-48-4	Cobalt, Dissolved	ND	0.0200	0.0017	U
7440-50-8	Copper, Dissolved	0.0036	0.0100	0.0022	J
7439-89-6	Iron, Dissolved	0.0467	0.0500	0.0090	J
7439-92-1	Lead, Dissolved	ND	0.0100	0.0027	U
7439-95-4	Magnesium, Dissolved	13.9	0.100	0.0153	
7439-96-5	Manganese, Dissolved	0.356	0.0100	0.0016	
7440-02-0	Nickel, Dissolved	0.0029	0.0250	0.0024	J
7440-09-7	Potassium, Dissolved	2.61	2.50	0.237	
7782-49-2	Selenium, Dissolved	ND	0.0100	0.0035	U
7440-22-4	Silver, Dissolved	ND	0.0070	0.0028	U
7440-23-5	Sodium, Dissolved	17.0	2.00	0.120	
7440-28-0	Thallium, Dissolved	ND	0.0200	0.0025	U
7440-62-2	Vanadium, Dissolved	ND	0.0100	0.0020	U
7440-66-6	Zinc, Dissolved	0.0131	0.0050	0.0021	

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-07	**Date Collected**	: 09/05/24 08:00
Client ID	: MW-8A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 22:24
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 19,200.7	**Analyst**	: CEY
Lab File ID	: WG1969717.pdf	**Instrument ID**	: TRACE8
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Dissolved	ND	0.100	0.0318	U
7440-36-0	Antimony, Dissolved	ND	0.0500	0.0071	U
7440-38-2	Arsenic, Dissolved	ND	0.0050	0.0019	U
7440-39-3	Barium, Dissolved	0.0440	0.0100	0.0021	
7440-41-7	Beryllium, Dissolved	ND	0.0050	0.0009	U
7440-43-9	Cadmium, Dissolved	ND	0.0050	0.0010	U
7440-70-2	Calcium, Dissolved	17.8	0.100	0.0350	
7440-47-3	Chromium, Dissolved	ND	0.0100	0.0021	U
7440-48-4	Cobalt, Dissolved	ND	0.0200	0.0017	U
7440-50-8	Copper, Dissolved	0.0062	0.0100	0.0022	J
7439-89-6	Iron, Dissolved	ND	0.0500	0.0090	U
7439-92-1	Lead, Dissolved	ND	0.0100	0.0027	U
7439-95-4	Magnesium, Dissolved	3.72	0.100	0.0153	
7439-96-5	Manganese, Dissolved	ND	0.0100	0.0016	U
7440-02-0	Nickel, Dissolved	ND	0.0250	0.0024	U
7440-09-7	Potassium, Dissolved	2.64	2.50	0.237	
7782-49-2	Selenium, Dissolved	ND	0.0100	0.0035	U
7440-22-4	Silver, Dissolved	ND	0.0070	0.0028	U
7440-23-5	Sodium, Dissolved	14.0	2.00	0.120	
7440-28-0	Thallium, Dissolved	ND	0.0200	0.0025	U
7440-62-2	Vanadium, Dissolved	ND	0.0100	0.0020	U
7440-66-6	Zinc, Dissolved	0.0114	0.0050	0.0021	

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-08	**Date Collected**	: 09/05/24 08:55
Client ID	: MW-8B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 22:28
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 19,200.7	**Analyst**	: CEY
Lab File ID	: WG1969717.pdf	**Instrument ID**	: TRACE8
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Dissolved	ND	0.100	0.0318	U
7440-36-0	Antimony, Dissolved	ND	0.0500	0.0071	U
7440-38-2	Arsenic, Dissolved	ND	0.0050	0.0019	U
7440-39-3	Barium, Dissolved	0.0023	0.0100	0.0021	J
7440-41-7	Beryllium, Dissolved	ND	0.0050	0.0009	U
7440-43-9	Cadmium, Dissolved	ND	0.0050	0.0010	U
7440-70-2	Calcium, Dissolved	7.70	0.100	0.0350	
7440-47-3	Chromium, Dissolved	ND	0.0100	0.0021	U
7440-48-4	Cobalt, Dissolved	ND	0.0200	0.0017	U
7440-50-8	Copper, Dissolved	0.0095	0.0100	0.0022	J
7439-89-6	Iron, Dissolved	0.966	0.0500	0.0090	
7439-92-1	Lead, Dissolved	ND	0.0100	0.0027	U
7439-95-4	Magnesium, Dissolved	3.12	0.100	0.0153	
7439-96-5	Manganese, Dissolved	0.0295	0.0100	0.0016	
7440-02-0	Nickel, Dissolved	ND	0.0250	0.0024	U
7440-09-7	Potassium, Dissolved	1.05	2.50	0.237	J
7782-49-2	Selenium, Dissolved	ND	0.0100	0.0035	U
7440-22-4	Silver, Dissolved	ND	0.0070	0.0028	U
7440-23-5	Sodium, Dissolved	6.02	2.00	0.120	
7440-28-0	Thallium, Dissolved	ND	0.0200	0.0025	U
7440-62-2	Vanadium, Dissolved	ND	0.0100	0.0020	U
7440-66-6	Zinc, Dissolved	0.0124	0.0050	0.0021	

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Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-09	**Date Collected**	: 09/05/24 10:10
Client ID	: MW-10A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 22:32
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 19,200.7	**Analyst**	: CEY
Lab File ID	: WG1969717.pdf	**Instrument ID**	: TRACE8
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Dissolved	ND	0.100	0.0318	U
7440-36-0	Antimony, Dissolved	ND	0.0500	0.0071	U
7440-38-2	Arsenic, Dissolved	ND	0.0050	0.0019	U
7440-39-3	Barium, Dissolved	0.0426	0.0100	0.0021	
7440-41-7	Beryllium, Dissolved	ND	0.0050	0.0009	U
7440-43-9	Cadmium, Dissolved	ND	0.0050	0.0010	U
7440-70-2	Calcium, Dissolved	16.9	0.100	0.0350	
7440-47-3	Chromium, Dissolved	ND	0.0100	0.0021	U
7440-48-4	Cobalt, Dissolved	ND	0.0200	0.0017	U
7440-50-8	Copper, Dissolved	0.0107	0.0100	0.0022	
7439-89-6	Iron, Dissolved	ND	0.0500	0.0090	U
7439-92-1	Lead, Dissolved	ND	0.0100	0.0027	U
7439-95-4	Magnesium, Dissolved	5.02	0.100	0.0153	
7439-96-5	Manganese, Dissolved	0.0025	0.0100	0.0016	J
7440-02-0	Nickel, Dissolved	ND	0.0250	0.0024	U
7440-09-7	Potassium, Dissolved	2.25	2.50	0.237	J
7782-49-2	Selenium, Dissolved	ND	0.0100	0.0035	U
7440-22-4	Silver, Dissolved	ND	0.0070	0.0028	U
7440-23-5	Sodium, Dissolved	12.7	2.00	0.120	
7440-28-0	Thallium, Dissolved	ND	0.0200	0.0025	U
7440-62-2	Vanadium, Dissolved	ND	0.0100	0.0020	U
7440-66-6	Zinc, Dissolved	0.0128	0.0050	0.0021	

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Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-10	**Date Collected**	: 09/05/24 10:16
Client ID	: MW-10B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 22:36
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 19,200.7	**Analyst**	: CEY
Lab File ID	: WG1969717.pdf	**Instrument ID**	: TRACE8
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Dissolved	ND	0.100	0.0318	U
7440-36-0	Antimony, Dissolved	ND	0.0500	0.0071	U
7440-38-2	Arsenic, Dissolved	ND	0.0050	0.0019	U
7440-39-3	Barium, Dissolved	0.0271	0.0100	0.0021	
7440-41-7	Beryllium, Dissolved	ND	0.0050	0.0009	U
7440-43-9	Cadmium, Dissolved	ND	0.0050	0.0010	U
7440-70-2	Calcium, Dissolved	14.6	0.100	0.0350	
7440-47-3	Chromium, Dissolved	ND	0.0100	0.0021	U
7440-48-4	Cobalt, Dissolved	0.0052	0.0200	0.0017	J
7440-50-8	Copper, Dissolved	0.0118	0.0100	0.0022	
7439-89-6	Iron, Dissolved	0.0857	0.0500	0.0090	
7439-92-1	Lead, Dissolved	ND	0.0100	0.0027	U
7439-95-4	Magnesium, Dissolved	6.40	0.100	0.0153	
7439-96-5	Manganese, Dissolved	0.0156	0.0100	0.0016	
7440-02-0	Nickel, Dissolved	0.0093	0.0250	0.0024	J
7440-09-7	Potassium, Dissolved	1.30	2.50	0.237	J
7782-49-2	Selenium, Dissolved	ND	0.0100	0.0035	U
7440-22-4	Silver, Dissolved	ND	0.0070	0.0028	U
7440-23-5	Sodium, Dissolved	16.0	2.00	0.120	
7440-28-0	Thallium, Dissolved	ND	0.0200	0.0025	U
7440-62-2	Vanadium, Dissolved	ND	0.0100	0.0020	U
7440-66-6	Zinc, Dissolved	0.0368	0.0050	0.0021	

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Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-12	**Date Collected**	: 09/05/24 00:00
Client ID	: DUP	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 22:40
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 19,200.7	**Analyst**	: CEY
Lab File ID	: WG1969717.pdf	**Instrument ID**	: TRACE8
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Dissolved	ND	0.100	0.0318	U
7440-36-0	Antimony, Dissolved	ND	0.0500	0.0071	U
7440-38-2	Arsenic, Dissolved	ND	0.0050	0.0019	U
7440-39-3	Barium, Dissolved	0.0426	0.0100	0.0021	
7440-41-7	Beryllium, Dissolved	ND	0.0050	0.0009	U
7440-43-9	Cadmium, Dissolved	ND	0.0050	0.0010	U
7440-70-2	Calcium, Dissolved	17.1	0.100	0.0350	
7440-47-3	Chromium, Dissolved	ND	0.0100	0.0021	U
7440-48-4	Cobalt, Dissolved	ND	0.0200	0.0017	U
7440-50-8	Copper, Dissolved	ND	0.0100	0.0022	U
7439-89-6	Iron, Dissolved	ND	0.0500	0.0090	U
7439-92-1	Lead, Dissolved	ND	0.0100	0.0027	U
7439-95-4	Magnesium, Dissolved	3.63	0.100	0.0153	
7439-96-5	Manganese, Dissolved	ND	0.0100	0.0016	U
7440-02-0	Nickel, Dissolved	ND	0.0250	0.0024	U
7440-09-7	Potassium, Dissolved	2.52	2.50	0.237	
7782-49-2	Selenium, Dissolved	ND	0.0100	0.0035	U
7440-22-4	Silver, Dissolved	ND	0.0070	0.0028	U
7440-23-5	Sodium, Dissolved	13.3	2.00	0.120	
7440-28-0	Thallium, Dissolved	ND	0.0200	0.0025	U
7440-62-2	Vanadium, Dissolved	ND	0.0100	0.0020	U
7440-66-6	Zinc, Dissolved	ND	0.0050	0.0021	U

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Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1969516-1	**Date Collected**	: NA
Client ID	: WG1969516-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 09/10/24 20:29
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 19,200.7	**Analyst**	: CEY
Lab File ID	: WG1969717.pdf	**Instrument ID**	: TRACE8
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Dissolved	ND	0.100	0.0318	U
7440-36-0	Antimony, Dissolved	ND	0.0500	0.0071	U
7440-38-2	Arsenic, Dissolved	ND	0.0050	0.0019	U
7440-39-3	Barium, Dissolved	ND	0.0100	0.0021	U
7440-41-7	Beryllium, Dissolved	ND	0.0050	0.0009	U
7440-43-9	Cadmium, Dissolved	ND	0.0050	0.0010	U
7440-70-2	Calcium, Dissolved	ND	0.100	0.0350	U
7440-47-3	Chromium, Dissolved	ND	0.0100	0.0021	U
7440-48-4	Cobalt, Dissolved	ND	0.0200	0.0017	U
7440-50-8	Copper, Dissolved	ND	0.0100	0.0022	U
7439-89-6	Iron, Dissolved	ND	0.0500	0.0090	U
7439-92-1	Lead, Dissolved	ND	0.0100	0.0027	U
7439-95-4	Magnesium, Dissolved	ND	0.100	0.0153	U
7439-96-5	Manganese, Dissolved	0.0036	0.0100	0.0016	J
7440-02-0	Nickel, Dissolved	ND	0.0250	0.0024	U
7440-09-7	Potassium, Dissolved	ND	2.50	0.237	U
7782-49-2	Selenium, Dissolved	ND	0.0100	0.0035	U
7440-22-4	Silver, Dissolved	ND	0.0070	0.0028	U
7440-23-5	Sodium, Dissolved	ND	2.00	0.120	U
7440-28-0	Thallium, Dissolved	ND	0.0200	0.0025	U
7440-62-2	Vanadium, Dissolved	ND	0.0100	0.0020	U
7440-66-6	Zinc, Dissolved	ND	0.0050	0.0021	U

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Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1969516-4	**Date Collected**	: 09/05/24 13:53
Client ID	: MW-5ADUP	**Date Received**	: 09/05/24
Sample Location	:	**Date Analyzed**	: 09/10/24 20:57
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 19,200.7	**Analyst**	: CEY
Lab File ID	: WG1969717.pdf	**Instrument ID**	: TRACE8
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Dissolved	ND	0.100	0.032	U
7440-36-0	Antimony, Dissolved	ND	0.0500	0.007	U
7440-38-2	Arsenic, Dissolved	ND	0.0050	0.002	U
7440-39-3	Barium, Dissolved	0.0166	0.0100	0.002	
7440-41-7	Beryllium, Dissolved	ND	0.0050	0.001	U
7440-43-9	Cadmium, Dissolved	ND	0.0050	0.001	U
7440-70-2	Calcium, Dissolved	24.3	0.100	0.035	
7440-47-3	Chromium, Dissolved	ND	0.0100	0.002	U
7440-48-4	Cobalt, Dissolved	ND	0.0200	0.002	U
7440-50-8	Copper, Dissolved	0.0025	0.0100	0.002	J
7439-89-6	Iron, Dissolved	ND	0.0500	0.009	U
7439-92-1	Lead, Dissolved	ND	0.0100	0.003	U
7439-95-4	Magnesium, Dissolved	5.07	0.100	0.015	
7439-96-5	Manganese, Dissolved	ND	0.0100	0.002	U
7440-02-0	Nickel, Dissolved	ND	0.0250	0.002	U
7440-09-7	Potassium, Dissolved	2.12	2.50	0.237	J
7782-49-2	Selenium, Dissolved	ND	0.0100	0.004	U
7440-22-4	Silver, Dissolved	ND	0.0070	0.003	U
7440-23-5	Sodium, Dissolved	10.6	2.00	0.120	
7440-28-0	Thallium, Dissolved	ND	0.0200	0.003	U
7440-62-2	Vanadium, Dissolved	ND	0.0100	0.002	U
7440-66-6	Zinc, Dissolved	ND	0.0050	0.002	U

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Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1969516-8	**Date Collected**	: 09/05/24 13:55
Client ID	: MW-5BDUP	**Date Received**	: 09/05/24
Sample Location	:	**Date Analyzed**	: 09/10/24 21:59
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 19,200.7	**Analyst**	: CEY
Lab File ID	: WG1969717.pdf	**Instrument ID**	: TRACE8
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Dissolved	ND	0.100	0.032	U
7440-36-0	Antimony, Dissolved	ND	0.0500	0.007	U
7440-38-2	Arsenic, Dissolved	ND	0.0050	0.002	U
7440-39-3	Barium, Dissolved	0.0677	0.0100	0.002	
7440-41-7	Beryllium, Dissolved	ND	0.0050	0.001	U
7440-43-9	Cadmium, Dissolved	ND	0.0050	0.001	U
7440-70-2	Calcium, Dissolved	14.1	0.100	0.035	
7440-47-3	Chromium, Dissolved	ND	0.0100	0.002	U
7440-48-4	Cobalt, Dissolved	ND	0.0200	0.002	U
7440-50-8	Copper, Dissolved	0.0239	0.0100	0.002	
7439-89-6	Iron, Dissolved	ND	0.0500	0.009	U
7439-92-1	Lead, Dissolved	ND	0.0100	0.003	U
7439-95-4	Magnesium, Dissolved	6.27	0.100	0.015	
7439-96-5	Manganese, Dissolved	ND	0.0100	0.002	U
7440-02-0	Nickel, Dissolved	ND	0.0250	0.002	U
7440-09-7	Potassium, Dissolved	1.19	2.50	0.237	J
7782-49-2	Selenium, Dissolved	ND	0.0100	0.004	U
7440-22-4	Silver, Dissolved	ND	0.0070	0.003	U
7440-23-5	Sodium, Dissolved	12.7	2.00	0.120	
7440-28-0	Thallium, Dissolved	ND	0.0200	0.003	U
7440-62-2	Vanadium, Dissolved	ND	0.0100	0.002	U
7440-66-6	Zinc, Dissolved	0.0247	0.0050	0.002	

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Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-01	**Date Collected**	: 09/05/24 13:53
Client ID	: MW-5A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 08:24
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 19,200.7	**Analyst**	: DMC
Lab File ID	: WG1970061.pdf	**Instrument ID**	: TRACE8
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	ND	0.100	0.0318	U
7440-36-0	Antimony, Total	ND	0.0500	0.0071	U
7440-38-2	Arsenic, Total	ND	0.0050	0.0019	U
7440-39-3	Barium, Total	0.0155	0.0100	0.0021	
7440-41-7	Beryllium, Total	ND	0.0050	0.0009	U
7440-43-9	Cadmium, Total	ND	0.0050	0.0010	U
7440-70-2	Calcium, Total	23.6	0.100	0.0350	
7440-47-3	Chromium, Total	ND	0.0100	0.0021	U
7440-48-4	Cobalt, Total	ND	0.0200	0.0017	U
7440-50-8	Copper, Total	ND	0.0100	0.0022	U
7439-89-6	Iron, Total	ND	0.0500	0.0090	U
7439-92-1	Lead, Total	ND	0.0100	0.0027	U
7439-95-4	Magnesium, Total	5.08	0.100	0.0153	
7439-96-5	Manganese, Total	ND	0.0100	0.0016	U
7440-02-0	Nickel, Total	ND	0.0250	0.0024	U
7440-09-7	Potassium, Total	1.99	2.50	0.237	J
7782-49-2	Selenium, Total	ND	0.0100	0.0035	U
7440-22-4	Silver, Total	ND	0.0070	0.0028	U
7440-23-5	Sodium, Total	10.2	2.00	0.120	
7440-28-0	Thallium, Total	ND	0.0200	0.0025	U
7440-62-2	Vanadium, Total	ND	0.0100	0.0020	U
7440-66-6	Zinc, Total	0.0022	0.0050	0.0021	J

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Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-02	**Date Collected**	: 09/05/24 13:55
Client ID	: MW-5B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 10:37
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 19,200.7	**Analyst**	: DMC
Lab File ID	: WG1970061.pdf	**Instrument ID**	: TRACE8
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	ND	0.100	0.0318	U
7440-36-0	Antimony, Total	ND	0.0500	0.0071	U
7440-38-2	Arsenic, Total	ND	0.0050	0.0019	U
7440-39-3	Barium, Total	0.0662	0.0100	0.0021	
7440-41-7	Beryllium, Total	ND	0.0050	0.0009	U
7440-43-9	Cadmium, Total	ND	0.0050	0.0010	U
7440-70-2	Calcium, Total	14.2	0.100	0.0350	
7440-47-3	Chromium, Total	ND	0.0100	0.0021	U
7440-48-4	Cobalt, Total	ND	0.0200	0.0017	U
7440-50-8	Copper, Total	ND	0.0100	0.0022	U
7439-89-6	Iron, Total	0.0212	0.0500	0.0090	J
7439-92-1	Lead, Total	ND	0.0100	0.0027	U
7439-95-4	Magnesium, Total	6.38	0.100	0.0153	
7439-96-5	Manganese, Total	0.0019	0.0100	0.0016	J
7440-02-0	Nickel, Total	ND	0.0250	0.0024	U
7440-09-7	Potassium, Total	1.15	2.50	0.237	J
7782-49-2	Selenium, Total	ND	0.0100	0.0035	U
7440-22-4	Silver, Total	ND	0.0070	0.0028	U
7440-23-5	Sodium, Total	12.5	2.00	0.120	
7440-28-0	Thallium, Total	ND	0.0200	0.0025	U
7440-62-2	Vanadium, Total	ND	0.0100	0.0020	U
7440-66-6	Zinc, Total	ND	0.0050	0.0021	U

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Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-03	**Date Collected**	: 09/05/24 12:50
Client ID	: MW-6A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 08:16
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 19,200.7	**Analyst**	: DMC
Lab File ID	: WG1970061.pdf	**Instrument ID**	: TRACE8
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	ND	0.100	0.0318	U
7440-36-0	Antimony, Total	ND	0.0500	0.0071	U
7440-38-2	Arsenic, Total	ND	0.0050	0.0019	U
7440-39-3	Barium, Total	0.0157	0.0100	0.0021	
7440-41-7	Beryllium, Total	ND	0.0050	0.0009	U
7440-43-9	Cadmium, Total	ND	0.0050	0.0010	U
7440-70-2	Calcium, Total	22.4	0.100	0.0350	
7440-47-3	Chromium, Total	ND	0.0100	0.0021	U
7440-48-4	Cobalt, Total	ND	0.0200	0.0017	U
7440-50-8	Copper, Total	ND	0.0100	0.0022	U
7439-89-6	Iron, Total	ND	0.0500	0.0090	U
7439-92-1	Lead, Total	ND	0.0100	0.0027	U
7439-95-4	Magnesium, Total	5.02	0.100	0.0153	
7439-96-5	Manganese, Total	ND	0.0100	0.0016	U
7440-02-0	Nickel, Total	ND	0.0250	0.0024	U
7440-09-7	Potassium, Total	1.12	2.50	0.237	J
7782-49-2	Selenium, Total	ND	0.0100	0.0035	U
7440-22-4	Silver, Total	ND	0.0070	0.0028	U
7440-23-5	Sodium, Total	8.46	2.00	0.120	
7440-28-0	Thallium, Total	ND	0.0200	0.0025	U
7440-62-2	Vanadium, Total	ND	0.0100	0.0020	U
7440-66-6	Zinc, Total	ND	0.0050	0.0021	U

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Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-04	**Date Collected**	: 09/05/24 12:47
Client ID	: MW-6B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 08:20
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 19,200.7	**Analyst**	: DMC
Lab File ID	: WG1970061.pdf	**Instrument ID**	: TRACE8
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	ND	0.100	0.0318	U
7440-36-0	Antimony, Total	ND	0.0500	0.0071	U
7440-38-2	Arsenic, Total	ND	0.0050	0.0019	U
7440-39-3	Barium, Total	0.0429	0.0100	0.0021	
7440-41-7	Beryllium, Total	ND	0.0050	0.0009	U
7440-43-9	Cadmium, Total	ND	0.0050	0.0010	U
7440-70-2	Calcium, Total	22.8	0.100	0.0350	
7440-47-3	Chromium, Total	0.0035	0.0100	0.0021	J
7440-48-4	Cobalt, Total	ND	0.0200	0.0017	U
7440-50-8	Copper, Total	ND	0.0100	0.0022	U
7439-89-6	Iron, Total	0.0282	0.0500	0.0090	J
7439-92-1	Lead, Total	ND	0.0100	0.0027	U
7439-95-4	Magnesium, Total	5.59	0.100	0.0153	
7439-96-5	Manganese, Total	0.0029	0.0100	0.0016	J
7440-02-0	Nickel, Total	0.0264	0.0250	0.0024	
7440-09-7	Potassium, Total	1.19	2.50	0.237	J
7782-49-2	Selenium, Total	ND	0.0100	0.0035	U
7440-22-4	Silver, Total	ND	0.0070	0.0028	U
7440-23-5	Sodium, Total	10.4	2.00	0.120	
7440-28-0	Thallium, Total	ND	0.0200	0.0025	U
7440-62-2	Vanadium, Total	ND	0.0100	0.0020	U
7440-66-6	Zinc, Total	0.0021	0.0050	0.0021	J

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Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-05	**Date Collected**	: 09/05/24 11:55
Client ID	: MW-7A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 09:52
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 19,200.7	**Analyst**	: DMC
Lab File ID	: WG1970061.pdf	**Instrument ID**	: TRACE8
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	ND	0.100	0.0318	U
7440-36-0	Antimony, Total	ND	0.0500	0.0071	U
7440-38-2	Arsenic, Total	ND	0.0050	0.0019	U
7440-39-3	Barium, Total	0.0921	0.0100	0.0021	
7440-41-7	Beryllium, Total	ND	0.0050	0.0009	U
7440-43-9	Cadmium, Total	ND	0.0050	0.0010	U
7440-70-2	Calcium, Total	63.3	0.100	0.0350	
7440-47-3	Chromium, Total	ND	0.0100	0.0021	U
7440-48-4	Cobalt, Total	ND	0.0200	0.0017	U
7440-50-8	Copper, Total	ND	0.0100	0.0022	U
7439-89-6	Iron, Total	ND	0.0500	0.0090	U
7439-92-1	Lead, Total	ND	0.0100	0.0027	U
7439-95-4	Magnesium, Total	12.2	0.100	0.0153	
7439-96-5	Manganese, Total	2.62	0.0100	0.0016	
7440-02-0	Nickel, Total	ND	0.0250	0.0024	U
7440-09-7	Potassium, Total	9.39	2.50	0.237	
7782-49-2	Selenium, Total	ND	0.0100	0.0035	U
7440-22-4	Silver, Total	ND	0.0070	0.0028	U
7440-23-5	Sodium, Total	12.2	2.00	0.120	
7440-28-0	Thallium, Total	ND	0.0200	0.0025	U
7440-62-2	Vanadium, Total	ND	0.0100	0.0020	U
7440-66-6	Zinc, Total	ND	0.0050	0.0021	U

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Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-06	**Date Collected**	: 09/05/24 12:00
Client ID	: MW-7B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 09:56
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 19,200.7	**Analyst**	: DMC
Lab File ID	: WG1970061.pdf	**Instrument ID**	: TRACE8
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	ND	0.100	0.0318	U
7440-36-0	Antimony, Total	ND	0.0500	0.0071	U
7440-38-2	Arsenic, Total	ND	0.0050	0.0019	U
7440-39-3	Barium, Total	0.0565	0.0100	0.0021	
7440-41-7	Beryllium, Total	ND	0.0050	0.0009	U
7440-43-9	Cadmium, Total	ND	0.0050	0.0010	U
7440-70-2	Calcium, Total	71.2	0.100	0.0350	
7440-47-3	Chromium, Total	0.0096	0.0100	0.0021	J
7440-48-4	Cobalt, Total	ND	0.0200	0.0017	U
7440-50-8	Copper, Total	ND	0.0100	0.0022	U
7439-89-6	Iron, Total	0.0850	0.0500	0.0090	
7439-92-1	Lead, Total	ND	0.0100	0.0027	U
7439-95-4	Magnesium, Total	14.0	0.100	0.0153	
7439-96-5	Manganese, Total	0.378	0.0100	0.0016	
7440-02-0	Nickel, Total	0.0072	0.0250	0.0024	J
7440-09-7	Potassium, Total	2.51	2.50	0.237	
7782-49-2	Selenium, Total	ND	0.0100	0.0035	U
7440-22-4	Silver, Total	ND	0.0070	0.0028	U
7440-23-5	Sodium, Total	16.7	2.00	0.120	
7440-28-0	Thallium, Total	ND	0.0200	0.0025	U
7440-62-2	Vanadium, Total	ND	0.0100	0.0020	U
7440-66-6	Zinc, Total	ND	0.0050	0.0021	U

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Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-07	**Date Collected**	: 09/05/24 08:00
Client ID	: MW-8A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 10:00
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 19,200.7	**Analyst**	: DMC
Lab File ID	: WG1970061.pdf	**Instrument ID**	: TRACE8
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	ND	0.100	0.0318	U
7440-36-0	Antimony, Total	ND	0.0500	0.0071	U
7440-38-2	Arsenic, Total	ND	0.0050	0.0019	U
7440-39-3	Barium, Total	0.0407	0.0100	0.0021	
7440-41-7	Beryllium, Total	ND	0.0050	0.0009	U
7440-43-9	Cadmium, Total	ND	0.0050	0.0010	U
7440-70-2	Calcium, Total	17.9	0.100	0.0350	
7440-47-3	Chromium, Total	ND	0.0100	0.0021	U
7440-48-4	Cobalt, Total	ND	0.0200	0.0017	U
7440-50-8	Copper, Total	ND	0.0100	0.0022	U
7439-89-6	Iron, Total	0.0411	0.0500	0.0090	J
7439-92-1	Lead, Total	ND	0.0100	0.0027	U
7439-95-4	Magnesium, Total	3.75	0.100	0.0153	
7439-96-5	Manganese, Total	0.0136	0.0100	0.0016	
7440-02-0	Nickel, Total	ND	0.0250	0.0024	U
7440-09-7	Potassium, Total	2.42	2.50	0.237	J
7782-49-2	Selenium, Total	ND	0.0100	0.0035	U
7440-22-4	Silver, Total	ND	0.0070	0.0028	U
7440-23-5	Sodium, Total	13.5	2.00	0.120	
7440-28-0	Thallium, Total	ND	0.0200	0.0025	U
7440-62-2	Vanadium, Total	ND	0.0100	0.0020	U
7440-66-6	Zinc, Total	ND	0.0050	0.0021	U

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Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-08	**Date Collected**	: 09/05/24 08:55
Client ID	: MW-8B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 10:04
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 19,200.7	**Analyst**	: DMC
Lab File ID	: WG1970061.pdf	**Instrument ID**	: TRACE8
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	ND	0.100	0.0318	U
7440-36-0	Antimony, Total	ND	0.0500	0.0071	U
7440-38-2	Arsenic, Total	ND	0.0050	0.0019	U
7440-39-3	Barium, Total	ND	0.0100	0.0021	U
7440-41-7	Beryllium, Total	ND	0.0050	0.0009	U
7440-43-9	Cadmium, Total	ND	0.0050	0.0010	U
7440-70-2	Calcium, Total	7.22	0.100	0.0350	
7440-47-3	Chromium, Total	ND	0.0100	0.0021	U
7440-48-4	Cobalt, Total	ND	0.0200	0.0017	U
7440-50-8	Copper, Total	ND	0.0100	0.0022	U
7439-89-6	Iron, Total	0.971	0.0500	0.0090	
7439-92-1	Lead, Total	ND	0.0100	0.0027	U
7439-95-4	Magnesium, Total	3.00	0.100	0.0153	
7439-96-5	Manganese, Total	0.0287	0.0100	0.0016	
7440-02-0	Nickel, Total	ND	0.0250	0.0024	U
7440-09-7	Potassium, Total	0.929	2.50	0.237	J
7782-49-2	Selenium, Total	ND	0.0100	0.0035	U
7440-22-4	Silver, Total	ND	0.0070	0.0028	U
7440-23-5	Sodium, Total	5.48	2.00	0.120	
7440-28-0	Thallium, Total	ND	0.0200	0.0025	U
7440-62-2	Vanadium, Total	ND	0.0100	0.0020	U
7440-66-6	Zinc, Total	ND	0.0050	0.0021	U

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Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-09	**Date Collected**	: 09/05/24 10:10
Client ID	: MW-10A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 10:33
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 19,200.7	**Analyst**	: DMC
Lab File ID	: WG1970061.pdf	**Instrument ID**	: TRACE8
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	ND	0.100	0.0318	U
7440-36-0	Antimony, Total	ND	0.0500	0.0071	U
7440-38-2	Arsenic, Total	ND	0.0050	0.0019	U
7440-39-3	Barium, Total	0.0407	0.0100	0.0021	
7440-41-7	Beryllium, Total	ND	0.0050	0.0009	U
7440-43-9	Cadmium, Total	ND	0.0050	0.0010	U
7440-70-2	Calcium, Total	16.7	0.100	0.0350	
7440-47-3	Chromium, Total	ND	0.0100	0.0021	U
7440-48-4	Cobalt, Total	ND	0.0200	0.0017	U
7440-50-8	Copper, Total	ND	0.0100	0.0022	U
7439-89-6	Iron, Total	ND	0.0500	0.0090	U
7439-92-1	Lead, Total	ND	0.0100	0.0027	U
7439-95-4	Magnesium, Total	5.16	0.100	0.0153	
7439-96-5	Manganese, Total	0.0024	0.0100	0.0016	J
7440-02-0	Nickel, Total	ND	0.0250	0.0024	U
7440-09-7	Potassium, Total	2.17	2.50	0.237	J
7782-49-2	Selenium, Total	ND	0.0100	0.0035	U
7440-22-4	Silver, Total	ND	0.0070	0.0028	U
7440-23-5	Sodium, Total	12.4	2.00	0.120	
7440-28-0	Thallium, Total	ND	0.0200	0.0025	U
7440-62-2	Vanadium, Total	ND	0.0100	0.0020	U
7440-66-6	Zinc, Total	ND	0.0050	0.0021	U

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Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-10	**Date Collected**	: 09/05/24 10:16
Client ID	: MW-10B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 11:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 19,200.7	**Analyst**	: DMC
Lab File ID	: WG1970061.pdf	**Instrument ID**	: TRACE8
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	ND	0.100	0.0318	U
7440-36-0	Antimony, Total	ND	0.0500	0.0071	U
7440-38-2	Arsenic, Total	ND	0.0050	0.0019	U
7440-39-3	Barium, Total	0.0247	0.0100	0.0021	
7440-41-7	Beryllium, Total	ND	0.0050	0.0009	U
7440-43-9	Cadmium, Total	ND	0.0050	0.0010	U
7440-70-2	Calcium, Total	14.3	0.100	0.0350	
7440-47-3	Chromium, Total	0.0023	0.0100	0.0021	J
7440-48-4	Cobalt, Total	0.0057	0.0200	0.0017	J
7440-50-8	Copper, Total	ND	0.0100	0.0022	U
7439-89-6	Iron, Total	0.452	0.0500	0.0090	
7439-92-1	Lead, Total	ND	0.0100	0.0027	U
7439-95-4	Magnesium, Total	6.50	0.100	0.0153	
7439-96-5	Manganese, Total	0.0166	0.0100	0.0016	
7440-02-0	Nickel, Total	0.0084	0.0250	0.0024	J
7440-09-7	Potassium, Total	1.21	2.50	0.237	J
7782-49-2	Selenium, Total	ND	0.0100	0.0035	U
7440-22-4	Silver, Total	ND	0.0070	0.0028	U
7440-23-5	Sodium, Total	15.3	2.00	0.120	
7440-28-0	Thallium, Total	ND	0.0200	0.0025	U
7440-62-2	Vanadium, Total	ND	0.0100	0.0020	U
7440-66-6	Zinc, Total	0.0160	0.0050	0.0021	

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Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-12	**Date Collected**	: 09/05/24 00:00
Client ID	: DUP	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 11:18
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 19,200.7	**Analyst**	: DMC
Lab File ID	: WG1970061.pdf	**Instrument ID**	: TRACE8
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	ND	0.100	0.0318	U
7440-36-0	Antimony, Total	ND	0.0500	0.0071	U
7440-38-2	Arsenic, Total	ND	0.0050	0.0019	U
7440-39-3	Barium, Total	0.0404	0.0100	0.0021	
7440-41-7	Beryllium, Total	ND	0.0050	0.0009	U
7440-43-9	Cadmium, Total	ND	0.0050	0.0010	U
7440-70-2	Calcium, Total	17.5	0.100	0.0350	
7440-47-3	Chromium, Total	ND	0.0100	0.0021	U
7440-48-4	Cobalt, Total	ND	0.0200	0.0017	U
7440-50-8	Copper, Total	ND	0.0100	0.0022	U
7439-89-6	Iron, Total	0.0104	0.0500	0.0090	J
7439-92-1	Lead, Total	ND	0.0100	0.0027	U
7439-95-4	Magnesium, Total	3.73	0.100	0.0153	
7439-96-5	Manganese, Total	0.0018	0.0100	0.0016	J
7440-02-0	Nickel, Total	ND	0.0250	0.0024	U
7440-09-7	Potassium, Total	2.34	2.50	0.237	J
7782-49-2	Selenium, Total	ND	0.0100	0.0035	U
7440-22-4	Silver, Total	ND	0.0070	0.0028	U
7440-23-5	Sodium, Total	13.3	2.00	0.120	
7440-28-0	Thallium, Total	ND	0.0200	0.0025	U
7440-62-2	Vanadium, Total	ND	0.0100	0.0020	U
7440-66-6	Zinc, Total	ND	0.0050	0.0021	U

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Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1969512-1	**Date Collected**	: NA
Client ID	: WG1969512-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 09/11/24 09:08
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 19,200.7	**Analyst**	: DMC
Lab File ID	: WG1970061.pdf	**Instrument ID**	: TRACE8
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	ND	0.100	0.0318	U
7440-36-0	Antimony, Total	ND	0.0500	0.0071	U
7440-38-2	Arsenic, Total	ND	0.0050	0.0019	U
7440-39-3	Barium, Total	ND	0.0100	0.0021	U
7440-41-7	Beryllium, Total	ND	0.0050	0.0009	U
7440-43-9	Cadmium, Total	ND	0.0050	0.0010	U
7440-70-2	Calcium, Total	ND	0.100	0.0350	U
7440-47-3	Chromium, Total	ND	0.0100	0.0021	U
7440-48-4	Cobalt, Total	ND	0.0200	0.0017	U
7440-50-8	Copper, Total	0.0023	0.0100	0.0022	J
7439-89-6	Iron, Total	ND	0.0500	0.0090	U
7439-92-1	Lead, Total	ND	0.0100	0.0027	U
7439-95-4	Magnesium, Total	ND	0.100	0.0153	U
7439-96-5	Manganese, Total	ND	0.0100	0.0016	U
7440-02-0	Nickel, Total	ND	0.0250	0.0024	U
7440-09-7	Potassium, Total	ND	2.50	0.237	U
7782-49-2	Selenium, Total	ND	0.0100	0.0035	U
7440-22-4	Silver, Total	ND	0.0070	0.0028	U
7440-23-5	Sodium, Total	ND	2.00	0.120	U
7440-28-0	Thallium, Total	ND	0.0200	0.0025	U
7440-62-2	Vanadium, Total	ND	0.0100	0.0020	U
7440-66-6	Zinc, Total	ND	0.0050	0.0021	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1969512-4	**Date Collected**	: 09/05/24 13:53
Client ID	: MW-5ADUP	**Date Received**	: 09/05/24
Sample Location	:	**Date Analyzed**	: 09/11/24 08:32
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 19,200.7	**Analyst**	: DMC
Lab File ID	: WG1970061.pdf	**Instrument ID**	: TRACE8
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	ND	0.100	0.032	U
7440-36-0	Antimony, Total	ND	0.0500	0.007	U
7440-38-2	Arsenic, Total	ND	0.0050	0.002	U
7440-39-3	Barium, Total	0.0160	0.0100	0.002	
7440-41-7	Beryllium, Total	ND	0.0050	0.001	U
7440-43-9	Cadmium, Total	ND	0.0050	0.001	U
7440-70-2	Calcium, Total	24.4	0.100	0.035	
7440-47-3	Chromium, Total	ND	0.0100	0.002	U
7440-48-4	Cobalt, Total	ND	0.0200	0.002	U
7440-50-8	Copper, Total	ND	0.0100	0.002	U
7439-89-6	Iron, Total	ND	0.0500	0.009	U
7439-92-1	Lead, Total	ND	0.0100	0.003	U
7439-95-4	Magnesium, Total	5.25	0.100	0.015	
7439-96-5	Manganese, Total	ND	0.0100	0.002	U
7440-02-0	Nickel, Total	ND	0.0250	0.002	U
7440-09-7	Potassium, Total	2.08	2.50	0.237	J
7782-49-2	Selenium, Total	ND	0.0100	0.004	U
7440-22-4	Silver, Total	ND	0.0070	0.003	U
7440-23-5	Sodium, Total	10.6	2.00	0.120	
7440-28-0	Thallium, Total	ND	0.0200	0.003	U
7440-62-2	Vanadium, Total	ND	0.0100	0.002	U
7440-66-6	Zinc, Total	ND	0.0050	0.002	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1969512-8	**Date Collected**	: 09/05/24 13:55
Client ID	: MW-5BDUP	**Date Received**	: 09/05/24
Sample Location	:	**Date Analyzed**	: 09/11/24 10:45
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 19,200.7	**Analyst**	: DMC
Lab File ID	: WG1970061.pdf	**Instrument ID**	: TRACE8
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	ND	0.100	0.032	U
7440-36-0	Antimony, Total	ND	0.0500	0.007	U
7440-38-2	Arsenic, Total	ND	0.0050	0.002	U
7440-39-3	Barium, Total	0.0672	0.0100	0.002	
7440-41-7	Beryllium, Total	ND	0.0050	0.001	U
7440-43-9	Cadmium, Total	ND	0.0050	0.001	U
7440-70-2	Calcium, Total	14.5	0.100	0.035	
7440-47-3	Chromium, Total	0.0025	0.0100	0.002	J
7440-48-4	Cobalt, Total	ND	0.0200	0.002	U
7440-50-8	Copper, Total	ND	0.0100	0.002	U
7439-89-6	Iron, Total	0.0254	0.0500	0.009	J
7439-92-1	Lead, Total	ND	0.0100	0.003	U
7439-95-4	Magnesium, Total	6.47	0.100	0.015	
7439-96-5	Manganese, Total	0.0019	0.0100	0.002	J
7440-02-0	Nickel, Total	ND	0.0250	0.002	U
7440-09-7	Potassium, Total	1.15	2.50	0.237	J
7782-49-2	Selenium, Total	ND	0.0100	0.004	U
7440-22-4	Silver, Total	ND	0.0070	0.003	U
7440-23-5	Sodium, Total	12.7	2.00	0.120	
7440-28-0	Thallium, Total	ND	0.0200	0.003	U
7440-62-2	Vanadium, Total	ND	0.0100	0.002	U
7440-66-6	Zinc, Total	ND	0.0050	0.002	U

Form 2A
Initial and Continuing Calibration Verification

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: TRACE8	**Units**	: mg/l

	Initial Calibration			Continuing Calibration(s)						
Lab ID :	R1874105-1									
Date Analyzed :	09/10/24 11:19									
Parameter	**True**	**Found**	**%R**	**True**	**Found**	**%R**	**Found**	**%R**	**Found**	**%R**
Aluminum	0.500	0.4770	95							
Antimony	0.500	0.4930	99							
Arsenic	0.500	0.4760	95							
Barium	0.500	0.5000	100							
Beryllium	0.500	0.5070	101							
Cadmium	0.500	0.4960	99							
Calcium	0.500	0.4900	98							
Chromium	0.500	0.4890	98							
Cobalt	0.500	0.5030	101							
Copper	0.500	0.4850	97							
Iron	0.500	0.5070	101							
Lead	0.500	0.4870	97							
Magnesium	0.500	0.4920	98							
Manganese	0.500	0.4920	98							
Nickel	0.500	0.5030	101							
Potassium	5.00	5.1700	103							
Selenium	0.500	0.4740	95							
Silver	0.500	0.5000	100							
Sodium	10.0	10.0000	100							
Thallium	0.500	0.4820	96							
Vanadium	0.500	0.4900	98							
Zinc	0.500	0.4930	99							

Acceptance Criteria:

ICV:	95-105%	(Methods 200.7, 245.1)
	90-110%	(Methods 200.8, 6010, 6020, 7470, 7471, 7474)
	85-115%	(Method 1631)
CCV:	90-110%	(Methods 200.7, 245.1, 6010, 6020, 7474)
	85-115%	(Methods 200.8, 1631)
	80-120%	(Methods 7470, 7471)

Form 2A
Initial and Continuing Calibration Verification

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: TRACE8	**Units**	: mg/l

	Initial Calibration			Continuing Calibration(s)						
Lab ID :	R1874105-3			R1874105-6			R1874105-8		R1874105-10	
Date Analyzed:	09/10/24 11:26			09/10/24 12:36			09/10/24 13:13		09/10/24 13:54	
Parameter	**True**	**Found**	**%R**	**True**	**Found**	**%R**	**Found**	**%R**	**Found**	**%R**
Aluminum	0.500	0.4970	99	0.5000	0.481	96	0.486	97	0.481	96
Antimony	0.500	0.5090	102	0.5000	0.491	98	0.505	101	0.508	102
Arsenic	0.500	0.4960	99	0.5000	0.482	96	0.483	97	0.482	96
Barium	0.500	0.5210	104	0.5000	0.503	101	0.511	102	0.507	101
Beryllium	0.500	0.5280	106	0.5000	0.515	103	0.518	104	0.516	103
Cadmium	0.500	0.5140	103	0.5000	0.498	100	0.502	100	0.504	101
Calcium	0.500	0.5170	103	0.5000	0.496	99	0.499	100	0.496	99
Chromium	0.500	0.5090	102	0.5000	0.492	98	0.498	100	0.498	100
Cobalt	0.500	0.5210	104	0.5000	0.508	102	0.514	103	0.514	103
Copper	0.500	0.5040	101	0.5000	0.488	98	0.495	99	0.492	98
Iron	0.500	0.5320	106	0.5000	0.508	102	0.518	104	0.506	101
Lead	0.500	0.5050	101	0.5000	0.487	97	0.491	98	0.488	98
Magnesium	0.500	0.5110	102	0.5000	0.496	99	0.501	100	0.498	100
Manganese	0.500	0.5140	103	0.5000	0.496	99	0.500	100	0.497	99
Nickel	0.500	0.5220	104	0.5000	0.507	101	0.512	102	0.514	103
Potassium	5.00	5.4200	108	5.0000	5.18	104	5.34	107	5.36	107
Selenium	0.500	0.4920	98	0.5000	0.478	96	0.482	96	0.481	96
Silver	0.500	0.5200	104	0.5000	0.503	101	0.509	102	0.508	102
Sodium	10.0	10.4000	104	10.0000	10.2	102	10.2	102	10.3	103
Thallium	0.500	0.5010	100	0.5000	0.481	96	0.482	96	0.479	96
Vanadium	0.500	0.5090	102	0.5000	0.493	99	0.499	100	0.501	100
Zinc	0.500	0.5110	102	0.5000	0.497	99	0.501	100	0.503	101

Acceptance Criteria:

ICV:	95-105%	(Methods 200.7, 245.1)
	90-110%	(Methods 200.8, 6010, 6020, 7470, 7471, 7474)
	85-115%	(Method 1631)
CCV:	90-110%	(Methods 200.7, 245.1, 6010, 6020, 7474)
	85-115%	(Methods 200.8, 1631)
	80-120%	(Methods 7470, 7471)

Form 2A
Initial and Continuing Calibration Verification

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: TRACE8	**Units**	: mg/l

	Initial Calibration			Continuing Calibration(s)						
Lab ID :				R1874105-12			R1874105-14		R1874105-16	
Date Analyzed :				09/10/24 14:42			09/10/24 15:35		09/10/24 16:29	
Parameter	**True**	**Found**	**%R**	**True**	**Found**	**%R**	**Found**	**%R**	**Found**	**%R**
Aluminum				0.5000	0.482	96	0.490	98	0.488	98
Antimony				0.5000	0.500	100	0.514	103	0.492	98
Arsenic				0.5000	0.480	96	0.486	97	0.480	96
Barium				0.5000	0.510	102	0.515	103	0.518	104
Beryllium				0.5000	0.515	103	0.520	104	0.519	104
Cadmium				0.5000	0.504	101	0.520	104	0.497	99
Calcium				0.5000	0.496	99	0.503	101	0.499	100
Chromium				0.5000	0.501	100	0.516	103	0.495	99
Cobalt				0.5000	0.514	103	0.532	106	0.508	102
Copper				0.5000	0.492	98	0.509	102	0.490	98
Iron				0.5000	0.506	101	0.520	104	0.517	103
Lead				0.5000	0.488	98	0.497	99	0.491	98
Magnesium				0.5000	0.503	101	0.518	104	0.496	99
Manganese				0.5000	0.495	99	0.501	100	0.497	99
Nickel				0.5000	0.515	103	0.532	106	0.509	102
Potassium				5.0000	5.28	106	5.34	107	5.32	106
Selenium				0.5000	0.479	96	0.486	97	0.482	96
Silver				0.5000	0.511	102	0.525	105	0.504	101
Sodium				10.0000	10.2	102	10.3	103	10.3	103
Thallium				0.5000	0.477	95	0.486	97	0.481	96
Vanadium				0.5000	0.502	100	0.518	104	0.496	99
Zinc				0.5000	0.505	101	0.522	104	0.496	99

Acceptance Criteria:

ICV:	95-105%	(Methods 200.7, 245.1)
	90-110%	(Methods 200.8, 6010, 6020, 7470, 7471, 7474)
	85-115%	(Method 1631)
CCV:	90-110%	(Methods 200.7, 245.1, 6010, 6020, 7474)
	85-115%	(Methods 200.8, 1631)
	80-120%	(Methods 7470, 7471)

Form 2A
Initial and Continuing Calibration Verification

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: TRACE8	**Units**	: mg/l

	Initial Calibration			Continuing Calibration(s)						
Lab ID :				R1874105-18			R1874105-20		R1874105-22	
Date Analyzed:				09/10/24 17:17			09/10/24 18:08		09/10/24 19:01	
Parameter	**True**	**Found**	**%R**	**True**	**Found**	**%R**	**Found**	**%R**	**Found**	**%R**
Aluminum				0.5000	0.492	98	0.488	98	0.489	98
Antimony				0.5000	0.509	102	0.494	99	0.494	99
Arsenic				0.5000	0.483	97	0.477	95	0.471	94
Barium				0.5000	0.518	104	0.518	104	0.514	103
Beryllium				0.5000	0.519	104	0.517	103	0.511	102
Cadmium				0.5000	0.515	103	0.500	100	0.500	100
Calcium				0.5000	0.504	101	0.500	100	0.498	100
Chromium				0.5000	0.514	103	0.498	100	0.498	100
Cobalt				0.5000	0.527	105	0.511	102	0.511	102
Copper				0.5000	0.508	102	0.493	99	0.492	98
Iron				0.5000	0.512	102	0.517	103	0.516	103
Lead				0.5000	0.497	99	0.493	99	0.490	98
Magnesium				0.5000	0.515	103	0.499	100	0.501	100
Manganese				0.5000	0.499	100	0.497	99	0.492	98
Nickel				0.5000	0.526	105	0.512	102	0.509	102
Potassium				5.0000	5.38	108	5.36	107	5.37	107
Selenium				0.5000	0.484	97	0.482	96	0.476	95
Silver				0.5000	0.524	105	0.508	102	0.507	101
Sodium				10.0000	10.4	104	10.4	104	10.3	103
Thallium				0.5000	0.484	97	0.480	96	0.476	95
Vanadium				0.5000	0.516	103	0.500	100	0.498	100
Zinc				0.5000	0.514	103	0.499	100	0.497	99

Acceptance Criteria:

ICV:	**95-105%**	**(Methods 200.7, 245.1)**
	90-110%	**(Methods 200.8, 6010, 6020, 7470, 7471, 7474)**
	85-115%	**(Method 1631)**
CCV:	**90-110%**	**(Methods 200.7, 245.1, 6010, 6020, 7474)**
	85-115%	**(Methods 200.8, 1631)**
	80-120%	**(Methods 7470, 7471)**

Form 2A
Initial and Continuing Calibration Verification

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: TRACE8	**Units**	: mg/l

	Initial Calibration			Continuing Calibration(s)						
Lab ID :				R1874105-24			R1874105-26		R1874105-28	
Date Analyzed:				09/10/24 20:02			09/10/24 20:19		09/10/24 21:09	
Parameter	**True**	**Found**	**%R**	**True**	**Found**	**%R**	**Found**	**%R**	**Found**	**%R**
Aluminum				0.5000	0.496	99	0.489	98	0.490	98
Antimony				0.5000	0.493	99	0.482	96	0.481	96
Arsenic				0.5000	0.468	94	0.458	92	0.462	92
Barium				0.5000	0.518	104	0.508	102	0.511	102
Beryllium				0.5000	0.508	102	0.500	100	0.502	100
Cadmium				0.5000	0.501	100	0.490	98	0.484	97
Calcium				0.5000	0.497	99	0.485	97	0.487	97
Chromium				0.5000	0.496	99	0.485	97	0.479	96
Cobalt				0.5000	0.507	101	0.496	99	0.494	99
Copper				0.5000	0.494	99	0.482	96	0.476	95
Iron				0.5000	0.519	104	0.504	101	0.492	98
Lead				0.5000	0.492	98	0.482	96	0.482	96
Magnesium				0.5000	0.502	100	0.492	98	0.486	97
Manganese				0.5000	0.491	98	0.484	97	0.483	97
Nickel				0.5000	0.508	102	0.497	99	0.495	99
Potassium				5.0000	5.44	109	5.36	107	5.38	108
Selenium				0.5000	0.475	95	0.466	93	0.466	93
Silver				0.5000	0.508	102	0.498	100	0.491	98
Sodium				10.0000	10.4	104	10.2	102	10.1	101
Thallium				0.5000	0.480	96	0.474	95	0.467	93
Vanadium				0.5000	0.497	99	0.485	97	0.481	96
Zinc				0.5000	0.497	99	0.486	97	0.482	96

Acceptance Criteria:

ICV:	95-105%	(Methods 200.7, 245.1)
	90-110%	(Methods 200.8, 6010, 6020, 7470, 7471, 7474)
	85-115%	(Method 1631)
CCV:	90-110%	(Methods 200.7, 245.1, 6010, 6020, 7474)
	85-115%	(Methods 200.8, 1631)
	80-120%	(Methods 7470, 7471)

Form 2A
Initial and Continuing Calibration Verification

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: TRACE8	**Units**	: mg/l

	Initial Calibration			Continuing Calibration(s)						
Lab ID :				R1874105-30			R1874105-32		R1874105-34	
Date Analyzed :				09/10/24 21:21			09/10/24 22:11		09/10/24 22:45	
Parameter	**True**	**Found**	**%R**	**True**	**Found**	**%R**	**Found**	**%R**	**Found**	**%R**
Aluminum				0.5000	0.484	97	0.487	97	0.485	97
Antimony				0.5000	0.486	97	0.489	98	0.476	95
Arsenic				0.5000	0.460	92	0.462	92	0.459	92
Barium				0.5000	0.509	102	0.513	103	0.511	102
Beryllium				0.5000	0.498	100	0.502	100	0.498	100
Cadmium				0.5000	0.481	96	0.487	97	0.483	97
Calcium				0.5000	0.484	97	0.486	97	0.483	97
Chromium				0.5000	0.477	95	0.486	97	0.479	96
Cobalt				0.5000	0.493	99	0.498	100	0.495	99
Copper				0.5000	0.474	95	0.480	96	0.474	95
Iron				0.5000	0.493	99	0.496	99	0.492	98
Lead				0.5000	0.480	96	0.483	97	0.478	96
Magnesium				0.5000	0.483	97	0.490	98	0.483	97
Manganese				0.5000	0.479	96	0.484	97	0.479	96
Nickel				0.5000	0.493	99	0.503	101	0.497	99
Potassium				5.0000	5.41	108	5.45	109	5.45	109
Selenium				0.5000	0.465	93	0.469	94	0.464	93
Silver				0.5000	0.491	98	0.498	100	0.492	98
Sodium				10.0000	10.2	102	10.3	103	10.2	102
Thallium				0.5000	0.461	92	0.467	93	0.460	92
Vanadium				0.5000	0.480	96	0.485	97	0.478	96
Zinc				0.5000	0.481	96	0.490	98	0.486	97

Acceptance Criteria:

ICV:	95-105%	(Methods 200.7, 245.1)
	90-110%	(Methods 200.8, 6010, 6020, 7470, 7471, 7474)
	85-115%	(Method 1631)
CCV:	90-110%	(Methods 200.7, 245.1, 6010, 6020, 7474)
	85-115%	(Methods 200.8, 1631)
	80-120%	(Methods 7470, 7471)

Form 2A
Initial and Continuing Calibration Verification

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: TRACE8	**Units**	: mg/l

	Initial Calibration			Continuing Calibration(s)						
Lab ID :	R1874435-1									
Date Analyzed :	09/11/24 05:40									
Parameter	**True**	**Found**	**%R**	**True**	**Found**	**%R**	**Found**	**%R**	**Found**	**%R**
Aluminum	0.500	0.4730	95							
Antimony	0.500	0.4940	99							
Arsenic	0.500	0.4690	94							
Barium	0.500	0.4970	99							
Beryllium	0.500	0.5050	101							
Cadmium	0.500	0.5030	101							
Calcium	0.500	0.4830	97							
Chromium	0.500	0.4900	98							
Cobalt	0.500	0.5070	101							
Copper	0.500	0.4880	98							
Iron	0.500	0.5070	101							
Lead	0.500	0.4880	98							
Magnesium	0.500	0.4950	99							
Manganese	0.500	0.4900	98							
Nickel	0.500	0.5050	101							
Potassium	5.00	5.1400	103							
Selenium	0.500	0.4730	95							
Silver	0.500	0.5010	100							
Sodium	10.0	10.0000	100							
Thallium	0.500	0.4910	98							
Vanadium	0.500	0.4920	98							
Zinc	0.500	0.4980	100							

Acceptance Criteria:

ICV:	95-105%	(Methods 200.7, 245.1)
	90-110%	(Methods 200.8, 6010, 6020, 7470, 7471, 7474)
	85-115%	(Method 1631)
CCV:	90-110%	(Methods 200.7, 245.1, 6010, 6020, 7474)
	85-115%	(Methods 200.8, 1631)
	80-120%	(Methods 7470, 7471)

Form 2A
Initial and Continuing Calibration Verification

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: TRACE8	**Units**	: mg/l

	Initial Calibration			Continuing Calibration(s)						
Lab ID :	R1874435-3			R1874435-6			R1874435-8		R1874435-10	
Date Analyzed:	09/11/24 05:48			09/11/24 07:00			09/11/24 07:49		09/11/24 08:44	
Parameter	**True**	**Found**	**%R**	**True**	**Found**	**%R**	**Found**	**%R**	**Found**	**%R**
Aluminum	0.500	0.4890	98	0.5000	0.475	95	0.474	95	0.473	95
Antimony	0.500	0.5000	100	0.5000	0.497	99	0.487	97	0.506	101
Arsenic	0.500	0.4800	96	0.5000	0.472	94	0.460	92	0.453	91
Barium	0.500	0.5050	101	0.5000	0.497	99	0.490	98	0.489	98
Beryllium	0.500	0.5140	103	0.5000	0.507	101	0.497	99	0.498	100
Cadmium	0.500	0.5100	102	0.5000	0.505	101	0.493	99	0.516	103
Calcium	0.500	0.4980	100	0.5000	0.484	97	0.475	95	0.482	96
Chromium	0.500	0.4960	99	0.5000	0.494	99	0.481	96	0.499	100
Cobalt	0.500	0.5120	102	0.5000	0.511	102	0.498	100	0.518	104
Copper	0.500	0.4950	99	0.5000	0.490	98	0.482	96	0.494	99
Iron	0.500	0.5180	104	0.5000	0.505	101	0.503	101	0.496	99
Lead	0.500	0.4970	99	0.5000	0.486	97	0.479	96	0.482	96
Magnesium	0.500	0.5000	100	0.5000	0.496	99	0.484	97	0.508	102
Manganese	0.500	0.4990	100	0.5000	0.489	98	0.480	96	0.483	97
Nickel	0.500	0.5150	103	0.5000	0.510	102	0.497	99	0.517	103
Potassium	5.00	5.2400	105	5.0000	5.15	103	5.11	102	5.12	102
Selenium	0.500	0.4830	97	0.5000	0.476	95	0.465	93	0.464	93
Silver	0.500	0.5070	101	0.5000	0.502	100	0.492	98	0.508	102
Sodium	10.0	10.2000	102	10.0000	10.2	102	9.99	100	10.1	101
Thallium	0.500	0.5030	101	0.5000	0.488	98	0.482	96	0.480	96
Vanadium	0.500	0.4980	100	0.5000	0.495	99	0.484	97	0.500	100
Zinc	0.500	0.5060	101	0.5000	0.506	101	0.489	98	0.513	103

Acceptance Criteria:

ICV:	95-105%	(Methods 200.7, 245.1)
	90-110%	(Methods 200.8, 6010, 6020, 7470, 7471, 7474)
	85-115%	(Method 1631)
CCV:	90-110%	(Methods 200.7, 245.1, 6010, 6020, 7474)
	85-115%	(Methods 200.8, 1631)
	80-120%	(Methods 7470, 7471)

Form 2A
Initial and Continuing Calibration Verification

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: TRACE8	**Units**	: mg/l

	Initial Calibration			Continuing Calibration(s)						
Lab ID :				R1874435-12			R1874435-14		R1874435-16	
Date Analyzed:				09/11/24 10:08			09/11/24 10:57		09/11/24 11:29	
Parameter	**True**	**Found**	**%R**	**True**	**Found**	**%R**	**Found**	**%R**	**Found**	**%R**
Aluminum				0.5000	0.465	93	0.455	91	0.460	92
Antimony				0.5000	0.486	97	0.492	98	0.488	98
Arsenic				0.5000	0.452	90	0.455	91	0.454	91
Barium				0.5000	0.484	97	0.485	97	0.488	98
Beryllium				0.5000	0.490	98	0.491	98	0.495	99
Cadmium				0.5000	0.496	99	0.494	99	0.497	99
Calcium				0.5000	0.469	94	0.470	94	0.476	95
Chromium				0.5000	0.481	96	0.485	97	0.484	97
Cobalt				0.5000	0.499	100	0.502	100	0.503	101
Copper				0.5000	0.480	96	0.480	96	0.481	96
Iron				0.5000	0.488	98	0.488	98	0.491	98
Lead				0.5000	0.474	95	0.472	94	0.476	95
Magnesium				0.5000	0.488	98	0.485	97	0.487	97
Manganese				0.5000	0.475	95	0.474	95	0.477	95
Nickel				0.5000	0.499	100	0.501	100	0.502	100
Potassium				5.0000	5.11	102	5.02	100	5.02	100
Selenium				0.5000	0.462	92	0.465	93	0.463	93
Silver				0.5000	0.493	99	0.492	98	0.491	98
Sodium				10.0000	9.90	99	9.91	99	10.0	100
Thallium				0.5000	0.474	95	0.469	94	0.469	94
Vanadium				0.5000	0.484	97	0.488	98	0.487	97
Zinc				0.5000	0.492	98	0.493	99	0.496	99

Acceptance Criteria:

ICV:	**95-105%**	**(Methods 200.7, 245.1)**
	90-110%	**(Methods 200.8, 6010, 6020, 7470, 7471, 7474)**
	85-115%	**(Method 1631)**
CCV:	**90-110%**	**(Methods 200.7, 245.1, 6010, 6020, 7474)**
	85-115%	**(Methods 200.8, 1631)**
	80-120%	**(Methods 7470, 7471)**

Form 3
Blanks

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: TRACE8		

	Initial Calibration Blank		Continuing Calibration Blank(s)						Preparation Blank	
Lab ID :	R1874105-2		R1874105-7		R1874105-9		R1874105-11		WG1969516-1	
Date Analyzed :	09/10/24 11:23		09/10/24 12:40		09/10/24 13:17		09/10/24 13:58		09/10/24 20:29	
Parameter	**mg/l**	**Q**	**mg/l**	**Q**	**mg/l**	**Q**	**mg/l**	**Q**	**mg/l**	**Q**
Aluminum	0.0318	U	0.0318	U	0.0318	U	0.0318	U	0.0318	U
Antimony	0.00710	U	0.00710	U	0.00710	U	0.00710	U	0.0071	U
Arsenic	0.00190	U	0.00190	U	0.00190	U	0.00190	U	0.0019	U
Barium	0.00210	U	0.00210	U	0.00210	U	0.00210	U	0.0021	U
Beryllium	0.000900	U	0.000900	U	0.000900	U	0.000900	U	0.0009	U
Cadmium	0.00100	U	0.00100	U	0.00100	U	0.00100	U	0.0010	U
Calcium	0.0350	U	0.0350	U	0.0350	U	0.0350	U	0.0350	U
Chromium	0.00210	U	0.00210	U	0.00210	U	0.00210	U	0.0021	U
Cobalt	0.00170	U	0.00170	U	0.00170	U	0.00170	U	0.0017	U
Copper	0.00220	U	0.00220	U	0.00220	U	0.00220	U	0.0022	U
Iron	0.00900	U	0.00900	U	0.00900	U	0.00900	U	0.0090	U
Lead	0.00270	U	0.00270	U	0.00270	U	0.00270	U	0.0027	U
Magnesium	0.0153	U	0.0153	U	0.0153	U	0.0153	U	0.0153	U
Manganese	0.00160	U	0.00160	U	0.00160	U	0.00160	U	0.0036	J
Nickel	0.00240	U	0.00240	U	0.00240	U	0.00240	U	0.0024	U
Potassium	0.237	U	0.237	U	0.237	U	0.237	U	0.237	U
Selenium	0.00350	U	0.00350	U	0.00350	U	0.00350	U	0.0035	U
Silver	0.00280	U	0.00280	U	0.00280	U	0.00280	U	0.0028	U
Sodium	0.120	U	0.120	U	0.120	U	0.120	U	0.120	U
Thallium	0.00250	U	0.00250	U	0.00250	U	0.00250	U	0.0025	U
Vanadium	0.00200	U	0.00200	U	0.00200	U	0.00200	U	0.0020	U
Zinc	0.00210	U	0.00210	U	0.00210	U	0.00210	U	0.0021	U

Form 3
Blanks

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: TRACE8		

	Initial Calibration Blank		Continuing Calibration Blank(s)						Preparation Blank	
Lab ID :	R1874105-4		R1874105-13		R1874105-15		R1874105-17			
Date Analyzed :	09/10/24 11:30		09/10/24 14:46		09/10/24 15:38		09/10/24 16:33			
Parameter	mg/l	Q	mg/l	Q	mg/l	Q	mg/l	Q		Q
Aluminum	0.0318	U	0.0318	U	0.0318	U	0.0318	U		
Antimony	0.00710	U	0.00710	U	0.00710	U	0.00710	U		
Arsenic	0.00190	U	0.00190	U	0.00190	U	0.00190	U		
Barium	0.00210	U	0.00210	U	0.00210	U	0.00210	U		
Beryllium	0.000900	U	0.000900	U	0.000900	U	0.000900	U		
Cadmium	0.00100	U	0.00100	U	0.00100	U	0.00100	U		
Calcium	0.0350	U	0.0350	U	0.0350	U	0.0350	U		
Chromium	0.00210	U	0.00210	U	0.00210	U	0.00210	U		
Cobalt	0.00170	U	0.00170	U	0.00170	U	0.00170	U		
Copper	0.00220	U	0.00220	U	0.00220	U	0.00220	U		
Iron	0.00900	U	0.00900	U	0.00900	U	0.00900	U		
Lead	0.00270	U	0.00270	U	0.00270	U	0.00270	U		
Magnesium	0.0153	U	0.0153	U	0.0153	U	0.0153	U		
Manganese	0.00160	U	0.00160	U	0.00160	U	0.00160	U		
Nickel	0.00240	U	0.00240	U	0.00240	U	0.00240	U		
Potassium	0.237	U	0.237	U	0.237	U	0.237	U		
Selenium	0.00350	U	0.00350	U	0.00350	U	0.00350	U		
Silver	0.00280	U	0.00280	U	0.00280	U	0.00280	U		
Sodium	0.120	U	0.120	U	0.120	U	0.120	U		
Thallium	0.00250	U	0.00250	U	0.00250	U	0.00250	U		
Vanadium	0.00200	U	0.00200	U	0.00200	U	0.00200	U		
Zinc	0.00210	U	0.00210	U	0.00210	U	0.00210	U		

Form 3
Blanks

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: TRACE8		

	Initial Calibration Blank		Continuing Calibration Blank(s)						Preparation Blank	
Lab ID :			R1874105-19		R1874105-21		R1874105-23			
Date Analyzed :			09/10/24 17:21		09/10/24 18:12		09/10/24 19:05			
Parameter	mg/l	Q	mg/l	Q	mg/l	Q	mg/l	Q		Q
Aluminum			0.0318	U	0.0318	U	0.0318	U		
Antimony			0.00710	U	0.00710	U	0.00710	U		
Arsenic			0.00190	U	0.00190	U	0.00190	U		
Barium			0.00210	U	0.00210	U	0.00210	U		
Beryllium			0.000900	U	0.000900	U	0.000900	U		
Cadmium			0.00100	U	0.00100	U	0.00100	U		
Calcium			0.0350	U	0.0350	U	0.0350	U		
Chromium			0.00210	U	0.00210	U	0.00210	U		
Cobalt			0.00170	U	0.00170	U	0.00170	U		
Copper			0.00220	U	0.00220	U	0.00220	U		
Iron			0.00900	U	0.00900	U	0.00900	U		
Lead			0.00270	U	0.00270	U	0.00270	U		
Magnesium			0.0153	U	0.0153	U	0.0153	U		
Manganese			0.00160	U	0.00160	U	0.00160	U		
Nickel			0.00240	U	0.00240	U	0.00240	U		
Potassium			0.237	U	0.237	U	0.237	U		
Selenium			0.00350	U	0.00350	U	0.00350	U		
Silver			0.00280	U	0.00280	U	0.00280	U		
Sodium			0.120	U	0.120	U	0.120	U		
Thallium			0.00250	U	0.00250	U	0.00250	U		
Vanadium			0.00200	U	0.00200	U	0.00200	U		
Zinc			0.00210	U	0.00210	U	0.00210	U		

Form 3
Blanks

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: TRACE8		

	Initial Calibration Blank		Continuing Calibration Blank(s)						Preparation Blank	
Lab ID :			R1874105-25		R1874105-27		R1874105-29			
Date Analyzed :			09/10/24 20:06		09/10/24 20:23		09/10/24 21:13			
Parameter	mg/l	Q	mg/l	Q	mg/l	Q	mg/l	Q		Q
Aluminum			0.0318	U	0.0318	U	0.0318	U		
Antimony			0.00710	U	0.00710	U	0.00710	U		
Arsenic			0.00190	U	0.00190	U	0.00190	U		
Barium			0.00210	U	0.00210	U	0.00210	U		
Beryllium			0.000900	U	0.000900	U	0.000900	U		
Cadmium			0.00100	U	0.00100	U	0.00100	U		
Calcium			0.0350	U	0.0350	U	0.0350	U		
Chromium			0.00210	U	0.00210	U	0.00210	U		
Cobalt			0.00170	U	0.00170	U	0.00170	U		
Copper			0.00220	U	0.00220	U	0.00220	U		
Iron			0.00900	U	0.00900	U	0.00900	U		
Lead			0.00270	U	0.00270	U	0.00270	U		
Magnesium			0.0153	U	0.0153	U	0.0153	U		
Manganese			0.00160	U	0.00160	U	0.00160	U		
Nickel			0.00240	U	0.00240	U	0.00240	U		
Potassium			0.237	U	0.237	U	0.237	U		
Selenium			0.00350	U	0.00350	U	0.00350	U		
Silver			0.00280	U	0.00280	U	0.00280	U		
Sodium			0.120	U	0.120	U	0.120	U		
Thallium			0.00250	U	0.00250	U	0.00250	U		
Vanadium			0.00200	U	0.00200	U	0.00200	U		
Zinc			0.00210	U	0.00210	U	0.00210	U		

Form 3
Blanks

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: TRACE8		

	Initial Calibration Blank		Continuing Calibration Blank(s)						Preparation Blank	
Lab ID :			R1874105-31		R1874105-33		R1874105-35			
Date Analyzed :			09/10/24 21:25		09/10/24 22:15		09/10/24 22:49			
Parameter	mg/l	Q	mg/l	Q	mg/l	Q	mg/l	Q		Q
Aluminum			0.0318	U	0.0318	U	0.0318	U		
Antimony			0.00710	U	0.00710	U	0.00710	U		
Arsenic			0.00190	U	0.00190	U	0.00190	U		
Barium			0.00210	U	0.00210	U	0.00210	U		
Beryllium			0.000900	U	0.000900	U	0.000900	U		
Cadmium			0.00100	U	0.00100	U	0.00100	U		
Calcium			0.0350	U	0.0350	U	0.0350	U		
Chromium			0.00210	U	0.00210	U	0.00210	U		
Cobalt			0.00170	U	0.00170	U	0.00170	U		
Copper			0.00220	U	0.00220	U	0.00220	U		
Iron			0.00900	U	0.00900	U	0.00900	U		
Lead			0.00270	U	0.00270	U	0.00270	U		
Magnesium			0.0153	U	0.0153	U	0.0153	U		
Manganese			0.00160	U	0.00160	U	0.00160	U		
Nickel			0.00240	U	0.00240	U	0.00240	U		
Potassium			0.237	U	0.237	U	0.237	U		
Selenium			0.00350	U	0.00350	U	0.00350	U		
Silver			0.00280	U	0.00280	U	0.00280	U		
Sodium			0.120	U	0.120	U	0.120	U		
Thallium			0.00250	U	0.00250	U	0.00250	U		
Vanadium			0.00200	U	0.00200	U	0.00200	U		
Zinc			0.00210	U	0.00210	U	0.00210	U		

Form 3
Blanks

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: TRACE8		

	Initial Calibration Blank		Continuing Calibration Blank(s)						Preparation Blank	
Lab ID :	R1874435-2		R1874435-7		R1874435-9		R1874435-11		WG1969512-1	
Date Analyzed :	09/11/24 05:44		09/11/24 07:04		09/11/24 07:53		09/11/24 08:48		09/11/24 09:08	
Parameter	**mg/l**	**Q**	**mg/l**	**Q**	**mg/l**	**Q**	**mg/l**	**Q**	**mg/l**	**Q**
Aluminum	0.0318	U	0.0318	U	0.0318	U	0.0318	U	0.0318	U
Antimony	0.00710	U	0.00710	U	0.00710	U	0.00710	U	0.0071	U
Arsenic	0.00190	U	0.00190	U	0.00190	U	0.00190	U	0.0019	U
Barium	0.00210	U	0.00210	U	0.00210	U	0.00210	U	0.0021	U
Beryllium	0.000900	U	0.000900	U	0.000900	U	0.000900	U	0.0009	U
Cadmium	0.00100	U	0.00100	U	0.00100	U	0.00100	U	0.0010	U
Calcium	0.0350	U	0.0350	U	0.0350	U	0.0350	U	0.0350	U
Chromium	0.00210	U	0.00210	U	0.00210	U	0.00210	U	0.0021	U
Cobalt	0.00170	U	0.00170	U	0.00170	U	0.00170	U	0.0017	U
Copper	0.00220	U	0.00220	U	0.00220	U	0.00220	U	0.0023	J
Iron	0.00900	U	0.00900	U	0.00900	U	0.00900	U	0.0090	U
Lead	0.00270	U	0.00270	U	0.00270	U	0.00270	U	0.0027	U
Magnesium	0.0153	U	0.0153	U	0.0153	U	0.0153	U	0.0153	U
Manganese	0.00160	U	0.00160	U	0.00160	U	0.00160	U	0.0016	U
Nickel	0.00240	U	0.00240	U	0.00240	U	0.00240	U	0.0024	U
Potassium	0.237	U	0.237	U	0.237	U	0.237	U	0.237	U
Selenium	0.00350	U	0.00350	U	0.00350	U	0.00350	U	0.0035	U
Silver	0.00280	U	0.00280	U	0.00280	U	0.00280	U	0.0028	U
Sodium	0.120	U	0.120	U	0.120	U	0.120	U	0.120	U
Thallium	0.00250	U	0.00250	U	0.00250	U	0.00250	U	0.0025	U
Vanadium	0.00200	U	0.00200	U	0.00200	U	0.00200	U	0.0020	U
Zinc	0.00210	U	0.00210	U	0.00210	U	0.00210	U	0.0021	U

Form 3
Blanks

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: TRACE8		

	Initial Calibration Blank		Continuing Calibration Blank(s)						Preparation Blank	
Lab ID :	R1874435-4		R1874435-13		R1874435-15		R1874435-17			
Date Analyzed :	09/11/24 05:52		09/11/24 10:12		09/11/24 11:01		09/11/24 11:33			
Parameter	mg/l	Q	mg/l	Q	mg/l	Q	mg/l	Q		Q
Aluminum	0.0318	U	0.0318	U	0.0318	U	0.0318	U		
Antimony	0.00710	U	0.00710	U	0.00710	U	0.00710	U		
Arsenic	0.00190	U	0.00190	U	0.00190	U	0.00190	U		
Barium	0.00210	U	0.00210	U	0.00210	U	0.00210	U		
Beryllium	0.000900	U	0.000900	U	0.000900	U	0.000900	U		
Cadmium	0.00100	U	0.00100	U	0.00100	U	0.00100	U		
Calcium	0.0350	U	0.0350	U	0.0350	U	0.0350	U		
Chromium	0.00210	U	0.00210	U	0.00210	U	0.00210	U		
Cobalt	0.00170	U	0.00170	U	0.00170	U	0.00170	U		
Copper	0.00220	U	0.00220	U	0.00220	U	0.00220	U		
Iron	0.00900	U	0.00900	U	0.00900	U	0.00900	U		
Lead	0.00270	U	0.00270	U	0.00270	U	0.00270	U		
Magnesium	0.0153	U	0.0153	U	0.0153	U	0.0153	U		
Manganese	0.00160	U	0.00160	U	0.00160	U	0.00160	U		
Nickel	0.00240	U	0.00240	U	0.00240	U	0.00240	U		
Potassium	0.237	U	0.237	U	0.237	U	0.237	U		
Selenium	0.00350	U	0.00350	U	0.00350	U	0.00350	U		
Silver	0.00280	U	0.00280	U	0.00280	U	0.00280	U		
Sodium	0.120	U	0.120	U	0.120	U	0.120	U		
Thallium	0.00250	U	0.00250	U	0.00250	U	0.00250	U		
Vanadium	0.00200	U	0.00200	U	0.00200	U	0.00200	U		
Zinc	0.00210	U	0.00210	U	0.00210	U	0.00210	U		

Form 4a
Interference Check Sample

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: TRACE8	**Concentration Units**	: mg/l

	True		Initial Found				Final Found			
Lab ID :			R1874105-5							
Analysis Date :			09/10/24 11:38							
Analyte	Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R	Sol. A	%R	Sol. AB	%R
Aluminum	500		504.	101						
Antimony			-0.00380							
Arsenic			0.000639							
Barium			0.00157							
Beryllium			0.0000416							
Cadmium			-0.000470							
Calcium	500		555.	111						
Chromium			-0.000180							
Cobalt			-0.000277							
Copper			0.000163							
Iron	200		182.	91						
Lead			-0.00303							
Magnesium	500		470.	94						
Manganese			0.00197							
Nickel			-0.0000352							
Potassium			0.0317							
Selenium			-0.00537							
Silver			0.000858							
Sodium			0.0318							
Thallium			0.00215							
Vanadium			-0.000370							
Zinc			-0.000346							

Acceptance Criteria: Methods 200.7, 200.8, 6010, 6020

ICSA: 80-120%

ICSAB: 80-120%

Form 4a
Interference Check Sample

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: TRACE8	**Concentration Units**	: mg/l

	True		Initial Found				Final Found			
Lab ID :			R1874435-5							
Analysis Date :			09/11/24 06:00							
Analyte	Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R	Sol. A	%R	Sol. AB	%R
Aluminum	500		492.	98						
Antimony			-0.00545							
Arsenic			-0.00140							
Barium			0.00143							
Beryllium			0.0000351							
Cadmium			-0.000515							
Calcium	500		543.	109						
Chromium			-0.000250							
Cobalt			-0.000192							
Copper			-0.000804							
Iron	200		176.	88						
Lead			-0.00198							
Magnesium	500		463.	93						
Manganese			0.00181							
Nickel			-0.000414							
Potassium			0.0229							
Selenium			-0.00220							
Silver			0.000742							
Sodium			0.0227							
Thallium			0.00294							
Vanadium			-0.000305							
Zinc			0.0000639							

Acceptance Criteria: Methods 200.7, 200.8, 6010, 6020

ICSA: 80-120%

ICSAB: 80-120%

Form 5a
Matrix Spike

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: MW-5A	**Matrix**	: WATER
Lab Sample ID	: L2450786-01		
Matrix Spike	: WG1969516-3	**MS Analysis Date**	: 09/10/24 20:53
Matrix Spike Dup	:	**MSD Analysis Date**	:

		Matrix Spike Sample			Matrix Spike Duplicate					
Parameter	Sample Conc. (mg/l)	Spike Added (mg/l)	Spike Conc. (mg/l)	%R	Spike Added (mg/l)	Spike Conc. (mg/l)	%R	RPD	Recovery Limits	RPD Limit
Aluminum, Dissolved	ND	2	2.04	102					75-125	20
Antimony, Dissolved	ND	0.5	0.481	96					75-125	20
Arsenic, Dissolved	ND	0.12	0.116	97					75-125	20
Barium, Dissolved	0.0161	2	2.09	104					75-125	20
Beryllium, Dissolved	ND	0.05	0.0511	102					75-125	20
Cadmium, Dissolved	ND	0.053	0.0535	101					75-125	20
Calcium, Dissolved	23.8	10	32.8	90					75-125	20
Chromium, Dissolved	ND	0.2	0.202	101					75-125	20
Cobalt, Dissolved	ND	0.5	0.507	101					75-125	20
Copper, Dissolved	0.0023J	0.25	0.260	104					75-125	20
Iron, Dissolved	ND	1	0.994	99					75-125	20
Lead, Dissolved	ND	0.53	0.526	99					75-125	20
Magnesium, Dissolved	4.95	10	14.8	98					75-125	20
Manganese, Dissolved	ND	0.5	0.501	100					75-125	20
Nickel, Dissolved	ND	0.5	0.511	102					75-125	20
Potassium, Dissolved	2.04J	10	12.8	128 Q					75-125	20
Selenium, Dissolved	ND	0.12	0.119	99					75-125	20
Silver, Dissolved	ND	0.05	0.0519	104					75-125	20
Sodium, Dissolved	10.3	10	20.4	101					75-125	20
Thallium, Dissolved	ND	0.12	0.116	97					75-125	20
Vanadium, Dissolved	ND	0.5	0.518	104					75-125	20
Zinc, Dissolved	ND	0.5	0.508	102					75-125	20

Form 5a
Matrix Spike

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: MW-5B	**Matrix**	: WATER
Lab Sample ID	: L2450786-02		
Matrix Spike	: WG1969516-7	**MS Analysis Date**	: 09/10/24 21:55
Matrix Spike Dup	:	**MSD Analysis Date**	:

		Matrix Spike Sample			Matrix Spike Duplicate					
Parameter	Sample Conc. (mg/l)	Spike Added (mg/l)	Spike Conc. (mg/l)	%R	Spike Added (mg/l)	Spike Conc. (mg/l)	%R	RPD	Recovery Limits	RPD Limit
Aluminum, Dissolved	ND	2	2.02	101					75-125	20
Antimony, Dissolved	ND	0.5	0.437	87					75-125	20
Arsenic, Dissolved	ND	0.12	0.114	95					75-125	20
Barium, Dissolved	0.0695	2	2.12	102					75-125	20
Beryllium, Dissolved	ND	0.05	0.0508	102					75-125	20
Cadmium, Dissolved	ND	0.053	0.0526	99					75-125	20
Calcium, Dissolved	14.6	10	24.5	99					75-125	20
Chromium, Dissolved	ND	0.2	0.201	100					75-125	20
Cobalt, Dissolved	ND	0.5	0.501	100					75-125	20
Copper, Dissolved	0.0239	0.25	0.279	102					75-125	20
Iron, Dissolved	ND	1	0.991	99					75-125	20
Lead, Dissolved	ND	0.53	0.517	98					75-125	20
Magnesium, Dissolved	6.28	10	16.3	100					75-125	20
Manganese, Dissolved	ND	0.5	0.496	99					75-125	20
Nickel, Dissolved	ND	0.5	0.508	102					75-125	20
Potassium, Dissolved	1.22J	10	12.0	120					75-125	20
Selenium, Dissolved	ND	0.12	0.117	98					75-125	20
Silver, Dissolved	ND	0.05	0.0514	103					75-125	20
Sodium, Dissolved	13.0	10	23.4	104					75-125	20
Thallium, Dissolved	ND	0.12	0.112	93					75-125	20
Vanadium, Dissolved	ND	0.5	0.509	102					75-125	20
Zinc, Dissolved	0.0244	0.5	0.528	101					75-125	20

Form 5a
Matrix Spike

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: MW-5A	**Matrix**	: WATER
Lab Sample ID	: L2450786-01		
Matrix Spike	: WG1969512-3	**MS Analysis Date**	: 09/11/24 08:28
Matrix Spike Dup	:	**MSD Analysis Date**	:

		Matrix Spike Sample			Matrix Spike Duplicate					
Parameter	Sample Conc. (mg/l)	Spike Added (mg/l)	Spike Conc. (mg/l)	%R	Spike Added (mg/l)	Spike Conc. (mg/l)	%R	RPD	Recovery Limits	RPD Limit
Aluminum, Total	ND	2	1.98	99					75-125	20
Antimony, Total	ND	0.5	0.492	98					75-125	20
Arsenic, Total	ND	0.12	0.118	98					75-125	20
Barium, Total	0.0155	2	1.99	99					75-125	20
Beryllium, Total	ND	0.05	0.0505	101					75-125	20
Cadmium, Total	ND	0.053	0.0549	104					75-125	20
Calcium, Total	23.6	10	32.6	90					75-125	20
Chromium, Total	ND	0.2	0.206	103					75-125	20
Cobalt, Total	ND	0.5	0.515	103					75-125	20
Copper, Total	ND	0.25	0.263	105					75-125	20
Iron, Total	ND	1	0.992	99					75-125	20
Lead, Total	ND	0.53	0.526	99					75-125	20
Magnesium, Total	5.08	10	15.1	100					75-125	20
Manganese, Total	ND	0.5	0.497	99					75-125	20
Nickel, Total	ND	0.5	0.522	104					75-125	20
Potassium, Total	1.99J	10	12.3	123					75-125	20
Selenium, Total	ND	0.12	0.120	100					75-125	20
Silver, Total	ND	0.05	0.0526	105					75-125	20
Sodium, Total	10.2	10	20.1	99					75-125	20
Thallium, Total	ND	0.12	0.119	99					75-125	20
Vanadium, Total	ND	0.5	0.524	105					75-125	20
Zinc, Total	0.0022J	0.5	0.523	105					75-125	20

Form 5a
Matrix Spike

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: MW-5B	**Matrix**	: WATER
Lab Sample ID	: L2450786-02		
Matrix Spike	: WG1969512-7	**MS Analysis Date**	: 09/11/24 10:41
Matrix Spike Dup	:	**MSD Analysis Date**	:

		Matrix Spike Sample			Matrix Spike Duplicate					
Parameter	Sample Conc. (mg/l)	Spike Added (mg/l)	Spike Conc. (mg/l)	%R	Spike Added (mg/l)	Spike Conc. (mg/l)	%R	RPD	Recovery Limits	RPD Limit
Aluminum, Total	ND	2	1.97	98					75-125	20
Antimony, Total	ND	0.5	0.461	92					75-125	20
Arsenic, Total	ND	0.12	0.113	94					75-125	20
Barium, Total	0.0662	2	2.01	97					75-125	20
Beryllium, Total	ND	0.05	0.0500	100					75-125	20
Cadmium, Total	ND	0.053	0.0551	104					75-125	20
Calcium, Total	14.2	10	23.6	94					75-125	20
Chromium, Total	ND	0.2	0.206	103					75-125	20
Cobalt, Total	ND	0.5	0.517	103					75-125	20
Copper, Total	ND	0.25	0.263	105					75-125	20
Iron, Total	0.0212J	1	1.00	100					75-125	20
Lead, Total	ND	0.53	0.511	96					75-125	20
Magnesium, Total	6.38	10	16.4	100					75-125	20
Manganese, Total	0.0019J	0.5	0.493	99					75-125	20
Nickel, Total	ND	0.5	0.521	104					75-125	20
Potassium, Total	1.15J	10	11.2	112					75-125	20
Selenium, Total	ND	0.12	0.116	97					75-125	20
Silver, Total	ND	0.05	0.0522	104					75-125	20
Sodium, Total	12.5	10	22.2	97					75-125	20
Thallium, Total	ND	0.12	0.114	95					75-125	20
Vanadium, Total	ND	0.5	0.524	105					75-125	20
Zinc, Total	ND	0.5	0.524	105					75-125	20

Form 6
Lab Duplicates

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: MW-5A	**Matrix**	: WATER
Lab Sample ID	: L2450786-01	**Analysis Date**	: 09/10/24 20:49
Dup Sample ID	: WG1969516-4	**DUP Analysis Date**	: 09/10/24 20:57

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Aluminum, Dissolved	ND	ND	NC	20
Antimony, Dissolved	ND	ND	NC	20
Arsenic, Dissolved	ND	ND	NC	20
Barium, Dissolved	0.0161	0.0166	3	20
Beryllium, Dissolved	ND	ND	NC	20
Cadmium, Dissolved	ND	ND	NC	20
Calcium, Dissolved	23.8	24.3	2	20
Chromium, Dissolved	ND	ND	NC	20
Cobalt, Dissolved	ND	ND	NC	20
Copper, Dissolved	0.0023J	0.0025J	NC	20
Iron, Dissolved	ND	ND	NC	20
Lead, Dissolved	ND	ND	NC	20
Magnesium, Dissolved	4.95	5.07	2	20
Manganese, Dissolved	ND	ND	NC	20
Nickel, Dissolved	ND	ND	NC	20
Potassium, Dissolved	2.04J	2.12J	NC	20
Selenium, Dissolved	ND	ND	NC	20
Silver, Dissolved	ND	ND	NC	20
Sodium, Dissolved	10.3	10.6	3	20
Thallium, Dissolved	ND	ND	NC	20
Vanadium, Dissolved	ND	ND	NC	20
Zinc, Dissolved	ND	ND	NC	20

Form 6
Lab Duplicates

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: MW-5B	**Matrix**	: WATER
Lab Sample ID	: L2450786-02	**Analysis Date**	: 09/10/24 21:51
Dup Sample ID	: WG1969516-8	**DUP Analysis Date**	: 09/10/24 21:59

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Aluminum, Dissolved	ND	ND	NC	20
Antimony, Dissolved	ND	ND	NC	20
Arsenic, Dissolved	ND	ND	NC	20
Barium, Dissolved	0.0695	0.0677	3	20
Beryllium, Dissolved	ND	ND	NC	20
Cadmium, Dissolved	ND	ND	NC	20
Calcium, Dissolved	14.6	14.1	3	20
Chromium, Dissolved	ND	ND	NC	20
Cobalt, Dissolved	ND	ND	NC	20
Copper, Dissolved	0.0239	0.0239	0	20
Iron, Dissolved	ND	ND	NC	20
Lead, Dissolved	ND	ND	NC	20
Magnesium, Dissolved	6.28	6.27	0	20
Manganese, Dissolved	ND	ND	NC	20
Nickel, Dissolved	ND	ND	NC	20
Potassium, Dissolved	1.22J	1.19J	NC	20
Selenium, Dissolved	ND	ND	NC	20
Silver, Dissolved	ND	ND	NC	20
Sodium, Dissolved	13.0	12.7	2	20
Thallium, Dissolved	ND	ND	NC	20
Vanadium, Dissolved	ND	ND	NC	20
Zinc, Dissolved	0.0244	0.0247	1	20

Form 6
Lab Duplicates

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: MW-5A	**Matrix**	: WATER
Lab Sample ID	: L2450786-01	**Analysis Date**	: 09/11/24 08:24
Dup Sample ID	: WG1969512-4	**DUP Analysis Date**	: 09/11/24 08:32

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Aluminum, Total	ND	ND	NC	20
Antimony, Total	ND	ND	NC	20
Arsenic, Total	ND	ND	NC	20
Barium, Total	0.0155	0.0160	3	20
Beryllium, Total	ND	ND	NC	20
Cadmium, Total	ND	ND	NC	20
Calcium, Total	23.6	24.4	3	20
Chromium, Total	ND	ND	NC	20
Cobalt, Total	ND	ND	NC	20
Copper, Total	ND	ND	NC	20
Iron, Total	ND	ND	NC	20
Lead, Total	ND	ND	NC	20
Magnesium, Total	5.08	5.25	3	20
Manganese, Total	ND	ND	NC	20
Nickel, Total	ND	ND	NC	20
Potassium, Total	1.99J	2.08J	NC	20
Selenium, Total	ND	ND	NC	20
Silver, Total	ND	ND	NC	20
Sodium, Total	10.2	10.6	4	20
Thallium, Total	ND	ND	NC	20
Vanadium, Total	ND	ND	NC	20
Zinc, Total	0.0022J	ND	NC	20

Form 6
Lab Duplicates

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: MW-5B	**Matrix**	: WATER
Lab Sample ID	: L2450786-02	**Analysis Date**	: 09/11/24 10:37
Dup Sample ID	: WG1969512-8	**DUP Analysis Date**	: 09/11/24 10:45

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Aluminum, Total	ND	ND	NC	20
Antimony, Total	ND	ND	NC	20
Arsenic, Total	ND	ND	NC	20
Barium, Total	0.0662	0.0672	1	20
Beryllium, Total	ND	ND	NC	20
Cadmium, Total	ND	ND	NC	20
Calcium, Total	14.2	14.5	2	20
Chromium, Total	ND	0.0025J	NC	20
Cobalt, Total	ND	ND	NC	20
Copper, Total	ND	ND	NC	20
Iron, Total	0.0212J	0.0254J	NC	20
Lead, Total	ND	ND	NC	20
Magnesium, Total	6.38	6.47	1	20
Manganese, Total	0.0019J	0.0019J	NC	20
Nickel, Total	ND	ND	NC	20
Potassium, Total	1.15J	1.15J	NC	20
Selenium, Total	ND	ND	NC	20
Silver, Total	ND	ND	NC	20
Sodium, Total	12.5	12.7	2	20
Thallium, Total	ND	ND	NC	20
Vanadium, Total	ND	ND	NC	20
Zinc, Total	ND	ND	NC	20

Form 7
Laboratory Control Sample

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: WG1969516-2	**LCS Analysis Date**	: 09/10/24 20:33
Dup Sample ID	:	**LCSD Analysis Date**	:

	Laboratory Control Sample			Laboratory Control Duplicate					
Parameter	**True (mg/l)**	**Found (mg/l)**	**%R**	**True (mg/l)**	**Found (mg/l)**	**%R**	**RPD**	**Recovery Limits**	**RPD Limit**
Aluminum, Dissolved	2.00	2.06	103.					85-115	20
Antimony, Dissolved	0.500	0.424	85.					85-115	20
Arsenic, Dissolved	0.120	0.119	99.					85-115	20
Barium, Dissolved	2.00	2.09	104.					85-115	20
Beryllium, Dissolved	0.0500	0.0512	102.					85-115	20
Cadmium, Dissolved	0.0530	0.0546	103.					85-115	20
Calcium, Dissolved	10.0	10.2	102.					85-115	20
Chromium, Dissolved	0.200	0.206	103.					85-115	20
Cobalt, Dissolved	0.500	0.517	103.					85-115	20
Copper, Dissolved	0.250	0.262	105.					85-115	20
Iron, Dissolved	1.00	1.01	101.					85-115	20
Lead, Dissolved	0.530	0.543	102.					85-115	20
Magnesium, Dissolved	10.0	10.4	104.					85-115	20
Manganese, Dissolved	0.500	0.518	104.					85-115	20
Nickel, Dissolved	0.500	0.524	105.					85-115	20
Potassium, Dissolved	10.0	11.1	111.					85-115	20
Selenium, Dissolved	0.120	0.120	100.					85-115	20
Silver, Dissolved	0.0500	0.0524	105.					85-115	20
Sodium, Dissolved	10.0	10.8	108.					85-115	20
Thallium, Dissolved	0.120	0.118	98.					85-115	20
Vanadium, Dissolved	0.500	0.524	105.					85-115	20
Zinc, Dissolved	0.500	0.516	103.					85-115	20

Form 7
Laboratory Control Sample

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: WG1969512-2	**LCS Analysis Date**	: 09/11/24 08:08
Dup Sample ID	:	**LCSD Analysis Date**	:

	Laboratory Control Sample			Laboratory Control Duplicate					
Parameter	**True (mg/l)**	**Found (mg/l)**	**%R**	**True (mg/l)**	**Found (mg/l)**	**%R**	**RPD**	**Recovery Limits**	**RPD Limit**
Aluminum, Total	2.00	1.97	98.					85-115	20
Antimony, Total	0.500	0.456	91.					85-115	20
Arsenic, Total	0.120	0.116	97.					85-115	20
Barium, Total	2.00	1.98	99.					85-115	20
Beryllium, Total	0.0500	0.0501	100.					85-115	20
Cadmium, Total	0.0530	0.0559	105.					85-115	20
Calcium, Total	10.0	10.0	100.					85-115	20
Chromium, Total	0.200	0.207	104.					85-115	20
Cobalt, Total	0.500	0.526	105.					85-115	20
Copper, Total	0.250	0.268	107.					85-115	20
Iron, Total	1.00	1.00	100.					85-115	20
Lead, Total	0.530	0.536	101.					85-115	20
Magnesium, Total	10.0	10.5	105.					85-115	20
Manganese, Total	0.500	0.497	99.					85-115	20
Nickel, Total	0.500	0.530	106.					85-115	20
Potassium, Total	10.0	10.5	105.					85-115	20
Selenium, Total	0.120	0.118	98.					85-115	20
Silver, Total	0.0500	0.0527	105.					85-115	20
Sodium, Total	10.0	10.4	104.					85-115	20
Thallium, Total	0.120	0.121	101.					85-115	20
Vanadium, Total	0.500	0.528	106.					85-115	20
Zinc, Total	0.500	0.528	106.					85-115	20

U.S. EPA - CLP
10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract: _____

Lab Code: AAL Case No.: _____ NRAS No.: _____ SDG No.: _____

ICP-AES Instrument: TRACE4 Date: 12/01/16

Analyte	Wave-length (nm)	Interelement Correction Factors for: Al	Ca	Fe	Mg	__
Aluminum	396.15	0.0000000	0.0000020	-0.0000310	-0.0000090	
Antimony	206.83	-0.0000020	0.0000040	-0.0000110	-0.0000050	
Arsenic	189.04	0.0000090	-0.0000010	-0.0000700	0.0000000	
Barium	455.40	-0.0000040	-0.0000020	-0.0000110	-0.0000010	
Beryllium	313.40	-0.0000020	-0.0000020	-0.0000050	0.0000000	
Cadmium	214.44	0.0000000	-0.0000030	0.0000000	-0.0000010	
Calcium	315.89	0.0000780	0.0000000	-0.0000170	0.0000710	
Chromium	267.72	0.0000050	-0.0000020	0.0000120	0.0000000	
Cobalt	228.62	-0.0000120	-0.0000060	-0.0000250	-0.0000020	
Copper	324.75	-0.0000030	-0.0000020	-0.0000040	0.0000110	
Iron	259.94	0.0000180	-0.0000120	0.0000000	-0.0000030	
Lead	220.35	0.0001100	-0.0000010	0.0000180	-0.0000010	
Magnesium	279.08	-0.0000540	-0.0000280	0.0000190	0.0000000	
Manganese	257.61	-0.0000030	-0.0000020	-0.0000080	0.0000020	
Mercury						
Nickel	231.60	-0.0000130	-0.0000050	-0.0000240	-0.0000020	
Potassium	766.49	-0.0012590	-0.0007040	-0.0028490	-0.0002350	
Selenium	196.09	-0.0000200	0.0000000	-0.0000290	-0.0000010	
Silver	328.07	-0.0000040	-0.0000020	-0.0000090	-0.0000010	
Sodium	589.59	-0.0006160	-0.0005220	-0.0020960	-0.0001600	
Thallium	190.86	-0.0000060	-0.0000040	-0.0000050	-0.0000010	
Vanadium	292.40	-0.0000050	-0.0000030	0.0000100	-0.0000020	
Zinc	206.20	0.0002750	0.0000030	-0.0007990	-0.0000040	

Comments:

U.S. EPA - CLP
10B-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract:

Lab Code: AAL Case No.: NRAS No.: SDG No.:

ICP-AES Instrument ID: TRACE4 Date: 12/01/16

Analyte	Wave-length (nm)	Interelement Correction Factors for: Sb	As	Ba	Be	Cd
Aluminum	396.15	0.0000000	0.0000000	0.0000000	-0.0022950	-0.0018570
Antimony	206.83	0.0000000	0.0000000	0.0000000	-0.0003900	-0.0000120
Arsenic	189.04	0.0000000	0.0000000	0.0000210	-0.0001780	-0.0001730
Barium	455.40	0.0000000	0.0000000	0.0000000	-0.0002050	-0.0002030
Beryllium	313.40	0.0000000	0.0000000	0.0000000	0.0000000	-0.0000860
Cadmium	214.44	0.0000000	0.0000000	0.0000000	-0.0002090	0.0000000
Calcium	315.89	0.0000000	0.0000000	0.0000000	-0.0020880	-0.0018790
Chromium	267.72	0.0000000	0.0000000	0.0000000	-0.0002010	-0.0003100
Cobalt	228.62	0.0000000	0.0000000	0.0000000	-0.0004810	-0.0004970
Copper	324.75	0.0000000	0.0000000	0.0000000	-0.0002330	-0.0002260
Iron	259.94	0.0000000	0.0000000	0.0000000	-0.0012310	-0.0009570
Lead	220.35	0.0000000	0.0000000	0.0000000	-0.0001700	-0.0001850
Magnesium	279.08	0.0000000	0.0000000	0.0000000	-0.0022440	-0.0017830
Manganese	257.61	0.0000000	0.0000000	0.0000000	-0.0001950	-0.0002020
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000000	-0.0005490	-0.0005200
Potassium	766.49	0.0000000	0.0000000	0.0000000	-0.0522980	-0.0517110
Selenium	196.09	0.0000000	0.0000000	0.0000000	0.0000060	0.0000030
Silver	328.07	0.0000000	0.0000000	0.0000000	-0.0001740	-0.0001560
Sodium	589.59	0.0000000	0.0000000	0.0000000	-0.0417330	-0.0407400
Thallium	190.86	0.0000000	0.0000000	0.0000000	-0.0002650	-0.0002240
Vanadium	292.40	0.0000000	0.0000000	0.0000000	-0.0002090	-0.0002040
Zinc	206.20	0.0000000	0.0000000	0.0000000	-0.0000320	-0.0009250

Comments:

U.S. EPA - CLP
10B-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract: _____

Lab Code: AAL Case No.: _____ NRAS No.: _____ SDG No.: _____

ICP-AES Instrument ID: TRACE4 Date: 12/01/16

Analyte	Wave-length (nm)	Interelement Correction Factors for: Cr	Co	Cu	Pb	Mn
Aluminum	396.15	-0.0020320	-0.0005350	-0.0005960	0.0000000	-0.0003930
Antimony	206.83	0.0049920	-0.0001600	-0.0001410	0.0000000	-0.0001780
Arsenic	189.04	0.0002670	-0.0001290	-0.0000570	0.0000000	-0.0000030
Barium	455.40	-0.0002000	-0.0000500	-0.0000660	0.0000000	-0.0000350
Beryllium	313.40	-0.0000900	-0.0000220	-0.0000300	0.0000000	-0.0000110
Cadmium	214.44	-0.0000290	-0.0000520	-0.0000680	0.0000000	-0.0000270
Calcium	315.89	-0.0020720	0.0009940	-0.0005720	0.0000000	-0.0000920
Chromium	267.72	0.0000000	-0.0000480	-0.0000690	0.0000000	0.0001140
Cobalt	228.62	-0.0005870	0.0000000	-0.0001660	0.0000000	-0.0000740
Copper	324.75	-0.0002130	-0.0000490	0.0000000	0.0000000	0.0000300
Iron	259.94	-0.0010370	-0.0002940	-0.0003760	0.0000000	-0.0001890
Lead	220.35	-0.0001960	-0.0003260	0.0002710	0.0000000	0.0000640
Magnesium	279.08	-0.0024620	-0.0005640	-0.0008730	0.0000000	-0.0069760
Manganese	257.61	-0.0002060	-0.0000480	-0.0000750	0.0000000	0.0000000
Mercury						
Nickel	231.60	-0.0005230	-0.0002210	-0.0001810	0.0000000	-0.0000730
Potassium	766.49	-0.0512430	-0.0126240	-0.0178480	0.0000000	-0.0089880
Selenium	196.09	-0.0000520	0.0000530	-0.0000240	0.0000000	0.0003780
Silver	328.07	-0.0001430	-0.0000370	-0.0000450	0.0000000	0.0001940
Sodium	589.59	-0.0407180	-0.0097580	-0.0137660	0.0000000	-0.0070470
Thallium	190.86	-0.0000390	0.0020440	-0.0000840	-0.0000200	0.0003990
Vanadium	292.40	-0.0002210	-0.0000500	-0.0000650	0.0000000	0.0001060
Zinc	206.20	-0.0012900	0.0000070	0.0003430	0.0001200	-0.0001520

Comments:

U.S. EPA - CLP
10B-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract:

Lab Code: AAL Case No.: NRAS No.: SDG No.:

ICP-AES Instrument ID: TRACE4 Date: 12/01/16

Analyte	Wave-length (nm)	Interelement Correction Factors for: Ni	K	Se	Ag	Na
Aluminum	396.15	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.83	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	189.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	455.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	214.44	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	315.89	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cobalt	228.62	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.35	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.08	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.09	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	206.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Comments:

U.S. EPA - CLP
10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract:

Lab Code: AAL Case No.: NRAS No.: SDG No.:

ICP-AES Instrument: TRACE5 Date: 12/01/16

Analyte	Wave-length (nm)	Interelement Correction Factors for: Al	Ca	Fe	Mg	Mo
Aluminum	396.15	0.0000000	0.0000960	0.0000000	0.0000000	0.0573510
Antimony	206.83	0.0000000	0.0000000	0.0000000	0.0000000	0.0016160
Arsenic	189.04	-0.0000310	0.0000000	0.0000000	0.0000000	0.0009550
Barium	455.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	214.44	0.0000000	0.0000000	0.0000010	0.0000000	0.0000000
Calcium	315.89	0.0000000	0.0000000	0.0000000	0.0000000	0.0009910
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0000120
Cobalt	228.62	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0004030
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.35	0.0003010	0.0000000	0.0000210	0.0000000	-0.0026290
Magnesium	279.08	0.0000000	0.0000000	0.0001760	0.0000000	0.0000000
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000340	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.09	0.0000000	0.0000000	0.0000000	0.0000000	0.0000180
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	0.0000000	0.0000000	0.0000310	0.0000000	0.0000000
Zinc	206.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Comments:

U.S. EPA - CLP
10B-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract: _____

Lab Code: AAL Case No.: _____ NRAS No.: _____ SDG No.: _____

ICP-AES Instrument ID: TRACE5 Date: 12/01/16

Analyte	Wave-length (nm)	Interelement Correction Factors for: Sb	As	Ba	Be	Cd
Aluminum	396.15	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.83	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	189.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	455.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	214.44	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	315.89	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cobalt	228.62	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.35	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.08	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.09	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	206.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Comments:

U.S. EPA - CLP
10B-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract:

Lab Code: AAL Case No.: NRAS No.: SDG No.:

ICP-AES Instrument ID: TRACE5 Date: 12/01/16

Analyte	Wave-length (nm)	Interelement Correction Factors for: Cr	Co	Cu	Pb	Mn
Aluminum	396.15	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.83	0.0114090	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	189.04	0.0003850	-0.0000480	0.0000000	0.0000000	0.0000000
Barium	455.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	214.44	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	315.89	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cobalt	228.62	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.35	0.0000000	0.0000000	0.0007800	0.0000000	0.0000000
Magnesium	279.08	0.0000000	0.0000000	0.0000000	0.0000000	-0.0092850
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Mercury						
Nickel	231.60	0.0000000	-0.0001620	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.09	0.0000000	0.0000620	0.0000000	0.0000000	0.0006770
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	-0.0019910	0.0000000	0.0000000	0.0000000	-0.0004360
Zinc	206.20					

Comments:

U.S. EPA - CLP
10B-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract: _____

Lab Code: AAL Case No.: _____ NRAS No.: _____ SDG No.: _____

ICP-AES Instrument ID: TRACE5 Date: 12/01/16

Analyte	Wave-length (nm)	Interelement Correction Factors for: Ni	K	Se	Ag	Na
Aluminum	396.15	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.83	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	189.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	455.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	214.44	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	315.89	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cobalt	228.62	0.0000930	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.35	0.0002270	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.08	-0.0003390	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.09	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	206.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Comments:

U.S. EPA - CLP
10B-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract:

Lab Code: AAL Case No.: NRAS No.: SDG No.:

ICP-AES Instrument ID: TRACE5 Date: 12/01/16

Analyte	Wave-length (nm)	Interelement Correction Factors for: Tl	V	Zn		
Aluminum	396.15	0.0000000	0.0000000	0.0000000		
Antimony	206.83	0.0000000	0.0000000	0.0000000		
Arsenic	189.04	0.0000000	0.0000000	0.0000000		
Barium	455.40	0.0000000	0.0000000	0.0000000		
Beryllium	313.40	0.0000000	0.0018940	0.0000000		
Cadmium	214.44	0.0000000	0.0000000	0.0000000		
Calcium	315.89	0.0000000	0.0000000	0.0000000		
Chromium	267.72	0.0000000	0.0000000	0.0000000		
Cobalt	228.62	0.0017990	0.0000000	0.0000000		
Copper	324.75	0.0000000	-0.0003720	0.0000000		
Iron	259.94	0.0000000	0.0000000	0.0000000		
Lead	220.35	0.0000000	-0.0001170	0.0000000		
Magnesium	279.08	0.0000000	0.0000000	0.0000000		
Manganese	257.61	0.0000000	0.0000000	0.0000000		
Mercury						
Nickel	231.60	0.0005790	0.0000000	0.0000000		
Potassium	766.49	0.0000000	0.0000000	0.0000000		
Selenium	196.09	0.0000000	0.0000000	0.0000000		
Silver	328.07	0.0000000	-0.0017200	0.0000000		
Sodium	589.59	0.0000000	0.0000000	0.0000000		
Thallium	190.86	0.0000000	0.0002820	0.0000000		
Vanadium	292.40	0.0000000	0.0000000	0.0000000		
Zinc	206.20	0.0000000	0.0000000	0.0000000		

Comments:

U.S. EPA - CLP
10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract: _____

Lab Code: AAL Case No.: _____ NRAS No.: _____ SDG No.: _____

ICP-AES Instrument: TRACE6 Date: 11/10/16

Analyte	Wave-length (nm)	Interelement Correction Factors for: Al	Ca	Fe	Mg	Mo
Aluminum	396.15	0.0000000	0.0000960	0.0000000	0.0000000	0.0573510
Antimony	206.83	0.0000000	0.0000000	0.0000000	0.0000000	0.0016160
Arsenic	189.04	-0.0000310	0.0000000	0.0000000	0.0000000	0.0009550
Barium	455.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	214.44	0.0000000	0.0000000	0.0000010	0.0000000	0.0000000
Calcium	315.89	0.0000000	0.0000000	0.0000000	0.0000000	0.0009910
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0000120
Cobalt	228.62	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0004030
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.35	0.0003010	0.0000000	0.0000210	0.0000000	-0.0026290
Magnesium	279.08	0.0000000	0.0000000	0.0001760	0.0000000	0.0000000
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000340	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.09	0.0000000	0.0000000	0.0000000	0.0000000	0.0000180
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	0.0000000	0.0000000	0.0000310	0.0000000	0.0000000
Zinc	206.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Comments:

U.S. EPA - CLP
10B-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract:

Lab Code: AAL Case No.: NRAS No.: SDG No.:

ICP-AES Instrument ID: TRACE6 Date: 11/10/16

Analyte	Wave-length (nm)	Interelement Correction Factors for: Sb	As	Ba	Be	Cd
Aluminum	396.15	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.83	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	189.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	455.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	214.44	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	315.89	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cobalt	228.62	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.35	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.08	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.09	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	206.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Comments:

U.S. EPA - CLP
10B-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract:

Lab Code: AAL Case No.: NRAS No.: SDG No.:

ICP-AES Instrument ID: TRACE6 Date: 11/10/16

Analyte	Wave-length (nm)	Interelement Correction Factors for: Cr	Co	Cu	Pb	Mn
Aluminum	396.15	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.83	0.0114090	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	189.04	0.0003850	-0.0000480	0.0000000	0.0000000	0.0000000
Barium	455.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	214.44	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	315.89	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cobalt	228.62	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.35	0.0000000	0.0000000	0.0007800	0.0000000	0.0000000
Magnesium	279.08	0.0000000	0.0000000	0.0000000	0.0000000	-0.0092850
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Mercury						
Nickel	231.60	0.0000000	-0.0001620	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.09	0.0000000	0.0000620	0.0000000	0.0000000	0.0006770
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	-0.0019910	0.0000000	0.0000000	0.0000000	-0.0004360
Zinc	206.20					

Comments:

U.S. EPA - CLP
10B-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract:

Lab Code: AAL Case No.: NRAS No.: SDG No.:

ICP-AES Instrument ID: TRACE6 Date: 11/10/16

Analyte	Wave-length (nm)	Interelement Correction Factors for: Ni	K	Se	Ag	Na
Aluminum	396.15	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.83	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	189.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	455.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	214.44	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	315.89	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cobalt	228.62	0.0000930	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.35	0.0002270	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.08	-0.0003390	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.09	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	206.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Comments:

U.S. EPA - CLP
10B-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract:

Lab Code: AAL Case No.: NRAS No.: SDG No.:

ICP-AES Instrument ID: TRACE6 Date: 11/10/16

Analyte	Wave-length (nm)	Interelement Correction Factors for: Tl	V	Zn		
Aluminum	396.15	0.0000000	0.0000000	0.0000000		
Antimony	206.83	0.0000000	0.0000000	0.0000000		
Arsenic	189.04	0.0000000	0.0000000	0.0000000		
Barium	455.40	0.0000000	0.0000000	0.0000000		
Beryllium	313.40	0.0000000	0.0018940	0.0000000		
Cadmium	214.44	0.0000000	0.0000000	0.0000000		
Calcium	315.89	0.0000000	0.0000000	0.0000000		
Chromium	267.72	0.0000000	0.0000000	0.0000000		
Cobalt	228.62	0.0017990	0.0000000	0.0000000		
Copper	324.75	0.0000000	-0.0003720	0.0000000		
Iron	259.94	0.0000000	0.0000000	0.0000000		
Lead	220.35	0.0000000	-0.0001170	0.0000000		
Magnesium	279.08	0.0000000	0.0000000	0.0000000		
Manganese	257.61	0.0000000	0.0000000	0.0000000		
Mercury						
Nickel	231.60	0.0005790	0.0000000	0.0000000		
Potassium	766.49	0.0000000	0.0000000	0.0000000		
Selenium	196.09	0.0000000	0.0000000	0.0000000		
Silver	328.07	0.0000000	-0.0017200	0.0000000		
Sodium	589.59	0.0000000	0.0000000	0.0000000		
Thallium	190.86	0.0000000	0.0002820	0.0000000		
Vanadium	292.40	0.0000000	0.0000000	0.0000000		
Zinc	206.20	0.0000000	0.0000000	0.0000000		

Comments:

U.S. EPA - CLP
10A-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract:

Lab Code: AAL Case No.: NRAS No.: SDG No.:

ICP-AES Instrument: TRACE7 Date: 05/17/16

Analyte	Wave-length (nm)	Interelement Correction Factors for: Al	Ca	Fe	Mg	Mo
Aluminum	396.15	0.0000000	0.0000960	0.0000000	0.0000000	0.0573510
Antimony	206.83	0.0000000	0.0000000	0.0000000	0.0000000	0.0016160
Arsenic	189.04	0.0001500	0.0000000	-0.0004550	0.0000000	0.0038670
Barium	455.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	214.44	0.0000000	0.0000000	0.0000380	0.0000000	0.0000000
Calcium	315.89	0.0000000	0.0000000	0.0000000	0.0000000	0.0009910
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0000120
Cobalt	228.62	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0004030
Iron	259.94	0.0000000	0.0000000	0.0000340	0.0000000	0.0000000
Lead	220.35	0.0001750	0.0000000	0.0002100	0.0000000	-0.0026290
Magnesium	279.08	0.0000000	0.0000000	0.0001760	0.0000000	0.0000000
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.09	-0.0000350	0.0000000	0.0000000	0.0000000	0.0000180
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	0.0000000	0.0000000	0.0000100	0.0000000	0.0000000
Zinc	206.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Comments:

U.S. EPA - CLP
10B-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract:

Lab Code: AAL Case No.: NRAS No.: SDG No.:

ICP-AES Instrument: TRACE7 Date: 05/17/16

Analyte	Wave-length (nm)	Interelement Correction Factors for: Sb	As	Ba	Be	Cd
Aluminum	396.15	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.83	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	189.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	455.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	214.44	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	315.89	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cobalt	228.62	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.35	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.08	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.09	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	206.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Comments:

U.S. EPA - CLP
10B-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract:

Lab Code: AAL Case No.: NRAS No.: SDG No.:

ICP-AES Instrument: TRACE7 Date: 05/17/16

Analyte	Wave-length (nm)	Interelement Correction Factors for: Cr	Co	Cu	Pb	Mn
Aluminum	396.15	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.83	0.0114090	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	189.04	0.0017890	0.0000000	0.0000000	0.0000000	0.0000000
Barium	455.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	214.44	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	315.89	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cobalt	228.62	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.35	0.0000000	0.0000000	0.0007800	0.0000000	0.0000000
Magnesium	279.08	0.0000000	0.0000000	0.0000000	0.0000000	-0.0092850
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Mercury						
Nickel	231.60	0.0000000	-0.0001620	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.09	0.0000000	0.0000620	0.0000000	0.0000000	0.0006770
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	-0.0019910	0.0000000	0.0000000	0.0000000	-0.0004360
Zinc	206.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Comments:

U.S. EPA - CLP
10B-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract:

Lab Code: AAL Case No.: NRAS No.: SDG No.:

ICP-AES Instrument: TRACE7 Date: 05/17/16

Analyte	Wave-length (nm)	Interelement Correction Factors for: Ni	K	Se	Ag	Na
Aluminum	396.15	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.83	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	189.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	455.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	214.44	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	315.89	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cobalt	228.62	0.0000930	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.35	0.0002270	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.08	-0.0003390	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.09	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	206.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Comments:

U.S. EPA - CLP
10B-IN
ICP-AES INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Alpha Analytical Contract:

Lab Code: AAL Case No.: NRAS No.: SDG No.:

ICP-AES Instrument: TRACE7 Date: 05/17/16

Analyte	Wave-length (nm)	Interelement Correction Factors for: Tl	V	Zn		
Aluminum	396.15	0.0000000	0.0000000	0.0000000		
Antimony	206.83	0.0000000	0.0000000	0.0000000		
Arsenic	189.04	0.0000000	0.0000000	0.0000000		
Barium	455.40	0.0000000	0.0000000	0.0000000		
Beryllium	313.40	0.0000000	0.0018940	0.0000000		
Cadmium	214.44	0.0000000	0.0000000	0.0000000		
Calcium	315.89	0.0000000	0.0000000	0.0000000		
Chromium	267.72	0.0000000	0.0000000	0.0000000		
Cobalt	228.62	0.0017990	0.0000000	0.0000000		
Copper	324.75	0.0000000	0.0000000	0.0000000		
Iron	259.94	0.0000000	0.0000000	0.0000000		
Lead	220.35	0.0000000	-0.0001170	0.0000000		
Magnesium	279.08	0.0000000	0.0000000	0.0000000		
Manganese	257.61	0.0000000	0.0000000	0.0000000		
Mercury						
Nickel	231.60	0.0005790	0.0000000	0.0000000		
Potassium	766.49	0.0000000	0.0000000	0.0000000		
Selenium	196.09	0.0000000	0.0000000	0.0000000		
Silver	328.07	0.0000000	0.0000000	0.0000000		
Sodium	589.59	0.0000000	0.0000000	0.0000000		
Thallium	190.86	0.0000000	0.0000000	0.0000000		
Vanadium	292.40	0.0011610	0.0000000	0.0000000		
Zinc	206.20	0.0000000	0.0000000	0.0000000		

Comments:

EPA 200.7, EPA 6010D		Linear Dynamic Range					
		All values are in mg/L and are 90% of the established LDR concentration.					
Instrument ID:		Trace 4	Trace 5	Trace 6	Trace 7	Trace 8	Trace 9
2023 Complete		☐	☐	☐	☐	☐	☐
Ag	Silver	36	27	9	13	90	45
Al	Aluminum	900	540	450	900	900	900
As	Arsenic	90	54	90	72	180	90
B	Boron	90	90	9	45	90	54
Ba	Barium	90	27	18	13	135	27
Be	Beryllium	27	36	9	9	11	31
Ca	Calcium	450	900	675	900	900	900
Cd	Cadmium	11	9	9	11	27	18
Co	Cobalt	90	63	45	22	135	90
Cr	Chromium	45	63	9	45	157	90
Cu	Copper	90	54	45	45	90	67
Fe	Iron	630	900	450	450	540	540
K	Potassium	900	900	675	720	900	900
Mg	Magnesium	450	900	360	900	900	900
Mn	Manganese	90	31	90	67	90	90
Mo	Molybdenum	45	36	9	22	67	45
Na	Sodium	675	900	450	405	630	900
Ni	Nickel	90	45	45	22	135	90
Pb	Lead	180	180	90	90	225	90
S	Sulfur	-	90	-	-	-	-
Sb	Antimony	22	45	45	4.5	90	45
Se	Selenium	27	27	45	22	15	45
Si	Silica	45	90	22	22	90	45
Sn	Tin	45	45	13	22	72	45
Sr	Strontium	45	45	9	9	67	45
Ti	Titanium	45	90	9	90	72	45
Tl	Thallium	45	90	45	22	135	45
V	Vanadium	90	90	90	90	112	45
Zn	Zinc	45	27	45	22	63	22

Form 12
Preparation Log

Client	: **P. W. Grosser**	**Lab Number**	: **L2450786**
Project Name	: **ROANOKE SAND + GRAVEL**	**Project Number**	: **BSD1504**
Matrix	: **WATER**	**Prep Method**	: **EPA 3005A**

Sample Number	Preparation Date	Weight (gram)	Volume (mL)
L2450786-01	09/10/24 07:34	-	50
L2450786-02	09/10/24 07:34	-	50
L2450786-03	09/10/24 07:34	-	50
L2450786-04	09/10/24 07:34	-	50
L2450786-05	09/10/24 07:34	-	50
L2450786-06	09/10/24 07:34	-	50
L2450786-07	09/10/24 07:34	-	50
L2450786-08	09/10/24 07:34	-	50
L2450786-09	09/10/24 07:34	-	50
L2450786-10	09/10/24 07:34	-	50
L2450786-12	09/10/24 07:34	-	50
WG1969516-1	09/10/24 07:34	-	50
WG1969516-2	09/10/24 07:34	-	50
WG1969516-3	09/10/24 07:34	-	50
WG1969516-4	09/10/24 07:34	-	50
WG1969516-7	09/10/24 07:34	-	50
WG1969516-8	09/10/24 07:34	-	50

Form 12
Preparation Log

Client	: **P. W. Grosser**	**Lab Number**	: **L2450786**
Project Name	: **ROANOKE SAND + GRAVEL**	**Project Number**	: **BSD1504**
Matrix	: **WATER**	**Prep Method**	: **EPA 3005A**

Sample Number	Preparation Date	Weight (gram)	Volume (mL)
L2450786-01	09/10/24 07:05	-	50
L2450786-02	09/10/24 07:05	-	50
L2450786-03	09/10/24 07:05	-	50
L2450786-04	09/10/24 07:05	-	50
L2450786-05	09/10/24 07:05	-	50
L2450786-06	09/10/24 07:05	-	50
L2450786-07	09/10/24 07:05	-	50
L2450786-08	09/10/24 07:05	-	50
L2450786-09	09/10/24 07:05	-	50
L2450786-10	09/10/24 07:05	-	50
L2450786-12	09/10/24 07:05	-	50
WG1969512-1	09/10/24 07:05	-	50
WG1969512-2	09/10/24 07:05	-	50
WG1969512-3	09/10/24 07:05	-	50
WG1969512-4	09/10/24 07:05	-	50
WG1969512-7	09/10/24 07:05	-	50
WG1969512-8	09/10/24 07:05	-	50

Form 13
Analysis Run Log

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: TRACE8	**Analysis Method**	: 19,200.7
Start Date	: 09/10/24 11:19	**End Date**	: 09/10/24 22:49

Sample Number	Dilution Factor	Analysis Time	Aluminum, Dissolved	Antimony, Dissolved	Arsenic, Dissolved	Barium, Dissolved	Beryllium, Dissolved	Cadmium, Dissolved	Calcium, Dissolved	Chromium, Dissolved	Cobalt, Dissolved	Copper, Dissolved	Iron, Dissolved	Lead, Dissolved	Magnesium, Dissolved	Manganese, Dissolved	Nickel, Dissolved	Potassium, Dissolved	Selenium, Dissolved	Silver, Dissolved	Sodium, Dissolved	Thallium, Dissolved	Vanadium, Dissolved	Zinc, Dissolved
R1874105-1 ICV	1	11:19:08	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-2 ICB	1	11:23:03	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-3 ICV	1	11:26:58	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-4 ICB	1	11:30:57	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-5 ICSA	1	11:38:49	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-6 CCV	1	12:36:50	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-7 CCB	1	12:40:51	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-8 CCV	1	13:13:35	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-9 CCB	1	13:17:31	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-10 CCV	1	13:54:25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-11 CCB	1	13:58:21	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-12 CCV	1	14:42:44	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-13 CCB	1	14:46:39	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-14 CCV	1	15:35:02	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-15 CCB	1	15:38:57	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-16 CCV	1	16:29:39	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-17 CCB	1	16:33:35	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-18 CCV	1	17:17:22	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-19 CCB	1	17:21:18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-20 CCV	1	18:08:44	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-21 CCB	1	18:12:41	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-22 CCV	1	19:01:35	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-23 CCB	1	19:05:36	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-24 CCV	1	20:02:39	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-25 CCB	1	20:06:36	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-26 CCV	1	20:19:05	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-27 CCB	1	20:23:02	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Form 13
Analysis Run Log

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: TRACE8	**Analysis Method**	: 19,200.7
Start Date	: 09/10/24 11:19	**End Date**	: 09/10/24 22:49

Sample Number	Dilution Factor	Analysis Time	Aluminum, Dissolved	Antimony, Dissolved	Arsenic, Dissolved	Barium, Dissolved	Beryllium, Dissolved	Cadmium, Dissolved	Calcium, Dissolved	Chromium, Dissolved	Cobalt, Dissolved	Copper, Dissolved	Iron, Dissolved	Lead, Dissolved	Magnesium, Dissolved	Manganese, Dissolved	Nickel, Dissolved	Potassium, Dissolved	Selenium, Dissolved	Silver, Dissolved	Sodium, Dissolved	Thallium, Dissolved	Vanadium, Dissolved	Zinc, Dissolved
WG1969516-1 BLANK	1	20:29:22	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WG1969516-2 LCS	1	20:33:38	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
L2450786-01	1	20:49:32	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WG1969516-3 MS	1	20:53:30	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WG1969516-4 DUP	1	20:57:27	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-28 CCV	1	21:09:20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-29 CCB	1	21:13:18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-30 CCV	1	21:21:41	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-31 CCB	1	21:25:39	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
L2450786-03	1	21:35:24	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
L2450786-04	1	21:39:23	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
L2450786-05	1	21:43:21	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
L2450786-06	1	21:47:19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
L2450786-02	1	21:51:17	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WG1969516-7 MS	1	21:55:15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WG1969516-8 DUP	1	21:59:13	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-32 CCV	1	22:11:07	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-33 CCB	1	22:15:04	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
L2450786-07	1	22:24:30	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
L2450786-08	1	22:28:35	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
L2450786-09	1	22:32:35	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
L2450786-10	1	22:36:34	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
L2450786-12	1	22:40:32	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-34 CCV	1	22:45:56	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874105-35 CCB	1	22:49:57	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Form 13
Analysis Run Log

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: TRACE8	**Analysis Method**	: 19,200.7
Start Date	: 09/11/24 05:40	**End Date**	: 09/11/24 11:33

Sample Number	Dilution Factor	Analysis Time	Aluminum, Total	Antimony, Total	Arsenic, Total	Barium, Total	Beryllium, Total	Cadmium, Total	Calcium, Total	Chromium, Total	Cobalt, Total	Copper, Total	Iron, Total	Lead, Total	Magnesium, Total	Manganese, Total	Nickel, Total	Potassium, Total	Selenium, Total	Silver, Total	Sodium, Total	Thallium, Total	Vanadium, Total	Zinc, Total
R1874435-1 ICV	1	05:40:48	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874435-2 ICB	1	05:44:44	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874435-3 ICV	1	05:48:39	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874435-4 ICB	1	05:52:38	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874435-5 ICSA	1	06:00:30	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874435-6 CCV	1	07:00:40	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874435-7 CCB	1	07:04:41	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874435-8 CCV	1	07:49:53	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874435-9 CCB	1	07:53:48	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WG1969512-2 LCS	1	08:08:53	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
L2450786-03	1	08:16:43	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
L2450786-04	1	08:20:39	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
L2450786-01	1	08:24:34	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WG1969512-3 MS	1	08:28:30	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WG1969512-4 DUP	1	08:32:25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874435-10 CCV	1	08:44:17	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874435-11 CCB	1	08:48:13	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WG1969512-1 BLANK	1	09:08:14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
L2450786-05	1	09:52:33	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
L2450786-06	1	09:56:33	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
L2450786-07	1	10:00:29	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
L2450786-08	1	10:04:26	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874435-12 CCV	1	10:08:23	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874435-13 CCB	1	10:12:20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
L2450786-09	1	10:33:46	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
L2450786-02	1	10:37:43	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WG1969512-7 MS	1	10:41:41	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Form 13
Analysis Run Log

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: TRACE8	**Analysis Method**	: 19,200.7
Start Date	: 09/11/24 05:40	**End Date**	: 09/11/24 11:33

Sample Number	Dilution Factor	Analysis Time	Aluminum, Total	Antimony, Total	Arsenic, Total	Barium, Total	Beryllium, Total	Cadmium, Total	Calcium, Total	Chromium, Total	Cobalt, Total	Copper, Total	Iron, Total	Lead, Total	Magnesium, Total	Manganese, Total	Nickel, Total	Potassium, Total	Selenium, Total	Silver, Total	Sodium, Total	Thallium, Total	Vanadium, Total	Zinc, Total
WG1969512-8 DUP	1	10:45:35	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874435-14 CCV	1	10:57:21	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874435-15 CCB	1	11:01:18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
L2450786-10	1	11:14:09	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
L2450786-12	1	11:18:04	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874435-16 CCV	1	11:29:49	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R1874435-17 CCB	1	11:33:45	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

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Created By: Jason Hebert
File: PM2960-2
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METALS by 200.7, 6010C (WATER)

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria	Holding Time	Container/Sample Preservation
Aluminum	7429-90-5	0.1	0.0318	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Antimony	7440-36-0	0.05	0.0071	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Arsenic	7440-38-2	0.005	0.0019	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Barium	7440-39-3	0.01	0.0021	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Beryllium	7440-41-7	0.005	0.0009	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Cadmium	7440-43-9	0.005	0.001	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Calcium	7440-70-2	0.1	0.035	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Chromium	7440-47-3	0.01	0.0021	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Cobalt	7440-48-4	0.02	0.0017	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Copper	7440-50-8	0.01	0.0022	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Iron	7439-89-6	0.05	0.009	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Lead	7439-92-1	0.01	0.0027	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Magnesium	7439-95-4	0.1	0.0153	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Manganese	7439-96-5	0.01	0.0016	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Nickel	7440-02-0	0.025	0.0024	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Potassium	7440-09-7	2.5	0.237	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Selenium	7782-49-2	0.01	0.0035	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Silver	7440-22-4	0.007	0.0028	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Sodium	7440-23-5	2	0.12	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Thallium	7440-28-0	0.02	0.0025	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Vanadium	7440-62-2	0.01	0.002	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved
Zinc	7440-66-6	0.05	0.0021	mg/l	85-115		75-125	20	20		180 days	1 - Plastic 500ml HNO3 preserved

Please Note that the RL information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)
Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.

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File: PM2962-1
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METALS by 6010C (SOIL)

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria	Holding Time	Container/Sample Preservation
Aluminum, Total	7429-90-5	4	1.08	mg/kg	48-151		75-125	20	20		180 days	1 - Metals Only - Glass 60mL/2oz unpreserved
Antimony, Total	7440-36-0	2	0.152	mg/kg	1-208		75-125	20	20		180 days	1 - Metals Only - Glass 60mL/2oz unpreserved
Arsenic, Total	7440-38-2	0.4	0.0832	mg/kg	79-121		75-125	20	20		180 days	1 - Metals Only - Glass 60mL/2oz unpreserved
Barium, Total	7440-39-3	0.4	0.0696	mg/kg	83-117		75-125	20	20		180 days	1 - Metals Only - Glass 60mL/2oz unpreserved
Beryllium, Total	7440-41-7	0.2	0.0132	mg/kg	83-117		75-125	20	20		180 days	1 - Metals Only - Glass 60mL/2oz unpreserved
Cadmium, Total	7440-43-9	0.4	0.0392	mg/kg	83-117		75-125	20	20		180 days	1 - Metals Only - Glass 60mL/2oz unpreserved
Calcium, Total	7440-70-2	4	1.4	mg/kg	81-119		75-125	20	20		180 days	1 - Metals Only - Glass 60mL/2oz unpreserved
Chromium, Total	7440-47-3	0.4	0.0384	mg/kg	80-120		75-125	20	20		180 days	1 - Metals Only - Glass 60mL/2oz unpreserved
Cobalt, Total	7440-48-4	0.8	0.0664	mg/kg	84-115		75-125	20	20		180 days	1 - Metals Only - Glass 60mL/2oz unpreserved
Copper, Total	7440-50-8	0.4	0.1032	mg/kg	81-118		75-125	20	20		180 days	1 - Metals Only - Glass 60mL/2oz unpreserved
Iron, Total	7439-89-6	2	0.3612	mg/kg	45-155		75-125	20	20		180 days	1 - Metals Only - Glass 60mL/2oz unpreserved
Lead, Total	7439-92-1	2	0.1072	mg/kg	81-117		75-125	20	20		180 days	1 - Metals Only - Glass 60mL/2oz unpreserved
Magnesium, Total	7439-95-4	4	0.616	mg/kg	76-124		75-125	20	20		180 days	1 - Metals Only - Glass 60mL/2oz unpreserved
Manganese, Total	7439-96-5	0.4	0.0636	mg/kg	81-117		75-125	20	20		180 days	1 - Metals Only - Glass 60mL/2oz unpreserved
Nickel, Total	7440-02-0	1	0.0968	mg/kg	83-117		75-125	20	20		180 days	1 - Metals Only - Glass 60mL/2oz unpreserved
Potassium, Total	7440-09-7	100	5.76	mg/kg	71-129		75-125	20	20		180 days	1 - Metals Only - Glass 60mL/2oz unpreserved
Selenium, Total	7782-49-2	0.8	0.1032	mg/kg	78-122		75-125	20	20		180 days	1 - Metals Only - Glass 60mL/2oz unpreserved
Silver, Total	7440-22-4	0.4	0.1132	mg/kg	75-124		75-125	20	20		180 days	1 - Metals Only - Glass 60mL/2oz unpreserved
Sodium, Total	7440-23-5	80	1.26	mg/kg	72-127		75-125	20	20		180 days	1 - Metals Only - Glass 60mL/2oz unpreserved
Thallium, Total	7440-28-0	0.8	0.126	mg/kg	80-120		75-125	20	20		180 days	1 - Metals Only - Glass 60mL/2oz unpreserved
Vanadium, Total	7440-62-2	0.4	0.0812	mg/kg	78-122		75-125	20	20		180 days	1 - Metals Only - Glass 60mL/2oz unpreserved
Zinc, Total	7440-66-6	2	0.1172	mg/kg	82-118		75-125	20	20		180 days	1 - Metals Only - Glass 60mL/2oz unpreserved

Please Note that the RL information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)
Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: Blank CEY Trace8
Analysis started at: 9/10/2024 11:11:04 AM
Rack 0
Vial 1
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm
Concentration per Run	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm
Concentration RSD	0.2 %	-0.3 %	-1.3 %	0.1 %	0.1 %	-0.3 %	-0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm
Concentration per Run	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm
Concentration RSD	-0.2 %	0.2 %	-1.6 %	0.0 %	-0.3 %	-4.4 %	-0.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm
Concentration per Run	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm
Concentration RSD	-0.5 %	-0.1 %	3.2 %	0.1 %	0.3 %	0.5 %	-3.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm
Concentration per Run	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm
Concentration RSD	-1.5 %	0.8 %	0.7 %	-1.2 %	-0.8 %	-1.1 %	3.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0000 ppm	100.0000 %	100.0000 %	100.0000 %	100.0000 %	100.0000 %	100.0000 %
Concentration per Run	0.0000 ppm	100.0000 %	100.0000 %	100.0000 %	100.0000 %	100.0000 %	100.0000 %
Concentration RSD	0.3 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: ICAL
Analysis started at: 9/10/2024 11:15:14 AM
Rack 0
Vial 2
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	1.0000 ppm	25.0000 ppm	1.0000 ppm	1.0000 ppm	1.0000 ppm	1.0000 ppm	10.0000 ppm
Concentration per Run 1	1.0037 ppm	25.0248 ppm	1.0088 ppm	1.0002 ppm	1.0001 ppm	0.9990 ppm	9.9810 ppm
Concentration per Run 2	0.9992 ppm	24.9754 ppm	0.9952 ppm	0.9978 ppm	0.9943 ppm	1.0003 ppm	10.0260 ppm
Concentration per Run 3	0.9972 ppm	24.9998 ppm	0.9960 ppm	1.0021 ppm	1.0056 ppm	1.0007 ppm	9.9930 ppm
Concentration RSD	0.3 %	0.1 %	0.8 %	0.2 %	0.6 %	0.1 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	1.0000 ppm	1.0000 ppm	1.0000 ppm	1.0000 ppm	25.0000 ppm	35.0000 ppm	1.0000 ppm
Concentration per Run 1	1.0062 ppm	1.0051 ppm	1.0064 ppm	0.9996 ppm	24.9411 ppm	35.0112 ppm	1.0056 ppm
Concentration per Run 2	0.9939 ppm	0.9939 ppm	0.9975 ppm	0.9964 ppm	24.8778 ppm	34.7723 ppm	0.9950 ppm
Concentration per Run 3	0.9999 ppm	1.0011 ppm	0.9961 ppm	1.0040 ppm	25.1810 ppm	35.2164 ppm	0.9993 ppm
Concentration RSD	0.6 %	0.6 %	0.6 %	0.4 %	0.6 %	0.6 %	0.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	10.0000 ppm	1.0000 ppm	1.0000 ppm	25.0000 ppm	1.0000 ppm	1.0000 ppm	1.0000 ppm
Concentration per Run 1	10.0532 ppm	0.9985 ppm	0.9931 ppm	25.0962 ppm	1.0073 ppm	0.9889 ppm	1.0000 ppm
Concentration per Run 2	9.9461 ppm	0.9985 ppm	0.9974 ppm	24.9004 ppm	0.9969 ppm	1.0038 ppm	0.9933 ppm
Concentration per Run 3	10.0007 ppm	1.0029 ppm	1.0095 ppm	25.0034 ppm	0.9958 ppm	1.0073 ppm	1.0068 ppm
Concentration RSD	0.5 %	0.3 %	0.9 %	0.4 %	0.6 %	1.0 %	0.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	1.0000 ppm	10.0000 ppm	1.0000 ppm	1.0000 ppm	1.0000 ppm	1.0000 ppm	1.0000 ppm
Concentration per Run 1	0.9978 ppm	9.9927 ppm	1.0090 ppm	0.9983 ppm	1.0028 ppm	0.9691 ppm	1.0055 ppm
Concentration per Run 2	1.0010 ppm	9.9766 ppm	0.9979 ppm	0.9991 ppm	0.9976 ppm	1.0129 ppm	0.9957 ppm
Concentration per Run 3	1.0013 ppm	10.0307 ppm	0.9931 ppm	1.0026 ppm	0.9997 ppm	1.0180 ppm	0.9989 ppm
Concentration RSD	0.2 %	0.3 %	0.8 %	0.2 %	0.3 %	2.7 %	0.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	1.0000 ppm	99.1296 %	102.1760 %	93.8195 %	93.7047 %	99.4408 %	95.5161 %
Concentration per Run 1	1.0032 ppm	98.7831 %	103.0405 %	94.2564 %	92.5855 %	100.4631 %	96.0579 %
Concentration per Run 2	0.9964 ppm	99.7441 %	101.8823 %	93.8196 %	94.5704 %	99.0523 %	95.2644 %
Concentration per Run 3	1.0004 ppm	98.8617 %	101.6053 %	93.3824 %	93.9584 %	98.8071 %	95.2261 %
Concentration RSD	0.3 %	0.5 %	0.7 %	0.5 %	1.1 %	0.9 %	0.5 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: ICV
Analysis started at: 9/10/2024 11:19:08 AM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.5004 ppm	0.4773 ppm	0.4765 ppm	0.4689 ppm	0.5004 ppm	0.5073 ppm	0.4896 ppm
Concentration per Run 1	0.5060 ppm	0.4753 ppm	0.4764 ppm	0.4739 ppm	0.5001 ppm	0.5054 ppm	0.4885 ppm
Concentration per Run 2	0.4973 ppm	0.4803 ppm	0.4735 ppm	0.4667 ppm	0.5008 ppm	0.5076 ppm	0.4885 ppm
Concentration per Run 3	0.4978 ppm	0.4762 ppm	0.4796 ppm	0.4660 ppm	0.5002 ppm	0.5089 ppm	0.4919 ppm
Recovery Percentage 1	100.075 %	95.456 %	95.302 %	93.775 %	100.077 %	101.462 %	97.929 %
Concentration RSD	1.0 %	0.6 %	0.6 %	0.9 %	0.1 %	0.3 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.4961 ppm	0.5034 ppm	0.4889 ppm	0.4853 ppm	0.5067 ppm	5.1692 ppm	0.5144 ppm
Concentration per Run 1	0.5005 ppm	0.5081 ppm	0.4942 ppm	0.4897 ppm	0.5047 ppm	5.1967 ppm	0.5156 ppm
Concentration per Run 2	0.4945 ppm	0.5028 ppm	0.4867 ppm	0.4844 ppm	0.5099 ppm	5.1493 ppm	0.5153 ppm
Concentration per Run 3	0.4933 ppm	0.4995 ppm	0.4858 ppm	0.4817 ppm	0.5056 ppm	5.1616 ppm	0.5124 ppm
Recovery Percentage 1	99.214 %	100.687 %	97.782 %	97.051 %	101.346 %	103.384 %	102.885 %
Concentration RSD	0.8 %	0.9 %	0.9 %	0.8 %	0.6 %	0.5 %	0.3 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.4917 ppm	0.4923 ppm	0.4996 ppm	10.0399 ppm	0.5027 ppm	0.4875 ppm	0.4929 ppm
Concentration per Run 1	0.4985 ppm	0.4898 ppm	0.5009 ppm	10.0334 ppm	0.5079 ppm	0.4862 ppm	0.4971 ppm
Concentration per Run 2	0.4880 ppm	0.4941 ppm	0.4986 ppm	10.0993 ppm	0.4996 ppm	0.4862 ppm	0.4897 ppm
Concentration per Run 3	0.4885 ppm	0.4929 ppm	0.4993 ppm	9.9871 ppm	0.5004 ppm	0.4899 ppm	0.4920 ppm
Recovery Percentage 1	98.341 %	98.452 %	99.918 %	100.399 %	100.532 %	97.492 %	98.587 %
Concentration RSD	1.2 %	0.4 %	0.2 %	0.6 %	0.9 %	0.4 %	0.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4742 ppm	5.1890 ppm	0.5176 ppm	0.5139 ppm	0.4956 ppm	0.4817 ppm	0.4900 ppm
Concentration per Run 1	0.4755 ppm	5.2304 ppm	0.5233 ppm	0.5115 ppm	0.5007 ppm	0.4833 ppm	0.4950 ppm
Concentration per Run 2	0.4706 ppm	5.1703 ppm	0.5136 ppm	0.5132 ppm	0.4934 ppm	0.4781 ppm	0.4885 ppm
Concentration per Run 3	0.4764 ppm	5.1663 ppm	0.5159 ppm	0.5171 ppm	0.4927 ppm	0.4839 ppm	0.4865 ppm
Recovery Percentage 1	94.835 %	98.838 %	103.522 %	102.787 %	99.115 %	96.350 %	98.003 %
Concentration RSD	0.7 %	0.7 %	1.0 %	0.6 %	0.9 %	0.7 %	0.9 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4933 ppm	101.4469 %	103.1475 %	98.5721 %	96.3883 %	100.4590 %	98.0489 %
Concentration per Run 1	0.4990 ppm	100.7094 %	103.9284 %	98.8930 %	95.1332 %	100.8739 %	98.0448 %
Concentration per Run 2	0.4902 ppm	101.7426 %	102.6415 %	98.6294 %	96.9172 %	99.9526 %	98.1966 %
Concentration per Run 3	0.4907 ppm	101.8885 %	102.8727 %	98.1940 %	97.1146 %	100.5503 %	97.9052 %
Recovery Percentage 1	98.656 %						
Concentration RSD	1.0 %	0.6 %	0.7 %	0.4 %	1.1 %	0.5 %	0.1 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: ICB
Analysis started at: 9/10/2024 11:23:03 AM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	0.0035 ppm	0.0001 ppm	-0.0002 ppm	0.0000 ppm	0.0000 ppm	0.0131 ppm
Concentration per Run 1	0.0002 ppm	0.0016 ppm	0.0008 ppm	0.0002 ppm	-0.0001 ppm	0.0000 ppm	0.0152 ppm
Concentration per Run 2	0.0000 ppm	0.0079 ppm	-0.0002 ppm	-0.0013 ppm	0.0000 ppm	0.0000 ppm	0.0130 ppm
Concentration per Run 3	0.0001 ppm	0.0008 ppm	-0.0003 ppm	0.0005 ppm	0.0000 ppm	0.0000 ppm	0.0112 ppm
Recovery Percentage 1	1.622 %	3.453 %	3.866 %	-0.729 %	-0.075 %	0.153 %	13.131 %
Concentration RSD	98.8 %	113.1 %	546.7 %	423.9 %	632.6 %	249.9 %	15.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0001 ppm	-0.0001 ppm	-0.0003 ppm	0.0008 ppm	0.0039 ppm	-0.0003 ppm	-0.0008 ppm
Concentration per Run 1	0.0001 ppm	0.0000 ppm	-0.0003 ppm	0.0007 ppm	0.0031 ppm	-0.0118 ppm	-0.0010 ppm
Concentration per Run 2	0.0000 ppm	-0.0003 ppm	-0.0003 ppm	0.0008 ppm	0.0054 ppm	-0.0011 ppm	-0.0010 ppm
Concentration per Run 3	0.0001 ppm	0.0001 ppm	-0.0001 ppm	0.0008 ppm	0.0032 ppm	0.0121 ppm	-0.0005 ppm
Recovery Percentage 1	1.651 %	-0.261 %	-2.667 %	7.731 %	7.798 %	-0.010 %	-8.272 %
Concentration RSD	58.6 %	401.1 %	50.3 %	9.8 %	33.9 %	4,609.0 %	34.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0045 ppm	0.0003 ppm	0.0021 ppm	0.0092 ppm	0.0003 ppm	0.0002 ppm	0.0017 ppm
Concentration per Run 1	0.0050 ppm	0.0002 ppm	0.0019 ppm	0.0083 ppm	0.0006 ppm	0.0002 ppm	0.0006 ppm
Concentration per Run 2	0.0047 ppm	0.0003 ppm	0.0023 ppm	0.0097 ppm	0.0003 ppm	0.0000 ppm	0.0012 ppm
Concentration per Run 3	0.0039 ppm	0.0003 ppm	0.0020 ppm	0.0096 ppm	0.0000 ppm	0.0003 ppm	0.0032 ppm
Recovery Percentage 1	4.535 %	2.894 %	4.173 %	0.460 %	1.236 %	1.672 %	3.313 %
Concentration RSD	13.1 %	16.2 %	11.6 %	8.4 %	96.1 %	85.2 %	83.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0002 ppm	-0.0206 ppm	0.0007 ppm	0.0001 ppm	-0.0003 ppm	-0.0005 ppm	0.0001 ppm
Concentration per Run 1	0.0011 ppm	-0.0197 ppm	0.0009 ppm	0.0001 ppm	-0.0001 ppm	-0.0009 ppm	0.0001 ppm
Concentration per Run 2	-0.0012 ppm	-0.0214 ppm	0.0007 ppm	-0.0001 ppm	-0.0006 ppm	-0.0009 ppm	0.0002 ppm
Concentration per Run 3	-0.0005 ppm	-0.0206 ppm	0.0006 ppm	0.0001 ppm	-0.0002 ppm	0.0005 ppm	-0.0001 ppm
Recovery Percentage 1	-2.072 %	-4.115 %	1.474 %	0.515 %	-2.982 %	-2.315 %	0.999 %
Concentration RSD	559.7 %	4.1 %	26.2 %	172.5 %	83.1 %	171.6 %	134.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0013 ppm	97.8225 %	99.8826 %	98.3387 %	98.0899 %	100.3947 %	98.7362 %
Concentration per Run 1	0.0014 ppm	96.5167 %	99.8118 %	98.1493 %	97.5860 %	100.6149 %	98.7357 %
Concentration per Run 2	0.0012 ppm	97.5862 %	100.9668 %	97.8923 %	97.6109 %	100.9398 %	98.4954 %
Concentration per Run 3	0.0013 ppm	99.3645 %	98.8692 %	98.9747 %	99.0727 %	99.6295 %	98.9776 %
Recovery Percentage 1	26.002 %						
Concentration RSD	7.7 %	1.5 %	1.1 %	0.6 %	0.9 %	0.7 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: ICV
Analysis started at: 9/10/2024 11:26:58 AM
Rack 0
Vial 10
Comment position changed

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.5198 ppm	0.4968 ppm	0.4959 ppm	0.4865 ppm	0.5215 ppm	0.5280 ppm	0.5174 ppm
Concentration per Run 1	0.5210 ppm	0.5029 ppm	0.4928 ppm	0.4899 ppm	0.5235 ppm	0.5289 ppm	0.5166 ppm
Concentration per Run 2	0.5193 ppm	0.4950 ppm	0.5002 ppm	0.4853 ppm	0.5195 ppm	0.5269 ppm	0.5168 ppm
Concentration per Run 3	0.5190 ppm	0.4924 ppm	0.4947 ppm	0.4843 ppm	0.5214 ppm	0.5282 ppm	0.5189 ppm
Recovery Percentage 1	103.955 %	99.355 %	99.182 %	97.307 %	104.295 %	105.606 %	103.487 %
Concentration RSD	0.2 %	1.1 %	0.8 %	0.6 %	0.4 %	0.2 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.5139 ppm	0.5213 ppm	0.5093 ppm	0.5040 ppm	0.5317 ppm	5.4187 ppm	0.5409 ppm
Concentration per Run 1	0.5171 ppm	0.5229 ppm	0.5120 ppm	0.5056 ppm	0.5324 ppm	5.4522 ppm	0.5432 ppm
Concentration per Run 2	0.5148 ppm	0.5212 ppm	0.5090 ppm	0.5035 ppm	0.5303 ppm	5.3800 ppm	0.5391 ppm
Concentration per Run 3	0.5098 ppm	0.5197 ppm	0.5070 ppm	0.5030 ppm	0.5325 ppm	5.4238 ppm	0.5404 ppm
Recovery Percentage 1	102.787 %	104.254 %	101.865 %	100.800 %	106.348 %	108.373 %	108.181 %
Concentration RSD	0.7 %	0.3 %	0.5 %	0.3 %	0.2 %	0.7 %	0.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.5107 ppm	0.5146 ppm	0.5148 ppm	10.4266 ppm	0.5215 ppm	0.5053 ppm	0.5091 ppm
Concentration per Run 1	0.5151 ppm	0.5141 ppm	0.5141 ppm	10.4669 ppm	0.5253 ppm	0.5043 ppm	0.5086 ppm
Concentration per Run 2	0.5097 ppm	0.5137 ppm	0.5151 ppm	10.3152 ppm	0.5211 ppm	0.5087 ppm	0.5116 ppm
Concentration per Run 3	0.5072 ppm	0.5160 ppm	0.5153 ppm	10.4976 ppm	0.5182 ppm	0.5029 ppm	0.5070 ppm
Recovery Percentage 1	102.131 %	102.919 %	102.968 %	104.266 %	104.306 %	101.061 %	101.811 %
Concentration RSD	0.8 %	0.2 %	0.1 %	0.9 %	0.7 %	0.6 %	0.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4926 ppm	5.3620 ppm	0.5439 ppm	0.5389 ppm	0.5142 ppm	0.5008 ppm	0.5087 ppm
Concentration per Run 1	0.4912 ppm	5.3744 ppm	0.5436 ppm	0.5415 ppm	0.5160 ppm	0.4993 ppm	0.5119 ppm
Concentration per Run 2	0.4969 ppm	5.3770 ppm	0.5459 ppm	0.5381 ppm	0.5132 ppm	0.5026 ppm	0.5065 ppm
Concentration per Run 3	0.4897 ppm	5.3347 ppm	0.5421 ppm	0.5373 ppm	0.5134 ppm	0.5005 ppm	0.5077 ppm
Recovery Percentage 1	98.520 %	102.134 %	108.778 %	107.788 %	102.841 %	100.157 %	101.740 %
Concentration RSD	0.8 %	0.4 %	0.3 %	0.4 %	0.3 %	0.3 %	0.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5111 ppm	100.5081 %	101.2326 %	97.1909 %	95.1773 %	98.7842 %	96.5133 %
Concentration per Run 1	0.5142 ppm	99.9737 %	101.4923 %	97.6238 %	94.5563 %	99.0050 %	96.7872 %
Concentration per Run 2	0.5118 ppm	100.8145 %	100.7060 %	96.6213 %	95.3605 %	98.4992 %	96.3395 %
Concentration per Run 3	0.5074 ppm	100.7362 %	101.4995 %	97.3275 %	95.6152 %	98.8484 %	96.4133 %
Recovery Percentage 1	102.223 %						
Concentration RSD	0.7 %	0.5 %	0.5 %	0.5 %	0.6 %	0.3 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: ICB
Analysis started at: 9/10/2024 11:30:57 AM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	0.0011 ppm	-0.0005 ppm	-0.0002 ppm	0.0000 ppm	0.0000 ppm	0.0164 ppm
Concentration per Run 1	0.0001 ppm	0.0059 ppm	0.0000 ppm	-0.0006 ppm	0.0000 ppm	0.0000 ppm	0.0167 ppm
Concentration per Run 2	0.0001 ppm	0.0001 ppm	-0.0003 ppm	0.0004 ppm	0.0000 ppm	0.0000 ppm	0.0167 ppm
Concentration per Run 3	0.0002 ppm	-0.0029 ppm	-0.0011 ppm	-0.0003 ppm	0.0001 ppm	0.0000 ppm	0.0159 ppm
Recovery Percentage 1	1.725 %	1.053 %	-16.434 %	-0.514 %	0.371 %	0.359 %	16.449 %
Concentration RSD	68.7 %	425.9 %	113.8 %	343.4 %	63.2 %	155.0 %	2.7 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0002 ppm	-0.0001 ppm	0.0006 ppm	0.0033 ppm	0.0074 ppm	0.0004 ppm
Concentration per Run 1	0.0001 ppm	-0.0001 ppm	-0.0003 ppm	0.0005 ppm	0.0029 ppm	0.0025 ppm	0.0004 ppm
Concentration per Run 2	0.0000 ppm	-0.0006 ppm	0.0000 ppm	0.0008 ppm	0.0021 ppm	0.0310 ppm	0.0002 ppm
Concentration per Run 3	0.0000 ppm	-0.0001 ppm	-0.0001 ppm	0.0005 ppm	0.0048 ppm	-0.0115 ppm	0.0006 ppm
Recovery Percentage 1	0.636 %	-1.183 %	-1.284 %	6.120 %	6.533 %	0.295 %	4.065 %
Concentration RSD	128.5 %	119.8 %	123.1 %	22.5 %	42.8 %	294.3 %	52.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0042 ppm	0.0003 ppm	0.0020 ppm	0.0119 ppm	0.0003 ppm	0.0002 ppm	0.0006 ppm
Concentration per Run 1	0.0035 ppm	0.0004 ppm	0.0020 ppm	0.0086 ppm	-0.0001 ppm	0.0000 ppm	0.0005 ppm
Concentration per Run 2	0.0045 ppm	0.0003 ppm	0.0017 ppm	0.0134 ppm	0.0003 ppm	0.0003 ppm	0.0017 ppm
Concentration per Run 3	0.0046 ppm	0.0004 ppm	0.0022 ppm	0.0138 ppm	0.0008 ppm	0.0003 ppm	-0.0004 ppm
Recovery Percentage 1	4.209 %	3.416 %	3.923 %	0.597 %	1.307 %	1.950 %	1.225 %
Concentration RSD	14.0 %	23.2 %	14.5 %	24.1 %	147.9 %	79.9 %	171.6 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0007 ppm	-0.0196 ppm	0.0002 ppm	0.0001 ppm	-0.0004 ppm	-0.0001 ppm	0.0001 ppm
Concentration per Run 1	0.0016 ppm	-0.0198 ppm	-0.0003 ppm	0.0001 ppm	-0.0003 ppm	0.0003 ppm	0.0002 ppm
Concentration per Run 2	-0.0010 ppm	-0.0203 ppm	0.0003 ppm	0.0001 ppm	-0.0004 ppm	0.0006 ppm	0.0000 ppm
Concentration per Run 3	0.0015 ppm	-0.0186 ppm	0.0006 ppm	0.0001 ppm	-0.0005 ppm	-0.0010 ppm	0.0002 ppm
Recovery Percentage 1	7.236 %	-3.910 %	0.348 %	0.793 %	-3.933 %	-0.260 %	1.362 %
Concentration RSD	200.7 %	4.5 %	261.2 %	22.1 %	22.5 %	1,646.5 %	81.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0014 ppm	96.8143 %	99.4757 %	98.2423 %	96.8107 %	99.9784 %	98.5335 %
Concentration per Run 1	0.0013 ppm	95.3811 %	98.3672 %	98.1942 %	96.3757 %	99.3000 %	98.4723 %
Concentration per Run 2	0.0015 ppm	97.1206 %	99.6643 %	97.9404 %	96.6913 %	100.3639 %	98.3624 %
Concentration per Run 3	0.0014 ppm	97.9412 %	100.3956 %	98.5921 %	97.3650 %	100.2712 %	98.7658 %
Recovery Percentage 1	28.248 %						
Concentration RSD	9.2 %	1.4 %	1.0 %	0.3 %	0.5 %	0.6 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: LLOQ
Analysis started at: 9/10/2024 11:34:53 AM
Rack 0
Vial 5
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0055 ppm	0.1116 ppm	0.0045 ppm	0.0300 ppm	0.0113 ppm	0.0054 ppm	0.1380 ppm
Concentration per Run 1	0.0055 ppm	0.1085 ppm	0.0047 ppm	0.0309 ppm	0.0113 ppm	0.0054 ppm	0.1368 ppm
Concentration per Run 2	0.0057 ppm	0.1118 ppm	0.0044 ppm	0.0300 ppm	0.0114 ppm	0.0055 ppm	0.1381 ppm
Concentration per Run 3	0.0053 ppm	0.1145 ppm	0.0044 ppm	0.0291 ppm	0.0112 ppm	0.0054 ppm	0.1391 ppm
Recovery Percentage 1	109.863 %	111.609 %	90.251 %	100.061 %	113.226 %	108.774 %	137.998 %
Concentration RSD	3.3 %	2.7 %	3.3 %	3.0 %	0.7 %	0.2 %	0.8 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0044 ppm	0.0219 ppm	0.0103 ppm	0.0116 ppm	0.1335 ppm	2.8530 ppm	0.0113 ppm
Concentration per Run 1	0.0044 ppm	0.0221 ppm	0.0103 ppm	0.0117 ppm	0.1335 ppm	2.8783 ppm	0.0121 ppm
Concentration per Run 2	0.0044 ppm	0.0222 ppm	0.0101 ppm	0.0117 ppm	0.1330 ppm	2.8282 ppm	0.0106 ppm
Concentration per Run 3	0.0043 ppm	0.0214 ppm	0.0106 ppm	0.0115 ppm	0.1340 ppm	2.8525 ppm	0.0112 ppm
Recovery Percentage 1	109.119 %	109.476 %	103.174 %	116.287 %	267.002 %	114.120 %	112.999 %
Concentration RSD	1.3 %	2.1 %	2.7 %	1.0 %	0.4 %	0.9 %	6.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.1160 ppm	0.0117 ppm	0.0567 ppm	2.2350 ppm	0.0223 ppm	0.0107 ppm	0.0541 ppm
Concentration per Run 1	0.1175 ppm	0.0117 ppm	0.0575 ppm	2.2335 ppm	0.0224 ppm	0.0109 ppm	0.0549 ppm
Concentration per Run 2	0.1161 ppm	0.0115 ppm	0.0567 ppm	2.2109 ppm	0.0221 ppm	0.0105 ppm	0.0557 ppm
Concentration per Run 3	0.1144 ppm	0.0118 ppm	0.0558 ppm	2.2608 ppm	0.0225 ppm	0.0106 ppm	0.0518 ppm
Recovery Percentage 1	116.005 %	116.831 %	113.374 %	111.752 %	89.335 %	106.650 %	108.241 %
Concentration RSD	1.3 %	1.3 %	1.5 %	1.1 %	0.9 %	1.8 %	3.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0108 ppm	0.5038 ppm	0.0564 ppm	0.0110 ppm	0.0549 ppm	0.0201 ppm	0.0109 ppm
Concentration per Run 1	0.0102 ppm	0.5089 ppm	0.0580 ppm	0.0110 ppm	0.0556 ppm	0.0204 ppm	0.0109 ppm
Concentration per Run 2	0.0119 ppm	0.5034 ppm	0.0557 ppm	0.0111 ppm	0.0545 ppm	0.0195 ppm	0.0109 ppm
Concentration per Run 3	0.0103 ppm	0.4991 ppm	0.0554 ppm	0.0111 ppm	0.0545 ppm	0.0206 ppm	0.0109 ppm
Recovery Percentage 1	107.826 %	100.757 %	112.808 %	110.398 %	109.775 %	100.736 %	108.910 %
Concentration RSD	9.1 %	1.0 %	2.5 %	0.4 %	1.1 %	2.8 %	0.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0121 ppm	100.4106 %	100.9122 %	98.7261 %	96.7994 %	99.3309 %	97.8490 %
Concentration per Run 1	0.0123 ppm	99.5930 %	101.2003 %	98.7272 %	96.1100 %	99.4228 %	98.0079 %
Concentration per Run 2	0.0122 ppm	100.3878 %	101.2898 %	99.2135 %	97.0642 %	99.7064 %	98.2482 %
Concentration per Run 3	0.0117 ppm	101.2509 %	100.2466 %	98.2376 %	97.2241 %	98.8636 %	97.2910 %
Recovery Percentage 1	241.082 %						
Concentration RSD	2.6 %	0.8 %	0.6 %	0.5 %	0.6 %	0.4 %	0.5 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: ICSA
Analysis started at: 9/10/2024 11:38:49 AM
Rack 0
Vial 6
Comment LDR +/-10%

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0009 ppm	**504.4040 ppm**	0.0006 ppm	0.0045 ppm	0.0016 ppm	0.0000 ppm	**554.9038 ppm**
Concentration per Run 1	0.0013 ppm	504.0198 ppm	-0.0002 ppm	0.0052 ppm	0.0016 ppm	0.0001 ppm	556.9337 ppm
Concentration per Run 2	0.0004 ppm	504.5576 ppm	0.0014 ppm	0.0045 ppm	0.0015 ppm	0.0001 ppm	553.4755 ppm
Concentration per Run 3	0.0009 ppm	504.6347 ppm	0.0007 ppm	0.0038 ppm	0.0017 ppm	0.0000 ppm	554.3022 ppm
Recovery Percentage 1	12.264 %	504,403.992 %	21.292 %	15.046 %	15.745 %	1.041 %	554,903.804 %
Concentration RSD	50.1 %	**0.1 %**	119.5 %	15.5 %	6.8 %	88.6 %	**0.3 %**

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0005 ppm	-0.0003 ppm	-0.0002 ppm	0.0002 ppm	**182.5135 ppm**	0.0317 ppm	-0.0001 ppm
Concentration per Run 1	-0.0003 ppm	-0.0001 ppm	-0.0005 ppm	0.0005 ppm	182.1422 ppm	0.0205 ppm	0.0015 ppm
Concentration per Run 2	-0.0005 ppm	-0.0005 ppm	-0.0003 ppm	-0.0005 ppm	182.5134 ppm	0.0428 ppm	-0.0021 ppm
Concentration per Run 3	-0.0006 ppm	-0.0003 ppm	0.0003 ppm	0.0005 ppm	182.8850 ppm	0.0319 ppm	0.0002 ppm
Recovery Percentage 1	-9.399 %	-1.385 %	-1.800 %	1.631 %	365,027.076 %	1.270 %	-1.227 %
Concentration RSD	32.2 %	66.4 %	211.6 %	350.6 %	**0.2 %**	35.0 %	1,487.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	**470.4704 ppm**	0.0020 ppm	-0.0001 ppm	0.0318 ppm	0.0000 ppm	-0.0030 ppm	-0.0038 ppm
Concentration per Run 1	468.5491 ppm	0.0020 ppm	0.0003 ppm	0.0316 ppm	0.0005 ppm	-0.0029 ppm	-0.0023 ppm
Concentration per Run 2	471.6244 ppm	0.0020 ppm	-0.0009 ppm	0.0300 ppm	-0.0003 ppm	-0.0029 ppm	-0.0015 ppm
Concentration per Run 3	471.2376 ppm	0.0019 ppm	0.0002 ppm	0.0338 ppm	-0.0003 ppm	-0.0033 ppm	-0.0076 ppm
Recovery Percentage 1	470,470.363 %	19.714 %	-0.282 %	1.590 %	-0.141 %	-30.298 %	-7.599 %
Concentration RSD	**0.4 %**	4.1 %	483.6 %	5.9 %	1,282.5 %	9.0 %	88.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0054 ppm	-0.0275 ppm	0.0005 ppm	0.0001 ppm	-0.0013 ppm	0.0022 ppm	-0.0004 ppm
Concentration per Run 1	-0.0066 ppm	-0.0254 ppm	-0.0008 ppm	0.0001 ppm	-0.0015 ppm	0.0018 ppm	-0.0007 ppm
Concentration per Run 2	-0.0024 ppm	-0.0300 ppm	0.0006 ppm	0.0000 ppm	-0.0010 ppm	0.0023 ppm	0.0003 ppm
Concentration per Run 3	-0.0072 ppm	-0.0271 ppm	0.0016 ppm	0.0001 ppm	-0.0013 ppm	0.0024 ppm	-0.0007 ppm
Recovery Percentage 1	-53.715 %	-5.503 %	0.939 %	0.637 %	-12.552 %	10.761 %	-3.705 %
Concentration RSD	48.6 %	8.4 %	261.1 %	109.2 %	18.6 %	16.1 %	155.9 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	-0.0003 ppm	87.0111 %	94.2460 %	75.9217 %	82.6813 %	93.6418 %	83.9045 %
Concentration per Run 1	-0.0002 ppm	87.2495 %	93.7999 %	76.1114 %	82.7532 %	93.3584 %	83.6644 %
Concentration per Run 2	-0.0003 ppm	87.1520 %	94.7702 %	75.7772 %	82.6146 %	94.2112 %	84.0039 %
Concentration per Run 3	-0.0005 ppm	86.6318 %	94.1678 %	75.8764 %	82.6761 %	93.3558 %	84.0451 %
Recovery Percentage 1	-6.932 %						
Concentration RSD	42.3 %	0.4 %	0.5 %	0.2 %	0.1 %	0.5 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: SIC Multi
Analysis started at: 9/10/2024 11:44:48 AM
Rack 0
Vial 7
Comment LDR +/-10%

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0009 ppm	0.0140 ppm	0.0005 ppm	0.0091 ppm	0.0002 ppm	-0.0010 ppm	-0.0036 ppm
Concentration per Run 1	-0.0008 ppm	0.0110 ppm	-0.0001 ppm	0.0088 ppm	0.0003 ppm	-0.0008 ppm	-0.0029 ppm
Concentration per Run 2	-0.0009 ppm	0.0130 ppm	0.0003 ppm	0.0092 ppm	0.0002 ppm	-0.0011 ppm	-0.0030 ppm
Concentration per Run 3	-0.0009 ppm	0.0180 ppm	0.0015 ppm	0.0093 ppm	0.0002 ppm	-0.0011 ppm	-0.0048 ppm
Recovery Percentage 1	-12.356 %	14.019 %	17.765 %	30.374 %	2.489 %	-24.028 %	-3.566 %
Concentration RSD	4.9 %	25.6 %	154.7 %	3.1 %	16.4 %	18.7 %	30.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0041 ppm	19.6548 ppm	-0.0015 ppm	0.0030 ppm	-0.0003 ppm	0.0003 ppm
Concentration per Run 1	0.0001 ppm	-0.0044 ppm	19.7488 ppm	-0.0014 ppm	0.0018 ppm	-0.0021 ppm	-0.0011 ppm
Concentration per Run 2	0.0001 ppm	-0.0041 ppm	19.6691 ppm	-0.0016 ppm	0.0047 ppm	0.0121 ppm	0.0012 ppm
Concentration per Run 3	0.0000 ppm	-0.0038 ppm	19.5466 ppm	-0.0014 ppm	0.0026 ppm	-0.0109 ppm	0.0008 ppm
Recovery Percentage 1	0.812 %	-20.626 %	196,548.221 %	-14.614 %	6.022 %	-0.012 %	2.769 %
Concentration RSD	156.9 %	7.8 %	0.5 %	5.5 %	49.5 %	3,852.5 %	450.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0008 ppm	20.2212 ppm	0.0011 ppm	0.0140 ppm	0.0001 ppm	-0.0028 ppm	-0.0015 ppm
Concentration per Run 1	0.0021 ppm	20.1833 ppm	0.0012 ppm	0.0124 ppm	-0.0004 ppm	-0.0028 ppm	-0.0012 ppm
Concentration per Run 2	0.0007 ppm	20.1968 ppm	0.0010 ppm	0.0153 ppm	-0.0002 ppm	-0.0039 ppm	-0.0035 ppm
Concentration per Run 3	-0.0004 ppm	20.2835 ppm	0.0011 ppm	0.0144 ppm	0.0009 ppm	-0.0017 ppm	0.0001 ppm
Recovery Percentage 1	0.786 %	202,211.886 %	2.251 %	0.702 %	0.492 %	-27.976 %	-3.072 %
Concentration RSD	163.7 %	0.3 %	10.4 %	10.5 %	559.0 %	40.1 %	119.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0032 ppm	0.1651 ppm	-0.0015 ppm	0.0000 ppm	19.5500 ppm	-0.0121 ppm	10.0177 ppm
Concentration per Run 1	-0.0031 ppm	0.1527 ppm	-0.0009 ppm	0.0000 ppm	19.6702 ppm	-0.0114 ppm	10.0558 ppm
Concentration per Run 2	-0.0037 ppm	0.1630 ppm	-0.0022 ppm	0.0000 ppm	19.5650 ppm	-0.0118 ppm	10.0406 ppm
Concentration per Run 3	-0.0029 ppm	0.1794 ppm	-0.0013 ppm	0.0001 ppm	19.4147 ppm	-0.0132 ppm	9.9568 ppm
Recovery Percentage 1	-32.003 %	33.011 %	-2.903 %	0.403 %	195,499.843 %	-60.702 %	100,177.396 %
Concentration RSD	13.2 %	8.2 %	46.2 %	35.8 %	0.7 %	7.4 %	0.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	-0.0002 ppm	100.0900 %	100.7063 %	75.4692 %	95.2337 %	99.0772 %	96.4595 %
Concentration per Run 1	-0.0003 ppm	99.7880 %	100.6034 %	75.2289 %	94.7629 %	99.1659 %	96.2245 %
Concentration per Run 2	-0.0002 ppm	100.1073 %	101.1779 %	75.9599 %	95.5079 %	99.0793 %	96.5361 %
Concentration per Run 3	-0.0001 ppm	100.3747 %	100.3375 %	75.2187 %	95.4302 %	98.9865 %	96.6179 %
Recovery Percentage 1	-4.140 %						
Concentration RSD	46.7 %	0.3 %	0.4 %	0.6 %	0.4 %	0.1 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: LDR Check
Analysis started at: 9/10/2024 11:49:49 AM
Rack 0
Vial 8
Comment LDR +/-10%

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0028 ppm	0.0093 ppm	23.0935 ppm	24.2953 ppm	19.6664 ppm	5.0271 ppm	0.0294 ppm
Concentration per Run 1	0.0027 ppm	0.0052 ppm	23.1461 ppm	24.5115 ppm	19.7720 ppm	5.0467 ppm	0.0319 ppm
Concentration per Run 2	0.0029 ppm	0.0126 ppm	23.1284 ppm	24.1488 ppm	19.7010 ppm	5.0111 ppm	0.0280 ppm
Concentration per Run 3	0.0028 ppm	0.0100 ppm	23.0059 ppm	24.2257 ppm	19.5261 ppm	5.0235 ppm	0.0283 ppm
Recovery Percentage 1			115.467 %	121.477 %	98.332 %		0.000 %
Concentration RSD	3.2 %	40.7 %	0.3 %	0.8 %	0.6 %	0.4 %	7.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	4.9725 ppm	5.0733 ppm	0.0011 ppm	19.8570 ppm	0.0081 ppm	517.5124 ppm	19.5910 ppm
Concentration per Run 1	5.0034 ppm	5.1021 ppm	0.0016 ppm	19.9404 ppm	0.0070 ppm	517.4005 ppm	19.6588 ppm
Concentration per Run 2	4.9770 ppm	5.0699 ppm	0.0010 ppm	19.7237 ppm	0.0073 ppm	518.7468 ppm	19.6275 ppm
Concentration per Run 3	4.9369 ppm	5.0478 ppm	0.0008 ppm	19.9069 ppm	0.0101 ppm	516.3898 ppm	19.4868 ppm
Recovery Percentage 1	99.449 %	101.466 %		99.285 %	0.000 %	103.502 %	97.955 %
Concentration RSD	0.7 %	0.5 %	39.2 %	0.6 %	20.7 %	0.2 %	0.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	-0.0054 ppm	0.0009 ppm	5.0252 ppm	452.9270 ppm	9.9023 ppm	49.9603 ppm	5.2336 ppm
Concentration per Run 1	-0.0048 ppm	0.0009 ppm	5.0130 ppm	452.0199 ppm	9.9433 ppm	50.0728 ppm	5.2331 ppm
Concentration per Run 2	-0.0062 ppm	0.0010 ppm	5.0154 ppm	453.3213 ppm	9.9066 ppm	49.9136 ppm	5.2255 ppm
Concentration per Run 3	-0.0051 ppm	0.0008 ppm	5.0474 ppm	453.4398 ppm	9.8568 ppm	49.8944 ppm	5.2422 ppm
Recovery Percentage 1		0.000 %	100.505 %	90.585 %	99.023 %	99.921 %	104.672 %
Concentration RSD	14.0 %	9.4 %	0.4 %	0.2 %	0.4 %	0.2 %	0.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	5.3871 ppm	20.5955 ppm	10.2964 ppm	5.0149 ppm	0.0072 ppm	4.7458 ppm	0.0037 ppm
Concentration per Run 1	5.3868 ppm	20.6695 ppm	10.3149 ppm	5.0121 ppm	0.0077 ppm	4.7504 ppm	0.0041 ppm
Concentration per Run 2	5.3917 ppm	20.5320 ppm	10.3459 ppm	5.0182 ppm	0.0072 ppm	4.7428 ppm	0.0038 ppm
Concentration per Run 3	5.3829 ppm	20.5852 ppm	10.2285 ppm	5.0144 ppm	0.0068 ppm	4.7443 ppm	0.0033 ppm
Recovery Percentage 1	107.742 %	102.978 %	102.964 %	100.298 %	0.000 %	94.917 %	0.000 %
Concentration RSD	0.1 %	0.3 %	0.6 %	0.1 %	6.2 %	0.1 %	11.0 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	19.6643 ppm	88.0261 %	96.7140 %	80.6257 %	82.8631 %	94.2026 %	83.8499 %
Concentration per Run 1	19.7622 ppm	87.7406 %	96.2540 %	80.6827 %	82.3929 %	93.5022 %	83.9050 %
Concentration per Run 2	19.6634 ppm	88.0840 %	97.1448 %	80.7291 %	82.8024 %	94.5706 %	83.7838 %
Concentration per Run 3	19.5672 ppm	88.2538 %	96.7431 %	80.4655 %	83.3940 %	94.5351 %	83.8609 %
Recovery Percentage 1	98.321 %						
Concentration RSD	0.5 %	0.3 %	0.5 %	0.2 %	0.6 %	0.6 %	0.1 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: LLOQ 0.005 Zn pass
Analysis started at: 9/10/2024 12:01:51 PM
Rack 1
Vial 1
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0052 ppm	0.0015 ppm	0.0050 ppm	0.0055 ppm	0.0052 ppm	0.0051 ppm	0.0109 ppm
Concentration per Run 1	0.0052 ppm	-0.0014 ppm	0.0039 ppm	0.0064 ppm	0.0052 ppm	0.0051 ppm	0.0109 ppm
Concentration per Run 2	0.0051 ppm	0.0000 ppm	0.0057 ppm	0.0055 ppm	0.0051 ppm	0.0051 ppm	0.0101 ppm
Concentration per Run 3	0.0052 ppm	0.0060 ppm	0.0055 ppm	0.0048 ppm	0.0052 ppm	0.0051 ppm	0.0118 ppm
Recovery Percentage 1	103.141 %	0.000 %	100.541 %	0.000 %	0.000 %	102.457 %	0.000 %
Concentration RSD	1.6 %	258.2 %	19.2 %	14.8 %	0.6 %	0.6 %	7.8 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0052 ppm	0.0050 ppm	0.0049 ppm	0.0053 ppm	0.0065 ppm	0.1033 ppm	0.0062 ppm
Concentration per Run 1	0.0052 ppm	0.0051 ppm	0.0051 ppm	0.0053 ppm	0.0058 ppm	0.1028 ppm	0.0077 ppm
Concentration per Run 2	0.0052 ppm	0.0053 ppm	0.0048 ppm	0.0053 ppm	0.0063 ppm	0.0983 ppm	0.0048 ppm
Concentration per Run 3	0.0052 ppm	0.0045 ppm	0.0048 ppm	0.0054 ppm	0.0074 ppm	0.1088 ppm	0.0061 ppm
Recovery Percentage 1	103.897 %	0.000 %	0.000 %	0.000 %	0.000 %	0.000 %	0.000 %
Concentration RSD	0.4 %	9.0 %	3.7 %	1.5 %	12.5 %	5.1 %	22.9 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0068 ppm	0.0053 ppm	0.0064 ppm	0.1409 ppm	0.0061 ppm	0.0047 ppm	0.0078 ppm
Concentration per Run 1	0.0061 ppm	0.0053 ppm	0.0064 ppm	0.1421 ppm	0.0061 ppm	0.0047 ppm	0.0098 ppm
Concentration per Run 2	0.0079 ppm	0.0053 ppm	0.0064 ppm	0.1406 ppm	0.0063 ppm	0.0049 ppm	0.0072 ppm
Concentration per Run 3	0.0065 ppm	0.0054 ppm	0.0063 ppm	0.1400 ppm	0.0058 ppm	0.0043 ppm	0.0065 ppm
Recovery Percentage 1	0.000 %	0.000 %	0.000 %	0.000 %	0.000 %	0.000 %	0.000 %
Concentration RSD	13.2 %	1.0 %	0.6 %	0.8 %	4.0 %	6.3 %	22.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0042 ppm	0.0338 ppm	0.0057 ppm	0.0055 ppm	0.0048 ppm	0.0047 ppm	0.0050 ppm
Concentration per Run 1	0.0055 ppm	0.0326 ppm	0.0059 ppm	0.0056 ppm	0.0047 ppm	0.0050 ppm	0.0049 ppm
Concentration per Run 2	0.0015 ppm	0.0348 ppm	0.0058 ppm	0.0054 ppm	0.0047 ppm	0.0042 ppm	0.0050 ppm
Concentration per Run 3	0.0055 ppm	0.0339 ppm	0.0053 ppm	0.0054 ppm	0.0048 ppm	0.0048 ppm	0.0050 ppm
Recovery Percentage 1	0.000 %	0.000 %	0.000 %	0.000 %	0.000 %	0.000 %	0.000 %
Concentration RSD	55.8 %	3.3 %	5.6 %	1.4 %	1.2 %	8.7 %	1.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0057 ppm	98.0060 %	99.8249 %	98.0427 %	97.7614 %	100.5778 %	98.6075 %
Concentration per Run 1	0.0059 ppm	96.7930 %	99.5194 %	98.0848 %	96.9763 %	100.2956 %	98.6650 %
Concentration per Run 2	0.0058 ppm	98.6183 %	100.2538 %	98.1423 %	98.2745 %	101.0354 %	98.6674 %
Concentration per Run 3	0.0056 ppm	98.6069 %	99.7015 %	97.9011 %	98.0335 %	100.4024 %	98.4902 %
Recovery Percentage 1	114.896 %						
Concentration RSD	2.1 %	1.1 %	0.4 %	0.1 %	0.7 %	0.4 %	0.1 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: LLOQ 0.05 Ca & Fe pass
Analysis started at: 9/10/2024 12:05:52 PM
Rack 1
Vial 2
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0518 ppm	0.0492 ppm	0.0472 ppm	0.0484 ppm	0.0508 ppm	0.0506 ppm	0.0559 ppm
Concentration per Run 1	0.0527 ppm	0.0507 ppm	0.0461 ppm	0.0501 ppm	0.0506 ppm	0.0504 ppm	0.0564 ppm
Concentration per Run 2	0.0517 ppm	0.0498 ppm	0.0482 ppm	0.0488 ppm	0.0511 ppm	0.0509 ppm	0.0573 ppm
Concentration per Run 3	0.0510 ppm	0.0471 ppm	0.0473 ppm	0.0462 ppm	0.0507 ppm	0.0505 ppm	0.0538 ppm
Recovery Percentage 1	0.000 %	98.345 %	0.000 %	0.000 %	0.000 %	0.000 %	111.715 %
Concentration RSD	1.6 %	3.8 %	2.2 %	4.1 %	0.5 %	0.4 %	3.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0504 ppm	0.0524 ppm	0.0503 ppm	0.0508 ppm	0.0519 ppm	0.5780 ppm	0.0552 ppm
Concentration per Run 1	0.0514 ppm	0.0534 ppm	0.0518 ppm	0.0515 ppm	0.0521 ppm	0.5750 ppm	0.0550 ppm
Concentration per Run 2	0.0502 ppm	0.0521 ppm	0.0498 ppm	0.0508 ppm	0.0517 ppm	0.5943 ppm	0.0578 ppm
Concentration per Run 3	0.0496 ppm	0.0518 ppm	0.0493 ppm	0.0500 ppm	0.0518 ppm	0.5648 ppm	0.0527 ppm
Recovery Percentage 1	0.000 %	0.000 %	0.000 %	0.000 %	103.721 %	23.122 %	0.000 %
Concentration RSD	1.8 %	1.6 %	2.6 %	1.6 %	0.4 %	2.6 %	4.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0521 ppm	0.0494 ppm	0.0519 ppm	1.0577 ppm	0.0532 ppm	0.0493 ppm	0.0513 ppm
Concentration per Run 1	0.0516 ppm	0.0493 ppm	0.0520 ppm	1.0471 ppm	0.0541 ppm	0.0502 ppm	0.0529 ppm
Concentration per Run 2	0.0523 ppm	0.0496 ppm	0.0518 ppm	1.0620 ppm	0.0534 ppm	0.0496 ppm	0.0503 ppm
Concentration per Run 3	0.0525 ppm	0.0493 ppm	0.0518 ppm	1.0640 ppm	0.0522 ppm	0.0481 ppm	0.0507 ppm
Recovery Percentage 1	104.255 %	0.000 %	0.000 %	105.769 %	0.000 %	0.000 %	102.605 %
Concentration RSD	0.9 %	0.3 %	0.3 %	0.9 %	1.8 %	2.1 %	2.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0472 ppm	0.5002 ppm	0.0542 ppm	0.0527 ppm	0.0506 ppm	0.0484 ppm	0.0499 ppm
Concentration per Run 1	0.0486 ppm	0.5091 ppm	0.0549 ppm	0.0526 ppm	0.0515 ppm	0.0482 ppm	0.0509 ppm
Concentration per Run 2	0.0478 ppm	0.4958 ppm	0.0532 ppm	0.0529 ppm	0.0506 ppm	0.0485 ppm	0.0497 ppm
Concentration per Run 3	0.0451 ppm	0.4956 ppm	0.0546 ppm	0.0526 ppm	0.0498 ppm	0.0484 ppm	0.0492 ppm
Recovery Percentage 1	0.000 %	100.032 %	0.000 %	0.000 %	0.000 %	0.000 %	0.000 %
Concentration RSD	3.9 %	1.6 %	1.7 %	0.4 %	1.7 %	0.3 %	1.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0508 ppm	99.7216 %	101.4739 %	98.8254 %	97.6202 %	100.2593 %	98.0833 %
Concentration per Run 1	0.0522 ppm	98.0008 %	102.4141 %	98.6306 %	96.2930 %	100.6696 %	97.9246 %
Concentration per Run 2	0.0504 ppm	100.2978 %	100.0992 %	98.6616 %	98.2737 %	99.4212 %	97.8191 %
Concentration per Run 3	0.0497 ppm	100.8664 %	101.9084 %	99.1840 %	98.2938 %	100.6872 %	98.5063 %
Recovery Percentage 1	101.558 %						
Concentration RSD	2.6 %	1.5 %	1.2 %	0.3 %	1.2 %	0.7 %	0.4 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: LDR 500 Ca pass
Analysis started at: 9/10/2024 12:09:47 PM
Rack 1
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0006 ppm	0.0040 ppm	-0.0005 ppm	0.0008 ppm	0.0004 ppm	0.0000 ppm	483.4472 ppm
Concentration per Run 1	-0.0005 ppm	0.0053 ppm	-0.0012 ppm	0.0014 ppm	0.0005 ppm	0.0000 ppm	483.8673 ppm
Concentration per Run 2	-0.0007 ppm	0.0003 ppm	0.0002 ppm	0.0011 ppm	0.0003 ppm	0.0000 ppm	485.3658 ppm
Concentration per Run 3	-0.0008 ppm	0.0064 ppm	-0.0006 ppm	0.0000 ppm	0.0004 ppm	0.0000 ppm	481.1087 ppm
Concentration RSD	25.7 %	80.5 %	124.5 %	84.4 %	14.6 %	920.2 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0000 ppm	0.0001 ppm	0.0010 ppm	0.0016 ppm	0.0457 ppm	0.0003 ppm
Concentration per Run 1	0.0000 ppm	-0.0006 ppm	0.0000 ppm	0.0009 ppm	0.0002 ppm	0.0585 ppm	0.0021 ppm
Concentration per Run 2	0.0000 ppm	0.0001 ppm	0.0002 ppm	0.0011 ppm	0.0013 ppm	0.0330 ppm	-0.0008 ppm
Concentration per Run 3	0.0000 ppm	0.0003 ppm	0.0002 ppm	0.0010 ppm	0.0034 ppm	0.0456 ppm	-0.0005 ppm
Concentration RSD	272.1 %	1,025.9 %	81.5 %	11.4 %	99.7 %	28.0 %	569.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0065 ppm	0.0002 ppm	0.0009 ppm	0.0318 ppm	0.0000 ppm	0.0005 ppm	0.0015 ppm
Concentration per Run 1	0.0057 ppm	0.0003 ppm	0.0012 ppm	0.0317 ppm	0.0000 ppm	0.0010 ppm	0.0013 ppm
Concentration per Run 2	0.0071 ppm	0.0002 ppm	0.0008 ppm	0.0295 ppm	-0.0002 ppm	0.0003 ppm	0.0019 ppm
Concentration per Run 3	0.0066 ppm	0.0001 ppm	0.0008 ppm	0.0342 ppm	0.0003 ppm	0.0003 ppm	0.0014 ppm
Concentration RSD	10.6 %	47.0 %	20.2 %	7.5 %	2,708.7 %	76.6 %	18.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0004 ppm	-0.0135 ppm	-0.0001 ppm	-0.0004 ppm	-0.0013 ppm	-0.0012 ppm	0.0002 ppm
Concentration per Run 1	0.0007 ppm	-0.0144 ppm	-0.0005 ppm	-0.0003 ppm	-0.0011 ppm	-0.0004 ppm	0.0000 ppm
Concentration per Run 2	0.0013 ppm	-0.0130 ppm	0.0000 ppm	-0.0004 ppm	-0.0012 ppm	-0.0025 ppm	0.0002 ppm
Concentration per Run 3	-0.0008 ppm	-0.0131 ppm	0.0002 ppm	-0.0004 ppm	-0.0017 ppm	-0.0008 ppm	0.0003 ppm
Concentration RSD	278.0 %	5.6 %	314.8 %	11.2 %	26.0 %	91.1 %	96.0 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0011 ppm	88.9060 %	95.7794 %	83.0956 %	86.9585 %	95.9079 %	88.7392 %
Concentration per Run 1	0.0010 ppm	88.0646 %	95.8014 %	82.7425 %	86.6462 %	95.7257 %	88.4702 %
Concentration per Run 2	0.0012 ppm	89.3013 %	95.2726 %	83.4669 %	87.2790 %	95.8361 %	89.0685 %
Concentration per Run 3	0.0012 ppm	89.3519 %	96.2641 %	83.0774 %	86.9505 %	96.1618 %	88.6790 %
Concentration RSD	8.2 %	0.8 %	0.5 %	0.4 %	0.4 %	0.2 %	0.3 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: LDR 1000 Ca pass
Analysis started at: 9/10/2024 12:13:43 PM
Rack 1
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0006 ppm	0.0146 ppm	0.0005 ppm	0.0020 ppm	0.0009 ppm	0.0000 ppm	939.5261 ppm
Concentration per Run 1	-0.0005 ppm	0.0163 ppm	0.0010 ppm	0.0031 ppm	0.0008 ppm	0.0000 ppm	941.5166 ppm
Concentration per Run 2	-0.0006 ppm	0.0125 ppm	0.0009 ppm	0.0016 ppm	0.0009 ppm	0.0000 ppm	938.2386 ppm
Concentration per Run 3	-0.0007 ppm	0.0149 ppm	-0.0004 ppm	0.0015 ppm	0.0009 ppm	0.0000 ppm	938.8232 ppm
Concentration RSD	21.5 %	13.2 %	161.6 %	45.8 %	1.3 %	1,028.0 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0001 ppm	0.0002 ppm	0.0002 ppm	0.0011 ppm	0.0016 ppm	0.0479 ppm	-0.0007 ppm
Concentration per Run 1	-0.0002 ppm	0.0002 ppm	0.0003 ppm	0.0012 ppm	0.0016 ppm	0.0520 ppm	0.0003 ppm
Concentration per Run 2	-0.0001 ppm	0.0003 ppm	0.0001 ppm	0.0010 ppm	0.0013 ppm	0.0528 ppm	-0.0006 ppm
Concentration per Run 3	-0.0002 ppm	0.0001 ppm	0.0000 ppm	0.0012 ppm	0.0018 ppm	0.0390 ppm	-0.0017 ppm
Concentration RSD	25.0 %	38.0 %	91.5 %	8.5 %	15.7 %	16.2 %	146.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0136 ppm	0.0006 ppm	0.0005 ppm	0.0349 ppm	0.0004 ppm	0.0012 ppm	0.0008 ppm
Concentration per Run 1	0.0148 ppm	0.0007 ppm	0.0006 ppm	0.0369 ppm	0.0000 ppm	0.0017 ppm	0.0033 ppm
Concentration per Run 2	0.0129 ppm	0.0006 ppm	0.0003 ppm	0.0323 ppm	0.0006 ppm	0.0014 ppm	-0.0020 ppm
Concentration per Run 3	0.0130 ppm	0.0005 ppm	0.0008 ppm	0.0354 ppm	0.0007 ppm	0.0005 ppm	0.0011 ppm
Concentration RSD	7.8 %	21.1 %	48.3 %	6.8 %	95.3 %	50.8 %	332.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0001 ppm	-0.0091 ppm	0.0001 ppm	-0.0004 ppm	-0.0020 ppm	-0.0021 ppm	0.0006 ppm
Concentration per Run 1	-0.0011 ppm	-0.0097 ppm	0.0005 ppm	-0.0004 ppm	-0.0021 ppm	-0.0030 ppm	0.0007 ppm
Concentration per Run 2	0.0029 ppm	-0.0079 ppm	-0.0008 ppm	-0.0004 ppm	-0.0020 ppm	-0.0009 ppm	0.0006 ppm
Concentration per Run 3	-0.0016 ppm	-0.0097 ppm	0.0005 ppm	-0.0005 ppm	-0.0018 ppm	-0.0024 ppm	0.0005 ppm
Concentration RSD	3,757.9 %	11.7 %	1,449.7 %	17.8 %	8.3 %	51.1 %	16.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0018 ppm	85.7028 %	93.2369 %	78.3381 %	83.4645 %	93.2626 %	84.9340 %
Concentration per Run 1	0.0018 ppm	85.1470 %	93.6726 %	78.3966 %	83.2905 %	93.7705 %	84.8579 %
Concentration per Run 2	0.0017 ppm	85.7901 %	92.8832 %	78.1506 %	83.5494 %	92.8260 %	84.9504 %
Concentration per Run 3	0.0017 ppm	86.1712 %	93.1548 %	78.4670 %	83.5534 %	93.1912 %	84.9937 %
Concentration RSD	3.8 %	0.6 %	0.4 %	0.2 %	0.2 %	0.5 %	0.1 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: LDR 500 Fe pass
Analysis started at: 9/10/2024 12:17:39 PM
Rack 1
Vial 5
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	0.0471 ppm	-0.0004 ppm	0.0013 ppm	0.0003 ppm	0.0000 ppm	0.0104 ppm
Concentration per Run 1	0.0005 ppm	0.0473 ppm	-0.0011 ppm	0.0018 ppm	0.0003 ppm	0.0000 ppm	0.0107 ppm
Concentration per Run 2	0.0001 ppm	0.0459 ppm	-0.0009 ppm	0.0013 ppm	0.0003 ppm	0.0000 ppm	0.0118 ppm
Concentration per Run 3	-0.0002 ppm	0.0482 ppm	0.0008 ppm	0.0007 ppm	0.0002 ppm	0.0000 ppm	0.0087 ppm
Concentration RSD	275.5 %	2.5 %	251.2 %	43.2 %	4.7 %	51.2 %	15.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0022 ppm	-0.0018 ppm	-0.0032 ppm	461.4540 ppm	-0.0440 ppm	0.0007 ppm
Concentration per Run 1	0.0000 ppm	-0.0021 ppm	-0.0020 ppm	-0.0034 ppm	460.7539 ppm	-0.0419 ppm	0.0008 ppm
Concentration per Run 2	-0.0001 ppm	-0.0020 ppm	-0.0018 ppm	-0.0030 ppm	460.5874 ppm	-0.0508 ppm	-0.0003 ppm
Concentration per Run 3	0.0000 ppm	-0.0024 ppm	-0.0017 ppm	-0.0033 ppm	463.0208 ppm	-0.0392 ppm	0.0015 ppm
Concentration RSD	306.3 %	9.2 %	7.8 %	6.3 %	0.3 %	13.8 %	130.9 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0291 ppm	0.0005 ppm	-0.0024 ppm	0.0237 ppm	-0.0021 ppm	0.0007 ppm	0.0104 ppm
Concentration per Run 1	0.0279 ppm	0.0006 ppm	-0.0023 ppm	0.0246 ppm	-0.0019 ppm	0.0001 ppm	0.0074 ppm
Concentration per Run 2	0.0301 ppm	0.0005 ppm	-0.0022 ppm	0.0232 ppm	-0.0020 ppm	0.0007 ppm	0.0130 ppm
Concentration per Run 3	0.0293 ppm	0.0002 ppm	-0.0026 ppm	0.0234 ppm	-0.0024 ppm	0.0013 ppm	0.0107 ppm
Concentration RSD	4.0 %	45.3 %	9.2 %	3.0 %	13.6 %	82.2 %	27.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0005 ppm	-0.0182 ppm	0.0027 ppm	0.0004 ppm	-0.0005 ppm	-0.0006 ppm	0.0003 ppm
Concentration per Run 1	-0.0007 ppm	-0.0171 ppm	0.0027 ppm	0.0005 ppm	-0.0003 ppm	-0.0019 ppm	0.0000 ppm
Concentration per Run 2	0.0019 ppm	-0.0186 ppm	0.0025 ppm	0.0004 ppm	-0.0006 ppm	-0.0012 ppm	0.0006 ppm
Concentration per Run 3	0.0001 ppm	-0.0191 ppm	0.0027 ppm	0.0005 ppm	-0.0005 ppm	0.0013 ppm	0.0005 ppm
Concentration RSD	292.5 %	5.7 %	4.0 %	8.7 %	25.1 %	283.0 %	92.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	-0.0006 ppm	97.7182 %	100.0119 %	87.6135 %	91.9571 %	98.9202 %	94.5726 %
Concentration per Run 1	-0.0008 ppm	97.1282 %	99.9427 %	87.8363 %	90.7482 %	98.9949 %	94.5173 %
Concentration per Run 2	-0.0007 ppm	97.7896 %	100.8694 %	87.6955 %	92.0988 %	99.8226 %	94.7320 %
Concentration per Run 3	-0.0004 ppm	98.2368 %	99.2235 %	87.3087 %	93.0243 %	97.9430 %	94.4686 %
Concentration RSD	29.1 %	0.6 %	0.8 %	0.3 %	1.2 %	1.0 %	0.1 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: LDR 20 As pass
Analysis started at: 9/10/2024 12:22:35 PM
Rack 1
Vial 6
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0003 ppm	-0.0027 ppm	19.1651 ppm	-0.0040 ppm	0.0000 ppm	0.0000 ppm	0.0047 ppm
Concentration per Run 1	-0.0004 ppm	-0.0029 ppm	19.1342 ppm	-0.0044 ppm	-0.0002 ppm	0.0000 ppm	0.0063 ppm
Concentration per Run 2	-0.0003 ppm	-0.0022 ppm	19.1815 ppm	-0.0039 ppm	0.0001 ppm	0.0000 ppm	0.0036 ppm
Concentration per Run 3	-0.0002 ppm	-0.0030 ppm	19.1796 ppm	-0.0037 ppm	0.0000 ppm	0.0000 ppm	0.0042 ppm
Concentration RSD	43.6 %	17.1 %	0.1 %	8.6 %	400.4 %	44.3 %	29.9 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0001 ppm	-0.0002 ppm	-0.0003 ppm	0.0004 ppm	0.0157 ppm	0.0089 ppm	-0.0002 ppm
Concentration per Run 1	0.0002 ppm	-0.0001 ppm	-0.0003 ppm	0.0004 ppm	0.0156 ppm	0.0252 ppm	-0.0013 ppm
Concentration per Run 2	0.0000 ppm	-0.0005 ppm	-0.0003 ppm	0.0005 ppm	0.0158 ppm	-0.0044 ppm	-0.0007 ppm
Concentration per Run 3	0.0001 ppm	0.0000 ppm	-0.0002 ppm	0.0005 ppm	0.0157 ppm	0.0060 ppm	0.0015 ppm
Concentration RSD	116.6 %	107.5 %	31.1 %	17.2 %	0.7 %	167.9 %	938.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0009 ppm	0.0002 ppm	0.0002 ppm	0.0287 ppm	0.0001 ppm	0.0004 ppm	0.0009 ppm
Concentration per Run 1	0.0006 ppm	0.0002 ppm	0.0004 ppm	0.0277 ppm	0.0003 ppm	0.0002 ppm	0.0002 ppm
Concentration per Run 2	0.0021 ppm	0.0002 ppm	0.0000 ppm	0.0286 ppm	0.0000 ppm	0.0003 ppm	0.0001 ppm
Concentration per Run 3	0.0000 ppm	0.0002 ppm	0.0002 ppm	0.0297 ppm	0.0000 ppm	0.0007 ppm	0.0024 ppm
Concentration RSD	121.4 %	7.5 %	92.1 %	3.4 %	143.5 %	56.9 %	140.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0000 ppm	-0.0194 ppm	0.0001 ppm	0.0001 ppm	-0.0006 ppm	-0.0009 ppm	0.0000 ppm
Concentration per Run 1	-0.0002 ppm	-0.0191 ppm	0.0006 ppm	0.0001 ppm	-0.0007 ppm	-0.0009 ppm	0.0000 ppm
Concentration per Run 2	0.0016 ppm	-0.0192 ppm	-0.0003 ppm	0.0001 ppm	-0.0004 ppm	-0.0005 ppm	0.0000 ppm
Concentration per Run 3	-0.0012 ppm	-0.0197 ppm	0.0001 ppm	0.0001 ppm	-0.0005 ppm	-0.0013 ppm	-0.0001 ppm
Concentration RSD	3,393.8 %	1.6 %	372.3 %	34.9 %	26.4 %	42.4 %	143.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0008 ppm	98.9326 %	101.0168 %	99.5126 %	97.7353 %	100.3294 %	99.2669 %
Concentration per Run 1	0.0009 ppm	97.4308 %	101.0297 %	99.1282 %	97.0360 %	100.3163 %	98.8999 %
Concentration per Run 2	0.0009 ppm	98.9536 %	100.8349 %	99.7536 %	97.8006 %	99.8513 %	99.5540 %
Concentration per Run 3	0.0007 ppm	100.4133 %	101.1858 %	99.6560 %	98.3694 %	100.8206 %	99.3469 %
Concentration RSD	17.0 %	1.5 %	0.2 %	0.3 %	0.7 %	0.5 %	0.3 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: LDR 20 B pass
Analysis started at: 9/10/2024 12:27:32 PM
Rack 1
Vial 7
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0003 ppm	-0.0039 ppm	0.0015 ppm	18.2129 ppm	0.0000 ppm	0.0000 ppm	0.0037 ppm
Concentration per Run 1	-0.0004 ppm	-0.0017 ppm	0.0016 ppm	18.5629 ppm	0.0001 ppm	0.0000 ppm	0.0046 ppm
Concentration per Run 2	-0.0005 ppm	-0.0058 ppm	0.0017 ppm	18.0999 ppm	0.0000 ppm	0.0000 ppm	0.0014 ppm
Concentration per Run 3	-0.0001 ppm	-0.0043 ppm	0.0011 ppm	17.9758 ppm	-0.0001 ppm	0.0000 ppm	0.0051 ppm
Concentration RSD	52.6 %	52.2 %	22.1 %	1.7 %	354.8 %	551.7 %	55.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0001 ppm	-0.0002 ppm	0.0003 ppm	0.0017 ppm	-0.0142 ppm	-0.0005 ppm
Concentration per Run 1	0.0000 ppm	0.0002 ppm	-0.0001 ppm	0.0004 ppm	0.0016 ppm	-0.0045 ppm	-0.0013 ppm
Concentration per Run 2	0.0001 ppm	-0.0003 ppm	-0.0002 ppm	0.0002 ppm	0.0009 ppm	-0.0283 ppm	-0.0007 ppm
Concentration per Run 3	0.0001 ppm	0.0000 ppm	-0.0002 ppm	0.0004 ppm	0.0026 ppm	-0.0099 ppm	0.0007 ppm
Concentration RSD	79.0 %	496.6 %	25.0 %	29.2 %	48.6 %	87.5 %	218.0 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0000 ppm	0.0002 ppm	0.0004 ppm	0.0168 ppm	0.0001 ppm	0.0002 ppm	0.0008 ppm
Concentration per Run 1	0.0002 ppm	0.0002 ppm	0.0003 ppm	0.0183 ppm	-0.0002 ppm	0.0003 ppm	0.0017 ppm
Concentration per Run 2	-0.0004 ppm	0.0002 ppm	0.0005 ppm	0.0192 ppm	0.0000 ppm	0.0005 ppm	0.0013 ppm
Concentration per Run 3	0.0003 ppm	0.0002 ppm	0.0004 ppm	0.0129 ppm	0.0006 ppm	-0.0003 ppm	-0.0006 ppm
Concentration RSD	1,484.7 %	0.6 %	24.7 %	20.5 %	301.8 %	266.5 %	157.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0002 ppm	-0.0198 ppm	0.0001 ppm	0.0001 ppm	-0.0005 ppm	-0.0009 ppm	0.0000 ppm
Concentration per Run 1	0.0002 ppm	-0.0191 ppm	0.0004 ppm	0.0000 ppm	-0.0004 ppm	-0.0013 ppm	-0.0001 ppm
Concentration per Run 2	-0.0015 ppm	-0.0195 ppm	-0.0003 ppm	0.0002 ppm	-0.0005 ppm	-0.0006 ppm	0.0000 ppm
Concentration per Run 3	0.0008 ppm	-0.0208 ppm	0.0001 ppm	0.0001 ppm	-0.0006 ppm	-0.0007 ppm	0.0001 ppm
Concentration RSD	738.4 %	4.5 %	660.4 %	121.5 %	24.8 %	44.0 %	290.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0005 ppm	100.1211 %	101.8460 %	100.0077 %	98.3987 %	101.2513 %	99.6255 %
Concentration per Run 1	0.0006 ppm	98.3003 %	101.6309 %	99.7759 %	97.1703 %	100.2559 %	99.4044 %
Concentration per Run 2	0.0006 ppm	100.8114 %	101.9618 %	100.3060 %	98.9680 %	102.1684 %	99.7903 %
Concentration per Run 3	0.0004 ppm	101.2514 %	101.9453 %	99.9412 %	99.0578 %	101.3295 %	99.6817 %
Concentration RSD	26.3 %	1.6 %	0.2 %	0.3 %	1.1 %	0.9 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCV
Analysis started at: 9/10/2024 12:36:50 PM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.5031 ppm	0.4810 ppm	0.4822 ppm	0.4727 ppm	0.5033 ppm	0.5150 ppm	0.4964 ppm
Concentration per Run 1	0.5055 ppm	0.4771 ppm	0.4810 ppm	0.4719 ppm	0.5054 ppm	0.5142 ppm	0.4971 ppm
Concentration per Run 2	0.5035 ppm	0.4830 ppm	0.4836 ppm	0.4715 ppm	0.5019 ppm	0.5146 ppm	0.4960 ppm
Concentration per Run 3	0.5003 ppm	0.4831 ppm	0.4819 ppm	0.4747 ppm	0.5027 ppm	0.5161 ppm	0.4960 ppm
Recovery Percentage 1	100.626 %	96.210 %	96.434 %	94.538 %	100.670 %	102.996 %	99.275 %
Concentration RSD	0.5 %	0.7 %	0.3 %	0.4 %	0.4 %	0.2 %	0.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.4976 ppm	0.5082 ppm	0.4925 ppm	0.4879 ppm	0.5078 ppm	5.1785 ppm	0.5086 ppm
Concentration per Run 1	0.4988 ppm	0.5105 ppm	0.4949 ppm	0.4895 ppm	0.5081 ppm	5.2104 ppm	0.5140 ppm
Concentration per Run 2	0.4978 ppm	0.5070 ppm	0.4936 ppm	0.4867 ppm	0.5073 ppm	5.2081 ppm	0.5042 ppm
Concentration per Run 3	0.4963 ppm	0.5070 ppm	0.4889 ppm	0.4873 ppm	0.5079 ppm	5.1169 ppm	0.5078 ppm
Recovery Percentage 1	99.523 %	101.632 %	98.491 %	97.572 %	101.555 %	103.569 %	101.730 %
Concentration RSD	0.2 %	0.4 %	0.6 %	0.3 %	0.1 %	1.0 %	1.0 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.4956 ppm	0.4962 ppm	0.5006 ppm	10.1545 ppm	0.5071 ppm	0.4871 ppm	0.4914 ppm
Concentration per Run 1	0.4968 ppm	0.4947 ppm	0.4969 ppm	10.0833 ppm	0.5100 ppm	0.4849 ppm	0.4882 ppm
Concentration per Run 2	0.4963 ppm	0.4977 ppm	0.5021 ppm	10.2048 ppm	0.5077 ppm	0.4887 ppm	0.4903 ppm
Concentration per Run 3	0.4936 ppm	0.4962 ppm	0.5028 ppm	10.1753 ppm	0.5035 ppm	0.4876 ppm	0.4957 ppm
Recovery Percentage 1	99.112 %	99.239 %	100.119 %	101.545 %	101.416 %	97.413 %	98.280 %
Concentration RSD	0.3 %	0.3 %	0.6 %	0.6 %	0.7 %	0.4 %	0.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4782 ppm	5.1950 ppm	0.5226 ppm	0.5256 ppm	0.5014 ppm	0.4806 ppm	0.4929 ppm
Concentration per Run 1	0.4767 ppm	5.2058 ppm	0.5251 ppm	0.5251 ppm	0.5021 ppm	0.4796 ppm	0.4951 ppm
Concentration per Run 2	0.4799 ppm	5.2011 ppm	0.5222 ppm	0.5252 ppm	0.5026 ppm	0.4812 ppm	0.4924 ppm
Concentration per Run 3	0.4781 ppm	5.1782 ppm	0.5206 ppm	0.5267 ppm	0.4996 ppm	0.4811 ppm	0.4913 ppm
Recovery Percentage 1	95.650 %	98.953 %	104.524 %	105.129 %	100.288 %	96.126 %	98.590 %
Concentration RSD	0.3 %	0.3 %	0.4 %	0.2 %	0.3 %	0.2 %	0.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4970 ppm	101.4411 %	102.0613 %	97.9447 %	96.7417 %	100.3399 %	97.7183 %
Concentration per Run 1	0.5018 ppm	100.9602 %	101.9983 %	98.2961 %	96.1722 %	100.0227 %	97.9039 %
Concentration per Run 2	0.4963 ppm	101.7080 %	101.8766 %	97.5763 %	96.7984 %	100.3615 %	97.7185 %
Concentration per Run 3	0.4928 ppm	101.6551 %	102.3090 %	97.9617 %	97.2546 %	100.6356 %	97.5327 %
Recovery Percentage 1	99.393 %						
Concentration RSD	0.9 %	0.4 %	0.2 %	0.4 %	0.6 %	0.3 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCB
Analysis started at: 9/10/2024 12:40:51 PM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0005 ppm	0.0006 ppm	0.0001 ppm	0.0000 ppm	0.0000 ppm	0.0150 ppm
Concentration per Run 1	-0.0001 ppm	-0.0012 ppm	0.0002 ppm	0.0006 ppm	0.0000 ppm	0.0000 ppm	0.0152 ppm
Concentration per Run 2	0.0001 ppm	0.0018 ppm	0.0005 ppm	-0.0001 ppm	0.0000 ppm	0.0000 ppm	0.0157 ppm
Concentration per Run 3	0.0000 ppm	-0.0020 ppm	0.0011 ppm	-0.0002 ppm	-0.0001 ppm	0.0000 ppm	0.0141 ppm
Recovery Percentage 1	0.192 %	-0.460 %	19.720 %	0.342 %	-0.320 %	-0.304 %	14.994 %
Concentration RSD	567.2 %	434.2 %	75.3 %	386.9 %	114.0 %	175.4 %	5.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0005 ppm	0.0001 ppm	0.0007 ppm	0.0053 ppm	0.0049 ppm	-0.0003 ppm
Concentration per Run 1	0.0000 ppm	-0.0004 ppm	0.0001 ppm	0.0007 ppm	0.0045 ppm	0.0134 ppm	-0.0003 ppm
Concentration per Run 2	0.0000 ppm	-0.0008 ppm	0.0001 ppm	0.0006 ppm	0.0056 ppm	-0.0008 ppm	0.0004 ppm
Concentration per Run 3	0.0000 ppm	-0.0004 ppm	-0.0001 ppm	0.0008 ppm	0.0056 ppm	0.0021 ppm	-0.0012 ppm
Recovery Percentage 1	0.128 %	-2.557 %	0.630 %	6.825 %	10.501 %	0.197 %	-3.415 %
Concentration RSD	480.3 %	43.2 %	160.7 %	13.6 %	12.2 %	152.3 %	232.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0052 ppm	0.0003 ppm	0.0017 ppm	0.0168 ppm	0.0003 ppm	0.0000 ppm	0.0008 ppm
Concentration per Run 1	0.0065 ppm	0.0003 ppm	0.0017 ppm	0.0194 ppm	0.0001 ppm	0.0008 ppm	0.0011 ppm
Concentration per Run 2	0.0046 ppm	0.0003 ppm	0.0015 ppm	0.0165 ppm	0.0004 ppm	-0.0001 ppm	0.0014 ppm
Concentration per Run 3	0.0045 ppm	0.0004 ppm	0.0020 ppm	0.0144 ppm	0.0004 ppm	-0.0008 ppm	-0.0001 ppm
Recovery Percentage 1	5.188 %	3.119 %	3.493 %	0.839 %	1.180 %	-0.362 %	1.574 %
Concentration RSD	21.6 %	14.6 %	12.7 %	14.9 %	50.5 %	2,188.7 %	102.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0004 ppm	-0.0085 ppm	-0.0002 ppm	0.0000 ppm	-0.0004 ppm	-0.0007 ppm	0.0000 ppm
Concentration per Run 1	-0.0011 ppm	-0.0191 ppm	-0.0001 ppm	0.0000 ppm	-0.0003 ppm	-0.0004 ppm	0.0000 ppm
Concentration per Run 2	0.0020 ppm	-0.0199 ppm	-0.0004 ppm	0.0001 ppm	-0.0005 ppm	-0.0007 ppm	-0.0001 ppm
Concentration per Run 3	0.0003 ppm	0.0136 ppm	-0.0002 ppm	0.0000 ppm	-0.0003 ppm	-0.0010 ppm	0.0001 ppm
Recovery Percentage 1	3.931 %	-1.693 %	-0.436 %	0.431 %	-3.694 %	-3.373 %	-0.015 %
Concentration RSD	402.7 %	225.7 %	78.5 %	100.9 %	25.8 %	47.2 %	6,916.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0013 ppm	96.6718 %	98.8354 %	97.8814 %	97.3066 %	99.7276 %	98.3596 %
Concentration per Run 1	0.0013 ppm	94.6814 %	97.9559 %	97.5857 %	96.2288 %	99.3387 %	98.4744 %
Concentration per Run 2	0.0013 ppm	97.2970 %	99.1534 %	97.9196 %	97.6659 %	99.8304 %	98.4526 %
Concentration per Run 3	0.0012 ppm	98.0371 %	99.3969 %	98.1391 %	98.0252 %	100.0137 %	98.1517 %
Recovery Percentage 1	25.152 %						
Concentration RSD	6.1 %	1.8 %	0.8 %	0.3 %	1.0 %	0.3 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1969482-1 WG1969482
Analysis started at: 9/10/2024 12:46:00 PM
Rack 1
Vial 8
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0001 ppm	0.0048 ppm	-0.0007 ppm	0.0000 ppm	0.0001 ppm	0.0000 ppm	0.0125 ppm
Concentration per Run 1	0.0001 ppm	0.0055 ppm	-0.0003 ppm	-0.0004 ppm	0.0000 ppm	0.0000 ppm	0.0125 ppm
Concentration per Run 2	-0.0003 ppm	0.0057 ppm	-0.0011 ppm	0.0001 ppm	0.0000 ppm	0.0000 ppm	0.0126 ppm
Concentration per Run 3	-0.0001 ppm	0.0032 ppm	-0.0007 ppm	0.0003 ppm	0.0002 ppm	0.0000 ppm	0.0124 ppm
Recovery Percentage 1	-1.554 %	4.794 %	-24.273 %	-0.090 %	0.847 %	0.232 %	12.521 %
Concentration RSD	169.4 %	28.0 %	55.4 %	1,405.1 %	149.3 %	343.2 %	1.0 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0001 ppm	0.0001 ppm	0.0007 ppm	0.0144 ppm	-0.0008 ppm	0.0001 ppm
Concentration per Run 1	0.0000 ppm	0.0002 ppm	-0.0001 ppm	0.0009 ppm	0.0147 ppm	0.0038 ppm	-0.0007 ppm
Concentration per Run 2	0.0000 ppm	-0.0002 ppm	0.0001 ppm	0.0007 ppm	0.0150 ppm	-0.0070 ppm	0.0001 ppm
Concentration per Run 3	0.0001 ppm	-0.0003 ppm	0.0001 ppm	0.0006 ppm	0.0136 ppm	0.0008 ppm	0.0010 ppm
Recovery Percentage 1	0.336 %	-0.498 %	0.515 %	7.247 %	28.844 %	-0.031 %	1.254 %
Concentration RSD	366.9 %	278.0 %	195.3 %	24.1 %	5.0 %	714.8 %	700.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0046 ppm	0.0003 ppm	0.0003 ppm	0.0174 ppm	0.0001 ppm	-0.0002 ppm	-0.0010 ppm
Concentration per Run 1	0.0039 ppm	0.0003 ppm	0.0004 ppm	0.0178 ppm	0.0004 ppm	-0.0004 ppm	-0.0028 ppm
Concentration per Run 2	0.0047 ppm	0.0004 ppm	0.0003 ppm	0.0155 ppm	-0.0001 ppm	-0.0004 ppm	0.0004 ppm
Concentration per Run 3	0.0050 ppm	0.0003 ppm	0.0003 ppm	0.0188 ppm	0.0000 ppm	0.0003 ppm	-0.0005 ppm
Recovery Percentage 1	4.558 %	3.440 %	0.696 %	0.868 %	0.367 %	-1.775 %	-1.914 %
Concentration RSD	13.1 %	25.9 %	4.5 %	9.9 %	336.4 %	214.6 %	174.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0008 ppm	-0.0137 ppm	0.0007 ppm	0.0000 ppm	-0.0002 ppm	-0.0009 ppm	0.0000 ppm
Concentration per Run 1	-0.0001 ppm	-0.0140 ppm	0.0009 ppm	0.0000 ppm	-0.0001 ppm	-0.0009 ppm	-0.0001 ppm
Concentration per Run 2	0.0008 ppm	-0.0139 ppm	0.0003 ppm	0.0001 ppm	-0.0004 ppm	-0.0013 ppm	0.0002 ppm
Concentration per Run 3	0.0016 ppm	-0.0131 ppm	0.0010 ppm	0.0000 ppm	-0.0003 ppm	-0.0005 ppm	0.0001 ppm
Recovery Percentage 1	7.707 %	-2.741 %	1.462 %	0.240 %	-2.405 %	-4.543 %	0.340 %
Concentration RSD	111.2 %	3.6 %	55.7 %	299.5 %	51.2 %	43.6 %	441.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0009 ppm	99.2751 %	101.1206 %	97.9497 %	97.3992 %	100.6831 %	98.3580 %
Concentration per Run 1	0.0010 ppm	98.5335 %	101.3368 %	97.9326 %	96.9820 %	100.7405 %	98.3930 %
Concentration per Run 2	0.0009 ppm	99.2962 %	100.6895 %	98.0787 %	97.2402 %	100.3992 %	98.1588 %
Concentration per Run 3	0.0009 ppm	99.9956 %	101.3354 %	97.8378 %	97.9754 %	100.9097 %	98.5222 %
Recovery Percentage 1	18.570 %						
Concentration RSD	6.6 %	0.7 %	0.4 %	0.1 %	0.5 %	0.3 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1969482-2D2 WG1969482
Analysis started at: 9/10/2024 12:49:58 PM
Rack 1
Vial 9
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0511 ppm	2.0003 ppm	0.1194 ppm	0.9856 ppm	2.0459 ppm	0.0523 ppm	10.3574 ppm
Concentration per Run 1	0.0515 ppm	2.0155 ppm	0.1195 ppm	0.9963 ppm	2.0483 ppm	0.0526 ppm	10.4015 ppm
Concentration per Run 2	0.0514 ppm	1.9870 ppm	0.1187 ppm	0.9830 ppm	2.0378 ppm	0.0520 ppm	10.2901 ppm
Concentration per Run 3	0.0505 ppm	1.9985 ppm	0.1199 ppm	0.9774 ppm	2.0515 ppm	0.0522 ppm	10.3806 ppm
Concentration RSD	1.0 %	0.7 %	0.6 %	1.0 %	0.3 %	0.6 %	0.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0538 ppm	0.5127 ppm	0.2025 ppm	0.2581 ppm	1.0476 ppm	10.7502 ppm	0.0006 ppm
Concentration per Run 1	0.0543 ppm	0.5177 ppm	0.2045 ppm	0.2612 ppm	1.0533 ppm	10.7608 ppm	0.0009 ppm
Concentration per Run 2	0.0537 ppm	0.5114 ppm	0.2017 ppm	0.2569 ppm	1.0439 ppm	10.7541 ppm	0.0005 ppm
Concentration per Run 3	0.0535 ppm	0.5090 ppm	0.2012 ppm	0.2563 ppm	1.0456 ppm	10.7356 ppm	0.0005 ppm
Concentration RSD	0.7 %	0.9 %	0.9 %	1.0 %	0.5 %	0.1 %	29.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	10.3367 ppm	0.5132 ppm	1.0500 ppm	10.4874 ppm	0.5175 ppm	0.5249 ppm	0.5188 ppm
Concentration per Run 1	10.4340 ppm	0.5166 ppm	1.0546 ppm	10.5061 ppm	0.5238 ppm	0.5238 ppm	0.5244 ppm
Concentration per Run 2	10.3185 ppm	0.5101 ppm	1.0479 ppm	10.4284 ppm	0.5144 ppm	0.5257 ppm	0.5191 ppm
Concentration per Run 3	10.2574 ppm	0.5129 ppm	1.0474 ppm	10.5276 ppm	0.5143 ppm	0.5253 ppm	0.5128 ppm
Concentration RSD	0.9 %	0.6 %	0.4 %	0.5 %	1.1 %	0.2 %	1.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1172 ppm	0.6046 ppm	1.0602 ppm	1.0303 ppm	1.0512 ppm	0.1156 ppm	0.5158 ppm
Concentration per Run 1	0.1159 ppm	0.6088 ppm	1.0719 ppm	1.0356 ppm	1.0648 ppm	0.1148 ppm	0.5204 ppm
Concentration per Run 2	0.1181 ppm	0.6035 ppm	1.0580 ppm	1.0257 ppm	1.0468 ppm	0.1170 ppm	0.5146 ppm
Concentration per Run 3	0.1176 ppm	0.6016 ppm	1.0507 ppm	1.0294 ppm	1.0420 ppm	0.1149 ppm	0.5125 ppm
Concentration RSD	1.0 %	0.6 %	1.0 %	0.5 %	1.1 %	1.1 %	0.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5127 ppm	98.5842 %	100.1577 %	94.5621 %	94.3962 %	98.4852 %	95.8904 %
Concentration per Run 1	0.5205 ppm	97.6767 %	99.8265 %	94.7491 %	93.5999 %	98.6029 %	95.8692 %
Concentration per Run 2	0.5114 ppm	98.7938 %	100.5742 %	94.3977 %	94.4735 %	98.5860 %	95.9031 %
Concentration per Run 3	0.5063 ppm	99.2821 %	100.0723 %	94.5395 %	95.1152 %	98.2667 %	95.8988 %
Concentration RSD	1.4 %	0.8 %	0.4 %	0.2 %	0.8 %	0.2 %	0.0 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2451280-01D2 WG1969482
Analysis started at: 9/10/2024 12:53:54 PM
Rack 1
Vial 10
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0004 ppm	46.1057 ppm	0.0098 ppm	0.0121 ppm	0.1326 ppm	0.0028 ppm	16.6964 ppm
Concentration per Run 1	0.0004 ppm	46.0489 ppm	0.0111 ppm	0.0118 ppm	0.1323 ppm	0.0028 ppm	16.6432 ppm
Concentration per Run 2	0.0005 ppm	46.0987 ppm	0.0084 ppm	0.0132 ppm	0.1323 ppm	0.0028 ppm	16.6948 ppm
Concentration per Run 3	0.0003 ppm	46.1696 ppm	0.0099 ppm	0.0113 ppm	0.1330 ppm	0.0028 ppm	16.7513 ppm
Concentration RSD	22.7 %	0.1 %	13.7 %	7.9 %	0.3 %	1.3 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0004 ppm	0.0458 ppm	0.1112 ppm	0.0853 ppm	94.8309 ppm	4.7825 ppm	0.0505 ppm
Concentration per Run 1	0.0004 ppm	0.0466 ppm	0.1130 ppm	0.0865 ppm	94.4959 ppm	4.8093 ppm	0.0529 ppm
Concentration per Run 2	0.0004 ppm	0.0456 ppm	0.1110 ppm	0.0848 ppm	95.1732 ppm	4.7743 ppm	0.0490 ppm
Concentration per Run 3	0.0005 ppm	0.0453 ppm	0.1096 ppm	0.0847 ppm	94.8235 ppm	4.7637 ppm	0.0496 ppm
Concentration RSD	8.8 %	1.5 %	1.5 %	1.2 %	0.4 %	0.5 %	4.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	16.9202 ppm	1.4570 ppm	0.0039 ppm	1.0535 ppm	0.1510 ppm	0.0324 ppm	0.0016 ppm
Concentration per Run 1	17.1241 ppm	1.4528 ppm	0.0042 ppm	1.0545 ppm	0.1537 ppm	0.0322 ppm	0.0021 ppm
Concentration per Run 2	16.8718 ppm	1.4583 ppm	0.0036 ppm	1.0475 ppm	0.1501 ppm	0.0321 ppm	0.0008 ppm
Concentration per Run 3	16.7647 ppm	1.4600 ppm	0.0038 ppm	1.0585 ppm	0.1492 ppm	0.0329 ppm	0.0019 ppm
Concentration RSD	1.1 %	0.3 %	7.0 %	0.5 %	1.6 %	1.4 %	41.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0009 ppm	4.1160 ppm	0.0023 ppm	0.0755 ppm	1.9752 ppm	0.0021 ppm	0.1534 ppm
Concentration per Run 1	-0.0011 ppm	4.2460 ppm	0.0027 ppm	0.0755 ppm	2.0060 ppm	0.0029 ppm	0.1556 ppm
Concentration per Run 2	-0.0011 ppm	4.1066 ppm	0.0021 ppm	0.0749 ppm	1.9649 ppm	0.0018 ppm	0.1536 ppm
Concentration per Run 3	-0.0006 ppm	3.9954 ppm	0.0021 ppm	0.0761 ppm	1.9548 ppm	0.0016 ppm	0.1510 ppm
Concentration RSD	32.2 %	3.1 %	15.5 %	0.8 %	1.4 %	33.7 %	1.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.1895 ppm	104.1770 %	105.4331 %	95.6962 %	108.6584 %	113.3491 %	109.6148 %
Concentration per Run 1	0.1911 ppm	102.9072 %	106.0852 %	95.6936 %	107.1838 %	113.9031 %	109.5137 %
Concentration per Run 2	0.1895 ppm	104.7189 %	105.7377 %	95.7123 %	109.6212 %	113.1631 %	109.6927 %
Concentration per Run 3	0.1879 ppm	104.9049 %	104.4764 %	95.6827 %	109.1702 %	112.9810 %	109.6379 %
Concentration RSD	0.8 %	1.1 %	0.8 %	0.0 %	1.2 %	0.4 %	0.1 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1969482-3D2 WG1969482
Analysis started at: 9/10/2024 12:57:52 PM
Rack 1
Vial 11
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0498 ppm	50.7265 ppm	0.1332 ppm	0.9196 ppm	2.0791 ppm	0.0527 ppm	208.1529 ppm
Concentration per Run 1	0.0503 ppm	50.8982 ppm	0.1337 ppm	0.9251 ppm	2.0887 ppm	0.0527 ppm	208.1508 ppm
Concentration per Run 2	0.0499 ppm	50.8410 ppm	0.1320 ppm	0.9163 ppm	2.0931 ppm	0.0521 ppm	207.0218 ppm
Concentration per Run 3	0.0492 ppm	50.4404 ppm	0.1338 ppm	0.9173 ppm	2.0555 ppm	0.0534 ppm	209.2862 ppm
Concentration RSD	1.1 %	0.5 %	0.7 %	0.5 %	1.0 %	1.3 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0477 ppm	0.5043 ppm	0.3104 ppm	0.3490 ppm	100.8374 ppm	15.8053 ppm	0.0545 ppm
Concentration per Run 1	0.0479 ppm	0.5086 ppm	0.3121 ppm	0.3516 ppm	101.2595 ppm	15.9399 ppm	0.0560 ppm
Concentration per Run 2	0.0479 ppm	0.5032 ppm	0.3111 ppm	0.3470 ppm	101.8274 ppm	15.9033 ppm	0.0545 ppm
Concentration per Run 3	0.0474 ppm	0.5011 ppm	0.3078 ppm	0.3484 ppm	99.4254 ppm	15.5727 ppm	0.0529 ppm
Concentration RSD	0.6 %	0.8 %	0.7 %	0.7 %	1.2 %	1.3 %	2.9 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	34.4488 ppm	2.0785 ppm	0.9746 ppm	11.1971 ppm	0.6154 ppm	0.5519 ppm	0.4778 ppm
Concentration per Run 1	34.7178 ppm	2.0789 ppm	0.9713 ppm	11.2476 ppm	0.6166 ppm	0.5513 ppm	0.4861 ppm
Concentration per Run 2	34.5220 ppm	2.0765 ppm	0.9732 ppm	11.3549 ppm	0.6162 ppm	0.5501 ppm	0.4728 ppm
Concentration per Run 3	34.1064 ppm	2.0801 ppm	0.9794 ppm	10.9890 ppm	0.6133 ppm	0.5542 ppm	0.4744 ppm
Concentration RSD	0.9 %	0.1 %	0.4 %	1.7 %	0.3 %	0.4 %	1.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1176 ppm	7.2235 ppm	0.9448 ppm	2.0092 ppm	3.0981 ppm	0.1159 ppm	0.6417 ppm
Concentration per Run 1	0.1189 ppm	7.3384 ppm	0.9486 ppm	2.0080 ppm	3.1157 ppm	0.1148 ppm	0.6486 ppm
Concentration per Run 2	0.1162 ppm	7.2016 ppm	0.9466 ppm	1.9824 ppm	3.0952 ppm	0.1162 ppm	0.6409 ppm
Concentration per Run 3	0.1177 ppm	7.1304 ppm	0.9392 ppm	2.0371 ppm	3.0832 ppm	0.1166 ppm	0.6355 ppm
Concentration RSD	1.1 %	1.5 %	0.5 %	1.4 %	0.5 %	0.8 %	1.0 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.6418 ppm	98.9599 %	102.8650 %	86.9782 %	104.5724 %	112.5604 %	105.8682 %
Concentration per Run 1	0.6445 ppm	98.0620 %	103.2668 %	87.2627 %	103.4575 %	113.1361 %	106.0086 %
Concentration per Run 2	0.6422 ppm	99.1877 %	102.8440 %	87.1370 %	104.3637 %	111.7975 %	106.1465 %
Concentration per Run 3	0.6387 ppm	99.6300 %	102.4841 %	86.5349 %	105.8959 %	112.7475 %	105.4495 %
Concentration RSD	0.5 %	0.8 %	0.4 %	0.4 %	1.2 %	0.6 %	0.3 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1969482-4D2 WG1969482
Analysis started at: 9/10/2024 1:01:49 PM
Rack 1
Vial 12
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0002 ppm	47.4769 ppm	0.0133 ppm	0.0116 ppm	0.1357 ppm	0.0029 ppm	33.6441 ppm
Concentration per Run 1	0.0004 ppm	47.2395 ppm	0.0129 ppm	0.0123 ppm	0.1359 ppm	0.0029 ppm	33.5285 ppm
Concentration per Run 2	0.0003 ppm	47.6337 ppm	0.0124 ppm	0.0108 ppm	0.1350 ppm	0.0029 ppm	33.7366 ppm
Concentration per Run 3	0.0000 ppm	47.5577 ppm	0.0146 ppm	0.0116 ppm	0.1363 ppm	0.0029 ppm	33.6673 ppm
Concentration RSD	77.7 %	0.4 %	8.4 %	6.1 %	0.5 %	0.8 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0002 ppm	0.0526 ppm	0.1135 ppm	0.0935 ppm	101.3540 ppm	5.3460 ppm	0.0578 ppm
Concentration per Run 1	0.0003 ppm	0.0530 ppm	0.1143 ppm	0.0945 ppm	101.3840 ppm	5.3378 ppm	0.0592 ppm
Concentration per Run 2	0.0002 ppm	0.0519 ppm	0.1133 ppm	0.0929 ppm	101.0673 ppm	5.3240 ppm	0.0553 ppm
Concentration per Run 3	0.0002 ppm	0.0528 ppm	0.1130 ppm	0.0930 ppm	101.6108 ppm	5.3762 ppm	0.0588 ppm
Concentration RSD	8.2 %	1.1 %	0.6 %	0.9 %	0.3 %	0.5 %	3.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	21.3170 ppm	1.5793 ppm	0.0037 ppm	1.0743 ppm	0.1694 ppm	0.0322 ppm	0.0023 ppm
Concentration per Run 1	21.4019 ppm	1.5737 ppm	0.0036 ppm	1.0722 ppm	0.1705 ppm	0.0326 ppm	-0.0005 ppm
Concentration per Run 2	21.3414 ppm	1.5837 ppm	0.0039 ppm	1.0776 ppm	0.1696 ppm	0.0319 ppm	0.0051 ppm
Concentration per Run 3	21.2076 ppm	1.5805 ppm	0.0035 ppm	1.0729 ppm	0.1681 ppm	0.0321 ppm	0.0024 ppm
Concentration RSD	0.5 %	0.3 %	5.3 %	0.3 %	0.7 %	1.2 %	119.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0002 ppm	5.3001 ppm	0.0026 ppm	0.1540 ppm	2.1690 ppm	0.0005 ppm	0.1588 ppm
Concentration per Run 1	-0.0011 ppm	5.4288 ppm	0.0035 ppm	0.1535 ppm	2.1812 ppm	0.0012 ppm	0.1594 ppm
Concentration per Run 2	0.0014 ppm	5.2439 ppm	0.0016 ppm	0.1543 ppm	2.1708 ppm	0.0006 ppm	0.1582 ppm
Concentration per Run 3	0.0003 ppm	5.2276 ppm	0.0027 ppm	0.1542 ppm	2.1550 ppm	-0.0003 ppm	0.1588 ppm
Concentration RSD	613.9 %	2.1 %	37.1 %	0.3 %	0.6 %	145.2 %	0.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.1838 ppm	103.4500 %	104.7515 %	94.6833 %	108.2727 %	113.8117 %	109.8764 %
Concentration per Run 1	0.1855 ppm	102.9739 %	104.7535 %	95.0820 %	107.9814 %	113.6572 %	110.4241 %
Concentration per Run 2	0.1835 ppm	103.6154 %	104.7392 %	94.6729 %	108.2017 %	113.6385 %	110.0803 %
Concentration per Run 3	0.1823 ppm	103.7608 %	104.7618 %	94.2949 %	108.6349 %	114.1395 %	109.1247 %
Concentration RSD	0.9 %	0.4 %	0.0 %	0.4 %	0.3 %	0.2 %	0.6 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1969482-5D2 WG1969482
Analysis started at: 9/10/2024 1:05:47 PM
Rack 1
Vial 13
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0506 ppm	47.2630 ppm	0.1234 ppm	0.9795 ppm	2.0895 ppm	0.0543 ppm	26.6338 ppm
Concentration per Run 1	0.0510 ppm	47.3564 ppm	0.1226 ppm	0.9899 ppm	2.0853 ppm	0.0547 ppm	26.7795 ppm
Concentration per Run 2	0.0503 ppm	47.0348 ppm	0.1226 ppm	0.9838 ppm	2.0875 ppm	0.0542 ppm	26.5461 ppm
Concentration per Run 3	0.0506 ppm	47.3978 ppm	0.1249 ppm	0.9649 ppm	2.0957 ppm	0.0541 ppm	26.5758 ppm
Concentration RSD	0.7 %	0.4 %	1.1 %	1.3 %	0.3 %	0.6 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0520 ppm	0.5391 ppm	0.3094 ppm	0.3425 ppm	94.3990 ppm	15.2674 ppm	0.0508 ppm
Concentration per Run 1	0.0527 ppm	0.5473 ppm	0.3141 ppm	0.3474 ppm	94.4622 ppm	15.2861 ppm	0.0520 ppm
Concentration per Run 2	0.0519 ppm	0.5374 ppm	0.3081 ppm	0.3418 ppm	94.0629 ppm	15.1056 ppm	0.0507 ppm
Concentration per Run 3	0.0514 ppm	0.5327 ppm	0.3060 ppm	0.3382 ppm	94.6718 ppm	15.4106 ppm	0.0498 ppm
Concentration RSD	1.2 %	1.4 %	1.4 %	1.3 %	0.3 %	1.0 %	2.1 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	27.0595 ppm	1.9125 ppm	1.0134 ppm	11.3950 ppm	0.6468 ppm	0.5735 ppm	0.4593 ppm
Concentration per Run 1	27.4713 ppm	1.9194 ppm	1.0114 ppm	11.4048 ppm	0.6576 ppm	0.5766 ppm	0.4617 ppm
Concentration per Run 2	26.9460 ppm	1.9088 ppm	1.0159 ppm	11.3710 ppm	0.6452 ppm	0.5753 ppm	0.4571 ppm
Concentration per Run 3	26.7611 ppm	1.9093 ppm	1.0129 ppm	11.4091 ppm	0.6374 ppm	0.5686 ppm	0.4592 ppm
Concentration RSD	1.4 %	0.3 %	0.2 %	0.2 %	1.6 %	0.7 %	0.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1123 ppm	5.3609 ppm	1.0302 ppm	1.1204 ppm	3.0205 ppm	0.1141 ppm	0.6554 ppm
Concentration per Run 1	0.1112 ppm	5.4960 ppm	1.0447 ppm	1.1223 ppm	3.0687 ppm	0.1152 ppm	0.6643 ppm
Concentration per Run 2	0.1120 ppm	5.4239 ppm	1.0248 ppm	1.1189 ppm	3.0039 ppm	0.1152 ppm	0.6548 ppm
Concentration per Run 3	0.1136 ppm	5.1627 ppm	1.0211 ppm	1.1200 ppm	2.9890 ppm	0.1120 ppm	0.6471 ppm
Concentration RSD	1.1 %	3.3 %	1.2 %	0.2 %	1.4 %	1.6 %	1.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.6872 ppm	101.5912 %	104.1809 %	91.6534 %	106.0840 %	112.4151 %	107.1314 %
Concentration per Run 1	0.6957 ppm	100.8535 %	103.3728 %	91.7588 %	105.0776 %	112.1696 %	106.8206 %
Concentration per Run 2	0.6870 ppm	102.1683 %	104.9634 %	91.5744 %	106.4868 %	112.5516 %	107.4224 %
Concentration per Run 3	0.6789 ppm	101.7519 %	104.2065 %	91.6271 %	106.6875 %	112.5240 %	107.1514 %
Concentration RSD	1.2 %	0.7 %	0.8 %	0.1 %	0.8 %	0.2 %	0.3 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1969482-6D10 WG1969482
Analysis started at: 9/10/2024 1:09:40 PM
Rack 1
Vial 14
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	10.0962 ppm	0.0017 ppm	0.0023 ppm	0.0287 ppm	0.0006 ppm	3.5850 ppm
Concentration per Run 1	0.0001 ppm	10.0987 ppm	0.0013 ppm	0.0029 ppm	0.0289 ppm	0.0005 ppm	3.5823 ppm
Concentration per Run 2	0.0000 ppm	10.1046 ppm	0.0015 ppm	0.0021 ppm	0.0285 ppm	0.0006 ppm	3.5939 ppm
Concentration per Run 3	0.0000 ppm	10.0852 ppm	0.0022 ppm	0.0018 ppm	0.0288 ppm	0.0006 ppm	3.5788 ppm
Concentration RSD	284.4 %	0.1 %	25.7 %	26.1 %	0.6 %	3.1 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0001 ppm	0.0101 ppm	0.0240 ppm	0.0184 ppm	21.1950 ppm	1.0614 ppm	0.0111 ppm
Concentration per Run 1	0.0002 ppm	0.0107 ppm	0.0239 ppm	0.0187 ppm	21.1160 ppm	1.0793 ppm	0.0127 ppm
Concentration per Run 2	0.0002 ppm	0.0101 ppm	0.0244 ppm	0.0182 ppm	21.2339 ppm	1.0503 ppm	0.0105 ppm
Concentration per Run 3	0.0000 ppm	0.0097 ppm	0.0237 ppm	0.0182 ppm	21.2351 ppm	1.0546 ppm	0.0102 ppm
Concentration RSD	79.6 %	5.0 %	1.7 %	1.6 %	0.3 %	1.5 %	12.3 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	3.6800 ppm	0.3157 ppm	0.0033 ppm	0.2469 ppm	0.0333 ppm	0.0065 ppm	0.0045 ppm
Concentration per Run 1	3.7297 ppm	0.3147 ppm	0.0034 ppm	0.2476 ppm	0.0339 ppm	0.0063 ppm	0.0031 ppm
Concentration per Run 2	3.6574 ppm	0.3165 ppm	0.0031 ppm	0.2466 ppm	0.0330 ppm	0.0074 ppm	0.0053 ppm
Concentration per Run 3	3.6527 ppm	0.3158 ppm	0.0035 ppm	0.2465 ppm	0.0330 ppm	0.0057 ppm	0.0051 ppm
Concentration RSD	1.2 %	0.3 %	5.5 %	0.2 %	1.6 %	13.3 %	26.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0001 ppm	0.9300 ppm	0.0011 ppm	0.0159 ppm	0.4275 ppm	-0.0010 ppm	0.0323 ppm
Concentration per Run 1	-0.0002 ppm	0.9906 ppm	0.0008 ppm	0.0160 ppm	0.4290 ppm	-0.0011 ppm	0.0324 ppm
Concentration per Run 2	-0.0009 ppm	0.8908 ppm	0.0012 ppm	0.0158 ppm	0.4260 ppm	-0.0011 ppm	0.0321 ppm
Concentration per Run 3	0.0008 ppm	0.9087 ppm	0.0013 ppm	0.0160 ppm	0.4275 ppm	-0.0008 ppm	0.0322 ppm
Concentration RSD	857.4 %	5.7 %	20.5 %	0.9 %	0.3 %	17.6 %	0.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0410 ppm	100.9116 %	101.5132 %	98.1288 %	99.9432 %	102.5223 %	100.8974 %
Concentration per Run 1	0.0418 ppm	99.6356 %	101.8463 %	97.7712 %	98.9529 %	102.7385 %	100.5111 %
Concentration per Run 2	0.0410 ppm	101.3802 %	100.5688 %	98.5206 %	100.7400 %	101.6695 %	101.2572 %
Concentration per Run 3	0.0402 ppm	101.7190 %	102.1247 %	98.0947 %	100.1367 %	103.1589 %	100.9239 %
Concentration RSD	1.9 %	1.1 %	0.8 %	0.4 %	0.9 %	0.7 %	0.4 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCV
Analysis started at: 9/10/2024 1:13:35 PM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.5091 ppm	0.4861 ppm	0.4827 ppm	0.4777 ppm	0.5113 ppm	0.5179 ppm	0.4989 ppm
Concentration per Run 1	0.5129 ppm	0.4882 ppm	0.4819 ppm	0.4829 ppm	0.5086 ppm	0.5173 ppm	0.5025 ppm
Concentration per Run 2	0.5084 ppm	0.4867 ppm	0.4824 ppm	0.4732 ppm	0.5135 ppm	0.5182 ppm	0.4991 ppm
Concentration per Run 3	0.5060 ppm	0.4834 ppm	0.4839 ppm	0.4769 ppm	0.5117 ppm	0.5181 ppm	0.4951 ppm
Recovery Percentage 1	101.823 %	97.219 %	96.545 %	95.537 %	102.254 %	103.573 %	99.778 %
Concentration RSD	0.7 %	0.5 %	0.2 %	1.0 %	0.5 %	0.1 %	0.7 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.5025 ppm	0.5136 ppm	0.4977 ppm	0.4948 ppm	0.5182 ppm	5.3425 ppm	0.5296 ppm
Concentration per Run 1	0.5065 ppm	0.5177 ppm	0.5009 ppm	0.4983 ppm	0.5172 ppm	5.3623 ppm	0.5286 ppm
Concentration per Run 2	0.5012 ppm	0.5124 ppm	0.4966 ppm	0.4940 ppm	0.5189 ppm	5.3261 ppm	0.5306 ppm
Concentration per Run 3	0.4998 ppm	0.5105 ppm	0.4956 ppm	0.4923 ppm	0.5184 ppm	5.3392 ppm	0.5296 ppm
Recovery Percentage 1	100.500 %	102.712 %	99.543 %	98.970 %	103.631 %	106.850 %	105.922 %
Concentration RSD	0.7 %	0.7 %	0.6 %	0.6 %	0.2 %	0.3 %	0.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.5012 ppm	0.4995 ppm	0.5074 ppm	10.2135 ppm	0.5124 ppm	0.4913 ppm	0.5047 ppm
Concentration per Run 1	0.5046 ppm	0.4982 ppm	0.5073 ppm	10.1577 ppm	0.5162 ppm	0.4914 ppm	0.5069 ppm
Concentration per Run 2	0.5008 ppm	0.5011 ppm	0.5063 ppm	10.2379 ppm	0.5112 ppm	0.4888 ppm	0.5041 ppm
Concentration per Run 3	0.4983 ppm	0.4994 ppm	0.5085 ppm	10.2450 ppm	0.5097 ppm	0.4936 ppm	0.5030 ppm
Recovery Percentage 1	100.246 %	99.906 %	101.479 %	102.135 %	102.477 %	98.252 %	100.933 %
Concentration RSD	0.6 %	0.3 %	0.2 %	0.5 %	0.7 %	0.5 %	0.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4816 ppm	5.2595 ppm	0.5300 ppm	0.5274 ppm	0.5089 ppm	0.4817 ppm	0.4994 ppm
Concentration per Run 1	0.4805 ppm	5.2991 ppm	0.5347 ppm	0.5276 ppm	0.5109 ppm	0.4829 ppm	0.5030 ppm
Concentration per Run 2	0.4838 ppm	5.2625 ppm	0.5289 ppm	0.5268 ppm	0.5092 ppm	0.4795 ppm	0.4980 ppm
Concentration per Run 3	0.4806 ppm	5.2169 ppm	0.5263 ppm	0.5279 ppm	0.5067 ppm	0.4827 ppm	0.4973 ppm
Recovery Percentage 1	96.330 %	100.181 %	105.994 %	105.486 %	101.790 %	96.345 %	99.880 %
Concentration RSD	0.4 %	0.8 %	0.8 %	0.1 %	0.4 %	0.4 %	0.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5012 ppm	100.2330 %	100.6947 %	97.2516 %	95.7008 %	99.0154 %	96.9008 %
Concentration per Run 1	0.5059 ppm	100.0560 %	101.0109 %	97.0969 %	95.2226 %	99.5794 %	96.6661 %
Concentration per Run 2	0.5006 ppm	99.9782 %	100.4837 %	97.2746 %	95.6141 %	98.9185 %	96.8077 %
Concentration per Run 3	0.4970 ppm	100.6650 %	100.5894 %	97.3834 %	96.2657 %	98.5481 %	97.2285 %
Recovery Percentage 1	100.230 %						
Concentration RSD	0.9 %	0.4 %	0.3 %	0.1 %	0.6 %	0.5 %	0.3 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCB
Analysis started at: 9/10/2024 1:17:31 PM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0001 ppm	-0.0002 ppm	0.0003 ppm	-0.0001 ppm	0.0000 ppm	0.0000 ppm	0.0159 ppm
Concentration per Run 1	-0.0001 ppm	-0.0031 ppm	0.0002 ppm	0.0002 ppm	0.0000 ppm	0.0000 ppm	0.0149 ppm
Concentration per Run 2	-0.0001 ppm	0.0021 ppm	0.0008 ppm	0.0003 ppm	0.0000 ppm	0.0000 ppm	0.0163 ppm
Concentration per Run 3	-0.0001 ppm	0.0003 ppm	-0.0001 ppm	-0.0007 ppm	0.0000 ppm	0.0000 ppm	0.0165 ppm
Recovery Percentage 1	-1.219 %	-0.208 %	10.062 %	-0.180 %	-0.031 %	0.195 %	15.888 %
Concentration RSD	52.7 %	1,267.3 %	145.2 %	1,053.9 %	821.7 %	29.2 %	5.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0001 ppm	-0.0001 ppm	-0.0002 ppm	0.0008 ppm	0.0056 ppm	-0.0026 ppm	-0.0002 ppm
Concentration per Run 1	0.0002 ppm	-0.0001 ppm	-0.0003 ppm	0.0009 ppm	0.0056 ppm	0.0009 ppm	-0.0012 ppm
Concentration per Run 2	0.0001 ppm	-0.0001 ppm	0.0001 ppm	0.0008 ppm	0.0063 ppm	-0.0076 ppm	0.0006 ppm
Concentration per Run 3	0.0000 ppm	-0.0002 ppm	-0.0004 ppm	0.0007 ppm	0.0049 ppm	-0.0013 ppm	-0.0002 ppm
Recovery Percentage 1	1.759 %	-0.662 %	-1.848 %	8.057 %	11.199 %	-0.106 %	-2.322 %
Concentration RSD	88.4 %	60.0 %	146.0 %	10.6 %	12.4 %	167.0 %	387.3 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0048 ppm	0.0003 ppm	0.0019 ppm	0.0173 ppm	0.0000 ppm	0.0002 ppm	0.0004 ppm
Concentration per Run 1	0.0054 ppm	0.0003 ppm	0.0020 ppm	0.0147 ppm	-0.0003 ppm	0.0004 ppm	0.0008 ppm
Concentration per Run 2	0.0049 ppm	0.0004 ppm	0.0018 ppm	0.0191 ppm	0.0001 ppm	0.0003 ppm	0.0009 ppm
Concentration per Run 3	0.0040 ppm	0.0003 ppm	0.0019 ppm	0.0180 ppm	0.0002 ppm	-0.0002 ppm	-0.0005 ppm
Recovery Percentage 1	4.757 %	3.292 %	3.771 %	0.864 %	0.020 %	1.799 %	0.798 %
Concentration RSD	15.0 %	16.4 %	3.4 %	13.4 %	5,002.8 %	200.9 %	200.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0000 ppm	-0.0190 ppm	-0.0004 ppm	0.0001 ppm	-0.0003 ppm	-0.0005 ppm	0.0000 ppm
Concentration per Run 1	0.0005 ppm	-0.0188 ppm	-0.0008 ppm	0.0001 ppm	-0.0002 ppm	-0.0012 ppm	0.0000 ppm
Concentration per Run 2	-0.0003 ppm	-0.0179 ppm	-0.0002 ppm	0.0002 ppm	-0.0004 ppm	0.0002 ppm	0.0001 ppm
Concentration per Run 3	-0.0004 ppm	-0.0203 ppm	-0.0003 ppm	0.0000 ppm	-0.0003 ppm	-0.0006 ppm	-0.0001 ppm
Recovery Percentage 1	-0.458 %	-3.800 %	-0.853 %	1.036 %	-2.984 %	-2.682 %	-0.073 %
Concentration RSD	1,118.0 %	6.3 %	82.0 %	68.1 %	39.7 %	127.4 %	1,630.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0015 ppm	96.4536 %	98.5929 %	97.8711 %	96.7055 %	99.8547 %	98.2425 %
Concentration per Run 1	0.0017 ppm	94.5781 %	98.4419 %	97.6012 %	95.9593 %	99.9256 %	98.5214 %
Concentration per Run 2	0.0014 ppm	97.1897 %	98.8662 %	97.7911 %	97.0146 %	100.0200 %	97.9212 %
Concentration per Run 3	0.0015 ppm	97.5931 %	98.4706 %	98.2209 %	97.1425 %	99.6186 %	98.2849 %
Recovery Percentage 1	30.409 %						
Concentration RSD	8.6 %	1.7 %	0.2 %	0.3 %	0.7 %	0.2 %	0.3 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1969231-1 WG1969231
Analysis started at: 9/10/2024 1:22:45 PM
Rack 1
Vial 43
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0002 ppm	-0.0045 ppm	-0.0003 ppm	0.0001 ppm	-0.0001 ppm	0.0000 ppm	0.0054 ppm
Concentration per Run 1	-0.0002 ppm	-0.0009 ppm	0.0003 ppm	0.0000 ppm	-0.0001 ppm	0.0000 ppm	0.0047 ppm
Concentration per Run 2	0.0000 ppm	-0.0085 ppm	-0.0009 ppm	-0.0001 ppm	-0.0001 ppm	0.0000 ppm	0.0061 ppm
Concentration per Run 3	-0.0004 ppm	-0.0040 ppm	-0.0004 ppm	0.0003 ppm	-0.0001 ppm	0.0000 ppm	0.0054 ppm
Recovery Percentage 1	-2.882 %	-4.485 %	-10.851 %	0.280 %	-1.055 %	-0.549 %	5.407 %
Concentration RSD	103.7 %	84.9 %	183.7 %	229.7 %	2.5 %	83.3 %	13.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0001 ppm	-0.0002 ppm	0.0000 ppm	0.0048 ppm	-0.0011 ppm	-0.0001 ppm
Concentration per Run 1	0.0000 ppm	0.0003 ppm	-0.0004 ppm	0.0002 ppm	0.0053 ppm	-0.0121 ppm	-0.0010 ppm
Concentration per Run 2	0.0001 ppm	0.0000 ppm	-0.0001 ppm	0.0001 ppm	0.0047 ppm	0.0108 ppm	-0.0002 ppm
Concentration per Run 3	-0.0001 ppm	0.0001 ppm	-0.0001 ppm	-0.0003 ppm	0.0044 ppm	-0.0021 ppm	0.0007 ppm
Recovery Percentage 1	0.250 %	0.606 %	-2.053 %	0.164 %	9.564 %	-0.044 %	-1.493 %
Concentration RSD	738.2 %	101.7 %	91.0 %	1,429.2 %	9.4 %	1,035.7 %	575.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0011 ppm	0.0001 ppm	0.0006 ppm	0.0049 ppm	0.0002 ppm	-0.0006 ppm	-0.0005 ppm
Concentration per Run 1	0.0005 ppm	0.0001 ppm	0.0006 ppm	0.0076 ppm	0.0001 ppm	-0.0005 ppm	-0.0013 ppm
Concentration per Run 2	0.0011 ppm	0.0001 ppm	0.0007 ppm	0.0073 ppm	0.0008 ppm	-0.0007 ppm	0.0004 ppm
Concentration per Run 3	0.0017 ppm	0.0002 ppm	0.0004 ppm	-0.0001 ppm	-0.0004 ppm	-0.0004 ppm	-0.0004 ppm
Recovery Percentage 1	1.076 %	1.343 %	1.136 %	0.246 %	0.704 %	-5.504 %	-0.904 %
Concentration RSD	55.4 %	30.1 %	26.1 %	87.9 %	357.6 %	28.3 %	179.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0001 ppm	-0.0194 ppm	-0.0003 ppm	0.0001 ppm	-0.0004 ppm	-0.0002 ppm	-0.0001 ppm
Concentration per Run 1	0.0007 ppm	-0.0197 ppm	-0.0005 ppm	0.0001 ppm	-0.0004 ppm	-0.0008 ppm	-0.0001 ppm
Concentration per Run 2	-0.0003 ppm	-0.0193 ppm	0.0003 ppm	0.0000 ppm	-0.0006 ppm	0.0010 ppm	-0.0001 ppm
Concentration per Run 3	-0.0006 ppm	-0.0192 ppm	-0.0007 ppm	0.0001 ppm	-0.0004 ppm	-0.0008 ppm	-0.0002 ppm
Recovery Percentage 1	-0.665 %	-3.882 %	-0.595 %	0.816 %	-4.405 %	-0.866 %	-1.427 %
Concentration RSD	969.4 %	1.4 %	172.4 %	61.5 %	23.2 %	598.3 %	57.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0000 ppm	98.4574 %	99.7254 %	99.1277 %	101.3672 %	101.6951 %	100.4163 %
Concentration per Run 1	-0.0001 ppm	97.0650 %	99.0807 %	98.8241 %	101.1317 %	101.2921 %	100.5042 %
Concentration per Run 2	0.0001 ppm	99.0217 %	100.2890 %	99.1598 %	102.0065 %	102.3565 %	100.4518 %
Concentration per Run 3	0.0000 ppm	99.2854 %	99.8065 %	99.3993 %	100.9634 %	101.4366 %	100.2930 %
Recovery Percentage 1	-0.338 %						
Concentration RSD	642.5 %	1.2 %	0.6 %	0.3 %	0.6 %	0.6 %	0.1 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1969231-2 WG1969231
Analysis started at: 9/10/2024 1:26:52 PM
Rack 1
Vial 44
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0523 ppm	2.0091 ppm	0.1186 ppm	0.9559 ppm	2.0325 ppm	0.0517 ppm	10.1091 ppm
Concentration per Run 1	0.0532 ppm	2.0218 ppm	0.1200 ppm	0.9645 ppm	2.0449 ppm	0.0521 ppm	10.1408 ppm
Concentration per Run 2	0.0520 ppm	1.9988 ppm	0.1186 ppm	0.9514 ppm	2.0236 ppm	0.0513 ppm	10.0703 ppm
Concentration per Run 3	0.0518 ppm	2.0067 ppm	0.1171 ppm	0.9519 ppm	2.0292 ppm	0.0518 ppm	10.1163 ppm
Concentration RSD	1.5 %	0.6 %	1.3 %	0.8 %	0.5 %	0.8 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0542 ppm	0.5175 ppm	0.2047 ppm	0.2616 ppm	1.0176 ppm	10.5311 ppm	-0.0010 ppm
Concentration per Run 1	0.0548 ppm	0.5254 ppm	0.2081 ppm	0.2653 ppm	1.0261 ppm	10.6537 ppm	-0.0014 ppm
Concentration per Run 2	0.0539 ppm	0.5154 ppm	0.2041 ppm	0.2598 ppm	1.0128 ppm	10.4171 ppm	-0.0005 ppm
Concentration per Run 3	0.0539 ppm	0.5117 ppm	0.2020 ppm	0.2598 ppm	1.0140 ppm	10.5224 ppm	-0.0010 ppm
Concentration RSD	0.9 %	1.4 %	1.5 %	1.2 %	0.7 %	1.1 %	45.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	10.2150 ppm	0.5107 ppm	0.9639 ppm	10.4343 ppm	0.5237 ppm	0.5276 ppm	0.4589 ppm
Concentration per Run 1	10.4001 ppm	0.5130 ppm	0.9692 ppm	10.4755 ppm	0.5322 ppm	0.5299 ppm	0.4633 ppm
Concentration per Run 2	10.1686 ppm	0.5072 ppm	0.9618 ppm	10.4065 ppm	0.5223 ppm	0.5280 ppm	0.4576 ppm
Concentration per Run 3	10.0764 ppm	0.5118 ppm	0.9605 ppm	10.4207 ppm	0.5165 ppm	0.5248 ppm	0.4559 ppm
Concentration RSD	1.6 %	0.6 %	0.5 %	0.3 %	1.5 %	0.5 %	0.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1170 ppm	0.9155 ppm	1.0235 ppm	1.0114 ppm	1.0465 ppm	0.1163 ppm	0.5216 ppm
Concentration per Run 1	0.1157 ppm	0.9286 ppm	1.0350 ppm	1.0128 ppm	1.0648 ppm	0.1166 ppm	0.5300 ppm
Concentration per Run 2	0.1170 ppm	0.9135 ppm	1.0219 ppm	1.0040 ppm	1.0439 ppm	0.1150 ppm	0.5186 ppm
Concentration per Run 3	0.1182 ppm	0.9044 ppm	1.0135 ppm	1.0175 ppm	1.0310 ppm	0.1173 ppm	0.5160 ppm
Concentration RSD	1.1 %	1.3 %	1.1 %	0.7 %	1.6 %	1.0 %	1.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5175 ppm	97.4811 %	101.7968 %	94.4213 %	96.2506 %	100.8963 %	97.2279 %
Concentration per Run 1	0.5239 ppm	96.3473 %	100.6950 %	94.1617 %	95.5600 %	100.5409 %	97.4655 %
Concentration per Run 2	0.5160 ppm	97.8334 %	103.4693 %	94.2449 %	96.5027 %	102.0551 %	96.9697 %
Concentration per Run 3	0.5128 ppm	98.2626 %	101.2260 %	94.8573 %	96.6890 %	100.0929 %	97.2486 %
Concentration RSD	1.1 %	1.0 %	1.4 %	0.4 %	0.6 %	1.0 %	0.3 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2449468-01 WG1969231
Analysis started at: 9/10/2024 1:30:48 PM
Rack 1
Vial 50
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0001 ppm	0.0017 ppm	0.0027 ppm	0.0746 ppm	0.0008 ppm	0.0000 ppm	12.3729 ppm
Concentration per Run 1	0.0000 ppm	-0.0008 ppm	0.0014 ppm	0.0767 ppm	0.0009 ppm	0.0001 ppm	12.4264 ppm
Concentration per Run 2	-0.0003 ppm	0.0055 ppm	0.0041 ppm	0.0749 ppm	0.0009 ppm	0.0000 ppm	12.4047 ppm
Concentration per Run 3	-0.0001 ppm	0.0006 ppm	0.0025 ppm	0.0723 ppm	0.0007 ppm	0.0000 ppm	12.2876 ppm
Concentration RSD	169.1 %	190.6 %	50.6 %	3.0 %	13.9 %	89.5 %	0.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0001 ppm	-0.0004 ppm	0.0011 ppm	0.0442 ppm	4.0295 ppm	0.0068 ppm
Concentration per Run 1	0.0000 ppm	0.0001 ppm	-0.0003 ppm	0.0009 ppm	0.0430 ppm	4.0665 ppm	0.0056 ppm
Concentration per Run 2	0.0000 ppm	-0.0005 ppm	-0.0007 ppm	0.0011 ppm	0.0443 ppm	4.0044 ppm	0.0073 ppm
Concentration per Run 3	-0.0001 ppm	0.0001 ppm	-0.0003 ppm	0.0012 ppm	0.0451 ppm	4.0177 ppm	0.0076 ppm
Concentration RSD	196.3 %	362.5 %	55.3 %	12.2 %	2.4 %	0.8 %	16.0 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	6.2334 ppm	0.0309 ppm	0.0077 ppm	42.2887 ppm	0.0001 ppm	0.0002 ppm	0.0008 ppm
Concentration per Run 1	6.3928 ppm	0.0310 ppm	0.0078 ppm	42.2430 ppm	0.0002 ppm	-0.0002 ppm	0.0002 ppm
Concentration per Run 2	6.2267 ppm	0.0308 ppm	0.0077 ppm	42.3803 ppm	-0.0002 ppm	0.0000 ppm	0.0016 ppm
Concentration per Run 3	6.0808 ppm	0.0308 ppm	0.0076 ppm	42.2427 ppm	0.0004 ppm	0.0009 ppm	0.0005 ppm
Concentration RSD	2.5 %	0.2 %	0.9 %	0.2 %	217.6 %	259.3 %	97.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0003 ppm	5.7346 ppm	0.0009 ppm	0.0632 ppm	-0.0004 ppm	-0.0009 ppm	0.0000 ppm
Concentration per Run 1	0.0005 ppm	5.8612 ppm	0.0002 ppm	0.0637 ppm	-0.0004 ppm	-0.0015 ppm	0.0000 ppm
Concentration per Run 2	0.0003 ppm	5.7119 ppm	0.0017 ppm	0.0631 ppm	-0.0003 ppm	-0.0003 ppm	0.0001 ppm
Concentration per Run 3	0.0000 ppm	5.6305 ppm	0.0010 ppm	0.0628 ppm	-0.0005 ppm	-0.0010 ppm	-0.0001 ppm
Concentration RSD	104.7 %	2.0 %	80.8 %	0.7 %	25.9 %	61.1 %	309.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0043 ppm	94.2474 %	101.0061 %	92.7987 %	94.7898 %	101.3011 %	95.9005 %
Concentration per Run 1	0.0045 ppm	92.3662 %	100.5682 %	92.3625 %	94.0219 %	101.1752 %	95.4379 %
Concentration per Run 2	0.0043 ppm	94.4698 %	100.9543 %	92.8917 %	94.6666 %	101.2585 %	96.2325 %
Concentration per Run 3	0.0042 ppm	95.9061 %	101.4958 %	93.1419 %	95.6808 %	101.4697 %	96.0310 %
Concentration RSD	4.0 %	1.9 %	0.5 %	0.4 %	0.9 %	0.1 %	0.4 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450299-01 WG1969231
Analysis started at: 9/10/2024 1:34:43 PM
Rack 1
Vial 45
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	0.0347 ppm	0.0064 ppm	0.0164 ppm	0.2267 ppm	0.0000 ppm	21.0467 ppm
Concentration per Run 1	-0.0002 ppm	0.0347 ppm	0.0068 ppm	0.0167 ppm	0.2267 ppm	0.0000 ppm	21.1441 ppm
Concentration per Run 2	0.0002 ppm	0.0347 ppm	0.0055 ppm	0.0154 ppm	0.2270 ppm	0.0000 ppm	20.9710 ppm
Concentration per Run 3	-0.0001 ppm	0.0345 ppm	0.0068 ppm	0.0170 ppm	0.2265 ppm	0.0000 ppm	21.0251 ppm
Concentration RSD	677.8 %	0.3 %	12.3 %	5.2 %	0.1 %	95.5 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0001 ppm	-0.0001 ppm	0.0006 ppm	0.0016 ppm	0.0309 ppm	42.4930 ppm	0.0083 ppm
Concentration per Run 1	-0.0001 ppm	-0.0003 ppm	0.0006 ppm	0.0016 ppm	0.0316 ppm	42.6793 ppm	0.0081 ppm
Concentration per Run 2	-0.0001 ppm	0.0003 ppm	0.0007 ppm	0.0018 ppm	0.0307 ppm	42.4309 ppm	0.0092 ppm
Concentration per Run 3	-0.0001 ppm	-0.0003 ppm	0.0006 ppm	0.0014 ppm	0.0306 ppm	42.3687 ppm	0.0077 ppm
Concentration RSD	15.2 %	347.8 %	12.5 %	13.2 %	1.8 %	0.4 %	9.1 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	4.9774 ppm	0.0179 ppm	0.0032 ppm	45.2448 ppm	0.0001 ppm	0.0002 ppm	0.0061 ppm
Concentration per Run 1	5.1009 ppm	0.0180 ppm	0.0031 ppm	45.2028 ppm	0.0004 ppm	0.0009 ppm	0.0065 ppm
Concentration per Run 2	4.9452 ppm	0.0177 ppm	0.0032 ppm	45.3131 ppm	-0.0002 ppm	-0.0002 ppm	0.0046 ppm
Concentration per Run 3	4.8862 ppm	0.0180 ppm	0.0032 ppm	45.2186 ppm	0.0002 ppm	0.0000 ppm	0.0070 ppm
Concentration RSD	2.2 %	0.9 %	3.1 %	0.1 %	239.8 %	265.9 %	20.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0003 ppm	3.9617 ppm	-0.0003 ppm	0.3378 ppm	0.0002 ppm	-0.0007 ppm	0.0010 ppm
Concentration per Run 1	-0.0008 ppm	4.0602 ppm	-0.0003 ppm	0.3381 ppm	0.0001 ppm	-0.0009 ppm	0.0012 ppm
Concentration per Run 2	0.0000 ppm	3.9316 ppm	0.0008 ppm	0.3390 ppm	0.0004 ppm	-0.0007 ppm	0.0010 ppm
Concentration per Run 3	0.0015 ppm	3.8932 ppm	-0.0014 ppm	0.3363 ppm	0.0002 ppm	-0.0007 ppm	0.0009 ppm
Concentration RSD	463.6 %	2.2 %	335.1 %	0.4 %	65.8 %	18.8 %	13.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0214 ppm	93.2988 %	100.4034 %	91.8219 %	93.8540 %	100.9040 %	95.7539 %
Concentration per Run 1	0.0219 ppm	91.2787 %	99.7355 %	91.5091 %	93.0819 %	100.9730 %	96.0429 %
Concentration per Run 2	0.0212 ppm	94.0849 %	101.2176 %	92.1493 %	94.5089 %	101.5550 %	95.5265 %
Concentration per Run 3	0.0211 ppm	94.5328 %	100.2570 %	91.8071 %	93.9712 %	100.1840 %	95.6922 %
Concentration RSD	2.0 %	1.9 %	0.7 %	0.3 %	0.8 %	0.7 %	0.3 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1969231-3 WG1969231
Analysis started at: 9/10/2024 1:38:39 PM
Rack 1
Vial 46
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0525 ppm	2.0267 ppm	0.1285 ppm	0.9927 ppm	2.2425 ppm	0.0519 ppm	31.1454 ppm
Concentration per Run 1	0.0536 ppm	2.0194 ppm	0.1275 ppm	1.0099 ppm	2.2475 ppm	0.0519 ppm	31.0565 ppm
Concentration per Run 2	0.0521 ppm	2.0395 ppm	0.1287 ppm	0.9897 ppm	2.2375 ppm	0.0518 ppm	31.1468 ppm
Concentration per Run 3	0.0519 ppm	2.0212 ppm	0.1293 ppm	0.9786 ppm	2.2426 ppm	0.0520 ppm	31.2330 ppm
Concentration RSD	1.7 %	0.5 %	0.7 %	1.6 %	0.2 %	0.2 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0541 ppm	0.5116 ppm	0.2041 ppm	0.2599 ppm	1.0348 ppm	53.5594 ppm	0.0100 ppm
Concentration per Run 1	0.0553 ppm	0.5210 ppm	0.2076 ppm	0.2642 ppm	1.0325 ppm	53.6021 ppm	0.0118 ppm
Concentration per Run 2	0.0540 ppm	0.5111 ppm	0.2032 ppm	0.2590 ppm	1.0345 ppm	53.6331 ppm	0.0093 ppm
Concentration per Run 3	0.0529 ppm	0.5029 ppm	0.2013 ppm	0.2565 ppm	1.0375 ppm	53.4429 ppm	0.0090 ppm
Concentration RSD	2.2 %	1.8 %	1.6 %	1.5 %	0.2 %	0.2 %	15.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	14.9592 ppm	0.5206 ppm	0.9205 ppm	55.8680 ppm	0.5168 ppm	0.5189 ppm	0.4711 ppm
Concentration per Run 1	15.2758 ppm	0.5204 ppm	0.9271 ppm	55.7231 ppm	0.5270 ppm	0.5148 ppm	0.4755 ppm
Concentration per Run 2	14.8972 ppm	0.5200 ppm	0.9217 ppm	55.7121 ppm	0.5151 ppm	0.5219 ppm	0.4731 ppm
Concentration per Run 3	14.7045 ppm	0.5215 ppm	0.9126 ppm	56.1688 ppm	0.5082 ppm	0.5200 ppm	0.4647 ppm
Concentration RSD	1.9 %	0.1 %	0.8 %	0.5 %	1.8 %	0.7 %	1.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1222 ppm	5.0100 ppm	1.0005 ppm	1.3403 ppm	1.0427 ppm	0.1124 ppm	0.5260 ppm
Concentration per Run 1	0.1194 ppm	5.1027 ppm	1.0131 ppm	1.3417 ppm	1.0653 ppm	0.1108 ppm	0.5347 ppm
Concentration per Run 2	0.1231 ppm	4.9953 ppm	0.9983 ppm	1.3365 ppm	1.0352 ppm	0.1146 ppm	0.5237 ppm
Concentration per Run 3	0.1241 ppm	4.9321 ppm	0.9901 ppm	1.3428 ppm	1.0275 ppm	0.1118 ppm	0.5198 ppm
Concentration RSD	2.1 %	1.7 %	1.2 %	0.3 %	1.9 %	1.7 %	1.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5426 ppm	94.3951 %	101.4697 %	90.4922 %	92.7697 %	100.5698 %	94.8105 %
Concentration per Run 1	0.5538 ppm	92.7995 %	102.1575 %	90.9586 %	92.0142 %	101.3876 %	94.9316 %
Concentration per Run 2	0.5432 ppm	94.7524 %	101.0493 %	90.1225 %	93.0192 %	99.8990 %	94.7600 %
Concentration per Run 3	0.5308 ppm	95.6333 %	101.2024 %	90.3954 %	93.2758 %	100.4229 %	94.7399 %
Concentration RSD	2.1 %	1.5 %	0.6 %	0.5 %	0.7 %	0.8 %	0.1 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1969231-4 WG1969231
Analysis started at: 9/10/2024 1:42:36 PM
Rack 1
Vial 47
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0001 ppm	0.0391 ppm	0.0061 ppm	0.0171 ppm	0.2307 ppm	0.0000 ppm	21.4680 ppm
Concentration per Run 1	0.0000 ppm	0.0370 ppm	0.0046 ppm	0.0179 ppm	0.2307 ppm	0.0000 ppm	21.4970 ppm
Concentration per Run 2	-0.0002 ppm	0.0441 ppm	0.0060 ppm	0.0172 ppm	0.2316 ppm	0.0000 ppm	21.4514 ppm
Concentration per Run 3	-0.0001 ppm	0.0363 ppm	0.0077 ppm	0.0162 ppm	0.2298 ppm	0.0000 ppm	21.4555 ppm
Concentration RSD	122.6 %	11.0 %	24.9 %	4.8 %	0.4 %	952.7 %	0.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0001 ppm	-0.0001 ppm	0.0009 ppm	0.0016 ppm	0.0310 ppm	43.4634 ppm	0.0086 ppm
Concentration per Run 1	-0.0001 ppm	0.0001 ppm	0.0008 ppm	0.0015 ppm	0.0301 ppm	43.3630 ppm	0.0084 ppm
Concentration per Run 2	-0.0002 ppm	-0.0002 ppm	0.0011 ppm	0.0015 ppm	0.0309 ppm	43.6704 ppm	0.0086 ppm
Concentration per Run 3	0.0000 ppm	-0.0002 ppm	0.0007 ppm	0.0017 ppm	0.0319 ppm	43.3569 ppm	0.0087 ppm
Concentration RSD	69.4 %	151.7 %	22.5 %	5.1 %	3.0 %	0.4 %	1.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	5.0703 ppm	0.0182 ppm	0.0072 ppm	45.9258 ppm	0.0004 ppm	0.0002 ppm	0.0084 ppm
Concentration per Run 1	5.1962 ppm	0.0182 ppm	0.0077 ppm	45.7592 ppm	-0.0001 ppm	-0.0003 ppm	0.0073 ppm
Concentration per Run 2	5.0460 ppm	0.0183 ppm	0.0070 ppm	46.2184 ppm	0.0006 ppm	-0.0002 ppm	0.0092 ppm
Concentration per Run 3	4.9686 ppm	0.0182 ppm	0.0070 ppm	45.7997 ppm	0.0006 ppm	0.0009 ppm	0.0087 ppm
Concentration RSD	2.3 %	0.3 %	5.5 %	0.6 %	111.9 %	428.1 %	11.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0016 ppm	4.0314 ppm	0.0016 ppm	0.3438 ppm	0.0006 ppm	-0.0007 ppm	0.0011 ppm
Concentration per Run 1	0.0008 ppm	4.1326 ppm	0.0020 ppm	0.3444 ppm	0.0009 ppm	-0.0010 ppm	0.0009 ppm
Concentration per Run 2	0.0015 ppm	4.0003 ppm	0.0008 ppm	0.3460 ppm	0.0003 ppm	0.0000 ppm	0.0011 ppm
Concentration per Run 3	0.0025 ppm	3.9613 ppm	0.0020 ppm	0.3410 ppm	0.0006 ppm	-0.0010 ppm	0.0012 ppm
Concentration RSD	52.3 %	2.2 %	45.1 %	0.8 %	51.3 %	84.4 %	11.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0216 ppm	93.8905 %	100.7756 %	92.5881 %	93.0008 %	100.4277 %	95.5622 %
Concentration per Run 1	0.0220 ppm	92.0639 %	101.4027 %	92.2231 %	92.3269 %	100.9082 %	95.6412 %
Concentration per Run 2	0.0217 ppm	94.2580 %	100.0002 %	92.3898 %	93.0288 %	99.9672 %	94.9965 %
Concentration per Run 3	0.0212 ppm	95.3494 %	100.9239 %	93.1514 %	93.6468 %	100.4076 %	96.0488 %
Concentration RSD	2.0 %	1.8 %	0.7 %	0.5 %	0.7 %	0.5 %	0.6 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1969231-5 WG1969231
Analysis started at: 9/10/2024 1:46:32 PM
Rack 1
Vial 48
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0531 ppm	2.0824 ppm	0.1242 ppm	1.0588 ppm	2.2672 ppm	0.0534 ppm	31.0765 ppm
Concentration per Run 1	0.0542 ppm	2.0824 ppm	0.1226 ppm	1.0821 ppm	2.2725 ppm	0.0537 ppm	31.1097 ppm
Concentration per Run 2	0.0530 ppm	2.0956 ppm	0.1258 ppm	1.0561 ppm	2.2724 ppm	0.0534 ppm	31.1592 ppm
Concentration per Run 3	0.0522 ppm	2.0694 ppm	0.1243 ppm	1.0383 ppm	2.2568 ppm	0.0532 ppm	30.9605 ppm
Concentration RSD	1.8 %	0.6 %	1.3 %	2.1 %	0.4 %	0.4 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0554 ppm	0.5252 ppm	0.2103 ppm	0.2670 ppm	1.0650 ppm	51.7044 ppm	0.0080 ppm
Concentration per Run 1	0.0567 ppm	0.5379 ppm	0.2146 ppm	0.2722 ppm	1.0616 ppm	51.5905 ppm	0.0080 ppm
Concentration per Run 2	0.0548 ppm	0.5209 ppm	0.2092 ppm	0.2658 ppm	1.0670 ppm	51.9975 ppm	0.0086 ppm
Concentration per Run 3	0.0546 ppm	0.5168 ppm	0.2072 ppm	0.2631 ppm	1.0663 ppm	51.5253 ppm	0.0075 ppm
Concentration RSD	2.1 %	2.1 %	1.8 %	1.7 %	0.3 %	0.5 %	7.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	15.5039 ppm	0.5343 ppm	0.9738 ppm	54.1899 ppm	0.5302 ppm	0.5437 ppm	0.4093 ppm
Concentration per Run 1	15.8700 ppm	0.5350 ppm	0.9852 ppm	54.3256 ppm	0.5406 ppm	0.5443 ppm	0.4095 ppm
Concentration per Run 2	15.3905 ppm	0.5360 ppm	0.9722 ppm	54.2941 ppm	0.5287 ppm	0.5437 ppm	0.4096 ppm
Concentration per Run 3	15.2512 ppm	0.5319 ppm	0.9641 ppm	53.9500 ppm	0.5212 ppm	0.5431 ppm	0.4089 ppm
Concentration RSD	2.1 %	0.4 %	1.1 %	0.4 %	1.8 %	0.1 %	0.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1173 ppm	5.1931 ppm	1.0764 ppm	1.4017 ppm	1.1111 ppm	0.1107 ppm	0.5399 ppm
Concentration per Run 1	0.1169 ppm	5.2942 ppm	1.0922 ppm	1.4110 ppm	1.1301 ppm	0.1098 ppm	0.5510 ppm
Concentration per Run 2	0.1174 ppm	5.1705 ppm	1.0738 ppm	1.4008 ppm	1.1083 ppm	0.1103 ppm	0.5371 ppm
Concentration per Run 3	0.1176 ppm	5.1146 ppm	1.0633 ppm	1.3933 ppm	1.0949 ppm	0.1121 ppm	0.5314 ppm
Concentration RSD	0.3 %	1.8 %	1.4 %	0.6 %	1.6 %	1.1 %	1.9 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5580 ppm	94.6743 %	101.1079 %	90.5642 %	92.5196 %	99.9272 %	94.5279 %
Concentration per Run 1	0.5712 ppm	93.0125 %	100.5844 %	90.4943 %	91.7389 %	99.6495 %	94.7074 %
Concentration per Run 2	0.5549 ppm	95.0507 %	100.8667 %	90.6658 %	92.7645 %	99.7268 %	94.5734 %
Concentration per Run 3	0.5478 ppm	95.9596 %	101.8725 %	90.5327 %	93.0554 %	100.4052 %	94.3030 %
Concentration RSD	2.1 %	1.6 %	0.7 %	0.1 %	0.7 %	0.4 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1969231-6D5 WG1969231
Analysis started at: 9/10/2024 1:50:29 PM
Rack 1
Vial 49
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0003 ppm	0.0027 ppm	0.0007 ppm	0.0037 ppm	0.0458 ppm	0.0000 ppm	4.3095 ppm
Concentration per Run 1	-0.0002 ppm	0.0019 ppm	0.0003 ppm	0.0031 ppm	0.0459 ppm	0.0000 ppm	4.3103 ppm
Concentration per Run 2	-0.0003 ppm	0.0022 ppm	-0.0003 ppm	0.0037 ppm	0.0456 ppm	0.0000 ppm	4.3014 ppm
Concentration per Run 3	-0.0004 ppm	0.0041 ppm	0.0021 ppm	0.0042 ppm	0.0459 ppm	0.0000 ppm	4.3168 ppm
Concentration RSD	37.5 %	42.5 %	185.9 %	14.8 %	0.4 %	2,299.1 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0003 ppm	0.0000 ppm	0.0004 ppm	0.0074 ppm	8.7204 ppm	0.0021 ppm
Concentration per Run 1	0.0000 ppm	-0.0002 ppm	0.0000 ppm	0.0002 ppm	0.0074 ppm	8.7941 ppm	0.0027 ppm
Concentration per Run 2	0.0000 ppm	-0.0006 ppm	0.0002 ppm	0.0003 ppm	0.0072 ppm	8.6394 ppm	0.0021 ppm
Concentration per Run 3	0.0000 ppm	-0.0001 ppm	-0.0002 ppm	0.0005 ppm	0.0077 ppm	8.7276 ppm	0.0016 ppm
Concentration RSD	312.9 %	71.0 %	1,123.0 %	38.9 %	3.2 %	0.9 %	24.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	1.0050 ppm	0.0038 ppm	0.0068 ppm	9.3099 ppm	0.0004 ppm	-0.0004 ppm	0.0082 ppm
Concentration per Run 1	1.0298 ppm	0.0036 ppm	0.0069 ppm	9.3736 ppm	0.0006 ppm	-0.0009 ppm	0.0084 ppm
Concentration per Run 2	1.0001 ppm	0.0040 ppm	0.0068 ppm	9.2226 ppm	0.0003 ppm	0.0003 ppm	0.0057 ppm
Concentration per Run 3	0.9852 ppm	0.0037 ppm	0.0068 ppm	9.3335 ppm	0.0002 ppm	-0.0005 ppm	0.0104 ppm
Concentration RSD	2.3 %	5.9 %	0.4 %	0.8 %	68.2 %	156.9 %	29.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0001 ppm	0.7595 ppm	0.0058 ppm	0.0684 ppm	-0.0001 ppm	-0.0007 ppm	0.0003 ppm
Concentration per Run 1	0.0011 ppm	0.7807 ppm	0.0057 ppm	0.0682 ppm	-0.0001 ppm	-0.0001 ppm	0.0003 ppm
Concentration per Run 2	0.0003 ppm	0.7507 ppm	0.0054 ppm	0.0687 ppm	-0.0002 ppm	0.0003 ppm	0.0003 ppm
Concentration per Run 3	-0.0010 ppm	0.7471 ppm	0.0062 ppm	0.0684 ppm	0.0000 ppm	-0.0024 ppm	0.0003 ppm
Concentration RSD	797.3 %	2.4 %	6.3 %	0.4 %	82.3 %	202.7 %	9.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0047 ppm	96.5341 %	100.8044 %	96.5042 %	95.5347 %	100.5005 %	97.2145 %
Concentration per Run 1	0.0048 ppm	94.0384 %	100.4630 %	96.6991 %	94.1182 %	100.5397 %	97.4699 %
Concentration per Run 2	0.0047 ppm	97.2079 %	101.4163 %	96.0862 %	96.0705 %	100.7806 %	96.8177 %
Concentration per Run 3	0.0047 ppm	98.3560 %	100.5339 %	96.7273 %	96.4153 %	100.1812 %	97.3559 %
Concentration RSD	1.2 %	2.3 %	0.5 %	0.4 %	1.3 %	0.3 %	0.4 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCV
Analysis started at: 9/10/2024 1:54:25 PM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.5081 ppm	0.4815 ppm	0.4822 ppm	0.4757 ppm	0.5074 ppm	0.5166 ppm	0.4966 ppm
Concentration per Run 1	0.5129 ppm	0.4854 ppm	0.4829 ppm	0.4793 ppm	0.5085 ppm	0.5141 ppm	0.4923 ppm
Concentration per Run 2	0.5065 ppm	0.4855 ppm	0.4827 ppm	0.4746 ppm	0.5052 ppm	0.5165 ppm	0.4975 ppm
Concentration per Run 3	0.5048 ppm	0.4735 ppm	0.4809 ppm	0.4731 ppm	0.5085 ppm	0.5190 ppm	0.5000 ppm
Recovery Percentage 1	101.619 %	96.297 %	96.437 %	95.135 %	101.480 %	103.310 %	99.319 %
Concentration RSD	0.8 %	1.4 %	0.2 %	0.7 %	0.4 %	0.5 %	0.8 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.5039 ppm	0.5141 ppm	0.4975 ppm	0.4925 ppm	0.5057 ppm	5.3611 ppm	0.5289 ppm
Concentration per Run 1	0.5071 ppm	0.5194 ppm	0.5013 ppm	0.4969 ppm	0.5089 ppm	5.4056 ppm	0.5350 ppm
Concentration per Run 2	0.5037 ppm	0.5127 ppm	0.4956 ppm	0.4916 ppm	0.5020 ppm	5.3537 ppm	0.5258 ppm
Concentration per Run 3	0.5010 ppm	0.5102 ppm	0.4958 ppm	0.4890 ppm	0.5063 ppm	5.3239 ppm	0.5260 ppm
Recovery Percentage 1	100.783 %	102.821 %	99.509 %	98.502 %	101.150 %	107.221 %	105.788 %
Concentration RSD	0.6 %	0.9 %	0.6 %	0.8 %	0.7 %	0.8 %	1.0 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.4983 ppm	0.4967 ppm	0.5081 ppm	10.2809 ppm	0.5140 ppm	0.4881 ppm	0.5076 ppm
Concentration per Run 1	0.5035 ppm	0.4957 ppm	0.5064 ppm	10.3148 ppm	0.5180 ppm	0.4888 ppm	0.5115 ppm
Concentration per Run 2	0.4976 ppm	0.4971 ppm	0.5068 ppm	10.2651 ppm	0.5121 ppm	0.4894 ppm	0.5064 ppm
Concentration per Run 3	0.4938 ppm	0.4972 ppm	0.5109 ppm	10.2627 ppm	0.5117 ppm	0.4861 ppm	0.5048 ppm
Recovery Percentage 1	99.659 %	99.335 %	101.611 %	102.809 %	102.795 %	97.615 %	101.512 %
Concentration RSD	1.0 %	0.2 %	0.5 %	0.3 %	0.7 %	0.4 %	0.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4809 ppm	5.2348 ppm	0.5328 ppm	0.5294 ppm	0.5083 ppm	0.4791 ppm	0.5009 ppm
Concentration per Run 1	0.4794 ppm	5.2819 ppm	0.5344 ppm	0.5278 ppm	0.5108 ppm	0.4793 ppm	0.5047 ppm
Concentration per Run 2	0.4803 ppm	5.2249 ppm	0.5337 ppm	0.5293 ppm	0.5062 ppm	0.4781 ppm	0.4993 ppm
Concentration per Run 3	0.4830 ppm	5.1976 ppm	0.5302 ppm	0.5310 ppm	0.5079 ppm	0.4797 ppm	0.4988 ppm
Recovery Percentage 1	96.179 %	99.710 %	106.552 %	105.878 %	101.660 %	95.811 %	100.187 %
Concentration RSD	0.4 %	0.8 %	0.4 %	0.3 %	0.5 %	0.2 %	0.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5035 ppm	99.7074 %	101.3971 %	96.7746 %	95.4424 %	99.9536 %	96.9576 %
Concentration per Run 1	0.5071 ppm	98.9159 %	101.5155 %	96.8718 %	94.3839 %	99.8272 %	97.0621 %
Concentration per Run 2	0.5015 ppm	100.1980 %	101.4327 %	96.8858 %	96.2546 %	100.0609 %	97.0861 %
Concentration per Run 3	0.5018 ppm	100.0084 %	101.2431 %	96.5661 %	95.6888 %	99.9727 %	96.7246 %
Recovery Percentage 1	100.694 %						
Concentration RSD	0.6 %	0.7 %	0.1 %	0.2 %	1.0 %	0.1 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCB
Analysis started at: 9/10/2024 1:58:21 PM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0001 ppm	-0.0005 ppm	0.0004 ppm	0.0002 ppm	0.0000 ppm	0.0000 ppm	0.0175 ppm
Concentration per Run 1	-0.0001 ppm	0.0032 ppm	0.0007 ppm	-0.0002 ppm	-0.0001 ppm	0.0000 ppm	0.0178 ppm
Concentration per Run 2	-0.0002 ppm	-0.0045 ppm	-0.0004 ppm	0.0010 ppm	0.0001 ppm	0.0000 ppm	0.0146 ppm
Concentration per Run 3	-0.0002 ppm	-0.0003 ppm	0.0010 ppm	-0.0003 ppm	-0.0001 ppm	0.0000 ppm	0.0201 ppm
Recovery Percentage 1	-1.987 %	-0.533 %	13.764 %	0.535 %	-0.431 %	0.584 %	17.516 %
Concentration RSD	46.9 %	721.1 %	184.4 %	453.9 %	280.0 %	38.1 %	15.7 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0001 ppm	-0.0002 ppm	-0.0001 ppm	0.0007 ppm	0.0047 ppm	0.0164 ppm	-0.0007 ppm
Concentration per Run 1	0.0001 ppm	0.0001 ppm	0.0000 ppm	0.0010 ppm	0.0048 ppm	0.0206 ppm	-0.0011 ppm
Concentration per Run 2	0.0001 ppm	-0.0001 ppm	0.0000 ppm	0.0008 ppm	0.0049 ppm	0.0195 ppm	0.0000 ppm
Concentration per Run 3	0.0001 ppm	-0.0006 ppm	-0.0002 ppm	0.0004 ppm	0.0043 ppm	0.0090 ppm	-0.0011 ppm
Recovery Percentage 1	1.342 %	-0.907 %	-0.855 %	7.285 %	9.359 %	0.654 %	-7.237 %
Concentration RSD	22.2 %	186.0 %	124.8 %	41.6 %	7.9 %	39.0 %	86.0 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0058 ppm	0.0002 ppm	0.0024 ppm	0.0232 ppm	0.0000 ppm	0.0002 ppm	0.0006 ppm
Concentration per Run 1	0.0070 ppm	0.0002 ppm	0.0022 ppm	0.0248 ppm	-0.0003 ppm	0.0002 ppm	0.0008 ppm
Concentration per Run 2	0.0059 ppm	0.0000 ppm	0.0026 ppm	0.0196 ppm	0.0004 ppm	0.0003 ppm	0.0002 ppm
Concentration per Run 3	0.0046 ppm	0.0003 ppm	0.0025 ppm	0.0250 ppm	-0.0002 ppm	0.0001 ppm	0.0007 ppm
Recovery Percentage 1	5.835 %	2.067 %	4.838 %	1.158 %	-0.113 %	1.922 %	1.149 %
Concentration RSD	20.1 %	76.6 %	8.3 %	13.3 %	1,321.4 %	45.2 %	52.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0000 ppm	-0.0212 ppm	0.0001 ppm	0.0001 ppm	-0.0005 ppm	-0.0007 ppm	-0.0001 ppm
Concentration per Run 1	0.0002 ppm	-0.0207 ppm	0.0004 ppm	0.0001 ppm	-0.0004 ppm	-0.0005 ppm	0.0000 ppm
Concentration per Run 2	0.0006 ppm	-0.0217 ppm	-0.0002 ppm	0.0001 ppm	-0.0005 ppm	-0.0010 ppm	-0.0003 ppm
Concentration per Run 3	-0.0008 ppm	-0.0213 ppm	0.0000 ppm	0.0002 ppm	-0.0006 ppm	-0.0007 ppm	0.0000 ppm
Recovery Percentage 1	0.274 %	-4.241 %	0.150 %	1.064 %	-5.298 %	-3.646 %	-0.951 %
Concentration RSD	2,680.1 %	2.3 %	441.0 %	49.1 %	17.5 %	38.3 %	160.0 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0016 ppm	96.1225 %	98.3267 %	96.7219 %	97.0138 %	99.8345 %	97.9134 %
Concentration per Run 1	0.0017 ppm	94.7875 %	98.3758 %	96.6457 %	96.2912 %	100.0594 %	98.3467 %
Concentration per Run 2	0.0015 ppm	96.6185 %	98.5261 %	96.9399 %	97.4090 %	99.7928 %	97.8151 %
Concentration per Run 3	0.0014 ppm	96.9616 %	98.0780 %	96.5800 %	97.3412 %	99.6513 %	97.5783 %
Recovery Percentage 1	31.284 %						
Concentration RSD	10.3 %	1.2 %	0.2 %	0.2 %	0.6 %	0.2 %	0.4 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2449438-03 WG1968490
Analysis started at: 9/10/2024 2:03:18 PM
Rack 1
Vial 33
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0003 ppm	0.0223 ppm	0.0083 ppm	0.0049 ppm	0.0099 ppm	0.0000 ppm	31.5625 ppm
Concentration per Run 1	-0.0004 ppm	0.0177 ppm	0.0078 ppm	0.0052 ppm	0.0099 ppm	0.0000 ppm	31.7055 ppm
Concentration per Run 2	-0.0004 ppm	0.0263 ppm	0.0086 ppm	0.0046 ppm	0.0099 ppm	0.0000 ppm	31.5981 ppm
Concentration per Run 3	0.0000 ppm	0.0230 ppm	0.0086 ppm	0.0047 ppm	0.0099 ppm	0.0000 ppm	31.3841 ppm
Concentration RSD	91.0 %	19.5 %	5.1 %	6.5 %	0.4 %	873.5 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0001 ppm	-0.0002 ppm	0.0009 ppm	0.0011 ppm	0.0471 ppm	2.9195 ppm	0.0013 ppm
Concentration per Run 1	-0.0001 ppm	-0.0001 ppm	0.0010 ppm	0.0010 ppm	0.0470 ppm	2.9355 ppm	0.0008 ppm
Concentration per Run 2	-0.0001 ppm	-0.0003 ppm	0.0010 ppm	0.0011 ppm	0.0472 ppm	2.9150 ppm	0.0014 ppm
Concentration per Run 3	-0.0002 ppm	-0.0002 ppm	0.0007 ppm	0.0011 ppm	0.0471 ppm	2.9080 ppm	0.0017 ppm
Concentration RSD	41.8 %	50.5 %	21.1 %	9.2 %	0.3 %	0.5 %	32.1 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	4.9956 ppm	0.1933 ppm	0.0434 ppm	23.2251 ppm	0.0009 ppm	0.0004 ppm	0.0005 ppm
Concentration per Run 1	5.0905 ppm	0.1939 ppm	0.0435 ppm	23.2138 ppm	0.0012 ppm	0.0003 ppm	-0.0008 ppm
Concentration per Run 2	4.9876 ppm	0.1934 ppm	0.0432 ppm	23.2562 ppm	0.0007 ppm	0.0001 ppm	0.0004 ppm
Concentration per Run 3	4.9087 ppm	0.1925 ppm	0.0435 ppm	23.2053 ppm	0.0008 ppm	0.0009 ppm	0.0019 ppm
Concentration RSD	1.8 %	0.4 %	0.3 %	0.1 %	27.2 %	99.4 %	256.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0007 ppm	6.1153 ppm	-0.0007 ppm	0.2772 ppm	0.0010 ppm	-0.0006 ppm	0.0002 ppm
Concentration per Run 1	-0.0010 ppm	6.2030 ppm	-0.0008 ppm	0.2774 ppm	0.0012 ppm	-0.0006 ppm	0.0002 ppm
Concentration per Run 2	-0.0009 ppm	6.1167 ppm	-0.0007 ppm	0.2755 ppm	0.0010 ppm	-0.0011 ppm	0.0003 ppm
Concentration per Run 3	-0.0003 ppm	6.0261 ppm	-0.0007 ppm	0.2786 ppm	0.0010 ppm	0.0001 ppm	0.0002 ppm
Concentration RSD	51.4 %	1.4 %	8.2 %	0.6 %	9.0 %	105.1 %	32.0 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0009 ppm	97.3475 %	101.4506 %	94.4726 %	97.0620 %	101.2459 %	97.4210 %
Concentration per Run 1	0.0010 ppm	95.9627 %	100.7429 %	93.9913 %	96.5522 %	100.8484 %	97.5638 %
Concentration per Run 2	0.0010 ppm	97.4374 %	101.4599 %	94.8739 %	97.3193 %	101.3820 %	97.4966 %
Concentration per Run 3	0.0008 ppm	98.6423 %	102.1490 %	94.5528 %	97.3146 %	101.5071 %	97.2025 %
Concentration RSD	12.4 %	1.4 %	0.7 %	0.5 %	0.5 %	0.3 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2449438-04 WG1968490
Analysis started at: 9/10/2024 2:07:23 PM
Rack 1
Vial 34
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0001 ppm	0.0913 ppm	-0.0006 ppm	0.0033 ppm	0.0335 ppm	0.0000 ppm	36.8856 ppm
Concentration per Run 1	-0.0002 ppm	0.0945 ppm	-0.0001 ppm	0.0034 ppm	0.0337 ppm	0.0000 ppm	36.8738 ppm
Concentration per Run 2	0.0001 ppm	0.0905 ppm	-0.0012 ppm	0.0047 ppm	0.0336 ppm	0.0000 ppm	36.9111 ppm
Concentration per Run 3	-0.0003 ppm	0.0889 ppm	-0.0006 ppm	0.0018 ppm	0.0333 ppm	0.0000 ppm	36.8718 ppm
Concentration RSD	188.6 %	3.2 %	91.6 %	43.7 %	0.6 %	95.3 %	0.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0001 ppm	0.0000 ppm	0.0011 ppm	0.0015 ppm	0.1357 ppm	4.0449 ppm	0.0065 ppm
Concentration per Run 1	-0.0001 ppm	0.0003 ppm	0.0008 ppm	0.0015 ppm	0.1352 ppm	4.0955 ppm	0.0075 ppm
Concentration per Run 2	-0.0001 ppm	-0.0001 ppm	0.0013 ppm	0.0016 ppm	0.1362 ppm	4.0572 ppm	0.0059 ppm
Concentration per Run 3	-0.0001 ppm	-0.0001 ppm	0.0011 ppm	0.0016 ppm	0.1358 ppm	3.9821 ppm	0.0063 ppm
Concentration RSD	23.6 %	704.4 %	21.8 %	3.7 %	0.4 %	1.4 %	12.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	19.9184 ppm	0.0304 ppm	0.0008 ppm	13.2946 ppm	0.0055 ppm	-0.0003 ppm	0.0000 ppm
Concentration per Run 1	20.2230 ppm	0.0303 ppm	0.0010 ppm	13.3505 ppm	0.0053 ppm	0.0003 ppm	0.0006 ppm
Concentration per Run 2	19.8302 ppm	0.0307 ppm	0.0007 ppm	13.3460 ppm	0.0053 ppm	-0.0007 ppm	0.0018 ppm
Concentration per Run 3	19.7020 ppm	0.0302 ppm	0.0007 ppm	13.1873 ppm	0.0058 ppm	-0.0004 ppm	-0.0022 ppm
Concentration RSD	1.4 %	0.8 %	22.5 %	0.7 %	5.1 %	191.5 %	4,231.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0004 ppm	14.7262 ppm	-0.0011 ppm	0.2685 ppm	0.0128 ppm	-0.0009 ppm	0.0005 ppm
Concentration per Run 1	0.0005 ppm	14.9202 ppm	-0.0016 ppm	0.2691 ppm	0.0128 ppm	-0.0012 ppm	0.0004 ppm
Concentration per Run 2	0.0002 ppm	14.7315 ppm	-0.0010 ppm	0.2684 ppm	0.0128 ppm	-0.0005 ppm	0.0005 ppm
Concentration per Run 3	0.0006 ppm	14.5271 ppm	-0.0009 ppm	0.2678 ppm	0.0129 ppm	-0.0010 ppm	0.0005 ppm
Concentration RSD	55.9 %	1.3 %	33.8 %	0.2 %	0.5 %	37.8 %	14.1 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0026 ppm	95.8735 %	101.2356 %	93.3501 %	95.1656 %	101.7445 %	96.6787 %
Concentration per Run 1	0.0027 ppm	94.6594 %	101.3608 %	93.1542 %	94.7897 %	101.5828 %	96.8263 %
Concentration per Run 2	0.0025 ppm	96.3718 %	100.9296 %	93.2271 %	95.5864 %	101.6383 %	96.6037 %
Concentration per Run 3	0.0025 ppm	96.5892 %	101.4162 %	93.6689 %	95.1208 %	102.0124 %	96.6060 %
Concentration RSD	4.6 %	1.1 %	0.3 %	0.3 %	0.4 %	0.2 %	0.1 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2449438-05 WG1968490
Analysis started at: 9/10/2024 2:11:20 PM
Rack 1
Vial 35
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0001 ppm	0.0107 ppm	0.0000 ppm	0.0294 ppm	0.0451 ppm	0.0000 ppm	57.0619 ppm
Concentration per Run 1	-0.0002 ppm	0.0112 ppm	0.0007 ppm	0.0301 ppm	0.0447 ppm	0.0000 ppm	57.0819 ppm
Concentration per Run 2	-0.0004 ppm	0.0119 ppm	0.0004 ppm	0.0290 ppm	0.0451 ppm	0.0001 ppm	57.0183 ppm
Concentration per Run 3	0.0002 ppm	0.0090 ppm	-0.0011 ppm	0.0293 ppm	0.0454 ppm	0.0000 ppm	57.0854 ppm
Concentration RSD	203.7 %	14.0 %	17,972.9 %	1.9 %	0.8 %	63.2 %	0.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0002 ppm	-0.0001 ppm	0.0016 ppm	0.0017 ppm	0.0205 ppm	4.1804 ppm	0.0051 ppm
Concentration per Run 1	-0.0002 ppm	0.0003 ppm	0.0017 ppm	0.0017 ppm	0.0203 ppm	4.1888 ppm	0.0059 ppm
Concentration per Run 2	-0.0002 ppm	-0.0002 ppm	0.0015 ppm	0.0017 ppm	0.0199 ppm	4.1401 ppm	0.0042 ppm
Concentration per Run 3	-0.0002 ppm	-0.0003 ppm	0.0016 ppm	0.0017 ppm	0.0214 ppm	4.2124 ppm	0.0052 ppm
Concentration RSD	6.1 %	427.9 %	6.0 %	2.9 %	3.8 %	0.9 %	16.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	24.3980 ppm	0.0191 ppm	0.0005 ppm	21.6211 ppm	0.0060 ppm	0.0004 ppm	-0.0006 ppm
Concentration per Run 1	24.6671 ppm	0.0193 ppm	0.0006 ppm	21.5833 ppm	0.0063 ppm	0.0006 ppm	0.0019 ppm
Concentration per Run 2	24.3202 ppm	0.0189 ppm	0.0005 ppm	21.6570 ppm	0.0062 ppm	0.0009 ppm	-0.0013 ppm
Concentration per Run 3	24.2067 ppm	0.0190 ppm	0.0004 ppm	21.6229 ppm	0.0057 ppm	-0.0003 ppm	-0.0023 ppm
Concentration RSD	1.0 %	1.0 %	23.2 %	0.2 %	5.3 %	153.3 %	395.3 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0008 ppm	11.6310 ppm	0.0002 ppm	0.4750 ppm	0.0007 ppm	-0.0004 ppm	0.0002 ppm
Concentration per Run 1	0.0001 ppm	11.7740 ppm	0.0004 ppm	0.4731 ppm	0.0007 ppm	0.0000 ppm	0.0002 ppm
Concentration per Run 2	-0.0014 ppm	11.6251 ppm	0.0009 ppm	0.4751 ppm	0.0006 ppm	-0.0007 ppm	0.0002 ppm
Concentration per Run 3	-0.0012 ppm	11.4938 ppm	-0.0006 ppm	0.4769 ppm	0.0007 ppm	-0.0005 ppm	0.0001 ppm
Concentration RSD	103.3 %	1.2 %	327.6 %	0.4 %	13.8 %	81.2 %	7.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0035 ppm	94.5329 %	101.0478 %	91.0895 %	94.1764 %	101.0986 %	94.9205 %
Concentration per Run 1	0.0034 ppm	93.6090 %	100.5424 %	90.6129 %	94.5603 %	100.6076 %	94.9419 %
Concentration per Run 2	0.0035 ppm	94.7469 %	101.6036 %	91.0781 %	94.2326 %	101.6195 %	94.8457 %
Concentration per Run 3	0.0035 ppm	95.2429 %	100.9973 %	91.5774 %	93.7362 %	101.0688 %	94.9740 %
Concentration RSD	1.2 %	0.9 %	0.5 %	0.5 %	0.4 %	0.5 %	0.1 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2449438-06 WG1968490
Analysis started at: 9/10/2024 2:15:17 PM
Rack 1
Vial 36
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0002 ppm	0.0012 ppm	0.0074 ppm	0.0227 ppm	0.0320 ppm	0.0000 ppm	56.3782 ppm
Concentration per Run 1	-0.0001 ppm	0.0078 ppm	0.0084 ppm	0.0229 ppm	0.0322 ppm	0.0000 ppm	56.1235 ppm
Concentration per Run 2	-0.0003 ppm	0.0007 ppm	0.0071 ppm	0.0230 ppm	0.0320 ppm	0.0000 ppm	56.5483 ppm
Concentration per Run 3	-0.0002 ppm	-0.0048 ppm	0.0066 ppm	0.0220 ppm	0.0317 ppm	0.0000 ppm	56.4630 ppm
Concentration RSD	50.6 %	517.6 %	12.4 %	2.5 %	0.8 %	678.4 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0002 ppm	0.0003 ppm	0.0007 ppm	0.0011 ppm	0.0812 ppm	5.5440 ppm	0.0004 ppm
Concentration per Run 1	-0.0002 ppm	0.0001 ppm	0.0008 ppm	0.0011 ppm	0.0816 ppm	5.5818 ppm	0.0013 ppm
Concentration per Run 2	-0.0003 ppm	0.0001 ppm	0.0005 ppm	0.0011 ppm	0.0805 ppm	5.5559 ppm	-0.0003 ppm
Concentration per Run 3	-0.0002 ppm	0.0008 ppm	0.0009 ppm	0.0011 ppm	0.0815 ppm	5.4944 ppm	0.0003 ppm
Concentration RSD	21.1 %	108.0 %	28.5 %	2.8 %	0.8 %	0.8 %	207.1 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	12.2911 ppm	0.5052 ppm	0.0040 ppm	33.6972 ppm	0.0020 ppm	0.0000 ppm	0.0005 ppm
Concentration per Run 1	12.4448 ppm	0.5042 ppm	0.0042 ppm	33.7070 ppm	0.0024 ppm	0.0001 ppm	-0.0017 ppm
Concentration per Run 2	12.2986 ppm	0.5066 ppm	0.0039 ppm	33.8160 ppm	0.0016 ppm	-0.0005 ppm	0.0037 ppm
Concentration per Run 3	12.1300 ppm	0.5048 ppm	0.0039 ppm	33.5685 ppm	0.0020 ppm	0.0002 ppm	-0.0006 ppm
Concentration RSD	1.3 %	0.3 %	4.9 %	0.4 %	19.4 %	815.6 %	626.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0000 ppm	9.1436 ppm	-0.0008 ppm	0.5828 ppm	-0.0003 ppm	-0.0011 ppm	0.0000 ppm
Concentration per Run 1	0.0001 ppm	9.2886 ppm	-0.0004 ppm	0.5820 ppm	0.0000 ppm	-0.0001 ppm	-0.0001 ppm
Concentration per Run 2	0.0004 ppm	9.1331 ppm	-0.0010 ppm	0.5807 ppm	-0.0003 ppm	-0.0019 ppm	0.0000 ppm
Concentration per Run 3	-0.0006 ppm	9.0093 ppm	-0.0009 ppm	0.5858 ppm	-0.0005 ppm	-0.0012 ppm	0.0001 ppm
Concentration RSD	1,403.4 %	1.5 %	45.7 %	0.5 %	93.0 %	82.7 %	1,012.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0013 ppm	94.8553 %	100.7015 %	91.7637 %	94.0791 %	100.4027 %	95.0110 %
Concentration per Run 1	0.0013 ppm	93.5768 %	101.7547 %	91.4692 %	93.5534 %	101.5301 %	95.1598 %
Concentration per Run 2	0.0013 ppm	95.0548 %	100.4435 %	91.7224 %	94.2753 %	100.7343 %	94.8529 %
Concentration per Run 3	0.0012 ppm	95.9343 %	99.9064 %	92.0996 %	94.4087 %	98.9436 %	95.0203 %
Concentration RSD	6.7 %	1.3 %	0.9 %	0.3 %	0.5 %	1.3 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2449438-07 WG1968490
Analysis started at: 9/10/2024 2:19:15 PM
Rack 1
Vial 37
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0001 ppm	3.9846 ppm	0.0023 ppm	0.0224 ppm	0.0975 ppm	0.0002 ppm	67.9507 ppm
Concentration per Run 1	0.0001 ppm	3.9953 ppm	0.0023 ppm	0.0214 ppm	0.0976 ppm	0.0002 ppm	68.0126 ppm
Concentration per Run 2	-0.0002 ppm	3.9818 ppm	0.0028 ppm	0.0229 ppm	0.0970 ppm	0.0002 ppm	68.0046 ppm
Concentration per Run 3	-0.0001 ppm	3.9768 ppm	0.0019 ppm	0.0227 ppm	0.0978 ppm	0.0002 ppm	67.8348 ppm
Concentration RSD	143.7 %	0.2 %	19.8 %	3.5 %	0.4 %	7.2 %	0.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0003 ppm	0.0051 ppm	0.0112 ppm	0.0096 ppm	11.7409 ppm	7.0128 ppm	0.0075 ppm
Concentration per Run 1	-0.0003 ppm	0.0055 ppm	0.0114 ppm	0.0099 ppm	11.7476 ppm	7.0428 ppm	0.0086 ppm
Concentration per Run 2	-0.0003 ppm	0.0048 ppm	0.0108 ppm	0.0096 ppm	11.7009 ppm	6.9890 ppm	0.0066 ppm
Concentration per Run 3	-0.0003 ppm	0.0050 ppm	0.0113 ppm	0.0095 ppm	11.7742 ppm	7.0066 ppm	0.0073 ppm
Concentration RSD	0.5 %	6.9 %	2.9 %	2.2 %	0.3 %	0.4 %	13.3 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	26.3715 ppm	0.5363 ppm	0.0019 ppm	20.8640 ppm	0.0102 ppm	0.0022 ppm	-0.0010 ppm
Concentration per Run 1	27.1311 ppm	0.5367 ppm	0.0020 ppm	20.8257 ppm	0.0111 ppm	0.0020 ppm	-0.0005 ppm
Concentration per Run 2	26.1482 ppm	0.5361 ppm	0.0023 ppm	20.8373 ppm	0.0100 ppm	0.0024 ppm	-0.0005 ppm
Concentration per Run 3	25.8353 ppm	0.5362 ppm	0.0015 ppm	20.9290 ppm	0.0096 ppm	0.0021 ppm	-0.0020 ppm
Concentration RSD	2.6 %	0.1 %	20.2 %	0.3 %	7.8 %	10.2 %	83.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0010 ppm	17.0577 ppm	-0.0012 ppm	0.4243 ppm	0.4551 ppm	-0.0007 ppm	0.0158 ppm
Concentration per Run 1	0.0016 ppm	17.5326 ppm	-0.0015 ppm	0.4256 ppm	0.4670 ppm	-0.0014 ppm	0.0161 ppm
Concentration per Run 2	0.0005 ppm	16.9172 ppm	-0.0016 ppm	0.4231 ppm	0.4506 ppm	0.0001 ppm	0.0158 ppm
Concentration per Run 3	0.0010 ppm	16.7234 ppm	-0.0006 ppm	0.4240 ppm	0.4476 ppm	-0.0009 ppm	0.0156 ppm
Concentration RSD	51.0 %	2.5 %	43.5 %	0.3 %	2.3 %	100.9 %	1.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0211 ppm	95.3148 %	102.3402 %	91.8187 %	95.1685 %	102.4301 %	96.8350 %
Concentration per Run 1	0.0218 ppm	93.3252 %	102.2838 %	91.1668 %	94.0332 %	102.4223 %	96.6809 %
Concentration per Run 2	0.0210 ppm	95.9948 %	102.3251 %	92.3521 %	95.6511 %	102.2729 %	96.9908 %
Concentration per Run 3	0.0206 ppm	96.6245 %	102.4118 %	91.9372 %	95.8211 %	102.5950 %	96.8332 %
Concentration RSD	2.7 %	1.8 %	0.1 %	0.7 %	1.0 %	0.2 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2449438-08 WG1968490
Analysis started at: 9/10/2024 2:23:09 PM
Rack 1
Vial 38
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0001 ppm	0.0311 ppm	0.0033 ppm	0.0200 ppm	0.0511 ppm	0.0000 ppm	89.3955 ppm
Concentration per Run 1	-0.0001 ppm	0.0330 ppm	0.0033 ppm	0.0206 ppm	0.0510 ppm	0.0000 ppm	89.1955 ppm
Concentration per Run 2	0.0000 ppm	0.0312 ppm	0.0027 ppm	0.0197 ppm	0.0512 ppm	0.0000 ppm	89.5673 ppm
Concentration per Run 3	-0.0001 ppm	0.0291 ppm	0.0039 ppm	0.0198 ppm	0.0512 ppm	0.0000 ppm	89.4237 ppm
Concentration RSD	57.1 %	6.3 %	18.7 %	2.3 %	0.3 %	173.5 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0004 ppm	0.0009 ppm	0.0008 ppm	0.0009 ppm	3.1868 ppm	5.7828 ppm	0.0018 ppm
Concentration per Run 1	-0.0003 ppm	0.0011 ppm	0.0010 ppm	0.0007 ppm	3.1724 ppm	5.7848 ppm	0.0017 ppm
Concentration per Run 2	-0.0003 ppm	0.0009 ppm	0.0009 ppm	0.0010 ppm	3.1924 ppm	5.7854 ppm	0.0030 ppm
Concentration per Run 3	-0.0004 ppm	0.0007 ppm	0.0005 ppm	0.0010 ppm	3.1958 ppm	5.7782 ppm	0.0006 ppm
Concentration RSD	9.7 %	21.3 %	33.2 %	18.3 %	0.4 %	0.1 %	65.3 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	23.2360 ppm	1.4545 ppm	0.0035 ppm	19.7929 ppm	0.0028 ppm	0.0000 ppm	0.0010 ppm
Concentration per Run 1	23.3769 ppm	1.4506 ppm	0.0034 ppm	19.7648 ppm	0.0027 ppm	-0.0005 ppm	0.0007 ppm
Concentration per Run 2	23.4310 ppm	1.4562 ppm	0.0033 ppm	19.8614 ppm	0.0031 ppm	-0.0003 ppm	-0.0001 ppm
Concentration per Run 3	22.9000 ppm	1.4567 ppm	0.0036 ppm	19.7526 ppm	0.0026 ppm	0.0007 ppm	0.0024 ppm
Concentration RSD	1.3 %	0.2 %	4.7 %	0.3 %	9.8 %	2,074.5 %	127.6 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0002 ppm	10.5241 ppm	-0.0007 ppm	0.5752 ppm	0.0028 ppm	-0.0015 ppm	0.0000 ppm
Concentration per Run 1	-0.0016 ppm	10.5942 ppm	-0.0001 ppm	0.5773 ppm	0.0026 ppm	-0.0017 ppm	0.0000 ppm
Concentration per Run 2	0.0013 ppm	10.5855 ppm	-0.0010 ppm	0.5767 ppm	0.0030 ppm	-0.0018 ppm	0.0001 ppm
Concentration per Run 3	-0.0003 ppm	10.3927 ppm	-0.0011 ppm	0.5717 ppm	0.0028 ppm	-0.0010 ppm	0.0000 ppm
Concentration RSD	602.4 %	1.1 %	73.8 %	0.5 %	6.8 %	28.8 %	8.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0014 ppm	93.1629 %	100.5107 %	90.3864 %	93.6195 %	100.8108 %	94.0134 %
Concentration per Run 1	0.0012 ppm	92.6563 %	100.6790 %	89.9958 %	93.9436 %	101.1348 %	94.2369 %
Concentration per Run 2	0.0014 ppm	92.5627 %	100.4528 %	90.3917 %	93.0217 %	100.6450 %	93.9686 %
Concentration per Run 3	0.0016 ppm	94.2696 %	100.4004 %	90.7718 %	93.8930 %	100.6525 %	93.8346 %
Concentration RSD	12.9 %	1.0 %	0.1 %	0.4 %	0.6 %	0.3 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2449438-09 WG1968490
Analysis started at: 9/10/2024 2:27:04 PM
Rack 1
Vial 39
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0002 ppm	0.0411 ppm	0.0156 ppm	0.0087 ppm	0.0328 ppm	0.0000 ppm	82.6486 ppm
Concentration per Run 1	-0.0002 ppm	0.0433 ppm	0.0153 ppm	0.0086 ppm	0.0331 ppm	0.0000 ppm	82.5915 ppm
Concentration per Run 2	-0.0002 ppm	0.0403 ppm	0.0142 ppm	0.0087 ppm	0.0329 ppm	0.0000 ppm	82.8741 ppm
Concentration per Run 3	-0.0002 ppm	0.0397 ppm	0.0173 ppm	0.0089 ppm	0.0325 ppm	0.0000 ppm	82.4803 ppm
Concentration RSD	4.8 %	4.8 %	10.1 %	1.8 %	0.8 %	91.8 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0004 ppm	0.0015 ppm	0.0008 ppm	0.0019 ppm	2.5566 ppm	5.4713 ppm	0.0014 ppm
Concentration per Run 1	-0.0004 ppm	0.0013 ppm	0.0008 ppm	0.0019 ppm	2.5518 ppm	5.5150 ppm	0.0022 ppm
Concentration per Run 2	-0.0004 ppm	0.0018 ppm	0.0008 ppm	0.0019 ppm	2.5629 ppm	5.4743 ppm	0.0019 ppm
Concentration per Run 3	-0.0004 ppm	0.0014 ppm	0.0007 ppm	0.0018 ppm	2.5551 ppm	5.4246 ppm	0.0003 ppm
Concentration RSD	3.3 %	20.2 %	10.4 %	4.1 %	0.2 %	0.8 %	70.1 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	19.9703 ppm	1.4490 ppm	0.0027 ppm	19.3476 ppm	0.0015 ppm	0.0001 ppm	-0.0006 ppm
Concentration per Run 1	20.3792 ppm	1.4475 ppm	0.0027 ppm	19.4418 ppm	0.0015 ppm	0.0007 ppm	-0.0007 ppm
Concentration per Run 2	19.8574 ppm	1.4530 ppm	0.0029 ppm	19.3200 ppm	0.0016 ppm	0.0001 ppm	0.0000 ppm
Concentration per Run 3	19.6742 ppm	1.4463 ppm	0.0024 ppm	19.2811 ppm	0.0013 ppm	-0.0007 ppm	-0.0012 ppm
Concentration RSD	1.8 %	0.2 %	9.6 %	0.4 %	11.2 %	1,425.5 %	95.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0016 ppm	9.8683 ppm	-0.0010 ppm	0.5747 ppm	0.0018 ppm	-0.0014 ppm	0.0000 ppm
Concentration per Run 1	-0.0014 ppm	10.0659 ppm	-0.0018 ppm	0.5760 ppm	0.0018 ppm	-0.0004 ppm	0.0000 ppm
Concentration per Run 2	-0.0017 ppm	9.7995 ppm	-0.0007 ppm	0.5766 ppm	0.0019 ppm	-0.0016 ppm	0.0000 ppm
Concentration per Run 3	-0.0016 ppm	9.7395 ppm	-0.0004 ppm	0.5716 ppm	0.0019 ppm	-0.0022 ppm	0.0000 ppm
Concentration RSD	10.4 %	1.8 %	74.7 %	0.5 %	0.5 %	65.5 %	23.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0051 ppm	93.2776 %	99.0787 %	89.6917 %	93.3926 %	99.9610 %	93.6869 %
Concentration per Run 1	0.0053 ppm	91.6388 %	99.1095 %	89.5206 %	92.8135 %	100.0218 %	94.1135 %
Concentration per Run 2	0.0049 ppm	93.7787 %	98.9484 %	90.4595 %	93.6216 %	99.6550 %	94.0916 %
Concentration per Run 3	0.0050 ppm	94.4151 %	99.1781 %	89.0951 %	93.7426 %	100.2063 %	92.8555 %
Concentration RSD	3.8 %	1.6 %	0.1 %	0.8 %	0.5 %	0.3 %	0.8 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2449438-10 WG1968490
Analysis started at: 9/10/2024 2:30:58 PM
Rack 1
Vial 40
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0001 ppm	-0.0033 ppm	0.0818 ppm	0.0675 ppm	0.0883 ppm	0.0000 ppm	88.8579 ppm
Concentration per Run 1	-0.0002 ppm	-0.0027 ppm	0.0827 ppm	0.0684 ppm	0.0874 ppm	0.0000 ppm	88.9681 ppm
Concentration per Run 2	0.0000 ppm	-0.0059 ppm	0.0822 ppm	0.0670 ppm	0.0881 ppm	0.0000 ppm	88.7178 ppm
Concentration per Run 3	-0.0003 ppm	-0.0014 ppm	0.0805 ppm	0.0672 ppm	0.0896 ppm	0.0001 ppm	88.8878 ppm
Concentration RSD	123.1 %	68.9 %	1.4 %	1.1 %	1.3 %	76.5 %	0.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0004 ppm	0.0006 ppm	0.0004 ppm	0.0008 ppm	9.9958 ppm	8.1655 ppm	0.0021 ppm
Concentration per Run 1	-0.0003 ppm	0.0007 ppm	0.0004 ppm	0.0010 ppm	9.9349 ppm	8.1092 ppm	0.0028 ppm
Concentration per Run 2	-0.0003 ppm	0.0006 ppm	0.0003 ppm	0.0007 ppm	9.9409 ppm	8.1932 ppm	0.0021 ppm
Concentration per Run 3	-0.0004 ppm	0.0005 ppm	0.0004 ppm	0.0007 ppm	10.1117 ppm	8.1943 ppm	0.0015 ppm
Concentration RSD	6.5 %	22.5 %	18.7 %	25.0 %	1.0 %	0.6 %	29.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	26.8915 ppm	2.7504 ppm	0.0552 ppm	30.8065 ppm	0.0056 ppm	-0.0004 ppm	0.0013 ppm
Concentration per Run 1	27.4590 ppm	2.7607 ppm	0.0557 ppm	30.8193 ppm	0.0052 ppm	-0.0005 ppm	0.0015 ppm
Concentration per Run 2	26.6522 ppm	2.7374 ppm	0.0549 ppm	30.7122 ppm	0.0057 ppm	0.0000 ppm	0.0016 ppm
Concentration per Run 3	26.5633 ppm	2.7532 ppm	0.0549 ppm	30.8878 ppm	0.0058 ppm	-0.0008 ppm	0.0007 ppm
Concentration RSD	1.8 %	0.4 %	0.8 %	0.3 %	5.5 %	95.6 %	37.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0006 ppm	13.2106 ppm	-0.0009 ppm	0.5411 ppm	-0.0004 ppm	-0.0024 ppm	0.0000 ppm
Concentration per Run 1	-0.0021 ppm	13.4472 ppm	-0.0013 ppm	0.5408 ppm	-0.0004 ppm	-0.0027 ppm	-0.0001 ppm
Concentration per Run 2	0.0006 ppm	13.1601 ppm	-0.0006 ppm	0.5366 ppm	-0.0005 ppm	-0.0014 ppm	0.0001 ppm
Concentration per Run 3	-0.0003 ppm	13.0244 ppm	-0.0008 ppm	0.5458 ppm	-0.0003 ppm	-0.0031 ppm	0.0001 ppm
Concentration RSD	243.1 %	1.6 %	40.7 %	0.9 %	26.8 %	36.1 %	487.9 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0027 ppm	93.7945 %	101.6532 %	89.7759 %	93.6110 %	101.1000 %	94.2021 %
Concentration per Run 1	0.0028 ppm	92.1226 %	101.5434 %	89.0224 %	93.0826 %	101.2008 %	93.8686 %
Concentration per Run 2	0.0027 ppm	94.5522 %	101.4436 %	89.9630 %	94.4258 %	100.6787 %	94.2980 %
Concentration per Run 3	0.0026 ppm	94.7087 %	101.9726 %	90.3423 %	93.3245 %	101.4206 %	94.4396 %
Concentration RSD	3.5 %	1.5 %	0.3 %	0.8 %	0.8 %	0.4 %	0.3 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2449438-11 WG1968490
Analysis started at: 9/10/2024 2:34:53 PM
Rack 1
Vial 41
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0004 ppm	-0.0013 ppm	0.0047 ppm	0.0171 ppm	0.0144 ppm	0.0000 ppm	46.2277 ppm
Concentration per Run 1	-0.0006 ppm	-0.0029 ppm	0.0054 ppm	0.0166 ppm	0.0147 ppm	0.0000 ppm	46.4173 ppm
Concentration per Run 2	-0.0003 ppm	-0.0041 ppm	0.0037 ppm	0.0178 ppm	0.0144 ppm	0.0000 ppm	46.3298 ppm
Concentration per Run 3	-0.0001 ppm	0.0029 ppm	0.0050 ppm	0.0168 ppm	0.0142 ppm	0.0000 ppm	45.9362 ppm
Concentration RSD	73.7 %	281.9 %	19.1 %	3.7 %	1.5 %	279.5 %	0.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0002 ppm	0.0002 ppm	0.0006 ppm	0.0014 ppm	0.0218 ppm	6.2300 ppm	0.0017 ppm
Concentration per Run 1	-0.0002 ppm	0.0001 ppm	0.0007 ppm	0.0014 ppm	0.0204 ppm	6.2938 ppm	0.0033 ppm
Concentration per Run 2	-0.0002 ppm	0.0000 ppm	0.0004 ppm	0.0012 ppm	0.0226 ppm	6.2259 ppm	0.0011 ppm
Concentration per Run 3	-0.0001 ppm	0.0003 ppm	0.0005 ppm	0.0016 ppm	0.0226 ppm	6.1702 ppm	0.0005 ppm
Concentration RSD	30.9 %	100.1 %	23.1 %	12.6 %	5.6 %	1.0 %	88.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	9.3533 ppm	0.3657 ppm	0.0314 ppm	33.3746 ppm	0.0012 ppm	0.0000 ppm	-0.0001 ppm
Concentration per Run 1	9.5089 ppm	0.3665 ppm	0.0315 ppm	33.4316 ppm	0.0016 ppm	-0.0004 ppm	-0.0002 ppm
Concentration per Run 2	9.3458 ppm	0.3667 ppm	0.0315 ppm	33.5309 ppm	0.0010 ppm	0.0000 ppm	0.0003 ppm
Concentration per Run 3	9.2052 ppm	0.3638 ppm	0.0310 ppm	33.1612 ppm	0.0011 ppm	0.0003 ppm	-0.0003 ppm
Concentration RSD	1.6 %	0.5 %	1.0 %	0.6 %	25.2 %	1,019.7 %	387.3 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0002 ppm	11.1995 ppm	-0.0013 ppm	0.2054 ppm	-0.0006 ppm	-0.0007 ppm	0.0001 ppm
Concentration per Run 1	-0.0014 ppm	11.4084 ppm	-0.0016 ppm	0.2058 ppm	-0.0005 ppm	-0.0016 ppm	0.0001 ppm
Concentration per Run 2	-0.0001 ppm	11.1653 ppm	-0.0013 ppm	0.2062 ppm	-0.0005 ppm	0.0000 ppm	0.0001 ppm
Concentration per Run 3	0.0008 ppm	11.0247 ppm	-0.0009 ppm	0.2041 ppm	-0.0006 ppm	-0.0006 ppm	0.0002 ppm
Concentration RSD	466.4 %	1.7 %	27.8 %	0.5 %	6.9 %	115.7 %	46.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0020 ppm	91.3677 %	98.4076 %	89.4040 %	94.4829 %	100.3371 %	95.3946 %
Concentration per Run 1	0.0020 ppm	90.1044 %	98.2545 %	88.7355 %	94.3169 %	100.4289 %	95.2860 %
Concentration per Run 2	0.0020 ppm	91.2822 %	98.6099 %	90.1205 %	94.1648 %	100.8165 %	95.8830 %
Concentration per Run 3	0.0019 ppm	92.7166 %	98.3584 %	89.3562 %	94.9670 %	99.7659 %	95.0149 %
Concentration RSD	3.7 %	1.4 %	0.2 %	0.8 %	0.5 %	0.5 %	0.5 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2449438-12 WG1968490
Analysis started at: 9/10/2024 2:38:48 PM
Rack 1
Vial 42
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0001 ppm	0.0071 ppm	-0.0001 ppm	0.0323 ppm	0.0108 ppm	0.0000 ppm	27.6177 ppm
Concentration per Run 1	-0.0003 ppm	0.0084 ppm	0.0009 ppm	0.0332 ppm	0.0108 ppm	0.0000 ppm	27.6418 ppm
Concentration per Run 2	-0.0003 ppm	0.0045 ppm	-0.0013 ppm	0.0325 ppm	0.0108 ppm	0.0000 ppm	27.6257 ppm
Concentration per Run 3	0.0002 ppm	0.0084 ppm	0.0000 ppm	0.0310 ppm	0.0108 ppm	0.0000 ppm	27.5855 ppm
Concentration RSD	222.3 %	31.8 %	804.6 %	3.4 %	0.2 %	319.0 %	0.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0001 ppm	0.0002 ppm	0.0009 ppm	0.0021 ppm	0.0679 ppm	3.8249 ppm	0.0003 ppm
Concentration per Run 1	0.0000 ppm	0.0001 ppm	0.0009 ppm	0.0025 ppm	0.0692 ppm	3.8746 ppm	-0.0001 ppm
Concentration per Run 2	-0.0001 ppm	0.0002 ppm	0.0009 ppm	0.0019 ppm	0.0662 ppm	3.7964 ppm	0.0004 ppm
Concentration per Run 3	-0.0001 ppm	0.0003 ppm	0.0007 ppm	0.0019 ppm	0.0682 ppm	3.8036 ppm	0.0006 ppm
Concentration RSD	53.0 %	44.8 %	14.7 %	17.9 %	2.3 %	1.1 %	119.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	8.4585 ppm	0.4251 ppm	0.0011 ppm	54.6262 ppm	0.0020 ppm	0.0004 ppm	0.0005 ppm
Concentration per Run 1	8.8032 ppm	0.4256 ppm	0.0011 ppm	54.6999 ppm	0.0022 ppm	0.0012 ppm	-0.0004 ppm
Concentration per Run 2	8.3996 ppm	0.4259 ppm	0.0008 ppm	54.5128 ppm	0.0020 ppm	-0.0003 ppm	0.0018 ppm
Concentration per Run 3	8.1727 ppm	0.4238 ppm	0.0013 ppm	54.6658 ppm	0.0018 ppm	0.0002 ppm	0.0002 ppm
Concentration RSD	3.8 %	0.3 %	24.0 %	0.2 %	8.2 %	218.4 %	211.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0006 ppm	5.5045 ppm	-0.0015 ppm	0.2036 ppm	-0.0002 ppm	-0.0010 ppm	0.0001 ppm
Concentration per Run 1	-0.0019 ppm	5.7123 ppm	-0.0014 ppm	0.2035 ppm	-0.0001 ppm	-0.0005 ppm	0.0001 ppm
Concentration per Run 2	0.0014 ppm	5.4741 ppm	-0.0023 ppm	0.2047 ppm	-0.0002 ppm	-0.0020 ppm	0.0000 ppm
Concentration per Run 3	0.0022 ppm	5.3272 ppm	-0.0009 ppm	0.2025 ppm	-0.0002 ppm	-0.0004 ppm	0.0002 ppm
Concentration RSD	383.7 %	3.5 %	47.1 %	0.5 %	46.0 %	89.1 %	133.1 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0014 ppm	88.1892 %	98.7706 %	88.9793 %	93.3203 %	100.6753 %	95.2444 %
Concentration per Run 1	0.0014 ppm	84.8863 %	98.9127 %	88.2762 %	92.9299 %	100.8573 %	95.2609 %
Concentration per Run 2	0.0014 ppm	88.9238 %	98.4051 %	89.3985 %	93.4955 %	100.9934 %	95.6341 %
Concentration per Run 3	0.0013 ppm	90.7574 %	98.9940 %	89.2633 %	93.5355 %	100.1753 %	94.8381 %
Concentration RSD	3.0 %	3.4 %	0.3 %	0.7 %	0.4 %	0.4 %	0.4 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCV
Analysis started at: 9/10/2024 2:42:44 PM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.5108 ppm	0.4824 ppm	0.4803 ppm	0.4752 ppm	0.5097 ppm	0.5150 ppm	0.4962 ppm
Concentration per Run 1	0.5162 ppm	0.4840 ppm	0.4787 ppm	0.4827 ppm	0.5137 ppm	0.5153 ppm	0.4962 ppm
Concentration per Run 2	0.5095 ppm	0.4768 ppm	0.4827 ppm	0.4720 ppm	0.5019 ppm	0.5117 ppm	0.4916 ppm
Concentration per Run 3	0.5068 ppm	0.4865 ppm	0.4795 ppm	0.4711 ppm	0.5135 ppm	0.5180 ppm	0.5007 ppm
Recovery Percentage 1	102.169 %	96.486 %	96.062 %	95.049 %	101.934 %	103.002 %	99.235 %
Concentration RSD	0.9 %	1.0 %	0.4 %	1.4 %	1.3 %	0.6 %	0.9 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.5040 ppm	0.5143 ppm	0.5015 ppm	0.4921 ppm	0.5056 ppm	5.2754 ppm	0.5212 ppm
Concentration per Run 1	0.5106 ppm	0.5211 ppm	0.5076 ppm	0.4970 ppm	0.5081 ppm	5.3468 ppm	0.5291 ppm
Concentration per Run 2	0.5023 ppm	0.5122 ppm	0.5008 ppm	0.4914 ppm	0.4976 ppm	5.1727 ppm	0.5094 ppm
Concentration per Run 3	0.4991 ppm	0.5097 ppm	0.4961 ppm	0.4879 ppm	0.5112 ppm	5.3067 ppm	0.5250 ppm
Recovery Percentage 1	100.804 %	102.865 %	100.299 %	98.425 %	101.127 %	105.508 %	104.230 %
Concentration RSD	1.2 %	1.2 %	1.1 %	0.9 %	1.4 %	1.7 %	2.0 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.5028 ppm	0.4950 ppm	0.5062 ppm	10.2329 ppm	0.5151 ppm	0.4883 ppm	0.5005 ppm
Concentration per Run 1	0.5066 ppm	0.4966 ppm	0.5106 ppm	10.2794 ppm	0.5213 ppm	0.4868 ppm	0.5083 ppm
Concentration per Run 2	0.5042 ppm	0.4898 ppm	0.5042 ppm	10.1028 ppm	0.5142 ppm	0.4892 ppm	0.4968 ppm
Concentration per Run 3	0.4976 ppm	0.4986 ppm	0.5037 ppm	10.3165 ppm	0.5096 ppm	0.4890 ppm	0.4964 ppm
Recovery Percentage 1	100.558 %	99.003 %	101.236 %	102.329 %	103.014 %	97.663 %	100.103 %
Concentration RSD	0.9 %	0.9 %	0.8 %	1.1 %	1.1 %	0.3 %	1.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4792 ppm	5.2600 ppm	0.5306 ppm	0.5269 ppm	0.5127 ppm	0.4774 ppm	0.5024 ppm
Concentration per Run 1	0.4783 ppm	5.3106 ppm	0.5382 ppm	0.5277 ppm	0.5184 ppm	0.4774 ppm	0.5094 ppm
Concentration per Run 2	0.4786 ppm	5.2428 ppm	0.5313 ppm	0.5237 ppm	0.5116 ppm	0.4776 ppm	0.5017 ppm
Concentration per Run 3	0.4809 ppm	5.2265 ppm	0.5223 ppm	0.5294 ppm	0.5080 ppm	0.4772 ppm	0.4961 ppm
Recovery Percentage 1	95.847 %	100.190 %	106.120 %	105.380 %	102.535 %	95.477 %	100.477 %
Concentration RSD	0.3 %	0.8 %	1.5 %	0.6 %	1.0 %	0.0 %	1.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5053 ppm	98.8750 %	101.4740 %	96.6118 %	95.3412 %	99.6385 %	97.1408 %
Concentration per Run 1	0.5101 ppm	98.1264 %	101.5255 %	96.8086 %	94.7635 %	99.8439 %	97.3908 %
Concentration per Run 2	0.5049 ppm	99.0604 %	102.2058 %	96.1743 %	95.5499 %	99.8137 %	96.7570 %
Concentration per Run 3	0.5009 ppm	99.4381 %	100.6907 %	96.8524 %	95.7102 %	99.2578 %	97.2746 %
Recovery Percentage 1	101.061 %						
Concentration RSD	0.9 %	0.7 %	0.7 %	0.4 %	0.5 %	0.3 %	0.3 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCB
Analysis started at: 9/10/2024 2:46:39 PM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	0.0023 ppm	-0.0003 ppm	-0.0001 ppm	0.0001 ppm	0.0000 ppm	0.0176 ppm
Concentration per Run 1	0.0000 ppm	0.0055 ppm	-0.0013 ppm	-0.0004 ppm	0.0000 ppm	0.0000 ppm	0.0152 ppm
Concentration per Run 2	-0.0001 ppm	-0.0016 ppm	0.0004 ppm	0.0003 ppm	0.0001 ppm	0.0000 ppm	0.0197 ppm
Concentration per Run 3	0.0000 ppm	0.0031 ppm	0.0001 ppm	-0.0004 ppm	0.0001 ppm	0.0001 ppm	0.0178 ppm
Recovery Percentage 1	-0.530 %	2.337 %	-9.243 %	-0.494 %	0.804 %	0.554 %	17.578 %
Concentration RSD	167.5 %	153.5 %	338.9 %	278.7 %	72.4 %	128.6 %	13.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0001 ppm	0.0000 ppm	0.0010 ppm	0.0058 ppm	0.0017 ppm	0.0001 ppm
Concentration per Run 1	0.0000 ppm	0.0001 ppm	0.0000 ppm	0.0011 ppm	0.0061 ppm	-0.0068 ppm	-0.0007 ppm
Concentration per Run 2	0.0000 ppm	0.0002 ppm	0.0002 ppm	0.0010 ppm	0.0045 ppm	0.0084 ppm	0.0002 ppm
Concentration per Run 3	0.0001 ppm	0.0000 ppm	-0.0003 ppm	0.0008 ppm	0.0069 ppm	0.0035 ppm	0.0009 ppm
Recovery Percentage 1	0.751 %	0.477 %	-0.491 %	9.669 %	11.692 %	0.069 %	1.469 %
Concentration RSD	61.0 %	65.2 %	543.6 %	14.0 %	20.9 %	450.5 %	563.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0065 ppm	0.0003 ppm	0.0016 ppm	0.0267 ppm	0.0004 ppm	0.0005 ppm	0.0004 ppm
Concentration per Run 1	0.0076 ppm	0.0004 ppm	0.0017 ppm	0.0270 ppm	0.0000 ppm	0.0003 ppm	0.0019 ppm
Concentration per Run 2	0.0062 ppm	0.0003 ppm	0.0016 ppm	0.0299 ppm	0.0007 ppm	0.0010 ppm	-0.0006 ppm
Concentration per Run 3	0.0058 ppm	0.0002 ppm	0.0015 ppm	0.0233 ppm	0.0006 ppm	0.0000 ppm	0.0000 ppm
Recovery Percentage 1	6.529 %	3.034 %	3.232 %	1.337 %	1.728 %	4.648 %	0.872 %
Concentration RSD	14.5 %	28.2 %	6.9 %	12.3 %	80.2 %	109.2 %	301.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0002 ppm	-0.0189 ppm	0.0005 ppm	0.0000 ppm	-0.0002 ppm	-0.0002 ppm	0.0000 ppm
Concentration per Run 1	0.0002 ppm	-0.0172 ppm	0.0009 ppm	0.0001 ppm	-0.0002 ppm	-0.0003 ppm	0.0000 ppm
Concentration per Run 2	0.0001 ppm	-0.0197 ppm	0.0003 ppm	0.0000 ppm	-0.0001 ppm	-0.0002 ppm	0.0001 ppm
Concentration per Run 3	-0.0008 ppm	-0.0198 ppm	0.0002 ppm	0.0000 ppm	-0.0004 ppm	-0.0002 ppm	-0.0001 ppm
Recovery Percentage 1	-1.796 %	-3.782 %	0.970 %	0.318 %	-2.211 %	-1.026 %	-0.152 %
Concentration RSD	292.4 %	7.7 %	81.8 %	157.7 %	57.9 %	31.1 %	616.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0016 ppm	92.9380 %	98.2200 %	95.4660 %	96.9610 %	99.8136 %	98.2086 %
Concentration per Run 1	0.0018 ppm	90.0128 %	97.5689 %	94.8404 %	95.7001 %	99.6211 %	98.0512 %
Concentration per Run 2	0.0016 ppm	93.6589 %	97.8296 %	95.7918 %	97.6182 %	99.3904 %	98.4786 %
Concentration per Run 3	0.0014 ppm	95.1423 %	99.2614 %	95.7657 %	97.5648 %	100.4293 %	98.0961 %
Recovery Percentage 1	31.837 %						
Concentration RSD	14.1 %	2.8 %	0.9 %	0.6 %	1.1 %	0.5 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: zL2449877-01D10 WG1969482
Analysis started at: 9/10/2024 2:55:27 PM
Rack 1
Vial 15
Comment color

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0002 ppm	1.0511 ppm	0.0001 ppm	0.0058 ppm	0.0219 ppm	0.0001 ppm	29.6978 ppm
Concentration per Run 1	0.0001 ppm	1.0518 ppm	-0.0001 ppm	0.0051 ppm	0.0219 ppm	0.0001 ppm	29.6217 ppm
Concentration per Run 2	0.0003 ppm	1.0493 ppm	0.0003 ppm	0.0065 ppm	0.0218 ppm	0.0001 ppm	29.7735 ppm
Concentration per Run 3	0.0000 ppm	1.0522 ppm	0.0001 ppm	0.0056 ppm	0.0218 ppm	0.0001 ppm	29.6981 ppm
Concentration RSD	81.9 %	0.2 %	190.3 %	12.6 %	0.3 %	9.9 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0001 ppm	0.0002 ppm	0.0054 ppm	0.0571 ppm	2.2329 ppm	2.1845 ppm	0.0006 ppm
Concentration per Run 1	0.0002 ppm	0.0003 ppm	0.0055 ppm	0.0566 ppm	2.2402 ppm	2.2175 ppm	0.0013 ppm
Concentration per Run 2	0.0001 ppm	0.0004 ppm	0.0053 ppm	0.0575 ppm	2.2270 ppm	2.1694 ppm	0.0001 ppm
Concentration per Run 3	0.0002 ppm	-0.0002 ppm	0.0054 ppm	0.0572 ppm	2.2317 ppm	2.1665 ppm	0.0003 ppm
Concentration RSD	30.5 %	199.0 %	1.9 %	0.7 %	0.3 %	1.3 %	115.0 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	3.3412 ppm	0.1324 ppm	0.0025 ppm	0.8065 ppm	0.0012 ppm	0.0033 ppm	0.0001 ppm
Concentration per Run 1	3.3534 ppm	0.1322 ppm	0.0027 ppm	0.8071 ppm	0.0013 ppm	0.0030 ppm	-0.0009 ppm
Concentration per Run 2	3.3389 ppm	0.1327 ppm	0.0021 ppm	0.8083 ppm	0.0009 ppm	0.0041 ppm	-0.0013 ppm
Concentration per Run 3	3.3314 ppm	0.1325 ppm	0.0026 ppm	0.8041 ppm	0.0016 ppm	0.0029 ppm	0.0024 ppm
Concentration RSD	0.3 %	0.2 %	13.5 %	0.3 %	27.5 %	20.6 %	2,687.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0010 ppm	0.7706 ppm	0.0004 ppm	0.0434 ppm	0.0383 ppm	-0.0006 ppm	0.0037 ppm
Concentration per Run 1	0.0011 ppm	0.7772 ppm	0.0001 ppm	0.0434 ppm	0.0385 ppm	-0.0013 ppm	0.0036 ppm
Concentration per Run 2	0.0008 ppm	0.7634 ppm	0.0000 ppm	0.0434 ppm	0.0379 ppm	0.0001 ppm	0.0038 ppm
Concentration per Run 3	0.0012 ppm	0.7711 ppm	0.0010 ppm	0.0435 ppm	0.0383 ppm	-0.0007 ppm	0.0038 ppm
Concentration RSD	23.4 %	0.9 %	144.6 %	0.1 %	0.8 %	119.8 %	3.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0472 ppm	103.1198 %	103.8147 %	97.2997 %	103.1182 %	106.2045 %	102.1593 %
Concentration per Run 1	0.0473 ppm	103.0578 %	104.5886 %	97.1020 %	102.9278 %	107.0491 %	102.0679 %
Concentration per Run 2	0.0471 ppm	103.3329 %	103.1761 %	97.7990 %	103.5619 %	105.4693 %	102.6814 %
Concentration per Run 3	0.0471 ppm	102.9688 %	103.6794 %	96.9981 %	102.8650 %	106.0950 %	101.7284 %
Concentration RSD	0.2 %	0.2 %	0.7 %	0.4 %	0.4 %	0.7 %	0.5 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: zL2449877-02D10 WG1969482
Analysis started at: 9/10/2024 2:59:36 PM
Rack 1
Vial 16
Comment color

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	0.6825 ppm	0.0006 ppm	0.0047 ppm	0.0218 ppm	0.0000 ppm	26.9490 ppm
Concentration per Run 1	0.0001 ppm	0.6907 ppm	0.0022 ppm	0.0046 ppm	0.0220 ppm	0.0000 ppm	27.0062 ppm
Concentration per Run 2	-0.0002 ppm	0.6878 ppm	-0.0007 ppm	0.0045 ppm	0.0217 ppm	0.0000 ppm	27.0678 ppm
Concentration per Run 3	0.0000 ppm	0.6692 ppm	0.0002 ppm	0.0050 ppm	0.0218 ppm	0.0000 ppm	26.7728 ppm
Concentration RSD	1,974.7 %	1.7 %	249.8 %	5.2 %	0.7 %	62.9 %	0.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0003 ppm	0.0013 ppm	0.0420 ppm	1.7267 ppm	2.0017 ppm	0.0018 ppm
Concentration per Run 1	0.0000 ppm	0.0000 ppm	0.0016 ppm	0.0429 ppm	1.7346 ppm	2.0410 ppm	0.0017 ppm
Concentration per Run 2	-0.0001 ppm	0.0005 ppm	0.0010 ppm	0.0423 ppm	1.7301 ppm	1.9843 ppm	0.0015 ppm
Concentration per Run 3	0.0000 ppm	0.0004 ppm	0.0013 ppm	0.0409 ppm	1.7154 ppm	1.9799 ppm	0.0020 ppm
Concentration RSD	1,673.8 %	77.3 %	19.5 %	2.4 %	0.6 %	1.7 %	14.1 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	3.3397 ppm	0.1306 ppm	0.0016 ppm	0.7736 ppm	0.0015 ppm	0.0028 ppm	-0.0001 ppm
Concentration per Run 1	3.4114 ppm	0.1312 ppm	0.0015 ppm	0.7774 ppm	0.0013 ppm	0.0036 ppm	-0.0005 ppm
Concentration per Run 2	3.3176 ppm	0.1310 ppm	0.0017 ppm	0.7724 ppm	0.0023 ppm	0.0022 ppm	-0.0005 ppm
Concentration per Run 3	3.2902 ppm	0.1295 ppm	0.0016 ppm	0.7708 ppm	0.0011 ppm	0.0027 ppm	0.0008 ppm
Concentration RSD	1.9 %	0.7 %	7.5 %	0.4 %	42.2 %	25.6 %	1,291.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0007 ppm	0.4571 ppm	0.0000 ppm	0.0332 ppm	0.0356 ppm	-0.0008 ppm	0.0021 ppm
Concentration per Run 1	0.0004 ppm	0.4677 ppm	0.0002 ppm	0.0333 ppm	0.0363 ppm	-0.0006 ppm	0.0020 ppm
Concentration per Run 2	0.0010 ppm	0.4547 ppm	-0.0003 ppm	0.0333 ppm	0.0354 ppm	-0.0006 ppm	0.0022 ppm
Concentration per Run 3	0.0006 ppm	0.4489 ppm	0.0000 ppm	0.0330 ppm	0.0350 ppm	-0.0012 ppm	0.0021 ppm
Concentration RSD	46.8 %	2.1 %	2,462.4 %	0.6 %	1.9 %	40.6 %	3.1 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0360 ppm	98.4276 %	103.2859 %	95.1839 %	96.7105 %	102.8785 %	96.8582 %
Concentration per Run 1	0.0365 ppm	96.5454 %	102.9535 %	95.0521 %	95.5800 %	102.8532 %	96.7252 %
Concentration per Run 2	0.0357 ppm	98.8311 %	102.6644 %	95.2954 %	96.9619 %	102.4959 %	97.0770 %
Concentration per Run 3	0.0357 ppm	99.9062 %	104.2399 %	95.2043 %	97.5896 %	103.2864 %	96.7724 %
Concentration RSD	1.4 %	1.7 %	0.8 %	0.1 %	1.1 %	0.4 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: zL2449877-03D10 WG1969482
Analysis started at: 9/10/2024 3:03:31 PM
Rack 1
Vial 17
Comment color

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0003 ppm	0.6815 ppm	0.0006 ppm	0.0055 ppm	0.0219 ppm	0.0000 ppm	38.4575 ppm
Concentration per Run 1	-0.0003 ppm	0.6883 ppm	0.0006 ppm	0.0055 ppm	0.0220 ppm	0.0001 ppm	38.9336 ppm
Concentration per Run 2	-0.0004 ppm	0.6807 ppm	0.0016 ppm	0.0055 ppm	0.0219 ppm	0.0000 ppm	38.2609 ppm
Concentration per Run 3	-0.0002 ppm	0.6755 ppm	-0.0005 ppm	0.0056 ppm	0.0217 ppm	0.0000 ppm	38.1779 ppm
Concentration RSD	34.8 %	0.9 %	187.6 %	1.6 %	0.8 %	111.3 %	1.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0003 ppm	0.0015 ppm	0.0330 ppm	1.7211 ppm	2.2556 ppm	0.0014 ppm
Concentration per Run 1	0.0001 ppm	-0.0002 ppm	0.0017 ppm	0.0338 ppm	1.7424 ppm	2.3136 ppm	0.0028 ppm
Concentration per Run 2	0.0001 ppm	0.0005 ppm	0.0016 ppm	0.0329 ppm	1.7134 ppm	2.2468 ppm	-0.0003 ppm
Concentration per Run 3	0.0000 ppm	0.0005 ppm	0.0013 ppm	0.0324 ppm	1.7076 ppm	2.2064 ppm	0.0018 ppm
Concentration RSD	160.8 %	143.7 %	14.5 %	2.1 %	1.1 %	2.4 %	109.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	3.7889 ppm	0.1449 ppm	0.0013 ppm	0.8929 ppm	0.0016 ppm	0.0028 ppm	0.0008 ppm
Concentration per Run 1	3.8851 ppm	0.1464 ppm	0.0013 ppm	0.9018 ppm	0.0015 ppm	0.0029 ppm	0.0000 ppm
Concentration per Run 2	3.7783 ppm	0.1441 ppm	0.0015 ppm	0.8877 ppm	0.0019 ppm	0.0032 ppm	0.0011 ppm
Concentration per Run 3	3.7033 ppm	0.1442 ppm	0.0010 ppm	0.8891 ppm	0.0013 ppm	0.0022 ppm	0.0012 ppm
Concentration RSD	2.4 %	0.9 %	20.6 %	0.9 %	20.3 %	19.4 %	82.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0001 ppm	0.4695 ppm	-0.0002 ppm	0.0396 ppm	0.0287 ppm	-0.0009 ppm	0.0020 ppm
Concentration per Run 1	-0.0014 ppm	0.4849 ppm	-0.0002 ppm	0.0401 ppm	0.0291 ppm	-0.0009 ppm	0.0021 ppm
Concentration per Run 2	0.0002 ppm	0.4742 ppm	-0.0004 ppm	0.0393 ppm	0.0286 ppm	0.0003 ppm	0.0019 ppm
Concentration per Run 3	0.0009 ppm	0.4494 ppm	0.0000 ppm	0.0395 ppm	0.0282 ppm	-0.0020 ppm	0.0019 ppm
Concentration RSD	1,399.6 %	3.9 %	122.2 %	1.0 %	1.5 %	125.9 %	6.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0388 ppm	99.7079 %	103.5436 %	95.5888 %	96.7825 %	102.3742 %	96.8174 %
Concentration per Run 1	0.0400 ppm	98.2720 %	102.9630 %	95.4428 %	95.5909 %	102.5781 %	96.7522 %
Concentration per Run 2	0.0387 ppm	100.1091 %	103.7155 %	95.6454 %	97.3301 %	101.9002 %	96.7021 %
Concentration per Run 3	0.0378 ppm	100.7424 %	103.9523 %	95.6782 %	97.4266 %	102.6444 %	96.9980 %
Concentration RSD	2.9 %	1.3 %	0.5 %	0.1 %	1.1 %	0.4 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450847-01D2 WG1969482
Analysis started at: 9/10/2024 3:07:27 PM
Rack 1
Vial 18
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0047 ppm	84.4294 ppm	0.0892 ppm	0.0671 ppm	4.3277 ppm	0.0053 ppm	311.0978 ppm
Concentration per Run 1	0.0047 ppm	84.8819 ppm	0.0898 ppm	0.0672 ppm	4.3246 ppm	0.0053 ppm	312.3844 ppm
Concentration per Run 2	0.0046 ppm	84.5731 ppm	0.0888 ppm	0.0669 ppm	4.3658 ppm	0.0053 ppm	312.2622 ppm
Concentration per Run 3	0.0047 ppm	83.8332 ppm	0.0891 ppm	0.0673 ppm	4.2928 ppm	0.0052 ppm	308.6468 ppm
Concentration RSD	0.9 %	0.6 %	0.6 %	0.4 %	0.8 %	0.7 %	0.7 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0033 ppm	0.0722 ppm	0.2178 ppm	1.1009 ppm	190.4059 ppm	18.8296 ppm	0.1316 ppm
Concentration per Run 1	0.0033 ppm	0.0729 ppm	0.2197 ppm	1.1071 ppm	190.7483 ppm	18.9347 ppm	0.1352 ppm
Concentration per Run 2	0.0034 ppm	0.0719 ppm	0.2171 ppm	1.0955 ppm	191.6413 ppm	18.9564 ppm	0.1291 ppm
Concentration per Run 3	0.0034 ppm	0.0717 ppm	0.2166 ppm	1.1002 ppm	188.8280 ppm	18.5978 ppm	0.1306 ppm
Concentration RSD	1.7 %	0.8 %	0.8 %	0.5 %	0.8 %	1.1 %	2.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	58.9789 ppm	5.0810 ppm	0.0160 ppm	3.8441 ppm	0.2008 ppm	6.7058 ppm	0.0261 ppm
Concentration per Run 1	59.4847 ppm	5.0979 ppm	0.0161 ppm	3.8637 ppm	0.2022 ppm	6.7205 ppm	0.0261 ppm
Concentration per Run 2	58.6891 ppm	5.1059 ppm	0.0160 ppm	3.8677 ppm	0.2001 ppm	6.7071 ppm	0.0231 ppm
Concentration per Run 3	58.7630 ppm	5.0391 ppm	0.0160 ppm	3.8009 ppm	0.2001 ppm	6.6898 ppm	0.0292 ppm
Concentration RSD	0.7 %	0.7 %	0.3 %	1.0 %	0.6 %	0.2 %	11.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0056 ppm	10.1022 ppm	1.0932 ppm	0.7304 ppm	3.6963 ppm	0.0005 ppm	0.2804 ppm
Concentration per Run 1	0.0046 ppm	10.2587 ppm	1.1007 ppm	0.7334 ppm	3.7032 ppm	-0.0010 ppm	0.2813 ppm
Concentration per Run 2	0.0055 ppm	10.0900 ppm	1.0912 ppm	0.7351 ppm	3.6855 ppm	0.0004 ppm	0.2804 ppm
Concentration per Run 3	0.0066 ppm	9.9578 ppm	1.0876 ppm	0.7228 ppm	3.7001 ppm	0.0020 ppm	0.2795 ppm
Concentration RSD	18.5 %	1.5 %	0.6 %	0.9 %	0.3 %	312.2 %	0.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	5.5263 ppm	98.8702 %	106.1190 %	82.7882 %	110.1514 %	122.0417 %	111.3540 %
Concentration per Run 1	5.5911 ppm	97.9685 %	106.0512 %	82.8382 %	109.2932 %	121.8048 %	111.3788 %
Concentration per Run 2	5.4807 ppm	99.4131 %	105.5797 %	82.9673 %	110.4041 %	122.3260 %	111.1877 %
Concentration per Run 3	5.5070 ppm	99.2289 %	106.7259 %	82.5590 %	110.7569 %	121.9943 %	111.4956 %
Concentration RSD	1.0 %	0.8 %	0.5 %	0.3 %	0.7 %	0.2 %	0.1 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450847-02D2 WG1969482
Analysis started at: 9/10/2024 3:11:22 PM
Rack 1
Vial 19
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0017 ppm	71.0691 ppm	0.5048 ppm	0.0453 ppm	0.7545 ppm	0.0032 ppm	191.9183 ppm
Concentration per Run 1	0.0019 ppm	71.2631 ppm	0.4952 ppm	0.0451 ppm	0.7580 ppm	0.0032 ppm	192.7335 ppm
Concentration per Run 2	0.0013 ppm	71.0115 ppm	0.5120 ppm	0.0448 ppm	0.7530 ppm	0.0031 ppm	191.2929 ppm
Concentration per Run 3	0.0018 ppm	70.9325 ppm	0.5074 ppm	0.0459 ppm	0.7526 ppm	0.0031 ppm	191.7284 ppm
Concentration RSD	20.1 %	0.2 %	1.7 %	1.3 %	0.4 %	1.7 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0002 ppm	0.0358 ppm	0.2049 ppm	0.4243 ppm	113.4257 ppm	7.3120 ppm	0.0691 ppm
Concentration per Run 1	0.0001 ppm	0.0365 ppm	0.2093 ppm	0.4331 ppm	113.8722 ppm	7.3844 ppm	0.0710 ppm
Concentration per Run 2	0.0003 ppm	0.0351 ppm	0.2015 ppm	0.4161 ppm	113.1296 ppm	7.2855 ppm	0.0685 ppm
Concentration per Run 3	0.0002 ppm	0.0359 ppm	0.2038 ppm	0.4237 ppm	113.2753 ppm	7.2660 ppm	0.0679 ppm
Concentration RSD	39.8 %	2.0 %	2.0 %	2.0 %	0.3 %	0.9 %	2.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	15.4350 ppm	3.4921 ppm	0.0060 ppm	1.7194 ppm	0.0771 ppm	1.6901 ppm	0.0062 ppm
Concentration per Run 1	15.7361 ppm	3.5049 ppm	0.0061 ppm	1.7224 ppm	0.0793 ppm	1.6551 ppm	0.0062 ppm
Concentration per Run 2	15.2557 ppm	3.4867 ppm	0.0061 ppm	1.7194 ppm	0.0750 ppm	1.7046 ppm	0.0056 ppm
Concentration per Run 3	15.3133 ppm	3.4847 ppm	0.0057 ppm	1.7163 ppm	0.0771 ppm	1.7106 ppm	0.0067 ppm
Concentration RSD	1.7 %	0.3 %	3.4 %	0.2 %	2.8 %	1.8 %	8.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0089 ppm	9.4081 ppm	0.1369 ppm	0.6542 ppm	1.1934 ppm	-0.0002 ppm	0.1549 ppm
Concentration per Run 1	0.0082 ppm	9.6857 ppm	0.1402 ppm	0.6576 ppm	1.2228 ppm	0.0004 ppm	0.1579 ppm
Concentration per Run 2	0.0099 ppm	9.2266 ppm	0.1351 ppm	0.6516 ppm	1.1709 ppm	-0.0006 ppm	0.1527 ppm
Concentration per Run 3	0.0087 ppm	9.3121 ppm	0.1352 ppm	0.6535 ppm	1.1864 ppm	-0.0003 ppm	0.1541 ppm
Concentration RSD	9.8 %	2.6 %	2.1 %	0.5 %	2.2 %	257.4 %	1.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.8795 ppm	98.2056 %	105.5836 %	88.8508 %	112.9865 %	124.2229 %	114.9673 %
Concentration per Run 1	0.9033 ppm	96.3058 %	105.3368 %	90.8657 %	111.3173 %	124.4172 %	116.8417 %
Concentration per Run 2	0.8600 ppm	99.6639 %	105.9291 %	88.2742 %	114.1818 %	124.2986 %	114.4202 %
Concentration per Run 3	0.8752 ppm	98.6470 %	105.4847 %	87.4125 %	113.4604 %	123.9529 %	113.6400 %
Concentration RSD	2.5 %	1.8 %	0.3 %	2.0 %	1.3 %	0.2 %	1.5 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450847-03D2 WG1969482
Analysis started at: 9/10/2024 3:15:18 PM
Rack 1
Vial 20
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0009 ppm	72.9124 ppm	0.1489 ppm	0.0139 ppm	0.5148 ppm	0.0037 ppm	42.9374 ppm
Concentration per Run 1	0.0010 ppm	73.2121 ppm	0.1494 ppm	0.0145 ppm	0.5170 ppm	0.0037 ppm	43.1065 ppm
Concentration per Run 2	0.0009 ppm	72.9459 ppm	0.1496 ppm	0.0136 ppm	0.5126 ppm	0.0038 ppm	43.0191 ppm
Concentration per Run 3	0.0008 ppm	72.5793 ppm	0.1476 ppm	0.0137 ppm	0.5148 ppm	0.0037 ppm	42.6866 ppm
Concentration RSD	12.4 %	0.4 %	0.8 %	3.4 %	0.4 %	0.6 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0002 ppm	0.0317 ppm	0.2635 ppm	0.2567 ppm	130.4696 ppm	5.6945 ppm	0.0717 ppm
Concentration per Run 1	0.0002 ppm	0.0321 ppm	0.2661 ppm	0.2597 ppm	131.0396 ppm	5.7682 ppm	0.0737 ppm
Concentration per Run 2	0.0002 ppm	0.0318 ppm	0.2625 ppm	0.2558 ppm	130.4514 ppm	5.6551 ppm	0.0715 ppm
Concentration per Run 3	0.0003 ppm	0.0313 ppm	0.2619 ppm	0.2547 ppm	129.9178 ppm	5.6603 ppm	0.0700 ppm
Concentration RSD	10.8 %	1.2 %	0.9 %	1.0 %	0.4 %	1.1 %	2.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	15.9303 ppm	1.2296 ppm	0.0039 ppm	1.2001 ppm	0.0833 ppm	0.7327 ppm	0.0029 ppm
Concentration per Run 1	16.1324 ppm	1.2335 ppm	0.0040 ppm	1.2095 ppm	0.0841 ppm	0.7341 ppm	-0.0001 ppm
Concentration per Run 2	15.8549 ppm	1.2307 ppm	0.0040 ppm	1.1989 ppm	0.0832 ppm	0.7312 ppm	0.0043 ppm
Concentration per Run 3	15.8038 ppm	1.2246 ppm	0.0038 ppm	1.1918 ppm	0.0826 ppm	0.7328 ppm	0.0044 ppm
Concentration RSD	1.1 %	0.4 %	2.5 %	0.7 %	0.9 %	0.2 %	88.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0034 ppm	6.5127 ppm	0.0730 ppm	0.1342 ppm	2.0678 ppm	0.0012 ppm	0.2528 ppm
Concentration per Run 1	0.0015 ppm	6.6969 ppm	0.0731 ppm	0.1343 ppm	2.0972 ppm	0.0015 ppm	0.2564 ppm
Concentration per Run 2	0.0037 ppm	6.4757 ppm	0.0729 ppm	0.1349 ppm	2.0631 ppm	0.0011 ppm	0.2519 ppm
Concentration per Run 3	0.0050 ppm	6.3657 ppm	0.0729 ppm	0.1333 ppm	2.0432 ppm	0.0011 ppm	0.2502 ppm
Concentration RSD	52.9 %	2.6 %	0.2 %	0.6 %	1.3 %	17.3 %	1.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4818 ppm	101.3675 %	107.6319 %	91.5389 %	114.2684 %	124.4431 %	116.9732 %
Concentration per Run 1	0.4852 ppm	99.9414 %	107.6641 %	91.5514 %	112.8931 %	124.8218 %	117.2600 %
Concentration per Run 2	0.4806 ppm	101.7913 %	107.1284 %	91.5619 %	114.3528 %	124.0771 %	116.7533 %
Concentration per Run 3	0.4797 ppm	102.3698 %	108.1030 %	91.5035 %	115.5594 %	124.4305 %	116.9063 %
Concentration RSD	0.6 %	1.3 %	0.5 %	0.0 %	1.2 %	0.3 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450847-04D2 WG1969482
Analysis started at: 9/10/2024 3:19:14 PM
Rack 1
Vial 21
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0020 ppm	86.2592 ppm	0.0697 ppm	0.0414 ppm	1.9693 ppm	0.0051 ppm	173.1928 ppm
Concentration per Run 1	0.0020 ppm	86.3536 ppm	0.0698 ppm	0.0410 ppm	1.9725 ppm	0.0052 ppm	173.5152 ppm
Concentration per Run 2	0.0022 ppm	86.4100 ppm	0.0703 ppm	0.0427 ppm	1.9735 ppm	0.0052 ppm	173.0267 ppm
Concentration per Run 3	0.0019 ppm	86.0139 ppm	0.0692 ppm	0.0404 ppm	1.9618 ppm	0.0051 ppm	173.0364 ppm
Concentration RSD	8.7 %	0.2 %	0.8 %	2.8 %	0.3 %	0.3 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0025 ppm	0.0705 ppm	0.2052 ppm	1.2788 ppm	239.2906 ppm	10.3909 ppm	0.0979 ppm
Concentration per Run 1	0.0025 ppm	0.0714 ppm	0.2088 ppm	1.2955 ppm	240.2963 ppm	10.4262 ppm	0.0975 ppm
Concentration per Run 2	0.0025 ppm	0.0702 ppm	0.2041 ppm	1.2736 ppm	239.1128 ppm	10.4177 ppm	0.0989 ppm
Concentration per Run 3	0.0025 ppm	0.0700 ppm	0.2026 ppm	1.2675 ppm	238.4627 ppm	10.3288 ppm	0.0972 ppm
Concentration RSD	0.2 %	1.1 %	1.6 %	1.1 %	0.4 %	0.5 %	0.9 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	35.3551 ppm	4.8762 ppm	0.0069 ppm	1.0980 ppm	0.1459 ppm	4.5500 ppm	0.0428 ppm
Concentration per Run 1	35.9128 ppm	4.8835 ppm	0.0068 ppm	1.0995 ppm	0.1480 ppm	4.5727 ppm	0.0434 ppm
Concentration per Run 2	35.1928 ppm	4.8759 ppm	0.0069 ppm	1.0973 ppm	0.1450 ppm	4.5460 ppm	0.0427 ppm
Concentration per Run 3	34.9598 ppm	4.8692 ppm	0.0070 ppm	1.0972 ppm	0.1446 ppm	4.5314 ppm	0.0422 ppm
Concentration RSD	1.4 %	0.1 %	1.4 %	0.1 %	1.3 %	0.5 %	1.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0010 ppm	7.6876 ppm	0.9699 ppm	0.4883 ppm	3.0873 ppm	0.0016 ppm	0.3196 ppm
Concentration per Run 1	0.0004 ppm	7.8112 ppm	0.9845 ppm	0.4895 ppm	3.1220 ppm	0.0018 ppm	0.3257 ppm
Concentration per Run 2	0.0010 ppm	7.6755 ppm	0.9700 ppm	0.4879 ppm	3.0835 ppm	0.0027 ppm	0.3174 ppm
Concentration per Run 3	0.0016 ppm	7.5761 ppm	0.9551 ppm	0.4875 ppm	3.0564 ppm	0.0003 ppm	0.3157 ppm
Concentration RSD	59.9 %	1.5 %	1.5 %	0.2 %	1.1 %	77.5 %	1.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	2.0220 ppm	101.6528 %	108.8677 %	87.6772 %	122.3474 %	135.0634 %	124.5762 %
Concentration per Run 1	2.0466 ppm	100.3403 %	108.4174 %	87.6294 %	120.9243 %	135.3583 %	124.4791 %
Concentration per Run 2	2.0180 ppm	101.8739 %	109.5638 %	87.8299 %	122.6443 %	135.4611 %	124.8896 %
Concentration per Run 3	2.0014 ppm	102.7442 %	108.6218 %	87.5725 %	123.4735 %	134.3709 %	124.3599 %
Concentration RSD	1.1 %	1.2 %	0.6 %	0.2 %	1.1 %	0.4 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450847-05D2 WG1969482
Analysis started at: 9/10/2024 3:23:11 PM
Rack 1
Vial 22
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0016 ppm	89.4166 ppm	0.0882 ppm	0.0191 ppm	0.8075 ppm	0.0049 ppm	26.8975 ppm
Concentration per Run 1	0.0015 ppm	90.0008 ppm	0.0873 ppm	0.0182 ppm	0.8117 ppm	0.0049 ppm	27.0610 ppm
Concentration per Run 2	0.0017 ppm	88.8975 ppm	0.0888 ppm	0.0188 ppm	0.8049 ppm	0.0049 ppm	26.6847 ppm
Concentration per Run 3	0.0015 ppm	89.3515 ppm	0.0885 ppm	0.0203 ppm	0.8059 ppm	0.0049 ppm	26.9469 ppm
Concentration RSD	5.0 %	0.6 %	0.9 %	5.7 %	0.5 %	0.7 %	0.7 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0011 ppm	0.0610 ppm	0.3082 ppm	0.3300 ppm	171.0588 ppm	7.7198 ppm	0.1001 ppm
Concentration per Run 1	0.0010 ppm	0.0618 ppm	0.3110 ppm	0.3325 ppm	172.9378 ppm	7.7835 ppm	0.1012 ppm
Concentration per Run 2	0.0011 ppm	0.0606 ppm	0.3065 ppm	0.3290 ppm	169.7099 ppm	7.6903 ppm	0.0992 ppm
Concentration per Run 3	0.0011 ppm	0.0606 ppm	0.3072 ppm	0.3284 ppm	170.5285 ppm	7.6856 ppm	0.1000 ppm
Concentration RSD	5.7 %	1.2 %	0.8 %	0.7 %	1.0 %	0.7 %	1.0 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	20.1513 ppm	3.9901 ppm	0.0048 ppm	0.9699 ppm	0.1397 ppm	1.3190 ppm	0.0124 ppm
Concentration per Run 1	20.3891 ppm	4.0171 ppm	0.0048 ppm	0.9795 ppm	0.1415 ppm	1.3150 ppm	0.0128 ppm
Concentration per Run 2	20.0013 ppm	3.9611 ppm	0.0046 ppm	0.9645 ppm	0.1383 ppm	1.3202 ppm	0.0114 ppm
Concentration per Run 3	20.0635 ppm	3.9922 ppm	0.0051 ppm	0.9657 ppm	0.1394 ppm	1.3218 ppm	0.0131 ppm
Concentration RSD	1.0 %	0.7 %	4.5 %	0.9 %	1.2 %	0.3 %	7.3 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0026 ppm	5.6320 ppm	0.1010 ppm	0.1818 ppm	2.4227 ppm	0.0009 ppm	0.4585 ppm
Concentration per Run 1	0.0035 ppm	5.6903 ppm	0.1021 ppm	0.1818 ppm	2.4358 ppm	-0.0003 ppm	0.4625 ppm
Concentration per Run 2	0.0027 ppm	5.5710 ppm	0.0996 ppm	0.1812 ppm	2.4184 ppm	0.0016 ppm	0.4552 ppm
Concentration per Run 3	0.0016 ppm	5.6345 ppm	0.1011 ppm	0.1823 ppm	2.4137 ppm	0.0015 ppm	0.4578 ppm
Concentration RSD	37.2 %	1.1 %	1.3 %	0.3 %	0.5 %	118.7 %	0.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.8423 ppm	103.2664 %	109.4528 %	92.1836 %	129.6964 %	141.3003 %	132.4870 %
Concentration per Run 1	0.8501 ppm	102.3989 %	107.5461 %	92.1358 %	128.5461 %	138.8254 %	132.1798 %
Concentration per Run 2	0.8371 ppm	103.9913 %	111.5745 %	92.4442 %	130.5266 %	143.7923 %	132.9053 %
Concentration per Run 3	0.8399 ppm	103.4090 %	109.2377 %	91.9709 %	130.0165 %	141.2833 %	132.3758 %
Concentration RSD	0.8 %	0.8 %	1.8 %	0.3 %	0.8 %	1.8 %	0.3 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450847-06D2 WG1969482
Analysis started at: 9/10/2024 3:27:07 PM
Rack 1
Vial 23
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0020 ppm	71.4325 ppm	0.0641 ppm	0.0202 ppm	1.2928 ppm	0.0034 ppm	147.5393 ppm
Concentration per Run 1	0.0018 ppm	71.2795 ppm	0.0640 ppm	0.0203 ppm	1.2950 ppm	0.0034 ppm	147.1558 ppm
Concentration per Run 2	0.0024 ppm	71.4920 ppm	0.0653 ppm	0.0212 ppm	1.2813 ppm	0.0034 ppm	147.6709 ppm
Concentration per Run 3	0.0019 ppm	71.5260 ppm	0.0629 ppm	0.0191 ppm	1.3022 ppm	0.0034 ppm	147.7912 ppm
Concentration RSD	16.5 %	0.2 %	1.9 %	5.2 %	0.8 %	1.0 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0008 ppm	0.0436 ppm	0.1865 ppm	0.1637 ppm	134.6558 ppm	6.7253 ppm	0.0916 ppm
Concentration per Run 1	0.0008 ppm	0.0443 ppm	0.1889 ppm	0.1658 ppm	134.7525 ppm	6.7326 ppm	0.0930 ppm
Concentration per Run 2	0.0008 ppm	0.0434 ppm	0.1861 ppm	0.1628 ppm	133.9171 ppm	6.6747 ppm	0.0898 ppm
Concentration per Run 3	0.0008 ppm	0.0430 ppm	0.1845 ppm	0.1625 ppm	135.2979 ppm	6.7687 ppm	0.0921 ppm
Concentration RSD	1.7 %	1.6 %	1.2 %	1.1 %	0.5 %	0.7 %	1.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	50.3837 ppm	2.5016 ppm	0.0045 ppm	0.8380 ppm	0.1080 ppm	0.8747 ppm	0.0101 ppm
Concentration per Run 1	50.9094 ppm	2.4997 ppm	0.0044 ppm	0.8458 ppm	0.1090 ppm	0.8805 ppm	0.0097 ppm
Concentration per Run 2	50.5289 ppm	2.4997 ppm	0.0043 ppm	0.8339 ppm	0.1080 ppm	0.8735 ppm	0.0099 ppm
Concentration per Run 3	49.7129 ppm	2.5054 ppm	0.0047 ppm	0.8343 ppm	0.1070 ppm	0.8700 ppm	0.0108 ppm
Concentration RSD	1.2 %	0.1 %	5.1 %	0.8 %	0.9 %	0.6 %	5.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0006 ppm	15.3497 ppm	0.0510 ppm	0.4290 ppm	1.5626 ppm	0.0005 ppm	0.3224 ppm
Concentration per Run 1	-0.0001 ppm	15.4573 ppm	0.0506 ppm	0.4294 ppm	1.5879 ppm	0.0005 ppm	0.3248 ppm
Concentration per Run 2	0.0013 ppm	15.2903 ppm	0.0510 ppm	0.4269 ppm	1.5596 ppm	-0.0014 ppm	0.3229 ppm
Concentration per Run 3	0.0006 ppm	15.3016 ppm	0.0513 ppm	0.4308 ppm	1.5402 ppm	0.0024 ppm	0.3196 ppm
Concentration RSD	118.5 %	0.6 %	0.7 %	0.5 %	1.5 %	375.1 %	0.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.9671 ppm	97.8467 %	105.4346 %	87.7813 %	109.7248 %	122.2489 %	112.6965 %
Concentration per Run 1	0.9776 ppm	97.1532 %	106.1091 %	87.1684 %	108.7076 %	123.1340 %	112.1161 %
Concentration per Run 2	0.9714 ppm	97.4567 %	105.5388 %	87.9875 %	109.1904 %	122.1974 %	112.9583 %
Concentration per Run 3	0.9522 ppm	98.9301 %	104.6559 %	88.1881 %	111.2762 %	121.4153 %	113.0153 %
Concentration RSD	1.4 %	1.0 %	0.7 %	0.6 %	1.2 %	0.7 %	0.4 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450847-07D2 WG1969482
Analysis started at: 9/10/2024 3:31:04 PM
Rack 1
Vial 24
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0004 ppm	39.2244 ppm	0.0132 ppm	0.0077 ppm	0.1986 ppm	0.0020 ppm	8.2177 ppm
Concentration per Run 1	0.0006 ppm	39.6724 ppm	0.0131 ppm	0.0076 ppm	0.2023 ppm	0.0020 ppm	8.2069 ppm
Concentration per Run 2	0.0001 ppm	38.9220 ppm	0.0120 ppm	0.0083 ppm	0.1953 ppm	0.0020 ppm	8.2145 ppm
Concentration per Run 3	0.0004 ppm	39.0787 ppm	0.0143 ppm	0.0072 ppm	0.1981 ppm	0.0020 ppm	8.2318 ppm
Concentration RSD	59.2 %	1.0 %	8.8 %	7.0 %	1.8 %	0.3 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0202 ppm	0.1224 ppm	0.0502 ppm	75.6046 ppm	3.2704 ppm	0.0457 ppm
Concentration per Run 1	0.0000 ppm	0.0202 ppm	0.1239 ppm	0.0513 ppm	76.6858 ppm	3.3681 ppm	0.0483 ppm
Concentration per Run 2	0.0001 ppm	0.0202 ppm	0.1220 ppm	0.0499 ppm	74.8045 ppm	3.2215 ppm	0.0442 ppm
Concentration per Run 3	0.0000 ppm	0.0203 ppm	0.1214 ppm	0.0494 ppm	75.3236 ppm	3.2215 ppm	0.0446 ppm
Concentration RSD	168.5 %	0.3 %	1.1 %	2.0 %	1.3 %	2.6 %	5.0 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	10.4221 ppm	0.4271 ppm	0.0082 ppm	0.4975 ppm	0.0657 ppm	0.0496 ppm	0.0016 ppm
Concentration per Run 1	10.5795 ppm	0.4311 ppm	0.0081 ppm	0.5119 ppm	0.0676 ppm	0.0501 ppm	-0.0001 ppm
Concentration per Run 2	10.3470 ppm	0.4231 ppm	0.0080 ppm	0.4866 ppm	0.0650 ppm	0.0487 ppm	0.0036 ppm
Concentration per Run 3	10.3397 ppm	0.4272 ppm	0.0084 ppm	0.4941 ppm	0.0645 ppm	0.0501 ppm	0.0013 ppm
Concentration RSD	1.3 %	0.9 %	2.6 %	2.6 %	2.5 %	1.6 %	118.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0005 ppm	7.1297 ppm	0.0039 ppm	0.0442 ppm	1.4216 ppm	0.0007 ppm	0.1714 ppm
Concentration per Run 1	0.0006 ppm	7.2320 ppm	0.0044 ppm	0.0443 ppm	1.4358 ppm	0.0001 ppm	0.1736 ppm
Concentration per Run 2	0.0017 ppm	7.1228 ppm	0.0039 ppm	0.0441 ppm	1.4152 ppm	0.0008 ppm	0.1707 ppm
Concentration per Run 3	-0.0007 ppm	7.0342 ppm	0.0036 ppm	0.0444 ppm	1.4139 ppm	0.0013 ppm	0.1700 ppm
Concentration RSD	234.3 %	1.4 %	10.9 %	0.3 %	0.9 %	77.1 %	1.1 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.1393 ppm	98.8635 %	102.4466 %	92.7481 %	102.9178 %	109.2305 %	105.0034 %
Concentration per Run 1	0.1413 ppm	97.6522 %	103.1396 %	92.8412 %	102.1050 %	110.2839 %	105.0095 %
Concentration per Run 2	0.1385 ppm	99.2873 %	101.7579 %	92.7266 %	103.0287 %	108.3695 %	104.9044 %
Concentration per Run 3	0.1381 ppm	99.6509 %	102.4422 %	92.6764 %	103.6198 %	109.0381 %	105.0963 %
Concentration RSD	1.3 %	1.1 %	0.7 %	0.1 %	0.7 %	0.9 %	0.1 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCV
Analysis started at: 9/10/2024 3:35:02 PM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.5252 ppm	0.4904 ppm	0.4860 ppm	0.4898 ppm	0.5152 ppm	0.5205 ppm	0.5029 ppm
Concentration per Run 1	0.5383 ppm	0.4997 ppm	0.4913 ppm	0.5055 ppm	0.5134 ppm	0.5214 ppm	0.5093 ppm
Concentration per Run 2	0.5228 ppm	0.4861 ppm	0.4836 ppm	0.4870 ppm	0.5171 ppm	0.5208 ppm	0.5014 ppm
Concentration per Run 3	0.5145 ppm	0.4855 ppm	0.4830 ppm	0.4768 ppm	0.5151 ppm	0.5193 ppm	0.4979 ppm
Recovery Percentage 1	105.036 %	98.086 %	97.192 %	97.951 %	103.040 %	104.095 %	100.572 %
Concentration RSD	2.3 %	1.6 %	1.0 %	3.0 %	0.4 %	0.2 %	1.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.5201 ppm	0.5316 ppm	0.5162 ppm	0.5092 ppm	0.5199 ppm	5.3454 ppm	0.5293 ppm
Concentration per Run 1	0.5338 ppm	0.5463 ppm	0.5292 ppm	0.5234 ppm	0.5227 ppm	5.4093 ppm	0.5322 ppm
Concentration per Run 2	0.5166 ppm	0.5275 ppm	0.5138 ppm	0.5060 ppm	0.5204 ppm	5.3346 ppm	0.5302 ppm
Concentration per Run 3	0.5100 ppm	0.5210 ppm	0.5054 ppm	0.4982 ppm	0.5165 ppm	5.2922 ppm	0.5256 ppm
Recovery Percentage 1	104.025 %	106.316 %	103.230 %	101.836 %	103.974 %	106.908 %	105.868 %
Concentration RSD	2.4 %	2.5 %	2.3 %	2.5 %	0.6 %	1.1 %	0.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.5182 ppm	0.5007 ppm	0.5229 ppm	10.3462 ppm	0.5316 ppm	0.4967 ppm	0.5137 ppm
Concentration per Run 1	0.5339 ppm	0.5040 ppm	0.5321 ppm	10.3913 ppm	0.5447 ppm	0.4990 ppm	0.5240 ppm
Concentration per Run 2	0.5129 ppm	0.5004 ppm	0.5204 ppm	10.3811 ppm	0.5294 ppm	0.4949 ppm	0.5132 ppm
Concentration per Run 3	0.5079 ppm	0.4976 ppm	0.5162 ppm	10.2661 ppm	0.5207 ppm	0.4963 ppm	0.5039 ppm
Recovery Percentage 1	103.646 %	100.132 %	104.579 %	103.462 %	106.316 %	99.344 %	102.732 %
Concentration RSD	2.7 %	0.6 %	1.6 %	0.7 %	2.3 %	0.4 %	2.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4856 ppm	5.4191 ppm	0.5461 ppm	0.5325 ppm	0.5279 ppm	0.4857 ppm	0.5183 ppm
Concentration per Run 1	0.4888 ppm	5.5545 ppm	0.5607 ppm	0.5332 ppm	0.5406 ppm	0.4871 ppm	0.5319 ppm
Concentration per Run 2	0.4833 ppm	5.3862 ppm	0.5435 ppm	0.5325 ppm	0.5259 ppm	0.4834 ppm	0.5148 ppm
Concentration per Run 3	0.4848 ppm	5.3166 ppm	0.5340 ppm	0.5319 ppm	0.5172 ppm	0.4867 ppm	0.5083 ppm
Recovery Percentage 1	97.129 %	103.221 %	109.212 %	106.509 %	105.578 %	97.146 %	103.667 %
Concentration RSD	0.6 %	2.3 %	2.5 %	0.1 %	2.2 %	0.4 %	2.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5217 ppm	96.1686 %	100.0889 %	95.2163 %	94.2273 %	98.9242 %	96.1032 %
Concentration per Run 1	0.5358 ppm	93.5012 %	99.4263 %	94.3458 %	92.4988 %	98.9747 %	95.5599 %
Concentration per Run 2	0.5205 ppm	97.1345 %	100.1111 %	95.5530 %	95.1454 %	98.8317 %	96.3799 %
Concentration per Run 3	0.5087 ppm	97.8701 %	100.7294 %	95.7502 %	95.0375 %	98.9662 %	96.3698 %
Recovery Percentage 1	104.337 %						
Concentration RSD	2.6 %	2.4 %	0.7 %	0.8 %	1.6 %	0.1 %	0.5 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCB
Analysis started at: 9/10/2024 3:38:57 PM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0021 ppm	-0.0009 ppm	-0.0004 ppm	0.0000 ppm	0.0000 ppm	0.0182 ppm
Concentration per Run 1	0.0000 ppm	0.0050 ppm	-0.0002 ppm	-0.0010 ppm	0.0000 ppm	0.0001 ppm	0.0181 ppm
Concentration per Run 2	0.0000 ppm	-0.0049 ppm	-0.0018 ppm	0.0002 ppm	0.0000 ppm	0.0000 ppm	0.0188 ppm
Concentration per Run 3	0.0000 ppm	-0.0066 ppm	-0.0006 ppm	-0.0005 ppm	0.0001 ppm	0.0000 ppm	0.0177 ppm
Recovery Percentage 1	0.346 %	-2.137 %	-29.711 %	-1.479 %	0.198 %	1.000 %	18.202 %
Concentration RSD	114.2 %	292.2 %	92.4 %	132.6 %	377.4 %	63.5 %	3.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0001 ppm	0.0001 ppm	-0.0002 ppm	0.0008 ppm	0.0073 ppm	-0.0078 ppm	-0.0005 ppm
Concentration per Run 1	0.0001 ppm	0.0001 ppm	-0.0003 ppm	0.0010 ppm	0.0073 ppm	-0.0091 ppm	-0.0002 ppm
Concentration per Run 2	0.0001 ppm	0.0003 ppm	0.0003 ppm	0.0008 ppm	0.0074 ppm	-0.0116 ppm	-0.0011 ppm
Concentration per Run 3	0.0001 ppm	-0.0001 ppm	-0.0005 ppm	0.0007 ppm	0.0072 ppm	-0.0028 ppm	-0.0003 ppm
Recovery Percentage 1	1.818 %	0.490 %	-1.710 %	8.309 %	14.535 %	-0.314 %	-5.275 %
Concentration RSD	25.1 %	238.3 %	226.9 %	17.4 %	1.4 %	57.7 %	91.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0055 ppm	0.0004 ppm	0.0017 ppm	0.0197 ppm	0.0001 ppm	0.0004 ppm	0.0006 ppm
Concentration per Run 1	0.0063 ppm	0.0005 ppm	0.0016 ppm	0.0182 ppm	0.0002 ppm	0.0003 ppm	0.0012 ppm
Concentration per Run 2	0.0045 ppm	0.0004 ppm	0.0018 ppm	0.0219 ppm	0.0002 ppm	0.0014 ppm	0.0000 ppm
Concentration per Run 3	0.0057 ppm	0.0003 ppm	0.0016 ppm	0.0190 ppm	0.0000 ppm	-0.0006 ppm	0.0005 ppm
Recovery Percentage 1	5.518 %	4.145 %	3.391 %	0.985 %	0.466 %	3.694 %	1.200 %
Concentration RSD	16.2 %	21.7 %	7.1 %	10.0 %	63.6 %	276.0 %	100.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0008 ppm	-0.0169 ppm	-0.0003 ppm	0.0000 ppm	-0.0004 ppm	0.0002 ppm	0.0000 ppm
Concentration per Run 1	0.0017 ppm	-0.0175 ppm	-0.0003 ppm	0.0000 ppm	-0.0006 ppm	0.0004 ppm	0.0000 ppm
Concentration per Run 2	-0.0004 ppm	-0.0150 ppm	-0.0003 ppm	0.0000 ppm	-0.0003 ppm	0.0006 ppm	0.0000 ppm
Concentration per Run 3	0.0010 ppm	-0.0181 ppm	-0.0001 ppm	0.0000 ppm	-0.0003 ppm	-0.0005 ppm	0.0000 ppm
Recovery Percentage 1	7.736 %	-3.373 %	-0.501 %	0.217 %	-3.698 %	0.808 %	-0.126 %
Concentration RSD	144.0 %	9.7 %	47.6 %	67.2 %	52.5 %	379.6 %	143.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0017 ppm	93.3166 %	97.0334 %	95.1973 %	95.8615 %	99.0627 %	97.4648 %
Concentration per Run 1	0.0015 ppm	91.0929 %	97.4243 %	94.7309 %	94.9664 %	99.7412 %	97.3567 %
Concentration per Run 2	0.0017 ppm	93.6856 %	96.4699 %	95.1366 %	96.2546 %	98.5630 %	97.2557 %
Concentration per Run 3	0.0018 ppm	95.1713 %	97.2060 %	95.7243 %	96.3635 %	98.8837 %	97.7821 %
Recovery Percentage 1	33.854 %						
Concentration RSD	10.1 %	2.2 %	0.5 %	0.5 %	0.8 %	0.6 %	0.3 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2449735-01 WG1969231
Analysis started at: 9/10/2024 3:50:19 PM
Rack 1
Vial 51
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	0.0055 ppm	0.0096 ppm	0.0135 ppm	0.0044 ppm	0.0000 ppm	83.8156 ppm
Concentration per Run 1	0.0001 ppm	0.0061 ppm	0.0087 ppm	0.0132 ppm	0.0044 ppm	0.0000 ppm	84.1015 ppm
Concentration per Run 2	-0.0001 ppm	0.0031 ppm	0.0097 ppm	0.0129 ppm	0.0045 ppm	0.0000 ppm	83.8039 ppm
Concentration per Run 3	-0.0001 ppm	0.0073 ppm	0.0105 ppm	0.0142 ppm	0.0043 ppm	0.0000 ppm	83.5414 ppm
Concentration RSD	653.0 %	39.3 %	9.0 %	5.1 %	2.0 %	692.9 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0004 ppm	0.0003 ppm	0.0001 ppm	0.0089 ppm	0.0107 ppm	6.2144 ppm	0.0038 ppm
Concentration per Run 1	-0.0004 ppm	-0.0002 ppm	-0.0001 ppm	0.0091 ppm	0.0111 ppm	6.2704 ppm	0.0053 ppm
Concentration per Run 2	-0.0004 ppm	0.0005 ppm	0.0002 ppm	0.0090 ppm	0.0111 ppm	6.2187 ppm	0.0038 ppm
Concentration per Run 3	-0.0003 ppm	0.0005 ppm	0.0001 ppm	0.0087 ppm	0.0099 ppm	6.1539 ppm	0.0022 ppm
Concentration RSD	15.2 %	154.3 %	210.7 %	2.4 %	6.4 %	0.9 %	40.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	8.8981 ppm	0.0016 ppm	0.0004 ppm	30.6278 ppm	0.0011 ppm	0.0007 ppm	-0.0008 ppm
Concentration per Run 1	9.0002 ppm	0.0015 ppm	0.0004 ppm	30.7627 ppm	0.0008 ppm	0.0008 ppm	0.0001 ppm
Concentration per Run 2	8.9174 ppm	0.0016 ppm	0.0003 ppm	30.7215 ppm	0.0013 ppm	0.0002 ppm	0.0002 ppm
Concentration per Run 3	8.7767 ppm	0.0016 ppm	0.0004 ppm	30.3993 ppm	0.0012 ppm	0.0011 ppm	-0.0026 ppm
Concentration RSD	1.3 %	1.4 %	24.7 %	0.6 %	23.0 %	71.0 %	199.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0011 ppm	7.0115 ppm	-0.0012 ppm	0.1906 ppm	-0.0004 ppm	-0.0004 ppm	0.0001 ppm
Concentration per Run 1	0.0007 ppm	7.0949 ppm	-0.0005 ppm	0.1899 ppm	-0.0002 ppm	-0.0005 ppm	0.0001 ppm
Concentration per Run 2	0.0007 ppm	6.9772 ppm	-0.0022 ppm	0.1910 ppm	-0.0005 ppm	-0.0006 ppm	0.0001 ppm
Concentration per Run 3	0.0019 ppm	6.9624 ppm	-0.0010 ppm	0.1908 ppm	-0.0005 ppm	-0.0001 ppm	0.0000 ppm
Concentration RSD	64.7 %	1.0 %	74.2 %	0.3 %	38.1 %	66.8 %	27.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0128 ppm	93.5797 %	100.7426 %	91.5575 %	93.7678 %	100.4646 %	94.9284 %
Concentration per Run 1	0.0129 ppm	92.8446 %	99.7635 %	90.7003 %	94.0561 %	99.5399 %	94.6347 %
Concentration per Run 2	0.0127 ppm	93.3644 %	100.5356 %	91.7334 %	93.2794 %	100.0812 %	95.2345 %
Concentration per Run 3	0.0129 ppm	94.5299 %	101.9288 %	92.2388 %	93.9679 %	101.7728 %	94.9161 %
Concentration RSD	1.1 %	0.9 %	1.1 %	0.9 %	0.5 %	1.2 %	0.3 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2449737-01 WG1969231
Analysis started at: 9/10/2024 3:54:21 PM
Rack 1
Vial 52
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0044 ppm	0.0106 ppm	0.0206 ppm	-0.0001 ppm	0.0000 ppm	0.0209 ppm
Concentration per Run 1	-0.0001 ppm	-0.0002 ppm	0.0104 ppm	0.0213 ppm	-0.0001 ppm	0.0000 ppm	0.0220 ppm
Concentration per Run 2	0.0003 ppm	-0.0101 ppm	0.0116 ppm	0.0207 ppm	-0.0001 ppm	0.0000 ppm	0.0204 ppm
Concentration per Run 3	-0.0001 ppm	-0.0028 ppm	0.0096 ppm	0.0197 ppm	-0.0002 ppm	0.0000 ppm	0.0204 ppm
Concentration RSD	645.7 %	117.3 %	9.7 %	3.8 %	41.2 %	88.5 %	4.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0001 ppm	-0.0002 ppm	0.0007 ppm	0.0019 ppm	0.1108 ppm	-0.0009 ppm
Concentration per Run 1	0.0000 ppm	-0.0004 ppm	-0.0002 ppm	0.0009 ppm	0.0014 ppm	0.1022 ppm	-0.0022 ppm
Concentration per Run 2	0.0000 ppm	0.0002 ppm	-0.0005 ppm	0.0009 ppm	0.0019 ppm	0.1172 ppm	-0.0008 ppm
Concentration per Run 3	0.0000 ppm	-0.0003 ppm	0.0000 ppm	0.0005 ppm	0.0023 ppm	0.1130 ppm	0.0003 ppm
Concentration RSD	168.7 %	212.6 %	94.4 %	31.3 %	22.3 %	7.0 %	135.9 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0065 ppm	0.0001 ppm	0.0015 ppm	65.4164 ppm	0.0000 ppm	-0.0001 ppm	-0.0009 ppm
Concentration per Run 1	0.0057 ppm	0.0001 ppm	0.0013 ppm	66.0501 ppm	0.0003 ppm	0.0002 ppm	0.0003 ppm
Concentration per Run 2	0.0067 ppm	0.0002 ppm	0.0015 ppm	65.0262 ppm	-0.0002 ppm	-0.0005 ppm	-0.0019 ppm
Concentration per Run 3	0.0071 ppm	-0.0001 ppm	0.0017 ppm	65.1731 ppm	-0.0002 ppm	-0.0001 ppm	-0.0012 ppm
Concentration RSD	11.5 %	168.4 %	14.4 %	0.8 %	1,088.9 %	285.5 %	120.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0026 ppm	6.6106 ppm	-0.0011 ppm	0.0001 ppm	-0.0004 ppm	-0.0001 ppm	-0.0001 ppm
Concentration per Run 1	-0.0029 ppm	6.6987 ppm	-0.0008 ppm	0.0000 ppm	-0.0005 ppm	0.0004 ppm	-0.0001 ppm
Concentration per Run 2	-0.0029 ppm	6.6066 ppm	-0.0008 ppm	0.0002 ppm	-0.0005 ppm	0.0002 ppm	0.0000 ppm
Concentration per Run 3	-0.0021 ppm	6.5265 ppm	-0.0018 ppm	0.0001 ppm	-0.0003 ppm	-0.0011 ppm	-0.0001 ppm
Concentration RSD	16.9 %	1.3 %	49.4 %	71.6 %	28.0 %	589.6 %	76.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0024 ppm	90.0239 %	99.3433 %	89.9924 %	93.3011 %	100.8169 %	95.6362 %
Concentration per Run 1	0.0023 ppm	89.0608 %	99.0555 %	89.0342 %	93.9826 %	100.9381 %	95.4744 %
Concentration per Run 2	0.0022 ppm	89.8781 %	99.2389 %	89.5283 %	92.5484 %	100.6696 %	95.2372 %
Concentration per Run 3	0.0027 ppm	91.1327 %	99.7355 %	91.4147 %	93.3722 %	100.8430 %	96.1970 %
Concentration RSD	10.5 %	1.2 %	0.4 %	1.4 %	0.8 %	0.1 %	0.5 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450847-50D2 WG1969482
Analysis started at: 9/10/2024 3:58:16 PM
Rack 1
Vial 25
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0017 ppm	88.9738 ppm	0.0538 ppm	0.0250 ppm	0.9196 ppm	0.0046 ppm	88.5541 ppm
Concentration per Run 1	0.0020 ppm	89.0849 ppm	0.0521 ppm	0.0244 ppm	0.9126 ppm	0.0046 ppm	88.7754 ppm
Concentration per Run 2	0.0016 ppm	89.2040 ppm	0.0531 ppm	0.0254 ppm	0.9297 ppm	0.0047 ppm	88.8281 ppm
Concentration per Run 3	0.0016 ppm	88.6324 ppm	0.0561 ppm	0.0253 ppm	0.9165 ppm	0.0047 ppm	88.0587 ppm
Concentration RSD	12.5 %	0.3 %	3.8 %	2.1 %	1.0 %	1.0 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0019 ppm	0.0645 ppm	0.1735 ppm	0.6523 ppm	190.1139 ppm	11.9328 ppm	0.0981 ppm
Concentration per Run 1	0.0020 ppm	0.0637 ppm	0.1726 ppm	0.6500 ppm	190.1339 ppm	11.9085 ppm	0.0987 ppm
Concentration per Run 2	0.0019 ppm	0.0644 ppm	0.1717 ppm	0.6520 ppm	191.9166 ppm	12.0457 ppm	0.0989 ppm
Concentration per Run 3	0.0018 ppm	0.0654 ppm	0.1761 ppm	0.6547 ppm	188.2913 ppm	11.8441 ppm	0.0966 ppm
Concentration RSD	5.4 %	1.3 %	1.3 %	0.4 %	1.0 %	0.9 %	1.3 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	21.7370 ppm	3.0428 ppm	0.0074 ppm	0.9253 ppm	0.1346 ppm	1.8421 ppm	0.0235 ppm
Concentration per Run 1	21.6115 ppm	3.0452 ppm	0.0073 ppm	0.9280 ppm	0.1342 ppm	1.8283 ppm	0.0233 ppm
Concentration per Run 2	21.7022 ppm	3.0555 ppm	0.0074 ppm	0.9293 ppm	0.1337 ppm	1.8517 ppm	0.0243 ppm
Concentration per Run 3	21.8972 ppm	3.0277 ppm	0.0076 ppm	0.9187 ppm	0.1358 ppm	1.8463 ppm	0.0229 ppm
Concentration RSD	0.7 %	0.5 %	2.0 %	0.6 %	0.8 %	0.7 %	3.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0060 ppm	5.3641 ppm	0.1415 ppm	0.2412 ppm	2.7657 ppm	0.0011 ppm	0.2976 ppm
Concentration per Run 1	0.0040 ppm	5.3910 ppm	0.1406 ppm	0.2390 ppm	2.7695 ppm	0.0012 ppm	0.2951 ppm
Concentration per Run 2	0.0074 ppm	5.3834 ppm	0.1416 ppm	0.2410 ppm	2.7665 ppm	0.0007 ppm	0.2976 ppm
Concentration per Run 3	0.0067 ppm	5.3179 ppm	0.1423 ppm	0.2436 ppm	2.7611 ppm	0.0016 ppm	0.3000 ppm
Concentration RSD	29.3 %	0.7 %	0.6 %	0.9 %	0.2 %	39.1 %	0.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	1.5384 ppm	104.2819 %	109.3606 %	89.6677 %	120.6394 %	132.0038 %	121.6670 %
Concentration per Run 1	1.5346 ppm	105.0738 %	108.8627 %	90.3196 %	121.1712 %	131.3689 %	122.2001 %
Concentration per Run 2	1.5274 ppm	104.4054 %	108.7614 %	89.3812 %	120.6655 %	131.6561 %	121.2856 %
Concentration per Run 3	1.5531 ppm	103.3666 %	110.4579 %	89.3021 %	120.0814 %	132.9864 %	121.5154 %
Concentration RSD	0.9 %	0.8 %	0.9 %	0.6 %	0.5 %	0.7 %	0.4 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450847-51D2 WG1969482
Analysis started at: 9/10/2024 4:02:10 PM
Rack 1
Vial 26
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0006 ppm	104.8719 ppm	0.0324 ppm	0.0158 ppm	0.4417 ppm	0.0047 ppm	38.1354 ppm
Concentration per Run 1	0.0006 ppm	108.3501 ppm	0.0346 ppm	0.0135 ppm	0.4549 ppm	0.0047 ppm	38.8510 ppm
Concentration per Run 2	0.0003 ppm	106.7925 ppm	0.0312 ppm	0.0166 ppm	0.4515 ppm	0.0049 ppm	39.0324 ppm
Concentration per Run 3	0.0007 ppm	99.4731 ppm	0.0315 ppm	0.0173 ppm	0.4187 ppm	0.0046 ppm	36.5226 ppm
Concentration RSD	36.2 %	4.5 %	5.8 %	12.9 %	4.5 %	3.1 %	3.7 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0003 ppm	0.0671 ppm	0.1969 ppm	0.1680 ppm	201.7456 ppm	8.9603 ppm	0.0856 ppm
Concentration per Run 1	0.0002 ppm	0.0671 ppm	0.1982 ppm	0.1694 ppm	208.4805 ppm	9.4669 ppm	0.0905 ppm
Concentration per Run 2	0.0003 ppm	0.0675 ppm	0.1960 ppm	0.1672 ppm	205.1478 ppm	9.0387 ppm	0.0869 ppm
Concentration per Run 3	0.0004 ppm	0.0667 ppm	0.1964 ppm	0.1674 ppm	191.6086 ppm	8.3754 ppm	0.0794 ppm
Concentration RSD	43.3 %	0.6 %	0.6 %	0.7 %	4.4 %	6.1 %	6.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	20.9274 ppm	5.0402 ppm	0.0047 ppm	0.6181 ppm	0.1238 ppm	0.1321 ppm	0.0022 ppm
Concentration per Run 1	21.0841 ppm	5.1685 ppm	0.0048 ppm	0.6495 ppm	0.1260 ppm	0.1319 ppm	0.0019 ppm
Concentration per Run 2	20.7673 ppm	5.1474 ppm	0.0047 ppm	0.6258 ppm	0.1225 ppm	0.1314 ppm	0.0031 ppm
Concentration per Run 3	20.9310 ppm	4.8046 ppm	0.0047 ppm	0.5788 ppm	0.1229 ppm	0.1329 ppm	0.0018 ppm
Concentration RSD	0.8 %	4.1 %	1.0 %	5.8 %	1.5 %	0.6 %	33.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0003 ppm	7.8253 ppm	0.0165 ppm	0.1226 ppm	2.8364 ppm	0.0009 ppm	0.2967 ppm
Concentration per Run 1	-0.0012 ppm	7.8727 ppm	0.0168 ppm	0.1238 ppm	2.8567 ppm	0.0007 ppm	0.2984 ppm
Concentration per Run 2	-0.0016 ppm	7.8154 ppm	0.0163 ppm	0.1264 ppm	2.8285 ppm	0.0013 ppm	0.2959 ppm
Concentration per Run 3	0.0020 ppm	7.7878 ppm	0.0164 ppm	0.1175 ppm	2.8241 ppm	0.0009 ppm	0.2958 ppm
Concentration RSD	699.2 %	0.6 %	1.5 %	3.7 %	0.6 %	32.5 %	0.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.2859 ppm	103.7057 %	110.6271 %	91.4933 %	122.5204 %	134.7543 %	124.8963 %
Concentration per Run 1	0.2879 ppm	103.3087 %	109.9285 %	91.3400 %	122.2654 %	134.1862 %	124.7158 %
Concentration per Run 2	0.2833 ppm	104.3751 %	108.1169 %	91.8116 %	122.9121 %	132.8902 %	125.0670 %
Concentration per Run 3	0.2863 ppm	103.4334 %	113.8358 %	91.3283 %	122.3836 %	137.1865 %	124.9061 %
Concentration RSD	0.8 %	0.6 %	2.6 %	0.3 %	0.3 %	1.6 %	0.1 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450847-52D2 WG1969482
Analysis started at: 9/10/2024 4:06:05 PM
Rack 1
Vial 27
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0005 ppm	71.6634 ppm	0.0146 ppm	0.0092 ppm	0.3731 ppm	0.0040 ppm	14.1573 ppm
Concentration per Run 1	0.0006 ppm	71.9218 ppm	0.0146 ppm	0.0097 ppm	0.3736 ppm	0.0039 ppm	14.1820 ppm
Concentration per Run 2	0.0003 ppm	71.8775 ppm	0.0131 ppm	0.0089 ppm	0.3740 ppm	0.0040 ppm	14.1968 ppm
Concentration per Run 3	0.0006 ppm	71.1909 ppm	0.0160 ppm	0.0090 ppm	0.3717 ppm	0.0040 ppm	14.0930 ppm
Concentration RSD	40.4 %	0.6 %	10.0 %	4.6 %	0.3 %	0.5 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0002 ppm	0.0412 ppm	0.1569 ppm	0.1341 ppm	100.0055 ppm	6.1904 ppm	0.0742 ppm
Concentration per Run 1	0.0002 ppm	0.0415 ppm	0.1571 ppm	0.1350 ppm	99.7057 ppm	6.1997 ppm	0.0752 ppm
Concentration per Run 2	0.0001 ppm	0.0409 ppm	0.1569 ppm	0.1332 ppm	100.4222 ppm	6.2299 ppm	0.0740 ppm
Concentration per Run 3	0.0003 ppm	0.0411 ppm	0.1566 ppm	0.1342 ppm	99.8886 ppm	6.1417 ppm	0.0733 ppm
Concentration RSD	37.5 %	0.7 %	0.2 %	0.7 %	0.4 %	0.7 %	1.3 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	16.8547 ppm	1.2945 ppm	0.0011 ppm	0.4483 ppm	0.1079 ppm	0.0731 ppm	0.0013 ppm
Concentration per Run 1	16.9764 ppm	1.2954 ppm	0.0011 ppm	0.4478 ppm	0.1088 ppm	0.0744 ppm	0.0010 ppm
Concentration per Run 2	16.8357 ppm	1.3009 ppm	0.0009 ppm	0.4526 ppm	0.1080 ppm	0.0733 ppm	0.0003 ppm
Concentration per Run 3	16.7520 ppm	1.2872 ppm	0.0012 ppm	0.4443 ppm	0.1068 ppm	0.0718 ppm	0.0027 ppm
Concentration RSD	0.7 %	0.5 %	14.4 %	0.9 %	0.9 %	1.8 %	93.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0018 ppm	6.1642 ppm	0.0049 ppm	0.0685 ppm	1.4110 ppm	0.0012 ppm	0.2310 ppm
Concentration per Run 1	0.0009 ppm	6.2355 ppm	0.0055 ppm	0.0684 ppm	1.4209 ppm	0.0012 ppm	0.2321 ppm
Concentration per Run 2	0.0024 ppm	6.1228 ppm	0.0043 ppm	0.0686 ppm	1.4073 ppm	0.0010 ppm	0.2307 ppm
Concentration per Run 3	0.0022 ppm	6.1344 ppm	0.0048 ppm	0.0686 ppm	1.4048 ppm	0.0015 ppm	0.2301 ppm
Concentration RSD	44.3 %	1.0 %	12.3 %	0.2 %	0.6 %	19.0 %	0.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.2688 ppm	105.3167 %	107.2206 %	97.1452 %	120.9554 %	128.0933 %	123.8251 %
Concentration per Run 1	0.2705 ppm	104.8470 %	107.0374 %	96.9205 %	120.2944 %	127.4978 %	123.7471 %
Concentration per Run 2	0.2683 ppm	105.1421 %	107.6317 %	96.6501 %	120.6281 %	129.1923 %	123.2204 %
Concentration per Run 3	0.2677 ppm	105.9609 %	106.9927 %	97.8649 %	121.9438 %	127.5898 %	124.5079 %
Concentration RSD	0.6 %	0.5 %	0.3 %	0.7 %	0.7 %	0.7 %	0.5 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450847-53D2 WG1969482
Analysis started at: 9/10/2024 4:10:00 PM
Rack 1
Vial 28
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0015 ppm	85.6001 ppm	0.0733 ppm	0.0612 ppm	1.3587 ppm	0.0041 ppm	290.0948 ppm
Concentration per Run 1	0.0017 ppm	85.5586 ppm	0.0723 ppm	0.0614 ppm	1.3578 ppm	0.0040 ppm	289.8010 ppm
Concentration per Run 2	0.0017 ppm	85.2238 ppm	0.0749 ppm	0.0612 ppm	1.3496 ppm	0.0041 ppm	289.1734 ppm
Concentration per Run 3	0.0013 ppm	86.0180 ppm	0.0728 ppm	0.0611 ppm	1.3686 ppm	0.0041 ppm	291.3100 ppm
Concentration RSD	14.7 %	0.5 %	1.9 %	0.2 %	0.7 %	0.5 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0016 ppm	0.0574 ppm	0.1861 ppm	0.5040 ppm	210.3652 ppm	10.6630 ppm	0.0922 ppm
Concentration per Run 1	0.0016 ppm	0.0574 ppm	0.1865 ppm	0.5033 ppm	209.8902 ppm	10.6582 ppm	0.0932 ppm
Concentration per Run 2	0.0017 ppm	0.0570 ppm	0.1859 ppm	0.5046 ppm	209.6771 ppm	10.6482 ppm	0.0915 ppm
Concentration per Run 3	0.0016 ppm	0.0579 ppm	0.1860 ppm	0.5042 ppm	211.5283 ppm	10.6827 ppm	0.0920 ppm
Concentration RSD	2.6 %	0.8 %	0.2 %	0.1 %	0.5 %	0.2 %	1.0 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	53.6943 ppm	3.1561 ppm	0.0067 ppm	2.9101 ppm	0.1316 ppm	1.8852 ppm	0.0144 ppm
Concentration per Run 1	53.8256 ppm	3.1489 ppm	0.0064 ppm	2.9041 ppm	0.1315 ppm	1.8812 ppm	0.0133 ppm
Concentration per Run 2	53.4354 ppm	3.1479 ppm	0.0067 ppm	2.9057 ppm	0.1311 ppm	1.8905 ppm	0.0145 ppm
Concentration per Run 3	53.8218 ppm	3.1714 ppm	0.0068 ppm	2.9206 ppm	0.1323 ppm	1.8838 ppm	0.0154 ppm
Concentration RSD	0.4 %	0.4 %	3.1 %	0.3 %	0.5 %	0.3 %	7.3 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0036 ppm	32.1301 ppm	0.6514 ppm	0.9545 ppm	3.5372 ppm	0.0025 ppm	0.2616 ppm
Concentration per Run 1	0.0051 ppm	32.3353 ppm	0.6541 ppm	0.9494 ppm	3.5323 ppm	0.0035 ppm	0.2612 ppm
Concentration per Run 2	0.0035 ppm	32.1279 ppm	0.6498 ppm	0.9531 ppm	3.5351 ppm	0.0024 ppm	0.2613 ppm
Concentration per Run 3	0.0022 ppm	31.9270 ppm	0.6504 ppm	0.9611 ppm	3.5441 ppm	0.0016 ppm	0.2624 ppm
Concentration RSD	39.7 %	0.6 %	0.4 %	0.6 %	0.2 %	38.6 %	0.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	1.7789 ppm	100.9239 %	107.2345 %	84.0111 %	113.6756 %	125.7324 %	114.4770 %
Concentration per Run 1	1.7900 ppm	100.8003 %	108.0937 %	83.9126 %	113.3711 %	127.4470 %	114.3316 %
Concentration per Run 2	1.7712 ppm	101.4142 %	106.7313 %	83.8460 %	114.9393 %	124.2038 %	114.3825 %
Concentration per Run 3	1.7754 ppm	100.5572 %	106.8784 %	84.2748 %	112.7163 %	125.5463 %	114.7169 %
Concentration RSD	0.6 %	0.4 %	0.7 %	0.3 %	1.0 %	1.3 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450847-54D2 WG1969482
Analysis started at: 9/10/2024 4:13:55 PM
Rack 1
Vial 29
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0011 ppm	134.2253 ppm	0.0558 ppm	0.0175 ppm	0.4559 ppm	0.0054 ppm	34.9516 ppm
Concentration per Run 1	0.0009 ppm	134.4710 ppm	0.0562 ppm	0.0183 ppm	0.4528 ppm	0.0055 ppm	35.2344 ppm
Concentration per Run 2	0.0010 ppm	133.8685 ppm	0.0555 ppm	0.0166 ppm	0.4573 ppm	0.0054 ppm	34.8143 ppm
Concentration per Run 3	0.0014 ppm	134.3366 ppm	0.0556 ppm	0.0177 ppm	0.4576 ppm	0.0054 ppm	34.8061 ppm
Concentration RSD	21.0 %	0.2 %	0.7 %	4.8 %	0.6 %	0.9 %	0.7 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0004 ppm	0.0874 ppm	0.2371 ppm	0.2173 ppm	218.1124 ppm	7.5658 ppm	0.1145 ppm
Concentration per Run 1	0.0004 ppm	0.0873 ppm	0.2391 ppm	0.2192 ppm	218.2206 ppm	7.5882 ppm	0.1140 ppm
Concentration per Run 2	0.0003 ppm	0.0869 ppm	0.2353 ppm	0.2148 ppm	218.1598 ppm	7.5789 ppm	0.1153 ppm
Concentration per Run 3	0.0006 ppm	0.0879 ppm	0.2370 ppm	0.2178 ppm	217.9568 ppm	7.5302 ppm	0.1142 ppm
Concentration RSD	33.5 %	0.6 %	0.8 %	1.0 %	0.1 %	0.4 %	0.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	25.6474 ppm	4.2850 ppm	0.0051 ppm	0.8275 ppm	0.1584 ppm	0.1777 ppm	0.0019 ppm
Concentration per Run 1	25.7352 ppm	4.3075 ppm	0.0056 ppm	0.8268 ppm	0.1591 ppm	0.1777 ppm	0.0015 ppm
Concentration per Run 2	25.5130 ppm	4.2691 ppm	0.0049 ppm	0.8313 ppm	0.1588 ppm	0.1768 ppm	0.0026 ppm
Concentration per Run 3	25.6940 ppm	4.2784 ppm	0.0049 ppm	0.8245 ppm	0.1574 ppm	0.1785 ppm	0.0017 ppm
Concentration RSD	0.5 %	0.5 %	7.9 %	0.4 %	0.6 %	0.5 %	30.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0006 ppm	8.4763 ppm	0.0100 ppm	0.1388 ppm	2.8394 ppm	0.0017 ppm	0.3186 ppm
Concentration per Run 1	-0.0024 ppm	8.7009 ppm	0.0102 ppm	0.1396 ppm	2.8576 ppm	0.0012 ppm	0.3215 ppm
Concentration per Run 2	0.0044 ppm	8.3419 ppm	0.0104 ppm	0.1383 ppm	2.8148 ppm	0.0021 ppm	0.3165 ppm
Concentration per Run 3	-0.0001 ppm	8.3861 ppm	0.0093 ppm	0.1386 ppm	2.8459 ppm	0.0017 ppm	0.3179 ppm
Concentration RSD	546.2 %	2.3 %	5.7 %	0.5 %	0.8 %	26.5 %	0.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.3668 ppm	103.8621 %	108.7637 %	91.3404 %	126.6069 %	137.5886 %	129.7543 %
Concentration per Run 1	0.3678 ppm	103.2360 %	107.1510 %	91.7669 %	126.4940 %	136.1602 %	130.0201 %
Concentration per Run 2	0.3644 ppm	104.7654 %	108.9995 %	91.3176 %	126.8888 %	137.7367 %	129.5863 %
Concentration per Run 3	0.3682 ppm	103.5850 %	110.1405 %	90.9366 %	126.4378 %	138.8689 %	129.6566 %
Concentration RSD	0.6 %	0.8 %	1.4 %	0.5 %	0.2 %	1.0 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450847-55D2 WG1969482
Analysis started at: 9/10/2024 4:17:51 PM
Rack 1
Vial 30
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0012 ppm	106.6318 ppm	0.0253 ppm	0.0078 ppm	0.7146 ppm	0.0053 ppm	21.2088 ppm
Concentration per Run 1	0.0010 ppm	106.5530 ppm	0.0245 ppm	0.0076 ppm	0.7155 ppm	0.0053 ppm	21.1689 ppm
Concentration per Run 2	0.0011 ppm	107.2458 ppm	0.0255 ppm	0.0080 ppm	0.7148 ppm	0.0053 ppm	21.3497 ppm
Concentration per Run 3	0.0014 ppm	106.0965 ppm	0.0259 ppm	0.0076 ppm	0.7135 ppm	0.0053 ppm	21.1077 ppm
Concentration RSD	16.3 %	0.5 %	2.9 %	3.1 %	0.1 %	0.2 %	0.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0003 ppm	0.0547 ppm	0.3189 ppm	0.2004 ppm	152.3949 ppm	5.2158 ppm	0.0818 ppm
Concentration per Run 1	0.0004 ppm	0.0549 ppm	0.3209 ppm	0.2019 ppm	152.4605 ppm	5.2513 ppm	0.0828 ppm
Concentration per Run 2	0.0002 ppm	0.0549 ppm	0.3189 ppm	0.2007 ppm	153.0728 ppm	5.2168 ppm	0.0824 ppm
Concentration per Run 3	0.0003 ppm	0.0544 ppm	0.3169 ppm	0.1986 ppm	151.6513 ppm	5.1793 ppm	0.0803 ppm
Concentration RSD	41.6 %	0.6 %	0.6 %	0.8 %	0.5 %	0.7 %	1.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	19.1800 ppm	2.3400 ppm	0.0028 ppm	1.3540 ppm	0.1493 ppm	0.1408 ppm	0.0010 ppm
Concentration per Run 1	19.2635 ppm	2.3368 ppm	0.0027 ppm	1.3515 ppm	0.1493 ppm	0.1359 ppm	0.0014 ppm
Concentration per Run 2	19.2107 ppm	2.3502 ppm	0.0030 ppm	1.3660 ppm	0.1498 ppm	0.1414 ppm	-0.0015 ppm
Concentration per Run 3	19.0658 ppm	2.3329 ppm	0.0028 ppm	1.3444 ppm	0.1487 ppm	0.1451 ppm	0.0031 ppm
Concentration RSD	0.5 %	0.4 %	4.8 %	0.8 %	0.4 %	3.3 %	232.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0004 ppm	7.4885 ppm	0.0064 ppm	0.1460 ppm	2.0752 ppm	0.0020 ppm	0.3179 ppm
Concentration per Run 1	0.0000 ppm	7.5564 ppm	0.0065 ppm	0.1459 ppm	2.0822 ppm	0.0020 ppm	0.3195 ppm
Concentration per Run 2	0.0009 ppm	7.5036 ppm	0.0069 ppm	0.1462 ppm	2.0735 ppm	0.0010 ppm	0.3182 ppm
Concentration per Run 3	0.0003 ppm	7.4055 ppm	0.0059 ppm	0.1458 ppm	2.0699 ppm	0.0029 ppm	0.3158 ppm
Concentration RSD	117.1 %	1.0 %	7.9 %	0.1 %	0.3 %	47.9 %	0.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.2578 ppm	106.8503 %	112.0528 %	96.6506 %	130.9718 %	142.3203 %	135.6512 %
Concentration per Run 1	0.2590 ppm	106.3547 %	112.3199 %	99.8790 %	130.4447 %	142.3627 %	137.9733 %
Concentration per Run 2	0.2585 ppm	106.7400 %	111.1168 %	95.7387 %	130.8950 %	141.6615 %	135.2917 %
Concentration per Run 3	0.2560 ppm	107.4563 %	112.7218 %	94.3340 %	131.5758 %	142.9368 %	133.6885 %
Concentration RSD	0.6 %	0.5 %	0.7 %	3.0 %	0.4 %	0.4 %	1.6 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450847-56D2 WG1969482
Analysis started at: 9/10/2024 4:21:46 PM
Rack 1
Vial 31
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0005 ppm	76.9017 ppm	0.0250 ppm	0.0165 ppm	0.3434 ppm	0.0044 ppm	36.4864 ppm
Concentration per Run 1	0.0005 ppm	76.5077 ppm	0.0255 ppm	0.0160 ppm	0.3414 ppm	0.0044 ppm	36.4368 ppm
Concentration per Run 2	0.0006 ppm	77.2042 ppm	0.0248 ppm	0.0165 ppm	0.3460 ppm	0.0043 ppm	36.5226 ppm
Concentration per Run 3	0.0005 ppm	76.9931 ppm	0.0246 ppm	0.0171 ppm	0.3429 ppm	0.0044 ppm	36.4997 ppm
Concentration RSD	12.4 %	0.5 %	1.9 %	3.4 %	0.7 %	1.4 %	0.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0004 ppm	0.0488 ppm	0.1568 ppm	0.1582 ppm	125.8331 ppm	5.3250 ppm	0.0720 ppm
Concentration per Run 1	0.0005 ppm	0.0488 ppm	0.1570 ppm	0.1578 ppm	125.2136 ppm	5.3053 ppm	0.0718 ppm
Concentration per Run 2	0.0003 ppm	0.0491 ppm	0.1568 ppm	0.1591 ppm	126.7806 ppm	5.3464 ppm	0.0733 ppm
Concentration per Run 3	0.0003 ppm	0.0485 ppm	0.1566 ppm	0.1575 ppm	125.5052 ppm	5.3232 ppm	0.0708 ppm
Concentration RSD	44.1 %	0.6 %	0.2 %	0.6 %	0.7 %	0.4 %	1.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	19.7186 ppm	1.5637 ppm	0.0031 ppm	0.6273 ppm	0.1065 ppm	0.1265 ppm	0.0035 ppm
Concentration per Run 1	19.6726 ppm	1.5573 ppm	0.0024 ppm	0.6202 ppm	0.1065 ppm	0.1274 ppm	0.0036 ppm
Concentration per Run 2	19.7650 ppm	1.5694 ppm	0.0032 ppm	0.6356 ppm	0.1065 ppm	0.1255 ppm	0.0040 ppm
Concentration per Run 3	19.7183 ppm	1.5643 ppm	0.0037 ppm	0.6261 ppm	0.1064 ppm	0.1266 ppm	0.0030 ppm
Concentration RSD	0.2 %	0.4 %	20.4 %	1.2 %	0.1 %	0.8 %	14.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0016 ppm	10.2599 ppm	0.0058 ppm	0.1483 ppm	2.4161 ppm	0.0017 ppm	0.2515 ppm
Concentration per Run 1	-0.0007 ppm	10.3946 ppm	0.0058 ppm	0.1487 ppm	2.4176 ppm	0.0018 ppm	0.2504 ppm
Concentration per Run 2	0.0035 ppm	10.2706 ppm	0.0061 ppm	0.1480 ppm	2.4350 ppm	0.0026 ppm	0.2541 ppm
Concentration per Run 3	0.0021 ppm	10.1144 ppm	0.0055 ppm	0.1481 ppm	2.3957 ppm	0.0005 ppm	0.2499 ppm
Concentration RSD	130.5 %	1.4 %	5.8 %	0.3 %	0.8 %	63.2 %	0.9 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.2720 ppm	102.1500 %	106.1309 %	92.2656 %	118.7471 %	126.7477 %	120.2394 %
Concentration per Run 1	0.2734 ppm	102.1121 %	105.7010 %	92.4908 %	119.6297 %	126.0470 %	120.5732 %
Concentration per Run 2	0.2713 ppm	102.1677 %	105.7265 %	92.3636 %	118.4605 %	126.2544 %	120.1382 %
Concentration per Run 3	0.2713 ppm	102.1703 %	106.9652 %	91.9423 %	118.1512 %	127.9419 %	120.0068 %
Concentration RSD	0.4 %	0.0 %	0.7 %	0.3 %	0.7 %	0.8 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2451109-03D2 WG1969482
Analysis started at: 9/10/2024 4:25:43 PM
Rack 1
Vial 32
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0006 ppm	94.0984 ppm	0.0252 ppm	0.0071 ppm	0.6050 ppm	0.0035 ppm	146.9815 ppm
Concentration per Run 1	0.0007 ppm	94.3603 ppm	0.0260 ppm	0.0072 ppm	0.6036 ppm	0.0035 ppm	147.6327 ppm
Concentration per Run 2	0.0006 ppm	94.0412 ppm	0.0255 ppm	0.0073 ppm	0.6062 ppm	0.0035 ppm	146.8815 ppm
Concentration per Run 3	0.0005 ppm	93.8937 ppm	0.0242 ppm	0.0069 ppm	0.6053 ppm	0.0034 ppm	146.4302 ppm
Concentration RSD	17.2 %	0.3 %	3.6 %	3.1 %	0.2 %	1.3 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0001 ppm	0.0555 ppm	0.1535 ppm	0.1534 ppm	144.2846 ppm	14.3017 ppm	0.1012 ppm
Concentration per Run 1	0.0000 ppm	0.0558 ppm	0.1546 ppm	0.1545 ppm	144.2376 ppm	14.3167 ppm	0.1013 ppm
Concentration per Run 2	-0.0002 ppm	0.0557 ppm	0.1537 ppm	0.1534 ppm	144.8821 ppm	14.3592 ppm	0.1016 ppm
Concentration per Run 3	-0.0002 ppm	0.0549 ppm	0.1524 ppm	0.1524 ppm	143.7340 ppm	14.2293 ppm	0.1007 ppm
Concentration RSD	106.6 %	0.9 %	0.7 %	0.7 %	0.4 %	0.5 %	0.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	102.8812 ppm	2.9433 ppm	0.0052 ppm	1.9753 ppm	0.1145 ppm	0.1013 ppm	-0.0018 ppm
Concentration per Run 1	103.6748 ppm	2.9508 ppm	0.0057 ppm	1.9773 ppm	0.1157 ppm	0.1019 ppm	-0.0009 ppm
Concentration per Run 2	103.0333 ppm	2.9430 ppm	0.0052 ppm	1.9720 ppm	0.1143 ppm	0.1010 ppm	-0.0015 ppm
Concentration per Run 3	101.9353 ppm	2.9361 ppm	0.0047 ppm	1.9765 ppm	0.1135 ppm	0.1010 ppm	-0.0029 ppm
Concentration RSD	0.9 %	0.3 %	9.6 %	0.1 %	1.0 %	0.5 %	57.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0014 ppm	10.8137 ppm	0.0052 ppm	0.1319 ppm	5.4070 ppm	0.0021 ppm	0.2419 ppm
Concentration per Run 1	-0.0019 ppm	11.0165 ppm	0.0050 ppm	0.1320 ppm	5.4503 ppm	0.0024 ppm	0.2427 ppm
Concentration per Run 2	-0.0011 ppm	10.7746 ppm	0.0048 ppm	0.1326 ppm	5.3819 ppm	0.0006 ppm	0.2423 ppm
Concentration per Run 3	-0.0012 ppm	10.6500 ppm	0.0058 ppm	0.1310 ppm	5.3889 ppm	0.0032 ppm	0.2408 ppm
Concentration RSD	30.2 %	1.7 %	9.7 %	0.6 %	0.7 %	63.7 %	0.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.3731 ppm	98.0508 %	105.6334 %	82.0214 %	118.5977 %	131.9149 %	120.3781 %
Concentration per Run 1	0.3788 ppm	97.6795 %	105.2162 %	82.0253 %	118.4951 %	131.4628 %	120.4884 %
Concentration per Run 2	0.3728 ppm	97.9044 %	105.7532 %	81.6669 %	118.3303 %	132.5075 %	120.3744 %
Concentration per Run 3	0.3678 ppm	98.5686 %	105.9308 %	82.3720 %	118.9677 %	131.7743 %	120.2714 %
Concentration RSD	1.5 %	0.5 %	0.4 %	0.4 %	0.3 %	0.4 %	0.1 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCV
Analysis started at: 9/10/2024 4:29:39 PM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.5039 ppm	0.4885 ppm	0.4796 ppm	0.4695 ppm	0.5178 ppm	0.5193 ppm	0.4991 ppm
Concentration per Run 1	0.5031 ppm	0.4965 ppm	0.4805 ppm	0.4663 ppm	0.5182 ppm	0.5186 ppm	0.4999 ppm
Concentration per Run 2	0.5027 ppm	0.4865 ppm	0.4788 ppm	0.4673 ppm	0.5151 ppm	0.5185 ppm	0.4969 ppm
Concentration per Run 3	0.5059 ppm	0.4827 ppm	0.4796 ppm	0.4749 ppm	0.5201 ppm	0.5206 ppm	0.5006 ppm
Recovery Percentage 1	100.776 %	97.707 %	95.927 %	93.896 %	103.559 %	103.851 %	99.822 %
Concentration RSD	0.3 %	1.5 %	0.2 %	1.0 %	0.5 %	0.2 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.4970 ppm	0.5086 ppm	0.4950 ppm	0.4900 ppm	0.5169 ppm	5.3207 ppm	0.5277 ppm
Concentration per Run 1	0.4964 ppm	0.5083 ppm	0.4942 ppm	0.4888 ppm	0.5213 ppm	5.3644 ppm	0.5267 ppm
Concentration per Run 2	0.4948 ppm	0.5069 ppm	0.4938 ppm	0.4871 ppm	0.5130 ppm	5.3039 ppm	0.5281 ppm
Concentration per Run 3	0.4996 ppm	0.5105 ppm	0.4972 ppm	0.4942 ppm	0.5164 ppm	5.2937 ppm	0.5282 ppm
Recovery Percentage 1	99.393 %	101.717 %	99.008 %	98.005 %	103.377 %	106.413 %	105.533 %
Concentration RSD	0.5 %	0.4 %	0.4 %	0.8 %	0.8 %	0.7 %	0.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.4962 ppm	0.4975 ppm	0.4972 ppm	10.3344 ppm	0.5088 ppm	0.4913 ppm	0.4920 ppm
Concentration per Run 1	0.5009 ppm	0.4974 ppm	0.4924 ppm	10.3145 ppm	0.5076 ppm	0.4921 ppm	0.4890 ppm
Concentration per Run 2	0.4905 ppm	0.4952 ppm	0.4964 ppm	10.2878 ppm	0.5072 ppm	0.4893 ppm	0.4905 ppm
Concentration per Run 3	0.4972 ppm	0.4999 ppm	0.5029 ppm	10.4009 ppm	0.5114 ppm	0.4925 ppm	0.4966 ppm
Recovery Percentage 1	99.241 %	99.499 %	99.442 %	103.344 %	101.751 %	98.261 %	98.407 %
Concentration RSD	1.1 %	0.5 %	1.1 %	0.6 %	0.4 %	0.3 %	0.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4822 ppm	5.2072 ppm	0.5220 ppm	0.5338 ppm	0.5038 ppm	0.4807 ppm	0.4962 ppm
Concentration per Run 1	0.4854 ppm	5.1981 ppm	0.5187 ppm	0.5329 ppm	0.4989 ppm	0.4808 ppm	0.4945 ppm
Concentration per Run 2	0.4804 ppm	5.1885 ppm	0.5206 ppm	0.5341 ppm	0.5025 ppm	0.4797 ppm	0.4942 ppm
Concentration per Run 3	0.4809 ppm	5.2349 ppm	0.5265 ppm	0.5345 ppm	0.5102 ppm	0.4816 ppm	0.4999 ppm
Recovery Percentage 1	96.448 %	99.184 %	104.391 %	106.764 %	100.765 %	96.141 %	99.243 %
Concentration RSD	0.6 %	0.5 %	0.8 %	0.2 %	1.1 %	0.2 %	0.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4959 ppm	100.4305 %	100.4970 %	96.6048 %	95.5500 %	98.7883 %	96.4397 %
Concentration per Run 1	0.4952 ppm	100.6163 %	100.4942 %	96.8796 %	95.1943 %	98.9465 %	96.7046 %
Concentration per Run 2	0.4952 ppm	100.6933 %	101.5726 %	96.5553 %	95.7376 %	99.6207 %	96.3456 %
Concentration per Run 3	0.4973 ppm	99.9817 %	99.4241 %	96.3795 %	95.7182 %	97.7978 %	96.2688 %
Recovery Percentage 1	99.178 %						
Concentration RSD	0.2 %	0.4 %	1.1 %	0.3 %	0.3 %	0.9 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCB
Analysis started at: 9/10/2024 4:33:35 PM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0028 ppm	0.0001 ppm	-0.0002 ppm	0.0001 ppm	0.0000 ppm	0.0182 ppm
Concentration per Run 1	0.0001 ppm	-0.0028 ppm	0.0012 ppm	-0.0003 ppm	0.0000 ppm	0.0000 ppm	0.0179 ppm
Concentration per Run 2	-0.0001 ppm	0.0003 ppm	-0.0005 ppm	0.0003 ppm	0.0001 ppm	0.0000 ppm	0.0183 ppm
Concentration per Run 3	0.0001 ppm	-0.0059 ppm	-0.0005 ppm	-0.0006 ppm	0.0001 ppm	0.0000 ppm	0.0182 ppm
Recovery Percentage 1	0.243 %	-2.787 %	2.175 %	-0.647 %	0.549 %	0.243 %	18.173 %
Concentration RSD	719.6 %	111.4 %	1,566.6 %	247.7 %	134.2 %	130.2 %	1.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0001 ppm	0.0000 ppm	-0.0002 ppm	0.0007 ppm	0.0082 ppm	-0.0179 ppm	-0.0001 ppm
Concentration per Run 1	0.0001 ppm	-0.0001 ppm	-0.0001 ppm	0.0008 ppm	0.0082 ppm	-0.0270 ppm	-0.0013 ppm
Concentration per Run 2	0.0000 ppm	0.0004 ppm	-0.0003 ppm	0.0008 ppm	0.0073 ppm	-0.0196 ppm	0.0002 ppm
Concentration per Run 3	0.0001 ppm	-0.0001 ppm	-0.0002 ppm	0.0006 ppm	0.0091 ppm	-0.0071 ppm	0.0007 ppm
Recovery Percentage 1	1.578 %	0.168 %	-1.918 %	7.050 %	16.435 %	-0.716 %	-1.339 %
Concentration RSD	37.8 %	859.6 %	53.9 %	17.4 %	11.3 %	56.4 %	794.0 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0049 ppm	0.0005 ppm	0.0015 ppm	0.0171 ppm	0.0003 ppm	0.0001 ppm	-0.0009 ppm
Concentration per Run 1	0.0048 ppm	0.0007 ppm	0.0018 ppm	0.0172 ppm	0.0001 ppm	0.0003 ppm	-0.0018 ppm
Concentration per Run 2	0.0052 ppm	0.0004 ppm	0.0010 ppm	0.0101 ppm	0.0001 ppm	0.0000 ppm	-0.0015 ppm
Concentration per Run 3	0.0047 ppm	0.0004 ppm	0.0015 ppm	0.0240 ppm	0.0007 ppm	0.0001 ppm	0.0007 ppm
Recovery Percentage 1	4.874 %	5.123 %	2.908 %	0.855 %	1.135 %	1.093 %	-1.728 %
Concentration RSD	5.7 %	26.1 %	26.9 %	40.5 %	121.1 %	136.9 %	159.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0007 ppm	-0.0156 ppm	-0.0003 ppm	0.0001 ppm	-0.0003 ppm	-0.0002 ppm	0.0000 ppm
Concentration per Run 1	-0.0005 ppm	-0.0151 ppm	0.0000 ppm	0.0000 ppm	-0.0004 ppm	0.0003 ppm	-0.0001 ppm
Concentration per Run 2	-0.0015 ppm	-0.0140 ppm	-0.0004 ppm	0.0000 ppm	-0.0004 ppm	-0.0001 ppm	0.0001 ppm
Concentration per Run 3	-0.0002 ppm	-0.0177 ppm	-0.0003 ppm	0.0002 ppm	-0.0002 ppm	-0.0009 ppm	0.0002 ppm
Recovery Percentage 1	-7.004 %	-3.124 %	-0.508 %	0.696 %	-3.341 %	-1.134 %	0.474 %
Concentration RSD	98.0 %	12.2 %	81.5 %	108.1 %	34.5 %	272.1 %	286.9 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0016 ppm	94.2692 %	97.5760 %	96.0897 %	95.2869 %	98.9363 %	96.9877 %
Concentration per Run 1	0.0016 ppm	92.2992 %	97.4482 %	95.8857 %	94.4525 %	98.8588 %	96.8385 %
Concentration per Run 2	0.0016 ppm	95.3669 %	98.0014 %	96.3034 %	96.0706 %	99.1945 %	97.3998 %
Concentration per Run 3	0.0015 ppm	95.1415 %	97.2784 %	96.0802 %	95.3378 %	98.7556 %	96.7247 %
Recovery Percentage 1	31.185 %						
Concentration RSD	1.6 %	1.8 %	0.4 %	0.2 %	0.9 %	0.2 %	0.4 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2449741-01 WG1969231
Analysis started at: 9/10/2024 4:37:56 PM
Rack 1
Vial 53
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	-0.0028 ppm	0.0001 ppm	0.0102 ppm	0.0098 ppm	0.0000 ppm	39.7237 ppm
Concentration per Run 1	0.0000 ppm	-0.0015 ppm	-0.0003 ppm	0.0104 ppm	0.0099 ppm	0.0000 ppm	39.6526 ppm
Concentration per Run 2	0.0003 ppm	0.0013 ppm	0.0000 ppm	0.0100 ppm	0.0099 ppm	0.0000 ppm	40.1241 ppm
Concentration per Run 3	0.0000 ppm	-0.0082 ppm	0.0004 ppm	0.0101 ppm	0.0097 ppm	0.0000 ppm	39.3946 ppm
Concentration RSD	189.7 %	174.4 %	679.5 %	2.3 %	1.0 %	932.8 %	0.9 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0001 ppm	0.0000 ppm	0.0003 ppm	0.0065 ppm	0.0038 ppm	3.7878 ppm	0.0057 ppm
Concentration per Run 1	-0.0002 ppm	-0.0003 ppm	0.0001 ppm	0.0068 ppm	0.0038 ppm	3.8309 ppm	0.0073 ppm
Concentration per Run 2	-0.0001 ppm	0.0000 ppm	0.0003 ppm	0.0065 ppm	0.0044 ppm	3.8055 ppm	0.0039 ppm
Concentration per Run 3	-0.0002 ppm	0.0003 ppm	0.0006 ppm	0.0063 ppm	0.0032 ppm	3.7271 ppm	0.0059 ppm
Concentration RSD	21.8 %	4,197.4 %	71.2 %	3.5 %	15.9 %	1.4 %	30.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	6.9370 ppm	0.0003 ppm	0.0024 ppm	13.7383 ppm	0.0008 ppm	-0.0002 ppm	0.0003 ppm
Concentration per Run 1	7.1215 ppm	0.0003 ppm	0.0023 ppm	13.8330 ppm	0.0004 ppm	-0.0006 ppm	-0.0009 ppm
Concentration per Run 2	6.9031 ppm	0.0002 ppm	0.0025 ppm	13.7974 ppm	0.0014 ppm	0.0001 ppm	-0.0005 ppm
Concentration per Run 3	6.7864 ppm	0.0003 ppm	0.0022 ppm	13.5844 ppm	0.0005 ppm	0.0000 ppm	0.0024 ppm
Concentration RSD	2.5 %	18.5 %	7.5 %	1.0 %	69.5 %	228.4 %	558.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0007 ppm	8.0967 ppm	-0.0014 ppm	0.1443 ppm	-0.0004 ppm	-0.0001 ppm	0.0004 ppm
Concentration per Run 1	-0.0003 ppm	8.3329 ppm	-0.0013 ppm	0.1440 ppm	-0.0005 ppm	-0.0004 ppm	0.0003 ppm
Concentration per Run 2	-0.0009 ppm	8.0756 ppm	-0.0017 ppm	0.1459 ppm	-0.0003 ppm	0.0010 ppm	0.0004 ppm
Concentration per Run 3	-0.0009 ppm	7.8817 ppm	-0.0013 ppm	0.1431 ppm	-0.0004 ppm	-0.0009 ppm	0.0005 ppm
Concentration RSD	51.1 %	2.8 %	13.6 %	1.0 %	16.5 %	745.1 %	29.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0151 ppm	93.4805 %	100.9251 %	93.6641 %	94.0294 %	100.6253 %	95.8761 %
Concentration per Run 1	0.0156 ppm	91.3975 %	101.0485 %	93.1879 %	93.9640 %	100.9876 %	95.9240 %
Concentration per Run 2	0.0152 ppm	93.6352 %	99.6248 %	92.9462 %	94.3903 %	99.0796 %	95.2085 %
Concentration per Run 3	0.0144 ppm	95.4088 %	102.1020 %	94.8580 %	93.7339 %	101.8087 %	96.4958 %
Concentration RSD	3.9 %	2.2 %	1.2 %	1.1 %	0.4 %	1.4 %	0.7 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2449742-01 WG1969231
Analysis started at: 9/10/2024 4:41:52 PM
Rack 1
Vial 54
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0001 ppm	0.0033 ppm	0.0007 ppm	0.0094 ppm	0.0453 ppm	0.0000 ppm	14.9259 ppm
Concentration per Run 1	-0.0002 ppm	0.0008 ppm	-0.0006 ppm	0.0095 ppm	0.0453 ppm	0.0001 ppm	14.9136 ppm
Concentration per Run 2	-0.0002 ppm	0.0032 ppm	0.0011 ppm	0.0089 ppm	0.0454 ppm	0.0000 ppm	15.0043 ppm
Concentration per Run 3	0.0000 ppm	0.0059 ppm	0.0016 ppm	0.0097 ppm	0.0451 ppm	0.0000 ppm	14.8597 ppm
Concentration RSD	108.6 %	76.9 %	168.4 %	4.4 %	0.4 %	168.7 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0001 ppm	0.0001 ppm	0.0010 ppm	0.0033 ppm	5.8157 ppm	0.0046 ppm
Concentration per Run 1	0.0000 ppm	0.0000 ppm	0.0003 ppm	0.0013 ppm	0.0035 ppm	5.8275 ppm	0.0050 ppm
Concentration per Run 2	0.0000 ppm	-0.0001 ppm	0.0000 ppm	0.0010 ppm	0.0032 ppm	5.8453 ppm	0.0048 ppm
Concentration per Run 3	-0.0001 ppm	-0.0002 ppm	0.0001 ppm	0.0008 ppm	0.0032 ppm	5.7742 ppm	0.0040 ppm
Concentration RSD	216.5 %	81.0 %	139.6 %	27.6 %	4.5 %	0.6 %	11.3 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	4.1241 ppm	0.0825 ppm	0.0005 ppm	33.9567 ppm	0.0009 ppm	0.0006 ppm	-0.0009 ppm
Concentration per Run 1	4.2040 ppm	0.0823 ppm	0.0003 ppm	33.8991 ppm	0.0010 ppm	0.0001 ppm	-0.0004 ppm
Concentration per Run 2	4.1190 ppm	0.0829 ppm	0.0005 ppm	34.1696 ppm	0.0008 ppm	0.0013 ppm	-0.0022 ppm
Concentration per Run 3	4.0492 ppm	0.0822 ppm	0.0006 ppm	33.8013 ppm	0.0009 ppm	0.0004 ppm	-0.0001 ppm
Concentration RSD	1.9 %	0.5 %	35.7 %	0.6 %	9.4 %	108.2 %	125.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0012 ppm	6.8471 ppm	-0.0009 ppm	0.1340 ppm	-0.0005 ppm	0.0001 ppm	0.0001 ppm
Concentration per Run 1	0.0023 ppm	6.9355 ppm	-0.0007 ppm	0.1337 ppm	-0.0003 ppm	-0.0005 ppm	0.0000 ppm
Concentration per Run 2	0.0002 ppm	6.8337 ppm	-0.0010 ppm	0.1345 ppm	-0.0007 ppm	0.0014 ppm	0.0001 ppm
Concentration per Run 3	0.0010 ppm	6.7723 ppm	-0.0010 ppm	0.1337 ppm	-0.0006 ppm	-0.0005 ppm	0.0000 ppm
Concentration RSD	89.6 %	1.2 %	16.9 %	0.4 %	36.4 %	824.5 %	163.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0009 ppm	93.7922 %	98.7728 %	92.2593 %	94.5872 %	98.9001 %	95.2535 %
Concentration per Run 1	0.0008 ppm	92.4560 %	98.6046 %	92.2182 %	94.5985 %	98.6696 %	95.4848 %
Concentration per Run 2	0.0010 ppm	93.7145 %	98.2897 %	92.2297 %	94.3612 %	98.9556 %	95.3033 %
Concentration per Run 3	0.0009 ppm	95.2062 %	99.4241 %	92.3299 %	94.8019 %	99.0752 %	94.9722 %
Concentration RSD	11.8 %	1.5 %	0.6 %	0.1 %	0.2 %	0.2 %	0.3 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450397-10 WG1969231
Analysis started at: 9/10/2024 4:45:47 PM
Rack 1
Vial 55
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0002 ppm	0.2171 ppm	0.0002 ppm	0.0355 ppm	0.0521 ppm	0.0000 ppm	19.5830 ppm
Concentration per Run 1	0.0002 ppm	0.2149 ppm	0.0001 ppm	0.0372 ppm	0.0525 ppm	0.0000 ppm	19.6833 ppm
Concentration per Run 2	0.0002 ppm	0.2147 ppm	0.0009 ppm	0.0355 ppm	0.0518 ppm	0.0000 ppm	19.5878 ppm
Concentration per Run 3	0.0002 ppm	0.2217 ppm	-0.0004 ppm	0.0339 ppm	0.0519 ppm	0.0000 ppm	19.4779 ppm
Concentration RSD	9.8 %	1.8 %	370.9 %	4.6 %	0.7 %	46.3 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0001 ppm	0.0001 ppm	0.0009 ppm	0.0028 ppm	1.4095 ppm	6.8355 ppm	0.0016 ppm
Concentration per Run 1	-0.0001 ppm	0.0002 ppm	0.0009 ppm	0.0029 ppm	1.4173 ppm	6.9102 ppm	0.0017 ppm
Concentration per Run 2	-0.0001 ppm	0.0002 ppm	0.0010 ppm	0.0026 ppm	1.4049 ppm	6.8000 ppm	0.0017 ppm
Concentration per Run 3	-0.0001 ppm	-0.0002 ppm	0.0007 ppm	0.0029 ppm	1.4062 ppm	6.7963 ppm	0.0015 ppm
Concentration RSD	15.2 %	352.6 %	17.3 %	7.1 %	0.5 %	0.9 %	8.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	5.3166 ppm	0.1972 ppm	0.0010 ppm	77.9425 ppm	0.0015 ppm	0.0037 ppm	-0.0003 ppm
Concentration per Run 1	5.4758 ppm	0.1990 ppm	0.0014 ppm	78.0780 ppm	0.0013 ppm	0.0042 ppm	-0.0009 ppm
Concentration per Run 2	5.2876 ppm	0.1966 ppm	0.0009 ppm	77.8141 ppm	0.0016 ppm	0.0033 ppm	-0.0007 ppm
Concentration per Run 3	5.1864 ppm	0.1961 ppm	0.0007 ppm	77.9355 ppm	0.0016 ppm	0.0036 ppm	0.0006 ppm
Concentration RSD	2.8 %	0.8 %	34.5 %	0.2 %	10.1 %	12.6 %	268.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0010 ppm	1.2609 ppm	-0.0007 ppm	0.1342 ppm	0.0099 ppm	-0.0007 ppm	0.0012 ppm
Concentration per Run 1	0.0011 ppm	1.2965 ppm	-0.0002 ppm	0.1359 ppm	0.0102 ppm	-0.0007 ppm	0.0013 ppm
Concentration per Run 2	-0.0020 ppm	1.2556 ppm	-0.0011 ppm	0.1333 ppm	0.0099 ppm	-0.0009 ppm	0.0010 ppm
Concentration per Run 3	-0.0022 ppm	1.2305 ppm	-0.0009 ppm	0.1334 ppm	0.0096 ppm	-0.0005 ppm	0.0012 ppm
Concentration RSD	185.7 %	2.6 %	62.2 %	1.1 %	3.3 %	24.5 %	14.1 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0077 ppm	91.5422 %	100.5864 %	90.8280 %	92.6643 %	99.6423 %	94.3342 %
Concentration per Run 1	0.0079 ppm	88.8760 %	99.4299 %	90.0513 %	92.0468 %	100.2990 %	93.6700 %
Concentration per Run 2	0.0078 ppm	91.9327 %	100.9767 %	91.3698 %	92.4729 %	99.0084 %	94.8433 %
Concentration per Run 3	0.0075 ppm	93.8178 %	101.3526 %	91.0629 %	93.4732 %	99.6195 %	94.4893 %
Concentration RSD	2.6 %	2.7 %	1.0 %	0.8 %	0.8 %	0.6 %	0.6 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450397-11 WG1969231
Analysis started at: 9/10/2024 4:49:44 PM
Rack 1
Vial 56
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0001 ppm	0.0242 ppm	0.0009 ppm	0.0342 ppm	0.0414 ppm	0.0000 ppm	19.4413 ppm
Concentration per Run 1	-0.0002 ppm	0.0206 ppm	0.0009 ppm	0.0347 ppm	0.0416 ppm	0.0000 ppm	19.4894 ppm
Concentration per Run 2	-0.0001 ppm	0.0307 ppm	0.0006 ppm	0.0341 ppm	0.0414 ppm	0.0000 ppm	19.3443 ppm
Concentration per Run 3	-0.0001 ppm	0.0213 ppm	0.0011 ppm	0.0338 ppm	0.0411 ppm	0.0000 ppm	19.4903 ppm
Concentration RSD	73.0 %	23.4 %	32.2 %	1.4 %	0.5 %	62.3 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0001 ppm	0.0000 ppm	0.0002 ppm	0.0017 ppm	0.3716 ppm	6.8196 ppm	0.0015 ppm
Concentration per Run 1	-0.0002 ppm	0.0001 ppm	0.0001 ppm	0.0019 ppm	0.3706 ppm	6.8945 ppm	0.0018 ppm
Concentration per Run 2	-0.0001 ppm	-0.0002 ppm	0.0004 ppm	0.0015 ppm	0.3708 ppm	6.8005 ppm	0.0016 ppm
Concentration per Run 3	-0.0001 ppm	0.0002 ppm	0.0000 ppm	0.0015 ppm	0.3734 ppm	6.7638 ppm	0.0013 ppm
Concentration RSD	47.7 %	1,766.3 %	132.8 %	14.0 %	0.4 %	1.0 %	17.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	5.2681 ppm	0.1190 ppm	0.0009 ppm	76.8167 ppm	0.0013 ppm	0.0003 ppm	-0.0007 ppm
Concentration per Run 1	5.3477 ppm	0.1197 ppm	0.0008 ppm	77.2825 ppm	0.0008 ppm	0.0001 ppm	-0.0021 ppm
Concentration per Run 2	5.2495 ppm	0.1186 ppm	0.0009 ppm	76.8458 ppm	0.0012 ppm	-0.0002 ppm	0.0001 ppm
Concentration per Run 3	5.2070 ppm	0.1188 ppm	0.0012 ppm	76.3220 ppm	0.0018 ppm	0.0010 ppm	-0.0001 ppm
Concentration RSD	1.4 %	0.5 %	22.0 %	0.6 %	40.5 %	208.7 %	171.6 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0006 ppm	0.9234 ppm	-0.0006 ppm	0.1322 ppm	0.0006 ppm	-0.0003 ppm	0.0005 ppm
Concentration per Run 1	-0.0010 ppm	0.9376 ppm	-0.0002 ppm	0.1329 ppm	0.0007 ppm	-0.0001 ppm	0.0005 ppm
Concentration per Run 2	-0.0009 ppm	0.9196 ppm	-0.0007 ppm	0.1316 ppm	0.0006 ppm	-0.0007 ppm	0.0007 ppm
Concentration per Run 3	0.0001 ppm	0.9130 ppm	-0.0010 ppm	0.1320 ppm	0.0006 ppm	-0.0001 ppm	0.0003 ppm
Concentration RSD	97.2 %	1.4 %	63.2 %	0.5 %	11.1 %	124.1 %	36.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0015 ppm	90.3749 %	98.9929 %	89.7495 %	91.5080 %	99.4539 %	94.4693 %
Concentration per Run 1	0.0016 ppm	89.4272 %	99.0120 %	88.9211 %	91.4821 %	99.6252 %	93.4612 %
Concentration per Run 2	0.0016 ppm	90.5982 %	99.0214 %	90.0092 %	91.7684 %	99.1161 %	94.8409 %
Concentration per Run 3	0.0015 ppm	91.0993 %	98.9454 %	90.3183 %	91.2734 %	99.6203 %	95.1059 %
Concentration RSD	4.4 %	0.9 %	0.0 %	0.8 %	0.3 %	0.3 %	0.9 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450397-12 WG1969231
Analysis started at: 9/10/2024 4:53:40 PM
Rack 1
Vial 57
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	0.5545 ppm	0.0022 ppm	0.0136 ppm	0.0645 ppm	0.0000 ppm	6.3798 ppm
Concentration per Run 1	0.0003 ppm	0.5654 ppm	0.0026 ppm	0.0137 ppm	0.0652 ppm	0.0001 ppm	6.5010 ppm
Concentration per Run 2	-0.0001 ppm	0.5509 ppm	0.0019 ppm	0.0139 ppm	0.0643 ppm	0.0000 ppm	6.3246 ppm
Concentration per Run 3	-0.0003 ppm	0.5471 ppm	0.0022 ppm	0.0131 ppm	0.0640 ppm	0.0000 ppm	6.3139 ppm
Concentration RSD	862.7 %	1.7 %	13.9 %	3.2 %	1.0 %	50.2 %	1.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0001 ppm	0.0005 ppm	0.0010 ppm	0.0063 ppm	3.5039 ppm	2.1966 ppm	0.0011 ppm
Concentration per Run 1	0.0001 ppm	0.0007 ppm	0.0009 ppm	0.0066 ppm	3.5358 ppm	2.2499 ppm	0.0007 ppm
Concentration per Run 2	0.0001 ppm	0.0004 ppm	0.0011 ppm	0.0063 ppm	3.4873 ppm	2.1701 ppm	0.0012 ppm
Concentration per Run 3	0.0001 ppm	0.0002 ppm	0.0008 ppm	0.0061 ppm	3.4888 ppm	2.1697 ppm	0.0014 ppm
Concentration RSD	14.9 %	54.4 %	16.4 %	3.7 %	0.8 %	2.1 %	35.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	1.1293 ppm	0.2605 ppm	0.0030 ppm	63.9220 ppm	0.0016 ppm	0.0085 ppm	0.0008 ppm
Concentration per Run 1	1.1548 ppm	0.2650 ppm	0.0031 ppm	64.5809 ppm	0.0021 ppm	0.0087 ppm	0.0019 ppm
Concentration per Run 2	1.1268 ppm	0.2582 ppm	0.0028 ppm	63.6969 ppm	0.0013 ppm	0.0080 ppm	0.0017 ppm
Concentration per Run 3	1.1065 ppm	0.2584 ppm	0.0030 ppm	63.4882 ppm	0.0014 ppm	0.0087 ppm	-0.0011 ppm
Concentration RSD	2.1 %	1.5 %	5.3 %	0.9 %	28.9 %	4.8 %	207.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0002 ppm	1.6806 ppm	-0.0005 ppm	0.0360 ppm	0.0250 ppm	-0.0011 ppm	0.0033 ppm
Concentration per Run 1	0.0001 ppm	1.7192 ppm	-0.0005 ppm	0.0365 ppm	0.0255 ppm	-0.0020 ppm	0.0033 ppm
Concentration per Run 2	-0.0011 ppm	1.6713 ppm	0.0004 ppm	0.0358 ppm	0.0248 ppm	-0.0013 ppm	0.0033 ppm
Concentration per Run 3	0.0004 ppm	1.6511 ppm	-0.0015 ppm	0.0357 ppm	0.0247 ppm	-0.0001 ppm	0.0032 ppm
Concentration RSD	363.1 %	2.1 %	174.6 %	1.2 %	1.7 %	85.5 %	2.0 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0258 ppm	94.7421 %	100.0943 %	92.3290 %	94.5630 %	99.6886 %	94.7111 %
Concentration per Run 1	0.0266 ppm	93.1601 %	97.8571 %	92.1613 %	94.2226 %	97.9456 %	94.5868 %
Concentration per Run 2	0.0258 ppm	94.6075 %	101.2894 %	92.4990 %	94.4147 %	100.6309 %	94.6389 %
Concentration per Run 3	0.0251 ppm	96.4587 %	101.1364 %	92.3267 %	95.0519 %	100.4892 %	94.9075 %
Concentration RSD	2.8 %	1.7 %	1.9 %	0.2 %	0.5 %	1.5 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450397-13 WG1969231
Analysis started at: 9/10/2024 4:57:37 PM
Rack 1
Vial 58
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	0.0612 ppm	0.0013 ppm	0.0313 ppm	0.1629 ppm	0.0000 ppm	35.6990 ppm
Concentration per Run 1	0.0003 ppm	0.0642 ppm	0.0015 ppm	0.0321 ppm	0.1642 ppm	0.0000 ppm	36.1418 ppm
Concentration per Run 2	-0.0001 ppm	0.0593 ppm	0.0005 ppm	0.0316 ppm	0.1639 ppm	0.0000 ppm	35.8826 ppm
Concentration per Run 3	0.0001 ppm	0.0600 ppm	0.0019 ppm	0.0300 ppm	0.1606 ppm	0.0000 ppm	35.0725 ppm
Concentration RSD	168.9 %	4.4 %	52.9 %	3.5 %	1.2 %	16,113.7 %	1.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0001 ppm	0.0004 ppm	0.0000 ppm	0.0016 ppm	6.3412 ppm	3.1887 ppm	0.0021 ppm
Concentration per Run 1	-0.0001 ppm	0.0006 ppm	-0.0002 ppm	0.0019 ppm	6.3914 ppm	3.2513 ppm	0.0025 ppm
Concentration per Run 2	-0.0002 ppm	0.0002 ppm	0.0002 ppm	0.0016 ppm	6.3878 ppm	3.1927 ppm	0.0022 ppm
Concentration per Run 3	-0.0002 ppm	0.0002 ppm	0.0000 ppm	0.0014 ppm	6.2443 ppm	3.1220 ppm	0.0016 ppm
Concentration RSD	37.0 %	67.9 %	5,223.6 %	15.0 %	1.3 %	2.0 %	23.3 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	7.7107 ppm	1.1057 ppm	0.0003 ppm	155.4361 ppm	0.0009 ppm	0.0022 ppm	0.0010 ppm
Concentration per Run 1	7.9877 ppm	1.1171 ppm	0.0005 ppm	157.2446 ppm	0.0010 ppm	0.0019 ppm	0.0003 ppm
Concentration per Run 2	7.6732 ppm	1.1117 ppm	0.0003 ppm	156.7690 ppm	0.0005 ppm	0.0025 ppm	0.0015 ppm
Concentration per Run 3	7.4712 ppm	1.0883 ppm	0.0001 ppm	152.2947 ppm	0.0012 ppm	0.0021 ppm	0.0014 ppm
Concentration RSD	3.4 %	1.4 %	65.0 %	1.8 %	37.6 %	13.4 %	65.6 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0005 ppm	4.4200 ppm	-0.0011 ppm	0.2824 ppm	0.0027 ppm	-0.0013 ppm	0.0009 ppm
Concentration per Run 1	0.0003 ppm	4.5789 ppm	-0.0005 ppm	0.2834 ppm	0.0026 ppm	-0.0011 ppm	0.0009 ppm
Concentration per Run 2	-0.0007 ppm	4.3801 ppm	-0.0014 ppm	0.2854 ppm	0.0030 ppm	-0.0020 ppm	0.0008 ppm
Concentration per Run 3	-0.0010 ppm	4.3011 ppm	-0.0014 ppm	0.2783 ppm	0.0026 ppm	-0.0010 ppm	0.0010 ppm
Concentration RSD	147.6 %	3.2 %	47.5 %	1.3 %	8.7 %	40.6 %	10.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0056 ppm	88.2756 %	96.3701 %	86.6317 %	90.4341 %	97.4044 %	92.5334 %
Concentration per Run 1	0.0056 ppm	85.4135 %	95.3391 %	85.4658 %	88.6154 %	96.2131 %	92.1272 %
Concentration per Run 2	0.0055 ppm	88.7773 %	96.1053 %	86.8471 %	90.8906 %	97.6411 %	92.5276 %
Concentration per Run 3	0.0056 ppm	90.6361 %	97.6657 %	87.5823 %	91.7964 %	98.3590 %	92.9455 %
Concentration RSD	0.9 %	3.0 %	1.2 %	1.2 %	1.8 %	1.1 %	0.4 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450398-01 WG1969231
Analysis started at: 9/10/2024 5:01:34 PM
Rack 1
Vial 59
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0003 ppm	0.0044 ppm	-0.0005 ppm	0.0113 ppm	0.0008 ppm	0.0000 ppm	16.4891 ppm
Concentration per Run 1	-0.0006 ppm	0.0012 ppm	-0.0010 ppm	0.0128 ppm	0.0010 ppm	0.0000 ppm	16.6279 ppm
Concentration per Run 2	0.0001 ppm	0.0039 ppm	-0.0009 ppm	0.0112 ppm	0.0008 ppm	0.0000 ppm	16.5176 ppm
Concentration per Run 3	-0.0003 ppm	0.0082 ppm	0.0003 ppm	0.0098 ppm	0.0007 ppm	0.0000 ppm	16.3219 ppm
Concentration RSD	146.2 %	80.1 %	126.9 %	13.3 %	13.3 %	54.7 %	0.9 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0006 ppm	0.0016 ppm	0.0009 ppm	0.0524 ppm	0.5394 ppm	0.0008 ppm
Concentration per Run 1	0.0000 ppm	0.0009 ppm	0.0016 ppm	0.0011 ppm	0.0533 ppm	0.5546 ppm	-0.0017 ppm
Concentration per Run 2	-0.0001 ppm	0.0006 ppm	0.0015 ppm	0.0007 ppm	0.0519 ppm	0.5294 ppm	0.0029 ppm
Concentration per Run 3	0.0001 ppm	0.0003 ppm	0.0015 ppm	0.0008 ppm	0.0521 ppm	0.5342 ppm	0.0012 ppm
Concentration RSD	612.1 %	49.0 %	1.2 %	25.7 %	1.4 %	2.5 %	293.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	6.4703 ppm	0.2453 ppm	-0.0002 ppm	14.1093 ppm	0.0039 ppm	0.0006 ppm	-0.0003 ppm
Concentration per Run 1	6.7960 ppm	0.2473 ppm	-0.0001 ppm	14.1106 ppm	0.0037 ppm	0.0003 ppm	-0.0005 ppm
Concentration per Run 2	6.3874 ppm	0.2456 ppm	-0.0003 ppm	14.2090 ppm	0.0040 ppm	0.0007 ppm	-0.0006 ppm
Concentration per Run 3	6.2273 ppm	0.2430 ppm	-0.0001 ppm	14.0084 ppm	0.0040 ppm	0.0007 ppm	0.0004 ppm
Concentration RSD	4.5 %	0.9 %	66.7 %	0.7 %	4.7 %	38.9 %	202.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0001 ppm	9.0200 ppm	-0.0007 ppm	0.1285 ppm	-0.0003 ppm	-0.0015 ppm	0.0000 ppm
Concentration per Run 1	0.0009 ppm	9.4353 ppm	-0.0024 ppm	0.1296 ppm	-0.0003 ppm	-0.0017 ppm	0.0000 ppm
Concentration per Run 2	0.0005 ppm	8.9122 ppm	-0.0002 ppm	0.1287 ppm	-0.0005 ppm	-0.0018 ppm	0.0000 ppm
Concentration per Run 3	-0.0013 ppm	8.7126 ppm	0.0005 ppm	0.1273 ppm	-0.0003 ppm	-0.0009 ppm	0.0000 ppm
Concentration RSD	1,535.8 %	4.1 %	209.3 %	0.9 %	31.6 %	31.4 %	35.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0006 ppm	87.8292 %	98.0180 %	90.4508 %	94.7919 %	100.5070 %	96.3588 %
Concentration per Run 1	0.0008 ppm	83.7728 %	96.3021 %	89.4549 %	93.1868 %	99.5780 %	96.8529 %
Concentration per Run 2	0.0005 ppm	89.1433 %	98.0382 %	90.5186 %	96.0160 %	100.7215 %	96.0457 %
Concentration per Run 3	0.0006 ppm	90.5717 %	99.7137 %	91.3791 %	95.1729 %	101.2215 %	96.1779 %
Concentration RSD	24.1 %	4.1 %	1.7 %	1.1 %	1.5 %	0.8 %	0.4 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450398-02 WG1969231
Analysis started at: 9/10/2024 5:05:31 PM
Rack 1
Vial 60
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0002 ppm	-0.0037 ppm	0.0014 ppm	0.0280 ppm	0.0374 ppm	0.0000 ppm	72.4489 ppm
Concentration per Run 1	-0.0002 ppm	-0.0044 ppm	0.0018 ppm	0.0290 ppm	0.0381 ppm	0.0000 ppm	73.1513 ppm
Concentration per Run 2	0.0000 ppm	-0.0097 ppm	0.0012 ppm	0.0278 ppm	0.0372 ppm	0.0000 ppm	72.4401 ppm
Concentration per Run 3	-0.0006 ppm	0.0031 ppm	0.0013 ppm	0.0272 ppm	0.0369 ppm	0.0000 ppm	71.7553 ppm
Concentration RSD	116.3 %	176.0 %	22.9 %	3.1 %	1.5 %	436.3 %	1.0 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0004 ppm	-0.0001 ppm	0.0004 ppm	0.0012 ppm	0.0144 ppm	0.7444 ppm	0.0036 ppm
Concentration per Run 1	-0.0004 ppm	0.0001 ppm	0.0005 ppm	0.0016 ppm	0.0169 ppm	0.7587 ppm	0.0049 ppm
Concentration per Run 2	-0.0004 ppm	-0.0002 ppm	0.0005 ppm	0.0010 ppm	0.0139 ppm	0.7385 ppm	0.0038 ppm
Concentration per Run 3	-0.0004 ppm	-0.0002 ppm	0.0002 ppm	0.0009 ppm	0.0123 ppm	0.7358 ppm	0.0020 ppm
Concentration RSD	7.6 %	174.2 %	33.8 %	30.4 %	16.3 %	1.7 %	40.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	36.0888 ppm	0.0269 ppm	0.0008 ppm	18.0166 ppm	0.0152 ppm	0.0003 ppm	0.0019 ppm
Concentration per Run 1	37.5803 ppm	0.0273 ppm	0.0006 ppm	18.1903 ppm	0.0153 ppm	-0.0006 ppm	0.0017 ppm
Concentration per Run 2	35.7156 ppm	0.0268 ppm	0.0009 ppm	17.9620 ppm	0.0160 ppm	0.0012 ppm	0.0015 ppm
Concentration per Run 3	34.9706 ppm	0.0266 ppm	0.0010 ppm	17.8974 ppm	0.0144 ppm	0.0002 ppm	0.0025 ppm
Concentration RSD	3.7 %	1.3 %	25.4 %	0.9 %	5.4 %	338.0 %	27.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0006 ppm	7.0761 ppm	-0.0010 ppm	0.6718 ppm	-0.0007 ppm	-0.0006 ppm	0.0000 ppm
Concentration per Run 1	-0.0005 ppm	7.3839 ppm	-0.0015 ppm	0.6790 ppm	-0.0010 ppm	-0.0015 ppm	0.0000 ppm
Concentration per Run 2	0.0020 ppm	7.0063 ppm	-0.0003 ppm	0.6680 ppm	-0.0006 ppm	0.0012 ppm	-0.0001 ppm
Concentration per Run 3	0.0003 ppm	6.8381 ppm	-0.0012 ppm	0.6684 ppm	-0.0005 ppm	-0.0015 ppm	0.0000 ppm
Concentration RSD	222.8 %	3.9 %	59.2 %	0.9 %	42.2 %	245.9 %	177.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0004 ppm	85.5029 %	97.3851 %	85.7710 %	91.9715 %	98.9848 %	92.7653 %
Concentration per Run 1	0.0004 ppm	82.4572 %	96.0219 %	84.8723 %	91.4708 %	98.5155 %	92.5841 %
Concentration per Run 2	0.0004 ppm	86.4073 %	97.1937 %	84.5982 %	92.6457 %	98.4937 %	91.6014 %
Concentration per Run 3	0.0003 ppm	87.6442 %	98.9398 %	87.8427 %	91.7982 %	99.9452 %	94.1105 %
Concentration RSD	24.4 %	3.2 %	1.5 %	2.1 %	0.7 %	0.8 %	1.4 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450398-03 WG1969231
Analysis started at: 9/10/2024 5:09:29 PM
Rack 2
Vial 1
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0002 ppm	0.0083 ppm	1.6735 ppm	0.4511 ppm	0.0895 ppm	0.0000 ppm	46.7815 ppm
Concentration per Run 1	0.0001 ppm	0.0057 ppm	1.6876 ppm	0.4721 ppm	0.0899 ppm	0.0000 ppm	47.0861 ppm
Concentration per Run 2	0.0002 ppm	0.0116 ppm	1.6729 ppm	0.4536 ppm	0.0897 ppm	0.0000 ppm	47.0738 ppm
Concentration per Run 3	0.0002 ppm	0.0074 ppm	1.6600 ppm	0.4277 ppm	0.0888 ppm	0.0000 ppm	46.1847 ppm
Concentration RSD	40.4 %	36.7 %	0.8 %	4.9 %	0.6 %	75.4 %	1.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0002 ppm	0.0670 ppm	0.0068 ppm	0.0015 ppm	52.7074 ppm	34.9454 ppm	0.0124 ppm
Concentration per Run 1	-0.0002 ppm	0.0704 ppm	0.0071 ppm	0.0016 ppm	53.0877 ppm	35.1667 ppm	0.0134 ppm
Concentration per Run 2	-0.0002 ppm	0.0669 ppm	0.0066 ppm	0.0016 ppm	52.6927 ppm	35.0326 ppm	0.0115 ppm
Concentration per Run 3	-0.0002 ppm	0.0638 ppm	0.0065 ppm	0.0012 ppm	52.3417 ppm	34.6368 ppm	0.0122 ppm
Concentration RSD	5.5 %	4.9 %	4.6 %	13.9 %	0.7 %	0.8 %	7.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	18.0550 ppm	2.9202 ppm	0.0003 ppm	52.3039 ppm	0.1016 ppm	-0.0002 ppm	0.0021 ppm
Concentration per Run 1	18.9412 ppm	2.9384 ppm	0.0004 ppm	52.6651 ppm	0.1069 ppm	0.0001 ppm	0.0004 ppm
Concentration per Run 2	18.0512 ppm	2.9336 ppm	0.0002 ppm	52.4497 ppm	0.1014 ppm	-0.0003 ppm	0.0057 ppm
Concentration per Run 3	17.1724 ppm	2.8887 ppm	0.0002 ppm	51.7968 ppm	0.0963 ppm	-0.0005 ppm	0.0000 ppm
Concentration RSD	4.9 %	0.9 %	39.2 %	0.9 %	5.2 %	133.6 %	155.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0021 ppm	10.0125 ppm	-0.0006 ppm	0.3647 ppm	-0.0003 ppm	-0.0015 ppm	0.0000 ppm
Concentration per Run 1	-0.0012 ppm	10.4879 ppm	-0.0011 ppm	0.3678 ppm	-0.0003 ppm	-0.0017 ppm	0.0000 ppm
Concentration per Run 2	-0.0024 ppm	10.0298 ppm	-0.0005 ppm	0.3653 ppm	-0.0003 ppm	-0.0015 ppm	0.0001 ppm
Concentration per Run 3	-0.0026 ppm	9.5197 ppm	0.0000 ppm	0.3611 ppm	-0.0003 ppm	-0.0012 ppm	-0.0002 ppm
Concentration RSD	36.0 %	4.8 %	97.1 %	0.9 %	8.2 %	14.5 %	1,396.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0037 ppm	92.1841 %	100.8362 %	90.0252 %	91.9703 %	99.9861 %	92.9910 %
Concentration per Run 1	0.0039 ppm	88.1650 %	99.5011 %	89.6821 %	90.6388 %	99.0649 %	92.4432 %
Concentration per Run 2	0.0036 ppm	91.7634 %	100.3558 %	90.0153 %	91.9306 %	99.7216 %	92.9693 %
Concentration per Run 3	0.0036 ppm	96.6239 %	102.6517 %	90.3781 %	93.3414 %	101.1717 %	93.5605 %
Concentration RSD	4.6 %	4.6 %	1.6 %	0.4 %	1.5 %	1.1 %	0.6 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450398-04 WG1969231
Analysis started at: 9/10/2024 5:13:25 PM
Rack 2
Vial 2
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0047 ppm	0.0021 ppm	0.0047 ppm	0.0026 ppm	0.0000 ppm	69.9403 ppm
Concentration per Run 1	-0.0002 ppm	-0.0074 ppm	0.0017 ppm	0.0046 ppm	0.0027 ppm	0.0000 ppm	70.3387 ppm
Concentration per Run 2	0.0001 ppm	-0.0062 ppm	0.0017 ppm	0.0053 ppm	0.0026 ppm	0.0000 ppm	70.0600 ppm
Concentration per Run 3	0.0000 ppm	-0.0006 ppm	0.0030 ppm	0.0043 ppm	0.0026 ppm	-0.0001 ppm	69.4221 ppm
Concentration RSD	1,431.1 %	76.1 %	34.4 %	10.9 %	2.1 %	215.3 %	0.7 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0001 ppm	-0.0003 ppm	0.0597 ppm	0.0577 ppm	1.1255 ppm	0.0005 ppm
Concentration per Run 1	0.0000 ppm	-0.0002 ppm	0.0002 ppm	0.0621 ppm	0.0586 ppm	1.1689 ppm	0.0011 ppm
Concentration per Run 2	0.0001 ppm	-0.0003 ppm	-0.0005 ppm	0.0594 ppm	0.0572 ppm	1.0978 ppm	0.0002 ppm
Concentration per Run 3	-0.0001 ppm	0.0001 ppm	-0.0005 ppm	0.0578 ppm	0.0572 ppm	1.1098 ppm	0.0003 ppm
Concentration RSD	513.7 %	163.1 %	157.6 %	3.6 %	1.4 %	3.4 %	99.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	13.9729 ppm	0.0034 ppm	0.0002 ppm	11.8388 ppm	0.0027 ppm	0.0077 ppm	-0.0008 ppm
Concentration per Run 1	14.4665 ppm	0.0033 ppm	0.0006 ppm	11.9254 ppm	0.0022 ppm	0.0069 ppm	-0.0017 ppm
Concentration per Run 2	13.9607 ppm	0.0033 ppm	0.0000 ppm	11.8272 ppm	0.0036 ppm	0.0083 ppm	-0.0008 ppm
Concentration per Run 3	13.4916 ppm	0.0035 ppm	0.0001 ppm	11.7640 ppm	0.0023 ppm	0.0080 ppm	0.0001 ppm
Concentration RSD	3.5 %	2.2 %	146.7 %	0.7 %	28.6 %	9.8 %	116.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0009 ppm	4.4255 ppm	-0.0015 ppm	0.3271 ppm	-0.0007 ppm	-0.0001 ppm	-0.0001 ppm
Concentration per Run 1	0.0000 ppm	4.5680 ppm	-0.0009 ppm	0.3303 ppm	-0.0008 ppm	-0.0001 ppm	0.0000 ppm
Concentration per Run 2	-0.0021 ppm	4.4160 ppm	-0.0011 ppm	0.3272 ppm	-0.0008 ppm	0.0002 ppm	-0.0001 ppm
Concentration per Run 3	-0.0005 ppm	4.2925 ppm	-0.0024 ppm	0.3237 ppm	-0.0005 ppm	-0.0002 ppm	-0.0002 ppm
Concentration RSD	122.3 %	3.1 %	55.7 %	1.0 %	20.1 %	265.1 %	140.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0620 ppm	87.0862 %	96.1506 %	89.1264 %	92.9269 %	98.8643 %	95.5166 %
Concentration per Run 1	0.0641 ppm	84.5644 %	95.0429 %	89.7880 %	92.6867 %	98.1912 %	96.0635 %
Concentration per Run 2	0.0619 ppm	86.8610 %	96.5418 %	89.2235 %	92.2538 %	98.8913 %	95.9989 %
Concentration per Run 3	0.0598 ppm	89.8334 %	96.8670 %	88.3677 %	93.8401 %	99.5105 %	94.4875 %
Concentration RSD	3.5 %	3.0 %	1.0 %	0.8 %	0.9 %	0.7 %	0.9 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCV
Analysis started at: 9/10/2024 5:17:22 PM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.5236 ppm	0.4918 ppm	0.4827 ppm	0.4856 ppm	0.5184 ppm	0.5191 ppm	0.5046 ppm
Concentration per Run 1	0.5327 ppm	0.4888 ppm	0.4839 ppm	0.4943 ppm	0.5182 ppm	0.5195 ppm	0.5069 ppm
Concentration per Run 2	0.5218 ppm	0.4856 ppm	0.4806 ppm	0.4822 ppm	0.5186 ppm	0.5179 ppm	0.5030 ppm
Concentration per Run 3	0.5162 ppm	0.5010 ppm	0.4835 ppm	0.4804 ppm	0.5183 ppm	0.5198 ppm	0.5037 ppm
Recovery Percentage 1	104.715 %	98.363 %	96.532 %	97.125 %	103.677 %	103.817 %	100.913 %
Concentration RSD	1.6 %	1.7 %	0.4 %	1.6 %	0.0 %	0.2 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.5146 ppm	0.5270 ppm	0.5142 ppm	0.5076 ppm	0.5124 ppm	5.3772 ppm	0.5330 ppm
Concentration per Run 1	0.5255 ppm	0.5381 ppm	0.5242 ppm	0.5177 ppm	0.5124 ppm	5.3884 ppm	0.5345 ppm
Concentration per Run 2	0.5140 ppm	0.5254 ppm	0.5134 ppm	0.5044 ppm	0.5122 ppm	5.3826 ppm	0.5340 ppm
Concentration per Run 3	0.5043 ppm	0.5175 ppm	0.5050 ppm	0.5006 ppm	0.5126 ppm	5.3608 ppm	0.5304 ppm
Recovery Percentage 1	102.923 %	105.398 %	102.838 %	101.511 %	102.477 %	107.545 %	106.596 %
Concentration RSD	2.1 %	2.0 %	1.9 %	1.8 %	0.0 %	0.3 %	0.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.5147 ppm	0.4988 ppm	0.5131 ppm	10.3769 ppm	0.5265 ppm	0.4971 ppm	0.5090 ppm
Concentration per Run 1	0.5267 ppm	0.4983 ppm	0.5172 ppm	10.3785 ppm	0.5371 ppm	0.4988 ppm	0.5147 ppm
Concentration per Run 2	0.5129 ppm	0.4983 ppm	0.5144 ppm	10.4078 ppm	0.5265 ppm	0.4967 ppm	0.5089 ppm
Concentration per Run 3	0.5044 ppm	0.4997 ppm	0.5078 ppm	10.3446 ppm	0.5157 ppm	0.4958 ppm	0.5034 ppm
Recovery Percentage 1	102.936 %	99.758 %	102.625 %	103.769 %	105.292 %	99.425 %	101.802 %
Concentration RSD	2.2 %	0.2 %	0.9 %	0.3 %	2.0 %	0.3 %	1.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4837 ppm	5.3814 ppm	0.5414 ppm	0.5352 ppm	0.5255 ppm	0.4839 ppm	0.5159 ppm
Concentration per Run 1	0.4855 ppm	5.4773 ppm	0.5500 ppm	0.5360 ppm	0.5355 ppm	0.4871 ppm	0.5261 ppm
Concentration per Run 2	0.4824 ppm	5.3802 ppm	0.5429 ppm	0.5338 ppm	0.5232 ppm	0.4808 ppm	0.5136 ppm
Concentration per Run 3	0.4831 ppm	5.2866 ppm	0.5313 ppm	0.5357 ppm	0.5179 ppm	0.4839 ppm	0.5081 ppm
Recovery Percentage 1	96.735 %	102.502 %	108.279 %	107.033 %	105.107 %	96.781 %	103.186 %
Concentration RSD	0.3 %	1.8 %	1.7 %	0.2 %	1.7 %	0.7 %	1.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5140 ppm	96.5653 %	99.4145 %	95.6520 %	94.4370 %	97.7248 %	96.1396 %
Concentration per Run 1	0.5237 ppm	94.5619 %	99.4755 %	95.5343 %	93.6857 %	98.2177 %	96.2670 %
Concentration per Run 2	0.5149 ppm	96.8856 %	99.2366 %	95.8629 %	94.1408 %	97.3286 %	96.1475 %
Concentration per Run 3	0.5035 ppm	98.2483 %	99.5313 %	95.5589 %	95.4844 %	97.6281 %	96.0044 %
Recovery Percentage 1	102.807 %						
Concentration RSD	2.0 %	1.9 %	0.2 %	0.2 %	1.0 %	0.5 %	0.1 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCB
Analysis started at: 9/10/2024 5:21:18 PM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0001 ppm	-0.0067 ppm	-0.0010 ppm	-0.0004 ppm	0.0000 ppm	0.0000 ppm	0.0036 ppm
Concentration per Run 1	-0.0001 ppm	-0.0044 ppm	-0.0003 ppm	0.0000 ppm	0.0001 ppm	0.0000 ppm	0.0057 ppm
Concentration per Run 2	0.0002 ppm	-0.0144 ppm	-0.0013 ppm	-0.0001 ppm	0.0000 ppm	0.0000 ppm	0.0013 ppm
Concentration per Run 3	-0.0003 ppm	-0.0012 ppm	-0.0014 ppm	-0.0011 ppm	-0.0001 ppm	0.0000 ppm	0.0038 ppm
Recovery Percentage 1	-0.989 %	-6.653 %	-34.372 %	-1.395 %	-0.235 %	-0.012 %	3.572 %
Concentration RSD	320.0 %	103.4 %	57.7 %	136.8 %	331.3 %	2,052.7 %	61.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0001 ppm	-0.0001 ppm	-0.0002 ppm	0.0005 ppm	0.0034 ppm	0.0012 ppm	0.0001 ppm
Concentration per Run 1	0.0001 ppm	0.0002 ppm	0.0001 ppm	0.0006 ppm	0.0041 ppm	-0.0037 ppm	-0.0007 ppm
Concentration per Run 2	0.0001 ppm	-0.0004 ppm	-0.0004 ppm	0.0005 ppm	0.0044 ppm	-0.0055 ppm	0.0019 ppm
Concentration per Run 3	0.0000 ppm	-0.0002 ppm	-0.0003 ppm	0.0004 ppm	0.0017 ppm	0.0128 ppm	-0.0008 ppm
Recovery Percentage 1	1.662 %	-0.625 %	-1.756 %	4.835 %	6.815 %	0.048 %	1.257 %
Concentration RSD	42.8 %	247.6 %	147.5 %	23.4 %	43.4 %	853.8 %	1,218.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0012 ppm	0.0001 ppm	0.0017 ppm	0.0212 ppm	0.0002 ppm	-0.0002 ppm	0.0008 ppm
Concentration per Run 1	0.0018 ppm	0.0001 ppm	0.0015 ppm	0.0247 ppm	0.0003 ppm	-0.0006 ppm	0.0004 ppm
Concentration per Run 2	0.0001 ppm	0.0001 ppm	0.0018 ppm	0.0192 ppm	0.0006 ppm	0.0002 ppm	0.0001 ppm
Concentration per Run 3	0.0016 ppm	0.0002 ppm	0.0018 ppm	0.0196 ppm	-0.0002 ppm	-0.0002 ppm	0.0018 ppm
Recovery Percentage 1	1.179 %	1.488 %	3.361 %	1.060 %	0.894 %	-1.781 %	1.606 %
Concentration RSD	83.3 %	25.9 %	8.6 %	14.5 %	163.2 %	235.3 %	112.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0013 ppm	-0.0195 ppm	-0.0001 ppm	0.0000 ppm	-0.0005 ppm	-0.0008 ppm	0.0001 ppm
Concentration per Run 1	-0.0014 ppm	-0.0196 ppm	0.0000 ppm	0.0000 ppm	-0.0005 ppm	0.0002 ppm	0.0000 ppm
Concentration per Run 2	-0.0023 ppm	-0.0198 ppm	0.0001 ppm	0.0001 ppm	-0.0005 ppm	-0.0004 ppm	0.0003 ppm
Concentration per Run 3	-0.0002 ppm	-0.0190 ppm	-0.0005 ppm	0.0000 ppm	-0.0005 ppm	-0.0020 ppm	0.0000 ppm
Recovery Percentage 1	-13.004 %	-3.895 %	-0.251 %	0.117 %	-4.917 %	-3.809 %	1.248 %
Concentration RSD	79.3 %	2.1 %	283.7 %	550.7 %	4.8 %	146.7 %	146.1 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0004 ppm	91.9496 %	96.5393 %	94.7090 %	94.7208 %	97.8118 %	96.6446 %
Concentration per Run 1	0.0006 ppm	89.6660 %	96.6337 %	94.2126 %	93.7385 %	97.8912 %	96.3610 %
Concentration per Run 2	0.0004 ppm	92.4499 %	96.2073 %	94.5071 %	95.0709 %	97.5431 %	96.5626 %
Concentration per Run 3	0.0002 ppm	93.7329 %	96.7768 %	95.4073 %	95.3531 %	98.0011 %	97.0103 %
Recovery Percentage 1	7.939 %						
Concentration RSD	56.7 %	2.3 %	0.3 %	0.7 %	0.9 %	0.2 %	0.3 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1968230-1 WG1968230
Analysis started at: 9/10/2024 5:27:16 PM
Rack 2
Vial 6
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	0.0008 ppm	0.0001 ppm	-0.0004 ppm	0.0000 ppm	0.0000 ppm	0.0118 ppm
Concentration per Run 1	-0.0001 ppm	0.0005 ppm	-0.0008 ppm	-0.0006 ppm	-0.0001 ppm	0.0000 ppm	0.0117 ppm
Concentration per Run 2	0.0001 ppm	0.0031 ppm	0.0008 ppm	0.0003 ppm	0.0000 ppm	0.0000 ppm	0.0116 ppm
Concentration per Run 3	0.0000 ppm	-0.0012 ppm	0.0004 ppm	-0.0007 ppm	0.0000 ppm	0.0000 ppm	0.0120 ppm
Recovery Percentage 1	-0.075 %	0.826 %	4.851 %	-1.180 %	-0.447 %	-0.505 %	11.754 %
Concentration RSD	1,136.1 %	264.5 %	604.0 %	150.9 %	67.8 %	140.5 %	1.9 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0003 ppm	0.0001 ppm	0.0011 ppm	0.0168 ppm	-0.0116 ppm	-0.0007 ppm
Concentration per Run 1	0.0000 ppm	-0.0002 ppm	0.0000 ppm	0.0013 ppm	0.0176 ppm	0.0001 ppm	-0.0014 ppm
Concentration per Run 2	-0.0001 ppm	-0.0006 ppm	0.0002 ppm	0.0010 ppm	0.0160 ppm	-0.0287 ppm	-0.0019 ppm
Concentration per Run 3	0.0001 ppm	-0.0001 ppm	0.0002 ppm	0.0009 ppm	0.0168 ppm	-0.0060 ppm	0.0012 ppm
Recovery Percentage 1	0.370 %	-1.513 %	1.320 %	10.678 %	33.578 %	-0.463 %	-6.953 %
Concentration RSD	401.6 %	95.3 %	107.4 %	19.5 %	4.6 %	131.1 %	241.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0035 ppm	0.0018 ppm	0.0003 ppm	0.0278 ppm	0.0006 ppm	-0.0001 ppm	-0.0004 ppm
Concentration per Run 1	0.0042 ppm	0.0018 ppm	0.0002 ppm	0.0271 ppm	0.0003 ppm	0.0003 ppm	-0.0010 ppm
Concentration per Run 2	0.0039 ppm	0.0016 ppm	0.0005 ppm	0.0268 ppm	0.0005 ppm	-0.0002 ppm	0.0010 ppm
Concentration per Run 3	0.0025 ppm	0.0019 ppm	0.0003 ppm	0.0295 ppm	0.0009 ppm	-0.0004 ppm	-0.0011 ppm
Recovery Percentage 1	3.532 %	17.631 %	0.610 %	1.389 %	2.217 %	-0.831 %	-0.717 %
Concentration RSD	24.8 %	8.8 %	47.1 %	5.3 %	56.7 %	412.5 %	334.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0002 ppm	-0.0151 ppm	0.0007 ppm	0.0000 ppm	-0.0003 ppm	-0.0025 ppm	0.0000 ppm
Concentration per Run 1	-0.0013 ppm	-0.0143 ppm	0.0011 ppm	0.0000 ppm	-0.0004 ppm	-0.0032 ppm	-0.0001 ppm
Concentration per Run 2	0.0009 ppm	-0.0157 ppm	0.0007 ppm	0.0000 ppm	-0.0002 ppm	-0.0031 ppm	0.0000 ppm
Concentration per Run 3	0.0011 ppm	-0.0151 ppm	0.0002 ppm	0.0000 ppm	-0.0003 ppm	-0.0012 ppm	0.0001 ppm
Recovery Percentage 1	2.314 %	-3.011 %	1.347 %	-0.041 %	-2.999 %	-12.390 %	-0.151 %
Concentration RSD	581.3 %	4.6 %	62.7 %	1,035.0 %	24.9 %	45.1 %	548.1 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0010 ppm	96.9176 %	99.7500 %	95.9509 %	97.3329 %	100.2363 %	97.8296 %
Concentration per Run 1	0.0011 ppm	95.2108 %	100.4449 %	95.9796 %	97.1264 %	100.9502 %	98.1807 %
Concentration per Run 2	0.0011 ppm	96.9700 %	98.8291 %	95.6574 %	97.1915 %	98.9481 %	97.4676 %
Concentration per Run 3	0.0007 ppm	98.5719 %	99.9760 %	96.2157 %	97.6807 %	100.8106 %	97.8404 %
Recovery Percentage 1	19.418 %						
Concentration RSD	23.0 %	1.7 %	0.8 %	0.3 %	0.3 %	1.1 %	0.4 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1968230-2D2 WG1968230
Analysis started at: 9/10/2024 5:31:16 PM
Rack 2
Vial 7
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0525 ppm	2.0096 ppm	0.1178 ppm	0.9662 ppm	2.0685 ppm	0.0521 ppm	10.2683 ppm
Concentration per Run 1	0.0533 ppm	2.0110 ppm	0.1190 ppm	0.9794 ppm	2.0600 ppm	0.0520 ppm	10.2592 ppm
Concentration per Run 2	0.0523 ppm	2.0041 ppm	0.1178 ppm	0.9670 ppm	2.0721 ppm	0.0522 ppm	10.2623 ppm
Concentration per Run 3	0.0519 ppm	2.0137 ppm	0.1165 ppm	0.9522 ppm	2.0733 ppm	0.0522 ppm	10.2833 ppm
Concentration RSD	1.4 %	0.2 %	1.1 %	1.4 %	0.4 %	0.3 %	0.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0541 ppm	0.5179 ppm	0.2058 ppm	0.2622 ppm	1.0370 ppm	10.7035 ppm	0.0002 ppm
Concentration per Run 1	0.0549 ppm	0.5242 ppm	0.2080 ppm	0.2654 ppm	1.0351 ppm	10.7404 ppm	-0.0002 ppm
Concentration per Run 2	0.0540 ppm	0.5187 ppm	0.2067 ppm	0.2627 ppm	1.0377 ppm	10.6834 ppm	0.0017 ppm
Concentration per Run 3	0.0534 ppm	0.5106 ppm	0.2026 ppm	0.2585 ppm	1.0381 ppm	10.6866 ppm	-0.0008 ppm
Concentration RSD	1.4 %	1.3 %	1.4 %	1.3 %	0.2 %	0.3 %	598.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	10.3020 ppm	0.5102 ppm	1.0624 ppm	10.5866 ppm	0.5235 ppm	0.5374 ppm	0.5223 ppm
Concentration per Run 1	10.4501 ppm	0.5092 ppm	1.0663 ppm	10.6057 ppm	0.5300 ppm	0.5404 ppm	0.5288 ppm
Concentration per Run 2	10.3007 ppm	0.5098 ppm	1.0658 ppm	10.5282 ppm	0.5221 ppm	0.5366 ppm	0.5209 ppm
Concentration per Run 3	10.1553 ppm	0.5115 ppm	1.0550 ppm	10.6260 ppm	0.5184 ppm	0.5351 ppm	0.5170 ppm
Concentration RSD	1.4 %	0.2 %	0.6 %	0.5 %	1.1 %	0.5 %	1.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1180 ppm	0.9417 ppm	1.0589 ppm	1.0349 ppm	1.0589 ppm	0.1156 ppm	0.5242 ppm
Concentration per Run 1	0.1190 ppm	0.9463 ppm	1.0773 ppm	1.0289 ppm	1.0739 ppm	0.1150 ppm	0.5303 ppm
Concentration per Run 2	0.1198 ppm	0.9526 ppm	1.0573 ppm	1.0424 ppm	1.0678 ppm	0.1167 ppm	0.5252 ppm
Concentration per Run 3	0.1152 ppm	0.9263 ppm	1.0420 ppm	1.0335 ppm	1.0350 ppm	0.1151 ppm	0.5169 ppm
Concentration RSD	2.1 %	1.5 %	1.7 %	0.7 %	2.0 %	0.8 %	1.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5148 ppm	96.4913 %	99.6425 %	92.4048 %	94.7697 %	98.1547 %	94.9902 %
Concentration per Run 1	0.5209 ppm	95.1681 %	99.7529 %	92.1997 %	94.5744 %	98.3355 %	94.8081 %
Concentration per Run 2	0.5118 ppm	96.7722 %	99.7158 %	92.5321 %	94.8413 %	98.0244 %	95.0420 %
Concentration per Run 3	0.5116 ppm	97.5338 %	99.4588 %	92.4825 %	94.8935 %	98.1042 %	95.1204 %
Concentration RSD	1.0 %	1.3 %	0.2 %	0.2 %	0.2 %	0.2 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2449877-01D2 WG1969482
Analysis started at: 9/10/2024 5:35:12 PM
Rack 2
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0002 ppm	5.5097 ppm	0.0032 ppm	0.0285 ppm	0.1145 ppm	0.0004 ppm	151.0078 ppm
Concentration per Run 1	0.0002 ppm	5.5228 ppm	0.0032 ppm	0.0289 ppm	0.1150 ppm	0.0004 ppm	151.4604 ppm
Concentration per Run 2	0.0003 ppm	5.5018 ppm	0.0033 ppm	0.0286 ppm	0.1141 ppm	0.0004 ppm	150.7635 ppm
Concentration per Run 3	0.0002 ppm	5.5044 ppm	0.0029 ppm	0.0281 ppm	0.1144 ppm	0.0004 ppm	150.7994 ppm
Concentration RSD	24.1 %	0.2 %	6.4 %	1.4 %	0.4 %	4.7 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0006 ppm	0.0026 ppm	0.0294 ppm	0.3082 ppm	11.4695 ppm	11.5506 ppm	0.0045 ppm
Concentration per Run 1	0.0006 ppm	0.0027 ppm	0.0297 ppm	0.3123 ppm	11.5030 ppm	11.6129 ppm	0.0055 ppm
Concentration per Run 2	0.0006 ppm	0.0025 ppm	0.0292 ppm	0.3073 ppm	11.4136 ppm	11.5316 ppm	0.0043 ppm
Concentration per Run 3	0.0006 ppm	0.0027 ppm	0.0293 ppm	0.3049 ppm	11.4920 ppm	11.5074 ppm	0.0038 ppm
Concentration RSD	3.7 %	3.7 %	0.8 %	1.2 %	0.4 %	0.5 %	19.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	17.3634 ppm	0.6783 ppm	0.0160 ppm	4.1905 ppm	0.0074 ppm	0.0165 ppm	0.0004 ppm
Concentration per Run 1	17.6663 ppm	0.6807 ppm	0.0164 ppm	4.1971 ppm	0.0072 ppm	0.0162 ppm	0.0002 ppm
Concentration per Run 2	17.2435 ppm	0.6767 ppm	0.0157 ppm	4.1860 ppm	0.0076 ppm	0.0174 ppm	-0.0006 ppm
Concentration per Run 3	17.1804 ppm	0.6776 ppm	0.0159 ppm	4.1884 ppm	0.0074 ppm	0.0159 ppm	0.0015 ppm
Concentration RSD	1.5 %	0.3 %	2.2 %	0.1 %	2.6 %	4.8 %	279.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0054 ppm	4.2332 ppm	0.0022 ppm	0.2251 ppm	0.2100 ppm	-0.0016 ppm	0.0204 ppm
Concentration per Run 1	0.0043 ppm	4.2983 ppm	0.0029 ppm	0.2260 ppm	0.2128 ppm	-0.0003 ppm	0.0207 ppm
Concentration per Run 2	0.0059 ppm	4.1947 ppm	0.0024 ppm	0.2241 ppm	0.2088 ppm	-0.0026 ppm	0.0203 ppm
Concentration per Run 3	0.0062 ppm	4.2067 ppm	0.0012 ppm	0.2251 ppm	0.2083 ppm	-0.0017 ppm	0.0201 ppm
Concentration RSD	19.1 %	1.3 %	41.7 %	0.4 %	1.2 %	75.6 %	1.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.2474 ppm	94.2390 %	99.9464 %	87.8838 %	110.1726 %	118.6820 %	111.0423 %
Concentration per Run 1	0.2511 ppm	92.7727 %	99.2157 %	87.7883 %	109.8795 %	118.5771 %	110.8794 %
Concentration per Run 2	0.2453 ppm	94.7068 %	100.6185 %	87.5194 %	110.3371 %	119.0455 %	110.7022 %
Concentration per Run 3	0.2458 ppm	95.2374 %	100.0051 %	88.3436 %	110.3012 %	118.4234 %	111.5452 %
Concentration RSD	1.3 %	1.4 %	0.7 %	0.5 %	0.2 %	0.3 %	0.4 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2449877-02D2 WG1969482
Analysis started at: 9/10/2024 5:39:09 PM
Rack 2
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0001 ppm	3.4786 ppm	0.0013 ppm	0.0242 ppm	0.1131 ppm	0.0002 ppm	134.3219 ppm
Concentration per Run 1	-0.0001 ppm	3.5014 ppm	0.0018 ppm	0.0239 ppm	0.1130 ppm	0.0002 ppm	134.2420 ppm
Concentration per Run 2	-0.0001 ppm	3.4637 ppm	0.0004 ppm	0.0247 ppm	0.1132 ppm	0.0002 ppm	134.7054 ppm
Concentration per Run 3	0.0000 ppm	3.4708 ppm	0.0016 ppm	0.0242 ppm	0.1130 ppm	0.0002 ppm	134.0183 ppm
Concentration RSD	81.1 %	0.6 %	59.1 %	1.8 %	0.1 %	7.0 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0001 ppm	0.0022 ppm	0.0066 ppm	0.2092 ppm	8.7393 ppm	10.3089 ppm	0.0052 ppm
Concentration per Run 1	-0.0001 ppm	0.0021 ppm	0.0065 ppm	0.2104 ppm	8.7506 ppm	10.3178 ppm	0.0054 ppm
Concentration per Run 2	-0.0001 ppm	0.0020 ppm	0.0067 ppm	0.2095 ppm	8.7424 ppm	10.3302 ppm	0.0059 ppm
Concentration per Run 3	-0.0001 ppm	0.0026 ppm	0.0068 ppm	0.2079 ppm	8.7249 ppm	10.2786 ppm	0.0042 ppm
Concentration RSD	35.2 %	15.0 %	2.6 %	0.6 %	0.2 %	0.3 %	16.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	16.1587 ppm	0.6572 ppm	0.0067 ppm	3.9679 ppm	0.0056 ppm	0.0164 ppm	0.0003 ppm
Concentration per Run 1	16.2083 ppm	0.6584 ppm	0.0070 ppm	3.9824 ppm	0.0055 ppm	0.0160 ppm	0.0017 ppm
Concentration per Run 2	16.2241 ppm	0.6575 ppm	0.0067 ppm	3.9640 ppm	0.0053 ppm	0.0161 ppm	-0.0010 ppm
Concentration per Run 3	16.0436 ppm	0.6557 ppm	0.0063 ppm	3.9574 ppm	0.0059 ppm	0.0172 ppm	0.0003 ppm
Concentration RSD	0.6 %	0.2 %	4.9 %	0.3 %	5.8 %	4.0 %	395.6 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0032 ppm	2.3584 ppm	0.0015 ppm	0.1702 ppm	0.1809 ppm	-0.0013 ppm	0.0104 ppm
Concentration per Run 1	0.0031 ppm	2.3516 ppm	0.0017 ppm	0.1708 ppm	0.1819 ppm	-0.0012 ppm	0.0102 ppm
Concentration per Run 2	0.0041 ppm	2.3890 ppm	0.0009 ppm	0.1699 ppm	0.1812 ppm	-0.0012 ppm	0.0106 ppm
Concentration per Run 3	0.0023 ppm	2.3347 ppm	0.0019 ppm	0.1700 ppm	0.1797 ppm	-0.0017 ppm	0.0105 ppm
Concentration RSD	28.4 %	1.2 %	33.4 %	0.3 %	0.6 %	21.0 %	2.0 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.1704 ppm	95.7659 %	100.6192 %	88.5984 %	93.7665 %	100.0493 %	93.0327 %
Concentration per Run 1	0.1705 ppm	95.7936 %	100.3820 %	88.6554 %	94.7247 %	99.8976 %	93.2028 %
Concentration per Run 2	0.1712 ppm	95.4586 %	100.0500 %	88.8577 %	93.1023 %	99.5420 %	93.1498 %
Concentration per Run 3	0.1695 ppm	96.0455 %	101.4256 %	88.2820 %	93.4726 %	100.7084 %	92.7455 %
Concentration RSD	0.5 %	0.3 %	0.7 %	0.3 %	0.9 %	0.6 %	0.3 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2449877-03D2 WG1969482
Analysis started at: 9/10/2024 5:43:05 PM
Rack 2
Vial 5
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0002 ppm	3.1222 ppm	0.0021 ppm	0.0273 ppm	0.1005 ppm	0.0002 ppm	170.8469 ppm
Concentration per Run 1	-0.0004 ppm	3.1486 ppm	0.0017 ppm	0.0277 ppm	0.1008 ppm	0.0002 ppm	171.8314 ppm
Concentration per Run 2	-0.0001 ppm	3.1183 ppm	0.0024 ppm	0.0262 ppm	0.1004 ppm	0.0002 ppm	170.5746 ppm
Concentration per Run 3	0.0000 ppm	3.0998 ppm	0.0023 ppm	0.0279 ppm	0.1002 ppm	0.0002 ppm	170.1347 ppm
Concentration RSD	144.1 %	0.8 %	17.0 %	3.5 %	0.3 %	5.3 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0004 ppm	0.0024 ppm	0.0067 ppm	0.1406 ppm	7.7027 ppm	10.2894 ppm	0.0039 ppm
Concentration per Run 1	-0.0004 ppm	0.0023 ppm	0.0068 ppm	0.1429 ppm	7.7302 ppm	10.3647 ppm	0.0058 ppm
Concentration per Run 2	-0.0003 ppm	0.0024 ppm	0.0066 ppm	0.1401 ppm	7.7077 ppm	10.2920 ppm	0.0031 ppm
Concentration per Run 3	-0.0003 ppm	0.0024 ppm	0.0066 ppm	0.1388 ppm	7.6701 ppm	10.2116 ppm	0.0027 ppm
Concentration RSD	13.8 %	1.8 %	1.3 %	1.5 %	0.4 %	0.7 %	44.3 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	15.7414 ppm	0.6475 ppm	0.0046 ppm	4.0821 ppm	0.0065 ppm	0.0131 ppm	0.0003 ppm
Concentration per Run 1	16.0098 ppm	0.6496 ppm	0.0045 ppm	4.1011 ppm	0.0065 ppm	0.0140 ppm	0.0007 ppm
Concentration per Run 2	15.6726 ppm	0.6482 ppm	0.0048 ppm	4.0920 ppm	0.0062 ppm	0.0129 ppm	0.0007 ppm
Concentration per Run 3	15.5417 ppm	0.6447 ppm	0.0045 ppm	4.0533 ppm	0.0067 ppm	0.0124 ppm	-0.0003 ppm
Concentration RSD	1.5 %	0.4 %	3.2 %	0.6 %	3.7 %	6.3 %	173.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0046 ppm	2.1038 ppm	0.0014 ppm	0.1805 ppm	0.1242 ppm	-0.0010 ppm	0.0085 ppm
Concentration per Run 1	0.0044 ppm	2.1410 ppm	0.0010 ppm	0.1809 ppm	0.1258 ppm	-0.0010 ppm	0.0086 ppm
Concentration per Run 2	0.0046 ppm	2.0880 ppm	0.0012 ppm	0.1803 ppm	0.1243 ppm	-0.0004 ppm	0.0084 ppm
Concentration per Run 3	0.0049 ppm	2.0825 ppm	0.0020 ppm	0.1803 ppm	0.1226 ppm	-0.0018 ppm	0.0085 ppm
Concentration RSD	5.0 %	1.5 %	39.8 %	0.2 %	1.3 %	68.2 %	1.0 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.1629 ppm	95.1652 %	101.3602 %	88.8257 %	93.5920 %	100.7884 %	93.4634 %
Concentration per Run 1	0.1659 ppm	93.2492 %	101.1343 %	88.4208 %	92.7263 %	100.9617 %	92.9589 %
Concentration per Run 2	0.1627 ppm	95.7307 %	101.5730 %	89.0294 %	93.9253 %	100.9377 %	93.8482 %
Concentration per Run 3	0.1600 ppm	96.5158 %	101.3733 %	89.0271 %	94.1243 %	100.4657 %	93.5833 %
Concentration RSD	1.8 %	1.8 %	0.2 %	0.4 %	0.8 %	0.3 %	0.5 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450423-01D2 WG1968230
Analysis started at: 9/10/2024 5:48:54 PM
Rack 2
Vial 8
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0014 ppm	108.8642 ppm	0.0408 ppm	0.0130 ppm	3.2989 ppm	0.0043 ppm	155.4940 ppm
Concentration per Run 1	0.0012 ppm	108.5609 ppm	0.0412 ppm	0.0122 ppm	3.2910 ppm	0.0042 ppm	155.0776 ppm
Concentration per Run 2	0.0015 ppm	109.0920 ppm	0.0408 ppm	0.0143 ppm	3.3134 ppm	0.0043 ppm	155.5479 ppm
Concentration per Run 3	0.0016 ppm	108.9397 ppm	0.0404 ppm	0.0124 ppm	3.2922 ppm	0.0043 ppm	155.8564 ppm
Concentration RSD	11.6 %	0.3 %	0.9 %	8.8 %	0.4 %	1.8 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0029 ppm	0.0763 ppm	0.2091 ppm	0.3491 ppm	165.7297 ppm	20.4436 ppm	0.1351 ppm
Concentration per Run 1	0.0027 ppm	0.0736 ppm	0.2004 ppm	0.3349 ppm	165.5632 ppm	20.3802 ppm	0.1364 ppm
Concentration per Run 2	0.0030 ppm	0.0786 ppm	0.2155 ppm	0.3592 ppm	166.0461 ppm	20.5073 ppm	0.1353 ppm
Concentration per Run 3	0.0030 ppm	0.0767 ppm	0.2116 ppm	0.3533 ppm	165.5796 ppm	20.4432 ppm	0.1338 ppm
Concentration RSD	5.4 %	3.3 %	3.7 %	3.6 %	0.2 %	0.3 %	1.0 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	54.2525 ppm	3.7202 ppm	0.0071 ppm	1.5705 ppm	0.1585 ppm	1.2798 ppm	0.0100 ppm
Concentration per Run 1	52.1477 ppm	3.7121 ppm	0.0065 ppm	1.5715 ppm	0.1520 ppm	1.2838 ppm	0.0080 ppm
Concentration per Run 2	55.7681 ppm	3.7233 ppm	0.0078 ppm	1.5724 ppm	0.1632 ppm	1.2787 ppm	0.0107 ppm
Concentration per Run 3	54.8417 ppm	3.7252 ppm	0.0072 ppm	1.5675 ppm	0.1602 ppm	1.2769 ppm	0.0113 ppm
Concentration RSD	3.5 %	0.2 %	8.9 %	0.2 %	3.7 %	0.3 %	17.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0015 ppm	1.8149 ppm	0.0322 ppm	0.3711 ppm	6.5918 ppm	0.0041 ppm	0.3542 ppm
Concentration per Run 1	-0.0015 ppm	1.7472 ppm	0.0311 ppm	0.3692 ppm	6.2683 ppm	0.0045 ppm	0.3403 ppm
Concentration per Run 2	-0.0016 ppm	1.8653 ppm	0.0345 ppm	0.3729 ppm	6.8323 ppm	0.0040 ppm	0.3651 ppm
Concentration per Run 3	-0.0014 ppm	1.8323 ppm	0.0309 ppm	0.3712 ppm	6.6747 ppm	0.0039 ppm	0.3572 ppm
Concentration RSD	4.8 %	3.4 %	6.2 %	0.5 %	4.4 %	8.6 %	3.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	2.6595 ppm	104.0055 %	108.8358 %	85.6837 %	119.9868 %	130.1346 %	121.5080 %
Concentration per Run 1	2.5547 ppm	108.1323 %	108.6820 %	85.5826 %	123.9303 %	129.6426 %	120.8591 %
Concentration per Run 2	2.7323 ppm	101.0222 %	109.4866 %	86.0259 %	117.5711 %	130.8823 %	122.2951 %
Concentration per Run 3	2.6916 ppm	102.8620 %	108.3387 %	85.4425 %	118.4589 %	129.8789 %	121.3698 %
Concentration RSD	3.5 %	3.5 %	0.5 %	0.4 %	2.9 %	0.5 %	0.6 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1968230-3D2 WG1968230
Analysis started at: 9/10/2024 5:52:53 PM
Rack 2
Vial 9
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0499 ppm	117.7336 ppm	0.1667 ppm	0.8145 ppm	9.9633 ppm	0.0507 ppm	143.3618 ppm
Concentration per Run 1	0.0501 ppm	117.7329 ppm	0.1669 ppm	0.8193 ppm	9.9572 ppm	0.0508 ppm	143.4497 ppm
Concentration per Run 2	0.0497 ppm	117.6818 ppm	0.1654 ppm	0.8099 ppm	9.9537 ppm	0.0504 ppm	143.0298 ppm
Concentration per Run 3	0.0501 ppm	117.7862 ppm	0.1678 ppm	0.8145 ppm	9.9790 ppm	0.0509 ppm	143.6060 ppm
Concentration RSD	0.5 %	0.0 %	0.7 %	0.6 %	0.1 %	0.5 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0487 ppm	0.5031 ppm	0.3994 ppm	0.6332 ppm	173.8600 ppm	30.6193 ppm	0.1560 ppm
Concentration per Run 1	0.0491 ppm	0.5076 ppm	0.4042 ppm	0.6362 ppm	174.2941 ppm	30.3641 ppm	0.1559 ppm
Concentration per Run 2	0.0484 ppm	0.5019 ppm	0.3980 ppm	0.6325 ppm	173.8012 ppm	30.8818 ppm	0.1555 ppm
Concentration per Run 3	0.0486 ppm	0.4999 ppm	0.3960 ppm	0.6309 ppm	173.4848 ppm	30.6118 ppm	0.1567 ppm
Concentration RSD	0.7 %	0.8 %	1.1 %	0.4 %	0.2 %	0.8 %	0.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	57.1248 ppm	3.9120 ppm	0.8975 ppm	10.5663 ppm	0.6160 ppm	2.0842 ppm	0.4387 ppm
Concentration per Run 1	57.6474 ppm	3.9202 ppm	0.8953 ppm	10.5578 ppm	0.6212 ppm	2.0949 ppm	0.4423 ppm
Concentration per Run 2	57.1698 ppm	3.9087 ppm	0.8950 ppm	10.6069 ppm	0.6173 ppm	2.0797 ppm	0.4366 ppm
Concentration per Run 3	56.5573 ppm	3.9069 ppm	0.9024 ppm	10.5342 ppm	0.6094 ppm	2.0782 ppm	0.4372 ppm
Concentration RSD	1.0 %	0.2 %	0.5 %	0.4 %	1.0 %	0.4 %	0.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1198 ppm	3.2108 ppm	0.8906 ppm	1.3800 ppm	8.4110 ppm	0.1232 ppm	0.8157 ppm
Concentration per Run 1	0.1199 ppm	3.2387 ppm	0.8969 ppm	1.3851 ppm	8.5453 ppm	0.1246 ppm	0.8216 ppm
Concentration per Run 2	0.1203 ppm	3.2091 ppm	0.8909 ppm	1.3727 ppm	8.3765 ppm	0.1226 ppm	0.8155 ppm
Concentration per Run 3	0.1190 ppm	3.1847 ppm	0.8841 ppm	1.3823 ppm	8.3112 ppm	0.1222 ppm	0.8099 ppm
Concentration RSD	0.6 %	0.8 %	0.7 %	0.5 %	1.4 %	1.1 %	0.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	3.6358 ppm	102.2665 %	106.9380 %	81.7277 %	118.3057 %	128.4096 %	120.1066 %
Concentration per Run 1	3.6728 ppm	101.7320 %	106.7767 %	81.7975 %	117.5525 %	128.4490 %	120.2397 %
Concentration per Run 2	3.6363 ppm	102.3028 %	107.1949 %	81.4682 %	118.3463 %	127.8845 %	119.3422 %
Concentration per Run 3	3.5982 ppm	102.7648 %	106.8423 %	81.9173 %	119.0182 %	128.8951 %	120.7378 %
Concentration RSD	1.0 %	0.5 %	0.2 %	0.3 %	0.6 %	0.4 %	0.6 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1968230-4D2 WG1968230
Analysis started at: 9/10/2024 5:56:50 PM
Rack 2
Vial 10
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0058 ppm	106.8575 ppm	0.1076 ppm	0.0171 ppm	6.5291 ppm	0.0043 ppm	114.2870 ppm
Concentration per Run 1	0.0059 ppm	106.7452 ppm	0.1094 ppm	0.0175 ppm	6.5355 ppm	0.0043 ppm	113.9267 ppm
Concentration per Run 2	0.0058 ppm	106.8490 ppm	0.1059 ppm	0.0162 ppm	6.4837 ppm	0.0044 ppm	114.5478 ppm
Concentration per Run 3	0.0056 ppm	106.9784 ppm	0.1075 ppm	0.0177 ppm	6.5679 ppm	0.0043 ppm	114.3865 ppm
Concentration RSD	2.4 %	0.1 %	1.6 %	4.7 %	0.7 %	1.4 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0041 ppm	0.0860 ppm	0.3525 ppm	1.7379 ppm	337.1754 ppm	17.4818 ppm	0.1325 ppm
Concentration per Run 1	0.0042 ppm	0.0870 ppm	0.3548 ppm	1.7514 ppm	337.9911 ppm	17.4345 ppm	0.1327 ppm
Concentration per Run 2	0.0041 ppm	0.0860 ppm	0.3530 ppm	1.7319 ppm	334.8808 ppm	17.4481 ppm	0.1315 ppm
Concentration per Run 3	0.0041 ppm	0.0851 ppm	0.3498 ppm	1.7305 ppm	338.6542 ppm	17.5629 ppm	0.1332 ppm
Concentration RSD	1.9 %	1.1 %	0.7 %	0.7 %	0.6 %	0.4 %	0.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	42.1085 ppm	4.5807 ppm	0.0103 ppm	1.4770 ppm	0.1825 ppm	1.8289 ppm	0.0156 ppm
Concentration per Run 1	42.4373 ppm	4.5760 ppm	0.0105 ppm	1.4845 ppm	0.1845 ppm	1.8362 ppm	0.0140 ppm
Concentration per Run 2	42.1658 ppm	4.5791 ppm	0.0098 ppm	1.4705 ppm	0.1816 ppm	1.8282 ppm	0.0162 ppm
Concentration per Run 3	41.7224 ppm	4.5868 ppm	0.0108 ppm	1.4761 ppm	0.1816 ppm	1.8222 ppm	0.0167 ppm
Concentration RSD	0.9 %	0.1 %	5.0 %	0.5 %	0.9 %	0.4 %	9.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0010 ppm	2.5576 ppm	0.0967 ppm	0.3845 ppm	5.8431 ppm	0.0043 ppm	0.3724 ppm
Concentration per Run 1	-0.0039 ppm	2.5781 ppm	0.0975 ppm	0.3839 ppm	5.8806 ppm	0.0045 ppm	0.3756 ppm
Concentration per Run 2	0.0017 ppm	2.5633 ppm	0.0963 ppm	0.3839 ppm	5.8214 ppm	0.0044 ppm	0.3724 ppm
Concentration per Run 3	-0.0007 ppm	2.5315 ppm	0.0962 ppm	0.3859 ppm	5.8273 ppm	0.0041 ppm	0.3692 ppm
Concentration RSD	292.3 %	0.9 %	0.7 %	0.3 %	0.6 %	5.4 %	0.9 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	2.8552 ppm	99.8625 %	105.2280 %	81.3667 %	115.6192 %	126.0357 %	116.6750 %
Concentration per Run 1	2.8728 ppm	99.3483 %	105.7912 %	81.2010 %	114.8199 %	126.8920 %	116.8003 %
Concentration per Run 2	2.8553 ppm	99.6633 %	104.6373 %	81.2860 %	115.1802 %	125.2076 %	116.5652 %
Concentration per Run 3	2.8377 ppm	100.5761 %	105.2554 %	81.6130 %	116.8574 %	126.0076 %	116.6596 %
Concentration RSD	0.6 %	0.6 %	0.5 %	0.3 %	0.9 %	0.7 %	0.1 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1968230-5D2 WG1968230
Analysis started at: 9/10/2024 6:00:48 PM
Rack 2
Vial 11
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0510 ppm	111.7318 ppm	0.1625 ppm	0.9209 ppm	5.2472 ppm	0.0539 ppm	166.3915 ppm
Concentration per Run 1	0.0512 ppm	111.7766 ppm	0.1644 ppm	0.9274 ppm	5.2417 ppm	0.0540 ppm	166.4653 ppm
Concentration per Run 2	0.0508 ppm	112.0027 ppm	0.1625 ppm	0.9168 ppm	5.2637 ppm	0.0537 ppm	166.3667 ppm
Concentration per Run 3	0.0509 ppm	111.4160 ppm	0.1605 ppm	0.9185 ppm	5.2363 ppm	0.0539 ppm	166.3425 ppm
Concentration RSD	0.4 %	0.3 %	1.2 %	0.6 %	0.3 %	0.3 %	0.0 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0506 ppm	0.5324 ppm	0.3974 ppm	0.6051 ppm	167.5139 ppm	31.4618 ppm	0.1361 ppm
Concentration per Run 1	0.0511 ppm	0.5378 ppm	0.4023 ppm	0.6088 ppm	167.3608 ppm	31.4195 ppm	0.1371 ppm
Concentration per Run 2	0.0502 ppm	0.5288 ppm	0.3941 ppm	0.6048 ppm	167.9038 ppm	31.4424 ppm	0.1360 ppm
Concentration per Run 3	0.0506 ppm	0.5307 ppm	0.3958 ppm	0.6018 ppm	167.2771 ppm	31.5236 ppm	0.1353 ppm
Concentration RSD	0.9 %	0.9 %	1.1 %	0.6 %	0.2 %	0.2 %	0.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	64.0748 ppm	4.1995 ppm	0.9618 ppm	12.1333 ppm	0.6180 ppm	1.8906 ppm	0.4755 ppm
Concentration per Run 1	64.8750 ppm	4.1992 ppm	0.9567 ppm	12.1318 ppm	0.6231 ppm	1.8909 ppm	0.4783 ppm
Concentration per Run 2	63.5582 ppm	4.2059 ppm	0.9565 ppm	12.2010 ppm	0.6127 ppm	1.8925 ppm	0.4749 ppm
Concentration per Run 3	63.7912 ppm	4.1935 ppm	0.9723 ppm	12.0672 ppm	0.6182 ppm	1.8883 ppm	0.4734 ppm
Concentration RSD	1.1 %	0.1 %	0.9 %	0.6 %	0.8 %	0.1 %	0.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1227 ppm	3.3009 ppm	0.9766 ppm	1.3934 ppm	7.6179 ppm	0.1209 ppm	0.8328 ppm
Concentration per Run 1	0.1218 ppm	3.3269 ppm	0.9915 ppm	1.3949 ppm	7.6699 ppm	0.1209 ppm	0.8387 ppm
Concentration per Run 2	0.1257 ppm	3.2846 ppm	0.9640 ppm	1.3916 ppm	7.6033 ppm	0.1202 ppm	0.8303 ppm
Concentration per Run 3	0.1206 ppm	3.2911 ppm	0.9745 ppm	1.3936 ppm	7.5805 ppm	0.1216 ppm	0.8296 ppm
Concentration RSD	2.2 %	0.7 %	1.4 %	0.1 %	0.6 %	0.6 %	0.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	3.1149 ppm	100.0168 %	104.8014 %	80.6427 %	116.8699 %	125.9128 %	116.8139 %
Concentration per Run 1	3.1760 ppm	99.0840 %	104.5538 %	80.3374 %	116.3813 %	125.5317 %	116.8960 %
Concentration per Run 2	3.0696 ppm	100.7833 %	105.4281 %	80.7795 %	117.2922 %	126.7742 %	117.4112 %
Concentration per Run 3	3.0992 ppm	100.1830 %	104.4224 %	80.8111 %	116.9362 %	125.4327 %	116.1344 %
Concentration RSD	1.8 %	0.9 %	0.5 %	0.3 %	0.4 %	0.6 %	0.5 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1968230-6D10 WG1968230
Analysis started at: 9/10/2024 6:04:46 PM
Rack 2
Vial 12
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0002 ppm	23.1314 ppm	0.0074 ppm	0.0017 ppm	0.7059 ppm	0.0009 ppm	33.7378 ppm
Concentration per Run 1	0.0005 ppm	23.1364 ppm	0.0085 ppm	0.0018 ppm	0.7049 ppm	0.0009 ppm	33.7565 ppm
Concentration per Run 2	0.0000 ppm	23.2385 ppm	0.0072 ppm	0.0024 ppm	0.7099 ppm	0.0009 ppm	33.6179 ppm
Concentration per Run 3	0.0002 ppm	23.0194 ppm	0.0063 ppm	0.0011 ppm	0.7027 ppm	0.0009 ppm	33.8391 ppm
Concentration RSD	124.0 %	0.5 %	15.4 %	36.0 %	0.5 %	1.3 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0006 ppm	0.0170 ppm	0.0449 ppm	0.0727 ppm	37.4833 ppm	4.2950 ppm	0.0296 ppm
Concentration per Run 1	0.0006 ppm	0.0170 ppm	0.0452 ppm	0.0730 ppm	37.4003 ppm	4.3296 ppm	0.0310 ppm
Concentration per Run 2	0.0006 ppm	0.0170 ppm	0.0449 ppm	0.0723 ppm	37.7014 ppm	4.3268 ppm	0.0294 ppm
Concentration per Run 3	0.0006 ppm	0.0169 ppm	0.0447 ppm	0.0727 ppm	37.3481 ppm	4.2287 ppm	0.0283 ppm
Concentration RSD	5.8 %	0.3 %	0.6 %	0.5 %	0.5 %	1.3 %	4.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	11.8558 ppm	0.8114 ppm	0.0039 ppm	0.3432 ppm	0.0358 ppm	0.2507 ppm	0.0023 ppm
Concentration per Run 1	11.8974 ppm	0.8134 ppm	0.0038 ppm	0.3433 ppm	0.0356 ppm	0.2505 ppm	-0.0005 ppm
Concentration per Run 2	11.8228 ppm	0.8114 ppm	0.0039 ppm	0.3436 ppm	0.0359 ppm	0.2511 ppm	0.0028 ppm
Concentration per Run 3	11.8471 ppm	0.8094 ppm	0.0039 ppm	0.3426 ppm	0.0360 ppm	0.2504 ppm	0.0047 ppm
Concentration RSD	0.3 %	0.2 %	1.5 %	0.2 %	0.6 %	0.2 %	111.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0010 ppm	0.3611 ppm	0.0079 ppm	0.0777 ppm	1.4041 ppm	0.0002 ppm	0.0743 ppm
Concentration per Run 1	-0.0016 ppm	0.3643 ppm	0.0076 ppm	0.0774 ppm	1.4084 ppm	0.0006 ppm	0.0745 ppm
Concentration per Run 2	-0.0011 ppm	0.3583 ppm	0.0077 ppm	0.0775 ppm	1.4056 ppm	-0.0007 ppm	0.0742 ppm
Concentration per Run 3	-0.0002 ppm	0.3608 ppm	0.0083 ppm	0.0782 ppm	1.3984 ppm	0.0006 ppm	0.0742 ppm
Concentration RSD	72.7 %	0.8 %	4.7 %	0.6 %	0.4 %	458.3 %	0.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5917 ppm	100.4745 %	102.9196 %	94.9134 %	101.4366 %	106.1224 %	102.8136 %
Concentration per Run 1	0.5935 ppm	100.5350 %	102.9614 %	95.0641 %	101.7781 %	105.7638 %	102.8776 %
Concentration per Run 2	0.5909 ppm	100.3048 %	103.0774 %	94.8822 %	101.2379 %	106.2292 %	102.5074 %
Concentration per Run 3	0.5906 ppm	100.5837 %	102.7201 %	94.7938 %	101.2937 %	106.3742 %	103.0557 %
Concentration RSD	0.3 %	0.1 %	0.2 %	0.1 %	0.3 %	0.3 %	0.3 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCV
Analysis started at: 9/10/2024 6:08:44 PM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.5084 ppm	0.4883 ppm	0.4770 ppm	0.4729 ppm	0.5179 ppm	0.5175 ppm	0.5001 ppm
Concentration per Run 1	0.5120 ppm	0.4859 ppm	0.4759 ppm	0.4753 ppm	0.5164 ppm	0.5194 ppm	0.4991 ppm
Concentration per Run 2	0.5062 ppm	0.4902 ppm	0.4762 ppm	0.4704 ppm	0.5198 ppm	0.5183 ppm	0.5012 ppm
Concentration per Run 3	0.5071 ppm	0.4887 ppm	0.4790 ppm	0.4731 ppm	0.5174 ppm	0.5147 ppm	0.5000 ppm
Recovery Percentage 1	101.690 %	97.654 %	95.407 %	94.585 %	103.573 %	103.494 %	100.016 %
Concentration RSD	0.6 %	0.5 %	0.4 %	0.5 %	0.3 %	0.5 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.5002 ppm	0.5108 ppm	0.4981 ppm	0.4933 ppm	0.5168 ppm	5.3570 ppm	0.5301 ppm
Concentration per Run 1	0.5089 ppm	0.5167 ppm	0.5035 ppm	0.4967 ppm	0.5198 ppm	5.3911 ppm	0.5318 ppm
Concentration per Run 2	0.4956 ppm	0.5056 ppm	0.4937 ppm	0.4911 ppm	0.5184 ppm	5.3690 ppm	0.5307 ppm
Concentration per Run 3	0.4961 ppm	0.5100 ppm	0.4972 ppm	0.4920 ppm	0.5121 ppm	5.3108 ppm	0.5278 ppm
Recovery Percentage 1	100.040 %	102.151 %	99.630 %	98.652 %	103.352 %	107.139 %	106.020 %
Concentration RSD	1.5 %	1.1 %	1.0 %	0.6 %	0.8 %	0.8 %	0.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.4991 ppm	0.4968 ppm	0.4989 ppm	10.3734 ppm	0.5124 ppm	0.4934 ppm	0.4942 ppm
Concentration per Run 1	0.5088 ppm	0.4976 ppm	0.5003 ppm	10.3978 ppm	0.5207 ppm	0.4944 ppm	0.4990 ppm
Concentration per Run 2	0.4941 ppm	0.4968 ppm	0.4959 ppm	10.3217 ppm	0.5062 ppm	0.4915 ppm	0.4902 ppm
Concentration per Run 3	0.4944 ppm	0.4961 ppm	0.5005 ppm	10.4006 ppm	0.5102 ppm	0.4942 ppm	0.4934 ppm
Recovery Percentage 1	99.819 %	99.367 %	99.783 %	103.734 %	102.478 %	98.672 %	98.847 %
Concentration RSD	1.7 %	0.2 %	0.5 %	0.4 %	1.5 %	0.3 %	0.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4816 ppm	5.2283 ppm	0.5237 ppm	0.5316 ppm	0.5109 ppm	0.4797 ppm	0.4999 ppm
Concentration per Run 1	0.4810 ppm	5.2835 ppm	0.5300 ppm	0.5321 ppm	0.5142 ppm	0.4779 ppm	0.5020 ppm
Concentration per Run 2	0.4794 ppm	5.1930 ppm	0.5182 ppm	0.5358 ppm	0.5087 ppm	0.4796 ppm	0.4983 ppm
Concentration per Run 3	0.4845 ppm	5.2084 ppm	0.5230 ppm	0.5270 ppm	0.5098 ppm	0.4817 ppm	0.4994 ppm
Recovery Percentage 1	96.321 %	99.587 %	104.745 %	106.330 %	102.182 %	95.945 %	99.983 %
Concentration RSD	0.5 %	0.9 %	1.1 %	0.8 %	0.6 %	0.4 %	0.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4994 ppm	99.8698 %	100.0567 %	96.2088 %	95.0293 %	98.2954 %	96.0379 %
Concentration per Run 1	0.5099 ppm	98.6798 %	100.3067 %	96.0204 %	93.8745 %	98.5026 %	95.9436 %
Concentration per Run 2	0.4928 ppm	100.7772 %	99.8909 %	96.5161 %	95.7204 %	98.3350 %	96.2903 %
Concentration per Run 3	0.4954 ppm	100.1524 %	99.9724 %	96.0898 %	95.4930 %	98.0485 %	95.8798 %
Recovery Percentage 1	99.878 %						
Concentration RSD	1.8 %	1.1 %	0.2 %	0.3 %	1.1 %	0.2 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCB
Analysis started at: 9/10/2024 6:12:41 PM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0001 ppm	-0.0040 ppm	0.0003 ppm	-0.0003 ppm	-0.0001 ppm	0.0000 ppm	0.0047 ppm
Concentration per Run 1	0.0000 ppm	0.0040 ppm	0.0007 ppm	0.0006 ppm	0.0001 ppm	0.0000 ppm	0.0063 ppm
Concentration per Run 2	-0.0001 ppm	-0.0089 ppm	0.0004 ppm	-0.0005 ppm	-0.0001 ppm	0.0000 ppm	0.0007 ppm
Concentration per Run 3	-0.0003 ppm	-0.0070 ppm	-0.0002 ppm	-0.0010 ppm	-0.0002 ppm	0.0000 ppm	0.0072 ppm
Recovery Percentage 1	-1.752 %	-3.964 %	10.796 %	-0.944 %	-0.631 %	0.110 %	4.740 %
Concentration RSD	115.3 %	176.2 %	136.8 %	298.3 %	231.4 %	472.8 %	74.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0001 ppm	-0.0002 ppm	0.0005 ppm	0.0043 ppm	0.0050 ppm	-0.0008 ppm
Concentration per Run 1	0.0001 ppm	-0.0004 ppm	-0.0001 ppm	0.0007 ppm	0.0055 ppm	0.0021 ppm	0.0009 ppm
Concentration per Run 2	0.0000 ppm	0.0001 ppm	-0.0002 ppm	0.0006 ppm	0.0037 ppm	0.0029 ppm	-0.0007 ppm
Concentration per Run 3	0.0000 ppm	-0.0001 ppm	-0.0002 ppm	0.0003 ppm	0.0037 ppm	0.0101 ppm	-0.0025 ppm
Recovery Percentage 1	0.689 %	-0.615 %	-1.586 %	4.969 %	8.593 %	0.201 %	-7.529 %
Concentration RSD	61.0 %	186.9 %	54.3 %	40.7 %	23.5 %	88.1 %	220.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0009 ppm	0.0001 ppm	0.0020 ppm	0.0138 ppm	0.0005 ppm	-0.0007 ppm	0.0008 ppm
Concentration per Run 1	0.0014 ppm	0.0001 ppm	0.0019 ppm	0.0140 ppm	0.0003 ppm	-0.0004 ppm	0.0018 ppm
Concentration per Run 2	0.0013 ppm	0.0001 ppm	0.0019 ppm	0.0156 ppm	0.0006 ppm	-0.0011 ppm	0.0007 ppm
Concentration per Run 3	0.0000 ppm	0.0002 ppm	0.0022 ppm	0.0117 ppm	0.0007 ppm	-0.0006 ppm	-0.0001 ppm
Recovery Percentage 1	0.896 %	1.462 %	4.002 %	0.689 %	2.118 %	-7.050 %	1.675 %
Concentration RSD	85.3 %	59.1 %	6.8 %	14.5 %	40.7 %	48.5 %	114.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0006 ppm	-0.0186 ppm	-0.0005 ppm	0.0000 ppm	-0.0003 ppm	-0.0012 ppm	0.0000 ppm
Concentration per Run 1	0.0015 ppm	-0.0178 ppm	-0.0011 ppm	-0.0001 ppm	-0.0002 ppm	-0.0011 ppm	0.0001 ppm
Concentration per Run 2	-0.0004 ppm	-0.0197 ppm	0.0006 ppm	0.0000 ppm	-0.0002 ppm	-0.0018 ppm	0.0000 ppm
Concentration per Run 3	0.0007 ppm	-0.0182 ppm	-0.0010 ppm	0.0001 ppm	-0.0004 ppm	-0.0007 ppm	0.0000 ppm
Recovery Percentage 1	6.001 %	-3.719 %	-0.988 %	0.317 %	-2.818 %	-5.943 %	0.367 %
Concentration RSD	154.4 %	5.4 %	192.0 %	295.6 %	47.6 %	46.4 %	118.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0005 ppm	95.3494 %	97.1322 %	96.3457 %	95.9970 %	97.9743 %	97.0375 %
Concentration per Run 1	0.0005 ppm	93.8859 %	98.1248 %	95.6636 %	95.2362 %	98.8406 %	96.6924 %
Concentration per Run 2	0.0005 ppm	95.4021 %	96.6333 %	96.8813 %	96.2241 %	97.7216 %	97.2593 %
Concentration per Run 3	0.0004 ppm	96.7601 %	96.6385 %	96.4923 %	96.5308 %	97.3608 %	97.1608 %
Recovery Percentage 1	9.267 %						
Concentration RSD	15.3 %	1.5 %	0.9 %	0.6 %	0.7 %	0.8 %	0.3 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450138-01D2 WG1968230
Analysis started at: 9/10/2024 6:21:47 PM
Rack 2
Vial 13
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0006 ppm	22.4775 ppm	0.0305 ppm	0.0220 ppm	0.2109 ppm	0.0014 ppm	49.7162 ppm
Concentration per Run 1	0.0005 ppm	22.3481 ppm	0.0316 ppm	0.0220 ppm	0.2095 ppm	0.0014 ppm	49.4831 ppm
Concentration per Run 2	0.0006 ppm	22.6290 ppm	0.0296 ppm	0.0224 ppm	0.2113 ppm	0.0014 ppm	49.9514 ppm
Concentration per Run 3	0.0006 ppm	22.4553 ppm	0.0303 ppm	0.0215 ppm	0.2119 ppm	0.0014 ppm	49.7140 ppm
Concentration RSD	9.2 %	0.6 %	3.3 %	2.1 %	0.6 %	2.8 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0005 ppm	0.0279 ppm	0.0550 ppm	0.1221 ppm	68.7445 ppm	7.0855 ppm	0.0344 ppm
Concentration per Run 1	0.0006 ppm	0.0282 ppm	0.0548 ppm	0.1215 ppm	68.1587 ppm	7.0458 ppm	0.0345 ppm
Concentration per Run 2	0.0005 ppm	0.0276 ppm	0.0549 ppm	0.1224 ppm	69.1299 ppm	7.1364 ppm	0.0344 ppm
Concentration per Run 3	0.0004 ppm	0.0279 ppm	0.0554 ppm	0.1224 ppm	68.9450 ppm	7.0742 ppm	0.0342 ppm
Concentration RSD	25.1 %	1.0 %	0.6 %	0.4 %	0.8 %	0.7 %	0.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	40.0993 ppm	3.9434 ppm	0.0066 ppm	23.5172 ppm	0.0554 ppm	0.2251 ppm	0.0000 ppm
Concentration per Run 1	39.9885 ppm	3.9207 ppm	0.0066 ppm	23.2456 ppm	0.0552 ppm	0.2260 ppm	0.0008 ppm
Concentration per Run 2	40.1552 ppm	3.9629 ppm	0.0064 ppm	23.7615 ppm	0.0558 ppm	0.2251 ppm	-0.0010 ppm
Concentration per Run 3	40.1541 ppm	3.9466 ppm	0.0068 ppm	23.5446 ppm	0.0553 ppm	0.2243 ppm	0.0000 ppm
Concentration RSD	0.2 %	0.5 %	2.9 %	1.1 %	0.6 %	0.4 %	1,965.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0000 ppm	1.6864 ppm	0.0209 ppm	0.0976 ppm	1.3077 ppm	-0.0014 ppm	0.1031 ppm
Concentration per Run 1	0.0000 ppm	1.6784 ppm	0.0212 ppm	0.0973 ppm	1.3056 ppm	-0.0011 ppm	0.1026 ppm
Concentration per Run 2	0.0001 ppm	1.6903 ppm	0.0199 ppm	0.0972 ppm	1.3077 ppm	-0.0012 ppm	0.1035 ppm
Concentration per Run 3	-0.0001 ppm	1.6905 ppm	0.0215 ppm	0.0981 ppm	1.3099 ppm	-0.0021 ppm	0.1032 ppm
Concentration RSD	405.2 %	0.4 %	4.0 %	0.5 %	0.2 %	38.2 %	0.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4183 ppm	100.4113 %	102.6030 %	90.7180 %	110.2824 %	116.2845 %	110.8580 %
Concentration per Run 1	0.4188 ppm	100.7595 %	102.6254 %	90.5670 %	110.8369 %	116.0970 %	110.6364 %
Concentration per Run 2	0.4185 ppm	100.0785 %	102.7939 %	90.7772 %	110.2122 %	116.8011 %	110.9396 %
Concentration per Run 3	0.4177 ppm	100.3960 %	102.3898 %	90.8099 %	109.7981 %	115.9554 %	110.9980 %
Concentration RSD	0.1 %	0.3 %	0.2 %	0.1 %	0.5 %	0.4 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450138-02D2 WG1968230
Analysis started at: 9/10/2024 6:26:03 PM
Rack 2
Vial 14
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0006 ppm	26.0054 ppm	0.0481 ppm	0.0242 ppm	0.1438 ppm	0.0013 ppm	29.6648 ppm
Concentration per Run 1	0.0006 ppm	26.0214 ppm	0.0483 ppm	0.0244 ppm	0.1433 ppm	0.0013 ppm	29.6646 ppm
Concentration per Run 2	0.0008 ppm	26.0312 ppm	0.0464 ppm	0.0246 ppm	0.1439 ppm	0.0013 ppm	29.6183 ppm
Concentration per Run 3	0.0004 ppm	25.9636 ppm	0.0496 ppm	0.0236 ppm	0.1440 ppm	0.0014 ppm	29.7114 ppm
Concentration RSD	36.0 %	0.1 %	3.3 %	2.1 %	0.3 %	2.7 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0015 ppm	0.0303 ppm	0.0645 ppm	0.2302 ppm	81.1635 ppm	7.0183 ppm	0.0473 ppm
Concentration per Run 1	0.0016 ppm	0.0311 ppm	0.0658 ppm	0.2322 ppm	81.2055 ppm	7.0100 ppm	0.0469 ppm
Concentration per Run 2	0.0015 ppm	0.0300 ppm	0.0637 ppm	0.2295 ppm	81.3693 ppm	7.0379 ppm	0.0471 ppm
Concentration per Run 3	0.0015 ppm	0.0299 ppm	0.0642 ppm	0.2289 ppm	80.9158 ppm	7.0069 ppm	0.0478 ppm
Concentration RSD	2.9 %	2.3 %	1.7 %	0.8 %	0.3 %	0.2 %	0.9 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	28.8738 ppm	1.8744 ppm	0.0054 ppm	16.8021 ppm	0.0605 ppm	0.3291 ppm	0.0021 ppm
Concentration per Run 1	29.2641 ppm	1.8690 ppm	0.0055 ppm	16.8350 ppm	0.0608 ppm	0.3283 ppm	0.0021 ppm
Concentration per Run 2	28.7323 ppm	1.8778 ppm	0.0053 ppm	16.8033 ppm	0.0604 ppm	0.3301 ppm	0.0020 ppm
Concentration per Run 3	28.6252 ppm	1.8763 ppm	0.0055 ppm	16.7679 ppm	0.0602 ppm	0.3290 ppm	0.0022 ppm
Concentration RSD	1.2 %	0.3 %	1.7 %	0.2 %	0.6 %	0.3 %	6.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0007 ppm	2.3367 ppm	0.1459 ppm	0.0876 ppm	1.5681 ppm	-0.0004 ppm	0.1340 ppm
Concentration per Run 1	-0.0003 ppm	2.3758 ppm	0.1488 ppm	0.0872 ppm	1.5849 ppm	-0.0001 ppm	0.1352 ppm
Concentration per Run 2	0.0016 ppm	2.3180 ppm	0.1440 ppm	0.0875 ppm	1.5653 ppm	-0.0002 ppm	0.1338 ppm
Concentration per Run 3	0.0009 ppm	2.3164 ppm	0.1448 ppm	0.0882 ppm	1.5542 ppm	-0.0010 ppm	0.1330 ppm
Concentration RSD	136.7 %	1.4 %	1.8 %	0.6 %	1.0 %	113.4 %	0.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4685 ppm	98.0290 %	102.9222 %	90.0192 %	103.6417 %	110.5410 %	104.3379 %
Concentration per Run 1	0.4797 ppm	96.8452 %	103.0101 %	90.2810 %	102.7902 %	110.8501 %	104.6823 %
Concentration per Run 2	0.4620 ppm	98.5376 %	103.1264 %	89.7769 %	104.2543 %	110.3972 %	103.9510 %
Concentration per Run 3	0.4636 ppm	98.7043 %	102.6302 %	89.9999 %	103.8805 %	110.3757 %	104.3805 %
Concentration RSD	2.1 %	1.0 %	0.3 %	0.3 %	0.7 %	0.2 %	0.4 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450247-03D2 WG1968230
Analysis started at: 9/10/2024 6:29:59 PM
Rack 2
Vial 15
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0006 ppm	126.0063 ppm	0.0605 ppm	0.0087 ppm	0.4350 ppm	0.0036 ppm	5.4098 ppm
Concentration per Run 1	0.0006 ppm	125.1948 ppm	0.0611 ppm	0.0098 ppm	0.4307 ppm	0.0036 ppm	5.3859 ppm
Concentration per Run 2	0.0007 ppm	127.4948 ppm	0.0597 ppm	0.0087 ppm	0.4395 ppm	0.0037 ppm	5.4747 ppm
Concentration per Run 3	0.0005 ppm	125.3293 ppm	0.0608 ppm	0.0076 ppm	0.4349 ppm	0.0036 ppm	5.3688 ppm
Concentration RSD	14.0 %	1.0 %	1.1 %	12.4 %	1.0 %	1.3 %	1.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0003 ppm	0.0182 ppm	0.1788 ppm	0.1116 ppm	140.2635 ppm	3.9925 ppm	0.0465 ppm
Concentration per Run 1	0.0003 ppm	0.0183 ppm	0.1793 ppm	0.1116 ppm	139.1871 ppm	4.0030 ppm	0.0474 ppm
Concentration per Run 2	0.0002 ppm	0.0186 ppm	0.1786 ppm	0.1115 ppm	142.0329 ppm	4.0298 ppm	0.0469 ppm
Concentration per Run 3	0.0004 ppm	0.0178 ppm	0.1784 ppm	0.1116 ppm	139.5707 ppm	3.9446 ppm	0.0453 ppm
Concentration RSD	28.9 %	2.3 %	0.3 %	0.1 %	1.1 %	1.1 %	2.3 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	7.2357 ppm	0.2851 ppm	0.0030 ppm	0.3100 ppm	0.0606 ppm	0.0754 ppm	0.0027 ppm
Concentration per Run 1	7.2950 ppm	0.2836 ppm	0.0029 ppm	0.3090 ppm	0.0608 ppm	0.0761 ppm	0.0045 ppm
Concentration per Run 2	7.2331 ppm	0.2885 ppm	0.0032 ppm	0.3139 ppm	0.0606 ppm	0.0745 ppm	0.0017 ppm
Concentration per Run 3	7.1790 ppm	0.2832 ppm	0.0030 ppm	0.3070 ppm	0.0606 ppm	0.0756 ppm	0.0018 ppm
Concentration RSD	0.8 %	1.0 %	5.1 %	1.2 %	0.2 %	1.1 %	59.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0012 ppm	2.4283 ppm	0.0045 ppm	0.0400 ppm	1.3679 ppm	0.0022 ppm	0.2980 ppm
Concentration per Run 1	0.0023 ppm	2.4466 ppm	0.0040 ppm	0.0397 ppm	1.3689 ppm	0.0019 ppm	0.2996 ppm
Concentration per Run 2	0.0006 ppm	2.4195 ppm	0.0054 ppm	0.0404 ppm	1.3637 ppm	0.0020 ppm	0.2984 ppm
Concentration per Run 3	0.0006 ppm	2.4187 ppm	0.0042 ppm	0.0398 ppm	1.3711 ppm	0.0029 ppm	0.2961 ppm
Concentration RSD	83.3 %	0.7 %	16.1 %	1.0 %	0.3 %	24.2 %	0.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.1534 ppm	104.3751 %	108.3066 %	95.3152 %	120.7030 %	129.2074 %	123.4736 %
Concentration per Run 1	0.1542 ppm	103.9044 %	108.4836 %	94.7401 %	119.9894 %	128.8940 %	122.7829 %
Concentration per Run 2	0.1527 ppm	104.1749 %	107.1229 %	95.7619 %	120.4615 %	129.0078 %	123.8674 %
Concentration per Run 3	0.1534 ppm	105.0461 %	109.3134 %	95.4437 %	121.6581 %	129.7202 %	123.7706 %
Concentration RSD	0.5 %	0.6 %	1.0 %	0.5 %	0.7 %	0.3 %	0.5 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450247-06D2 WG1968230
Analysis started at: 9/10/2024 6:33:56 PM
Rack 2
Vial 16
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0011 ppm	183.4894 ppm	0.0252 ppm	0.0042 ppm	0.5315 ppm	0.0048 ppm	4.0405 ppm
Concentration per Run 1	0.0013 ppm	182.7546 ppm	0.0245 ppm	0.0028 ppm	0.5322 ppm	0.0047 ppm	4.0176 ppm
Concentration per Run 2	0.0013 ppm	184.0409 ppm	0.0244 ppm	0.0050 ppm	0.5303 ppm	0.0048 ppm	4.0462 ppm
Concentration per Run 3	0.0005 ppm	183.6728 ppm	0.0267 ppm	0.0048 ppm	0.5321 ppm	0.0049 ppm	4.0577 ppm
Concentration RSD	42.5 %	0.4 %	5.2 %	29.1 %	0.2 %	1.5 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0005 ppm	0.0296 ppm	0.0952 ppm	0.0342 ppm	281.7255 ppm	2.3890 ppm	0.0208 ppm
Concentration per Run 1	0.0006 ppm	0.0293 ppm	0.0950 ppm	0.0347 ppm	279.9962 ppm	2.3778 ppm	0.0211 ppm
Concentration per Run 2	0.0006 ppm	0.0296 ppm	0.0955 ppm	0.0342 ppm	282.5642 ppm	2.4015 ppm	0.0208 ppm
Concentration per Run 3	0.0002 ppm	0.0299 ppm	0.0950 ppm	0.0337 ppm	282.6163 ppm	2.3877 ppm	0.0204 ppm
Concentration RSD	53.0 %	0.9 %	0.3 %	1.5 %	0.5 %	0.5 %	1.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	3.4635 ppm	0.3855 ppm	0.0022 ppm	0.4886 ppm	0.0562 ppm	0.0475 ppm	0.0039 ppm
Concentration per Run 1	3.4699 ppm	0.3833 ppm	0.0020 ppm	0.4894 ppm	0.0563 ppm	0.0476 ppm	0.0008 ppm
Concentration per Run 2	3.4594 ppm	0.3873 ppm	0.0021 ppm	0.4889 ppm	0.0563 ppm	0.0462 ppm	0.0063 ppm
Concentration per Run 3	3.4613 ppm	0.3859 ppm	0.0024 ppm	0.4875 ppm	0.0561 ppm	0.0485 ppm	0.0045 ppm
Concentration RSD	0.2 %	0.5 %	8.0 %	0.2 %	0.2 %	2.5 %	72.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0001 ppm	2.1223 ppm	0.0034 ppm	0.0186 ppm	1.3121 ppm	0.0027 ppm	0.1613 ppm
Concentration per Run 1	0.0017 ppm	2.1326 ppm	0.0041 ppm	0.0185 ppm	1.3099 ppm	0.0018 ppm	0.1610 ppm
Concentration per Run 2	-0.0019 ppm	2.1154 ppm	0.0024 ppm	0.0186 ppm	1.3138 ppm	0.0024 ppm	0.1605 ppm
Concentration per Run 3	-0.0002 ppm	2.1188 ppm	0.0039 ppm	0.0187 ppm	1.3124 ppm	0.0037 ppm	0.1624 ppm
Concentration RSD	1,542.7 %	0.4 %	27.5 %	0.4 %	0.2 %	36.1 %	0.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.1458 ppm	104.8362 %	107.9963 %	93.8344 %	121.5074 %	131.3864 %	125.1378 %
Concentration per Run 1	0.1468 ppm	104.7388 %	109.4245 %	93.6919 %	120.6318 %	132.5953 %	124.7132 %
Concentration per Run 2	0.1457 ppm	105.1497 %	107.7545 %	93.9915 %	121.8511 %	131.2866 %	125.4171 %
Concentration per Run 3	0.1449 ppm	104.6202 %	106.8101 %	93.8197 %	122.0391 %	130.2774 %	125.2831 %
Concentration RSD	0.6 %	0.3 %	1.2 %	0.2 %	0.6 %	0.9 %	0.3 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450388-09D2 WG1968230
Analysis started at: 9/10/2024 6:37:53 PM
Rack 2
Vial 17
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0046 ppm	36.7182 ppm	0.2087 ppm	0.0523 ppm	3.0548 ppm	0.0019 ppm	18.7380 ppm
Concentration per Run 1	0.0046 ppm	36.7616 ppm	0.2106 ppm	0.0517 ppm	3.0554 ppm	0.0019 ppm	18.8034 ppm
Concentration per Run 2	0.0047 ppm	36.7802 ppm	0.2074 ppm	0.0517 ppm	3.0673 ppm	0.0019 ppm	18.7135 ppm
Concentration per Run 3	0.0046 ppm	36.6130 ppm	0.2081 ppm	0.0534 ppm	3.0416 ppm	0.0019 ppm	18.6970 ppm
Concentration RSD	1.6 %	0.2 %	0.8 %	1.8 %	0.4 %	0.2 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0033 ppm	0.0282 ppm	0.1938 ppm	1.0285 ppm	172.0690 ppm	6.0933 ppm	0.0948 ppm
Concentration per Run 1	0.0032 ppm	0.0286 ppm	0.1935 ppm	1.0264 ppm	172.6451 ppm	6.0994 ppm	0.0966 ppm
Concentration per Run 2	0.0033 ppm	0.0282 ppm	0.1936 ppm	1.0278 ppm	172.2945 ppm	6.1278 ppm	0.0938 ppm
Concentration per Run 3	0.0033 ppm	0.0278 ppm	0.1943 ppm	1.0313 ppm	171.2673 ppm	6.0528 ppm	0.0939 ppm
Concentration RSD	1.4 %	1.4 %	0.2 %	0.2 %	0.4 %	0.6 %	1.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	9.9171 ppm	0.6181 ppm	0.0310 ppm	1.9894 ppm	0.1104 ppm	3.4614 ppm	0.0337 ppm
Concentration per Run 1	9.9105 ppm	0.6196 ppm	0.0305 ppm	1.9902 ppm	0.1102 ppm	3.4532 ppm	0.0333 ppm
Concentration per Run 2	9.9108 ppm	0.6183 ppm	0.0310 ppm	1.9923 ppm	0.1109 ppm	3.4670 ppm	0.0321 ppm
Concentration per Run 3	9.9300 ppm	0.6163 ppm	0.0315 ppm	1.9858 ppm	0.1101 ppm	3.4641 ppm	0.0357 ppm
Concentration RSD	0.1 %	0.3 %	1.6 %	0.2 %	0.4 %	0.2 %	5.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0590 ppm	2.2111 ppm	0.5963 ppm	0.2214 ppm	1.0117 ppm	0.0039 ppm	0.2097 ppm
Concentration per Run 1	0.0598 ppm	2.2095 ppm	0.5939 ppm	0.2216 ppm	1.0018 ppm	0.0041 ppm	0.2102 ppm
Concentration per Run 2	0.0603 ppm	2.2081 ppm	0.5968 ppm	0.2217 ppm	1.0224 ppm	0.0041 ppm	0.2092 ppm
Concentration per Run 3	0.0571 ppm	2.2155 ppm	0.5982 ppm	0.2208 ppm	1.0108 ppm	0.0036 ppm	0.2097 ppm
Concentration RSD	2.9 %	0.2 %	0.4 %	0.2 %	1.0 %	7.7 %	0.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	1.3323 ppm	102.5655 %	104.9925 %	92.0066 %	105.0164 %	111.5352 %	105.2606 %
Concentration per Run 1	1.3281 ppm	102.7880 %	104.4256 %	92.0723 %	104.5838 %	110.8193 %	105.3781 %
Concentration per Run 2	1.3317 ppm	102.7757 %	105.6617 %	91.7048 %	105.1540 %	112.9008 %	104.9598 %
Concentration per Run 3	1.3370 ppm	102.1329 %	104.8903 %	92.2428 %	105.3113 %	110.8855 %	105.4438 %
Concentration RSD	0.3 %	0.4 %	0.6 %	0.3 %	0.4 %	1.1 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450389-07D2 WG1968230
Analysis started at: 9/10/2024 6:41:50 PM
Rack 2
Vial 18
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0012 ppm	45.7156 ppm	10.9618 ppm	0.0211 ppm	3.9329 ppm	0.0029 ppm	304.8871 ppm
Concentration per Run 1	0.0012 ppm	45.9132 ppm	10.9991 ppm	0.0223 ppm	3.9659 ppm	0.0029 ppm	306.5303 ppm
Concentration per Run 2	0.0013 ppm	45.5717 ppm	10.9713 ppm	0.0216 ppm	3.9117 ppm	0.0029 ppm	303.8065 ppm
Concentration per Run 3	0.0012 ppm	45.6621 ppm	10.9150 ppm	0.0192 ppm	3.9211 ppm	0.0029 ppm	304.3243 ppm
Concentration RSD	4.4 %	0.4 %	0.4 %	7.7 %	0.7 %	0.3 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0042 ppm	0.0425 ppm	0.2561 ppm	3.0613 ppm	132.6827 ppm	6.8099 ppm	0.0886 ppm
Concentration per Run 1	0.0042 ppm	0.0430 ppm	0.2590 ppm	3.1077 ppm	134.0128 ppm	6.9139 ppm	0.0910 ppm
Concentration per Run 2	0.0043 ppm	0.0424 ppm	0.2545 ppm	3.0434 ppm	131.8215 ppm	6.7321 ppm	0.0871 ppm
Concentration per Run 3	0.0041 ppm	0.0420 ppm	0.2547 ppm	3.0328 ppm	132.2136 ppm	6.7836 ppm	0.0876 ppm
Concentration RSD	2.2 %	1.2 %	1.0 %	1.3 %	0.9 %	1.4 %	2.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	26.8572 ppm	1.6971 ppm	0.0070 ppm	2.0819 ppm	0.1419 ppm	5.2369 ppm	0.0338 ppm
Concentration per Run 1	27.2492 ppm	1.7059 ppm	0.0068 ppm	2.0932 ppm	0.1430 ppm	5.2412 ppm	0.0353 ppm
Concentration per Run 2	26.6193 ppm	1.6934 ppm	0.0072 ppm	2.0683 ppm	0.1415 ppm	5.2386 ppm	0.0358 ppm
Concentration per Run 3	26.7031 ppm	1.6920 ppm	0.0070 ppm	2.0844 ppm	0.1411 ppm	5.2311 ppm	0.0303 ppm
Concentration RSD	1.3 %	0.4 %	2.9 %	0.6 %	0.7 %	0.1 %	9.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0055 ppm	1.3904 ppm	0.1047 ppm	0.5272 ppm	1.5672 ppm	-0.0005 ppm	0.1585 ppm
Concentration per Run 1	0.0043 ppm	1.4118 ppm	0.1050 ppm	0.5320 ppm	1.5897 ppm	-0.0011 ppm	0.1608 ppm
Concentration per Run 2	0.0063 ppm	1.3823 ppm	0.1041 ppm	0.5259 ppm	1.5559 ppm	-0.0005 ppm	0.1573 ppm
Concentration per Run 3	0.0058 ppm	1.3771 ppm	0.1049 ppm	0.5235 ppm	1.5560 ppm	0.0001 ppm	0.1575 ppm
Concentration RSD	19.4 %	1.3 %	0.5 %	0.8 %	1.2 %	111.1 %	1.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	19.3826 ppm	96.6946 %	103.7609 %	85.3828 %	104.1945 %	115.8436 %	106.1109 %
Concentration per Run 1	19.5080 ppm	95.7215 %	102.5575 %	85.5757 %	102.7169 %	114.7431 %	106.6758 %
Concentration per Run 2	19.3178 ppm	97.4967 %	104.1225 %	85.2650 %	105.2012 %	115.9355 %	105.7436 %
Concentration per Run 3	19.3219 ppm	96.8657 %	104.6025 %	85.3075 %	104.6653 %	116.8521 %	105.9134 %
Concentration RSD	0.6 %	0.9 %	1.0 %	0.2 %	1.3 %	0.9 %	0.5 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450389-09D2 WG1968230
Analysis started at: 9/10/2024 6:45:47 PM
Rack 2
Vial 19
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0018 ppm	57.5831 ppm	12.6247 ppm	0.0272 ppm	1.6292 ppm	0.0034 ppm	253.8659 ppm
Concentration per Run 1	0.0019 ppm	57.8703 ppm	12.5533 ppm	0.0271 ppm	1.6479 ppm	0.0034 ppm	254.7621 ppm
Concentration per Run 2	0.0016 ppm	57.4598 ppm	12.6059 ppm	0.0260 ppm	1.6232 ppm	0.0034 ppm	253.9815 ppm
Concentration per Run 3	0.0020 ppm	57.4191 ppm	12.7150 ppm	0.0284 ppm	1.6166 ppm	0.0033 ppm	252.8541 ppm
Concentration RSD	9.1 %	0.4 %	0.7 %	4.4 %	1.0 %	1.5 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0072 ppm	0.0558 ppm	0.3132 ppm	18.9559 ppm	140.5396 ppm	9.4513 ppm	0.1045 ppm
Concentration per Run 1	0.0072 ppm	0.0561 ppm	0.3140 ppm	19.0575 ppm	141.8090 ppm	9.5566 ppm	0.1060 ppm
Concentration per Run 2	0.0072 ppm	0.0561 ppm	0.3125 ppm	18.9027 ppm	139.9453 ppm	9.3883 ppm	0.1039 ppm
Concentration per Run 3	0.0072 ppm	0.0553 ppm	0.3130 ppm	18.9074 ppm	139.8646 ppm	9.4089 ppm	0.1034 ppm
Concentration RSD	0.4 %	0.8 %	0.2 %	0.5 %	0.8 %	1.0 %	1.3 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	30.8031 ppm	2.3562 ppm	0.0093 ppm	3.1937 ppm	0.2083 ppm	1.5886 ppm	0.0277 ppm
Concentration per Run 1	30.8879 ppm	2.3673 ppm	0.0093 ppm	3.2217 ppm	0.2079 ppm	1.5866 ppm	0.0275 ppm
Concentration per Run 2	30.7471 ppm	2.3557 ppm	0.0093 ppm	3.1790 ppm	0.2083 ppm	1.5885 ppm	0.0282 ppm
Concentration per Run 3	30.7742 ppm	2.3456 ppm	0.0093 ppm	3.1806 ppm	0.2086 ppm	1.5907 ppm	0.0276 ppm
Concentration RSD	0.2 %	0.5 %	0.3 %	0.8 %	0.2 %	0.1 %	1.3 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0068 ppm	3.1267 ppm	0.1006 ppm	0.4081 ppm	2.0623 ppm	0.0011 ppm	0.2256 ppm
Concentration per Run 1	0.0074 ppm	3.1367 ppm	0.1006 ppm	0.4118 ppm	2.0626 ppm	-0.0003 ppm	0.2262 ppm
Concentration per Run 2	0.0066 ppm	3.1198 ppm	0.1005 ppm	0.4093 ppm	2.0621 ppm	0.0005 ppm	0.2258 ppm
Concentration per Run 3	0.0065 ppm	3.1236 ppm	0.1006 ppm	0.4033 ppm	2.0622 ppm	0.0030 ppm	0.2249 ppm
Concentration RSD	6.9 %	0.3 %	0.0 %	1.1 %	0.0 %	162.4 %	0.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	1.7328 ppm	98.6258 %	105.4209 %	86.4018 %	109.3633 %	120.6722 %	108.7746 %
Concentration per Run 1	1.7413 ppm	98.6230 %	105.1288 %	86.7282 %	109.1186 %	120.8751 %	108.9650 %
Concentration per Run 2	1.7298 ppm	98.8509 %	105.5908 %	86.3503 %	109.1045 %	120.8897 %	108.4433 %
Concentration per Run 3	1.7273 ppm	98.4035 %	105.5431 %	86.1271 %	109.8669 %	120.2517 %	108.9156 %
Concentration RSD	0.4 %	0.2 %	0.2 %	0.4 %	0.4 %	0.3 %	0.3 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450389-11D2 WG1968230
Analysis started at: 9/10/2024 6:49:43 PM
Rack 2
Vial 20
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0020 ppm	45.4795 ppm	6.7257 ppm	0.0610 ppm	3.7779 ppm	0.0027 ppm	265.7983 ppm
Concentration per Run 1	0.0020 ppm	45.3371 ppm	6.7297 ppm	0.0624 ppm	3.7810 ppm	0.0026 ppm	264.8062 ppm
Concentration per Run 2	0.0020 ppm	45.3910 ppm	6.7532 ppm	0.0602 ppm	3.8019 ppm	0.0027 ppm	265.0272 ppm
Concentration per Run 3	0.0018 ppm	45.7106 ppm	6.6942 ppm	0.0603 ppm	3.7509 ppm	0.0027 ppm	267.5615 ppm
Concentration RSD	5.6 %	0.4 %	0.4 %	2.0 %	0.7 %	0.5 %	0.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0012 ppm	0.0364 ppm	0.1631 ppm	2.2421 ppm	107.5329 ppm	6.3779 ppm	0.0769 ppm
Concentration per Run 1	0.0012 ppm	0.0361 ppm	0.1630 ppm	2.2452 ppm	107.6684 ppm	6.4130 ppm	0.0785 ppm
Concentration per Run 2	0.0013 ppm	0.0361 ppm	0.1626 ppm	2.2432 ppm	107.8550 ppm	6.3997 ppm	0.0769 ppm
Concentration per Run 3	0.0011 ppm	0.0370 ppm	0.1636 ppm	2.2378 ppm	107.0754 ppm	6.3211 ppm	0.0754 ppm
Concentration RSD	6.2 %	1.3 %	0.3 %	0.2 %	0.4 %	0.8 %	2.0 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	30.0380 ppm	1.9062 ppm	0.0100 ppm	2.5000 ppm	0.1434 ppm	4.9032 ppm	0.0164 ppm
Concentration per Run 1	30.1166 ppm	1.9022 ppm	0.0098 ppm	2.4986 ppm	0.1441 ppm	4.9191 ppm	0.0151 ppm
Concentration per Run 2	29.9221 ppm	1.9032 ppm	0.0102 ppm	2.4853 ppm	0.1431 ppm	4.9000 ppm	0.0153 ppm
Concentration per Run 3	30.0753 ppm	1.9133 ppm	0.0099 ppm	2.5162 ppm	0.1430 ppm	4.8906 ppm	0.0187 ppm
Concentration RSD	0.3 %	0.3 %	2.1 %	0.6 %	0.4 %	0.3 %	12.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0054 ppm	23.4122 ppm	0.3838 ppm	0.7140 ppm	2.0692 ppm	0.0003 ppm	0.1647 ppm
Concentration per Run 1	0.0060 ppm	23.4692 ppm	0.3844 ppm	0.7109 ppm	2.0752 ppm	0.0005 ppm	0.1648 ppm
Concentration per Run 2	0.0054 ppm	23.4164 ppm	0.3804 ppm	0.7160 ppm	2.0609 ppm	0.0006 ppm	0.1640 ppm
Concentration per Run 3	0.0048 ppm	23.3511 ppm	0.3866 ppm	0.7151 ppm	2.0715 ppm	-0.0002 ppm	0.1653 ppm
Concentration RSD	10.5 %	0.3 %	0.8 %	0.4 %	0.4 %	144.8 %	0.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	3.1098 ppm	98.8181 %	105.0738 %	87.0183 %	109.0965 %	120.5708 %	111.3389 %
Concentration per Run 1	3.1035 ppm	98.5150 %	105.7407 %	86.7890 %	108.1148 %	121.1493 %	111.3343 %
Concentration per Run 2	3.1044 ppm	99.2659 %	105.8325 %	87.1625 %	110.0329 %	121.2857 %	111.2285 %
Concentration per Run 3	3.1215 ppm	98.6734 %	103.6482 %	87.1035 %	109.1417 %	119.2775 %	111.4540 %
Concentration RSD	0.3 %	0.4 %	1.2 %	0.2 %	0.9 %	0.9 %	0.1 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450423-02D2 WG1968230
Analysis started at: 9/10/2024 6:53:40 PM
Rack 2
Vial 21
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0013 ppm	147.6377 ppm	0.0359 ppm	0.0110 ppm	1.8329 ppm	0.0056 ppm	29.3146 ppm
Concentration per Run 1	0.0011 ppm	147.8751 ppm	0.0354 ppm	0.0100 ppm	1.8435 ppm	0.0057 ppm	29.3795 ppm
Concentration per Run 2	0.0017 ppm	147.0550 ppm	0.0370 ppm	0.0117 ppm	1.8344 ppm	0.0055 ppm	29.2227 ppm
Concentration per Run 3	0.0012 ppm	147.9829 ppm	0.0354 ppm	0.0114 ppm	1.8207 ppm	0.0057 ppm	29.3415 ppm
Concentration RSD	25.4 %	0.3 %	2.5 %	8.5 %	0.6 %	1.7 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0013 ppm	0.1302 ppm	0.2939 ppm	0.4438 ppm	245.5775 ppm	61.7495 ppm	0.2463 ppm
Concentration per Run 1	0.0012 ppm	0.1305 ppm	0.2942 ppm	0.4445 ppm	247.2614 ppm	62.1977 ppm	0.2503 ppm
Concentration per Run 2	0.0013 ppm	0.1301 ppm	0.2929 ppm	0.4442 ppm	245.7092 ppm	61.3971 ppm	0.2472 ppm
Concentration per Run 3	0.0013 ppm	0.1299 ppm	0.2947 ppm	0.4428 ppm	243.7618 ppm	61.6537 ppm	0.2414 ppm
Concentration RSD	5.9 %	0.2 %	0.3 %	0.2 %	0.7 %	0.7 %	1.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	55.3048 ppm	4.4907 ppm	0.0156 ppm	1.8161 ppm	0.2082 ppm	1.2992 ppm	0.0052 ppm
Concentration per Run 1	55.2837 ppm	4.4864 ppm	0.0152 ppm	1.8264 ppm	0.2090 ppm	1.3063 ppm	0.0034 ppm
Concentration per Run 2	55.2293 ppm	4.4807 ppm	0.0158 ppm	1.8050 ppm	0.2068 ppm	1.2983 ppm	0.0033 ppm
Concentration per Run 3	55.4013 ppm	4.5050 ppm	0.0159 ppm	1.8169 ppm	0.2089 ppm	1.2931 ppm	0.0088 ppm
Concentration RSD	0.2 %	0.3 %	2.3 %	0.6 %	0.6 %	0.5 %	61.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0002 ppm	1.8172 ppm	0.1080 ppm	0.2113 ppm	14.4775 ppm	0.0123 ppm	0.4513 ppm
Concentration per Run 1	-0.0026 ppm	1.8181 ppm	0.1086 ppm	0.2123 ppm	14.4837 ppm	0.0133 ppm	0.4513 ppm
Concentration per Run 2	0.0046 ppm	1.8194 ppm	0.1077 ppm	0.2107 ppm	14.4637 ppm	0.0115 ppm	0.4499 ppm
Concentration per Run 3	-0.0014 ppm	1.8140 ppm	0.1077 ppm	0.2108 ppm	14.4851 ppm	0.0122 ppm	0.4528 ppm
Concentration RSD	1,997.0 %	0.2 %	0.4 %	0.4 %	0.1 %	7.0 %	0.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	1.2056 ppm	106.1203 %	109.4777 %	78.5109 %	119.2822 %	127.4181 %	120.5488 %
Concentration per Run 1	1.2088 ppm	106.0588 %	108.9348 %	78.2712 %	118.9745 %	127.0088 %	120.4429 %
Concentration per Run 2	1.2016 ppm	106.3010 %	110.0957 %	78.4247 %	119.8502 %	128.0145 %	120.3304 %
Concentration per Run 3	1.2064 ppm	106.0012 %	109.4027 %	78.8369 %	119.0220 %	127.2311 %	120.8732 %
Concentration RSD	0.3 %	0.1 %	0.5 %	0.4 %	0.4 %	0.4 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450423-03D2 WG1968230
Analysis started at: 9/10/2024 6:57:37 PM
Rack 2
Vial 22
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0013 ppm	87.6312 ppm	0.0218 ppm	0.0214 ppm	1.5088 ppm	0.0025 ppm	172.1644 ppm
Concentration per Run 1	0.0013 ppm	88.1619 ppm	0.0236 ppm	0.0217 ppm	1.5178 ppm	0.0024 ppm	172.5498 ppm
Concentration per Run 2	0.0013 ppm	87.2248 ppm	0.0197 ppm	0.0212 ppm	1.5076 ppm	0.0025 ppm	171.2393 ppm
Concentration per Run 3	0.0012 ppm	87.5070 ppm	0.0220 ppm	0.0212 ppm	1.5009 ppm	0.0026 ppm	172.7040 ppm
Concentration RSD	5.0 %	0.5 %	8.9 %	1.5 %	0.6 %	4.1 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0013 ppm	0.0821 ppm	0.1912 ppm	0.4602 ppm	164.3465 ppm	37.7103 ppm	0.1826 ppm
Concentration per Run 1	0.0014 ppm	0.0823 ppm	0.1922 ppm	0.4647 ppm	165.3050 ppm	38.0298 ppm	0.1865 ppm
Concentration per Run 2	0.0013 ppm	0.0809 ppm	0.1886 ppm	0.4516 ppm	163.7806 ppm	37.5815 ppm	0.1814 ppm
Concentration per Run 3	0.0013 ppm	0.0830 ppm	0.1927 ppm	0.4642 ppm	163.9540 ppm	37.5197 ppm	0.1799 ppm
Concentration RSD	5.2 %	1.3 %	1.2 %	1.6 %	0.5 %	0.7 %	1.9 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	64.5008 ppm	2.0485 ppm	0.0088 ppm	1.7074 ppm	0.1457 ppm	1.2362 ppm	0.0023 ppm
Concentration per Run 1	64.7406 ppm	2.0576 ppm	0.0085 ppm	1.7195 ppm	0.1465 ppm	1.2325 ppm	0.0028 ppm
Concentration per Run 2	63.7942 ppm	2.0388 ppm	0.0093 ppm	1.7051 ppm	0.1442 ppm	1.2396 ppm	0.0020 ppm
Concentration per Run 3	64.9675 ppm	2.0493 ppm	0.0086 ppm	1.6977 ppm	0.1465 ppm	1.2364 ppm	0.0022 ppm
Concentration RSD	1.0 %	0.5 %	4.6 %	0.6 %	0.9 %	0.3 %	18.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0003 ppm	6.2122 ppm	0.0450 ppm	0.6073 ppm	7.5959 ppm	0.0072 ppm	0.3065 ppm
Concentration per Run 1	-0.0002 ppm	6.2701 ppm	0.0462 ppm	0.6070 ppm	7.6308 ppm	0.0068 ppm	0.3068 ppm
Concentration per Run 2	-0.0004 ppm	6.1218 ppm	0.0439 ppm	0.6093 ppm	7.4928 ppm	0.0073 ppm	0.3028 ppm
Concentration per Run 3	-0.0004 ppm	6.2447 ppm	0.0449 ppm	0.6056 ppm	7.6641 ppm	0.0074 ppm	0.3099 ppm
Concentration RSD	31.8 %	1.3 %	2.5 %	0.3 %	1.2 %	4.8 %	1.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	1.6152 ppm	99.8187 %	104.3037 %	80.9959 %	104.1268 %	111.2164 %	103.8766 %
Concentration per Run 1	1.6236 ppm	99.7429 %	104.1714 %	81.4480 %	104.6776 %	111.3792 %	104.1573 %
Concentration per Run 2	1.5966 ppm	100.9668 %	105.4327 %	80.6320 %	104.7013 %	112.0838 %	103.7536 %
Concentration per Run 3	1.6255 ppm	98.7465 %	103.3069 %	80.9075 %	103.0015 %	110.1861 %	103.7189 %
Concentration RSD	1.0 %	1.1 %	1.0 %	0.5 %	0.9 %	0.9 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCV
Analysis started at: 9/10/2024 7:01:35 PM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.5068 ppm	0.4893 ppm	0.4709 ppm	0.4692 ppm	0.5143 ppm	0.5114 ppm	0.4981 ppm
Concentration per Run 1	0.5097 ppm	0.4836 ppm	0.4727 ppm	0.4703 ppm	0.5132 ppm	0.5140 ppm	0.4953 ppm
Concentration per Run 2	0.5050 ppm	0.4941 ppm	0.4723 ppm	0.4692 ppm	0.5162 ppm	0.5118 ppm	0.5025 ppm
Concentration per Run 3	0.5058 ppm	0.4901 ppm	0.4676 ppm	0.4682 ppm	0.5135 ppm	0.5084 ppm	0.4965 ppm
Recovery Percentage 1	101.368 %	97.857 %	94.175 %	93.847 %	102.864 %	102.280 %	99.625 %
Concentration RSD	0.5 %	1.1 %	0.6 %	0.2 %	0.3 %	0.5 %	0.8 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.5002 ppm	0.5106 ppm	0.4981 ppm	0.4924 ppm	0.5163 ppm	5.3679 ppm	0.5253 ppm
Concentration per Run 1	0.5035 ppm	0.5138 ppm	0.5021 ppm	0.4973 ppm	0.5189 ppm	5.3726 ppm	0.5170 ppm
Concentration per Run 2	0.4981 ppm	0.5081 ppm	0.4962 ppm	0.4898 ppm	0.5174 ppm	5.3696 ppm	0.5301 ppm
Concentration per Run 3	0.4991 ppm	0.5100 ppm	0.4959 ppm	0.4900 ppm	0.5125 ppm	5.3615 ppm	0.5288 ppm
Recovery Percentage 1	100.046 %	102.126 %	99.611 %	98.475 %	103.256 %	107.357 %	105.061 %
Concentration RSD	0.6 %	0.6 %	0.7 %	0.9 %	0.6 %	0.1 %	1.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.5008 ppm	0.4921 ppm	0.4971 ppm	10.3496 ppm	0.5091 ppm	0.4896 ppm	0.4944 ppm
Concentration per Run 1	0.5055 ppm	0.4918 ppm	0.4971 ppm	10.3288 ppm	0.5113 ppm	0.4933 ppm	0.4966 ppm
Concentration per Run 2	0.4949 ppm	0.4932 ppm	0.4969 ppm	10.4166 ppm	0.5071 ppm	0.4883 ppm	0.4968 ppm
Concentration per Run 3	0.5020 ppm	0.4912 ppm	0.4972 ppm	10.3036 ppm	0.5089 ppm	0.4872 ppm	0.4897 ppm
Recovery Percentage 1	100.162 %	98.416 %	99.411 %	103.496 %	101.817 %	97.921 %	98.877 %
Concentration RSD	1.1 %	0.2 %	0.0 %	0.6 %	0.4 %	0.7 %	0.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4759 ppm	5.2258 ppm	0.5265 ppm	0.5284 ppm	0.5021 ppm	0.4757 ppm	0.4984 ppm
Concentration per Run 1	0.4780 ppm	5.2669 ppm	0.5296 ppm	0.5310 ppm	0.5053 ppm	0.4803 ppm	0.5011 ppm
Concentration per Run 2	0.4760 ppm	5.2025 ppm	0.5235 ppm	0.5296 ppm	0.5006 ppm	0.4740 ppm	0.4965 ppm
Concentration per Run 3	0.4738 ppm	5.2078 ppm	0.5266 ppm	0.5246 ppm	0.5003 ppm	0.4728 ppm	0.4977 ppm
Recovery Percentage 1	95.185 %	99.538 %	105.308 %	105.680 %	100.414 %	95.145 %	99.685 %
Concentration RSD	0.4 %	0.7 %	0.6 %	0.6 %	0.6 %	0.8 %	0.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4970 ppm	99.6438 %	100.0812 %	96.8633 %	95.8955 %	98.6391 %	96.9864 %
Concentration per Run 1	0.5007 ppm	98.8518 %	100.4543 %	96.9999 %	95.3709 %	98.7454 %	97.2230 %
Concentration per Run 2	0.4943 ppm	100.2774 %	100.1733 %	96.8440 %	96.5633 %	98.8593 %	96.9934 %
Concentration per Run 3	0.4960 ppm	99.8023 %	99.6162 %	96.7461 %	95.7523 %	98.3126 %	96.7427 %
Recovery Percentage 1	99.396 %						
Concentration RSD	0.7 %	0.7 %	0.4 %	0.1 %	0.6 %	0.3 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCB
Analysis started at: 9/10/2024 7:05:36 PM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0035 ppm	-0.0002 ppm	-0.0001 ppm	0.0000 ppm	0.0000 ppm	0.0052 ppm
Concentration per Run 1	-0.0001 ppm	-0.0058 ppm	-0.0002 ppm	0.0006 ppm	-0.0001 ppm	0.0000 ppm	0.0056 ppm
Concentration per Run 2	-0.0002 ppm	-0.0024 ppm	-0.0007 ppm	-0.0006 ppm	0.0000 ppm	0.0000 ppm	0.0035 ppm
Concentration per Run 3	0.0002 ppm	-0.0023 ppm	0.0003 ppm	-0.0004 ppm	0.0001 ppm	0.0000 ppm	0.0064 ppm
Recovery Percentage 1	-0.388 %	-3.490 %	-7.007 %	-0.464 %	0.056 %	0.122 %	5.152 %
Concentration RSD	731.6 %	57.4 %	257.3 %	439.4 %	1,761.3 %	319.2 %	29.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0000 ppm	-0.0002 ppm	0.0005 ppm	0.0042 ppm	0.0067 ppm	-0.0014 ppm
Concentration per Run 1	0.0002 ppm	-0.0003 ppm	-0.0001 ppm	0.0006 ppm	0.0047 ppm	0.0043 ppm	-0.0005 ppm
Concentration per Run 2	0.0000 ppm	0.0001 ppm	-0.0004 ppm	0.0004 ppm	0.0033 ppm	-0.0084 ppm	-0.0012 ppm
Concentration per Run 3	0.0000 ppm	0.0001 ppm	-0.0001 ppm	0.0006 ppm	0.0045 ppm	0.0241 ppm	-0.0025 ppm
Recovery Percentage 1	0.736 %	-0.203 %	-1.771 %	5.371 %	8.332 %	0.268 %	-13.697 %
Concentration RSD	276.5 %	517.4 %	91.5 %	16.5 %	17.9 %	245.0 %	74.0 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0006 ppm	0.0002 ppm	0.0016 ppm	0.0076 ppm	0.0002 ppm	-0.0001 ppm	-0.0003 ppm
Concentration per Run 1	0.0011 ppm	0.0002 ppm	0.0018 ppm	0.0093 ppm	-0.0001 ppm	-0.0003 ppm	0.0009 ppm
Concentration per Run 2	0.0010 ppm	0.0002 ppm	0.0017 ppm	0.0071 ppm	0.0000 ppm	0.0005 ppm	-0.0012 ppm
Concentration per Run 3	-0.0004 ppm	0.0001 ppm	0.0014 ppm	0.0062 ppm	0.0005 ppm	-0.0004 ppm	-0.0006 ppm
Recovery Percentage 1	0.580 %	1.743 %	3.255 %	0.378 %	0.613 %	-0.723 %	-0.672 %
Concentration RSD	150.4 %	48.3 %	11.2 %	21.2 %	213.2 %	738.6 %	319.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0003 ppm	-0.0186 ppm	-0.0006 ppm	0.0000 ppm	-0.0004 ppm	-0.0002 ppm	0.0000 ppm
Concentration per Run 1	-0.0005 ppm	-0.0190 ppm	-0.0008 ppm	0.0001 ppm	-0.0001 ppm	-0.0002 ppm	0.0001 ppm
Concentration per Run 2	0.0013 ppm	-0.0186 ppm	-0.0003 ppm	0.0000 ppm	-0.0006 ppm	0.0000 ppm	-0.0002 ppm
Concentration per Run 3	0.0002 ppm	-0.0181 ppm	-0.0007 ppm	0.0000 ppm	-0.0004 ppm	-0.0005 ppm	0.0002 ppm
Recovery Percentage 1	3.488 %	-3.717 %	-1.200 %	0.161 %	-3.741 %	-1.119 %	0.349 %
Concentration RSD	250.8 %	2.3 %	43.9 %	233.9 %	69.4 %	118.2 %	527.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0004 ppm	96.7519 %	97.7626 %	97.4264 %	97.3716 %	99.0675 %	98.2357 %
Concentration per Run 1	0.0007 ppm	96.1088 %	97.7560 %	97.4658 %	97.2344 %	99.2523 %	98.6803 %
Concentration per Run 2	0.0004 ppm	97.1521 %	97.4700 %	97.3554 %	97.5674 %	98.7499 %	98.0131 %
Concentration per Run 3	0.0001 ppm	96.9949 %	98.0616 %	97.4581 %	97.3132 %	99.2003 %	98.0139 %
Recovery Percentage 1	7.806 %						
Concentration RSD	69.7 %	0.6 %	0.3 %	0.1 %	0.2 %	0.3 %	0.4 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: xTest ICV 1700 CEY
Analysis started at: 9/10/2024 7:13:47 PM
Rack 2
Vial 32
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.4835 ppm	0.4776 ppm	0.4505 ppm	0.4521 ppm	0.4976 ppm	0.4888 ppm	0.4753 ppm
Concentration per Run 1	0.4789 ppm	0.4860 ppm	0.4465 ppm	0.4499 ppm	0.4977 ppm	0.4879 ppm	0.4774 ppm
Concentration per Run 2	0.4859 ppm	0.4752 ppm	0.4510 ppm	0.4512 ppm	0.4977 ppm	0.4896 ppm	0.4762 ppm
Concentration per Run 3	0.4856 ppm	0.4716 ppm	0.4541 ppm	0.4550 ppm	0.4974 ppm	0.4888 ppm	0.4722 ppm
Concentration RSD	0.8 %	1.6 %	0.8 %	0.6 %	0.0 %	0.2 %	0.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.4754 ppm	0.4834 ppm	0.4710 ppm	0.4687 ppm	0.4821 ppm	5.2110 ppm	0.5688 ppm
Concentration per Run 1	0.4696 ppm	0.4794 ppm	0.4661 ppm	0.4654 ppm	0.4837 ppm	5.2442 ppm	0.5739 ppm
Concentration per Run 2	0.4787 ppm	0.4864 ppm	0.4739 ppm	0.4703 ppm	0.4792 ppm	5.1586 ppm	0.5620 ppm
Concentration per Run 3	0.4779 ppm	0.4843 ppm	0.4730 ppm	0.4704 ppm	0.4835 ppm	5.2303 ppm	0.5705 ppm
Concentration RSD	1.1 %	0.7 %	0.9 %	0.6 %	0.5 %	0.9 %	1.1 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.4762 ppm	0.4726 ppm	0.4647 ppm	8.1028 ppm	0.4832 ppm	0.4692 ppm	0.4642 ppm
Concentration per Run 1	0.4705 ppm	0.4728 ppm	0.4582 ppm	8.1464 ppm	0.4767 ppm	0.4686 ppm	0.4586 ppm
Concentration per Run 2	0.4795 ppm	0.4725 ppm	0.4673 ppm	8.0594 ppm	0.4881 ppm	0.4708 ppm	0.4637 ppm
Concentration per Run 3	0.4785 ppm	0.4726 ppm	0.4688 ppm	8.1026 ppm	0.4849 ppm	0.4683 ppm	0.4702 ppm
Concentration RSD	1.0 %	0.0 %	1.2 %	0.5 %	1.2 %	0.3 %	1.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4590 ppm	5.2204 ppm	0.5475 ppm	0.5194 ppm	0.4813 ppm	0.4611 ppm	0.4718 ppm
Concentration per Run 1	0.4557 ppm	5.1767 ppm	0.5414 ppm	0.5187 ppm	0.4741 ppm	0.4572 ppm	0.4668 ppm
Concentration per Run 2	0.4602 ppm	5.2339 ppm	0.5522 ppm	0.5213 ppm	0.4863 ppm	0.4606 ppm	0.4752 ppm
Concentration per Run 3	0.4609 ppm	5.2506 ppm	0.5488 ppm	0.5182 ppm	0.4837 ppm	0.4654 ppm	0.4734 ppm
Concentration RSD	0.6 %	0.7 %	1.0 %	0.3 %	1.3 %	0.9 %	0.9 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4729 ppm	101.1481 %	101.2308 %	97.8590 %	96.8672 %	99.3433 %	97.3129 %
Concentration per Run 1	0.4684 ppm	102.2295 %	101.0947 %	98.1125 %	97.5256 %	99.2938 %	97.4389 %
Concentration per Run 2	0.4751 ppm	100.6376 %	101.3239 %	97.5316 %	96.6283 %	99.5643 %	96.8803 %
Concentration per Run 3	0.4752 ppm	100.5772 %	101.2739 %	97.9328 %	96.4477 %	99.1719 %	97.6196 %
Concentration RSD	0.8 %	0.9 %	0.1 %	0.3 %	0.6 %	0.2 %	0.4 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450423-04D2 WG1968230
Analysis started at: 9/10/2024 7:26:56 PM
Rack 2
Vial 23
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0015 ppm	69.7007 ppm	0.0467 ppm	0.0176 ppm	2.3854 ppm	0.0031 ppm	287.6189 ppm
Concentration per Run 1	0.0015 ppm	69.7666 ppm	0.0470 ppm	0.0169 ppm	2.3964 ppm	0.0031 ppm	287.7819 ppm
Concentration per Run 2	0.0014 ppm	69.5738 ppm	0.0472 ppm	0.0179 ppm	2.3909 ppm	0.0031 ppm	286.3325 ppm
Concentration per Run 3	0.0017 ppm	69.7616 ppm	0.0458 ppm	0.0179 ppm	2.3688 ppm	0.0032 ppm	288.7422 ppm
Concentration RSD	11.3 %	0.2 %	1.6 %	3.3 %	0.6 %	1.5 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0034 ppm	0.0500 ppm	0.1532 ppm	0.4124 ppm	114.3668 ppm	19.8578 ppm	0.1048 ppm
Concentration per Run 1	0.0033 ppm	0.0501 ppm	0.1527 ppm	0.4119 ppm	114.8156 ppm	20.0159 ppm	0.1079 ppm
Concentration per Run 2	0.0035 ppm	0.0495 ppm	0.1535 ppm	0.4114 ppm	114.2331 ppm	19.8674 ppm	0.1047 ppm
Concentration per Run 3	0.0034 ppm	0.0504 ppm	0.1534 ppm	0.4140 ppm	114.0517 ppm	19.6901 ppm	0.1016 ppm
Concentration RSD	2.6 %	0.9 %	0.3 %	0.3 %	0.3 %	0.8 %	3.0 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	77.3075 ppm	2.0067 ppm	0.0039 ppm	1.8545 ppm	0.1263 ppm	3.4410 ppm	0.0092 ppm
Concentration per Run 1	77.3326 ppm	2.0155 ppm	0.0035 ppm	1.8573 ppm	0.1262 ppm	3.4382 ppm	0.0100 ppm
Concentration per Run 2	77.1923 ppm	1.9958 ppm	0.0041 ppm	1.8575 ppm	0.1256 ppm	3.4425 ppm	0.0092 ppm
Concentration per Run 3	77.3977 ppm	2.0090 ppm	0.0040 ppm	1.8486 ppm	0.1272 ppm	3.4421 ppm	0.0083 ppm
Concentration RSD	0.1 %	0.5 %	9.0 %	0.3 %	0.6 %	0.1 %	8.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0011 ppm	4.6558 ppm	0.0537 ppm	0.7006 ppm	5.1089 ppm	0.0050 ppm	0.2677 ppm
Concentration per Run 1	0.0019 ppm	4.6555 ppm	0.0527 ppm	0.7047 ppm	5.1068 ppm	0.0051 ppm	0.2672 ppm
Concentration per Run 2	-0.0006 ppm	4.6505 ppm	0.0543 ppm	0.6965 ppm	5.1079 ppm	0.0052 ppm	0.2672 ppm
Concentration per Run 3	0.0019 ppm	4.6615 ppm	0.0540 ppm	0.7007 ppm	5.1119 ppm	0.0046 ppm	0.2687 ppm
Concentration RSD	130.3 %	0.1 %	1.6 %	0.6 %	0.1 %	6.4 %	0.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	2.3250 ppm	97.7289 %	103.1309 %	82.3596 %	105.1755 %	115.3943 %	106.3476 %
Concentration per Run 1	2.3232 ppm	97.9620 %	103.3861 %	82.4501 %	105.3644 %	115.6803 %	106.2583 %
Concentration per Run 2	2.3229 ppm	97.5937 %	103.9867 %	82.2600 %	105.1415 %	116.1005 %	106.2091 %
Concentration per Run 3	2.3288 ppm	97.6310 %	102.0198 %	82.3688 %	105.0205 %	114.4021 %	106.5753 %
Concentration RSD	0.1 %	0.2 %	1.0 %	0.1 %	0.2 %	0.8 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450423-05D2 WG1968230
Analysis started at: 9/10/2024 7:31:00 PM
Rack 2
Vial 24
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0015 ppm	108.1067 ppm	0.0496 ppm	0.0244 ppm	7.2555 ppm	0.0032 ppm	260.4590 ppm
Concentration per Run 1	0.0016 ppm	107.5873 ppm	0.0494 ppm	0.0246 ppm	7.2525 ppm	0.0032 ppm	258.7908 ppm
Concentration per Run 2	0.0014 ppm	108.5688 ppm	0.0499 ppm	0.0236 ppm	7.2860 ppm	0.0032 ppm	263.1758 ppm
Concentration per Run 3	0.0015 ppm	108.1641 ppm	0.0495 ppm	0.0250 ppm	7.2280 ppm	0.0031 ppm	259.4105 ppm
Concentration RSD	6.2 %	0.5 %	0.6 %	3.0 %	0.4 %	2.1 %	0.9 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0036 ppm	0.0938 ppm	0.2831 ppm	0.4530 ppm	183.4720 ppm	56.2221 ppm	0.2097 ppm
Concentration per Run 1	0.0035 ppm	0.0921 ppm	0.2805 ppm	0.4459 ppm	183.4281 ppm	56.0064 ppm	0.2089 ppm
Concentration per Run 2	0.0037 ppm	0.0944 ppm	0.2836 ppm	0.4559 ppm	184.2260 ppm	56.3736 ppm	0.2104 ppm
Concentration per Run 3	0.0036 ppm	0.0949 ppm	0.2852 ppm	0.4571 ppm	182.7619 ppm	56.2864 ppm	0.2099 ppm
Concentration RSD	3.0 %	1.6 %	0.8 %	1.4 %	0.4 %	0.3 %	0.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	63.2389 ppm	2.8365 ppm	0.0056 ppm	3.9676 ppm	0.1969 ppm	6.5599 ppm	0.0068 ppm
Concentration per Run 1	62.6136 ppm	2.8222 ppm	0.0053 ppm	3.9609 ppm	0.1958 ppm	6.5318 ppm	0.0052 ppm
Concentration per Run 2	63.8031 ppm	2.8572 ppm	0.0058 ppm	3.9656 ppm	0.1967 ppm	6.5634 ppm	0.0077 ppm
Concentration per Run 3	63.3002 ppm	2.8302 ppm	0.0057 ppm	3.9764 ppm	0.1981 ppm	6.5845 ppm	0.0074 ppm
Concentration RSD	0.9 %	0.6 %	4.1 %	0.2 %	0.6 %	0.4 %	20.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0004 ppm	2.2230 ppm	0.0621 ppm	0.7168 ppm	8.3433 ppm	0.0080 ppm	0.3426 ppm
Concentration per Run 1	-0.0002 ppm	2.1934 ppm	0.0606 ppm	0.7190 ppm	8.2564 ppm	0.0060 ppm	0.3386 ppm
Concentration per Run 2	-0.0022 ppm	2.2409 ppm	0.0634 ppm	0.7198 ppm	8.3754 ppm	0.0087 ppm	0.3447 ppm
Concentration per Run 3	0.0013 ppm	2.2347 ppm	0.0624 ppm	0.7115 ppm	8.3980 ppm	0.0095 ppm	0.3445 ppm
Concentration RSD	486.6 %	1.2 %	2.2 %	0.6 %	0.9 %	22.7 %	1.0 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	4.2029 ppm	101.0276 %	105.4709 %	79.8643 %	111.5233 %	122.3860 %	113.3492 %
Concentration per Run 1	4.1439 ppm	102.1259 %	105.9067 %	80.3700 %	111.9286 %	122.0921 %	113.5794 %
Concentration per Run 2	4.2456 ppm	100.0464 %	103.9206 %	79.6220 %	110.4291 %	121.6804 %	113.2015 %
Concentration per Run 3	4.2190 ppm	100.9105 %	106.5854 %	79.6009 %	112.2122 %	123.3856 %	113.2669 %
Concentration RSD	1.3 %	1.0 %	1.3 %	0.5 %	0.9 %	0.7 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450423-06D2 WG1968230
Analysis started at: 9/10/2024 7:34:58 PM
Rack 2
Vial 25
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0010 ppm	98.2631 ppm	0.0515 ppm	0.0150 ppm	0.9866 ppm	0.0032 ppm	135.0813 ppm
Concentration per Run 1	0.0012 ppm	97.5420 ppm	0.0536 ppm	0.0159 ppm	0.9825 ppm	0.0031 ppm	134.3600 ppm
Concentration per Run 2	0.0010 ppm	98.3369 ppm	0.0497 ppm	0.0139 ppm	0.9867 ppm	0.0032 ppm	134.9897 ppm
Concentration per Run 3	0.0009 ppm	98.9104 ppm	0.0512 ppm	0.0153 ppm	0.9906 ppm	0.0032 ppm	135.8941 ppm
Concentration RSD	15.8 %	0.7 %	3.8 %	6.7 %	0.4 %	0.5 %	0.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0045 ppm	0.0641 ppm	0.2333 ppm	0.4800 ppm	176.6535 ppm	24.1836 ppm	0.0938 ppm
Concentration per Run 1	0.0044 ppm	0.0634 ppm	0.2330 ppm	0.4775 ppm	176.1291 ppm	23.9659 ppm	0.0933 ppm
Concentration per Run 2	0.0045 ppm	0.0649 ppm	0.2339 ppm	0.4826 ppm	176.5078 ppm	24.1555 ppm	0.0934 ppm
Concentration per Run 3	0.0045 ppm	0.0639 ppm	0.2330 ppm	0.4798 ppm	177.3236 ppm	24.4293 ppm	0.0946 ppm
Concentration RSD	1.4 %	1.2 %	0.2 %	0.5 %	0.3 %	1.0 %	0.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	76.4686 ppm	2.2935 ppm	0.0090 ppm	1.0196 ppm	0.1424 ppm	1.4850 ppm	0.0082 ppm
Concentration per Run 1	76.1410 ppm	2.2790 ppm	0.0091 ppm	1.0133 ppm	0.1420 ppm	1.4938 ppm	0.0062 ppm
Concentration per Run 2	76.7682 ppm	2.2935 ppm	0.0090 ppm	1.0176 ppm	0.1429 ppm	1.4814 ppm	0.0117 ppm
Concentration per Run 3	76.4964 ppm	2.3081 ppm	0.0090 ppm	1.0281 ppm	0.1421 ppm	1.4796 ppm	0.0068 ppm
Concentration RSD	0.4 %	0.6 %	1.0 %	0.7 %	0.4 %	0.5 %	36.3 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0016 ppm	1.6409 ppm	0.0323 ppm	0.2187 ppm	5.0215 ppm	0.0039 ppm	0.3254 ppm
Concentration per Run 1	0.0013 ppm	1.6364 ppm	0.0314 ppm	0.2181 ppm	5.0049 ppm	0.0033 ppm	0.3234 ppm
Concentration per Run 2	0.0019 ppm	1.6458 ppm	0.0330 ppm	0.2186 ppm	5.0456 ppm	0.0046 ppm	0.3267 ppm
Concentration per Run 3	0.0016 ppm	1.6405 ppm	0.0326 ppm	0.2196 ppm	5.0140 ppm	0.0039 ppm	0.3259 ppm
Concentration RSD	19.7 %	0.3 %	2.5 %	0.4 %	0.4 %	16.6 %	0.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	1.3455 ppm	102.6848 %	107.8198 %	85.4616 %	113.6625 %	124.1734 %	114.4782 %
Concentration per Run 1	1.3462 ppm	103.0569 %	108.5470 %	85.2533 %	113.0488 %	124.5866 %	114.1888 %
Concentration per Run 2	1.3540 ppm	102.3393 %	108.0000 %	85.5388 %	113.7345 %	124.0355 %	114.7790 %
Concentration per Run 3	1.3364 ppm	102.6580 %	106.9123 %	85.5928 %	114.2042 %	123.8982 %	114.4668 %
Concentration RSD	0.7 %	0.4 %	0.8 %	0.2 %	0.5 %	0.3 %	0.3 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450423-07D2 WG1968230
Analysis started at: 9/10/2024 7:38:55 PM
Rack 2
Vial 26
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0012 ppm	49.2466 ppm	0.0364 ppm	0.0287 ppm	0.9824 ppm	0.0024 ppm	217.3621 ppm
Concentration per Run 1	0.0010 ppm	49.4305 ppm	0.0345 ppm	0.0288 ppm	0.9902 ppm	0.0023 ppm	216.6145 ppm
Concentration per Run 2	0.0016 ppm	49.0830 ppm	0.0386 ppm	0.0292 ppm	0.9729 ppm	0.0024 ppm	217.5935 ppm
Concentration per Run 3	0.0010 ppm	49.2264 ppm	0.0360 ppm	0.0282 ppm	0.9842 ppm	0.0024 ppm	217.8783 ppm
Concentration RSD	28.8 %	0.4 %	5.6 %	1.7 %	0.9 %	1.4 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0025 ppm	0.0395 ppm	0.1233 ppm	1.9675 ppm	109.5576 ppm	15.6288 ppm	0.0766 ppm
Concentration per Run 1	0.0024 ppm	0.0398 ppm	0.1235 ppm	1.9666 ppm	110.2498 ppm	15.7596 ppm	0.0789 ppm
Concentration per Run 2	0.0026 ppm	0.0397 ppm	0.1234 ppm	1.9556 ppm	108.7851 ppm	15.5201 ppm	0.0760 ppm
Concentration per Run 3	0.0026 ppm	0.0391 ppm	0.1229 ppm	1.9803 ppm	109.6379 ppm	15.6068 ppm	0.0750 ppm
Concentration RSD	4.8 %	0.9 %	0.3 %	0.6 %	0.7 %	0.8 %	2.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	58.3626 ppm	2.0190 ppm	0.0059 ppm	1.2441 ppm	0.1068 ppm	1.8038 ppm	0.0058 ppm
Concentration per Run 1	58.5190 ppm	2.0232 ppm	0.0061 ppm	1.2505 ppm	0.1083 ppm	1.7974 ppm	0.0069 ppm
Concentration per Run 2	58.3271 ppm	2.0175 ppm	0.0057 ppm	1.2428 ppm	0.1064 ppm	1.8112 ppm	0.0032 ppm
Concentration per Run 3	58.2416 ppm	2.0164 ppm	0.0059 ppm	1.2389 ppm	0.1057 ppm	1.8030 ppm	0.0073 ppm
Concentration RSD	0.2 %	0.2 %	3.8 %	0.5 %	1.3 %	0.4 %	38.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0008 ppm	2.4797 ppm	0.0867 ppm	0.3772 ppm	2.9478 ppm	0.0017 ppm	0.1906 ppm
Concentration per Run 1	-0.0008 ppm	2.4743 ppm	0.0872 ppm	0.3759 ppm	2.9512 ppm	0.0024 ppm	0.1918 ppm
Concentration per Run 2	-0.0020 ppm	2.4812 ppm	0.0862 ppm	0.3759 ppm	2.9397 ppm	0.0011 ppm	0.1891 ppm
Concentration per Run 3	0.0006 ppm	2.4836 ppm	0.0869 ppm	0.3799 ppm	2.9524 ppm	0.0018 ppm	0.1908 ppm
Concentration RSD	175.9 %	0.2 %	0.6 %	0.6 %	0.2 %	38.0 %	0.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	6.5058 ppm	97.4918 %	101.0482 %	85.2456 %	100.2054 %	108.4748 %	101.3761 %
Concentration per Run 1	6.5136 ppm	97.4055 %	101.8380 %	85.4487 %	99.5424 %	108.8332 %	101.6563 %
Concentration per Run 2	6.5265 ppm	97.6142 %	100.2583 %	84.7095 %	100.6168 %	107.7203 %	100.7946 %
Concentration per Run 3	6.4774 ppm	97.4556 %	101.0484 %	85.5786 %	100.4570 %	108.8709 %	101.6772 %
Concentration RSD	0.4 %	0.1 %	0.8 %	0.5 %	0.6 %	0.6 %	0.5 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450423-08D2 WG1968230
Analysis started at: 9/10/2024 7:42:53 PM
Rack 2
Vial 27
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0008 ppm	51.9289 ppm	0.0244 ppm	0.0144 ppm	0.9913 ppm	0.0029 ppm	184.5390 ppm
Concentration per Run 1	0.0009 ppm	51.9499 ppm	0.0260 ppm	0.0135 ppm	0.9979 ppm	0.0029 ppm	184.3328 ppm
Concentration per Run 2	0.0009 ppm	51.8875 ppm	0.0223 ppm	0.0141 ppm	0.9842 ppm	0.0030 ppm	185.2494 ppm
Concentration per Run 3	0.0006 ppm	51.9494 ppm	0.0249 ppm	0.0155 ppm	0.9918 ppm	0.0028 ppm	184.0348 ppm
Concentration RSD	18.6 %	0.1 %	7.7 %	7.3 %	0.7 %	2.4 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0011 ppm	0.0380 ppm	0.1161 ppm	0.2904 ppm	92.6806 ppm	21.8634 ppm	0.0768 ppm
Concentration per Run 1	0.0010 ppm	0.0378 ppm	0.1162 ppm	0.2906 ppm	92.8010 ppm	22.0089 ppm	0.0791 ppm
Concentration per Run 2	0.0012 ppm	0.0381 ppm	0.1157 ppm	0.2889 ppm	92.0877 ppm	21.7244 ppm	0.0747 ppm
Concentration per Run 3	0.0011 ppm	0.0381 ppm	0.1165 ppm	0.2916 ppm	93.1530 ppm	21.8570 ppm	0.0765 ppm
Concentration RSD	7.5 %	0.4 %	0.4 %	0.5 %	0.6 %	0.7 %	2.9 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	41.9862 ppm	1.3035 ppm	0.0054 ppm	1.0679 ppm	0.1273 ppm	1.3603 ppm	0.0165 ppm
Concentration per Run 1	42.0492 ppm	1.3027 ppm	0.0052 ppm	1.0705 ppm	0.1278 ppm	1.3684 ppm	0.0165 ppm
Concentration per Run 2	41.7819 ppm	1.3026 ppm	0.0054 ppm	1.0664 ppm	0.1264 ppm	1.3578 ppm	0.0149 ppm
Concentration per Run 3	42.1277 ppm	1.3053 ppm	0.0056 ppm	1.0669 ppm	0.1278 ppm	1.3548 ppm	0.0181 ppm
Concentration RSD	0.4 %	0.1 %	3.4 %	0.2 %	0.7 %	0.5 %	9.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0008 ppm	2.7410 ppm	0.2665 ppm	0.4107 ppm	4.2944 ppm	0.0029 ppm	0.1950 ppm
Concentration per Run 1	-0.0012 ppm	2.7454 ppm	0.2677 ppm	0.4127 ppm	4.2872 ppm	0.0018 ppm	0.1950 ppm
Concentration per Run 2	0.0000 ppm	2.7300 ppm	0.2638 ppm	0.4111 ppm	4.2778 ppm	0.0032 ppm	0.1945 ppm
Concentration per Run 3	-0.0010 ppm	2.7477 ppm	0.2681 ppm	0.4082 ppm	4.3183 ppm	0.0035 ppm	0.1955 ppm
Concentration RSD	84.0 %	0.4 %	0.9 %	0.5 %	0.5 %	31.5 %	0.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	1.6533 ppm	98.6825 %	101.2814 %	84.8572 %	98.2544 %	105.0901 %	99.6838 %
Concentration per Run 1	1.6596 ppm	98.5232 %	101.3916 %	84.5034 %	97.6441 %	105.4025 %	99.2654 %
Concentration per Run 2	1.6352 ppm	99.3628 %	100.9317 %	85.0150 %	98.8587 %	105.0205 %	99.6439 %
Concentration per Run 3	1.6651 ppm	98.1615 %	101.5208 %	85.0533 %	98.2604 %	104.8472 %	100.1422 %
Concentration RSD	1.0 %	0.6 %	0.3 %	0.4 %	0.6 %	0.3 %	0.4 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450423-09D2 WG1968230
Analysis started at: 9/10/2024 7:46:50 PM
Rack 2
Vial 28
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0013 ppm	216.6240 ppm	0.0181 ppm	0.0098 ppm	2.7840 ppm	0.0080 ppm	33.3207 ppm
Concentration per Run 1	0.0014 ppm	216.9719 ppm	0.0211 ppm	0.0101 ppm	2.8036 ppm	0.0078 ppm	33.2703 ppm
Concentration per Run 2	0.0010 ppm	217.5461 ppm	0.0164 ppm	0.0096 ppm	2.7952 ppm	0.0081 ppm	33.5416 ppm
Concentration per Run 3	0.0014 ppm	215.3539 ppm	0.0168 ppm	0.0097 ppm	2.7530 ppm	0.0080 ppm	33.1500 ppm
Concentration RSD	19.7 %	0.5 %	14.5 %	2.8 %	1.0 %	2.1 %	0.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0012 ppm	0.1650 ppm	0.2988 ppm	0.6045 ppm	349.7241 ppm	81.0622 ppm	0.3467 ppm
Concentration per Run 1	0.0012 ppm	0.1652 ppm	0.2982 ppm	0.6027 ppm	351.2951 ppm	81.7677 ppm	0.3500 ppm
Concentration per Run 2	0.0012 ppm	0.1653 ppm	0.2998 ppm	0.6076 ppm	351.4966 ppm	81.2305 ppm	0.3475 ppm
Concentration per Run 3	0.0011 ppm	0.1645 ppm	0.2983 ppm	0.6032 ppm	346.3806 ppm	80.1883 ppm	0.3426 ppm
Concentration RSD	6.9 %	0.3 %	0.3 %	0.4 %	0.8 %	1.0 %	1.1 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	86.2062 ppm	4.3606 ppm	0.0029 ppm	1.5643 ppm	0.2603 ppm	0.5677 ppm	0.0035 ppm
Concentration per Run 1	86.1900 ppm	4.3726 ppm	0.0028 ppm	1.5766 ppm	0.2593 ppm	0.5703 ppm	0.0039 ppm
Concentration per Run 2	86.4533 ppm	4.3772 ppm	0.0029 ppm	1.5721 ppm	0.2616 ppm	0.5691 ppm	0.0042 ppm
Concentration per Run 3	85.9752 ppm	4.3321 ppm	0.0029 ppm	1.5443 ppm	0.2601 ppm	0.5636 ppm	0.0023 ppm
Concentration RSD	0.3 %	0.6 %	2.6 %	1.1 %	0.5 %	0.6 %	29.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0011 ppm	1.4287 ppm	0.0179 ppm	0.2719 ppm	13.7037 ppm	0.0142 ppm	0.7432 ppm
Concentration per Run 1	-0.0038 ppm	1.4214 ppm	0.0179 ppm	0.2694 ppm	13.6873 ppm	0.0168 ppm	0.7406 ppm
Concentration per Run 2	-0.0013 ppm	1.4350 ppm	0.0171 ppm	0.2741 ppm	13.7250 ppm	0.0137 ppm	0.7454 ppm
Concentration per Run 3	0.0017 ppm	1.4298 ppm	0.0186 ppm	0.2723 ppm	13.6988 ppm	0.0120 ppm	0.7437 ppm
Concentration RSD	248.7 %	0.5 %	4.2 %	0.9 %	0.1 %	17.2 %	0.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.7547 ppm	110.2145 %	115.3482 %	80.7576 %	127.4354 %	140.2420 %	130.9660 %
Concentration per Run 1	0.7525 ppm	110.3161 %	116.3727 %	80.2255 %	126.8182 %	141.4787 %	130.2847 %
Concentration per Run 2	0.7594 ppm	109.8302 %	114.0320 %	80.6099 %	127.3430 %	139.2707 %	131.1290 %
Concentration per Run 3	0.7523 ppm	110.4974 %	115.6399 %	81.4374 %	128.1452 %	139.9767 %	131.4843 %
Concentration RSD	0.5 %	0.3 %	1.0 %	0.8 %	0.5 %	0.8 %	0.5 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450423-11D2 WG1968230
Analysis started at: 9/10/2024 7:50:47 PM
Rack 2
Vial 29
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0021 ppm	72.0045 ppm	0.0494 ppm	0.0170 ppm	2.5793 ppm	0.0032 ppm	181.2482 ppm
Concentration per Run 1	0.0019 ppm	72.8324 ppm	0.0484 ppm	0.0165 ppm	2.5981 ppm	0.0030 ppm	180.9668 ppm
Concentration per Run 2	0.0021 ppm	71.6201 ppm	0.0503 ppm	0.0170 ppm	2.5787 ppm	0.0033 ppm	182.0660 ppm
Concentration per Run 3	0.0023 ppm	71.5611 ppm	0.0493 ppm	0.0176 ppm	2.5611 ppm	0.0033 ppm	180.7116 ppm
Concentration RSD	8.7 %	1.0 %	1.9 %	3.3 %	0.7 %	5.0 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0107 ppm	0.0527 ppm	0.1848 ppm	0.6763 ppm	111.8490 ppm	16.8256 ppm	0.0938 ppm
Concentration per Run 1	0.0106 ppm	0.0531 ppm	0.1852 ppm	0.6745 ppm	113.2156 ppm	17.4093 ppm	0.0984 ppm
Concentration per Run 2	0.0107 ppm	0.0524 ppm	0.1840 ppm	0.6731 ppm	111.5636 ppm	16.5524 ppm	0.0922 ppm
Concentration per Run 3	0.0107 ppm	0.0525 ppm	0.1852 ppm	0.6814 ppm	110.7678 ppm	16.5152 ppm	0.0907 ppm
Concentration RSD	0.6 %	0.7 %	0.4 %	0.7 %	1.1 %	3.0 %	4.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	57.5102 ppm	1.9627 ppm	0.0074 ppm	1.5862 ppm	0.1310 ppm	2.2167 ppm	0.0057 ppm
Concentration per Run 1	57.5176 ppm	1.9754 ppm	0.0075 ppm	1.6214 ppm	0.1308 ppm	2.2130 ppm	0.0019 ppm
Concentration per Run 2	57.4769 ppm	1.9585 ppm	0.0073 ppm	1.5684 ppm	0.1307 ppm	2.2163 ppm	0.0077 ppm
Concentration per Run 3	57.5361 ppm	1.9541 ppm	0.0074 ppm	1.5687 ppm	0.1315 ppm	2.2208 ppm	0.0076 ppm
Concentration RSD	0.1 %	0.6 %	1.3 %	1.9 %	0.3 %	0.2 %	57.6 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0014 ppm	1.8615 ppm	0.0504 ppm	0.5520 ppm	4.4280 ppm	0.0030 ppm	0.3041 ppm
Concentration per Run 1	-0.0004 ppm	1.8617 ppm	0.0498 ppm	0.5434 ppm	4.4272 ppm	0.0044 ppm	0.3050 ppm
Concentration per Run 2	0.0018 ppm	1.8525 ppm	0.0497 ppm	0.5586 ppm	4.4211 ppm	0.0011 ppm	0.3037 ppm
Concentration per Run 3	0.0028 ppm	1.8703 ppm	0.0519 ppm	0.5539 ppm	4.4358 ppm	0.0034 ppm	0.3035 ppm
Concentration RSD	117.3 %	0.5 %	2.4 %	1.4 %	0.2 %	56.7 %	0.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	3.7528 ppm	99.0497 %	103.0455 %	84.7891 %	106.1835 %	114.8081 %	107.8192 %
Concentration per Run 1	3.7483 ppm	99.2010 %	103.7976 %	84.9393 %	105.7986 %	115.6003 %	107.9910 %
Concentration per Run 2	3.7306 ppm	99.1396 %	101.8572 %	84.7029 %	106.2172 %	113.8992 %	107.6700 %
Concentration per Run 3	3.7797 ppm	98.8084 %	103.4817 %	84.7252 %	106.5347 %	114.9248 %	107.7966 %
Concentration RSD	0.7 %	0.2 %	1.0 %	0.2 %	0.3 %	0.7 %	0.1 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450423-12D2 WG1968230
Analysis started at: 9/10/2024 7:54:45 PM
Rack 2
Vial 30
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0010 ppm	69.7448 ppm	0.0276 ppm	0.0136 ppm	1.4441 ppm	0.0020 ppm	151.9894 ppm
Concentration per Run 1	0.0013 ppm	69.5405 ppm	0.0260 ppm	0.0141 ppm	1.4306 ppm	0.0020 ppm	151.5078 ppm
Concentration per Run 2	0.0010 ppm	70.1652 ppm	0.0275 ppm	0.0135 ppm	1.4533 ppm	0.0021 ppm	152.7640 ppm
Concentration per Run 3	0.0007 ppm	69.5285 ppm	0.0291 ppm	0.0134 ppm	1.4483 ppm	0.0020 ppm	151.6966 ppm
Concentration RSD	25.9 %	0.5 %	5.8 %	2.7 %	0.8 %	0.8 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0009 ppm	0.0763 ppm	0.3326 ppm	0.3201 ppm	142.3852 ppm	23.0347 ppm	0.1096 ppm
Concentration per Run 1	0.0011 ppm	0.0762 ppm	0.3322 ppm	0.3195 ppm	141.5336 ppm	22.9767 ppm	0.1093 ppm
Concentration per Run 2	0.0007 ppm	0.0763 ppm	0.3323 ppm	0.3196 ppm	143.1690 ppm	23.1117 ppm	0.1107 ppm
Concentration per Run 3	0.0009 ppm	0.0763 ppm	0.3333 ppm	0.3211 ppm	142.4529 ppm	23.0158 ppm	0.1089 ppm
Concentration RSD	20.0 %	0.1 %	0.2 %	0.3 %	0.6 %	0.3 %	0.9 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	44.3405 ppm	4.1374 ppm	0.0169 ppm	1.1781 ppm	0.1777 ppm	0.8495 ppm	0.0030 ppm
Concentration per Run 1	44.3096 ppm	4.1193 ppm	0.0167 ppm	1.1701 ppm	0.1763 ppm	0.8528 ppm	0.0026 ppm
Concentration per Run 2	44.4351 ppm	4.1604 ppm	0.0173 ppm	1.1882 ppm	0.1788 ppm	0.8492 ppm	0.0030 ppm
Concentration per Run 3	44.2768 ppm	4.1324 ppm	0.0166 ppm	1.1761 ppm	0.1779 ppm	0.8467 ppm	0.0035 ppm
Concentration RSD	0.2 %	0.5 %	2.1 %	0.8 %	0.7 %	0.4 %	14.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0016 ppm	2.0993 ppm	0.0242 ppm	0.3666 ppm	5.0303 ppm	0.0015 ppm	0.2482 ppm
Concentration per Run 1	-0.0031 ppm	2.1104 ppm	0.0237 ppm	0.3634 ppm	5.0146 ppm	0.0027 ppm	0.2461 ppm
Concentration per Run 2	-0.0013 ppm	2.0971 ppm	0.0250 ppm	0.3693 ppm	5.0307 ppm	0.0009 ppm	0.2500 ppm
Concentration per Run 3	-0.0005 ppm	2.0905 ppm	0.0238 ppm	0.3671 ppm	5.0455 ppm	0.0007 ppm	0.2486 ppm
Concentration RSD	80.2 %	0.5 %	3.1 %	0.8 %	0.3 %	74.5 %	0.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.9855 ppm	99.8962 %	103.3599 %	84.5012 %	107.3632 %	116.0167 %	108.5596 %
Concentration per Run 1	0.9892 ppm	99.8799 %	103.4177 %	84.4916 %	106.6535 %	115.7214 %	108.3540 %
Concentration per Run 2	0.9879 ppm	99.8118 %	103.3040 %	84.4708 %	107.3030 %	116.6450 %	108.8772 %
Concentration per Run 3	0.9796 ppm	99.9970 %	103.3581 %	84.5411 %	108.1332 %	115.6838 %	108.4474 %
Concentration RSD	0.5 %	0.1 %	0.1 %	0.0 %	0.7 %	0.5 %	0.3 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450423-13D2 WG1968230
Analysis started at: 9/10/2024 7:58:42 PM
Rack 2
Vial 31
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0014 ppm	121.1382 ppm	0.0388 ppm	0.0129 ppm	3.7676 ppm	0.0039 ppm	139.5475 ppm
Concentration per Run 1	0.0012 ppm	121.4493 ppm	0.0398 ppm	0.0144 ppm	3.7745 ppm	0.0039 ppm	140.0274 ppm
Concentration per Run 2	0.0015 ppm	120.9326 ppm	0.0387 ppm	0.0121 ppm	3.7563 ppm	0.0040 ppm	139.6587 ppm
Concentration per Run 3	0.0017 ppm	121.0326 ppm	0.0378 ppm	0.0124 ppm	3.7719 ppm	0.0038 ppm	138.9563 ppm
Concentration RSD	18.5 %	0.2 %	2.6 %	9.7 %	0.3 %	2.2 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0026 ppm	0.1079 ppm	0.2712 ppm	0.6597 ppm	219.3866 ppm	56.1877 ppm	0.2149 ppm
Concentration per Run 1	0.0026 ppm	0.1077 ppm	0.2707 ppm	0.6590 ppm	220.4375 ppm	56.5244 ppm	0.2172 ppm
Concentration per Run 2	0.0027 ppm	0.1069 ppm	0.2712 ppm	0.6567 ppm	219.1288 ppm	55.9521 ppm	0.2122 ppm
Concentration per Run 3	0.0026 ppm	0.1092 ppm	0.2716 ppm	0.6633 ppm	218.5935 ppm	56.0865 ppm	0.2154 ppm
Concentration RSD	1.2 %	1.1 %	0.2 %	0.5 %	0.4 %	0.5 %	1.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	57.3979 ppm	3.3230 ppm	0.0070 ppm	1.5457 ppm	0.2168 ppm	2.8412 ppm	0.0082 ppm
Concentration per Run 1	57.3265 ppm	3.3332 ppm	0.0069 ppm	1.5546 ppm	0.2165 ppm	2.8452 ppm	0.0091 ppm
Concentration per Run 2	57.1032 ppm	3.3246 ppm	0.0068 ppm	1.5444 ppm	0.2154 ppm	2.8514 ppm	0.0084 ppm
Concentration per Run 3	57.7642 ppm	3.3113 ppm	0.0073 ppm	1.5380 ppm	0.2186 ppm	2.8270 ppm	0.0071 ppm
Concentration RSD	0.6 %	0.3 %	4.1 %	0.5 %	0.8 %	0.4 %	13.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0012 ppm	1.3923 ppm	0.0680 ppm	0.4090 ppm	10.6210 ppm	0.0079 ppm	0.3688 ppm
Concentration per Run 1	-0.0018 ppm	1.3929 ppm	0.0671 ppm	0.4097 ppm	10.6160 ppm	0.0085 ppm	0.3686 ppm
Concentration per Run 2	-0.0007 ppm	1.3881 ppm	0.0678 ppm	0.4096 ppm	10.5898 ppm	0.0072 ppm	0.3669 ppm
Concentration per Run 3	-0.0011 ppm	1.3957 ppm	0.0691 ppm	0.4076 ppm	10.6572 ppm	0.0080 ppm	0.3708 ppm
Concentration RSD	48.6 %	0.3 %	1.5 %	0.3 %	0.3 %	8.4 %	0.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	2.8749 ppm	102.6526 %	106.2813 %	79.4700 %	112.3223 %	121.6389 %	113.8937 %
Concentration per Run 1	2.8642 ppm	102.7404 %	105.9360 %	79.4513 %	111.7594 %	121.4507 %	114.0535 %
Concentration per Run 2	2.8543 ppm	103.2291 %	105.6909 %	79.5657 %	112.7719 %	121.0780 %	113.9776 %
Concentration per Run 3	2.9062 ppm	101.9883 %	107.2170 %	79.3928 %	112.4355 %	122.3881 %	113.6501 %
Concentration RSD	1.0 %	0.6 %	0.8 %	0.1 %	0.5 %	0.6 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCV
Analysis started at: 9/10/2024 8:02:39 PM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.5081 ppm	0.4963 ppm	0.4680 ppm	0.4696 ppm	0.5180 ppm	0.5079 ppm	0.4967 ppm
Concentration per Run 1	0.5075 ppm	0.4911 ppm	0.4651 ppm	0.4712 ppm	0.5140 ppm	0.5061 ppm	0.4977 ppm
Concentration per Run 2	0.5094 ppm	0.5040 ppm	0.4708 ppm	0.4713 ppm	0.5189 ppm	0.5072 ppm	0.4921 ppm
Concentration per Run 3	0.5074 ppm	0.4938 ppm	0.4680 ppm	0.4665 ppm	0.5209 ppm	0.5105 ppm	0.5004 ppm
Recovery Percentage 1	101.623 %	99.260 %	93.597 %	93.929 %	103.592 %	101.585 %	99.342 %
Concentration RSD	0.2 %	1.4 %	0.6 %	0.6 %	0.7 %	0.4 %	0.8 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.5007 ppm	0.5073 ppm	0.4963 ppm	0.4935 ppm	0.5188 ppm	5.4420 ppm	0.5306 ppm
Concentration per Run 1	0.5005 ppm	0.5076 ppm	0.4969 ppm	0.4946 ppm	0.5159 ppm	5.4545 ppm	0.5376 ppm
Concentration per Run 2	0.5023 ppm	0.5091 ppm	0.4964 ppm	0.4950 ppm	0.5166 ppm	5.4114 ppm	0.5219 ppm
Concentration per Run 3	0.4993 ppm	0.5052 ppm	0.4956 ppm	0.4911 ppm	0.5238 ppm	5.4602 ppm	0.5322 ppm
Recovery Percentage 1	100.145 %	101.454 %	99.265 %	98.707 %	103.754 %	108.841 %	106.119 %
Concentration RSD	0.3 %	0.4 %	0.1 %	0.4 %	0.9 %	0.5 %	1.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.5018 ppm	0.4911 ppm	0.4937 ppm	10.3535 ppm	0.5084 ppm	0.4922 ppm	0.4933 ppm
Concentration per Run 1	0.5029 ppm	0.4894 ppm	0.4914 ppm	10.2747 ppm	0.5095 ppm	0.4907 ppm	0.4933 ppm
Concentration per Run 2	0.5013 ppm	0.4898 ppm	0.4948 ppm	10.3959 ppm	0.5095 ppm	0.4931 ppm	0.4944 ppm
Concentration per Run 3	0.5011 ppm	0.4942 ppm	0.4948 ppm	10.3900 ppm	0.5061 ppm	0.4929 ppm	0.4923 ppm
Recovery Percentage 1	100.357 %	98.228 %	98.734 %	103.535 %	101.670 %	98.445 %	98.664 %
Concentration RSD	0.2 %	0.5 %	0.4 %	0.7 %	0.4 %	0.3 %	0.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4752 ppm	5.2326 ppm	0.5210 ppm	0.5314 ppm	0.5087 ppm	0.4801 ppm	0.4968 ppm
Concentration per Run 1	0.4704 ppm	5.2508 ppm	0.5237 ppm	0.5283 ppm	0.5057 ppm	0.4747 ppm	0.4954 ppm
Concentration per Run 2	0.4765 ppm	5.2301 ppm	0.5188 ppm	0.5328 ppm	0.5106 ppm	0.4834 ppm	0.4984 ppm
Concentration per Run 3	0.4788 ppm	5.2170 ppm	0.5205 ppm	0.5331 ppm	0.5096 ppm	0.4822 ppm	0.4965 ppm
Recovery Percentage 1	95.047 %	99.669 %	104.198 %	106.280 %	101.733 %	96.020 %	99.358 %
Concentration RSD	0.9 %	0.3 %	0.5 %	0.5 %	0.5 %	1.0 %	0.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4966 ppm	100.1669 %	100.7386 %	97.1314 %	95.0560 %	98.5952 %	96.3419 %
Concentration per Run 1	0.4990 ppm	100.1531 %	101.0482 %	97.4960 %	94.7341 %	98.7867 %	96.3101 %
Concentration per Run 2	0.4965 ppm	99.5775 %	100.5986 %	96.9171 %	94.6138 %	97.6590 %	96.1604 %
Concentration per Run 3	0.4943 ppm	100.7701 %	100.5689 %	96.9809 %	95.8203 %	99.3399 %	96.5552 %
Recovery Percentage 1	99.320 %						
Concentration RSD	0.5 %	0.6 %	0.3 %	0.3 %	0.7 %	0.9 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCB
Analysis started at: 9/10/2024 8:06:36 PM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0003 ppm	-0.0027 ppm	-0.0007 ppm	-0.0008 ppm	0.0000 ppm	0.0000 ppm	0.0077 ppm
Concentration per Run 1	0.0003 ppm	-0.0064 ppm	0.0006 ppm	-0.0014 ppm	-0.0001 ppm	0.0000 ppm	0.0060 ppm
Concentration per Run 2	0.0004 ppm	-0.0014 ppm	-0.0018 ppm	-0.0008 ppm	0.0000 ppm	0.0000 ppm	0.0088 ppm
Concentration per Run 3	0.0001 ppm	-0.0002 ppm	-0.0010 ppm	-0.0002 ppm	0.0002 ppm	0.0000 ppm	0.0084 ppm
Recovery Percentage 1	3.875 %	-2.661 %	-24.539 %	-2.646 %	0.392 %	0.496 %	7.713 %
Concentration RSD	63.7 %	124.2 %	169.3 %	77.0 %	365.2 %	71.4 %	19.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0001 ppm	-0.0003 ppm	0.0006 ppm	0.0047 ppm	0.0048 ppm	-0.0007 ppm
Concentration per Run 1	0.0001 ppm	-0.0001 ppm	-0.0002 ppm	0.0007 ppm	0.0061 ppm	0.0124 ppm	-0.0021 ppm
Concentration per Run 2	0.0000 ppm	-0.0001 ppm	-0.0001 ppm	0.0004 ppm	0.0040 ppm	-0.0151 ppm	0.0007 ppm
Concentration per Run 3	0.0000 ppm	-0.0002 ppm	-0.0006 ppm	0.0007 ppm	0.0039 ppm	0.0171 ppm	-0.0006 ppm
Recovery Percentage 1	0.423 %	-0.581 %	-3.027 %	5.895 %	9.330 %	0.192 %	-6.587 %
Concentration RSD	418.1 %	79.6 %	75.4 %	23.6 %	27.2 %	362.0 %	216.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0009 ppm	0.0001 ppm	0.0017 ppm	0.0055 ppm	0.0005 ppm	-0.0004 ppm	0.0011 ppm
Concentration per Run 1	0.0001 ppm	0.0001 ppm	0.0018 ppm	0.0053 ppm	0.0006 ppm	-0.0006 ppm	0.0007 ppm
Concentration per Run 2	0.0011 ppm	0.0002 ppm	0.0015 ppm	0.0057 ppm	0.0008 ppm	-0.0005 ppm	0.0010 ppm
Concentration per Run 3	0.0015 ppm	0.0000 ppm	0.0019 ppm	0.0057 ppm	0.0002 ppm	-0.0001 ppm	0.0016 ppm
Recovery Percentage 1	0.902 %	0.912 %	3.477 %	0.277 %	2.122 %	-4.152 %	2.182 %
Concentration RSD	80.4 %	127.2 %	12.6 %	3.5 %	60.3 %	59.1 %	39.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0001 ppm	-0.0192 ppm	-0.0005 ppm	0.0000 ppm	0.0000 ppm	-0.0006 ppm	0.0000 ppm
Concentration per Run 1	0.0001 ppm	-0.0191 ppm	-0.0006 ppm	0.0000 ppm	0.0000 ppm	0.0001 ppm	-0.0001 ppm
Concentration per Run 2	0.0003 ppm	-0.0197 ppm	-0.0009 ppm	0.0001 ppm	0.0000 ppm	-0.0010 ppm	0.0001 ppm
Concentration per Run 3	-0.0007 ppm	-0.0189 ppm	-0.0002 ppm	0.0000 ppm	0.0000 ppm	-0.0009 ppm	-0.0002 ppm
Recovery Percentage 1	-1.181 %	-3.843 %	-1.099 %	0.190 %	0.163 %	-3.149 %	-0.496 %
Concentration RSD	472.0 %	2.2 %	62.5 %	207.7 %	265.1 %	94.1 %	304.9 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0004 ppm	95.7492 %	96.4436 %	96.7115 %	96.0668 %	97.3687 %	97.0751 %
Concentration per Run 1	0.0004 ppm	94.7085 %	95.8084 %	96.6784 %	95.6874 %	96.8873 %	97.1907 %
Concentration per Run 2	0.0003 ppm	95.8196 %	96.6964 %	96.8847 %	96.0474 %	97.6641 %	97.4037 %
Concentration per Run 3	0.0004 ppm	96.7196 %	96.8262 %	96.5715 %	96.4655 %	97.5548 %	96.6310 %
Recovery Percentage 1	7.677 %						
Concentration RSD	26.4 %	1.1 %	0.6 %	0.2 %	0.4 %	0.4 %	0.4 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1969323-2d2 WG1969323
Analysis started at: 9/10/2024 8:11:09 PM
Rack 2
Vial 33
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.2401 ppm	17.6758 ppm	1.1735 ppm	0.8708 ppm	1.2420 ppm	0.6635 ppm	19.4574 ppm
Concentration per Run 1	0.2416 ppm	17.6357 ppm	1.1763 ppm	0.8782 ppm	1.2414 ppm	0.6632 ppm	19.4524 ppm
Concentration per Run 2	0.2445 ppm	17.6392 ppm	1.1783 ppm	0.8634 ppm	1.2451 ppm	0.6636 ppm	19.4518 ppm
Concentration per Run 3	0.2342 ppm	17.7524 ppm	1.1658 ppm	0.8707 ppm	1.2396 ppm	0.6636 ppm	19.4681 ppm
Concentration RSD	2.2 %	0.4 %	0.6 %	0.9 %	0.2 %	0.0 %	0.0 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.8623 ppm	0.3239 ppm	0.7149 ppm	0.8291 ppm	21.9520 ppm	4.4997 ppm	0.5418 ppm
Concentration per Run 1	0.8699 ppm	0.3266 ppm	0.7224 ppm	0.8368 ppm	21.9263 ppm	4.4983 ppm	0.5417 ppm
Concentration per Run 2	0.8572 ppm	0.3223 ppm	0.7084 ppm	0.8246 ppm	21.9625 ppm	4.4940 ppm	0.5426 ppm
Concentration per Run 3	0.8599 ppm	0.3228 ppm	0.7139 ppm	0.8259 ppm	21.9673 ppm	4.5068 ppm	0.5412 ppm
Concentration RSD	0.8 %	0.7 %	1.0 %	0.8 %	0.1 %	0.1 %	0.1 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	5.7650 ppm	2.0210 ppm	0.4817 ppm	7.1757 ppm	1.2637 ppm	0.3589 ppm	0.7039 ppm
Concentration per Run 1	5.8442 ppm	2.0203 ppm	0.4796 ppm	7.1773 ppm	1.2750 ppm	0.3584 ppm	0.7114 ppm
Concentration per Run 2	5.7418 ppm	2.0196 ppm	0.4779 ppm	7.1585 ppm	1.2488 ppm	0.3611 ppm	0.6965 ppm
Concentration per Run 3	5.7091 ppm	2.0232 ppm	0.4874 ppm	7.1914 ppm	1.2674 ppm	0.3572 ppm	0.7037 ppm
Concentration RSD	1.2 %	0.1 %	1.1 %	0.2 %	1.1 %	0.6 %	1.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.6390 ppm	6.1037 ppm	0.2742 ppm	0.5566 ppm	1.0447 ppm	0.8118 ppm	0.4077 ppm
Concentration per Run 1	0.6408 ppm	6.1835 ppm	0.2739 ppm	0.5568 ppm	1.0601 ppm	0.8124 ppm	0.4106 ppm
Concentration per Run 2	0.6423 ppm	6.0139 ppm	0.2712 ppm	0.5571 ppm	1.0341 ppm	0.8138 ppm	0.4058 ppm
Concentration per Run 3	0.6340 ppm	6.1138 ppm	0.2775 ppm	0.5559 ppm	1.0399 ppm	0.8092 ppm	0.4065 ppm
Concentration RSD	0.7 %	1.4 %	1.2 %	0.1 %	1.3 %	0.3 %	0.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.6542 ppm	99.3954 %	102.5598 %	95.8202 %	101.1118 %	106.1467 %	103.2628 %
Concentration per Run 1	0.6620 ppm	98.6117 %	102.4254 %	95.7294 %	100.4274 %	105.9848 %	102.9864 %
Concentration per Run 2	0.6479 ppm	99.5667 %	103.4321 %	95.3913 %	101.2576 %	107.1238 %	103.0192 %
Concentration per Run 3	0.6528 ppm	100.0079 %	101.8218 %	96.3400 %	101.6503 %	105.3317 %	103.7829 %
Concentration RSD	1.1 %	0.7 %	0.8 %	0.5 %	0.6 %	0.9 %	0.4 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1969323-3d2 WG1969323
Analysis started at: 9/10/2024 8:15:07 PM
Rack 2
Vial 34
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.2416 ppm	17.6268 ppm	1.1405 ppm	0.8433 ppm	1.0878 ppm	0.6331 ppm	19.1399 ppm
Concentration per Run 1	0.2452 ppm	17.5193 ppm	1.1449 ppm	0.8538 ppm	1.0853 ppm	0.6310 ppm	19.1117 ppm
Concentration per Run 2	0.2407 ppm	17.7098 ppm	1.1348 ppm	0.8418 ppm	1.0872 ppm	0.6350 ppm	19.1822 ppm
Concentration per Run 3	0.2390 ppm	17.6514 ppm	1.1417 ppm	0.8341 ppm	1.0908 ppm	0.6334 ppm	19.1259 ppm
Concentration RSD	1.3 %	0.6 %	0.5 %	1.2 %	0.3 %	0.3 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.8228 ppm	0.3135 ppm	0.6822 ppm	0.7949 ppm	22.1761 ppm	4.4168 ppm	0.5290 ppm
Concentration per Run 1	0.8308 ppm	0.3155 ppm	0.6879 ppm	0.8011 ppm	22.1440 ppm	4.4390 ppm	0.5288 ppm
Concentration per Run 2	0.8236 ppm	0.3139 ppm	0.6820 ppm	0.7931 ppm	22.1867 ppm	4.3813 ppm	0.5247 ppm
Concentration per Run 3	0.8140 ppm	0.3110 ppm	0.6766 ppm	0.7905 ppm	22.1977 ppm	4.4301 ppm	0.5334 ppm
Concentration RSD	1.0 %	0.7 %	0.8 %	0.7 %	0.1 %	0.7 %	0.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	5.7040 ppm	1.9876 ppm	0.4617 ppm	7.1638 ppm	1.2165 ppm	0.3520 ppm	0.6655 ppm
Concentration per Run 1	5.7662 ppm	1.9841 ppm	0.4591 ppm	7.1261 ppm	1.2240 ppm	0.3542 ppm	0.6744 ppm
Concentration per Run 2	5.7024 ppm	1.9895 ppm	0.4629 ppm	7.1592 ppm	1.2178 ppm	0.3501 ppm	0.6601 ppm
Concentration per Run 3	5.6435 ppm	1.9891 ppm	0.4631 ppm	7.2062 ppm	1.2076 ppm	0.3516 ppm	0.6621 ppm
Concentration RSD	1.1 %	0.2 %	0.5 %	0.6 %	0.7 %	0.6 %	1.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.6118 ppm	5.0220 ppm	0.2690 ppm	0.5133 ppm	1.0385 ppm	0.7723 ppm	0.3896 ppm
Concentration per Run 1	0.6132 ppm	5.1036 ppm	0.2723 ppm	0.5110 ppm	1.0338 ppm	0.7751 ppm	0.3922 ppm
Concentration per Run 2	0.6067 ppm	5.0576 ppm	0.2681 ppm	0.5157 ppm	1.0456 ppm	0.7662 ppm	0.3899 ppm
Concentration per Run 3	0.6155 ppm	4.9050 ppm	0.2666 ppm	0.5131 ppm	1.0361 ppm	0.7756 ppm	0.3867 ppm
Concentration RSD	0.7 %	2.1 %	1.1 %	0.5 %	0.6 %	0.7 %	0.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.6402 ppm	99.5914 %	102.4283 %	95.8504 %	102.5553 %	107.1404 %	104.1361 %
Concentration per Run 1	0.6473 ppm	98.4832 %	102.4926 %	95.3639 %	101.9731 %	106.5025 %	104.1539 %
Concentration per Run 2	0.6375 ppm	99.8241 %	102.0726 %	96.2008 %	102.5514 %	106.9458 %	104.2549 %
Concentration per Run 3	0.6359 ppm	100.4668 %	102.7196 %	95.9865 %	103.1415 %	107.9730 %	103.9994 %
Concentration RSD	1.0 %	1.0 %	0.3 %	0.5 %	0.6 %	0.7 %	0.1 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCV
Analysis started at: 9/10/2024 8:19:05 PM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.4975 ppm	0.4888 ppm	0.4581 ppm	0.4603 ppm	0.5085 ppm	0.5003 ppm	0.4849 ppm
Concentration per Run 1	0.4965 ppm	0.4867 ppm	0.4558 ppm	0.4576 ppm	0.5096 ppm	0.5016 ppm	0.4833 ppm
Concentration per Run 2	0.4981 ppm	0.4857 ppm	0.4618 ppm	0.4626 ppm	0.5071 ppm	0.4975 ppm	0.4839 ppm
Concentration per Run 3	0.4979 ppm	0.4938 ppm	0.4567 ppm	0.4607 ppm	0.5087 ppm	0.5018 ppm	0.4874 ppm
Recovery Percentage 1	99.500 %	97.752 %	91.621 %	92.059 %	101.694 %	100.059 %	96.973 %
Concentration RSD	0.2 %	0.9 %	0.7 %	0.6 %	0.2 %	0.5 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.4895 ppm	0.4964 ppm	0.4848 ppm	0.4821 ppm	0.5042 ppm	5.3569 ppm	0.5262 ppm
Concentration per Run 1	0.4872 ppm	0.4941 ppm	0.4841 ppm	0.4803 ppm	0.5038 ppm	5.3823 ppm	0.5260 ppm
Concentration per Run 2	0.4909 ppm	0.4981 ppm	0.4838 ppm	0.4847 ppm	0.5009 ppm	5.3543 ppm	0.5239 ppm
Concentration per Run 3	0.4904 ppm	0.4969 ppm	0.4865 ppm	0.4813 ppm	0.5077 ppm	5.3341 ppm	0.5287 ppm
Recovery Percentage 1	97.903 %	99.272 %	96.957 %	96.424 %	100.833 %	107.139 %	105.235 %
Concentration RSD	0.4 %	0.4 %	0.3 %	0.5 %	0.7 %	0.5 %	0.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.4922 ppm	0.4842 ppm	0.4857 ppm	10.2078 ppm	0.4972 ppm	0.4819 ppm	0.4817 ppm
Concentration per Run 1	0.4901 ppm	0.4824 ppm	0.4799 ppm	10.1456 ppm	0.4960 ppm	0.4824 ppm	0.4815 ppm
Concentration per Run 2	0.4922 ppm	0.4847 ppm	0.4882 ppm	10.2135 ppm	0.4966 ppm	0.4820 ppm	0.4816 ppm
Concentration per Run 3	0.4942 ppm	0.4855 ppm	0.4890 ppm	10.2644 ppm	0.4990 ppm	0.4813 ppm	0.4821 ppm
Recovery Percentage 1	98.437 %	96.835 %	97.133 %	102.078 %	99.446 %	96.378 %	96.348 %
Concentration RSD	0.4 %	0.3 %	1.0 %	0.6 %	0.3 %	0.1 %	0.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4664 ppm	5.1403 ppm	0.5100 ppm	0.5215 ppm	0.4952 ppm	0.4742 ppm	0.4853 ppm
Concentration per Run 1	0.4651 ppm	5.1332 ppm	0.5073 ppm	0.5244 ppm	0.4951 ppm	0.4726 ppm	0.4829 ppm
Concentration per Run 2	0.4674 ppm	5.1355 ppm	0.5126 ppm	0.5189 ppm	0.4946 ppm	0.4760 ppm	0.4855 ppm
Concentration per Run 3	0.4666 ppm	5.1521 ppm	0.5102 ppm	0.5213 ppm	0.4960 ppm	0.4740 ppm	0.4874 ppm
Recovery Percentage 1	93.279 %	97.910 %	102.005 %	104.306 %	99.048 %	94.840 %	97.055 %
Concentration RSD	0.3 %	0.2 %	0.5 %	0.5 %	0.1 %	0.4 %	0.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4862 ppm	101.8944 %	100.9486 %	98.9792 %	96.7507 %	99.0648 %	98.3484 %
Concentration per Run 1	0.4848 ppm	102.2700 %	101.3638 %	99.2068 %	96.5667 %	99.6354 %	98.2069 %
Concentration per Run 2	0.4869 ppm	101.9791 %	100.7313 %	98.9311 %	97.2095 %	98.6157 %	98.5556 %
Concentration per Run 3	0.4870 ppm	101.4341 %	100.7508 %	98.7997 %	96.4758 %	98.9434 %	98.2827 %
Recovery Percentage 1	97.246 %						
Concentration RSD	0.3 %	0.4 %	0.4 %	0.2 %	0.4 %	0.5 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCB
Analysis started at: 9/10/2024 8:23:02 PM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0003 ppm	0.0014 ppm	0.0005 ppm	0.0001 ppm	0.0001 ppm	0.0000 ppm	0.0039 ppm
Concentration per Run 1	0.0003 ppm	0.0008 ppm	-0.0006 ppm	-0.0004 ppm	0.0002 ppm	0.0001 ppm	0.0037 ppm
Concentration per Run 2	0.0002 ppm	-0.0037 ppm	-0.0004 ppm	0.0003 ppm	-0.0001 ppm	0.0000 ppm	0.0021 ppm
Concentration per Run 3	0.0003 ppm	0.0072 ppm	0.0025 ppm	0.0004 ppm	0.0001 ppm	0.0000 ppm	0.0058 ppm
Recovery Percentage 1	3.682 %	1.426 %	16.869 %	0.363 %	0.552 %	0.949 %	3.858 %
Concentration RSD	9.6 %	384.1 %	335.7 %	389.5 %	257.5 %	54.9 %	49.0 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0001 ppm	-0.0003 ppm	-0.0002 ppm	0.0007 ppm	0.0038 ppm	0.0060 ppm	0.0000 ppm
Concentration per Run 1	0.0001 ppm	-0.0002 ppm	-0.0002 ppm	0.0009 ppm	0.0030 ppm	0.0065 ppm	0.0006 ppm
Concentration per Run 2	0.0001 ppm	-0.0004 ppm	-0.0001 ppm	0.0007 ppm	0.0035 ppm	0.0039 ppm	-0.0002 ppm
Concentration per Run 3	0.0001 ppm	-0.0003 ppm	-0.0001 ppm	0.0006 ppm	0.0050 ppm	0.0075 ppm	-0.0004 ppm
Recovery Percentage 1	1.444 %	-1.466 %	-1.663 %	7.256 %	7.670 %	0.238 %	0.259 %
Concentration RSD	18.9 %	40.6 %	40.7 %	18.4 %	26.4 %	31.0 %	1,981.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0025 ppm	0.0001 ppm	0.0021 ppm	0.0021 ppm	0.0001 ppm	0.0003 ppm	-0.0001 ppm
Concentration per Run 1	0.0023 ppm	0.0000 ppm	0.0023 ppm	0.0039 ppm	-0.0005 ppm	0.0002 ppm	0.0017 ppm
Concentration per Run 2	0.0018 ppm	0.0002 ppm	0.0016 ppm	0.0025 ppm	0.0009 ppm	0.0005 ppm	-0.0012 ppm
Concentration per Run 3	0.0035 ppm	0.0002 ppm	0.0023 ppm	-0.0001 ppm	0.0001 ppm	0.0001 ppm	-0.0009 ppm
Recovery Percentage 1	2.531 %	1.231 %	4.160 %	0.105 %	0.596 %	2.767 %	-0.248 %
Concentration RSD	35.1 %	70.1 %	18.6 %	98.2 %	462.7 %	82.5 %	1,256.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0013 ppm	-0.0158 ppm	0.0003 ppm	0.0001 ppm	-0.0003 ppm	0.0003 ppm	0.0001 ppm
Concentration per Run 1	-0.0023 ppm	-0.0200 ppm	-0.0001 ppm	0.0000 ppm	-0.0003 ppm	0.0000 ppm	0.0001 ppm
Concentration per Run 2	-0.0003 ppm	-0.0131 ppm	0.0007 ppm	0.0001 ppm	-0.0003 ppm	0.0000 ppm	0.0003 ppm
Concentration per Run 3	-0.0013 ppm	-0.0145 ppm	0.0002 ppm	0.0001 ppm	-0.0004 ppm	0.0008 ppm	0.0000 ppm
Recovery Percentage 1	-13.041 %	-3.169 %	0.528 %	0.660 %	-3.092 %	1.305 %	1.200 %
Concentration RSD	76.3 %	22.9 %	142.6 %	42.8 %	20.6 %	194.0 %	102.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0003 ppm	98.7024 %	99.2848 %	99.4273 %	98.2520 %	100.3143 %	99.5143 %
Concentration per Run 1	0.0004 ppm	98.0197 %	100.1392 %	98.6751 %	97.4491 %	100.5971 %	99.1847 %
Concentration per Run 2	0.0003 ppm	98.6710 %	99.1200 %	99.7635 %	98.3992 %	100.1707 %	99.7049 %
Concentration per Run 3	0.0001 ppm	99.4166 %	98.5953 %	99.8432 %	98.9078 %	100.1752 %	99.6534 %
Recovery Percentage 1	5.357 %						
Concentration RSD	54.5 %	0.7 %	0.8 %	0.7 %	0.8 %	0.2 %	0.3 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1969516-1 WG1969516
Analysis started at: 9/10/2024 8:29:22 PM
Rack 2
Vial 35
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0003 ppm	-0.0011 ppm	-0.0001 ppm	-0.0006 ppm	0.0000 ppm	0.0000 ppm	0.0060 ppm
Concentration per Run 1	0.0002 ppm	-0.0022 ppm	0.0004 ppm	-0.0003 ppm	0.0001 ppm	0.0000 ppm	0.0052 ppm
Concentration per Run 2	0.0004 ppm	-0.0005 ppm	-0.0008 ppm	-0.0005 ppm	-0.0001 ppm	0.0000 ppm	0.0075 ppm
Concentration per Run 3	0.0002 ppm	-0.0005 ppm	0.0001 ppm	-0.0010 ppm	0.0001 ppm	0.0000 ppm	0.0055 ppm
Concentration RSD	40.3 %	93.0 %	535.8 %	56.8 %	1,412.4 %	160.2 %	20.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0003 ppm	0.0006 ppm	0.0002 ppm	-0.0012 ppm	0.0232 ppm	0.0000 ppm
Concentration per Run 1	0.0000 ppm	-0.0001 ppm	0.0007 ppm	0.0002 ppm	-0.0022 ppm	0.0273 ppm	0.0005 ppm
Concentration per Run 2	0.0000 ppm	-0.0003 ppm	0.0007 ppm	0.0002 ppm	-0.0010 ppm	0.0199 ppm	-0.0003 ppm
Concentration per Run 3	-0.0001 ppm	-0.0005 ppm	0.0005 ppm	0.0002 ppm	-0.0003 ppm	0.0223 ppm	-0.0002 ppm
Concentration RSD	63.5 %	62.4 %	13.7 %	9.0 %	79.5 %	16.3 %	11,624.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0011 ppm	0.0037 ppm	0.0002 ppm	-0.0036 ppm	0.0002 ppm	-0.0007 ppm	-0.0002 ppm
Concentration per Run 1	0.0016 ppm	0.0036 ppm	0.0002 ppm	-0.0025 ppm	0.0004 ppm	-0.0011 ppm	0.0010 ppm
Concentration per Run 2	0.0001 ppm	0.0038 ppm	0.0003 ppm	-0.0026 ppm	0.0002 ppm	-0.0001 ppm	-0.0028 ppm
Concentration per Run 3	0.0015 ppm	0.0038 ppm	0.0001 ppm	-0.0055 ppm	0.0001 ppm	-0.0009 ppm	0.0012 ppm
Concentration RSD	76.5 %	3.3 %	54.1 %	47.7 %	68.2 %	75.4 %	1,277.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0009 ppm	-0.0160 ppm	-0.0009 ppm	0.0000 ppm	-0.0004 ppm	-0.0004 ppm	-0.0001 ppm
Concentration per Run 1	-0.0020 ppm	-0.0167 ppm	-0.0012 ppm	0.0000 ppm	-0.0004 ppm	0.0000 ppm	-0.0001 ppm
Concentration per Run 2	0.0001 ppm	-0.0167 ppm	-0.0007 ppm	0.0000 ppm	-0.0003 ppm	-0.0002 ppm	-0.0002 ppm
Concentration per Run 3	-0.0008 ppm	-0.0145 ppm	-0.0007 ppm	-0.0001 ppm	-0.0005 ppm	-0.0010 ppm	-0.0001 ppm
Concentration RSD	116.6 %	7.8 %	32.5 %	249.7 %	28.6 %	123.8 %	34.0 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0002 ppm	95.9965 %	96.6051 %	96.5975 %	99.4348 %	100.1002 %	99.3113 %
Concentration per Run 1	0.0002 ppm	95.3438 %	96.6121 %	96.3840 %	99.3912 %	100.8440 %	99.6728 %
Concentration per Run 2	0.0003 ppm	95.9250 %	97.0277 %	96.7389 %	99.6399 %	100.2278 %	99.1256 %
Concentration per Run 3	0.0001 ppm	96.7208 %	96.1754 %	96.6695 %	99.2734 %	99.2288 %	99.1355 %
Concentration RSD	60.3 %	0.7 %	0.4 %	0.2 %	0.2 %	0.8 %	0.3 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1969516-2 WG1969516
Analysis started at: 9/10/2024 8:33:38 PM
Rack 2
Vial 36
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0524 ppm	2.0579 ppm	0.1187 ppm	0.9606 ppm	2.0901 ppm	0.0512 ppm	10.2464 ppm
Concentration per Run 1	0.0531 ppm	2.0689 ppm	0.1204 ppm	0.9712 ppm	2.0969 ppm	0.0514 ppm	10.2341 ppm
Concentration per Run 2	0.0523 ppm	2.0452 ppm	0.1180 ppm	0.9621 ppm	2.0825 ppm	0.0512 ppm	10.2637 ppm
Concentration per Run 3	0.0519 ppm	2.0595 ppm	0.1177 ppm	0.9487 ppm	2.0909 ppm	0.0512 ppm	10.2413 ppm
Concentration RSD	1.2 %	0.6 %	1.3 %	1.2 %	0.3 %	0.3 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0546 ppm	0.5173 ppm	0.2065 ppm	0.2621 ppm	1.0144 ppm	11.0790 ppm	-0.0006 ppm
Concentration per Run 1	0.0551 ppm	0.5229 ppm	0.2085 ppm	0.2647 ppm	1.0150 ppm	11.1013 ppm	-0.0015 ppm
Concentration per Run 2	0.0547 ppm	0.5188 ppm	0.2065 ppm	0.2634 ppm	1.0135 ppm	11.0285 ppm	0.0017 ppm
Concentration per Run 3	0.0538 ppm	0.5101 ppm	0.2045 ppm	0.2582 ppm	1.0147 ppm	11.1072 ppm	-0.0022 ppm
Concentration RSD	1.2 %	1.3 %	1.0 %	1.3 %	0.1 %	0.4 %	323.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	10.4326 ppm	0.5184 ppm	0.9582 ppm	10.8105 ppm	0.5242 ppm	0.5433 ppm	0.4245 ppm
Concentration per Run 1	10.5404 ppm	0.5179 ppm	0.9604 ppm	10.8237 ppm	0.5306 ppm	0.5491 ppm	0.4230 ppm
Concentration per Run 2	10.4725 ppm	0.5177 ppm	0.9626 ppm	10.7904 ppm	0.5253 ppm	0.5414 ppm	0.4288 ppm
Concentration per Run 3	10.2850 ppm	0.5195 ppm	0.9516 ppm	10.8175 ppm	0.5166 ppm	0.5394 ppm	0.4217 ppm
Concentration RSD	1.3 %	0.2 %	0.6 %	0.2 %	1.3 %	0.9 %	0.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1199 ppm	0.9537 ppm	1.0229 ppm	1.0401 ppm	1.0642 ppm	0.1183 ppm	0.5243 ppm
Concentration per Run 1	0.1196 ppm	0.9672 ppm	1.0294 ppm	1.0440 ppm	1.0707 ppm	0.1187 ppm	0.5266 ppm
Concentration per Run 2	0.1214 ppm	0.9547 ppm	1.0268 ppm	1.0364 ppm	1.0660 ppm	0.1180 ppm	0.5268 ppm
Concentration per Run 3	0.1186 ppm	0.9392 ppm	1.0126 ppm	1.0399 ppm	1.0557 ppm	0.1182 ppm	0.5195 ppm
Concentration RSD	1.2 %	1.5 %	0.9 %	0.4 %	0.7 %	0.3 %	0.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5156 ppm	97.2826 %	101.1362 %	93.6486 %	95.1368 %	99.8543 %	96.2982 %
Concentration per Run 1	0.5218 ppm	96.6983 %	101.4679 %	92.8412 %	95.2319 %	100.2878 %	95.8958 %
Concentration per Run 2	0.5172 ppm	96.6827 %	100.7689 %	94.2996 %	94.5335 %	99.1315 %	96.6914 %
Concentration per Run 3	0.5078 ppm	98.4669 %	101.1718 %	93.8049 %	95.6450 %	100.1435 %	96.3073 %
Concentration RSD	1.4 %	1.1 %	0.3 %	0.8 %	0.6 %	0.6 %	0.4 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450627-01 WG1969516
Analysis started at: 9/10/2024 8:37:37 PM
Rack 2
Vial 47
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0002 ppm	0.0010 ppm	-0.0004 ppm	-0.0004 ppm	0.0001 ppm	0.0000 ppm	0.0123 ppm
Concentration per Run 1	0.0002 ppm	0.0087 ppm	0.0004 ppm	-0.0003 ppm	0.0001 ppm	0.0000 ppm	0.0134 ppm
Concentration per Run 2	0.0001 ppm	0.0037 ppm	-0.0012 ppm	-0.0002 ppm	0.0000 ppm	0.0000 ppm	0.0116 ppm
Concentration per Run 3	0.0004 ppm	-0.0093 ppm	-0.0003 ppm	-0.0008 ppm	0.0002 ppm	0.0000 ppm	0.0119 ppm
Concentration RSD	80.0 %	913.7 %	224.4 %	75.6 %	88.4 %	621.5 %	7.8 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0004 ppm	0.0005 ppm	0.0005 ppm	0.0072 ppm	0.0114 ppm	-0.0008 ppm
Concentration per Run 1	0.0000 ppm	-0.0009 ppm	0.0004 ppm	0.0006 ppm	0.0065 ppm	0.0175 ppm	-0.0005 ppm
Concentration per Run 2	0.0000 ppm	-0.0004 ppm	0.0004 ppm	0.0006 ppm	0.0072 ppm	0.0019 ppm	-0.0016 ppm
Concentration per Run 3	0.0000 ppm	0.0001 ppm	0.0005 ppm	0.0004 ppm	0.0079 ppm	0.0149 ppm	-0.0003 ppm
Concentration RSD	62.2 %	129.9 %	14.5 %	25.2 %	9.8 %	72.8 %	86.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0023 ppm	0.0004 ppm	0.0055 ppm	0.0230 ppm	0.0007 ppm	-0.0003 ppm	0.0036 ppm
Concentration per Run 1	0.0024 ppm	0.0004 ppm	0.0053 ppm	0.0249 ppm	0.0006 ppm	0.0002 ppm	0.0027 ppm
Concentration per Run 2	0.0027 ppm	0.0004 ppm	0.0054 ppm	0.0215 ppm	0.0006 ppm	-0.0003 ppm	0.0039 ppm
Concentration per Run 3	0.0018 ppm	0.0003 ppm	0.0057 ppm	0.0226 ppm	0.0008 ppm	-0.0008 ppm	0.0041 ppm
Concentration RSD	19.6 %	24.5 %	3.8 %	7.6 %	19.7 %	166.3 %	21.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0002 ppm	-0.0061 ppm	0.0018 ppm	0.0000 ppm	-0.0003 ppm	-0.0004 ppm	0.0000 ppm
Concentration per Run 1	0.0010 ppm	-0.0059 ppm	0.0014 ppm	-0.0001 ppm	-0.0004 ppm	-0.0008 ppm	-0.0001 ppm
Concentration per Run 2	-0.0006 ppm	-0.0057 ppm	0.0021 ppm	0.0001 ppm	-0.0003 ppm	-0.0001 ppm	0.0001 ppm
Concentration per Run 3	-0.0010 ppm	-0.0067 ppm	0.0018 ppm	0.0000 ppm	-0.0002 ppm	-0.0003 ppm	0.0000 ppm
Concentration RSD	573.7 %	9.4 %	19.1 %	14,859.0 %	36.8 %	93.1 %	1,316.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0004 ppm	98.9367 %	101.5001 %	97.7446 %	99.1697 %	102.4447 %	99.7080 %
Concentration per Run 1	0.0004 ppm	97.9116 %	101.0933 %	97.5554 %	98.7306 %	102.0151 %	100.2716 %
Concentration per Run 2	0.0004 ppm	99.4337 %	101.2218 %	97.8831 %	99.4849 %	102.4846 %	99.4318 %
Concentration per Run 3	0.0003 ppm	99.4649 %	102.1852 %	97.7954 %	99.2935 %	102.8343 %	99.4206 %
Concentration RSD	15.2 %	0.9 %	0.6 %	0.2 %	0.4 %	0.4 %	0.5 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450627-03 WG1969516
Analysis started at: 9/10/2024 8:41:36 PM
Rack 2
Vial 48
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0003 ppm	0.0024 ppm	-0.0005 ppm	-0.0003 ppm	0.0000 ppm	0.0000 ppm	0.0079 ppm
Concentration per Run 1	0.0003 ppm	0.0051 ppm	-0.0010 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0077 ppm
Concentration per Run 2	0.0002 ppm	0.0018 ppm	0.0001 ppm	-0.0008 ppm	0.0000 ppm	0.0000 ppm	0.0075 ppm
Concentration per Run 3	0.0004 ppm	0.0002 ppm	-0.0005 ppm	-0.0002 ppm	0.0000 ppm	0.0000 ppm	0.0084 ppm
Concentration RSD	25.5 %	105.1 %	111.9 %	129.1 %	277.8 %	67.4 %	5.8 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0003 ppm	0.0006 ppm	0.0005 ppm	-0.0006 ppm	-0.0007 ppm	-0.0005 ppm
Concentration per Run 1	0.0000 ppm	-0.0004 ppm	0.0007 ppm	0.0006 ppm	-0.0015 ppm	0.0074 ppm	-0.0015 ppm
Concentration per Run 2	0.0000 ppm	-0.0004 ppm	0.0005 ppm	0.0004 ppm	-0.0007 ppm	-0.0084 ppm	-0.0008 ppm
Concentration per Run 3	0.0000 ppm	0.0000 ppm	0.0007 ppm	0.0005 ppm	0.0005 ppm	-0.0010 ppm	0.0007 ppm
Concentration RSD	38.5 %	76.2 %	18.7 %	17.5 %	180.1 %	1,138.5 %	209.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0011 ppm	0.0001 ppm	0.0009 ppm	0.0623 ppm	0.0006 ppm	0.0000 ppm	0.0005 ppm
Concentration per Run 1	0.0006 ppm	0.0002 ppm	0.0009 ppm	0.0640 ppm	-0.0004 ppm	-0.0007 ppm	0.0020 ppm
Concentration per Run 2	0.0022 ppm	0.0000 ppm	0.0009 ppm	0.0614 ppm	0.0011 ppm	0.0011 ppm	0.0001 ppm
Concentration per Run 3	0.0005 ppm	0.0002 ppm	0.0009 ppm	0.0613 ppm	0.0012 ppm	-0.0004 ppm	-0.0007 ppm
Concentration RSD	86.5 %	103.6 %	5.4 %	2.4 %	140.2 %	4,510.2 %	289.3 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0008 ppm	-0.0050 ppm	-0.0005 ppm	0.0000 ppm	-0.0003 ppm	-0.0009 ppm	0.0000 ppm
Concentration per Run 1	0.0002 ppm	-0.0070 ppm	-0.0009 ppm	0.0000 ppm	-0.0002 ppm	-0.0014 ppm	0.0000 ppm
Concentration per Run 2	0.0018 ppm	-0.0043 ppm	-0.0003 ppm	0.0001 ppm	-0.0004 ppm	-0.0009 ppm	0.0001 ppm
Concentration per Run 3	0.0004 ppm	-0.0036 ppm	-0.0002 ppm	0.0000 ppm	-0.0003 ppm	-0.0004 ppm	-0.0002 ppm
Concentration RSD	103.6 %	36.3 %	73.1 %	106.8 %	39.3 %	58.3 %	336.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0000 ppm	97.8506 %	100.4536 %	97.1295 %	97.9068 %	101.2744 %	98.7609 %
Concentration per Run 1	-0.0001 ppm	97.3643 %	100.1939 %	97.6375 %	98.1977 %	101.4580 %	99.6244 %
Concentration per Run 2	0.0001 ppm	97.6177 %	100.3986 %	96.7389 %	97.3781 %	101.0206 %	98.5469 %
Concentration per Run 3	0.0001 ppm	98.5698 %	100.7683 %	97.0122 %	98.1447 %	101.3446 %	98.1113 %
Concentration RSD	258.9 %	0.6 %	0.3 %	0.5 %	0.5 %	0.2 %	0.8 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450627-05 WG1969516
Analysis started at: 9/10/2024 8:45:34 PM
Rack 2
Vial 49
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0002 ppm	0.0097 ppm	0.0005 ppm	-0.0006 ppm	0.0000 ppm	0.0000 ppm	0.0057 ppm
Concentration per Run 1	0.0004 ppm	0.0114 ppm	0.0002 ppm	-0.0010 ppm	0.0001 ppm	0.0000 ppm	0.0053 ppm
Concentration per Run 2	0.0000 ppm	0.0105 ppm	0.0012 ppm	-0.0011 ppm	0.0000 ppm	0.0000 ppm	0.0053 ppm
Concentration per Run 3	0.0004 ppm	0.0072 ppm	0.0000 ppm	0.0003 ppm	0.0001 ppm	0.0000 ppm	0.0064 ppm
Concentration RSD	100.8 %	23.2 %	131.9 %	137.4 %	97.2 %	666.7 %	11.7 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0003 ppm	0.0008 ppm	0.0004 ppm	0.0056 ppm	-0.0047 ppm	-0.0006 ppm
Concentration per Run 1	0.0000 ppm	-0.0002 ppm	0.0010 ppm	0.0003 ppm	0.0059 ppm	-0.0121 ppm	-0.0005 ppm
Concentration per Run 2	0.0000 ppm	-0.0001 ppm	0.0008 ppm	0.0005 ppm	0.0062 ppm	-0.0031 ppm	-0.0014 ppm
Concentration per Run 3	0.0000 ppm	-0.0005 ppm	0.0005 ppm	0.0005 ppm	0.0047 ppm	0.0011 ppm	0.0000 ppm
Concentration RSD	210.7 %	67.8 %	35.8 %	25.9 %	14.2 %	144.3 %	117.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0009 ppm	0.0002 ppm	0.0005 ppm	0.0195 ppm	0.0004 ppm	-0.0006 ppm	0.0006 ppm
Concentration per Run 1	0.0012 ppm	0.0004 ppm	0.0007 ppm	0.0219 ppm	0.0007 ppm	-0.0005 ppm	0.0007 ppm
Concentration per Run 2	0.0007 ppm	0.0001 ppm	0.0002 ppm	0.0190 ppm	-0.0001 ppm	-0.0006 ppm	0.0015 ppm
Concentration per Run 3	0.0006 ppm	0.0001 ppm	0.0006 ppm	0.0175 ppm	0.0005 ppm	-0.0007 ppm	-0.0004 ppm
Concentration RSD	36.4 %	76.2 %	48.9 %	11.4 %	124.3 %	16.6 %	151.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0009 ppm	-0.0122 ppm	-0.0007 ppm	0.0001 ppm	-0.0002 ppm	-0.0009 ppm	0.0000 ppm
Concentration per Run 1	-0.0015 ppm	-0.0123 ppm	-0.0005 ppm	0.0000 ppm	-0.0003 ppm	-0.0018 ppm	0.0002 ppm
Concentration per Run 2	-0.0004 ppm	-0.0117 ppm	-0.0006 ppm	0.0002 ppm	-0.0001 ppm	-0.0004 ppm	0.0000 ppm
Concentration per Run 3	-0.0009 ppm	-0.0126 ppm	-0.0011 ppm	0.0001 ppm	-0.0004 ppm	-0.0006 ppm	-0.0001 ppm
Concentration RSD	58.5 %	3.8 %	44.4 %	93.7 %	51.9 %	81.0 %	503.9 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0005 ppm	98.1010 %	100.4384 %	96.9771 %	98.1818 %	101.5323 %	98.7670 %
Concentration per Run 1	0.0004 ppm	96.8618 %	100.5291 %	96.6678 %	97.9393 %	101.3238 %	98.7553 %
Concentration per Run 2	0.0006 ppm	98.3943 %	100.1566 %	97.6780 %	98.5090 %	101.3383 %	99.1912 %
Concentration per Run 3	0.0004 ppm	99.0469 %	100.6296 %	96.5854 %	98.0972 %	101.9349 %	98.3545 %
Concentration RSD	19.6 %	1.1 %	0.2 %	0.6 %	0.3 %	0.3 %	0.4 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450786-01 WG1969516
Analysis started at: 9/10/2024 8:49:32 PM
Rack 2
Vial 37
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	0.0026 ppm	0.0009 ppm	0.0188 ppm	0.0161 ppm	0.0000 ppm	23.7659 ppm
Concentration per Run 1	0.0002 ppm	0.0012 ppm	0.0013 ppm	0.0192 ppm	0.0162 ppm	0.0000 ppm	23.8092 ppm
Concentration per Run 2	-0.0001 ppm	0.0037 ppm	0.0001 ppm	0.0185 ppm	0.0163 ppm	0.0000 ppm	23.7362 ppm
Concentration per Run 3	0.0003 ppm	0.0030 ppm	0.0012 ppm	0.0188 ppm	0.0159 ppm	0.0000 ppm	23.7525 ppm
Concentration RSD	159.0 %	49.1 %	74.4 %	1.9 %	1.2 %	360.1 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0001 ppm	-0.0003 ppm	0.0007 ppm	0.0023 ppm	0.0005 ppm	2.0434 ppm	-0.0012 ppm
Concentration per Run 1	-0.0001 ppm	-0.0002 ppm	0.0007 ppm	0.0026 ppm	0.0009 ppm	2.0555 ppm	-0.0008 ppm
Concentration per Run 2	-0.0001 ppm	-0.0001 ppm	0.0004 ppm	0.0023 ppm	0.0008 ppm	2.0243 ppm	-0.0018 ppm
Concentration per Run 3	0.0000 ppm	-0.0005 ppm	0.0009 ppm	0.0022 ppm	-0.0002 ppm	2.0504 ppm	-0.0009 ppm
Concentration RSD	33.1 %	71.5 %	37.2 %	8.6 %	123.8 %	0.8 %	45.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	4.9482 ppm	0.0003 ppm	0.0010 ppm	10.3369 ppm	0.0005 ppm	-0.0006 ppm	0.0004 ppm
Concentration per Run 1	4.9964 ppm	0.0002 ppm	0.0009 ppm	10.3647 ppm	-0.0002 ppm	0.0003 ppm	-0.0014 ppm
Concentration per Run 2	4.9399 ppm	0.0003 ppm	0.0010 ppm	10.3609 ppm	0.0012 ppm	-0.0009 ppm	0.0014 ppm
Concentration per Run 3	4.9083 ppm	0.0003 ppm	0.0011 ppm	10.2851 ppm	0.0005 ppm	-0.0011 ppm	0.0013 ppm
Concentration RSD	0.9 %	34.5 %	10.1 %	0.4 %	135.0 %	137.3 %	402.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0008 ppm	1.7991 ppm	-0.0012 ppm	0.0851 ppm	-0.0005 ppm	-0.0002 ppm	0.0006 ppm
Concentration per Run 1	-0.0009 ppm	1.8250 ppm	-0.0016 ppm	0.0848 ppm	-0.0006 ppm	0.0001 ppm	0.0006 ppm
Concentration per Run 2	-0.0008 ppm	1.7895 ppm	-0.0012 ppm	0.0855 ppm	-0.0005 ppm	-0.0013 ppm	0.0005 ppm
Concentration per Run 3	-0.0008 ppm	1.7829 ppm	-0.0008 ppm	0.0851 ppm	-0.0005 ppm	0.0007 ppm	0.0006 ppm
Concentration RSD	7.5 %	1.3 %	31.4 %	0.4 %	14.5 %	632.2 %	8.9 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0013 ppm	94.9078 %	99.7447 %	93.8449 %	95.4801 %	100.6541 %	96.9537 %
Concentration per Run 1	0.0012 ppm	93.5525 %	100.0451 %	93.5118 %	95.3470 %	101.4244 %	96.8640 %
Concentration per Run 2	0.0013 ppm	95.1768 %	99.9067 %	93.6079 %	95.2290 %	100.8229 %	96.8384 %
Concentration per Run 3	0.0014 ppm	95.9941 %	99.2823 %	94.4150 %	95.8645 %	99.7149 %	97.1587 %
Concentration RSD	7.2 %	1.3 %	0.4 %	0.5 %	0.4 %	0.9 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1969516-3 WG1969516
Analysis started at: 9/10/2024 8:53:30 PM
Rack 2
Vial 38
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0519 ppm	2.0352 ppm	0.1165 ppm	0.9742 ppm	2.0876 ppm	0.0511 ppm	32.8139 ppm
Concentration per Run 1	0.0520 ppm	2.0414 ppm	0.1163 ppm	0.9741 ppm	2.0917 ppm	0.0513 ppm	32.8719 ppm
Concentration per Run 2	0.0519 ppm	2.0358 ppm	0.1170 ppm	0.9678 ppm	2.0821 ppm	0.0510 ppm	32.7748 ppm
Concentration per Run 3	0.0518 ppm	2.0284 ppm	0.1160 ppm	0.9807 ppm	2.0888 ppm	0.0510 ppm	32.7951 ppm
Concentration RSD	0.2 %	0.3 %	0.5 %	0.7 %	0.2 %	0.3 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0535 ppm	0.5072 ppm	0.2023 ppm	0.2597 ppm	0.9941 ppm	12.8329 ppm	0.0001 ppm
Concentration per Run 1	0.0537 ppm	0.5091 ppm	0.2041 ppm	0.2614 ppm	0.9935 ppm	12.9441 ppm	-0.0006 ppm
Concentration per Run 2	0.0532 ppm	0.5044 ppm	0.2009 ppm	0.2588 ppm	0.9926 ppm	12.8377 ppm	0.0012 ppm
Concentration per Run 3	0.0537 ppm	0.5082 ppm	0.2021 ppm	0.2589 ppm	0.9963 ppm	12.7170 ppm	-0.0003 ppm
Concentration RSD	0.5 %	0.5 %	0.8 %	0.6 %	0.2 %	0.9 %	930.0 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	14.8326 ppm	0.5011 ppm	0.8980 ppm	20.3665 ppm	0.5114 ppm	0.5256 ppm	0.4809 ppm
Concentration per Run 1	14.9336 ppm	0.5033 ppm	0.8951 ppm	20.4345 ppm	0.5150 ppm	0.5268 ppm	0.4835 ppm
Concentration per Run 2	14.7975 ppm	0.4996 ppm	0.8953 ppm	20.3551 ppm	0.5085 ppm	0.5243 ppm	0.4759 ppm
Concentration per Run 3	14.7666 ppm	0.5003 ppm	0.9036 ppm	20.3099 ppm	0.5106 ppm	0.5257 ppm	0.4833 ppm
Concentration RSD	0.6 %	0.4 %	0.5 %	0.3 %	0.7 %	0.2 %	0.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1188 ppm	2.7382 ppm	0.9767 ppm	1.0994 ppm	1.0310 ppm	0.1158 ppm	0.5186 ppm
Concentration per Run 1	0.1172 ppm	2.7519 ppm	0.9784 ppm	1.1042 ppm	1.0392 ppm	0.1158 ppm	0.5192 ppm
Concentration per Run 2	0.1212 ppm	2.7271 ppm	0.9659 ppm	1.0957 ppm	1.0270 ppm	0.1165 ppm	0.5168 ppm
Concentration per Run 3	0.1178 ppm	2.7356 ppm	0.9859 ppm	1.0983 ppm	1.0267 ppm	0.1150 ppm	0.5198 ppm
Concentration RSD	1.8 %	0.5 %	1.0 %	0.4 %	0.7 %	0.7 %	0.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5085 ppm	96.6624 %	101.9304 %	92.1864 %	94.9346 %	101.6225 %	96.0336 %
Concentration per Run 1	0.5123 ppm	96.2411 %	101.8313 %	92.5191 %	95.3174 %	101.6785 %	96.4954 %
Concentration per Run 2	0.5038 ppm	96.9369 %	102.1702 %	92.1807 %	94.9315 %	101.9426 %	96.1228 %
Concentration per Run 3	0.5093 ppm	96.8091 %	101.7898 %	91.8595 %	94.5550 %	101.2464 %	95.4827 %
Concentration RSD	0.8 %	0.4 %	0.2 %	0.4 %	0.4 %	0.3 %	0.5 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1969516-4 WG1969516
Analysis started at: 9/10/2024 8:57:27 PM
Rack 2
Vial 39
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0002 ppm	0.0036 ppm	-0.0005 ppm	0.0198 ppm	0.0167 ppm	0.0000 ppm	24.2834 ppm
Concentration per Run 1	0.0006 ppm	0.0055 ppm	0.0002 ppm	0.0191 ppm	0.0166 ppm	0.0000 ppm	24.2217 ppm
Concentration per Run 2	0.0002 ppm	0.0052 ppm	-0.0011 ppm	0.0202 ppm	0.0166 ppm	0.0000 ppm	24.2558 ppm
Concentration per Run 3	-0.0002 ppm	0.0002 ppm	-0.0006 ppm	0.0201 ppm	0.0168 ppm	0.0000 ppm	24.3726 ppm
Concentration RSD	206.0 %	81.7 %	141.3 %	3.0 %	0.5 %	18,263.8 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0001 ppm	-0.0002 ppm	0.0007 ppm	0.0025 ppm	0.0006 ppm	2.1260 ppm	0.0000 ppm
Concentration per Run 1	-0.0001 ppm	-0.0004 ppm	0.0007 ppm	0.0025 ppm	0.0005 ppm	2.1258 ppm	0.0003 ppm
Concentration per Run 2	-0.0001 ppm	0.0001 ppm	0.0009 ppm	0.0027 ppm	0.0013 ppm	2.1312 ppm	0.0008 ppm
Concentration per Run 3	-0.0001 ppm	-0.0003 ppm	0.0006 ppm	0.0024 ppm	0.0000 ppm	2.1209 ppm	-0.0011 ppm
Concentration RSD	23.0 %	157.1 %	16.8 %	4.9 %	109.0 %	0.2 %	8,148.9 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	5.0666 ppm	0.0003 ppm	0.0067 ppm	10.6247 ppm	0.0006 ppm	-0.0001 ppm	0.0010 ppm
Concentration per Run 1	5.1287 ppm	0.0001 ppm	0.0067 ppm	10.5919 ppm	0.0012 ppm	-0.0006 ppm	0.0012 ppm
Concentration per Run 2	5.0893 ppm	0.0003 ppm	0.0066 ppm	10.5940 ppm	0.0003 ppm	0.0009 ppm	0.0014 ppm
Concentration per Run 3	4.9819 ppm	0.0004 ppm	0.0068 ppm	10.6882 ppm	0.0004 ppm	-0.0006 ppm	0.0005 ppm
Concentration RSD	1.5 %	60.0 %	2.1 %	0.5 %	83.2 %	799.9 %	43.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0014 ppm	1.8446 ppm	0.0013 ppm	0.0871 ppm	-0.0001 ppm	-0.0006 ppm	0.0008 ppm
Concentration per Run 1	-0.0005 ppm	1.8596 ppm	0.0010 ppm	0.0870 ppm	-0.0002 ppm	-0.0007 ppm	0.0010 ppm
Concentration per Run 2	-0.0020 ppm	1.8545 ppm	0.0009 ppm	0.0868 ppm	-0.0002 ppm	-0.0009 ppm	0.0006 ppm
Concentration per Run 3	-0.0018 ppm	1.8196 ppm	0.0021 ppm	0.0875 ppm	0.0000 ppm	-0.0002 ppm	0.0007 ppm
Concentration RSD	59.7 %	1.2 %	48.6 %	0.4 %	60.6 %	62.8 %	22.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0014 ppm	95.6292 %	99.3889 %	94.2179 %	95.5227 %	100.2095 %	97.2194 %
Concentration per Run 1	0.0014 ppm	94.4539 %	99.8355 %	94.1854 %	95.2294 %	100.6113 %	97.4188 %
Concentration per Run 2	0.0014 ppm	95.2423 %	99.3879 %	94.0004 %	95.1470 %	100.1379 %	97.1330 %
Concentration per Run 3	0.0014 ppm	97.1915 %	98.9433 %	94.4680 %	96.1917 %	99.8793 %	97.1065 %
Concentration RSD	2.2 %	1.5 %	0.4 %	0.2 %	0.6 %	0.4 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1969516-5 WG1969516
Analysis started at: 9/10/2024 9:01:25 PM
Rack 2
Vial 40
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0476 ppm	1.8733 ppm	0.1016 ppm	0.9322 ppm	1.9230 ppm	0.0471 ppm	31.9756 ppm
Concentration per Run 1	0.0482 ppm	1.8629 ppm	0.1023 ppm	0.9393 ppm	1.9187 ppm	0.0472 ppm	31.9536 ppm
Concentration per Run 2	0.0475 ppm	1.8717 ppm	0.1018 ppm	0.9320 ppm	1.9124 ppm	0.0468 ppm	31.9139 ppm
Concentration per Run 3	0.0472 ppm	1.8852 ppm	0.1008 ppm	0.9254 ppm	1.9379 ppm	0.0474 ppm	32.0593 ppm
Concentration RSD	1.1 %	0.6 %	0.8 %	0.7 %	0.7 %	0.7 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0490 ppm	0.4678 ppm	0.1867 ppm	0.2400 ppm	0.9178 ppm	12.3385 ppm	-0.0001 ppm
Concentration per Run 1	0.0499 ppm	0.4720 ppm	0.1895 ppm	0.2423 ppm	0.9130 ppm	12.2648 ppm	-0.0003 ppm
Concentration per Run 2	0.0490 ppm	0.4677 ppm	0.1861 ppm	0.2403 ppm	0.9125 ppm	12.3449 ppm	0.0003 ppm
Concentration per Run 3	0.0482 ppm	0.4636 ppm	0.1845 ppm	0.2373 ppm	0.9279 ppm	12.4058 ppm	-0.0003 ppm
Concentration RSD	1.8 %	0.9 %	1.4 %	1.0 %	1.0 %	0.6 %	308.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	14.4421 ppm	0.4599 ppm	0.8568 ppm	19.9045 ppm	0.4727 ppm	0.4908 ppm	0.3475 ppm
Concentration per Run 1	14.6777 ppm	0.4591 ppm	0.8605 ppm	19.8239 ppm	0.4782 ppm	0.4952 ppm	0.3459 ppm
Concentration per Run 2	14.4121 ppm	0.4588 ppm	0.8574 ppm	19.8336 ppm	0.4726 ppm	0.4884 ppm	0.3484 ppm
Concentration per Run 3	14.2366 ppm	0.4619 ppm	0.8525 ppm	20.0560 ppm	0.4672 ppm	0.4886 ppm	0.3481 ppm
Concentration RSD	1.5 %	0.4 %	0.5 %	0.7 %	1.2 %	0.8 %	0.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1030 ppm	2.9078 ppm	0.9416 ppm	1.0565 ppm	0.9897 ppm	0.1011 ppm	0.4786 ppm
Concentration per Run 1	0.1030 ppm	2.9435 ppm	0.9483 ppm	1.0670 ppm	1.0019 ppm	0.1015 ppm	0.4837 ppm
Concentration per Run 2	0.1024 ppm	2.9081 ppm	0.9411 ppm	1.0473 ppm	0.9889 ppm	0.1017 ppm	0.4775 ppm
Concentration per Run 3	0.1035 ppm	2.8717 ppm	0.9354 ppm	1.0553 ppm	0.9783 ppm	0.1001 ppm	0.4747 ppm
Concentration RSD	0.6 %	1.2 %	0.7 %	0.9 %	1.2 %	0.9 %	1.0 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4718 ppm	96.5293 %	101.2348 %	92.6132 %	94.5666 %	100.7092 %	96.0280 %
Concentration per Run 1	0.4778 ppm	95.4596 %	100.7954 %	92.2730 %	94.3342 %	100.0086 %	95.8551 %
Concentration per Run 2	0.4731 ppm	96.6155 %	101.6788 %	92.6251 %	94.7499 %	101.0460 %	96.1635 %
Concentration per Run 3	0.4647 ppm	97.5128 %	101.2303 %	92.9416 %	94.6158 %	101.0732 %	96.0653 %
Concentration RSD	1.4 %	1.1 %	0.4 %	0.4 %	0.2 %	0.6 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1969516-6d5 WG1969516
Analysis started at: 9/10/2024 9:05:22 PM
Rack 2
Vial 41
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0003 ppm	0.0024 ppm	-0.0004 ppm	0.0037 ppm	0.0033 ppm	0.0000 ppm	4.6726 ppm
Concentration per Run 1	0.0004 ppm	-0.0031 ppm	-0.0007 ppm	0.0034 ppm	0.0033 ppm	0.0000 ppm	4.6728 ppm
Concentration per Run 2	0.0003 ppm	0.0057 ppm	0.0008 ppm	0.0037 ppm	0.0033 ppm	0.0000 ppm	4.6379 ppm
Concentration per Run 3	0.0003 ppm	0.0045 ppm	-0.0013 ppm	0.0040 ppm	0.0033 ppm	0.0000 ppm	4.7071 ppm
Concentration RSD	18.5 %	199.9 %	274.1 %	8.6 %	1.2 %	166.5 %	0.7 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0007 ppm	0.0017 ppm	0.4045 ppm	-0.0010 ppm
Concentration per Run 1	-0.0001 ppm	0.0002 ppm	0.0000 ppm	0.0006 ppm	0.0015 ppm	0.4141 ppm	-0.0012 ppm
Concentration per Run 2	-0.0001 ppm	0.0002 ppm	-0.0001 ppm	0.0008 ppm	0.0009 ppm	0.3956 ppm	-0.0008 ppm
Concentration per Run 3	0.0000 ppm	-0.0005 ppm	0.0001 ppm	0.0006 ppm	0.0026 ppm	0.4036 ppm	-0.0011 ppm
Concentration RSD	142.2 %	1,666.9 %	367.3 %	21.8 %	50.4 %	2.3 %	23.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.9507 ppm	0.0001 ppm	0.0068 ppm	2.0472 ppm	0.0005 ppm	-0.0003 ppm	0.0066 ppm
Concentration per Run 1	0.9528 ppm	0.0000 ppm	0.0070 ppm	2.0488 ppm	0.0003 ppm	-0.0009 ppm	0.0056 ppm
Concentration per Run 2	0.9537 ppm	0.0002 ppm	0.0068 ppm	2.0383 ppm	0.0009 ppm	0.0003 ppm	0.0073 ppm
Concentration per Run 3	0.9456 ppm	0.0001 ppm	0.0067 ppm	2.0545 ppm	0.0002 ppm	-0.0001 ppm	0.0068 ppm
Concentration RSD	0.5 %	86.2 %	1.7 %	0.4 %	87.1 %	237.6 %	13.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0006 ppm	0.3227 ppm	0.0053 ppm	0.0165 ppm	0.0000 ppm	-0.0003 ppm	0.0001 ppm
Concentration per Run 1	-0.0008 ppm	0.3235 ppm	0.0057 ppm	0.0167 ppm	-0.0001 ppm	0.0001 ppm	0.0002 ppm
Concentration per Run 2	-0.0017 ppm	0.3220 ppm	0.0046 ppm	0.0164 ppm	0.0000 ppm	-0.0006 ppm	0.0003 ppm
Concentration per Run 3	0.0007 ppm	0.3225 ppm	0.0055 ppm	0.0166 ppm	0.0002 ppm	-0.0004 ppm	-0.0001 ppm
Concentration RSD	190.2 %	0.2 %	11.1 %	1.0 %	1,228.0 %	132.6 %	135.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0006 ppm	99.2935 %	101.3721 %	97.6481 %	96.7800 %	100.9606 %	98.1715 %
Concentration per Run 1	0.0006 ppm	98.9028 %	101.6524 %	96.9484 %	96.7076 %	101.5631 %	97.7122 %
Concentration per Run 2	0.0005 ppm	99.4848 %	102.0082 %	97.7184 %	97.0822 %	101.1099 %	98.1477 %
Concentration per Run 3	0.0006 ppm	99.4930 %	100.4556 %	98.2776 %	96.5503 %	100.2088 %	98.6545 %
Concentration RSD	12.1 %	0.3 %	0.8 %	0.7 %	0.3 %	0.7 %	0.5 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCV
Analysis started at: 9/10/2024 9:09:20 PM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.4910 ppm	0.4895 ppm	0.4625 ppm	0.4545 ppm	0.5111 ppm	0.5025 ppm	0.4874 ppm
Concentration per Run 1	0.4884 ppm	0.4881 ppm	0.4613 ppm	0.4541 ppm	0.5102 ppm	0.5010 ppm	0.4862 ppm
Concentration per Run 2	0.4916 ppm	0.4858 ppm	0.4645 ppm	0.4491 ppm	0.5142 ppm	0.5069 ppm	0.4890 ppm
Concentration per Run 3	0.4928 ppm	0.4947 ppm	0.4616 ppm	0.4602 ppm	0.5090 ppm	0.4997 ppm	0.4870 ppm
Recovery Percentage 1	98.191 %	97.908 %	92.499 %	90.899 %	102.220 %	100.504 %	97.481 %
Concentration RSD	0.5 %	0.9 %	0.4 %	1.2 %	0.5 %	0.8 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.4836 ppm	0.4944 ppm	0.4795 ppm	0.4756 ppm	0.4925 ppm	5.3828 ppm	0.5335 ppm
Concentration per Run 1	0.4836 ppm	0.4952 ppm	0.4784 ppm	0.4756 ppm	0.4921 ppm	5.3916 ppm	0.5355 ppm
Concentration per Run 2	0.4801 ppm	0.4910 ppm	0.4792 ppm	0.4738 ppm	0.4926 ppm	5.3537 ppm	0.5311 ppm
Concentration per Run 3	0.4870 ppm	0.4970 ppm	0.4808 ppm	0.4775 ppm	0.4929 ppm	5.4030 ppm	0.5338 ppm
Recovery Percentage 1	96.710 %	98.882 %	95.898 %	95.128 %	98.506 %	107.656 %	106.696 %
Concentration RSD	0.7 %	0.6 %	0.3 %	0.4 %	0.1 %	0.5 %	0.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.4856 ppm	0.4831 ppm	0.4808 ppm	10.1149 ppm	0.4950 ppm	0.4817 ppm	0.4807 ppm
Concentration per Run 1	0.4816 ppm	0.4820 ppm	0.4785 ppm	10.0865 ppm	0.4962 ppm	0.4811 ppm	0.4818 ppm
Concentration per Run 2	0.4868 ppm	0.4844 ppm	0.4782 ppm	10.0465 ppm	0.4936 ppm	0.4831 ppm	0.4772 ppm
Concentration per Run 3	0.4885 ppm	0.4828 ppm	0.4857 ppm	10.2116 ppm	0.4951 ppm	0.4809 ppm	0.4831 ppm
Recovery Percentage 1	97.121 %	96.618 %	96.153 %	101.149 %	98.994 %	96.342 %	96.140 %
Concentration RSD	0.7 %	0.3 %	0.9 %	0.9 %	0.3 %	0.3 %	0.6 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4662 ppm	5.0363 ppm	0.5109 ppm	0.5253 ppm	0.4943 ppm	0.4668 ppm	0.4815 ppm
Concentration per Run 1	0.4651 ppm	5.0167 ppm	0.5125 ppm	0.5243 ppm	0.4930 ppm	0.4645 ppm	0.4789 ppm
Concentration per Run 2	0.4681 ppm	5.0241 ppm	0.5090 ppm	0.5312 ppm	0.4943 ppm	0.4690 ppm	0.4811 ppm
Concentration per Run 3	0.4654 ppm	5.0681 ppm	0.5110 ppm	0.5205 ppm	0.4955 ppm	0.4669 ppm	0.4844 ppm
Recovery Percentage 1	93.238 %	95.929 %	102.171 %	105.065 %	98.856 %	93.360 %	96.295 %
Concentration RSD	0.4 %	0.6 %	0.3 %	1.0 %	0.3 %	0.5 %	0.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4819 ppm	101.8223 %	101.5621 %	97.5577 %	95.0206 %	100.0083 %	97.0505 %
Concentration per Run 1	0.4813 ppm	102.3159 %	101.7742 %	97.8729 %	95.2571 %	99.8311 %	97.1533 %
Concentration per Run 2	0.4804 ppm	101.9116 %	101.1233 %	97.5760 %	94.8447 %	99.8031 %	96.9876 %
Concentration per Run 3	0.4840 ppm	101.2395 %	101.7889 %	97.2244 %	94.9601 %	100.3908 %	97.0107 %
Recovery Percentage 1	96.383 %						
Concentration RSD	0.4 %	0.5 %	0.4 %	0.3 %	0.2 %	0.3 %	0.1 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCB
Analysis started at: 9/10/2024 9:13:18 PM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0003 ppm	0.0054 ppm	0.0004 ppm	-0.0003 ppm	0.0001 ppm	0.0000 ppm	0.0043 ppm
Concentration per Run 1	0.0001 ppm	0.0015 ppm	-0.0002 ppm	-0.0006 ppm	0.0002 ppm	0.0000 ppm	0.0053 ppm
Concentration per Run 2	0.0006 ppm	0.0065 ppm	0.0011 ppm	0.0001 ppm	0.0000 ppm	0.0000 ppm	0.0021 ppm
Concentration per Run 3	0.0001 ppm	0.0082 ppm	0.0003 ppm	-0.0004 ppm	0.0000 ppm	0.0000 ppm	0.0055 ppm
Recovery Percentage 1	4.179 %	5.400 %	12.542 %	-1.066 %	0.668 %	0.562 %	4.309 %
Concentration RSD	97.2 %	65.2 %	182.8 %	109.1 %	126.0 %	68.2 %	45.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0001 ppm	-0.0002 ppm	-0.0004 ppm	0.0005 ppm	0.0032 ppm	0.0026 ppm	0.0003 ppm
Concentration per Run 1	0.0001 ppm	-0.0006 ppm	-0.0003 ppm	0.0005 ppm	0.0038 ppm	-0.0092 ppm	0.0002 ppm
Concentration per Run 2	0.0000 ppm	0.0003 ppm	-0.0004 ppm	0.0003 ppm	0.0035 ppm	0.0084 ppm	0.0003 ppm
Concentration per Run 3	0.0000 ppm	-0.0003 ppm	-0.0003 ppm	0.0005 ppm	0.0023 ppm	0.0086 ppm	0.0005 ppm
Recovery Percentage 1	1.178 %	-0.986 %	-3.569 %	4.734 %	6.377 %	0.106 %	3.402 %
Concentration RSD	79.8 %	230.9 %	16.9 %	23.8 %	25.3 %	387.1 %	39.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0012 ppm	0.0002 ppm	0.0024 ppm	0.0018 ppm	0.0005 ppm	0.0001 ppm	0.0000 ppm
Concentration per Run 1	0.0023 ppm	0.0002 ppm	0.0024 ppm	0.0017 ppm	0.0009 ppm	-0.0002 ppm	-0.0003 ppm
Concentration per Run 2	0.0009 ppm	0.0003 ppm	0.0025 ppm	0.0039 ppm	0.0002 ppm	-0.0005 ppm	0.0001 ppm
Concentration per Run 3	0.0005 ppm	0.0000 ppm	0.0023 ppm	-0.0002 ppm	0.0005 ppm	0.0009 ppm	0.0003 ppm
Recovery Percentage 1	1.226 %	1.908 %	4.827 %	0.090 %	2.156 %	0.744 %	0.043 %
Concentration RSD	76.5 %	72.1 %	4.9 %	116.6 %	70.0 %	1,021.1 %	1,268.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0017 ppm	-0.0200 ppm	0.0002 ppm	0.0000 ppm	-0.0003 ppm	0.0003 ppm	-0.0002 ppm
Concentration per Run 1	-0.0008 ppm	-0.0196 ppm	0.0004 ppm	0.0001 ppm	-0.0001 ppm	0.0010 ppm	-0.0003 ppm
Concentration per Run 2	-0.0029 ppm	-0.0202 ppm	0.0004 ppm	0.0001 ppm	-0.0004 ppm	0.0003 ppm	-0.0002 ppm
Concentration per Run 3	-0.0013 ppm	-0.0201 ppm	0.0000 ppm	-0.0001 ppm	-0.0004 ppm	-0.0003 ppm	0.0000 ppm
Recovery Percentage 1	-16.705 %	-3.996 %	0.499 %	0.228 %	-2.797 %	1.623 %	-1.895 %
Concentration RSD	64.3 %	1.6 %	92.4 %	480.9 %	63.0 %	206.4 %	72.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0004 ppm	97.4863 %	98.6621 %	97.3357 %	96.7018 %	100.1095 %	98.2964 %
Concentration per Run 1	0.0004 ppm	96.6073 %	98.0495 %	97.5868 %	96.1760 %	99.8090 %	98.6095 %
Concentration per Run 2	0.0004 ppm	97.6276 %	98.5038 %	97.6267 %	96.9343 %	99.9732 %	98.5459 %
Concentration per Run 3	0.0004 ppm	98.2240 %	99.4332 %	96.7936 %	96.9950 %	100.5462 %	97.7337 %
Recovery Percentage 1	8.144 %						
Concentration RSD	8.0 %	0.8 %	0.7 %	0.5 %	0.5 %	0.4 %	0.5 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1969415-2 WG1969415
Analysis started at: 9/10/2024 9:17:42 PM
Rack 2
Vial 60
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0517 ppm	2.0476 ppm	0.1158 ppm	0.9371 ppm	2.0955 ppm	0.0515 ppm	10.1400 ppm
Concentration per Run 1	0.0524 ppm	2.0374 ppm	0.1163 ppm	0.9444 ppm	2.0844 ppm	0.0512 ppm	10.0736 ppm
Concentration per Run 2	0.0511 ppm	2.0683 ppm	0.1154 ppm	0.9306 ppm	2.1193 ppm	0.0521 ppm	10.2150 ppm
Concentration per Run 3	0.0516 ppm	2.0372 ppm	0.1158 ppm	0.9362 ppm	2.0828 ppm	0.0512 ppm	10.1314 ppm
Concentration RSD	1.2 %	0.9 %	0.4 %	0.7 %	1.0 %	1.1 %	0.7 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0537 ppm	0.5126 ppm	0.2019 ppm	0.2576 ppm	1.0208 ppm	11.0981 ppm	-0.0003 ppm
Concentration per Run 1	0.0542 ppm	0.5191 ppm	0.2043 ppm	0.2602 ppm	1.0206 ppm	11.0266 ppm	-0.0006 ppm
Concentration per Run 2	0.0532 ppm	0.5076 ppm	0.2007 ppm	0.2560 ppm	1.0278 ppm	11.1767 ppm	0.0001 ppm
Concentration per Run 3	0.0536 ppm	0.5110 ppm	0.2007 ppm	0.2565 ppm	1.0140 ppm	11.0910 ppm	-0.0003 ppm
Concentration RSD	1.0 %	1.1 %	1.0 %	0.9 %	0.7 %	0.7 %	115.3 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	10.2181 ppm	0.5072 ppm	0.9425 ppm	10.6189 ppm	0.5173 ppm	0.5304 ppm	0.4312 ppm
Concentration per Run 1	10.3522 ppm	0.5044 ppm	0.9458 ppm	10.5561 ppm	0.5243 ppm	0.5312 ppm	0.4334 ppm
Concentration per Run 2	10.1125 ppm	0.5125 ppm	0.9385 ppm	10.7075 ppm	0.5121 ppm	0.5313 ppm	0.4301 ppm
Concentration per Run 3	10.1895 ppm	0.5046 ppm	0.9433 ppm	10.5932 ppm	0.5156 ppm	0.5287 ppm	0.4301 ppm
Concentration RSD	1.2 %	0.9 %	0.4 %	0.7 %	1.2 %	0.3 %	0.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1157 ppm	0.9159 ppm	1.0031 ppm	1.0316 ppm	1.0422 ppm	0.1151 ppm	0.5156 ppm
Concentration per Run 1	0.1160 ppm	0.9265 ppm	1.0129 ppm	1.0245 ppm	1.0533 ppm	0.1151 ppm	0.5199 ppm
Concentration per Run 2	0.1165 ppm	0.9091 ppm	0.9957 ppm	1.0419 ppm	1.0363 ppm	0.1146 ppm	0.5131 ppm
Concentration per Run 3	0.1147 ppm	0.9119 ppm	1.0007 ppm	1.0284 ppm	1.0371 ppm	0.1154 ppm	0.5139 ppm
Concentration RSD	0.8 %	1.0 %	0.9 %	0.9 %	0.9 %	0.4 %	0.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5104 ppm	98.2874 %	100.7961 %	94.3968 %	94.7490 %	100.0873 %	96.6388 %
Concentration per Run 1	0.5177 ppm	97.2491 %	100.7864 %	94.4697 %	94.0592 %	100.1314 %	96.5347 %
Concentration per Run 2	0.5039 ppm	99.2359 %	99.6936 %	94.4253 %	95.7039 %	99.1119 %	96.6975 %
Concentration per Run 3	0.5096 ppm	98.3771 %	101.9083 %	94.2954 %	94.4840 %	101.0185 %	96.6843 %
Concentration RSD	1.4 %	1.0 %	1.1 %	0.1 %	0.9 %	1.0 %	0.1 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCV
Analysis started at: 9/10/2024 9:21:41 PM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.4913 ppm	0.4838 ppm	0.4598 ppm	0.4520 ppm	0.5090 ppm	0.4985 ppm	0.4838 ppm
Concentration per Run 1	0.4870 ppm	0.4851 ppm	0.4627 ppm	0.4463 ppm	0.5089 ppm	0.4994 ppm	0.4849 ppm
Concentration per Run 2	0.4939 ppm	0.4817 ppm	0.4565 ppm	0.4574 ppm	0.5085 ppm	0.4971 ppm	0.4834 ppm
Concentration per Run 3	0.4929 ppm	0.4846 ppm	0.4603 ppm	0.4523 ppm	0.5097 ppm	0.4990 ppm	0.4830 ppm
Recovery Percentage 1	98.252 %	96.757 %	91.966 %	90.402 %	101.809 %	99.701 %	96.756 %
Concentration RSD	0.8 %	0.4 %	0.7 %	1.2 %	0.1 %	0.3 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.4812 ppm	0.4934 ppm	0.4774 ppm	0.4740 ppm	0.4933 ppm	5.4109 ppm	0.5397 ppm
Concentration per Run 1	0.4729 ppm	0.4851 ppm	0.4715 ppm	0.4679 ppm	0.4965 ppm	5.4267 ppm	0.5366 ppm
Concentration per Run 2	0.4850 ppm	0.4968 ppm	0.4798 ppm	0.4771 ppm	0.4931 ppm	5.4191 ppm	0.5435 ppm
Concentration per Run 3	0.4858 ppm	0.4983 ppm	0.4808 ppm	0.4770 ppm	0.4902 ppm	5.3870 ppm	0.5388 ppm
Recovery Percentage 1	96.248 %	98.678 %	95.471 %	94.803 %	98.655 %	108.218 %	107.933 %
Concentration RSD	1.5 %	1.5 %	1.1 %	1.1 %	0.6 %	0.4 %	0.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.4835 ppm	0.4791 ppm	0.4856 ppm	10.1764 ppm	0.4930 ppm	0.4798 ppm	0.4855 ppm
Concentration per Run 1	0.4784 ppm	0.4807 ppm	0.4738 ppm	10.2043 ppm	0.4879 ppm	0.4799 ppm	0.4799 ppm
Concentration per Run 2	0.4843 ppm	0.4786 ppm	0.4910 ppm	10.1492 ppm	0.4971 ppm	0.4800 ppm	0.4884 ppm
Concentration per Run 3	0.4876 ppm	0.4779 ppm	0.4920 ppm	10.1756 ppm	0.4940 ppm	0.4796 ppm	0.4883 ppm
Recovery Percentage 1	96.695 %	95.815 %	97.119 %	101.764 %	98.603 %	95.966 %	97.102 %
Concentration RSD	1.0 %	0.3 %	2.1 %	0.3 %	0.9 %	0.0 %	1.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4652 ppm	5.0201 ppm	0.5077 ppm	0.5179 ppm	0.4925 ppm	0.4612 ppm	0.4799 ppm
Concentration per Run 1	0.4679 ppm	4.9454 ppm	0.5004 ppm	0.5175 ppm	0.4879 ppm	0.4603 ppm	0.4746 ppm
Concentration per Run 2	0.4632 ppm	5.0571 ppm	0.5101 ppm	0.5162 ppm	0.4968 ppm	0.4601 ppm	0.4820 ppm
Concentration per Run 3	0.4645 ppm	5.0577 ppm	0.5125 ppm	0.5199 ppm	0.4929 ppm	0.4632 ppm	0.4832 ppm
Recovery Percentage 1	93.042 %	95.621 %	101.533 %	103.575 %	98.506 %	92.236 %	95.986 %
Concentration RSD	0.5 %	1.3 %	1.3 %	0.4 %	0.9 %	0.4 %	1.0 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4807 ppm	102.0241 %	101.8215 %	97.8732 %	96.1032 %	100.1316 %	97.6020 %
Concentration per Run 1	0.4736 ppm	102.9959 %	100.7892 %	97.9540 %	96.3025 %	99.3161 %	97.9323 %
Concentration per Run 2	0.4841 ppm	101.8083 %	102.3034 %	97.7877 %	96.0914 %	100.3716 %	97.4740 %
Concentration per Run 3	0.4845 ppm	101.2679 %	102.3721 %	97.8780 %	95.9156 %	100.7072 %	97.3998 %
Recovery Percentage 1	96.139 %						
Concentration RSD	1.3 %	0.9 %	0.9 %	0.1 %	0.2 %	0.7 %	0.3 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCB
Analysis started at: 9/10/2024 9:25:39 PM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0002 ppm	0.0014 ppm	0.0002 ppm	-0.0010 ppm	0.0002 ppm	0.0000 ppm	0.0045 ppm
Concentration per Run 1	0.0004 ppm	0.0010 ppm	0.0007 ppm	-0.0008 ppm	0.0002 ppm	0.0000 ppm	0.0040 ppm
Concentration per Run 2	0.0000 ppm	0.0013 ppm	0.0004 ppm	-0.0009 ppm	0.0003 ppm	0.0000 ppm	0.0056 ppm
Concentration per Run 3	0.0002 ppm	0.0020 ppm	-0.0005 ppm	-0.0012 ppm	0.0000 ppm	0.0000 ppm	0.0039 ppm
Recovery Percentage 1	2.684 %	1.424 %	6.554 %	-3.256 %	1.535 %	0.611 %	4.529 %
Concentration RSD	90.6 %	39.1 %	330.9 %	17.1 %	93.7 %	122.9 %	20.8 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0000 ppm	-0.0002 ppm	0.0004 ppm	0.0037 ppm	0.0054 ppm	-0.0003 ppm
Concentration per Run 1	0.0000 ppm	0.0000 ppm	-0.0001 ppm	0.0004 ppm	0.0032 ppm	-0.0058 ppm	-0.0005 ppm
Concentration per Run 2	0.0000 ppm	0.0000 ppm	-0.0002 ppm	0.0006 ppm	0.0040 ppm	0.0242 ppm	-0.0002 ppm
Concentration per Run 3	0.0000 ppm	0.0000 ppm	-0.0002 ppm	0.0003 ppm	0.0040 ppm	-0.0024 ppm	-0.0002 ppm
Recovery Percentage 1	0.500 %	0.158 %	-1.824 %	4.166 %	7.435 %	0.215 %	-3.095 %
Concentration RSD	101.0 %	27.7 %	39.0 %	33.7 %	13.2 %	306.5 %	62.3 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0014 ppm	0.0001 ppm	0.0031 ppm	0.0010 ppm	0.0009 ppm	-0.0004 ppm	0.0014 ppm
Concentration per Run 1	0.0017 ppm	0.0001 ppm	0.0031 ppm	-0.0034 ppm	0.0009 ppm	0.0003 ppm	0.0032 ppm
Concentration per Run 2	0.0009 ppm	0.0002 ppm	0.0032 ppm	0.0042 ppm	0.0005 ppm	-0.0004 ppm	0.0009 ppm
Concentration per Run 3	0.0017 ppm	0.0001 ppm	0.0030 ppm	0.0023 ppm	0.0013 ppm	-0.0010 ppm	0.0000 ppm
Recovery Percentage 1	1.407 %	1.313 %	6.244 %	0.052 %	3.684 %	-3.620 %	2.735 %
Concentration RSD	31.5 %	22.6 %	3.0 %	380.9 %	41.0 %	189.2 %	119.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0012 ppm	-0.0209 ppm	0.0005 ppm	-0.0001 ppm	-0.0003 ppm	-0.0008 ppm	-0.0001 ppm
Concentration per Run 1	-0.0011 ppm	-0.0196 ppm	0.0006 ppm	-0.0001 ppm	-0.0003 ppm	-0.0014 ppm	0.0000 ppm
Concentration per Run 2	-0.0015 ppm	-0.0223 ppm	0.0004 ppm	-0.0001 ppm	-0.0003 ppm	-0.0008 ppm	-0.0003 ppm
Concentration per Run 3	-0.0009 ppm	-0.0208 ppm	0.0005 ppm	0.0000 ppm	-0.0002 ppm	-0.0002 ppm	-0.0001 ppm
Recovery Percentage 1	-11.823 %	-4.182 %	0.989 %	-0.585 %	-2.590 %	-3.970 %	-1.331 %
Concentration RSD	24.4 %	6.4 %	17.1 %	149.9 %	28.0 %	74.6 %	101.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0004 ppm	97.4060 %	99.0471 %	97.0158 %	96.2637 %	100.0323 %	97.8400 %
Concentration per Run 1	0.0004 ppm	96.4761 %	98.8962 %	96.8199 %	95.9532 %	99.9092 %	97.6912 %
Concentration per Run 2	0.0005 ppm	97.4783 %	98.6766 %	97.1308 %	96.2025 %	99.4118 %	97.9567 %
Concentration per Run 3	0.0003 ppm	98.2637 %	99.5684 %	97.0967 %	96.6354 %	100.7760 %	97.8722 %
Recovery Percentage 1	8.198 %						
Concentration RSD	25.0 %	0.9 %	0.5 %	0.2 %	0.4 %	0.7 %	0.1 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450627-07 WG1969516
Analysis started at: 9/10/2024 9:31:11 PM
Rack 2
Vial 50
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0002 ppm	0.0109 ppm	0.0002 ppm	-0.0009 ppm	0.0000 ppm	0.0000 ppm	0.0050 ppm
Concentration per Run 1	-0.0003 ppm	0.0099 ppm	-0.0003 ppm	-0.0009 ppm	0.0000 ppm	0.0000 ppm	0.0055 ppm
Concentration per Run 2	0.0004 ppm	0.0148 ppm	0.0001 ppm	-0.0007 ppm	-0.0001 ppm	0.0000 ppm	0.0055 ppm
Concentration per Run 3	0.0005 ppm	0.0081 ppm	0.0007 ppm	-0.0010 ppm	0.0002 ppm	0.0000 ppm	0.0041 ppm
Concentration RSD	235.0 %	32.0 %	290.2 %	20.6 %	580.1 %	533.0 %	16.7 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0001 ppm	0.0007 ppm	0.0000 ppm	0.0014 ppm	-0.0136 ppm	-0.0001 ppm
Concentration per Run 1	0.0001 ppm	-0.0001 ppm	0.0008 ppm	0.0000 ppm	0.0015 ppm	-0.0090 ppm	0.0007 ppm
Concentration per Run 2	0.0000 ppm	-0.0005 ppm	0.0006 ppm	-0.0001 ppm	0.0010 ppm	-0.0141 ppm	-0.0005 ppm
Concentration per Run 3	0.0001 ppm	0.0002 ppm	0.0007 ppm	0.0002 ppm	0.0016 ppm	-0.0177 ppm	-0.0005 ppm
Concentration RSD	185.4 %	302.7 %	12.7 %	286.5 %	25.2 %	32.0 %	652.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0013 ppm	0.0001 ppm	0.0008 ppm	0.0098 ppm	0.0000 ppm	0.0001 ppm	0.0003 ppm
Concentration per Run 1	0.0018 ppm	0.0001 ppm	0.0007 ppm	0.0138 ppm	0.0010 ppm	0.0004 ppm	0.0014 ppm
Concentration per Run 2	0.0002 ppm	-0.0001 ppm	0.0011 ppm	0.0092 ppm	0.0002 ppm	0.0000 ppm	-0.0013 ppm
Concentration per Run 3	0.0020 ppm	0.0002 ppm	0.0006 ppm	0.0066 ppm	-0.0012 ppm	-0.0002 ppm	0.0009 ppm
Concentration RSD	75.6 %	185.9 %	36.2 %	36.8 %	4,659.0 %	307.0 %	455.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0010 ppm	-0.0121 ppm	-0.0008 ppm	0.0000 ppm	-0.0001 ppm	-0.0002 ppm	-0.0002 ppm
Concentration per Run 1	-0.0003 ppm	-0.0116 ppm	-0.0009 ppm	-0.0001 ppm	-0.0001 ppm	-0.0001 ppm	-0.0002 ppm
Concentration per Run 2	-0.0016 ppm	-0.0110 ppm	-0.0004 ppm	0.0001 ppm	-0.0003 ppm	-0.0002 ppm	-0.0001 ppm
Concentration per Run 3	-0.0009 ppm	-0.0138 ppm	-0.0010 ppm	-0.0001 ppm	0.0000 ppm	-0.0005 ppm	-0.0002 ppm
Concentration RSD	68.4 %	12.1 %	43.2 %	728.2 %	97.8 %	86.3 %	39.1 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0001 ppm	99.5723 %	100.6291 %	98.1843 %	99.8812 %	102.1136 %	100.3275 %
Concentration per Run 1	0.0002 ppm	99.9770 %	100.5454 %	97.7114 %	100.3577 %	102.3796 %	100.9286 %
Concentration per Run 2	0.0001 ppm	98.7502 %	101.0518 %	98.9639 %	98.1851 %	102.4018 %	100.9064 %
Concentration per Run 3	0.0000 ppm	99.9898 %	100.2900 %	97.8774 %	101.1009 %	101.5594 %	99.1476 %
Concentration RSD	82.8 %	0.7 %	0.4 %	0.7 %	1.5 %	0.5 %	1.0 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450786-03 WG1969516
Analysis started at: 9/10/2024 9:35:24 PM
Rack 2
Vial 51
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	0.0021 ppm	0.0010 ppm	0.0162 ppm	0.0166 ppm	0.0000 ppm	22.4013 ppm
Concentration per Run 1	0.0000 ppm	0.0013 ppm	0.0007 ppm	0.0154 ppm	0.0166 ppm	0.0000 ppm	22.3671 ppm
Concentration per Run 2	-0.0001 ppm	0.0027 ppm	0.0011 ppm	0.0167 ppm	0.0167 ppm	0.0000 ppm	22.4631 ppm
Concentration per Run 3	0.0001 ppm	0.0021 ppm	0.0012 ppm	0.0165 ppm	0.0165 ppm	0.0000 ppm	22.3737 ppm
Concentration RSD	513.6 %	33.8 %	22.7 %	4.4 %	0.6 %	105.7 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0001 ppm	-0.0001 ppm	0.0008 ppm	0.0068 ppm	0.0014 ppm	1.1584 ppm	-0.0005 ppm
Concentration per Run 1	-0.0001 ppm	-0.0004 ppm	0.0009 ppm	0.0071 ppm	0.0021 ppm	1.1765 ppm	-0.0002 ppm
Concentration per Run 2	-0.0002 ppm	-0.0001 ppm	0.0007 ppm	0.0068 ppm	0.0006 ppm	1.1491 ppm	-0.0007 ppm
Concentration per Run 3	-0.0002 ppm	0.0001 ppm	0.0008 ppm	0.0064 ppm	0.0015 ppm	1.1495 ppm	-0.0006 ppm
Concentration RSD	38.0 %	191.9 %	15.4 %	5.0 %	53.5 %	1.4 %	59.3 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	4.8856 ppm	0.0003 ppm	0.0006 ppm	8.5284 ppm	0.0010 ppm	-0.0001 ppm	-0.0005 ppm
Concentration per Run 1	4.9849 ppm	0.0004 ppm	0.0007 ppm	8.5039 ppm	0.0014 ppm	-0.0006 ppm	0.0025 ppm
Concentration per Run 2	4.8636 ppm	0.0002 ppm	0.0007 ppm	8.5608 ppm	0.0002 ppm	-0.0006 ppm	-0.0033 ppm
Concentration per Run 3	4.8082 ppm	0.0003 ppm	0.0005 ppm	8.5204 ppm	0.0015 ppm	0.0010 ppm	-0.0006 ppm
Concentration RSD	1.9 %	25.1 %	22.5 %	0.3 %	67.2 %	970.4 %	592.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0008 ppm	3.4131 ppm	-0.0013 ppm	0.0797 ppm	-0.0004 ppm	0.0001 ppm	0.0002 ppm
Concentration per Run 1	-0.0007 ppm	3.4711 ppm	-0.0008 ppm	0.0794 ppm	-0.0006 ppm	0.0006 ppm	0.0002 ppm
Concentration per Run 2	-0.0013 ppm	3.3940 ppm	-0.0015 ppm	0.0805 ppm	-0.0003 ppm	0.0004 ppm	0.0005 ppm
Concentration per Run 3	-0.0003 ppm	3.3741 ppm	-0.0016 ppm	0.0793 ppm	-0.0003 ppm	-0.0005 ppm	0.0000 ppm
Concentration RSD	60.7 %	1.5 %	31.9 %	0.9 %	33.1 %	414.6 %	103.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0069 ppm	94.1716 %	99.7419 %	93.6754 %	96.1391 %	101.8214 %	97.4333 %
Concentration per Run 1	0.0070 ppm	92.6156 %	99.6765 %	93.1842 %	95.6352 %	101.4778 %	97.2542 %
Concentration per Run 2	0.0069 ppm	94.3389 %	99.7915 %	93.6238 %	96.0005 %	102.1681 %	97.8508 %
Concentration per Run 3	0.0068 ppm	95.5602 %	99.7579 %	94.2182 %	96.7817 %	101.8182 %	97.1948 %
Concentration RSD	1.6 %	1.6 %	0.1 %	0.6 %	0.6 %	0.3 %	0.4 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450786-04 WG1969516
Analysis started at: 9/10/2024 9:39:23 PM
Rack 2
Vial 52
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	0.0058 ppm	-0.0001 ppm	0.0120 ppm	0.0454 ppm	0.0000 ppm	23.1228 ppm
Concentration per Run 1	0.0003 ppm	0.0004 ppm	-0.0001 ppm	0.0120 ppm	0.0459 ppm	0.0000 ppm	23.3448 ppm
Concentration per Run 2	0.0001 ppm	0.0088 ppm	-0.0004 ppm	0.0115 ppm	0.0450 ppm	0.0000 ppm	22.9849 ppm
Concentration per Run 3	0.0000 ppm	0.0082 ppm	0.0002 ppm	0.0125 ppm	0.0452 ppm	0.0000 ppm	23.0387 ppm
Concentration RSD	153.1 %	81.5 %	320.8 %	3.9 %	1.1 %	471.7 %	0.8 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0001 ppm	-0.0001 ppm	0.0012 ppm	0.0072 ppm	0.0127 ppm	1.2590 ppm	0.0009 ppm
Concentration per Run 1	0.0000 ppm	-0.0001 ppm	0.0012 ppm	0.0069 ppm	0.0137 ppm	1.2853 ppm	0.0015 ppm
Concentration per Run 2	0.0000 ppm	-0.0002 ppm	0.0013 ppm	0.0074 ppm	0.0127 ppm	1.2486 ppm	0.0002 ppm
Concentration per Run 3	-0.0001 ppm	-0.0002 ppm	0.0012 ppm	0.0072 ppm	0.0118 ppm	1.2432 ppm	0.0010 ppm
Concentration RSD	66.6 %	43.2 %	4.8 %	3.7 %	7.2 %	1.8 %	73.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	5.6310 ppm	0.0031 ppm	0.0007 ppm	10.7214 ppm	0.0273 ppm	0.0004 ppm	0.0007 ppm
Concentration per Run 1	5.6122 ppm	0.0032 ppm	0.0006 ppm	10.7733 ppm	0.0280 ppm	0.0004 ppm	0.0039 ppm
Concentration per Run 2	5.7228 ppm	0.0031 ppm	0.0007 ppm	10.6577 ppm	0.0278 ppm	0.0002 ppm	-0.0007 ppm
Concentration per Run 3	5.5578 ppm	0.0030 ppm	0.0007 ppm	10.7332 ppm	0.0261 ppm	0.0006 ppm	-0.0012 ppm
Concentration RSD	1.5 %	3.5 %	5.7 %	0.5 %	3.7 %	47.0 %	401.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0008 ppm	6.4671 ppm	-0.0014 ppm	0.1037 ppm	-0.0003 ppm	-0.0009 ppm	-0.0001 ppm
Concentration per Run 1	0.0005 ppm	6.4215 ppm	-0.0017 ppm	0.1047 ppm	-0.0003 ppm	-0.0014 ppm	-0.0001 ppm
Concentration per Run 2	-0.0023 ppm	6.5979 ppm	-0.0012 ppm	0.1032 ppm	-0.0004 ppm	-0.0015 ppm	-0.0002 ppm
Concentration per Run 3	-0.0005 ppm	6.3819 ppm	-0.0012 ppm	0.1033 ppm	-0.0003 ppm	0.0000 ppm	-0.0001 ppm
Concentration RSD	182.0 %	1.8 %	19.1 %	0.8 %	21.0 %	90.1 %	42.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0151 ppm	93.2238 %	98.8702 %	93.2212 %	94.0179 %	99.9513 %	97.0261 %
Concentration per Run 1	0.0149 ppm	93.6845 %	97.6825 %	92.9263 %	94.3267 %	99.1686 %	97.2605 %
Concentration per Run 2	0.0155 ppm	91.7509 %	99.5267 %	92.6918 %	92.7111 %	100.4647 %	96.8214 %
Concentration per Run 3	0.0147 ppm	94.2359 %	99.4014 %	94.0453 %	95.0158 %	100.2206 %	96.9964 %
Concentration RSD	2.6 %	1.4 %	1.0 %	0.8 %	1.3 %	0.7 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450786-05 WG1969516
Analysis started at: 9/10/2024 9:43:21 PM
Rack 2
Vial 53
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	0.0054 ppm	0.0004 ppm	0.0640 ppm	0.0985 ppm	0.0000 ppm	64.7020 ppm
Concentration per Run 1	-0.0002 ppm	0.0068 ppm	0.0014 ppm	0.0658 ppm	0.0987 ppm	0.0000 ppm	65.0635 ppm
Concentration per Run 2	0.0001 ppm	0.0082 ppm	0.0010 ppm	0.0633 ppm	0.0979 ppm	0.0000 ppm	64.3263 ppm
Concentration per Run 3	0.0003 ppm	0.0012 ppm	-0.0011 ppm	0.0629 ppm	0.0987 ppm	0.0000 ppm	64.7162 ppm
Concentration RSD	502.5 %	67.9 %	312.3 %	2.4 %	0.5 %	912.5 %	0.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0003 ppm	0.0003 ppm	0.0005 ppm	0.0165 ppm	0.0003 ppm	10.0767 ppm	0.0003 ppm
Concentration per Run 1	-0.0002 ppm	0.0006 ppm	0.0005 ppm	0.0166 ppm	0.0006 ppm	10.0817 ppm	0.0022 ppm
Concentration per Run 2	-0.0002 ppm	0.0000 ppm	0.0004 ppm	0.0166 ppm	0.0001 ppm	10.0212 ppm	0.0005 ppm
Concentration per Run 3	-0.0003 ppm	0.0002 ppm	0.0005 ppm	0.0164 ppm	0.0001 ppm	10.1274 ppm	-0.0017 ppm
Concentration RSD	15.5 %	108.5 %	12.9 %	0.5 %	100.4 %	0.5 %	612.1 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	12.4185 ppm	2.6435 ppm	0.0009 ppm	12.5469 ppm	0.0018 ppm	0.0006 ppm	-0.0007 ppm
Concentration per Run 1	12.5727 ppm	2.6568 ppm	0.0009 ppm	12.5761 ppm	0.0017 ppm	0.0005 ppm	-0.0009 ppm
Concentration per Run 2	12.4585 ppm	2.6320 ppm	0.0009 ppm	12.4975 ppm	0.0022 ppm	0.0007 ppm	-0.0011 ppm
Concentration per Run 3	12.2243 ppm	2.6417 ppm	0.0009 ppm	12.5672 ppm	0.0014 ppm	0.0007 ppm	-0.0002 ppm
Concentration RSD	1.4 %	0.5 %	1.9 %	0.3 %	21.5 %	16.4 %	68.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0020 ppm	4.2738 ppm	-0.0012 ppm	0.2497 ppm	-0.0005 ppm	-0.0015 ppm	0.0003 ppm
Concentration per Run 1	-0.0024 ppm	4.3292 ppm	-0.0014 ppm	0.2499 ppm	-0.0005 ppm	-0.0006 ppm	0.0002 ppm
Concentration per Run 2	-0.0031 ppm	4.2776 ppm	-0.0013 ppm	0.2495 ppm	-0.0005 ppm	-0.0021 ppm	0.0003 ppm
Concentration per Run 3	-0.0006 ppm	4.2147 ppm	-0.0008 ppm	0.2496 ppm	-0.0006 ppm	-0.0018 ppm	0.0004 ppm
Concentration RSD	63.9 %	1.3 %	26.5 %	0.1 %	7.9 %	52.4 %	32.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0198 ppm	92.3729 %	99.8284 %	90.8342 %	93.1353 %	101.2456 %	95.2712 %
Concentration per Run 1	0.0199 ppm	91.1536 %	98.9866 %	90.6214 %	92.7053 %	100.7753 %	95.5556 %
Concentration per Run 2	0.0198 ppm	92.1469 %	100.6781 %	90.8714 %	92.9967 %	101.5517 %	95.2406 %
Concentration per Run 3	0.0195 ppm	93.8183 %	99.8206 %	91.0099 %	93.7038 %	101.4096 %	95.0174 %
Concentration RSD	1.0 %	1.5 %	0.8 %	0.2 %	0.6 %	0.4 %	0.3 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450786-06 WG1969516
Analysis started at: 9/10/2024 9:47:19 PM
Rack 2
Vial 54
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0001 ppm	0.0041 ppm	-0.0006 ppm	0.0675 ppm	0.0586 ppm	0.0000 ppm	71.6385 ppm
Concentration per Run 1	0.0000 ppm	-0.0037 ppm	-0.0005 ppm	0.0685 ppm	0.0589 ppm	0.0000 ppm	72.2437 ppm
Concentration per Run 2	0.0000 ppm	0.0059 ppm	-0.0002 ppm	0.0668 ppm	0.0582 ppm	0.0000 ppm	71.3714 ppm
Concentration per Run 3	-0.0003 ppm	0.0102 ppm	-0.0011 ppm	0.0671 ppm	0.0587 ppm	0.0000 ppm	71.3003 ppm
Concentration RSD	202.8 %	172.0 %	78.7 %	1.3 %	0.6 %	127.8 %	0.7 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0003 ppm	0.0004 ppm	0.0008 ppm	0.0037 ppm	0.0467 ppm	2.6109 ppm	0.0002 ppm
Concentration per Run 1	-0.0004 ppm	0.0003 ppm	0.0007 ppm	0.0039 ppm	0.0467 ppm	2.6424 ppm	-0.0004 ppm
Concentration per Run 2	-0.0003 ppm	0.0005 ppm	0.0007 ppm	0.0037 ppm	0.0473 ppm	2.5938 ppm	-0.0003 ppm
Concentration per Run 3	-0.0003 ppm	0.0002 ppm	0.0009 ppm	0.0034 ppm	0.0461 ppm	2.5964 ppm	0.0012 ppm
Concentration RSD	12.1 %	36.5 %	12.6 %	7.0 %	1.3 %	1.0 %	587.3 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	13.9233 ppm	0.3564 ppm	0.0005 ppm	17.0165 ppm	0.0030 ppm	0.0002 ppm	-0.0011 ppm
Concentration per Run 1	14.0117 ppm	0.3588 ppm	0.0006 ppm	17.1666 ppm	0.0034 ppm	-0.0001 ppm	-0.0029 ppm
Concentration per Run 2	13.9186 ppm	0.3556 ppm	0.0004 ppm	16.9223 ppm	0.0031 ppm	0.0007 ppm	-0.0027 ppm
Concentration per Run 3	13.8396 ppm	0.3547 ppm	0.0004 ppm	16.9608 ppm	0.0025 ppm	0.0001 ppm	0.0023 ppm
Concentration RSD	0.6 %	0.6 %	29.1 %	0.8 %	14.9 %	163.7 %	265.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0010 ppm	5.5907 ppm	-0.0014 ppm	0.2698 ppm	-0.0004 ppm	-0.0017 ppm	0.0003 ppm
Concentration per Run 1	-0.0024 ppm	5.6440 ppm	-0.0014 ppm	0.2727 ppm	-0.0005 ppm	-0.0016 ppm	0.0003 ppm
Concentration per Run 2	-0.0006 ppm	5.5766 ppm	-0.0014 ppm	0.2667 ppm	-0.0003 ppm	-0.0011 ppm	0.0003 ppm
Concentration per Run 3	-0.0001 ppm	5.5516 ppm	-0.0014 ppm	0.2700 ppm	-0.0004 ppm	-0.0023 ppm	0.0002 ppm
Concentration RSD	114.5 %	0.9 %	1.2 %	1.1 %	15.8 %	35.6 %	21.0 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0131 ppm	92.9335 %	99.0991 %	90.4806 %	93.3622 %	100.0398 %	95.0168 %
Concentration per Run 1	0.0131 ppm	92.2190 %	98.4076 %	90.3921 %	93.0976 %	99.7396 %	95.1550 %
Concentration per Run 2	0.0129 ppm	92.8796 %	99.2379 %	90.5378 %	93.4406 %	100.2626 %	95.4482 %
Concentration per Run 3	0.0134 ppm	93.7018 %	99.6519 %	90.5117 %	93.5483 %	100.1172 %	94.4472 %
Concentration RSD	1.8 %	0.8 %	0.6 %	0.1 %	0.3 %	0.3 %	0.5 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450786-02 WG1969516
Analysis started at: 9/10/2024 9:51:17 PM
Rack 2
Vial 42
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	0.0085 ppm	0.0000 ppm	0.0113 ppm	0.0695 ppm	0.0000 ppm	14.5607 ppm
Concentration per Run 1	0.0000 ppm	0.0111 ppm	0.0000 ppm	0.0119 ppm	0.0699 ppm	0.0000 ppm	14.5622 ppm
Concentration per Run 2	0.0002 ppm	0.0097 ppm	-0.0011 ppm	0.0108 ppm	0.0693 ppm	0.0000 ppm	14.5516 ppm
Concentration per Run 3	0.0002 ppm	0.0048 ppm	0.0011 ppm	0.0114 ppm	0.0694 ppm	0.0000 ppm	14.5683 ppm
Concentration RSD	100.7 %	38.7 %	5,786.3 %	4.9 %	0.5 %	312.2 %	0.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0002 ppm	0.0015 ppm	0.0239 ppm	0.0033 ppm	1.2233 ppm	0.0003 ppm
Concentration per Run 1	0.0000 ppm	-0.0003 ppm	0.0015 ppm	0.0242 ppm	0.0026 ppm	1.2553 ppm	0.0003 ppm
Concentration per Run 2	0.0000 ppm	0.0000 ppm	0.0016 ppm	0.0237 ppm	0.0032 ppm	1.2048 ppm	0.0007 ppm
Concentration per Run 3	0.0000 ppm	-0.0002 ppm	0.0014 ppm	0.0239 ppm	0.0040 ppm	1.2099 ppm	0.0000 ppm
Concentration RSD	52.6 %	79.9 %	4.2 %	1.0 %	21.0 %	2.3 %	105.0 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	6.2818 ppm	0.0010 ppm	0.0001 ppm	13.0004 ppm	0.0019 ppm	0.0016 ppm	-0.0011 ppm
Concentration per Run 1	6.3713 ppm	0.0009 ppm	0.0000 ppm	13.0550 ppm	0.0018 ppm	0.0021 ppm	-0.0023 ppm
Concentration per Run 2	6.2389 ppm	0.0010 ppm	0.0005 ppm	13.0211 ppm	0.0022 ppm	0.0018 ppm	-0.0016 ppm
Concentration per Run 3	6.2351 ppm	0.0011 ppm	0.0000 ppm	12.9252 ppm	0.0019 ppm	0.0010 ppm	0.0006 ppm
Concentration RSD	1.2 %	6.6 %	200.0 %	0.5 %	10.5 %	32.4 %	140.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0007 ppm	6.7543 ppm	0.0028 ppm	0.0764 ppm	-0.0004 ppm	-0.0002 ppm	0.0000 ppm
Concentration per Run 1	-0.0006 ppm	6.8386 ppm	0.0030 ppm	0.0768 ppm	-0.0002 ppm	-0.0002 ppm	-0.0001 ppm
Concentration per Run 2	-0.0018 ppm	6.7153 ppm	0.0033 ppm	0.0759 ppm	-0.0006 ppm	-0.0001 ppm	0.0000 ppm
Concentration per Run 3	0.0004 ppm	6.7090 ppm	0.0020 ppm	0.0765 ppm	-0.0004 ppm	-0.0003 ppm	0.0001 ppm
Concentration RSD	168.0 %	1.1 %	24.4 %	0.6 %	54.6 %	52.3 %	1,371.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0244 ppm	94.6082 %	99.2110 %	92.7994 %	95.7597 %	101.5504 %	97.2941 %
Concentration per Run 1	0.0244 ppm	93.4386 %	99.3371 %	92.6739 %	95.7952 %	101.9007 %	97.7929 %
Concentration per Run 2	0.0242 ppm	95.1856 %	99.6990 %	92.6834 %	96.2032 %	101.7539 %	97.4522 %
Concentration per Run 3	0.0244 ppm	95.2003 %	98.5968 %	93.0411 %	95.2807 %	100.9965 %	96.6373 %
Concentration RSD	0.4 %	1.1 %	0.6 %	0.2 %	0.5 %	0.5 %	0.6 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1969516-7 WG1969516
Analysis started at: 9/10/2024 9:55:15 PM
Rack 2
Vial 43
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0514 ppm	2.0221 ppm	0.1145 ppm	0.9559 ppm	2.1235 ppm	0.0508 ppm	24.5030 ppm
Concentration per Run 1	0.0518 ppm	2.0096 ppm	0.1145 ppm	0.9604 ppm	2.1122 ppm	0.0504 ppm	24.2730 ppm
Concentration per Run 2	0.0514 ppm	2.0202 ppm	0.1140 ppm	0.9544 ppm	2.1094 ppm	0.0506 ppm	24.3867 ppm
Concentration per Run 3	0.0510 ppm	2.0366 ppm	0.1151 ppm	0.9529 ppm	2.1490 ppm	0.0515 ppm	24.8494 ppm
Concentration RSD	0.8 %	0.7 %	0.5 %	0.4 %	1.0 %	1.2 %	1.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0526 ppm	0.5008 ppm	0.2012 ppm	0.2790 ppm	0.9909 ppm	12.0574 ppm	0.0011 ppm
Concentration per Run 1	0.0529 ppm	0.5053 ppm	0.2034 ppm	0.2822 ppm	0.9834 ppm	12.0069 ppm	0.0027 ppm
Concentration per Run 2	0.0528 ppm	0.4999 ppm	0.2007 ppm	0.2776 ppm	0.9848 ppm	12.0801 ppm	0.0008 ppm
Concentration per Run 3	0.0523 ppm	0.4972 ppm	0.1994 ppm	0.2773 ppm	1.0044 ppm	12.0851 ppm	-0.0002 ppm
Concentration RSD	0.6 %	0.8 %	1.0 %	1.0 %	1.2 %	0.4 %	133.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	16.2932 ppm	0.4961 ppm	0.8858 ppm	23.3909 ppm	0.5082 ppm	0.5170 ppm	0.4373 ppm
Concentration per Run 1	16.4980 ppm	0.4914 ppm	0.8857 ppm	23.2587 ppm	0.5143 ppm	0.5188 ppm	0.4408 ppm
Concentration per Run 2	16.2820 ppm	0.4938 ppm	0.8858 ppm	23.2844 ppm	0.5057 ppm	0.5161 ppm	0.4360 ppm
Concentration per Run 3	16.0997 ppm	0.5032 ppm	0.8860 ppm	23.6297 ppm	0.5045 ppm	0.5161 ppm	0.4352 ppm
Concentration RSD	1.2 %	1.3 %	0.0 %	0.9 %	1.0 %	0.3 %	0.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1169 ppm	7.8520 ppm	0.9683 ppm	1.0861 ppm	1.0301 ppm	0.1125 ppm	0.5092 ppm
Concentration per Run 1	0.1161 ppm	7.9214 ppm	0.9762 ppm	1.0759 ppm	1.0407 ppm	0.1127 ppm	0.5127 ppm
Concentration per Run 2	0.1162 ppm	7.8319 ppm	0.9651 ppm	1.0800 ppm	1.0250 ppm	0.1126 ppm	0.5102 ppm
Concentration per Run 3	0.1185 ppm	7.8027 ppm	0.9637 ppm	1.1024 ppm	1.0246 ppm	0.1123 ppm	0.5046 ppm
Concentration RSD	1.2 %	0.8 %	0.7 %	1.3 %	0.9 %	0.2 %	0.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5277 ppm	95.8574 %	99.8962 %	92.0528 %	94.5540 %	99.6545 %	96.1030 %
Concentration per Run 1	0.5346 ppm	94.9123 %	100.2441 %	92.2404 %	94.5170 %	99.8318 %	96.6321 %
Concentration per Run 2	0.5258 ppm	95.9672 %	101.0321 %	91.9915 %	94.3483 %	100.4325 %	96.0217 %
Concentration per Run 3	0.5227 ppm	96.6928 %	98.4125 %	91.9264 %	94.7966 %	98.6991 %	95.6551 %
Concentration RSD	1.2 %	0.9 %	1.3 %	0.2 %	0.2 %	0.9 %	0.5 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1969516-8 WG1969516
Analysis started at: 9/10/2024 9:59:13 PM
Rack 2
Vial 44
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	0.0005 ppm	0.0002 ppm	0.0115 ppm	0.0677 ppm	0.0000 ppm	14.1208 ppm
Concentration per Run 1	0.0002 ppm	0.0018 ppm	0.0006 ppm	0.0122 ppm	0.0681 ppm	0.0000 ppm	14.1346 ppm
Concentration per Run 2	-0.0002 ppm	-0.0022 ppm	-0.0001 ppm	0.0111 ppm	0.0680 ppm	0.0000 ppm	14.1540 ppm
Concentration per Run 3	0.0002 ppm	0.0018 ppm	0.0003 ppm	0.0112 ppm	0.0671 ppm	0.0000 ppm	14.0738 ppm
Concentration RSD	360.0 %	469.7 %	145.9 %	5.1 %	0.8 %	129.1 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0001 ppm	0.0014 ppm	0.0239 ppm	0.0024 ppm	1.1916 ppm	-0.0001 ppm
Concentration per Run 1	0.0000 ppm	-0.0002 ppm	0.0015 ppm	0.0242 ppm	0.0025 ppm	1.2258 ppm	0.0001 ppm
Concentration per Run 2	0.0000 ppm	0.0000 ppm	0.0013 ppm	0.0242 ppm	0.0027 ppm	1.1806 ppm	0.0000 ppm
Concentration per Run 3	0.0000 ppm	-0.0002 ppm	0.0013 ppm	0.0234 ppm	0.0022 ppm	1.1684 ppm	-0.0004 ppm
Concentration RSD	85.5 %	89.7 %	6.1 %	2.0 %	10.1 %	2.5 %	342.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	6.2696 ppm	0.0010 ppm	0.0056 ppm	12.6939 ppm	0.0018 ppm	0.0022 ppm	0.0026 ppm
Concentration per Run 1	6.4008 ppm	0.0010 ppm	0.0057 ppm	12.6548 ppm	0.0019 ppm	0.0024 ppm	0.0032 ppm
Concentration per Run 2	6.2572 ppm	0.0010 ppm	0.0054 ppm	12.7690 ppm	0.0017 ppm	0.0014 ppm	0.0009 ppm
Concentration per Run 3	6.1509 ppm	0.0011 ppm	0.0057 ppm	12.6579 ppm	0.0017 ppm	0.0027 ppm	0.0035 ppm
Concentration RSD	2.0 %	8.9 %	3.5 %	0.5 %	8.1 %	30.9 %	56.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0004 ppm	6.7532 ppm	0.0015 ppm	0.0742 ppm	-0.0001 ppm	0.0002 ppm	0.0000 ppm
Concentration per Run 1	0.0033 ppm	6.8815 ppm	0.0013 ppm	0.0745 ppm	0.0001 ppm	0.0006 ppm	0.0001 ppm
Concentration per Run 2	-0.0006 ppm	6.7460 ppm	0.0014 ppm	0.0742 ppm	-0.0002 ppm	0.0006 ppm	-0.0002 ppm
Concentration per Run 3	-0.0016 ppm	6.6322 ppm	0.0019 ppm	0.0738 ppm	-0.0001 ppm	-0.0006 ppm	0.0000 ppm
Concentration RSD	731.7 %	1.8 %	20.8 %	0.5 %	141.8 %	423.2 %	312.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0247 ppm	93.6593 %	101.0802 %	93.6162 %	95.5899 %	102.2855 %	97.3513 %
Concentration per Run 1	0.0251 ppm	92.2511 %	101.0178 %	92.3422 %	95.3311 %	102.1195 %	96.7920 %
Concentration per Run 2	0.0246 ppm	93.4549 %	100.2622 %	93.9099 %	95.3221 %	101.8367 %	97.7185 %
Concentration per Run 3	0.0244 ppm	95.2718 %	101.9608 %	94.5965 %	96.1166 %	102.9002 %	97.5436 %
Concentration RSD	1.4 %	1.6 %	0.8 %	1.2 %	0.5 %	0.5 %	0.5 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1969516-9 WG1969516
Analysis started at: 9/10/2024 10:03:11 PM
Rack 2
Vial 45
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0565 ppm	2.1334 ppm	0.1164 ppm	1.1027 ppm	2.2343 ppm	0.0536 ppm	24.3918 ppm
Concentration per Run 1	0.0575 ppm	2.1380 ppm	0.1170 ppm	1.1241 ppm	2.2325 ppm	0.0538 ppm	24.4384 ppm
Concentration per Run 2	0.0571 ppm	2.1456 ppm	0.1169 ppm	1.1030 ppm	2.2551 ppm	0.0539 ppm	24.4736 ppm
Concentration per Run 3	0.0548 ppm	2.1167 ppm	0.1154 ppm	1.0812 ppm	2.2154 ppm	0.0531 ppm	24.2635 ppm
Concentration RSD	2.6 %	0.7 %	0.7 %	1.9 %	0.9 %	0.8 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0588 ppm	0.5631 ppm	0.2265 ppm	0.3089 ppm	1.0543 ppm	12.9225 ppm	0.0006 ppm
Concentration per Run 1	0.0601 ppm	0.5754 ppm	0.2326 ppm	0.3147 ppm	1.0566 ppm	13.0155 ppm	0.0003 ppm
Concentration per Run 2	0.0590 ppm	0.5649 ppm	0.2271 ppm	0.3098 ppm	1.0565 ppm	12.8216 ppm	0.0014 ppm
Concentration per Run 3	0.0573 ppm	0.5491 ppm	0.2199 ppm	0.3022 ppm	1.0498 ppm	12.9304 ppm	0.0001 ppm
Concentration RSD	2.4 %	2.4 %	2.8 %	2.0 %	0.4 %	0.8 %	118.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	17.7006 ppm	0.5229 ppm	1.0198 ppm	23.5318 ppm	0.5733 ppm	0.5646 ppm	0.4202 ppm
Concentration per Run 1	18.0847 ppm	0.5257 ppm	1.0306 ppm	23.5275 ppm	0.5849 ppm	0.5693 ppm	0.4233 ppm
Concentration per Run 2	17.7649 ppm	0.5250 ppm	1.0263 ppm	23.6323 ppm	0.5774 ppm	0.5643 ppm	0.4202 ppm
Concentration per Run 3	17.2522 ppm	0.5180 ppm	1.0025 ppm	23.4355 ppm	0.5574 ppm	0.5603 ppm	0.4172 ppm
Concentration RSD	2.4 %	0.8 %	1.5 %	0.4 %	2.5 %	0.8 %	0.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1181 ppm	7.9488 ppm	1.1397 ppm	1.1745 ppm	1.1980 ppm	0.1147 ppm	0.5727 ppm
Concentration per Run 1	0.1176 ppm	8.0770 ppm	1.1626 ppm	1.1765 ppm	1.2233 ppm	0.1152 ppm	0.5845 ppm
Concentration per Run 2	0.1185 ppm	7.9728 ppm	1.1375 ppm	1.1812 ppm	1.2044 ppm	0.1151 ppm	0.5750 ppm
Concentration per Run 3	0.1182 ppm	7.7966 ppm	1.1188 ppm	1.1656 ppm	1.1663 ppm	0.1138 ppm	0.5586 ppm
Concentration RSD	0.4 %	1.8 %	1.9 %	0.7 %	2.4 %	0.7 %	2.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5906 ppm	95.1696 %	101.6936 %	92.6172 %	94.3479 %	100.3944 %	95.7872 %
Concentration per Run 1	0.6025 ppm	93.4809 %	101.8402 %	92.7260 %	93.6427 %	100.7935 %	95.9384 %
Concentration per Run 2	0.5930 ppm	95.0437 %	101.6160 %	92.6423 %	93.9735 %	100.5917 %	96.0806 %
Concentration per Run 3	0.5762 ppm	96.9841 %	101.6246 %	92.4832 %	95.4274 %	99.7981 %	95.3427 %
Concentration RSD	2.3 %	1.8 %	0.1 %	0.1 %	1.0 %	0.5 %	0.4 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1969516-10d5 WG1969516
Analysis started at: 9/10/2024 10:07:09 PM
Rack 2
Vial 46
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0003 ppm	0.0079 ppm	-0.0003 ppm	0.0020 ppm	0.0135 ppm	0.0000 ppm	2.8121 ppm
Concentration per Run 1	0.0004 ppm	0.0116 ppm	-0.0012 ppm	0.0032 ppm	0.0136 ppm	0.0000 ppm	2.8251 ppm
Concentration per Run 2	0.0001 ppm	0.0057 ppm	0.0001 ppm	0.0003 ppm	0.0135 ppm	0.0000 ppm	2.8133 ppm
Concentration per Run 3	0.0003 ppm	0.0064 ppm	0.0001 ppm	0.0025 ppm	0.0136 ppm	0.0000 ppm	2.7978 ppm
Concentration RSD	49.6 %	40.7 %	236.3 %	77.6 %	0.5 %	197.6 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0002 ppm	0.0005 ppm	0.0049 ppm	0.0032 ppm	0.2505 ppm	-0.0004 ppm
Concentration per Run 1	0.0000 ppm	-0.0002 ppm	0.0006 ppm	0.0051 ppm	0.0030 ppm	0.2639 ppm	-0.0017 ppm
Concentration per Run 2	0.0000 ppm	0.0000 ppm	0.0005 ppm	0.0049 ppm	0.0037 ppm	0.2471 ppm	-0.0004 ppm
Concentration per Run 3	0.0000 ppm	-0.0004 ppm	0.0005 ppm	0.0048 ppm	0.0029 ppm	0.2407 ppm	0.0008 ppm
Concentration RSD	649.2 %	120.1 %	3.8 %	2.4 %	14.6 %	4.8 %	285.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	1.2051 ppm	0.0003 ppm	0.0077 ppm	2.5556 ppm	0.0008 ppm	0.0003 ppm	0.0091 ppm
Concentration per Run 1	1.2188 ppm	0.0004 ppm	0.0079 ppm	2.5606 ppm	0.0003 ppm	0.0008 ppm	0.0088 ppm
Concentration per Run 2	1.1989 ppm	0.0004 ppm	0.0076 ppm	2.5501 ppm	0.0011 ppm	0.0001 ppm	0.0104 ppm
Concentration per Run 3	1.1977 ppm	0.0002 ppm	0.0076 ppm	2.5562 ppm	0.0009 ppm	-0.0001 ppm	0.0081 ppm
Concentration RSD	1.0 %	35.6 %	2.2 %	0.2 %	51.4 %	164.5 %	13.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0005 ppm	1.2453 ppm	0.0072 ppm	0.0147 ppm	-0.0001 ppm	-0.0007 ppm	0.0000 ppm
Concentration per Run 1	0.0000 ppm	1.2540 ppm	0.0072 ppm	0.0148 ppm	-0.0002 ppm	-0.0007 ppm	-0.0001 ppm
Concentration per Run 2	-0.0009 ppm	1.2441 ppm	0.0071 ppm	0.0146 ppm	-0.0001 ppm	-0.0010 ppm	-0.0001 ppm
Concentration per Run 3	-0.0005 ppm	1.2378 ppm	0.0074 ppm	0.0146 ppm	-0.0002 ppm	-0.0005 ppm	0.0001 ppm
Concentration RSD	103.5 %	0.7 %	1.8 %	0.9 %	55.5 %	38.0 %	258.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0049 ppm	98.9960 %	102.4703 %	98.0995 %	96.8624 %	101.9822 %	98.1582 %
Concentration per Run 1	0.0050 ppm	98.0237 %	102.0382 %	97.4206 %	96.0984 %	101.8307 %	97.9615 %
Concentration per Run 2	0.0049 ppm	99.3079 %	102.2724 %	98.6148 %	97.3167 %	101.5170 %	98.6328 %
Concentration per Run 3	0.0049 ppm	99.6565 %	103.1003 %	98.2631 %	97.1721 %	102.5990 %	97.8804 %
Concentration RSD	1.3 %	0.9 %	0.5 %	0.6 %	0.7 %	0.5 %	0.4 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCV
Analysis started at: 9/10/2024 10:11:07 PM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.4981 ppm	0.4874 ppm	0.4618 ppm	0.4575 ppm	0.5134 ppm	0.5026 ppm	0.4856 ppm
Concentration per Run 1	0.4980 ppm	0.4799 ppm	0.4563 ppm	0.4588 ppm	0.5151 ppm	0.5036 ppm	0.4850 ppm
Concentration per Run 2	0.4968 ppm	0.4963 ppm	0.4642 ppm	0.4562 ppm	0.5151 ppm	0.5036 ppm	0.4866 ppm
Concentration per Run 3	0.4996 ppm	0.4860 ppm	0.4649 ppm	0.4574 ppm	0.5101 ppm	0.5004 ppm	0.4854 ppm
Recovery Percentage 1	99.625 %	97.487 %	92.362 %	91.492 %	102.685 %	100.513 %	97.127 %
Concentration RSD	0.3 %	1.7 %	1.0 %	0.3 %	0.6 %	0.4 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.4874 ppm	0.4981 ppm	0.4862 ppm	0.4803 ppm	0.4956 ppm	5.4541 ppm	0.5409 ppm
Concentration per Run 1	0.4895 ppm	0.4990 ppm	0.4862 ppm	0.4813 ppm	0.4959 ppm	5.4111 ppm	0.5378 ppm
Concentration per Run 2	0.4874 ppm	0.4980 ppm	0.4861 ppm	0.4792 ppm	0.4983 ppm	5.4520 ppm	0.5420 ppm
Concentration per Run 3	0.4853 ppm	0.4974 ppm	0.4863 ppm	0.4803 ppm	0.4925 ppm	5.4990 ppm	0.5428 ppm
Recovery Percentage 1	97.485 %	99.627 %	97.236 %	96.051 %	99.111 %	109.081 %	108.176 %
Concentration RSD	0.4 %	0.2 %	0.0 %	0.2 %	0.6 %	0.8 %	0.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.4896 ppm	0.4845 ppm	0.4885 ppm	10.2693 ppm	0.5032 ppm	0.4827 ppm	0.4888 ppm
Concentration per Run 1	0.4921 ppm	0.4835 ppm	0.4840 ppm	10.2538 ppm	0.5034 ppm	0.4804 ppm	0.4880 ppm
Concentration per Run 2	0.4878 ppm	0.4864 ppm	0.4897 ppm	10.2769 ppm	0.5033 ppm	0.4834 ppm	0.4899 ppm
Concentration per Run 3	0.4889 ppm	0.4837 ppm	0.4918 ppm	10.2774 ppm	0.5028 ppm	0.4844 ppm	0.4885 ppm
Recovery Percentage 1	97.918 %	96.906 %	97.700 %	102.693 %	100.635 %	96.548 %	97.757 %
Concentration RSD	0.5 %	0.3 %	0.8 %	0.1 %	0.1 %	0.4 %	0.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4689 ppm	5.0977 ppm	0.5145 ppm	0.5254 ppm	0.5012 ppm	0.4671 ppm	0.4853 ppm
Concentration per Run 1	0.4674 ppm	5.1005 ppm	0.5147 ppm	0.5267 ppm	0.5014 ppm	0.4625 ppm	0.4849 ppm
Concentration per Run 2	0.4709 ppm	5.0898 ppm	0.5166 ppm	0.5270 ppm	0.4995 ppm	0.4716 ppm	0.4846 ppm
Concentration per Run 3	0.4683 ppm	5.1028 ppm	0.5122 ppm	0.5225 ppm	0.5027 ppm	0.4673 ppm	0.4865 ppm
Recovery Percentage 1	93.773 %	97.099 %	102.902 %	105.080 %	100.236 %	93.424 %	97.066 %
Concentration RSD	0.4 %	0.1 %	0.4 %	0.5 %	0.3 %	1.0 %	0.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4901 ppm	101.3977 %	101.6286 %	97.3980 %	95.3653 %	99.9707 %	97.1814 %
Concentration per Run 1	0.4919 ppm	101.1816 %	101.8539 %	97.9326 %	94.9801 %	99.7151 %	97.2496 %
Concentration per Run 2	0.4897 ppm	101.7667 %	101.6445 %	96.9158 %	95.3879 %	100.6754 %	96.9447 %
Concentration per Run 3	0.4887 ppm	101.2450 %	101.3875 %	97.3455 %	95.7280 %	99.5218 %	97.3498 %
Recovery Percentage 1	98.022 %						
Concentration RSD	0.3 %	0.3 %	0.2 %	0.5 %	0.4 %	0.6 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCB
Analysis started at: 9/10/2024 10:15:04 PM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0003 ppm	0.0028 ppm	0.0000 ppm	-0.0003 ppm	0.0002 ppm	0.0000 ppm	0.0039 ppm
Concentration per Run 1	0.0002 ppm	0.0095 ppm	0.0008 ppm	-0.0005 ppm	0.0002 ppm	0.0000 ppm	0.0035 ppm
Concentration per Run 2	0.0002 ppm	0.0029 ppm	-0.0007 ppm	0.0000 ppm	0.0001 ppm	0.0000 ppm	0.0051 ppm
Concentration per Run 3	0.0004 ppm	-0.0040 ppm	0.0000 ppm	-0.0004 ppm	0.0001 ppm	0.0000 ppm	0.0030 ppm
Recovery Percentage 1	3.644 %	2.794 %	1.346 %	-1.012 %	1.510 %	-0.052 %	3.857 %
Concentration RSD	41.9 %	241.9 %	1,848.6 %	90.6 %	6.0 %	659.2 %	27.7 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0001 ppm	-0.0002 ppm	-0.0004 ppm	0.0005 ppm	0.0004 ppm	0.0178 ppm	-0.0008 ppm
Concentration per Run 1	0.0001 ppm	-0.0002 ppm	-0.0004 ppm	0.0007 ppm	0.0001 ppm	0.0217 ppm	-0.0005 ppm
Concentration per Run 2	0.0001 ppm	-0.0002 ppm	-0.0004 ppm	0.0004 ppm	0.0001 ppm	0.0015 ppm	-0.0013 ppm
Concentration per Run 3	0.0001 ppm	-0.0004 ppm	-0.0005 ppm	0.0003 ppm	0.0011 ppm	0.0303 ppm	-0.0005 ppm
Recovery Percentage 1	1.579 %	-1.148 %	-4.280 %	4.547 %	0.827 %	0.713 %	-7.967 %
Concentration RSD	18.5 %	46.7 %	17.2 %	42.0 %	134.5 %	83.0 %	56.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0010 ppm	0.0002 ppm	0.0022 ppm	0.0007 ppm	0.0003 ppm	0.0002 ppm	0.0010 ppm
Concentration per Run 1	0.0005 ppm	0.0001 ppm	0.0021 ppm	0.0019 ppm	0.0002 ppm	0.0000 ppm	0.0016 ppm
Concentration per Run 2	0.0021 ppm	0.0001 ppm	0.0024 ppm	-0.0015 ppm	0.0004 ppm	-0.0002 ppm	0.0015 ppm
Concentration per Run 3	0.0004 ppm	0.0004 ppm	0.0020 ppm	0.0015 ppm	0.0003 ppm	0.0006 ppm	0.0000 ppm
Recovery Percentage 1	1.005 %	2.067 %	4.332 %	0.033 %	1.229 %	1.559 %	2.016 %
Concentration RSD	94.1 %	90.1 %	8.0 %	285.5 %	32.7 %	276.8 %	89.6 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0009 ppm	-0.0218 ppm	0.0013 ppm	0.0000 ppm	-0.0002 ppm	-0.0003 ppm	-0.0002 ppm
Concentration per Run 1	0.0000 ppm	-0.0224 ppm	0.0010 ppm	0.0000 ppm	-0.0001 ppm	-0.0001 ppm	-0.0001 ppm
Concentration per Run 2	-0.0017 ppm	-0.0215 ppm	0.0011 ppm	0.0001 ppm	-0.0002 ppm	0.0002 ppm	0.0000 ppm
Concentration per Run 3	-0.0008 ppm	-0.0217 ppm	0.0018 ppm	0.0000 ppm	-0.0003 ppm	-0.0010 ppm	-0.0004 ppm
Recovery Percentage 1	-8.549 %	-4.369 %	2.565 %	0.371 %	-1.939 %	-1.462 %	-1.550 %
Concentration RSD	99.1 %	2.1 %	33.1 %	80.3 %	35.9 %	208.2 %	123.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0003 ppm	95.7630 %	98.1189 %	96.6249 %	95.8809 %	99.7874 %	97.7820 %
Concentration per Run 1	0.0003 ppm	94.9331 %	98.2308 %	96.2606 %	95.5968 %	100.0991 %	97.6745 %
Concentration per Run 2	0.0003 ppm	96.0315 %	98.6538 %	96.6744 %	96.3242 %	100.2896 %	97.9057 %
Concentration per Run 3	0.0002 ppm	96.3242 %	97.4720 %	96.9397 %	95.7218 %	98.9734 %	97.7660 %
Recovery Percentage 1	6.041 %						
Concentration RSD	18.6 %	0.8 %	0.6 %	0.4 %	0.4 %	0.7 %	0.1 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450786-07 WG1969516
Analysis started at: 9/10/2024 10:24:30 PM
Rack 2
Vial 55
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	0.0061 ppm	-0.0003 ppm	0.0150 ppm	0.0440 ppm	0.0000 ppm	17.8392 ppm
Concentration per Run 1	-0.0002 ppm	0.0069 ppm	-0.0001 ppm	0.0152 ppm	0.0441 ppm	0.0000 ppm	17.8238 ppm
Concentration per Run 2	0.0002 ppm	0.0094 ppm	-0.0010 ppm	0.0152 ppm	0.0441 ppm	0.0000 ppm	17.8474 ppm
Concentration per Run 3	-0.0001 ppm	0.0021 ppm	0.0002 ppm	0.0146 ppm	0.0438 ppm	0.0000 ppm	17.8465 ppm
Concentration RSD	665.0 %	59.9 %	224.8 %	2.0 %	0.4 %	61.8 %	0.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0001 ppm	0.0011 ppm	0.0063 ppm	0.0013 ppm	2.6386 ppm	-0.0001 ppm
Concentration per Run 1	-0.0001 ppm	-0.0002 ppm	0.0010 ppm	0.0066 ppm	0.0018 ppm	2.6608 ppm	-0.0004 ppm
Concentration per Run 2	-0.0001 ppm	0.0001 ppm	0.0012 ppm	0.0061 ppm	0.0017 ppm	2.6307 ppm	-0.0003 ppm
Concentration per Run 3	0.0000 ppm	-0.0003 ppm	0.0011 ppm	0.0062 ppm	0.0005 ppm	2.6242 ppm	0.0006 ppm
Concentration RSD	154.4 %	179.9 %	9.1 %	4.6 %	52.4 %	0.7 %	945.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	3.7212 ppm	0.0008 ppm	0.0005 ppm	14.0033 ppm	0.0007 ppm	0.0003 ppm	0.0002 ppm
Concentration per Run 1	3.7510 ppm	0.0008 ppm	0.0003 ppm	14.0078 ppm	0.0000 ppm	0.0004 ppm	-0.0025 ppm
Concentration per Run 2	3.7246 ppm	0.0008 ppm	0.0006 ppm	14.0102 ppm	0.0010 ppm	0.0004 ppm	0.0019 ppm
Concentration per Run 3	3.6881 ppm	0.0009 ppm	0.0007 ppm	13.9917 ppm	0.0012 ppm	0.0001 ppm	0.0010 ppm
Concentration RSD	0.8 %	6.9 %	42.8 %	0.1 %	83.9 %	47.7 %	1,357.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0009 ppm	3.9641 ppm	-0.0009 ppm	0.0812 ppm	-0.0004 ppm	-0.0013 ppm	0.0000 ppm
Concentration per Run 1	0.0012 ppm	3.9845 ppm	-0.0009 ppm	0.0812 ppm	-0.0004 ppm	-0.0015 ppm	0.0000 ppm
Concentration per Run 2	0.0010 ppm	3.9779 ppm	-0.0004 ppm	0.0809 ppm	-0.0006 ppm	-0.0011 ppm	-0.0001 ppm
Concentration per Run 3	0.0004 ppm	3.9299 ppm	-0.0015 ppm	0.0816 ppm	-0.0002 ppm	-0.0013 ppm	0.0000 ppm
Concentration RSD	49.9 %	0.8 %	58.1 %	0.4 %	43.9 %	15.2 %	156.9 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0114 ppm	95.2550 %	100.2776 %	94.3081 %	96.3024 %	101.5218 %	97.8206 %
Concentration per Run 1	0.0114 ppm	94.8759 %	100.4381 %	93.8158 %	96.9282 %	101.6641 %	97.9097 %
Concentration per Run 2	0.0115 ppm	95.0004 %	99.6396 %	94.3468 %	96.0349 %	100.8525 %	97.7133 %
Concentration per Run 3	0.0113 ppm	95.8885 %	100.7551 %	94.7618 %	95.9442 %	102.0489 %	97.8389 %
Concentration RSD	0.8 %	0.6 %	0.6 %	0.5 %	0.6 %	0.6 %	0.1 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450786-08 WG1969516
Analysis started at: 9/10/2024 10:28:35 PM
Rack 2
Vial 56
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	0.0043 ppm	0.0011 ppm	0.0070 ppm	0.0023 ppm	0.0000 ppm	7.7040 ppm
Concentration per Run 1	0.0000 ppm	0.0073 ppm	0.0009 ppm	0.0067 ppm	0.0023 ppm	0.0000 ppm	7.7109 ppm
Concentration per Run 2	0.0002 ppm	0.0020 ppm	0.0011 ppm	0.0076 ppm	0.0024 ppm	0.0000 ppm	7.7122 ppm
Concentration per Run 3	-0.0001 ppm	0.0036 ppm	0.0012 ppm	0.0067 ppm	0.0023 ppm	0.0000 ppm	7.6890 ppm
Concentration RSD	1,087.7 %	63.0 %	18.1 %	7.2 %	3.4 %	496.4 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0001 ppm	-0.0003 ppm	0.0008 ppm	0.0095 ppm	0.9660 ppm	1.0536 ppm	0.0007 ppm
Concentration per Run 1	0.0000 ppm	-0.0003 ppm	0.0007 ppm	0.0098 ppm	0.9659 ppm	1.0750 ppm	0.0012 ppm
Concentration per Run 2	0.0000 ppm	-0.0004 ppm	0.0008 ppm	0.0094 ppm	0.9674 ppm	1.0597 ppm	0.0005 ppm
Concentration per Run 3	-0.0001 ppm	-0.0001 ppm	0.0009 ppm	0.0093 ppm	0.9646 ppm	1.0262 ppm	0.0004 ppm
Concentration RSD	128.8 %	65.4 %	11.3 %	2.9 %	0.1 %	2.4 %	61.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	3.1209 ppm	0.0295 ppm	0.0007 ppm	6.0203 ppm	0.0009 ppm	0.0000 ppm	-0.0005 ppm
Concentration per Run 1	3.1917 ppm	0.0294 ppm	0.0004 ppm	6.0450 ppm	0.0007 ppm	-0.0007 ppm	-0.0001 ppm
Concentration per Run 2	3.0954 ppm	0.0295 ppm	0.0007 ppm	6.0316 ppm	0.0015 ppm	0.0013 ppm	-0.0015 ppm
Concentration per Run 3	3.0756 ppm	0.0295 ppm	0.0010 ppm	5.9844 ppm	0.0005 ppm	-0.0007 ppm	0.0000 ppm
Concentration RSD	2.0 %	0.2 %	43.8 %	0.5 %	56.9 %	2,728.4 %	154.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0002 ppm	12.4977 ppm	-0.0009 ppm	0.0366 ppm	-0.0004 ppm	-0.0003 ppm	0.0000 ppm
Concentration per Run 1	0.0001 ppm	12.7760 ppm	-0.0009 ppm	0.0364 ppm	-0.0005 ppm	-0.0006 ppm	0.0000 ppm
Concentration per Run 2	0.0008 ppm	12.4094 ppm	-0.0009 ppm	0.0369 ppm	-0.0005 ppm	-0.0005 ppm	0.0000 ppm
Concentration per Run 3	-0.0002 ppm	12.3079 ppm	-0.0009 ppm	0.0366 ppm	-0.0004 ppm	0.0001 ppm	0.0002 ppm
Concentration RSD	202.9 %	2.0 %	5.3 %	0.7 %	8.3 %	104.1 %	309.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0124 ppm	95.3571 %	99.4618 %	94.9490 %	96.7204 %	102.3877 %	98.7556 %
Concentration per Run 1	0.0128 ppm	93.5922 %	99.0387 %	94.3580 %	95.8824 %	102.0961 %	98.3735 %
Concentration per Run 2	0.0121 ppm	95.9608 %	99.9443 %	95.2477 %	97.2904 %	102.7181 %	99.1158 %
Concentration per Run 3	0.0123 ppm	96.5184 %	99.4023 %	95.2412 %	96.9886 %	102.3488 %	98.7774 %
Concentration RSD	2.8 %	1.6 %	0.5 %	0.5 %	0.8 %	0.3 %	0.4 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450786-09 WG1969516
Analysis started at: 9/10/2024 10:32:35 PM
Rack 2
Vial 57
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	0.0034 ppm	0.0008 ppm	0.0127 ppm	0.0426 ppm	0.0000 ppm	16.8790 ppm
Concentration per Run 1	-0.0004 ppm	-0.0030 ppm	0.0004 ppm	0.0131 ppm	0.0426 ppm	0.0000 ppm	16.8784 ppm
Concentration per Run 2	0.0002 ppm	0.0036 ppm	0.0014 ppm	0.0129 ppm	0.0426 ppm	0.0000 ppm	16.8645 ppm
Concentration per Run 3	0.0001 ppm	0.0097 ppm	0.0006 ppm	0.0122 ppm	0.0427 ppm	0.0000 ppm	16.8941 ppm
Concentration RSD	2,323.3 %	186.3 %	63.1 %	3.5 %	0.2 %	36.6 %	0.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0001 ppm	-0.0003 ppm	0.0009 ppm	0.0107 ppm	0.0007 ppm	2.2543 ppm	-0.0002 ppm
Concentration per Run 1	0.0000 ppm	-0.0002 ppm	0.0010 ppm	0.0108 ppm	0.0004 ppm	2.2542 ppm	-0.0010 ppm
Concentration per Run 2	-0.0001 ppm	-0.0004 ppm	0.0009 ppm	0.0107 ppm	0.0018 ppm	2.2536 ppm	0.0011 ppm
Concentration per Run 3	-0.0001 ppm	-0.0003 ppm	0.0009 ppm	0.0106 ppm	0.0000 ppm	2.2553 ppm	-0.0005 ppm
Concentration RSD	53.2 %	28.4 %	6.8 %	0.8 %	122.9 %	0.0 %	707.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	5.0166 ppm	0.0025 ppm	0.0002 ppm	12.7170 ppm	0.0012 ppm	0.0006 ppm	-0.0013 ppm
Concentration per Run 1	5.1205 ppm	0.0026 ppm	0.0000 ppm	12.7454 ppm	0.0015 ppm	0.0009 ppm	-0.0017 ppm
Concentration per Run 2	5.0011 ppm	0.0026 ppm	0.0003 ppm	12.6552 ppm	0.0008 ppm	0.0007 ppm	-0.0013 ppm
Concentration per Run 3	4.9282 ppm	0.0023 ppm	0.0003 ppm	12.7504 ppm	0.0014 ppm	0.0002 ppm	-0.0009 ppm
Concentration RSD	1.9 %	5.5 %	78.2 %	0.4 %	28.9 %	62.7 %	34.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0015 ppm	6.2116 ppm	-0.0014 ppm	0.0814 ppm	-0.0005 ppm	-0.0003 ppm	0.0001 ppm
Concentration per Run 1	-0.0013 ppm	6.3314 ppm	-0.0013 ppm	0.0808 ppm	-0.0005 ppm	-0.0001 ppm	0.0000 ppm
Concentration per Run 2	-0.0015 ppm	6.1832 ppm	-0.0017 ppm	0.0821 ppm	-0.0004 ppm	-0.0005 ppm	0.0001 ppm
Concentration per Run 3	-0.0018 ppm	6.1203 ppm	-0.0013 ppm	0.0812 ppm	-0.0005 ppm	-0.0002 ppm	0.0000 ppm
Concentration RSD	17.7 %	1.7 %	17.1 %	0.8 %	11.6 %	76.0 %	176.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0128 ppm	95.1522 %	100.2071 %	94.8183 %	96.3854 %	102.0433 %	98.1609 %
Concentration per Run 1	0.0131 ppm	93.6702 %	100.3814 %	94.6748 %	96.2467 %	102.3732 %	98.4095 %
Concentration per Run 2	0.0128 ppm	95.2064 %	100.8146 %	94.8727 %	96.4540 %	102.5415 %	98.1619 %
Concentration per Run 3	0.0124 ppm	96.5800 %	99.4255 %	94.9072 %	96.4554 %	101.2153 %	97.9115 %
Concentration RSD	2.5 %	1.5 %	0.7 %	0.1 %	0.1 %	0.7 %	0.3 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450786-10 WG1969516
Analysis started at: 9/10/2024 10:36:34 PM
Rack 2
Vial 58
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	0.0024 ppm	-0.0004 ppm	0.0132 ppm	0.0271 ppm	0.0001 ppm	14.5865 ppm
Concentration per Run 1	0.0001 ppm	0.0033 ppm	-0.0011 ppm	0.0143 ppm	0.0272 ppm	0.0001 ppm	14.5868 ppm
Concentration per Run 2	0.0000 ppm	0.0008 ppm	-0.0004 ppm	0.0131 ppm	0.0269 ppm	0.0001 ppm	14.5870 ppm
Concentration per Run 3	0.0001 ppm	0.0032 ppm	0.0003 ppm	0.0121 ppm	0.0272 ppm	0.0001 ppm	14.5856 ppm
Concentration RSD	78.7 %	58.3 %	189.2 %	8.2 %	0.6 %	9.0 %	0.0 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0001 ppm	0.0052 ppm	0.0018 ppm	0.0118 ppm	0.0857 ppm	1.3037 ppm	0.0033 ppm
Concentration per Run 1	0.0001 ppm	0.0054 ppm	0.0016 ppm	0.0119 ppm	0.0858 ppm	1.3530 ppm	0.0025 ppm
Concentration per Run 2	0.0001 ppm	0.0052 ppm	0.0021 ppm	0.0117 ppm	0.0851 ppm	1.2835 ppm	0.0035 ppm
Concentration per Run 3	0.0001 ppm	0.0050 ppm	0.0017 ppm	0.0116 ppm	0.0862 ppm	1.2746 ppm	0.0040 ppm
Concentration RSD	23.7 %	4.3 %	14.7 %	1.1 %	0.7 %	3.3 %	21.9 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	6.4047 ppm	0.0156 ppm	0.0003 ppm	16.0532 ppm	0.0094 ppm	0.0001 ppm	0.0001 ppm
Concentration per Run 1	6.4970 ppm	0.0158 ppm	0.0003 ppm	16.0139 ppm	0.0094 ppm	0.0004 ppm	0.0008 ppm
Concentration per Run 2	6.3914 ppm	0.0155 ppm	0.0004 ppm	16.0845 ppm	0.0093 ppm	-0.0001 ppm	-0.0020 ppm
Concentration per Run 3	6.3256 ppm	0.0155 ppm	0.0000 ppm	16.0613 ppm	0.0094 ppm	0.0000 ppm	0.0015 ppm
Concentration RSD	1.4 %	1.2 %	81.2 %	0.2 %	1.0 %	276.0 %	2,243.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0008 ppm	9.4216 ppm	-0.0004 ppm	0.0822 ppm	-0.0002 ppm	0.0002 ppm	0.0000 ppm
Concentration per Run 1	0.0000 ppm	9.5013 ppm	-0.0005 ppm	0.0827 ppm	-0.0003 ppm	-0.0001 ppm	0.0000 ppm
Concentration per Run 2	-0.0004 ppm	9.4280 ppm	-0.0003 ppm	0.0819 ppm	-0.0002 ppm	-0.0003 ppm	0.0002 ppm
Concentration per Run 3	-0.0021 ppm	9.3354 ppm	-0.0006 ppm	0.0820 ppm	-0.0002 ppm	0.0011 ppm	0.0000 ppm
Concentration RSD	140.6 %	0.9 %	37.5 %	0.5 %	34.1 %	330.1 %	290.0 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0368 ppm	95.8090 %	100.6592 %	94.5239 %	96.4873 %	101.7028 %	98.2677 %
Concentration per Run 1	0.0375 ppm	94.4618 %	100.8859 %	93.8517 %	96.0746 %	102.3320 %	98.1651 %
Concentration per Run 2	0.0367 ppm	96.1157 %	100.4820 %	94.7616 %	96.8298 %	101.3743 %	98.4802 %
Concentration per Run 3	0.0362 ppm	96.8494 %	100.6097 %	94.9584 %	96.5574 %	101.4021 %	98.1579 %
Concentration RSD	1.8 %	1.3 %	0.2 %	0.6 %	0.4 %	0.5 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450786-12 WG1969516
Analysis started at: 9/10/2024 10:40:32 PM
Rack 2
Vial 59
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0003 ppm	0.0071 ppm	-0.0008 ppm	0.0146 ppm	0.0426 ppm	0.0000 ppm	17.1489 ppm
Concentration per Run 1	0.0002 ppm	0.0050 ppm	-0.0015 ppm	0.0156 ppm	0.0427 ppm	0.0000 ppm	17.2620 ppm
Concentration per Run 2	0.0003 ppm	0.0107 ppm	-0.0011 ppm	0.0141 ppm	0.0425 ppm	0.0000 ppm	17.0837 ppm
Concentration per Run 3	0.0005 ppm	0.0055 ppm	0.0001 ppm	0.0139 ppm	0.0424 ppm	0.0000 ppm	17.1011 ppm
Concentration RSD	51.0 %	44.8 %	104.3 %	6.5 %	0.4 %	1,332.4 %	0.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0001 ppm	-0.0001 ppm	0.0012 ppm	0.0007 ppm	-0.0004 ppm	2.5151 ppm	-0.0005 ppm
Concentration per Run 1	-0.0001 ppm	-0.0001 ppm	0.0010 ppm	0.0008 ppm	-0.0013 ppm	2.5577 ppm	-0.0005 ppm
Concentration per Run 2	0.0000 ppm	-0.0002 ppm	0.0013 ppm	0.0006 ppm	-0.0004 ppm	2.4827 ppm	-0.0003 ppm
Concentration per Run 3	0.0000 ppm	-0.0001 ppm	0.0011 ppm	0.0008 ppm	0.0006 ppm	2.5050 ppm	-0.0007 ppm
Concentration RSD	148.2 %	74.2 %	11.9 %	19.9 %	257.4 %	1.5 %	38.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	3.6308 ppm	0.0007 ppm	0.0002 ppm	13.3454 ppm	0.0007 ppm	-0.0004 ppm	-0.0010 ppm
Concentration per Run 1	3.7095 ppm	0.0004 ppm	0.0004 ppm	13.4682 ppm	0.0009 ppm	-0.0006 ppm	-0.0014 ppm
Concentration per Run 2	3.6116 ppm	0.0007 ppm	-0.0002 ppm	13.1764 ppm	0.0003 ppm	0.0002 ppm	0.0015 ppm
Concentration per Run 3	3.5712 ppm	0.0008 ppm	0.0004 ppm	13.3916 ppm	0.0008 ppm	-0.0009 ppm	-0.0031 ppm
Concentration RSD	2.0 %	32.3 %	190.3 %	1.1 %	48.6 %	140.5 %	228.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0013 ppm	3.8901 ppm	-0.0012 ppm	0.0782 ppm	-0.0004 ppm	-0.0001 ppm	0.0000 ppm
Concentration per Run 1	-0.0004 ppm	3.9664 ppm	-0.0013 ppm	0.0785 ppm	-0.0005 ppm	-0.0001 ppm	-0.0001 ppm
Concentration per Run 2	-0.0013 ppm	3.8862 ppm	-0.0012 ppm	0.0783 ppm	-0.0002 ppm	-0.0001 ppm	0.0001 ppm
Concentration per Run 3	-0.0021 ppm	3.8177 ppm	-0.0013 ppm	0.0778 ppm	-0.0004 ppm	0.0000 ppm	0.0000 ppm
Concentration RSD	64.9 %	1.9 %	4.4 %	0.5 %	35.1 %	92.6 %	9,928.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0008 ppm	94.5656 %	101.1359 %	95.2257 %	95.9316 %	101.8259 %	98.2224 %
Concentration per Run 1	0.0009 ppm	92.7167 %	100.0443 %	94.1871 %	95.2899 %	100.7016 %	98.0548 %
Concentration per Run 2	0.0007 ppm	94.8375 %	101.2481 %	96.1001 %	96.1071 %	102.0451 %	99.2181 %
Concentration per Run 3	0.0009 ppm	96.1428 %	102.1155 %	95.3899 %	96.3978 %	102.7311 %	97.3942 %
Concentration RSD	10.7 %	1.8 %	1.0 %	1.0 %	0.6 %	1.0 %	0.9 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCV
Analysis started at: 9/10/2024 10:45:56 PM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.4915 ppm	0.4851 ppm	0.4590 ppm	0.4519 ppm	0.5111 ppm	0.4983 ppm	0.4833 ppm
Concentration per Run 1	0.4907 ppm	0.4834 ppm	0.4619 ppm	0.4531 ppm	0.5115 ppm	0.4992 ppm	0.4833 ppm
Concentration per Run 2	0.4921 ppm	0.4882 ppm	0.4575 ppm	0.4499 ppm	0.5113 ppm	0.4979 ppm	0.4813 ppm
Concentration per Run 3	0.4918 ppm	0.4837 ppm	0.4577 ppm	0.4526 ppm	0.5104 ppm	0.4979 ppm	0.4853 ppm
Recovery Percentage 1	98.308 %	97.022 %	91.804 %	90.371 %	102.217 %	99.664 %	96.658 %
Concentration RSD	0.2 %	0.5 %	0.5 %	0.4 %	0.1 %	0.1 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.4828 ppm	0.4949 ppm	0.4791 ppm	0.4746 ppm	0.4916 ppm	5.4548 ppm	0.5408 ppm
Concentration per Run 1	0.4825 ppm	0.4944 ppm	0.4769 ppm	0.4737 ppm	0.4915 ppm	5.5029 ppm	0.5430 ppm
Concentration per Run 2	0.4817 ppm	0.4947 ppm	0.4787 ppm	0.4755 ppm	0.4914 ppm	5.3996 ppm	0.5388 ppm
Concentration per Run 3	0.4841 ppm	0.4956 ppm	0.4818 ppm	0.4746 ppm	0.4918 ppm	5.4619 ppm	0.5405 ppm
Recovery Percentage 1	96.555 %	98.980 %	95.828 %	94.920 %	98.315 %	109.095 %	108.152 %
Concentration RSD	0.2 %	0.1 %	0.5 %	0.2 %	0.0 %	1.0 %	0.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.4833 ppm	0.4790 ppm	0.4785 ppm	10.2350 ppm	0.4974 ppm	0.4776 ppm	0.4765 ppm
Concentration per Run 1	0.4810 ppm	0.4785 ppm	0.4737 ppm	10.2114 ppm	0.4966 ppm	0.4780 ppm	0.4743 ppm
Concentration per Run 2	0.4836 ppm	0.4785 ppm	0.4780 ppm	10.2254 ppm	0.4954 ppm	0.4777 ppm	0.4753 ppm
Concentration per Run 3	0.4851 ppm	0.4801 ppm	0.4837 ppm	10.2682 ppm	0.5004 ppm	0.4771 ppm	0.4800 ppm
Recovery Percentage 1	96.651 %	95.805 %	95.691 %	102.350 %	99.488 %	95.518 %	95.309 %
Concentration RSD	0.4 %	0.2 %	1.1 %	0.3 %	0.5 %	0.1 %	0.6 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4637 ppm	5.0325 ppm	0.5070 ppm	0.5199 ppm	0.4945 ppm	0.4602 ppm	0.4784 ppm
Concentration per Run 1	0.4644 ppm	5.0294 ppm	0.5045 ppm	0.5225 ppm	0.4953 ppm	0.4587 ppm	0.4773 ppm
Concentration per Run 2	0.4624 ppm	5.0301 ppm	0.5045 ppm	0.5182 ppm	0.4935 ppm	0.4600 ppm	0.4784 ppm
Concentration per Run 3	0.4644 ppm	5.0381 ppm	0.5120 ppm	0.5190 ppm	0.4946 ppm	0.4621 ppm	0.4793 ppm
Recovery Percentage 1	92.749 %	95.858 %	101.403 %	103.979 %	98.893 %	92.049 %	95.671 %
Concentration RSD	0.3 %	0.1 %	0.9 %	0.4 %	0.2 %	0.4 %	0.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4861 ppm	102.1821 %	102.1963 %	98.4519 %	96.3048 %	100.2908 %	98.1169 %
Concentration per Run 1	0.4849 ppm	102.5663 %	102.2124 %	98.4632 %	96.1032 %	100.2937 %	98.5559 %
Concentration per Run 2	0.4844 ppm	101.9359 %	102.1012 %	98.5763 %	96.2504 %	100.0681 %	98.0392 %
Concentration per Run 3	0.4890 ppm	102.0440 %	102.2753 %	98.3161 %	96.5608 %	100.5107 %	97.7554 %
Recovery Percentage 1	97.219 %						
Concentration RSD	0.5 %	0.3 %	0.1 %	0.1 %	0.2 %	0.2 %	0.4 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCB
Analysis started at: 9/10/2024 10:49:57 PM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	0.0054 ppm	0.0002 ppm	0.0000 ppm	0.0001 ppm	0.0000 ppm	0.0050 ppm
Concentration per Run 1	0.0001 ppm	0.0054 ppm	0.0007 ppm	-0.0002 ppm	0.0002 ppm	0.0000 ppm	0.0061 ppm
Concentration per Run 2	0.0000 ppm	0.0010 ppm	0.0003 ppm	0.0004 ppm	0.0001 ppm	0.0000 ppm	0.0044 ppm
Concentration per Run 3	0.0001 ppm	0.0098 ppm	-0.0004 ppm	-0.0003 ppm	0.0000 ppm	0.0000 ppm	0.0044 ppm
Recovery Percentage 1	1.287 %	5.403 %	5.477 %	-0.046 %	0.863 %	0.771 %	4.980 %
Concentration RSD	48.9 %	81.3 %	345.6 %	2,885.5 %	81.2 %	30.5 %	19.8 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0004 ppm	-0.0003 ppm	0.0004 ppm	0.0024 ppm	-0.0124 ppm	-0.0002 ppm
Concentration per Run 1	0.0001 ppm	-0.0002 ppm	-0.0001 ppm	0.0004 ppm	0.0013 ppm	-0.0198 ppm	0.0008 ppm
Concentration per Run 2	0.0000 ppm	-0.0004 ppm	-0.0002 ppm	0.0006 ppm	0.0036 ppm	-0.0052 ppm	-0.0003 ppm
Concentration per Run 3	0.0001 ppm	-0.0006 ppm	-0.0006 ppm	0.0004 ppm	0.0023 ppm	-0.0122 ppm	-0.0012 ppm
Recovery Percentage 1	0.945 %	-2.041 %	-3.023 %	4.497 %	4.771 %	-0.496 %	-2.134 %
Concentration RSD	158.9 %	50.0 %	88.8 %	25.8 %	50.4 %	59.1 %	479.9 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0006 ppm	0.0002 ppm	0.0017 ppm	0.0035 ppm	0.0006 ppm	-0.0007 ppm	0.0006 ppm
Concentration per Run 1	-0.0001 ppm	0.0001 ppm	0.0016 ppm	0.0056 ppm	0.0009 ppm	-0.0012 ppm	0.0003 ppm
Concentration per Run 2	0.0022 ppm	0.0001 ppm	0.0018 ppm	0.0062 ppm	0.0006 ppm	-0.0001 ppm	0.0018 ppm
Concentration per Run 3	-0.0004 ppm	0.0003 ppm	0.0018 ppm	-0.0011 ppm	0.0002 ppm	-0.0009 ppm	-0.0002 ppm
Recovery Percentage 1	0.556 %	1.890 %	3.444 %	0.177 %	2.206 %	-7.338 %	1.287 %
Concentration RSD	252.0 %	57.7 %	6.1 %	113.9 %	62.2 %	75.3 %	163.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0007 ppm	-0.0213 ppm	0.0002 ppm	0.0000 ppm	-0.0003 ppm	-0.0005 ppm	-0.0001 ppm
Concentration per Run 1	0.0009 ppm	-0.0199 ppm	0.0003 ppm	0.0000 ppm	-0.0002 ppm	-0.0006 ppm	-0.0002 ppm
Concentration per Run 2	-0.0005 ppm	-0.0224 ppm	0.0004 ppm	0.0001 ppm	-0.0002 ppm	0.0000 ppm	-0.0001 ppm
Concentration per Run 3	-0.0025 ppm	-0.0214 ppm	-0.0002 ppm	-0.0001 ppm	-0.0005 ppm	-0.0008 ppm	-0.0001 ppm
Recovery Percentage 1	-6.815 %	-4.251 %	0.324 %	0.273 %	-2.884 %	-2.488 %	-1.108 %
Concentration RSD	247.8 %	6.0 %	213.0 %	324.4 %	68.8 %	84.2 %	34.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0003 ppm	98.1444 %	99.0352 %	96.6996 %	98.6354 %	100.6514 %	98.4382 %
Concentration per Run 1	0.0003 ppm	99.0850 %	98.4263 %	96.4865 %	99.9890 %	100.4543 %	98.5916 %
Concentration per Run 2	0.0003 ppm	97.8600 %	99.3061 %	96.9177 %	98.3817 %	100.6883 %	98.5944 %
Concentration per Run 3	0.0002 ppm	97.4882 %	99.3732 %	96.6946 %	97.5357 %	100.8115 %	98.1286 %
Recovery Percentage 1	5.985 %						
Concentration RSD	18.2 %	0.9 %	0.5 %	0.2 %	1.3 %	0.2 %	0.3 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1969465-1 WG1969465
Analysis started at: 9/10/2024 10:56:01 PM
Rack 3
Vial 1
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0003 ppm	0.0055 ppm	0.0002 ppm	-0.0010 ppm	0.0000 ppm	0.0000 ppm	0.0080 ppm
Concentration per Run 1	0.0002 ppm	-0.0001 ppm	-0.0007 ppm	-0.0012 ppm	0.0001 ppm	0.0000 ppm	0.0085 ppm
Concentration per Run 2	0.0004 ppm	0.0052 ppm	0.0007 ppm	-0.0007 ppm	0.0000 ppm	0.0000 ppm	0.0078 ppm
Concentration per Run 3	0.0002 ppm	0.0115 ppm	0.0004 ppm	-0.0013 ppm	-0.0001 ppm	0.0000 ppm	0.0077 ppm
Concentration RSD	34.8 %	104.7 %	458.5 %	28.1 %	563.1 %	147.3 %	5.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0001 ppm	-0.0005 ppm	0.0002 ppm	0.0006 ppm	-0.0080 ppm	-0.0007 ppm
Concentration per Run 1	0.0000 ppm	0.0001 ppm	-0.0006 ppm	0.0001 ppm	0.0005 ppm	-0.0080 ppm	-0.0007 ppm
Concentration per Run 2	0.0000 ppm	-0.0001 ppm	-0.0003 ppm	0.0001 ppm	-0.0001 ppm	-0.0243 ppm	-0.0010 ppm
Concentration per Run 3	0.0000 ppm	-0.0003 ppm	-0.0006 ppm	0.0003 ppm	0.0013 ppm	0.0084 ppm	-0.0006 ppm
Concentration RSD	110.3 %	204.0 %	26.5 %	62.8 %	121.7 %	204.9 %	25.3 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0019 ppm	0.0002 ppm	0.0003 ppm	-0.0004 ppm	0.0007 ppm	-0.0002 ppm	0.0004 ppm
Concentration per Run 1	0.0023 ppm	0.0003 ppm	0.0004 ppm	0.0002 ppm	0.0004 ppm	-0.0005 ppm	0.0014 ppm
Concentration per Run 2	0.0018 ppm	0.0003 ppm	0.0004 ppm	-0.0022 ppm	0.0008 ppm	-0.0001 ppm	-0.0006 ppm
Concentration per Run 3	0.0016 ppm	0.0001 ppm	0.0002 ppm	0.0008 ppm	0.0009 ppm	-0.0001 ppm	0.0003 ppm
Concentration RSD	20.3 %	68.8 %	31.7 %	402.3 %	38.2 %	92.9 %	273.6 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0007 ppm	-0.0205 ppm	-0.0002 ppm	-0.0001 ppm	-0.0004 ppm	-0.0004 ppm	-0.0002 ppm
Concentration per Run 1	-0.0019 ppm	-0.0210 ppm	-0.0007 ppm	-0.0001 ppm	-0.0004 ppm	-0.0002 ppm	-0.0002 ppm
Concentration per Run 2	0.0000 ppm	-0.0197 ppm	0.0002 ppm	-0.0001 ppm	-0.0003 ppm	0.0000 ppm	-0.0001 ppm
Concentration per Run 3	-0.0002 ppm	-0.0209 ppm	0.0000 ppm	0.0000 ppm	-0.0006 ppm	-0.0010 ppm	-0.0003 ppm
Concentration RSD	149.1 %	3.6 %	263.6 %	51.1 %	34.2 %	130.9 %	31.9 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0002 ppm	97.4944 %	99.1566 %	97.2678 %	101.2655 %	103.1775 %	101.0786 %
Concentration per Run 1	0.0002 ppm	97.0560 %	97.9039 %	97.6922 %	100.8071 %	102.8279 %	101.5266 %
Concentration per Run 2	0.0002 ppm	97.6445 %	99.4316 %	96.4672 %	101.6634 %	103.4679 %	100.6081 %
Concentration per Run 3	0.0002 ppm	97.7827 %	100.1344 %	97.6439 %	101.3261 %	103.2368 %	101.1011 %
Concentration RSD	9.4 %	0.4 %	1.2 %	0.7 %	0.4 %	0.3 %	0.5 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1969465-2 WG1969465
Analysis started at: 9/10/2024 11:00:19 PM
Rack 3
Vial 2
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0520 ppm	2.0210 ppm	0.1155 ppm	0.9444 ppm	2.0686 ppm	0.0506 ppm	9.9452 ppm
Concentration per Run 1	0.0527 ppm	2.0291 ppm	0.1150 ppm	0.9588 ppm	2.0681 ppm	0.0507 ppm	9.9676 ppm
Concentration per Run 2	0.0520 ppm	2.0141 ppm	0.1158 ppm	0.9476 ppm	2.0715 ppm	0.0508 ppm	9.9495 ppm
Concentration per Run 3	0.0514 ppm	2.0199 ppm	0.1157 ppm	0.9268 ppm	2.0661 ppm	0.0502 ppm	9.9184 ppm
Concentration RSD	1.3 %	0.4 %	0.4 %	1.7 %	0.1 %	0.7 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0537 ppm	0.5150 ppm	0.2029 ppm	0.2600 ppm	0.9985 ppm	10.9286 ppm	-0.0003 ppm
Concentration per Run 1	0.0548 ppm	0.5230 ppm	0.2066 ppm	0.2640 ppm	0.9996 ppm	10.9989 ppm	0.0002 ppm
Concentration per Run 2	0.0535 ppm	0.5160 ppm	0.2029 ppm	0.2595 ppm	0.9987 ppm	10.8865 ppm	-0.0010 ppm
Concentration per Run 3	0.0527 ppm	0.5062 ppm	0.1993 ppm	0.2566 ppm	0.9972 ppm	10.9003 ppm	-0.0002 ppm
Concentration RSD	1.9 %	1.6 %	1.8 %	1.4 %	0.1 %	0.6 %	200.3 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	10.2769 ppm	0.4970 ppm	0.9471 ppm	10.4972 ppm	0.5229 ppm	0.5268 ppm	0.4378 ppm
Concentration per Run 1	10.4645 ppm	0.4986 ppm	0.9562 ppm	10.4935 ppm	0.5326 ppm	0.5341 ppm	0.4397 ppm
Concentration per Run 2	10.2637 ppm	0.4967 ppm	0.9479 ppm	10.4147 ppm	0.5234 ppm	0.5286 ppm	0.4400 ppm
Concentration per Run 3	10.1025 ppm	0.4957 ppm	0.9372 ppm	10.5832 ppm	0.5126 ppm	0.5176 ppm	0.4338 ppm
Concentration RSD	1.8 %	0.3 %	1.0 %	0.8 %	1.9 %	1.6 %	0.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1154 ppm	0.9212 ppm	1.0030 ppm	1.0190 ppm	1.0541 ppm	0.1133 ppm	0.5185 ppm
Concentration per Run 1	0.1169 ppm	0.9329 ppm	1.0167 ppm	1.0178 ppm	1.0717 ppm	0.1139 ppm	0.5253 ppm
Concentration per Run 2	0.1176 ppm	0.9212 ppm	1.0057 ppm	1.0261 ppm	1.0541 ppm	0.1133 ppm	0.5187 ppm
Concentration per Run 3	0.1117 ppm	0.9094 ppm	0.9866 ppm	1.0131 ppm	1.0366 ppm	0.1127 ppm	0.5116 ppm
Concentration RSD	2.8 %	1.3 %	1.5 %	0.6 %	1.7 %	0.5 %	1.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5126 ppm	96.7740 %	101.9263 %	93.8903 %	96.0826 %	101.3211 %	97.1439 %
Concentration per Run 1	0.5229 ppm	95.4710 %	101.2252 %	93.2427 %	95.7331 %	100.9842 %	97.2989 %
Concentration per Run 2	0.5104 ppm	96.6559 %	101.1782 %	93.0471 %	95.6337 %	100.7109 %	96.5026 %
Concentration per Run 3	0.5046 ppm	98.1950 %	103.3756 %	95.3811 %	96.8811 %	102.2683 %	97.6302 %
Concentration RSD	1.8 %	1.4 %	1.2 %	1.4 %	0.7 %	0.8 %	0.6 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450239-01 WG1969465
Analysis started at: 9/10/2024 11:04:18 PM
Rack 3
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	0.0087 ppm	0.0006 ppm	0.0153 ppm	0.0019 ppm	0.0000 ppm	35.3834 ppm
Concentration per Run 1	0.0002 ppm	0.0065 ppm	0.0012 ppm	0.0163 ppm	0.0019 ppm	0.0000 ppm	35.3968 ppm
Concentration per Run 2	-0.0001 ppm	0.0107 ppm	0.0002 ppm	0.0149 ppm	0.0020 ppm	0.0000 ppm	35.3861 ppm
Concentration per Run 3	0.0001 ppm	0.0088 ppm	0.0005 ppm	0.0149 ppm	0.0018 ppm	0.0000 ppm	35.3675 ppm
Concentration RSD	186.1 %	23.9 %	85.2 %	5.6 %	5.7 %	2,708.7 %	0.0 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0002 ppm	-0.0002 ppm	-0.0003 ppm	0.0591 ppm	0.0613 ppm	0.9345 ppm	0.0069 ppm
Concentration per Run 1	-0.0002 ppm	-0.0002 ppm	-0.0002 ppm	0.0601 ppm	0.0623 ppm	0.9627 ppm	0.0070 ppm
Concentration per Run 2	-0.0002 ppm	0.0001 ppm	-0.0003 ppm	0.0594 ppm	0.0620 ppm	0.9338 ppm	0.0060 ppm
Concentration per Run 3	-0.0002 ppm	-0.0004 ppm	-0.0003 ppm	0.0579 ppm	0.0595 ppm	0.9070 ppm	0.0078 ppm
Concentration RSD	5.1 %	146.2 %	18.1 %	1.9 %	2.5 %	3.0 %	12.9 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	9.7172 ppm	0.0199 ppm	0.0071 ppm	11.8966 ppm	0.0018 ppm	0.0003 ppm	0.0024 ppm
Concentration per Run 1	9.8729 ppm	0.0200 ppm	0.0068 ppm	11.9366 ppm	0.0021 ppm	0.0003 ppm	0.0014 ppm
Concentration per Run 2	9.6746 ppm	0.0198 ppm	0.0073 ppm	11.9220 ppm	0.0018 ppm	0.0010 ppm	0.0033 ppm
Concentration per Run 3	9.6040 ppm	0.0200 ppm	0.0071 ppm	11.8312 ppm	0.0013 ppm	-0.0005 ppm	0.0025 ppm
Concentration RSD	1.4 %	0.7 %	3.7 %	0.5 %	23.5 %	289.8 %	40.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0009 ppm	13.0451 ppm	0.0013 ppm	0.0405 ppm	0.0000 ppm	-0.0002 ppm	0.0003 ppm
Concentration per Run 1	0.0011 ppm	13.2574 ppm	0.0015 ppm	0.0405 ppm	0.0001 ppm	-0.0006 ppm	0.0003 ppm
Concentration per Run 2	0.0001 ppm	13.0659 ppm	0.0012 ppm	0.0407 ppm	-0.0001 ppm	0.0006 ppm	0.0003 ppm
Concentration per Run 3	0.0016 ppm	12.8120 ppm	0.0011 ppm	0.0402 ppm	-0.0002 ppm	-0.0007 ppm	0.0002 ppm
Concentration RSD	80.8 %	1.7 %	17.2 %	0.7 %	276.6 %	320.0 %	13.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0957 ppm	95.2269 %	100.3558 %	93.7339 %	95.6058 %	101.4404 %	97.4508 %
Concentration per Run 1	0.0965 ppm	93.9531 %	100.0096 %	93.1725 %	94.6866 %	101.0582 %	97.1779 %
Concentration per Run 2	0.0960 ppm	95.1792 %	101.0715 %	94.0982 %	95.8906 %	102.6883 %	97.9723 %
Concentration per Run 3	0.0944 ppm	96.5485 %	99.9863 %	93.9311 %	96.2401 %	100.5748 %	97.2022 %
Concentration RSD	1.1 %	1.4 %	0.6 %	0.5 %	0.9 %	1.1 %	0.5 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1969465-3 WG1969465
Analysis started at: 9/10/2024 11:08:17 PM
Rack 3
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0526 ppm	2.0408 ppm	0.1187 ppm	0.9875 ppm	2.0944 ppm	0.0516 ppm	44.6375 ppm
Concentration per Run 1	0.0531 ppm	2.0478 ppm	0.1200 ppm	0.9947 ppm	2.0865 ppm	0.0518 ppm	44.6999 ppm
Concentration per Run 2	0.0527 ppm	2.0439 ppm	0.1188 ppm	0.9886 ppm	2.1016 ppm	0.0516 ppm	44.6679 ppm
Concentration per Run 3	0.0521 ppm	2.0307 ppm	0.1172 ppm	0.9792 ppm	2.0952 ppm	0.0516 ppm	44.5447 ppm
Concentration RSD	0.9 %	0.4 %	1.2 %	0.8 %	0.4 %	0.2 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0535 ppm	0.5117 ppm	0.2030 ppm	0.3202 ppm	1.0572 ppm	12.0402 ppm	0.0074 ppm
Concentration per Run 1	0.0541 ppm	0.5177 ppm	0.2055 ppm	0.3222 ppm	1.0532 ppm	12.0243 ppm	0.0088 ppm
Concentration per Run 2	0.0536 ppm	0.5122 ppm	0.2033 ppm	0.3216 ppm	1.0631 ppm	12.0874 ppm	0.0071 ppm
Concentration per Run 3	0.0528 ppm	0.5053 ppm	0.2002 ppm	0.3168 ppm	1.0554 ppm	12.0090 ppm	0.0062 ppm
Concentration RSD	1.3 %	1.2 %	1.3 %	0.9 %	0.5 %	0.3 %	17.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	19.8160 ppm	0.5189 ppm	0.9101 ppm	22.2270 ppm	0.5193 ppm	0.5280 ppm	0.4320 ppm
Concentration per Run 1	20.0539 ppm	0.5182 ppm	0.9121 ppm	22.1047 ppm	0.5233 ppm	0.5300 ppm	0.4298 ppm
Concentration per Run 2	19.8615 ppm	0.5197 ppm	0.9130 ppm	22.3744 ppm	0.5207 ppm	0.5278 ppm	0.4359 ppm
Concentration per Run 3	19.5325 ppm	0.5189 ppm	0.9053 ppm	22.2018 ppm	0.5140 ppm	0.5262 ppm	0.4303 ppm
Concentration RSD	1.3 %	0.1 %	0.5 %	0.6 %	0.9 %	0.4 %	0.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1195 ppm	13.8978 ppm	1.0009 ppm	1.0650 ppm	1.0603 ppm	0.1152 ppm	0.5211 ppm
Concentration per Run 1	0.1184 ppm	14.0426 ppm	1.0037 ppm	1.0706 ppm	1.0660 ppm	0.1154 ppm	0.5241 ppm
Concentration per Run 2	0.1209 ppm	13.9304 ppm	1.0079 ppm	1.0608 ppm	1.0639 ppm	0.1165 ppm	0.5223 ppm
Concentration per Run 3	0.1193 ppm	13.7204 ppm	0.9911 ppm	1.0634 ppm	1.0510 ppm	0.1138 ppm	0.5168 ppm
Concentration RSD	1.0 %	1.2 %	0.9 %	0.5 %	0.8 %	1.2 %	0.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.6086 ppm	95.2816 %	100.9303 %	91.2633 %	94.3409 %	100.7104 %	96.2832 %
Concentration per Run 1	0.6158 ppm	94.4504 %	100.5086 %	90.7288 %	94.3213 %	100.3968 %	96.0732 %
Concentration per Run 2	0.6114 ppm	94.9961 %	100.7390 %	91.4170 %	93.9080 %	100.1662 %	96.3573 %
Concentration per Run 3	0.5985 ppm	96.3984 %	101.5433 %	91.6442 %	94.7933 %	101.5681 %	96.4192 %
Concentration RSD	1.5 %	1.1 %	0.5 %	0.5 %	0.5 %	0.7 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1969465-4 WG1969465
Analysis started at: 9/10/2024 11:12:16 PM
Rack 3
Vial 5
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0002 ppm	0.0089 ppm	-0.0011 ppm	0.0158 ppm	0.0019 ppm	0.0000 ppm	35.3674 ppm
Concentration per Run 1	0.0002 ppm	0.0068 ppm	0.0003 ppm	0.0154 ppm	0.0019 ppm	0.0000 ppm	35.4599 ppm
Concentration per Run 2	0.0001 ppm	0.0107 ppm	-0.0019 ppm	0.0174 ppm	0.0020 ppm	0.0000 ppm	35.2524 ppm
Concentration per Run 3	0.0003 ppm	0.0091 ppm	-0.0016 ppm	0.0146 ppm	0.0018 ppm	0.0000 ppm	35.3900 ppm
Concentration RSD	74.2 %	22.3 %	109.1 %	9.0 %	5.5 %	115.4 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0002 ppm	-0.0001 ppm	-0.0002 ppm	0.0586 ppm	0.0658 ppm	0.9394 ppm	0.0083 ppm
Concentration per Run 1	-0.0002 ppm	0.0000 ppm	-0.0005 ppm	0.0593 ppm	0.0669 ppm	0.9438 ppm	0.0093 ppm
Concentration per Run 2	-0.0001 ppm	-0.0001 ppm	-0.0001 ppm	0.0593 ppm	0.0656 ppm	0.9439 ppm	0.0074 ppm
Concentration per Run 3	-0.0002 ppm	-0.0003 ppm	-0.0002 ppm	0.0573 ppm	0.0648 ppm	0.9306 ppm	0.0082 ppm
Concentration RSD	35.3 %	128.9 %	88.1 %	2.0 %	1.6 %	0.8 %	11.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	9.6579 ppm	0.0199 ppm	0.0081 ppm	11.8635 ppm	0.0014 ppm	0.0008 ppm	0.0030 ppm
Concentration per Run 1	9.7897 ppm	0.0201 ppm	0.0084 ppm	11.8598 ppm	0.0016 ppm	0.0009 ppm	0.0038 ppm
Concentration per Run 2	9.6939 ppm	0.0198 ppm	0.0076 ppm	11.8075 ppm	0.0018 ppm	0.0009 ppm	0.0034 ppm
Concentration per Run 3	9.4901 ppm	0.0197 ppm	0.0082 ppm	11.9232 ppm	0.0010 ppm	0.0006 ppm	0.0019 ppm
Concentration RSD	1.6 %	0.9 %	5.3 %	0.5 %	30.4 %	24.4 %	33.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0004 ppm	12.9528 ppm	0.0022 ppm	0.0406 ppm	0.0000 ppm	-0.0004 ppm	0.0002 ppm
Concentration per Run 1	-0.0003 ppm	13.1439 ppm	0.0032 ppm	0.0409 ppm	0.0001 ppm	0.0000 ppm	0.0002 ppm
Concentration per Run 2	0.0005 ppm	13.0212 ppm	0.0017 ppm	0.0405 ppm	-0.0003 ppm	-0.0002 ppm	0.0001 ppm
Concentration per Run 3	0.0009 ppm	12.6934 ppm	0.0019 ppm	0.0402 ppm	0.0002 ppm	-0.0008 ppm	0.0003 ppm
Concentration RSD	154.3 %	1.8 %	37.5 %	0.9 %	9,129.7 %	114.1 %	62.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0951 ppm	95.6390 %	100.6222 %	94.5895 %	94.9473 %	101.3919 %	97.9087 %
Concentration per Run 1	0.0967 ppm	94.5858 %	100.2068 %	94.4110 %	94.6193 %	101.7610 %	97.6003 %
Concentration per Run 2	0.0953 ppm	95.3767 %	101.3145 %	94.5039 %	94.7126 %	101.7859 %	98.2982 %
Concentration per Run 3	0.0934 ppm	96.9544 %	100.3453 %	94.8537 %	95.5101 %	100.6287 %	97.8276 %
Concentration RSD	1.7 %	1.3 %	0.6 %	0.2 %	0.5 %	0.7 %	0.4 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1969465-5 WG1969465
Analysis started at: 9/10/2024 11:16:15 PM
Rack 3
Vial 6
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0547 ppm	2.1449 ppm	0.1172 ppm	1.0735 ppm	2.1741 ppm	0.0536 ppm	44.7421 ppm
Concentration per Run 1	0.0554 ppm	2.1428 ppm	0.1158 ppm	1.0848 ppm	2.1728 ppm	0.0536 ppm	44.5647 ppm
Concentration per Run 2	0.0550 ppm	2.1425 ppm	0.1184 ppm	1.0753 ppm	2.1774 ppm	0.0535 ppm	44.7407 ppm
Concentration per Run 3	0.0537 ppm	2.1495 ppm	0.1176 ppm	1.0603 ppm	2.1722 ppm	0.0537 ppm	44.9208 ppm
Concentration RSD	1.6 %	0.2 %	1.1 %	1.1 %	0.1 %	0.2 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0565 ppm	0.5392 ppm	0.2148 ppm	0.3325 ppm	1.1128 ppm	12.9012 ppm	0.0069 ppm
Concentration per Run 1	0.0575 ppm	0.5492 ppm	0.2181 ppm	0.3362 ppm	1.1090 ppm	12.9340 ppm	0.0069 ppm
Concentration per Run 2	0.0562 ppm	0.5379 ppm	0.2155 ppm	0.3324 ppm	1.1075 ppm	12.7793 ppm	0.0062 ppm
Concentration per Run 3	0.0558 ppm	0.5305 ppm	0.2107 ppm	0.3288 ppm	1.1219 ppm	12.9903 ppm	0.0078 ppm
Concentration RSD	1.6 %	1.7 %	1.7 %	1.1 %	0.7 %	0.8 %	12.0 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	20.4976 ppm	0.5399 ppm	0.9816 ppm	22.9272 ppm	0.5441 ppm	0.5592 ppm	0.4084 ppm
Concentration per Run 1	20.8257 ppm	0.5377 ppm	0.9913 ppm	22.9051 ppm	0.5552 ppm	0.5607 ppm	0.4065 ppm
Concentration per Run 2	20.4954 ppm	0.5406 ppm	0.9808 ppm	22.9443 ppm	0.5437 ppm	0.5623 ppm	0.4093 ppm
Concentration per Run 3	20.1718 ppm	0.5413 ppm	0.9727 ppm	22.9322 ppm	0.5334 ppm	0.5545 ppm	0.4095 ppm
Concentration RSD	1.6 %	0.4 %	1.0 %	0.1 %	2.0 %	0.7 %	0.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1185 ppm	13.8791 ppm	1.0926 ppm	1.1410 ppm	1.1519 ppm	0.1135 ppm	0.5517 ppm
Concentration per Run 1	0.1185 ppm	14.0250 ppm	1.1061 ppm	1.1398 ppm	1.1715 ppm	0.1144 ppm	0.5599 ppm
Concentration per Run 2	0.1193 ppm	13.8909 ppm	1.0947 ppm	1.1398 ppm	1.1528 ppm	0.1128 ppm	0.5516 ppm
Concentration per Run 3	0.1177 ppm	13.7213 ppm	1.0769 ppm	1.1435 ppm	1.1314 ppm	0.1134 ppm	0.5435 ppm
Concentration RSD	0.7 %	1.1 %	1.3 %	0.2 %	1.7 %	0.7 %	1.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.6319 ppm	95.7978 %	100.4738 %	91.4367 %	94.4140 %	100.2547 %	96.0496 %
Concentration per Run 1	0.6445 ppm	94.9360 %	101.3632 %	91.1520 %	94.1987 %	100.5331 %	95.6834 %
Concentration per Run 2	0.6295 ppm	95.8608 %	100.1107 %	91.1718 %	94.1392 %	100.0115 %	96.0022 %
Concentration per Run 3	0.6217 ppm	96.5965 %	99.9475 %	91.9864 %	94.9042 %	100.2195 %	96.4633 %
Concentration RSD	1.8 %	0.9 %	0.8 %	0.5 %	0.5 %	0.3 %	0.4 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: WG1969465-6d5 WG1969465
Analysis started at: 9/10/2024 11:20:14 PM
Rack 3
Vial 7
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	0.0045 ppm	0.0009 ppm	0.0019 ppm	0.0004 ppm	0.0000 ppm	7.0176 ppm
Concentration per Run 1	0.0002 ppm	0.0045 ppm	0.0011 ppm	0.0027 ppm	0.0004 ppm	0.0000 ppm	7.0184 ppm
Concentration per Run 2	-0.0001 ppm	0.0018 ppm	0.0008 ppm	0.0008 ppm	0.0003 ppm	0.0000 ppm	6.9833 ppm
Concentration per Run 3	0.0002 ppm	0.0071 ppm	0.0008 ppm	0.0022 ppm	0.0006 ppm	0.0000 ppm	7.0510 ppm
Concentration RSD	231.5 %	58.5 %	21.5 %	50.9 %	29.2 %	79.8 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0001 ppm	-0.0002 ppm	-0.0003 ppm	0.0116 ppm	0.0124 ppm	0.1848 ppm	0.0010 ppm
Concentration per Run 1	-0.0001 ppm	0.0000 ppm	-0.0002 ppm	0.0115 ppm	0.0135 ppm	0.1894 ppm	0.0025 ppm
Concentration per Run 2	0.0000 ppm	-0.0003 ppm	-0.0004 ppm	0.0115 ppm	0.0114 ppm	0.2024 ppm	-0.0004 ppm
Concentration per Run 3	-0.0001 ppm	-0.0003 ppm	-0.0003 ppm	0.0118 ppm	0.0124 ppm	0.1625 ppm	0.0011 ppm
Concentration RSD	53.9 %	70.4 %	33.2 %	1.2 %	8.5 %	11.0 %	138.9 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	1.8586 ppm	0.0040 ppm	0.0078 ppm	2.3261 ppm	0.0006 ppm	-0.0005 ppm	0.0074 ppm
Concentration per Run 1	1.8719 ppm	0.0039 ppm	0.0080 ppm	2.3223 ppm	0.0002 ppm	-0.0005 ppm	0.0084 ppm
Concentration per Run 2	1.8577 ppm	0.0040 ppm	0.0076 ppm	2.3273 ppm	0.0009 ppm	-0.0007 ppm	0.0073 ppm
Concentration per Run 3	1.8462 ppm	0.0041 ppm	0.0076 ppm	2.3289 ppm	0.0006 ppm	-0.0002 ppm	0.0066 ppm
Concentration RSD	0.7 %	2.4 %	3.1 %	0.1 %	57.0 %	49.6 %	12.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0007 ppm	2.4130 ppm	0.0049 ppm	0.0079 ppm	0.0000 ppm	-0.0010 ppm	0.0001 ppm
Concentration per Run 1	-0.0012 ppm	2.4241 ppm	0.0049 ppm	0.0078 ppm	0.0001 ppm	-0.0010 ppm	0.0002 ppm
Concentration per Run 2	-0.0008 ppm	2.4147 ppm	0.0048 ppm	0.0079 ppm	-0.0001 ppm	-0.0007 ppm	0.0000 ppm
Concentration per Run 3	-0.0001 ppm	2.4002 ppm	0.0050 ppm	0.0080 ppm	0.0001 ppm	-0.0012 ppm	0.0000 ppm
Concentration RSD	81.7 %	0.5 %	2.5 %	1.3 %	1,029.8 %	22.2 %	153.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0183 ppm	99.9561 %	102.4938 %	98.6333 %	97.4194 %	101.9740 %	98.7353 %
Concentration per Run 1	0.0186 ppm	99.0383 %	102.0903 %	98.6050 %	96.7128 %	101.9294 %	98.5465 %
Concentration per Run 2	0.0183 ppm	99.9282 %	103.3232 %	98.4947 %	97.4094 %	102.3512 %	98.9329 %
Concentration per Run 3	0.0180 ppm	100.9018 %	102.0680 %	98.8003 %	98.1361 %	101.6415 %	98.7265 %
Concentration RSD	1.7 %	0.9 %	0.7 %	0.2 %	0.7 %	0.4 %	0.2 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: L2450431-04d20 WG1968556
Analysis started at: 9/10/2024 11:24:14 PM
Rack 3
Vial 8
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0007 ppm	7.6197 ppm	0.0043 ppm	0.0037 ppm	0.0890 ppm	0.0003 ppm	22.8926 ppm
Concentration per Run 1	0.0006 ppm	7.6268 ppm	0.0059 ppm	0.0031 ppm	0.0891 ppm	0.0004 ppm	22.8836 ppm
Concentration per Run 2	0.0009 ppm	7.6313 ppm	0.0052 ppm	0.0044 ppm	0.0890 ppm	0.0004 ppm	22.9681 ppm
Concentration per Run 3	0.0005 ppm	7.6009 ppm	0.0017 ppm	0.0037 ppm	0.0890 ppm	0.0003 ppm	22.8262 ppm
Concentration RSD	28.0 %	0.2 %	52.0 %	18.0 %	0.0 %	9.1 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0082 ppm	0.0128 ppm	0.0197 ppm	0.0569 ppm	15.7716 ppm	1.5936 ppm	0.0102 ppm
Concentration per Run 1	0.0082 ppm	0.0129 ppm	0.0197 ppm	0.0571 ppm	15.7652 ppm	1.6185 ppm	0.0116 ppm
Concentration per Run 2	0.0083 ppm	0.0126 ppm	0.0199 ppm	0.0570 ppm	15.8206 ppm	1.5879 ppm	0.0099 ppm
Concentration per Run 3	0.0081 ppm	0.0129 ppm	0.0196 ppm	0.0565 ppm	15.7291 ppm	1.5743 ppm	0.0093 ppm
Concentration RSD	1.0 %	1.4 %	0.7 %	0.5 %	0.3 %	1.4 %	12.0 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	8.0261 ppm	0.2774 ppm	0.0026 ppm	0.6335 ppm	0.0198 ppm	0.2843 ppm	0.0050 ppm
Concentration per Run 1	8.0973 ppm	0.2771 ppm	0.0021 ppm	0.6349 ppm	0.0197 ppm	0.2873 ppm	0.0050 ppm
Concentration per Run 2	7.9940 ppm	0.2783 ppm	0.0027 ppm	0.6350 ppm	0.0199 ppm	0.2821 ppm	0.0039 ppm
Concentration per Run 3	7.9869 ppm	0.2768 ppm	0.0031 ppm	0.6305 ppm	0.0197 ppm	0.2837 ppm	0.0060 ppm
Concentration RSD	0.8 %	0.3 %	19.1 %	0.4 %	0.6 %	0.9 %	21.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0010 ppm	1.1554 ppm	0.0097 ppm	0.0672 ppm	0.3600 ppm	0.0004 ppm	0.0279 ppm
Concentration per Run 1	-0.0011 ppm	1.1694 ppm	0.0095 ppm	0.0669 ppm	0.3625 ppm	0.0001 ppm	0.0281 ppm
Concentration per Run 2	-0.0009 ppm	1.1542 ppm	0.0106 ppm	0.0676 ppm	0.3597 ppm	0.0009 ppm	0.0279 ppm
Concentration per Run 3	-0.0011 ppm	1.1427 ppm	0.0090 ppm	0.0671 ppm	0.3577 ppm	0.0001 ppm	0.0278 ppm
Concentration RSD	9.1 %	1.2 %	8.7 %	0.5 %	0.7 %	112.5 %	0.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	12.5972 ppm	98.8836 %	102.7241 %	96.4523 %	97.5385 %	104.1696 %	99.9488 %
Concentration per Run 1	12.6831 ppm	98.2395 %	103.3120 %	96.0118 %	97.2603 %	105.0534 %	99.5241 %
Concentration per Run 2	12.6011 ppm	99.1529 %	102.5426 %	96.6089 %	97.7988 %	104.2274 %	100.2034 %
Concentration per Run 3	12.5074 ppm	99.2585 %	102.3177 %	96.7363 %	97.5564 %	103.2280 %	100.1189 %
Concentration RSD	0.7 %	0.6 %	0.5 %	0.4 %	0.3 %	0.9 %	0.4 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCV
Analysis started at: 9/10/2024 11:28:13 PM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.4950 ppm	0.4855 ppm	0.4600 ppm	0.4549 ppm	0.5124 ppm	0.5008 ppm	0.4859 ppm
Concentration per Run 1	0.4946 ppm	0.4866 ppm	0.4621 ppm	0.4548 ppm	0.5161 ppm	0.5017 ppm	0.4835 ppm
Concentration per Run 2	0.4968 ppm	0.4864 ppm	0.4601 ppm	0.4565 ppm	0.5118 ppm	0.5005 ppm	0.4855 ppm
Concentration per Run 3	0.4936 ppm	0.4834 ppm	0.4578 ppm	0.4535 ppm	0.5092 ppm	0.5002 ppm	0.4887 ppm
Recovery Percentage 1	99.000 %	97.097 %	92.006 %	90.987 %	102.475 %	100.156 %	97.177 %
Concentration RSD	0.3 %	0.4 %	0.5 %	0.3 %	0.7 %	0.2 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.4855 ppm	0.4972 ppm	0.4811 ppm	0.4798 ppm	0.4968 ppm	5.4591 ppm	0.5419 ppm
Concentration per Run 1	0.4847 ppm	0.4967 ppm	0.4805 ppm	0.4802 ppm	0.4987 ppm	5.4799 ppm	0.5472 ppm
Concentration per Run 2	0.4888 ppm	0.5003 ppm	0.4830 ppm	0.4803 ppm	0.4960 ppm	5.4448 ppm	0.5403 ppm
Concentration per Run 3	0.4831 ppm	0.4947 ppm	0.4798 ppm	0.4788 ppm	0.4956 ppm	5.4526 ppm	0.5382 ppm
Recovery Percentage 1	97.106 %	99.447 %	96.222 %	95.951 %	99.357 %	109.182 %	108.376 %
Concentration RSD	0.6 %	0.6 %	0.4 %	0.2 %	0.3 %	0.3 %	0.9 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.4881 ppm	0.4822 ppm	0.4806 ppm	10.2077 ppm	0.4953 ppm	0.4800 ppm	0.4835 ppm
Concentration per Run 1	0.4881 ppm	0.4828 ppm	0.4750 ppm	10.2569 ppm	0.4934 ppm	0.4808 ppm	0.4799 ppm
Concentration per Run 2	0.4908 ppm	0.4815 ppm	0.4839 ppm	10.1801 ppm	0.5007 ppm	0.4809 ppm	0.4853 ppm
Concentration per Run 3	0.4855 ppm	0.4824 ppm	0.4827 ppm	10.1861 ppm	0.4919 ppm	0.4784 ppm	0.4853 ppm
Recovery Percentage 1	97.624 %	96.439 %	96.111 %	102.077 %	99.065 %	96.007 %	96.706 %
Concentration RSD	0.5 %	0.1 %	1.0 %	0.4 %	1.0 %	0.3 %	0.6 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4668 ppm	5.0744 ppm	0.5074 ppm	0.5239 ppm	0.4970 ppm	0.4651 ppm	0.4842 ppm
Concentration per Run 1	0.4649 ppm	5.0658 ppm	0.5076 ppm	0.5239 ppm	0.4975 ppm	0.4672 ppm	0.4842 ppm
Concentration per Run 2	0.4697 ppm	5.0904 ppm	0.5100 ppm	0.5236 ppm	0.4994 ppm	0.4665 ppm	0.4859 ppm
Concentration per Run 3	0.4659 ppm	5.0672 ppm	0.5046 ppm	0.5241 ppm	0.4943 ppm	0.4615 ppm	0.4825 ppm
Recovery Percentage 1	93.370 %	96.656 %	101.478 %	104.772 %	99.408 %	93.015 %	96.840 %
Concentration RSD	0.5 %	0.3 %	0.5 %	0.0 %	0.5 %	0.7 %	0.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4828 ppm	101.5997 %	102.2313 %	98.2549 %	95.5430 %	100.4339 %	97.8038 %
Concentration per Run 1	0.4822 ppm	101.5095 %	103.0977 %	98.1729 %	94.7303 %	101.4637 %	97.8566 %
Concentration per Run 2	0.4848 ppm	100.8902 %	102.4446 %	98.2997 %	95.1467 %	100.8007 %	97.7696 %
Concentration per Run 3	0.4814 ppm	102.3992 %	101.1517 %	98.2922 %	96.7520 %	99.0373 %	97.7852 %
Recovery Percentage 1	96.560 %						
Concentration RSD	0.4 %	0.7 %	1.0 %	0.1 %	1.1 %	1.2 %	0.0 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCB
Analysis started at: 9/10/2024 11:32:11 PM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	0.0033 ppm	0.0007 ppm	-0.0008 ppm	0.0001 ppm	0.0000 ppm	0.0043 ppm
Concentration per Run 1	0.0002 ppm	0.0022 ppm	0.0021 ppm	-0.0009 ppm	0.0001 ppm	0.0000 ppm	0.0039 ppm
Concentration per Run 2	0.0000 ppm	0.0045 ppm	0.0001 ppm	-0.0012 ppm	0.0001 ppm	0.0000 ppm	0.0036 ppm
Concentration per Run 3	0.0000 ppm	0.0031 ppm	-0.0001 ppm	-0.0002 ppm	0.0002 ppm	0.0000 ppm	0.0053 ppm
Recovery Percentage 1	1.497 %	3.309 %	23.529 %	-2.545 %	1.393 %	0.412 %	4.278 %
Concentration RSD	115.7 %	34.9 %	176.8 %	65.6 %	24.8 %	69.7 %	21.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0004 ppm	-0.0001 ppm	0.0006 ppm	0.0025 ppm	0.0104 ppm	-0.0002 ppm
Concentration per Run 1	0.0000 ppm	-0.0005 ppm	0.0000 ppm	0.0009 ppm	0.0018 ppm	0.0252 ppm	-0.0014 ppm
Concentration per Run 2	0.0000 ppm	-0.0004 ppm	-0.0001 ppm	0.0004 ppm	0.0026 ppm	0.0028 ppm	0.0011 ppm
Concentration per Run 3	0.0000 ppm	-0.0004 ppm	-0.0003 ppm	0.0004 ppm	0.0031 ppm	0.0031 ppm	-0.0002 ppm
Recovery Percentage 1	0.633 %	-2.085 %	-1.302 %	5.886 %	5.039 %	0.415 %	-1.626 %
Concentration RSD	19.9 %	15.8 %	98.7 %	49.5 %	26.8 %	124.0 %	759.3 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0007 ppm	0.0001 ppm	0.0023 ppm	0.0026 ppm	0.0001 ppm	-0.0007 ppm	0.0016 ppm
Concentration per Run 1	0.0014 ppm	0.0001 ppm	0.0025 ppm	0.0008 ppm	-0.0001 ppm	0.0002 ppm	0.0004 ppm
Concentration per Run 2	0.0005 ppm	0.0002 ppm	0.0019 ppm	0.0047 ppm	0.0004 ppm	-0.0012 ppm	0.0036 ppm
Concentration per Run 3	0.0003 ppm	0.0001 ppm	0.0024 ppm	0.0022 ppm	0.0001 ppm	-0.0011 ppm	0.0010 ppm
Recovery Percentage 1	0.719 %	1.239 %	4.571 %	0.129 %	0.453 %	-7.013 %	3.292 %
Concentration RSD	83.9 %	45.9 %	15.4 %	75.8 %	212.7 %	105.9 %	103.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0000 ppm	-0.0198 ppm	0.0006 ppm	0.0000 ppm	-0.0003 ppm	-0.0009 ppm	-0.0001 ppm
Concentration per Run 1	0.0004 ppm	-0.0196 ppm	0.0012 ppm	-0.0001 ppm	-0.0003 ppm	-0.0019 ppm	0.0000 ppm
Concentration per Run 2	-0.0003 ppm	-0.0197 ppm	0.0008 ppm	0.0000 ppm	-0.0003 ppm	-0.0005 ppm	-0.0002 ppm
Concentration per Run 3	-0.0001 ppm	-0.0201 ppm	-0.0001 ppm	0.0000 ppm	-0.0003 ppm	-0.0004 ppm	-0.0001 ppm
Recovery Percentage 1	-0.072 %	-3.957 %	1.273 %	-0.377 %	-2.710 %	-4.611 %	-1.036 %
Concentration RSD	4,760.3 %	1.2 %	105.3 %	153.2 %	6.0 %	90.4 %	76.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0005 ppm	97.8570 %	99.3931 %	97.8904 %	97.2713 %	100.5988 %	98.4817 %
Concentration per Run 1	0.0005 ppm	97.2896 %	98.5846 %	98.3002 %	96.9187 %	100.2481 %	99.0010 %
Concentration per Run 2	0.0005 ppm	97.8408 %	99.7903 %	97.5982 %	97.0605 %	100.5782 %	98.3395 %
Concentration per Run 3	0.0004 ppm	98.4405 %	99.8045 %	97.7727 %	97.8346 %	100.9701 %	98.1045 %
Recovery Percentage 1	9.272 %						
Concentration RSD	19.9 %	0.6 %	0.7 %	0.4 %	0.5 %	0.4 %	0.5 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCV
Analysis started at: 9/10/2024 11:36:09 PM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.4899 ppm	0.4883 ppm	0.4553 ppm	0.4497 ppm	0.5087 ppm	0.4980 ppm	0.4810 ppm
Concentration per Run 1	0.4875 ppm	0.4890 ppm	0.4550 ppm	0.4481 ppm	0.5095 ppm	0.4975 ppm	0.4812 ppm
Concentration per Run 2	0.4884 ppm	0.4882 ppm	0.4579 ppm	0.4476 ppm	0.5068 ppm	0.4989 ppm	0.4791 ppm
Concentration per Run 3	0.4939 ppm	0.4878 ppm	0.4531 ppm	0.4535 ppm	0.5096 ppm	0.4977 ppm	0.4826 ppm
Recovery Percentage 1	97.988 %	97.661 %	91.068 %	89.947 %	101.731 %	99.609 %	96.195 %
Concentration RSD	0.7 %	0.1 %	0.5 %	0.7 %	0.3 %	0.2 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.4815 ppm	0.4914 ppm	0.4779 ppm	0.4736 ppm	0.4891 ppm	5.3953 ppm	0.5334 ppm
Concentration per Run 1	0.4804 ppm	0.4899 ppm	0.4748 ppm	0.4705 ppm	0.4925 ppm	5.4234 ppm	0.5361 ppm
Concentration per Run 2	0.4785 ppm	0.4893 ppm	0.4764 ppm	0.4720 ppm	0.4887 ppm	5.3838 ppm	0.5311 ppm
Concentration per Run 3	0.4856 ppm	0.4951 ppm	0.4827 ppm	0.4782 ppm	0.4860 ppm	5.3787 ppm	0.5332 ppm
Recovery Percentage 1	96.302 %	98.283 %	95.586 %	94.713 %	97.812 %	107.906 %	106.687 %
Concentration RSD	0.8 %	0.7 %	0.9 %	0.9 %	0.7 %	0.5 %	0.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.4829 ppm	0.4775 ppm	0.4740 ppm	10.1322 ppm	0.4917 ppm	0.4782 ppm	0.4744 ppm
Concentration per Run 1	0.4824 ppm	0.4785 ppm	0.4679 ppm	10.1302 ppm	0.4900 ppm	0.4762 ppm	0.4742 ppm
Concentration per Run 2	0.4800 ppm	0.4776 ppm	0.4722 ppm	10.0834 ppm	0.4881 ppm	0.4807 ppm	0.4705 ppm
Concentration per Run 3	0.4865 ppm	0.4764 ppm	0.4817 ppm	10.1829 ppm	0.4970 ppm	0.4779 ppm	0.4786 ppm
Recovery Percentage 1	96.589 %	95.501 %	94.791 %	101.322 %	98.339 %	95.648 %	94.883 %
Concentration RSD	0.7 %	0.2 %	1.5 %	0.5 %	1.0 %	0.5 %	0.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4617 ppm	5.0212 ppm	0.5029 ppm	0.5235 ppm	0.4913 ppm	0.4617 ppm	0.4793 ppm
Concentration per Run 1	0.4606 ppm	4.9864 ppm	0.5005 ppm	0.5245 ppm	0.4884 ppm	0.4610 ppm	0.4766 ppm
Concentration per Run 2	0.4617 ppm	5.0075 ppm	0.4989 ppm	0.5230 ppm	0.4887 ppm	0.4639 ppm	0.4779 ppm
Concentration per Run 3	0.4628 ppm	5.0698 ppm	0.5094 ppm	0.5229 ppm	0.4968 ppm	0.4603 ppm	0.4834 ppm
Recovery Percentage 1	92.338 %	95.642 %	100.590 %	104.695 %	98.260 %	92.344 %	95.860 %
Concentration RSD	0.2 %	0.9 %	1.1 %	0.2 %	1.0 %	0.4 %	0.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4792 ppm	102.7355 %	102.8127 %	98.6133 %	96.2979 %	100.3979 %	97.9329 %
Concentration per Run 1	0.4774 ppm	102.9739 %	103.2090 %	98.7167 %	95.6883 %	101.1836 %	97.9919 %
Concentration per Run 2	0.4744 ppm	103.4936 %	102.2709 %	98.1823 %	97.0511 %	100.0652 %	97.4641 %
Concentration per Run 3	0.4858 ppm	101.7389 %	102.9581 %	98.9409 %	96.1543 %	99.9449 %	98.3426 %
Recovery Percentage 1	95.842 %						
Concentration RSD	1.2 %	0.9 %	0.5 %	0.4 %	0.7 %	0.7 %	0.5 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: CCB
Analysis started at: 9/10/2024 11:40:07 PM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	-0.0002 ppm	0.0001 ppm	-0.0001 ppm	0.0001 ppm	0.0000 ppm	0.0043 ppm
Concentration per Run 1	0.0004 ppm	0.0062 ppm	-0.0007 ppm	-0.0008 ppm	0.0000 ppm	0.0000 ppm	0.0040 ppm
Concentration per Run 2	-0.0001 ppm	-0.0026 ppm	0.0000 ppm	0.0002 ppm	0.0000 ppm	0.0000 ppm	0.0042 ppm
Concentration per Run 3	0.0002 ppm	-0.0041 ppm	0.0011 ppm	0.0002 ppm	0.0002 ppm	0.0000 ppm	0.0047 ppm
Recovery Percentage 1	2.106 %	-0.170 %	4.717 %	-0.443 %	0.686 %	0.678 %	4.296 %
Concentration RSD	159.6 %	3,258.8 %	632.8 %	402.2 %	177.0 %	35.5 %	8.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0001 ppm	-0.0002 ppm	0.0004 ppm	0.0028 ppm	-0.0067 ppm	-0.0003 ppm
Concentration per Run 1	0.0001 ppm	0.0003 ppm	-0.0002 ppm	0.0004 ppm	0.0036 ppm	-0.0068 ppm	-0.0003 ppm
Concentration per Run 2	0.0000 ppm	-0.0001 ppm	-0.0001 ppm	0.0003 ppm	0.0027 ppm	-0.0133 ppm	-0.0012 ppm
Concentration per Run 3	0.0000 ppm	-0.0004 ppm	-0.0004 ppm	0.0004 ppm	0.0021 ppm	0.0000 ppm	0.0007 ppm
Recovery Percentage 1	0.451 %	-0.305 %	-2.473 %	3.874 %	5.604 %	-0.269 %	-2.774 %
Concentration RSD	203.2 %	604.7 %	68.5 %	16.0 %	27.4 %	99.1 %	326.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0024 ppm	0.0002 ppm	0.0020 ppm	0.0022 ppm	0.0002 ppm	-0.0002 ppm	0.0016 ppm
Concentration per Run 1	0.0014 ppm	0.0002 ppm	0.0022 ppm	0.0000 ppm	0.0000 ppm	0.0002 ppm	0.0013 ppm
Concentration per Run 2	0.0020 ppm	0.0002 ppm	0.0019 ppm	0.0046 ppm	0.0008 ppm	-0.0005 ppm	0.0022 ppm
Concentration per Run 3	0.0037 ppm	0.0002 ppm	0.0018 ppm	0.0020 ppm	-0.0002 ppm	-0.0004 ppm	0.0012 ppm
Recovery Percentage 1	2.368 %	1.839 %	3.921 %	0.109 %	0.798 %	-1.993 %	3.160 %
Concentration RSD	49.7 %	16.3 %	11.5 %	106.3 %	285.1 %	191.4 %	34.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0010 ppm	-0.0208 ppm	0.0002 ppm	0.0000 ppm	-0.0003 ppm	-0.0002 ppm	0.0000 ppm
Concentration per Run 1	-0.0012 ppm	-0.0211 ppm	0.0006 ppm	0.0000 ppm	-0.0003 ppm	0.0005 ppm	0.0000 ppm
Concentration per Run 2	-0.0027 ppm	-0.0208 ppm	0.0000 ppm	-0.0001 ppm	-0.0002 ppm	0.0000 ppm	-0.0001 ppm
Concentration per Run 3	0.0010 ppm	-0.0204 ppm	0.0000 ppm	0.0000 ppm	-0.0003 ppm	-0.0011 ppm	0.0000 ppm
Recovery Percentage 1	-9.887 %	-4.156 %	0.409 %	-0.287 %	-2.568 %	-1.097 %	-0.450 %
Concentration RSD	186.2 %	1.5 %	158.4 %	116.9 %	14.3 %	366.6 %	138.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0003 ppm	97.2303 %	99.3084 %	98.8776 %	97.2059 %	100.8425 %	99.8896 %
Concentration per Run 1	0.0004 ppm	96.1110 %	98.7896 %	97.8514 %	96.6605 %	100.7167 %	98.7223 %
Concentration per Run 2	0.0004 ppm	97.5751 %	99.5193 %	101.0921 %	97.7592 %	100.8038 %	102.1314 %
Concentration per Run 3	0.0002 ppm	98.0047 %	99.6161 %	97.6893 %	97.1979 %	101.0071 %	98.8152 %
Recovery Percentage 1	6.792 %						
Concentration RSD	29.9 %	1.0 %	0.5 %	1.9 %	0.6 %	0.1 %	1.9 %

iCAP Pro Trace 8 Data report

9/11/2024 8:15:39 AM

LabBook: WG1969717_09102024T8.imexp

Sample: LLOQ
Analysis started at: 9/10/2024 11:44:06 PM
Rack 0
Vial 5
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0055 ppm	0.1118 ppm	0.0047 ppm	0.0296 ppm	0.0115 ppm	0.0052 ppm	**0.1356 ppm**
Concentration per Run 1	0.0054 ppm	0.1110 ppm	0.0040 ppm	0.0284 ppm	0.0117 ppm	0.0053 ppm	0.1344 ppm
Concentration per Run 2	0.0056 ppm	0.1110 ppm	0.0053 ppm	0.0296 ppm	0.0113 ppm	0.0052 ppm	0.1367 ppm
Concentration per Run 3	0.0056 ppm	0.1134 ppm	0.0048 ppm	0.0307 ppm	0.0115 ppm	0.0052 ppm	0.1358 ppm
Recovery Percentage 1	110.273 %	111.787 %	94.238 %	98.575 %	114.887 %	104.916 %	135.616 %
Concentration RSD	2.5 %	1.2 %	13.1 %	3.9 %	1.7 %	0.6 %	**0.9 %**

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0042 ppm	0.0210 ppm	0.0102 ppm	0.0114 ppm	**0.1286 ppm**	2.8999 ppm	0.0115 ppm
Concentration per Run 1	0.0042 ppm	0.0209 ppm	0.0102 ppm	0.0112 ppm	0.1295 ppm	2.9115 ppm	0.0120 ppm
Concentration per Run 2	0.0043 ppm	0.0212 ppm	0.0104 ppm	0.0114 ppm	0.1273 ppm	2.8972 ppm	0.0110 ppm
Concentration per Run 3	0.0042 ppm	0.0209 ppm	0.0101 ppm	0.0115 ppm	0.1292 ppm	2.8911 ppm	0.0114 ppm
Recovery Percentage 1	105.258 %	105.037 %	102.379 %	113.516 %	257.272 %	115.997 %	114.869 %
Concentration RSD	1.9 %	0.8 %	1.4 %	1.1 %	**0.9 %**	0.4 %	4.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.1139 ppm	0.0111 ppm	0.0544 ppm	2.2195 ppm	0.0218 ppm	0.0102 ppm	0.0523 ppm
Concentration per Run 1	0.1150 ppm	0.0111 ppm	0.0544 ppm	2.2221 ppm	0.0217 ppm	0.0104 ppm	0.0542 ppm
Concentration per Run 2	0.1138 ppm	0.0110 ppm	0.0547 ppm	2.2166 ppm	0.0218 ppm	0.0099 ppm	0.0522 ppm
Concentration per Run 3	0.1129 ppm	0.0113 ppm	0.0541 ppm	2.2199 ppm	0.0218 ppm	0.0104 ppm	0.0507 ppm
Recovery Percentage 1	113.902 %	111.172 %	108.845 %	110.976 %	87.212 %	102.355 %	104.696 %
Concentration RSD	0.9 %	1.6 %	0.6 %	0.1 %	0.2 %	2.5 %	3.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0091 ppm	0.4915 ppm	0.0557 ppm	0.0111 ppm	0.0537 ppm	0.0191 ppm	0.0105 ppm
Concentration per Run 1	0.0082 ppm	0.4909 ppm	0.0552 ppm	0.0111 ppm	0.0535 ppm	0.0182 ppm	0.0106 ppm
Concentration per Run 2	0.0095 ppm	0.4931 ppm	0.0562 ppm	0.0111 ppm	0.0539 ppm	0.0197 ppm	0.0106 ppm
Concentration per Run 3	0.0096 ppm	0.4903 ppm	0.0556 ppm	0.0110 ppm	0.0538 ppm	0.0193 ppm	0.0105 ppm
Recovery Percentage 1	91.179 %	98.294 %	111.304 %	110.770 %	107.458 %	95.262 %	105.499 %
Concentration RSD	8.5 %	0.3 %	0.9 %	0.5 %	0.4 %	4.1 %	0.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	**0.0118 ppm**	101.3973 %	102.1381 %	99.4582 %	96.7627 %	100.5632 %	98.3787 %
Concentration per Run 1	0.0114 ppm	101.1362 %	101.6419 %	99.6744 %	96.6008 %	100.0524 %	98.3605 %
Concentration per Run 2	0.0119 ppm	101.3160 %	103.0706 %	99.6139 %	96.8812 %	101.1851 %	98.5274 %
Concentration per Run 3	0.0119 ppm	101.7397 %	101.7018 %	99.0862 %	96.8061 %	100.4523 %	98.2481 %
Recovery Percentage 1	235.251 %						
Concentration RSD	**2.4 %**	0.3 %	0.8 %	0.3 %	0.1 %	0.6 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: Blank DMC Trace8
Analysis started at: 9/11/2024 5:32:48 AM
Rack 0
Vial 1
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm
Concentration per Run	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm
Concentration RSD	0.9 %	-0.3 %	-0.6 %	0.5 %	0.2 %	-0.5 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm
Concentration per Run	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm
Concentration RSD	-2.3 %	0.2 %	-0.4 %	0.0 %	-0.4 %	-0.1 %	-4.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm
Concentration per Run	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm
Concentration RSD	-0.4 %	-0.2 %	1.3 %	0.3 %	0.7 %	0.3 %	2.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm
Concentration per Run	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm
Concentration RSD	-2.8 %	0.1 %	0.5 %	-1.7 %	-0.1 %	-0.8 %	6.1 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0000 ppm	100.0000 %	100.0000 %	100.0000 %	100.0000 %	100.0000 %	100.0000 %
Concentration per Run	0.0000 ppm	100.0000 %	100.0000 %	100.0000 %	100.0000 %	100.0000 %	100.0000 %
Concentration RSD	-1.9 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: ICAL
Analysis started at: 9/11/2024 5:36:54 AM
Rack 0
Vial 2
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	1.0000 ppm	25.0000 ppm	1.0000 ppm	1.0000 ppm	1.0000 ppm	1.0000 ppm	10.0000 ppm
Concentration per Run 1	1.0019 ppm	24.8958 ppm	0.9962 ppm	1.0016 ppm	0.9974 ppm	0.9964 ppm	9.9437 ppm
Concentration per Run 2	0.9960 ppm	24.9608 ppm	0.9986 ppm	0.9920 ppm	1.0022 ppm	1.0009 ppm	9.9813 ppm
Concentration per Run 3	1.0021 ppm	25.1434 ppm	1.0052 ppm	1.0064 ppm	1.0004 ppm	1.0027 ppm	10.0750 ppm
Concentration RSD	0.3 %	0.5 %	0.5 %	0.7 %	0.2 %	0.3 %	0.7 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	1.0000 ppm	1.0000 ppm	1.0000 ppm	1.0000 ppm	25.0000 ppm	35.0000 ppm	1.0000 ppm
Concentration per Run 1	1.0040 ppm	1.0031 ppm	1.0062 ppm	1.0003 ppm	24.8744 ppm	34.7798 ppm	1.0002 ppm
Concentration per Run 2	0.9915 ppm	0.9933 ppm	0.9922 ppm	0.9981 ppm	24.9973 ppm	34.9090 ppm	0.9863 ppm
Concentration per Run 3	1.0045 ppm	1.0036 ppm	1.0016 ppm	1.0016 ppm	25.1282 ppm	35.3112 ppm	1.0134 ppm
Concentration RSD	0.7 %	0.6 %	0.7 %	0.2 %	0.5 %	0.8 %	1.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	10.0000 ppm	1.0000 ppm	1.0000 ppm	25.0000 ppm	1.0000 ppm	1.0000 ppm	1.0000 ppm
Concentration per Run 1	10.0618 ppm	0.9954 ppm	0.9920 ppm	24.8959 ppm	1.0071 ppm	0.9979 ppm	1.0011 ppm
Concentration per Run 2	9.9281 ppm	0.9979 ppm	0.9976 ppm	24.9292 ppm	0.9898 ppm	1.0002 ppm	0.9910 ppm
Concentration per Run 3	10.0101 ppm	1.0067 ppm	1.0104 ppm	25.1749 ppm	1.0032 ppm	1.0018 ppm	1.0078 ppm
Concentration RSD	0.7 %	0.6 %	0.9 %	0.6 %	0.9 %	0.2 %	0.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	1.0000 ppm	10.0000 ppm	1.0000 ppm	1.0000 ppm	1.0000 ppm	1.0000 ppm	1.0000 ppm
Concentration per Run 1	0.9959 ppm	10.0231 ppm	1.0111 ppm	0.9939 ppm	1.0039 ppm	0.9956 ppm	1.0015 ppm
Concentration per Run 2	0.9983 ppm	9.9251 ppm	0.9869 ppm	1.0019 ppm	0.9969 ppm	0.9994 ppm	0.9930 ppm
Concentration per Run 3	1.0057 ppm	10.0517 ppm	1.0020 ppm	1.0043 ppm	0.9992 ppm	1.0050 ppm	1.0055 ppm
Concentration RSD	0.5 %	0.7 %	1.2 %	0.5 %	0.4 %	0.5 %	0.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	1.0000 ppm	101.8843 %	103.5121 %	95.0408 %	93.9233 %	99.0920 %	96.2210 %
Concentration per Run 1	1.0047 ppm	101.2930 %	104.2886 %	95.1253 %	92.4552 %	99.4112 %	96.3518 %
Concentration per Run 2	0.9934 ppm	102.9882 %	103.3982 %	95.0695 %	95.2729 %	98.5058 %	96.1568 %
Concentration per Run 3	1.0019 ppm	101.3718 %	102.8495 %	94.9277 %	94.0418 %	99.3591 %	96.1544 %
Concentration RSD	0.6 %	0.9 %	0.7 %	0.1 %	1.5 %	0.5 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: ICV
Analysis started at: 9/11/2024 5:40:48 AM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.5010 ppm	0.4735 ppm	0.4687 ppm	0.4750 ppm	0.4972 ppm	0.5048 ppm	0.4833 ppm
Concentration per Run 1	0.5035 ppm	0.4693 ppm	0.4695 ppm	0.4757 ppm	0.4932 ppm	0.5021 ppm	0.4832 ppm
Concentration per Run 2	0.4984 ppm	0.4755 ppm	0.4668 ppm	0.4717 ppm	0.4953 ppm	0.5062 ppm	0.4868 ppm
Concentration per Run 3	0.5010 ppm	0.4758 ppm	0.4699 ppm	0.4776 ppm	0.5032 ppm	0.5060 ppm	0.4799 ppm
Recovery Percentage 1	100.197 %	94.699 %	93.745 %	94.999 %	99.447 %	100.951 %	96.658 %
Concentration RSD	0.5 %	0.8 %	0.4 %	0.6 %	1.1 %	0.5 %	0.7 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.5034 ppm	0.5068 ppm	0.4898 ppm	0.4882 ppm	0.5068 ppm	5.1377 ppm	0.5107 ppm
Concentration per Run 1	0.5074 ppm	0.5098 ppm	0.4926 ppm	0.4913 ppm	0.5055 ppm	5.1230 ppm	0.5093 ppm
Concentration per Run 2	0.5002 ppm	0.5046 ppm	0.4870 ppm	0.4841 ppm	0.5070 ppm	5.1245 ppm	0.5082 ppm
Concentration per Run 3	0.5028 ppm	0.5062 ppm	0.4898 ppm	0.4893 ppm	0.5081 ppm	5.1655 ppm	0.5146 ppm
Recovery Percentage 1	100.686 %	101.369 %	97.962 %	97.645 %	101.370 %	102.754 %	102.142 %
Concentration RSD	0.7 %	0.5 %	0.6 %	0.8 %	0.3 %	0.5 %	0.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.4947 ppm	0.4897 ppm	0.5021 ppm	10.0200 ppm	0.5050 ppm	0.4884 ppm	0.4942 ppm
Concentration per Run 1	0.4970 ppm	0.4895 ppm	0.4989 ppm	9.9856 ppm	0.5073 ppm	0.4877 ppm	0.4966 ppm
Concentration per Run 2	0.4920 ppm	0.4901 ppm	0.4998 ppm	10.0134 ppm	0.4992 ppm	0.4872 ppm	0.4912 ppm
Concentration per Run 3	0.4951 ppm	0.4895 ppm	0.5075 ppm	10.0611 ppm	0.5086 ppm	0.4904 ppm	0.4949 ppm
Recovery Percentage 1	98.936 %	97.941 %	100.414 %	100.200 %	101.004 %	97.684 %	98.848 %
Concentration RSD	0.5 %	0.1 %	0.9 %	0.4 %	1.0 %	0.4 %	0.6 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4732 ppm	5.2358 ppm	0.5196 ppm	0.5103 ppm	0.5013 ppm	0.4913 ppm	0.4919 ppm
Concentration per Run 1	0.4715 ppm	5.2566 ppm	0.5210 ppm	0.5066 ppm	0.5031 ppm	0.4898 ppm	0.4965 ppm
Concentration per Run 2	0.4721 ppm	5.2084 ppm	0.5196 ppm	0.5115 ppm	0.4975 ppm	0.4903 ppm	0.4876 ppm
Concentration per Run 3	0.4761 ppm	5.2425 ppm	0.5181 ppm	0.5127 ppm	0.5032 ppm	0.4938 ppm	0.4916 ppm
Recovery Percentage 1	94.646 %	99.730 %	103.910 %	102.056 %	100.252 %	98.259 %	98.381 %
Concentration RSD	0.5 %	0.5 %	0.3 %	0.6 %	0.7 %	0.4 %	0.9 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4979 ppm	103.7743 %	103.7794 %	99.8696 %	96.7051 %	99.6998 %	98.4091 %
Concentration per Run 1	0.5004 ppm	102.8826 %	103.2495 %	99.6396 %	95.3327 %	99.3953 %	97.9822 %
Concentration per Run 2	0.4950 ppm	104.3793 %	103.5190 %	100.2906 %	97.2489 %	99.7675 %	98.8455 %
Concentration per Run 3	0.4983 ppm	104.0610 %	104.5697 %	99.6786 %	97.5337 %	99.9364 %	98.3997 %
Recovery Percentage 1	99.577 %						
Concentration RSD	0.6 %	0.8 %	0.7 %	0.4 %	1.2 %	0.3 %	0.4 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: ICB
Analysis started at: 9/11/2024 5:44:44 AM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	0.0004 ppm	0.0004 ppm	0.0008 ppm	0.0000 ppm	0.0000 ppm	-0.0013 ppm
Concentration per Run 1	0.0002 ppm	0.0015 ppm	0.0014 ppm	0.0001 ppm	0.0000 ppm	0.0000 ppm	-0.0023 ppm
Concentration per Run 2	-0.0001 ppm	0.0021 ppm	-0.0003 ppm	0.0010 ppm	0.0000 ppm	0.0000 ppm	-0.0004 ppm
Concentration per Run 3	0.0000 ppm	-0.0025 ppm	0.0000 ppm	0.0012 ppm	0.0001 ppm	0.0000 ppm	-0.0014 ppm
Recovery Percentage 1	0.469 %	0.365 %	12.018 %	2.539 %	0.253 %	-0.093 %	-1.343 %
Concentration RSD	343.2 %	697.4 %	252.3 %	78.5 %	196.0 %	43.4 %	71.0 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0001 ppm	-0.0001 ppm	0.0001 ppm	0.0007 ppm	0.0041 ppm	0.0187 ppm	-0.0001 ppm
Concentration per Run 1	0.0002 ppm	0.0001 ppm	0.0002 ppm	0.0008 ppm	0.0048 ppm	0.0260 ppm	0.0004 ppm
Concentration per Run 2	0.0000 ppm	-0.0003 ppm	0.0000 ppm	0.0006 ppm	0.0037 ppm	0.0120 ppm	-0.0005 ppm
Concentration per Run 3	-0.0001 ppm	-0.0001 ppm	0.0001 ppm	0.0005 ppm	0.0039 ppm	0.0181 ppm	-0.0001 ppm
Recovery Percentage 1	1.106 %	-0.531 %	1.076 %	6.549 %	8.228 %	0.749 %	-0.783 %
Concentration RSD	262.6 %	220.6 %	69.3 %	22.7 %	14.0 %	37.5 %	548.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0008 ppm	0.0001 ppm	0.0024 ppm	0.0047 ppm	-0.0001 ppm	0.0008 ppm	-0.0003 ppm
Concentration per Run 1	0.0003 ppm	0.0001 ppm	0.0025 ppm	0.0034 ppm	-0.0005 ppm	0.0009 ppm	0.0003 ppm
Concentration per Run 2	0.0000 ppm	0.0002 ppm	0.0025 ppm	0.0036 ppm	0.0004 ppm	0.0004 ppm	0.0026 ppm
Concentration per Run 3	0.0021 ppm	0.0001 ppm	0.0024 ppm	0.0071 ppm	0.0000 ppm	0.0011 ppm	-0.0039 ppm
Recovery Percentage 1	0.797 %	1.334 %	4.865 %	0.233 %	-0.277 %	7.935 %	-0.690 %
Concentration RSD	138.1 %	66.7 %	2.9 %	44.5 %	658.4 %	47.7 %	955.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0003 ppm	-0.0008 ppm	0.0004 ppm	0.0000 ppm	0.0000 ppm	0.0004 ppm	0.0001 ppm
Concentration per Run 1	-0.0008 ppm	-0.0003 ppm	0.0008 ppm	0.0001 ppm	0.0001 ppm	-0.0001 ppm	0.0002 ppm
Concentration per Run 2	0.0015 ppm	-0.0007 ppm	0.0008 ppm	0.0001 ppm	0.0000 ppm	0.0011 ppm	0.0001 ppm
Concentration per Run 3	0.0002 ppm	-0.0012 ppm	-0.0003 ppm	0.0000 ppm	-0.0002 ppm	0.0002 ppm	0.0000 ppm
Recovery Percentage 1	2.932 %	-0.153 %	0.884 %	0.434 %	-0.075 %	1.989 %	0.968 %
Concentration RSD	396.2 %	59.8 %	137.2 %	63.9 %	1,886.7 %	148.9 %	122.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0010 ppm	100.9980 %	101.7985 %	100.4413 %	99.5886 %	100.9935 %	100.4676 %
Concentration per Run 1	0.0010 ppm	100.0658 %	101.3223 %	100.5597 %	98.9121 %	100.3046 %	100.8328 %
Concentration per Run 2	0.0011 ppm	101.1361 %	102.2460 %	100.2102 %	99.8468 %	101.5861 %	100.2619 %
Concentration per Run 3	0.0009 ppm	101.7923 %	101.8271 %	100.5539 %	100.0068 %	101.0898 %	100.3081 %
Recovery Percentage 1	19.683 %						
Concentration RSD	8.3 %	0.9 %	0.5 %	0.2 %	0.6 %	0.6 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: ICV
Analysis started at: 9/11/2024 5:48:39 AM
Rack 0
Vial 10
Comment position changed

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.5067 ppm	0.4891 ppm	0.4797 ppm	0.4797 ppm	0.5049 ppm	0.5136 ppm	0.4983 ppm
Concentration per Run 1	0.5071 ppm	0.4865 ppm	0.4787 ppm	0.4782 ppm	0.5055 ppm	0.5137 ppm	0.5011 ppm
Concentration per Run 2	0.5061 ppm	0.4918 ppm	0.4805 ppm	0.4807 ppm	0.5040 ppm	0.5112 ppm	0.4947 ppm
Concentration per Run 3	0.5070 ppm	0.4890 ppm	0.4798 ppm	0.4801 ppm	0.5051 ppm	0.5157 ppm	0.4991 ppm
Recovery Percentage 1	101.345 %	97.821 %	95.931 %	95.933 %	100.976 %	102.712 %	99.665 %
Concentration RSD	0.1 %	0.5 %	0.2 %	0.3 %	0.1 %	0.4 %	0.7 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.5095 ppm	0.5122 ppm	0.4965 ppm	0.4948 ppm	0.5177 ppm	5.2457 ppm	0.5275 ppm
Concentration per Run 1	0.5109 ppm	0.5142 ppm	0.4976 ppm	0.4948 ppm	0.5168 ppm	5.2319 ppm	0.5229 ppm
Concentration per Run 2	0.5094 ppm	0.5125 ppm	0.4959 ppm	0.4945 ppm	0.5179 ppm	5.2451 ppm	0.5318 ppm
Concentration per Run 3	0.5083 ppm	0.5100 ppm	0.4960 ppm	0.4951 ppm	0.5183 ppm	5.2602 ppm	0.5278 ppm
Recovery Percentage 1	101.905 %	102.445 %	99.297 %	98.967 %	103.531 %	104.914 %	105.496 %
Concentration RSD	0.3 %	0.4 %	0.2 %	0.1 %	0.1 %	0.3 %	0.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.5002 ppm	0.4990 ppm	0.5055 ppm	10.2025 ppm	0.5149 ppm	0.4969 ppm	0.4998 ppm
Concentration per Run 1	0.5035 ppm	0.4986 ppm	0.5019 ppm	10.1759 ppm	0.5153 ppm	0.4967 ppm	0.4995 ppm
Concentration per Run 2	0.4987 ppm	0.4980 ppm	0.5061 ppm	10.1955 ppm	0.5153 ppm	0.4966 ppm	0.4997 ppm
Concentration per Run 3	0.4983 ppm	0.5005 ppm	0.5086 ppm	10.2360 ppm	0.5140 ppm	0.4973 ppm	0.5002 ppm
Recovery Percentage 1	100.031 %	99.804 %	101.102 %	102.025 %	102.972 %	99.373 %	99.960 %
Concentration RSD	0.6 %	0.3 %	0.7 %	0.3 %	0.2 %	0.1 %	0.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4827 ppm	5.2767 ppm	0.5357 ppm	0.5207 ppm	0.5088 ppm	0.5033 ppm	0.4984 ppm
Concentration per Run 1	0.4826 ppm	5.2748 ppm	0.5362 ppm	0.5241 ppm	0.5099 ppm	0.5018 ppm	0.4994 ppm
Concentration per Run 2	0.4824 ppm	5.2727 ppm	0.5357 ppm	0.5160 ppm	0.5062 ppm	0.5041 ppm	0.4976 ppm
Concentration per Run 3	0.4833 ppm	5.2825 ppm	0.5352 ppm	0.5221 ppm	0.5102 ppm	0.5041 ppm	0.4983 ppm
Recovery Percentage 1	96.549 %	100.508 %	107.141 %	104.147 %	101.758 %	100.666 %	99.687 %
Concentration RSD	0.1 %	0.1 %	0.1 %	0.8 %	0.4 %	0.3 %	0.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5058 ppm	105.6395 %	104.9729 %	100.6240 %	97.8802 %	100.9142 %	99.1340 %
Concentration per Run 1	0.5074 ppm	105.2071 %	104.0897 %	100.8415 %	97.2293 %	99.6675 %	99.0595 %
Concentration per Run 2	0.5061 ppm	105.6379 %	105.6158 %	100.5426 %	97.9041 %	101.8254 %	99.1794 %
Concentration per Run 3	0.5041 ppm	106.0736 %	105.2132 %	100.4880 %	98.5071 %	101.2498 %	99.1633 %
Recovery Percentage 1	101.168 %						
Concentration RSD	0.3 %	0.4 %	0.8 %	0.2 %	0.7 %	1.1 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: ICB
Analysis started at: 9/11/2024 5:52:38 AM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0003 ppm	-0.0001 ppm	0.0008 ppm	0.0001 ppm	0.0000 ppm	0.0000 ppm	-0.0017 ppm
Concentration per Run 1	0.0003 ppm	-0.0001 ppm	0.0009 ppm	-0.0001 ppm	-0.0001 ppm	0.0000 ppm	-0.0001 ppm
Concentration per Run 2	0.0000 ppm	-0.0024 ppm	0.0002 ppm	0.0012 ppm	0.0001 ppm	0.0000 ppm	-0.0036 ppm
Concentration per Run 3	0.0004 ppm	0.0021 ppm	0.0012 ppm	-0.0008 ppm	0.0000 ppm	0.0000 ppm	-0.0015 ppm
Recovery Percentage 1	3.726 %	-0.119 %	25.766 %	0.363 %	0.018 %	0.137 %	-1.742 %
Concentration RSD	79.0 %	1,909.5 %	67.4 %	912.2 %	6,002.4 %	166.3 %	100.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0001 ppm	0.0001 ppm	0.0006 ppm	0.0030 ppm	0.0090 ppm	-0.0006 ppm
Concentration per Run 1	0.0001 ppm	0.0000 ppm	0.0001 ppm	0.0008 ppm	0.0021 ppm	0.0150 ppm	0.0004 ppm
Concentration per Run 2	0.0001 ppm	-0.0002 ppm	0.0000 ppm	0.0004 ppm	0.0028 ppm	0.0101 ppm	-0.0013 ppm
Concentration per Run 3	-0.0001 ppm	-0.0001 ppm	0.0001 ppm	0.0004 ppm	0.0042 ppm	0.0018 ppm	-0.0009 ppm
Recovery Percentage 1	0.607 %	-0.519 %	0.593 %	5.570 %	6.074 %	0.359 %	-5.717 %
Concentration RSD	260.9 %	120.8 %	110.6 %	44.4 %	34.5 %	74.5 %	158.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0020 ppm	0.0003 ppm	0.0021 ppm	0.0037 ppm	-0.0002 ppm	0.0003 ppm	0.0004 ppm
Concentration per Run 1	0.0017 ppm	0.0002 ppm	0.0023 ppm	0.0041 ppm	-0.0003 ppm	0.0003 ppm	0.0015 ppm
Concentration per Run 2	0.0017 ppm	0.0003 ppm	0.0019 ppm	0.0029 ppm	-0.0004 ppm	0.0005 ppm	-0.0006 ppm
Concentration per Run 3	0.0026 ppm	0.0004 ppm	0.0020 ppm	0.0041 ppm	0.0000 ppm	0.0002 ppm	0.0003 ppm
Recovery Percentage 1	2.009 %	2.825 %	4.165 %	0.184 %	-0.945 %	3.227 %	0.748 %
Concentration RSD	26.4 %	29.9 %	10.9 %	19.4 %	88.1 %	44.1 %	281.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0007 ppm	-0.0007 ppm	0.0005 ppm	0.0000 ppm	0.0000 ppm	0.0006 ppm	-0.0001 ppm
Concentration per Run 1	0.0011 ppm	0.0005 ppm	0.0010 ppm	0.0001 ppm	0.0000 ppm	0.0012 ppm	0.0001 ppm
Concentration per Run 2	0.0011 ppm	-0.0006 ppm	-0.0001 ppm	0.0000 ppm	-0.0001 ppm	0.0010 ppm	-0.0002 ppm
Concentration per Run 3	-0.0002 ppm	-0.0019 ppm	0.0007 ppm	0.0000 ppm	0.0000 ppm	-0.0005 ppm	-0.0001 ppm
Recovery Percentage 1	6.820 %	-0.132 %	1.051 %	0.210 %	-0.298 %	2.866 %	-0.758 %
Concentration RSD	107.3 %	184.5 %	106.9 %	225.6 %	221.6 %	162.8 %	165.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0010 ppm	100.0622 %	100.9480 %	100.4587 %	98.9764 %	100.4968 %	100.4030 %
Concentration per Run 1	0.0010 ppm	99.5093 %	101.0894 %	100.6381 %	98.7235 %	100.9567 %	100.4796 %
Concentration per Run 2	0.0011 ppm	100.1698 %	100.2996 %	100.3310 %	99.4023 %	99.8987 %	100.5684 %
Concentration per Run 3	0.0008 ppm	100.5075 %	101.4551 %	100.4070 %	98.8034 %	100.6350 %	100.1611 %
Recovery Percentage 1	19.781 %						
Concentration RSD	14.9 %	0.5 %	0.6 %	0.2 %	0.4 %	0.5 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: LLOQ
Analysis started at: 9/11/2024 5:56:34 AM
Rack 0
Vial 5
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0051 ppm	0.0927 ppm	0.0041 ppm	0.0299 ppm	0.0097 ppm	0.0049 ppm	0.0898 ppm
Concentration per Run 1	0.0051 ppm	0.0923 ppm	0.0033 ppm	0.0294 ppm	0.0098 ppm	0.0049 ppm	0.0901 ppm
Concentration per Run 2	0.0050 ppm	0.0942 ppm	0.0040 ppm	0.0307 ppm	0.0097 ppm	0.0049 ppm	0.0895 ppm
Concentration per Run 3	0.0051 ppm	0.0915 ppm	0.0050 ppm	0.0296 ppm	0.0095 ppm	0.0049 ppm	0.0898 ppm
Recovery Percentage 1	101.180 %	92.663 %	82.347 %	99.652 %	97.048 %	97.847 %	89.768 %
Concentration RSD	1.8 %	1.5 %	20.4 %	2.4 %	1.6 %	0.3 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0040 ppm	0.0198 ppm	0.0097 ppm	0.0103 ppm	0.0511 ppm	2.5849 ppm	0.0100 ppm
Concentration per Run 1	0.0041 ppm	0.0199 ppm	0.0100 ppm	0.0106 ppm	0.0515 ppm	2.6123 ppm	0.0109 ppm
Concentration per Run 2	0.0041 ppm	0.0201 ppm	0.0098 ppm	0.0105 ppm	0.0505 ppm	2.5635 ppm	0.0104 ppm
Concentration per Run 3	0.0039 ppm	0.0195 ppm	0.0095 ppm	0.0098 ppm	0.0513 ppm	2.5791 ppm	0.0088 ppm
Recovery Percentage 1	100.947 %	99.196 %	97.485 %	103.096 %	102.205 %	103.398 %	100.152 %
Concentration RSD	2.5 %	1.6 %	2.7 %	4.5 %	1.1 %	1.0 %	11.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.1000 ppm	0.0102 ppm	0.0515 ppm	2.0174 ppm	0.0199 ppm	0.0099 ppm	0.0495 ppm
Concentration per Run 1	0.1019 ppm	0.0101 ppm	0.0510 ppm	2.0212 ppm	0.0201 ppm	0.0103 ppm	0.0505 ppm
Concentration per Run 2	0.0992 ppm	0.0102 ppm	0.0519 ppm	2.0193 ppm	0.0195 ppm	0.0098 ppm	0.0478 ppm
Concentration per Run 3	0.0989 ppm	0.0102 ppm	0.0516 ppm	2.0116 ppm	0.0200 ppm	0.0097 ppm	0.0502 ppm
Recovery Percentage 1	99.986 %	101.544 %	102.953 %	100.869 %	79.552 %	99.384 %	99.013 %
Concentration RSD	1.6 %	0.8 %	0.9 %	0.3 %	1.6 %	2.9 %	2.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0080 ppm	0.4805 ppm	0.0515 ppm	0.0098 ppm	0.0502 ppm	0.0197 ppm	0.0097 ppm
Concentration per Run 1	0.0091 ppm	0.4825 ppm	0.0512 ppm	0.0099 ppm	0.0507 ppm	0.0182 ppm	0.0096 ppm
Concentration per Run 2	0.0079 ppm	0.4804 ppm	0.0518 ppm	0.0097 ppm	0.0499 ppm	0.0202 ppm	0.0097 ppm
Concentration per Run 3	0.0071 ppm	0.4787 ppm	0.0517 ppm	0.0098 ppm	0.0501 ppm	0.0206 ppm	0.0098 ppm
Recovery Percentage 1	80.263 %	96.107 %	103.075 %	98.421 %	100.498 %	98.442 %	97.163 %
Concentration RSD	12.6 %	0.4 %	0.6 %	1.0 %	0.8 %	6.6 %	1.0 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0053 ppm	104.9729 %	104.8824 %	102.9207 %	99.2254 %	101.6709 %	100.5518 %
Concentration per Run 1	0.0053 ppm	104.3423 %	105.6171 %	102.8574 %	98.3540 %	102.8197 %	100.7345 %
Concentration per Run 2	0.0053 ppm	104.6222 %	104.5867 %	102.6472 %	99.0901 %	101.2444 %	100.1953 %
Concentration per Run 3	0.0053 ppm	105.9542 %	104.4435 %	103.2576 %	100.2321 %	100.9486 %	100.7256 %
Recovery Percentage 1	106.552 %						
Concentration RSD	0.6 %	0.8 %	0.6 %	0.3 %	1.0 %	1.0 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: ICSA
Analysis started at: 9/11/2024 6:00:30 AM
Rack 0
Vial 6
Comment LDR +/-10%

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0007 ppm	**491.6762 ppm**	-0.0014 ppm	0.0049 ppm	0.0014 ppm	0.0000 ppm	**542.9177 ppm**
Concentration per Run 1	0.0011 ppm	492.6635 ppm	-0.0024 ppm	0.0042 ppm	0.0015 ppm	0.0000 ppm	543.7948 ppm
Concentration per Run 2	0.0005 ppm	489.7927 ppm	-0.0029 ppm	0.0066 ppm	0.0014 ppm	0.0000 ppm	541.5413 ppm
Concentration per Run 3	0.0006 ppm	492.5724 ppm	0.0011 ppm	0.0039 ppm	0.0014 ppm	0.0000 ppm	543.4169 ppm
Recovery Percentage 1	10.601 %	491,676.211 %	-46.691 %	16.429 %	14.316 %	0.878 %	542,917.679 %
Concentration RSD	44.4 %	**0.3 %**	154.8 %	29.9 %	2.2 %	25.2 %	**0.2 %**

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0005 ppm	-0.0002 ppm	-0.0002 ppm	-0.0008 ppm	**176.1838 ppm**	0.0229 ppm	-0.0006 ppm
Concentration per Run 1	-0.0004 ppm	0.0004 ppm	-0.0002 ppm	-0.0007 ppm	175.6779 ppm	0.0238 ppm	-0.0002 ppm
Concentration per Run 2	-0.0005 ppm	0.0000 ppm	-0.0004 ppm	-0.0011 ppm	175.2930 ppm	0.0216 ppm	-0.0004 ppm
Concentration per Run 3	-0.0007 ppm	-0.0009 ppm	-0.0002 ppm	-0.0007 ppm	177.5804 ppm	0.0232 ppm	-0.0012 ppm
Recovery Percentage 1	-10.304 %	-0.960 %	-2.497 %	-8.039 %	352,367.558 %	0.915 %	-6.176 %
Concentration RSD	24.9 %	343.7 %	36.3 %	27.2 %	**0.7 %**	5.0 %	87.1 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	**462.9040 ppm**	0.0018 ppm	-0.0009 ppm	0.0227 ppm	-0.0004 ppm	-0.0020 ppm	-0.0054 ppm
Concentration per Run 1	463.6251 ppm	0.0018 ppm	-0.0005 ppm	0.0221 ppm	-0.0008 ppm	-0.0019 ppm	-0.0059 ppm
Concentration per Run 2	461.3923 ppm	0.0019 ppm	-0.0011 ppm	0.0233 ppm	-0.0001 ppm	-0.0021 ppm	-0.0044 ppm
Concentration per Run 3	463.6946 ppm	0.0017 ppm	-0.0010 ppm	0.0227 ppm	-0.0004 ppm	-0.0020 ppm	-0.0060 ppm
Recovery Percentage 1	462,903.993 %	18.097 %	-1.772 %	1.136 %	-1.654 %	-19.821 %	-10.897 %
Concentration RSD	**0.3 %**	3.8 %	35.4 %	2.6 %	91.0 %	6.3 %	16.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0022 ppm	-0.0068 ppm	0.0009 ppm	0.0001 ppm	-0.0007 ppm	0.0029 ppm	-0.0003 ppm
Concentration per Run 1	-0.0036 ppm	-0.0075 ppm	0.0001 ppm	0.0001 ppm	-0.0007 ppm	0.0035 ppm	-0.0008 ppm
Concentration per Run 2	-0.0020 ppm	-0.0062 ppm	0.0007 ppm	0.0001 ppm	-0.0009 ppm	0.0044 ppm	-0.0001 ppm
Concentration per Run 3	-0.0010 ppm	-0.0067 ppm	0.0019 ppm	0.0001 ppm	-0.0005 ppm	0.0008 ppm	-0.0001 ppm
Recovery Percentage 1	-22.032 %	-1.363 %	1.815 %	1.000 %	-7.190 %	14.687 %	-3.051 %
Concentration RSD	60.4 %	9.4 %	105.0 %	32.8 %	29.2 %	64.3 %	129.1 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0001 ppm	90.9048 %	96.6927 %	78.8103 %	84.0593 %	94.3636 %	86.1791 %
Concentration per Run 1	0.0000 ppm	90.6473 %	96.7431 %	78.9851 %	83.8040 %	94.5781 %	86.3545 %
Concentration per Run 2	-0.0001 ppm	91.3468 %	97.4173 %	78.3642 %	84.2751 %	95.1061 %	85.9017 %
Concentration per Run 3	0.0003 ppm	90.7204 %	95.9176 %	79.0817 %	84.0989 %	93.4064 %	86.2809 %
Recovery Percentage 1	1.278 %						
Concentration RSD	346.5 %	0.4 %	0.8 %	0.5 %	0.3 %	0.9 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: SIC Multi
Analysis started at: 9/11/2024 6:06:28 AM
Rack 0
Vial 7
Comment LDR +/-10%

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0007 ppm	0.0096 ppm	0.0006 ppm	0.0100 ppm	0.0002 ppm	-0.0011 ppm	-0.0125 ppm
Concentration per Run 1	-0.0009 ppm	0.0110 ppm	-0.0003 ppm	0.0101 ppm	0.0001 ppm	-0.0008 ppm	-0.0132 ppm
Concentration per Run 2	-0.0007 ppm	0.0103 ppm	-0.0001 ppm	0.0099 ppm	0.0003 ppm	-0.0011 ppm	-0.0134 ppm
Concentration per Run 3	-0.0006 ppm	0.0076 ppm	0.0021 ppm	0.0100 ppm	0.0003 ppm	-0.0013 ppm	-0.0110 ppm
Recovery Percentage 1	-10.542 %	9.606 %	19.462 %	33.209 %	2.275 %	-26.789 %	-12.539 %
Concentration RSD	16.9 %	18.8 %	226.5 %	0.9 %	36.0 %	21.1 %	10.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0037 ppm	**19.1939 ppm**	-0.0013 ppm	0.0050 ppm	0.0118 ppm	-0.0015 ppm
Concentration per Run 1	0.0000 ppm	-0.0039 ppm	19.1264 ppm	-0.0012 ppm	0.0054 ppm	0.0163 ppm	-0.0016 ppm
Concentration per Run 2	0.0000 ppm	-0.0040 ppm	19.2102 ppm	-0.0015 ppm	0.0044 ppm	0.0075 ppm	-0.0015 ppm
Concentration per Run 3	-0.0001 ppm	-0.0034 ppm	19.2452 ppm	-0.0012 ppm	0.0053 ppm	0.0117 ppm	-0.0012 ppm
Recovery Percentage 1	-0.807 %	-18.728 %	191,939.250 %	-13.055 %	10.049 %	0.474 %	-14.543 %
Concentration RSD	42.1 %	7.8 %	**0.3 %**	13.3 %	10.8 %	37.0 %	13.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	-0.0006 ppm	**19.7200 ppm**	0.0010 ppm	0.0103 ppm	-0.0005 ppm	-0.0024 ppm	0.0078 ppm
Concentration per Run 1	0.0016 ppm	19.7178 ppm	0.0014 ppm	0.0109 ppm	-0.0006 ppm	-0.0027 ppm	0.0083 ppm
Concentration per Run 2	-0.0024 ppm	19.7042 ppm	0.0009 ppm	0.0075 ppm	-0.0009 ppm	-0.0022 ppm	0.0072 ppm
Concentration per Run 3	-0.0010 ppm	19.7381 ppm	0.0007 ppm	0.0124 ppm	0.0000 ppm	-0.0024 ppm	0.0079 ppm
Recovery Percentage 1	-0.597 %	197,200.401 %	2.012 %	0.513 %	-1.946 %	-24.050 %	15.577 %
Concentration RSD	344.7 %	**0.1 %**	35.5 %	24.0 %	98.8 %	9.9 %	7.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0036 ppm	0.1904 ppm	-0.0001 ppm	0.0001 ppm	**19.2933 ppm**	-0.0088 ppm	**9.8022 ppm**
Concentration per Run 1	-0.0036 ppm	0.1744 ppm	-0.0004 ppm	0.0000 ppm	19.2198 ppm	-0.0076 ppm	9.7738 ppm
Concentration per Run 2	-0.0018 ppm	0.1867 ppm	-0.0004 ppm	0.0001 ppm	19.3400 ppm	-0.0071 ppm	9.8180 ppm
Concentration per Run 3	-0.0054 ppm	0.2102 ppm	0.0004 ppm	0.0001 ppm	19.3200 ppm	-0.0116 ppm	9.8148 ppm
Recovery Percentage 1	-36.012 %	38.085 %	-0.221 %	0.513 %	192,932.581 %	-43.834 %	98,021.816 %
Concentration RSD	49.5 %	9.6 %	421.3 %	50.6 %	**0.3 %**	28.2 %	**0.3 %**

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0001 ppm	104.5402 %	103.9130 %	78.7656 %	97.3596 %	100.4634 %	99.3689 %
Concentration per Run 1	0.0000 ppm	104.8554 %	103.9300 %	78.8642 %	96.6361 %	100.4707 %	98.9988 %
Concentration per Run 2	0.0001 ppm	104.1633 %	103.8584 %	78.4312 %	97.3521 %	100.5289 %	99.3220 %
Concentration per Run 3	0.0001 ppm	104.6020 %	103.9506 %	79.0015 %	98.0907 %	100.3907 %	99.7858 %
Recovery Percentage 1	1.321 %						
Concentration RSD	68.3 %	0.3 %	0.0 %	0.4 %	0.7 %	0.1 %	0.4 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: LDR Check
Analysis started at: 9/11/2024 6:11:29 AM
Rack 0
Vial 8
Comment LDR +/-10%

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0030 ppm	0.0095 ppm	22.3619 ppm	24.3955 ppm	19.2346 ppm	4.8876 ppm	0.0211 ppm
Concentration per Run 1	0.0027 ppm	0.0066 ppm	22.4223 ppm	24.4392 ppm	19.1048 ppm	4.8633 ppm	0.0197 ppm
Concentration per Run 2	0.0033 ppm	0.0095 ppm	22.2802 ppm	24.4574 ppm	19.2149 ppm	4.8814 ppm	0.0219 ppm
Concentration per Run 3	0.0030 ppm	0.0124 ppm	22.3832 ppm	24.2897 ppm	19.3840 ppm	4.9181 ppm	0.0217 ppm
Recovery Percentage 1			111.810 %	121.977 %	96.173 %		0.000 %
Concentration RSD	10.1 %	30.8 %	0.3 %	0.4 %	0.7 %	0.6 %	5.7 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	4.9967 ppm	5.0260 ppm	0.0013 ppm	19.8466 ppm	0.0096 ppm	503.9938 ppm	19.2116 ppm
Concentration per Run 1	4.9993 ppm	5.0286 ppm	0.0016 ppm	19.8895 ppm	0.0084 ppm	500.8682 ppm	19.0822 ppm
Concentration per Run 2	5.0141 ppm	5.0399 ppm	0.0011 ppm	19.8459 ppm	0.0102 ppm	504.3925 ppm	19.1930 ppm
Concentration per Run 3	4.9767 ppm	5.0095 ppm	0.0014 ppm	19.8044 ppm	0.0101 ppm	506.7207 ppm	19.3597 ppm
Recovery Percentage 1	99.934 %	100.520 %		99.233 %	0.000 %	100.799 %	96.058 %
Concentration RSD	0.4 %	0.3 %	17.5 %	0.2 %	10.8 %	0.6 %	0.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	-0.0060 ppm	0.0008 ppm	4.9806 ppm	445.5910 ppm	9.8297 ppm	49.7340 ppm	5.2157 ppm
Concentration per Run 1	-0.0050 ppm	0.0009 ppm	4.9407 ppm	444.1510 ppm	9.8396 ppm	49.7665 ppm	5.2044 ppm
Concentration per Run 2	-0.0063 ppm	0.0007 ppm	4.9960 ppm	446.6002 ppm	9.7951 ppm	49.5045 ppm	5.2244 ppm
Concentration per Run 3	-0.0068 ppm	0.0008 ppm	5.0050 ppm	446.0218 ppm	9.8543 ppm	49.9310 ppm	5.2183 ppm
Recovery Percentage 1		0.000 %	99.612 %	89.118 %	98.297 %	99.468 %	104.314 %
Concentration RSD	15.8 %	9.2 %	0.7 %	0.3 %	0.3 %	0.4 %	0.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	5.3275 ppm	20.5033 ppm	10.1659 ppm	4.8804 ppm	0.0078 ppm	4.8210 ppm	0.0033 ppm
Concentration per Run 1	5.3326 ppm	20.5460 ppm	10.1783 ppm	4.8516 ppm	0.0085 ppm	4.8360 ppm	0.0036 ppm
Concentration per Run 2	5.3127 ppm	20.4888 ppm	10.1352 ppm	4.8873 ppm	0.0074 ppm	4.8099 ppm	0.0035 ppm
Concentration per Run 3	5.3371 ppm	20.4750 ppm	10.1840 ppm	4.9024 ppm	0.0075 ppm	4.8171 ppm	0.0027 ppm
Recovery Percentage 1	106.550 %	102.516 %	101.659 %	97.608 %	0.000 %	96.420 %	0.000 %
Concentration RSD	0.2 %	0.2 %	0.3 %	0.5 %	7.8 %	0.3 %	14.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	19.5220 ppm	91.6636 %	99.5212 %	83.0965 %	84.7164 %	95.5132 %	85.3968 %
Concentration per Run 1	19.5169 ppm	91.8758 %	99.2714 %	83.0577 %	84.3908 %	95.2278 %	85.4348 %
Concentration per Run 2	19.5349 ppm	91.5937 %	99.5811 %	83.2685 %	84.9725 %	95.4605 %	85.4221 %
Concentration per Run 3	19.5142 ppm	91.5213 %	99.7111 %	82.9632 %	84.7860 %	95.8512 %	85.3336 %
Recovery Percentage 1	97.610 %						
Concentration RSD	0.1 %	0.2 %	0.2 %	0.2 %	0.4 %	0.3 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: LDR 20ppm As pass
Analysis started at: 9/11/2024 6:28:00 AM
Rack 1
Vial 1
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0033 ppm	19.1134 ppm	-0.0028 ppm	0.0000 ppm	0.0000 ppm	-0.0043 ppm
Concentration per Run 1	-0.0002 ppm	-0.0067 ppm	19.0917 ppm	-0.0022 ppm	0.0000 ppm	0.0000 ppm	-0.0038 ppm
Concentration per Run 2	0.0003 ppm	-0.0018 ppm	19.1672 ppm	-0.0026 ppm	0.0001 ppm	0.0000 ppm	-0.0052 ppm
Concentration per Run 3	-0.0001 ppm	-0.0013 ppm	19.0815 ppm	-0.0036 ppm	0.0000 ppm	0.0000 ppm	-0.0039 ppm
Concentration RSD	2,524.3 %	91.2 %	0.2 %	27.5 %	102.3 %	55.8 %	18.0 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0001 ppm	-0.0001 ppm	-0.0002 ppm	0.0004 ppm	0.0097 ppm	0.0493 ppm	0.0003 ppm
Concentration per Run 1	0.0001 ppm	-0.0001 ppm	-0.0003 ppm	0.0006 ppm	0.0093 ppm	0.0501 ppm	0.0007 ppm
Concentration per Run 2	0.0001 ppm	-0.0001 ppm	-0.0004 ppm	0.0003 ppm	0.0093 ppm	0.0537 ppm	-0.0005 ppm
Concentration per Run 3	0.0002 ppm	-0.0002 ppm	0.0001 ppm	0.0003 ppm	0.0105 ppm	0.0441 ppm	0.0007 ppm
Concentration RSD	25.5 %	79.6 %	130.4 %	33.7 %	7.2 %	9.8 %	227.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0002 ppm	0.0000 ppm	0.0009 ppm	0.0397 ppm	-0.0003 ppm	0.0007 ppm	0.0009 ppm
Concentration per Run 1	0.0010 ppm	0.0000 ppm	0.0010 ppm	0.0426 ppm	-0.0002 ppm	0.0008 ppm	0.0006 ppm
Concentration per Run 2	0.0003 ppm	0.0000 ppm	0.0006 ppm	0.0376 ppm	-0.0004 ppm	-0.0001 ppm	0.0016 ppm
Concentration per Run 3	-0.0006 ppm	0.0000 ppm	0.0012 ppm	0.0387 ppm	-0.0003 ppm	0.0014 ppm	0.0005 ppm
Concentration RSD	354.9 %	1,873.5 %	32.4 %	6.6 %	24.4 %	109.5 %	70.6 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0001 ppm	0.0019 ppm	0.0008 ppm	0.0001 ppm	-0.0002 ppm	0.0000 ppm	0.0000 ppm
Concentration per Run 1	0.0015 ppm	0.0020 ppm	0.0013 ppm	0.0001 ppm	-0.0002 ppm	0.0000 ppm	0.0001 ppm
Concentration per Run 2	0.0001 ppm	0.0013 ppm	0.0005 ppm	0.0001 ppm	-0.0002 ppm	0.0001 ppm	-0.0002 ppm
Concentration per Run 3	-0.0020 ppm	0.0025 ppm	0.0006 ppm	0.0002 ppm	0.0000 ppm	-0.0001 ppm	-0.0001 ppm
Concentration RSD	1,276.0 %	29.6 %	49.7 %	28.4 %	64.4 %	913.3 %	723.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0010 ppm	102.8648 %	104.2929 %	102.8040 %	99.8037 %	101.9739 %	101.4365 %
Concentration per Run 1	0.0009 ppm	102.0895 %	103.6652 %	102.9719 %	99.1707 %	101.2736 %	101.6470 %
Concentration per Run 2	0.0010 ppm	103.1657 %	104.8241 %	102.5983 %	100.0455 %	102.7100 %	101.3411 %
Concentration per Run 3	0.0010 ppm	103.3392 %	104.3893 %	102.8418 %	100.1950 %	101.9380 %	101.3213 %
Concentration RSD	3.7 %	0.7 %	0.6 %	0.2 %	0.6 %	0.7 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: LDR 20ppm B pass
Analysis started at: 9/11/2024 6:32:00 AM
Rack 1
Vial 2
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0001 ppm	-0.0047 ppm	0.0017 ppm	20.8082 ppm	-0.0001 ppm	0.0000 ppm	-0.0049 ppm
Concentration per Run 1	-0.0002 ppm	-0.0038 ppm	0.0022 ppm	21.2035 ppm	-0.0001 ppm	0.0000 ppm	-0.0057 ppm
Concentration per Run 2	0.0000 ppm	-0.0095 ppm	0.0015 ppm	20.7170 ppm	-0.0001 ppm	0.0000 ppm	-0.0034 ppm
Concentration per Run 3	0.0000 ppm	-0.0009 ppm	0.0015 ppm	20.5041 ppm	-0.0001 ppm	0.0000 ppm	-0.0056 ppm
Concentration RSD	150.4 %	92.4 %	24.9 %	1.7 %	23.7 %	61.6 %	26.8 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0001 ppm	-0.0004 ppm	0.0002 ppm	0.0005 ppm	0.0016 ppm	0.0173 ppm	0.0006 ppm
Concentration per Run 1	0.0001 ppm	-0.0003 ppm	0.0001 ppm	0.0008 ppm	0.0019 ppm	0.0144 ppm	0.0003 ppm
Concentration per Run 2	0.0000 ppm	-0.0003 ppm	0.0003 ppm	0.0002 ppm	0.0017 ppm	0.0247 ppm	0.0006 ppm
Concentration per Run 3	0.0001 ppm	-0.0005 ppm	0.0001 ppm	0.0005 ppm	0.0012 ppm	0.0127 ppm	0.0009 ppm
Concentration RSD	41.3 %	27.1 %	67.7 %	53.2 %	22.2 %	37.6 %	44.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	-0.0008 ppm	0.0000 ppm	0.0003 ppm	0.0243 ppm	-0.0001 ppm	0.0003 ppm	0.0016 ppm
Concentration per Run 1	-0.0007 ppm	-0.0001 ppm	0.0002 ppm	0.0220 ppm	-0.0002 ppm	0.0005 ppm	0.0005 ppm
Concentration per Run 2	-0.0009 ppm	0.0000 ppm	0.0004 ppm	0.0240 ppm	0.0003 ppm	0.0005 ppm	0.0011 ppm
Concentration per Run 3	-0.0010 ppm	0.0001 ppm	0.0004 ppm	0.0270 ppm	-0.0005 ppm	-0.0001 ppm	0.0031 ppm
Concentration RSD	16.1 %	5,585.2 %	38.8 %	10.4 %	404.4 %	128.4 %	87.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0000 ppm	0.0034 ppm	0.0004 ppm	0.0000 ppm	-0.0003 ppm	-0.0004 ppm	-0.0001 ppm
Concentration per Run 1	-0.0013 ppm	0.0035 ppm	0.0007 ppm	0.0000 ppm	-0.0005 ppm	-0.0003 ppm	0.0000 ppm
Concentration per Run 2	0.0004 ppm	0.0040 ppm	-0.0003 ppm	0.0000 ppm	0.0000 ppm	-0.0001 ppm	-0.0001 ppm
Concentration per Run 3	0.0008 ppm	0.0028 ppm	0.0009 ppm	0.0000 ppm	-0.0004 ppm	-0.0009 ppm	-0.0002 ppm
Concentration RSD	5,692.7 %	17.7 %	148.4 %	134.3 %	82.8 %	97.7 %	138.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0004 ppm	102.7923 %	103.0215 %	101.2008 %	99.9140 %	101.2982 %	100.5308 %
Concentration per Run 1	0.0004 ppm	101.2606 %	103.5083 %	101.2703 %	98.9776 %	101.4061 %	100.6801 %
Concentration per Run 2	0.0005 ppm	103.2497 %	102.8170 %	100.7206 %	100.2866 %	101.0707 %	100.4571 %
Concentration per Run 3	0.0004 ppm	103.8666 %	102.7392 %	101.6114 %	100.4778 %	101.4177 %	100.4554 %
Concentration RSD	5.3 %	1.3 %	0.4 %	0.4 %	0.8 %	0.2 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: LDR 200ppm Fe pass
Analysis started at: 9/11/2024 6:35:55 AM
Rack 1
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0005 ppm	0.0141 ppm	0.0010 ppm	0.0091 ppm	0.0000 ppm	0.0000 ppm	-0.0037 ppm
Concentration per Run 1	0.0003 ppm	0.0156 ppm	0.0015 ppm	0.0105 ppm	0.0000 ppm	0.0000 ppm	-0.0044 ppm
Concentration per Run 2	0.0002 ppm	0.0142 ppm	0.0012 ppm	0.0089 ppm	0.0000 ppm	0.0000 ppm	-0.0047 ppm
Concentration per Run 3	0.0008 ppm	0.0126 ppm	0.0003 ppm	0.0078 ppm	-0.0001 ppm	0.0000 ppm	-0.0021 ppm
Concentration RSD	66.8 %	10.6 %	64.5 %	14.8 %	243.7 %	129.0 %	38.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0002 ppm	-0.0008 ppm	-0.0003 ppm	0.0012 ppm	190.2793 ppm	-0.0108 ppm	0.0002 ppm
Concentration per Run 1	0.0000 ppm	-0.0007 ppm	-0.0005 ppm	0.0010 ppm	189.3127 ppm	-0.0093 ppm	-0.0004 ppm
Concentration per Run 2	0.0002 ppm	-0.0010 ppm	-0.0002 ppm	0.0013 ppm	190.5557 ppm	-0.0273 ppm	0.0001 ppm
Concentration per Run 3	0.0002 ppm	-0.0008 ppm	-0.0003 ppm	0.0015 ppm	190.9695 ppm	0.0043 ppm	0.0010 ppm
Concentration RSD	61.7 %	21.6 %	41.7 %	19.3 %	0.5 %	147.1 %	303.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0120 ppm	0.0002 ppm	-0.0011 ppm	0.0202 ppm	-0.0012 ppm	0.0004 ppm	0.0033 ppm
Concentration per Run 1	0.0117 ppm	0.0002 ppm	-0.0014 ppm	0.0233 ppm	-0.0010 ppm	0.0009 ppm	0.0018 ppm
Concentration per Run 2	0.0128 ppm	0.0002 ppm	-0.0012 ppm	0.0191 ppm	-0.0010 ppm	0.0008 ppm	0.0049 ppm
Concentration per Run 3	0.0115 ppm	0.0003 ppm	-0.0007 ppm	0.0181 ppm	-0.0016 ppm	-0.0007 ppm	0.0031 ppm
Concentration RSD	5.8 %	16.4 %	35.7 %	13.6 %	26.5 %	260.7 %	48.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0003 ppm	0.0015 ppm	0.0010 ppm	0.0002 ppm	-0.0002 ppm	0.0000 ppm	-0.0002 ppm
Concentration per Run 1	0.0008 ppm	0.0015 ppm	0.0006 ppm	0.0002 ppm	-0.0003 ppm	0.0006 ppm	-0.0002 ppm
Concentration per Run 2	-0.0024 ppm	0.0012 ppm	0.0015 ppm	0.0001 ppm	-0.0002 ppm	0.0002 ppm	-0.0001 ppm
Concentration per Run 3	0.0008 ppm	0.0018 ppm	0.0009 ppm	0.0002 ppm	-0.0003 ppm	-0.0007 ppm	-0.0003 ppm
Concentration RSD	681.0 %	18.9 %	47.4 %	21.3 %	18.3 %	1,535.9 %	45.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0002 ppm	102.1545 %	103.6762 %	97.0912 %	95.8705 %	100.0441 %	98.5780 %
Concentration per Run 1	0.0001 ppm	100.9780 %	104.5687 %	97.7745 %	94.3294 %	100.5682 %	98.8782 %
Concentration per Run 2	0.0002 ppm	102.1736 %	103.3176 %	96.8547 %	95.7278 %	100.0086 %	98.6130 %
Concentration per Run 3	0.0002 ppm	103.3119 %	103.1424 %	96.6443 %	97.5542 %	99.5553 %	98.2429 %
Concentration RSD	4.6 %	1.1 %	0.8 %	0.6 %	1.7 %	0.5 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: LDR 500ppm Na pass
Analysis started at: 9/11/2024 6:40:50 AM
Rack 1
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0002 ppm	0.0148 ppm	0.0004 ppm	0.0021 ppm	0.0000 ppm	0.0000 ppm	-0.0011 ppm
Concentration per Run 1	0.0001 ppm	0.0163 ppm	0.0000 ppm	0.0021 ppm	0.0001 ppm	0.0000 ppm	0.0002 ppm
Concentration per Run 2	0.0002 ppm	0.0121 ppm	0.0010 ppm	0.0023 ppm	-0.0001 ppm	0.0000 ppm	-0.0013 ppm
Concentration per Run 3	0.0004 ppm	0.0160 ppm	0.0002 ppm	0.0020 ppm	0.0000 ppm	0.0000 ppm	-0.0021 ppm
Concentration RSD	51.8 %	15.6 %	132.6 %	7.2 %	2,934.3 %	330.2 %	105.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0001 ppm	0.0002 ppm	0.0007 ppm	0.0056 ppm	0.2676 ppm	0.0003 ppm
Concentration per Run 1	0.0001 ppm	0.0000 ppm	0.0003 ppm	0.0007 ppm	0.0053 ppm	0.2497 ppm	-0.0004 ppm
Concentration per Run 2	0.0000 ppm	0.0004 ppm	0.0001 ppm	0.0003 ppm	0.0058 ppm	0.2638 ppm	0.0002 ppm
Concentration per Run 3	0.0001 ppm	-0.0002 ppm	0.0002 ppm	0.0011 ppm	0.0056 ppm	0.2892 ppm	0.0012 ppm
Concentration RSD	90.5 %	387.9 %	51.5 %	52.1 %	4.6 %	7.5 %	254.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0012 ppm	0.0000 ppm	0.0002 ppm	461.7857 ppm	0.0000 ppm	0.0005 ppm	-0.0016 ppm
Concentration per Run 1	0.0009 ppm	-0.0001 ppm	0.0002 ppm	463.3808 ppm	-0.0001 ppm	-0.0003 ppm	-0.0010 ppm
Concentration per Run 2	0.0019 ppm	0.0002 ppm	0.0006 ppm	457.8854 ppm	0.0001 ppm	0.0007 ppm	-0.0019 ppm
Concentration per Run 3	0.0007 ppm	0.0001 ppm	-0.0001 ppm	464.0910 ppm	0.0000 ppm	0.0009 ppm	-0.0021 ppm
Concentration RSD	54.3 %	228.6 %	132.5 %	0.7 %	479.4 %	147.2 %	36.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0013 ppm	0.0121 ppm	-0.0003 ppm	0.0000 ppm	-0.0001 ppm	0.0001 ppm	0.0001 ppm
Concentration per Run 1	-0.0001 ppm	0.0115 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	-0.0004 ppm	0.0001 ppm
Concentration per Run 2	-0.0011 ppm	0.0133 ppm	-0.0005 ppm	0.0000 ppm	-0.0002 ppm	0.0009 ppm	0.0000 ppm
Concentration per Run 3	-0.0027 ppm	0.0114 ppm	-0.0004 ppm	-0.0001 ppm	-0.0002 ppm	-0.0002 ppm	0.0001 ppm
Concentration RSD	104.7 %	9.0 %	73.4 %	564.1 %	73.4 %	704.5 %	122.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0008 ppm	89.8068 %	98.3768 %	87.8393 %	88.4907 %	96.3267 %	92.4006 %
Concentration per Run 1	0.0008 ppm	89.4761 %	98.1900 %	87.4830 %	88.9852 %	96.2168 %	92.5252 %
Concentration per Run 2	0.0009 ppm	89.4068 %	98.9869 %	87.6744 %	88.1893 %	97.1213 %	92.2480 %
Concentration per Run 3	0.0006 ppm	90.5376 %	97.9535 %	88.3605 %	88.2976 %	95.6419 %	92.4287 %
Concentration RSD	20.6 %	0.7 %	0.6 %	0.5 %	0.5 %	0.8 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: LDR 500 Fe pass
Analysis started at: 9/11/2024 6:45:46 AM
Rack 1
Vial 5
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0009 ppm	0.0422 ppm	-0.0017 ppm	0.0025 ppm	0.0003 ppm	0.0000 ppm	-0.0082 ppm
Concentration per Run 1	-0.0014 ppm	0.0477 ppm	-0.0010 ppm	0.0034 ppm	0.0003 ppm	0.0000 ppm	-0.0073 ppm
Concentration per Run 2	-0.0007 ppm	0.0416 ppm	-0.0017 ppm	0.0020 ppm	0.0004 ppm	0.0000 ppm	-0.0093 ppm
Concentration per Run 3	-0.0004 ppm	0.0374 ppm	-0.0023 ppm	0.0019 ppm	0.0003 ppm	0.0000 ppm	-0.0080 ppm
Concentration RSD	60.6 %	12.2 %	41.0 %	33.9 %	16.0 %	32.8 %	12.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0001 ppm	-0.0020 ppm	-0.0023 ppm	-0.0048 ppm	461.5139 ppm	-0.0259 ppm	0.0004 ppm
Concentration per Run 1	-0.0002 ppm	-0.0022 ppm	-0.0023 ppm	-0.0056 ppm	462.2974 ppm	-0.0425 ppm	0.0010 ppm
Concentration per Run 2	-0.0001 ppm	-0.0019 ppm	-0.0022 ppm	-0.0048 ppm	462.1184 ppm	-0.0202 ppm	0.0008 ppm
Concentration per Run 3	0.0001 ppm	-0.0019 ppm	-0.0022 ppm	-0.0041 ppm	460.1259 ppm	-0.0151 ppm	-0.0007 ppm
Concentration RSD	218.0 %	7.7 %	3.3 %	15.4 %	0.3 %	56.3 %	238.9 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0282 ppm	0.0005 ppm	-0.0026 ppm	0.0802 ppm	-0.0022 ppm	0.0012 ppm	0.0095 ppm
Concentration per Run 1	0.0279 ppm	0.0004 ppm	-0.0024 ppm	0.0865 ppm	-0.0022 ppm	0.0017 ppm	0.0108 ppm
Concentration per Run 2	0.0289 ppm	0.0006 ppm	-0.0026 ppm	0.0749 ppm	-0.0015 ppm	0.0006 ppm	0.0087 ppm
Concentration per Run 3	0.0277 ppm	0.0004 ppm	-0.0027 ppm	0.0793 ppm	-0.0028 ppm	0.0014 ppm	0.0089 ppm
Concentration RSD	2.1 %	20.0 %	6.4 %	7.3 %	30.0 %	43.0 %	12.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0006 ppm	0.0017 ppm	0.0017 ppm	0.0004 ppm	-0.0002 ppm	-0.0001 ppm	0.0009 ppm
Concentration per Run 1	-0.0018 ppm	0.0021 ppm	0.0023 ppm	0.0004 ppm	-0.0002 ppm	0.0002 ppm	0.0012 ppm
Concentration per Run 2	0.0008 ppm	0.0006 ppm	0.0013 ppm	0.0004 ppm	-0.0002 ppm	-0.0005 ppm	0.0009 ppm
Concentration per Run 3	-0.0008 ppm	0.0022 ppm	0.0015 ppm	0.0004 ppm	-0.0002 ppm	-0.0001 ppm	0.0005 ppm
Concentration RSD	219.9 %	54.2 %	31.1 %	5.5 %	13.7 %	276.0 %	37.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	-0.0008 ppm	100.3501 %	101.3001 %	89.9199 %	93.2745 %	98.4494 %	96.1734 %
Concentration per Run 1	-0.0009 ppm	99.7457 %	100.6134 %	90.1898 %	92.2257 %	97.9340 %	96.4681 %
Concentration per Run 2	-0.0007 ppm	100.5682 %	101.2081 %	89.7773 %	93.7069 %	98.4761 %	95.8905 %
Concentration per Run 3	-0.0007 ppm	100.7365 %	102.0788 %	89.7926 %	93.8909 %	98.9382 %	96.1615 %
Concentration RSD	16.0 %	0.5 %	0.7 %	0.3 %	1.0 %	0.5 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: LDR 1000 Ca pass
Analysis started at: 9/11/2024 6:51:43 AM
Rack 1
Vial 6
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0007 ppm	0.0119 ppm	-0.0007 ppm	0.0035 ppm	0.0009 ppm	0.0000 ppm	920.4985 ppm
Concentration per Run 1	-0.0009 ppm	0.0070 ppm	-0.0021 ppm	0.0039 ppm	0.0008 ppm	0.0000 ppm	918.0748 ppm
Concentration per Run 2	-0.0007 ppm	0.0181 ppm	-0.0006 ppm	0.0031 ppm	0.0009 ppm	0.0000 ppm	924.5615 ppm
Concentration per Run 3	-0.0005 ppm	0.0105 ppm	0.0004 ppm	0.0036 ppm	0.0009 ppm	0.0000 ppm	918.8594 ppm
Concentration RSD	28.7 %	47.9 %	174.4 %	12.5 %	6.9 %	109.3 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0001 ppm	0.0001 ppm	0.0005 ppm	0.0011 ppm	0.0107 ppm	0.0676 ppm	-0.0010 ppm
Concentration per Run 1	0.0001 ppm	0.0005 ppm	0.0005 ppm	0.0010 ppm	0.0104 ppm	0.0550 ppm	0.0006 ppm
Concentration per Run 2	0.0000 ppm	-0.0002 ppm	0.0003 ppm	0.0012 ppm	0.0099 ppm	0.0830 ppm	-0.0023 ppm
Concentration per Run 3	0.0001 ppm	0.0001 ppm	0.0007 ppm	0.0011 ppm	0.0118 ppm	0.0647 ppm	-0.0012 ppm
Concentration RSD	79.3 %	236.8 %	38.5 %	9.3 %	9.6 %	21.0 %	150.9 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0138 ppm	0.0004 ppm	0.0002 ppm	0.0672 ppm	0.0004 ppm	0.0016 ppm	-0.0011 ppm
Concentration per Run 1	0.0151 ppm	0.0003 ppm	0.0002 ppm	0.0702 ppm	0.0009 ppm	0.0019 ppm	-0.0016 ppm
Concentration per Run 2	0.0128 ppm	0.0005 ppm	0.0001 ppm	0.0615 ppm	0.0000 ppm	0.0005 ppm	-0.0018 ppm
Concentration per Run 3	0.0133 ppm	0.0005 ppm	0.0003 ppm	0.0699 ppm	0.0002 ppm	0.0023 ppm	0.0000 ppm
Concentration RSD	8.8 %	25.1 %	35.7 %	7.3 %	141.5 %	60.2 %	87.3 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0021 ppm	0.0107 ppm	0.0004 ppm	-0.0003 ppm	-0.0017 ppm	-0.0004 ppm	0.0008 ppm
Concentration per Run 1	0.0015 ppm	0.0113 ppm	-0.0008 ppm	-0.0003 ppm	-0.0018 ppm	-0.0013 ppm	0.0008 ppm
Concentration per Run 2	0.0027 ppm	0.0113 ppm	0.0009 ppm	-0.0004 ppm	-0.0017 ppm	-0.0011 ppm	0.0009 ppm
Concentration per Run 3	0.0020 ppm	0.0097 ppm	0.0010 ppm	-0.0002 ppm	-0.0015 ppm	0.0012 ppm	0.0007 ppm
Concentration RSD	27.4 %	8.7 %	280.1 %	45.3 %	10.0 %	323.9 %	16.9 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0019 ppm	89.1142 %	95.6453 %	81.4030 %	85.7879 %	93.9511 %	87.1089 %
Concentration per Run 1	0.0020 ppm	87.8716 %	95.5047 %	80.9407 %	84.9104 %	93.8065 %	86.9121 %
Concentration per Run 2	0.0019 ppm	89.2275 %	95.4720 %	81.7748 %	85.8493 %	93.9301 %	87.3431 %
Concentration per Run 3	0.0019 ppm	90.2436 %	95.9592 %	81.4937 %	86.6042 %	94.1167 %	87.0716 %
Concentration RSD	3.3 %	1.3 %	0.3 %	0.5 %	1.0 %	0.2 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCV
Analysis started at: 9/11/2024 7:00:40 AM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.5017 ppm	0.4755 ppm	0.4717 ppm	0.4773 ppm	0.4967 ppm	0.5069 ppm	0.4840 ppm
Concentration per Run 1	0.5017 ppm	0.4785 ppm	0.4728 ppm	0.4811 ppm	0.4985 ppm	0.5079 ppm	0.4878 ppm
Concentration per Run 2	0.5011 ppm	0.4722 ppm	0.4705 ppm	0.4701 ppm	0.4962 ppm	0.5078 ppm	0.4823 ppm
Concentration per Run 3	0.5024 ppm	0.4757 ppm	0.4718 ppm	0.4808 ppm	0.4953 ppm	0.5050 ppm	0.4818 ppm
Recovery Percentage 1	100.346 %	95.098 %	94.338 %	95.461 %	99.331 %	101.381 %	96.795 %
Concentration RSD	0.1 %	0.7 %	0.2 %	1.3 %	0.3 %	0.3 %	0.7 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.5055 ppm	0.5115 ppm	0.4936 ppm	0.4905 ppm	0.5053 ppm	5.1548 ppm	0.5115 ppm
Concentration per Run 1	0.5064 ppm	0.5139 ppm	0.4928 ppm	0.4921 ppm	0.5085 ppm	5.1992 ppm	0.5189 ppm
Concentration per Run 2	0.5027 ppm	0.5087 ppm	0.4917 ppm	0.4882 ppm	0.5062 ppm	5.0989 ppm	0.5039 ppm
Concentration per Run 3	0.5073 ppm	0.5119 ppm	0.4963 ppm	0.4912 ppm	0.5011 ppm	5.1664 ppm	0.5116 ppm
Recovery Percentage 1	101.091 %	102.299 %	98.721 %	98.102 %	101.053 %	103.096 %	102.300 %
Concentration RSD	0.5 %	0.5 %	0.5 %	0.4 %	0.7 %	1.0 %	1.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.4961 ppm	0.4890 ppm	0.5015 ppm	10.1766 ppm	0.5102 ppm	0.4861 ppm	0.4968 ppm
Concentration per Run 1	0.4945 ppm	0.4892 ppm	0.4993 ppm	10.1581 ppm	0.5101 ppm	0.4859 ppm	0.4975 ppm
Concentration per Run 2	0.4959 ppm	0.4899 ppm	0.4991 ppm	10.2266 ppm	0.5078 ppm	0.4860 ppm	0.4952 ppm
Concentration per Run 3	0.4980 ppm	0.4880 ppm	0.5061 ppm	10.1451 ppm	0.5129 ppm	0.4863 ppm	0.4976 ppm
Recovery Percentage 1	99.225 %	97.803 %	100.299 %	101.766 %	102.049 %	97.211 %	99.355 %
Concentration RSD	0.4 %	0.2 %	0.8 %	0.4 %	0.5 %	0.0 %	0.3 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4757 ppm	5.2488 ppm	0.5267 ppm	0.5118 ppm	0.4968 ppm	0.4877 ppm	0.4954 ppm
Concentration per Run 1	0.4765 ppm	5.2592 ppm	0.5249 ppm	0.5139 ppm	0.4953 ppm	0.4871 ppm	0.4948 ppm
Concentration per Run 2	0.4726 ppm	5.2207 ppm	0.5263 ppm	0.5117 ppm	0.4965 ppm	0.4863 ppm	0.4941 ppm
Concentration per Run 3	0.4780 ppm	5.2665 ppm	0.5290 ppm	0.5099 ppm	0.4988 ppm	0.4898 ppm	0.4972 ppm
Recovery Percentage 1	95.135 %	99.977 %	105.347 %	102.365 %	99.369 %	97.546 %	99.075 %
Concentration RSD	0.6 %	0.5 %	0.4 %	0.4 %	0.4 %	0.4 %	0.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5058 ppm	103.9635 %	103.1235 %	100.4921 %	98.6260 %	99.8361 %	99.1794 %
Concentration per Run 1	0.5045 ppm	104.1290 %	102.9569 %	100.8193 %	98.8765 %	99.4587 %	99.3263 %
Concentration per Run 2	0.5050 ppm	104.2020 %	102.9559 %	100.3010 %	98.7387 %	100.0216 %	99.0293 %
Concentration per Run 3	0.5078 ppm	103.5594 %	103.4577 %	100.3560 %	98.2628 %	100.0280 %	99.1827 %
Recovery Percentage 1	101.157 %						
Concentration RSD	0.4 %	0.3 %	0.3 %	0.3 %	0.3 %	0.3 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCB
Analysis started at: 9/11/2024 7:04:41 AM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0001 ppm	-0.0074 ppm	-0.0001 ppm	0.0003 ppm	-0.0001 ppm	0.0000 ppm	-0.0026 ppm
Concentration per Run 1	-0.0001 ppm	-0.0100 ppm	-0.0003 ppm	0.0005 ppm	-0.0001 ppm	0.0000 ppm	-0.0007 ppm
Concentration per Run 2	0.0000 ppm	-0.0100 ppm	0.0000 ppm	-0.0005 ppm	-0.0001 ppm	0.0000 ppm	-0.0038 ppm
Concentration per Run 3	-0.0001 ppm	-0.0020 ppm	0.0001 ppm	0.0011 ppm	-0.0002 ppm	0.0000 ppm	-0.0032 ppm
Recovery Percentage 1	-1.200 %	-7.364 %	-2.406 %	1.131 %	-1.400 %	0.201 %	-2.564 %
Concentration RSD	72.7 %	62.8 %	249.9 %	239.5 %	51.6 %	88.4 %	63.8 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0001 ppm	0.0001 ppm	0.0002 ppm	0.0005 ppm	0.0046 ppm	0.0090 ppm	0.0001 ppm
Concentration per Run 1	0.0001 ppm	0.0001 ppm	0.0001 ppm	0.0005 ppm	0.0050 ppm	0.0006 ppm	-0.0001 ppm
Concentration per Run 2	0.0000 ppm	-0.0002 ppm	0.0002 ppm	0.0005 ppm	0.0042 ppm	0.0226 ppm	0.0006 ppm
Concentration per Run 3	0.0001 ppm	0.0003 ppm	0.0002 ppm	0.0004 ppm	0.0047 ppm	0.0037 ppm	-0.0001 ppm
Recovery Percentage 1	1.309 %	0.357 %	1.650 %	4.684 %	9.276 %	0.359 %	1.477 %
Concentration RSD	35.8 %	315.3 %	21.0 %	18.5 %	8.9 %	132.6 %	287.1 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	-0.0001 ppm	0.0002 ppm	0.0015 ppm	0.0255 ppm	0.0000 ppm	0.0003 ppm	-0.0010 ppm
Concentration per Run 1	-0.0011 ppm	0.0002 ppm	0.0015 ppm	0.0246 ppm	0.0002 ppm	0.0010 ppm	-0.0035 ppm
Concentration per Run 2	0.0003 ppm	0.0001 ppm	0.0015 ppm	0.0260 ppm	0.0001 ppm	0.0003 ppm	-0.0002 ppm
Concentration per Run 3	0.0004 ppm	0.0002 ppm	0.0014 ppm	0.0260 ppm	-0.0003 ppm	-0.0003 ppm	0.0009 ppm
Recovery Percentage 1	-0.102 %	1.674 %	2.982 %	1.277 %	-0.018 %	3.244 %	-1.921 %
Concentration RSD	807.6 %	38.7 %	3.0 %	3.1 %	5,677.6 %	194.6 %	239.6 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0004 ppm	-0.0005 ppm	0.0005 ppm	0.0000 ppm	-0.0002 ppm	-0.0001 ppm	-0.0001 ppm
Concentration per Run 1	0.0018 ppm	0.0000 ppm	0.0011 ppm	-0.0001 ppm	-0.0002 ppm	-0.0002 ppm	0.0000 ppm
Concentration per Run 2	0.0001 ppm	-0.0013 ppm	0.0004 ppm	0.0000 ppm	-0.0003 ppm	0.0001 ppm	-0.0001 ppm
Concentration per Run 3	-0.0007 ppm	-0.0002 ppm	0.0000 ppm	0.0001 ppm	-0.0002 ppm	0.0000 ppm	-0.0002 ppm
Recovery Percentage 1	4.109 %	-0.098 %	0.956 %	-0.023 %	-2.235 %	-0.285 %	-1.008 %
Concentration RSD	316.6 %	139.1 %	113.5 %	4,144.9 %	33.1 %	273.8 %	130.0 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0011 ppm	98.4054 %	100.2341 %	99.5757 %	99.9002 %	100.1140 %	100.4173 %
Concentration per Run 1	0.0012 ppm	97.2361 %	100.2555 %	99.1119 %	100.0113 %	100.6742 %	100.2336 %
Concentration per Run 2	0.0010 ppm	98.3984 %	100.4266 %	99.5320 %	99.8321 %	100.0894 %	100.5084 %
Concentration per Run 3	0.0011 ppm	99.5818 %	100.0202 %	100.0832 %	99.8570 %	99.5786 %	100.5100 %
Recovery Percentage 1	22.041 %						
Concentration RSD	7.4 %	1.2 %	0.2 %	0.5 %	0.1 %	0.5 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1969961-1 WG1969961
Analysis started at: 9/11/2024 7:10:34 AM
Rack 1
Vial 7
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	-0.0007 ppm	0.0000 ppm	0.0005 ppm	-0.0001 ppm	0.0000 ppm	0.0044 ppm
Concentration per Run 1	-0.0001 ppm	0.0013 ppm	-0.0004 ppm	0.0007 ppm	-0.0001 ppm	0.0000 ppm	0.0043 ppm
Concentration per Run 2	0.0001 ppm	-0.0053 ppm	0.0004 ppm	0.0005 ppm	-0.0001 ppm	0.0000 ppm	0.0042 ppm
Concentration per Run 3	0.0002 ppm	0.0018 ppm	0.0000 ppm	0.0002 ppm	-0.0001 ppm	0.0000 ppm	0.0048 ppm
Recovery Percentage 1	1.080 %	-0.719 %	0.491 %	1.643 %	-0.828 %	-0.437 %	4.427 %
Concentration RSD	210.8 %	554.2 %	2,761.9 %	48.6 %	35.2 %	93.2 %	7.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0001 ppm	0.0006 ppm	0.0008 ppm	0.0527 ppm	0.0007 ppm	0.0005 ppm
Concentration per Run 1	0.0000 ppm	0.0003 ppm	0.0010 ppm	0.0008 ppm	0.0533 ppm	-0.0135 ppm	0.0007 ppm
Concentration per Run 2	-0.0001 ppm	-0.0001 ppm	0.0004 ppm	0.0010 ppm	0.0518 ppm	0.0110 ppm	0.0005 ppm
Concentration per Run 3	0.0001 ppm	0.0001 ppm	0.0005 ppm	0.0007 ppm	0.0529 ppm	0.0045 ppm	0.0004 ppm
Recovery Percentage 1	0.096 %	0.426 %	6.174 %	8.327 %	105.314 %	0.027 %	5.228 %
Concentration RSD	1,241.5 %	286.1 %	52.8 %	22.5 %	1.4 %	1,914.5 %	24.9 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0033 ppm	0.0008 ppm	0.0003 ppm	0.0207 ppm	0.0001 ppm	0.0003 ppm	-0.0010 ppm
Concentration per Run 1	0.0031 ppm	0.0008 ppm	-0.0002 ppm	0.0241 ppm	-0.0001 ppm	0.0000 ppm	0.0003 ppm
Concentration per Run 2	0.0030 ppm	0.0008 ppm	0.0005 ppm	0.0197 ppm	0.0004 ppm	-0.0005 ppm	0.0018 ppm
Concentration per Run 3	0.0038 ppm	0.0008 ppm	0.0005 ppm	0.0182 ppm	0.0002 ppm	0.0014 ppm	-0.0050 ppm
Recovery Percentage 1	3.295 %	8.187 %	0.547 %	1.035 %	0.563 %	3.015 %	-1.949 %
Concentration RSD	12.6 %	2.6 %	137.9 %	14.9 %	182.1 %	323.9 %	365.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0001 ppm	0.0028 ppm	0.0008 ppm	0.0000 ppm	0.0000 ppm	-0.0002 ppm	0.0001 ppm
Concentration per Run 1	0.0000 ppm	0.0038 ppm	0.0002 ppm	0.0000 ppm	-0.0001 ppm	-0.0010 ppm	0.0000 ppm
Concentration per Run 2	0.0002 ppm	0.0028 ppm	0.0011 ppm	0.0001 ppm	-0.0001 ppm	-0.0007 ppm	0.0002 ppm
Concentration per Run 3	-0.0005 ppm	0.0018 ppm	0.0010 ppm	0.0000 ppm	0.0001 ppm	0.0010 ppm	0.0000 ppm
Recovery Percentage 1	-0.997 %	0.560 %	1.546 %	0.398 %	-0.270 %	-1.178 %	0.706 %
Concentration RSD	316.1 %	36.0 %	59.6 %	171.1 %	341.5 %	446.2 %	157.0 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0008 ppm	100.0549 %	102.4253 %	100.5076 %	100.7099 %	102.1252 %	101.5856 %
Concentration per Run 1	0.0010 ppm	98.5242 %	101.5151 %	100.6290 %	100.0537 %	101.5215 %	101.5818 %
Concentration per Run 2	0.0007 ppm	100.2042 %	103.0864 %	100.3569 %	101.0375 %	102.6254 %	101.2557 %
Concentration per Run 3	0.0008 ppm	101.4363 %	102.6744 %	100.5370 %	101.0384 %	102.2286 %	101.9193 %
Recovery Percentage 1	16.369 %						
Concentration RSD	18.2 %	1.5 %	0.8 %	0.1 %	0.6 %	0.5 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1969961-2D2 WG1969961
Analysis started at: 9/11/2024 7:14:33 AM
Rack 1
Vial 8
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.3327 ppm	17.2596 ppm	1.2147 ppm	0.9247 ppm	1.1666 ppm	0.6651 ppm	19.6180 ppm
Concentration per Run 1	0.3348 ppm	17.2796 ppm	1.2205 ppm	0.9304 ppm	1.1761 ppm	0.6679 ppm	19.6176 ppm
Concentration per Run 2	0.3323 ppm	17.2482 ppm	1.2147 ppm	0.9203 ppm	1.1582 ppm	0.6644 ppm	19.6537 ppm
Concentration per Run 3	0.3311 ppm	17.2511 ppm	1.2089 ppm	0.9234 ppm	1.1654 ppm	0.6630 ppm	19.5826 ppm
Concentration RSD	0.6 %	0.1 %	0.5 %	0.6 %	0.8 %	0.4 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.8601 ppm	0.3331 ppm	0.7213 ppm	0.8605 ppm	22.6130 ppm	4.1398 ppm	0.5101 ppm
Concentration per Run 1	0.8638 ppm	0.3358 ppm	0.7262 ppm	0.8643 ppm	22.7272 ppm	4.1636 ppm	0.5139 ppm
Concentration per Run 2	0.8595 ppm	0.3327 ppm	0.7200 ppm	0.8605 ppm	22.5702 ppm	4.1025 ppm	0.4998 ppm
Concentration per Run 3	0.8568 ppm	0.3309 ppm	0.7178 ppm	0.8568 ppm	22.5418 ppm	4.1534 ppm	0.5166 ppm
Concentration RSD	0.4 %	0.7 %	0.6 %	0.4 %	0.4 %	0.8 %	1.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	5.7565 ppm	2.0489 ppm	0.5335 ppm	7.0749 ppm	1.2970 ppm	0.3663 ppm	0.7659 ppm
Concentration per Run 1	5.7831 ppm	2.0513 ppm	0.5300 ppm	7.0615 ppm	1.3039 ppm	0.3673 ppm	0.7746 ppm
Concentration per Run 2	5.7431 ppm	2.0494 ppm	0.5350 ppm	7.0809 ppm	1.2991 ppm	0.3662 ppm	0.7659 ppm
Concentration per Run 3	5.7433 ppm	2.0461 ppm	0.5356 ppm	7.0824 ppm	1.2881 ppm	0.3653 ppm	0.7572 ppm
Concentration RSD	0.4 %	0.1 %	0.6 %	0.2 %	0.6 %	0.3 %	1.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.6625 ppm	5.7428 ppm	0.3080 ppm	0.5311 ppm	1.1432 ppm	0.8117 ppm	0.4165 ppm
Concentration per Run 1	0.6667 ppm	5.8569 ppm	0.3097 ppm	0.5330 ppm	1.1474 ppm	0.8126 ppm	0.4193 ppm
Concentration per Run 2	0.6624 ppm	5.7159 ppm	0.3094 ppm	0.5312 ppm	1.1376 ppm	0.8108 ppm	0.4154 ppm
Concentration per Run 3	0.6583 ppm	5.6556 ppm	0.3051 ppm	0.5292 ppm	1.1446 ppm	0.8116 ppm	0.4148 ppm
Concentration RSD	0.6 %	1.8 %	0.8 %	0.4 %	0.4 %	0.1 %	0.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.6751 ppm	103.5222 %	105.2826 %	98.0430 %	105.5706 %	109.4248 %	106.5358 %
Concentration per Run 1	0.6776 ppm	103.1311 %	105.3824 %	97.7813 %	105.3181 %	109.4006 %	106.2158 %
Concentration per Run 2	0.6750 ppm	103.5749 %	104.7623 %	97.9553 %	105.3888 %	108.5602 %	106.7065 %
Concentration per Run 3	0.6728 ppm	103.8606 %	105.7031 %	98.3924 %	106.0049 %	110.3136 %	106.6851 %
Concentration RSD	0.4 %	0.4 %	0.5 %	0.3 %	0.4 %	0.8 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1969961-3D2 WG1969961
Analysis started at: 9/11/2024 7:18:29 AM
Rack 1
Vial 9
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.3448 ppm	17.5312 ppm	1.2597 ppm	0.9499 ppm	1.1611 ppm	0.6807 ppm	20.0080 ppm
Concentration per Run 1	0.3463 ppm	17.6368 ppm	1.2608 ppm	0.9564 ppm	1.1657 ppm	0.6824 ppm	20.0826 ppm
Concentration per Run 2	0.3446 ppm	17.5215 ppm	1.2594 ppm	0.9501 ppm	1.1592 ppm	0.6811 ppm	19.9770 ppm
Concentration per Run 3	0.3436 ppm	17.4353 ppm	1.2591 ppm	0.9433 ppm	1.1583 ppm	0.6787 ppm	19.9643 ppm
Concentration RSD	0.4 %	0.6 %	0.1 %	0.7 %	0.3 %	0.3 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.8804 ppm	0.3429 ppm	0.7496 ppm	0.8558 ppm	23.4120 ppm	4.2880 ppm	0.5357 ppm
Concentration per Run 1	0.8864 ppm	0.3457 ppm	0.7522 ppm	0.8596 ppm	23.5000 ppm	4.3533 ppm	0.5432 ppm
Concentration per Run 2	0.8815 ppm	0.3427 ppm	0.7500 ppm	0.8559 ppm	23.3827 ppm	4.2597 ppm	0.5317 ppm
Concentration per Run 3	0.8733 ppm	0.3403 ppm	0.7465 ppm	0.8518 ppm	23.3533 ppm	4.2511 ppm	0.5323 ppm
Concentration RSD	0.8 %	0.8 %	0.4 %	0.5 %	0.3 %	1.3 %	1.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	5.9313 ppm	2.1506 ppm	0.5503 ppm	7.2375 ppm	1.3283 ppm	0.3820 ppm	0.7656 ppm
Concentration per Run 1	5.9481 ppm	2.1608 ppm	0.5482 ppm	7.3272 ppm	1.3347 ppm	0.3828 ppm	0.7717 ppm
Concentration per Run 2	5.9359 ppm	2.1512 ppm	0.5512 ppm	7.2231 ppm	1.3294 ppm	0.3814 ppm	0.7673 ppm
Concentration per Run 3	5.9098 ppm	2.1398 ppm	0.5516 ppm	7.1621 ppm	1.3206 ppm	0.3818 ppm	0.7578 ppm
Concentration RSD	0.3 %	0.5 %	0.3 %	1.2 %	0.5 %	0.2 %	0.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.6937 ppm	6.3210 ppm	0.3208 ppm	0.5314 ppm	1.1788 ppm	0.8318 ppm	0.4292 ppm
Concentration per Run 1	0.6922 ppm	6.3123 ppm	0.3217 ppm	0.5323 ppm	1.1891 ppm	0.8321 ppm	0.4321 ppm
Concentration per Run 2	0.6958 ppm	6.3509 ppm	0.3224 ppm	0.5305 ppm	1.1742 ppm	0.8281 ppm	0.4284 ppm
Concentration per Run 3	0.6930 ppm	6.2998 ppm	0.3181 ppm	0.5315 ppm	1.1732 ppm	0.8353 ppm	0.4270 ppm
Concentration RSD	0.3 %	0.4 %	0.7 %	0.2 %	0.8 %	0.4 %	0.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.6926 ppm	103.7896 %	104.8762 %	97.8065 %	106.4066 %	108.9441 %	106.8483 %
Concentration per Run 1	0.6985 ppm	103.4478 %	105.1830 %	98.1492 %	106.1859 %	109.4272 %	107.2256 %
Concentration per Run 2	0.6944 ppm	103.7194 %	104.8568 %	97.9703 %	106.5469 %	108.9623 %	106.9509 %
Concentration per Run 3	0.6850 ppm	104.2015 %	104.5887 %	97.2999 %	106.4870 %	108.4429 %	106.3684 %
Concentration RSD	1.0 %	0.4 %	0.3 %	0.5 %	0.2 %	0.5 %	0.4 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450305-01D2 WG1969961
Analysis started at: 9/11/2024 7:22:26 AM
Rack 1
Vial 10
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0012 ppm	54.7894 ppm	0.0580 ppm	0.0617 ppm	0.1726 ppm	0.0027 ppm	10.5530 ppm
Concentration per Run 1	0.0009 ppm	54.5134 ppm	0.0574 ppm	0.0614 ppm	0.1719 ppm	0.0028 ppm	10.6228 ppm
Concentration per Run 2	0.0011 ppm	54.9225 ppm	0.0582 ppm	0.0617 ppm	0.1733 ppm	0.0027 ppm	10.5242 ppm
Concentration per Run 3	0.0017 ppm	54.9322 ppm	0.0584 ppm	0.0620 ppm	0.1726 ppm	0.0027 ppm	10.5121 ppm
Concentration RSD	34.0 %	0.4 %	0.9 %	0.5 %	0.4 %	2.6 %	0.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0014 ppm	0.4014 ppm	1.2753 ppm	0.1206 ppm	176.0908 ppm	5.4540 ppm	0.0940 ppm
Concentration per Run 1	0.0016 ppm	0.3998 ppm	1.2752 ppm	0.1201 ppm	175.7947 ppm	5.4084 ppm	0.0916 ppm
Concentration per Run 2	0.0013 ppm	0.4030 ppm	1.2796 ppm	0.1209 ppm	176.3140 ppm	5.4893 ppm	0.0955 ppm
Concentration per Run 3	0.0015 ppm	0.4014 ppm	1.2712 ppm	0.1209 ppm	176.1636 ppm	5.4644 ppm	0.0950 ppm
Concentration RSD	10.0 %	0.4 %	0.3 %	0.4 %	0.2 %	0.8 %	2.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	589.8551 ppm	3.8246 ppm	0.0026 ppm	7.8984 ppm	6.7980 ppm	0.1299 ppm	0.0028 ppm
Concentration per Run 1	588.5858 ppm	3.8329 ppm	0.0025 ppm	7.7662 ppm	6.7954 ppm	0.1306 ppm	0.0006 ppm
Concentration per Run 2	593.0358 ppm	3.8203 ppm	0.0024 ppm	7.9720 ppm	6.8403 ppm	0.1293 ppm	0.0053 ppm
Concentration per Run 3	587.9438 ppm	3.8207 ppm	0.0030 ppm	7.9570 ppm	6.7582 ppm	0.1297 ppm	0.0026 ppm
Concentration RSD	0.5 %	0.2 %	11.0 %	1.5 %	0.6 %	0.5 %	83.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0003 ppm	3.2588 ppm	0.0056 ppm	0.0399 ppm	2.0865 ppm	0.0012 ppm	0.1369 ppm
Concentration per Run 1	0.0009 ppm	3.2351 ppm	0.0046 ppm	0.0405 ppm	2.0920 ppm	0.0009 ppm	0.1369 ppm
Concentration per Run 2	-0.0006 ppm	3.2321 ppm	0.0063 ppm	0.0396 ppm	2.0841 ppm	0.0010 ppm	0.1378 ppm
Concentration per Run 3	0.0006 ppm	3.3091 ppm	0.0057 ppm	0.0396 ppm	2.0835 ppm	0.0017 ppm	0.1361 ppm
Concentration RSD	235.2 %	1.3 %	15.2 %	1.4 %	0.2 %	32.9 %	0.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.2815 ppm	98.7813 %	104.9369 %	86.3903 %	103.8798 %	113.7106 %	105.6846 %
Concentration per Run 1	0.2803 ppm	98.8808 %	102.9729 %	86.3800 %	103.8577 %	112.2877 %	105.9276 %
Concentration per Run 2	0.2836 ppm	98.5743 %	105.9435 %	86.2501 %	103.4300 %	114.5539 %	105.4457 %
Concentration per Run 3	0.2806 ppm	98.8889 %	105.8943 %	86.5407 %	104.3515 %	114.2902 %	105.6804 %
Concentration RSD	0.6 %	0.2 %	1.6 %	0.2 %	0.4 %	1.1 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450420-01D2 WG1969961
Analysis started at: 9/11/2024 7:26:22 AM
Rack 1
Vial 11
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0010 ppm	56.8078 ppm	0.0418 ppm	0.0092 ppm	0.3671 ppm	0.0040 ppm	80.5242 ppm
Concentration per Run 1	0.0009 ppm	56.8787 ppm	0.0419 ppm	0.0078 ppm	0.3666 ppm	0.0041 ppm	80.8239 ppm
Concentration per Run 2	0.0009 ppm	56.4563 ppm	0.0403 ppm	0.0091 ppm	0.3646 ppm	0.0040 ppm	80.4649 ppm
Concentration per Run 3	0.0011 ppm	57.0883 ppm	0.0433 ppm	0.0107 ppm	0.3700 ppm	0.0039 ppm	80.2837 ppm
Concentration RSD	11.8 %	0.6 %	3.7 %	15.5 %	0.7 %	2.5 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0026 ppm	0.0525 ppm	0.1091 ppm	0.3107 ppm	126.9387 ppm	8.8042 ppm	0.0932 ppm
Concentration per Run 1	0.0027 ppm	0.0525 ppm	0.1090 ppm	0.3087 ppm	126.8667 ppm	8.8702 ppm	0.0933 ppm
Concentration per Run 2	0.0026 ppm	0.0524 ppm	0.1087 ppm	0.3111 ppm	126.1104 ppm	8.6971 ppm	0.0920 ppm
Concentration per Run 3	0.0025 ppm	0.0526 ppm	0.1095 ppm	0.3124 ppm	127.8388 ppm	8.8453 ppm	0.0941 ppm
Concentration RSD	4.1 %	0.2 %	0.4 %	0.6 %	0.7 %	1.1 %	1.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	30.7295 ppm	4.1506 ppm	0.0061 ppm	2.2315 ppm	0.0942 ppm	0.5080 ppm	0.0047 ppm
Concentration per Run 1	30.7548 ppm	4.1580 ppm	0.0062 ppm	2.2199 ppm	0.0935 ppm	0.5093 ppm	0.0037 ppm
Concentration per Run 2	30.6786 ppm	4.1384 ppm	0.0063 ppm	2.2046 ppm	0.0940 ppm	0.5095 ppm	0.0053 ppm
Concentration per Run 3	30.7549 ppm	4.1556 ppm	0.0060 ppm	2.2700 ppm	0.0950 ppm	0.5051 ppm	0.0053 ppm
Concentration RSD	0.1 %	0.3 %	2.5 %	1.5 %	0.8 %	0.5 %	19.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0013 ppm	7.3262 ppm	0.0193 ppm	0.1915 ppm	2.5580 ppm	0.0022 ppm	0.1596 ppm
Concentration per Run 1	-0.0003 ppm	7.2338 ppm	0.0201 ppm	0.1924 ppm	2.5509 ppm	0.0035 ppm	0.1594 ppm
Concentration per Run 2	-0.0014 ppm	7.3570 ppm	0.0195 ppm	0.1923 ppm	2.5507 ppm	0.0012 ppm	0.1590 ppm
Concentration per Run 3	-0.0021 ppm	7.3879 ppm	0.0184 ppm	0.1899 ppm	2.5725 ppm	0.0019 ppm	0.1603 ppm
Concentration RSD	68.4 %	1.1 %	4.6 %	0.7 %	0.5 %	52.1 %	0.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.7908 ppm	105.8236 %	107.6097 %	93.5189 %	147.2028 %	155.6095 %	148.5538 %
Concentration per Run 1	0.7889 ppm	105.7966 %	107.8246 %	93.5005 %	146.4541 %	156.7498 %	149.0517 %
Concentration per Run 2	0.7933 ppm	105.7722 %	107.1338 %	93.6681 %	147.1724 %	154.3903 %	148.1663 %
Concentration per Run 3	0.7902 ppm	105.9021 %	107.8708 %	93.3882 %	147.9820 %	155.6885 %	148.4435 %
Concentration RSD	0.3 %	0.1 %	0.4 %	0.2 %	0.5 %	0.8 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450507-01D2 WG1969961
Analysis started at: 9/11/2024 7:30:20 AM
Rack 1
Vial 12
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0015 ppm	157.6924 ppm	0.0848 ppm	0.0201 ppm	0.5821 ppm	0.0066 ppm	26.3087 ppm
Concentration per Run 1	0.0016 ppm	157.9721 ppm	0.0835 ppm	0.0209 ppm	0.5843 ppm	0.0066 ppm	26.3703 ppm
Concentration per Run 2	0.0015 ppm	158.3588 ppm	0.0873 ppm	0.0194 ppm	0.5853 ppm	0.0065 ppm	26.3086 ppm
Concentration per Run 3	0.0013 ppm	156.7463 ppm	0.0836 ppm	0.0200 ppm	0.5765 ppm	0.0067 ppm	26.2472 ppm
Concentration RSD	7.4 %	0.5 %	2.6 %	3.5 %	0.8 %	1.4 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0014 ppm	0.1160 ppm	0.3064 ppm	0.4825 ppm	258.3593 ppm	38.5847 ppm	0.2749 ppm
Concentration per Run 1	0.0015 ppm	0.1164 ppm	0.3048 ppm	0.4806 ppm	258.8526 ppm	38.7171 ppm	0.2808 ppm
Concentration per Run 2	0.0016 ppm	0.1156 ppm	0.3073 ppm	0.4843 ppm	259.2730 ppm	38.9818 ppm	0.2829 ppm
Concentration per Run 3	0.0013 ppm	0.1160 ppm	0.3071 ppm	0.4826 ppm	256.9523 ppm	38.0553 ppm	0.2611 ppm
Concentration RSD	9.2 %	0.4 %	0.5 %	0.4 %	0.5 %	1.2 %	4.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	70.1703 ppm	4.2846 ppm	0.0035 ppm	14.9884 ppm	0.2381 ppm	0.2064 ppm	0.0045 ppm
Concentration per Run 1	70.1243 ppm	4.2910 ppm	0.0031 ppm	14.9991 ppm	0.2389 ppm	0.2072 ppm	0.0057 ppm
Concentration per Run 2	70.0038 ppm	4.2942 ppm	0.0039 ppm	15.1118 ppm	0.2374 ppm	0.2056 ppm	0.0054 ppm
Concentration per Run 3	70.3829 ppm	4.2686 ppm	0.0034 ppm	14.8543 ppm	0.2381 ppm	0.2065 ppm	0.0024 ppm
Concentration RSD	0.3 %	0.3 %	10.8 %	0.9 %	0.3 %	0.4 %	40.3 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0029 ppm	3.9690 ppm	0.0101 ppm	0.2061 ppm	7.8529 ppm	0.0080 ppm	0.4309 ppm
Concentration per Run 1	-0.0035 ppm	3.9457 ppm	0.0098 ppm	0.2070 ppm	7.8302 ppm	0.0072 ppm	0.4296 ppm
Concentration per Run 2	-0.0020 ppm	3.9653 ppm	0.0105 ppm	0.2046 ppm	7.8525 ppm	0.0082 ppm	0.4294 ppm
Concentration per Run 3	-0.0032 ppm	3.9959 ppm	0.0099 ppm	0.2068 ppm	7.8759 ppm	0.0086 ppm	0.4338 ppm
Concentration RSD	28.1 %	0.6 %	4.0 %	0.6 %	0.3 %	9.0 %	0.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.7869 ppm	111.2733 %	113.3415 %	89.3401 %	133.7895 %	141.4164 %	136.0534 %
Concentration per Run 1	0.7853 ppm	111.4363 %	113.2466 %	89.7435 %	133.7645 %	141.5240 %	136.8581 %
Concentration per Run 2	0.7900 ppm	111.4488 %	113.2641 %	89.2365 %	134.1994 %	141.3398 %	135.4951 %
Concentration per Run 3	0.7854 ppm	110.9348 %	113.5138 %	89.0404 %	133.4045 %	141.3855 %	135.8071 %
Concentration RSD	0.3 %	0.3 %	0.1 %	0.4 %	0.3 %	0.1 %	0.5 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450562-01D2 WG1969961
Analysis started at: 9/11/2024 7:34:17 AM
Rack 1
Vial 13
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0084 ppm	81.2341 ppm	0.2845 ppm	0.2702 ppm	1.1912 ppm	0.0045 ppm	103.3671 ppm
Concentration per Run 1	0.0085 ppm	80.6859 ppm	0.2866 ppm	0.2697 ppm	1.1929 ppm	0.0045 ppm	102.9170 ppm
Concentration per Run 2	0.0084 ppm	81.0434 ppm	0.2855 ppm	0.2703 ppm	1.1884 ppm	0.0045 ppm	103.1995 ppm
Concentration per Run 3	0.0083 ppm	81.9730 ppm	0.2814 ppm	0.2705 ppm	1.1923 ppm	0.0044 ppm	103.9849 ppm
Concentration RSD	1.3 %	0.8 %	1.0 %	0.1 %	0.2 %	0.9 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0306 ppm	0.1198 ppm	0.6397 ppm	1.4571 ppm	298.7453 ppm	9.2947 ppm	0.1441 ppm
Concentration per Run 1	0.0305 ppm	0.1199 ppm	0.6426 ppm	1.4658 ppm	298.6285 ppm	9.2555 ppm	0.1446 ppm
Concentration per Run 2	0.0307 ppm	0.1195 ppm	0.6376 ppm	1.4458 ppm	296.8471 ppm	9.2413 ppm	0.1428 ppm
Concentration per Run 3	0.0307 ppm	0.1201 ppm	0.6390 ppm	1.4596 ppm	300.7602 ppm	9.3874 ppm	0.1450 ppm
Concentration RSD	0.4 %	0.3 %	0.4 %	0.7 %	0.7 %	0.9 %	0.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	35.0998 ppm	4.2354 ppm	0.0560 ppm	4.4213 ppm	0.5609 ppm	3.2006 ppm	0.0800 ppm
Concentration per Run 1	35.1108 ppm	4.2170 ppm	0.0555 ppm	4.3949 ppm	0.5612 ppm	3.2317 ppm	0.0788 ppm
Concentration per Run 2	35.0953 ppm	4.2254 ppm	0.0555 ppm	4.4064 ppm	0.5609 ppm	3.1865 ppm	0.0820 ppm
Concentration per Run 3	35.0933 ppm	4.2639 ppm	0.0570 ppm	4.4626 ppm	0.5607 ppm	3.1836 ppm	0.0792 ppm
Concentration RSD	0.0 %	0.6 %	1.6 %	0.8 %	0.1 %	0.8 %	2.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0012 ppm	7.4692 ppm	0.1581 ppm	0.7406 ppm	3.7620 ppm	0.0024 ppm	0.3999 ppm
Concentration per Run 1	0.0051 ppm	7.6480 ppm	0.1582 ppm	0.7418 ppm	3.7821 ppm	0.0032 ppm	0.4002 ppm
Concentration per Run 2	0.0003 ppm	7.3789 ppm	0.1581 ppm	0.7432 ppm	3.7510 ppm	0.0014 ppm	0.3986 ppm
Concentration per Run 3	-0.0019 ppm	7.3807 ppm	0.1582 ppm	0.7367 ppm	3.7530 ppm	0.0027 ppm	0.4008 ppm
Concentration RSD	304.0 %	2.1 %	0.0 %	0.5 %	0.5 %	38.8 %	0.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	12.5810 ppm	104.7382 %	109.0771 %	87.6726 %	122.7887 %	131.8326 %	123.6488 %
Concentration per Run 1	12.5914 ppm	105.3694 %	108.9548 %	87.3514 %	123.3221 %	131.0546 %	123.8485 %
Concentration per Run 2	12.6053 ppm	104.9494 %	110.1506 %	87.9533 %	122.6306 %	133.2229 %	123.5777 %
Concentration per Run 3	12.5462 ppm	103.8960 %	108.1258 %	87.7131 %	122.4135 %	131.2204 %	123.5201 %
Concentration RSD	0.2 %	0.7 %	0.9 %	0.3 %	0.4 %	0.9 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2451114-01D2 WG1969961
Analysis started at: 9/11/2024 7:38:10 AM
Rack 1
Vial 14
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0004 ppm	37.5285 ppm	0.1036 ppm	0.0015 ppm	0.1667 ppm	0.0015 ppm	6.5283 ppm
Concentration per Run 1	0.0002 ppm	37.4837 ppm	0.1051 ppm	0.0023 ppm	0.1664 ppm	0.0015 ppm	6.5496 ppm
Concentration per Run 2	0.0006 ppm	37.7430 ppm	0.1030 ppm	0.0018 ppm	0.1677 ppm	0.0014 ppm	6.5110 ppm
Concentration per Run 3	0.0004 ppm	37.3586 ppm	0.1027 ppm	0.0005 ppm	0.1661 ppm	0.0015 ppm	6.5243 ppm
Concentration RSD	38.8 %	0.5 %	1.3 %	57.8 %	0.5 %	2.7 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0003 ppm	0.0197 ppm	0.0851 ppm	0.1094 ppm	74.1849 ppm	11.6911 ppm	0.0845 ppm
Concentration per Run 1	0.0002 ppm	0.0196 ppm	0.0852 ppm	0.1092 ppm	73.9434 ppm	11.5765 ppm	0.0827 ppm
Concentration per Run 2	0.0003 ppm	0.0198 ppm	0.0852 ppm	0.1095 ppm	74.4532 ppm	11.8765 ppm	0.0862 ppm
Concentration per Run 3	0.0003 ppm	0.0195 ppm	0.0848 ppm	0.1096 ppm	74.1580 ppm	11.6204 ppm	0.0847 ppm
Concentration RSD	13.3 %	0.6 %	0.3 %	0.2 %	0.3 %	1.4 %	2.1 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	15.5325 ppm	0.8216 ppm	0.0029 ppm	0.9081 ppm	0.0607 ppm	0.0463 ppm	0.0020 ppm
Concentration per Run 1	15.5342 ppm	0.8222 ppm	0.0027 ppm	0.8968 ppm	0.0611 ppm	0.0473 ppm	0.0016 ppm
Concentration per Run 2	15.5718 ppm	0.8241 ppm	0.0029 ppm	0.9272 ppm	0.0603 ppm	0.0451 ppm	0.0018 ppm
Concentration per Run 3	15.4915 ppm	0.8186 ppm	0.0030 ppm	0.9003 ppm	0.0607 ppm	0.0464 ppm	0.0027 ppm
Concentration RSD	0.3 %	0.3 %	6.0 %	1.8 %	0.6 %	2.4 %	28.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0010 ppm	3.0175 ppm	0.0037 ppm	0.0278 ppm	2.3246 ppm	0.0023 ppm	0.0924 ppm
Concentration per Run 1	0.0014 ppm	3.0369 ppm	0.0041 ppm	0.0281 ppm	2.3349 ppm	0.0016 ppm	0.0932 ppm
Concentration per Run 2	0.0007 ppm	3.0011 ppm	0.0025 ppm	0.0274 ppm	2.3178 ppm	0.0021 ppm	0.0920 ppm
Concentration per Run 3	0.0008 ppm	3.0145 ppm	0.0045 ppm	0.0281 ppm	2.3210 ppm	0.0032 ppm	0.0920 ppm
Concentration RSD	36.5 %	0.6 %	28.5 %	1.5 %	0.4 %	34.9 %	0.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.1343 ppm	107.0955 %	107.0162 %	98.2446 %	111.3250 %	114.4012 %	112.0191 %
Concentration per Run 1	0.1341 ppm	107.1648 %	106.9119 %	98.2859 %	111.1706 %	114.4604 %	112.9360 %
Concentration per Run 2	0.1351 ppm	107.2884 %	107.3326 %	98.9312 %	111.9717 %	114.1457 %	112.2729 %
Concentration per Run 3	0.1338 ppm	106.8333 %	106.8040 %	97.5166 %	110.8328 %	114.5976 %	110.8484 %
Concentration RSD	0.5 %	0.2 %	0.3 %	0.7 %	0.5 %	0.2 %	1.0 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2451252-01D2 WG1969961
Analysis started at: 9/11/2024 7:42:04 AM
Rack 1
Vial 15
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0011 ppm	124.7399 ppm	0.4358 ppm	0.0040 ppm	0.8475 ppm	0.0059 ppm	23.2397 ppm
Concentration per Run 1	0.0010 ppm	124.8794 ppm	0.4324 ppm	0.0029 ppm	0.8484 ppm	0.0059 ppm	23.2736 ppm
Concentration per Run 2	0.0012 ppm	124.7738 ppm	0.4371 ppm	0.0048 ppm	0.8507 ppm	0.0060 ppm	23.2488 ppm
Concentration per Run 3	0.0011 ppm	124.5664 ppm	0.4380 ppm	0.0043 ppm	0.8432 ppm	0.0059 ppm	23.1968 ppm
Concentration RSD	11.0 %	0.1 %	0.7 %	24.9 %	0.5 %	1.1 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0007 ppm	0.1562 ppm	0.2637 ppm	0.3255 ppm	199.8261 ppm	23.9472 ppm	0.2017 ppm
Concentration per Run 1	0.0007 ppm	0.1527 ppm	0.2585 ppm	0.3172 ppm	199.9955 ppm	24.0636 ppm	0.2019 ppm
Concentration per Run 2	0.0007 ppm	0.1585 ppm	0.2670 ppm	0.3307 ppm	200.2867 ppm	24.0445 ppm	0.2055 ppm
Concentration per Run 3	0.0008 ppm	0.1575 ppm	0.2657 ppm	0.3286 ppm	199.1961 ppm	23.7335 ppm	0.1977 ppm
Concentration RSD	8.5 %	2.0 %	1.7 %	2.2 %	0.3 %	0.8 %	2.0 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	48.3012 ppm	4.7885 ppm	0.0172 ppm	2.9920 ppm	0.2695 ppm	0.1381 ppm	0.0011 ppm
Concentration per Run 1	47.3036 ppm	4.7934 ppm	0.0168 ppm	3.0060 ppm	0.2631 ppm	0.1399 ppm	0.0023 ppm
Concentration per Run 2	48.8071 ppm	4.7955 ppm	0.0173 ppm	2.9825 ppm	0.2725 ppm	0.1386 ppm	0.0014 ppm
Concentration per Run 3	48.7928 ppm	4.7767 ppm	0.0175 ppm	2.9874 ppm	0.2730 ppm	0.1358 ppm	-0.0004 ppm
Concentration RSD	1.8 %	0.2 %	2.1 %	0.4 %	2.1 %	1.5 %	124.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0005 ppm	8.2728 ppm	0.0082 ppm	0.1122 ppm	5.8248 ppm	0.0044 ppm	0.2315 ppm
Concentration per Run 1	-0.0015 ppm	8.1040 ppm	0.0078 ppm	0.1117 ppm	5.6997 ppm	0.0047 ppm	0.2267 ppm
Concentration per Run 2	0.0006 ppm	8.4871 ppm	0.0078 ppm	0.1130 ppm	5.8945 ppm	0.0046 ppm	0.2341 ppm
Concentration per Run 3	-0.0008 ppm	8.2274 ppm	0.0090 ppm	0.1119 ppm	5.8801 ppm	0.0038 ppm	0.2337 ppm
Concentration RSD	198.1 %	2.4 %	8.4 %	0.6 %	1.9 %	11.6 %	1.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.3728 ppm	110.1779 %	110.7879 %	90.2398 %	135.0656 %	141.5026 %	134.8109 %
Concentration per Run 1	0.3659 ppm	112.6065 %	110.5037 %	89.9182 %	136.6109 %	140.7776 %	133.6610 %
Concentration per Run 2	0.3770 ppm	108.7428 %	110.5462 %	90.4219 %	133.7174 %	141.6876 %	134.9563 %
Concentration per Run 3	0.3755 ppm	109.1843 %	111.3138 %	90.3791 %	134.8685 %	142.0425 %	135.8153 %
Concentration RSD	1.6 %	1.9 %	0.4 %	0.3 %	1.1 %	0.5 %	0.8 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2451252-03D2 WG1969961
Analysis started at: 9/11/2024 7:45:58 AM
Rack 1
Vial 16
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0004 ppm	142.9409 ppm	0.4923 ppm	0.0054 ppm	0.9727 ppm	0.0071 ppm	37.6595 ppm
Concentration per Run 1	0.0005 ppm	141.9737 ppm	0.4977 ppm	0.0068 ppm	0.9722 ppm	0.0070 ppm	37.3020 ppm
Concentration per Run 2	0.0004 ppm	143.3295 ppm	0.4891 ppm	0.0050 ppm	0.9721 ppm	0.0071 ppm	37.7835 ppm
Concentration per Run 3	0.0004 ppm	143.5195 ppm	0.4899 ppm	0.0043 ppm	0.9739 ppm	0.0072 ppm	37.8931 ppm
Concentration RSD	16.1 %	0.6 %	1.0 %	24.2 %	0.1 %	1.2 %	0.8 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0006 ppm	0.1702 ppm	0.2978 ppm	0.3929 ppm	228.2786 ppm	26.6892 ppm	0.2337 ppm
Concentration per Run 1	0.0008 ppm	0.1709 ppm	0.2998 ppm	0.3941 ppm	227.9343 ppm	26.7828 ppm	0.2357 ppm
Concentration per Run 2	0.0006 ppm	0.1699 ppm	0.2971 ppm	0.3932 ppm	228.9381 ppm	26.7287 ppm	0.2337 ppm
Concentration per Run 3	0.0005 ppm	0.1699 ppm	0.2966 ppm	0.3912 ppm	227.9634 ppm	26.5561 ppm	0.2316 ppm
Concentration RSD	17.7 %	0.4 %	0.6 %	0.4 %	0.3 %	0.4 %	0.9 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	56.9779 ppm	4.8201 ppm	0.0217 ppm	2.7667 ppm	0.3054 ppm	0.1580 ppm	0.0044 ppm
Concentration per Run 1	57.3752 ppm	4.7858 ppm	0.0215 ppm	2.7560 ppm	0.3073 ppm	0.1596 ppm	0.0035 ppm
Concentration per Run 2	57.0255 ppm	4.8303 ppm	0.0212 ppm	2.7685 ppm	0.3053 ppm	0.1563 ppm	0.0062 ppm
Concentration per Run 3	56.5329 ppm	4.8443 ppm	0.0223 ppm	2.7756 ppm	0.3037 ppm	0.1581 ppm	0.0037 ppm
Concentration RSD	0.7 %	0.6 %	2.5 %	0.4 %	0.6 %	1.0 %	33.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0000 ppm	10.3704 ppm	0.0083 ppm	0.1808 ppm	6.7225 ppm	0.0058 ppm	0.2639 ppm
Concentration per Run 1	0.0019 ppm	10.4082 ppm	0.0080 ppm	0.1796 ppm	6.7601 ppm	0.0041 ppm	0.2643 ppm
Concentration per Run 2	-0.0001 ppm	10.4918 ppm	0.0087 ppm	0.1809 ppm	6.7034 ppm	0.0067 ppm	0.2646 ppm
Concentration per Run 3	-0.0018 ppm	10.2113 ppm	0.0082 ppm	0.1820 ppm	6.7040 ppm	0.0066 ppm	0.2627 ppm
Concentration RSD	22,873.3 %	1.4 %	4.6 %	0.7 %	0.5 %	24.8 %	0.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4161 ppm	106.6847 %	108.9604 %	88.1443 %	136.4537 %	144.2200 %	139.1316 %
Concentration per Run 1	0.4189 ppm	106.1911 %	109.8928 %	87.4846 %	135.7582 %	144.6994 %	138.9137 %
Concentration per Run 2	0.4145 ppm	106.5077 %	108.4673 %	88.7644 %	136.1251 %	143.4168 %	139.5081 %
Concentration per Run 3	0.4148 ppm	107.3553 %	108.5210 %	88.1841 %	137.4777 %	144.5437 %	138.9731 %
Concentration RSD	0.6 %	0.6 %	0.7 %	0.7 %	0.7 %	0.5 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCV
Analysis started at: 9/11/2024 7:49:53 AM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.4915 ppm	0.4737 ppm	0.4598 ppm	0.4659 ppm	0.4897 ppm	0.4968 ppm	0.4747 ppm
Concentration per Run 1	0.4925 ppm	0.4731 ppm	0.4605 ppm	0.4624 ppm	0.4888 ppm	0.4982 ppm	0.4755 ppm
Concentration per Run 2	0.4899 ppm	0.4738 ppm	0.4593 ppm	0.4674 ppm	0.4908 ppm	0.4993 ppm	0.4755 ppm
Concentration per Run 3	0.4922 ppm	0.4743 ppm	0.4596 ppm	0.4678 ppm	0.4894 ppm	0.4930 ppm	0.4733 ppm
Recovery Percentage 1	98.306 %	94.742 %	91.957 %	93.175 %	97.939 %	99.367 %	94.948 %
Concentration RSD	0.3 %	0.1 %	0.1 %	0.7 %	0.2 %	0.7 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.4931 ppm	0.4975 ppm	0.4811 ppm	0.4817 ppm	0.5033 ppm	5.1128 ppm	0.5073 ppm
Concentration per Run 1	0.4927 ppm	0.4973 ppm	0.4812 ppm	0.4813 ppm	0.5023 ppm	5.1033 ppm	0.5053 ppm
Concentration per Run 2	0.4949 ppm	0.4994 ppm	0.4815 ppm	0.4808 ppm	0.5063 ppm	5.1269 ppm	0.5070 ppm
Concentration per Run 3	0.4917 ppm	0.4959 ppm	0.4804 ppm	0.4831 ppm	0.5013 ppm	5.1083 ppm	0.5097 ppm
Recovery Percentage 1	98.625 %	99.503 %	96.213 %	96.349 %	100.666 %	102.257 %	101.467 %
Concentration RSD	0.3 %	0.4 %	0.1 %	0.3 %	0.5 %	0.2 %	0.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.4843 ppm	0.4796 ppm	0.4875 ppm	9.9873 ppm	0.4971 ppm	0.4793 ppm	0.4867 ppm
Concentration per Run 1	0.4865 ppm	0.4797 ppm	0.4830 ppm	9.9084 ppm	0.4997 ppm	0.4766 ppm	0.4877 ppm
Concentration per Run 2	0.4818 ppm	0.4822 ppm	0.4897 ppm	10.0086 ppm	0.4985 ppm	0.4801 ppm	0.4861 ppm
Concentration per Run 3	0.4846 ppm	0.4770 ppm	0.4898 ppm	10.0450 ppm	0.4932 ppm	0.4811 ppm	0.4863 ppm
Recovery Percentage 1	96.859 %	95.928 %	97.495 %	99.873 %	99.428 %	95.855 %	97.337 %
Concentration RSD	0.5 %	0.5 %	0.8 %	0.7 %	0.7 %	0.5 %	0.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4654 ppm	5.1600 ppm	0.5106 ppm	0.5036 ppm	0.4901 ppm	0.4818 ppm	0.4840 ppm
Concentration per Run 1	0.4639 ppm	5.1705 ppm	0.5108 ppm	0.5037 ppm	0.4913 ppm	0.4807 ppm	0.4834 ppm
Concentration per Run 2	0.4651 ppm	5.1475 ppm	0.5136 ppm	0.5059 ppm	0.4887 ppm	0.4799 ppm	0.4834 ppm
Concentration per Run 3	0.4673 ppm	5.1619 ppm	0.5074 ppm	0.5012 ppm	0.4902 ppm	0.4848 ppm	0.4850 ppm
Recovery Percentage 1	93.088 %	98.285 %	102.113 %	100.718 %	98.015 %	96.359 %	96.792 %
Concentration RSD	0.4 %	0.2 %	0.6 %	0.5 %	0.3 %	0.5 %	0.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4892 ppm	105.7511 %	104.7635 %	102.1308 %	99.4264 %	101.2743 %	100.6879 %
Concentration per Run 1	0.4907 ppm	105.6605 %	104.7685 %	102.2016 %	98.9600 %	101.4140 %	100.6553 %
Concentration per Run 2	0.4928 ppm	105.9003 %	104.0226 %	102.1535 %	99.7359 %	100.8279 %	100.9646 %
Concentration per Run 3	0.4842 ppm	105.6923 %	105.4993 %	102.0373 %	99.5832 %	101.5809 %	100.4438 %
Recovery Percentage 1	97.848 %						
Concentration RSD	0.9 %	0.1 %	0.7 %	0.1 %	0.4 %	0.4 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCB
Analysis started at: 9/11/2024 7:53:48 AM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	-0.0056 ppm	0.0000 ppm	0.0001 ppm	-0.0001 ppm	0.0000 ppm	-0.0017 ppm
Concentration per Run 1	0.0002 ppm	0.0022 ppm	0.0004 ppm	-0.0002 ppm	-0.0001 ppm	0.0000 ppm	-0.0041 ppm
Concentration per Run 2	0.0000 ppm	-0.0050 ppm	0.0001 ppm	0.0004 ppm	-0.0001 ppm	0.0000 ppm	-0.0006 ppm
Concentration per Run 3	-0.0001 ppm	-0.0138 ppm	-0.0004 ppm	0.0002 ppm	-0.0001 ppm	0.0000 ppm	-0.0002 ppm
Recovery Percentage 1	0.837 %	-5.559 %	0.139 %	0.466 %	-0.873 %	0.043 %	-1.662 %
Concentration RSD	243.2 %	143.7 %	9,532.6 %	242.2 %	60.3 %	901.2 %	130.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0001 ppm	0.0002 ppm	0.0005 ppm	0.0054 ppm	0.0237 ppm	-0.0003 ppm
Concentration per Run 1	0.0001 ppm	-0.0001 ppm	0.0005 ppm	0.0003 ppm	0.0058 ppm	0.0112 ppm	-0.0008 ppm
Concentration per Run 2	0.0000 ppm	-0.0001 ppm	-0.0001 ppm	0.0004 ppm	0.0052 ppm	0.0300 ppm	-0.0001 ppm
Concentration per Run 3	0.0000 ppm	-0.0001 ppm	0.0001 ppm	0.0007 ppm	0.0052 ppm	0.0300 ppm	-0.0001 ppm
Recovery Percentage 1	0.592 %	-0.568 %	1.689 %	4.641 %	10.829 %	0.950 %	-3.258 %
Concentration RSD	191.1 %	20.9 %	168.6 %	43.0 %	6.6 %	45.8 %	137.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0002 ppm	0.0002 ppm	0.0016 ppm	0.0118 ppm	0.0000 ppm	0.0002 ppm	-0.0001 ppm
Concentration per Run 1	0.0005 ppm	0.0002 ppm	0.0014 ppm	0.0098 ppm	0.0004 ppm	0.0002 ppm	-0.0004 ppm
Concentration per Run 2	0.0000 ppm	0.0002 ppm	0.0016 ppm	0.0124 ppm	0.0001 ppm	-0.0005 ppm	0.0007 ppm
Concentration per Run 3	0.0001 ppm	0.0000 ppm	0.0018 ppm	0.0133 ppm	-0.0004 ppm	0.0010 ppm	-0.0006 ppm
Recovery Percentage 1	0.188 %	1.515 %	3.152 %	0.591 %	0.070 %	2.153 %	-0.188 %
Concentration RSD	148.9 %	65.3 %	11.0 %	15.3 %	2,417.5 %	357.1 %	725.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0013 ppm	0.0124 ppm	-0.0001 ppm	0.0000 ppm	-0.0001 ppm	-0.0007 ppm	-0.0001 ppm
Concentration per Run 1	-0.0014 ppm	0.0241 ppm	0.0001 ppm	0.0000 ppm	-0.0003 ppm	-0.0006 ppm	-0.0002 ppm
Concentration per Run 2	-0.0014 ppm	0.0113 ppm	-0.0004 ppm	0.0000 ppm	0.0000 ppm	-0.0004 ppm	0.0000 ppm
Concentration per Run 3	-0.0011 ppm	0.0018 ppm	0.0001 ppm	0.0000 ppm	0.0001 ppm	-0.0010 ppm	0.0000 ppm
Recovery Percentage 1	-12.889 %	2.481 %	-0.162 %	-0.183 %	-0.692 %	-3.384 %	-0.813 %
Concentration RSD	10.1 %	90.0 %	390.0 %	73.8 %	324.0 %	49.2 %	110.0 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0010 ppm	101.5613 %	101.0587 %	101.7915 %	100.5372 %	100.7472 %	101.1848 %
Concentration per Run 1	0.0010 ppm	100.9264 %	100.2096 %	101.8676 %	100.5121 %	100.4728 %	101.2121 %
Concentration per Run 2	0.0011 ppm	100.9394 %	101.9360 %	101.6057 %	99.8218 %	101.3032 %	101.3765 %
Concentration per Run 3	0.0010 ppm	102.8181 %	101.0305 %	101.9013 %	101.2777 %	100.4657 %	100.9656 %
Recovery Percentage 1	20.884 %						
Concentration RSD	6.1 %	1.1 %	0.9 %	0.2 %	0.7 %	0.5 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: xWG1969512-1 WG1969512
Analysis started at: 9/11/2024 8:04:40 AM
Rack 1
Vial 17
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	**0.1186 ppm**	0.0008 ppm	0.0001 ppm	0.0000 ppm	0.0000 ppm	0.0034 ppm
Concentration per Run 1	-0.0002 ppm	0.1137 ppm	0.0003 ppm	0.0001 ppm	0.0000 ppm	0.0000 ppm	0.0022 ppm
Concentration per Run 2	0.0003 ppm	0.1211 ppm	0.0013 ppm	0.0010 ppm	0.0000 ppm	0.0000 ppm	0.0027 ppm
Concentration per Run 3	0.0003 ppm	0.1209 ppm	0.0010 ppm	-0.0008 ppm	-0.0001 ppm	0.0000 ppm	0.0054 ppm
Recovery Percentage 1	1.893 %	118.561 %	27.896 %	0.310 %	-0.418 %	-0.202 %	3.434 %
Concentration RSD	223.3 %	**3.5 %**	62.0 %	1,016.0 %	56.5 %	408.3 %	49.8 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0000 ppm	0.0010 ppm	0.0018 ppm	0.0016 ppm	0.0022 ppm	-0.0011 ppm
Concentration per Run 1	0.0000 ppm	-0.0002 ppm	0.0009 ppm	0.0018 ppm	0.0015 ppm	0.0130 ppm	-0.0019 ppm
Concentration per Run 2	0.0000 ppm	0.0000 ppm	0.0010 ppm	0.0016 ppm	0.0019 ppm	-0.0011 ppm	-0.0009 ppm
Concentration per Run 3	0.0001 ppm	0.0001 ppm	0.0010 ppm	0.0020 ppm	0.0014 ppm	-0.0053 ppm	-0.0003 ppm
Recovery Percentage 1	0.574 %	-0.102 %	9.800 %	18.077 %	3.211 %	0.087 %	-10.501 %
Concentration RSD	189.0 %	794.2 %	8.8 %	10.2 %	17.0 %	440.4 %	76.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0028 ppm	0.0000 ppm	0.0001 ppm	0.0033 ppm	-0.0003 ppm	0.0005 ppm	-0.0005 ppm
Concentration per Run 1	0.0034 ppm	-0.0001 ppm	0.0002 ppm	0.0009 ppm	0.0001 ppm	0.0000 ppm	0.0002 ppm
Concentration per Run 2	0.0033 ppm	-0.0001 ppm	0.0002 ppm	0.0067 ppm	-0.0011 ppm	0.0004 ppm	0.0000 ppm
Concentration per Run 3	0.0018 ppm	0.0002 ppm	-0.0002 ppm	0.0023 ppm	-0.0001 ppm	0.0011 ppm	-0.0018 ppm
Recovery Percentage 1	2.822 %	0.140 %	0.125 %	0.165 %	-1.359 %	5.158 %	-1.021 %
Concentration RSD	32.8 %	1,463.0 %	427.4 %	90.9 %	187.3 %	108.0 %	218.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0009 ppm	0.0456 ppm	0.0000 ppm	0.0001 ppm	-0.0002 ppm	0.0003 ppm	-0.0001 ppm
Concentration per Run 1	-0.0020 ppm	0.0443 ppm	0.0005 ppm	0.0001 ppm	-0.0002 ppm	0.0008 ppm	0.0000 ppm
Concentration per Run 2	-0.0003 ppm	0.0475 ppm	-0.0007 ppm	0.0001 ppm	-0.0002 ppm	0.0001 ppm	-0.0003 ppm
Concentration per Run 3	-0.0002 ppm	0.0450 ppm	0.0001 ppm	0.0002 ppm	-0.0004 ppm	-0.0001 ppm	0.0000 ppm
Recovery Percentage 1	-8.631 %	9.121 %	-0.085 %	1.015 %	-2.296 %	1.354 %	-0.804 %
Concentration RSD	118.0 %	3.8 %	1,336.7 %	51.2 %	49.1 %	184.9 %	222.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0015 ppm	100.5549 %	100.6084 %	101.0324 %	104.3782 %	103.9219 %	103.8165 %
Concentration per Run 1	0.0014 ppm	99.6391 %	99.5385 %	100.3995 %	104.0450 %	103.0996 %	103.5537 %
Concentration per Run 2	0.0015 ppm	101.2118 %	101.7288 %	100.8369 %	105.1363 %	105.2242 %	103.8132 %
Concentration per Run 3	0.0015 ppm	100.8137 %	100.5578 %	101.8607 %	103.9533 %	103.4419 %	104.0825 %
Recovery Percentage 1	29.461 %						
Concentration RSD	3.4 %	0.8 %	1.1 %	0.7 %	0.6 %	1.1 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1969512-2 WG1969512
Analysis started at: 9/11/2024 8:08:53 AM
Rack 1
Vial 18
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0527 ppm	1.9706 ppm	0.1164 ppm	0.9924 ppm	1.9797 ppm	0.0501 ppm	10.0327 ppm
Concentration per Run 1	0.0539 ppm	1.9772 ppm	0.1175 ppm	1.0185 ppm	1.9807 ppm	0.0501 ppm	10.0357 ppm
Concentration per Run 2	0.0525 ppm	1.9619 ppm	0.1161 ppm	0.9875 ppm	1.9805 ppm	0.0502 ppm	10.0369 ppm
Concentration per Run 3	0.0519 ppm	1.9727 ppm	0.1156 ppm	0.9712 ppm	1.9780 ppm	0.0501 ppm	10.0255 ppm
Concentration RSD	1.9 %	0.4 %	0.9 %	2.4 %	0.1 %	0.1 %	0.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0559 ppm	0.5260 ppm	0.2071 ppm	0.2680 ppm	1.0000 ppm	10.4784 ppm	-0.0011 ppm
Concentration per Run 1	0.0576 ppm	0.5408 ppm	0.2123 ppm	0.2752 ppm	1.0025 ppm	10.5642 ppm	-0.0026 ppm
Concentration per Run 2	0.0553 ppm	0.5227 ppm	0.2065 ppm	0.2673 ppm	1.0010 ppm	10.4148 ppm	-0.0009 ppm
Concentration per Run 3	0.0547 ppm	0.5144 ppm	0.2024 ppm	0.2615 ppm	0.9965 ppm	10.4562 ppm	0.0001 ppm
Concentration RSD	2.7 %	2.6 %	2.4 %	2.6 %	0.3 %	0.7 %	123.0 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	10.5161 ppm	0.4973 ppm	0.9873 ppm	10.4193 ppm	0.5301 ppm	0.5356 ppm	0.4558 ppm
Concentration per Run 1	10.8095 ppm	0.4978 ppm	1.0030 ppm	10.4570 ppm	0.5458 ppm	0.5397 ppm	0.4652 ppm
Concentration per Run 2	10.4505 ppm	0.4971 ppm	0.9832 ppm	10.3397 ppm	0.5281 ppm	0.5332 ppm	0.4562 ppm
Concentration per Run 3	10.2884 ppm	0.4971 ppm	0.9756 ppm	10.4611 ppm	0.5165 ppm	0.5340 ppm	0.4460 ppm
Concentration RSD	2.5 %	0.1 %	1.4 %	0.7 %	2.8 %	0.7 %	2.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1179 ppm	0.9899 ppm	1.0447 ppm	0.9915 ppm	1.0715 ppm	0.1209 ppm	0.5280 ppm
Concentration per Run 1	0.1182 ppm	1.0115 ppm	1.0727 ppm	0.9867 ppm	1.0986 ppm	0.1212 ppm	0.5415 ppm
Concentration per Run 2	0.1174 ppm	0.9889 ppm	1.0359 ppm	0.9954 ppm	1.0684 ppm	0.1207 ppm	0.5266 ppm
Concentration per Run 3	0.1181 ppm	0.9695 ppm	1.0255 ppm	0.9925 ppm	1.0475 ppm	0.1207 ppm	0.5159 ppm
Concentration RSD	0.3 %	2.1 %	2.4 %	0.4 %	2.4 %	0.2 %	2.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5277 ppm	98.5783 %	103.3102 %	97.0641 %	98.9381 %	101.4014 %	100.0079 %
Concentration per Run 1	0.5424 ppm	96.0697 %	102.5800 %	96.5893 %	98.3224 %	101.2105 %	99.8892 %
Concentration per Run 2	0.5242 ppm	99.0240 %	103.5108 %	97.5842 %	99.1142 %	101.3793 %	100.3277 %
Concentration per Run 3	0.5166 ppm	100.6412 %	103.8398 %	97.0187 %	99.3777 %	101.6145 %	99.8067 %
Concentration RSD	2.5 %	2.4 %	0.6 %	0.5 %	0.6 %	0.2 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450471-04 WG1969512
Analysis started at: 9/11/2024 8:12:48 AM
Rack 1
Vial 29
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0010 ppm	0.3245 ppm	0.0008 ppm	0.2427 ppm	0.0144 ppm	0.0000 ppm	29.4530 ppm
Concentration per Run 1	0.0013 ppm	0.3255 ppm	0.0016 ppm	0.2471 ppm	0.0144 ppm	0.0000 ppm	29.5915 ppm
Concentration per Run 2	0.0013 ppm	0.3233 ppm	0.0007 ppm	0.2445 ppm	0.0143 ppm	0.0000 ppm	29.3642 ppm
Concentration per Run 3	0.0006 ppm	0.3247 ppm	0.0001 ppm	0.2366 ppm	0.0144 ppm	0.0000 ppm	29.4031 ppm
Concentration RSD	35.1 %	0.3 %	91.2 %	2.3 %	0.3 %	83.9 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0002 ppm	0.0007 ppm	0.0043 ppm	0.1843 ppm	0.9170 ppm	29.9992 ppm	0.0101 ppm
Concentration per Run 1	0.0002 ppm	0.0008 ppm	0.0047 ppm	0.1878 ppm	0.9209 ppm	30.1803 ppm	0.0105 ppm
Concentration per Run 2	0.0001 ppm	0.0002 ppm	0.0041 ppm	0.1844 ppm	0.9078 ppm	29.7327 ppm	0.0097 ppm
Concentration per Run 3	0.0001 ppm	0.0009 ppm	0.0039 ppm	0.1806 ppm	0.9223 ppm	30.0847 ppm	0.0102 ppm
Concentration RSD	39.2 %	54.5 %	9.6 %	2.0 %	0.9 %	0.8 %	4.0 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	67.3022 ppm	0.0254 ppm	0.0094 ppm	503.2233 ppm	0.0159 ppm	0.0084 ppm	0.0035 ppm
Concentration per Run 1	68.6110 ppm	0.0254 ppm	0.0096 ppm	503.1369 ppm	0.0170 ppm	0.0086 ppm	0.0038 ppm
Concentration per Run 2	67.3188 ppm	0.0254 ppm	0.0095 ppm	502.2829 ppm	0.0159 ppm	0.0084 ppm	0.0046 ppm
Concentration per Run 3	65.9768 ppm	0.0253 ppm	0.0091 ppm	504.2501 ppm	0.0150 ppm	0.0083 ppm	0.0023 ppm
Concentration RSD	2.0 %	0.3 %	2.5 %	0.2 %	6.2 %	1.5 %	33.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0011 ppm	2.2495 ppm	0.0032 ppm	0.3983 ppm	0.0125 ppm	0.0005 ppm	0.0015 ppm
Concentration per Run 1	-0.0005 ppm	2.2943 ppm	0.0031 ppm	0.4001 ppm	0.0126 ppm	0.0002 ppm	0.0017 ppm
Concentration per Run 2	-0.0021 ppm	2.2518 ppm	0.0028 ppm	0.3968 ppm	0.0126 ppm	0.0009 ppm	0.0014 ppm
Concentration per Run 3	-0.0007 ppm	2.2024 ppm	0.0037 ppm	0.3979 ppm	0.0124 ppm	0.0004 ppm	0.0014 ppm
Concentration RSD	78.2 %	2.0 %	14.1 %	0.4 %	1.0 %	71.4 %	11.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.1603 ppm	87.1362 %	99.1768 %	83.3703 %	88.7071 %	99.2454 %	91.4323 %
Concentration per Run 1	0.1640 ppm	85.6035 %	98.1842 %	83.3154 %	88.4535 %	98.2613 %	91.8867 %
Concentration per Run 2	0.1596 ppm	87.2625 %	99.8349 %	82.9696 %	88.5673 %	99.5710 %	90.7471 %
Concentration per Run 3	0.1574 ppm	88.5425 %	99.5112 %	83.8260 %	89.1004 %	99.9040 %	91.6631 %
Concentration RSD	2.1 %	1.7 %	0.9 %	0.5 %	0.4 %	0.9 %	0.7 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450786-03 WG1969512
Analysis started at: 9/11/2024 8:16:43 AM
Rack 1
Vial 30
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	-0.0072 ppm	0.0002 ppm	0.0179 ppm	0.0157 ppm	0.0000 ppm	22.3716 ppm
Concentration per Run 1	0.0001 ppm	-0.0089 ppm	-0.0009 ppm	0.0190 ppm	0.0158 ppm	0.0000 ppm	22.4275 ppm
Concentration per Run 2	0.0002 ppm	-0.0073 ppm	0.0008 ppm	0.0177 ppm	0.0158 ppm	0.0000 ppm	22.4392 ppm
Concentration per Run 3	0.0000 ppm	-0.0053 ppm	0.0006 ppm	0.0170 ppm	0.0155 ppm	0.0000 ppm	22.2480 ppm
Concentration RSD	90.5 %	25.1 %	496.1 %	5.8 %	1.0 %	64.4 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0001 ppm	0.0001 ppm	0.0013 ppm	0.0008 ppm	0.0042 ppm	1.1220 ppm	-0.0004 ppm
Concentration per Run 1	-0.0001 ppm	0.0002 ppm	0.0013 ppm	0.0009 ppm	0.0043 ppm	1.1433 ppm	-0.0005 ppm
Concentration per Run 2	-0.0001 ppm	-0.0002 ppm	0.0013 ppm	0.0009 ppm	0.0041 ppm	1.1277 ppm	-0.0004 ppm
Concentration per Run 3	-0.0002 ppm	0.0002 ppm	0.0013 ppm	0.0006 ppm	0.0043 ppm	1.0951 ppm	-0.0001 ppm
Concentration RSD	58.4 %	450.4 %	0.5 %	25.0 %	2.9 %	2.2 %	52.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	5.0161 ppm	0.0002 ppm	0.0012 ppm	8.4564 ppm	0.0007 ppm	0.0005 ppm	0.0002 ppm
Concentration per Run 1	5.1655 ppm	0.0003 ppm	0.0011 ppm	8.4745 ppm	0.0009 ppm	0.0004 ppm	-0.0006 ppm
Concentration per Run 2	4.9914 ppm	0.0002 ppm	0.0012 ppm	8.4975 ppm	0.0003 ppm	0.0000 ppm	-0.0004 ppm
Concentration per Run 3	4.8915 ppm	0.0002 ppm	0.0014 ppm	8.3972 ppm	0.0009 ppm	0.0011 ppm	0.0015 ppm
Concentration RSD	2.8 %	32.3 %	13.4 %	0.6 %	50.0 %	106.6 %	701.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0002 ppm	3.5781 ppm	-0.0001 ppm	0.0776 ppm	0.0008 ppm	-0.0003 ppm	0.0004 ppm
Concentration per Run 1	0.0007 ppm	3.6634 ppm	-0.0004 ppm	0.0774 ppm	0.0000 ppm	0.0003 ppm	0.0002 ppm
Concentration per Run 2	-0.0010 ppm	3.5662 ppm	0.0002 ppm	0.0782 ppm	-0.0003 ppm	-0.0011 ppm	0.0005 ppm
Concentration per Run 3	-0.0003 ppm	3.5046 ppm	0.0000 ppm	0.0773 ppm	0.0026 ppm	-0.0003 ppm	0.0004 ppm
Concentration RSD	433.9 %	2.2 %	292.5 %	0.6 %	207.2 %	210.8 %	41.9 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0007 ppm	96.4604 %	102.8551 %	97.4640 %	99.7086 %	103.2080 %	101.3470 %
Concentration per Run 1	0.0008 ppm	93.9125 %	102.8099 %	97.1782 %	99.5203 %	103.5665 %	101.3634 %
Concentration per Run 2	0.0007 ppm	96.7460 %	102.3152 %	97.3345 %	99.4823 %	102.9554 %	101.5330 %
Concentration per Run 3	0.0007 ppm	98.7228 %	103.4402 %	97.8793 %	100.1230 %	103.1022 %	101.1447 %
Concentration RSD	4.8 %	2.5 %	0.5 %	0.4 %	0.4 %	0.3 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450786-04 WG1969512
Analysis started at: 9/11/2024 8:20:39 AM
Rack 1
Vial 31
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	-0.0017 ppm	0.0000 ppm	0.0125 ppm	0.0429 ppm	0.0000 ppm	22.7918 ppm
Concentration per Run 1	0.0001 ppm	-0.0010 ppm	0.0005 ppm	0.0125 ppm	0.0429 ppm	0.0000 ppm	22.8478 ppm
Concentration per Run 2	0.0000 ppm	-0.0037 ppm	-0.0004 ppm	0.0131 ppm	0.0427 ppm	0.0000 ppm	22.7975 ppm
Concentration per Run 3	0.0002 ppm	-0.0004 ppm	0.0000 ppm	0.0120 ppm	0.0432 ppm	0.0000 ppm	22.7301 ppm
Concentration RSD	145.9 %	104.6 %	2,659.1 %	4.3 %	0.7 %	91.9 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0001 ppm	0.0000 ppm	0.0035 ppm	0.0006 ppm	0.0282 ppm	1.1900 ppm	0.0005 ppm
Concentration per Run 1	-0.0001 ppm	-0.0001 ppm	0.0037 ppm	0.0007 ppm	0.0280 ppm	1.2186 ppm	0.0014 ppm
Concentration per Run 2	-0.0001 ppm	0.0003 ppm	0.0034 ppm	0.0007 ppm	0.0278 ppm	1.1717 ppm	0.0005 ppm
Concentration per Run 3	-0.0001 ppm	-0.0001 ppm	0.0035 ppm	0.0005 ppm	0.0289 ppm	1.1796 ppm	-0.0004 ppm
Concentration RSD	17.1 %	1,296.3 %	5.5 %	20.1 %	2.1 %	2.1 %	175.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	5.5948 ppm	0.0029 ppm	0.0011 ppm	10.4005 ppm	0.0264 ppm	0.0003 ppm	-0.0001 ppm
Concentration per Run 1	5.7237 ppm	0.0030 ppm	0.0009 ppm	10.4101 ppm	0.0265 ppm	0.0013 ppm	0.0002 ppm
Concentration per Run 2	5.5738 ppm	0.0030 ppm	0.0013 ppm	10.4323 ppm	0.0267 ppm	0.0001 ppm	-0.0012 ppm
Concentration per Run 3	5.4869 ppm	0.0028 ppm	0.0011 ppm	10.3591 ppm	0.0261 ppm	-0.0004 ppm	0.0008 ppm
Concentration RSD	2.1 %	4.7 %	18.8 %	0.4 %	1.0 %	278.7 %	1,830.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0009 ppm	6.5378 ppm	-0.0004 ppm	0.0997 ppm	-0.0003 ppm	-0.0001 ppm	0.0001 ppm
Concentration per Run 1	-0.0003 ppm	6.7185 ppm	-0.0005 ppm	0.0996 ppm	-0.0002 ppm	-0.0001 ppm	0.0001 ppm
Concentration per Run 2	-0.0025 ppm	6.5082 ppm	-0.0004 ppm	0.0992 ppm	-0.0004 ppm	-0.0004 ppm	0.0002 ppm
Concentration per Run 3	0.0003 ppm	6.3868 ppm	-0.0003 ppm	0.1001 ppm	-0.0002 ppm	0.0001 ppm	0.0001 ppm
Concentration RSD	173.3 %	2.6 %	20.3 %	0.5 %	31.7 %	231.0 %	82.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0021 ppm	96.4185 %	102.7745 %	97.3783 %	99.6382 %	103.3875 %	101.3227 %
Concentration per Run 1	0.0021 ppm	94.2544 %	102.3800 %	96.5588 %	98.9786 %	103.6262 %	101.2418 %
Concentration per Run 2	0.0020 ppm	96.9220 %	102.7083 %	97.2351 %	100.1890 %	102.9347 %	101.0953 %
Concentration per Run 3	0.0022 ppm	98.0792 %	103.2351 %	98.3411 %	99.7470 %	103.6016 %	101.6311 %
Concentration RSD	4.9 %	2.0 %	0.4 %	0.9 %	0.6 %	0.4 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450786-01 WG1969512
Analysis started at: 9/11/2024 8:24:34 AM
Rack 1
Vial 19
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0002 ppm	-0.0056 ppm	-0.0002 ppm	0.0207 ppm	0.0155 ppm	0.0000 ppm	23.5932 ppm
Concentration per Run 1	0.0003 ppm	-0.0094 ppm	-0.0001 ppm	0.0213 ppm	0.0154 ppm	0.0000 ppm	23.6514 ppm
Concentration per Run 2	0.0000 ppm	-0.0061 ppm	0.0001 ppm	0.0205 ppm	0.0154 ppm	0.0000 ppm	23.4497 ppm
Concentration per Run 3	0.0001 ppm	-0.0012 ppm	-0.0006 ppm	0.0201 ppm	0.0157 ppm	0.0000 ppm	23.6786 ppm
Concentration RSD	91.0 %	74.4 %	200.1 %	3.0 %	0.9 %	799.1 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0001 ppm	-0.0001 ppm	0.0011 ppm	0.0010 ppm	0.0033 ppm	1.9887 ppm	-0.0016 ppm
Concentration per Run 1	-0.0002 ppm	0.0002 ppm	0.0012 ppm	0.0010 ppm	0.0019 ppm	1.9823 ppm	-0.0007 ppm
Concentration per Run 2	-0.0001 ppm	-0.0002 ppm	0.0011 ppm	0.0012 ppm	0.0036 ppm	1.9724 ppm	-0.0035 ppm
Concentration per Run 3	-0.0001 ppm	-0.0001 ppm	0.0012 ppm	0.0009 ppm	0.0044 ppm	2.0114 ppm	-0.0004 ppm
Concentration RSD	52.4 %	444.5 %	2.9 %	12.3 %	39.1 %	1.0 %	110.9 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	5.0832 ppm	0.0011 ppm	0.0009 ppm	10.2390 ppm	0.0003 ppm	0.0007 ppm	-0.0007 ppm
Concentration per Run 1	5.2122 ppm	0.0010 ppm	0.0009 ppm	10.1843 ppm	0.0001 ppm	0.0007 ppm	-0.0010 ppm
Concentration per Run 2	5.0450 ppm	0.0011 ppm	0.0012 ppm	10.2464 ppm	0.0004 ppm	0.0006 ppm	-0.0012 ppm
Concentration per Run 3	4.9923 ppm	0.0011 ppm	0.0008 ppm	10.2864 ppm	0.0004 ppm	0.0009 ppm	0.0001 ppm
Concentration RSD	2.3 %	9.1 %	21.3 %	0.5 %	47.6 %	18.9 %	103.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0007 ppm	1.8448 ppm	-0.0005 ppm	0.0823 ppm	-0.0002 ppm	0.0005 ppm	0.0006 ppm
Concentration per Run 1	-0.0007 ppm	1.8877 ppm	-0.0005 ppm	0.0825 ppm	-0.0004 ppm	0.0012 ppm	0.0006 ppm
Concentration per Run 2	0.0000 ppm	1.8287 ppm	-0.0004 ppm	0.0821 ppm	-0.0001 ppm	0.0004 ppm	0.0005 ppm
Concentration per Run 3	-0.0015 ppm	1.8179 ppm	-0.0006 ppm	0.0824 ppm	-0.0002 ppm	0.0000 ppm	0.0008 ppm
Concentration RSD	99.9 %	2.0 %	17.1 %	0.3 %	64.0 %	118.2 %	18.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0023 ppm	94.9388 %	100.5008 %	95.8355 %	99.1258 %	101.5404 %	99.9098 %
Concentration per Run 1	0.0023 ppm	92.5755 %	99.5260 %	94.7543 %	98.8799 %	100.3197 %	99.9908 %
Concentration per Run 2	0.0023 ppm	95.8405 %	101.0477 %	95.8346 %	99.4976 %	102.0006 %	100.0465 %
Concentration per Run 3	0.0021 ppm	96.4003 %	100.9287 %	96.9176 %	98.9997 %	102.3009 %	99.6921 %
Concentration RSD	5.5 %	2.2 %	0.8 %	1.1 %	0.3 %	1.1 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1969512-3 WG1969512
Analysis started at: 9/11/2024 8:28:30 AM
Rack 1
Vial 20
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0527 ppm	1.9764 ppm	0.1181 ppm	1.0152 ppm	1.9917 ppm	0.0505 ppm	32.6432 ppm
Concentration per Run 1	0.0535 ppm	1.9787 ppm	0.1172 ppm	1.0281 ppm	1.9901 ppm	0.0505 ppm	32.6514 ppm
Concentration per Run 2	0.0525 ppm	1.9675 ppm	0.1182 ppm	1.0120 ppm	1.9875 ppm	0.0505 ppm	32.5711 ppm
Concentration per Run 3	0.0520 ppm	1.9829 ppm	0.1188 ppm	1.0054 ppm	1.9974 ppm	0.0506 ppm	32.7070 ppm
Concentration RSD	1.5 %	0.4 %	0.7 %	1.1 %	0.3 %	0.1 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0549 ppm	0.5155 ppm	0.2056 ppm	0.2633 ppm	0.9924 ppm	12.3222 ppm	-0.0006 ppm
Concentration per Run 1	0.0559 ppm	0.5220 ppm	0.2096 ppm	0.2673 ppm	0.9944 ppm	12.4782 ppm	0.0002 ppm
Concentration per Run 2	0.0548 ppm	0.5156 ppm	0.2045 ppm	0.2619 ppm	0.9871 ppm	12.1529 ppm	-0.0009 ppm
Concentration per Run 3	0.0540 ppm	0.5089 ppm	0.2026 ppm	0.2607 ppm	0.9955 ppm	12.3356 ppm	-0.0011 ppm
Concentration RSD	1.7 %	1.3 %	1.8 %	1.3 %	0.5 %	1.3 %	110.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	15.1236 ppm	0.4972 ppm	0.9298 ppm	20.1359 ppm	0.5224 ppm	0.5259 ppm	0.4923 ppm
Concentration per Run 1	15.4263 ppm	0.4969 ppm	0.9378 ppm	20.1796 ppm	0.5300 ppm	0.5269 ppm	0.4971 ppm
Concentration per Run 2	15.0375 ppm	0.4964 ppm	0.9289 ppm	20.0012 ppm	0.5203 ppm	0.5297 ppm	0.4906 ppm
Concentration per Run 3	14.9068 ppm	0.4982 ppm	0.9227 ppm	20.2268 ppm	0.5169 ppm	0.5212 ppm	0.4892 ppm
Concentration RSD	1.8 %	0.2 %	0.8 %	0.6 %	1.3 %	0.8 %	0.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1201 ppm	2.8014 ppm	1.0144 ppm	1.0625 ppm	1.0494 ppm	0.1190 ppm	0.5235 ppm
Concentration per Run 1	0.1213 ppm	2.8487 ppm	1.0256 ppm	1.0650 ppm	1.0662 ppm	0.1187 ppm	0.5311 ppm
Concentration per Run 2	0.1195 ppm	2.7996 ppm	1.0154 ppm	1.0583 ppm	1.0442 ppm	0.1201 ppm	0.5221 ppm
Concentration per Run 3	0.1196 ppm	2.7559 ppm	1.0021 ppm	1.0642 ppm	1.0377 ppm	0.1182 ppm	0.5173 ppm
Concentration RSD	0.9 %	1.7 %	1.2 %	0.3 %	1.4 %	0.8 %	1.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5228 ppm	99.5553 %	104.3569 %	97.0028 %	98.3225 %	102.1105 %	100.3519 %
Concentration per Run 1	0.5317 ppm	98.0189 %	104.3427 %	97.2444 %	97.4208 %	102.0229 %	100.7548 %
Concentration per Run 2	0.5214 ppm	99.9453 %	105.3308 %	96.0707 %	98.8311 %	103.2545 %	99.7574 %
Concentration per Run 3	0.5152 ppm	100.7016 %	103.3971 %	97.6935 %	98.7155 %	101.0541 %	100.5436 %
Concentration RSD	1.6 %	1.4 %	0.9 %	0.9 %	0.8 %	1.1 %	0.5 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1969512-4 WG1969512
Analysis started at: 9/11/2024 8:32:25 AM
Rack 1
Vial 21
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0001 ppm	-0.0022 ppm	0.0002 ppm	0.0222 ppm	0.0161 ppm	0.0000 ppm	24.4422 ppm
Concentration per Run 1	-0.0002 ppm	0.0003 ppm	0.0004 ppm	0.0228 ppm	0.0161 ppm	0.0000 ppm	24.4883 ppm
Concentration per Run 2	-0.0001 ppm	0.0004 ppm	0.0007 ppm	0.0210 ppm	0.0160 ppm	0.0000 ppm	24.5400 ppm
Concentration per Run 3	0.0000 ppm	-0.0072 ppm	-0.0006 ppm	0.0227 ppm	0.0161 ppm	0.0000 ppm	24.2982 ppm
Concentration RSD	76.4 %	199.9 %	358.1 %	4.6 %	0.4 %	193.7 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0001 ppm	-0.0001 ppm	0.0010 ppm	0.0010 ppm	0.0040 ppm	2.0754 ppm	-0.0006 ppm
Concentration per Run 1	-0.0001 ppm	0.0004 ppm	0.0013 ppm	0.0009 ppm	0.0040 ppm	2.0945 ppm	0.0001 ppm
Concentration per Run 2	-0.0001 ppm	-0.0004 ppm	0.0008 ppm	0.0010 ppm	0.0047 ppm	2.0606 ppm	0.0002 ppm
Concentration per Run 3	-0.0001 ppm	-0.0002 ppm	0.0009 ppm	0.0011 ppm	0.0034 ppm	2.0711 ppm	-0.0019 ppm
Concentration RSD	5.6 %	471.0 %	29.8 %	10.9 %	16.6 %	0.8 %	213.1 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	5.2469 ppm	0.0012 ppm	0.0067 ppm	10.5910 ppm	-0.0003 ppm	0.0007 ppm	0.0011 ppm
Concentration per Run 1	5.4014 ppm	0.0012 ppm	0.0068 ppm	10.6485 ppm	0.0007 ppm	0.0008 ppm	-0.0014 ppm
Concentration per Run 2	5.2213 ppm	0.0012 ppm	0.0071 ppm	10.5080 ppm	-0.0010 ppm	0.0005 ppm	0.0028 ppm
Concentration per Run 3	5.1179 ppm	0.0012 ppm	0.0062 ppm	10.6164 ppm	-0.0006 ppm	0.0009 ppm	0.0019 ppm
Concentration RSD	2.7 %	1.9 %	6.7 %	0.7 %	294.4 %	26.7 %	199.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0002 ppm	1.9090 ppm	0.0025 ppm	0.0853 ppm	-0.0001 ppm	-0.0003 ppm	0.0007 ppm
Concentration per Run 1	-0.0008 ppm	1.9654 ppm	0.0022 ppm	0.0853 ppm	0.0000 ppm	-0.0006 ppm	0.0005 ppm
Concentration per Run 2	0.0001 ppm	1.8949 ppm	0.0032 ppm	0.0852 ppm	-0.0001 ppm	0.0001 ppm	0.0006 ppm
Concentration per Run 3	0.0001 ppm	1.8667 ppm	0.0021 ppm	0.0856 ppm	-0.0002 ppm	-0.0005 ppm	0.0009 ppm
Concentration RSD	274.3 %	2.7 %	23.9 %	0.2 %	166.8 %	120.6 %	24.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0007 ppm	95.1889 %	100.7085 %	96.5420 %	99.3980 %	102.1251 %	100.5705 %
Concentration per Run 1	0.0008 ppm	92.6750 %	100.5404 %	96.0993 %	98.4820 %	101.9883 %	100.7342 %
Concentration per Run 2	0.0007 ppm	95.5317 %	100.2531 %	96.4719 %	99.8259 %	102.2327 %	100.4630 %
Concentration per Run 3	0.0007 ppm	97.3599 %	101.3320 %	97.0549 %	99.8861 %	102.1542 %	100.5142 %
Concentration RSD	11.7 %	2.5 %	0.6 %	0.5 %	0.8 %	0.1 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1969512-5 WG1969512
Analysis started at: 9/11/2024 8:36:21 AM
Rack 1
Vial 22
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0541 ppm	2.0130 ppm	0.1137 ppm	1.0870 ppm	2.0233 ppm	0.0514 ppm	32.4373 ppm
Concentration per Run 1	0.0552 ppm	2.0304 ppm	0.1146 ppm	1.1145 ppm	2.0256 ppm	0.0517 ppm	32.6091 ppm
Concentration per Run 2	0.0542 ppm	1.9892 ppm	0.1134 ppm	1.0886 ppm	2.0166 ppm	0.0511 ppm	32.2113 ppm
Concentration per Run 3	0.0529 ppm	2.0195 ppm	0.1132 ppm	1.0580 ppm	2.0278 ppm	0.0515 ppm	32.4913 ppm
Concentration RSD	2.1 %	1.1 %	0.7 %	2.6 %	0.3 %	0.5 %	0.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0566 ppm	0.5344 ppm	0.2125 ppm	0.2745 ppm	1.0141 ppm	12.7298 ppm	-0.0003 ppm
Concentration per Run 1	0.0585 ppm	0.5492 ppm	0.2174 ppm	0.2817 ppm	1.0140 ppm	12.8814 ppm	-0.0005 ppm
Concentration per Run 2	0.0564 ppm	0.5313 ppm	0.2120 ppm	0.2741 ppm	1.0082 ppm	12.5436 ppm	0.0005 ppm
Concentration per Run 3	0.0550 ppm	0.5229 ppm	0.2082 ppm	0.2676 ppm	1.0202 ppm	12.7644 ppm	-0.0009 ppm
Concentration RSD	3.1 %	2.5 %	2.2 %	2.6 %	0.6 %	1.3 %	244.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	15.7226 ppm	0.5041 ppm	0.9857 ppm	20.4991 ppm	0.5391 ppm	0.5438 ppm	0.4150 ppm
Concentration per Run 1	16.2041 ppm	0.5065 ppm	1.0025 ppm	20.5947 ppm	0.5514 ppm	0.5459 ppm	0.4178 ppm
Concentration per Run 2	15.6018 ppm	0.4997 ppm	0.9850 ppm	20.3051 ppm	0.5387 ppm	0.5446 ppm	0.4175 ppm
Concentration per Run 3	15.3619 ppm	0.5060 ppm	0.9694 ppm	20.5975 ppm	0.5271 ppm	0.5410 ppm	0.4098 ppm
Concentration RSD	2.8 %	0.8 %	1.7 %	0.8 %	2.3 %	0.5 %	1.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1151 ppm	3.1409 ppm	1.0836 ppm	1.1053 ppm	1.1176 ppm	0.1162 ppm	0.5447 ppm
Concentration per Run 1	0.1158 ppm	3.2316 ppm	1.1043 ppm	1.1088 ppm	1.1477 ppm	0.1170 ppm	0.5567 ppm
Concentration per Run 2	0.1143 ppm	3.1292 ppm	1.0793 ppm	1.0994 ppm	1.1159 ppm	0.1152 ppm	0.5433 ppm
Concentration per Run 3	0.1151 ppm	3.0619 ppm	1.0673 ppm	1.1077 ppm	1.0892 ppm	0.1164 ppm	0.5342 ppm
Concentration RSD	0.6 %	2.7 %	1.7 %	0.5 %	2.6 %	0.8 %	2.1 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5416 ppm	95.9497 %	103.8356 %	93.9769 %	97.9223 %	102.5218 %	98.7536 %
Concentration per Run 1	0.5575 ppm	93.2883 %	103.3218 %	93.7120 %	96.8408 %	102.6989 %	98.9509 %
Concentration per Run 2	0.5390 ppm	96.6010 %	104.9453 %	94.1869 %	98.6821 %	103.0156 %	98.7403 %
Concentration per Run 3	0.5283 ppm	97.9596 %	103.2396 %	94.0318 %	98.2441 %	101.8509 %	98.5695 %
Concentration RSD	2.7 %	2.5 %	0.9 %	0.3 %	1.0 %	0.6 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1969512-6D5 WG1969512
Analysis started at: 9/11/2024 8:40:18 AM
Rack 1
Vial 23
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	-0.0046 ppm	-0.0007 ppm	0.0048 ppm	0.0030 ppm	0.0000 ppm	4.6198 ppm
Concentration per Run 1	0.0000 ppm	-0.0091 ppm	-0.0011 ppm	0.0062 ppm	0.0030 ppm	0.0000 ppm	4.6056 ppm
Concentration per Run 2	0.0003 ppm	-0.0053 ppm	-0.0002 ppm	0.0037 ppm	0.0028 ppm	0.0000 ppm	4.6180 ppm
Concentration per Run 3	-0.0001 ppm	0.0004 ppm	-0.0008 ppm	0.0044 ppm	0.0031 ppm	0.0000 ppm	4.6358 ppm
Concentration RSD	371.8 %	103.1 %	68.0 %	27.2 %	4.9 %	115.9 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0001 ppm	0.0002 ppm	0.0004 ppm	0.0032 ppm	0.4110 ppm	-0.0001 ppm
Concentration per Run 1	0.0000 ppm	-0.0003 ppm	0.0004 ppm	0.0004 ppm	0.0016 ppm	0.4157 ppm	0.0002 ppm
Concentration per Run 2	0.0000 ppm	0.0005 ppm	0.0001 ppm	0.0006 ppm	0.0052 ppm	0.4151 ppm	-0.0001 ppm
Concentration per Run 3	-0.0001 ppm	0.0001 ppm	0.0001 ppm	0.0003 ppm	0.0028 ppm	0.4023 ppm	-0.0003 ppm
Concentration RSD	35.4 %	410.5 %	82.0 %	31.8 %	56.7 %	1.8 %	293.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.9629 ppm	0.0003 ppm	0.0068 ppm	2.0083 ppm	-0.0002 ppm	0.0001 ppm	0.0069 ppm
Concentration per Run 1	0.9795 ppm	0.0004 ppm	0.0067 ppm	1.9956 ppm	-0.0004 ppm	0.0002 ppm	0.0071 ppm
Concentration per Run 2	0.9579 ppm	0.0002 ppm	0.0067 ppm	2.0064 ppm	-0.0004 ppm	0.0005 ppm	0.0048 ppm
Concentration per Run 3	0.9513 ppm	0.0004 ppm	0.0070 ppm	2.0228 ppm	0.0004 ppm	-0.0005 ppm	0.0087 ppm
Concentration RSD	1.5 %	27.0 %	3.0 %	0.7 %	286.6 %	670.0 %	28.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0005 ppm	0.3324 ppm	0.0063 ppm	0.0157 ppm	0.0000 ppm	-0.0006 ppm	0.0000 ppm
Concentration per Run 1	-0.0003 ppm	0.3390 ppm	0.0068 ppm	0.0157 ppm	0.0000 ppm	-0.0006 ppm	0.0000 ppm
Concentration per Run 2	-0.0009 ppm	0.3310 ppm	0.0066 ppm	0.0156 ppm	0.0000 ppm	-0.0002 ppm	0.0002 ppm
Concentration per Run 3	-0.0002 ppm	0.3271 ppm	0.0055 ppm	0.0157 ppm	0.0000 ppm	-0.0011 ppm	0.0000 ppm
Concentration RSD	74.5 %	1.8 %	11.4 %	0.4 %	71.2 %	71.4 %	250.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0010 ppm	96.8052 %	95.0660 %	101.4789 %	97.3667 %	94.1186 %	100.2650 %
Concentration per Run 1	0.0010 ppm	95.4509 %	94.9716 %	101.0903 %	97.1954 %	94.3139 %	99.9965 %
Concentration per Run 2	0.0011 ppm	96.4921 %	95.9461 %	101.7589 %	96.8879 %	95.0112 %	100.3961 %
Concentration per Run 3	0.0009 ppm	98.4725 %	94.2804 %	101.5875 %	98.0168 %	93.0306 %	100.4024 %
Concentration RSD	9.2 %	1.6 %	0.9 %	0.3 %	0.6 %	1.1 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCV
Analysis started at: 9/11/2024 8:44:17 AM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.5079 ppm	0.4734 ppm	0.4528 ppm	0.4804 ppm	0.4886 ppm	0.4981 ppm	0.4819 ppm
Concentration per Run 1	0.5132 ppm	0.4721 ppm	0.4531 ppm	0.4833 ppm	0.4890 ppm	0.4995 ppm	0.4854 ppm
Concentration per Run 2	0.5075 ppm	0.4719 ppm	0.4507 ppm	0.4790 ppm	0.4888 ppm	0.4967 ppm	0.4776 ppm
Concentration per Run 3	0.5029 ppm	0.4762 ppm	0.4545 ppm	0.4790 ppm	0.4880 ppm	0.4982 ppm	0.4828 ppm
Recovery Percentage 1	101.575 %	94.678 %	90.552 %	96.088 %	97.722 %	99.622 %	96.387 %
Concentration RSD	1.0 %	0.5 %	0.4 %	0.5 %	0.1 %	0.3 %	0.8 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.5159 ppm	0.5181 ppm	0.4992 ppm	0.4945 ppm	0.4962 ppm	5.1152 ppm	0.5040 ppm
Concentration per Run 1	0.5223 ppm	0.5242 ppm	0.5058 ppm	0.5007 ppm	0.4948 ppm	5.1170 ppm	0.5077 ppm
Concentration per Run 2	0.5148 ppm	0.5165 ppm	0.4982 ppm	0.4916 ppm	0.4964 ppm	5.1517 ppm	0.5025 ppm
Concentration per Run 3	0.5106 ppm	0.5135 ppm	0.4936 ppm	0.4911 ppm	0.4974 ppm	5.0769 ppm	0.5019 ppm
Recovery Percentage 1	103.182 %	103.611 %	99.842 %	98.899 %	99.238 %	102.304 %	100.800 %
Concentration RSD	1.2 %	1.1 %	1.2 %	1.1 %	0.3 %	0.7 %	0.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.5084 ppm	0.4832 ppm	0.5068 ppm	10.0699 ppm	0.5173 ppm	0.4816 ppm	0.5056 ppm
Concentration per Run 1	0.5131 ppm	0.4847 ppm	0.5086 ppm	10.0590 ppm	0.5239 ppm	0.4822 ppm	0.5094 ppm
Concentration per Run 2	0.5102 ppm	0.4821 ppm	0.5041 ppm	10.0837 ppm	0.5146 ppm	0.4820 ppm	0.5015 ppm
Concentration per Run 3	0.5018 ppm	0.4828 ppm	0.5077 ppm	10.0669 ppm	0.5135 ppm	0.4806 ppm	0.5058 ppm
Recovery Percentage 1	101.671 %	96.642 %	101.362 %	100.699 %	103.468 %	96.313 %	101.120 %
Concentration RSD	1.2 %	0.3 %	0.5 %	0.1 %	1.1 %	0.2 %	0.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4645 ppm	5.3053 ppm	0.5347 ppm	0.5038 ppm	0.5028 ppm	0.4800 ppm	0.5001 ppm
Concentration per Run 1	0.4638 ppm	5.3599 ppm	0.5419 ppm	0.5063 ppm	0.5075 ppm	0.4784 ppm	0.5053 ppm
Concentration per Run 2	0.4647 ppm	5.2817 ppm	0.5341 ppm	0.5008 ppm	0.5011 ppm	0.4807 ppm	0.4987 ppm
Concentration per Run 3	0.4650 ppm	5.2743 ppm	0.5283 ppm	0.5044 ppm	0.4998 ppm	0.4810 ppm	0.4963 ppm
Recovery Percentage 1	92.902 %	101.053 %	106.950 %	100.764 %	100.563 %	96.007 %	100.017 %
Concentration RSD	0.1 %	0.9 %	1.3 %	0.6 %	0.8 %	0.3 %	0.9 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5128 ppm	101.7974 %	99.5976 %	102.3391 %	97.4339 %	96.4997 %	99.8881 %
Concentration per Run 1	0.5214 ppm	100.6502 %	99.5976 %	102.1681 %	96.9395 %	96.5067 %	99.8966 %
Concentration per Run 2	0.5091 ppm	101.8984 %	99.5371 %	102.5125 %	97.5574 %	96.2894 %	99.9888 %
Concentration per Run 3	0.5079 ppm	102.8437 %	99.6580 %	102.3366 %	97.8049 %	96.7029 %	99.7790 %
Recovery Percentage 1	102.555 %						
Concentration RSD	1.5 %	1.1 %	0.1 %	0.2 %	0.5 %	0.2 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCB
Analysis started at: 9/11/2024 8:48:13 AM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	-0.0034 ppm	0.0002 ppm	0.0006 ppm	0.0000 ppm	0.0000 ppm	-0.0018 ppm
Concentration per Run 1	0.0000 ppm	-0.0052 ppm	0.0011 ppm	0.0009 ppm	0.0001 ppm	0.0000 ppm	-0.0023 ppm
Concentration per Run 2	0.0003 ppm	-0.0009 ppm	0.0004 ppm	0.0005 ppm	-0.0001 ppm	0.0000 ppm	-0.0016 ppm
Concentration per Run 3	0.0000 ppm	-0.0040 ppm	-0.0009 ppm	0.0003 ppm	-0.0001 ppm	0.0000 ppm	-0.0014 ppm
Recovery Percentage 1	1.303 %	-3.371 %	6.771 %	1.887 %	-0.177 %	0.098 %	-1.759 %
Concentration RSD	184.3 %	65.4 %	484.6 %	55.4 %	592.9 %	220.8 %	27.0 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0001 ppm	0.0001 ppm	0.0007 ppm	0.0035 ppm	0.0131 ppm	-0.0004 ppm
Concentration per Run 1	0.0000 ppm	-0.0001 ppm	0.0004 ppm	0.0005 ppm	0.0031 ppm	0.0298 ppm	-0.0003 ppm
Concentration per Run 2	0.0000 ppm	0.0002 ppm	0.0002 ppm	0.0008 ppm	0.0034 ppm	0.0112 ppm	-0.0001 ppm
Concentration per Run 3	0.0000 ppm	0.0000 ppm	-0.0002 ppm	0.0009 ppm	0.0040 ppm	-0.0017 ppm	-0.0009 ppm
Recovery Percentage 1	0.285 %	0.251 %	1.372 %	7.145 %	6.911 %	0.525 %	-4.010 %
Concentration RSD	144.4 %	300.1 %	211.0 %	30.5 %	13.3 %	120.7 %	105.1 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0000 ppm	0.0002 ppm	0.0023 ppm	0.0193 ppm	0.0001 ppm	0.0005 ppm	0.0007 ppm
Concentration per Run 1	-0.0010 ppm	0.0002 ppm	0.0022 ppm	0.0247 ppm	0.0002 ppm	0.0002 ppm	0.0017 ppm
Concentration per Run 2	0.0000 ppm	0.0002 ppm	0.0027 ppm	0.0142 ppm	0.0002 ppm	0.0010 ppm	0.0006 ppm
Concentration per Run 3	0.0010 ppm	0.0001 ppm	0.0021 ppm	0.0190 ppm	-0.0002 ppm	0.0003 ppm	-0.0001 ppm
Recovery Percentage 1	-0.018 %	1.789 %	4.700 %	0.964 %	0.282 %	4.921 %	1.481 %
Concentration RSD	5,363.4 %	33.4 %	14.4 %	27.3 %	317.6 %	84.7 %	124.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0009 ppm	0.0000 ppm	0.0011 ppm	0.0000 ppm	-0.0002 ppm	0.0000 ppm	0.0000 ppm
Concentration per Run 1	0.0011 ppm	0.0003 ppm	0.0016 ppm	0.0001 ppm	-0.0002 ppm	-0.0004 ppm	-0.0001 ppm
Concentration per Run 2	0.0006 ppm	0.0009 ppm	0.0009 ppm	0.0000 ppm	-0.0001 ppm	-0.0001 ppm	0.0001 ppm
Concentration per Run 3	0.0011 ppm	-0.0011 ppm	0.0007 ppm	-0.0001 ppm	-0.0001 ppm	0.0005 ppm	-0.0001 ppm
Recovery Percentage 1	9.255 %	0.005 %	2.110 %	0.106 %	-1.571 %	0.156 %	-0.007 %
Concentration RSD	31.6 %	4,023.2 %	43.0 %	932.7 %	44.0 %	1,421.5 %	16,255.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0012 ppm	97.7589 %	99.1401 %	101.9989 %	99.8050 %	99.3138 %	102.0089 %
Concentration per Run 1	0.0013 ppm	95.5717 %	98.9788 %	101.2102 %	98.9855 %	99.7147 %	101.9300 %
Concentration per Run 2	0.0009 ppm	97.9799 %	99.4634 %	102.4807 %	100.2046 %	98.9964 %	102.4642 %
Concentration per Run 3	0.0012 ppm	99.7250 %	98.9780 %	102.3059 %	100.2250 %	99.2303 %	101.6325 %
Recovery Percentage 1	23.119 %						
Concentration RSD	16.1 %	2.1 %	0.3 %	0.7 %	0.7 %	0.4 %	0.4 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1969512-1 WG1969512
Analysis started at: 9/11/2024 9:08:14 AM
Rack 1
Vial 44
Comment rr

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	-0.0058 ppm	0.0007 ppm	0.0006 ppm	-0.0001 ppm	0.0000 ppm	-0.0021 ppm
Concentration per Run 1	0.0001 ppm	-0.0044 ppm	-0.0004 ppm	0.0007 ppm	-0.0001 ppm	0.0000 ppm	-0.0035 ppm
Concentration per Run 2	-0.0001 ppm	-0.0035 ppm	0.0017 ppm	-0.0004 ppm	-0.0001 ppm	0.0000 ppm	-0.0015 ppm
Concentration per Run 3	0.0002 ppm	-0.0094 ppm	0.0007 ppm	0.0015 ppm	0.0000 ppm	0.0000 ppm	-0.0014 ppm
Recovery Percentage 1	1.410 %	-5.753 %	21.749 %	2.033 %	-0.958 %	-0.370 %	-2.134 %
Concentration RSD	154.5 %	55.4 %	162.5 %	159.3 %	60.8 %	170.1 %	55.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0003 ppm	0.0009 ppm	0.0023 ppm	0.0000 ppm	0.0031 ppm	-0.0019 ppm
Concentration per Run 1	0.0000 ppm	-0.0005 ppm	0.0008 ppm	0.0025 ppm	-0.0010 ppm	0.0034 ppm	-0.0014 ppm
Concentration per Run 2	0.0000 ppm	-0.0003 ppm	0.0011 ppm	0.0025 ppm	0.0003 ppm	0.0050 ppm	-0.0024 ppm
Concentration per Run 3	0.0000 ppm	0.0000 ppm	0.0008 ppm	0.0020 ppm	0.0007 ppm	0.0010 ppm	-0.0020 ppm
Recovery Percentage 1	-0.596 %	-1.473 %	8.963 %	23.306 %	0.000 %	0.126 %	-19.313 %
Concentration RSD	34.6 %	80.6 %	18.3 %	11.5 %	599,782.8 %	64.7 %	26.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	-0.0002 ppm	0.0000 ppm	0.0005 ppm	0.0065 ppm	-0.0001 ppm	0.0010 ppm	-0.0010 ppm
Concentration per Run 1	-0.0011 ppm	0.0001 ppm	0.0004 ppm	0.0014 ppm	0.0001 ppm	0.0007 ppm	-0.0001 ppm
Concentration per Run 2	0.0000 ppm	-0.0001 ppm	0.0004 ppm	0.0120 ppm	-0.0003 ppm	0.0010 ppm	-0.0023 ppm
Concentration per Run 3	0.0005 ppm	0.0001 ppm	0.0006 ppm	0.0059 ppm	0.0000 ppm	0.0014 ppm	-0.0006 ppm
Recovery Percentage 1	-0.176 %	0.392 %	0.939 %	0.323 %	-0.204 %	10.372 %	-1.973 %
Concentration RSD	461.9 %	238.9 %	31.4 %	82.5 %	352.2 %	33.4 %	114.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0008 ppm	0.0031 ppm	0.0001 ppm	0.0001 ppm	-0.0003 ppm	0.0003 ppm	-0.0001 ppm
Concentration per Run 1	-0.0017 ppm	0.0056 ppm	0.0001 ppm	0.0000 ppm	-0.0003 ppm	0.0005 ppm	-0.0001 ppm
Concentration per Run 2	-0.0004 ppm	0.0023 ppm	0.0002 ppm	0.0001 ppm	-0.0002 ppm	0.0000 ppm	-0.0001 ppm
Concentration per Run 3	-0.0003 ppm	0.0014 ppm	0.0000 ppm	0.0001 ppm	-0.0004 ppm	0.0005 ppm	0.0000 ppm
Recovery Percentage 1	-7.920 %	0.622 %	0.214 %	0.676 %	-2.769 %	1.599 %	-0.852 %
Concentration RSD	96.3 %	71.8 %	106.9 %	70.3 %	38.0 %	78.7 %	65.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0015 ppm	95.9214 %	93.7244 %	98.8905 %	101.1884 %	96.5043 %	101.8154 %
Concentration per Run 1	0.0014 ppm	95.2273 %	93.6031 %	98.1278 %	101.6698 %	96.7657 %	101.7654 %
Concentration per Run 2	0.0017 ppm	96.2919 %	93.6337 %	99.4212 %	101.3891 %	96.4230 %	102.1144 %
Concentration per Run 3	0.0016 ppm	96.2451 %	93.9363 %	99.1226 %	100.5062 %	96.3242 %	101.5663 %
Recovery Percentage 1	30.565 %						
Concentration RSD	10.3 %	0.6 %	0.2 %	0.7 %	0.6 %	0.2 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: Test FM 0244 CHL
Analysis started at: 9/11/2024 9:12:28 AM
Rack 1
Vial 41
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	0.0381 ppm	0.1172 ppm	1.0885 ppm	0.0116 ppm	-0.0001 ppm	10.6717 ppm
Concentration per Run 1	0.0000 ppm	0.0393 ppm	0.1169 ppm	1.1117 ppm	0.0115 ppm	-0.0001 ppm	10.7651 ppm
Concentration per Run 2	-0.0002 ppm	0.0387 ppm	0.1176 ppm	1.0830 ppm	0.0116 ppm	-0.0001 ppm	10.6597 ppm
Concentration per Run 3	0.0003 ppm	0.0362 ppm	0.1170 ppm	1.0709 ppm	0.0116 ppm	-0.0001 ppm	10.5903 ppm
Concentration RSD	2,907.5 %	4.3 %	0.3 %	1.9 %	0.3 %	21.3 %	0.8 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0034 ppm	0.0001 ppm	-0.0001 ppm	0.0005 ppm	0.0074 ppm	11.2580 ppm	-0.0024 ppm
Concentration per Run 1	0.0035 ppm	-0.0006 ppm	0.0003 ppm	0.0006 ppm	0.0073 ppm	11.3254 ppm	-0.0021 ppm
Concentration per Run 2	0.0034 ppm	0.0004 ppm	-0.0002 ppm	0.0005 ppm	0.0083 ppm	11.2038 ppm	-0.0034 ppm
Concentration per Run 3	0.0034 ppm	0.0004 ppm	-0.0004 ppm	0.0003 ppm	0.0068 ppm	11.2448 ppm	-0.0018 ppm
Concentration RSD	1.5 %	796.0 %	339.1 %	39.6 %	10.0 %	0.5 %	35.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	11.5477 ppm	0.0002 ppm	0.9791 ppm	11.0924 ppm	0.0001 ppm	0.5528 ppm	-0.0021 ppm
Concentration per Run 1	11.6825 ppm	0.0001 ppm	0.9927 ppm	11.1209 ppm	-0.0005 ppm	0.5550 ppm	-0.0015 ppm
Concentration per Run 2	11.4579 ppm	0.0003 ppm	0.9772 ppm	11.1238 ppm	-0.0002 ppm	0.5536 ppm	-0.0016 ppm
Concentration per Run 3	11.5025 ppm	0.0001 ppm	0.9672 ppm	11.0326 ppm	0.0009 ppm	0.5498 ppm	-0.0032 ppm
Concentration RSD	1.0 %	75.4 %	1.3 %	0.5 %	1,442.4 %	0.5 %	46.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1222 ppm	0.8647 ppm	1.1027 ppm	1.0300 ppm	1.1292 ppm	0.1247 ppm	0.0006 ppm
Concentration per Run 1	0.1239 ppm	0.8853 ppm	1.1186 ppm	1.0375 ppm	1.1491 ppm	0.1252 ppm	0.0008 ppm
Concentration per Run 2	0.1222 ppm	0.8594 ppm	1.0994 ppm	1.0307 ppm	1.1264 ppm	0.1254 ppm	0.0006 ppm
Concentration per Run 3	0.1206 ppm	0.8495 ppm	1.0902 ppm	1.0219 ppm	1.1121 ppm	0.1235 ppm	0.0005 ppm
Concentration RSD	1.3 %	2.1 %	1.3 %	0.8 %	1.7 %	0.9 %	25.9 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0003 ppm	93.4563 %	91.6517 %	95.9757 %	96.7796 %	91.8642 %	98.7352 %
Concentration per Run 1	0.0003 ppm	91.7174 %	91.3731 %	95.4806 %	96.4599 %	92.1085 %	98.7520 %
Concentration per Run 2	0.0002 ppm	94.1508 %	91.8558 %	95.8455 %	97.4518 %	92.2307 %	98.6825 %
Concentration per Run 3	0.0004 ppm	94.5008 %	91.7264 %	96.6009 %	96.4272 %	91.2533 %	98.7709 %
Concentration RSD	39.2 %	1.6 %	0.3 %	0.6 %	0.6 %	0.6 %	0.0 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: Test FM 0252 CHL
Analysis started at: 9/11/2024 9:47:08 AM
Rack 1
Vial 42
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0001 ppm	0.0115 ppm	0.1177 ppm	1.0333 ppm	0.0154 ppm	-0.0001 ppm	10.3805 ppm
Concentration per Run 1	0.0002 ppm	0.0067 ppm	0.1183 ppm	1.0332 ppm	0.0154 ppm	-0.0001 ppm	10.4420 ppm
Concentration per Run 2	-0.0003 ppm	0.0133 ppm	0.1175 ppm	1.0348 ppm	0.0155 ppm	0.0000 ppm	10.3786 ppm
Concentration per Run 3	-0.0001 ppm	0.0145 ppm	0.1172 ppm	1.0320 ppm	0.0154 ppm	-0.0001 ppm	10.3208 ppm
Concentration RSD	339.0 %	36.7 %	0.5 %	0.1 %	0.2 %	38.5 %	0.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0032 ppm	-0.0005 ppm	0.0000 ppm	0.0002 ppm	0.0105 ppm	11.1227 ppm	-0.0012 ppm
Concentration per Run 1	0.0032 ppm	-0.0003 ppm	-0.0001 ppm	0.0000 ppm	0.0120 ppm	11.1840 ppm	-0.0011 ppm
Concentration per Run 2	0.0032 ppm	-0.0006 ppm	0.0001 ppm	0.0003 ppm	0.0090 ppm	11.0899 ppm	-0.0006 ppm
Concentration per Run 3	0.0032 ppm	-0.0007 ppm	0.0002 ppm	0.0003 ppm	0.0104 ppm	11.0941 ppm	-0.0020 ppm
Concentration RSD	0.4 %	43.1 %	353.6 %	98.1 %	13.9 %	0.5 %	58.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	10.8447 ppm	0.0003 ppm	0.9349 ppm	10.7832 ppm	0.0004 ppm	0.5412 ppm	-0.0019 ppm
Concentration per Run 1	10.8790 ppm	0.0003 ppm	0.9316 ppm	10.8073 ppm	0.0001 ppm	0.5462 ppm	-0.0041 ppm
Concentration per Run 2	10.8579 ppm	0.0003 ppm	0.9373 ppm	10.7454 ppm	0.0006 ppm	0.5403 ppm	-0.0004 ppm
Concentration per Run 3	10.7973 ppm	0.0004 ppm	0.9359 ppm	10.7970 ppm	0.0004 ppm	0.5372 ppm	-0.0012 ppm
Concentration RSD	0.4 %	19.3 %	0.3 %	0.3 %	71.5 %	0.8 %	101.6 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1226 ppm	0.6188 ppm	1.0456 ppm	1.0237 ppm	1.0874 ppm	0.1239 ppm	0.0005 ppm
Concentration per Run 1	0.1223 ppm	0.6209 ppm	1.0419 ppm	1.0258 ppm	1.0850 ppm	0.1261 ppm	0.0005 ppm
Concentration per Run 2	0.1212 ppm	0.6191 ppm	1.0528 ppm	1.0259 ppm	1.0930 ppm	0.1230 ppm	0.0005 ppm
Concentration per Run 3	0.1245 ppm	0.6164 ppm	1.0422 ppm	1.0194 ppm	1.0842 ppm	0.1226 ppm	0.0004 ppm
Concentration RSD	1.4 %	0.4 %	0.6 %	0.4 %	0.5 %	1.5 %	17.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0035 ppm	100.2819 %	102.4156 %	98.5176 %	101.3604 %	102.6388 %	101.6514 %
Concentration per Run 1	0.0035 ppm	100.2800 %	101.6093 %	97.7622 %	102.2048 %	101.6985 %	101.6890 %
Concentration per Run 2	0.0035 ppm	100.2009 %	102.3207 %	98.8072 %	101.3033 %	102.5149 %	101.7976 %
Concentration per Run 3	0.0035 ppm	100.3648 %	103.3169 %	98.9834 %	100.5731 %	103.7031 %	101.4675 %
Concentration RSD	0.4 %	0.1 %	0.8 %	0.7 %	0.8 %	1.0 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450786-05 WG1969512
Analysis started at: 9/11/2024 9:52:33 AM
Rack 1
Vial 32
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0072 ppm	-0.0008 ppm	0.0654 ppm	0.0921 ppm	0.0000 ppm	63.2653 ppm
Concentration per Run 1	0.0001 ppm	-0.0067 ppm	-0.0012 ppm	0.0647 ppm	0.0924 ppm	0.0000 ppm	63.6802 ppm
Concentration per Run 2	-0.0001 ppm	-0.0100 ppm	-0.0016 ppm	0.0665 ppm	0.0927 ppm	0.0000 ppm	63.3513 ppm
Concentration per Run 3	0.0000 ppm	-0.0048 ppm	0.0004 ppm	0.0651 ppm	0.0912 ppm	0.0000 ppm	62.7645 ppm
Concentration RSD	823.2 %	36.9 %	127.9 %	1.5 %	0.8 %	416.6 %	0.7 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0002 ppm	0.0002 ppm	0.0008 ppm	0.0017 ppm	0.0072 ppm	9.3898 ppm	-0.0003 ppm
Concentration per Run 1	-0.0002 ppm	0.0001 ppm	0.0007 ppm	0.0017 ppm	0.0073 ppm	9.5077 ppm	0.0004 ppm
Concentration per Run 2	-0.0002 ppm	0.0002 ppm	0.0010 ppm	0.0015 ppm	0.0071 ppm	9.3845 ppm	-0.0007 ppm
Concentration per Run 3	-0.0002 ppm	0.0002 ppm	0.0007 ppm	0.0018 ppm	0.0071 ppm	9.2771 ppm	-0.0004 ppm
Concentration RSD	11.1 %	34.3 %	15.6 %	7.8 %	1.9 %	1.2 %	224.9 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	12.2385 ppm	2.6177 ppm	0.0039 ppm	12.2347 ppm	0.0011 ppm	0.0007 ppm	-0.0016 ppm
Concentration per Run 1	12.3429 ppm	2.6360 ppm	0.0041 ppm	12.2266 ppm	0.0005 ppm	0.0012 ppm	-0.0021 ppm
Concentration per Run 2	12.2727 ppm	2.6230 ppm	0.0039 ppm	12.2566 ppm	0.0016 ppm	0.0005 ppm	-0.0004 ppm
Concentration per Run 3	12.0999 ppm	2.5940 ppm	0.0036 ppm	12.2209 ppm	0.0012 ppm	0.0003 ppm	-0.0024 ppm
Concentration RSD	1.0 %	0.8 %	6.3 %	0.2 %	50.1 %	72.0 %	68.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0007 ppm	4.3054 ppm	0.0019 ppm	0.2363 ppm	-0.0002 ppm	-0.0009 ppm	0.0003 ppm
Concentration per Run 1	0.0000 ppm	4.3303 ppm	0.0017 ppm	0.2383 ppm	-0.0002 ppm	-0.0009 ppm	0.0003 ppm
Concentration per Run 2	-0.0034 ppm	4.3121 ppm	0.0025 ppm	0.2364 ppm	-0.0002 ppm	-0.0011 ppm	0.0003 ppm
Concentration per Run 3	0.0013 ppm	4.2739 ppm	0.0015 ppm	0.2341 ppm	-0.0002 ppm	-0.0007 ppm	0.0003 ppm
Concentration RSD	341.0 %	0.7 %	28.5 %	0.9 %	16.3 %	22.5 %	6.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0010 ppm	97.5317 %	102.2390 %	95.1032 %	100.8152 %	103.7481 %	101.3438 %
Concentration per Run 1	0.0011 ppm	97.3854 %	101.4442 %	94.4493 %	101.7300 %	103.2875 %	100.8540 %
Concentration per Run 2	0.0010 ppm	97.2163 %	102.2259 %	95.1597 %	100.4223 %	104.0193 %	101.4636 %
Concentration per Run 3	0.0010 ppm	97.9933 %	103.0471 %	95.7007 %	100.2933 %	103.9375 %	101.7139 %
Concentration RSD	5.8 %	0.4 %	0.8 %	0.7 %	0.8 %	0.4 %	0.4 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450786-06 WG1969512
Analysis started at: 9/11/2024 9:56:33 AM
Rack 1
Vial 33
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	-0.0016 ppm	0.0010 ppm	0.0717 ppm	0.0565 ppm	0.0000 ppm	71.1873 ppm
Concentration per Run 1	0.0001 ppm	0.0003 ppm	0.0016 ppm	0.0736 ppm	0.0570 ppm	0.0000 ppm	71.7248 ppm
Concentration per Run 2	0.0003 ppm	-0.0024 ppm	0.0001 ppm	0.0713 ppm	0.0568 ppm	0.0000 ppm	71.4874 ppm
Concentration per Run 3	0.0001 ppm	-0.0026 ppm	0.0013 ppm	0.0700 ppm	0.0558 ppm	0.0000 ppm	70.3499 ppm
Concentration RSD	79.0 %	104.3 %	77.6 %	2.5 %	1.2 %	192.0 %	1.0 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0004 ppm	0.0001 ppm	0.0097 ppm	0.0020 ppm	0.0850 ppm	2.5130 ppm	0.0003 ppm
Concentration per Run 1	-0.0003 ppm	-0.0003 ppm	0.0097 ppm	0.0018 ppm	0.0855 ppm	2.5658 ppm	0.0012 ppm
Concentration per Run 2	-0.0004 ppm	0.0003 ppm	0.0098 ppm	0.0019 ppm	0.0846 ppm	2.5123 ppm	0.0007 ppm
Concentration per Run 3	-0.0004 ppm	0.0001 ppm	0.0095 ppm	0.0023 ppm	0.0848 ppm	2.4607 ppm	-0.0010 ppm
Concentration RSD	4.9 %	541.2 %	1.4 %	12.9 %	0.5 %	2.1 %	407.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	14.0313 ppm	0.3776 ppm	0.0015 ppm	16.7447 ppm	0.0073 ppm	0.0006 ppm	-0.0015 ppm
Concentration per Run 1	14.2954 ppm	0.3815 ppm	0.0016 ppm	16.9661 ppm	0.0074 ppm	0.0001 ppm	-0.0033 ppm
Concentration per Run 2	14.0048 ppm	0.3790 ppm	0.0016 ppm	16.7347 ppm	0.0075 ppm	0.0005 ppm	0.0000 ppm
Concentration per Run 3	13.7936 ppm	0.3724 ppm	0.0012 ppm	16.5332 ppm	0.0070 ppm	0.0011 ppm	-0.0011 ppm
Concentration RSD	1.8 %	1.2 %	14.7 %	1.3 %	3.4 %	91.8 %	112.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0001 ppm	5.7560 ppm	0.0003 ppm	0.2622 ppm	-0.0004 ppm	0.0002 ppm	0.0004 ppm
Concentration per Run 1	0.0003 ppm	5.8604 ppm	-0.0003 ppm	0.2628 ppm	-0.0006 ppm	-0.0008 ppm	0.0004 ppm
Concentration per Run 2	-0.0010 ppm	5.7322 ppm	0.0003 ppm	0.2629 ppm	-0.0003 ppm	0.0004 ppm	0.0005 ppm
Concentration per Run 3	0.0012 ppm	5.6754 ppm	0.0009 ppm	0.2610 ppm	-0.0003 ppm	0.0010 ppm	0.0004 ppm
Concentration RSD	800.1 %	1.6 %	209.2 %	0.4 %	50.3 %	400.7 %	18.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0008 ppm	97.9460 %	102.8005 %	96.3605 %	100.5639 %	102.9428 %	101.4802 %
Concentration per Run 1	0.0006 ppm	96.5311 %	101.3740 %	95.8902 %	100.4105 %	101.9807 %	101.5926 %
Concentration per Run 2	0.0009 ppm	97.8619 %	101.8589 %	96.3361 %	100.4257 %	102.1464 %	101.5746 %
Concentration per Run 3	0.0009 ppm	99.4448 %	105.1687 %	96.8550 %	100.8557 %	104.7013 %	101.2733 %
Concentration RSD	25.6 %	1.5 %	2.0 %	0.5 %	0.3 %	1.5 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450786-07 WG1969512
Analysis started at: 9/11/2024 10:00:29 AM
Rack 1
Vial 34
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	0.0255 ppm	0.0001 ppm	0.0166 ppm	0.0407 ppm	0.0000 ppm	17.9411 ppm
Concentration per Run 1	0.0001 ppm	0.0216 ppm	0.0010 ppm	0.0174 ppm	0.0410 ppm	0.0000 ppm	18.0863 ppm
Concentration per Run 2	0.0002 ppm	0.0248 ppm	0.0003 ppm	0.0160 ppm	0.0405 ppm	0.0000 ppm	17.9304 ppm
Concentration per Run 3	0.0000 ppm	0.0300 ppm	-0.0009 ppm	0.0164 ppm	0.0406 ppm	0.0000 ppm	17.8068 ppm
Concentration RSD	96.4 %	16.8 %	721.9 %	4.4 %	0.6 %	114.5 %	0.8 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0001 ppm	-0.0002 ppm	0.0018 ppm	0.0008 ppm	0.0411 ppm	2.4158 ppm	-0.0002 ppm
Concentration per Run 1	-0.0002 ppm	-0.0002 ppm	0.0019 ppm	0.0007 ppm	0.0417 ppm	2.4305 ppm	0.0005 ppm
Concentration per Run 2	0.0000 ppm	-0.0003 ppm	0.0017 ppm	0.0010 ppm	0.0409 ppm	2.4068 ppm	-0.0001 ppm
Concentration per Run 3	-0.0001 ppm	0.0000 ppm	0.0019 ppm	0.0007 ppm	0.0406 ppm	2.4101 ppm	-0.0009 ppm
Concentration RSD	61.8 %	74.6 %	5.1 %	24.0 %	1.4 %	0.5 %	449.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	3.7521 ppm	0.0136 ppm	0.0004 ppm	13.4735 ppm	0.0003 ppm	0.0007 ppm	-0.0002 ppm
Concentration per Run 1	3.8027 ppm	0.0139 ppm	0.0006 ppm	13.6203 ppm	0.0005 ppm	0.0009 ppm	-0.0002 ppm
Concentration per Run 2	3.7410 ppm	0.0134 ppm	0.0003 ppm	13.4673 ppm	0.0000 ppm	0.0001 ppm	-0.0013 ppm
Concentration per Run 3	3.7125 ppm	0.0134 ppm	0.0003 ppm	13.3328 ppm	0.0003 ppm	0.0009 ppm	0.0010 ppm
Concentration RSD	1.2 %	1.8 %	47.4 %	1.1 %	79.9 %	72.6 %	744.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0010 ppm	3.9905 ppm	-0.0002 ppm	0.0799 ppm	0.0008 ppm	-0.0003 ppm	0.0001 ppm
Concentration per Run 1	0.0013 ppm	4.0359 ppm	-0.0001 ppm	0.0801 ppm	0.0008 ppm	0.0007 ppm	0.0003 ppm
Concentration per Run 2	0.0013 ppm	3.9860 ppm	0.0002 ppm	0.0794 ppm	0.0008 ppm	-0.0011 ppm	0.0001 ppm
Concentration per Run 3	0.0005 ppm	3.9498 ppm	-0.0005 ppm	0.0801 ppm	0.0007 ppm	-0.0004 ppm	0.0000 ppm
Concentration RSD	44.8 %	1.1 %	220.4 %	0.5 %	6.3 %	371.4 %	136.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0008 ppm	98.0479 %	102.3446 %	98.2880 %	102.0148 %	103.9695 %	103.0755 %
Concentration per Run 1	0.0007 ppm	96.8264 %	101.1761 %	97.9416 %	102.1213 %	103.3814 %	103.2341 %
Concentration per Run 2	0.0008 ppm	98.1694 %	102.6375 %	97.9485 %	101.9003 %	104.0858 %	102.8746 %
Concentration per Run 3	0.0009 ppm	99.1480 %	103.2201 %	98.9741 %	102.0227 %	104.4413 %	103.1179 %
Concentration RSD	11.8 %	1.2 %	1.0 %	0.6 %	0.1 %	0.5 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450786-08 WG1969512
Analysis started at: 9/11/2024 10:04:26 AM
Rack 1
Vial 35
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	0.0245 ppm	0.0003 ppm	0.0064 ppm	0.0018 ppm	0.0000 ppm	7.2183 ppm
Concentration per Run 1	0.0002 ppm	0.0222 ppm	-0.0001 ppm	0.0062 ppm	0.0018 ppm	0.0000 ppm	7.2084 ppm
Concentration per Run 2	0.0000 ppm	0.0269 ppm	0.0005 ppm	0.0062 ppm	0.0018 ppm	0.0000 ppm	7.1864 ppm
Concentration per Run 3	0.0001 ppm	0.0244 ppm	0.0004 ppm	0.0068 ppm	0.0018 ppm	0.0000 ppm	7.2603 ppm
Concentration RSD	85.6 %	9.8 %	110.5 %	5.5 %	2.1 %	57.2 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0000 ppm	0.0013 ppm	0.0008 ppm	0.9713 ppm	0.9292 ppm	0.0010 ppm
Concentration per Run 1	0.0000 ppm	0.0002 ppm	0.0013 ppm	0.0006 ppm	0.9670 ppm	0.9586 ppm	0.0011 ppm
Concentration per Run 2	0.0000 ppm	0.0001 ppm	0.0012 ppm	0.0007 ppm	0.9668 ppm	0.9199 ppm	0.0010 ppm
Concentration per Run 3	0.0000 ppm	-0.0003 ppm	0.0013 ppm	0.0010 ppm	0.9800 ppm	0.9091 ppm	0.0009 ppm
Concentration RSD	623.4 %	1,264.0 %	3.7 %	31.0 %	0.8 %	2.8 %	10.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	3.0018 ppm	0.0287 ppm	0.0006 ppm	5.4825 ppm	-0.0001 ppm	0.0004 ppm	0.0000 ppm
Concentration per Run 1	3.0413 ppm	0.0285 ppm	0.0010 ppm	5.4996 ppm	-0.0001 ppm	0.0002 ppm	-0.0013 ppm
Concentration per Run 2	3.0148 ppm	0.0288 ppm	0.0004 ppm	5.4772 ppm	0.0000 ppm	0.0004 ppm	0.0010 ppm
Concentration per Run 3	2.9494 ppm	0.0287 ppm	0.0004 ppm	5.4708 ppm	-0.0002 ppm	0.0005 ppm	0.0002 ppm
Concentration RSD	1.6 %	0.5 %	58.3 %	0.3 %	116.3 %	43.2 %	2,754.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0004 ppm	12.1781 ppm	0.0003 ppm	0.0334 ppm	0.0012 ppm	0.0004 ppm	0.0001 ppm
Concentration per Run 1	0.0000 ppm	12.2468 ppm	0.0003 ppm	0.0335 ppm	0.0011 ppm	0.0009 ppm	0.0000 ppm
Concentration per Run 2	-0.0004 ppm	12.2285 ppm	0.0005 ppm	0.0333 ppm	0.0012 ppm	0.0007 ppm	0.0000 ppm
Concentration per Run 3	-0.0009 ppm	12.0589 ppm	0.0000 ppm	0.0335 ppm	0.0013 ppm	-0.0004 ppm	0.0002 ppm
Concentration RSD	101.5 %	0.9 %	102.8 %	0.4 %	7.0 %	178.3 %	148.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0015 ppm	100.9045 %	103.5648 %	101.3562 %	103.9784 %	104.2890 %	104.9280 %
Concentration per Run 1	0.0016 ppm	100.0123 %	103.7868 %	100.9705 %	104.3755 %	104.6582 %	105.1166 %
Concentration per Run 2	0.0015 ppm	100.6017 %	104.2122 %	101.4350 %	103.7070 %	104.8086 %	105.0304 %
Concentration per Run 3	0.0014 ppm	102.0996 %	102.6953 %	101.6630 %	103.8528 %	103.4001 %	104.6371 %
Concentration RSD	6.0 %	1.1 %	0.8 %	0.3 %	0.3 %	0.7 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCV
Analysis started at: 9/11/2024 10:08:23 AM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.4926 ppm	0.4648 ppm	0.4522 ppm	0.4648 ppm	0.4840 ppm	0.4898 ppm	0.4689 ppm
Concentration per Run 1	0.4939 ppm	0.4676 ppm	0.4482 ppm	0.4693 ppm	0.4865 ppm	0.4909 ppm	0.4685 ppm
Concentration per Run 2	0.4913 ppm	0.4686 ppm	0.4575 ppm	0.4624 ppm	0.4826 ppm	0.4894 ppm	0.4714 ppm
Concentration per Run 3	0.4928 ppm	0.4583 ppm	0.4508 ppm	0.4627 ppm	0.4829 ppm	0.4891 ppm	0.4667 ppm
Recovery Percentage 1	98.530 %	92.968 %	90.434 %	92.958 %	96.797 %	97.962 %	93.773 %
Concentration RSD	0.3 %	1.2 %	1.1 %	0.8 %	0.4 %	0.2 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.4958 ppm	0.4991 ppm	0.4810 ppm	0.4802 ppm	0.4882 ppm	5.1083 ppm	0.5063 ppm
Concentration per Run 1	0.4985 ppm	0.5030 ppm	0.4836 ppm	0.4833 ppm	0.4910 ppm	5.1456 ppm	0.5089 ppm
Concentration per Run 2	0.4955 ppm	0.4969 ppm	0.4800 ppm	0.4785 ppm	0.4879 ppm	5.0995 ppm	0.5065 ppm
Concentration per Run 3	0.4934 ppm	0.4974 ppm	0.4794 ppm	0.4787 ppm	0.4858 ppm	5.0798 ppm	0.5033 ppm
Recovery Percentage 1	99.164 %	99.824 %	96.200 %	96.030 %	97.644 %	102.166 %	101.252 %
Concentration RSD	0.5 %	0.7 %	0.5 %	0.6 %	0.5 %	0.7 %	0.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.4879 ppm	0.4750 ppm	0.4881 ppm	9.9029 ppm	0.4991 ppm	0.4744 ppm	0.4861 ppm
Concentration per Run 1	0.4924 ppm	0.4767 ppm	0.4878 ppm	9.9289 ppm	0.5019 ppm	0.4732 ppm	0.4863 ppm
Concentration per Run 2	0.4874 ppm	0.4744 ppm	0.4875 ppm	9.8659 ppm	0.4973 ppm	0.4765 ppm	0.4825 ppm
Concentration per Run 3	0.4838 ppm	0.4740 ppm	0.4889 ppm	9.9139 ppm	0.4980 ppm	0.4734 ppm	0.4896 ppm
Recovery Percentage 1	97.571 %	95.004 %	97.610 %	99.029 %	99.812 %	94.873 %	97.218 %
Concentration RSD	0.9 %	0.3 %	0.1 %	0.3 %	0.5 %	0.4 %	0.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4618 ppm	5.1364 ppm	0.5146 ppm	0.4980 ppm	0.4930 ppm	0.4744 ppm	0.4841 ppm
Concentration per Run 1	0.4592 ppm	5.1543 ppm	0.5196 ppm	0.4977 ppm	0.4936 ppm	0.4710 ppm	0.4874 ppm
Concentration per Run 2	0.4661 ppm	5.1300 ppm	0.5131 ppm	0.4972 ppm	0.4918 ppm	0.4756 ppm	0.4823 ppm
Concentration per Run 3	0.4601 ppm	5.1248 ppm	0.5110 ppm	0.4991 ppm	0.4935 ppm	0.4765 ppm	0.4828 ppm
Recovery Percentage 1	92.361 %	97.836 %	102.917 %	99.603 %	98.595 %	94.872 %	96.827 %
Concentration RSD	0.8 %	0.3 %	0.9 %	0.2 %	0.2 %	0.6 %	0.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4921 ppm	105.4592 %	103.9960 %	102.8794 %	100.4139 %	100.8584 %	102.0446 %
Concentration per Run 1	0.4960 ppm	104.5808 %	103.5201 %	102.9683 %	99.8942 %	100.2753 %	101.9678 %
Concentration per Run 2	0.4904 ppm	105.6912 %	104.2791 %	102.4366 %	100.3107 %	101.1866 %	101.8118 %
Concentration per Run 3	0.4899 ppm	106.1058 %	104.1889 %	103.2333 %	101.0367 %	101.1134 %	102.3543 %
Recovery Percentage 1	98.426 %						
Concentration RSD	0.7 %	0.7 %	0.4 %	0.4 %	0.6 %	0.5 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCB
Analysis started at: 9/11/2024 10:12:20 AM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0052 ppm	0.0001 ppm	0.0003 ppm	0.0001 ppm	0.0000 ppm	-0.0033 ppm
Concentration per Run 1	-0.0001 ppm	-0.0043 ppm	0.0006 ppm	0.0009 ppm	0.0001 ppm	0.0000 ppm	-0.0056 ppm
Concentration per Run 2	0.0001 ppm	-0.0042 ppm	0.0001 ppm	-0.0004 ppm	0.0000 ppm	0.0000 ppm	-0.0040 ppm
Concentration per Run 3	0.0002 ppm	-0.0070 ppm	-0.0002 ppm	0.0003 ppm	0.0001 ppm	0.0000 ppm	-0.0003 ppm
Recovery Percentage 1	0.644 %	-5.170 %	4.033 %	0.941 %	0.801 %	0.586 %	-3.279 %
Concentration RSD	369.9 %	30.7 %	335.3 %	225.7 %	48.5 %	51.3 %	82.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0001 ppm	0.0001 ppm	0.0001 ppm	0.0005 ppm	0.0040 ppm	0.0109 ppm	-0.0004 ppm
Concentration per Run 1	0.0001 ppm	0.0003 ppm	-0.0001 ppm	0.0008 ppm	0.0041 ppm	0.0147 ppm	-0.0008 ppm
Concentration per Run 2	0.0001 ppm	0.0000 ppm	0.0001 ppm	0.0003 ppm	0.0043 ppm	-0.0005 ppm	-0.0005 ppm
Concentration per Run 3	0.0000 ppm	0.0000 ppm	0.0004 ppm	0.0005 ppm	0.0036 ppm	0.0184 ppm	0.0001 ppm
Recovery Percentage 1	1.244 %	0.488 %	1.293 %	5.275 %	8.028 %	0.434 %	-4.059 %
Concentration RSD	38.4 %	193.5 %	188.8 %	41.5 %	9.5 %	92.0 %	106.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0002 ppm	0.0002 ppm	0.0018 ppm	0.0166 ppm	-0.0001 ppm	-0.0001 ppm	0.0002 ppm
Concentration per Run 1	-0.0004 ppm	0.0003 ppm	0.0017 ppm	0.0155 ppm	-0.0009 ppm	0.0000 ppm	0.0018 ppm
Concentration per Run 2	0.0013 ppm	0.0002 ppm	0.0019 ppm	0.0171 ppm	0.0003 ppm	0.0003 ppm	-0.0009 ppm
Concentration per Run 3	-0.0004 ppm	0.0001 ppm	0.0017 ppm	0.0172 ppm	0.0001 ppm	-0.0005 ppm	-0.0002 ppm
Recovery Percentage 1	0.189 %	2.212 %	3.535 %	0.828 %	-0.580 %	-0.849 %	0.463 %
Concentration RSD	516.4 %	44.9 %	6.2 %	5.8 %	441.3 %	495.0 %	608.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0000 ppm	-0.0010 ppm	0.0006 ppm	0.0001 ppm	-0.0001 ppm	0.0002 ppm	0.0001 ppm
Concentration per Run 1	0.0010 ppm	-0.0008 ppm	0.0013 ppm	0.0001 ppm	-0.0002 ppm	0.0001 ppm	0.0001 ppm
Concentration per Run 2	-0.0001 ppm	-0.0007 ppm	-0.0001 ppm	0.0001 ppm	-0.0002 ppm	0.0003 ppm	0.0003 ppm
Concentration per Run 3	-0.0007 ppm	-0.0014 ppm	0.0006 ppm	0.0001 ppm	0.0000 ppm	0.0001 ppm	0.0000 ppm
Recovery Percentage 1	0.450 %	-0.195 %	1.158 %	1.041 %	-1.390 %	0.887 %	1.151 %
Concentration RSD	1,998.8 %	38.1 %	120.6 %	28.2 %	56.9 %	56.2 %	123.0 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0009 ppm	101.5872 %	101.5190 %	102.8148 %	103.3032 %	102.4790 %	103.8570 %
Concentration per Run 1	0.0009 ppm	101.2086 %	100.7531 %	102.4149 %	103.9594 %	101.7711 %	103.9408 %
Concentration per Run 2	0.0009 ppm	101.2415 %	102.5565 %	102.7856 %	103.0833 %	102.9268 %	103.6141 %
Concentration per Run 3	0.0009 ppm	102.3114 %	101.2473 %	103.2439 %	102.8670 %	102.7390 %	104.0160 %
Recovery Percentage 1	18.072 %						
Concentration RSD	3.6 %	0.6 %	0.9 %	0.4 %	0.6 %	0.6 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1970073-1 WG1970073
Analysis started at: 9/11/2024 10:17:47 AM
Rack 1
Vial 46
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	0.0015 ppm	0.0005 ppm	0.0003 ppm	0.0003 ppm	0.0000 ppm	0.0113 ppm
Concentration per Run 1	0.0002 ppm	-0.0002 ppm	0.0006 ppm	-0.0004 ppm	0.0004 ppm	0.0000 ppm	0.0115 ppm
Concentration per Run 2	0.0001 ppm	-0.0003 ppm	0.0003 ppm	0.0009 ppm	0.0003 ppm	0.0000 ppm	0.0116 ppm
Concentration per Run 3	0.0001 ppm	0.0050 ppm	0.0008 ppm	0.0003 ppm	0.0003 ppm	0.0000 ppm	0.0107 ppm
Recovery Percentage 1	1.953 %	1.519 %	17.970 %	0.862 %	3.364 %	-0.048 %	11.281 %
Concentration RSD	57.3 %	199.4 %	48.9 %	251.4 %	17.1 %	549.4 %	4.7 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0003 ppm	0.0004 ppm	0.0003 ppm	0.0280 ppm	0.0326 ppm	0.0001 ppm
Concentration per Run 1	0.0000 ppm	-0.0003 ppm	0.0005 ppm	0.0001 ppm	0.0281 ppm	0.0361 ppm	0.0006 ppm
Concentration per Run 2	0.0000 ppm	-0.0005 ppm	0.0007 ppm	0.0004 ppm	0.0294 ppm	0.0192 ppm	0.0009 ppm
Concentration per Run 3	0.0000 ppm	-0.0002 ppm	0.0001 ppm	0.0003 ppm	0.0266 ppm	0.0427 ppm	-0.0012 ppm
Recovery Percentage 1	-0.167 %	-1.713 %	4.440 %	2.538 %	56.063 %	1.306 %	0.923 %
Concentration RSD	437.7 %	42.1 %	62.8 %	42.6 %	5.0 %	37.1 %	1,206.9 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0042 ppm	0.0004 ppm	0.0006 ppm	0.0215 ppm	-0.0003 ppm	0.0004 ppm	0.0010 ppm
Concentration per Run 1	0.0041 ppm	0.0004 ppm	0.0006 ppm	0.0207 ppm	-0.0004 ppm	0.0008 ppm	0.0012 ppm
Concentration per Run 2	0.0039 ppm	0.0004 ppm	0.0006 ppm	0.0246 ppm	-0.0004 ppm	0.0000 ppm	0.0009 ppm
Concentration per Run 3	0.0047 ppm	0.0003 ppm	0.0006 ppm	0.0191 ppm	-0.0002 ppm	0.0006 ppm	0.0009 ppm
Recovery Percentage 1	4.221 %	3.659 %	1.181 %	1.074 %	-1.281 %	4.493 %	2.010 %
Concentration RSD	10.7 %	7.0 %	7.9 %	13.0 %	24.5 %	94.5 %	16.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0003 ppm	0.0075 ppm	0.0045 ppm	0.0000 ppm	0.0002 ppm	-0.0009 ppm	-0.0001 ppm
Concentration per Run 1	-0.0012 ppm	0.0081 ppm	0.0045 ppm	0.0000 ppm	0.0005 ppm	-0.0005 ppm	0.0001 ppm
Concentration per Run 2	0.0003 ppm	0.0075 ppm	0.0045 ppm	0.0000 ppm	0.0002 ppm	-0.0015 ppm	-0.0001 ppm
Concentration per Run 3	-0.0001 ppm	0.0069 ppm	0.0046 ppm	0.0000 ppm	-0.0001 ppm	-0.0007 ppm	-0.0001 ppm
Recovery Percentage 1	-3.429 %	1.500 %	9.015 %	0.115 %	2.024 %	-4.456 %	-0.552 %
Concentration RSD	221.0 %	8.4 %	1.2 %	132.9 %	142.8 %	57.9 %	246.1 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0010 ppm	109.8410 %	104.6480 %	103.9309 %	104.0621 %	102.6975 %	103.5598 %
Concentration per Run 1	0.0010 ppm	109.7748 %	104.4762 %	103.6184 %	104.0026 %	102.4352 %	103.2280 %
Concentration per Run 2	0.0009 ppm	109.9003 %	104.0904 %	104.0546 %	104.1662 %	102.3160 %	103.6704 %
Concentration per Run 3	0.0011 ppm	109.8480 %	105.3775 %	104.1195 %	104.0175 %	103.3413 %	103.7810 %
Recovery Percentage 1	19.492 %						
Concentration RSD	7.2 %	0.1 %	0.6 %	0.3 %	0.1 %	0.5 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1970073-2 WG1970073
Analysis started at: 9/11/2024 10:21:56 AM
Rack 1
Vial 47
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0962 ppm	3.8115 ppm	0.2285 ppm	1.8490 ppm	3.8390 ppm	0.0992 ppm	19.4859 ppm
Concentration per Run 1	0.0972 ppm	3.8331 ppm	0.2282 ppm	1.8623 ppm	3.8587 ppm	0.0998 ppm	19.5466 ppm
Concentration per Run 2	0.0956 ppm	3.7912 ppm	0.2267 ppm	1.8494 ppm	3.8148 ppm	0.0985 ppm	19.4163 ppm
Concentration per Run 3	0.0957 ppm	3.8103 ppm	0.2305 ppm	1.8352 ppm	3.8435 ppm	0.0992 ppm	19.4948 ppm
Concentration RSD	0.9 %	0.6 %	0.8 %	0.7 %	0.6 %	0.6 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.1028 ppm	0.9713 ppm	0.3849 ppm	0.4992 ppm	1.9633 ppm	20.6461 ppm	0.0005 ppm
Concentration per Run 1	0.1034 ppm	0.9770 ppm	0.3884 ppm	0.5037 ppm	1.9785 ppm	20.7066 ppm	-0.0002 ppm
Concentration per Run 2	0.1027 ppm	0.9704 ppm	0.3841 ppm	0.4987 ppm	1.9500 ppm	20.4694 ppm	0.0013 ppm
Concentration per Run 3	0.1023 ppm	0.9664 ppm	0.3822 ppm	0.4951 ppm	1.9615 ppm	20.7623 ppm	0.0006 ppm
Concentration RSD	0.6 %	0.6 %	0.8 %	0.9 %	0.7 %	0.8 %	142.3 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	19.2186 ppm	0.9663 ppm	2.0875 ppm	20.0060 ppm	0.9767 ppm	1.0272 ppm	0.9847 ppm
Concentration per Run 1	19.3438 ppm	0.9693 ppm	2.0870 ppm	20.0925 ppm	0.9819 ppm	1.0246 ppm	0.9925 ppm
Concentration per Run 2	19.1516 ppm	0.9623 ppm	2.0905 ppm	19.9094 ppm	0.9799 ppm	1.0240 ppm	0.9810 ppm
Concentration per Run 3	19.1604 ppm	0.9674 ppm	2.0851 ppm	20.0162 ppm	0.9684 ppm	1.0330 ppm	0.9805 ppm
Concentration RSD	0.6 %	0.4 %	0.1 %	0.5 %	0.7 %	0.5 %	0.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.2281 ppm	1.2910 ppm	1.9884 ppm	1.9181 ppm	2.0083 ppm	0.2282 ppm	0.9875 ppm
Concentration per Run 1	0.2277 ppm	1.3029 ppm	1.9980 ppm	1.9219 ppm	2.0271 ppm	0.2274 ppm	0.9958 ppm
Concentration per Run 2	0.2275 ppm	1.2890 ppm	1.9990 ppm	1.9094 ppm	2.0010 ppm	0.2252 ppm	0.9832 ppm
Concentration per Run 3	0.2292 ppm	1.2812 ppm	1.9681 ppm	1.9230 ppm	1.9969 ppm	0.2321 ppm	0.9834 ppm
Concentration RSD	0.4 %	0.9 %	0.9 %	0.4 %	0.8 %	1.5 %	0.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.9727 ppm	102.2885 %	103.7069 %	94.4168 %	96.3410 %	100.3916 %	97.7603 %
Concentration per Run 1	0.9768 ppm	101.5937 %	102.9141 %	94.6529 %	95.7541 %	99.9457 %	97.9668 %
Concentration per Run 2	0.9724 ppm	102.5237 %	104.5618 %	94.5742 %	96.6218 %	101.1570 %	97.7457 %
Concentration per Run 3	0.9689 ppm	102.7482 %	103.6447 %	94.0233 %	96.6472 %	100.0721 %	97.5684 %
Concentration RSD	0.4 %	0.6 %	0.8 %	0.4 %	0.5 %	0.7 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1970073-3 WG1970073
Analysis started at: 9/11/2024 10:25:53 AM
Rack 1
Vial 48
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0920 ppm	3.6653 ppm	0.2174 ppm	1.7669 ppm	3.6836 ppm	0.0953 ppm	18.6902 ppm
Concentration per Run 1	0.0924 ppm	3.6561 ppm	0.2144 ppm	1.7746 ppm	3.6672 ppm	0.0948 ppm	18.6983 ppm
Concentration per Run 2	0.0918 ppm	3.6713 ppm	0.2172 ppm	1.7649 ppm	3.6951 ppm	0.0953 ppm	18.6814 ppm
Concentration per Run 3	0.0918 ppm	3.6685 ppm	0.2207 ppm	1.7612 ppm	3.6885 ppm	0.0957 ppm	18.6908 ppm
Concentration RSD	0.4 %	0.2 %	1.5 %	0.4 %	0.4 %	0.4 %	0.0 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0978 ppm	0.9248 ppm	0.3673 ppm	0.4765 ppm	1.8969 ppm	19.7573 ppm	0.0011 ppm
Concentration per Run 1	0.0982 ppm	0.9290 ppm	0.3693 ppm	0.4781 ppm	1.8857 ppm	19.6551 ppm	0.0008 ppm
Concentration per Run 2	0.0978 ppm	0.9240 ppm	0.3668 ppm	0.4753 ppm	1.9046 ppm	19.8909 ppm	0.0014 ppm
Concentration per Run 3	0.0974 ppm	0.9214 ppm	0.3659 ppm	0.4759 ppm	1.9003 ppm	19.7258 ppm	0.0012 ppm
Concentration RSD	0.4 %	0.4 %	0.5 %	0.3 %	0.5 %	0.6 %	24.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	18.2849 ppm	0.9285 ppm	1.9832 ppm	19.0932 ppm	0.9253 ppm	0.9836 ppm	0.9373 ppm
Concentration per Run 1	18.3890 ppm	0.9279 ppm	1.9816 ppm	19.0270 ppm	0.9298 ppm	0.9769 ppm	0.9424 ppm
Concentration per Run 2	18.2707 ppm	0.9317 ppm	1.9828 ppm	19.2550 ppm	0.9232 ppm	0.9786 ppm	0.9345 ppm
Concentration per Run 3	18.1951 ppm	0.9258 ppm	1.9852 ppm	18.9977 ppm	0.9229 ppm	0.9954 ppm	0.9349 ppm
Concentration RSD	0.5 %	0.3 %	0.1 %	0.7 %	0.4 %	1.0 %	0.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.2181 ppm	1.2279 ppm	1.8800 ppm	1.8357 ppm	1.9041 ppm	0.2194 ppm	0.9414 ppm
Concentration per Run 1	0.2156 ppm	1.2315 ppm	1.8777 ppm	1.8289 ppm	1.9172 ppm	0.2160 ppm	0.9452 ppm
Concentration per Run 2	0.2171 ppm	1.2263 ppm	1.8799 ppm	1.8369 ppm	1.8968 ppm	0.2191 ppm	0.9383 ppm
Concentration per Run 3	0.2217 ppm	1.2260 ppm	1.8822 ppm	1.8414 ppm	1.8985 ppm	0.2230 ppm	0.9408 ppm
Concentration RSD	1.5 %	0.3 %	0.1 %	0.3 %	0.6 %	1.6 %	0.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.9245 ppm	102.9577 %	102.6382 %	94.0310 %	97.0819 %	99.4120 %	97.3949 %
Concentration per Run 1	0.9265 ppm	102.1991 %	102.6483 %	94.0866 %	96.1703 %	99.0269 %	97.3352 %
Concentration per Run 2	0.9276 ppm	102.9170 %	103.3910 %	94.6651 %	97.0182 %	100.4110 %	97.9518 %
Concentration per Run 3	0.9196 ppm	103.7572 %	101.8753 %	93.3414 %	98.0571 %	98.7981 %	96.8976 %
Concentration RSD	0.5 %	0.8 %	0.7 %	0.7 %	1.0 %	0.9 %	0.5 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2451579-01 WG1970073
Analysis started at: 9/11/2024 10:29:50 AM
Rack 1
Vial 49
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0002 ppm	0.0982 ppm	-0.0003 ppm	0.0108 ppm	0.0092 ppm	0.0000 ppm	2.7473 ppm
Concentration per Run 1	0.0003 ppm	0.1007 ppm	0.0005 ppm	0.0102 ppm	0.0090 ppm	0.0000 ppm	2.7233 ppm
Concentration per Run 2	0.0001 ppm	0.1004 ppm	-0.0016 ppm	0.0107 ppm	0.0092 ppm	0.0000 ppm	2.7688 ppm
Concentration per Run 3	0.0001 ppm	0.0934 ppm	0.0001 ppm	0.0113 ppm	0.0093 ppm	0.0000 ppm	2.7497 ppm
Concentration RSD	96.1 %	4.2 %	365.6 %	5.3 %	1.3 %	92.9 %	0.8 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0003 ppm	-0.0001 ppm	0.0027 ppm	0.0225 ppm	0.2429 ppm	1.6871 ppm	0.0022 ppm
Concentration per Run 1	0.0003 ppm	-0.0001 ppm	0.0027 ppm	0.0230 ppm	0.2407 ppm	1.6933 ppm	0.0018 ppm
Concentration per Run 2	0.0002 ppm	-0.0001 ppm	0.0026 ppm	0.0225 ppm	0.2447 ppm	1.7027 ppm	0.0023 ppm
Concentration per Run 3	0.0003 ppm	0.0000 ppm	0.0029 ppm	0.0219 ppm	0.2432 ppm	1.6654 ppm	0.0025 ppm
Concentration RSD	30.4 %	74.3 %	5.0 %	2.5 %	0.8 %	1.2 %	16.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.3921 ppm	0.0097 ppm	0.0069 ppm	6.7632 ppm	0.0045 ppm	0.0043 ppm	0.0033 ppm
Concentration per Run 1	0.3974 ppm	0.0096 ppm	0.0070 ppm	6.7209 ppm	0.0046 ppm	0.0035 ppm	0.0039 ppm
Concentration per Run 2	0.3939 ppm	0.0097 ppm	0.0069 ppm	6.8557 ppm	0.0047 ppm	0.0038 ppm	0.0026 ppm
Concentration per Run 3	0.3849 ppm	0.0097 ppm	0.0069 ppm	6.7129 ppm	0.0044 ppm	0.0054 ppm	0.0035 ppm
Concentration RSD	1.6 %	0.9 %	1.2 %	1.2 %	3.2 %	24.0 %	19.6 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0030 ppm	1.3001 ppm	0.0374 ppm	0.0139 ppm	0.0093 ppm	-0.0020 ppm	0.0006 ppm
Concentration per Run 1	0.0017 ppm	1.3240 ppm	0.0387 ppm	0.0138 ppm	0.0092 ppm	-0.0026 ppm	0.0007 ppm
Concentration per Run 2	0.0041 ppm	1.3068 ppm	0.0372 ppm	0.0139 ppm	0.0092 ppm	-0.0016 ppm	0.0005 ppm
Concentration per Run 3	0.0032 ppm	1.2695 ppm	0.0362 ppm	0.0140 ppm	0.0095 ppm	-0.0018 ppm	0.0007 ppm
Concentration RSD	39.2 %	2.1 %	3.4 %	0.7 %	1.5 %	24.7 %	15.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.1461 ppm	103.8554 %	103.4287 %	99.3975 %	98.4054 %	99.4538 %	98.9520 %
Concentration per Run 1	0.1487 ppm	101.9020 %	104.6536 %	100.0424 %	96.6753 %	99.8826 %	99.1254 %
Concentration per Run 2	0.1465 ppm	103.5693 %	102.5473 %	99.9085 %	98.3328 %	98.6983 %	99.5432 %
Concentration per Run 3	0.1430 ppm	106.0950 %	103.0853 %	98.2416 %	100.2081 %	99.7805 %	98.1874 %
Concentration RSD	2.0 %	2.0 %	1.1 %	1.0 %	1.8 %	0.7 %	0.7 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450786-09 WG1969512
Analysis started at: 9/11/2024 10:33:46 AM
Rack 1
Vial 36
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0074 ppm	-0.0002 ppm	0.0150 ppm	0.0407 ppm	0.0000 ppm	16.6663 ppm
Concentration per Run 1	0.0002 ppm	-0.0077 ppm	-0.0007 ppm	0.0157 ppm	0.0409 ppm	0.0000 ppm	16.6561 ppm
Concentration per Run 2	-0.0004 ppm	-0.0004 ppm	-0.0011 ppm	0.0150 ppm	0.0405 ppm	0.0000 ppm	16.6730 ppm
Concentration per Run 3	0.0003 ppm	-0.0140 ppm	0.0011 ppm	0.0143 ppm	0.0406 ppm	0.0000 ppm	16.6699 ppm
Concentration RSD	743.1 %	92.3 %	478.4 %	4.5 %	0.5 %	394.5 %	0.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0001 ppm	0.0016 ppm	0.0008 ppm	0.0022 ppm	2.1741 ppm	-0.0003 ppm
Concentration per Run 1	0.0001 ppm	-0.0001 ppm	0.0018 ppm	0.0010 ppm	0.0017 ppm	2.1821 ppm	0.0006 ppm
Concentration per Run 2	0.0000 ppm	0.0002 ppm	0.0014 ppm	0.0007 ppm	0.0022 ppm	2.1721 ppm	-0.0009 ppm
Concentration per Run 3	-0.0001 ppm	-0.0005 ppm	0.0016 ppm	0.0008 ppm	0.0026 ppm	2.1680 ppm	-0.0006 ppm
Concentration RSD	1,551.6 %	218.7 %	10.7 %	16.9 %	21.0 %	0.3 %	274.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	5.1594 ppm	0.0025 ppm	0.0012 ppm	12.4239 ppm	0.0008 ppm	0.0004 ppm	-0.0014 ppm
Concentration per Run 1	5.2556 ppm	0.0024 ppm	0.0010 ppm	12.3658 ppm	0.0008 ppm	-0.0002 ppm	0.0000 ppm
Concentration per Run 2	5.1373 ppm	0.0026 ppm	0.0013 ppm	12.4991 ppm	0.0011 ppm	0.0002 ppm	-0.0021 ppm
Concentration per Run 3	5.0854 ppm	0.0024 ppm	0.0012 ppm	12.4069 ppm	0.0006 ppm	0.0014 ppm	-0.0022 ppm
Concentration RSD	1.7 %	4.8 %	16.2 %	0.5 %	28.4 %	187.1 %	87.6 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0007 ppm	6.4685 ppm	-0.0002 ppm	0.0782 ppm	-0.0003 ppm	0.0001 ppm	0.0002 ppm
Concentration per Run 1	0.0010 ppm	6.5816 ppm	-0.0003 ppm	0.0784 ppm	-0.0003 ppm	0.0003 ppm	0.0001 ppm
Concentration per Run 2	-0.0007 ppm	6.4534 ppm	-0.0004 ppm	0.0782 ppm	-0.0001 ppm	-0.0001 ppm	0.0003 ppm
Concentration per Run 3	0.0017 ppm	6.3705 ppm	0.0001 ppm	0.0781 ppm	-0.0004 ppm	0.0002 ppm	0.0001 ppm
Concentration RSD	186.2 %	1.6 %	137.3 %	0.2 %	43.9 %	172.9 %	85.1 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0011 ppm	97.8298 %	102.9007 %	98.7055 %	102.2881 %	104.2563 %	103.5630 %
Concentration per Run 1	0.0009 ppm	96.5126 %	103.2902 %	98.0959 %	102.5404 %	104.6639 %	103.8768 %
Concentration per Run 2	0.0010 ppm	98.0573 %	102.5397 %	98.6516 %	102.3949 %	103.8606 %	103.3252 %
Concentration per Run 3	0.0013 ppm	98.9195 %	102.8722 %	99.3690 %	101.9288 %	104.2443 %	103.4869 %
Concentration RSD	18.7 %	1.2 %	0.4 %	0.6 %	0.3 %	0.4 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450786-02 WG1969512
Analysis started at: 9/11/2024 10:37:43 AM
Rack 1
Vial 24
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	0.0177 ppm	0.0009 ppm	0.0123 ppm	0.0662 ppm	0.0000 ppm	14.2363 ppm
Concentration per Run 1	0.0001 ppm	0.0219 ppm	0.0011 ppm	0.0122 ppm	0.0661 ppm	0.0000 ppm	14.1625 ppm
Concentration per Run 2	0.0002 ppm	0.0175 ppm	0.0003 ppm	0.0117 ppm	0.0661 ppm	0.0000 ppm	14.3227 ppm
Concentration per Run 3	-0.0002 ppm	0.0138 ppm	0.0014 ppm	0.0129 ppm	0.0665 ppm	0.0000 ppm	14.2238 ppm
Concentration RSD	6,850.5 %	22.9 %	60.2 %	4.6 %	0.3 %	616.4 %	0.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0001 ppm	0.0021 ppm	0.0010 ppm	0.0212 ppm	1.1515 ppm	0.0003 ppm
Concentration per Run 1	0.0000 ppm	0.0000 ppm	0.0021 ppm	0.0010 ppm	0.0215 ppm	1.1565 ppm	-0.0005 ppm
Concentration per Run 2	-0.0001 ppm	0.0000 ppm	0.0019 ppm	0.0012 ppm	0.0205 ppm	1.1507 ppm	0.0002 ppm
Concentration per Run 3	-0.0001 ppm	0.0003 ppm	0.0022 ppm	0.0008 ppm	0.0217 ppm	1.1472 ppm	0.0012 ppm
Concentration RSD	86.6 %	197.9 %	7.8 %	17.0 %	2.9 %	0.4 %	293.9 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	6.3853 ppm	0.0020 ppm	0.0006 ppm	12.5404 ppm	0.0008 ppm	0.0004 ppm	-0.0021 ppm
Concentration per Run 1	6.4814 ppm	0.0019 ppm	0.0003 ppm	12.5721 ppm	0.0009 ppm	0.0003 ppm	-0.0012 ppm
Concentration per Run 2	6.3827 ppm	0.0020 ppm	0.0008 ppm	12.4708 ppm	0.0011 ppm	0.0005 ppm	-0.0010 ppm
Concentration per Run 3	6.2917 ppm	0.0020 ppm	0.0008 ppm	12.5783 ppm	0.0004 ppm	0.0003 ppm	-0.0040 ppm
Concentration RSD	1.5 %	3.0 %	51.4 %	0.5 %	46.8 %	27.7 %	79.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0005 ppm	6.9093 ppm	-0.0006 ppm	0.0725 ppm	0.0005 ppm	0.0001 ppm	0.0000 ppm
Concentration per Run 1	-0.0014 ppm	6.9932 ppm	-0.0009 ppm	0.0721 ppm	0.0005 ppm	-0.0010 ppm	-0.0001 ppm
Concentration per Run 2	-0.0011 ppm	6.9359 ppm	-0.0009 ppm	0.0730 ppm	0.0005 ppm	0.0006 ppm	0.0000 ppm
Concentration per Run 3	0.0009 ppm	6.7989 ppm	-0.0001 ppm	0.0725 ppm	0.0005 ppm	0.0007 ppm	0.0000 ppm
Concentration RSD	234.0 %	1.4 %	76.0 %	0.6 %	6.3 %	900.3 %	108.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0013 ppm	97.4909 %	102.0543 %	97.8783 %	102.3276 %	103.4294 %	103.0155 %
Concentration per Run 1	0.0013 ppm	95.9546 %	103.7030 %	97.3546 %	102.7782 %	104.9417 %	103.0762 %
Concentration per Run 2	0.0014 ppm	97.4025 %	100.8409 %	97.7818 %	101.6026 %	101.9496 %	102.8622 %
Concentration per Run 3	0.0013 ppm	99.1157 %	101.6190 %	98.4986 %	102.6019 %	103.3969 %	103.1082 %
Concentration RSD	2.7 %	1.6 %	1.5 %	0.6 %	0.6 %	1.4 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1969512-7 WG1969512
Analysis started at: 9/11/2024 10:41:41 AM
Rack 1
Vial 25
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0522 ppm	1.9728 ppm	0.1134 ppm	0.9896 ppm	2.0141 ppm	0.0501 ppm	23.5821 ppm
Concentration per Run 1	0.0538 ppm	1.9820 ppm	0.1146 ppm	1.0194 ppm	2.0155 ppm	0.0501 ppm	23.6777 ppm
Concentration per Run 2	0.0519 ppm	1.9638 ppm	0.1133 ppm	0.9815 ppm	2.0096 ppm	0.0499 ppm	23.4798 ppm
Concentration per Run 3	0.0509 ppm	1.9725 ppm	0.1124 ppm	0.9678 ppm	2.0172 ppm	0.0502 ppm	23.5888 ppm
Concentration RSD	2.9 %	0.5 %	1.0 %	2.7 %	0.2 %	0.4 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0551 ppm	0.5170 ppm	0.2061 ppm	0.2635 ppm	0.9997 ppm	11.2252 ppm	0.0001 ppm
Concentration per Run 1	0.0568 ppm	0.5333 ppm	0.2121 ppm	0.2722 ppm	1.0030 ppm	11.2293 ppm	-0.0006 ppm
Concentration per Run 2	0.0546 ppm	0.5131 ppm	0.2053 ppm	0.2609 ppm	0.9971 ppm	11.2500 ppm	0.0007 ppm
Concentration per Run 3	0.0540 ppm	0.5046 ppm	0.2008 ppm	0.2573 ppm	0.9990 ppm	11.1963 ppm	0.0004 ppm
Concentration RSD	2.7 %	2.9 %	2.8 %	3.0 %	0.3 %	0.2 %	475.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	16.4103 ppm	0.4928 ppm	0.9126 ppm	22.1644 ppm	0.5210 ppm	0.5111 ppm	0.4607 ppm
Concentration per Run 1	16.9171 ppm	0.4942 ppm	0.9350 ppm	22.2349 ppm	0.5371 ppm	0.5132 ppm	0.4720 ppm
Concentration per Run 2	16.2978 ppm	0.4914 ppm	0.9077 ppm	22.1921 ppm	0.5181 ppm	0.5108 ppm	0.4580 ppm
Concentration per Run 3	16.0160 ppm	0.4929 ppm	0.8950 ppm	22.0662 ppm	0.5077 ppm	0.5092 ppm	0.4520 ppm
Concentration RSD	2.8 %	0.3 %	2.2 %	0.4 %	2.9 %	0.4 %	2.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1165 ppm	7.8307 ppm	0.9999 ppm	1.0285 ppm	1.0348 ppm	0.1145 ppm	0.5239 ppm
Concentration per Run 1	0.1179 ppm	8.0661 ppm	1.0258 ppm	1.0322 ppm	1.0647 ppm	0.1168 ppm	0.5397 ppm
Concentration per Run 2	0.1155 ppm	7.7747 ppm	0.9963 ppm	1.0235 ppm	1.0298 ppm	0.1135 ppm	0.5203 ppm
Concentration per Run 3	0.1161 ppm	7.6514 ppm	0.9776 ppm	1.0299 ppm	1.0098 ppm	0.1132 ppm	0.5117 ppm
Concentration RSD	1.1 %	2.7 %	2.4 %	0.4 %	2.7 %	1.8 %	2.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5236 ppm	100.3776 %	105.3125 %	98.7828 %	101.4895 %	104.1844 %	102.9914 %
Concentration per Run 1	0.5397 ppm	97.4439 %	105.1883 %	98.8036 %	101.2825 %	104.2250 %	103.3779 %
Concentration per Run 2	0.5199 ppm	101.3360 %	104.2469 %	98.5562 %	101.9473 %	103.0274 %	102.8250 %
Concentration per Run 3	0.5111 ppm	102.3529 %	106.5021 %	98.9886 %	101.2388 %	105.3008 %	102.7713 %
Concentration RSD	2.8 %	2.6 %	1.1 %	0.2 %	0.4 %	1.1 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1969512-8 WG1969512
Analysis started at: 9/11/2024 10:45:35 AM
Rack 1
Vial 26
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	0.0119 ppm	0.0003 ppm	0.0124 ppm	0.0672 ppm	0.0000 ppm	14.5105 ppm
Concentration per Run 1	0.0002 ppm	0.0144 ppm	0.0000 ppm	0.0127 ppm	0.0680 ppm	0.0000 ppm	14.6131 ppm
Concentration per Run 2	0.0001 ppm	0.0158 ppm	0.0010 ppm	0.0119 ppm	0.0674 ppm	0.0000 ppm	14.5118 ppm
Concentration per Run 3	0.0000 ppm	0.0055 ppm	-0.0002 ppm	0.0126 ppm	0.0663 ppm	0.0000 ppm	14.4067 ppm
Concentration RSD	81.2 %	46.8 %	222.1 %	3.4 %	1.3 %	178.8 %	0.7 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0001 ppm	0.0002 ppm	0.0026 ppm	0.0012 ppm	0.0254 ppm	1.1461 ppm	-0.0006 ppm
Concentration per Run 1	-0.0001 ppm	0.0004 ppm	0.0026 ppm	0.0012 ppm	0.0271 ppm	1.1667 ppm	-0.0001 ppm
Concentration per Run 2	0.0000 ppm	0.0002 ppm	0.0025 ppm	0.0012 ppm	0.0245 ppm	1.1479 ppm	-0.0005 ppm
Concentration per Run 3	-0.0001 ppm	-0.0001 ppm	0.0027 ppm	0.0011 ppm	0.0248 ppm	1.1238 ppm	-0.0012 ppm
Concentration RSD	21.1 %	148.5 %	3.3 %	4.1 %	5.5 %	1.9 %	92.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	6.4750 ppm	0.0020 ppm	0.0059 ppm	12.6956 ppm	0.0008 ppm	0.0007 ppm	0.0014 ppm
Concentration per Run 1	6.6238 ppm	0.0018 ppm	0.0062 ppm	12.8634 ppm	0.0008 ppm	-0.0002 ppm	0.0006 ppm
Concentration per Run 2	6.4567 ppm	0.0021 ppm	0.0058 ppm	12.7377 ppm	0.0006 ppm	0.0011 ppm	0.0022 ppm
Concentration per Run 3	6.3446 ppm	0.0021 ppm	0.0055 ppm	12.4857 ppm	0.0011 ppm	0.0012 ppm	0.0012 ppm
Concentration RSD	2.2 %	8.6 %	6.3 %	1.5 %	36.0 %	108.9 %	61.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0006 ppm	6.9920 ppm	0.0024 ppm	0.0738 ppm	0.0009 ppm	0.0000 ppm	0.0001 ppm
Concentration per Run 1	-0.0002 ppm	7.1266 ppm	0.0024 ppm	0.0741 ppm	0.0010 ppm	0.0001 ppm	0.0003 ppm
Concentration per Run 2	-0.0006 ppm	6.9913 ppm	0.0024 ppm	0.0737 ppm	0.0009 ppm	0.0000 ppm	-0.0001 ppm
Concentration per Run 3	0.0027 ppm	6.8581 ppm	0.0025 ppm	0.0736 ppm	0.0008 ppm	-0.0002 ppm	0.0000 ppm
Concentration RSD	298.1 %	1.9 %	2.3 %	0.4 %	7.0 %	557.0 %	314.9 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0011 ppm	97.0776 %	101.1744 %	97.5799 %	101.8410 %	102.4187 %	102.5463 %
Concentration per Run 1	0.0012 ppm	95.2035 %	99.7674 %	96.9904 %	101.6831 %	101.8227 %	102.8401 %
Concentration per Run 2	0.0011 ppm	97.3628 %	100.8429 %	98.0179 %	101.8487 %	102.0271 %	102.7834 %
Concentration per Run 3	0.0011 ppm	98.6664 %	102.9131 %	97.7314 %	101.9912 %	103.4061 %	102.0154 %
Concentration RSD	6.4 %	1.8 %	1.6 %	0.5 %	0.2 %	0.8 %	0.4 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1969512-9 WG1969512
Analysis started at: 9/11/2024 10:49:30 AM
Rack 1
Vial 27
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0527 ppm	2.0188 ppm	0.1119 ppm	1.0551 ppm	2.0533 ppm	0.0512 ppm	24.0511 ppm
Concentration per Run 1	0.0534 ppm	2.0351 ppm	0.1122 ppm	1.0751 ppm	2.0753 ppm	0.0516 ppm	24.2507 ppm
Concentration per Run 2	0.0523 ppm	2.0062 ppm	0.1119 ppm	1.0533 ppm	2.0313 ppm	0.0508 ppm	23.8913 ppm
Concentration per Run 3	0.0525 ppm	2.0149 ppm	0.1114 ppm	1.0367 ppm	2.0534 ppm	0.0511 ppm	24.0113 ppm
Concentration RSD	1.1 %	0.7 %	0.4 %	1.8 %	1.1 %	0.8 %	0.8 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0561 ppm	0.5281 ppm	0.2120 ppm	0.2687 ppm	1.0251 ppm	11.7800 ppm	0.0001 ppm
Concentration per Run 1	0.0571 ppm	0.5384 ppm	0.2158 ppm	0.2745 ppm	1.0334 ppm	11.8837 ppm	-0.0006 ppm
Concentration per Run 2	0.0559 ppm	0.5262 ppm	0.2110 ppm	0.2676 ppm	1.0146 ppm	11.7173 ppm	0.0013 ppm
Concentration per Run 3	0.0554 ppm	0.5198 ppm	0.2092 ppm	0.2641 ppm	1.0274 ppm	11.7391 ppm	-0.0005 ppm
Concentration RSD	1.6 %	1.8 %	1.6 %	2.0 %	0.9 %	0.8 %	1,373.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	16.9756 ppm	0.5028 ppm	0.9723 ppm	22.7925 ppm	0.5335 ppm	0.5372 ppm	0.4146 ppm
Concentration per Run 1	17.2468 ppm	0.5078 ppm	0.9786 ppm	22.9527 ppm	0.5422 ppm	0.5391 ppm	0.4137 ppm
Concentration per Run 2	16.9583 ppm	0.4980 ppm	0.9704 ppm	22.5910 ppm	0.5327 ppm	0.5368 ppm	0.4161 ppm
Concentration per Run 3	16.7216 ppm	0.5026 ppm	0.9679 ppm	22.8337 ppm	0.5257 ppm	0.5358 ppm	0.4141 ppm
Concentration RSD	1.5 %	1.0 %	0.6 %	0.8 %	1.5 %	0.3 %	0.3 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1129 ppm	8.0338 ppm	1.0737 ppm	1.0904 ppm	1.1046 ppm	0.1119 ppm	0.5366 ppm
Concentration per Run 1	0.1112 ppm	8.1798 ppm	1.0846 ppm	1.0997 ppm	1.1162 ppm	0.1116 ppm	0.5455 ppm
Concentration per Run 2	0.1130 ppm	8.0009 ppm	1.0688 ppm	1.0845 ppm	1.1072 ppm	0.1123 ppm	0.5356 ppm
Concentration per Run 3	0.1145 ppm	7.9208 ppm	1.0677 ppm	1.0871 ppm	1.0906 ppm	0.1119 ppm	0.5286 ppm
Concentration RSD	1.4 %	1.7 %	0.9 %	0.7 %	1.2 %	0.3 %	1.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5391 ppm	98.2911 %	103.3506 %	95.9125 %	100.2124 %	102.6746 %	100.8010 %
Concentration per Run 1	0.5497 ppm	96.4959 %	101.9365 %	95.3551 %	100.1586 %	102.0888 %	100.8401 %
Concentration per Run 2	0.5373 ppm	98.8994 %	104.6763 %	96.0838 %	100.6289 %	103.2335 %	100.7687 %
Concentration per Run 3	0.5302 ppm	99.4782 %	103.4391 %	96.2987 %	99.8497 %	102.7017 %	100.7941 %
Concentration RSD	1.8 %	1.6 %	1.3 %	0.5 %	0.4 %	0.6 %	0.0 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1969512-10D5 WG1969512
Analysis started at: 9/11/2024 10:53:25 AM
Rack 1
Vial 28
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0041 ppm	0.0002 ppm	0.0041 ppm	0.0030 ppm	0.0000 ppm	4.6864 ppm
Concentration per Run 1	-0.0002 ppm	-0.0041 ppm	0.0010 ppm	0.0042 ppm	0.0030 ppm	0.0000 ppm	4.6961 ppm
Concentration per Run 2	0.0000 ppm	-0.0045 ppm	-0.0002 ppm	0.0042 ppm	0.0031 ppm	0.0000 ppm	4.7058 ppm
Concentration per Run 3	0.0000 ppm	-0.0036 ppm	-0.0001 ppm	0.0038 ppm	0.0029 ppm	0.0000 ppm	4.6573 ppm
Concentration RSD	351.9 %	11.6 %	289.9 %	6.7 %	2.2 %	795.1 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0002 ppm	0.0002 ppm	0.0004 ppm	0.0017 ppm	0.4082 ppm	-0.0002 ppm
Concentration per Run 1	0.0000 ppm	0.0004 ppm	0.0004 ppm	0.0003 ppm	0.0014 ppm	0.4101 ppm	-0.0007 ppm
Concentration per Run 2	0.0000 ppm	0.0001 ppm	-0.0001 ppm	0.0004 ppm	0.0017 ppm	0.4224 ppm	-0.0007 ppm
Concentration per Run 3	0.0000 ppm	0.0002 ppm	0.0004 ppm	0.0004 ppm	0.0022 ppm	0.3922 ppm	0.0006 ppm
Concentration RSD	43.4 %	73.6 %	110.5 %	9.5 %	23.2 %	3.7 %	286.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.9691 ppm	0.0004 ppm	0.0066 ppm	2.0418 ppm	0.0001 ppm	0.0002 ppm	0.0060 ppm
Concentration per Run 1	0.9907 ppm	0.0005 ppm	0.0067 ppm	2.0441 ppm	0.0000 ppm	-0.0001 ppm	0.0049 ppm
Concentration per Run 2	0.9696 ppm	0.0004 ppm	0.0071 ppm	2.0458 ppm	0.0002 ppm	0.0003 ppm	0.0073 ppm
Concentration per Run 3	0.9472 ppm	0.0003 ppm	0.0060 ppm	2.0355 ppm	0.0002 ppm	0.0004 ppm	0.0059 ppm
Concentration RSD	2.2 %	25.4 %	8.0 %	0.3 %	80.5 %	165.5 %	19.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0003 ppm	0.3412 ppm	0.0063 ppm	0.0161 ppm	0.0001 ppm	-0.0006 ppm	0.0001 ppm
Concentration per Run 1	0.0017 ppm	0.3496 ppm	0.0065 ppm	0.0162 ppm	0.0000 ppm	-0.0007 ppm	0.0000 ppm
Concentration per Run 2	-0.0012 ppm	0.3415 ppm	0.0058 ppm	0.0161 ppm	0.0002 ppm	-0.0006 ppm	0.0001 ppm
Concentration per Run 3	0.0003 ppm	0.3324 ppm	0.0065 ppm	0.0161 ppm	0.0001 ppm	-0.0004 ppm	0.0002 ppm
Concentration RSD	576.6 %	2.5 %	6.9 %	0.3 %	68.6 %	31.8 %	70.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0010 ppm	101.1889 %	100.7889 %	101.2949 %	102.7403 %	101.0693 %	102.9505 %
Concentration per Run 1	0.0011 ppm	99.5056 %	100.5838 %	100.7785 %	102.7699 %	101.3250 %	103.0852 %
Concentration per Run 2	0.0010 ppm	101.2691 %	100.4902 %	101.4092 %	102.3913 %	100.7821 %	103.2272 %
Concentration per Run 3	0.0010 ppm	102.7919 %	101.2928 %	101.6968 %	103.0597 %	101.1007 %	102.5391 %
Concentration RSD	6.8 %	1.6 %	0.4 %	0.5 %	0.3 %	0.3 %	0.4 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCV
Analysis started at: 9/11/2024 10:57:21 AM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.4918 ppm	0.4555 ppm	0.4551 ppm	0.4651 ppm	0.4850 ppm	0.4908 ppm	0.4703 ppm
Concentration per Run 1	0.4944 ppm	0.4581 ppm	0.4552 ppm	0.4669 ppm	0.4829 ppm	0.4918 ppm	0.4712 ppm
Concentration per Run 2	0.4924 ppm	0.4522 ppm	0.4569 ppm	0.4650 ppm	0.4879 ppm	0.4899 ppm	0.4681 ppm
Concentration per Run 3	0.4886 ppm	0.4562 ppm	0.4533 ppm	0.4634 ppm	0.4841 ppm	0.4908 ppm	0.4714 ppm
Recovery Percentage 1	98.357 %	91.098 %	91.028 %	93.023 %	96.990 %	98.168 %	94.051 %
Concentration RSD	0.6 %	0.7 %	0.4 %	0.4 %	0.5 %	0.2 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.4942 ppm	0.5020 ppm	0.4850 ppm	0.4803 ppm	0.4881 ppm	5.0238 ppm	0.4990 ppm
Concentration per Run 1	0.4968 ppm	0.5052 ppm	0.4875 ppm	0.4820 ppm	0.4934 ppm	5.0244 ppm	0.4957 ppm
Concentration per Run 2	0.4941 ppm	0.5005 ppm	0.4852 ppm	0.4806 ppm	0.4865 ppm	5.0488 ppm	0.5006 ppm
Concentration per Run 3	0.4918 ppm	0.5003 ppm	0.4823 ppm	0.4781 ppm	0.4842 ppm	4.9982 ppm	0.5006 ppm
Recovery Percentage 1	98.848 %	100.404 %	97.007 %	96.050 %	97.610 %	100.476 %	99.793 %
Concentration RSD	0.5 %	0.6 %	0.5 %	0.4 %	1.0 %	0.5 %	0.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.4848 ppm	0.4736 ppm	0.4922 ppm	9.9145 ppm	0.5012 ppm	0.4723 ppm	0.4924 ppm
Concentration per Run 1	0.4872 ppm	0.4742 ppm	0.4920 ppm	9.9056 ppm	0.5047 ppm	0.4736 ppm	0.4960 ppm
Concentration per Run 2	0.4837 ppm	0.4731 ppm	0.4923 ppm	9.9381 ppm	0.5007 ppm	0.4726 ppm	0.4923 ppm
Concentration per Run 3	0.4834 ppm	0.4736 ppm	0.4924 ppm	9.8998 ppm	0.4981 ppm	0.4706 ppm	0.4890 ppm
Recovery Percentage 1	96.953 %	94.727 %	98.447 %	99.145 %	100.233 %	94.454 %	98.484 %
Concentration RSD	0.4 %	0.1 %	0.0 %	0.2 %	0.7 %	0.3 %	0.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4647 ppm	5.1291 ppm	0.5168 ppm	0.4970 ppm	0.4916 ppm	0.4692 ppm	0.4881 ppm
Concentration per Run 1	0.4664 ppm	5.1565 ppm	0.5172 ppm	0.4964 ppm	0.4968 ppm	0.4718 ppm	0.4901 ppm
Concentration per Run 2	0.4647 ppm	5.1368 ppm	0.5194 ppm	0.4963 ppm	0.4872 ppm	0.4674 ppm	0.4877 ppm
Concentration per Run 3	0.4630 ppm	5.0941 ppm	0.5139 ppm	0.4983 ppm	0.4910 ppm	0.4684 ppm	0.4866 ppm
Recovery Percentage 1	92.943 %	97.698 %	103.364 %	99.401 %	98.329 %	93.837 %	97.620 %
Concentration RSD	0.4 %	0.6 %	0.5 %	0.2 %	1.0 %	0.5 %	0.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4929 ppm	105.6849 %	105.1379 %	103.0658 %	101.3136 %	102.1855 %	102.3237 %
Concentration per Run 1	0.4966 ppm	105.1081 %	105.1369 %	103.2982 %	101.3986 %	102.8802 %	102.8812 %
Concentration per Run 2	0.4921 ppm	106.0188 %	105.1459 %	102.5995 %	101.3986 %	101.8498 %	101.9583 %
Concentration per Run 3	0.4899 ppm	105.9277 %	105.1308 %	103.2998 %	101.1437 %	101.8264 %	102.1316 %
Recovery Percentage 1	98.576 %						
Concentration RSD	0.7 %	0.5 %	0.0 %	0.4 %	0.1 %	0.6 %	0.5 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCB
Analysis started at: 9/11/2024 11:01:18 AM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0001 ppm	-0.0108 ppm	0.0006 ppm	0.0010 ppm	-0.0001 ppm	0.0000 ppm	-0.0015 ppm
Concentration per Run 1	-0.0003 ppm	-0.0082 ppm	0.0008 ppm	0.0008 ppm	-0.0002 ppm	0.0000 ppm	-0.0007 ppm
Concentration per Run 2	-0.0001 ppm	-0.0131 ppm	-0.0002 ppm	0.0002 ppm	0.0001 ppm	0.0000 ppm	-0.0026 ppm
Concentration per Run 3	0.0000 ppm	-0.0110 ppm	0.0011 ppm	0.0019 ppm	-0.0001 ppm	0.0000 ppm	-0.0011 ppm
Recovery Percentage 1	-2.138 %	-10.761 %	19.086 %	3.284 %	-0.666 %	0.832 %	-1.487 %
Concentration RSD	84.1 %	23.1 %	126.5 %	86.6 %	240.7 %	43.4 %	66.7 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0001 ppm	-0.0001 ppm	0.0001 ppm	0.0002 ppm	0.0038 ppm	0.0116 ppm	-0.0004 ppm
Concentration per Run 1	0.0001 ppm	-0.0002 ppm	0.0001 ppm	0.0003 ppm	0.0033 ppm	0.0196 ppm	-0.0012 ppm
Concentration per Run 2	0.0001 ppm	0.0000 ppm	0.0002 ppm	0.0001 ppm	0.0034 ppm	0.0122 ppm	-0.0005 ppm
Concentration per Run 3	0.0001 ppm	0.0000 ppm	0.0000 ppm	0.0003 ppm	0.0047 ppm	0.0028 ppm	0.0004 ppm
Recovery Percentage 1	1.665 %	-0.259 %	0.777 %	2.158 %	7.598 %	0.462 %	-4.200 %
Concentration RSD	48.4 %	229.0 %	103.1 %	49.4 %	20.0 %	72.7 %	189.3 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	-0.0004 ppm	0.0002 ppm	0.0024 ppm	0.0168 ppm	-0.0001 ppm	0.0004 ppm	0.0019 ppm
Concentration per Run 1	-0.0015 ppm	0.0000 ppm	0.0024 ppm	0.0191 ppm	0.0005 ppm	0.0002 ppm	0.0009 ppm
Concentration per Run 2	0.0012 ppm	0.0002 ppm	0.0026 ppm	0.0129 ppm	0.0004 ppm	0.0011 ppm	0.0034 ppm
Concentration per Run 3	-0.0010 ppm	0.0003 ppm	0.0021 ppm	0.0183 ppm	-0.0014 ppm	0.0001 ppm	0.0013 ppm
Recovery Percentage 1	-0.408 %	1.658 %	4.719 %	0.840 %	-0.571 %	4.460 %	3.716 %
Concentration RSD	347.1 %	65.3 %	9.7 %	20.0 %	764.2 %	120.3 %	71.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0001 ppm	-0.0001 ppm	0.0009 ppm	0.0000 ppm	-0.0003 ppm	0.0002 ppm	0.0001 ppm
Concentration per Run 1	0.0007 ppm	-0.0004 ppm	0.0008 ppm	0.0000 ppm	-0.0002 ppm	-0.0004 ppm	0.0001 ppm
Concentration per Run 2	-0.0002 ppm	0.0004 ppm	0.0010 ppm	0.0000 ppm	-0.0003 ppm	-0.0001 ppm	0.0000 ppm
Concentration per Run 3	-0.0003 ppm	-0.0002 ppm	0.0010 ppm	0.0000 ppm	-0.0004 ppm	0.0013 ppm	0.0002 ppm
Recovery Percentage 1	0.806 %	-0.010 %	1.877 %	0.285 %	-2.901 %	1.220 %	0.918 %
Concentration RSD	717.0 %	868.5 %	12.4 %	44.7 %	38.7 %	374.3 %	84.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0009 ppm	100.7079 %	102.5468 %	102.7151 %	103.6890 %	103.5465 %	104.4392 %
Concentration per Run 1	0.0009 ppm	98.6388 %	102.0951 %	102.2371 %	103.0394 %	103.1508 %	104.5546 %
Concentration per Run 2	0.0010 ppm	101.3797 %	102.0589 %	102.9376 %	103.9959 %	103.2052 %	104.4739 %
Concentration per Run 3	0.0010 ppm	102.1052 %	103.4863 %	102.9707 %	104.0317 %	104.2835 %	104.2890 %
Recovery Percentage 1	18.958 %						
Concentration RSD	5.7 %	1.8 %	0.8 %	0.4 %	0.5 %	0.6 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: Test MIX 0601 CME
Analysis started at: 9/11/2024 11:09:55 AM
Rack 1
Vial 43
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	-0.0083 ppm	0.0012 ppm	0.9403 ppm	-0.0001 ppm	0.0000 ppm	9.3705 ppm
Concentration per Run 1	0.0005 ppm	-0.0036 ppm	0.0013 ppm	0.9449 ppm	0.0000 ppm	0.0000 ppm	9.5504 ppm
Concentration per Run 2	-0.0003 ppm	-0.0118 ppm	0.0013 ppm	0.9391 ppm	-0.0001 ppm	0.0000 ppm	9.2426 ppm
Concentration per Run 3	0.0001 ppm	-0.0096 ppm	0.0011 ppm	0.9369 ppm	-0.0001 ppm	0.0000 ppm	9.3185 ppm
Concentration RSD	369.7 %	50.8 %	6.6 %	0.4 %	74.3 %	40.6 %	1.7 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0000 ppm	0.0008 ppm	-0.0003 ppm	-0.0007 ppm	19.7613 ppm	-0.0004 ppm
Concentration per Run 1	0.0000 ppm	0.0000 ppm	0.0010 ppm	-0.0002 ppm	-0.0007 ppm	20.0401 ppm	0.0005 ppm
Concentration per Run 2	-0.0001 ppm	0.0001 ppm	0.0005 ppm	-0.0005 ppm	0.0003 ppm	19.5658 ppm	-0.0009 ppm
Concentration per Run 3	0.0000 ppm	-0.0001 ppm	0.0008 ppm	-0.0003 ppm	-0.0016 ppm	19.6781 ppm	-0.0008 ppm
Concentration RSD	176.5 %	34,873.6 %	33.0 %	43.8 %	142.3 %	1.3 %	208.1 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	10.0100 ppm	0.0001 ppm	0.9372 ppm	9.5913 ppm	-0.0006 ppm	0.0001 ppm	-0.0008 ppm
Concentration per Run 1	10.0875 ppm	0.0001 ppm	0.9360 ppm	9.7489 ppm	-0.0002 ppm	-0.0007 ppm	-0.0009 ppm
Concentration per Run 2	10.0214 ppm	0.0000 ppm	0.9368 ppm	9.4714 ppm	-0.0006 ppm	0.0008 ppm	-0.0004 ppm
Concentration per Run 3	9.9209 ppm	0.0002 ppm	0.9387 ppm	9.5536 ppm	-0.0009 ppm	0.0001 ppm	-0.0010 ppm
Concentration RSD	0.8 %	70.1 %	0.1 %	1.5 %	56.9 %	1,067.0 %	45.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0007 ppm	0.0052 ppm	0.9828 ppm	0.9342 ppm	0.0000 ppm	-0.0001 ppm	0.0004 ppm
Concentration per Run 1	-0.0009 ppm	0.0052 ppm	0.9856 ppm	0.9517 ppm	-0.0002 ppm	-0.0005 ppm	0.0003 ppm
Concentration per Run 2	-0.0010 ppm	0.0062 ppm	0.9815 ppm	0.9230 ppm	-0.0001 ppm	0.0002 ppm	0.0006 ppm
Concentration per Run 3	-0.0003 ppm	0.0042 ppm	0.9813 ppm	0.9278 ppm	0.0003 ppm	0.0000 ppm	0.0003 ppm
Concentration RSD	55.8 %	19.4 %	0.2 %	1.6 %	925.1 %	327.1 %	35.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0001 ppm	100.8242 %	104.4604 %	99.8468 %	100.6012 %	101.4790 %	101.2384 %
Concentration per Run 1	0.0001 ppm	99.9761 %	102.6435 %	99.6741 %	100.8144 %	101.0890 %	101.8229 %
Concentration per Run 2	0.0000 ppm	100.8193 %	105.9855 %	99.4646 %	100.1250 %	101.7428 %	100.5416 %
Concentration per Run 3	0.0002 ppm	101.6772 %	104.7521 %	100.4017 %	100.8642 %	101.6052 %	101.3509 %
Concentration RSD	112.2 %	0.8 %	1.6 %	0.5 %	0.4 %	0.3 %	0.6 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450786-10 WG1969512
Analysis started at: 9/11/2024 11:14:09 AM
Rack 1
Vial 37
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0049 ppm	0.0002 ppm	0.0147 ppm	0.0247 ppm	0.0000 ppm	14.2977 ppm
Concentration per Run 1	0.0001 ppm	0.0004 ppm	0.0009 ppm	0.0153 ppm	0.0245 ppm	0.0000 ppm	14.2992 ppm
Concentration per Run 2	0.0001 ppm	-0.0100 ppm	0.0001 ppm	0.0149 ppm	0.0247 ppm	0.0001 ppm	14.1995 ppm
Concentration per Run 3	-0.0001 ppm	-0.0052 ppm	-0.0005 ppm	0.0138 ppm	0.0247 ppm	0.0000 ppm	14.3944 ppm
Concentration RSD	795.5 %	105.3 %	407.6 %	5.1 %	0.4 %	125.9 %	0.7 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0057 ppm	0.0023 ppm	0.0008 ppm	0.4519 ppm	1.2080 ppm	0.0024 ppm
Concentration per Run 1	0.0000 ppm	0.0055 ppm	0.0026 ppm	0.0007 ppm	0.4497 ppm	1.2155 ppm	0.0020 ppm
Concentration per Run 2	0.0000 ppm	0.0058 ppm	0.0025 ppm	0.0010 ppm	0.4503 ppm	1.1882 ppm	0.0022 ppm
Concentration per Run 3	0.0000 ppm	0.0060 ppm	0.0019 ppm	0.0008 ppm	0.4556 ppm	1.2204 ppm	0.0029 ppm
Concentration RSD	336.6 %	4.5 %	17.7 %	18.2 %	0.7 %	1.4 %	20.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	6.5005 ppm	0.0166 ppm	0.0059 ppm	15.3405 ppm	0.0085 ppm	0.0007 ppm	-0.0021 ppm
Concentration per Run 1	6.6136 ppm	0.0167 ppm	0.0058 ppm	15.2952 ppm	0.0082 ppm	0.0009 ppm	-0.0020 ppm
Concentration per Run 2	6.5110 ppm	0.0166 ppm	0.0062 ppm	15.1689 ppm	0.0084 ppm	0.0014 ppm	-0.0013 ppm
Concentration per Run 3	6.3767 ppm	0.0166 ppm	0.0058 ppm	15.5575 ppm	0.0089 ppm	-0.0001 ppm	-0.0030 ppm
Concentration RSD	1.8 %	0.5 %	4.2 %	1.3 %	4.1 %	101.9 %	41.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0004 ppm	9.7681 ppm	0.0028 ppm	0.0781 ppm	-0.0003 ppm	-0.0001 ppm	0.0000 ppm
Concentration per Run 1	0.0007 ppm	9.9625 ppm	0.0030 ppm	0.0781 ppm	-0.0005 ppm	-0.0004 ppm	0.0001 ppm
Concentration per Run 2	-0.0002 ppm	9.7028 ppm	0.0026 ppm	0.0780 ppm	-0.0004 ppm	0.0004 ppm	-0.0001 ppm
Concentration per Run 3	0.0006 ppm	9.6392 ppm	0.0027 ppm	0.0782 ppm	-0.0002 ppm	-0.0002 ppm	0.0000 ppm
Concentration RSD	132.7 %	1.8 %	8.1 %	0.1 %	45.3 %	677.1 %	392.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0160 ppm	95.5404 %	99.8189 %	96.7454 %	100.8475 %	101.5288 %	102.2053 %
Concentration per Run 1	0.0163 ppm	94.1356 %	100.0086 %	95.8310 %	101.3863 %	102.1374 %	102.2516 %
Concentration per Run 2	0.0158 ppm	95.6471 %	100.3045 %	97.0977 %	100.4446 %	101.5832 %	102.2933 %
Concentration per Run 3	0.0158 ppm	96.8386 %	99.1437 %	97.3077 %	100.7117 %	100.8657 %	102.0711 %
Concentration RSD	1.9 %	1.4 %	0.6 %	0.8 %	0.5 %	0.6 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450786-12 WG1969512
Analysis started at: 9/11/2024 11:18:04 AM
Rack 1
Vial 38
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0060 ppm	0.0005 ppm	0.0168 ppm	0.0405 ppm	0.0000 ppm	17.5227 ppm
Concentration per Run 1	-0.0002 ppm	-0.0078 ppm	0.0005 ppm	0.0168 ppm	0.0408 ppm	-0.0001 ppm	17.4741 ppm
Concentration per Run 2	0.0000 ppm	-0.0065 ppm	0.0007 ppm	0.0172 ppm	0.0403 ppm	0.0000 ppm	17.5272 ppm
Concentration per Run 3	0.0001 ppm	-0.0038 ppm	0.0003 ppm	0.0164 ppm	0.0402 ppm	0.0000 ppm	17.5667 ppm
Concentration RSD	339.9 %	33.9 %	37.9 %	2.5 %	0.8 %	205.6 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0002 ppm	0.0015 ppm	0.0005 ppm	0.0104 ppm	2.3438 ppm	-0.0001 ppm
Concentration per Run 1	-0.0001 ppm	-0.0003 ppm	0.0015 ppm	0.0005 ppm	0.0111 ppm	2.3903 ppm	0.0006 ppm
Concentration per Run 2	0.0000 ppm	-0.0004 ppm	0.0015 ppm	0.0003 ppm	0.0098 ppm	2.3223 ppm	-0.0013 ppm
Concentration per Run 3	-0.0001 ppm	0.0000 ppm	0.0016 ppm	0.0007 ppm	0.0104 ppm	2.3188 ppm	0.0004 ppm
Concentration RSD	90.2 %	96.4 %	3.4 %	44.8 %	6.3 %	1.7 %	932.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	3.7346 ppm	0.0019 ppm	0.0014 ppm	13.3048 ppm	-0.0002 ppm	0.0004 ppm	-0.0017 ppm
Concentration per Run 1	3.7847 ppm	0.0018 ppm	0.0011 ppm	13.5005 ppm	-0.0005 ppm	-0.0002 ppm	-0.0002 ppm
Concentration per Run 2	3.7251 ppm	0.0018 ppm	0.0014 ppm	13.1885 ppm	0.0002 ppm	0.0014 ppm	-0.0043 ppm
Concentration per Run 3	3.6938 ppm	0.0020 ppm	0.0016 ppm	13.2253 ppm	-0.0002 ppm	0.0000 ppm	-0.0007 ppm
Concentration RSD	1.2 %	6.5 %	20.5 %	1.3 %	171.5 %	212.3 %	128.3 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0002 ppm	3.9616 ppm	0.0005 ppm	0.0775 ppm	-0.0002 ppm	0.0001 ppm	0.0001 ppm
Concentration per Run 1	-0.0009 ppm	3.9979 ppm	0.0008 ppm	0.0775 ppm	-0.0002 ppm	0.0001 ppm	0.0001 ppm
Concentration per Run 2	0.0007 ppm	3.9634 ppm	0.0006 ppm	0.0775 ppm	-0.0003 ppm	0.0005 ppm	-0.0001 ppm
Concentration per Run 3	0.0009 ppm	3.9235 ppm	0.0002 ppm	0.0775 ppm	0.0000 ppm	-0.0004 ppm	0.0001 ppm
Concentration RSD	406.1 %	0.9 %	61.9 %	0.1 %	78.7 %	676.9 %	184.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0007 ppm	97.5443 %	100.8848 %	97.9818 %	101.5406 %	102.4559 %	102.5652 %
Concentration per Run 1	0.0008 ppm	96.9137 %	101.0014 %	96.9620 %	102.5938 %	102.5481 %	102.4798 %
Concentration per Run 2	0.0006 ppm	97.5908 %	100.7423 %	98.6892 %	101.2790 %	102.2004 %	103.0660 %
Concentration per Run 3	0.0008 ppm	98.1283 %	100.9107 %	98.2941 %	100.7488 %	102.6193 %	102.1500 %
Concentration RSD	15.0 %	0.6 %	0.1 %	0.9 %	0.9 %	0.2 %	0.5 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450815-02 WG1969512
Analysis started at: 9/11/2024 11:21:59 AM
Rack 1
Vial 39
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0001 ppm	0.0036 ppm	0.0754 ppm	0.0171 ppm	0.0312 ppm	0.0001 ppm	11.2138 ppm
Concentration per Run 1	0.0001 ppm	0.0035 ppm	0.0753 ppm	0.0182 ppm	0.0312 ppm	0.0001 ppm	11.2873 ppm
Concentration per Run 2	0.0000 ppm	0.0032 ppm	0.0741 ppm	0.0171 ppm	0.0315 ppm	0.0001 ppm	11.2148 ppm
Concentration per Run 3	-0.0003 ppm	0.0041 ppm	0.0767 ppm	0.0160 ppm	0.0309 ppm	0.0001 ppm	11.1392 ppm
Concentration RSD	258.2 %	12.3 %	1.7 %	6.5 %	0.9 %	9.7 %	0.7 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0018 ppm	0.0009 ppm	0.0019 ppm	43.8364 ppm	3.0185 ppm	0.0006 ppm
Concentration per Run 1	0.0000 ppm	0.0017 ppm	0.0012 ppm	0.0018 ppm	44.0788 ppm	3.0741 ppm	0.0011 ppm
Concentration per Run 2	-0.0001 ppm	0.0017 ppm	0.0010 ppm	0.0022 ppm	43.9275 ppm	3.0274 ppm	0.0004 ppm
Concentration per Run 3	0.0000 ppm	0.0021 ppm	0.0005 ppm	0.0017 ppm	43.5028 ppm	2.9540 ppm	0.0002 ppm
Concentration RSD	26.1 %	12.7 %	41.8 %	12.8 %	0.7 %	2.0 %	79.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	7.8647 ppm	2.7534 ppm	0.0017 ppm	21.4281 ppm	0.0007 ppm	0.0000 ppm	0.0007 ppm
Concentration per Run 1	7.9525 ppm	2.7665 ppm	0.0017 ppm	21.5345 ppm	0.0009 ppm	0.0006 ppm	0.0035 ppm
Concentration per Run 2	7.9053 ppm	2.7562 ppm	0.0015 ppm	21.4850 ppm	0.0005 ppm	0.0002 ppm	-0.0008 ppm
Concentration per Run 3	7.7363 ppm	2.7375 ppm	0.0018 ppm	21.2648 ppm	0.0006 ppm	-0.0007 ppm	-0.0006 ppm
Concentration RSD	1.4 %	0.5 %	7.6 %	0.7 %	30.3 %	15,401.2 %	351.3 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0005 ppm	8.1949 ppm	0.0000 ppm	0.1231 ppm	-0.0001 ppm	-0.0012 ppm	0.0005 ppm
Concentration per Run 1	0.0005 ppm	8.2986 ppm	-0.0004 ppm	0.1234 ppm	0.0000 ppm	-0.0016 ppm	0.0006 ppm
Concentration per Run 2	-0.0016 ppm	8.2539 ppm	0.0000 ppm	0.1235 ppm	-0.0002 ppm	0.0000 ppm	0.0004 ppm
Concentration per Run 3	-0.0003 ppm	8.0324 ppm	0.0002 ppm	0.1224 ppm	-0.0002 ppm	-0.0019 ppm	0.0005 ppm
Concentration RSD	219.4 %	1.7 %	847.8 %	0.5 %	93.9 %	86.0 %	20.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0021 ppm	100.3908 %	103.3801 %	100.6682 %	98.9217 %	102.7500 %	102.3933 %
Concentration per Run 1	0.0021 ppm	99.4539 %	102.0908 %	101.5442 %	99.9033 %	101.9732 %	101.9346 %
Concentration per Run 2	0.0023 ppm	99.8027 %	103.9618 %	101.5243 %	99.1539 %	103.6343 %	103.7227 %
Concentration per Run 3	0.0020 ppm	101.9158 %	104.0876 %	98.9360 %	97.7080 %	102.6424 %	101.5227 %
Concentration RSD	8.6 %	1.3 %	1.1 %	1.5 %	1.1 %	0.8 %	1.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450815-03 WG1969512
Analysis started at: 9/11/2024 11:25:54 AM
Rack 1
Vial 40
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0096 ppm	0.0007 ppm	0.0179 ppm	0.0003 ppm	0.0000 ppm	10.5619 ppm
Concentration per Run 1	-0.0002 ppm	-0.0058 ppm	0.0016 ppm	0.0177 ppm	0.0004 ppm	0.0000 ppm	10.6527 ppm
Concentration per Run 2	0.0002 ppm	-0.0188 ppm	0.0010 ppm	0.0178 ppm	0.0004 ppm	0.0000 ppm	10.5605 ppm
Concentration per Run 3	0.0000 ppm	-0.0043 ppm	-0.0006 ppm	0.0181 ppm	0.0002 ppm	0.0000 ppm	10.4725 ppm
Concentration RSD	1,349.3 %	83.0 %	169.2 %	1.0 %	24.7 %	1,213.4 %	0.9 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0003 ppm	0.0013 ppm	0.0012 ppm	0.0151 ppm	2.9165 ppm	0.0008 ppm
Concentration per Run 1	-0.0001 ppm	0.0004 ppm	0.0014 ppm	0.0015 ppm	0.0156 ppm	2.9960 ppm	0.0008 ppm
Concentration per Run 2	0.0000 ppm	0.0003 ppm	0.0013 ppm	0.0008 ppm	0.0148 ppm	2.8761 ppm	-0.0002 ppm
Concentration per Run 3	0.0000 ppm	0.0001 ppm	0.0013 ppm	0.0013 ppm	0.0150 ppm	2.8775 ppm	0.0018 ppm
Concentration RSD	161.4 %	41.6 %	4.8 %	27.9 %	2.8 %	2.4 %	122.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	7.7282 ppm	0.4254 ppm	0.0014 ppm	20.8890 ppm	0.0007 ppm	0.0004 ppm	0.0001 ppm
Concentration per Run 1	7.8069 ppm	0.4307 ppm	0.0014 ppm	21.1531 ppm	0.0005 ppm	-0.0002 ppm	-0.0010 ppm
Concentration per Run 2	7.7341 ppm	0.4238 ppm	0.0014 ppm	20.7718 ppm	0.0007 ppm	0.0011 ppm	-0.0012 ppm
Concentration per Run 3	7.6437 ppm	0.4218 ppm	0.0013 ppm	20.7420 ppm	0.0007 ppm	0.0003 ppm	0.0024 ppm
Concentration RSD	1.1 %	1.1 %	5.9 %	1.1 %	24.5 %	161.5 %	2,512.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0007 ppm	5.3545 ppm	0.0002 ppm	0.1029 ppm	-0.0001 ppm	-0.0002 ppm	-0.0001 ppm
Concentration per Run 1	0.0000 ppm	5.4382 ppm	0.0005 ppm	0.1037 ppm	-0.0002 ppm	0.0010 ppm	-0.0001 ppm
Concentration per Run 2	-0.0006 ppm	5.3367 ppm	-0.0002 ppm	0.1027 ppm	0.0000 ppm	-0.0007 ppm	-0.0001 ppm
Concentration per Run 3	-0.0013 ppm	5.2886 ppm	0.0003 ppm	0.1021 ppm	-0.0002 ppm	-0.0008 ppm	-0.0001 ppm
Concentration RSD	103.3 %	1.4 %	175.3 %	0.8 %	108.1 %	618.1 %	24.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0008 ppm	96.4157 %	100.7346 %	95.7031 %	101.3112 %	102.7891 %	101.7852 %
Concentration per Run 1	0.0007 ppm	95.5715 %	99.3040 %	95.6901 %	102.1095 %	102.4837 %	102.3845 %
Concentration per Run 2	0.0009 ppm	96.4606 %	100.0765 %	95.6400 %	100.9647 %	101.8146 %	101.3351 %
Concentration per Run 3	0.0009 ppm	97.2150 %	102.8234 %	95.7791 %	100.8594 %	104.0691 %	101.6360 %
Concentration RSD	11.2 %	0.9 %	1.8 %	0.1 %	0.7 %	1.1 %	0.5 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCV
Analysis started at: 9/11/2024 11:29:49 AM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.4914 ppm	0.4597 ppm	0.4536 ppm	0.4664 ppm	0.4878 ppm	0.4949 ppm	0.4757 ppm
Concentration per Run 1	0.4919 ppm	0.4626 ppm	0.4521 ppm	0.4653 ppm	0.4880 ppm	0.4941 ppm	0.4744 ppm
Concentration per Run 2	0.4916 ppm	0.4624 ppm	0.4537 ppm	0.4684 ppm	0.4894 ppm	0.4959 ppm	0.4769 ppm
Concentration per Run 3	0.4905 ppm	0.4540 ppm	0.4550 ppm	0.4654 ppm	0.4859 ppm	0.4947 ppm	0.4756 ppm
Recovery Percentage 1	98.274 %	91.933 %	90.726 %	93.277 %	97.552 %	98.978 %	95.132 %
Concentration RSD	0.1 %	1.1 %	0.3 %	0.4 %	0.4 %	0.2 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.4966 ppm	0.5030 ppm	0.4846 ppm	0.4811 ppm	0.4913 ppm	5.0206 ppm	0.4976 ppm
Concentration per Run 1	0.4976 ppm	0.5036 ppm	0.4860 ppm	0.4808 ppm	0.4917 ppm	5.0348 ppm	0.4952 ppm
Concentration per Run 2	0.4974 ppm	0.5035 ppm	0.4845 ppm	0.4817 ppm	0.4896 ppm	5.0401 ppm	0.5003 ppm
Concentration per Run 3	0.4949 ppm	0.5018 ppm	0.4832 ppm	0.4807 ppm	0.4927 ppm	4.9869 ppm	0.4972 ppm
Recovery Percentage 1	99.322 %	100.593 %	96.914 %	96.213 %	98.259 %	100.412 %	99.514 %
Concentration RSD	0.3 %	0.2 %	0.3 %	0.1 %	0.3 %	0.6 %	0.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.4870 ppm	0.4770 ppm	0.4897 ppm	9.9995 ppm	0.5017 ppm	0.4762 ppm	0.4877 ppm
Concentration per Run 1	0.4906 ppm	0.4761 ppm	0.4847 ppm	9.9276 ppm	0.5030 ppm	0.4749 ppm	0.4867 ppm
Concentration per Run 2	0.4844 ppm	0.4773 ppm	0.4928 ppm	10.0422 ppm	0.5031 ppm	0.4760 ppm	0.4897 ppm
Concentration per Run 3	0.4861 ppm	0.4777 ppm	0.4917 ppm	10.0288 ppm	0.4992 ppm	0.4777 ppm	0.4866 ppm
Recovery Percentage 1	97.404 %	95.407 %	97.950 %	99.995 %	100.349 %	95.236 %	97.530 %
Concentration RSD	0.7 %	0.2 %	0.9 %	0.6 %	0.4 %	0.3 %	0.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4628 ppm	5.1238 ppm	0.5190 ppm	0.5015 ppm	0.4941 ppm	0.4686 ppm	0.4874 ppm
Concentration per Run 1	0.4600 ppm	5.1228 ppm	0.5189 ppm	0.5012 ppm	0.4940 ppm	0.4663 ppm	0.4872 ppm
Concentration per Run 2	0.4632 ppm	5.1332 ppm	0.5205 ppm	0.5016 ppm	0.4947 ppm	0.4694 ppm	0.4877 ppm
Concentration per Run 3	0.4653 ppm	5.1153 ppm	0.5175 ppm	0.5015 ppm	0.4934 ppm	0.4701 ppm	0.4873 ppm
Recovery Percentage 1	92.563 %	97.596 %	103.801 %	100.292 %	98.811 %	93.725 %	97.476 %
Concentration RSD	0.6 %	0.2 %	0.3 %	0.0 %	0.1 %	0.4 %	0.1 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4960 ppm	105.4187 %	102.9900 %	102.3621 %	100.3314 %	99.7168 %	101.2817 %
Concentration per Run 1	0.4966 ppm	105.1154 %	102.7499 %	102.5432 %	100.1001 %	99.4730 %	101.6698 %
Concentration per Run 2	0.4981 ppm	105.1214 %	103.4918 %	102.1725 %	100.2774 %	100.2681 %	100.9473 %
Concentration per Run 3	0.4934 ppm	106.0193 %	102.7285 %	102.3706 %	100.6167 %	99.4095 %	101.2282 %
Recovery Percentage 1	99.199 %						
Concentration RSD	0.5 %	0.5 %	0.4 %	0.2 %	0.3 %	0.5 %	0.4 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCB
Analysis started at: 9/11/2024 11:33:45 AM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0048 ppm	-0.0001 ppm	0.0006 ppm	0.0000 ppm	0.0000 ppm	-0.0026 ppm
Concentration per Run 1	0.0000 ppm	-0.0028 ppm	-0.0004 ppm	0.0018 ppm	0.0000 ppm	0.0000 ppm	-0.0033 ppm
Concentration per Run 2	0.0002 ppm	-0.0095 ppm	0.0001 ppm	0.0002 ppm	0.0000 ppm	0.0000 ppm	-0.0018 ppm
Concentration per Run 3	-0.0001 ppm	-0.0020 ppm	0.0000 ppm	-0.0001 ppm	-0.0001 ppm	0.0000 ppm	-0.0027 ppm
Recovery Percentage 1	0.407 %	-4.772 %	-3.835 %	2.096 %	-0.070 %	0.219 %	-2.598 %
Concentration RSD	442.6 %	86.6 %	242.2 %	163.5 %	706.1 %	59.4 %	28.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0001 ppm	-0.0001 ppm	0.0000 ppm	0.0006 ppm	0.0028 ppm	-0.0007 ppm	-0.0005 ppm
Concentration per Run 1	0.0001 ppm	-0.0003 ppm	-0.0001 ppm	0.0008 ppm	0.0028 ppm	-0.0037 ppm	0.0006 ppm
Concentration per Run 2	0.0001 ppm	0.0002 ppm	0.0001 ppm	0.0006 ppm	0.0025 ppm	-0.0047 ppm	-0.0011 ppm
Concentration per Run 3	0.0000 ppm	-0.0001 ppm	-0.0002 ppm	0.0004 ppm	0.0032 ppm	0.0062 ppm	-0.0009 ppm
Recovery Percentage 1	1.229 %	-0.283 %	-0.380 %	5.814 %	5.600 %	-0.030 %	-4.911 %
Concentration RSD	51.5 %	477.9 %	442.4 %	30.7 %	12.8 %	810.5 %	188.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0002 ppm	0.0002 ppm	0.0017 ppm	0.0202 ppm	0.0002 ppm	0.0007 ppm	-0.0013 ppm
Concentration per Run 1	-0.0007 ppm	0.0001 ppm	0.0015 ppm	0.0206 ppm	0.0003 ppm	0.0007 ppm	-0.0033 ppm
Concentration per Run 2	0.0009 ppm	0.0003 ppm	0.0018 ppm	0.0215 ppm	-0.0001 ppm	0.0001 ppm	-0.0010 ppm
Concentration per Run 3	0.0003 ppm	0.0003 ppm	0.0017 ppm	0.0185 ppm	0.0004 ppm	0.0013 ppm	0.0002 ppm
Recovery Percentage 1	0.176 %	2.187 %	3.358 %	1.010 %	0.849 %	7.068 %	-2.689 %
Concentration RSD	484.0 %	35.1 %	9.3 %	7.6 %	126.0 %	84.6 %	133.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0002 ppm	0.0009 ppm	0.0005 ppm	0.0000 ppm	-0.0002 ppm	0.0001 ppm	0.0000 ppm
Concentration per Run 1	-0.0007 ppm	0.0006 ppm	0.0007 ppm	0.0001 ppm	-0.0002 ppm	-0.0002 ppm	-0.0001 ppm
Concentration per Run 2	0.0002 ppm	0.0019 ppm	0.0008 ppm	0.0000 ppm	-0.0003 ppm	-0.0002 ppm	0.0001 ppm
Concentration per Run 3	-0.0001 ppm	0.0000 ppm	0.0001 ppm	0.0000 ppm	-0.0002 ppm	0.0006 ppm	0.0000 ppm
Recovery Percentage 1	-1.978 %	0.171 %	1.067 %	0.497 %	-2.190 %	0.266 %	-0.075 %
Concentration RSD	231.0 %	115.6 %	67.8 %	90.1 %	20.0 %	824.8 %	1,882.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0010 ppm	100.2754 %	99.6820 %	101.3143 %	102.2904 %	100.6603 %	102.7171 %
Concentration per Run 1	0.0009 ppm	99.3095 %	100.4639 %	100.7832 %	102.2524 %	101.5088 %	102.6639 %
Concentration per Run 2	0.0009 ppm	100.5035 %	98.7249 %	101.7627 %	102.4729 %	99.9118 %	102.7033 %
Concentration per Run 3	0.0011 ppm	101.0131 %	99.8573 %	101.3971 %	102.1459 %	100.5603 %	102.7841 %
Recovery Percentage 1	19.084 %						
Concentration RSD	10.7 %	0.9 %	0.9 %	0.5 %	0.2 %	0.8 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1970060-1 WG1970060
Analysis started at: 9/11/2024 11:46:53 AM
Rack 1
Vial 50
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	0.0028 ppm	0.0005 ppm	0.0002 ppm	0.0000 ppm	0.0000 ppm	0.0026 ppm
Concentration per Run 1	0.0002 ppm	0.0040 ppm	-0.0002 ppm	0.0003 ppm	-0.0001 ppm	0.0000 ppm	0.0010 ppm
Concentration per Run 2	0.0000 ppm	0.0050 ppm	0.0009 ppm	0.0003 ppm	0.0000 ppm	0.0000 ppm	0.0041 ppm
Concentration per Run 3	0.0002 ppm	-0.0004 ppm	0.0009 ppm	0.0001 ppm	0.0002 ppm	0.0000 ppm	0.0026 ppm
Recovery Percentage 1	1.695 %	2.842 %	17.278 %	0.703 %	0.120 %	-0.048 %	2.595 %
Concentration RSD	103.0 %	101.8 %	125.4 %	62.4 %	1,117.0 %	720.0 %	60.8 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0001 ppm	0.0004 ppm	0.0001 ppm	0.0191 ppm	0.0039 ppm	-0.0007 ppm
Concentration per Run 1	0.0000 ppm	-0.0001 ppm	0.0004 ppm	0.0002 ppm	0.0189 ppm	-0.0045 ppm	0.0009 ppm
Concentration per Run 2	0.0000 ppm	-0.0001 ppm	0.0004 ppm	0.0003 ppm	0.0200 ppm	0.0099 ppm	-0.0024 ppm
Concentration per Run 3	0.0000 ppm	-0.0001 ppm	0.0004 ppm	-0.0001 ppm	0.0183 ppm	0.0063 ppm	-0.0007 ppm
Recovery Percentage 1	0.175 %	-0.465 %	3.897 %	1.169 %	38.133 %	0.156 %	-7.208 %
Concentration RSD	532.9 %	10.7 %	12.3 %	209.0 %	4.6 %	191.4 %	231.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0031 ppm	0.0004 ppm	0.0003 ppm	0.0198 ppm	-0.0004 ppm	0.0010 ppm	0.0000 ppm
Concentration per Run 1	0.0038 ppm	0.0003 ppm	0.0002 ppm	0.0167 ppm	-0.0001 ppm	0.0008 ppm	-0.0008 ppm
Concentration per Run 2	0.0026 ppm	0.0003 ppm	0.0005 ppm	0.0216 ppm	-0.0003 ppm	0.0010 ppm	0.0011 ppm
Concentration per Run 3	0.0028 ppm	0.0005 ppm	0.0002 ppm	0.0212 ppm	-0.0009 ppm	0.0011 ppm	-0.0003 ppm
Recovery Percentage 1	3.070 %	3.811 %	0.640 %	0.991 %	-1.571 %	9.797 %	0.007 %
Concentration RSD	19.7 %	25.8 %	57.7 %	13.8 %	105.5 %	12.6 %	29,336.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0003 ppm	0.0086 ppm	0.0015 ppm	0.0001 ppm	0.0001 ppm	-0.0006 ppm	0.0000 ppm
Concentration per Run 1	-0.0006 ppm	0.0083 ppm	0.0012 ppm	0.0001 ppm	0.0001 ppm	-0.0006 ppm	-0.0001 ppm
Concentration per Run 2	-0.0005 ppm	0.0083 ppm	0.0019 ppm	0.0001 ppm	0.0002 ppm	-0.0014 ppm	0.0000 ppm
Concentration per Run 3	0.0000 ppm	0.0094 ppm	0.0014 ppm	0.0001 ppm	0.0000 ppm	0.0003 ppm	0.0002 ppm
Recovery Percentage 1	-3.433 %	1.729 %	2.987 %	1.015 %	1.046 %	-2.896 %	0.231 %
Concentration RSD	100.3 %	7.5 %	23.2 %	34.1 %	89.6 %	148.4 %	619.9 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0011 ppm	105.5098 %	103.4309 %	104.4344 %	103.9060 %	102.1129 %	103.9039 %
Concentration per Run 1	0.0012 ppm	104.9680 %	103.9400 %	104.0204 %	104.6499 %	102.0491 %	103.4479 %
Concentration per Run 2	0.0011 ppm	105.9381 %	103.1198 %	104.4013 %	104.0705 %	102.3639 %	104.0670 %
Concentration per Run 3	0.0011 ppm	105.6232 %	103.2328 %	104.8814 %	102.9977 %	101.9257 %	104.1968 %
Recovery Percentage 1	22.218 %						
Concentration RSD	6.4 %	0.5 %	0.4 %	0.4 %	0.8 %	0.2 %	0.4 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1970060-2D2 WG1970060
Analysis started at: 9/11/2024 11:51:08 AM
Rack 1
Vial 51
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.3219 ppm	18.4200 ppm	1.1258 ppm	0.8773 ppm	1.0617 ppm	0.6157 ppm	18.4684 ppm
Concentration per Run 1	0.3275 ppm	18.4083 ppm	1.1330 ppm	0.8909 ppm	1.0665 ppm	0.6192 ppm	18.4693 ppm
Concentration per Run 2	0.3208 ppm	18.4541 ppm	1.1265 ppm	0.8758 ppm	1.0616 ppm	0.6139 ppm	18.4616 ppm
Concentration per Run 3	0.3174 ppm	18.3977 ppm	1.1178 ppm	0.8652 ppm	1.0570 ppm	0.6141 ppm	18.4741 ppm
Concentration RSD	1.6 %	0.2 %	0.7 %	1.5 %	0.4 %	0.5 %	0.0 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.8201 ppm	0.3181 ppm	0.6906 ppm	0.7833 ppm	21.6683 ppm	4.2916 ppm	0.4898 ppm
Concentration per Run 1	0.8320 ppm	0.3230 ppm	0.7033 ppm	0.7961 ppm	21.7540 ppm	4.2900 ppm	0.4952 ppm
Concentration per Run 2	0.8180 ppm	0.3172 ppm	0.6880 ppm	0.7802 ppm	21.6742 ppm	4.2832 ppm	0.4847 ppm
Concentration per Run 3	0.8103 ppm	0.3140 ppm	0.6807 ppm	0.7735 ppm	21.5768 ppm	4.3016 ppm	0.4894 ppm
Concentration RSD	1.3 %	1.4 %	1.7 %	1.5 %	0.4 %	0.2 %	1.1 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	5.8446 ppm	1.9297 ppm	0.5214 ppm	6.7613 ppm	1.2207 ppm	0.3475 ppm	0.8100 ppm
Concentration per Run 1	5.9618 ppm	1.9336 ppm	0.5229 ppm	6.7665 ppm	1.2407 ppm	0.3483 ppm	0.8234 ppm
Concentration per Run 2	5.8274 ppm	1.9270 ppm	0.5208 ppm	6.7913 ppm	1.2162 ppm	0.3483 ppm	0.8084 ppm
Concentration per Run 3	5.7446 ppm	1.9284 ppm	0.5203 ppm	6.7260 ppm	1.2053 ppm	0.3458 ppm	0.7981 ppm
Concentration RSD	1.9 %	0.2 %	0.3 %	0.5 %	1.5 %	0.4 %	1.6 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.6141 ppm	6.7284 ppm	0.2993 ppm	0.4929 ppm	1.2096 ppm	0.7481 ppm	0.3961 ppm
Concentration per Run 1	0.6181 ppm	6.7971 ppm	0.3043 ppm	0.4956 ppm	1.2339 ppm	0.7457 ppm	0.4042 ppm
Concentration per Run 2	0.6160 ppm	6.7667 ppm	0.2980 ppm	0.4905 ppm	1.2067 ppm	0.7518 ppm	0.3941 ppm
Concentration per Run 3	0.6082 ppm	6.6213 ppm	0.2957 ppm	0.4926 ppm	1.1883 ppm	0.7466 ppm	0.3901 ppm
Concentration RSD	0.8 %	1.4 %	1.5 %	0.5 %	1.9 %	0.4 %	1.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.6408 ppm	101.7488 %	104.6549 %	98.8741 %	107.1781 %	109.0989 %	108.6349 %
Concentration per Run 1	0.6485 ppm	99.8882 %	104.7129 %	98.6667 %	105.9844 %	109.3045 %	108.9207 %
Concentration per Run 2	0.6398 ppm	102.2257 %	104.3412 %	98.3370 %	108.4614 %	108.5428 %	108.2759 %
Concentration per Run 3	0.6339 ppm	103.1324 %	104.9107 %	99.6185 %	107.0886 %	109.4493 %	108.7082 %
Concentration RSD	1.1 %	1.6 %	0.3 %	0.7 %	1.2 %	0.4 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1970060-3D2 WG1970060
Analysis started at: 9/11/2024 11:55:03 AM
Rack 1
Vial 52
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.3193 ppm	17.2403 ppm	1.1053 ppm	0.8664 ppm	1.0357 ppm	0.6112 ppm	18.3404 ppm
Concentration per Run 1	0.3258 ppm	17.2218 ppm	1.1082 ppm	0.8827 ppm	1.0358 ppm	0.6093 ppm	18.3622 ppm
Concentration per Run 2	0.3184 ppm	17.2945 ppm	1.0979 ppm	0.8652 ppm	1.0375 ppm	0.6132 ppm	18.3578 ppm
Concentration per Run 3	0.3138 ppm	17.2045 ppm	1.1096 ppm	0.8512 ppm	1.0339 ppm	0.6112 ppm	18.3013 ppm
Concentration RSD	1.9 %	0.3 %	0.6 %	1.8 %	0.2 %	0.3 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.8172 ppm	0.3148 ppm	0.6751 ppm	0.7874 ppm	20.5888 ppm	4.1799 ppm	0.4891 ppm
Concentration per Run 1	0.8341 ppm	0.3211 ppm	0.6888 ppm	0.8037 ppm	20.5881 ppm	4.2067 ppm	0.4852 ppm
Concentration per Run 2	0.8152 ppm	0.3137 ppm	0.6736 ppm	0.7844 ppm	20.6452 ppm	4.1794 ppm	0.4920 ppm
Concentration per Run 3	0.8025 ppm	0.3097 ppm	0.6629 ppm	0.7742 ppm	20.5330 ppm	4.1537 ppm	0.4900 ppm
Concentration RSD	1.9 %	1.8 %	1.9 %	1.9 %	0.3 %	0.6 %	0.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	5.6511 ppm	1.8734 ppm	0.5182 ppm	6.7323 ppm	1.2081 ppm	0.3395 ppm	0.7967 ppm
Concentration per Run 1	5.7624 ppm	1.8751 ppm	0.5233 ppm	6.7356 ppm	1.2333 ppm	0.3426 ppm	0.8135 ppm
Concentration per Run 2	5.6594 ppm	1.8756 ppm	0.5176 ppm	6.7671 ppm	1.2071 ppm	0.3364 ppm	0.7981 ppm
Concentration per Run 3	5.5315 ppm	1.8694 ppm	0.5137 ppm	6.6941 ppm	1.1840 ppm	0.3395 ppm	0.7786 ppm
Concentration RSD	2.0 %	0.2 %	0.9 %	0.5 %	2.0 %	0.9 %	2.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.5960 ppm	6.7925 ppm	0.2991 ppm	0.4806 ppm	1.1736 ppm	0.7436 ppm	0.3869 ppm
Concentration per Run 1	0.6007 ppm	7.0081 ppm	0.3060 ppm	0.4812 ppm	1.2027 ppm	0.7454 ppm	0.3943 ppm
Concentration per Run 2	0.5906 ppm	6.6868 ppm	0.2975 ppm	0.4811 ppm	1.1699 ppm	0.7392 ppm	0.3857 ppm
Concentration per Run 3	0.5968 ppm	6.6826 ppm	0.2939 ppm	0.4796 ppm	1.1483 ppm	0.7460 ppm	0.3807 ppm
Concentration RSD	0.9 %	2.7 %	2.1 %	0.2 %	2.3 %	0.5 %	1.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.6337 ppm	101.0347 %	103.7436 %	98.9410 %	105.8361 %	107.9985 %	108.1973 %
Concentration per Run 1	0.6464 ppm	99.1356 %	103.9869 %	98.2804 %	105.4400 %	108.2320 %	108.0209 %
Concentration per Run 2	0.6342 ppm	101.1453 %	103.2479 %	99.5735 %	105.8178 %	107.2822 %	108.4818 %
Concentration per Run 3	0.6205 ppm	102.8233 %	103.9961 %	98.9690 %	106.2506 %	108.4813 %	108.0891 %
Concentration RSD	2.0 %	1.8 %	0.4 %	0.7 %	0.4 %	0.6 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2451879-05D2 WG1970060
Analysis started at: 9/11/2024 11:58:59 AM
Rack 1
Vial 53
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0010 ppm	113.4047 ppm	0.0748 ppm	0.0078 ppm	0.3358 ppm	0.0047 ppm	15.3047 ppm
Concentration per Run 1	0.0012 ppm	113.2398 ppm	0.0745 ppm	0.0075 ppm	0.3349 ppm	0.0046 ppm	15.2274 ppm
Concentration per Run 2	0.0008 ppm	113.7143 ppm	0.0746 ppm	0.0087 ppm	0.3368 ppm	0.0048 ppm	15.3895 ppm
Concentration per Run 3	0.0010 ppm	113.2599 ppm	0.0754 ppm	0.0073 ppm	0.3358 ppm	0.0047 ppm	15.2971 ppm
Concentration RSD	16.8 %	0.2 %	0.7 %	9.3 %	0.3 %	1.9 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0013 ppm	0.0280 ppm	0.1681 ppm	0.2862 ppm	111.1175 ppm	4.7370 ppm	0.0667 ppm
Concentration per Run 1	0.0014 ppm	0.0282 ppm	0.1696 ppm	0.2892 ppm	110.6623 ppm	4.7426 ppm	0.0661 ppm
Concentration per Run 2	0.0012 ppm	0.0280 ppm	0.1675 ppm	0.2848 ppm	111.5961 ppm	4.7604 ppm	0.0673 ppm
Concentration per Run 3	0.0013 ppm	0.0278 ppm	0.1672 ppm	0.2845 ppm	111.0940 ppm	4.7082 ppm	0.0668 ppm
Concentration RSD	9.1 %	0.6 %	0.8 %	0.9 %	0.4 %	0.6 %	0.9 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	17.9373 ppm	1.7220 ppm	0.0081 ppm	0.6177 ppm	0.0684 ppm	1.0819 ppm	0.0043 ppm
Concentration per Run 1	18.1515 ppm	1.7203 ppm	0.0083 ppm	0.6211 ppm	0.0692 ppm	1.0783 ppm	0.0043 ppm
Concentration per Run 2	17.9219 ppm	1.7245 ppm	0.0078 ppm	0.6110 ppm	0.0678 ppm	1.0885 ppm	0.0045 ppm
Concentration per Run 3	17.7386 ppm	1.7211 ppm	0.0082 ppm	0.6210 ppm	0.0682 ppm	1.0790 ppm	0.0042 ppm
Concentration RSD	1.2 %	0.1 %	3.5 %	0.9 %	1.0 %	0.5 %	4.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0055 ppm	7.1741 ppm	0.0258 ppm	0.0467 ppm	4.2830 ppm	0.0029 ppm	0.2741 ppm
Concentration per Run 1	0.0075 ppm	7.3588 ppm	0.0255 ppm	0.0464 ppm	4.3438 ppm	0.0035 ppm	0.2770 ppm
Concentration per Run 2	0.0046 ppm	7.0912 ppm	0.0262 ppm	0.0470 ppm	4.2702 ppm	0.0020 ppm	0.2732 ppm
Concentration per Run 3	0.0045 ppm	7.0724 ppm	0.0258 ppm	0.0466 ppm	4.2349 ppm	0.0032 ppm	0.2720 ppm
Concentration RSD	30.6 %	2.2 %	1.3 %	0.7 %	1.3 %	26.7 %	0.9 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5468 ppm	104.9144 %	109.2426 %	93.6238 %	127.4433 %	133.9574 %	129.8924 %
Concentration per Run 1	0.5519 ppm	103.7597 %	110.3548 %	93.8767 %	127.0621 %	134.8841 %	130.0798 %
Concentration per Run 2	0.5485 ppm	105.1599 %	108.3329 %	93.2373 %	127.4448 %	133.4378 %	129.8257 %
Concentration per Run 3	0.5399 ppm	105.8237 %	109.0402 %	93.7575 %	127.8229 %	133.5504 %	129.7716 %
Concentration RSD	1.1 %	1.0 %	0.9 %	0.4 %	0.3 %	0.6 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1970060-4D2 WG1970060
Analysis started at: 9/11/2024 12:02:54 PM
Rack 1
Vial 54
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0495 ppm	116.4145 ppm	0.1984 ppm	0.8574 ppm	2.2470 ppm	0.0533 ppm	24.5710 ppm
Concentration per Run 1	0.0497 ppm	116.6803 ppm	0.1991 ppm	0.8644 ppm	2.2498 ppm	0.0532 ppm	24.6385 ppm
Concentration per Run 2	0.0496 ppm	116.1779 ppm	0.1962 ppm	0.8516 ppm	2.2435 ppm	0.0532 ppm	24.5446 ppm
Concentration per Run 3	0.0492 ppm	116.3852 ppm	0.1999 ppm	0.8560 ppm	2.2477 ppm	0.0534 ppm	24.5300 ppm
Concentration RSD	0.5 %	0.2 %	1.0 %	0.8 %	0.1 %	0.1 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0504 ppm	0.5001 ppm	0.3665 ppm	0.5519 ppm	111.5106 ppm	14.8636 ppm	0.0765 ppm
Concentration per Run 1	0.0506 ppm	0.5024 ppm	0.3683 ppm	0.5559 ppm	111.5532 ppm	14.9157 ppm	0.0774 ppm
Concentration per Run 2	0.0501 ppm	0.4981 ppm	0.3648 ppm	0.5505 ppm	111.4684 ppm	14.7987 ppm	0.0751 ppm
Concentration per Run 3	0.0506 ppm	0.4998 ppm	0.3664 ppm	0.5492 ppm	111.5102 ppm	14.8764 ppm	0.0771 ppm
Concentration RSD	0.6 %	0.4 %	0.5 %	0.6 %	0.0 %	0.4 %	1.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	28.6667 ppm	2.1436 ppm	0.9497 ppm	10.4440 ppm	0.5457 ppm	1.7157 ppm	0.4595 ppm
Concentration per Run 1	28.7993 ppm	2.1496 ppm	0.9467 ppm	10.4943 ppm	0.5477 ppm	1.7205 ppm	0.4621 ppm
Concentration per Run 2	28.4921 ppm	2.1412 ppm	0.9441 ppm	10.3920 ppm	0.5429 ppm	1.7066 ppm	0.4618 ppm
Concentration per Run 3	28.7087 ppm	2.1400 ppm	0.9582 ppm	10.4458 ppm	0.5465 ppm	1.7201 ppm	0.4546 ppm
Concentration RSD	0.6 %	0.2 %	0.8 %	0.5 %	0.5 %	0.5 %	0.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1236 ppm	7.2935 ppm	0.9654 ppm	0.9929 ppm	5.5651 ppm	0.1162 ppm	0.7576 ppm
Concentration per Run 1	0.1225 ppm	7.4103 ppm	0.9668 ppm	0.9928 ppm	5.6019 ppm	0.1179 ppm	0.7644 ppm
Concentration per Run 2	0.1245 ppm	7.2655 ppm	0.9605 ppm	0.9918 ppm	5.5470 ppm	0.1138 ppm	0.7538 ppm
Concentration per Run 3	0.1236 ppm	7.2045 ppm	0.9689 ppm	0.9942 ppm	5.5463 ppm	0.1169 ppm	0.7547 ppm
Concentration RSD	0.8 %	1.4 %	0.5 %	0.1 %	0.6 %	1.8 %	0.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	1.0800 ppm	104.4993 %	108.0240 %	90.4139 %	124.2601 %	131.0908 %	126.8197 %
Concentration per Run 1	1.0866 ppm	103.9671 %	107.5164 %	90.1755 %	124.0621 %	130.9125 %	126.6741 %
Concentration per Run 2	1.0716 ppm	105.0207 %	107.6586 %	90.8660 %	124.6947 %	130.5316 %	127.4401 %
Concentration per Run 3	1.0819 ppm	104.5103 %	108.8969 %	90.2003 %	124.0236 %	131.8285 %	126.3449 %
Concentration RSD	0.7 %	0.5 %	0.7 %	0.4 %	0.3 %	0.5 %	0.4 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1970060-4D2 WG1970060
Analysis started at: 9/11/2024 12:06:50 PM
Rack 1
Vial 55
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0496 ppm	117.6255 ppm	0.1997 ppm	0.8645 ppm	2.2646 ppm	0.0538 ppm	24.7873 ppm
Concentration per Run 1	0.0498 ppm	117.4386 ppm	0.2009 ppm	0.8680 ppm	2.2701 ppm	0.0539 ppm	24.7298 ppm
Concentration per Run 2	0.0497 ppm	117.8508 ppm	0.2006 ppm	0.8620 ppm	2.2575 ppm	0.0540 ppm	24.8731 ppm
Concentration per Run 3	0.0494 ppm	117.5871 ppm	0.1976 ppm	0.8637 ppm	2.2662 ppm	0.0535 ppm	24.7591 ppm
Concentration RSD	0.4 %	0.2 %	0.9 %	0.4 %	0.3 %	0.5 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0507 ppm	0.5033 ppm	0.3704 ppm	0.5550 ppm	112.7026 ppm	14.9638 ppm	0.0772 ppm
Concentration per Run 1	0.0511 ppm	0.5069 ppm	0.3743 ppm	0.5565 ppm	113.0575 ppm	14.9761 ppm	0.0779 ppm
Concentration per Run 2	0.0506 ppm	0.5022 ppm	0.3680 ppm	0.5578 ppm	112.1329 ppm	14.9078 ppm	0.0765 ppm
Concentration per Run 3	0.0505 ppm	0.5008 ppm	0.3689 ppm	0.5508 ppm	112.9175 ppm	15.0076 ppm	0.0774 ppm
Concentration RSD	0.7 %	0.6 %	0.9 %	0.7 %	0.4 %	0.3 %	0.9 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	28.8672 ppm	2.1662 ppm	0.9599 ppm	10.5370 ppm	0.5507 ppm	1.7362 ppm	0.4656 ppm
Concentration per Run 1	29.1511 ppm	2.1622 ppm	0.9551 ppm	10.5489 ppm	0.5579 ppm	1.7405 ppm	0.4705 ppm
Concentration per Run 2	28.7134 ppm	2.1708 ppm	0.9584 ppm	10.5059 ppm	0.5453 ppm	1.7422 ppm	0.4601 ppm
Concentration per Run 3	28.7369 ppm	2.1655 ppm	0.9662 ppm	10.5562 ppm	0.5489 ppm	1.7258 ppm	0.4663 ppm
Concentration RSD	0.9 %	0.2 %	0.6 %	0.3 %	1.2 %	0.5 %	1.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1244 ppm	7.3459 ppm	0.9762 ppm	1.0044 ppm	5.6174 ppm	0.1170 ppm	0.7638 ppm
Concentration per Run 1	0.1249 ppm	7.4466 ppm	0.9815 ppm	1.0084 ppm	5.6545 ppm	0.1177 ppm	0.7699 ppm
Concentration per Run 2	0.1256 ppm	7.3797 ppm	0.9679 ppm	1.0049 ppm	5.6141 ppm	0.1168 ppm	0.7619 ppm
Concentration per Run 3	0.1228 ppm	7.2115 ppm	0.9791 ppm	0.9999 ppm	5.5836 ppm	0.1164 ppm	0.7596 ppm
Concentration RSD	1.2 %	1.6 %	0.7 %	0.4 %	0.6 %	0.6 %	0.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	1.0922 ppm	104.5382 %	108.0787 %	89.8899 %	124.8667 %	131.3580 %	126.5076 %
Concentration per Run 1	1.1033 ppm	103.5134 %	107.6780 %	89.5702 %	124.0983 %	131.1190 %	126.3887 %
Concentration per Run 2	1.0816 ppm	105.5160 %	108.0992 %	89.7590 %	125.9889 %	131.7701 %	126.5755 %
Concentration per Run 3	1.0918 ppm	104.5851 %	108.4588 %	90.3405 %	124.5129 %	131.1850 %	126.5586 %
Concentration RSD	1.0 %	1.0 %	0.4 %	0.4 %	0.8 %	0.3 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1970060-5D2 WG1970060
Analysis started at: 9/11/2024 12:10:46 PM
Rack 1
Vial 56
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0494 ppm	124.1885 ppm	0.2080 ppm	0.8459 ppm	2.2567 ppm	0.0534 ppm	26.6317 ppm
Concentration per Run 1	0.0500 ppm	123.7066 ppm	0.2081 ppm	0.8505 ppm	2.2495 ppm	0.0532 ppm	26.5995 ppm
Concentration per Run 2	0.0496 ppm	124.1258 ppm	0.2087 ppm	0.8450 ppm	2.2564 ppm	0.0534 ppm	26.6771 ppm
Concentration per Run 3	0.0486 ppm	124.7332 ppm	0.2074 ppm	0.8423 ppm	2.2642 ppm	0.0535 ppm	26.6186 ppm
Concentration RSD	1.4 %	0.4 %	0.3 %	0.5 %	0.3 %	0.2 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0500 ppm	0.4938 ppm	0.3781 ppm	0.5844 ppm	114.9735 ppm	14.5274 ppm	0.0762 ppm
Concentration per Run 1	0.0501 ppm	0.4954 ppm	0.3801 ppm	0.5879 ppm	114.6135 ppm	14.4849 ppm	0.0773 ppm
Concentration per Run 2	0.0501 ppm	0.4958 ppm	0.3780 ppm	0.5835 ppm	114.9634 ppm	14.4926 ppm	0.0747 ppm
Concentration per Run 3	0.0498 ppm	0.4901 ppm	0.3762 ppm	0.5819 ppm	115.3436 ppm	14.6045 ppm	0.0765 ppm
Concentration RSD	0.3 %	0.6 %	0.5 %	0.5 %	0.3 %	0.5 %	1.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	28.3196 ppm	2.1499 ppm	0.9588 ppm	10.3650 ppm	0.5420 ppm	1.9583 ppm	0.4626 ppm
Concentration per Run 1	28.4732 ppm	2.1453 ppm	0.9520 ppm	10.3698 ppm	0.5465 ppm	1.9502 ppm	0.4685 ppm
Concentration per Run 2	28.3551 ppm	2.1483 ppm	0.9633 ppm	10.3510 ppm	0.5404 ppm	1.9696 ppm	0.4612 ppm
Concentration per Run 3	28.1303 ppm	2.1560 ppm	0.9609 ppm	10.3743 ppm	0.5390 ppm	1.9551 ppm	0.4581 ppm
Concentration RSD	0.6 %	0.3 %	0.6 %	0.1 %	0.7 %	0.5 %	1.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1211 ppm	8.5859 ppm	0.9701 ppm	0.9985 ppm	5.6717 ppm	0.1173 ppm	0.7612 ppm
Concentration per Run 1	0.1178 ppm	8.7272 ppm	0.9765 ppm	0.9984 ppm	5.6647 ppm	0.1176 ppm	0.7670 ppm
Concentration per Run 2	0.1230 ppm	8.5632 ppm	0.9698 ppm	0.9971 ppm	5.7120 ppm	0.1175 ppm	0.7585 ppm
Concentration per Run 3	0.1224 ppm	8.4673 ppm	0.9640 ppm	0.9999 ppm	5.6384 ppm	0.1170 ppm	0.7581 ppm
Concentration RSD	2.3 %	1.5 %	0.6 %	0.1 %	0.7 %	0.3 %	0.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	1.1190 ppm	104.6094 %	107.7527 %	89.6601 %	124.6428 %	131.3441 %	126.6117 %
Concentration per Run 1	1.1239 ppm	104.0764 %	108.4898 %	89.7902 %	124.3965 %	131.8947 %	126.5705 %
Concentration per Run 2	1.1240 ppm	104.5840 %	107.0929 %	89.1532 %	124.5501 %	130.1982 %	126.4274 %
Concentration per Run 3	1.1090 ppm	105.1679 %	107.6754 %	90.0367 %	124.9818 %	131.9393 %	126.8373 %
Concentration RSD	0.8 %	0.5 %	0.7 %	0.5 %	0.2 %	0.8 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1970060-5D2 WG1970060
Analysis started at: 9/11/2024 12:14:42 PM
Rack 1
Vial 57
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0500 ppm	125.4197 ppm	0.2085 ppm	0.8536 ppm	2.2802 ppm	0.0535 ppm	26.7851 ppm
Concentration per Run 1	0.0498 ppm	125.9510 ppm	0.2100 ppm	0.8600 ppm	2.2839 ppm	0.0538 ppm	26.8607 ppm
Concentration per Run 2	0.0501 ppm	124.7544 ppm	0.2069 ppm	0.8520 ppm	2.2700 ppm	0.0531 ppm	26.6851 ppm
Concentration per Run 3	0.0500 ppm	125.5537 ppm	0.2087 ppm	0.8487 ppm	2.2866 ppm	0.0537 ppm	26.8095 ppm
Concentration RSD	0.3 %	0.5 %	0.7 %	0.7 %	0.4 %	0.7 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0504 ppm	0.4987 ppm	0.3837 ppm	0.5910 ppm	115.5677 ppm	14.6453 ppm	0.0768 ppm
Concentration per Run 1	0.0507 ppm	0.5028 ppm	0.3858 ppm	0.5938 ppm	116.0981 ppm	14.6702 ppm	0.0787 ppm
Concentration per Run 2	0.0501 ppm	0.4964 ppm	0.3815 ppm	0.5905 ppm	114.8551 ppm	14.6503 ppm	0.0761 ppm
Concentration per Run 3	0.0503 ppm	0.4970 ppm	0.3837 ppm	0.5886 ppm	115.7500 ppm	14.6153 ppm	0.0756 ppm
Concentration RSD	0.7 %	0.7 %	0.6 %	0.5 %	0.6 %	0.2 %	2.1 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	28.6193 ppm	2.1654 ppm	0.9707 ppm	10.5265 ppm	0.5491 ppm	1.9754 ppm	0.4690 ppm
Concentration per Run 1	28.8241 ppm	2.1748 ppm	0.9705 ppm	10.5838 ppm	0.5524 ppm	1.9851 ppm	0.4712 ppm
Concentration per Run 2	28.4393 ppm	2.1535 ppm	0.9660 ppm	10.4935 ppm	0.5448 ppm	1.9708 ppm	0.4704 ppm
Concentration per Run 3	28.5945 ppm	2.1679 ppm	0.9757 ppm	10.5022 ppm	0.5500 ppm	1.9704 ppm	0.4655 ppm
Concentration RSD	0.7 %	0.5 %	0.5 %	0.5 %	0.7 %	0.4 %	0.6 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1228 ppm	8.9386 ppm	0.9816 ppm	1.0023 ppm	5.7565 ppm	0.1192 ppm	0.7719 ppm
Concentration per Run 1	0.1233 ppm	9.1340 ppm	0.9925 ppm	1.0031 ppm	5.8295 ppm	0.1199 ppm	0.7784 ppm
Concentration per Run 2	0.1227 ppm	9.0647 ppm	0.9731 ppm	0.9968 ppm	5.7334 ppm	0.1194 ppm	0.7657 ppm
Concentration per Run 3	0.1225 ppm	8.6170 ppm	0.9791 ppm	1.0069 ppm	5.7065 ppm	0.1183 ppm	0.7716 ppm
Concentration RSD	0.3 %	3.1 %	1.0 %	0.5 %	1.1 %	0.7 %	0.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	1.1281 ppm	105.0213 %	109.2582 %	90.0253 %	125.5295 %	132.9691 %	127.7099 %
Concentration per Run 1	1.1318 ppm	104.4683 %	107.9124 %	89.6611 %	125.3088 %	131.6880 %	127.5264 %
Concentration per Run 2	1.1260 ppm	105.2795 %	110.0588 %	90.0708 %	125.9009 %	133.1064 %	127.7881 %
Concentration per Run 3	1.1266 ppm	105.3160 %	109.8033 %	90.3439 %	125.3789 %	134.1129 %	127.8152 %
Concentration RSD	0.3 %	0.5 %	1.1 %	0.4 %	0.3 %	0.9 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1970060-7D2 WG1970060
Analysis started at: 9/11/2024 12:18:39 PM
Rack 1
Vial 58
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0474 ppm	112.8234 ppm	0.1876 ppm	0.8714 ppm	2.1013 ppm	0.0496 ppm	23.8566 ppm
Concentration per Run 1	0.0478 ppm	113.1296 ppm	0.1868 ppm	0.8751 ppm	2.0986 ppm	0.0493 ppm	23.8684 ppm
Concentration per Run 2	0.0470 ppm	113.2204 ppm	0.1886 ppm	0.8708 ppm	2.1130 ppm	0.0499 ppm	23.8952 ppm
Concentration per Run 3	0.0475 ppm	112.1201 ppm	0.1875 ppm	0.8683 ppm	2.0924 ppm	0.0496 ppm	23.8063 ppm
Concentration RSD	0.9 %	0.5 %	0.5 %	0.4 %	0.5 %	0.6 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0475 ppm	0.4673 ppm	0.3403 ppm	0.5176 ppm	109.3030 ppm	14.1506 ppm	0.0655 ppm
Concentration per Run 1	0.0476 ppm	0.4700 ppm	0.3409 ppm	0.5221 ppm	109.4773 ppm	14.2449 ppm	0.0663 ppm
Concentration per Run 2	0.0475 ppm	0.4672 ppm	0.3402 ppm	0.5152 ppm	109.9438 ppm	14.2062 ppm	0.0661 ppm
Concentration per Run 3	0.0476 ppm	0.4645 ppm	0.3397 ppm	0.5155 ppm	108.4878 ppm	14.0008 ppm	0.0641 ppm
Concentration RSD	0.1 %	0.6 %	0.2 %	0.8 %	0.7 %	0.9 %	1.9 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	26.5041 ppm	2.1055 ppm	0.8968 ppm	9.9717 ppm	0.5076 ppm	1.5652 ppm	0.4550 ppm
Concentration per Run 1	26.6277 ppm	2.1057 ppm	0.8877 ppm	10.0113 ppm	0.5072 ppm	1.5736 ppm	0.4596 ppm
Concentration per Run 2	26.4525 ppm	2.1149 ppm	0.8997 ppm	10.0306 ppm	0.5092 ppm	1.5656 ppm	0.4515 ppm
Concentration per Run 3	26.4321 ppm	2.0959 ppm	0.9029 ppm	9.8732 ppm	0.5063 ppm	1.5565 ppm	0.4538 ppm
Concentration RSD	0.4 %	0.5 %	0.9 %	0.9 %	0.3 %	0.5 %	0.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1206 ppm	7.2248 ppm	0.9369 ppm	0.9485 ppm	5.1090 ppm	0.1119 ppm	0.7190 ppm
Concentration per Run 1	0.1179 ppm	7.4461 ppm	0.9345 ppm	0.9431 ppm	5.1643 ppm	0.1111 ppm	0.7255 ppm
Concentration per Run 2	0.1229 ppm	7.1450 ppm	0.9376 ppm	0.9528 ppm	5.1159 ppm	0.1128 ppm	0.7166 ppm
Concentration per Run 3	0.1210 ppm	7.0832 ppm	0.9387 ppm	0.9495 ppm	5.0467 ppm	0.1118 ppm	0.7149 ppm
Concentration RSD	2.1 %	2.7 %	0.2 %	0.5 %	1.2 %	0.8 %	0.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.9697 ppm	104.3119 %	109.5111 %	91.6328 %	125.9665 %	133.6270 %	128.4446 %
Concentration per Run 1	0.9670 ppm	104.0425 %	109.2707 %	90.9202 %	126.2351 %	133.4135 %	128.2797 %
Concentration per Run 2	0.9746 ppm	104.4569 %	108.9804 %	91.8000 %	125.8416 %	133.1476 %	128.3607 %
Concentration per Run 3	0.9675 ppm	104.4362 %	110.2821 %	92.1783 %	125.8228 %	134.3199 %	128.6934 %
Concentration RSD	0.4 %	0.2 %	0.6 %	0.7 %	0.2 %	0.5 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1970060-6D10 WG1970060
Analysis started at: 9/11/2024 12:22:36 PM
Rack 1
Vial 59
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0002 ppm	23.9156 ppm	0.0145 ppm	0.0027 ppm	0.0703 ppm	0.0010 ppm	3.2337 ppm
Concentration per Run 1	0.0001 ppm	23.9592 ppm	0.0154 ppm	0.0028 ppm	0.0702 ppm	0.0011 ppm	3.2571 ppm
Concentration per Run 2	0.0003 ppm	23.7908 ppm	0.0135 ppm	0.0031 ppm	0.0702 ppm	0.0010 ppm	3.2020 ppm
Concentration per Run 3	0.0002 ppm	23.9969 ppm	0.0146 ppm	0.0021 ppm	0.0706 ppm	0.0010 ppm	3.2419 ppm
Concentration RSD	41.6 %	0.5 %	6.8 %	19.4 %	0.3 %	4.3 %	0.9 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0003 ppm	0.0061 ppm	0.0354 ppm	0.0592 ppm	24.2101 ppm	1.0164 ppm	0.0145 ppm
Concentration per Run 1	0.0003 ppm	0.0060 ppm	0.0361 ppm	0.0605 ppm	24.2606 ppm	1.0403 ppm	0.0159 ppm
Concentration per Run 2	0.0003 ppm	0.0061 ppm	0.0353 ppm	0.0589 ppm	24.2021 ppm	0.9988 ppm	0.0139 ppm
Concentration per Run 3	0.0003 ppm	0.0062 ppm	0.0347 ppm	0.0580 ppm	24.1677 ppm	1.0101 ppm	0.0138 ppm
Concentration RSD	14.7 %	2.0 %	2.0 %	2.1 %	0.2 %	2.1 %	8.1 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	3.9080 ppm	0.3666 ppm	0.0042 ppm	0.1381 ppm	0.0145 ppm	0.2178 ppm	0.0008 ppm
Concentration per Run 1	3.9599 ppm	0.3679 ppm	0.0039 ppm	0.1391 ppm	0.0152 ppm	0.2197 ppm	0.0026 ppm
Concentration per Run 2	3.8996 ppm	0.3644 ppm	0.0042 ppm	0.1391 ppm	0.0142 ppm	0.2173 ppm	-0.0013 ppm
Concentration per Run 3	3.8646 ppm	0.3676 ppm	0.0045 ppm	0.1359 ppm	0.0141 ppm	0.2163 ppm	0.0010 ppm
Concentration RSD	1.2 %	0.5 %	6.4 %	1.3 %	4.2 %	0.8 %	259.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0007 ppm	1.4421 ppm	0.0064 ppm	0.0098 ppm	0.9055 ppm	0.0001 ppm	0.0568 ppm
Concentration per Run 1	0.0008 ppm	1.4519 ppm	0.0057 ppm	0.0099 ppm	0.9184 ppm	-0.0004 ppm	0.0577 ppm
Concentration per Run 2	0.0010 ppm	1.4716 ppm	0.0066 ppm	0.0098 ppm	0.8972 ppm	0.0005 ppm	0.0565 ppm
Concentration per Run 3	0.0002 ppm	1.4027 ppm	0.0068 ppm	0.0097 ppm	0.9008 ppm	0.0001 ppm	0.0561 ppm
Concentration RSD	61.6 %	2.5 %	9.2 %	1.0 %	1.2 %	740.1 %	1.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.1170 ppm	103.5175 %	105.6694 %	101.0794 %	107.5659 %	109.5467 %	109.2613 %
Concentration per Run 1	0.1188 ppm	102.4698 %	105.7100 %	100.7887 %	107.5936 %	110.1820 %	109.3555 %
Concentration per Run 2	0.1169 ppm	103.5504 %	106.9370 %	101.0311 %	107.6390 %	110.3043 %	109.2985 %
Concentration per Run 3	0.1154 ppm	104.5323 %	104.3612 %	101.4184 %	107.4652 %	108.1540 %	109.1300 %
Concentration RSD	1.5 %	1.0 %	1.2 %	0.3 %	0.1 %	1.1 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCV
Analysis started at: 9/11/2024 12:26:33 PM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.4928 ppm	0.4619 ppm	0.4493 ppm	0.4630 ppm	0.4859 ppm	0.4916 ppm	0.4698 ppm
Concentration per Run 1	0.4953 ppm	0.4630 ppm	0.4471 ppm	0.4643 ppm	0.4871 ppm	0.4936 ppm	0.4707 ppm
Concentration per Run 2	0.4920 ppm	0.4591 ppm	0.4467 ppm	0.4646 ppm	0.4838 ppm	0.4897 ppm	0.4734 ppm
Concentration per Run 3	0.4910 ppm	0.4636 ppm	0.4540 ppm	0.4602 ppm	0.4869 ppm	0.4914 ppm	0.4652 ppm
Recovery Percentage 1	98.552 %	92.382 %	89.858 %	92.609 %	97.188 %	98.316 %	93.956 %
Concentration RSD	0.5 %	0.5 %	0.9 %	0.5 %	0.4 %	0.4 %	0.9 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.4943 ppm	0.5022 ppm	0.4842 ppm	0.4808 ppm	0.4915 ppm	5.0874 ppm	0.5022 ppm
Concentration per Run 1	0.4977 ppm	0.5044 ppm	0.4864 ppm	0.4821 ppm	0.4932 ppm	5.1322 ppm	0.5074 ppm
Concentration per Run 2	0.4955 ppm	0.5029 ppm	0.4853 ppm	0.4823 ppm	0.4906 ppm	5.0265 ppm	0.4965 ppm
Concentration per Run 3	0.4898 ppm	0.4994 ppm	0.4809 ppm	0.4781 ppm	0.4908 ppm	5.1035 ppm	0.5028 ppm
Recovery Percentage 1	98.866 %	100.446 %	96.843 %	96.170 %	98.310 %	101.749 %	100.444 %
Concentration RSD	0.8 %	0.5 %	0.6 %	0.5 %	0.3 %	1.1 %	1.1 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.4887 ppm	0.4753 ppm	0.4895 ppm	9.9415 ppm	0.4990 ppm	0.4733 ppm	0.4850 ppm
Concentration per Run 1	0.4902 ppm	0.4754 ppm	0.4877 ppm	9.9264 ppm	0.5012 ppm	0.4729 ppm	0.4838 ppm
Concentration per Run 2	0.4904 ppm	0.4756 ppm	0.4925 ppm	9.9287 ppm	0.4987 ppm	0.4721 ppm	0.4882 ppm
Concentration per Run 3	0.4853 ppm	0.4750 ppm	0.4883 ppm	9.9695 ppm	0.4971 ppm	0.4748 ppm	0.4831 ppm
Recovery Percentage 1	97.731 %	95.061 %	97.892 %	99.415 %	99.805 %	94.652 %	97.006 %
Concentration RSD	0.6 %	0.1 %	0.5 %	0.2 %	0.4 %	0.3 %	0.6 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4622 ppm	5.1366 ppm	0.5143 ppm	0.4985 ppm	0.4876 ppm	0.4705 ppm	0.4871 ppm
Concentration per Run 1	0.4635 ppm	5.1496 ppm	0.5165 ppm	0.5006 ppm	0.4897 ppm	0.4663 ppm	0.4897 ppm
Concentration per Run 2	0.4601 ppm	5.1621 ppm	0.5142 ppm	0.4951 ppm	0.4878 ppm	0.4708 ppm	0.4864 ppm
Concentration per Run 3	0.4629 ppm	5.0979 ppm	0.5122 ppm	0.5000 ppm	0.4854 ppm	0.4743 ppm	0.4851 ppm
Recovery Percentage 1	92.433 %	97.839 %	102.863 %	99.708 %	97.524 %	94.092 %	97.413 %
Concentration RSD	0.4 %	0.7 %	0.4 %	0.6 %	0.4 %	0.9 %	0.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4922 ppm	105.4995 %	104.2578 %	103.0857 %	101.0899 %	101.2509 %	102.1248 %
Concentration per Run 1	0.4957 ppm	104.9493 %	104.4227 %	103.0185 %	100.8786 %	101.7976 %	102.1333 %
Concentration per Run 2	0.4936 ppm	105.5941 %	104.5105 %	103.4280 %	101.1963 %	101.6783 %	102.2743 %
Concentration per Run 3	0.4873 ppm	105.9550 %	103.8402 %	102.8107 %	101.1948 %	100.2768 %	101.9667 %
Recovery Percentage 1	98.436 %						
Concentration RSD	0.9 %	0.5 %	0.3 %	0.3 %	0.2 %	0.8 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCB
Analysis started at: 9/11/2024 12:30:30 PM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0002 ppm	-0.0107 ppm	0.0004 ppm	0.0004 ppm	0.0000 ppm	0.0000 ppm	-0.0042 ppm
Concentration per Run 1	0.0000 ppm	-0.0123 ppm	-0.0001 ppm	0.0003 ppm	0.0000 ppm	0.0001 ppm	-0.0041 ppm
Concentration per Run 2	0.0002 ppm	-0.0101 ppm	0.0007 ppm	0.0009 ppm	0.0000 ppm	0.0000 ppm	-0.0038 ppm
Concentration per Run 3	0.0003 ppm	-0.0098 ppm	0.0007 ppm	-0.0001 ppm	0.0000 ppm	0.0000 ppm	-0.0047 ppm
Recovery Percentage 1	2.157 %	-10.722 %	13.723 %	1.206 %	0.124 %	0.344 %	-4.189 %
Concentration RSD	83.7 %	12.6 %	118.3 %	132.8 %	181.1 %	288.3 %	11.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0000 ppm	0.0001 ppm	0.0005 ppm	0.0049 ppm	0.0091 ppm	0.0000 ppm
Concentration per Run 1	0.0001 ppm	-0.0001 ppm	0.0004 ppm	0.0004 ppm	0.0055 ppm	0.0234 ppm	0.0001 ppm
Concentration per Run 2	0.0000 ppm	0.0000 ppm	-0.0001 ppm	0.0003 ppm	0.0050 ppm	0.0058 ppm	-0.0011 ppm
Concentration per Run 3	0.0000 ppm	0.0001 ppm	0.0000 ppm	0.0006 ppm	0.0041 ppm	-0.0018 ppm	0.0009 ppm
Recovery Percentage 1	0.684 %	0.043 %	0.776 %	4.519 %	9.703 %	0.366 %	-0.294 %
Concentration RSD	53.4 %	751.0 %	328.6 %	31.6 %	15.0 %	141.0 %	3,440.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0010 ppm	0.0002 ppm	0.0022 ppm	0.0104 ppm	0.0002 ppm	0.0002 ppm	-0.0009 ppm
Concentration per Run 1	0.0011 ppm	0.0001 ppm	0.0024 ppm	0.0125 ppm	0.0004 ppm	-0.0004 ppm	-0.0004 ppm
Concentration per Run 2	0.0022 ppm	0.0003 ppm	0.0019 ppm	0.0143 ppm	0.0003 ppm	0.0006 ppm	-0.0021 ppm
Concentration per Run 3	-0.0004 ppm	0.0003 ppm	0.0022 ppm	0.0045 ppm	-0.0001 ppm	0.0004 ppm	-0.0003 ppm
Recovery Percentage 1	0.954 %	2.144 %	4.334 %	0.520 %	0.893 %	2.002 %	-1.892 %
Concentration RSD	135.3 %	44.7 %	9.8 %	49.9 %	122.8 %	268.0 %	107.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0006 ppm	0.0060 ppm	0.0001 ppm	0.0001 ppm	-0.0001 ppm	-0.0004 ppm	0.0000 ppm
Concentration per Run 1	-0.0009 ppm	0.0101 ppm	0.0004 ppm	0.0001 ppm	-0.0001 ppm	-0.0009 ppm	-0.0002 ppm
Concentration per Run 2	-0.0001 ppm	0.0022 ppm	0.0000 ppm	0.0001 ppm	-0.0003 ppm	-0.0003 ppm	0.0001 ppm
Concentration per Run 3	-0.0007 ppm	0.0058 ppm	-0.0001 ppm	0.0001 ppm	0.0000 ppm	0.0002 ppm	0.0001 ppm
Recovery Percentage 1	-6.119 %	1.201 %	0.194 %	0.967 %	-1.243 %	-1.795 %	-0.221 %
Concentration RSD	68.7 %	66.0 %	254.9 %	28.6 %	132.9 %	154.7 %	621.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0009 ppm	100.2365 %	100.0277 %	101.7078 %	103.1075 %	101.0516 %	102.8872 %
Concentration per Run 1	0.0010 ppm	99.2335 %	99.7453 %	101.2840 %	103.1048 %	101.0796 %	103.0027 %
Concentration per Run 2	0.0008 ppm	100.1182 %	100.4749 %	101.8021 %	103.0369 %	101.6830 %	103.0637 %
Concentration per Run 3	0.0010 ppm	101.3578 %	99.8630 %	102.0373 %	103.1808 %	100.3924 %	102.5952 %
Recovery Percentage 1	18.337 %						
Concentration RSD	13.1 %	1.1 %	0.4 %	0.4 %	0.1 %	0.6 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1970062-1 WG1970062
Analysis started at: 9/11/2024 12:41:32 PM
Rack 2
Vial 12
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0004 ppm	0.0001 ppm	0.0004 ppm	-0.0001 ppm	0.0000 ppm	0.0046 ppm
Concentration per Run 1	-0.0001 ppm	0.0040 ppm	0.0000 ppm	0.0006 ppm	-0.0002 ppm	0.0000 ppm	0.0036 ppm
Concentration per Run 2	0.0002 ppm	-0.0036 ppm	-0.0005 ppm	0.0005 ppm	-0.0002 ppm	0.0000 ppm	0.0054 ppm
Concentration per Run 3	-0.0002 ppm	-0.0016 ppm	0.0007 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0047 ppm
Recovery Percentage 1	-0.571 %	-0.392 %	2.065 %	1.254 %	-1.236 %	0.074 %	4.571 %
Concentration RSD	427.6 %	1,009.4 %	973.1 %	97.4 %	53.3 %	593.9 %	19.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0002 ppm	0.0003 ppm	0.0003 ppm	0.0311 ppm	0.0087 ppm	-0.0004 ppm
Concentration per Run 1	0.0000 ppm	-0.0002 ppm	0.0005 ppm	0.0000 ppm	0.0307 ppm	0.0145 ppm	-0.0009 ppm
Concentration per Run 2	0.0001 ppm	-0.0004 ppm	0.0002 ppm	0.0002 ppm	0.0306 ppm	-0.0025 ppm	0.0005 ppm
Concentration per Run 3	0.0000 ppm	-0.0001 ppm	0.0001 ppm	0.0007 ppm	0.0319 ppm	0.0142 ppm	-0.0007 ppm
Recovery Percentage 1	0.285 %	-1.022 %	2.652 %	3.349 %	62.169 %	0.348 %	-3.857 %
Concentration RSD	319.2 %	62.5 %	82.0 %	108.8 %	2.4 %	111.2 %	200.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0030 ppm	0.0008 ppm	0.0003 ppm	0.0132 ppm	-0.0001 ppm	0.0002 ppm	-0.0017 ppm
Concentration per Run 1	0.0043 ppm	0.0009 ppm	0.0000 ppm	0.0143 ppm	-0.0002 ppm	0.0004 ppm	0.0001 ppm
Concentration per Run 2	0.0037 ppm	0.0007 ppm	0.0002 ppm	0.0118 ppm	0.0001 ppm	-0.0002 ppm	-0.0016 ppm
Concentration per Run 3	0.0011 ppm	0.0008 ppm	0.0007 ppm	0.0134 ppm	-0.0001 ppm	0.0005 ppm	-0.0036 ppm
Recovery Percentage 1	3.012 %	8.103 %	0.571 %	0.658 %	-0.268 %	2.322 %	-3.409 %
Concentration RSD	57.1 %	9.7 %	124.8 %	9.8 %	213.3 %	163.7 %	107.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0005 ppm	0.0066 ppm	0.0005 ppm	0.0001 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm
Concentration per Run 1	-0.0011 ppm	0.0055 ppm	0.0007 ppm	0.0002 ppm	-0.0001 ppm	0.0006 ppm	0.0000 ppm
Concentration per Run 2	0.0005 ppm	0.0086 ppm	0.0006 ppm	0.0000 ppm	0.0000 ppm	0.0000 ppm	0.0001 ppm
Concentration per Run 3	-0.0009 ppm	0.0056 ppm	0.0004 ppm	0.0001 ppm	0.0002 ppm	-0.0005 ppm	-0.0001 ppm
Recovery Percentage 1	-5.072 %	1.310 %	1.093 %	1.109 %	0.428 %	0.176 %	-0.013 %
Concentration RSD	167.5 %	26.5 %	28.9 %	57.5 %	396.3 %	1,507.8 %	7,084.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0008 ppm	105.9595 %	102.9758 %	104.0309 %	104.3237 %	101.7122 %	103.4108 %
Concentration per Run 1	0.0008 ppm	105.7842 %	102.2983 %	103.8814 %	104.3896 %	101.2100 %	103.3526 %
Concentration per Run 2	0.0009 ppm	106.1228 %	102.7836 %	103.8922 %	104.5399 %	101.2623 %	103.5221 %
Concentration per Run 3	0.0007 ppm	105.9716 %	103.8456 %	104.3190 %	104.0417 %	102.6642 %	103.3576 %
Recovery Percentage 1	16.047 %						
Concentration RSD	14.1 %	0.2 %	0.8 %	0.2 %	0.2 %	0.8 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1970062-2D2 WG1970062
Analysis started at: 9/11/2024 12:45:51 PM
Rack 2
Vial 13
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.3117 ppm	17.4765 ppm	1.1003 ppm	0.8516 ppm	1.0321 ppm	0.6097 ppm	18.3037 ppm
Concentration per Run 1	0.3134 ppm	17.4749 ppm	1.0978 ppm	0.8524 ppm	1.0367 ppm	0.6104 ppm	18.3110 ppm
Concentration per Run 2	0.3110 ppm	17.3922 ppm	1.1055 ppm	0.8550 ppm	1.0293 ppm	0.6084 ppm	18.2817 ppm
Concentration per Run 3	0.3107 ppm	17.5624 ppm	1.0977 ppm	0.8474 ppm	1.0302 ppm	0.6104 ppm	18.3185 ppm
Concentration RSD	0.5 %	0.5 %	0.4 %	0.5 %	0.4 %	0.2 %	0.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.7907 ppm	0.3074 ppm	0.6612 ppm	0.7676 ppm	21.1862 ppm	4.1601 ppm	0.4954 ppm
Concentration per Run 1	0.7941 ppm	0.3089 ppm	0.6651 ppm	0.7706 ppm	21.3092 ppm	4.1938 ppm	0.4978 ppm
Concentration per Run 2	0.7897 ppm	0.3080 ppm	0.6598 ppm	0.7679 ppm	21.1165 ppm	4.1256 ppm	0.4939 ppm
Concentration per Run 3	0.7882 ppm	0.3055 ppm	0.6587 ppm	0.7644 ppm	21.1330 ppm	4.1608 ppm	0.4946 ppm
Concentration RSD	0.4 %	0.6 %	0.5 %	0.4 %	0.5 %	0.8 %	0.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	5.5781 ppm	1.8816 ppm	0.5015 ppm	6.8362 ppm	1.1819 ppm	0.3392 ppm	0.7729 ppm
Concentration per Run 1	5.6128 ppm	1.8837 ppm	0.4998 ppm	6.8201 ppm	1.1894 ppm	0.3373 ppm	0.7740 ppm
Concentration per Run 2	5.5636 ppm	1.8814 ppm	0.5028 ppm	6.8257 ppm	1.1817 ppm	0.3414 ppm	0.7778 ppm
Concentration per Run 3	5.5579 ppm	1.8797 ppm	0.5018 ppm	6.8629 ppm	1.1747 ppm	0.3389 ppm	0.7668 ppm
Concentration RSD	0.5 %	0.1 %	0.3 %	0.3 %	0.6 %	0.6 %	0.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.6023 ppm	6.1550 ppm	0.2903 ppm	0.4863 ppm	1.1509 ppm	0.7308 ppm	0.3807 ppm
Concentration per Run 1	0.6024 ppm	6.2400 ppm	0.2914 ppm	0.4880 ppm	1.1563 ppm	0.7275 ppm	0.3828 ppm
Concentration per Run 2	0.6052 ppm	6.1734 ppm	0.2894 ppm	0.4866 ppm	1.1505 ppm	0.7365 ppm	0.3801 ppm
Concentration per Run 3	0.5993 ppm	6.0514 ppm	0.2901 ppm	0.4843 ppm	1.1459 ppm	0.7284 ppm	0.3790 ppm
Concentration RSD	0.5 %	1.6 %	0.3 %	0.4 %	0.5 %	0.7 %	0.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.6190 ppm	104.4843 %	105.3164 %	100.3871 %	107.8303 %	109.2651 %	109.2605 %
Concentration per Run 1	0.6225 ppm	104.2175 %	104.8530 %	100.6052 %	108.2477 %	108.9072 %	109.4617 %
Concentration per Run 2	0.6203 ppm	104.3940 %	105.8993 %	99.8293 %	107.8091 %	109.4823 %	109.0160 %
Concentration per Run 3	0.6143 ppm	104.8415 %	105.1970 %	100.7268 %	107.4342 %	109.4058 %	109.3036 %
Concentration RSD	0.7 %	0.3 %	0.5 %	0.5 %	0.4 %	0.3 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1970062-3D2 WG1970062
Analysis started at: 9/11/2024 12:49:48 PM
Rack 2
Vial 14
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.2984 ppm	17.6005 ppm	1.0501 ppm	0.8146 ppm	1.1395 ppm	0.5857 ppm	17.3233 ppm
Concentration per Run 1	0.3011 ppm	17.6648 ppm	1.0579 ppm	0.8208 ppm	1.1481 ppm	0.5872 ppm	17.3251 ppm
Concentration per Run 2	0.2982 ppm	17.5340 ppm	1.0501 ppm	0.8148 ppm	1.1369 ppm	0.5849 ppm	17.3236 ppm
Concentration per Run 3	0.2960 ppm	17.6026 ppm	1.0423 ppm	0.8081 ppm	1.1336 ppm	0.5849 ppm	17.3213 ppm
Concentration RSD	0.9 %	0.4 %	0.7 %	0.8 %	0.7 %	0.2 %	0.0 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.7676 ppm	0.2939 ppm	0.6412 ppm	0.7487 ppm	21.3502 ppm	4.0423 ppm	0.4681 ppm
Concentration per Run 1	0.7751 ppm	0.2960 ppm	0.6472 ppm	0.7513 ppm	21.5216 ppm	4.0965 ppm	0.4766 ppm
Concentration per Run 2	0.7672 ppm	0.2937 ppm	0.6411 ppm	0.7508 ppm	21.2702 ppm	4.0136 ppm	0.4625 ppm
Concentration per Run 3	0.7603 ppm	0.2921 ppm	0.6354 ppm	0.7442 ppm	21.2589 ppm	4.0169 ppm	0.4654 ppm
Concentration RSD	1.0 %	0.7 %	0.9 %	0.5 %	0.7 %	1.2 %	1.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	5.4513 ppm	1.8177 ppm	0.4855 ppm	6.5788 ppm	1.1384 ppm	0.3253 ppm	0.7818 ppm
Concentration per Run 1	5.5098 ppm	1.8162 ppm	0.4850 ppm	6.5901 ppm	1.1505 ppm	0.3265 ppm	0.7898 ppm
Concentration per Run 2	5.4198 ppm	1.8162 ppm	0.4872 ppm	6.5469 ppm	1.1396 ppm	0.3254 ppm	0.7790 ppm
Concentration per Run 3	5.4243 ppm	1.8206 ppm	0.4843 ppm	6.5994 ppm	1.1253 ppm	0.3241 ppm	0.7764 ppm
Concentration RSD	0.9 %	0.1 %	0.3 %	0.4 %	1.1 %	0.4 %	0.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.5820 ppm	4.0778 ppm	0.2776 ppm	0.4905 ppm	1.0920 ppm	0.7164 ppm	0.3692 ppm
Concentration per Run 1	0.5843 ppm	4.1542 ppm	0.2796 ppm	0.4893 ppm	1.0997 ppm	0.7186 ppm	0.3720 ppm
Concentration per Run 2	0.5806 ppm	4.0417 ppm	0.2776 ppm	0.4924 ppm	1.0935 ppm	0.7156 ppm	0.3684 ppm
Concentration per Run 3	0.5810 ppm	4.0375 ppm	0.2756 ppm	0.4899 ppm	1.0827 ppm	0.7151 ppm	0.3672 ppm
Concentration RSD	0.4 %	1.6 %	0.7 %	0.3 %	0.8 %	0.3 %	0.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5962 ppm	103.1528 %	104.4214 %	99.0621 %	106.3240 %	107.8223 %	107.3872 %
Concentration per Run 1	0.6016 ppm	102.4101 %	103.9941 %	98.7473 %	106.0437 %	107.7979 %	107.1631 %
Concentration per Run 2	0.5961 ppm	103.5969 %	104.2199 %	99.2470 %	107.1087 %	107.4401 %	107.3883 %
Concentration per Run 3	0.5908 ppm	103.4514 %	105.0501 %	99.1921 %	105.8196 %	108.2291 %	107.6102 %
Concentration RSD	0.9 %	0.6 %	0.5 %	0.3 %	0.6 %	0.4 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2451583-01D2 WG1970062
Analysis started at: 9/11/2024 12:53:45 PM
Rack 2
Vial 15
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0005 ppm	155.1961 ppm	0.3961 ppm	0.0582 ppm	0.4243 ppm	0.0027 ppm	51.8145 ppm
Concentration per Run 1	0.0006 ppm	154.7296 ppm	0.3974 ppm	0.0573 ppm	0.4225 ppm	0.0027 ppm	51.5171 ppm
Concentration per Run 2	0.0004 ppm	155.5561 ppm	0.3953 ppm	0.0582 ppm	0.4257 ppm	0.0027 ppm	51.9238 ppm
Concentration per Run 3	0.0006 ppm	155.3026 ppm	0.3956 ppm	0.0590 ppm	0.4247 ppm	0.0027 ppm	52.0025 ppm
Concentration RSD	21.9 %	0.3 %	0.3 %	1.5 %	0.4 %	0.9 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0029 ppm	0.0811 ppm	0.2310 ppm	0.2141 ppm	138.6515 ppm	9.7463 ppm	0.1220 ppm
Concentration per Run 1	0.0030 ppm	0.0811 ppm	0.2319 ppm	0.2140 ppm	137.5687 ppm	9.7320 ppm	0.1226 ppm
Concentration per Run 2	0.0030 ppm	0.0816 ppm	0.2309 ppm	0.2142 ppm	139.3667 ppm	9.7790 ppm	0.1214 ppm
Concentration per Run 3	0.0028 ppm	0.0806 ppm	0.2303 ppm	0.2140 ppm	139.0193 ppm	9.7279 ppm	0.1221 ppm
Concentration RSD	4.0 %	0.6 %	0.4 %	0.0 %	0.7 %	0.3 %	0.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	25.5986 ppm	20.9555 ppm	0.0128 ppm	1.2407 ppm	0.1075 ppm	0.2022 ppm	0.0031 ppm
Concentration per Run 1	25.6629 ppm	20.8364 ppm	0.0129 ppm	1.2369 ppm	0.1081 ppm	0.2021 ppm	0.0044 ppm
Concentration per Run 2	25.7163 ppm	21.0163 ppm	0.0126 ppm	1.2431 ppm	0.1081 ppm	0.2032 ppm	0.0023 ppm
Concentration per Run 3	25.4166 ppm	21.0136 ppm	0.0130 ppm	1.2420 ppm	0.1064 ppm	0.2012 ppm	0.0025 ppm
Concentration RSD	0.6 %	0.5 %	1.7 %	0.3 %	0.9 %	0.5 %	38.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0025 ppm	13.4643 ppm	0.0111 ppm	0.2117 ppm	2.0378 ppm	-0.0060 ppm	0.2045 ppm
Concentration per Run 1	-0.0020 ppm	13.5662 ppm	0.0112 ppm	0.2098 ppm	2.0452 ppm	-0.0054 ppm	0.2049 ppm
Concentration per Run 2	-0.0031 ppm	13.4861 ppm	0.0102 ppm	0.2122 ppm	2.0377 ppm	-0.0076 ppm	0.2045 ppm
Concentration per Run 3	-0.0025 ppm	13.3406 ppm	0.0119 ppm	0.2130 ppm	2.0305 ppm	-0.0051 ppm	0.2040 ppm
Concentration RSD	19.8 %	0.8 %	7.9 %	0.8 %	0.4 %	22.7 %	0.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.7134 ppm	104.4547 %	107.1596 %	92.7975 %	117.1946 %	122.9727 %	119.0201 %
Concentration per Run 1	0.7166 ppm	104.4499 %	108.2273 %	92.2852 %	117.6280 %	123.6591 %	118.5656 %
Concentration per Run 2	0.7168 ppm	104.3367 %	106.8029 %	93.1726 %	117.0841 %	122.8410 %	119.1063 %
Concentration per Run 3	0.7068 ppm	104.5775 %	106.4488 %	92.9346 %	116.8718 %	122.4180 %	119.3884 %
Concentration RSD	0.8 %	0.1 %	0.9 %	0.5 %	0.3 %	0.5 %	0.4 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2451642-01D2 WG1970062
Analysis started at: 9/11/2024 12:57:41 PM
Rack 2
Vial 16
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0009 ppm	96.6959 ppm	0.0828 ppm	0.0075 ppm	0.9376 ppm	0.0043 ppm	28.2471 ppm
Concentration per Run 1	0.0010 ppm	97.2039 ppm	0.0807 ppm	0.0077 ppm	0.9479 ppm	0.0042 ppm	28.1273 ppm
Concentration per Run 2	0.0007 ppm	96.5837 ppm	0.0836 ppm	0.0074 ppm	0.9349 ppm	0.0044 ppm	28.4253 ppm
Concentration per Run 3	0.0010 ppm	96.3000 ppm	0.0840 ppm	0.0073 ppm	0.9299 ppm	0.0043 ppm	28.1888 ppm
Concentration RSD	20.9 %	0.5 %	2.1 %	3.0 %	1.0 %	2.1 %	0.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0023 ppm	0.0946 ppm	0.1681 ppm	0.3233 ppm	168.4516 ppm	5.1626 ppm	0.1113 ppm
Concentration per Run 1	0.0023 ppm	0.0950 ppm	0.1688 ppm	0.3255 ppm	170.1435 ppm	5.2393 ppm	0.1151 ppm
Concentration per Run 2	0.0022 ppm	0.0947 ppm	0.1682 ppm	0.3219 ppm	168.9199 ppm	5.1638 ppm	0.1120 ppm
Concentration per Run 3	0.0024 ppm	0.0942 ppm	0.1672 ppm	0.3225 ppm	166.2913 ppm	5.0846 ppm	0.1070 ppm
Concentration RSD	3.1 %	0.4 %	0.5 %	0.6 %	1.2 %	1.5 %	3.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	39.9798 ppm	2.5653 ppm	0.0086 ppm	0.8878 ppm	0.1318 ppm	3.1681 ppm	0.0030 ppm
Concentration per Run 1	40.1291 ppm	2.5683 ppm	0.0090 ppm	0.8951 ppm	0.1315 ppm	3.1783 ppm	0.0009 ppm
Concentration per Run 2	40.0188 ppm	2.5696 ppm	0.0081 ppm	0.8873 ppm	0.1322 ppm	3.1670 ppm	0.0010 ppm
Concentration per Run 3	39.7917 ppm	2.5579 ppm	0.0087 ppm	0.8812 ppm	0.1316 ppm	3.1589 ppm	0.0071 ppm
Concentration RSD	0.4 %	0.3 %	5.5 %	0.8 %	0.3 %	0.3 %	117.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0026 ppm	7.7944 ppm	0.0302 ppm	0.0912 ppm	4.4303 ppm	0.0041 ppm	0.3565 ppm
Concentration per Run 1	0.0012 ppm	7.8691 ppm	0.0294 ppm	0.0907 ppm	4.4466 ppm	0.0037 ppm	0.3565 ppm
Concentration per Run 2	0.0043 ppm	7.8134 ppm	0.0311 ppm	0.0919 ppm	4.4333 ppm	0.0040 ppm	0.3595 ppm
Concentration per Run 3	0.0022 ppm	7.7007 ppm	0.0300 ppm	0.0910 ppm	4.4109 ppm	0.0047 ppm	0.3536 ppm
Concentration RSD	61.8 %	1.1 %	2.9 %	0.7 %	0.4 %	13.1 %	0.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	1.1268 ppm	106.4022 %	109.1575 %	93.3640 %	121.2155 %	126.1398 %	123.1870 %
Concentration per Run 1	1.1319 ppm	106.0243 %	109.7825 %	92.7040 %	121.0645 %	126.7667 %	122.4921 %
Concentration per Run 2	1.1244 ppm	106.2045 %	107.8909 %	93.7941 %	120.6889 %	125.1266 %	123.4523 %
Concentration per Run 3	1.1239 ppm	106.9778 %	109.7992 %	93.5939 %	121.8931 %	126.5261 %	123.6167 %
Concentration RSD	0.4 %	0.5 %	1.0 %	0.6 %	0.5 %	0.7 %	0.5 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2451879-01D2 WG1970060
Analysis started at: 9/11/2024 1:01:38 PM
Rack 1
Vial 60
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0013 ppm	136.3178 ppm	0.1668 ppm	0.0106 ppm	0.4555 ppm	0.0043 ppm	23.6981 ppm
Concentration per Run 1	0.0012 ppm	136.4834 ppm	0.1652 ppm	0.0093 ppm	0.4558 ppm	0.0043 ppm	23.6681 ppm
Concentration per Run 2	0.0015 ppm	135.9997 ppm	0.1680 ppm	0.0115 ppm	0.4533 ppm	0.0043 ppm	23.7066 ppm
Concentration per Run 3	0.0012 ppm	136.4704 ppm	0.1670 ppm	0.0110 ppm	0.4573 ppm	0.0044 ppm	23.7196 ppm
Concentration RSD	14.2 %	0.2 %	0.8 %	10.9 %	0.4 %	0.7 %	0.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0018 ppm	0.0384 ppm	0.2626 ppm	0.5363 ppm	131.0044 ppm	6.3008 ppm	0.0881 ppm
Concentration per Run 1	0.0018 ppm	0.0383 ppm	0.2634 ppm	0.5382 ppm	131.3516 ppm	6.3572 ppm	0.0907 ppm
Concentration per Run 2	0.0017 ppm	0.0385 ppm	0.2619 ppm	0.5361 ppm	130.7229 ppm	6.2753 ppm	0.0864 ppm
Concentration per Run 3	0.0019 ppm	0.0384 ppm	0.2625 ppm	0.5345 ppm	130.9388 ppm	6.2700 ppm	0.0871 ppm
Concentration RSD	5.5 %	0.3 %	0.3 %	0.3 %	0.2 %	0.8 %	2.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	23.8425 ppm	1.6517 ppm	0.0070 ppm	1.5211 ppm	0.0926 ppm	2.0453 ppm	0.0050 ppm
Concentration per Run 1	23.8778 ppm	1.6517 ppm	0.0070 ppm	1.5285 ppm	0.0936 ppm	2.0435 ppm	0.0068 ppm
Concentration per Run 2	23.7385 ppm	1.6511 ppm	0.0070 ppm	1.5153 ppm	0.0925 ppm	2.0531 ppm	0.0018 ppm
Concentration per Run 3	23.9111 ppm	1.6521 ppm	0.0071 ppm	1.5196 ppm	0.0919 ppm	2.0394 ppm	0.0063 ppm
Concentration RSD	0.4 %	0.0 %	0.9 %	0.4 %	0.9 %	0.3 %	55.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0052 ppm	8.7373 ppm	0.0269 ppm	0.1170 ppm	5.2833 ppm	0.0034 ppm	0.2763 ppm
Concentration per Run 1	0.0051 ppm	8.7597 ppm	0.0268 ppm	0.1175 ppm	5.2817 ppm	0.0033 ppm	0.2765 ppm
Concentration per Run 2	0.0064 ppm	8.6924 ppm	0.0269 ppm	0.1165 ppm	5.2715 ppm	0.0032 ppm	0.2756 ppm
Concentration per Run 3	0.0040 ppm	8.7597 ppm	0.0268 ppm	0.1172 ppm	5.2967 ppm	0.0038 ppm	0.2767 ppm
Concentration RSD	23.5 %	0.4 %	0.2 %	0.4 %	0.2 %	9.3 %	0.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.6778 ppm	106.9894 %	110.2882 %	91.8347 %	123.0648 %	129.2954 %	124.4261 %
Concentration per Run 1	0.6793 ppm	106.8898 %	110.1604 %	92.1307 %	123.4633 %	129.2399 %	124.9803 %
Concentration per Run 2	0.6783 ppm	107.4784 %	110.6623 %	91.5000 %	123.1931 %	129.7247 %	123.8650 %
Concentration per Run 3	0.6757 ppm	106.6000 %	110.0420 %	91.8735 %	122.5381 %	128.9216 %	124.4330 %
Concentration RSD	0.3 %	0.4 %	0.3 %	0.3 %	0.4 %	0.3 %	0.4 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2451879-02D2 WG1970060
Analysis started at: 9/11/2024 1:05:36 PM
Rack 2
Vial 1
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0011 ppm	122.4581 ppm	0.0972 ppm	0.0171 ppm	0.5089 ppm	0.0047 ppm	26.6997 ppm
Concentration per Run 1	0.0011 ppm	122.5553 ppm	0.0988 ppm	0.0166 ppm	0.5102 ppm	0.0047 ppm	26.7101 ppm
Concentration per Run 2	0.0013 ppm	122.1391 ppm	0.0953 ppm	0.0180 ppm	0.5055 ppm	0.0047 ppm	26.7072 ppm
Concentration per Run 3	0.0009 ppm	122.6798 ppm	0.0973 ppm	0.0165 ppm	0.5110 ppm	0.0047 ppm	26.6817 ppm
Concentration RSD	15.3 %	0.2 %	1.8 %	4.8 %	0.6 %	0.8 %	0.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0025 ppm	0.0329 ppm	0.8357 ppm	0.3844 ppm	112.3672 ppm	5.8732 ppm	0.0775 ppm
Concentration per Run 1	0.0026 ppm	0.0333 ppm	0.8377 ppm	0.3866 ppm	112.4904 ppm	5.9047 ppm	0.0792 ppm
Concentration per Run 2	0.0025 ppm	0.0325 ppm	0.8381 ppm	0.3852 ppm	111.9410 ppm	5.8579 ppm	0.0775 ppm
Concentration per Run 3	0.0025 ppm	0.0329 ppm	0.8312 ppm	0.3815 ppm	112.6701 ppm	5.8569 ppm	0.0758 ppm
Concentration RSD	2.1 %	1.3 %	0.5 %	0.7 %	0.3 %	0.5 %	2.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	20.3420 ppm	2.1105 ppm	0.0058 ppm	0.6999 ppm	0.0849 ppm	1.9063 ppm	0.0044 ppm
Concentration per Run 1	20.4362 ppm	2.1121 ppm	0.0055 ppm	0.6903 ppm	0.0851 ppm	1.9116 ppm	0.0062 ppm
Concentration per Run 2	20.3383 ppm	2.1070 ppm	0.0059 ppm	0.7032 ppm	0.0849 ppm	1.9051 ppm	0.0030 ppm
Concentration per Run 3	20.2516 ppm	2.1124 ppm	0.0059 ppm	0.7062 ppm	0.0848 ppm	1.9022 ppm	0.0040 ppm
Concentration RSD	0.5 %	0.1 %	3.7 %	1.2 %	0.2 %	0.3 %	37.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0033 ppm	6.8352 ppm	0.0267 ppm	0.1421 ppm	5.1247 ppm	0.0036 ppm	0.3087 ppm
Concentration per Run 1	0.0011 ppm	6.9146 ppm	0.0261 ppm	0.1425 ppm	5.1661 ppm	0.0054 ppm	0.3093 ppm
Concentration per Run 2	0.0041 ppm	6.7324 ppm	0.0274 ppm	0.1412 ppm	5.1533 ppm	0.0031 ppm	0.3106 ppm
Concentration per Run 3	0.0046 ppm	6.8586 ppm	0.0267 ppm	0.1427 ppm	5.0548 ppm	0.0023 ppm	0.3063 ppm
Concentration RSD	57.6 %	1.4 %	2.3 %	0.6 %	1.2 %	44.5 %	0.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.9162 ppm	105.1491 %	109.0045 %	91.8380 %	124.7137 %	130.9166 %	126.2979 %
Concentration per Run 1	0.9205 ppm	104.7903 %	108.8492 %	91.3852 %	124.9278 %	130.8245 %	125.6194 %
Concentration per Run 2	0.9182 ppm	104.8203 %	108.9392 %	92.1079 %	124.3793 %	130.9055 %	126.8400 %
Concentration per Run 3	0.9098 ppm	105.8367 %	109.2250 %	92.0210 %	124.8341 %	131.0199 %	126.4344 %
Concentration RSD	0.6 %	0.6 %	0.2 %	0.4 %	0.2 %	0.1 %	0.5 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2451879-03D2 WG1970060
Analysis started at: 9/11/2024 1:09:32 PM
Rack 2
Vial 2
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0012 ppm	136.9626 ppm	0.0823 ppm	0.0091 ppm	0.6477 ppm	0.0066 ppm	10.2200 ppm
Concentration per Run 1	0.0013 ppm	136.3509 ppm	0.0829 ppm	0.0080 ppm	0.6495 ppm	0.0067 ppm	10.2259 ppm
Concentration per Run 2	0.0011 ppm	137.4785 ppm	0.0810 ppm	0.0101 ppm	0.6495 ppm	0.0067 ppm	10.2040 ppm
Concentration per Run 3	0.0011 ppm	137.0582 ppm	0.0831 ppm	0.0092 ppm	0.6440 ppm	0.0065 ppm	10.2300 ppm
Concentration RSD	10.3 %	0.4 %	1.4 %	11.8 %	0.5 %	1.2 %	0.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0031 ppm	0.0253 ppm	0.1469 ppm	0.2737 ppm	125.5623 ppm	3.5154 ppm	0.0747 ppm
Concentration per Run 1	0.0032 ppm	0.0248 ppm	0.1502 ppm	0.2759 ppm	125.3210 ppm	3.5071 ppm	0.0742 ppm
Concentration per Run 2	0.0032 ppm	0.0256 ppm	0.1458 ppm	0.2722 ppm	126.0831 ppm	3.5190 ppm	0.0751 ppm
Concentration per Run 3	0.0030 ppm	0.0255 ppm	0.1449 ppm	0.2729 ppm	125.2828 ppm	3.5202 ppm	0.0746 ppm
Concentration RSD	4.3 %	1.8 %	1.9 %	0.7 %	0.4 %	0.2 %	0.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	17.0586 ppm	2.4815 ppm	0.0071 ppm	0.5594 ppm	0.0755 ppm	0.9074 ppm	0.0048 ppm
Concentration per Run 1	17.1563 ppm	2.4788 ppm	0.0071 ppm	0.5617 ppm	0.0759 ppm	0.9060 ppm	0.0041 ppm
Concentration per Run 2	17.0539 ppm	2.4870 ppm	0.0073 ppm	0.5583 ppm	0.0750 ppm	0.9095 ppm	0.0060 ppm
Concentration per Run 3	16.9657 ppm	2.4787 ppm	0.0070 ppm	0.5582 ppm	0.0756 ppm	0.9067 ppm	0.0041 ppm
Concentration RSD	0.6 %	0.2 %	2.1 %	0.4 %	0.6 %	0.2 %	23.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0055 ppm	6.8455 ppm	0.0343 ppm	0.0559 ppm	4.2592 ppm	0.0037 ppm	0.2314 ppm
Concentration per Run 1	0.0077 ppm	6.9224 ppm	0.0346 ppm	0.0562 ppm	4.3040 ppm	0.0039 ppm	0.2330 ppm
Concentration per Run 2	0.0028 ppm	6.8408 ppm	0.0337 ppm	0.0561 ppm	4.2545 ppm	0.0027 ppm	0.2307 ppm
Concentration per Run 3	0.0060 ppm	6.7733 ppm	0.0347 ppm	0.0554 ppm	4.2191 ppm	0.0045 ppm	0.2307 ppm
Concentration RSD	45.7 %	1.1 %	1.5 %	0.7 %	1.0 %	24.5 %	0.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	1.0640 ppm	105.2047 %	108.9935 %	93.4914 %	139.3193 %	145.9747 %	142.3744 %
Concentration per Run 1	1.0726 ppm	104.5487 %	109.0629 %	93.5515 %	139.3468 %	146.1449 %	142.6066 %
Concentration per Run 2	1.0635 ppm	105.3988 %	108.7965 %	93.3675 %	139.4602 %	145.9992 %	142.1091 %
Concentration per Run 3	1.0560 ppm	105.6665 %	109.1210 %	93.5553 %	139.1510 %	145.7800 %	142.4075 %
Concentration RSD	0.8 %	0.6 %	0.2 %	0.1 %	0.1 %	0.1 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2451879-04D2 WG1970060
Analysis started at: 9/11/2024 1:13:29 PM
Rack 2
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0012 ppm	148.3332 ppm	0.0855 ppm	0.0072 ppm	0.6305 ppm	0.0051 ppm	8.5079 ppm
Concentration per Run 1	0.0012 ppm	148.6421 ppm	0.0864 ppm	0.0075 ppm	0.6305 ppm	0.0051 ppm	8.4962 ppm
Concentration per Run 2	0.0012 ppm	147.8396 ppm	0.0842 ppm	0.0079 ppm	0.6303 ppm	0.0051 ppm	8.4911 ppm
Concentration per Run 3	0.0012 ppm	148.5179 ppm	0.0859 ppm	0.0061 ppm	0.6307 ppm	0.0051 ppm	8.5363 ppm
Concentration RSD	2.8 %	0.3 %	1.4 %	12.7 %	0.0 %	0.8 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0018 ppm	0.0310 ppm	0.1657 ppm	0.2829 ppm	129.9680 ppm	4.6465 ppm	0.0744 ppm
Concentration per Run 1	0.0018 ppm	0.0313 ppm	0.1667 ppm	0.2844 ppm	130.3061 ppm	4.6858 ppm	0.0749 ppm
Concentration per Run 2	0.0018 ppm	0.0315 ppm	0.1653 ppm	0.2833 ppm	129.4861 ppm	4.6113 ppm	0.0734 ppm
Concentration per Run 3	0.0017 ppm	0.0304 ppm	0.1653 ppm	0.2809 ppm	130.1117 ppm	4.6425 ppm	0.0748 ppm
Concentration RSD	4.8 %	1.8 %	0.5 %	0.6 %	0.3 %	0.8 %	1.1 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	20.2006 ppm	1.7910 ppm	0.0084 ppm	0.5646 ppm	0.0780 ppm	1.1646 ppm	0.0022 ppm
Concentration per Run 1	20.3090 ppm	1.7917 ppm	0.0082 ppm	0.5688 ppm	0.0782 ppm	1.1654 ppm	0.0043 ppm
Concentration per Run 2	20.1966 ppm	1.7903 ppm	0.0088 ppm	0.5637 ppm	0.0774 ppm	1.1628 ppm	0.0017 ppm
Concentration per Run 3	20.0961 ppm	1.7911 ppm	0.0082 ppm	0.5613 ppm	0.0785 ppm	1.1657 ppm	0.0006 ppm
Concentration RSD	0.5 %	0.0 %	4.3 %	0.7 %	0.8 %	0.1 %	86.6 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0063 ppm	4.6809 ppm	0.0210 ppm	0.0408 ppm	5.9586 ppm	0.0043 ppm	0.2572 ppm
Concentration per Run 1	0.0098 ppm	4.7350 ppm	0.0214 ppm	0.0408 ppm	5.9965 ppm	0.0040 ppm	0.2584 ppm
Concentration per Run 2	0.0044 ppm	4.6990 ppm	0.0208 ppm	0.0406 ppm	5.9501 ppm	0.0040 ppm	0.2569 ppm
Concentration per Run 3	0.0046 ppm	4.6088 ppm	0.0208 ppm	0.0409 ppm	5.9293 ppm	0.0047 ppm	0.2562 ppm
Concentration RSD	48.9 %	1.4 %	1.6 %	0.4 %	0.6 %	10.0 %	0.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5057 ppm	105.6488 %	109.5955 %	92.4188 %	131.9639 %	138.8273 %	135.5096 %
Concentration per Run 1	0.5096 ppm	105.0708 %	109.1030 %	92.3723 %	132.3380 %	138.5242 %	136.1624 %
Concentration per Run 2	0.5023 ppm	105.5152 %	110.2261 %	92.8051 %	131.6861 %	139.1604 %	135.9123 %
Concentration per Run 3	0.5051 ppm	106.3605 %	109.4575 %	92.0789 %	131.8676 %	138.7972 %	134.4542 %
Concentration RSD	0.7 %	0.6 %	0.5 %	0.4 %	0.3 %	0.2 %	0.7 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2451879-06D2 WG1970060
Analysis started at: 9/11/2024 1:17:26 PM
Rack 2
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0012 ppm	156.3101 ppm	0.0545 ppm	0.0083 ppm	0.6365 ppm	0.0071 ppm	4.2457 ppm
Concentration per Run 1	0.0010 ppm	156.7795 ppm	0.0537 ppm	0.0082 ppm	0.6408 ppm	0.0070 ppm	4.2418 ppm
Concentration per Run 2	0.0014 ppm	156.0023 ppm	0.0556 ppm	0.0082 ppm	0.6390 ppm	0.0072 ppm	4.2511 ppm
Concentration per Run 3	0.0011 ppm	156.1485 ppm	0.0541 ppm	0.0083 ppm	0.6296 ppm	0.0071 ppm	4.2442 ppm
Concentration RSD	20.4 %	0.3 %	1.9 %	0.7 %	0.9 %	1.2 %	0.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0048 ppm	0.0247 ppm	0.1850 ppm	0.1585 ppm	143.3013 ppm	3.5010 ppm	0.0764 ppm
Concentration per Run 1	0.0048 ppm	0.0246 ppm	0.1865 ppm	0.1591 ppm	144.2080 ppm	3.5457 ppm	0.0760 ppm
Concentration per Run 2	0.0049 ppm	0.0252 ppm	0.1844 ppm	0.1594 ppm	143.4582 ppm	3.4824 ppm	0.0770 ppm
Concentration per Run 3	0.0048 ppm	0.0244 ppm	0.1842 ppm	0.1572 ppm	142.2377 ppm	3.4750 ppm	0.0761 ppm
Concentration RSD	1.3 %	1.7 %	0.7 %	0.7 %	0.7 %	1.1 %	0.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	16.5407 ppm	2.2617 ppm	0.0083 ppm	0.4384 ppm	0.0730 ppm	0.6020 ppm	0.0024 ppm
Concentration per Run 1	16.6364 ppm	2.2677 ppm	0.0087 ppm	0.4383 ppm	0.0740 ppm	0.6040 ppm	0.0056 ppm
Concentration per Run 2	16.4721 ppm	2.2610 ppm	0.0081 ppm	0.4390 ppm	0.0724 ppm	0.6039 ppm	0.0012 ppm
Concentration per Run 3	16.5135 ppm	2.2564 ppm	0.0081 ppm	0.4379 ppm	0.0727 ppm	0.5981 ppm	0.0005 ppm
Concentration RSD	0.5 %	0.3 %	4.4 %	0.1 %	1.2 %	0.6 %	115.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0066 ppm	8.3203 ppm	0.0157 ppm	0.0363 ppm	4.6901 ppm	0.0036 ppm	0.2366 ppm
Concentration per Run 1	0.0076 ppm	8.2631 ppm	0.0156 ppm	0.0359 ppm	4.6838 ppm	0.0035 ppm	0.2385 ppm
Concentration per Run 2	0.0076 ppm	8.4953 ppm	0.0156 ppm	0.0369 ppm	4.7033 ppm	0.0034 ppm	0.2362 ppm
Concentration per Run 3	0.0044 ppm	8.2025 ppm	0.0159 ppm	0.0362 ppm	4.6831 ppm	0.0039 ppm	0.2351 ppm
Concentration RSD	28.5 %	1.9 %	1.3 %	1.5 %	0.2 %	7.3 %	0.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	1.2203 ppm	105.0764 %	108.9136 %	92.9050 %	139.2172 %	146.3542 %	143.3585 %
Concentration per Run 1	1.2231 ppm	104.5944 %	109.1172 %	92.9792 %	138.8097 %	146.4712 %	144.0101 %
Concentration per Run 2	1.2152 ppm	105.3493 %	108.6412 %	92.3094 %	139.8483 %	146.2999 %	142.7561 %
Concentration per Run 3	1.2225 ppm	105.2855 %	108.9824 %	93.4264 %	138.9935 %	146.2914 %	143.3093 %
Concentration RSD	0.4 %	0.4 %	0.2 %	0.6 %	0.4 %	0.1 %	0.4 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCV
Analysis started at: 9/11/2024 1:21:22 PM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.4949 ppm	0.4659 ppm	0.4508 ppm	0.4668 ppm	0.4915 ppm	0.4946 ppm	0.4730 ppm
Concentration per Run 1	0.4955 ppm	0.4659 ppm	0.4499 ppm	0.4712 ppm	0.4891 ppm	0.4952 ppm	0.4756 ppm
Concentration per Run 2	0.4954 ppm	0.4664 ppm	0.4535 ppm	0.4653 ppm	0.4927 ppm	0.4954 ppm	0.4718 ppm
Concentration per Run 3	0.4937 ppm	0.4653 ppm	0.4490 ppm	0.4638 ppm	0.4928 ppm	0.4932 ppm	0.4716 ppm
Recovery Percentage 1	98.977 %	93.170 %	90.160 %	93.354 %	98.302 %	98.920 %	94.600 %
Concentration RSD	0.2 %	0.1 %	0.5 %	0.8 %	0.4 %	0.2 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.4946 ppm	0.5040 ppm	0.4864 ppm	0.4854 ppm	0.5008 ppm	5.1077 ppm	0.5083 ppm
Concentration per Run 1	0.5007 ppm	0.5097 ppm	0.4900 ppm	0.4883 ppm	0.5012 ppm	5.1023 ppm	0.5051 ppm
Concentration per Run 2	0.4918 ppm	0.5022 ppm	0.4855 ppm	0.4843 ppm	0.5024 ppm	5.1261 ppm	0.5106 ppm
Concentration per Run 3	0.4912 ppm	0.5002 ppm	0.4837 ppm	0.4837 ppm	0.4988 ppm	5.0949 ppm	0.5092 ppm
Recovery Percentage 1	98.914 %	100.809 %	97.281 %	97.087 %	100.164 %	102.155 %	101.662 %
Concentration RSD	1.1 %	1.0 %	0.7 %	0.5 %	0.4 %	0.3 %	0.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.4906 ppm	0.4753 ppm	0.4917 ppm	10.0154 ppm	0.5024 ppm	0.4775 ppm	0.4891 ppm
Concentration per Run 1	0.4956 ppm	0.4755 ppm	0.4948 ppm	9.9791 ppm	0.5062 ppm	0.4780 ppm	0.4930 ppm
Concentration per Run 2	0.4864 ppm	0.4763 ppm	0.4896 ppm	10.0505 ppm	0.5017 ppm	0.4776 ppm	0.4873 ppm
Concentration per Run 3	0.4897 ppm	0.4742 ppm	0.4907 ppm	10.0167 ppm	0.4993 ppm	0.4771 ppm	0.4870 ppm
Recovery Percentage 1	98.115 %	95.067 %	98.344 %	100.154 %	100.476 %	95.508 %	97.819 %
Concentration RSD	1.0 %	0.2 %	0.6 %	0.4 %	0.7 %	0.1 %	0.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4660 ppm	5.1711 ppm	0.5169 ppm	0.5059 ppm	0.4975 ppm	0.4690 ppm	0.4906 ppm
Concentration per Run 1	0.4637 ppm	5.1968 ppm	0.5264 ppm	0.5063 ppm	0.4993 ppm	0.4682 ppm	0.4920 ppm
Concentration per Run 2	0.4704 ppm	5.1643 ppm	0.5148 ppm	0.5062 ppm	0.4977 ppm	0.4706 ppm	0.4893 ppm
Concentration per Run 3	0.4638 ppm	5.1522 ppm	0.5095 ppm	0.5052 ppm	0.4956 ppm	0.4681 ppm	0.4904 ppm
Recovery Percentage 1	93.198 %	98.497 %	103.376 %	101.184 %	99.507 %	93.796 %	98.113 %
Concentration RSD	0.8 %	0.4 %	1.7 %	0.1 %	0.4 %	0.3 %	0.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4925 ppm	104.9546 %	104.3452 %	102.1683 %	100.4982 %	101.1594 %	101.3511 %
Concentration per Run 1	0.4974 ppm	104.4693 %	103.8311 %	101.7398 %	100.7716 %	100.8601 %	100.8961 %
Concentration per Run 2	0.4904 ppm	105.4547 %	104.4405 %	102.5654 %	100.9510 %	101.3513 %	101.9447 %
Concentration per Run 3	0.4898 ppm	104.9399 %	104.7638 %	102.1997 %	99.7721 %	101.2667 %	101.2124 %
Recovery Percentage 1	98.509 %						
Concentration RSD	0.9 %	0.5 %	0.5 %	0.4 %	0.6 %	0.3 %	0.5 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCB
Analysis started at: 9/11/2024 1:25:21 PM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0001 ppm	-0.0089 ppm	0.0007 ppm	0.0009 ppm	0.0000 ppm	0.0000 ppm	-0.0029 ppm
Concentration per Run 1	-0.0001 ppm	-0.0045 ppm	0.0002 ppm	0.0009 ppm	0.0000 ppm	0.0000 ppm	-0.0030 ppm
Concentration per Run 2	0.0000 ppm	-0.0058 ppm	0.0012 ppm	0.0006 ppm	0.0000 ppm	0.0000 ppm	-0.0035 ppm
Concentration per Run 3	-0.0003 ppm	-0.0163 ppm	0.0006 ppm	0.0011 ppm	0.0000 ppm	0.0000 ppm	-0.0021 ppm
Recovery Percentage 1	-1.884 %	-8.871 %	23.293 %	2.860 %	-0.060 %	-0.099 %	-2.857 %
Concentration RSD	118.8 %	73.1 %	73.3 %	30.9 %	252.2 %	193.9 %	26.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0001 ppm	-0.0001 ppm	0.0001 ppm	0.0006 ppm	0.0047 ppm	0.0032 ppm	-0.0005 ppm
Concentration per Run 1	0.0002 ppm	0.0001 ppm	0.0002 ppm	0.0008 ppm	0.0051 ppm	0.0101 ppm	-0.0001 ppm
Concentration per Run 2	0.0001 ppm	0.0001 ppm	0.0003 ppm	0.0005 ppm	0.0046 ppm	-0.0034 ppm	-0.0009 ppm
Concentration per Run 3	0.0001 ppm	-0.0005 ppm	-0.0001 ppm	0.0006 ppm	0.0045 ppm	0.0029 ppm	-0.0006 ppm
Recovery Percentage 1	2.106 %	-0.471 %	1.294 %	6.233 %	9.495 %	0.128 %	-5.286 %
Concentration RSD	55.9 %	359.6 %	139.4 %	30.1 %	7.1 %	212.3 %	78.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0010 ppm	0.0002 ppm	0.0016 ppm	0.0121 ppm	0.0001 ppm	0.0001 ppm	0.0000 ppm
Concentration per Run 1	0.0009 ppm	0.0003 ppm	0.0015 ppm	0.0125 ppm	0.0002 ppm	-0.0004 ppm	0.0009 ppm
Concentration per Run 2	0.0010 ppm	0.0000 ppm	0.0017 ppm	0.0109 ppm	0.0004 ppm	0.0002 ppm	0.0017 ppm
Concentration per Run 3	0.0010 ppm	0.0003 ppm	0.0016 ppm	0.0130 ppm	-0.0003 ppm	0.0003 ppm	-0.0027 ppm
Recovery Percentage 1	0.967 %	2.060 %	3.211 %	0.606 %	0.364 %	0.611 %	-0.025 %
Concentration RSD	1.9 %	68.0 %	8.8 %	8.7 %	393.4 %	619.9 %	18,687.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0011 ppm	0.0041 ppm	0.0005 ppm	0.0001 ppm	0.0000 ppm	0.0002 ppm	-0.0001 ppm
Concentration per Run 1	-0.0013 ppm	0.0039 ppm	0.0008 ppm	0.0001 ppm	0.0001 ppm	-0.0001 ppm	0.0000 ppm
Concentration per Run 2	-0.0014 ppm	0.0054 ppm	0.0005 ppm	0.0000 ppm	0.0000 ppm	-0.0003 ppm	0.0000 ppm
Concentration per Run 3	-0.0006 ppm	0.0030 ppm	0.0004 ppm	0.0001 ppm	-0.0001 ppm	0.0011 ppm	-0.0002 ppm
Recovery Percentage 1	-11.127 %	0.821 %	1.076 %	0.890 %	-0.290 %	1.244 %	-0.707 %
Concentration RSD	40.1 %	28.7 %	36.3 %	67.6 %	397.5 %	304.1 %	204.9 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0008 ppm	99.2518 %	99.4108 %	101.0594 %	102.2221 %	100.4297 %	102.5779 %
Concentration per Run 1	0.0008 ppm	98.1021 %	99.5500 %	100.3336 %	102.2048 %	100.6089 %	102.4577 %
Concentration per Run 2	0.0007 ppm	99.3431 %	98.8168 %	101.1351 %	102.3732 %	99.7437 %	102.7111 %
Concentration per Run 3	0.0008 ppm	100.3101 %	99.8656 %	101.7096 %	102.0885 %	100.9367 %	102.5650 %
Recovery Percentage 1	15.786 %						
Concentration RSD	7.4 %	1.1 %	0.5 %	0.7 %	0.1 %	0.6 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2451879-07D2 WG1970060
Analysis started at: 9/11/2024 1:32:21 PM
Rack 2
Vial 5
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0016 ppm	144.8478 ppm	0.1938 ppm	0.0098 ppm	0.6358 ppm	0.0057 ppm	16.4606 ppm
Concentration per Run 1	0.0015 ppm	145.0266 ppm	0.1944 ppm	0.0101 ppm	0.6399 ppm	0.0057 ppm	16.5156 ppm
Concentration per Run 2	0.0016 ppm	145.3948 ppm	0.1924 ppm	0.0098 ppm	0.6336 ppm	0.0056 ppm	16.4684 ppm
Concentration per Run 3	0.0017 ppm	144.1221 ppm	0.1945 ppm	0.0095 ppm	0.6338 ppm	0.0057 ppm	16.3977 ppm
Concentration RSD	5.1 %	0.5 %	0.6 %	3.0 %	0.6 %	0.9 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0018 ppm	0.0283 ppm	0.3637 ppm	0.3645 ppm	132.5926 ppm	3.7224 ppm	0.0741 ppm
Concentration per Run 1	0.0018 ppm	0.0280 ppm	0.3630 ppm	0.3627 ppm	133.8642 ppm	3.7398 ppm	0.0754 ppm
Concentration per Run 2	0.0018 ppm	0.0288 ppm	0.3633 ppm	0.3663 ppm	132.2312 ppm	3.7444 ppm	0.0741 ppm
Concentration per Run 3	0.0018 ppm	0.0281 ppm	0.3646 ppm	0.3646 ppm	131.6825 ppm	3.6831 ppm	0.0727 ppm
Concentration RSD	2.2 %	1.6 %	0.2 %	0.5 %	0.9 %	0.9 %	1.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	21.3485 ppm	1.5077 ppm	0.0074 ppm	0.6160 ppm	0.0823 ppm	3.4711 ppm	0.0050 ppm
Concentration per Run 1	21.3453 ppm	1.5124 ppm	0.0072 ppm	0.6169 ppm	0.0826 ppm	3.4860 ppm	0.0046 ppm
Concentration per Run 2	21.3739 ppm	1.5100 ppm	0.0077 ppm	0.6166 ppm	0.0812 ppm	3.4607 ppm	0.0058 ppm
Concentration per Run 3	21.3262 ppm	1.5007 ppm	0.0073 ppm	0.6145 ppm	0.0831 ppm	3.4665 ppm	0.0045 ppm
Concentration RSD	0.1 %	0.4 %	3.8 %	0.2 %	1.1 %	0.4 %	15.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0039 ppm	3.8916 ppm	0.0485 ppm	0.0491 ppm	5.0862 ppm	0.0052 ppm	0.3117 ppm
Concentration per Run 1	0.0081 ppm	3.8606 ppm	0.0491 ppm	0.0491 ppm	5.0924 ppm	0.0062 ppm	0.3123 ppm
Concentration per Run 2	0.0017 ppm	3.8221 ppm	0.0480 ppm	0.0493 ppm	5.0810 ppm	0.0033 ppm	0.3118 ppm
Concentration per Run 3	0.0017 ppm	3.9921 ppm	0.0485 ppm	0.0489 ppm	5.0853 ppm	0.0061 ppm	0.3111 ppm
Concentration RSD	95.9 %	2.3 %	1.2 %	0.4 %	0.1 %	31.5 %	0.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.8364 ppm	106.6974 %	109.5385 %	92.5213 %	129.1789 %	135.3188 %	131.5987 %
Concentration per Run 1	0.8274 ppm	106.9183 %	108.5315 %	92.0565 %	129.4886 %	134.5466 %	131.4954 %
Concentration per Run 2	0.8371 ppm	106.2509 %	109.6313 %	93.0843 %	128.5030 %	135.4953 %	131.8199 %
Concentration per Run 3	0.8446 ppm	106.9231 %	110.4528 %	92.4230 %	129.5450 %	135.9146 %	131.4808 %
Concentration RSD	1.0 %	0.4 %	0.9 %	0.6 %	0.5 %	0.5 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2451879-08D2 WG1970060
Analysis started at: 9/11/2024 1:36:35 PM
Rack 2
Vial 6
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0012 ppm	132.5329 ppm	0.1480 ppm	0.0076 ppm	0.4810 ppm	0.0050 ppm	11.8409 ppm
Concentration per Run 1	0.0013 ppm	132.7392 ppm	0.1472 ppm	0.0082 ppm	0.4813 ppm	0.0051 ppm	11.8176 ppm
Concentration per Run 2	0.0012 ppm	132.5146 ppm	0.1490 ppm	0.0071 ppm	0.4822 ppm	0.0050 ppm	11.8237 ppm
Concentration per Run 3	0.0012 ppm	132.3449 ppm	0.1478 ppm	0.0076 ppm	0.4795 ppm	0.0051 ppm	11.8816 ppm
Concentration RSD	7.0 %	0.1 %	0.6 %	7.6 %	0.3 %	0.9 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0019 ppm	0.0282 ppm	0.2454 ppm	0.3961 ppm	120.7795 ppm	3.7324 ppm	0.0687 ppm
Concentration per Run 1	0.0019 ppm	0.0283 ppm	0.2485 ppm	0.3997 ppm	120.8012 ppm	3.7872 ppm	0.0689 ppm
Concentration per Run 2	0.0019 ppm	0.0282 ppm	0.2436 ppm	0.3946 ppm	120.8257 ppm	3.7170 ppm	0.0694 ppm
Concentration per Run 3	0.0020 ppm	0.0282 ppm	0.2441 ppm	0.3940 ppm	120.7117 ppm	3.6930 ppm	0.0679 ppm
Concentration RSD	4.4 %	0.2 %	1.1 %	0.8 %	0.0 %	1.3 %	1.1 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	19.3574 ppm	1.4198 ppm	0.0066 ppm	0.4844 ppm	0.0744 ppm	2.4285 ppm	0.0040 ppm
Concentration per Run 1	19.4889 ppm	1.4210 ppm	0.0064 ppm	0.4890 ppm	0.0752 ppm	2.4301 ppm	0.0023 ppm
Concentration per Run 2	19.2822 ppm	1.4182 ppm	0.0065 ppm	0.4873 ppm	0.0740 ppm	2.4373 ppm	0.0061 ppm
Concentration per Run 3	19.3009 ppm	1.4202 ppm	0.0070 ppm	0.4767 ppm	0.0740 ppm	2.4180 ppm	0.0038 ppm
Concentration RSD	0.6 %	0.1 %	4.4 %	1.4 %	0.9 %	0.4 %	47.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0034 ppm	4.7291 ppm	0.0397 ppm	0.0438 ppm	5.4856 ppm	0.0036 ppm	0.2693 ppm
Concentration per Run 1	0.0066 ppm	4.8700 ppm	0.0402 ppm	0.0441 ppm	5.5277 ppm	0.0050 ppm	0.2711 ppm
Concentration per Run 2	0.0011 ppm	4.5944 ppm	0.0382 ppm	0.0437 ppm	5.4682 ppm	0.0021 ppm	0.2685 ppm
Concentration per Run 3	0.0026 ppm	4.7229 ppm	0.0406 ppm	0.0438 ppm	5.4610 ppm	0.0037 ppm	0.2682 ppm
Concentration RSD	83.8 %	2.9 %	3.2 %	0.5 %	0.7 %	39.4 %	0.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.7967 ppm	106.3775 %	109.8826 %	92.5322 %	128.7908 %	135.1174 %	131.0101 %
Concentration per Run 1	0.8061 ppm	105.9007 %	110.3467 %	92.5326 %	129.1750 %	135.9928 %	130.8520 %
Concentration per Run 2	0.7850 ppm	106.6456 %	110.3347 %	92.1840 %	128.7945 %	135.4186 %	131.2684 %
Concentration per Run 3	0.7991 ppm	106.5862 %	108.9665 %	92.8800 %	128.4029 %	133.9408 %	130.9099 %
Concentration RSD	1.3 %	0.4 %	0.7 %	0.4 %	0.3 %	0.8 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2451879-09D2 WG1970060
Analysis started at: 9/11/2024 1:40:31 PM
Rack 2
Vial 7
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0011 ppm	132.3427 ppm	0.1700 ppm	0.0083 ppm	0.3717 ppm	0.0048 ppm	14.0686 ppm
Concentration per Run 1	0.0012 ppm	131.8700 ppm	0.1685 ppm	0.0084 ppm	0.3707 ppm	0.0048 ppm	14.0610 ppm
Concentration per Run 2	0.0011 ppm	133.1211 ppm	0.1713 ppm	0.0091 ppm	0.3745 ppm	0.0047 ppm	14.0988 ppm
Concentration per Run 3	0.0011 ppm	132.0368 ppm	0.1703 ppm	0.0073 ppm	0.3700 ppm	0.0048 ppm	14.0461 ppm
Concentration RSD	8.9 %	0.5 %	0.8 %	10.5 %	0.6 %	1.5 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0007 ppm	0.0256 ppm	0.4087 ppm	0.3982 ppm	123.5459 ppm	4.1390 ppm	0.0693 ppm
Concentration per Run 1	0.0008 ppm	0.0263 ppm	0.4094 ppm	0.4012 ppm	123.1845 ppm	4.1160 ppm	0.0687 ppm
Concentration per Run 2	0.0005 ppm	0.0253 ppm	0.4090 ppm	0.3986 ppm	124.3744 ppm	4.1636 ppm	0.0704 ppm
Concentration per Run 3	0.0008 ppm	0.0252 ppm	0.4078 ppm	0.3947 ppm	123.0788 ppm	4.1375 ppm	0.0689 ppm
Concentration RSD	26.7 %	2.5 %	0.2 %	0.8 %	0.6 %	0.6 %	1.3 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	21.8765 ppm	1.0919 ppm	0.0071 ppm	0.5167 ppm	0.0819 ppm	1.9787 ppm	0.0049 ppm
Concentration per Run 1	21.9530 ppm	1.0884 ppm	0.0069 ppm	0.5068 ppm	0.0819 ppm	1.9773 ppm	0.0030 ppm
Concentration per Run 2	21.9020 ppm	1.0963 ppm	0.0070 ppm	0.5273 ppm	0.0830 ppm	1.9709 ppm	0.0048 ppm
Concentration per Run 3	21.7745 ppm	1.0911 ppm	0.0075 ppm	0.5159 ppm	0.0809 ppm	1.9878 ppm	0.0070 ppm
Concentration RSD	0.4 %	0.4 %	4.5 %	2.0 %	1.3 %	0.4 %	41.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0029 ppm	5.5882 ppm	0.0342 ppm	0.0422 ppm	5.7815 ppm	0.0048 ppm	0.3693 ppm
Concentration per Run 1	0.0011 ppm	5.6244 ppm	0.0351 ppm	0.0424 ppm	5.8010 ppm	0.0040 ppm	0.3697 ppm
Concentration per Run 2	0.0053 ppm	5.5618 ppm	0.0337 ppm	0.0419 ppm	5.7857 ppm	0.0038 ppm	0.3704 ppm
Concentration per Run 3	0.0022 ppm	5.5784 ppm	0.0337 ppm	0.0423 ppm	5.7577 ppm	0.0066 ppm	0.3678 ppm
Concentration RSD	75.8 %	0.6 %	2.3 %	0.6 %	0.4 %	32.6 %	0.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4118 ppm	105.1625 %	108.8554 %	91.5851 %	122.0722 %	126.9927 %	123.9355 %
Concentration per Run 1	0.4160 ppm	104.8735 %	109.4639 %	91.9008 %	122.6434 %	128.1747 %	123.6890 %
Concentration per Run 2	0.4106 ppm	105.0383 %	108.2645 %	91.7421 %	121.3754 %	125.8882 %	124.6191 %
Concentration per Run 3	0.4089 ppm	105.5757 %	108.8379 %	91.1124 %	122.1980 %	126.9153 %	123.4983 %
Concentration RSD	0.9 %	0.3 %	0.6 %	0.5 %	0.5 %	0.9 %	0.5 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2451879-10D2 WG1970060
Analysis started at: 9/11/2024 1:44:40 PM
Rack 2
Vial 8
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0012 ppm	144.9147 ppm	0.0545 ppm	0.0080 ppm	0.5873 ppm	0.0068 ppm	4.4124 ppm
Concentration per Run 1	0.0013 ppm	144.2821 ppm	0.0539 ppm	0.0083 ppm	0.5861 ppm	0.0067 ppm	4.3977 ppm
Concentration per Run 2	0.0012 ppm	145.5875 ppm	0.0544 ppm	0.0086 ppm	0.5866 ppm	0.0068 ppm	4.4348 ppm
Concentration per Run 3	0.0011 ppm	144.8744 ppm	0.0553 ppm	0.0071 ppm	0.5891 ppm	0.0068 ppm	4.4049 ppm
Concentration RSD	11.8 %	0.5 %	1.4 %	9.8 %	0.3 %	0.4 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0043 ppm	0.0238 ppm	0.1505 ppm	0.1583 ppm	130.8201 ppm	2.9964 ppm	0.0737 ppm
Concentration per Run 1	0.0044 ppm	0.0241 ppm	0.1513 ppm	0.1588 ppm	130.2277 ppm	2.9840 ppm	0.0742 ppm
Concentration per Run 2	0.0043 ppm	0.0239 ppm	0.1500 ppm	0.1585 ppm	131.1138 ppm	3.0323 ppm	0.0742 ppm
Concentration per Run 3	0.0043 ppm	0.0235 ppm	0.1502 ppm	0.1577 ppm	131.1189 ppm	2.9729 ppm	0.0727 ppm
Concentration RSD	0.8 %	1.3 %	0.5 %	0.4 %	0.4 %	1.1 %	1.1 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	15.6865 ppm	2.0740 ppm	0.0070 ppm	0.4039 ppm	0.0713 ppm	0.9921 ppm	0.0031 ppm
Concentration per Run 1	15.8001 ppm	2.0658 ppm	0.0074 ppm	0.4028 ppm	0.0718 ppm	0.9936 ppm	0.0039 ppm
Concentration per Run 2	15.6748 ppm	2.0797 ppm	0.0067 ppm	0.4058 ppm	0.0714 ppm	0.9896 ppm	0.0041 ppm
Concentration per Run 3	15.5845 ppm	2.0766 ppm	0.0070 ppm	0.4032 ppm	0.0707 ppm	0.9931 ppm	0.0014 ppm
Concentration RSD	0.7 %	0.4 %	4.6 %	0.4 %	0.8 %	0.2 %	48.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0056 ppm	6.7504 ppm	0.0172 ppm	0.0350 ppm	4.7101 ppm	0.0032 ppm	0.2198 ppm
Concentration per Run 1	0.0080 ppm	6.7452 ppm	0.0170 ppm	0.0353 ppm	4.7322 ppm	0.0032 ppm	0.2210 ppm
Concentration per Run 2	0.0063 ppm	6.7525 ppm	0.0172 ppm	0.0346 ppm	4.6965 ppm	0.0040 ppm	0.2191 ppm
Concentration per Run 3	0.0026 ppm	6.7535 ppm	0.0174 ppm	0.0350 ppm	4.7017 ppm	0.0024 ppm	0.2191 ppm
Concentration RSD	49.4 %	0.1 %	1.3 %	1.0 %	0.4 %	24.2 %	0.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	1.3102 ppm	104.1303 %	108.9409 %	92.0140 %	134.6291 %	141.5341 %	137.2967 %
Concentration per Run 1	1.3213 ppm	103.4259 %	109.7561 %	91.8255 %	134.7712 %	142.5110 %	137.5422 %
Concentration per Run 2	1.3012 ppm	104.2915 %	108.6947 %	92.0699 %	134.5127 %	141.4026 %	136.9990 %
Concentration per Run 3	1.3083 ppm	104.6735 %	108.3719 %	92.1467 %	134.6033 %	140.6887 %	137.3490 %
Concentration RSD	0.8 %	0.6 %	0.7 %	0.2 %	0.1 %	0.6 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2451879-11D2 WG1970060
Analysis started at: 9/11/2024 1:48:38 PM
Rack 2
Vial 9
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0008 ppm	112.0846 ppm	0.0831 ppm	0.0107 ppm	0.6154 ppm	0.0040 ppm	27.7820 ppm
Concentration per Run 1	0.0008 ppm	112.2783 ppm	0.0830 ppm	0.0110 ppm	0.6148 ppm	0.0040 ppm	27.7861 ppm
Concentration per Run 2	0.0007 ppm	111.3862 ppm	0.0833 ppm	0.0105 ppm	0.6151 ppm	0.0040 ppm	27.6569 ppm
Concentration per Run 3	0.0009 ppm	112.5894 ppm	0.0830 ppm	0.0106 ppm	0.6163 ppm	0.0040 ppm	27.9029 ppm
Concentration RSD	7.6 %	0.6 %	0.2 %	2.4 %	0.1 %	0.3 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0026 ppm	0.0383 ppm	0.1750 ppm	0.4171 ppm	120.3706 ppm	9.4701 ppm	0.0777 ppm
Concentration per Run 1	0.0026 ppm	0.0386 ppm	0.1752 ppm	0.4180 ppm	120.5903 ppm	9.5355 ppm	0.0790 ppm
Concentration per Run 2	0.0027 ppm	0.0381 ppm	0.1749 ppm	0.4174 ppm	119.8940 ppm	9.3912 ppm	0.0764 ppm
Concentration per Run 3	0.0026 ppm	0.0382 ppm	0.1749 ppm	0.4158 ppm	120.6274 ppm	9.4836 ppm	0.0777 ppm
Concentration RSD	2.2 %	0.6 %	0.1 %	0.3 %	0.3 %	0.8 %	1.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	25.1236 ppm	2.0296 ppm	0.0056 ppm	0.6008 ppm	0.0903 ppm	1.5768 ppm	0.0018 ppm
Concentration per Run 1	25.1301 ppm	2.0317 ppm	0.0053 ppm	0.6039 ppm	0.0909 ppm	1.5861 ppm	0.0001 ppm
Concentration per Run 2	25.1409 ppm	2.0189 ppm	0.0054 ppm	0.5984 ppm	0.0906 ppm	1.5727 ppm	0.0003 ppm
Concentration per Run 3	25.0997 ppm	2.0384 ppm	0.0061 ppm	0.6002 ppm	0.0895 ppm	1.5715 ppm	0.0049 ppm
Concentration RSD	0.1 %	0.5 %	8.5 %	0.5 %	0.8 %	0.5 %	153.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0043 ppm	6.7418 ppm	0.0210 ppm	0.1237 ppm	5.0430 ppm	0.0033 ppm	0.2458 ppm
Concentration per Run 1	0.0040 ppm	6.8410 ppm	0.0216 ppm	0.1235 ppm	5.0644 ppm	0.0028 ppm	0.2461 ppm
Concentration per Run 2	0.0050 ppm	6.6820 ppm	0.0200 ppm	0.1238 ppm	5.0261 ppm	0.0029 ppm	0.2463 ppm
Concentration per Run 3	0.0041 ppm	6.7023 ppm	0.0215 ppm	0.1239 ppm	5.0386 ppm	0.0041 ppm	0.2448 ppm
Concentration RSD	12.8 %	1.3 %	4.4 %	0.2 %	0.4 %	22.4 %	0.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.7595 ppm	105.3467 %	109.2275 %	92.1980 %	122.3261 %	128.1729 %	124.6787 %
Concentration per Run 1	0.7630 ppm	105.4440 %	108.9536 %	91.7779 %	123.1646 %	127.9558 %	124.8606 %
Concentration per Run 2	0.7552 ppm	105.3503 %	109.7126 %	92.4164 %	122.2388 %	128.2350 %	124.7266 %
Concentration per Run 3	0.7604 ppm	105.2458 %	109.0164 %	92.3996 %	121.5750 %	128.3279 %	124.4491 %
Concentration RSD	0.5 %	0.1 %	0.4 %	0.4 %	0.7 %	0.2 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2451879-12D2 WG1970060
Analysis started at: 9/11/2024 1:52:35 PM
Rack 2
Vial 10
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0011 ppm	130.6606 ppm	0.1025 ppm	0.0077 ppm	0.5250 ppm	0.0055 ppm	12.0460 ppm
Concentration per Run 1	0.0010 ppm	130.7418 ppm	0.1027 ppm	0.0083 ppm	0.5229 ppm	0.0056 ppm	12.0434 ppm
Concentration per Run 2	0.0012 ppm	130.3426 ppm	0.1018 ppm	0.0070 ppm	0.5269 ppm	0.0055 ppm	12.0001 ppm
Concentration per Run 3	0.0011 ppm	130.8973 ppm	0.1029 ppm	0.0077 ppm	0.5253 ppm	0.0055 ppm	12.0946 ppm
Concentration RSD	11.5 %	0.2 %	0.6 %	7.9 %	0.4 %	1.0 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0033 ppm	0.0317 ppm	0.1582 ppm	0.4040 ppm	120.8662 ppm	5.3117 ppm	0.0697 ppm
Concentration per Run 1	0.0033 ppm	0.0316 ppm	0.1589 ppm	0.4043 ppm	120.7006 ppm	5.3602 ppm	0.0725 ppm
Concentration per Run 2	0.0034 ppm	0.0319 ppm	0.1585 ppm	0.4049 ppm	120.7136 ppm	5.2628 ppm	0.0694 ppm
Concentration per Run 3	0.0033 ppm	0.0317 ppm	0.1573 ppm	0.4027 ppm	121.1844 ppm	5.3119 ppm	0.0673 ppm
Concentration RSD	2.1 %	0.5 %	0.5 %	0.3 %	0.2 %	0.9 %	3.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	19.8396 ppm	1.8267 ppm	0.0067 ppm	0.4213 ppm	0.0742 ppm	1.9450 ppm	0.0020 ppm
Concentration per Run 1	19.9964 ppm	1.8235 ppm	0.0066 ppm	0.4251 ppm	0.0746 ppm	1.9506 ppm	0.0008 ppm
Concentration per Run 2	19.8190 ppm	1.8272 ppm	0.0068 ppm	0.4141 ppm	0.0746 ppm	1.9402 ppm	-0.0022 ppm
Concentration per Run 3	19.7033 ppm	1.8294 ppm	0.0066 ppm	0.4246 ppm	0.0734 ppm	1.9441 ppm	0.0075 ppm
Concentration RSD	0.7 %	0.2 %	2.2 %	1.5 %	0.9 %	0.3 %	245.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0046 ppm	7.4732 ppm	0.0292 ppm	0.0593 ppm	5.9828 ppm	0.0042 ppm	0.2518 ppm
Concentration per Run 1	0.0043 ppm	7.5144 ppm	0.0297 ppm	0.0597 ppm	6.0097 ppm	0.0040 ppm	0.2536 ppm
Concentration per Run 2	0.0046 ppm	7.4534 ppm	0.0280 ppm	0.0588 ppm	5.9857 ppm	0.0048 ppm	0.2517 ppm
Concentration per Run 3	0.0047 ppm	7.4518 ppm	0.0300 ppm	0.0593 ppm	5.9531 ppm	0.0037 ppm	0.2501 ppm
Concentration RSD	4.2 %	0.5 %	3.8 %	0.7 %	0.5 %	13.9 %	0.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	1.0312 ppm	105.3270 %	108.8429 %	91.2190 %	132.9730 %	139.4527 %	135.3213 %
Concentration per Run 1	1.0338 ppm	104.8900 %	109.5556 %	90.9124 %	133.0066 %	140.7242 %	135.1611 %
Concentration per Run 2	1.0338 ppm	105.3055 %	108.6931 %	91.5064 %	132.9754 %	138.3929 %	135.4642 %
Concentration per Run 3	1.0261 ppm	105.7855 %	108.2799 %	91.2383 %	132.9369 %	139.2410 %	135.3388 %
Concentration RSD	0.4 %	0.4 %	0.6 %	0.3 %	0.0 %	0.8 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2451879-13D2 WG1970060
Analysis started at: 9/11/2024 1:56:32 PM
Rack 2
Vial 11
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0008 ppm	123.7742 ppm	0.0941 ppm	0.0063 ppm	0.4882 ppm	0.0053 ppm	7.4267 ppm
Concentration per Run 1	0.0007 ppm	123.5334 ppm	0.0930 ppm	0.0054 ppm	0.4876 ppm	0.0053 ppm	7.4278 ppm
Concentration per Run 2	0.0009 ppm	124.2697 ppm	0.0956 ppm	0.0072 ppm	0.4906 ppm	0.0052 ppm	7.4487 ppm
Concentration per Run 3	0.0007 ppm	123.5195 ppm	0.0938 ppm	0.0062 ppm	0.4863 ppm	0.0053 ppm	7.4035 ppm
Concentration RSD	10.3 %	0.3 %	1.4 %	13.8 %	0.4 %	0.4 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0024 ppm	0.0266 ppm	0.1646 ppm	0.2218 ppm	111.5491 ppm	2.8640 ppm	0.0595 ppm
Concentration per Run 1	0.0026 ppm	0.0265 ppm	0.1649 ppm	0.2228 ppm	111.5902 ppm	2.8785 ppm	0.0603 ppm
Concentration per Run 2	0.0024 ppm	0.0268 ppm	0.1642 ppm	0.2215 ppm	112.1703 ppm	2.8752 ppm	0.0598 ppm
Concentration per Run 3	0.0023 ppm	0.0265 ppm	0.1647 ppm	0.2210 ppm	110.8868 ppm	2.8381 ppm	0.0585 ppm
Concentration RSD	5.0 %	0.6 %	0.2 %	0.4 %	0.6 %	0.8 %	1.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	15.8712 ppm	1.4893 ppm	0.0062 ppm	0.3714 ppm	0.0643 ppm	1.6264 ppm	0.0021 ppm
Concentration per Run 1	15.9100 ppm	1.4874 ppm	0.0061 ppm	0.3685 ppm	0.0650 ppm	1.6270 ppm	0.0044 ppm
Concentration per Run 2	15.8840 ppm	1.4930 ppm	0.0066 ppm	0.3684 ppm	0.0639 ppm	1.6282 ppm	0.0033 ppm
Concentration per Run 3	15.8195 ppm	1.4875 ppm	0.0059 ppm	0.3774 ppm	0.0641 ppm	1.6242 ppm	-0.0013 ppm
Concentration RSD	0.3 %	0.2 %	5.9 %	1.4 %	0.9 %	0.1 %	143.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0022 ppm	8.2182 ppm	0.0282 ppm	0.0321 ppm	5.9662 ppm	0.0041 ppm	0.2279 ppm
Concentration per Run 1	0.0013 ppm	8.1136 ppm	0.0276 ppm	0.0320 ppm	5.9537 ppm	0.0039 ppm	0.2287 ppm
Concentration per Run 2	0.0007 ppm	8.2695 ppm	0.0282 ppm	0.0325 ppm	6.0129 ppm	0.0051 ppm	0.2280 ppm
Concentration per Run 3	0.0047 ppm	8.2714 ppm	0.0289 ppm	0.0318 ppm	5.9319 ppm	0.0032 ppm	0.2271 ppm
Concentration RSD	94.4 %	1.1 %	2.4 %	1.0 %	0.7 %	23.9 %	0.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.8523 ppm	105.2680 %	107.9910 %	91.4183 %	134.2045 %	141.0352 %	137.1877 %
Concentration per Run 1	0.8546 ppm	104.9645 %	108.1177 %	91.3408 %	134.3491 %	141.3101 %	137.6053 %
Concentration per Run 2	0.8490 ppm	105.2305 %	107.9976 %	91.3374 %	133.9511 %	141.3607 %	136.7762 %
Concentration per Run 3	0.8532 ppm	105.6089 %	107.8577 %	91.5767 %	134.3132 %	140.4347 %	137.1816 %
Concentration RSD	0.3 %	0.3 %	0.1 %	0.2 %	0.2 %	0.4 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2451799-01D2 WG1970062
Analysis started at: 9/11/2024 2:00:30 PM
Rack 2
Vial 24
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0016 ppm	30.5399 ppm	0.0214 ppm	0.0237 ppm	0.2189 ppm	0.0012 ppm	7.6694 ppm
Concentration per Run 1	0.0015 ppm	30.7190 ppm	0.0210 ppm	0.0233 ppm	0.2190 ppm	0.0012 ppm	7.6496 ppm
Concentration per Run 2	0.0014 ppm	30.5663 ppm	0.0218 ppm	0.0246 ppm	0.2188 ppm	0.0012 ppm	7.6717 ppm
Concentration per Run 3	0.0018 ppm	30.3342 ppm	0.0215 ppm	0.0232 ppm	0.2188 ppm	0.0012 ppm	7.6869 ppm
Concentration RSD	13.4 %	0.6 %	2.0 %	3.3 %	0.1 %	1.8 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0099 ppm	0.0154 ppm	0.1162 ppm	0.5244 ppm	62.7036 ppm	1.5260 ppm	0.0268 ppm
Concentration per Run 1	0.0099 ppm	0.0156 ppm	0.1169 ppm	0.5259 ppm	62.5739 ppm	1.5389 ppm	0.0272 ppm
Concentration per Run 2	0.0099 ppm	0.0156 ppm	0.1158 ppm	0.5250 ppm	62.8004 ppm	1.5129 ppm	0.0256 ppm
Concentration per Run 3	0.0099 ppm	0.0152 ppm	0.1160 ppm	0.5223 ppm	62.7366 ppm	1.5262 ppm	0.0277 ppm
Concentration RSD	0.4 %	1.6 %	0.5 %	0.4 %	0.2 %	0.9 %	4.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	10.7366 ppm	0.5771 ppm	0.0041 ppm	0.5134 ppm	0.0718 ppm	0.4903 ppm	0.0033 ppm
Concentration per Run 1	10.8117 ppm	0.5771 ppm	0.0041 ppm	0.5162 ppm	0.0720 ppm	0.4918 ppm	0.0044 ppm
Concentration per Run 2	10.7566 ppm	0.5766 ppm	0.0041 ppm	0.5151 ppm	0.0719 ppm	0.4900 ppm	0.0019 ppm
Concentration per Run 3	10.6415 ppm	0.5776 ppm	0.0041 ppm	0.5090 ppm	0.0715 ppm	0.4891 ppm	0.0036 ppm
Concentration RSD	0.8 %	0.1 %	0.2 %	0.8 %	0.4 %	0.3 %	39.6 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0006 ppm	5.7309 ppm	0.0470 ppm	0.0397 ppm	1.0436 ppm	0.0008 ppm	0.1170 ppm
Concentration per Run 1	0.0018 ppm	5.7777 ppm	0.0468 ppm	0.0397 ppm	1.0481 ppm	-0.0010 ppm	0.1177 ppm
Concentration per Run 2	-0.0002 ppm	5.6729 ppm	0.0476 ppm	0.0397 ppm	1.0559 ppm	0.0018 ppm	0.1173 ppm
Concentration per Run 3	0.0003 ppm	5.7421 ppm	0.0465 ppm	0.0398 ppm	1.0268 ppm	0.0015 ppm	0.1158 ppm
Concentration RSD	160.8 %	0.9 %	1.2 %	0.2 %	1.4 %	206.1 %	0.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	1.0871 ppm	104.1486 %	106.9813 %	98.7905 %	107.6988 %	110.3294 %	107.9938 %
Concentration per Run 1	1.0884 ppm	103.5627 %	107.3299 %	98.6049 %	107.9942 %	110.7904 %	108.0808 %
Concentration per Run 2	1.0879 ppm	104.0642 %	106.7489 %	98.6775 %	107.2924 %	109.9293 %	107.7408 %
Concentration per Run 3	1.0850 ppm	104.8187 %	106.8650 %	99.0891 %	107.8096 %	110.2684 %	108.1597 %
Concentration RSD	0.2 %	0.6 %	0.3 %	0.3 %	0.3 %	0.4 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2451799-02D2 WG1970062
Analysis started at: 9/11/2024 2:04:29 PM
Rack 2
Vial 25
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0003 ppm	39.1721 ppm	0.0196 ppm	0.0099 ppm	0.1165 ppm	0.0012 ppm	15.6404 ppm
Concentration per Run 1	0.0002 ppm	39.1874 ppm	0.0193 ppm	0.0100 ppm	0.1155 ppm	0.0012 ppm	15.6421 ppm
Concentration per Run 2	0.0003 ppm	39.2597 ppm	0.0202 ppm	0.0105 ppm	0.1175 ppm	0.0011 ppm	15.6633 ppm
Concentration per Run 3	0.0003 ppm	39.0692 ppm	0.0192 ppm	0.0093 ppm	0.1165 ppm	0.0012 ppm	15.6158 ppm
Concentration RSD	23.3 %	0.2 %	2.7 %	6.5 %	0.8 %	2.1 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0031 ppm	0.0084 ppm	0.0615 ppm	0.1204 ppm	60.0024 ppm	1.9209 ppm	0.0266 ppm
Concentration per Run 1	0.0032 ppm	0.0082 ppm	0.0613 ppm	0.1194 ppm	59.9453 ppm	1.9263 ppm	0.0271 ppm
Concentration per Run 2	0.0031 ppm	0.0085 ppm	0.0616 ppm	0.1210 ppm	60.2060 ppm	1.9369 ppm	0.0266 ppm
Concentration per Run 3	0.0031 ppm	0.0084 ppm	0.0616 ppm	0.1209 ppm	59.8560 ppm	1.8995 ppm	0.0261 ppm
Concentration RSD	2.6 %	1.4 %	0.2 %	0.7 %	0.3 %	1.0 %	1.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	5.8852 ppm	0.4581 ppm	0.0026 ppm	0.2715 ppm	0.0261 ppm	0.2127 ppm	0.0006 ppm
Concentration per Run 1	5.8951 ppm	0.4579 ppm	0.0022 ppm	0.2725 ppm	0.0257 ppm	0.2123 ppm	-0.0005 ppm
Concentration per Run 2	5.8935 ppm	0.4585 ppm	0.0028 ppm	0.2706 ppm	0.0263 ppm	0.2136 ppm	0.0036 ppm
Concentration per Run 3	5.8670 ppm	0.4580 ppm	0.0028 ppm	0.2714 ppm	0.0264 ppm	0.2123 ppm	-0.0012 ppm
Concentration RSD	0.3 %	0.1 %	12.3 %	0.4 %	1.5 %	0.4 %	416.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0008 ppm	4.8940 ppm	0.0091 ppm	0.0540 ppm	1.0401 ppm	0.0003 ppm	0.1144 ppm
Concentration per Run 1	0.0010 ppm	4.9953 ppm	0.0097 ppm	0.0536 ppm	1.0381 ppm	-0.0001 ppm	0.1141 ppm
Concentration per Run 2	-0.0007 ppm	4.8653 ppm	0.0085 ppm	0.0542 ppm	1.0324 ppm	0.0007 ppm	0.1144 ppm
Concentration per Run 3	0.0020 ppm	4.8216 ppm	0.0091 ppm	0.0543 ppm	1.0499 ppm	0.0005 ppm	0.1146 ppm
Concentration RSD	176.0 %	1.8 %	6.5 %	0.7 %	0.9 %	124.8 %	0.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.9881 ppm	104.8883 %	105.7856 %	97.6037 %	106.1830 %	107.4279 %	105.6571 %
Concentration per Run 1	0.9875 ppm	104.7848 %	105.4147 %	97.3657 %	106.5254 %	106.9801 %	105.7903 %
Concentration per Run 2	0.9839 ppm	104.8639 %	105.8466 %	97.6036 %	106.1128 %	107.4968 %	105.7554 %
Concentration per Run 3	0.9928 ppm	105.0160 %	106.0956 %	97.8417 %	105.9106 %	107.8067 %	105.4254 %
Concentration RSD	0.5 %	0.1 %	0.3 %	0.2 %	0.3 %	0.4 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2451803-01D2 WG1970062
Analysis started at: 9/11/2024 2:08:26 PM
Rack 2
Vial 26
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0004 ppm	45.0723 ppm	0.0417 ppm	0.0186 ppm	0.1916 ppm	0.0021 ppm	24.1548 ppm
Concentration per Run 1	0.0004 ppm	45.0964 ppm	0.0433 ppm	0.0189 ppm	0.1917 ppm	0.0021 ppm	24.1788 ppm
Concentration per Run 2	0.0002 ppm	44.9977 ppm	0.0402 ppm	0.0181 ppm	0.1909 ppm	0.0021 ppm	24.0986 ppm
Concentration per Run 3	0.0005 ppm	45.1227 ppm	0.0417 ppm	0.0188 ppm	0.1923 ppm	0.0021 ppm	24.1869 ppm
Concentration RSD	40.6 %	0.1 %	3.8 %	2.4 %	0.4 %	0.0 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0008 ppm	0.0247 ppm	0.0820 ppm	0.1396 ppm	86.2155 ppm	4.6836 ppm	0.0482 ppm
Concentration per Run 1	0.0009 ppm	0.0250 ppm	0.0827 ppm	0.1403 ppm	86.2683 ppm	4.7441 ppm	0.0489 ppm
Concentration per Run 2	0.0008 ppm	0.0244 ppm	0.0819 ppm	0.1397 ppm	86.0723 ppm	4.6541 ppm	0.0490 ppm
Concentration per Run 3	0.0008 ppm	0.0245 ppm	0.0813 ppm	0.1389 ppm	86.3059 ppm	4.6526 ppm	0.0467 ppm
Concentration RSD	7.1 %	1.3 %	0.9 %	0.5 %	0.1 %	1.1 %	2.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	11.1280 ppm	1.0291 ppm	0.0090 ppm	15.0772 ppm	0.0949 ppm	0.3447 ppm	0.0043 ppm
Concentration per Run 1	11.2287 ppm	1.0290 ppm	0.0087 ppm	15.0559 ppm	0.0950 ppm	0.3444 ppm	0.0048 ppm
Concentration per Run 2	11.1172 ppm	1.0285 ppm	0.0093 ppm	15.0572 ppm	0.0956 ppm	0.3466 ppm	0.0057 ppm
Concentration per Run 3	11.0383 ppm	1.0298 ppm	0.0089 ppm	15.1184 ppm	0.0942 ppm	0.3433 ppm	0.0023 ppm
Concentration RSD	0.9 %	0.1 %	3.3 %	0.2 %	0.7 %	0.5 %	40.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0019 ppm	4.3599 ppm	0.0145 ppm	0.1007 ppm	1.4940 ppm	0.0006 ppm	0.1778 ppm
Concentration per Run 1	0.0011 ppm	4.3796 ppm	0.0150 ppm	0.1009 ppm	1.4867 ppm	0.0015 ppm	0.1787 ppm
Concentration per Run 2	0.0030 ppm	4.4325 ppm	0.0135 ppm	0.1004 ppm	1.5022 ppm	0.0003 ppm	0.1777 ppm
Concentration per Run 3	0.0016 ppm	4.2676 ppm	0.0150 ppm	0.1008 ppm	1.4932 ppm	-0.0001 ppm	0.1769 ppm
Concentration RSD	52.4 %	1.9 %	5.9 %	0.3 %	0.5 %	152.0 %	0.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4425 ppm	103.6357 %	106.5889 %	96.3236 %	109.1425 %	113.4898 %	110.2753 %
Concentration per Run 1	0.4490 ppm	102.8172 %	106.1907 %	96.2996 %	109.2254 %	113.3624 %	110.7608 %
Concentration per Run 2	0.4394 ppm	103.9278 %	106.9834 %	95.8647 %	109.5816 %	113.4331 %	109.8188 %
Concentration per Run 3	0.4391 ppm	104.1621 %	106.5927 %	96.8064 %	108.6203 %	113.6739 %	110.2463 %
Concentration RSD	1.3 %	0.7 %	0.4 %	0.5 %	0.4 %	0.1 %	0.4 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCV
Analysis started at: 9/11/2024 2:12:23 PM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.4997 ppm	0.4670 ppm	0.4532 ppm	0.4698 ppm	0.4908 ppm	0.4954 ppm	0.4747 ppm
Concentration per Run 1	0.5030 ppm	0.4698 ppm	0.4555 ppm	0.4689 ppm	0.4911 ppm	0.4939 ppm	0.4773 ppm
Concentration per Run 2	0.4997 ppm	0.4594 ppm	0.4518 ppm	0.4714 ppm	0.4906 ppm	0.4971 ppm	0.4714 ppm
Concentration per Run 3	0.4963 ppm	0.4717 ppm	0.4522 ppm	0.4690 ppm	0.4907 ppm	0.4953 ppm	0.4754 ppm
Recovery Percentage 1	99.931 %	93.392 %	90.632 %	93.953 %	98.159 %	99.087 %	94.943 %
Concentration RSD	0.7 %	1.4 %	0.4 %	0.3 %	0.1 %	0.3 %	0.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.4964 ppm	0.5072 ppm	0.4903 ppm	0.4885 ppm	0.4963 ppm	5.0679 ppm	0.5000 ppm
Concentration per Run 1	0.4990 ppm	0.5101 ppm	0.4933 ppm	0.4886 ppm	0.4982 ppm	5.0691 ppm	0.4993 ppm
Concentration per Run 2	0.4966 ppm	0.5081 ppm	0.4910 ppm	0.4901 ppm	0.4953 ppm	5.0147 ppm	0.4953 ppm
Concentration per Run 3	0.4935 ppm	0.5033 ppm	0.4868 ppm	0.4869 ppm	0.4955 ppm	5.1200 ppm	0.5053 ppm
Recovery Percentage 1	99.280 %	101.438 %	98.069 %	97.707 %	99.262 %	101.359 %	99.991 %
Concentration RSD	0.6 %	0.7 %	0.7 %	0.3 %	0.3 %	1.0 %	1.0 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.4945 ppm	0.4772 ppm	0.4944 ppm	10.1332 ppm	0.5066 ppm	0.4772 ppm	0.4900 ppm
Concentration per Run 1	0.4980 ppm	0.4762 ppm	0.4926 ppm	10.1046 ppm	0.5105 ppm	0.4775 ppm	0.4920 ppm
Concentration per Run 2	0.4942 ppm	0.4772 ppm	0.4957 ppm	10.1418 ppm	0.5070 ppm	0.4779 ppm	0.4883 ppm
Concentration per Run 3	0.4913 ppm	0.4783 ppm	0.4948 ppm	10.1532 ppm	0.5022 ppm	0.4762 ppm	0.4898 ppm
Recovery Percentage 1	98.899 %	95.447 %	98.874 %	101.332 %	101.311 %	95.442 %	98.004 %
Concentration RSD	0.7 %	0.2 %	0.3 %	0.3 %	0.8 %	0.2 %	0.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4667 ppm	5.1910 ppm	0.5177 ppm	0.5059 ppm	0.5016 ppm	0.4681 ppm	0.4941 ppm
Concentration per Run 1	0.4672 ppm	5.2028 ppm	0.5202 ppm	0.5059 ppm	0.5072 ppm	0.4702 ppm	0.4959 ppm
Concentration per Run 2	0.4665 ppm	5.2094 ppm	0.5179 ppm	0.5083 ppm	0.5000 ppm	0.4645 ppm	0.4947 ppm
Concentration per Run 3	0.4664 ppm	5.1608 ppm	0.5151 ppm	0.5035 ppm	0.4977 ppm	0.4696 ppm	0.4917 ppm
Recovery Percentage 1	93.342 %	98.877 %	103.547 %	101.174 %	100.327 %	93.624 %	98.817 %
Concentration RSD	0.1 %	0.5 %	0.5 %	0.5 %	1.0 %	0.7 %	0.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4963 ppm	104.5123 %	103.4617 %	102.3205 %	100.5742 %	101.0054 %	101.9531 %
Concentration per Run 1	0.4986 ppm	104.1481 %	103.7835 %	102.5664 %	100.7709 %	101.2189 %	102.4034 %
Concentration per Run 2	0.4976 ppm	104.5796 %	103.1451 %	101.8998 %	100.7440 %	100.5647 %	101.4993 %
Concentration per Run 3	0.4926 ppm	104.8092 %	103.4565 %	102.4952 %	100.2076 %	101.2325 %	101.9567 %
Recovery Percentage 1	99.256 %						
Concentration RSD	0.6 %	0.3 %	0.3 %	0.4 %	0.3 %	0.4 %	0.4 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCB
Analysis started at: 9/11/2024 2:16:20 PM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0131 ppm	-0.0004 ppm	0.0003 ppm	0.0000 ppm	0.0000 ppm	-0.0039 ppm
Concentration per Run 1	0.0000 ppm	-0.0056 ppm	-0.0008 ppm	0.0008 ppm	0.0000 ppm	0.0001 ppm	-0.0039 ppm
Concentration per Run 2	0.0001 ppm	-0.0156 ppm	-0.0005 ppm	-0.0001 ppm	-0.0001 ppm	0.0000 ppm	-0.0041 ppm
Concentration per Run 3	-0.0002 ppm	-0.0183 ppm	0.0002 ppm	0.0002 ppm	0.0000 ppm	0.0001 ppm	-0.0038 ppm
Recovery Percentage 1	-0.394 %	-13.149 %	-12.466 %	0.975 %	-0.391 %	1.021 %	-3.946 %
Concentration RSD	509.9 %	50.9 %	136.2 %	160.8 %	111.3 %	91.5 %	3.9 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0000 ppm	0.0002 ppm	0.0003 ppm	0.0057 ppm	-0.0040 ppm	-0.0004 ppm
Concentration per Run 1	0.0001 ppm	0.0000 ppm	0.0000 ppm	0.0001 ppm	0.0065 ppm	-0.0187 ppm	-0.0007 ppm
Concentration per Run 2	0.0000 ppm	0.0003 ppm	0.0003 ppm	0.0002 ppm	0.0048 ppm	0.0078 ppm	0.0002 ppm
Concentration per Run 3	0.0000 ppm	-0.0003 ppm	0.0003 ppm	0.0004 ppm	0.0058 ppm	-0.0012 ppm	-0.0008 ppm
Recovery Percentage 1	0.859 %	0.112 %	1.973 %	2.756 %	11.345 %	-0.161 %	-4.282 %
Concentration RSD	83.8 %	1,287.5 %	78.7 %	56.6 %	14.8 %	334.2 %	128.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0011 ppm	0.0001 ppm	0.0015 ppm	0.0136 ppm	0.0000 ppm	0.0003 ppm	-0.0007 ppm
Concentration per Run 1	0.0016 ppm	0.0000 ppm	0.0013 ppm	0.0115 ppm	0.0005 ppm	0.0007 ppm	0.0000 ppm
Concentration per Run 2	0.0012 ppm	0.0003 ppm	0.0017 ppm	0.0177 ppm	-0.0002 ppm	0.0001 ppm	-0.0017 ppm
Concentration per Run 3	0.0004 ppm	0.0001 ppm	0.0014 ppm	0.0115 ppm	-0.0003 ppm	0.0001 ppm	-0.0004 ppm
Recovery Percentage 1	1.060 %	1.253 %	2.931 %	0.679 %	0.028 %	3.114 %	-1.422 %
Concentration RSD	60.1 %	109.8 %	11.9 %	26.2 %	6,215.2 %	115.5 %	122.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0007 ppm	0.0016 ppm	0.0008 ppm	0.0000 ppm	-0.0001 ppm	0.0001 ppm	0.0001 ppm
Concentration per Run 1	0.0013 ppm	0.0045 ppm	0.0006 ppm	0.0001 ppm	0.0000 ppm	-0.0002 ppm	0.0000 ppm
Concentration per Run 2	-0.0005 ppm	-0.0009 ppm	0.0004 ppm	0.0000 ppm	-0.0001 ppm	-0.0001 ppm	0.0001 ppm
Concentration per Run 3	0.0013 ppm	0.0010 ppm	0.0013 ppm	0.0000 ppm	-0.0001 ppm	0.0005 ppm	0.0001 ppm
Recovery Percentage 1	6.784 %	0.312 %	1.547 %	0.484 %	-0.815 %	0.380 %	0.574 %
Concentration RSD	155.2 %	175.3 %	65.7 %	38.2 %	50.9 %	538.1 %	151.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0010 ppm	99.0030 %	99.2642 %	100.9646 %	102.3119 %	100.5803 %	102.9851 %
Concentration per Run 1	0.0009 ppm	97.7946 %	99.7839 %	99.9620 %	102.4104 %	100.9815 %	102.4044 %
Concentration per Run 2	0.0011 ppm	98.8891 %	99.4990 %	101.4684 %	102.1114 %	101.0803 %	103.5571 %
Concentration per Run 3	0.0009 ppm	100.3253 %	98.5098 %	101.4634 %	102.4140 %	99.6792 %	102.9937 %
Recovery Percentage 1	19.897 %						
Concentration RSD	10.1 %	1.3 %	0.7 %	0.9 %	0.2 %	0.8 %	0.6 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: Test MIX 1346 EFM
Analysis started at: 9/11/2024 2:24:54 PM
Rack 2
Vial 27
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0001 ppm	-0.0106 ppm	0.0000 ppm	0.9499 ppm	-0.0002 ppm	-0.0001 ppm	9.6099 ppm
Concentration per Run 1	-0.0002 ppm	-0.0071 ppm	0.0000 ppm	0.9614 ppm	-0.0003 ppm	-0.0001 ppm	9.6390 ppm
Concentration per Run 2	0.0001 ppm	-0.0096 ppm	-0.0004 ppm	0.9539 ppm	-0.0002 ppm	-0.0001 ppm	9.6870 ppm
Concentration per Run 3	-0.0003 ppm	-0.0152 ppm	0.0003 ppm	0.9345 ppm	-0.0002 ppm	-0.0001 ppm	9.5037 ppm
Concentration RSD	133.5 %	38.8 %	1,927.8 %	1.5 %	12.7 %	22.7 %	1.0 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0002 ppm	0.0000 ppm	0.0001 ppm	-0.0009 ppm	10.1015 ppm	-0.0012 ppm
Concentration per Run 1	-0.0001 ppm	0.0000 ppm	-0.0002 ppm	0.0002 ppm	-0.0007 ppm	10.2333 ppm	-0.0012 ppm
Concentration per Run 2	-0.0001 ppm	-0.0005 ppm	0.0000 ppm	0.0001 ppm	-0.0008 ppm	10.1226 ppm	-0.0017 ppm
Concentration per Run 3	0.0001 ppm	-0.0001 ppm	0.0001 ppm	0.0001 ppm	-0.0011 ppm	9.9486 ppm	-0.0006 ppm
Concentration RSD	207.4 %	131.1 %	767.8 %	61.9 %	21.8 %	1.4 %	48.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	10.3400 ppm	0.0001 ppm	0.9671 ppm	10.1223 ppm	0.0000 ppm	0.0002 ppm	-0.0011 ppm
Concentration per Run 1	10.4490 ppm	0.0000 ppm	0.9773 ppm	10.1730 ppm	0.0000 ppm	0.0010 ppm	-0.0012 ppm
Concentration per Run 2	10.3793 ppm	0.0001 ppm	0.9703 ppm	10.1681 ppm	0.0001 ppm	-0.0008 ppm	-0.0017 ppm
Concentration per Run 3	10.1916 ppm	0.0000 ppm	0.9538 ppm	10.0259 ppm	-0.0001 ppm	0.0005 ppm	-0.0003 ppm
Concentration RSD	1.3 %	93.1 %	1.2 %	0.8 %	318.9 %	438.1 %	63.6 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0003 ppm	-0.0079 ppm	1.0053 ppm	0.9791 ppm	1.0378 ppm	-0.0007 ppm	0.0005 ppm
Concentration per Run 1	-0.0011 ppm	-0.0079 ppm	1.0139 ppm	0.9815 ppm	1.0496 ppm	-0.0015 ppm	0.0005 ppm
Concentration per Run 2	0.0006 ppm	-0.0073 ppm	1.0058 ppm	0.9807 ppm	1.0393 ppm	-0.0011 ppm	0.0006 ppm
Concentration per Run 3	0.0014 ppm	-0.0085 ppm	0.9961 ppm	0.9753 ppm	1.0244 ppm	0.0004 ppm	0.0004 ppm
Concentration RSD	435.8 %	7.7 %	0.9 %	0.3 %	1.2 %	138.5 %	11.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0003 ppm	98.2746 %	100.6836 %	97.6680 %	100.4557 %	100.4276 %	100.9688 %
Concentration per Run 1	0.0005 ppm	97.3291 %	99.8443 %	97.7739 %	100.9393 %	99.8214 %	101.3272 %
Concentration per Run 2	0.0003 ppm	97.8176 %	99.5608 %	97.5506 %	99.6283 %	99.4654 %	100.8454 %
Concentration per Run 3	0.0002 ppm	99.6769 %	102.6456 %	97.6796 %	100.7994 %	101.9959 %	100.7338 %
Concentration RSD	45.9 %	1.3 %	1.7 %	0.1 %	0.7 %	1.4 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2451782-01D2 WG1970062
Analysis started at: 9/11/2024 2:29:08 PM
Rack 2
Vial 17
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	42.9059 ppm	0.0160 ppm	0.0016 ppm	0.1480 ppm	0.0043 ppm	9.4680 ppm
Concentration per Run 1	0.0002 ppm	42.9811 ppm	0.0163 ppm	0.0011 ppm	0.1489 ppm	0.0043 ppm	9.4665 ppm
Concentration per Run 2	0.0001 ppm	43.0130 ppm	0.0158 ppm	0.0005 ppm	0.1463 ppm	0.0043 ppm	9.4978 ppm
Concentration per Run 3	0.0001 ppm	42.7238 ppm	0.0160 ppm	0.0032 ppm	0.1487 ppm	0.0043 ppm	9.4396 ppm
Concentration RSD	64.6 %	0.4 %	1.4 %	89.8 %	1.0 %	0.2 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0005 ppm	0.0389 ppm	0.0668 ppm	0.0688 ppm	101.0561 ppm	2.8819 ppm	0.0603 ppm
Concentration per Run 1	0.0005 ppm	0.0394 ppm	0.0676 ppm	0.0699 ppm	101.7617 ppm	2.9335 ppm	0.0624 ppm
Concentration per Run 2	0.0006 ppm	0.0391 ppm	0.0664 ppm	0.0683 ppm	100.6421 ppm	2.8588 ppm	0.0589 ppm
Concentration per Run 3	0.0005 ppm	0.0383 ppm	0.0665 ppm	0.0683 ppm	100.7646 ppm	2.8534 ppm	0.0596 ppm
Concentration RSD	6.5 %	1.5 %	1.0 %	1.3 %	0.6 %	1.6 %	3.1 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	21.4666 ppm	2.1440 ppm	0.0070 ppm	0.5170 ppm	0.0519 ppm	0.0466 ppm	0.0002 ppm
Concentration per Run 1	21.7225 ppm	2.1484 ppm	0.0068 ppm	0.5158 ppm	0.0520 ppm	0.0455 ppm	-0.0001 ppm
Concentration per Run 2	21.3935 ppm	2.1443 ppm	0.0073 ppm	0.5172 ppm	0.0518 ppm	0.0474 ppm	-0.0003 ppm
Concentration per Run 3	21.2838 ppm	2.1392 ppm	0.0068 ppm	0.5179 ppm	0.0518 ppm	0.0468 ppm	0.0009 ppm
Concentration RSD	1.1 %	0.2 %	3.8 %	0.2 %	0.3 %	2.1 %	449.6 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0017 ppm	3.8984 ppm	0.0086 ppm	0.0611 ppm	2.2207 ppm	0.0012 ppm	0.1189 ppm
Concentration per Run 1	-0.0030 ppm	4.0042 ppm	0.0093 ppm	0.0612 ppm	2.2331 ppm	0.0018 ppm	0.1188 ppm
Concentration per Run 2	-0.0012 ppm	3.8838 ppm	0.0079 ppm	0.0608 ppm	2.2242 ppm	0.0019 ppm	0.1192 ppm
Concentration per Run 3	-0.0008 ppm	3.8072 ppm	0.0085 ppm	0.0614 ppm	2.2047 ppm	-0.0001 ppm	0.1187 ppm
Concentration RSD	69.0 %	2.5 %	8.5 %	0.6 %	0.7 %	94.9 %	0.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.2828 ppm	103.8279 %	104.6200 %	96.8575 %	122.2328 %	124.4810 %	123.9418 %
Concentration per Run 1	0.2885 ppm	102.5835 %	104.2821 %	96.9743 %	122.2577 %	124.0533 %	124.4730 %
Concentration per Run 2	0.2813 ppm	104.3917 %	104.7408 %	96.8590 %	122.4963 %	124.4114 %	123.8846 %
Concentration per Run 3	0.2786 ppm	104.5085 %	104.8370 %	96.7391 %	121.9444 %	124.9784 %	123.4679 %
Concentration RSD	1.8 %	1.0 %	0.3 %	0.1 %	0.2 %	0.4 %	0.4 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2451782-02D2 WG1970062
Analysis started at: 9/11/2024 2:33:05 PM
Rack 2
Vial 18
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0002 ppm	32.6628 ppm	0.0165 ppm	0.0008 ppm	0.1584 ppm	0.0038 ppm	8.6159 ppm
Concentration per Run 1	-0.0002 ppm	32.6999 ppm	0.0167 ppm	0.0010 ppm	0.1584 ppm	0.0038 ppm	8.6373 ppm
Concentration per Run 2	-0.0001 ppm	32.7348 ppm	0.0166 ppm	0.0010 ppm	0.1582 ppm	0.0039 ppm	8.6113 ppm
Concentration per Run 3	-0.0003 ppm	32.5537 ppm	0.0163 ppm	0.0005 ppm	0.1587 ppm	0.0038 ppm	8.5992 ppm
Concentration RSD	34.7 %	0.3 %	1.1 %	33.8 %	0.2 %	1.5 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0005 ppm	0.0380 ppm	0.0654 ppm	0.0562 ppm	91.0934 ppm	2.9080 ppm	0.0376 ppm
Concentration per Run 1	0.0004 ppm	0.0384 ppm	0.0663 ppm	0.0564 ppm	91.0480 ppm	2.9214 ppm	0.0392 ppm
Concentration per Run 2	0.0004 ppm	0.0383 ppm	0.0657 ppm	0.0564 ppm	91.0828 ppm	2.9293 ppm	0.0381 ppm
Concentration per Run 3	0.0006 ppm	0.0374 ppm	0.0642 ppm	0.0559 ppm	91.1493 ppm	2.8733 ppm	0.0356 ppm
Concentration RSD	17.8 %	1.5 %	1.6 %	0.6 %	0.1 %	1.0 %	4.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	14.4895 ppm	2.2509 ppm	0.0043 ppm	0.4225 ppm	0.0505 ppm	0.0473 ppm	0.0012 ppm
Concentration per Run 1	14.6985 ppm	2.2526 ppm	0.0048 ppm	0.4244 ppm	0.0514 ppm	0.0472 ppm	0.0020 ppm
Concentration per Run 2	14.4820 ppm	2.2539 ppm	0.0038 ppm	0.4185 ppm	0.0499 ppm	0.0474 ppm	0.0006 ppm
Concentration per Run 3	14.2879 ppm	2.2462 ppm	0.0042 ppm	0.4247 ppm	0.0501 ppm	0.0475 ppm	0.0009 ppm
Concentration RSD	1.4 %	0.2 %	11.8 %	0.8 %	1.6 %	0.3 %	63.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0009 ppm	4.5721 ppm	0.0044 ppm	0.0536 ppm	2.4727 ppm	0.0009 ppm	0.1354 ppm
Concentration per Run 1	0.0007 ppm	4.6275 ppm	0.0038 ppm	0.0538 ppm	2.5012 ppm	0.0000 ppm	0.1369 ppm
Concentration per Run 2	-0.0030 ppm	4.5899 ppm	0.0042 ppm	0.0538 ppm	2.4682 ppm	0.0019 ppm	0.1354 ppm
Concentration per Run 3	-0.0004 ppm	4.4989 ppm	0.0054 ppm	0.0531 ppm	2.4488 ppm	0.0009 ppm	0.1340 ppm
Concentration RSD	204.9 %	1.4 %	19.3 %	0.8 %	1.1 %	99.0 %	1.1 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.2129 ppm	103.9859 %	103.8097 %	97.7027 %	123.8373 %	126.9993 %	127.4180 %
Concentration per Run 1	0.2159 ppm	102.8836 %	104.3599 %	97.6192 %	123.2921 %	127.7449 %	127.9640 %
Concentration per Run 2	0.2122 ppm	104.0613 %	103.0360 %	97.7892 %	124.1632 %	126.5149 %	127.2266 %
Concentration per Run 3	0.2107 ppm	105.0127 %	104.0334 %	97.6996 %	124.0567 %	126.7383 %	127.0634 %
Concentration RSD	1.3 %	1.0 %	0.7 %	0.1 %	0.4 %	0.5 %	0.4 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2451782-03D2 WG1970062
Analysis started at: 9/11/2024 2:37:03 PM
Rack 2
Vial 19
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	38.4132 ppm	0.0181 ppm	0.0005 ppm	0.1789 ppm	0.0065 ppm	9.6840 ppm
Concentration per Run 1	0.0001 ppm	38.3664 ppm	0.0179 ppm	0.0008 ppm	0.1791 ppm	0.0067 ppm	9.7731 ppm
Concentration per Run 2	0.0001 ppm	38.1842 ppm	0.0177 ppm	0.0012 ppm	0.1774 ppm	0.0065 ppm	9.6446 ppm
Concentration per Run 3	0.0002 ppm	38.6889 ppm	0.0185 ppm	-0.0004 ppm	0.1800 ppm	0.0063 ppm	9.6343 ppm
Concentration RSD	26.6 %	0.7 %	2.4 %	165.6 %	0.7 %	2.8 %	0.8 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0006 ppm	0.0374 ppm	0.0540 ppm	0.0872 ppm	101.4610 ppm	3.5962 ppm	0.0503 ppm
Concentration per Run 1	0.0005 ppm	0.0379 ppm	0.0545 ppm	0.0878 ppm	101.9541 ppm	3.6233 ppm	0.0514 ppm
Concentration per Run 2	0.0008 ppm	0.0372 ppm	0.0539 ppm	0.0877 ppm	100.6030 ppm	3.5592 ppm	0.0495 ppm
Concentration per Run 3	0.0005 ppm	0.0370 ppm	0.0535 ppm	0.0862 ppm	101.8258 ppm	3.6059 ppm	0.0500 ppm
Concentration RSD	26.6 %	1.2 %	0.9 %	1.0 %	0.7 %	0.9 %	2.0 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	17.4397 ppm	2.4347 ppm	0.0077 ppm	0.6086 ppm	0.0434 ppm	0.0878 ppm	-0.0002 ppm
Concentration per Run 1	17.5963 ppm	2.4444 ppm	0.0074 ppm	0.6094 ppm	0.0440 ppm	0.0898 ppm	0.0012 ppm
Concentration per Run 2	17.4399 ppm	2.4223 ppm	0.0077 ppm	0.5945 ppm	0.0443 ppm	0.0877 ppm	0.0001 ppm
Concentration per Run 3	17.2828 ppm	2.4374 ppm	0.0080 ppm	0.6219 ppm	0.0420 ppm	0.0860 ppm	-0.0018 ppm
Concentration RSD	0.9 %	0.5 %	4.2 %	2.3 %	2.8 %	2.2 %	761.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0012 ppm	4.9937 ppm	0.0050 ppm	0.0635 ppm	2.5536 ppm	0.0012 ppm	0.1328 ppm
Concentration per Run 1	-0.0018 ppm	5.1289 ppm	0.0053 ppm	0.0647 ppm	2.5726 ppm	0.0011 ppm	0.1338 ppm
Concentration per Run 2	0.0002 ppm	4.9575 ppm	0.0051 ppm	0.0634 ppm	2.5501 ppm	0.0011 ppm	0.1324 ppm
Concentration per Run 3	-0.0019 ppm	4.8946 ppm	0.0046 ppm	0.0625 ppm	2.5381 ppm	0.0016 ppm	0.1322 ppm
Concentration RSD	99.6 %	2.4 %	7.2 %	1.7 %	0.7 %	21.6 %	0.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.3038 ppm	103.8144 %	104.0062 %	96.5111 %	128.1191 %	130.5730 %	130.0053 %
Concentration per Run 1	0.3058 ppm	102.8563 %	101.7035 %	96.0181 %	127.9742 %	128.9182 %	129.7645 %
Concentration per Run 2	0.3052 ppm	104.1575 %	104.2037 %	96.4824 %	128.9341 %	130.2785 %	129.9234 %
Concentration per Run 3	0.3004 ppm	104.4295 %	106.1113 %	97.0329 %	127.4490 %	132.5221 %	130.3280 %
Concentration RSD	1.0 %	0.8 %	2.1 %	0.5 %	0.6 %	1.4 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2451782-04D2 WG1970062
Analysis started at: 9/11/2024 2:40:59 PM
Rack 2
Vial 20
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0007 ppm	78.1975 ppm	0.0812 ppm	0.0090 ppm	0.2093 ppm	0.0039 ppm	72.0673 ppm
Concentration per Run 1	0.0007 ppm	78.0398 ppm	0.0794 ppm	0.0095 ppm	0.2091 ppm	0.0039 ppm	71.9990 ppm
Concentration per Run 2	0.0010 ppm	78.3369 ppm	0.0827 ppm	0.0086 ppm	0.2098 ppm	0.0039 ppm	72.1489 ppm
Concentration per Run 3	0.0003 ppm	78.2159 ppm	0.0814 ppm	0.0090 ppm	0.2090 ppm	0.0039 ppm	72.0541 ppm
Concentration RSD	51.1 %	0.2 %	2.0 %	5.3 %	0.2 %	0.3 %	0.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0004 ppm	0.0520 ppm	0.0862 ppm	0.1013 ppm	142.0537 ppm	4.0997 ppm	0.1007 ppm
Concentration per Run 1	0.0004 ppm	0.0525 ppm	0.0866 ppm	0.1020 ppm	142.0517 ppm	4.1149 ppm	0.1025 ppm
Concentration per Run 2	0.0004 ppm	0.0521 ppm	0.0864 ppm	0.1011 ppm	142.5016 ppm	4.0956 ppm	0.0997 ppm
Concentration per Run 3	0.0004 ppm	0.0515 ppm	0.0856 ppm	0.1008 ppm	141.6079 ppm	4.0887 ppm	0.1001 ppm
Concentration RSD	2.1 %	1.0 %	0.6 %	0.6 %	0.3 %	0.3 %	1.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	28.3326 ppm	2.3997 ppm	0.0029 ppm	0.7125 ppm	0.0963 ppm	1.9575 ppm	0.0022 ppm
Concentration per Run 1	28.5809 ppm	2.3999 ppm	0.0031 ppm	0.7112 ppm	0.0971 ppm	1.9621 ppm	0.0024 ppm
Concentration per Run 2	28.3455 ppm	2.4021 ppm	0.0028 ppm	0.7154 ppm	0.0968 ppm	1.9596 ppm	0.0012 ppm
Concentration per Run 3	28.0714 ppm	2.3970 ppm	0.0027 ppm	0.7107 ppm	0.0950 ppm	1.9507 ppm	0.0030 ppm
Concentration RSD	0.9 %	0.1 %	7.7 %	0.4 %	1.2 %	0.3 %	42.3 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0008 ppm	9.2200 ppm	0.0092 ppm	0.3300 ppm	4.1980 ppm	0.0034 ppm	0.1255 ppm
Concentration per Run 1	0.0009 ppm	9.3022 ppm	0.0101 ppm	0.3299 ppm	4.2197 ppm	0.0024 ppm	0.1257 ppm
Concentration per Run 2	-0.0001 ppm	9.2168 ppm	0.0077 ppm	0.3297 ppm	4.2021 ppm	0.0043 ppm	0.1256 ppm
Concentration per Run 3	-0.0033 ppm	9.1411 ppm	0.0097 ppm	0.3305 ppm	4.1722 ppm	0.0034 ppm	0.1253 ppm
Concentration RSD	262.6 %	0.9 %	13.7 %	0.1 %	0.6 %	29.5 %	0.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4240 ppm	103.0070 %	104.2476 %	90.3643 %	139.9985 %	145.2353 %	141.4852 %
Concentration per Run 1	0.4291 ppm	102.2460 %	104.4626 %	90.5075 %	139.7956 %	144.9206 %	141.8270 %
Concentration per Run 2	0.4240 ppm	103.1952 %	104.0492 %	90.0759 %	140.0412 %	145.4768 %	141.7165 %
Concentration per Run 3	0.4190 ppm	103.5798 %	104.2311 %	90.5094 %	140.1587 %	145.3085 %	140.9122 %
Concentration RSD	1.2 %	0.7 %	0.2 %	0.3 %	0.1 %	0.2 %	0.4 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2451782-05D2 WG1970062
Analysis started at: 9/11/2024 2:44:56 PM
Rack 2
Vial 21
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	54.9630 ppm	0.0232 ppm	0.0160 ppm	0.2934 ppm	0.0036 ppm	143.4822 ppm
Concentration per Run 1	-0.0001 ppm	55.1528 ppm	0.0232 ppm	0.0155 ppm	0.2955 ppm	0.0035 ppm	143.1014 ppm
Concentration per Run 2	0.0002 ppm	54.6599 ppm	0.0236 ppm	0.0162 ppm	0.2891 ppm	0.0037 ppm	144.4110 ppm
Concentration per Run 3	-0.0002 ppm	55.0763 ppm	0.0227 ppm	0.0162 ppm	0.2955 ppm	0.0035 ppm	142.9341 ppm
Concentration RSD	813.7 %	0.5 %	2.0 %	2.6 %	1.3 %	3.7 %	0.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0002 ppm	0.0492 ppm	0.8151 ppm	0.1286 ppm	99.7092 ppm	4.2193 ppm	0.0542 ppm
Concentration per Run 1	0.0002 ppm	0.0493 ppm	0.8172 ppm	0.1293 ppm	100.3411 ppm	4.2734 ppm	0.0556 ppm
Concentration per Run 2	0.0002 ppm	0.0495 ppm	0.8150 ppm	0.1284 ppm	98.8115 ppm	4.1662 ppm	0.0538 ppm
Concentration per Run 3	0.0002 ppm	0.0488 ppm	0.8130 ppm	0.1281 ppm	99.9749 ppm	4.2183 ppm	0.0533 ppm
Concentration RSD	10.5 %	0.8 %	0.3 %	0.5 %	0.8 %	1.3 %	2.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	29.2401 ppm	2.8747 ppm	0.0186 ppm	1.2427 ppm	0.3756 ppm	0.3700 ppm	0.0010 ppm
Concentration per Run 1	29.4831 ppm	2.8782 ppm	0.0183 ppm	1.2618 ppm	0.3766 ppm	0.3696 ppm	0.0005 ppm
Concentration per Run 2	29.1740 ppm	2.8750 ppm	0.0185 ppm	1.2224 ppm	0.3763 ppm	0.3706 ppm	0.0010 ppm
Concentration per Run 3	29.0632 ppm	2.8707 ppm	0.0191 ppm	1.2438 ppm	0.3738 ppm	0.3700 ppm	0.0014 ppm
Concentration RSD	0.7 %	0.1 %	2.1 %	1.6 %	0.4 %	0.1 %	50.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0006 ppm	4.6500 ppm	0.0129 ppm	0.8304 ppm	3.4728 ppm	0.0018 ppm	0.1503 ppm
Concentration per Run 1	0.0026 ppm	4.7703 ppm	0.0138 ppm	0.8268 ppm	3.4862 ppm	0.0021 ppm	0.1516 ppm
Concentration per Run 2	-0.0004 ppm	4.5486 ppm	0.0119 ppm	0.8410 ppm	3.4834 ppm	0.0020 ppm	0.1497 ppm
Concentration per Run 3	-0.0004 ppm	4.6311 ppm	0.0128 ppm	0.8234 ppm	3.4488 ppm	0.0014 ppm	0.1496 ppm
Concentration RSD	274.7 %	2.4 %	7.3 %	1.1 %	0.6 %	21.3 %	0.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4878 ppm	101.0649 %	104.7223 %	90.3204 %	119.6734 %	125.9105 %	121.8888 %
Concentration per Run 1	0.4887 ppm	100.5409 %	104.9796 %	90.2908 %	120.0055 %	125.9324 %	121.7165 %
Concentration per Run 2	0.4896 ppm	101.4302 %	103.9272 %	90.2879 %	119.9855 %	125.5543 %	122.0307 %
Concentration per Run 3	0.4851 ppm	101.2237 %	105.2600 %	90.3826 %	119.0291 %	126.2447 %	121.9193 %
Concentration RSD	0.5 %	0.5 %	0.7 %	0.1 %	0.5 %	0.3 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2451782-06D2 WG1970062
Analysis started at: 9/11/2024 2:48:54 PM
Rack 2
Vial 22
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0003 ppm	50.5291 ppm	0.0171 ppm	0.0122 ppm	0.1629 ppm	0.0036 ppm	41.5849 ppm
Concentration per Run 1	0.0003 ppm	50.4948 ppm	0.0182 ppm	0.0118 ppm	0.1625 ppm	0.0036 ppm	41.6636 ppm
Concentration per Run 2	0.0004 ppm	50.5841 ppm	0.0151 ppm	0.0130 ppm	0.1629 ppm	0.0036 ppm	41.6481 ppm
Concentration per Run 3	0.0002 ppm	50.5085 ppm	0.0180 ppm	0.0118 ppm	0.1633 ppm	0.0035 ppm	41.4430 ppm
Concentration RSD	38.3 %	0.1 %	10.2 %	5.5 %	0.2 %	1.4 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0530 ppm	0.0361 ppm	0.0593 ppm	0.0940 ppm	95.8532 ppm	2.3720 ppm	0.0489 ppm
Concentration per Run 1	0.0540 ppm	0.0366 ppm	0.0600 ppm	0.0951 ppm	95.8998 ppm	2.3767 ppm	0.0510 ppm
Concentration per Run 2	0.0527 ppm	0.0361 ppm	0.0590 ppm	0.0935 ppm	95.8644 ppm	2.3820 ppm	0.0480 ppm
Concentration per Run 3	0.0525 ppm	0.0356 ppm	0.0587 ppm	0.0935 ppm	95.7955 ppm	2.3574 ppm	0.0478 ppm
Concentration RSD	1.6 %	1.3 %	1.2 %	1.0 %	0.1 %	0.5 %	3.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	16.8794 ppm	1.6347 ppm	0.0020 ppm	0.4229 ppm	0.0449 ppm	0.4748 ppm	0.0013 ppm
Concentration per Run 1	17.1283 ppm	1.6335 ppm	0.0024 ppm	0.4224 ppm	0.0449 ppm	0.4758 ppm	0.0018 ppm
Concentration per Run 2	16.8078 ppm	1.6375 ppm	0.0014 ppm	0.4260 ppm	0.0449 ppm	0.4744 ppm	0.0027 ppm
Concentration per Run 3	16.7022 ppm	1.6330 ppm	0.0023 ppm	0.4202 ppm	0.0448 ppm	0.4741 ppm	-0.0008 ppm
Concentration RSD	1.3 %	0.2 %	28.5 %	0.7 %	0.1 %	0.2 %	142.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0006 ppm	4.2209 ppm	0.0106 ppm	0.3687 ppm	2.9947 ppm	0.0009 ppm	0.1256 ppm
Concentration per Run 1	0.0014 ppm	4.2996 ppm	0.0112 ppm	0.3703 ppm	3.0288 ppm	0.0017 ppm	0.1266 ppm
Concentration per Run 2	-0.0008 ppm	4.1529 ppm	0.0103 ppm	0.3681 ppm	2.9921 ppm	0.0007 ppm	0.1256 ppm
Concentration per Run 3	-0.0024 ppm	4.2102 ppm	0.0103 ppm	0.3677 ppm	2.9632 ppm	0.0004 ppm	0.1247 ppm
Concentration RSD	306.4 %	1.8 %	4.7 %	0.4 %	1.1 %	71.4 %	0.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	20.8852 ppm	103.2393 %	106.4023 %	94.0712 %	118.6217 %	123.0095 %	119.7855 %
Concentration per Run 1	21.2133 ppm	102.3920 %	106.2481 %	94.1157 %	119.2183 %	123.6239 %	120.2307 %
Concentration per Run 2	20.7154 ppm	103.6500 %	105.9401 %	94.0007 %	118.6351 %	122.4082 %	119.4390 %
Concentration per Run 3	20.7269 ppm	103.6760 %	107.0186 %	94.0973 %	118.0118 %	122.9966 %	119.6867 %
Concentration RSD	1.4 %	0.7 %	0.5 %	0.1 %	0.5 %	0.5 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2451782-07D2 WG1970062
Analysis started at: 9/11/2024 2:52:53 PM
Rack 2
Vial 23
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0004 ppm	58.9901 ppm	0.0238 ppm	0.0104 ppm	0.1968 ppm	0.0036 ppm	65.8018 ppm
Concentration per Run 1	0.0008 ppm	59.1805 ppm	0.0239 ppm	0.0116 ppm	0.1975 ppm	0.0035 ppm	65.6075 ppm
Concentration per Run 2	0.0002 ppm	58.4351 ppm	0.0229 ppm	0.0098 ppm	0.1947 ppm	0.0037 ppm	66.1614 ppm
Concentration per Run 3	0.0002 ppm	59.3546 ppm	0.0244 ppm	0.0098 ppm	0.1981 ppm	0.0035 ppm	65.6365 ppm
Concentration RSD	84.7 %	0.8 %	3.3 %	9.9 %	0.9 %	3.5 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0216 ppm	0.0413 ppm	0.0769 ppm	0.1085 ppm	136.4633 ppm	5.2622 ppm	0.0612 ppm
Concentration per Run 1	0.0217 ppm	0.0419 ppm	0.0775 ppm	0.1098 ppm	136.5641 ppm	5.3206 ppm	0.0638 ppm
Concentration per Run 2	0.0217 ppm	0.0412 ppm	0.0773 ppm	0.1081 ppm	135.5937 ppm	5.1660 ppm	0.0583 ppm
Concentration per Run 3	0.0213 ppm	0.0408 ppm	0.0761 ppm	0.1076 ppm	137.2321 ppm	5.3001 ppm	0.0616 ppm
Concentration RSD	1.1 %	1.4 %	1.0 %	1.0 %	0.6 %	1.6 %	4.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	22.4732 ppm	1.9553 ppm	0.0037 ppm	0.6390 ppm	0.0556 ppm	0.6427 ppm	0.0026 ppm
Concentration per Run 1	22.5778 ppm	1.9544 ppm	0.0039 ppm	0.6459 ppm	0.0558 ppm	0.6456 ppm	0.0045 ppm
Concentration per Run 2	22.5071 ppm	1.9591 ppm	0.0037 ppm	0.6267 ppm	0.0561 ppm	0.6375 ppm	0.0012 ppm
Concentration per Run 3	22.3346 ppm	1.9523 ppm	0.0036 ppm	0.6446 ppm	0.0550 ppm	0.6450 ppm	0.0019 ppm
Concentration RSD	0.6 %	0.2 %	3.2 %	1.7 %	1.1 %	0.7 %	67.6 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0003 ppm	5.1171 ppm	0.0164 ppm	0.6366 ppm	3.3799 ppm	0.0027 ppm	0.1634 ppm
Concentration per Run 1	0.0014 ppm	5.2443 ppm	0.0168 ppm	0.6306 ppm	3.3955 ppm	0.0021 ppm	0.1639 ppm
Concentration per Run 2	0.0000 ppm	5.1199 ppm	0.0160 ppm	0.6478 ppm	3.3808 ppm	0.0037 ppm	0.1640 ppm
Concentration per Run 3	-0.0003 ppm	4.9873 ppm	0.0164 ppm	0.6315 ppm	3.3633 ppm	0.0022 ppm	0.1624 ppm
Concentration RSD	269.4 %	2.5 %	2.7 %	1.5 %	0.5 %	34.1 %	0.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	8.7157 ppm	103.2735 %	105.5639 %	92.6049 %	116.4443 %	120.8316 %	118.4070 %
Concentration per Run 1	8.7919 ppm	103.0591 %	106.4242 %	92.6570 %	116.9849 %	121.9518 %	118.3242 %
Concentration per Run 2	8.7589 ppm	102.9683 %	104.2452 %	92.7240 %	115.9009 %	119.8832 %	118.3037 %
Concentration per Run 3	8.5963 ppm	103.7932 %	106.0223 %	92.4339 %	116.4470 %	120.6596 %	118.5932 %
Concentration RSD	1.2 %	0.4 %	1.1 %	0.2 %	0.5 %	0.9 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCV
Analysis started at: 9/11/2024 2:56:51 PM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.4997 ppm	0.4645 ppm	0.4517 ppm	0.4676 ppm	0.4928 ppm	0.4970 ppm	0.4782 ppm
Concentration per Run 1	0.5017 ppm	0.4616 ppm	0.4559 ppm	0.4707 ppm	0.4926 ppm	0.4947 ppm	0.4762 ppm
Concentration per Run 2	0.4992 ppm	0.4660 ppm	0.4504 ppm	0.4669 ppm	0.4925 ppm	0.4978 ppm	0.4810 ppm
Concentration per Run 3	0.4980 ppm	0.4659 ppm	0.4488 ppm	0.4652 ppm	0.4934 ppm	0.4985 ppm	0.4773 ppm
Recovery Percentage 1	99.930 %	92.897 %	90.345 %	93.517 %	98.569 %	99.400 %	95.633 %
Concentration RSD	0.4 %	0.5 %	0.8 %	0.6 %	0.1 %	0.4 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.4972 ppm	0.5090 ppm	0.4902 ppm	0.4893 ppm	0.5001 ppm	5.1314 ppm	0.5079 ppm
Concentration per Run 1	0.5025 ppm	0.5130 ppm	0.4942 ppm	0.4930 ppm	0.5005 ppm	5.1347 ppm	0.5086 ppm
Concentration per Run 2	0.4952 ppm	0.5066 ppm	0.4892 ppm	0.4887 ppm	0.4990 ppm	5.1116 ppm	0.5067 ppm
Concentration per Run 3	0.4938 ppm	0.5075 ppm	0.4873 ppm	0.4861 ppm	0.5009 ppm	5.1480 ppm	0.5084 ppm
Recovery Percentage 1	99.431 %	101.808 %	98.049 %	97.853 %	100.027 %	102.629 %	101.583 %
Concentration RSD	0.9 %	0.7 %	0.7 %	0.7 %	0.2 %	0.4 %	0.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.4960 ppm	0.4776 ppm	0.4962 ppm	10.1542 ppm	0.5070 ppm	0.4766 ppm	0.4903 ppm
Concentration per Run 1	0.4999 ppm	0.4757 ppm	0.4993 ppm	10.1271 ppm	0.5104 ppm	0.4781 ppm	0.4943 ppm
Concentration per Run 2	0.4939 ppm	0.4784 ppm	0.4936 ppm	10.2280 ppm	0.5079 ppm	0.4766 ppm	0.4899 ppm
Concentration per Run 3	0.4942 ppm	0.4786 ppm	0.4958 ppm	10.1075 ppm	0.5027 ppm	0.4750 ppm	0.4867 ppm
Recovery Percentage 1	99.200 %	95.520 %	99.248 %	101.542 %	101.402 %	95.316 %	98.062 %
Concentration RSD	0.7 %	0.3 %	0.6 %	0.6 %	0.8 %	0.3 %	0.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4647 ppm	5.1923 ppm	0.5231 ppm	0.5089 ppm	0.5001 ppm	0.4658 ppm	0.4940 ppm
Concentration per Run 1	0.4696 ppm	5.2202 ppm	0.5299 ppm	0.5068 ppm	0.5011 ppm	0.4669 ppm	0.4957 ppm
Concentration per Run 2	0.4643 ppm	5.1886 ppm	0.5209 ppm	0.5100 ppm	0.4992 ppm	0.4663 ppm	0.4942 ppm
Concentration per Run 3	0.4600 ppm	5.1681 ppm	0.5184 ppm	0.5098 ppm	0.4999 ppm	0.4643 ppm	0.4922 ppm
Recovery Percentage 1	92.930 %	98.901 %	104.612 %	101.773 %	100.013 %	93.165 %	98.809 %
Concentration RSD	1.0 %	0.5 %	1.2 %	0.4 %	0.2 %	0.3 %	0.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4987 ppm	104.4619 %	103.1760 %	102.2115 %	100.8431 %	100.7657 %	101.6537 %
Concentration per Run 1	0.5053 ppm	103.8826 %	104.1087 %	101.9473 %	100.8344 %	101.7001 %	102.0379 %
Concentration per Run 2	0.4976 ppm	104.4751 %	102.7964 %	102.0807 %	100.4999 %	100.3657 %	101.2750 %
Concentration per Run 3	0.4932 ppm	105.0279 %	102.6229 %	102.6065 %	101.1949 %	100.2313 %	101.6481 %
Recovery Percentage 1	99.736 %						
Concentration RSD	1.2 %	0.5 %	0.8 %	0.3 %	0.3 %	0.8 %	0.4 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCB
Analysis started at: 9/11/2024 3:00:49 PM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0001 ppm	-0.0136 ppm	-0.0002 ppm	0.0004 ppm	-0.0001 ppm	0.0000 ppm	-0.0058 ppm
Concentration per Run 1	-0.0001 ppm	-0.0149 ppm	0.0001 ppm	0.0010 ppm	-0.0001 ppm	0.0000 ppm	-0.0081 ppm
Concentration per Run 2	-0.0001 ppm	-0.0137 ppm	-0.0007 ppm	0.0005 ppm	-0.0001 ppm	0.0000 ppm	-0.0035 ppm
Concentration per Run 3	-0.0002 ppm	-0.0123 ppm	-0.0001 ppm	-0.0004 ppm	-0.0002 ppm	0.0000 ppm	-0.0059 ppm
Recovery Percentage 1	-1.904 %	-13.640 %	-6.648 %	1.175 %	-1.317 %	0.386 %	-5.826 %
Concentration RSD	29.2 %	9.4 %	206.5 %	201.4 %	32.7 %	29.8 %	39.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0001 ppm	0.0003 ppm	0.0002 ppm	0.0004 ppm	0.0044 ppm	-0.0145 ppm	-0.0010 ppm
Concentration per Run 1	0.0001 ppm	0.0005 ppm	0.0003 ppm	0.0005 ppm	0.0038 ppm	-0.0227 ppm	-0.0009 ppm
Concentration per Run 2	0.0000 ppm	0.0001 ppm	0.0003 ppm	0.0004 ppm	0.0054 ppm	0.0102 ppm	-0.0016 ppm
Concentration per Run 3	0.0000 ppm	0.0002 ppm	0.0001 ppm	0.0003 ppm	0.0040 ppm	-0.0312 ppm	-0.0005 ppm
Recovery Percentage 1	1.060 %	1.315 %	2.214 %	4.196 %	8.767 %	-0.581 %	-9.842 %
Concentration RSD	140.6 %	77.0 %	64.0 %	20.4 %	20.4 %	150.5 %	59.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0006 ppm	0.0000 ppm	0.0015 ppm	0.0139 ppm	-0.0006 ppm	0.0007 ppm	0.0003 ppm
Concentration per Run 1	0.0010 ppm	0.0000 ppm	0.0017 ppm	0.0165 ppm	-0.0008 ppm	0.0006 ppm	0.0006 ppm
Concentration per Run 2	0.0015 ppm	0.0000 ppm	0.0014 ppm	0.0141 ppm	-0.0006 ppm	0.0005 ppm	0.0003 ppm
Concentration per Run 3	-0.0006 ppm	0.0001 ppm	0.0015 ppm	0.0112 ppm	-0.0005 ppm	0.0011 ppm	-0.0001 ppm
Recovery Percentage 1	0.632 %	0.377 %	3.088 %	0.697 %	-2.476 %	7.066 %	0.543 %
Concentration RSD	180.6 %	200.8 %	8.0 %	19.0 %	21.6 %	46.6 %	133.3 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0008 ppm	0.0039 ppm	0.0004 ppm	0.0001 ppm	-0.0002 ppm	-0.0005 ppm	0.0000 ppm
Concentration per Run 1	-0.0013 ppm	0.0056 ppm	0.0000 ppm	0.0001 ppm	-0.0001 ppm	-0.0005 ppm	0.0001 ppm
Concentration per Run 2	-0.0002 ppm	0.0031 ppm	0.0007 ppm	0.0002 ppm	-0.0003 ppm	-0.0011 ppm	0.0000 ppm
Concentration per Run 3	-0.0008 ppm	0.0029 ppm	0.0005 ppm	0.0001 ppm	-0.0001 ppm	0.0000 ppm	-0.0001 ppm
Recovery Percentage 1	-7.706 %	0.775 %	0.774 %	1.315 %	-1.853 %	-2.705 %	0.016 %
Concentration RSD	71.7 %	38.9 %	99.7 %	22.2 %	73.5 %	102.6 %	6,644.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0007 ppm	99.3946 %	99.4784 %	101.1994 %	102.3533 %	100.3779 %	102.6756 %
Concentration per Run 1	0.0005 ppm	98.7185 %	98.7103 %	100.1234 %	103.3411 %	99.8234 %	102.4498 %
Concentration per Run 2	0.0009 ppm	99.2631 %	99.2734 %	101.7028 %	101.7689 %	100.3413 %	103.1968 %
Concentration per Run 3	0.0007 ppm	100.2021 %	100.4516 %	101.7718 %	101.9499 %	100.9690 %	102.3803 %
Recovery Percentage 1	13.464 %						
Concentration RSD	27.7 %	0.8 %	0.9 %	0.9 %	0.8 %	0.6 %	0.4 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1969489-1 WG1969489
Analysis started at: 9/11/2024 3:11:04 PM
Rack 2
Vial 28
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0005 ppm	-0.0004 ppm	-0.0001 ppm	0.0000 ppm	0.0000 ppm	0.0066 ppm
Concentration per Run 1	0.0000 ppm	-0.0041 ppm	0.0002 ppm	-0.0002 ppm	-0.0001 ppm	0.0000 ppm	0.0078 ppm
Concentration per Run 2	0.0001 ppm	0.0015 ppm	0.0000 ppm	-0.0001 ppm	0.0001 ppm	0.0000 ppm	0.0054 ppm
Concentration per Run 3	-0.0001 ppm	0.0012 ppm	-0.0013 ppm	0.0001 ppm	-0.0001 ppm	0.0000 ppm	0.0067 ppm
Recovery Percentage 1	-0.451 %	-0.491 %	-12.461 %	-0.319 %	-0.095 %	0.032 %	6.646 %
Concentration RSD	270.0 %	637.7 %	222.2 %	151.1 %	1,128.4 %	1,784.0 %	17.9 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0001 ppm	-0.0003 ppm	0.0002 ppm	0.0029 ppm	0.0191 ppm	-0.0065 ppm	-0.0021 ppm
Concentration per Run 1	0.0001 ppm	-0.0004 ppm	0.0001 ppm	0.0027 ppm	0.0203 ppm	-0.0136 ppm	-0.0010 ppm
Concentration per Run 2	0.0001 ppm	-0.0004 ppm	0.0003 ppm	0.0030 ppm	0.0184 ppm	0.0022 ppm	-0.0038 ppm
Concentration per Run 3	0.0001 ppm	-0.0001 ppm	0.0001 ppm	0.0031 ppm	0.0186 ppm	-0.0082 ppm	-0.0016 ppm
Recovery Percentage 1	1.618 %	-1.491 %	1.713 %	29.205 %	38.237 %	-0.262 %	-21.272 %
Concentration RSD	17.6 %	58.2 %	54.6 %	6.4 %	5.6 %	123.5 %	69.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0041 ppm	0.0006 ppm	0.0002 ppm	0.0157 ppm	-0.0003 ppm	0.0005 ppm	-0.0001 ppm
Concentration per Run 1	0.0043 ppm	0.0006 ppm	0.0003 ppm	0.0138 ppm	0.0002 ppm	0.0011 ppm	-0.0022 ppm
Concentration per Run 2	0.0031 ppm	0.0005 ppm	0.0002 ppm	0.0167 ppm	-0.0006 ppm	0.0004 ppm	0.0002 ppm
Concentration per Run 3	0.0049 ppm	0.0007 ppm	0.0000 ppm	0.0165 ppm	-0.0004 ppm	0.0000 ppm	0.0018 ppm
Recovery Percentage 1	4.109 %	5.862 %	0.338 %	0.783 %	-1.112 %	5.231 %	-0.143 %
Concentration RSD	21.4 %	22.3 %	95.3 %	10.2 %	144.1 %	101.1 %	2,830.3 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0009 ppm	0.0080 ppm	0.0010 ppm	0.0001 ppm	0.0000 ppm	-0.0006 ppm	-0.0001 ppm
Concentration per Run 1	0.0000 ppm	0.0074 ppm	0.0009 ppm	0.0001 ppm	0.0000 ppm	-0.0023 ppm	0.0000 ppm
Concentration per Run 2	-0.0015 ppm	0.0096 ppm	0.0013 ppm	0.0001 ppm	-0.0002 ppm	-0.0002 ppm	-0.0002 ppm
Concentration per Run 3	-0.0011 ppm	0.0071 ppm	0.0009 ppm	0.0001 ppm	0.0002 ppm	0.0007 ppm	0.0000 ppm
Recovery Percentage 1	-8.508 %	1.608 %	2.066 %	0.804 %	0.211 %	-2.862 %	-0.754 %
Concentration RSD	90.9 %	17.0 %	25.6 %	32.8 %	981.8 %	272.1 %	105.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0028 ppm	105.4563 %	103.5938 %	102.6403 %	104.0834 %	102.5917 %	103.3198 %
Concentration per Run 1	0.0030 ppm	104.7352 %	103.7750 %	102.5272 %	104.2269 %	103.2181 %	103.5179 %
Concentration per Run 2	0.0027 ppm	105.3647 %	102.9248 %	102.6801 %	103.7534 %	101.6749 %	103.2810 %
Concentration per Run 3	0.0026 ppm	106.2689 %	104.0816 %	102.7136 %	104.2699 %	102.8820 %	103.1605 %
Recovery Percentage 1	55.172 %						
Concentration RSD	6.9 %	0.7 %	0.6 %	0.1 %	0.3 %	0.8 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1969489-2D2 WG1969489
Analysis started at: 9/11/2024 3:15:22 PM
Rack 2
Vial 29
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0494 ppm	1.8875 ppm	0.1100 ppm	0.9472 ppm	1.9414 ppm	0.0493 ppm	9.7484 ppm
Concentration per Run 1	0.0503 ppm	1.8913 ppm	0.1101 ppm	0.9560 ppm	1.9327 ppm	0.0491 ppm	9.7268 ppm
Concentration per Run 2	0.0491 ppm	1.8762 ppm	0.1102 ppm	0.9417 ppm	1.9365 ppm	0.0495 ppm	9.7533 ppm
Concentration per Run 3	0.0489 ppm	1.8952 ppm	0.1097 ppm	0.9439 ppm	1.9550 ppm	0.0493 ppm	9.7653 ppm
Concentration RSD	1.5 %	0.5 %	0.2 %	0.8 %	0.6 %	0.4 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0521 ppm	0.4991 ppm	0.1998 ppm	0.2503 ppm	0.9938 ppm	10.2318 ppm	-0.0011 ppm
Concentration per Run 1	0.0528 ppm	0.5068 ppm	0.2016 ppm	0.2527 ppm	0.9903 ppm	10.2796 ppm	-0.0004 ppm
Concentration per Run 2	0.0515 ppm	0.4941 ppm	0.1985 ppm	0.2485 ppm	0.9917 ppm	10.1764 ppm	-0.0012 ppm
Concentration per Run 3	0.0521 ppm	0.4964 ppm	0.1992 ppm	0.2497 ppm	0.9994 ppm	10.2393 ppm	-0.0017 ppm
Concentration RSD	1.3 %	1.4 %	0.8 %	0.9 %	0.5 %	0.5 %	58.9 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	9.9741 ppm	0.4800 ppm	1.0078 ppm	10.1509 ppm	0.5039 ppm	0.5020 ppm	0.4982 ppm
Concentration per Run 1	10.1264 ppm	0.4801 ppm	1.0093 ppm	10.2241 ppm	0.5102 ppm	0.5064 ppm	0.5023 ppm
Concentration per Run 2	9.8935 ppm	0.4786 ppm	0.9999 ppm	10.0339 ppm	0.4999 ppm	0.5004 ppm	0.4933 ppm
Concentration per Run 3	9.9024 ppm	0.4811 ppm	1.0143 ppm	10.1945 ppm	0.5015 ppm	0.4991 ppm	0.4990 ppm
Concentration RSD	1.3 %	0.3 %	0.7 %	1.0 %	1.1 %	0.8 %	0.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1126 ppm	0.6064 ppm	1.0555 ppm	0.9782 ppm	1.0121 ppm	0.1095 ppm	0.5024 ppm
Concentration per Run 1	0.1123 ppm	0.6129 ppm	1.0633 ppm	0.9738 ppm	1.0220 ppm	0.1110 ppm	0.5082 ppm
Concentration per Run 2	0.1123 ppm	0.6020 ppm	1.0493 ppm	0.9819 ppm	1.0049 ppm	0.1080 ppm	0.4994 ppm
Concentration per Run 3	0.1133 ppm	0.6042 ppm	1.0538 ppm	0.9788 ppm	1.0093 ppm	0.1095 ppm	0.4996 ppm
Concentration RSD	0.5 %	1.0 %	0.7 %	0.4 %	0.9 %	1.4 %	1.0 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4994 ppm	102.0392 %	103.4099 %	98.1143 %	98.8667 %	101.1235 %	100.0867 %
Concentration per Run 1	0.5067 ppm	100.5510 %	103.3933 %	97.5788 %	98.2379 %	101.1441 %	99.9402 %
Concentration per Run 2	0.4944 ppm	103.0475 %	104.1183 %	97.8664 %	99.5707 %	101.9042 %	99.7825 %
Concentration per Run 3	0.4971 ppm	102.5191 %	102.7180 %	98.8978 %	98.7914 %	100.3223 %	100.5375 %
Concentration RSD	1.3 %	1.3 %	0.7 %	0.7 %	0.7 %	0.8 %	0.4 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450528-01D2 WG1969489
Analysis started at: 9/11/2024 3:19:20 PM
Rack 2
Vial 35
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0004 ppm	27.2693 ppm	0.0250 ppm	0.0089 ppm	0.1280 ppm	0.0018 ppm	21.1102 ppm
Concentration per Run 1	0.0004 ppm	27.3495 ppm	0.0254 ppm	0.0086 ppm	0.1288 ppm	0.0018 ppm	21.0659 ppm
Concentration per Run 2	0.0002 ppm	27.3469 ppm	0.0246 ppm	0.0095 ppm	0.1279 ppm	0.0017 ppm	21.0317 ppm
Concentration per Run 3	0.0005 ppm	27.1116 ppm	0.0250 ppm	0.0087 ppm	0.1273 ppm	0.0018 ppm	21.2329 ppm
Concentration RSD	32.6 %	0.5 %	1.6 %	5.5 %	0.6 %	3.1 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0004 ppm	0.0320 ppm	0.0499 ppm	0.0752 ppm	96.4486 ppm	2.8344 ppm	0.0485 ppm
Concentration per Run 1	0.0004 ppm	0.0326 ppm	0.0503 ppm	0.0763 ppm	96.7216 ppm	2.8662 ppm	0.0494 ppm
Concentration per Run 2	0.0005 ppm	0.0316 ppm	0.0496 ppm	0.0744 ppm	96.5545 ppm	2.8599 ppm	0.0490 ppm
Concentration per Run 3	0.0004 ppm	0.0318 ppm	0.0498 ppm	0.0750 ppm	96.0696 ppm	2.7771 ppm	0.0469 ppm
Concentration RSD	9.9 %	1.6 %	0.7 %	1.3 %	0.4 %	1.8 %	2.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	11.3538 ppm	1.1759 ppm	0.0044 ppm	1.1694 ppm	0.0664 ppm	0.0371 ppm	0.0004 ppm
Concentration per Run 1	11.4977 ppm	1.1758 ppm	0.0043 ppm	1.1718 ppm	0.0675 ppm	0.0380 ppm	0.0030 ppm
Concentration per Run 2	11.2096 ppm	1.1757 ppm	0.0044 ppm	1.1812 ppm	0.0652 ppm	0.0358 ppm	0.0004 ppm
Concentration per Run 3	11.3543 ppm	1.1761 ppm	0.0045 ppm	1.1554 ppm	0.0663 ppm	0.0375 ppm	-0.0022 ppm
Concentration RSD	1.3 %	0.0 %	2.9 %	1.1 %	1.7 %	3.1 %	623.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0007 ppm	4.7876 ppm	0.0033 ppm	0.0689 ppm	0.7585 ppm	-0.0001 ppm	0.1091 ppm
Concentration per Run 1	-0.0025 ppm	4.8458 ppm	0.0034 ppm	0.0689 ppm	0.7671 ppm	-0.0007 ppm	0.1102 ppm
Concentration per Run 2	0.0003 ppm	4.7419 ppm	0.0035 ppm	0.0682 ppm	0.7537 ppm	0.0003 ppm	0.1088 ppm
Concentration per Run 3	0.0003 ppm	4.7749 ppm	0.0029 ppm	0.0696 ppm	0.7546 ppm	0.0002 ppm	0.1084 ppm
Concentration RSD	250.6 %	1.1 %	9.6 %	1.0 %	1.0 %	928.8 %	0.9 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.2277 ppm	106.7195 %	106.8458 %	99.5691 %	131.1999 %	133.4490 %	132.9499 %
Concentration per Run 1	0.2309 ppm	105.7472 %	106.9104 %	99.3081 %	130.7815 %	133.1549 %	133.0192 %
Concentration per Run 2	0.2243 ppm	107.7415 %	108.6715 %	99.7878 %	131.7229 %	135.4473 %	133.5295 %
Concentration per Run 3	0.2280 ppm	106.6699 %	104.9555 %	99.6115 %	131.0951 %	131.7448 %	132.3010 %
Concentration RSD	1.5 %	0.9 %	1.7 %	0.2 %	0.4 %	1.4 %	0.5 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450528-02D2 WG1969489
Analysis started at: 9/11/2024 3:23:19 PM
Rack 2
Vial 36
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0007 ppm	38.0052 ppm	0.0343 ppm	0.0155 ppm	0.7148 ppm	0.0023 ppm	73.6792 ppm
Concentration per Run 1	0.0008 ppm	37.9976 ppm	0.0342 ppm	0.0162 ppm	0.7110 ppm	0.0023 ppm	74.0961 ppm
Concentration per Run 2	0.0009 ppm	38.0117 ppm	0.0341 ppm	0.0154 ppm	0.7231 ppm	0.0023 ppm	73.4633 ppm
Concentration per Run 3	0.0004 ppm	38.0064 ppm	0.0346 ppm	0.0148 ppm	0.7104 ppm	0.0023 ppm	73.4781 ppm
Concentration RSD	36.6 %	0.0 %	0.7 %	4.5 %	1.0 %	0.7 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0007 ppm	0.0297 ppm	0.0890 ppm	0.1897 ppm	95.8911 ppm	2.8670 ppm	0.0569 ppm
Concentration per Run 1	0.0007 ppm	0.0300 ppm	0.0901 ppm	0.1921 ppm	95.9984 ppm	2.8857 ppm	0.0584 ppm
Concentration per Run 2	0.0007 ppm	0.0299 ppm	0.0882 ppm	0.1893 ppm	96.1889 ppm	2.8643 ppm	0.0568 ppm
Concentration per Run 3	0.0008 ppm	0.0291 ppm	0.0886 ppm	0.1876 ppm	95.4860 ppm	2.8510 ppm	0.0554 ppm
Concentration RSD	11.4 %	1.6 %	1.1 %	1.2 %	0.4 %	0.6 %	2.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	16.6298 ppm	1.7634 ppm	0.0028 ppm	1.1645 ppm	0.0663 ppm	0.7057 ppm	0.0013 ppm
Concentration per Run 1	16.8090 ppm	1.7618 ppm	0.0027 ppm	1.1615 ppm	0.0664 ppm	0.7085 ppm	0.0006 ppm
Concentration per Run 2	16.6523 ppm	1.7633 ppm	0.0027 ppm	1.1715 ppm	0.0660 ppm	0.7064 ppm	0.0033 ppm
Concentration per Run 3	16.4282 ppm	1.7650 ppm	0.0030 ppm	1.1606 ppm	0.0664 ppm	0.7023 ppm	0.0001 ppm
Concentration RSD	1.2 %	0.1 %	6.5 %	0.5 %	0.3 %	0.4 %	129.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0010 ppm	4.3210 ppm	0.0308 ppm	0.2360 ppm	0.6488 ppm	0.0008 ppm	0.1068 ppm
Concentration per Run 1	0.0002 ppm	4.3739 ppm	0.0309 ppm	0.2350 ppm	0.6544 ppm	0.0007 ppm	0.1077 ppm
Concentration per Run 2	0.0024 ppm	4.3056 ppm	0.0309 ppm	0.2364 ppm	0.6478 ppm	0.0017 ppm	0.1068 ppm
Concentration per Run 3	0.0002 ppm	4.2836 ppm	0.0308 ppm	0.2366 ppm	0.6440 ppm	-0.0001 ppm	0.1058 ppm
Concentration RSD	134.7 %	1.1 %	0.2 %	0.4 %	0.8 %	112.6 %	0.9 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	1.1287 ppm	104.0244 %	106.2373 %	96.6923 %	122.7368 %	126.6753 %	124.1339 %
Concentration per Run 1	1.1368 ppm	103.1075 %	106.2695 %	96.3711 %	122.4872 %	127.5489 %	123.8185 %
Concentration per Run 2	1.1308 ppm	103.7982 %	106.6957 %	96.8337 %	122.6998 %	126.9546 %	124.5752 %
Concentration per Run 3	1.1184 ppm	105.1673 %	105.7468 %	96.8722 %	123.0234 %	125.5225 %	124.0081 %
Concentration RSD	0.8 %	1.0 %	0.4 %	0.3 %	0.2 %	0.8 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2451351-10D2 WG1969489
Analysis started at: 9/11/2024 3:27:29 PM
Rack 2
Vial 53
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0006 ppm	73.6191 ppm	0.0303 ppm	0.0685 ppm	0.5240 ppm	0.0024 ppm	884.2003 ppm
Concentration per Run 1	-0.0008 ppm	73.2873 ppm	0.0297 ppm	0.0694 ppm	0.5232 ppm	0.0025 ppm	882.5217 ppm
Concentration per Run 2	-0.0005 ppm	74.2669 ppm	0.0295 ppm	0.0674 ppm	0.5314 ppm	0.0022 ppm	881.0121 ppm
Concentration per Run 3	-0.0006 ppm	73.3032 ppm	0.0317 ppm	0.0686 ppm	0.5173 ppm	0.0026 ppm	889.0672 ppm
Concentration RSD	28.3 %	0.8 %	4.0 %	1.5 %	1.3 %	8.8 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0038 ppm	0.0308 ppm	0.1963 ppm	0.1155 ppm	96.6309 ppm	16.2480 ppm	0.0745 ppm
Concentration per Run 1	-0.0040 ppm	0.0312 ppm	0.1991 ppm	0.1166 ppm	96.3960 ppm	16.2545 ppm	0.0743 ppm
Concentration per Run 2	-0.0039 ppm	0.0303 ppm	0.1947 ppm	0.1150 ppm	97.3777 ppm	16.4295 ppm	0.0767 ppm
Concentration per Run 3	-0.0037 ppm	0.0308 ppm	0.1952 ppm	0.1149 ppm	96.1189 ppm	16.0600 ppm	0.0725 ppm
Concentration RSD	3.1 %	1.5 %	1.2 %	0.8 %	0.7 %	1.1 %	2.9 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	71.3297 ppm	1.4023 ppm	0.0058 ppm	7.2817 ppm	0.1049 ppm	1.0696 ppm	0.0005 ppm
Concentration per Run 1	72.2473 ppm	1.4011 ppm	0.0058 ppm	7.2001 ppm	0.1062 ppm	1.0662 ppm	0.0005 ppm
Concentration per Run 2	70.9173 ppm	1.4037 ppm	0.0059 ppm	7.4698 ppm	0.1040 ppm	1.0798 ppm	-0.0020 ppm
Concentration per Run 3	70.8246 ppm	1.4021 ppm	0.0059 ppm	7.1752 ppm	0.1045 ppm	1.0629 ppm	0.0031 ppm
Concentration RSD	1.1 %	0.1 %	1.7 %	2.2 %	1.1 %	0.8 %	479.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0000 ppm	16.9172 ppm	0.0065 ppm	1.7916 ppm	8.2063 ppm	0.0075 ppm	0.2369 ppm
Concentration per Run 1	0.0025 ppm	17.1268 ppm	0.0055 ppm	1.8010 ppm	8.2762 ppm	0.0078 ppm	0.2404 ppm
Concentration per Run 2	-0.0010 ppm	16.7975 ppm	0.0074 ppm	1.7660 ppm	8.1689 ppm	0.0088 ppm	0.2349 ppm
Concentration per Run 3	-0.0015 ppm	16.8272 ppm	0.0067 ppm	1.8079 ppm	8.1738 ppm	0.0060 ppm	0.2353 ppm
Concentration RSD	39,254.5 %	1.1 %	14.8 %	1.3 %	0.7 %	19.1 %	1.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5283 ppm	94.8066 %	102.5630 %	77.6286 %	103.6038 %	115.4226 %	107.9587 %
Concentration per Run 1	0.5338 ppm	93.2231 %	102.3766 %	77.8123 %	102.3712 %	115.2625 %	108.4073 %
Concentration per Run 2	0.5249 ppm	95.9622 %	103.8539 %	76.9281 %	105.0230 %	115.9184 %	106.7982 %
Concentration per Run 3	0.5263 ppm	95.2345 %	101.4586 %	78.1455 %	103.4172 %	115.0869 %	108.6706 %
Concentration RSD	0.9 %	1.5 %	1.2 %	0.8 %	1.3 %	0.4 %	0.9 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2451351-09D2 WG1969489
Analysis started at: 9/11/2024 3:31:27 PM
Rack 2
Vial 30
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	69.3734 ppm	0.0261 ppm	0.0682 ppm	0.4977 ppm	0.0020 ppm	831.4215 ppm
Concentration per Run 1	-0.0002 ppm	69.0596 ppm	0.0272 ppm	0.0704 ppm	0.4964 ppm	0.0020 ppm	829.1936 ppm
Concentration per Run 2	0.0000 ppm	69.5437 ppm	0.0263 ppm	0.0678 ppm	0.4991 ppm	0.0020 ppm	833.3994 ppm
Concentration per Run 3	0.0001 ppm	69.5170 ppm	0.0249 ppm	0.0663 ppm	0.4978 ppm	0.0020 ppm	831.6714 ppm
Concentration RSD	326.2 %	0.4 %	4.5 %	3.0 %	0.3 %	1.4 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0030 ppm	0.0256 ppm	0.1787 ppm	0.1129 ppm	87.6425 ppm	16.3531 ppm	0.0689 ppm
Concentration per Run 1	-0.0031 ppm	0.0258 ppm	0.1817 ppm	0.1144 ppm	87.4210 ppm	16.3172 ppm	0.0710 ppm
Concentration per Run 2	-0.0030 ppm	0.0254 ppm	0.1779 ppm	0.1125 ppm	87.8346 ppm	16.3611 ppm	0.0676 ppm
Concentration per Run 3	-0.0028 ppm	0.0255 ppm	0.1766 ppm	0.1118 ppm	87.6717 ppm	16.3810 ppm	0.0681 ppm
Concentration RSD	4.3 %	0.8 %	1.5 %	1.2 %	0.2 %	0.2 %	2.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	56.1292 ppm	1.2430 ppm	0.0059 ppm	7.8018 ppm	0.0944 ppm	1.6901 ppm	0.0005 ppm
Concentration per Run 1	57.0483 ppm	1.2384 ppm	0.0057 ppm	7.7632 ppm	0.0961 ppm	1.6925 ppm	0.0003 ppm
Concentration per Run 2	55.8660 ppm	1.2465 ppm	0.0064 ppm	7.8366 ppm	0.0939 ppm	1.6869 ppm	0.0017 ppm
Concentration per Run 3	55.4731 ppm	1.2440 ppm	0.0056 ppm	7.8056 ppm	0.0933 ppm	1.6910 ppm	-0.0007 ppm
Concentration RSD	1.5 %	0.3 %	8.0 %	0.5 %	1.6 %	0.2 %	272.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0008 ppm	10.9584 ppm	0.0075 ppm	1.9611 ppm	7.4991 ppm	0.0063 ppm	0.2105 ppm
Concentration per Run 1	-0.0023 ppm	11.1467 ppm	0.0079 ppm	1.9568 ppm	7.6104 ppm	0.0075 ppm	0.2127 ppm
Concentration per Run 2	-0.0006 ppm	10.8721 ppm	0.0065 ppm	1.9742 ppm	7.4626 ppm	0.0057 ppm	0.2109 ppm
Concentration per Run 3	0.0004 ppm	10.8564 ppm	0.0081 ppm	1.9523 ppm	7.4242 ppm	0.0056 ppm	0.2080 ppm
Concentration RSD	164.6 %	1.5 %	10.9 %	0.6 %	1.3 %	16.7 %	1.1 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4683 ppm	95.7109 %	103.5347 %	78.9365 %	104.5798 %	115.0957 %	107.4981 %
Concentration per Run 1	0.4769 ppm	94.5724 %	103.6524 %	78.8975 %	104.1240 %	114.8305 %	107.8458 %
Concentration per Run 2	0.4655 ppm	95.9862 %	103.4124 %	79.0062 %	104.7755 %	115.0940 %	107.3347 %
Concentration per Run 3	0.4626 ppm	96.5741 %	103.5392 %	78.9060 %	104.8399 %	115.3627 %	107.3137 %
Concentration RSD	1.6 %	1.1 %	0.1 %	0.1 %	0.4 %	0.2 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1969489-3D2 WG1969489
Analysis started at: 9/11/2024 3:35:25 PM
Rack 2
Vial 31
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0499 ppm	78.0019 ppm	0.1610 ppm	0.9478 ppm	2.3210 ppm	0.0494 ppm	871.4190 ppm
Concentration per Run 1	0.0505 ppm	78.1769 ppm	0.1628 ppm	0.9609 ppm	2.3191 ppm	0.0496 ppm	872.6613 ppm
Concentration per Run 2	0.0496 ppm	78.1015 ppm	0.1613 ppm	0.9431 ppm	2.3300 ppm	0.0494 ppm	873.4641 ppm
Concentration per Run 3	0.0496 ppm	77.7274 ppm	0.1589 ppm	0.9395 ppm	2.3139 ppm	0.0493 ppm	868.1316 ppm
Concentration RSD	1.0 %	0.3 %	1.2 %	1.2 %	0.4 %	0.3 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0417 ppm	0.4573 ppm	0.3747 ppm	0.3680 ppm	97.0116 ppm	22.9312 ppm	0.0782 ppm
Concentration per Run 1	0.0423 ppm	0.4640 ppm	0.3803 ppm	0.3736 ppm	97.1181 ppm	23.0991 ppm	0.0806 ppm
Concentration per Run 2	0.0418 ppm	0.4553 ppm	0.3737 ppm	0.3660 ppm	97.3719 ppm	22.9178 ppm	0.0764 ppm
Concentration per Run 3	0.0411 ppm	0.4526 ppm	0.3702 ppm	0.3645 ppm	96.5448 ppm	22.7767 ppm	0.0776 ppm
Concentration RSD	1.4 %	1.3 %	1.4 %	1.3 %	0.4 %	0.7 %	2.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	67.7252 ppm	1.9034 ppm	0.9127 ppm	14.0065 ppm	0.5419 ppm	2.9397 ppm	0.4415 ppm
Concentration per Run 1	68.7964 ppm	1.9013 ppm	0.9163 ppm	14.0395 ppm	0.5495 ppm	2.9352 ppm	0.4464 ppm
Concentration per Run 2	67.5916 ppm	1.9077 ppm	0.9105 ppm	14.0146 ppm	0.5401 ppm	2.9366 ppm	0.4364 ppm
Concentration per Run 3	66.7877 ppm	1.9012 ppm	0.9114 ppm	13.9652 ppm	0.5362 ppm	2.9473 ppm	0.4417 ppm
Concentration RSD	1.5 %	0.2 %	0.3 %	0.3 %	1.3 %	0.2 %	1.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1304 ppm	20.3740 ppm	0.8822 ppm	2.7207 ppm	9.2880 ppm	0.1212 ppm	0.7005 ppm
Concentration per Run 1	0.1301 ppm	20.7198 ppm	0.8926 ppm	2.7263 ppm	9.4107 ppm	0.1213 ppm	0.7120 ppm
Concentration per Run 2	0.1314 ppm	20.2675 ppm	0.8788 ppm	2.7236 ppm	9.2604 ppm	0.1206 ppm	0.6969 ppm
Concentration per Run 3	0.1298 ppm	20.1347 ppm	0.8752 ppm	2.7121 ppm	9.1930 ppm	0.1217 ppm	0.6926 ppm
Concentration RSD	0.6 %	1.5 %	1.0 %	0.3 %	1.2 %	0.5 %	1.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.9624 ppm	95.3422 %	102.6412 %	75.3591 %	104.9983 %	116.6153 %	107.4683 %
Concentration per Run 1	0.9742 ppm	93.8748 %	102.2630 %	75.5391 %	104.3987 %	116.2306 %	107.6231 %
Concentration per Run 2	0.9616 ppm	95.7513 %	102.1405 %	75.2787 %	105.0328 %	116.4157 %	107.6036 %
Concentration per Run 3	0.9515 ppm	96.4006 %	103.5200 %	75.2596 %	105.5632 %	117.1995 %	107.1781 %
Concentration RSD	1.2 %	1.4 %	0.7 %	0.2 %	0.6 %	0.4 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1969489-4D2 WG1969489
Analysis started at: 9/11/2024 3:39:22 PM
Rack 2
Vial 32
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0001 ppm	68.6254 ppm	0.0273 ppm	0.0668 ppm	0.5115 ppm	0.0023 ppm	829.4608 ppm
Concentration per Run 1	0.0001 ppm	68.7272 ppm	0.0270 ppm	0.0695 ppm	0.5129 ppm	0.0023 ppm	830.7560 ppm
Concentration per Run 2	-0.0002 ppm	68.5614 ppm	0.0272 ppm	0.0663 ppm	0.5102 ppm	0.0023 ppm	826.7576 ppm
Concentration per Run 3	-0.0001 ppm	68.5875 ppm	0.0278 ppm	0.0647 ppm	0.5114 ppm	0.0023 ppm	830.8687 ppm
Concentration RSD	204.3 %	0.1 %	1.4 %	3.7 %	0.3 %	1.6 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0032 ppm	0.0270 ppm	0.1752 ppm	0.1118 ppm	84.2744 ppm	16.0339 ppm	0.0710 ppm
Concentration per Run 1	-0.0032 ppm	0.0279 ppm	0.1765 ppm	0.1126 ppm	84.4546 ppm	16.0340 ppm	0.0712 ppm
Concentration per Run 2	-0.0032 ppm	0.0267 ppm	0.1752 ppm	0.1121 ppm	83.8244 ppm	16.0701 ppm	0.0696 ppm
Concentration per Run 3	-0.0033 ppm	0.0263 ppm	0.1739 ppm	0.1106 ppm	84.5441 ppm	15.9976 ppm	0.0722 ppm
Concentration RSD	2.0 %	3.2 %	0.7 %	0.9 %	0.5 %	0.2 %	1.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	55.4412 ppm	1.3445 ppm	0.0066 ppm	7.0243 ppm	0.0926 ppm	1.6810 ppm	0.0036 ppm
Concentration per Run 1	55.9619 ppm	1.3468 ppm	0.0067 ppm	7.0821 ppm	0.0933 ppm	1.6910 ppm	0.0054 ppm
Concentration per Run 2	55.3613 ppm	1.3386 ppm	0.0068 ppm	7.0223 ppm	0.0919 ppm	1.6692 ppm	0.0017 ppm
Concentration per Run 3	55.0005 ppm	1.3480 ppm	0.0063 ppm	6.9685 ppm	0.0924 ppm	1.6829 ppm	0.0037 ppm
Concentration RSD	0.9 %	0.4 %	4.1 %	0.8 %	0.8 %	0.7 %	52.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0008 ppm	9.6982 ppm	0.0076 ppm	2.0052 ppm	7.5564 ppm	0.0058 ppm	0.2062 ppm
Concentration per Run 1	0.0023 ppm	9.7861 ppm	0.0077 ppm	2.0038 ppm	7.6320 ppm	0.0058 ppm	0.2070 ppm
Concentration per Run 2	0.0028 ppm	9.7618 ppm	0.0085 ppm	1.9963 ppm	7.5521 ppm	0.0060 ppm	0.2058 ppm
Concentration per Run 3	-0.0026 ppm	9.5467 ppm	0.0066 ppm	2.0154 ppm	7.4852 ppm	0.0054 ppm	0.2057 ppm
Concentration RSD	351.6 %	1.4 %	12.5 %	0.5 %	1.0 %	5.3 %	0.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4736 ppm	95.9263 %	101.8816 %	78.3182 %	104.9583 %	114.2759 %	107.3886 %
Concentration per Run 1	0.4788 ppm	95.0653 %	101.9032 %	78.0277 %	104.6365 %	114.4472 %	106.6882 %
Concentration per Run 2	0.4747 ppm	96.0837 %	102.1849 %	78.4800 %	105.4594 %	114.4226 %	107.7334 %
Concentration per Run 3	0.4673 ppm	96.6298 %	101.5566 %	78.4470 %	104.7789 %	113.9578 %	107.7443 %
Concentration RSD	1.2 %	0.8 %	0.3 %	0.3 %	0.4 %	0.2 %	0.6 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1969489-5D2 WG1969489
Analysis started at: 9/11/2024 3:43:20 PM
Rack 2
Vial 33
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0474 ppm	69.3585 ppm	0.1504 ppm	0.9234 ppm	2.2442 ppm	0.0467 ppm	822.3472 ppm
Concentration per Run 1	0.0474 ppm	68.8678 ppm	0.1521 ppm	0.9241 ppm	2.2270 ppm	0.0474 ppm	824.5050 ppm
Concentration per Run 2	0.0477 ppm	69.6782 ppm	0.1501 ppm	0.9213 ppm	2.2477 ppm	0.0465 ppm	825.2956 ppm
Concentration per Run 3	0.0472 ppm	69.5297 ppm	0.1489 ppm	0.9248 ppm	2.2578 ppm	0.0461 ppm	817.2411 ppm
Concentration RSD	0.6 %	0.6 %	1.0 %	0.2 %	0.7 %	1.5 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0405 ppm	0.4363 ppm	0.3405 ppm	0.3382 ppm	85.7579 ppm	25.7743 ppm	0.0678 ppm
Concentration per Run 1	0.0406 ppm	0.4383 ppm	0.3403 ppm	0.3380 ppm	85.2361 ppm	25.4048 ppm	0.0659 ppm
Concentration per Run 2	0.0404 ppm	0.4340 ppm	0.3394 ppm	0.3387 ppm	85.9415 ppm	25.9035 ppm	0.0689 ppm
Concentration per Run 3	0.0405 ppm	0.4367 ppm	0.3418 ppm	0.3379 ppm	86.0961 ppm	26.0145 ppm	0.0687 ppm
Concentration RSD	0.3 %	0.5 %	0.4 %	0.1 %	0.5 %	1.3 %	2.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	62.4593 ppm	1.6235 ppm	0.8706 ppm	17.3126 ppm	0.5008 ppm	2.1705 ppm	0.4075 ppm
Concentration per Run 1	62.9209 ppm	1.6196 ppm	0.8613 ppm	16.9619 ppm	0.5004 ppm	2.1689 ppm	0.3996 ppm
Concentration per Run 2	61.9828 ppm	1.6273 ppm	0.8699 ppm	17.4736 ppm	0.4991 ppm	2.1829 ppm	0.4102 ppm
Concentration per Run 3	62.4741 ppm	1.6237 ppm	0.8806 ppm	17.5023 ppm	0.5028 ppm	2.1597 ppm	0.4126 ppm
Concentration RSD	0.8 %	0.2 %	1.1 %	1.8 %	0.4 %	0.5 %	1.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1242 ppm	11.2562 ppm	0.8635 ppm	2.8258 ppm	8.0992 ppm	0.1157 ppm	0.6492 ppm
Concentration per Run 1	0.1273 ppm	11.3186 ppm	0.8613 ppm	2.8636 ppm	8.1349 ppm	0.1157 ppm	0.6539 ppm
Concentration per Run 2	0.1237 ppm	11.2709 ppm	0.8558 ppm	2.8146 ppm	8.0475 ppm	0.1180 ppm	0.6437 ppm
Concentration per Run 3	0.1217 ppm	11.1790 ppm	0.8734 ppm	2.7991 ppm	8.1152 ppm	0.1135 ppm	0.6502 ppm
Concentration RSD	2.3 %	0.6 %	1.0 %	1.2 %	0.6 %	1.9 %	0.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.8606 ppm	96.1615 %	102.1855 %	77.4326 %	104.2714 %	113.6883 %	105.9485 %
Concentration per Run 1	0.8627 ppm	95.5289 %	101.8567 %	77.5192 %	103.9570 %	114.0938 %	106.2772 %
Concentration per Run 2	0.8563 ppm	96.7669 %	102.0086 %	77.0901 %	105.0704 %	113.3759 %	105.8009 %
Concentration per Run 3	0.8629 ppm	96.1888 %	102.6913 %	77.6884 %	103.7867 %	113.5953 %	105.7675 %
Concentration RSD	0.4 %	0.6 %	0.4 %	0.4 %	0.7 %	0.3 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1969489-6D10 WG1969489
Analysis started at: 9/11/2024 3:47:18 PM
Rack 2
Vial 34
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0001 ppm	14.2176 ppm	0.0049 ppm	0.0146 ppm	0.1032 ppm	0.0005 ppm	185.9784 ppm
Concentration per Run 1	-0.0003 ppm	14.2796 ppm	0.0047 ppm	0.0140 ppm	0.1031 ppm	0.0004 ppm	186.1865 ppm
Concentration per Run 2	0.0000 ppm	14.2824 ppm	0.0054 ppm	0.0148 ppm	0.1037 ppm	0.0004 ppm	185.5862 ppm
Concentration per Run 3	0.0000 ppm	14.0907 ppm	0.0045 ppm	0.0149 ppm	0.1027 ppm	0.0005 ppm	186.1626 ppm
Concentration RSD	149.4 %	0.8 %	9.8 %	3.6 %	0.5 %	6.8 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0006 ppm	0.0057 ppm	0.0377 ppm	0.0230 ppm	19.0109 ppm	3.3387 ppm	0.0145 ppm
Concentration per Run 1	-0.0007 ppm	0.0057 ppm	0.0379 ppm	0.0232 ppm	19.0487 ppm	3.3774 ppm	0.0144 ppm
Concentration per Run 2	-0.0006 ppm	0.0060 ppm	0.0377 ppm	0.0225 ppm	19.0533 ppm	3.3447 ppm	0.0151 ppm
Concentration per Run 3	-0.0005 ppm	0.0054 ppm	0.0375 ppm	0.0232 ppm	18.9308 ppm	3.2940 ppm	0.0139 ppm
Concentration RSD	9.1 %	5.1 %	0.5 %	1.7 %	0.4 %	1.3 %	4.1 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	12.0688 ppm	0.2654 ppm	0.0040 ppm	1.6171 ppm	0.0205 ppm	0.3285 ppm	0.0031 ppm
Concentration per Run 1	12.1128 ppm	0.2668 ppm	0.0035 ppm	1.6338 ppm	0.0205 ppm	0.3281 ppm	0.0021 ppm
Concentration per Run 2	12.0998 ppm	0.2652 ppm	0.0042 ppm	1.6317 ppm	0.0202 ppm	0.3301 ppm	0.0039 ppm
Concentration per Run 3	11.9938 ppm	0.2642 ppm	0.0041 ppm	1.5859 ppm	0.0208 ppm	0.3272 ppm	0.0034 ppm
Concentration RSD	0.5 %	0.5 %	9.3 %	1.7 %	1.4 %	0.5 %	28.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0010 ppm	2.1599 ppm	0.0028 ppm	0.4118 ppm	1.5549 ppm	0.0007 ppm	0.0434 ppm
Concentration per Run 1	-0.0012 ppm	2.1588 ppm	0.0031 ppm	0.4086 ppm	1.5613 ppm	0.0003 ppm	0.0438 ppm
Concentration per Run 2	-0.0017 ppm	2.1592 ppm	0.0028 ppm	0.4093 ppm	1.5546 ppm	0.0007 ppm	0.0434 ppm
Concentration per Run 3	-0.0002 ppm	2.1616 ppm	0.0025 ppm	0.4174 ppm	1.5486 ppm	0.0011 ppm	0.0431 ppm
Concentration RSD	76.7 %	0.1 %	11.5 %	1.2 %	0.4 %	58.2 %	0.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.1020 ppm	100.1606 %	102.7465 %	93.3927 %	99.6454 %	104.2825 %	101.7672 %
Concentration per Run 1	0.1028 ppm	100.0187 %	102.0044 %	93.7000 %	99.9754 %	103.3217 %	102.3061 %
Concentration per Run 2	0.1011 ppm	100.2201 %	103.2394 %	92.8102 %	99.4484 %	104.8903 %	101.2929 %
Concentration per Run 3	0.1021 ppm	100.2430 %	102.9956 %	93.6677 %	99.5124 %	104.6354 %	101.7028 %
Concentration RSD	0.8 %	0.1 %	0.6 %	0.5 %	0.3 %	0.8 %	0.5 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCV
Analysis started at: 9/11/2024 3:51:16 PM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.4973 ppm	0.4718 ppm	0.4553 ppm	0.4644 ppm	0.4958 ppm	0.4989 ppm	0.4819 ppm
Concentration per Run 1	0.4990 ppm	0.4717 ppm	0.4529 ppm	0.4634 ppm	0.4931 ppm	0.4975 ppm	0.4809 ppm
Concentration per Run 2	0.4971 ppm	0.4723 ppm	0.4555 ppm	0.4636 ppm	0.4972 ppm	0.4987 ppm	0.4785 ppm
Concentration per Run 3	0.4959 ppm	0.4714 ppm	0.4574 ppm	0.4662 ppm	0.4971 ppm	0.5005 ppm	0.4864 ppm
Recovery Percentage 1	99.466 %	94.358 %	91.055 %	92.885 %	99.167 %	99.785 %	96.385 %
Concentration RSD	0.3 %	0.1 %	0.5 %	0.3 %	0.5 %	0.3 %	0.8 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.4946 ppm	0.5067 ppm	0.4895 ppm	0.4838 ppm	0.4991 ppm	5.2623 ppm	0.5154 ppm
Concentration per Run 1	0.4955 ppm	0.5065 ppm	0.4913 ppm	0.4836 ppm	0.4975 ppm	5.2593 ppm	0.5148 ppm
Concentration per Run 2	0.4932 ppm	0.5057 ppm	0.4893 ppm	0.4836 ppm	0.5000 ppm	5.2603 ppm	0.5171 ppm
Concentration per Run 3	0.4952 ppm	0.5078 ppm	0.4879 ppm	0.4842 ppm	0.4999 ppm	5.2674 ppm	0.5143 ppm
Recovery Percentage 1	98.928 %	101.336 %	97.898 %	96.762 %	99.826 %	105.246 %	103.078 %
Concentration RSD	0.3 %	0.2 %	0.3 %	0.1 %	0.3 %	0.1 %	0.3 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.4919 ppm	0.4778 ppm	0.4944 ppm	10.2464 ppm	0.5069 ppm	0.4763 ppm	0.4866 ppm
Concentration per Run 1	0.4950 ppm	0.4771 ppm	0.4899 ppm	10.2510 ppm	0.5103 ppm	0.4769 ppm	0.4877 ppm
Concentration per Run 2	0.4904 ppm	0.4775 ppm	0.4951 ppm	10.2346 ppm	0.5079 ppm	0.4769 ppm	0.4852 ppm
Concentration per Run 3	0.4902 ppm	0.4787 ppm	0.4982 ppm	10.2536 ppm	0.5025 ppm	0.4750 ppm	0.4868 ppm
Recovery Percentage 1	98.376 %	95.558 %	98.882 %	102.464 %	101.382 %	95.251 %	97.317 %
Concentration RSD	0.6 %	0.2 %	0.8 %	0.1 %	0.8 %	0.2 %	0.3 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4698 ppm	5.1609 ppm	0.5200 ppm	0.5152 ppm	0.4986 ppm	0.4670 ppm	0.4931 ppm
Concentration per Run 1	0.4681 ppm	5.1649 ppm	0.5200 ppm	0.5132 ppm	0.5007 ppm	0.4672 ppm	0.4955 ppm
Concentration per Run 2	0.4709 ppm	5.1676 ppm	0.5221 ppm	0.5137 ppm	0.4982 ppm	0.4658 ppm	0.4913 ppm
Concentration per Run 3	0.4705 ppm	5.1503 ppm	0.5180 ppm	0.5186 ppm	0.4970 ppm	0.4682 ppm	0.4926 ppm
Recovery Percentage 1	93.961 %	98.303 %	104.004 %	103.030 %	99.729 %	93.409 %	98.625 %
Concentration RSD	0.3 %	0.2 %	0.4 %	0.6 %	0.4 %	0.3 %	0.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4967 ppm	104.4072 %	102.7914 %	101.2104 %	100.0257 %	100.7563 %	101.2039 %
Concentration per Run 1	0.4981 ppm	103.9191 %	102.8570 %	101.0681 %	99.8080 %	100.9052 %	101.2775 %
Concentration per Run 2	0.4964 ppm	104.8472 %	103.1732 %	101.0972 %	100.5924 %	100.7700 %	100.8858 %
Concentration per Run 3	0.4954 ppm	104.4554 %	102.3438 %	101.4658 %	99.6768 %	100.5937 %	101.4484 %
Recovery Percentage 1	99.330 %						
Concentration RSD	0.3 %	0.4 %	0.4 %	0.2 %	0.5 %	0.2 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCB
Analysis started at: 9/11/2024 3:55:14 PM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0001 ppm	-0.0111 ppm	0.0002 ppm	0.0002 ppm	-0.0001 ppm	0.0000 ppm	-0.0054 ppm
Concentration per Run 1	0.0001 ppm	-0.0092 ppm	0.0006 ppm	-0.0003 ppm	0.0001 ppm	0.0000 ppm	-0.0063 ppm
Concentration per Run 2	-0.0001 ppm	-0.0125 ppm	0.0007 ppm	0.0006 ppm	-0.0002 ppm	0.0000 ppm	-0.0055 ppm
Concentration per Run 3	-0.0002 ppm	-0.0115 ppm	-0.0006 ppm	0.0002 ppm	-0.0002 ppm	0.0000 ppm	-0.0044 ppm
Recovery Percentage 1	-0.841 %	-11.080 %	8.322 %	0.592 %	-1.076 %	0.191 %	-5.381 %
Concentration RSD	246.6 %	15.4 %	287.0 %	239.6 %	149.7 %	244.6 %	17.8 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0001 ppm	-0.0002 ppm	0.0001 ppm	0.0002 ppm	0.0037 ppm	0.0037 ppm	-0.0013 ppm
Concentration per Run 1	0.0001 ppm	-0.0002 ppm	0.0001 ppm	0.0002 ppm	0.0041 ppm	0.0224 ppm	-0.0012 ppm
Concentration per Run 2	0.0001 ppm	-0.0001 ppm	0.0002 ppm	0.0001 ppm	0.0039 ppm	-0.0125 ppm	-0.0019 ppm
Concentration per Run 3	0.0001 ppm	-0.0001 ppm	-0.0001 ppm	0.0002 ppm	0.0032 ppm	0.0011 ppm	-0.0009 ppm
Recovery Percentage 1	2.795 %	-0.789 %	0.659 %	1.625 %	7.499 %	0.148 %	-13.249 %
Concentration RSD	11.0 %	49.8 %	170.0 %	50.7 %	12.2 %	475.6 %	40.9 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	-0.0008 ppm	0.0001 ppm	0.0010 ppm	0.0139 ppm	0.0000 ppm	0.0002 ppm	-0.0005 ppm
Concentration per Run 1	0.0000 ppm	0.0002 ppm	0.0016 ppm	0.0166 ppm	0.0001 ppm	0.0005 ppm	-0.0012 ppm
Concentration per Run 2	-0.0025 ppm	0.0000 ppm	0.0010 ppm	0.0102 ppm	0.0003 ppm	0.0000 ppm	0.0015 ppm
Concentration per Run 3	0.0002 ppm	0.0001 ppm	0.0005 ppm	0.0147 ppm	-0.0004 ppm	0.0002 ppm	-0.0017 ppm
Recovery Percentage 1	-0.767 %	0.951 %	2.087 %	0.693 %	0.054 %	2.247 %	-0.972 %
Concentration RSD	195.0 %	108.9 %	49.9 %	23.9 %	2,494.4 %	124.2 %	350.3 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0005 ppm	0.0001 ppm	0.0000 ppm	0.0000 ppm	-0.0002 ppm	0.0001 ppm	-0.0001 ppm
Concentration per Run 1	-0.0013 ppm	-0.0006 ppm	-0.0001 ppm	0.0000 ppm	-0.0002 ppm	0.0000 ppm	-0.0001 ppm
Concentration per Run 2	-0.0013 ppm	0.0013 ppm	-0.0004 ppm	0.0000 ppm	-0.0004 ppm	0.0004 ppm	-0.0002 ppm
Concentration per Run 3	0.0010 ppm	-0.0003 ppm	0.0004 ppm	0.0001 ppm	0.0000 ppm	-0.0002 ppm	-0.0002 ppm
Recovery Percentage 1	-5.240 %	0.021 %	-0.071 %	0.326 %	-2.016 %	0.345 %	-1.498 %
Concentration RSD	247.4 %	968.6 %	1,151.9 %	264.4 %	81.9 %	465.2 %	51.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0007 ppm	103.0949 %	101.8576 %	102.9170 %	101.2605 %	101.0462 %	102.0573 %
Concentration per Run 1	0.0009 ppm	101.5801 %	101.8733 %	102.7410 %	101.5122 %	100.8640 %	102.0158 %
Concentration per Run 2	0.0005 ppm	103.7096 %	102.2274 %	102.9434 %	101.0255 %	101.2204 %	102.2788 %
Concentration per Run 3	0.0007 ppm	103.9949 %	101.4719 %	103.0666 %	101.2439 %	101.0542 %	101.8773 %
Recovery Percentage 1	13.511 %						
Concentration RSD	29.6 %	1.3 %	0.4 %	0.2 %	0.2 %	0.2 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450528-03D2 WG1969489
Analysis started at: 9/11/2024 4:03:14 PM
Rack 2
Vial 37
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0002 ppm	43.9965 ppm	0.0213 ppm	0.0115 ppm	0.1954 ppm	0.0028 ppm	87.3871 ppm
Concentration per Run 1	0.0002 ppm	43.7199 ppm	0.0217 ppm	0.0117 ppm	0.1933 ppm	0.0028 ppm	87.8207 ppm
Concentration per Run 2	0.0001 ppm	44.3504 ppm	0.0217 ppm	0.0108 ppm	0.1977 ppm	0.0028 ppm	87.7239 ppm
Concentration per Run 3	0.0003 ppm	43.9194 ppm	0.0205 ppm	0.0119 ppm	0.1954 ppm	0.0028 ppm	86.6168 ppm
Concentration RSD	46.4 %	0.7 %	3.1 %	5.1 %	1.1 %	1.4 %	0.8 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0002 ppm	0.0351 ppm	0.0499 ppm	0.1165 ppm	104.3757 ppm	3.4611 ppm	0.0707 ppm
Concentration per Run 1	0.0002 ppm	0.0358 ppm	0.0504 ppm	0.1170 ppm	103.4209 ppm	3.4052 ppm	0.0705 ppm
Concentration per Run 2	0.0002 ppm	0.0351 ppm	0.0502 ppm	0.1166 ppm	105.5646 ppm	3.5189 ppm	0.0713 ppm
Concentration per Run 3	0.0003 ppm	0.0343 ppm	0.0492 ppm	0.1158 ppm	104.1417 ppm	3.4590 ppm	0.0704 ppm
Concentration RSD	18.5 %	2.1 %	1.3 %	0.5 %	1.0 %	1.6 %	0.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	16.0284 ppm	3.3836 ppm	0.0035 ppm	0.6418 ppm	0.0817 ppm	0.0930 ppm	0.0010 ppm
Concentration per Run 1	16.2111 ppm	3.3826 ppm	0.0034 ppm	0.6315 ppm	0.0821 ppm	0.0930 ppm	0.0019 ppm
Concentration per Run 2	15.9522 ppm	3.4056 ppm	0.0032 ppm	0.6499 ppm	0.0816 ppm	0.0938 ppm	0.0008 ppm
Concentration per Run 3	15.9219 ppm	3.3625 ppm	0.0039 ppm	0.6440 ppm	0.0814 ppm	0.0922 ppm	0.0003 ppm
Concentration RSD	1.0 %	0.6 %	9.8 %	1.5 %	0.4 %	0.8 %	81.3 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0019 ppm	3.6360 ppm	0.0070 ppm	0.3081 ppm	0.4441 ppm	-0.0009 ppm	0.1000 ppm
Concentration per Run 1	-0.0037 ppm	3.6750 ppm	0.0070 ppm	0.3123 ppm	0.4487 ppm	-0.0004 ppm	0.1009 ppm
Concentration per Run 2	0.0001 ppm	3.6166 ppm	0.0065 ppm	0.3082 ppm	0.4424 ppm	-0.0015 ppm	0.1000 ppm
Concentration per Run 3	-0.0021 ppm	3.6164 ppm	0.0075 ppm	0.3037 ppm	0.4411 ppm	-0.0008 ppm	0.0991 ppm
Concentration RSD	100.3 %	0.9 %	6.9 %	1.4 %	0.9 %	58.0 %	0.9 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.2648 ppm	105.1840 %	107.8728 %	97.6053 %	127.1134 %	133.8068 %	129.2091 %
Concentration per Run 1	0.2695 ppm	104.2822 %	106.9039 %	97.1380 %	126.6402 %	133.0710 %	129.1114 %
Concentration per Run 2	0.2630 ppm	105.2792 %	107.4337 %	97.7663 %	127.0954 %	133.6462 %	129.1629 %
Concentration per Run 3	0.2619 ppm	105.9908 %	109.2807 %	97.9116 %	127.6046 %	134.7033 %	129.3532 %
Concentration RSD	1.5 %	0.8 %	1.2 %	0.4 %	0.4 %	0.6 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450631-01D2 WG1969489
Analysis started at: 9/11/2024 4:07:12 PM
Rack 2
Vial 38
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0011 ppm	87.5529 ppm	0.0352 ppm	0.0114 ppm	1.3968 ppm	0.0044 ppm	35.7774 ppm
Concentration per Run 1	0.0011 ppm	87.9022 ppm	0.0353 ppm	0.0106 ppm	1.3991 ppm	0.0044 ppm	35.9503 ppm
Concentration per Run 2	0.0010 ppm	87.6662 ppm	0.0358 ppm	0.0116 ppm	1.4011 ppm	0.0044 ppm	35.8570 ppm
Concentration per Run 3	0.0011 ppm	87.0905 ppm	0.0347 ppm	0.0119 ppm	1.3902 ppm	0.0043 ppm	35.5248 ppm
Concentration RSD	7.9 %	0.5 %	1.5 %	6.1 %	0.4 %	1.1 %	0.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0021 ppm	0.0396 ppm	0.1101 ppm	0.0712 ppm	120.6061 ppm	4.5172 ppm	0.0870 ppm
Concentration per Run 1	0.0021 ppm	0.0396 ppm	0.1111 ppm	0.0717 ppm	121.1732 ppm	4.5621 ppm	0.0873 ppm
Concentration per Run 2	0.0021 ppm	0.0397 ppm	0.1097 ppm	0.0706 ppm	120.9330 ppm	4.5245 ppm	0.0876 ppm
Concentration per Run 3	0.0022 ppm	0.0395 ppm	0.1096 ppm	0.0713 ppm	119.7121 ppm	4.4650 ppm	0.0862 ppm
Concentration RSD	2.5 %	0.2 %	0.7 %	0.8 %	0.6 %	1.1 %	0.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	19.1586 ppm	1.2186 ppm	0.0032 ppm	0.4335 ppm	0.0919 ppm	0.1177 ppm	0.0006 ppm
Concentration per Run 1	19.3459 ppm	1.2230 ppm	0.0038 ppm	0.4374 ppm	0.0937 ppm	0.1172 ppm	0.0002 ppm
Concentration per Run 2	19.0949 ppm	1.2203 ppm	0.0029 ppm	0.4357 ppm	0.0915 ppm	0.1182 ppm	0.0035 ppm
Concentration per Run 3	19.0351 ppm	1.2126 ppm	0.0030 ppm	0.4273 ppm	0.0906 ppm	0.1178 ppm	-0.0020 ppm
Concentration RSD	0.9 %	0.4 %	15.0 %	1.2 %	1.7 %	0.4 %	462.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0023 ppm	3.7692 ppm	0.0051 ppm	0.1437 ppm	0.3155 ppm	0.0009 ppm	0.1809 ppm
Concentration per Run 1	0.0029 ppm	3.8137 ppm	0.0058 ppm	0.1444 ppm	0.3181 ppm	0.0001 ppm	0.1825 ppm
Concentration per Run 2	0.0035 ppm	3.7431 ppm	0.0047 ppm	0.1437 ppm	0.3142 ppm	0.0014 ppm	0.1800 ppm
Concentration per Run 3	0.0006 ppm	3.7509 ppm	0.0047 ppm	0.1430 ppm	0.3142 ppm	0.0012 ppm	0.1803 ppm
Concentration RSD	65.3 %	1.0 %	12.6 %	0.5 %	0.7 %	76.6 %	0.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.3506 ppm	107.0756 %	109.6960 %	97.9485 %	137.4942 %	144.5092 %	139.4851 %
Concentration per Run 1	0.3552 ppm	105.8617 %	109.0497 %	97.9101 %	136.4730 %	144.4887 %	139.5267 %
Concentration per Run 2	0.3472 ppm	107.6003 %	109.4266 %	98.2443 %	137.9365 %	143.9607 %	140.1179 %
Concentration per Run 3	0.3495 ppm	107.7649 %	110.6116 %	97.6911 %	138.0731 %	145.0782 %	138.8108 %
Concentration RSD	1.2 %	1.0 %	0.7 %	0.3 %	0.6 %	0.4 %	0.5 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450631-02D2 WG1969489
Analysis started at: 9/11/2024 4:11:09 PM
Rack 2
Vial 39
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0010 ppm	82.7409 ppm	0.0290 ppm	0.0098 ppm	0.4295 ppm	0.0032 ppm	7.8816 ppm
Concentration per Run 1	0.0010 ppm	82.8046 ppm	0.0279 ppm	0.0100 ppm	0.4272 ppm	0.0032 ppm	7.9089 ppm
Concentration per Run 2	0.0011 ppm	82.7273 ppm	0.0290 ppm	0.0092 ppm	0.4284 ppm	0.0032 ppm	7.8770 ppm
Concentration per Run 3	0.0010 ppm	82.6907 ppm	0.0301 ppm	0.0102 ppm	0.4330 ppm	0.0032 ppm	7.8588 ppm
Concentration RSD	3.3 %	0.1 %	3.8 %	5.3 %	0.7 %	0.5 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0016 ppm	0.0481 ppm	0.0891 ppm	0.0709 ppm	114.2932 ppm	5.1801 ppm	0.0811 ppm
Concentration per Run 1	0.0017 ppm	0.0481 ppm	0.0891 ppm	0.0716 ppm	114.0566 ppm	5.2065 ppm	0.0825 ppm
Concentration per Run 2	0.0017 ppm	0.0486 ppm	0.0894 ppm	0.0712 ppm	114.1060 ppm	5.2005 ppm	0.0809 ppm
Concentration per Run 3	0.0016 ppm	0.0478 ppm	0.0887 ppm	0.0699 ppm	114.7171 ppm	5.1333 ppm	0.0800 ppm
Concentration RSD	5.1 %	0.8 %	0.4 %	1.2 %	0.3 %	0.8 %	1.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	18.2736 ppm	4.6269 ppm	0.0033 ppm	0.2403 ppm	0.0849 ppm	0.0840 ppm	-0.0001 ppm
Concentration per Run 1	18.3536 ppm	4.6278 ppm	0.0034 ppm	0.2441 ppm	0.0848 ppm	0.0837 ppm	-0.0016 ppm
Concentration per Run 2	18.2788 ppm	4.6264 ppm	0.0033 ppm	0.2408 ppm	0.0856 ppm	0.0843 ppm	0.0009 ppm
Concentration per Run 3	18.1885 ppm	4.6266 ppm	0.0032 ppm	0.2360 ppm	0.0843 ppm	0.0838 ppm	0.0003 ppm
Concentration RSD	0.5 %	0.0 %	3.8 %	1.7 %	0.8 %	0.4 %	1,128.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0006 ppm	3.8522 ppm	0.0044 ppm	0.0303 ppm	0.6155 ppm	-0.0012 ppm	0.1565 ppm
Concentration per Run 1	-0.0008 ppm	3.8720 ppm	0.0032 ppm	0.0303 ppm	0.6183 ppm	0.0003 ppm	0.1571 ppm
Concentration per Run 2	0.0014 ppm	3.8621 ppm	0.0057 ppm	0.0302 ppm	0.6141 ppm	-0.0020 ppm	0.1566 ppm
Concentration per Run 3	0.0011 ppm	3.8224 ppm	0.0042 ppm	0.0304 ppm	0.6142 ppm	-0.0020 ppm	0.1559 ppm
Concentration RSD	202.7 %	0.7 %	28.3 %	0.2 %	0.4 %	108.7 %	0.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.3478 ppm	104.8851 %	107.0553 %	97.2392 %	118.0770 %	123.3202 %	120.8242 %
Concentration per Run 1	0.3471 ppm	104.9499 %	106.3174 %	97.3796 %	118.3223 %	122.9117 %	121.1319 %
Concentration per Run 2	0.3506 ppm	104.4909 %	107.8095 %	96.9831 %	117.7678 %	124.3952 %	120.3819 %
Concentration per Run 3	0.3457 ppm	105.2145 %	107.0390 %	97.3549 %	118.1408 %	122.6536 %	120.9588 %
Concentration RSD	0.7 %	0.3 %	0.7 %	0.2 %	0.2 %	0.8 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450631-03D2 WG1969489
Analysis started at: 9/11/2024 4:15:07 PM
Rack 2
Vial 40
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0012 ppm	109.0569 ppm	0.0379 ppm	0.0142 ppm	1.3442 ppm	0.0059 ppm	40.9402 ppm
Concentration per Run 1	0.0013 ppm	108.9549 ppm	0.0389 ppm	0.0148 ppm	1.3417 ppm	0.0059 ppm	40.8183 ppm
Concentration per Run 2	0.0013 ppm	109.4489 ppm	0.0362 ppm	0.0138 ppm	1.3475 ppm	0.0059 ppm	41.0300 ppm
Concentration per Run 3	0.0011 ppm	108.7670 ppm	0.0387 ppm	0.0140 ppm	1.3433 ppm	0.0059 ppm	40.9724 ppm
Concentration RSD	11.0 %	0.3 %	4.0 %	3.8 %	0.2 %	0.3 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0019 ppm	0.0641 ppm	0.1364 ppm	0.1311 ppm	161.6541 ppm	5.3640 ppm	0.1198 ppm
Concentration per Run 1	0.0018 ppm	0.0641 ppm	0.1369 ppm	0.1313 ppm	161.2890 ppm	5.3607 ppm	0.1198 ppm
Concentration per Run 2	0.0020 ppm	0.0643 ppm	0.1362 ppm	0.1308 ppm	161.7799 ppm	5.4005 ppm	0.1210 ppm
Concentration per Run 3	0.0019 ppm	0.0638 ppm	0.1361 ppm	0.1310 ppm	161.8935 ppm	5.3307 ppm	0.1185 ppm
Concentration RSD	3.8 %	0.4 %	0.3 %	0.2 %	0.2 %	0.7 %	1.1 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	27.9705 ppm	3.4034 ppm	0.0035 ppm	0.5499 ppm	0.1232 ppm	0.1235 ppm	0.0006 ppm
Concentration per Run 1	28.0778 ppm	3.3956 ppm	0.0036 ppm	0.5486 ppm	0.1231 ppm	0.1237 ppm	0.0001 ppm
Concentration per Run 2	27.9717 ppm	3.4127 ppm	0.0035 ppm	0.5525 ppm	0.1236 ppm	0.1231 ppm	0.0013 ppm
Concentration per Run 3	27.8619 ppm	3.4021 ppm	0.0035 ppm	0.5486 ppm	0.1228 ppm	0.1238 ppm	0.0003 ppm
Concentration RSD	0.4 %	0.3 %	1.4 %	0.4 %	0.3 %	0.3 %	109.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0022 ppm	3.3556 ppm	0.0061 ppm	0.1410 ppm	0.4658 ppm	0.0016 ppm	0.2248 ppm
Concentration per Run 1	0.0039 ppm	3.3718 ppm	0.0065 ppm	0.1404 ppm	0.4666 ppm	0.0008 ppm	0.2259 ppm
Concentration per Run 2	0.0029 ppm	3.3581 ppm	0.0060 ppm	0.1413 ppm	0.4653 ppm	0.0017 ppm	0.2239 ppm
Concentration per Run 3	-0.0001 ppm	3.3369 ppm	0.0058 ppm	0.1413 ppm	0.4654 ppm	0.0023 ppm	0.2244 ppm
Concentration RSD	93.3 %	0.5 %	6.3 %	0.4 %	0.2 %	47.3 %	0.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.3821 ppm	106.7417 %	110.3239 %	97.1223 %	150.4706 %	159.8872 %	153.7782 %
Concentration per Run 1	0.3830 ppm	106.4267 %	110.6574 %	97.2609 %	150.6667 %	160.0752 %	154.0860 %
Concentration per Run 2	0.3840 ppm	106.8892 %	110.5645 %	97.0922 %	150.5968 %	160.6880 %	153.8319 %
Concentration per Run 3	0.3795 ppm	106.9092 %	109.7498 %	97.0138 %	150.1483 %	158.8983 %	153.4167 %
Concentration RSD	0.6 %	0.3 %	0.5 %	0.1 %	0.2 %	0.6 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450751-01D2 WG1969489
Analysis started at: 9/11/2024 4:19:05 PM
Rack 2
Vial 41
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0013 ppm	98.2580 ppm	0.0588 ppm	0.0136 ppm	0.3446 ppm	0.0030 ppm	13.9501 ppm
Concentration per Run 1	0.0012 ppm	98.0949 ppm	0.0578 ppm	0.0141 ppm	0.3421 ppm	0.0029 ppm	13.9501 ppm
Concentration per Run 2	0.0014 ppm	98.3420 ppm	0.0595 ppm	0.0136 ppm	0.3455 ppm	0.0030 ppm	13.9587 ppm
Concentration per Run 3	0.0011 ppm	98.3369 ppm	0.0592 ppm	0.0132 ppm	0.3463 ppm	0.0030 ppm	13.9417 ppm
Concentration RSD	12.3 %	0.1 %	1.6 %	3.1 %	0.6 %	1.4 %	0.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0026 ppm	0.0223 ppm	0.1705 ppm	0.1356 ppm	135.9973 ppm	3.1435 ppm	0.0565 ppm
Concentration per Run 1	0.0026 ppm	0.0221 ppm	0.1712 ppm	0.1363 ppm	135.3976 ppm	3.1393 ppm	0.0569 ppm
Concentration per Run 2	0.0026 ppm	0.0227 ppm	0.1704 ppm	0.1356 ppm	136.3813 ppm	3.1448 ppm	0.0562 ppm
Concentration per Run 3	0.0026 ppm	0.0222 ppm	0.1699 ppm	0.1350 ppm	136.2129 ppm	3.1465 ppm	0.0563 ppm
Concentration RSD	1.6 %	1.5 %	0.4 %	0.5 %	0.4 %	0.1 %	0.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	10.2143 ppm	1.8914 ppm	0.0072 ppm	0.2131 ppm	0.0646 ppm	0.4682 ppm	0.0040 ppm
Concentration per Run 1	10.2867 ppm	1.8923 ppm	0.0073 ppm	0.2110 ppm	0.0644 ppm	0.4681 ppm	0.0051 ppm
Concentration per Run 2	10.2142 ppm	1.8936 ppm	0.0072 ppm	0.2100 ppm	0.0648 ppm	0.4685 ppm	0.0015 ppm
Concentration per Run 3	10.1419 ppm	1.8884 ppm	0.0070 ppm	0.2183 ppm	0.0645 ppm	0.4679 ppm	0.0055 ppm
Concentration RSD	0.7 %	0.1 %	1.7 %	2.1 %	0.3 %	0.1 %	54.6 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0064 ppm	4.3454 ppm	0.0153 ppm	0.0501 ppm	1.4817 ppm	0.0005 ppm	0.2291 ppm
Concentration per Run 1	0.0070 ppm	4.3642 ppm	0.0159 ppm	0.0497 ppm	1.4857 ppm	0.0003 ppm	0.2305 ppm
Concentration per Run 2	0.0057 ppm	4.3355 ppm	0.0148 ppm	0.0504 ppm	1.4834 ppm	0.0008 ppm	0.2287 ppm
Concentration per Run 3	0.0067 ppm	4.3364 ppm	0.0151 ppm	0.0501 ppm	1.4758 ppm	0.0003 ppm	0.2281 ppm
Concentration RSD	10.9 %	0.4 %	3.7 %	0.7 %	0.3 %	59.1 %	0.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5613 ppm	105.3136 %	107.8858 %	95.6839 %	114.4681 %	119.6818 %	116.2445 %
Concentration per Run 1	0.5635 ppm	104.7522 %	107.8308 %	95.5414 %	114.4488 %	119.6950 %	116.3113 %
Concentration per Run 2	0.5623 ppm	105.4994 %	107.5091 %	96.0574 %	114.4488 %	119.0622 %	116.4975 %
Concentration per Run 3	0.5581 ppm	105.6890 %	108.3175 %	95.4530 %	114.5066 %	120.2882 %	115.9247 %
Concentration RSD	0.5 %	0.5 %	0.4 %	0.3 %	0.0 %	0.5 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450751-03D2 WG1969489
Analysis started at: 9/11/2024 4:23:02 PM
Rack 2
Vial 42
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0013 ppm	90.2363 ppm	0.0676 ppm	0.0122 ppm	0.3321 ppm	0.0028 ppm	14.0412 ppm
Concentration per Run 1	0.0015 ppm	90.4160 ppm	0.0683 ppm	0.0131 ppm	0.3312 ppm	0.0029 ppm	14.0533 ppm
Concentration per Run 2	0.0010 ppm	90.1385 ppm	0.0669 ppm	0.0120 ppm	0.3325 ppm	0.0028 ppm	14.0376 ppm
Concentration per Run 3	0.0014 ppm	90.1545 ppm	0.0677 ppm	0.0114 ppm	0.3325 ppm	0.0028 ppm	14.0329 ppm
Concentration RSD	18.2 %	0.2 %	1.1 %	6.8 %	0.2 %	1.0 %	0.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0026 ppm	0.0221 ppm	0.1908 ppm	0.1292 ppm	124.5301 ppm	2.9206 ppm	0.0483 ppm
Concentration per Run 1	0.0026 ppm	0.0224 ppm	0.1920 ppm	0.1301 ppm	124.6803 ppm	2.9480 ppm	0.0507 ppm
Concentration per Run 2	0.0026 ppm	0.0219 ppm	0.1904 ppm	0.1287 ppm	124.5340 ppm	2.9040 ppm	0.0481 ppm
Concentration per Run 3	0.0027 ppm	0.0219 ppm	0.1898 ppm	0.1289 ppm	124.3761 ppm	2.9099 ppm	0.0462 ppm
Concentration RSD	2.9 %	1.4 %	0.6 %	0.6 %	0.1 %	0.8 %	4.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	9.8678 ppm	1.8240 ppm	0.0059 ppm	0.2136 ppm	0.0623 ppm	0.4889 ppm	0.0048 ppm
Concentration per Run 1	9.9524 ppm	1.8222 ppm	0.0059 ppm	0.2185 ppm	0.0630 ppm	0.4917 ppm	0.0078 ppm
Concentration per Run 2	9.8443 ppm	1.8306 ppm	0.0056 ppm	0.2129 ppm	0.0628 ppm	0.4886 ppm	0.0026 ppm
Concentration per Run 3	9.8066 ppm	1.8191 ppm	0.0061 ppm	0.2094 ppm	0.0611 ppm	0.4863 ppm	0.0041 ppm
Concentration RSD	0.8 %	0.3 %	3.6 %	2.2 %	1.7 %	0.6 %	54.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0067 ppm	5.8242 ppm	0.0162 ppm	0.0508 ppm	1.5395 ppm	0.0009 ppm	0.2216 ppm
Concentration per Run 1	0.0073 ppm	5.8641 ppm	0.0158 ppm	0.0508 ppm	1.5551 ppm	-0.0001 ppm	0.2233 ppm
Concentration per Run 2	0.0053 ppm	5.8179 ppm	0.0163 ppm	0.0510 ppm	1.5362 ppm	0.0013 ppm	0.2207 ppm
Concentration per Run 3	0.0074 ppm	5.7906 ppm	0.0164 ppm	0.0507 ppm	1.5271 ppm	0.0015 ppm	0.2207 ppm
Concentration RSD	17.6 %	0.6 %	2.1 %	0.2 %	0.9 %	97.3 %	0.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5438 ppm	104.2230 %	106.9026 %	95.3236 %	113.5887 %	118.3968 %	115.2338 %
Concentration per Run 1	0.5467 ppm	103.5976 %	106.8340 %	95.3822 %	113.6327 %	118.3154 %	115.5837 %
Concentration per Run 2	0.5453 ppm	104.2165 %	106.3538 %	95.2249 %	113.4216 %	117.6494 %	114.7669 %
Concentration per Run 3	0.5394 ppm	104.8549 %	107.5199 %	95.3637 %	113.7118 %	119.2255 %	115.3509 %
Concentration RSD	0.7 %	0.6 %	0.5 %	0.1 %	0.1 %	0.7 %	0.4 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450751-04D2 WG1969489
Analysis started at: 9/11/2024 4:27:00 PM
Rack 2
Vial 43
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0027 ppm	79.6460 ppm	0.1101 ppm	0.0296 ppm	4.6191 ppm	0.0117 ppm	277.5911 ppm
Concentration per Run 1	0.0026 ppm	79.7856 ppm	0.1104 ppm	0.0309 ppm	4.6185 ppm	0.0116 ppm	277.5287 ppm
Concentration per Run 2	0.0029 ppm	79.5102 ppm	0.1117 ppm	0.0294 ppm	4.6204 ppm	0.0116 ppm	276.9036 ppm
Concentration per Run 3	0.0025 ppm	79.6422 ppm	0.1083 ppm	0.0285 ppm	4.6184 ppm	0.0117 ppm	278.3411 ppm
Concentration RSD	7.1 %	0.2 %	1.5 %	4.2 %	0.0 %	0.5 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0083 ppm	0.0889 ppm	0.2085 ppm	0.6588 ppm	299.3652 ppm	9.0484 ppm	0.0813 ppm
Concentration per Run 1	0.0082 ppm	0.0890 ppm	0.2105 ppm	0.6614 ppm	299.7891 ppm	9.1002 ppm	0.0823 ppm
Concentration per Run 2	0.0085 ppm	0.0891 ppm	0.2075 ppm	0.6595 ppm	298.9099 ppm	9.0162 ppm	0.0807 ppm
Concentration per Run 3	0.0081 ppm	0.0886 ppm	0.2076 ppm	0.6555 ppm	299.3967 ppm	9.0288 ppm	0.0810 ppm
Concentration RSD	2.5 %	0.3 %	0.8 %	0.5 %	0.1 %	0.5 %	1.0 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	107.0617 ppm	4.7604 ppm	0.0081 ppm	1.3393 ppm	0.1592 ppm	4.8194 ppm	0.0166 ppm
Concentration per Run 1	107.9756 ppm	4.7542 ppm	0.0081 ppm	1.3449 ppm	0.1600 ppm	4.8505 ppm	0.0164 ppm
Concentration per Run 2	106.8718 ppm	4.7614 ppm	0.0081 ppm	1.3365 ppm	0.1580 ppm	4.8116 ppm	0.0162 ppm
Concentration per Run 3	106.3377 ppm	4.7656 ppm	0.0081 ppm	1.3367 ppm	0.1595 ppm	4.7962 ppm	0.0171 ppm
Concentration RSD	0.8 %	0.1 %	0.5 %	0.4 %	0.6 %	0.6 %	3.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0054 ppm	4.1428 ppm	0.0819 ppm	0.6638 ppm	3.2399 ppm	0.0029 ppm	0.3484 ppm
Concentration per Run 1	0.0054 ppm	4.1740 ppm	0.0819 ppm	0.6597 ppm	3.2585 ppm	0.0017 ppm	0.3497 ppm
Concentration per Run 2	0.0043 ppm	4.1379 ppm	0.0816 ppm	0.6659 ppm	3.2327 ppm	0.0031 ppm	0.3479 ppm
Concentration per Run 3	0.0065 ppm	4.1166 ppm	0.0821 ppm	0.6657 ppm	3.2285 ppm	0.0041 ppm	0.3478 ppm
Concentration RSD	20.5 %	0.7 %	0.3 %	0.5 %	0.5 %	40.5 %	0.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	4.1207 ppm	102.3883 %	107.2511 %	84.2902 %	126.9846 %	137.6034 %	127.7396 %
Concentration per Run 1	4.1661 ppm	101.9193 %	107.3077 %	83.9175 %	126.5834 %	137.8611 %	127.6632 %
Concentration per Run 2	4.1036 ppm	102.2734 %	107.4420 %	84.3794 %	126.9664 %	137.6538 %	127.7686 %
Concentration per Run 3	4.0925 ppm	102.9722 %	107.0037 %	84.5738 %	127.4041 %	137.2953 %	127.7871 %
Concentration RSD	1.0 %	0.5 %	0.2 %	0.4 %	0.3 %	0.2 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450751-05D2 WG1969489
Analysis started at: 9/11/2024 4:30:58 PM
Rack 2
Vial 44
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0015 ppm	98.2038 ppm	0.0652 ppm	0.0196 ppm	1.5267 ppm	0.0164 ppm	257.3643 ppm
Concentration per Run 1	0.0017 ppm	98.3745 ppm	0.0643 ppm	0.0198 ppm	1.5314 ppm	0.0164 ppm	257.8326 ppm
Concentration per Run 2	0.0014 ppm	98.3540 ppm	0.0662 ppm	0.0202 ppm	1.5368 ppm	0.0165 ppm	257.7652 ppm
Concentration per Run 3	0.0013 ppm	97.8830 ppm	0.0652 ppm	0.0187 ppm	1.5119 ppm	0.0163 ppm	256.4951 ppm
Concentration RSD	14.2 %	0.3 %	1.4 %	4.0 %	0.9 %	0.5 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0041 ppm	0.0901 ppm	0.2459 ppm	0.4319 ppm	279.0148 ppm	10.8109 ppm	0.1053 ppm
Concentration per Run 1	0.0042 ppm	0.0911 ppm	0.2474 ppm	0.4338 ppm	280.6255 ppm	10.8772 ppm	0.1075 ppm
Concentration per Run 2	0.0040 ppm	0.0894 ppm	0.2458 ppm	0.4314 ppm	279.9762 ppm	10.8514 ppm	0.1063 ppm
Concentration per Run 3	0.0041 ppm	0.0898 ppm	0.2444 ppm	0.4304 ppm	276.4428 ppm	10.7041 ppm	0.1021 ppm
Concentration RSD	2.5 %	1.0 %	0.6 %	0.4 %	0.8 %	0.9 %	2.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	92.4957 ppm	6.7494 ppm	0.0062 ppm	1.3048 ppm	0.1545 ppm	2.2751 ppm	0.0214 ppm
Concentration per Run 1	93.2464 ppm	6.7653 ppm	0.0059 ppm	1.3143 ppm	0.1565 ppm	2.2792 ppm	0.0201 ppm
Concentration per Run 2	92.2969 ppm	6.7687 ppm	0.0065 ppm	1.3078 ppm	0.1538 ppm	2.2814 ppm	0.0228 ppm
Concentration per Run 3	91.9437 ppm	6.7140 ppm	0.0061 ppm	1.2923 ppm	0.1533 ppm	2.2647 ppm	0.0212 ppm
Concentration RSD	0.7 %	0.5 %	4.9 %	0.9 %	1.1 %	0.4 %	6.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0007 ppm	3.6332 ppm	0.1320 ppm	0.4064 ppm	4.3512 ppm	0.0037 ppm	0.3881 ppm
Concentration per Run 1	0.0018 ppm	3.6485 ppm	0.1315 ppm	0.4064 ppm	4.3864 ppm	0.0028 ppm	0.3908 ppm
Concentration per Run 2	0.0009 ppm	3.6340 ppm	0.1322 ppm	0.4087 ppm	4.3394 ppm	0.0043 ppm	0.3872 ppm
Concentration per Run 3	-0.0006 ppm	3.6173 ppm	0.1322 ppm	0.4042 ppm	4.3277 ppm	0.0038 ppm	0.3862 ppm
Concentration RSD	167.2 %	0.4 %	0.3 %	0.5 %	0.7 %	21.4 %	0.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	2.0211 ppm	105.3000 %	109.9393 %	85.9358 %	133.4152 %	143.0545 %	133.6341 %
Concentration per Run 1	2.0473 ppm	104.5208 %	109.1070 %	85.7188 %	132.9219 %	142.0439 %	133.4491 %
Concentration per Run 2	2.0201 ppm	105.4837 %	110.2916 %	85.7953 %	133.5182 %	144.0693 %	133.4672 %
Concentration per Run 3	1.9959 ppm	105.8956 %	110.4192 %	86.2933 %	133.8056 %	143.0502 %	133.9859 %
Concentration RSD	1.3 %	0.7 %	0.7 %	0.4 %	0.3 %	0.7 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450751-06D2 WG1969489
Analysis started at: 9/11/2024 4:34:55 PM
Rack 2
Vial 45
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0003 ppm	132.0848 ppm	0.0543 ppm	0.0116 ppm	0.5452 ppm	0.0079 ppm	11.5309 ppm
Concentration per Run 1	0.0003 ppm	132.0655 ppm	0.0555 ppm	0.0122 ppm	0.5453 ppm	0.0080 ppm	11.5104 ppm
Concentration per Run 2	0.0005 ppm	132.5498 ppm	0.0534 ppm	0.0111 ppm	0.5464 ppm	0.0079 ppm	11.5659 ppm
Concentration per Run 3	0.0001 ppm	131.6390 ppm	0.0540 ppm	0.0115 ppm	0.5438 ppm	0.0079 ppm	11.5163 ppm
Concentration RSD	65.4 %	0.3 %	2.0 %	4.6 %	0.2 %	0.6 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0008 ppm	0.1009 ppm	0.2284 ppm	0.1511 ppm	228.0117 ppm	7.6340 ppm	0.1382 ppm
Concentration per Run 1	0.0008 ppm	0.1014 ppm	0.2289 ppm	0.1518 ppm	228.1518 ppm	7.6438 ppm	0.1387 ppm
Concentration per Run 2	0.0009 ppm	0.1007 ppm	0.2286 ppm	0.1513 ppm	228.9775 ppm	7.6822 ppm	0.1398 ppm
Concentration per Run 3	0.0008 ppm	0.1006 ppm	0.2278 ppm	0.1502 ppm	226.9057 ppm	7.5760 ppm	0.1362 ppm
Concentration RSD	4.7 %	0.4 %	0.2 %	0.5 %	0.5 %	0.7 %	1.3 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	35.1953 ppm	6.0837 ppm	0.0046 ppm	0.4879 ppm	0.1610 ppm	0.1748 ppm	0.0007 ppm
Concentration per Run 1	35.4367 ppm	6.0826 ppm	0.0043 ppm	0.4881 ppm	0.1614 ppm	0.1747 ppm	-0.0018 ppm
Concentration per Run 2	35.1747 ppm	6.0949 ppm	0.0049 ppm	0.4898 ppm	0.1616 ppm	0.1750 ppm	0.0003 ppm
Concentration per Run 3	34.9745 ppm	6.0737 ppm	0.0046 ppm	0.4859 ppm	0.1602 ppm	0.1747 ppm	0.0037 ppm
Concentration RSD	0.7 %	0.2 %	7.2 %	0.4 %	0.5 %	0.1 %	376.6 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0009 ppm	2.7246 ppm	0.0091 ppm	0.0604 ppm	5.9670 ppm	0.0028 ppm	0.3510 ppm
Concentration per Run 1	-0.0016 ppm	2.7339 ppm	0.0083 ppm	0.0608 ppm	5.9851 ppm	0.0014 ppm	0.3526 ppm
Concentration per Run 2	-0.0024 ppm	2.7270 ppm	0.0098 ppm	0.0604 ppm	5.9699 ppm	0.0032 ppm	0.3516 ppm
Concentration per Run 3	0.0014 ppm	2.7130 ppm	0.0091 ppm	0.0601 ppm	5.9461 ppm	0.0036 ppm	0.3490 ppm
Concentration RSD	227.3 %	0.4 %	8.3 %	0.6 %	0.3 %	42.0 %	0.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4650 ppm	114.2917 %	116.7159 %	95.9458 %	149.2955 %	156.8485 %	152.4479 %
Concentration per Run 1	0.4695 ppm	113.7976 %	117.8475 %	96.0926 %	149.2712 %	158.6944 %	152.4476 %
Concentration per Run 2	0.4644 ppm	114.2474 %	115.8648 %	95.9117 %	148.9893 %	156.1613 %	152.7618 %
Concentration per Run 3	0.4611 ppm	114.8301 %	116.4353 %	95.8330 %	149.6260 %	155.6897 %	152.1344 %
Concentration RSD	0.9 %	0.5 %	0.9 %	0.1 %	0.2 %	1.0 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450751-07D2 WG1969489
Analysis started at: 9/11/2024 4:38:53 PM
Rack 2
Vial 46
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0005 ppm	111.8738 ppm	0.0265 ppm	0.0039 ppm	0.6157 ppm	0.0177 ppm	8.0340 ppm
Concentration per Run 1	-0.0009 ppm	111.3722 ppm	0.0243 ppm	0.0040 ppm	0.6105 ppm	0.0176 ppm	8.0317 ppm
Concentration per Run 2	-0.0003 ppm	112.2100 ppm	0.0288 ppm	0.0043 ppm	0.6190 ppm	0.0177 ppm	8.0582 ppm
Concentration per Run 3	-0.0002 ppm	112.0393 ppm	0.0263 ppm	0.0033 ppm	0.6177 ppm	0.0176 ppm	8.0121 ppm
Concentration RSD	76.5 %	0.4 %	8.6 %	13.8 %	0.7 %	0.4 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0016 ppm	0.1481 ppm	0.2972 ppm	0.2243 ppm	301.9271 ppm	26.8260 ppm	0.0689 ppm
Concentration per Run 1	0.0015 ppm	0.1481 ppm	0.2967 ppm	0.2234 ppm	299.3188 ppm	26.6020 ppm	0.0692 ppm
Concentration per Run 2	0.0016 ppm	0.1478 ppm	0.2974 ppm	0.2255 ppm	303.9589 ppm	27.0341 ppm	0.0695 ppm
Concentration per Run 3	0.0016 ppm	0.1484 ppm	0.2973 ppm	0.2241 ppm	302.5037 ppm	26.8417 ppm	0.0679 ppm
Concentration RSD	5.6 %	0.2 %	0.1 %	0.5 %	0.8 %	0.8 %	1.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	48.2455 ppm	8.6357 ppm	0.0017 ppm	0.4265 ppm	0.1752 ppm	0.0634 ppm	0.0036 ppm
Concentration per Run 1	48.1415 ppm	8.6141 ppm	0.0017 ppm	0.4254 ppm	0.1734 ppm	0.0635 ppm	0.0046 ppm
Concentration per Run 2	48.4185 ppm	8.6636 ppm	0.0016 ppm	0.4272 ppm	0.1767 ppm	0.0634 ppm	0.0038 ppm
Concentration per Run 3	48.1764 ppm	8.6294 ppm	0.0017 ppm	0.4269 ppm	0.1755 ppm	0.0633 ppm	0.0023 ppm
Concentration RSD	0.3 %	0.3 %	4.6 %	0.2 %	0.9 %	0.2 %	32.3 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0017 ppm	2.9719 ppm	0.0073 ppm	0.0549 ppm	8.5118 ppm	0.0055 ppm	0.4295 ppm
Concentration per Run 1	-0.0010 ppm	2.9602 ppm	0.0070 ppm	0.0548 ppm	8.5113 ppm	0.0066 ppm	0.4305 ppm
Concentration per Run 2	-0.0041 ppm	2.9826 ppm	0.0079 ppm	0.0551 ppm	8.5215 ppm	0.0048 ppm	0.4292 ppm
Concentration per Run 3	0.0000 ppm	2.9730 ppm	0.0070 ppm	0.0549 ppm	8.5026 ppm	0.0052 ppm	0.4287 ppm
Concentration RSD	124.3 %	0.4 %	7.4 %	0.3 %	0.1 %	17.2 %	0.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.7518 ppm	114.7139 %	114.7419 %	91.9116 %	**168.7640 %**	**175.0395 %**	**173.0066 %**
Concentration per Run 1	0.7425 ppm	114.9236 %	114.4899 %	91.9869 %	**169.1612 %**	**174.2368 %**	**172.5709 %**
Concentration per Run 2	0.7602 ppm	114.7246 %	114.1581 %	91.5709 %	**168.9899 %**	**174.4837 %**	**172.3511 %**
Concentration per Run 3	0.7528 ppm	114.4936 %	115.5778 %	92.1771 %	**168.1409 %**	**176.3980 %**	**174.0979 %**
Concentration RSD	1.2 %	0.2 %	0.6 %	0.3 %	**0.3 %**	**0.7 %**	**0.5 %**

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCV
Analysis started at: 9/11/2024 4:42:51 PM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.4983 ppm	0.4667 ppm	0.4509 ppm	0.4649 ppm	0.4985 ppm	0.4962 ppm	0.4761 ppm
Concentration per Run 1	0.5019 ppm	0.4679 ppm	0.4502 ppm	0.4686 ppm	0.4959 ppm	0.4962 ppm	0.4777 ppm
Concentration per Run 2	0.4978 ppm	0.4631 ppm	0.4499 ppm	0.4635 ppm	0.4999 ppm	0.4968 ppm	0.4783 ppm
Concentration per Run 3	0.4952 ppm	0.4692 ppm	0.4527 ppm	0.4626 ppm	0.4998 ppm	0.4954 ppm	0.4723 ppm
Recovery Percentage 1	99.661 %	93.344 %	90.184 %	92.983 %	99.709 %	99.230 %	95.218 %
Concentration RSD	0.7 %	0.7 %	0.3 %	0.7 %	0.5 %	0.1 %	0.7 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.4926 ppm	0.5066 ppm	0.4888 ppm	0.4858 ppm	0.5135 ppm	5.2468 ppm	0.5141 ppm
Concentration per Run 1	0.4983 ppm	0.5123 ppm	0.4933 ppm	0.4904 ppm	0.5142 ppm	5.2805 ppm	0.5129 ppm
Concentration per Run 2	0.4904 ppm	0.5042 ppm	0.4874 ppm	0.4841 ppm	0.5144 ppm	5.2096 ppm	0.5123 ppm
Concentration per Run 3	0.4892 ppm	0.5033 ppm	0.4857 ppm	0.4827 ppm	0.5119 ppm	5.2501 ppm	0.5170 ppm
Recovery Percentage 1	98.523 %	101.318 %	97.759 %	97.154 %	102.702 %	104.935 %	102.813 %
Concentration RSD	1.0 %	1.0 %	0.8 %	0.8 %	0.3 %	0.7 %	0.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.4923 ppm	0.4750 ppm	0.4926 ppm	10.2652 ppm	0.5071 ppm	0.4772 ppm	0.4867 ppm
Concentration per Run 1	0.5013 ppm	0.4776 ppm	0.4944 ppm	10.2503 ppm	0.5120 ppm	0.4803 ppm	0.4891 ppm
Concentration per Run 2	0.4889 ppm	0.4751 ppm	0.4919 ppm	10.2588 ppm	0.5052 ppm	0.4738 ppm	0.4852 ppm
Concentration per Run 3	0.4867 ppm	0.4722 ppm	0.4915 ppm	10.2864 ppm	0.5041 ppm	0.4777 ppm	0.4858 ppm
Recovery Percentage 1	98.455 %	94.992 %	98.518 %	102.652 %	101.423 %	95.450 %	97.342 %
Concentration RSD	1.6 %	0.6 %	0.3 %	0.2 %	0.8 %	0.7 %	0.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4673 ppm	5.1575 ppm	0.5181 ppm	0.5122 ppm	0.5007 ppm	0.4655 ppm	0.4936 ppm
Concentration per Run 1	0.4666 ppm	5.1911 ppm	0.5252 ppm	0.5120 ppm	0.5050 ppm	0.4645 ppm	0.4984 ppm
Concentration per Run 2	0.4665 ppm	5.1438 ppm	0.5152 ppm	0.5143 ppm	0.4987 ppm	0.4662 ppm	0.4911 ppm
Concentration per Run 3	0.4687 ppm	5.1376 ppm	0.5139 ppm	0.5102 ppm	0.4985 ppm	0.4659 ppm	0.4914 ppm
Recovery Percentage 1	93.460 %	98.238 %	103.622 %	102.431 %	100.146 %	93.109 %	98.726 %
Concentration RSD	0.3 %	0.6 %	1.2 %	0.4 %	0.7 %	0.2 %	0.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4951 ppm	104.6291 %	102.4997 %	101.5003 %	100.2298 %	99.9093 %	101.4186 %
Concentration per Run 1	0.5003 ppm	103.4033 %	101.6577 %	101.5535 %	99.3588 %	99.7472 %	101.5378 %
Concentration per Run 2	0.4933 ppm	104.9476 %	101.8891 %	102.1301 %	100.3807 %	99.1300 %	101.7049 %
Concentration per Run 3	0.4917 ppm	105.5363 %	103.9525 %	100.8174 %	100.9498 %	100.8506 %	101.0130 %
Recovery Percentage 1	99.017 %						
Concentration RSD	0.9 %	1.1 %	1.2 %	0.6 %	0.8 %	0.9 %	0.4 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCB
Analysis started at: 9/11/2024 4:46:49 PM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0001 ppm	-0.0060 ppm	-0.0003 ppm	0.0001 ppm	-0.0001 ppm	0.0000 ppm	-0.0040 ppm
Concentration per Run 1	0.0001 ppm	-0.0049 ppm	-0.0004 ppm	0.0007 ppm	-0.0001 ppm	0.0000 ppm	-0.0029 ppm
Concentration per Run 2	-0.0002 ppm	-0.0019 ppm	-0.0001 ppm	-0.0008 ppm	-0.0002 ppm	0.0000 ppm	-0.0039 ppm
Concentration per Run 3	-0.0001 ppm	-0.0111 ppm	-0.0005 ppm	0.0005 ppm	-0.0002 ppm	0.0000 ppm	-0.0053 ppm
Recovery Percentage 1	-0.824 %	-5.953 %	-11.556 %	0.466 %	-1.451 %	0.362 %	-4.047 %
Concentration RSD	277.8 %	79.0 %	63.3 %	591.8 %	26.0 %	50.5 %	30.0 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0001 ppm	-0.0002 ppm	0.0001 ppm	0.0002 ppm	0.0049 ppm	-0.0015 ppm	-0.0021 ppm
Concentration per Run 1	0.0000 ppm	-0.0001 ppm	0.0000 ppm	0.0003 ppm	0.0046 ppm	-0.0032 ppm	-0.0023 ppm
Concentration per Run 2	0.0002 ppm	-0.0002 ppm	0.0000 ppm	0.0000 ppm	0.0058 ppm	0.0023 ppm	-0.0009 ppm
Concentration per Run 3	0.0000 ppm	-0.0002 ppm	0.0002 ppm	0.0002 ppm	0.0044 ppm	-0.0036 ppm	-0.0031 ppm
Recovery Percentage 1	1.571 %	-0.818 %	0.570 %	1.529 %	9.864 %	-0.059 %	-21.122 %
Concentration RSD	102.9 %	23.8 %	153.3 %	78.8 %	15.5 %	221.1 %	53.3 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0003 ppm	0.0001 ppm	0.0013 ppm	0.0133 ppm	-0.0001 ppm	0.0001 ppm	0.0017 ppm
Concentration per Run 1	0.0016 ppm	0.0002 ppm	0.0009 ppm	0.0151 ppm	-0.0002 ppm	0.0004 ppm	-0.0003 ppm
Concentration per Run 2	-0.0010 ppm	0.0001 ppm	0.0014 ppm	0.0133 ppm	0.0001 ppm	-0.0001 ppm	0.0041 ppm
Concentration per Run 3	0.0003 ppm	0.0002 ppm	0.0014 ppm	0.0116 ppm	-0.0004 ppm	-0.0002 ppm	0.0012 ppm
Recovery Percentage 1	0.290 %	1.421 %	2.508 %	0.666 %	-0.556 %	0.721 %	3.329 %
Concentration RSD	449.8 %	40.8 %	21.3 %	13.1 %	161.3 %	440.1 %	136.3 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0003 ppm	0.0003 ppm	0.0003 ppm	0.0001 ppm	-0.0001 ppm	0.0003 ppm	-0.0002 ppm
Concentration per Run 1	-0.0007 ppm	0.0010 ppm	0.0006 ppm	0.0001 ppm	-0.0001 ppm	0.0004 ppm	-0.0001 ppm
Concentration per Run 2	0.0001 ppm	0.0002 ppm	0.0004 ppm	0.0001 ppm	-0.0001 ppm	0.0003 ppm	-0.0001 ppm
Concentration per Run 3	-0.0003 ppm	-0.0002 ppm	-0.0003 ppm	0.0001 ppm	-0.0002 ppm	0.0002 ppm	-0.0002 ppm
Recovery Percentage 1	-3.038 %	0.065 %	0.502 %	1.011 %	-1.243 %	1.373 %	-1.646 %
Concentration RSD	138.5 %	190.8 %	183.1 %	37.7 %	46.3 %	33.4 %	21.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0007 ppm	100.1381 %	99.5917 %	101.2348 %	101.8064 %	100.6784 %	102.7657 %
Concentration per Run 1	0.0005 ppm	98.6049 %	100.1254 %	100.0392 %	101.4627 %	101.6212 %	102.1957 %
Concentration per Run 2	0.0008 ppm	100.2147 %	99.1411 %	101.6446 %	101.7545 %	100.0105 %	102.9956 %
Concentration per Run 3	0.0008 ppm	101.5946 %	99.5087 %	102.0207 %	102.2021 %	100.4035 %	103.1059 %
Recovery Percentage 1	13.703 %						
Concentration RSD	25.5 %	1.5 %	0.5 %	1.0 %	0.4 %	0.8 %	0.5 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450751-09D2 WG1969489
Analysis started at: 9/11/2024 4:55:01 PM
Rack 2
Vial 47
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0006 ppm	79.5337 ppm	0.0388 ppm	0.0177 ppm	2.5271 ppm	0.0095 ppm	881.3198 ppm
Concentration per Run 1	0.0007 ppm	79.4266 ppm	0.0400 ppm	0.0177 ppm	2.5179 ppm	0.0096 ppm	879.9397 ppm
Concentration per Run 2	0.0005 ppm	79.3874 ppm	0.0377 ppm	0.0172 ppm	2.5287 ppm	0.0094 ppm	880.4375 ppm
Concentration per Run 3	0.0006 ppm	79.7872 ppm	0.0387 ppm	0.0181 ppm	2.5347 ppm	0.0094 ppm	883.5822 ppm
Concentration RSD	17.0 %	0.3 %	3.0 %	2.6 %	0.3 %	0.9 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0562 ppm	0.1547 ppm	0.5731 ppm	148.5230 ppm	10.9820 ppm	0.0815 ppm
Concentration per Run 1	0.0001 ppm	0.0568 ppm	0.1554 ppm	0.5725 ppm	148.0209 ppm	10.9819 ppm	0.0805 ppm
Concentration per Run 2	0.0000 ppm	0.0555 ppm	0.1545 ppm	0.5743 ppm	148.6646 ppm	10.9553 ppm	0.0802 ppm
Concentration per Run 3	0.0000 ppm	0.0563 ppm	0.1543 ppm	0.5724 ppm	148.8834 ppm	11.0088 ppm	0.0837 ppm
Concentration RSD	160.6 %	1.1 %	0.4 %	0.2 %	0.3 %	0.2 %	2.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	427.1230 ppm	4.1791 ppm	0.0034 ppm	0.8765 ppm	0.1329 ppm	1.1391 ppm	0.0028 ppm
Concentration per Run 1	428.7105 ppm	4.1809 ppm	0.0033 ppm	0.8737 ppm	0.1332 ppm	1.1424 ppm	0.0049 ppm
Concentration per Run 2	426.9059 ppm	4.1731 ppm	0.0035 ppm	0.8745 ppm	0.1319 ppm	1.1374 ppm	0.0004 ppm
Concentration per Run 3	425.7526 ppm	4.1832 ppm	0.0035 ppm	0.8812 ppm	0.1335 ppm	1.1377 ppm	0.0030 ppm
Concentration RSD	0.3 %	0.1 %	4.0 %	0.5 %	0.6 %	0.2 %	80.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0021 ppm	3.8431 ppm	0.0389 ppm	0.6610 ppm	3.7905 ppm	0.0033 ppm	0.3749 ppm
Concentration per Run 1	0.0034 ppm	3.8363 ppm	0.0390 ppm	0.6664 ppm	3.7972 ppm	0.0034 ppm	0.3742 ppm
Concentration per Run 2	0.0023 ppm	3.8518 ppm	0.0393 ppm	0.6607 ppm	3.7969 ppm	0.0047 ppm	0.3758 ppm
Concentration per Run 3	0.0006 ppm	3.8411 ppm	0.0384 ppm	0.6560 ppm	3.7773 ppm	0.0019 ppm	0.3747 ppm
Concentration RSD	69.3 %	0.2 %	1.2 %	0.8 %	0.3 %	42.8 %	0.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	2.0159 ppm	93.8257 %	100.8061 %	76.1228 %	109.7679 %	121.4438 %	109.8199 %
Concentration per Run 1	2.0238 ppm	93.8685 %	100.9247 %	75.8000 %	109.9485 %	121.2089 %	109.7748 %
Concentration per Run 2	2.0144 ppm	94.0681 %	100.6862 %	76.1862 %	110.1660 %	121.6888 %	109.6947 %
Concentration per Run 3	2.0097 ppm	93.5404 %	100.8076 %	76.3822 %	109.1891 %	121.4337 %	109.9903 %
Concentration RSD	0.4 %	0.3 %	0.1 %	0.4 %	0.5 %	0.2 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450797-01D2 WG1969489
Analysis started at: 9/11/2024 4:59:05 PM
Rack 2
Vial 48
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0009 ppm	59.3964 ppm	**41.7737 ppm**	0.0137 ppm	1.0846 ppm	0.0042 ppm	54.7572 ppm
Concentration per Run 1	0.0010 ppm	59.5901 ppm	41.7800 ppm	0.0139 ppm	1.0864 ppm	0.0043 ppm	55.0172 ppm
Concentration per Run 2	0.0010 ppm	59.2389 ppm	41.6993 ppm	0.0132 ppm	1.0821 ppm	0.0042 ppm	54.6273 ppm
Concentration per Run 3	0.0007 ppm	59.3602 ppm	41.8417 ppm	0.0141 ppm	1.0851 ppm	0.0042 ppm	54.6272 ppm
Concentration RSD	14.1 %	0.3 %	0.2 %	3.2 %	0.2 %	1.2 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0037 ppm	0.0632 ppm	0.6241 ppm	14.4732 ppm	105.8989 ppm	8.2323 ppm	0.1775 ppm
Concentration per Run 1	0.0038 ppm	0.0628 ppm	0.6263 ppm	14.5314 ppm	106.5169 ppm	8.3068 ppm	0.1785 ppm
Concentration per Run 2	0.0038 ppm	0.0635 ppm	0.6233 ppm	14.4477 ppm	105.5417 ppm	8.2197 ppm	0.1777 ppm
Concentration per Run 3	0.0036 ppm	0.0632 ppm	0.6227 ppm	14.4406 ppm	105.6380 ppm	8.1703 ppm	0.1765 ppm
Concentration RSD	2.3 %	0.5 %	0.3 %	0.3 %	0.5 %	0.8 %	0.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	24.2038 ppm	1.1142 ppm	0.0072 ppm	2.3653 ppm	0.4550 ppm	1.0736 ppm	0.2451 ppm
Concentration per Run 1	24.3596 ppm	1.1183 ppm	0.0070 ppm	2.3802 ppm	0.4562 ppm	1.0760 ppm	0.2472 ppm
Concentration per Run 2	24.1325 ppm	1.1114 ppm	0.0072 ppm	2.3453 ppm	0.4546 ppm	1.0724 ppm	0.2444 ppm
Concentration per Run 3	24.1193 ppm	1.1128 ppm	0.0074 ppm	2.3704 ppm	0.4543 ppm	1.0724 ppm	0.2436 ppm
Concentration RSD	0.6 %	0.3 %	3.0 %	0.8 %	0.2 %	0.2 %	0.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0047 ppm	5.1137 ppm	0.1433 ppm	0.2103 ppm	1.8631 ppm	0.0025 ppm	0.1641 ppm
Concentration per Run 1	0.0047 ppm	5.1341 ppm	0.1420 ppm	0.2104 ppm	1.8726 ppm	0.0021 ppm	0.1651 ppm
Concentration per Run 2	0.0057 ppm	5.0949 ppm	0.1446 ppm	0.2109 ppm	1.8587 ppm	0.0032 ppm	0.1639 ppm
Concentration per Run 3	0.0039 ppm	5.1122 ppm	0.1433 ppm	0.2095 ppm	1.8580 ppm	0.0023 ppm	0.1633 ppm
Concentration RSD	18.9 %	0.4 %	0.9 %	0.4 %	0.4 %	22.8 %	0.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	2.7884 ppm	106.8034 %	108.9385 %	96.0361 %	115.4956 %	120.3287 %	115.4017 %
Concentration per Run 1	2.8045 ppm	106.3157 %	107.2089 %	96.1019 %	115.3965 %	118.7065 %	115.7319 %
Concentration per Run 2	2.7741 ppm	107.3901 %	109.9600 %	96.1127 %	115.9749 %	121.3419 %	115.3371 %
Concentration per Run 3	2.7867 ppm	106.7045 %	109.6465 %	95.8937 %	115.1153 %	120.9377 %	115.1360 %
Concentration RSD	0.5 %	0.5 %	1.4 %	0.1 %	0.4 %	1.2 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450797-03D2 WG1969489
Analysis started at: 9/11/2024 5:03:04 PM
Rack 2
Vial 49
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	40.2955 ppm	0.7416 ppm	0.0320 ppm	0.4691 ppm	0.0025 ppm	549.1019 ppm
Concentration per Run 1	0.0000 ppm	40.2947 ppm	0.7418 ppm	0.0324 ppm	0.4672 ppm	0.0025 ppm	549.1355 ppm
Concentration per Run 2	0.0000 ppm	40.2610 ppm	0.7381 ppm	0.0327 ppm	0.4717 ppm	0.0025 ppm	548.5339 ppm
Concentration per Run 3	0.0000 ppm	40.3308 ppm	0.7449 ppm	0.0311 ppm	0.4684 ppm	0.0025 ppm	549.6362 ppm
Concentration RSD	18.9 %	0.1 %	0.5 %	2.6 %	0.5 %	0.6 %	0.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0018 ppm	0.0353 ppm	0.0848 ppm	0.4115 ppm	78.6781 ppm	6.8843 ppm	0.0703 ppm
Concentration per Run 1	-0.0019 ppm	0.0353 ppm	0.0853 ppm	0.4141 ppm	78.2434 ppm	6.8844 ppm	0.0724 ppm
Concentration per Run 2	-0.0019 ppm	0.0351 ppm	0.0843 ppm	0.4086 ppm	79.0401 ppm	6.9538 ppm	0.0703 ppm
Concentration per Run 3	-0.0018 ppm	0.0355 ppm	0.0847 ppm	0.4119 ppm	78.7507 ppm	6.8148 ppm	0.0683 ppm
Concentration RSD	2.3 %	0.6 %	0.6 %	0.7 %	0.5 %	1.0 %	2.9 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	19.9645 ppm	2.2194 ppm	0.0053 ppm	2.4257 ppm	0.0901 ppm	2.6298 ppm	0.0034 ppm
Concentration per Run 1	20.0673 ppm	2.2179 ppm	0.0051 ppm	2.4256 ppm	0.0915 ppm	2.6297 ppm	0.0037 ppm
Concentration per Run 2	19.9166 ppm	2.2189 ppm	0.0053 ppm	2.4264 ppm	0.0892 ppm	2.6270 ppm	0.0017 ppm
Concentration per Run 3	19.9096 ppm	2.2213 ppm	0.0055 ppm	2.4250 ppm	0.0895 ppm	2.6328 ppm	0.0049 ppm
Concentration RSD	0.4 %	0.1 %	3.1 %	0.0 %	1.4 %	0.1 %	47.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0010 ppm	8.5504 ppm	0.0720 ppm	1.3239 ppm	1.6666 ppm	0.0015 ppm	0.1337 ppm
Concentration per Run 1	0.0002 ppm	8.5949 ppm	0.0719 ppm	1.3247 ppm	1.6726 ppm	0.0012 ppm	0.1342 ppm
Concentration per Run 2	0.0003 ppm	8.5316 ppm	0.0712 ppm	1.3212 ppm	1.6664 ppm	0.0013 ppm	0.1336 ppm
Concentration per Run 3	0.0025 ppm	8.5247 ppm	0.0727 ppm	1.3259 ppm	1.6609 ppm	0.0019 ppm	0.1332 ppm
Concentration RSD	131.5 %	0.5 %	1.0 %	0.2 %	0.4 %	27.4 %	0.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.3741 ppm	99.6676 %	105.0673 %	88.4877 %	109.3835 %	118.0714 %	111.6056 %
Concentration per Run 1	0.3764 ppm	99.1719 %	105.6939 %	88.6830 %	109.3936 %	119.2289 %	111.6943 %
Concentration per Run 2	0.3713 ppm	100.1060 %	104.9216 %	88.7103 %	109.2436 %	117.6750 %	111.7406 %
Concentration per Run 3	0.3744 ppm	99.7248 %	104.5863 %	88.0699 %	109.5132 %	117.3103 %	111.3819 %
Concentration RSD	0.7 %	0.5 %	0.5 %	0.4 %	0.1 %	0.9 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450797-05D2 WG1969489
Analysis started at: 9/11/2024 5:07:02 PM
Rack 2
Vial 50
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0020 ppm	57.9101 ppm	4.5147 ppm	0.0438 ppm	1.8119 ppm	0.0040 ppm	163.5517 ppm
Concentration per Run 1	0.0023 ppm	58.0161 ppm	4.5195 ppm	0.0432 ppm	1.8064 ppm	0.0040 ppm	163.4378 ppm
Concentration per Run 2	0.0019 ppm	57.9546 ppm	4.4781 ppm	0.0441 ppm	1.8173 ppm	0.0041 ppm	163.5632 ppm
Concentration per Run 3	0.0018 ppm	57.7596 ppm	4.5465 ppm	0.0443 ppm	1.8119 ppm	0.0040 ppm	163.6543 ppm
Concentration RSD	13.6 %	0.2 %	0.8 %	1.3 %	0.3 %	0.7 %	0.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0086 ppm	0.0531 ppm	0.1996 ppm	9.4266 ppm	158.9928 ppm	16.9635 ppm	0.1319 ppm
Concentration per Run 1	0.0085 ppm	0.0534 ppm	0.2002 ppm	9.4872 ppm	158.4972 ppm	16.9740 ppm	0.1340 ppm
Concentration per Run 2	0.0086 ppm	0.0532 ppm	0.1999 ppm	9.4048 ppm	159.2377 ppm	16.9379 ppm	0.1306 ppm
Concentration per Run 3	0.0086 ppm	0.0528 ppm	0.1988 ppm	9.3878 ppm	159.2435 ppm	16.9786 ppm	0.1311 ppm
Concentration RSD	0.5 %	0.6 %	0.4 %	0.6 %	0.3 %	0.1 %	1.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	37.2071 ppm	2.4051 ppm	0.0230 ppm	2.2688 ppm	0.1990 ppm	3.4804 ppm	0.0178 ppm
Concentration per Run 1	37.3750 ppm	2.4057 ppm	0.0229 ppm	2.2839 ppm	0.1992 ppm	3.4891 ppm	0.0189 ppm
Concentration per Run 2	37.1483 ppm	2.4093 ppm	0.0233 ppm	2.2635 ppm	0.1994 ppm	3.4702 ppm	0.0188 ppm
Concentration per Run 3	37.0981 ppm	2.4003 ppm	0.0228 ppm	2.2590 ppm	0.1984 ppm	3.4818 ppm	0.0158 ppm
Concentration RSD	0.4 %	0.2 %	1.2 %	0.6 %	0.3 %	0.3 %	9.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0162 ppm	3.7613 ppm	0.4331 ppm	0.5359 ppm	3.0530 ppm	0.0034 ppm	0.2407 ppm
Concentration per Run 1	0.0155 ppm	3.7926 ppm	0.4355 ppm	0.5331 ppm	3.0687 ppm	0.0027 ppm	0.2419 ppm
Concentration per Run 2	0.0175 ppm	3.7536 ppm	0.4331 ppm	0.5383 ppm	3.0499 ppm	0.0035 ppm	0.2402 ppm
Concentration per Run 3	0.0156 ppm	3.7377 ppm	0.4308 ppm	0.5363 ppm	3.0405 ppm	0.0041 ppm	0.2399 ppm
Concentration RSD	7.0 %	0.8 %	0.5 %	0.5 %	0.5 %	19.8 %	0.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	2.0512 ppm	103.3508 %	106.4389 %	89.7358 %	114.0847 %	120.3481 %	114.6077 %
Concentration per Run 1	2.0561 ppm	102.7703 %	107.1203 %	89.6410 %	113.5920 %	121.5458 %	114.6063 %
Concentration per Run 2	2.0586 ppm	103.7725 %	106.0240 %	89.8509 %	114.7757 %	119.4536 %	114.5269 %
Concentration per Run 3	2.0388 ppm	103.5096 %	106.1724 %	89.7155 %	113.8863 %	120.0448 %	114.6898 %
Concentration RSD	0.5 %	0.5 %	0.6 %	0.1 %	0.5 %	0.9 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450797-07D2 WG1969489
Analysis started at: 9/11/2024 5:11:00 PM
Rack 2
Vial 51
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0006 ppm	33.7208 ppm	0.4645 ppm	0.0197 ppm	0.3607 ppm	0.0023 ppm	945.5135 ppm
Concentration per Run 1	-0.0003 ppm	33.5998 ppm	0.4652 ppm	0.0198 ppm	0.3611 ppm	0.0023 ppm	947.1682 ppm
Concentration per Run 2	-0.0007 ppm	33.8464 ppm	0.4657 ppm	0.0194 ppm	0.3633 ppm	0.0024 ppm	946.7293 ppm
Concentration per Run 3	-0.0008 ppm	33.7164 ppm	0.4625 ppm	0.0200 ppm	0.3578 ppm	0.0023 ppm	942.6429 ppm
Concentration RSD	45.5 %	0.4 %	0.4 %	1.5 %	0.8 %	1.0 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0037 ppm	0.0270 ppm	0.0771 ppm	0.2378 ppm	66.1776 ppm	5.1420 ppm	0.0508 ppm
Concentration per Run 1	-0.0037 ppm	0.0271 ppm	0.0777 ppm	0.2382 ppm	66.0397 ppm	5.1342 ppm	0.0500 ppm
Concentration per Run 2	-0.0037 ppm	0.0272 ppm	0.0771 ppm	0.2390 ppm	66.5474 ppm	5.1884 ppm	0.0518 ppm
Concentration per Run 3	-0.0037 ppm	0.0266 ppm	0.0764 ppm	0.2361 ppm	65.9458 ppm	5.1033 ppm	0.0505 ppm
Concentration RSD	1.1 %	1.1 %	0.9 %	0.6 %	0.5 %	0.8 %	1.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	21.9868 ppm	2.5454 ppm	0.0030 ppm	1.8131 ppm	0.0775 ppm	0.4464 ppm	0.0006 ppm
Concentration per Run 1	22.1217 ppm	2.5439 ppm	0.0031 ppm	1.7962 ppm	0.0784 ppm	0.4484 ppm	-0.0007 ppm
Concentration per Run 2	22.0113 ppm	2.5504 ppm	0.0031 ppm	1.8224 ppm	0.0780 ppm	0.4445 ppm	0.0013 ppm
Concentration per Run 3	21.8276 ppm	2.5420 ppm	0.0030 ppm	1.8208 ppm	0.0760 ppm	0.4463 ppm	0.0011 ppm
Concentration RSD	0.7 %	0.2 %	2.1 %	0.8 %	1.7 %	0.4 %	191.6 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0014 ppm	10.3680 ppm	0.0129 ppm	2.0825 ppm	1.4559 ppm	0.0006 ppm	0.1159 ppm
Concentration per Run 1	0.0005 ppm	10.4397 ppm	0.0125 ppm	2.0831 ppm	1.4652 ppm	0.0007 ppm	0.1166 ppm
Concentration per Run 2	0.0024 ppm	10.3794 ppm	0.0133 ppm	2.0857 ppm	1.4569 ppm	0.0006 ppm	0.1159 ppm
Concentration per Run 3	0.0012 ppm	10.2849 ppm	0.0127 ppm	2.0786 ppm	1.4455 ppm	0.0007 ppm	0.1152 ppm
Concentration RSD	73.3 %	0.8 %	3.2 %	0.2 %	0.7 %	9.6 %	0.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.3053 ppm	95.1775 %	99.6838 %	84.1335 %	106.3580 %	113.9454 %	108.1938 %
Concentration per Run 1	0.3075 ppm	94.9319 %	98.7517 %	84.4539 %	106.8582 %	112.9908 %	108.2556 %
Concentration per Run 2	0.3058 ppm	95.0545 %	99.9587 %	83.8923 %	106.0398 %	114.2684 %	108.3869 %
Concentration per Run 3	0.3026 ppm	95.5460 %	100.3410 %	84.0543 %	106.1761 %	114.5769 %	107.9390 %
Concentration RSD	0.8 %	0.3 %	0.8 %	0.3 %	0.4 %	0.7 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450834-02D2 WG1969489
Analysis started at: 9/11/2024 5:14:58 PM
Rack 2
Vial 52
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0013 ppm	54.2830 ppm	0.0348 ppm	0.0221 ppm	0.5590 ppm	0.0038 ppm	127.6039 ppm
Concentration per Run 1	0.0009 ppm	54.3614 ppm	0.0349 ppm	0.0220 ppm	0.5549 ppm	0.0038 ppm	128.2437 ppm
Concentration per Run 2	0.0014 ppm	54.3254 ppm	0.0344 ppm	0.0217 ppm	0.5635 ppm	0.0037 ppm	126.8644 ppm
Concentration per Run 3	0.0015 ppm	54.1622 ppm	0.0353 ppm	0.0225 ppm	0.5587 ppm	0.0038 ppm	127.7037 ppm
Concentration RSD	24.3 %	0.2 %	1.3 %	1.9 %	0.8 %	2.0 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0031 ppm	0.0683 ppm	0.1604 ppm	0.5092 ppm	126.7519 ppm	10.8670 ppm	0.0827 ppm
Concentration per Run 1	0.0030 ppm	0.0689 ppm	0.1614 ppm	0.5121 ppm	126.3591 ppm	10.9219 ppm	0.0842 ppm
Concentration per Run 2	0.0030 ppm	0.0682 ppm	0.1593 ppm	0.5075 ppm	127.2755 ppm	10.8916 ppm	0.0819 ppm
Concentration per Run 3	0.0031 ppm	0.0678 ppm	0.1603 ppm	0.5081 ppm	126.6212 ppm	10.7873 ppm	0.0821 ppm
Concentration RSD	1.9 %	0.8 %	0.6 %	0.5 %	0.4 %	0.7 %	1.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	52.9176 ppm	3.7985 ppm	0.0020 ppm	5.9663 ppm	0.4557 ppm	1.6161 ppm	0.0037 ppm
Concentration per Run 1	53.2072 ppm	3.8066 ppm	0.0015 ppm	5.9054 ppm	0.4580 ppm	1.6272 ppm	0.0047 ppm
Concentration per Run 2	52.6850 ppm	3.7887 ppm	0.0027 ppm	6.0443 ppm	0.4534 ppm	1.6068 ppm	0.0043 ppm
Concentration per Run 3	52.8607 ppm	3.8003 ppm	0.0018 ppm	5.9492 ppm	0.4556 ppm	1.6143 ppm	0.0022 ppm
Concentration RSD	0.5 %	0.2 %	32.9 %	1.2 %	0.5 %	0.6 %	37.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0012 ppm	6.7047 ppm	0.0455 ppm	0.4947 ppm	2.8207 ppm	0.0019 ppm	0.1871 ppm
Concentration per Run 1	0.0001 ppm	6.7383 ppm	0.0469 ppm	0.4963 ppm	2.8317 ppm	0.0016 ppm	0.1885 ppm
Concentration per Run 2	-0.0033 ppm	6.6846 ppm	0.0450 ppm	0.4914 ppm	2.8164 ppm	0.0013 ppm	0.1870 ppm
Concentration per Run 3	-0.0006 ppm	6.6911 ppm	0.0445 ppm	0.4964 ppm	2.8139 ppm	0.0027 ppm	0.1858 ppm
Concentration RSD	142.2 %	0.4 %	2.8 %	0.6 %	0.3 %	38.6 %	0.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	1.0474 ppm	104.5145 %	105.2805 %	92.0589 %	116.0943 %	120.1888 %	117.2295 %
Concentration per Run 1	1.0566 ppm	104.1871 %	104.3525 %	91.3880 %	116.5725 %	119.6098 %	116.2664 %
Concentration per Run 2	1.0392 ppm	104.5592 %	106.0573 %	92.6747 %	115.9884 %	120.7108 %	117.8471 %
Concentration per Run 3	1.0463 ppm	104.7972 %	105.4317 %	92.1141 %	115.7218 %	120.2458 %	117.5752 %
Concentration RSD	0.8 %	0.3 %	0.8 %	0.7 %	0.4 %	0.5 %	0.7 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCV
Analysis started at: 9/11/2024 5:18:56 PM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.4961 ppm	0.4628 ppm	0.4508 ppm	0.4636 ppm	0.4977 ppm	0.4963 ppm	0.4809 ppm
Concentration per Run 1	0.4989 ppm	0.4649 ppm	0.4489 ppm	0.4650 ppm	0.5003 ppm	0.4971 ppm	0.4808 ppm
Concentration per Run 2	0.4964 ppm	0.4613 ppm	0.4520 ppm	0.4621 ppm	0.4963 ppm	0.4956 ppm	0.4822 ppm
Concentration per Run 3	0.4929 ppm	0.4623 ppm	0.4514 ppm	0.4636 ppm	0.4964 ppm	0.4963 ppm	0.4798 ppm
Recovery Percentage 1	99.214 %	92.565 %	90.153 %	92.717 %	99.537 %	99.265 %	96.185 %
Concentration RSD	0.6 %	0.4 %	0.4 %	0.3 %	0.5 %	0.1 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.4934 ppm	0.5050 ppm	0.4874 ppm	0.4839 ppm	0.5082 ppm	5.3059 ppm	0.5208 ppm
Concentration per Run 1	0.4950 ppm	0.5065 ppm	0.4902 ppm	0.4852 ppm	0.5113 ppm	5.3256 ppm	0.5226 ppm
Concentration per Run 2	0.4930 ppm	0.5028 ppm	0.4876 ppm	0.4821 ppm	0.5065 ppm	5.3079 ppm	0.5229 ppm
Concentration per Run 3	0.4923 ppm	0.5056 ppm	0.4844 ppm	0.4844 ppm	0.5068 ppm	5.2842 ppm	0.5169 ppm
Recovery Percentage 1	98.686 %	100.998 %	97.480 %	96.778 %	101.641 %	106.118 %	104.158 %
Concentration RSD	0.3 %	0.4 %	0.6 %	0.3 %	0.5 %	0.4 %	0.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.4901 ppm	0.4776 ppm	0.4923 ppm	10.2962 ppm	0.5040 ppm	0.4775 ppm	0.4851 ppm
Concentration per Run 1	0.4952 ppm	0.4765 ppm	0.4901 ppm	10.2891 ppm	0.5071 ppm	0.4761 ppm	0.4880 ppm
Concentration per Run 2	0.4890 ppm	0.4792 ppm	0.4927 ppm	10.3447 ppm	0.5051 ppm	0.4790 ppm	0.4851 ppm
Concentration per Run 3	0.4860 ppm	0.4771 ppm	0.4940 ppm	10.2548 ppm	0.4999 ppm	0.4774 ppm	0.4822 ppm
Recovery Percentage 1	98.013 %	95.520 %	98.451 %	102.962 %	100.810 %	95.499 %	97.017 %
Concentration RSD	1.0 %	0.3 %	0.4 %	0.4 %	0.7 %	0.3 %	0.6 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4674 ppm	5.1528 ppm	0.5195 ppm	0.5134 ppm	0.4967 ppm	0.4656 ppm	0.4917 ppm
Concentration per Run 1	0.4659 ppm	5.1779 ppm	0.5251 ppm	0.5170 ppm	0.5002 ppm	0.4633 ppm	0.4931 ppm
Concentration per Run 2	0.4683 ppm	5.1484 ppm	0.5168 ppm	0.5092 ppm	0.4952 ppm	0.4668 ppm	0.4911 ppm
Concentration per Run 3	0.4681 ppm	5.1320 ppm	0.5166 ppm	0.5141 ppm	0.4948 ppm	0.4668 ppm	0.4910 ppm
Recovery Percentage 1	93.485 %	98.148 %	103.902 %	102.687 %	99.347 %	93.130 %	98.347 %
Concentration RSD	0.3 %	0.5 %	0.9 %	0.8 %	0.6 %	0.4 %	0.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4929 ppm	104.5429 %	101.5103 %	101.2616 %	100.2651 %	99.3775 %	100.9382 %
Concentration per Run 1	0.4942 ppm	104.1336 %	101.1484 %	101.2010 %	99.9733 %	98.9649 %	100.9050 %
Concentration per Run 2	0.4959 ppm	104.9343 %	101.5555 %	101.1543 %	100.8109 %	99.3595 %	100.8184 %
Concentration per Run 3	0.4885 ppm	104.5608 %	101.8271 %	101.4294 %	100.0111 %	99.8080 %	101.0910 %
Recovery Percentage 1	98.574 %						
Concentration RSD	0.8 %	0.4 %	0.3 %	0.1 %	0.5 %	0.4 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCB
Analysis started at: 9/11/2024 5:22:54 PM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0002 ppm	-0.0099 ppm	0.0003 ppm	0.0005 ppm	-0.0002 ppm	0.0000 ppm	-0.0036 ppm
Concentration per Run 1	-0.0001 ppm	-0.0114 ppm	0.0007 ppm	0.0012 ppm	-0.0002 ppm	0.0000 ppm	-0.0029 ppm
Concentration per Run 2	-0.0002 ppm	-0.0064 ppm	-0.0005 ppm	0.0006 ppm	-0.0002 ppm	0.0000 ppm	-0.0036 ppm
Concentration per Run 3	-0.0002 ppm	-0.0118 ppm	0.0007 ppm	-0.0004 ppm	-0.0002 ppm	-0.0001 ppm	-0.0043 ppm
Recovery Percentage 1	-2.540 %	-9.892 %	10.409 %	1.529 %	-1.854 %	-0.253 %	-3.571 %
Concentration RSD	27.3 %	30.7 %	213.7 %	171.6 %	19.6 %	356.1 %	19.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0001 ppm	0.0001 ppm	0.0004 ppm	0.0051 ppm	0.0022 ppm	-0.0002 ppm
Concentration per Run 1	0.0001 ppm	-0.0002 ppm	0.0002 ppm	0.0002 ppm	0.0057 ppm	0.0071 ppm	-0.0011 ppm
Concentration per Run 2	0.0000 ppm	-0.0002 ppm	0.0003 ppm	0.0007 ppm	0.0045 ppm	0.0028 ppm	0.0000 ppm
Concentration per Run 3	0.0000 ppm	0.0001 ppm	-0.0001 ppm	0.0002 ppm	0.0051 ppm	-0.0034 ppm	0.0004 ppm
Recovery Percentage 1	0.935 %	-0.533 %	1.158 %	3.927 %	10.227 %	0.087 %	-2.036 %
Concentration RSD	141.2 %	138.0 %	156.4 %	70.0 %	12.0 %	243.2 %	385.1 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0003 ppm	0.0001 ppm	0.0015 ppm	0.0126 ppm	-0.0002 ppm	0.0003 ppm	-0.0002 ppm
Concentration per Run 1	-0.0002 ppm	0.0001 ppm	0.0018 ppm	0.0156 ppm	0.0000 ppm	0.0002 ppm	0.0004 ppm
Concentration per Run 2	0.0012 ppm	0.0000 ppm	0.0014 ppm	0.0104 ppm	-0.0001 ppm	0.0000 ppm	-0.0005 ppm
Concentration per Run 3	-0.0001 ppm	0.0003 ppm	0.0014 ppm	0.0117 ppm	-0.0007 ppm	0.0007 ppm	-0.0005 ppm
Recovery Percentage 1	0.300 %	1.151 %	3.074 %	0.629 %	-0.959 %	3.105 %	-0.401 %
Concentration RSD	261.2 %	139.2 %	14.6 %	21.6 %	150.6 %	128.4 %	261.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0009 ppm	0.0020 ppm	0.0006 ppm	0.0001 ppm	-0.0001 ppm	-0.0002 ppm	0.0000 ppm
Concentration per Run 1	-0.0010 ppm	0.0019 ppm	-0.0004 ppm	0.0001 ppm	0.0000 ppm	0.0000 ppm	0.0001 ppm
Concentration per Run 2	-0.0013 ppm	0.0011 ppm	0.0013 ppm	0.0000 ppm	-0.0004 ppm	0.0005 ppm	0.0000 ppm
Concentration per Run 3	-0.0003 ppm	0.0029 ppm	0.0008 ppm	0.0001 ppm	0.0000 ppm	-0.0011 ppm	-0.0001 ppm
Recovery Percentage 1	-8.520 %	0.395 %	1.151 %	0.879 %	-1.439 %	-1.053 %	-0.170 %
Concentration RSD	62.8 %	46.4 %	153.4 %	51.1 %	177.7 %	371.3 %	797.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0006 ppm	99.2214 %	98.6716 %	101.1598 %	101.4459 %	99.5915 %	102.5361 %
Concentration per Run 1	0.0005 ppm	97.9123 %	98.7533 %	100.3162 %	101.1032 %	100.0985 %	102.2929 %
Concentration per Run 2	0.0008 ppm	99.6653 %	98.5145 %	101.2505 %	102.0782 %	99.2907 %	102.6008 %
Concentration per Run 3	0.0006 ppm	100.0867 %	98.7470 %	101.9127 %	101.1562 %	99.3854 %	102.7145 %
Recovery Percentage 1	12.330 %						
Concentration RSD	25.1 %	1.2 %	0.1 %	0.8 %	0.5 %	0.4 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1969497-1 WG1969497
Analysis started at: 9/11/2024 6:04:59 PM
Rack 2
Vial 54
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	-0.0002 ppm	-0.0024 ppm	0.0001 ppm	0.0000 ppm	-0.0001 ppm	0.0000 ppm	0.0055 ppm
Concentration per Run 1	-0.0002 ppm	-0.0018 ppm	-0.0004 ppm	0.0015 ppm	-0.0001 ppm	0.0000 ppm	0.0064 ppm
Concentration per Run 2	-0.0003 ppm	-0.0056 ppm	0.0001 ppm	-0.0003 ppm	-0.0001 ppm	0.0000 ppm	0.0041 ppm
Concentration per Run 3	0.0000 ppm	0.0002 ppm	0.0005 ppm	-0.0011 ppm	0.0000 ppm	0.0000 ppm	0.0061 ppm
Recovery Percentage 1	-2.431 %	-2.400 %	2.488 %	0.025 %	-0.656 %	-0.224 %	5.547 %
Concentration RSD	74.7 %	121.8 %	628.7 %	17,612.9 %	85.6 %	379.5 %	22.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0001 ppm	0.0002 ppm	-0.0002 ppm	0.0225 ppm	-0.0132 ppm	-0.0015 ppm
Concentration per Run 1	0.0000 ppm	-0.0004 ppm	0.0001 ppm	-0.0002 ppm	0.0225 ppm	-0.0213 ppm	-0.0021 ppm
Concentration per Run 2	0.0000 ppm	0.0003 ppm	0.0003 ppm	-0.0002 ppm	0.0211 ppm	-0.0087 ppm	-0.0018 ppm
Concentration per Run 3	0.0000 ppm	0.0000 ppm	0.0002 ppm	-0.0002 ppm	0.0239 ppm	-0.0097 ppm	-0.0006 ppm
Recovery Percentage 1	-0.182 %	-0.327 %	1.957 %	-2.115 %	45.006 %	-0.528 %	-15.120 %
Concentration RSD	328.3 %	527.5 %	50.4 %	6.0 %	6.3 %	53.0 %	52.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0036 ppm	0.0005 ppm	0.0000 ppm	0.0184 ppm	-0.0004 ppm	0.0003 ppm	0.0000 ppm
Concentration per Run 1	0.0028 ppm	0.0005 ppm	0.0001 ppm	0.0211 ppm	-0.0003 ppm	-0.0003 ppm	-0.0011 ppm
Concentration per Run 2	0.0042 ppm	0.0004 ppm	-0.0001 ppm	0.0190 ppm	-0.0004 ppm	0.0004 ppm	0.0007 ppm
Concentration per Run 3	0.0038 ppm	0.0005 ppm	0.0000 ppm	0.0150 ppm	-0.0004 ppm	0.0008 ppm	0.0003 ppm
Recovery Percentage 1	3.605 %	4.767 %	0.023 %	0.918 %	-1.507 %	3.182 %	-0.054 %
Concentration RSD	19.6 %	7.9 %	1,188.7 %	17.0 %	15.8 %	168.3 %	3,510.3 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0003 ppm	0.0104 ppm	0.0010 ppm	0.0001 ppm	0.0002 ppm	-0.0009 ppm	0.0000 ppm
Concentration per Run 1	0.0007 ppm	0.0106 ppm	0.0017 ppm	0.0001 ppm	0.0000 ppm	-0.0008 ppm	-0.0001 ppm
Concentration per Run 2	-0.0010 ppm	0.0119 ppm	0.0013 ppm	0.0000 ppm	0.0006 ppm	-0.0004 ppm	0.0000 ppm
Concentration per Run 3	-0.0007 ppm	0.0087 ppm	0.0002 ppm	0.0001 ppm	0.0001 ppm	-0.0014 ppm	0.0001 ppm
Recovery Percentage 1	-3.336 %	2.082 %	2.072 %	0.628 %	2.290 %	-4.384 %	0.108 %
Concentration RSD	280.0 %	15.2 %	75.7 %	68.2 %	129.7 %	58.5 %	1,113.1 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0014 ppm	116.2905 %	103.7321 %	108.0493 %	103.3370 %	99.7597 %	103.2746 %
Concentration per Run 1	0.0012 ppm	117.9277 %	103.9696 %	108.6521 %	103.2097 %	99.6559 %	102.8699 %
Concentration per Run 2	0.0014 ppm	116.4143 %	103.6506 %	107.8791 %	103.7190 %	99.4940 %	103.4686 %
Concentration per Run 3	0.0015 ppm	114.5294 %	103.5760 %	107.6166 %	103.0823 %	100.1291 %	103.4853 %
Recovery Percentage 1	27.689 %						
Concentration RSD	11.4 %	1.5 %	0.2 %	0.5 %	0.3 %	0.3 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1969497-2D2 WG1969497
Analysis started at: 9/11/2024 6:09:18 PM
Rack 2
Vial 55
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0475 ppm	1.8260 ppm	0.1087 ppm	0.9336 ppm	1.8931 ppm	0.0474 ppm	9.7447 ppm
Concentration per Run 1	0.0479 ppm	1.8229 ppm	0.1082 ppm	0.9480 ppm	1.8960 ppm	0.0476 ppm	9.7589 ppm
Concentration per Run 2	0.0472 ppm	1.8219 ppm	0.1092 ppm	0.9305 ppm	1.8923 ppm	0.0472 ppm	9.7271 ppm
Concentration per Run 3	0.0473 ppm	1.8332 ppm	0.1087 ppm	0.9224 ppm	1.8911 ppm	0.0474 ppm	9.7481 ppm
Concentration RSD	0.8 %	0.3 %	0.4 %	1.4 %	0.1 %	0.3 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0503 ppm	0.4811 ppm	0.1886 ppm	0.2420 ppm	0.9567 ppm	10.5887 ppm	-0.0003 ppm
Concentration per Run 1	0.0511 ppm	0.4910 ppm	0.1922 ppm	0.2451 ppm	0.9601 ppm	10.5913 ppm	-0.0010 ppm
Concentration per Run 2	0.0499 ppm	0.4770 ppm	0.1871 ppm	0.2417 ppm	0.9539 ppm	10.4917 ppm	-0.0004 ppm
Concentration per Run 3	0.0498 ppm	0.4753 ppm	0.1866 ppm	0.2391 ppm	0.9561 ppm	10.6831 ppm	0.0003 ppm
Concentration RSD	1.4 %	1.8 %	1.6 %	1.2 %	0.3 %	0.9 %	190.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	9.8889 ppm	0.4630 ppm	1.0052 ppm	10.3731 ppm	0.4846 ppm	0.4970 ppm	0.4759 ppm
Concentration per Run 1	10.0420 ppm	0.4647 ppm	1.0146 ppm	10.2866 ppm	0.4914 ppm	0.4971 ppm	0.4796 ppm
Concentration per Run 2	9.8134 ppm	0.4612 ppm	0.9998 ppm	10.4193 ppm	0.4831 ppm	0.4977 ppm	0.4746 ppm
Concentration per Run 3	9.8114 ppm	0.4630 ppm	1.0011 ppm	10.4133 ppm	0.4793 ppm	0.4964 ppm	0.4736 ppm
Concentration RSD	1.3 %	0.4 %	0.8 %	0.7 %	1.3 %	0.1 %	0.7 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1116 ppm	0.5992 ppm	1.0147 ppm	0.9892 ppm	1.0062 ppm	0.1089 ppm	0.4853 ppm
Concentration per Run 1	0.1119 ppm	0.6087 ppm	1.0330 ppm	0.9923 ppm	1.0213 ppm	0.1082 ppm	0.4936 ppm
Concentration per Run 2	0.1117 ppm	0.5959 ppm	1.0049 ppm	0.9887 ppm	1.0010 ppm	0.1100 ppm	0.4819 ppm
Concentration per Run 3	0.1113 ppm	0.5928 ppm	1.0061 ppm	0.9865 ppm	0.9962 ppm	0.1086 ppm	0.4804 ppm
Concentration RSD	0.3 %	1.4 %	1.6 %	0.3 %	1.3 %	0.9 %	1.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4791 ppm	102.2449 %	102.0417 %	98.9286 %	98.9703 %	99.8099 %	100.6226 %
Concentration per Run 1	0.4860 ppm	100.7856 %	101.7571 %	99.2332 %	98.1230 %	99.9454 %	100.9995 %
Concentration per Run 2	0.4759 ppm	102.9525 %	102.4582 %	98.6089 %	99.7164 %	99.9706 %	100.3528 %
Concentration per Run 3	0.4755 ppm	102.9968 %	101.9099 %	98.9439 %	99.0714 %	99.5138 %	100.5153 %
Concentration RSD	1.2 %	1.2 %	0.4 %	0.3 %	0.8 %	0.3 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2448894-01D2 WG1969497
Analysis started at: 9/11/2024 6:13:19 PM
Rack 3
Vial 1
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0005 ppm	79.2633 ppm	0.0582 ppm	0.2272 ppm	0.6845 ppm	0.0049 ppm	79.4812 ppm
Concentration per Run 1	0.0007 ppm	79.2732 ppm	0.0577 ppm	0.2287 ppm	0.6841 ppm	0.0050 ppm	79.3692 ppm
Concentration per Run 2	0.0005 ppm	79.4306 ppm	0.0587 ppm	0.2271 ppm	0.6849 ppm	0.0049 ppm	79.6907 ppm
Concentration per Run 3	0.0005 ppm	79.0862 ppm	0.0582 ppm	0.2257 ppm	0.6845 ppm	0.0049 ppm	79.3838 ppm
Concentration RSD	19.0 %	0.2 %	0.8 %	0.7 %	0.1 %	0.7 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0010 ppm	0.0843 ppm	0.2000 ppm	0.3852 ppm	188.0705 ppm	8.3841 ppm	0.1325 ppm
Concentration per Run 1	0.0010 ppm	0.0841 ppm	0.2017 ppm	0.3877 ppm	188.3447 ppm	8.4127 ppm	0.1333 ppm
Concentration per Run 2	0.0009 ppm	0.0845 ppm	0.1996 ppm	0.3853 ppm	188.3624 ppm	8.4116 ppm	0.1326 ppm
Concentration per Run 3	0.0011 ppm	0.0843 ppm	0.1987 ppm	0.3825 ppm	187.5045 ppm	8.3281 ppm	0.1317 ppm
Concentration RSD	8.2 %	0.2 %	0.8 %	0.7 %	0.3 %	0.6 %	0.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	47.0799 ppm	4.3503 ppm	0.0081 ppm	3.5452 ppm	0.1809 ppm	0.2584 ppm	0.0031 ppm
Concentration per Run 1	47.3430 ppm	4.3506 ppm	0.0081 ppm	3.5570 ppm	0.1810 ppm	0.2584 ppm	0.0035 ppm
Concentration per Run 2	47.0190 ppm	4.3637 ppm	0.0081 ppm	3.5390 ppm	0.1823 ppm	0.2571 ppm	0.0025 ppm
Concentration per Run 3	46.8778 ppm	4.3366 ppm	0.0082 ppm	3.5395 ppm	0.1794 ppm	0.2597 ppm	0.0032 ppm
Concentration RSD	0.5 %	0.3 %	0.6 %	0.3 %	0.8 %	0.5 %	17.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0005 ppm	2.1770 ppm	0.0115 ppm	0.2814 ppm	3.3586 ppm	0.0017 ppm	0.4051 ppm
Concentration per Run 1	-0.0006 ppm	2.1940 ppm	0.0111 ppm	0.2829 ppm	3.3779 ppm	0.0013 ppm	0.4073 ppm
Concentration per Run 2	-0.0004 ppm	2.1725 ppm	0.0119 ppm	0.2801 ppm	3.3583 ppm	0.0019 ppm	0.4044 ppm
Concentration per Run 3	0.0024 ppm	2.1646 ppm	0.0114 ppm	0.2812 ppm	3.3396 ppm	0.0017 ppm	0.4035 ppm
Concentration RSD	359.8 %	0.7 %	3.5 %	0.5 %	0.6 %	17.8 %	0.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5031 ppm	105.4807 %	107.6187 %	91.0093 %	125.4074 %	131.5018 %	126.3446 %
Concentration per Run 1	0.5064 ppm	104.8531 %	107.7822 %	90.8580 %	125.2723 %	131.9748 %	126.5411 %
Concentration per Run 2	0.5019 ppm	105.6982 %	107.0102 %	91.0906 %	125.7051 %	130.6669 %	126.3067 %
Concentration per Run 3	0.5009 ppm	105.8907 %	108.0637 %	91.0794 %	125.2447 %	131.8636 %	126.1861 %
Concentration RSD	0.6 %	0.5 %	0.5 %	0.1 %	0.2 %	0.6 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450797-01D5 WG1969489
Analysis started at: 9/11/2024 6:17:18 PM
Rack 3
Vial 20
Comment As RR

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0003 ppm	24.5381 ppm	17.0221 ppm	0.0058 ppm	0.4442 ppm	0.0017 ppm	22.8095 ppm
Concentration per Run 1	0.0006 ppm	24.5854 ppm	17.0016 ppm	0.0059 ppm	0.4405 ppm	0.0018 ppm	22.8648 ppm
Concentration per Run 2	0.0004 ppm	24.4533 ppm	17.1074 ppm	0.0063 ppm	0.4442 ppm	0.0017 ppm	22.7562 ppm
Concentration per Run 3	-0.0001 ppm	24.5757 ppm	16.9574 ppm	0.0053 ppm	0.4478 ppm	0.0017 ppm	22.8075 ppm
Concentration RSD	135.2 %	0.3 %	0.5 %	8.9 %	0.8 %	2.6 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0016 ppm	0.0272 ppm	0.2630 ppm	6.1163 ppm	44.7482 ppm	3.3649 ppm	0.0716 ppm
Concentration per Run 1	0.0016 ppm	0.0275 ppm	0.2665 ppm	6.1842 ppm	44.5035 ppm	3.3583 ppm	0.0717 ppm
Concentration per Run 2	0.0016 ppm	0.0273 ppm	0.2620 ppm	6.1100 ppm	44.6710 ppm	3.3632 ppm	0.0724 ppm
Concentration per Run 3	0.0016 ppm	0.0268 ppm	0.2604 ppm	6.0547 ppm	45.0702 ppm	3.3733 ppm	0.0705 ppm
Concentration RSD	0.8 %	1.3 %	1.2 %	1.1 %	0.7 %	0.2 %	1.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	10.4393 ppm	0.4682 ppm	0.0036 ppm	0.9838 ppm	0.1957 ppm	0.4356 ppm	0.1010 ppm
Concentration per Run 1	10.5846 ppm	0.4685 ppm	0.0034 ppm	0.9825 ppm	0.1985 ppm	0.4375 ppm	0.1010 ppm
Concentration per Run 2	10.3971 ppm	0.4666 ppm	0.0034 ppm	0.9783 ppm	0.1950 ppm	0.4352 ppm	0.1015 ppm
Concentration per Run 3	10.3361 ppm	0.4695 ppm	0.0038 ppm	0.9906 ppm	0.1937 ppm	0.4342 ppm	0.1005 ppm
Concentration RSD	1.2 %	0.3 %	5.8 %	0.6 %	1.3 %	0.4 %	0.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0028 ppm	2.2438 ppm	0.0619 ppm	0.0867 ppm	0.7811 ppm	0.0011 ppm	0.0687 ppm
Concentration per Run 1	0.0024 ppm	2.2756 ppm	0.0636 ppm	0.0869 ppm	0.7893 ppm	0.0016 ppm	0.0697 ppm
Concentration per Run 2	0.0030 ppm	2.2332 ppm	0.0615 ppm	0.0864 ppm	0.7794 ppm	0.0010 ppm	0.0682 ppm
Concentration per Run 3	0.0030 ppm	2.2227 ppm	0.0605 ppm	0.0867 ppm	0.7745 ppm	0.0007 ppm	0.0682 ppm
Concentration RSD	13.3 %	1.2 %	2.6 %	0.3 %	1.0 %	43.7 %	1.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	1.2252 ppm	103.1522 %	105.0228 %	99.4511 %	106.2892 %	108.5040 %	107.6977 %
Concentration per Run 1	1.2424 ppm	102.2154 %	104.9564 %	99.0852 %	106.3689 %	108.8652 %	107.3035 %
Concentration per Run 2	1.2208 ppm	103.3968 %	105.1361 %	99.5293 %	106.0782 %	108.5056 %	107.9330 %
Concentration per Run 3	1.2125 ppm	103.8444 %	104.9758 %	99.7388 %	106.4203 %	108.1414 %	107.8567 %
Concentration RSD	1.3 %	0.8 %	0.1 %	0.3 %	0.2 %	0.3 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450558-03D2 WG1969497
Analysis started at: 9/11/2024 6:21:17 PM
Rack 3
Vial 2
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0006 ppm	65.2341 ppm	0.0433 ppm	0.0479 ppm	0.6429 ppm	0.0039 ppm	217.8981 ppm
Concentration per Run 1	0.0004 ppm	65.4123 ppm	0.0445 ppm	0.0463 ppm	0.6457 ppm	0.0039 ppm	218.3654 ppm
Concentration per Run 2	0.0006 ppm	65.0153 ppm	0.0432 ppm	0.0485 ppm	0.6385 ppm	0.0039 ppm	217.3173 ppm
Concentration per Run 3	0.0007 ppm	65.2748 ppm	0.0421 ppm	0.0487 ppm	0.6446 ppm	0.0038 ppm	218.0117 ppm
Concentration RSD	25.4 %	0.3 %	2.7 %	2.8 %	0.6 %	0.9 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0269 ppm	0.2557 ppm	0.2516 ppm	210.5309 ppm	4.4934 ppm	0.0452 ppm
Concentration per Run 1	0.0000 ppm	0.0267 ppm	0.2575 ppm	0.2532 ppm	211.3296 ppm	4.5484 ppm	0.0466 ppm
Concentration per Run 2	0.0000 ppm	0.0273 ppm	0.2559 ppm	0.2508 ppm	209.8056 ppm	4.4675 ppm	0.0448 ppm
Concentration per Run 3	0.0000 ppm	0.0266 ppm	0.2539 ppm	0.2510 ppm	210.4574 ppm	4.4644 ppm	0.0442 ppm
Concentration RSD	540.5 %	1.3 %	0.7 %	0.5 %	0.4 %	1.1 %	2.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	17.6094 ppm	0.8797 ppm	0.0382 ppm	1.9068 ppm	0.0581 ppm	1.5316 ppm	0.0058 ppm
Concentration per Run 1	17.6982 ppm	0.8804 ppm	0.0374 ppm	1.9084 ppm	0.0588 ppm	1.5366 ppm	0.0073 ppm
Concentration per Run 2	17.6269 ppm	0.8766 ppm	0.0383 ppm	1.8983 ppm	0.0585 ppm	1.5267 ppm	0.0047 ppm
Concentration per Run 3	17.5030 ppm	0.8822 ppm	0.0389 ppm	1.9138 ppm	0.0569 ppm	1.5315 ppm	0.0055 ppm
Concentration RSD	0.6 %	0.3 %	1.9 %	0.4 %	1.7 %	0.3 %	22.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0024 ppm	16.9769 ppm	0.0144 ppm	1.1561 ppm	1.9294 ppm	0.0021 ppm	0.2349 ppm
Concentration per Run 1	-0.0009 ppm	17.1158 ppm	0.0148 ppm	1.1592 ppm	1.9354 ppm	0.0019 ppm	0.2358 ppm
Concentration per Run 2	0.0035 ppm	16.9057 ppm	0.0143 ppm	1.1506 ppm	1.9295 ppm	0.0025 ppm	0.2342 ppm
Concentration per Run 3	0.0044 ppm	16.9091 ppm	0.0142 ppm	1.1586 ppm	1.9231 ppm	0.0018 ppm	0.2347 ppm
Concentration RSD	120.0 %	0.7 %	2.2 %	0.4 %	0.3 %	19.1 %	0.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.6925 ppm	102.2566 %	104.5066 %	89.1239 %	108.3296 %	113.9312 %	109.8020 %
Concentration per Run 1	0.6986 ppm	101.9709 %	104.4624 %	88.7314 %	108.8013 %	114.1986 %	109.9635 %
Concentration per Run 2	0.6939 ppm	102.1436 %	104.8324 %	89.5223 %	107.9360 %	114.0420 %	109.7805 %
Concentration per Run 3	0.6849 ppm	102.6552 %	104.2251 %	89.1179 %	108.2513 %	113.5531 %	109.6619 %
Concentration RSD	1.0 %	0.3 %	0.3 %	0.4 %	0.4 %	0.3 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450558-05D2 WG1969497
Analysis started at: 9/11/2024 6:25:17 PM
Rack 3
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0006 ppm	32.3165 ppm	0.0887 ppm	0.0288 ppm	0.1159 ppm	0.0032 ppm	5.3882 ppm
Concentration per Run 1	0.0008 ppm	32.2298 ppm	0.0874 ppm	0.0286 ppm	0.1152 ppm	0.0032 ppm	5.3901 ppm
Concentration per Run 2	0.0006 ppm	32.4098 ppm	0.0878 ppm	0.0290 ppm	0.1161 ppm	0.0032 ppm	5.3936 ppm
Concentration per Run 3	0.0004 ppm	32.3100 ppm	0.0908 ppm	0.0288 ppm	0.1163 ppm	0.0033 ppm	5.3808 ppm
Concentration RSD	35.9 %	0.3 %	2.1 %	0.7 %	0.5 %	0.6 %	0.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0002 ppm	0.0062 ppm	0.1570 ppm	0.0858 ppm	238.4307 ppm	5.7512 ppm	0.0196 ppm
Concentration per Run 1	0.0002 ppm	0.0063 ppm	0.1589 ppm	0.0860 ppm	237.5708 ppm	5.7687 ppm	0.0201 ppm
Concentration per Run 2	0.0003 ppm	0.0064 ppm	0.1566 ppm	0.0857 ppm	239.0773 ppm	5.7727 ppm	0.0195 ppm
Concentration per Run 3	0.0002 ppm	0.0060 ppm	0.1554 ppm	0.0855 ppm	238.6441 ppm	5.7121 ppm	0.0191 ppm
Concentration RSD	15.8 %	3.2 %	1.1 %	0.3 %	0.3 %	0.6 %	2.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	3.1745 ppm	0.2254 ppm	0.0127 ppm	0.2572 ppm	0.0130 ppm	0.1363 ppm	0.0044 ppm
Concentration per Run 1	3.2118 ppm	0.2251 ppm	0.0127 ppm	0.2596 ppm	0.0134 ppm	0.1366 ppm	0.0046 ppm
Concentration per Run 2	3.1682 ppm	0.2261 ppm	0.0125 ppm	0.2564 ppm	0.0134 ppm	0.1359 ppm	0.0039 ppm
Concentration per Run 3	3.1434 ppm	0.2250 ppm	0.0127 ppm	0.2555 ppm	0.0121 ppm	0.1365 ppm	0.0046 ppm
Concentration RSD	1.1 %	0.3 %	0.8 %	0.8 %	5.5 %	0.3 %	8.6 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0034 ppm	1.9656 ppm	0.0074 ppm	0.0494 ppm	0.4539 ppm	0.0026 ppm	0.2713 ppm
Concentration per Run 1	0.0033 ppm	1.9780 ppm	0.0072 ppm	0.0494 ppm	0.4569 ppm	0.0028 ppm	0.2740 ppm
Concentration per Run 2	0.0039 ppm	1.9601 ppm	0.0077 ppm	0.0495 ppm	0.4533 ppm	0.0027 ppm	0.2710 ppm
Concentration per Run 3	0.0029 ppm	1.9586 ppm	0.0075 ppm	0.0495 ppm	0.4515 ppm	0.0022 ppm	0.2690 ppm
Concentration RSD	15.9 %	0.6 %	3.2 %	0.0 %	0.6 %	12.1 %	0.9 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.1085 ppm	107.6375 %	106.8008 %	99.3792 %	117.5045 %	119.3826 %	120.0097 %
Concentration per Run 1	0.1098 ppm	106.4682 %	106.7240 %	99.8671 %	117.1437 %	119.1395 %	120.6651 %
Concentration per Run 2	0.1081 ppm	107.7854 %	106.5545 %	99.1278 %	117.1488 %	119.1259 %	119.7214 %
Concentration per Run 3	0.1077 ppm	108.6589 %	107.1239 %	99.1427 %	118.2210 %	119.8823 %	119.6426 %
Concentration RSD	1.0 %	1.0 %	0.3 %	0.4 %	0.5 %	0.4 %	0.5 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1969497-3D2 WG1969497
Analysis started at: 9/11/2024 6:29:16 PM
Rack 2
Vial 57
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0494 ppm	29.8493 ppm	0.1125 ppm	0.8941 ppm	1.9700 ppm	0.0491 ppm	23.2859 ppm
Concentration per Run 1	0.0499 ppm	29.9139 ppm	0.1131 ppm	0.9069 ppm	1.9779 ppm	0.0493 ppm	23.3079 ppm
Concentration per Run 2	0.0493 ppm	29.7954 ppm	0.1110 ppm	0.8917 ppm	1.9700 ppm	0.0489 ppm	23.2302 ppm
Concentration per Run 3	0.0490 ppm	29.8384 ppm	0.1132 ppm	0.8838 ppm	1.9622 ppm	0.0491 ppm	23.3195 ppm
Concentration RSD	0.9 %	0.2 %	1.1 %	1.3 %	0.4 %	0.4 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0496 ppm	0.4862 ppm	0.3368 ppm	0.3307 ppm	23.3822 ppm	11.1318 ppm	0.0341 ppm
Concentration per Run 1	0.0502 ppm	0.4951 ppm	0.3405 ppm	0.3354 ppm	23.5441 ppm	11.1663 ppm	0.0348 ppm
Concentration per Run 2	0.0496 ppm	0.4846 ppm	0.3370 ppm	0.3290 ppm	23.3373 ppm	11.1537 ppm	0.0341 ppm
Concentration per Run 3	0.0490 ppm	0.4790 ppm	0.3329 ppm	0.3276 ppm	23.2653 ppm	11.0755 ppm	0.0335 ppm
Concentration RSD	1.2 %	1.7 %	1.1 %	1.3 %	0.6 %	0.4 %	2.0 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	18.4972 ppm	1.0104 ppm	0.9453 ppm	11.2139 ppm	0.5079 ppm	0.5551 ppm	0.4588 ppm
Concentration per Run 1	18.6899 ppm	1.0140 ppm	0.9556 ppm	11.2174 ppm	0.5148 ppm	0.5558 ppm	0.4687 ppm
Concentration per Run 2	18.5264 ppm	1.0082 ppm	0.9436 ppm	11.1978 ppm	0.5081 ppm	0.5553 ppm	0.4561 ppm
Concentration per Run 3	18.2754 ppm	1.0090 ppm	0.9368 ppm	11.2264 ppm	0.5008 ppm	0.5543 ppm	0.4514 ppm
Concentration RSD	1.1 %	0.3 %	1.0 %	0.1 %	1.4 %	0.1 %	2.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0908 ppm	3.7985 ppm	0.9677 ppm	1.0064 ppm	2.0832 ppm	0.1111 ppm	0.5936 ppm
Concentration per Run 1	0.0896 ppm	3.8490 ppm	0.9791 ppm	1.0111 ppm	2.1029 ppm	0.1115 ppm	0.5994 ppm
Concentration per Run 2	0.0905 ppm	3.7863 ppm	0.9669 ppm	1.0027 ppm	2.0820 ppm	0.1120 ppm	0.5934 ppm
Concentration per Run 3	0.0924 ppm	3.7601 ppm	0.9572 ppm	1.0053 ppm	2.0647 ppm	0.1098 ppm	0.5880 ppm
Concentration RSD	1.6 %	1.2 %	1.1 %	0.4 %	0.9 %	1.0 %	1.0 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5058 ppm	106.5924 %	106.1651 %	98.4997 %	165.1838 %	167.4909 %	168.1485 %
Concentration per Run 1	0.5150 ppm	105.1911 %	105.7800 %	98.5967 %	164.6538 %	167.0202 %	168.4127 %
Concentration per Run 2	0.5059 ppm	106.6357 %	106.9032 %	98.3332 %	164.8189 %	168.4225 %	168.1024 %
Concentration per Run 3	0.4966 ppm	107.9505 %	105.8122 %	98.5691 %	166.0787 %	167.0300 %	167.9305 %
Concentration RSD	1.8 %	1.3 %	0.6 %	0.1 %	0.5 %	0.5 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1969497-4D2 WG1969497
Analysis started at: 9/11/2024 6:33:15 PM
Rack 2
Vial 58
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0005 ppm	13.8248 ppm	0.0185 ppm	0.0155 ppm	0.0574 ppm	0.0011 ppm	6.4070 ppm
Concentration per Run 1	0.0006 ppm	13.8104 ppm	0.0180 ppm	0.0140 ppm	0.0578 ppm	0.0011 ppm	6.4122 ppm
Concentration per Run 2	0.0005 ppm	13.8384 ppm	0.0187 ppm	0.0168 ppm	0.0568 ppm	0.0011 ppm	6.3859 ppm
Concentration per Run 3	0.0003 ppm	13.8256 ppm	0.0188 ppm	0.0157 ppm	0.0575 ppm	0.0010 ppm	6.4230 ppm
Concentration RSD	35.3 %	0.1 %	2.5 %	8.8 %	0.8 %	1.8 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0079 ppm	0.0731 ppm	0.1362 ppm	16.8332 ppm	1.4122 ppm	0.0171 ppm
Concentration per Run 1	0.0000 ppm	0.0078 ppm	0.0739 ppm	0.1387 ppm	16.8537 ppm	1.4382 ppm	0.0179 ppm
Concentration per Run 2	0.0000 ppm	0.0077 ppm	0.0727 ppm	0.1359 ppm	16.7730 ppm	1.3917 ppm	0.0164 ppm
Concentration per Run 3	0.0000 ppm	0.0080 ppm	0.0726 ppm	0.1340 ppm	16.8731 ppm	1.4067 ppm	0.0169 ppm
Concentration RSD	394.0 %	2.1 %	0.9 %	1.7 %	0.3 %	1.7 %	4.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	6.5953 ppm	0.1605 ppm	0.0041 ppm	0.9539 ppm	0.0220 ppm	0.0548 ppm	0.0009 ppm
Concentration per Run 1	6.6864 ppm	0.1610 ppm	0.0044 ppm	0.9551 ppm	0.0224 ppm	0.0547 ppm	0.0013 ppm
Concentration per Run 2	6.5507 ppm	0.1596 ppm	0.0040 ppm	0.9484 ppm	0.0216 ppm	0.0549 ppm	0.0012 ppm
Concentration per Run 3	6.5489 ppm	0.1610 ppm	0.0038 ppm	0.9581 ppm	0.0220 ppm	0.0549 ppm	0.0003 ppm
Concentration RSD	1.2 %	0.5 %	7.9 %	0.5 %	1.9 %	0.2 %	59.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0010 ppm	2.1179 ppm	0.0032 ppm	0.0366 ppm	0.9559 ppm	0.0018 ppm	0.0727 ppm
Concentration per Run 1	-0.0009 ppm	2.1520 ppm	0.0026 ppm	0.0368 ppm	0.9674 ppm	0.0015 ppm	0.0736 ppm
Concentration per Run 2	-0.0013 ppm	2.0999 ppm	0.0041 ppm	0.0364 ppm	0.9528 ppm	0.0019 ppm	0.0725 ppm
Concentration per Run 3	-0.0006 ppm	2.1017 ppm	0.0030 ppm	0.0367 ppm	0.9474 ppm	0.0020 ppm	0.0719 ppm
Concentration RSD	36.7 %	1.4 %	24.4 %	0.7 %	1.1 %	14.3 %	1.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0214 ppm	106.4614 %	105.1218 %	102.7446 %	**159.3094 %**	**159.3895 %**	**162.2997 %**
Concentration per Run 1	0.0218 ppm	105.1770 %	105.0312 %	102.5788 %	**159.3386 %**	**159.4638 %**	**162.3282 %**
Concentration per Run 2	0.0212 ppm	106.8930 %	105.0295 %	102.5955 %	**159.6476 %**	**158.7220 %**	**162.0045 %**
Concentration per Run 3	0.0213 ppm	107.3143 %	105.3047 %	103.0594 %	**158.9419 %**	**159.9826 %**	**162.5663 %**
Concentration RSD	1.5 %	1.1 %	0.2 %	0.3 %	**0.2 %**	**0.4 %**	**0.2 %**

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1969497-5D2 WG1969497
Analysis started at: 9/11/2024 6:37:14 PM
Rack 2
Vial 59
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0469 ppm	11.1993 ppm	0.1226 ppm	0.8918 ppm	1.8971 ppm	0.0468 ppm	13.8544 ppm
Concentration per Run 1	0.0473 ppm	11.2245 ppm	0.1225 ppm	0.8934 ppm	1.9002 ppm	0.0468 ppm	13.8534 ppm
Concentration per Run 2	0.0465 ppm	11.1967 ppm	0.1226 ppm	0.8922 ppm	1.8946 ppm	0.0468 ppm	13.8810 ppm
Concentration per Run 3	0.0469 ppm	11.1766 ppm	0.1228 ppm	0.8896 ppm	1.8966 ppm	0.0468 ppm	13.8288 ppm
Concentration RSD	0.8 %	0.2 %	0.1 %	0.2 %	0.1 %	0.1 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0480 ppm	0.4632 ppm	0.2435 ppm	0.2818 ppm	11.0029 ppm	11.3158 ppm	0.0108 ppm
Concentration per Run 1	0.0484 ppm	0.4668 ppm	0.2446 ppm	0.2835 ppm	10.9903 ppm	11.3346 ppm	0.0108 ppm
Concentration per Run 2	0.0479 ppm	0.4624 ppm	0.2422 ppm	0.2811 ppm	11.0225 ppm	11.3205 ppm	0.0098 ppm
Concentration per Run 3	0.0477 ppm	0.4604 ppm	0.2437 ppm	0.2809 ppm	10.9958 ppm	11.2924 ppm	0.0118 ppm
Concentration RSD	0.8 %	0.7 %	0.5 %	0.5 %	0.2 %	0.2 %	9.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	12.5114 ppm	0.5429 ppm	0.9306 ppm	10.6249 ppm	0.4717 ppm	0.5314 ppm	0.4060 ppm
Concentration per Run 1	12.6334 ppm	0.5424 ppm	0.9247 ppm	10.6846 ppm	0.4757 ppm	0.5342 ppm	0.4057 ppm
Concentration per Run 2	12.4977 ppm	0.5442 ppm	0.9311 ppm	10.6045 ppm	0.4691 ppm	0.5289 ppm	0.4043 ppm
Concentration per Run 3	12.4031 ppm	0.5421 ppm	0.9360 ppm	10.5858 ppm	0.4703 ppm	0.5310 ppm	0.4080 ppm
Concentration RSD	0.9 %	0.2 %	0.6 %	0.5 %	0.7 %	0.5 %	0.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.1068 ppm	2.7780 ppm	0.9675 ppm	0.9702 ppm	1.4058 ppm	0.1071 ppm	0.5241 ppm
Concentration per Run 1	0.1075 ppm	2.7988 ppm	0.9745 ppm	0.9675 ppm	1.4188 ppm	0.1073 ppm	0.5286 ppm
Concentration per Run 2	0.1054 ppm	2.7632 ppm	0.9593 ppm	0.9713 ppm	1.4060 ppm	0.1075 ppm	0.5242 ppm
Concentration per Run 3	0.1074 ppm	2.7720 ppm	0.9687 ppm	0.9718 ppm	1.3927 ppm	0.1065 ppm	0.5196 ppm
Concentration RSD	1.1 %	0.7 %	0.8 %	0.2 %	0.9 %	0.5 %	0.9 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4663 ppm	105.3201 %	104.4852 %	99.4364 %	158.5733 %	159.8913 %	161.2435 %
Concentration per Run 1	0.4705 ppm	104.4730 %	104.8493 %	99.2179 %	158.5318 %	160.9111 %	161.1437 %
Concentration per Run 2	0.4615 ppm	105.6004 %	104.2276 %	99.1338 %	158.7109 %	159.5912 %	160.8176 %
Concentration per Run 3	0.4668 ppm	105.8868 %	104.3788 %	99.9576 %	158.4771 %	159.1715 %	161.7692 %
Concentration RSD	1.0 %	0.7 %	0.3 %	0.5 %	0.1 %	0.6 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: WG1969497-6D10 WG1969497
Analysis started at: 9/11/2024 6:41:13 PM
Rack 2
Vial 60
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	1.9770 ppm	0.0049 ppm	0.0033 ppm	0.0105 ppm	0.0002 ppm	0.9625 ppm
Concentration per Run 1	0.0001 ppm	1.9900 ppm	0.0050 ppm	0.0042 ppm	0.0105 ppm	0.0002 ppm	0.9697 ppm
Concentration per Run 2	0.0002 ppm	1.9780 ppm	0.0050 ppm	0.0024 ppm	0.0105 ppm	0.0002 ppm	0.9609 ppm
Concentration per Run 3	0.0001 ppm	1.9629 ppm	0.0047 ppm	0.0034 ppm	0.0107 ppm	0.0002 ppm	0.9570 ppm
Concentration RSD	76.9 %	0.7 %	3.3 %	28.1 %	0.9 %	9.1 %	0.7 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0006 ppm	0.0136 ppm	0.0105 ppm	2.1408 ppm	0.2681 ppm	0.0026 ppm
Concentration per Run 1	0.0000 ppm	0.0004 ppm	0.0138 ppm	0.0110 ppm	2.1467 ppm	0.2743 ppm	0.0028 ppm
Concentration per Run 2	-0.0001 ppm	0.0007 ppm	0.0136 ppm	0.0102 ppm	2.1424 ppm	0.2599 ppm	0.0027 ppm
Concentration per Run 3	0.0001 ppm	0.0007 ppm	0.0136 ppm	0.0104 ppm	2.1333 ppm	0.2700 ppm	0.0021 ppm
Concentration RSD	761.7 %	24.5 %	0.8 %	3.8 %	0.3 %	2.7 %	16.1 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.6884 ppm	0.0198 ppm	0.0033 ppm	0.1587 ppm	0.0019 ppm	0.0109 ppm	0.0031 ppm
Concentration per Run 1	0.6968 ppm	0.0199 ppm	0.0030 ppm	0.1646 ppm	0.0015 ppm	0.0104 ppm	0.0013 ppm
Concentration per Run 2	0.6862 ppm	0.0199 ppm	0.0033 ppm	0.1546 ppm	0.0022 ppm	0.0115 ppm	0.0053 ppm
Concentration per Run 3	0.6821 ppm	0.0196 ppm	0.0035 ppm	0.1569 ppm	0.0021 ppm	0.0109 ppm	0.0025 ppm
Concentration RSD	1.1 %	0.8 %	7.9 %	3.3 %	17.7 %	5.1 %	66.4 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0012 ppm	0.4348 ppm	0.0015 ppm	0.0068 ppm	0.0945 ppm	-0.0005 ppm	0.0122 ppm
Concentration per Run 1	-0.0003 ppm	0.4428 ppm	0.0019 ppm	0.0069 ppm	0.0952 ppm	-0.0005 ppm	0.0123 ppm
Concentration per Run 2	-0.0026 ppm	0.4310 ppm	0.0010 ppm	0.0069 ppm	0.0944 ppm	-0.0007 ppm	0.0124 ppm
Concentration per Run 3	-0.0008 ppm	0.4307 ppm	0.0017 ppm	0.0067 ppm	0.0939 ppm	-0.0002 ppm	0.0120 ppm
Concentration RSD	98.2 %	1.6 %	29.4 %	1.8 %	0.7 %	61.5 %	1.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0028 ppm	103.2656 %	101.9652 %	103.6801 %	114.9480 %	112.9947 %	116.1370 %
Concentration per Run 1	0.0028 ppm	102.3639 %	100.7976 %	103.0354 %	115.4127 %	112.3880 %	115.9521 %
Concentration per Run 2	0.0028 ppm	103.5246 %	102.5024 %	103.9241 %	114.8344 %	113.2933 %	116.2446 %
Concentration per Run 3	0.0028 ppm	103.9082 %	102.5956 %	104.0808 %	114.5970 %	113.3029 %	116.2142 %
Concentration RSD	0.9 %	0.8 %	1.0 %	0.5 %	0.4 %	0.5 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCV
Analysis started at: 9/11/2024 6:45:13 PM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.4938 ppm	0.4666 ppm	0.4536 ppm	0.4601 ppm	0.4996 ppm	0.4931 ppm	0.4761 ppm
Concentration per Run 1	0.4956 ppm	0.4637 ppm	0.4518 ppm	0.4613 ppm	0.4998 ppm	0.4928 ppm	0.4761 ppm
Concentration per Run 2	0.4937 ppm	0.4673 ppm	0.4514 ppm	0.4587 ppm	0.5006 ppm	0.4938 ppm	0.4770 ppm
Concentration per Run 3	0.4920 ppm	0.4688 ppm	0.4576 ppm	0.4604 ppm	0.4984 ppm	0.4927 ppm	0.4752 ppm
Recovery Percentage 1	98.757 %	93.319 %	90.718 %	92.024 %	99.921 %	98.625 %	95.218 %
Concentration RSD	0.4 %	0.6 %	0.8 %	0.3 %	0.2 %	0.1 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.4900 ppm	0.5014 ppm	0.4848 ppm	0.4839 ppm	0.4979 ppm	5.2570 ppm	0.5179 ppm
Concentration per Run 1	0.4934 ppm	0.5041 ppm	0.4885 ppm	0.4862 ppm	0.5005 ppm	5.2656 ppm	0.5146 ppm
Concentration per Run 2	0.4863 ppm	0.5002 ppm	0.4828 ppm	0.4829 ppm	0.4980 ppm	5.2851 ppm	0.5195 ppm
Concentration per Run 3	0.4904 ppm	0.5000 ppm	0.4831 ppm	0.4828 ppm	0.4952 ppm	5.2202 ppm	0.5197 ppm
Recovery Percentage 1	98.004 %	100.285 %	96.963 %	96.786 %	99.580 %	105.140 %	103.585 %
Concentration RSD	0.7 %	0.5 %	0.7 %	0.4 %	0.5 %	0.6 %	0.6 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.4883 ppm	0.4758 ppm	0.4859 ppm	10.3475 ppm	0.5008 ppm	0.4724 ppm	0.4842 ppm
Concentration per Run 1	0.4925 ppm	0.4767 ppm	0.4859 ppm	10.3410 ppm	0.5060 ppm	0.4723 ppm	0.4822 ppm
Concentration per Run 2	0.4858 ppm	0.4763 ppm	0.4827 ppm	10.3731 ppm	0.4980 ppm	0.4717 ppm	0.4837 ppm
Concentration per Run 3	0.4867 ppm	0.4744 ppm	0.4891 ppm	10.3282 ppm	0.4984 ppm	0.4732 ppm	0.4866 ppm
Recovery Percentage 1	97.665 %	95.157 %	97.181 %	103.475 %	100.157 %	94.481 %	96.835 %
Concentration RSD	0.7 %	0.3 %	0.7 %	0.2 %	0.9 %	0.2 %	0.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4629 ppm	5.1203 ppm	0.5140 ppm	0.5097 ppm	0.4933 ppm	0.4623 ppm	0.4893 ppm
Concentration per Run 1	0.4634 ppm	5.1444 ppm	0.5201 ppm	0.5102 ppm	0.4969 ppm	0.4580 ppm	0.4920 ppm
Concentration per Run 2	0.4603 ppm	5.0952 ppm	0.5100 ppm	0.5111 ppm	0.4930 ppm	0.4616 ppm	0.4887 ppm
Concentration per Run 3	0.4651 ppm	5.1213 ppm	0.5120 ppm	0.5079 ppm	0.4901 ppm	0.4674 ppm	0.4871 ppm
Recovery Percentage 1	92.589 %	97.530 %	102.806 %	101.947 %	98.663 %	92.466 %	97.852 %
Concentration RSD	0.5 %	0.5 %	1.0 %	0.3 %	0.7 %	1.0 %	0.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4903 ppm	104.9342 %	101.8996 %	102.4369 %	100.5125 %	99.3799 %	101.7658 %
Concentration per Run 1	0.4959 ppm	104.4770 %	101.6413 %	102.7106 %	100.4069 %	99.3250 %	102.1300 %
Concentration per Run 2	0.4845 ppm	105.3426 %	101.1197 %	102.5035 %	100.6992 %	98.4743 %	101.7533 %
Concentration per Run 3	0.4905 ppm	104.9832 %	102.9379 %	102.0967 %	100.4313 %	100.3405 %	101.4141 %
Recovery Percentage 1	98.061 %						
Concentration RSD	1.2 %	0.4 %	0.9 %	0.3 %	0.2 %	0.9 %	0.4 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCB
Analysis started at: 9/11/2024 6:49:11 PM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0088 ppm	-0.0002 ppm	0.0002 ppm	-0.0001 ppm	0.0000 ppm	-0.0040 ppm
Concentration per Run 1	-0.0001 ppm	-0.0131 ppm	-0.0013 ppm	0.0010 ppm	-0.0001 ppm	0.0000 ppm	-0.0042 ppm
Concentration per Run 2	0.0000 ppm	-0.0046 ppm	0.0010 ppm	-0.0007 ppm	0.0001 ppm	0.0000 ppm	-0.0023 ppm
Concentration per Run 3	0.0001 ppm	-0.0087 ppm	-0.0003 ppm	0.0005 ppm	-0.0001 ppm	0.0000 ppm	-0.0055 ppm
Recovery Percentage 1	-0.370 %	-8.770 %	-6.449 %	0.816 %	-0.524 %	0.551 %	-3.977 %
Concentration RSD	414.5 %	48.6 %	586.5 %	362.3 %	185.3 %	2.0 %	40.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0001 ppm	-0.0001 ppm	-0.0001 ppm	0.0003 ppm	0.0036 ppm	0.0161 ppm	-0.0007 ppm
Concentration per Run 1	0.0002 ppm	-0.0005 ppm	0.0001 ppm	0.0003 ppm	0.0031 ppm	0.0074 ppm	-0.0013 ppm
Concentration per Run 2	0.0001 ppm	0.0001 ppm	-0.0002 ppm	0.0004 ppm	0.0022 ppm	0.0226 ppm	-0.0003 ppm
Concentration per Run 3	-0.0001 ppm	0.0001 ppm	-0.0001 ppm	0.0003 ppm	0.0056 ppm	0.0184 ppm	-0.0006 ppm
Recovery Percentage 1	1.666 %	-0.300 %	-0.931 %	3.332 %	7.257 %	0.645 %	-7.101 %
Concentration RSD	182.8 %	577.9 %	164.8 %	13.1 %	47.8 %	48.7 %	72.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0011 ppm	0.0001 ppm	0.0018 ppm	0.0103 ppm	-0.0001 ppm	0.0003 ppm	-0.0005 ppm
Concentration per Run 1	0.0010 ppm	0.0000 ppm	0.0021 ppm	0.0085 ppm	0.0002 ppm	0.0002 ppm	-0.0022 ppm
Concentration per Run 2	0.0010 ppm	0.0002 ppm	0.0017 ppm	0.0095 ppm	0.0002 ppm	0.0006 ppm	0.0017 ppm
Concentration per Run 3	0.0015 ppm	0.0003 ppm	0.0015 ppm	0.0129 ppm	-0.0007 ppm	0.0002 ppm	-0.0009 ppm
Recovery Percentage 1	1.150 %	1.469 %	3.557 %	0.515 %	-0.341 %	3.116 %	-0.900 %
Concentration RSD	24.6 %	75.7 %	14.7 %	22.2 %	646.2 %	84.4 %	441.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0004 ppm	0.0006 ppm	0.0004 ppm	0.0001 ppm	-0.0001 ppm	-0.0002 ppm	-0.0001 ppm
Concentration per Run 1	-0.0008 ppm	0.0018 ppm	-0.0001 ppm	0.0001 ppm	-0.0003 ppm	-0.0001 ppm	-0.0002 ppm
Concentration per Run 2	0.0002 ppm	-0.0007 ppm	0.0002 ppm	0.0001 ppm	0.0001 ppm	-0.0004 ppm	-0.0001 ppm
Concentration per Run 3	-0.0007 ppm	0.0005 ppm	0.0010 ppm	0.0001 ppm	-0.0002 ppm	-0.0001 ppm	0.0000 ppm
Recovery Percentage 1	-4.198 %	0.110 %	0.737 %	1.085 %	-1.132 %	-1.021 %	-1.120 %
Concentration RSD	125.4 %	226.6 %	153.1 %	14.3 %	151.4 %	99.6 %	102.7 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0007 ppm	98.9066 %	98.1097 %	101.0762 %	101.3708 %	98.9616 %	102.3394 %
Concentration per Run 1	0.0007 ppm	96.9511 %	97.7454 %	100.6182 %	100.6487 %	99.0212 %	102.6191 %
Concentration per Run 2	0.0007 ppm	99.2024 %	98.6732 %	100.9145 %	101.9075 %	99.6042 %	102.2331 %
Concentration per Run 3	0.0006 ppm	100.5663 %	97.9106 %	101.6959 %	101.5562 %	98.2593 %	102.1661 %
Recovery Percentage 1	13.083 %						
Concentration RSD	7.8 %	1.8 %	0.5 %	0.6 %	0.6 %	0.7 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450558-01D2 WG1969497
Analysis started at: 9/11/2024 7:06:23 PM
Rack 2
Vial 56
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0006 ppm	9.2755 ppm	0.0189 ppm	0.0099 ppm	0.0491 ppm	0.0010 ppm	4.5054 ppm
Concentration per Run 1	0.0008 ppm	9.2835 ppm	0.0189 ppm	0.0096 ppm	0.0493 ppm	0.0010 ppm	4.5105 ppm
Concentration per Run 2	0.0005 ppm	9.2223 ppm	0.0190 ppm	0.0100 ppm	0.0486 ppm	0.0010 ppm	4.4884 ppm
Concentration per Run 3	0.0004 ppm	9.3206 ppm	0.0190 ppm	0.0100 ppm	0.0495 ppm	0.0010 ppm	4.5172 ppm
Concentration RSD	37.5 %	0.5 %	0.3 %	2.2 %	1.0 %	0.9 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0031 ppm	0.0562 ppm	0.0435 ppm	9.9881 ppm	1.2230 ppm	0.0101 ppm
Concentration per Run 1	0.0001 ppm	0.0030 ppm	0.0558 ppm	0.0428 ppm	10.0062 ppm	1.2344 ppm	0.0109 ppm
Concentration per Run 2	0.0000 ppm	0.0032 ppm	0.0560 ppm	0.0437 ppm	9.9620 ppm	1.2148 ppm	0.0092 ppm
Concentration per Run 3	0.0000 ppm	0.0032 ppm	0.0567 ppm	0.0442 ppm	9.9960 ppm	1.2198 ppm	0.0103 ppm
Concentration RSD	35.3 %	3.6 %	0.9 %	1.7 %	0.2 %	0.8 %	8.3 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	2.8665 ppm	0.0909 ppm	0.0015 ppm	0.6864 ppm	0.0087 ppm	0.0488 ppm	-0.0007 ppm
Concentration per Run 1	2.8382 ppm	0.0907 ppm	0.0016 ppm	0.6890 ppm	0.0084 ppm	0.0478 ppm	0.0006 ppm
Concentration per Run 2	2.8593 ppm	0.0906 ppm	0.0015 ppm	0.6831 ppm	0.0087 ppm	0.0494 ppm	-0.0019 ppm
Concentration per Run 3	2.9020 ppm	0.0913 ppm	0.0015 ppm	0.6871 ppm	0.0090 ppm	0.0491 ppm	-0.0009 ppm
Concentration RSD	1.1 %	0.4 %	3.5 %	0.4 %	3.6 %	1.7 %	176.3 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0001 ppm	1.8213 ppm	0.0022 ppm	0.0313 ppm	0.4033 ppm	0.0019 ppm	0.0511 ppm
Concentration per Run 1	0.0007 ppm	1.8003 ppm	0.0025 ppm	0.0313 ppm	0.3985 ppm	0.0020 ppm	0.0503 ppm
Concentration per Run 2	0.0004 ppm	1.8174 ppm	0.0014 ppm	0.0310 ppm	0.4016 ppm	0.0014 ppm	0.0511 ppm
Concentration per Run 3	-0.0014 ppm	1.8463 ppm	0.0025 ppm	0.0315 ppm	0.4097 ppm	0.0024 ppm	0.0519 ppm
Concentration RSD	1,220.4 %	1.3 %	29.0 %	0.7 %	1.4 %	27.5 %	1.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0104 ppm	120.5971 %	108.8440 %	111.4969 %	165.8404 %	161.8065 %	166.8789 %
Concentration per Run 1	0.0103 ppm	122.1858 %	108.8441 %	112.2458 %	165.6606 %	161.5098 %	167.2158 %
Concentration per Run 2	0.0104 ppm	120.5306 %	108.5361 %	111.2262 %	166.1586 %	161.0445 %	166.5625 %
Concentration per Run 3	0.0106 ppm	119.0750 %	109.1517 %	111.0188 %	165.7020 %	162.8651 %	166.8584 %
Concentration RSD	1.4 %	1.3 %	0.3 %	0.6 %	0.2 %	0.6 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450558-07D2 WG1969497
Analysis started at: 9/11/2024 7:10:42 PM
Rack 3
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0010 ppm	49.2627 ppm	0.0754 ppm	0.0142 ppm	0.1752 ppm	0.0018 ppm	6.0694 ppm
Concentration per Run 1	0.0009 ppm	49.2413 ppm	0.0763 ppm	0.0143 ppm	0.1759 ppm	0.0018 ppm	6.0849 ppm
Concentration per Run 2	0.0006 ppm	49.3008 ppm	0.0753 ppm	0.0137 ppm	0.1754 ppm	0.0018 ppm	6.0666 ppm
Concentration per Run 3	0.0016 ppm	49.2460 ppm	0.0747 ppm	0.0145 ppm	0.1743 ppm	0.0017 ppm	6.0567 ppm
Concentration RSD	47.9 %	0.1 %	1.1 %	3.2 %	0.5 %	1.1 %	0.2 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0006 ppm	0.0045 ppm	0.1564 ppm	0.1312 ppm	301.6938 ppm	3.3682 ppm	0.0399 ppm
Concentration per Run 1	0.0004 ppm	0.0045 ppm	0.1570 ppm	0.1308 ppm	302.9232 ppm	3.3800 ppm	0.0409 ppm
Concentration per Run 2	0.0004 ppm	0.0045 ppm	0.1555 ppm	0.1297 ppm	302.1704 ppm	3.3713 ppm	0.0387 ppm
Concentration per Run 3	0.0011 ppm	0.0044 ppm	0.1568 ppm	0.1330 ppm	299.9880 ppm	3.3533 ppm	0.0402 ppm
Concentration RSD	60.1 %	1.2 %	0.5 %	1.3 %	0.5 %	0.4 %	2.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	1.4295 ppm	0.2264 ppm	0.0023 ppm	0.4532 ppm	0.0055 ppm	0.1283 ppm	0.0042 ppm
Concentration per Run 1	1.4365 ppm	0.2267 ppm	0.0025 ppm	0.4547 ppm	0.0061 ppm	0.1291 ppm	0.0059 ppm
Concentration per Run 2	1.4290 ppm	0.2263 ppm	0.0023 ppm	0.4517 ppm	0.0054 ppm	0.1282 ppm	0.0026 ppm
Concentration per Run 3	1.4231 ppm	0.2262 ppm	0.0023 ppm	0.4532 ppm	0.0051 ppm	0.1276 ppm	0.0040 ppm
Concentration RSD	0.5 %	0.1 %	4.5 %	0.3 %	8.9 %	0.6 %	40.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0019 ppm	1.6765 ppm	0.0074 ppm	0.0395 ppm	0.1065 ppm	0.0016 ppm	0.2981 ppm
Concentration per Run 1	0.0006 ppm	1.6867 ppm	0.0075 ppm	0.0399 ppm	0.1081 ppm	0.0013 ppm	0.3013 ppm
Concentration per Run 2	0.0032 ppm	1.6596 ppm	0.0078 ppm	0.0393 ppm	0.1052 ppm	0.0018 ppm	0.2990 ppm
Concentration per Run 3	0.0018 ppm	1.6832 ppm	0.0067 ppm	0.0393 ppm	0.1062 ppm	0.0017 ppm	0.2940 ppm
Concentration RSD	71.2 %	0.9 %	7.8 %	0.8 %	1.4 %	17.5 %	1.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0944 ppm	109.1609 %	108.5493 %	99.9382 %	109.1463 %	110.9531 %	111.8924 %
Concentration per Run 1	0.0941 ppm	108.6665 %	108.0196 %	100.2565 %	108.4778 %	110.6058 %	112.1073 %
Concentration per Run 2	0.0933 ppm	109.4775 %	108.4318 %	99.7323 %	109.3921 %	110.8601 %	111.8382 %
Concentration per Run 3	0.0958 ppm	109.3387 %	109.1964 %	99.8260 %	109.5690 %	111.3934 %	111.7318 %
Concentration RSD	1.3 %	0.4 %	0.6 %	0.3 %	0.5 %	0.4 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450558-09D2 WG1969497
Analysis started at: 9/11/2024 7:14:41 PM
Rack 3
Vial 5
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0009 ppm	26.2554 ppm	0.0344 ppm	0.0161 ppm	0.2267 ppm	0.0015 ppm	16.2248 ppm
Concentration per Run 1	0.0011 ppm	26.2972 ppm	0.0350 ppm	0.0158 ppm	0.2271 ppm	0.0014 ppm	16.2578 ppm
Concentration per Run 2	0.0006 ppm	26.1793 ppm	0.0350 ppm	0.0168 ppm	0.2247 ppm	0.0015 ppm	16.2425 ppm
Concentration per Run 3	0.0009 ppm	26.2898 ppm	0.0332 ppm	0.0157 ppm	0.2282 ppm	0.0014 ppm	16.1742 ppm
Concentration RSD	30.0 %	0.3 %	3.0 %	3.7 %	0.8 %	3.2 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0015 ppm	0.0081 ppm	0.3036 ppm	0.1381 ppm	177.8208 ppm	2.0915 ppm	0.0261 ppm
Concentration per Run 1	0.0015 ppm	0.0079 ppm	0.3044 ppm	0.1386 ppm	178.3605 ppm	2.1175 ppm	0.0271 ppm
Concentration per Run 2	0.0015 ppm	0.0083 ppm	0.3044 ppm	0.1378 ppm	177.4265 ppm	2.0778 ppm	0.0257 ppm
Concentration per Run 3	0.0014 ppm	0.0081 ppm	0.3019 ppm	0.1379 ppm	177.6754 ppm	2.0791 ppm	0.0255 ppm
Concentration RSD	4.5 %	2.9 %	0.5 %	0.3 %	0.3 %	1.1 %	3.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	2.9975 ppm	0.6144 ppm	0.0543 ppm	0.4612 ppm	0.0364 ppm	0.8395 ppm	0.0057 ppm
Concentration per Run 1	3.0204 ppm	0.6150 ppm	0.0540 ppm	0.4582 ppm	0.0365 ppm	0.8393 ppm	0.0062 ppm
Concentration per Run 2	2.9946 ppm	0.6151 ppm	0.0548 ppm	0.4602 ppm	0.0363 ppm	0.8402 ppm	0.0071 ppm
Concentration per Run 3	2.9774 ppm	0.6130 ppm	0.0541 ppm	0.4651 ppm	0.0365 ppm	0.8390 ppm	0.0037 ppm
Concentration RSD	0.7 %	0.2 %	0.8 %	0.8 %	0.3 %	0.1 %	30.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0020 ppm	2.6385 ppm	0.0165 ppm	0.0704 ppm	0.4031 ppm	0.0010 ppm	0.1379 ppm
Concentration per Run 1	0.0014 ppm	2.6579 ppm	0.0164 ppm	0.0703 ppm	0.4039 ppm	0.0019 ppm	0.1386 ppm
Concentration per Run 2	0.0020 ppm	2.6337 ppm	0.0163 ppm	0.0705 ppm	0.4035 ppm	0.0001 ppm	0.1376 ppm
Concentration per Run 3	0.0026 ppm	2.6238 ppm	0.0168 ppm	0.0705 ppm	0.4019 ppm	0.0010 ppm	0.1374 ppm
Concentration RSD	29.4 %	0.7 %	1.8 %	0.2 %	0.3 %	92.3 %	0.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4364 ppm	108.0184 %	106.5902 %	99.5321 %	116.4507 %	116.8795 %	116.9910 %
Concentration per Run 1	0.4374 ppm	107.5854 %	106.3402 %	99.2954 %	116.6829 %	116.5044 %	116.8862 %
Concentration per Run 2	0.4387 ppm	108.1054 %	106.2766 %	99.6328 %	116.6132 %	117.0415 %	117.0389 %
Concentration per Run 3	0.4330 ppm	108.3644 %	107.1538 %	99.6681 %	116.0561 %	117.0927 %	117.0480 %
Concentration RSD	0.7 %	0.4 %	0.5 %	0.2 %	0.3 %	0.3 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450558-11D2 WG1969497
Analysis started at: 9/11/2024 7:18:40 PM
Rack 3
Vial 6
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0008 ppm	47.2064 ppm	0.0430 ppm	0.9600 ppm	0.1916 ppm	0.0017 ppm	27.2446 ppm
Concentration per Run 1	0.0006 ppm	46.9919 ppm	0.0432 ppm	0.9643 ppm	0.1907 ppm	0.0018 ppm	27.1077 ppm
Concentration per Run 2	0.0007 ppm	47.3391 ppm	0.0427 ppm	0.9644 ppm	0.1923 ppm	0.0017 ppm	27.4146 ppm
Concentration per Run 3	0.0011 ppm	47.2882 ppm	0.0430 ppm	0.9514 ppm	0.1920 ppm	0.0016 ppm	27.2115 ppm
Concentration RSD	36.5 %	0.4 %	0.6 %	0.8 %	0.4 %	4.3 %	0.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0003 ppm	0.0375 ppm	0.0987 ppm	0.2650 ppm	120.0169 ppm	3.7929 ppm	0.0495 ppm
Concentration per Run 1	0.0003 ppm	0.0382 ppm	0.1002 ppm	0.2669 ppm	119.4301 ppm	3.8155 ppm	0.0497 ppm
Concentration per Run 2	0.0003 ppm	0.0374 ppm	0.0987 ppm	0.2650 ppm	120.5562 ppm	3.8041 ppm	0.0502 ppm
Concentration per Run 3	0.0003 ppm	0.0370 ppm	0.0973 ppm	0.2631 ppm	120.0643 ppm	3.7591 ppm	0.0484 ppm
Concentration RSD	13.7 %	1.6 %	1.4 %	0.7 %	0.5 %	0.8 %	1.9 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	24.8996 ppm	0.6991 ppm	0.0046 ppm	1.6932 ppm	0.0807 ppm	0.1318 ppm	-0.0007 ppm
Concentration per Run 1	25.1905 ppm	0.6954 ppm	0.0048 ppm	1.6837 ppm	0.0814 ppm	0.1322 ppm	-0.0037 ppm
Concentration per Run 2	24.9267 ppm	0.7036 ppm	0.0046 ppm	1.6905 ppm	0.0806 ppm	0.1310 ppm	0.0009 ppm
Concentration per Run 3	24.5816 ppm	0.6984 ppm	0.0045 ppm	1.7055 ppm	0.0800 ppm	0.1323 ppm	0.0006 ppm
Concentration RSD	1.2 %	0.6 %	2.8 %	0.7 %	0.9 %	0.6 %	339.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0012 ppm	2.5729 ppm	0.0084 ppm	0.1062 ppm	2.4278 ppm	0.0032 ppm	0.2576 ppm
Concentration per Run 1	-0.0023 ppm	2.5889 ppm	0.0078 ppm	0.1062 ppm	2.4517 ppm	0.0030 ppm	0.2603 ppm
Concentration per Run 2	0.0012 ppm	2.5840 ppm	0.0083 ppm	0.1067 ppm	2.4296 ppm	0.0034 ppm	0.2582 ppm
Concentration per Run 3	-0.0023 ppm	2.5457 ppm	0.0089 ppm	0.1057 ppm	2.4022 ppm	0.0031 ppm	0.2543 ppm
Concentration RSD	172.3 %	0.9 %	6.9 %	0.4 %	1.0 %	7.7 %	1.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.1660 ppm	108.4576 %	107.6432 %	98.6914 %	146.8149 %	148.7212 %	148.4996 %
Concentration per Run 1	0.1677 ppm	107.3362 %	108.1179 %	98.5624 %	145.8760 %	149.2927 %	148.3316 %
Concentration per Run 2	0.1668 ppm	108.2101 %	106.9890 %	99.0287 %	146.4611 %	147.8832 %	148.9305 %
Concentration per Run 3	0.1636 ppm	109.8266 %	107.8226 %	98.4830 %	148.1076 %	148.9877 %	148.2366 %
Concentration RSD	1.3 %	1.2 %	0.5 %	0.3 %	0.8 %	0.5 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450558-13D2 WG1969497
Analysis started at: 9/11/2024 7:22:40 PM
Rack 3
Vial 7
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0024 ppm	46.7146 ppm	0.0561 ppm	0.0471 ppm	0.6457 ppm	0.0029 ppm	60.5983 ppm
Concentration per Run 1	0.0026 ppm	46.5165 ppm	0.0564 ppm	0.0488 ppm	0.6441 ppm	0.0029 ppm	60.4147 ppm
Concentration per Run 2	0.0023 ppm	46.6488 ppm	0.0562 ppm	0.0458 ppm	0.6457 ppm	0.0029 ppm	60.5543 ppm
Concentration per Run 3	0.0022 ppm	46.9784 ppm	0.0556 ppm	0.0468 ppm	0.6474 ppm	0.0029 ppm	60.8257 ppm
Concentration RSD	9.1 %	0.5 %	0.7 %	3.3 %	0.3 %	0.5 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0217 ppm	0.0290 ppm	0.2257 ppm	0.2652 ppm	128.9562 ppm	2.8573 ppm	0.0422 ppm
Concentration per Run 1	0.0221 ppm	0.0289 ppm	0.2295 ppm	0.2680 ppm	128.3810 ppm	2.8469 ppm	0.0443 ppm
Concentration per Run 2	0.0216 ppm	0.0298 ppm	0.2249 ppm	0.2645 ppm	128.8841 ppm	2.8630 ppm	0.0408 ppm
Concentration per Run 3	0.0216 ppm	0.0284 ppm	0.2226 ppm	0.2630 ppm	129.6034 ppm	2.8618 ppm	0.0415 ppm
Concentration RSD	1.3 %	2.4 %	1.6 %	1.0 %	0.5 %	0.3 %	4.4 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	8.9637 ppm	0.9141 ppm	0.0288 ppm	1.6118 ppm	0.0726 ppm	1.5919 ppm	0.0060 ppm
Concentration per Run 1	9.1270 ppm	0.9136 ppm	0.0286 ppm	1.5996 ppm	0.0740 ppm	1.5822 ppm	0.0041 ppm
Concentration per Run 2	8.9062 ppm	0.9128 ppm	0.0293 ppm	1.6137 ppm	0.0726 ppm	1.5960 ppm	0.0061 ppm
Concentration per Run 3	8.8578 ppm	0.9161 ppm	0.0283 ppm	1.6222 ppm	0.0713 ppm	1.5975 ppm	0.0079 ppm
Concentration RSD	1.6 %	0.2 %	1.7 %	0.7 %	1.9 %	0.5 %	30.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0037 ppm	1.4227 ppm	0.1054 ppm	0.2419 ppm	1.2080 ppm	0.0006 ppm	0.1569 ppm
Concentration per Run 1	0.0040 ppm	1.4441 ppm	0.1079 ppm	0.2423 ppm	1.2334 ppm	-0.0002 ppm	0.1590 ppm
Concentration per Run 2	0.0032 ppm	1.4139 ppm	0.1044 ppm	0.2418 ppm	1.1979 ppm	0.0009 ppm	0.1564 ppm
Concentration per Run 3	0.0037 ppm	1.4100 ppm	0.1038 ppm	0.2417 ppm	1.1929 ppm	0.0011 ppm	0.1553 ppm
Concentration RSD	11.8 %	1.3 %	2.1 %	0.1 %	1.8 %	120.8 %	1.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	1.1692 ppm	105.3597 %	105.6994 %	96.8654 %	115.5952 %	118.0534 %	117.2063 %
Concentration per Run 1	1.1891 ppm	103.7435 %	106.2255 %	97.2263 %	114.6060 %	118.3224 %	117.4584 %
Concentration per Run 2	1.1629 ppm	105.6452 %	105.8714 %	96.7018 %	115.8228 %	118.3406 %	116.9268 %
Concentration per Run 3	1.1555 ppm	106.6905 %	105.0014 %	96.6682 %	116.3567 %	117.4972 %	117.2339 %
Concentration RSD	1.5 %	1.4 %	0.6 %	0.3 %	0.8 %	0.4 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450558-15D2 WG1969497
Analysis started at: 9/11/2024 7:26:39 PM
Rack 3
Vial 8
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0005 ppm	182.2889 ppm	0.0182 ppm	0.0169 ppm	0.9849 ppm	0.0057 ppm	2.9415 ppm
Concentration per Run 1	0.0008 ppm	180.7897 ppm	0.0183 ppm	0.0178 ppm	0.9807 ppm	0.0057 ppm	2.9179 ppm
Concentration per Run 2	0.0000 ppm	182.9672 ppm	0.0179 ppm	0.0168 ppm	0.9868 ppm	0.0058 ppm	2.9570 ppm
Concentration per Run 3	0.0007 ppm	183.1097 ppm	0.0183 ppm	0.0162 ppm	0.9871 ppm	0.0057 ppm	2.9496 ppm
Concentration RSD	79.3 %	0.7 %	1.3 %	4.9 %	0.4 %	0.6 %	0.7 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0002 ppm	0.0208 ppm	0.1129 ppm	0.0454 ppm	145.5287 ppm	1.3811 ppm	0.0179 ppm
Concentration per Run 1	0.0003 ppm	0.0208 ppm	0.1139 ppm	0.0462 ppm	144.7005 ppm	1.3847 ppm	0.0181 ppm
Concentration per Run 2	0.0003 ppm	0.0213 ppm	0.1129 ppm	0.0452 ppm	146.1226 ppm	1.3752 ppm	0.0188 ppm
Concentration per Run 3	0.0002 ppm	0.0202 ppm	0.1118 ppm	0.0450 ppm	145.7630 ppm	1.3834 ppm	0.0168 ppm
Concentration RSD	16.2 %	2.5 %	0.9 %	1.4 %	0.5 %	0.4 %	5.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	3.5842 ppm	0.7445 ppm	0.0007 ppm	0.6790 ppm	0.0458 ppm	0.0579 ppm	-0.0007 ppm
Concentration per Run 1	3.6093 ppm	0.7402 ppm	0.0006 ppm	0.6766 ppm	0.0456 ppm	0.0565 ppm	-0.0002 ppm
Concentration per Run 2	3.5858 ppm	0.7455 ppm	0.0010 ppm	0.6757 ppm	0.0465 ppm	0.0592 ppm	-0.0003 ppm
Concentration per Run 3	3.5575 ppm	0.7478 ppm	0.0004 ppm	0.6847 ppm	0.0453 ppm	0.0579 ppm	-0.0017 ppm
Concentration RSD	0.7 %	0.5 %	50.9 %	0.7 %	1.4 %	2.3 %	114.0 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0014 ppm	2.6263 ppm	0.0038 ppm	0.0279 ppm	2.4188 ppm	0.0028 ppm	0.1555 ppm
Concentration per Run 1	-0.0004 ppm	2.6352 ppm	0.0036 ppm	0.0279 ppm	2.4265 ppm	0.0023 ppm	0.1554 ppm
Concentration per Run 2	-0.0013 ppm	2.6327 ppm	0.0042 ppm	0.0281 ppm	2.4244 ppm	0.0036 ppm	0.1566 ppm
Concentration per Run 3	-0.0026 ppm	2.6109 ppm	0.0036 ppm	0.0279 ppm	2.4055 ppm	0.0024 ppm	0.1547 ppm
Concentration RSD	80.4 %	0.5 %	9.5 %	0.4 %	0.5 %	26.6 %	0.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.1320 ppm	109.8858 %	109.2776 %	101.4007 %	133.4344 %	136.3139 %	138.7473 %
Concentration per Run 1	0.1324 ppm	109.6105 %	110.8278 %	101.0891 %	133.8603 %	137.7905 %	138.6797 %
Concentration per Run 2	0.1321 ppm	109.5986 %	108.3900 %	101.4610 %	132.9085 %	135.5473 %	138.9626 %
Concentration per Run 3	0.1314 ppm	110.4482 %	108.6150 %	101.6520 %	133.5346 %	135.6039 %	138.5996 %
Concentration RSD	0.4 %	0.4 %	1.2 %	0.3 %	0.4 %	0.9 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450558-17D2 WG1969497
Analysis started at: 9/11/2024 7:30:39 PM
Rack 3
Vial 9
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0004 ppm	10.2988 ppm	0.0105 ppm	0.0032 ppm	0.0466 ppm	0.0008 ppm	0.9839 ppm
Concentration per Run 1	0.0004 ppm	10.3550 ppm	0.0113 ppm	0.0026 ppm	0.0468 ppm	0.0008 ppm	0.9889 ppm
Concentration per Run 2	0.0004 ppm	10.2925 ppm	0.0101 ppm	0.0029 ppm	0.0466 ppm	0.0008 ppm	0.9852 ppm
Concentration per Run 3	0.0003 ppm	10.2489 ppm	0.0100 ppm	0.0041 ppm	0.0465 ppm	0.0008 ppm	0.9776 ppm
Concentration RSD	12.3 %	0.5 %	7.0 %	24.1 %	0.4 %	0.1 %	0.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0027 ppm	0.0599 ppm	0.0267 ppm	34.4054 ppm	1.4828 ppm	0.0072 ppm
Concentration per Run 1	0.0000 ppm	0.0028 ppm	0.0608 ppm	0.0272 ppm	34.4026 ppm	1.5185 ppm	0.0081 ppm
Concentration per Run 2	0.0001 ppm	0.0026 ppm	0.0598 ppm	0.0266 ppm	34.4660 ppm	1.4647 ppm	0.0060 ppm
Concentration per Run 3	0.0000 ppm	0.0028 ppm	0.0591 ppm	0.0263 ppm	34.3476 ppm	1.4653 ppm	0.0074 ppm
Concentration RSD	153.4 %	4.4 %	1.5 %	1.7 %	0.2 %	2.1 %	14.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	1.3393 ppm	0.0942 ppm	0.0062 ppm	0.2628 ppm	0.0053 ppm	0.0417 ppm	0.0005 ppm
Concentration per Run 1	1.3607 ppm	0.0947 ppm	0.0066 ppm	0.2622 ppm	0.0054 ppm	0.0422 ppm	-0.0003 ppm
Concentration per Run 2	1.3330 ppm	0.0940 ppm	0.0061 ppm	0.2625 ppm	0.0053 ppm	0.0413 ppm	0.0007 ppm
Concentration per Run 3	1.3243 ppm	0.0939 ppm	0.0059 ppm	0.2639 ppm	0.0051 ppm	0.0416 ppm	0.0010 ppm
Concentration RSD	1.4 %	0.5 %	6.1 %	0.3 %	2.5 %	1.0 %	140.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0006 ppm	1.9796 ppm	0.0028 ppm	0.0145 ppm	0.4882 ppm	0.0010 ppm	0.0425 ppm
Concentration per Run 1	0.0005 ppm	2.0082 ppm	0.0030 ppm	0.0146 ppm	0.4972 ppm	0.0015 ppm	0.0433 ppm
Concentration per Run 2	-0.0010 ppm	1.9790 ppm	0.0031 ppm	0.0146 ppm	0.4854 ppm	0.0004 ppm	0.0424 ppm
Concentration per Run 3	-0.0012 ppm	1.9518 ppm	0.0022 ppm	0.0144 ppm	0.4821 ppm	0.0010 ppm	0.0418 ppm
Concentration RSD	168.9 %	1.4 %	18.1 %	0.7 %	1.6 %	61.0 %	1.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0177 ppm	106.5213 %	104.3741 %	104.0714 %	123.7907 %	122.1814 %	125.8535 %
Concentration per Run 1	0.0182 ppm	104.9175 %	103.2089 %	103.7403 %	123.2452 %	121.0671 %	125.5900 %
Concentration per Run 2	0.0174 ppm	107.0031 %	104.9507 %	104.7159 %	124.1526 %	122.9781 %	126.7112 %
Concentration per Run 3	0.0175 ppm	107.6433 %	104.9627 %	103.7581 %	123.9743 %	122.4989 %	125.2593 %
Concentration RSD	2.4 %	1.3 %	1.0 %	0.5 %	0.4 %	0.8 %	0.6 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450558-19D2 WG1969497
Analysis started at: 9/11/2024 7:34:38 PM
Rack 3
Vial 10
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0010 ppm	29.8765 ppm	0.1541 ppm	0.0115 ppm	0.1998 ppm	0.0035 ppm	22.9999 ppm
Concentration per Run 1	0.0009 ppm	29.8697 ppm	0.1545 ppm	0.0118 ppm	0.1994 ppm	0.0035 ppm	23.0326 ppm
Concentration per Run 2	0.0013 ppm	29.9122 ppm	0.1530 ppm	0.0118 ppm	0.1996 ppm	0.0036 ppm	23.0425 ppm
Concentration per Run 3	0.0008 ppm	29.8475 ppm	0.1548 ppm	0.0110 ppm	0.2006 ppm	0.0036 ppm	22.9247 ppm
Concentration RSD	27.1 %	0.1 %	0.7 %	3.7 %	0.3 %	0.8 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0008 ppm	0.0108 ppm	0.2566 ppm	0.3375 ppm	447.4669 ppm	2.9218 ppm	0.0174 ppm
Concentration per Run 1	0.0009 ppm	0.0104 ppm	0.2590 ppm	0.3391 ppm	445.9320 ppm	2.9162 ppm	0.0180 ppm
Concentration per Run 2	0.0009 ppm	0.0113 ppm	0.2552 ppm	0.3368 ppm	450.1242 ppm	2.9499 ppm	0.0174 ppm
Concentration per Run 3	0.0006 ppm	0.0107 ppm	0.2555 ppm	0.3367 ppm	446.3445 ppm	2.8993 ppm	0.0167 ppm
Concentration RSD	22.0 %	4.4 %	0.8 %	0.4 %	0.5 %	0.9 %	3.8 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	4.1171 ppm	3.7537 ppm	0.0052 ppm	0.4022 ppm	0.0132 ppm	0.1685 ppm	0.0091 ppm
Concentration per Run 1	4.1608 ppm	3.7470 ppm	0.0050 ppm	0.4013 ppm	0.0133 ppm	0.1687 ppm	0.0110 ppm
Concentration per Run 2	4.0969 ppm	3.7648 ppm	0.0053 ppm	0.4031 ppm	0.0135 ppm	0.1671 ppm	0.0100 ppm
Concentration per Run 3	4.0934 ppm	3.7491 ppm	0.0054 ppm	0.4021 ppm	0.0128 ppm	0.1698 ppm	0.0064 ppm
Concentration RSD	0.9 %	0.3 %	4.3 %	0.2 %	2.8 %	0.8 %	26.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0003 ppm	2.4188 ppm	0.0072 ppm	0.1673 ppm	0.0694 ppm	0.0053 ppm	0.5596 ppm
Concentration per Run 1	-0.0014 ppm	2.4321 ppm	0.0074 ppm	0.1658 ppm	0.0703 ppm	0.0053 ppm	0.5655 ppm
Concentration per Run 2	0.0007 ppm	2.4163 ppm	0.0073 ppm	0.1678 ppm	0.0689 ppm	0.0059 ppm	0.5541 ppm
Concentration per Run 3	-0.0001 ppm	2.4081 ppm	0.0068 ppm	0.1683 ppm	0.0689 ppm	0.0045 ppm	0.5593 ppm
Concentration RSD	417.1 %	0.5 %	4.7 %	0.8 %	1.2 %	13.5 %	1.0 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0969 ppm	128.8211 %	129.4331 %	113.1569 %	**213.8126 %**	**222.0761 %**	**217.5062 %**
Concentration per Run 1	0.0982 ppm	127.8761 %	129.5826 %	112.8584 %	**212.9327 %**	**221.7507 %**	**217.3618 %**
Concentration per Run 2	0.0966 ppm	129.4253 %	128.2841 %	113.0663 %	**214.3775 %**	**220.7960 %**	**217.1005 %**
Concentration per Run 3	0.0960 ppm	129.1619 %	130.4327 %	113.5460 %	**214.1277 %**	**223.6815 %**	**218.0565 %**
Concentration RSD	1.1 %	0.6 %	0.8 %	0.3 %	**0.4 %**	**0.7 %**	**0.2 %**

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450558-21D2 WG1969497
Analysis started at: 9/11/2024 7:38:38 PM
Rack 3
Vial 11
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0016 ppm	56.1367 ppm	0.0734 ppm	0.0460 ppm	0.3488 ppm	0.0043 ppm	148.0606 ppm
Concentration per Run 1	0.0020 ppm	56.3326 ppm	0.0734 ppm	0.0465 ppm	0.3511 ppm	0.0043 ppm	148.4366 ppm
Concentration per Run 2	0.0015 ppm	56.0181 ppm	0.0723 ppm	0.0453 ppm	0.3465 ppm	0.0043 ppm	147.1267 ppm
Concentration per Run 3	0.0012 ppm	56.0593 ppm	0.0744 ppm	0.0461 ppm	0.3490 ppm	0.0043 ppm	148.6184 ppm
Concentration RSD	24.7 %	0.3 %	1.4 %	1.3 %	0.7 %	0.4 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0012 ppm	0.0426 ppm	0.3222 ppm	0.2755 ppm	252.9417 ppm	2.7066 ppm	0.0381 ppm
Concentration per Run 1	0.0013 ppm	0.0427 ppm	0.3239 ppm	0.2773 ppm	254.4464 ppm	2.7584 ppm	0.0389 ppm
Concentration per Run 2	0.0011 ppm	0.0430 ppm	0.3223 ppm	0.2747 ppm	251.3937 ppm	2.6848 ppm	0.0374 ppm
Concentration per Run 3	0.0011 ppm	0.0422 ppm	0.3203 ppm	0.2746 ppm	252.9849 ppm	2.6766 ppm	0.0380 ppm
Concentration RSD	5.5 %	0.9 %	0.6 %	0.5 %	0.6 %	1.7 %	2.0 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	73.9845 ppm	1.1323 ppm	0.0121 ppm	1.7040 ppm	0.0846 ppm	0.7670 ppm	0.0054 ppm
Concentration per Run 1	74.1444 ppm	1.1370 ppm	0.0120 ppm	1.7091 ppm	0.0845 ppm	0.7668 ppm	0.0030 ppm
Concentration per Run 2	74.1790 ppm	1.1264 ppm	0.0125 ppm	1.7010 ppm	0.0850 ppm	0.7653 ppm	0.0062 ppm
Concentration per Run 3	73.6301 ppm	1.1333 ppm	0.0119 ppm	1.7019 ppm	0.0843 ppm	0.7688 ppm	0.0071 ppm
Concentration RSD	0.4 %	0.5 %	2.8 %	0.3 %	0.4 %	0.2 %	39.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0015 ppm	1.4615 ppm	0.0172 ppm	0.1751 ppm	1.1238 ppm	0.0025 ppm	0.3877 ppm
Concentration per Run 1	0.0014 ppm	1.4740 ppm	0.0171 ppm	0.1754 ppm	1.1214 ppm	0.0029 ppm	0.3873 ppm
Concentration per Run 2	-0.0006 ppm	1.4606 ppm	0.0174 ppm	0.1746 ppm	1.1307 ppm	0.0021 ppm	0.3886 ppm
Concentration per Run 3	0.0036 ppm	1.4500 ppm	0.0172 ppm	0.1753 ppm	1.1193 ppm	0.0024 ppm	0.3872 ppm
Concentration RSD	141.4 %	0.8 %	0.8 %	0.2 %	0.5 %	17.4 %	0.2 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4005 ppm	103.6471 %	104.4758 %	91.3667 %	107.1303 %	110.5439 %	108.0635 %
Concentration per Run 1	0.4031 ppm	103.3334 %	104.2331 %	91.2115 %	107.1353 %	110.6006 %	107.6292 %
Concentration per Run 2	0.4002 ppm	103.7111 %	105.0294 %	91.6608 %	107.2286 %	110.5766 %	108.4959 %
Concentration per Run 3	0.3981 ppm	103.8968 %	104.1647 %	91.2278 %	107.0271 %	110.4544 %	108.0654 %
Concentration RSD	0.6 %	0.3 %	0.5 %	0.3 %	0.1 %	0.1 %	0.4 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450558-23D2 WG1969497
Analysis started at: 9/11/2024 7:42:37 PM
Rack 3
Vial 12
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	12.8494 ppm	0.0149 ppm	0.0016 ppm	0.0810 ppm	0.0022 ppm	0.8695 ppm
Concentration per Run 1	-0.0001 ppm	12.8158 ppm	0.0150 ppm	0.0009 ppm	0.0810 ppm	0.0022 ppm	0.8740 ppm
Concentration per Run 2	0.0004 ppm	12.8431 ppm	0.0149 ppm	0.0016 ppm	0.0810 ppm	0.0022 ppm	0.8659 ppm
Concentration per Run 3	0.0000 ppm	12.8894 ppm	0.0147 ppm	0.0023 ppm	0.0812 ppm	0.0022 ppm	0.8687 ppm
Concentration RSD	236.5 %	0.3 %	1.0 %	42.9 %	0.2 %	0.6 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0001 ppm	0.0025 ppm	0.0776 ppm	0.0539 ppm	50.7494 ppm	2.9258 ppm	0.0127 ppm
Concentration per Run 1	0.0001 ppm	0.0030 ppm	0.0775 ppm	0.0541 ppm	50.5837 ppm	2.9174 ppm	0.0127 ppm
Concentration per Run 2	0.0000 ppm	0.0024 ppm	0.0781 ppm	0.0540 ppm	50.8933 ppm	2.9460 ppm	0.0137 ppm
Concentration per Run 3	0.0001 ppm	0.0021 ppm	0.0771 ppm	0.0536 ppm	50.7713 ppm	2.9140 ppm	0.0118 ppm
Concentration RSD	47.7 %	18.4 %	0.6 %	0.4 %	0.3 %	0.6 %	7.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	1.8898 ppm	0.0636 ppm	0.0024 ppm	0.2327 ppm	0.0072 ppm	0.0645 ppm	-0.0005 ppm
Concentration per Run 1	1.9044 ppm	0.0637 ppm	0.0024 ppm	0.2320 ppm	0.0076 ppm	0.0649 ppm	0.0008 ppm
Concentration per Run 2	1.8902 ppm	0.0635 ppm	0.0025 ppm	0.2327 ppm	0.0071 ppm	0.0640 ppm	-0.0004 ppm
Concentration per Run 3	1.8749 ppm	0.0635 ppm	0.0023 ppm	0.2334 ppm	0.0068 ppm	0.0648 ppm	-0.0021 ppm
Concentration RSD	0.8 %	0.2 %	3.9 %	0.3 %	5.5 %	0.8 %	272.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0003 ppm	1.8328 ppm	0.0061 ppm	0.0240 ppm	0.2012 ppm	0.0017 ppm	0.0702 ppm
Concentration per Run 1	0.0011 ppm	1.8380 ppm	0.0063 ppm	0.0242 ppm	0.2028 ppm	0.0027 ppm	0.0704 ppm
Concentration per Run 2	0.0000 ppm	1.8310 ppm	0.0062 ppm	0.0239 ppm	0.2013 ppm	0.0016 ppm	0.0703 ppm
Concentration per Run 3	-0.0002 ppm	1.8295 ppm	0.0057 ppm	0.0241 ppm	0.1996 ppm	0.0009 ppm	0.0700 ppm
Concentration RSD	252.2 %	0.2 %	5.6 %	0.7 %	0.8 %	52.0 %	0.3 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0284 ppm	111.2271 %	108.6818 %	107.3719 %	138.6795 %	137.3723 %	140.4916 %
Concentration per Run 1	0.0288 ppm	110.5143 %	108.4150 %	106.8972 %	138.8936 %	137.6460 %	140.1822 %
Concentration per Run 2	0.0282 ppm	111.2806 %	108.5404 %	107.2362 %	138.2961 %	136.8822 %	140.5276 %
Concentration per Run 3	0.0283 ppm	111.8865 %	109.0900 %	107.9824 %	138.8489 %	137.5887 %	140.7651 %
Concentration RSD	1.3 %	0.6 %	0.3 %	0.5 %	0.2 %	0.3 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCV
Analysis started at: 9/11/2024 7:46:38 PM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.4895 ppm	0.4644 ppm	0.4344 ppm	0.4563 ppm	0.4892 ppm	0.4839 ppm	0.4644 ppm
Concentration per Run 1	0.4942 ppm	0.4668 ppm	0.4338 ppm	0.4588 ppm	0.4890 ppm	0.4854 ppm	0.4668 ppm
Concentration per Run 2	0.4891 ppm	0.4688 ppm	0.4358 ppm	0.4586 ppm	0.4884 ppm	0.4850 ppm	0.4675 ppm
Concentration per Run 3	0.4851 ppm	0.4577 ppm	0.4335 ppm	0.4514 ppm	0.4902 ppm	0.4813 ppm	0.4590 ppm
Recovery Percentage 1	97.898 %	92.887 %	86.872 %	91.254 %	97.836 %	96.779 %	92.888 %
Concentration RSD	0.9 %	1.3 %	0.3 %	0.9 %	0.2 %	0.5 %	1.0 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.4866 ppm	0.4951 ppm	0.4803 ppm	0.4801 ppm	0.4907 ppm	5.2575 ppm	0.5185 ppm
Concentration per Run 1	0.4919 ppm	0.5006 ppm	0.4839 ppm	0.4850 ppm	0.4963 ppm	5.2595 ppm	0.5200 ppm
Concentration per Run 2	0.4892 ppm	0.4966 ppm	0.4813 ppm	0.4805 ppm	0.4918 ppm	5.3220 ppm	0.5214 ppm
Concentration per Run 3	0.4788 ppm	0.4883 ppm	0.4757 ppm	0.4747 ppm	0.4841 ppm	5.1912 ppm	0.5143 ppm
Recovery Percentage 1	97.324 %	99.028 %	96.054 %	96.018 %	98.146 %	105.151 %	103.707 %
Concentration RSD	1.4 %	1.3 %	0.9 %	1.1 %	1.3 %	1.2 %	0.7 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.4843 ppm	0.4707 ppm	0.4771 ppm	10.1184 ppm	0.4938 ppm	0.4677 ppm	0.4766 ppm
Concentration per Run 1	0.4890 ppm	0.4712 ppm	0.4782 ppm	10.0896 ppm	0.4986 ppm	0.4673 ppm	0.4825 ppm
Concentration per Run 2	0.4845 ppm	0.4731 ppm	0.4792 ppm	10.1773 ppm	0.4941 ppm	0.4686 ppm	0.4771 ppm
Concentration per Run 3	0.4794 ppm	0.4678 ppm	0.4738 ppm	10.0883 ppm	0.4886 ppm	0.4672 ppm	0.4702 ppm
Recovery Percentage 1	96.856 %	94.136 %	95.414 %	101.184 %	98.752 %	93.537 %	95.321 %
Concentration RSD	1.0 %	0.6 %	0.6 %	0.5 %	1.0 %	0.2 %	1.3 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4539 ppm	5.0854 ppm	0.5048 ppm	0.5009 ppm	0.4866 ppm	0.4561 ppm	0.4837 ppm
Concentration per Run 1	0.4534 ppm	5.1354 ppm	0.5091 ppm	0.5005 ppm	0.4929 ppm	0.4538 ppm	0.4872 ppm
Concentration per Run 2	0.4559 ppm	5.0938 ppm	0.5087 ppm	0.4986 ppm	0.4879 ppm	0.4592 ppm	0.4851 ppm
Concentration per Run 3	0.4523 ppm	5.0269 ppm	0.4968 ppm	0.5037 ppm	0.4789 ppm	0.4553 ppm	0.4789 ppm
Recovery Percentage 1	90.780 %	96.864 %	100.967 %	100.186 %	97.312 %	91.218 %	96.748 %
Concentration RSD	0.4 %	1.1 %	1.4 %	0.5 %	1.5 %	0.6 %	0.9 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4838 ppm	105.0120 %	101.4775 %	103.4755 %	100.6529 %	99.0057 %	102.6164 %
Concentration per Run 1	0.4889 ppm	103.8123 %	101.7207 %	103.3704 %	99.9527 %	99.6552 %	102.4462 %
Concentration per Run 2	0.4848 ppm	104.7037 %	100.4224 %	103.5310 %	100.4643 %	98.4190 %	102.9307 %
Concentration per Run 3	0.4778 ppm	106.5200 %	102.2893 %	103.5252 %	101.5416 %	98.9429 %	102.4722 %
Recovery Percentage 1	96.770 %						
Concentration RSD	1.2 %	1.3 %	0.9 %	0.1 %	0.8 %	0.6 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCB
Analysis started at: 9/11/2024 7:50:35 PM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0039 ppm	0.0002 ppm	0.0005 ppm	0.0000 ppm	0.0000 ppm	-0.0046 ppm
Concentration per Run 1	0.0002 ppm	-0.0042 ppm	0.0002 ppm	-0.0002 ppm	-0.0001 ppm	0.0000 ppm	-0.0069 ppm
Concentration per Run 2	-0.0001 ppm	-0.0037 ppm	-0.0006 ppm	0.0012 ppm	0.0001 ppm	0.0000 ppm	-0.0027 ppm
Concentration per Run 3	-0.0001 ppm	-0.0039 ppm	0.0010 ppm	0.0004 ppm	0.0000 ppm	0.0000 ppm	-0.0040 ppm
Recovery Percentage 1	0.365 %	-3.945 %	6.854 %	1.636 %	0.046 %	0.310 %	-4.570 %
Concentration RSD	684.1 %	6.6 %	370.8 %	141.6 %	1,640.8 %	59.2 %	47.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0001 ppm	0.0001 ppm	0.0000 ppm	0.0004 ppm	0.0046 ppm	-0.0044 ppm	-0.0013 ppm
Concentration per Run 1	0.0000 ppm	-0.0001 ppm	0.0001 ppm	0.0007 ppm	0.0036 ppm	-0.0158 ppm	-0.0017 ppm
Concentration per Run 2	0.0001 ppm	0.0005 ppm	0.0001 ppm	0.0002 ppm	0.0047 ppm	-0.0003 ppm	-0.0009 ppm
Concentration per Run 3	0.0001 ppm	-0.0002 ppm	-0.0002 ppm	0.0003 ppm	0.0054 ppm	0.0030 ppm	-0.0012 ppm
Recovery Percentage 1	1.140 %	0.394 %	0.004 %	3.991 %	9.133 %	-0.175 %	-12.690 %
Concentration RSD	88.1 %	466.0 %	42,808.7 %	60.5 %	20.3 %	230.0 %	34.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	-0.0008 ppm	0.0001 ppm	0.0013 ppm	0.0044 ppm	-0.0001 ppm	0.0006 ppm	-0.0006 ppm
Concentration per Run 1	-0.0004 ppm	0.0001 ppm	0.0016 ppm	0.0087 ppm	0.0000 ppm	0.0005 ppm	-0.0006 ppm
Concentration per Run 2	0.0001 ppm	0.0001 ppm	0.0010 ppm	0.0052 ppm	0.0000 ppm	0.0001 ppm	0.0013 ppm
Concentration per Run 3	-0.0022 ppm	0.0000 ppm	0.0014 ppm	-0.0006 ppm	-0.0002 ppm	0.0011 ppm	-0.0026 ppm
Recovery Percentage 1	-0.826 %	0.706 %	2.667 %	0.222 %	-0.232 %	5.760 %	-1.242 %
Concentration RSD	143.3 %	77.6 %	21.1 %	106.8 %	248.8 %	91.5 %	316.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0010 ppm	0.0004 ppm	0.0007 ppm	0.0000 ppm	-0.0002 ppm	-0.0004 ppm	0.0000 ppm
Concentration per Run 1	-0.0011 ppm	0.0008 ppm	0.0007 ppm	0.0001 ppm	-0.0004 ppm	-0.0008 ppm	0.0000 ppm
Concentration per Run 2	-0.0006 ppm	0.0002 ppm	0.0004 ppm	0.0001 ppm	-0.0003 ppm	-0.0008 ppm	0.0000 ppm
Concentration per Run 3	-0.0012 ppm	0.0004 ppm	0.0010 ppm	-0.0001 ppm	0.0001 ppm	0.0004 ppm	0.0001 ppm
Recovery Percentage 1	-9.950 %	0.088 %	1.410 %	0.244 %	-1.903 %	-2.107 %	0.018 %
Concentration RSD	33.8 %	68.3 %	39.9 %	329.5 %	131.6 %	160.3 %	2,906.9 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0007 ppm	100.4790 %	98.4603 %	102.5039 %	102.6511 %	98.6959 %	103.0696 %
Concentration per Run 1	0.0007 ppm	99.2440 %	97.8057 %	102.0095 %	103.0717 %	98.6757 %	103.0769 %
Concentration per Run 2	0.0006 ppm	100.1587 %	98.3429 %	102.4387 %	102.0597 %	98.3725 %	103.0090 %
Concentration per Run 3	0.0006 ppm	102.0342 %	99.2324 %	103.0635 %	102.8221 %	99.0396 %	103.1230 %
Recovery Percentage 1	13.075 %						
Concentration RSD	3.8 %	1.4 %	0.7 %	0.5 %	0.5 %	0.3 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450651-01D2 WG1969497
Analysis started at: 9/11/2024 7:54:34 PM
Rack 3
Vial 13
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0052 ppm	103.9328 ppm	0.1489 ppm	0.6188 ppm	0.9978 ppm	0.0019 ppm	107.5750 ppm
Concentration per Run 1	0.0058 ppm	103.8498 ppm	0.1504 ppm	0.6174 ppm	0.9942 ppm	0.0020 ppm	107.6640 ppm
Concentration per Run 2	0.0051 ppm	103.9643 ppm	0.1455 ppm	0.6207 ppm	0.9993 ppm	0.0019 ppm	107.4579 ppm
Concentration per Run 3	0.0049 ppm	103.9843 ppm	0.1509 ppm	0.6184 ppm	1.0000 ppm	0.0020 ppm	107.6030 ppm
Concentration RSD	8.9 %	0.1 %	2.0 %	0.3 %	0.3 %	0.8 %	0.1 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0286 ppm	0.1672 ppm	0.8195 ppm	5.3927 ppm	457.6442 ppm	21.8949 ppm	0.1231 ppm
Concentration per Run 1	0.0286 ppm	0.1675 ppm	0.8201 ppm	5.4146 ppm	457.3293 ppm	21.9251 ppm	0.1246 ppm
Concentration per Run 2	0.0288 ppm	0.1674 ppm	0.8215 ppm	5.3858 ppm	457.0239 ppm	21.8651 ppm	0.1219 ppm
Concentration per Run 3	0.0284 ppm	0.1666 ppm	0.8170 ppm	5.3778 ppm	458.5794 ppm	21.8945 ppm	0.1229 ppm
Concentration RSD	0.6 %	0.3 %	0.3 %	0.4 %	0.2 %	0.1 %	1.1 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	75.2606 ppm	4.8411 ppm	0.1352 ppm	8.9955 ppm	0.5203 ppm	2.1344 ppm	0.0803 ppm
Concentration per Run 1	75.5174 ppm	4.8322 ppm	0.1335 ppm	8.9641 ppm	0.5165 ppm	2.1462 ppm	0.0804 ppm
Concentration per Run 2	75.3120 ppm	4.8398 ppm	0.1362 ppm	9.0080 ppm	0.5238 ppm	2.1280 ppm	0.0835 ppm
Concentration per Run 3	74.9525 ppm	4.8514 ppm	0.1357 ppm	9.0145 ppm	0.5204 ppm	2.1290 ppm	0.0769 ppm
Concentration RSD	0.4 %	0.2 %	1.1 %	0.3 %	0.7 %	0.5 %	4.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0008 ppm	3.6526 ppm	0.1602 ppm	0.4404 ppm	5.6447 ppm	0.0055 ppm	0.8174 ppm
Concentration per Run 1	0.0012 ppm	3.6735 ppm	0.1593 ppm	0.4379 ppm	5.6426 ppm	0.0051 ppm	0.8181 ppm
Concentration per Run 2	0.0015 ppm	3.6601 ppm	0.1587 ppm	0.4404 ppm	5.6525 ppm	0.0065 ppm	0.8175 ppm
Concentration per Run 3	-0.0003 ppm	3.6241 ppm	0.1626 ppm	0.4428 ppm	5.6389 ppm	0.0049 ppm	0.8166 ppm
Concentration RSD	121.9 %	0.7 %	1.3 %	0.6 %	0.1 %	15.7 %	0.1 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	6.3003 ppm	104.2050 %	106.8364 %	82.2274 %	124.1637 %	130.7425 %	124.3602 %
Concentration per Run 1	6.2887 ppm	103.7972 %	106.3391 %	82.1668 %	123.7858 %	130.3384 %	124.7785 %
Concentration per Run 2	6.3338 ppm	104.2487 %	106.6603 %	82.2033 %	124.1621 %	130.1560 %	123.8735 %
Concentration per Run 3	6.2784 ppm	104.5691 %	107.5098 %	82.3120 %	124.5433 %	131.7332 %	124.4287 %
Concentration RSD	0.5 %	0.4 %	0.6 %	0.1 %	0.3 %	0.7 %	0.4 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450651-02D2 WG1969497
Analysis started at: 9/11/2024 7:58:33 PM
Rack 3
Vial 14
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0025 ppm	101.1340 ppm	0.0416 ppm	0.6302 ppm	0.6996 ppm	0.0018 ppm	148.5477 ppm
Concentration per Run 1	0.0021 ppm	101.0624 ppm	0.0415 ppm	0.6328 ppm	0.6988 ppm	0.0018 ppm	148.1940 ppm
Concentration per Run 2	0.0024 ppm	101.4613 ppm	0.0432 ppm	0.6298 ppm	0.6986 ppm	0.0017 ppm	149.2962 ppm
Concentration per Run 3	0.0028 ppm	100.8782 ppm	0.0402 ppm	0.6281 ppm	0.7016 ppm	0.0018 ppm	148.1528 ppm
Concentration RSD	15.4 %	0.3 %	3.6 %	0.4 %	0.2 %	2.0 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0065 ppm	0.1361 ppm	0.2802 ppm	1.4557 ppm	269.8911 ppm	23.6450 ppm	0.0986 ppm
Concentration per Run 1	0.0064 ppm	0.1368 ppm	0.2828 ppm	1.4668 ppm	268.4993 ppm	23.6042 ppm	0.1002 ppm
Concentration per Run 2	0.0066 ppm	0.1362 ppm	0.2799 ppm	1.4501 ppm	271.0291 ppm	23.7362 ppm	0.0998 ppm
Concentration per Run 3	0.0065 ppm	0.1354 ppm	0.2780 ppm	1.4503 ppm	270.1450 ppm	23.5944 ppm	0.0958 ppm
Concentration RSD	1.1 %	0.5 %	0.9 %	0.7 %	0.5 %	0.3 %	2.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	89.6485 ppm	2.6623 ppm	0.0205 ppm	7.4794 ppm	0.2402 ppm	0.6312 ppm	0.0120 ppm
Concentration per Run 1	90.1976 ppm	2.6633 ppm	0.0203 ppm	7.4524 ppm	0.2418 ppm	0.6272 ppm	0.0130 ppm
Concentration per Run 2	89.6563 ppm	2.6591 ppm	0.0207 ppm	7.5140 ppm	0.2404 ppm	0.6326 ppm	0.0115 ppm
Concentration per Run 3	89.0916 ppm	2.6644 ppm	0.0206 ppm	7.4717 ppm	0.2383 ppm	0.6337 ppm	0.0115 ppm
Concentration RSD	0.6 %	0.1 %	1.1 %	0.4 %	0.7 %	0.5 %	7.2 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0003 ppm	2.3552 ppm	0.0387 ppm	0.4786 ppm	6.2581 ppm	0.0070 ppm	0.8522 ppm
Concentration per Run 1	0.0004 ppm	2.3763 ppm	0.0389 ppm	0.4800 ppm	6.3388 ppm	0.0061 ppm	0.8609 ppm
Concentration per Run 2	-0.0027 ppm	2.3476 ppm	0.0388 ppm	0.4782 ppm	6.2228 ppm	0.0069 ppm	0.8498 ppm
Concentration per Run 3	0.0015 ppm	2.3417 ppm	0.0383 ppm	0.4775 ppm	6.2128 ppm	0.0079 ppm	0.8459 ppm
Concentration RSD	742.4 %	0.8 %	0.9 %	0.3 %	1.1 %	13.2 %	0.9 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	1.0436 ppm	102.0098 %	102.7725 %	83.7913 %	121.9631 %	126.6983 %	123.4615 %
Concentration per Run 1	1.0503 ppm	101.1187 %	103.0510 %	84.2649 %	121.4478 %	126.8230 %	124.0767 %
Concentration per Run 2	1.0420 ppm	102.3291 %	102.5984 %	83.4423 %	122.2407 %	127.0821 %	122.8626 %
Concentration per Run 3	1.0385 ppm	102.5817 %	102.6679 %	83.6668 %	122.2007 %	126.1900 %	123.4453 %
Concentration RSD	0.6 %	0.8 %	0.2 %	0.5 %	0.4 %	0.4 %	0.5 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450651-03D2 WG1969497
Analysis started at: 9/11/2024 8:02:33 PM
Rack 3
Vial 15
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0016 ppm	116.5047 ppm	0.0226 ppm	0.8922 ppm	0.6092 ppm	0.0010 ppm	98.5876 ppm
Concentration per Run 1	0.0017 ppm	116.0704 ppm	0.0243 ppm	0.9004 ppm	0.6061 ppm	0.0011 ppm	98.6439 ppm
Concentration per Run 2	0.0015 ppm	117.3693 ppm	0.0214 ppm	0.8880 ppm	0.6133 ppm	0.0008 ppm	98.2833 ppm
Concentration per Run 3	0.0016 ppm	116.0744 ppm	0.0222 ppm	0.8882 ppm	0.6083 ppm	0.0011 ppm	98.8357 ppm
Concentration RSD	5.0 %	0.6 %	6.8 %	0.8 %	0.6 %	14.8 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0038 ppm	0.1830 ppm	0.1115 ppm	1.6457 ppm	320.3255 ppm	27.9952 ppm	0.0925 ppm
Concentration per Run 1	0.0039 ppm	0.1849 ppm	0.1122 ppm	1.6544 ppm	318.6472 ppm	27.7455 ppm	0.0917 ppm
Concentration per Run 2	0.0038 ppm	0.1823 ppm	0.1115 ppm	1.6416 ppm	322.8355 ppm	28.7411 ppm	0.0949 ppm
Concentration per Run 3	0.0038 ppm	0.1818 ppm	0.1109 ppm	1.6412 ppm	319.4938 ppm	27.4990 ppm	0.0911 ppm
Concentration RSD	2.5 %	0.9 %	0.6 %	0.5 %	0.7 %	2.3 %	2.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	90.9169 ppm	2.7102 ppm	0.0110 ppm	10.3307 ppm	0.2075 ppm	0.2379 ppm	0.0098 ppm
Concentration per Run 1	91.9201 ppm	2.7061 ppm	0.0112 ppm	10.2917 ppm	0.2088 ppm	0.2366 ppm	0.0116 ppm
Concentration per Run 2	90.4881 ppm	2.7159 ppm	0.0108 ppm	10.5120 ppm	0.2067 ppm	0.2374 ppm	0.0097 ppm
Concentration per Run 3	90.3426 ppm	2.7085 ppm	0.0111 ppm	10.1882 ppm	0.2070 ppm	0.2396 ppm	0.0082 ppm
Concentration RSD	1.0 %	0.2 %	1.6 %	1.6 %	0.6 %	0.7 %	17.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0015 ppm	1.5064 ppm	0.0159 ppm	0.3218 ppm	5.9572 ppm	0.0090 ppm	1.1385 ppm
Concentration per Run 1	-0.0031 ppm	1.5133 ppm	0.0157 ppm	0.3221 ppm	6.0031 ppm	0.0083 ppm	1.1493 ppm
Concentration per Run 2	-0.0023 ppm	1.5062 ppm	0.0161 ppm	0.3185 ppm	5.9352 ppm	0.0084 ppm	1.1352 ppm
Concentration per Run 3	0.0008 ppm	1.4996 ppm	0.0159 ppm	0.3246 ppm	5.9332 ppm	0.0103 ppm	1.1309 ppm
Concentration RSD	132.4 %	0.5 %	1.3 %	1.0 %	0.7 %	12.6 %	0.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.7583 ppm	102.9097 %	103.4504 %	84.7914 %	131.5142 %	135.9241 %	133.0952 %
Concentration per Run 1	0.7671 ppm	102.1766 %	103.3575 %	85.0069 %	131.4438 %	135.9503 %	133.9865 %
Concentration per Run 2	0.7518 ppm	103.0157 %	104.3311 %	84.6364 %	131.2934 %	136.6660 %	132.8349 %
Concentration per Run 3	0.7559 ppm	103.5368 %	102.6626 %	84.7311 %	131.8054 %	135.1560 %	132.4642 %
Concentration RSD	1.0 %	0.7 %	0.8 %	0.2 %	0.2 %	0.6 %	0.6 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450660-01D2 WG1969497
Analysis started at: 9/11/2024 8:06:32 PM
Rack 3
Vial 16
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0003 ppm	0.4413 ppm	0.0007 ppm	0.0213 ppm	0.2480 ppm	0.0000 ppm	0.2599 ppm
Concentration per Run 1	0.0001 ppm	0.4451 ppm	0.0016 ppm	0.0208 ppm	0.2474 ppm	0.0000 ppm	0.2634 ppm
Concentration per Run 2	0.0004 ppm	0.4345 ppm	0.0007 ppm	0.0215 ppm	0.2469 ppm	0.0000 ppm	0.2561 ppm
Concentration per Run 3	0.0005 ppm	0.4444 ppm	-0.0001 ppm	0.0215 ppm	0.2496 ppm	0.0000 ppm	0.2602 ppm
Concentration RSD	61.2 %	1.3 %	116.4 %	1.8 %	0.6 %	263.4 %	1.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0000 ppm	0.0028 ppm	0.0068 ppm	0.0114 ppm	0.1053 ppm	0.0527 ppm	0.0004 ppm
Concentration per Run 1	0.0000 ppm	0.0030 ppm	0.0071 ppm	0.0115 ppm	0.1065 ppm	0.0534 ppm	-0.0002 ppm
Concentration per Run 2	0.0000 ppm	0.0024 ppm	0.0068 ppm	0.0117 ppm	0.1039 ppm	0.0472 ppm	0.0006 ppm
Concentration per Run 3	0.0000 ppm	0.0028 ppm	0.0065 ppm	0.0110 ppm	0.1056 ppm	0.0576 ppm	0.0008 ppm
Concentration RSD	235.8 %	10.9 %	4.7 %	3.2 %	1.2 %	9.9 %	128.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0343 ppm	0.0016 ppm	0.0014 ppm	0.3812 ppm	0.0184 ppm	0.0021 ppm	-0.0006 ppm
Concentration per Run 1	0.0355 ppm	0.0016 ppm	0.0016 ppm	0.3839 ppm	0.0188 ppm	0.0022 ppm	0.0007 ppm
Concentration per Run 2	0.0339 ppm	0.0016 ppm	0.0013 ppm	0.3789 ppm	0.0186 ppm	0.0022 ppm	-0.0013 ppm
Concentration per Run 3	0.0335 ppm	0.0017 ppm	0.0014 ppm	0.3808 ppm	0.0179 ppm	0.0020 ppm	-0.0011 ppm
Concentration RSD	3.1 %	5.0 %	8.5 %	0.7 %	2.4 %	6.0 %	201.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0003 ppm	0.1494 ppm	0.0014 ppm	0.0044 ppm	0.0053 ppm	-0.0004 ppm	0.0001 ppm
Concentration per Run 1	-0.0006 ppm	0.1500 ppm	0.0019 ppm	0.0044 ppm	0.0055 ppm	-0.0007 ppm	0.0000 ppm
Concentration per Run 2	0.0006 ppm	0.1487 ppm	0.0009 ppm	0.0044 ppm	0.0052 ppm	-0.0008 ppm	0.0002 ppm
Concentration per Run 3	0.0010 ppm	0.1495 ppm	0.0012 ppm	0.0044 ppm	0.0051 ppm	0.0004 ppm	0.0000 ppm
Concentration RSD	241.8 %	0.4 %	36.2 %	0.8 %	3.1 %	176.3 %	190.0 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0084 ppm	103.6004 %	100.9016 %	104.2261 %	119.2981 %	115.5975 %	120.7514 %
Concentration per Run 1	0.0086 ppm	102.2118 %	100.0607 %	104.1734 %	119.0723 %	114.8343 %	121.1022 %
Concentration per Run 2	0.0083 ppm	103.4708 %	101.3118 %	103.9346 %	119.5546 %	115.8158 %	120.4415 %
Concentration per Run 3	0.0082 ppm	105.1187 %	101.3323 %	104.5703 %	119.2675 %	116.1425 %	120.7104 %
Concentration RSD	2.4 %	1.4 %	0.7 %	0.3 %	0.2 %	0.6 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450660-02D2 WG1969497
Analysis started at: 9/11/2024 8:10:32 PM
Rack 3
Vial 17
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.4694 ppm	1.6404 ppm	-0.0033 ppm	0.0396 ppm	3.1516 ppm	0.0000 ppm	110.8628 ppm
Concentration per Run 1	0.4761 ppm	1.6371 ppm	-0.0027 ppm	0.0401 ppm	3.1288 ppm	0.0000 ppm	110.8713 ppm
Concentration per Run 2	0.4693 ppm	1.6280 ppm	-0.0038 ppm	0.0389 ppm	3.1700 ppm	0.0001 ppm	110.5146 ppm
Concentration per Run 3	0.4629 ppm	1.6559 ppm	-0.0036 ppm	0.0398 ppm	3.1562 ppm	0.0000 ppm	111.2027 ppm
Concentration RSD	1.4 %	0.9 %	16.5 %	1.6 %	0.7 %	33.3 %	0.3 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	-0.0003 ppm	0.0002 ppm	0.0069 ppm	1.8623 ppm	0.3684 ppm	2.9473 ppm	0.0309 ppm
Concentration per Run 1	-0.0003 ppm	0.0004 ppm	0.0069 ppm	1.8845 ppm	0.3675 ppm	2.9614 ppm	0.0331 ppm
Concentration per Run 2	-0.0004 ppm	0.0003 ppm	0.0071 ppm	1.8720 ppm	0.3680 ppm	2.9204 ppm	0.0285 ppm
Concentration per Run 3	-0.0003 ppm	-0.0001 ppm	0.0066 ppm	1.8305 ppm	0.3697 ppm	2.9602 ppm	0.0312 ppm
Concentration RSD	12.9 %	140.6 %	3.9 %	1.5 %	0.3 %	0.8 %	7.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.4830 ppm	0.0586 ppm	0.0000 ppm	2.8615 ppm	0.1247 ppm	0.4900 ppm	0.0028 ppm
Concentration per Run 1	0.4881 ppm	0.0586 ppm	-0.0001 ppm	2.8442 ppm	0.1256 ppm	0.4924 ppm	0.0035 ppm
Concentration per Run 2	0.4811 ppm	0.0587 ppm	0.0002 ppm	2.8612 ppm	0.1248 ppm	0.4892 ppm	0.0029 ppm
Concentration per Run 3	0.4800 ppm	0.0586 ppm	-0.0001 ppm	2.8791 ppm	0.1238 ppm	0.4883 ppm	0.0019 ppm
Concentration RSD	0.9 %	0.2 %	5,137.2 %	0.6 %	0.7 %	0.4 %	30.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0192 ppm	0.3090 ppm	0.0046 ppm	1.6005 ppm	0.0075 ppm	0.0002 ppm	0.0016 ppm
Concentration per Run 1	0.0190 ppm	0.3184 ppm	0.0044 ppm	1.5909 ppm	0.0076 ppm	0.0007 ppm	0.0018 ppm
Concentration per Run 2	0.0194 ppm	0.3058 ppm	0.0050 ppm	1.6077 ppm	0.0076 ppm	-0.0001 ppm	0.0016 ppm
Concentration per Run 3	0.0193 ppm	0.3028 ppm	0.0043 ppm	1.6031 ppm	0.0074 ppm	0.0001 ppm	0.0016 ppm
Concentration RSD	1.2 %	2.7 %	9.0 %	0.5 %	1.8 %	174.6 %	7.8 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.2924 ppm	100.5770 %	101.7935 %	97.4107 %	125.8690 %	127.3404 %	127.6822 %
Concentration per Run 1	0.2945 ppm	99.8361 %	100.9214 %	97.1086 %	126.4067 %	126.6326 %	127.3252 %
Concentration per Run 2	0.2934 ppm	100.6265 %	102.5904 %	97.7400 %	125.7902 %	127.6787 %	128.0922 %
Concentration per Run 3	0.2891 ppm	101.2683 %	101.8686 %	97.3834 %	125.4101 %	127.7098 %	127.6291 %
Concentration RSD	1.0 %	0.7 %	0.8 %	0.3 %	0.4 %	0.5 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2450660-03D2 WG1969497
Analysis started at: 9/11/2024 8:14:32 PM
Rack 3
Vial 18
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0021 ppm	0.1595 ppm	0.0011 ppm	0.0036 ppm	0.0289 ppm	0.0000 ppm	0.6133 ppm
Concentration per Run 1	0.0020 ppm	0.1564 ppm	0.0006 ppm	0.0032 ppm	0.0288 ppm	0.0001 ppm	0.6107 ppm
Concentration per Run 2	0.0020 ppm	0.1576 ppm	0.0014 ppm	0.0042 ppm	0.0292 ppm	0.0000 ppm	0.6158 ppm
Concentration per Run 3	0.0023 ppm	0.1647 ppm	0.0014 ppm	0.0035 ppm	0.0289 ppm	0.0000 ppm	0.6134 ppm
Concentration RSD	9.9 %	2.8 %	37.5 %	14.4 %	0.7 %	70.5 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0009 ppm	0.0017 ppm	0.0039 ppm	0.0126 ppm	0.3916 ppm	0.0504 ppm	-0.0001 ppm
Concentration per Run 1	0.0009 ppm	0.0019 ppm	0.0040 ppm	0.0128 ppm	0.3917 ppm	0.0464 ppm	0.0007 ppm
Concentration per Run 2	0.0009 ppm	0.0017 ppm	0.0040 ppm	0.0123 ppm	0.3912 ppm	0.0463 ppm	-0.0011 ppm
Concentration per Run 3	0.0008 ppm	0.0016 ppm	0.0036 ppm	0.0126 ppm	0.3920 ppm	0.0585 ppm	0.0001 ppm
Concentration RSD	6.6 %	10.6 %	6.6 %	2.2 %	0.1 %	13.9 %	1,105.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0749 ppm	0.0116 ppm	0.0618 ppm	0.1067 ppm	0.0328 ppm	0.0345 ppm	0.0660 ppm
Concentration per Run 1	0.0752 ppm	0.0116 ppm	0.0626 ppm	0.1081 ppm	0.0326 ppm	0.0342 ppm	0.0690 ppm
Concentration per Run 2	0.0752 ppm	0.0116 ppm	0.0610 ppm	0.1085 ppm	0.0328 ppm	0.0347 ppm	0.0649 ppm
Concentration per Run 3	0.0741 ppm	0.0117 ppm	0.0618 ppm	0.1035 ppm	0.0331 ppm	0.0345 ppm	0.0642 ppm
Concentration RSD	0.9 %	0.7 %	1.3 %	2.6 %	0.9 %	0.8 %	3.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	-0.0002 ppm	0.8818 ppm	0.0021 ppm	0.0159 ppm	0.0072 ppm	-0.0003 ppm	0.0006 ppm
Concentration per Run 1	-0.0007 ppm	0.8954 ppm	0.0021 ppm	0.0158 ppm	0.0075 ppm	-0.0004 ppm	0.0005 ppm
Concentration per Run 2	-0.0004 ppm	0.8575 ppm	0.0014 ppm	0.0158 ppm	0.0073 ppm	-0.0004 ppm	0.0006 ppm
Concentration per Run 3	0.0003 ppm	0.8925 ppm	0.0027 ppm	0.0159 ppm	0.0070 ppm	-0.0001 ppm	0.0008 ppm
Concentration RSD	216.8 %	2.4 %	31.2 %	0.4 %	3.5 %	49.8 %	25.0 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0938 ppm	104.0936 %	101.8165 %	104.5357 %	113.3138 %	110.5908 %	114.1037 %
Concentration per Run 1	0.0953 ppm	103.1659 %	102.2298 %	103.9165 %	113.3108 %	110.9527 %	113.8242 %
Concentration per Run 2	0.0935 ppm	104.5551 %	101.1205 %	104.7571 %	113.7773 %	109.8085 %	114.3975 %
Concentration per Run 3	0.0927 ppm	104.5596 %	102.0993 %	104.9335 %	112.8532 %	111.0113 %	114.0894 %
Concentration RSD	1.4 %	0.8 %	0.6 %	0.5 %	0.4 %	0.6 %	0.3 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: L2451173-01D2 WG1969497
Analysis started at: 9/11/2024 8:18:32 PM
Rack 3
Vial 19
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0060 ppm	101.3262 ppm	0.1636 ppm	0.0833 ppm	1.5449 ppm	0.0051 ppm	54.8020 ppm
Concentration per Run 1	0.0060 ppm	101.8140 ppm	0.1621 ppm	0.0835 ppm	1.5501 ppm	0.0052 ppm	55.1166 ppm
Concentration per Run 2	0.0059 ppm	101.0015 ppm	0.1632 ppm	0.0827 ppm	1.5389 ppm	0.0051 ppm	54.4715 ppm
Concentration per Run 3	0.0063 ppm	101.1629 ppm	0.1655 ppm	0.0835 ppm	1.5457 ppm	0.0051 ppm	54.8180 ppm
Concentration RSD	3.3 %	0.4 %	1.1 %	0.5 %	0.4 %	0.7 %	0.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0069 ppm	0.0836 ppm	0.4718 ppm	0.8164 ppm	250.5705 ppm	13.1704 ppm	0.3027 ppm
Concentration per Run 1	0.0070 ppm	0.0837 ppm	0.4697 ppm	0.8202 ppm	251.2702 ppm	13.2197 ppm	0.3026 ppm
Concentration per Run 2	0.0069 ppm	0.0843 ppm	0.4727 ppm	0.8200 ppm	249.4096 ppm	13.1388 ppm	0.3027 ppm
Concentration per Run 3	0.0070 ppm	0.0827 ppm	0.4730 ppm	0.8090 ppm	251.0318 ppm	13.1526 ppm	0.3027 ppm
Concentration RSD	1.0 %	0.9 %	0.4 %	0.8 %	0.4 %	0.3 %	0.0 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	40.5717 ppm	2.3867 ppm	0.0144 ppm	5.9586 ppm	0.2456 ppm	2.8584 ppm	0.0230 ppm
Concentration per Run 1	40.6363 ppm	2.3980 ppm	0.0138 ppm	6.0206 ppm	0.2446 ppm	2.8479 ppm	0.0234 ppm
Concentration per Run 2	40.4951 ppm	2.3758 ppm	0.0149 ppm	5.9071 ppm	0.2458 ppm	2.8720 ppm	0.0241 ppm
Concentration per Run 3	40.5838 ppm	2.3864 ppm	0.0145 ppm	5.9482 ppm	0.2463 ppm	2.8553 ppm	0.0217 ppm
Concentration RSD	0.2 %	0.5 %	3.7 %	1.0 %	0.4 %	0.4 %	5.3 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0048 ppm	2.1841 ppm	1.2160 ppm	0.3343 ppm	2.5409 ppm	0.0033 ppm	0.2992 ppm
Concentration per Run 1	0.0083 ppm	2.1874 ppm	1.2126 ppm	0.3363 ppm	2.5430 ppm	0.0026 ppm	0.3007 ppm
Concentration per Run 2	0.0044 ppm	2.1936 ppm	1.2236 ppm	0.3325 ppm	2.5381 ppm	0.0029 ppm	0.2990 ppm
Concentration per Run 3	0.0017 ppm	2.1713 ppm	1.2117 ppm	0.3340 ppm	2.5418 ppm	0.0042 ppm	0.2978 ppm
Concentration RSD	68.4 %	0.5 %	0.5 %	0.6 %	0.1 %	26.4 %	0.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	6.1554 ppm	108.7056 %	109.7667 %	94.8705 %	135.5147 %	140.0013 %	137.6990 %
Concentration per Run 1	6.1289 ppm	108.8850 %	109.5318 %	95.3162 %	136.1914 %	140.0574 %	138.2317 %
Concentration per Run 2	6.1804 ppm	108.3979 %	110.5259 %	94.1144 %	135.4855 %	140.8225 %	136.9417 %
Concentration per Run 3	6.1567 ppm	108.8338 %	109.2423 %	95.1808 %	134.8672 %	139.1240 %	137.9237 %
Concentration RSD	0.4 %	0.2 %	0.6 %	0.7 %	0.5 %	0.6 %	0.5 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCV
Analysis started at: 9/11/2024 8:22:32 PM
Rack 0
Vial 3
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.4910 ppm	0.4642 ppm	0.4338 ppm	0.4557 ppm	0.4913 ppm	0.4820 ppm	0.4611 ppm
Concentration per Run 1	0.4925 ppm	0.4666 ppm	0.4329 ppm	0.4559 ppm	0.4910 ppm	0.4817 ppm	0.4625 ppm
Concentration per Run 2	0.4917 ppm	0.4590 ppm	0.4356 ppm	0.4545 ppm	0.4907 ppm	0.4817 ppm	0.4589 ppm
Concentration per Run 3	0.4887 ppm	0.4671 ppm	0.4329 ppm	0.4566 ppm	0.4924 ppm	0.4827 ppm	0.4619 ppm
Recovery Percentage 1	98.193 %	92.846 %	86.756 %	91.132 %	98.268 %	96.407 %	92.216 %
Concentration RSD	0.4 %	1.0 %	0.4 %	0.2 %	0.2 %	0.1 %	0.4 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.4865 ppm	0.4948 ppm	0.4790 ppm	0.4820 ppm	0.4977 ppm	5.3343 ppm	0.5258 ppm
Concentration per Run 1	0.4880 ppm	0.4966 ppm	0.4812 ppm	0.4844 ppm	0.4976 ppm	5.3567 ppm	0.5272 ppm
Concentration per Run 2	0.4874 ppm	0.4944 ppm	0.4794 ppm	0.4814 ppm	0.4977 ppm	5.2903 ppm	0.5228 ppm
Concentration per Run 3	0.4841 ppm	0.4935 ppm	0.4762 ppm	0.4803 ppm	0.4976 ppm	5.3558 ppm	0.5275 ppm
Recovery Percentage 1	97.307 %	98.968 %	95.792 %	96.401 %	99.530 %	106.685 %	105.162 %
Concentration RSD	0.4 %	0.3 %	0.5 %	0.4 %	0.0 %	0.7 %	0.5 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.4849 ppm	0.4702 ppm	0.4775 ppm	10.2029 ppm	0.4953 ppm	0.4695 ppm	0.4782 ppm
Concentration per Run 1	0.4892 ppm	0.4701 ppm	0.4755 ppm	10.2267 ppm	0.4961 ppm	0.4691 ppm	0.4782 ppm
Concentration per Run 2	0.4853 ppm	0.4682 ppm	0.4786 ppm	10.1279 ppm	0.4951 ppm	0.4713 ppm	0.4797 ppm
Concentration per Run 3	0.4802 ppm	0.4724 ppm	0.4785 ppm	10.2542 ppm	0.4947 ppm	0.4682 ppm	0.4766 ppm
Recovery Percentage 1	96.982 %	94.047 %	95.506 %	102.029 %	99.057 %	93.908 %	95.631 %
Concentration RSD	0.9 %	0.5 %	0.4 %	0.7 %	0.1 %	0.3 %	0.3 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4550 ppm	5.0899 ppm	0.5070 ppm	0.5007 ppm	0.4892 ppm	0.4606 ppm	0.4838 ppm
Concentration per Run 1	0.4575 ppm	5.0967 ppm	0.5070 ppm	0.5001 ppm	0.4902 ppm	0.4613 ppm	0.4854 ppm
Concentration per Run 2	0.4559 ppm	5.0984 ppm	0.5107 ppm	0.5004 ppm	0.4894 ppm	0.4628 ppm	0.4856 ppm
Concentration per Run 3	0.4514 ppm	5.0747 ppm	0.5032 ppm	0.5015 ppm	0.4879 ppm	0.4577 ppm	0.4805 ppm
Recovery Percentage 1	90.994 %	96.951 %	101.393 %	100.130 %	97.837 %	92.120 %	96.769 %
Concentration RSD	0.7 %	0.3 %	0.7 %	0.1 %	0.2 %	0.6 %	0.6 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.4833 ppm	105.2332 %	101.7412 %	103.0227 %	101.0121 %	98.6171 %	102.1909 %
Concentration per Run 1	0.4835 ppm	104.8686 %	102.4283 %	102.9801 %	101.3070 %	99.3731 %	102.2995 %
Concentration per Run 2	0.4844 ppm	105.0614 %	102.5005 %	102.8591 %	100.6303 %	99.2260 %	101.9635 %
Concentration per Run 3	0.4820 ppm	105.7696 %	100.2948 %	103.2290 %	101.0989 %	97.2520 %	102.3098 %
Recovery Percentage 1	96.657 %						
Concentration RSD	0.3 %	0.5 %	1.2 %	0.2 %	0.3 %	1.2 %	0.2 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCB
Analysis started at: 9/11/2024 8:26:30 PM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0001 ppm	-0.0076 ppm	0.0004 ppm	0.0008 ppm	0.0000 ppm	0.0000 ppm	-0.0045 ppm
Concentration per Run 1	0.0001 ppm	-0.0063 ppm	-0.0003 ppm	0.0016 ppm	0.0002 ppm	0.0000 ppm	-0.0034 ppm
Concentration per Run 2	0.0002 ppm	-0.0116 ppm	0.0004 ppm	0.0005 ppm	0.0000 ppm	0.0000 ppm	-0.0024 ppm
Concentration per Run 3	0.0000 ppm	-0.0048 ppm	0.0010 ppm	0.0004 ppm	-0.0001 ppm	0.0000 ppm	-0.0078 ppm
Recovery Percentage 1	1.463 %	-7.571 %	12.440 %	2.718 %	0.219 %	0.175 %	-4.535 %
Concentration RSD	111.2 %	47.0 %	166.2 %	86.7 %	582.6 %	396.8 %	62.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0001 ppm	-0.0002 ppm	0.0000 ppm	0.0007 ppm	0.0047 ppm	0.0117 ppm	-0.0018 ppm
Concentration per Run 1	0.0001 ppm	-0.0002 ppm	0.0000 ppm	0.0008 ppm	0.0047 ppm	0.0032 ppm	-0.0024 ppm
Concentration per Run 2	0.0001 ppm	-0.0004 ppm	-0.0002 ppm	0.0008 ppm	0.0041 ppm	0.0158 ppm	-0.0016 ppm
Concentration per Run 3	0.0001 ppm	-0.0001 ppm	0.0003 ppm	0.0004 ppm	0.0054 ppm	0.0160 ppm	-0.0013 ppm
Recovery Percentage 1	1.549 %	-1.114 %	0.485 %	6.667 %	9.487 %	0.466 %	-17.582 %
Concentration RSD	17.3 %	66.2 %	461.9 %	29.3 %	13.7 %	62.7 %	32.1 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0012 ppm	0.0001 ppm	0.0015 ppm	0.0045 ppm	0.0000 ppm	0.0005 ppm	-0.0010 ppm
Concentration per Run 1	0.0012 ppm	0.0002 ppm	0.0017 ppm	0.0038 ppm	-0.0003 ppm	0.0005 ppm	-0.0019 ppm
Concentration per Run 2	0.0008 ppm	0.0001 ppm	0.0014 ppm	0.0071 ppm	-0.0001 ppm	0.0006 ppm	0.0011 ppm
Concentration per Run 3	0.0016 ppm	0.0000 ppm	0.0015 ppm	0.0026 ppm	0.0005 ppm	0.0005 ppm	-0.0021 ppm
Recovery Percentage 1	1.212 %	0.898 %	2.996 %	0.224 %	0.169 %	5.270 %	-1.974 %
Concentration RSD	31.3 %	87.3 %	10.7 %	51.5 %	990.1 %	15.2 %	180.9 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0002 ppm	0.0004 ppm	0.0004 ppm	0.0001 ppm	-0.0001 ppm	0.0000 ppm	0.0000 ppm
Concentration per Run 1	-0.0011 ppm	0.0004 ppm	0.0002 ppm	0.0001 ppm	-0.0001 ppm	0.0001 ppm	0.0001 ppm
Concentration per Run 2	0.0007 ppm	0.0000 ppm	0.0001 ppm	0.0000 ppm	0.0000 ppm	-0.0004 ppm	-0.0002 ppm
Concentration per Run 3	0.0010 ppm	0.0008 ppm	0.0008 ppm	0.0001 ppm	-0.0001 ppm	0.0002 ppm	0.0000 ppm
Recovery Percentage 1	1.686 %	0.080 %	0.712 %	0.595 %	-0.957 %	-0.132 %	-0.411 %
Concentration RSD	673.0 %	99.3 %	107.4 %	33.7 %	66.1 %	1,212.7 %	392.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0007 ppm	101.0556 %	99.2399 %	102.4606 %	102.8199 %	99.6449 %	103.1582 %
Concentration per Run 1	0.0008 ppm	99.9893 %	98.9098 %	101.9895 %	103.2453 %	99.4169 %	103.0874 %
Concentration per Run 2	0.0007 ppm	100.8366 %	99.5183 %	102.3848 %	102.4428 %	99.8145 %	103.0830 %
Concentration per Run 3	0.0007 ppm	102.3411 %	99.2917 %	103.0076 %	102.7715 %	99.7032 %	103.3041 %
Recovery Percentage 1	13.902 %						
Concentration RSD	8.1 %	1.2 %	0.3 %	0.5 %	0.4 %	0.2 %	0.1 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCV
Analysis started at: 9/11/2024 8:30:28 PM
Rack 0
Vial 10
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.5028 ppm	0.4832 ppm	0.4500 ppm	0.4691 ppm	0.5060 ppm	0.4999 ppm	0.4828 ppm
Concentration per Run 1	0.5034 ppm	0.4795 ppm	0.4496 ppm	0.4718 ppm	0.5055 ppm	0.4993 ppm	0.4801 ppm
Concentration per Run 2	0.5018 ppm	0.4894 ppm	0.4522 ppm	0.4653 ppm	0.5063 ppm	0.5003 ppm	0.4831 ppm
Concentration per Run 3	0.5032 ppm	0.4807 ppm	0.4483 ppm	0.4700 ppm	0.5061 ppm	0.5001 ppm	0.4853 ppm
Recovery Percentage 1	100.563 %	96.640 %	90.006 %	93.810 %	101.193 %	99.978 %	96.567 %
Concentration RSD	0.2 %	1.1 %	0.4 %	0.7 %	0.1 %	0.1 %	0.5 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.5005 ppm	0.5103 ppm	0.4937 ppm	0.4934 ppm	0.5113 ppm	5.4939 ppm	0.5407 ppm
Concentration per Run 1	0.5019 ppm	0.5111 ppm	0.4941 ppm	0.4949 ppm	0.5078 ppm	5.5011 ppm	0.5395 ppm
Concentration per Run 2	0.4989 ppm	0.5091 ppm	0.4923 ppm	0.4918 ppm	0.5133 ppm	5.4999 ppm	0.5410 ppm
Concentration per Run 3	0.5006 ppm	0.5108 ppm	0.4945 ppm	0.4935 ppm	0.5128 ppm	5.4808 ppm	0.5416 ppm
Recovery Percentage 1	100.096 %	102.064 %	98.731 %	98.681 %	102.264 %	109.879 %	108.143 %
Concentration RSD	0.3 %	0.2 %	0.2 %	0.3 %	0.6 %	0.2 %	0.2 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.4957 ppm	0.4882 ppm	0.4952 ppm	10.4711 ppm	0.5115 ppm	0.4844 ppm	0.4922 ppm
Concentration per Run 1	0.4949 ppm	0.4862 ppm	0.4946 ppm	10.4431 ppm	0.5135 ppm	0.4832 ppm	0.4926 ppm
Concentration per Run 2	0.4962 ppm	0.4898 ppm	0.4917 ppm	10.4432 ppm	0.5064 ppm	0.4869 ppm	0.4881 ppm
Concentration per Run 3	0.4962 ppm	0.4884 ppm	0.4993 ppm	10.5269 ppm	0.5145 ppm	0.4830 ppm	0.4959 ppm
Recovery Percentage 1	99.150 %	97.633 %	99.039 %	104.711 %	102.291 %	96.873 %	98.439 %
Concentration RSD	0.1 %	0.4 %	0.8 %	0.5 %	0.9 %	0.5 %	0.8 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.4692 ppm	5.2207 ppm	0.5301 ppm	0.5199 ppm	0.5050 ppm	0.4739 ppm	0.4960 ppm
Concentration per Run 1	0.4675 ppm	5.2242 ppm	0.5323 ppm	0.5211 ppm	0.5036 ppm	0.4720 ppm	0.4976 ppm
Concentration per Run 2	0.4701 ppm	5.2027 ppm	0.5256 ppm	0.5195 ppm	0.5043 ppm	0.4748 ppm	0.4938 ppm
Concentration per Run 3	0.4701 ppm	5.2353 ppm	0.5323 ppm	0.5192 ppm	0.5071 ppm	0.4749 ppm	0.4967 ppm
Recovery Percentage 1	93.841 %	99.442 %	106.018 %	103.982 %	100.997 %	94.779 %	99.200 %
Concentration RSD	0.3 %	0.3 %	0.7 %	0.2 %	0.4 %	0.4 %	0.4 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.5007 ppm	105.2540 %	101.3946 %	102.5348 %	100.2962 %	98.5821 %	101.6814 %
Concentration per Run 1	0.5025 ppm	104.9192 %	101.5675 %	103.2161 %	100.3165 %	98.2705 %	102.4017 %
Concentration per Run 2	0.4973 ppm	105.4852 %	101.3856 %	101.6550 %	100.5234 %	98.8995 %	100.9883 %
Concentration per Run 3	0.5023 ppm	105.3575 %	101.2307 %	102.7333 %	100.0488 %	98.5763 %	101.6541 %
Recovery Percentage 1	100.140 %						
Concentration RSD	0.6 %	0.3 %	0.2 %	0.8 %	0.2 %	0.3 %	0.7 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: CCB
Analysis started at: 9/11/2024 8:34:31 PM
Rack 0
Vial 4
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0000 ppm	-0.0034 ppm	0.0001 ppm	0.0003 ppm	0.0000 ppm	0.0000 ppm	-0.0034 ppm
Concentration per Run 1	-0.0002 ppm	-0.0053 ppm	-0.0002 ppm	0.0000 ppm	0.0001 ppm	0.0000 ppm	-0.0033 ppm
Concentration per Run 2	0.0000 ppm	-0.0056 ppm	0.0011 ppm	0.0008 ppm	0.0001 ppm	0.0001 ppm	-0.0041 ppm
Concentration per Run 3	0.0002 ppm	0.0006 ppm	-0.0004 ppm	0.0000 ppm	-0.0001 ppm	0.0000 ppm	-0.0029 ppm
Recovery Percentage 1	-0.364 %	-3.448 %	4.728 %	0.884 %	0.315 %	0.826 %	-3.440 %
Concentration RSD	811.3 %	102.0 %	564.3 %	183.3 %	258.1 %	101.4 %	18.9 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0001 ppm	0.0000 ppm	0.0001 ppm	0.0003 ppm	0.0043 ppm	0.0161 ppm	-0.0014 ppm
Concentration per Run 1	0.0000 ppm	0.0003 ppm	0.0000 ppm	0.0002 ppm	0.0051 ppm	0.0390 ppm	-0.0002 ppm
Concentration per Run 2	0.0001 ppm	0.0000 ppm	0.0002 ppm	0.0002 ppm	0.0040 ppm	0.0055 ppm	-0.0016 ppm
Concentration per Run 3	0.0001 ppm	-0.0002 ppm	0.0003 ppm	0.0005 ppm	0.0038 ppm	0.0037 ppm	-0.0024 ppm
Recovery Percentage 1	1.488 %	0.121 %	1.462 %	3.084 %	8.621 %	0.642 %	-14.152 %
Concentration RSD	103.1 %	1,001.0 %	102.4 %	57.6 %	15.8 %	123.9 %	80.1 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.0004 ppm	0.0001 ppm	0.0015 ppm	0.0043 ppm	0.0000 ppm	0.0005 ppm	0.0001 ppm
Concentration per Run 1	0.0002 ppm	-0.0001 ppm	0.0015 ppm	0.0052 ppm	-0.0002 ppm	0.0003 ppm	-0.0003 ppm
Concentration per Run 2	0.0001 ppm	0.0002 ppm	0.0016 ppm	0.0037 ppm	-0.0002 ppm	0.0001 ppm	0.0001 ppm
Concentration per Run 3	0.0008 ppm	0.0003 ppm	0.0013 ppm	0.0041 ppm	0.0004 ppm	0.0011 ppm	0.0005 ppm
Recovery Percentage 1	0.401 %	1.381 %	2.939 %	0.217 %	0.056 %	5.245 %	0.163 %
Concentration RSD	92.9 %	148.6 %	9.7 %	18.4 %	2,174.8 %	96.8 %	531.5 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0005 ppm	-0.0003 ppm	0.0006 ppm	0.0000 ppm	0.0000 ppm	0.0006 ppm	0.0000 ppm
Concentration per Run 1	0.0004 ppm	0.0002 ppm	0.0005 ppm	0.0000 ppm	-0.0001 ppm	0.0001 ppm	0.0001 ppm
Concentration per Run 2	0.0005 ppm	-0.0001 ppm	0.0006 ppm	0.0000 ppm	0.0001 ppm	0.0013 ppm	-0.0001 ppm
Concentration per Run 3	0.0006 ppm	-0.0008 ppm	0.0007 ppm	0.0001 ppm	0.0000 ppm	0.0002 ppm	-0.0001 ppm
Recovery Percentage 1	5.073 %	-0.051 %	1.204 %	0.429 %	-0.164 %	2.827 %	-0.381 %
Concentration RSD	20.3 %	201.0 %	22.7 %	105.8 %	500.3 %	120.4 %	294.5 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0007 ppm	100.1541 %	98.3408 %	101.5399 %	101.9052 %	98.5672 %	102.8672 %
Concentration per Run 1	0.0007 ppm	98.7837 %	97.8040 %	101.8722 %	101.8971 %	98.3197 %	103.3904 %
Concentration per Run 2	0.0009 ppm	100.9221 %	98.1166 %	101.5079 %	102.3850 %	98.6185 %	102.9054 %
Concentration per Run 3	0.0007 ppm	100.7567 %	99.1017 %	101.2395 %	101.4336 %	98.7633 %	102.3058 %
Recovery Percentage 1	14.653 %						
Concentration RSD	16.4 %	1.2 %	0.7 %	0.3 %	0.5 %	0.2 %	0.5 %

iCAP Pro Trace 8 Data report

9/12/2024 5:58:39 AM

LabBook: WG1970061_09112024T8.imexp

Sample: LLOQ
Analysis started at: 9/11/2024 8:38:29 PM
Rack 0
Vial 5
Comment <Comment>

	Ag 328.068 (Axial-iFR)	Al 396.152 (Radial-iFR)	As 189.042 (Axial-eUV)	B 208.959 (Axial-iFR)	Ba 455.403 (Radial-iFR)	Be 313.042 (Radial-iFR)	Ca 315.887 (Radial-iFR)
Concentration average	0.0050 ppm	0.0913 ppm	0.0054 ppm	0.0288 ppm	0.0099 ppm	0.0047 ppm	0.0847 ppm
Concentration per Run 1	0.0051 ppm	0.0925 ppm	0.0055 ppm	0.0293 ppm	0.0099 ppm	0.0047 ppm	0.0822 ppm
Concentration per Run 2	0.0050 ppm	0.0873 ppm	0.0049 ppm	0.0283 ppm	0.0099 ppm	0.0048 ppm	0.0863 ppm
Concentration per Run 3	0.0049 ppm	0.0939 ppm	0.0057 ppm	0.0288 ppm	0.0099 ppm	0.0048 ppm	0.0856 ppm
Recovery Percentage 1	100.104 %	91.258 %	107.206 %	95.955 %	99.232 %	94.825 %	84.710 %
Concentration RSD	1.9 %	3.8 %	7.1 %	1.7 %	0.2 %	0.7 %	2.6 %

	Cd 214.438 (Axial-iFR)	Co 228.616 (Axial-iFR)	Cr 267.716 (Axial-iFR)	Cu 324.754 (Axial-iFR)	Fe 259.940 (Radial-iFR)	K 766.490 (Radial-iFR)	Li 670.776 (Radial-iFR)
Concentration average	0.0040 ppm	0.0198 ppm	0.0098 ppm	0.0103 ppm	0.0504 ppm	2.7354 ppm	0.0108 ppm
Concentration per Run 1	0.0040 ppm	0.0202 ppm	0.0101 ppm	0.0105 ppm	0.0504 ppm	2.7741 ppm	0.0111 ppm
Concentration per Run 2	0.0040 ppm	0.0197 ppm	0.0097 ppm	0.0103 ppm	0.0498 ppm	2.7096 ppm	0.0111 ppm
Concentration per Run 3	0.0039 ppm	0.0195 ppm	0.0097 ppm	0.0102 ppm	0.0510 ppm	2.7225 ppm	0.0101 ppm
Recovery Percentage 1	98.783 %	99.004 %	98.108 %	103.353 %	100.800 %	109.415 %	107.745 %
Concentration RSD	1.2 %	1.8 %	2.3 %	1.1 %	1.2 %	1.2 %	5.3 %

	Mg 279.079 (Axial-iFR)	Mn 257.610 (Radial-iFR)	Mo 202.030 (Axial-iFR)	Na 589.592 (Radial-iFR)	Ni 231.604 (Axial-iFR)	Pb 220.353 (Axial-eUV)	Sb 206.833 (Axial-iFR)
Concentration average	0.1002 ppm	0.0101 ppm	0.0500 ppm	2.0740 ppm	0.0200 ppm	0.0095 ppm	0.0488 ppm
Concentration per Run 1	0.1006 ppm	0.0101 ppm	0.0495 ppm	2.0816 ppm	0.0200 ppm	0.0098 ppm	0.0499 ppm
Concentration per Run 2	0.1007 ppm	0.0102 ppm	0.0503 ppm	2.0710 ppm	0.0200 ppm	0.0091 ppm	0.0486 ppm
Concentration per Run 3	0.0992 ppm	0.0100 ppm	0.0501 ppm	2.0693 ppm	0.0200 ppm	0.0095 ppm	0.0479 ppm
Recovery Percentage 1	100.165 %	100.965 %	99.918 %	103.698 %	80.068 %	94.589 %	97.626 %
Concentration RSD	0.8 %	0.9 %	0.8 %	0.3 %	0.1 %	3.5 %	2.1 %

	Se 196.090 (Axial-eUV)	Si 212.412 (Axial-iFR)	Sn 189.989 (Axial-iFR)	Sr 421.552 (Radial-iFR)	Ti 334.904 (Axial-iFR)	Tl 190.856 (Axial-eUV)	V 292.402 (Axial-iFR)
Concentration average	0.0090 ppm	0.4771 ppm	0.0515 ppm	0.0099 ppm	0.0500 ppm	0.0184 ppm	0.0098 ppm
Concentration per Run 1	0.0093 ppm	0.4838 ppm	0.0525 ppm	0.0099 ppm	0.0506 ppm	0.0180 ppm	0.0100 ppm
Concentration per Run 2	0.0091 ppm	0.4736 ppm	0.0513 ppm	0.0100 ppm	0.0500 ppm	0.0184 ppm	0.0098 ppm
Concentration per Run 3	0.0087 ppm	0.4740 ppm	0.0506 ppm	0.0099 ppm	0.0494 ppm	0.0189 ppm	0.0096 ppm
Recovery Percentage 1	90.198 %	95.427 %	102.969 %	99.384 %	100.040 %	92.111 %	98.144 %
Concentration RSD	3.4 %	1.2 %	1.9 %	0.4 %	1.3 %	2.2 %	2.0 %

	Zn 206.200 (Axial-iFR)	Sc 361.384 (Axial-iFR)	Sc 361.384 (Radial-iFR)	Sc 227.318 (Axial-eUV)	Y 360.073 (Axial-iFR)	Y 371.030 (Radial-iFR)	Y 224.306 (Axial-eUV)
Concentration average	0.0053 ppm	104.5688 %	101.9089 %	103.8723 %	101.6805 %	99.4906 %	102.6227 %
Concentration per Run 1	0.0054 ppm	103.4725 %	101.2722 %	103.4909 %	101.4103 %	99.4081 %	102.7546 %
Concentration per Run 2	0.0052 ppm	104.7770 %	101.8399 %	104.0258 %	101.5953 %	98.7550 %	102.5918 %
Concentration per Run 3	0.0052 ppm	105.4569 %	102.6146 %	104.1002 %	102.0360 %	100.3088 %	102.5217 %
Recovery Percentage 1	105.147 %						
Concentration RSD	2.3 %	1.0 %	0.7 %	0.3 %	0.3 %	0.8 %	0.1 %

QC True Values: Trace 4,5,6,7

	Element	True Value (mg/L)
ICV/CCV	All	0.50
	K	5.00
	Na	10.00
	Si	5.25
ICSA	Al	250
	Ca	250
	Fe	100
	Mg	250
ICSB	Al	9.00
	Sb	1.00
	As	1.00
	Ba	0.30
	Be	0.10
	Bi	1.00
	B	0.50
	Cd	0.30
	Ca	45.00
	Cr	0.30
	Co	0.30
	Cu	0.30
	Fe	37.50
	Pb	1.00
	Mg	22.50
	Mn	0.20
	Mo	0.30
	Ni	0.30
	K	20.00
	Se	0.50
	Si	1.23
	Ag	0.30
	Na	7.50
	Sr	1.00
	Tl	1.00
	Sn	1.00
	Ti	1.00
	V	0.30
	Zn	0.30

	Element	True Value (mg/L)
CRI	Al	0.40
	Sb	0.10
	As	0.02
	Ba	0.04
	Be	0.01
	Bi	0.02
	B	0.10
	Cd	0.01
	Ca	0.40
	Cr	0.02
	Co	0.10
	Cu	0.05
	Fe	0.20
	Pb	0.05
	Mg	0.40
	Mn	0.03
	Mo	0.10
	Ni	0.08
	K	5.00
	Se	0.02
	Si	1.00
	Ag	0.02
	Na	5.00
	Sr	0.02
	Tl	0.02
	Sn	0.02
	Ti	0.02
	V	0.10
	Zn	0.04

LCS & MS Spike Concentrations

Element	Liquid concentrations (mg/L)	Soil concentrations (mg/kg)
Al	2.00	100
Sb	0.50	25.0
As	0.12	6.0
Ba	2.00	100
Be	0.05	2.5
Bi	1.00	50.0
B	1.00	50.0
Cd	0.05	2.55
Ca	10.00	500
Cr	0.20	10.0
Co	0.50	25.0
Cu	0.25	12.5
Fe	1.00	50.0
Pb	0.51	25.5
Mg	10.00	500
Mn	0.50	25.0
Mo	1.00	50.0
Ni	0.50	25.0
K	10.00	500
Se	0.12	6.0
Si	1.00	50.0
Ag	0.05	2.5
Na	10.00	500
Sr	1.00	50.0
Tl	0.12	6.0
Sn	1.00	50.0
Ti	1.00	50.0
V	0.50	25.0
Zn	0.50	25.0

LCS and MS Spike Concentrations—As of 08/09/2011

Element	Liquid Concentration(mg/L)	Soil Concentration (mg/kg)
Al	2.00	160
Sb	0.50	40
As	0.12	9.6
Ba	2.00	160
Be	0.05	4.0
Bi	1.00	80
B	1.00	80
Cd	0.051	4.08
Ca	10.0	800
Cr	0.20	16
Co	0.50	40
Cu	0.25	20
Fe	1.00	80
Pb	0.51	40.8
Mg	10.0	800
Mn	0.50	40
Mo	1.00	80
Ni	0.50	40
K	10.0	800
Se	0.12	9.6
Si	1.00	80
Ag	0.05	24
Na	10.0	800
Sr	1.00	80
Tl	0.12	9.6
Sn	1.00	80
Ti	1.00	80
V	0.50	40
Zn	0.50	40

Revised 8/9/11 Soil spike is based on (2x water spike)x(50/1.25), where 50 is the final volume of soil digestate and 1.25 is the nominal digestion weight of 1.25g, except in the case of Ag, where additional Ag is added to the spike.

▪ Certificate of Analysis ▪

Product: Metals in Soil
Catalog Number: 540
Lot No. D102-540
Certificate Issue Date: June 22, 2018
Expiration Date: January 31, 2022
Revision Number: Original

Product use instructions are included as part of the certification packet and are paginated separately from this Certificate of Analysis. Please reference the product use instructions for catalog #540 revision 030512.

CERTIFICATION

Parameter	Certified Value[1]	Reference Value	Uncertainty[2]	QC Performance Acceptance Limits[3]	PT Performance Acceptance Limits[4]
	mg/kg	mg/kg	%	mg/kg	mg/kg
Aluminum	10100	8160	6.36	3960 - 12400	4080 - 12200
Antimony	120	60.9	9.42	0.822 - 121	12.0 - 166
Arsenic	144	135	5.08	112 - 158	94.6 - 176
Barium	469	443	6.77	366 - 521	332 - 554
Beryllium	207	197	5.86	164 - 229	148 - 246
Boron	213	174	12.6	127 - 221	105 - 244
Cadmium	224	204	6.65	169 - 240	153 - 256
Calcium	5190	4830	9.12	3950 - 5700	3510 - 6150
Chromium	138	132	8.56	109 - 155	92.2 - 171
Cobalt	182	179	7.93	151 - 207	134 - 224
Copper	191	184	6.72	155 - 213	138 - 230
Iron	15000	14400	10.7	8770 - 20000	5120 - 23600
Lead	225	216	7.72	178 - 254	159 - 274
Magnesium	2570	2340	6.13	1780 - 2900	1460 - 3230
Manganese	331	323	6.71	266 - 380	242 - 404
Mercury	16.8	13.2	16.0	8.64 - 17.7	7.89 - 18.5
Molybdenum	193	175	2.39	141 - 209	125 - 226
Nickel	163	152	5.95	126 - 178	106 - 197
Potassium	2420	2050	6.31	1440 - 2660	1210 - 2890
Selenium	81.9	74.9	4.13	59.3 - 90.5	47.0 - 103
Silver	57.6	53.9	9.00	43.0 - 64.8	37.8 - 70.0
Sodium	161	149	12.1	111 - 188	57.7 - 241
Strontium	100	96.2	4.04	78.1 - 114	69.0 - 123
Thallium	253	232	3.54	188 - 276	168 - 296

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Parameter	Certified Value[1]	Reference Value	Uncertainty[2]	QC Performance Acceptance Limits[3]	PT Performance Acceptance Limits[4]
	mg/kg	mg/kg	%	mg/kg	mg/kg
Tin	146	134	10.8	106 - 163	79.5 - 189
Titanium	449	340	7.20	70.2 - 609	44.9 - 711
Uranium	114	113	7.10	85.5 - 140	71.9 - 153
Vanadium	180	172	8.85	137 - 207	126 - 218
Zinc	217	211	6.58	171 - 250	147 - 274

ANALYTICAL VERIFICATION

Parameter	Certified Value[1]	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery[5]	n	SRM Number	Recovery
	mg/kg	mg/kg	%			%
Aluminum	10100	8160	80.8	138	-	-
Antimony	120	60.9	50.8	135	-	-
Arsenic	144	135	93.8	184	-	-
Barium	469	443	94.5	158	-	-
Beryllium	207	197	95.0	148	-	-
Boron	213	174	81.8	107	-	-
Cadmium	224	204	91.3	199	-	-
Calcium	5190	4830	93.0	122	-	-
Chromium	138	132	95.5	172	-	-
Cobalt	182	179	98.4	140	-	-
Copper	191	184	96.3	183	-	-
Iron	15000	14400	95.6	133	-	-
Lead	225	216	96.2	204	-	-
Magnesium	2570	2340	91.2	122	-	-
Manganese	331	323	97.6	147	-	-
Mercury	16.8	13.2	78.3	128	-	-
Molybdenum	193	175	90.8	143	-	-
Nickel	163	152	93.1	185	-	-
Potassium	2420	2050	84.7	121	-	-
Selenium	81.9	74.9	91.5	163	-	-

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Parameter	Certified Value[1]	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery[5]	n	SRM Number	Recovery
	mg/kg	mg/kg	%			%
Silver	57.6	53.9	93.6	150	-	-
Sodium	161	149	92.8	105	-	-
Strontium	100	96.2	96.2	90	-	-
Thallium	253	232	91.6	147	-	-
Tin	146	134	92.0	100	-	-
Titanium	449	340	75.6	93	-	-
Uranium	114	113	98.8	35	-	-
Vanadium	180	172	95.4	139	-	-
Zinc	217	211	97.0	180	-	-

1. The **Certified Values** are the actual "made-to" concentrations confirmed by ERA analytical verification. The certified values are monitored and purchasers will be notified of any significant changes resulting in recertification or withdrawal of this certified reference material during the period of validity of this certificate.

2. The **Uncertainty** is the total propagated uncertainty at the 95% confidence interval. The uncertainty is based on the preparation and internal analytical verification of the product by ERA, multiplied by a coverage factor. The uncertainty applies to the product as supplied and does not take into account any required or optional dilution and/or preparations the laboratory may perform while using this product.

3. The **QC Performance Acceptance Limits (QC PALs™)**are based on actual historical data collected in ERA's Proficiency Testing program. The QC PALs™ reflect any inherent biases in the methods used to establish the limits and closely approximate a 95% confidence interval of the performance that experienced laboratories should achieve using accepted environmental methods. Use the QC PALs™ to realistically evaluate your performance against your peers.

4. The **PT Performance Acceptance Limits (PT PALs™)** are calculated using the regression equations and fixed acceptance criteria specified in the NELAC proficiency testing requirements. Use the PT PALs™ when analyzing this QC standard alongside USEPA and NELAC compliant PT standards. Please note that many PT study acceptance limits are concentration dependent (some non-linearly) and, therefore, the acceptance limits of this QC standard and any PT standard may differ relative to their difference in concentrations.

5. The **PT Data/Traceability** data include the mean value, percent recovery and number of data points reported by the laboratories in our Proficiency Testing study compared to the Certified Values. In addition, where NIST Standard Reference Materials (SRMs) are available, each analyte has been analytically traced to the NIST SRM listed. This product is traceable to the lot numbers of its starting materials. All gravimetric and volumetric measurements related to its manufacture are traceable to NIST through an unbroken chain of comparisons.
Traceability Recovery (%) = [(% recovery certified standard)/(% recovery NIST SRM)]*100
The traceability data shown were compiled by analyzing the ERA standards or their associated stock solutions against the applicable NIST SRMs.

6. For additional information on this product such as intended use, instructions for use, level of homogeneity, and safety information, please refer to the provided Instruction Sheet

If you have any questions or need technical assistance, please call ERA technical assistance at 1-800-372-0122 or send an email to info@eraqc.com.

Certifying Officer

Brian Miller

Quality Officer

Matthew Seebeck

ERA
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Reference Material

▪ Certificate of Analysis ▪

Product: Metals in Soil
Catalog Number: 540
Lot No. D105-540
Certificate Issue Date: March 19, 2019
Expiration Date: October 12, 2022
Revision Number: Original

Product use instructions are included as part of the certification packet and are paginated separately from this Certificate of Analysis. Please reference the product use instructions for catalog #540 revision 030512.

CERTIFICATION

Parameter	Certified Value[1]	Reference Value	Uncertainty[2]	QC Performance Acceptance Limits[3]	PT Performance Acceptance Limits[4]
	mg/kg	mg/kg	%	mg/kg	mg/kg
Aluminum	10100	8800	8.32	4600 - 13000	4470 - 13100
Antimony	282	147	7.70	6.17 - 289	28.2 - 366
Arsenic	155	143	6.34	119 - 168	100 - 186
Barium	439	415	5.37	343 - 488	311 - 519
Beryllium	192	179	2.78	149 - 210	134 - 224
Boron	216	160	7.08	113 - 208	96.1 - 238
Cadmium	61.5	56.2	0.528	46.6 - 65.9	42.2 - 70.3
Calcium	5190	4960	6.64	4090 - 5840	3610 - 6310
Chromium	104	101	4.75	83.2 - 118	70.5 - 131
Cobalt	196	189	0.500	158 - 219	141 - 236
Copper	65.0	63.1	2.65	53.1 - 73.1	47.3 - 78.9
Iron	15000	15700	8.94	10100 - 21300	6000 - 25400
Lead	126	125	4.77	103 - 146	89.3 - 160
Magnesium	2570	2410	6.26	1860 - 2970	1520 - 3310
Manganese	387	382	5.37	315 - 449	290 - 474
Mercury	7.76	7.61	13.7	5.53 - 9.69	4.57 - 10.7
Molybdenum	120	107	0.500	86.0 - 128	75.5 - 139
Nickel	117	108	0.514	89.5 - 127	75.7 - 141
Potassium	2420	2110	5.62	1500 - 2720	1260 - 2960
Selenium	84.6	77.9	7.10	61.8 - 94.0	49.2 - 107
Silver	34.6	34.3	8.34	27.8 - 40.9	23.6 - 45.1
Sodium	161	145	6.72	106 - 183	54.3 - 235
Strontium	104	104	3.95	85.1 - 123	74.8 - 133
Thallium	123	113	0.500	91.3 - 134	77.1 - 149

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Parameter	Certified Value[1]	Reference Value	Uncertainty[2]	QC Performance Acceptance Limits[3]	PT Performance Acceptance Limits[4]
	mg/kg	mg/kg	%	mg/kg	mg/kg
Tin	118	107	0.500	83.5 - 130	61.2 - 152
Titanium	512	421	5.80	114 - 728	0.00 - 854
Uranium	103	104	6.18	79.1 - 128	71.9 - 135
Vanadium	87.3	83.7	8.55	66.8 - 101	54.2 - 113
Zinc	251	240	3.98	194 - 285	168 - 312

ANALYTICAL VERIFICATION

Parameter	Certified Value[1]	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery[5]	n	SRM Number	Recovery
	mg/kg	mg/kg	%			%
Aluminum	10100	8800	87.1	193	-	-
Antimony	282	147	52.3	216	-	-
Arsenic	155	143	92.5	240	-	-
Barium	439	415	94.6	222	-	-
Beryllium	192	179	93.4	220	-	-
Boron	216	160	74.2	152	-	-
Cadmium	61.5	56.2	91.5	239	-	-
Calcium	5190	4960	95.6	175	-	-
Chromium	104	101	96.8	237	-	-
Cobalt	196	189	96.2	215	-	-
Copper	65.0	63.1	97.1	237	-	-
Iron	15000	15700	105	195	-	-
Lead	126	125	99.0	243	-	-
Magnesium	2570	2410	93.9	177	-	-
Manganese	387	382	98.7	215	-	-
Mercury	7.76	7.61	98.0	157	-	-
Molybdenum	120	107	89.4	216	-	-
Nickel	117	108	92.5	235	-	-
Potassium	2420	2110	87.2	181	-	-
Selenium	84.6	77.9	92.1	231	-	-

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Parameter	Certified Value[1]	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery[5]	n	SRM Number	Recovery
	mg/kg	mg/kg	%			%
Silver	34.6	34.3	99.3	216	-	-
Sodium	161	145	89.8	166	-	-
Strontium	104	104	99.9	148	-	-
Thallium	123	113	91.8	215	-	-
Tin	118	107	90.4	164	-	-
Titanium	512	421	82.2	157	-	-
Uranium	103	104	101	61	-	-
Vanadium	87.3	83.7	95.9	214	-	-
Zinc	251	240	95.5	234	-	-

1. The **Certified Values** are the actual "made-to" concentrations confirmed by ERA analytical verification. The certified values are monitored and purchasers will be notified of any significant changes resulting in recertification or withdrawal of this reference material during the period of validity of this certificate.

2. The **Uncertainty** is the total propagated uncertainty at the 95% confidence interval. The uncertainty is based on the preparation and internal analytical verification of the product by ERA, multiplied by a coverage factor. The uncertainty applies to the product as supplied and does not take into account any required or optional dilution and/or preparations the laboratory may perform while using this product.

3. The **QC Performance Acceptance Limits (QC PALs™)**are based on actual historical data collected in ERA's Proficiency Testing program. The QC PALs™ reflect any inherent biases in the methods used to establish the limits and closely approximate a 95% confidence interval of the performance that experienced laboratories should achieve using accepted environmental methods. Use the QC PALs™ to realistically evaluate your performance against your peers.

4. The **PT Performance Acceptance Limits (PT PALs™)** are calculated using the regression equations and fixed acceptance criteria specified in the NELAC proficiency testing requirements. Use the PT PALs™ when analyzing this QC standard alongside USEPA and NELAC compliant PT standards. Please note that many PT study acceptance limits are concentration dependent (some non-linearly) and, therefore, the acceptance limits of this QC standard and any PT standard may differ relative to their difference in concentrations.

5. The **PT Data/Traceability** data include the mean value, percent recovery and number of data points reported by the laboratories in our Proficiency Testing study compared to the Certified Values. In addition, where NIST Standard Reference Materials (SRMs) are available, each analyte has been analytically traced to the NIST SRM listed. This product is traceable to the lot numbers of its starting materials. All gravimetric and volumetric measurements related to its manufacture are traceable to NIST through an unbroken chain of comparisons.
Traceability Recovery (%) = [(% recovery certified standard)/(% recovery NIST SRM)]*100
The traceability data shown were compiled by analyzing the ERA standards or their associated stock solutions against the applicable NIST SRMs.

6. For additional information on this product such as intended use, instructions for use, level of homogeneity, and safety information, please refer to the provided Instruction Sheet

If you have any questions or need technical assistance, please call ERA technical assistance at 1-800-372-0122 or send an email to info@eraqc.com.

Certifying Officer

Brian Miller

Brian Miller

Quality Officer

Matthew Seebeck

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Certified Reference Material

▪ Certificate of Analysis ▪

Product: Metals in Soil
Catalog Number: 540
Lot No. D109-540
Certificate Issue Date: March 24, 2020
Expiration Date: October 03, 2023
Revision Number: Original

Product use instructions are included as part of the certification packet and are paginated separately from this Certificate of Analysis. Please reference the product use instructions for catalog #540 revision 090119.

CERTIFICATION

Parameter	Certified Value[1]	Reference Value[7]	Uncertainty[2]	QC Performance Acceptance Limits[3]	PT Performance Acceptance Limits[4]
	mg/kg	mg/kg	%	mg/kg	mg/kg
Aluminum	10100	8130	2.54	3920 - 12300	4060 - 12200
Antimony	259	134	5.03	4.56 - 264	25.9 - 335
Arsenic	171	156	3.38	129 - 183	109 - 203
Barium	253	239	4.81	197 - 280	179 - 298
Beryllium	179	169	6.59	141 - 198	127 - 212
Boron	114	87.5	10.3	62.5 - 113	52.5 - 125
Cadmium	149	137	5.43	113 - 160	103 - 171
Calcium	5190	4760	3.48	3890 - 5640	3460 - 6070
Chromium	163	154	3.79	126 - 181	108 - 200
Cobalt	127	121	5.07	101 - 141	90.8 - 151
Copper	57.0	54.9	4.13	46.1 - 63.6	41.1 - 68.6
Iron	15000	14100	6.27	8470 - 19700	4920 - 23200
Lead	133	130	3.00	107 - 152	93.3 - 167
Magnesium	2570	2320	3.32	1760 - 2880	1440 - 3200
Manganese	277	269	2.67	221 - 317	199 - 340
Mercury	21.6	20.5	7.72	14.7 - 26.3	12.3 - 28.6
Molybdenum	108	95.4	2.61	76.4 - 114	66.9 - 124
Nickel	58.7	53.9	4.97	44.5 - 63.3	37.7 - 70.0
Potassium	2420	2020	3.06	1410 - 2630	1190 - 2850
Selenium	181	167	5.63	132 - 201	113 - 221
Silver	35.5	33.6	5.20	26.8 - 40.3	23.0 - 44.1
Sodium	161	133	2.76	95.1 - 171	46.5 - 220
Strontium	89.7	87.9	4.59	71.7 - 104	62.8 - 113
Thallium	121	112	5.19	90.3 - 133	76.1 - 147

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Parameter	Certified Value[1]	Reference Value[7]	Uncertainty[2]	QC Performance Acceptance Limits[3]	PT Performance Acceptance Limits[4]
	mg/kg	mg/kg	%	mg/kg	mg/kg
Tin	83.5	74.0	5.42	57.6 - 90.4	39.7 - 108
Titanium	474	333	7.17	48.6 - 617	46.3 - 620
Uranium	51.9	51.9	3.36	39.6 - 64.3	35.9 - 68.0
Vanadium	68.1	62.6	6.00	49.4 - 75.8	37.0 - 88.3
Zinc	165	158	2.34	128 - 188	111 - 205

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ANALYTICAL VERIFICATION

Parameter	Certified Value[1]	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery[5]	n	SRM Number[6]	Recovery
	mg/kg	mg/kg	%			%
Aluminum	10100	8130	80.5	196	-	-
Antimony	259	134	51.8	217	-	-
Arsenic	171	156	91.3	243	-	-
Barium	253	239	94.3	230	-	-
Beryllium	179	169	94.6	223	-	-
Boron	114	87.5	76.7	150	-	-
Cadmium	149	137	91.8	249	-	-
Calcium	5190	4760	91.8	184	-	-
Chromium	163	154	94.4	245	-	-
Cobalt	127	121	95.3	221	-	-
Copper	57.0	54.9	96.2	243	-	-
Iron	15000	14100	93.9	199	-	-
Lead	133	130	97.7	251	-	-
Magnesium	2570	2320	90.1	182	-	-
Manganese	277	269	97.2	220	-	-
Mercury	21.6	20.5	94.7	172	-	-
Molybdenum	108	95.4	88.3	218	-	-
Nickel	58.7	53.9	91.8	242	-	-
Potassium	2420	2020	83.5	187	-	-
Selenium	181	167	92.2	235	-	-
Silver	35.5	33.6	94.5	222	-	-
Sodium	161	133	82.7	177	-	-
Strontium	89.7	87.9	98.0	151	-	-
Thallium	121	112	92.2	219	-	-
Tin	83.5	74.0	88.6	170	-	-
Titanium	474	333	70.3	157	-	-
Uranium	51.9	51.9	100	60	-	-
Vanadium	68.1	62.6	91.9	213	-	-
Zinc	165	158	95.8	238	-	-

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1. The **Certified Values** are the actual gravimetric/volumetric "made-to" concentrations confirmed by ERA analytical verification. The certified values are monitored and purchasers will be notified of any significant changes resulting in recertification or withdrawal of this certified reference material during the period of validity of this certificate.

2. The **Uncertainty** represents an expanded uncertainty and approximates a 95% confidence interval. The uncertainty is based on the characterization, homogeneity and stability characteristics of the product, multiplied by a coverage factor (k=2). The uncertainty applies to the product as supplied and does not take into account any required or optional dilution and/or preparations the laboratory may perform while using this product. The formula used to calculate the expanded uncertainty is:
$U_{expanded} = k * SQRT((U_{char}^2) + (U_{homogen}^2) + (U_{LTS}^2) + (U_{STS}^2) + (U_{RSS}^2))$

Where:

$U_{expanded}$ = Expanded uncertainty.
k = Coverage factor.
U_{char} = Combined standard uncertainty of the manufacturing and/or analytical verification assessment.
$U_{homogen}$ = Standard uncertainty of the homogeneity assessment.
U_{LTS} = Standard uncertainty associated with long-term stability.
U_{STS} = Standard uncertainty associated with short-term (transport) stability.
U_{RSS} = Standard uncertainty associated with repeated sampling of the product (where permitted by product use instructions).

3. The **QC Performance Acceptance Limits (QC PALs™)** are based on actual historical data collected in ERA's Proficiency Testing program. The QC PALs™ reflect any inherent biases in the methods used to establish the limits and closely approximate a 95% confidence interval of the performance that experienced laboratories should achieve using accepted environmental methods. Use the QC PALs™ to realistically evaluate your performance against your peers.

4. The **PT Performance Acceptance Limits (PT PALs™)** are calculated using the regression equations and fixed acceptance criteria specified in the NELAC proficiency testing requirements. Use the PT PALs™ when analyzing this certified reference material alongside USEPA and NELAC compliant PT study materials. Please note that many PT study acceptance limits are concentration dependent (some non-linearly) and therefore, the acceptance limits of this certified reference material and any PT study material may differ relative to their difference in concentrations.

5. The **PT Performance Data** include the mean value, percent recovery and number of data points reported by laboratories in our Proficiency Testing study compared to the Certified Values. In the event this lot was not used in a proficiency testing scheme, the data displayed was generated internally by ERA.

6. Where NIST Standard Reference Materials (SRMs) are available, each analyte has been analytically traced to the NIST SRM listed. **Analytical Traceability Recovery (%)** = [(% recovery ERA certified reference material)/(% recovery NIST SRM)]*100
The traceability data shown were compiled by analyzing this ERA certified reference material and/or it's associated stock solution(s) against the applicable NIST SRMs.

7. The **Reference Values** are equal to the mean recoveries for the parameters as determined in an interlaboratory round robin study. The **Reference Values** represent the expected performance for the analytes in this standard. ERA recommends using the **Reference Values** when assessing or evaluating your results.

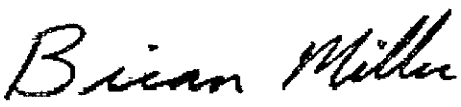
8. **Metrological Traceability**. This certified reference material is metrologically traceable to NIST mass reference materials through an unbroken chain of comparisons.

9. For additional information on this product such as intended use, storage information, instructions for use, minimum sample size, and safety information, please refer to the Product Use Instructions provided.

If you have any questions or need technical assistance, please call ERA technical assistance at 1-800-372-0122 or send an email to info@eraqc.com.

Certifying Officer

Brian Miller



Quality Officer

Matthew Seebeck

ERA
A Waters Company

Certified Reference Material

▪ Certificate of Analysis ▪

Product: Metals in Soil
Catalog Number: 540
Lot No. D113-540
Certificate Issue Date: March 23, 2021
Expiration Date: October 13, 2024
Revision Number: Original

Product use instructions are included as part of the certification packet and are paginated separately from this Certificate of Analysis. Please reference the product use instructions for catalog #540 revision 090119.

CERTIFICATION

Parameter	Certified Value[1]	Reference Value	Uncertainty[2]	QC Performance Acceptance Limits[3]	PT Performance Acceptance Limits[4]
	mg/kg	mg/kg	%	mg/kg	mg/kg
Aluminum	10100	8630	12.0	4420 - 12800	4370 - 12900
Antimony	256	129	16.8	0.742 - 257	25.6 - 323
Arsenic	91.6	84.5	15.1	70.0 - 99.0	59.2 - 110
Barium	259	249	9.94	206 - 292	187 - 311
Beryllium	175	163	3.89	135 - 191	122 - 204
Boron	95.7	76.7	12.8	55.7 - 97.7	48.0 - 107
Cadmium	107	99.0	11.5	82.2 - 116	74.2 - 124
Calcium	5190	4760	11.8	3890 - 5640	3460 - 6070
Chromium	129	122	14.6	101 - 144	85.7 - 159
Cobalt	63.6	61.7	11.5	51.9 - 71.6	46.3 - 77.2
Copper	62.3	61.5	12.3	51.9 - 71.0	46.1 - 76.8
Iron	15000	14500	15.7	8860 - 20100	5190 - 23800
Lead	122	123	13.9	103 - 144	88.3 - 158
Lithium	6.42	7.30	18.7	5.13 - 9.48	3.20 - 11.4
Magnesium	2570	2360	8.87	1810 - 2920	1480 - 3250
Manganese	470	456	13.4	375 - 538	350 - 563
Mercury	22.1	18.9	14.5	13.0 - 24.8	11.3 - 26.4
Molybdenum	80.1	72.8	11.0	58.7 - 87.0	50.5 - 95.2
Nickel	143	135	14.2	112 - 158	94.7 - 176
Potassium	2420	2090	8.21	1480 - 2700	1240 - 2940
Selenium	128	121	11.7	96.9 - 146	80.4 - 162
Silver	45.4	44.1	6.69	35.5 - 52.8	30.7 - 57.6
Sodium	161	136	9.34	97.4 - 174	48.1 - 223
Strontium	82.2	82.3	8.42	67.4 - 97.1	58.6 - 106

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Parameter	Certified Value[1]	Reference Value	Uncertainty[2]	QC Performance Acceptance Limits[3]	PT Performance Acceptance Limits[4]
	mg/kg	mg/kg	%	mg/kg	mg/kg
Thallium	154	144	7.54	117 - 171	101 - 187
Tin	89.7	79.8	14.0	62.2 - 97.4	43.5 - 116
Titanium	705	546	10.3	123 - 969	118 - 974
Uranium	29.5	30.9	3.38	23.9 - 37.9	21.3 - 40.5
Vanadium	196	186	14.2	148 - 224	138 - 235
Zinc	307	295	10.4	240 - 351	207 - 384

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Calculation of 6010B Metals

Aqueous Samples

The instrument will calculate the concentration (µg/L). This value is divided by 1000 to convert the units to mg/L. If the sample is diluted (DF), the result is multiplied by the DF to generate the final result.

$$\text{Result, mg/L} = C_s \times (1\text{mg}/1000\mu\text{g}) \times (DF)$$

Where:

C_s = Concentration of sample (µg/L)

DF = Dilution Factor

Soil or Solid Samples

Soil samples are calculated as follows:

$$\text{Result, mg/Kg} = \frac{C_s \times (1\text{mg}/1000\mu\text{g}) \times (DF)}{A}$$

Where:

C_s = Concentration of sample (µg/L)

DF = Dilution Factor

$$A = \frac{\text{Sample weight (grams)}}{\text{Final Volume (mL)}}$$

Dry weight correction

Dry weight correction is calculated as follows:

$$\text{Final concentration in mg/Kg, dry weight} = \frac{\text{Result, mg/Kg}}{\%_{solids}}$$

Where:

$\%_{solids}$ = Percent Solids, as a decimal value

Sequence Trace 8

9/11/2024 6:01:24 AM

LabBook: WG1969717_09102024T8.imexp

Summary

Index	Label	Rack	Vial	Started at
1	Blank CEY Trace8	0	1	9/10/2024 11:11:04 AM
2	ICAL	0	2	9/10/2024 11:15:14 AM
3	ICV	0	3	9/10/2024 11:19:08 AM
4	ICB	0	4	9/10/2024 11:23:03 AM
5	ICV	0	10	9/10/2024 11:26:58 AM
6	ICB	0	4	9/10/2024 11:30:57 AM
7	LLOQ	0	5	9/10/2024 11:34:53 AM
8	ICSA	0	6	9/10/2024 11:38:49 AM
9	SIC Multi	0	7	9/10/2024 11:44:48 AM
10	LDR Check	0	8	9/10/2024 11:49:49 AM
11	LLOQ 0.005 Zn pass	1	1	9/10/2024 12:01:51 PM
12	LLOQ 0.05 Ca & Fe pass	1	2	9/10/2024 12:05:52 PM
13	LDR 500 Ca pass	1	3	9/10/2024 12:09:47 PM
14	LDR 1000 Ca pass	1	4	9/10/2024 12:13:43 PM
15	LDR 500 Fe pass	1	5	9/10/2024 12:17:39 PM
16	LDR 20 As pass	1	6	9/10/2024 12:22:35 PM
17	LDR 20 B pass	1	7	9/10/2024 12:27:32 PM
18	CCV	0	3	9/10/2024 12:36:50 PM
19	CCB	0	4	9/10/2024 12:40:51 PM
20	WG1969482-1 WG1969482	1	8	9/10/2024 12:46:00 PM
21	WG1969482-2D2 WG1969482	1	9	9/10/2024 12:49:58 PM
22	L2451280-01D2 WG1969482	1	10	9/10/2024 12:53:54 PM
23	WG1969482-3D2 WG1969482	1	11	9/10/2024 12:57:52 PM
24	WG1969482-4D2 WG1969482	1	12	9/10/2024 1:01:49 PM
25	WG1969482-5D2 WG1969482	1	13	9/10/2024 1:05:47 PM
26	WG1969482-6D10 WG1969482	1	14	9/10/2024 1:09:40 PM
27	CCV	0	3	9/10/2024 1:13:35 PM
28	CCB	0	4	9/10/2024 1:17:31 PM
29	WG1969231-1 WG1969231	1	43	9/10/2024 1:22:45 PM
30	WG1969231-2 WG1969231	1	44	9/10/2024 1:26:52 PM
31	L2449468-01 WG1969231	1	50	9/10/2024 1:30:48 PM
32	L2450299-01 WG1969231	1	45	9/10/2024 1:34:43 PM
33	WG1969231-3 WG1969231	1	46	9/10/2024 1:38:39 PM
34	WG1969231-4 WG1969231	1	47	9/10/2024 1:42:36 PM
35	WG1969231-5 WG1969231	1	48	9/10/2024 1:46:32 PM
36	WG1969231-6D5 WG1969231	1	49	9/10/2024 1:50:29 PM
37	CCV	0	3	9/10/2024 1:54:25 PM
38	CCB	0	4	9/10/2024 1:58:21 PM
39	L2449438-03 WG1968490	1	33	9/10/2024 2:03:18 PM
40	L2449438-04 WG1968490	1	34	9/10/2024 2:07:23 PM
41	L2449438-05 WG1968490	1	35	9/10/2024 2:11:20 PM
42	L2449438-06 WG1968490	1	36	9/10/2024 2:15:17 PM
43	L2449438-07 WG1968490	1	37	9/10/2024 2:19:15 PM
44	L2449438-08 WG1968490	1	38	9/10/2024 2:23:09 PM
45	L2449438-09 WG1968490	1	39	9/10/2024 2:27:04 PM
46	L2449438-10 WG1968490	1	40	9/10/2024 2:30:58 PM
47	L2449438-11 WG1968490	1	41	9/10/2024 2:34:53 PM
48	L2449438-12 WG1968490	1	42	9/10/2024 2:38:48 PM
49	CCV	0	3	9/10/2024 2:42:44 PM
50	CCB	0	4	9/10/2024 2:46:39 PM
51	zL2449877-01D10 WG1969482	1	15	9/10/2024 2:55:27 PM
52	zL2449877-02D10 WG1969482	1	16	9/10/2024 2:59:36 PM
53	zL2449877-03D10 WG1969482	1	17	9/10/2024 3:03:31 PM
54	L2450847-01D2 WG1969482	1	18	9/10/2024 3:07:27 PM
55	L2450847-02D2 WG1969482	1	19	9/10/2024 3:11:22 PM
56	L2450847-03D2 WG1969482	1	20	9/10/2024 3:15:18 PM
57	L2450847-04D2 WG1969482	1	21	9/10/2024 3:19:14 PM
58	L2450847-05D2 WG1969482	1	22	9/10/2024 3:23:11 PM
59	L2450847-06D2 WG1969482	1	23	9/10/2024 3:27:07 PM
60	L2450847-07D2 WG1969482	1	24	9/10/2024 3:31:04 PM
61	CCV	0	3	9/10/2024 3:35:02 PM
62	CCB	0	4	9/10/2024 3:38:57 PM
63	L2449735-01 WG1969231	1	51	9/10/2024 3:50:19 PM
64	L2449737-01 WG1969231	1	52	9/10/2024 3:54:21 PM
65	L2450847-50D2 WG1969482	1	25	9/10/2024 3:58:16 PM
66	L2450847-51D2 WG1969482	1	26	9/10/2024 4:02:10 PM
67	L2450847-52D2 WG1969482	1	27	9/10/2024 4:06:05 PM
68	L2450847-53D2 WG1969482	1	28	9/10/2024 4:10:00 PM

Sequence Trace 8

9/11/2024 6:01:24 AM

Index	Label	Rack	Vial	Started at
69	L2450847-54D2 WG1969482	1	29	9/10/2024 4:13:55 PM
70	L2450847-55D2 WG1969482	1	30	9/10/2024 4:17:51 PM
71	L2450847-56D2 WG1969482	1	31	9/10/2024 4:21:46 PM
72	L2451109-03D2 WG1969482	1	32	9/10/2024 4:25:43 PM
73	CCV	0	3	9/10/2024 4:29:39 PM
74	CCB	0	4	9/10/2024 4:33:35 PM
75	L2449741-01 WG1969231	1	53	9/10/2024 4:37:56 PM
76	L2449742-01 WG1969231	1	54	9/10/2024 4:41:52 PM
77	L2450397-10 WG1969231	1	55	9/10/2024 4:45:47 PM
78	L2450397-11 WG1969231	1	56	9/10/2024 4:49:44 PM
79	L2450397-12 WG1969231	1	57	9/10/2024 4:53:40 PM
80	L2450397-13 WG1969231	1	58	9/10/2024 4:57:37 PM
81	L2450398-01 WG1969231	1	59	9/10/2024 5:01:34 PM
82	L2450398-02 WG1969231	1	60	9/10/2024 5:05:31 PM
83	L2450398-03 WG1969231	2	1	9/10/2024 5:09:29 PM
84	L2450398-04 WG1969231	2	2	9/10/2024 5:13:25 PM
85	CCV	0	3	9/10/2024 5:17:22 PM
86	CCB	0	4	9/10/2024 5:21:18 PM
87	WG1968230-1 WG1968230	2	6	9/10/2024 5:27:16 PM
88	WG1968230-2D2 WG1968230	2	7	9/10/2024 5:31:16 PM
89	L2449877-01D2 WG1969482	2	3	9/10/2024 5:35:12 PM
90	L2449877-02D2 WG1969482	2	4	9/10/2024 5:39:09 PM
91	L2449877-03D2 WG1969482	2	5	9/10/2024 5:43:05 PM
92	L2450423-01D2 WG1968230	2	8	9/10/2024 5:48:54 PM
93	WG1968230-3D2 WG1968230	2	9	9/10/2024 5:52:53 PM
94	WG1968230-4D2 WG1968230	2	10	9/10/2024 5:56:50 PM
95	WG1968230-5D2 WG1968230	2	11	9/10/2024 6:00:48 PM
96	WG1968230-6D10 WG1968230	2	12	9/10/2024 6:04:46 PM
97	CCV	0	3	9/10/2024 6:08:44 PM
98	CCB	0	4	9/10/2024 6:12:41 PM
99	L2450138-01D2 WG1968230	2	13	9/10/2024 6:21:47 PM
100	L2450138-02D2 WG1968230	2	14	9/10/2024 6:26:03 PM
101	L2450247-03D2 WG1968230	2	15	9/10/2024 6:29:59 PM
102	L2450247-06D2 WG1968230	2	16	9/10/2024 6:33:56 PM
103	L2450388-09D2 WG1968230	2	17	9/10/2024 6:37:53 PM
104	L2450389-07D2 WG1968230	2	18	9/10/2024 6:41:50 PM
105	L2450389-09D2 WG1968230	2	19	9/10/2024 6:45:47 PM
106	L2450389-11D2 WG1968230	2	20	9/10/2024 6:49:43 PM
107	L2450423-02D2 WG1968230	2	21	9/10/2024 6:53:40 PM
108	L2450423-03D2 WG1968230	2	22	9/10/2024 6:57:37 PM
109	CCV	0	3	9/10/2024 7:01:35 PM
110	CCB	0	4	9/10/2024 7:05:36 PM
111	xTest ICV 1700 CEY	2	32	9/10/2024 7:13:47 PM
112	L2450423-04D2 WG1968230	2	23	9/10/2024 7:26:56 PM
113	L2450423-05D2 WG1968230	2	24	9/10/2024 7:31:00 PM
114	L2450423-06D2 WG1968230	2	25	9/10/2024 7:34:58 PM
115	L2450423-07D2 WG1968230	2	26	9/10/2024 7:38:55 PM
116	L2450423-08D2 WG1968230	2	27	9/10/2024 7:42:53 PM
117	L2450423-09D2 WG1968230	2	28	9/10/2024 7:46:50 PM
118	L2450423-11D2 WG1968230	2	29	9/10/2024 7:50:47 PM
119	L2450423-12D2 WG1968230	2	30	9/10/2024 7:54:45 PM
120	L2450423-13D2 WG1968230	2	31	9/10/2024 7:58:42 PM
121	CCV	0	3	9/10/2024 8:02:39 PM
122	CCB	0	4	9/10/2024 8:06:36 PM
123	WG1969323-2d2 WG1969323	2	33	9/10/2024 8:11:09 PM
124	WG1969323-3d2 WG1969323	2	34	9/10/2024 8:15:07 PM
125	CCV	0	3	9/10/2024 8:19:05 PM
126	CCB	0	4	9/10/2024 8:23:02 PM
127	WG1969516-1 WG1969516	2	35	9/10/2024 8:29:22 PM
128	WG1969516-2 WG1969516	2	36	9/10/2024 8:33:38 PM
129	L2450627-01 WG1969516	2	47	9/10/2024 8:37:37 PM
130	L2450627-03 WG1969516	2	48	9/10/2024 8:41:36 PM
131	L2450627-05 WG1969516	2	49	9/10/2024 8:45:34 PM
132	L2450786-01 WG1969516	2	37	9/10/2024 8:49:32 PM
133	WG1969516-3 WG1969516	2	38	9/10/2024 8:53:30 PM
134	WG1969516-4 WG1969516	2	39	9/10/2024 8:57:27 PM
135	WG1969516-5 WG1969516	2	40	9/10/2024 9:01:25 PM
136	WG1969516-6d5 WG1969516	2	41	9/10/2024 9:05:22 PM
137	CCV	0	3	9/10/2024 9:09:20 PM
138	CCB	0	4	9/10/2024 9:13:18 PM
139	WG1969415-2 WG1969415	2	60	9/10/2024 9:17:42 PM
140	CCV	0	3	9/10/2024 9:21:41 PM
141	CCB	0	4	9/10/2024 9:25:39 PM
142	L2450627-07 WG1969516	2	50	9/10/2024 9:31:11 PM

Sequence Trace 8

9/11/2024 6:01:24 AM

Index	Label	Rack	Vial	Started at
143	L2450786-03 WG1969516	2	51	9/10/2024 9:35:24 PM
144	L2450786-04 WG1969516	2	52	9/10/2024 9:39:23 PM
145	L2450786-05 WG1969516	2	53	9/10/2024 9:43:21 PM
146	L2450786-06 WG1969516	2	54	9/10/2024 9:47:19 PM
147	L2450786-02 WG1969516	2	42	9/10/2024 9:51:17 PM
148	WG1969516-7 WG1969516	2	43	9/10/2024 9:55:15 PM
149	WG1969516-8 WG1969516	2	44	9/10/2024 9:59:13 PM
150	WG1969516-9 WG1969516	2	45	9/10/2024 10:03:11 PM
151	WG1969516-10d5 WG1969516	2	46	9/10/2024 10:07:09 PM
152	CCV	0	3	9/10/2024 10:11:07 PM
153	CCB	0	4	9/10/2024 10:15:04 PM
154	L2450786-07 WG1969516	2	55	9/10/2024 10:24:30 PM
155	L2450786-08 WG1969516	2	56	9/10/2024 10:28:35 PM
156	L2450786-09 WG1969516	2	57	9/10/2024 10:32:35 PM
157	L2450786-10 WG1969516	2	58	9/10/2024 10:36:34 PM
158	L2450786-12 WG1969516	2	59	9/10/2024 10:40:32 PM
159	CCV	0	3	9/10/2024 10:45:56 PM
160	CCB	0	4	9/10/2024 10:49:57 PM
161	WG1969465-1 WG1969465	3	1	9/10/2024 10:56:01 PM
162	WG1969465-2 WG1969465	3	2	9/10/2024 11:00:19 PM
163	L2450239-01 WG1969465	3	3	9/10/2024 11:04:18 PM
164	WG1969465-3 WG1969465	3	4	9/10/2024 11:08:17 PM
165	WG1969465-4 WG1969465	3	5	9/10/2024 11:12:16 PM
166	WG1969465-5 WG1969465	3	6	9/10/2024 11:16:15 PM
167	WG1969465-6d5 WG1969465	3	7	9/10/2024 11:20:14 PM
168	L2450431-04d20 WG1968556	3	8	9/10/2024 11:24:14 PM
169	CCV	0	3	9/10/2024 11:28:13 PM
170	CCB	0	4	9/10/2024 11:32:11 PM
171	CCV	0	3	9/10/2024 11:36:09 PM
172	CCB	0	4	9/10/2024 11:40:07 PM
173	LLOQ	0	5	9/10/2024 11:44:06 PM

Sequence Trace 8

9/12/2024 5:59:25 AM

LabBook: WG1970061_09112024T8.imexp

Summary

Index	Label	Rack	Vial	Started at
1	Blank DMC Trace8	0	1	9/11/2024 5:32:48 AM
2	ICAL	0	2	9/11/2024 5:36:54 AM
3	ICV	0	3	9/11/2024 5:40:48 AM
4	ICB	0	4	9/11/2024 5:44:44 AM
5	ICV	0	10	9/11/2024 5:48:39 AM
6	ICB	0	4	9/11/2024 5:52:38 AM
7	LLOQ	0	5	9/11/2024 5:56:34 AM
8	ICSA	0	6	9/11/2024 6:00:30 AM
9	SIC Multi	0	7	9/11/2024 6:06:28 AM
10	LDR Check	0	8	9/11/2024 6:11:29 AM
11	LDR 20ppm As pass	1	1	9/11/2024 6:28:00 AM
12	LDR 20ppm B pass	1	2	9/11/2024 6:32:00 AM
13	LDR 200ppm Fe pass	1	3	9/11/2024 6:35:55 AM
14	LDR 500ppm Na pass	1	4	9/11/2024 6:40:50 AM
15	LDR 500 Fe pass	1	5	9/11/2024 6:45:46 AM
16	LDR 1000 Ca pass	1	6	9/11/2024 6:51:43 AM
17	CCV	0	3	9/11/2024 7:00:40 AM
18	CCB	0	4	9/11/2024 7:04:41 AM
19	WG1969961-1 WG1969961	1	7	9/11/2024 7:10:34 AM
20	WG1969961-2D2 WG1969961	1	8	9/11/2024 7:14:33 AM
21	WG1969961-3D2 WG1969961	1	9	9/11/2024 7:18:29 AM
22	L2450305-01D2 WG1969961	1	10	9/11/2024 7:22:26 AM
23	L2450420-01D2 WG1969961	1	11	9/11/2024 7:26:22 AM
24	L2450507-01D2 WG1969961	1	12	9/11/2024 7:30:20 AM
25	L2450562-01D2 WG1969961	1	13	9/11/2024 7:34:17 AM
26	L2451114-01D2 WG1969961	1	14	9/11/2024 7:38:10 AM
27	L2451252-01D2 WG1969961	1	15	9/11/2024 7:42:04 AM
28	L2451252-03D2 WG1969961	1	16	9/11/2024 7:45:58 AM
29	CCV	0	3	9/11/2024 7:49:53 AM
30	CCB	0	4	9/11/2024 7:53:48 AM
31	xWG1969512-1 WG1969512	1	17	9/11/2024 8:04:40 AM
32	WG1969512-2 WG1969512	1	18	9/11/2024 8:08:53 AM
33	L2450471-04 WG1969512	1	29	9/11/2024 8:12:48 AM
34	L2450786-03 WG1969512	1	30	9/11/2024 8:16:43 AM
35	L2450786-04 WG1969512	1	31	9/11/2024 8:20:39 AM
36	L2450786-01 WG1969512	1	19	9/11/2024 8:24:34 AM
37	WG1969512-3 WG1969512	1	20	9/11/2024 8:28:30 AM
38	WG1969512-4 WG1969512	1	21	9/11/2024 8:32:25 AM
39	WG1969512-5 WG1969512	1	22	9/11/2024 8:36:21 AM
40	WG1969512-6D5 WG1969512	1	23	9/11/2024 8:40:18 AM
41	CCV	0	3	9/11/2024 8:44:17 AM
42	CCB	0	4	9/11/2024 8:48:13 AM
43	WG1969512-1 WG1969512	1	44	9/11/2024 9:08:14 AM
44	Test FM 0244 CHL	1	41	9/11/2024 9:12:28 AM
45	xTest FM 0252 CHL	1	42	9/11/2024 9:16:24 AM
46	xTest MIX 0601 CME	1	43	9/11/2024 9:20:19 AM
47	xL2450471-04D2 WG1969512	1	45	9/11/2024 9:30:36 AM
48	Test FM 0252 CHL	1	42	9/11/2024 9:47:08 AM
49	L2450786-05 WG1969512	1	32	9/11/2024 9:52:33 AM
50	L2450786-06 WG1969512	1	33	9/11/2024 9:56:33 AM
51	L2450786-07 WG1969512	1	34	9/11/2024 10:00:29 AM
52	L2450786-08 WG1969512	1	35	9/11/2024 10:04:26 AM
53	CCV	0	3	9/11/2024 10:08:23 AM
54	CCB	0	4	9/11/2024 10:12:20 AM
55	WG1970073-1 WG1970073	1	46	9/11/2024 10:17:47 AM
56	WG1970073-2 WG1970073	1	47	9/11/2024 10:21:56 AM
57	WG1970073-3 WG1970073	1	48	9/11/2024 10:25:53 AM
58	L2451579-01 WG1970073	1	49	9/11/2024 10:29:50 AM
59	L2450786-09 WG1969512	1	36	9/11/2024 10:33:46 AM
60	L2450786-02 WG1969512	1	24	9/11/2024 10:37:43 AM
61	WG1969512-7 WG1969512	1	25	9/11/2024 10:41:41 AM
62	WG1969512-8 WG1969512	1	26	9/11/2024 10:45:35 AM
63	WG1969512-9 WG1969512	1	27	9/11/2024 10:49:30 AM
64	WG1969512-10D5 WG1969512	1	28	9/11/2024 10:53:25 AM
65	CCV	0	3	9/11/2024 10:57:21 AM
66	CCB	0	4	9/11/2024 11:01:18 AM
67	Test MIX 0601 CME	1	43	9/11/2024 11:09:55 AM
68	L2450786-10 WG1969512	1	37	9/11/2024 11:14:09 AM

Sequence Trace 8

9/12/2024 5:59:25 AM

Index	Label	Rack	Vial	Started at
69	L2450786-12 WG1969512	1	38	9/11/2024 11:18:04 AM
70	L2450815-02 WG1969512	1	39	9/11/2024 11:21:59 AM
71	L2450815-03 WG1969512	1	40	9/11/2024 11:25:54 AM
72	CCV	0	3	9/11/2024 11:29:49 AM
73	CCB	0	4	9/11/2024 11:33:45 AM
74	WG1970060-1 WG1970060	1	50	9/11/2024 11:46:53 AM
75	WG1970060-2D2 WG1970060	1	51	9/11/2024 11:51:08 AM
76	WG1970060-3D2 WG1970060	1	52	9/11/2024 11:55:03 AM
77	L2451879-05D2 WG1970060	1	53	9/11/2024 11:58:59 AM
78	WG1970060-4D2 WG1970060	1	54	9/11/2024 12:02:54 PM
79	WG1970060-4D2 WG1970060	1	55	9/11/2024 12:06:50 PM
80	WG1970060-5D2 WG1970060	1	56	9/11/2024 12:10:46 PM
81	WG1970060-5D2 WG1970060	1	57	9/11/2024 12:14:42 PM
82	WG1970060-7D2 WG1970060	1	58	9/11/2024 12:18:39 PM
83	WG1970060-6D10 WG1970060	1	59	9/11/2024 12:22:36 PM
84	CCV	0	3	9/11/2024 12:26:33 PM
85	CCB	0	4	9/11/2024 12:30:30 PM
86	WG1970062-1 WG1970062	2	12	9/11/2024 12:41:32 PM
87	WG1970062-2D2 WG1970062	2	13	9/11/2024 12:45:51 PM
88	WG1970062-3D2 WG1970062	2	14	9/11/2024 12:49:48 PM
89	L2451583-01D2 WG1970062	2	15	9/11/2024 12:53:45 PM
90	L2451642-01D2 WG1970062	2	16	9/11/2024 12:57:41 PM
91	L2451879-01D2 WG1970060	1	60	9/11/2024 1:01:38 PM
92	L2451879-02D2 WG1970060	2	1	9/11/2024 1:05:36 PM
93	L2451879-03D2 WG1970060	2	2	9/11/2024 1:09:32 PM
94	L2451879-04D2 WG1970060	2	3	9/11/2024 1:13:29 PM
95	L2451879-06D2 WG1970060	2	4	9/11/2024 1:17:26 PM
96	CCV	0	3	9/11/2024 1:21:22 PM
97	CCB	0	4	9/11/2024 1:25:21 PM
98	L2451879-07D2 WG1970060	2	5	9/11/2024 1:32:21 PM
99	L2451879-08D2 WG1970060	2	6	9/11/2024 1:36:35 PM
100	L2451879-09D2 WG1970060	2	7	9/11/2024 1:40:31 PM
101	L2451879-10D2 WG1970060	2	8	9/11/2024 1:44:40 PM
102	L2451879-11D2 WG1970060	2	9	9/11/2024 1:48:38 PM
103	L2451879-12D2 WG1970060	2	10	9/11/2024 1:52:35 PM
104	L2451879-13D2 WG1970060	2	11	9/11/2024 1:56:32 PM
105	L2451799-01D2 WG1970062	2	24	9/11/2024 2:00:30 PM
106	L2451799-02D2 WG1970062	2	25	9/11/2024 2:04:29 PM
107	L2451803-01D2 WG1970062	2	26	9/11/2024 2:08:26 PM
108	CCV	0	3	9/11/2024 2:12:23 PM
109	CCB	0	4	9/11/2024 2:16:20 PM
110	Test MIX 1346 EFM	2	27	9/11/2024 2:24:54 PM
111	L2451782-01D2 WG1970062	2	17	9/11/2024 2:29:08 PM
112	L2451782-02D2 WG1970062	2	18	9/11/2024 2:33:05 PM
113	L2451782-03D2 WG1970062	2	19	9/11/2024 2:37:03 PM
114	L2451782-04D2 WG1970062	2	20	9/11/2024 2:40:59 PM
115	L2451782-05D2 WG1970062	2	21	9/11/2024 2:44:56 PM
116	L2451782-06D2 WG1970062	2	22	9/11/2024 2:48:54 PM
117	L2451782-07D2 WG1970062	2	23	9/11/2024 2:52:53 PM
118	CCV	0	3	9/11/2024 2:56:51 PM
119	CCB	0	4	9/11/2024 3:00:49 PM
120	WG1969489-1 WG1969489	2	28	9/11/2024 3:11:04 PM
121	WG1969489-2D2 WG1969489	2	29	9/11/2024 3:15:22 PM
122	L2450528-01D2 WG1969489	2	35	9/11/2024 3:19:20 PM
123	L2450528-02D2 WG1969489	2	36	9/11/2024 3:23:19 PM
124	L2451351-10D2 WG1969489	2	53	9/11/2024 3:27:29 PM
125	L2451351-09D2 WG1969489	2	30	9/11/2024 3:31:27 PM
126	WG1969489-3D2 WG1969489	2	31	9/11/2024 3:35:25 PM
127	WG1969489-4D2 WG1969489	2	32	9/11/2024 3:39:22 PM
128	WG1969489-5D2 WG1969489	2	33	9/11/2024 3:43:20 PM
129	WG1969489-6D10 WG1969489	2	34	9/11/2024 3:47:18 PM
130	CCV	0	3	9/11/2024 3:51:16 PM
131	CCB	0	4	9/11/2024 3:55:14 PM
132	L2450528-03D2 WG1969489	2	37	9/11/2024 4:03:14 PM
133	L2450631-01D2 WG1969489	2	38	9/11/2024 4:07:12 PM
134	L2450631-02D2 WG1969489	2	39	9/11/2024 4:11:09 PM
135	L2450631-03D2 WG1969489	2	40	9/11/2024 4:15:07 PM
136	L2450751-01D2 WG1969489	2	41	9/11/2024 4:19:05 PM
137	L2450751-03D2 WG1969489	2	42	9/11/2024 4:23:02 PM
138	L2450751-04D2 WG1969489	2	43	9/11/2024 4:27:00 PM
139	L2450751-05D2 WG1969489	2	44	9/11/2024 4:30:58 PM
140	L2450751-06D2 WG1969489	2	45	9/11/2024 4:34:55 PM
141	L2450751-07D2 WG1969489	2	46	9/11/2024 4:38:53 PM
142	CCV	0	3	9/11/2024 4:42:51 PM

Sequence Trace 8

9/12/2024 5:59:25 AM

Index	Label	Rack	Vial	Started at
143	CCB	0	4	9/11/2024 4:46:49 PM
144	L2450751-09D2 WG1969489	2	47	9/11/2024 4:55:01 PM
145	L2450797-01D2 WG1969489	2	48	9/11/2024 4:59:05 PM
146	L2450797-03D2 WG1969489	2	49	9/11/2024 5:03:04 PM
147	L2450797-05D2 WG1969489	2	50	9/11/2024 5:07:02 PM
148	L2450797-07D2 WG1969489	2	51	9/11/2024 5:11:00 PM
149	L2450834-02D2 WG1969489	2	52	9/11/2024 5:14:58 PM
150	CCV	0	3	9/11/2024 5:18:56 PM
151	CCB	0	4	9/11/2024 5:22:54 PM
152	WG1969497-1 WG1969497	2	54	9/11/2024 6:04:59 PM
153	WG1969497-2D2 WG1969497	2	55	9/11/2024 6:09:18 PM
154	L2448894-01D2 WG1969497	3	1	9/11/2024 6:13:19 PM
155	L2450797-01D5 WG1969489	3	20	9/11/2024 6:17:18 PM
156	L2450558-03D2 WG1969497	3	2	9/11/2024 6:21:17 PM
157	L2450558-05D2 WG1969497	3	3	9/11/2024 6:25:17 PM
158	WG1969497-3D2 WG1969497	2	57	9/11/2024 6:29:16 PM
159	WG1969497-4D2 WG1969497	2	58	9/11/2024 6:33:15 PM
160	WG1969497-5D2 WG1969497	2	59	9/11/2024 6:37:14 PM
161	WG1969497-6D10 WG1969497	2	60	9/11/2024 6:41:13 PM
162	CCV	0	3	9/11/2024 6:45:13 PM
163	CCB	0	4	9/11/2024 6:49:11 PM
164	L2450558-01D2 WG1969497	2	56	9/11/2024 7:06:23 PM
165	L2450558-07D2 WG1969497	3	4	9/11/2024 7:10:42 PM
166	L2450558-09D2 WG1969497	3	5	9/11/2024 7:14:41 PM
167	L2450558-11D2 WG1969497	3	6	9/11/2024 7:18:40 PM
168	L2450558-13D2 WG1969497	3	7	9/11/2024 7:22:40 PM
169	L2450558-15D2 WG1969497	3	8	9/11/2024 7:26:39 PM
170	L2450558-17D2 WG1969497	3	9	9/11/2024 7:30:39 PM
171	L2450558-19D2 WG1969497	3	10	9/11/2024 7:34:38 PM
172	L2450558-21D2 WG1969497	3	11	9/11/2024 7:38:38 PM
173	L2450558-23D2 WG1969497	3	12	9/11/2024 7:42:37 PM
174	CCV	0	3	9/11/2024 7:46:38 PM
175	CCB	0	4	9/11/2024 7:50:35 PM
176	L2450651-01D2 WG1969497	3	13	9/11/2024 7:54:34 PM
177	L2450651-02D2 WG1969497	3	14	9/11/2024 7:58:33 PM
178	L2450651-03D2 WG1969497	3	15	9/11/2024 8:02:33 PM
179	L2450660-01D2 WG1969497	3	16	9/11/2024 8:06:32 PM
180	L2450660-02D2 WG1969497	3	17	9/11/2024 8:10:32 PM
181	L2450660-03D2 WG1969497	3	18	9/11/2024 8:14:32 PM
182	L2451173-01D2 WG1969497	3	19	9/11/2024 8:18:32 PM
183	CCV	0	3	9/11/2024 8:22:32 PM
184	CCB	0	4	9/11/2024 8:26:30 PM
185	CCV	0	10	9/11/2024 8:30:28 PM
186	CCB	0	4	9/11/2024 8:34:31 PM
187	LLOQ	0	5	9/11/2024 8:38:29 PM

METALS ELN REPORT

Workgroup: WG1969512

Digestion

Prep Method	Acid Type 1	Acid 1 Lot	Acid Type 2	Acid 2 Lot	Spike Type	Lims Spike Lot	Spike Lot	Post Spike Spikelot	Spike Lot	Pipette Id
EPA 3005A	1:1 HNO3	tHNO324360 11110CME	1:1 HCl	tHCL243421 0713CME	METALS	METSPIKE2	IPS,FPS,MIX	METSPIKE2	IPS,FPS,MIX	140, 326

Additional Reagent/Std

Sample/ Type	Digestion Date	Analyst	Sample Vol ml	Ph	Spike Amt ml	Start Date/Time	Hot Block Unit	Temperature (C)	Stop Date/Time	Final Vol	Comments
L2450471-04 SAMP	09/10/24 07:05	Cristy Estevez	50	<2		09/10/24 07:05	10	95.0	09/10/24 10:05	50	
L2450786-01 SAMP	09/10/24 07:05	Cristy Estevez	50	<2		09/10/24 07:05	10	95.0	09/10/24 10:05	50	
L2450786-02 SAMP	09/10/24 07:05	Cristy Estevez	50	<2		09/10/24 07:05	10	95.0	09/10/24 10:05	50	
L2450786-03 SAMP	09/10/24 07:05	Cristy Estevez	50	<2		09/10/24 07:05	10	95.0	09/10/24 10:05	50	
L2450786-04 SAMP	09/10/24 07:05	Cristy Estevez	50	<2		09/10/24 07:05	10	95.0	09/10/24 10:05	50	
L2450786-05 SAMP	09/10/24 07:05	Cristy Estevez	50	<2		09/10/24 07:05	10	95.0	09/10/24 10:05	50	
L2450786-06 SAMP	09/10/24 07:05	Cristy Estevez	50	<2		09/10/24 07:05	10	95.0	09/10/24 10:05	50	
L2450786-07 SAMP	09/10/24 07:05	Cristy Estevez	50	<2		09/10/24 07:05	10	95.0	09/10/24 10:05	50	
L2450786-08 SAMP	09/10/24 07:05	Cristy Estevez	50	<2		09/10/24 07:05	10	95.0	09/10/24 10:05	50	
L2450786-09 SAMP	09/10/24 07:05	Cristy Estevez	50	<2		09/10/24 07:05	10	95.0	09/10/24 10:05	50	
L2450786-10 SAMP	09/10/24 07:05	Cristy Estevez	50	<2		09/10/24 07:05	10	95.0	09/10/24 10:05	50	
L2450786-12 SAMP	09/10/24 07:05	Cristy Estevez	50	<2		09/10/24 07:05	10	95.0	09/10/24 10:05	50	
L2450815-02 SAMP	09/10/24 07:05	Cristy Estevez	50	<2		09/10/24 07:05	10	95.0	09/10/24 10:05	50	
L2450815-03 SAMP	09/10/24 07:05	Cristy Estevez	50	<2		09/10/24 07:05	10	95.0	09/10/24 10:05	50	

Reported: 18-OCT-24 09:42 PM

METALS ELN REPORT

Workgroup: WG1969512

Sample/ Type	Digestion Date	Analyst	Sample Vol ml	Ph	Spike Amt ml	Start Date/Time	Hot Block Unit	Temperature (C)	Stop Date/Time	Final Vol	Comments
WG1969512-1 BLANK	09/10/24 07:05	Cristy Estevez	50	<2		09/10/24 07:05	10	95.0	09/10/24 10:05	50	ELN: ADG
WG1969512-2 LCS	09/10/24 07:05	Cristy Estevez	50	<2	0.5	09/10/24 07:05	10	95.0	09/10/24 10:05	50	IPS2430270135FAC
WG1969512-3 MS	09/10/24 07:05	Cristy Estevez	50	<2	0.5	09/10/24 07:05	10	95.0	09/10/24 10:05	50	
WG1969512-4 DUP	09/10/24 07:05	Cristy Estevez	50	<2		09/10/24 07:05	10	95.0	09/10/24 10:05	50	
WG1969512-5 PS	09/10/24 07:05	Cristy Estevez	50	<2		09/10/24 07:05	10	95.0	09/10/24 10:05	50	
WG1969512-6 SERDIL	09/10/24 07:05	Cristy Estevez	50	<2		09/10/24 07:05	10	95.0	09/10/24 10:05	50	
WG1969512-7 MS	09/10/24 07:05	Cristy Estevez	50	<2	0.5	09/10/24 07:05	10	95.0	09/10/24 10:05	50	
WG1969512-8 DUP	09/10/24 07:05	Cristy Estevez	50	<2		09/10/24 07:05	10	95.0	09/10/24 10:05	50	
WG1969512-9 PS	09/10/24 07:05	Cristy Estevez	50	<2		09/10/24 07:05	10	95.0	09/10/24 10:05	50	
WG1969512-10 SERDIL	09/10/24 07:05	Cristy Estevez	50	<2		09/10/24 07:05	10	95.0	09/10/24 10:05	50	FM2436030557CME

Reagent	Actual Volume	Units
1:1 Hydrochloric Acid (H	.5	ml
1:1 Nitric Acid (HNO3)	1	ml

Reported: 18-OCT-24 09:42 PM

METALS ELN REPORT

Workgroup: WG1969516

Digestion

Prep Method	Acid Type 1	Acid 1 Lot	Acid Type 2	Acid 2 Lot	Spike Type	Lims Spike Lot	Spike Lot	Post Spike Spikelot	Spike Lot	Pipette Id
EPA 3005A	1:1 HNO3	tHNO324360 11110CME	1:1 HCl	tHCL243421 0713CME	METALS	METSPIKE2	IPS,FPS,MIX	METSPIKE2	IPS,FPS,MIX	140, 326

Additional Reagent/Std

Sample/ Type	Digestion Date	Analyst	Lab Filtration Date	Sample Vol	Ph	Spike Amt ml	Start Date/Time	Hot Block Unit	Temperature (C)	Stop Date/Time	Final Vol ml	Comments
L2450627-01 SAMP	09/10/24 07:34	Cristy Estevez	09-06-24 01:35	50	<2		09/10/24 07:34	9	93.4	09/10/24 10:34	50	
L2450627-03 SAMP	09/10/24 07:34	Cristy Estevez	09-06-24 01:35	50	<2		09/10/24 07:34	9	93.4	09/10/24 10:34	50	
L2450627-05 SAMP	09/10/24 07:34	Cristy Estevez	09-06-24 01:35	50	<2		09/10/24 07:34	9	93.4	09/10/24 10:34	50	
L2450627-07 SAMP	09/10/24 07:34	Cristy Estevez	09-06-24 01:35	50	<2		09/10/24 07:34	9	93.4	09/10/24 10:34	50	
L2450786-01 SAMP	09/10/24 07:34	Cristy Estevez	NA	50	<2		09/10/24 07:34	9	93.4	09/10/24 10:34	50	
L2450786-02 SAMP	09/10/24 07:34	Cristy Estevez	NA	50	<2		09/10/24 07:34	9	93.4	09/10/24 10:34	50	
L2450786-03 SAMP	09/10/24 07:34	Cristy Estevez	NA	50	<2		09/10/24 07:34	9	93.4	09/10/24 10:34	50	
L2450786-04 SAMP	09/10/24 07:34	Cristy Estevez	NA	50	<2		09/10/24 07:34	9	93.4	09/10/24 10:34	50	
L2450786-05 SAMP	09/10/24 07:34	Cristy Estevez	NA	50	<2		09/10/24 07:34	9	93.4	09/10/24 10:34	50	
L2450786-06 SAMP	09/10/24 07:34	Cristy Estevez	NA	50	<2		09/10/24 07:34	9	93.4	09/10/24 10:34	50	
L2450786-07 SAMP	09/10/24 07:34	Cristy Estevez	NA	50	<2		09/10/24 07:34	9	93.4	09/10/24 10:34	50	
L2450786-08 SAMP	09/10/24 07:34	Cristy Estevez	NA	50	<2		09/10/24 07:34	9	93.4	09/10/24 10:34	50	
L2450786-09 SAMP	09/10/24 07:34	Cristy Estevez	NA	50	<2		09/10/24 07:34	9	93.4	09/10/24 10:34	50	
L2450786-10 SAMP	09/10/24 07:34	Cristy Estevez	NA	50	<2		09/10/24 07:34	9	93.4	09/10/24 10:34	50	

METALS ELN REPORT

Workgroup: WG1969516

Sample/ Type	Digestion Date	Analyst	Lab Filtration Date	Sample Vol	Ph	Spike Amt ml	Start Date/Time	Hot Block Unit	Temperature (C)	Stop Date/Time	Final Vol ml	Comments
L2450786-12 SAMP	09/10/24 07:34	Cristy Estevez	NA	50	<2		09/10/24 07:34	9	93.4	09/10/24 10:34	50	
WG1969516-1 BLANK	09/10/24 07:34	Cristy Estevez	NA	50	<2		09/10/24 07:34	9	93.4	09/10/24 10:34	50	ELN: ADG
WG1969516-2 LCS	09/10/24 07:34	Cristy Estevez	NA	50	<2	0.5	09/10/24 07:34	9	93.4	09/10/24 10:34	50	FM2436030557 CME
WG1969516-3 MS	09/10/24 07:34	Cristy Estevez	NA	50	<2	0.5	09/10/24 07:34	9	93.4	09/10/24 10:34	50	IPS2430270135FAC
WG1969516-4 DUP	09/10/24 07:34	Cristy Estevez	NA	50	<2		09/10/24 07:34	9	93.4	09/10/24 10:34	50	
WG1969516-5 PS	09/10/24 07:34	Cristy Estevez	NA	50	<2		09/10/24 07:34	9	93.4	09/10/24 10:34	50	
WG1969516-6 SERDIL	09/10/24 07:34	Cristy Estevez	NA	50	<2		09/10/24 07:34	9	93.4	09/10/24 10:34	50	
WG1969516-7 MS	09/10/24 07:34	Cristy Estevez	NA	50	<2	0.5	09/10/24 07:34	9	93.4	09/10/24 10:34	50	
WG1969516-8 DUP	09/10/24 07:34	Cristy Estevez	NA	50	<2		09/10/24 07:34	9	93.4	09/10/24 10:34	50	
WG1969516-9 PS	09/10/24 07:34	Cristy Estevez	NA	50	<2		09/10/24 07:34	9	93.4	09/10/24 10:34	50	
WG1969516-10 SERDIL	09/10/24 07:34	Cristy Estevez	NA	50	<2		09/10/24 07:34	9	93.4	09/10/24 10:34	50	

METALS ELN REPORT

Workgroup: WG1969516

Reagent	Actual Volume	Units
1:1 Hydrochloric Acid (H	.5	ml
1:1 Nitric Acid (HNO3)	1	ml

Inorganic Data
(Mercury Analysis)

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-01	**Date Collected**	: 09/05/24 13:53
Client ID	: MW-5A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 12:06
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 3,245.1	**Analyst**	: JWN
Lab File ID	: WG1970081.pdf	**Instrument ID**	: NIC3
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 245.1	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Dissolved	ND	0.00020	0.00009	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-02	**Date Collected**	: 09/05/24 13:55
Client ID	: MW-5B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 12:09
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 3,245.1	**Analyst**	: JWN
Lab File ID	: WG1970081.pdf	**Instrument ID**	: NIC3
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 245.1	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Dissolved	ND	0.00020	0.00009	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-03	**Date Collected**	: 09/05/24 12:50
Client ID	: MW-6A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 11:36
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 3,245.1	**Analyst**	: JWN
Lab File ID	: WG1970081.pdf	**Instrument ID**	: NIC3
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 245.1	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Dissolved	ND	0.00020	0.00009	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-04	**Date Collected**	: 09/05/24 12:47
Client ID	: MW-6B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 11:46
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 3,245.1	**Analyst**	: JWN
Lab File ID	: WG1970081.pdf	**Instrument ID**	: NIC3
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 245.1	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Dissolved	ND	0.00020	0.00009	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-05	**Date Collected**	: 09/05/24 11:55
Client ID	: MW-7A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 12:12
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 3,245.1	**Analyst**	: JWN
Lab File ID	: WG1970081.pdf	**Instrument ID**	: NIC3
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 245.1	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Dissolved	ND	0.00020	0.00009	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-06	**Date Collected**	: 09/05/24 12:00
Client ID	: MW-7B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 12:16
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 3,245.1	**Analyst**	: JWN
Lab File ID	: WG1970081.pdf	**Instrument ID**	: NIC3
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 245.1	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Dissolved	ND	0.00020	0.00009	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-07	**Date Collected**	: 09/05/24 08:00
Client ID	: MW-8A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 12:19
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 3,245.1	**Analyst**	: JWN
Lab File ID	: WG1970081.pdf	**Instrument ID**	: NIC3
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 245.1	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Dissolved	ND	0.00020	0.00009	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-08	**Date Collected**	: 09/05/24 08:55
Client ID	: MW-8B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 12:22
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 3,245.1	**Analyst**	: JWN
Lab File ID	: WG1970081.pdf	**Instrument ID**	: NIC3
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 245.1	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Dissolved	ND	0.00020	0.00009	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-09	**Date Collected**	: 09/05/24 10:10
Client ID	: MW-10A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 12:26
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 3,245.1	**Analyst**	: JWN
Lab File ID	: WG1970081.pdf	**Instrument ID**	: NIC3
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 245.1	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Dissolved	ND	0.00020	0.00009	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-10	**Date Collected**	: 09/05/24 10:16
Client ID	: MW-10B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 12:29
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 3,245.1	**Analyst**	: JWN
Lab File ID	: WG1970081.pdf	**Instrument ID**	: NIC3
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 245.1	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Dissolved	ND	0.00020	0.00009	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-12	**Date Collected**	: 09/05/24 00:00
Client ID	: DUP	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 12:32
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 3,245.1	**Analyst**	: JWN
Lab File ID	: WG1970081.pdf	**Instrument ID**	: NIC3
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 245.1	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Dissolved	ND	0.00020	0.00009	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1969689-1	**Date Collected**	: NA
Client ID	: WG1969689-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 09/11/24 11:29
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 3,245.1	**Analyst**	: JWN
Lab File ID	: WG1970081.pdf	**Instrument ID**	: NIC3
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 245.1	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Dissolved	ND	0.00020	0.00009	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1969689-4	**Date Collected**	: 09/05/24 12:50
Client ID	: MW-6ADUP	**Date Received**	: 09/05/24
Sample Location	:	**Date Analyzed**	: 09/11/24 11:42
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 3,245.1	**Analyst**	: JWN
Lab File ID	: WG1970081.pdf	**Instrument ID**	: NIC3
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 245.1	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Dissolved	ND	0.00020	0.0001	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1969689-6	**Date Collected**	: 09/05/24 12:47
Client ID	: MW-6BDUP	**Date Received**	: 09/05/24
Sample Location	:	**Date Analyzed**	: 09/11/24 12:03
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 3,245.1	**Analyst**	: JWN
Lab File ID	: WG1970081.pdf	**Instrument ID**	: NIC3
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 245.1	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Dissolved	ND	0.00020	0.0001	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-01	**Date Collected**	: 09/05/24 13:53
Client ID	: MW-5A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 11:47
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 3,245.1	**Analyst**	: JWN
Lab File ID	: WG1970186.pdf	**Instrument ID**	: NIC2
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 245.1	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-02	**Date Collected**	: 09/05/24 13:55
Client ID	: MW-5B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 11:50
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 3,245.1	**Analyst**	: JWN
Lab File ID	: WG1970186.pdf	**Instrument ID**	: NIC2
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 245.1	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-03	**Date Collected**	: 09/05/24 12:50
Client ID	: MW-6A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 11:27
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 3,245.1	**Analyst**	: JWN
Lab File ID	: WG1970186.pdf	**Instrument ID**	: NIC2
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 245.1	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-04	**Date Collected**	: 09/05/24 12:47
Client ID	: MW-6B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 11:37
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 3,245.1	**Analyst**	: JWN
Lab File ID	: WG1970186.pdf	**Instrument ID**	: NIC2
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 245.1	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-05	**Date Collected**	: 09/05/24 11:55
Client ID	: MW-7A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 12:02
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 3,245.1	**Analyst**	: JWN
Lab File ID	: WG1970186.pdf	**Instrument ID**	: NIC2
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 245.1	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-06	**Date Collected**	: 09/05/24 12:00
Client ID	: MW-7B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 12:06
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 3,245.1	**Analyst**	: JWN
Lab File ID	: WG1970186.pdf	**Instrument ID**	: NIC2
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 245.1	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-07	**Date Collected**	: 09/05/24 08:00
Client ID	: MW-8A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 12:09
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 3,245.1	**Analyst**	: JWN
Lab File ID	: WG1970186.pdf	**Instrument ID**	: NIC2
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 245.1	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-08	**Date Collected**	: 09/05/24 08:55
Client ID	: MW-8B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 12:12
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 3,245.1	**Analyst**	: JWN
Lab File ID	: WG1970186.pdf	**Instrument ID**	: NIC2
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 245.1	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-09	**Date Collected**	: 09/05/24 10:10
Client ID	: MW-10A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 12:16
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 3,245.1	**Analyst**	: JWN
Lab File ID	: WG1970186.pdf	**Instrument ID**	: NIC2
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 245.1	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-10	**Date Collected**	: 09/05/24 10:16
Client ID	: MW-10B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 12:19
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 3,245.1	**Analyst**	: JWN
Lab File ID	: WG1970186.pdf	**Instrument ID**	: NIC2
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 245.1	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-12	**Date Collected**	: 09/05/24 00:00
Client ID	: DUP	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 12:22
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 3,245.1	**Analyst**	: JWN
Lab File ID	: WG1970186.pdf	**Instrument ID**	: NIC2
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 245.1	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1969514-1	**Date Collected**	: NA
Client ID	: WG1969514-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 09/11/24 11:20
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 3,245.1	**Analyst**	: JWN
Lab File ID	: WG1970186.pdf	**Instrument ID**	: NIC2
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 245.1	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1969514-4	**Date Collected**	: 09/05/24 12:50
Client ID	: MW-6ADUP	**Date Received**	: 09/05/24
Sample Location	:	**Date Analyzed**	: 09/11/24 11:33
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 3,245.1	**Analyst**	: JWN
Lab File ID	: WG1970186.pdf	**Instrument ID**	: NIC2
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 245.1	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.0001	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1969514-6	**Date Collected**	: 09/05/24 12:47
Client ID	: MW-6BDUP	**Date Received**	: 09/05/24
Sample Location	:	**Date Analyzed**	: 09/11/24 11:43
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 3,245.1	**Analyst**	: JWN
Lab File ID	: WG1970186.pdf	**Instrument ID**	: NIC2
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 245.1	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.0001	U

Form 2A
Initial and Continuing Calibration Verification

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: NIC3	**Units**	: mg/l

	Initial Calibration			Continuing Calibration(s)						
Lab ID :	R1874483-1			R1874483-3			R1874483-5		R1874483-7	
Date Analyzed :	09/11/24 06:57			09/11/24 07:52			09/11/24 09:12		09/11/24 09:59	
Parameter	**True**	**Found**	**%R**	**True**	**Found**	**%R**	**Found**	**%R**	**Found**	**%R**
Mercury	0.00300	0.0029	97	0.0050	0.00490	98	0.00480	96	0.00490	97

Acceptance Criteria:

ICV:	95-105%	(Methods 200.7, 245.1)
	90-110%	(Methods 200.8, 6010, 6020, 7470, 7471, 7474)
	85-115%	(Method 1631)
CCV:	90-110%	(Methods 200.7, 245.1, 6010, 6020, 7474)
	85-115%	(Methods 200.8, 1631)
	80-120%	(Methods 7470, 7471)

Form 2A
Initial and Continuing Calibration Verification

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: NIC3	**Units**	: mg/l

	Initial Calibration			Continuing Calibration(s)						
Lab ID :				R1874483-9			R1874483-11			
Date Analyzed :				09/11/24 11:52			09/11/24 12:36			
Parameter	**True**	**Found**	**%R**	**True**	**Found**	**%R**	**Found**	**%R**	**Found**	**%R**
Mercury				**0.0050**	**0.00480**	**97**	**0.00490**	**97**		

Acceptance Criteria:

ICV:	**95-105%**	**(Methods 200.7, 245.1)**
	90-110%	**(Methods 200.8, 6010, 6020, 7470, 7471, 7474)**
	85-115%	**(Method 1631)**
CCV:	**90-110%**	**(Methods 200.7, 245.1, 6010, 6020, 7474)**
	85-115%	**(Methods 200.8, 1631)**
	80-120%	**(Methods 7470, 7471)**

Form 2A
Initial and Continuing Calibration Verification

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: NIC2	**Units**	: mg/l

	Initial Calibration			Continuing Calibration(s)						
Lab ID :	R1874550-1			R1874550-3			R1874550-5		R1874550-7	
Date Analyzed :	09/11/24 09:18			09/11/24 10:22			09/11/24 11:04		09/11/24 11:53	
Parameter	**True**	**Found**	**%R**	**True**	**Found**	**%R**	**Found**	**%R**	**Found**	**%R**
Mercury	0.00300	0.0029	96	0.0050	0.00490	98	0.00490	99	0.00490	99

Acceptance Criteria:

ICV:	95-105%	(Methods 200.7, 245.1)
	90-110%	(Methods 200.8, 6010, 6020, 7470, 7471, 7474)
	85-115%	(Method 1631)
CCV:	90-110%	(Methods 200.7, 245.1, 6010, 6020, 7474)
	85-115%	(Methods 200.8, 1631)
	80-120%	(Methods 7470, 7471)

Form 2A
Initial and Continuing Calibration Verification

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: NIC2	**Units**	: mg/l

	Initial Calibration			Continuing Calibration(s)						
Lab ID :				R1874550-9						
Date Analyzed :				09/11/24 12:37						
Parameter	**True**	**Found**	**%R**	**True**	**Found**	**%R**	**Found**	**%R**	**Found**	**%R**
Mercury				0.0050	0.00490	98				

Acceptance Criteria:

ICV:	**95-105%**	**(Methods 200.7, 245.1)**
	90-110%	**(Methods 200.8, 6010, 6020, 7470, 7471, 7474)**
	85-115%	**(Method 1631)**
CCV:	**90-110%**	**(Methods 200.7, 245.1, 6010, 6020, 7474)**
	85-115%	**(Methods 200.8, 1631)**
	80-120%	**(Methods 7470, 7471)**

Form 3
Blanks

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: NIC3		

	Initial Calibration Blank	Continuing Calibration Blank(s)			Preparation Blank
Lab ID :	R1874483-2	R1874483-4	R1874483-6	R1874483-8	WG1969689-1
Date Analyzed :	09/11/24 07:01	09/11/24 07:56	09/11/24 09:15	09/11/24 10:02	09/11/24 11:29
Parameter	mg/l Q	mg/l Q	mg/l Q	mg/l Q	mg/l Q
Mercury	0.0000910 U	0.0000910 U	0.0000910 U	0.0000910 U	0.00009 U

Form 3
Blanks

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: NIC3		

	Initial Calibration Blank		Continuing Calibration Blank(s)						Preparation Blank	
Lab ID :			R1874483-10		R1874483-12					
Date Analyzed :			09/11/24 11:55		09/11/24 12:39					
Parameter	mg/l	Q	mg/l	Q	mg/l	Q	mg/l	Q		Q
Mercury			0.0000910	U	0.0000910	U				

Form 3
Blanks

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: NIC2		

	Initial Calibration Blank	Continuing Calibration Blank(s)			Preparation Blank
Lab ID :	R1874550-2	R1874550-4	R1874550-6	R1874550-8	WG1969514-1
Date Analyzed :	09/11/24 09:21	09/11/24 10:26	09/11/24 11:08	09/11/24 11:57	09/11/24 11:20
Parameter	mg/l Q	mg/l Q	mg/l Q	mg/l Q	mg/l Q
Mercury	0.0000910 U	0.0000910 U	0.0000910 U	0.0000910 U	0.00009 U

Form 3
Blanks

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: NIC2		

	Initial Calibration Blank		Continuing Calibration Blank(s)						Preparation Blank	
Lab ID :			R1874550-10							
Date Analyzed :			09/11/24 12:41							
Parameter	mg/l	Q	mg/l	Q	mg/l	Q	mg/l	Q		Q
Mercury			0.0000910	U						

Form 5a
Matrix Spike

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: MW-6A	**Matrix**	: WATER
Lab Sample ID	: L2450786-03		
Matrix Spike	: WG1969689-3	**MS Analysis Date**	: 09/11/24 11:39
Matrix Spike Dup	:	**MSD Analysis Date**	:

		Matrix Spike Sample			Matrix Spike Duplicate					
Parameter	Sample Conc. (mg/l)	Spike Added (mg/l)	Spike Conc. (mg/l)	%R	Spike Added (mg/l)	Spike Conc. (mg/l)	%R	RPD	Recovery Limits	RPD Limit
Mercury, Dissolved	ND	0.005	0.00466	93					75-125	20

Form 5a
Matrix Spike

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: MW-6B	**Matrix**	: WATER
Lab Sample ID	: L2450786-04		
Matrix Spike	: WG1969689-5	**MS Analysis Date**	: 09/11/24 11:49
Matrix Spike Dup	:	**MSD Analysis Date**	:

		Matrix Spike Sample			Matrix Spike Duplicate					
Parameter	Sample Conc. (mg/l)	Spike Added (mg/l)	Spike Conc. (mg/l)	%R	Spike Added (mg/l)	Spike Conc. (mg/l)	%R	RPD	Recovery Limits	RPD Limit
Mercury, Dissolved	ND	0.005	0.00465	93					75-125	20

Form 5a
Matrix Spike

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: MW-6A	**Matrix**	: WATER
Lab Sample ID	: L2450786-03		
Matrix Spike	: WG1969514-3	**MS Analysis Date**	: 09/11/24 11:30
Matrix Spike Dup	:	**MSD Analysis Date**	:

		Matrix Spike Sample			Matrix Spike Duplicate					
Parameter	Sample Conc. (mg/l)	Spike Added (mg/l)	Spike Conc. (mg/l)	%R	Spike Added (mg/l)	Spike Conc. (mg/l)	%R	RPD	Recovery Limits	RPD Limit
Mercury, Total	ND	0.005	0.00560	112					70-130	20

Form 5a
Matrix Spike

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: MW-6B	**Matrix**	: WATER
Lab Sample ID	: L2450786-04		
Matrix Spike	: WG1969514-5	**MS Analysis Date**	: 09/11/24 11:40
Matrix Spike Dup	:	**MSD Analysis Date**	:

		Matrix Spike Sample			Matrix Spike Duplicate					
Parameter	Sample Conc. (mg/l)	Spike Added (mg/l)	Spike Conc. (mg/l)	%R	Spike Added (mg/l)	Spike Conc. (mg/l)	%R	RPD	Recovery Limits	RPD Limit
Mercury, Total	ND	0.005	0.00540	108					70-130	20

Form 6
Lab Duplicates

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: MW-6A	**Matrix**	: WATER
Lab Sample ID	: L2450786-03	**Analysis Date**	: 09/11/24 11:36
Dup Sample ID	: WG1969689-4	**DUP Analysis Date**	: 09/11/24 11:42

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Mercury, Dissolved	ND	ND	NC	20

Form 6
Lab Duplicates

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: MW-6B	**Matrix**	: WATER
Lab Sample ID	: L2450786-04	**Analysis Date**	: 09/11/24 11:46
Dup Sample ID	: WG1969689-6	**DUP Analysis Date**	: 09/11/24 12:03

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Mercury, Dissolved	ND	ND	NC	20

Form 6
Lab Duplicates

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: MW-6A	**Matrix**	: WATER
Lab Sample ID	: L2450786-03	**Analysis Date**	: 09/11/24 11:27
Dup Sample ID	: WG1969514-4	**DUP Analysis Date**	: 09/11/24 11:33

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Mercury, Total	ND	ND	NC	20

Form 6
Lab Duplicates

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: MW-6B	**Matrix**	: WATER
Lab Sample ID	: L2450786-04	**Analysis Date**	: 09/11/24 11:37
Dup Sample ID	: WG1969514-6	**DUP Analysis Date**	: 09/11/24 11:43

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Mercury, Total	ND	ND	NC	20

Form 7
Laboratory Control Sample

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: WG1969689-2	**LCS Analysis Date**	: 09/11/24 11:32
Dup Sample ID	:	**LCSD Analysis Date**	:

	Laboratory Control Sample			Laboratory Control Duplicate					
Parameter	**True (mg/l)**	**Found (mg/l)**	**%R**	**True (mg/l)**	**Found (mg/l)**	**%R**	**RPD**	**Recovery Limits**	**RPD Limit**
Mercury, Dissolved	**0.00100**	**0.000940**	**95.**					**85-115**	**20**

Form 7
Laboratory Control Sample

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: WG1969514-2	**LCS Analysis Date**	: 09/11/24 11:24
Dup Sample ID	:	**LCSD Analysis Date**	:

	Laboratory Control Sample			Laboratory Control Duplicate					
Parameter	**True (mg/l)**	**Found (mg/l)**	**%R**	**True (mg/l)**	**Found (mg/l)**	**%R**	**RPD**	**Recovery Limits**	**RPD Limit**
Mercury, Total	**0.00100**	**0.00113**	**114.**					**85-115**	**20**

Form 12
Preparation Log

Client	: **P. W. Grosser**	**Lab Number**	: **L2450786**
Project Name	: **ROANOKE SAND + GRAVEL**	**Project Number**	: **BSD1504**
Matrix	: **WATER**	**Prep Method**	: **EPA 245.1**

Sample Number	Preparation Date	Weight (gram)	Volume (mL)
L2450786-01	09/10/24 23:45	-	25
L2450786-02	09/10/24 23:45	-	25
L2450786-03	09/10/24 23:45	-	25
L2450786-04	09/10/24 23:45	-	25
L2450786-05	09/10/24 23:45	-	25
L2450786-06	09/10/24 23:45	-	25
L2450786-07	09/10/24 23:45	-	25
L2450786-08	09/10/24 23:45	-	25
L2450786-09	09/10/24 23:45	-	25
L2450786-10	09/10/24 23:45	-	25
L2450786-12	09/10/24 23:45	-	25
WG1969689-1	09/10/24 23:45	-	25
WG1969689-2	09/10/24 23:45	-	25
WG1969689-3	09/10/24 23:45	-	25
WG1969689-4	09/10/24 23:45	-	25
WG1969689-5	09/10/24 23:45	-	25
WG1969689-6	09/10/24 23:45	-	25

Form 12
Preparation Log

Client	: **P. W. Grosser**	**Lab Number**	: **L2450786**
Project Name	: **ROANOKE SAND + GRAVEL**	**Project Number**	: **BSD1504**
Matrix	: **WATER**	**Prep Method**	: **EPA 245.1**

Sample Number	Preparation Date	Weight (gram)	Volume (mL)
L2450786-01	09/10/24 09:07	-	25
L2450786-02	09/10/24 09:07	-	25
L2450786-03	09/10/24 09:07	-	25
L2450786-04	09/10/24 09:07	-	25
L2450786-05	09/10/24 09:07	-	25
L2450786-06	09/10/24 09:07	-	25
L2450786-07	09/10/24 09:07	-	25
L2450786-08	09/10/24 09:07	-	25
L2450786-09	09/10/24 09:07	-	25
L2450786-10	09/10/24 09:07	-	25
L2450786-12	09/10/24 09:07	-	25
WG1969514-1	09/10/24 09:07	-	25
WG1969514-2	09/10/24 09:07	-	25
WG1969514-3	09/10/24 09:07	-	25
WG1969514-4	09/10/24 09:07	-	25
WG1969514-5	09/10/24 09:07	-	25
WG1969514-6	09/10/24 09:07	-	25

Form 13
Analysis Run Log

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: NIC3	**Analysis Method**	: 3,245.1
Start Date	: 09/11/24 06:57	**End Date**	: 09/11/24 12:39

Sample Number	Dilution Factor	Analysis Time	Mercury, Dissolved
R1874483-1 ICV	1	06:57:51	X
R1874483-2 ICB	1	07:01:09	X
R1874483-3 CCV	1	07:52:42	X
R1874483-4 CCB	1	07:56:01	X
R1874483-5 CCV	1	09:12:35	X
R1874483-6 CCB	1	09:15:53	X
R1874483-7 CCV	1	09:59:26	X
R1874483-8 CCB	1	10:02:45	X
WG1969689-1 BLANK	1	11:29:37	X
WG1969689-2 LCS	1	11:32:54	X
L2450786-03	1	11:36:12	X
WG1969689-3 MS	1	11:39:30	X
WG1969689-4 DUP	1	11:42:48	X
L2450786-04	1	11:46:06	X
WG1969689-5 MS	1	11:49:23	X
R1874483-9 CCV	1	11:52:40	X
R1874483-10 CCB	1	11:55:59	X
WG1969689-6 DUP	1	12:03:03	X
L2450786-01	1	12:06:21	X
L2450786-02	1	12:09:39	X
L2450786-05	1	12:12:57	X
L2450786-06	1	12:16:15	X
L2450786-07	1	12:19:33	X
L2450786-08	1	12:22:52	X
L2450786-09	1	12:26:10	X
L2450786-10	1	12:29:28	X
L2450786-12	1	12:32:46	X

Form 13
Analysis Run Log

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: NIC3	**Analysis Method**	: 3,245.1
Start Date	: 09/11/24 06:57	**End Date**	: 09/11/24 12:39

Sample Number	Dilution Factor	Analysis Time	Mercury, Dissolved
R1874483-11 CCV	1	12:36:04	X
R1874483-12 CCB	1	12:39:22	X

Form 13
Analysis Run Log

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Instrument ID	: NIC2	**Analysis Method**	: 3,245.1
Start Date	: 09/11/24 09:18	**End Date**	: 09/11/24 12:41

Sample Number	Dilution Factor	Analysis Time	Mercury, Total
R1874550-1 ICV	1	09:18:20	X
R1874550-2 ICB	1	09:21:40	X
R1874550-3 CCV	1	10:22:42	X
R1874550-4 CCB	1	10:26:02	X
R1874550-5 CCV	1	11:04:51	X
R1874550-6 CCB	1	11:08:10	X
WG1969514-1 BLANK	1	11:20:46	X
WG1969514-2 LCS	1	11:24:03	X
L2450786-03	1	11:27:22	X
WG1969514-3 MS	1	11:30:40	X
WG1969514-4 DUP	1	11:33:59	X
L2450786-04	1	11:37:17	X
WG1969514-5 MS	1	11:40:36	X
WG1969514-6 DUP	1	11:43:54	X
L2450786-01	1	11:47:12	X
L2450786-02	1	11:50:31	X
R1874550-7 CCV	1	11:53:49	X
R1874550-8 CCB	1	11:57:08	X
L2450786-05	1	12:02:53	X
L2450786-06	1	12:06:12	X
L2450786-07	1	12:09:30	X
L2450786-08	1	12:12:49	X
L2450786-09	1	12:16:07	X
L2450786-10	1	12:19:25	X
L2450786-12	1	12:22:43	X
R1874550-9 CCV	1	12:37:53	X
R1874550-10 CCB	1	12:41:12	X

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File: PM4631-1
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MERCURY by 7470A, 245.1 (WATER)

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria	Holding Time	Container/Sample Preservation
Mercury, Total	7439-97-6	0.0002	0.0000915	mg/l	80-120	20	75-125	20	20		28 days	1 - Plastic 500ml HNO3 preserved

Please Note that the RL information provided in this table is calculated using a 100% Solids factor. ***(Soil/Solids only)***
Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.

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Page: 1

METALS by 7470A (WATER)

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria	Holding Time	Container/Sample Preservation
Mercury, Total	7439-97-6	0.0002	0.0000915	mg/l	80-120		75-125	20	20		28 days	1 - Plastic 500ml HNO3 preserved

Please Note that the RL information provided in this table is calculated using a 100% Solids factor. ***(Soil/Solids only)***
Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.

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Page: 1

METALS by 7471B (SOIL)

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria	Holding Time	Container/Sample Preservation
Mercury, Total	7439-97-6	0.08	0.05216	mg/kg	72-128		80-120	20	20		28 days	Metals Only-Glass 60mL/2oz unpreserv

Please Note that the RL information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)
Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.

Title :
Date : 9/11/2024
Name :

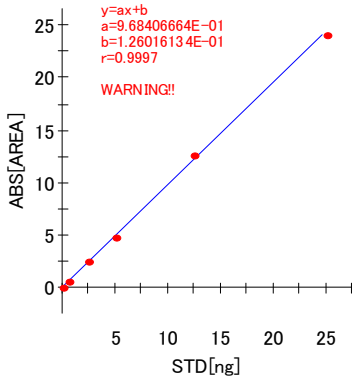
Method

STD
HONH3Cl : 0.0mL
(1+1)H2SO4 : 0.0mL
10w/v% SnCl2 : 0.3mL

SMP
HONH3Cl : 0.0mL
(1+1)H2SO4 : 0.0mL
10w/v% SnCl2 : 0.3mL

Measurement Time(sec) : 120sec

Calib



STD

No.	STD [ug/L]	SVOL [mL]	CVOL [mL]	DVOL [mL]	STD [ng]	AREA [ON]	MEAS [ng]	Dev [%]	M. TIME	Note
1	0.000	2.500	2.500	2.500	0.000	0.0147	-0.1149	-	09/11/2024 08:50	JWN,NIC2
2	0.200	2.500	2.500	2.500	0.500	0.5715	0.4600	8.0	09/11/2024 08:53	JWN,NIC2
3	1.000	2.500	2.500	2.500	2.500	2.5313	2.4838	0.6	09/11/2024 08:57	JWN,NIC2
4	2.000	2.500	2.500	2.500	5.000	4.9157	4.9459	1.1	09/11/2024 09:00	JWN,NIC2
5	5.000	2.500	2.500	2.500	12.500	12.6417	12.9240	3.4	09/11/2024 09:03	JWN,NIC2
6	10.000	2.500	2.500	2.500	25.000	24.1437	24.8012	0.8	09/11/2024 09:07	JWN,NIC2

SMP

No.	NAME	SVOL [mL]	CVOL [mL]	DVOL [mL]	AREA [ON]	MEAS [ng]	CONC [ug/L]	Recovery [%]	M. TIME	Note
1	ICV	2.500	2.500	2.500	7.1265	7.2289	2.892	-	09/11/2024 09:18	JWN,NIC2
2	ICB	2.500	2.500	2.500	0.1032	-0.0236	-0.009	-	09/11/2024 09:21	JWN,NIC2
3	0.2 PPB	2.500	2.500	2.500	0.5663	0.4546	0.182	-	09/11/2024 09:29	JWN,NIC2
4	WG1969363-1 WG1969363	2.500	2.500	2.500	-0.0723	-0.2048	-0.082	-	09/11/2024 09:52	JWN,NIC2
5	WG1969363-2 WG1969363	2.500	2.500	2.500	2.4670	2.4174	0.967	-	09/11/2024 09:56	JWN,NIC2
6	I2447454-04 WG1969363	2.500	2.500	2.500	0.2870	0.1662	0.066	-	09/11/2024 09:59	JWN,NIC2

No.	NAME	SVOL [mL]	CVOL [mL]	DVOL [mL]	AREA [ON]	MEAS [ng]	CONC [ug/L]	Recovery [%]	M. TIME	Note
7	WG1969363-3 WG1969363	2.500	2.500	2.500	12.0422	12.3049	4.922	-	09/11/2024 10:02	JWN,NIC2
8	WG1969363-4 WG1969363	2.500	2.500	2.500	12.1126	12.3776	4.951	-	09/11/2024 10:06	JWN,NIC2
9	I2447454-01 WG1969363	2.500	2.500	2.500	0.2407	0.1184	0.047	-	09/11/2024 10:09	JWN,NIC2
10	I2447454-02 WG1969363	2.500	2.500	2.500	0.2871	0.1663	0.067	-	09/11/2024 10:12	JWN,NIC2
11	I2447454-03 WG1969363	2.500	2.500	2.500	0.3077	0.1876	0.075	-	09/11/2024 10:16	JWN,NIC2
12	I2447454-05 WG1969363	2.500	2.500	2.500	0.2843	0.1634	0.065	-	09/11/2024 10:19	JWN,NIC2
13	Check STD(5ug/L)	2.500	2.500	2.500	12.0266	12.2888	4.916	98.3	09/11/2024 10:22	JWN,NIC2
14	Check Blank	2.500	2.500	2.500	0.0987	-0.0282	-0.011	-	09/11/2024 10:26	JWN,NIC2
15	I2447454-06 WG1969363	2.500	2.500	2.500	0.2569	0.1352	0.054	-	09/11/2024 10:31	JWN,NIC2
16	I2447454-07 WG1969363	2.500	2.500	2.500	0.2602	0.1386	0.055	-	09/11/2024 10:35	JWN,NIC2
17	I2447454-08 WG1969363	2.500	2.500	2.500	0.3846	0.2670	0.107	-	09/11/2024 10:38	JWN,NIC2
18	I2447454-09 WG1969363	2.500	2.500	2.500	0.2982	0.1778	0.071	-	09/11/2024 10:41	JWN,NIC2
19	I2447454-10 WG1969363	2.500	2.500	2.500	0.1911	0.0672	0.027	-	09/11/2024 10:45	JWN,NIC2
20	I2447454-11 WG1969363	2.500	2.500	2.500	0.2787	0.1577	0.063	-	09/11/2024 10:48	JWN,NIC2
21	I2447454-12 WG1969363	2.500	2.500	2.500	0.2620	0.1404	0.056	-	09/11/2024 10:51	JWN,NIC2
22	I2447454-13 WG1969363	2.500	2.500	2.500	0.1246	-0.0015	-0.001	-	09/11/2024 10:54	JWN,NIC2
23	I2447454-14 WG1969363	2.500	2.500	2.500	0.3335	0.2143	0.086	-	09/11/2024 10:58	JWN,NIC2
24	I2447454-15 WG1969363	2.500	2.500	2.500	0.3495	0.2308	0.092	-	09/11/2024 11:01	JWN,NIC2
25	Check STD(5ug/L)	2.500	2.500	2.500	12.0827	12.3468	4.939	98.8	09/11/2024 11:04	JWN,NIC2
26	Check Blank	2.500	2.500	2.500	0.1008	-0.0260	-0.010	-	09/11/2024 11:08	JWN,NIC2
27	wg1969514-1 wg1969514	2.500	2.500	2.500	0.0913	-0.0358	-0.014	-	09/11/2024 11:20	JWN,NIC2
28	wg1969514-2 wg1969514	2.500	2.500	2.500	2.8785	2.8423	1.137	-	09/11/2024 11:24	JWN,NIC2
29	L2450786-03 wg1969514	2.500	2.500	2.500	0.1069	-0.0197	-0.008	-	09/11/2024 11:27	JWN,NIC2
30	wg1969514-3 wg1969514	2.500	2.500	2.500	13.6848	14.0011	5.600	-	09/11/2024 11:30	JWN,NIC2
31	wg1969514-4 wg1969514	2.500	2.500	2.500	0.1589	0.0340	0.014	-	09/11/2024 11:33	JWN,NIC2
32	L2450786-04 wg1969514	2.500	2.500	2.500	0.2647	0.1432	0.057	-	09/11/2024 11:37	JWN,NIC2
33	wg1969514-5 wg1969514	2.500	2.500	2.500	13.1991	13.4996	5.400	-	09/11/2024 11:40	JWN,NIC2
34	wg1969514-6 wg1969514	2.500	2.500	2.500	0.2367	0.1143	0.046	-	09/11/2024 11:43	JWN,NIC2
35	L2450786-01 wg1969514	2.500	2.500	2.500	0.1725	0.0480	0.019	-	09/11/2024 11:47	JWN,NIC2
36	L2450786-02 wg1969514	2.500	2.500	2.500	0.1860	0.0619	0.025	-	09/11/2024 11:50	JWN,NIC2
37	Check STD(5ug/L)	2.500	2.500	2.500	12.1057	12.3705	4.948	99.0	09/11/2024 11:53	JWN,NIC2
38	Check Blank	2.500	2.500	2.500	0.1014	-0.0254	-0.010	-	09/11/2024 11:57	JWN,NIC2

No.	NAME	SVOL [mL]	CVOL [mL]	DVOL [mL]	AREA [ON]	MEAS [ng]	CONC [ug/L]	Recovery [%]	M. TIME	Note
39	L2450786-05 wg1969514	2.500	2.500	2.500	0.1607	0.0358	0.014	-	09/11/2024 12:02	JWN,NIC2
40	L2450786-06 wg1969514	2.500	2.500	2.500	0.1493	0.0240	0.010	-	09/11/2024 12:06	JWN,NIC2
41	L2450786-07 wg1969514	2.500	2.500	2.500	0.1386	0.0130	0.005	-	09/11/2024 12:09	JWN,NIC2
42	L2450786-08 wg1969514	2.500	2.500	2.500	0.1305	0.0046	0.002	-	09/11/2024 12:12	JWN,NIC2
43	L2450786-09 wg1969514	2.500	2.500	2.500	0.1343	0.0086	0.003	-	09/11/2024 12:16	JWN,NIC2
44	L2450786-10 wg1969514	2.500	2.500	2.500	0.1088	-0.0178	-0.007	-	09/11/2024 12:19	JWN,NIC2
45	L2450786-12 wg1969514	2.500	2.500	2.500	0.1220	-0.0041	-0.002	-	09/11/2024 12:22	JWN,NIC2
46	XCLR SOLUTION CHECK	2.500	2.500	2.500	0.1713	0.0468	0.019	-	09/11/2024 12:26	JWN,NIC2
47	XHG2437101855CLHV1	2.500	2.500	2.500	2.5907	2.5451	1.018	-	09/11/2024 12:31	JWN,NIC2
48	XHG2437101855CLHV2	2.500	2.500	2.500	2.4411	2.3906	0.956	-	09/11/2024 12:34	JWN,NIC2
49	Check STD(5ug/L)	2.500	2.500	2.500	11.9305	12.1896	4.876	97.5	09/11/2024 12:37	JWN,NIC2
50	Check Blank	2.500	2.500	2.500	0.0960	-0.0310	-0.012	-	09/11/2024 12:41	JWN,NIC2
51	WG1969719-1 WG1969719	2.500	2.500	2.500	0.0896	-0.0376	-0.015	-	09/11/2024 12:44	JWN,NIC2
52	WG1969719-2 WG1969719	2.500	2.500	2.500	2.5112	2.4630	0.985	-	09/11/2024 12:47	JWN,NIC2
53	L2450429-01 WG1969719	2.500	2.500	2.500	1.6939	1.6190	0.648	-	09/11/2024 12:51	JWN,NIC2
54	WG1969719-3 WG1969719	2.500	2.500	2.500	13.5223	13.8333	5.533	-	09/11/2024 12:54	JWN,NIC2
55	WG1969719-4 WG1969719	2.500	2.500	2.500	13.2778	13.5808	5.432	-	09/11/2024 12:57	JWN,NIC2
56	L2450291-01 WG1969719	2.500	2.500	2.500	0.1119	-0.0146	-0.006	-	09/11/2024 13:01	JWN,NIC2
57	L2450291-02 WG1969719	2.500	2.500	2.500	0.0921	-0.0350	-0.014	-	09/11/2024 13:04	JWN,NIC2
58	L2450291-03 WG1969719	2.500	2.500	2.500	0.0870	-0.0403	-0.016	-	09/11/2024 13:07	JWN,NIC2
59	L2450291-04 WG1969719	2.500	2.500	2.500	0.1195	-0.0067	-0.003	-	09/11/2024 13:10	JWN,NIC2
60	L2450291-05 WG1969719	2.500	2.500	2.500	0.0907	-0.0365	-0.015	-	09/11/2024 13:14	JWN,NIC2
61	Check STD(5ug/L)	2.500	2.500	2.500	12.1436	12.4096	4.964	99.3	09/11/2024 13:17	JWN,NIC2
62	Check Blank	2.500	2.500	2.500	0.1706	0.0460	0.018	-	09/11/2024 13:20	JWN,NIC2
63	L2450291-06 WG1969719	2.500	2.500	2.500	0.1177	-0.0086	-0.003	-	09/11/2024 13:24	JWN,NIC2
64	L2450291-34 WG1969719	2.500	2.500	2.500	0.0824	-0.0450	-0.018	-	09/11/2024 13:27	JWN,NIC2
65	L2450429-02 WG1969719	2.500	2.500	2.500	1.6719	1.5963	0.639	-	09/11/2024 13:30	JWN,NIC2
66	L2450429-03 WG1969719	2.500	2.500	2.500	0.0827	-0.0447	-0.018	-	09/11/2024 13:34	JWN,NIC2
67	L2450429-04 WG1969719	2.500	2.500	2.500	0.0792	-0.0483	-0.019	-	09/11/2024 13:37	JWN,NIC2
68	WG1970107-1 WG1970107	2.500	2.500	2.500	0.1365	0.0108	0.004	-	09/11/2024 13:54	JWN,NIC2
69	WG1970107-2 WG1970107	2.500	2.500	2.500	2.6034	2.5582	1.023	-	09/11/2024 13:57	JWN,NIC2
70	L2450190-01 WG1970107	2.500	2.500	2.500	0.2830	0.1621	0.065	-	09/11/2024 14:01	JWN,NIC2

No.	NAME	SVOL [mL]	CVOL [mL]	DVOL [mL]	AREA [ON]	MEAS [ng]	CONC [ug/L]	Recovery [%]	M. TIME	Note
71	WG1970107-3 WG1970107	2.500	2.500	2.500	12.3674	12.6407	5.056	-	09/11/2024 14:04	JWN,NIC2
72	WG1970107-4 WG1970107	2.500	2.500	2.500	0.3013	0.1810	0.072	-	09/11/2024 14:07	JWN,NIC2
73	Check STD(5ug/L)	2.500	2.500	2.500	12.1393	12.4052	4.962	99.2	09/11/2024 14:11	JWN,NIC2
74	Check Blank	2.500	2.500	2.500	0.1671	0.0424	0.017	-	09/11/2024 14:14	JWN,NIC2
75	L2450847-01 WG1970107	2.500	2.500	2.500	0.2214	0.0985	0.039	-	09/11/2024 14:17	JWN,NIC2
76	L2450847-02 WG1970107	2.500	2.500	2.500	0.2011	0.0775	0.031	-	09/11/2024 14:21	JWN,NIC2
77	L2450847-03 WG1970107	2.500	2.500	2.500	0.1918	0.0679	0.027	-	09/11/2024 14:24	JWN,NIC2
78	L2450847-04 WG1970107	2.500	2.500	2.500	0.2011	0.0775	0.031	-	09/11/2024 14:27	JWN,NIC2
79	L2450847-05 WG1970107	2.500	2.500	2.500	0.1818	0.0576	0.023	-	09/11/2024 14:31	JWN,NIC2
80	L2450847-06 WG1970107	2.500	2.500	2.500	0.1860	0.0619	0.025	-	09/11/2024 14:34	JWN,NIC2
81	L2450847-07 WG1970107	2.500	2.500	2.500	0.1936	0.0698	0.028	-	09/11/2024 14:37	JWN,NIC2
82	L2450847-50 WG1970107	2.500	2.500	2.500	0.1753	0.0509	0.020	-	09/11/2024 14:40	JWN,NIC2
83	L2450847-51 WG1970107	2.500	2.500	2.500	0.1661	0.0414	0.017	-	09/11/2024 14:44	JWN,NIC2
84	L2450847-52 WG1970107	2.500	2.500	2.500	0.1430	0.0175	0.007	-	09/11/2024 14:47	JWN,NIC2
85	Check STD(5ug/L)	2.500	2.500	2.500	12.1619	12.4285	4.971	99.4	09/11/2024 14:50	JWN,NIC2
86	Check Blank	2.500	2.500	2.500	0.0915	-0.0356	-0.014	-	09/11/2024 14:54	JWN,NIC2
87	L2450847-53 WG1970107	2.500	2.500	2.500	0.1397	0.0141	0.006	-	09/11/2024 14:57	JWN,NIC2
88	L2450847-54 WG1970107	2.500	2.500	2.500	0.1458	0.0204	0.008	-	09/11/2024 15:00	JWN,NIC2
89	L2450847-55 WG1970107	2.500	2.500	2.500	0.1248	-0.0013	-0.001	-	09/11/2024 15:04	JWN,NIC2
90	L2450847-56 WG1970107	2.500	2.500	2.500	0.1349	0.0092	0.004	-	09/11/2024 15:07	JWN,NIC2
91	Check STD(5ug/L)	2.500	2.500	2.500	12.0377	12.3003	4.920	98.4	09/11/2024 15:10	JWN,NIC2
92	Check Blank	2.500	2.500	2.500	0.0950	-0.0320	-0.013	-	09/11/2024 15:14	JWN,NIC2

Title :
Date : 09/11/2024
Name :

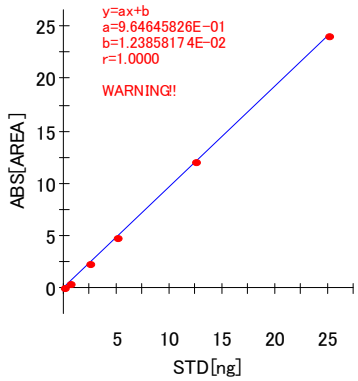
Method

STD
HONH3Cl : 0.0mL
(1+1)H2SO4 : 0.0mL
10w/v% SnCl2 : 0.3mL

SMP
HONH3Cl : 0.0mL
(1+1)H2SO4 : 0.0mL
10w/v% SnCl2 : 0.3mL

Measurement Time(sec) : 120sec

Calib



STD

No.	STD [ug/L]	SVOL [mL]	CVOL [mL]	DVOL [mL]	STD [ng]	AREA [ON]	MEAS [ng]	Dev [%]	M. TIME	Note
1	0.000	2.500	2.500	2.500	0.000	0.0916	0.0821	-	09/11/2024 06:19	JWN,NIC3
2	0.200	2.500	2.500	2.500	0.500	0.5394	0.5463	9.3	09/11/2024 06:23	JWN,NIC3
3	1.000	2.500	2.500	2.500	2.500	2.3549	2.4284	2.9	09/11/2024 06:26	JWN,NIC3
4	2.000	2.500	2.500	2.500	5.000	4.7555	4.9169	1.7	09/11/2024 06:29	JWN,NIC3
5	5.000	2.500	2.500	2.500	12.500	12.0770	12.5068	0.1	09/11/2024 06:33	JWN,NIC3
6	10.000	2.500	2.500	2.500	25.000	24.1473	25.0195	0.1	09/11/2024 06:36	JWN,NIC3

SMP

No.	NAME	SVOL [mL]	CVOL [mL]	DVOL [mL]	AREA [ON]	MEAS [ng]	CONC [ug/L]	Recovery [%]	M. TIME	Note
1	XICV	2.500	2.500	2.500	6.8449	7.0829	2.833	-	09/11/2024 06:47	JWN,NIC3
2	XICB	2.500	2.500	2.500	0.0942	0.0848	0.034	-	09/11/2024 06:50	JWN,NIC3
3	ICV	2.500	2.500	2.500	7.0532	7.2989	2.920	-	09/11/2024 06:57	JWN,NIC3
4	ICB	2.500	2.500	2.500	0.0942	0.0848	0.034	-	09/11/2024 07:01	JWN,NIC3
5	0.2PPB	2.500	2.500	2.500	0.5603	0.5680	0.227	-	09/11/2024 07:04	JWN,NIC3
6	WG1969778-1 WG1969778	2.500	2.500	2.500	0.0933	0.0839	0.034	-	09/11/2024 07:22	JWN,NIC3

NIC NIPPON INSTRUMENTS CORPORATION

No.	NAME	SVOL [mL]	CVOL [mL]	DVOL [mL]	AREA [ON]	MEAS [ng]	CONC [ug/L]	Recovery [%]	M. TIME	Note
7	WG1969778-2 WG1969778	2.500	2.500	2.500	2.4096	2.4851	0.994	-	09/11/2024 07:26	JWN,NIC3
8	L2450417-06 WG1969778	2.500	2.500	2.500	0.0962	0.0869	0.035	-	09/11/2024 07:29	JWN,NIC3
9	WG1969778-3 WG1969778	2.500	2.500	2.500	11.5591	11.9699	4.788	-	09/11/2024 07:32	JWN,NIC3
10	WG1969778-4 WG1969778	2.500	2.500	2.500	11.6564	12.0708	4.828	-	09/11/2024 07:36	JWN,NIC3
11	L2450417-08 WG1969778	2.500	2.500	2.500	0.1008	0.0917	0.037	-	09/11/2024 07:39	JWN,NIC3
12	WG1969778-5 WG1969778	2.500	2.500	2.500	11.5648	11.9758	4.790	-	09/11/2024 07:42	JWN,NIC3
13	WG1969778-6 WG1969778	2.500	2.500	2.500	0.0991	0.0899	0.036	-	09/11/2024 07:46	JWN,NIC3
14	L2450383-01 WG1969778	2.500	2.500	2.500	0.1028	0.0937	0.037	-	09/11/2024 07:49	JWN,NIC3
15	Check STD(5ug/L)	2.500	2.500	2.500	11.8037	12.2235	4.889	97.8	09/11/2024 07:52	JWN,NIC3
16	Check Blank	2.500	2.500	2.500	0.0923	0.0828	0.033	-	09/11/2024 07:56	JWN,NIC3
17	L2450385-01 WG1969778	2.500	2.500	2.500	0.0934	0.0840	0.034	-	09/11/2024 08:11	JWN,NIC3
18	L2450386-01 WG1969778	2.500	2.500	2.500	0.0900	0.0805	0.032	-	09/11/2024 08:14	JWN,NIC3
19	L2450391-01 WG1969778	2.500	2.500	2.500	0.0928	0.0834	0.033	-	09/11/2024 08:18	JWN,NIC3
20	L2450417-01 WG1969778	2.500	2.500	2.500	0.0922	0.0827	0.033	-	09/11/2024 08:21	JWN,NIC3
21	L2450417-02 WG1969778	2.500	2.500	2.500	0.1509	0.1436	0.057	-	09/11/2024 08:24	JWN,NIC3
22	L2450417-03 WG1969778	2.500	2.500	2.500	0.0909	0.0814	0.033	-	09/11/2024 08:28	JWN,NIC3
23	L2450417-04 WG1969778	2.500	2.500	2.500	0.0904	0.0809	0.032	-	09/11/2024 08:31	JWN,NIC3
24	L2450417-07 WG1969778	2.500	2.500	2.500	0.0934	0.0840	0.034	-	09/11/2024 08:34	JWN,NIC3
25	L2450417-09 WG1969778	2.500	2.500	2.500	0.0897	0.0801	0.032	-	09/11/2024 08:38	JWN,NIC3
26	WG1969413-1 WG1969413	2.500	2.500	2.500	0.0983	0.0891	0.036	-	09/11/2024 09:09	JWN,NIC3
27	Check STD(5ug/L)	2.500	2.500	2.500	11.5938	12.0059	4.802	96.0	09/11/2024 09:12	JWN,NIC3
28	Check Blank	2.500	2.500	2.500	0.0847	0.0750	0.030	-	09/11/2024 09:15	JWN,NIC3
29	WG1969413-2 WG1969413	2.500	2.500	2.500	2.3043	2.3759	0.950	-	09/11/2024 09:26	JWN,NIC3
30	I2449687-02 WG1969413	2.500	2.500	2.500	0.1050	0.0960	0.038	-	09/11/2024 09:29	JWN,NIC3
31	WG1969413-3 WG1969413	2.500	2.500	2.500	11.7844	12.2035	4.881	-	09/11/2024 09:33	JWN,NIC3
32	WG1969413-4 WG1969413	2.500	2.500	2.500	0.1025	0.0934	0.037	-	09/11/2024 09:36	JWN,NIC3
33	I2449687-01 WG1969413	2.500	2.500	2.500	0.1156	0.1070	0.043	-	09/11/2024 09:39	JWN,NIC3
34	I2449687-03 WG1969413	2.500	2.500	2.500	0.1207	0.1123	0.045	-	09/11/2024 09:42	JWN,NIC3
35	I2449687-04 WG1969413	2.500	2.500	2.500	0.1390	0.1313	0.053	-	09/11/2024 09:46	JWN,NIC3
36	I2449687-05 WG1969413	2.500	2.500	2.500	0.1262	0.1180	0.047	-	09/11/2024 09:49	JWN,NIC3
37	I2449687-06 WG1969413	2.500	2.500	2.500	0.1123	0.1036	0.041	-	09/11/2024 09:52	JWN,NIC3
38	I2449687-07 WG1969413	2.500	2.500	2.500	0.1077	0.0988	0.040	-	09/11/2024 09:56	JWN,NIC3

NIC NIPPON INSTRUMENTS CORPORATION

No.	NAME	SVOL [mL]	CVOL [mL]	DVOL [mL]	AREA [ON]	MEAS [ng]	CONC [ug/L]	Recovery [%]	M. TIME	Note
39	Check STD(5ug/L)	2.500	2.500	2.500	11.7116	12.1280	4.851	97.0	09/11/2024 09:59	JWN,NIC3
40	Check Blank	2.500	2.500	2.500	0.0828	0.0730	0.029	-	09/11/2024 10:02	JWN,NIC3
41	I2449687-08 WG1969413	2.500	2.500	2.500	0.1232	0.1149	0.046	-	09/11/2024 10:15	JWN,NIC3
42	I2449687-09 WG1969413	2.500	2.500	2.500	0.1049	0.0959	0.038	-	09/11/2024 10:18	JWN,NIC3
43	I2449687-10 WG1969413	2.500	2.500	2.500	0.1008	0.0917	0.037	-	09/11/2024 10:21	JWN,NIC3
44	WG1969689-1 WG1969689	2.500	2.500	2.500	0.0718	0.0616	0.025	-	09/11/2024 11:29	JWN,NIC3
45	WG1969689-2 WG1969689	2.500	2.500	2.500	2.2992	2.3706	0.948	-	09/11/2024 11:32	JWN,NIC3
46	I2450786-03 WG1969689	2.500	2.500	2.500	0.0775	0.0675	0.027	-	09/11/2024 11:36	JWN,NIC3
47	WG1969689-3 WG1969689	2.500	2.500	2.500	11.2667	11.6668	4.667	-	09/11/2024 11:39	JWN,NIC3
48	WG1969689-4 WG1969689	2.500	2.500	2.500	0.0753	0.0652	0.026	-	09/11/2024 11:42	JWN,NIC3
49	I2450786-04 WG1969689	2.500	2.500	2.500	0.0893	0.0797	0.032	-	09/11/2024 11:46	JWN,NIC3
50	WG1969689-5 WG1969689	2.500	2.500	2.500	11.2390	11.6381	4.655	-	09/11/2024 11:49	JWN,NIC3
51	Check STD(5ug/L)	2.500	2.500	2.500	11.6739	12.0889	4.836	96.7	09/11/2024 11:52	JWN,NIC3
52	Check Blank	2.500	2.500	2.500	0.0830	0.0732	0.029	-	09/11/2024 11:55	JWN,NIC3
53	WG1969689-6 WG1969689	2.500	2.500	2.500	0.0859	0.0762	0.030	-	09/11/2024 12:03	JWN,NIC3
54	I2450786-01 WG1969689	2.500	2.500	2.500	0.0925	0.0831	0.033	-	09/11/2024 12:06	JWN,NIC3
55	I2450786-02 WG1969689	2.500	2.500	2.500	0.1066	0.0977	0.039	-	09/11/2024 12:09	JWN,NIC3
56	I2450786-05 WG1969689	2.500	2.500	2.500	0.0873	0.0777	0.031	-	09/11/2024 12:12	JWN,NIC3
57	I2450786-06 WG1969689	2.500	2.500	2.500	0.0850	0.0753	0.030	-	09/11/2024 12:16	JWN,NIC3
58	I2450786-07 WG1969689	2.500	2.500	2.500	0.0761	0.0660	0.026	-	09/11/2024 12:19	JWN,NIC3
59	I2450786-08 WG1969689	2.500	2.500	2.500	0.0721	0.0619	0.025	-	09/11/2024 12:22	JWN,NIC3
60	I2450786-09 WG1969689	2.500	2.500	2.500	0.0790	0.0691	0.028	-	09/11/2024 12:26	JWN,NIC3
61	I2450786-10 WG1969689	2.500	2.500	2.500	0.0781	0.0681	0.027	-	09/11/2024 12:29	JWN,NIC3
62	I2450786-12 WG1969689	2.500	2.500	2.500	0.0831	0.0733	0.029	-	09/11/2024 12:32	JWN,NIC3
63	Check STD(5ug/L)	2.500	2.500	2.500	11.7272	12.1442	4.858	97.2	09/11/2024 12:36	JWN,NIC3
64	Check Blank	2.500	2.500	2.500	0.0837	0.0739	0.030	-	09/11/2024 12:39	JWN,NIC3
65	WG1969763-1 WG1969763	2.500	2.500	2.500	0.0901	0.0806	0.032	-	09/11/2024 12:57	JWN,NIC3
66	WG1969763-2 WG1969763	2.500	2.500	2.500	2.3702	2.4442	0.978	-	09/11/2024 13:00	JWN,NIC3
67	I2450417-06 WG1969763	2.500	2.500	2.500	0.1056	0.0966	0.039	-	09/11/2024 13:04	JWN,NIC3
68	WG1969763-3 WG1969763	2.500	2.500	2.500	11.2382	11.6372	4.655	-	09/11/2024 13:07	JWN,NIC3
69	WG1969763-4 WG1969763	2.500	2.500	2.500	11.1298	11.5249	4.610	-	09/11/2024 13:10	JWN,NIC3
70	I2450417-01 WG1969763	2.500	2.500	2.500	0.1175	0.1090	0.044	-	09/11/2024 13:13	JWN,NIC3

NIC NIPPON INSTRUMENTS CORPORATION

No.	NAME	SVOL [mL]	CVOL [mL]	DVOL [mL]	AREA [ON]	MEAS [ng]	CONC [ug/L]	Recovery [%]	M. TIME	Note
71	I2450417-02 WG1969763	2.500	2.500	2.500	0.1044	0.0954	0.038	-	09/11/2024 13:17	JWN,NIC3
72	I2450417-03 WG1969763	2.500	2.500	2.500	0.0855	0.0758	0.030	-	09/11/2024 13:20	JWN,NIC3
73	I2450417-04 WG1969763	2.500	2.500	2.500	0.0960	0.0867	0.035	-	09/11/2024 13:23	JWN,NIC3
74	I2450417-07 WG1969763	2.500	2.500	2.500	0.1435	0.1359	0.054	-	09/11/2024 13:27	JWN,NIC3
75	Check STD(5ug/L)	2.500	2.500	2.500	11.7590	12.1771	4.871	97.4	09/11/2024 13:30	JWN,NIC3
76	Check Blank	2.500	2.500	2.500	0.0784	0.0684	0.027	-	09/11/2024 13:33	JWN,NIC3
77	I2450417-08 WG1969763	2.500	2.500	2.500	0.1033	0.0942	0.038	-	09/11/2024 13:37	JWN,NIC3
78	I2450417-09 WG1969763	2.500	2.500	2.500	0.1010	0.0919	0.037	-	09/11/2024 13:40	JWN,NIC3
79	Check STD(5ug/L)	2.500	2.500	2.500	11.5008	11.9095	4.764	95.3	09/11/2024 14:07	JWN,NIC3
80	Check Blank	2.500	2.500	2.500	0.0744	0.0643	0.026	-	09/11/2024 14:10	JWN,NIC3
81	WG1969864-2 WG1969864	2.500	2.500	2.500	2.7501	2.8381	1.135	-	09/11/2024 15:04	JWN,NIC3
82	Check STD(5ug/L)	2.500	2.500	2.500	11.1821	11.5791	4.632	92.6	09/11/2024 15:26	DJR,NIC3
83	Check Blank	2.500	2.500	2.500	0.0767	0.0667	0.027	-	09/11/2024 15:29	DJR,NIC3
84	WG1969913-1 WG1969913	2.500	2.500	2.500	0.1001	0.0909	0.036	-	09/11/2024 16:46	DJR,NIC3
85	WG1969913-2 WG1969913	2.500	2.500	2.500	2.4992	2.5780	1.031	-	09/11/2024 16:50	DJR,NIC3
86	I2450603-01 WG1969913	2.500	2.500	2.500	0.1185	0.1100	0.044	-	09/11/2024 16:53	DJR,NIC3
87	Check STD(5ug/L)	2.500	2.500	2.500	12.0119	12.4393	4.976	99.5	09/11/2024 16:56	DJR,NIC3
88	Check Blank	2.500	2.500	2.500	0.0734	0.0633	0.025	-	09/11/2024 17:00	DJR,NIC3
89	WG1969913-3 WG1969913	2.500	2.500	2.500	11.8245	12.2450	4.898	-	09/11/2024 17:22	DJR,NIC3
90	WG1969913-4 WG1969913	2.500	2.500	2.500	0.1171	0.1086	0.043	-	09/11/2024 17:26	DJR,NIC3
91	I2449563-04 WG1969913	2.500	2.500	2.500	0.1090	0.1002	0.040	-	09/11/2024 17:29	DJR,NIC3
92	I2450603-02 WG1969913	2.500	2.500	2.500	0.1103	0.1015	0.041	-	09/11/2024 17:32	DJR,NIC3
93	I2450818-02 WG1969913	2.500	2.500	2.500	0.1537	0.1465	0.059	-	09/11/2024 17:36	DJR,NIC3
94	I2450829-04 WG1969913	2.500	2.500	2.500	0.4779	0.4826	0.193	-	09/11/2024 17:39	DJR,NIC3
95	I2450829-06 WG1969913	2.500	2.500	2.500	0.1060	0.0970	0.039	-	09/11/2024 17:42	DJR,NIC3
96	WG1970279-1 WG1970279	2.500	2.500	2.500	0.3252	0.3243	0.130	-	09/11/2024 17:45	DJR,NIC3
97	WG1970279-2 WG1970279	2.500	2.500	2.500	2.6480	2.7322	1.093	-	09/11/2024 17:49	DJR,NIC3
98	I2450266-01 WG1970279	2.500	2.500	2.500	0.3521	0.3522	0.141	-	09/11/2024 17:52	DJR,NIC3
99	Check STD(5ug/L)	2.500	2.500	2.500	12.1931	12.6271	5.051	101.0	09/11/2024 17:55	DJR,NIC3
100	Check Blank	2.500	2.500	2.500	0.0799	0.0700	0.028	-	09/11/2024 17:59	DJR,NIC3
101	WG1970279-3 WG1970279	2.500	2.500	2.500	11.8626	12.2845	4.914	-	09/11/2024 18:51	DJR,NIC3
102	WG1970279-4 WG1970279	2.500	2.500	2.500	0.4951	0.5004	0.200	-	09/11/2024 18:55	DJR,NIC3

NIC NIPPON INSTRUMENTS CORPORATION

No.	NAME	SVOL [mL]	CVOL [mL]	DVOL [mL]	AREA [ON]	MEAS [ng]	CONC [ug/L]	Recovery [%]	M. TIME	Note
103	WG1970306-1 WG1970306	2.500	2.500	2.500	0.5875	0.5962	0.238	-	09/11/2024 19:34	DJR,NIC3
104	WG1970306-2 WG1970306	2.500	2.500	2.500	2.9483	3.0435	1.217	-	09/11/2024 19:37	DJR,NIC3
105	L2409778-143 WG1970306	2.500	2.500	2.500	0.5754	0.5836	0.233	-	09/11/2024 19:40	DJR,NIC3
106	WG1970306-3 WG1970306	2.500	2.500	2.500	12.2886	12.7261	5.090	-	09/11/2024 19:44	DJR,NIC3
107	WG1970306-4 WG1970306	2.500	2.500	2.500	2.0780	2.1413	0.857	-	09/11/2024 19:47	DJR,NIC3
108	XL2450423-12 WG1970306	2.500	2.500	2.500	2.0992	2.1633	0.865	-	09/11/2024 19:50	DJR,NIC3
109	XL2450423-13 WG1970306	2.500	2.500	2.500	2.2398	2.3090	0.924	-	09/11/2024 19:54	DJR,NIC3
110	XL2450431-01 WG1970306	2.500	2.500	2.500	1.8364	1.8909	0.756	-	09/11/2024 19:57	DJR,NIC3
111	Check STD(5ug/L)	2.500	2.500	2.500	11.7237	12.1405	4.856	97.1	09/11/2024 20:00	DJR,NIC3
112	Check Blank	2.500	2.500	2.500	0.0850	0.0753	0.030	-	09/11/2024 20:04	DJR,NIC3
113	L2450431-02 WG1970306	2.500	2.500	2.500	0.1332	0.1252	0.050	-	09/11/2024 20:10	DJR,NIC3
114	L2450431-03 WG1970306	2.500	2.500	2.500	0.1345	0.1266	0.051	-	09/11/2024 20:13	DJR,NIC3
115	L2450431-04 WG1970306	2.500	2.500	2.500	0.1290	0.1209	0.048	-	09/11/2024 20:16	DJR,NIC3
116	XWG1970306-1 WG1970306	2.500	2.500	2.500	0.6062	0.6156	0.246	-	09/11/2024 20:28	DJR,NIC3
117	XWG1970306-2 WG1970306	2.500	2.500	2.500	2.9586	3.0542	1.222	-	09/11/2024 20:31	DJR,NIC3
118	WG1970265-1 WG1970265	2.500	2.500	2.500	0.1247	0.1164	0.047	-	09/11/2024 21:35	DJR,NIC3
119	WG1970265-2 WG1970265	2.500	2.500	2.500	2.4664	2.5440	1.018	-	09/11/2024 21:38	DJR,NIC3
120	I2450792-02 WG1970265	2.500	2.500	2.500	0.1242	0.1159	0.046	-	09/11/2024 21:41	DJR,NIC3
121	WG1970265-3 WG1970265	2.500	2.500	2.500	11.1584	11.5545	4.622	-	09/11/2024 21:45	DJR,NIC3
122	WG1970265-4 WG1970265	2.500	2.500	2.500	0.1290	0.1209	0.048	-	09/11/2024 21:48	DJR,NIC3
123	Check STD(5ug/L)	2.500	2.500	2.500	11.4662	11.8736	4.749	95.0	09/11/2024 21:51	DJR,NIC3
124	Check Blank	2.500	2.500	2.500	0.0835	0.0737	0.029	-	09/11/2024 21:55	DJR,NIC3
125	I2450792-01 WG1970265	2.500	2.500	2.500	0.1285	0.1204	0.048	-	09/11/2024 22:07	DJR,NIC3
126	Check STD(5ug/L)	2.500	2.500	2.500	12.0993	12.5299	5.012	100.2	09/11/2024 22:10	DJR,NIC3
127	Check Blank	2.500	2.500	2.500	0.0838	0.0740	0.030	-	09/11/2024 22:14	DJR,NIC3
128	WG1969786-1 WG1969786	2.500	2.500	2.500	0.1036	0.0946	0.038	-	09/11/2024 23:36	DJR,NIC3
129	WG1969786-2 WG1969786	2.500	2.500	2.500	2.4056	2.4809	0.992	-	09/11/2024 23:39	DJR,NIC3
130	WG1969786-3 WG1969786	2.500	2.500	2.500	2.3262	2.3986	0.959	-	09/11/2024 23:42	DJR,NIC3
131	L2449202-01 WG1969786	2.500	2.500	2.500	0.1013	0.0922	0.037	-	09/11/2024 23:46	DJR,NIC3
132	Check STD(5ug/L)	2.500	2.500	2.500	12.1296	12.5613	5.025	100.5	09/11/2024 23:49	DJR,NIC3
133	Check Blank	2.500	2.500	2.500	0.0859	0.0762	0.030	-	09/11/2024 23:52	DJR,NIC3
134	Check STD(5ug/L)	2.500	2.500	2.500	12.1079	12.5388	5.016	100.3	09/11/2024 23:55	DJR,NIC3

NIC NIPPON INSTRUMENTS CORPORATION

No.	NAME	SVOL [mL]	CVOL [mL]	DVOL [mL]	AREA [ON]	MEAS [ng]	CONC [ug/L]	Recovery [%]	M. TIME	Note
135	Check Blank	2.500	2.500	2.500	0.0867	0.0770	0.031	-	09/11/2024 23:59	DJR,NIC3

MERCURY TRUE VALUE CRITERIA

ICV	3 ug/l
LCSW	1 ug/l
MS	1 ug/l
CCV	5 ug/l

As of 6/1/13, Mercury True Value criteria is as follows:

ICV	3 ug/l
LCSW	1 ug/l
MS(aq)	5 ug/l
MS(soil)	1 ug/l
CCV	10 ug/l

▪ Certificate of Analysis ▪

Product: Metals in Soil
Catalog Number: 540
Lot No. D102-540
Certificate Issue Date: June 22, 2018
Expiration Date: January 31, 2022
Revision Number: Original

Product use instructions are included as part of the certification packet and are paginated separately from this Certificate of Analysis. Please reference the product use instructions for catalog #540 revision 030512.

CERTIFICATION

Parameter	Certified Value[1]	Reference Value	Uncertainty[2]	QC Performance Acceptance Limits[3]	PT Performance Acceptance Limits[4]
	mg/kg	mg/kg	%	mg/kg	mg/kg
Aluminum	10100	8160	6.36	3960 - 12400	4080 - 12200
Antimony	120	60.9	9.42	0.822 - 121	12.0 - 166
Arsenic	144	135	5.08	112 - 158	94.6 - 176
Barium	469	443	6.77	366 - 521	332 - 554
Beryllium	207	197	5.86	164 - 229	148 - 246
Boron	213	174	12.6	127 - 221	105 - 244
Cadmium	224	204	6.65	169 - 240	153 - 256
Calcium	5190	4830	9.12	3950 - 5700	3510 - 6150
Chromium	138	132	8.56	109 - 155	92.2 - 171
Cobalt	182	179	7.93	151 - 207	134 - 224
Copper	191	184	6.72	155 - 213	138 - 230
Iron	15000	14400	10.7	8770 - 20000	5120 - 23600
Lead	225	216	7.72	178 - 254	159 - 274
Magnesium	2570	2340	6.13	1780 - 2900	1460 - 3230
Manganese	331	323	6.71	266 - 380	242 - 404
Mercury	16.8	13.2	16.0	8.64 - 17.7	7.89 - 18.5
Molybdenum	193	175	2.39	141 - 209	125 - 226
Nickel	163	152	5.95	126 - 178	106 - 197
Potassium	2420	2050	6.31	1440 - 2660	1210 - 2890
Selenium	81.9	74.9	4.13	59.3 - 90.5	47.0 - 103
Silver	57.6	53.9	9.00	43.0 - 64.8	37.8 - 70.0
Sodium	161	149	12.1	111 - 188	57.7 - 241
Strontium	100	96.2	4.04	78.1 - 114	69.0 - 123
Thallium	253	232	3.54	188 - 276	168 - 296

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Parameter	Certified Value[1]	Reference Value	Uncertainty[2]	QC Performance Acceptance Limits[3]	PT Performance Acceptance Limits[4]
	mg/kg	mg/kg	%	mg/kg	mg/kg
Tin	146	134	10.8	106 - 163	79.5 - 189
Titanium	449	340	7.20	70.2 - 609	44.9 - 711
Uranium	114	113	7.10	85.5 - 140	71.9 - 153
Vanadium	180	172	8.85	137 - 207	126 - 218
Zinc	217	211	6.58	171 - 250	147 - 274

ANALYTICAL VERIFICATION

Parameter	Certified Value[1]	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery[5]	n	SRM Number	Recovery
	mg/kg	mg/kg	%			%
Aluminum	10100	8160	80.8	138	-	-
Antimony	120	60.9	50.8	135	-	-
Arsenic	144	135	93.8	184	-	-
Barium	469	443	94.5	158	-	-
Beryllium	207	197	95.0	148	-	-
Boron	213	174	81.8	107	-	-
Cadmium	224	204	91.3	199	-	-
Calcium	5190	4830	93.0	122	-	-
Chromium	138	132	95.5	172	-	-
Cobalt	182	179	98.4	140	-	-
Copper	191	184	96.3	183	-	-
Iron	15000	14400	95.6	133	-	-
Lead	225	216	96.2	204	-	-
Magnesium	2570	2340	91.2	122	-	-
Manganese	331	323	97.6	147	-	-
Mercury	16.8	13.2	78.3	128	-	-
Molybdenum	193	175	90.8	143	-	-
Nickel	163	152	93.1	185	-	-
Potassium	2420	2050	84.7	121	-	-
Selenium	81.9	74.9	91.5	163	-	-

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Parameter	Certified Value[1]	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery[5]	n	SRM Number	Recovery
	mg/kg	mg/kg	%			%
Silver	57.6	53.9	93.6	150	-	-
Sodium	161	149	92.8	105	-	-
Strontium	100	96.2	96.2	90	-	-
Thallium	253	232	91.6	147	-	-
Tin	146	134	92.0	100	-	-
Titanium	449	340	75.6	93	-	-
Uranium	114	113	98.8	35	-	-
Vanadium	180	172	95.4	139	-	-
Zinc	217	211	97.0	180	-	-

1. The **Certified Values** are the actual "made-to" concentrations confirmed by ERA analytical verification. The certified values are monitored and purchasers will be notified of any significant changes resulting in recertification or withdrawal of this certified reference material during the period of validity of this certificate.

2. The **Uncertainty** is the total propagated uncertainty at the 95% confidence interval. The uncertainty is based on the preparation and internal analytical verification of the product by ERA, multiplied by a coverage factor. The uncertainty applies to the product as supplied and does not take into account any required or optional dilution and/or preparations the laboratory may perform while using this product.

3. The **QC Performance Acceptance Limits (QC PALs™)**are based on actual historical data collected in ERA's Proficiency Testing program. The QC PALs™ reflect any inherent biases in the methods used to establish the limits and closely approximate a 95% confidence interval of the performance that experienced laboratories should achieve using accepted environmental methods. Use the QC PALs™ to realistically evaluate your performance against your peers.

4. The **PT Performance Acceptance Limits (PT PALs™)** are calculated using the regression equations and fixed acceptance criteria specified in the NELAC proficiency testing requirements. Use the PT PALs™ when analyzing this QC standard alongside USEPA and NELAC compliant PT standards. Please note that many PT study acceptance limits are concentration dependent (some non-linearly) and, therefore, the acceptance limits of this QC standard and any PT standard may differ relative to their difference in concentrations.

5. The **PT Data/Traceability** data include the mean value, percent recovery and number of data points reported by the laboratories in our Proficiency Testing study compared to the Certified Values. In addition, where NIST Standard Reference Materials (SRMs) are available, each analyte has been analytically traced to the NIST SRM listed. This product is traceable to the lot numbers of its starting materials. All gravimetric and volumetric measurements related to its manufacture are traceable to NIST through an unbroken chain of comparisons.
Traceability Recovery (%) = [(% recovery certified standard)/(% recovery NIST SRM)]*100
The traceability data shown were compiled by analyzing the ERA standards or their associated stock solutions against the applicable NIST SRMs.

6. For additional information on this product such as intended use, instructions for use, level of homogeneity, and safety information, please refer to the provided Instruction Sheet

If you have any questions or need technical assistance, please call ERA technical assistance at 1-800-372-0122 or send an email to info@eraqc.com.

Certifying Officer

Brian Miller

Quality Officer

Matthew Seebeck

ERA
A Waters Company

Reference Material

▪ Certificate of Analysis ▪

Product: Metals in Soil
Catalog Number: 540
Lot No. D105-540
Certificate Issue Date: March 19, 2019
Expiration Date: October 12, 2022
Revision Number: Original

Product use instructions are included as part of the certification packet and are paginated separately from this Certificate of Analysis. Please reference the product use instructions for catalog #540 revision 030512.

CERTIFICATION

Parameter	Certified Value[1]	Reference Value	Uncertainty[2]	QC Performance Acceptance Limits[3]	PT Performance Acceptance Limits[4]
	mg/kg	mg/kg	%	mg/kg	mg/kg
Aluminum	10100	8800	8.32	4600 - 13000	4470 - 13100
Antimony	282	147	7.70	6.17 - 289	28.2 - 366
Arsenic	155	143	6.34	119 - 168	100 - 186
Barium	439	415	5.37	343 - 488	311 - 519
Beryllium	192	179	2.78	149 - 210	134 - 224
Boron	216	160	7.08	113 - 208	96.1 - 238
Cadmium	61.5	56.2	0.528	46.6 - 65.9	42.2 - 70.3
Calcium	5190	4960	6.64	4090 - 5840	3610 - 6310
Chromium	104	101	4.75	83.2 - 118	70.5 - 131
Cobalt	196	189	0.500	158 - 219	141 - 236
Copper	65.0	63.1	2.65	53.1 - 73.1	47.3 - 78.9
Iron	15000	15700	8.94	10100 - 21300	6000 - 25400
Lead	126	125	4.77	103 - 146	89.3 - 160
Magnesium	2570	2410	6.26	1860 - 2970	1520 - 3310
Manganese	387	382	5.37	315 - 449	290 - 474
Mercury	7.76	7.61	13.7	5.53 - 9.69	4.57 - 10.7
Molybdenum	120	107	0.500	86.0 - 128	75.5 - 139
Nickel	117	108	0.514	89.5 - 127	75.7 - 141
Potassium	2420	2110	5.62	1500 - 2720	1260 - 2960
Selenium	84.6	77.9	7.10	61.8 - 94.0	49.2 - 107
Silver	34.6	34.3	8.34	27.8 - 40.9	23.6 - 45.1
Sodium	161	145	6.72	106 - 183	54.3 - 235
Strontium	104	104	3.95	85.1 - 123	74.8 - 133
Thallium	123	113	0.500	91.3 - 134	77.1 - 149

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Parameter	Certified Value[1]	Reference Value	Uncertainty[2]	QC Performance Acceptance Limits[3]	PT Performance Acceptance Limits[4]
	mg/kg	mg/kg	%	mg/kg	mg/kg
Tin	118	107	0.500	83.5 - 130	61.2 - 152
Titanium	512	421	5.80	114 - 728	0.00 - 854
Uranium	103	104	6.18	79.1 - 128	71.9 - 135
Vanadium	87.3	83.7	8.55	66.8 - 101	54.2 - 113
Zinc	251	240	3.98	194 - 285	168 - 312

ANALYTICAL VERIFICATION

Parameter	Certified Value[1]	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery[5]	n	SRM Number	Recovery
	mg/kg	mg/kg	%			%
Aluminum	10100	8800	87.1	193	-	-
Antimony	282	147	52.3	216	-	-
Arsenic	155	143	92.5	240	-	-
Barium	439	415	94.6	222	-	-
Beryllium	192	179	93.4	220	-	-
Boron	216	160	74.2	152	-	-
Cadmium	61.5	56.2	91.5	239	-	-
Calcium	5190	4960	95.6	175	-	-
Chromium	104	101	96.8	237	-	-
Cobalt	196	189	96.2	215	-	-
Copper	65.0	63.1	97.1	237	-	-
Iron	15000	15700	105	195	-	-
Lead	126	125	99.0	243	-	-
Magnesium	2570	2410	93.9	177	-	-
Manganese	387	382	98.7	215	-	-
Mercury	7.76	7.61	98.0	157	-	-
Molybdenum	120	107	89.4	216	-	-
Nickel	117	108	92.5	235	-	-
Potassium	2420	2110	87.2	181	-	-
Selenium	84.6	77.9	92.1	231	-	-

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Parameter	Certified Value[1]	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery[5]	n	SRM Number	Recovery
	mg/kg	mg/kg	%			%
Silver	34.6	34.3	99.3	216	-	-
Sodium	161	145	89.8	166	-	-
Strontium	104	104	99.9	148	-	-
Thallium	123	113	91.8	215	-	-
Tin	118	107	90.4	164	-	-
Titanium	512	421	82.2	157	-	-
Uranium	103	104	101	61	-	-
Vanadium	87.3	83.7	95.9	214	-	-
Zinc	251	240	95.5	234	-	-

1. The **Certified Values** are the actual "made-to" concentrations confirmed by ERA analytical verification. The certified values are monitored and purchasers will be notified of any significant changes resulting in recertification or withdrawal of this reference material during the period of validity of this certificate.

2. The **Uncertainty** is the total propagated uncertainty at the 95% confidence interval. The uncertainty is based on the preparation and internal analytical verification of the product by ERA, multiplied by a coverage factor. The uncertainty applies to the product as supplied and does not take into account any required or optional dilution and/or preparations the laboratory may perform while using this product.

3. The **QC Performance Acceptance Limits (QC PALs™)**are based on actual historical data collected in ERA's Proficiency Testing program. The QC PALs™ reflect any inherent biases in the methods used to establish the limits and closely approximate a 95% confidence interval of the performance that experienced laboratories should achieve using accepted environmental methods. Use the QC PALs™ to realistically evaluate your performance against your peers.

4. The **PT Performance Acceptance Limits (PT PALs™)** are calculated using the regression equations and fixed acceptance criteria specified in the NELAC proficiency testing requirements. Use the PT PALs™ when analyzing this QC standard alongside USEPA and NELAC compliant PT standards. Please note that many PT study acceptance limits are concentration dependent (some non-linearly) and, therefore, the acceptance limits of this QC standard and any PT standard may differ relative to their difference in concentrations.

5. The **PT Data/Traceability** data include the mean value, percent recovery and number of data points reported by the laboratories in our Proficiency Testing study compared to the Certified Values. In addition, where NIST Standard Reference Materials (SRMs) are available, each analyte has been analytically traced to the NIST SRM listed. This product is traceable to the lot numbers of its starting materials. All gravimetric and volumetric measurements related to its manufacture are traceable to NIST through an unbroken chain of comparisons.
Traceability Recovery (%) = [(% recovery certified standard)/(% recovery NIST SRM)]*100
The traceability data shown were compiled by analyzing the ERA standards or their associated stock solutions against the applicable NIST SRMs.

6. For additional information on this product such as intended use, instructions for use, level of homogeneity, and safety information, please refer to the provided Instruction Sheet

If you have any questions or need technical assistance, please call ERA technical assistance at 1-800-372-0122 or send an email to info@eraqc.com.

Certifying Officer

Brian Miller

Brian Miller

Quality Officer

Matthew Seebeck

ACCREDITED ACCREDITED

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Certified Reference Material

▪ Certificate of Analysis ▪

Product: Metals in Soil
Catalog Number: 540
Lot No. D109-540
Certificate Issue Date: March 24, 2020
Expiration Date: October 03, 2023
Revision Number: Original

Product use instructions are included as part of the certification packet and are paginated separately from this Certificate of Analysis. Please reference the product use instructions for catalog #540 revision 090119.

CERTIFICATION

Parameter	Certified Value[1]	Reference Value[7]	Uncertainty[2]	QC Performance Acceptance Limits[3]	PT Performance Acceptance Limits[4]
	mg/kg	mg/kg	%	mg/kg	mg/kg
Aluminum	10100	8130	2.54	3920 - 12300	4060 - 12200
Antimony	259	134	5.03	4.56 - 264	25.9 - 335
Arsenic	171	156	3.38	129 - 183	109 - 203
Barium	253	239	4.81	197 - 280	179 - 298
Beryllium	179	169	6.59	141 - 198	127 - 212
Boron	114	87.5	10.3	62.5 - 113	52.5 - 125
Cadmium	149	137	5.43	113 - 160	103 - 171
Calcium	5190	4760	3.48	3890 - 5640	3460 - 6070
Chromium	163	154	3.79	126 - 181	108 - 200
Cobalt	127	121	5.07	101 - 141	90.8 - 151
Copper	57.0	54.9	4.13	46.1 - 63.6	41.1 - 68.6
Iron	15000	14100	6.27	8470 - 19700	4920 - 23200
Lead	133	130	3.00	107 - 152	93.3 - 167
Magnesium	2570	2320	3.32	1760 - 2880	1440 - 3200
Manganese	277	269	2.67	221 - 317	199 - 340
Mercury	21.6	20.5	7.72	14.7 - 26.3	12.3 - 28.6
Molybdenum	108	95.4	2.61	76.4 - 114	66.9 - 124
Nickel	58.7	53.9	4.97	44.5 - 63.3	37.7 - 70.0
Potassium	2420	2020	3.06	1410 - 2630	1190 - 2850
Selenium	181	167	5.63	132 - 201	113 - 221
Silver	35.5	33.6	5.20	26.8 - 40.3	23.0 - 44.1
Sodium	161	133	2.76	95.1 - 171	46.5 - 220
Strontium	89.7	87.9	4.59	71.7 - 104	62.8 - 113
Thallium	121	112	5.19	90.3 - 133	76.1 - 147

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Parameter	Certified Value[1]	Reference Value[7]	Uncertainty[2]	QC Performance Acceptance Limits[3]	PT Performance Acceptance Limits[4]
	mg/kg	mg/kg	%	mg/kg	mg/kg
Tin	83.5	74.0	5.42	57.6 - 90.4	39.7 - 108
Titanium	474	333	7.17	48.6 - 617	46.3 - 620
Uranium	51.9	51.9	3.36	39.6 - 64.3	35.9 - 68.0
Vanadium	68.1	62.6	6.00	49.4 - 75.8	37.0 - 88.3
Zinc	165	158	2.34	128 - 188	111 - 205

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ANALYTICAL VERIFICATION

Parameter	Certified Value[1]	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery[5]	n	SRM Number[6]	Recovery
	mg/kg	mg/kg	%			%
Aluminum	10100	8130	80.5	196	-	-
Antimony	259	134	51.8	217	-	-
Arsenic	171	156	91.3	243	-	-
Barium	253	239	94.3	230	-	-
Beryllium	179	169	94.6	223	-	-
Boron	114	87.5	76.7	150	-	-
Cadmium	149	137	91.8	249	-	-
Calcium	5190	4760	91.8	184	-	-
Chromium	163	154	94.4	245	-	-
Cobalt	127	121	95.3	221	-	-
Copper	57.0	54.9	96.2	243	-	-
Iron	15000	14100	93.9	199	-	-
Lead	133	130	97.7	251	-	-
Magnesium	2570	2320	90.1	182	-	-
Manganese	277	269	97.2	220	-	-
Mercury	21.6	20.5	94.7	172	-	-
Molybdenum	108	95.4	88.3	218	-	-
Nickel	58.7	53.9	91.8	242	-	-
Potassium	2420	2020	83.5	187	-	-
Selenium	181	167	92.2	235	-	-
Silver	35.5	33.6	94.5	222	-	-
Sodium	161	133	82.7	177	-	-
Strontium	89.7	87.9	98.0	151	-	-
Thallium	121	112	92.2	219	-	-
Tin	83.5	74.0	88.6	170	-	-
Titanium	474	333	70.3	157	-	-
Uranium	51.9	51.9	100	60	-	-
Vanadium	68.1	62.6	91.9	213	-	-
Zinc	165	158	95.8	238	-	-

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▪ Certificate of Analysis ▪

1. The **Certified Values** are the actual gravimetric/volumetric "made-to" concentrations confirmed by ERA analytical verification. The certified values are monitored and purchasers will be notified of any significant changes resulting in recertification or withdrawal of this certified reference material during the period of validity of this certificate.

2. The **Uncertainty** represents an expanded uncertainty and approximates a 95% confidence interval. The uncertainty is based on the characterization, homogeneity and stability characteristics of the product, multiplied by a coverage factor (k=2). The uncertainty applies to the product as supplied and does not take into account any required or optional dilution and/or preparations the laboratory may perform while using this product. The formula used to calculate the expanded uncertainty is:
$U_{expanded} = k * SQRT((U_{char}^2) + (U_{homogen}^2) + (U_{LTS}^2) + (U_{STS}^2) + (U_{RSS}^2))$

Where:

$U_{expanded}$ = Expanded uncertainty.
k = Coverage factor.
U_{char} = Combined standard uncertainty of the manufacturing and/or analytical verification assessment.
$U_{homogen}$ = Standard uncertainty of the homogeneity assessment.
U_{LTS} = Standard uncertainty associated with long-term stability.
U_{STS} = Standard uncertainty associated with short-term (transport) stability.
U_{RSS} = Standard uncertainty associated with repeated sampling of the product (where permitted by product use instructions).

3. The **QC Performance Acceptance Limits (QC PALs™)** are based on actual historical data collected in ERA's Proficiency Testing program. The QC PALs™ reflect any inherent biases in the methods used to establish the limits and closely approximate a 95% confidence interval of the performance that experienced laboratories should achieve using accepted environmental methods. Use the QC PALs™ to realistically evaluate your performance against your peers.

4. The **PT Performance Acceptance Limits (PT PALs™)** are calculated using the regression equations and fixed acceptance criteria specified in the NELAC proficiency testing requirements. Use the PT PALs™ when analyzing this certified reference material alongside USEPA and NELAC compliant PT study materials. Please note that many PT study acceptance limits are concentration dependent (some non-linearly) and therefore, the acceptance limits of this certified reference material and any PT study material may differ relative to their difference in concentrations.

5. The **PT Performance Data** include the mean value, percent recovery and number of data points reported by laboratories in our Proficiency Testing study compared to the Certified Values. In the event this lot was not used in a proficiency testing scheme, the data displayed was generated internally by ERA.

6. Where NIST Standard Reference Materials (SRMs) are available, each analyte has been analytically traced to the NIST SRM listed. **Analytical Traceability Recovery (%)** = [(% recovery ERA certified reference material)/(% recovery NIST SRM)]*100
The traceability data shown were compiled by analyzing this ERA certified reference material and/or it's associated stock solution(s) against the applicable NIST SRMs.

7. The **Reference Values** are equal to the mean recoveries for the parameters as determined in an interlaboratory round robin study. The **Reference Values** represent the expected performance for the analytes in this standard. ERA recommends using the **Reference Values** when assessing or evaluating your results.

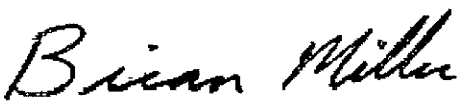
8. **Metrological Traceability**. This certified reference material is metrologically traceable to NIST mass reference materials through an unbroken chain of comparisons.

9. For additional information on this product such as intended use, storage information, instructions for use, minimum sample size, and safety information, please refer to the Product Use Instructions provided.

If you have any questions or need technical assistance, please call ERA technical assistance at 1-800-372-0122 or send an email to info@eraqc.com.

Certifying Officer

Brian Miller



Quality Officer

Matthew Seebeck

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Certified Reference Material

▪ Certificate of Analysis ▪

Product: Metals in Soil
Catalog Number: 540
Lot No. D113-540
Certificate Issue Date: March 23, 2021
Expiration Date: October 13, 2024
Revision Number: Original

Product use instructions are included as part of the certification packet and are paginated separately from this Certificate of Analysis. Please reference the product use instructions for catalog #540 revision 090119.

CERTIFICATION

Parameter	Certified Value[1]	Reference Value	Uncertainty[2]	QC Performance Acceptance Limits[3]	PT Performance Acceptance Limits[4]
	mg/kg	mg/kg	%	mg/kg	mg/kg
Aluminum	10100	8630	12.0	4420 - 12800	4370 - 12900
Antimony	256	129	16.8	0.742 - 257	25.6 - 323
Arsenic	91.6	84.5	15.1	70.0 - 99.0	59.2 - 110
Barium	259	249	9.94	206 - 292	187 - 311
Beryllium	175	163	3.89	135 - 191	122 - 204
Boron	95.7	76.7	12.8	55.7 - 97.7	48.0 - 107
Cadmium	107	99.0	11.5	82.2 - 116	74.2 - 124
Calcium	5190	4760	11.8	3890 - 5640	3460 - 6070
Chromium	129	122	14.6	101 - 144	85.7 - 159
Cobalt	63.6	61.7	11.5	51.9 - 71.6	46.3 - 77.2
Copper	62.3	61.5	12.3	51.9 - 71.0	46.1 - 76.8
Iron	15000	14500	15.7	8860 - 20100	5190 - 23800
Lead	122	123	13.9	103 - 144	88.3 - 158
Lithium	6.42	7.30	18.7	5.13 - 9.48	3.20 - 11.4
Magnesium	2570	2360	8.87	1810 - 2920	1480 - 3250
Manganese	470	456	13.4	375 - 538	350 - 563
Mercury	22.1	18.9	14.5	13.0 - 24.8	11.3 - 26.4
Molybdenum	80.1	72.8	11.0	58.7 - 87.0	50.5 - 95.2
Nickel	143	135	14.2	112 - 158	94.7 - 176
Potassium	2420	2090	8.21	1480 - 2700	1240 - 2940
Selenium	128	121	11.7	96.9 - 146	80.4 - 162
Silver	45.4	44.1	6.69	35.5 - 52.8	30.7 - 57.6
Sodium	161	136	9.34	97.4 - 174	48.1 - 223
Strontium	82.2	82.3	8.42	67.4 - 97.1	58.6 - 106

16341 Table Mountain Pkwy ▪ Golden, CO 80403 ▪ T: 800.372.0122 ▪ 303.431.8454 ▪ www.eraqc.com

▪ Certificate of Analysis ▪

Parameter	Certified Value[1]	Reference Value	Uncertainty[2]	QC Performance Acceptance Limits[3]	PT Performance Acceptance Limits[4]
	mg/kg	mg/kg	%	mg/kg	mg/kg
Thallium	154	144	7.54	117 - 171	101 - 187
Tin	89.7	79.8	14.0	62.2 - 97.4	43.5 - 116
Titanium	705	546	10.3	123 - 969	118 - 974
Uranium	29.5	30.9	3.38	23.9 - 37.9	21.3 - 40.5
Vanadium	196	186	14.2	148 - 224	138 - 235
Zinc	307	295	10.4	240 - 351	207 - 384

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Calculation of 7470A Mercury

Calculate Mercury concentration from the daily calibration curve. The curve is generated utilizing a straight-line equation defined as:

$$A = k1 + k2C$$

Where:

A = Average peak height of the sample/standard integrations
C = Sample/Standard Concentration, µg/L
k1 = y-intercept
k2 = slope

The instrument will plot peak height against concentration (µg/L). The result is generated in µg/L . This value is divided by 1000 to convert the units to mg/L. If the sample is diluted (DF), the result is multiplied by the DF to generate the final result.

Result, mg/L = (concentration, µg/L) x (1mg/1000µg) x (DF)

Calculation of 7471B Mercury

Calculate Mercury concentration from the daily calibration curve. The curve is generated utilizing a straight-line equation defined as:

$$A = k1 + k2C$$

Where:

A = Average peak height of the sample/standard integrations
C = Sample/Standard Concentration, µg/L
k1 = y-intercept
k2 = slope

The instrument will plot peak height against concentration (µg/L). The result is generated in µg/L . This value is divided by 1000 to convert the units to mg/L. If the sample is diluted (DF), the result is multiplied by the DF to generate the final result.

Result, mg/L = (concentration, µg/L) x (1mg/1000µg) x (DF)

The result in mg/kg is calculated on a dry weight basis using the sample weight digested(Wt), the final volume of the digestate(FV), and the percent total solids(%TS).

Result, mg/kg, wet = ((result, mg/L) x (FV)) /Wt

Result, mg/kg, dry wt = (Result, mg/kg wet)/(%TS)

No.	Sample No.	NAME	CURVE: WG1968216
1	1	STD	
2	2	STD	
3	3	STD	
4	4	STD	
5	5	STD	
6	6	STD	
1	7	ICV	
2	8	ICB	
3	9	0.2 PPB	
4	10	WG1969363-1 WG1969363	
5	11	WG1969363-2 WG1969363	
6	12	l2447454-04 WG1969363	
7	13	WG1969363-3 WG1969363	
8	14	WG1969363-4 WG1969363	
9	15	l2447454-01 WG1969363	
10	16	l2447454-02 WG1969363	
11	17	l2447454-03 WG1969363	
12	18	l2447454-05 WG1969363	
13	19	Check STD(5ug/L)	
14	20	Check Blank	
15	21	l2447454-06 WG1969363	
16	22	l2447454-07 WG1969363	
17	23	l2447454-08 WG1969363	
18	24	l2447454-09 WG1969363	
19	25	l2447454-10 WG1969363	
20	26	l2447454-11 WG1969363	
21	27	l2447454-12 WG1969363	
22	28	l2447454-13 WG1969363	
23	29	l2447454-14 WG1969363	
24	30	l2447454-15 WG1969363	
25	31	Check STD(5ug/L)	
26	32	Check Blank	
27	33	wg1969514-1 wg1969514	
28	34	wg1969514-2 wg1969514	
29	35	L2450786-03 wg1969514	
30	36	wg1969514-3 wg1969514	
31	37	wg1969514-4 wg1969514	
32	38	L2450786-04 wg1969514	
33	39	wg1969514-5 wg1969514	
34	40	wg1969514-6 wg1969514	
35	41	L2450786-01 wg1969514	
36	42	L2450786-02 wg1969514	
37	43	Check STD(5ug/L)	

38	44	Check Blank
39	45	L2450786-05 wg1969514
40	46	L2450786-06 wg1969514
41	47	L2450786-07 wg1969514
42	48	L2450786-08 wg1969514
43	49	L2450786-09 wg1969514
44	50	L2450786-10 wg1969514
45	51	L2450786-12 wg1969514
46	52	XCLR SOLUTION CHECK
47	53	XHG2437101855CLHV1
48	54	XHG2437101855CLHV2
49	55	Check STD(5ug/L)
50	56	Check Blank
51	57	WG1969719-1 WG1969719
52	58	WG1969719-2 WG1969719
53	59	L2450429-01 WG1969719
54	60	WG1969719-3 WG1969719
55	61	WG1969719-4 WG1969719
56	62	L2450291-01 WG1969719
57	63	L2450291-02 WG1969719
58	64	L2450291-03 WG1969719
59	65	L2450291-04 WG1969719
60	66	L2450291-05 WG1969719
61	67	Check STD(5ug/L)
62	68	Check Blank
63	69	L2450291-06 WG1969719
64	70	L2450291-34 WG1969719
65	71	L2450429-02 WG1969719
66	72	L2450429-03 WG1969719
67	73	L2450429-04 WG1969719
68	74	WG1970107-1 WG1970107
69	75	WG1970107-2 WG1970107
70	76	L2450190-01 WG1970107
71	77	WG1970107-3 WG1970107
72	78	WG1970107-4 WG1970107
73	79	Check STD(5ug/L)
74	80	Check Blank
75	1	L2450847-01 WG1970107
76	2	L2450847-02 WG1970107
77	3	L2450847-03 WG1970107
78	4	L2450847-04 WG1970107
79	5	L2450847-05 WG1970107
80	6	L2450847-06 WG1970107
81	7	L2450847-07 WG1970107

82	8	L2450847-50	WG1970107
83	9	L2450847-51	WG1970107
84	10	L2450847-52	WG1970107
85	11	Check STD(5ug/L)	
86	12	Check Blank	
87	13	L2450847-53	WG1970107
88	14	L2450847-54	WG1970107
89	15	L2450847-55	WG1970107
90	16	L2450847-56	WG1970107
91	23	Check STD(5ug/L)	
92	24	Check Blank	

No.	Sample No.	NAME	CURVE: WG1968216
1	1	STD	
2	2	STD	
3	3	STD	
4	4	STD	
5	5	STD	
6	6	STD	
1	7	XICV	
2	8	XICB	
3	7	ICV	
4	8	ICB	
5	9	0.2PPB	
6	10	WG1969778-1	WG1969778
7	11	WG1969778-2	WG1969778
8	12	L2450417-06	WG1969778
9	13	WG1969778-3	WG1969778
10	14	WG1969778-4	WG1969778
11	15	L2450417-08	WG1969778
12	16	WG1969778-5	WG1969778
13	17	WG1969778-6	WG1969778
14	18	L2450383-01	WG1969778
15	19	Check STD(5ug/L)	
16	20	Check Blank	
17	21	L2450385-01	WG1969778
18	22	L2450386-01	WG1969778
19	23	L2450391-01	WG1969778
20	24	L2450417-01	WG1969778
21	25	L2450417-02	WG1969778
22	26	L2450417-03	WG1969778
23	27	L2450417-04	WG1969778
24	28	L2450417-07	WG1969778
25	29	L2450417-09	WG1969778
26	30	WG1969413-1	WG1969413
27	31	Check STD(5ug/L)	
28	32	Check Blank	
29	33	WG1969413-2	WG1969413
30	34	l2449687-02	WG1969413
31	35	WG1969413-3	WG1969413
32	36	WG1969413-4	WG1969413
33	37	l2449687-01	WG1969413
34	38	l2449687-03	WG1969413
35	39	l2449687-04	WG1969413
36	40	l2449687-05	WG1969413
37	41	l2449687-06	WG1969413

38	42	l2449687-07 WG1969413
39	43	Check STD(5ug/L)
40	44	Check Blank
41	45	l2449687-08 WG1969413
42	46	l2449687-09 WG1969413
43	47	l2449687-10 WG1969413
44	48	WG1969689-1 WG1969689
45	49	WG1969689-2 WG1969689
46	50	l2450786-03 WG1969689
47	51	WG1969689-3 WG1969689
48	52	WG1969689-4 WG1969689
49	53	l2450786-04 WG1969689
50	54	WG1969689-5 WG1969689
51	55	Check STD(5ug/L)
52	56	Check Blank
53	57	WG1969689-6 WG1969689
54	58	l2450786-01 WG1969689
55	59	l2450786-02 WG1969689
56	60	l2450786-05 WG1969689
57	61	l2450786-06 WG1969689
58	62	l2450786-07 WG1969689
59	63	l2450786-08 WG1969689
60	64	l2450786-09 WG1969689
61	65	l2450786-10 WG1969689
62	66	l2450786-12 WG1969689
63	67	Check STD(5ug/L)
64	68	Check Blank
65	69	WG1969763-1 WG1969763
66	70	WG1969763-2 WG1969763
67	71	l2450417-06 WG1969763
68	72	WG1969763-3 WG1969763
69	73	WG1969763-4 WG1969763
70	74	l2450417-01 WG1969763
71	75	l2450417-02 WG1969763
72	76	l2450417-03 WG1969763
73	77	l2450417-04 WG1969763
74	78	l2450417-07 WG1969763
75	79	Check STD(5ug/L)
76	80	Check Blank
77	1	l2450417-08 WG1969763
78	2	l2450417-09 WG1969763
79	3	Check STD(5ug/L)
80	4	Check Blank
81	5	WG1969864-2 WG1969864

82	6	Check STD(5ug/L)
83	7	Check Blank
84	8	WG1969913-1 WG1969913
85	9	WG1969913-2 WG1969913
86	10	l2450603-01 WG1969913
87	11	Check STD(5ug/L)
88	12	Check Blank
89	13	WG1969913-3 WG1969913
90	14	WG1969913-4 WG1969913
91	15	l2449563-04 WG1969913
92	16	l2450603-02 WG1969913
93	17	l2450818-02 WG1969913
94	18	l2450829-04 WG1969913
95	19	l2450829-06 WG1969913
96	20	WG1970279-1 WG1970279
97	21	WG1970279-2 WG1970279
98	22	l2450266-01 WG1970279
99	23	Check STD(5ug/L)
100	24	Check Blank
101	25	WG1970279-3 WG1970279
102	26	WG1970279-4 WG1970279
103	27	WG1970306-1 WG1970306
104	28	WG1970306-2 WG1970306
105	29	L2409778-143 WG1970306
106	30	WG1970306-3 WG1970306
107	31	WG1970306-4 WG1970306
108	32	XL2450423-12 WG1970306
109	33	XL2450423-13 WG1970306
110	34	XL2450431-01 WG1970306
111	35	Check STD(5ug/L)
112	36	Check Blank
113	37	L2450431-02 WG1970306
114	38	L2450431-03 WG1970306
115	39	L2450431-04 WG1970306
116	40	XWG1970306-1 WG1970306
117	41	XWG1970306-2 WG1970306
118	42	WG1970265-1 WG1970265
119	43	WG1970265-2 WG1970265
120	44	l2450792-02 WG1970265
121	45	WG1970265-3 WG1970265
122	46	WG1970265-4 WG1970265
123	47	Check STD(5ug/L)
124	48	Check Blank
125	49	l2450792-01 WG1970265

126	50	Check STD(5ug/L)
127	51	Check Blank
128	52	WG1969786-1 WG1969786
129	53	WG1969786-2 WG1969786
130	54	WG1969786-3 WG1969786
131	55	L2449202-01 WG1969786
132	57	Check STD(5ug/L)
133	58	Check Blank
134	59	Check STD(5ug/L)
135	60	Check Blank

METALS ELN REPORT

Workgroup: WG1969514

Digestion

Prep Method	Acid Type 1	Acid 1 Lot	Acid Type 2	Acid 2 Lot	Spike Type	Lims Spike Lot	Spike Lot	Post Spike Spikelot	Spike Lot	Pipette Id
EPA 245.1	HNO3	24011095	H2SO4	24001335	METALS	METSPIKE	HG24360414 34MGMV1	METSPIKE	HG24360414320, 348 34MGMV1	

Additional Reagent/Std	K2O8S2	PS2436051150JDH
	KMnO4	PP2436071410EFM
	NaCl-NH2OH.HCl	HH2436061309JWN
		ICV2436051025CME

Sample/ Type	Digestion Date	Analyst	Sample Vol ml	Spike Amt ml	Start Date/Time	Hot Block Unit	Temperature (C)	Stop Date/Time	Final Vol	Comments
L2450786-01 SAMP	09/10/24 09:07	Cristy Estevez	25		09/10/24 09:07	5	95.0	09/10/24 11:07	25	
L2450786-02 SAMP	09/10/24 09:07	Cristy Estevez	25		09/10/24 09:07	5	95.0	09/10/24 11:07	25	
L2450786-03 SAMP	09/10/24 09:07	Cristy Estevez	25		09/10/24 09:07	5	95.0	09/10/24 11:07	25	
L2450786-04 SAMP	09/10/24 09:07	Cristy Estevez	25		09/10/24 09:07	5	95.0	09/10/24 11:07	25	
L2450786-05 SAMP	09/10/24 09:07	Cristy Estevez	25		09/10/24 09:07	5	95.0	09/10/24 11:07	25	
L2450786-06 SAMP	09/10/24 09:07	Cristy Estevez	25		09/10/24 09:07	5	95.0	09/10/24 11:07	25	
L2450786-07 SAMP	09/10/24 09:07	Cristy Estevez	25		09/10/24 09:07	5	95.0	09/10/24 11:07	25	
L2450786-08 SAMP	09/10/24 09:07	Cristy Estevez	25		09/10/24 09:07	5	95.0	09/10/24 11:07	25	
L2450786-09 SAMP	09/10/24 09:07	Cristy Estevez	25		09/10/24 09:07	5	95.0	09/10/24 11:07	25	
L2450786-10 SAMP	09/10/24 09:07	Cristy Estevez	25		09/10/24 09:07	5	95.0	09/10/24 11:07	25	
L2450786-12 SAMP	09/10/24 09:07	Cristy Estevez	25		09/10/24 09:07	5	95.0	09/10/24 11:07	25	

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METALS ELN REPORT

Workgroup: WG1969514

Sample/ Type	Digestion Date	Analyst	Sample Vol ml	Spike Amt ml	Start Date/Time	Hot Block Unit	Temperature (C)	Stop Date/Time	Final Vol	Comments
WG1969514-1 BLANK	09/10/24 09:07	Cristy Estevez	25		09/10/24 09:07	5	95.0	09/10/24 11:07	25	eln: ADG
WG1969514-2 LCS	09/10/24 09:07	Cristy Estevez	25	0.25	09/10/24 09:07	5	95.0	09/10/24 11:07	25	
WG1969514-3 MS	09/10/24 09:07	Cristy Estevez	25	1.25	09/10/24 09:07	5	95.0	09/10/24 11:07	25	
WG1969514-4 DUP	09/10/24 09:07	Cristy Estevez	25		09/10/24 09:07	5	95.0	09/10/24 11:07	25	
WG1969514-5 MS	09/10/24 09:07	Cristy Estevez	25	1.25	09/10/24 09:07	5	95.0	09/10/24 11:07	25	
WG1969514-6 DUP	09/10/24 09:07	Cristy Estevez	25		09/10/24 09:07	5	95.0	09/10/24 11:07	25	

Reagent	Actual Volume	Units
Sulfuric Acid (H2SO4)	1.25	ml
Nitric Acid (HNO3)	.625	ml
Potassium Permanganat	3.75	ml
Potassium Persulfate (K	2	ml
NaCl-Hydroxylamine Hy	1.5	ml

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METALS ELN REPORT

Workgroup: WG1969689

Digestion

Prep Method	Acid Type 1	Acid 1 Lot	Acid Type 2	Acid 2 Lot	Spike Type	Lims Spike Lot	Spike Lot	Post Spike Spikelot	Spike Lot	Pipette Id
EPA 245.1	HNO3	24011095	H2SO4	24001335	METALS	METSPIKE	HG24360414 34MGMV1	METSPIKE	HG24360414320, 348 34MGMV1	

Additional Reagent/Std	K2O8S2	PS2436051150JDH
	KMnO4	PP2436071410EFM
	NaCl-NH2OH.HCl	HH2436061309JWN
		ICV2436051025CME

Sample/ Type	Digestion Date	Analyst	Lab Filtration Date	Sample Vol ml	Spike Amt	Start Date/Time	Hot Block Unit	Temperature (C)	Stop Date/Time	Final Vol	Comments
L2450786-01 SAMP	09/10/24 23:45	Christine Hamor	NA	25		09/10/24 23:45	8	95.3	09/11/24 01:45	25	M
L2450786-02 SAMP	09/10/24 23:45	Christine Hamor	NA	25		09/10/24 23:45	8	95.3	09/11/24 01:45	25	M
L2450786-03 SAMP	09/10/24 23:45	Christine Hamor	NA	25		09/10/24 23:45	8	95.3	09/11/24 01:45	25	O
L2450786-04 SAMP	09/10/24 23:45	Christine Hamor	NA	25		09/10/24 23:45	8	95.3	09/11/24 01:45	25	M
L2450786-05 SAMP	09/10/24 23:45	Christine Hamor	NA	25		09/10/24 23:45	8	95.3	09/11/24 01:45	25	M
L2450786-06 SAMP	09/10/24 23:45	Christine Hamor	NA	25		09/10/24 23:45	8	95.3	09/11/24 01:45	25	M
L2450786-07 SAMP	09/10/24 23:45	Christine Hamor	NA	25		09/10/24 23:45	8	95.3	09/11/24 01:45	25	O
L2450786-08 SAMP	09/10/24 23:45	Christine Hamor	NA	25		09/10/24 23:45	8	95.3	09/11/24 01:45	25	M
L2450786-09 SAMP	09/10/24 23:45	Christine Hamor	NA	25		09/10/24 23:45	8	95.3	09/11/24 01:45	25	O
L2450786-10 SAMP	09/10/24 23:45	Christine Hamor	NA	25		09/10/24 23:45	8	95.3	09/11/24 01:45	25	M
L2450786-12 SAMP	09/10/24 23:45	Christine Hamor	NA	25		09/10/24 23:45	8	95.3	09/11/24 01:45	25	M

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METALS ELN REPORT

Workgroup: WG1969689

Sample/ Type	Digestion Date	Analyst	Lab Filtration Date	Sample Vol ml	Spike Amt	Start Date/Time	Hot Block Unit	Temperature (C)	Stop Date/Time	Final Vol	Comments
WG1969689-1 BLANK	09/10/24 23:45	Christine Hamor	NA	25		09/10/24 23:45	8	95.3	09/11/24 01:45	25	ELN check:cme
WG1969689-2 LCS	09/10/24 23:45	Christine Hamor	NA	25	.25	09/10/24 23:45	8	95.3	09/11/24 01:45	25	
WG1969689-3 MS	09/10/24 23:45	Christine Hamor	NA	25	1.25	09/10/24 23:45	8	95.3	09/11/24 01:45	25	
WG1969689-4 DUP	09/10/24 23:45	Christine Hamor	NA	25		09/10/24 23:45	8	95.3	09/11/24 01:45	25	
WG1969689-5 MS	09/10/24 23:45	Christine Hamor	NA	25	1.25	09/10/24 23:45	8	95.3	09/11/24 01:45	25	
WG1969689-6 DUP	09/10/24 23:45	Christine Hamor	NA	25		09/10/24 23:45	8	95.3	09/11/24 01:45	25	

Reagent	Actual Volume	Units
Sulfuric Acid (H2SO4)	1.25	ml
Nitric Acid (HNO3)	.625	ml
Potassium Permanganat	3.75	ml
Potassium Persulfate (K	2	ml
NaCl-Hydroxylamine Hy	1.5	ml

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Wet Chemistry

Total Nitrogen Analysis

Results

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-01	**Date Collected**	: 09/05/24 13:53
Client ID	: MW-5A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 15:45
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 107,-	**Analyst**	: MRM
Lab File ID	: WG1970407.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Total Nitrogen	ND	0.30	0.30	U

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-02	**Date Collected**	: 09/05/24 13:55
Client ID	: MW-5B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 15:45
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 107,-	**Analyst**	: MRM
Lab File ID	: WG1970407.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Total Nitrogen	3.2	0.30	0.30	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-03	**Date Collected**	: 09/05/24 12:50
Client ID	: MW-6A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 15:45
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 107,-	**Analyst**	: MRM
Lab File ID	: WG1970407.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Total Nitrogen	ND	0.30	0.30	U

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-04	**Date Collected**	: 09/05/24 12:47
Client ID	: MW-6B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 15:45
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 107,-	**Analyst**	: MRM
Lab File ID	: WG1970407.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Total Nitrogen	1.1	0.30	0.30	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-05	**Date Collected**	: 09/05/24 11:55
Client ID	: MW-7A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 15:45
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 107,-	**Analyst**	: MRM
Lab File ID	: WG1970407.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Total Nitrogen	0.53	0.30	0.30	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-06	**Date Collected**	: 09/05/24 12:00
Client ID	: MW-7B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 15:45
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 107,-	**Analyst**	: MRM
Lab File ID	: WG1970407.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Total Nitrogen	ND	0.30	0.30	U

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-07	**Date Collected**	: 09/05/24 08:00
Client ID	: MW-8A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 15:45
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 107,-	**Analyst**	: MRM
Lab File ID	: WG1970407.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Total Nitrogen	1.2	0.30	0.30	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-08	**Date Collected**	: 09/05/24 08:55
Client ID	: MW-8B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 15:45
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 107,-	**Analyst**	: MRM
Lab File ID	: WG1970407.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Total Nitrogen	0.30	0.30	0.30	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-09	**Date Collected**	: 09/05/24 10:10
Client ID	: MW-10A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 15:45
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 107,-	**Analyst**	: MRM
Lab File ID	: WG1970407.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Total Nitrogen	2.8	0.30	0.30	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-10	**Date Collected**	: 09/05/24 10:16
Client ID	: MW-10B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 15:45
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 107,-	**Analyst**	: MRM
Lab File ID	: WG1970407.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Total Nitrogen	2.9	0.30	0.30	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-12	**Date Collected**	: 09/05/24 00:00
Client ID	: DUP	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 15:45
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 107,-	**Analyst**	: MRM
Lab File ID	: WG1970407.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Total Nitrogen	1.2	0.30	0.30	

Sample Raw Data

ALPHA ANALYTICAL LABS

WET CHEMISTRY DEPARTMENT

TOTAL NITROGEN

Last Change 3/5/13 GFF
File tnitrogen.xlt

Sample #: _____

Client: _____

Analysis: **Total Nitrogen**

Method: ***Calculation from TKN & NO3/NO2***

Product: **TNITROGEN**
Analyte: **Total Nitrogen,**
Analysis Date: 9/11/2024 15:45
Technician: MRM
Work group: WG1970407
RL: **0.3 mg/L**

	Sample Number	TKN (mg/L)	NO3/NO2 (mg/L)	RL Multiplier	Result (mg/L)
SAMP	L2450786-01	0	0.11	1.0	0.11
SAMP	L2450786-02	0	3.2	1.0	3.2
SAMP	L2450786-03	0	0.26	1.0	0.26
SAMP	L2450786-04	0	1.1	1.0	1.1
SAMP	L2450786-05	0.532	0.09	1.0	0.532
SAMP	L2450786-06	0.234	0	1.0	0.234
SAMP	L2450786-07	0	1.2	1.0	1.2
SAMP	L2450786-08	0.103	0.3	1.0	0.3
SAMP	L2450786-09	0.0832	2.8	1.0	2.8
SAMP	L2450786-10	0	2.9	1.0	2.9
SAMP	L2450786-12	0	1.2	1.0	1.2

Calculations of Total Nitrogen

Calculate the concentration value based on results for TKN-N and N03/NO2-N.

Aqueous samples:

mgTN-N/L = TKN-N(mg/l) + NO3/NO2-N (mg/l)

Soil samples:

mgTN-N/Kg = TKN-N(mg/Kg) + NO3/NO2-N(mg/Kg)

Total Kjeldahl Nitrogen Analysis

Results

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-01	**Date Collected**	: 09/05/24 13:53
Client ID	: MW-5A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 13:42
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: KEP
Lab File ID	: NH320240911-C	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	ND	0.300	0.066	U

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-02	**Date Collected**	: 09/05/24 13:55
Client ID	: MW-5B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 13:43
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: KEP
Lab File ID	: NH320240911-C	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	ND	0.300	0.066	U

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-03	**Date Collected**	: 09/05/24 12:50
Client ID	: MW-6A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 13:44
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: KEP
Lab File ID	: NH320240911-C	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	ND	0.300	0.066	U

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-04	**Date Collected**	: 09/05/24 12:47
Client ID	: MW-6B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 15:19
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: KEP
Lab File ID	: NH320240911-E	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/11/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	ND	0.300	0.066	U

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-05	**Date Collected**	: 09/05/24 11:55
Client ID	: MW-7A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 15:20
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: KEP
Lab File ID	: NH320240911-E	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/11/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.532	0.300	0.066	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-06	**Date Collected**	: 09/05/24 12:00
Client ID	: MW-7B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 15:20
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: KEP
Lab File ID	: NH320240911-E	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/11/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.234	0.300	0.066	J

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-07	**Date Collected**	: 09/05/24 08:00
Client ID	: MW-8A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 15:21
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: KEP
Lab File ID	: NH320240911-E	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/11/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	ND	0.300	0.066	U

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-08	**Date Collected**	: 09/05/24 08:55
Client ID	: MW-8B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 15:22
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: KEP
Lab File ID	: NH320240911-E	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/11/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.103	0.300	0.066	J

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-09	**Date Collected**	: 09/05/24 10:10
Client ID	: MW-10A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 15:23
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: KEP
Lab File ID	: NH320240911-E	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/11/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.083	0.300	0.066	J

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-10	**Date Collected**	: 09/05/24 10:16
Client ID	: MW-10B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 15:24
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: KEP
Lab File ID	: NH320240911-E	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/11/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	ND	0.300	0.066	U

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-12	**Date Collected**	: 09/05/24 00:00
Client ID	: DUP	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 15:25
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: KEP
Lab File ID	: NH320240911-E	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/11/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	ND	0.300	0.066	U

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1969899-1	**Date Collected**	: NA
Client ID	: WG1969899-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 09/11/24 13:24
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: KEP
Lab File ID	: NH320240911-C	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.040	0.300	0.022	J

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1969899-3	**Date Collected**	: 09/04/24 13:40
Client ID	: WG1969899-3 DUP	**Date Received**	: 09/04/24
Sample Location	:	**Date Analyzed**	: 09/11/24 13:38
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: KEP
Lab File ID	: NH320240911-C	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.284	0.300	0.066	J

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1970052-1	**Date Collected**	: NA
Client ID	: WG1970052-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 09/11/24 14:58
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: KEP
Lab File ID	: NH320240911-E	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/11/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.083	0.300	0.022	J

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1970052-3	**Date Collected**	: 09/04/24 15:00
Client ID	: WG1970052-3 DUP	**Date Received**	: 09/04/24
Sample Location	:	**Date Analyzed**	: 09/11/24 15:02
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: KEP
Lab File ID	: NH320240911-E	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/11/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	1.03	0.300	0.066	

Sample Raw Data

Original Run Filename: OM_9-11-2024_09-47-56AM.OMN Created: 9/11/2024 9:47:56 AM
Original Run Author's Signature: [A1WETCHEMINSTRUMENT]
Current Run Filename: OM_9-11-2024_09-47-56AM.OMN Last Modified: 9/11/2024 10:34:35 AM
Current Run Author's Signature: [A1WETCHEMINSTRUMENT]
Description: Default New Run

Sample	Rep.	Cup No.	Channel 2 Ammonia (mg N/L)	ADF	MDF	Weight	TRAY A
STD 1	1	S1	10.00000				
STD 2	1	S2	8.00000				
STD 3	1	S3	4.00000				
STD 4	1	S4	2.00000				
STD 5	1	S5	1.00000				
STD 6	1	S6	0.40000				
STD 7	1	S7	0.20000				
STD 8	1	S8	0.10000				
STD 9	1	S9	0.05000				
STD 10	1	S10	0.00000				
CCV 0.4000	1	S6	0.39209				98%
		Known Conc:	100.00000				
		Calibration:	Table/Fig. : 1				
CCV 4.0000	1	S3	3.96540				99%
		Known Conc:	100.00000				
CCB	1	S10	0.01433				
		Known Conc:	100.00000				
HI ICV 8.0	1	1	8.40500				105%
LO ICV 1.0	1	2	1.01900				102%
ICB	1	3	0.01026				
WG1969898 WG1969895-1	1	4	0.00338		1.50		
WG1969895-2	1	5	~~3.87734~~		~~1.50~~	7.5	19.3867, 97%
LCS LO	1	6	~~9.89213~~		~~7.50~~	1.5	1.9784, 99%
L2450429-01	1	7	1.57769		1.50		
WG1969895-4	1	8	5.95884		1.50		110%
WG1969895-3	1	9	1.69254		1.50		RPD=7%
L2450429-02	1	10	1.62035		1.50		
CCV 0.4000	1	S6	0.41869				105%
		Known Conc:	100.00000				
CCV 4.0000	1	S3	4.01349				100%
		Known Conc:	100.00000				
CCB	1	S10	0.01794				
		Known Conc:	100.00000				
L2450429-03	1	11	4.74846		1.50		
L2450429-04	1	12	~~1.82443~~		~~7.50~~	1.5	0.3649
L2450669-01	1	13	0.04066		1.50		
L2450669-02	1	14	0.00616		1.50		
L2450669-03	1	15	0.01666		1.50		
L2449689-02	1	16	0.29201		1.50		
L2450155-02	1	17	0.23833		1.50		
L2450416-01	1	18	1.66537		1.50		
WG1969898-4	1	19	6.27023		1.50		115%
WG1969898-3	1	20	1.77035		1.50		RPD=6%
CCV 0.4000	1	S6	0.39884				100%
		Known Conc:	100.00000				
CCV 4.0000	1	S3	4.02287				101%
		Known Conc:	100.00000				
CCB	1	S10	0.01703				
		Known Conc:	100.00000				

Author: A1WETCHEMINSTRUMENT Date : 9/11/2024

Channel 2 (Ammonia High) - Current View

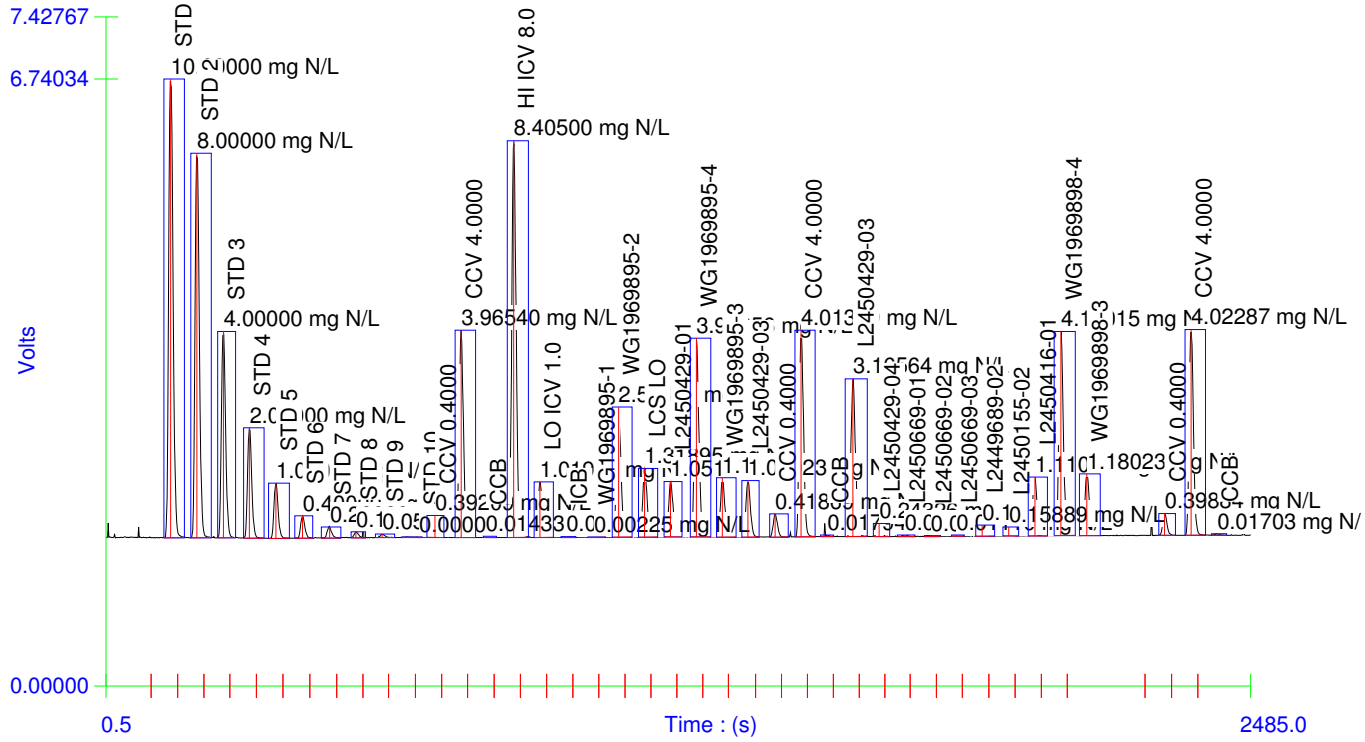
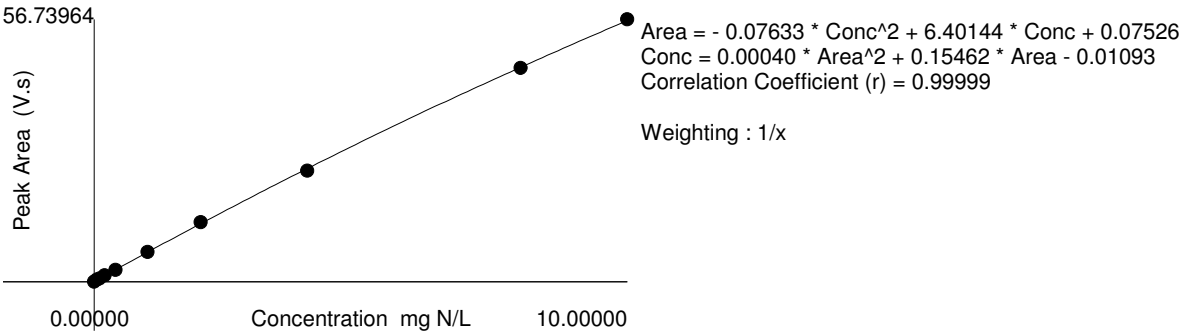


Table : 1 (Ammonia)

	Known Conc. (mg N/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg N/L)	Detection Date	Detection Time
1	10.00000	1	56.73964	5.09312	0.0	-0.5	10.03843	9/11/2024	9:54:44 AM
2	8.00000	1	46.20772	4.27006	0.0	0.4	7.98015	9/11/2024	9:55:41 AM
3	4.00000	1	23.99822	2.29331	0.0	1.9	3.92798	9/11/2024	9:56:38 AM
4	2.00000	1	12.83582	1.22321	0.0	-2.1	2.03906	9/11/2024	9:57:35 AM
5	1.00000	1	6.45077	0.61394	0.0	-0.8	1.00298	9/11/2024	9:58:33 AM
6	0.40000	1	2.59143	0.24661	0.0	1.2	0.39242	9/11/2024	9:59:31 AM
7	0.20000	1	1.38847	0.12179	0.0	-2.7	0.20452	9/11/2024	10:00:29 AM
8	0.10000	1	0.71488	0.06598	0.0	0.0	0.09981	9/11/2024	10:01:27 AM
9	0.05000	1	0.45086	0.03891	0.0	-14.1	0.05886	9/11/2024	10:02:24 AM
10	0.00000	1	0.01093	-0.00287			-0.00924	9/11/2024	10:03:21 AM

Figure : 1 (Ammonia)



Author: A1WETCHEMINSTRUMENT Date : 9/11/2024

Original Run Filename: OM_9-11-2024_11-10-56AM.OMN Created: 9/11/2024 11:10:56 AM
Original Run Author's Signature: [A1WETCHEMINSTRUMENT]
Current Run Filename: OM_9-11-2024_11-10-56AM.OMN Last Modified: 9/11/2024 11:26:29 AM
Current Run Author's Signature: [A1WETCHEMINSTRUMENT]
Description: Default New Run

	Sample	Rep.	Cup No.	Channel 2 Ammonia (mg N/L)	ADF	MDF	Weight	TRAY B
	CCV 0.4000	1	S6	0.40214				101%
		Known Conc:		100.00000				
	CCV 4.0000	1	S3	4.05341				101%
		Known Conc:		100.00000				
		Calibration:		Table/Fig. : 1				
	CCB	1	S10	0.02204				
		Known Conc:		100.00000				
	WG1969894-1	1	1	0.01364		1.50		
	WG1969894-2	1	2	19.24289		7.50		96%
	LCS LO	1	3	1.98043		1.50		99%
	L2450188-01	1	4	17.91733		7.50		
	L2450188-02	1	5	2.72818		1.50		
	L2450189-01	1	6	~~5.48084~~		~~1.50~~	7.5	27.4042
	L2450189-02	1	7	0.34383		1.50		
	L2450258-01	1	10	6.37044		1.50		
	L2450192-01; 10X	1	8	242.69919		150.00		
	L2450192-02; 20X	1	9	304.32382		300.00		
X	CCV 0.4000	1	S6	0.44465				111%, RERUN OK
		Known Conc:		100.00000				

Channel 2 (Ammonia High) - Current View

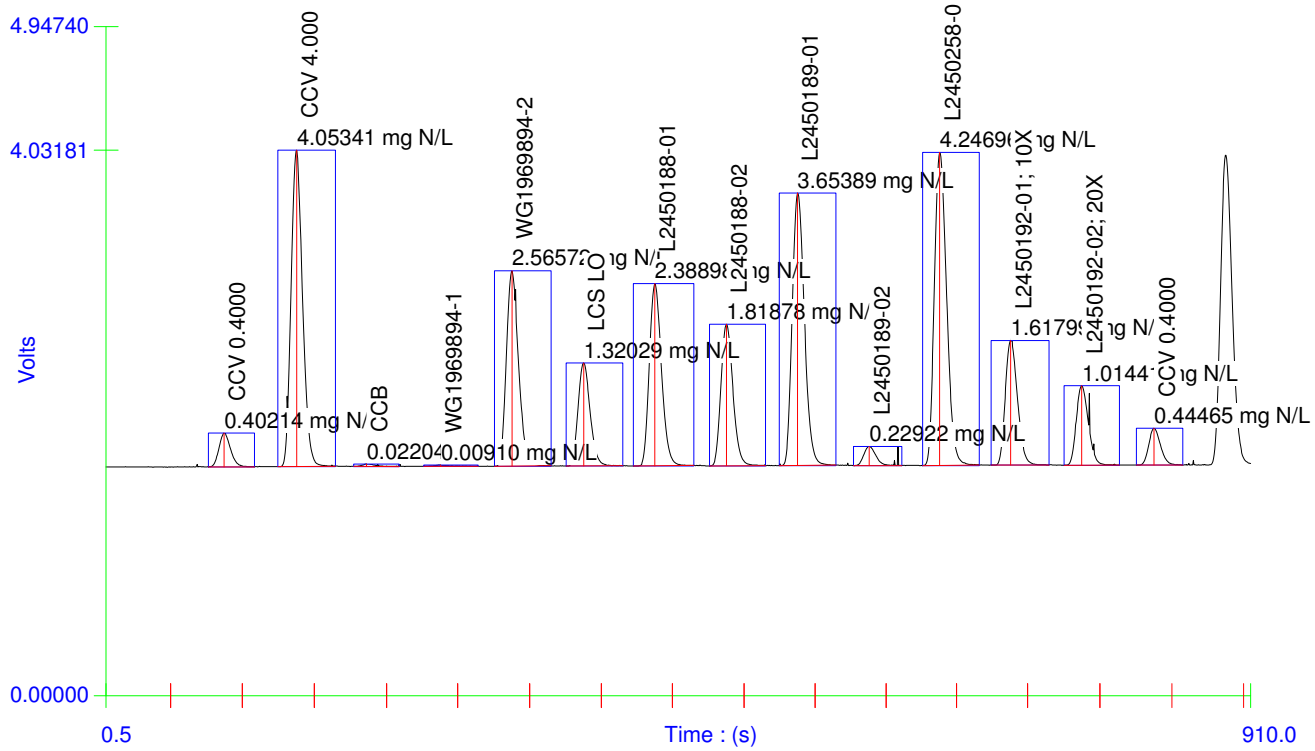
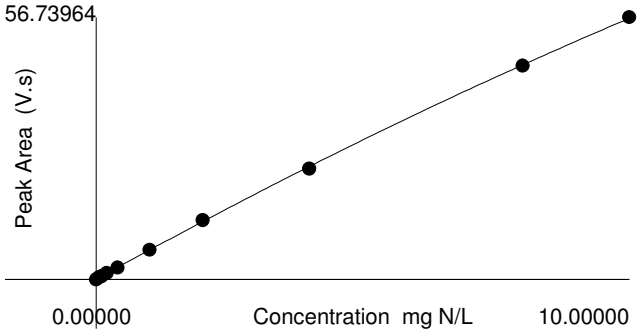


Table : 1 (Ammonia)

	Known Conc. (mg N/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg N/L)	Detection Date	Detection Time
1	10.00000	1	56.73964	5.09312	0.0	-0.5	10.03843	9/11/2024	9:54:44 AM
2	8.00000	1	46.20772	4.27006	0.0	0.4	7.98015	9/11/2024	9:55:41 AM
3	4.00000	1	23.99822	2.29331	0.0	1.9	3.92798	9/11/2024	9:56:38 AM
4	2.00000	1	12.83582	1.22321	0.0	-2.1	2.03906	9/11/2024	9:57:35 AM
5	1.00000	1	6.45077	0.61394	0.0	-0.8	1.00298	9/11/2024	9:58:33 AM
6	0.40000	1	2.59143	0.24661	0.0	1.2	0.39242	9/11/2024	9:59:31 AM
7	0.20000	1	1.38847	0.12179	0.0	-2.7	0.20452	9/11/2024	10:00:29 AM
8	0.10000	1	0.71488	0.06598	0.0	0.0	0.09981	9/11/2024	10:01:27 AM
9	0.05000	1	0.45086	0.03891	0.0	-14.1	0.05886	9/11/2024	10:02:24 AM
10	0.00000	1	0.01093	-0.00287			-0.00924	9/11/2024	10:03:21 AM

Figure : 1 (Ammonia)



Area = - 0.07633 * Conc^2 + 6.40144 * Conc + 0.07526
Conc = 0.00040 * Area^2 + 0.15462 * Area - 0.01093
Correlation Coefficient (r) = 0.99999

Weighting : 1/x

Original Run Filename: OM_9-11-2024_11-28-20AM.OMN Created: 9/11/2024 11:28:20 AM
Original Run Author's Signature: [A1WETCHEMINSTRUMENT]
Current Run Filename: OM_9-11-2024_11-28-20AM.OMN Last Modified: 9/11/2024 12:00:34 PM
Current Run Author's Signature: [A1WETCHEMINSTRUMENT]
Description: Default New Run

TRAY B

	Sample	Rep.	Cup No.	Channel 2 Ammonia (mg N/L)	ADF	MDF	Weight	
	CCV 0.4000	1	S6	0.40506				
		Known Conc:		100.00000				
	CCV 4.0000	1	S3	4.02951				
		Known Conc:		100.00000				
		Calibration:		Table/Fig. : 1				
	CCB	1	S10	0.02869				
		Known Conc:		100.00000				
	L2450258-02	1	11	0.05660		1.50		
	L2450270-01	1	12	0.05845		1.50		
	L2450271-01	1	13	10.23403		3.00		
	L2450271-02	1	14	3.39248		1.50		
	L2450356-02	1	15	14.59168		1.50		
	L2450356-03	1	16	0.44175		1.50		
	L2450356-04	1	17	10.17633		3.00		
	L2450356-05	1	18	15.52221		7.50		
	L2450398-01	1	19	0.18358		1.50		
	L2450398-02	1	20	0.03820		1.50		
	CCV 0.4000	1	S6	0.40880				
		Known Conc:		100.00000				
	CCV 4.0000	1	S3	4.01958				
		Known Conc:		100.00000				
	CCB	1	S10	0.02376				
		Known Conc:		100.00000				
	L2450429-04	1	26	0.26177		1.50		
X	L2450398-03	1	21	41.38338		1.50		
X	L2450398-04	1	22	0.83363		1.50		
	WG1969894-4	1	23	4.39999		1.50		105%
	WG1969894-3	1	24	0.21330		1.50		RPD=3%
	L2451513-01	1	25	4.88741		150.00		
	~~L2450398-03; 30X~~	~~1~~	~~21~~	~~1249.08826~~		~~45.00~~		
	~~L2450398-04~~	~~1~~	~~22~~	~~0.59676~~		~~1.50~~		
	L2450398-03; 30X	1	21	90.81435		45.00		
	L2450398-04	1	22	0.20740		1.50		
	CCV 0.4000	1	S6	0.41692				104%
		Known Conc:		100.00000				
	CCV 4.0000	1	S3	4.02309				101%
		Known Conc:		100.00000				
	CCB	1	S10	0.03723				
		Known Conc:		100.00000				

Channel 2 (Ammonia High) - Current View

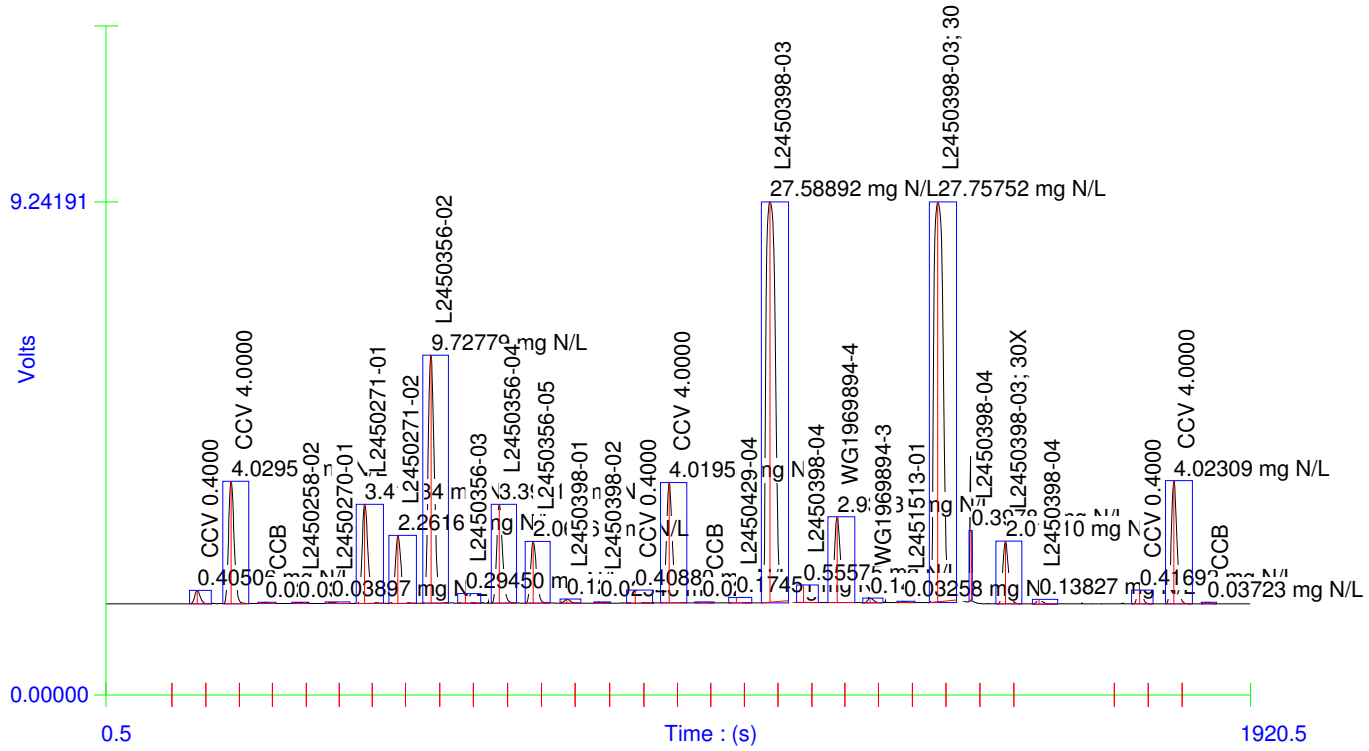
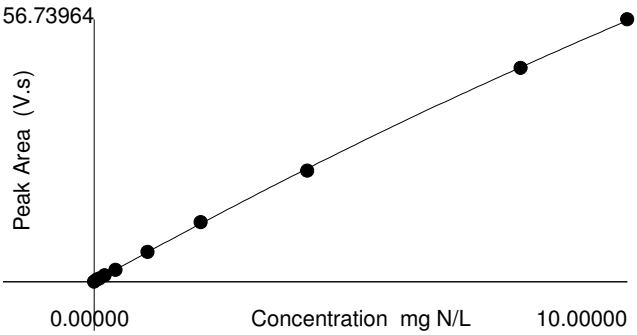


Table : 1 (Ammonia)

	Known Conc. (mg N/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg N/L)	Detection Date	Detection Time
1	10.00000	1	56.73964	5.09312	0.0	-0.5	10.03843	9/11/2024	9:54:44 AM
2	8.00000	1	46.20772	4.27006	0.0	0.4	7.98015	9/11/2024	9:55:41 AM
3	4.00000	1	23.99822	2.29331	0.0	1.9	3.92798	9/11/2024	9:56:38 AM
4	2.00000	1	12.83582	1.22321	0.0	-2.1	2.03906	9/11/2024	9:57:35 AM
5	1.00000	1	6.45077	0.61394	0.0	-0.8	1.00298	9/11/2024	9:58:33 AM
6	0.40000	1	2.59143	0.24661	0.0	1.2	0.39242	9/11/2024	9:59:31 AM
7	0.20000	1	1.38847	0.12179	0.0	-2.7	0.20452	9/11/2024	10:00:29 AM
8	0.10000	1	0.71488	0.06598	0.0	0.0	0.09981	9/11/2024	10:01:27 AM
9	0.05000	1	0.45086	0.03891	0.0	-14.1	0.05886	9/11/2024	10:02:24 AM
10	0.00000	1	0.01093	-0.00287			-0.00924	9/11/2024	10:03:21 AM

Figure : 1 (Ammonia)



Original Run Filename: OM_9-11-2024_01-20-20PM.OMN Created: 9/11/2024 1:20:20 PM
Original Run Author's Signature: [A1WETCHEMINSTRUMENT]
Current Run Filename: OM_9-11-2024_01-20-20PM.OMN Last Modified: 9/11/2024 1:51:40 PM
Current Run Author's Signature: [A1WETCHEMINSTRUMENT]
Description: Default New Run

Sample	Rep.	Cup No.	Channel 2 Ammonia (mg N/L)	ADF	MDF	Weight	TRAY C
CCV 0.4000	1	S6	0.39730				99%
	Known Conc:		100.00000				
	Calibration:		Table/Fig. : 1				
CCV 4.0000	1	S3	4.01982				100%
	Known Conc:		100.00000				
CCB	1	S10	0.02463				
	Known Conc:		100.00000				
WG1969899-1 T	1	1	0.01318				
WG1969899-2 T	1	2	39.70275		15.00		99%
LCS LO T	1	3	4.20623		3.00		105%
L2449689-02 T	1	4	0.36044		3.00		
L2450271-01 T	1	5	19.69460		3.00		
L2450271-02 T	1	6	3.87822		3.00		
L2450417-01 T	1	7	0.30899		3.00		
L2450417-02 T	1	8	0.09057		3.00		
L2450417-03 T	1	9	0.12902		3.00		
L2450417-04 T	1	10	0.10145		3.00		
CCV 0.4000	1	S6	0.40628				102%
	Known Conc:		100.00000				
CCV 4.0000	1	S3	4.05471				101%
	Known Conc:		100.00000				
CCB	1	S10	0.02764				
	Known Conc:		100.00000				
L2450417-06 T	1	11	0.06099		3.00		
WG1969899-4 T	1	12	6.65106		3.00		83%
WG1969899-3 T	1	13	0.28349		3.00		RPD=NC
L2450417-07 T	1	14	0.07866		3.00		
L2450417-08 T	1	15	-0.00315		3.00		
L2450417-09 T	1	16	0.20182		3.00		
L2450786-01 T	1	17	0.04313		3.00		
L2450786-02 T	1	18	0.02591		3.00		
L2450786-03 T	1	19	0.04631		3.00		
L2451667-01 T	1	20	42.57375		6.00		
CCV 0.4000	1	S6	0.43587				109%
	Known Conc:		100.00000				
CCV 4.0000	1	S3	4.05613				101%
	Known Conc:		100.00000				
CCB	1	S10	0.03211				
	Known Conc:		100.00000				

Author: A1WETCHEMINSTRUMENT Date : 9/11/2024

Channel 2 (Ammonia High) - Current View

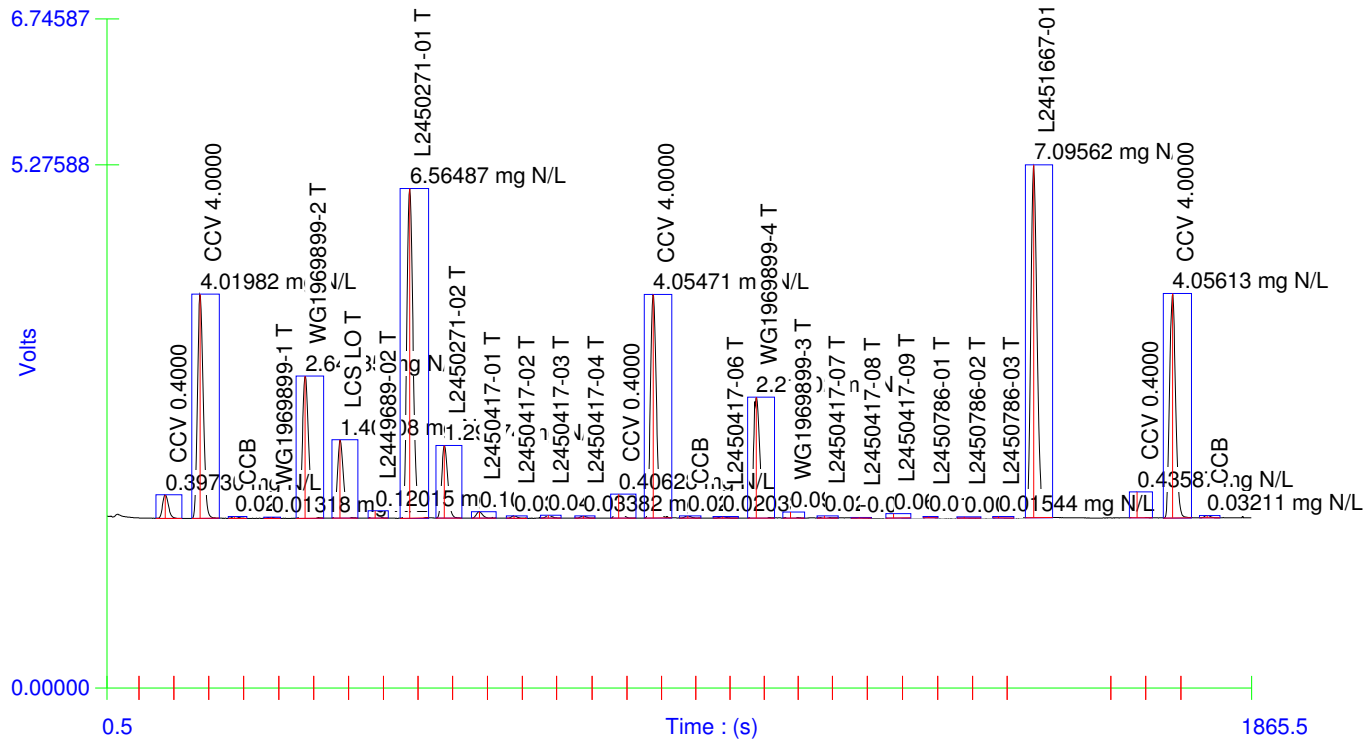
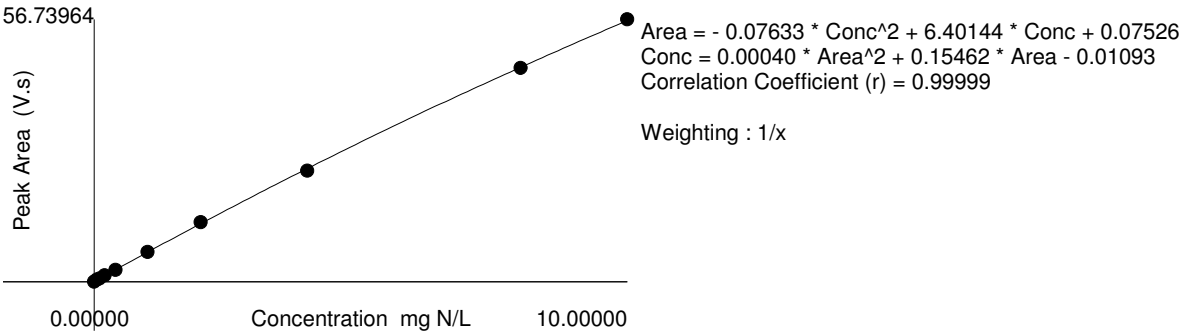


Table : 1 (Ammonia)

	Known Conc. (mg N/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg N/L)	Detection Date	Detection Time
1	10.00000	1	56.73964	5.09312	0.0	-0.5	10.03843	9/11/2024	9:54:44 AM
2	8.00000	1	46.20772	4.27006	0.0	0.4	7.98015	9/11/2024	9:55:41 AM
3	4.00000	1	23.99822	2.29331	0.0	1.9	3.92798	9/11/2024	9:56:38 AM
4	2.00000	1	12.83582	1.22321	0.0	-2.1	2.03906	9/11/2024	9:57:35 AM
5	1.00000	1	6.45077	0.61394	0.0	-0.8	1.00298	9/11/2024	9:58:33 AM
6	0.40000	1	2.59143	0.24661	0.0	1.2	0.39242	9/11/2024	9:59:31 AM
7	0.20000	1	1.38847	0.12179	0.0	-2.7	0.20452	9/11/2024	10:00:29 AM
8	0.10000	1	0.71488	0.06598	0.0	0.0	0.09981	9/11/2024	10:01:27 AM
9	0.05000	1	0.45086	0.03891	0.0	-14.1	0.05886	9/11/2024	10:02:24 AM
10	0.00000	1	0.01093	-0.00287			-0.00924	9/11/2024	10:03:21 AM

Figure : 1 (Ammonia)



Original Run Filename: OM_9-11-2024_01-58-22PM.OMN Created: 9/11/2024 1:58:22 PM
Original Run Author's Signature: [A1WETCHEMINSTRUMENT]
Current Run Filename: OM_9-11-2024_01-58-22PM.OMN Last Modified: 9/11/2024 2:27:28 PM
Current Run Author's Signature: [A1WETCHEMINSTRUMENT]
Description: Default New Run

	Sample	Rep.	Cup No.	Channel 2 Ammonia (mg N/L)	ADF	MDF	Weight	
								TRAY D
	CCV 0.4000	1	S6	0.40410				101%
			Known Conc:	100.00000				
			Calibration:	Table/Fig. : 1				
	CCV 4.0000	1	S3	4.09748				102%
			Known Conc:	100.00000				
	CCB	1	S10	0.02585				
			Known Conc:	100.00000				
	WG1969628-1 T	1	1	0.01546				
	WG1969628-2 T	1	2	39.20982		15.00		98%
	LCS LO T	1	3	4.06640		3.00		102%
	L2449744-02 T	1	4	20.90746		3.00		
	L2450131-01 T	1	5	23.62857		15.00		
	L2450131-02 T	1	6	17.10877		15.00		
	L2450131-03 T	1	7	8.49827		15.00		
	L2450131-04 T	1	8	7.96189		15.00		
	L2450131-05 T	1	9	9.48728		15.00		
	L2450131-06 T	1	10	4.59875		15.00		
	CCV 0.4000	1	S6	0.41550				104%
			Known Conc:	100.00000				
	CCV 4.0000	1	S3	4.24188				106%
			Known Conc:	100.00000				
	CCB	1	S10	0.02498				
			Known Conc:	100.00000				
	L2450131-07 T	1	11	4.92030		15.00		
X	L2450240-01 T	1	12	64.00275		3.00		
X	L2450242-01 T	1	13	27.03210		30.00		
	L2450243-01 T	1	14	22.20405		6.00		
	L2450258-01 T	1	15	11.06256		3.00		
	L2450258-02 T	1	16	0.63686		3.00		
	L2450262-01 T	1	17	0.66946		15.00		
	L2450269-01 T	1	18	15.54385		3.00		
	WG1969628-4 T	1	19	25.83981		3.00		129%
	WG1969628-3 T	1	20	~~32.71156~~		~~6.00~~	3	16.3558, RPD=5%
X	CCV 0.4000	1	S6	0.59340				148%, RERUN OK
			Known Conc:	100.00000				
	CCV 4.0000	1	S3	4.25673				
			Known Conc:	100.00000				

Channel 2 (Ammonia High) - Current View

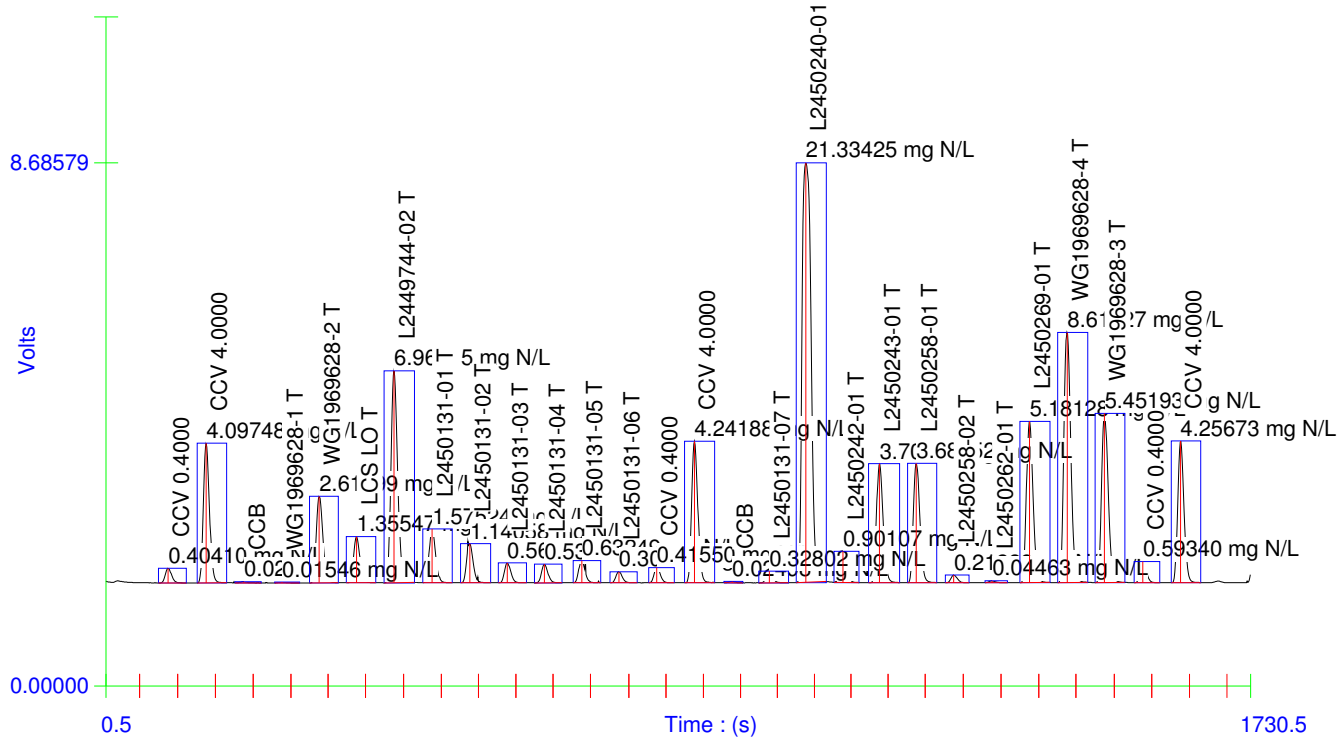
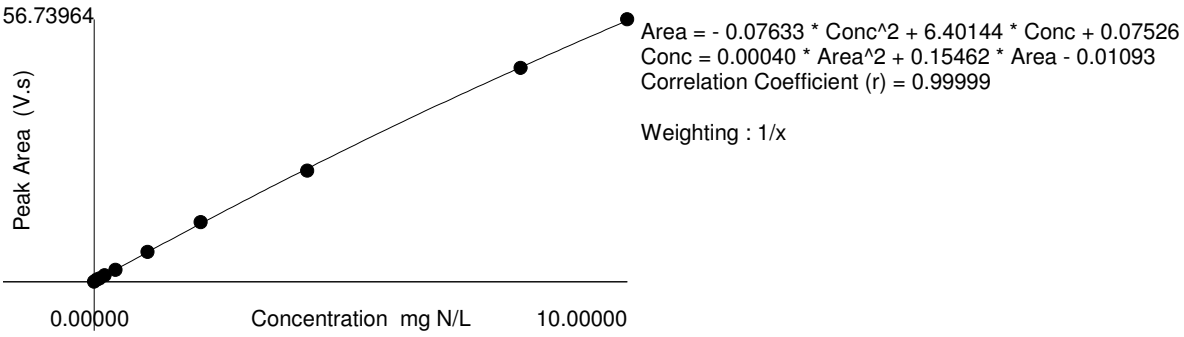


Table : 1 (Ammonia)

	Known Conc. (mg N/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg N/L)	Detection Date	Detection Time
1	10.00000	1	56.73964	5.09312	0.0	-0.5	10.03843	9/11/2024	9:54:44 AM
2	8.00000	1	46.20772	4.27006	0.0	0.4	7.98015	9/11/2024	9:55:41 AM
3	4.00000	1	23.99822	2.29331	0.0	1.9	3.92798	9/11/2024	9:56:38 AM
4	2.00000	1	12.83582	1.22321	0.0	-2.1	2.03906	9/11/2024	9:57:35 AM
5	1.00000	1	6.45077	0.61394	0.0	-0.8	1.00298	9/11/2024	9:58:33 AM
6	0.40000	1	2.59143	0.24661	0.0	1.2	0.39242	9/11/2024	9:59:31 AM
7	0.20000	1	1.38847	0.12179	0.0	-2.7	0.20452	9/11/2024	10:00:29 AM
8	0.10000	1	0.71488	0.06598	0.0	0.0	0.09981	9/11/2024	10:01:27 AM
9	0.05000	1	0.45086	0.03891	0.0	-14.1	0.05886	9/11/2024	10:02:24 AM
10	0.00000	1	0.01093	-0.00287			-0.00924	9/11/2024	10:03:21 AM

Figure : 1 (Ammonia)



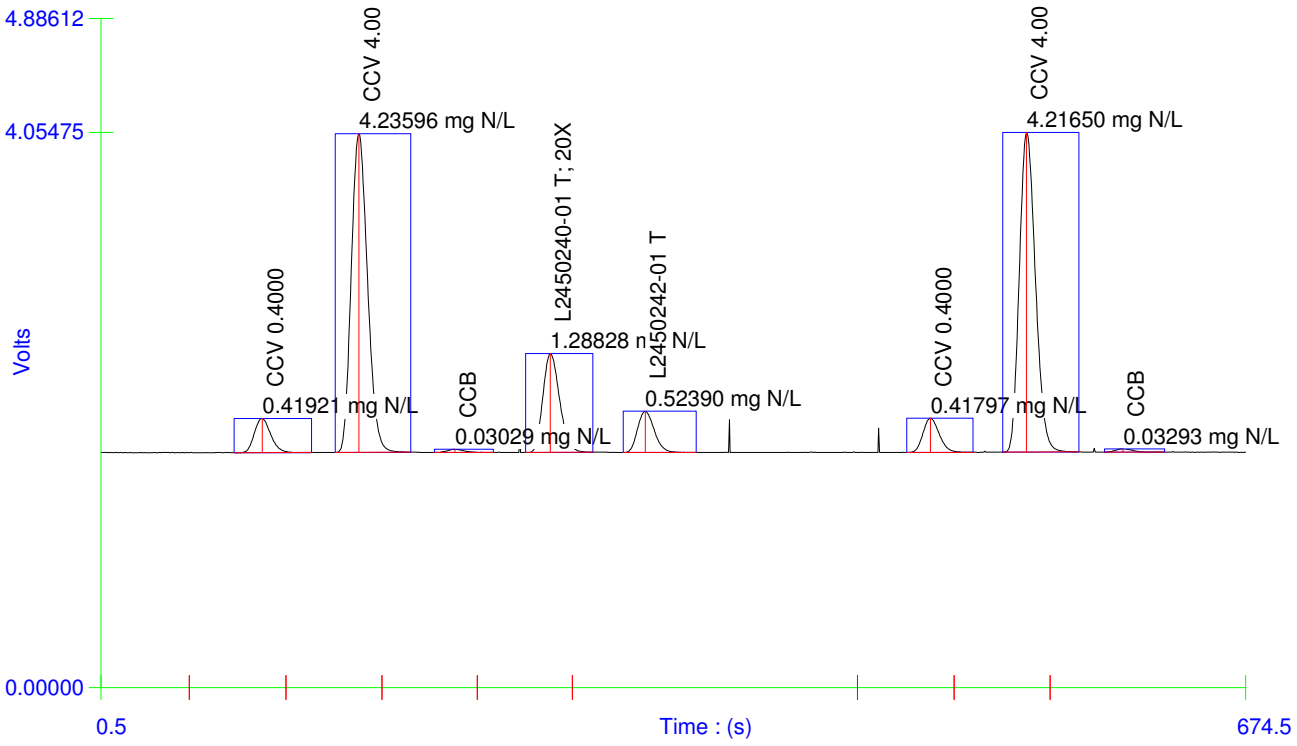
Author: A1WETCHEMINSTRUMENT Date : 9/11/2024

Original Run Filename: OM_9-11-2024_02-37-58PM.OMN Created: 9/11/2024 2:37:58 PM
Original Run Author's Signature: [A1WETCHEMINSTRUMENT]
Current Run Filename: OM_9-11-2024_02-37-58PM.OMN Last Modified: 9/11/2024 2:49:25 PM
Current Run Author's Signature: [A1WETCHEMINSTRUMENT]
Description: Default New Run

TRAY D

Sample	Rep.	Cup No.	Channel 2 Ammonia (mg N/L)	ADF	MDF	Weight	
CCV 0.4000	1	S6	0.41921				105%
	Known Conc:		100.00000				
	Calibration:		Table/Fig. : 1				
CCV 4.0000	1	S3	4.23596				106%
	Known Conc:		100.00000				
CCB	1	S10	0.03029				
	Known Conc:		100.00000				
L2450240-01 T; 20X	1	12	77.29678		60.00		
L2450242-01 T	1	13	15.71687		30.00		
CCV 0.4000	1	S6	0.41797				104%
	Known Conc:		100.00000				
CCV 4.0000	1	S3	4.21650				105%
	Known Conc:		100.00000				
CCB	1	S10	0.03293				
	Known Conc:		100.00000				

Channel 2 (Ammonia High) - Current View

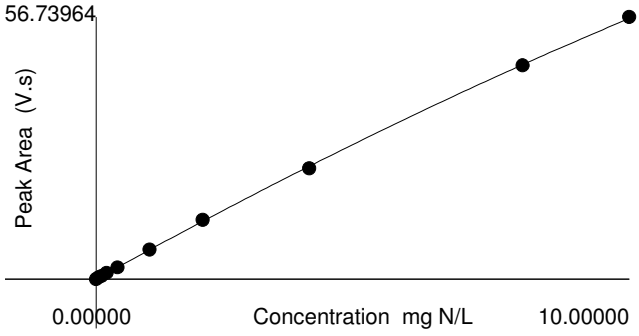


Author: A1WETCHEMINSTRUMENT Date : 9/11/2024

Table : 1 (Ammonia)

	Known Conc. (mg N/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg N/L)	Detection Date	Detection Time
1	10.00000	1	56.73964	5.09312	0.0	-0.5	10.03843	9/11/2024	9:54:44 AM
2	8.00000	1	46.20772	4.27006	0.0	0.4	7.98015	9/11/2024	9:55:41 AM
3	4.00000	1	23.99822	2.29331	0.0	1.9	3.92798	9/11/2024	9:56:38 AM
4	2.00000	1	12.83582	1.22321	0.0	-2.1	2.03906	9/11/2024	9:57:35 AM
5	1.00000	1	6.45077	0.61394	0.0	-0.8	1.00298	9/11/2024	9:58:33 AM
6	0.40000	1	2.59143	0.24661	0.0	1.2	0.39242	9/11/2024	9:59:31 AM
7	0.20000	1	1.38847	0.12179	0.0	-2.7	0.20452	9/11/2024	10:00:29 AM
8	0.10000	1	0.71488	0.06598	0.0	0.0	0.09981	9/11/2024	10:01:27 AM
9	0.05000	1	0.45086	0.03891	0.0	-14.1	0.05886	9/11/2024	10:02:24 AM
10	0.00000	1	0.01093	-0.00287			-0.00924	9/11/2024	10:03:21 AM

Figure : 1 (Ammonia)



Area = - 0.07633 * Conc^2 + 6.40144 * Conc + 0.07526
Conc = 0.00040 * Area^2 + 0.15462 * Area - 0.01093
Correlation Coefficient (r) = 0.99999

Weighting : 1/x

Author: A1WETCHEMINSTRUMENT Date : 9/11/2024

Original Run Filename: OM_9-11-2024_02-54-20PM.OMN Created: 9/11/2024 2:54:20 PM
Original Run Author's Signature: [A1WETCHEMINSTRUMENT]
Current Run Filename: OM_9-11-2024_02-54-20PM.OMN Last Modified: 9/11/2024 3:09:39 PM
Current Run Author's Signature: [A1WETCHEMINSTRUMENT]
Description: Default New Run

	Sample	Rep.	Cup No.	Channel 2 Ammonia (mg N/L)	ADF	MDF	Weight	TRAY E
	CCV 0.4000	1	S6	0.41102				103%
			Known Conc:	100.00000				
			Calibration:	Table/Fig. : 1				
	CCV 4.0000	1	S3	4.15128				104%
			Known Conc:	100.00000				
	CCB	1	S10	0.03269				
			Known Conc:	100.00000				
	WG1970052-1 T	1	1	0.02753				
	WG1970052-2 T	1	2	38.22231		15.00		96%
	LCS LO T	1	3	4.01235		3.00		100%
	L2450448-01 T	1	4	0.94791		3.00		
	WG1970052-4 T	1	5	9.61042		3.00		108%
	WG1970052-3 T	1	6	1.03108		3.00		RPD=8%
	L2450478-01 T	1	7	0.60887		3.00		
	L2450480-01 T	1	8	43.17801		6.00		
	L2450480-02 T	1	9	3.69017		3.00		
	L2450481-01 T	1	10	48.44675		6.00		
X	CCV 0.4000	1	S6	0.63679				159%, RERUN OK
			Known Conc:	100.00000				

Channel 2 (Ammonia High) - Current View

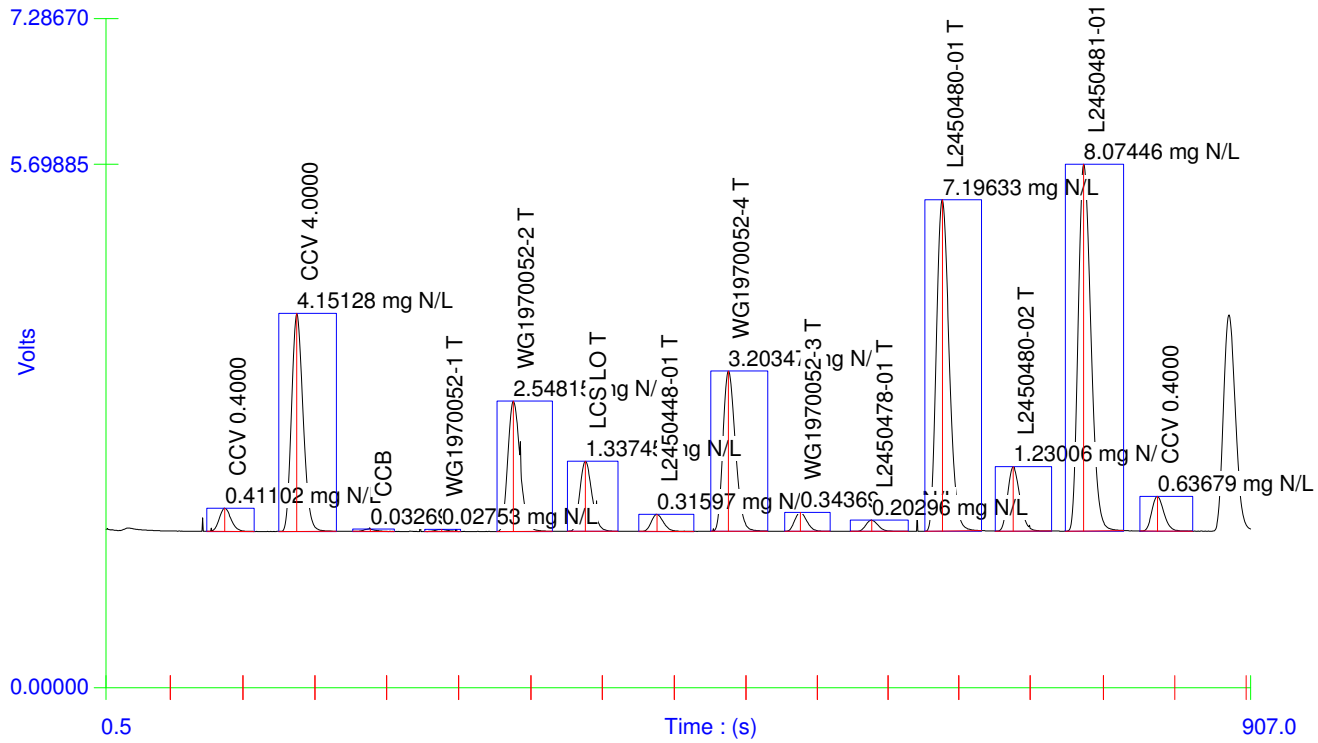
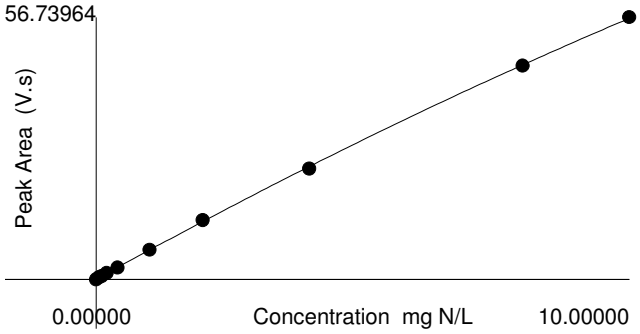


Table : 1 (Ammonia)

	Known Conc. (mg N/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg N/L)	Detection Date	Detection Time
1	10.00000	1	56.73964	5.09312	0.0	-0.5	10.03843	9/11/2024	9:54:44 AM
2	8.00000	1	46.20772	4.27006	0.0	0.4	7.98015	9/11/2024	9:55:41 AM
3	4.00000	1	23.99822	2.29331	0.0	1.9	3.92798	9/11/2024	9:56:38 AM
4	2.00000	1	12.83582	1.22321	0.0	-2.1	2.03906	9/11/2024	9:57:35 AM
5	1.00000	1	6.45077	0.61394	0.0	-0.8	1.00298	9/11/2024	9:58:33 AM
6	0.40000	1	2.59143	0.24661	0.0	1.2	0.39242	9/11/2024	9:59:31 AM
7	0.20000	1	1.38847	0.12179	0.0	-2.7	0.20452	9/11/2024	10:00:29 AM
8	0.10000	1	0.71488	0.06598	0.0	0.0	0.09981	9/11/2024	10:01:27 AM
9	0.05000	1	0.45086	0.03891	0.0	-14.1	0.05886	9/11/2024	10:02:24 AM
10	0.00000	1	0.01093	-0.00287			-0.00924	9/11/2024	10:03:21 AM

Figure : 1 (Ammonia)



Area = - 0.07633 * Conc^2 + 6.40144 * Conc + 0.07526
Conc = 0.00040 * Area^2 + 0.15462 * Area - 0.01093
Correlation Coefficient (r) = 0.99999

Weighting : 1/x

Author: A1WETCHEMINSTRUMENT Date : 9/11/2024

Original Run Filename: OM_9-11-2024_03-13-19PM.OMN Created: 9/11/2024 3:13:19 PM
Original Run Author's Signature: [A1WETCHEMINSTRUMENT]
Current Run Filename: OM_9-11-2024_03-13-19PM.OMN Last Modified: 9/11/2024 3:32:20 PM
Current Run Author's Signature: [A1WETCHEMINSTRUMENT]
Description: Default New Run

TRAY E

Sample	Rep.	Cup No.	Channel 2 Ammonia (mg N/L)	ADF	MDF	Weight	
CCV 0.4000	1	S6	0.42055				105%
	Known Conc:		100.00000				
	Calibration:		Table/Fig. : 1				
CCV 4.0000	1	S3	4.17541				104%
	Known Conc:		100.00000				
CCB	1	S10	0.03506				
	Known Conc:		100.00000				
L2450481-02 T	1	11	4.65781		3.00		
L2450547-02 T	1	12	0.22075		3.00		
L2450786-04 T	1	13	0.04208		3.00		
L2450786-05 T	1	14	0.53237		3.00		
L2450786-06 T	1	15	0.23380		3.00		
L2450786-07 T	1	16	0.02986		3.00		
L2450786-08 T	1	17	0.10280		3.00		
L2450786-09 T	1	18	0.08318		3.00		
L2450786-10 T	1	19	0.04169		3.00		
L2450786-12 T	1	20	0.01739		3.00		
CCV 0.4000	1	S6	0.41213				103%
	Known Conc:		100.00000				
CCV 4.0000	1	S3	4.11906				103%
	Known Conc:		100.00000				
CCB	1	S10	0.03315				
	Known Conc:		100.00000				

Channel 2 (Ammonia High) - Current View

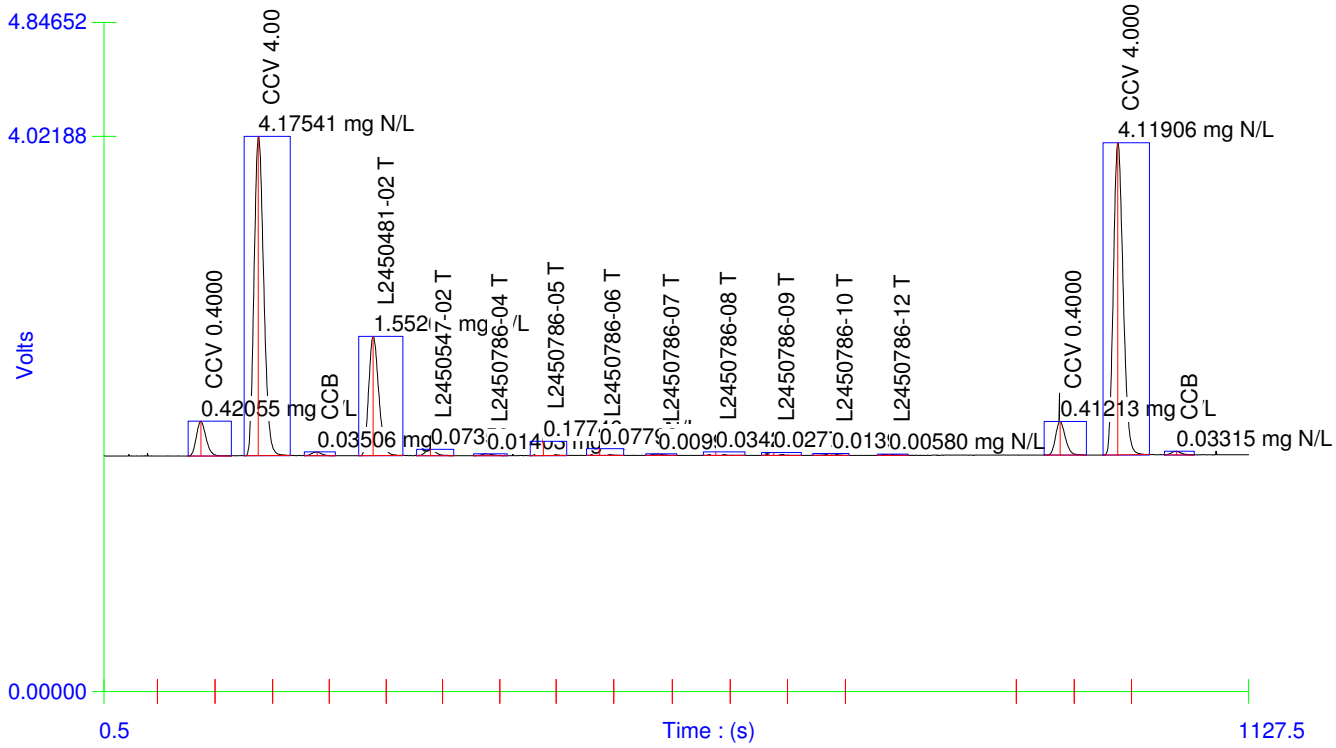


Table : 1 (Ammonia)

	Known Conc. (mg N/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg N/L)	Detection Date	Detection Time
1	10.00000	1	56.73964	5.09312	0.0	-0.5	10.03843	9/11/2024	9:54:44 AM
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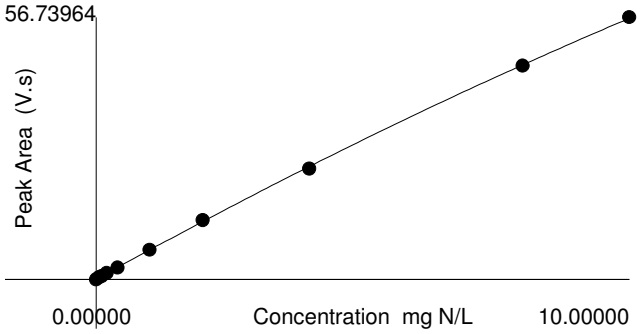
4	2.00000	1	12.83582	1.22321	0.0	-2.1	2.03906	9/11/2024	9:57:35 AM
5	1.00000	1	6.45077	0.61394	0.0	-0.8	1.00298	9/11/2024	9:58:33 AM
6	0.40000	1	2.59143	0.24661	0.0	1.2	0.39242	9/11/2024	9:59:31 AM
7	0.20000	1	1.38847	0.12179	0.0	-2.7	0.20452	9/11/2024	10:00:29 AM
8	0.10000	1	0.71488	0.06598	0.0	0.0	0.09981	9/11/2024	10:01:27 AM
9	0.05000	1	0.45086	0.03891	0.0	-14.1	0.05886	9/11/2024	10:02:24 AM
10	0.00000	1	0.01093	-0.00287			-0.00924	9/11/2024	10:03:21 AM

Figure : 1 (Ammonia)



Area = - 0.07633 * Conc^2 + 6.40144 * Conc + 0.07526
Conc = 0.00040 * Area^2 + 0.15462 * Area - 0.01093
Correlation Coefficient (r) = 0.99999

Weighting : 1/x

Quality Control

Form 5a
Matrix Spike

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: L2450417-06		
Matrix Spike	: WG1969899-4	**MS Analysis Date**	: 09/11/24 13:37
Matrix Spike Dup	:	**MSD Analysis Date**	:

		Matrix Spike Sample			Matrix Spike Duplicate					
Parameter	Sample Conc. (mg/l)	Spike Added (mg/l)	Spike Conc. (mg/l)	%R	Spike Added (mg/l)	Spike Conc. (mg/l)	%R	RPD	Recovery Limits	RPD Limit
Nitrogen, Total Kjeldahl	ND	8	6.65	83					77-111	24

Form 5a
Matrix Spike

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: L2450448-01		
Matrix Spike	: WG1970052-4	**MS Analysis Date**	: 09/11/24 15:02
Matrix Spike Dup	:	**MSD Analysis Date**	:

		Matrix Spike Sample			Matrix Spike Duplicate					
Parameter	**Sample Conc. (mg/l)**	**Spike Added (mg/l)**	**Spike Conc. (mg/l)**	**%R**	**Spike Added (mg/l)**	**Spike Conc. (mg/l)**	**%R**	**RPD**	**Recovery Limits**	**RPD Limit**
Nitrogen, Total Kjeldahl	**0.948**	**8**	**9.61**	**108**					**77-111**	**24**

Form 6
Lab Duplicates

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: NA	**Analysis Date**	: 09/11/24 13:36
Dup Sample ID	: WG1969899-3	**DUP Analysis Date**	: 09/11/24 13:38

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Nitrogen, Total Kjeldahl	ND	0.284J	NC	24

Form 6
Lab Duplicates

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: NA	**Analysis Date**	: 09/11/24 15:01
Dup Sample ID	: WG1970052-3	**DUP Analysis Date**	: 09/11/24 15:02

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Nitrogen, Total Kjeldahl	0.948	1.03	8	24

Form 7
Laboratory Control Sample

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: WG1969899-2	**LCS Analysis Date**	: 09/11/24 13:25
Dup Sample ID	:	**LCSD Analysis Date**	:

	Laboratory Control Sample			Laboratory Control Duplicate					
Parameter	**True (mg/l)**	**Found (mg/l)**	**%R**	**True (mg/l)**	**Found (mg/l)**	**%R**	**RPD**	**Recovery Limits**	**RPD Limit**
Nitrogen, Total Kjeldahl	**40.0**	**39.7**	**99.**					**78-122**	**24**

Form 7
Laboratory Control Sample

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: WG1970052-2	**LCS Analysis Date**	: 09/11/24 14:59
Dup Sample ID	:	**LCSD Analysis Date**	:

	Laboratory Control Sample			Laboratory Control Duplicate					
Parameter	**True (mg/l)**	**Found (mg/l)**	**%R**	**True (mg/l)**	**Found (mg/l)**	**%R**	**RPD**	**Recovery Limits**	**RPD Limit**
Nitrogen, Total Kjeldahl	**40.0**	**38.2**	**96.**					**78-122**	**24**

Date Created: 11/11/21
Created By: Jason Hebert
File: PM11467-1
Page: 1

WETCHEM (WATER)

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Method	Holding Time	Container / Sample Preservation
Nitrogen, Total Kjeldahl	NONE	0.3	0.066	mg/l	78-122		77-111	24	24	4500NH3-H	28 days	1 - Plastic 500ml H2SO4 preserved
Nitrogen, Total Kjeldahl	NONE	0.3	0.066	mg/l	78-122		77-111	24	24	351.1	28 days	1 - Plastic 500ml H2SO4 preserved

Please Note that the RL information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)
Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.

Date Created: 11/11/21
Created By: Jason Hebert
File: PM11468-1
Page: 1

WETCHEM (SOIL)

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Method	Holding Time	Container/Sample Preservation
Nitrogen, Total Kjeldahl	NONE	150	31.5	mg/kg	81-115	26	43-160	26	26	4500NH3-H	28 days	1 - Glass 250ml/8oz unpreserved

Please Note that the RL information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)
Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.

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Calculations of Nitrogen in TKN

Aqueous samples:

Compute sample TKN –N concentration by comparing sample peak areas with standard curve, as determined by the Lachat instrument software.

If the sample has a concentration of less than 2ppm, calculate results by using the low curve generated on Channel 1.

If the sample concentration is greater than 2ppm, calculate the results by using the high curve generated on Channel 2.

To Compute the final results for aqueous samples, multiply the direct reading by the dilution factor based on the initial preparation volume. (also done using software)

TKN-N mg/L = mg/L direct reading x dilution factor

Sequence Logs

From Page No. ____

Tray A (09-47-56AM)
prep 9/10/24 @ 22:56, 22:53

1	Hi 7.0
2	Lo 7.0 1.0
3	ICB
4	KEP ~~WG199~~ WG1969898-1, Blk
5	(9895)-2, LCS Hi, 5x
6	LCS Lo
7	50429-01
8	-01 MS
9	-01 Dup
10	-02
11	-03
⊗ 12	-04; return on Tray B
13	50669-01
14	-02
15	-03
16	49689-02
17	50155-02
18	50416-01
19	-01 MS
20	-01 Dup

Date: 9/11/24
Sodium Phenolate: 8/30/24 R-4065
Sodium Hypochlorate: 8/30/24 stp tshp
Sodium Nitropruisside: 8/30/24 R-3969
Borric Acid Soln.: 8/30/24 R-4019
ICV 1.0: 9/4/24 wc-3476
ICV 8.0:
Cal. Std: 8/30/24 wc-3392
See Front Page for Instructions:

KEP

Tray B ~~10-41-09AM~~ KEP (11-10-56AM, 11-25-20AM)
prep 9/10/24 @ 22:56

1	WG1969894-1, Blk
2	-2, LCS Hi, 5x
3	LCS Lo
4	50188-01 (5x)
5	-02
6	50189-01 (5x)
7	-02
⊗ 8	50192-01 (10x); 10x 1↑10
KEP ⊗ 9	-02 (10x); 20x 0.5↑10
⊗ 10	50258-01
11	-02
12	50270-01
13	50271-01 (2x)
14	-02
15	50356-02
16	-03
17	-04 (2x)
18	-05 (5x)
19	50398-01
20	-02
⊗ 21	-03; 30X 1↑30
⊗ 22	-04
23	-04 MS
24	-04 Dup
25	51513-01 (100x)

KEP

To Page No. ____

Tray C (01-20-20PM)
prep 9/10/24 @22:21

1	WG1969899-1T, BLK	
2	-2T, LCS Hi, 5x	
3	LCS Lo T	
4	49689 -02T	
5	50271 -01T	
6	-02T	
7	50417 -01T	
8	-02T	
9	-03T	
10	-04T	
11	-06T	
12	-06T MS	
13	-06T Dup	
14	-07T	
15	-08T	
16	-09T	
17	50786 -01T	
18	-02T	
19	-03T	
20	51667 -01T (2x)	

Tray D (01-58-22PM, 02-37-58PM)
prep 9/10/24 @16:55

1	WG1969628-1T, BLK	
2	-2T, LCS Hi, 5x	
3	LCS Lo T	
4	49744 -02T	
5	50131 -01T (5x)	
6	-02T (5x)	
7	-03T (5x)	
8	-04T (5x)	
9	-05T (5x)	
10	-06T (5x)	
11	-07T (5x)	
⊗ 12	50240 -01T, 20x 0.5 H2O	
⊗ 13	50242 -01T (10x)	
14	50243 -01T (2x)	
15	50258 -01T	
16	-02T	
17	50262 -01T (5x)	
18	50269 -01T	
19	-01T MS	
20	-01T Dup	

KEP

From Page No. ____

Tray E(02-54-20PM, 03-13-19PM)
prep 9/11/24 @5:20

1 WG1970052-1T, BLK
2 -2T, LCS Mj SX
3 LCS Lot
4 50448-01T
5 01T MS
6 01T Dup
7 50478-01T
8 50480-01T (2x)
9 02T
10 50481-01T (2x)
11 02T
12 50547-02T
13 50786-04T
14 05T
15 06T
16 07T
17 08T
18 09T
19 10T
20 12T

To Page No. ____

Witnessed & Understood by me, | Date | Invented by: | Date
Recorded by:

Sample Preparation

Sample	Volume 50ml	Dilution 1x	Final Volume 150 mL
Blank			
Low			
High			
50478-1 PA			
-1 DUP			
-1 MS			
50478-1			
50480-1		2x(25↑50) matrix	
-2		1x	
50481-1		2x(25↑50) Matrix	
-2		1x	
50547-2			
50786-4			
-5			
-6			
-7			
-8			
-9			
-10			
-12			

Same standards and reagents as pg. #63. Nitrates checked.

09/11/24 @ 05:20

Distilled by SAD 09 11 24 @ 13:33

Witnessed & Understood by me, | Date | Invented by: | Date

Recorded by:

Project No. _____

TITLE _____ WG1969899 Book No. _____ Confider

From Page No. ____

Sample	Volume 50mL	Dilution 1x	Final Vol 15 mL
Blank			
Low			
High			
L2449689 - 02			
502711 - 01			
- 02			
0417 - 01			
- 02			
- 03			
- 04			
- 06 PA			
- 06 DUP			
- 06 MS			
- 07			
- 08			
- 09			
0786 - 01			
- 02			
- 03			
1667 - 01		2x (25 ↑50) matrix	

Same standards as reagents as page # 62

09/15/24 @ 22:21 ~~Eff~~

Distilled by AJC 09/11/24 @ 03:04

To Page No. .

Witnessed & Understood by me,	Date	Invented by:	Date
		Recorded by:	

Nitrate and Nitrite Analysis

Results

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-01	**Date Collected**	: 09/05/24 13:53
Client ID	: MW-5A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 06:53
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NO3-F	**Analyst**	: KAF
Lab File ID	: NO3240910-C1	**Instrument ID**	: FIA1
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Nitrate/Nitrite	0.11	0.10	0.046	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-02	**Date Collected**	: 09/05/24 13:55
Client ID	: MW-5B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 06:56
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NO3-F	**Analyst**	: KAF
Lab File ID	: NO3240910-C1	**Instrument ID**	: FIA1
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Nitrate/Nitrite	3.2	0.10	0.046	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-03	**Date Collected**	: 09/05/24 12:50
Client ID	: MW-6A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 06:58
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NO3-F	**Analyst**	: KAF
Lab File ID	: NO3240910-C1	**Instrument ID**	: FIA1
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Nitrate/Nitrite	0.26	0.10	0.046	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-04	**Date Collected**	: 09/05/24 12:47
Client ID	: MW-6B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 06:59
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NO3-F	**Analyst**	: KAF
Lab File ID	: NO3240910-C1	**Instrument ID**	: FIA1
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Nitrate/Nitrite	1.1	0.10	0.046	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-05	**Date Collected**	: 09/05/24 11:55
Client ID	: MW-7A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 07:00
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NO3-F	**Analyst**	: KAF
Lab File ID	: NO3240910-C1	**Instrument ID**	: FIA1
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Nitrate/Nitrite	0.090	0.10	0.046	J

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-06	**Date Collected**	: 09/05/24 12:00
Client ID	: MW-7B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 07:04
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NO3-F	**Analyst**	: KAF
Lab File ID	: NO3240910-C1	**Instrument ID**	: FIA1
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Nitrate/Nitrite	ND	0.10	0.046	U

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-07	**Date Collected**	: 09/05/24 08:00
Client ID	: MW-8A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 07:05
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NO3-F	**Analyst**	: KAF
Lab File ID	: NO3240910-C1	**Instrument ID**	: FIA1
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Nitrate/Nitrite	1.2	0.10	0.046	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-08	**Date Collected**	: 09/05/24 08:55
Client ID	: MW-8B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 07:07
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NO3-F	**Analyst**	: KAF
Lab File ID	: NO3240910-C1	**Instrument ID**	: FIA1
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Nitrate/Nitrite	0.30	0.10	0.046	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-09	**Date Collected**	: 09/05/24 10:10
Client ID	: MW-10A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 07:08
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NO3-F	**Analyst**	: KAF
Lab File ID	: NO3240910-C1	**Instrument ID**	: FIA1
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Nitrate/Nitrite	2.8	0.10	0.046	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-10	**Date Collected**	: 09/05/24 10:16
Client ID	: MW-10B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 07:09
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NO3-F	**Analyst**	: KAF
Lab File ID	: NO3240910-C1	**Instrument ID**	: FIA1
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Nitrate/Nitrite	2.9	0.10	0.046	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-12	**Date Collected**	: 09/05/24 00:00
Client ID	: DUP	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 07:10
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NO3-F	**Analyst**	: KAF
Lab File ID	: NO3240910-C1	**Instrument ID**	: FIA1
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Nitrate/Nitrite	1.2	0.10	0.046	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1969439-1	**Date Collected**	: NA
Client ID	: WG1969439-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 09/10/24 04:06
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NO3-F	**Analyst**	: KAF
Lab File ID	: NO3240910-A1	**Instrument ID**	: FIA1
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Nitrate/Nitrite	ND	0.10	0.046	U

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1969439-3	**Date Collected**	: 09/05/24 13:53
Client ID	: MW-5ADUP	**Date Received**	: 09/05/24
Sample Location	:	**Date Analyzed**	: 09/10/24 06:54
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NO3-F	**Analyst**	: KAF
Lab File ID	: NO3240910-C1	**Instrument ID**	: FIA1
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Nitrate/Nitrite	0.11	0.10	0.05	

Sample Raw Data

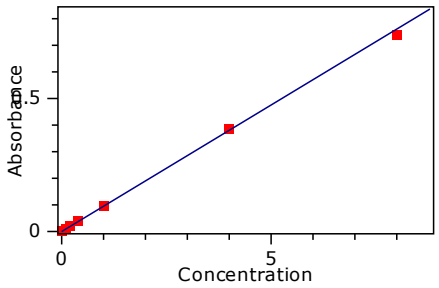
Graphical report generated by FIAsoft v3.1.10
Report generated on 2024-09-10 04:49:28
Data file (.dat): C:\FIAlab\Autosave Data\2024-09-10-044845.dat

Dataset Notes:

Analyst	

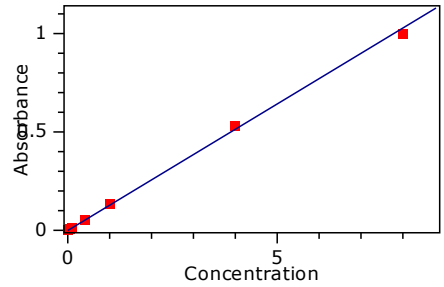
Dataset Notes Table Location: C:\FIAlab\FIAlab User Files\Tables\Dataset Notes\Analyst.csv

Calibrations:



Channel: 1-NOx
Fit_Order: 1
Weighting: 1/response
Standard relation
Coefficients:
A: -0.00020
B: 0.09514
R^2: 0.99965
RSE(%): 2.55403
% Max. for OVR: 100

InjNo	Name	Response	Known Conc. mg/L	Calc. Conc. mg/L	% Error	Time
2	NOx 8.0ppm	0.73720	8.00000	7.75040	3.12	2024-09-10T03:24:21
3	NOx 4.0ppm	0.38350	4.00000	4.03240	0.81	2024-09-10T03:25:30
4	NOx 1.0ppm	0.09440	1.00000	0.99430	0.57	2024-09-10T03:26:37
5	NOx 0.4ppm	0.03920	0.40000	0.41450	3.62	2024-09-10T03:27:45
6	NOx 0.2ppm	0.01900	0.20000	0.20190	0.94	2024-09-10T03:28:55
7	NOx 0.1ppm	0.00920	0.10000	0.09880	1.17	2024-09-10T03:30:05
8	NOx 0.0ppm	0.00010	0.00000	0.00330	NA	2024-09-10T03:31:16



Channel: 2-NO2
Fit_Order: 1
Weighting: 1/response
Standard relation
Coefficients:
A: -0.00088
B: 0.12861
R^2: 0.99896
RSE(%): 6.50972
% Max. for OVR: 100

InjNo	Name	Response	Known Conc. mg/L	Calc. Conc. mg/L	% Error	Time
9	Nitrite 8.0ppm	0.99690	8.00000	7.75810	3.02	2024-09-10T03:32:14
10	Nitrite 4.0ppm	0.53250	4.00000	4.14720	3.68	2024-09-10T03:33:24
11	Nitrite 1.0ppm	0.13320	1.00000	1.04230	4.23	2024-09-10T03:34:30
12	Nitrite 0.4ppm	0.05230	0.40000	0.41350	3.38	2024-09-10T03:35:40
13	Nitrite 0.1ppm	0.01080	0.10000	0.09050	9.52	2024-09-10T03:36:50
14	Nitrite 0.05ppm	0.00590	0.05000	0.05260	5.17	2024-09-10T03:38:01
15	Nitrite 0.0ppm	0.00010	0.00000	0.00780	NA	2024-09-10T03:39:11

Results:

Channel: 1-NOx

Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
Stabil	1	Unknown	?	0.0002	1	1	1	0.0038		2024-09-10T03:23:06
NOx 8.0ppm	2	Standard	8	0.7372	1	1	1	7.7504		2024-09-10T03:24:21
NOx 4.0ppm	3	Standard	4	0.3835	1	1	1	4.0324		2024-09-10T03:25:30
NOx 1.0ppm	4	Standard	1	0.0944	1	1	1	0.9943		2024-09-10T03:26:37
NOx 0.4ppm	5	Standard	0.4	0.0392	1	1	1	0.4145		2024-09-10T03:27:45
NOx 0.2ppm	6	Standard	0.2	0.0190	1	1	1	0.2019		2024-09-10T03:28:55
NOx 0.1ppm	7	Standard	0.1	0.0092	1	1	1	0.0988		2024-09-10T03:30:05
NOx 0.0ppm	8	Standard	0	0.0001	1	1	1	0.0033		2024-09-10T03:31:16
Nitrite 8.0ppm	9	Standard	?	0.7371	1	1	1	7.7487		2024-09-10T03:32:25
Nitrite 4.0ppm	10	Standard	?	0.3866	1	1	1	4.0657		2024-09-10T03:33:36
Nitrite 1.0ppm	11	Standard	?	0.0949	1	1	1	0.9993		2024-09-10T03:34:43
Nitrite 0.4ppm	12	Standard	?	0.0368	1	1	1	0.3884		2024-09-10T03:35:51
Nitrite 0.1ppm	13	Standard	?	0.0073	1	1	1	0.0791		2024-09-10T03:37:02
Nitrite 0.05ppm	14	Standard	?	0.0040	1	1	1	0.0436		2024-09-10T03:38:11
Nitrite 0.0ppm	15	Standard	?	0.0001	1	1	1	0.0032		2024-09-10T03:39:23
CCV NO3	16	QC	1	0.0949	1	1	1	0.9994		2024-09-10T03:40:30
CCV NO2	17	QC	?	0.0953	1	1	1	1.0037		2024-09-10T03:41:35
CCB	18	QC	0	0.0001	1	1	1	0.0029		2024-09-10T03:42:42
ICV NO3 5.0	19	QC	5	0.4746	1	1	1	4.9902		2024-09-10T03:43:53
ICV NO2 5.0	20	QC	?	0.4757	1	1	1	5.0021		2024-09-10T03:45:02
ICV NO3 0.5	21	QC	0.5	0.0469	1	1	1	0.4946		2024-09-10T03:46:12
ICV NO2 0.5	22	QC	?	0.0473	1	1	1	0.4991		2024-09-10T03:47:20
ICB	23	QC	0	0.0001	1	1	1	0.0033		2024-09-10T03:48:30
BLANK NO3	24	Unknown	?	0.0001	1	1	1	0.0032		2024-09-10T03:49:38
LCS NO3	25	Unknown	?	0.4739	1	1	1	4.9828		2024-09-10T03:50:45
BLANK NO2	26	Unknown	?	-0.0001	1	1	1	0.0010		2024-09-10T03:51:28
LCS NO2	27	Unknown	?	0.4758	1	1	1	5.0030		2024-09-10T03:52:58
CCV NO3	28	QC	1	0.0941	1	1	1	0.9908		2024-09-10T03:54:04
CCV NO2	29	QC	?	0.0950	1	1	1	1.0008		2024-09-10T03:55:10
CCB	30	QC	0	0.0001	1	1	1	0.0029		2024-09-10T03:56:20
WG1969435-1	31	Unknown	?	0.0001	1	1	1	0.0032		2024-09-10T03:57:33
WG1969435-2	32	Unknown	?	0.4735	1	1	1	4.9786		2024-09-10T03:58:37

Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
WG1969436-1	33	Unknown	?	-0.0001	1	1	1	0.0013		2024-09-10T03:59:17
WG1969436-2	34	Unknown	?	0.4736	1	1	1	4.9802		2024-09-10T04:00:48
WG1969437-1	35	Unknown	?	-0.0001	1	1	1	0.0010		2024-09-10T04:01:28
WG1969437-2	36	Unknown	?	0.4739	1	1	1	4.9826		2024-09-10T04:03:00
WG1969438-1	37	Unknown	?	0.0000	1	1	1	0.0017		2024-09-10T04:03:43
WG1969438-2	38	Unknown	?	0.4737	1	1	1	4.9812		2024-09-10T04:05:14
WG1969439-1	39	Unknown	?	0.0000	1	1	1	0.0018		2024-09-10T04:05:57
WG1969439-2	40	Unknown	?	0.4739	1	1	1	4.9830		2024-09-10T04:07:28
CCV NO3	41	QC	1	0.0945	1	1	1	0.9951		2024-09-10T04:08:33
CCV NO2	42	QC	?	0.0945	1	1	1	0.9957		2024-09-10T04:09:39
CCB	43	QC	0	0.0001	1	1	1	0.0031		2024-09-10T04:10:50
L2451222-01	44	Unknown	?	0.0001	1	1	1	0.0027		2024-09-10T04:12:05
L2451222-02	45	Unknown	?	0.0001	1	1	1	0.0027		2024-09-10T04:13:07
L2451233-01	46	Unknown	?	0.0989	1	1	1	1.0414		2024-09-10T04:14:13
L2451282-01	47	Unknown	?	0.3072	1	1	1	3.2304		2024-09-10T04:15:19
WG1969436-3	48	Unknown	?	0.3080	1	1	1	3.2391		2024-09-10T04:16:24
WG1969436-4	49	Unknown	?	0.6608	1	1	1	6.9476		2024-09-10T04:17:30
WG1969435-3	50	Unknown	?	0.3080	1	1	1	3.2390		2024-09-10T04:18:35
WG1969435-4	51	Unknown	?	0.6735	1	1	1	7.0803		2024-09-10T04:19:40
L2451286-07	52	Unknown	?	0.2979	1	1	1	3.1333		2024-09-10T04:20:44
WG1969436-5	53	Unknown	?	0.2983	1	1	1	3.1371		2024-09-10T04:21:49
CCV NO3	54	QC	1	0.0940	1	1	1	0.9900		2024-09-10T04:22:53
CCV NO2	55	QC	?	0.0949	1	1	1	0.9994		2024-09-10T04:23:59
CCB	56	QC	0	0.0002	1	1	1	0.0037		2024-09-10T04:25:08
WG1969436-6	57	Unknown	?	0.6370	1	1	1	6.6970		2024-09-10T04:26:18
WG1969435-5	58	Unknown	?	0.2952	1	1	1	3.1050		2024-09-10T04:27:27
WG1969435-6	59	Unknown	?	0.6595	1	1	1	6.9338		2024-09-10T04:28:34
L2451286-08	60	Unknown	?	0.0127	1	1	1	0.1353		2024-09-10T04:29:41
L2451286-09	61	Unknown	?	0.2866	1	1	1	3.0143		2024-09-10T04:30:47
L2451289-01	62	Unknown	?	0.1112	1	1	1	1.1705		2024-09-10T04:31:54
L2451348-01	63	Unknown	?	0.0043	1	1	1	0.0470		2024-09-10T04:33:01
L2451368-01	64	Unknown	?	0.0010	1	1	1	0.0121		2024-09-10T04:34:06
L2451370-01	65	Unknown	?	0.0011	1	1	1	0.0134		2024-09-10T04:35:11

Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
L2451376-01	66	Unknown	?	1.3099	1	1	1	13.7693	OVR	2024-09-10T04:36:31
CCV NO3	67	QC	1	0.0849	1	1	1	0.8939	QCR	2024-09-10T04:37:22
CCV NO2	68	QC	?	0.0954	1	1	1	1.0047		2024-09-10T04:38:28
CCB	69	QC	0	0.0003	1	1	1	0.0053		2024-09-10T04:39:38
L2451384-01	70	Unknown	?	0.0218	1	1	1	0.2316		2024-09-10T04:40:48
L2451384-02	71	Unknown	?	0.0220	1	1	1	0.2337		2024-09-10T04:41:54
L2451384-03	72	Unknown	?	0.0128	1	1	1	0.1362		2024-09-10T04:42:59
L2451384-04	73	Unknown	?	0.0128	1	1	1	0.1365		2024-09-10T04:44:03
L2451258-01	74	Unknown	?	0.0011	1	1	1	0.0139		2024-09-10T04:45:09
WG1969437-3	75	Unknown	?	0.0006	1	1	1	0.0082		2024-09-10T04:46:14
WG1969437-4	76	Unknown	?	0.3817	1	1	1	4.0140		2024-09-10T04:47:21
L2450131-02	77	Unknown	?	0.3656	1	1	1	3.8450		2024-09-10T04:48:28

Channel: 2-NO2

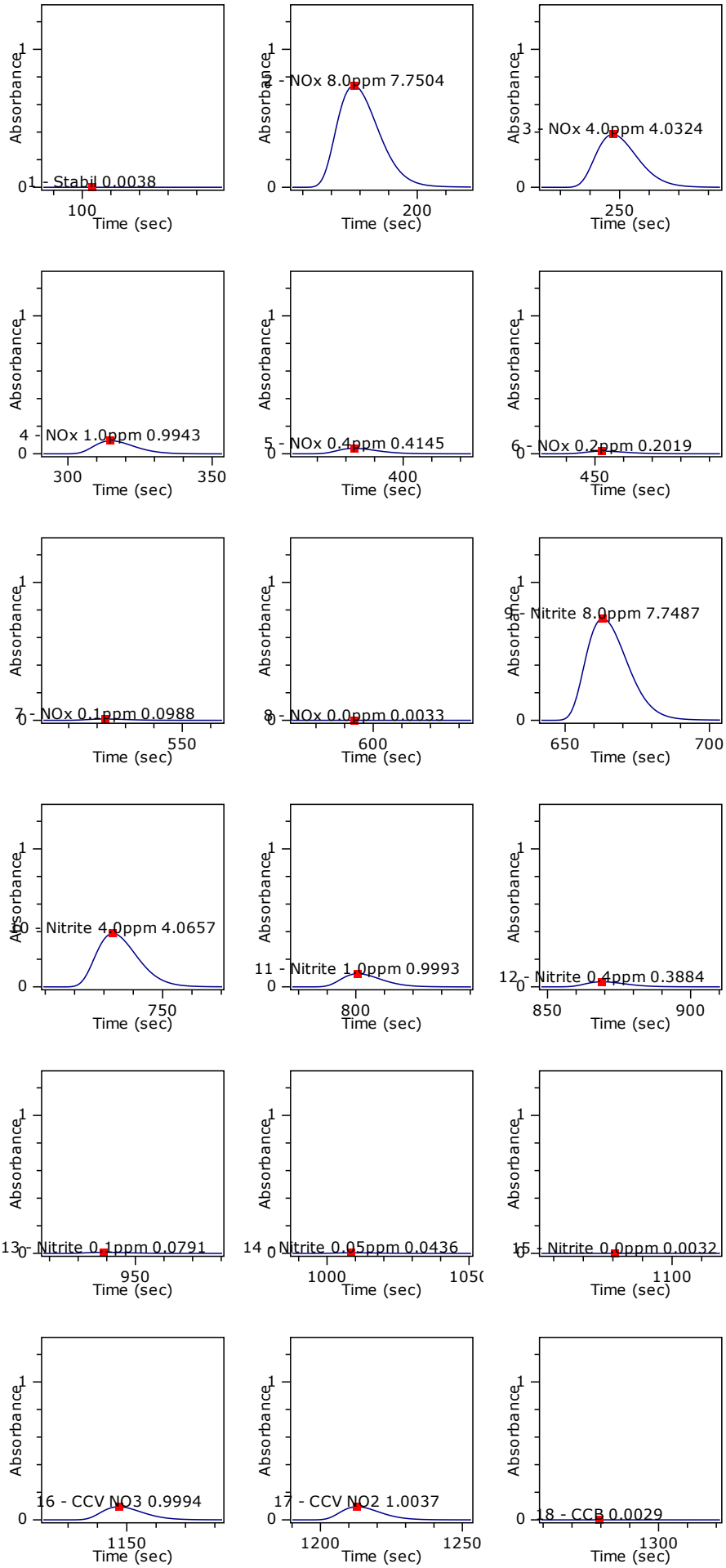
Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
Stabil	1	Unknown	?	0.0001	1	1	1	0.0073		2024-09-10T03:22:51
NOx 8.0ppm	2	Standard	?	0.0001	1	1	1	0.0074		2024-09-10T03:24:54
NOx 4.0ppm	3	Standard	?	0.0001	1	1	1	0.0075		2024-09-10T03:25:24
NOx 1.0ppm	4	Standard	?	0.0004	1	1	1	0.0096		2024-09-10T03:26:25
NOx 0.4ppm	5	Standard	?	0.0001	1	1	1	0.0073		2024-09-10T03:28:22
NOx 0.2ppm	6	Standard	?	0.0000	1	1	1	0.0072		2024-09-10T03:29:33
NOx 0.1ppm	7	Standard	?	0.0001	1	1	1	0.0074		2024-09-10T03:29:57
NOx 0.0ppm	8	Standard	?	0.0001	1	1	1	0.0075		2024-09-10T03:31:25
Nitrite 8.0ppm	9	Standard	8	0.9969	1	1	1	7.7581		2024-09-10T03:32:14
Nitrite 4.0ppm	10	Standard	4	0.5325	1	1	1	4.1472		2024-09-10T03:33:24
Nitrite 1.0ppm	11	Standard	1	0.1332	1	1	1	1.0423		2024-09-10T03:34:30
Nitrite 0.4ppm	12	Standard	0.4	0.0523	1	1	1	0.4135		2024-09-10T03:35:40
Nitrite 0.1ppm	13	Standard	0.1	0.0108	1	1	1	0.0905		2024-09-10T03:36:50
Nitrite 0.05ppm	14	Standard	0.05	0.0059	1	1	1	0.0526		2024-09-10T03:38:01
Nitrite 0.0ppm	15	Standard	0	0.0001	1	1	1	0.0078		2024-09-10T03:39:11
CCV NO3	16	QC	?	0.0003	1	1	1	0.0095		2024-09-10T03:40:17
CCV NO2	17	QC	1	0.1333	1	1	1	1.0434		2024-09-10T03:41:23
CCB	18	QC	0	0.0001	1	1	1	0.0075		2024-09-10T03:42:33
ICV NO3 5.0	19	QC	?	0.0000	1	1	1	0.0071		2024-09-

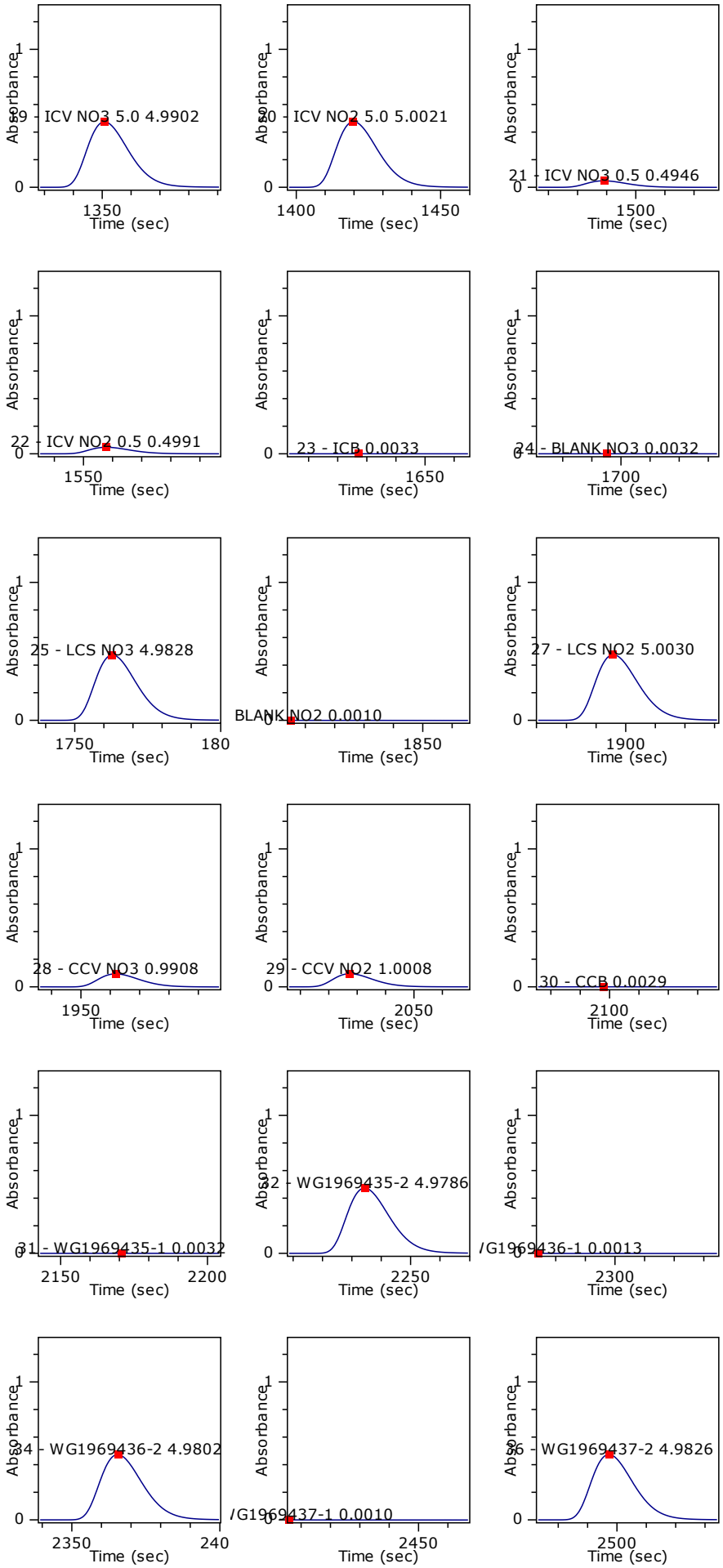
Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
										10T03:43:51
ICV NO2 5.0	20	QC	5	0.6545	1	1	1	5.0954		2024-09-10T03:44:51
ICV NO3 0.5	21	QC	?	0.0001	1	1	1	0.0078		2024-09-10T03:46:00
ICV NO2 0.5	22	QC	0.5	0.0677	1	1	1	0.5335		2024-09-10T03:47:08
ICB	23	QC	0	0.0002	1	1	1	0.0087		2024-09-10T03:48:19
BLANK NO3	24	Unknown	?	0.0001	1	1	1	0.0073		2024-09-10T03:49:24
LCS NO3	25	Unknown	?	0.0001	1	1	1	0.0075		2024-09-10T03:50:41
BLANK NO2	26	Unknown	?	0.0000	1	1	1	0.0071		2024-09-10T03:51:48
LCS NO2	27	Unknown	?	0.6533	1	1	1	5.0864		2024-09-10T03:52:46
CCV NO3	28	QC	?	0.0004	1	1	1	0.0101		2024-09-10T03:53:52
CCV NO2	29	QC	1	0.1306	1	1	1	1.0224		2024-09-10T03:54:57
CCB	30	QC	0	0.0001	1	1	1	0.0076		2024-09-10T03:56:11
WG1969435-1	31	Unknown	?	0.0001	1	1	1	0.0076		2024-09-10T03:57:24
WG1969435-2	32	Unknown	?	0.6517	1	1	1	5.0742		2024-09-10T03:58:24
WG1969436-1	33	Unknown	?	0.0001	1	1	1	0.0074		2024-09-10T03:59:31
WG1969436-2	34	Unknown	?	0.0001	1	1	1	0.0078		2024-09-10T04:00:36
WG1969437-1	35	Unknown	?	0.0001	1	1	1	0.0074		2024-09-10T04:01:47
WG1969437-2	36	Unknown	?	0.0001	1	1	1	0.0077		2024-09-10T04:02:50
WG1969438-1	37	Unknown	?	0.0001	1	1	1	0.0073		2024-09-10T04:04:04
WG1969438-2	38	Unknown	?	0.0000	1	1	1	0.0072		2024-09-10T04:05:02
WG1969439-1	39	Unknown	?	0.0000	1	1	1	0.0071		2024-09-10T04:06:24
WG1969439-2	40	Unknown	?	0.0001	1	1	1	0.0075		2024-09-10T04:07:21
CCV NO3	41	QC	?	0.0004	1	1	1	0.0098		2024-09-10T04:08:20
CCV NO2	42	QC	1	0.1272	1	1	1	0.9958		2024-09-10T04:09:26
CCB	43	QC	0	0.0001	1	1	1	0.0075		2024-09-10T04:10:38
L2451222-01	44	Unknown	?	0.0001	1	1	1	0.0072		2024-09-10T04:11:53
L2451222-02	45	Unknown	?	0.0000	1	1	1	0.0072		2024-09-10T04:12:57
L2451233-01	46	Unknown	?	0.0008	1	1	1	0.0131		2024-09-10T04:14:00
L2451282-01	47	Unknown	?	0.0023	1	1	1	0.0247		2024-09-10T04:15:05
WG1969436-3	48	Unknown	?	0.0015	1	1	1	0.0183		2024-09-10T04:16:11
WG1969436-4	49	Unknown	?	0.0015	1	1	1	0.0181		2024-09-10T04:17:16
WG1969435-3	50	Unknown	?	0.0015	1	1	1	0.0182		2024-09-10T04:18:20
WG1969435-4	51	Unknown	?	0.5450	1	1	1	4.2445		2024-09-10T04:19:26

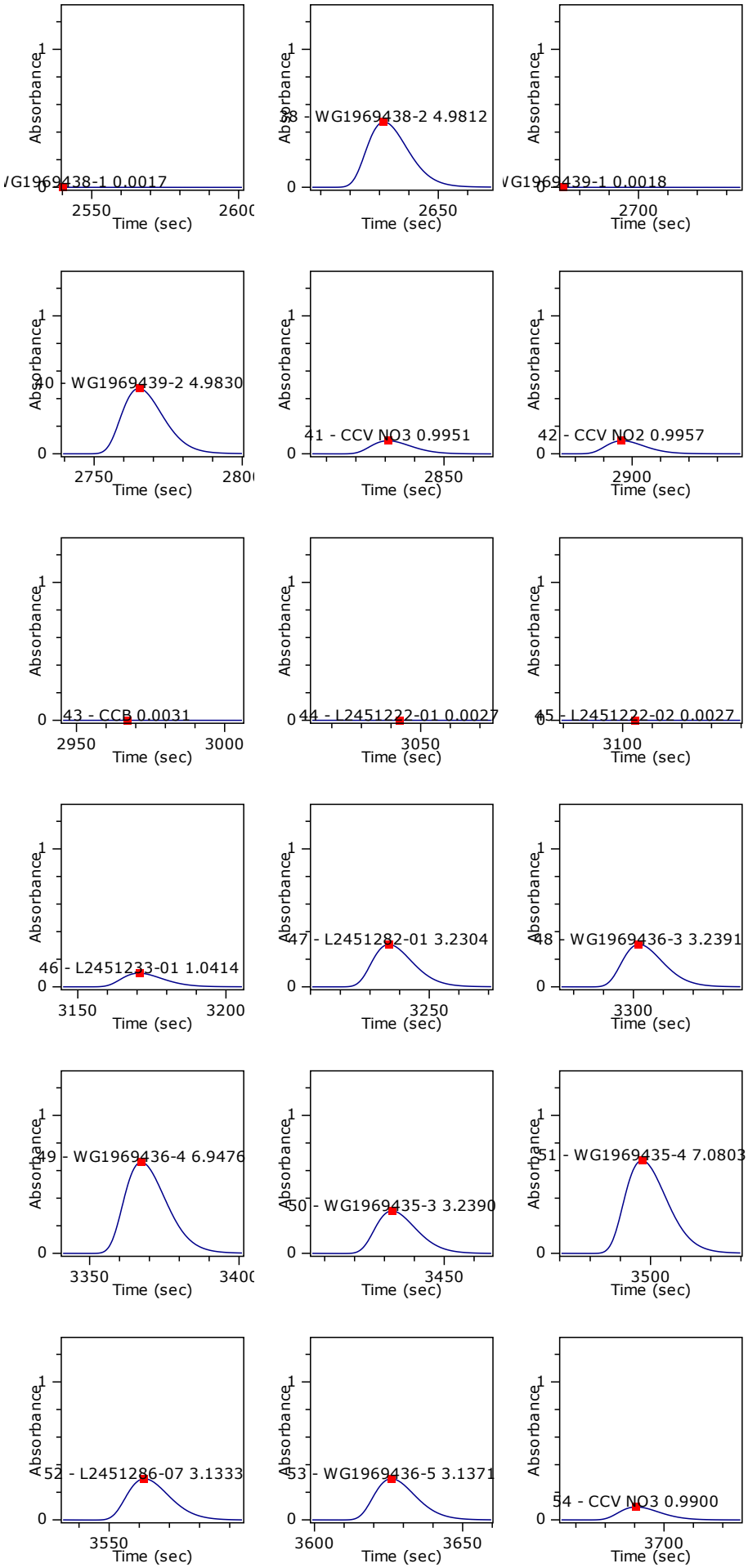
Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
L2451286-07	52	Unknown	?	0.0022	1	1	1	0.0239		2024-09-10T04:20:30
WG1969436-5	53	Unknown	?	0.0013	1	1	1	0.0173		2024-09-10T04:21:35
CCV NO3	54	QC	?	0.0004	1	1	1	0.0098		2024-09-10T04:22:40
CCV NO2	55	QC	1	0.1340	1	1	1	1.0484		2024-09-10T04:23:46
CCB	56	QC	0	0.0001	1	1	1	0.0077		2024-09-10T04:24:56
WG1969436-6	57	Unknown	?	0.0042	1	1	1	0.0393		2024-09-10T04:26:06
WG1969435-5	58	Unknown	?	0.0013	1	1	1	0.0170		2024-09-10T04:27:14
WG1969435-6	59	Unknown	?	0.5402	1	1	1	4.2068		2024-09-10T04:28:21
L2451286-08	60	Unknown	?	0.0017	1	1	1	0.0201		2024-09-10T04:29:28
L2451286-09	61	Unknown	?	0.0019	1	1	1	0.0217		2024-09-10T04:30:35
L2451289-01	62	Unknown	?	0.0045	1	1	1	0.0417		2024-09-10T04:31:40
L2451348-01	63	Unknown	?	0.0035	1	1	1	0.0343		2024-09-10T04:32:47
L2451368-01	64	Unknown	?	0.0008	1	1	1	0.0131		2024-09-10T04:33:53
L2451370-01	65	Unknown	?	0.0008	1	1	1	0.0128		2024-09-10T04:34:58
L2451376-01	66	Unknown	?	0.0086	1	1	1	0.0736		2024-09-10T04:36:03
CCV NO3	67	QC	?	0.0004	1	1	1	0.0097		2024-09-10T04:37:09
CCV NO2	68	QC	1	0.1273	1	1	1	0.9964		2024-09-10T04:38:15
CCB	69	QC	0	0.0001	1	1	1	0.0076		2024-09-10T04:39:27
L2451384-01	70	Unknown	?	0.0093	1	1	1	0.0794		2024-09-10T04:40:34
L2451384-02	71	Unknown	?	0.0092	1	1	1	0.0786		2024-09-10T04:41:40
L2451384-03	72	Unknown	?	0.0078	1	1	1	0.0671		2024-09-10T04:42:45
L2451384-04	73	Unknown	?	0.0077	1	1	1	0.0664		2024-09-10T04:43:49
L2451258-01	74	Unknown	?	0.0007	1	1	1	0.0121		2024-09-10T04:44:54
WG1969437-3	75	Unknown	?	0.0001	1	1	1	0.0076		2024-09-10T04:46:01
WG1969437-4	76	Unknown	?	0.0036	1	1	1	0.0350		2024-09-10T04:47:08
L2450131-02	77	Unknown	?	0.0039	1	1	1	0.0372		2024-09-10T04:48:16

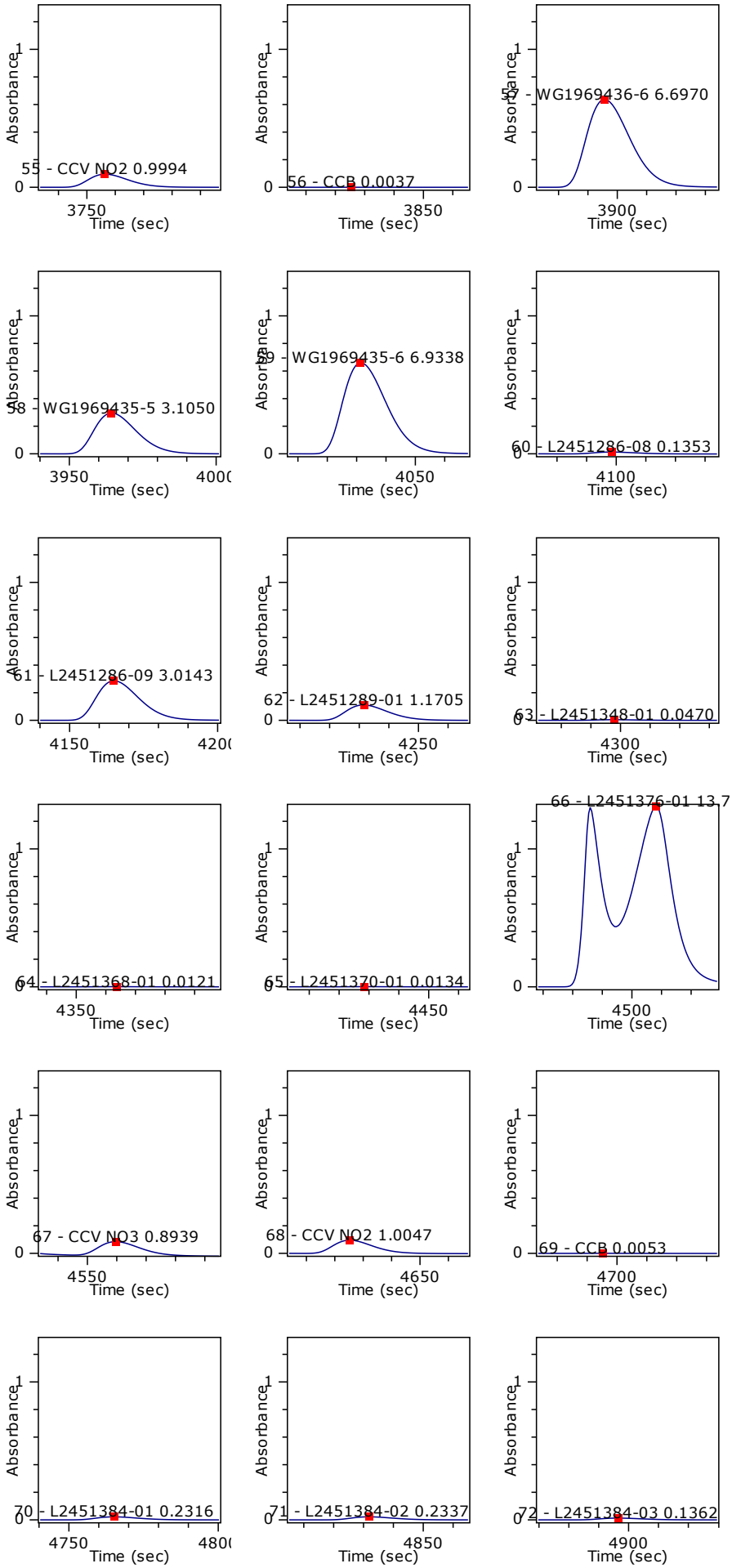
Peaks:

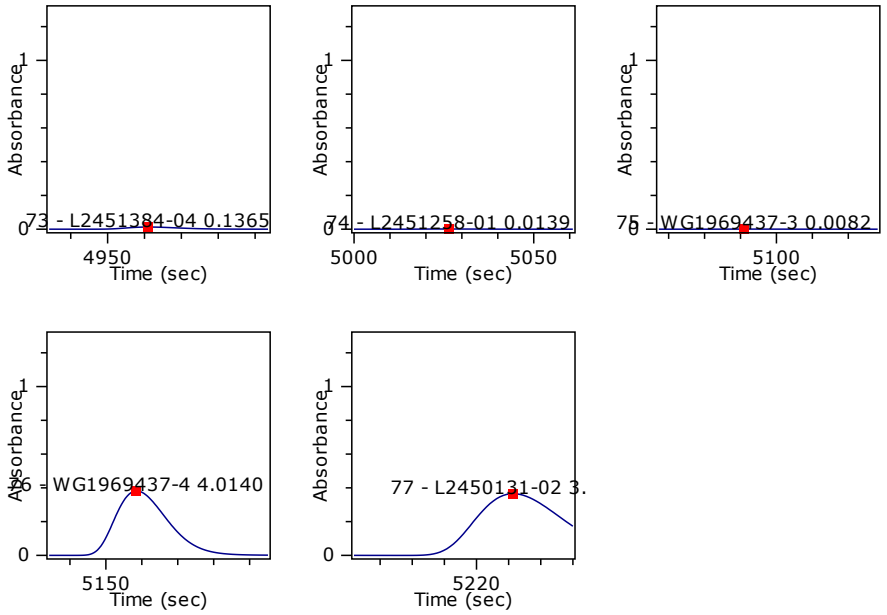
Channel: 1-NOx


Absorbance
1 - Stabil 0.0038
2 - NOx 8.0ppm 7.7504
3 - NOx 4.0ppm 4.0324
4 - NOx 1.0ppm 0.9943
5 - NOx 0.4ppm 0.4145
6 - NOx 0.2ppm 0.2019
7 - NOx 0.1ppm 0.0988
8 - NOx 0.0ppm 0.0033
9 - Nitrite 8.0ppm 7.7487
10 - Nitrite 4.0ppm 4.0657
11 - Nitrite 1.0ppm 0.9993
12 - Nitrite 0.4ppm 0.3884
13 - Nitrite 0.1ppm 0.0791
14 - Nitrite 0.05ppm 0.0436
15 - Nitrite 0.0ppm 0.0032
16 - CCV NO3 0.9994
17 - CCV NO2 1.0037
18 - CCB 0.0029
Time (sec)

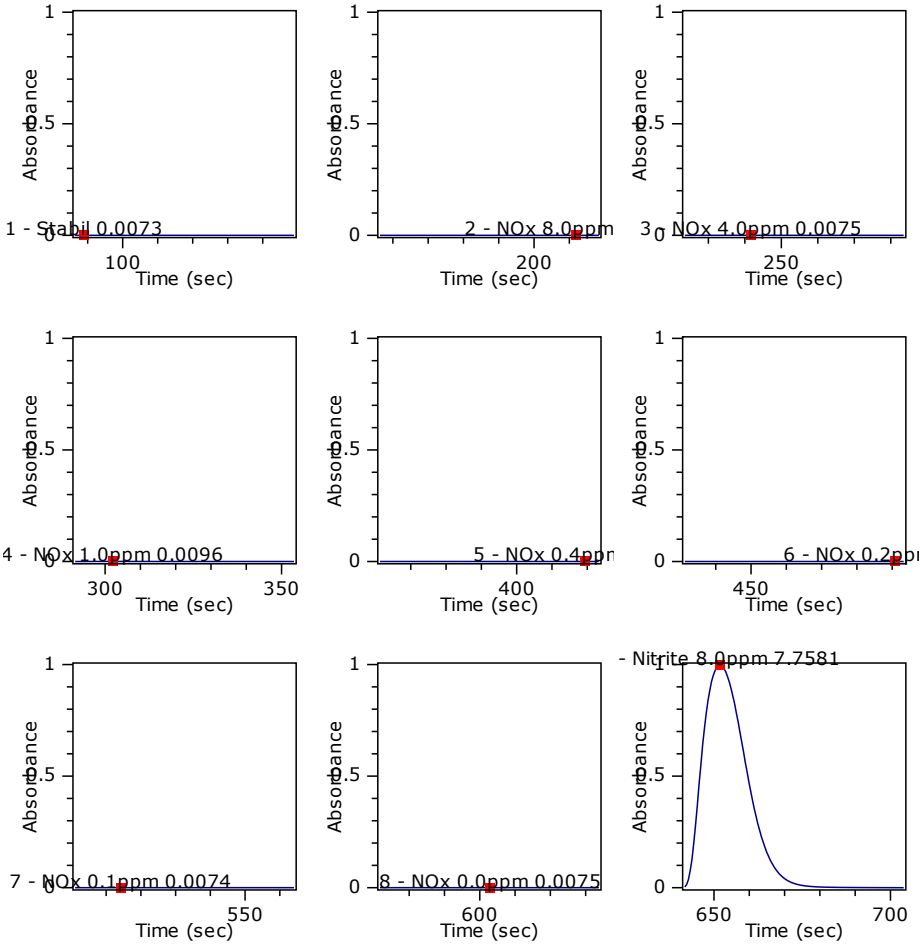

19 - ICV NO3 5.0 4.9902
20 - ICV NO2 5.0 5.0021
21 - ICV NO3 0.5 0.4946
22 - ICV NO2 0.5 0.4991
23 - ICB 0.0033
24 - BLANK NO3 0.0032
25 - LCS NO3 4.9828
BLANK NO2 0.0010
27 - LCS NO2 5.0030
28 - CCV NO3 0.9908
29 - CCV NO2 1.0008
30 - CCB 0.0029
31 - WG1969435-1 0.0032
32 - WG1969435-2 4.9786
/G1969436-1 0.0013
34 - WG1969436-2 4.9802
/G1969437-1 0.0010
36 - WG1969437-2 4.9826
Absorbance
Time (sec)

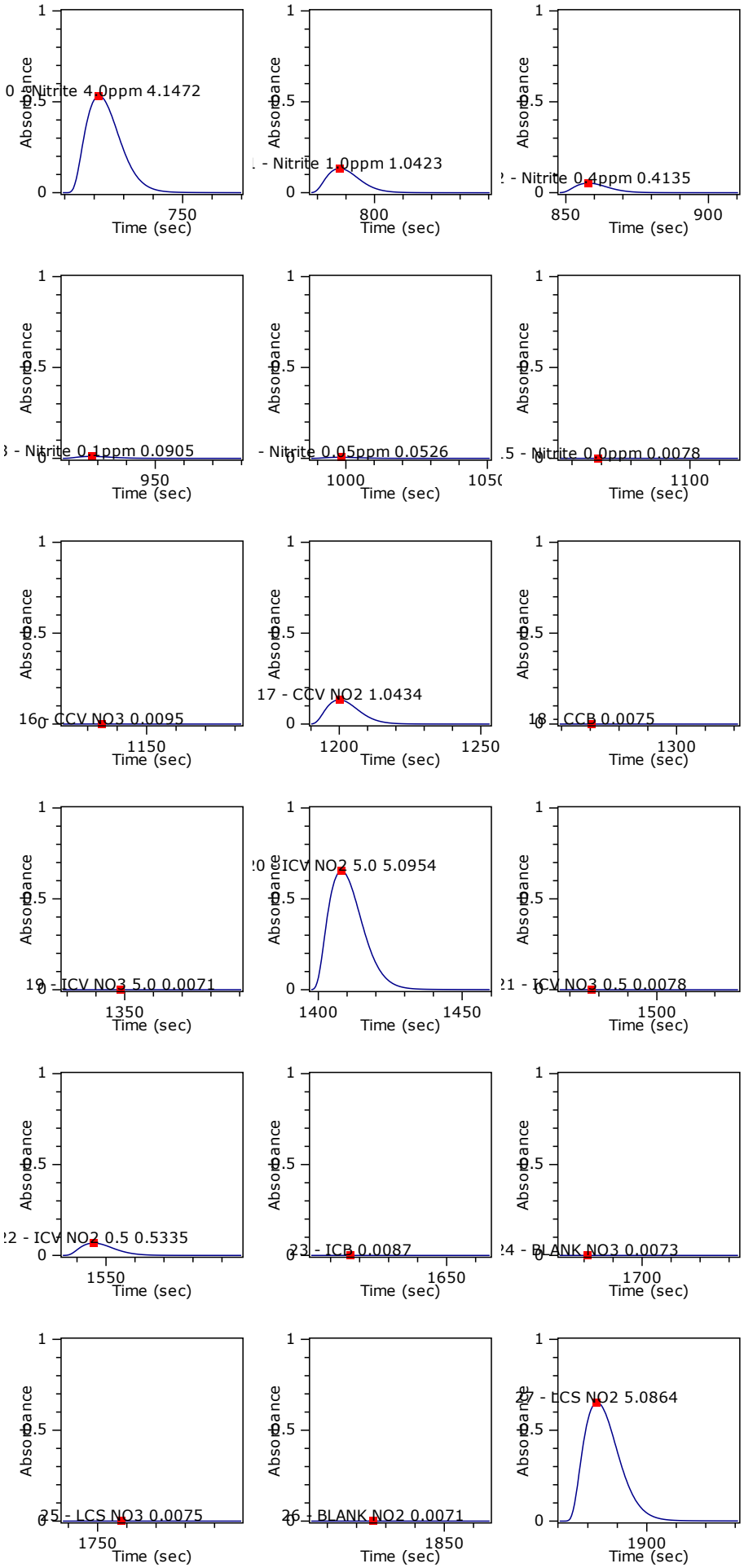

Absorbance
Time (sec)
WG1969438-1 0.0017
WG1969438-2 4.9812
WG1969439-1 0.0018
WG1969439-2 4.9830
41 - CCV NO3 0.9951
42 - CCV NO2 0.9957
43 - CCB 0.0031
44 - L2451222-01 0.0027
45 - L2451222-02 0.0027
46 - L2451233-01 1.0414
47 - L2451282-01 3.2304
48 - WG1969436-3 3.2391
49 - WG1969436-4 6.9476
50 - WG1969435-3 3.2390
51 - WG1969435-4 7.0803
52 - L2451286-07 3.1333
53 - WG1969436-5 3.1371
54 - CCV NO3 0.9900

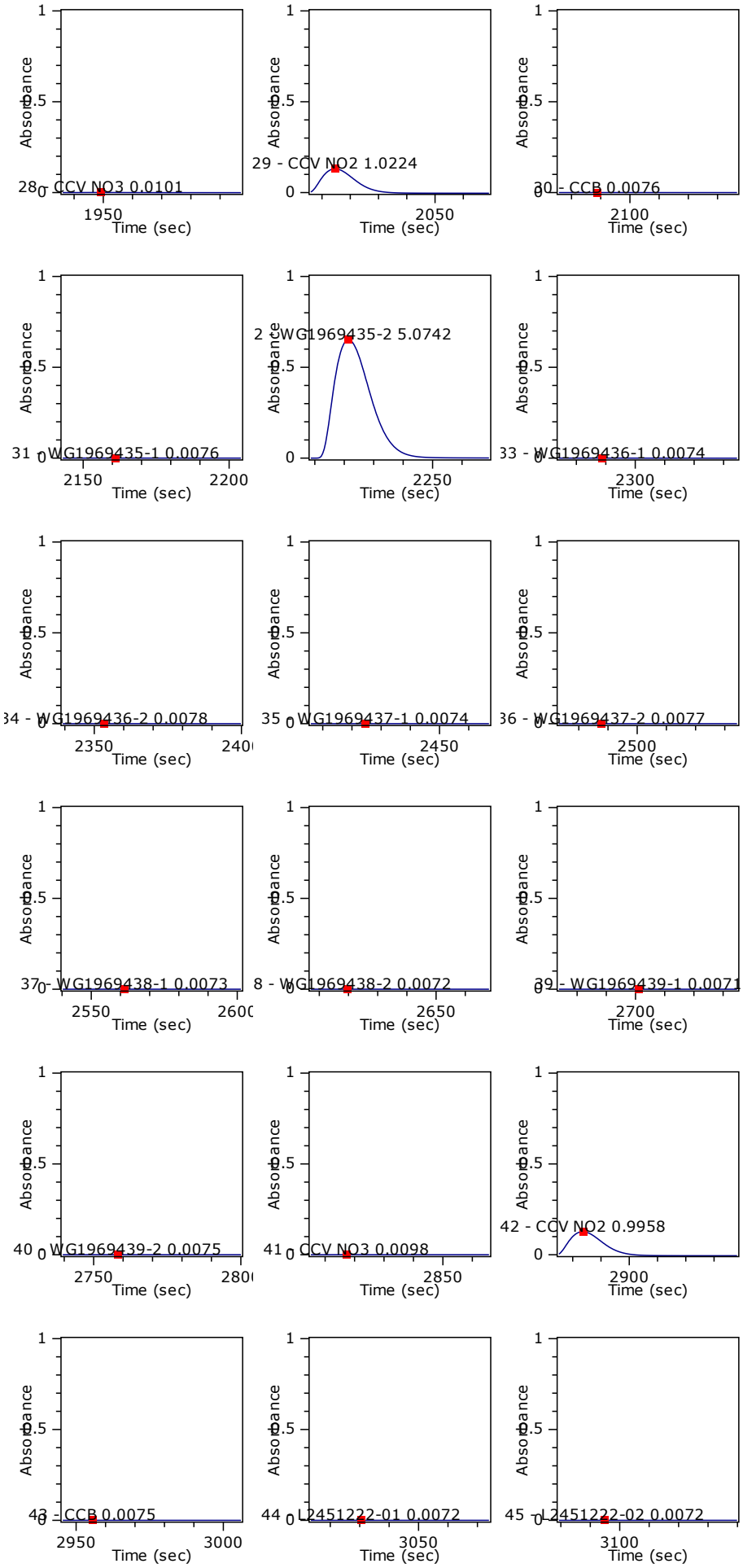

55 - CCV NO2 0.9994
56 - CCB 0.0037
57 - WG1969436-6 6.6970
58 - WG1969435-5 3.1050
59 - WG1969435-6 6.9338
60 - L2451286-08 0.1353
61 - L2451286-09 3.0143
62 - L2451289-01 1.1705
63 - L2451348-01 0.0470
64 - L2451368-01 0.0121
65 - L2451370-01 0.0134
66 - L2451376-01 13.7
67 - CCV NO3 0.8939
68 - CCV NO2 1.0047
69 - CCB 0.0053
70 - L2451384-01 0.2316
71 - L2451384-02 0.2337
72 - L2451384-03 0.1362
Absorbance
Time (sec)

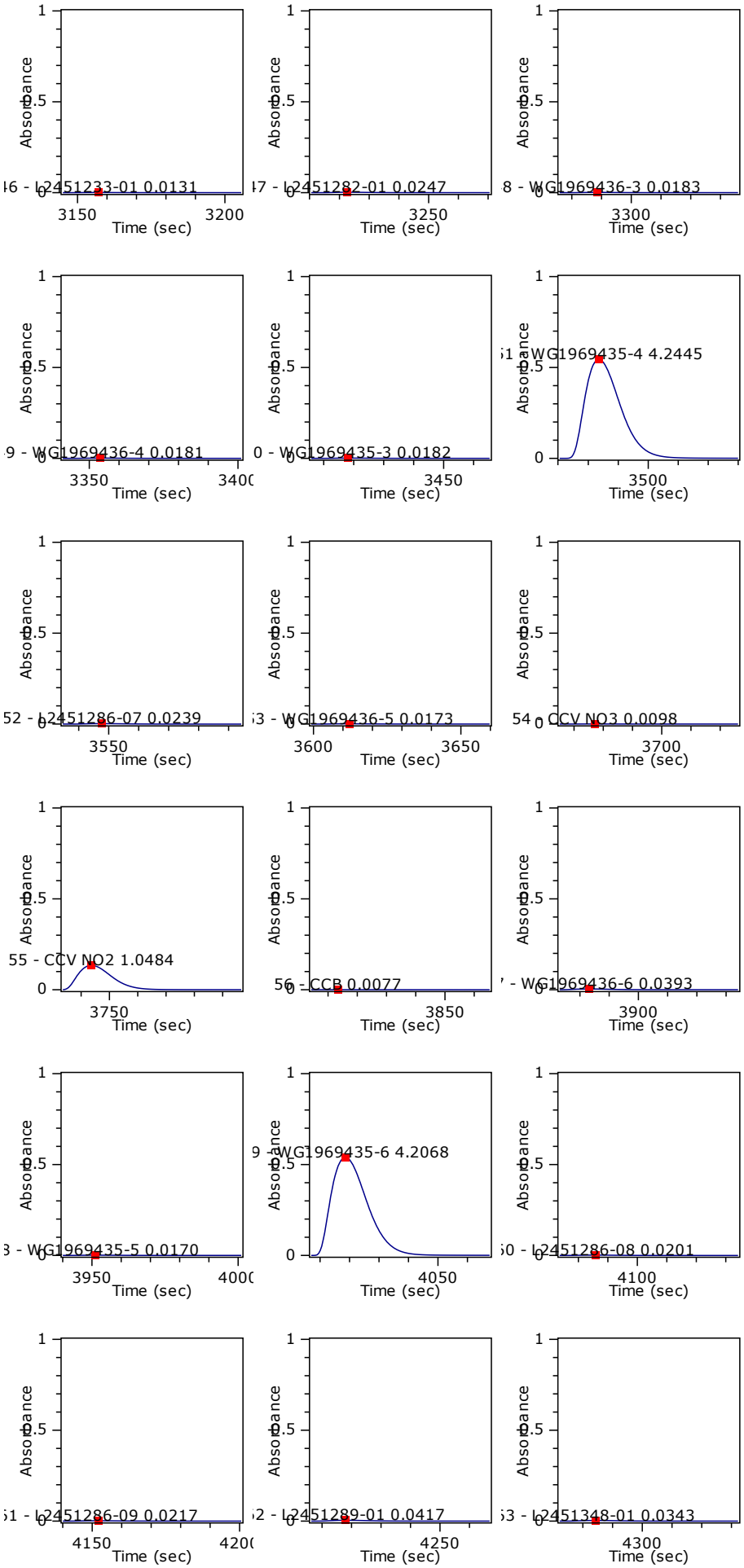


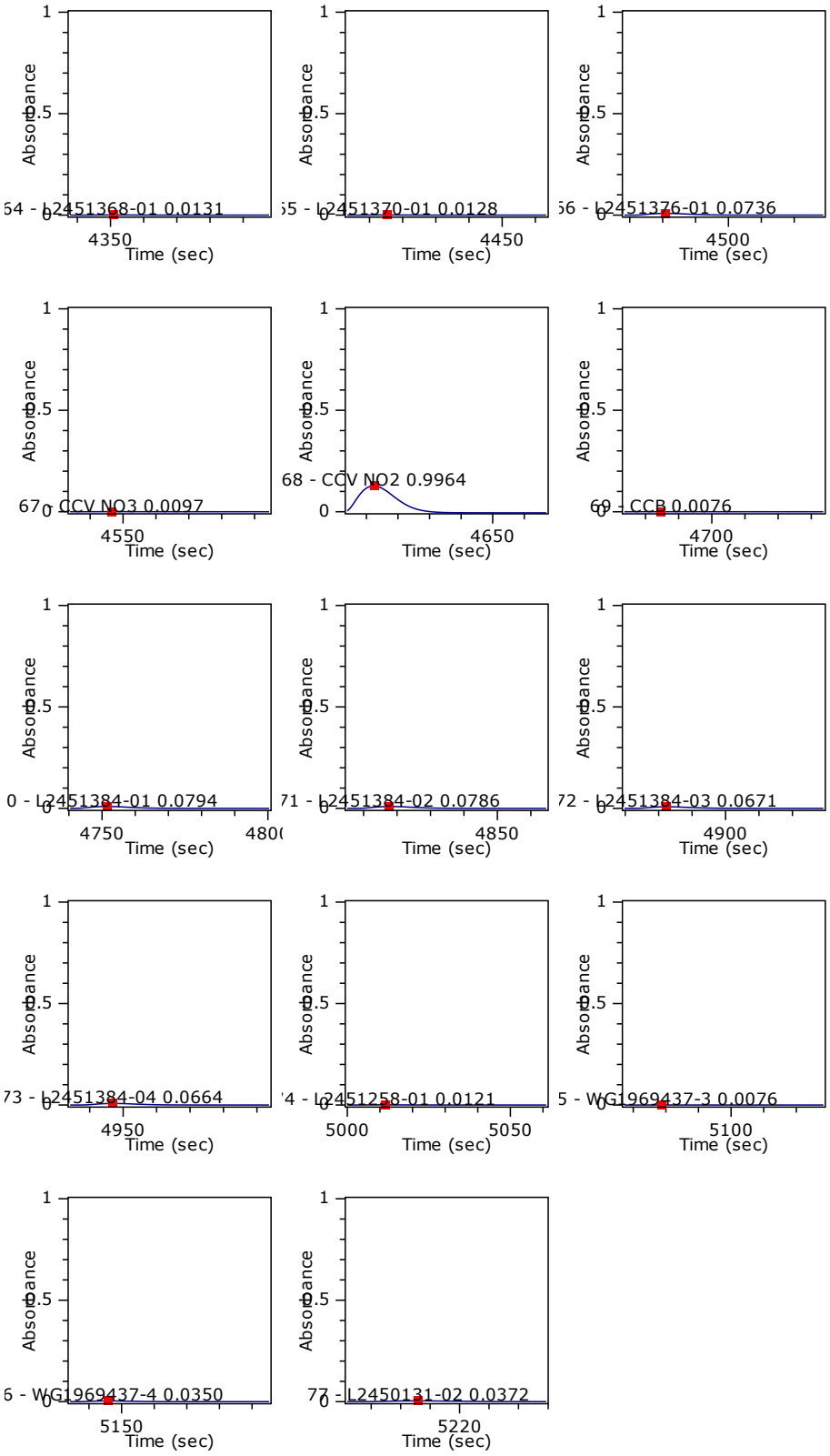
Channel: 2-NO2




0 - Nitrite 4.0ppm 4.1472
- Nitrite 1.0ppm 1.0423
2 - Nitrite 0.4ppm 0.4135
3 - Nitrite 0.1ppm 0.0905
- Nitrite 0.05ppm 0.0526
5 - Nitrite 0.0ppm 0.0078
16 - CCV NO3 0.0095
17 - CCV NO2 1.0434
18 - CCB 0.0075
ICV NO2 5.0 5.0954
19 - ICV NO3 5.0 0.0071
21 - ICV NO3 0.5 0.0078
22 - ICV NO2 0.5 0.5335
23 - ICB 0.0087
24 - BLANK NO3 0.0073
25 - LCS NO3 0.0075
26 - BLANK NO2 0.0071
27 - LCS NO2 5.0864
Absorbance
Time (sec)


28 - CCV NO3 0.0101
29 - CCV NO2 1.0224
30 - CCB 0.0076
31 - WG1969435-1 0.0076
2 - WG1969435-2 5.0742
33 - WG1969436-1 0.0074
34 - WG1969436-2 0.0078
35 - WG1969437-1 0.0074
36 - WG1969437-2 0.0077
37 - WG1969438-1 0.0073
8 - WG1969438-2 0.0072
39 - WG1969439-1 0.0071
40 - WG1969439-2 0.0075
41 - CCV NO3 0.0098
42 - CCV NO2 0.9958
43 - CCB 0.0075
44 - L2451222-01 0.0072
45 - L2451222-02 0.0072
Absorbance
Time (sec)


Absorbance
Time (sec)
46 - L2451233-01 0.0131
47 - L2451282-01 0.0247
48 - WG1969436-3 0.0183
49 - WG1969436-4 0.0181
50 - WG1969435-3 0.0182
51 - WG1969435-4 4.2445
52 - L2451286-07 0.0239
53 - WG1969436-5 0.0173
54 - CCV NO3 0.0098
55 - CCV NO2 1.0484
56 - CCB 0.0077
57 - WG1969436-6 0.0393
58 - WG1969435-6 4.2068
59 - WG1969435-5 0.0170
60 - L2451286-08 0.0201
61 - L2451286-09 0.0217
62 - L2451289-01 0.0417
63 - L2451348-01 0.0343



Data Processing Parameters:

Channel: 1-NOx

Response parameter	Peak Height
Filter Type	None
Filter Window	3
Enable Peak Window	False
Peak Window Start	0
Peak Window Stop	0

Enable Baseline Correction	False
Enable 2 Point Correction	False
Baseline Start	0
Baseline Stop	0
Point 2 Baseline Start	0
Point 2 Baseline Stop	0
Background Correction	Single Wavelength
Ref Wavelength 1	600
Ref Wavelength 2	0

Channel: 2-NO2

Response parameter	Peak Height
Filter Type	None
Filter Window	3
Enable Peak Window	False
Peak Window Start	0
Peak Window Stop	0
Enable Baseline Correction	False
Enable 2 Point Correction	False
Baseline Start	0
Baseline Stop	0
Point 2 Baseline Start	0
Point 2 Baseline Stop	0
Background Correction	Single Wavelength
Ref Wavelength 1	600
Ref Wavelength 2	0

Method Log:

```
FIAsoft FIAsoft v3.1.10

FIAlyzer Settings
------------
FIAlab1 Serial Number: FIA31428
FIAlab2 Serial Number: FIA31429
Pump: Connected on COM8

Spectrometer Settings
Spectrometer1
------------
Spectrometer Type: tec5
Integration Time: 34.4
Bandwidth: 2
Data Acq Rate: 2
Use Full Spectrum: False
        |---  Low: 500nm
        |--- High: 650nm
Reduce to Boxcar: True

Spectrometer2
------------
Spectrometer Type: tec5
Integration Time: 2.8
Bandwidth: 2
Data Acq Rate: 2
Use Full Spectrum: False
        |---  Low: 500nm
        |--- High: 650nm
Reduce to Boxcar: True

Start Time
------------
2024-09-10T03:21:23

Method
------------
```

```
' Method Script for NOx-NO2

Autosave Data C:\FIAlab\Autosave Data\DateTime
FIAlab Injection Valve Sample Load
Message Cadmium Column on for NOx
FIAlab Peristaltic Pump Clockwise(%) 55

Autosampler Wash
Delay (sec) 2
Next Sample
Delay (sec) 35  'StartDelay2 - Controls initial sample introduction.

FIAlab1 Injection Valve Sample Inject
Autosampler Probe Up
Delay (sec) 2
Autosampler Position (#) Rinse
FIAlab2 Injection Valve Sample Inject
Delay (sec) 15   'StartDelay3 - Should be set equal to LoopDelay3

Autosampler Probe Up
Delay (sec) 5   'StartDelay4 - Should be set equal to LoopDelay4

Loop Start

   Analyte New Sample
   Delay (sec) 1
   Next Sample
   Autosampler Probe Force Down

   Spectrometer Reference Scan
   Spectrometer Absorbance Scanning

   Delay (sec) 3   ' LoopDelay1 - Controls sample transit & loop empty. Controls back baseline.

   FIAlab Injection Valve Sample Load

   Delay (sec) 35   ' LoopDelay2 - Controls sample transit & loop fill. Controls back baseline.

   FIAlab1 Injection Valve Sample Inject
   Autosampler Probe Up
   Delay (sec) 5
   Autosampler Position (#) Rinse
   FIAlab2 Injection Valve Sample Inject

   Delay (sec) 10   ' LoopDelay3 - Controls loop empty & probe rinse time. Inverse controls front baseline.

   Autosampler Probe Up

   Delay (sec) 3   ' LoopDelay4 - Controls loop empty. Inverse controls front baseline.

   Spectrometer Stop Scanning

Loop End

Autosampler Position (#) Rinse
Delay (sec) 20
Autosampler Probe Up
Delay (sec) 30
FIAlab Peristaltic Pump Clockwise(%) 5
Autoexport Report C:\FIAlab\autoreport\NOxNO2\DateTime
Message Run is Complete
```

Method File Location: C:\FIAlab\FIAlab User Files\Methods\Method_NOx+NO2.fia

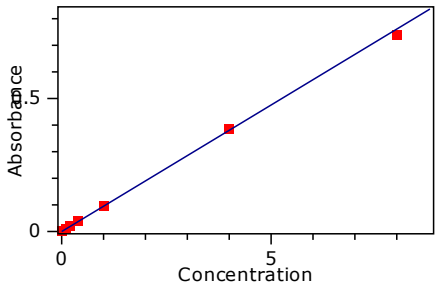
Graphical report generated by FIAsoft v3.1.10
Report generated on 2024-09-10 06:35:55
Data file (.dat): C:\FIAlab\Autosave Data\2024-09-10-063535.dat

Dataset Notes:

Analyst	

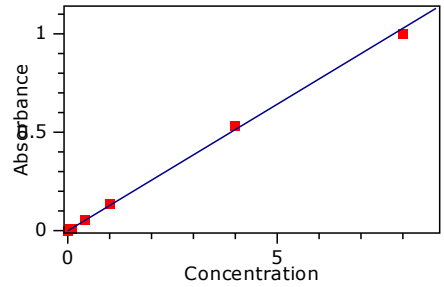
Dataset Notes Table Location: C:\FIAlab\FIAlab User Files\Tables\Dataset Notes\Analyst.csv

Calibrations:



Channel: 1-NOx
Fit_Order: 1
Weighting: 1/response
Standard relation
Coefficients:
A: -0.00020
B: 0.09514
R^2: 0.99965
RSE(%): 2.55403
% Max. for OVR: 100

InjNo	Name	Response	Known Conc. mg/L	Calc. Conc. mg/L	% Error	Time
10001	NOx 8.0ppm	0.73720	8.00000	7.75040	3.12	N/A
10002	NOx 4.0ppm	0.38350	4.00000	4.03240	0.81	N/A
10003	NOx 1.0ppm	0.09440	1.00000	0.99430	0.57	N/A
10004	NOx 0.4ppm	0.03920	0.40000	0.41450	3.62	N/A
10005	NOx 0.2ppm	0.01900	0.20000	0.20190	0.94	N/A
10006	NOx 0.1ppm	0.00920	0.10000	0.09880	1.17	N/A
10007	NOx 0.0ppm	0.00010	0.00000	0.00330	NA	N/A



Channel: 2-NO2
Fit_Order: 1
Weighting: 1/response
Standard relation
Coefficients:
A: -0.00088
B: 0.12861
R^2: 0.99896
RSE(%): 6.50972
% Max. for OVR: 100

InjNo	Name	Response	Known Conc. mg/L	Calc. Conc. mg/L	% Error	Time
10001	Nitrite 8.0ppm	0.99690	8.00000	7.75810	3.02	N/A
10002	Nitrite 4.0ppm	0.53250	4.00000	4.14720	3.68	N/A
10003	Nitrite 1.0ppm	0.13320	1.00000	1.04230	4.23	N/A
10004	Nitrite 0.4ppm	0.05230	0.40000	0.41350	3.38	N/A
10005	Nitrite 0.1ppm	0.01080	0.10000	0.09050	9.52	N/A
10006	Nitrite 0.05ppm	0.00590	0.05000	0.05260	5.17	N/A
10007	Nitrite 0.0ppm	0.00010	0.00000	0.00780	NA	N/A

Results:

Channel: 1-NOx

Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
Stabil	1	Unknown	?	0.0004	1	1	1	0.0068		2024-09-10T04:56:23
CCV NO3	2	QC	1	0.0950	1	1	1	1.0006		2024-09-10T04:57:35
CCV NO2	3	QC	?	0.0947	1	1	1	0.9975		2024-09-10T04:58:41
CCB	4	QC	0	0.0002	1	1	1	0.0039		2024-09-10T04:59:50

Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
WG1969436-6	5	Unknown	?	0.6371	1	1	1	6.6985		2024-09-10T05:00:59
WG1969435-5	6	Unknown	?	0.2962	1	1	1	3.1155		2024-09-10T05:02:06
WG1969435-6	7	Unknown	?	0.6602	1	1	1	6.9410		2024-09-10T05:03:14
L2451286-08	8	Unknown	?	0.0126	1	1	1	0.1340		2024-09-10T05:04:20
L2451286-09	9	Unknown	?	0.2841	1	1	1	2.9880		2024-09-10T05:05:27
L2451289-01	10	Unknown	?	0.1115	1	1	1	1.1740		2024-09-10T05:06:33
L2451348-01	11	Unknown	?	0.0044	1	1	1	0.0487		2024-09-10T05:07:39
L2451368-01	12	Unknown	?	0.0009	1	1	1	0.0118		2024-09-10T05:08:45
L2451370-01	13	Unknown	?	0.0011	1	1	1	0.0135		2024-09-10T05:09:52
L2451376-01; 2 UP TO 10	14	Unknown	?	1.2866	5	1	1	67.6247	OVR	2024-09-10T05:10:58
CCV NO3	15	QC	1	0.0947	1	1	1	0.9970		2024-09-10T05:12:05
CCV NO2	16	QC	?	0.0953	1	1	1	1.0037		2024-09-10T05:13:10
CCB	17	QC	0	0.0002	1	1	1	0.0041		2024-09-10T05:14:20
L2451384-01	18	Unknown	?	0.0217	1	1	1	0.2298		2024-09-10T05:15:29
L2451384-02	19	Unknown	?	0.0223	1	1	1	0.2368		2024-09-10T05:16:35
L2451384-03	20	Unknown	?	0.0129	1	1	1	0.1377		2024-09-10T05:17:39
L2451384-04	21	Unknown	?	0.0128	1	1	1	0.1369		2024-09-10T05:18:44
L2451258-01	22	Unknown	?	0.0011	1	1	1	0.0133		2024-09-10T05:19:48
WG1969437-3	23	Unknown	?	0.0006	1	1	1	0.0079		2024-09-10T05:20:56
WG1969437-4	24	Unknown	?	0.3825	1	1	1	4.0218		2024-09-10T05:22:01
L2450131-02	25	Unknown	?	0.3640	1	1	1	3.8281		2024-09-10T05:23:09
L2450131-04	26	Unknown	?	0.3167	1	1	1	3.3309		2024-09-10T05:24:15
L2450131-07	27	Unknown	?	0.2629	1	1	1	2.7648		2024-09-10T05:25:22
CCV NO3	28	QC	1	0.0956	1	1	1	1.0069		2024-09-10T05:26:28
CCV NO2	29	QC	?	0.0955	1	1	1	1.0058		2024-09-10T05:27:33
CCB	30	QC	0	0.0001	1	1	1	0.0034		2024-09-10T05:28:44
L2450245-01	31	Unknown	?	0.1336	1	1	1	1.4059		2024-09-10T05:29:53
WG1969438-3	32	Unknown	?	0.1331	1	1	1	1.4009		2024-09-10T05:31:01
WG1969438-4	33	Unknown	?	0.5069	1	1	1	5.3293		2024-09-10T05:32:07
L2450245-02	34	Unknown	?	1.0467	1	1	1	11.0030	OVR	2024-09-10T05:33:13
L2450270-01	35	Unknown	?	0.3689	1	1	1	3.8796		2024-09-10T05:34:18
L2450344-01	36	Unknown	?	0.1372	1	1	1	1.4445		2024-09-10T05:35:23
L2450565-	37	Unknown	?	0.0033	1	1	1	0.0365		2024-09-

Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
01										10T05:36:28
L2450891-01	38	Unknown	?	0.0364	1	1	1	0.3841		2024-09-10T05:37:33
WG1969438-5	39	Unknown	?	0.0361	1	1	1	0.3817		2024-09-10T05:38:37
WG1969438-6	40	Unknown	?	0.4188	1	1	1	4.4042		2024-09-10T05:39:42
CCV NO3	41	QC	1	0.0951	1	1	1	1.0014		2024-09-10T05:40:46
CCV NO2	42	QC	?	0.0958	1	1	1	1.0087		2024-09-10T05:41:52
CCB	43	QC	0	0.0001	1	1	1	0.0035		2024-09-10T05:43:02
L2450891-04	44	Unknown	?	0.0370	1	1	1	0.3911		2024-09-10T05:44:13
L2450891-07	45	Unknown	?	0.0057	1	1	1	0.0616		2024-09-10T05:45:21
L2450891-10	46	Unknown	?	0.0057	1	1	1	0.0624		2024-09-10T05:46:28
L2450891-13	47	Unknown	?	0.0008	1	1	1	0.0108		2024-09-10T05:47:34
L2450891-16	48	Unknown	?	0.0029	1	1	1	0.0328		2024-09-10T05:48:42
L2450891-19	49	Unknown	?	0.0056	1	1	1	0.0611		2024-09-10T05:49:48
L2450891-22	50	Unknown	?	0.0060	1	1	1	0.0649		2024-09-10T05:50:53
L2450891-25	51	Unknown	?	0.0420	1	1	1	0.4436		2024-09-10T05:51:59
L2450891-28	52	Unknown	?	0.0079	1	1	1	0.0852		2024-09-10T05:53:05
L2450891-31	53	Unknown	?	0.0026	1	1	1	0.0298		2024-09-10T05:54:10
CCV NO3	54	QC	1	0.0953	1	1	1	1.0034		2024-09-10T05:55:16
CCV NO2	55	QC	?	0.0957	1	1	1	1.0083		2024-09-10T05:56:21
CCB	56	QC	0	0.0001	1	1	1	0.0032		2024-09-10T05:57:31
L2450907-01	57	Unknown	?	0.0564	1	1	1	0.5946		2024-09-10T05:58:41
L2451376-01; 1 UP TO 25	58	Unknown	?	0.3671	25	1	1	96.5020		2024-09-10T05:59:49
L2451251-02	59	Unknown	?	0.3569	1	1	1	3.7537		2024-09-10T06:00:56
L2450270-01	60	Unknown	?	0.3694	1	1	1	3.8842		2024-09-10T06:02:01
L2450626-01	61	Unknown	?	0.0287	1	1	1	0.3041		2024-09-10T06:03:06
L2450626-02	62	Unknown	?	0.0115	1	1	1	0.1230		2024-09-10T06:04:11
L2450626-03	63	Unknown	?	0.0017	1	1	1	0.0200		2024-09-10T06:05:15
L2450626-04	64	Unknown	?	0.0009	1	1	1	0.0111		2024-09-10T06:06:20
L2450626-05	65	Unknown	?	0.0025	1	1	1	0.0278		2024-09-10T06:07:29
L2450626-06	66	Unknown	?	0.0015	1	1	1	0.0176		2024-09-10T06:08:36
CCV NO3	67	QC	1	0.0950	1	1	1	1.0007		2024-09-10T06:09:42
CCV NO2	68	QC	?	0.0959	1	1	1	1.0098		2024-09-10T06:10:47
CCB	69	QC	0	0.0001	1	1	1	0.0035		2024-09-10T06:11:57

Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
L2450626-07	70	Unknown	?	0.0529	1	1	1	0.5579		2024-09-10T06:13:09
L2450626-08	71	Unknown	?	0.0598	1	1	1	0.6301		2024-09-10T06:14:16
L2451387-02	72	Unknown	?	0.2569	1	1	1	2.7022		2024-09-10T06:15:23
L2451387-03	73	Unknown	?	0.0488	1	1	1	0.5148		2024-09-10T06:16:29
L2451391-01	74	Unknown	?	0.0016	1	1	1	0.0184		2024-09-10T06:17:36
L2451391-02	75	Unknown	?	0.0480	1	1	1	0.5070		2024-09-10T06:18:40
L2451391-03	76	Unknown	?	1.3100	1	1	1	13.7701	OVR	2024-09-10T06:19:51
L2451391-04	77	Unknown	?	0.0706	1	1	1	0.7443		2024-09-10T06:20:52
CCV NO3	78	QC	1	0.0943	1	1	1	0.9930		2024-09-10T06:21:57
CCV NO2	79	QC	?	0.0958	1	1	1	1.0088		2024-09-10T06:23:02
CCB	80	QC	0	0.0002	1	1	1	0.0043		2024-09-10T06:24:12

Channel: 2-NO2

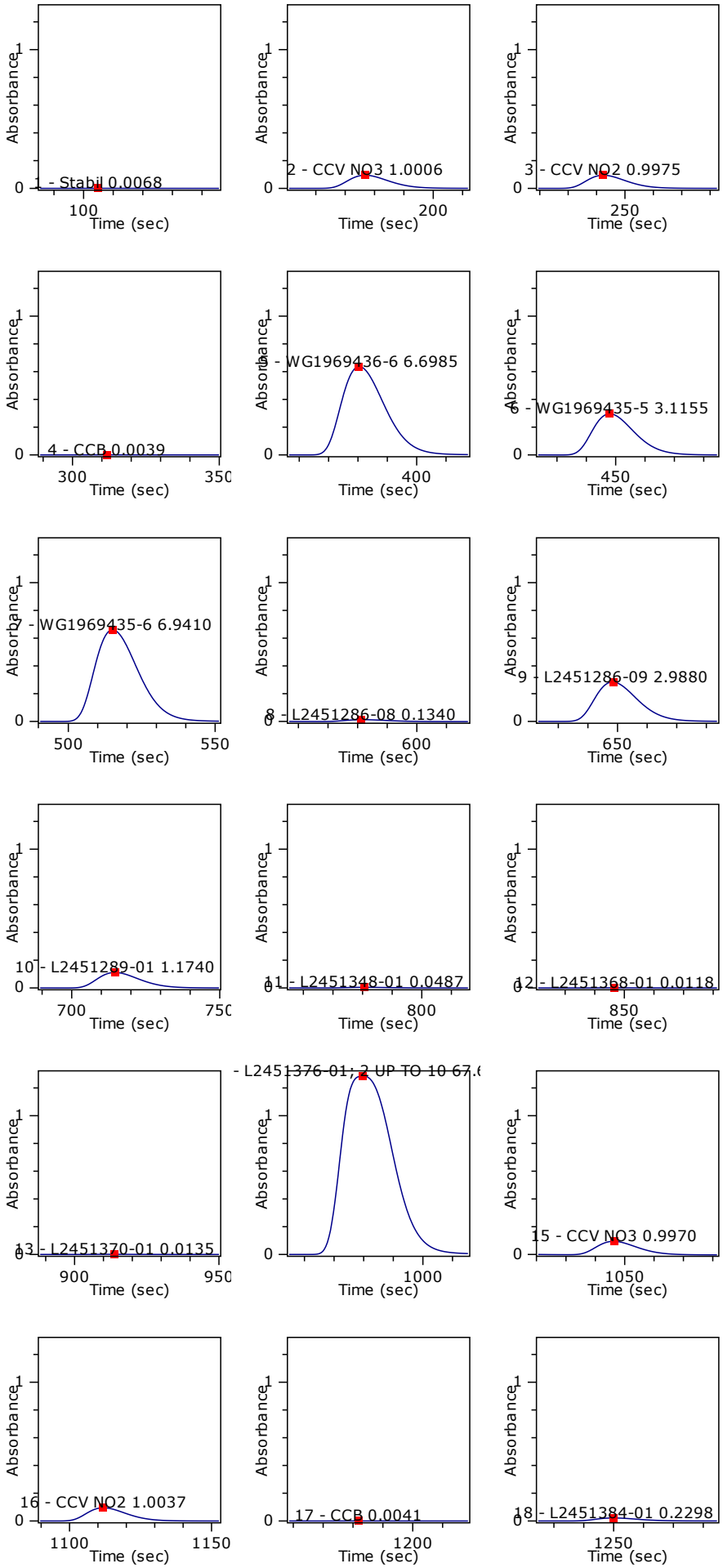
Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
Stabil	1	Unknown	?	0.0001	1	1	1	0.0075		2024-09-10T04:56:27
CCV NO3	2	QC	?	0.0005	1	1	1	0.0110		2024-09-10T04:57:22
CCV NO2	3	QC	1	0.1331	1	1	1	1.0417		2024-09-10T04:58:28
CCB	4	QC	0	0.0001	1	1	1	0.0075		2024-09-10T04:59:40
WG1969436-6	5	Unknown	?	0.0041	1	1	1	0.0391		2024-09-10T05:00:46
WG1969435-5	6	Unknown	?	0.0013	1	1	1	0.0171		2024-09-10T05:01:54
WG1969435-6	7	Unknown	?	0.5474	1	1	1	4.2631		2024-09-10T05:03:00
L2451286-08	8	Unknown	?	0.0017	1	1	1	0.0204		2024-09-10T05:04:07
L2451286-09	9	Unknown	?	0.0019	1	1	1	0.0218		2024-09-10T05:05:14
L2451289-01	10	Unknown	?	0.0046	1	1	1	0.0423		2024-09-10T05:06:20
L2451348-01	11	Unknown	?	0.0036	1	1	1	0.0345		2024-09-10T05:07:26
L2451368-01	12	Unknown	?	0.0008	1	1	1	0.0128		2024-09-10T05:08:32
L2451370-01	13	Unknown	?	0.0008	1	1	1	0.0128		2024-09-10T05:09:37
L2451376-01; 2 UP TO 10	14	Unknown	?	0.0018	5	1	1	0.1024		2024-09-10T05:10:46
CCV NO3	15	QC	?	0.0004	1	1	1	0.0098		2024-09-10T05:11:51
CCV NO2	16	QC	1	0.1338	1	1	1	1.0474		2024-09-10T05:12:57
CCB	17	QC	0	0.0001	1	1	1	0.0076		2024-09-10T05:14:10
L2451384-01	18	Unknown	?	0.0093	1	1	1	0.0795		2024-09-10T05:15:15
L2451384-02	19	Unknown	?	0.0095	1	1	1	0.0809		2024-09-10T05:16:21

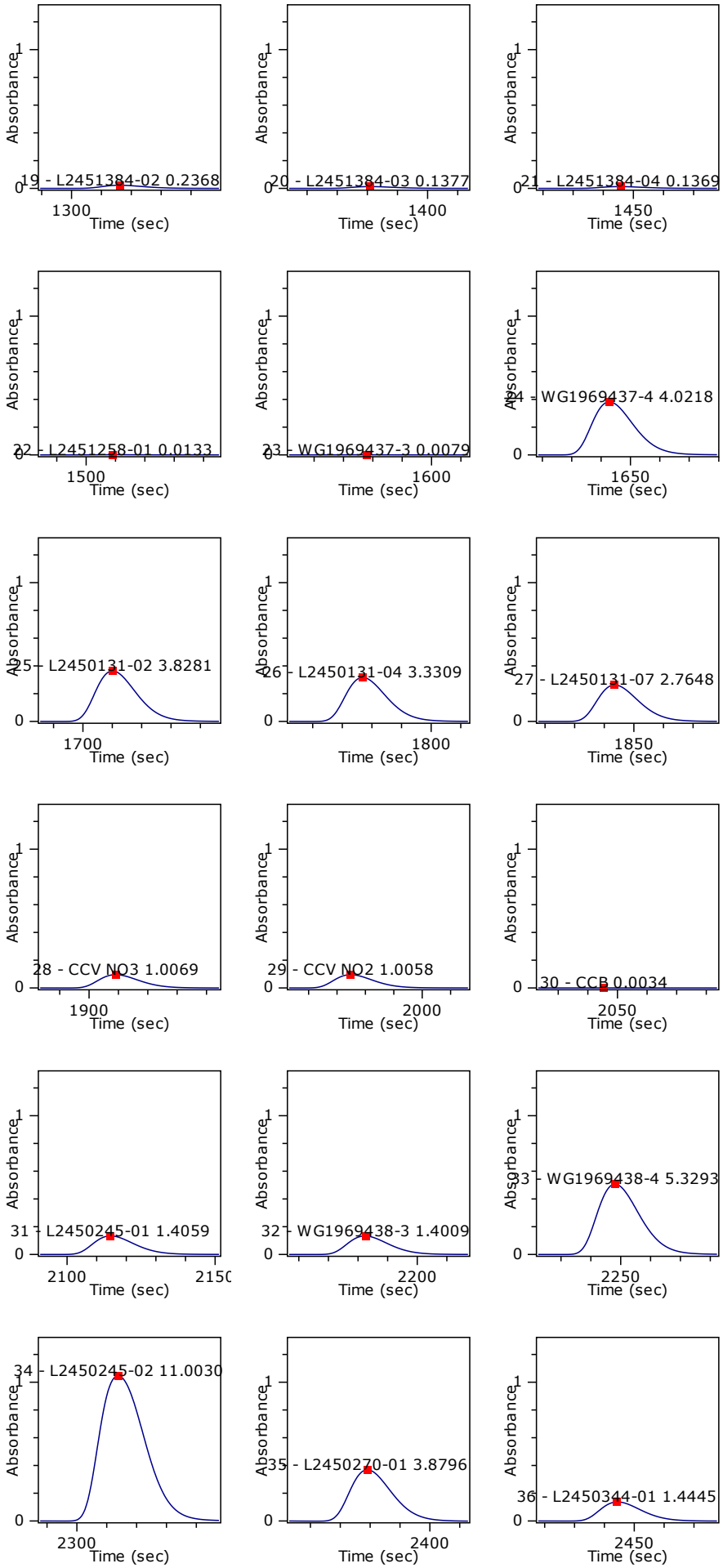
Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
L2451384-03	20	Unknown	?	0.0079	1	1	1	0.0682		2024-09-10T05:17:26
L2451384-04	21	Unknown	?	0.0077	1	1	1	0.0670		2024-09-10T05:18:30
L2451258-01	22	Unknown	?	0.0007	1	1	1	0.0122		2024-09-10T05:19:34
WG1969437-3	23	Unknown	?	0.0001	1	1	1	0.0079		2024-09-10T05:20:41
WG1969437-4	24	Unknown	?	0.0037	1	1	1	0.0355		2024-09-10T05:21:49
L2450131-02	25	Unknown	?	0.0040	1	1	1	0.0379		2024-09-10T05:22:56
L2450131-04	26	Unknown	?	0.0024	1	1	1	0.0257		2024-09-10T05:24:02
L2450131-07	27	Unknown	?	0.0021	1	1	1	0.0229		2024-09-10T05:25:09
CCV NO3	28	QC	?	0.0004	1	1	1	0.0096		2024-09-10T05:26:14
CCV NO2	29	QC	1	0.1305	1	1	1	1.0213		2024-09-10T05:27:20
CCB	30	QC	0	0.0001	1	1	1	0.0079		2024-09-10T05:28:34
L2450245-01	31	Unknown	?	0.0449	1	1	1	0.3559		2024-09-10T05:29:40
WG1969438-3	32	Unknown	?	0.0447	1	1	1	0.3541		2024-09-10T05:30:48
WG1969438-4	33	Unknown	?	0.0439	1	1	1	0.3483		2024-09-10T05:31:53
L2450245-02	34	Unknown	?	0.0856	1	1	1	0.6727		2024-09-10T05:32:59
L2450270-01	35	Unknown	?	0.0008	1	1	1	0.0129		2024-09-10T05:34:03
L2450344-01	36	Unknown	?	0.0008	1	1	1	0.0130		2024-09-10T05:35:09
L2450565-01	37	Unknown	?	0.0024	1	1	1	0.0254		2024-09-10T05:36:14
L2450891-01	38	Unknown	?	0.0008	1	1	1	0.0129		2024-09-10T05:37:17
WG1969438-5	39	Unknown	?	0.0001	1	1	1	0.0078		2024-09-10T05:38:22
WG1969438-6	40	Unknown	?	0.0005	1	1	1	0.0106		2024-09-10T05:39:26
CCV NO3	41	QC	?	0.0004	1	1	1	0.0096		2024-09-10T05:40:34
CCV NO2	42	QC	1	0.1322	1	1	1	1.0348		2024-09-10T05:41:39
CCB	43	QC	0	0.0001	1	1	1	0.0076		2024-09-10T05:42:49
L2450891-04	44	Unknown	?	0.0009	1	1	1	0.0135		2024-09-10T05:44:00
L2450891-07	45	Unknown	?	0.0007	1	1	1	0.0124		2024-09-10T05:45:09
L2450891-10	46	Unknown	?	0.0007	1	1	1	0.0124		2024-09-10T05:46:16
L2450891-13	47	Unknown	?	0.0007	1	1	1	0.0123		2024-09-10T05:47:23
L2450891-16	48	Unknown	?	0.0008	1	1	1	0.0128		2024-09-10T05:48:29
L2450891-19	49	Unknown	?	0.0008	1	1	1	0.0131		2024-09-10T05:49:34
L2450891-22	50	Unknown	?	0.0007	1	1	1	0.0123		2024-09-10T05:50:40
L2450891-25	51	Unknown	?	0.0008	1	1	1	0.0131		2024-09-10T05:51:47
L2450891-28	52	Unknown	?	0.0013	1	1	1	0.0169		2024-09-10T05:52:51

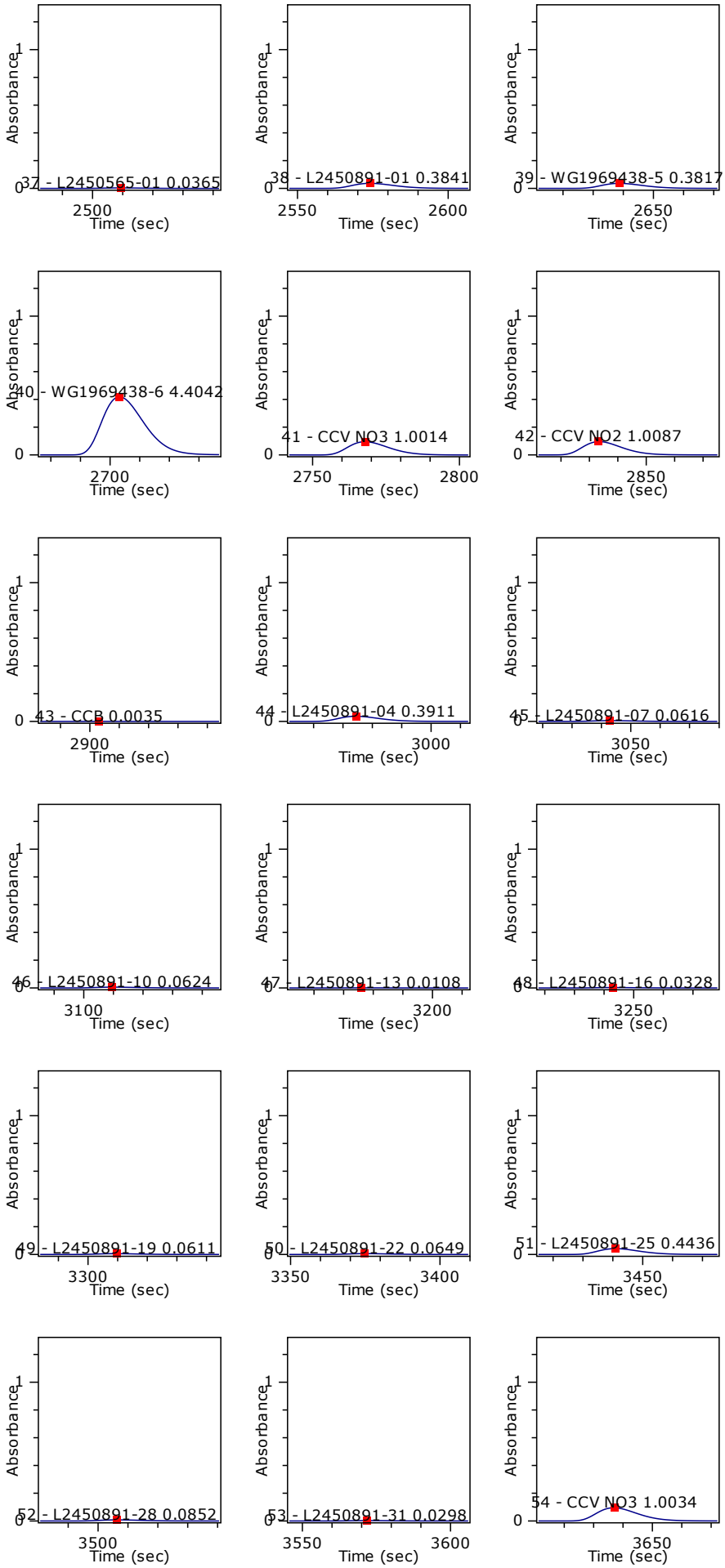
Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
L2450891-31	53	Unknown	?	0.0008	1	1	1	0.0127		2024-09-10T05:53:57
CCV NO3	54	QC	?	0.0004	1	1	1	0.0097		2024-09-10T05:55:01
CCV NO2	55	QC	1	0.1304	1	1	1	1.0207		2024-09-10T05:56:08
CCB	56	QC	0	0.0001	1	1	1	0.0076		2024-09-10T05:57:23
L2450907-01	57	Unknown	?	0.0009	1	1	1	0.0137		2024-09-10T05:58:26
L2451376-01; 1 UP TO 25	58	Unknown	?	0.0004	25	1	1	0.2419		2024-09-10T05:59:37
L2451251-02	59	Unknown	?	0.0023	1	1	1	0.0247		2024-09-10T06:00:43
L2450270-01	60	Unknown	?	0.0007	1	1	1	0.0123		2024-09-10T06:01:48
L2450626-01	61	Unknown	?	0.0007	1	1	1	0.0121		2024-09-10T06:02:52
L2450626-02	62	Unknown	?	0.0008	1	1	1	0.0127		2024-09-10T06:03:57
L2450626-03	63	Unknown	?	0.0011	1	1	1	0.0151		2024-09-10T06:05:02
L2450626-04	64	Unknown	?	0.0008	1	1	1	0.0128		2024-09-10T06:06:09
L2450626-05	65	Unknown	?	0.0008	1	1	1	0.0131		2024-09-10T06:07:16
L2450626-06	66	Unknown	?	0.0012	1	1	1	0.0158		2024-09-10T06:08:24
CCV NO3	67	QC	?	0.0004	1	1	1	0.0097		2024-09-10T06:09:29
CCV NO2	68	QC	1	0.1303	1	1	1	1.0203		2024-09-10T06:10:35
CCB	69	QC	0	0.0001	1	1	1	0.0077		2024-09-10T06:11:46
L2450626-07	70	Unknown	?	0.0008	1	1	1	0.0130		2024-09-10T06:12:55
L2450626-08	71	Unknown	?	0.0010	1	1	1	0.0145		2024-09-10T06:14:04
L2451387-02	72	Unknown	?	0.0889	1	1	1	0.6978		2024-09-10T06:15:10
L2451387-03	73	Unknown	?	0.0332	1	1	1	0.2652		2024-09-10T06:16:16
L2451391-01	74	Unknown	?	0.0007	1	1	1	0.0123		2024-09-10T06:17:21
L2451391-02	75	Unknown	?	0.0106	1	1	1	0.0890		2024-09-10T06:18:28
L2451391-03	76	Unknown	?	1.1167	1	1	1	8.6894	OVR	2024-09-10T06:19:33
L2451391-04	77	Unknown	?	0.0023	1	1	1	0.0245		2024-09-10T06:20:38
CCV NO3	78	QC	?	0.0005	1	1	1	0.0107		2024-09-10T06:21:45
CCV NO2	79	QC	1	0.1327	1	1	1	1.0389		2024-09-10T06:22:49
CCB	80	QC	0	0.0001	1	1	1	0.0078		2024-09-10T06:24:02

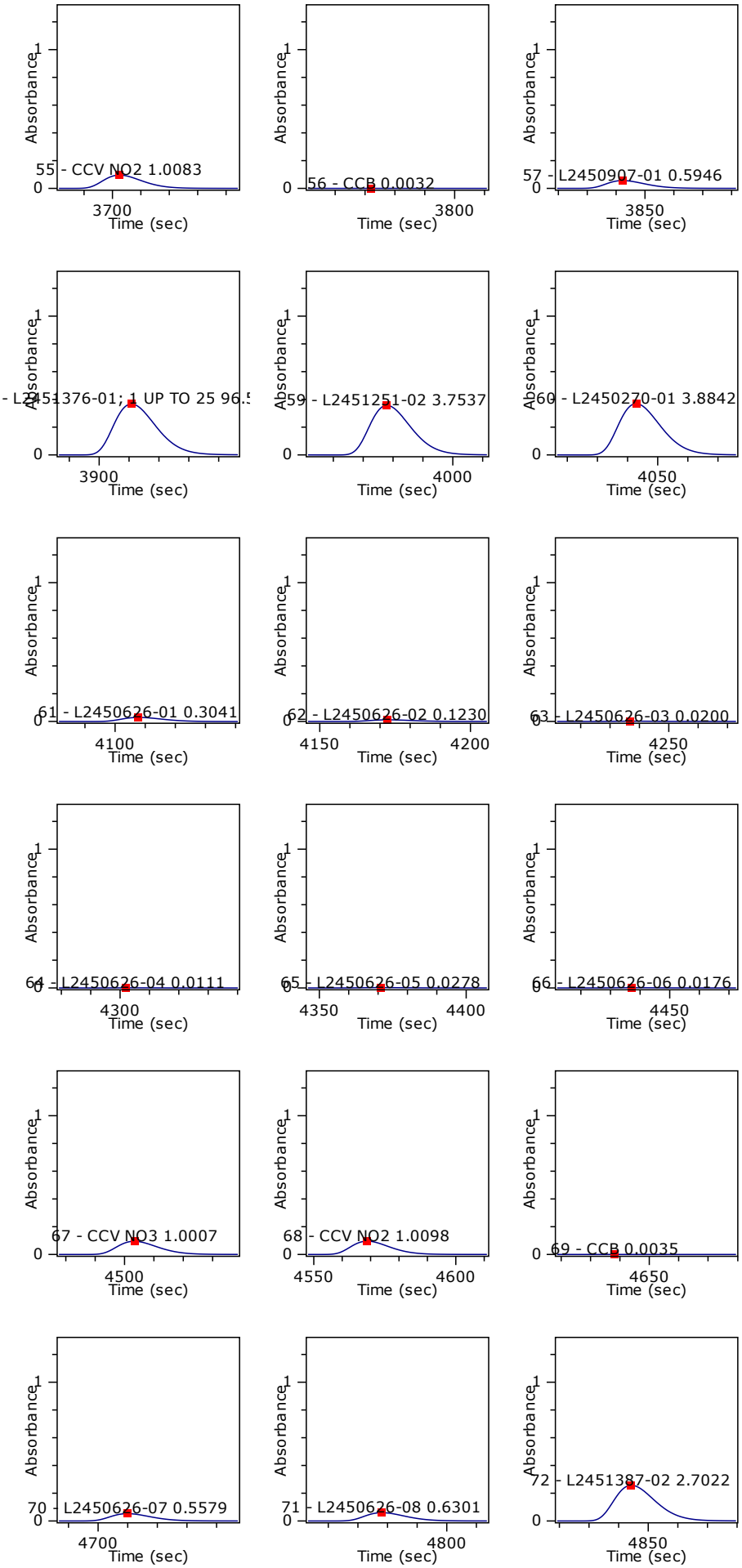
Peaks:

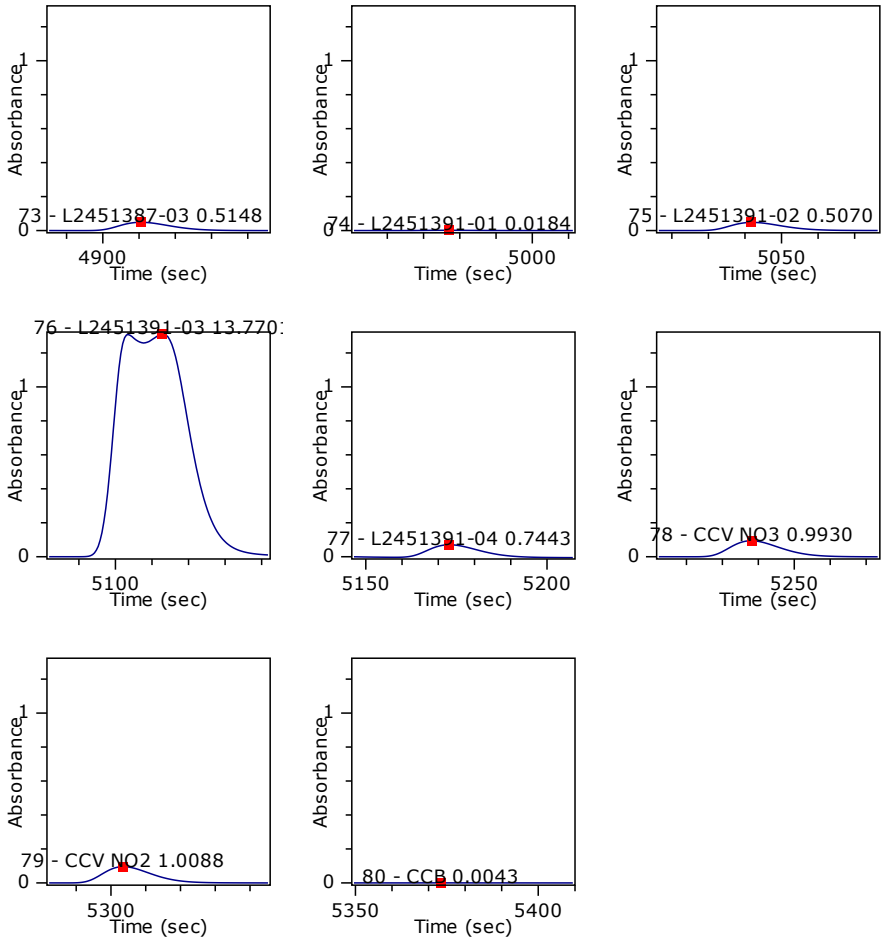
Channel: 1-NOx


Absorbance
Time (sec)
1 - Stabil 0.0068
2 - CCV NO3 1.0006
3 - CCV NO2 0.9975
4 - CCB 0.0039
5 - WG1969436-6 6.6985
6 - WG1969435-5 3.1155
7 - WG1969435-6 6.9410
8 - L2451286-08 0.1340
9 - L2451286-09 2.9880
10 - L2451289-01 1.1740
11 - L2451348-01 0.0487
12 - L2451368-01 0.0118
- L2451376-01; 2 UP TO 10 67.(
13 - L2451370-01 0.0135
15 - CCV NO3 0.9970
16 - CCV NO2 1.0037
17 - CCB 0.0041
18 - L2451384-01 0.2298

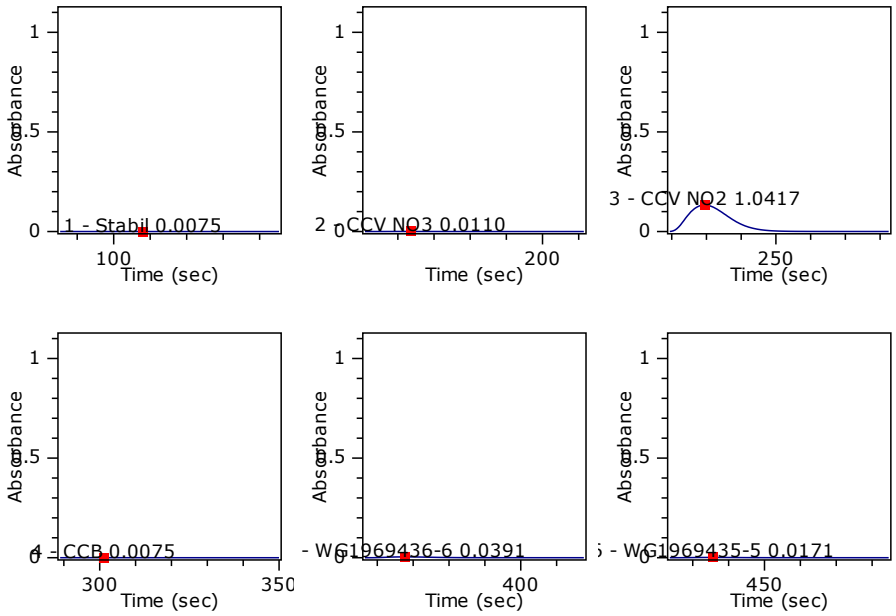

19 - L2451384-02 0.2368
20 - L2451384-03 0.1377
21 - L2451384-04 0.1369
22 - L2451258-01 0.0133
23 - WG1969437-3 0.0079
24 - WG1969437-4 4.0218
25 - L2450131-02 3.8281
26 - L2450131-04 3.3309
27 - L2450131-07 2.7648
28 - CCV NO3 1.0069
29 - CCV NO2 1.0058
30 - CCB 0.0034
31 - L2450245-01 1.4059
32 - WG1969438-3 1.4009
33 - WG1969438-4 5.3293
34 - L2450245-02 11.0030
35 - L2450270-01 3.8796
36 - L2450344-01 1.4445
Absorbance
Time (sec)

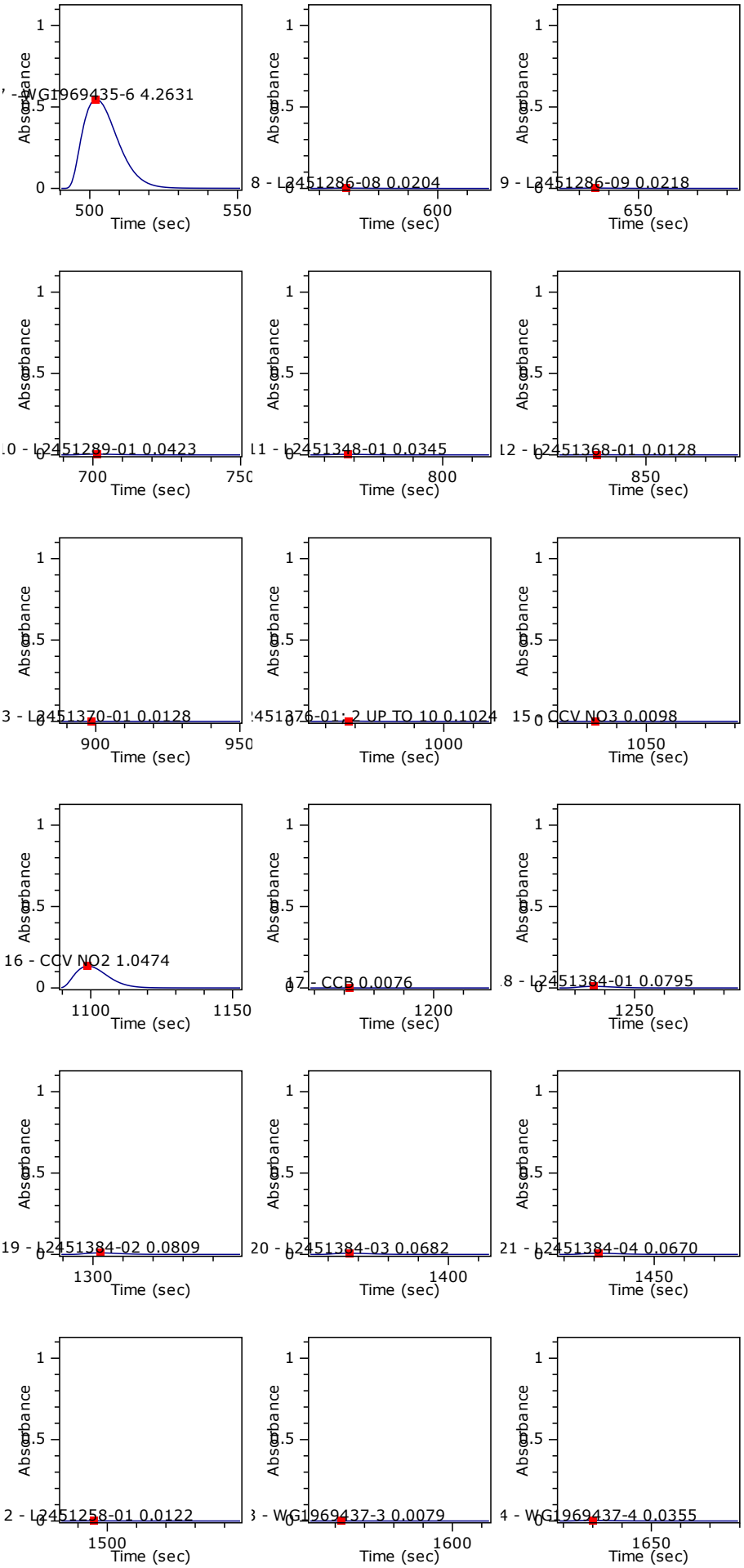

Absorbance
Time (sec)
37 - L2450565-01 0.0365
38 - L2450891-01 0.3841
39 - WG1969438-5 0.3817
40 - WG1969438-6 4.4042
41 - CCV NO3 1.0014
42 - CCV NO2 1.0087
43 - CCB 0.0035
44 - L2450891-04 0.3911
45 - L2450891-07 0.0616
46 - L2450891-10 0.0624
47 - L2450891-13 0.0108
48 - L2450891-16 0.0328
49 - L2450891-19 0.0611
50 - L2450891-22 0.0649
51 - L2450891-25 0.4436
52 - L2450891-28 0.0852
53 - L2450891-31 0.0298
54 - CCV NO3 1.0034

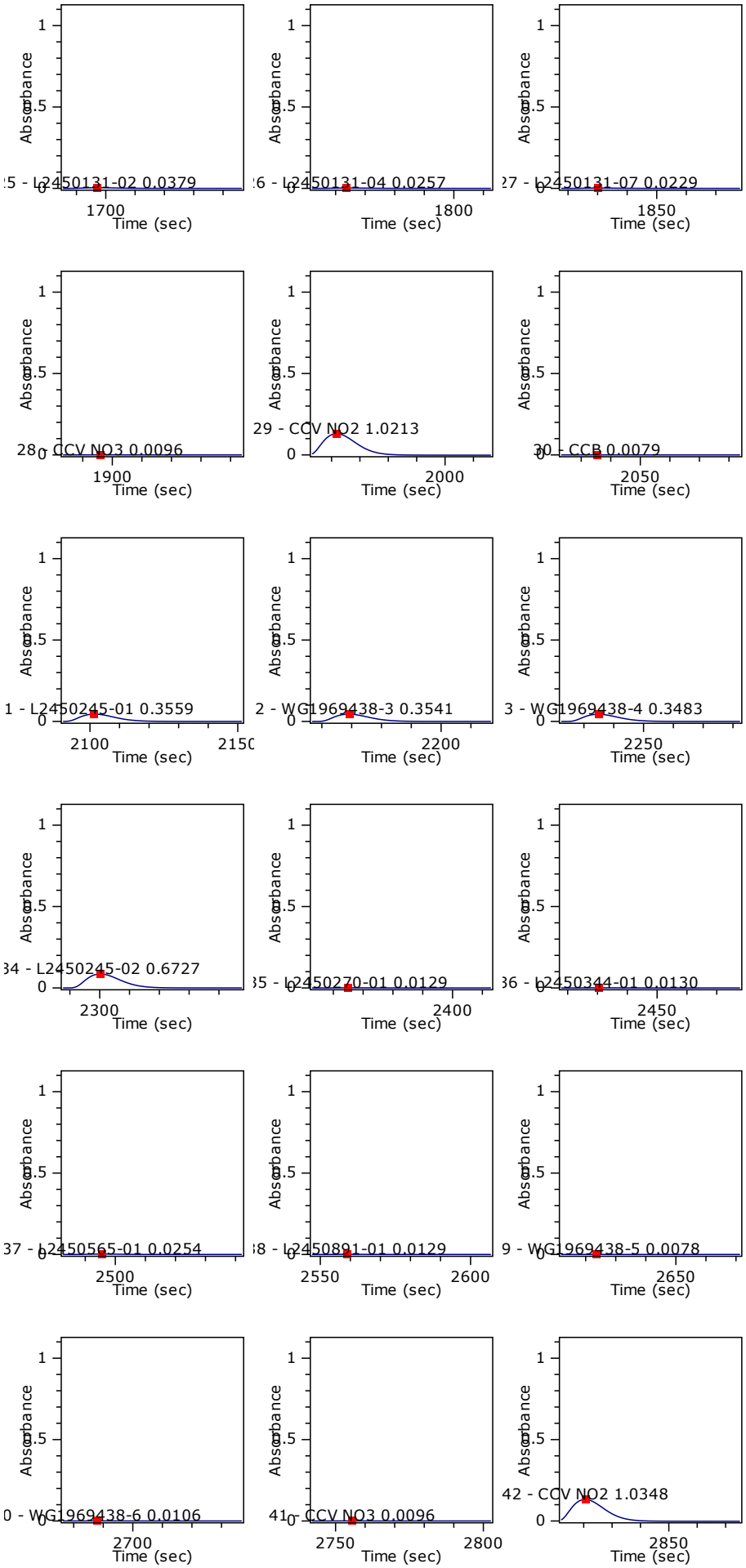

Absorbance
Time (sec)
55 - CCV NO2 1.0083
56 - CCB 0.0032
57 - L2450907-01 0.5946
- L2451376-01; 1 UP TO 25 96.5
59 - L2451251-02 3.7537
60 - L2450270-01 3.8842
61 - L2450626-01 0.3041
62 - L2450626-02 0.1230
63 - L2450626-03 0.0200
64 - L2450626-04 0.0111
65 - L2450626-05 0.0278
66 - L2450626-06 0.0176
67 - CCV NO3 1.0007
68 - CCV NO2 1.0098
69 - CCB 0.0035
70 - L2450626-07 0.5579
71 - L2450626-08 0.6301
72 - L2451387-02 2.7022

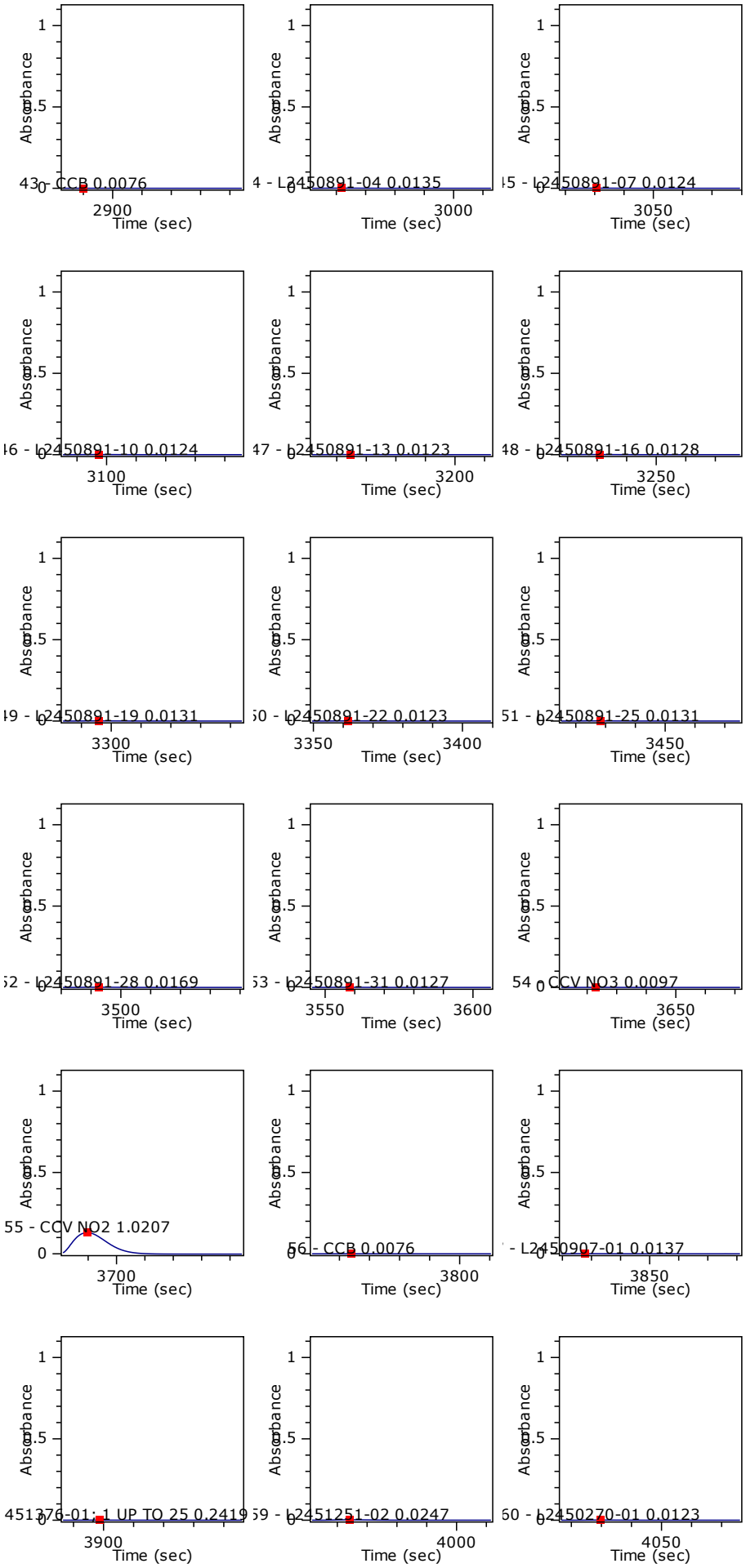


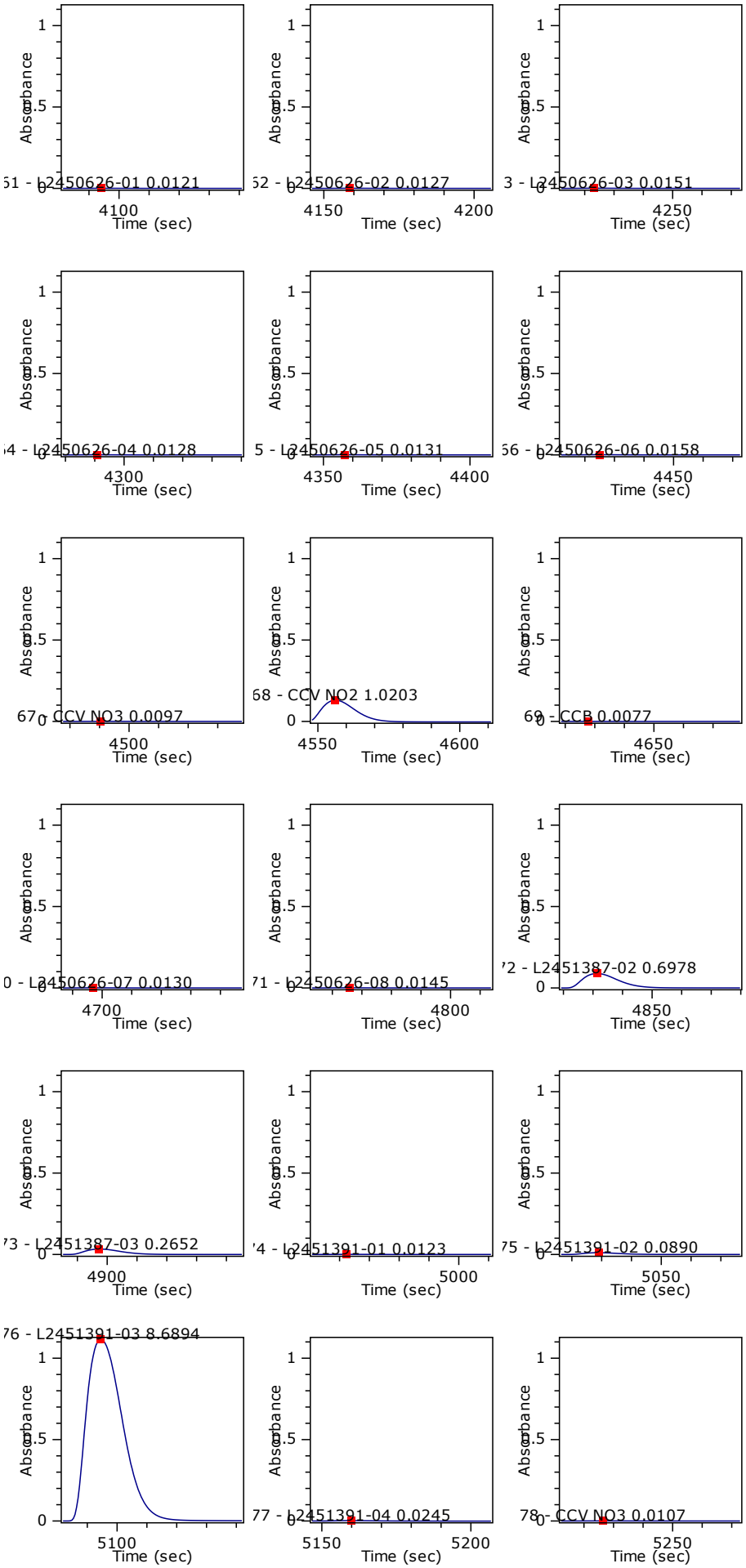
Channel: 2-NO2

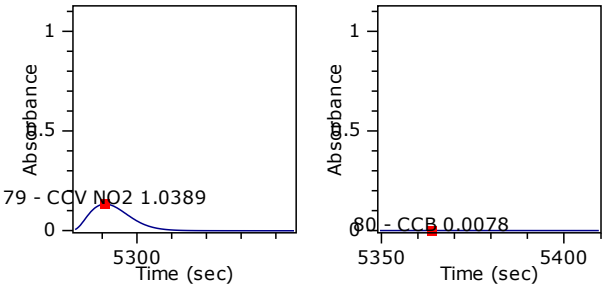



-WG1969435-6 4.2631
8 - L2451286-08 0.0204
9 - L2451286-09 0.0218
.0 - L2451289-01 0.0423
11 - L2451348-01 0.0345
12 - L2451368-01 0.0128
3 - L2451370-01 0.0128
2451376-01: 2 UP TO 10 0.1024
15 - CCV NO3 0.0098
16 - CCV NO2 1.0474
17 - CCB 0.0076
8 - L2451384-01 0.0795
19 - L2451384-02 0.0809
20 - L2451384-03 0.0682
21 - L2451384-04 0.0670
2 - L2451258-01 0.0122
3 - WG1969437-3 0.0079
4 - WG1969437-4 0.0355
Absorbance
Time (sec)


Absorbance
Time (sec)
5 - L2450131-02 0.0379
6 - L2450131-04 0.0257
27 - L2450131-07 0.0229
28 - CCV NO3 0.0096
29 - CCV NO2 1.0213
30 - CCB 0.0079
1 - L2450245-01 0.3559
2 - WG1969438-3 0.3541
3 - WG1969438-4 0.3483
34 - L2450245-02 0.6727
35 - L2450270-01 0.0129
36 - L2450344-01 0.0130
37 - L2450565-01 0.0254
38 - L2450891-01 0.0129
39 - WG1969438-5 0.0078
40 - WG1969438-6 0.0106
41 - CCV NO3 0.0096
42 - CCV NO2 1.0348


43 - CCB 0.0076
4 - L2450891-04 0.0135
5 - L2450891-07 0.0124
46 - L2450891-10 0.0124
47 - L2450891-13 0.0123
48 - L2450891-16 0.0128
49 - L2450891-19 0.0131
50 - L2450891-22 0.0123
51 - L2450891-25 0.0131
52 - L2450891-28 0.0169
53 - L2450891-31 0.0127
54 - CCV NO3 0.0097
55 - CCV NO2 1.0207
56 - CCB 0.0076
- L2450907-01 0.0137
451376-01: 1 UP TO 25 0.2419
59 - L2451251-02 0.0247
60 - L2450270-01 0.0123
Absorbance
Time (sec)


51 - L2450626-01 0.0121
52 - L2450626-02 0.0127
3 - L2450626-03 0.0151
4 - L2450626-04 0.0128
5 - L2450626-05 0.0131
56 - L2450626-06 0.0158
67 - CCV NO3 0.0097
68 - CCV NO2 1.0203
69 - CCB 0.0077
0 - L2450626-07 0.0130
71 - L2450626-08 0.0145
72 - L2451387-02 0.6978
73 - L2451387-03 0.2652
74 - L2451391-01 0.0123
75 - L2451391-02 0.0890
76 - L2451391-03 8.6894
77 - L2451391-04 0.0245
78 - CCV NO3 0.0107
Absorbance
Time (sec)



Data Processing Parameters:

Channel: 1-NOx

Response parameter	Peak Height
Filter Type	None
Filter Window	3
Enable Peak Window	False
Peak Window Start	0
Peak Window Stop	0
Enable Baseline Correction	False
Enable 2 Point Correction	False
Baseline Start	0
Baseline Stop	0
Point 2 Baseline Start	0
Point 2 Baseline Stop	0
Background Correction	Single Wavelength
Ref Wavelength 1	600
Ref Wavelength 2	0

Channel: 2-NO2

Response parameter	Peak Height
Filter Type	None
Filter Window	3
Enable Peak Window	False
Peak Window Start	0
Peak Window Stop	0
Enable Baseline Correction	False
Enable 2 Point Correction	False
Baseline Start	0
Baseline Stop	0
Point 2 Baseline Start	0
Point 2 Baseline Stop	0
Background Correction	Single Wavelength
Ref Wavelength 1	600
Ref Wavelength 2	0

Method Log:

```
FIAsoft FIAsoft v3.1.10

FIAlyzer Settings
------------
FIAlab1 Serial Number: FIA31428
FIAlab2 Serial Number: FIA31429
Pump: Connected on COM8

Spectrometer Settings
Spectrometer1
------------
Spectrometer Type: tec5
```

```
Integration Time: 34.4
Bandwidth: 2
Data Acq Rate: 2
Use Full Spectrum: False
        |---  Low: 500nm
        |--- High: 650nm
Reduce to Boxcar: True

Spectrometer2
------------
Spectrometer Type: tec5
Integration Time: 2.8
Bandwidth: 2
Data Acq Rate: 2
Use Full Spectrum: False
        |---  Low: 500nm
        |--- High: 650nm
Reduce to Boxcar: True

Start Time
------------
2024-09-10T04:54:39

Method
------------
' Method Script for NOx-NO2

Autosave Data C:\FIAlab\Autosave Data\DateTime
FIAlab Injection Valve Sample Load
Message Cadmium Column on for NOx
FIAlab Peristaltic Pump Clockwise(%) 55

Autosampler Wash
Delay (sec) 2
Next Sample
Delay (sec) 35  'StartDelay2 - Controls initial sample introduction.

FIAlab1 Injection Valve Sample Inject
Autosampler Probe Up
Delay (sec) 2
Autosampler Position (#) Rinse
FIAlab2 Injection Valve Sample Inject
Delay (sec) 15   'StartDelay3 - Should be set equal to LoopDelay3

Autosampler Probe Up
Delay (sec) 5   'StartDelay4 - Should be set equal to LoopDelay4

Loop Start

   Analyte New Sample
   Delay (sec) 1
   Next Sample
   Autosampler Probe Force Down

   Spectrometer Reference Scan
   Spectrometer Absorbance Scanning

   Delay (sec) 3   ' LoopDelay1 - Controls sample transit & loop empty. Controls back baseline.

   FIAlab Injection Valve Sample Load

   Delay (sec) 35   ' LoopDelay2 - Controls sample transit & loop fill. Controls back baseline.

   FIAlab1 Injection Valve Sample Inject
   Autosampler Probe Up
   Delay (sec) 5
   Autosampler Position (#) Rinse
   FIAlab2 Injection Valve Sample Inject

   Delay (sec) 10   ' LoopDelay3 - Controls loop empty & probe rinse time. Inverse controls front baseline.

   Autosampler Probe Up

   Delay (sec) 3   ' LoopDelay4 - Controls loop empty. Inverse controls front baseline.
```

```
    Spectrometer Stop Scanning

Loop End

Autosampler Position (#) Rinse
Delay (sec) 20
Autosampler Probe Up
Delay (sec) 30
FIAlab Peristaltic Pump Clockwise(%) 5
Autoexport Report C:\FIAlab\autoreport\NOxNO2\DateTime
Message Run is Complete
```

Method File Location: C:\FIAlab\FIAlab User Files\Methods\Method_NOx+NO2.fia

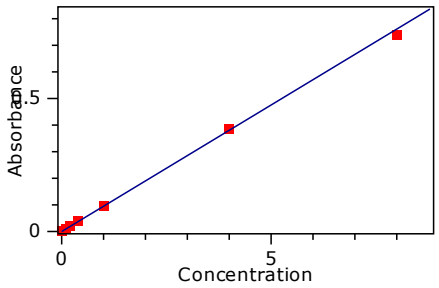
Graphical report generated by FIAsoft v3.1.10
Report generated on 2024-09-10 07:32:34
Data file (.dat): C:\FIAlab\Autosave Data\2024-09-10-073206.dat

Dataset Notes:

Analyst	

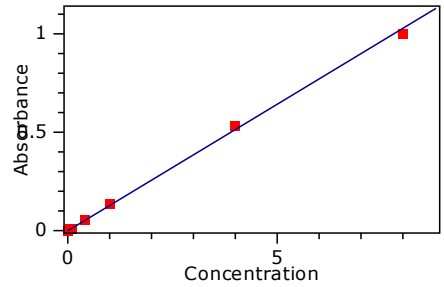
Dataset Notes Table Location: C:\FIAlab\FIAlab User Files\Tables\Dataset Notes\Analyst.csv

Calibrations:



Channel: 1-NOx
Fit_Order: 1
Weighting: 1/response
Standard relation
Coefficients:
A: -0.00020
B: 0.09514
R^2: 0.99965
RSE(%): 2.55403
% Max. for OVR: 100

InjNo	Name	Response	Known Conc. mg/L	Calc. Conc. mg/L	% Error	Time
10001	NOx 8.0ppm	0.73720	8.00000	7.75040	3.12	N/A
10002	NOx 4.0ppm	0.38350	4.00000	4.03240	0.81	N/A
10003	NOx 1.0ppm	0.09440	1.00000	0.99430	0.57	N/A
10004	NOx 0.4ppm	0.03920	0.40000	0.41450	3.62	N/A
10005	NOx 0.2ppm	0.01900	0.20000	0.20190	0.94	N/A
10006	NOx 0.1ppm	0.00920	0.10000	0.09880	1.17	N/A
10007	NOx 0.0ppm	0.00010	0.00000	0.00330	NA	N/A



Channel: 2-NO2
Fit_Order: 1
Weighting: 1/response
Standard relation
Coefficients:
A: -0.00088
B: 0.12861
R^2: 0.99896
RSE(%): 6.50972
% Max. for OVR: 100

InjNo	Name	Response	Known Conc. mg/L	Calc. Conc. mg/L	% Error	Time
10001	Nitrite 8.0ppm	0.99690	8.00000	7.75810	3.02	N/A
10002	Nitrite 4.0ppm	0.53250	4.00000	4.14720	3.68	N/A
10003	Nitrite 1.0ppm	0.13320	1.00000	1.04230	4.23	N/A
10004	Nitrite 0.4ppm	0.05230	0.40000	0.41350	3.38	N/A
10005	Nitrite 0.1ppm	0.01080	0.10000	0.09050	9.52	N/A
10006	Nitrite 0.05ppm	0.00590	0.05000	0.05260	5.17	N/A
10007	Nitrite 0.0ppm	0.00010	0.00000	0.00780	NA	N/A

Results:

Channel: 1-NOx

Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
Stabil	1	Unknown	?	0.0002	1	1	1	0.0041		2024-09-10T06:46:00
CCV NO3	2	QC	1	0.0957	1	1	1	1.0078		2024-09-10T06:47:09
CCV NO2	3	QC	?	0.0962	1	1	1	1.0134		2024-09-10T06:48:15
CCB	4	QC	0	0.0001	1	1	1	0.0029		2024-09-10T06:49:23

Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
L2451391-04	5	Unknown	?	0.0739	1	1	1	0.7791		2024-09-10T06:50:32
L2450245-02; 2 UP TO 10	6	Unknown	?	0.2410	5	1	1	12.6765		2024-09-10T06:51:40
L2451391-03; 2 UP TO 10	7	Unknown	?	0.5687	5	1	1	29.8960		2024-09-10T06:52:48
L2450786-01	8	Unknown	?	0.0103	1	1	1	0.1104		2024-09-10T06:53:55
WG1969439-3	9	Unknown	?	0.0103	1	1	1	0.1101		2024-09-10T06:55:01
WG1969439-4	10	Unknown	?	0.3993	1	1	1	4.1993		2024-09-10T06:56:06
L2450786-02	11	Unknown	?	0.3048	1	1	1	3.2054		2024-09-10T06:57:11
L2450786-03	12	Unknown	?	0.0251	1	1	1	0.2656		2024-09-10T06:58:17
L2450786-04	13	Unknown	?	0.1057	1	1	1	1.1133		2024-09-10T06:59:24
L2450786-05	14	Unknown	?	0.0084	1	1	1	0.0902		2024-09-10T07:00:31
CCV NO3	15	QC	1	0.0957	1	1	1	1.0082		2024-09-10T07:01:37
CCV NO2	16	QC	?	0.0963	1	1	1	1.0139		2024-09-10T07:02:43
CCB	17	QC	0	0.0001	1	1	1	0.0034		2024-09-10T07:03:54
L2450786-06	18	Unknown	?	0.0012	1	1	1	0.0151		2024-09-10T07:05:03
L2450786-07	19	Unknown	?	0.1146	1	1	1	1.2065		2024-09-10T07:06:10
L2450786-08	20	Unknown	?	0.0283	1	1	1	0.2991		2024-09-10T07:07:16
L2450786-09	21	Unknown	?	0.2672	1	1	1	2.8104		2024-09-10T07:08:22
L2450786-10	22	Unknown	?	0.2737	1	1	1	2.8790		2024-09-10T07:09:28
L2450786-12	23	Unknown	?	0.1137	1	1	1	1.1968		2024-09-10T07:10:34
CCV NO3	24	QC	1	0.0965	1	1	1	1.0168		2024-09-10T07:11:39
CCV NO2	25	QC	?	0.0962	1	1	1	1.0136		2024-09-10T07:12:45
CCB	26	QC	0	0.0000	1	1	1	0.0026		2024-09-10T07:13:54

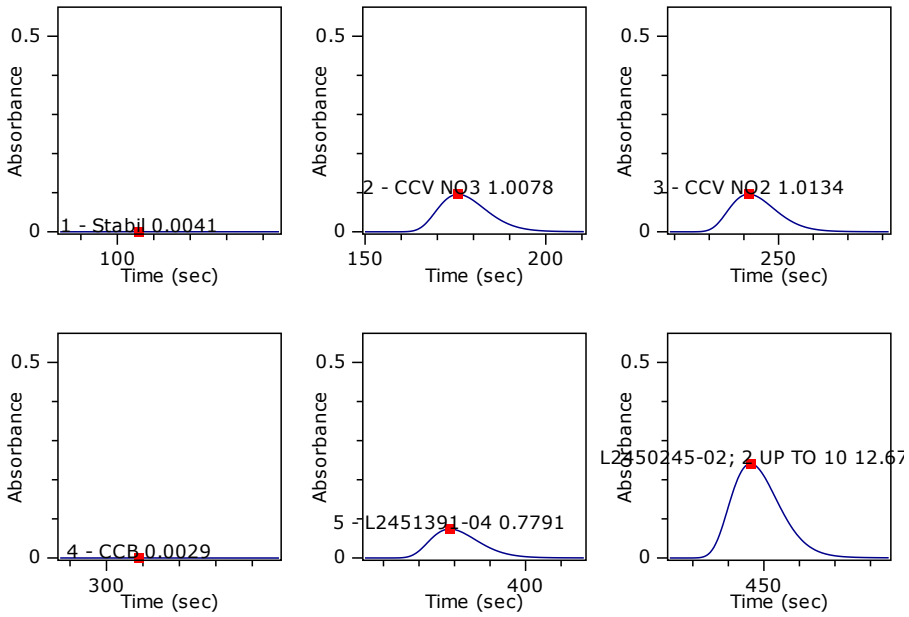
Channel: 2-NO2

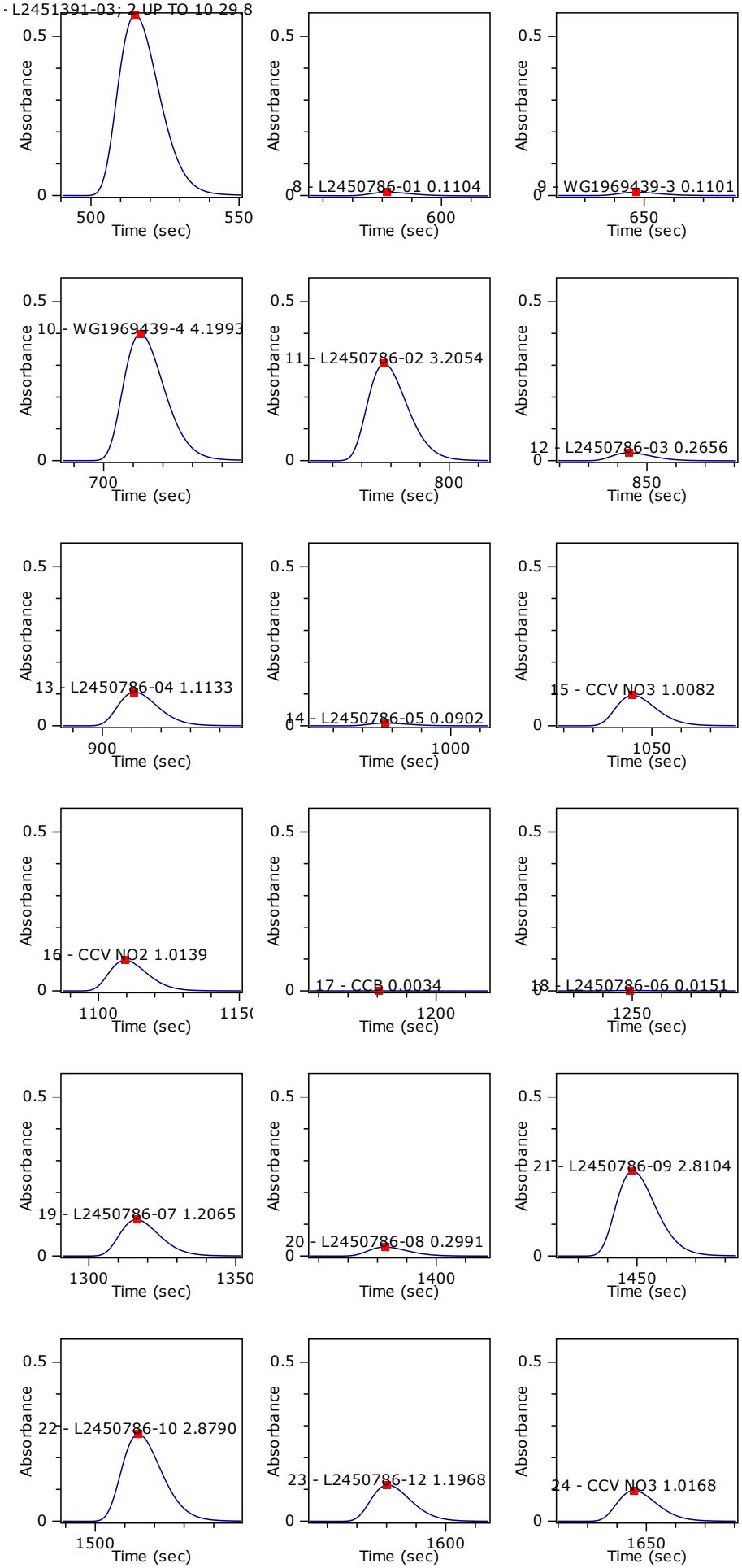
Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
Stabil	1	Unknown	?	0.0001	1	1	1	0.0075		2024-09-10T06:45:45
CCV NO3	2	QC	?	0.0004	1	1	1	0.0097		2024-09-10T06:46:56
CCV NO2	3	QC	1	0.1341	1	1	1	1.0494		2024-09-10T06:48:02
CCB	4	QC	0	0.0001	1	1	1	0.0077		2024-09-10T06:49:14
L2451391-04	5	Unknown	?	0.0022	1	1	1	0.0239		2024-09-10T06:50:18
L2450245-02; 2 UP TO 10	6	Unknown	?	0.0169	5	1	1	0.6901		2024-09-10T06:51:28
L2451391-03; 2 UP TO 10	7	Unknown	?	0.2447	5	1	1	9.5477		2024-09-10T06:52:37

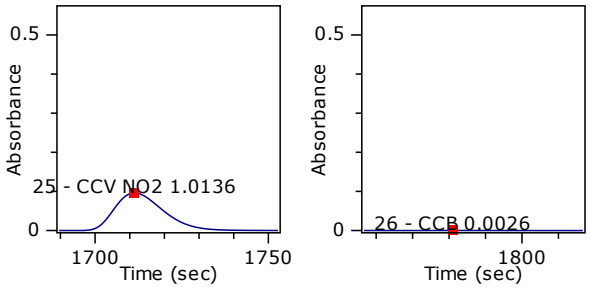
Name	Inj. No.	Type	Known Conc. mg/L	Response	MDF	ADF	Weight	Calc. Conc. mg/L	Flags	Time
L2450786-01	8	Unknown	?	0.0008	1	1	1	0.0130		2024-09-10T06:53:42
WG1969439-3	9	Unknown	?	0.0001	1	1	1	0.0077		2024-09-10T06:54:48
WG1969439-4	10	Unknown	?	0.0001	1	1	1	0.0079		2024-09-10T06:55:53
L2450786-02	11	Unknown	?	0.0007	1	1	1	0.0121		2024-09-10T06:56:57
L2450786-03	12	Unknown	?	0.0006	1	1	1	0.0117		2024-09-10T06:58:05
L2450786-04	13	Unknown	?	0.0006	1	1	1	0.0114		2024-09-10T06:59:13
L2450786-05	14	Unknown	?	0.0007	1	1	1	0.0126		2024-09-10T07:00:19
CCV NO3	15	QC	?	0.0004	1	1	1	0.0099		2024-09-10T07:01:23
CCV NO2	16	QC	1	0.1319	1	1	1	1.0321		2024-09-10T07:02:30
CCB	17	QC	0	0.0001	1	1	1	0.0078		2024-09-10T07:03:42
L2450786-06	18	Unknown	?	0.0007	1	1	1	0.0124		2024-09-10T07:04:49
L2450786-07	19	Unknown	?	0.0008	1	1	1	0.0127		2024-09-10T07:05:57
L2450786-08	20	Unknown	?	0.0007	1	1	1	0.0124		2024-09-10T07:07:02
L2450786-09	21	Unknown	?	0.0007	1	1	1	0.0125		2024-09-10T07:08:09
L2450786-10	22	Unknown	?	0.0008	1	1	1	0.0132		2024-09-10T07:09:15
L2450786-12	23	Unknown	?	0.0008	1	1	1	0.0128		2024-09-10T07:10:21
CCV NO3	24	QC	?	0.0004	1	1	1	0.0096		2024-09-10T07:11:27
CCV NO2	25	QC	1	0.1322	1	1	1	1.0347		2024-09-10T07:12:32
CCB	26	QC	0	0.0001	1	1	1	0.0078		2024-09-10T07:13:46

Peaks:

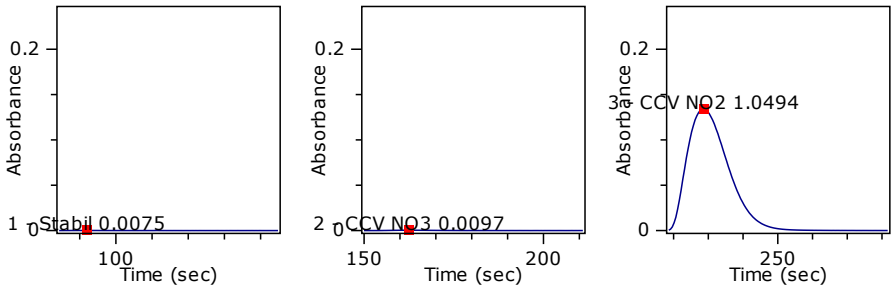
Channel: 1-NOx

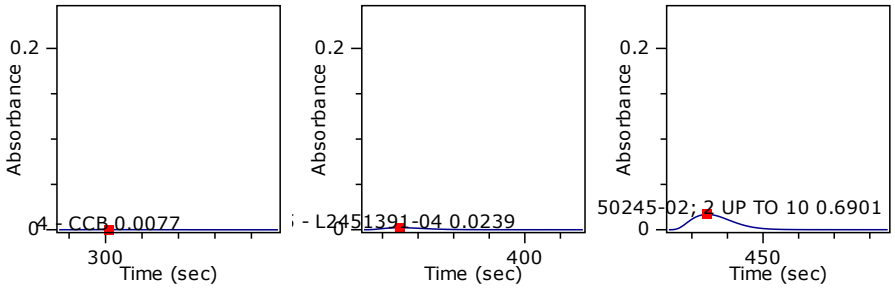


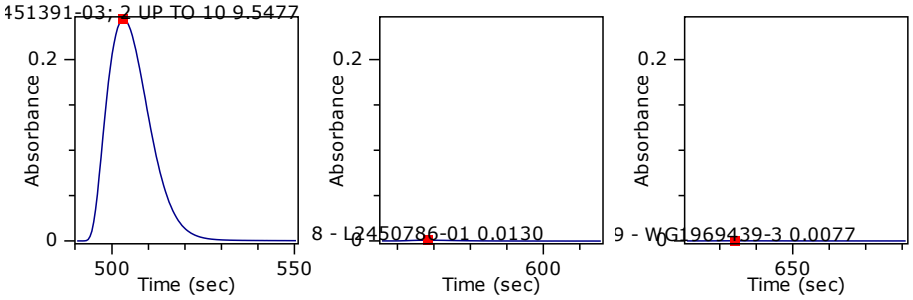

- L2451391-03; 2 UP TO 10 29.8
8 - L2450786-01 0.1104
9 - WG1969439-3 0.1101
10 - WG1969439-4 4.1993
11 - L2450786-02 3.2054
12 - L2450786-03 0.2656
13 - L2450786-04 1.1133
14 - L2450786-05 0.0902
15 - CCV NO3 1.0082
16 - CCV NO2 1.0139
17 - CCB 0.0034
18 - L2450786-06 0.0151
19 - L2450786-07 1.2065
20 - L2450786-08 0.2991
21 - L2450786-09 2.8104
22 - L2450786-10 2.8790
23 - L2450786-12 1.1968
24 - CCV NO3 1.0168
Absorbance
Time (sec)

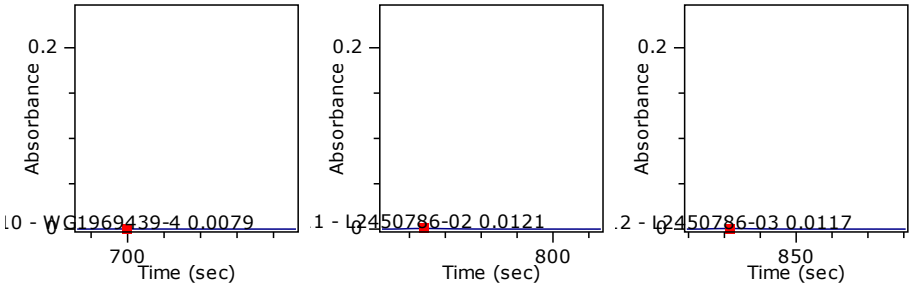


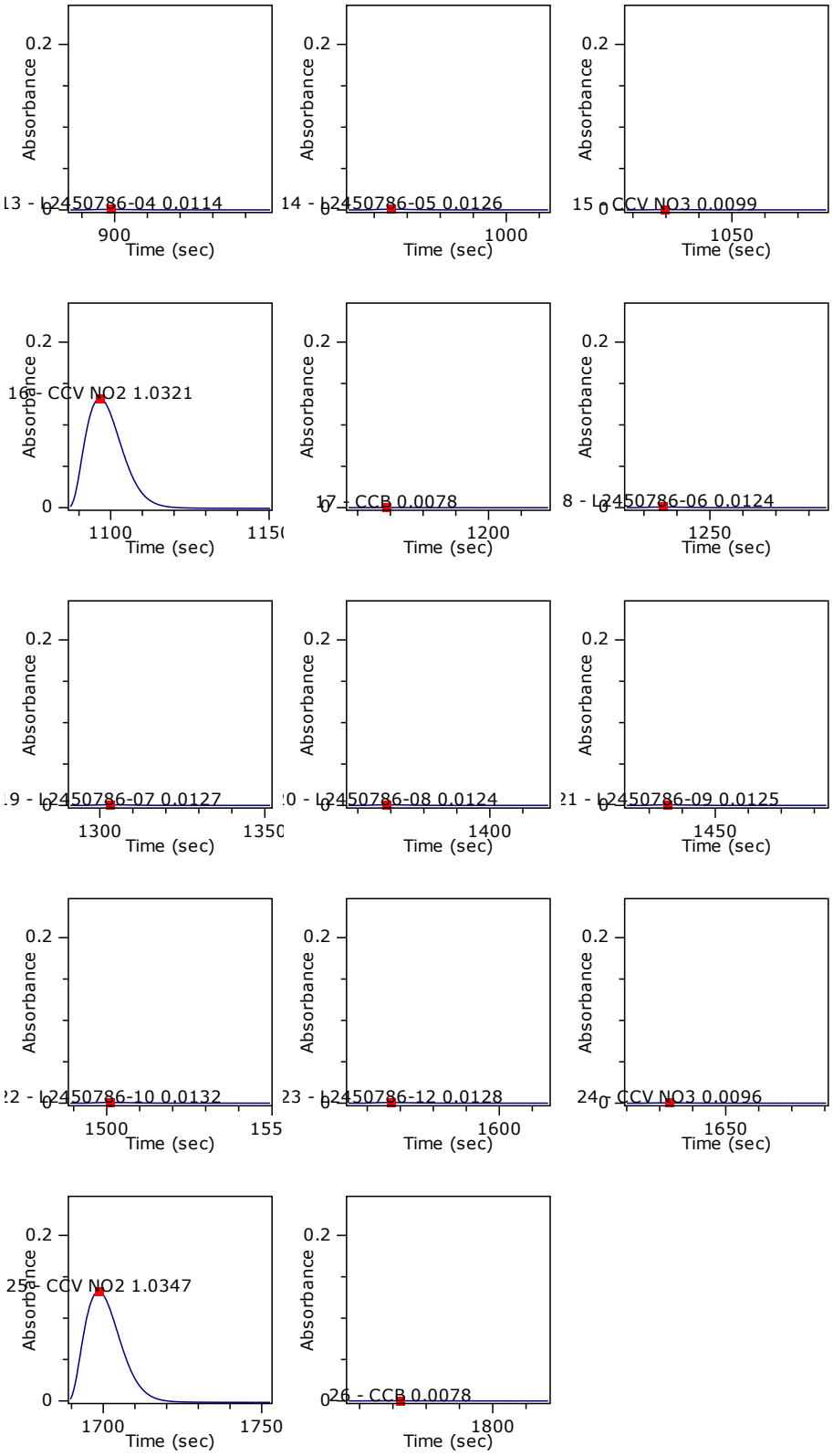
Channel: 2-NO2











Data Processing Parameters:

Channel: 1-NOx

Response parameter	Peak Height
Filter Type	None
Filter Window	3
Enable Peak Window	False
Peak Window Start	0
Peak Window Stop	0

Enable Baseline Correction	False
Enable 2 Point Correction	False
Baseline Start	0
Baseline Stop	0
Point 2 Baseline Start	0
Point 2 Baseline Stop	0
Background Correction	Single Wavelength
Ref Wavelength 1	600
Ref Wavelength 2	0

Channel: 2-NO2

Response parameter	Peak Height
Filter Type	None
Filter Window	3
Enable Peak Window	False
Peak Window Start	0
Peak Window Stop	0
Enable Baseline Correction	False
Enable 2 Point Correction	False
Baseline Start	0
Baseline Stop	0
Point 2 Baseline Start	0
Point 2 Baseline Stop	0
Background Correction	Single Wavelength
Ref Wavelength 1	600
Ref Wavelength 2	0

Method Log:

```
FIAsoft FIAsoft v3.1.10

FIAlyzer Settings
------------
FIAlab1 Serial Number: FIA31428
FIAlab2 Serial Number: FIA31429
Pump: Connected on COM8

Spectrometer Settings
Spectrometer1
------------
Spectrometer Type: tec5
Integration Time: 34.5
Bandwidth: 2
Data Acq Rate: 2
Use Full Spectrum: False
        |---  Low: 500nm
        |--- High: 650nm
Reduce to Boxcar: True

Spectrometer2
------------
Spectrometer Type: tec5
Integration Time: 2.8
Bandwidth: 2
Data Acq Rate: 2
Use Full Spectrum: False
        |---  Low: 500nm
        |--- High: 650nm
Reduce to Boxcar: True

Start Time
------------
2024-09-10T06:44:14

Method
------------
```

```
' Method Script for NOx-NO2

Autosave Data C:\FIAlab\Autosave Data\DateTime
FIAlab Injection Valve Sample Load
Message Cadmium Column on for NOx
FIAlab Peristaltic Pump Clockwise(%) 55

Autosampler Wash
Delay (sec) 2
Next Sample
Delay (sec) 35  'StartDelay2 - Controls initial sample introduction.

FIAlab1 Injection Valve Sample Inject
Autosampler Probe Up
Delay (sec) 2
Autosampler Position (#) Rinse
FIAlab2 Injection Valve Sample Inject
Delay (sec) 15   'StartDelay3 - Should be set equal to LoopDelay3

Autosampler Probe Up
Delay (sec) 5   'StartDelay4 - Should be set equal to LoopDelay4

Loop Start

   Analyte New Sample
   Delay (sec) 1
   Next Sample
   Autosampler Probe Force Down

   Spectrometer Reference Scan
   Spectrometer Absorbance Scanning

   Delay (sec) 3   ' LoopDelay1 - Controls sample transit & loop empty. Controls back baseline.

   FIAlab Injection Valve Sample Load

   Delay (sec) 35   ' LoopDelay2 - Controls sample transit & loop fill. Controls back baseline.

   FIAlab1 Injection Valve Sample Inject
   Autosampler Probe Up
   Delay (sec) 5
   Autosampler Position (#) Rinse
   FIAlab2 Injection Valve Sample Inject

   Delay (sec) 10   ' LoopDelay3 - Controls loop empty & probe rinse time. Inverse controls front baseline.

   Autosampler Probe Up

   Delay (sec) 3   ' LoopDelay4 - Controls loop empty. Inverse controls front baseline.

   Spectrometer Stop Scanning

Loop End

Autosampler Position (#) Rinse
Delay (sec) 20
Autosampler Probe Up
Delay (sec) 30
FIAlab Peristaltic Pump Clockwise(%) 5
Autoexport Report C:\FIAlab\autoreport\NOxNO2\DateTime
Message Run is Complete
```

Method File Location: C:\FIAlab\FIAlab User Files\Methods\Method_NOx+NO2.fia

Quality Control

Form 5a
Matrix Spike

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: MW-5A	**Matrix**	: WATER
Lab Sample ID	: L2450786-01		
Matrix Spike	: WG1969439-4	**MS Analysis Date**	: 09/10/24 06:55
Matrix Spike Dup	:	**MSD Analysis Date**	:

		Matrix Spike Sample			Matrix Spike Duplicate					
Parameter	Sample Conc. (mg/l)	Spike Added (mg/l)	Spike Conc. (mg/l)	%R	Spike Added (mg/l)	Spike Conc. (mg/l)	%R	RPD	Recovery Limits	RPD Limit
Nitrogen, Nitrate/Nitrite	0.11	4	4.2	102					80-120	20

Form 6
Lab Duplicates

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: MW-5A	**Matrix**	: WATER
Lab Sample ID	: L2450786-01	**Analysis Date**	: 09/10/24 06:53
Dup Sample ID	: WG1969439-3	**DUP Analysis Date**	: 09/10/24 06:54

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Nitrogen, Nitrate/Nitrite	0.11	0.11	0	20

Form 7
Laboratory Control Sample

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: WG1969439-2	**LCS Analysis Date**	: 09/10/24 04:07
Dup Sample ID	:	**LCSD Analysis Date**	:

	Laboratory Control Sample			Laboratory Control Duplicate					
Parameter	**True (mg/l)**	**Found (mg/l)**	**%R**	**True (mg/l)**	**Found (mg/l)**	**%R**	**RPD**	**Recovery Limits**	**RPD Limit**
Nitrogen, Nitrate/Nitrite	**5.00**	**5.00**	**100.**					**90-110**	**20**

Date Created: 11/11/21
Created By: Jason Hebert
File: PM11467-1
Page: 1

WETCHEM (WATER)

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Method	Holding Time	Container/Sample Preservation
Nitrogen, Nitrate	14797-55-8	0.1	0.0228	mg/l	90-110		83-113	6	6	353.2	48 hours	1 - Plastic 250ml unpreserved
Nitrogen, Nitrate	14797-55-8	0.1	0.0228	mg/l	90-110		83-113	17	17	4500NO3-F	48 hours	1 - Plastic 250ml unpreserved
Nitrogen, Nitrite	NONE	0.05	0.0143	mg/l	90-110	20	80-120	20	20	353.2	48 hours	1 - Plastic 250ml unpreserved
Nitrogen, Nitrite	NONE	0.05	0.0143	mg/l	90-110	20	80-120	20	20	4500NO3-F	48 hours	1 - Plastic 250ml unpreserved

Please Note that the RL information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)
Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.

Date Created: 11/11/21
Created By: Jason Hebert
File: PM11468-1
Page: 1

WETCHEM (SOIL)

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Method	Holding Time	Container/Sample Preservation
Nitrogen, Nitrate	14797-55-8	1	0.261	mg/kg	90-110	20	80-120	20	20	4500NO3-F	48 hours	1 - Glass 250ml/8oz unpreserved
Nitrogen, Nitrite	NONE	1	0.282	mg/kg	90-110	20	80-120	20	20	4500NO3-F	48 hours	1 - Glass 250ml/8oz unpreserved

Please Note that the RL information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)
Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.

Calculations of Nitrogen, Nitrate

Aqueous Samples:
Compute sample N in NO3 concentration by comparing sample peak areas with standard curve, as determined by the Lachat instrument software.

Calculate results by using reading on Channel 1 (NO3+NO2) and Channel 2 (NO2)

$$NO3\ mg/I = (NO3+NO2)\ mg/L - (NO2)\ mg/L$$

To compute final results for aqueous samples, multiply the direct reading by the dilution factor (also done using software)

$$(NO3)\text{-}N\ mg/L = mg/L\ direct\ reading \times dilution\ factor$$

Calculations of Nitrogen, Nitrite

Aqueous Samples:
Compute sample N in NO2 concentration by comparing sample peak areas with standard curve, as determined by the Lachat instrument software.

Calculate results by using reading on Channel 2 (NO2)

To compute final results for aqueous samples, multiply the direct reading by the dilution factor (also done using software)

$$(NO2)\text{-}N\ mg/L = mg/L\ direct\ reading \times dilution\ factor$$

Sequence Logs

Date:	Initals:	Syringe Lot:	Syringe Lot: 20230620
091024	KAF	Filter Lot:	Filter Lot: 18048470A

Injection #	Rack #	Sample ID:	Comments:
19	RA1	ICV NO3 5	*Buffer: NO3NO2_083024_BUFFER*
20	RA2	ICV NO2 5	*Color: NO3NO2_082824_COLOR*
21	RA3	ICV NO3 0.5	*NO3 MS: NO3_082924_200PPM_CAL*
22	RA4	ICV NO2 0.5	*NO2 MS: NO2_082724_200PPM_CAL*
23	RA5	ICB	*ICV NO3 5: NO3_090724_5PPM_ICV*
X	RA6	5X DILUTER CHECK	*ICV NO2 5: NO2_090624_5PPM_ICV*
24	RA7	BLANK NO3	*ICV NO3 0.5: NO3_091024_0.5PPM_ICV*
25	RA8	LCS NO3	*ICV NO2 0.5: NO2_091024_0.5PPM_ICV*
26	RA9	BLANK NO2	
27	RA10	LCS NO2	
31	RA11	WG1969435-1; NO2	*OOH*
32	RA12	WG1969435-2; NO2	*DW*
33	RA13	WG1969436-1; NO3	GOING OOH
34	RA14	WG1969436-2; NO3	FIELD BLANK
35	RA15	WG1969437-1; NO3	
36	RA16	WG1969437-2; NO3	
37	RA17	WG1969438-1; CNO3	
38	RA18	WG1969438-2; CNO3	
39	RA19	WG1969439-1; CNO3	
40	RA20	WG1969439-2; CNO3	
44	RA21	L2451222-01	
45	RA22	L2451222-02	
46	RA23	L2451233-01	
47	RA24	L2451282-01	
48	RA25	WG1969436-3; NO3	
49	RA26	WG1969436-4; NO3	
50	RA27	WG1969435-3; NO2	
51	RA28	WG1969435-4; NO2	
52	RA29	L2451286-07	
53	RA30	WG1969436-5; NO3	
57; 5	RA31	WG1969436-6; NO3	
58; 6	RA32	WG1969435-5; NO2	
59; 7	RA33	WG1969435-6; NO2	
60; 8	RA34	L2451286-08	
61; 9	RA35	L2451286-09	
62; 10	RA36	L2451289-01	
63; 11	RA37	L2451348-01	
64; 12	RA38	L2451368-01	
65; 13	RA39	L2451370-01	
66	RA40	L2451376-01	
18	RA41	L2451384-01	
19	RA42	L2451384-02	
20	RA43	L2451384-03	

Injection #	Rack #	Sample ID:	Comments:
21	RA44	L2451384-04	
22	RA45	L2451258-01	
23	RA46	WG1969437-3; NO3	
24	RA47	WG1969437-4; NO3	
25	RA48	L2450131-02	
26	RA49	L2450131-04	
27	RA50	L2450131-07	
31	RA51	L2450245-01	
32	RA52	WG1969438-3; CNO3	
33	RA53	WG1969438-4; CNO3	
34	RA54	L2450245-02	
35; 60	RA55	L2450270-01	
36	RA56	L2450344-01	
37	RA57	L2450565-01	
38	RA58	L2450891-01	
39	RA59	WG1969438-5; CNO3	
40	RA60	WG1969438-6; CNO3	
44	RA61	L2450891-04	
45	RA62	L2450891-07	
46	RA63	L2450891-10	
47	RA64	L2450891-13	
48	RA65	L2450891-16	
49	RA66	L2450891-19	
50	RA67	L2450891-22	
51	RA68	L2450891-25	
52	RA69	L2450891-28	
53	RA70	L2450891-31	
57	RA71	L2450907-01	
59	RA72	L2451251-02	
61	RA73	L2450626-01	
62	RA74	L2450626-02	
63	RA75	L2450626-03	
64	RA76	L2450626-04	
65	RA77	L2450626-05	
66	RA78	L2450626-06	
70	RA79	L2450626-07	
71	RA80	L2450626-08	
72	RA81	L2451387-02B	
73	RA82	L2451387-03B	
74	RA83	L2451391-01F	
75	RA84	L2451391-02F	
76	RA85	L2451391-03O	
77; 5	RA86	L2451391-04O	
8	RA87	L2450786-01	
9	RA88	WG1969439-3; CNO3	
10	RA89	WG1969439-4; CNO3	

Injection #	Rack #	Sample ID:	Comments:
11	RA90	L2450786-02	
12	RB1	L2450786-03	
13	RB2	L2450786-04	
14	RB3	L2450786-05	
18	RB4	L2450786-06	
19	RB5	L2450786-07	
20	RB6	L2450786-08	
21	RB7	L2450786-09	
22	RB8	L2450786-10	
23	RB9	L2450786-12	
14	RD1	L2451376-01	
58	RD2	L2451376-01	
6	RD3	L2450245-02	
7	RD4	L2451391-03O	

Total Dissolved Solids Analysis

Results

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-01	**Date Collected**	: 09/05/24 13:53
Client ID	: MW-5A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 02:50
Sample Matrix	: WATER	**Dilution Factor**	: 1.3
Analytical Method	: 121,2540C	**Analyst**	: DEW
Lab File ID	: WG1969455.pdf	**Instrument ID**	: BALANCE#22
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Solids, Total Dissolved	84.	13	4.0	

Form 1
WETCHEM

Client	:	P. W. Grosser	**Lab Number**	:	L2450786
Project Name	:	ROANOKE SAND + GRAVEL	**Project Number**	:	BSD1504
Lab ID	:	L2450786-02	**Date Collected**	:	09/05/24 13:55
Client ID	:	MW-5B	**Date Received**	:	09/05/24
Sample Location	:	104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	:	09/10/24 02:50
Sample Matrix	:	WATER	**Dilution Factor**	:	1.3
Analytical Method	:	121,2540C	**Analyst**	:	DEW
Lab File ID	:	WG1969455.pdf	**Instrument ID**	:	BALANCE#22
Sample Amount	:		**%Solids**	:	N/A
Digestion Method	:		**Date Digested**	:	

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Solids, Total Dissolved	120	13	4.0	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-03	**Date Collected**	: 09/05/24 12:50
Client ID	: MW-6A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 02:50
Sample Matrix	: WATER	**Dilution Factor**	: 1.3
Analytical Method	: 121,2540C	**Analyst**	: DEW
Lab File ID	: WG1969455.pdf	**Instrument ID**	: BALANCE#22
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Solids, Total Dissolved	100	13	4.0	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-04	**Date Collected**	: 09/05/24 12:47
Client ID	: MW-6B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 02:50
Sample Matrix	: WATER	**Dilution Factor**	: 1.3
Analytical Method	: 121,2540C	**Analyst**	: DEW
Lab File ID	: WG1969455.pdf	**Instrument ID**	: BALANCE#22
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Solids, Total Dissolved	130	13	4.0	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-05	**Date Collected**	: 09/05/24 11:55
Client ID	: MW-7A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 02:50
Sample Matrix	: WATER	**Dilution Factor**	: 1.3
Analytical Method	: 121,2540C	**Analyst**	: DEW
Lab File ID	: WG1969455.pdf	**Instrument ID**	: BALANCE#22
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Solids, Total Dissolved	260	13	4.0	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-06	**Date Collected**	: 09/05/24 12:00
Client ID	: MW-7B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 02:50
Sample Matrix	: WATER	**Dilution Factor**	: 1.3
Analytical Method	: 121,2540C	**Analyst**	: DEW
Lab File ID	: WG1969455.pdf	**Instrument ID**	: BALANCE#22
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Solids, Total Dissolved	280	13	4.0	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-07	**Date Collected**	: 09/05/24 08:00
Client ID	: MW-8A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 02:50
Sample Matrix	: WATER	**Dilution Factor**	: 1.3
Analytical Method	: 121,2540C	**Analyst**	: DEW
Lab File ID	: WG1969455.pdf	**Instrument ID**	: BALANCE#22
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Solids, Total Dissolved	120	13	4.0	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-08	**Date Collected**	: 09/05/24 08:55
Client ID	: MW-8B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 02:50
Sample Matrix	: WATER	**Dilution Factor**	: 1.3
Analytical Method	: 121,2540C	**Analyst**	: DEW
Lab File ID	: WG1969455.pdf	**Instrument ID**	: BALANCE#22
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Solids, Total Dissolved	44.	13	4.0	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-09	**Date Collected**	: 09/05/24 10:10
Client ID	: MW-10A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 02:50
Sample Matrix	: WATER	**Dilution Factor**	: 1.3
Analytical Method	: 121,2540C	**Analyst**	: DEW
Lab File ID	: WG1969455.pdf	**Instrument ID**	: BALANCE#22
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Solids, Total Dissolved	110	13	4.0	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-10	**Date Collected**	: 09/05/24 10:16
Client ID	: MW-10B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 02:50
Sample Matrix	: WATER	**Dilution Factor**	: 1.3
Analytical Method	: 121,2540C	**Analyst**	: DEW
Lab File ID	: WG1969455.pdf	**Instrument ID**	: BALANCE#22
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Solids, Total Dissolved	120	13	4.0	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-12	**Date Collected**	: 09/05/24 00:00
Client ID	: DUP	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 02:50
Sample Matrix	: WATER	**Dilution Factor**	: 1.3
Analytical Method	: 121,2540C	**Analyst**	: DEW
Lab File ID	: WG1969455.pdf	**Instrument ID**	: BALANCE#22
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Solids, Total Dissolved	90.	13	4.0	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1969455-1	**Date Collected**	: NA
Client ID	: WG1969455-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 09/10/24 02:50
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2540C	**Analyst**	: DEW
Lab File ID	: WG1969455.pdf	**Instrument ID**	: BALANCE#22
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Solids, Total Dissolved	ND	10	3.1	U

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1969455-3	**Date Collected**	: 09/03/24 09:15
Client ID	: WG1969455-3 DUP	**Date Received**	: 09/03/24
Sample Location	:	**Date Analyzed**	: 09/10/24 02:50
Sample Matrix	: WATER	**Dilution Factor**	: 1.3
Analytical Method	: 121,2540C	**Analyst**	: DEW
Lab File ID	: WG1969455.pdf	**Instrument ID**	: BALANCE#22
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Solids, Total Dissolved	150	13	4.0	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1969455-4	**Date Collected**	: 09/03/24 10:30
Client ID	: WG1969455-4 DUP	**Date Received**	: 09/03/24
Sample Location	:	**Date Analyzed**	: 09/10/24 02:50
Sample Matrix	: WATER	**Dilution Factor**	: 1.3
Analytical Method	: 121,2540C	**Analyst**	: DEW
Lab File ID	: WG1969455.pdf	**Instrument ID**	: BALANCE#22
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Solids, Total Dissolved	82.	13	4.0	

Sample Raw Data

Wet Chemistry Gravimetric ELN

Printed: SEP-11-24 10:38:34

WorkGroup	WG1969455	**Temp In (C)**	180	**Temp In (C)**	180	**Temp In (C)**	180	**Temp In (C)**		**Temp In (C)**					
Title	Solids, Total Dissolved	**Temp Out (C)**	180	**Temp Out (C)**	180	**Temp Out (C)**	180	**Temp Out (C)**		**Temp Out (C)**					
Method	SM2540C	**Time In**	11-SEP-24 00:45	**Time In**	11-SEP-24 04:18	**Time In**	11-SEP-24 08:59	**Time In**		**Time In**					
Instrument	BALANCE#22	**Time Out**	11-SEP-24 03:09	**Time Out**	11-SEP-24 07:04	**Time Out**	11-SEP-24 10:04	**Time Out**		**Time Out**					

Evaporation	**Temp In (C)**	**Time In**
	90	10-SEP-24 09:23

LCS Lot #	**TrueValue**	**Units**
082724B	500	mg/l

Sample #	Analysis Date	Analyst	Cup ID	Filter Lot	Tare Weight (gm)	Sample Volume (ml)	Net Weight (1) (gm)	Net Weight (2) (gm)	Net Weight (3) (gm)	Net Weight (4) (gm)	Net Weight (5) (gm)	Result mg/L	Dil	Comment
L2449993-04	10-SEP-24 02:50	DEB WHELAN	FD	71910422	66.0903	80	66.1113	66.1116				262.50	1.3	
L2449993-05	10-SEP-24 02:50	DEB WHELAN	PG	71910422	61.7191	80	61.7303	61.7307				140.00	1.3	
L2449993-07	10-SEP-24 02:50	DEB WHELAN	CA	71910422	58.9338	80	58.9378	58.9395	58.9393			50.00	1.3	
L2449993-08	10-SEP-24 02:50	DEB WHELAN	EW	71910422	66.9839	80	67.0083	67.0091	67.0095			305.00	1.3	
L2449993-10	10-SEP-24 02:50	DEB WHELAN	AZ	71910422	71.4896	80	71.4947	71.4951				63.75	1.3	
L2450218-01	10-SEP-24 02:50	DEB WHELAN	W11	71910422	62.9617	50	63.0376	63.0378				1518.00	2	
L2450218-02	10-SEP-24 02:50	DEB WHELAN	EG	71910422	62.8332	50	62.9104	62.91				1536.00	2	
L2450218-04	10-SEP-24 02:50	DEB WHELAN	P8	71910422	70.734	80	70.8633	70.8629				1611.25	1.3	
L2450218-06	10-SEP-24 02:50	DEB WHELAN	BJ	71910422	110.9192	80	111.0455	111.0451				1573.75	1.3	T4
L2450786-01	10-SEP-24 02:50	DEB WHELAN	BAA	71910422	112.8995	80	112.9066	112.9062				83.75	1.3	
L2450786-02	10-SEP-24 02:50	DEB WHELAN	BA	71910422	110.4438	80	110.4534	110.4534				120.00	1.3	
L2450786-03	10-SEP-24 02:50	DEB WHELAN	BR	71910422	119.4606	80	119.469	119.4689				103.75	1.3	
L2450786-04	10-SEP-24 02:50	DEB WHELAN	BRR	71910422	122.7119	80	122.7222	122.722				126.25	1.3	
L2450786-05	10-SEP-24 02:50	DEB WHELAN	BH	71910422	120.1815	80	120.2026	120.203				263.75	1.3	
L2450786-06	10-SEP-24 02:50	DEB WHELAN	BUG	71910422	106.6474	80	106.6705	106.6701				283.75	1.3	
L2450786-07	10-SEP-24 02:50	DEB WHELAN	BV	71910422	109.3453	80	109.3547	109.3546				116.25	1.3	
L2450786-08	10-SEP-24 02:50	DEB WHELAN	BL	71910422	107.9162	80	107.9199	107.9197				43.75	1.3	
L2450786-09	10-SEP-24 02:50	DEB WHELAN	BI	71910422	106.5417	80	106.5507	106.551				112.50	1.3	
L2450786-10	10-SEP-24 02:50	DEB WHELAN	BG	71910422	110.1835	80	110.1937	110.1935				125.00	1.3	
L2450786-12	10-SEP-24 02:50	DEB WHELAN	BN	71910422	104.7283	80	104.7357	104.7355				90.00	1.3	
WG1969455-1	10-SEP-24 02:50	DEB WHELAN	W12	71910422	64.6745	100	64.6747	64.6745				0.00	1	T3
WG1969455-2	10-SEP-24 02:50	DEB WHELAN	CB	71910422	62.6633	50	62.6917	62.6915				564.00	2	

Wet Chemistry Gravimetric ELN

Printed: SEP-11-24 10:38:34

WorkGroup	WG1969455	**Temp In (C)**	180	**Temp In (C)**	180	**Temp In (C)**	180	**Temp In (C)**		**Temp In (C)**					
Title	Solids, Total Dissolved	**Temp Out (C)**	180	**Temp Out (C)**	180	**Temp Out (C)**	180	**Temp Out (C)**		**Temp Out (C)**					
Method	SM2540C	**Time In**	11-SEP-24 00:45	**Time In**	11-SEP-24 04:18	**Time In**	11-SEP-24 08:59	**Time In**		**Time In**					
Instrument	BALANCE#22	**Time Out**	11-SEP-24 03:09	**Time Out**	11-SEP-24 07:04	**Time Out**	11-SEP-24 10:04	**Time Out**		**Time Out**					

Temp In (C)	**Time In**
90	10-SEP-24 09:23

LCS Lot #	**TrueValue**	**Units**
082724B	500	mg/l

Sample #	**Analysis Date**	**Analyst**	**Cup ID**			**Sample Volume (ml)**					**Result mg/L**	**Dil**	**Comment**
WG1969455-3	10-SEP-24 02:50	DEB WHELAN	CE	71910422	64.7187	80	64.7308	64.7312			151.25	1.3	
WG1969455-4	10-SEP-24 02:50	DEB WHELAN	AA 3	71910422	60.2648	80	60.2714	60.2718			82.50	1.3	

Quality Control

Form 6
Lab Duplicates

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: NA	**Analysis Date**	: 09/10/24 02:50
Dup Sample ID	: WG1969455-3	**DUP Analysis Date**	: 09/10/24 02:50

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Solids, Total Dissolved	140	150	7	10

Form 6
Lab Duplicates

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: NA	**Analysis Date**	: 09/10/24 02:50
Dup Sample ID	: WG1969455-4	**DUP Analysis Date**	: 09/10/24 02:50

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Solids, Total Dissolved	64	82.	25 Q	10

Form 7
Laboratory Control Sample

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: WG1969455-2	**LCS Analysis Date**	: 09/10/24 02:50
Dup Sample ID	:	**LCSD Analysis Date**	:

	Laboratory Control Sample			Laboratory Control Duplicate					
Parameter	**True (mg/l)**	**Found (mg/l)**	**%R**	**True (mg/l)**	**Found (mg/l)**	**%R**	**RPD**	**Recovery Limits**	**RPD Limit**
Solids, Total Dissolved	**500.**	**560.**	**113.**					**80-120**	**10**

Date Created: 11/11/21
Created By: Jason Hebert
File: PM11467-1
Page: 1

WETCHEM (WATER)

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Method	Holding Time	Container/Sample Preservation
Solids, Total Dissolved	NONE	10	3.07	mg/l	80-120			10	10	2540C	7 days	1 - Plastic 500ml unpreserved

Please Note that the RL information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)
Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.

Calculations of TDS

$$\text{mgTDS/L} = \frac{(A - B) \times 1000}{\text{Sample volume, (L)}}$$

Where:

A = Final weight (weight of dish + dried residue, g)
B = Initial weight (weight of clean dish, g)

Sulfate Analysis

Results

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-01	**Date Collected**	: 09/05/24 13:53
Client ID	: MW-5A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 14:00
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500SO4-E	**Analyst**	: MRW
Lab File ID	: WG1969632.csv	**Instrument ID**	: SPEC6
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
14808-79-8	Sulfate	15.	10	1.4	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-02	**Date Collected**	: 09/05/24 13:55
Client ID	: MW-5B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 14:00
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500SO4-E	**Analyst**	: MRW
Lab File ID	: WG1969632.csv	**Instrument ID**	: SPEC6
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
14808-79-8	Sulfate	17.	10	1.4	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-03	**Date Collected**	: 09/05/24 12:50
Client ID	: MW-6A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 14:00
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500SO4-E	**Analyst**	: MRW
Lab File ID	: WG1969632.csv	**Instrument ID**	: SPEC6
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
14808-79-8	Sulfate	19.	10	1.4	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-04	**Date Collected**	: 09/05/24 12:47
Client ID	: MW-6B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 16:00
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500SO4-E	**Analyst**	: MRW
Lab File ID	: WG1970410.csv	**Instrument ID**	: SPEC6
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/11/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
14808-79-8	Sulfate	16.	10	1.4	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-05	**Date Collected**	: 09/05/24 11:55
Client ID	: MW-7A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 16:00
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500SO4-E	**Analyst**	: MRW
Lab File ID	: WG1970410.csv	**Instrument ID**	: SPEC6
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/11/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
14808-79-8	Sulfate	34.	10	1.4	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-06	**Date Collected**	: 09/05/24 12:00
Client ID	: MW-7B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 16:00
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500SO4-E	**Analyst**	: MRW
Lab File ID	: WG1970410.csv	**Instrument ID**	: SPEC6
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/11/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
14808-79-8	Sulfate	35.	10	1.4	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-07	**Date Collected**	: 09/05/24 08:00
Client ID	: MW-8A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 16:00
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500SO4-E	**Analyst**	: MRW
Lab File ID	: WG1970410.csv	**Instrument ID**	: SPEC6
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/11/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
14808-79-8	Sulfate	12.	10	1.4	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-08	**Date Collected**	: 09/05/24 08:55
Client ID	: MW-8B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 16:00
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500SO4-E	**Analyst**	: MRW
Lab File ID	: WG1970410.csv	**Instrument ID**	: SPEC6
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/11/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
14808-79-8	Sulfate	10.	10	1.4	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-09	**Date Collected**	: 09/05/24 10:10
Client ID	: MW-10A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 11:00
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500SO4-E	**Analyst**	: MRW
Lab File ID	: WG1970226.csv	**Instrument ID**	: SPEC6
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/11/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
14808-79-8	Sulfate	13.	10	1.4	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-10	**Date Collected**	: 09/05/24 10:16
Client ID	: MW-10B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 11:00
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500SO4-E	**Analyst**	: MRW
Lab File ID	: WG1970226.csv	**Instrument ID**	: SPEC6
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/11/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
14808-79-8	Sulfate	18.	10	1.4	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-12	**Date Collected**	: 09/05/24 00:00
Client ID	: DUP	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 11:00
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500SO4-E	**Analyst**	: MRW
Lab File ID	: WG1970226.csv	**Instrument ID**	: SPEC6
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/11/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
14808-79-8	Sulfate	12.	10	1.4	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1969632-1	**Date Collected**	: NA
Client ID	: WG1969632-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 09/10/24 14:00
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500SO4-E	**Analyst**	: MRW
Lab File ID	: WG1969632.csv	**Instrument ID**	: SPEC6
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
14808-79-8	Sulfate	1.6	10	1.4	J

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1969632-3	**Date Collected**	: 09/04/24 13:40
Client ID	: WG1969632-3 DUP	**Date Received**	: 09/04/24
Sample Location	:	**Date Analyzed**	: 09/10/24 14:00
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500SO4-E	**Analyst**	: MRW
Lab File ID	: WG1969632.csv	**Instrument ID**	: SPEC6
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
14808-79-8	Sulfate	19.	10	1.4	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1970226-1	**Date Collected**	: NA
Client ID	: WG1970226-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 09/11/24 11:00
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500SO4-E	**Analyst**	: MRW
Lab File ID	: WG1970226.csv	**Instrument ID**	: SPEC6
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/11/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
14808-79-8	Sulfate	1.9	10	1.4	J

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1970226-3	**Date Collected**	: 08/29/24 11:45
Client ID	: WG1970226-3 DUP	**Date Received**	: 08/29/24
Sample Location	:	**Date Analyzed**	: 09/11/24 11:00
Sample Matrix	: WATER	**Dilution Factor**	: 2.5
Analytical Method	: 121,4500SO4-E	**Analyst**	: MRW
Lab File ID	: WG1970226.csv	**Instrument ID**	: SPEC6
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/11/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
14808-79-8	Sulfate	57.	25	3.4	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1970410-1	**Date Collected**	: NA
Client ID	: WG1970410-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 09/11/24 16:00
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500SO4-E	**Analyst**	: MRW
Lab File ID	: WG1970410.csv	**Instrument ID**	: SPEC6
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/11/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
14808-79-8	Sulfate	1.8	10	1.4	J

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1970410-3	**Date Collected**	: 09/05/24 12:47
Client ID	: MW-6BDUP	**Date Received**	: 09/05/24
Sample Location	:	**Date Analyzed**	: 09/11/24 16:00
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500SO4-E	**Analyst**	: MRW
Lab File ID	: WG1970410.csv	**Instrument ID**	: SPEC6
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/11/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
14808-79-8	Sulfate	18.	10	1.4	

Sample Raw Data

ALPHA ANALYTICAL LABS

WET CHEMISTRY DEPARTMENT

S U L F A T E

Last Change 3/5/13
File SO4-L.xlt
Curve/spike/ccv;wc3437
LCS;wc3373
Reagent;lot A4117
Pippette/s: 322, 424
Acrodisk: FJ5503
Syringe: 2125536

Sample Number: _____
Client: _____
Analysis: Sulfate, SO4
Method: SM 4500SO4-E
Instrument: SPEC6
Wavelength: 420 nm
Spike Volume(ml): 0.5
Spike Concentration (mg/l): 1000

Product: SO4-4500
Curve Calibration Date : 09/11/24
Curve Identifier: 9/11/2024
Analysis Analyte: Sulfate
Analysis Date: 9/11/2024 16:00
Preparation Date: 9/11/2024 16:00
Technician: MRW
Work group: WG1970410
RL: 10 mg/l
Cell: 2.5 cm

Standard ID	Mean signal (pk area) abs	Dilution	Calc-ed Result
0	0.000	1.0	1.56
10	0.151	1.0	8.05
20	0.425	1.0	19.8
40	0.908	1.0	40.6

Calibration Curve
Volume: 25 ml

Slope	y-intercept
0.023269	-0.0362

Correlation Coefficient
0.996245

ICV/LCS Concentration (mg/l) = 20.0000

	Sample number	Sample Volume (ml)	Final Volume (ml)	Bkgd. Abs.	Gross Abs.	Net Absorbance	RESULT (mg/l)	Dilution Factor	RL Multiplier	FINAL RESULT (mg/l)	
	ICB	25	25	0	0.003	0.003	1.803	1	1.0	1.8	**Recovery**
	ICV	25	25	0	0.4	0.400	18.737	1	1.0	18.7	94%
SAMP	L2450786-04	25	25	0.004	0.352	0.348	16.519	1	1.0	16.5	
SAMP	L2450786-05	25	25	0	0.765	0.765	34.306	1	1.0	34.3	
SAMP	L2450786-06	25	25	0.004	0.775	0.771	34.562	1	1.0	34.6	
SAMP	L2450786-07	25	25	0.006	0.253	0.247	12.211	1	1.0	12.2	
SAMP	L2450786-08	25	25	0.009	0.206	0.197	10.078	1	1.0	10.1	
	CCV	25	25	0	0.39	0.390	18.310	1	1.0	18.3	
	CCB	25	25	0	0.004	0.004	1.846	1	1.0	1.8	
		25	25					1	1.0		
		25	25					1	1.0		
		25	25					1	1.0		
		25	25					1	1.0		
		25	25					1	1.0		
		25	25					1	1.0		
		25	25					1	1.0		
		25	25					1	1.0		
		25	25					1	1.0		
		25	25					1	1.0		
		25	25					1	1.0		
		25	25					1	1.0		
		25	25					1	1.0		
BLANK	WG1970410-1	25	25	0.000	0.003	0.003	1.803	1	1.0	1.8	
DUP	WG1970410-3	25	25	0.004	0.383	0.379	17.841	1	1.0	17.8	**L2450786-04**

	Sample number	sample volume	Final volume (ml)	Bkgd. Abs.	Gross Abs.	Absorbance	Sample Result mg/l	Spiked Volume	Spike conc. mg/l	Spike Result mg/l	Recovery %
MS	WG1970410-4	12.5	25	0.002	0.651	0.649	16.500	12.5	40.0000	59	**106**
											L2450786-04
LCS	WG1970410-2	25	25	0	0.4	0.4		1	20.0000	19	**94**

ALPHA ANALYTICAL LABS

WET CHEMISTRY DEPARTMENT

S U L F A T E

Last Change 3/5/13
File SO4-L.xlt

Curve/spike/ccv;wc3437
LCS;wc3373

Sample Number: _____
Client: _____
Analysis: Sulfate, SO4
Method: SM 4500SO4-E
Instrument: SPEC6
Wavelength: 420 nm
Spike Volume(ml): 0.5
Spike Concentration (mg/l): 1000

Product: SO4-4500
Curve Calibration Date : 09/11/24
Curve Identifier: 9/11/2024
Analysis Analyte: Sulfate
Analysis Date: 9/11/2024 11:00
Preparation Date: 9/11/2024 11:00
Technician: MRW
Work group: WG1970226
RL: 10 mg/l
Cell: 2.5 cm

Reagent;lot A4117
Pippette/s: 322, 424
Acrodisk: FJ5503
Syringe: 2125536

Standard ID	Mean signal (pk area) abs	Dilution	Calc-ed Result
0	0.000	1.0	1.56
10	0.151	1.0	8.05
20	0.425	1.0	19.8
40	0.908	1.0	40.6

Calibration Curve
Volume: 25 ml

Slope	y-intercept
0.023269	-0.0362

Correlation Coefficient
0.996245

ICV/LCS Concentration (mg/l) = 20.0000

	Sample number	Sample Volume (ml)	Final Volume (ml)	Bkgd. Abs.	Gross Abs.	Net Absorbance	RESULT (mg/l)	Dilution Factor	RL Multiplier	FINAL RESULT (mg/l)	
	ICB	25	25	0	0.006	0.006	1.931	1	1.0	1.9	Recovery
	ICV	25	25	0	0.396	0.396	18.566	1	1.0	18.6	93%
SAMP	L2449151-01	10	25	0.076	0.393	0.317	15.197	1	2.5	38.0	
SAMP	L2449151-03	10	25	0.002	0.525	0.523	23.983	1	2.5	60.0	
SAMP	L2449151-05	10	25	0.031	0.477	0.446	20.699	1	2.5	51.7	
SAMP	L2449151-07	25	25	0.045	0.388	0.343	16.306	1	1.0	16.3	
SAMP	L2449151-09	25	25	0.09	0.405	0.315	15.111	1	1.0	15.1	
SAMP	L2449151-11	25	25	0.14	0.213	0.073	4.789	1	1.0	4.8	
SAMP	L2449151-13	5	25	0.007	0.826	0.819	36.609	1	5.0	183.0	
SAMP	L2449151-15	10	25	0.139	0.182	0.043	3.509	1	2.5	8.8	FILTERED
	CCV1	25	25	0	0.394	0.394	18.481	1	1.0	18.5	
	CCB1	25	25	0	0.004	0.004	1.846	1	1.0	1.8	
SAMP	L2449483-01	10	25	0.008	0.498	0.490	22.576	1	2.5	56.4	
SAMP	L2449483-03	2	25	0.008	0.595	0.587	26.713	1	12.5	333.9	
SAMP	L2449483-05	10	25	0.048	0.482	0.434	20.187	1	2.5	50.5	
SAMP	L2449483-07	2	25	0.005	0.458	0.453	20.998	1	12.5	262.5	
SAMP	L2449483-09	10	25	0.007	0.492	0.485	22.363	1	2.5	55.9	FILTERED
SAMP	L2449483-11	1	25	0.003	0.349	0.346	16.434	1	25.0	410.8	
SAMP	L2449863-01	2.5	25	0.005	0.244	0.239	11.870	1	10.0	118.7	
SAMP	L2450710-01	25	25	0.001	0.011	0.010	2.102	1	1.0	2.1	
SAMP	L2450710-02	25	25	0.002	0.004	0.002	1.761	1	1.0	1.8	
SAMP	L2450786-09	25	25	0.001	0.269	0.268	13.107	1	1.0	13.1	
	CCV2	25	25	0	0.392	0.392	18.396	1	1.0	18.4	
	CCB2	25	25	0	0.004	0.004	1.846	1	1.0	1.8	
SAMP	L2450786-10	25	25	0.004	0.383	0.379	17.841	1	1.0	17.8	
SAMP	L2450786-12	25	25	0.002	0.232	0.230	11.486	1	1.0	11.5	
	CCV3	25	25	0	0.39	0.390	18.310	1	1.0	18.3	
	CCB3	25	25	0	0.005	0.005	1.889	1	1.0	1.9	
BLANK	WG1970226-1	25	25	0.000	0.006	0.006	1.931	1	1.0	1.9	
DUP	WG1970226-3	10	25	0.006	0.502	0.496	22.832	1	2.5	57.1	L2449483-09

	Sample number	sample volume	Final volume (ml)	Bkgd. Abs.	Gross Abs.	Absorbance	Sample Result mg/l	Spiked Volume	Spike conc. mg/l	Spike Result mg/l	Recovery %
MS	WG1970226-4	5	25	0.003	0.682	0.679	55.900	5	100.0000	153	97
											L2449483-09
LCS	WG1970226-2	25	25	0	0.396	0.396		1	20.0000	19	93

ALPHA ANALYTICAL LABS

WET CHEMISTRY DEPARTMENT

S U L F A T E

Last Change 3/5/13
File SO4-L.xlt
Curve/spike/ccv;wc3437
LCS;wc3373
Reagent;lot A4117
Pippette/s: 322, 424
Acrodisk: FJ5503
Syringe: 2125536

Sample Number: _____
Client: _____
Analysis: Sulfate, SO4
Method: SM 4500SO4-E
Instrument: SPEC6
Wavelength: 420 nm
Spike Volume(ml): 0.5
Spike Concentration (mg/l): 1000

Product: SO4-4500
Curve Calibration Date : 09/10/24
Curve Identifier: 9/10/2024
Analysis Analyte: Sulfate
Analysis Date: 9/10/2024 14:00
Preparation Date: 9/10/2024 14:00
Technician: MRW
Work group: WG1969632
RL: 10 mg/l
Cell: 2.5 cm

Standard ID	Mean signal (pk area) abs	Dilution	Calc-ed Result
0	0.003	1.0	1.58
10	0.155	1.0	8.11
20	0.424	1.0	19.7
40	0.912	1.0	40.6

Calibration Curve
Volume: 25 ml

Slope	y-intercept
0.023274	-0.0338

Correlation Coefficient
0.996261

ICV/LCS Concentration (mg/l) = 20.0000

	Sample number	Sample Volume (ml)	Final Volume (ml)	Bkgd. Abs.	Gross Abs.	Net Absorbance	RESULT (mg/l)	Dilution Factor	RL Multiplier	FINAL RESULT (mg/l)	
	ICB	25	25	0	0.001	0.001	1.615	1	1.0	1.6	Recovery
	ICV	25	25	0	0.391	0.391	18.246	1	1.0	18.2	91%
SAMP	L2448924-01	25	25	0.09	0.151	0.061	4.173	1	1.0	4.2	
SAMP	L2448924-03	2.5	25	0.003	0.315	0.312	14.877	1	10.0	148.8	
SAMP	L2448924-05	2.5	25	0.004	0.282	0.278	13.427	1	10.0	134.3	
SAMP	L2450209-01	0.5	25	0.002	0.232	0.230	11.380	1	50.0	569.0	
SAMP	L2450209-02	2.5	25	0.003	0.411	0.408	18.971	1	10.0	189.7	
SAMP	L2450398-01	25	25	0.009	0.316	0.307	14.664	1	1.0	14.7	
SAMP	L2450398-02	10	25	0.001	0.268	0.267	12.958	1	2.5	32.4	
SAMP	L2450398-03	25	25	0.035	0.036	0.001	1.615	1	1.0	1.6	FILTERED
	CCV1	25	25	0	0.394	0.394	18.374	1	1.0	18.4	
	CCB1	25	25	0	0.005	0.005	1.785	1	1.0	1.8	
SAMP	L2450398-04	25	25	0.011	0.186	0.175	9.035	1	1.0	9.0	
	L2450417-01	25	25	0.01	0.463	0.453	20.890	1	1.0	20.9	
	L2450417-02	25	25	0.006	0.375	0.369	17.308	1	1.0	17.3	
	L2450417-03	25	25	0.014	0.204	0.190	9.675	1	1.0	9.7	
	L2450417-04	25	25	0.014	0.366	0.352	16.583	1	1.0	16.6	
	L2450417-06	25	25	0.004	0.376	0.372	17.436	1	1.0	17.4	
	L2450417-07	25	25	0.006	0.42	0.414	19.227	1	1.0	19.2	
	L2450417-08	25	25	0.006	0.344	0.338	15.986	1	1.0	16.0	
	L2450417-09	25	25	0.007	0.846	0.839	37.351	1	1.0	37.4	
SAMP	L2450786-01	25	25	0.002	0.313	0.311	14.835	1	1.0	14.8	
	CCV2	25	25	0	0.385	0.385	17.990	1	1.0	18.0	
	CCB2	25	25	0	0.004	0.004	1.743	1	1.0	1.7	
SAMP	L2450786-02	25	25	0.007	0.369	0.362	17.010	1	1.0	17.0	
SAMP	L2450786-03	25	25	0.006	0.412	0.406	18.886	1	1.0	18.9	
	CCV3	25	25	0	0.389	0.389	18.161	1	1.0	18.2	
	CCB3	25	25	0	0.003	0.003	1.700	1	1.0	1.7	
BLANK	WG1969632-1	25	25	0.000	0.001	0.001	1.615	1	1.0	1.6	
DUP	WG1969632-3	25	25	0.003	0.414	0.411	19.099	1	1.0	19.1	L2450417-06

	Sample number	sample volume	Final volume (ml)	Bkgd. Abs.	Gross Abs.	Absorbance	Sample Result mg/l	Spiked Volume	Spike conc. mg/l	Spike Result mg/l	Recovery %
MS	WG1969632-4	12.5	25	0.002	0.672	0.670	17.400	12.5	40.0000	60	107
											L2450417-06
LCS	WG1969632-2	25	25	0	0.391	0.391		1	20.0000	18	91

Quality Control

Form 5a
Matrix Spike

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: L2450417-06		
Matrix Spike	: WG1969632-4	**MS Analysis Date**	: 09/10/24 14:00
Matrix Spike Dup	:	**MSD Analysis Date**	:

		Matrix Spike Sample			Matrix Spike Duplicate					
Parameter	**Sample Conc. (mg/l)**	**Spike Added (mg/l)**	**Spike Conc. (mg/l)**	**%R**	**Spike Added (mg/l)**	**Spike Conc. (mg/l)**	**%R**	**RPD**	**Recovery Limits**	**RPD Limit**
Sulfate	**17.**	**40**	**60.**	**108**					**55-147**	**14**

Form 5a
Matrix Spike

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: L2449483-09		
Matrix Spike	: WG1970226-4	**MS Analysis Date**	: 09/11/24 11:00
Matrix Spike Dup	:	**MSD Analysis Date**	:

		Matrix Spike Sample			Matrix Spike Duplicate					
Parameter	**Sample Conc. (mg/l)**	**Spike Added (mg/l)**	**Spike Conc. (mg/l)**	**%R**	**Spike Added (mg/l)**	**Spike Conc. (mg/l)**	**%R**	**RPD**	**Recovery Limits**	**RPD Limit**
Sulfate	**56.**	**100**	**150**	**97**					**55-147**	**14**

Form 5a
Matrix Spike

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: MW-6B	**Matrix**	: WATER
Lab Sample ID	: L2450786-04		
Matrix Spike	: WG1970410-4	**MS Analysis Date**	: 09/11/24 16:00
Matrix Spike Dup	:	**MSD Analysis Date**	:

		Matrix Spike Sample			Matrix Spike Duplicate					
Parameter	Sample Conc. (mg/l)	Spike Added (mg/l)	Spike Conc. (mg/l)	%R	Spike Added (mg/l)	Spike Conc. (mg/l)	%R	RPD	Recovery Limits	RPD Limit
Sulfate	16.	40	59.	108					55-147	14

Form 6
Lab Duplicates

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: NA	**Analysis Date**	: 09/10/24 14:00
Dup Sample ID	: WG1969632-3	**DUP Analysis Date**	: 09/10/24 14:00

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Sulfate	17	19.	11	14

Form 6
Lab Duplicates

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: NA	**Analysis Date**	: 09/11/24 11:00
Dup Sample ID	: WG1970226-3	**DUP Analysis Date**	: 09/11/24 11:00

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Sulfate	56	57.	2	14

Form 6
Lab Duplicates

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: MW-6B	**Matrix**	: WATER
Lab Sample ID	: L2450786-04	**Analysis Date**	: 09/11/24 16:00
Dup Sample ID	: WG1970410-3	**DUP Analysis Date**	: 09/11/24 16:00

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Sulfate	16.	18.	12	14

Form 7
Laboratory Control Sample

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: WG1969632-2	**LCS Analysis Date**	: 09/10/24 14:00
Dup Sample ID	:	**LCSD Analysis Date**	:

	Laboratory Control Sample			Laboratory Control Duplicate					
Parameter	**True (mg/l)**	**Found (mg/l)**	**%R**	**True (mg/l)**	**Found (mg/l)**	**%R**	**RPD**	**Recovery Limits**	**RPD Limit**
Sulfate	**20.0**	**18.0**	**90.**					**90-110**	**14**

Form 7
Laboratory Control Sample

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: WG1970226-2	**LCS Analysis Date**	: 09/11/24 11:00
Dup Sample ID	:	**LCSD Analysis Date**	:

	Laboratory Control Sample			Laboratory Control Duplicate					
Parameter	**True (mg/l)**	**Found (mg/l)**	**%R**	**True (mg/l)**	**Found (mg/l)**	**%R**	**RPD**	**Recovery Limits**	**RPD Limit**
Sulfate	**20.0**	**19.0**	**95.**					**90-110**	**14**

Form 7
Laboratory Control Sample

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: WG1970410-2	**LCS Analysis Date**	: 09/11/24 16:00
Dup Sample ID	:	**LCSD Analysis Date**	:

	Laboratory Control Sample			Laboratory Control Duplicate					
Parameter	**True (mg/l)**	**Found (mg/l)**	**%R**	**True (mg/l)**	**Found (mg/l)**	**%R**	**RPD**	**Recovery Limits**	**RPD Limit**
Sulfate	**20.0**	**19.0**	**95.**					**90-110**	**14**

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Created By: Jason Hebert
File: PM11467-1
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WETCHEM (WATER)

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Method	Holding Time	Container/Sample Preservation
Sulfate	14808-79-8	10	1.37	mg/l	90-110		55-147	14	14	4500SO4-E	28 days	1 - Plastic 500ml unpreserved
Sulfate	14808-79-8	10	1.37	mg/l	90-110		55-147	14	14	9038	28 days	1 - Plastic 500ml unpreserved

Please Note that the RL information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)
Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.

Date Created: 11/11/21
Created By: Jason Hebert
File: PM11468-1
Page: 1

WETCHEM (SOIL)

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Method	Holding Time	Container / Sample Preservation
Sulfate	14808-79-8	100	13.6	mg/kg	80-121	12	22-183	12	12	9038	28 days	1 - Glass 250ml/8oz unpreserved

Please Note that the RL information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)
Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.

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Calculations of Sulfate

Aqueous samples:

Calculate the concentration value of the sample directly from the standard curve.

$$mgSO_4/L = \frac{\text{absorbance - y-intercept}}{\text{slope}} \times \text{Dilution Factor}$$

If sample has a background absorbance, it has to be subtracted before calculation.

Alkalinity Analysis

Results

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-01	**Date Collected**	: 09/05/24 13:53
Client ID	: MW-5A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/09/24 09:16
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: MKT
Lab File ID	: 240909_CSV.csv	**Instrument ID**	: TITR5
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
3812-32-6	Alkalinity, Carbonate	ND	2.00	NA	U
71-52-3	Alkalinity, Bicarbonate	63.1	2.00	NA	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-02	**Date Collected**	: 09/05/24 13:55
Client ID	: MW-5B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/09/24 09:18
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: MKT
Lab File ID	: 240909_CSV.csv	**Instrument ID**	: TITR5
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
3812-32-6	Alkalinity, Carbonate	ND	2.00	NA	U
71-52-3	Alkalinity, Bicarbonate	24.7	2.00	NA	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-03	**Date Collected**	: 09/05/24 12:50
Client ID	: MW-6A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/09/24 09:20
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: MKT
Lab File ID	: 240909_CSV.csv	**Instrument ID**	: TITR5
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
3812-32-6	Alkalinity, Carbonate	ND	2.00	NA	U
71-52-3	Alkalinity, Bicarbonate	50.9	2.00	NA	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-04	**Date Collected**	: 09/05/24 12:47
Client ID	: MW-6B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/09/24 09:22
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: MKT
Lab File ID	: 240909_CSV.csv	**Instrument ID**	: TITR5
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
3812-32-6	Alkalinity, Carbonate	ND	2.00	NA	U
71-52-3	Alkalinity, Bicarbonate	46.7	2.00	NA	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-05	**Date Collected**	: 09/05/24 11:55
Client ID	: MW-7A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/09/24 09:24
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: MKT
Lab File ID	: 240909_CSV.csv	**Instrument ID**	: TITR5
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
3812-32-6	Alkalinity, Carbonate	ND	2.00	NA	U
71-52-3	Alkalinity, Bicarbonate	194.	2.00	NA	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-06	**Date Collected**	: 09/05/24 12:00
Client ID	: MW-7B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/09/24 09:30
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: MKT
Lab File ID	: 240909_CSV.csv	**Instrument ID**	: TITR5
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
3812-32-6	Alkalinity, Carbonate	ND	2.00	NA	U
71-52-3	Alkalinity, Bicarbonate	205.	2.00	NA	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-07	**Date Collected**	: 09/05/24 08:00
Client ID	: MW-8A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/09/24 09:35
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: MKT
Lab File ID	: 240909_CSV.csv	**Instrument ID**	: TITR5
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
3812-32-6	Alkalinity, Carbonate	ND	2.00	NA	U
71-52-3	Alkalinity, Bicarbonate	23.2	2.00	NA	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-08	**Date Collected**	: 09/05/24 08:55
Client ID	: MW-8B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/09/24 09:37
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: MKT
Lab File ID	: 240909_CSV.csv	**Instrument ID**	: TITR5
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
3812-32-6	Alkalinity, Carbonate	ND	2.00	NA	U
71-52-3	Alkalinity, Bicarbonate	23.6	2.00	NA	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-09	**Date Collected**	: 09/05/24 10:10
Client ID	: MW-10A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/09/24 09:38
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: MKT
Lab File ID	: 240909_CSV.csv	**Instrument ID**	: TITR5
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
3812-32-6	Alkalinity, Carbonate	ND	2.00	NA	U
71-52-3	Alkalinity, Bicarbonate	31.6	2.00	NA	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-10	**Date Collected**	: 09/05/24 10:16
Client ID	: MW-10B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/09/24 09:40
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: MKT
Lab File ID	: 240909_CSV.csv	**Instrument ID**	: TITR5
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
3812-32-6	Alkalinity, Carbonate	ND	2.00	NA	U
71-52-3	Alkalinity, Bicarbonate	23.3	2.00	NA	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-12	**Date Collected**	: 09/05/24 00:00
Client ID	: DUP	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/09/24 09:42
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: MKT
Lab File ID	: 240909_CSV.csv	**Instrument ID**	: TITR5
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
3812-32-6	Alkalinity, Carbonate	ND	2.00	NA	U
71-52-3	Alkalinity, Bicarbonate	21.8	2.00	NA	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1969097-3	**Date Collected**	: NA
Client ID	: WG1969097-3BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 09/09/24 08:50
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: MKT
Lab File ID	: 240909_CSV.csv	**Instrument ID**	: TITR5
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
3812-32-6	Alkalinity, Carbonate	ND	2.00	NA	U
71-52-3	Alkalinity, Bicarbonate	ND	2.00	NA	U

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1969097-4	**Date Collected**	: 09/04/24 13:40
Client ID	: WG1969097-4 DUP	**Date Received**	: 09/04/24
Sample Location	:	**Date Analyzed**	: 09/09/24 09:07
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: MKT
Lab File ID	: 240909_CSV.csv	**Instrument ID**	: TITR5
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
71-52-3	Alkalinity, Bicarbonate	61.5	2.00	NA	
3812-32-6	Alkalinity, Carbonate	ND	2.00	NA	U

Sample Raw Data

Results Editor

Result Overview

Sample start t	Zero poin	Unit of Ze	Data marl	Slope 1 (C	Unit of Sl	Data marl	Sensor ty	List of sta	Standard	Comment	Temperat
	7.127	pH		-53.26	mV/pH						

Results Editor

Result Overview

Sample ID1	Potentia	Unit of P	Data ma	Sample start	Volume	Unit of V	Density [	Unit of D	Cor	Uni	Tempera	Unit of T	Commer
--	7.02	pH		9/9/2024 8:	0	mL	1.0	g/mL	1.0		25.0	°C	

Titration report

Method

Method ID	Alk Total (2)	**Release state**	Released
Name	EP/EP	**Modified by**	SystemInternal
Modified on	10/14/2023 11:44:43 AM		

Summary

Samples

	Sample ID	Name	Result	State
1	Rinse,MKT	Sample size	50 mL	
		Potential R4	6.76 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	0.364 mL	OK
		Consumption 4.2 R3	0.371 mL	OK
		Content R5	7.280 mg/L	OK
		ALK LOW R6	7.140 mg/L	OK
2	Rinse,MKT	Sample size	50 mL	
		Potential R4	5.06 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	0.028 mL	OK
		Consumption 4.2 R3	0.035 mL	OK
		Content R5	0.560 mg/L	OK
		ALK LOW R6	0.420 mg/L	OK
3	WG1969097-3	Sample size	50 mL	
		Potential R4	4.78 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	0.000 mL	OK
		Consumption 4.2 R3	0.024 mL	OK
		Content R5	0.000 mg/L	OK
		ALK LOW R6	-0.480 mg/L	OK
4	xLCS	Sample size	50 mL	
		Potential R4	10.93 pH	OK
		Consumption 8.3 R1	4.843 mL	OK
		Consumption 4.5 R2	5.208 mL	OK
		Consumption 4.2 R3	5.211 mL	OK
		Content R5	104.160 mg/L	OK
		ALK LOW R6	104.100 mg/L	OK
5	I2450417-01	Sample size	50 mL	
		Potential R4	5.13 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	2.596 mL	OK
		Consumption 4.2 R3	2.644 mL	OK
		Content R5	51.920 mg/L	OK
		ALK LOW R6	50.960 mg/L	OK
6	I2450417-02	Sample size	50 mL	

Titration report

		Potential R4	5.33 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	3.053 mL	OK
		Consumption 4.2 R3	3.102 mL	OK
		Content R5	61.060 mg/L	OK
		ALK LOW R6	60.080 mg/L	OK
7	I2450417-03	Sample size	50 mL	
		Potential R4	5.46 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	3.912 mL	OK
		Consumption 4.2 R3	3.974 mL	OK
		Content R5	78.240 mg/L	OK
		ALK LOW R6	77.000 mg/L	OK
8	I2450417-04	Sample size	50 mL	
		Potential R4	5.41 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	3.222 mL	OK
		Consumption 4.2 R3	3.274 mL	OK
		Content R5	64.440 mg/L	OK
		ALK LOW R6	63.400 mg/L	OK
9	I2450417-06	Sample size	50 mL	
		Potential R4	5.42 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	3.014 mL	OK
		Consumption 4.2 R3	3.068 mL	OK
		Content R5	60.280 mg/L	OK
		ALK LOW R6	59.200 mg/L	OK
10	WG1969097-4	Sample size	50 mL	
		Potential R4	5.47 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	3.075 mL	OK
		Consumption 4.2 R3	3.121 mL	OK
		Content R5	61.500 mg/L	OK
		ALK LOW R6	60.580 mg/L	OK
11	I2450417-07	Sample size	50 mL	
		Potential R4	5.46 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	3.134 mL	OK
		Consumption 4.2 R3	3.183 mL	OK
		Content R5	62.680 mg/L	OK
		ALK LOW R6	61.700 mg/L	OK
12	I2450417-08	Sample size	50 mL	
		Potential R4	5.04 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	0.816 mL	OK
		Consumption 4.2 R3	0.890 mL	OK
		Content R5	16.320 mg/L	OK

Titration report

		ALK LOW R6	14.840 mg/L	OK
13	I2450417-09	Sample size	50 mL	
		Potential R4	6.53 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	3.007 mL	OK
		Consumption 4.2 R3	3.031 mL	OK
		Content R5	60.140 mg/L	OK
		ALK LOW R6	59.660 mg/L	OK
14	I2450786-01	Sample size	50 mL	
		Potential R4	5.50 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	3.153 mL	OK
		Consumption 4.2 R3	3.190 mL	OK
		Content R5	63.060 mg/L	OK
		ALK LOW R6	62.320 mg/L	OK
15	I2450786-02	Sample size	50 mL	
		Potential R4	5.22 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	1.234 mL	OK
		Consumption 4.2 R3	1.284 mL	OK
		Content R5	24.680 mg/L	OK
		ALK LOW R6	23.680 mg/L	OK
16	I2450786-03	Sample size	50 mL	
		Potential R4	5.45 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	2.544 mL	OK
		Consumption 4.2 R3	2.578 mL	OK
		Content R5	50.880 mg/L	OK
		ALK LOW R6	50.200 mg/L	OK
17	I2450786-04	Sample size	50 mL	
		Potential R4	5.36 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	2.334 mL	OK
		Consumption 4.2 R3	2.379 mL	OK
		Content R5	46.680 mg/L	OK
		ALK LOW R6	45.780 mg/L	OK
18	I2450786-05	Sample size	50 mL	
		Potential R4	5.68 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	9.684 mL	OK
		Consumption 4.2 R3	9.807 mL	OK
		Content R5	193.680 mg/L	OK
		ALK LOW R6	191.220 mg/L	OK
19	I2450786-06	Sample size	50 mL	
		Potential R4	5.89 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	10.269 mL	OK

Titration report

		Consumption 4.2 R3	10.392 mL	OK
		Content R5	205.380 mg/L	OK
		ALK LOW R6	202.920 mg/L	OK
20	I2450786-07	Sample size	50 mL	
		Potential R4	5.22 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	1.160 mL	OK
		Consumption 4.2 R3	1.198 mL	OK
		Content R5	23.200 mg/L	OK
		ALK LOW R6	22.440 mg/L	OK
21	I2450786-08	Sample size	50 mL	
		Potential R4	5.30 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	1.180 mL	OK
		Consumption 4.2 R3	1.205 mL	OK
		Content R5	23.600 mg/L	OK
		ALK LOW R6	23.100 mg/L	OK
22	I2450786-09	Sample size	50 mL	
		Potential R4	5.18 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	1.580 mL	OK
		Consumption 4.2 R3	1.651 mL	OK
		Content R5	31.600 mg/L	OK
		ALK LOW R6	30.180 mg/L	OK
23	I2450786-10	Sample size	50 mL	
		Potential R4	5.24 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	1.167 mL	OK
		Consumption 4.2 R3	1.206 mL	OK
		Content R5	23.340 mg/L	OK
		ALK LOW R6	22.560 mg/L	OK
24	I2450786-12	Sample size	50 mL	
		Potential R4	5.21 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	1.089 mL	OK
		Consumption 4.2 R3	1.124 mL	OK
		Content R5	21.780 mg/L	OK
		ALK LOW R6	21.080 mg/L	OK
25	I2449259-01	Sample size	50 mL	
		Potential R4	5.78 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	8.568 mL	OK
		Consumption 4.2 R3	8.681 mL	OK
		Content R5	171.360 mg/L	OK
		ALK LOW R6	169.100 mg/L	OK
26	I2449259-02	Sample size	50 mL	
		Potential R4	6.02 pH	OK

Titration report

		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	8.649 mL	OK
		Consumption 4.2 R3	8.753 mL	OK
		Content R5	172.980 mg/L	OK
		ALK LOW R6	170.900 mg/L	OK
27	I2449259-03	Sample size	50 mL	
		Potential R4	5.90 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	8.033 mL	OK
		Consumption 4.2 R3	8.119 mL	OK
		Content R5	160.660 mg/L	OK
		ALK LOW R6	158.940 mg/L	OK
28	I2450267-01	Sample size	50 mL	
		Potential R4	6.14 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	4.569 mL	OK
		Consumption 4.2 R3	4.610 mL	OK
		Content R5	91.380 mg/L	OK
		ALK LOW R6	90.560 mg/L	OK
29	I2449483-01	Sample size	50 mL	
		Potential R4	4.82 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	0.370 mL	OK
		Consumption 4.2 R3	0.518 mL	OK
		Content R5	7.400 mg/L	OK
		ALK LOW R6	4.440 mg/L	OK
30	I2449483-03	Sample size	50 mL	
		Potential R4	5.38 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	2.817 mL	OK
		Consumption 4.2 R3	2.936 mL	OK
		Content R5	56.340 mg/L	OK
		ALK LOW R6	53.960 mg/L	OK
31	I2449483-05	Sample size	50 mL	
		Potential R4	5.66 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	9.891 mL	OK
		Consumption 4.2 R3	10.084 mL	OK
		Content R5	197.820 mg/L	OK
		ALK LOW R6	193.960 mg/L	OK
32	I2449483-07	Sample size	50 mL	
		Potential R4	5.81 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	6.216 mL	OK
		Consumption 4.2 R3	6.307 mL	OK
		Content R5	124.320 mg/L	OK
		ALK LOW R6	122.500 mg/L	OK

Titration report

33	I2449483-09	Sample size	50 mL	
		Potential R4	5.31 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	1.378 mL	OK
		Consumption 4.2 R3	1.467 mL	OK
		Content R5	27.560 mg/L	OK
		ALK LOW R6	25.780 mg/L	OK
34	WG1969155-3	Sample size	50 mL	
		Potential R4	5.26 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	1.374 mL	OK
		Consumption 4.2 R3	1.454 mL	OK
		Content R5	27.480 mg/L	OK
		ALK LOW R6	25.880 mg/L	OK
35	WG1969155-4	Sample size	50 mL	
		Potential R4	7.48 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	6.403 mL	OK
		Consumption 4.2 R3	6.459 mL	OK
		Content R5	128.060 mg/L	OK
		ALK LOW R6	126.940 mg/L	OK
36	I2449483-11	Sample size	50 mL	
		Potential R4	5.96 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	7.218 mL	OK
		Consumption 4.2 R3	7.316 mL	OK
		Content R5	144.360 mg/L	OK
		ALK LOW R6	142.400 mg/L	OK
37	I2450710-01	Sample size	50 mL	
		Potential R4	5.52 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	0.224 mL	OK
		Consumption 4.2 R3	0.240 mL	OK
		Content R5	4.480 mg/L	OK
		ALK LOW R6	4.160 mg/L	OK
38	I2450710-02	Sample size	50 mL	
		Potential R4	5.05 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	0.206 mL	OK
		Consumption 4.2 R3	0.242 mL	OK
		Content R5	4.120 mg/L	OK
		ALK LOW R6	3.400 mg/L	OK
39	WG1969155-2	Sample size	50 mL	
		Potential R4	10.96 pH	OK
		Consumption 8.3 R1	4.871 mL	OK
		Consumption 4.5 R2	5.246 mL	OK
		Consumption 4.2 R3	5.250 mL	OK

Titration report

		Content R5	104.920 mg/L	OK
		ALK LOW R6	104.840 mg/L	OK
40	WG1969155-1	Sample size	50 mL	
		Potential R4	5.20 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	0.029 mL	OK
		Consumption 4.2 R3	0.038 mL	OK
		Content R5	0.580 mg/L	OK
		ALK LOW R6	0.400 mg/L	OK
41	I2449993-04	Sample size	50 mL	
		Potential R4	5.66 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	7.795 mL	OK
		Consumption 4.2 R3	7.862 mL	OK
		Content R5	155.900 mg/L	OK
		ALK LOW R6	154.560 mg/L	OK
42	I2449993-05	Sample size	50 mL	
		Potential R4	5.54 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	3.979 mL	OK
		Consumption 4.2 R3	4.066 mL	OK
		Content R5	79.580 mg/L	OK
		ALK LOW R6	77.840 mg/L	OK
43	I2449993-07	Sample size	50 mL	
		Potential R4	5.45 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	1.248 mL	OK
		Consumption 4.2 R3	1.302 mL	OK
		Content R5	24.960 mg/L	OK
		ALK LOW R6	23.880 mg/L	OK
44	I2449993-08	Sample size	50 mL	
		Potential R4	6.63 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	NaN mL	Not OK
		Consumption 4.2 R3	NaN mL	Not OK
		Content R5	NaN mg/L	Not OK
		ALK LOW R6	NaN mg/L	Not OK
45	I2449993-10	Sample size	50 mL	
		Potential R4	6.66 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	1.779 mL	OK
		Consumption 4.2 R3	1.802 mL	OK
		Content R5	35.580 mg/L	OK
		ALK LOW R6	35.120 mg/L	OK
46	I2450480-01	Sample size	50 mL	
		Potential R4	6.22 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK

Titration report

		Consumption 4.5 R2	7.335 mL	OK
		Consumption 4.2 R3	8.007 mL	OK
		Content R5	146.700 mg/L	OK
		ALK LOW R6	133.260 mg/L	OK
47	I2450480-02	Sample size	50 mL	
		Potential R4	6.03 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	4.481 mL	OK
		Consumption 4.2 R3	4.524 mL	OK
		Content R5	89.620 mg/L	OK
		ALK LOW R6	88.760 mg/L	OK
48	I2450481-01	Sample size	50 mL	
		Potential R4	6.72 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	9.706 mL	OK
		Consumption 4.2 R3	9.890 mL	OK
		Content R5	194.120 mg/L	OK
		ALK LOW R6	190.440 mg/L	OK
49	I2450481-02	Sample size	50 mL	
		Potential R4	6.00 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	3.592 mL	OK
		Consumption 4.2 R3	3.625 mL	OK
		Content R5	71.840 mg/L	OK
		ALK LOW R6	71.180 mg/L	OK
50	I2450626-01	Sample size	50 mL	
		Potential R4	5.83 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	6.332 mL	OK
		Consumption 4.2 R3	6.416 mL	OK
		Content R5	126.640 mg/L	OK
		ALK LOW R6	124.960 mg/L	OK
51	I2450626-02	Sample size	50 mL	
		Potential R4	6.40 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	9.892 mL	OK
		Consumption 4.2 R3	9.987 mL	OK
		Content R5	197.840 mg/L	OK
		ALK LOW R6	195.940 mg/L	OK
52	WG1969171-3	Sample size	50 mL	
		Potential R4	6.41 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	10.012 mL	OK
		Consumption 4.2 R3	10.123 mL	OK
		Content R5	200.240 mg/L	OK
		ALK LOW R6	198.020 mg/L	OK
53	WG1969171-4	Sample size	50 mL	

Titration report

		Potential R4	9.29 pH	OK
		Consumption 8.3 R1	3.192 mL	OK
		Consumption 4.5 R2	13.259 mL	OK
		Consumption 4.2 R3	13.349 mL	OK
		Content R5	265.180 mg/L	OK
		ALK LOW R6	263.380 mg/L	OK
54	I2450626-03	Sample size	50 mL	
		Potential R4	6.41 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	11.883 mL	OK
		Consumption 4.2 R3	12.031 mL	OK
		Content R5	237.660 mg/L	OK
		ALK LOW R6	234.700 mg/L	OK
55	I2450626-04	Sample size	50 mL	
		Potential R4	7.15 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	11.823 mL	OK
		Consumption 4.2 R3	11.943 mL	OK
		Content R5	236.460 mg/L	OK
		ALK LOW R6	234.060 mg/L	OK
56	I2450626-05	Sample size	50 mL	
		Potential R4	6.06 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	NaN mL	Not OK
		Consumption 4.2 R3	NaN mL	Not OK
		Content R5	NaN mg/L	Not OK
		ALK LOW R6	NaN mg/L	Not OK
57	I2450626-06	Sample size	50 mL	
		Potential R4	6.98 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	9.881 mL	OK
		Consumption 4.2 R3	9.998 mL	OK
		Content R5	197.620 mg/L	OK
		ALK LOW R6	195.280 mg/L	OK
58	I2450626-07	Sample size	50 mL	
		Potential R4	6.48 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	12.353 mL	OK
		Consumption 4.2 R3	12.480 mL	OK
		Content R5	247.060 mg/L	OK
		ALK LOW R6	244.520 mg/L	OK
59	I2450626-08	Sample size	50 mL	
		Potential R4	6.86 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	12.460 mL	OK
		Consumption 4.2 R3	12.599 mL	OK
		Content R5	249.200 mg/L	OK

Titration report

		ALK LOW R6	246.420 mg/L	OK
60	I2449993-08 2x+20	Sample size	50 mL	
		Potential R4	5.40 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	12.088 mL	OK
		Consumption 4.2 R3	NaN mL	Not OK
		Content R5	241.760 mg/L	OK
		ALK LOW R6	NaN mg/L	Not OK
61	I2450626-05 2x+20	Sample size	50 mL	
		Potential R4	4.58 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	0.277 mL	OK
		Consumption 4.2 R3	0.619 mL	OK
		Content R5	5.540 mg/L	OK
		ALK LOW R6	-1.300 mg/L	OK
62	I2449993-08 5x+20	Sample size	50 mL	
		Potential R4	3.57 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	NaN mL	Not OK
		Consumption 4.2 R3	NaN mL	Not OK
		Content R5	NaN mg/L	Not OK
		ALK LOW R6	NaN mg/L	Not OK
63	I2450626-05 5x+20	Sample size	50 mL	
		Potential R4	1.91 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	NaN mL	Not OK
		Consumption 4.2 R3	NaN mL	Not OK
		Content R5	NaN mg/L	Not OK
		ALK LOW R6	NaN mg/L	Not OK
64	WG1969171-2	Sample size	50 mL	
		Potential R4	10.82 pH	OK
		Consumption 8.3 R1	4.644 mL	OK
		Consumption 4.5 R2	4.984 mL	OK
		Consumption 4.2 R3	4.991 mL	OK
		Content R5	99.680 mg/L	OK
		ALK LOW R6	99.540 mg/L	OK
65	WG1969171-1	Sample size	50 mL	
		Potential R4	5.22 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	0.037 mL	OK
		Consumption 4.2 R3	0.041 mL	OK
		Content R5	0.740 mg/L	OK
		ALK LOW R6	0.660 mg/L	OK
66	CCV	Sample size	50 mL	
		Potential R4	10.86 pH	OK
		Consumption 8.3 R1	4.699 mL	OK
		Consumption 4.5 R2	5.060 mL	OK

Titration report

		Consumption 4.2 R3	5.064 mL	OK
		Content R5	101.200 mg/L	OK
		ALK LOW R6	101.120 mg/L	OK
67	CCB	Sample size	50 mL	
		Potential R4	5.09 pH	OK
		Consumption 8.3 R1	NaN mL	Not OK
		Consumption 4.5 R2	0.030 mL	OK
		Consumption 4.2 R3	0.035 mL	OK
		Content R5	0.600 mg/L	OK
		ALK LOW R6	0.500 mg/L	OK

Statistics

R1

Mean	NaN mL		
Maximum	4.871 mL	**Minimum**	3.192 mL
Standard deviation	NaN mL	**Rel. standard deviation**	NaN %
Total samples	67	**Samples excluded**	0

R2

Mean	NaN mL		
Maximum	13.259 mL	**Minimum**	0.000 mL
Standard deviation	NaN mL	**Rel. standard deviation**	NaN %
Total samples	67	**Samples excluded**	0

R3

Mean	NaN mL		
Maximum	13.349 mL	**Minimum**	0.024 mL
Standard deviation	NaN mL	**Rel. standard deviation**	NaN %
Total samples	67	**Samples excluded**	0

R4

Mean	6.01 pH		
Maximum	10.96 pH	**Minimum**	1.91 pH
Standard deviation	1.54 pH	**Rel. standard deviation**	25.705 %
Total samples	67	**Samples excluded**	0

R5

Mean	NaN mg/L		
Maximum	265.180 mg/L	**Minimum**	0.000 mg/L
Standard deviation	NaN mg/L	**Rel. standard deviation**	NaN %
Total samples	67	**Samples excluded**	0

R6

Titration report

Mean	NaN mg/L		
Maximum	263.380 mg/L	**Minimum**	-1.300 mg/L
Standard deviation	NaN mg/L	**Rel. standard deviation**	NaN %
Total samples	67	**Samples excluded**	0

Used Instruments

Name	T7 Excellence Titrator	**Serial number**	C329519495

Responsible User

Time	Login name	Full name
9/9/2024 8:47:51 AM	SystemInternal	System internal account

Quality Control

Form 6
Lab Duplicates

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: NA	**Analysis Date**	: 09/09/24 09:04
Dup Sample ID	: WG1969097-4	**DUP Analysis Date**	: 09/09/24 09:07

Parameter	Sample Concentration (mg CaCO3/L)	Duplicate Concentration (mg CaCO3/L)	RPD	RPD Limit
Alkalinity, Carbonate	ND	ND	NC	10
Alkalinity, Bicarbonate	60.3	61.5	2	9

Date Created: 11/11/21
Created By: Jason Hebert
File: PM11467-1
Page: 1

WETCHEM (WATER)

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Method	Holding Time	Container/Sample Preservation
Alkalinity, Total	471-34-1	2		mg CaCO3/L	90-110	10	86-116	10	10	2320B	14 days	1 - Plastic 250ml unpreserved/No Headspace

Please Note that the RL information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)
Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.

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Calculations of Alkalinity

$$\text{Alkalinity, mg } CaCO_3/L = \frac{A \times N \times 50{,}000}{\text{mL Sample}}$$

Where:

A = mL of the standard acid titrated

N = normality of the standard acid

Results are calculated using Mettler Toledo software.

Standard sample size is 50mL, 0.02N Sulfuric acid for titration

Sequence Logs

CAL	240909	LCS 7.0	7.03	INT:	MKT
pH 4	3295	Titrant:	4193		
pH 7	3386	LCS:	3257		
pH 10	3298	MS:	3255		
LCS	3409				

1	Rinse,MKT	42	l2449993-05
2	Rinse,MKT	43	l2449993-07
3	WG1969097-3	44	l2449993-08
4	xLCS	45	l2449993-10
5	l2450417-01	46	l2450480-01
6	l2450417-02	47	l2450480-02
7	l2450417-03	48	l2450481-01
8	l2450417-04	49	l2450481-02
9	l2450417-06	50	l2450626-01
10	WG1969097-4	51	l2450626-02
11	l2450417-07	52	WG1969171-3
12	l2450417-08	53	WG1969171-4
13	l2450417-09	54	l2450626-03
14	l2450786-01	55	l2450626-04
15	l2450786-02	56	l2450626-05
16	l2450786-03	57	l2450626-06
17	l2450786-04	58	l2450626-07
18	l2450786-05	59	l2450626-08
19	l2450786-06	60	l2449993-08 2x+20
20	l2450786-07	61	l2450626-05 2x+20
21	l2450786-08	62	l2449993-08 5x+20
22	l2450786-09	63	l2450626-05 5x+20
23	l2450786-10	64	WG1969171-2
24	l2450786-12	65	WG1969171-1
25	l2449259-01	66	CCV
26	l2449259-02	67	CCB
27	l2449259-03	68	
28	l2450267-01	69	
29	l2449483-01	70	
30	l2449483-03	71	
31	l2449483-05	72	
32	l2449483-07	73	
33	l2449483-09	74	
34	WG1969155-3	75	
35	WG1969155-4	76	
36	l2449483-11		
37	l2450710-01		
38	l2450710-02		
39	WG1969155-2		
40	WG1969155-1		
41	l2449993-04		

Chloride Analysis

Results

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-01	**Date Collected**	: 09/05/24 13:53
Client ID	: MW-5A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 18:35
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500CL-E	**Analyst**	: MRM
Lab File ID	: CL240910-D1	**Instrument ID**	: LACHAT3
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
16887-00-6	Chloride	18.	1.0	0.89	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-02	**Date Collected**	: 09/05/24 13:55
Client ID	: MW-5B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 16:12
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500CL-E	**Analyst**	: MRM
Lab File ID	: CL240910-C1	**Instrument ID**	: LACHAT3
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
16887-00-6	Chloride	27.	1.0	0.89	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-03	**Date Collected**	: 09/05/24 12:50
Client ID	: MW-6A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 16:13
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500CL-E	**Analyst**	: MRM
Lab File ID	: CL240910-C1	**Instrument ID**	: LACHAT3
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
16887-00-6	Chloride	16.	1.0	0.89	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-04	**Date Collected**	: 09/05/24 12:47
Client ID	: MW-6B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 16:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500CL-E	**Analyst**	: MRM
Lab File ID	: CL240910-C1	**Instrument ID**	: LACHAT3
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
16887-00-6	Chloride	24.	1.0	0.89	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-05	**Date Collected**	: 09/05/24 11:55
Client ID	: MW-7A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 16:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500CL-E	**Analyst**	: MRM
Lab File ID	: CL240910-C1	**Instrument ID**	: LACHAT3
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
16887-00-6	Chloride	18.	1.0	0.89	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-06	**Date Collected**	: 09/05/24 12:00
Client ID	: MW-7B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 16:15
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500CL-E	**Analyst**	: MRM
Lab File ID	: CL240910-C1	**Instrument ID**	: LACHAT3
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
16887-00-6	Chloride	22.	1.0	0.89	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-07	**Date Collected**	: 09/05/24 08:00
Client ID	: MW-8A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 16:16
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500CL-E	**Analyst**	: MRM
Lab File ID	: CL240910-C1	**Instrument ID**	: LACHAT3
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
16887-00-6	Chloride	41.	1.0	0.89	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-08	**Date Collected**	: 09/05/24 08:55
Client ID	: MW-8B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 16:17
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500CL-E	**Analyst**	: MRM
Lab File ID	: CL240910-C1	**Instrument ID**	: LACHAT3
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
16887-00-6	Chloride	7.9	1.0	0.89	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-09	**Date Collected**	: 09/05/24 10:10
Client ID	: MW-10A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 16:17
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500CL-E	**Analyst**	: MRM
Lab File ID	: CL240910-C1	**Instrument ID**	: LACHAT3
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
16887-00-6	Chloride	27.	1.0	0.89	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-10	**Date Collected**	: 09/05/24 10:16
Client ID	: MW-10B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 18:36
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500CL-E	**Analyst**	: MRM
Lab File ID	: CL240910-D1	**Instrument ID**	: LACHAT3
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
16887-00-6	Chloride	33.	1.0	0.89	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-12	**Date Collected**	: 09/05/24 00:00
Client ID	: DUP	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 16:22
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500CL-E	**Analyst**	: MRM
Lab File ID	: CL240910-C1	**Instrument ID**	: LACHAT3
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
16887-00-6	Chloride	38.	1.0	0.89	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1969756-1	**Date Collected**	: NA
Client ID	: WG1969756-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 09/10/24 15:13
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500CL-E	**Analyst**	: MRM
Lab File ID	: CL240910-C1	**Instrument ID**	: LACHAT3
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
16887-00-6	Chloride	ND	1.0	0.89	U

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1969756-3	**Date Collected**	: 09/05/24 13:53
Client ID	: MW-5ADUP	**Date Received**	: 09/05/24
Sample Location	:	**Date Analyzed**	: 09/10/24 18:36
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500CL-E	**Analyst**	: MRM
Lab File ID	: CL240910-D1	**Instrument ID**	: LACHAT3
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
16887-00-6	Chloride	18.	1.0	0.89	

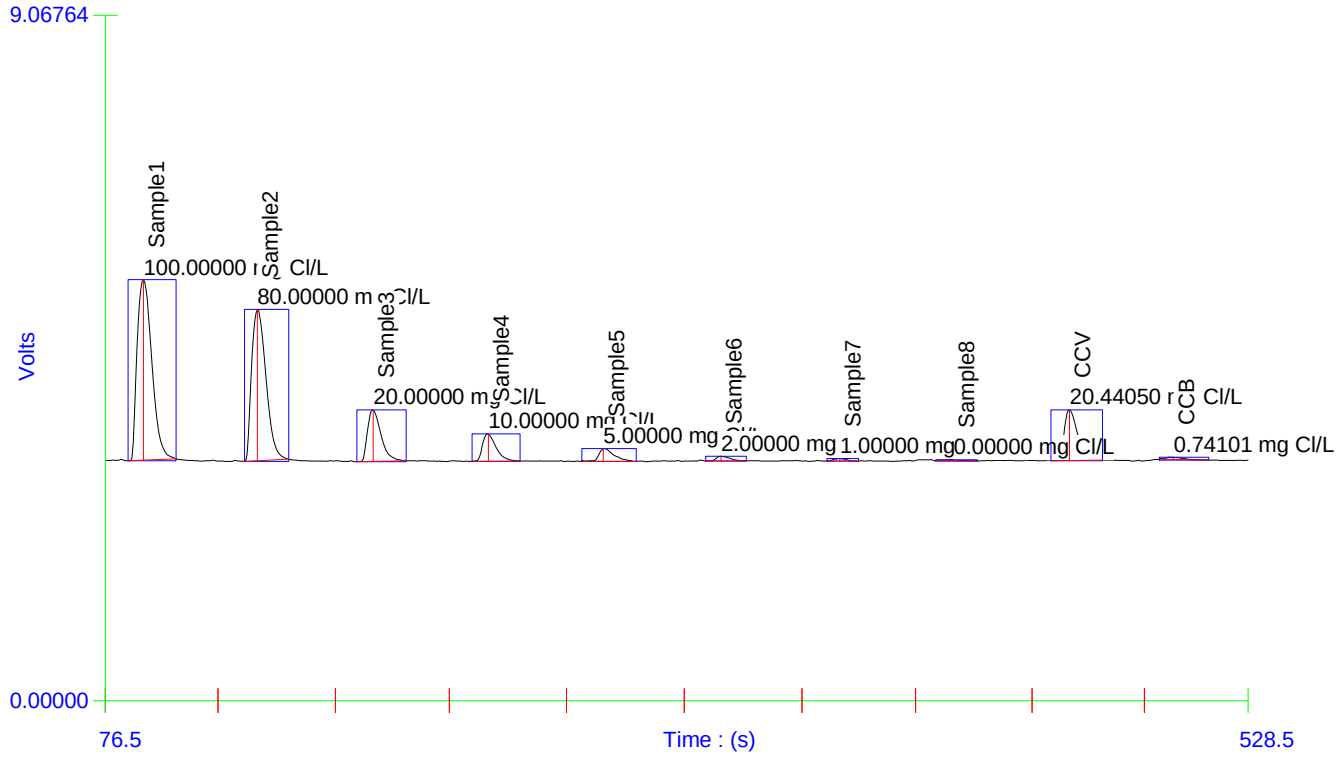
Sample Raw Data

Author: Date : 9/10/2024

Original Run Filename: OM_9-10-2024_11-28-37AM.OMN Created: 9/10/2024 11:28:37 AM
Original Run Author's Signature: [a1wetcheminstrument]
Current Run Filename: OM_9-10-2024_11-28-37AM.OMN Last Modified: 9/10/2024 11:42:47 AM
Current Run Author's Signature: [a1wetcheminstrument]
Description: Default New Run

Sample	Rep.	Cup No.	Channel 1 Chloride-CH3 (mg Cl/L)	ADF	MDF	Weight
Sample1	1	S1	100.00000			
Sample2	1	S2	80.00000			
Sample3	1	S3	20.00000			
Sample4	1	S4	10.00000			
Sample5	1	S5	5.00000			
Sample6	1	S6	2.00000			
Sample7	1	S7	1.00000			
Sample8	1	S9	0.00000			
CCV	1	S3	20.44050			
		Known Conc:	20.00000			
		Calibration:	Table/Fig. : 1			
CCB	1	S9	0.74101			
		Known Conc:	0.00000			
~~ICV 5.0~~	~~1~~	~~1~~	~~4.91856~~			
~~ICV 30.0~~	~~1~~	~~2~~	~~1.12648~~			
~~ICV 80.0~~	~~1~~	~~3~~	~~84.44601~~			
~~ICB~~	~~1~~	4	~~-0.64074~~			

Channel 1 (Chloride) - Set: 1 / 2



Author: Date : 9/10/2024

Channel 1 (Chloride) - Set: 2 / 2

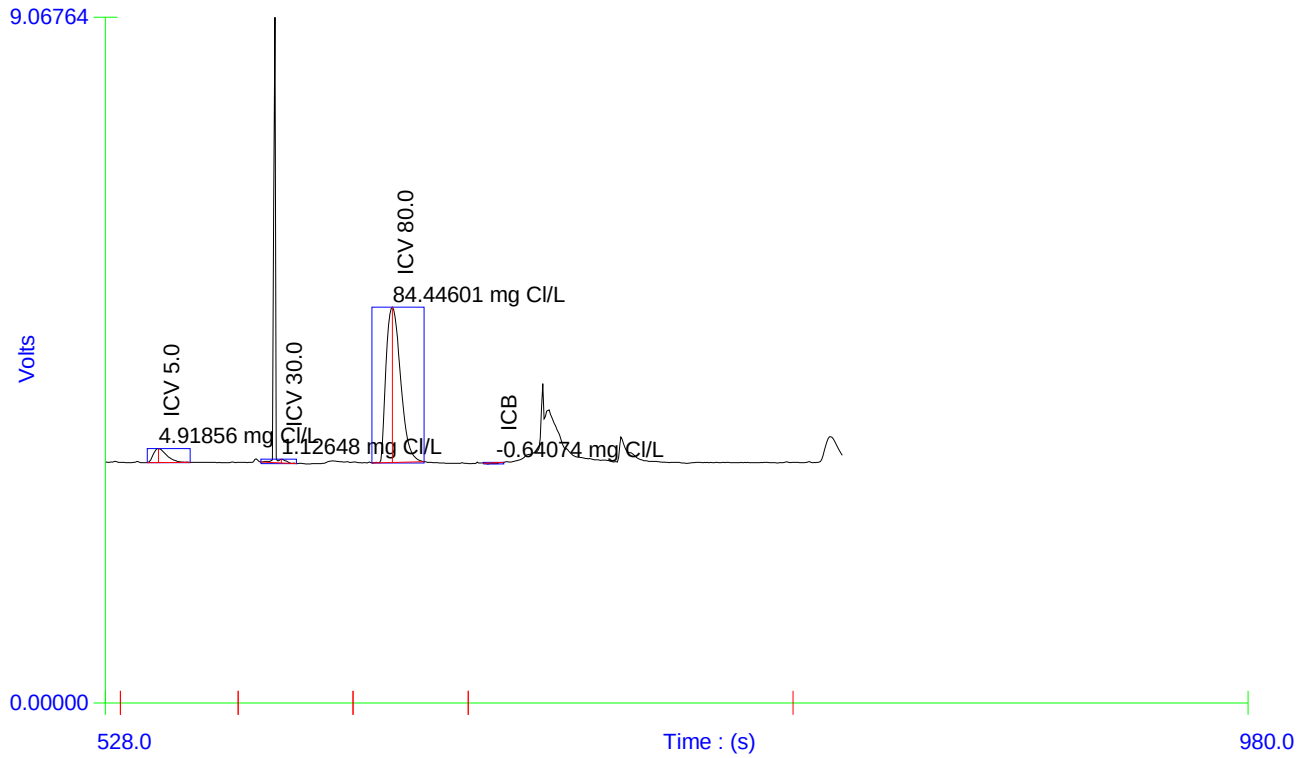
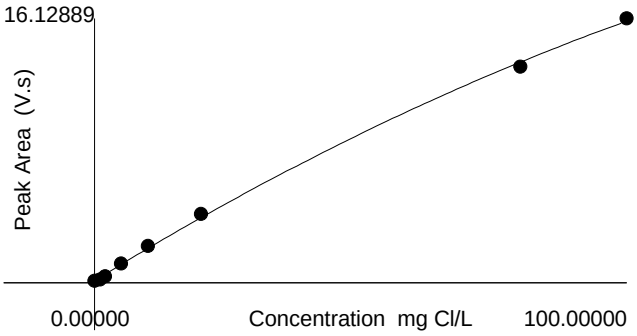


Table : 1 (Chloride-CH3)

	Known Conc. (mg Cl/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg Cl/L)	Detection Date	Detection Time
1	100.00000	1	16.12889	2.38746	0.0	-1.1	100.91061	9/10/2024	11:30:08 AM
2	80.00000	1	13.18545	1.99737	0.0	2.1	78.53601	9/10/2024	11:30:52 AM
3	20.00000	1	4.17903	0.67878	0.0	-5.4	20.85784	9/10/2024	11:31:38 AM
4	10.00000	1	2.22797	0.36165	0.0	-6.8	10.50523	9/10/2024	11:32:24 AM
5	5.00000	1	1.16467	0.16875	0.0	-4.5	5.18438	9/10/2024	11:33:11 AM
6	2.00000	1	0.38019	0.06305	0.0	27.1	1.40399	9/10/2024	11:33:57 AM
7	1.00000	1	0.18347	0.03238	0.0	43.1	0.47537	9/10/2024	11:34:43 AM
8	0.00000	1	0.10916	0.01175			0.12658	9/10/2024	11:35:29 AM

Figure : 1 (Chloride-CH3)



Area = - 0.00042 * Conc^2 + 0.20063 * Conc + 0.12219
Conc = 0.10020 * Area^2 + 4.66416 * Area - 0.38375
Correlation Coefficient (r) = 0.99962

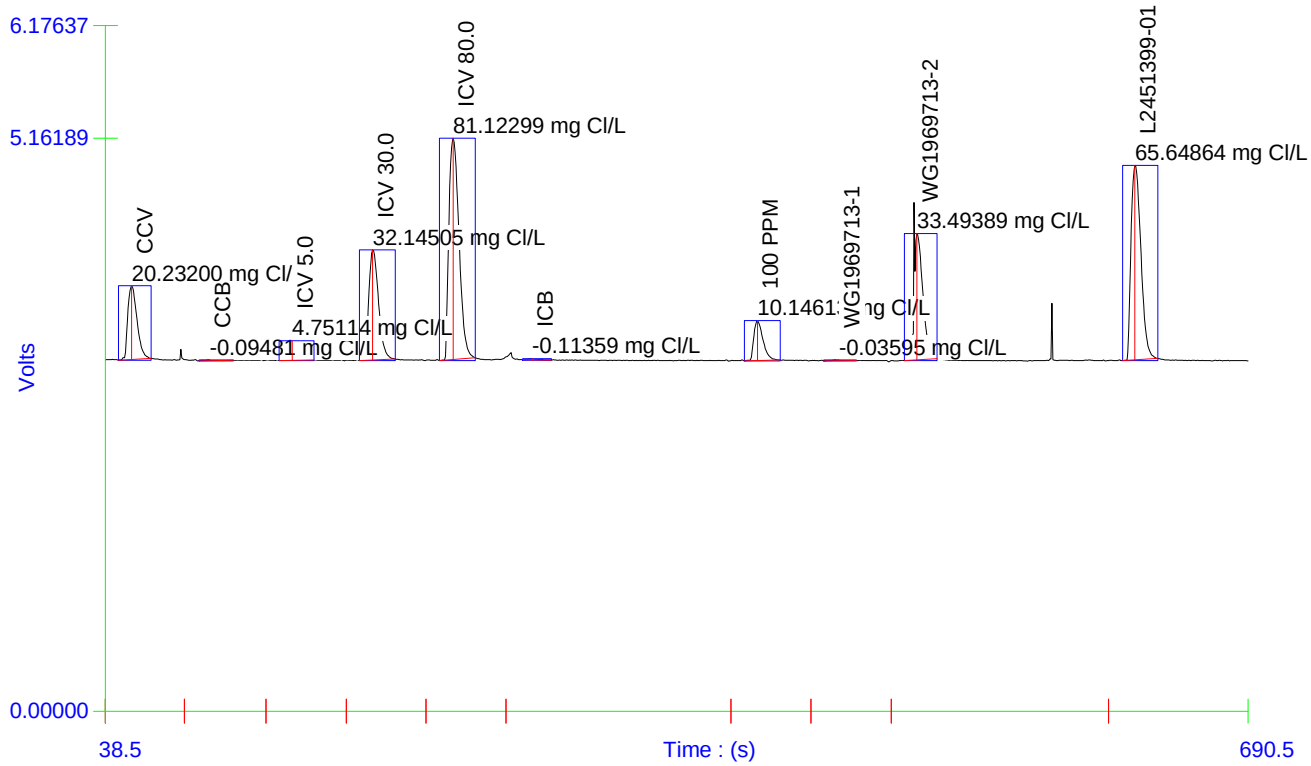
Weighting : None

Author: Date : 9/10/2024

Original Run Filename: OM_9-10-2024_12-22-07PM.OMN Created: 9/10/2024 12:22:07 PM
Original Run Author's Signature: [a1wetcheminstrument]
Current Run Filename: OM_9-10-2024_12-22-07PM.OMN Last Modified: 9/10/2024 12:39:38 PM
Current Run Author's Signature: [a1wetcheminstrument]
Description: Default New Run

Sample	Rep.	Cup No.	Channel 1 Chloride-CH3 (mg Cl/L)	ADF	MDF	Weight
CCV	1	S3	20.23200			
	Known Conc:		20.00000			
	Calibration:		Table/Fig. : 1			
CCB	1	S9	-0.09481			
	Known Conc:		0.00000			
ICV 5.0	1	1	4.75114			
ICV 30.0	1	2	32.14505			
ICV 80.0	1	3	81.12299			
ICB	1	4	-0.11359			
100 PPM	1	5	101.46126	10.00		
WG1969713-1	1	6	-0.03595			
~~WG1969713-2~~	~~1~~	~~7~~	~~33.49389~~			
L2451399-01	1	8	6564.86377	100.00		
WG1969713-3	1	9	6588.92969	100.00		
WG1969713-4	1	10	6474.10986	100.00		
CCV	1	S3	20.36360			
	Known Conc:		20.00000			
CCB	1	S9	-0.18773			
	Known Conc:		0.00000			

Channel 1 (Chloride) - Set: 1 / 2



Author: Date : 9/10/2024

Channel 1 (Chloride) - Set: 2 / 2

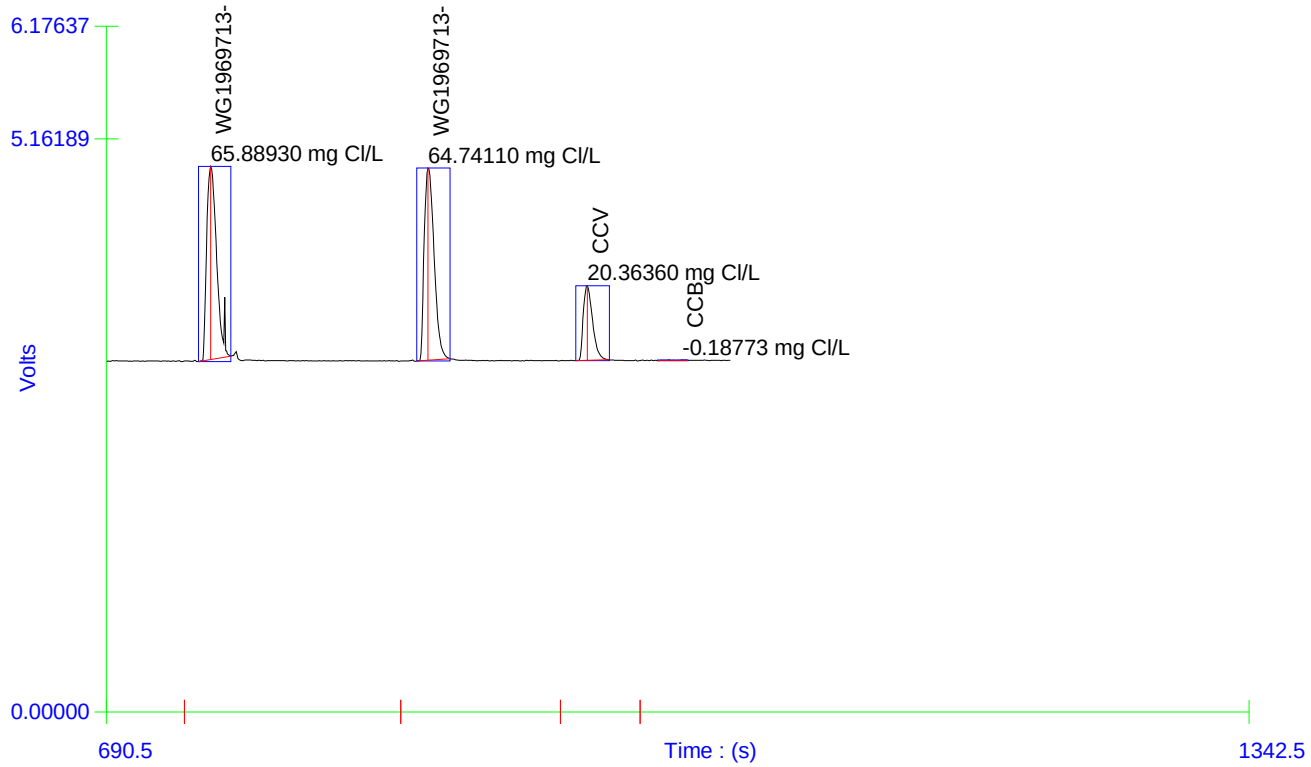
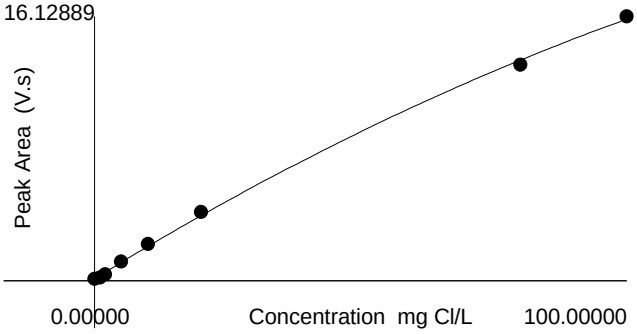


Table : 1 (Chloride-CH3)

	Known Conc. (mg Cl/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg Cl/L)	Detection Date	Detection Time
1	100.00000	1	16.12889	2.38746	0.0	-1.1	100.91061	9/10/2024	11:30:08 AM
2	80.00000	1	13.18545	1.99737	0.0	2.1	78.53601	9/10/2024	11:30:52 AM
3	20.00000	1	4.17903	0.67878	0.0	-5.4	20.85784	9/10/2024	11:31:38 AM
4	10.00000	1	2.22797	0.36165	0.0	-6.8	10.50523	9/10/2024	11:32:24 AM
5	5.00000	1	1.16467	0.16875	0.0	-4.5	5.18438	9/10/2024	11:33:11 AM
6	2.00000	1	0.38019	0.06305	0.0	27.1	1.40399	9/10/2024	11:33:57 AM
7	1.00000	1	0.18347	0.03238	0.0	43.1	0.47537	9/10/2024	11:34:43 AM
8	0.00000	1	0.10916	0.01175			0.12658	9/10/2024	11:35:29 AM

Figure : 1 (Chloride-CH3)



Area = - 0.00042 * Conc^2 + 0.20063 * Conc + 0.12219
Conc = 0.10020 * Area^2 + 4.66416 * Area - 0.38375
Correlation Coefficient (r) = 0.99962

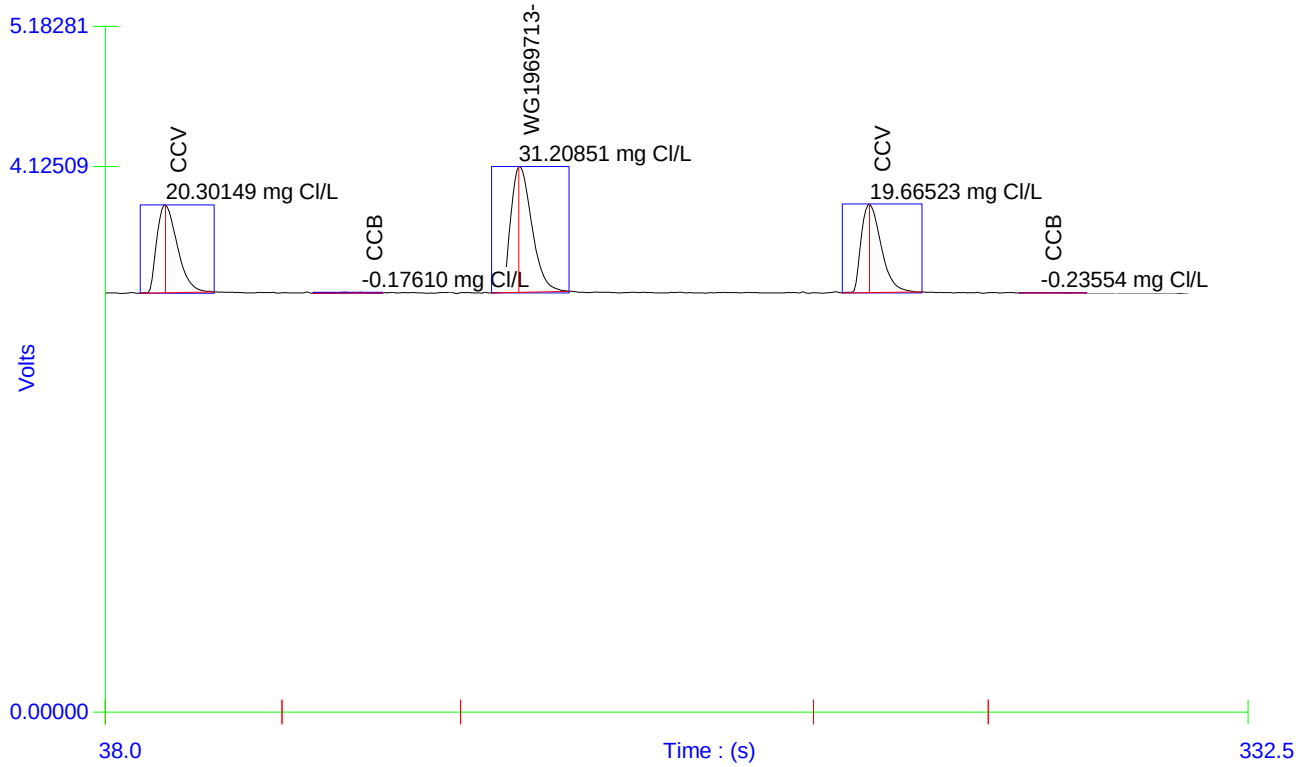
Weighting : None

Author: Date : 9/10/2024

Original Run Filename: OM_9-10-2024_12-41-36PM.OMN Created: 9/10/2024 12:41:36 PM
Original Run Author's Signature: [a1wetcheminstrument]
Current Run Filename: OM_9-10-2024_12-41-36PM.OMN Last Modified: 9/10/2024 12:47:07 PM
Current Run Author's Signature: [a1wetcheminstrument]
Description: Default New Run

Sample	Rep.	Cup No.	Channel 1 Chloride-CH3 (mg Cl/L)	ADF	MDF	Weight
CCV	1	S3	20.30149			
		Known Conc:	20.00000			
		Calibration:	Table/Fig. : 1			
CCB	1	S9	-0.17610			
		Known Conc:	0.00000			
WG1969713-2	1	7	31.20851			
CCV	1	S3	19.66523			
		Known Conc:	20.00000			
CCB	1	S9	-0.23554			
		Known Conc:	0.00000			

Channel 1 (Chloride) - Set: 1 / 1

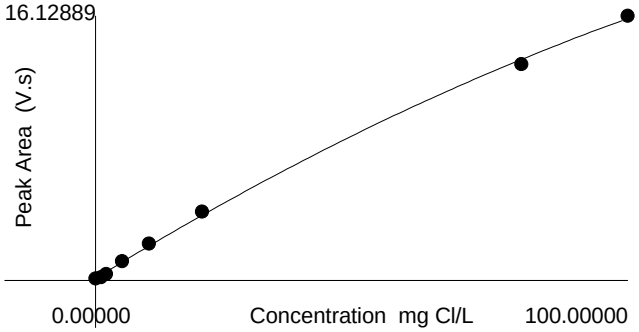


Author: Date : 9/10/2024

Table : 1 (Chloride-CH3)

	Known Conc. (mg Cl/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg Cl/L)	Detection Date	Detection Time
1	100.00000	1	16.12889	2.38746	0.0	-1.1	100.91061	9/10/2024	11:30:08 AM
2	80.00000	1	13.18545	1.99737	0.0	2.1	78.53601	9/10/2024	11:30:52 AM
3	20.00000	1	4.17903	0.67878	0.0	-5.4	20.85784	9/10/2024	11:31:38 AM
4	10.00000	1	2.22797	0.36165	0.0	-6.8	10.50523	9/10/2024	11:32:24 AM
5	5.00000	1	1.16467	0.16875	0.0	-4.5	5.18438	9/10/2024	11:33:11 AM
6	2.00000	1	0.38019	0.06305	0.0	27.1	1.40399	9/10/2024	11:33:57 AM
7	1.00000	1	0.18347	0.03238	0.0	43.1	0.47537	9/10/2024	11:34:43 AM
8	0.00000	1	0.10916	0.01175			0.12658	9/10/2024	11:35:29 AM

Figure : 1 (Chloride-CH3)



Area = - 0.00042 * Conc^2 + 0.20063 * Conc + 0.12219
Conc = 0.10020 * Area^2 + 4.66416 * Area - 0.38375
Correlation Coefficient (r) = 0.99962

Weighting : None

Author: Date : 9/10/2024

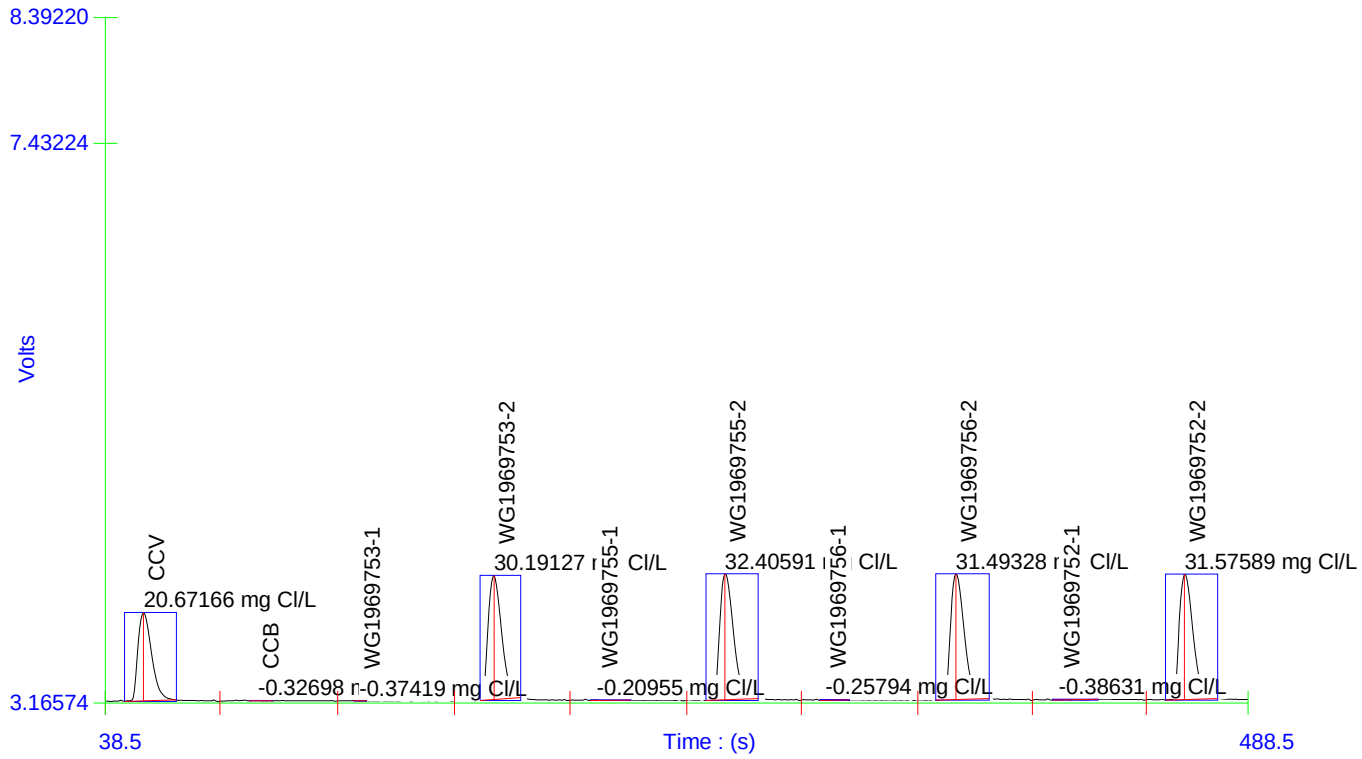
Original Run Filename: OM_9-10-2024_03-07-34PM.OMN Created: 9/10/2024 3:07:34 PM
Original Run Author's Signature: [a1wetcheminstrument]
Current Run Filename: OM_9-10-2024_03-07-34PM.OMN Last Modified: 9/10/2024 5:20:52 PM
Current Run Author's Signature: [a1wetcheminstrument]
Description: Default New Run

Sample	Rep.	Cup No.	Channel 1 Chloride-CH3 (mg Cl/L)	ADF	MDF	Weight
CCV	1	S3	20.67166			
		Known Conc:	20.00000			
		Calibration:	Table/Fig. : 1			
CCB	1	S9	-0.32698			
		Known Conc:	0.00000			
WG1969753-1	1	1	-0.37419			
WG1969753-2	1	2	30.19127			
WG1969755-1	1	3	-0.20955			
WG1969755-2	1	4	32.40591			
WG1969756-1	1	5	-0.25794			
WG1969756-2	1	6	31.49328			
WG1969752-1	1	7	-0.38631			
WG1969752-2	1	8	31.57589			
WG1969758-1	1	9	-0.24937			
WG1969758-2	1	10	31.05803			
CCV	1	S3	20.40181			
		Known Conc:	20.00000			
CCB	1	S9	-0.23323			
		Known Conc:	0.00000			
WG1969759-1	1	11	-0.19105			
WG1969759-2	1	12	31.14308			
L2450360-01	1	13	289.09259	10.00		
L2450360-02	1	14	269.77811	10.00		
L2450360-03	1	15	308.34329	10.00		
L2450360-04	1	16	227.09425	10.00		
L2450360-05	1	17	376.62921	10.00		
L2450360-06	1	18	285.99332	10.00		
L2450360-07	1	19	174.15167	10.00		
L2450398-01	1	20	13.19452			
CCV	1	S3	20.42575			
		Known Conc:	20.00000			
CCB	1	S9	-0.09532			
		Known Conc:	0.00000			
L2450398-02	1	21	58.62584			
L2450398-03	1	22	40.00628	10.00		
L2450398-04	1	23	23.85112			
L2450417-01	1	24	17.61414			
L2450417-02	1	25	18.33386			
L2450417-03	1	26	17.79461			
L2450417-04	1	27	17.78733			
L2450417-06	1	28	18.07437			
WG1969753-3	1	29	18.51814			
WG1969753-4	1	30	27.21450	10.00		
CCV	1	S3	20.21910			
		Known Conc:	20.00000			
CCB	1	S9	-0.36994			
		Known Conc:	0.00000			
L2450417-07	1	31	16.80397			
L2450417-08	1	32	21.31100			
L2450417-09	1	33	9.33851			
L2450415-01	1	34	141.54671			
WG1969755-3	1	35	141.04616			
WG1969755-4	1	36	149.63808			
L2450415-02	1	37	215.92075			
L2450415-03	1	38	202.19598			
L2450415-04	1	39	77.42345			
L2450415-05	1	40	310.14417	10.00		
CCV	1	S3	20.55167			

		Known Conc:	20.00000			
CCB	1	S9	-0.16360			
		Known Conc:	0.00000			
L2450415-06	1	41	203.72507			
L2450415-07	1	42	269.55502			
L2450415-08	1	43	170.18568			
L2450415-09	1	44	193.49144			
L2450415-10	1	45	114.90399			
L2450415-11	1	46	111.60323			
L2450415-12	1	47	218.13400			
L2450415-13	1	48	0.49423			
L2450786-01	1	49	17.35077	10.00		
WG1969756-3	1	50	12.50047	10.00		
CCV	1	S3	20.15436			
		Known Conc:	20.00000			
CCB	1	S9	-0.29475			
		Known Conc:	0.00000			
WG1969756-4	1	51	37.27002			
L2450786-02	1	52	27.21221			
L2450786-03	1	53	15.98283			
L2450786-04	1	54	24.53163			
L2450786-05	1	55	17.68526			
L2450786-06	1	56	22.16711			
L2450786-07	1	57	40.90660			
L2450786-08	1	58	7.92930			
L2450786-09	1	59	27.48017			
L2450786-10	1	60	23.47769	10.00		
CCV	1	S3	21.18209			
		Known Conc:	20.00000			
CCB	1	S9	-0.18298			
		Known Conc:	0.00000			
L2450786-12	1	61	38.54598			
L2449354-01	1	62	0.45377			
WG1969759-3	1	63	0.51959			
WG1969759-4	1	64	18.92736			
L2449354-02	1	65	5.07160			
WG1969759-5	1	66	5.13567			
WG1969759-6	1	67	25.34037			
L2449354-03	1	68	8.13894			
L2449354-04	1	69	6.19174			
L2449354-05	1	70	3.18698	10.00		
CCV	1	S3	20.77125			
		Known Conc:	20.00000			
CCB	1	S9	-0.25171			
		Known Conc:	0.00000			
L2449354-06	1	71	12.18232			
L2449354-07	1	72	3.66208			
L2449354-08	1	73	0.30232			
L2449354-09	1	74	0.20491			
L2449354-10	1	75	0.06579			
L2449354-11	1	76	0.17178			
L2449354-12	1	77	12.19213			
L2449354-13	1	78	3.25039			
L2449354-14	1	79	0.58829			
L2450397-08	1	80	-2.59176	10.00		
CCV	1	S3	20.23811			
		Known Conc:	20.00000			
CCB	1	S9	-0.26710			
		Known Conc:	0.00000			
L2450397-10	1	81	111.03073			
L2450397-11	1	82	111.71011			
L2450397-12	1	83	84.89079			
L2450397-13	1	84	173.61766			
L2450626-01	1	85	22.06647			
WG1969758-3	1	86	21.65620			
WG1969758-4	1	87	42.34877			
L2450626-02	1	88	1.14710			
WG1969758-5	1	89	1.12406			

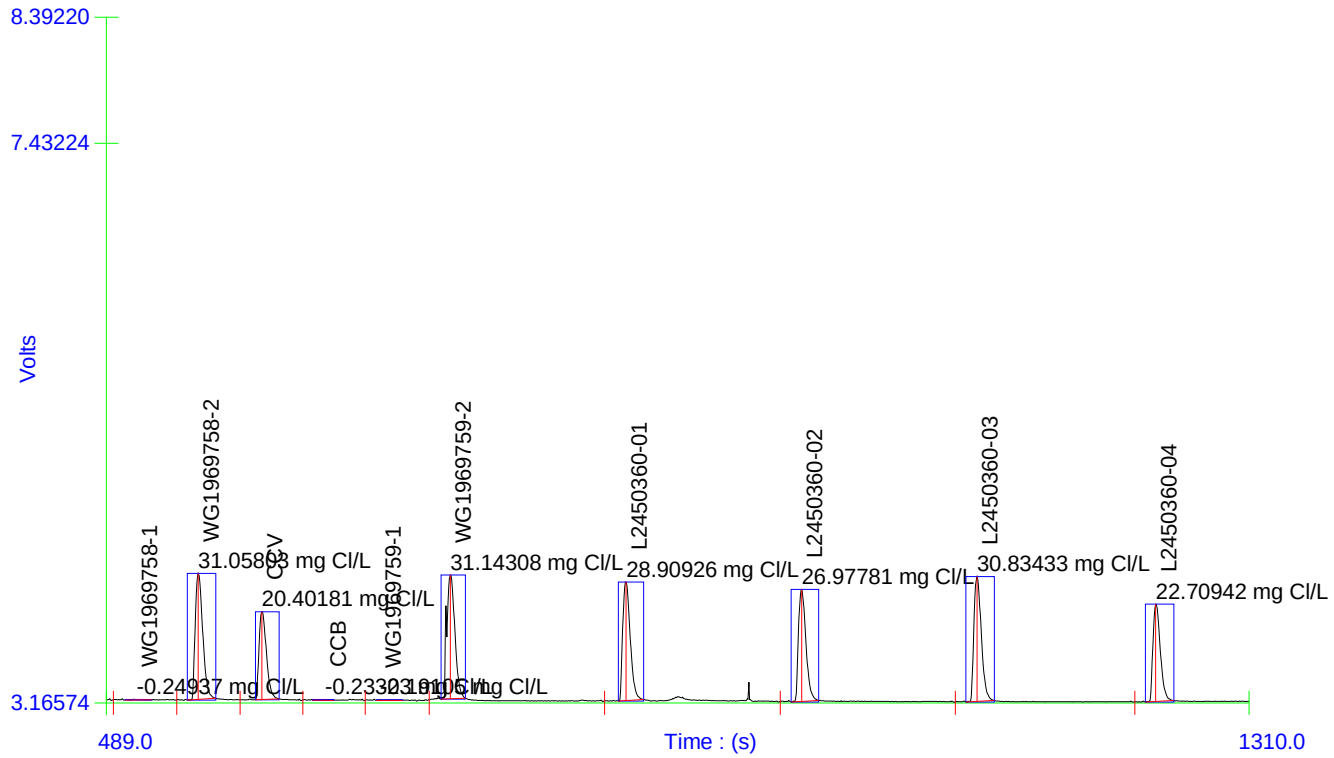
WG1969758-6	1	90	14.93051	10.00		
CCV	1	S3	20.82479			
	Known Conc:		20.00000			
CCB	1	S9	-0.23446			
	Known Conc:		0.00000			
L2450626-03	1	91	26.23339			
L2450626-04	1	92	22.21083			
L2450626-05	1	93	28.95173			
L2450626-06	1	94	5.25978			
L2450626-07	1	95	6.32874			
L2450626-08	1	96	30.75180			
L2450193-01	1	97	22.95891			
L2450196-01; MTX 0.5 UPTO 50	1	98	121.90099	10.00	100.00	
L2450196-02; MTX 0.5 UPTO 50	1	99	241.56151	10.00	100.00	
L2450196-03	1	100	264.49426	10.00		
CCV	1	S3	20.03609			
	Known Conc:		20.00000			
CCB	1	S9	-0.21165			
	Known Conc:		0.00000			
~~L2450196-04; MTX 0.5 UPTO 50~~	~~1~~	~~101~~	~~324.55313~~	~~10.00~~	~~100.00~~	
~~L2450196-05; MTX 0.5 UPTO 50~~	~~1~~	~~102~~	~~368.01025~~		~~100.00~~	
~~L2450196-06~~	~~1~~	~~103~~	~~236.46994~~			
~~L2450196-07; MTX 0.5 UPTO 50~~	~~1~~	~~104~~	~~227.06731~~	~~10.00~~	~~100.00~~	
~~WG1969752-3; MTX 0.5 UPTO 50~~	~~1~~	~~105~~	~~178.71870~~	~~10.00~~	~~100.00~~	
~~WG1969752-4; MTX 0.5 UPTO 50~~	~~1~~	~~106~~	~~43.72781~~	~~10.00~~	~~100.00~~	
~~L2450196-08; MTX 0.5 UPTO 50~~	~~1~~	~~107~~	~~380.66507~~	~~10.00~~	~~100.00~~	
~~L2450196-09~~	~~1~~	~~108~~	~~311.13855~~			
~~L2450196-10~~	~~1~~	~~109~~	~~247.09122~~			

Channel 1 (Chloride) - Set: 1 / 14



Author: Date : 9/10/2024

Channel 1 (Chloride) - Set: 2 / 14



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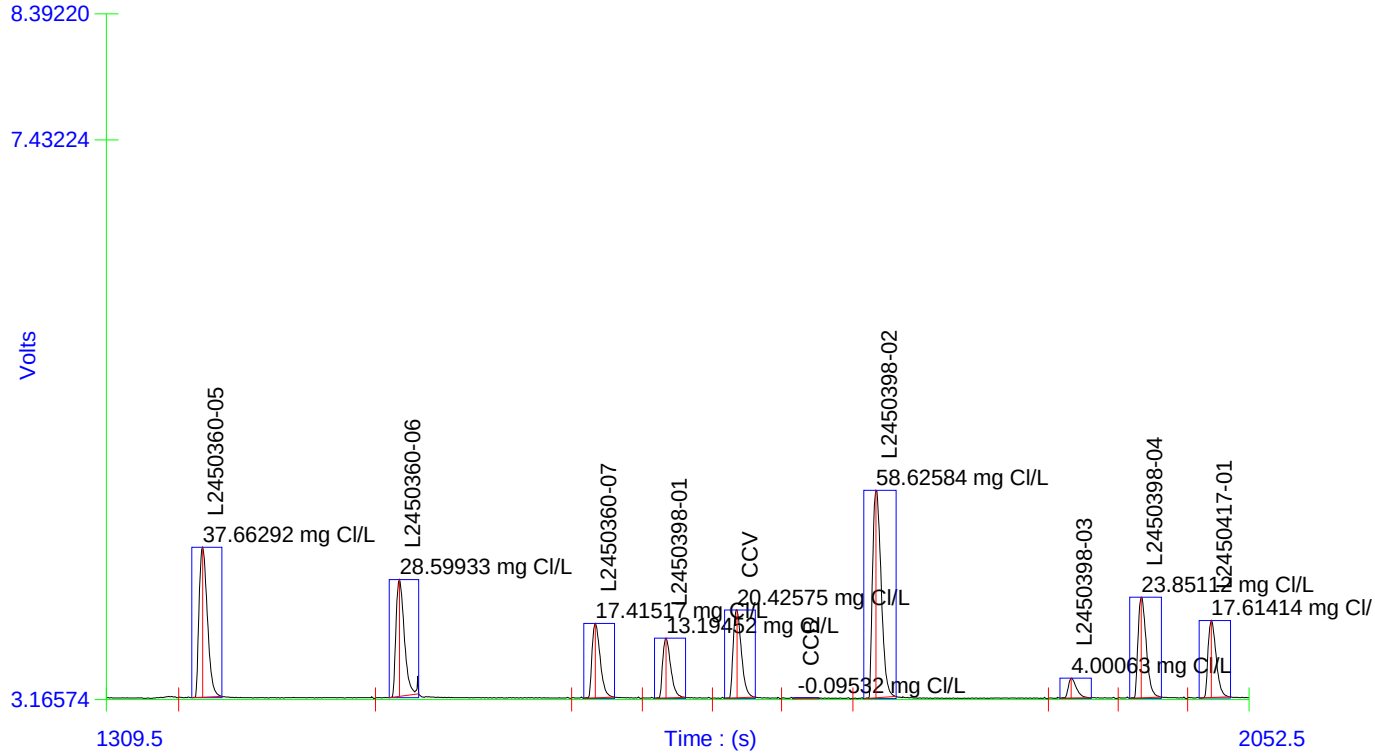
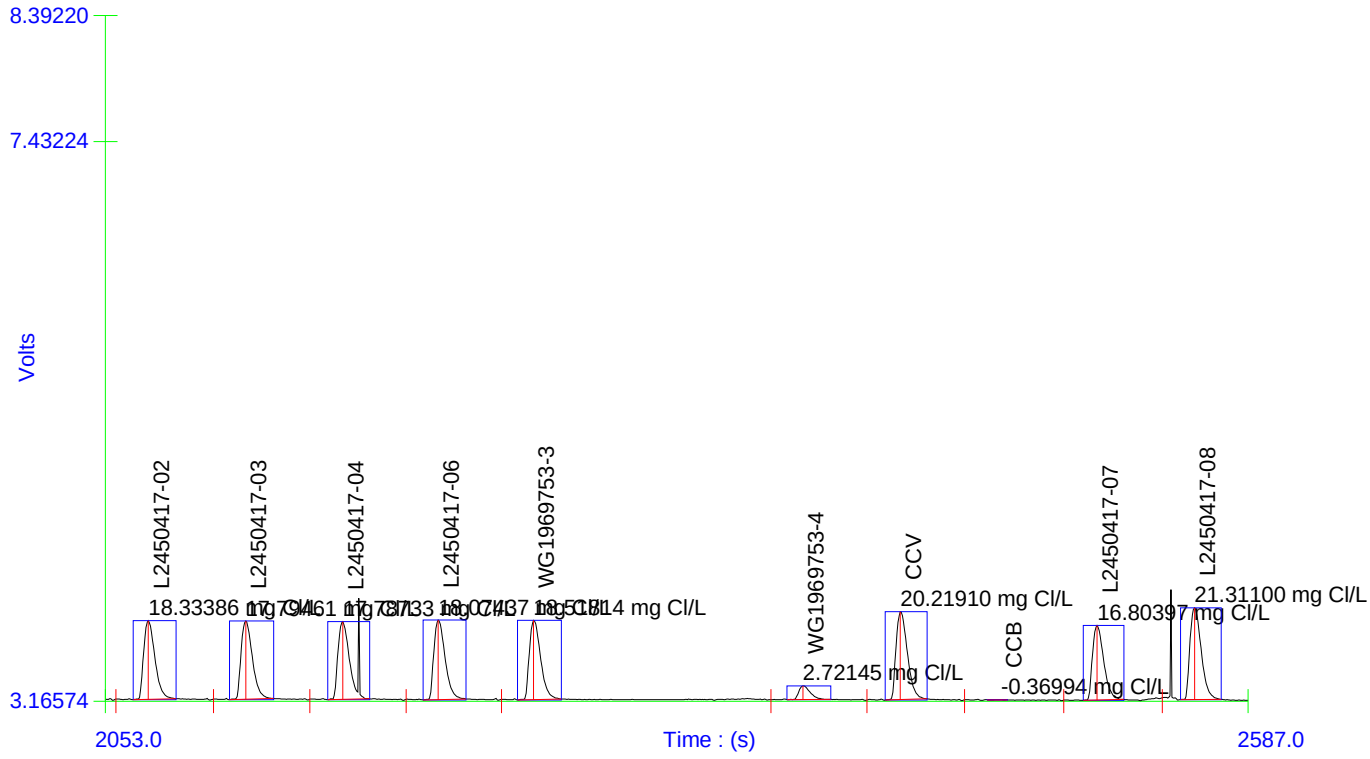


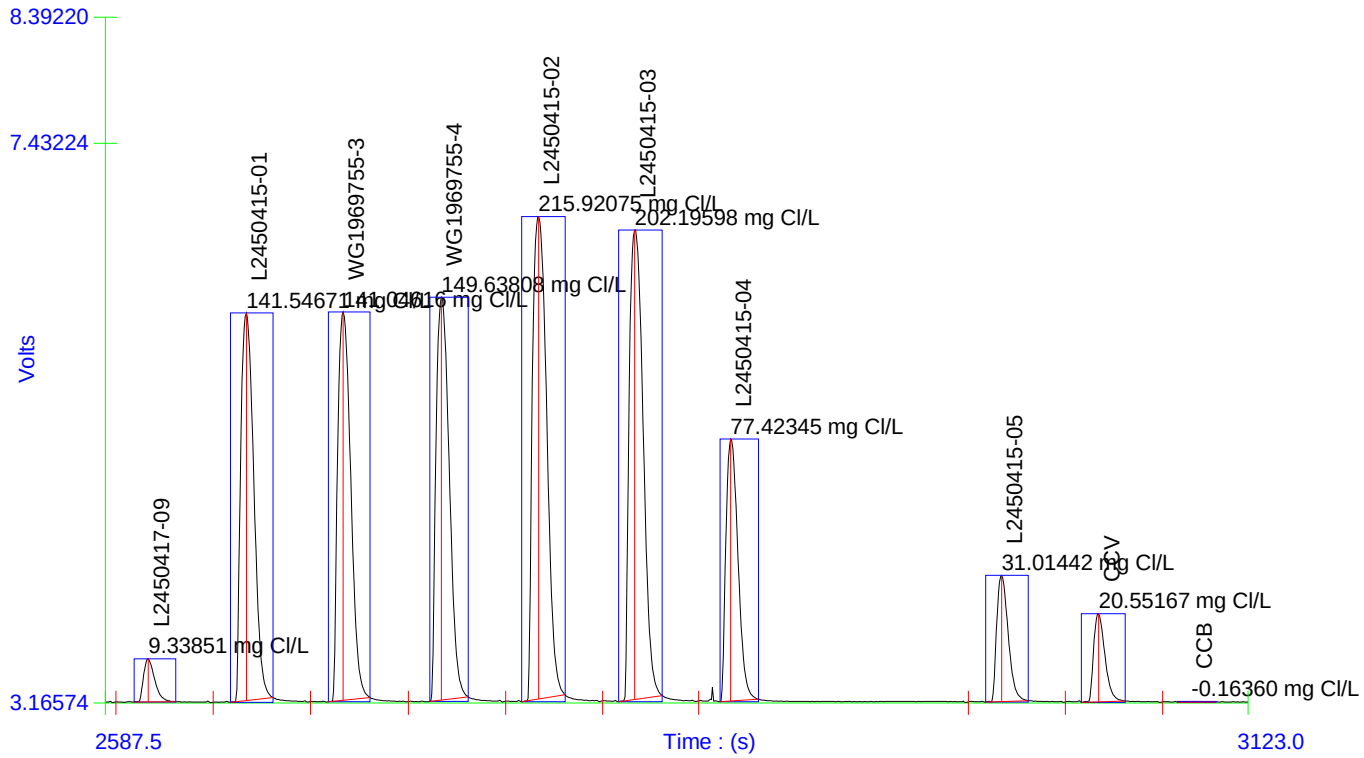
Author: Date : 9/10/2024

Channel 1 (Chloride) - Set: 4 / 14

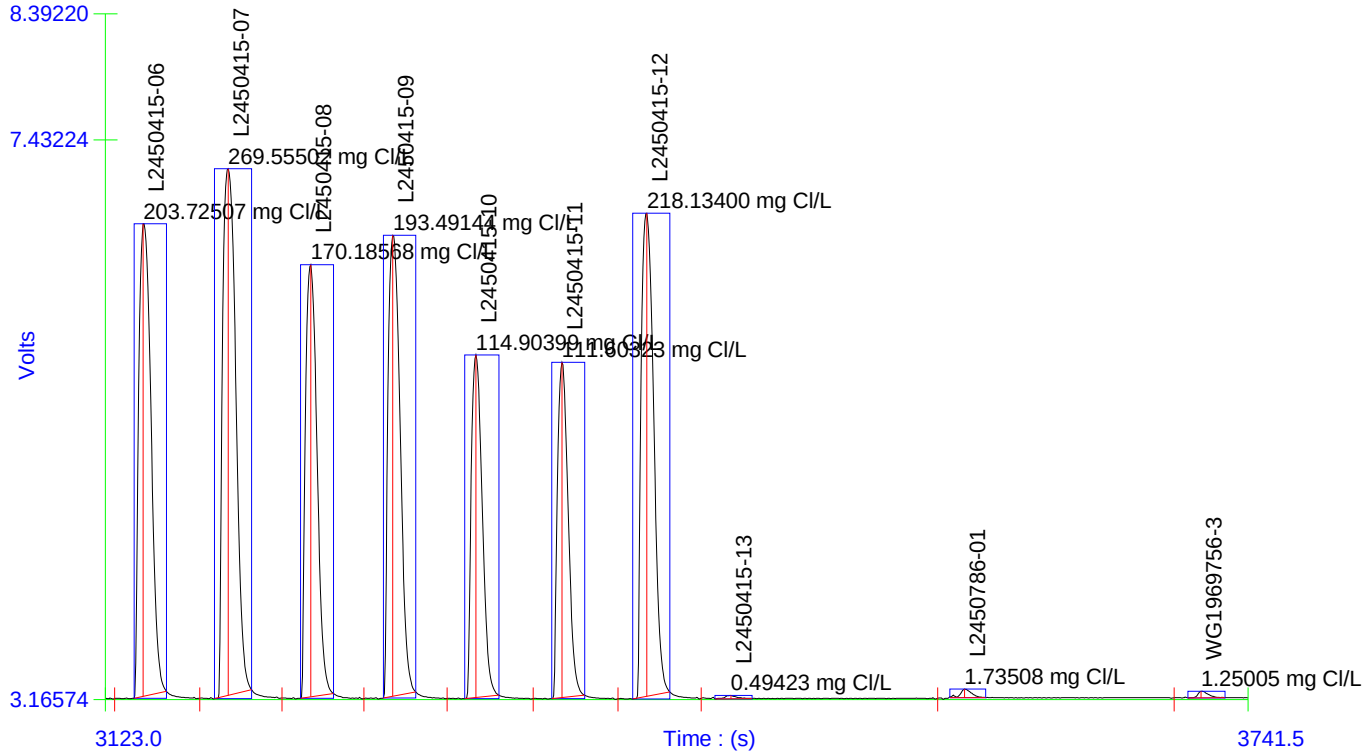


Author: Date : 9/10/2024

Channel 1 (Chloride) - Set: 5 / 14

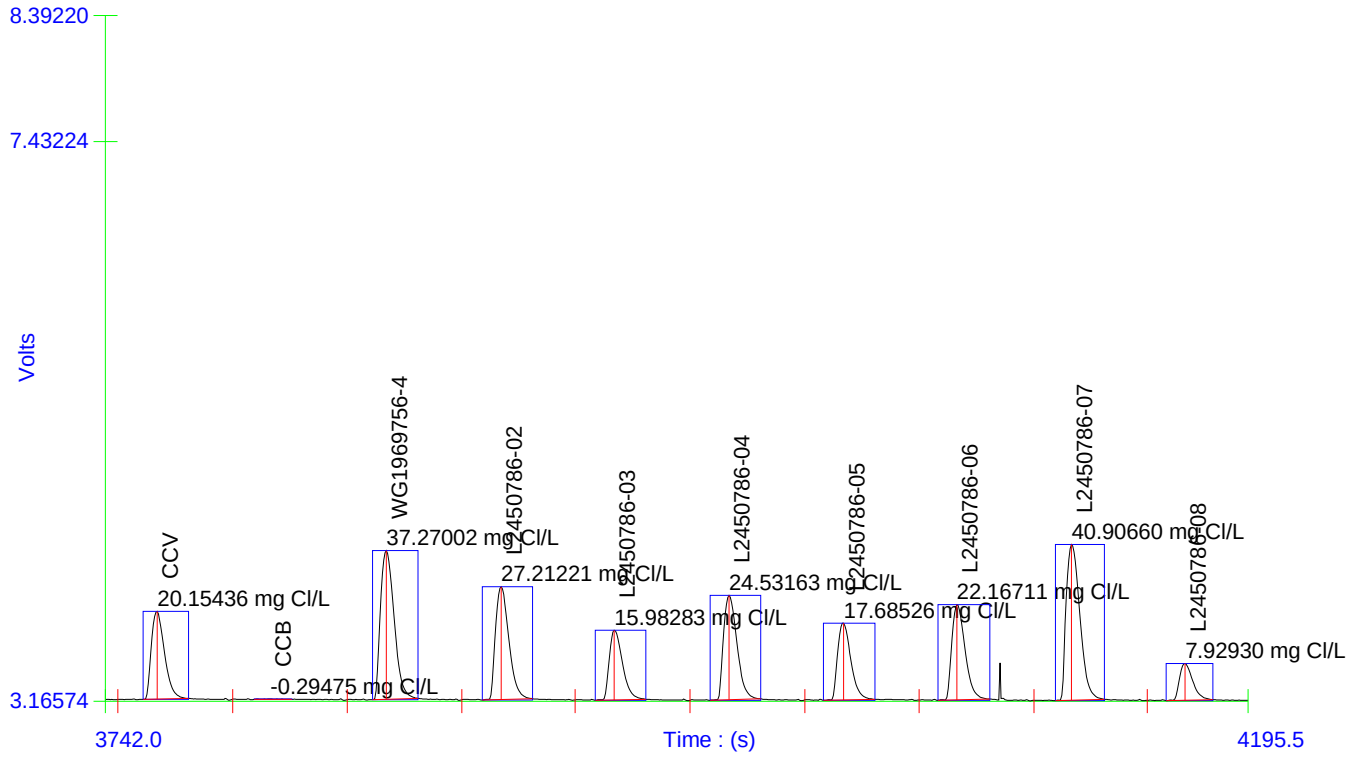


Channel 1 (Chloride) - Set: 6 / 14

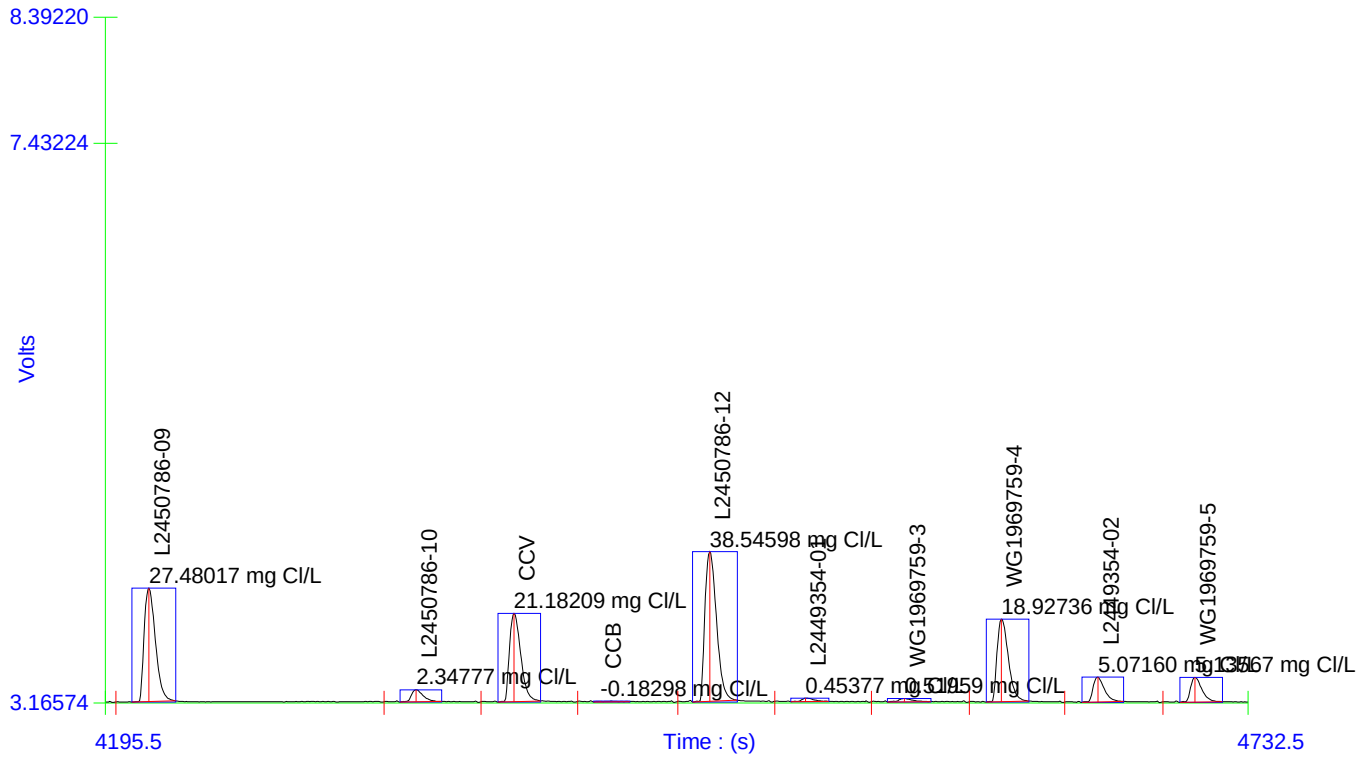


Author: Date : 9/10/2024

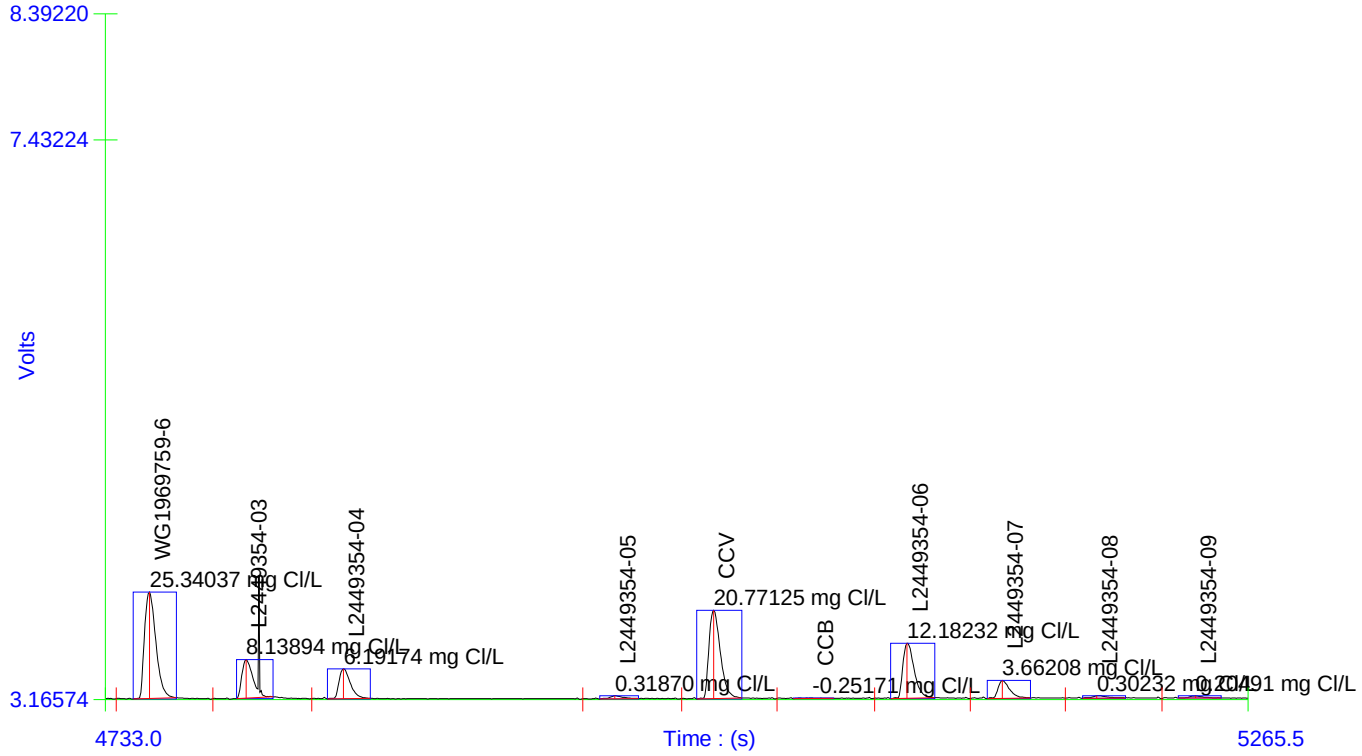
Channel 1 (Chloride) - Set: 7 / 14



Channel 1 (Chloride) - Set: 8 / 14



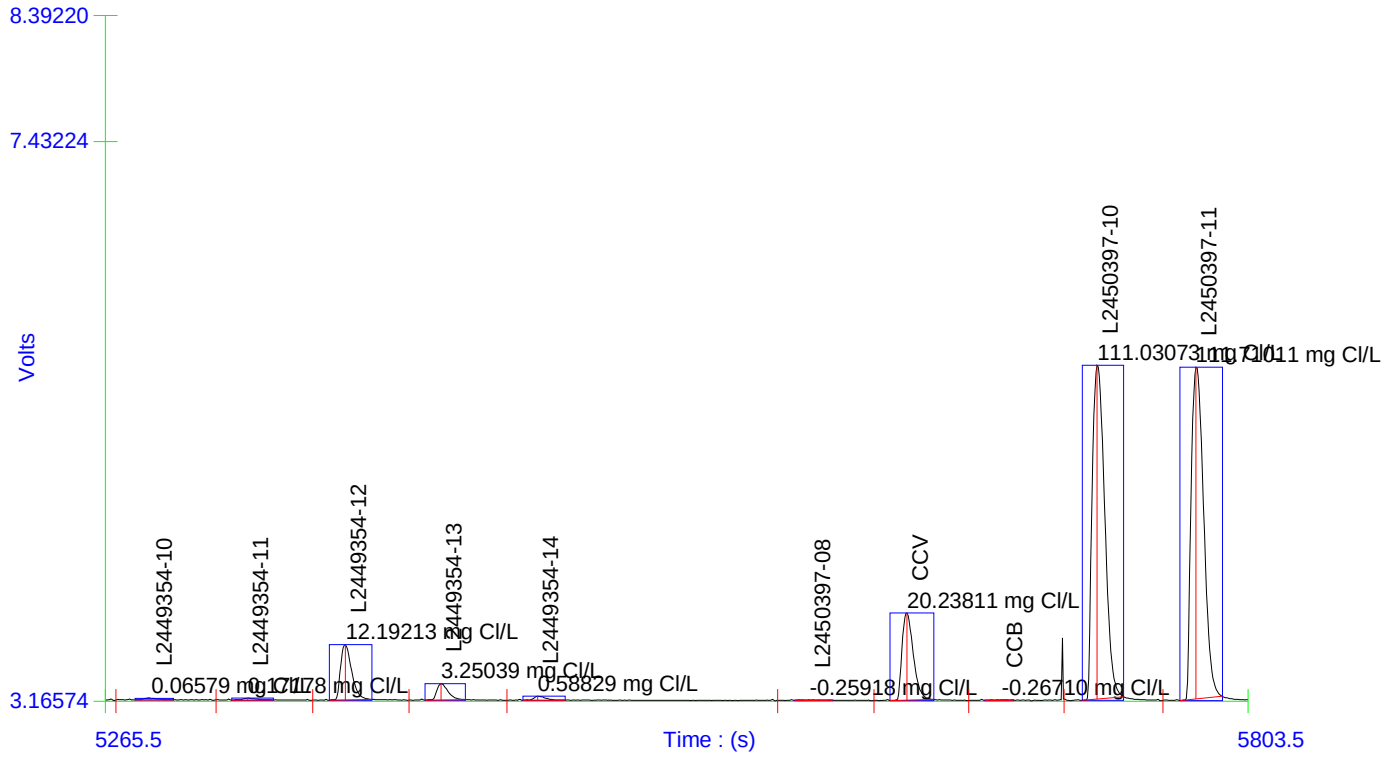
Channel 1 (Chloride) - Set: 9 / 14



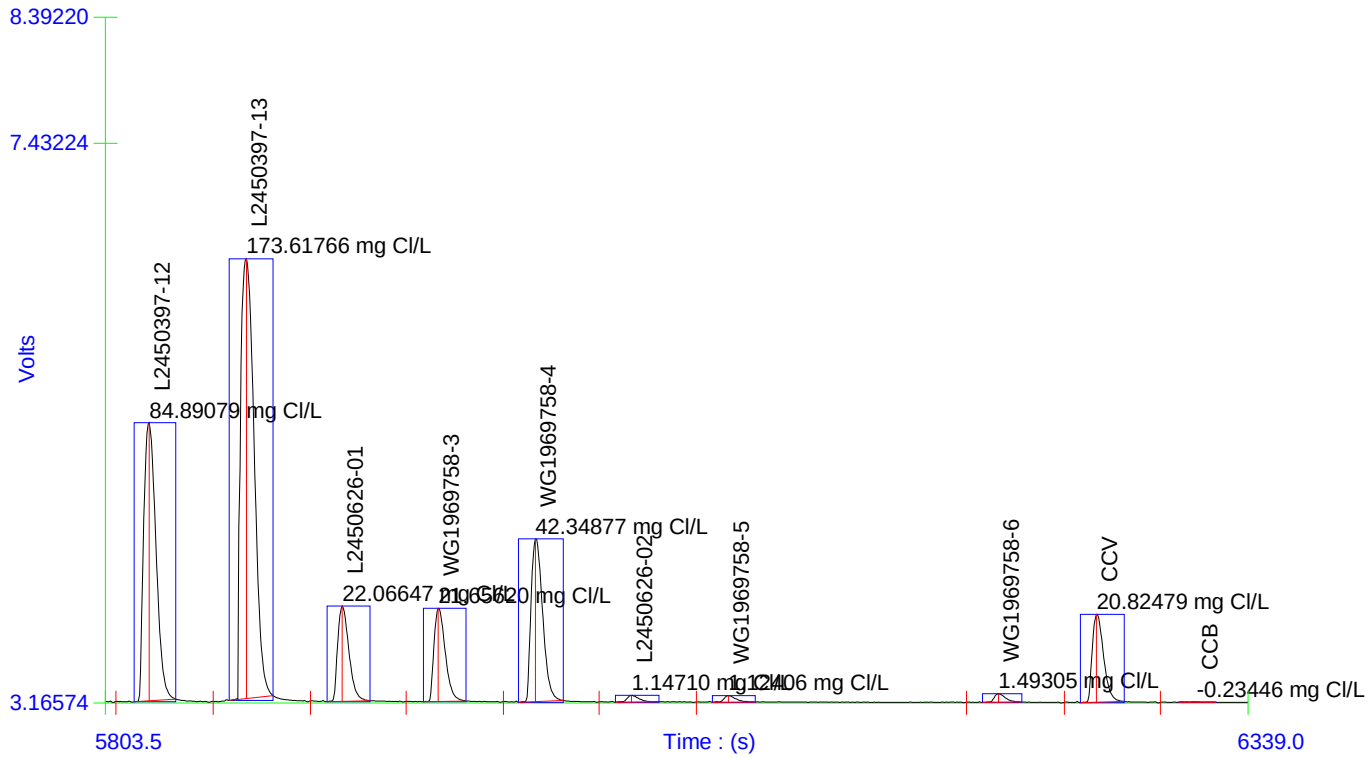
Author:

Date : 9/10/2024

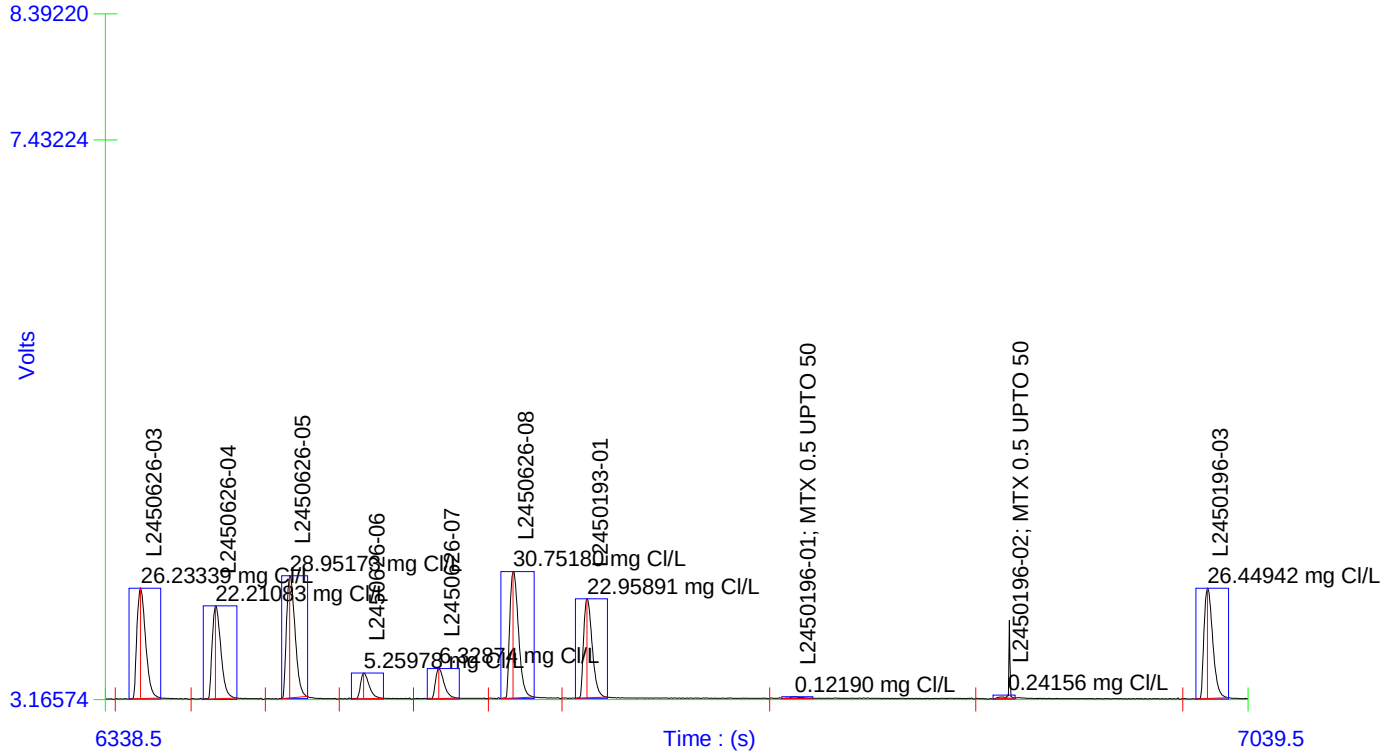
Channel 1 (Chloride) - Set: 10 / 14



Channel 1 (Chloride) - Set: 11 / 14

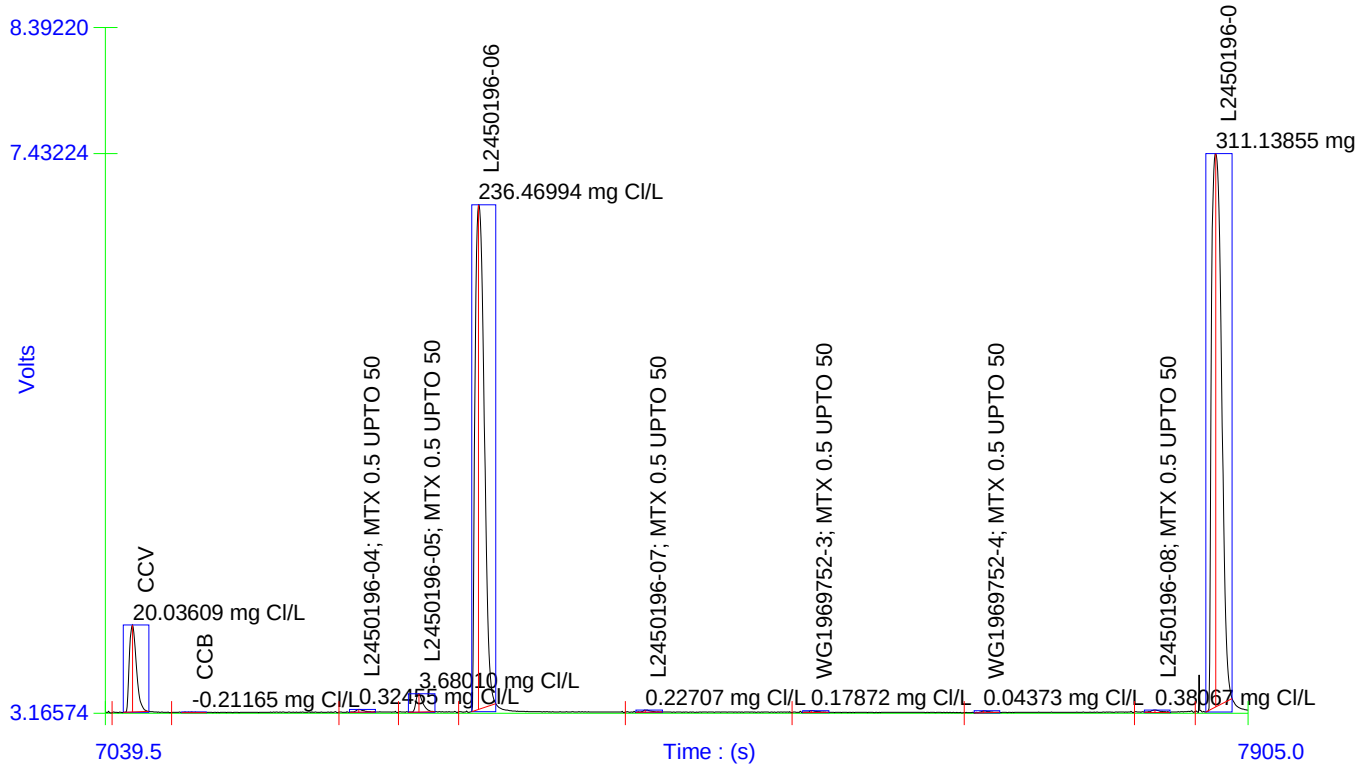


Channel 1 (Chloride) - Set: 12 / 14



Author: Date : 9/10/2024

Channel 1 (Chloride) - Set: 13 / 14



Author: Date : 9/10/2024

Channel 1 (Chloride) - Set: 14 / 14

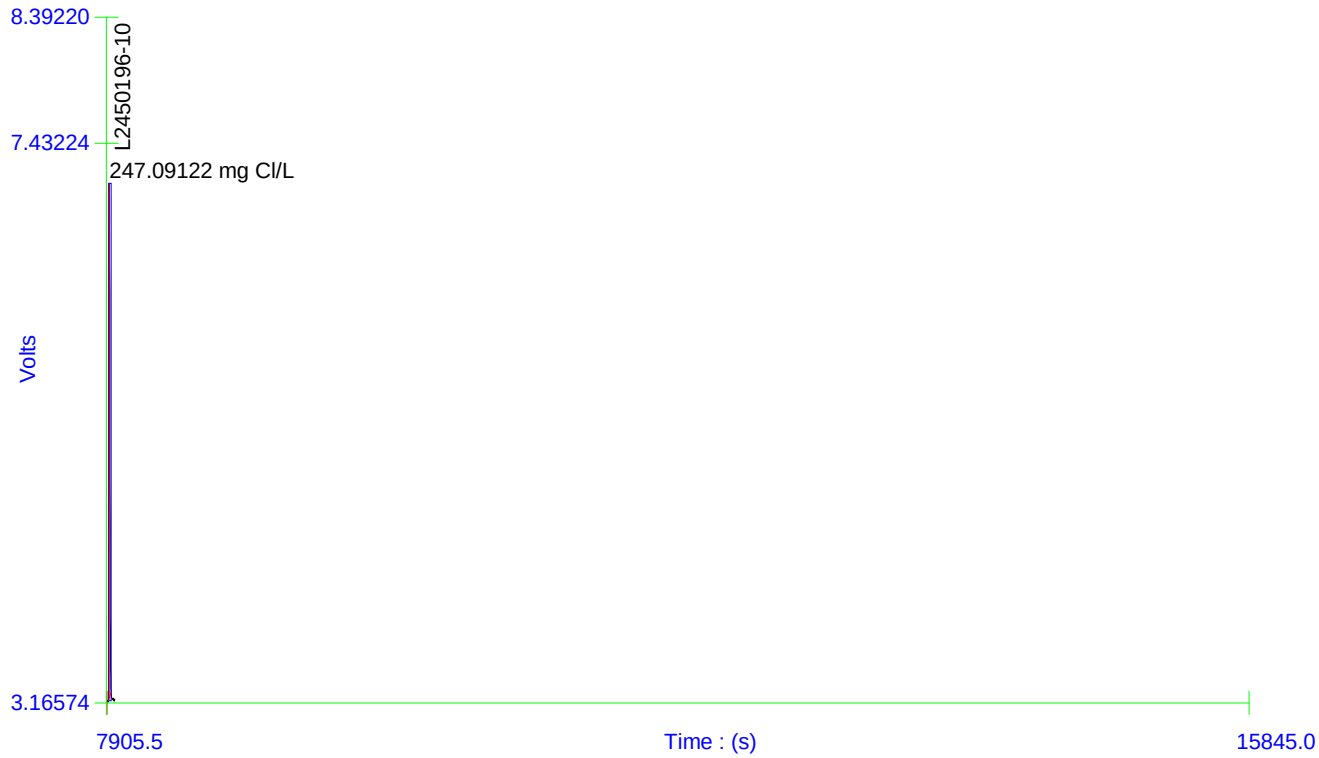
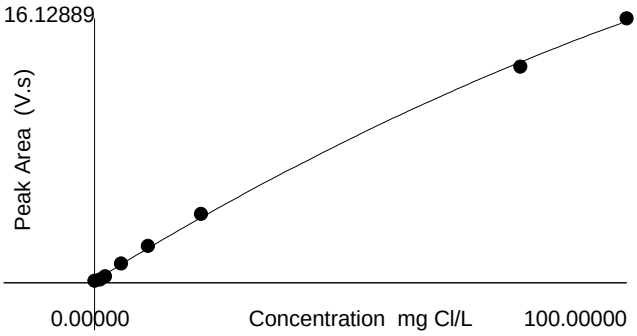


Table : 1 (Chloride-CH3)

	Known Conc. (mg Cl/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg Cl/L)	Detection Date	Detection Time
1	100.00000	1	16.12889	2.38746	0.0	-1.1	100.91061	9/10/2024	11:30:08 AM
2	80.00000	1	13.18545	1.99737	0.0	2.1	78.53601	9/10/2024	11:30:52 AM
3	20.00000	1	4.17903	0.67878	0.0	-5.4	20.85784	9/10/2024	11:31:38 AM
4	10.00000	1	2.22797	0.36165	0.0	-6.8	10.50523	9/10/2024	11:32:24 AM
5	5.00000	1	1.16467	0.16875	0.0	-4.5	5.18438	9/10/2024	11:33:11 AM
6	2.00000	1	0.38019	0.06305	0.0	27.1	1.40399	9/10/2024	11:33:57 AM
7	1.00000	1	0.18347	0.03238	0.0	43.1	0.47537	9/10/2024	11:34:43 AM
8	0.00000	1	0.10916	0.01175			0.12658	9/10/2024	11:35:29 AM

Figure : 1 (Chloride-CH3)



Area = - 0.00042 * Conc^2 + 0.20063 * Conc + 0.12219
Conc = 0.10020 * Area^2 + 4.66416 * Area - 0.38375
Correlation Coefficient (r) = 0.99962

Weighting : None

Author: Date : 9/10/2024

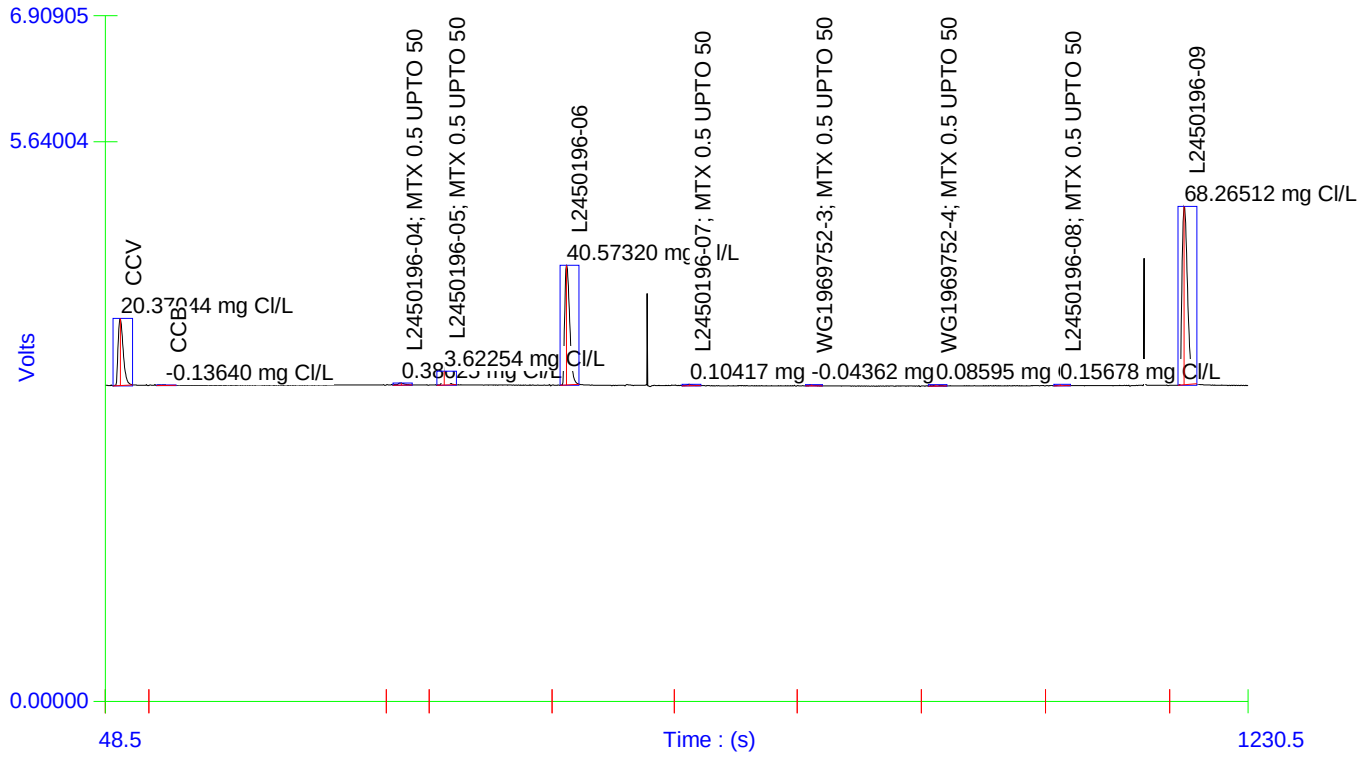
Original Run Filename: OM_9-10-2024_05-26-37PM.OMN Created: 9/10/2024 5:26:37 PM
Original Run Author's Signature: [a1wetcheminstrument]
Current Run Filename: OM_9-10-2024_05-26-37PM.OMN Last Modified: 9/10/2024 6:55:52 PM
Current Run Author's Signature: [a1wetcheminstrument]
Description: Default New Run

Sample	Rep.	Cup No.	Channel 1 Chloride-CH3 (mg Cl/L)	ADF	MDF	Weight
CCV	1	S3	20.37044			
		Known Conc:	20.00000			
		Calibration:	Table/Fig. : 1			
CCB	1	S9	-0.13640			
		Known Conc:	0.00000			
L2450196-04; MTX 0.5 UPTO 50	1	101	386.24585	10.00	100.00	
L2450196-05; MTX 0.5 UPTO 50	1	102	362.25415		100.00	
L2450196-06	1	103	405.73196	10.00		
L2450196-07; MTX 0.5 UPTO 50	1	104	104.16591	10.00	100.00	
WG1969752-3; MTX 0.5 UPTO 50	1	105	-43.61682	10.00	100.00	
WG1969752-4; MTX 0.5 UPTO 50	1	106	85.95291	10.00	100.00	
L2450196-08; MTX 0.5 UPTO 50	1	107	156.78355	10.00	100.00	
L2450196-09	1	108	682.65125	10.00		
L2450196-10	1	109	439.54282	10.00		
L2450196-11; MTX 0.5 UPTO 50	1	110	393.84750		100.00	
CCV	1	S3	20.07366			
		Known Conc:	20.00000			
CCB	1	S9	-0.28671			
		Known Conc:	0.00000			
L2450570-01	1	111	4.94604			
L2450579-01	1	112	5258.49561	50.00		
L2450710-01	1	113	-0.09099			
L2450710-02	1	114	-0.25988			
L2450719-01	1	115	111.01661	10.00		
L2450719-02	1	116	627.68011	10.00		
L2451151-01	1	117	2255.13696	100.00		
L2451151-02	1	118	1390.08057	100.00		
L2450398-03	1	22	48.14161			
WG1969753-4	1	30	35.67238			
CCV	1	S3	20.22781			
		Known Conc:	20.00000			
CCB	1	S9	-0.22928			
		Known Conc:	0.00000			
L2450415-01	1	34	173.98589	10.00		
WG1969755-3	1	35	173.00516	10.00		
WG1969755-4	1	36	194.22594	10.00		
L2450415-02	1	37	340.14175	10.00		
L2450415-03	1	38	312.13168	10.00		
L2450415-04	1	39	77.09351			
L2450415-06	1	41	321.24213	10.00		
L2450415-07	1	42	491.52869	10.00		
L2450415-08	1	43	238.10051	10.00		
L2450415-09	1	44	294.36365	10.00		
CCV	1	S3	20.69225			
		Known Conc:	20.00000			
CCB	1	S9	-0.16304			
		Known Conc:	0.00000			
L2450415-10	1	45	128.90973	10.00		
L2450415-11	1	46	124.64697	10.00		
L2450415-12	1	47	339.29108	10.00		
L2450415-13	1	48	-0.07562			
L2450786-01	1	49	17.75446			
WG1969756-3	1	50	17.62826			
L2450786-10	1	60	32.80489			
L2449354-05	1	70	6.79428			
L2450397-08	1	80	-0.24095			
L2450397-10	1	81	123.26762	10.00		
CCV	1	S3	20.40309			

Author: Date : 9/10/2024

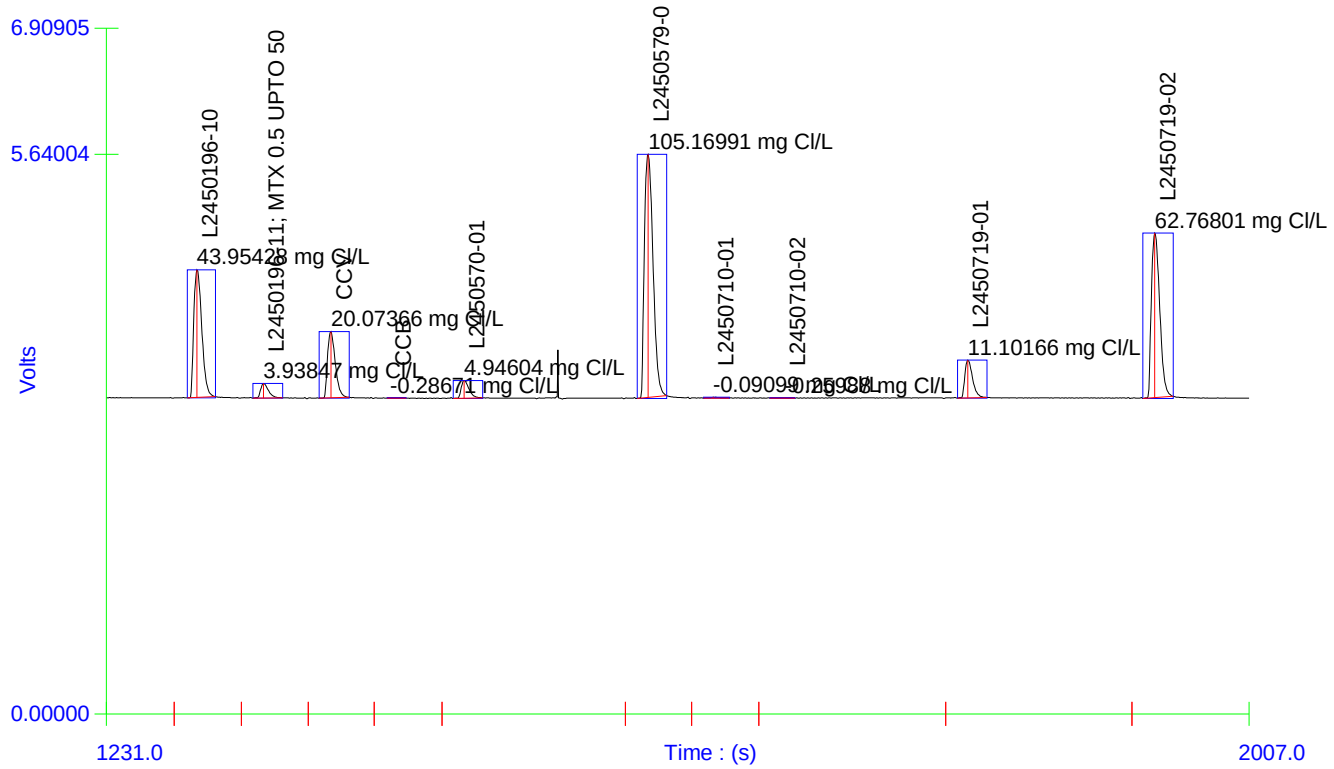
		Known Conc:	20.00000			
CCB	1	S9	-0.18398			
		Known Conc:	0.00000			
L2450397-11	1	82	121.42072	10.00		
L2450397-12	1	83	86.71465			
L2450397-13	1	84	252.10008	10.00		
L2450626-01	1	85	21.48989			
L2450196-02; MTX 0.5 UPTO 50	1	99	125.65594	10.00	100.00	
L2450579-01	1	112	5683.32422	100.00		
L2450710-01	1	113	-0.10534			
CCV	1	S3	20.21976			
		Known Conc:	20.00000			
CCB	1	S9	-0.20786			
		Known Conc:	0.00000			

Channel 1 (Chloride) - Set: 1 / 6

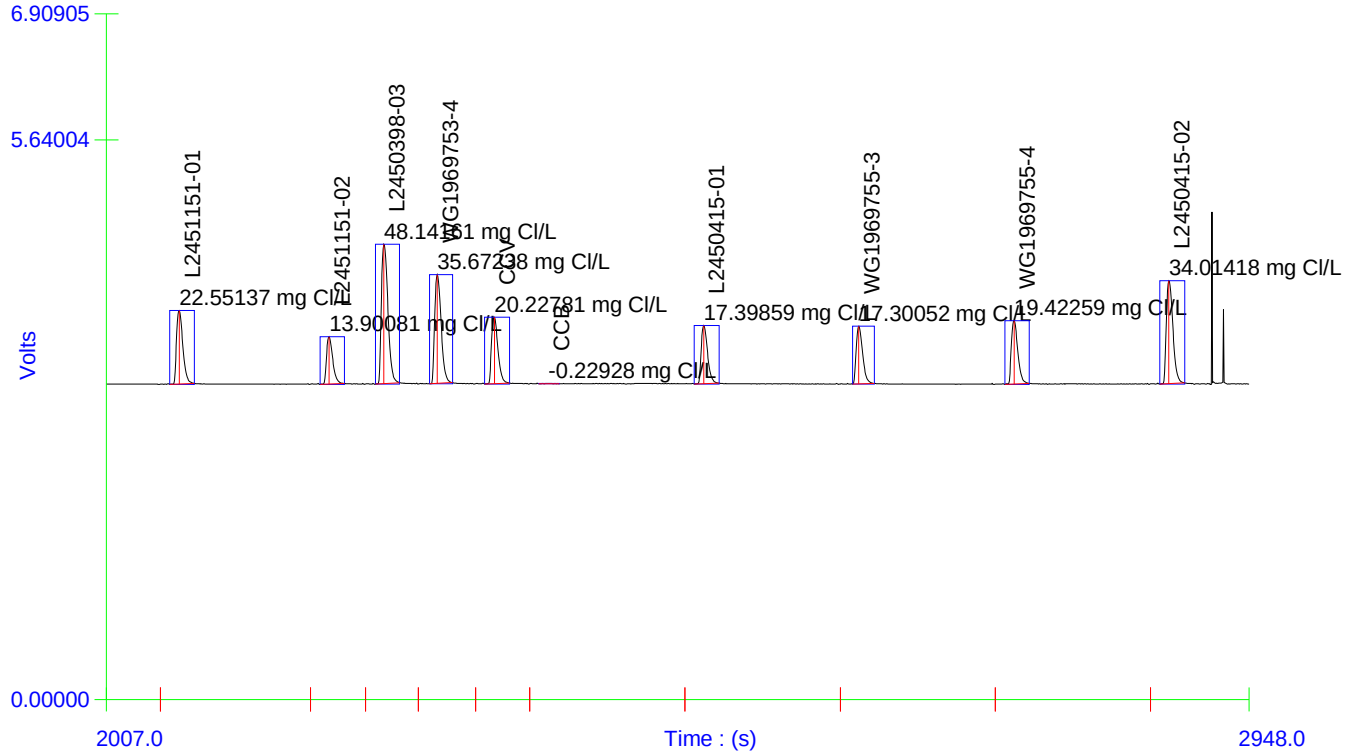


Author: Date : 9/10/2024

Channel 1 (Chloride) - Set: 2 / 6

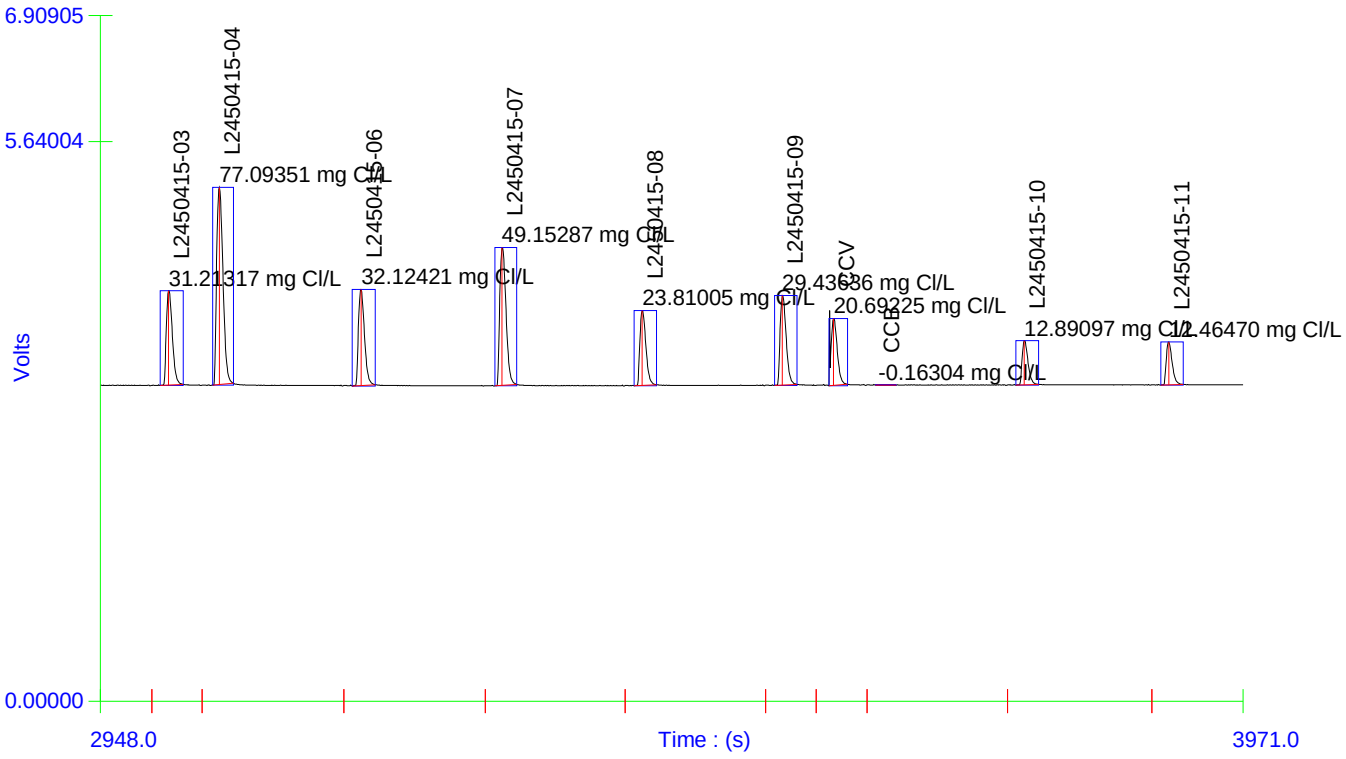


Channel 1 (Chloride) - Set: 3 / 6



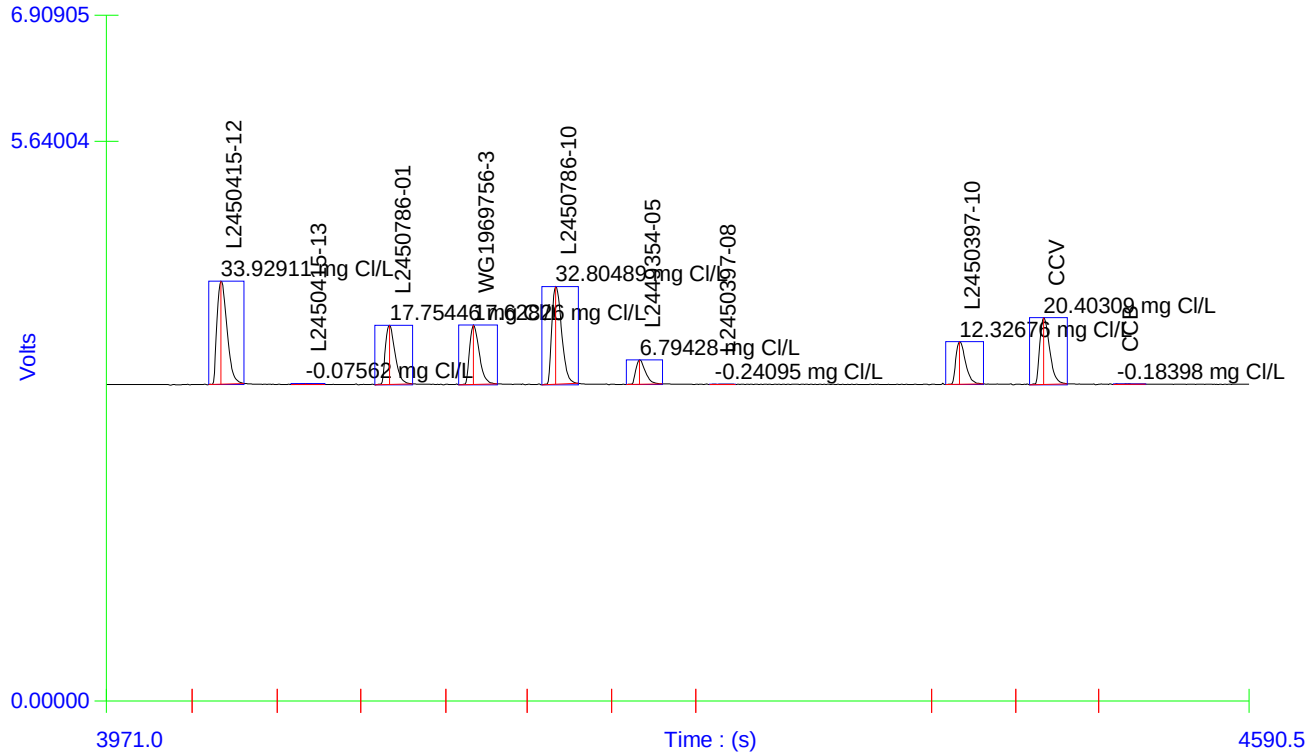
Author: Date : 9/10/2024

Channel 1 (Chloride) - Set: 4 / 6



Author: Date : 9/10/2024

Channel 1 (Chloride) - Set: 5 / 6



Channel 1 (Chloride) - Set: 6 / 6

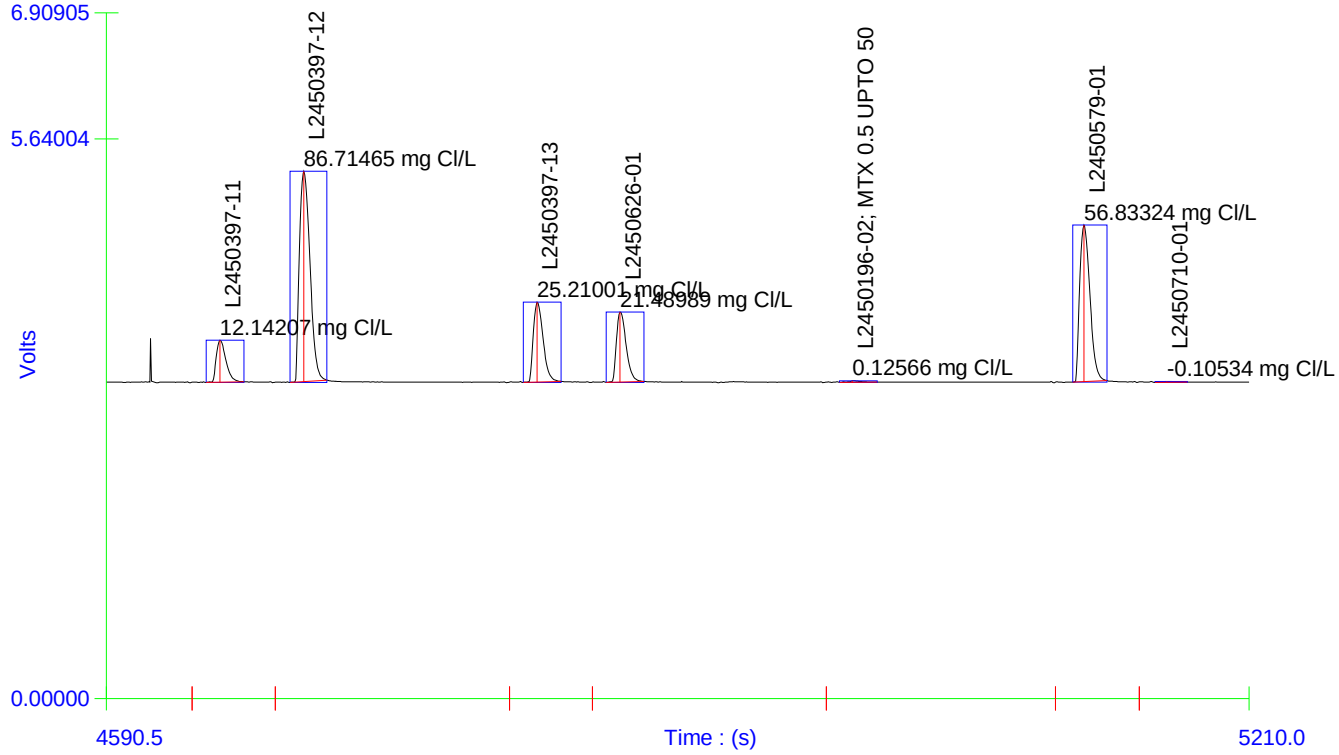
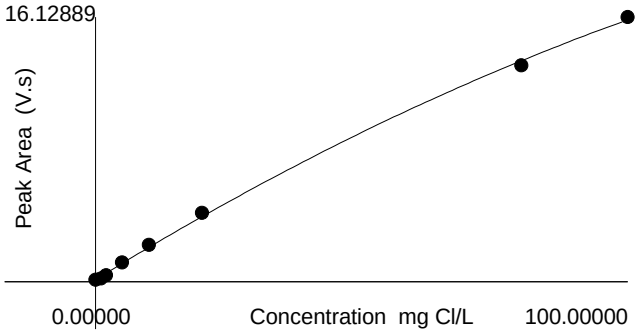


Table : 1 (Chloride-CH3)

	Known Conc. (mg Cl/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg Cl/L)	Detection Date	Detection Time
1	100.00000	1	16.12889	2.38746	0.0	-1.1	100.91061	9/10/2024	11:30:08 AM
2	80.00000	1	13.18545	1.99737	0.0	2.1	78.53601	9/10/2024	11:30:52 AM
3	20.00000	1	4.17903	0.67878	0.0	-5.4	20.85784	9/10/2024	11:31:38 AM
4	10.00000	1	2.22797	0.36165	0.0	-6.8	10.50523	9/10/2024	11:32:24 AM
5	5.00000	1	1.16467	0.16875	0.0	-4.5	5.18438	9/10/2024	11:33:11 AM
6	2.00000	1	0.38019	0.06305	0.0	27.1	1.40399	9/10/2024	11:33:57 AM
7	1.00000	1	0.18347	0.03238	0.0	43.1	0.47537	9/10/2024	11:34:43 AM
8	0.00000	1	0.10916	0.01175			0.12658	9/10/2024	11:35:29 AM

Figure : 1 (Chloride-CH3)



Area = - 0.00042 * Conc^2 + 0.20063 * Conc + 0.12219
Conc = 0.10020 * Area^2 + 4.66416 * Area - 0.38375
Correlation Coefficient (r) = 0.99962

Weighting : None

Quality Control

Form 5a
Matrix Spike

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: MW-5A	**Matrix**	: WATER
Lab Sample ID	: L2450786-01		
Matrix Spike	: WG1969756-4	**MS Analysis Date**	: 09/10/24 16:11
Matrix Spike Dup	:	**MSD Analysis Date**	:

		Matrix Spike Sample			Matrix Spike Duplicate					
Parameter	**Sample Conc. (mg/l)**	**Spike Added (mg/l)**	**Spike Conc. (mg/l)**	**%R**	**Spike Added (mg/l)**	**Spike Conc. (mg/l)**	**%R**	**RPD**	**Recovery Limits**	**RPD Limit**
Chloride	**18.**	**20**	**37.**	**100**					**58-140**	**7**

Form 6
Lab Duplicates

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: MW-5A	**Matrix**	: WATER
Lab Sample ID	: L2450786-01	**Analysis Date**	: 09/10/24 18:35
Dup Sample ID	: WG1969756-3	**DUP Analysis Date**	: 09/10/24 18:36

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Chloride	18.	18.	0	7

Form 7
Laboratory Control Sample

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: WG1969756-2	**LCS Analysis Date**	: 09/10/24 15:13
Dup Sample ID	:	**LCSD Analysis Date**	:

	Laboratory Control Sample			Laboratory Control Duplicate					
Parameter	**True (mg/l)**	**Found (mg/l)**	**%R**	**True (mg/l)**	**Found (mg/l)**	**%R**	**RPD**	**Recovery Limits**	**RPD Limit**
Chloride	**30.0**	**31.0**	**103.**					**90-110**	**7**

Date Created: 11/11/21
Created By: Jason Hebert
File: PM11467-1
Page: 1

WETCHEM (WATER)

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Method	Holding Time	Container/Sample Preservation
Chloride	16887-00-6	1	0.2	mg/l	90-110		58-140	7	7	4500CL-E	28 days	1 - Plastic 250ml unpreserved

Please Note that the RL information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)
Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.

Date Created: 11/11/21
Created By: Jason Hebert
File: PM11468-1
Page: 1

WETCHEM (SOIL)

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Method	Holding Time	Container / Sample Preservation
Chloride	16887-00-6	10	3.73	mg/kg	89-109	35	62-129	35	35	9251	28 days	1 - Glass 250ml/8oz unpreserved
Chloride	16887-00-6	10	3.73	mg/kg	90-110	35	62-129	35	35	4500CL-E	28 days	1 - Glass 250ml/8oz unpreserved

Please Note that the RL information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)
Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.

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Calculations of Chloride

Aqueous samples:

Compute sample Chloride concentration by comparing sample peak areas with standard curve, as determined by the Lachat instrument software.

Calculate results by using reading on Channel 2 (Chloride)

To compute the final results for aqueous samples, multiply the direct reading by the dilution factor. (also done using software)

Cl mg/L = mg/L direct reading x dilution factor

Sequence Logs

240910 TRAY 1, MRM Chloride

1 ICV 5.0
2 ICV 30.0
3 ICV 80.0
4 ICB
5 100 PPM
6 WG1969713-1
7 WG1969713-2
8 L2451399-01
9 WG1969713-3
10 WG1969713-4

1 WG1969753-1
2 WG1969753-2
3 WG1969755-1
4 WG1969755-2
5 WG1969756-1
6 WG1969756-2
7 WG1969752-1
8 WG1969752-2
9 WG1969758-1
10 WG1969758-2
11 WG1969759-1
12 WG1969759-2
13 L2450360-01
14 L2450360-02
15 L2450360-03
16 L2450360-04
17 L2450360-05
18 L2450360-06
19 L2450360-07
20 L2450398-01
21 L2450398-02
22 L2450398-03
23 L2450398-04
24 L2450417-01
25 L2450417-02
26 L2450417-03
27 L2450417-04
28 L2450417-06
29 WG1969753-3
30 WG1969753-4
31 L2450417-07
32 L2450417-08
33 L2450417-09
34 L2450415-01
35 WG1969755-3

36 WG1969755-4
37 L2450415-02
38 L2450415-03
39 L2450415-04
40 L2450415-05
41 L2450415-06
42 L2450415-07
43 L2450415-08
44 L2450415-09
45 L2450415-10
46 L2450415-11
47 L2450415-12
48 L2450415-13
49 L2450786-01
50 WG1969756-3
51 WG1969756-4
52 L2450786-02
53 L2450786-03
54 L2450786-04
55 L2450786-05
56 L2450786-06
57 L2450786-07
58 L2450786-08
59 L2450786-09
60 L2450786-10
61 L2450786-12
62 L2449354-01
63 WG1969759-3
64 WG1969759-4
65 L2449354-02
66 WG1969759-5
67 WG1969759-6
68 L2449354-03
69 L2449354-04
70 L2449354-05
71 L2449354-06
72 L2449354-07
73 L2449354-08
74 L2449354-09
75 L2449354-10
76 L2449354-11
77 L2449354-12
78 L2449354-13
79 L2449354-14
80 L2450397-08
81 L2450397-10
82 L2450397-11

83 L2450397-12
84 L2450397-13
85 L2450626-01
86 WG1969758-3
87 WG1969758-4
88 L2450626-02
89 WG1969758-5
90 WG1969758-6
91 L2450626-03
92 L2450626-04
93 L2450626-05
94 L2450626-06
95 L2450626-07
96 L2450626-08
97 L2450193-01
98 L2450196-01; MTX 0.5 UPTO 50
99 L2450196-02; MTX 0.5 UPTO 50
100 L2450196-03
101 L2450196-04; MTX 0.5 UPTO 50
102 L2450196-05; MTX 0.5 UPTO 50
103 L2450196-06
104 L2450196-07; MTX 0.5 UPTO 50
105 WG1969752-3; MTX 0.5 UPTO 50
106 WG1969752-4; MTX 0.5 UPTO 50
107 L2450196-08; MTX 0.5 UPTO 50
108 L2450196-09
109 L2450196-10
110 L2450196-11; MTX 0.5 UPTO 50
111 L2450570-01
112 L2450579-01
113 L2450710-01
114 L2450710-02
115 L2450719-01
116 L2450719-02
117 L2451151-01
118 L2451151-02

Fluoride Analysis

Results

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-01	**Date Collected**	: 09/05/24 13:53
Client ID	: MW-5A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 04:42
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500F-BC	**Analyst**	: DTH
Lab File ID	: WG1969425.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
16984-48-8	Fluoride	0.07	0.20	0.01	J

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-02	**Date Collected**	: 09/05/24 13:55
Client ID	: MW-5B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 04:42
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500F-BC	**Analyst**	: DTH
Lab File ID	: WG1969425.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
16984-48-8	Fluoride	0.03	0.20	0.01	J

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-03	**Date Collected**	: 09/05/24 12:50
Client ID	: MW-6A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 04:42
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500F-BC	**Analyst**	: DTH
Lab File ID	: WG1969425.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
16984-48-8	Fluoride	0.08	0.20	0.01	J

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-04	**Date Collected**	: 09/05/24 12:47
Client ID	: MW-6B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 04:42
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500F-BC	**Analyst**	: DTH
Lab File ID	: WG1969425.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
16984-48-8	Fluoride	0.44	0.20	0.01	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-05	**Date Collected**	: 09/05/24 11:55
Client ID	: MW-7A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 04:42
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500F-BC	**Analyst**	: DTH
Lab File ID	: WG1969425.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
16984-48-8	Fluoride	0.10	0.20	0.01	J

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-06	**Date Collected**	: 09/05/24 12:00
Client ID	: MW-7B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 04:42
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500F-BC	**Analyst**	: DTH
Lab File ID	: WG1969425.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
16984-48-8	Fluoride	0.08	0.20	0.01	J

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-07	**Date Collected**	: 09/05/24 08:00
Client ID	: MW-8A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 04:42
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500F-BC	**Analyst**	: DTH
Lab File ID	: WG1969425.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
16984-48-8	Fluoride	0.03	0.20	0.01	J

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-08	**Date Collected**	: 09/05/24 08:55
Client ID	: MW-8B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/10/24 04:42
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500F-BC	**Analyst**	: DTH
Lab File ID	: WG1969425.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
16984-48-8	Fluoride	0.06	0.20	0.01	J

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-09	**Date Collected**	: 09/05/24 10:10
Client ID	: MW-10A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 04:10
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500F-BC	**Analyst**	: DTH
Lab File ID	: WG1970013.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/11/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
16984-48-8	Fluoride	0.02	0.20	0.01	J

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-10	**Date Collected**	: 09/05/24 10:16
Client ID	: MW-10B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 04:10
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500F-BC	**Analyst**	: DTH
Lab File ID	: WG1970013.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/11/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
16984-48-8	Fluoride	0.05	0.20	0.01	J

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-12	**Date Collected**	: 09/05/24 00:00
Client ID	: DUP	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/11/24 04:10
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500F-BC	**Analyst**	: DTH
Lab File ID	: WG1970013.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/11/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
16984-48-8	Fluoride	0.03	0.20	0.01	J

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1969425-1	**Date Collected**	: NA
Client ID	: WG1969425-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 09/10/24 04:42
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500F-BC	**Analyst**	: DTH
Lab File ID	: WG1969425.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
16984-48-8	Fluoride	ND	0.20	0.01	U

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1969425-3	**Date Collected**	: 09/04/24 13:40
Client ID	: WG1969425-3 DUP	**Date Received**	: 09/04/24
Sample Location	:	**Date Analyzed**	: 09/10/24 04:42
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500F-BC	**Analyst**	: DTH
Lab File ID	: WG1969425.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/10/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
16984-48-8	Fluoride	0.15	0.20	0.02	J

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1970013-1	**Date Collected**	: NA
Client ID	: WG1970013-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 09/11/24 04:10
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500F-BC	**Analyst**	: DTH
Lab File ID	: WG1970013.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/11/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
16984-48-8	Fluoride	ND	0.20	0.01	U

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1970013-3	**Date Collected**	: 09/05/24 08:00
Client ID	: WG1970013-3 DUP	**Date Received**	: 09/05/24
Sample Location	:	**Date Analyzed**	: 09/11/24 04:10
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500F-BC	**Analyst**	: DTH
Lab File ID	: WG1970013.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/11/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
16984-48-8	Fluoride	ND	0.20	0.02	U

Sample Raw Data

ALPHA ANALYTICAL LABS

WET CHEMISTRY DEPARTMENT

F L U O R I D E

Last Change 03/4/13
File Flouride.xlt

Sample Number: _____

Client: _____

Product: F-4500
Analysis Analyte: Fluoride,
Analysis: FLUORIDE
Analysis Date: 9/11/2024 4:10
Method: SM 4500F-BC
Technician: DTH
LCS Concentration (mg/l): 2
Work group: WG1970013
Spike Concentration (mg/l): 1
RL: 0.20 mg/L
Distillation Date: 9/11/2024 1:51

Standard ID mg/L	Log Std-d	Reading mV	Result, Curve	Antilog Result	% Recovery	Calibration Curve	
						Slope	y-intercept
0.2	-0.699	126.4	-0.706	0.1966	98	-58.7486591	84.9
0.5	-0.301	102.4	-0.298	0.5036	101		
1.0	0.000	84.4	0.009	1.0198	102	Correlation	Coefficient
10	1.000	26.4	0.996	9.903	99	0.99995098	

	Sample number	Sample Volume (ml)	Distill Volume (ml)	Flask	Reagent	Dilution Factor	Meter Reading	RL Multiplier	FINAL RESULT (mg/l)	
	ICB	50	50		YES	1.00	0	1.00	0.00	Recovery
	ICV	50	50		YES	1.00	0.961	1.00	0.96	96%
	L2450707-01	50	50		YES	1.00	0.282	1.00	0.28	
SAMP	L2450710-01	50	50		YES	1.00	0.0134	1.00	0.01	
SAMP	L2450710-02	50	50		YES	1.00	0.0133	1.00	0.01	
SAMP	L2450786-09	50	50		YES	1.00	0.0239	1.00	0.02	
SAMP	L2450786-10	50	50		YES	1.00	0.0458	1.00	0.05	
SAMP	L2450786-12	50	50		YES	1.00	0.0291	1.00	0.03	
	CCV	50	50		YES	1.00	0.958	1.00	0.96	
	CCB	50	50		YES	1.00	0	1.00	0.00	
						1.00		1.00		
						1.00		1.00		
LOQ2	WG1970013-5	50	50		YES	1.00	0.141	1.00	0.14	
						1.00		1.00		
						1.00		1.00		
						1.00		1.00		
						1.00		1.00		
						1.00		1.00		
						1.00		1.00		
						1.00		1.00		
						1.00		1.00		
						1.00		1.00		
BLANK	WG1970013-1	50	50		YES	1.00	0	1.00	0.00	
DUP	WG1970013-3	50	50		YES	1.00	0.0121	1.00	0.01	L2450710-01

	Sample number	sample volume	Distill volume (ml)	Flask	Reagent	Sample Result mg/l	Meter Reading	Spike conc. mg/l	Spike Result mg/l	Recovery %
MS	WG1970013-4	50	50		YES	.01	0.857	1	0.86	85
LCS	WG1970013-2	50	50		YES		1.71	2	1.71	86

last sample

ALPHA ANALYTICAL LABS

WET CHEMISTRY DEPARTMENT

F L U O R I D E

Last Change 03/4/13
File Flouride.xlt

Sample Number: _____

Client: _____

Product: F-4500
Analysis Analyte: Fluoride,
Analysis: FLUORIDE
Analysis Date: 9/10/2024 4:42
Method: SM 4500F-BC
Technician: DTH
LCS Concentration (mg/l): 2
Work group: WG1969425
Spike Concentration (mg/l): 1
RL: 0.20 mg/L
Distillation Date: 9/10/2024 0:55

Standard ID mg/L	Log Std-d	Reading mV	Result, Curve	Antilog Result	% Recovery	Calibration Curve	
						Slope	y-intercept
0.2	-0.699	126.3	-0.703	0.1982	99	-58.5082846	85.175
0.5	-0.301	102.7	-0.300	0.5017	100		
1.0	0.000	84.9	0.005	1.0109	101	Correlation	Coefficient
10	1.000	26.8	0.998	9.948	99	0.99998588	

	Sample number	Sample Volume (ml)	Distill Volume (ml)	Flask	Reagent	Dilution Factor	Meter Reading	RL Multiplier	FINAL RESULT (mg/l)	
	ICB	50	50		YES	1.00	0	1.00	0.00	Recovery
	ICV	50	50		YES	1.00	0.971	1.00	0.97	97%
	L2450417-01	50	50		YES	1.00	0.118	1.00	0.12	
	L2450417-02	50	50		YES	1.00	0.081	1.00	0.08	
	L2450417-03	50	50		YES	1.00	0.101	1.00	0.10	
	L2450417-04	50	50		YES	1.00	0.262	1.00	0.26	
	L2450417-06	50	50		YES	1.00	0.152	1.00	0.15	
	L2450417-07	50	50		YES	1.00	0.129	1.00	0.13	
	L2450417-08	50	50		YES	1.00	0.0255	1.00	0.03	
	L2450417-09	50	50		YES	1.00	0.0719	1.00	0.07	
SAMP	L2450786-01	50	50		YES	1.00	0.0726	1.00	0.07	
SAMP	L2450786-02	50	50		YES	1.00	0.0344	1.00	0.03	
SAMP	L2450786-03	50	50		YES	1.00	0.0782	1.00	0.08	
SAMP	L2450786-04	50	50		YES	1.00	0.435	1.00	0.44	
SAMP	L2450786-05	50	50		YES	1.00	0.0956	1.00	0.10	
SAMP	L2450786-06	50	50		YES	1.00	0.0778	1.00	0.08	
SAMP	L2450786-07	50	50		YES	1.00	0.0313	1.00	0.03	
SAMP	L2450786-08	50	50		YES	1.00	0.0645	1.00	0.06	
	CCV	50	50		YES	1.00	0.966	1.00	0.97	
	CCB	50	50		YES	1.00	0	1.00	0.00	
	CCV	50	50		YES	1.00	0.964	1.00	0.96	
	CCB	50	50		YES	1.00	0	1.00	0.00	
BLANK	WG1969425-1	50	50		YES	1.00	0	1.00	0.00	
DUP	WG1969425-3	50	50		YES	1.00	0.147	1.00	0.15	L2450417-06

	Sample number	sample volume	Distill volume (ml)	Flask	Reagent	Sample Result mg/l	Meter Reading	Spike conc. mg/l	Spike Result mg/l	Recovery %
MS	WG1969425-4	50	50		YES	.15	1.05	1	1.05	90
LCS	WG1969425-2	50	50		YES		1.88	2	1.88	94

last sample

Quality Control

Form 5a
Matrix Spike

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: L2450417-06		
Matrix Spike	: WG1969425-4	**MS Analysis Date**	: 09/10/24 04:42
Matrix Spike Dup	:	**MSD Analysis Date**	:

		Matrix Spike Sample			Matrix Spike Duplicate					
Parameter	Sample Conc. (mg/l)	Spike Added (mg/l)	Spike Conc. (mg/l)	%R	Spike Added (mg/l)	Spike Conc. (mg/l)	%R	RPD	Recovery Limits	RPD Limit
Fluoride	0.15J	1	1.0	105					69-124	13

Form 5a
Matrix Spike

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: L2450710-01		
Matrix Spike	: WG1970013-4	**MS Analysis Date**	: 09/11/24 04:10
Matrix Spike Dup	:	**MSD Analysis Date**	:

		Matrix Spike Sample			Matrix Spike Duplicate					
Parameter	**Sample Conc. (mg/l)**	**Spike Added (mg/l)**	**Spike Conc. (mg/l)**	**%R**	**Spike Added (mg/l)**	**Spike Conc. (mg/l)**	**%R**	**RPD**	**Recovery Limits**	**RPD Limit**
Fluoride	**ND**	**1**	**0.86**	**86**					**69-124**	**13**

Form 6
Lab Duplicates

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: NA	**Analysis Date**	: 09/10/24 04:42
Dup Sample ID	: WG1969425-3	**DUP Analysis Date**	: 09/10/24 04:42

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Fluoride	0.15J	0.15J	NC	13

Form 6
Lab Duplicates

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: NA	**Analysis Date**	: 09/11/24 04:10
Dup Sample ID	: WG1970013-3	**DUP Analysis Date**	: 09/11/24 04:10

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Fluoride	ND	ND	NC	13

Form 7
Laboratory Control Sample

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: WG1969425-2	**LCS Analysis Date**	: 09/10/24 04:42
Dup Sample ID	:	**LCSD Analysis Date**	:

	Laboratory Control Sample			Laboratory Control Duplicate					
Parameter	**True (mg/l)**	**Found (mg/l)**	**%R**	**True (mg/l)**	**Found (mg/l)**	**%R**	**RPD**	**Recovery Limits**	**RPD Limit**
Fluoride	**2.00**	**1.90**	**94.**					**78-120**	**13**

Form 7
Laboratory Control Sample

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: WG1970013-2	**LCS Analysis Date**	: 09/11/24 04:10
Dup Sample ID	:	**LCSD Analysis Date**	:

	Laboratory Control Sample			Laboratory Control Duplicate					
Parameter	**True (mg/l)**	**Found (mg/l)**	**%R**	**True (mg/l)**	**Found (mg/l)**	**%R**	**RPD**	**Recovery Limits**	**RPD Limit**
Fluoride	**2.00**	**1.70**	**86.**					**78-120**	**13**

Date Created: 11/11/21
Created By: Jason Hebert
File: PM11467-1
Page: 1

WETCHEM (WATER)

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Method	Holding Time	Container/Sample Preservation
Fluoride	16984-48-8	0.2	0.017	mg/l	78-120		69-124	13	13	4500F-BC	28 days	1 - Plastic 500ml unpreserved

Please Note that the RL information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)
Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.

Date Created: 11/11/21
Created By: Jason Hebert
File: PM11468-1
Page: 1

WETCHEM (SOIL)

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Method	Holding Time	Container / Sample Preservation
Fluoride	16984-48-8	10	1.04	mg/kg	80-120		70-130	20	20	4500F-BC	28 days	1 - Glass 250ml/8oz unpreserved

Please Note that the RL information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)
Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.

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Calculations of Fluoride

When the volume of the distillate is the same as the volume of the sample used, the direct determination of Fluoride concentration is the instrument's result.

However, when analyzing soil samples or high level samples requiring a dilution, the following equations apply:

For liquids:

Fluoride, mg/L = (mg F-/L) X (Volume of Distillate, mL)/ Volume of Sample, mL

For solids:

Fluoride, mg/Kg = (mg F-/L) X (Volume of Distillate, mL)/Weight of Sample, gm

To calculate final result for soil samples based on dry weight, multiply final result on 100 and divide on %TS (in %)

Sample Preparation

Project No. _____

dential Book No. _____ TITLE _

Page No. ____

WG1970013

STD	Mv
0.0	126.4
0.5	102.9
1.0	84.4
10.0	26.4

Analyst: DTH
Date & Time: 9/11/24 4:10
ICV:F 082024
LCS:F 082004
Spike:F 071524
Curve:WC- 3420
TISAB III: R- 4015

Sample	Volume	Final Volume	Meter
	50mL	60mL	
ICV			0.961
ICB			0.00
Blank			0.00
LCS			1.71
50707-01			0.282
50710-01			0.0134
-Dup-01			0.0121
-MS-01			0.857
-02			0.0133
50786-09			0.0239
-10			0.0458
-12			0.0791
LOQ2			0.141
CCV			0.956
CCB			0.00

To Page No. ____

ssed & Understood by me, | Date | Invented by: | Date

Recorded by:

Project No. _____

ntial Book No. _____ TITLE _____

ge No. ____

Sample	Volume	Final Volume	Comments
Blank	50mL	50mL	~~DTH~~ 9/11/24 1:51
LCS			1.0 mL F071504 100 ppm
50707-01			
50710-01			
-DP01			
-MS 01			0.5 mL F071504 100ppm
02			
50786-04			
-10			
-12			
LOQ			0.05 mL F071504 10ppm

To Page No. ____

Understood by me,	Date	Invented by:	Date
		Recorded by:	

Project No. _____

Book No. _____ Confiden

TITLE _____

From Page No. _____

WG1969425

Analyst: DTH

Date & Time: 9/10/24 4:42

ICV:F 082224

LCS:F 092204

Spike:F 071524

Curve: WC- 3420

TISAB III: R- 4215

STD	MV
0.0	96.3
0.5	102.7
1.0	84.9
10.0	96.8

Sample	Volume	Final Volume	Meter
ICV	50mL	50mL	0.971
ICB			0.000
Blank			0.000
LCS			1.88
50417-01			0.118
-02			0.0810
-03			0.101
-04			0.262
-06			0.152
-Dup 06			0.147
-MS 06			1.05
-07			0.129
CCV			0.966
CCB			0.00
-08			0.0255
-09			0.0719
50786-01			0.0726
-02			0.0344
-03			0.0782
-04			0.435
-05			0.0956
-06			0.0776
-07			0.0313
-08			0.0645
CCV			0.964
CCB			0.00

To Page No. _____

Witnessed & Understood by me,	Date	Invented by:	Date
		Recorded by:	

From Page No. ___

Tube	Sample	Volume	Final Volume	comments
1	Blank	1.0147	50 mL	DTH 9/8/24 1:45
2	LCS	1.0558		1.0 mL Fo71524-100ppm
3	50554-01	0.5044	2x	
4	-Dup 01	0.5061		
5	-MS 01	0.5031		0.5 mL Fo71524-100ppm
7	-02	0.5167		
8	-03	0.5011		

Tube	Sample	Volume	Final Volume	Comments
1	Blank	50mL	50mL	DTH 9/10/2024 @00:55
2	LCS			1.0 mL Fo71524-100ppm
4	50417-01			
5	-02			
3	-03			
6	-04			
7	-06			
8	-Dup 06			
9	-MS 06			0.5mL Fo71524-100ppm
10	-07			
11	-08			
12	-09			
13	50786-01			
14	-02			
15	-03			
16	-04			
17	-05			
18	-06			
19	-07			
20	-08			

To Page No. ___

Witnessed & Understood by me,	Date	Invented by:	Date
		Recorded by:	

Phosphates Analysis

Results

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-01	**Date Collected**	: 09/05/24 13:53
Client ID	: MW-5A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/09/24 11:31
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500P-E(M)	**Analyst**	: EYA
Lab File ID	: PHOS090924-WG1968910.csv	**Instrument ID**	: SEAL2
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/08/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7723-14-0	Phosphate, Total	0.120	0.031	0.012	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-02	**Date Collected**	: 09/05/24 13:55
Client ID	: MW-5B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/09/24 11:31
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500P-E(M)	**Analyst**	: EYA
Lab File ID	: PHOS090924-WG1968910.csv	**Instrument ID**	: SEAL2
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/08/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7723-14-0	Phosphate, Total	0.025	0.031	0.012	J

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-03	**Date Collected**	: 09/05/24 12:50
Client ID	: MW-6A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/09/24 11:32
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500P-E(M)	**Analyst**	: EYA
Lab File ID	: PHOS090924-WG1968910.csv	**Instrument ID**	: SEAL2
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/08/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7723-14-0	Phosphate, Total	0.052	0.031	0.012	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-04	**Date Collected**	: 09/05/24 12:47
Client ID	: MW-6B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/09/24 11:33
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500P-E(M)	**Analyst**	: EYA
Lab File ID	: PHOS090924-WG1968910.csv	**Instrument ID**	: SEAL2
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/08/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7723-14-0	Phosphate, Total	0.028	0.031	0.012	J

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-05	**Date Collected**	: 09/05/24 11:55
Client ID	: MW-7A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/09/24 11:34
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500P-E(M)	**Analyst**	: EYA
Lab File ID	: PHOS090924-WG1968910.csv	**Instrument ID**	: SEAL2
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/08/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7723-14-0	Phosphate, Total	0.089	0.031	0.012	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-06	**Date Collected**	: 09/05/24 12:00
Client ID	: MW-7B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/09/24 11:35
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500P-E(M)	**Analyst**	: EYA
Lab File ID	: PHOS090924-WG1968910.csv	**Instrument ID**	: SEAL2
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/08/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7723-14-0	Phosphate, Total	0.071	0.031	0.012	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-07	**Date Collected**	: 09/05/24 08:00
Client ID	: MW-8A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/09/24 11:36
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500P-E(M)	**Analyst**	: EYA
Lab File ID	: PHOS090924-WG1968910.csv	**Instrument ID**	: SEAL2
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/08/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7723-14-0	Phosphate, Total	0.025	0.031	0.012	J

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-08	**Date Collected**	: 09/05/24 08:55
Client ID	: MW-8B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/09/24 11:39
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500P-E(M)	**Analyst**	: EYA
Lab File ID	: PHOS090924-WG1968910.csv	**Instrument ID**	: SEAL2
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/08/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7723-14-0	Phosphate, Total	0.154	0.031	0.012	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-09	**Date Collected**	: 09/05/24 10:10
Client ID	: MW-10A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/09/24 11:40
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500P-E(M)	**Analyst**	: EYA
Lab File ID	: PHOS090924-WG1968910.csv	**Instrument ID**	: SEAL2
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/08/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7723-14-0	Phosphate, Total	0.037	0.031	0.012	

Form 1
WETCHEM

Client	:	P. W. Grosser	**Lab Number**	:	L2450786
Project Name	:	ROANOKE SAND + GRAVEL	**Project Number**	:	BSD1504
Lab ID	:	L2450786-10	**Date Collected**	:	09/05/24 10:16
Client ID	:	MW-10B	**Date Received**	:	09/05/24
Sample Location	:	104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	:	09/09/24 11:41
Sample Matrix	:	WATER	**Dilution Factor**	:	1
Analytical Method	:	121,4500P-E(M)	**Analyst**	:	EYA
Lab File ID	:	PHOS090924-WG1968910.csv	**Instrument ID**	:	SEAL2
Sample Amount	:		**%Solids**	:	N/A
Digestion Method	:		**Date Digested**	:	09/08/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7723-14-0	Phosphate, Total	ND	0.031	0.012	U

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-12	**Date Collected**	: 09/05/24 00:00
Client ID	: DUP	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/09/24 11:42
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500P-E(M)	**Analyst**	: EYA
Lab File ID	: PHOS090924-WG1968910.csv	**Instrument ID**	: SEAL2
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/08/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7723-14-0	Phosphate, Total	0.022	0.031	0.012	J

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1968910-1	**Date Collected**	: NA
Client ID	: WG1968910-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 09/09/24 11:17
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500P-E(M)	**Analyst**	: EYA
Lab File ID	: PHOS090924-WG1968910.csv	**Instrument ID**	: SEAL2
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/08/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7723-14-0	Phosphate, Total	ND	0.031	0.012	U

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1968910-3	**Date Collected**	: 09/04/24 13:40
Client ID	: WG1968910-3 DUP	**Date Received**	: 09/04/24
Sample Location	:	**Date Analyzed**	: 09/09/24 11:24
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500P-E(M)	**Analyst**	: EYA
Lab File ID	: PHOS090924-WG1968910.csv	**Instrument ID**	: SEAL2
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 09/08/24

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7723-14-0	Phosphate, Total	0.065	0.031	0.012	

Sample Raw Data

AQ400Tray Report

Software version : 2.4.5
Report requested by : easamoah
Date \ Time : 09-Sep-2024 12:26:49
Tray number : 1
Tray name : WG1968910

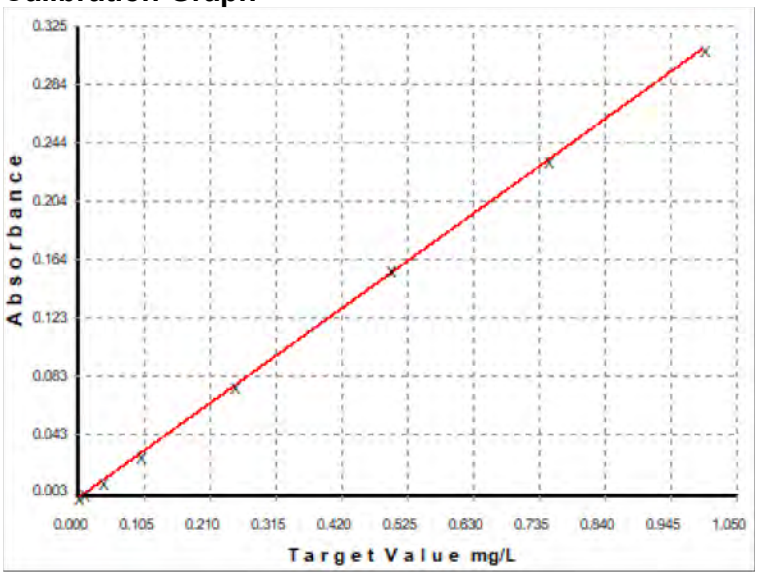
T-Phos 1

Calibration Chart

Type	Absorbance	Calc mg/L	Target mg/L	% Error
S1	0.0027	0.002	0.000	
S90	0.0052	0.010	0.010	-0.83
S91	0.0137	0.038	0.040	-5.87
S92	0.0315	0.095	0.100	-4.55
S93	0.0793	0.250	0.250	0.13
S94	0.1587	0.508	0.500	1.51
S95	0.2340	0.752	0.750	0.26
S96	0.3091	0.995	1.000	-0.48
S0	0.0029	0.002	0.000	

Polynomial Order : 1
Correlation Coefficient : 0.9999
Carryover(%) : 0.1
Calibration equation: y = bx + a
y =: Concentration mg/L
x =: Measured absorbance
a =: -6.823257E-03
b =: 3.242312E+00
Date & Time : 09-Sep-2024 11:14:15

Calibration Graph



Reagents

Reagent Name	Batch Number	Operator	Expiry Date
TP Working Color			
TP Ascorbic			

Test Results

Cup	Type	ID	Sample Details	Result	Units	QC Pro	Auto Dil.	Man Dil.	User	Time & Date
	S1	Standard 1		0.003					EYA	09-Sep-2024 11:06:47
	S90	Standard 90		0.005					EYA	09-Sep-2024 11:07:43
	S91	Standard 91		0.014					EYA	09-Sep-2024 11:08:39
	S92	Standard 92		0.032					EYA	09-Sep-2024 11:09:35
	S93	Standard 93		0.079					EYA	09-Sep-2024 11:10:31
	S94	Standard 94		0.159					EYA	09-Sep-2024 11:11:27
	S95	Standard 95		0.234					EYA	09-Sep-2024 11:12:23
	S96	Standard 96		0.309					EYA	09-Sep-2024 11:13:19
	S0	Standard 0		0.003					EYA	09-Sep-2024 11:14:15
2	ICV	ICV	8-SEP-24 15-36	0.465	mg/L				EYA	09-Sep-2024 11:15:11
3	ICB	ICB	8-SEP-24 15-36	0.002	mg/L				EYA	09-Sep-2024 11:16:07
4	U1	WG1968910-1O	8-SEP-24 15-36	0.001ELL	mg/L				EYA	09-Sep-2024 11:17:03
5	U2	WG1968910-2O	8-SEP-24 15-36	0.466	mg/L				EYA	09-Sep-2024 11:17:59
6	U3	L2449663-01O100	8-SEP-24 15-36	200.087	mg/L		x5.0000	x100.0000	EYA	09-Sep-2024 11:59:59
7	U4	L2450417-01O	8-SEP-24 15-36	0.020	mg/L				EYA	09-Sep-2024 11:19:51
8	U5	L2450417-02O	8-SEP-24 15-36	0.020	mg/L				EYA	09-Sep-2024 11:20:47
9	U6	L2450417-03O	8-SEP-24 15-36	0.011	mg/L				EYA	09-Sep-2024 11:21:43
10	U7	L2450417-04O	8-SEP-24 15-36	0.014	mg/L				EYA	09-Sep-2024 11:22:39
11	U8	L2450417-06O	8-SEP-24 15-36	0.020	mg/L				EYA	09-Sep-2024 11:23:35

12	U9	WG1968910-3O	8-SEP-24 15-36	0.021	mg/L		EYA	09-Sep-2024 11:24:31
13	U10	WG1968910-4O	8-SEP-24 15-36	0.519	mg/L		EYA	09-Sep-2024 11:25:27
	CCV	CCV		0.467	mg/L		EYA	09-Sep-2024 11:26:23
	CCB	CCB		0.002	mg/L		EYA	09-Sep-2024 11:27:19
14	U11	L2450417-07O	8-SEP-24 15-36	0.010	mg/L		EYA	09-Sep-2024 11:28:15
15	U12	L2450417-08O	8-SEP-24 15-36	0.013	mg/L		EYA	09-Sep-2024 11:29:11
16	U13	L2450417-09O	8-SEP-24 15-36	0.094	mg/L		EYA	09-Sep-2024 11:30:07
17	U14	L2450786-01O	8-SEP-24 15-36	0.039	mg/L		EYA	09-Sep-2024 11:31:03
18	U15	L2450786-02O	8-SEP-24 15-36	0.008	mg/L		EYA	09-Sep-2024 11:31:59
19	U16	L2450786-03O	8-SEP-24 15-36	0.017	mg/L		EYA	09-Sep-2024 11:32:55
20	U17	L2450786-04O	8-SEP-24 15-36	0.009	mg/L		EYA	09-Sep-2024 11:33:51
21	U18	L2450786-05O	8-SEP-24 15-36	0.029	mg/L		EYA	09-Sep-2024 11:34:47
22	U19	L2450786-06O	8-SEP-24 15-36	0.023	mg/L		EYA	09-Sep-2024 11:35:43
23	U20	L2450786-07O	8-SEP-24 15-36	0.008	mg/L		EYA	09-Sep-2024 11:36:38
	CCV	CCV		0.471	mg/L		EYA	09-Sep-2024 11:37:34
	CCB	CCB		0.002	mg/L		EYA	09-Sep-2024 11:38:30
24	U21	L2450786-08O	8-SEP-24 15-36	0.050	mg/L		EYA	09-Sep-2024 11:39:26
25	U22	L2450786-09O	8-SEP-24 15-36	0.012	mg/L		EYA	09-Sep-2024 11:40:22
26	U23	L2450786-10O	8-SEP-24 15-36	0.003	mg/L		EYA	09-Sep-2024 11:41:18
27	U24	L2450786-12O	8-SEP-24 15-36	0.007	mg/L		EYA	09-Sep-2024 11:42:14
	CCV	CCV		0.467	mg/L		EYA	09-Sep-2024 11:43:10
	CCB	CCB		0.004	mg/L		EYA	09-Sep-2024 11:44:06
	CCV	CCV		0.466	mg/L		EYA	09-Sep-2024 11:58:07
	CCB	CCB		0.001	mg/L		EYA	09-Sep-2024 11:59:03
	CCV	CCV		0.468	mg/L		EYA	09-Sep-2024 12:00:55
	CCB	CCB		0.003	mg/L		EYA	09-Sep-2024 12:01:51

Quality Control

Form 5a
Matrix Spike

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: L2450417-06		
Matrix Spike	: WG1968910-4	**MS Analysis Date**	: 09/09/24 11:25
Matrix Spike Dup	:	**MSD Analysis Date**	:

		Matrix Spike Sample			Matrix Spike Duplicate					
Parameter	Sample Conc. (mg/l)	Spike Added (mg/l)	Spike Conc. (mg/l)	%R	Spike Added (mg/l)	Spike Conc. (mg/l)	%R	RPD	Recovery Limits	RPD Limit
Phosphate, Total	0.061	1.53	1.59	100					80-120	15

Form 6
Lab Duplicates

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: NA	**Analysis Date**	: 09/09/24 11:23
Dup Sample ID	: WG1968910-3	**DUP Analysis Date**	: 09/09/24 11:24

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Phosphate, Total	0.061	0.065	5	15

Form 7
Laboratory Control Sample

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: WG1968910-2	**LCS Analysis Date**	: 09/09/24 11:17
Dup Sample ID	:	**LCSD Analysis Date**	:

	Laboratory Control Sample			Laboratory Control Duplicate					
Parameter	**True (mg/l)**	**Found (mg/l)**	**%R**	**True (mg/l)**	**Found (mg/l)**	**%R**	**RPD**	**Recovery Limits**	**RPD Limit**
Phosphate, Total	**1.53**	**1.43**	**93.**					**84-118**	**15**

Date Created: 11/11/21
Created By: Jason Hebert
File: PM11467-1
Page: 1

WETCHEM (WATER)

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Method	Holding Time	Container / Sample Preservation
Phosphorus, Total	7723-14-0	0.01	0.004	mg/l	80-120		75-125	20	20	4500P-E	28 days	1 - Plastic 500ml H2SO4 preserved

Please Note that the RL information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)
Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.

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WETCHEM (SOIL)

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Method	Holding Time	Container / Sample Preservation
Phosphorus, Total	7723-14-0	5	1.67	mg/kg	52-148	20	75-125	20	20	4500P-E	28 days	1 - Glass 250ml/8oz unpreserved

Please Note that the RL information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)
Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.

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WETCHEM (WATER)

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Method	Holding Time	Container/Sample Preservation
Phosphorus, Orthophosphate	7723-14-0	0.005	0.001	mg/l	90-110		80-120	20	20	4500P-E	48 hours	1 - Plastic 500ml unpreserved

Please Note that the RL information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)
Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.

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WETCHEM (SOIL)

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Method	Holding Time	Container / Sample Preservation
Phosphorus, Orthophosphate	7723-14-0	0.05	0.05	mg/kg						4500P-E	48 hours	1 - Glass 250ml/8oz unpreserved

Please Note that the RL information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)
Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.

Calculations of TPhosphorus

Aqueous samples:

Calculate the concentration value of the sample directly from the standard curve. All calculations are done by SEAL (segmant flow spectrometer).

$$\text{Mg TPhosphorus/L} = \frac{\text{absorbance - y-intercept}}{\text{slope}} \times \text{Dilution Factor}$$

Wet Chemistry
By
IC Methods

Results

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-01	**Date Collected**	: 09/05/24 13:53
Client ID	: MW-5A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/09/24 17:19
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,300.0	**Analyst**	: AVT,
Lab File ID	: WG1969414-16	**Instrument ID**	: IC3
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
24959-67-9	Bromide	0.179	0.050	0.013	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-02	**Date Collected**	: 09/05/24 13:55
Client ID	: MW-5B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/09/24 17:30
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,300.0	**Analyst**	: AVT,
Lab File ID	: WG1969414-16	**Instrument ID**	: IC3
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
24959-67-9	Bromide	0.171	0.050	0.013	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-03	**Date Collected**	: 09/05/24 12:50
Client ID	: MW-6A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/09/24 17:41
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,300.0	**Analyst**	: AVT,
Lab File ID	: WG1969414-16	**Instrument ID**	: IC3
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
24959-67-9	Bromide	0.154	0.050	0.013	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-04	**Date Collected**	: 09/05/24 12:47
Client ID	: MW-6B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/09/24 17:52
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,300.0	**Analyst**	: AVT,
Lab File ID	: WG1969414-16	**Instrument ID**	: IC3
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
24959-67-9	Bromide	0.209	0.050	0.013	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-05	**Date Collected**	: 09/05/24 11:55
Client ID	: MW-7A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/09/24 18:03
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,300.0	**Analyst**	: AVT,
Lab File ID	: WG1969414-16	**Instrument ID**	: IC3
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
24959-67-9	Bromide	0.283	0.050	0.013	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-06	**Date Collected**	: 09/05/24 12:00
Client ID	: MW-7B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/09/24 19:00
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,300.0	**Analyst**	: AVT,
Lab File ID	: WG1969414-16	**Instrument ID**	: IC3
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
24959-67-9	Bromide	0.286	0.050	0.013	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-07	**Date Collected**	: 09/05/24 08:00
Client ID	: MW-8A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/09/24 19:11
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,300.0	**Analyst**	: AVT,
Lab File ID	: WG1969414-16	**Instrument ID**	: IC3
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
24959-67-9	Bromide	0.401	0.050	0.013	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-08	**Date Collected**	: 09/05/24 08:55
Client ID	: MW-8B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/09/24 19:22
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,300.0	**Analyst**	: AVT,
Lab File ID	: WG1969414-16	**Instrument ID**	: IC3
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
24959-67-9	Bromide	0.103	0.050	0.013	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-09	**Date Collected**	: 09/05/24 10:10
Client ID	: MW-10A	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/09/24 19:33
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,300.0	**Analyst**	: AVT,
Lab File ID	: WG1969414-16	**Instrument ID**	: IC3
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
24959-67-9	Bromide	0.252	0.050	0.013	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-10	**Date Collected**	: 09/05/24 10:16
Client ID	: MW-10B	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/09/24 19:44
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,300.0	**Analyst**	: AVT,
Lab File ID	: WG1969414-16	**Instrument ID**	: IC3
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
24959-67-9	Bromide	0.170	0.050	0.013	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: L2450786-12	**Date Collected**	: 09/05/24 00:00
Client ID	: DUP	**Date Received**	: 09/05/24
Sample Location	: 104 ROCKY POINT RD. MIDDLE ISLAND	**Date Analyzed**	: 09/09/24 19:55
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,300.0	**Analyst**	: AVT,
Lab File ID	: WG1969414-16	**Instrument ID**	: IC3
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
24959-67-9	Bromide	0.352	0.050	0.013	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1969414-1	**Date Collected**	: NA
Client ID	: WG1969414-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 09/09/24 16:58
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,300.0	**Analyst**	: AVT,
Lab File ID	: WG1969414-16	**Instrument ID**	: IC3
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
24959-67-9	Bromide	ND	0.050	0.013	U

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1969414-4	**Date Collected**	: 09/05/24 13:53
Client ID	: MW-5ADUP	**Date Received**	: 09/05/24
Sample Location	:	**Date Analyzed**	: 09/09/24 21:55
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,300.0	**Analyst**	: AVT,
Lab File ID	: WG1969414-16	**Instrument ID**	: IC3
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
24959-67-9	Bromide	0.124	0.050	0.013	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1969416-1	**Date Collected**	: NA
Client ID	: WG1969416-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 09/09/24 16:58
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,300.0	**Analyst**	: AVT,
Lab File ID	: WG1969416	**Instrument ID**	: IC3
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
24959-67-9	Bromide	ND	0.050	0.013	U

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Lab ID	: WG1969416-4	**Date Collected**	: 09/09/24 08:07
Client ID	: WG1969416-4 DUP	**Date Received**	: 09/09/24
Sample Location	:	**Date Analyzed**	: 09/09/24 22:17
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,300.0	**Analyst**	: AVT,
Lab File ID	: WG1969414-16	**Instrument ID**	: IC3
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

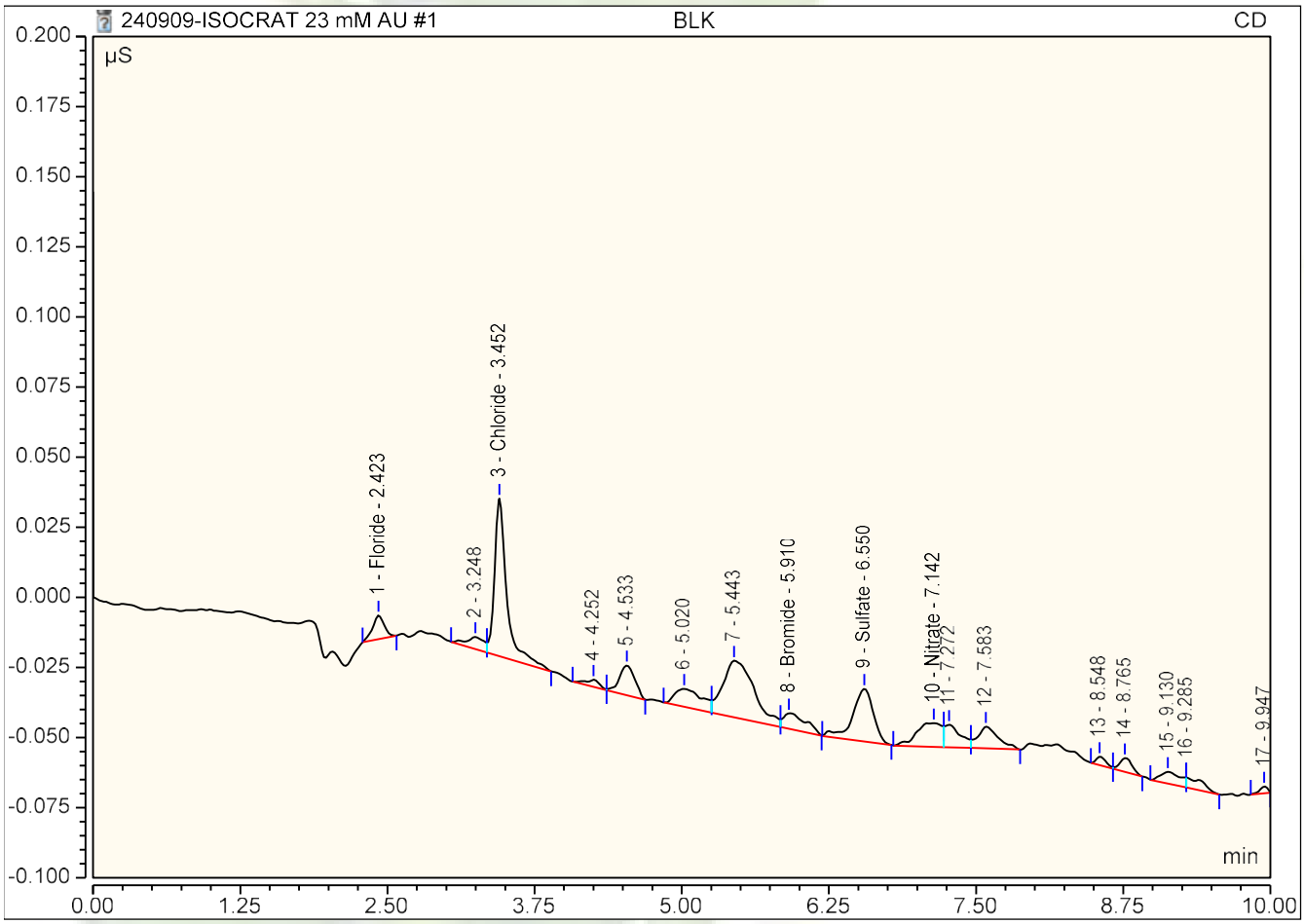
		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
24959-67-9	Bromide	ND	0.050	0.013	U

Sample Raw Data

Peak Integration Report

Sample Name:	**BLK**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**05-Sep-2024 / 15:43**	*Run Time:*	**10.00**

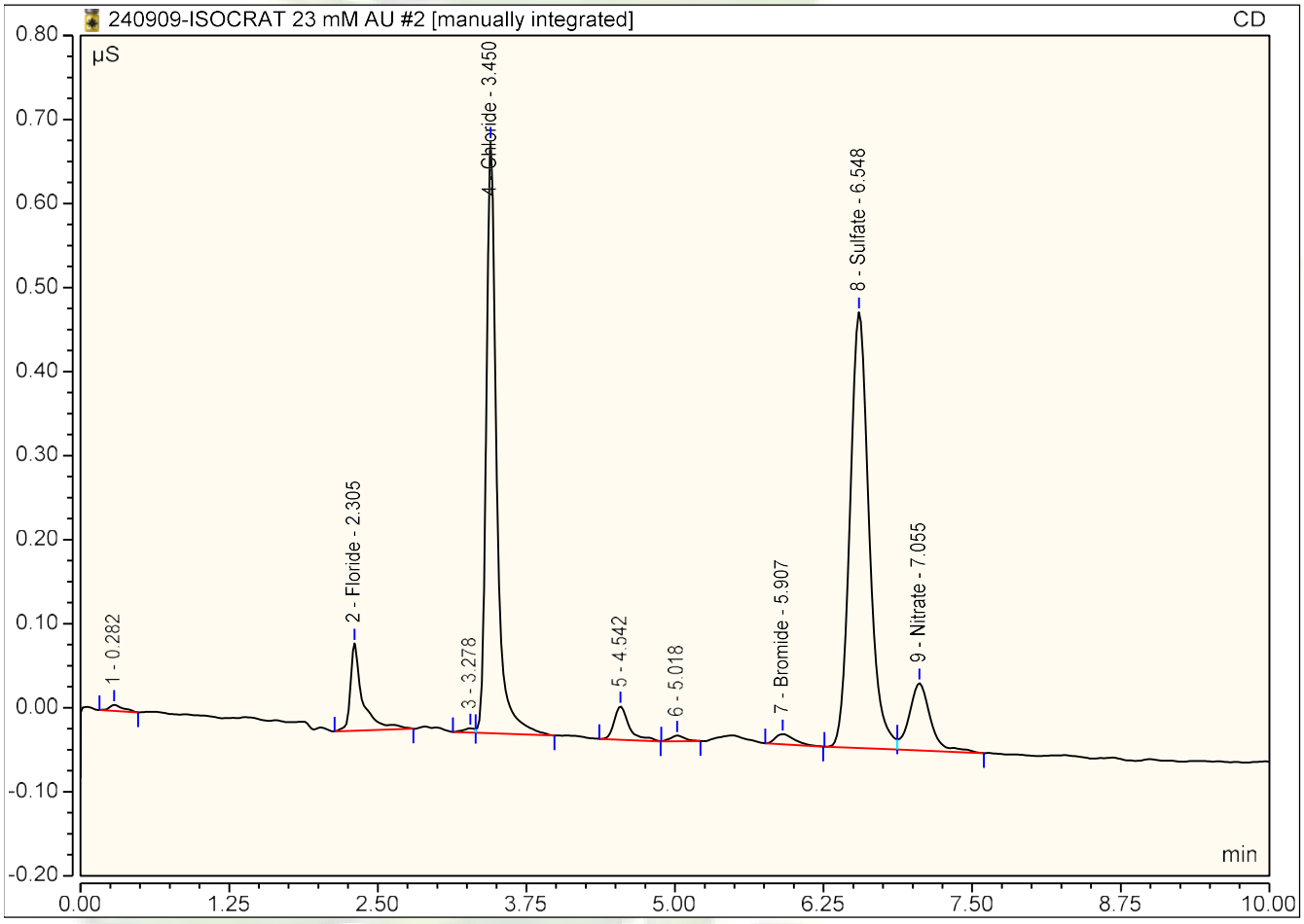
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.42	**Floride**	BMB	0.001	0.008	0.0118
3	3.45	**Chloride**	MB	0.007	0.056	0.1031
8	5.91	**Bromide**	MB	0.001	0.006	0.0296
9	6.55	**Sulfate**	BMB	0.004	0.019	0.2660
10	7.14	**Nitrate**	BM	0.002	0.008	0.0162
TOTAL:				0.01	0.10	0.43



Peak Integration Report

Sample Name:	**STD 0.5**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Calibration Standard**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**05-Sep-2024 / 15:54**	*Run Time:*	**10.00**

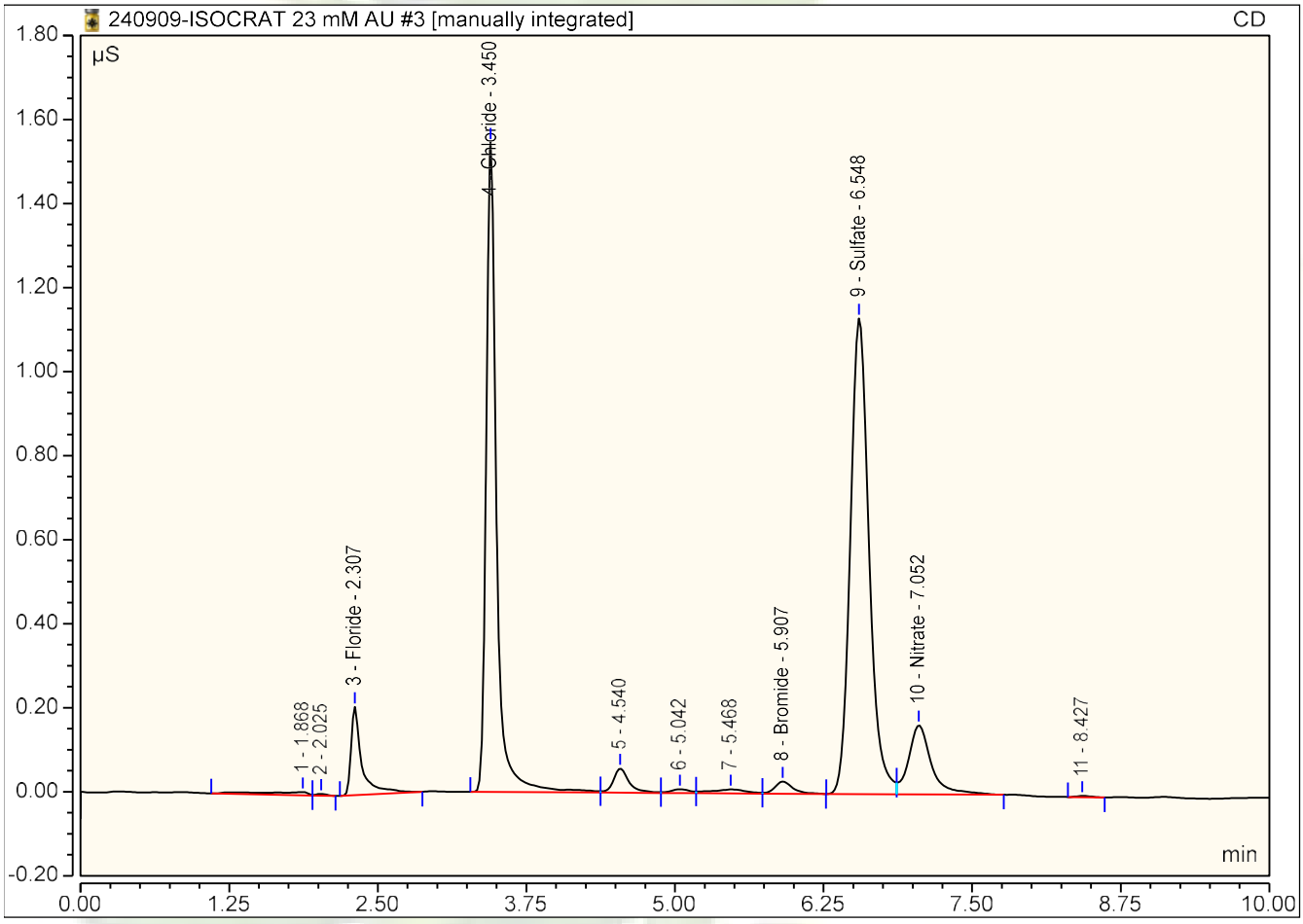
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
2	2.31	**Floride**	BMB	0.012	0.104	0.0326
4	3.45	**Chloride**	MB	0.072	0.704	0.2835
7	5.91	**Bromide**	BMB	0.002	0.012	0.0373
8	6.55	**Sulfate**	BM *	0.097	0.519	0.6187
9	7.06	**Nitrate**	MB*	0.017	0.080	0.0302
TOTAL:				0.20	1.42	1.00



Peak Integration Report

Sample Name:	**STD 1.0**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Calibration Standard**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**05-Sep-2024 / 16:05**	*Run Time:*	**10.00**

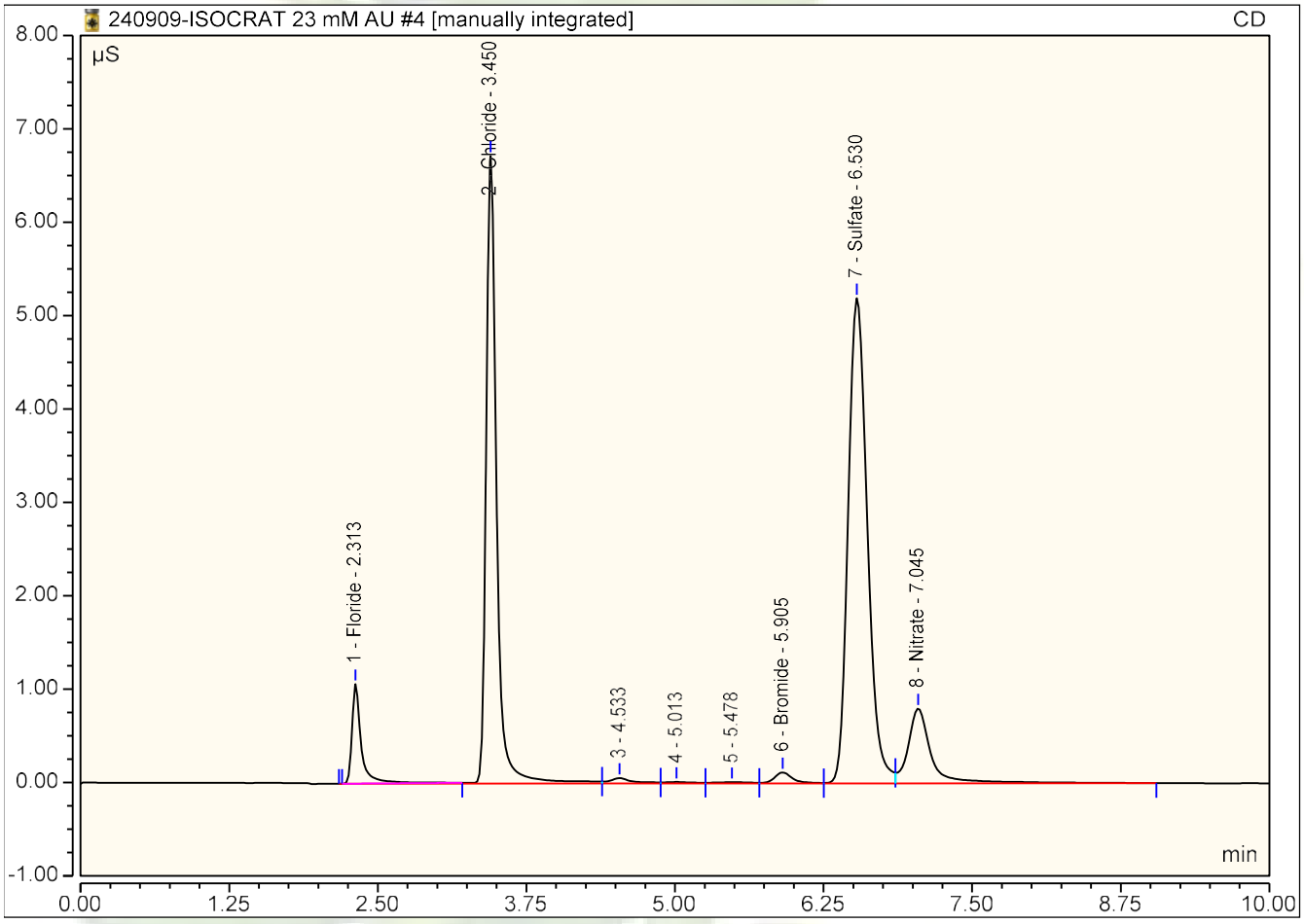
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
3	2.31	**Floride**	BMB	0.022	0.210	0.0501
4	3.45	**Chloride**	BM	0.156	1.545	0.5161
8	5.91	**Bromide**	MB	0.005	0.029	0.0597
9	6.55	**Sulfate**	BM *	0.207	1.132	1.0354
10	7.05	**Nitrate**	MB*	0.037	0.164	0.0495
TOTAL:				0.43	3.08	1.71



Peak Integration Report

Sample Name:	**STD 2.0**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Calibration Standard**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**05-Sep-2024 / 16:16**	*Run Time:*	**10.00**

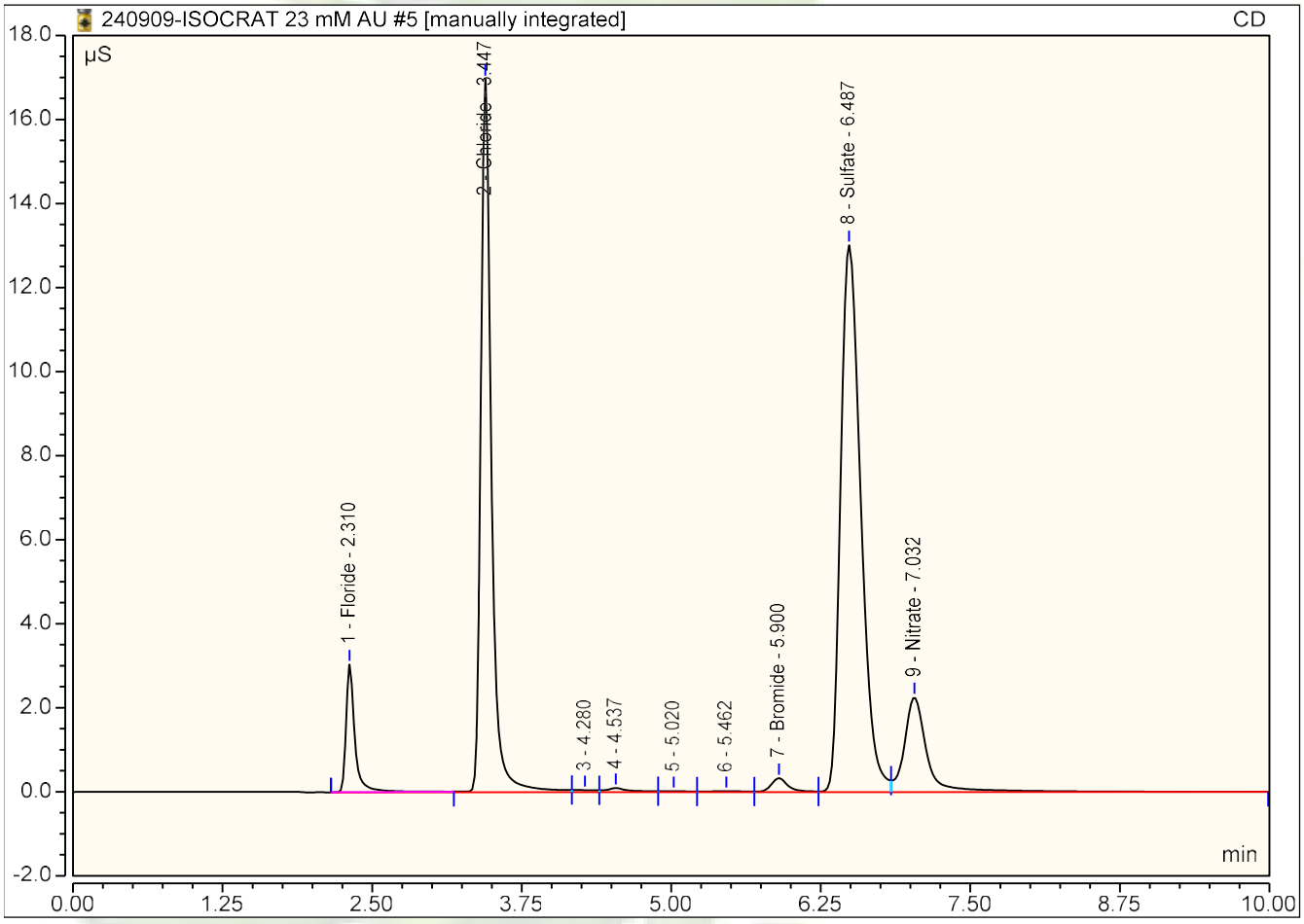
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.31	**Floride**	Ru	0.097	1.067	0.1864
2	3.45	**Chloride**	BM	0.691	6.724	1.9986
6	5.91	**Bromide**	M	0.021	0.118	0.1857
7	6.53	**Sulfate**	M *	0.971	5.194	3.9301
8	7.05	**Nitrate**	MB*	0.181	0.801	0.1891
TOTAL:				1.96	13.90	6.49



Peak Integration Report

Sample Name:	**STD 3.0**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Calibration Standard**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**05-Sep-2024 / 16:27**	*Run Time:*	**10.00**

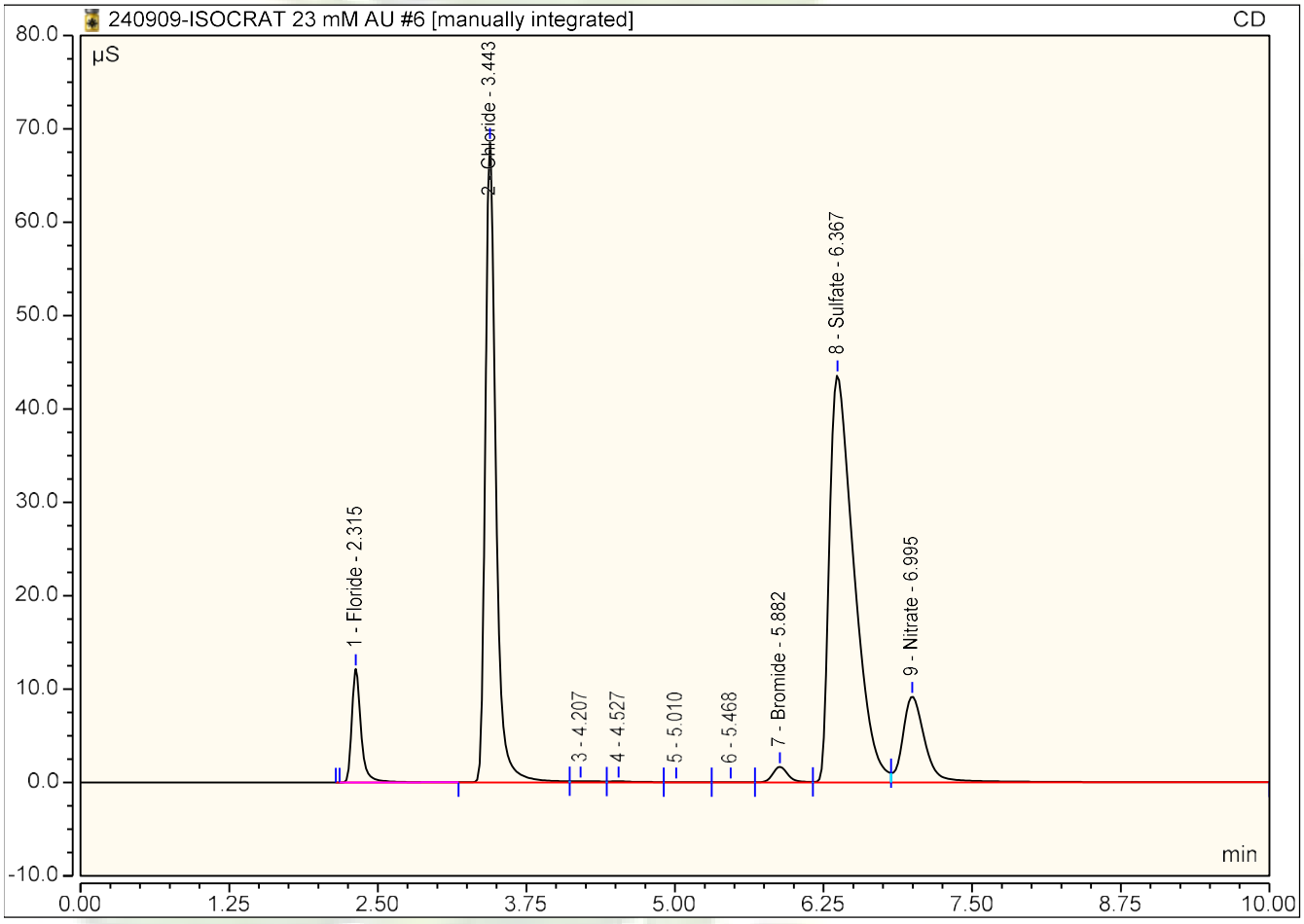
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.31	**Floride**	Ru	0.261	3.039	0.4848
2	3.45	**Chloride**	BM	1.758	16.967	4.9540
7	5.90	**Bromide**	M	0.056	0.330	0.4625
8	6.49	**Sulfate**	M *	2.523	13.012	9.8113
9	7.03	**Nitrate**	MB*	0.502	2.253	0.4987
TOTAL:				5.10	35.60	16.21



Peak Integration Report

Sample Name:	**STD 4.0**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Calibration Standard**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**05-Sep-2024 / 16:37**	*Run Time:*	**10.00**

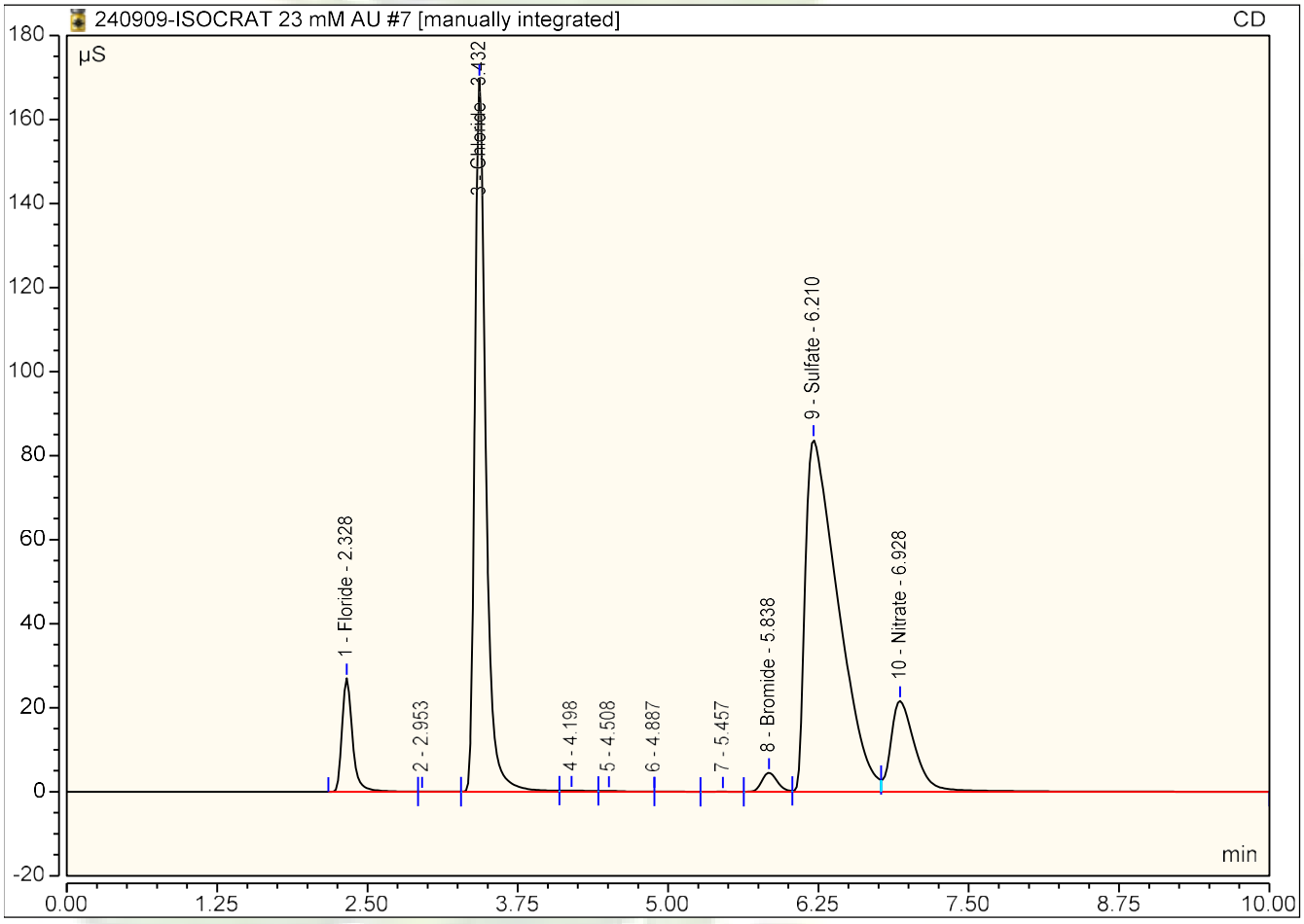
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.32	**Floride**	Ru	1.102	12.150	2.0151
2	3.44	**Chloride**	BM	7.134	68.529	19.8486
7	5.88	**Bromide**	M	0.251	1.669	2.0104
8	6.37	**Sulfate**	M *	10.416	43.612	39.7205
9	7.00	**Nitrate**	MB*	2.045	9.202	1.9879
TOTAL:				20.95	135.16	65.58



Peak Integration Report

Sample Name:	**STD 5.0**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Calibration Standard**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**05-Sep-2024 / 16:48**	*Run Time:*	**10.00**

No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.33	**Floride**	BM	2.740	27.015	4.9960
3	3.43	**Chloride**	M	18.040	169.584	50.0649
8	5.84	**Bromide**	M	0.677	4.532	5.3876
9	6.21	**Sulfate**	M *	26.359	83.745	100.1325
10	6.93	**Nitrate**	MB*	5.172	21.606	5.0054
TOTAL:				52.99	306.48	165.59



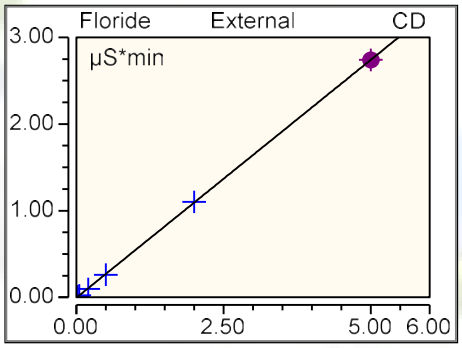
Calibration Batch Report

Sequence:	**240909-ISOCRAT 23 mM AU**	*Injection Volume:*	**5,000.00**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**05-Sep-2024 / 16:48**	*Run Time:*	**10**

Calibration Summary

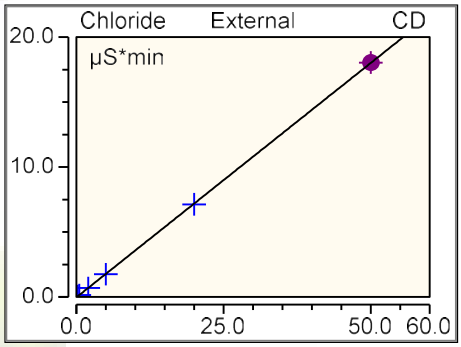
Peak Name	Eval.Type	Cal.Type	Points	Offset (C0)	Slope (C1)	Curve (C2)	Coeff.Det. %
Floride	Area	Lin, AddZero	7.000	-0.005	0.549	0.000	99.9960
Chloride	Area	Lin, AddZero	7.000	-0.030	0.361	0.000	99.9982
Bromide	Area	Lin, AddZero	6.000	-0.002	0.126	0.000	99.9224
Sulfate	Area	Lin, AddZero	7.000	-0.066	0.264	0.000	99.9974
Nitrate	Area	Lin, AddZero	7.000	-0.015	1.036	0.000	99.9975
		AVERAGE:		-0.0239	0.4673	0.0000	99.9823

Injection Name	Ret.Time min CD	Area µS*min CD	Height µS CD	Amount CD
	Floride	Floride	Floride	Floride
STD 0.5	2.305	0.0124	0.104	0.033
STD 1.0	2.307	0.0220	0.210	0.050
STD 2.0	2.313	0.0969	1.067	0.186
STD 3.0	2.310	0.2609	3.039	0.485
STD 4.0	2.315	1.1018	12.150	2.015
STD 5.0	2.328	2.7397	27.015	4.996
Average	2.313			
Rel. Std. Dev.	0.363 %			

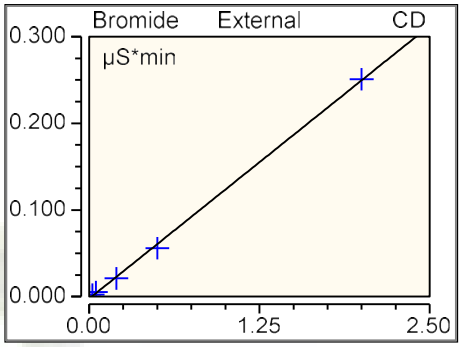


No.	Peak Name	Ret. Time	Window	Standard	Eval.Type	Cal. Type	Peak Type
1	Floride	2.330	0.249 AN	External	Area	Lin, AddZ	BM
2	Chloride	3.500	0.692 AN	External	Area	Lin, AddZ	M
3	Bromide	6.000	0.290 AF	External	Area	Lin, AddZ	M
4	Sulfate	6.600	0.604 AN	External	Area	Lin, AddZ	M *
5	Nitrate	7.200	0.491 AN	External	Area	Lin, AddZ	MB*

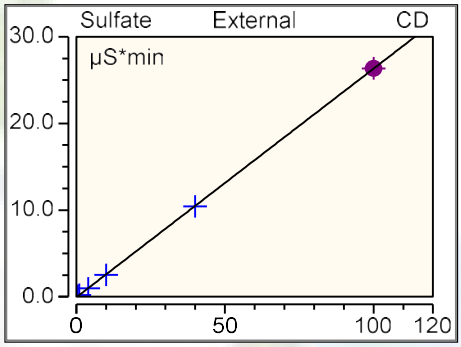
Injection Name	Ret.Time min CD	Area µS*min CD	Height µS CD	Amount CD
	Chloride	Chloride	Chloride	Chloride
STD 0.5	3.450	0.0719	0.704	0.284
STD 1.0	3.450	0.1559	1.545	0.516
STD 2.0	3.450	0.6910	6.724	1.999
STD 3.0	3.447	1.7577	16.967	4.954
STD 4.0	3.443	7.1337	68.529	19.849
STD 5.0	3.432	18.0401	169.584	50.065
Average	3.445			
Rel. Std. Dev.	0.208 %			



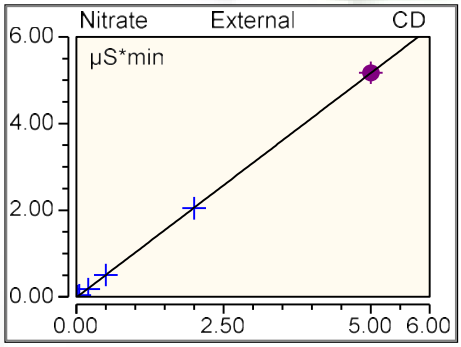
Injection Name	Ret.Time min CD	Area µS*min CD	Height µS CD	Amount CD
	Bromide	Bromide	Bromide	Bromide
STD 0.5	5.907	0.0023	0.012	0.037
STD 1.0	5.907	0.0051	0.029	0.060
STD 2.0	5.905	0.0210	0.118	0.186
STD 3.0	5.900	0.0559	0.330	0.462
STD 4.0	5.882	0.2510	1.669	2.010
STD 5.0	5.838	0.6766	4.532	5.388
Average	5.890			
Rel. Std. Dev.	0.457 %			



Injection Name	Ret.Time min CD	Area µS*min CD	Height µS CD	Amount CD
	Sulfate	Sulfate	Sulfate	Sulfate
STD 0.5	6.548	0.0969	0.519	0.619
STD 1.0	6.548	0.2069	1.132	1.035
STD 2.0	6.530	0.9708	5.194	3.930
STD 3.0	6.487	2.5229	13.012	9.811
STD 4.0	6.367	10.4161	43.612	39.720
STD 5.0	6.210	26.3591	83.745	100.133
Average	6.448			
Rel. Std. Dev.	2.099 %			



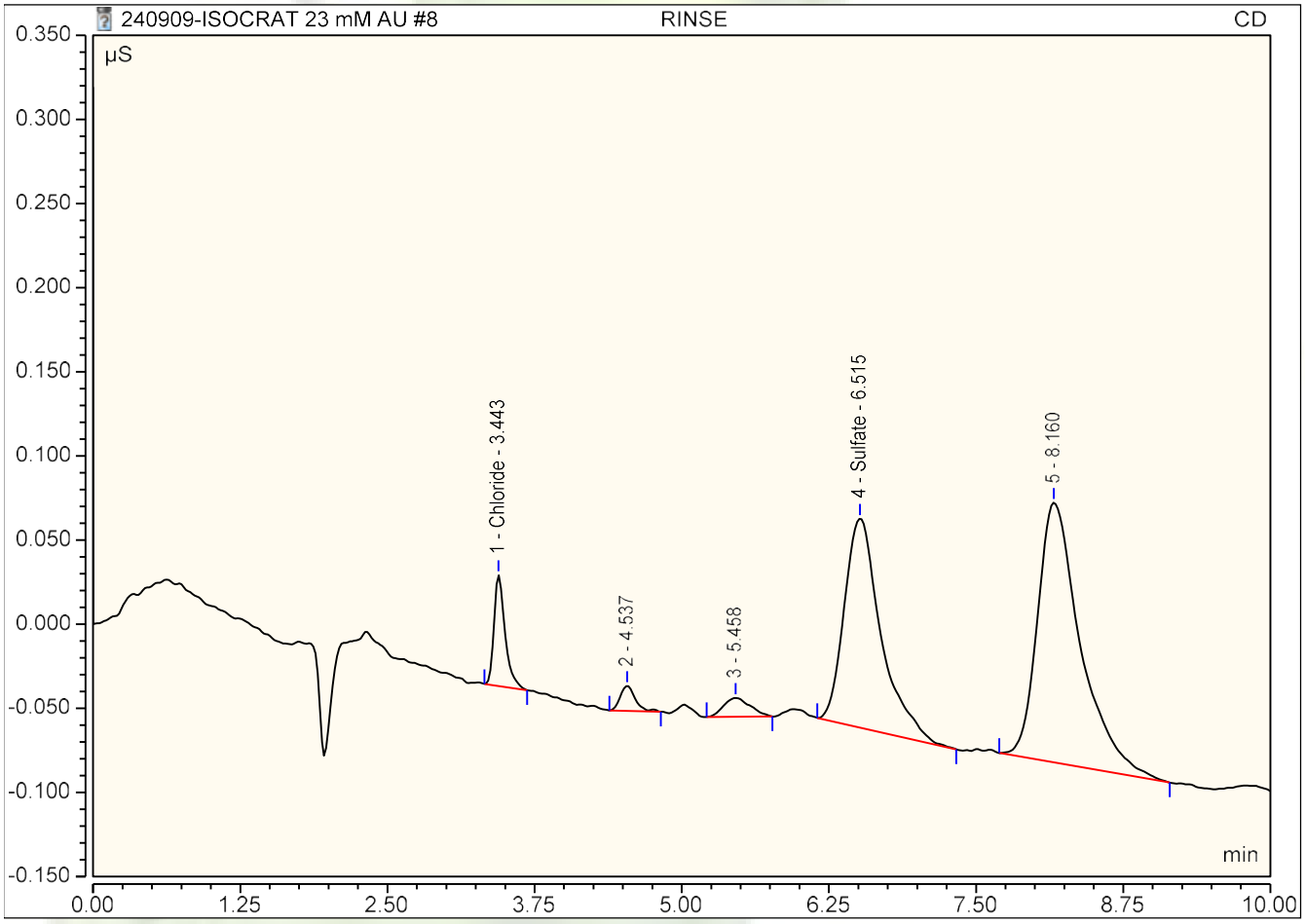
Injection Name	Ret.Time min CD	Area µS*min CD	Height µS CD	Amount CD
	Nitrate	Nitrate	Nitrate	Nitrate
STD 0.5	7.055	0.0166	0.080	0.030
STD 1.0	7.052	0.0366	0.164	0.050
STD 2.0	7.045	0.1812	0.801	0.189
STD 3.0	7.032	0.5021	2.253	0.499
STD 4.0	6.995	2.0453	9.202	1.988
STD 5.0	6.928	5.1721	21.606	5.005
Average	7.018			
Rel. Std. Dev.	0.698 %			



Peak Integration Report

Sample Name:	**RINSE**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 16:03**	*Run Time:*	**10.00**

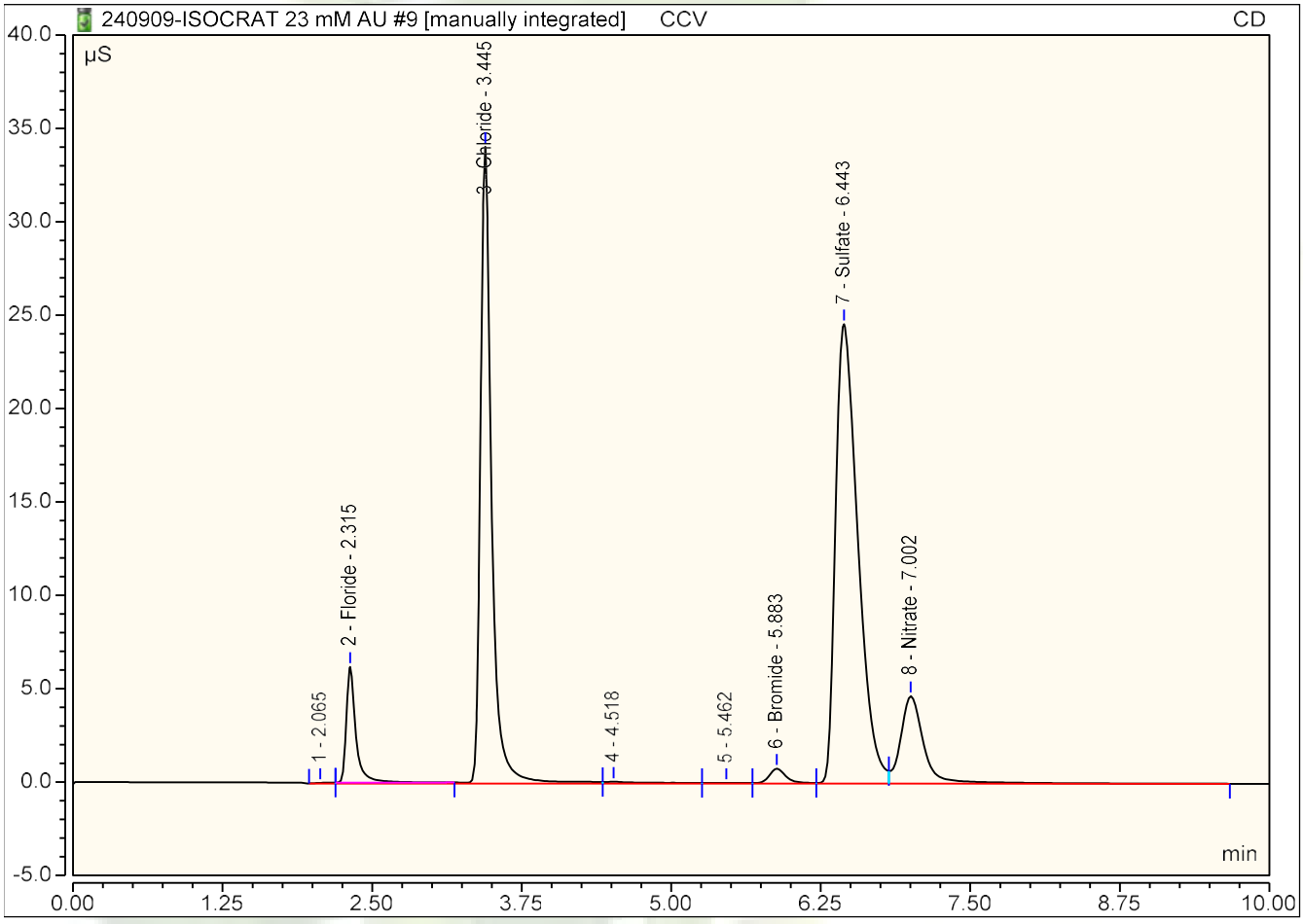
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	3.44	**Chloride**	BMB	0.007	0.066	0.1044
4	6.52	**Sulfate**	BMB	0.045	0.124	0.4212
TOTAL:				0.05	0.19	0.53



Peak Integration Report

Sample Name:	**CCV**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Check Standard**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 16:14**	*Run Time:*	**10.00**

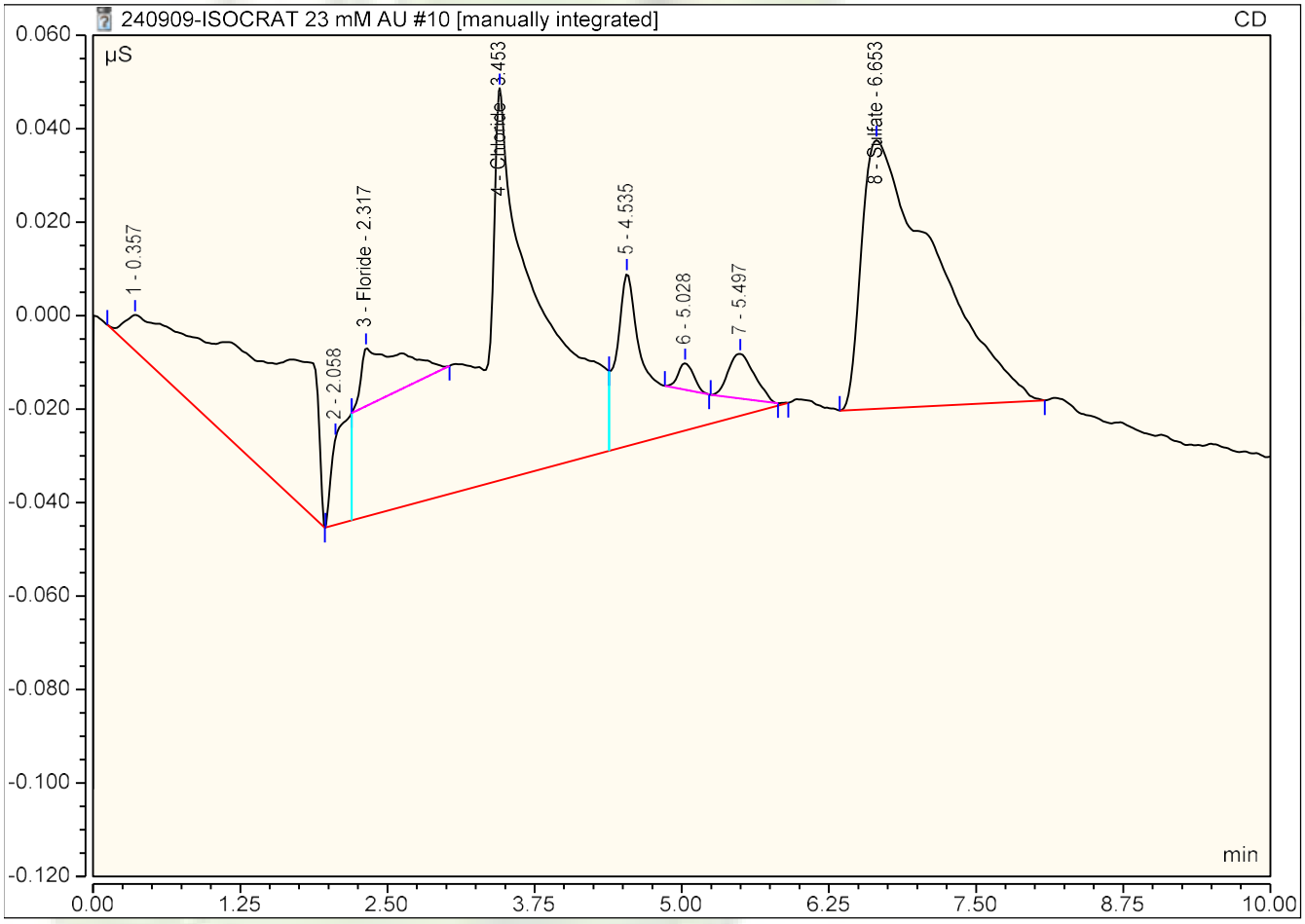
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
2	2.32	**Floride**	Ru	0.577	6.203	1.0603
3	3.45	**Chloride**	M	3.756	34.094	10.4898
6	5.88	**Bromide**	M	0.136	0.797	1.0972
7	6.44	**Sulfate**	M *	5.304	24.598	20.3496
8	7.00	**Nitrate**	MB*	1.068	4.684	1.0451
TOTAL:				10.84	70.38	34.04



Peak Integration Report

Sample Name:	**CCB**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 16:25**	*Run Time:*	**10.00**

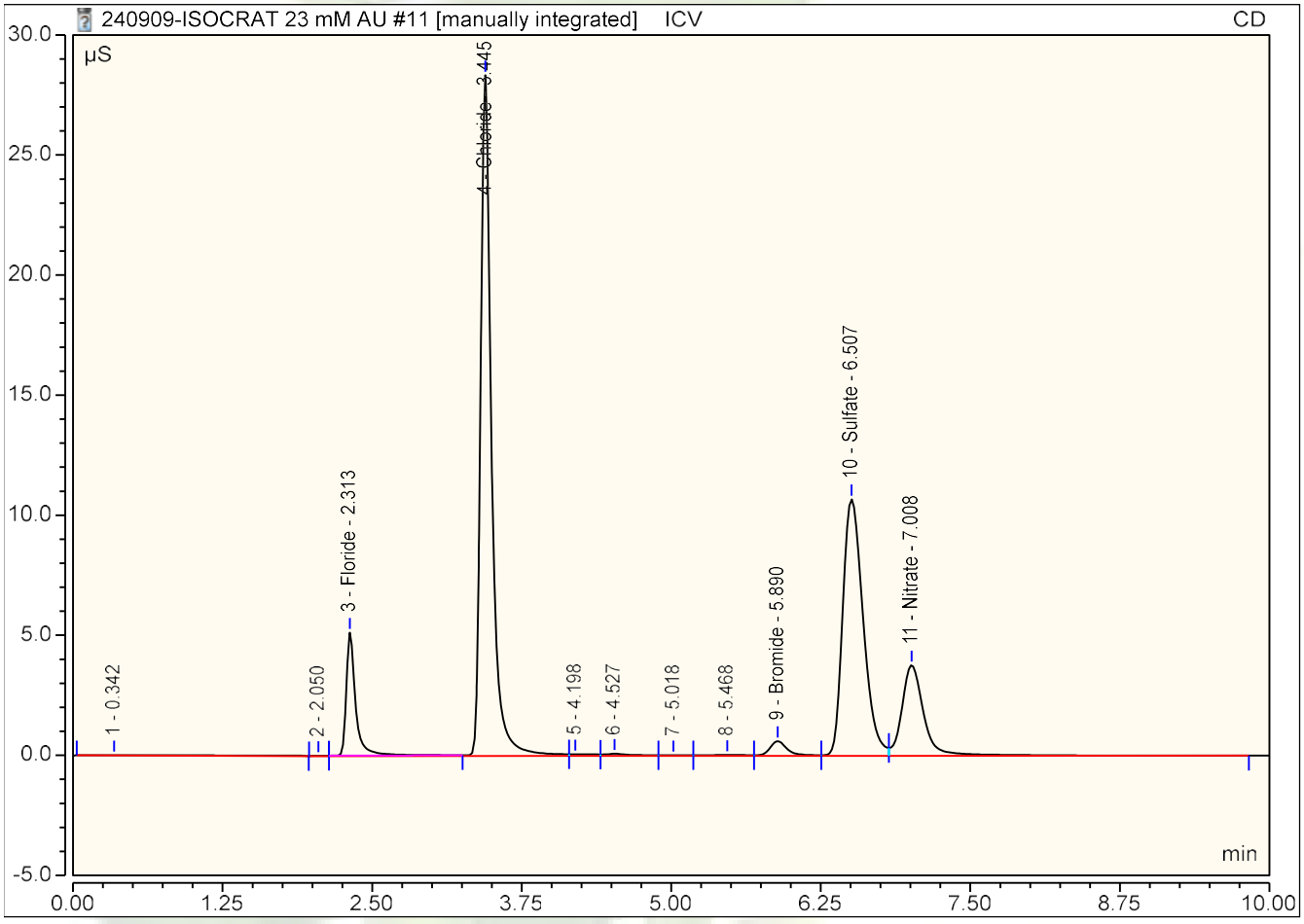
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
3	2.32	**Floride**	Ru*	0.005	0.012	0.0188
4	3.45	**Chloride**	M *	0.067	0.084	0.2688
8	6.65	**Sulfate**	BMB	0.042	0.058	0.4096
TOTAL:				0.11	0.15	0.70



Peak Integration Report

Sample Name:	**ICV**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 16:36**	*Run Time:*	**10.00**

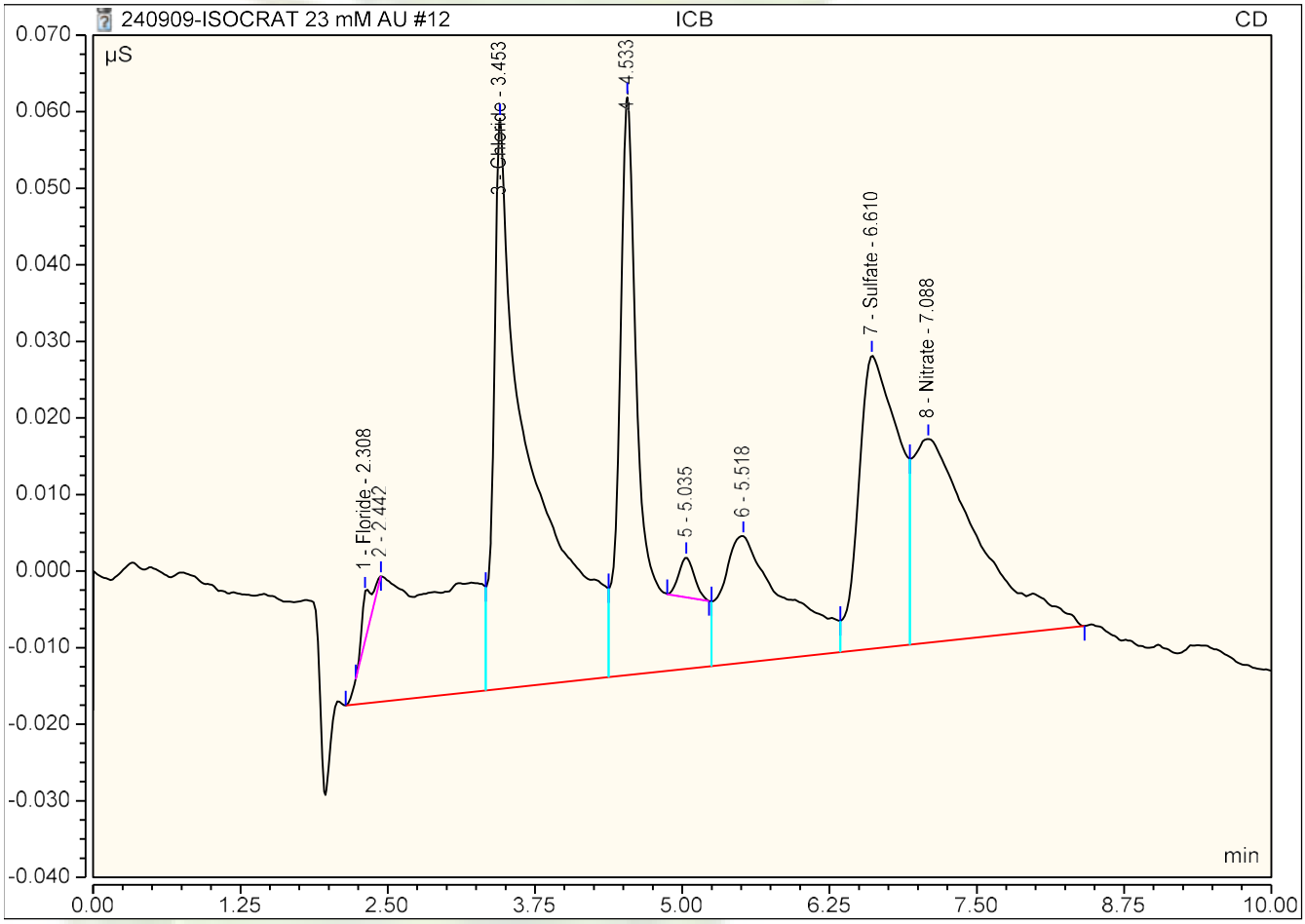
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
3	2.31	**Floride**	Ru	0.466	5.121	0.8585
4	3.45	**Chloride**	M	3.053	28.348	8.5421
9	5.89	**Bromide**	M	0.108	0.618	0.8734
10	6.51	**Sulfate**	M *	2.100	10.688	8.2080
11	7.01	**Nitrate**	MB*	0.816	3.775	0.8020
TOTAL:				6.54	48.55	19.28



Peak Integration Report

Sample Name:	**ICB**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 16:47**	*Run Time:*	**10.00**

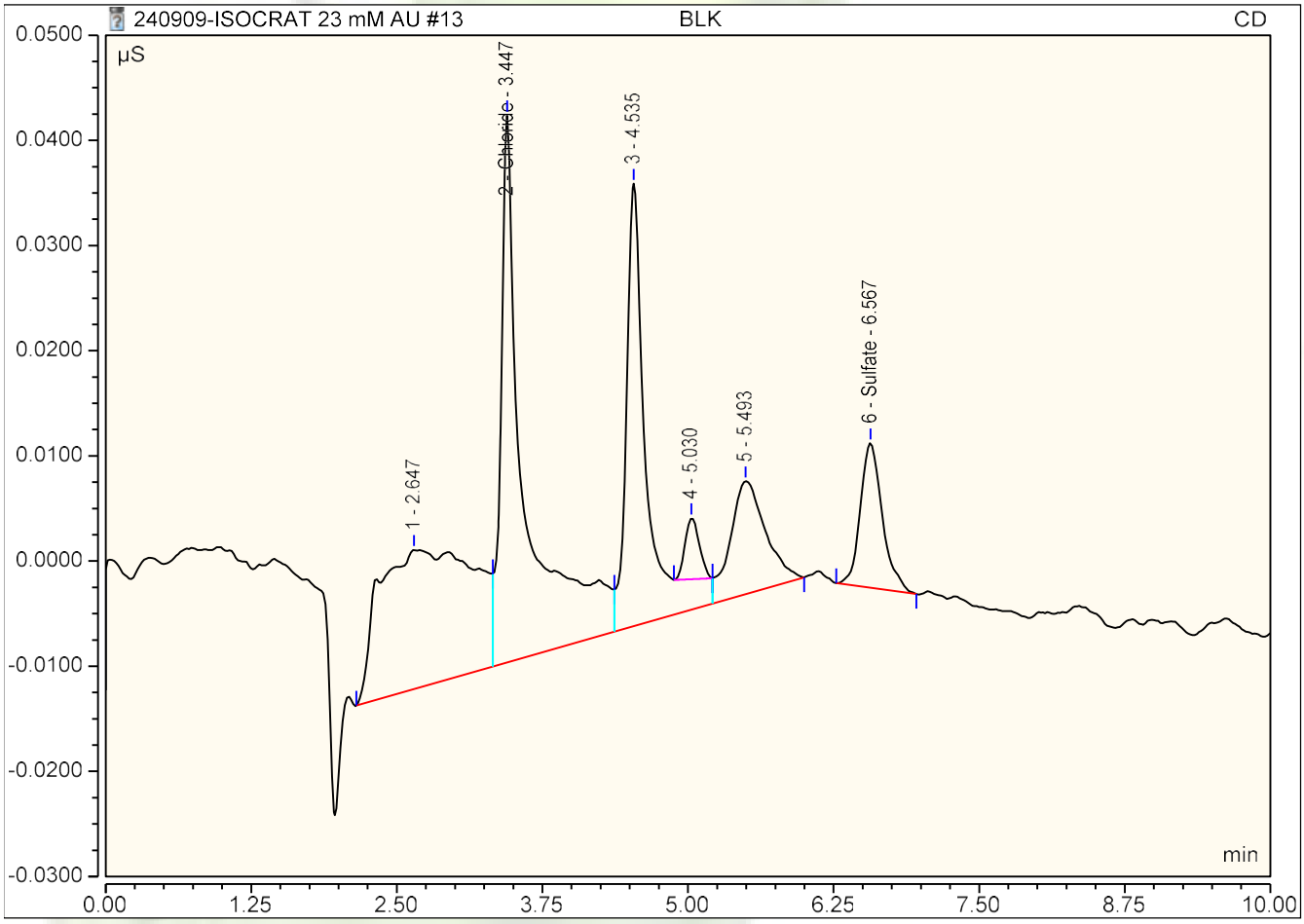
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.31	**Floride**	Ru	0.001	0.006	0.0110
3	3.45	**Chloride**	M	0.028	0.074	0.1607
7	6.61	**Sulfate**	M	0.015	0.038	0.3087
8	7.09	**Nitrate**	MB	0.017	0.027	0.0308
TOTAL:				0.06	0.15	0.51



Peak Integration Report

Sample Name:	**BLK**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 16:58**	*Run Time:*	**10.00**

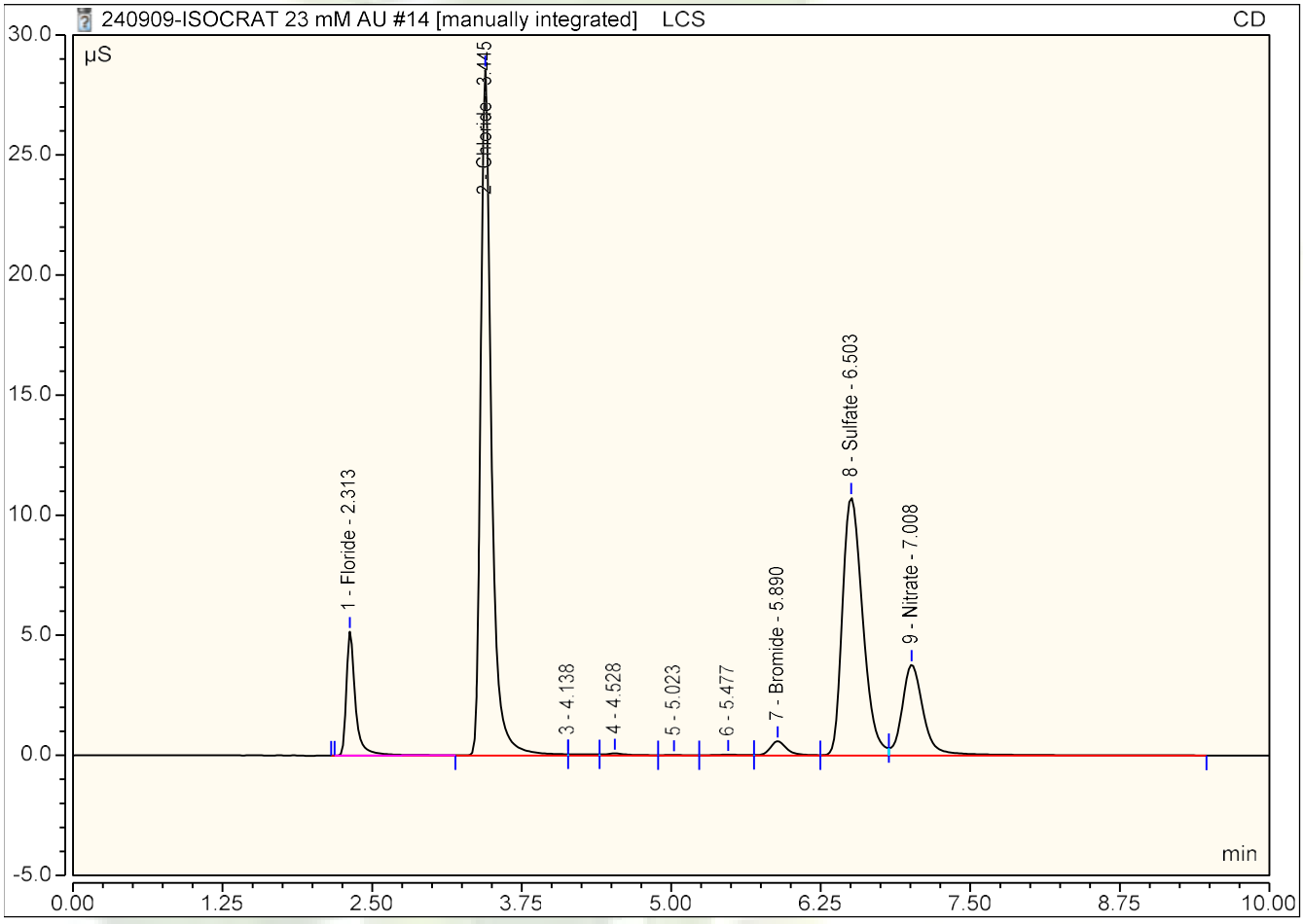
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
2	3.45	**Chloride**	M	0.013	0.052	0.1189
6	6.57	**Sulfate**	BMB	0.003	0.014	0.2630
TOTAL:				0.02	0.07	0.38



Peak Integration Report

Sample Name:	**LCS**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 17:09**	*Run Time:*	**10.00**

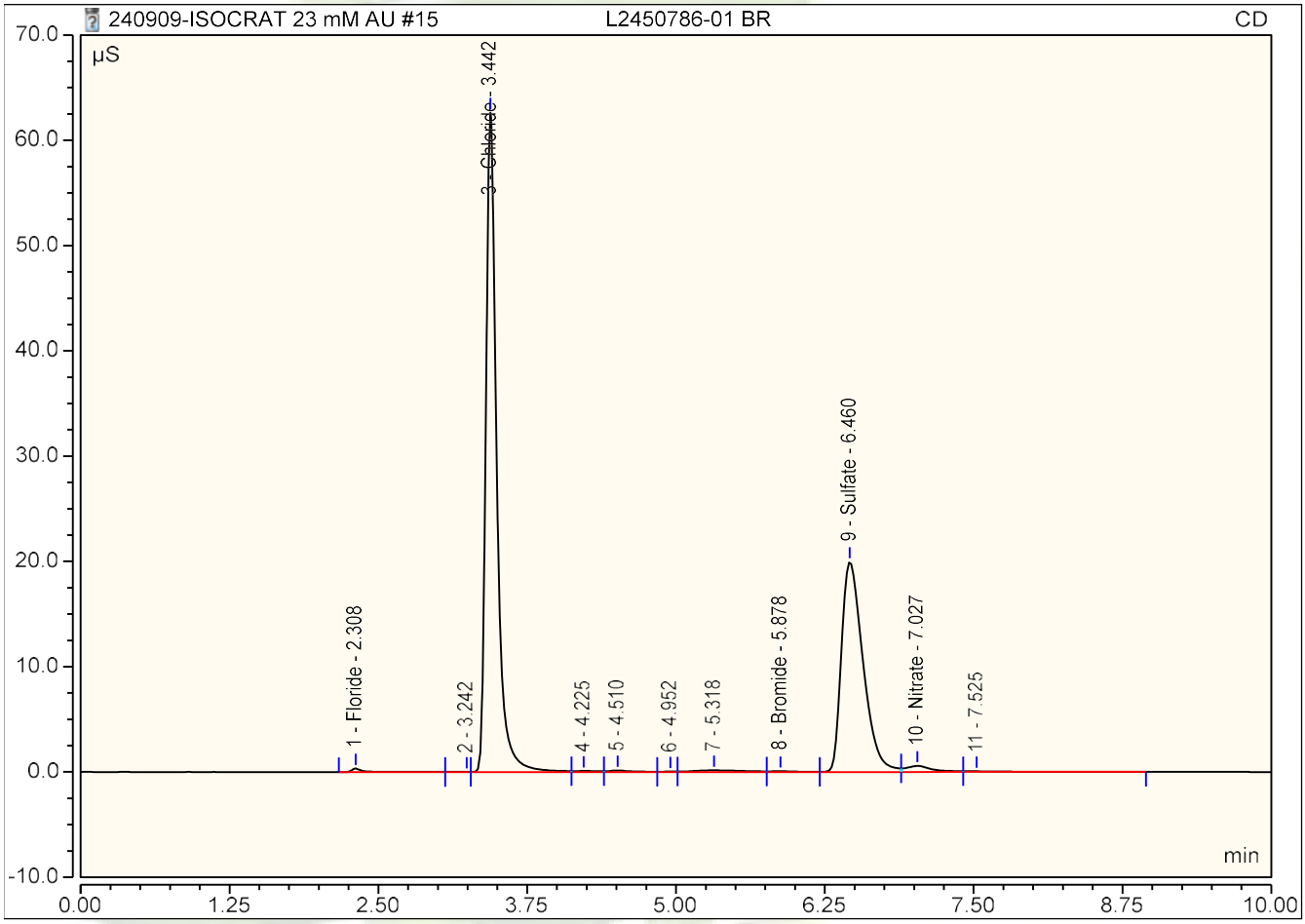
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.31	**Floride**	Ru	0.460	5.162	0.8477
2	3.45	**Chloride**	BM	3.027	28.547	8.4709
7	5.89	**Bromide**	M	0.100	0.602	0.8147
8	6.50	**Sulfate**	M *	2.102	10.740	8.2149
9	7.01	**Nitrate**	MB*	0.798	3.777	0.7839
TOTAL:				6.49	48.83	19.13



Peak Integration Report

Sample Name:	**L2450786-01 BR**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 17:19**	*Run Time:*	**10.00**

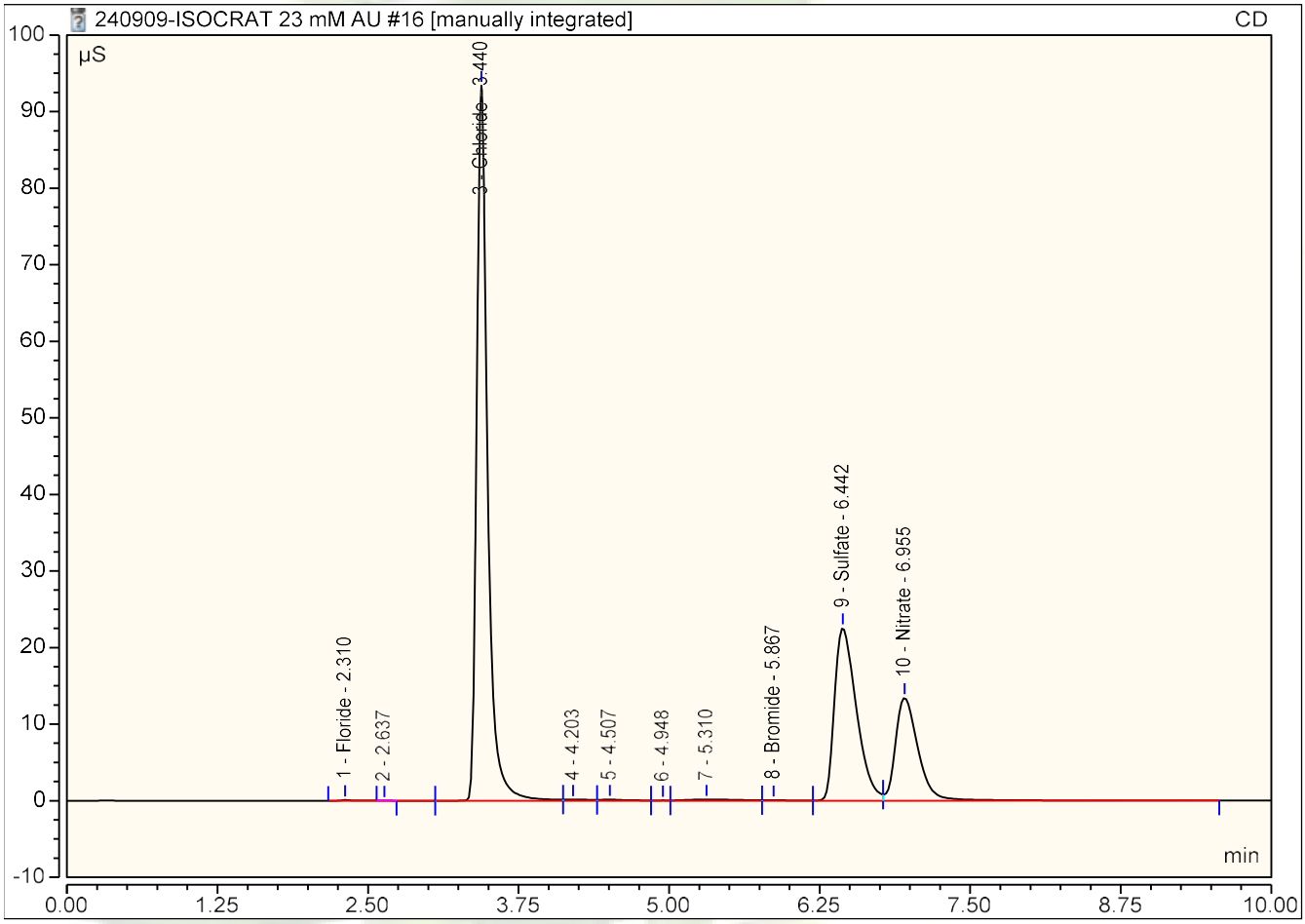
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.31	**Floride**	BM	0.042	0.340	0.0870
3	3.44	**Chloride**	M	6.584	62.637	18.3254
8	5.88	**Bromide**	M	0.020	0.077	0.1793
9	6.46	**Sulfate**	M	4.198	19.961	16.1602
10	7.03	**Nitrate**	M	0.149	0.581	0.1575
TOTAL:				10.99	83.60	34.91



Peak Integration Report

Sample Name:	**L2450786-02**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 17:30**	*Run Time:*	**10.00**

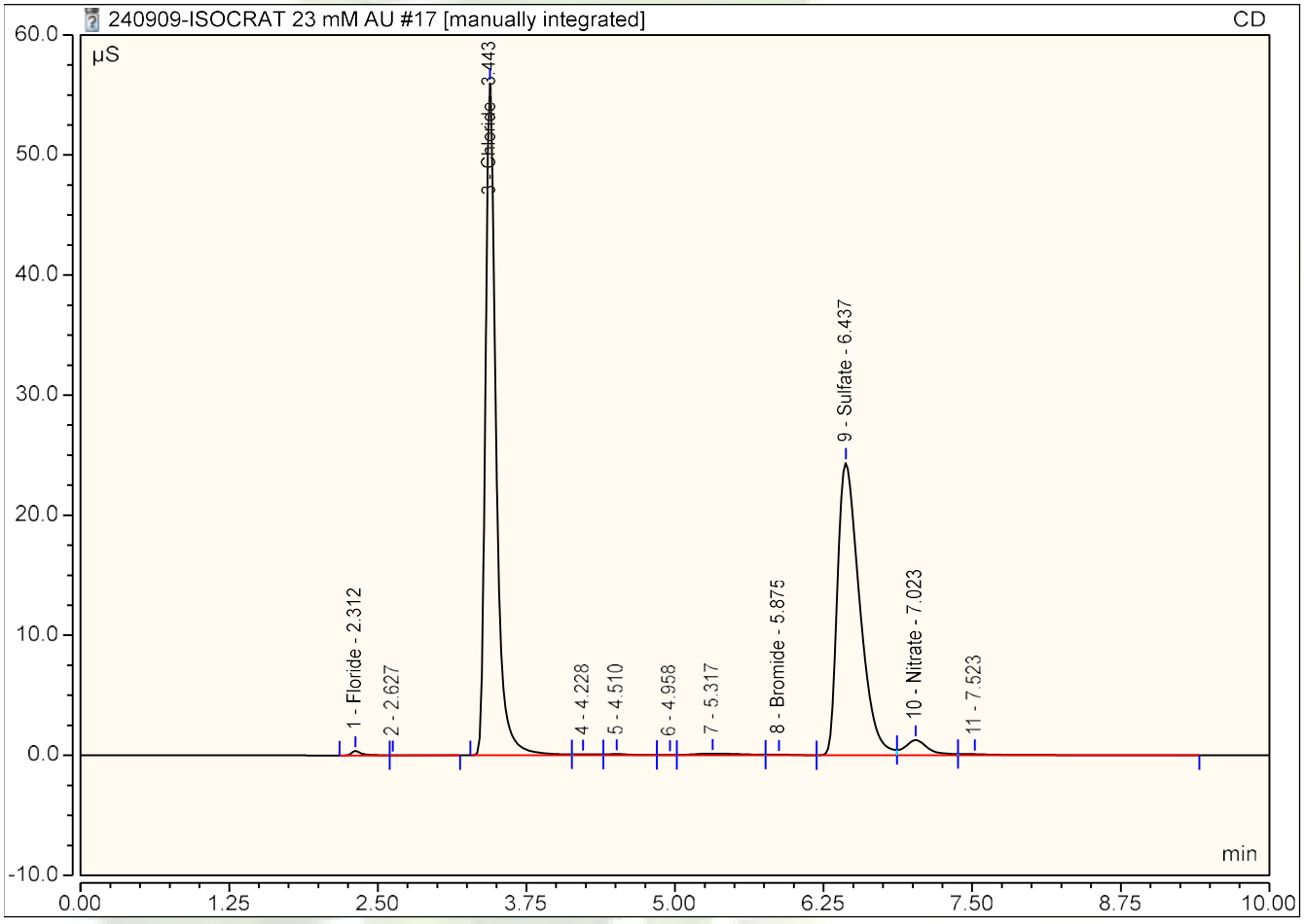
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.31	**Floride**	BM	0.019	0.101	0.0452
3	3.44	**Chloride**	M	9.870	93.401	27.4283
8	5.87	**Bromide**	M	0.019	0.070	0.1711
9	6.44	**Sulfate**	M *	4.748	22.548	18.2415
10	6.96	**Nitrate**	MB*	2.944	13.420	2.8555
TOTAL:				17.60	129.54	48.74



Peak Integration Report

Sample Name:	**L2450786-03**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 17:41**	*Run Time:*	**10.00**

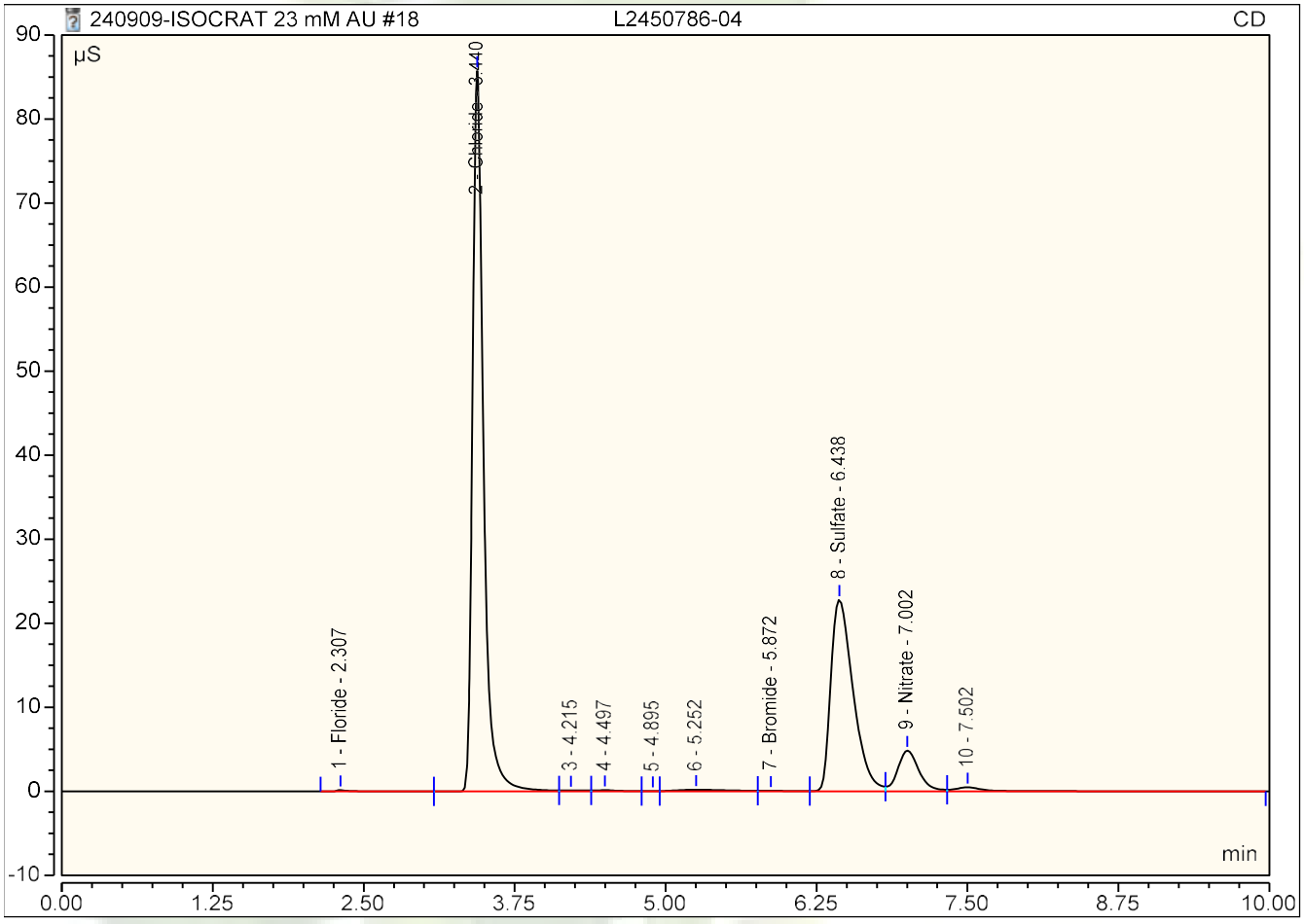
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.31	**Floride**	BM	0.039	0.382	0.0812
3	3.44	**Chloride**	BM	5.868	55.988	16.3409
8	5.88	**Bromide**	M	0.017	0.070	0.1544
9	6.44	**Sulfate**	M *	5.254	24.362	20.1585
10	7.02	**Nitrate**	M	0.291	1.272	0.2948
TOTAL:				11.47	82.07	37.03



Peak Integration Report

Sample Name:	**L2450786-04**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 17:52**	*Run Time:*	**10.00**

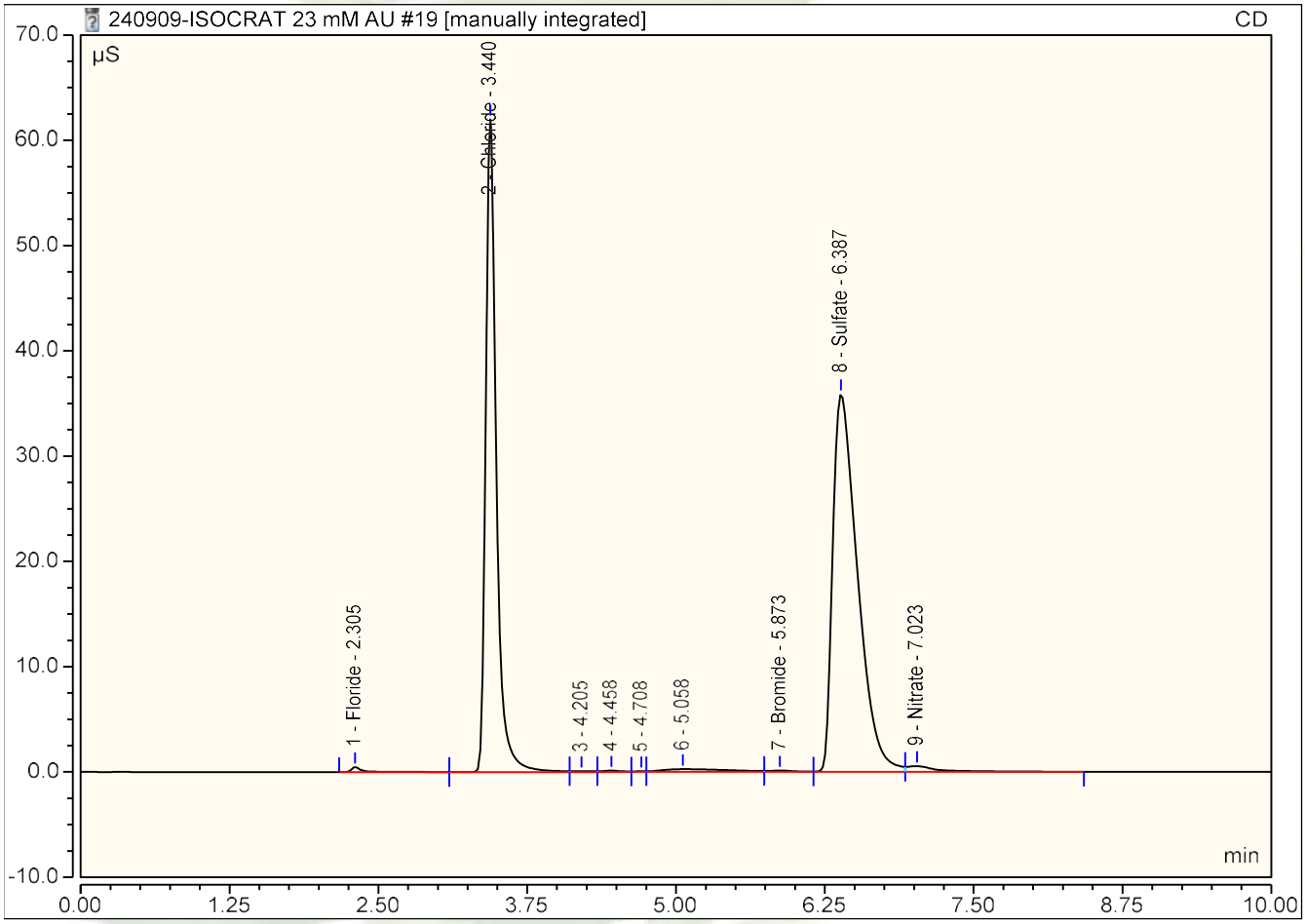
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.31	**Floride**	BM	0.023	0.164	0.0528
2	3.44	**Chloride**	M	9.009	85.719	25.0451
7	5.87	**Bromide**	M	0.024	0.088	0.2094
8	6.44	**Sulfate**	M	4.880	22.799	18.7430
9	7.00	**Nitrate**	M	0.991	4.852	0.9704
TOTAL:				14.93	113.62	45.02



Peak Integration Report

Sample Name:	**L2450786-05**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 18:03**	*Run Time:*	**10.00**

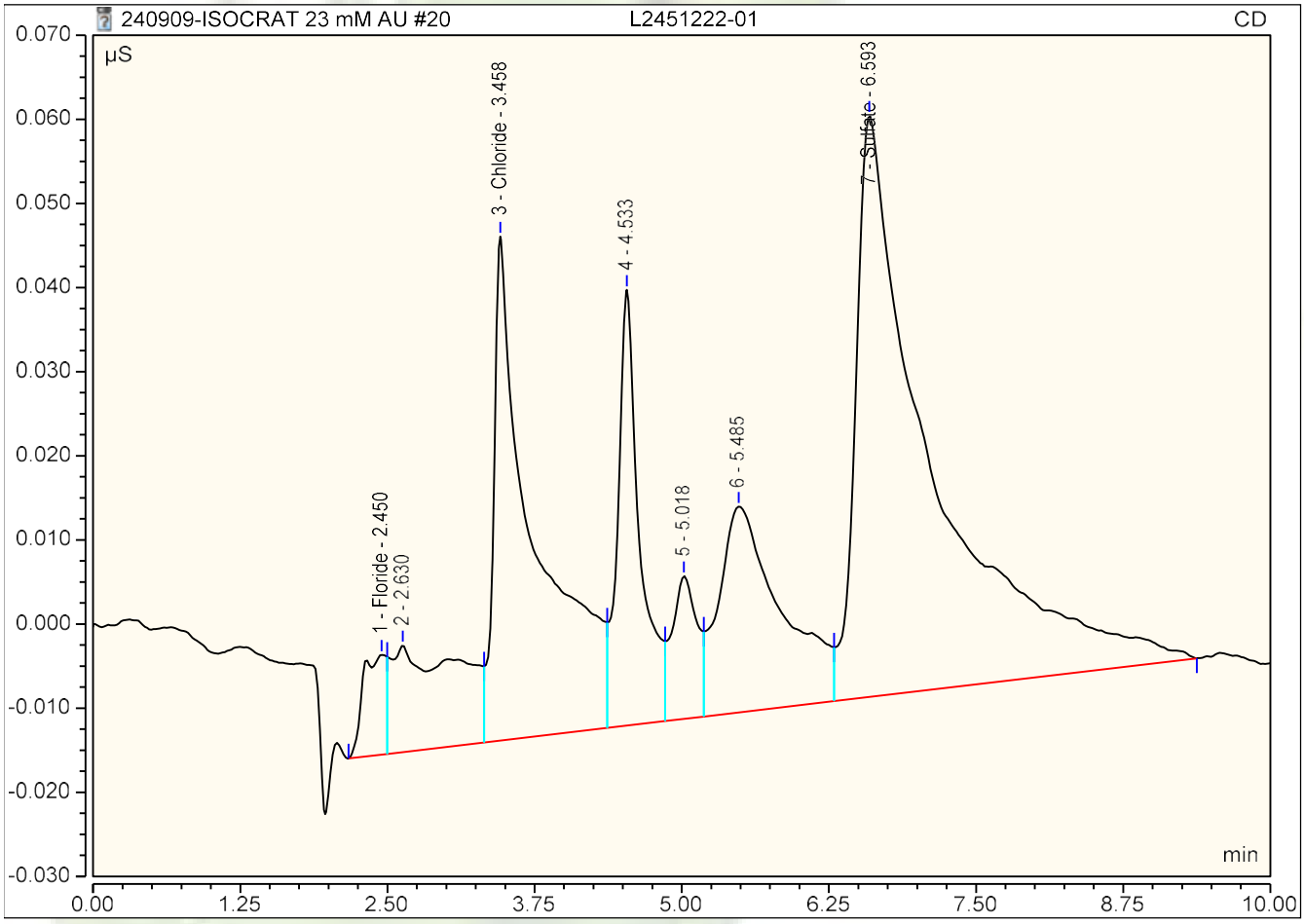
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.31	**Floride**	BM	0.054	0.482	0.1078
2	3.44	**Chloride**	M	6.397	62.006	17.8069
7	5.87	**Bromide**	M	0.033	0.135	0.2826
8	6.39	**Sulfate**	M *	8.636	35.887	32.9757
9	7.02	**Nitrate**	MB	0.173	0.550	0.1810
TOTAL:				15.29	99.06	51.35



Peak Integration Report

Sample Name:	**L2451222-01**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 18:14**	*Run Time:*	**10.00**

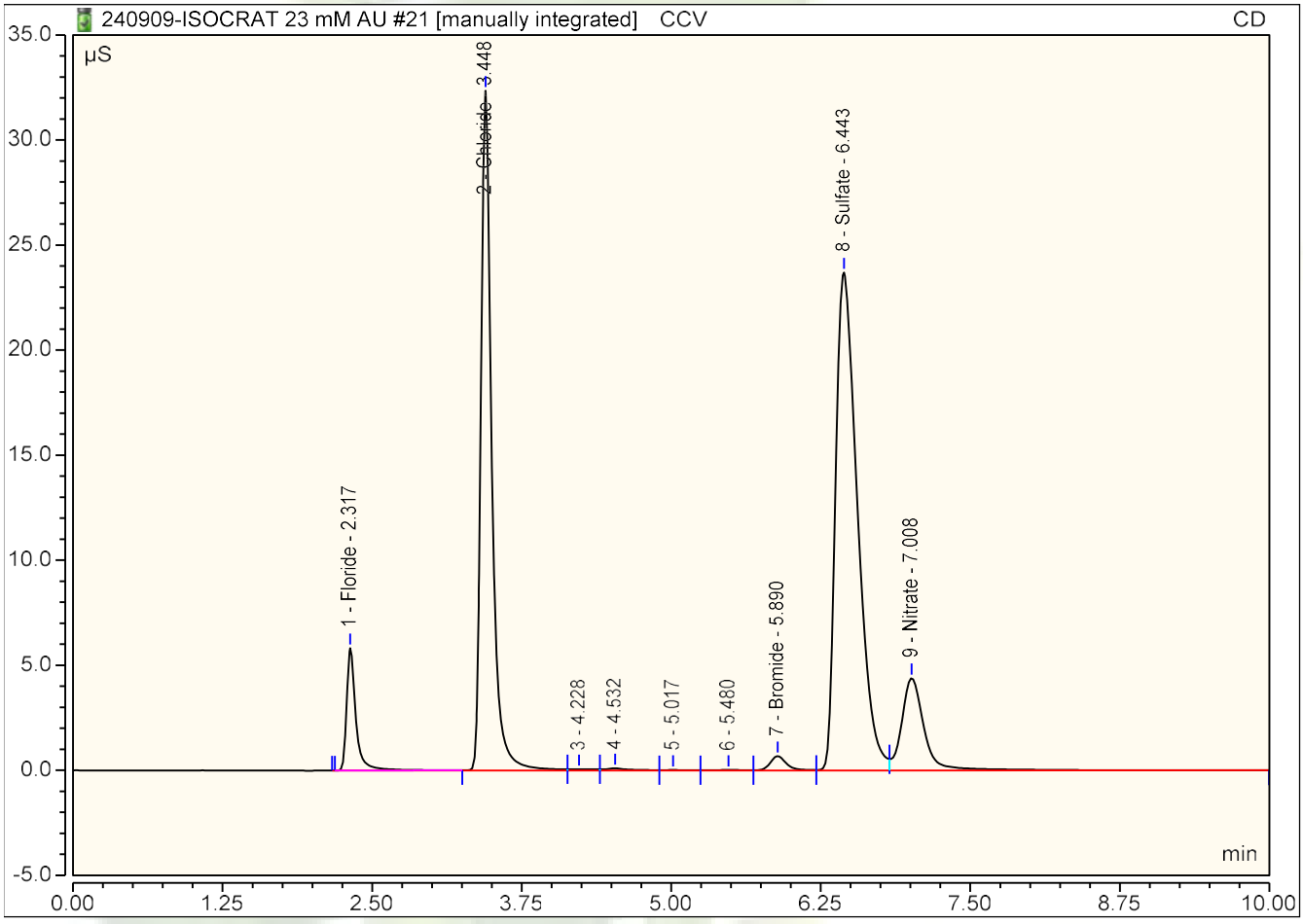
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.45	**Floride**	BM	0.003	0.012	0.0148
3	3.46	**Chloride**	M	0.024	0.060	0.1514
7	6.59	**Sulfate**	MB	0.052	0.069	0.4474
TOTAL:				0.08	0.14	0.61



Peak Integration Report

Sample Name:	**CCV**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Check Standard**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 18:25**	*Run Time:*	**10.00**

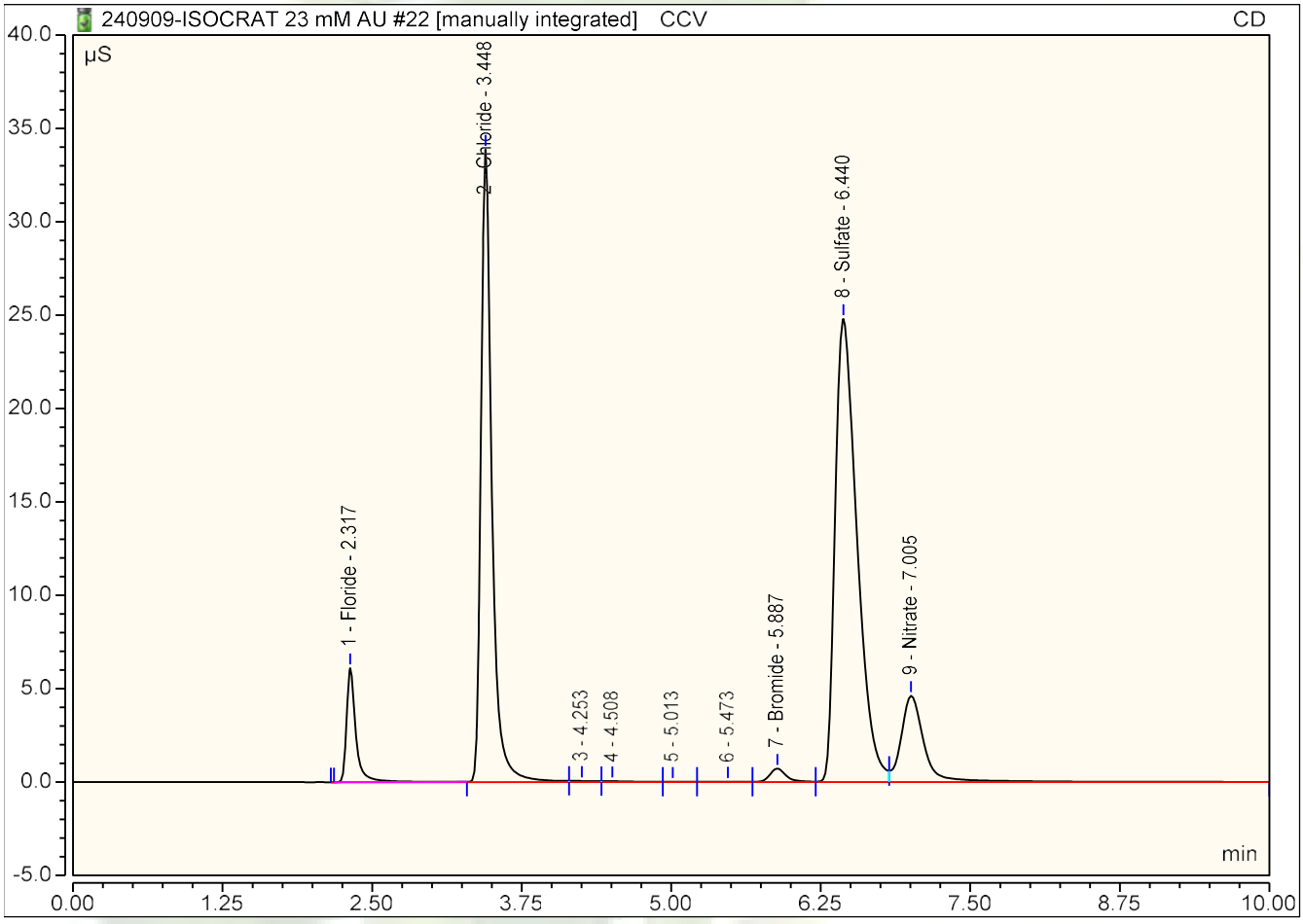
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.32	**Floride**	Ru	0.526	5.820	0.9677
2	3.45	**Chloride**	BM	3.426	32.352	9.5762
7	5.89	**Bromide**	M	0.110	0.683	0.8952
8	6.44	**Sulfate**	M *	4.983	23.701	19.1331
9	7.01	**Nitrate**	MB*	0.969	4.391	0.9491
TOTAL:				10.01	66.95	31.52



Peak Integration Report

Sample Name:	**CCV**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Check Standard**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 18:38**	*Run Time:*	**10.00**

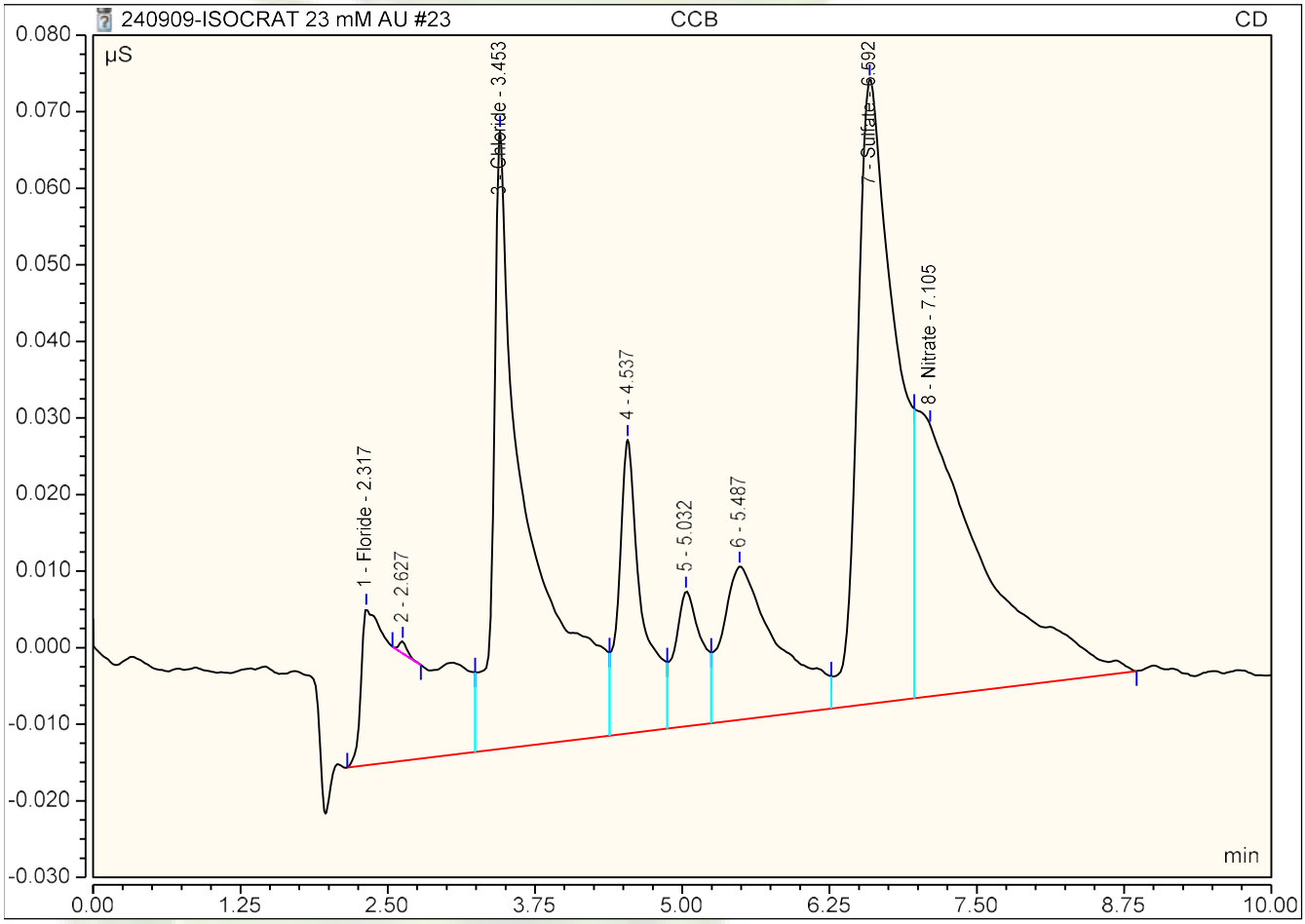
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.32	**Floride**	Ru	0.555	6.107	1.0205
2	3.45	**Chloride**	BM	3.610	33.872	10.0851
7	5.89	**Bromide**	M	0.118	0.726	0.9564
8	6.44	**Sulfate**	M *	5.238	24.801	20.1008
9	7.01	**Nitrate**	MB*	1.045	4.614	1.0223
TOTAL:				10.57	70.12	33.19



Peak Integration Report

Sample Name:	**CCB**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 18:49**	*Run Time:*	**10.00**

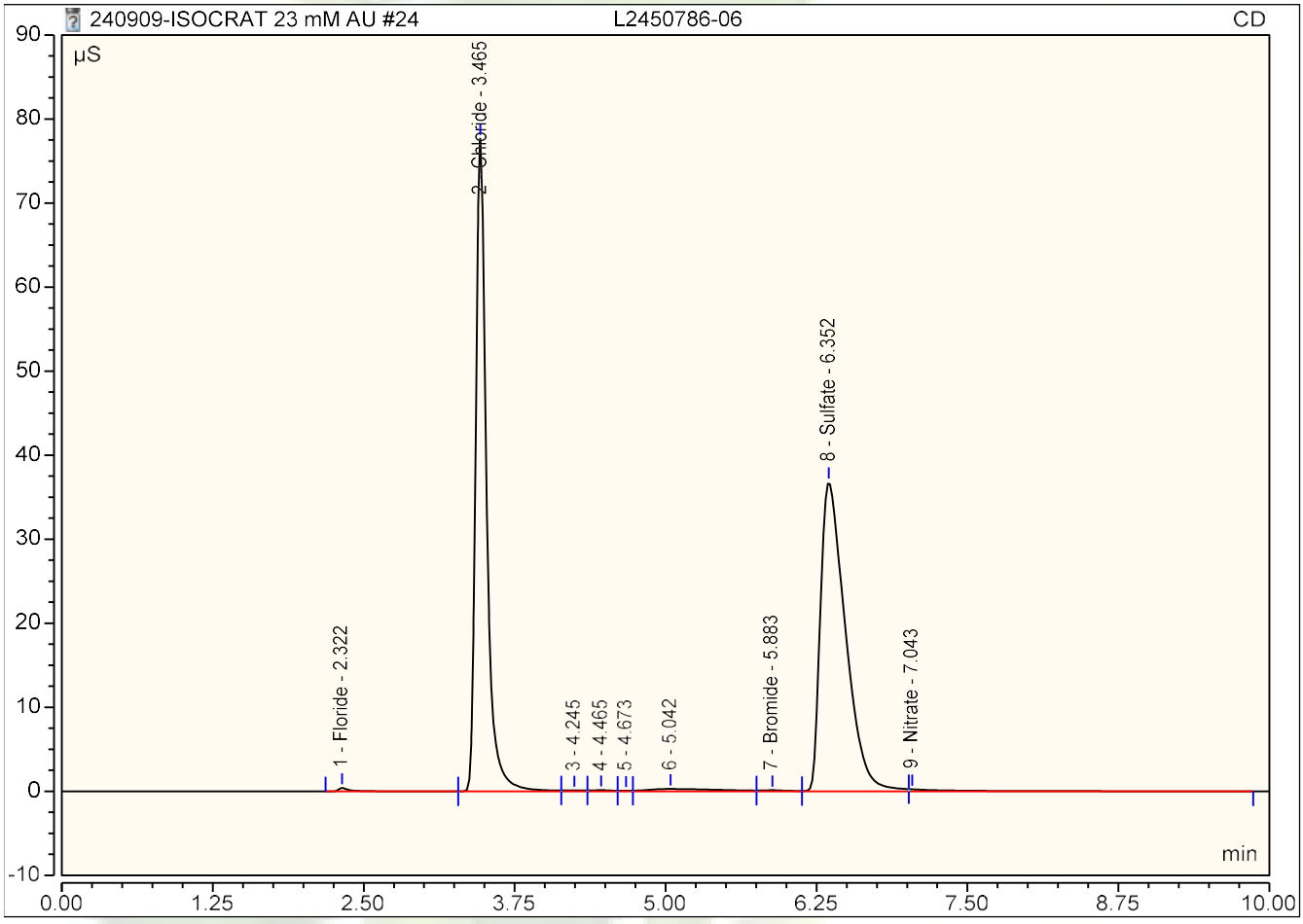
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.32	**Floride**	BM	0.014	0.020	0.0347
3	3.45	**Chloride**	M	0.028	0.081	0.1618
7	6.59	**Sulfate**	M	0.031	0.082	0.3684
8	7.11	**Nitrate**	MB	0.025	0.035	0.0382
TOTAL:				0.10	0.22	0.60



Peak Integration Report

Sample Name:	**L2450786-06**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 19:00**	*Run Time:*	**10.00**

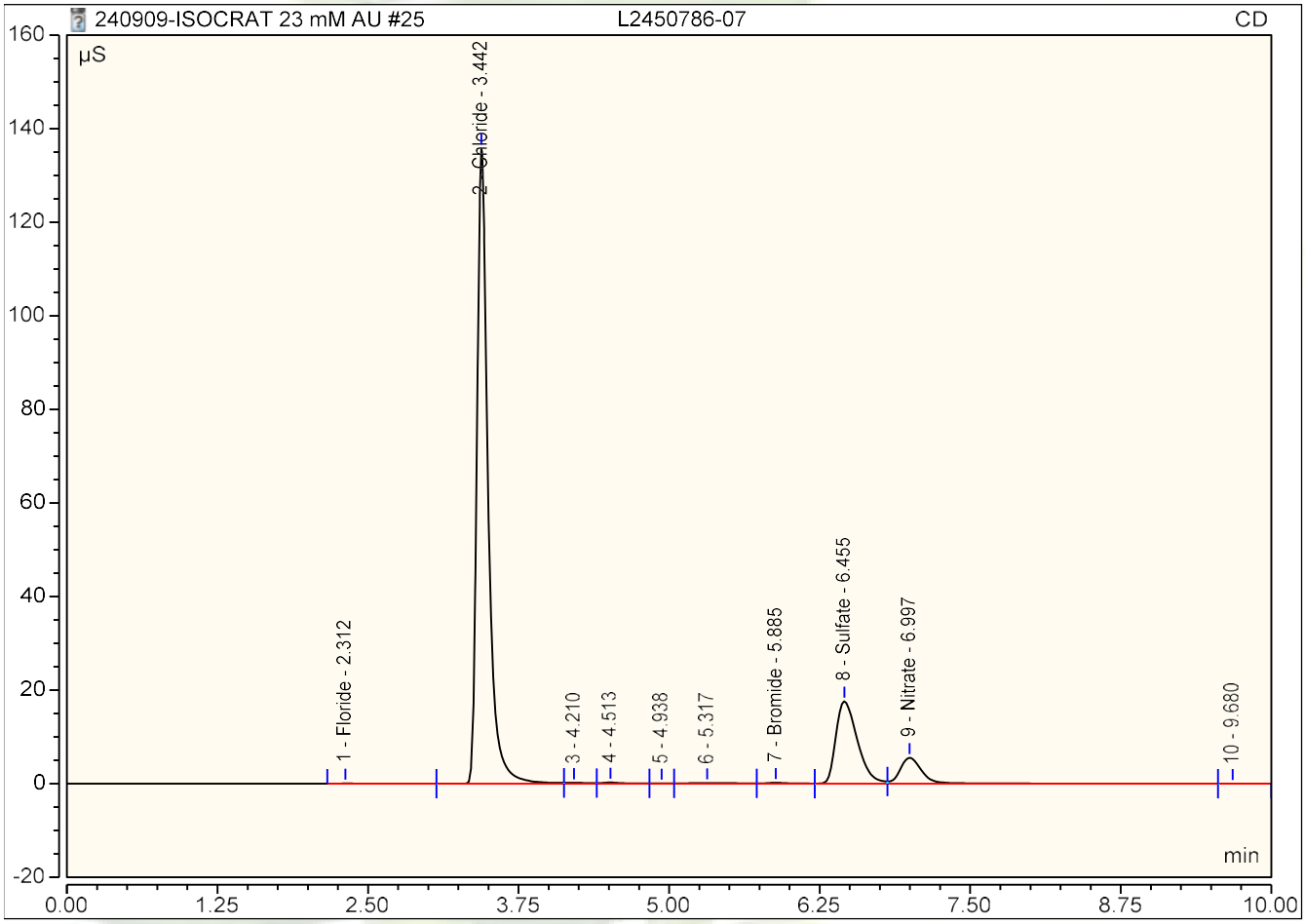
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.32	**Floride**	BM	0.049	0.408	0.0993
2	3.47	**Chloride**	M	8.075	77.666	22.4570
7	5.88	**Bromide**	M	0.034	0.133	0.2860
8	6.35	**Sulfate**	M	8.801	36.792	33.5993
9	7.04	**Nitrate**	MB	0.105	0.239	0.1158
TOTAL:				17.06	115.24	56.56



Peak Integration Report

Sample Name:	**L2450786-07**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 19:11**	*Run Time:*	**10.00**

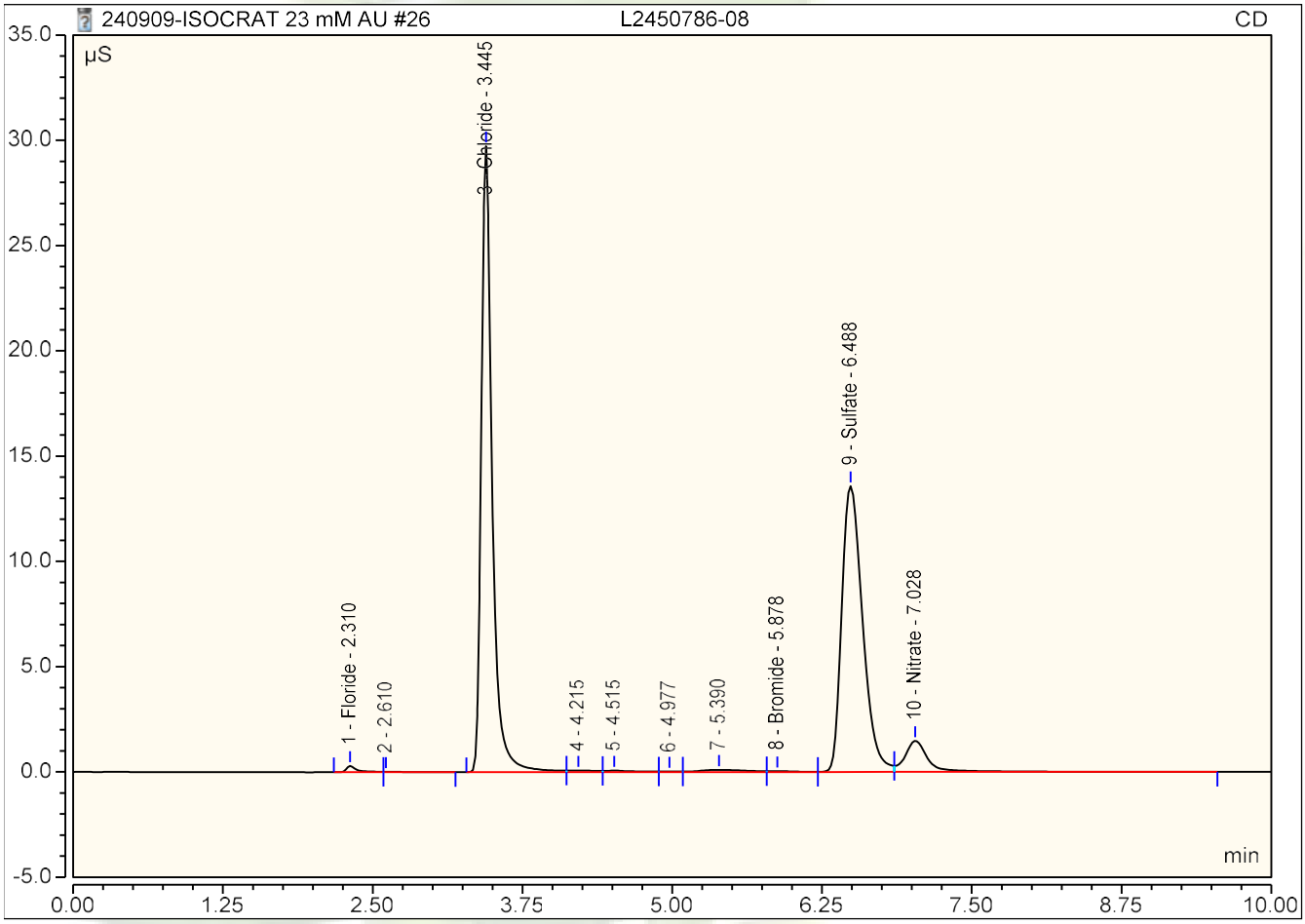
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.31	**Floride**	BM	0.018	0.096	0.0429
2	3.44	**Chloride**	M	14.613	135.807	40.5704
7	5.89	**Bromide**	M	0.048	0.203	0.4006
8	6.46	**Sulfate**	M	3.631	17.615	14.0084
9	7.00	**Nitrate**	M	1.190	5.548	1.1622
TOTAL:				19.50	159.27	56.18



Peak Integration Report

Sample Name:	**L2450786-08**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 19:22**	*Run Time:*	**10.00**

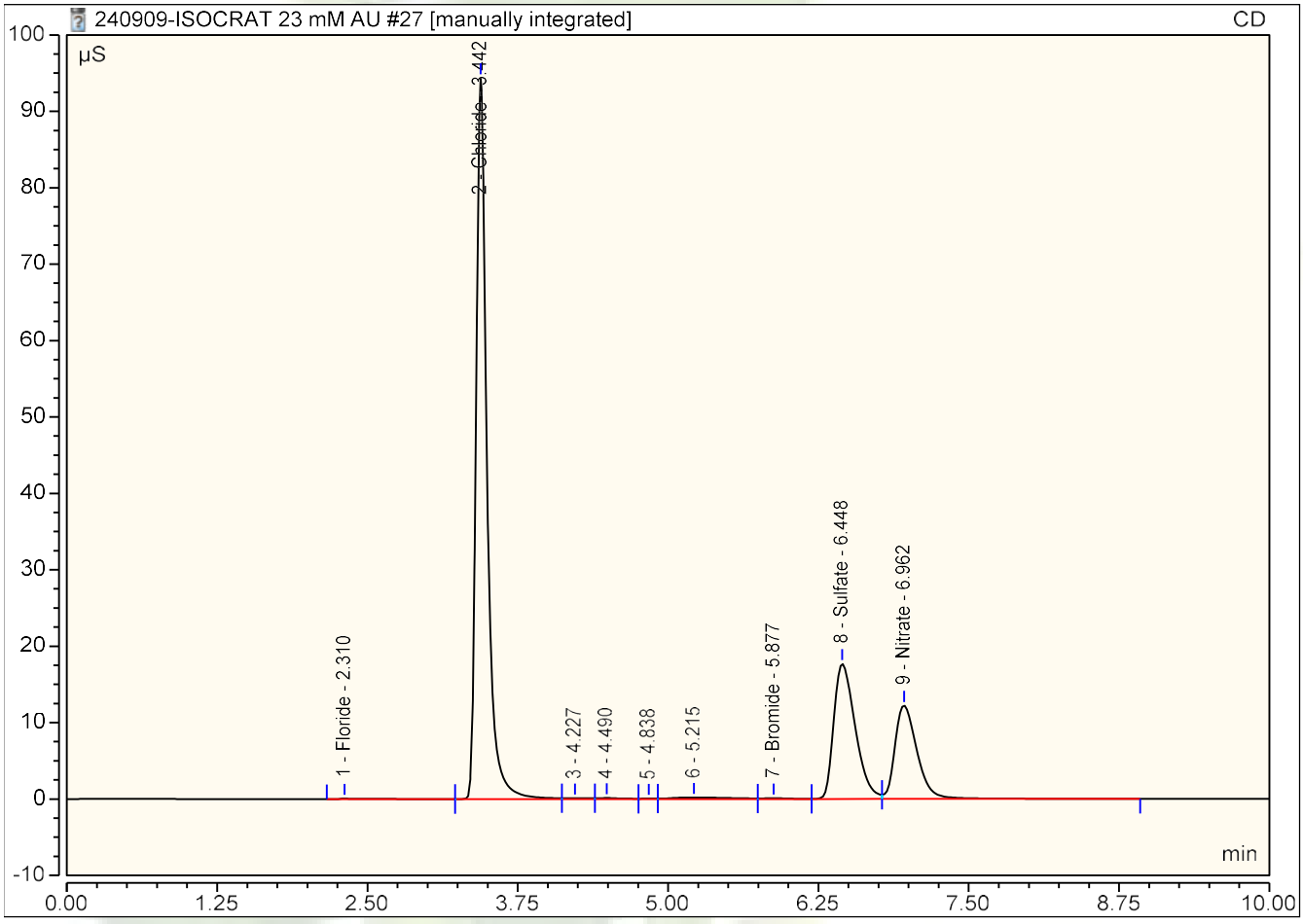
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.31	**Floride**	BM	0.032	0.306	0.0677
3	3.45	**Chloride**	BM	3.135	29.727	8.7688
8	5.88	**Bromide**	M	0.011	0.042	0.1031
9	6.49	**Sulfate**	M	2.719	13.578	10.5543
10	7.03	**Nitrate**	MB	0.342	1.480	0.3442
TOTAL:				6.24	45.13	19.84



Peak Integration Report

Sample Name:	**L2450786-09**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 19:33**	*Run Time:*	**10.00**

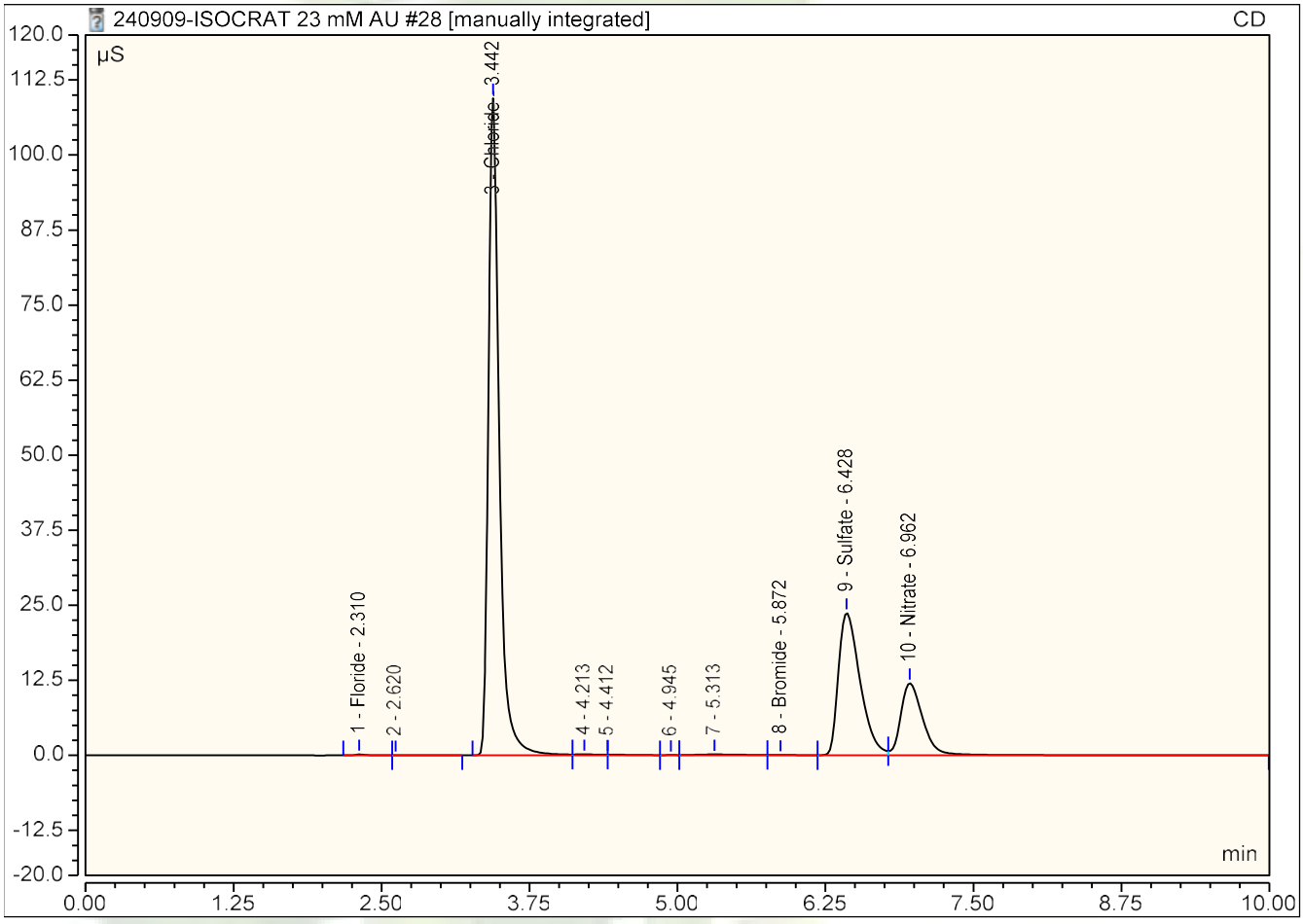
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.31	**Floride**	BM	0.018	0.076	0.0429
2	3.44	**Chloride**	M	9.909	94.380	27.5367
7	5.88	**Bromide**	M	0.029	0.114	0.2523
8	6.45	**Sulfate**	M *	3.659	17.698	14.1148
9	6.96	**Nitrate**	MB	2.622	12.218	2.5442
TOTAL:				16.24	124.49	44.49



Peak Integration Report

Sample Name:	**L2450786-10**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 19:44**	*Run Time:*	**10.00**

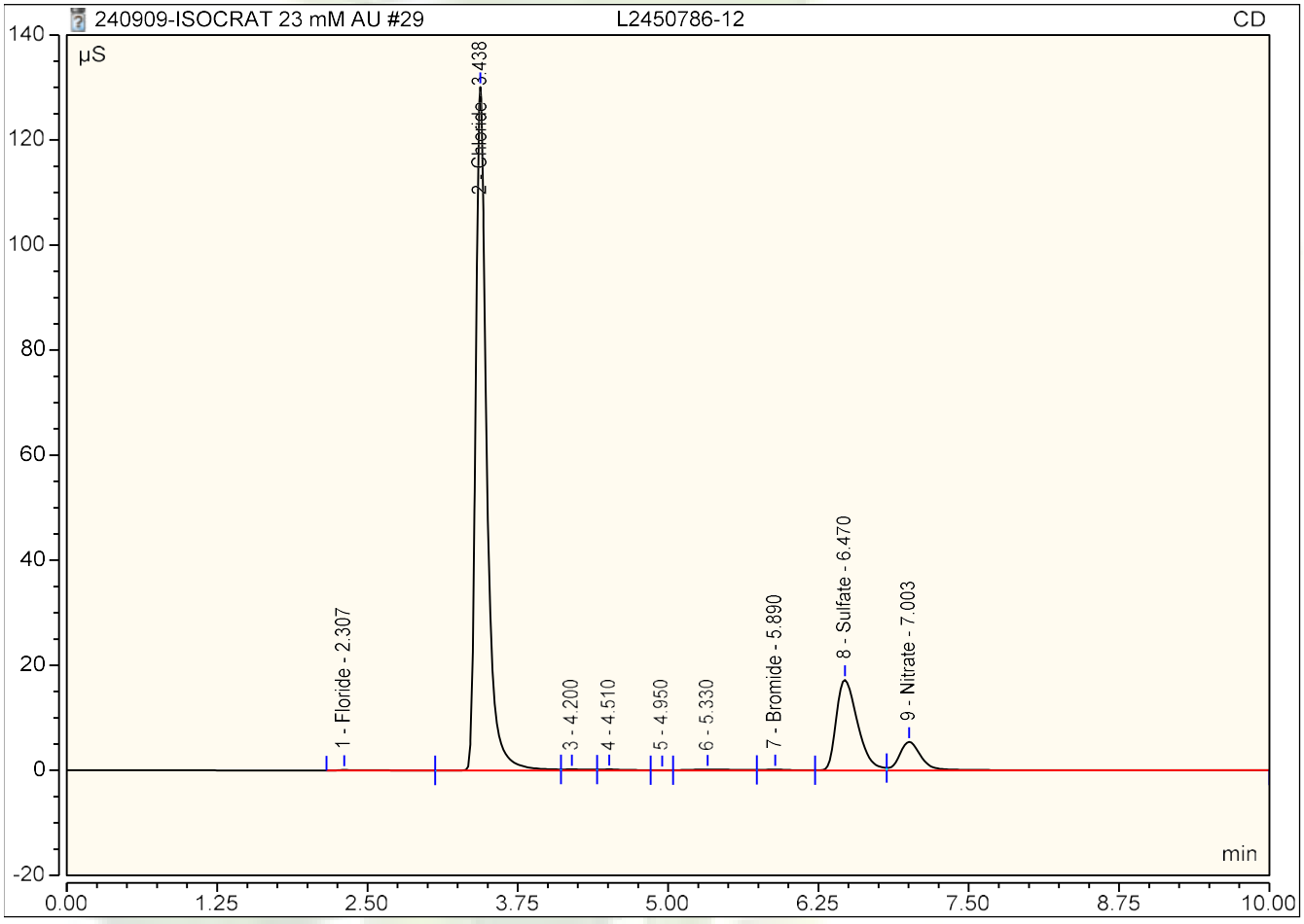
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.31	**Floride**	BM	0.019	0.169	0.0446
3	3.44	**Chloride**	BM	11.651	109.466	32.3644
8	5.87	**Bromide**	M	0.019	0.072	0.1700
9	6.43	**Sulfate**	M *	5.039	23.714	19.3445
10	6.96	**Nitrate**	MB*	2.619	12.012	2.5414
TOTAL:				19.35	145.43	54.46



Peak Integration Report

Sample Name:	**L2450786-12**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 19:55**	*Run Time:*	**10.00**

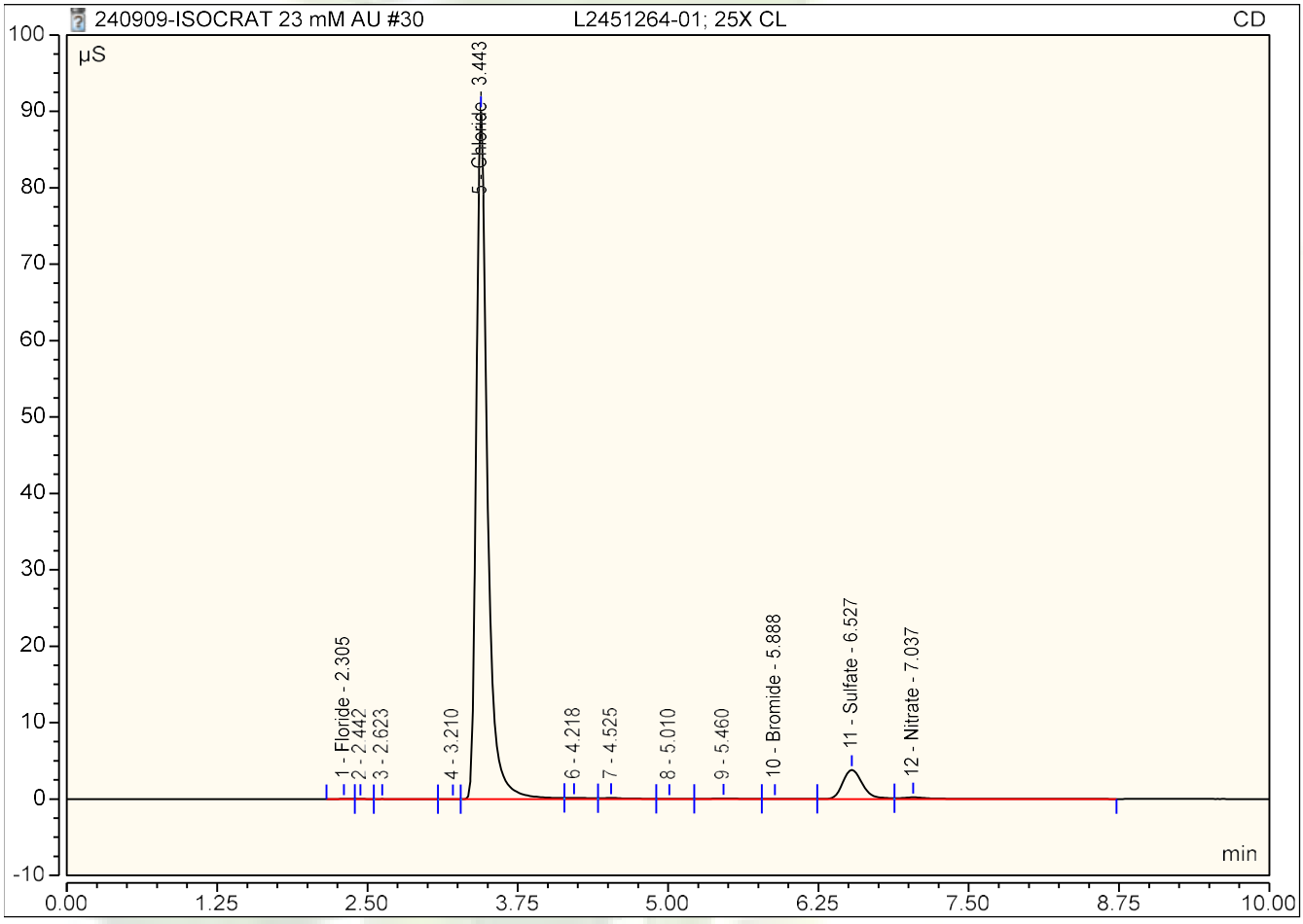
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.31	**Floride**	BM	0.017	0.094	0.0407
2	3.44	**Chloride**	M	13.933	130.090	38.6851
7	5.89	**Bromide**	M	0.042	0.182	0.3522
8	6.47	**Sulfate**	M	3.522	17.231	13.5988
9	7.00	**Nitrate**	MB	1.170	5.422	1.1431
TOTAL:				18.68	153.02	53.82



Peak Integration Report

Sample Name:	**L2451264-01; 25X CL**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**25.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 20:06**	*Run Time:*	**10.00**

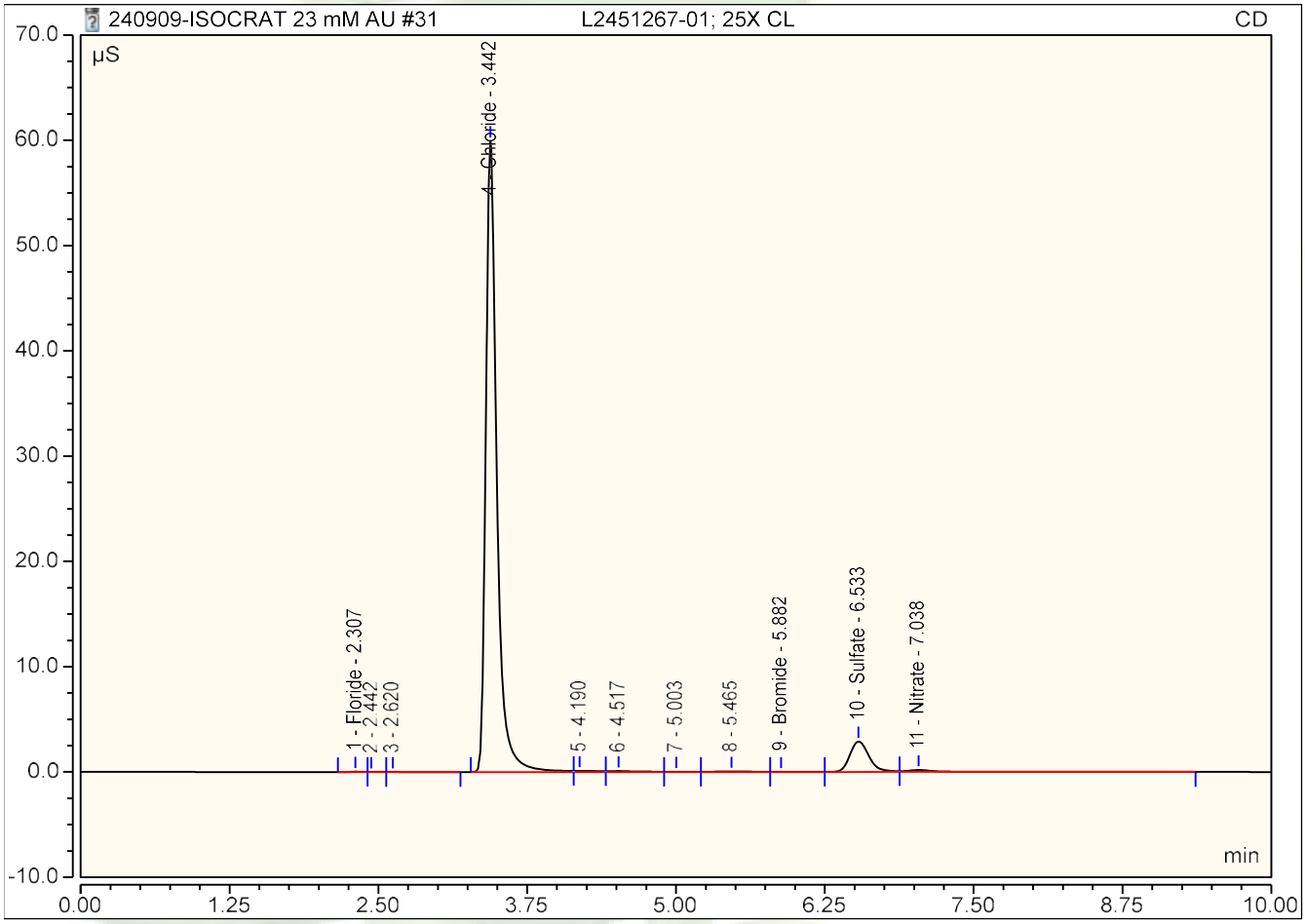
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.31	**Floride**	BM	0.003	0.035	0.4086
5	3.44	**Chloride**	M	9.728	90.060	675.8728
10	5.89	**Bromide**	M	0.011	0.036	2.6309
11	6.53	**Sulfate**	M	0.729	3.812	75.3567
12	7.04	**Nitrate**	MB	0.076	0.220	2.1839
TOTAL:				10.55	94.16	756.45



Peak Integration Report

Sample Name:	**L2451267-01; 25X CL**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**25.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 20:16**	*Run Time:*	**10.00**

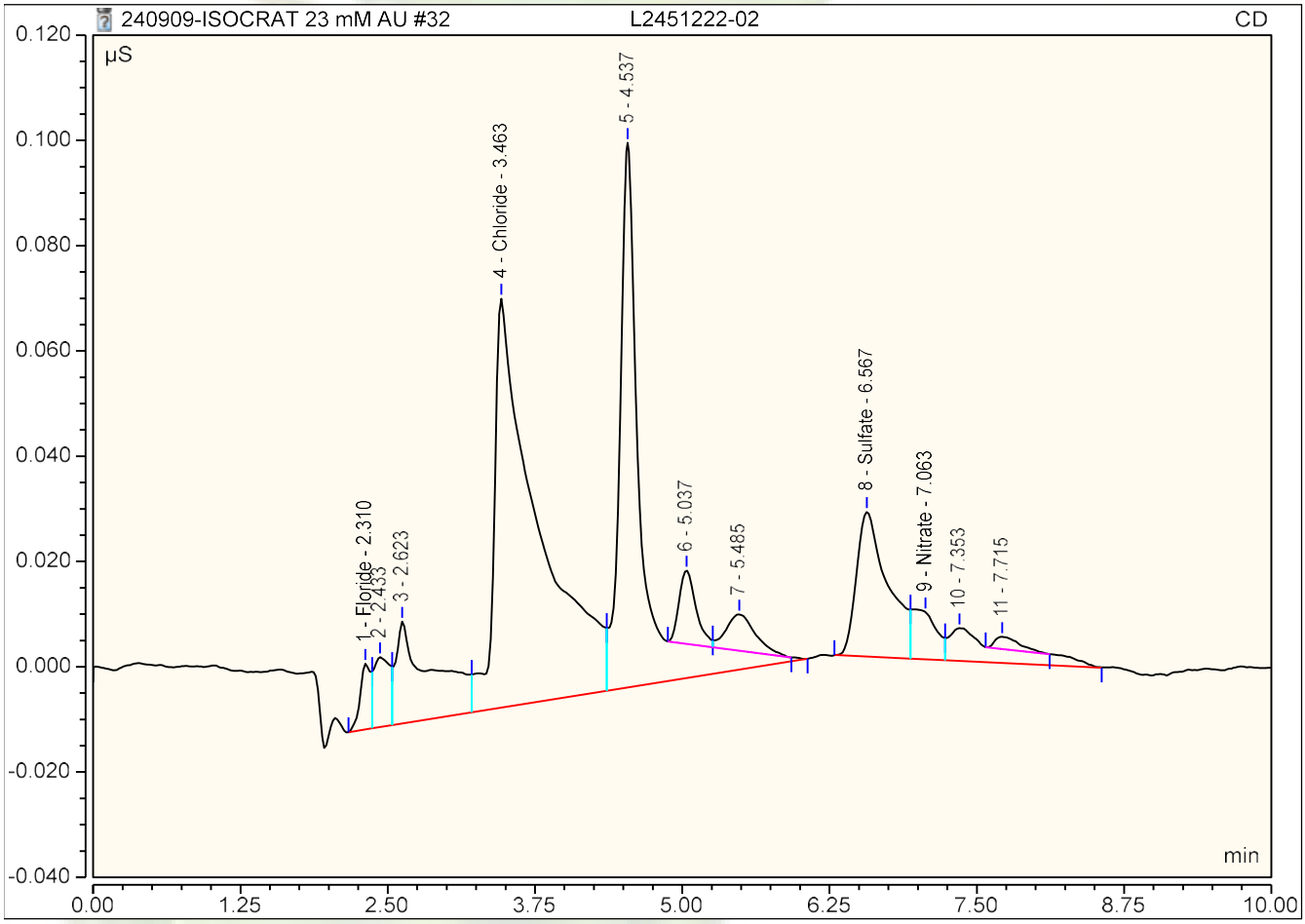
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.31	**Floride**	BM	0.005	0.045	0.4548
4	3.44	**Chloride**	BM	6.417	59.936	446.5791
9	5.88	**Bromide**	M	0.006	0.023	1.7626
10	6.53	**Sulfate**	M	0.541	2.908	57.5325
11	7.04	**Nitrate**	MB	0.058	0.187	1.7521
TOTAL:				7.03	63.10	508.08



Peak Integration Report

Sample Name:	**L2451222-02**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 20:27**	*Run Time:*	**10.00**

No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.31	**Floride**	BM	0.001	0.012	0.0124
4	3.46	**Chloride**	M	0.033	0.078	0.1763
8	6.57	**Sulfate**	BM	0.009	0.028	0.2838
9	7.06	**Nitrate**	M	0.002	0.009	0.0164
TOTAL:				0.05	0.13	0.49



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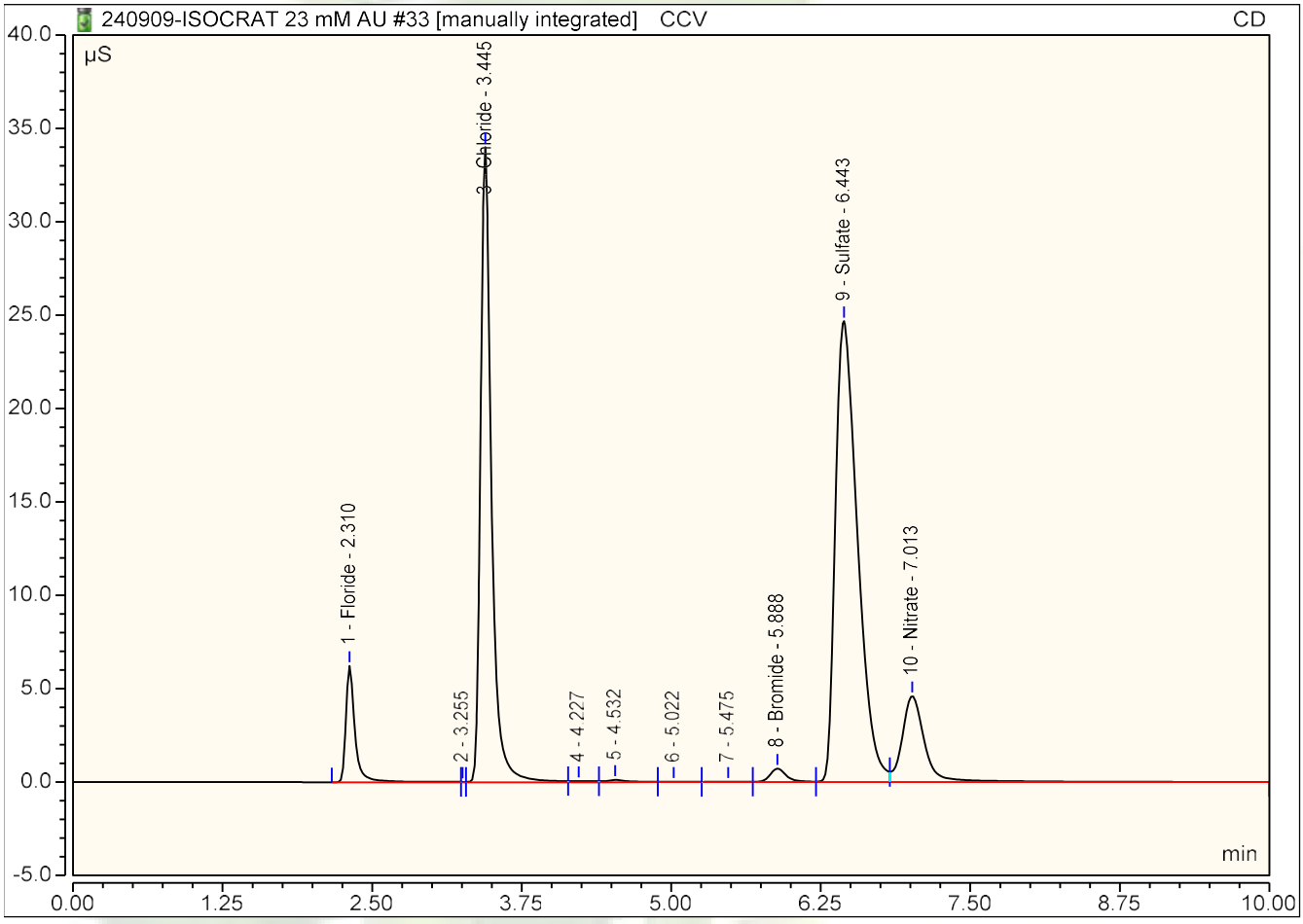
Peak Integration Report

Sample Name:	**CCV**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Check Standard**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 20:38**	*Run Time:*	**10.00**

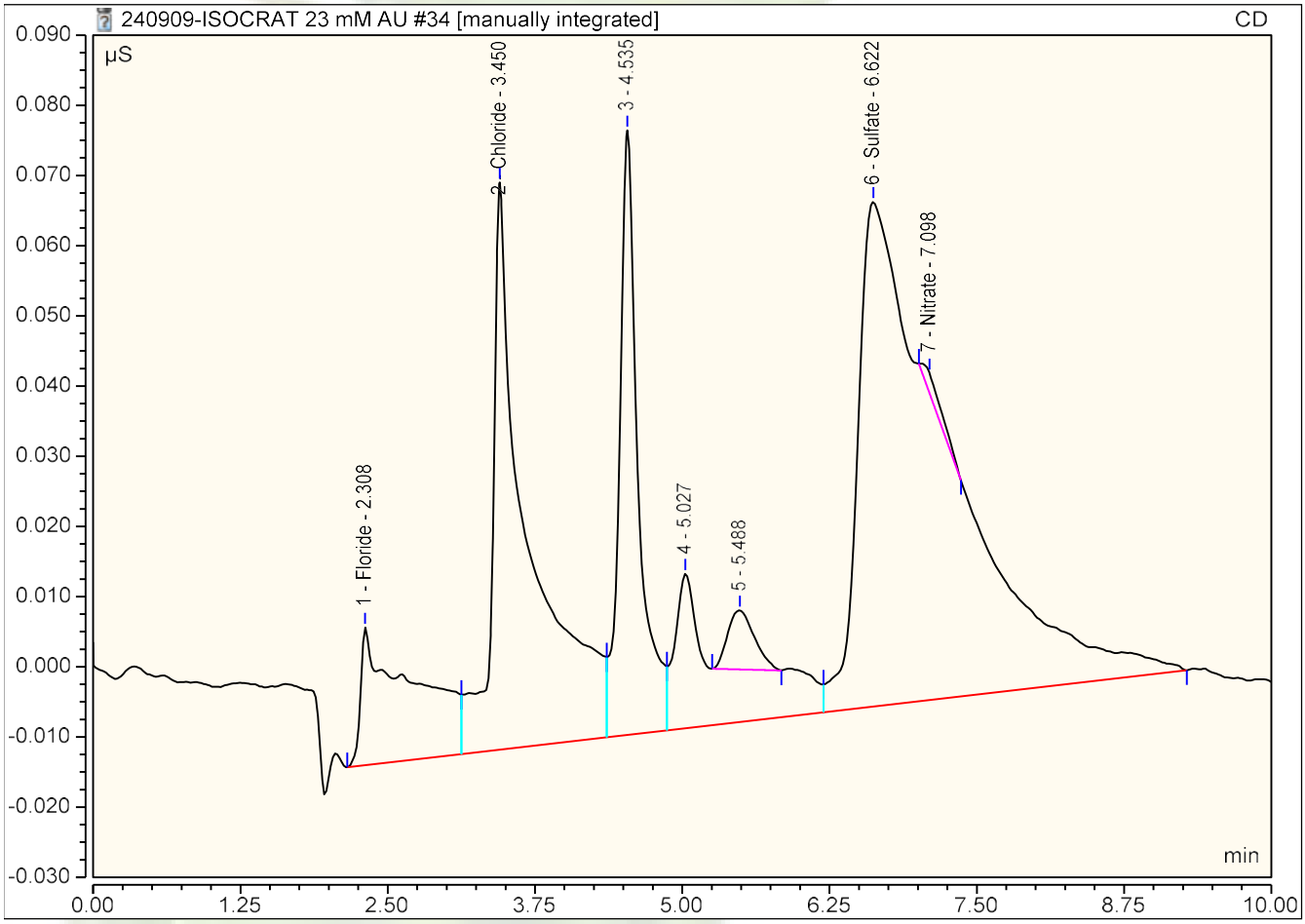
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.31	**Floride**	BM	0.564	6.232	1.0360
3	3.45	**Chloride**	M	3.609	34.012	10.0844
8	5.89	**Bromide**	M	0.118	0.725	0.9560
9	6.44	**Sulfate**	M *	5.271	24.677	20.2240
10	7.01	**Nitrate**	MB*	1.022	4.606	1.0002
TOTAL:				10.58	70.25	33.30



Peak Integration Report

Sample Name:	**CCB**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 20:49**	*Run Time:*	**10.00**

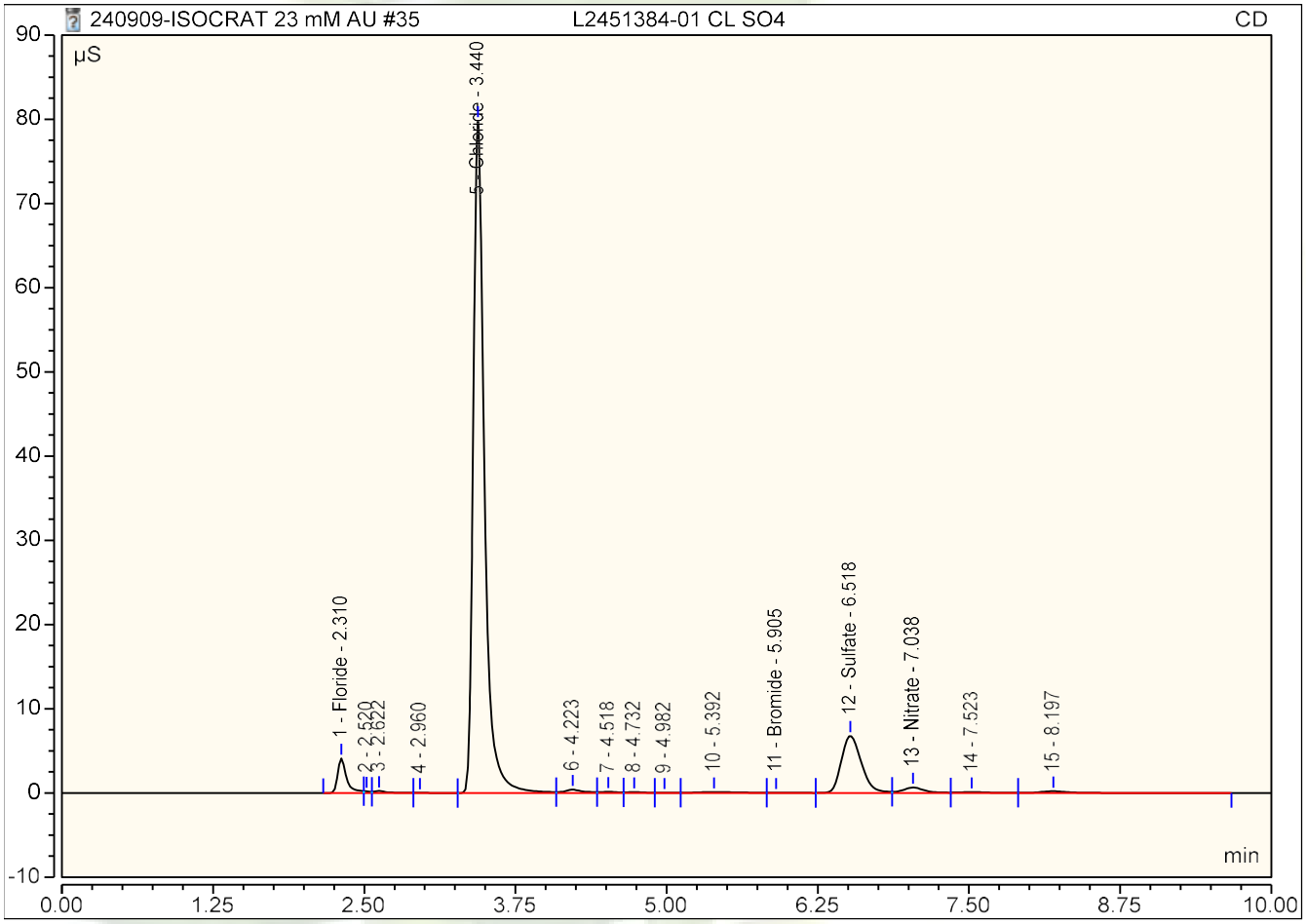
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.31	**Floride**	BM	0.010	0.020	0.0285
2	3.45	**Chloride**	M	0.029	0.081	0.1636
6	6.62	**Sulfate**	MB*	0.065	0.072	0.4993
7	7.10	**Nitrate**	Rd*	0.001	0.003	0.0148
TOTAL:				0.10	0.18	0.71



Peak Integration Report

Sample Name:	**L2451384-01 CL SO4**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 21:00**	*Run Time:*	**10.00**

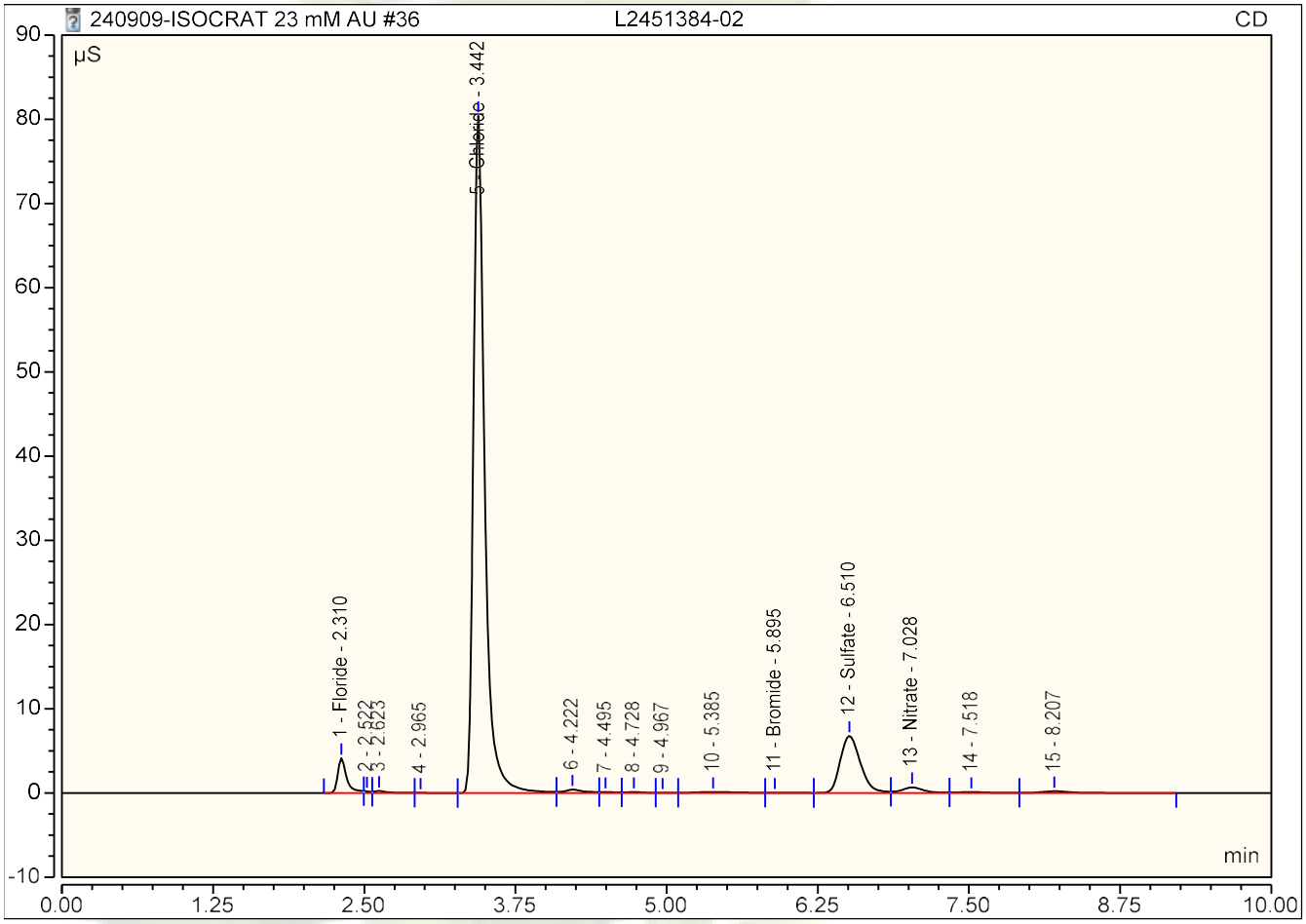
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.31	**Floride**	BM	0.358	4.117	0.6618
5	3.44	**Chloride**	M	8.543	79.827	23.7533
11	5.91	**Bromide**	M	0.012	0.038	0.1106
12	6.52	**Sulfate**	M	1.308	6.796	5.2067
13	7.04	**Nitrate**	M	0.141	0.659	0.1500
TOTAL:				10.36	91.44	29.88



Peak Integration Report

Sample Name:	**L2451384-02**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 21:11**	*Run Time:*	**10.00**

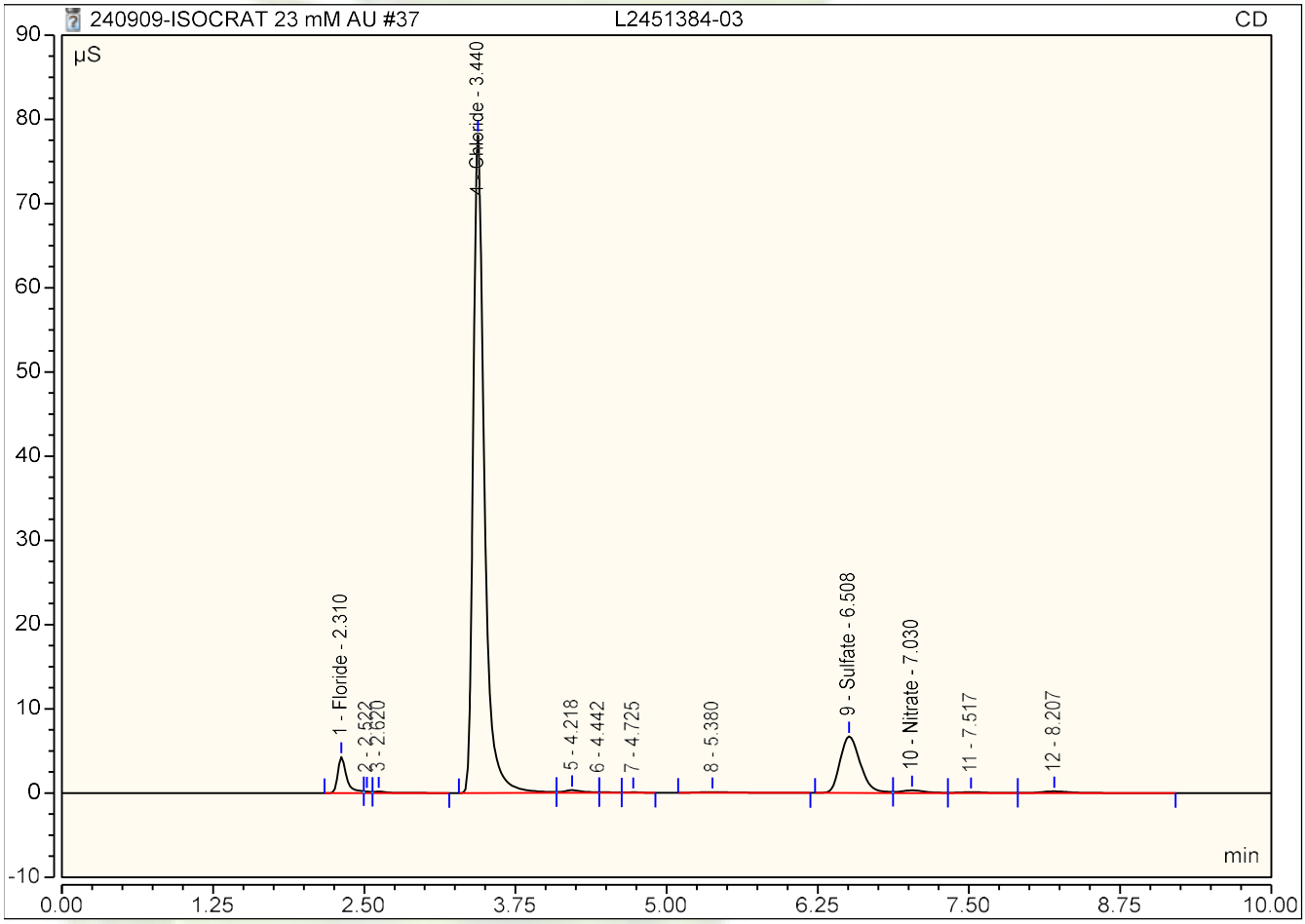
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.31	**Floride**	BM	0.360	4.144	0.6651
5	3.44	**Chloride**	M	8.615	80.400	23.9533
11	5.90	**Bromide**	M	0.012	0.038	0.1107
12	6.51	**Sulfate**	M	1.315	6.770	5.2341
13	7.03	**Nitrate**	M	0.146	0.683	0.1555
TOTAL:				10.45	92.03	30.12



Peak Integration Report

Sample Name:	**L2451384-03**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 21:22**	*Run Time:*	**10.00**

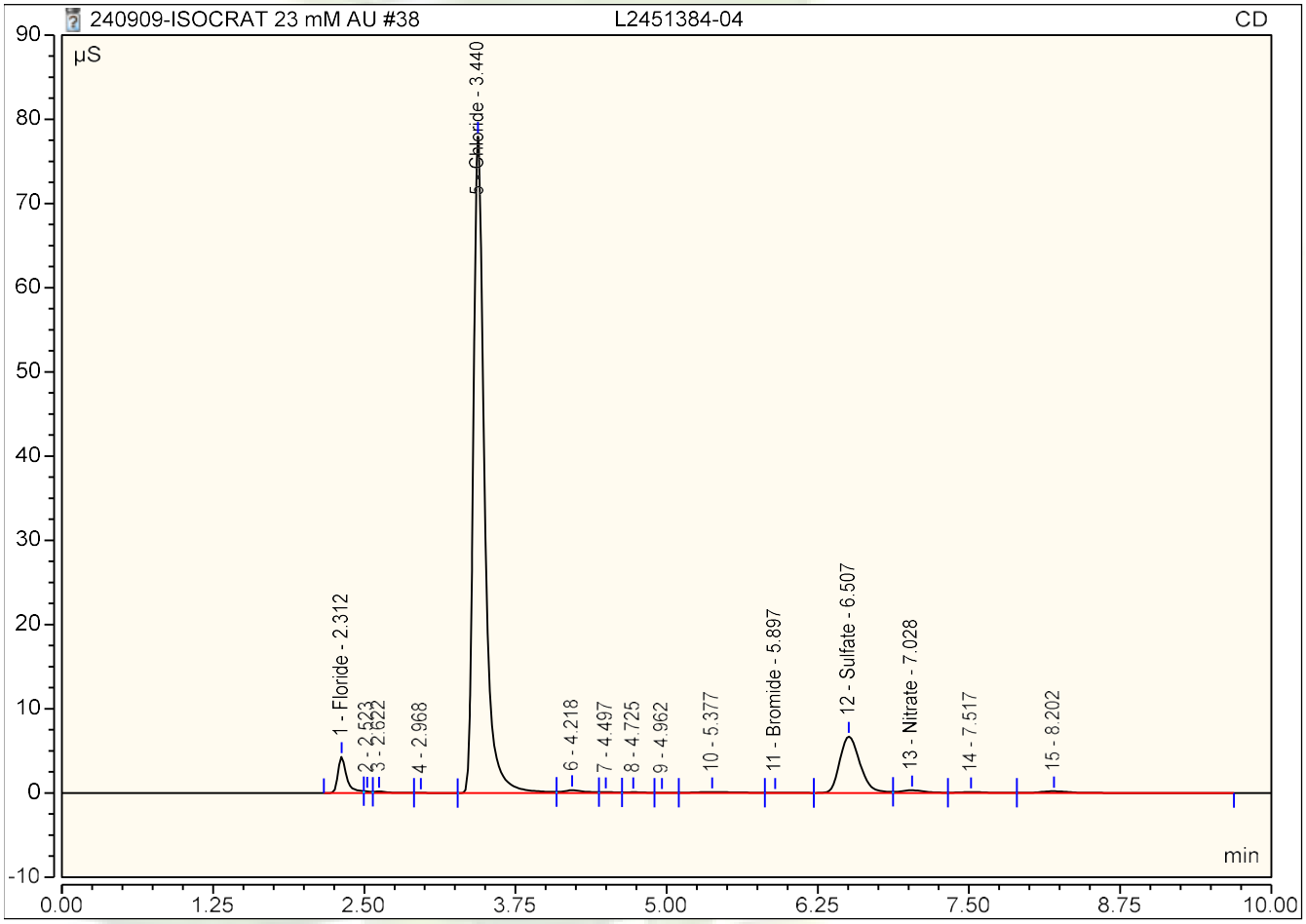
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.31	**Floride**	BM	0.372	4.316	0.6871
4	3.44	**Chloride**	BM	8.369	78.082	23.2701
9	6.51	**Sulfate**	BM	1.297	6.705	5.1656
10	7.03	**Nitrate**	M	0.072	0.315	0.0834
TOTAL:				10.11	89.42	29.21



Peak Integration Report

Sample Name:	**L2451384-04**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 21:33**	*Run Time:*	**10.00**

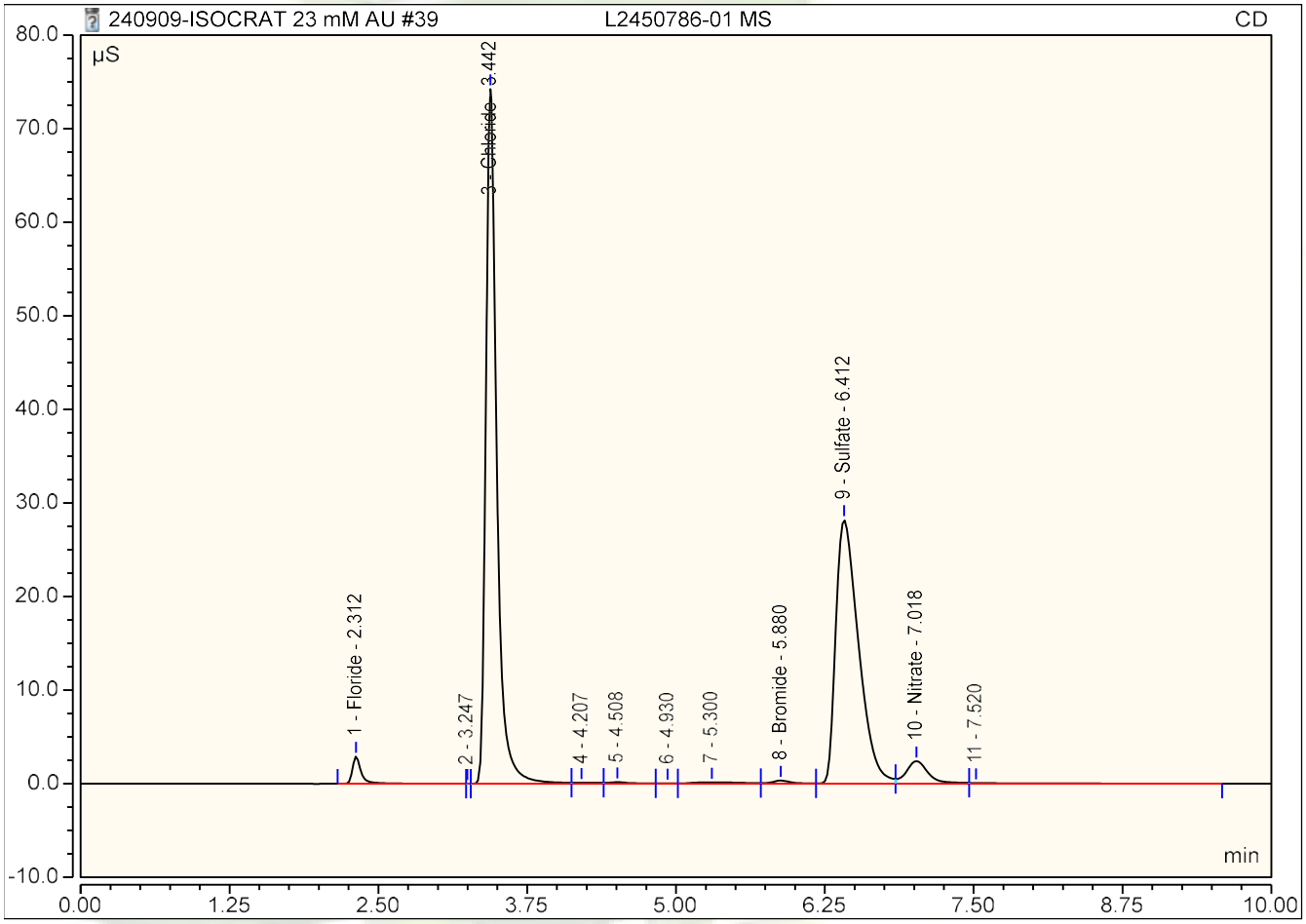
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.31	**Floride**	BM	0.371	4.300	0.6857
5	3.44	**Chloride**	M	8.354	77.951	23.2305
11	5.90	**Bromide**	M	0.012	0.039	0.1165
12	6.51	**Sulfate**	M	1.305	6.706	5.1960
13	7.03	**Nitrate**	M	0.079	0.334	0.0909
TOTAL:				10.12	89.33	29.32



Peak Integration Report

Sample Name:	**L2450786-01 MS**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 21:44**	*Run Time:*	**10.00**

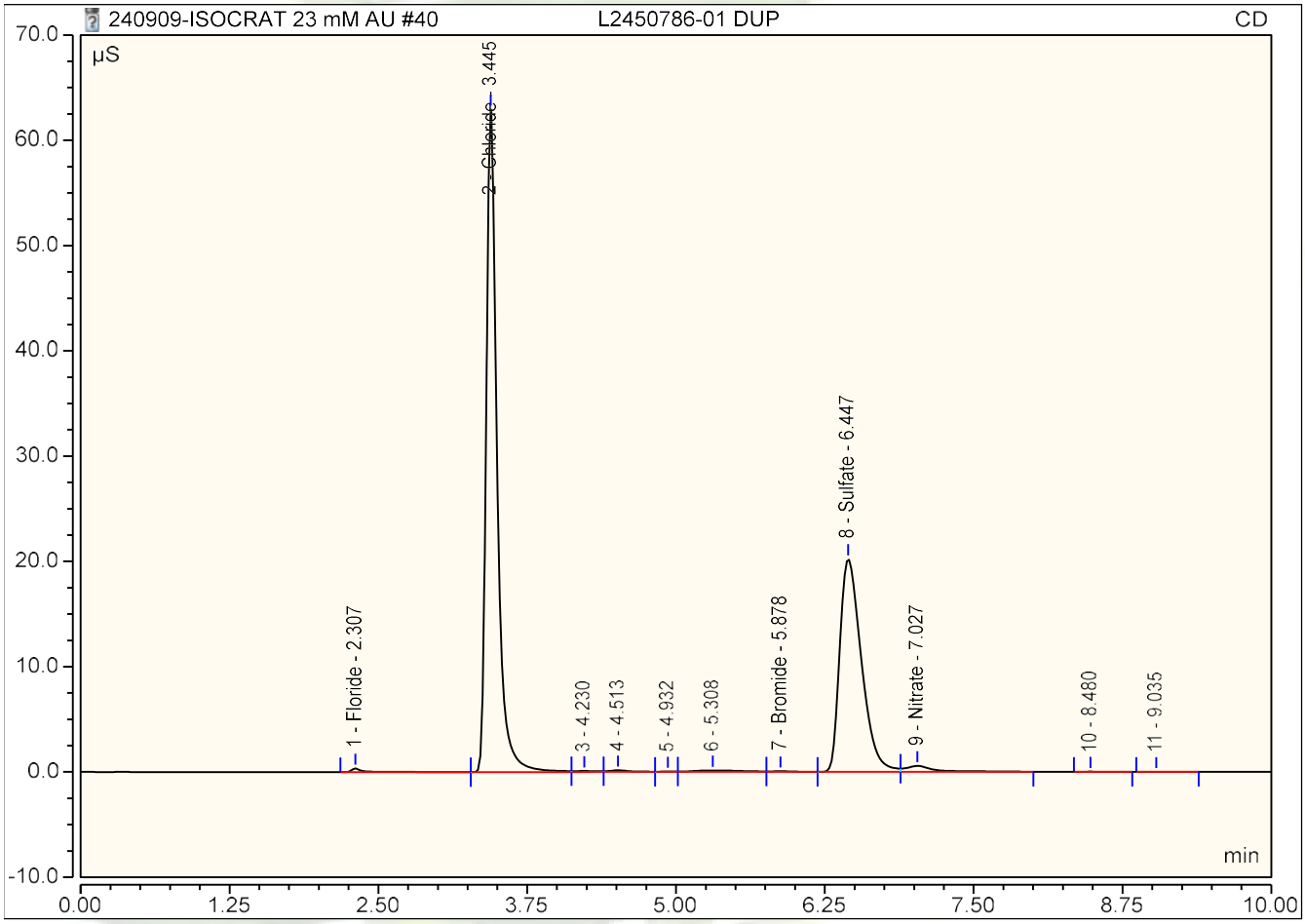
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.31	**Floride**	BM	0.263	2.928	0.4892
3	3.44	**Chloride**	M	7.870	74.247	21.8892
8	5.88	**Bromide**	M	0.064	0.333	0.5244
9	6.41	**Sulfate**	M	6.244	28.198	23.9124
10	7.02	**Nitrate**	M	0.521	2.415	0.5166
TOTAL:				14.96	108.12	47.33



Peak Integration Report

Sample Name:	**L2450786-01 DUP**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 21:55**	*Run Time:*	**10.00**

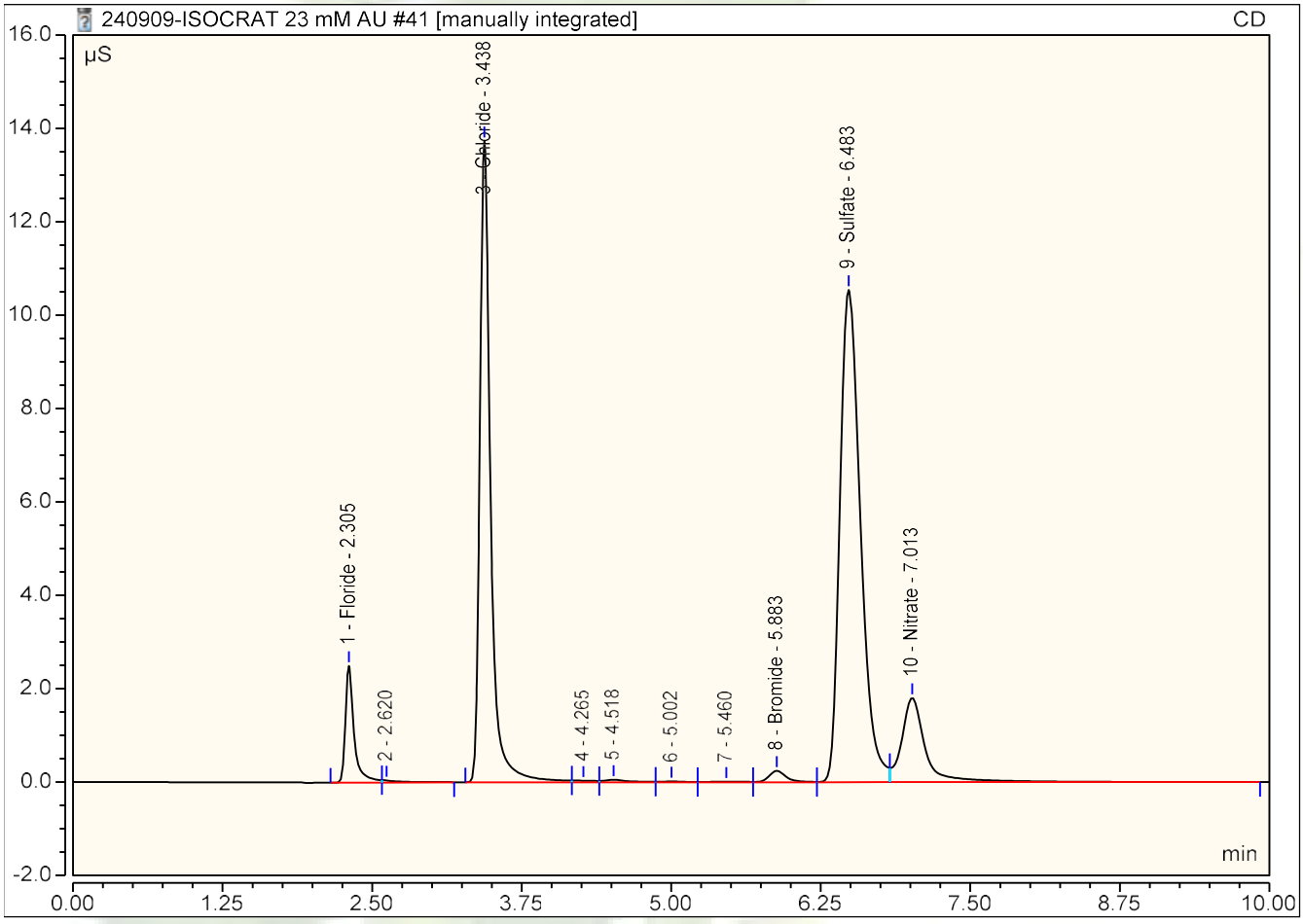
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.31	**Floride**	BM	0.042	0.353	0.0864
2	3.45	**Chloride**	M	6.659	62.957	18.5343
7	5.88	**Bromide**	M	0.013	0.061	0.1235
8	6.45	**Sulfate**	M	4.254	20.223	16.3715
9	7.03	**Nitrate**	MB	0.153	0.561	0.1622
TOTAL:				11.12	84.16	35.28



Peak Integration Report

Sample Name:	**L2451222-02 MS**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 22:06**	*Run Time:*	**10.00**

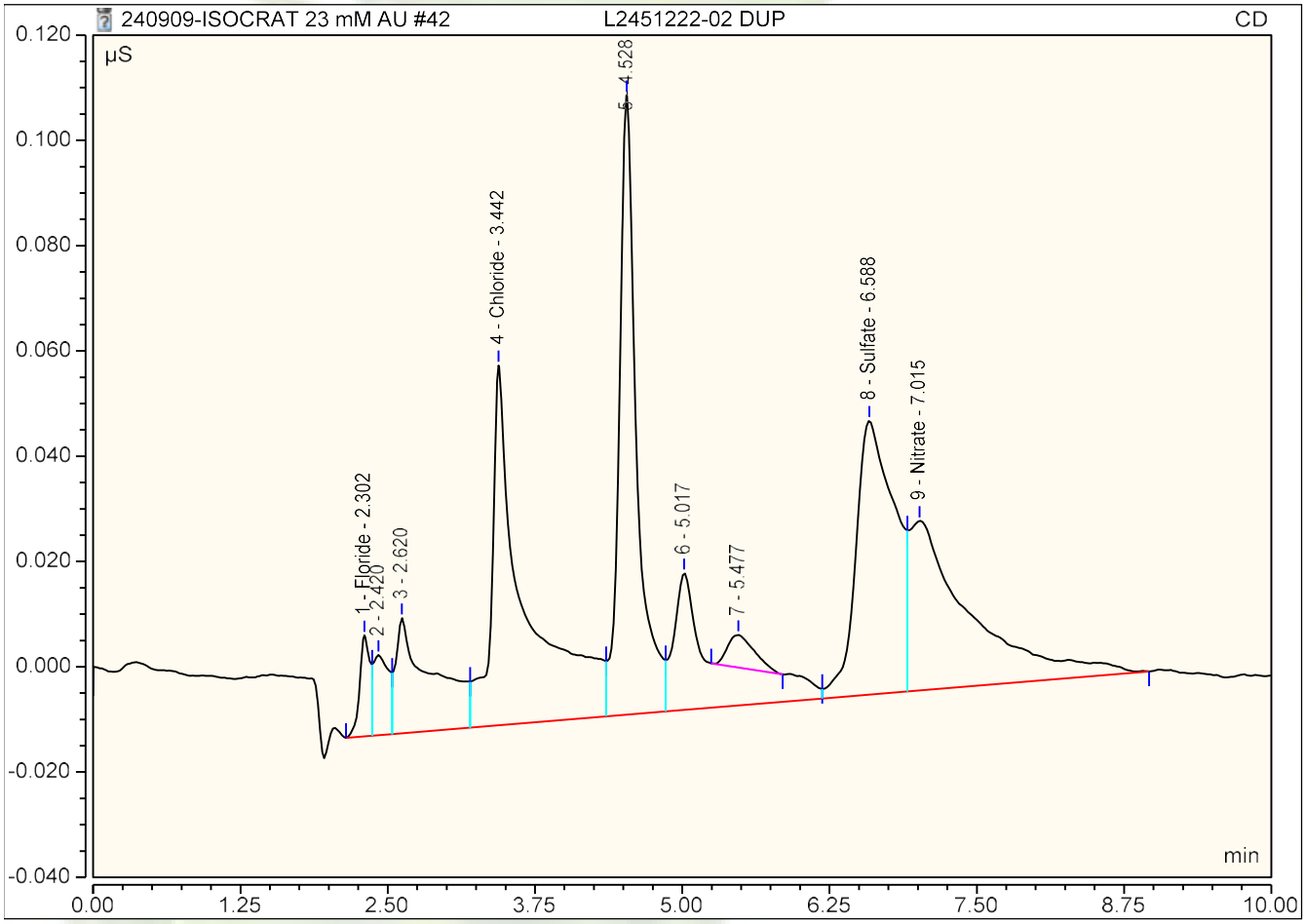
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.31	**Floride**	BM	0.211	2.501	0.3934
3	3.44	**Chloride**	BM	1.433	13.730	4.0549
8	5.88	**Bromide**	M	0.041	0.244	0.3412
9	6.48	**Sulfate**	M *	2.086	10.543	8.1543
10	7.01	**Nitrate**	MB*	0.421	1.806	0.4200
TOTAL:				4.19	28.82	13.36



Peak Integration Report

Sample Name:	**L2451222-02 DUP**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 22:17**	*Run Time:*	**10.00**

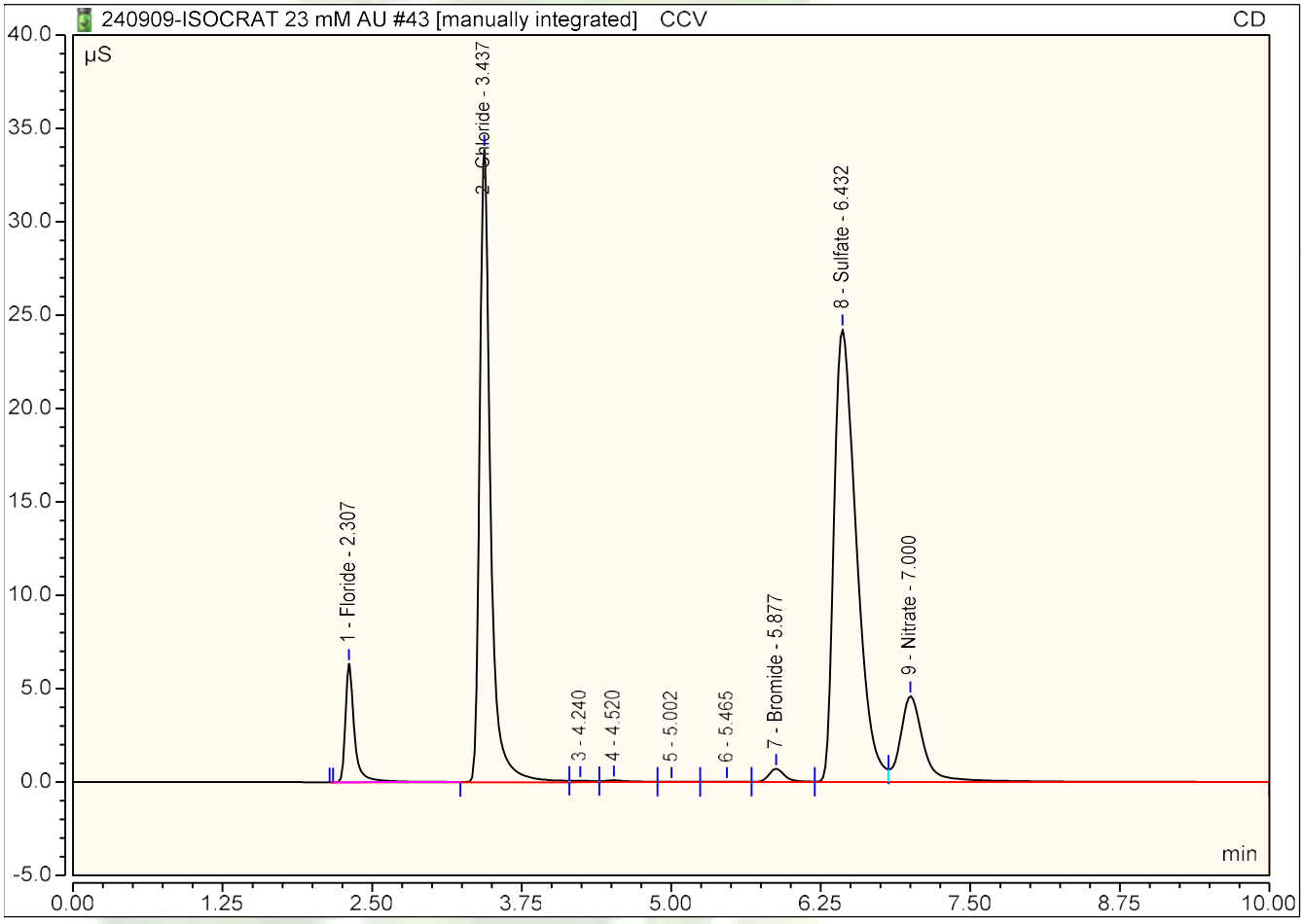
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.30	**Floride**	BM	0.002	0.019	0.0135
4	3.44	**Chloride**	M	0.023	0.068	0.1467
8	6.59	**Sulfate**	M	0.020	0.052	0.3269
9	7.02	**Nitrate**	MB	0.020	0.032	0.0332
TOTAL:				0.06	0.17	0.52



Peak Integration Report

Sample Name:	**CCV**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Check Standard**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 22:28**	*Run Time:*	**10.00**

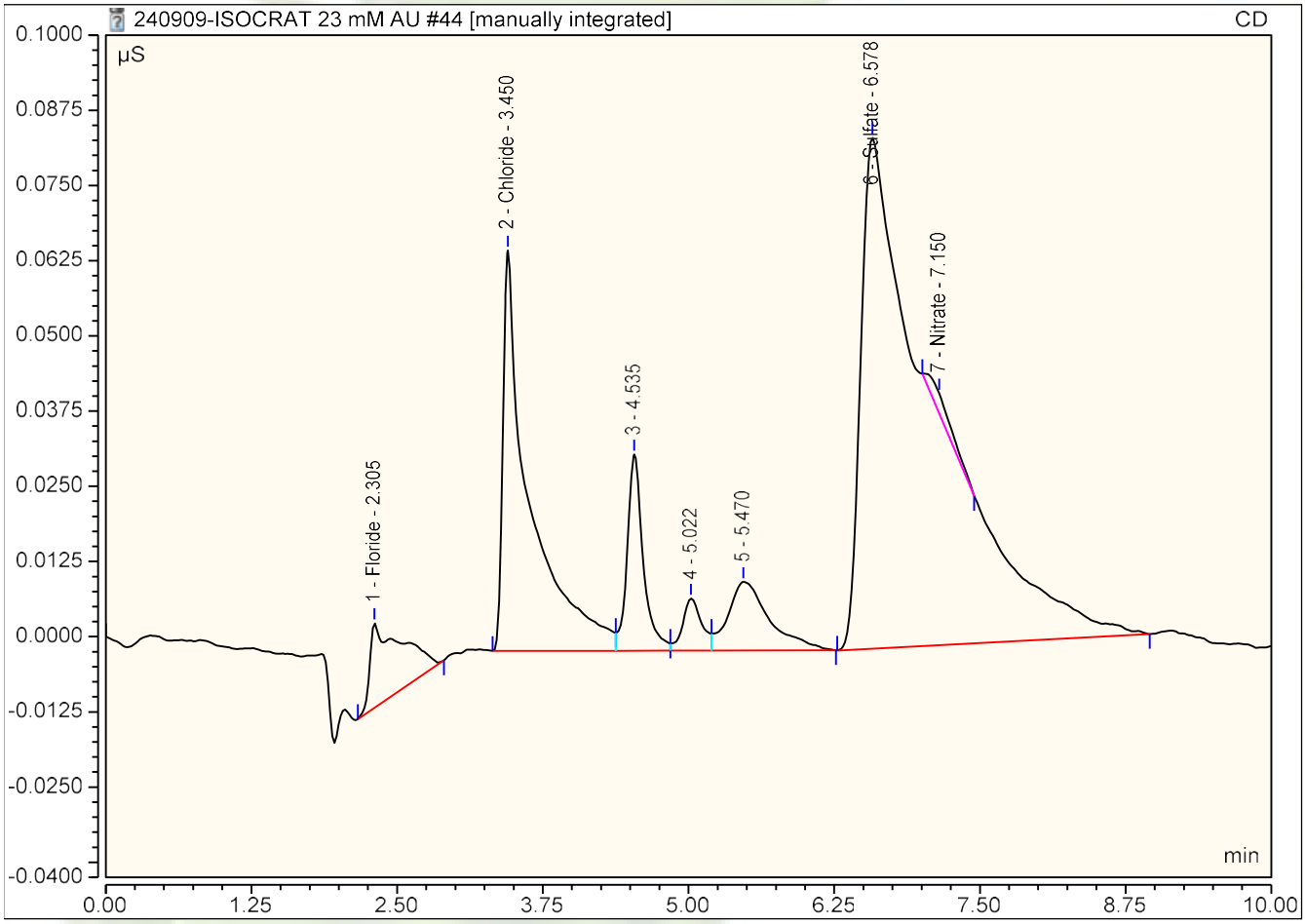
No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.31	**Floride**	Ru	0.558	6.347	1.0263
2	3.44	**Chloride**	BM	3.612	33.868	10.0922
7	5.88	**Bromide**	M	0.116	0.715	0.9373
8	6.43	**Sulfate**	M *	5.236	24.253	20.0926
9	7.00	**Nitrate**	MB*	1.062	4.600	1.0388
TOTAL:				10.58	69.78	33.19



Peak Integration Report

Sample Name:	**CCB**	*Inj. Vol.:*	**5000.00**
Injection Type:	**Unknown**	*Dilution Factor:*	**1.0000**
Instrument Method:	**IC 3 method 23 mM**	*Operator:*	**Wetchem25**
Inj. Date / Time:	**09-Sep-2024 / 22:38**	*Run Time:*	**10.00**

No.	Time min	Peak Name	Peak Type	Area µS*min	Height µS	Amount
1	2.31	**Floride**	BMB	0.004	0.014	0.0179
2	3.45	**Chloride**	BM	0.018	0.067	0.1328
6	6.58	**Sulfate**	BMB*	0.063	0.085	0.4890
7	7.15	**Nitrate**	Rd*	0.001	0.003	0.0150
TOTAL:				0.09	0.17	0.65



Anion Summary Report

No.	Name	Dilution	Amount CD Floride	Amount CD Chloride	Amount CD Nitrate	Amount CD Sulfate	Amount CD Bromide	Inject Time	Comment
1	BLK	1.0	0.0118	0.1031	0.0162	0.2660	0.0296	05/Sep/2024 15:43	AU
2	STD 0.5	1.0	0.0326	0.2835	0.0302	0.6187	0.0373	05/Sep/2024 15:54	LOT#240905-0.5
3	STD 1.0	1.0	0.0501	0.5161	0.0495	1.0354	0.0597	05/Sep/2024 16:05	LOT#240905-1.0
4	STD 2.0	1.0	0.1864	1.9986	0.1891	3.9301	0.1857	05/Sep/2024 16:16	LOT#240905-2.0
5	STD 3.0	1.0	0.4848	4.9540	0.4987	9.8113	0.4625	05/Sep/2024 16:27	LOT#240905-3.0
6	STD 4.0	1.0	2.0151	19.8486	1.9879	39.7205	2.0104	05/Sep/2024 16:37	LOT#240905-4.0
7	STD 5.0	1.0	4.9960	50.0649	5.0054	100.1325	5.3876	05/Sep/2024 16:48	LOT#240905-5.0
8	RINSE	1.0	n.a.	0.1044	n.a.	0.4212	n.a.	09/Sep/2024 16:03	WG1969414-16
9	CCV	1.0	1.0603	10.4898	1.0451	20.3496	1.0972	09/Sep/2024 16:14	LOT#240905-C
10	CCB	1.0	0.0188	0.2688	n.a.	0.4096	n.a.	09/Sep/2024 16:25	AU
11	ICV	1.0	0.8585	8.5421	0.8020	8.2080	0.8734	09/Sep/2024 16:36	LOT#240905-I
12	ICB	1.0	0.0110	0.1607	0.0308	0.3087	n.a.	09/Sep/2024 16:47	AU
13	BLK	1.0	n.a.	0.1189	n.a.	0.2630	n.a.	09/Sep/2024 16:58	AU
14	LCS	1.0	0.8477	8.4709	0.7839	8.2149	0.8147	09/Sep/2024 17:09	LOT#240905-I
15	L2450786-01 BR	1.0	0.0870	18.3254	0.1575	16.1602	0.1793	09/Sep/2024 17:19	AU
16	L2450786-02	1.0	0.0452	27.4283	2.8555	18.2415	0.1711	09/Sep/2024 17:30	AU
17	L2450786-03	1.0	0.0812	16.3409	0.2948	20.1585	0.1544	09/Sep/2024 17:41	AU
18	L2450786-04	1.0	0.0528	25.0451	0.9704	18.7430	0.2094	09/Sep/2024 17:52	AU
19	L2450786-05	1.0	0.1078	17.8069	0.1810	32.9757	0.2826	09/Sep/2024 18:03	AU
20	L2451222-01	1.0	0.0148	0.1514	n.a.	0.4474	n.a.	09/Sep/2024 18:14	AU
21	CCV	1.0	0.9677	9.5762	0.9491	19.1331	0.8952	09/Sep/2024 18:25	LOT#240905-C
22	CCV	1.0	1.0205	10.0851	1.0223	20.1008	0.9564	09/Sep/2024 18:38	LOT#240905-C
23	CCB	1.0	0.0347	0.1618	0.0382	0.3684	n.a.	09/Sep/2024 18:49	AU
24	L2450786-06	1.0	0.0993	22.4570	0.1158	33.5993	0.2860	09/Sep/2024 19:00	AU
25	L2450786-07	1.0	0.0429	40.5704	1.1622	14.0084	0.4006	09/Sep/2024 19:11	AU
26	L2450786-08	1.0	0.0677	8.7688	0.3442	10.5543	0.1031	09/Sep/2024 19:22	AU
27	L2450786-09	1.0	0.0429	27.5367	2.5442	14.1148	0.2523	09/Sep/2024 19:33	AU
28	L2450786-10	1.0	0.0446	32.3644	2.5414	19.3445	0.1700	09/Sep/2024 19:44	AU
29	L2450786-12	1.0	0.0407	38.6851	1.1431	13.5988	0.3522	09/Sep/2024 19:55	AU
30	L2451264-01; 25X CL	25.0	0.4086	675.8728	2.1839	75.3567	2.6309	09/Sep/2024 20:06	AU
31	L2451267-01; 25X CL	25.0	0.4548	446.5791	1.7521	57.5325	1.7626	09/Sep/2024 20:16	AU
32	L2451222-02	1.0	0.0124	0.1763	0.0164	0.2838	n.a.	09/Sep/2024 20:27	AU
33	CCV	1.0	1.0360	10.0844	1.0002	20.2240	0.9560	09/Sep/2024 20:38	LOT#240905-C
34	CCB	1.0	0.0285	0.1636	0.0148	0.4993	n.a.	09/Sep/2024 20:49	AU
35	L2451384-01 CL SO4	1.0	0.6618	23.7533	0.1500	5.2067	0.1106	09/Sep/2024 21:00	AU

36	L2451384-02	1.0	0.6651	23.9533	0.1555	5.2341	0.1107	09/Sep/2024 21:11	AU
37	L2451384-03	1.0	0.6871	23.2701	0.0834	5.1656	n.a.	09/Sep/2024 21:22	AU
38	L2451384-04	1.0	0.6857	23.2305	0.0909	5.1960	0.1165	09/Sep/2024 21:33	AU
39	L2450786-01 MS	1.0	0.4892	21.8892	0.5166	23.9124	0.5244	09/Sep/2024 21:44	AU
40	L2450786-01 DUP	1.0	0.0864	18.5343	0.1622	16.3715	0.1235	09/Sep/2024 21:55	AU
41	L2451222-02 MS	1.0	0.3934	4.0549	0.4200	8.1543	0.3412	09/Sep/2024 22:06	AU
42	L2451222-02 DUP	1.0	0.0135	0.1467	0.0332	0.3269	n.a.	09/Sep/2024 22:17	AU
43	CCV	1.0	1.0263	10.0922	1.0388	20.0926	0.9373	09/Sep/2024 22:28	LOT#240905-C
44	CCB	1.0	0.0179	0.1328	0.0150	0.4890	n.a.	09/Sep/2024 22:38	AU
	Sum:			1683.161	32.391	689.284			0.000
	Average:			38.254	0.810	15.666			#DIV/0!
	Rel.Std.Dev:			310.415 %	129.327 %	129.474 %			#DIV/0!

Quality Control

Form 5a
Matrix Spike

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: MW-5A	**Matrix**	: WATER
Lab Sample ID	: L2450786-01		
Matrix Spike	: WG1969414-3	**MS Analysis Date**	: 09/09/24 21:44
Matrix Spike Dup	:	**MSD Analysis Date**	:

		Matrix Spike Sample				Matrix Spike Duplicate					
Parameter	Sample Conc. (mg/l)	Spike Added (mg/l)	Spike Conc. (mg/l)	%R		Spike Added (mg/l)	Spike Conc. (mg/l)	%R	RPD	Recovery Limits	RPD Limit
Bromide	0.179	0.4	0.524	86	Q					90-110	20

Form 5a
Matrix Spike

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: L2451222-02		
Matrix Spike	: WG1969416-3	**MS Analysis Date**	: 09/09/24 22:06
Matrix Spike Dup	:	**MSD Analysis Date**	:

		Matrix Spike Sample				Matrix Spike Duplicate					
Parameter	Sample Conc. (mg/l)	Spike Added (mg/l)	Spike Conc. (mg/l)	%R		Spike Added (mg/l)	Spike Conc. (mg/l)	%R	RPD	Recovery Limits	RPD Limit
Bromide	ND	0.4	0.341	85	Q					90-110	20

Form 6
Lab Duplicates

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: MW-5A	**Matrix**	: WATER
Lab Sample ID	: L2450786-01	**Analysis Date**	: 09/09/24 17:19
Dup Sample ID	: WG1969414-4	**DUP Analysis Date**	: 09/09/24 21:55

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Bromide	0.179	0.124	36 Q	20

Form 6
Lab Duplicates

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: NA	**Analysis Date**	: 09/09/24 20:27
Dup Sample ID	: WG1969416-4	**DUP Analysis Date**	: 09/09/24 22:17

Parameter	Sample Concentration (mg/l)	Duplicate Concentration (mg/l)	RPD	RPD Limit
Bromide	ND	ND	NC	20

Form 7
Laboratory Control Sample

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: WG1969414-2	**LCS Analysis Date**	: 09/09/24 17:09
Dup Sample ID	:	**LCSD Analysis Date**	:

	Laboratory Control Sample			Laboratory Control Duplicate					
	True	Found	%R	True	Found	%R	RPD	Recovery	RPD
Parameter	(mg/l)	(mg/l)		(mg/l)	(mg/l)			Limits	Limit
Bromide	0.800	0.815	102.					90-110	20

Form 7
Laboratory Control Sample

Client	: P. W. Grosser	**Lab Number**	: L2450786
Project Name	: ROANOKE SAND + GRAVEL	**Project Number**	: BSD1504
Client Sample ID	: NA	**Matrix**	: WATER
Lab Sample ID	: WG1969416-2	**LCS Analysis Date**	: 09/09/24 17:09
Dup Sample ID	:	**LCSD Analysis Date**	:

	Laboratory Control Sample			Laboratory Control Duplicate					
Parameter	**True (mg/l)**	**Found (mg/l)**	**%R**	**True (mg/l)**	**Found (mg/l)**	**%R**	**RPD**	**Recovery Limits**	**RPD Limit**
Bromide	**0.800**	**0.815**	**102.**					**90-110**	**20**

Date Created: 11/11/21
Created By: Jason Hebert
File: PM11467-1
Page: 1

WETCHEM (WATER)

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Method	Holding Time	Container/Sample Preservation
Bromide	24959-67-9	0.05	0.0132	mg/l	90-110		90-110	20	20	300.0	28 days	1 - Plastic 250ml unpreserved
Chloride	16887-00-6	0.5	0.0839	mg/l	90-110		64-148	18	18	9056	28 days	1 - Plastic 250ml unpreserved
Chloride	16887-00-6	0.5	0.0839	mg/l	90-110		90-110	18	18	300.0	28 days	1 - Plastic 250ml unpreserved
Fluoride	16984-48-8	0.05	0.037	mg/l	90-110		81-124	15	15	9056	28 days	1 - Plastic 500ml unpreserved
Fluoride	16984-48-8	0.05	0.037	mg/l	90-110		90-110	15	15	300.0	28 days	1 - Plastic 500ml unpreserved
Nitrogen, Nitrate	14797-55-8	0.05	0.0128	mg/l	90-110		90-110	15	15	300.0	48 hours	1 - Plastic 250ml unpreserved
Nitrogen, Nitrate	14797-55-8	0.05	0.0128	mg/l	90-110		80-120	15	15	9056	48 hours	1 - Plastic 250ml unpreserved
Sulfate	14808-79-8	1	0.454	mg/l	90-110		72-124	20	20	9056	28 days	1 - Plastic 500ml unpreserved
Sulfate	14808-79-8	1	0.454	mg/l	90-110		90-110	20	20	300.0	28 days	1 - Plastic 500ml unpreserved

Please Note that the RL information provided in this table is calculated using a 100% Solids factor. (Soil/Solids only)
Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, Inc.

Calculations of Anions by Ion Chromatography

Aqueous samples:

The Dionex calculates the area of the peaks produced by the instrument, compares them to the peak area of the calibration standard stored in its memory, and calculates result in mg/L.

If the sample was manually diluted prior to analysis, the calculated mean must be manually multiplied by the dilution factor. The Reported Detection Limit is also multiplied by the same dilution factor.

$$\text{Result, mg/L} = \frac{\text{area - y-intercept}}{\text{slope}} \times \text{Dilution Factor}$$

Subcontracted Data

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
516-370-6000

September 12, 2024

Reports
Alpha Analytical
8 Walkup Drive
Westborough, MA 01581

RE: Project: L2450786
Pace Project No.: 70312804

Dear Reports:

Enclosed are the analytical results for sample(s) received by the laboratory on September 10, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Melville

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Brianna D. Rivera
brianna.rivera@pacelabs.com
516-370-6007
Project Manager

Enclosures

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Melville, NY 11747
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CERTIFICATIONS

Project: L2450786
Pace Project No.: 70312804

Pace Analytical Services, LLC - Melville, NY

575 Broad Hollow Rd, Melville, NY 11747
Connecticut Certification #: PH-0435
Delaware Certification # NY 10478
Maryland Certification #: 208
Massachusetts Certification #: M-NY026
New Hampshire Certification #: 2987
New Jersey Certification #: NY158
New York Certification #: 10478 Primary Accrediting Body
Pennsylvania Certification #: 68-00350
Rhode Island Certification #: LAO00340

REPORT OF LABORATORY ANALYSIS

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Melville, NY 11747
516-370-6000

SAMPLE SUMMARY

Project: L2450786
Pace Project No.: 70312804

Lab ID	Sample ID	Matrix	Date Collected	Date Received
70312804001	**MW-5A**	Water	09/05/24 13:53	09/10/24 08:00
70312804002	**MW-5B**	Water	09/05/24 13:55	09/10/24 08:00
70312804003	**MW-6A**	Water	09/05/24 12:50	09/10/24 08:00
70312804004	**MW-6B**	Water	09/05/24 12:47	09/10/24 08:00
70312804005	**MW-7A**	Water	09/05/24 11:55	09/10/24 08:00
70312804006	**MW-7B**	Water	09/05/24 12:00	09/10/24 08:00
70312804007	**MW-8A**	Water	09/05/24 08:00	09/10/24 08:00
70312804008	**MW-8B**	Water	09/05/24 08:55	09/10/24 08:00
70312804009	**MW-10A**	Water	09/05/24 10:10	09/10/24 08:00
70312804010	**MW-10B**	Water	09/05/24 10:16	09/10/24 08:00
70312804011	**DUP**	Water	09/05/24 00:00	09/10/24 08:00

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SAMPLE ANALYTE COUNT

Project: L2450786
Pace Project No.: 70312804

Lab ID	Sample ID	Method	Analysts	Analytes Reported
70312804001	**MW-5A**	SM22 4500-S2 F	JWM	1
70312804002	**MW-5B**	SM22 4500-S2 F	JWM	1
70312804003	**MW-6A**	SM22 4500-S2 F	JWM	1
70312804004	**MW-6B**	SM22 4500-S2 F	JWM	1
70312804005	**MW-7A**	SM22 4500-S2 F	JWM	1
70312804006	**MW-7B**	SM22 4500-S2 F	JWM	1
70312804007	**MW-8A**	SM22 4500-S2 F	JWM	1
70312804008	**MW-8B**	SM22 4500-S2 F	JWM	1
70312804009	**MW-10A**	SM22 4500-S2 F	JWM	1
70312804010	**MW-10B**	SM22 4500-S2 F	JWM	1
70312804011	**DUP**	SM22 4500-S2 F	JWM	1

PACE-MV = Pace Analytical Services - Melville

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ANALYTICAL RESULTS

Project: L2450786
Pace Project No.: 70312804

Sample: MW-5A **Lab ID: 70312804001** Collected: 09/05/24 13:53 Received: 09/10/24 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F W Sulfide Iodometric	Analytical Method: SM22 4500-S2 F Pace Analytical Services - Melville								
Sulfide	**<2.0**	mg/L	2.0	0.20	1		09/12/24 16:03		

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ANALYTICAL RESULTS

Project: L2450786
Pace Project No.: 70312804

Sample: MW-5B **Lab ID: 70312804002** Collected: 09/05/24 13:55 Received: 09/10/24 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F W Sulfide Iodometric	Analytical Method: SM22 4500-S2 F Pace Analytical Services - Melville								
Sulfide	**<2.0**	mg/L	2.0	0.20	1		09/12/24 16:06		

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ANALYTICAL RESULTS

Project: L2450786
Pace Project No.: 70312804

Sample: MW-6A **Lab ID: 70312804003** Collected: 09/05/24 12:50 Received: 09/10/24 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F W Sulfide Iodometric	Analytical Method: SM22 4500-S2 F Pace Analytical Services - Melville								
Sulfide	**<2.0**	mg/L	2.0	0.20	1		09/12/24 16:09		

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ANALYTICAL RESULTS

Project: L2450786
Pace Project No.: 70312804

Sample: MW-6B **Lab ID: 70312804004** Collected: 09/05/24 12:47 Received: 09/10/24 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F W Sulfide Iodometric	Analytical Method: SM22 4500-S2 F Pace Analytical Services - Melville								
Sulfide	**<2.0**	mg/L	2.0	0.20	1		09/12/24 16:11		

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ANALYTICAL RESULTS

Project: L2450786
Pace Project No.: 70312804

Sample: MW-7A **Lab ID: 70312804005** Collected: 09/05/24 11:55 Received: 09/10/24 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F W Sulfide Iodometric	Analytical Method: SM22 4500-S2 F Pace Analytical Services - Melville								
Sulfide	**<2.0**	mg/L	2.0	0.20	1		09/12/24 16:14		

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ANALYTICAL RESULTS

Project: L2450786
Pace Project No.: 70312804

Sample: MW-7B **Lab ID: 70312804006** Collected: 09/05/24 12:00 Received: 09/10/24 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F W Sulfide Iodometric	Analytical Method: SM22 4500-S2 F Pace Analytical Services - Melville								
Sulfide	**<2.0**	mg/L	2.0	0.20	1		09/12/24 16:16		

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ANALYTICAL RESULTS

Project: L2450786
Pace Project No.: 70312804

Sample: MW-8A **Lab ID: 70312804007** Collected: 09/05/24 08:00 Received: 09/10/24 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F W Sulfide Iodometric	Analytical Method: SM22 4500-S2 F Pace Analytical Services - Melville								
Sulfide	**<2.0**	mg/L	2.0	0.20	1		09/12/24 16:19		

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ANALYTICAL RESULTS

Project: L2450786
Pace Project No.: 70312804

Sample: MW-8B **Lab ID: 70312804008** Collected: 09/05/24 08:55 Received: 09/10/24 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F W Sulfide Iodometric	Analytical Method: SM22 4500-S2 F Pace Analytical Services - Melville								
Sulfide	**<2.0**	mg/L	2.0	0.20	1		09/12/24 16:22		

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ANALYTICAL RESULTS

Project: L2450786
Pace Project No.: 70312804

Sample: MW-10A **Lab ID: 70312804009** Collected: 09/05/24 10:10 Received: 09/10/24 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F W Sulfide Iodometric	Analytical Method: SM22 4500-S2 F Pace Analytical Services - Melville								
Sulfide	**<2.0**	mg/L	2.0	0.20	1		09/12/24 16:25		

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ANALYTICAL RESULTS

Project: L2450786
Pace Project No.: 70312804

Sample: MW-10B **Lab ID: 70312804010** Collected: 09/05/24 10:16 Received: 09/10/24 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F W Sulfide Iodometric	Analytical Method: SM22 4500-S2 F Pace Analytical Services - Melville								
Sulfide	**<2.0**	mg/L	2.0	0.20	1		09/12/24 16:28		

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ANALYTICAL RESULTS

Project: L2450786
Pace Project No.: 70312804

Sample: DUP **Lab ID: 70312804011** Collected: 09/05/24 00:00 Received: 09/10/24 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F W Sulfide Iodometric	Analytical Method: SM22 4500-S2 F Pace Analytical Services - Melville								
Sulfide	**<2.0**	mg/L	2.0	0.20	1		09/12/24 16:31		

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
516-370-6000

QUALITY CONTROL DATA

Project: L2450786
Pace Project No.: 70312804

QC Batch: 362362 | Analysis Method: SM22 4500-S2 F
QC Batch Method: SM22 4500-S2 F | Analysis Description: 4500S2F W Sulfide Iodometric
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70312804001, 70312804002, 70312804003, 70312804004, 70312804005, 70312804006, 70312804007, 70312804008, 70312804009, 70312804010, 70312804011

METHOD BLANK: 1886007 Matrix: Water
Associated Lab Samples: 70312804001, 70312804002, 70312804003, 70312804004, 70312804005, 70312804006, 70312804007, 70312804008, 70312804009, 70312804010, 70312804011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	2.0	0.20	09/12/24 15:55	

LABORATORY CONTROL SAMPLE & LCSD: 1886008 1886009

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Sulfide	mg/L	14	14.0	14.0	100	100	85-115	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: L2450786
Pace Project No.: 70312804

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: L2450786
Pace Project No.: 70312804

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
70312804001	**MW-5A**	SM22 4500-S2 F	362362		
70312804002	**MW-5B**	SM22 4500-S2 F	362362		
70312804003	**MW-6A**	SM22 4500-S2 F	362362		
70312804004	**MW-6B**	SM22 4500-S2 F	362362		
70312804005	**MW-7A**	SM22 4500-S2 F	362362		
70312804006	**MW-7B**	SM22 4500-S2 F	362362		
70312804007	**MW-8A**	SM22 4500-S2 F	362362		
70312804008	**MW-8B**	SM22 4500-S2 F	362362		
70312804009	**MW-10A**	SM22 4500-S2 F	362362		
70312804010	**MW-10B**	SM22 4500-S2 F	362362		
70312804011	**DUP**	SM22 4500-S2 F	362362		

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pg 1 of 2

Subcontract

Pace Analytical (M
575 Broad Hollow
Melville, NY 11747

WO# : 70312804

70312804

Alpha Job Number
L2450786

Client Information	Project Information	Regulatory Requirements/Report Limits
Client: Alpha Analytical Labs Address: Eight Walkup Drive Westborough, MA 01581-1019 Phone: 508.844.4115 Email: Mitchell.Ostrowski@pacelabs.com	Project Location: NY Project Manager: Mitchell Ostrowski **Turnaround & Deliverables Information** Due Date: Deliverables:	State/Federal Program: Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2450786

Report to include Method Blank, LCS/LCSD:

Additional Comments: Invoices to: invoices@pacelabs.coupahost.com Reports to: west.subreports@pacelabs.com

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
	MW-5A	09-05-24 13:53	WATER	Sulfide	
	MW-5B	09-05-24 13:55	WATER	Sulfide	
	MW-6A	09-05-24 12:50	WATER	Sulfide	
	MW-6B	09-05-24 12:47	WATER	Sulfide	
	MW-7A	09-05-24 11:55	WATER	Sulfide	
	MW-7B	09-05-24 12:00	WATER	Sulfide	
	MW-8A	09-05-24 08:00	WATER	Sulfide	
	MW-8B	09-05-24 08:55	WATER	Sulfide	

	Relinquished By:	Date/Time:	Received By:	Date/Time:
		9/9/24 1805	PACE	9/9/24 1805
	PACE	9/9/24 2240		9/10/24 0052
		9/10/24	PACE	9/10 4:10
Form No: AL_subcoc		9/10 8:00		

RMJ 9/10/24 8:00

1.9 (W)

pg 2052

WO# : 70312804
PM: BDR Due Date: 09/17/24
CLIENT: ALPHA

ALPHA ANALYTICAL
World Class Chemistry

Subcontract Ch

Pace Analytical (Melvil
575 Broad Hollow Roa
Melville, NY 11747

Alpha Job Number
L2450786

Client Information	Project Information	Regulatory Requirements/Report Limits
Client: Alpha Analytical Labs Address: Eight Walkup Drive Westborough, MA 01581-1019 Phone: 508.844.4115 Email: Mitchell.Ostrowski@pacelabs.com	Project Location: NY Project Manager: Mitchell Ostrowski **Turnaround & Deliverables Information** Due Date: Deliverables:	State/Federal Program: Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2450786

Report to include Method Blank, LCS/LCSD:

Additional Comments: Send all results/reports to subreports@alphalab.com

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
	MW-10A	09-05-24 10:10	WATER	Sulfide	
	MW-10B	09-05-24 10:16	WATER	Sulfide	
	DUP	09-05-24 00:00	WATER	Sulfide	

	Relinquished By:	Date/Time:	Received By:	Date/Time:
		9/9/24 1805	PACE	9/9/24 1805
	PACE	9/9/24 2240	PACE	9/10/24 0052
	PACE	9/10/24		9/10 4:10
Form No: AL_subcoc		9/10 8:00		

1-9

Client: ALPHA

Work ID: L2450786

Profile #: 5378

COC Page _____ of _____

☐ Use Point Number Spreadsheet ☐ Multiday Project

☐ Add SCLOGFD to first sample for field charge

COC Line Item	Matrix	VG9U	VG9C	VG9H	VG9S	VG9T	DG9Y	DG9P	DG9A	DG6T	DG9S	AG4U	AG3U	AG2U	AG1U	AG34	AG3S	AG4E	AG3T	AG2R	AG1T	AG1H	AG1A	AG5U	AG44	CG1U	WG9O	WG4O	BP4U	BP3U	BP2U	BP1U	BP3S	BP2S	BP4N	BP3N	BP2N	BP3C	BP3T	BP35	BP3R	BP1Z	BP1N	BP1B	SP5T	R	WG2U	WGFU	WGKU	WGDU	ZPLC	GN	WP	TEDL	BGIH	LLHG	BG1N	IOC	SOC	8932
1		

DC#: Title: ENV-FRM-MELV-0024 v07 ,SCUR
Effective Date: 4/12/2024

WO#: 70312804
PM: BDR Due Date: 09/17/24
CLIENT: ALPHA

Client Name: ALPHA Project #

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #:

Custody Seal on Cooler/Box Present: Yes No Seals intact: Yes No Temperature Blank Present: Yes No
Packing Material: Bubble Wrap Bubble Bags Ziplo None Other Type of Ice: Wet Blue None

Thermometer Used: THR4 Correction Factor: +0.3 Samples on ice, cooling process has begun
Cooler Temperature(°C): 1.9 Cooler Temperature Corrected(°C): 2.2 Date/Time 5035A kits placed in freezer
Temp should be above freezing to 6 °C

USDA Regulated Soil (N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA (check map)? Yes No

Did samples orignate from a foreign source including Hawaii and Puerto Rico)? Yes No

If Yes to either question, fill out a Regulated Soil Checklist (ENV-FRM-MELV-0076) and include with SCUR/COC paperwork.

Date and Initials of person examining contents: 9/11/24 ABB

		COMMENTS:
Chain of Custody Present:	Yes No	1.
Chain of Custody Filled Out:	Yes No	2.
Chain of Custody Relinquished:	Yes No	3.
Sampler Name & Signature on COC:	Yes No N/A	4.
Samples Arrived within Hold Time:	Yes No	5.
Short Hold Time Analysis (<72hr):	Yes No	6.
Rush Turn Around Time Requested	Yes No	7.
Sufficient Volume: (Triple volume provided for MS/MSD)	Yes No	8.
Correct Containers Used:	Yes No	9.
-Pace Containers Used:	Yes No	
Containers Intact:	Yes No	10.
Filtered volume received for Dissolved tests	Yes No N/A	11. Note: if sediment is visible in the dissolved container
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: SL WT OIL OTHER	Yes No	12.

Date and Initials of person checking preservation: 9/11/24 AEB

All containers needing preservation have been checked. pH paper Lot # 205324	Yes No N/A	13. HNO3 H2SO4 NaOH HCl Sample #
All containers needing preservation are found to be in compliance with method recommendation? (HNO_3, H_2SO_4, HCl, NaOH>9 Sulfide, NAOH>12 Cyanide) Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water). Per Method, VOA pH is checked after analysis	Yes No N/A	Initial when completed: / Lot # of added preservative: / Date/Time preservative added:
Samples checked for dechlorination: KI starch test strips Lot # Residual chlorine strips Lot #	Yes No N/A	14. Positive for Res. Chlorine? Y N
SM 4500 CN samples checked for sul Lead Acetate Strips Lot #	Yes No N/A	15. Positive for Sulfide? Y N
Headspace in ALK Bottle (>6mm):	Yes No N/A	
Headspace in VOA Vials (>6mm):	Yes No N/A	16.
Trip Blank Present:	Yes No N/A	17
Trip Blank Custody Seals Present	Yes No N/A	

Client Notification/ Resolution: Field Data Required? Y / N
Person Contacted: Date/Time:
Comments/ Resolution:

* PM (Project Manager) review (which includes the SCUR) is documented electronically in LIMS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

September 15, 2024

Pace MA
Pace MA
Eight Walkup Drive
Westborough, MA 01581

RE: Project: L2450786
Pace Project No.: 50381973

Dear Pace MA:

Enclosed are the analytical results for sample(s) received by the laboratory on September 10, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Indianapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tina Sayer

Tina Sayer
tina.sayer@pacelabs.com
(317)228-3127
Project Manager

Enclosures

cc: Mitchell Ostrowski, Pace MA

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Indianapolis, IN 46268
(317)228-3100

CERTIFICATIONS

Project: L2450786
Pace Project No.: 50381973

Pace Analytical Services Indianapolis
7726 Moller Road, Indianapolis, IN 46268
Illinois Accreditation #: 200074
Indiana Drinking Water Laboratory #: C-49-06
Kansas/TNI Certification #: E-10177
Kentucky UST Agency Interest #: 80226
Kentucky WW Laboratory ID #: 98019
Michigan Drinking Water Laboratory #9050
Oklahoma Laboratory #: 9204
Texas Certification #: T104704355
Washington Dept of Ecology #: C1081
Wisconsin Laboratory #: 999788130
USDA Foreign Soil Permit #: 525-23-13-23119
USDA Compliance Agreement #: IN-SL-22-001

REPORT OF LABORATORY ANALYSIS

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Indianapolis, IN 46268
(317)228-3100

SAMPLE SUMMARY

Project: L2450786
Pace Project No.: 50381973

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50381973001	**MW-5A**	Water	09/05/24 13:53	09/10/24 09:30
50381973002	**MW-5B**	Water	09/05/24 13:55	09/10/24 09:30
50381973003	**MW-6A**	Water	09/05/24 12:50	09/10/24 09:30
50381973004	**MW-6B**	Water	09/05/24 12:47	09/10/24 09:30
50381973005	**MW-7A**	Water	09/05/24 11:55	09/10/24 09:30
50381973006	**MW-7B**	Water	09/05/24 12:00	09/10/24 09:30
50381973007	**MW-8A**	Water	09/05/24 08:00	09/10/24 09:30
50381973008	**MW-8B**	Water	09/05/24 08:55	09/10/24 09:30
50381973009	**MW-10A**	Water	09/05/24 10:10	09/10/24 09:30
50381973010	**MW-10B**	Water	09/05/24 10:16	09/10/24 09:30
50381973011	**DUP**	Water	09/05/24 00:00	09/10/24 09:30

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SAMPLE ANALYTE COUNT

Project: L2450786
Pace Project No.: 50381973

Lab ID	Sample ID	Method	Analysts	Analytes Reported
50381973001	**MW-5A**	EPA 9056	DMP1	1
50381973002	**MW-5B**	EPA 9056	DMP1	1
50381973003	**MW-6A**	EPA 9056	DMP1	1
50381973004	**MW-6B**	EPA 9056	DMP1	1
50381973005	**MW-7A**	EPA 9056	DMP1	1
50381973006	**MW-7B**	EPA 9056	DMP1	1
50381973007	**MW-8A**	EPA 9056	DMP1	1
50381973008	**MW-8B**	EPA 9056	DMP1	1
50381973009	**MW-10A**	EPA 9056	DMP1	1
50381973010	**MW-10B**	EPA 9056	DMP1	1
50381973011	**DUP**	EPA 9056	DMP1	1

PASI-I = Pace Analytical Services - Indianapolis

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ANALYTICAL RESULTS

Project: L2450786
Pace Project No.: 50381973

Sample: MW-5A **Lab ID: 50381973001** Collected: 09/05/24 13:53 Received: 09/10/24 09:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 Iodide by IC	Analytical Method: EPA 9056 Pace Analytical Services - Indianapolis							
Iodide	ND	mg/L	0.50	1		09/11/24 11:57		

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ANALYTICAL RESULTS

Project: L2450786
Pace Project No.: 50381973

Sample: MW-5B **Lab ID: 50381973002** Collected: 09/05/24 13:55 Received: 09/10/24 09:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 Iodide by IC	Analytical Method: EPA 9056 Pace Analytical Services - Indianapolis							
Iodide	ND	mg/L	0.50	1		09/11/24 12:15		

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ANALYTICAL RESULTS

Project: L2450786
Pace Project No.: 50381973

Sample: MW-6A **Lab ID: 50381973003** Collected: 09/05/24 12:50 Received: 09/10/24 09:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 Iodide by IC	Analytical Method: EPA 9056 Pace Analytical Services - Indianapolis							
Iodide	ND	mg/L	0.50	1		09/11/24 12:33		

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ANALYTICAL RESULTS

Project: L2450786
Pace Project No.: 50381973

Sample: MW-6B **Lab ID: 50381973004** Collected: 09/05/24 12:47 Received: 09/10/24 09:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 Iodide by IC	Analytical Method: EPA 9056 Pace Analytical Services - Indianapolis							
Iodide	ND	mg/L	0.50	1		09/11/24 12:51		

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ANALYTICAL RESULTS

Project: L2450786
Pace Project No.: 50381973

Sample: MW-7A **Lab ID: 50381973005** Collected: 09/05/24 11:55 Received: 09/10/24 09:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 Iodide by IC	Analytical Method: EPA 9056 Pace Analytical Services - Indianapolis							
Iodide	ND	mg/L	0.50	1		09/11/24 13:08		

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ANALYTICAL RESULTS

Project: L2450786
Pace Project No.: 50381973

Sample: MW-7B **Lab ID: 50381973006** Collected: 09/05/24 12:00 Received: 09/10/24 09:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 Iodide by IC	Analytical Method: EPA 9056 Pace Analytical Services - Indianapolis							
Iodide	ND	mg/L	0.50	1		09/11/24 13:25		

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(317)228-3100

ANALYTICAL RESULTS

Project: L2450786
Pace Project No.: 50381973

Sample: MW-8A **Lab ID: 50381973007** Collected: 09/05/24 08:00 Received: 09/10/24 09:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 Iodide by IC	Analytical Method: EPA 9056 Pace Analytical Services - Indianapolis							
Iodide	ND	mg/L	0.50	1		09/11/24 13:42		

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Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: L2450786
Pace Project No.: 50381973

Sample: MW-8B **Lab ID: 50381973008** Collected: 09/05/24 08:55 Received: 09/10/24 09:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 Iodide by IC	Analytical Method: EPA 9056 Pace Analytical Services - Indianapolis							
Iodide	ND	mg/L	0.50	1		09/11/24 13:59		

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ANALYTICAL RESULTS

Project: L2450786
Pace Project No.: 50381973

Sample: MW-10A **Lab ID: 50381973009** Collected: 09/05/24 10:10 Received: 09/10/24 09:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 Iodide by IC	Analytical Method: EPA 9056 Pace Analytical Services - Indianapolis							
Iodide	ND	mg/L	0.50	1		09/11/24 14:50		

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(317)228-3100

ANALYTICAL RESULTS

Project: L2450786
Pace Project No.: 50381973

Sample: MW-10B **Lab ID: 50381973010** Collected: 09/05/24 10:16 Received: 09/10/24 09:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 Iodide by IC	Analytical Method: EPA 9056 Pace Analytical Services - Indianapolis							
Iodide	ND	mg/L	0.50	1		09/11/24 15:07		

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7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: L2450786
Pace Project No.: 50381973

Sample: DUP **Lab ID: 50381973011** Collected: 09/05/24 00:00 Received: 09/10/24 09:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 Iodide by IC	Analytical Method: EPA 9056 Pace Analytical Services - Indianapolis							
Iodide	ND	mg/L	0.50	1		09/11/24 15:24		

REPORT OF LABORATORY ANALYSIS

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7726 Moller Road
Indianapolis, IN 46268
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QUALITY CONTROL DATA

Project: L2450786
Pace Project No.: 50381973

QC Batch: 808395 — Analysis Method: EPA 9056
QC Batch Method: EPA 9056 — Analysis Description: 9056 Iodide by IC
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50381973001, 50381973002, 50381973003, 50381973004, 50381973005, 50381973006, 50381973007, 50381973008, 50381973009, 50381973010, 50381973011

METHOD BLANK: 3696993 — Matrix: Water
Associated Lab Samples: 50381973001, 50381973002, 50381973003, 50381973004, 50381973005, 50381973006, 50381973007, 50381973008, 50381973009, 50381973010, 50381973011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Iodide	mg/L	ND	0.50	09/11/24 11:23	

LABORATORY CONTROL SAMPLE: 3696994

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iodide	mg/L	5	4.9	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3696995 3696996

Parameter	Units	50381975005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iodide	mg/L	ND	5	5	5.0	5.0	101	101	80-120	0	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALIFIERS

Project: L2450786
Pace Project No.: 50381973

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: L2450786
Pace Project No.: 50381973

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50381973001	**MW-5A**	EPA 9056	808395		
50381973002	**MW-5B**	EPA 9056	808395		
50381973003	**MW-6A**	EPA 9056	808395		
50381973004	**MW-6B**	EPA 9056	808395		
50381973005	**MW-7A**	EPA 9056	808395		
50381973006	**MW-7B**	EPA 9056	808395		
50381973007	**MW-8A**	EPA 9056	808395		
50381973008	**MW-8B**	EPA 9056	808395		
50381973009	**MW-10A**	EPA 9056	808395		
50381973010	**MW-10B**	EPA 9056	808395		
50381973011	**DUP**	EPA 9056	808395		

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WO# : 50381973

50381973

World Class Chemistry

Subcontract Chain of Custody

Pace Analytical (Indianapolis, IN)
7726 Moller Road
Indianapolis, IN 46268

Alpha Job Number
L2450786

Client Information	Project Information	Regulatory Requirements/Report Limits
Client: Alpha Analytical Labs Address: Eight Walkup Drive Westborough, MA 01581-1019 Phone: 508.844.4115 Email: Mitchell.Ostrowski@pacelabs.com	Project Location: NY Project Manager: Mitchell Ostrowski **Turnaround & Deliverables Information** Due Date: Deliverables:	State/Federal Program: Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2450786

Report to include Method Blank, LCS/LCSD:

Additional Comments: Invoices to: invoices@pacelabs.coupahost.com Reports to: west.subreports@pacelabs.com

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
	MW-5A	09-05-24 13:53	WATER	Iodide	001
	MW-5B	09-05-24 13:55	WATER	Iodide	002
	MW-6A	09-05-24 12:50	WATER	Iodide	003
	MW-6B	09-05-24 12:47	WATER	Iodide	004
	MW-7A	09-05-24 11:55	WATER	Iodide	005
	MW-7B	09-05-24 12:00	WATER	Iodide	006
	MW-8A	09-05-24 08:00	WATER	Iodide	007
	MW-8B	09-05-24 08:55	WATER	Iodide	008

	Relinquished By:	Date/Time:	Received By:	Date/Time:
		9/9/24	Fed ex	9/9/24
	Fed ex	9/10/24 9:30	Tabitha Schelle Pace	9/10/24 9:30
Form No: AL_subcoc				

ALPHA ANALYTICAL
World Class Chemistry

Subcontract Chain of Custody

Pace Analytical (Indianapolis, IN)
7726 Moller Road
Indianapolis, IN 46268

Alpha Job Number
L2450786

Client Information

Client: Alpha Analytical Labs
Address: Eight Walkup Drive
Westborough, MA 01581-1019

Phone: 508.844.4115
Email: Mitchell.Ostrowski@pacelabs.com

Project Information

Project Location: NY
Project Manager: Mitchell Ostrowski

Turnaround & Deliverables Information

Due Date:
Deliverables:

Regulatory Requirements/Report Limits

State/Federal Program:
Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2450786

Report to include Method Blank, LCS/LCSD:

Additional Comments: Send all results/reports to subreports@alphalab.com

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
	MW-10A	09-05-24 10:10	WATER	Iodide	009
	MW-10B	09-05-24 10:16	WATER	Iodide	010
	DUP	09-05-24 00:00	WATER	Iodide	011

	Relinquished By:	Date/Time:	Received By:	Date/Time:
		9/9/24	Fedex	9/9/24
	Fedex	9/10/24 9:30	Tabitha Schelen	9/10/24 9:30
Form No: AL_subcoc				

F-IN-Q-290-rev.28, 29Jul2024

SAMPLE CONDITION UPON RECEIPT FORM

Date/Time and Initials of person examining contents: 9/10/24 10.55 TS

1. Courier: ☑ FED EX ☐ UPS ☐ CLIENT ☐ PACE ☐ NOW/JETT ☐ OTHER _____
2. Custody Seal on Cooler/Box Present: ☐ Yes ☑ No
   (If yes)Seals Intact: ☐ Yes ☐ No (leave blank if no seals were present)
3. Thermometer: 1 2 3 4 5 6 7 8 9 (A) B C D E F G H I
4. Cooler Temperature(s): 1.1/2.1 (Initial/Corrected) RECORD TEMPS OF ALL COOLERS RECEIVED (use Comments below to add more)
5. Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other _____
6. Ice Type: ☑ Wet ☐ Blue ☐ None
7. Was the PM notified of out of temp cooler?: ☐ Yes ☐ No
   Cooler temp should be above freezing to 6°C

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
USDA Regulated Soils? (HI, ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		✓	All containers needing acid/base preservation have been pH CHECKED?: **Exceptions: VOA, coliform, LLHg, O&G, RAD CHEM, and any container with a septum cap or preserved with HCl.** **Circle: HNO3 (<2) H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9)** Any non-conformance to pH recommendations will be noted on the container count form			✓
Short Hold Time Analysis (48 hours or less)? Analysis:		✓				
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:			Present	Absent	N/A
			Residual Chlorine Check (SVOC 625 Pest/PCB 608)			✓
Rush TAT Requested (4 days or less):		✓	Residual Chlorine Check (Total/Amenable/Free Cyanide)			✓
Custody Signatures Present?	✓		Headspace Wisconsin Sulfide?			✓
Containers Intact?:	✓		Headspace in VOA Vials (>6mm): See Containter Count form for details	Present	Absent	No VOA Vials Sent ✓
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID	✓		Trip Blank Present?		✓	
Extra labels on Terracore Vials? (soils only)			Trip Blank Custody Seals?:			✓

COMMENTS:

COC PAGE 1 of 2

Sample Container Count

** Place a PINK dot on containers that are out of conformance **

COC Line Item	WGFU	WGKU BG1U	MeOH (only) SBS DI R	DG9H VG9H	VOA VIAL HS (>6mm)	VG9U DG9U	VG9T	AMBER GLASS: AG0U	AG1H	AG1U	AG3U	AG3S	AG3SF	AG3B	PLASTIC: BP1U	BP1N	BP2U	BP3U	BP3N	BP3F	BP3S	BP3B	BP3Z	OTHER: CG3H	CG3F	Syringe Kit			Matrix
1																		1											
2																		↓											↓
3																													
4																													
5																													
6																													
7																													
8																		↓											
9																													
10																													
11																													
12																													

Nitric	Sulfuric	Sodium Hydroxide	Sodium Hydroxide/ ZnAc
Red	Yellow	Green	Black
HNO3 <2	H2SO4 <2	NaOH >10	NaOH/Zn Ac >9

ontainer Codes

Glass

G9H	40mL HCl amber voa vial	BG1T	1L Na Thiosulfate clear glass
G9P	40mL TSP amber vial	BG1U	1L unpreserved glass
G9S	40mL H2SO4 amber vial	CG3H	250mL HCl Clear Glass
G9T	40mL Na Thio amber vial	CG3U	250mL Unpres Clear Glass
G9U	40mL unpreserved amber vial	AG0U	100mL unpres amber glass
G9H	40mL HCl clear vial	AG1H	1L HCl amber glass
G9T	40mL Na Thio. clear vial	AG1S	1L H2SO4 amber glass
G9U	40mL unpreserved clear vial	AG1T	1L Na Thiosulfate amber glass
I	40mL w/hexane wipe vial	AG1U	1liter unpres amber glass
GKU	8oz unpreserved clear jar	AG2N	500mL HNO3 amber glass
GFU	4oz clear soil jar	AG2S	500mL H2SO4 amber glass
FU	4oz unpreserved amber wide	AG2U	500mL unpres amber glass
G3H	250mL clear glass HCl	AG3S	250mL H2SO4 amber glass
G3F	250mL clear glass HCl, Field Filter	AG3SF	250mL H2SO4 amb glass -field filtered
G1H	1L HCl clear glass	AG3U	250mL unpres amber glass
G1S	1L H2SO4 clear glass	AG3B	250mL NaOH amber glass

Plastic

BP1B	1L NaOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn, Ac
BP2N	500mL HNO3 plastic
BP2C	500mL NaOH plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Ac
BP3B	250mL NaOH plastic
BP3N	250mL HNO3 plastic
BP3F	250mL HNO3 plastic-field filtered
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, ZnAc plastic

NT3U	Non Teflon 250mL unpreserved plastic
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic

Miscellaneous

Syringe Kit	LL Cr+6 sampling kit
ZPLC	Ziploc Bag
R	Terracore Kit
SP5T	120mL Coliform Sodium Thiosulfate
GN	General Container
U	Summa Can (air sample)
WT	Water
SL	Solid
OL:	Oil
NAL	Non-aqueous liquid
WP	Wipe

COC PAGE 2 of 2

Sample Container Count

** Place a PINK dot on containers that are out of conformance **

									AMBER GLASS							PLASTIC								OTHER							
COC Line Item	WGFU	WGKU BG1U	MeOH (only) SBS DI R	DG9H VG9H	VOA VIAL HS (>6mm)	VG9U DG9U	VG9T	AG0U	AG1H	AG1U	AG3U	AG3S	AG3SF	AG3B	BP1U	BP1N	BP2U	BP3U	BP3N	BP3F	BP3S	BP3B	BP3Z	CG3H	CG3F	Syringe Kit			Matrix	Nitric Red HNO3 <2	Sulfuric Yellow H2SO4 <2	Sodium Hydroxide Green NaOH >10	Sodium Hydroxide/ ZnAc Black NaOH/Zn Ac >9
1																		1											SL				
2																		↓											↓				
3																																	
4																																	
5																																	
6																																	
7																																	
8																																	
9																																	
10																																	
11																																	
12																																	

ontainer Codes

Glass

G9H	40mL HCl amber voa vial	BG1T	1L Na Thiosulfate clear glass
G9P	40mL TSP amber vial	BG1U	1L unpreserved glass
G9S	40mL H2SO4 amber vial	CG3H	250mL HCl Clear Glass
G9T	40mL Na Thio amber vial	CG3U	250mL Unpres Clear Glass
G9U	40mL unpreserved amber vial	AG0U	100mL unpres amber glass
G9H	40mL HCl clear vial	AG1H	1L HCl amber glass
G9T	40mL Na Thio. clear vial	AG1S	1L H2SO4 amber glass
G9U	40mL unpreserved clear vial	AG1T	1L Na Thiosulfate amber glass
I	40mL w/hexane wipe vial	AG1U	1liter unpres amber glass
GKU	8oz unpreserved clear jar	AG2N	500mL HNO3 amber glass
GFU	4oz clear soil jar	AG2S	500mL H2SO4 amber glass
FU	4oz unpreserved amber wide	AG2U	500mL unpres amber glass
G3H	250mL clear glass HCl	AG3S	250mL H2SO4 amber glass
3F	250mL clear glass HCl, Field Filter	AG3SF	250mL H2SO4 amb glass -field filtered
1H	1L HCl clear glass	AG3U	250mL unpres amber glass
1S	1L H2SO4 clear glass	AG3B	250mL NaOH amber glass

Plastic

BP1B	1L NaOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn, Ac
BP2N	500mL HNO3 plastic
BP2C	500mL NaOH plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Ac
BP3B	250mL NaOH plastic
BP3N	250mL HNO3 plastic
BP3F	250mL HNO3 plastic-field filtered
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, ZnAc plastic

NT3U	Non Teflon 250mL unpreserved plastic
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic

Miscellaneous

Syringe Kit	LL Cr+6 sampling kit
ZPLC	Ziploc Bag
R	Terracore Kit
SP5T	120mL Coliform Sodium Thiosulfate
GN	General Container
U	Summa Can (air sample)
WT	Water
SL	Solid
OL:	Oil
NAL	Non-aqueous liquid
WP	Wipe

Laboratory Report

Report prepared for:
Mitchell Ostrowski
Pace Analytical Services, LLC
8 Walkup Dr
Westborough, MA 01581
Email: mitchell.ostrowski@pacelabs.com, west.subreports@alphalab.com

Report prepared by:
Debbie S Robertson

Purchase Order:

For further assistance, contact:
Debbie S Robertson
Report Production Coordinator
PO Box 51610
Knoxville, TN 37950 -1610
(865) 546-1335
debbierobertson@galbraith.com

Sample: MW-4A Alpha Job #L2450786
Lab ID: 2024-U-7947 **Received:** 2024-09-10

Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)
711: Ammonium					
	GLI Procedure ME-4D	< 5 ppm	As Received	204.15 mg	2024-09-16

Sample: MW-4B Alpha Job #L2450786
Lab ID: 2024-U-7948 **Received:** 2024-09-10

Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)
711: Ammonium					
	GLI Procedure ME-4D	< 5 ppm	As Received	204.01 mg	2024-09-16

Sample: MW-3A Alpha Job #L2450786
Lab ID: 2024-U-7949 **Received:** 2024-09-10

Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)
711: Ammonium					
	GLI Procedure ME-4D	< 5 ppm	As Received	203.92 mg	2024-09-16

Sample: MW-3B Alpha Job #L2450786
Lab ID: 2024-U-7950 **Received:** 2024-09-10

Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)
711: Ammonium					
	GLI Procedure ME-4D	< 5 ppm	As Received	203.71 mg	2024-09-16

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Sample: MW-2A Alpha Job #L2450786
Lab ID: 2024-U-7951 **Received:** 2024-09-10

Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)
711: Ammonium					
	GLI Procedure ME-4D	< 5 ppm	As Received	203.47 mg	2024-09-16

Sample: MW-2A-MS Alpha Job #L2450786
Lab ID: 2024-U-7952 **Received:** 2024-09-10

Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)
711: Ammonium					
	GLI Procedure ME-4D	< 5 ppm	As Received	203.91 mg	2024-09-16

Sample: MW-2A-MSD Alpha Job #L2450786
Lab ID: 2024-U-7953 **Received:** 2024-09-10

Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)
711: Ammonium					
	GLI Procedure ME-4D	< 5 ppm	As Received	202.80 mg	2024-09-16

Sample: MW-2B Alpha Job #L2450786
Lab ID: 2024-U-7954 **Received:** 2024-09-10

Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)
711: Ammonium					
	GLI Procedure ME-4D	< 5 ppm	As Received	205.07 mg	2024-09-16

Sample: MW-9A Alpha Job #L2450786
Lab ID: 2024-U-7955 **Received:** 2024-09-10

Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)
711: Ammonium					
	GLI Procedure ME-4D	< 5 ppm	As Received	218.14 mg	2024-09-16

Sample: MW-9B Alpha Job #L2450786
Lab ID: 2024-U-7956 **Received:** 2024-09-10

Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)
711: Ammonium					
	GLI Procedure ME-4D	< 5 ppm	As Received	211.27 mg	2024-09-16

Sample: MW-5A Alpha Job #L2450786

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Lab ID: 2024-U-7957 **Received:** 2024-09-10

Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)
711: Ammonium					
	GLI Procedure ME-4D	< 5 ppm	As Received	223.12 mg	2024-09-16

Sample: MW-5B Alpha Job #L2450786
Lab ID: 2024-U-7958 **Received:** 2024-09-10

Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)
711: Ammonium					
	GLI Procedure ME-4D	< 5 ppm	As Received	206.78 mg	2024-09-16

Sample: MW-6A Alpha Job #L2450786
Lab ID: 2024-U-7959 **Received:** 2024-09-10

Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)
711: Ammonium					
	GLI Procedure ME-4D	< 5 ppm	As Received	213.17 mg	2024-09-16

Sample: MW-6B Alpha Job #L2450786
Lab ID: 2024-U-7960 **Received:** 2024-09-10

Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)
711: Ammonium					
	GLI Procedure ME-4D	< 5 ppm	As Received	210.61 mg	2024-09-17

Sample: MW-7A Alpha Job #L2450786
Lab ID: 2024-U-7961 **Received:** 2024-09-10

Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)
711: Ammonium					
	GLI Procedure ME-4D	< 5 ppm	As Received	231.22 mg	2024-09-17

Sample: MW-7B Alpha Job #L2450786
Lab ID: 2024-U-7962 **Received:** 2024-09-10

Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)
711: Ammonium					
	GLI Procedure ME-4D	< 5 ppm	As Received	220.13 mg	2024-09-17

Sample: MW-8A Alpha Job #L2450786
Lab ID: 2024-U-7963 **Received:** 2024-09-10

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Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)
711: Ammonium					
	GLI Procedure ME-4D	< 5 ppm	As Received	215.61 mg	2024-09-17

Sample: MW-8B Alpha Job #L2450786
Lab ID: 2024-U-7964 **Received:** 2024-09-10

Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)
711: Ammonium					
	GLI Procedure ME-4D	< 5 ppm	As Received	218.31 mg	2024-09-17

Sample: MW-10A Alpha Job #L2450786
Lab ID: 2024-U-7965 **Received:** 2024-09-10

Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)
711: Ammonium					
	GLI Procedure ME-4D	< 5 ppm	As Received	202.58 mg	2024-09-17

Sample: MW-10B Alpha Job #L2450786
Lab ID: 2024-U-7966 **Received:** 2024-09-10

Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)
711: Ammonium					
	GLI Procedure ME-4D	< 5 ppm	As Received	202.52 mg	2024-09-17

Sample: DUP Alpha Job #L2450786
Lab ID: 2024-U-7967 **Received:** 2024-09-10

Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)
711: Ammonium					
	GLI Procedure ME-4D	< 5 ppm	As Received	202.51 mg	2024-09-17

Signatures:

Created By: Debbie.S.Robertson 2024-09-18T20:51:26.833-04:00
Published By: Debbie.S.Robertson 2024-09-18T20:51:51.387-04:00

- Physical signatures are on file.
- "Published By" signature indicates authorized release of data.

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Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

September 27, 2024

Melissa Gulli
Alpha Analytical
8 Walkup Drive
Westborough, MA 01581

RE: Project: L2450786
Pace Project No.: 30716573

Dear Melissa Gulli:

Enclosed are the analytical results for sample(s) received by the laboratory on September 10, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Skyler C. Richmond
skyler.richmond@pacelabs.com
(724)850-5600
Project Manager

Enclosures

cc: Customer Service, Alpha Analytical

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: L2450786
Pace Project No.: 30716573

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
ANABISO/IEC 17025:2017 Rad Cert#: L24170
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 2950
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA010
Louisiana DEQ/TNI Certification #: 04086
Maine Certification #: 2023021
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572023-03
New Hampshire/TNI Certification #: 297622
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-015
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN02867
Texas/TNI Certification #: T104704188-22-18
Utah/TNI Certification #: PA014572223-14
USDA Soil Permit #: 525-23-67-77263
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad

REPORT OF LABORATORY ANALYSIS

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1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SAMPLE SUMMARY

Project: L2450786
Pace Project No.: 30716573

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30716573001	**001 / MW6A**	Water	09/05/24 12:50	09/10/24 21:58
30716573002	**002 / MW-8A**	Water	09/05/24 08:00	09/10/24 21:58
30716573003	**003 / MW-10A**	Water	09/05/24 10:10	09/10/24 21:58

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Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: L2450786
Pace Project No.: 30716573

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30716573001	**001 / MW6A**	EPA 901.1	MAH	8	PASI-PA
30716573002	**002 / MW-8A**	EPA 901.1	MAH	8	PASI-PA
30716573003	**003 / MW-10A**	EPA 901.1	MAH	8	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

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Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: L2450786
Pace Project No.: 30716573

Sample: 001 / MW6A **Lab ID: 30716573001** Collected: 09/05/24 12:50 Received: 09/10/24 21:58 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 901.1	**27.887 ± 101.330 (130.900) C:NA T:NA**	pCi/L	09/18/24 09:47	13982-63-3	RA
Radium-228	EPA 901.1	**0.000 ± 9.485 (20.540) C:NA T:NA**	pCi/L	09/18/24 09:47	15262-20-1	
Thorium-228	EPA 901.1	**0.000 ± 251.380 (732.100) C:NA T:NA**	pCi/L	09/18/24 09:47	14274-82-9	
Thorium-230	EPA 901.1	**-1840.400 ± 3919.600 (4994.000) C:NA T:NA**	pCi/L	09/18/24 09:47	14269-63-7	
Thorium-232	EPA 901.1	**0.000 ± 3306.700 (8653.000) C:NA T:NA**	pCi/L	09/18/24 09:47	7440-29-1	
Uranium-234	EPA 901.1	**8.098 ± 369.070 (489.100) C:NA T:NA**	pCi/L	09/18/24 09:47	13966-29-5	
Uranium-235	EPA 901.1	**0.000 ± 15.462 (48.600) C:NA T:NA**	pCi/L	09/18/24 09:47	15117-96-1	
Uranium-238	EPA 901.1	**0.000 ± 76.202 (146.600) C:NA T:NA**	pCi/L	09/18/24 09:47		

Sample: 002 / MW-8A **Lab ID: 30716573002** Collected: 09/05/24 08:00 Received: 09/10/24 21:58 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 901.1	**0.000 ± 60.184 (120.100) C:NA T:NA**	pCi/L	09/23/24 16:10	13982-63-3	RA
Radium-228	EPA 901.1	**0.000 ± 7.241 (19.800) C:NA T:NA**	pCi/L	09/23/24 16:10	15262-20-1	
Thorium-228	EPA 901.1	**0.000 ± 265.080 (609.700) C:NA T:NA**	pCi/L	09/23/24 16:10	14274-82-9	
Thorium-230	EPA 901.1	**-813.190 ± 3657.900 (4736.000) C:NA T:NA**	pCi/L	09/23/24 16:10	14269-63-7	
Thorium-232	EPA 901.1	**-2891.700 ± 6777.500 (8653.000) C:NA T:NA**	pCi/L	09/23/24 16:10	7440-29-1	
Uranium-234	EPA 901.1	**0.000 ± 224.300 (448.100) C:NA T:NA**	pCi/L	09/23/24 16:10	13966-29-5	
Uranium-235	EPA 901.1	**0.000 ± 9.108 (37.230) C:NA T:NA**	pCi/L	09/23/24 16:10	15117-96-1	
Uranium-238	EPA 901.1	**54.614 ± 85.077 (114.400) C:NA T:NA**	pCi/L	09/23/24 16:10		

Sample: 003 / MW-10A **Lab ID: 30716573003** Collected: 09/05/24 10:10 Received: 09/10/24 21:58 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 901.1	**0.000 ± 76.917 (141.200) C:NA T:NA**	pCi/L	09/23/24 20:46	13982-63-3	RA

REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: L2450786
Pace Project No.: 30716573

Sample: 003 / MW-10A **Lab ID: 30716573003** Collected: 09/05/24 10:10 Received: 09/10/24 21:58 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-228	EPA 901.1	**3.180 ± 18.058 (19.800) C:NA T:NA**	pCi/L	09/23/24 20:46	15262-20-1	
Thorium-228	EPA 901.1	**0.000 ± 174.210 (761.600) C:NA T:NA**	pCi/L	09/23/24 20:46	14274-82-9	
Thorium-230	EPA 901.1	**-85.599 ± 3512.700 (4602.000) C:NA T:NA**	pCi/L	09/23/24 20:46	14269-63-7	
Thorium-232	EPA 901.1	**2435.100 ± 5984.300 (7680.000) C:NA T:NA**	pCi/L	09/23/24 20:46	7440-29-1	
Uranium-234	EPA 901.1	**0.000 ± 204.260 (499.000) C:NA T:NA**	pCi/L	09/23/24 20:46	13966-29-5	
Uranium-235	EPA 901.1	**14.768 ± 30.295 (37.230) C:NA T:NA**	pCi/L	09/23/24 20:46	15117-96-1	
Uranium-238	EPA 901.1	**42.516 ± 110.010 (144.600) C:NA T:NA**	pCi/L	09/23/24 20:46		

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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL - RADIOCHEMISTRY

Project: L2450786
Pace Project No.: 30716573

QC Batch: 696165
QC Batch Method: EPA 901.1
Analysis Method: EPA 901.1
Analysis Description: 901.1 Gamma Spec
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30716573001, 30716573002, 30716573003

METHOD BLANK: 3390410 Matrix: Water
Associated Lab Samples: 30716573001, 30716573002, 30716573003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.000 ± 100.630 (117.600) C:NA T:NA	pCi/L	09/18/24 07:53	RA
Radium-228	0.000 ± 9.946 (23.370) C:NA T:NA	pCi/L	09/18/24 07:53	
Thorium-228	0.000 ± 169.730 (345.600) C:NA T:NA	pCi/L	09/18/24 07:53	
Thorium-230	222.730 ± 1479.800 (1673.000) C:NA T:NA	pCi/L	09/18/24 07:53	
Thorium-232	0.000 ± 1500.700 (2865.000) C:NA T:NA	pCi/L	09/18/24 07:53	
Uranium-234	45.060 ± 138.750 (150.800) C:NA T:NA	pCi/L	09/18/24 07:53	
Uranium-235	-1.946 ± 30.992 (34.000) C:NA T:NA	pCi/L	09/18/24 07:53	
Uranium-238	19.040 ± 72.315 (86.310) C:NA T:NA	pCi/L	09/18/24 07:53	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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Greensburg, PA 15601
(724)850-5600

QUALIFIERS

Project: L2450786
Pace Project No.: 30716573

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. Is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

RA The reported Ra-226 results were determined using a direct gamma emission (186 keV) shared by both Ra-226 and naturally-occurring U-235. The reported Ra-226 results were determined assuming the shared energy peak is attributable exclusively to Ra-226. Reported results for Ra-226 may be biased high if U-235 is present in the sample.

REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: L2450786
Pace Project No.: 30716573

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30716573001	**001 / MW6A**	EPA 901.1	696165		
30716573002	**002 / MW-8A**	EPA 901.1	696165		
30716573003	**003 / MW-10A**	EPA 901.1	696165		

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ALPHA ANALYTICAL
World Class Chemistry

Subcontract Chain of Custody

Pace Analytical (Greensburg, PA)
1638 Roseytown Rd, Suite 2
Greensburg, PA 15601

Alpha Job Number
L2450786

Client Information	Project Information	Regulatory Requirements/Report Limits
Client: Alpha Analytical Labs Address: Eight Walkup Drive Westborough, MA 01581-1019 Phone: 508.844.4115 Email: Mitchell.Ostrowski@pacelabs.com	Project Location: NY Project Manager: Mitchell Ostrowski **Turnaround & Deliverables Information** Due Date: Deliverables:	State/Federal Program: Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2450786

Report to include Method Blank, LCS/LCSD:

Additional Comments: Invoices to: invoices@pacelabs.coupahost.com Reports to: west.subreports@pacelabs.com

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
001	MW-6A	09-05-24 12:50	WATER	Isotopic Uranium; Radium 226; Radium 228; Thorium	
002	MW-8A	09-05-24 08:00	WATER	Isotopic Uranium; Radium 226; Radium 228; Thorium	
003	MW-10A	09-05-24 10:10	WATER	Isotopic Uranium; Radium 226; Radium 228; Thorium	

Received by Pace Greensburg
Therm ID 19 Corr Factor +0.5
Receipt Temp 1.6
Corrected Temp 1.1
Correct Preservation (Y) / N

WO# : 30716573

30716573

	Relinquished By:	Date/Time:	Received By:	Date/Time:
		9/9/24 1805	PACE	9/9/24 1805
	PACE	9/10/24 0052	PACE	9/10/24 0052
	PACE	9/10/24		9/10 12:30
Form No: AL_subcoc		9/10 1643	Pace	9-10-24 21:58

DC#_Title: ENV-FRM-GBUR-0088 v07_Sample C

Greensburg

Effective Date: 01/04/2024

WO#: 30716573

PM: SCR Due Date: 10/02/24

CLIENT: ALPHA ANALYT

Client Name: Alpha

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace ☐ Other

Tracking Number: _____

Initial / Date

Examined By: JS 9/11/24

Labeled By: JS 9/11/24

Temped By: VB 9-16-24

Custody Seal on Cooler/Box Present: ☐ Yes ☑ No Seals Intact: ☐ Yes ☑ No

Thermometer Used: 19 Type of Ice: (Wet) Blue None

Cooler Temperature: Observed Temp 1.6 °C Correction Factor: -0.5 °C Final Temp: 1.1 °C

Temp should be above freezing to 6°C

pH paper Lot# 10D29731 D.P.D. Residual Chlorine Lot #

Comments:	Yes	No	NA	
Chain of Custody Present	✓			1.
Chain of Custody Filled Out:	✓			2.
-Were client corrections present on COC		✓		
Chain of Custody Relinquished	✓			3.
Sampler Name & Signature on COC:		✓		4.
Sample Labels match COC:	✓			5.
-Includes date/time/ID Matrix:	WT			
Samples Arrived within Hold Time:	✓			6.
Short Hold Time Analysis (<72hr remaining):		✓		7.
Rush Turn Around Time Requested:		✓		8.
Sufficient Volume:	✓			9.
Correct Containers Used:	✓			10.
-Pace Containers Used		✓		
Containers Intact:	✓			11.
Orthophosphate field filtered:			✓	12.
Hex Cr Aqueous samples field filtered:			✓	13.
Organic Samples checked for dichlorination			✓	14:
Filtered volume received for dissolved tests:			✓	15:
All containers checked for preservation:	✓			16.
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix				PH<2
All containers meet method preservation requirements:	✓			Initial when completed: JS Date/Time of Preservation: Lot# of added Preservative:
8260C/D: Headspace in VOA Vials (> 6mm)			✓	17.
624.1: Headspace in VOA Vials (0mm)			✓	18.
Radon: Headspace in RAD Vials (0mm)			✓	19.
Trip Blank Present:		✓		Trip blank custody seal present? YES or NO
Rad Samples Screened <.05 mrem/hr.	X			Initial when completed: VB Date: 9-16-24 Survey Meter SN: 7-5043RO

Comments:

Note: For NC compliance samples with discrepancies, a copy of this form must be sent to the DEHNR Certification office.
PM Review is documented electronically in LIMS through the SRF Review schedule in the Workorder Edit Screen.

Qualtrax ID: 55680

Client Alpha

Page 1 of 1

Profile/EZ Login Number 7088

Notes

Sample Line Item	Matrix	Amber Glass					Plastic								Vials					Other									
		AG1H	AG3S	AG3U	AG5U	AG5T	BP1N	BP1U	BP2S	BP2U	BP3B	BP3N	BP3S	BP3U	DG9S	VG9H	VG9T	VG9U	VOAK	WGFU	WGKU	ZPLC	GCUB	GJN	12GN	AG1U	BG1U	BP2N	
1	WT						1																						
2	↓						↓																						
3																													

Container Codes

Glass

GJN	1 Gallon Jug with HNO3	DG9S	40mL amber VOA vial H2SO4
AG5U	100mL amber glass unpreserved	VG9U	40mL clear VOA vial
AG5T	100mL amber glass Na Thiosulfate	VG9T	40mL clear VOA vial Na Thiosulfate
GJN	1 Gallon Jug	VG9H	40mL clear VOA vial HCl
AG1S	1L amber glass H2SO4	JGFU	4oz amber wide jar
AG1H	1L amber glass HCl	WGFU	4oz wide jar unpreserved
AG1T	1L amber glass NA Thiosulfate	BG2U	500mL clear glass unpreserved
BG1U	1L clear glass unpreserved	AG2U	500mL amber glass unpreserved
AG3S	250mL amber glass H2SO4	WGKU	8oz wide jar unpreserved
AG3U	250mL amber glass unpreserved	GN	General

Plastic/Misc.

GCUB	1 gallon cubitainer
12GN	1/2 gallon cubitainer
SP5T	120mL coliform Na Thiosulfate
BP1N	1L plastic HNO3
BP1U	1L plastic unpreserved
BP3S	250mL plastic H2SO4
BP3N	250mL plastic HNO3
BP3U	250mL plastic unpreserved
BP3B	250mL plastic NAOH
BP2S	500mL plastic H2SO4
	L plastic unpreserved

EZI	5g Encore
VOAK	Kit Volatile Solid
I	Wipe/Swab
ZPLC	Siploc Bag

WT	Water
SL	Solid
OL	Non-Aq Liquid
WP	Wipe

WO#: 30716573

PM: SCR Due Date: 10/02/24

CLIENT: ALPHA ANALYT

Qualtrax ID: 55678

Alpha Analytical

8 Walkup Drive, Westborough, MA 01581

Client Ref.: L2450786

Pace Greensburg Project No.: 30716573

Pace Analytical Services, Inc.
1638 Roseytown Road
Suites 2, 3, & 4
Greensburg, PA 15601
(724) 850-5600

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Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

September 27, 2024

Melissa Gulli
Alpha Analytical
8 Walkup Drive
Westborough, MA 01581

RE: Project: L2450786
Pace Project No.: 30716573

Dear Melissa Gulli:

Enclosed are the analytical results for sample(s) received by the laboratory on September 10, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Skyler C. Richmond
skyler.richmond@pacelabs.com
(724)850-5600
Project Manager

Enclosures

cc: Customer Service, Alpha Analytical

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Greensburg, PA 15601
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CERTIFICATIONS

Project: L2450786
Pace Project No.: 30716573

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
ANABISO/IEC 17025:2017 Rad Cert#: L24170
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 2950
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA010
Louisiana DEQ/TNI Certification #: 04086
Maine Certification #: 2023021
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572023-03
New Hampshire/TNI Certification #: 297622
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
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South Dakota Certification
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Utah/TNI Certification #: PA014572223-14
USDA Soil Permit #: 525-23-67-77263
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad

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SAMPLE SUMMARY

Project: L2450786
Pace Project No.: 30716573

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30716573001	**001 / MW6A**	Water	09/05/24 12:50	09/10/24 21:58
30716573002	**002 / MW-8A**	Water	09/05/24 08:00	09/10/24 21:58
30716573003	**003 / MW-10A**	Water	09/05/24 10:10	09/10/24 21:58

REPORT OF LABORATORY ANALYSIS

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1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
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SAMPLE ANALYTE COUNT

Project: L2450786
Pace Project No.: 30716573

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30716573001	**001 / MW6A**	EPA 901.1	MAH	8	PASI-PA
30716573002	**002 / MW-8A**	EPA 901.1	MAH	8	PASI-PA
30716573003	**003 / MW-10A**	EPA 901.1	MAH	8	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: L2450786
Pace Project No.: 30716573

Sample: 001 / MW6A **Lab ID: 30716573001** Collected: 09/05/24 12:50 Received: 09/10/24 21:58 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 901.1	**27.887 ± 101.330 (130.900) C:NA T:NA**	pCi/L	09/18/24 09:47	13982-63-3	RA
Radium-228	EPA 901.1	**0.000 ± 9.485 (20.540) C:NA T:NA**	pCi/L	09/18/24 09:47	15262-20-1	
Thorium-228	EPA 901.1	**0.000 ± 251.380 (732.100) C:NA T:NA**	pCi/L	09/18/24 09:47	14274-82-9	
Thorium-230	EPA 901.1	**-1840.400 ± 3919.600 (4994.000) C:NA T:NA**	pCi/L	09/18/24 09:47	14269-63-7	
Thorium-232	EPA 901.1	**0.000 ± 3306.700 (8653.000) C:NA T:NA**	pCi/L	09/18/24 09:47	7440-29-1	
Uranium-234	EPA 901.1	**8.098 ± 369.070 (489.100) C:NA T:NA**	pCi/L	09/18/24 09:47	13966-29-5	
Uranium-235	EPA 901.1	**0.000 ± 15.462 (48.600) C:NA T:NA**	pCi/L	09/18/24 09:47	15117-96-1	
Uranium-238	EPA 901.1	**0.000 ± 76.202 (146.600) C:NA T:NA**	pCi/L	09/18/24 09:47		

Sample: 002 / MW-8A **Lab ID: 30716573002** Collected: 09/05/24 08:00 Received: 09/10/24 21:58 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 901.1	**0.000 ± 60.184 (120.100) C:NA T:NA**	pCi/L	09/23/24 16:10	13982-63-3	RA
Radium-228	EPA 901.1	**0.000 ± 7.241 (19.800) C:NA T:NA**	pCi/L	09/23/24 16:10	15262-20-1	
Thorium-228	EPA 901.1	**0.000 ± 265.080 (609.700) C:NA T:NA**	pCi/L	09/23/24 16:10	14274-82-9	
Thorium-230	EPA 901.1	**-813.190 ± 3657.900 (4736.000) C:NA T:NA**	pCi/L	09/23/24 16:10	14269-63-7	
Thorium-232	EPA 901.1	**-2891.700 ± 6777.500 (8653.000) C:NA T:NA**	pCi/L	09/23/24 16:10	7440-29-1	
Uranium-234	EPA 901.1	**0.000 ± 224.300 (448.100) C:NA T:NA**	pCi/L	09/23/24 16:10	13966-29-5	
Uranium-235	EPA 901.1	**0.000 ± 9.108 (37.230) C:NA T:NA**	pCi/L	09/23/24 16:10	15117-96-1	
Uranium-238	EPA 901.1	**54.614 ± 85.077 (114.400) C:NA T:NA**	pCi/L	09/23/24 16:10		

Sample: 003 / MW-10A **Lab ID: 30716573003** Collected: 09/05/24 10:10 Received: 09/10/24 21:58 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 901.1	**0.000 ± 76.917 (141.200) C:NA T:NA**	pCi/L	09/23/24 20:46	13982-63-3	RA

REPORT OF LABORATORY ANALYSIS

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1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: L2450786
Pace Project No.: 30716573

Sample: 003 / MW-10A **Lab ID: 30716573003** Collected: 09/05/24 10:10 Received: 09/10/24 21:58 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
		Pace Analytical Services - Greensburg				
Radium-228	EPA 901.1	**3.180 ± 18.058 (19.800) C:NA T:NA**	pCi/L	09/23/24 20:46	15262-20-1	
Thorium-228	EPA 901.1	**0.000 ± 174.210 (761.600) C:NA T:NA**	pCi/L	09/23/24 20:46	14274-82-9	
Thorium-230	EPA 901.1	**-85.599 ± 3512.700 (4602.000) C:NA T:NA**	pCi/L	09/23/24 20:46	14269-63-7	
Thorium-232	EPA 901.1	**2435.100 ± 5984.300 (7680.000) C:NA T:NA**	pCi/L	09/23/24 20:46	7440-29-1	
Uranium-234	EPA 901.1	**0.000 ± 204.260 (499.000) C:NA T:NA**	pCi/L	09/23/24 20:46	13966-29-5	
Uranium-235	EPA 901.1	**14.768 ± 30.295 (37.230) C:NA T:NA**	pCi/L	09/23/24 20:46	15117-96-1	
Uranium-238	EPA 901.1	**42.516 ± 110.010 (144.600) C:NA T:NA**	pCi/L	09/23/24 20:46		

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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL - RADIOCHEMISTRY

Project: L2450786
Pace Project No.: 30716573

QC Batch: 696165
QC Batch Method: EPA 901.1
Analysis Method: EPA 901.1
Analysis Description: 901.1 Gamma Spec
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30716573001, 30716573002, 30716573003

METHOD BLANK: 3390410 Matrix: Water
Associated Lab Samples: 30716573001, 30716573002, 30716573003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.000 ± 100.630 (117.600) C:NA T:NA	pCi/L	09/18/24 07:53	RA
Radium-228	0.000 ± 9.946 (23.370) C:NA T:NA	pCi/L	09/18/24 07:53	
Thorium-228	0.000 ± 169.730 (345.600) C:NA T:NA	pCi/L	09/18/24 07:53	
Thorium-230	222.730 ± 1479.800 (1673.000) C:NA T:NA	pCi/L	09/18/24 07:53	
Thorium-232	0.000 ± 1500.700 (2865.000) C:NA T:NA	pCi/L	09/18/24 07:53	
Uranium-234	45.060 ± 138.750 (150.800) C:NA T:NA	pCi/L	09/18/24 07:53	
Uranium-235	-1.946 ± 30.992 (34.000) C:NA T:NA	pCi/L	09/18/24 07:53	
Uranium-238	19.040 ± 72.315 (86.310) C:NA T:NA	pCi/L	09/18/24 07:53	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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Greensburg, PA 15601
(724)850-5600

QUALIFIERS

Project: L2450786
Pace Project No.: 30716573

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. Is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

RA	The reported Ra-226 results were determined using a direct gamma emission (186 keV) shared by both Ra-226 and naturally-occurring U-235. The reported Ra-226 results were determined assuming the shared energy peak is attributable exclusively to Ra-226. Reported results for Ra-226 may be biased high if U-235 is present in the sample.

REPORT OF LABORATORY ANALYSIS

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1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: L2450786
Pace Project No.: 30716573

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30716573001	**001 / MW6A**	EPA 901.1	696165		
30716573002	**002 / MW-8A**	EPA 901.1	696165		
30716573003	**003 / MW-10A**	EPA 901.1	696165		

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Subcontract Chain of Custody

Pace Analytical (Greensburg, PA)
1638 Roseytown Rd, Suite 2
Greensburg, PA 15601

Alpha Job Number
L2450786

Client Information	Project Information	Regulatory Requirements/Report Limits
Client: Alpha Analytical Labs Address: Eight Walkup Drive Westborough, MA 01581-1019 Phone: 508.844.4115 Email: Mitchell.Ostrowski@pacelabs.com	Project Location: NY Project Manager: Mitchell Ostrowski **Turnaround & Deliverables Information** Due Date: Deliverables:	State/Federal Program: Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2450786

Report to include Method Blank, LCS/LCSD:

Additional Comments: Invoices to: invoices@pacelabs.coupahost.com Reports to: west.subreports@pacelabs.com

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
001	MW-6A	09-05-24 12:50	WATER	Isotopic Uranium; Radium 226; Radium 228; Thorium	
002	MW-8A	09-05-24 08:00	WATER	Isotopic Uranium; Radium 226; Radium 228; Thorium	
003	MW-10A	09-05-24 10:10	WATER	Isotopic Uranium; Radium 226; Radium 228; Thorium	

Received by Pace Greensburg
Therm ID 19 Corr Factor +0.2
Receipt Temp 1.6
Corrected Temp 1.8
Correct Preservation (Y) / N

WO# : 30716573

30716573

Relinquished By:	Date/Time:	Received By:	Date/Time:
	9/9/24 1805	PACE	9/9/24 1805
PACE	9/10/24 0052	PACE	9/10/24 0052
PACE	9/10/24		9/10 12:30
	9/10 1643	Pace	9-10-24 21:58

Form No: AL_subcoc

DC#_Title: ENV-FRM-GBUR-0088 v07_Sample C

Greensburg

Effective Date: 01/04/2024

WO#: 30716573

PM: SCR Due Date: 10/02/24

CLIENT: ALPHA ANALYT

Pr

Client Name: Alpha

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace ☐ Other

Tracking Number: _____

Initial / Date

Examined By: JS 9/11/24

Labeled By: JS 9/11/24

Temped By: LB 9-16-24

Custody Seal on Cooler/Box Present: ☐ Yes ☑ No **Seals Intact:** ☐ Yes ☑ No

Thermometer Used: 19 **Type of Ice:** (Wet) Blue None

Cooler Temperature: Observed Temp 1.6 °C Correction Factor: -0.5 °C Final Temp: 1.1 °C

Temp should be above freezing to 6°C

Comments:	Yes	No	NA	pH paper Lot# 10D2531 / D.P.D. Residual Chlorine Lot #
Chain of Custody Present	✓			1.
Chain of Custody Filled Out:	✓			2.
-Were client corrections present on COC		✓		
Chain of Custody Relinquished	✓			3.
Sampler Name & Signature on COC:		✓		4.
Sample Labels match COC: -Includes date/time/ID Matrix: WT	✓			5.
Samples Arrived within Hold Time:	✓			6.
Short Hold Time Analysis (<72hr remaining):		✓		7.
Rush Turn Around Time Requested:		✓		8.
Sufficient Volume:	✓			9.
Correct Containers Used:	✓			10.
-Pace Containers Used		✓		
Containers Intact:	✓			11.
Orthophosphate field filtered:			✓	12.
Hex Cr Aqueous samples field filtered:			✓	13.
Organic Samples checked for dichlorination			✓	14:
Filtered volume received for dissolved tests:			✓	15:
All containers checked for preservation: exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix	✓			16. PHC2
All containers meet method preservation requirements:	✓			Initial when completed JS / Date/Time of Preservation / Lot# of added Preservative
8260C/D: Headspace in VOA Vials (> 6mm)			✓	17.
624.1: Headspace in VOA Vials (0mm)			✓	18.
Radon: Headspace in RAD Vials (0mm)			✓	19.
Trip Blank Present:		✓		Trip blank custody seal present? YES or NO
Rad Samples Screened <.05 mrem/hr.	X			Initial when completed LB / Date: 9-16-24 / Survey Meter SN: 2504380

Comments:

Note: For NC compliance samples with discrepancies, a copy of this form must be sent to the DEHNR Certification office.
PM Review is documented electronically in LIMS through the SRF Review schedule in the Workorder Edit Screen.

Qualtrax ID: 55680

lient Alpha

ite

Page 1 of 1

Profile/EZ Login Number 7088

Notes

Sample Line Item	Matrix	Amber Glass					Plastic								Vials					Other									
		AG1H	AG3S	AG3U	AG5U	AG5T	BP1N	BP1U	BP2S	BP2U	BP3B	BP3N	BP3S	BP3U	DG9S	VG9H	VG9T	VG9U	VOAK	WGFU	WGKU	ZPLC	GCUB	GJN	12GN	AG1U	BG1U	BP2N	
1	WT						J																						
2	↓						↓																						
3																													

Container Codes

Glass

GJN	1 Gallon Jug with HNO3	DG9S	40mL amber VOA vial H2SO4
AG5U	100mL amber glass unpreserved	VG9U	40mL clear VOA vial
AG5T	100mL amber glass Na Thiosulfate	VG9T	40mL clear VOA vial Na Thiosulfate
GJN	1 Gallon Jug	VG9H	40mL clear VOA vial HCl
AG1S	1L amber glass H2SO4	JGFU	4oz amber wide jar
AG1H	1L amber glass HCl	WGFU	4oz wide jar unpreserved
AG1T	1L amber glass NA Thiosulfate	BG2U	500mL clear glass unpreserved
BG1U	1L clear glass unpreserved	AG2U	500mL amber glass unpreserved
AG3S	250mL amber glass H2SO4	WGKU	8oz wide jar unpreserved
AG3U	250mL amber glass unpreserved	GN	General

Plastic/Misc.

GCUB	1 gallon cubitainer
12GN	1/2 gallon cubitainer
SP5T	120mL coliform Na Thiosulfate
BP1N	1L plastic HNO3
BP1U	1L plastic unpreserved
BP3S	250mL plastic H2SO4
BP3N	250mL plastic HNO3
BP3U	250mL plastic unpreserved
BP3B	250mL plastic NAOH
BP2S	500mL plastic H2SO4
	L plastic unpreserved

EZI	5g Encore
VOAK	Kit Volatile Solid
I	Wipe/Swab
ZPLC	Siploc Bag

WT	Water
SL	Solid
OL	Non-Aq Liquid
WP	Wipe

WO#: 30716573

PM: SCR Due Date: 10/02/24

CLIENT: ALPHA ANALYT

Qualtrax ID: 55678

Gamma Spectroscopy Sample Analysis Documentation

Sample Solid Preparation Logbook

Balance SN: 14900809 Oven ID: #7 Logbook ID: 6-0022-0 SOP ID: ENV-SOP-GBUR-0079 R

Sample ID				Oven Drying Prep Analyst	Sample Wet Weight (g)	Begin Drying Date	End Drying Date	Dried Sample Weight Analyst	Final Dry Weight (g)	Sample Process Analyst	Sample Process Date	Geom Prep Analyst	Geometry/ Canned Prep Date	Gamma Geometry	Geometry Prep Volume/ Mass (L,g)
60	45	9704	003	KDW	266.54	9-11-24	9-12-24	KDW	205.89	KDW	9-12-24	KDW	9-12-24	8tuna	73.74
30	71	6684	001	KDW	95.76	9-11-24	9-12-24	KDW	24.27	KDW	9-12-24	KDW	9-12-24	0.5oz	11.84
30	71	6736	001	KDW	242.63	9-11-24	9-12-24	KDW	35.01	KDW	9-12-24	KDW	9-12-24	1oz	21.52
30	71	6796	001	KDW	286.46	9-11-24	9-12-24	KDW	42.32	KDW	9-12-24	KDW	9-12-24	4oz	83.13
40	28	3774	001	KDW	484.27	9-11-24	9-12-24	KDW	174.46	KDW	9-12-24	KDW	9-12-24	4oz	84.13
30	71	3844	001				Marinelli	208				KDW	9-12-24	2L	2.0L
30	71	3846	001				Marinelli	211				KDW	9-12-24	2L	2.0L
30	71	6737	001	KDW	723.68	9-12-24	9-13-24	KDW	703.13	KDW	9-13-24	KDW	9-13-24	8tuna	389.95
30	71	6778	001	KDW	112.28	9-12-24	9-13-24	KDW	77.38	KDW	9-13-24	KDW	9-13-24	8tuna	43.55
30	71	6822	001	KDW	46.70	9-12-24	9-13-24	KDW	44.37	KDW	9-13-24	KDW	9-13-24	4oz	31.71
30	71	6840	001	KDW	115.43	9-12-24	9-13-24	KDW	114.75	KDW	9-13-24	KDW	9-13-24	8tuna	414.26
20	71	7280	001	KDW	1188.28	9-12-24	9-13-24	KDW	1185.15	KDW	9-13-24	KDW	9-13-24	8tuna	421.14
30	71	6827	001				Marinelli	220				KDW	9-12-24	2L	2.0L
30	71	6836	001				Marinelli	221				KDW	9-12-24	2L	2.0L
30	71	6821	002				As	Received	KDW 9-13-24			KDW	9-13-24	8tuna	300.34
30	71	3848	001				Marinelli	222				KDW	9-13-24	2L	2.0L
30	71	3849	001	N/A 9-13-24	KDW		Marinelli	223	N/A KDW 9-13-24			KDW	9-13-24	2L	2.0L
30	71	3850	001				Marinelli	224				KDW	9-13-24	2L	2.0L
30	71	7368	003	KDW	256.19	9-13-24	9-16-24	KDW	200.41	KDW	9-16-24	KDW	9-16-24	4oz	134.83
30	71	7631	003	KDW	475.60	9-13-24	9-16-24	KDW	97.98	KDW	9-16-24	KDW	9-16-24	0.5oz	9.55

WTF 9-25-24

JM 9/25/24

Logbook review is documented on the Rad Data Review Verification Form.

Sample Solid Preparation Logbook

Balance SN: 14900809 Oven ID: # 7 Logbook ID: 6-0022-0 SOP ID: ENV-SOP-GBUR-0079 R

Sample ID				Oven Drying Prep Analyst	Sample Wet Weight (g)	Begin Drying Date	End Drying Date	Dried Sample Weight Analyst	Final Dry Weight (g)	Sample Process Analyst	Sample Process Date	Geom Prep Analyst	Geometry/ Canned Prep Date	Gamma Geometry	Geometry Prep Volume/ Mass (L,g)
10	70	7385	001	KDW	348.98	9-13-24	9-16-24	KDW	339.20	KDW	9-16-24	KDW	9-16-24	4oz	238.77
30	71	7665	001	KDW	521.39	9-13-24	9-16-24	KDW	309.94	KDW	9-16-24	KDW	9-16-24	8tuna	273.67
30	71	5474	001				Marinelli	227				KDW	9-16-24	2L	2.0L
35	90	2567	001	NA	KDW		Marinelli	228	NA KDW			KDW	9-16-24	2L	2.0L
30	71	6728	003	9-16-24			Marinelli	229	9-16-24			KDW	9-16-24	2L	2.0L
30	71	6737	002				Marinelli	230				KDW	9-16-24	2L	2.0L
30	71	7703	001	KDW	554.22	9-16-24	9-17-24	KDW	548.30	KDW	9-17-24	KDW	9-17-24	8tuna	188.99
30	71	7763	001	KDW	773.83	9-16-24	9-17-24	KDW	54.73	KDW	9-17-24	KDW	9-17-24	802	32.55
30	71	7763	002	KDW	820.58	9-16-24	9-17-24	KDW	110.34	KDW	9-17-24	KDW	9-17-24	4oz	88.57
30	71	7763	003	KDW	772.28	9-16-24	9-17-24	KDW	47.69	KDW	9-17-24	KDW	9-17-24	2oz	28.83
30	71	7763	004	KDW	922.29	9-16-24	9-17-24	KDW	461.21	KDW	9-17-24	KDW	9-17-24	4oz	165.50
10	70	7532	005	KDW	1795.16	9-16-24	9-17-24	KDW	948.13	KDW	9-17-24	KDW	9-17-24	8tuna	320.25
10	70	7532	006	KDW	1837.80	9-16-24	9-17-24	KDW	1096.38	KDW	9-17-24	KDW	9-17-24	8tuna	343.60
30	71	8009	001	KDW	329.42	9-17-24	9-17-24	KDW	154.99	KDW	9-17-24	KDW	9-17-24	8tuna	94.91
30	71	8010	001	KDW	335.52	9-17-24	9-17-24	KDW	154.45	KDW	9-17-24	KDW	9-17-24	8tuna	109.34
30	71	6676	001				Marinelli	191				KDW	9-17-24	2L	2.0L
30	71	7053	001				Marinelli	192				KDW	9-17-24	2L	2.0L
30	71	7984	001	KDW	1335.73	9-17-24	9-19-24	KDW	1097.83	KDW	9-19-24	KDW	9-19-24	1oz	48.63
30	71	8012	001	KDW	237.20	9-17-24	9-19-24	KDW	95.67	KDW	9-19-24	KDW	9-19-24	0.5oz	12.52
30	71	8290	001	KDW	64.90	9-17-24	9-19-24	KDW	62.58	KDW	9-19-24	KDW	9-19-24	4oz	21.88

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Logbook review is documented on the Rad Data Review Verification Form. On 9/25/24

Sample Solid Preparation Logbook

Balance SN: 14900809 Oven ID: # 7 Logbook ID: 6-0022-0 SOP ID: ENV-SOP-GBUR-0079 R

Sample ID				Oven Drying Prep Analyst	Sample Wet Weight (g)	Begin Drying Date	End Drying Date	Dried Sample Weight Analyst	Final Dry Weight (g)	Sample Process Analyst	Sample Process Date	Geom Prep Analyst	Geometry/ Canned Prep Date	Gamma Geometry	Geometry Prep Volume/ Mass (L,g)
30	71	8290	002	KDW	657.06	9-17-24	9-19-24	KDW	645.50	KDW	9-19-24	KDW	9-19-24	8tuna	256.22
30	71	8290	003	KDW	21.41	9-17-24	9-19-24	KDW	18.55	KDW	9-19-24	KDW	9-19-24	1oz	12.20
30	71	8285	001	KDW	664.14	9-17-24	9-19-24	KDW	537.26	KDW	9-19-24	KDW	9-19-24	8tuna	307.04
30	71	8285	002	KDW	540.26	9-17-24	9-19-24	KDW	452.19	KDW	9-19-24	KDW	9-19-24	8tuna	343.21
30	71	8285	003	KDW	564.89	9-17-24	9-19-24	KDW	466.44	KDW	9-19-24	KDW	9-19-24	8tuna	293.71
30	71	8285	004	KDW	525.70	9-17-24	9-19-24	KDW	418.65	KDW	9-19-24	KDW	9-19-24	8tuna	287.57
30	71	8285	005	KDW	552.42	9-17-24	9-19-24	KDW	436.42	KDW	9-19-24	KDW	9-19-24	8tuna	279.89
30	71	8285	006	KDW	564.61	9-17-24	9-19-24	KDW	447.68	KDW	9-19-24	KDW	9-19-24	8tuna	283.32
30	71	8285	007	KDW	575.93	9-17-24	9-19-24	KDW	433.37	KDW	9-19-24	KDW	9-19-24	8tuna	368.95
30	71	8285	008	KDW	508.59	9-17-24	9-19-24	KDW	344.79	KDW	9-19-24	KDW	9-19-24	8tuna	347.83
30	71	8285	009	KDW	588.72	9-17-24	9-19-24	KDW	438.36	KDW	9-19-24	KDW	9-19-24	8tuna	257.16
30	71	8285	010	KDW	573.35	9-17-24	9-19-24	KDW	421.04	KDW	9-19-24	KDW	9-19-24	8tuna	358.81
30	71	8285	011	KDW	632.88	9-17-24	9-19-24	KDW	500.92	KDW	9-19-24	KDW	9-19-24	8tuna	292.18
30	71	8285	012	KDW	577.49	9-17-24	9-19-24	KDW	446.60	KDW	9-19-24	KDW	9-19-24	8tuna	292.98
30	71	8285	013	KDW	546.81	9-17-24	9-19-24	KDW	435.89	KDW	9-19-24	KDW	9-19-24	8tuna	275.41
30	71	8285	014	KDW	661.55	9-17-24	9-19-24	KDW	509.20	KDW	9-19-24	KDW	9-19-24	8tuna	372.85
30	71	8285	015	KDW	512.87	9-17-24	9-19-24	KDW	353.25	KDW	9-19-24	KDW	9-19-24	8tuna	251.94
30	71	8285	016	KDW	639.46	9-17-24	9-19-24	KDW	495.92	KDW	9-19-24	KDW	9-19-24	8tuna	254.60
30	71	6565	001				Marinelli	194				KDW	9-17-24	2L	2.02
30	71	6573	001				Marinelli	207				KDW	9-17-24	2L	2.04

JM 9/25/24

WTF 9-25-24

Logbook review is documented on the Rad Data Review Verification Form.

Sample Solid Preparation Logbook

Balance SN: 14900809 Oven ID: # 7 Logbook ID: 6-0022-0 SOP ID: ENV-SOP-GBUR-0079 R

Sample ID				Oven Drying Prep Analyst	Sample Wet Weight (g)	Begin Drying Date	End Drying Date	Dried Sample Weight Analyst	Final Dry Weight (g)	Sample Process Analyst	Sample Process Date	Geom Prep Analyst	Geometry/ Canned Prep Date	Gamma Geometry	Geometry Prep Volume/ Mass (L,g)
30	71	0847	001				Marinelli	208				KDW	9-19-24	2L	2.0L
30	71	8317	001	KDW	828.13	9-19-24	9-20-24	KDW	243.47	KDW	9-20-24	KDW	9-20-24	1oz	27.48
30	71	8317	002	KDW	978.11	9-19-24	9-20-24	KDW	272.91	KDW	9-20-24	KDW	9-20-24	1oz	28.40
30	71	8346	001	KDW	190.35	9-19-24	9-20-24	KDW	163.47	KDW	9-20-24	KDW	9-20-24	0.5oz	141.66
30	71	8567	001	KDW	703.69	9-19-24	9-20-24	KDW	592.11	KDW	9-20-24	KDW	9-20-24	8tuna	286.57
30	71	8573	001	KDW	121.41	9-19-24	9-20-24	KDW	43.54	KDW	9-20-24	KDW	9-20-24	1oz	28.04
30	71	8690	001	KDW	277.53	9-19-24	9-20-24	KDW	261.16	KDW	9-20-24	KDW	9-20-24	4oz	146.89
30	71	9235	001	KDW	549.07	9-19-24	9-20-24	KDW	331.20	KDW	9-20-24	KDW	9-20-24	4oz	109.35
30	71	3947	001				Marinelli	211				KDW	9-20-24	2L	2.0L
30	71	8494	002				N/A	KDW							
							9-20-24			KDW	9-20-24	KDW	9-20-24	8tuna	340.85
10	70	8386	003	KDW	1001.74	9-20-24	9-23-24	KDW	857.08	KDW	9-23-24	KDW	9-23-24	8tuna	309.56
10	70	8386	004	KDW	1213.93	9-20-24	9-23-24	KDW	784.40	KDW	9-23-24	KDW	9-23-24	8tuna	235.71
40	28	4278	001	KDW	586.49	9-20-24	9-23-24	KDW	516.02	KDW	9-23-24	KDW	9-23-24	8tuna	295.00
30	71	8477	001	KDW	120.99	9-20-24	9-23-24	KDW	118.36	KDW	9-23-24	KDW	9-23-24	8tuna	30.28
30	71	8477	002	KDW	835.12	9-20-24	9-23-24	KDW	757.50	KDW	9-23-24	KDW	9-23-24	8tuna	276.05
30	71	9313	001	KDW	63.04	9-20-24	9-23-24	KDW	39.04	KDW	9-23-24	KDW	9-23-24	2oz	27.59
30	71	9313	002	KDW	116.45	9-20-24	9-23-24	KDW	73.27	KDW	9-23-24	KDW	9-23-24	4oz	67.42
30	20	9799	001				As Received	KDW	9-20-24			KDW	9-20-24	500 SSJ	118.34g
30	71	6573	002				Marinelli	220				KDW	9-23-24	2L	2.0L
30	71	6573	003				Marinelli	221				KDW	9-23-24	2L	2.0L

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WTF 9.25.24

Logbook review is documented on the Rad Data Review Verification Form.

Sample Solid Preparation Logbook

Balance SN: 14900809 Oven ID: # 7 Logbook ID: 6-0022-0 SOP ID: ENV-SOP-GBUR-0079 R

Sample ID				Oven Drying Prep Analyst	Sample Wet Weight (g)	Begin Drying Date	End Drying Date	Dried Sample Weight Analyst	Final Dry Weight (g)	Sample Process Analyst	Sample Process Date	Geom Prep Analyst	Geometry/ Canned Prep Date	Gamma Geometry	Geometry Prep Volume/ Mass (L,g)
30	71	8627	001	KDW	663.60	9-23-24	9-24-24	KDW	635.44	KDW	9-24-24	KDW	9-24-24	Stump	272.80
30	71	8627	003	KDW	160.85	9-23-24	9-24-24	KDW	109.84	KDW	9-24-24	KDW	9-24-24	8 ounce	75.65
30	71	9894	001	KDW	767.48	9-23-24	9-24-24	KDW	7.49	KDW	9-24-24	KDW	9-24-24	0.5oz	7.15
30	71	5870	001				Marinelli	222				KDW	9-24-24	2L	2282.32g, 2.0L
30	71	6130	001	N/A	KDW		Marinelli	223	N/A KDW			KDW	9-24-24	2L	2254.77g, 2.0L
30	71	6183	001	9-24	-24		Marinelli	224	9-24-24			KDW	9-24-24	2L	2262.63g, 2.0L
30	71	7346	001				Marinelli	227				KDW	9-24-24	2L	2377.36g, 2.0L
30	71	7759	001				Marinelli	228				KDW	9-24-24	2L	2296.67g, 2.0L
30	71	7760	001				Marinelli	229				KDW	9-24-24	2L	2300.56g, 2.0L
30	71	7761	001				Marinelli	230				KDW	9-24-24	2L	2316.11g, 2.0L
30	71	7766	001				Marinelli	191				KDW	9-24-24	2L	2189.36g, 2.0L
30	72	0213	001	KDW	459.32	9-24-24	9-25-24	KDW	9-25-24 KDW 1349	KDW	9-25-24	KDW	9-25-24	0.5oz	8.84
30	72	0213	002	KDW	463.85	9-24-24	9-25-24	KDW	9.52	KDW	9-25-24	KDW	9-25-24	0.5oz	8.68
30	71	7768	001				Marinelli	192				KDW	9-24-24	2L	2225.24g, 2.0L
30	71	7769	001				Marinelli	194				KDW	9-25-24	2L	2256.12g, 2.0L
30	71	8290	004	N/A	KDW		Marinelli	207	N/A KDW			KDW	9-25-24	2L	2008.71g, 2.0L
30	71	8627	002	9-25-24			Marinelli	208	9-25-24			KDW	9-25-24	2L	2003.31g, 2.0L
30	71	8627	005				Marinelli	211				KDW	9-25-24	2L	820.88g, 0.95L
30	71	8806	001				Marinelli	220				KDW	9-25-24	2L	2013.54g, 2.0L
30	71	8712	001				Marinelli	221				KDW	9-25-24	2L	1959.82g, 1.92L

WTF 9.25-24

JM 9/25/24

Logbook review is documented on the Rad Data Review Verification Form.

Logbook ID: 7-0054-0

Gamma Spectrometry Run Log

SOP ID: ENV-SOP-GBUR-0078

REMINDER: Perform and Log Daily Checks!

Detector #	Sample No.	Batch ID	Aliquots (g, L,S, F)	Geometry	Count Time (min)	Count Start date/ time	Count Analyst
2	DCDLCS1424(QA200260) ✓	DCHK	—	CHECKSOURCE2	5	9/14/24 1700	
2	307080430003	80952	290.93g	8 OZ TUNA	1000	9/14/24 1711	
2	DBD2091524	DBKG	—	—	5	9/15/24 1013	
2	DCD2091524(QA200261) ✓	DCHK	—	CHECKSOURCE2	5	9/15/24 1022	
2	307080430006	80952	271.24g	8 OZ TUNA	1000	9/15/24 1033	
2	DCD2091624 (QA200262) ✓	DCHK	—	check source 2	5	9-16-24 0522	BSS
2	DBD2091624	DBKG	—	—	5	9-16-24 0535	BSS
2	307138480001 (222) 8/318	8/318	2.0L	2 LITER	30	9/16/24 802	
2	307138490001 (223)	8/318	2.0L	2 LITER	30	9/16/24 834	
2	307154740001 (224)	8/318	2.0L	2 LITER	30	9/16/24 909	
2	307138500001 (224)	8/318	2.0L	2 LITER	30	9/16/24 941	
2	LCS 8/318 (17-079)	8/318	2.0L	2 LITER	15	9/16/24 1013	
2	LCS 8/317 (21-044)	8/317	204.87g	4 OZ	15	9/16/24 1031	
2	LCS 80952 (21-042)	80952	351.68g	8 OZ TUNA	15	9/16/24 1104	
2	307080430009	80952	276.19g	8 OZ TUNA	1000	9/16/24 1123	
2	DBD2091724	DBKG	—	—	5	9/17/24 704	
2	DCD2091724 (QA200263) ✓	DCHK	—	CHECKSOURCE2	5	9/17/24 713	
2	LCS 8/209 (21403) MA 9/17/24	8/209	204.87g	4 OZ	15	9/17/24 732	
2	307122010001	8/209	82.04g	4 OZ	30	9/17/24 749	
2	307173680003 MA 9/17/24	8/269 317	124.83g	4 OZ	45	9/17/24 838	
2	307080430012	80952	287.29g	8 OZ TUNA	1000	9/17/24 1117	
2	BSS 9-18-24 DCD2091824 (QA200264) ✓	DCHK	—	check source 2	5	9-18-24 0519	BSS
2	DBD6091824	DBKG	—	—	5	9-18-24 0529	BSS
2	307166760001 (19)	8/318	2.0L	2 LITER	30	9/18/24 738	

Comments:

Logbook review documented on Rad Data Review Verification form.

9/25/24

WTF 9.25.24

Logbook ID: 8-0054-0

Gamma Spectrometry Run Log

SOP ID: ENV-SOP-GBUR-0078

REMINDER: Perform and Log Daily Checks!

Detector #	Sample No.	Batch ID	Aliquots (g, L,S, F)	Geometry	Count Time (min)	Count Start date/ time	Count Analyst
5	307080430004	80952	298.7g	8OZ TUNA	1000	9/14/24 1714	
6	307080430005	80952	292.13g	8OZ TUNA	1000	9/14/24 1719	
6	DBD6091524	DBKG	—	—	5	9/15/24 1015	
6	DCD6091624 (QAG00773) ✓	DCHK		CHECK SOURCE 5	5	9/15/24 1024	
5	DBD5091524	DBKG	—	—	5	9/15/24 1037	
5	DCD5091524 (QA5B080A)	DCHK	—	CHECK SOURCE 5	5	9/15/24 1044	
5	307080430007	80952	301.53g	8OZ TUNA	1000	9/15/24 1052	
6	307080430008	80952	268.52g	8OZ TUNA	1000	9/15/24 1053	
6	DBD6091624	DBKG	—	—	5	9-16-24 0524	BSS
5	DCD5091624 (QA5B0804) ✓	DCHK	—	check source 5	5	9-16-24 0525	BSS
5	DBD5091624	DBKG	—	—	5	9-16-24 0537	BSS
6	DCD6091624 (QAG00774) ✓	DCHK	—	check source 5	5	9-16-24 0538	BSS
6	BSS 9-16-24 3069 3238 093 Ti-F	79911	143.9	Contact	60	9-16-24 0541	BSS
5	307168220001	81317	31.7g	4OZ	120	9/16/24 0803	
6	3069 3238 095 Co-EZ	79911	46.6	PVC TOP	60	9-16-24 0838	BSS
6	3069 3238 094 Co-EY	79911	46.4	PVC TOP	60	9-16-24 0944	BSS
5	LCS81317 (21-044)	81317	204.87g	4OZ	15	9/16/24 1009	
5	LCS081318 (17-029)	81318	2.0L	2 LITER	15	9/16/24 1031	
5	3990405	81317	197.84g	4OZ	30	9/16/24 1049	
6	3069 3238 086 Co-EW	79911	47.0	PVC TOP	60	9-16-24 1121	BSS
5	LCS080952 (21-042)	80952	351.68g	8OZ TUNA	15	9/16/24 1125	
5	307080430010	80952	322.79g	8OZ TUNA	1000	9/16/24 1143	
6	3069 3238 087 Co-EX	79911	46.0	BSS 9-16-24 Con PVC TOP	60	9-16-24 1228	BSS
6	LCSD0 80952 (21-042)	80952	351.68g	8OZ TUNA	15	9/16/24 1332	

Comments:

9/16/24

Logbook review documented on Rad Data Review Verification form.

WTF 9-25-24

Detector #	Sample No.	Batch ID	Aliquots (g, L,S, F)	Geometry	Count Time (min)	Count Start date/ time	Count Analyst
6	307080430 11	80952	299.33g	8 OZ TUNA	1000	9/16/24 1416	
5	BB05 091724	DBKG	—	—	5	9/17/24 705	
6	BBD6091724	DBKG	—	—	5	9/17/24 706	
5	DCD5091724 (QAS600805) ✓	DCHK	—	CHECKSOURCE 5	5	9/17/24 713	
6	DCD6091724 (QAG600775) ✓	DCHK	—	CHECKSOURCE 5	5	9/17/24 722	
5	3382818	81209	197.8g	4 OZ	30	9/17/24 732	
5	LCS081209 (21-OF3)	81209	204.87g	4 OZ	15	9/17/24 805	
5	307167790 07 (229)	81318	2.0L	2 LITER	90	9/17/24 826	
6	307080430 16	80952	322.79g	8 OZ TUNA	1000	9/17/24 911	
5	107073850 01	81317	239.77g	4 OZ	30	9/17/24 1001	
5	307176650 01	81269	273.67g	8 OZ TUNA	30	9/17/24 1033	
5	307167370 07 (230)	81318	2.0L	2 LITER	90	9/17/24 1106	
5	3367861	80952	318.71g	8 OZ TUNA	1000	9/17/24 1250	
6	DCD6091824 (QAG600776) ✓	DCHK	—	Check Source 5	5	9-18-24 0520	BSS
6	DBD6091824	DBKG	—	—	5	9-18-24 0529	BSS
6	3069 3238 035 30° -4.5°	79914	1107.8	contact	180	9-18-24 0541	BSS
5	DBD5091824	DBKG	—	—	5	9/18/24 736	
5	DCD5091824 (QAS600805) ✓	DCHK	—	CHECKSOURCE 5	5	9/18/24 745	
5	33904-10 *	81318	2.0L	2 LITER	240	9/18/24 753	
6	Det-6_OPEN-6-131021 (091824)	Cal	1 sample	Open 6	113	9-18-24 0916	BSS
5	307177630 04	81317	165.50g	4 OZ	30	9/18/24 1106	
6	CV-D6-OPEN-6-131021 (091824)	CV	1 sample	Open 6	60	9-18-24 1120	BSS
5	307080430 14	80952	288.68g	8 OZ TUNA	1000	9/18/24 1142	
6	DET_6_OPEN_4_131021 (091824)	Cal	1 sample	Open 4	43 60 9-18-24	9-18-24 1216	BSS

Comments: * COUNT TERMINATED ONCE MDC REQS ACHIEVED 9/18/24

Logbook review documented on Rad Data Review Verification form. 9/25/24 WTF 9-25-24

Logbook ID: 7-0054-0

Gamma Spectrometry Run Log

SOP ID: ENV-SOP-GBUR-0078

REMINDER: Perform and Log Daily Checks!

Detector #	Sample No.	Batch ID	Aliquots (g, L,S, F)	Geometry	Count Time (min)	Count Start date/ time	Count Analyst
2	307105300l (192)	81318	2.0L	2 LITER	30	9/18/24 810	
2	307165650l (194)	81318	2.0L	2 LITER	60	9/18/24 843	
2	307165130l (207)	81318	2.0L	2 LITER	60	9/18/24 947	
2	307177630l02	81317	88.57g	4 OZ	45	9/18/24 1053	
2	307080430l3	80952	283.82g	8 OZ TNVA	1000	9/18/24 1141	
2	DCD2091924(QA200265) ✓	DCHK	—	check source 2	5	9-19-24 0531	BSS
2	DBD2091924	DBKG	—	—	5	9-19-24 0539	BSS
2	LCS81210 (21-045)	81210	55.57g	1 OZ	15	9/19/24 748	
2	LCS081210 (21-045)	81210	55.57g	1 OZ	15	9/19/24 805	
2	3382876	81210	46.47g	1 OZ	30	9/19/24 825	
2	307122750l0l *	81210	17.88g	1 OZ	90	9/19/24 859	
2	402831720l2 *	81210	24.87g	1 OZ	60	9/19/24 951	
2	307128940l2 *	81210	32.75g	1 OZ	90	9/19/24 1028	
2	307128940l3 *	81210	29.11g	1 OZ	90	9/19/24 1104	
2	307129900l *	81210	25.44g	1 OZ	90	9/19/24 1146	
2	307122920l0l	81169	0.94g	0.5 OZ	1000	9/19/24 1323	
2	DBD2092024 MM 9/20/24	DBKG	—	—	5	9/20/24 739	
2	DCD2092024 (QA200266) ✓	DCHK	—	CHECK SOURCE 2	5	9/20/24 749	
2	307128940l4 *	81169	23.42g	0.5 OZ	90	9/20/24 802	
2	307128960l0l *	81169	11.61g	0.5 OZ	150	9/20/24 852	
2	307130850l0l *	81169	10.32g	0.5 OZ	180	9/20/24 1009	
2	307122740l0l *	81169	6.95g	0.5 OZ	480	9/20/24 1152	
2	307138470l0l (211)	81318	2.0L	2 LITER	60	9/20/24 1506	
2	LBD2092024	LONGBKG	—	EMPTY	1000	9/20/24 1658	

Comments: * COUNT TERMINATED ONCE MDC REQS. ACHIEVED MM 9/19/24

Logbook review documented on Rad Data Review Verification form.

MM 9/25/24

WTF 9.25.24

Detector #	Sample No.	Batch ID	Aliquots (g, L,S, F)	Geometry	Count Time (min)	Count Start date/ time	Count Analyst
6	CV-DG-OPEN-4-131021(091824)	CV	1 sample	open 4	60	9-18-24 1306	BSS
6	~~CV-D~~ DET-6-OPEN-2-131021(091824)	Cal	1	open 2	15	9-18-24 1421	BSS
6	CV-DG-OPEN_2_131021(091824)	CV	1	Open 2	15	9-18-24 1439	BSS
6	DBDG091924	DBKG	-	-	5	9-19-24 0529	BSS
5	DCD5091924(QA5BU80G) ✓	DCHK	-	check source 5	5	9-19-24 0531	BSS
5	DBD5091924	DBKG	-	-	5	9-19-24 0540	BSS
6	DCDG091924(QAG00776) ✓	DCHK	-	check source 5	5	9-19-24 0545	BSS
5	LCS81208 (21-042)	81208	351.68g	8OZ TUNA	15	9/19/24 751	JMK
6	3069 2931 012 -5.5° 0°	79925	1125.4	open 6	60	9-19-24 0750	BSS
5	LCSD81208 (21-042)	81208	351.68g	8OZ TUNA	15	9/19/24 809	JMK
5	3382815	81208	318.74g	8OZ TUNA	15	9/19/24 830	JMK
5	3071227001	81208	227.50g	8OZ TUNA	15	9/19/24 848	JMK
6	3069 2931 011 -4.5° 0°	79925	1130.8	open 6	60	9-19-24 0859	BSS
5	3590256700I (228)	81318	2.0L	2LITER	240	9/19/24 924	JMK
6	3069 2931 010 -3.5° 0°	79925	1130.9	Open 6	60	9-19-24 1013	BSS
6	3069 2931 009 -2.5° 0°	79925	1130.9	Open 4	60	9-19-24 1128	BSS
6	3069 2931 008 -1.5° 0°	79925	1131.0	Open 6	60	9-19-24 1244	BSS
5	3070904301S	80952	252.04g	8OZ TUNA	1000	9/19/24 BAL	JMK
6	3069 2931 007 -0.5 0°	79925	1127.0	Open 6	60	9-19-24 1443	BSS
6	3069 2931 013 -6.5 0°	79925	1294.0	Open 6	720	9-19-24 1601	BSS
6	~~3069 2931~~ DCDG092024(QAG00777) ✓	DCHK	-	check source 5	5	9-~~19~~-20-24 0516	BSS
6	DBDG092024	DBKG	-	-	5	9-20-24 0528	BSS
6	3069 2931 001 +5.5 0°	79925	1120.9	Open 4	60	9-20-24 0600	BSS
6	3069 2931 002 +4.5 0°	79925	1178.9	Open 4	60	9-20-24 0724	BSS

Comments:

JMK 9/20/24

Logbook review documented on Rad Data Review Verification form.

WTF 9-25-24

Logbook ID: 7-0054-0

Gamma Spectrometry Run Log

SOP ID: ENV-SOP-GBUR-0078

REMINDER: Perform and Log Daily Checks!

Detector #	Sample No.	Batch ID	Aliquots (g, L,S, F)	Geometry	Count Time (min)	Count Start date/ time	Count Analyst
2	~~SET~~ DCD2092324 (QA200267) ✓ 9-23-24	DCHK	–	clock source 2	5	9-23-24 0510	BSS
2	DBD2092324	DBKG	–	–	5	9-23-24 0520	BSS
2	3071 6821 002	81450	300.34	8oz Tuna	1000	923-24 0636	BSS
2	LCS81453 (21-042)	81453	351.68g	8OZ TUNA	15	9/23/24 754	JMK
2	3071 8285001	81453	307.08g	8OZ TUNA	30	9/23/24 811	JMK
2	3071 8285002	81453	343.21g	8OZ TUNA	30	9/23/24 846	JMK
2	3071 8285003	81453	293.71g	8OZ TUNA	30	9/23/24 919	JMK
2	3071 8285005	81453	279.89g	8OZ TUNA	30	9/23/24 953	JMK
2	3071 8285 007	81453	268.95	8oz Tuna	30	9-23-24 1028	BSS
2	3071 8285008	81453	247.83g	8OZ TUNA	30	9/23/24 1107	JMK
2	3071 8285010	81453	258.81g	8OZ TUNA	30	9/23/24 1142	JMK
2	3071 8285012	81453	292.98g	8OZ TUNA	30	9/23/24 1215	JMK
2	3071 8285014	81453	277.85g	8OZ TUNA	30	9/23/24 1249	JMK
2	3071 8285016	81453	254.60g	8OZ TUNA	30	9/23/24 1322	JMK
2	1070 8386003	81453	308.50g	8OZ TUNA JMK 9/23	60	9/23/24 1355	JMK
2	1070 8386004	81453	235.71g	8OZ TUNA	60	9/23/24 1458	JMK
2	3071 6573002 (220)	81318	2.0L	2 LITER	60	9/23/24 1610	JMK
2	3071 6573003 (224)	81318	2.0L	2 LITER	60	9/23/24 2046	JMK
2	LCS81358 (21-044)	81358	97.52g	2 OZ	15	9/23/24 2148	JMK
2	3071 9313001	81358	27.58g	2 OZ	180	9/23/24 2211	JMK
2	DCD2092424 (QA200268) ✓	DCHK	–	clock source 2	5	9-24-24 0610	BSS
2	DBD2092424	DBKG	–	–	5	9-24-24 0622	BSS
2	4009330600 1	81315	41.52g	2 OZ	45	9/24/24 740	JMK
2	3390381	81315	79.20g	2 OZ	30	9/24/24 830	JMK

Comments:

JMK 9/24/24

Logbook review documented on Rad Data Review Verification form.

WTF 9-25-24

JM 9/25/24

Logbook ID: 7-0054-0

SOP ID: ENV-SOP-GBUR-0078

Gamma Spectrometry Run Log

REMINDER: Perform and Log Daily Checks!

Detector #	Sample No.	Batch ID	Aliquots (g, L,S, F)	Geometry	Count Time (min)	Count Start date/ time	Count Analyst
2	LCSD 81315 (21-044)	81315	97.52g	2oz	15	9/24/24 905	
2	3071587000 1 (222)	81318	2.0L	2 LITER	30	9/24/24 926	
2	3071613000 1 (223)	81318	2.0L	2 LITER	60	9/24/24 1003	
2	3071618300 1 (224)	81318	2.0L	2 LITER	60	9/24/24 1110	
2	3071775900 1 (228)	81318	2.0L	2 LITER	30	9/24/24 1220	
2	3071776000 1 (229)	81318	2.0L	2 LITER	30	9/24/24 1251	
2	LCS 81473 (21-045)	81473	55.57g	1 OZ	15	9/24/24 1326	
2	LCS 81473 (21-045)	81473	55.57g	1 OZ	15	9/24/24 1343	
2	3399283	81473	46.47g	1 OZ	60	9/24/24 1401	
2	LCSD 81472 (21-043)	81472	204.8g	4 OZ	15	9/24/24 1505	
2	3071829000 3	81473	12.70g	1 OZ	900	9/24/24 1524	
2	DCD2092524 (QA209264) ✓	DC.HK	-	check source 2	5	9-25-24 0714	BSS
2	DBD2092524	DBKG	-	-	5	9-25-24 0723	BSS
2	3071857300 1	81473	28.0g	1 OZ	120	9/25/24 740	
2	3071 3938001 *	81316	9.80	1/2 OZ	240	9-25-24 0947	BSS
2	LCSD 81479 (17-029)	81479	2.0L	2 LITER	15	9/25/24 1248	
2	LCS 81316 (21-046)	81316	28.82g	0.5 OZ	20	9/25/24 1309	
2	LCSD 81316 (21-046)	81316	28.82g	0.5 OZ	20	9/25/24 1332	
2	3390398	81316	24.75g	0.5 OZ	90	9/25/24 1356	

Comments: * COUNT TERMINATED ONCE MDC REQS MET. 9/25/24

Logbook review documented on Rad Data Review Verification form.

WTF 9-25-24

Logbook ID: 8-0054-0

SOP ID: ENV-SOP-GBUR-0078

Gamma Spectrometry Run Log

REMINDER: Perform and Log Daily Checks!

Detector #	Sample No.	Batch ID	Aliquots (g, L,S, F)	Geometry	Count Time (min)	Count Start date/ time	Count Analyst
BSF 9-24-24 6	3069 2931 020 -0.5' 15°	79926	1125.6	Open 4	60	9-24-24 0641	BSS
5	46283306002	81315	42.32g	2 OZ	45	9/24/24 740	JMK
6	3069 2931 021 -1.5' 15°	79926	1130.3 J	Open 4	60	9-24-24 0755	BSS
5	LCS81315 (21-044)	81315	97.52g	2 OZ	15	9/24/24 830	JMK
5	LCS81474 (21-042)	81474	351.68g	8 OZ TUNA	15	9/24/24 850	JMK
6	3069 2931 022 -2.5' 15°	79926	1131.9 J	Open 4	60	9-24-24 0909	BSS
5	LCS081474 (21-042)	81474	351.68g	8 OZ TUNA	15	9/24/24 906	JMK
5	3399292	81474	319.7g	8 OZ TUNA	30	9/24/24 927	JMK
5	30718977002	81474	276.05g	8 OZ TUNA	30	9/24/24 1003	JMK
6	3069 2931 023 -3.5' 15°	79926	1127.9	Open 4	90	9-24-24 1023	BSS
5	30717346001 (227)	81318	2.0 L	2 LITER	60	9/24/24 1110	JMK
6	3069 2931 024 026 -4.5' 15°	79926	1129.8	Open 4	1000	9-24-24 1149	BSS
5	30718677001	81474	277.80g	8 OZ TUNA	30	9/24/24 1220	JMK
5	30718677003	81474	75.65g	8 OZ TUNA	90	9/24/24 1253	JMK
5	LCS81472 (21-043)	81472	204.87g	4 OZ	15	9/24/24 1431	JMK
5	3399287	81472	197.24g	4 OZ	30	9/24/24 1450	JMK
5	30718690601	81472	146.89g	4 OZ	45	9/24/24 1536	JMK
5	30718290001	81472	21.88g	4 OZ	600	9/24/24 1626	JMK
6	DBD6092524	DBKG	—	—	5	9-25-24 0518	BSS
5	DCD5092524 (QA5B08810) ✓	DCHK	—	check source 5	5	9-25-24 0520	BSS
5	DBD5092524	DBKG	—	—	5	9-25-24 0530	BSS
6	DCD6092524 (QA6D0780) ✓	DCHK	—	check source 5	5	9-25-24 0532	BSS
6	DBD6092524 (OPEN)	DBKG	—	—	5	9-25-24 0548	BSS
6	3069 2931 024 -4.5' 15°	79926	1129.8	open 4	120	9-25-24 0558	BSS

Comments:

JMK 9/25/24

Logbook review documented on Rad Data Review Verification form.

MYF 9-25-24

ORTEC g v - i (3263) Env32 G701W047 9/18/2024 11:08:24 AM Page 1
PACE Spectrum name: 3390410.An1

Sample description
81318

Spectrum Filename: C:\User\3390410.An1

Acquisition information
Start time: 9/18/2024 7:53:35 AM
Live time: 11002
Real time: 11444
Dead time: 3.87 %
Detector ID: 5

Detector system
DET 5

Calibration
Filename: DET_5_2L_MAR_23-047(021924).Clb
DET_5_2L_MAR_23-047(021924)

Energy Calibration
Created: 2/23/2024 11:14:34 AM
Zero offset: 0.513 keV
Gain: 0.250 keV/channel
Quadratic: -4.543E-10 keV/channel^2

Efficiency Calibration
Created: 2/23/2024 11:15:45 AM
Type: Polynomial
Uncertainty: 1.566 %
Coefficients: -0.317713 -4.992960 0.533353
-0.071649 0.003819 -0.000077

Library Files
Main analysis library: Pace Master w Ra226U235 (wo PS)
Library Match Width: 0.500
Peak stripping: Library based

Analysis parameters
Analysis engine: Env32 G701W047
Start channel: 120 (30.51keV)
Stop channel: 8144 (2036.02keV)
Peak rejection level: 30.000%
Peak search sensitivity: 3
Sample Size: 2.0000E+00
Activity scaling factor: 1.0000E+06/(1.0000E+00* 2.0000E+00) =
5.0000E+05
Detection limit method: Reg. Guide 4.16 Method

Random error: 1.0000000E+00
Systematic error: 1.0000000E+00
Fraction Limit: 0.000%
Background width: average of three points.

Half lives decay limit: 12.000

WTF 9-19-24

JM 9/18/24

ORTEC g v - i (3263) Env32 G701W047 9/18/2024 11:08:24 AM Page 2
PACE Spectrum name: 3390410.An1

Activity range factor:	2.000
Min. step backg. energy	0.000
Multiplet shift channel	2.000

Corrections	Status	Comments
Decay correct to date:	YES	9/18/2024 7:53:35 AM
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	YES	Det_5_Bkg_091324Ra226U235(2L).Pb 9/16/2024 9:21:01 AM
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

total peaks alloc. 0 cutoff: 0.00E+00 %
Energy Calibration
Normalized diff: 1.0000

***** S U M M A R Y O F P E A K S I N R A N G E *****

Peak Energy	Area	Uncert	FWHM	Corrctn Factor	Nuclide	Brnch. Ratio	Act. pCi/L	Nuc

No unknown peaks passed sensitivity test.

This section based on library: Pace Master w Ra226U235 (wo PS)

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	FWHM keV

s - Peak fails shape tests.
D - Peak area deconvoluted.
A Derived peak area.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

- Nuclide - Name	Code	Average Activity pCi/L	Peak Energy keV	Peak Activity pCi/L	Code	Peak MDA Value pCi/L	COMMENTS
Be-7	C	-2.8067E+00				5.34E+01	
			477.56	-2.807E+00 %(		3.280E+01	5.31E+02 1.03E+01 G K
K-40	N	2.0377E+01				4.68E+11	
			1461.00	2.038E+01 %(P		6.400E+01	1.38E+02 1.07E+01 G K

ORTEC g v - i (3263) Env32 G701W047 9/18/2024 11:08:24 AM Page 3
PACE Spectrum name: 3390410.An1

Nuclide	Ave activity	Energy	Activity	Code	Peak MDA	Comments

Sc-46	F	1.2152E+00						8.38E+01		
			889.28	1.215E+00	%(	P	4.377E+00	1.66E+02	1.00E+02	G K
Cr-51	F	-1.0054E+01						2.77E+01		
			320.08	-1.005E+01	%(		3.627E+01	1.64E+02	1.01E+01	G K
Mn-54	C	2.6072E+00						3.12E+02		
			834.85	2.607E+00	&(		3.815E+00	7.22E+01	1.00E+02	G K
Co-56	C	4.6117E+00						7.73E+01		
			1238.28	4.612E+00	%(	P	5.438E+00	6.84E+01	6.61E+01	G K
			1771.35	0.000E+00	%	P	4.558E+01	1.00E+03	1.55E+01	G
Co-57	C	-1.4790E-01						2.72E+02		
			122.06	-1.479E-01	%(		3.985E+00	1.18E+03	8.56E+01	G K
			136.47	-1.312E+00	&		3.258E+01	1.13E+03	1.07E+01	G
Co-58	C	-1.9812E+00						7.08E+01		
			810.78	-1.981E+00	%(		5.544E+00	1.38E+02	9.94E+01	G K
Co-60	F	1.5759E+00						1.92E+03		
			1332.50	1.576E+00	%(	P	4.714E+00	1.49E+02	1.00E+02	G K
			1173.24	-1.023E+00	%		4.628E+00	2.20E+02	1.00E+02	G
Zn-65	F	-2.0593E+00						2.44E+02		
			1115.55	-2.059E+00	%(		1.026E+01	2.46E+02	5.06E+01	G K
Y-88	C	9.7434E-01						1.07E+02		
			1836.06	9.743E-01	&(	P	4.887E+00	2.69E+02	9.92E+01	G K
			898.04	0.000E+00	%	P	5.645E+00	1.00E+03	9.37E+01	G
Nb-94	I	-3.5394E-01						7.41E+06		
			871.09	-3.539E-01	%(		4.735E+00	6.40E+02	9.99E+01	G K
			702.62	1.485E+00	%		4.204E+00	1.34E+02	9.79E+01	G
Zr-95	I	1.9170E+00						6.40E+01		
			756.73	1.917E+00	%(		6.999E+00	1.76E+02	5.45E+01	G K
			724.20	7.290E+00	&		6.303E+00	4.30E+01	4.42E+01	G
Nb-95	I	1.8652E+00						3.50E+01		
			765.81	1.865E+00	&(	P	4.040E+00	1.13E+02	9.98E+01	G K
Ag-108M	C	-9.5355E-01						1.53E+05		
			722.94	-9.536E-01	&(		5.034E+00	2.49E+02	9.08E+01	G K
			614.28	-6.118E-01	%		5.170E+00	4.00E+02	8.98E+01	G
			433.94	4.594E-01	%	P	3.896E+00	4.21E+02	9.05E+01	G
			79.13	2.181E+01	&	P	7.095E+01	1.53E+02	6.60E+00	G

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Ru-106	I -3.9083E+00					3.73E+02	
		621.93	-3.908E+00	%(		4.283E+01	5.15E+02 9.93E+00 G K
Cd-109	F 9.2669E-01					4.64E+02	
		88.03	9.267E-01	%(	P	1.234E+02	6.02E+03 3.61E+00 G K
Sn-113	F -1.1300E+00					1.15E+02	
		391.69	-1.130E+00	&(		6.197E+00	2.55E+02 6.40E+01 G K

Sb-125	I	-2.1328E+00					1.01E+03		
			427.88	-2.133E+00	%(	1.125E+01	2.42E+02	2.96E+01	G K
			176.31	5.704E+00	% P	5.073E+01	4.26E+02	6.82E+00	G
			463.36	1.550E+01	% P	3.370E+01	1.11E+02	1.05E+01	G
			600.60	0.000E+00	& P	3.449E+01	1.00E+03	1.79E+01	G
			635.95	6.982E+00	%	3.059E+01	2.05E+02	1.13E+01	G
Te-129	I	7.1069E+00					3.36E+01		
			459.60	7.107E+00	&(	4.832E+01	3.13E+02	7.70E+00	G K
			487.39	8.180E+01	% P	2.482E+02	1.51E+02	1.42E+00	G
Te-129M	I	5.8456E+01					3.36E+01		
			695.88	5.846E+01	%(P	1.189E+02	1.12E+02	3.00E+00	G K
Te-132	I	7.7814E-01					3.20E+00		
			228.16	7.781E-01	%(	3.719E+00	2.17E+02	8.80E+01	G K
I-133	I	6.1338E-01					8.67E-01		
			529.87	6.134E-01	%(P	4.583E+00	3.64E+02	8.70E+01	G K
			875.33	0.000E+00	% P	1.360E+02	1.00E+03	4.51E+00	G
Ba-133	F	3.0259E+00					3.84E+03		
			356.02	3.026E+00	&(	5.494E+00	8.57E+01	6.20E+01	G K
			81.00	-4.735E-01	&	1.320E+01	1.22E+03	3.41E+01	G
			302.85	-1.077E+00	&	1.891E+01	7.88E+02	1.83E+01	G
			276.40	-3.533E+01	%	5.411E+01	7.09E+01	7.16E+00	G
			383.85	4.348E-01	%	4.026E+01	4.25E+03	8.94E+00	G
Cs-134	I	3.5029E-01					7.52E+02		
			795.86	3.503E-01	%(P	5.196E+00	7.29E+02	8.55E+01	G K
			604.72	0.000E+00	%	5.691E+00	1.00E+03	9.76E+01	GA
			569.33	0.000E+00	% P	2.754E+01	1.00E+03	1.54E+01	GA
			801.95	0.000E+00	% P	7.576E+01	1.00E+03	8.69E+00	GA
Cs-137	I	2.7034E+00					1.10E+04		
			661.66	2.703E+00	%(	2.894E+00	5.22E+01	9.01E+01	G K

Nuclide		Ave activity	Energy		Activity		Code	Peak	MDA	Comments
Ba-140	I	1.8375E+00						1.28E+01		
			537.26	1.837E+00	%(	1.566E+01	4.01E+02	2.44E+01	G K	
			162.66	9.017E+00	& P	5.510E+01	2.96E+02	6.22E+00	G	
La-140	I	1.3064E+00						1.28E+01		
			1596.21	1.306E+00	%(P	5.381E+00	2.15E+02	9.54E+01	G K	
			487.02	2.826E+00	% P	7.466E+00	1.33E+02	4.55E+01	G	
			815.77	0.000E+00	% P	2.052E+01	1.00E+03	2.33E+01	G	
			328.76	6.857E-01	%	2.050E+01	1.39E+03	2.03E+01	G	
Ce-141	I	2.8328E-01						3.25E+01		
			145.44	2.833E-01	&(P	7.635E+00	1.30E+03	4.82E+01	G K	
Ce-144	I	5.1630E+00						2.85E+02		
			133.51	5.163E+00	%(P	3.005E+01	2.81E+02	1.11E+01	G K	
Eu-152	F	7.1373E-01						4.95E+03		
			121.78	7.137E-01	%(	1.170E+01	7.17E+02	2.84E+01	G K	
			1408.01	-9.618E-01	%	2.363E+01	1.20E+03	2.09E+01	GA	
			1112.12	-1.244E+00	%	3.566E+01	1.39E+03	1.36E+01	GA	

			1085.91	1.364E+01	%	4.409E+01	1.58E+02	9.92E+00	GA
			964.13	0.000E+00	% P	4.132E+01	1.00E+03	1.43E+01	GA
			344.28	0.000E+00	% P	1.473E+01	1.00E+03	2.66E+01	GA
			244.70	-7.695E-01	%	4.759E+01	2.79E+03	7.49E+00	GA
Eu-155	I	6.1886E+00					1.74E+03		
			86.54	6.189E+00	%(P	1.381E+01	1.05E+02	3.07E+01	G K
			105.31	4.885E-01	% P	1.612E+01	1.52E+03	2.12E+01	G
Lu-176	N	-1.8828E-01					1.38E+13		
			306.78	-1.883E-01	%(	3.476E+00	8.25E+02	9.40E+01	G K
			201.83	-3.572E+00	%	4.491E+00	5.86E+01	8.65E+01	G
Hg-203	F	4.6058E-01					4.66E+01		
			279.20	4.606E-01	%(P	4.101E+00	4.34E+02	8.15E+01	G K
U-236	I	2.2196E+03					8.55E+09		
			49.46	2.220E+03	&(	1.273E+04	2.52E+02	7.80E-02	G K
			112.79	0.000E+00	& P	1.903E+04	1.00E+03	1.90E-02	G
			171.15	0.000E+00	% P	5.437E+06	1.00E+03	6.20E-05	G
Sm-145	I	-3.6155E+01					3.40E+02		
			61.23	-3.615E+01	&(	6.308E+01	7.82E+01	1.21E+01	G K
			431.40	-2.307E+06	%	7.194E+06	1.45E+02	5.20E-05	G

Nuclide		Ave activity	Energy			Activity	Code	Peak	MDA	Comments
Cd-113M	I	3.2113E-01						5.15E+03		
			263.70	3.211E-01	%(	3.271E+00	4.59E+02	1.00E+02	G K	
Ra-224	N	1.4410E+01						6.98E+02		
			241.00	1.441E+01	%(	9.564E+01	3.02E+02	3.90E+00	G K	
Th-230	N	2.2273E+02						2.75E+07		
			67.67	2.227E+02	%(	1.673E+03	3.32E+02	3.80E-01	G K	
Pa-231	N	-2.6262E+00						1.20E+07		
			283.70	-2.626E+00	%(	1.939E+02	3.29E+03	1.60E+00	G K	
			330.00	-2.442E+02	%	3.571E+02	7.00E+01	1.30E+00	G	
Pa-234M	N	1.9613E+02						1.63E+12		
								Energy duplication		
			1001.03	1.961E+02	%(P	4.899E+02	1.32E+02	8.37E-01	G	
Th-234	N	4.5060E+01						1.63E+12		
			63.29	4.506E+01	%(P	1.508E+02	1.53E+02	4.80E+00	G K	
			92.60	3.808E+01	% P	1.726E+02	1.90E+02	2.80E+00	GA	
U-235	N	-1.9464E+00						2.57E+11		
			143.76	-1.946E+00	%(	3.400E+01	7.96E+02	1.10E+01	G K	
			205.31	1.671E+01	%	5.983E+01	1.63E+02	5.01E+00	G	
			89.95	0.000E+00	%	1.544E+02	1.00E+03	3.56E+00	GA	
U-238	N	1.9040E+01						1.63E+12		
			92.59	1.904E+01	%(P	8.631E+01	1.90E+02	5.60E+00	G K	
								Energy duplication		
			1001.03	1.954E+02	% P	4.882E+02	1.32E+02	8.40E-01	G K	
Am-241	T	-4.1813E+00						1.58E+05		

```
                          59.54-4.181E+00 %(  1.850E+01 1.95E+02 3.63E+01 G K

Am-243   T   1.5282E-01                                          2.69E+06
                          74.66 1.528E-01 %(  7.546E+00 2.17E+03 6.82E+01 G K

Pm-144   C   9.6478E-01                                          3.63E+02
                         696.51 9.648E-01 %(P 4.049E+00 2.21E+02 9.90E+01 G K
                         618.01 1.679E+00 %   3.803E+00 1.08E+02 9.86E+01 G
   ( - This peak used in the nuclide activity average.

   * - Peak is too wide, but only one peak in library.
   ! - Peak is part of a multiplet and this area went
       negative during deconvolution.
   ? - Peak is too narrow.
   @ - Peak is too wide at FW25M, but ok at FWHM.
   % - Peak fails sensitivity test.
```



```
   $ - Peak identified, but first peak of this nuclide
       failed one or more qualification tests.
   + - Peak activity higher than counting uncertainty range.
   - - Peak activity lower than counting uncertainty range.
   = - Peak outside analysis energy range.
   & - Calculated peak centroid is not close enough to the
       library energy centroid for positive identification.
   P - Peakbackground subtraction
   } - Peak is too close to another for the activity
       to be found directly.

   Nuclide Codes:                      Peak Codes:
   T - Thermal Neutron Activation      G - Gamma Ray
   F - Fast Neutron Activation         X - X-Ray
   I - Fission Product                 P - Positron Decay
   N - Naturally Occurring Isotope     S - Single-Escape
   P - Photon Reaction                 D - Double-Escape
   C - Charged Particle Reaction       K - Key Line
   M - No MDA Calculation              A - Not in Average
   R - Coincidence Corrected           C - Coincidence Peak
   H - Halflife limit exceeded

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

*************** D I S C A R D E D  I S O T O P E  P E A K S ***************
Nuclide Centroid  Background  Net Area   Intensity   Uncert   Activity
          Energy   Counts     Counts     Cts/Sec  2 Sigma %
-------------------------------------------------------------------------
  P - Peakbackground subtraction

*****   S U M M A R Y   O F   N U C L I D E S   I N   S A M P L E   *****
          Time of Count  Time Corrected  Uncertainty  2 Sigma
Nuclide     Activity       Activity       Counting     Total          MDA
               pCi/L          pCi/L          pCi/L       pCi/L        pCi/L
-------------------------------------------------------------------------
Be-7    #B   -2.8067E+00   -2.8067E+00   2.9822E+01   2.9823E+01  3.280E+01
Na-22   #B    0.0000E+00    0.0000E+00   5.2722E-01   5.2722E-01  5.725E+00
K-40    #B    2.0377E+01    2.0377E+01   5.6090E+01   5.6104E+01  6.400E+01
Sc-46   #B    1.2152E+00    1.2152E+00   4.0302E+00   4.0309E+00  4.377E+00
Cr-51   #B   -1.0054E+01   -1.0054E+01   3.2904E+01   3.2911E+01  3.627E+01
```

Mn-54	#B	2.6072E+00	2.6072E+00	3.7646E+00	3.7680E+00	3.815E+00
Co-56	#B	4.6117E+00	4.6117E+00	6.3058E+00	6.3119E+00	5.438E+00
Co-57	#B	-1.4790E-01	-1.4790E-01	3.4873E+00	3.4874E+00	3.985E+00
Co-58	#B	-1.9812E+00	-1.9812E+00	5.4663E+00	5.4677E+00	5.544E+00
Fe-59	#B	0.0000E+00	0.0000E+00	3.8353E+00	3.8353E+00	1.253E+01
Co-60	#B	1.5759E+00	1.5759E+00	4.6967E+00	4.6977E+00	4.714E+00
Zn-65	#B	-2.0593E+00	-2.0593E+00	1.0111E+01	1.0112E+01	1.026E+01
SE-75	#B	0.0000E+00	0.0000E+00	1.4563E+00	1.4563E+00	6.548E+00
Kr-85	#B	0.0000E+00	0.0000E+00	3.8042E+02	3.8043E+02	1.983E+03
Y-88	#B	9.7434E-01	9.7434E-01	5.2442E+00	5.2446E+00	4.887E+00
Nb-94	#B	-3.5394E-01	-3.5394E-01	4.5326E+00	4.5327E+00	4.735E+00
Zr-95	#B	1.9170E+00	1.9170E+00	6.7303E+00	6.7313E+00	6.999E+00

Nb-95	#B	1.8652E+00	1.8652E+00	4.2244E+00	4.2259E+00	4.040E+00
Ru-103	#B	0.0000E+00	0.0000E+00	2.2451E+00	2.2451E+00	4.968E+00
Ag-108M	#B	-9.5355E-01	-9.5355E-01	4.7502E+00	4.7506E+00	5.034E+00
Ru-106	#B	-3.9083E+00	-3.9083E+00	4.0277E+01	4.0277E+01	4.283E+01
Cd-109	#B	9.2669E-01	9.2669E-01	1.1156E+02	1.1156E+02	1.234E+02
Ag-110M	#B	0.0000E+00	0.0000E+00	6.0196E-01	6.0197E-01	4.629E+00
Sn-113	#B	-1.1300E+00	-1.1300E+00	5.7680E+00	5.7684E+00	6.197E+00
Sb-124	#B	0.0000E+00	0.0000E+00	1.0395E+00	1.0395E+00	5.846E+00
Sb-125	#B	-2.1328E+00	-2.1328E+00	1.0339E+01	1.0339E+01	1.125E+01
Te-129	#B	7.1069E+00	7.1069E+00	4.4464E+01	4.4467E+01	4.832E+01
Te-129M	#B	5.8456E+01	5.8456E+01	1.3044E+02	1.3049E+02	1.189E+02
I-131	#B	0.0000E+00	0.0000E+00	1.4434E+00	1.4434E+00	4.463E+00
I-132	#B	0.0000E+00	0.0000E+00	6.8655E-01	6.8656E-01	6.808E+00
Te-132	#B	7.7814E-01	7.7814E-01	3.3774E+00	3.3778E+00	3.719E+00
I-133	#B	6.1338E-01	6.1338E-01	4.4633E+00	4.4635E+00	4.583E+00
Ba-133	#B	3.0259E+00	3.0259E+00	5.1864E+00	5.1884E+00	5.494E+00
Cs-134	#B	3.5029E-01	3.5029E-01	5.1038E+00	5.1039E+00	5.196E+00
Cs-136	#B	0.0000E+00	0.0000E+00	5.4265E-01	5.4266E-01	5.536E+00
Cs-137	#B	2.7034E+00	2.7034E+00	2.8204E+00	2.8251E+00	2.894E+00
Ce-139	#B	0.0000E+00	0.0000E+00	2.2100E+00	2.2100E+00	4.417E+00
Ba-140	#B	1.8375E+00	1.8375E+00	1.4751E+01	1.4751E+01	1.566E+01
La-140	#B	1.3064E+00	1.3064E+00	5.6153E+00	5.6159E+00	5.381E+00
Ce-141	#B	2.8328E-01	2.8328E-01	7.3481E+00	7.3481E+00	7.635E+00
Ce-144	B	5.1630E+00	5.1630E+00	2.8993E+01	2.8995E+01	3.005E+01
ND-147	#B	0.0000E+00	0.0000E+00	1.1883E+01	1.1883E+01	3.258E+01
Eu-152	#B	7.1373E-01	7.1373E-01	1.0238E+01	1.0238E+01	1.170E+01
Eu-154	#B	0.0000E+00	0.0000E+00	2.5133E+00	2.5133E+00	9.658E+00
Eu-155	#B	6.1886E+00	6.1886E+00	1.3012E+01	1.3021E+01	1.381E+01
Lu-176	#B	-1.8828E-01	-1.8828E-01	3.1079E+00	3.1080E+00	3.476E+00
Ir-192	#B	0.0000E+00	0.0000E+00	2.2331E+00	2.2331E+00	4.324E+00
Hg-203	#B	4.6058E-01	4.6058E-01	3.9972E+00	3.9973E+00	4.101E+00
Tl-208	#B	0.0000E+00	0.0000E+00	3.7452E+00	3.7452E+00	5.997E+00
U-236	#B	2.2196E+03	2.2196E+03	1.1176E+04	1.1185E+04	1.273E+04
Sm-145	#B	-3.6155E+01	-3.6155E+01	5.6577E+01	5.7365E+01	6.308E+01
Cd-113M	#B	3.2113E-01	3.2113E-01	2.9454E+00	2.9454E+00	3.271E+00
I-129	#	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.000E+00
Pb-210	#B	0.0000E+00	0.0000E+00	1.8396E+02	1.8396E+02	3.986E+02
Bi-212	#B	0.0000E+00	0.0000E+00	1.8499E+01	1.8499E+01	7.025E+01
Pb-212	#B	0.0000E+00	0.0000E+00	4.4868E+00	4.4868E+00	8.870E+00
Bi-214	#B	0.0000E+00	0.0000E+00	6.7571E+00	6.7571E+00	1.401E+01
Pb-214	#B	0.0000E+00	0.0000E+00	5.5957E+00	5.5957E+00	1.216E+01
Ra-223	#B	0.0000E+00	0.0000E+00	1.1545E+01	1.1545E+01	2.593E+01
Ra-224	#B	1.4410E+01	1.4410E+01	8.6977E+01	8.6983E+01	9.564E+01
Ra-226	#B	0.0000E+00	0.0000E+00	1.0063E+02	1.0063E+02	1.176E+02
Ac-227	#B	0.0000E+00	0.0000E+00	5.5126E+00	5.5126E+00	3.123E+01
Ac-228	#B	0.0000E+00	0.0000E+00	9.9455E+00	9.9455E+00	2.337E+01

Th-228 #B	0.0000E+00	0.0000E+00	1.6972E+02	1.6973E+02	3.456E+02
Th-230 #B	2.2273E+02	2.2273E+02	1.4791E+03	1.4798E+03	1.673E+03
Pa-231 #B	-2.6262E+00	-2.6262E+00	1.7304E+02	1.7304E+02	1.939E+02

Pa-234M#A	1.9613E+02	1.9613E+02	5.1652E+02	5.1666E+02	4.899E+02
Th-232 #B	0.0000E+00	0.0000E+00	1.5006E+03	1.5007E+03	2.865E+03
Th-234 #B	4.5060E+01	4.5060E+01	1.3832E+02	1.3875E+02	1.508E+02
U-235 #B	-1.9464E+00	-1.9464E+00	3.0992E+01	3.0992E+01	3.400E+01
U-238 #B	1.9040E+01	1.9040E+01	7.2302E+01	7.2315E+01	8.631E+01
Am-241 #B	-4.1813E+00	-4.1813E+00	1.6347E+01	1.6387E+01	1.850E+01
Am-243 #B	1.5282E-01	1.5282E-01	6.6236E+00	6.6236E+00	7.546E+00
Pm-144 #B	9.6478E-01	9.6478E-01	4.2678E+00	4.2682E+00	4.049E+00
Pm-146 #B	0.0000E+00	0.0000E+00	1.0788E+00	1.0788E+00	6.990E+00

- All peaks for activity calculation had bad shape.
* - Activity omitted from total
& - Activity omitted from total and all peaks had bad shape.
< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

---------- S U M M A R Y ----------

Total Activity (30.5 to 2036.0 keV) 0.000E+00 pCi/L
Total Decayed Activity (30.5 to 2036.0 keV) 0.0000000E+00 pCi/L

The library has energies which are not separable.

Analyzed by: _____
Operator

Reviewed by: _____
Supervisor

Laboratory: PACE

ORTEC g v - i (3263) Env32 G701W047 9/16/2024 9:42:49 AM Page 1
Pace Spectrum name: 30715474001.An1

Sample description
81318

Spectrum Filename: C:\User\Spectra\30715474001.An1

Acquisition information
Start time: 9/16/2024 9:09:11 AM
Live time: 1800
Real time: 1835
Dead time: 1.93 %
Detector ID: 2

Detector system
DET 2

Calibration
Filename: DET_2_2L MAR_23-047(113023).Clb
DET 2 2L MARINELLI

Energy Calibration
Created: 11/30/2023 7:00:31 AM
Zero offset: 0.281 keV
Gain: 0.250 keV/channel
Quadratic: -1.344E-08 keV/channel^2

Efficiency Calibration
Created: 11/30/2023 7:26:21 AM
Type: Polynomial
Uncertainty: 1.699 %
Coefficients: -0.225215 -3.983441 0.474906
-0.072106 0.003754 -0.000081

Library Files
Main analysis library: Pace Master w Ra226U235 (wo PS)
Library Match Width: 0.500
Peak stripping: Library based

Analysis parameters
Analysis engine: Env32 G701W047
Start channel: 120 (30.33keV)
Stop channel: 8144 (2038.53keV)
Peak rejection level: 30.000%
Peak search sensitivity: 3
Sample Size: 2.0000E+00
Activity scaling factor: 1.0000E+06/(1.0000E+00* 2.0000E+00) = WTF
5.0000E+05
Detection limit method: Reg. Guide 4.16 Method 9-19-24

Random error: 0.0000000E+00
Systematic error: 0.0000000E+00
Fraction Limit: 0.000%
Background width: average of three points.

Half lives decay limit: 12.000

JM 9/16/24

ORTEC g v - i (3263) Env32 G701W047 9/16/2024 9:42:49 AM Page 2
Pace Spectrum name: 30715474001.An1

Activity range factor:	2.000
Min. step backg. energy	0.000
Multiplet shift channel	2.000

Corrections	Status	Comments
Decay correct to date:	YES	9/5/2024 12:45:00 PM
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	YES	Det_2_Bkg_091324Ra226U235(2LITER 9/16/2024 9:13:41 AM
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

WTF 9-19-24

9/16/24

total peaks alloc. 0 cutoff: 0.00E+00 %
Energy Calibration
Normalized diff: 0.0554

***** S U M M A R Y O F P E A K S I N R A N G E *****

Peak Energy	Area	Uncert	FWHM	Corrctn Factor	Nuclide Energy	Brnch. Ratio	Act. pCi/L	Nuc
74.76	216.	13.18	0.97	1.578E-02	74.66	68.200	1.500E+02	Am243
					74.81	6.330	1.607E+03	Pb214
					74.81	10.400	9.884E+02	Pb212
					74.81	10.400	9.884E+02	Pb212
77.10	358.	8.54	0.97	1.716E-02	77.11	17.500	9.016E+02	Pb212
					77.11	10.700	1.464E+03	Pb214
					77.11	17.500	9.016E+02	Pb212
87.22	169.	17.28	0.78	2.296E-02	86.54	30.700	1.837E+02	Eu155
					87.20	3.700	1.494E+03	Pb214
					87.30	7.800	7.111E+02	Pb212
					87.30	7.800	7.111E+02	Pb212
186.20	700.	7.77	0.98	4.782E-02	186.10	3.500	3.060E+03	Ra226
242.06	661.	6.99	1.14	4.663E-02	241.92	7.470	1.423E+03	Pb214
					241.00	3.900	2.739E+03	Ra224
295.26	1560.	3.43	1.08	4.357E-02	295.22	19.200	1.397E+03	Pb214
					295.96	28.670	1.039E+03	Ir192
					295.96	28.670	1.039E+03	Ir192
338.45	259.	11.24	1.23	4.095E-02	338.32	11.300	4.202E+02	Ac228
351.97	2839.	2.24	1.23	4.017E-02	351.99	37.100	1.427E+03	Pb214
546.50	75.	24.28	0.84	3.153E-02				
609.37	2655.	2.12	1.38	2.961E-02	609.31	44.800	1.497E+03	Bi214
768.20	291.	8.62	1.06	2.593E-02	768.36	4.800	1.756E+03	Bi214
911.09	364.	7.66	1.84	2.353E-02	911.21	26.600	4.377E+02	Ac228
969.18	174.	11.50	1.09	2.272E-02	968.97	16.200	3.569E+02	Ac228
1120.42	690.	4.45	1.58	2.093E-02	1120.29	14.800	1.672E+03	Bi214
1238.17	78.	27.21	1.99	1.977E-02	1235.36	20.000	PBC<MDA	Cs136
					1238.11	5.860	5.032E+02	Bi214

ORTEC g v - i (3263) Env32 G701W047 9/16/2024 9:42:49 AM Page 3
Pace Spectrum name: 30715474001.An1

pk energy	area	uncert	fwhm	corr	nuclide	brnch.	act.	nuc
					1238.28	66.070	PBC<MDA	Co56

1238.29	120.	11.00	1.99	1.976E-02	1235.36	20.000	4.045E+02	Cs136
					1238.11	5.860	7.805E+02	Bi214
					1238.28	66.070	7.631E+01	Co56
1377.95	206.	8.75	0.62	1.858E-02	1377.67	3.920	2.120E+03	Bi214
1407.87	76.	28.68	2.12	1.835E-02	1408.01	20.870	1.483E+02	Eu152
					1408.01	20.870	1.483E+02	Eu152
1764.59	630.	3.98	1.85	1.602E-02	1764.49	15.360	1.908E+03	Bi214

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Efficiency * Area	Uncert 2 Sigma %	FWHM keV	Suspected Nuclide	
2181.75	546.50	55.	75.	2.379E+03	48.56	0.838	J-135	sM

s - Peak fails shape tests.
D - Peak area deconvoluted.
L - Peak written from unknown list.
C - Area < Critical level.
M - Peak is close to a library peak.

This section based on library: Pace Master w Ra226U235 (wo PS)

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	FWHM keV
Pb-214	297.66	74.81	303.	189.	0.105	21.68	0.966D
Pb-212	297.66	74.81	349.	187.	0.104	40.23	0.966D
Pb-212	306.85	77.11	346.	319.	0.177	24.56	0.969D
Pb-214	306.85	77.11	289.	359.	0.199	17.09	0.969D
Pb-214	347.15	87.20	229.	168.	0.093	29.77	0.979D
Pb-212	347.31	87.24	340.	145.	0.081	51.24	0.979s
Ra-226	742.57	186.20	518.	682.	0.379	15.99	0.982
Pb-214	965.68	242.06	341.	660.	0.367	14.00	1.144
Pb-214	1178.16	295.26	271.	1557.	0.865	6.87	1.083
Ac-228	1350.70	338.45	148.	258.	0.143	22.59	1.232s
Pb-214	1404.69	351.97	232.	2832.	1.573	4.49	1.230
Bi-214	2432.93	609.37	116.	2646.	1.470	4.27	1.375
Bi-214	3068.19	768.39	75.	273.	0.152	19.31	1.052s
Ac-228	3638.32	911.09	66.	364.	0.202	15.33	1.843s
Ac-228	3870.45	969.18	48.	174.	0.097	23.00	1.086s
Bi-214	4474.74	1120.42	36.	690.	0.383	8.90	1.582s
Bi-214	4945.00	1238.11	52.	78.	0.043	54.43	1.990D
Co-56	4945.69	1238.28	109.	120.	0.067	22.01	1.990D

Nuclide	Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM
Bi-214	5503.80	1377.95	22.	206.	0.114	17.50	0.620s
Eu-152	5623.40	1407.87	60.	76.	0.042	57.35	2.116s
Bi-214	7048.65	1764.49	44.	580.	0.322	8.92	2.361D

s - Peak fails shape tests.
D - Peak area deconvoluted.
A Derived peak area.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

Nuclide Name	Code	Average Activity pCi/L	Peak Energy keV	Peak Activity pCi/L	Code	MDA Value pCi/L	COMMENTS
Na-22	C	-7.7900E-01				9.50E+02	
			1274.53	-7.790E-01	%(	1.452E+01 9.48E+02 9.99E+01	G K
K-40	N	1.7506E+00				4.68E+11	
			1461.00	1.751E+00	%(P	1.796E+02 5.20E+03 1.07E+01	G K
Sc-46	F	5.4397E-01				8.38E+01	
			889.28	5.440E-01	%(P	1.277E+01 1.10E+03 1.00E+02	G K
Cr-51	F	7.7456E-01				2.77E+01	
			320.08	7.746E-01	&(	1.743E+02 9.50E+03 1.01E+01	G K
Mn-54	C	4.6769E+00				3.12E+02	
			834.85	4.677E+00	%(P	1.497E+01 1.54E+02 1.00E+02	G K
Co-56	C	7.6307E+01				7.73E+01	
			1238.28	7.631E+01	} P	3.260E+01 1.10E+01 6.61E+01	G K
			1771.35	0.000E+00	%(P	1.644E+02 1.00E+03 1.55E+01	G
Fe-59	F	-6.1980E+00				4.45E+01	
			1099.25	-6.198E+00	%(	3.149E+01 2.56E+02 5.65E+01	G K
			1291.60	9.670E+00	% P	3.391E+01 1.79E+02 4.32E+01	G
SE-75		4.8551E+00				1.20E+02	
			264.66	4.855E+00	&(	2.431E+01 2.13E+02 5.86E+01	G K
			136.00	0.000E+00	% P	3.398E+01 1.00E+03 5.83E+01	G
			279.54	0.000E+00	& P	5.945E+01 1.00E+03 2.48E+01	G
			121.12	-4.068E+01	%	1.291E+02 1.31E+02 1.64E+01	G
Y-88	C	3.1191E+00				1.07E+02	
			1836.06	3.119E+00	%(	1.376E+01 2.36E+02 9.92E+01	G K
			898.04	0.000E+00	% P	1.743E+01 1.00E+03 9.37E+01	G

Nuclide	Ave activity	Energy	Activity	Code	Peak MDA	Comments
Nb-94	I 2.1793E+00				7.41E+06	
		871.09	2.179E+00	%(	1.390E+01 3.04E+02 9.99E+01	G K
		702.62	5.128E+00	% P	1.351E+01 1.23E+02 9.79E+01	G
Zr-95	I 5.6317E+00				6.40E+01	
		756.73	5.632E+00	%(	2.745E+01 2.26E+02 5.45E+01	G K
		724.20	0.000E+00	% P	3.230E+01 1.00E+03 4.42E+01	G
Nb-95	I 6.3447E+00				3.50E+01	
		765.81	6.345E+00	%(P	1.386E+01 1.02E+02 9.98E+01	G K
Ru-103	I 1.3863E+00				3.93E+01	
		497.08	1.386E+00	%(P	1.635E+01 5.31E+02 9.10E+01	G K
Ag-108M	C -1.2320E+01				1.53E+05	
		722.94	-1.232E+01	%(	1.841E+01 7.14E+01 9.08E+01	G K
		614.28	7.622E+00	& P	1.296E+01 7.80E+01 8.98E+01	G
		433.94	2.850E+00	% P	1.224E+01 1.88E+02 9.05E+01	G
		79.13	2.747E+02	%	5.023E+02 7.42E+01 6.60E+00	G

Ru-106	I	3.5145E+00							3.73E+02		
			621.93	3.514E+00	&(	1.147E+02	1.45E+03	9.93E+00	G	K	
Ag-110M	F	9.8892E-01							2.50E+02		
			657.76	9.889E-01	%(P	1.436E+01	6.72E+02	9.40E+01	G	K	
			1505.04	0.000E+00	% P	1.888E+02	1.00E+03	1.29E+01	G		
			1384.30	6.857E+01	% P	5.844E+01	4.57E+01	2.41E+01	G		
			937.49	0.000E+00	%	8.777E+01	1.00E+03	3.41E+01	G		
			884.68	1.075E+01	%	1.655E+01	7.47E+01	7.22E+01	G		
			763.94	0.000E+00	% P	6.143E+01	1.00E+03	2.21E+01	G		
			744.28	0.000E+00	% P	3.256E+02	1.00E+03	4.70E+00	G		
			706.68	-4.645E+01	%	9.241E+01	9.41E+01	1.63E+01	G		
Sn-113	F	-8.2384E+00							1.15E+02		
			391.69	-8.238E+00	%(	2.351E+01	1.27E+02	6.40E+01	G	K	
Sb-124	F	3.2105E+00							6.02E+01		
			602.73	3.211E+00	%(	1.538E+01	2.16E+02	9.78E+01	G	K	
			645.85	4.180E+01	% P	1.834E+02	2.03E+02	7.38E+00	G		
			722.79	-1.178E+02	%	1.760E+02	7.14E+01	1.08E+01	G		
			1690.98	0.000E+00	% P	3.646E+01	1.00E+03	4.73E+01	G		
Te-132	I	3.9765E+01							3.20E+00		
			228.16	3.976E+01	&(	1.683E+02	1.81E+02	8.80E+01	G	K	

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
I-133	I 5.4526E+00					8.67E-01	
		529.87	5.453E+00	%(P	1.260E+01	1.05E+02	8.70E+01 G K
		875.33	5.681E+01	& P	3.119E+02	2.61E+02	4.51E+00 G
Ba-133	F 5.3119E+00					3.84E+03	
		356.02	5.312E+00	%(	1.777E+01	1.47E+02	6.20E+01 G K
		81.00	0.000E+00	% P	1.110E+02	1.00E+03	3.41E+01 G
		302.85	3.829E+01	% P	6.775E+01	7.63E+01	1.83E+01 G
		276.40	2.818E+01	%	1.971E+02	2.98E+02	7.16E+00 G
		383.85	0.000E+00	% P	1.506E+02	1.00E+03	8.94E+00 G
Cs-134	I 1.9002E+01					7.52E+02	
		795.86	1.900E+01	%(P	1.607E+01	4.22E+01	8.55E+01 G K
		604.72	0.000E+00	%	2.036E+01	1.00E+03	9.76E+01 GA
		569.33	2.568E+01	% P	8.186E+01	1.45E+02	1.54E+01 GA
		801.95	5.346E+01	%	1.414E+02	1.27E+02	8.69E+00 GA
Cs-136	F 1.5997E+00					1.32E+01	
		818.51	1.600E+00	%(	2.502E+01	7.44E+02	9.97E+01 G K
		176.60	-4.527E+01	%	2.811E+02	2.55E+02	1.00E+01 G
		273.65	-4.893E+01	&	2.456E+02	2.15E+02	1.11E+01 G
		340.55	2.045E+01	%	4.205E+01	8.78E+01	4.22E+01 G
		1048.07	0.000E+00	%	3.964E+01	1.00E+03	8.00E+01 G
		1235.36	-1.120E+02	&	1.905E+02	8.81E+01	2.00E+01 G
Cs-137	I -8.0192E+00					1.10E+04	
		661.66	-8.019E+00	%(	1.643E+01	9.70E+01	9.01E+01 G K
Ce-139	F 1.3796E+00					1.38E+02	
		165.85	1.380E+00	&(	2.076E+01	6.16E+02	7.99E+01 G K

La-140	I	-1.0141E+01					1.28E+01		
			1596.21	-1.014E+01	%(	3.337E+01	1.74E+02	9.54E+01	G K
			487.02	5.657E+00	% P	5.157E+01	4.12E+02	4.55E+01	G
			815.77	-3.482E+00	&	1.115E+02	1.52E+03	2.33E+01	G
			328.76	6.345E+01	&	1.150E+02	7.80E+01	2.03E+01	G
Ce-141	I	1.4818E+01					3.25E+01		
			145.44	1.482E+01	&(	4.504E+01	1.25E+02	4.82E+01	G K
Ce-144	I	-4.9225E+01					2.85E+02		
			133.51	-4.922E+01	%(	1.696E+02	1.42E+02	1.11E+01	G K
Eu-155	I	-3.6604E+01					1.74E+03		
			86.54	-3.660E+01	%(	9.619E+01	7.92E+01	3.07E+01	G K
			105.31	1.944E+01	%	1.043E+02	2.20E+02	2.12E+01	G

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Lu-176	N 4.4490E+00					1.38E+13	
		306.78	4.449E+00	%(P	1.353E+01	1.30E+02	9.40E+01 G K
		201.83	-4.225E-01	%	1.706E+01	1.65E+03	8.65E+01 G
Hg-203	F 9.7355E+00					4.66E+01	
		279.20	9.736E+00	&(P	1.810E+01	7.99E+01	8.15E+01 G K
Pb-210	N -7.0924E+02					8.14E+03	
		46.54	-7.092E+02	%(	1.555E+04	8.51E+02	4.25E+00 G K
Bi-212	N 1.1159E+02					6.98E+02	
		727.33	1.116E+02	%(P	1.775E+02	7.48E+01	6.58E+00 G K
		1620.50	4.243E+02	% P	5.878E+02	7.29E+01	1.49E+00 G
Pb-212	N 3.2358E+02					6.98E+02	
		238.63	0.000E+00	%(P	3.602E+01	1.00E+03	4.33E+01 G K
							Energy duplication
		77.11	8.045E+02	(P	2.259E+02	1.23E+01	1.75E+01 G
							Energy duplication
		74.81	8.615E+02	(P	4.145E+02	2.01E+01	1.04E+01 G
		87.30	6.152E+02	P	3.746E+02	2.56E+01	7.80E+00 GA
Bi-214	N 1.5027E+03					5.84E+05	
		609.31	1.497E+03	(P	2.994E+01	2.13E+00	4.48E+01 G K
		1120.29	1.672E+03	@	7.434E+01	4.45E+00	1.48E+01 GA
		2204.21	0.000E+00	=	0.000E+00	0.00E+00	4.86E+00 G
		1764.49	1.770E+03	+ P	1.028E+02	4.46E+00	1.54E+01 G
		1377.67	2.120E+03	+ P	2.547E+02	8.75E+00	3.92E+00 G
		1238.11	5.032E+02	} P	2.357E+02	2.72E+01	5.86E+00 G
		768.36	1.649E+03	(	2.593E+02	9.65E+00	4.80E+00 G
Pb-214	N 1.4384E+03					5.84E+05	
		351.99	1.427E+03	(P	3.712E+01	2.25E+00	3.71E+01 G K
		295.22	1.397E+03	(P	7.127E+01	3.44E+00	1.92E+01 G
		241.92	1.423E+03	(P	1.912E+02	7.00E+00	7.47E+00 G
		87.20	1.486E+03	(	6.473E+02	1.49E+01	3.70E+00 G
							Energy duplication
		77.11	1.465E+03	(P	3.350E+02	8.55E+00	1.07E+01 G
							Energy duplication
		74.81	1.420E+03	} P	6.287E+02	1.08E+01	6.33E+00 G

Nuclide		Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Ra-223	N	8.6303E+01					7.96E+03	
			269.46	8.630E+01	&(P	1.033E+02	5.21E+01	1.37E+01 G K
			83.78	6.510E+01	% P	1.221E+02	5.72E+01	2.49E+01 G
			323.87	-1.234E+02	%	3.599E+02	1.25E+02	3.93E+00 G
			154.21	2.101E+02	%	2.986E+02	5.93E+01	5.62E+00 G
			94.90	-6.310E+01	%	2.411E+02	1.54E+02	1.13E+01 G
			81.07	0.000E+00	% P	2.530E+02	1.00E+03	1.50E+01 G

Nuclide		Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Ra-226	N	3.0595E+03					5.84E+05	
			186.10	3.060E+03	(P	4.879E+02	7.99E+00	3.50E+00 G K
Ac-228	N	4.3246E+02					2.10E+03	
			911.21	4.377E+02	@(P	4.898E+01	7.66E+00	2.66E+01 G K
			968.97	3.569E+02	- P	7.137E+01	1.15E+01	1.62E+01 G
			338.32	4.202E+02	@(P	9.664E+01	1.13E+01	1.13E+01 G
Th-230	N	1.8832E+03					2.75E+07	
			67.67	1.883E+03	%(	1.451E+04	3.01E+02	3.80E-01 G K
Pa-231	N	-3.7092E+01					1.20E+07	
			283.70	-3.709E+01	&(	8.484E+02	9.70E+02	1.60E+00 G K
			330.00	-2.415E+02	&	1.071E+03	1.89E+02	1.30E+00 G
Pa-234M	N	1.2062E+02					1.63E+12	
							Energy duplication	
			1001.03	1.206E+02	&(	1.536E+03	6.16E+02	8.37E-01 G
Th-232	N	-3.5004E+03					4.17E+12	
			63.81	-3.500E+03	%(	2.708E+04	3.03E+02	2.67E-01 G K
Th-234	N	3.6276E+02					1.63E+12	
			63.29	3.628E+02	%(P	1.452E+03	1.56E+02	4.80E+00 G K
			92.60	2.645E+02	% P	9.852E+02	1.49E+02	2.80E+00 GA
U-235	N	2.8284E+01					2.57E+11	
			143.76	2.828E+01	%(P	1.586E+02	2.31E+02	1.10E+01 G K
			205.31	8.918E+01	%	2.873E+02	1.33E+02	5.01E+00 G
			89.95	6.008E+02	%	7.946E+02	5.53E+01	3.56E+00 GA
U-238	N	1.3439E+02					1.63E+12	
			92.59	1.344E+02	%(P	4.925E+02	1.46E+02	5.60E+00 G K
							Energy duplication	
			1001.03	1.202E+02	&	1.530E+03	6.16E+02	8.40E-01 G K
Am-241	T	3.0164E+01					1.58E+05	
			59.54	3.016E+01	&(P	2.456E+02	3.18E+02	3.63E+01 G K
Pm-146	C	8.8152E+00					2.02E+03	
			453.88	8.815E+00	%(P	1.768E+01	8.89E+01	6.52E+01 G K
			747.16	1.753E+01	%	3.113E+01	8.32E+01	3.40E+01 G
			735.72	0.000E+00	% P	6.721E+01	1.00E+03	2.25E+01 GA

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went
negative during deconvolution.

? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide failed one or more qualification tests.
+ - Peak activity higher than counting uncertainty range.
- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction
} - Peak is too close to another for the activity to be found directly.

Nuclide Codes:
T - Thermal Neutron Activation
F - Fast Neutron Activation
I - Fission Product
N - Naturally Occurring Isotope
P - Photon Reaction
C - Charged Particle Reaction
M - No MDA Calculation
R - Coincidence Corrected
H - Halflife limit exceeded

Peak Codes:
G - Gamma Ray
X - X-Ray
P - Positron Decay
S - Single-Escape
D - Double-Escape
K - Key Line
A - Not in Average
C - Coincidence Peak

- -

********** D I S C A R D E D I S O T O P E P E A K S **********

Nuclide	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	Activity	
Pb-212	74.81	349.	187.	0.104	40.23	8.615E+02	P
Pb-212	77.11	346.	319.	0.177	24.56	8.045E+02	P
Pb-212	87.24	340.	145.	0.081	51.24	6.152E+02	P
Eu-152	1407.87	60.	76.	0.042	57.35	1.483E+02	

P - Peakbackground subtraction

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide		Time of Count Activity pCi/L	Time Corrected Activity pCi/L	Uncertainty Counting pCi/L	2 Sigma Total pCi/L	MDA pCi/L
Be-7	#B	0.0000E+00	0.0000E+00	6.6118E+01	6.6118E+01	1.477E+02
Na-22	#B	-7.7285E-01	-7.7900E-01	1.4770E+01	1.4770E+01	1.452E+01
K-40	#B	1.7506E+00	1.7506E+00	1.8211E+02	1.8211E+02	1.796E+02
Sc-46	#B	4.9727E-01	5.4397E-01	1.1957E+01	1.1957E+01	1.277E+01
Cr-51	#B	5.9039E-01	7.7456E-01	1.4719E+02	1.4719E+02	1.743E+02
Mn-54	#B	4.5656E+00	4.6769E+00	1.4432E+01	1.4435E+01	1.497E+01
Co-56	A	6.9230E+01	7.6307E+01	1.9729E+01	2.0292E+01	1.644E+02
Co-57	#B	0.0000E+00	0.0000E+00	7.5989E+00	7.5990E+00	2.364E+01
Co-58	#B	0.0000E+00	0.0000E+00	4.2232E+00	4.2232E+00	1.605E+01
Fe-59	#B	-5.2343E+00	-6.1980E+00	3.1709E+01	3.1711E+01	3.149E+01

Co-60	#B	0.0000E+00	0.0000E+00	2.5164E+00	2.5164E+00	1.918E+01
Zn-65	#B	0.0000E+00	0.0000E+00	1.1486E+01	1.1487E+01	4.981E+01
SE-75	#B	4.5611E+00	4.8551E+00	2.0724E+01	2.0726E+01	2.431E+01
Kr-85	#B	0.0000E+00	0.0000E+00	9.0904E+02	9.0904E+02	4.385E+03
Y-88	#B	2.9067E+00	3.1191E+00	1.4740E+01	1.4742E+01	1.376E+01
Nb-94	#B	2.1793E+00	2.1793E+00	1.3245E+01	1.3246E+01	1.390E+01
Zr-95	#B	5.0075E+00	5.6317E+00	2.5472E+01	2.5474E+01	2.745E+01
Nb-95	#B	5.1172E+00	6.3447E+00	1.2911E+01	1.2915E+01	1.386E+01
Ru-103	#B	1.1446E+00	1.3863E+00	1.4727E+01	1.4727E+01	1.635E+01
Ag-108M	#B	-1.2320E+01	-1.2320E+01	1.7586E+01	1.7600E+01	1.841E+01
Ru-106	#B	3.4442E+00	3.5145E+00	1.0166E+02	1.0166E+02	1.147E+02
Cd-109	#B	0.0000E+00	0.0000E+00	4.6160E+02	4.6160E+02	9.131E+02
Ag-110M	#B	9.5959E-01	9.8892E-01	1.3292E+01	1.3292E+01	1.436E+01
Sn-113	#B	-7.7173E+00	-8.2384E+00	2.0857E+01	2.0862E+01	2.351E+01
Sb-124	#B	2.8335E+00	3.2105E+00	1.3898E+01	1.3899E+01	1.538E+01
Sb-125	#B	0.0000E+00	0.0000E+00	2.7217E+01	2.7217E+01	4.725E+01
Te-129	#B	0.0000E+00	0.0000E+00	3.8391E+01	3.8391E+01	2.126E+02
Te-129M	#B	0.0000E+00	0.0000E+00	2.6997E+02	2.6997E+02	6.112E+02
I-131	#B	0.0000E+00	0.0000E+00	1.1031E+01	1.1031E+01	3.972E+01
I-132	#B	0.0000E+00	0.0000E+00	3.6044E+01	3.6044E+01	2.534E+02
Te-132	#B	3.7915E+00	3.9765E+01	1.4401E+02	1.4403E+02	1.683E+02
I-133	#B	5.4526E+00	>12 Halflives	1.1429E+01	1.1433E+01	1.260E+01
Ba-133	#B	5.3015E+00	5.3119E+00	1.5634E+01	1.5635E+01	1.777E+01
Cs-134	F	1.8813E+01	1.9002E+01	1.6046E+01	1.6081E+01	1.607E+01
Cs-136	#B	9.0330E-01	1.5997E+00	2.3799E+01	2.3799E+01	2.502E+01
Cs-137	#B	-8.0137E+00	-8.0192E+00	1.5559E+01	1.5565E+01	1.643E+01
Ce-139	#B	1.3062E+00	1.3796E+00	1.6996E+01	1.6996E+01	2.076E+01
Ba-140	#B	0.0000E+00	0.0000E+00	3.8837E+01	3.8837E+01	1.043E+02
La-140	#B	-5.6223E+00	-1.0141E+01	3.5388E+01	3.5393E+01	3.337E+01
Ce-141	#B	1.1757E+01	1.4818E+01	3.7188E+01	3.7197E+01	4.504E+01
Ce-144	#B	-4.7942E+01	-4.9225E+01	1.3986E+02	1.3989E+02	1.696E+02
ND-147	#B	0.0000E+00	0.0000E+00	4.9389E+01	4.9390E+01	2.023E+02
Eu-152	#B	0.0000E+00	0.0000E+00	2.0401E+01	2.0401E+01	6.959E+01
Eu-154	#B	0.0000E+00	0.0000E+00	2.5538E+01	2.5538E+01	4.657E+01
Eu-155	#B	-3.6446E+01	-3.6604E+01	5.7983E+01	5.8053E+01	9.619E+01
Lu-176	#B	4.4490E+00	4.4490E+00	1.1573E+01	1.1576E+01	1.353E+01
Ir-192	#B	0.0000E+00	0.0000E+00	5.6996E+00	5.6996E+00	1.893E+01
Hg-203	#B	8.2848E+00	9.7355E+00	1.5567E+01	1.5577E+01	1.810E+01
Tl-208	#B	0.0000E+00	0.0000E+00	4.0111E+00	4.0111E+00	1.767E+01
Pb-210	#B	-7.0858E+02	-7.0924E+02	1.2072E+04	1.2072E+04	1.555E+04
Bi-212	#B	1.1039E+02	1.1159E+02	1.6704E+02	1.6716E+02	1.775E+02
Pb-212	#F	3.2012E+02	3.2358E+02	7.9470E+01	8.1759E+01	3.602E+01
Bi-214		1.5027E+03	1.5027E+03	6.4117E+01	1.0463E+02	2.994E+01
Pb-214		1.4384E+03	1.4384E+03	6.4640E+01	1.0422E+02	3.712E+01
Ra-223	#B	8.6221E+01	8.6303E+01	9.0006E+01	9.0150E+01	1.033E+02
Ra-224	#B	0.0000E+00	0.0000E+00	1.6208E+02	1.6208E+02	4.043E+02
Ra-226		3.0595E+03	3.0595E+03	4.8918E+02	5.2016E+02	4.879E+02
Ac-227	#B	0.0000E+00	0.0000E+00	5.3116E+01	5.3116E+01	1.281E+02
Ac-228	#	4.3091E+02	4.3246E+02	5.9036E+01	6.3852E+01	4.898E+01

Th-228	#B	0.0000E+00	0.0000E+00	1.2392E+03	1.2392E+03	2.579E+03
Th-230	#B	1.8832E+03	1.8832E+03	1.1335E+04	1.1341E+04	1.451E+04
Pa-231	#B	-3.7092E+01	-3.7092E+01	7.1921E+02	7.1921E+02	8.484E+02
Pa-234M	#A	1.2062E+02	1.2062E+02	1.4856E+03	1.4856E+03	1.536E+03
Th-232	#B	-3.5004E+03	-3.5004E+03	2.1178E+04	2.1192E+04	2.708E+04
Th-234	#B	3.6276E+02	3.6276E+02	1.1350E+03	1.1379E+03	1.452E+03
U-235	#B	2.8284E+01	2.8284E+01	1.3039E+02	1.3040E+02	1.586E+02
U-238	#B	1.3439E+02	1.3439E+02	3.9353E+02	3.9364E+02	4.925E+02
Am-241	#B	3.0162E+01	3.0164E+01	1.9157E+02	1.9171E+02	2.456E+02

Am-243 #B	0.0000E+00	0.0000E+00	7.4790E+01	7.4790E+01	1.251E+02
Pm-144 #B	0.0000E+00	0.0000E+00	5.2361E+00	5.2361E+00	1.336E+01
Pm-146 #B	8.7824E+00	8.8152E+00	1.5682E+01	1.5690E+01	1.768E+01

- All peaks for activity calculation had bad shape.
* - Activity omitted from total
& - Activity omitted from total and all peaks had bad shape.
< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

---------- S U M M A R Y ----------

Total Activity (30.3 to 2038.5 keV) 6.432E+03 pCi/L
Total Decayed Activity (30.3 to 2038.5 keV) 6.4331367E+03 pCi/L

The library has energies which are not separable.

Analyzed by: _____
Operator

Reviewed by: _____
Supervisor

Laboratory: Pace

ORTEC g v - i (3263) Env32 G701W047 9/20/2024 4:48:56 PM Page 1
Pace Spectrum name: 30713847001.An1

Sample description
81318

Spectrum Filename: C:\User\Spectra\30713847001.An1

Acquisition information
Start time: 9/20/2024 3:06:50 PM
Live time: 3600
Real time: 3657
Dead time: 1.55 %
Detector ID: 2

Detector system
DET 2

Calibration
Filename: DET_2_2L MAR_23-047(113023).Clb
DET 2 2L MARINELLI

Energy Calibration
Created: 11/30/2023 7:00:31 AM
Zero offset: 0.281 keV
Gain: 0.250 keV/channel
Quadratic: -1.344E-08 keV/channel^2

Efficiency Calibration
Created: 11/30/2023 7:26:21 AM
Type: Polynomial
Uncertainty: 1.699 %
Coefficients: -0.225215 -3.983441 0.474906
-0.072106 0.003754 -0.000081

Library Files
Main analysis library: Pace Master w Ra226U235 (wo PS)
Library Match Width: 0.500
Peak stripping: Library based

Analysis parameters
Analysis engine: Env32 G701W047
Start channel: 120 (30.33keV)
Stop channel: 8144 (2038.53keV)
Peak rejection level: 30.000%
Peak search sensitivity: 3
Sample Size: 2.0000E+00
Activity scaling factor: 1.0000E+06/(1.0000E+00* 2.0000E+00) =
5.0000E+05
Detection limit method: Reg. Guide 4.16 Method

Random error: 0.0000000E+00
Systematic error: 0.0000000E+00
Fraction Limit: 0.000%
Background width: average of three points.

Half lives decay limit: 12.000

WTF 9-23-24

JM 9/20/24

Activity range factor:	2.000
Min. step backg. energy	0.000
Multiplet shift channel	2.000

Corrections	Status	Comments
Decay correct to date:	YES	8/28/2024 9:00:00 AM
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	YES	Det_2_Bkg_091324Ra226U235(2LITER 9/16/2024 9:13:41 AM
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

total peaks alloc. 0 cutoff: 0.00E+00 %

Energy Calibration
Normalized diff: 0.1072

***** S U M M A R Y O F P E A K S I N R A N G E *****

Peak Energy	Area	Uncert	FWHM	Corrctn Factor	Nuclide Energy	Brnch. Ratio	Act. pCi/L	Nuc
74.83	598.	8.91	0.97	1.583E-02	74.66	68.200	2.081E+02	Am243
					74.81	6.330	2.229E+03	Pb214
					74.81	10.400	1.389E+03	Pb212
77.14	1115.	5.03	0.97	1.719E-02	77.11	17.500	1.422E+03	Pb212
					77.11	10.700	2.277E+03	Pb214
84.15	155.	29.54	0.98	2.121E-02	83.78	24.900	PBC<MDA	Ra223
					84.37	1.266	PBC<MDA	Th228
					84.37	1.266	2.076E+03	Th228
87.19	526.	9.72	0.98	2.291E-02	86.54	30.700	2.872E+02	Eu155
					87.20	3.700	2.324E+03	Pb214
					87.30	7.800	1.122E+03	Pb212
					88.03	3.610	2.405E+03	Cd109
89.99	482.	10.05	0.98	2.444E-02	89.95	3.560	2.077E+03	U235
					91.10	28.300	1.094E+03	ND147
					89.95	3.560	2.077E+03	U235
92.42	574.	13.00	1.10	2.586E-02	92.59	5.600	1.488E+03	U238
					92.60	2.800	2.976E+03	Th234
					92.60	2.800	2.976E+03	Th234
					92.59	5.600	1.488E+03	U238
93.52	574.	13.00	1.10	2.634E-02				
99.35	220.	24.08	0.87	2.926E-02				
129.08	334.	15.97	1.02	4.047E-02				
153.83	208.	27.72	0.85	4.546E-02	154.21	5.620	3.054E+02	Ra223
186.17	3429.	3.26	1.01	4.782E-02	186.10	3.500	7.613E+03	Ra226
209.21	764.	8.30	1.03	4.783E-02				
238.53	232.	20.40	1.13	4.680E-02	238.63	43.300	4.041E+01	Pb212
240.73	186.	24.22	1.13	4.668E-02	241.00	3.900	3.915E+02	Ra224

pk energy	area	uncert	fwhm	corr	nuclide	brnch.	act.	nuc
242.02	2203.	2.87	1.13	4.663E-02	241.92	7.470	2.373E+03	Pb214

270.44	624.	10.77	1.07	4.507E-02	269.46	13.700	3.775E+02	Ra223
295.27	5133.	1.99	1.15	4.357E-02	295.22	19.200	2.301E+03	Pb214
					295.96	28.670	1.921E+03	Ir192
					295.96	28.670	1.921E+03	Ir192
328.22	401.	14.80	1.13	4.156E-02	328.76	20.300	6.316E+02	La140
					330.00	1.300	2.791E+03	Pa231
					328.76	20.300	6.316E+02	La140
338.37	1738.	4.05	1.20	4.096E-02	338.32	11.300	1.419E+03	Ac228
351.98	9024.	1.30	1.21	4.017E-02	351.99	37.100	2.270E+03	Pb214
409.45	328.	17.95	0.99	3.710E-02				
463.07	599.	7.66	1.61	3.465E-02	463.36	10.500	6.282E+02	Sb125
					463.36	10.500	6.282E+02	Sb125
510.47	548.	16.79	1.45	3.279E-02	514.01	0.430	1.424E+04	Kr85
609.37	7780.	1.34	1.46	2.961E-02	609.31	44.800	2.196E+03	Bi214
665.39	300.	17.87	1.48	2.815E-02				
726.83	149.	22.64	1.32	2.675E-02	727.33	6.580	3.254E+02	Bi212
768.56	714.	8.16	1.05	2.592E-02	768.36	4.800	2.153E+03	Bi214
772.77	130.	19.42	1.61	2.584E-02	772.60	75.600	3.843E+03	I132
786.20	191.	18.69	0.99	2.559E-02				
795.21	487.	7.97	1.60	2.542E-02	795.86	85.530	8.557E+01	Cs134
911.29	2648.	2.47	1.63	2.353E-02	911.21	26.600	1.597E+03	Ac228
934.37	417.	8.85	1.42	2.320E-02				
964.71	563.	5.86	1.77	2.278E-02	964.13	14.340	6.481E+02	Eu152
					964.13	14.340	6.481E+02	Eu152
969.16	1480.	2.93	1.78	2.272E-02	968.97	16.200	1.517E+03	Ac228
1120.40	1912.	3.21	1.76	2.093E-02	1120.29	14.800	2.317E+03	Bi214
1238.20	747.	5.50	1.86	1.976E-02	1238.11	5.860	2.419E+03	Bi214
					1238.28	66.070	2.643E+02	Co56
1377.68	585.	6.96	1.90	1.858E-02	1377.67	3.920	3.008E+03	Bi214
1408.32	251.	14.49	2.12	1.835E-02	1408.01	20.870	2.469E+02	Eu152
					1408.01	20.870	2.469E+02	Eu152
1460.45	375.	10.79	1.95	1.795E-02	1461.00	10.670	7.347E+02	K40
1661.46	143.	15.36	1.11	1.662E-02				
1764.54	1760.	2.59	2.44	1.602E-02	1764.49	15.360	2.671E+03	Bi214

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Centroid Channel	Energy	Background Counts	Net Area Counts	Efficiency * Area	Uncert 2 Sigma %	FWHM keV	Suspected Nuclide	
334.84	84.09	965.	156.	7.365E+03	58.46	0.976	HG-203	D
358.15	89.93	930.	482.	1.971E+04	20.09	0.982	AC-228	D
395.68	99.35	862.	220.	7.518E+03	48.16	0.871	PA-234M	M
514.40	128.97	1258.	334.	8.257E+03	31.95	1.020	AC-228	D
613.29	153.83	1096.	208.	4.568E+03	55.44	0.850	XE-138	M
834.46	209.21	978.	764.	1.598E+04	16.60	1.030	AC-228	

Channel	Energy	Background	Net area	Eff*Area	Uncert	FWHM	Suspected	
1079.04	270.44	934.	624.	1.384E+04	21.55	1.067	AC-228	M
1309.83	328.22	747.	401.	9.640E+03	29.59	1.132	BI-207	M
1634.29	409.45	628.	328.	8.840E+03	35.91	0.987	AC-228	sM
1848.49	463.07	361.	599.	1.729E+04	15.31	1.607	AC-228	M
2037.84	510.47	833.	548.	1.671E+04	33.57	1.448	J-133	sM
2656.72	665.39	396.	300.	1.066E+04	35.74	1.475	AS-76	
3139.37	786.20	250.	191.	7.464E+03	37.38	0.994	PA-234M	s
3731.35	934.37	178.	417.	1.799E+04	17.70	1.424	TE-131	
3853.20	964.70	252.	574.	2.520E+04	11.44	1.775	AC-228	D
6636.85	1661.46	53.	143.	8.584E+03	30.73	1.108	BI-214	s

s - Peak fails shape tests.
D - Peak area deconvoluted.
L - Peak written from unknown list.
C - Area < Critical level.
M - Peak is close to a library peak.

This section based on library: Pace Master w Ra226U235 (wo PS)

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	FWHM keV
Pb-212	297.66	74.81	1326.	544.	0.151	20.83	0.966D
Pb-214	306.85	77.11	1017.	1115.	0.310	10.08	0.969D
Pb-214	347.15	87.20	1045.	526.	0.146	19.44	0.979D
Pb-212	347.18	87.21	1354.	464.	0.129	24.26	0.979
U-235	357.96	89.91	1454.	382.	0.106	40.45	0.982s
U-238	372.38	93.52	1248.	574.	0.159	25.99	1.097s
Ra-226	742.45	186.17	1975.	3394.	0.943	6.60	1.009
Pb-212	951.98	238.63	942.	220.	0.061	41.89	1.128D
Ra-224	960.35	240.73	910.	186.	0.052	48.44	1.130
Pb-214	965.12	241.92	832.	2202.	0.612	5.66	1.131D
Pb-214	1178.22	295.27	1065.	5128.	1.424	3.99	1.154
La-140	1309.71	328.19	757.	387.	0.108	30.74	1.214
Ac-228	1350.37	338.37	742.	1736.	0.482	8.11	1.201
Pb-214	1404.73	351.98	884.	9011.	2.503	2.60	1.205
Sb-125	1848.56	463.09	399.	593.	0.165	16.48	1.340
Bi-214	2432.69	609.31	399.	7628.	2.119	2.41	1.472D
Bi-212	2902.17	726.83	220.	149.	0.041	45.29	1.323
Bi-214	3068.07	768.36	219.	720.	0.200	9.46	1.611D
I-132	3085.03	772.60	253.	130.	0.036	38.85	1.614D
Cs-134	3175.38	795.21	206.	485.	0.135	16.06	1.605
Ac-228	3639.13	911.29	268.	2643.	0.734	4.96	1.634
Eu-152	3853.12	964.85	368.	480.	0.133	21.40	1.774s
Ac-228	3869.60	968.97	223.	1477.	0.410	5.95	1.779D
Bi-214	4474.65	1120.40	231.	1912.	0.531	6.41	1.755

Nuclide	Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM
Bi-214	4945.00	1238.11	166.	670.	0.186	3.85	1.990D
Co-56	4945.69	1238.28	143.	605.	0.168	11.45	1.857D
Bi-214	5502.72	1377.68	144.	584.	0.162	13.98	1.896
Eu-152	5625.16	1408.32	165.	251.	0.070	28.99	2.116
K-40	5833.52	1460.45	143.	375.	0.104	21.58	1.950
Bi-214	7048.65	1764.49	144.	1603.	0.445	5.43	2.361D

s - Peak fails shape tests.
D - Peak area deconvoluted.
A Derived peak area.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

- Nuclide - Name	Code	Average Activity pCi/L	Peak Energy keV	Peak Activity pCi/L	Peak Code	MDA Value pCi/L	COMMENTS
Na-22	C	6.1904E+00				9.50E+02	

			1274.53	6.190E+00	%(	1.127E+01	9.66E+01	9.99E+01	G K
K-40	N	7.3465E+02						4.68E+11	
			1461.00	7.347E+02	(P	1.146E+02	1.08E+01	1.07E+01	G K
Sc-46	F	9.4725E+00						8.38E+01	
			889.28	9.472E+00	%(P	1.374E+01	7.18E+01	1.00E+02	G K
Cr-51	F	-5.2294E+01						2.77E+01	
			320.08	-5.229E+01	&(	2.129E+02	1.76E+02	1.01E+01	G K
Mn-54	C	1.8876E+01						3.12E+02	
			834.85	1.888E+01	%(P	1.386E+01	3.70E+01	1.00E+02	G K
Co-56	C	2.1415E+02						7.73E+01	
			1238.28	2.142E+02	} P	2.067E+01	5.72E+00	6.61E+01	G K
			1771.35	0.000E+00	%(P	1.405E+02	1.00E+03	1.55E+01	G
Fe-59	F	-6.6920E+00						4.45E+01	
			1099.25	-6.692E+00	&(	3.182E+01	2.45E+02	5.65E+01	G K
			1291.60	0.000E+00	% P	4.428E+01	1.00E+03	4.32E+01	G
Co-60	F	5.6751E+00						1.92E+03	
			1332.50	5.675E+00	%(P	1.223E+01	1.14E+02	1.00E+02	G K
			1173.24	7.647E-01	& P	1.192E+01	7.85E+02	1.00E+02	G
Zn-65	F	2.2340E+00						2.44E+02	
			1115.55	2.234E+00	%(P	3.006E+01	6.93E+02	5.06E+01	G K

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
SE-75	1.0483E+00					1.20E+02	
		264.66	1.048E+00	%(	2.506E+01	1.03E+03	5.86E+01 G K
		136.00	1.956E+00	% P	3.382E+01	7.18E+02	5.83E+01 G
		279.54	1.085E+01	& P	5.957E+01	2.37E+02	2.48E+01 G
		121.12	3.466E+01	%	1.266E+02	1.52E+02	1.64E+01 G
Kr-85	I 3.6471E+03					3.93E+03	
		514.01	3.647E+03	%(P	2.479E+03	3.19E+01	4.30E-01 G K
Y-88	C 8.5933E+00					1.07E+02	
		1836.06	8.593E+00	&(	1.187E+01	7.81E+01	9.92E+01 G K
		898.04	9.206E+00	% P	1.414E+01	7.60E+01	9.37E+01 G
Nb-94	I -8.0944E+00					7.41E+06	
		871.09	-8.094E+00	%(	1.330E+01	8.12E+01	9.99E+01 G K
		702.62	8.524E+00	% P	1.365E+01	7.68E+01	9.79E+01 G
Zr-95	I 2.6669E+01					6.40E+01	
		756.73	2.667E+01	&(	2.976E+01	5.39E+01	5.45E+01 G K
		724.20	3.853E+01	% P	2.800E+01	3.57E+01	4.42E+01 G
Ru-103	I 3.0647E+00					3.93E+01	
		497.08	3.065E+00	%(P	1.913E+01	2.88E+02	9.10E+01 G K
Ag-108M	C -5.9039E-01					1.53E+05	
		722.94	-5.904E-01	%(	1.424E+01	1.14E+03	9.08E+01 G K
		614.28	5.589E+00	% P	1.140E+01	9.46E+01	8.98E+01 G
		433.94	0.000E+00	% P	1.287E+01	1.00E+03	9.05E+01 G

			79.13	3.718E+01	%	5.330E+02	5.80E+02	6.60E+00	G
Ru-106	I	-6.5187E+00						3.73E+02	
			621.93	-6.519E+00	&(	1.171E+02	8.22E+02	9.93E+00	G K
Ag-110M	F	1.0167E+01						2.50E+02	
			657.76	1.017E+01	%(P	1.265E+01	6.01E+01	9.40E+01	G K
			1505.04	0.000E+00	% P	1.974E+02	1.00E+03	1.29E+01	G
			1384.30	8.575E+01	& P	4.953E+01	3.18E+01	2.41E+01	G
			937.49	3.741E+01	%	2.627E+01	3.64E+01	3.41E+01	G
			884.68	4.983E+00	&	1.667E+01	1.63E+02	7.22E+01	G
			763.94	5.743E+01	% P	5.757E+01	4.85E+01	2.21E+01	G
			744.28	8.948E+01	& P	2.749E+02	1.47E+02	4.70E+00	G
			706.68	-2.359E+01	&	9.197E+01	1.86E+02	1.63E+01	G
Sn-113	F	-6.2142E+00						1.15E+02	
			391.69	-6.214E+00	&(	2.193E+01	1.58E+02	6.40E+01	G K

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Sb-124	F 1.0942E+00					6.02E+01	
		602.73	1.094E+00	&(	1.664E+01	6.99E+02	9.78E+01 G K
		645.85	9.078E+01	% P	1.970E+02	1.04E+02	7.38E+00 G
		722.79	-4.104E+01	%	1.637E+02	1.90E+02	1.08E+01 G
		1690.98	0.000E+00	& P	2.999E+01	1.00E+03	4.73E+01 G
Sb-125	I 1.6283E+02					1.01E+03	
		427.88	0.000E+00	%(P	4.266E+01	1.00E+03	2.96E+01 G K
		176.31	1.061E+01	&	2.204E+02	8.61E+02	6.82E+00 G
		463.36	6.219E+02	(	1.005E+02	8.24E+00	1.05E+01 G
		600.60	0.000E+00	% P	7.479E+01	1.00E+03	1.79E+01 G
		635.95	0.000E+00	& P	1.102E+02	1.00E+03	1.13E+01 G
Te-129	I 5.7058E+01					3.36E+01	
		459.60	5.706E+01	&(P	2.217E+02	1.73E+02	7.70E+00 G K
		487.39	8.460E+02	% P	1.336E+03	7.37E+01	1.42E+00 G
I-131	I 3.0330E+01					8.02E+00	
		364.49	3.033E+01	&(P	9.817E+01	1.45E+02	8.17E+01 G K
		636.99	0.000E+00	% P	1.221E+03	1.00E+03	7.17E+00 G
		284.30	0.000E+00	% P	1.552E+03	1.00E+03	6.14E+00 G
I-132	I 3.8427E+03					3.20E+00	
		772.60	3.843E+03	(	2.274E+03	1.94E+01	7.56E+01 G K
		522.65	4.320E+02	% P	1.153E+04	1.23E+03	1.60E+01 G
		630.19	-4.989E+02	%	1.406E+04	1.34E+03	1.33E+01 G
		954.55	-2.389E+03	%	1.138E+04	2.40E+02	1.76E+01 G
Te-132	I -5.1912E+02					3.20E+00	
		228.16	-5.191E+02	%(	2.473E+03	2.06E+02	8.80E+01 G K
I-133	I 8.0742E+00					8.67E-01	
		529.87	8.074E+00	&(P	1.173E+01	6.76E+01	8.70E+01 G K
		875.33	2.020E+02	% P	2.381E+02	5.84E+01	4.51E+00 G
Ba-133	F 1.5895E+01					3.84E+03	
		356.02	1.590E+01	&(	1.638E+01	4.68E+01	6.20E+01 G K
		81.00	0.000E+00	% P	1.021E+02	1.00E+03	3.41E+01 G
		302.85	1.270E+01	& P	6.451E+01	2.19E+02	1.83E+01 G

			276.40	-7.943E+01	%		1.937E+02	1.06E+02	7.16E+00 G
			383.85	0.000E+00	&	P	1.284E+02	1.00E+03	8.94E+00 G
Cs-134	I	8.5566E+01							7.52E+02
			795.86	8.557E+01		(P	1.228E+01	8.03E+00	8.55E+01 G K
			604.72	0.000E+00	%		1.706E+01	1.00E+03	9.76E+01 GA
			569.33	1.598E+01	&	P	7.693E+01	2.22E+02	1.54E+01 GA
			801.95	-1.038E+02	&		1.599E+02	7.64E+01	8.69E+00 GA

Nuclide		Ave activity	Energy		Activity		Code	Peak	MDA	Comments
Cs-136	F	-8.9673E+00							1.32E+01	
			818.51	-8.967E+00	%(		4.347E+01	2.37E+02	9.97E+01 G K	
			176.60	-3.005E+01	%		5.082E+02	7.01E+02	1.00E+01 G	
			273.65	1.791E+02	%		3.868E+02	9.37E+01	1.11E+01 G	
			340.55	4.029E+01	&		9.196E+01	9.87E+01	4.22E+01 G	
			1048.07	-5.143E+00	&		5.078E+01	4.93E+02	8.00E+01 G	
			1235.36	5.380E-01	&		1.929E+02	1.82E+04	2.00E+01 G	
Cs-137	I	1.9694E+00							1.10E+04	
			661.66	1.969E+00	%(		1.312E+01	3.16E+02	9.01E+01 G K	
Ce-139	F	6.3823E+00							1.38E+02	
			165.85	6.382E+00	%(		2.118E+01	1.38E+02	7.99E+01 G K	
Ba-140	I	8.1678E+01							1.28E+01	
			537.26	8.168E+01	%(	P	1.539E+02	8.76E+01	2.44E+01 G K	
			162.66	3.491E+02	&	P	8.747E+02	1.04E+02	6.22E+00 G	
La-140	I	1.3294E+02							1.28E+01	
			1596.21	3.136E+01	%(		4.339E+01	7.54E+01	9.54E+01 G K	
			487.02	9.003E+01	%	P	8.772E+01	4.59E+01	4.55E+01 G	
			815.77	5.468E+01	%		1.747E+02	1.56E+02	2.33E+01 G	
			328.76	6.103E+02	(		2.064E+02	1.54E+01	2.03E+01 G	
Ce-141	I	8.2052E+00							3.25E+01	
			145.44	8.205E+00	%(		5.735E+01	2.90E+02	4.82E+01 G K	
Ce-144	I	-6.0049E+01							2.85E+02	
			133.51	-6.005E+01	&(		1.693E+02	1.17E+02	1.11E+01 G K	
Eu-155	I	7.4665E+00							1.74E+03	
			86.54	7.466E+00	%(		8.987E+01	3.60E+02	3.07E+01 G K	
			105.31	7.955E+01	%		1.001E+02	5.27E+01	2.12E+01 G	
Lu-176	N	2.8758E-01							1.38E+13	
			306.78	2.876E-01	&(	P	1.242E+01	1.86E+03	9.40E+01 G K	
			201.83	-3.124E+00	%		1.661E+01	2.21E+02	8.65E+01 G	
Hg-203	F	3.7909E-01							4.66E+01	
			279.20	3.791E-01	%(	P	2.270E+01	2.58E+03	8.15E+01 G K	
Tl-208	N	8.7719E+00							6.98E+02	
			583.19	8.772E+00	%(	P	1.544E+01	8.17E+01	8.45E+01 G K	
			860.56	3.932E+00	%	P	1.030E+02	1.28E+03	1.24E+01 G	
			277.36	0.000E+00	%	P	2.210E+02	1.00E+03	6.31E+00 G	

Nuclide		Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Pb-210	N	8.6212E+02						8.14E+03
			46.54	8.621E+02	&(	1.420E+04	6.49E+02	4.25E+00 G K
Bi-212	N	3.2538E+02						6.98E+02
			727.33	3.254E+02	(P	1.567E+02	2.26E+01	6.58E+00 G K
			1620.50	0.000E+00	% P	8.554E+02	1.00E+03	1.49E+00 G
Pb-212	N	4.1632E+01						6.98E+02
			238.63	4.163E+01	(P	2.763E+01	2.09E+01	4.33E+01 G K
								Energy duplication
			77.11	0.000E+00	% P	1.352E+01	1.00E+03	1.75E+01 G
								Energy duplication
			74.81	1.271E+03	+ P	4.028E+02	1.04E+01	1.04E+01 G
			87.30	9.939E+02	+ P	3.728E+02	1.21E+01	7.80E+00 GA
Bi-214	N	2.1719E+03						5.84E+05
			609.31	2.158E+03	(P	2.712E+01	1.20E+00	4.48E+01 G K
			1120.29	2.317E+03		8.912E+01	3.21E+00	1.48E+01 GA
			2204.21	0.000E+00	=	0.000E+00	0.00E+00	4.86E+00 G
			1764.49	2.446E+03	+ P	8.939E+01	2.71E+00	1.54E+01 G
			1377.67	3.008E+03	+ P	3.024E+02	6.99E+00	3.92E+00 G
			1238.11	2.172E+03	} P	2.035E+02	1.92E+00	5.86E+00 G
			768.36	2.171E+03	(	2.162E+02	4.73E+00	4.80E+00 G
Pb-214	N	2.2865E+03						5.84E+05
			351.99	2.270E+03	(P	3.559E+01	1.30E+00	3.71E+01 G K
			295.22	2.301E+03	(P	6.946E+01	1.99E+00	1.92E+01 G
			241.92	2.373E+03	(P	1.477E+02	2.83E+00	7.47E+00 G
			87.20	2.326E+03	(	6.778E+02	9.72E+00	3.70E+00 G
								Energy duplication
			77.11	2.278E+03	(P	3.092E+02	5.04E+00	1.07E+01 G
								Energy duplication
			74.81	8.555E+01	} P	5.966E+02	2.11E+02	6.33E+00 G
Ra-224	N	3.9151E+02						6.98E+02
			241.00	3.915E+02	(P	3.024E+02	2.42E+01	3.90E+00 G K
Ra-226	N	7.6135E+03						5.84E+05
			186.10	7.613E+03	(P	4.705E+02	3.30E+00	3.50E+00 G K
Ac-228	N	1.5360E+03						2.10E+03
			911.21	1.597E+03	(P	4.777E+01	2.48E+00	2.66E+01 G K
			968.97	1.517E+03	(P	7.433E+01	2.98E+00	1.62E+01 G
			338.32	1.419E+03	(P	1.059E+02	4.06E+00	1.13E+01 G
Th-228	N	1.0080E+03						6.98E+02
			84.37	1.008E+03	%(P	2.408E+03	9.73E+01	1.27E+00 G K
			215.99	-1.159E+03	%	5.503E+03	2.05E+02	2.63E-01 GA
			166.41	2.506E+03	%	1.449E+04	2.40E+02	1.08E-01 GA
			131.61	3.156E+03	%	1.279E+04	1.69E+02	1.35E-01 GA

Nuclide		Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Th-230	N	2.0544E+03						2.75E+07
			67.67	2.054E+03	%(	1.352E+04	2.61E+02	3.80E-01 G K

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Pa-231    N  -2.7112E+02                                        1.20E+07
                          283.70-2.711E+02 %(  8.138E+02 1.30E+02 1.60E+00 G K
                          330.00-8.091E+02 %   1.161E+03 6.25E+01 1.30E+00 G

Pa-234M   N  -6.3659E+02                                        1.63E+12
                                                              Energy duplication
                         1001.03-6.366E+02 &(  1.511E+03 1.20E+02 8.37E-01 G

Th-232    N  -2.1307E+03                                        4.17E+12
                           63.81-2.131E+03 %(  2.367E+04 4.39E+02 2.67E-01 G K

U-238     N   1.4881E+03                                        1.63E+12
                           92.59 1.488E+03 ?(P 4.338E+02 1.30E+01 5.60E+00 G K
                                                              Energy duplication
                         1001.03-6.343E+02 &   1.505E+03 1.20E+02 8.40E-01 G K

Am-241    T   9.0679E+01                                        1.58E+05
                           59.54 9.068E+01 %(P 2.195E+02 9.63E+01 3.63E+01 G K

Pm-144    C   8.0315E-01                                        3.63E+02
                          696.51 8.032E-01 %(P 1.358E+01 8.05E+02 9.90E+01 G K
                          618.01-3.613E-01 &   1.222E+01 1.55E+03 9.86E+01 G

Pm-146    C   2.4177E-01                                        2.02E+03
                          453.88 2.418E-01 &(P 1.837E+01 3.38E+03 6.52E+01 G K
                          747.16 4.929E-01 %   3.641E+01 3.49E+03 3.40E+01 G
                          735.72 0.000E+00 & P 6.089E+01 1.00E+03 2.25E+01 GA
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(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went
negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide
failed one or more qualification tests.
\+ - Peak activity higher than counting uncertainty range.
\- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the
library energy centroid for positive identification.
P - Peakbackground subtraction
} - Peak is too close to another for the activity

to be found directly.

Nuclide Codes:
T - Thermal Neutron Activation
F - Fast Neutron Activation
I - Fission Product
N - Naturally Occurring Isotope
P - Photon Reaction
C - Charged Particle Reaction
M - No MDA Calculation
R - Coincidence Corrected
H - Halflife limit exceeded

Peak Codes:
G - Gamma Ray
X - X-Ray
P - Positron Decay
S - Single-Escape
D - Double-Escape
K - Key Line
A - Not in Average
C - Coincidence Peak

********** D I S C A R D E D I S O T O P E P E A K S **********

Nuclide	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	Activity	
U-235	89.91	1454.	382.	0.106	40.45	1.645E+03	
La-140	328.19	757.	387.	0.108	30.74	6.103E+02	
Sb-125	463.09	399.	593.	0.165	16.48	6.219E+02	
Eu-152	964.85	368.	480.	0.133	21.40	5.528E+02	P
Eu-152	1408.32	165.	251.	0.070	28.99	2.469E+02	

P - Peakbackground subtraction

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide		Time of Count Activity pCi/L	Time Corrected Activity pCi/L	Uncertainty Counting pCi/L	2 Sigma Total pCi/L	MDA pCi/L
Be-7	#B	0.0000E+00	0.0000E+00	5.5978E+01	5.5978E+01	1.636E+02
Na-22	#B	6.0862E+00	6.1904E+00	1.1956E+01	1.1960E+01	1.127E+01
K-40		7.3465E+02	7.3465E+02	1.5855E+02	1.6379E+02	1.146E+02
Sc-46	#B	7.8148E+00	9.4725E+00	1.3609E+01	1.3619E+01	1.374E+01
Cr-51	#B	-2.9224E+01	-5.2294E+01	1.8366E+02	1.8368E+02	2.129E+02
Mn-54	F	1.7927E+01	1.8876E+01	1.3980E+01	1.4021E+01	1.386E+01
Co-56		1.7383E+02	2.1415E+02	2.3659E+01	2.7151E+01	1.405E+02
Co-57	#B	0.0000E+00	0.0000E+00	9.6425E+00	9.6425E+00	2.332E+01
Co-58	#B	0.0000E+00	0.0000E+00	7.7440E+00	7.7441E+00	1.578E+01
Fe-59	#B	-4.6585E+00	-6.6920E+00	3.2796E+01	3.2798E+01	3.182E+01
Co-60	#B	5.6278E+00	5.6751E+00	1.2917E+01	1.2920E+01	1.223E+01
Zn-65	#B	2.0911E+00	2.2340E+00	3.0950E+01	3.0951E+01	3.006E+01
SE-75	#B	9.1693E-01	1.0483E+00	2.1588E+01	2.1588E+01	2.506E+01
Kr-85	#F	3.6321E+03	3.6471E+03	2.3291E+03	2.3376E+03	2.479E+03
Y-88	#B	7.3879E+00	8.5933E+00	1.3415E+01	1.3426E+01	1.187E+01
Nb-94	#B	-8.0944E+00	-8.0944E+00	1.3151E+01	1.3159E+01	1.330E+01
Zr-95	#B	2.0733E+01	2.6669E+01	2.8773E+01	2.8812E+01	2.976E+01
Nb-95	#B	0.0000E+00	0.0000E+00	4.8148E+00	4.8148E+00	2.218E+01
Ru-103	#B	2.0327E+00	3.0647E+00	1.7667E+01	1.7667E+01	1.913E+01
Ag-108M	#B	-5.9032E-01	-5.9039E-01	1.3496E+01	1.3496E+01	1.424E+01
Ru-106	#B	-6.2427E+00	-6.5187E+00	1.0721E+02	1.0721E+02	1.171E+02

Cd-109	#B	0.0000E+00	0.0000E+00	5.2215E+02	5.2216E+02	4.761E+01
Ag-110M	#B	9.5315E+00	1.0167E+01	1.2214E+01	1.2227E+01	1.265E+01
Sn-113	#B	-5.4021E+00	-6.2142E+00	1.9640E+01	1.9643E+01	2.193E+01
Sb-124	#B	8.3716E-01	1.0942E+00	1.5292E+01	1.5292E+01	1.664E+01
Sb-125	#F	1.6025E+02	1.6283E+02	2.6840E+01	2.8301E+01	4.266E+01
Te-129	#B	3.5316E+01	5.7058E+01	1.9790E+02	1.9793E+02	2.217E+02
Te-129M	#B	0.0000E+00	0.0000E+00	3.5792E+02	3.5792E+02	7.422E+02
I-131	#B	4.0645E+00	3.0330E+01	8.8054E+01	8.8070E+01	9.817E+01
I-132		2.4947E+01	3.8427E+03	1.4928E+03	1.5082E+03	2.274E+03
Te-132	#B	-3.3702E+00	-5.1912E+02	2.1401E+03	2.1404E+03	2.473E+03
I-133	#B	8.0742E+00	>12 Halflives	1.0921E+01	1.0930E+01	1.173E+01
Ba-133	#B	1.5829E+01	1.5895E+01	1.4867E+01	1.4877E+01	1.638E+01
Cs-134		8.3753E+01	8.5566E+01	1.3746E+01	1.4561E+01	1.228E+01
Cs-136	#B	-2.6346E+00	-8.9673E+00	4.2568E+01	4.2571E+01	4.347E+01
Cs-137	#B	1.9665E+00	1.9694E+00	1.2459E+01	1.2459E+01	1.312E+01
Ce-139	#B	5.6770E+00	6.3823E+00	1.7622E+01	1.7626E+01	2.118E+01
Ba-140	#B	2.3071E+01	8.1678E+01	1.4307E+02	1.4314E+02	1.539E+02

La-140 #F	3.7550E+01	1.3294E+02	4.0863E+01	4.1579E+01	4.339E+01
Ce-141 #B	4.9968E+00	8.2052E+00	4.7628E+01	4.7631E+01	5.735E+01
Ce-144 #B	-5.6745E+01	-6.0049E+01	1.4106E+02	1.4110E+02	1.693E+02
ND-147 #B	0.0000E+00	0.0000E+00	1.3940E+02	1.3940E+02	3.829E+02
Eu-152 #B	0.0000E+00	0.0000E+00	2.7544E+01	2.7544E+01	6.598E+01
Eu-154 #B	0.0000E+00	0.0000E+00	1.0491E+01	1.0491E+01	4.652E+01
Eu-155 B	7.3976E+00	7.4665E+00	5.3799E+01	5.3802E+01	8.987E+01
Lu-176 #B	2.8758E-01	2.8758E-01	1.0686E+01	1.0686E+01	1.242E+01
Ir-192 #B	0.0000E+00	0.0000E+00	8.7033E+00	8.7033E+00	1.818E+01
Hg-203 #B	2.6826E-01	3.7909E-01	1.9553E+01	1.9553E+01	2.270E+01
Tl-208 #B	8.5716E+00	8.7719E+00	1.4326E+01	1.4334E+01	1.544E+01
Pb-210 #B	8.6042E+02	8.6212E+02	1.1193E+04	1.1193E+04	1.420E+04
Bi-212	3.1795E+02	3.2538E+02	1.4735E+02	1.4847E+02	1.567E+02
Pb-212	4.0682E+01	4.1632E+01	1.7442E+01	1.7616E+01	2.763E+01
Bi-214	2.1718E+03	2.1719E+03	5.2326E+01	1.3046E+02	2.712E+01
Pb-214	2.2864E+03	2.2865E+03	5.9384E+01	1.4288E+02	3.559E+01
Ra-223 #B	0.0000E+00	0.0000E+00	1.6935E+02	1.6935E+02	9.204E+01
Ra-224	3.8257E+02	3.9151E+02	1.8965E+02	1.9107E+02	3.024E+02
Ra-226	7.6133E+03	7.6135E+03	5.0216E+02	6.6768E+02	4.705E+02
Ac-227 #B	0.0000E+00	0.0000E+00	2.5276E+01	2.5276E+01	1.089E+02
Ac-228	1.5243E+03	1.5360E+03	5.7421E+01	1.0374E+02	4.777E+01
Th-228 #B	9.8493E+02	1.0080E+03	1.9620E+03	1.9638E+03	2.408E+03
Th-230 #B	2.0544E+03	2.0544E+03	1.0704E+04	1.0710E+04	1.352E+04
Pa-231 #B	-2.7112E+02	-2.7112E+02	7.0445E+02	7.0463E+02	8.138E+02
Pa-234M#A	-6.3659E+02	-6.3659E+02	1.5264E+03	1.5269E+03	1.511E+03
Th-232 #B	-2.1307E+03	-2.1307E+03	1.8705E+04	1.8711E+04	2.367E+04
Th-234 #B	0.0000E+00	0.0000E+00	6.8148E+02	6.8152E+02	1.337E+03
U-235 #B	0.0000E+00	0.0000E+00	3.6497E+01	3.6497E+01	1.588E+02
U-238 #F	1.4881E+03	1.4881E+03	3.8682E+02	3.9931E+02	4.338E+02
Am-241 #B	9.0670E+01	9.0679E+01	1.7470E+02	1.7616E+02	2.195E+02
Am-243 #B	0.0000E+00	0.0000E+00	5.3003E+01	5.3003E+01	8.828E+01
Pm-144 #B	7.6827E-01	8.0315E-01	1.2926E+01	1.2926E+01	1.358E+01

Pm-146 #B	2.3985E-01	2.4177E-01	1.6354E+01	1.6354E+01	1.837E+01

- All peaks for activity calculation had bad shape.
* - Activity omitted from total
& - Activity omitted from total and all peaks had bad shape.
< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

S U M M A R Y

Total Activity (30.3 to 2038.5 keV) 1.480E+04 pCi/L
Total Decayed Activity (30.3 to 2038.5 keV) 1.8637785E+04 pCi/L

The library has energies which are not separable.

Analyzed by: _____
Operator

Reviewed by: _____
Supervisor

Laboratory: Pace

ORTEC g v - i (3263) Env32 G701W047 9/16/2024 9:15:12 AM Page 1
Pace Spectrum name: 30713848001.An1

Sample description
81318

Spectrum Filename: C:\User\Spectra\30713848001.An1

Acquisition information
Start time: 9/16/2024 8:02:58 AM
Live time: 1800
Real time: 1844
Dead time: 2.39 %
Detector ID: 2

Detector system
DET 2

Calibration
Filename: DET_2_2L MAR_23-047(113023).Clb
DET 2 2L MARINELLI

Energy Calibration
Created: 11/30/2023 7:00:31 AM
Zero offset: 0.281 keV
Gain: 0.250 keV/channel
Quadratic: -1.344E-08 keV/channel^2

Efficiency Calibration
Created: 11/30/2023 7:26:21 AM
Type: Polynomial
Uncertainty: 1.699 %
Coefficients: -0.225215 -3.983441 0.474906
-0.072106 0.003754 -0.000081

Library Files
Main analysis library: Pace Master w Ra226U235 (wo PS)
Library Match Width: 0.500
Peak stripping: Library based

Analysis parameters
Analysis engine: Env32 G701W047
Start channel: 120 (30.33keV)
Stop channel: 8144 (2038.53keV)
Peak rejection level: 30.000%
Peak search sensitivity: 3
Sample Size: 2.0000E+00
Activity scaling factor: 1.0000E+06/(1.0000E+00* 2.0000E+00) =
5.0000E+05
Detection limit method: Reg. Guide 4.16 Method

Random error: 0.0000000E+00
Systematic error: 0.0000000E+00
Fraction Limit: 0.000%
Background width: average of three points.

Half lives decay limit: 12.000

WTF 9-19-24

JM 9/16/24

ORTEC g v - i (3263) Env32 G701W047 9/16/2024 9:15:12 AM Page 2
Pace Spectrum name: 30713848001.An1

Activity range factor:	2.000
Min. step backg. energy	0.000
Multiplet shift channel	2.000

Corrections	Status	Comments
Decay correct to date:	YES	8/28/2024 10:50:00 AM
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	YES	Det_2_Bkg_091324Ra226U235(2LITER 9/16/2024 9:13:41 AM
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

total peaks alloc. 0 cutoff: 0.00E+00 %
Energy Calibration
Normalized diff: 0.0409

***** S U M M A R Y O F P E A K S I N R A N G E *****

Peak Energy	Area	Uncert	FWHM	Corrctn Factor	Nuclide Energy	Brnch. Ratio	Act. pCi/L	Nuc
74.78	1267.	5.33	0.97	1.579E-02	74.66	68.200	8.861E+02	Am243
					74.81	10.400	5.887E+03	Pb212
					74.81	6.330	9.493E+03	Pb214
77.13	2484.	2.96	0.97	1.718E-02	77.11	10.700	1.015E+04	Pb214
					77.11	17.500	6.320E+03	Pb212
79.51	182.	29.07	0.97	1.857E-02	79.13	6.600	1.126E+03	Ag108M
					79.13	6.600	1.126E+03	Ag108M
83.94	239.	21.88	0.98	2.110E-02	83.78	24.900	3.416E+02	Ra223
					84.37	1.266	6.637E+03	Th228
					83.78	24.900	3.416E+02	Ra223
87.24	1126.	5.52	0.98	2.294E-02	86.54	30.700	1.228E+03	Eu155
					87.20	3.700	9.952E+03	Pb214
					87.30	7.800	4.795E+03	Pb212
					88.03	3.610	1.027E+04	Cd109
89.91	544.	10.75	0.98	2.441E-02	89.95	3.560	4.692E+03	U235
					91.10	28.300	1.880E+03	ND147
					89.95	3.560	4.692E+03	U235
186.13	5404.	2.60	1.05	4.782E-02	186.10	3.500	2.416E+04	Ra226
241.97	4300.	2.57	1.05	4.664E-02	241.00	3.900	1.805E+04	Ra224
					241.92	7.470	9.265E+03	Pb214
259.24	423.	16.32	1.00	4.572E-02				
270.27	290.	27.52	0.95	4.508E-02	269.46	13.700	3.501E+02	Ra223
274.80	294.	26.33	0.72	4.481E-02				
295.23	10113.	1.30	1.13	4.357E-02	295.22	19.200	9.074E+03	Pb214
					295.96	28.670	7.264E+03	Ir192
					295.96	28.670	7.264E+03	Ir192
328.13	200.	29.02	0.74	4.157E-02	328.76	20.300	4.972E+02	La140

ORTEC g v - i (3263) Env32 G701W047 9/16/2024 9:15:12 AM Page 3
Pace Spectrum name: 30713848001.An1

pk energy	area	uncert	fwhm	corr	nuclide	brnch.	act.	nuc
					329.85	2.700	1.343E+03	Ac227

					330.00	1.300	2.786E+03	Pa231
					328.76	20.300	4.972E+02	La140
338.42	617.	12.12	1.17	4.096E-02	338.32	11.300	1.006E+03	Ac228
351.95	18400.	0.88	1.19	4.017E-02	351.99	37.100	9.266E+03	Pb214
406.29	188.	25.82	0.86	3.726E-02				
480.70	149.	24.65	0.88	3.393E-02				
487.24	207.	26.68	1.36	3.366E-02	487.02	45.500	PBC<MDA	La140
					487.39	1.420	4.796E+03	Te129
					487.39	1.420	4.796E+03	Te129
					487.02	45.500	PBC<MDA	La140
609.34	15715.	0.89	1.45	2.961E-02	609.31	44.800	8.887E+03	Bi214
665.56	528.	10.46	1.28	2.815E-02				
703.35	203.	20.33	1.46	2.727E-02	702.62	97.900	5.618E+01	Nb94
					702.62	97.900	5.618E+01	Nb94
768.24	1481.	4.25	1.58	2.593E-02	768.36	4.800	8.933E+03	Bi214
785.74	419.	13.11	1.28	2.560E-02				
806.50	440.	11.11	1.31	2.522E-02				
910.98	910.	5.16	1.81	2.353E-02	911.21	26.600	1.095E+03	Ac228
933.52	875.	6.27	1.98	2.321E-02	937.49	34.130	8.758E+02	Ag110M
964.55	237.	21.80	1.77	2.279E-02	964.13	14.340	5.456E+02	Eu152
					964.13	14.340	5.456E+02	Eu152
969.19	530.	7.48	1.68	2.272E-02	968.97	16.200	1.084E+03	Ac228
1120.31	3853.	2.02	1.80	2.093E-02	1120.29	14.800	9.339E+03	Bi214
1155.14	526.	9.98	1.97	2.057E-02				
1238.08	1626.	3.44	2.02	1.977E-02	1235.36	20.000	8.341E+03	Cs136
					1238.11	5.860	1.054E+04	Bi214
					1238.28	66.070	1.107E+03	Co56
1281.11	379.	11.57	1.53	1.938E-02				
1377.67	1146.	4.86	2.09	1.858E-02	1377.67	3.920	1.181E+04	Bi214
1385.63	241.	14.81	0.88	1.852E-02	1384.30	24.120	4.265E+02	Ag110M
1401.64	317.	7.77	2.11	1.840E-02				
1408.26	559.	5.30	2.12	1.835E-02	1408.01	20.870	1.098E+03	Eu152
					1408.01	20.870	1.098E+03	Eu152
1460.86	164.	21.74	0.91	1.795E-02	1461.00	10.670	6.027E+02	K40
1758.26	78.	26.65	2.36	1.605E-02				
1764.71	3396.	1.82	2.36	1.602E-02	1764.49	15.360	1.035E+04	Bi214
1847.52	494.	6.34	1.95	1.556E-02				

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Centroid Channel	Energy	Background Counts	Net Area Counts	Efficiency * Area	Uncert 2 Sigma %	FWHM keV	Suspected Nuclide	
316.44	79.50	1304.	182.	9.773E+03	58.20	0.971	BA-133	D
357.92	89.86	1439.	545.	2.233E+04	21.47	0.981	AC-228	D
1034.30	259.24	1184.	423.	9.252E+03	32.64	0.997	PB-214	sM

Channel	Energy	Background	Net area	Eff*Area	Uncert	FWHM	Suspected	
1078.34	270.27	1454.	290.	6.422E+03	55.03	0.955	AC-228	M
1096.45	274.80	1368.	294.	6.561E+03	52.67	0.722	SR-91	sM
1309.48	328.13	864.	200.	4.812E+03	58.03	0.744	BI-207	s
1621.67	406.29	589.	188.	5.037E+03	51.65	0.855	J-134	sM
1918.93	480.70	362.	149.	4.402E+03	49.30	0.881	PB-214	sM
2657.39	665.56	420.	528.	1.876E+04	20.91	1.282	BI-214	s
2808.38	703.35	300.	203.	7.444E+03	40.66	1.464	NB-94	s
3137.53	785.74	411.	419.	1.638E+04	26.21	1.279	PB-214	sM
3220.46	806.50	325.	440.	1.745E+04	22.22	1.312	BI-214	M
3727.95	933.52	346.	875.	3.769E+04	12.54	1.978	BI-214	
4613.48	1155.14	272.	526.	2.556E+04	19.95	1.967	BI-214	sM

5116.83	1281.11	216.	379.	1.956E+04	23.15	1.526	BI-214	s
5534.52	1385.63	152.	241.	1.303E+04	29.62	0.884	AG-110M	sM
5598.49	1401.55	146.	317.	1.725E+04	15.54	2.112	BI-214	D
5624.96	1408.17	159.	559.	3.046E+04	10.60	2.116	EU-152	D
7023.81	1758.06	177.	78.	4.887E+03	52.97	2.357	-	D
7380.51	1847.52	65.	494.	3.175E+04	12.68	1.954	BI-214	

s - Peak fails shape tests.
D - Peak area deconvoluted.
L - Peak written from unknown list.
C - Area < Critical level.
M - Peak is close to a library peak.

This section based on library: Pace Master w Ra226U235 (wo PS)

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	FWHM keV
Pb-212	297.66	74.81	2029.	1224.	0.680	11.88	0.966D
Pb-214	297.66	74.81	1646.	1206.	0.670	8.08	0.966D
Pb-214	306.85	77.11	1466.	2485.	1.380	5.93	0.969D
Th-228	335.86	84.37	1308.	187.	0.104	56.54	0.976D
Pb-214	347.15	87.20	1506.	1126.	0.625	11.43	0.979D
Pb-212	347.21	87.22	1814.	1100.	0.611	12.50	0.979
Ra-226	742.28	186.13	3083.	5386.	2.992	5.22	1.045
Pb-214	965.30	241.97	1821.	4299.	2.389	5.14	1.045
Pb-214	1178.06	295.23	1478.	10111.	5.617	2.60	1.127
Ac-228	1350.55	338.42	1107.	616.	0.342	24.28	1.169s
Pb-214	1404.62	351.95	1441.	18393.	10.218	1.76	1.188
Te-129	1945.05	487.24	587.	207.	0.115	53.36	1.362s
Bi-214	2432.78	609.34	606.	15706.	8.726	1.78	1.445
Bi-214	3067.63	768.24	425.	1481.	0.823	8.50	1.583
Ac-228	3639.09	911.28	393.	974.	0.541	12.41	1.820s
Eu-152	3851.93	964.55	416.	237.	0.132	43.59	1.774
Ac-228	3870.46	969.19	210.	528.	0.294	15.02	1.676s

Nuclide	Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM
Bi-214	4474.28	1120.31	318.	3853.	2.141	4.05	1.797
Bi-214	4945.00	1238.11	1418.	292.	0.162	38.36	1.990D
Co-56	4945.69	1238.28	510.	979.	0.544	6.61	1.990D
Bi-214	5502.89	1377.72	274.	1110.	0.617	10.28	2.083
Eu-152	5624.08	1408.04	132.	598.	0.332	12.76	2.116s
K-40	5835.17	1460.86	198.	154.	0.085	46.43	0.910s
Bi-214	7048.65	1764.49	223.	3383.	1.880	3.66	2.361D

s - Peak fails shape tests.
D - Peak area deconvoluted.
A Derived peak area.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

- Nuclide - Name	Code	Average Activity pCi/L	Peak Energy keV	Peak Activity pCi/L	Peak Code	Peak MDA Value pCi/L	COMMENTS

Nuclide		Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Na-22	C	3.9179E+00					9.50E+02	
			1274.53	3.918E+00	&(	3.073E+01	4.15E+02	9.99E+01 G K
K-40	N	6.0270E+02					4.68E+11	
			1461.00	6.027E+02	(P	2.678E+02	2.32E+01	1.07E+01 G K
Sc-46	F	9.4930E-01					8.38E+01	
			889.28	9.493E-01	%(P	3.395E+01	1.75E+03	1.00E+02 G K
Cr-51	F	-3.6459E+01					2.77E+01	
			320.08	-3.646E+01	%(	4.503E+02	5.33E+02	1.01E+01 G K
Co-56	C	6.6683E+02					7.73E+01	
			1238.28	6.668E+02	} P	7.355E+01	3.30E+00	6.61E+01 G K
			1771.35	0.000E+00	%(P	3.655E+02	1.00E+03	1.55E+01 G
Co-58	C	1.5253E+01					7.08E+01	
			810.78	1.525E+01	&(P	3.108E+01	1.01E+02	9.94E+01 G K
Fe-59	F	2.2478E+01					4.45E+01	
			1099.25	2.248E+01	%(	6.910E+01	1.60E+02	5.65E+01 G K
			1291.60	1.217E+01	% P	8.587E+01	3.73E+02	4.32E+01 G
Zn-65	F	6.4641E+01					2.44E+02	
			1115.55	6.464E+01	%(P	7.108E+01	5.79E+01	5.06E+01 G K
SE-75		-9.2263E+00					1.20E+02	
			264.66	-9.226E+00	%(	5.847E+01	2.74E+02	5.86E+01 G K
			136.00	0.000E+00	% P	8.072E+01	1.00E+03	5.83E+01 G
			279.54	0.000E+00	& P	1.398E+02	1.00E+03	2.48E+01 G
			121.12	1.133E+02	&	2.953E+02	1.09E+02	1.64E+01 G

Nuclide		Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Y-88	C	2.5743E+01					1.07E+02	
			1836.06	2.574E+01	%(	2.751E+01	6.12E+01	9.92E+01 G K
			898.04	0.000E+00	% P	3.972E+01	1.00E+03	9.37E+01 G
Nb-94	I	1.1052E+01					7.41E+06	
			871.09	1.105E+01	%(	2.785E+01	1.24E+02	9.99E+01 G K
			702.62	2.279E+01	% P	2.851E+01	6.03E+01	9.79E+01 G
Zr-95	I	-3.4059E+01					6.40E+01	
			756.73	-3.406E+01	&(	6.685E+01	9.42E+01	5.45E+01 G K
			724.20	0.000E+00	% P	8.110E+01	1.00E+03	4.42E+01 G
Nb-95	I	2.7577E+01					3.50E+01	
			765.81	2.758E+01	%(P	3.446E+01	6.02E+01	9.98E+01 G K
Ag-108M	C	-2.3872E+01					1.53E+05	
			722.94	-2.387E+01	%(	3.411E+01	6.89E+01	9.08E+01 G K
			614.28	7.102E+00	& P	2.680E+01	1.74E+02	8.98E+01 G
			433.94	7.722E-01	& P	3.070E+01	1.77E+03	9.05E+01 G
			79.13	0.000E+00	%	2.142E+03	1.00E+03	6.60E+00 G
Ru-106	I	4.9944E+01					3.73E+02	
			621.93	4.994E+01	&(	2.439E+02	2.25E+02	9.93E+00 G K
Sb-124	F	1.2806E+00					6.02E+01	

			602.73	1.281E+00	%(	3.518E+01	1.27E+03	9.78E+01	G K
			645.85	0.000E+00	& P	4.219E+02	1.00E+03	7.38E+00	G
			722.79	-2.503E+02	%	3.577E+02	6.89E+01	1.08E+01	G
			1690.98	4.138E+01	% P	6.688E+01	9.00E+01	4.73E+01	G
Te-129	I	7.4675E+02						3.36E+01	
			459.60	0.000E+00	%(P	5.315E+02	1.00E+03	7.70E+00	G K
			487.39	4.796E+03	(P	2.681E+03	2.67E+01	1.42E+00	G
I-132	I	-1.3702E+03						3.20E+00	
			772.60	-1.370E+03	%(	2.374E+03	8.33E+01	7.56E+01	G K
			522.65	1.634E+03	% P	9.225E+03	2.61E+02	1.60E+01	G
			630.19	-3.872E+03	%	1.190E+04	1.47E+02	1.33E+01	G
			954.55	-8.899E+02	&	9.972E+03	5.64E+02	1.76E+01	G
Te-132	I	5.0355E+01						3.20E+00	
			228.16	5.036E+01	&(	2.180E+03	1.87E+03	8.80E+01	G K
I-133	I	1.1951E+01						8.67E-01	
			529.87	1.195E+01	&(P	2.831E+01	1.10E+02	8.70E+01	G K
			875.33	0.000E+00	% P	6.687E+02	1.00E+03	4.51E+00	G

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Ba-133	F 3.6173E+01					3.84E+03	
		356.02	3.617E+01	%(	4.066E+01	5.10E+01	6.20E+01 G K
		81.00	0.000E+00	% P	2.336E+02	1.00E+03	3.41E+01 G
		302.85	0.000E+00	% P	1.584E+02	1.00E+03	1.83E+01 G
		276.40	-1.101E+02	%	4.196E+02	1.65E+02	7.16E+00 G
		383.85	6.298E+01	& P	3.025E+02	2.15E+02	8.94E+00 G
Cs-134	I 3.5663E+01					7.52E+02	
		795.86	3.566E+01	%(P	3.303E+01	4.63E+01	8.55E+01 G K
		604.72	0.000E+00	%	4.291E+01	1.00E+03	9.76E+01 GA
		569.33	5.382E+01	% P	1.697E+02	1.46E+02	1.54E+01 GA
		801.95	-9.729E+01	%	3.424E+02	1.73E+02	8.69E+00 GA
Cs-136	F -2.5644E+01					1.32E+01	
		818.51	-2.564E+01	%(	8.388E+01	1.61E+02	9.97E+01 G K
		176.60	1.682E+02	%	9.985E+02	2.47E+02	1.00E+01 G
		273.65	0.000E+00	%	7.666E+02	1.00E+03	1.11E+01 G
		340.55	1.321E+02	%	1.669E+02	5.51E+01	4.22E+01 G
		1048.07	-1.064E+02	%	1.121E+02	5.41E+01	8.00E+01 G
		1235.36	-1.376E+02	%	4.311E+02	1.63E+02	2.00E+01 G
Cs-137	I -3.0370E+01					1.10E+04	
		661.66	-3.037E+01	%(	3.295E+01	5.26E+01	9.01E+01 G K
Ce-139	F 6.5196E+00					1.38E+02	
		165.85	6.520E+00	&(	5.269E+01	3.36E+02	7.99E+01 G K
La-140	I 7.3746E+01					1.28E+01	
		1596.21	7.375E+01	&(	9.870E+01	7.36E+01	9.54E+01 G K
		487.02	2.479E+02	% P	1.626E+02	3.11E+01	4.55E+01 G
		815.77	9.162E+01	&	3.333E+02	1.79E+02	2.33E+01 G
		328.76	-7.044E+01	&	3.824E+02	2.34E+02	2.03E+01 G
Ce-141	I -1.4158E+01					3.25E+01	
		145.44	-1.416E+01	&(	1.285E+02	3.78E+02	4.82E+01 G K

Nuclide		Ave activity	Energy		Activity	Code	Peak	MDA	Comments
Ce-144	I	3.0345E+01						2.85E+02	
			133.51	3.034E+01	%(	3.898E+02	5.34E+02	1.11E+01	G K
Eu-155	I	5.9264E+01						1.74E+03	
			86.54	5.926E+01	%(	2.110E+02	1.07E+02	3.07E+01	G K
			105.31	-2.991E+01	%	2.464E+02	3.42E+02	2.12E+01	G
Lu-176	N	2.2441E+00						1.38E+13	
			306.78	2.244E+00	&(P	2.925E+01	5.62E+02	9.40E+01	G K
			201.83	-1.455E+01	%	4.011E+01	1.15E+02	8.65E+01	G

Nuclide		Ave activity	Energy		Activity	Code	Peak	MDA	Comments
Hg-203	F	7.5009E+00						4.66E+01	
			279.20	7.501E+00	&(P	4.962E+01	2.86E+02	8.15E+01	G K
Pb-210	N	-4.4611E+03						8.14E+03	
			46.54	-4.461E+03	%(	3.553E+04	3.15E+02	4.25E+00	G K
Bi-212	N	6.0333E+01						6.98E+02	
			727.33	6.033E+01	%(P	4.133E+02	3.26E+02	6.58E+00	G K
			1620.50	0.000E+00	% P	1.775E+03	1.00E+03	1.49E+00	G
Pb-212	N	1.1026E+03						6.98E+02	
			238.63	0.000E+00	%(P	8.320E+01	1.00E+03	4.33E+01	G K
									Energy duplication
			77.11	0.000E+00	% P	2.106E+01	1.00E+03	1.75E+01	G
									Energy duplication
			74.81	5.693E+03	(P	9.893E+02	5.94E+00	1.04E+01	G
			87.30	4.688E+03	P	8.576E+02	6.25E+00	7.80E+00	GA
Bi-214	N	8.8918E+03						5.84E+05	
			609.31	8.887E+03	(P	6.645E+01	8.89E-01	4.48E+01	G K
			1120.29	9.339E+03		2.080E+02	2.02E+00	1.48E+01	GA
			2204.21	0.000E+00	=	0.000E+00	0.00E+00	4.86E+00	G
			1764.49	1.032E+04	+ P	2.206E+02	1.83E+00	1.54E+01	G
			1377.67	1.144E+04	+ P	8.229E+02	5.14E+00	3.92E+00	G
			1238.11	1.891E+03	} P	1.155E+03	1.92E+01	5.86E+00	G
			768.36	8.933E+03	(	5.961E+02	4.25E+00	4.80E+00	G
Pb-214	N	9.3854E+03						5.84E+05	
			351.99	9.266E+03	(P	9.048E+01	8.78E-01	3.71E+01	G K
			295.22	9.074E+03	(P	1.632E+02	1.30E+00	1.92E+01	G
			241.92	9.265E+03	(P	4.343E+02	2.57E+00	7.47E+00	G
			87.20	9.951E+03	(	1.623E+03	5.72E+00	3.70E+00	G
									Energy duplication
			77.11	1.015E+04	(P	7.403E+02	2.96E+00	1.07E+01	G
									Energy duplication
			74.81	9.051E+03	} P	1.439E+03	4.04E+00	6.33E+00	G
Ra-226	N	2.4162E+04						5.84E+05	
			186.10	2.416E+04	(P	1.173E+03	2.61E+00	3.50E+00	G K
Ac-228	N	1.1126E+03						2.10E+03	
			911.21	1.175E+03	@(P	1.148E+02	6.21E+00	2.66E+01	G K
			968.97	1.084E+03	@(P	1.440E+02	7.51E+00	1.62E+01	G
			338.32	1.006E+03	@(P	2.575E+02	1.21E+01	1.13E+01	G

Nuclide		Ave activity	Energy		Activity	Code	Peak	MDA	Comments
Th-228	N	5.2972E+03						6.98E+02	
			84.37	5.297E+03	(P		4.841E+03	2.83E+01	1.27E+00 G K
			215.99	-9.936E+03	%		1.368E+04	6.01E+01	2.63E-01 GA
			166.41	1.951E+03	%		3.652E+04	5.62E+02	1.08E-01 GA
			131.61	4.959E+03	&		3.145E+04	2.64E+02	1.35E-01 GA

Nuclide		Ave activity	Energy		Activity	Code	Peak	MDA	Comments
Th-230	N	2.8248E+03						2.75E+07	
			67.67	2.825E+03	%(		3.391E+04	4.76E+02	3.80E-01 G K
Pa-231	N	-3.2853E+02						1.20E+07	
			283.70	-3.285E+02	%(		1.918E+03	2.52E+02	1.60E+00 G K
			330.00	0.000E+00	&		2.513E+03	1.00E+03	1.30E+00 G
Th-232	N	2.9373E+04						4.17E+12	
			63.81	2.937E+04	%(		5.590E+04	7.60E+01	2.67E-01 G K
Th-234	N	1.0721E+03						1.63E+12	
			63.29	1.072E+03	%(P		3.239E+03	1.20E+02	4.80E+00 G K
			92.60	7.100E+01	& P		2.164E+03	1.23E+03	2.80E+00 GA
U-235	N	2.9846E+01						2.57E+11	
			143.76	2.985E+01	%(P		3.760E+02	5.24E+02	1.10E+01 G K
			205.31	-2.190E+02	%		6.913E+02	1.32E+02	5.01E+00 G
			89.95	2.541E+03	%		1.910E+03	3.17E+01	3.56E+00 GA
U-238	N	3.7608E+01						1.63E+12	
			92.59	3.761E+01	&(P		1.082E+03	1.17E+03	5.60E+00 G K
									Energy duplication
			1001.03	0.000E+00	%		4.045E+03	1.00E+03	8.40E-01 G K
Am-241	T	5.9272E+01						1.58E+05	
			59.54	5.927E+01	&(P		5.545E+02	3.71E+02	3.63E+01 G K
Pm-144	C	6.6733E+00						3.63E+02	
			696.51	6.673E+00	%(P		2.722E+01	1.95E+02	9.90E+01 G K
			618.01	-8.375E+00	%		2.747E+01	1.52E+02	9.86E+01 G
Pm-146	C	1.5784E+01						2.02E+03	
			453.88	1.578E+01	&(P		4.188E+01	1.19E+02	6.52E+01 G K
			747.16	-4.288E+01	&		8.293E+01	9.28E+01	3.40E+01 G
			735.72	0.000E+00	% P		1.244E+02	1.00E+03	2.25E+01 GA

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went
negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide
failed one or more qualification tests.
+ - Peak activity higher than counting uncertainty range.
- - Peak activity lower than counting uncertainty range.

= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction
} - Peak is too close to another for the activity to be found directly.

Nuclide Codes:
T - Thermal Neutron Activation
F - Fast Neutron Activation
I - Fission Product
N - Naturally Occurring Isotope
P - Photon Reaction
C - Charged Particle Reaction
M - No MDA Calculation
R - Coincidence Corrected
H - Halflife limit exceeded

Peak Codes:
G - Gamma Ray
X - X-Ray
P - Positron Decay
S - Single-Escape
D - Double-Escape
K - Key Line
A - Not in Average
C - Coincidence Peak

- -

********** D I S C A R D E D I S O T O P E P E A K S **********

Nuclide	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	Activity	
Te-129	487.24	587.	207.	0.115	53.36	4.796E+03	P
Eu-152	964.55	416.	237.	0.132	43.59	5.456E+02	P
Eu-152	1408.04	132.	598.	0.332	12.76	1.176E+03	

P - Peakbackground subtraction

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide		Time of Count Activity pCi/L	Time Corrected Activity pCi/L	Uncertainty Counting pCi/L	2 Sigma Total pCi/L	MDA pCi/L
Be-7	#B	0.0000E+00	0.0000E+00	1.3036E+02	1.3036E+02	3.344E+02
Na-22	#B	3.8643E+00	3.9179E+00	3.2554E+01	3.2555E+01	3.073E+01
K-40	#	6.0270E+02	6.0270E+02	2.7983E+02	2.8186E+02	2.678E+02
Sc-46	#B	8.1201E-01	9.4930E-01	3.3197E+01	3.3197E+01	3.395E+01
Cr-51	#B	-2.2729E+01	-3.6459E+01	3.8831E+02	3.8832E+02	4.503E+02
Mn-54	#B	0.0000E+00	0.0000E+00	1.1365E+01	1.1365E+01	3.643E+01
Co-56		5.6292E+02	6.6683E+02	5.2127E+01	6.6615E+01	3.655E+02
Co-57	#B	0.0000E+00	0.0000E+00	1.7211E+01	1.7211E+01	5.434E+01
Co-58	#B	1.2679E+01	1.5253E+01	3.0665E+01	3.0677E+01	3.108E+01
Fe-59	#B	1.6750E+01	2.2478E+01	7.1739E+01	7.1750E+01	6.910E+01
Co-60	#B	0.0000E+00	0.0000E+00	1.4672E+01	1.4672E+01	3.713E+01
Zn-65	#B	6.1264E+01	6.4641E+01	7.4826E+01	7.4913E+01	7.108E+01
SE-75	#B	-8.2758E+00	-9.2263E+00	5.0593E+01	5.0596E+01	5.847E+01
Kr-85	#B	0.0000E+00	0.0000E+00	2.2298E+03	2.2299E+03	7.242E+03
Y-88	B	2.2769E+01	2.5743E+01	3.1502E+01	3.1545E+01	2.751E+01
Nb-94	#B	1.1052E+01	1.1052E+01	2.7434E+01	2.7441E+01	2.785E+01
Zr-95	#B	-2.7761E+01	-3.4059E+01	6.4198E+01	6.4227E+01	6.685E+01
Nb-95	#B	1.8968E+01	2.7577E+01	3.3203E+01	3.3239E+01	3.446E+01

Ru-103	#B	0.0000E+00	0.0000E+00	1.0628E+01	1.0628E+01	3.987E+01
Ag-108M	#B	-2.3870E+01	-2.3872E+01	3.2914E+01	3.2941E+01	3.411E+01
Ru-106	#B	4.8219E+01	4.9944E+01	2.2451E+02	2.2453E+02	2.439E+02

Cd-109 #B	0.0000E+00	0.0000E+00	1.3205E+03	1.3205E+03	7.414E+01
Ag-110M#B	0.0000E+00	0.0000E+00	1.5374E+01	1.5374E+01	3.112E+01
Sn-113 #B	0.0000E+00	0.0000E+00	1.1981E+01	1.1981E+01	5.694E+01
Sb-124 #B	1.0304E+00	1.2806E+00	3.2402E+01	3.2402E+01	3.518E+01
Sb-125 #B	0.0000E+00	0.0000E+00	4.0284E+01	4.0284E+01	1.029E+02
Te-129 #F	5.0581E+02	7.4675E+02	3.9847E+02	4.0056E+02	5.315E+02
Te-129M#B	0.0000E+00	0.0000E+00	6.5634E+02	6.5634E+02	1.414E+03
I-131 #B	0.0000E+00	0.0000E+00	7.0176E+01	7.0176E+01	1.748E+02
I-132 #B	-2.2926E+01	-1.3702E+03	2.2830E+03	2.2843E+03	2.374E+03
Te-132 #B	8.4254E-01	5.0355E+01	1.8852E+03	1.8852E+03	2.180E+03
I-133 #B	1.1951E+01	>12 Halflives	2.6258E+01	2.6267E+01	2.831E+01
Ba-133 #B	3.6050E+01	3.6173E+01	3.6873E+01	3.6893E+01	4.066E+01
Cs-134 F	3.5048E+01	3.5663E+01	3.3042E+01	3.3102E+01	3.303E+01
Cs-136 #B	-9.4847E+00	-2.5644E+01	8.2714E+01	8.2727E+01	8.388E+01
Cs-137 #B	-3.0334E+01	-3.0370E+01	3.1934E+01	3.1978E+01	3.295E+01
Ce-139 #B	5.9282E+00	6.5196E+00	4.3839E+01	4.3841E+01	5.269E+01
Ba-140 #B	0.0000E+00	0.0000E+00	6.2015E+01	6.2016E+01	3.351E+02
La-140 #B	2.6417E+01	7.3746E+01	1.0858E+02	1.0867E+02	9.870E+01
Ce-141 #B	-9.4645E+00	-1.4158E+01	1.0694E+02	1.0694E+02	1.285E+02
Ce-144 #B	2.8982E+01	3.0345E+01	3.2402E+02	3.2402E+02	3.898E+02
ND-147 #B	0.0000E+00	0.0000E+00	2.0833E+02	2.0833E+02	7.149E+02
Eu-152 #B	0.0000E+00	0.0000E+00	8.2046E+01	8.2046E+01	1.558E+02
Eu-154 #B	0.0000E+00	0.0000E+00	2.6778E+01	2.6778E+01	1.087E+02
Eu-155 B	5.8819E+01	5.9264E+01	1.2727E+02	1.2735E+02	2.110E+02
Lu-176 #B	2.2441E+00	2.2441E+00	2.5223E+01	2.5224E+01	2.925E+01
Ir-192 #B	0.0000E+00	0.0000E+00	2.0666E+01	2.0666E+01	4.172E+01
Hg-203 #B	5.6644E+00	7.5009E+00	4.2905E+01	4.2907E+01	4.962E+01
Tl-208 #B	0.0000E+00	0.0000E+00	1.7765E+01	1.7765E+01	3.840E+01
Pb-210 #B	-4.4539E+03	-4.4611E+03	2.8147E+04	2.8150E+04	3.553E+04
Bi-212 #B	5.9211E+01	6.0333E+01	3.9280E+02	3.9281E+02	4.133E+02
Pb-212 F	1.0821E+03	1.1026E+03	1.3102E+02	1.4646E+02	8.320E+01
Bi-214	8.8916E+03	8.8918E+03	1.5816E+02	5.1420E+02	6.645E+01
Pb-214	9.3852E+03	9.3854E+03	1.6474E+02	5.5831E+02	9.048E+01
Ra-223 #B	0.0000E+00	0.0000E+00	1.4777E+02	1.4777E+02	2.283E+02
Ra-224 #B	0.0000E+00	0.0000E+00	8.8572E+02	8.8572E+02	9.301E+02
Ra-226	2.4161E+04	2.4162E+04	1.2602E+03	1.8810E+03	1.173E+03
Ac-227 #B	0.0000E+00	0.0000E+00	9.1249E+01	9.1250E+01	2.713E+02
Ac-228 #	1.1057E+03	1.1126E+03	1.1546E+02	1.3133E+02	1.148E+02
Th-228	5.1987E+03	5.2972E+03	2.9952E+03	3.0282E+03	4.841E+03
Th-230 #B	2.8248E+03	2.8248E+03	2.6890E+04	2.6895E+04	3.391E+04
Pa-231 #B	-3.2853E+02	-3.2853E+02	1.6590E+03	1.6592E+03	1.918E+03
Pa-234M#A	0.0000E+00	0.0000E+00	5.0857E+02	5.0857E+02	4.060E+03
Th-232 #B	2.9373E+04	2.9373E+04	4.4622E+04	4.5078E+04	5.590E+04
Th-234 #B	1.0721E+03	1.0721E+03	2.5750E+03	2.5860E+03	3.239E+03
U-235 #B	2.9846E+01	2.9846E+01	3.1269E+02	3.1269E+02	3.760E+02
U-238 #B	3.7608E+01	3.7608E+01	8.7692E+02	8.7693E+02	1.082E+03

Am-241 #B	5.9267E+01	5.9272E+01	4.3946E+02	4.3971E+02	5.545E+02
Am-243 #B	0.0000E+00	0.0000E+00	1.6350E+02	1.6350E+02	2.713E+02
Pm-144 #B	6.4370E+00	6.6733E+00	2.5961E+01	2.5964E+01	2.722E+01
Pm-146 #B	1.5682E+01	1.5784E+01	3.7603E+01	3.7612E+01	4.188E+01

- All peaks for activity calculation had bad shape.
* - Activity omitted from total
& - Activity omitted from total and all peaks had bad shape.
< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.

F - Failed fraction or key line test.
H - Halflife limit exceeded

---------- S U M M A R Y ----------

Total Activity (30.3 to 2038.5 keV) 4.935E+04 pCi/L
Total Decayed Activity (30.3 to 2038.5 keV) 4.9451391E+04 pCi/L

The library has energies which are not separable.

Analyzed by: _____
Operator

Reviewed by: _____
Supervisor

Laboratory: Pace

ORTEC g v - i (3263) Env32 G701W047 9/16/2024 9:16:25 AM Page 1
Pace Spectrum name: 30713849001.An1

Sample description
81318

Spectrum Filename: C:\User\Spectra\30713849001.An1

Acquisition information
Start time: 9/16/2024 8:34:30 AM
Live time: 1800
Real time: 1835
Dead time: 1.92 %
Detector ID: 2

Detector system
DET 2

Calibration
Filename: DET_2_2L MAR_23-047(113023).Clb
DET 2 2L MARINELLI

Energy Calibration
Created: 11/30/2023 7:00:31 AM
Zero offset: 0.281 keV
Gain: 0.250 keV/channel
Quadratic: -1.344E-08 keV/channel^2

Efficiency Calibration
Created: 11/30/2023 7:26:21 AM
Type: Polynomial
Uncertainty: 1.699 %
Coefficients: -0.225215 -3.983441 0.474906
-0.072106 0.003754 -0.000081

Library Files
Main analysis library: Pace Master w Ra226U235 (wo PS)
Library Match Width: 0.500
Peak stripping: Library based

Analysis parameters
Analysis engine: Env32 G701W047
Start channel: 120 (30.33keV)
Stop channel: 8144 (2038.53keV)
Peak rejection level: 30.000%
Peak search sensitivity: 3
Sample Size: 2.0000E+00
Activity scaling factor: 1.0000E+06/(1.0000E+00* 2.0000E+00) =
5.0000E+05
Detection limit method: Reg. Guide 4.16 Method

Random error: 0.0000000E+00
Systematic error: 0.0000000E+00
Fraction Limit: 0.000%
Background width: average of three points.

Half lives decay limit: 12.000

WTF 9-19-24

9/16/24

Activity range factor:	2.000
Min. step backg. energy	0.000
Multiplet shift channel	2.000

Corrections	Status	Comments
Decay correct to date:	YES	8/28/2024 12:20:00 PM
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	YES	Det_2_Bkg_091324Ra226U235(2LITER 9/16/2024 9:13:41 AM
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

total peaks alloc. 0 cutoff: 0.00E+00 %

Energy Calibration
Normalized diff: 0.0505

***** S U M M A R Y O F P E A K S I N R A N G E *****

Peak Energy	Area	Uncert	FWHM	Corrctn Factor	Nuclide Energy	Brnch. Ratio	Act. pCi/L	Nuc
74.84	468.	9.14	0.97	1.583E-02	74.66	68.200	3.264E+02	Am243
					74.81	10.400	2.168E+03	Pb212
					74.81	6.330	3.497E+03	Pb214
77.18	832.	5.68	0.97	1.721E-02	77.11	10.700	3.401E+03	Pb214
					77.11	17.500	2.115E+03	Pb212
87.15	393.	10.33	0.98	2.292E-02	86.54	30.700	4.289E+02	Eu155
					87.20	3.700	3.476E+03	Pb214
					87.30	7.800	1.673E+03	Pb212
					88.03	3.610	3.581E+03	Cd109
90.02	282.	14.16	0.98	2.449E-02	89.95	3.560	2.434E+03	U235
					89.95	3.560	2.434E+03	U235
91.98	173.	22.37	0.98	2.586E-02	91.10	28.300	PBC<MDA	ND147
					92.59	5.600	8.980E+02	U238
					92.60	2.800	1.796E+03	Th234
					92.60	2.800	1.796E+03	Th234
					92.59	5.600	8.980E+02	U238
93.36	174.	22.22	0.98	2.625E-02				
128.82	207.	27.99	0.80	4.043E-02				
186.15	2050.	4.26	1.00	4.782E-02	186.10	3.500	9.119E+03	Ra226
209.36	382.	15.96	0.79	4.782E-02				
238.70	132.	26.86	1.13	4.679E-02	238.63	43.300	4.608E+01	Pb212
242.02	1575.	3.36	1.13	4.663E-02	241.00	3.900	6.601E+03	Ra224
					241.92	7.470	3.393E+03	Pb214
270.32	330.	18.34	1.16	4.508E-02				
295.26	3717.	2.10	1.16	4.357E-02	295.22	19.200	3.333E+03	Pb214
					295.96	28.670	2.669E+03	Ir192
					295.96	28.670	2.669E+03	Ir192

pk energy	area	uncert	fwhm	corr	nuclide	brnch.	act.	nuc
328.12	264.	16.60	1.32	4.157E-02	329.85	2.700	1.773E+03	Ac227

					330.00	1.300	3.678E+03	Pa231
					328.76	20.300	6.549E+02	La140
338.34	808.	7.06	1.23	4.096E-02	338.32	11.300	1.317E+03	Ac228
351.95	6700.	1.47	1.17	4.017E-02	351.99	37.100	3.372E+03	Pb214
462.82	324.	11.82	1.44	3.466E-02	463.36	10.500	6.782E+02	Sb125
					463.36	10.500	6.782E+02	Sb125
609.35	5732.	1.54	1.43	2.961E-02	609.31	44.800	3.239E+03	Bi214
665.68	167.	14.14	0.74	2.815E-02				
766.30	144.	18.21	1.61	2.598E-02	765.81	99.810	6.051E+01	Nb95
					765.81	99.810	6.051E+01	Nb95
768.41	539.	7.77	0.90	2.593E-02	768.36	4.800	3.254E+03	Bi214
786.65	202.	15.05	0.96	2.558E-02				
795.09	243.	14.56	1.51	2.543E-02	795.86	85.530	8.504E+01	Cs134
911.20	1248.	3.75	1.57	2.353E-02	911.21	26.600	1.503E+03	Ac228
934.33	337.	11.70	1.77	2.320E-02				
964.90	236.	16.60	1.77	2.279E-02	964.13	14.340	5.440E+02	Eu152
					964.13	14.340	5.440E+02	Eu152
968.79	621.	6.33	1.83	2.273E-02	968.97	16.200	1.271E+03	Ac228
1120.33	1451.	3.30	1.76	2.093E-02	1120.29	14.800	3.517E+03	Bi214
1238.19	481.	2.06	1.99	1.977E-02	1238.11	5.860	3.115E+03	Bi214
					1238.28	66.070	PBC<MDA	Co56
1281.16	176.	15.27	1.59	1.938E-02				
1377.33	495.	6.04	1.59	1.858E-02	1377.67	3.920	5.092E+03	Bi214
1408.18	181.	16.54	2.12	1.835E-02	1408.01	20.870	3.558E+02	Eu152
					1408.01	20.870	3.558E+02	Eu152
1460.40	162.	13.70	2.16	1.795E-02	1461.00	10.670	6.354E+02	K40
1661.42	140.	11.14	0.58	1.662E-02				
1764.85	1325.	3.01	2.23	1.601E-02	1764.49	15.360	4.029E+03	Bi214

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Efficiency * Area	Uncert 2 Sigma %	FWHM keV	Suspected Nuclide	
358.29	90.02	657.	283.	1.157E+04	28.21	0.982	AC-228	D
513.37	128.82	900.	207.	5.120E+03	55.98	0.804	AC-228	M
835.05	209.36	834.	382.	7.988E+03	31.92	0.788	AC-228	s
1078.55	270.32	738.	330.	7.309E+03	36.68	1.165	AC-228	sM
1309.44	328.12	414.	264.	6.351E+03	33.20	1.323	BI-207	M
1847.48	462.82	246.	324.	9.357E+03	23.65	1.436	CS-138	s
2657.87	665.68	102.	167.	5.933E+03	28.29	0.745	BI-214	sM
3141.16	786.65	130.	202.	7.877E+03	30.09	0.962	PA-234M	s
3731.20	934.33	174.	337.	1.453E+04	23.40	1.771	TE-131	
5117.05	1281.16	78.	176.	9.081E+03	30.53	1.594	BI-214	
6636.70	1661.42	13.	140.	8.403E+03	22.27	0.580	BI-214	s
7053.93	1765.78	960.	338.	2.110E+04	28.14	2.362	RH-106	D

s - Peak fails shape tests.
D - Peak area deconvoluted.
L - Peak written from unknown list.
C - Area < Critical level.
M - Peak is close to a library peak.

This section based on library: Pace Master w Ra226U235 (wo PS)

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	FWHM keV
Pb-212	297.66	74.81	957.	363.	0.202	26.30	0.966D
Pb-214	306.85	77.11	699.	833.	0.463	11.35	0.969D
Pb-214	347.15	87.20	672.	394.	0.219	21.18	0.979D
Pb-212	346.99	87.16	769.	443.	0.246	20.09	0.979
U-238	371.61	93.33	664.	173.	0.096	44.74	0.985s
Ra-226	742.35	186.15	1209.	2033.	1.129	8.60	0.997
Pb-212	951.98	238.63	568.	123.	0.068	57.64	1.128D
Pb-214	965.12	241.92	570.	1574.	0.875	6.62	1.131D
Pb-214	1178.18	295.26	576.	3714.	2.063	4.21	1.163
Ac-228	1350.26	338.34	543.	807.	0.448	14.14	1.234
Pb-214	1404.60	351.95	557.	6693.	3.718	2.93	1.174
Sb-125	1848.51	463.07	332.	226.	0.125	36.80	1.340
Bi-214	2432.69	609.31	281.	5574.	3.097	2.81	1.472D
Nb-95	3059.88	766.30	105.	144.	0.080	36.42	1.608s
Bi-214	3068.29	768.41	215.	539.	0.300	15.54	0.901s
Cs-134	3175.42	795.22	181.	150.	0.083	45.11	1.634
Ac-228	3638.76	911.20	152.	1245.	0.692	7.53	1.566
Eu-152	3853.34	964.90	223.	236.	0.131	33.19	1.774s
Ac-228	3870.19	969.12	227.	624.	0.347	14.25	1.835
Bi-214	4474.36	1120.33	120.	1451.	0.806	6.60	1.760
Bi-214	4945.00	1238.11	150.	481.	0.267	4.11	1.990D
Bi-214	5501.33	1377.33	59.	494.	0.274	12.11	1.592s
Eu-152	5624.62	1408.18	110.	181.	0.101	33.08	2.116s
K-40	5833.29	1460.40	63.	162.	0.090	27.40	2.155s
Bi-214	7048.65	1764.49	376.	970.	0.539	8.56	2.361D

s - Peak fails shape tests.
D - Peak area deconvoluted.
A Derived peak area.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

- Nuclide - Name	Code	Average Activity pCi/L	Peak Energy keV	Peak Activity pCi/L	Code	MDA Value pCi/L	COMMENTS
Na-22	C	6.2684E+00				9.50E+02	
			1274.53	6.268E+00	%(	1.819E+01 1.52E+02 9.99E+01	G K
K-40	N	6.3536E+02				4.68E+11	
			1461.00	6.354E+02	(P	1.555E+02 1.37E+01 1.07E+01	G K
Sc-46	F	6.4663E+00				8.38E+01	
			889.28	6.466E+00	%(P	2.344E+01 1.76E+02 1.00E+02	G K
Cr-51	F	-2.6489E+01				2.77E+01	
			320.08	-2.649E+01	&(	3.091E+02 4.99E+02 1.01E+01	G K
Mn-54	C	7.9269E+00				3.12E+02	
			834.85	7.927E+00	%(P	2.279E+01 1.41E+02 1.00E+02	G K
Co-56	C	2.7179E+02				7.73E+01	
			1238.28	3.232E+01	} P	4.456E+01 5.74E+01 6.61E+01	G K
			1771.35	0.000E+00	%(P	2.181E+02 1.00E+03 1.55E+01	G

Fe-59	F	-4.0434E+01					4.45E+01		
			1099.25	-4.043E+01	%(	5.582E+01	7.20E+01	5.65E+01	G K
			1291.60	0.000E+00	% P	7.070E+01	1.00E+03	4.32E+01	G
Zn-65	F	2.7326E+01					2.44E+02		
			1115.55	2.733E+01	%(P	4.409E+01	8.35E+01	5.06E+01	G K
SE-75		2.1960E+01					1.20E+02		
			264.66	2.196E+01	&(	3.593E+01	7.10E+01	5.86E+01	G K
			136.00	0.000E+00	& P	5.261E+01	1.00E+03	5.83E+01	G
			279.54	7.418E+00	& P	9.199E+01	5.32E+02	2.48E+01	G
			121.12	1.071E+01	%	1.994E+02	7.69E+02	1.64E+01	G
Y-88	C	-2.1903E+00					1.07E+02		
			1836.06	-2.190E+00	%(	1.988E+01	4.96E+02	9.92E+01	G K
			898.04	0.000E+00	% P	2.401E+01	1.00E+03	9.37E+01	G
Nb-94	I	-8.4057E+00					7.41E+06		
			871.09	-8.406E+00	&(	2.172E+01	1.26E+02	9.99E+01	G K
			702.62	9.016E+00	& P	2.036E+01	1.07E+02	9.79E+01	G

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Zr-95	I 5.6021E+00					6.40E+01	
		756.73	5.602E+00	%(	4.776E+01	4.02E+02	5.45E+01 G K
		724.20	0.000E+00	% P	5.892E+01	1.00E+03	4.42E+01 G
Nb-95	I 6.0505E+01					3.50E+01	
		765.81	6.051E+01	?(P	2.124E+01	1.82E+01	9.98E+01 G K
Ru-103	I 1.1218E+01					3.93E+01	
		497.08	1.122E+01	%(P	2.561E+01	1.05E+02	9.10E+01 G K
Ag-108M	C -1.5504E+01					1.53E+05	
		722.94	-1.550E+01	%(	2.500E+01	7.73E+01	9.08E+01 G K
		614.28	0.000E+00	% P	2.000E+01	1.00E+03	8.98E+01 G
		433.94	7.722E-01	% P	2.007E+01	1.15E+03	9.05E+01 G
		79.13	0.000E+00	%	1.362E+03	1.00E+03	6.60E+00 G
Ru-106	I 9.3637E+01					3.73E+02	
		621.93	9.364E+01	&(	1.654E+02	8.15E+01	9.93E+00 G K
Sb-124	F -9.7600E+00					6.02E+01	
		602.73	-9.760E+00	&(	2.714E+01	1.28E+02	9.78E+01 G K
		645.85	0.000E+00	& P	3.213E+02	1.00E+03	7.38E+00 G
		722.79	-1.625E+02	%	2.620E+02	7.73E+01	1.08E+01 G
		1690.98	0.000E+00	% P	5.133E+01	1.00E+03	4.73E+01 G
Sb-125	I 1.2347E+02					1.01E+03	
		427.88	0.000E+00	%(P	6.920E+01	1.00E+03	2.96E+01 G K
		176.31	1.202E+02	&	3.623E+02	1.25E+02	6.82E+00 G
		463.36	4.715E+02	(	1.833E+02	1.84E+01	1.05E+01 G
		600.60	3.297E+01	% P	1.122E+02	1.55E+02	1.79E+01 G
		635.95	0.000E+00	% P	1.727E+02	1.00E+03	1.13E+01 G
Te-129	I 2.4324E+02					3.36E+01	
		459.60	2.432E+02	%(P	2.930E+02	5.44E+01	7.70E+00 G K
		487.39	2.820E+02	% P	2.125E+03	3.46E+02	1.42E+00 G

Nuclide		Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Te-129M	I	6.9986E+02					3.36E+01	
			695.88 6.999E+02	&(P	8.417E+02	5.77E+01	3.00E+00	G K
I-132	I	-6.5254E+02					3.20E+00	
			772.60-6.525E+02	%(	1.949E+03	1.42E+02	7.56E+01	G K
			522.65 1.692E+03	& P	6.707E+03	1.82E+02	1.60E+01	G
			630.19-2.303E+03	&	8.359E+03	1.72E+02	1.33E+01	G
			954.55-1.838E+01	%	6.982E+03	1.88E+04	1.76E+01	G

Nuclide		Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Te-132	I	-1.3548E+02					3.20E+00	
			228.16-1.355E+02	%(	1.513E+03	4.81E+02	8.80E+01	G K
Ba-133	F	7.5994E-01					3.84E+03	
			356.02 7.599E-01	%(	2.824E+01	1.64E+03	6.20E+01	G K
			81.00 0.000E+00	% P	1.773E+02	1.00E+03	3.41E+01	G
			302.85 1.928E+01	% P	1.039E+02	2.31E+02	1.83E+01	G
			276.40-7.368E+01	%	3.097E+02	1.81E+02	7.16E+00	G
			383.85 2.459E+01	% P	2.041E+02	3.68E+02	8.94E+00	G
Cs-134	I	5.2708E+01					7.52E+02	
			795.86 5.271E+01	?(P	2.299E+01	2.26E+01	8.55E+01	G K
			604.72 0.000E+00	%	3.098E+01	1.00E+03	9.76E+01	GA
			569.33 1.081E+01	& P	1.361E+02	5.76E+02	1.54E+01	GA
			801.95-1.060E+02	%	2.498E+02	1.16E+02	8.69E+00	GA
Cs-136	F	-1.6247E+00					1.32E+01	
			818.51-1.625E+00	%(	5.547E+01	1.65E+03	9.97E+01	G K
			176.60 1.707E+02	%	6.622E+02	1.61E+02	1.00E+01	G
			273.65-7.183E+01	&	5.377E+02	3.22E+02	1.11E+01	G
			340.55 2.194E+01	&	1.210E+02	2.36E+02	4.22E+01	G
			1048.07-3.145E+01	%	7.476E+01	1.20E+02	8.00E+01	G
			1235.36-8.529E+01	%	3.567E+02	2.16E+02	2.00E+01	G
Cs-137	I	6.9896E+00					1.10E+04	
			661.66 6.990E+00	&(	2.066E+01	1.40E+02	9.01E+01	G K
Ce-139	F	-1.2668E+01					1.38E+02	
			165.85-1.267E+01	%(	3.578E+01	1.17E+02	7.99E+01	G K
La-140	I	6.5861E+01					1.28E+01	
			1596.21 6.586E+01	%(	4.182E+01	3.55E+01	9.54E+01	G K
			487.02 4.642E+00	% P	1.265E+02	1.25E+03	4.55E+01	G
			815.77 1.793E+01	%	2.339E+02	6.31E+02	2.33E+01	G
			328.76-7.235E+01	&	2.544E+02	1.51E+02	2.03E+01	G
Ce-141	I	-1.0280E+01					3.25E+01	
			145.44-1.028E+01	&(	8.648E+01	3.48E+02	4.82E+01	G K
Ce-144	I	-3.4595E+01					2.85E+02	
			133.51-3.460E+01	%(	2.675E+02	3.20E+02	1.11E+01	G K
Eu-154	I	3.1717E+01					3.14E+03	
			123.07 3.172E+01	&(P	7.180E+01	9.42E+01	4.06E+01	G K
			1274.44 6.094E+00	%	5.579E+01	4.76E+02	3.50E+01	G
			1004.72-9.769E+00	%	1.094E+02	5.55E+02	1.79E+01	G
			996.26-2.507E+01	%	1.912E+02	3.79E+02	1.05E+01	G

ORTEC g v - i (3263) Env32 G701W047 9/16/2024 9:16:25 AM Page 8
Pace Spectrum name: 30713849001.An1

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
		873.19	2.246E+01 %	P	1.673E+02	3.61E+02	1.22E+01 G
		723.30	0.000E+00 %	P	1.174E+02	1.00E+03	2.01E+01 GA
		247.93	0.000E+00 &	P	3.121E+02	1.00E+03	6.91E+00 G
Eu-155	I -1.3816E+01					1.74E+03	
		86.54	-1.382E+01 %(		1.491E+02	3.22E+02	3.07E+01 G K
		105.31	1.098E+02 %		1.567E+02	5.97E+01	2.12E+01 G
Lu-176	N 1.2192E+00					1.38E+13	
		306.78	1.219E+00 &(	P	1.950E+01	6.84E+02	9.40E+01 G K
		201.83	-1.313E+01 %		2.800E+01	8.88E+01	8.65E+01 G
Hg-203	F 1.6440E+01					4.66E+01	
		279.20	1.644E+01 %(	P	3.194E+01	8.41E+01	8.15E+01 G K
Tl-208	N 2.1411E-01					6.98E+02	
		583.19	2.141E-01 &(	P	2.662E+01	5.67E+03	8.45E+01 G K
		860.56	6.853E+01 %	P	1.471E+02	1.05E+02	1.24E+01 G
		277.36	0.000E+00 &	P	3.467E+02	1.00E+03	6.31E+00 G
Pb-210	N -1.3180E+03					8.14E+03	
		46.54	-1.318E+03 %(		2.422E+04	7.22E+02	4.25E+00 G K
Pb-212	N 4.6530E+01					6.98E+02	
		238.63	4.653E+01 (	P	4.294E+01	2.88E+01	4.33E+01 G K
							Energy duplication
		77.11	0.000E+00 %	P	2.106E+01	1.00E+03	1.75E+01 G
							Energy duplication
		74.81	1.690E+03 +	P	6.832E+02	1.31E+01	1.04E+01 G
		87.30	1.889E+03 +	P	5.623E+02	1.00E+01	7.80E+00 GA
Bi-214	N 3.1154E+03					5.84E+05	
		609.31	3.154E+03 (	P	4.575E+01	1.41E+00	4.48E+01 G K
		1120.29	3.517E+03		1.303E+02	3.30E+00	1.48E+01 GA
		2204.21	0.000E+00 =		0.000E+00	0.00E+00	4.86E+00 G
		1764.49	2.959E+03 (	P	2.842E+02	4.28E+00	1.54E+01 G
		1377.67	5.092E+03 +	P	3.967E+02	6.06E+00	3.92E+00 G
		1238.11	3.115E+03 }	P	3.879E+02	2.06E+00	5.86E+00 G
		768.36	3.254E+03 (		4.282E+02	7.77E+00	4.80E+00 G
Pb-214	N 3.3844E+03					5.84E+05	
		351.99	3.372E+03 (	P	5.677E+01	1.47E+00	3.71E+01 G K
		295.22	3.333E+03 (	P	1.028E+02	2.10E+00	1.92E+01 G
		241.92	3.393E+03 (	P	2.455E+02	3.31E+00	7.47E+00 G
		87.20	3.480E+03 (		1.092E+03	1.06E+01	3.70E+00 G
							Energy duplication
		77.11	3.403E+03 (	P	5.146E+02	5.67E+00	1.07E+01 G
							Energy duplication
		74.81	3.588E+02 }	P	9.323E+02	7.86E+01	6.33E+00 G

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Pace Spectrum name: 30713849001.An1

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Ra-224	N 3.6634E+02					6.98E+02	

			241.00	3.663E+02	%(P	5.166E+02	4.33E+01	3.90E+00	G K
Ra-226	N	9.1192E+03						5.84E+05	
			186.10	9.119E+03	(P	7.390E+02	4.30E+00	3.50E+00	G K
Ac-227	N	7.1519E+01						7.95E+03	
			235.97	7.152E+01	&(P	1.768E+02	1.07E+02	1.23E+01	G K
			256.25	6.395E+01	% P	2.904E+02	1.96E+02	7.00E+00	G
			300.00	-3.072E+02	&	8.975E+02	1.26E+02	2.30E+00	G
			329.85	0.000E+00	%	9.385E+02	1.00E+03	2.70E+00	G
Ac-228	N	1.5029E+03						2.10E+03	
			911.21	1.503E+03	(P	7.256E+01	3.77E+00	2.66E+01	G K
			968.97	1.281E+03	- P	1.495E+02	7.13E+00	1.62E+01	G
			338.32	1.317E+03	- P	1.817E+02	7.07E+00	1.13E+01	G
Th-228	N	1.2297E+03						6.98E+02	
			84.37	1.230E+03	%(P	3.917E+03	1.29E+02	1.27E+00	G K
			215.99	1.322E+02	%	8.464E+03	2.75E+03	2.63E-01	GA
			166.41	-8.918E+03	%	2.473E+04	1.15E+02	1.08E-01	GA
			131.61	-2.788E+03	&	2.188E+04	3.25E+02	1.35E-01	GA
Th-230	N	-1.8832E+04						2.75E+07	
			67.67	-1.883E+04	%(	2.420E+04	5.15E+01	3.80E-01	G K
Pa-231	N	6.6589E+02						1.20E+07	
			283.70	6.659E+02	%(	1.250E+03	8.13E+01	1.60E+00	G K
			330.00	0.000E+00	%	1.946E+03	1.00E+03	1.30E+00	G
Pa-234M	N	1.1660E+03						1.63E+12	
								Energy duplication	
			1001.03	1.166E+03	&(	2.127E+03	9.16E+01	8.37E-01	G
Th-232	N	4.7180E+03						4.17E+12	
			63.81	4.718E+03	%(	3.692E+04	3.08E+02	2.67E-01	G K
U-235	N	7.5402E+01						2.57E+11	
			143.76	7.540E+01	%(P	2.436E+02	1.34E+02	1.10E+01	G K
			205.31	-1.653E+02	&	4.591E+02	1.15E+02	5.01E+00	G
			89.95	1.677E+03	%	1.291E+03	3.25E+01	3.56E+00	GA
U-238	N	8.9797E+02						1.63E+12	
			92.59	8.980E+02	(P	6.366E+02	2.24E+01	5.60E+00	G K
								Energy duplication	
			1001.03	1.162E+03	&	2.119E+03	9.16E+01	8.40E-01	G K

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Am-241	T 1.2515E+02						1.58E+05
		59.54	1.251E+02	%(P	3.584E+02	1.13E+02	3.63E+01 G K
Am-243	T 1.1332E+01						2.69E+06
							Derived Ave Activity
		74.66	1.133E+01	}(P	1.495E+02	8.89E+03	6.82E+01 G K
Pm-146	C 5.3671E+00						2.02E+03
		453.88	5.367E+00	&(P	2.901E+01	2.40E+02	6.52E+01 G K
		747.16	1.504E+01	&	5.491E+01	1.72E+02	3.40E+01 G
		735.72	0.000E+00	% P	9.907E+01	1.00E+03	2.25E+01 GA

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide failed one or more qualification tests.
+ - Peak activity higher than counting uncertainty range.
- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction
} - Peak is too close to another for the activity to be found directly.

Nuclide Codes:
T - Thermal Neutron Activation
F - Fast Neutron Activation
I - Fission Product
N - Naturally Occurring Isotope
P - Photon Reaction
C - Charged Particle Reaction
M - No MDA Calculation
R - Coincidence Corrected
H - Halflife limit exceeded

Peak Codes:
G - Gamma Ray
X - X-Ray
P - Positron Decay
S - Single-Escape
D - Double-Escape
K - Key Line
A - Not in Average
C - Coincidence Peak

- -

********** D I S C A R D E D I S O T O P E P E A K S **********

Nuclide	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	Activity	
Sb-125	463.07	332.	226.	0.125	36.80	4.715E+02	
Nb-95	766.30	105.	144.	0.080	36.42	6.051E+01	P
Eu-152	964.90	223.	236.	0.131	33.19	5.440E+02	P
Eu-152	1408.18	110.	181.	0.101	33.08	3.558E+02	

P - Peakbackground subtraction

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide		Time of Count Activity pCi/L	Time Corrected Activity pCi/L	Uncertainty Counting pCi/L	2 Sigma Total pCi/L	MDA pCi/L
Be-7	#B	0.0000E+00	0.0000E+00	1.0516E+02	1.0516E+02	2.458E+02
Na-22	#B	6.1828E+00	6.2684E+00	1.9000E+01	1.9003E+01	1.819E+01
K-40	#	6.3536E+02	6.3536E+02	1.7411E+02	1.7770E+02	1.555E+02
Sc-46	#B	5.5330E+00	6.4663E+00	2.2805E+01	2.2808E+01	2.344E+01
Cr-51	#B	-1.6531E+01	-2.6489E+01	2.6461E+02	2.6462E+02	3.091E+02
Mn-54	#B	7.6022E+00	7.9269E+00	2.2310E+01	2.2314E+01	2.279E+01
Co-56		2.2952E+02	2.7179E+02	3.2295E+01	3.6452E+01	2.181E+02
Co-57	#B	0.0000E+00	0.0000E+00	1.7169E+01	1.7169E+01	3.748E+01
Co-58	#B	0.0000E+00	0.0000E+00	8.0408E+00	8.0409E+00	2.546E+01

Fe-59	#B	-3.0149E+01	-4.0434E+01	5.8240E+01	5.8283E+01	5.582E+01
Co-60	#B	0.0000E+00	0.0000E+00	9.6428E+00	9.6429E+00	2.470E+01
Zn-65	#B	2.5902E+01	2.7326E+01	4.5613E+01	4.5639E+01	4.409E+01
SE-75	#B	1.9702E+01	2.1960E+01	3.1181E+01	3.1208E+01	3.593E+01
Kr-85	#B	0.0000E+00	0.0000E+00	1.2511E+03	1.2511E+03	6.044E+03
Y-88	#B	-1.9378E+00	-2.1903E+00	2.1738E+01	2.1738E+01	1.988E+01
Nb-94	#B	-8.4057E+00	-8.4057E+00	2.1257E+01	2.1262E+01	2.172E+01
Zr-95	B	4.5682E+00	5.6021E+00	4.5048E+01	4.5050E+01	4.776E+01
Nb-95	#	4.1652E+01	6.0505E+01	2.2039E+01	2.2298E+01	2.124E+01
Ru-103	#B	8.0430E+00	1.1218E+01	2.3616E+01	2.3624E+01	2.561E+01
Ag-108M	#B	-1.5502E+01	-1.5504E+01	2.3972E+01	2.3988E+01	2.500E+01
Ru-106	#B	9.0411E+01	9.3637E+01	1.5258E+02	1.5267E+02	1.654E+02
Cd-109	#B	0.0000E+00	0.0000E+00	8.6137E+02	8.6138E+02	7.414E+01
Ag-110M	#B	0.0000E+00	0.0000E+00	9.7224E+00	9.7224E+00	2.234E+01
Sn-113	#B	0.0000E+00	0.0000E+00	1.2176E+01	1.2177E+01	3.895E+01
Sb-124	#B	-7.8564E+00	-9.7600E+00	2.5044E+01	2.5050E+01	2.714E+01
Sb-125	#F	1.2188E+02	1.2347E+02	4.5438E+01	4.5944E+01	6.920E+01
Te-129	#B	1.6490E+02	2.4324E+02	2.6440E+02	2.6474E+02	2.930E+02
Te-129M	#B	4.7445E+02	6.9986E+02	8.0698E+02	8.0792E+02	8.417E+02
I-131	#B	0.0000E+00	0.0000E+00	5.0239E+01	5.0239E+01	1.137E+02
I-132	#B	-1.1015E+01	-6.5254E+02	1.8576E+03	1.8579E+03	1.949E+03
Te-132	#B	-2.2869E+00	-1.3548E+02	1.3025E+03	1.3025E+03	1.513E+03
I-133	#B	0.0000E+00	>12 Halflives	6.2714E+00	6.2715E+00	2.175E+01

Ba-133	#B	7.5736E-01	7.5994E-01	2.4976E+01	2.4976E+01	2.824E+01
Cs-134	#	5.1801E+01	5.2708E+01	2.3776E+01	2.3960E+01	2.299E+01
Cs-136	#B	-6.0220E-01	-1.6247E+00	5.3665E+01	5.3665E+01	5.547E+01
Cs-137	#B	6.9812E+00	6.9896E+00	1.9591E+01	1.9595E+01	2.066E+01
Ce-139	#B	-1.1521E+01	-1.2668E+01	2.9750E+01	2.9759E+01	3.578E+01
Ba-140	#B	0.0000E+00	0.0000E+00	6.4630E+01	6.4630E+01	2.232E+02
La-140	#F	2.3644E+01	6.5861E+01	4.6779E+01	4.6934E+01	4.182E+01
Ce-141	#B	-6.8780E+00	-1.0280E+01	7.1617E+01	7.1620E+01	8.648E+01
Ce-144	#B	-3.3045E+01	-3.4595E+01	2.2143E+02	2.2144E+02	2.675E+02
ND-147	#B	0.0000E+00	0.0000E+00	8.3059E+01	8.3060E+01	4.798E+02
Eu-152	#B	0.0000E+00	0.0000E+00	4.9567E+01	4.9567E+01	1.078E+02
Eu-154	#B	3.1585E+01	3.1717E+01	5.9756E+01	5.9784E+01	7.180E+01
Eu-155	#B	-1.3712E+01	-1.3816E+01	8.9040E+01	8.9046E+01	1.491E+02
Lu-176	#B	1.2192E+00	1.2192E+00	1.6677E+01	1.6677E+01	1.950E+01
Ir-192	#B	0.0000E+00	0.0000E+00	1.3351E+01	1.3351E+01	2.823E+01
Hg-203	#B	1.2422E+01	1.6440E+01	2.7647E+01	2.7664E+01	3.194E+01
Tl-208	#B	2.1014E-01	2.1411E-01	2.4291E+01	2.4291E+01	2.662E+01
Pb-210	#B	-1.3159E+03	-1.3180E+03	1.9034E+04	1.9034E+04	2.422E+04
Bi-212	#B	0.0000E+00	0.0000E+00	1.7854E+02	1.7854E+02	3.248E+02
Pb-212		4.5667E+01	4.6530E+01	2.6818E+01	2.6960E+01	4.294E+01
Bi-214		3.1153E+03	3.1154E+03	8.7594E+01	1.9251E+02	4.575E+01
Pb-214		3.3843E+03	3.3844E+03	9.9312E+01	2.1648E+02	5.677E+01
Ra-223	#B	0.0000E+00	0.0000E+00	1.2279E+02	1.2280E+02	1.564E+02
Ra-224	B	3.5954E+02	3.6634E+02	3.1689E+02	3.1763E+02	5.166E+02
Ra-226		9.1190E+03	9.1192E+03	7.8381E+02	9.4454E+02	7.390E+02
Ac-227	#B	7.1401E+01	7.1519E+01	1.5307E+02	1.5313E+02	1.768E+02
Ac-228		1.4936E+03	1.5029E+03	1.1318E+02	1.4127E+02	7.256E+01
Th-228	#B	1.2069E+03	1.2297E+03	3.1757E+03	3.1774E+03	3.917E+03
Th-230	#B	-1.8832E+04	-1.8832E+04	1.9392E+04	1.9701E+04	2.420E+04
Pa-231	#B	6.6588E+02	6.6589E+02	1.0827E+03	1.0834E+03	1.250E+03
Pa-234M	#A	1.1660E+03	1.1660E+03	2.1361E+03	2.1371E+03	2.127E+03
Th-232	#B	4.7180E+03	4.7180E+03	2.9079E+04	2.9098E+04	3.692E+04
Th-234	#B	0.0000E+00	0.0000E+00	8.0336E+02	8.0341E+02	2.266E+03
U-235	#B	7.5402E+01	7.5402E+01	2.0231E+02	2.0236E+02	2.436E+02
U-238	#F	8.9797E+02	8.9797E+02	4.0173E+02	4.0615E+02	6.366E+02

Am-241 #B	1.2514E+02	1.2515E+02	2.8386E+02	2.8558E+02	3.584E+02
Am-243 A	1.1332E+01	1.1332E+01	2.0148E+03	2.0148E+03	1.495E+02
Pm-144 #B	0.0000E+00	0.0000E+00	1.4456E+01	1.4457E+01	2.100E+01
Pm-146 #B	5.3326E+00	5.3671E+00	2.5748E+01	2.5749E+01	2.901E+01

- All peaks for activity calculation had bad shape.
* - Activity omitted from total
& - Activity omitted from total and all peaks had bad shape.
< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

S U M M A R Y

Total Activity (30.3 to 2038.5 keV) 1.785E+04 pCi/L
Total Decayed Activity (30.3 to 2038.5 keV) 1.7856471E+04 pCi/L

The library has energies which are not separable.

Analyzed by: _____
Operator

Reviewed by: _____
Supervisor

Laboratory: Pace

ORTEC g v - i (3263) Env32 G701W047 9/16/2024 10:14:53 AM Page 1
Pace Spectrum name: 30713850001.An1

Sample description
81318

Spectrum Filename: C:\User\Spectra\30713850001.An1

Acquisition information
Start time: 9/16/2024 9:41:25 AM
Live time: 1800
Real time: 1841
Dead time: 2.20 %
Detector ID: 2

Detector system
DET 2

Calibration
Filename: DET_2_2L MAR_23-047(113023).Clb
DET 2 2L MARINELLI

Energy Calibration
Created: 11/30/2023 7:00:31 AM
Zero offset: 0.281 keV
Gain: 0.250 keV/channel
Quadratic: -1.344E-08 keV/channel^2

Efficiency Calibration
Created: 11/30/2023 7:26:21 AM
Type: Polynomial
Uncertainty: 1.699 %
Coefficients: -0.225215 -3.983441 0.474906
-0.072106 0.003754 -0.000081

Library Files
Main analysis library: Pace Master w Ra226U235 (wo PS)
Library Match Width: 0.500
Peak stripping: Library based

Analysis parameters
Analysis engine: Env32 G701W047
Start channel: 120 (30.33keV)
Stop channel: 8144 (2038.53keV)
Peak rejection level: 30.000%
Peak search sensitivity: 3
Sample Size: 2.0000E+00
Activity scaling factor: 1.0000E+06/(1.0000E+00* 2.0000E+00) = 5.0000E+05
Detection limit method: Reg. Guide 4.16 Method

Random error: 0.0000000E+00
Systematic error: 0.0000000E+00
Fraction Limit: 0.000%
Background width: average of three points.

Half lives decay limit: 12.000

WTF 9-19-24

9/16/24

ORTEC g v - i (3263) Env32 G701W047 9/16/2024 10:14:53 AM Page 2
Pace Spectrum name: 30713850001.An1

Activity range factor:	2.000
Min. step backg. energy	0.000
Multiplet shift channel	2.000

Corrections	Status	Comments
Decay correct to date:	YES	8/27/2024 11:30:00 AM
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	YES	Det_2_Bkg_091324Ra226U235(2LITER 9/16/2024 9:13:41 AM
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

total peaks alloc. 0 cutoff: 0.00E+00 %
Energy Calibration
Normalized diff: 0.0647

***** S U M M A R Y O F P E A K S I N R A N G E *****

Peak Energy	Area	Uncert	FWHM	Corrctn Factor	Nuclide Energy	Brnch. Ratio	Act. pCi/L	Nuc
74.76	998.	6.13	0.97	1.576E-02	74.66	68.200	6.977E+02	Am243
					74.81	6.330	7.475E+03	Pb214
					74.81	10.400	4.640E+03	Pb212
					74.81	10.400	4.640E+03	Pb212
77.15	1676.	3.79	0.97	1.718E-02	77.11	17.500	4.267E+03	Pb212
					77.11	10.700	6.848E+03	Pb214
					77.11	17.500	4.267E+03	Pb212
83.90	191.	26.00	0.98	2.113E-02	83.78	24.900	2.728E+02	Ra223
					84.37	1.266	5.286E+03	Th228
87.22	706.	7.94	0.98	2.299E-02	86.54	30.700	7.707E+02	Eu155
					87.20	3.700	6.244E+03	Pb214
					87.30	7.800	3.010E+03	Pb212
					88.03	3.610	6.452E+03	Cd109
					87.30	7.800	3.010E+03	Pb212
89.95	444.	11.79	0.98	2.448E-02	89.95	3.560	3.828E+03	U235
					89.95	3.560	3.828E+03	U235
93.38	207.	23.40	0.98	2.630E-02	92.59	5.600	9.909E+02	U238
					92.60	2.800	1.977E+03	Th234
					92.60	2.800	1.977E+03	Th234
					92.59	5.600	9.909E+02	U238
129.05	264.	28.93	0.92	4.049E-02				
186.22	3060.	3.98	1.02	4.782E-02	186.10	3.500	1.365E+04	Ra226
209.22	408.	13.19	1.10	4.783E-02				
242.01	2929.	3.60	1.06	4.663E-02	241.92	7.470	6.310E+03	Pb214
					241.00	3.900	1.230E+04	Ra224
270.24	540.	14.26	1.13	4.508E-02	269.46	13.700	6.554E+02	Ra223
295.26	7108.	1.70	1.14	4.357E-02	295.22	19.200	6.377E+03	Pb214

ORTEC g v - i (3263) Env32 G701W047 9/16/2024 10:14:53 AM Page 3
Pace Spectrum name: 30713850001.An1

pk energy	area	uncert	fwhm	corr	nuclide	brnch.	act.	nuc
					295.96	28.670	5.156E+03	Ir192

					295.96	28.670	5.156E+03	Ir192
328.09	366.	18.27	1.00	4.157E-02	328.76	20.300	9.628E+02	La140
					329.85	2.700	2.459E+03	Ac227
					330.00	1.300	5.099E+03	Pa231
					328.76	20.300	9.628E+02	La140
338.38	1088.	5.96	1.20	4.096E-02	338.32	11.300	1.775E+03	Ac228
352.00	12675.	1.10	1.20	4.017E-02	351.99	37.100	6.382E+03	Pb214
409.44	136.	29.11	0.76	3.710E-02				
462.72	586.	9.89	1.18	3.467E-02	463.36	10.500	1.226E+03	Sb125
					463.36	10.500	1.226E+03	Sb125
480.47	231.	19.74	0.71	3.394E-02				
487.48	214.	19.59	0.95	3.366E-02	487.02	45.500	3.086E+02	La140
					487.39	1.420	5.054E+03	Te129
					487.39	1.420	5.054E+03	Te129
					487.02	45.500	3.086E+02	La140
580.01	125.	28.45	0.44	3.047E-02				
609.38	10594.	1.11	1.42	2.961E-02	609.31	44.800	5.990E+03	Bi214
665.60	350.	11.25	1.15	2.815E-02				
727.00	84.	28.71	1.58	2.676E-02	727.33	6.580	3.575E+02	Bi212
768.49	997.	3.93	1.61	2.593E-02	768.36	4.800	6.013E+03	Bi214
772.62	117.	20.85	1.61	2.585E-02	772.60	75.600	3.376E+03	I132
794.86	335.	11.97	1.88	2.543E-02	795.86	85.530	1.174E+02	Cs134
806.11	357.	13.52	1.42	2.523E-02				
839.89	163.	23.24	0.87	2.464E-02				
911.31	1715.	3.55	1.68	2.353E-02	911.21	26.600	2.068E+03	Ac228
934.13	653.	6.80	1.53	2.320E-02				
937.00	119.	25.75	1.75	2.315E-02	937.49	34.130	1.193E+02	Ag110M
					937.49	34.130	1.193E+02	Ag110M
964.88	306.	16.17	1.77	2.279E-02	964.13	14.340	7.054E+02	Eu152
					964.13	14.340	7.054E+02	Eu152
969.21	887.	4.91	1.62	2.272E-02	968.97	16.200	1.817E+03	Ac228
1051.61	146.	21.18	0.38	2.169E-02				
1116.97	130.	28.23	1.90	2.098E-02	1115.55	50.600	9.727E+01	Zn65
					1115.55	50.600	9.727E+01	Zn65
1120.41	2694.	2.48	1.84	2.093E-02	1120.29	14.800	6.529E+03	Bi214
1155.09	372.	9.17	1.72	2.057E-02				
1238.26	1021.	4.75	1.95	1.976E-02	1238.11	5.860	6.613E+03	Bi214
					1238.28	66.070	7.013E+02	Co56
1281.06	292.	8.74	1.31	1.938E-02				
1377.75	782.	5.34	1.83	1.858E-02	1377.67	3.920	8.059E+03	Bi214
1401.76	216.	15.47	1.36	1.839E-02				
1408.21	354.	11.30	2.12	1.835E-02	1408.01	20.870	6.970E+02	Eu152
					1408.01	20.870	6.970E+02	Eu152
1460.76	409.	9.22	1.63	1.795E-02	1461.00	10.670	1.605E+03	K40
1588.30	148.	12.40	0.92	1.708E-02				
1764.55	2527.	2.14	2.35	1.602E-02	1764.49	15.360	7.698E+03	Bi214

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Efficiency * Area	Uncert 2 Sigma %	FWHM keV	Suspected Nuclide	
334.12	83.95	1137.	192.	9.110E+03	51.59	0.976	HG-203	D
358.28	90.00	1151.	441.	1.801E+04	23.75	0.982	AC-228	D
514.30	129.05	1598.	264.	6.532E+03	57.86	0.922	AC-228	M
834.52	209.17	1244.	408.	8.527E+03	26.39	1.099	AC-228	D
1078.24	270.24	1200.	540.	1.199E+04	28.53	1.131	AC-228	sM
1309.30	328.09	880.	366.	8.804E+03	36.55	0.997	BI-207	M

1634.27	409.44	432.	136.	3.675E+03	58.22	0.765 AC-228	s
1847.10	462.72	520.	586.	1.690E+04	19.78	1.182 CS-138	s
1918.00	480.47	396.	231.	6.807E+03	39.48	0.713 PB-214	s
1945.98	487.48	343.	214.	6.358E+03	39.18	0.953 PB-214	s
2315.61	580.01	285.	125.	4.103E+03	56.91	0.436 PB-214	sM
2657.55	665.60	240.	350.	1.243E+04	22.50	1.146 BI-214	s
3173.97	794.86	238.	335.	1.316E+04	23.95	1.877 AC-228	M
3218.89	806.11	282.	357.	1.415E+04	27.05	1.423 BI-214	M
3353.86	839.89	271.	163.	6.601E+03	46.48	0.871 PB-214	s
3730.39	934.13	220.	653.	2.815E+04	13.60	1.535 BI-214	s
4199.79	1051.61	135.	146.	6.730E+03	42.36	0.378 J-133	s
4613.29	1155.09	135.	372.	1.807E+04	18.34	1.722 BI-214	s
5116.62	1281.06	77.	292.	1.507E+04	17.48	1.313 BI-214	s
5598.95	1401.76	150.	216.	1.174E+04	30.93	1.361 BI-214	s
6344.47	1588.30	43.	148.	8.645E+03	24.81	0.917 AC-228	s

s - Peak fails shape tests.
D - Peak area deconvoluted.
L - Peak written from unknown list.
C - Area < Critical level.
M - Peak is close to a library peak.

This section based on library: Pace Master w Ra226U235 (wo PS)

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	FWHM keV
Pb-214	297.66	74.81	1395.	856.	0.476	10.27	0.966D
Pb-212	297.66	74.81	1599.	916.	0.509	17.63	0.966D
Pb-212	306.85	77.11	1516.	1592.	0.884	10.44	0.969D
Pb-214	306.85	77.11	1192.	1662.	0.923	7.66	0.969D
Pb-214	347.15	87.20	1221.	705.	0.392	15.90	0.979D
Pb-212	347.41	87.26	1513.	697.	0.387	22.67	0.979
U-235	357.92	89.90	1726.	298.	0.166	55.71	0.982
U-238	372.01	93.42	1072.	207.	0.115	46.82	0.985

Nuclide	Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM
Ra-226	742.62	186.22	2455.	3043.	1.690	8.01	1.016
Pb-214	965.49	242.01	1699.	2928.	1.627	7.21	1.059
Pb-214	1178.18	295.26	1380.	7105.	3.947	3.41	1.138
Ac-228	1350.40	338.38	781.	1087.	0.604	11.94	1.198
Pb-214	1404.81	352.00	1167.	12668.	7.038	2.20	1.196
Sb-125	1847.96	462.94	556.	404.	0.225	26.67	1.340s
Bi-214	2432.95	609.38	529.	10585.	5.881	2.21	1.419
Bi-212	2904.17	727.33	251.	85.	0.047	57.20	1.575D
Bi-214	3068.07	768.36	267.	997.	0.554	7.85	1.611D
I-132	3085.03	772.60	219.	110.	0.061	42.55	1.614D
Ac-228	3639.21	911.31	317.	1713.	0.952	7.11	1.684
Ag-110M	3741.84	937.00	140.	119.	0.066	51.50	1.753s
Eu-152	3853.25	964.88	368.	306.	0.170	32.35	1.774
Ac-228	3870.56	969.21	235.	885.	0.492	9.85	1.615
Zn-65	4460.94	1116.97	198.	130.	0.072	56.47	1.896s
Bi-214	4474.69	1120.41	226.	2694.	1.496	4.96	1.844s
Co-56	4945.69	1238.28	174.	827.	0.459	9.97	1.954D
Bi-214	5503.03	1377.75	149.	782.	0.434	10.70	1.827
Eu-152	5624.75	1408.21	192.	354.	0.197	22.61	2.116

K-40	5834.75	1460.76	132.	409.	0.227	18.44	1.631s
Bi-214	7048.65	1764.49	197.	2310.	1.284	4.50	2.361D

s - Peak fails shape tests.
D - Peak area deconvoluted.
A Derived peak area.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

- Nuclide - Name	Code	Average Activity pCi/L	Peak Energy keV	Peak Activity pCi/L	Code	Peak MDA Value pCi/L		COMMENTS
Na-22	C	2.2741E+01					9.50E+02	
			1274.53	2.274E+01	%(	2.291E+01	5.42E+01	9.99E+01 G K
K-40	N	1.6047E+03					4.68E+11	
			1461.00	1.605E+03	(P	2.201E+02	9.22E+00	1.07E+01 G K
Cr-51	F	-7.0469E+01					2.77E+01	
			320.08	-7.047E+01	%(	4.103E+02	2.51E+02	1.01E+01 G K
Mn-54	C	1.6516E+01					3.12E+02	
			834.85	1.652E+01	&(P	3.048E+01	9.13E+01	1.00E+02 G K
Co-56	C	5.6820E+02					7.73E+01	
			1238.28	5.682E+02	} P	4.410E+01	4.98E+00	6.61E+01 G K
			1771.35	0.000E+00	%(P	3.159E+02	1.00E+03	1.55E+01 G

Nuclide	Ave activity	Energy	Activity	Code	Peak MDA		Comments
Fe-59	F 8.2813E+00					4.45E+01	
		1099.25	8.281E+00	&(	6.251E+01	3.89E+02	5.65E+01 G K
		1291.60	9.295E+00	% P	7.449E+01	4.20E+02	4.32E+01 G
Zn-65	F 9.7266E+01					2.44E+02	
		1115.55	9.727E+01	?(P	5.111E+01	2.82E+01	5.06E+01 G K
SE-75	-1.5821E+01					1.20E+02	
		264.66	-1.582E+01	&(	5.307E+01	1.45E+02	5.86E+01 G K
		136.00	0.000E+00	% P	6.998E+01	1.00E+03	5.83E+01 G
		279.54	0.000E+00	% P	1.232E+02	1.00E+03	2.48E+01 G
		121.12	-2.289E+01	%	2.688E+02	4.87E+02	1.64E+01 G
Y-88	C 1.6819E+01					1.07E+02	
		1836.06	1.682E+01	%(	2.322E+01	7.81E+01	9.92E+01 G K
		898.04	0.000E+00	& P	3.169E+01	1.00E+03	9.37E+01 G
Nb-94	I 2.8019E+00					7.41E+06	
		871.09	2.802E+00	%(	2.468E+01	4.29E+02	9.99E+01 G K
		702.62	1.145E+01	% P	2.799E+01	1.17E+02	9.79E+01 G
Zr-95	I 2.6596E+01					6.40E+01	
		756.73	2.660E+01	%(	5.529E+01	9.94E+01	5.45E+01 G K
		724.20	7.806E+00	% P	6.518E+01	3.95E+02	4.42E+01 G
Nb-95	I 3.4741E+01					3.50E+01	
		765.81	3.474E+01	%(P	3.315E+01	4.63E+01	9.98E+01 G K

Ru-103	I	2.6842E+00						3.93E+01		
			497.08	2.684E+00	%(P	3.649E+01	6.26E+02	9.10E+01	G	K
Ru-106	I	1.1527E+02						3.73E+02		
			621.93	1.153E+02	&(	2.233E+02	8.97E+01	9.93E+00	G	K
Ag-110M	F	3.2052E+01						2.50E+02		
			657.76	3.688E-01	&(P	2.785E+01	3.58E+03	9.40E+01	G	K
			1505.04	0.000E+00	% P	4.290E+02	1.00E+03	1.29E+01	G	
			1384.30	1.564E+02	% P	1.197E+02	4.16E+01	2.41E+01	G	
			937.49	1.193E+02	?(	5.811E+01	2.58E+01	3.41E+01	G	
			884.68	9.645E+00	%	3.522E+01	1.79E+02	7.22E+01	G	
			763.94	0.000E+00	% P	1.338E+02	1.00E+03	2.21E+01	G	
			744.28	4.336E+01	% P	5.717E+02	6.25E+02	4.70E+00	G	
			706.68	-6.074E+01	%	1.814E+02	1.43E+02	1.63E+01	G	
Sn-113	F	-2.8714E+01						1.15E+02		
			391.69	-2.871E+01	&(	4.785E+01	7.52E+01	6.40E+01	G	K

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Sb-124	F -1.0530E+01					6.02E+01	
		602.73	-1.053E+01	&(	3.285E+01	1.44E+02	9.78E+01 G K
		645.85	1.364E+01	& P	3.977E+02	1.38E+03	7.38E+00 G
		722.79	0.000E+00	%	3.523E+02	1.00E+03	1.08E+01 G
		1690.98	0.000E+00	% P	7.068E+01	1.00E+03	4.73E+01 G
Sb-125	I 2.5195E+02					1.01E+03	
		427.88	4.107E+01	&(P	8.175E+01	8.94E+01	2.96E+01 G K
		176.31	-5.643E+01	%	4.802E+02	3.53E+02	6.82E+00 G
		463.36	8.464E+02	@(	2.357E+02	1.33E+01	1.05E+01 G
		600.60	0.000E+00	% P	1.405E+02	1.00E+03	1.79E+01 G
		635.95	0.000E+00	% P	2.206E+02	1.00E+03	1.13E+01 G
Te-129	I 3.8396E+02					3.36E+01	
		459.60	3.840E+02	%(P	4.270E+02	5.04E+01	7.70E+00 G K
		487.39	1.990E+03	% P	2.586E+03	6.08E+01	1.42E+00 G
I-131	I 1.1331E+02					8.02E+00	
		364.49	1.133E+02	%(P	1.534E+02	6.12E+01	8.17E+01 G K
		636.99	8.958E+01	% P	1.839E+03	9.72E+02	7.17E+00 G
		284.30	0.000E+00	% P	2.515E+03	1.00E+03	6.14E+00 G
I-132	I 3.1654E+03					3.20E+00	
		772.60	3.165E+03	(	2.062E+03	2.13E+01	7.56E+01 G K
		522.65	0.000E+00	% P	1.169E+04	1.00E+03	1.60E+01 G
		630.19	-2.692E+03	%	1.374E+04	2.43E+02	1.33E+01 G
		954.55	-4.041E+03	%	1.198E+04	1.50E+02	1.76E+01 G
Te-132	I -1.3519E+01					3.20E+00	
		228.16	-1.352E+01	&(	2.493E+03	7.96E+03	8.80E+01 G K
I-133	I 4.0633E+00					8.67E-01	
		529.87	4.063E+00	%(P	2.674E+01	3.03E+02	8.70E+01 G K
		875.33	0.000E+00	& P	6.044E+02	1.00E+03	4.51E+00 G
Ba-133	F -8.5130E+00					3.84E+03	
		356.02	-8.513E+00	%(	3.868E+01	2.03E+02	6.20E+01 G K

			81.00	0.000E+00	% P	2.224E+02	1.00E+03	3.41E+01	G
			302.85	0.000E+00	% P	1.419E+02	1.00E+03	1.83E+01	G
			276.40	-2.183E+02	%	4.197E+02	8.36E+01	7.16E+00	G
			383.85	0.000E+00	% P	2.767E+02	1.00E+03	8.94E+00	G
Cs-136	F	-4.3428E+01						1.32E+01	
			818.51	-4.343E+01	%(	7.884E+01	8.98E+01	9.97E+01	G K
			176.60	-2.424E+02	%	9.278E+02	1.59E+02	1.00E+01	G
			273.65	-1.958E+02	&	7.612E+02	1.68E+02	1.11E+01	G
			340.55	-1.070E+02	&	1.821E+02	7.39E+01	4.22E+01	G

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
		1048.07	3.658E+01 %		8.324E+01	1.15E+02	8.00E+01 G
		1235.36	1.399E+02 %		3.342E+02	1.23E+02	2.00E+01 G
Cs-137 I	-1.5949E+01						1.10E+04
		661.66	-1.595E+01 %(		2.833E+01	8.53E+01	9.01E+01 G K
Ce-139 F	9.9604E+00						1.38E+02
		165.85	9.960E+00 &(		4.634E+01	1.94E+02	7.99E+01 G K
Ba-140 I	2.4689E+02						1.28E+01
		537.26	2.469E+02 %(P		2.724E+02	5.17E+01	2.44E+01 G K
		162.66	0.000E+00 % P		1.625E+03	1.00E+03	6.22E+00 G
La-140 I	-3.2307E+01						1.28E+01
		1596.21	-3.231E+01 &(		1.056E+02	1.78E+02	9.54E+01 G K
		487.02	1.357E+02 % P		1.575E+02	5.44E+01	4.55E+01 G
		815.77	-1.939E+02 %		3.336E+02	8.51E+01	2.33E+01 G
		328.76	-2.793E+02 %		3.623E+02	5.65E+01	2.03E+01 G
Ce-141 I	3.5516E+01						3.25E+01
		145.44	3.552E+01 %(		1.140E+02	1.34E+02	4.82E+01 G K
Ce-144 I	-7.7618E+01						2.85E+02
		133.51	-7.762E+01 %(		3.445E+02	1.85E+02	1.11E+01 G K
Lu-176 N	1.4946E+01						1.38E+13
		306.78	1.495E+01 %(P		2.518E+01	7.32E+01	9.40E+01 G K
		201.83	1.509E-01 %		3.526E+01	9.68E+03	8.65E+01 G
Hg-203 F	1.9606E+00						4.66E+01
		279.20	1.961E+00 &(P		4.470E+01	9.82E+02	8.15E+01 G K
Pb-210 N	-5.2727E+03						8.14E+03
		46.54	-5.273E+03 %(		3.036E+04	2.28E+02	4.25E+00 G K
Bi-212 N	3.6923E+02						6.98E+02
		727.33	3.692E+02 (P		3.330E+02	2.86E+01	6.58E+00 G K
		1620.50	0.000E+00 % P		2.016E+03	1.00E+03	1.49E+00 G
Pb-212 N	1.6283E+03						6.98E+02
		238.63	1.407E+01 %(P		7.124E+01	2.19E+02	4.33E+01 G K
							Energy duplication
		77.11	4.056E+03 (P		4.693E+02	5.22E+00	1.75E+01 G
							Energy duplication
		74.81	4.265E+03 (P		8.806E+02	8.81E+00	1.04E+01 G
		87.30	2.975E+03 P		7.850E+02	1.13E+01	7.80E+00 GA

Bi-214	N	5.9433E+03					5.84E+05		
			609.31	5.990E+03	(P	6.217E+01	1.11E+00	4.48E+01	G K
			1120.29	6.529E+03	@	1.762E+02	2.48E+00	1.48E+01	GA

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
		2204.21	0.000E+00	=	0.000E+00	0.00E+00	4.86E+00 G
		1764.49	7.051E+03	+ P	2.076E+02	2.25E+00	1.54E+01 G
		1377.67	8.059E+03	+ P	6.145E+02	5.35E+00	3.92E+00 G
		1238.11	1.210E+02	} P	5.318E+02	2.49E+02	5.86E+00 G
		768.36	6.013E+03	(	4.760E+02	3.93E+00	4.80E+00 G
Pb-214	N 6.4228E+03						5.84E+05
		351.99	6.382E+03	(P	8.155E+01	1.10E+00	3.71E+01 G K
		295.22	6.377E+03	(P	1.578E+02	1.71E+00	1.92E+01 G
		241.92	6.310E+03	(P	4.197E+02	3.60E+00	7.47E+00 G
		87.20	6.236E+03	(	1.463E+03	7.95E+00	3.70E+00 G
							Energy duplication
		77.11	6.790E+03	(P	6.686E+02	3.83E+00	1.07E+01 G
							Energy duplication
		74.81	6.423E+03	} P	1.326E+03	5.14E+00	6.33E+00 G
Ra-226	N 1.3648E+04						5.84E+05
		186.10	1.365E+04	(P	1.048E+03	4.01E+00	3.50E+00 G K
Ac-228	N 2.0681E+03						2.10E+03
		911.21	2.068E+03	(P	1.035E+02	3.56E+00	2.66E+01 G K
		968.97	1.817E+03	- P	1.522E+02	4.93E+00	1.62E+01 G
		338.32	1.775E+03	- P	2.170E+02	5.97E+00	1.13E+01 G
Th-228	N 4.8914E+03						6.98E+02
		84.37	4.891E+03	%(P	5.005E+03	3.15E+01	1.27E+00 G K
		215.99	-2.881E+03	%	1.175E+04	1.77E+02	2.63E-01 GA
		166.41	5.073E+01	%	3.181E+04	2.60E+04	1.08E-01 GA
		131.61	4.621E+03	%	2.735E+04	2.46E+02	1.35E-01 GA
Th-230	N 9.5015E+03						2.75E+07
		67.67	9.502E+03	&(	2.915E+04	1.22E+02	3.80E-01 G K
Pa-231	N 4.5923E+01						1.20E+07
		283.70	4.592E+01	%(	1.678E+03	1.57E+03	1.60E+00 G K
		330.00	0.000E+00	%	2.357E+03	1.00E+03	1.30E+00 G
Pa-234M	N -1.0186E+03						1.63E+12
							Energy duplication
		1001.03	-1.019E+03	%(	3.246E+03	1.61E+02	8.37E-01 G
Th-232	N 2.1611E+04						4.17E+12
		63.81	2.161E+04	%(	4.924E+04	9.07E+01	2.67E-01 G K
U-238	N 1.0739E+03						1.63E+12
		92.59	1.074E+03	&(P	8.051E+02	2.34E+01	5.60E+00 G K
							Energy duplication
		1001.03	-1.015E+03	%	3.234E+03	1.61E+02	8.40E-01 G K
Am-241	T 8.5316E+01						1.58E+05
		59.54	8.532E+01	%(P	4.896E+02	2.27E+02	3.63E+01 G K

Nuclide		Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Pm-144	C	3.4311E+00					3.63E+02	
			696.51	3.431E+00	%(P	2.582E+01	3.58E+02	9.90E+01 G K
			618.01-8.212E+00		&	2.661E+01	1.50E+02	9.86E+01 G
Pm-146	C	5.7231E-01					2.02E+03	
			453.88	5.723E-01	&(P	3.784E+01	2.94E+03	6.52E+01 G K
			747.16-3.699E+01		&	7.802E+01	1.01E+02	3.40E+01 G
			735.72	3.897E+01	& P	1.092E+02	1.33E+02	2.25E+01 GA

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide failed one or more qualification tests.
+ - Peak activity higher than counting uncertainty range.
- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction
} - Peak is too close to another for the activity to be found directly.

Nuclide Codes:
T - Thermal Neutron Activation
F - Fast Neutron Activation
I - Fission Product
N - Naturally Occurring Isotope
P - Photon Reaction
C - Charged Particle Reaction
M - No MDA Calculation
R - Coincidence Corrected
H - Halflife limit exceeded

Peak Codes:
G - Gamma Ray
X - X-Ray
P - Positron Decay
S - Single-Escape
D - Double-Escape
K - Key Line
A - Not in Average
C - Coincidence Peak

- -

********** D I S C A R D E D I S O T O P E P E A K S **********

Nuclide	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	Activity	
Pb-212	74.81	1599.	916.	0.509	17.63	4.265E+03	P
Pb-212	77.11	1516.	1592.	0.884	10.44	4.056E+03	P
Pb-212	87.26	1513.	697.	0.387	22.67	2.975E+03	P
U-235	89.90	1726.	298.	0.166	55.71	2.574E+03	
Sb-125	462.94	556.	404.	0.225	26.67	8.464E+02	
Ag-110M	937.00	140.	119.	0.066	51.50	1.193E+02	

Nuclide	Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM	
Eu-152	964.88	368.	306.	0.170	32.35	7.054E+02		P
Zn-65	1116.97	198.	130.	0.072	56.47	9.727E+01		P

Eu-152 1408.21 192. 354. 0.197 22.61 6.970E+02
P - Peakbackground subtraction

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide		Time of Count Activity pCi/L	Time Corrected Activity pCi/L	Uncertainty Counting pCi/L	2 Sigma Total pCi/L	MDA pCi/L
Be-7	#B	0.0000E+00	0.0000E+00	9.4739E+01	9.4740E+01	3.152E+02
Na-22	#B	2.2413E+01	2.2741E+01	2.4642E+01	2.4674E+01	2.291E+01
K-40		1.6047E+03	1.6047E+03	2.9595E+02	3.0927E+02	2.201E+02
Sc-46	#B	0.0000E+00	0.0000E+00	5.0342E+00	5.0342E+00	3.172E+01
Cr-51	#B	-4.2802E+01	-7.0469E+01	3.5374E+02	3.5376E+02	4.103E+02
Mn-54	#B	1.5801E+01	1.6516E+01	3.0165E+01	3.0179E+01	3.048E+01
Co-56	#	4.7520E+02	5.6820E+02	5.4019E+01	6.4553E+01	3.159E+02
Co-57	#B	0.0000E+00	0.0000E+00	1.1591E+01	1.1591E+01	4.757E+01
Co-58	#B	0.0000E+00	0.0000E+00	1.3417E+01	1.3417E+01	3.366E+01
Fe-59	#B	6.0717E+00	8.2813E+00	6.4372E+01	6.4374E+01	6.251E+01
Co-60	#B	0.0000E+00	0.0000E+00	1.0770E+01	1.0770E+01	3.172E+01
Zn-65	#	9.1911E+01	9.7266E+01	5.4922E+01	5.5188E+01	5.111E+01
SE-75	#B	-1.4107E+01	-1.5821E+01	4.5963E+01	4.5973E+01	5.307E+01
Kr-85	#B	0.0000E+00	0.0000E+00	2.4327E+03	2.4327E+03	7.038E+03
Y-88	#B	1.4776E+01	1.6819E+01	2.6255E+01	2.6278E+01	2.322E+01
Nb-94	#B	2.8019E+00	2.8019E+00	2.4067E+01	2.4067E+01	2.468E+01
Zr-95	#B	2.1436E+01	2.6596E+01	5.2869E+01	5.2890E+01	5.529E+01
Nb-95	#F	2.3409E+01	3.4741E+01	3.2140E+01	3.2199E+01	3.315E+01
Ru-103	#B	1.8882E+00	2.6842E+00	3.3590E+01	3.3590E+01	3.649E+01
Ag-108M	#B	0.0000E+00	0.0000E+00	9.2612E+00	9.2613E+00	3.266E+01
Ru-106	#B	1.1108E+02	1.1527E+02	2.0683E+02	2.0693E+02	2.233E+02
Cd-109	#B	0.0000E+00	0.0000E+00	1.1376E+03	1.1376E+03	7.426E+01
Ag-110M	#F	3.0328E+01	3.2052E+01	1.6508E+01	1.6603E+01	2.785E+01
Sn-113	#B	-2.5467E+01	-2.8714E+01	4.3173E+01	4.3203E+01	4.785E+01
Sb-124	#B	-8.3716E+00	-1.0530E+01	3.0397E+01	3.0402E+01	3.285E+01
Sb-125	#F	2.4852E+02	2.5195E+02	6.7186E+01	6.8607E+01	8.175E+01
Te-129	#B	2.5455E+02	3.8396E+02	3.8684E+02	3.8741E+02	4.270E+02
Te-129M	#B	0.0000E+00	0.0000E+00	2.2689E+02	2.2689E+02	1.407E+03
I-131	#B	2.0248E+01	1.1331E+02	1.3866E+02	1.3880E+02	1.534E+02
I-132		4.2275E+01	3.1654E+03	1.3470E+03	1.3586E+03	2.062E+03
Te-132	#B	-1.8055E-01	-1.3519E+01	2.1518E+03	2.1518E+03	2.493E+03
I-133	#B	4.0633E+00	>12 Halflives	2.4617E+01	2.4618E+01	2.674E+01
Ba-133	#B	-8.4824E+00	-8.5130E+00	3.4617E+01	3.4618E+01	3.868E+01
Cs-134	#B	0.0000E+00	0.0000E+00	2.0134E+01	2.0134E+01	3.092E+01
Cs-136	#B	-1.5206E+01	-4.3428E+01	7.7973E+01	7.8011E+01	7.884E+01
Cs-137	#B	-1.5929E+01	-1.5949E+01	2.7202E+01	2.7217E+01	2.833E+01
Ce-139	#B	9.0094E+00	9.9604E+00	3.8552E+01	3.8556E+01	4.634E+01

Ba-140	#B	8.3575E+01	2.4689E+02	2.5537E+02	2.5573E+02	2.724E+02
La-140	#B	-1.0937E+01	-3.2307E+01	1.1511E+02	1.1512E+02	1.056E+02
Ce-141	#B	2.3220E+01	3.5516E+01	9.4953E+01	9.4974E+01	1.140E+02
Ce-144	#B	-7.3945E+01	-7.7618E+01	2.8649E+02	2.8652E+02	3.445E+02
ND-147	#B	0.0000E+00	0.0000E+00	2.6555E+02	2.6555E+02	6.459E+02
Eu-152	#B	0.0000E+00	0.0000E+00	5.5856E+01	5.5856E+01	1.399E+02
Eu-154	#B	0.0000E+00	0.0000E+00	4.7912E+01	4.7912E+01	9.499E+01
Eu-155	#B	0.0000E+00	0.0000E+00	1.3226E+02	1.3226E+02	2.040E+02
Lu-176	#B	1.4946E+01	1.4946E+01	2.1884E+01	2.1902E+01	2.518E+01
Ir-192	#B	0.0000E+00	0.0000E+00	1.7661E+01	1.7661E+01	3.679E+01
Hg-203	#B	1.4578E+00	1.9606E+00	3.8521E+01	3.8521E+01	4.470E+01
Tl-208	#B	0.0000E+00	0.0000E+00	1.5607E+01	1.5607E+01	3.291E+01

Pb-210 #B	-5.2637E+03	-5.2727E+03	2.4024E+04	2.4028E+04	3.036E+04
Bi-212	3.6199E+02	3.6923E+02	2.1119E+02	2.1220E+02	3.330E+02
Pb-212 #F	1.5964E+03	1.6283E+03	1.6995E+02	1.9552E+02	7.124E+01
Bi-214	5.9431E+03	5.9433E+03	1.3156E+02	3.5250E+02	6.217E+01
Pb-214	6.4227E+03	6.4228E+03	1.4142E+02	3.9150E+02	8.155E+01
Ra-223 #B	0.0000E+00	0.0000E+00	1.2538E+02	1.2538E+02	2.006E+02
Ra-224 #B	0.0000E+00	0.0000E+00	3.2818E+02	3.2818E+02	8.221E+02
Ra-226	1.3648E+04	1.3648E+04	1.0938E+03	1.3486E+03	1.048E+03
Ac-227 #B	0.0000E+00	0.0000E+00	1.0013E+02	1.0013E+02	2.423E+02
Ac-228	2.0546E+03	2.0681E+03	1.4714E+02	1.8758E+02	1.035E+02
Th-228 B	4.7955E+03	4.8914E+03	3.0839E+03	3.1113E+03	5.005E+03
Th-230 #B	9.5015E+03	9.5015E+03	2.3170E+04	2.3236E+04	2.915E+04
Pa-231 #B	4.5923E+01	4.5923E+01	1.4451E+03	1.4451E+03	1.678E+03
Pa-234M#A	-1.0186E+03	-1.0186E+03	3.2768E+03	3.2773E+03	3.246E+03
Th-232 #B	2.1611E+04	2.1611E+04	3.9210E+04	3.9491E+04	4.924E+04
Th-234 #B	0.0000E+00	0.0000E+00	1.2542E+03	1.2543E+03	2.992E+03
U-235 #B	0.0000E+00	0.0000E+00	1.4559E+02	1.4559E+02	3.384E+02
U-238 #F	1.0739E+03	1.0739E+03	5.0279E+02	5.0785E+02	8.051E+02
Am-241 #B	8.5309E+01	8.5316E+01	3.8782E+02	3.8841E+02	4.896E+02
Am-243 #B	0.0000E+00	0.0000E+00	1.6188E+02	1.6188E+02	2.686E+02
Pm-144 #B	3.3031E+00	3.4311E+00	2.4533E+01	2.4534E+01	2.582E+01
Pm-146 #B	5.6841E-01	5.7231E-01	3.3657E+01	3.3658E+01	3.784E+01

- All peaks for activity calculation had bad shape.
* - Activity omitted from total
& - Activity omitted from total and all peaks had bad shape.
< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

---------- S U M M A R Y ----------

Total Activity (30.3 to 2038.5 keV) 3.008E+04 pCi/L
Total Decayed Activity (30.3 to 2038.5 keV) 3.3221996E+04 pCi/L

The library has energies which are not separable.

Analyzed by: _____
Operator

Reviewed by: _____
Supervisor

Laboratory: Pace

ORTEC g v - i (3263) Env32 G701W047 9/19/2024 1:48:50 PM Page 1
PACE Spectrum name: 35902567001.An1

Sample description
81318

Spectrum Filename: C:\User\35902567001.An1

Acquisition information
Start time: 9/19/2024 9:24:34 AM
Live time: 14400
Real time: 15181
Dead time: 5.15 %
Detector ID: 5

Detector system
DET 5

Calibration
Filename: DET_5_2L_MAR_23-047(021924).Clb
DET_5_2L_MAR_23-047(021924)

Energy Calibration
Created: 2/23/2024 11:14:34 AM
Zero offset: 0.513 keV
Gain: 0.250 keV/channel
Quadratic: -4.543E-10 keV/channel^2

Efficiency Calibration
Created: 2/23/2024 11:15:45 AM
Type: Polynomial
Uncertainty: 1.566 %
Coefficients: -0.317713 -4.992960 0.533353
-0.071649 0.003819 -0.000077

Library Files
Main analysis library: Pace Master w Ra226U235 (wo PS)
Library Match Width: 0.500
Peak stripping: Library based

Analysis parameters
Analysis engine: Env32 G701W047
Start channel: 120 (30.51keV)
Stop channel: 8144 (2036.02keV)
Peak rejection level: 30.000%
Peak search sensitivity: 3
Sample Size: 2.0000E+00
Activity scaling factor: 1.0000E+06/(1.0000E+00* 2.0000E+00) =
5.0000E+05
Detection limit method: Reg. Guide 4.16 Method

Random error: 1.0000000E+00
Systematic error: 1.0000000E+00
Fraction Limit: 0.000%
Background width: average of three points.

Half lives decay limit: 12.000

WTF 9-19-24

9/19/24

ORTEC g v - i (3263) Env32 G701W047 9/19/2024 1:48:50 PM Page 2
PACE Spectrum name: 35902567001.An1

Activity range factor:	2.000
Min. step backg. energy	0.000
Multiplet shift channel	2.000

Corrections	Status	Comments
Decay correct to date:	YES	8/29/2024 5:45:00 PM
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	YES	Det_5_Bkg_091324Ra226U235(2L).Pb 9/16/2024 9:21:01 AM
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

total peaks alloc. 0 cutoff: 0.00E+00 %
Energy Calibration
Normalized diff: 0.1609

JM 9/19/24

***** S U M M A R Y O F P E A K S I N R A N G E *****

Peak Energy	Area	Uncert	FWHM	Corrctn Factor	Nuclide Energy	Brnch. Ratio	Act. pCi/L	Nuc
198.36	131.	27.31	0.80	2.355E-02				

WTF 9-19-24

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Channel	Centroid Energy	Background Counts	Net Area Counts	Efficiency * Area	Uncert 2 Sigma %	FWHM keV	Suspected Nuclide	
791.55	198.36	217.	131.	5.577E+03	54.63	0.797	TA-182	sM

s - Peak fails shape tests.
D - Peak area deconvoluted.
L - Peak written from unknown list.
C - Area < Critical level.
M - Peak is close to a library peak.

This section based on library: Pace Master w Ra226U235 (wo PS)

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	FWHM keV

s - Peak fails shape tests.
D - Peak area deconvoluted.
A Derived peak area.

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PACE Spectrum name: 35902567001.An1

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

Nuclide Name	Code	Average Activity pCi/L	Peak Energy keV	Peak Activity pCi/L	Code	MDA Value pCi/L		COMMENTS
Be-7	C	2.5085E+00					5.34E+01	
			477.56	2.509E+00 %(		4.451E+01	8.21E+02 1.03E+01	G K
Cr-51	F	2.4600E+01					2.77E+01	
			320.08	2.460E+01 %(		4.716E+01	8.80E+01 1.01E+01	G K
Mn-54	C	1.0244E+00					3.12E+02	
			834.85	1.024E+00 %(		3.478E+00	1.64E+02 1.00E+02	G K
Co-57	C	-3.5732E-01					2.72E+02	
			122.06	-3.573E-01 %(		3.821E+00	4.72E+02 8.56E+01	G K
			136.47	-1.274E+01 &		3.200E+01	1.16E+02 1.07E+01	G
Co-58	C	3.7898E+00					7.08E+01	
			810.78	3.790E+00 %(		3.512E+00	4.70E+01 9.94E+01	G K
Fe-59	F	1.7672E+00					4.45E+01	
			1099.25	1.767E+00 &(		1.019E+01	2.85E+02 5.65E+01	G K
			1291.60	0.000E+00 %		1.353E+01	1.00E+03 4.32E+01	G
Co-60	F	8.9539E-01					1.92E+03	
			1332.50	8.954E-01 &(P		4.119E+00	2.35E+02 1.00E+02	G K
			1173.24	2.474E+00 %		3.225E+00	6.59E+01 1.00E+02	G
Zn-65	F	-2.9762E+00					2.44E+02	
			1115.55	-2.976E+00 %(		1.066E+01	1.80E+02 5.06E+01	G K
SE-75		1.9813E+00					1.20E+02	
			264.66	1.981E+00 %(P		4.996E+00	1.23E+02 5.86E+01	G K
			136.00	-8.519E-02 &		5.811E+00	3.11E+03 5.83E+01	G
			279.54	5.057E-01 &		1.278E+01	1.14E+03 2.48E+01	G
			121.12	2.390E+00 & P		2.099E+01	4.12E+02 1.64E+01	G
Zr-95	I	3.3642E+00					6.40E+01	
			756.73	3.364E+00 %(		8.567E+00	1.25E+02 5.45E+01	G K
			724.20	5.492E+00 &		9.509E+00	8.35E+01 4.42E+01	G
Ag-108M	C	-1.6133E+00					1.53E+05	
			722.94	-1.613E+00 %(		4.524E+00	1.35E+02 9.08E+01	G K
			614.28	-1.309E+00 %		4.781E+00	1.76E+02 8.98E+01	G
			433.94	0.000E+00 % P		3.794E+00	1.00E+03 9.05E+01	G
			79.13	1.781E+01 % P		6.066E+01	1.64E+02 6.60E+00	G

Nuclide	Ave activity	Energy	Activity	Code	Peak MDA		Comments
Ru-106	I 1.9061E+01					3.73E+02	
		621.93	1.906E+01 %(		3.400E+01	8.62E+01 9.93E+00	G K
Ag-110M	F 2.4357E+00					2.50E+02	
		657.76	2.436E+00 %(P		2.991E+00	6.97E+01 9.40E+01	G K
		1505.04	0.000E+00 % P		4.072E+01	1.00E+03 1.29E+01	G
		1384.30	0.000E+00 % P		2.115E+01	1.00E+03 2.41E+01	G
		937.49	0.000E+00 % P		1.643E+01	1.00E+03 3.41E+01	G

			884.68	-1.576E+00	&	6.354E+00	1.97E+02	7.22E+01	G
			763.94	7.055E-01	%	1.994E+01	1.37E+03	2.21E+01	G
			744.28	0.000E+00	% P	8.913E+01	1.00E+03	4.70E+00	G
			706.68	0.000E+00	& P	3.082E+01	1.00E+03	1.63E+01	G
Sn-113	F	-9.2435E-01						1.15E+02	
			391.69	-9.243E-01	&(	6.205E+00	3.14E+02	6.40E+01	G K
Sb-124	F	5.6700E-01						6.02E+01	
			602.73	5.670E-01	%(P	5.363E+00	5.13E+02	9.78E+01	G K
			645.85	0.000E+00	& P	6.380E+01	1.00E+03	7.38E+00	G
			722.79	-1.671E+01	%	4.706E+01	1.35E+02	1.08E+01	G
			1690.98	0.000E+00	%	1.473E+01	1.00E+03	4.73E+01	G
Sb-125	I	3.7465E+00						1.01E+03	
			427.88	3.746E+00	%(	9.491E+00	1.18E+02	2.96E+01	G K
			176.31	6.060E+00	& P	4.524E+01	3.66E+02	6.82E+00	G
			463.36	7.780E+00	& P	3.190E+01	2.11E+02	1.05E+01	G
			600.60	7.225E+00	& P	2.281E+01	1.72E+02	1.79E+01	G
			635.95	3.478E+00	%	3.540E+01	4.84E+02	1.13E+01	G
Te-129	I	2.6740E+01						3.36E+01	
			459.60	2.674E+01	%(	5.956E+01	1.04E+02	7.70E+00	G K
			487.39	0.000E+00	% P	3.841E+02	1.00E+03	1.42E+00	G
Te-132	I	-5.2117E+01						3.20E+00	
			228.16	-5.212E+01	&(	2.895E+02	2.53E+02	8.80E+01	G K
Ba-133	F	4.3983E-01						3.84E+03	
			356.02	4.398E-01	%(	5.512E+00	5.86E+02	6.20E+01	G K
			81.00	-5.011E+00	%	1.220E+01	1.09E+02	3.41E+01	G
			302.85	-9.864E+00	%	1.937E+01	9.06E+01	1.83E+01	G
			276.40	1.548E+00	&	4.196E+01	1.23E+03	7.16E+00	G
			383.85	1.667E+00	%	3.477E+01	9.66E+02	8.94E+00	G
Cs-137	I	-1.7234E+00						1.10E+04	
			661.66	-1.723E+00	%(	4.281E+00	1.20E+02	9.01E+01	G K

Nuclide		Ave activity	Energy		Activity	Code	Peak	MDA	Comments
Ba-140	I	-4.7940E+00						1.28E+01	
			537.26	-4.794E+00	&(	4.499E+01	4.47E+02	2.44E+01	G K
			162.66	0.000E+00	% P	1.532E+02	1.00E+03	6.22E+00	G
Eu-152	F	3.7599E+00						4.95E+03	
			121.78	3.760E+00	&(	1.027E+01	1.21E+02	2.84E+01	G K
			1408.01	-3.685E+00	%	2.172E+01	2.96E+02	2.09E+01	GA
			1112.12	-3.496E+00	&	3.452E+01	4.90E+02	1.36E+01	GA
			1085.91	0.000E+00	%	5.235E+01	1.00E+03	9.92E+00	GA
			964.13	0.000E+00	% P	3.504E+01	1.00E+03	1.43E+01	GA
			344.28	0.000E+00	& P	1.289E+01	1.00E+03	2.66E+01	GA
			244.70	-2.565E+01	%	4.221E+01	7.62E+01	7.49E+00	GA
Lu-176	N	-9.2606E-01						1.38E+13	
			306.78	-9.261E-01	%(	3.520E+00	1.74E+02	9.40E+01	G K
			201.83	-5.798E-01	&	3.641E+00	2.87E+02	8.65E+01	G
Hg-203	F	5.0117E-01						4.66E+01	
			279.20	5.012E-01	%(P	4.751E+00	4.76E+02	8.15E+01	G K

U-236	I	-3.5458E+03					8.55E+09		
			49.46	-3.546E+03	%(	1.244E+04	1.56E+02	7.80E-02	G K
			112.79	0.000E+00	% P	1.846E+04	1.00E+03	1.90E-02	G
			171.15	0.000E+00	& P	4.766E+06	1.00E+03	6.20E-05	G
Sm-145	I	-4.2928E+01					3.40E+02		
			61.23	-4.293E+01	&(	5.817E+01	6.11E+01	1.21E+01	G K
			431.40	2.163E+06	%	5.872E+06	1.27E+02	5.20E-05	G
Cd-113M	I	9.4568E-01					5.15E+03		
			263.70	9.457E-01	%(	2.753E+00	1.33E+02	1.00E+02	G K
Pb-210	N	1.1592E+02					8.14E+03		
			46.54	1.159E+02	%(P	2.863E+02	1.22E+02	4.25E+00	G K
Ra-224	N	-2.6857E+01					6.98E+02		
			241.00	-2.686E+01	&(	9.694E+01	1.66E+02	3.90E+00	G K
Ra-226	N	6.6913E+00					5.84E+05		
			186.10	6.691E+00	%(P	9.263E+01	5.83E+02	3.50E+00	G K
Th-230	N	3.4035E+02					2.75E+07		
			67.67	3.403E+02	%(	1.350E+03	1.76E+02	3.80E-01	G K
Pa-231	N	8.0261E+00					1.20E+07		
			283.70	8.026E+00	%(	1.818E+02	1.02E+03	1.60E+00	G K
			330.00	-1.278E+02	%	2.669E+02	9.93E+01	1.30E+00	G

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Th-232	N 1.1741E+03					4.17E+12	
		63.81	1.174E+03 %(P	2.275E+03	9.11E+01	2.67E-01	G K
Th-234	N 6.5724E+01					1.63E+12	
		63.29	6.572E+01 %(P	1.254E+02	9.00E+01	4.80E+00	G K
		92.60	0.000E+00 % P	1.664E+02	1.00E+03	2.80E+00	GA
U-235	N 3.3746E+00					2.57E+11	
		143.76	3.375E+00 %(	2.841E+01	3.85E+02	1.10E+01	G K
		205.31	1.115E+01 %	5.575E+01	2.28E+02	5.01E+00	G
		89.95	0.000E+00 %	1.370E+02	1.00E+03	3.56E+00	GA
Am-241	T -4.6471E+00					1.58E+05	
		59.54	-4.647E+00 %(	1.689E+01	1.62E+02	3.63E+01	G K
Am-243	T 7.7837E-02					2.69E+06	
		74.66	7.784E-02 %(	6.860E+00	3.89E+03	6.82E+01	G K
Pm-146	C 1.2306E+00					2.02E+03	
		453.88	1.231E+00 %(P	4.897E+00	2.05E+02	6.52E+01	G K
		747.16	4.759E-01 % P	1.035E+01	1.12E+03	3.40E+01	G
		735.72	-3.641E+00 &	1.862E+01	2.44E+02	2.25E+01	GA

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went
negative during deconvolution.
? - Peak is too narrow.

@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide
    failed one or more qualification tests.
+ - Peak activity higher than counting uncertainty range.
- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the
    library energy centroid for positive identification.
P - Peakbackground subtraction
} - Peak is too close to another for the activity
    to be found directly.

Nuclide Codes:	Peak Codes:
T - Thermal Neutron Activation	G - Gamma Ray
F - Fast Neutron Activation	X - X-Ray
I - Fission Product	P - Positron Decay
N - Naturally Occurring Isotope	S - Single-Escape
P - Photon Reaction	D - Double-Escape

C - Charged Particle Reaction	K - Key Line
M - No MDA Calculation	A - Not in Average
R - Coincidence Corrected	C - Coincidence Peak
H - Halflife limit exceeded	

- -

********** D I S C A R D E D I S O T O P E P E A K S **********

Nuclide	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	Activity

P - Peakbackground subtraction

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide		Time of Count Activity pCi/L	Time Corrected Activity pCi/L	Uncertainty Counting pCi/L	2 Sigma Total pCi/L	MDA pCi/L
Be-7	#B	1.9187E+00	2.5085E+00	4.1187E+01	4.1188E+01	4.451E+01
Na-22	#B	0.0000E+00	0.0000E+00	8.1785E-01	8.1786E-01	5.401E+00
K-40	#B	0.0000E+00	0.0000E+00	5.9131E+00	5.9131E+00	5.556E+01
Sc-46	#B	0.0000E+00	0.0000E+00	1.4722E+00	1.4722E+00	5.862E+00
Cr-51	#B	1.4672E+01	2.4600E+01	4.3281E+01	4.3313E+01	4.716E+01
Mn-54	#B	9.7851E-01	1.0244E+00	3.3643E+00	3.3649E+00	3.478E+00
Co-56	#B	0.0000E+00	0.0000E+00	3.2898E+00	3.2898E+00	9.258E+00
Co-57	#B	-3.3899E-01	-3.5732E-01	3.3712E+00	3.3713E+00	3.821E+00
Co-58	#F	3.0962E+00	3.7898E+00	3.5656E+00	3.5730E+00	3.512E+00
Fe-59	#B	1.2811E+00	1.7672E+00	1.0068E+01	1.0069E+01	1.019E+01
Co-60	#B	8.8876E-01	8.9539E-01	4.2107E+00	4.2110E+00	4.119E+00
Zn-65	#B	-2.8066E+00	-2.9762E+00	1.0732E+01	1.0734E+01	1.066E+01
SE-75	#B	1.7592E+00	1.9813E+00	4.8707E+00	4.8727E+00	4.996E+00
Kr-85	#B	0.0000E+00	0.0000E+00	3.7660E+02	3.7660E+02	1.665E+03
Y-88	#B	0.0000E+00	0.0000E+00	4.3630E-01	4.3630E-01	5.741E+00
Nb-94	#B	0.0000E+00	0.0000E+00	7.4941E-01	7.4941E-01	5.249E+00
Zr-95	#B	2.6901E+00	3.3642E+00	8.4316E+00	8.4340E+00	8.567E+00
Nb-95	#B	0.0000E+00	0.0000E+00	3.1172E+00	3.1172E+00	7.041E+00
Ru-103	#B	0.0000E+00	0.0000E+00	1.8750E+00	1.8750E+00	6.091E+00

Ag-108M#B	-1.6132E+00	-1.6133E+00	4.3480E+00	4.3491E+00	4.524E+00
Ru-106 #B	1.8343E+01	1.9061E+01	3.2851E+01	3.2871E+01	3.400E+01
Cd-109 #B	0.0000E+00	0.0000E+00	6.4928E+01	6.4928E+01	1.149E+02
Ag-110M#B	2.3001E+00	2.4357E+00	3.3944E+00	3.3975E+00	2.991E+00
Sn-113 #B	-8.1624E-01	-9.2435E-01	5.8051E+00	5.8054E+00	6.205E+00
Sb-124 #B	4.4700E-01	5.6700E-01	5.8166E+00	5.8167E+00	5.363E+00
Sb-125 #B	3.6936E+00	3.7465E+00	8.8647E+00	8.8678E+00	9.491E+00
Te-129 #B	1.7464E+01	2.6740E+01	5.5841E+01	5.5866E+01	5.956E+01
Te-129M#B	0.0000E+00	0.0000E+00	3.5112E+01	3.5112E+01	2.774E+02
I-131 #B	0.0000E+00	0.0000E+00	7.0819E+00	7.0819E+00	2.454E+01
I-132 #B	0.0000E+00	0.0000E+00	1.5251E+02	1.5251E+02	6.157E+02
Te-132 #B	-5.9452E-01	-5.2117E+01	2.6400E+02	2.6403E+02	2.895E+02
I-133 #B	0.0000E+00	>12 Halflives	5.9978E-01	5.9978E-01	3.627E+00
Ba-133 #B	4.3819E-01	4.3983E-01	5.1520E+00	5.1521E+00	5.512E+00

Cs-134 #B	0.0000E+00	0.0000E+00	5.9124E-01	5.9124E-01	4.849E+00
Cs-136 #B	0.0000E+00	0.0000E+00	2.3019E+00	2.3019E+00	1.099E+01
Cs-137 #B	-1.7212E+00	-1.7234E+00	4.1233E+00	4.1246E+00	4.281E+00
Ce-139 #B	0.0000E+00	0.0000E+00	9.5441E-01	9.5441E-01	4.428E+00
Ba-140 #B	-1.5599E+00	-4.7940E+00	4.2878E+01	4.2879E+01	4.499E+01
La-140 #B	0.0000E+00	0.0000E+00	2.6664E+00	2.6664E+00	1.816E+01
Ce-141 #B	0.0000E+00	0.0000E+00	1.8135E+00	1.8135E+00	1.031E+01
Ce-144 #B	0.0000E+00	0.0000E+00	5.4733E+00	5.4734E+00	2.928E+01
ND-147 #B	0.0000E+00	0.0000E+00	4.0774E+01	4.0774E+01	1.011E+02
Eu-152 #B	3.7490E+00	3.7599E+00	9.1277E+00	9.1307E+00	1.027E+01
Eu-154 #B	0.0000E+00	0.0000E+00	3.5834E+00	3.5835E+00	7.770E+00
Eu-155 #B	0.0000E+00	0.0000E+00	5.7958E+00	5.7959E+00	1.349E+01
Lu-176 #B	-9.2606E-01	-9.2606E-01	3.2150E+00	3.2156E+00	3.520E+00
Ir-192 #B	0.0000E+00	0.0000E+00	1.6911E+00	1.6911E+00	4.966E+00
Hg-203 #B	3.6864E-01	5.0117E-01	4.7761E+00	4.7762E+00	4.751E+00
Tl-208 #B	0.0000E+00	0.0000E+00	2.5904E+00	2.5904E+00	5.608E+00
U-236 #B	-3.5458E+03	-3.5458E+03	1.1044E+04	1.1065E+04	1.244E+04
Sm-145 #B	-4.1158E+01	-4.2928E+01	5.2493E+01	5.3684E+01	5.817E+01
Cd-113M#B	9.4306E-01	9.4568E-01	2.5150E+00	2.5159E+00	2.753E+00
I-129 #	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.000E+00
Pb-210 #B	1.1572E+02	1.1592E+02	2.8342E+02	2.8358E+02	2.863E+02
Bi-212 #B	0.0000E+00	0.0000E+00	1.6129E+01	1.6129E+01	6.884E+01
Pb-212 #B	0.0000E+00	0.0000E+00	6.0286E+00	6.0287E+00	8.368E+00
Bi-214 #B	0.0000E+00	0.0000E+00	4.5936E+00	4.5936E+00	1.270E+01
Pb-214 #B	0.0000E+00	0.0000E+00	6.1206E+00	6.1207E+00	1.169E+01
Ra-223 #B	0.0000E+00	0.0000E+00	9.0956E+00	9.0956E+00	2.289E+01
Ra-224 #B	-2.6312E+01	-2.6857E+01	8.9239E+01	8.9258E+01	9.694E+01
Ra-226 B	6.6911E+00	6.6913E+00	7.7980E+01	7.7981E+01	9.263E+01
Ac-227 #B	0.0000E+00	0.0000E+00	6.7451E+00	6.7451E+00	3.114E+01
Ac-228 #B	0.0000E+00	0.0000E+00	6.7589E+00	6.7590E+00	2.146E+01
Th-228 #B	0.0000E+00	0.0000E+00	1.4918E+02	1.4918E+02	3.236E+02
Th-230 #B	3.4035E+02	3.4035E+02	1.1993E+03	1.2012E+03	1.350E+03
Pa-231 #B	8.0260E+00	8.0261E+00	1.6417E+02	1.6417E+02	1.818E+02
Pa-234M#A	0.0000E+00	0.0000E+00	2.3526E+02	2.3526E+02	6.472E+02
Th-232 B	1.1741E+03	1.1741E+03	2.1383E+03	2.1565E+03	2.275E+03
Th-234 B	6.5724E+01	6.5724E+01	1.1824E+02	1.1931E+02	1.254E+02
U-235 #B	3.3746E+00	3.3746E+00	2.6014E+01	2.6015E+01	2.841E+01
U-238 #B	0.0000E+00	0.0000E+00	3.9640E+01	3.9640E+01	8.322E+01
Am-241 #B	-4.6467E+00	-4.6471E+00	1.5021E+01	1.5075E+01	1.689E+01
Am-243 #B	7.7837E-02	7.7837E-02	6.0553E+00	6.0553E+00	6.860E+00
Pm-144 #B	0.0000E+00	0.0000E+00	5.4677E-01	5.4678E-01	5.015E+00
Pm-146 #B	1.2219E+00	1.2306E+00	5.0403E+00	5.0409E+00	4.897E+00

- All peaks for activity calculation had bad shape.

* - Activity omitted from total
& - Activity omitted from total and all peaks had bad shape.

< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

S U M M A R Y

Total Activity (30.5 to 2036.0 keV) 0.000E+00 pCi/L
Total Decayed Activity (30.5 to 2036.0 keV) 0.0000000E+00 pCi/L

The library has energies which are not separable.

Analyzed by: _____ bskoff

Reviewed by: _____ Supervisor

Laboratory: PACE

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PACE Spectrum name: 30716778002.An1

Sample description
81318

Spectrum Filename: C:\User\30716778002.An1

Acquisition information
Start time: 9/17/2024 8:26:42 AM
Live time: 5400
Real time: 5595
Dead time: 3.48 %
Detector ID: 5

Detector system
DET 5

Calibration
Filename: DET_5_2L_MAR_23-047(021924).Clb
DET_5_2L_MAR_23-047(021924)

Energy Calibration
Created: 2/23/2024 11:14:34 AM
Zero offset: 0.513 keV
Gain: 0.250 keV/channel
Quadratic: -4.543E-10 keV/channel^2

Efficiency Calibration
Created: 2/23/2024 11:15:45 AM
Type: Polynomial
Uncertainty: 1.566 %
Coefficients: -0.317713 -4.992960 0.533353
-0.071649 0.003819 -0.000077

Library Files
Main analysis library: Pace Master w Ra226U235 (wo PS)
Library Match Width: 0.500
Peak stripping: Library based

Analysis parameters
Analysis engine: Env32 G701W047
Start channel: 120 (30.51keV)
Stop channel: 8144 (2036.02keV)
Peak rejection level: 30.000%
Peak search sensitivity: 3
Sample Size: 2.0000E+00
Activity scaling factor: 1.0000E+06/(1.0000E+00* 2.0000E+00) =
5.0000E+05
Detection limit method: Reg. Guide 4.16 Method

Random error: 1.0000000E+00
Systematic error: 1.0000000E+00
Fraction Limit: 0.000%
Background width: average of three points.

Half lives decay limit: 12.000

WTF 9-19-24

DM 9/17/24

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PACE Spectrum name: 30716778002.An1

Activity range factor:	2.000
Min. step backg. energy	0.000
Multiplet shift channel	2.000

Corrections	Status	Comments
Decay correct to date:	YES	9/5/2024 5:00:00 PM
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	YES	Det_5_Bkg_091324Ra226U235(2L).Pb 9/16/2024 9:21:01 AM
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

total peaks alloc. 0 cutoff: 0.00E+00 %
Energy Calibration
Normalized diff: 0.2779

***** S U M M A R Y O F P E A K S I N R A N G E *****

Peak Energy	Area	Uncert	FWHM	Corrctn Factor	Nuclide Energy	Brnch. Ratio	Act. pCi/L	Nuc
351.63	70.	26.56	1.55	1.682E-02	351.99	37.100	2.799E+01	Pb214
595.91	47.	22.95	0.54	1.143E-02				
1291.76	14.	26.73	2.06	6.528E-03	1291.60	43.200	1.489E+01	Fe59
					1291.60	43.200	1.489E+01	Fe59
1460.70	58.	22.42	2.15	5.950E-03	1461.00	10.670	2.289E+02	K40
					1461.00	10.670	2.289E+02	K40

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Efficiency * Area	Uncert 2 Sigma %	FWHM keV	Suspected Nuclide
2382.16	595.91	13.	47.	4.112E+03	45.90	0.537	PA-234 s

s - Peak fails shape tests.
D - Peak area deconvoluted.
L - Peak written from unknown list.
C - Area < Critical level.

This section based on library: Pace Master w Ra226U235 (wo PS)

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PACE Spectrum name: 30716778002.An1

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	FWHM keV
Pb-214	1404.81	351.63	73.	70.	0.013	53.12	1.549s
Fe-59	5166.21	1291.76	0.	14.	0.003	53.45	2.061s

K-40	5842.17	1460.70	24.	58.	0.011	44.84	2.153s

s - Peak fails shape tests.
D - Peak area deconvoluted.
A Derived peak area.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

- Nuclide - Name	Code	Average Activity pCi/L	Peak Energy keV	Peak Activity pCi/L	Peak Code	Peak MDA Value pCi/L			COMMENTS
Be-7	C	-1.3653E+01						5.34E+01	
			477.56	-1.365E+01	%(	6.563E+01	2.18E+02	1.03E+01	G K
K-40	N	2.2895E+02						4.68E+11	
			1461.00	2.289E+02	(P	1.005E+02	2.24E+01	1.07E+01	G K
Cr-51	F	-1.8480E+00						2.77E+01	
			320.08	-1.848E+00	%(	7.654E+01	1.83E+03	1.01E+01	G K
Mn-54	C	3.5384E+00						3.12E+02	
			834.85	3.538E+00	%(	4.934E+00	6.72E+01	1.00E+02	G K
Co-57	C	-2.1728E+00						2.72E+02	
			122.06	-2.173E+00	&(	7.268E+00	1.47E+02	8.56E+01	G K
			136.47	1.620E-01	%	5.200E+01	1.44E+04	1.07E+01	G
Co-58	C	2.9302E+00						7.08E+01	
			810.78	2.930E+00	%(	6.309E+00	1.02E+02	9.94E+01	G K
Fe-59	F	7.5452E+00						4.45E+01	
			1099.25	1.927E+00	%(	1.279E+01	3.06E+02	5.65E+01	G K
			1291.60	1.489E+01	?(	7.840E+00	2.67E+01	4.32E+01	G
Zn-65	F	8.3221E+00						2.44E+02	
			1115.55	8.322E+00	%(	9.355E+00	5.59E+01	5.06E+01	G K
Nb-94	I	-3.3652E-01						7.41E+06	
			871.09	-3.365E-01	%(	7.390E+00	1.02E+03	9.99E+01	G K
			702.62	2.522E+00	&	6.789E+00	1.26E+02	9.79E+01	G

Nuclide	Ave activity	Energy	Activity	Code	Peak MDA			Comments
Nb-95	I 4.7526E+00						3.50E+01	
		765.81	4.753E+00	%(P	4.886E+00	5.30E+01	9.98E+01	G K
Ag-108M	C 2.0816E+00						1.53E+05	
		722.94	2.082E+00	%(	5.504E+00	1.21E+02	9.08E+01	G K
		614.28	4.612E+00	%	4.945E+00	5.21E+01	8.98E+01	G
		433.94	0.000E+00	% P	6.639E+00	1.00E+03	9.05E+01	G
		79.13	1.404E+00	& P	1.248E+02	3.95E+03	6.60E+00	G
Ru-106	I 9.2995E+00						3.73E+02	
		621.93	9.299E+00	%(	6.260E+01	3.09E+02	9.93E+00	G K
Sn-113	F -8.0818E-01						1.15E+02	
		391.69	-8.082E-01	&(	9.607E+00	5.39E+02	6.40E+01	G K

Sb-125	I	1.9468E+00					1.01E+03		
			427.88	1.947E+00	%(	1.915E+01	4.44E+02	2.96E+01	G K
			176.31	0.000E+00	% P	7.879E+01	1.00E+03	6.82E+00	G
			463.36	0.000E+00	% P	6.696E+01	1.00E+03	1.05E+01	G
			600.60	5.785E+00	% P	3.722E+01	3.10E+02	1.79E+01	G
			635.95	1.331E+01	&	5.083E+01	1.76E+02	1.13E+01	G
Te-129	I	2.8860E+01					3.36E+01		
			459.60	2.886E+01	&(	8.842E+01	1.40E+02	7.70E+00	G K
			487.39	7.405E+01	% P	4.523E+02	2.81E+02	1.42E+00	G
I-132	I	2.0601E+01					3.20E+00		
			772.60	2.060E+01	%(P	1.009E+02	2.21E+02	7.56E+01	G K
			522.65	-6.964E+01	%	4.836E+02	3.13E+02	1.60E+01	G
			630.19	0.000E+00	& P	7.699E+02	1.00E+03	1.33E+01	G
			954.55	0.000E+00	%	7.282E+02	1.00E+03	1.76E+01	G
Te-132	I	-3.7356E+01					3.20E+00		
			228.16	-3.736E+01	%(	8.163E+01	9.98E+01	8.80E+01	G K
Ba-133	F	-2.2208E+00					3.84E+03		
			356.02	-2.221E+00	%(	8.966E+00	1.85E+02	6.20E+01	G K
			81.00	-6.767E+00	%	2.315E+01	1.51E+02	3.41E+01	G
			302.85	2.687E+00	&	2.873E+01	4.72E+02	1.83E+01	G
			276.40	1.001E+01	%	6.926E+01	3.07E+02	7.16E+00	G
			383.85	2.308E+01	&	4.618E+01	9.17E+01	8.94E+00	G
Cs-137	I	2.2310E+00					1.10E+04		
			661.66	2.231E+00	%(	6.513E+00	1.35E+02	9.01E+01	G K

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Ce-139	F 5.5733E-02					1.38E+02	
		165.85	5.573E-02	&(P	6.051E+00	4.98E+03	7.99E+01 G K
Ba-140	I -1.6450E+01					1.28E+01	
		537.26	-1.645E+01	&(	5.561E+01	1.60E+02	2.44E+01 G K
		162.66	1.487E+01	% P	1.464E+02	4.54E+02	6.22E+00 G
Ce-141	I 4.5511E+00					3.25E+01	
		145.44	4.551E+00	&(P	1.244E+01	1.28E+02	4.82E+01 G K
Ce-144	I 1.8812E+00					2.85E+02	
		133.51	1.881E+00	%(P	4.857E+01	1.18E+03	1.11E+01 G K
ND-147	3.0201E+01					1.11E+01	
		531.00	3.020E+01	%(P	8.888E+01	1.37E+02	1.35E+01 G K
		91.10	1.127E+01	& P	5.396E+01	2.15E+02	2.83E+01 G
Eu-152	F -4.9158E+00					4.95E+03	
		121.78	-4.916E+00	&(	2.081E+01	1.86E+02	2.84E+01 G K
		1408.01	0.000E+00	%	6.207E+01	1.00E+03	2.09E+01 GA
		1112.12	0.000E+00	%	9.194E+01	1.00E+03	1.36E+01 GA
		1085.91	-9.091E+00	%	8.146E+01	4.28E+02	9.92E+00 GA
		964.13	0.000E+00	% P	5.358E+01	1.00E+03	1.43E+01 GA
		344.28	2.902E+00	% P	1.707E+01	2.73E+02	2.66E+01 GA
		244.70	-1.492E+01	%	7.871E+01	2.38E+02	7.49E+00 GA

Eu-154	I	3.0118E+00						3.14E+03		
			123.07	3.012E+00	%(P	1.260E+01	1.86E+02	4.06E+01	G	K
			1274.44	0.000E+00	% P	2.430E+01	1.00E+03	3.50E+01	G	
			1004.72	0.000E+00	%	5.838E+01	1.00E+03	1.79E+01	G	
			996.26	0.000E+00	% P	6.179E+01	1.00E+03	1.05E+01	G	
			873.19	0.000E+00	& P	5.118E+01	1.00E+03	1.22E+01	G	
			723.30	5.027E+00	%	2.825E+01	2.54E+02	2.01E+01	GA	
			247.93	0.000E+00	% P	7.118E+01	1.00E+03	6.91E+00	G	
Eu-155	I	8.9272E+00						1.74E+03		
			86.54	8.927E+00	%(P	1.946E+01	9.82E+01	3.07E+01	G	K
			105.31	0.000E+00	& P	2.593E+01	1.00E+03	2.12E+01	G	
Lu-176	N	-1.7023E+00						1.38E+13		
			306.78	-1.702E+00	%(	6.111E+00	1.61E+02	9.40E+01	G	K
			201.83	1.505E+00	%	5.978E+00	1.79E+02	8.65E+01	G	
Hg-203	F	3.8823E+00						4.66E+01		
			279.20	3.882E+00	%(P	6.372E+00	7.82E+01	8.15E+01	G	K

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PACE Spectrum name: 30716778002.An1

Nuclide		Ave activity	Energy		Activity		Code	Peak	MDA	Comments
U-236	I	-1.1716E+04							8.55E+09	
			49.46	-1.172E+04	%(	2.516E+04		9.53E+01	7.80E-02	G K
			112.79	0.000E+00	& P	3.083E+04		1.00E+03	1.90E-02	G
			171.15	0.000E+00	% P	9.260E+06		1.00E+03	6.20E-05	G
Sm-145	I	-4.4504E+01							3.40E+02	
			61.23	-4.450E+01	%(	9.615E+01		9.60E+01	1.21E+01	G K
			431.40	-1.756E+06	%	1.257E+07		3.27E+02	5.20E-05	G
Pb-210	N	1.9934E+02							8.14E+03	
			46.54	1.993E+02	%(P	5.754E+02		1.30E+02	4.25E+00	G K
Pb-212	N	2.7492E+00							6.98E+02	
			238.63	2.749E+00	%(P	1.383E+01		2.12E+02	4.33E+01	G K
									Energy duplication	
			77.11	1.365E+01	% P	4.790E+01		1.54E+02	1.75E+01	G
									Energy duplication	
			74.81	0.000E+00	% P	9.028E+01		1.00E+03	1.04E+01	G
			87.30	9.640E+00	%	8.107E+01		3.65E+02	7.80E+00	GA
Bi-214	N	2.2431E+01							5.84E+05	
			609.31	2.243E+01	%(P	1.685E+01		3.10E+01	4.48E+01	G K
			1120.29	8.241E+00	% P	6.923E+01		3.82E+02	1.48E+01	GA
			2204.21	0.000E+00	=	0.000E+00		0.00E+00	4.86E+00	G
			1764.49	2.804E+01	& P	5.350E+01		6.20E+01	1.54E+01	G
			1377.67	7.368E+01	% P	1.777E+02		1.04E+02	3.92E+00	G
			1238.11	3.325E+01	% P	1.227E+02		1.80E+02	5.86E+00	G
			768.36	7.874E+01	% P	1.021E+02		6.51E+01	4.80E+00	G
Pb-214	N	2.7987E+01							5.84E+05	
			351.99	2.799E+01	*(P	1.708E+01		2.66E+01	3.71E+01	G K
			295.22	3.655E+01	% P	2.970E+01		3.84E+01	1.92E+01	G
			241.92	0.000E+00	% P	8.924E+01		1.00E+03	7.47E+00	G
			87.20	0.000E+00	% P	1.782E+02		1.00E+03	3.70E+00	G
									Energy duplication	
			77.11	2.652E+01	% P	7.660E+01		1.27E+02	1.07E+01	G
									Energy duplication	

			74.81	0.000E+00	% P	1.487E+02	1.00E+03	6.33E+00	G
Ra-223	N	1.8377E+00						7.96E+03	
			269.46	1.838E+00	&(P	3.658E+01	8.64E+02	1.37E+01	G K
			83.78	0.000E+00	% P	2.833E+01	1.00E+03	2.49E+01	G
			323.87	4.289E+01	%	1.227E+02	1.28E+02	3.93E+00	G
			154.21	3.664E+01	%	8.959E+01	1.11E+02	5.62E+00	G
			94.90	0.000E+00	%	7.713E+01	1.00E+03	1.13E+01	G
			81.07	-1.536E+01	%	5.254E+01	1.51E+02	1.50E+01	G
Ra-224	N	7.0478E+00						6.98E+02	
			241.00	7.048E+00	%(	1.641E+02	1.05E+03	3.90E+00	G K

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Ra-226	N 1.0751E+02					5.84E+05	
		186.10	1.075E+02	%(P	1.385E+02	4.87E+01	3.50E+00 G K
Th-230	N 4.9505E+02					2.75E+07	
		67.67	4.951E+02	&(	2.270E+03	2.01E+02	3.80E-01 G K
Pa-231	N 7.2234E+01					1.20E+07	
		283.70	7.223E+01	%(	3.324E+02	2.06E+02	1.60E+00 G K
		330.00	0.000E+00	%	5.064E+02	1.00E+03	1.30E+00 G
Pa-234M	N 3.9801E+02					1.63E+12	Energy duplication
		1001.03	3.980E+02	%(P	5.897E+02	7.25E+01	8.37E-01 G
Th-232	N 3.8869E+02					4.17E+12	
		63.81	3.887E+02	%(P	3.713E+03	4.17E+02	2.67E-01 G K
U-235	N 2.6997E+01					2.57E+11	
		143.76	2.700E+01	%(	4.074E+01	6.94E+01	1.10E+01 G K
		205.31	-3.512E+01	%	1.096E+02	1.42E+02	5.01E+00 G
		89.95	0.000E+00	%	2.409E+02	1.00E+03	3.56E+00 GA
U-238	N 5.8713E+01					1.63E+12	
		92.59	5.871E+01	%(P	1.284E+02	8.95E+01	5.60E+00 G K
		1001.03	3.966E+02	% P	5.876E+02	7.25E+01	Energy duplication 8.40E-01 G K
Am-241	T 1.0843E+01					1.58E+05	
		59.54	1.084E+01	%(	2.522E+01	1.02E+02	3.63E+01 G K
Am-243	T 7.2648E-01					2.69E+06	
		74.66	7.265E-01	%(	1.215E+01	7.28E+02	6.82E+01 G K

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide failed one or more qualification tests.
+ - Peak activity higher than counting uncertainty range.
- - Peak activity lower than counting uncertainty range.

= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the
library energy centroid for positive identification.
P - Peakbackground subtraction

} - Peak is too close to another for the activity
to be found directly.

Nuclide Codes:
T - Thermal Neutron Activation
F - Fast Neutron Activation
I - Fission Product
N - Naturally Occurring Isotope
P - Photon Reaction
C - Charged Particle Reaction
M - No MDA Calculation
R - Coincidence Corrected
H - Halflife limit exceeded

Peak Codes:
G - Gamma Ray
X - X-Ray
P - Positron Decay
S - Single-Escape
D - Double-Escape
K - Key Line
A - Not in Average
C - Coincidence Peak

- -

********** D I S C A R D E D I S O T O P E P E A K S **********

Nuclide	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	Activity	
Fe-59	1291.76	0.	14.	0.003	53.45	1.489E+01	
K-40	1460.70	24.	58.	0.011	44.84	2.289E+02	P

P - Peakbackground subtraction

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide		Time of Count Activity pCi/L	Time Corrected Activity pCi/L	Uncertainty Counting pCi/L	2 Sigma Total pCi/L	MDA pCi/L
Be-7	#B	-1.1738E+01	-1.3653E+01	5.9446E+01	5.9452E+01	6.563E+01
Na-22	#B	0.0000E+00	0.0000E+00	3.2500E+00	3.2500E+00	1.018E+01
K-40	#	2.2895E+02	2.2895E+02	1.0266E+02	1.0359E+02	1.005E+02
Sc-46	#B	0.0000E+00	0.0000E+00	9.1098E-01	9.1099E-01	1.030E+01
Cr-51	#B	-1.3809E+00	-1.8480E+00	6.7598E+01	6.7598E+01	7.654E+01
Mn-54	#B	3.4481E+00	3.5384E+00	4.7566E+00	4.7615E+00	4.934E+00
Co-56	#B	0.0000E+00	0.0000E+00	3.5315E+00	3.5315E+00	1.568E+01
Co-57	#B	-2.1093E+00	-2.1728E+00	6.3953E+00	6.3967E+00	7.268E+00
Co-58	#B	2.6146E+00	2.9302E+00	5.9835E+00	5.9861E+00	6.309E+00
Fe-59	#B	6.2937E+00	7.5452E+00	4.0331E+00	4.0589E+00	1.279E+01
Co-60	#B	0.0000E+00	0.0000E+00	1.1145E+00	1.1145E+00	1.018E+01
Zn-65	#B	8.0512E+00	8.3221E+00	9.2976E+00	9.3112E+00	9.355E+00
SE-75	#B	0.0000E+00	0.0000E+00	1.9037E+00	1.9037E+00	1.015E+01
Kr-85	#B	0.0000E+00	0.0000E+00	5.1778E+02	5.1778E+02	3.031E+03
Y-88	#B	0.0000E+00	0.0000E+00	1.5518E+00	1.5518E+00	1.060E+01
Nb-94	#B	-3.3652E-01	-3.3652E-01	6.8778E+00	6.8779E+00	7.390E+00
Zr-95	#B	0.0000E+00	0.0000E+00	1.5344E+00	1.5344E+00	1.719E+01
Nb-95	#B	3.7733E+00	4.7526E+00	5.0394E+00	5.0476E+00	4.886E+00
Ru-103	#B	0.0000E+00	0.0000E+00	2.4258E+00	2.4258E+00	1.095E+01
Ag-108M	#B	2.0815E+00	2.0816E+00	5.0190E+00	5.0206E+00	5.504E+00
Ru-106	#B	9.1002E+00	9.2995E+00	5.7420E+01	5.7423E+01	6.260E+01
Cd-109	#B	0.0000E+00	0.0000E+00	4.4972E+01	4.4972E+01	1.848E+02
Ag-110M	#B	0.0000E+00	0.0000E+00	2.8325E+00	2.8325E+00	8.042E+00

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PACE Spectrum name: 30716778002.An1

Sn-113 #B	-7.5345E-01	-8.0818E-01	8.7099E+00	8.7101E+00	9.607E+00
Sb-124 #B	0.0000E+00	0.0000E+00	1.4603E+00	1.4603E+00	9.282E+00
Sb-125 #B	1.9313E+00	1.9468E+00	1.7271E+01	1.7271E+01	1.915E+01
Te-129 #B	2.2698E+01	2.8860E+01	8.0530E+01	8.0550E+01	8.842E+01
Te-129M#B	0.0000E+00	0.0000E+00	4.1560E+01	4.1561E+01	3.039E+02
I-131 #B	0.0000E+00	0.0000E+00	3.2307E+00	3.2308E+00	2.181E+01
I-132 #B	1.6541E+00	2.0601E+01	9.0889E+01	9.0898E+01	1.009E+02
Te-132 #B	-2.9994E+00	-3.7356E+01	7.4552E+01	7.4597E+01	8.163E+01
I-133 #B	0.0000E+00	>12 Halflives	2.4431E+00	2.4432E+00	9.776E+00
Ba-133 #B	-2.2161E+00	-2.2208E+00	8.2375E+00	8.2382E+00	8.966E+00
Cs-134 #B	0.0000E+00	0.0000E+00	2.2113E+00	2.2113E+00	9.829E+00
Cs-136 #B	0.0000E+00	0.0000E+00	4.0829E+00	4.0829E+00	1.408E+01
Cs-137 #B	2.2294E+00	2.2310E+00	6.0368E+00	6.0383E+00	6.513E+00
Ce-139 #B	5.2559E-02	5.5733E-02	5.5464E+00	5.5464E+00	6.051E+00
Ba-140 #B	-8.7352E+00	-1.6450E+01	5.2689E+01	5.2698E+01	5.561E+01
La-140 #B	0.0000E+00	0.0000E+00	2.5156E+00	2.5156E+00	2.514E+01
Ce-141 #B	3.5503E+00	4.5511E+00	1.1666E+01	1.1670E+01	1.244E+01
Ce-144 #B	1.8286E+00	1.8812E+00	4.4391E+01	4.4391E+01	4.857E+01
ND-147 #B	1.4558E+01	3.0201E+01	8.3023E+01	8.3043E+01	8.888E+01
Eu-152 #B	-4.9078E+00	-4.9158E+00	1.8247E+01	1.8249E+01	2.081E+01
Eu-154 #B	3.0040E+00	3.0118E+00	1.1197E+01	1.1198E+01	1.260E+01
Eu-155 #B	8.8859E+00	8.9272E+00	1.7538E+01	1.7553E+01	1.946E+01
Lu-176 #B	-1.7023E+00	-1.7023E+00	5.4880E+00	5.4893E+00	6.111E+00
Ir-192 #B	0.0000E+00	0.0000E+00	3.5694E+00	3.5694E+00	8.298E+00
Hg-203 #B	3.2651E+00	3.8823E+00	6.0699E+00	6.0760E+00	6.372E+00
Tl-208 #B	0.0000E+00	0.0000E+00	4.1284E+00	4.1284E+00	8.507E+00
U-236 #B	-1.1716E+04	-1.1716E+04	2.2325E+04	2.2439E+04	2.516E+04
Sm-145 #B	-4.3460E+01	-4.4504E+01	8.5407E+01	8.6199E+01	9.615E+01
Cd-113M#B	0.0000E+00	0.0000E+00	7.7707E-01	7.7708E-01	5.825E+00
I-129 #	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.000E+00
Pb-210 #B	1.9914E+02	1.9934E+02	5.2020E+02	5.2046E+02	5.754E+02
Bi-212 #B	0.0000E+00	0.0000E+00	3.9685E+01	3.9685E+01	8.815E+01
Pb-212 #B	2.7175E+00	2.7492E+00	1.1660E+01	1.1661E+01	1.383E+01
Bi-214 F	2.2431E+01	2.2431E+01	1.3921E+01	1.3986E+01	1.685E+01
Pb-214 #	2.7986E+01	2.7987E+01	1.4868E+01	1.4984E+01	1.708E+01
Ra-223 #B	1.8359E+00	1.8377E+00	3.1749E+01	3.1749E+01	3.658E+01
Ra-224 #B	6.9667E+00	7.0478E+00	1.4738E+02	1.4738E+02	1.641E+02
Ra-226 B	1.0750E+02	1.0751E+02	1.0465E+02	1.0489E+02	1.385E+02
Ac-227 #B	0.0000E+00	0.0000E+00	1.1551E+01	1.1551E+01	5.280E+01
Ac-228 #B	0.0000E+00	0.0000E+00	1.3478E+01	1.3478E+01	3.561E+01
Th-228 #B	0.0000E+00	0.0000E+00	2.4736E+02	2.4736E+02	5.726E+02
Th-230 #B	4.9505E+02	4.9505E+02	1.9854E+03	1.9878E+03	2.270E+03
Pa-231 #B	7.2234E+01	7.2234E+01	2.9707E+02	2.9711E+02	3.324E+02
Pa-234M#A	3.9801E+02	3.9801E+02	5.7739E+02	5.7790E+02	5.897E+02
Th-232 #B	3.8869E+02	3.8869E+02	3.2438E+03	3.2451E+03	3.713E+03
Th-234 #B	0.0000E+00	0.0000E+00	9.7410E+01	9.7417E+01	2.199E+02
U-235 #B	2.6997E+01	2.6997E+01	3.7447E+01	3.7484E+01	4.074E+01
U-238 #B	5.8713E+01	5.8713E+01	1.0514E+02	1.0522E+02	1.284E+02
Am-241 #B	1.0842E+01	1.0843E+01	2.2196E+01	2.2396E+01	2.522E+01

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PACE Spectrum name: 30716778002.An1

Am-243 #B	7.2647E-01	7.2648E-01	1.0578E+01	1.0578E+01	1.215E+01
Pm-144 #B	0.0000E+00	0.0000E+00	1.4332E+00	1.4332E+00	7.893E+00
Pm-146 #B	0.0000E+00	0.0000E+00	1.3514E+00	1.3514E+00	9.579E+00

- All peaks for activity calculation had bad shape.
* - Activity omitted from total
& - Activity omitted from total and all peaks had bad shape.
< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

S U M M A R Y

Total Activity (30.5 to 2036.0 keV) 2.799E+01 pCi/L
Total Decayed Activity (30.5 to 2036.0 keV) 2.7986607E+01 pCi/L

The library has energies which are not separable.

Analyzed by: _____
Operator

Reviewed by: _____
Supervisor

Laboratory: PACE

ORTEC g v - i (3263) Env32 G701W047 9/17/2024 12:46:57 PM Page 1
PACE Spectrum name: 30716737002.An1

Sample description
81318

Spectrum Filename: C:\User\30716737002.An1

Acquisition information
Start time: 9/17/2024 11:06:24 AM
Live time: 5400
Real time: 5589
Dead time: 3.38 %
Detector ID: 5

Detector system
DET 5

Calibration
Filename: DET_5_2L_MAR_23-047(021924).Clb
DET_5_2L_MAR_23-047(021924)

Energy Calibration
Created: 2/23/2024 11:14:34 AM
Zero offset: 0.513 keV
Gain: 0.250 keV/channel
Quadratic: -4.543E-10 keV/channel^2

Efficiency Calibration
Created: 2/23/2024 11:15:45 AM
Type: Polynomial
Uncertainty: 1.566 %
Coefficients: -0.317713 -4.992960 0.533353
-0.071649 0.003819 -0.000077

Library Files
Main analysis library: Pace Master w Ra226U235 (wo PS)
Library Match Width: 0.500
Peak stripping: Library based

Analysis parameters
Analysis engine: Env32 G701W047
Start channel: 120 (30.51keV)
Stop channel: 8144 (2036.02keV)
Peak rejection level: 30.000%
Peak search sensitivity: 3
Sample Size: 2.0000E+00
Activity scaling factor: 1.0000E+06/(1.0000E+00* 2.0000E+00) =
5.0000E+05
Detection limit method: Reg. Guide 4.16 Method

Random error: 1.0000000E+00
Systematic error: 1.0000000E+00
Fraction Limit: 0.000%
Background width: average of three points.

Half lives decay limit: 12.000

WYF 9-19-24

DM 9/17/24

Activity range factor:	2.000
Min. step backg. energy	0.000
Multiplet shift channel	2.000

Corrections	Status	Comments
Decay correct to date:	YES	9/6/2024 10:00:00 AM
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	YES	Det_5_Bkg_091324Ra226U235(2L).Pb 9/16/2024 9:21:01 AM
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

total peaks alloc. 0 cutoff: 0.00E+00 %

Energy Calibration
Normalized diff: 0.2429

9/17/24

***** S U M M A R Y O F P E A K S I N R A N G E *****

Peak Energy	Area	Uncert	FWHM	Corrctn Factor	Nuclide Energy	Brnch. Ratio	Act. pCi/L	Nuc
46.86	76.	29.31	1.10	5.514E-03	46.54	4.250	8.085E+02	Pb210
1172.85	13.	27.74	1.99	7.007E-03	1173.24	99.974	4.663E+00	Co60

No unknown peaks passed sensitivity test.

WTF 9-19-24

This section based on library: Pace Master w Ra226U235 (wo PS)

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	FWHM keV
Pb-210	185.42	46.86	85.	76.	0.014	58.62	1.096
Co-60	4690.46	1172.85	0.	13.	0.002	55.47	1.994s

s - Peak fails shape tests.
D - Peak area deconvoluted.
A Derived peak area.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

- Nuclide - Name	Code	Average Activity pCi/L	Peak Energy keV	Peak Activity pCi/L	Code	Peak MDA Value pCi/L	COMMENTS
Be-7	C	-4.5158E+00				5.34E+01	
			477.56	-4.516E+00 %(		5.810E+01	5.71E+02 1.03E+01 G K

K-40	N	1.1478E+01						4.68E+11		
			1461.00	1.148E+01	&(P	8.881E+01	2.96E+02	1.07E+01	G	K
Sc-46	F	5.0851E-01						8.38E+01		
			889.28	5.085E-01	%(P	5.688E+00	4.32E+02	1.00E+02	G	K
Cr-51	F	1.6992E+01						2.77E+01		
			320.08	1.699E+01	%(	6.709E+01	1.76E+02	1.01E+01	G	K
Co-56	C	3.6481E+00						7.73E+01		
			1238.28	3.648E+00	%(P	1.176E+01	1.60E+02	6.61E+01	G	K
			1771.35	0.000E+00	% P	6.870E+01	1.00E+03	1.55E+01	G	
Co-57	C	-6.1987E-02						2.72E+02		
			122.06	-6.199E-02	%(	6.156E+00	4.28E+03	8.56E+01	G	K
			136.47	-3.073E+01	%	5.271E+01	7.89E+01	1.07E+01	G	
Fe-59	F	1.0741E+00						4.45E+01		
			1099.25	1.074E+00	%(	1.508E+01	6.57E+02	5.65E+01	G	K
			1291.60	5.270E-01	%	2.281E+01	2.08E+03	4.32E+01	G	
Co-60	F	3.2944E+00						1.92E+03		
			1332.50	1.926E+00	&(P	6.296E+00	1.46E+02	1.00E+02	G	K
			1173.24	4.663E+00	?(	2.643E+00	2.77E+01	1.00E+02	G	
Y-88	C	4.1672E+00						1.07E+02		
			1836.06	4.167E+00	%(P	4.028E+00	4.61E+01	9.92E+01	G	K
			898.04	3.073E-01	% P	7.791E+00	1.12E+03	9.37E+01	G	
Zr-95	I	8.0849E-01						6.40E+01		
			756.73	8.085E-01	%(	1.102E+01	6.19E+02	5.45E+01	G	K
			724.20	1.449E+01	%	8.109E+00	3.06E+01	4.42E+01	G	
Ru-103	I	1.4244E-01						3.93E+01		
			497.08	1.424E-01	%(P	6.825E+00	2.06E+03	9.10E+01	G	K
Ag-108M	C	-4.1633E-01						1.53E+05		
			722.94	-4.163E-01	&(	8.011E+00	8.81E+02	9.08E+01	G	K
			614.28	3.490E+00	&	4.161E+00	5.69E+01	8.98E+01	G	
			433.94	0.000E+00	% P	6.639E+00	1.00E+03	9.05E+01	G	
			79.13	0.000E+00	% P	1.152E+02	1.00E+03	6.60E+00	G	
Ru-106	I	4.2962E+01						3.73E+02		
			621.93	4.296E+01	%(	2.925E+01	3.55E+01	9.93E+00	G	K

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Ag-110M	F 3.0654E+00					2.50E+02	
		657.76	3.065E+00	%(P	4.527E+00	7.34E+01	9.40E+01 G K
		1505.04	0.000E+00	% P	7.713E+01	1.00E+03	1.29E+01 G
		1384.30	0.000E+00	% P	4.138E+01	1.00E+03	2.41E+01 G
		937.49	1.854E+00	% P	1.904E+01	4.86E+02	3.41E+01 G
		884.68	-1.734E+00	&	1.066E+01	2.89E+02	7.22E+01 G
		763.94	4.275E+00	%	2.498E+01	2.68E+02	2.21E+01 G
		744.28	6.305E-01	% P	1.412E+02	1.02E+04	4.70E+00 G
		706.68	1.559E+01	& P	3.157E+01	9.07E+01	1.63E+01 G
Sn-113	F -8.9475E-01					1.15E+02	

			391.69	-8.948E-01	&(	1.028E+01	5.24E+02	6.40E+01 G K
Te-129	I	2.4575E+01						3.36E+01
			459.60	2.457E+01	&(	6.409E+01	1.17E+02	7.70E+00 G K
			487.39	0.000E+00	% P	5.320E+02	1.00E+03	1.42E+00 G
I-131	I	2.0423E+00						8.02E+00
			364.49	2.042E+00	%(P	1.774E+01	4.03E+02	8.17E+01 G K
			636.99	9.920E+01	% P	1.396E+02	7.28E+01	7.17E+00 G
			284.30	-1.360E+01	%	2.070E+02	6.70E+02	6.14E+00 G
Te-132	I	-1.4066E+01						3.20E+00
			228.16	-1.407E+01	&(	6.668E+01	2.13E+02	8.80E+01 G K
I-133	I	2.2666E+00						8.67E-01
			529.87	2.267E+00	%(P	5.213E+00	1.08E+02	8.70E+01 G K
			875.33	5.961E+01	% P	1.055E+02	7.89E+01	4.51E+00 G
Cs-137	I	-1.9685E+00						1.10E+04
			661.66	-1.968E+00	%(	8.495E+00	2.02E+02	9.01E+01 G K
Ce-139	F	4.3624E+00						1.38E+02
			165.85	4.362E+00	%(P	5.332E+00	5.87E+01	7.99E+01 G K
Ba-140	I	-3.7916E+00						1.28E+01
			537.26	-3.792E+00	%(	4.909E+01	6.00E+02	2.44E+01 G K
			162.66	8.979E+00	& P	1.444E+02	7.40E+02	6.22E+00 G
Ce-141	I	2.7823E+00						3.25E+01
			145.44	2.782E+00	&(P	1.301E+01	2.17E+02	4.82E+01 G K
Eu-152	F	3.6410E+00						4.95E+03
			121.78	3.641E+00	&(	1.717E+01	2.05E+02	2.84E+01 G K
			1408.01	1.472E+01	%	2.677E+01	8.77E+01	2.09E+01 GA
			1112.12	-1.270E+00	%	5.346E+01	1.96E+03	1.36E+01 GA
			1085.91	1.648E+01	%	4.534E+01	1.25E+02	9.92E+00 GA

Nuclide	Ave activity	Energy		Activity	Code	Peak	MDA	Comments
		964.13	0.000E+00	% P	5.880E+01	1.00E+03	1.43E+01 GA	
		344.28	4.373E+00	% P	1.875E+01	2.00E+02	2.66E+01 GA	
		244.70	-2.408E+01	%	7.145E+01	1.34E+02	7.49E+00 GA	
Eu-155	I 1.3770E+00							1.74E+03
		86.54	1.377E+00	%(P	2.046E+01	6.56E+02	3.07E+01 G K	
		105.31	0.000E+00	% P	2.550E+01	1.00E+03	2.12E+01 G	
Lu-176	N -3.3566E-01							1.38E+13
		306.78	-3.357E-01	%(	5.640E+00	7.41E+02	9.40E+01 G K	
		201.83	-1.649E-01	%	5.628E+00	1.52E+03	8.65E+01 G	
Ir-192	F 3.1454E-01							7.38E+01
		316.51	3.145E-01	%(P	6.368E+00	9.20E+02	8.28E+01 G K	
		468.07	-4.250E-01	&	1.516E+01	1.61E+03	4.78E+01 G	
		308.46	2.091E+00	%	1.787E+01	3.76E+02	3.00E+01 G	
		295.96	7.151E+00	&	1.753E+01	1.10E+02	2.87E+01 GA	
Hg-203	F 3.5415E+00							4.66E+01
		279.20	3.542E+00	&(P	6.781E+00	9.04E+01	8.15E+01 G K	

U-236	I	1.0483E+04					8.55E+09	
			49.46	1.048E+04	%(	1.300E+04	5.53E+01	7.80E-02 G K
			112.79	0.000E+00	% P	3.001E+04	1.00E+03	1.90E-02 G
			171.15	1.064E+06	% P	7.880E+06	3.32E+02	6.20E-05 G
Sm-145	I	-2.4108E+01					3.40E+02	
			61.23	-2.411E+01	%(	9.509E+01	1.74E+02	1.21E+01 G K
			431.40	6.165E+06	%	8.138E+06	6.17E+01	5.20E-05 G
Cd-113M	I	-1.4128E+00					5.15E+03	
			263.70	-1.413E+00	%(	5.470E+00	1.74E+02	1.00E+02 G K
Pb-210	N	8.0854E+02					8.14E+03	
			46.54	8.085E+02	(P	4.891E+02	2.93E+01	4.25E+00 G K
Ra-224	N	-4.1759E+01					6.98E+02	
			241.00	-4.176E+01	%(	1.615E+02	1.75E+02	3.90E+00 G K
Th-228	N	2.6620E+01					6.98E+02	
			84.37	2.662E+01	%(P	5.113E+02	8.53E+02	1.27E+00 G K
			215.99	5.434E+02	%	1.708E+03	1.41E+02	2.63E-01 GA
			166.41	-9.679E+02	%	4.936E+03	2.30E+02	1.08E-01 GA
			131.61	1.965E+03	%	3.584E+03	8.34E+01	1.35E-01 GA
Th-230	N	-1.3201E+03					2.75E+07	
			67.67	-1.320E+03	%(	2.705E+03	9.12E+01	3.80E-01 G K

□

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Pa-231	N 5.7520E+01					1.20E+07	
		283.70	5.752E+01	%(	2.858E+02	2.20E+02	1.60E+00 G K
		330.00	-3.281E+01	%	4.710E+02	6.59E+02	1.30E+00 G
Th-234	N 8.7703E+01					1.63E+12	
		63.29	8.770E+01	&(P	2.105E+02	1.07E+02	4.80E+00 G K
		92.60	0.000E+00	% P	2.650E+02	1.00E+03	2.80E+00 GA
U-235	N 6.4061E+00					2.57E+11	
		143.76	6.406E+00	%(	4.821E+01	3.39E+02	1.10E+01 G K
		205.31	-1.792E+01	%	9.785E+01	2.45E+02	5.01E+00 G
		89.95	0.000E+00	%	2.502E+02	1.00E+03	3.56E+00 GA
Am-241	T 3.6143E+00					1.58E+05	
		59.54	3.614E+00	&(	2.686E+01	3.23E+02	3.63E+01 G K
Am-243	T 1.4530E+00					2.69E+06	
		74.66	1.453E+00	&(	1.080E+01	3.23E+02	6.82E+01 G K
Pm-144	C 4.9955E+00					3.63E+02	
		696.51	4.996E+00	%(P	5.861E+00	5.96E+01	9.90E+01 G K
		618.01	0.000E+00	%	8.608E+00	1.00E+03	9.86E+01 G
Pm-146	C 1.0025E+00					2.02E+03	
		453.88	1.002E+00	&(P	7.346E+00	3.39E+02	6.52E+01 G K
		747.16	0.000E+00	% P	1.882E+01	1.00E+03	3.40E+01 G
		735.72	8.539E+00	%	2.258E+01	1.21E+02	2.25E+01 GA

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.

! - Peak is part of a multiplet and this area went
negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide
failed one or more qualification tests.
+ - Peak activity higher than counting uncertainty range.
- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the
library energy centroid for positive identification.
P - Peakbackground subtraction
} - Peak is too close to another for the activity
to be found directly.

Nuclide Codes: Peak Codes:

T - Thermal Neutron Activation
F - Fast Neutron Activation
I - Fission Product
N - Naturally Occurring Isotope
P - Photon Reaction
C - Charged Particle Reaction
M - No MDA Calculation
R - Coincidence Corrected
H - Halflife limit exceeded

G - Gamma Ray
X - X-Ray
P - Positron Decay
S - Single-Escape
D - Double-Escape
K - Key Line
A - Not in Average
C - Coincidence Peak

- -

********** D I S C A R D E D I S O T O P E P E A K S **********

Nuclide	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	Activity
Co-60	1172.85	0.	13.	0.002	55.47	4.663E+00

P - Peakbackground subtraction

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide		Time of Count Activity pCi/L	Time Corrected Activity pCi/L	Uncertainty Counting pCi/L	2 Sigma Total pCi/L	MDA pCi/L
Be-7	#B	-3.9126E+00	-4.5158E+00	5.1537E+01	5.1538E+01	5.810E+01
Na-22	#B	0.0000E+00	0.0000E+00	7.6569E-01	7.6569E-01	9.160E+00
K-40	#B	1.1478E+01	1.1478E+01	6.8060E+01	6.8064E+01	8.881E+01
Sc-46	#B	4.6411E-01	5.0851E-01	4.3908E+00	4.3909E+00	5.688E+00
Cr-51	#B	1.2889E+01	1.6992E+01	5.9689E+01	5.9700E+01	6.709E+01
Mn-54	#B	0.0000E+00	0.0000E+00	1.6208E+00	1.6208E+00	9.582E+00
Co-56	#B	3.3039E+00	3.6481E+00	1.1696E+01	1.1698E+01	1.176E+01
Co-57	#B	-6.0265E-02	-6.1987E-02	5.3019E+00	5.3019E+00	6.156E+00
Co-58	#B	0.0000E+00	0.0000E+00	2.4531E+00	2.4531E+00	9.716E+00
Fe-59	#B	9.0431E-01	1.0741E+00	1.4111E+01	1.4111E+01	1.508E+01
Co-60	#B	3.2813E+00	3.2944E+00	1.8274E+00	1.8381E+00	6.296E+00
Zn-65	#B	0.0000E+00	0.0000E+00	4.8642E+00	4.8642E+00	2.012E+01
SE-75	#B	0.0000E+00	0.0000E+00	2.6073E+00	2.6074E+00	1.115E+01
Kr-85	#B	0.0000E+00	0.0000E+00	3.6609E+02	3.6609E+02	3.127E+03
Y-88	#F	3.8785E+00	4.1672E+00	3.8407E+00	3.8513E+00	4.028E+00

Nb-94	#B	0.0000E+00	0.0000E+00	1.8243E+00	1.8243E+00	8.600E+00
Zr-95	#B	7.1736E-01	8.0849E-01	1.0002E+01	1.0002E+01	1.102E+01
Nb-95	#B	0.0000E+00	0.0000E+00	9.2658E-01	9.2658E-01	7.911E+00
Ru-103	#B	1.1720E-01	1.4244E-01	5.8824E+00	5.8824E+00	6.825E+00
Ag-108M	#B	-4.1631E-01	-4.1633E-01	7.3381E+00	7.3381E+00	8.011E+00
Ru-106	#F	4.2088E+01	4.2962E+01	3.0545E+01	3.0654E+01	2.925E+01
Cd-109	#B	0.0000E+00	0.0000E+00	7.3373E+01	7.3374E+01	1.948E+02
Ag-110M	#B	2.9729E+00	3.0654E+00	4.4995E+00	4.5032E+00	4.527E+00
Sn-113	#B	-8.3717E-01	-8.9475E-01	9.3715E+00	9.3716E+00	1.028E+01
Sb-124	#B	0.0000E+00	0.0000E+00	3.7680E+00	3.7680E+00	9.218E+00
Sb-125	#B	0.0000E+00	0.0000E+00	4.9538E+00	4.9538E+00	2.448E+01
Te-129	#B	1.9567E+01	2.4575E+01	5.7318E+01	5.7338E+01	6.409E+01

Te-129M	#B	0.0000E+00	0.0000E+00	6.4908E+01	6.4908E+01	3.357E+02
I-131	#B	7.8617E-01	2.0423E+00	1.6443E+01	1.6443E+01	1.774E+01
I-132	#B	0.0000E+00	0.0000E+00	3.4227E+01	3.4227E+01	1.343E+02
Te-132	#B	-1.2854E+00	-1.4066E+01	5.9987E+01	5.9995E+01	6.668E+01
I-133	#B	2.2666E+00	>12 Halflives	4.8825E+00	4.8844E+00	5.213E+00
Ba-133	#B	0.0000E+00	0.0000E+00	2.8250E+00	2.8250E+00	1.043E+01
Cs-134	#B	0.0000E+00	0.0000E+00	1.5627E+00	1.5627E+00	1.095E+01
Cs-136	#B	0.0000E+00	0.0000E+00	1.9782E+00	1.9782E+00	1.558E+01
Cs-137	#B	-1.9671E+00	-1.9685E+00	7.9652E+00	7.9660E+00	8.495E+00
Ce-139	#B	4.1264E+00	4.3624E+00	5.1227E+00	5.1301E+00	5.332E+00
Ba-140	#B	-2.0798E+00	-3.7916E+00	4.5525E+01	4.5525E+01	4.909E+01
La-140	#B	0.0000E+00	0.0000E+00	1.7219E+00	1.7219E+00	1.656E+01
Ce-141	#B	2.1983E+00	2.7823E+00	1.2095E+01	1.2096E+01	1.301E+01
Ce-144	#B	0.0000E+00	0.0000E+00	7.9432E+00	7.9432E+00	4.849E+01
ND-147	#B	0.0000E+00	0.0000E+00	3.2617E+01	3.2618E+01	1.098E+02
Eu-152	#B	3.6354E+00	3.6410E+00	1.4915E+01	1.4917E+01	1.717E+01
Eu-154	#B	0.0000E+00	0.0000E+00	5.3306E+00	5.3306E+00	1.260E+01
Eu-155	#B	1.3710E+00	1.3770E+00	1.8071E+01	1.8072E+01	2.046E+01
Lu-176	#B	-3.3566E-01	-3.3566E-01	4.9731E+00	4.9731E+00	5.640E+00
Ir-192	#B	2.8356E-01	3.1454E-01	5.7895E+00	5.7895E+00	6.368E+00
Hg-203	#B	3.0050E+00	3.5415E+00	6.4017E+00	6.4065E+00	6.781E+00
Tl-208	#B	0.0000E+00	0.0000E+00	4.3763E+00	4.3763E+00	8.502E+00
U-236	#B	1.0483E+04	1.0483E+04	1.1591E+04	1.1767E+04	1.300E+04
Sm-145	#B	-2.3572E+01	-2.4108E+01	8.3731E+01	8.3969E+01	9.509E+01
Cd-113M	#B	-1.4108E+00	-1.4128E+00	4.9178E+00	4.9188E+00	5.470E+00
I-129	#	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.000E+00
Pb-210		8.0778E+02	8.0854E+02	4.7399E+02	4.7869E+02	4.891E+02
Bi-212	#B	0.0000E+00	0.0000E+00	1.5556E+01	1.5556E+01	1.325E+02
Pb-212	#B	0.0000E+00	0.0000E+00	8.5517E+00	8.5518E+00	1.515E+01
Bi-214	#B	0.0000E+00	0.0000E+00	2.4337E+00	2.4337E+00	1.815E+01
Pb-214	#B	0.0000E+00	0.0000E+00	6.0028E+00	6.0028E+00	1.708E+01
Ra-223	#B	0.0000E+00	0.0000E+00	8.5200E+00	8.5200E+00	4.627E+01
Ra-224	#B	-4.1303E+01	-4.1759E+01	1.4642E+02	1.4645E+02	1.615E+02
Ra-226	#B	0.0000E+00	0.0000E+00	8.9709E+01	8.9710E+01	1.655E+02
Ac-227	#B	0.0000E+00	0.0000E+00	9.1792E+00	9.1792E+00	5.207E+01
Ac-228	#B	0.0000E+00	0.0000E+00	7.7798E+00	7.7799E+00	4.122E+01
Th-228	#B	2.6330E+01	2.6620E+01	4.5408E+02	4.5409E+02	5.113E+02
Th-230	#B	-1.3201E+03	-1.3201E+03	2.4069E+03	2.4213E+03	2.705E+03
Pa-231	#B	5.7520E+01	5.7520E+01	2.5280E+02	2.5283E+02	2.858E+02
Pa-234M	#A	0.0000E+00	0.0000E+00	4.5646E+02	4.5647E+02	1.275E+03
Th-232	#B	0.0000E+00	0.0000E+00	8.3777E+02	8.3783E+02	4.194E+03
Th-234	#B	8.7703E+01	8.7703E+01	1.8687E+02	1.8808E+02	2.105E+02
U-235	#B	6.4061E+00	6.4061E+00	4.3423E+01	4.3424E+01	4.821E+01
U-238	#B	0.0000E+00	0.0000E+00	7.6995E+01	7.6996E+01	1.325E+02
Am-241	#B	3.6141E+00	3.6143E+00	2.3343E+01	2.3365E+01	2.686E+01
Am-243	#B	1.4529E+00	1.4530E+00	9.3841E+00	9.3863E+00	1.080E+01

Pm-144 #B	4.8913E+00	4.9955E+00	5.9589E+00	5.9665E+00	5.861E+00
Pm-146 #B	9.9870E-01	1.0025E+00	6.8052E+00	6.8055E+00	7.346E+00

- All peaks for activity calculation had bad shape.
* - Activity omitted from total
& - Activity omitted from total and all peaks had bad shape.
< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

S U M M A R Y

Total Activity (30.5 to 2036.0 keV) 8.078E+02 pCi/L
Total Decayed Activity (30.5 to 2036.0 keV) 8.0854034E+02 pCi/L

The library has energies which are not separable.

Analyzed by: _____
Operator

Reviewed by: _____
Supervisor

Laboratory: PACE

ORTEC g v - i (3263) Env32 G701W047 9/18/2024 8:12:13 AM Page 1
Pace Spectrum name: 30716676001.An1

Sample description
81318

Spectrum Filename: C:\User\Spectra\30716676001.An1

Acquisition information
Start time: 9/18/2024 7:38:44 AM
Live time: 1800
Real time: 1835
Dead time: 1.90 %
Detector ID: 2

Detector system
DET 2

Calibration
Filename: DET_2_2L MAR_23-047(113023).Clb
DET 2 2L MARINELLI

Energy Calibration
Created: 11/30/2023 7:00:31 AM
Zero offset: 0.281 keV
Gain: 0.250 keV/channel
Quadratic: -1.344E-08 keV/channel^2

Efficiency Calibration
Created: 11/30/2023 7:26:21 AM
Type: Polynomial
Uncertainty: 1.699 %
Coefficients: -0.225215 -3.983441 0.474906
-0.072106 0.003754 -0.000081

Library Files
Main analysis library: Pace Master w Ra226U235 (wo PS)
Library Match Width: 0.500
Peak stripping: Library based

Analysis parameters
Analysis engine: Env32 G701W047
Start channel: 120 (30.33keV)
Stop channel: 8144 (2038.53keV)
Peak rejection level: 30.000%
Peak search sensitivity: 3
Sample Size: 2.0000E+00
Activity scaling factor: 1.0000E+06/(1.0000E+00* 2.0000E+00) =
5.0000E+05
Detection limit method: Reg. Guide 4.16 Method

WTF 9-19-24

Random error: 0.0000000E+00
Systematic error: 0.0000000E+00
Fraction Limit: 0.000%
Background width: average of three points.

Half lives decay limit: 12.000

JM 9/18/24

ORTEC g v - i (3263) Env32 G701W047 9/18/2024 8:12:13 AM Page 2
Pace Spectrum name: 30716676001.An1

Activity range factor:	2.000
Min. step backg. energy	0.000
Multiplet shift channel	2.000

Corrections	Status	Comments
Decay correct to date:	YES	9/10/2024 8:50:00 AM
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	YES	Det_2_Bkg_091324Ra226U235(2LITER 9/16/2024 9:13:41 AM
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

WTF 9-19-24

JM 9/18/24

total peaks alloc. 0 cutoff: 0.00E+00 %
Energy Calibration
Normalized diff: 0.0573

***** S U M M A R Y O F P E A K S I N R A N G E *****

Peak Energy	Area	Uncert	FWHM	Corrctn Factor	Nuclide Energy	Brnch. Ratio	Act. pCi/L	Nuc
74.82	565.	7.93	0.97	1.580E-02	74.66	68.200	3.945E+02	Am243
					74.81	6.330	4.227E+03	Pb214
					74.81	10.400	2.593E+03	Pb212
77.17	911.	5.14	0.97	1.719E-02	77.11	17.500	2.290E+03	Pb212
					77.11	10.700	3.722E+03	Pb214
87.21	478.	8.56	0.98	2.294E-02	86.54	30.700	5.190E+02	Eu155
					87.20	3.700	4.225E+03	Pb214
					87.30	7.800	2.011E+03	Pb212
					88.03	3.610	4.284E+03	Cd109
90.03	201.	18.95	0.98	2.448E-02	89.95	3.560	1.732E+03	U235
					89.95	3.560	1.732E+03	U235
186.18	2081.	3.55	1.02	4.782E-02	186.10	3.500	9.255E+03	Ra226
209.47	217.	25.27	1.00	4.782E-02				
238.66	698.	6.07	1.13	4.680E-02	238.63	43.300	2.571E+02	Pb212
242.00	1708.	3.04	1.13	4.664E-02	241.00	3.900	7.081E+03	Ra224
					241.92	7.470	3.679E+03	Pb214
295.24	3875.	2.37	1.11	4.357E-02	295.22	19.200	3.475E+03	Pb214
					295.96	28.670	2.512E+03	Ir192
					295.96	28.670	2.512E+03	Ir192
338.29	362.	12.64	1.27	4.096E-02	338.32	11.300	5.873E+02	Ac228
351.98	6868.	1.40	1.17	4.017E-02	351.99	37.100	3.457E+03	Pb214
583.03	408.	11.51	1.18	3.038E-02	583.19	84.500	1.189E+02	Tl208
609.36	5876.	1.42	1.45	2.961E-02	609.31	44.800	3.320E+03	Bi214
727.55	136.	19.12	1.04	2.675E-02	727.33	6.580	5.784E+02	Bi212
768.42	531.	6.55	1.29	2.593E-02	768.36	4.800	3.203E+03	Bi214
786.10	164.	13.41	1.03	2.559E-02				
794.89	161.	21.64	0.95	2.543E-02	795.86	85.530	5.578E+01	Cs134

ORTEC g v - i (3263) Env32 G701W047 9/18/2024 8:12:13 AM Page 3
Pace Spectrum name: 30716676001.An1

pk energy	area	uncert	fwhm	corr	nuclide	brnch.	act.	nuc
806.36	176.	15.62	0.72	2.522E-02				

860.98	72.	25.80	1.16	2.431E-02	860.56	12.420	1.793E+02	Tl208
911.29	549.	7.21	1.46	2.353E-02	911.21	26.600	6.575E+02	Ac228
964.47	134.	23.79	1.77	2.279E-02	964.13	14.340	3.075E+02	Eu152
					964.13	14.340	3.075E+02	Eu152
969.22	320.	9.16	1.72	2.272E-02	968.97	16.200	6.510E+02	Ac228
1116.38	114.	18.41	1.90	2.098E-02	1115.55	50.600	8.220E+01	Zn65
					1115.55	50.600	8.220E+01	Zn65
1120.29	1468.	3.16	1.83	2.093E-02	1120.29	14.800	3.559E+03	Bi214
1238.13	626.	5.96	2.00	1.977E-02	1235.36	20.000	1.805E+03	Cs136
					1238.11	5.860	4.054E+03	Bi214
					1238.28	66.070	3.862E+02	Co56
1377.82	465.	7.49	1.71	1.858E-02	1377.67	3.920	4.790E+03	Bi214
1408.15	184.	16.30	2.12	1.835E-02	1408.01	20.870	3.612E+02	Eu152
					1408.01	20.870	3.612E+02	Eu152
1620.80	75.	22.76	0.80	1.687E-02	1620.50	1.490	2.259E+03	Bi212
1764.55	1306.	2.99	2.47	1.602E-02	1764.49	15.360	3.973E+03	Bi214

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Efficiency * Area	Uncert 2 Sigma %	FWHM keV	Suspected Nuclide	
358.34	89.99	622.	203.	8.309E+03	37.41	0.982	AC-228	D
835.50	209.47	725.	217.	4.531E+03	50.53	1.003	AC-228	s
3138.98	786.10	73.	164.	6.396E+03	26.81	1.028	PA-234M	sM
3174.09	794.89	159.	161.	6.344E+03	43.28	0.945	AC-228	sM
3219.92	806.36	116.	176.	6.978E+03	31.24	0.717	BI-214	sM

s - Peak fails shape tests.
D - Peak area deconvoluted.
L - Peak written from unknown list.
C - Area < Critical level.
M - Peak is close to a library peak.

This section based on library: Pace Master w Ra226U235 (wo PS)

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	FWHM keV	
Pb-212	297.66	74.81	889.	480.	0.266	19.83	0.966	D
Pb-212	306.85	77.11	653.	102.	0.057	16.23	0.969	D
Pb-214	306.85	77.11	651.	854.	0.474	10.86	0.969	D
Pb-214	347.15	87.20	655.	478.	0.266	17.69	0.979	D
Pb-212	347.09	87.19	806.	456.	0.253	19.95	0.979	

Nuclide	Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM	
Ra-226	742.47	186.18	935.	2063.	1.146	7.17	1.021	
Pb-212	951.98	238.63	558.	687.	0.382	12.37	1.128	D
Ra-224	961.38	240.98	473.	161.	0.090	41.29	1.130	
Pb-214	965.12	241.92	497.	1707.	0.948	6.09	1.131	D
Pb-214	1178.10	295.24	805.	3873.	2.152	4.74	1.113	
Ac-228	1350.05	338.29	401.	361.	0.201	25.37	1.269	
Pb-214	1404.73	351.98	527.	6862.	3.812	2.81	1.174	
Tl-208	2327.71	583.03	267.	403.	0.224	23.30	1.176	s
Bi-214	2432.87	609.36	202.	5867.	3.259	2.84	1.449	
Bi-212	2905.03	727.55	109.	135.	0.075	38.75	1.040	s

Bi-214	3068.32	768.42	136.	531.	0.295	13.11	1.292
Tl-208	3438.14	860.98	67.	72.	0.040	51.61	1.160s
Ac-228	3639.14	911.29	144.	547.	0.304	14.50	1.460
Eu-152	3851.61	964.47	150.	134.	0.074	47.57	1.774s
Ac-228	3870.61	969.22	110.	318.	0.177	18.46	1.720
Zn-65	4458.61	1116.38	53.	114.	0.063	36.83	1.896s
Bi-214	4474.20	1120.29	104.	1468.	0.816	6.31	1.827
Co-56	4945.69	1238.28	128.	401.	0.223	9.00	1.990D
Bi-214	5503.31	1377.82	96.	465.	0.258	15.01	1.714
Eu-152	5624.48	1408.15	110.	184.	0.102	32.59	2.116
Bi-212	6474.34	1620.80	28.	75.	0.042	45.51	0.801s
Bi-214	7048.65	1764.49	95.	1201.	0.667	6.22	2.361D

s - Peak fails shape tests.
D - Peak area deconvoluted.
A Derived peak area.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

- Nuclide - Name	Code	Average Activity pCi/L	Peak Energy keV	Peak Activity pCi/L	Code	MDA Value pCi/L	COMMENTS
Na-22	C	-7.1905E+00				9.50E+02	
			1274.53	-7.190E+00	%(	2.229E+01 1.63E+02	9.99E+01 G K
K-40	N	1.1549E+01				4.68E+11	
			1461.00	1.155E+01	%(P	2.252E+02 1.02E+03	1.07E+01 G K
Sc-46	F	2.8840E+00				8.38E+01	
			889.28	2.884E+00	%(P	1.973E+01 3.30E+02	1.00E+02 G K
Cr-51	F	1.7288E+01				2.77E+01	
			320.08	1.729E+01	&(	2.253E+02 5.57E+02	1.01E+01 G K
Co-56	C	2.4889E+02				7.73E+01	
			1238.28	2.475E+02	} P	3.428E+01 4.50E+00	6.61E+01 G K
			1771.35	0.000E+00	%(P	2.158E+02 1.00E+03	1.55E+01 G

Nuclide	Ave activity	Energy	Activity	Code	Peak MDA	Comments
Fe-59	F -5.8058E+00				4.45E+01	
		1099.25	-5.806E+00	%(	4.385E+01 3.86E+02	5.65E+01 G K
		1291.60	0.000E+00	% P	5.512E+01 1.00E+03	4.32E+01 G
Co-60	F 2.0946E+01				1.92E+03	
		1332.50	2.095E+01	%(P	1.434E+01 3.70E+01	1.00E+02 G K
		1173.24	6.364E+00	% P	1.657E+01 1.30E+02	1.00E+02 G
Zn-65	F 8.2196E+01				2.44E+02	
		1115.55	8.220E+01	?(P	2.659E+01 1.84E+01	5.06E+01 G K
SE-75	9.4018E+00				1.20E+02	
		264.66	9.402E+00	&(	3.535E+01 1.62E+02	5.86E+01 G K
		136.00	0.000E+00	% P	4.973E+01 1.00E+03	5.83E+01 G
		279.54	0.000E+00	% P	8.844E+01 1.00E+03	2.48E+01 G
		121.12	-4.336E+01	%	1.912E+02 1.83E+02	1.64E+01 G

Y-88	C	7.6522E+00					1.07E+02			
			1836.06	7.652E+00	&(	1.623E+01	1.17E+02	9.92E+01	G	K
			898.04	6.111E+00	& P	2.118E+01	1.68E+02	9.37E+01	G	
Nb-94	I	4.0472E+00					7.41E+06			
			871.09	4.047E+00	&(	1.879E+01	2.25E+02	9.99E+01	G	K
			702.62	1.215E+01	% P	2.018E+01	7.91E+01	9.79E+01	G	
Zr-95	I	2.3075E+01					6.40E+01			
			756.73	2.308E+01	%(	3.389E+01	7.01E+01	5.45E+01	G	K
			724.20	4.209E+00	& P	4.346E+01	4.84E+02	4.42E+01	G	
Nb-95	I	1.9663E+01					3.50E+01			
			765.81	1.966E+01	%(P	1.679E+01	4.15E+01	9.98E+01	G	K
Ag-108M	C	-7.6488E+00					1.53E+05			
			722.94	-7.649E+00	%(	2.216E+01	1.37E+02	9.08E+01	G	K
			614.28	8.378E+00	& P	1.676E+01	9.20E+01	8.98E+01	G	
			433.94	2.388E+00	& P	2.007E+01	3.72E+02	9.05E+01	G	
			79.13	1.735E+02	%	8.295E+02	1.93E+02	6.60E+00	G	
Ru-106	I	4.3695E+00					3.73E+02			
			621.93	4.369E+00	%(	1.584E+02	1.64E+03	9.93E+00	G	K
Ag-110M	F	2.1814E+00					2.50E+02			
			657.76	2.181E+00	%(P	1.836E+01	3.95E+02	9.40E+01	G	K
			1505.04	0.000E+00	% P	3.073E+02	1.00E+03	1.29E+01	G	
			1384.30	1.118E+02	% P	8.661E+01	4.20E+01	2.41E+01	G	
			937.49	0.000E+00	%	1.229E+02	1.00E+03	3.41E+01	G	
			884.68	-8.441E+00	&	2.828E+01	1.63E+02	7.22E+01	G	

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
		763.94	0.000E+00	& P	9.185E+01	1.00E+03	2.21E+01 G
		744.28	0.000E+00	% P	4.332E+02	1.00E+03	4.70E+00 G
		706.68	-6.279E+01	%	1.341E+02	1.02E+02	1.63E+01 G
Sb-124	F -2.4935E+00					6.02E+01	
		602.73	-2.493E+00	%(	2.088E+01	3.82E+02	9.78E+01 G K
		645.85	0.000E+00	% P	2.514E+02	1.00E+03	7.38E+00 G
		722.79	-9.493E+01	%	2.104E+02	1.06E+02	1.08E+01 G
		1690.98	5.323E+01	% P	2.735E+01	3.00E+01	4.73E+01 G
Sb-125	I 1.8199E+01					1.01E+03	
		427.88	1.820E+01	%(P	6.090E+01	1.49E+02	2.96E+01 G K
		176.31	1.104E+02	%	3.426E+02	1.29E+02	6.82E+00 G
		463.36	2.335E+02	%	1.664E+02	3.27E+01	1.05E+01 G
		600.60	0.000E+00	% P	1.151E+02	1.00E+03	1.79E+01 G
		635.95	2.545E+01	& P	1.425E+02	2.63E+02	1.13E+01 G
I-132	I -2.6880E+01					3.20E+00	
		772.60	-2.688E+01	%(	1.430E+02	2.51E+02	7.56E+01 G K
		522.65	2.220E+02	& P	5.361E+02	1.11E+02	1.60E+01 G
		630.19	-1.233E+02	%	7.610E+02	2.91E+02	1.33E+01 G
		954.55	3.646E+01	%	6.413E+02	8.73E+02	1.76E+01 G
Te-132	I 3.8565E+01					3.20E+00	
		228.16	3.856E+01	%(	1.323E+02	1.48E+02	8.80E+01 G K
I-133	I 1.8548E+03					8.67E-01	

			529.87	1.855E+03	%(P	1.115E+04	2.74E+02	8.70E+01	G K
			875.33	0.000E+00	& P	2.617E+05	1.00E+03	4.51E+00	G
Ba-133	F	-1.4259E+01						3.84E+03	
			356.02	-1.426E+01	%(	3.121E+01	9.81E+01	6.20E+01	G K
			81.00	0.000E+00	% P	1.617E+02	1.00E+03	3.41E+01	G
			302.85	8.453E-01	% P	1.005E+02	5.08E+03	1.83E+01	G
			276.40	1.173E+01	&	2.963E+02	1.08E+03	7.16E+00	G
			383.85	0.000E+00	% P	2.136E+02	1.00E+03	8.94E+00	G
Cs-136	F	-1.5104E+01						1.32E+01	
			818.51	-1.510E+01	%(	3.193E+01	1.04E+02	9.97E+01	G K
			176.60	1.002E+01	&	3.647E+02	1.50E+03	1.00E+01	G
			273.65	-8.514E+01	&	3.048E+02	1.54E+02	1.11E+01	G
			340.55	1.347E+01	%	6.145E+01	1.95E+02	4.22E+01	G
			1048.07	-1.564E+01	&	3.921E+01	1.26E+02	8.00E+01	G
			1235.36	-5.670E+01	%	1.859E+02	1.69E+02	2.00E+01	G
Cs-137	I	4.4270E-01						1.10E+04	
			661.66	4.427E-01	%(	1.963E+01	2.08E+03	9.01E+01	G K

Nuclide		Ave activity	Energy		Activity		Code	Peak	MDA	Comments
Ce-139	F	3.2420E+00							1.38E+02	
			165.85	3.242E+00	&(	3.208E+01		4.09E+02	7.99E+01	G K
Ba-140	I	5.5777E+01							1.28E+01	
			537.26	5.578E+01	%(P	1.050E+02		8.70E+01	2.44E+01	G K
			162.66	3.003E+02	% P	5.822E+02		8.08E+01	6.22E+00	G
La-140	I	8.4248E+00							1.28E+01	
			1596.21	8.425E+00	%(	3.497E+01		2.22E+02	9.54E+01	G K
			487.02	4.044E+01	% P	5.636E+01		6.48E+01	4.55E+01	G
			815.77	5.949E+00	&	1.163E+02		9.40E+02	2.33E+01	G
			328.76	8.964E+01	%	1.334E+02		6.46E+01	2.03E+01	G
Ce-141	I	1.1353E+01							3.25E+01	
			145.44	1.135E+01	&(	6.289E+01		2.29E+02	4.82E+01	G K
Ce-144	I	6.7933E+01							2.85E+02	
			133.51	6.793E+01	%(	2.490E+02		1.52E+02	1.11E+01	G K
Eu-154	I	1.3627E+01							3.14E+03	
			123.07	1.363E+01	&(P	7.062E+01		2.15E+02	4.06E+01	G K
			1274.44	-2.045E+01	%	6.340E+01		1.63E+02	3.50E+01	G
			1004.72	-3.521E+01	%	1.036E+02		1.47E+02	1.79E+01	G
			996.26	-6.386E+00	%	1.878E+02		1.46E+03	1.05E+01	G
			873.19	4.501E+00	& P	1.629E+02		1.75E+03	1.22E+01	G
			723.30	0.000E+00	% P	1.074E+02		1.00E+03	2.01E+01	GA
			247.93	0.000E+00	% P	2.987E+02		1.00E+03	6.91E+00	G
Eu-155	I	-7.2400E+00							1.74E+03	
			86.54	-7.240E+00	%(	1.449E+02		8.07E+02	3.07E+01	G K
			105.31	1.191E+02	%	1.481E+02		5.21E+01	2.12E+01	G
Hg-203	F	1.2041E+01							4.66E+01	
			279.20	1.204E+01	&(P	2.645E+01		9.49E+01	8.15E+01	G K
Tl-208	N	1.1894E+02							6.98E+02	

			583.19	1.189E+02	@(P	2.323E+01	1.16E+01	8.45E+01	G K
			860.56	1.793E+02	+ P	1.027E+02	2.58E+01	1.24E+01	G
			277.36	0.000E+00	% P	3.503E+02	1.00E+03	6.31E+00	G
Pb-210	N	4.3557E+03						8.14E+03	
			46.54	4.356E+03	&(	2.254E+04	2.04E+02	4.25E+00	G K
Bi-212	N	5.7840E+02						6.98E+02	
			727.33	5.784E+02	(P	2.212E+02	1.94E+01	6.58E+00	G K
			1620.50	2.259E+03	+ P	8.229E+02	2.28E+01	1.49E+00	G

Nuclide		Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Pb-212	N	2.5666E+02					6.98E+02	
			238.63	2.567E+02	(P	4.211E+01	6.18E+00	4.33E+01 G K
								Energy duplication
			77.11	2.567E+02	} P	3.066E+02	8.11E+00	1.75E+01 G
								Energy duplication
			74.81	2.207E+03	+ P	6.520E+02	9.91E+00	1.04E+01 G
			87.30	1.922E+03	+ P	5.693E+02	9.98E+00	7.80E+00 GA
Bi-214	N	3.3806E+03					5.84E+05	
			609.31	3.320E+03	(P	3.903E+01	1.42E+00	4.48E+01 G K
			1120.29	3.559E+03		1.220E+02	3.16E+00	1.48E+01 GA
			2204.21	0.000E+00	=	0.000E+00	0.00E+00	4.86E+00 G
			1764.49	3.664E+03	(P	1.472E+02	3.11E+00	1.54E+01 G
			1377.67	4.790E+03	+ P	4.993E+02	7.51E+00	3.92E+00 G
			1238.11	5.733E+02	} P	4.065E+02	3.89E+01	5.86E+00 G
			768.36	3.203E+03	(	3.442E+02	6.55E+00	4.80E+00 G
Pb-214	N	3.4885E+03					5.84E+05	
			351.99	3.457E+03	(P	5.527E+01	1.41E+00	3.71E+01 G K
			295.22	3.475E+03	(P	1.211E+02	2.37E+00	1.92E+01 G
			241.92	3.679E+03	(P	2.297E+02	3.05E+00	7.47E+00 G
			87.20	4.226E+03	+	1.078E+03	8.85E+00	3.70E+00 G
								Energy duplication
			77.11	3.488E+03	} P	4.971E+02	5.43E+00	1.07E+01 G
								Energy duplication
			74.81	2.767E+02	} P	9.617E+02	1.05E+02	6.33E+00 G
Ra-223	N	3.9297E+01					7.96E+03	
			269.46	3.930E+01	&(P	1.516E+02	1.66E+02	1.37E+01 G K
			83.78	8.875E+01	% P	1.926E+02	9.03E+01	2.49E+01 G
			323.87	-5.028E+01	&	5.037E+02	4.29E+02	3.93E+00 G
			154.21	1.988E+02	%	4.722E+02	9.89E+01	5.62E+00 G
			94.90	-4.915E+00	%	3.257E+02	2.67E+03	1.13E+01 G
			81.07	0.000E+00	% P	3.531E+02	1.00E+03	1.50E+01 G
Ra-224	N	6.7065E+02					6.98E+02	
			241.00	6.707E+02	(P	4.323E+02	2.06E+01	3.90E+00 G K
Ra-226	N	9.2552E+03					5.84E+05	
			186.10	9.255E+03	(P	6.513E+02	3.58E+00	3.50E+00 G K
Ac-227	N	6.7953E+00					7.95E+03	
			235.97	6.795E+00	&(P	1.739E+02	1.10E+03	1.23E+01 G K
			256.25	0.000E+00	% P	3.011E+02	1.00E+03	7.00E+00 G
			300.00	4.931E+02	%	7.819E+02	6.88E+01	2.30E+00 G
			329.85	-4.664E+02	%	7.585E+02	7.06E+01	2.70E+00 G

Ac-228	N	6.4089E+02						2.10E+03	
			911.21	6.575E+02	(P	7.057E+01	7.25E+00	2.66E+01	G K
			968.97	6.510E+02	(P	1.053E+02	9.23E+00	1.62E+01	G
			338.32	5.873E+02	(P	1.561E+02	1.27E+01	1.13E+01	G

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Th-228	N 9.5545E+02					6.98E+02	
		84.37	9.555E+02	&(P	3.759E+03	1.59E+02	1.27E+00 G K
		215.99	-4.024E+01	%	8.629E+03	9.22E+03	2.63E-01 GA
		166.41	1.000E+04	&	2.251E+04	9.37E+01	1.08E-01 GA
		131.61	-5.425E+02	&	2.055E+04	1.56E+03	1.35E-01 GA
Th-230	N -1.0015E+04					2.75E+07	
		67.67	-1.002E+04	%(	2.271E+04	9.01E+01	3.80E-01 G K
Pa-231	N -1.1304E+02					1.20E+07	
		283.70	-1.130E+02	%(	1.259E+03	4.78E+02	1.60E+00 G K
		330.00	-9.682E+02	%	1.575E+03	7.06E+01	1.30E+00 G
Pa-234M	N -1.3402E+03					1.63E+12	Energy duplication
		1001.03	-1.340E+03	%(	2.511E+03	9.45E+01	8.37E-01 G
Th-232	N -8.0662E+03					4.17E+12	
		63.81	-8.066E+03	%(	3.855E+04	1.89E+02	2.67E-01 G K
Am-241	T 3.6291E+01					1.58E+05	
		59.54	3.629E+01	%(P	3.525E+02	3.82E+02	3.63E+01 G K
Pm-144	C 2.0902E+00					3.63E+02	
		696.51	2.090E+00	%(P	1.744E+01	3.92E+02	9.90E+01 G K
		618.01	-2.588E+00	&	1.752E+01	3.08E+02	9.86E+01 G
Pm-146	C 8.8064E+00					2.02E+03	
		453.88	8.806E+00	&(P	2.845E+01	1.44E+02	6.52E+01 G K
		747.16	-2.647E+01	%	5.591E+01	1.00E+02	3.40E+01 G
		735.72	0.000E+00	% P	8.579E+01	1.00E+03	2.25E+01 GA

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide failed one or more qualification tests.
\+ - Peak activity higher than counting uncertainty range.
\- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction

} - Peak is too close to another for the activity
to be found directly.

Nuclide Codes:
T - Thermal Neutron Activation
F - Fast Neutron Activation
I - Fission Product
N - Naturally Occurring Isotope
P - Photon Reaction
C - Charged Particle Reaction
M - No MDA Calculation
R - Coincidence Corrected
H - Halflife limit exceeded

Peak Codes:
G - Gamma Ray
X - X-Ray
P - Positron Decay
S - Single-Escape
D - Double-Escape
K - Key Line
A - Not in Average
C - Coincidence Peak

- -

********** D I S C A R D E D I S O T O P E P E A K S **********

Nuclide	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	Activity	
Eu-152	964.47	150.	134.	0.074	47.57	3.075E+02	P
Zn-65	1116.38	53.	114.	0.063	36.83	8.220E+01	P
Eu-152	1408.15	110.	184.	0.102	32.59	3.612E+02	

P - Peakbackground subtraction

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide		Time of Count Activity pCi/L	Time Corrected Activity pCi/L	Uncertainty Counting pCi/L	2 Sigma Total pCi/L	MDA pCi/L
Be-7	#B	0.0000E+00	0.0000E+00	5.4114E+01	5.4114E+01	2.081E+02
Na-22	#B	-7.1489E+00	-7.1905E+00	2.3479E+01	2.3482E+01	2.229E+01
K-40	#B	1.1549E+01	1.1549E+01	2.3529E+02	2.3529E+02	2.252E+02
Sc-46	#B	2.7004E+00	2.8840E+00	1.9056E+01	1.9057E+01	1.973E+01
Cr-51	#B	1.4169E+01	1.7288E+01	1.9266E+02	1.9267E+02	2.253E+02
Mn-54	#B	0.0000E+00	0.0000E+00	3.9095E+00	3.9095E+00	2.225E+01
Co-56		2.3175E+02	2.4889E+02	2.7512E+01	3.1569E+01	2.158E+02
Co-57	#B	0.0000E+00	0.0000E+00	1.7033E+01	1.7033E+01	3.579E+01
Co-58	#B	0.0000E+00	0.0000E+00	6.5552E+00	6.5553E+00	2.447E+01
Fe-59	#B	-5.1296E+00	-5.8058E+00	4.4869E+01	4.4870E+01	4.385E+01
Co-60	F	2.0886E+01	2.0946E+01	1.5497E+01	1.5540E+01	1.434E+01
Zn-65	#	8.0359E+01	8.2196E+01	3.0272E+01	3.0615E+01	2.659E+01
SE-75	#B	8.9812E+00	9.4018E+00	3.0451E+01	3.0456E+01	3.535E+01
Kr-85	#B	0.0000E+00	0.0000E+00	7.2623E+02	7.2623E+02	5.992E+03
Y-88	#B	7.2668E+00	7.6522E+00	1.7891E+01	1.7898E+01	1.623E+01
Nb-94	#B	4.0472E+00	4.0472E+00	1.8201E+01	1.8202E+01	1.879E+01
Zr-95	#B	2.1172E+01	2.3075E+01	3.2369E+01	3.2394E+01	3.389E+01
Nb-95	#F	1.6797E+01	1.9663E+01	1.6312E+01	1.6349E+01	1.679E+01
Ru-103	#B	0.0000E+00	0.0000E+00	4.1131E+00	4.1131E+00	2.178E+01
Ag-108M	#B	-7.6486E+00	-7.6488E+00	2.1033E+01	2.1037E+01	2.216E+01
Ru-106	#B	4.3053E+00	4.3695E+00	1.4290E+02	1.4290E+02	1.584E+02
Cd-109	#B	0.0000E+00	0.0000E+00	8.5445E+02	8.5446E+02	7.294E+01

Ag-110M	#B	2.1338E+00	2.1814E+00	1.7226E+01	1.7227E+01	1.836E+01
Sn-113	#B	0.0000E+00	0.0000E+00	1.3336E+01	1.3336E+01	3.522E+01
Sb-124	#B	-2.2754E+00	-2.4935E+00	1.9054E+01	1.9054E+01	2.088E+01

Sb-125 #B	1.8100E+01	1.8199E+01	5.4173E+01	5.4182E+01	6.090E+01
Te-129 #B	0.0000E+00	0.0000E+00	1.0849E+02	1.0849E+02	2.999E+02
Te-129M#B	0.0000E+00	0.0000E+00	1.1772E+02	1.1772E+02	7.634E+02
I-131 #B	0.0000E+00	0.0000E+00	9.4418E+00	9.4419E+00	4.620E+01
I-132 #B	-4.8030E+00	-2.6880E+01	1.3472E+02	1.3473E+02	1.430E+02
Te-132 #B	6.8908E+00	3.8565E+01	1.1417E+02	1.1419E+02	1.323E+02
I-133 #B	3.2118E+00	1.8548E+03	1.0174E+04	1.0175E+04	1.115E+04
Ba-133 #B	-1.4238E+01	-1.4259E+01	2.7977E+01	2.7981E+01	3.121E+01
Cs-134 #B	0.0000E+00	0.0000E+00	1.4740E+01	1.4740E+01	2.249E+01
Cs-136 #B	-9.9363E+00	-1.5104E+01	3.1331E+01	3.1343E+01	3.193E+01
Cs-137 #B	4.4247E-01	4.4270E-01	1.8386E+01	1.8386E+01	1.963E+01
Ce-139 #B	3.1148E+00	3.2420E+00	2.6534E+01	2.6535E+01	3.208E+01
Ba-140 #B	3.6203E+01	5.5777E+01	9.7014E+01	9.7062E+01	1.050E+02
La-140 #B	5.4683E+00	8.4248E+00	3.7389E+01	3.7392E+01	3.497E+01
Ce-141 #B	9.5821E+00	1.1353E+01	5.2080E+01	5.2084E+01	6.289E+01
Ce-144 #B	6.6632E+01	6.7933E+01	2.0657E+02	2.0661E+02	2.490E+02
ND-147 #B	0.0000E+00	0.0000E+00	3.8734E+01	3.8734E+01	2.275E+02
Eu-152 #B	0.0000E+00	0.0000E+00	5.0483E+01	5.0483E+01	1.045E+02
Eu-154 #B	1.3603E+01	1.3627E+01	5.8479E+01	5.8485E+01	7.062E+01
Eu-155 #B	-7.2171E+00	-7.2400E+00	1.1679E+02	1.1679E+02	1.449E+02
Lu-176 #B	0.0000E+00	0.0000E+00	1.1785E+01	1.1785E+01	1.956E+01
Ir-192 #B	0.0000E+00	0.0000E+00	9.8918E+00	9.8918E+00	2.451E+01
Hg-203 #B	1.0698E+01	1.2041E+01	2.2857E+01	2.2868E+01	2.645E+01
Tl-208	1.1800E+02	1.1894E+02	2.7709E+01	2.8467E+01	2.323E+01
Pb-210 #B	4.3527E+03	4.3557E+03	1.7755E+04	1.7759E+04	2.254E+04
Bi-212	5.7384E+02	5.7840E+02	2.2412E+02	2.2643E+02	2.212E+02
Pb-212	2.5464E+02	2.5666E+02	3.1737E+01	3.5205E+01	4.211E+01
Bi-214	3.3806E+03	3.3806E+03	9.6096E+01	2.0938E+02	3.903E+01
Pb-214	3.4884E+03	3.4885E+03	9.5540E+01	2.2010E+02	5.527E+01
Ra-223 #B	3.9270E+01	3.9297E+01	1.3063E+02	1.3065E+02	1.516E+02
Ra-224	6.6538E+02	6.7065E+02	2.7694E+02	2.7979E+02	4.323E+02
Ra-226	9.2551E+03	9.2552E+03	6.6326E+02	8.5208E+02	6.513E+02
Ac-227 #B	6.7906E+00	6.7953E+00	1.4945E+02	1.4945E+02	1.739E+02
Ac-228	6.3921E+02	6.4089E+02	7.3842E+01	8.2172E+01	7.057E+01
Th-228 #B	9.4794E+02	9.5545E+02	3.0428E+03	3.0439E+03	3.759E+03
Th-230 #B	-1.0015E+04	-1.0015E+04	1.8052E+04	1.8147E+04	2.271E+04
Pa-231 #B	-1.1304E+02	-1.1304E+02	1.0801E+03	1.0801E+03	1.259E+03
Pa-234M#A	-1.3402E+03	-1.3402E+03	2.5326E+03	2.5337E+03	2.511E+03
Th-232 #B	-8.0662E+03	-8.0662E+03	3.0455E+04	3.0506E+04	3.855E+04
Th-234 #B	0.0000E+00	0.0000E+00	9.8454E+02	9.8460E+02	2.239E+03
U-235 #B	0.0000E+00	0.0000E+00	9.0538E+01	9.0538E+01	2.452E+02
U-238 #B	0.0000E+00	0.0000E+00	3.7761E+02	3.7761E+02	7.210E+02
Am-241 #B	3.6289E+01	3.6291E+01	2.7722E+02	2.7737E+02	3.525E+02
Am-243 #B	0.0000E+00	0.0000E+00	9.5045E+01	9.5045E+01	1.585E+02
Pm-144 #B	2.0587E+00	2.0902E+00	1.6374E+01	1.6375E+01	1.744E+01
Pm-146 B	8.7824E+00	8.8064E+00	2.5339E+01	2.5343E+01	2.845E+01

- All peaks for activity calculation had bad shape.
* - Activity omitted from total
& - Activity omitted from total and all peaks had bad shape.
< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

S U M M A R Y

Total Activity (30.3 to 2038.5 keV) 1.771E+04 pCi/L

Total Decayed Activity (30.3 to 2038.5 keV) 1.7719143E+04 pCi/L

The library has energies which are not separable.

Analyzed by: _____
Operator

Reviewed by: _____
Supervisor

Laboratory: Pace

ORTEC g v - i (3263) Env32 G701W047 9/18/2024 8:44:36 AM Page 1
Pace Spectrum name: 30717053001.An1

Sample description
81318

Spectrum Filename: C:\User\Spectra\30717053001.An1

Acquisition information
Start time: 9/18/2024 8:10:43 AM
Live time: 1800
Real time: 1883
Dead time: 4.40 %
Detector ID: 2

Detector system
DET 2

Calibration
Filename: DET_2_2L MAR_23-047(113023).Clb
DET 2 2L MARINELLI

Energy Calibration
Created: 11/30/2023 7:00:31 AM
Zero offset: 0.281 keV
Gain: 0.250 keV/channel
Quadratic: -1.344E-08 keV/channel^2

Efficiency Calibration
Created: 11/30/2023 7:26:21 AM
Type: Polynomial
Uncertainty: 1.699 %
Coefficients: -0.225215 -3.983441 0.474906
-0.072106 0.003754 -0.000081

Library Files
Main analysis library: Pace Master w Ra226U235 (wo PS)
Library Match Width: 0.500
Peak stripping: Library based

Analysis parameters
Analysis engine: Env32 G701W047
Start channel: 120 (30.33keV)
Stop channel: 8144 (2038.53keV)
Peak rejection level: 30.000%
Peak search sensitivity: 3
Sample Size: 2.0000E+00
Activity scaling factor: 1.0000E+06/(1.0000E+00* 2.0000E+00) =
5.0000E+05
Detection limit method: Reg. Guide 4.16 Method

Random error: 0.0000000E+00
Systematic error: 0.0000000E+00
Fraction Limit: 0.000%
Background width: average of three points.

Half lives decay limit: 12.000

WTF 9-19-24

JM 9/18/24

ORTEC g v - i (3263) Env32 G701W047 9/18/2024 8:44:36 AM Page 2
Pace Spectrum name: 30717053001.An1

Activity range factor:	2.000
Min. step backg. energy	0.000
Multiplet shift channel	2.000

Corrections	Status	Comments
Decay correct to date:	YES	9/11/2024 8:15:00 AM
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	YES	Det_2_Bkg_091324Ra226U235(2LITER 9/16/2024 9:13:41 AM
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

total peaks alloc. 0 cutoff: 0.00E+00 %
Energy Calibration
Normalized diff: 0.0852

WTF 9-19-24

9/18/24

***** S U M M A R Y O F P E A K S I N R A N G E *****

Peak Energy	Area	Uncert	FWHM	Corrctn Factor	Nuclide Energy	Brnch. Ratio	Act. pCi/L	Nuc
74.84	3868.	3.21	0.97	1.583E-02	74.66	68.200	2.707E+03	Am243
					74.81	10.400	1.778E+04	Pb212
					74.81	6.330	2.901E+04	Pb214
77.14	7368.	1.84	0.97	1.720E-02	77.11	10.700	3.011E+04	Pb214
					77.11	17.500	1.853E+04	Pb212
84.10	705.	15.43	0.98	2.120E-02	83.78	24.900	1.010E+03	Ra223
					84.37	1.266	1.958E+04	Th228
87.21	3536.	3.39	0.98	2.294E-02	86.54	30.700	3.839E+03	Eu155
					87.20	3.700	3.126E+04	Pb214
					87.30	7.800	1.489E+04	Pb212
					88.03	3.610	3.173E+04	Cd109
90.00	2088.	5.56	0.98	2.446E-02	89.95	3.560	1.800E+04	U235
					89.95	3.560	1.800E+04	U235
93.62	1556.	10.39	0.92	2.639E-02	92.59	5.600	7.984E+03	U238
					92.60	2.800	1.596E+04	Th234
105.45	756.	21.00	1.21	3.208E-02	105.31	21.200	8.391E+02	Eu155
129.05	1426.	12.43	0.99	4.049E-02				
186.18	13051.	1.87	1.05	4.782E-02	186.10	3.500	5.846E+04	Ra226
209.25	2700.	7.28	1.01	4.782E-02				
238.68	34264.	0.62	1.13	4.680E-02	238.63	43.300	1.278E+04	Pb212
241.91	11901.	1.35	1.13	4.664E-02	241.00	3.900	4.940E+04	Ra224
					241.92	7.470	2.564E+04	Pb214
258.74	774.	16.55	0.90	4.575E-02				
270.34	2205.	7.02	1.11	4.508E-02	269.46	13.700	2.677E+03	Ra223
274.51	541.	18.34	1.16	4.483E-02	273.65	11.100	1.178E+03	Cs136
					273.65	11.100	1.178E+03	Cs136
277.44	1409.	7.24	1.16	4.465E-02	277.36	6.310	3.778E+03	Tl208

ORTEC g v - i (3263) Env32 G701W047 9/18/2024 8:44:36 AM Page 3
Pace Spectrum name: 30717053001.An1

pk energy	area	uncert	fwhm	corr	nuclide	brnch.	act.	nuc
					279.54	24.790	9.963E+02	SE75

					276.40	7.164	3.307E+03	Ba133
295.28	25933.	0.93	1.17	4.357E-02	295.22	19.200	2.327E+04	Pb214
					295.96	28.670	1.666E+04	Ir192
					295.96	28.670	1.666E+04	Ir192
300.15	2545.	5.27	1.18	4.327E-02	300.00	2.300	1.921E+04	Ac227
					300.00	2.300	1.921E+04	Ac227
328.05	1900.	8.31	1.16	4.157E-02	329.85	2.700	1.275E+04	Ac227
					330.00	1.300	2.647E+04	Pa231
					328.76	20.300	2.476E+03	La140
338.37	7042.	2.24	1.23	4.096E-02	338.32	11.300	1.145E+04	Ac228
351.99	46503.	0.58	1.19	4.017E-02	351.99	37.100	2.342E+04	Pb214
409.55	1049.	9.74	1.30	3.710E-02				
462.89	2764.	4.47	1.35	3.466E-02	463.36	10.500	5.732E+03	Sb125
					463.36	10.500	5.732E+03	Sb125
480.47	440.	24.02	0.92	3.394E-02				
487.07	520.	21.50	1.36	3.368E-02	487.02	45.500	3.726E+02	La140
					487.39	1.420	9.433E+03	Te129
					487.39	1.420	9.433E+03	Te129
					487.02	45.500	3.726E+02	La140
487.11	594.	18.54	1.36	3.366E-02	487.02	45.500	PBC<MDA	La140
					487.39	1.420	1.078E+04	Te129
510.81	5928.	3.84	1.59	3.277E-02				
513.69	908.	9.23	1.39	3.266E-02	514.01	0.430	4.861E+04	Kr85
					514.01	0.430	4.861E+04	Kr85
533.90	207.	27.98	0.39	3.195E-02				
562.62	478.	20.41	1.22	3.101E-02				
583.22	14957.	1.25	1.47	3.037E-02	583.19	84.500	4.405E+03	Tl208
604.87	226.	27.29	1.47	2.974E-02	604.72	97.620	5.876E+01	Cs134
609.39	39748.	0.59	1.46	2.961E-02	609.31	44.800	2.249E+04	Bi214
665.50	1260.	7.12	1.48	2.815E-02				
703.16	464.	19.04	1.61	2.728E-02	702.62	97.900	1.295E+02	Nb94
					702.62	97.900	1.295E+02	Nb94
719.71	453.	18.08	1.47	2.691E-02	722.94	90.800	1.394E+02	Ag108M
724.18	533.	14.40	1.57	2.682E-02	724.20	44.170	3.646E+02	Zr95
					722.94	90.800	1.642E+02	Ag108M
					722.79	10.760	1.502E+03	Sb124
					723.30	20.110	7.429E+02	Eu154
727.35	3622.	3.01	1.51	2.675E-02	727.33	6.580	1.555E+04	Bi212
755.27	363.	25.04	1.26	2.618E-02	756.73	54.460	2.064E+02	Zr95
768.52	3623.	2.21	1.61	2.592E-02	768.36	4.800	2.186E+04	Bi214
772.77	633.	8.98	1.61	2.584E-02	772.60	75.600	1.107E+03	I132
786.11	1346.	6.85	1.56	2.559E-02				
795.09	1926.	4.53	1.53	2.543E-02	795.86	85.530	6.692E+02	Cs134
806.22	1101.	6.96	1.70	2.523E-02				
835.83	591.	10.73	1.54	2.471E-02	834.85	99.976	1.821E+02	Mn54
860.69	2002.	3.16	1.69	2.430E-02	860.56	12.420	5.010E+03	Tl208
904.05	332.	24.15	0.48	2.364E-02				

pk energy	area	uncert	fwhm	corr	nuclide	brnch.	act.	nuc
911.28	11184.	1.35	1.65	2.353E-02	911.21	26.600	1.344E+04	Ac228
934.10	2270.	4.46	1.73	2.320E-02				
936.96	534.	11.80	1.75	2.315E-02	937.49	34.130	5.176E+02	Ag110M
					937.49	34.130	5.176E+02	Ag110M
964.87	2282.	2.97	1.77	2.278E-02	964.13	14.340	5.247E+03	Eu152
					964.13	14.340	5.247E+03	Eu152
969.18	6344.	1.45	1.78	2.272E-02	968.97	16.200	1.296E+04	Ac228
1117.57	335.	24.46	1.90	2.098E-02	1115.55	50.600	2.417E+02	Zn65
					1115.55	50.600	2.417E+02	Zn65
1120.41	10370.	1.33	1.88	2.093E-02	1120.29	14.800	2.513E+04	Bi214

1155.41	1186.	7.02	1.88	2.056E-02				
1208.04	394.	19.26	1.29	2.005E-02				
1238.25	3780.	2.38	1.97	1.976E-02	1238.11	5.860	2.450E+04	Bi214
					1238.28	66.070	2.314E+03	Co56
1281.09	979.	7.60	1.98	1.938E-02				
1377.69	3044.	3.05	1.93	1.858E-02	1377.67	3.920	3.137E+04	Bi214
1385.47	458.	15.98	2.10	1.853E-02	1384.30	24.120	7.846E+02	Ag110M
					1384.30	24.120	7.846E+02	Ag110M
1402.00	785.	5.64	2.11	1.839E-02				
1408.23	1256.	3.98	2.12	1.835E-02	1408.01	20.870	2.466E+03	Eu152
					1408.01	20.870	2.466E+03	Eu152
1509.86	1432.	7.18	2.38	1.761E-02				
1544.00	235.	22.66	0.87	1.737E-02				
1588.44	874.	8.26	1.91	1.708E-02				
1621.09	709.	12.96	2.02	1.687E-02	1620.50	1.490	2.129E+04	Bi212
1630.81	565.	9.63	1.89	1.681E-02				
1729.77	2251.	3.05	2.29	1.621E-02				
1764.61	9168.	1.32	2.33	1.602E-02	1764.49	15.360	2.797E+04	Bi214
1847.47	1418.	4.42	2.16	1.556E-02				
1873.30	267.	16.27	0.90	1.542E-02				

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Centroid Channel	Energy	Background Counts	Net Area Counts	Efficiency * Area	Uncert 2 Sigma %	FWHM keV	Suspected Nuclide	
358.14	89.97	5684.	2105.	8.604E+04	11.03	0.982	AC-228	D
514.43	129.05	7568.	1293.	3.194E+04	19.82	1.020	AC-228	D
834.64	209.25	8979.	2700.	5.646E+04	14.56	1.011	AC-228	
1032.30	258.74	4462.	774.	1.691E+04	33.10	0.901	PB-214	M
1078.64	270.34	5439.	2205.	4.892E+04	14.04	1.112	AC-228	sM
1095.79	274.56	4626.	563.	1.257E+04	35.18	1.162	PB-214	D
1197.70	300.15	4029.	2545.	5.882E+04	10.54	1.177	PB-212	sM
1309.17	328.05	4932.	1900.	4.571E+04	16.61	1.162	BI-212	M
1634.70	409.55	2557.	1049.	2.827E+04	19.47	1.297	AC-228	
1847.77	462.89	2588.	2764.	7.973E+04	8.94	1.346	CS-138	s
1917.99	480.47	2390.	440.	1.298E+04	48.05	0.918	PB-214	s

Channel	Energy	Background	Net area	Eff*Area	Uncert	FWHM	Suspected	
2039.21	510.81	4836.	5928.	1.809E+05	7.68	1.587	TL-208	s
2131.42	533.90	1109.	207.	6.473E+03	55.96	0.395	PB-214	s
2246.18	562.62	2009.	478.	1.542E+04	40.82	1.222	AS-76	
2657.15	665.50	1456.	1260.	4.477E+04	14.24	1.484	BI-214	sM
2807.61	703.16	1573.	464.	1.701E+04	38.08	1.611	NB-94	sM
2873.73	719.71	1338.	453.	1.682E+04	36.16	1.475	SB-126	M
3015.78	755.27	1580.	363.	1.386E+04	50.08	1.257	ZR-95	M
3139.02	786.11	1383.	1346.	5.258E+04	13.70	1.564	PA-234M	
3219.74	806.22	955.	1028.	4.076E+04	10.54	1.643	BI-214	D
3337.63	835.83	936.	591.	2.391E+04	21.46	1.542	AC-228	M
3610.21	904.05	1179.	332.	1.404E+04	48.31	0.477	EU-154	sM
3730.29	934.10	1226.	2270.	9.786E+04	8.91	1.731	BI-214	
3853.79	964.82	1164.	2277.	9.994E+04	5.96	1.775	AC-228	D
4614.56	1155.41	886.	1186.	5.770E+04	14.04	1.883	BI-214	s
4824.83	1208.04	788.	394.	1.968E+04	38.53	1.288	-	s
5116.75	1281.09	720.	979.	5.051E+04	15.20	1.982	BI-214	s
5599.94	1401.79	587.	785.	4.269E+04	11.27	2.112	BI-214	D
5624.82	1408.01	623.	1256.	6.847E+04	7.96	2.117	EU-152	D
6030.96	1509.86	1034.	1432.	8.133E+04	14.36	2.380	PA-234M	s
6167.40	1544.00	520.	235.	1.353E+04	45.31	0.870	-	s

6345.01	1588.44	765.	874.	5.115E+04	16.52	1.907 AC-228	
6514.36	1630.81	411.	565.	3.362E+04	19.26	1.890 AC-228	
6909.86	1729.77	345.	2251.	1.388E+05	6.11	2.293 BI-214	
7380.31	1847.47	301.	1418.	9.115E+04	8.83	2.164 BI-214	s
7483.53	1873.30	222.	267.	1.733E+04	32.55	0.904 -	s

s - Peak fails shape tests.
D - Peak area deconvoluted.
L - Peak written from unknown list.
C - Area < Critical level.
M - Peak is close to a library peak.

This section based on library: Pace Master w Ra226U235 (wo PS)

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	FWHM keV
Pb-212	297.66	74.81	7145.	599.	0.333	45.60	0.966D
Pb-214	297.66	74.81	6307.	3100.	1.722	6.02	0.966D
Pb-214	306.85	77.11	5503.	5714.	3.174	10.57	0.969D
Pb-212	306.85	77.11	5505.	5079.	2.821	10.58	0.969D
Th-228	335.86	84.37	5615.	667.	0.370	32.72	0.976D
Eu-155	344.53	86.54	8723.	597.	0.332	44.97	0.978D
Pb-212	347.55	87.30	6141.	3026.	1.681	7.13	0.979D
U-235	357.95	89.91	8370.	1501.	0.834	24.41	0.982
U-238	372.79	93.62	6704.	1556.	0.864	20.78	0.924

Nuclide	Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM
Eu-155	420.03	105.45	6992.	756.	0.420	41.99	1.212s
Ra-226	742.47	186.18	10821.	13033.	7.241	3.76	1.046
Pb-212	951.98	238.63	5633.	34245.	19.025	1.25	1.128D
Ra-224	961.44	241.00	23433.	2860.	1.589	15.60	1.130D
Pb-214	965.12	241.92	8163.	10754.	5.975	3.06	1.131D
Tl-208	1106.67	277.36	4560.	1409.	0.783	14.57	1.165D
Pb-214	1178.24	295.28	6383.	25930.	14.406	1.85	1.166
Ac-227	1197.67	300.14	4497.	2522.	1.401	11.56	1.186s
Ac-228	1350.35	338.37	4285.	7042.	3.912	4.48	1.232
Pb-214	1404.78	351.99	5157.	46496.	25.831	1.16	1.193
Sb-125	1848.29	463.02	2768.	2352.	1.307	10.35	1.340s
La-140	1944.35	487.07	2477.	520.	0.289	43.00	1.361s
Te-129	1944.53	487.11	2389.	594.	0.330	37.09	1.362s
Kr-85	2050.69	513.69	1270.	908.	0.505	18.46	1.386s
Tl-208	2328.45	583.22	3135.	14953.	8.307	2.49	1.466
Cs-134	2414.35	604.72	1786.	226.	0.125	54.59	1.468D
Bi-214	2432.69	609.31	2389.	38828.	21.571	1.08	1.472D
Nb-94	2806.92	702.99	1845.	400.	0.222	49.78	1.554s
Zr-95	2891.58	724.18	1038.	533.	0.296	28.80	1.573
Bi-212	2904.26	727.35	1601.	3621.	2.011	6.02	1.509
Bi-214	3068.07	768.36	1337.	3623.	2.013	4.38	1.611D
I-132	3085.03	772.60	1232.	635.	0.353	17.52	1.614D
Cs-134	3175.28	795.19	1214.	1597.	0.887	10.37	1.447
Tl-208	3436.47	860.56	961.	2001.	1.112	6.26	1.689D
Ac-228	3639.09	911.28	1694.	11182.	6.212	2.70	1.647
Ag-110M	3741.72	936.96	590.	534.	0.297	23.60	1.753s
Eu-152	3853.39	964.91	1697.	1991.	1.106	10.95	1.774
Ac-228	3869.60	968.97	1198.	6341.	3.523	2.95	1.779D

Zn-65	4463.35	1117.57	1035.	335.	0.186	48.92	1.896s
Bi-214	4474.71	1120.41	1093.	10370.	5.761	2.65	1.883
Bi-214	4945.00	1238.11	982.	3405.	1.892	3.19	1.990D
Co-56	4945.69	1238.28	715.	3062.	1.701	5.62	1.970D
Bi-214	5502.76	1377.69	778.	3043.	1.691	6.10	1.928s
Ag-110M	5533.86	1385.47	754.	458.	0.255	31.96	2.099s
Eu-152	5623.95	1408.01	627.	1373.	0.763	10.75	2.116D
Bi-212	6475.52	1621.09	787.	708.	0.393	25.95	2.016
Bi-214	7049.12	1764.61	591.	9164.	5.091	2.65	2.327s

s - Peak fails shape tests.
D - Peak area deconvoluted.
A Derived peak area.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

Nuclide Name	Code	Average Activity pCi/L	Peak Energy keV	Peak Activity pCi/L	Code	MDA Value pCi/L		COMMENTS
Be-7	C	3.5102E+02				5.34E+01		
			477.56	3.510E+02	%(P	5.313E+02	6.86E+01	1.03E+01 G K
Na-22	C	-6.4087E+00				9.50E+02		
			1274.53	-6.409E+00	%(	5.525E+01	4.63E+02	9.99E+01 G K
K-40	N	7.0656E+02				4.68E+11		
			1461.00	7.066E+02	%(P	5.430E+02	4.28E+01	1.07E+01 G K
Sc-46	F	8.5306E+00				8.38E+01		
			889.28	8.531E+00	&(P	5.725E+01	3.33E+02	1.00E+02 G K
Cr-51	F	-6.7521E+01				2.77E+01		
			320.08	-6.752E+01	&(	6.655E+02	4.28E+02	1.01E+01 G K
Co-56	C	1.8745E+03				7.73E+01		
			1238.28	1.875E+03	} P	7.796E+01	2.81E+00	6.61E+01 G K
			1771.35	0.000E+00	%(P	5.979E+02	1.00E+03	1.55E+01 G
Co-60	F	5.0460E+00				1.92E+03		
			1332.50	5.046E+00	&(P	5.196E+01	5.52E+02	1.00E+02 G K
			1173.24	0.000E+00	% P	5.504E+01	1.00E+03	1.00E+02 G
Zn-65	F	2.4165E+02				2.44E+02		
			1115.55	2.417E+02	&(P	1.101E+02	2.45E+01	5.06E+01 G K
SE-75		7.3187E+01				1.20E+02		
			264.66	7.319E+01	&(	1.034E+02	6.17E+01	5.86E+01 G K
			136.00	0.000E+00	% P	1.511E+02	1.00E+03	5.83E+01 G
			279.54	0.000E+00	% P	3.042E+02	1.00E+03	2.48E+01 G
			121.12	4.417E+01	&	5.611E+02	5.31E+02	1.64E+01 G
Kr-85	I	4.8610E+04				3.93E+03		
			514.01	4.861E+04	?(P	9.034E+03	9.23E+00	4.30E-01 G K
Y-88	C	1.8759E+01				1.07E+02		
			1836.06	1.876E+01	%(	5.658E+01	1.74E+02	9.92E+01 G K

			898.04	0.000E+00	%	P	6.107E+01	1.00E+03	9.37E+01 G
Nb-94	I	5.0327E+01						7.41E+06	
			871.09	-1.058E+01	&(		5.450E+01	2.56E+02	9.99E+01 G K
			702.62	1.125E+02	@(	P	5.701E+01	2.49E+02	9.79E+01 G

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Zr-95	I 1.4746E+02					6.40E+01	
		756.73	-2.862E+01	%(		1.086E+02	1.83E+02 5.45E+01 G K
		724.20	3.646E+02	(P		1.045E+02	1.44E+01 4.42E+01 G
Nb-95	I 5.4277E+01					3.50E+01	
		765.81	5.428E+01	&(P		6.428E+01	5.75E+01 9.98E+01 G K
Ru-106	I 1.2344E+02					3.73E+02	
		621.93	1.234E+02	&(		5.074E+02	1.92E+02 9.93E+00 G K
Ag-110M	F 2.4516E+02					2.50E+02	
		657.76	7.827E+00	%(P		5.687E+01	3.50E+02 9.40E+01 G K
		1505.04	0.000E+00	%	P	5.237E+02	1.00E+03 1.29E+01 G
		1384.30	7.846E+02	?(P		2.238E+02	1.60E+01 2.41E+01 G
		937.49	5.176E+02	?(		1.122E+02	1.18E+01 3.41E+01 G
		884.68	1.019E+01	%		7.502E+01	3.65E+02 7.22E+01 G
		763.94	9.721E+01	&	P	2.647E+02	1.32E+02 2.21E+01 G
		744.28	0.000E+00	&	P	1.180E+03	1.00E+03 4.70E+00 G
		706.68	4.576E+02	&		3.247E+02	3.47E+01 1.63E+01 G
Sb-124	F -6.6077E+00					6.02E+01	
		602.73	-6.608E+00	%(		5.772E+01	4.07E+02 9.78E+01 G K
		645.85	2.587E+01	%	P	7.772E+02	1.45E+03 7.38E+00 G
		722.79	-3.141E+02	%		5.741E+02	8.85E+01 1.08E+01 G
		1690.98	3.992E+01	&	P	1.091E+02	1.54E+02 4.73E+01 G
Sb-125	I 1.3422E+03					1.01E+03	
		427.88	8.750E+01	%(P		1.842E+02	9.53E+01 2.96E+01 G K
		176.31	5.034E+02	&		1.060E+03	8.82E+01 6.82E+00 G
		463.36	4.879E+03	(		5.142E+02	5.17E+00 1.05E+01 G
		600.60	0.000E+00	%	P	3.007E+02	1.00E+03 1.79E+01 G
		635.95	0.000E+00	&	P	4.849E+02	1.00E+03 1.13E+01 G
Te-129	I 1.6786E+03					3.36E+01	
		459.60	0.000E+00	%(P		2.780E+02	1.00E+03 7.70E+00 G K
		487.39	1.078E+04	*(P		4.182E+03	1.85E+01 1.42E+00 G
I-132	I 1.1112E+03					3.20E+00	
		772.60	1.111E+03	(		2.908E+02	8.76E+00 7.56E+01 G K
		522.65	3.677E+02	&	P	1.518E+03	1.93E+02 1.60E+01 G
		630.19	1.519E+02	%		1.746E+03	5.54E+02 1.33E+01 G
		954.55	-5.352E+02	%		1.431E+03	1.37E+02 1.76E+01 G
Te-132	I -6.6436E+01					3.20E+00	
		228.16	-6.644E+01	%(		3.594E+02	2.36E+02 8.80E+01 G K

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments

I-133	I	3.0744E+03					8.67E-01		
			529.87	3.074E+03	&(P	1.647E+04	2.50E+02	8.70E+01	G K
			875.33	5.349E+04	& P	3.183E+05	2.95E+02	4.51E+00	G
Ba-133	F	-7.5376E+01					3.84E+03		
			356.02	-7.538E+01	%(	8.944E+01	5.39E+01	6.20E+01	G K
			81.00	0.000E+00	% P	4.657E+02	1.00E+03	3.41E+01	G
			302.85	0.000E+00	& P	3.092E+02	1.00E+03	1.83E+01	G
			276.40	8.823E+02	%	7.982E+02	3.96E+01	7.16E+00	G
			383.85	0.000E+00	% P	6.355E+02	1.00E+03	8.94E+00	G
Cs-134	I	5.5508E+02					7.52E+02		
			795.86	5.551E+02	(P	5.740E+01	5.19E+00	8.55E+01	G K
			604.72	5.876E+01	-	5.196E+01	2.73E+01	9.76E+01	GA
			569.33	0.000E+00	& P	3.606E+02	1.00E+03	1.54E+01	GA
			801.95	-7.217E+01	%	6.246E+02	4.30E+02	8.69E+00	GA
Cs-137	I	2.8282E+01					1.10E+04		
			661.66	2.828E+01	%(	5.840E+01	9.99E+01	9.01E+01	G K
Ce-139	F	5.5510E+00					1.38E+02		
			165.85	5.551E+00	%(	9.793E+01	7.37E+02	7.99E+01	G K
Ba-140	I	5.5552E+01					1.28E+01		
			537.26	5.555E+01	&(P	3.215E+02	2.70E+02	2.44E+01	G K
			162.66	0.000E+00	% P	1.804E+03	1.00E+03	6.22E+00	G
La-140	I	1.2201E+02					1.28E+01		
			1596.21	2.479E+00	&(	1.016E+02	2.26E+03	9.54E+01	G K
			487.02	3.726E+02	*(P	1.682E+02	2.15E+01	4.55E+01	G
			815.77	8.661E+01	&	3.231E+02	1.85E+02	2.33E+01	G
			328.76	-2.647E+02	%	4.067E+02	6.71E+01	2.03E+01	G
Ce-141	I	6.6814E+01					3.25E+01		
			145.44	6.681E+01	%(	1.950E+02	1.22E+02	4.82E+01	G K
Ce-144	I	2.2048E+00					2.85E+02		
			133.51	2.205E+00	%(	7.846E+02	1.49E+04	1.11E+01	G K
Eu-152	F	5.0809E+01					4.95E+03		
			121.78	5.081E+01	%(P	3.090E+02	2.54E+02	2.84E+01	G K
							Energy duplication		
			1408.01	2.695E+03		2.343E+02	5.38E+00	2.09E+01	GA
			1112.12	1.601E+02	%	4.084E+02	1.34E+02	1.36E+01	GA
			1085.91	4.919E+01	%	4.805E+02	4.97E+02	9.92E+00	GA
			964.13	4.579E+03	P	4.477E+02	5.48E+00	1.43E+01	GA
			344.28	-6.713E+01	%	2.245E+02	1.51E+02	2.66E+01	GA
			244.70	0.000E+00	&	8.106E+02	1.00E+03	7.49E+00	GA

Nuclide	Ave activity	Energy	Activity	Code	Peak MDA	Comments
Eu-155	I 7.2634E+02				1.74E+03	
		86.54	6.485E+02	(	4.754E+02	2.25E+01	3.07E+01	G K
		105.31	8.391E+02	(	4.352E+02	2.10E+01	2.12E+01	G
Lu-176	N 1.9025E+00				1.38E+13	
		306.78	1.902E+00	&(P	5.957E+01	1.36E+03	9.40E+01	G K
		201.83	-9.990E+00	%	8.035E+01	3.36E+02	8.65E+01	G

Tl-208	N	4.4048E+03					6.98E+02		
			583.19	4.405E+03	(P	7.765E+01	1.25E+00	8.45E+01	G K
			860.56	5.011E+03	+ P	3.686E+02	3.13E+00	1.24E+01	G
			277.36	3.780E+03	- P	8.515E+02	7.28E+00	6.31E+00	G
Pb-210	N	5.4694E+03					8.14E+03		
			46.54	5.469E+03	&(	6.700E+04	4.88E+02	4.25E+00	G K
Bi-212	N	1.5549E+04					6.98E+02		
			727.33	1.555E+04	(P	8.125E+02	3.01E+00	6.58E+00	G K
			1620.50	2.129E+04	+ P	4.012E+03	1.30E+01	1.49E+00	G
Pb-212	N	1.2777E+04					6.98E+02		
			238.63	1.278E+04	(P	1.315E+02	6.23E-01	4.33E+01	G K
							Energy duplication		
			77.11	1.278E+04	} P	8.766E+02	5.29E+00	1.75E+01	G
							Energy duplication		
			74.81	2.756E+03	} P	1.824E+03	2.28E+01	1.04E+01	G
			87.30	1.275E+04	} P	1.550E+03	3.56E+00	7.80E+00	GA
Bi-214	N	2.2071E+04					5.84E+05		
			609.31	2.197E+04	(P	1.304E+02	5.38E-01	4.48E+01	G K
			1120.29	2.513E+04	+	3.801E+02	1.33E+00	1.48E+01	GA
			2204.21	0.000E+00	=	0.000E+00	0.00E+00	4.86E+00	G
			1764.49	2.797E+04	+ P	3.541E+02	1.33E+00	1.54E+01	G
			1377.67	3.137E+04	+ P	1.367E+03	3.05E+00	3.92E+00	G
			1238.11	2.207E+04	} P	9.642E+02	1.59E+00	5.86E+00	G
			768.36	2.186E+04	(	1.044E+03	2.19E+00	4.80E+00	G
Pb-214	N	2.3349E+04					5.84E+05		
			351.99	2.342E+04	(P	1.699E+02	5.82E-01	3.71E+01	G K
			295.22	2.327E+04	(P	3.365E+02	9.27E-01	1.92E+01	G
			241.92	2.318E+04	(P	9.131E+02	1.53E+00	7.47E+00	G
			87.20	2.081E+03	}	3.596E+03	5.79E+01	3.70E+00	G
							Energy duplication		
			77.11	2.335E+04	} P	1.424E+03	5.29E+00	1.07E+01	G
							Energy duplication		
			74.81	2.326E+04	} P	2.797E+03	3.01E+00	6.33E+00	G
Ra-224	N	1.1875E+04					6.98E+02		
			241.00	1.187E+04	(P	2.973E+03	7.80E+00	3.90E+00	G K

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Ra-226	N 5.8464E+04					5.84E+05	
		186.10	5.846E+04	(P	2.187E+03	1.88E+00	3.50E+00 G K
Ac-227	N 2.9987E+03					7.95E+03	
		235.97	0.000E+00	&(P	4.439E+02	1.00E+03	1.23E+01 G K
		256.25	4.720E+02	% P	8.266E+02	7.65E+01	7.00E+00 G
		300.00	1.904E+04	@(	2.379E+03	5.78E+00	2.30E+00 G
		329.85	0.000E+00	%	2.651E+03	1.00E+03	2.70E+00 G
Ac-228	N 1.3261E+04					2.10E+03	
		911.21	1.344E+04	(P	2.339E+02	1.35E+00	2.66E+01 G K
		968.97	1.296E+04	(P	3.352E+02	1.47E+00	1.62E+01 G
		338.32	1.145E+04	- P	5.003E+02	2.24E+00	1.13E+01 G

Th-228	N	1.8630E+04					6.98E+02		
			84.37	1.863E+04	(P	9.833E+03	1.64E+01	1.27E+00	G K
			215.99	6.533E+03	%	2.668E+04	1.78E+02	2.63E-01	GA
			166.41	-4.056E+03	%	7.070E+04	5.26E+02	1.08E-01	GA
			131.61	0.000E+00	%	6.691E+04	1.00E+03	1.35E-01	GA
Th-230	N	2.9104E+03					2.75E+07		
			67.67	2.910E+03	&(	6.239E+04	8.55E+02	3.80E-01	G K
Pa-231	N	2.8437E+02					1.20E+07		
			283.70	2.844E+02	&(	3.733E+03	5.71E+02	1.60E+00	G K
			330.00	0.000E+00	%	5.503E+03	1.00E+03	1.30E+00	G
Pa-234M	N	-1.5814E+03					1.63E+12		
							Energy duplication		
			1001.03	-1.581E+03	%(	6.219E+03	2.01E+02	8.37E-01	G
Th-232	N	-6.2399E+03					4.17E+12		
			63.81	-6.240E+03	%(	1.061E+05	6.78E+02	2.67E-01	G K
Th-234	N	8.1813E+02					1.63E+12		
			63.29	8.181E+02	%(P	6.057E+03	2.95E+02	4.80E+00	G K
			92.60	0.000E+00	& P	4.030E+03	1.00E+03	2.80E+00	GA
U-238	N	8.0677E+03					1.63E+12		
			92.59	8.068E+03	&(P	1.992E+03	1.04E+01	5.60E+00	G K
							Energy duplication		
			1001.03	-1.576E+03	%	6.196E+03	2.01E+02	8.40E-01	G K
Am-241	T	1.6957E+02					1.58E+05		
			59.54	1.696E+02	%(P	1.030E+03	2.42E+02	3.63E+01	G K
Pm-146	C	1.0843E+02					2.02E+03		
			453.88	1.084E+02	%(P	8.145E+01	3.43E+01	6.52E+01	G K
			747.16	6.035E+01	&	1.516E+02	1.21E+02	3.40E+01	G

Nuclide	Ave activity	Energy		Activity	Code	Peak	MDA	Comments
		735.72	0.000E+00	% P	2.474E+02	1.00E+03	2.25E+01	GA

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide failed one or more qualification tests.
\+ - Peak activity higher than counting uncertainty range.
\- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction
} - Peak is too close to another for the activity to be found directly.

Nuclide Codes:
T - Thermal Neutron Activation

Peak Codes:
G - Gamma Ray

F - Fast Neutron Activation
I - Fission Product
N - Naturally Occurring Isotope
P - Photon Reaction
C - Charged Particle Reaction
M - No MDA Calculation
R - Coincidence Corrected
H - Halflife limit exceeded

X - X-Ray
P - Positron Decay
S - Single-Escape
D - Double-Escape
K - Key Line
A - Not in Average
C - Coincidence Peak

- -

********** D I S C A R D E D I S O T O P E P E A K S **********

Nuclide	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	Activity	
U-235	89.91	8370.	1501.	0.834	24.41	1.295E+04	
Ac-227	300.14	4497.	2522.	1.401	11.56	1.904E+04	
Sb-125	463.02	2768.	2352.	1.307	10.35	4.879E+03	
La-140	487.07	2477.	520.	0.289	43.00	3.726E+02	P
Te-129	487.11	2389.	594.	0.330	37.09	1.078E+04	P
Kr-85	513.69	1270.	908.	0.505	18.46	4.861E+04	P
Nb-94	702.99	1845.	400.	0.222	49.78	1.125E+02	P
Ag-110M	936.96	590.	534.	0.297	23.60	5.176E+02	
Eu-152	964.91	1697.	1991.	1.106	10.95	4.579E+03	P
Zn-65	1117.57	1035.	335.	0.186	48.92	2.417E+02	P
Ag-110M	1385.47	754.	458.	0.255	31.96	7.846E+02	P
Eu-152	1408.01	627.	1373.	0.763	10.75	2.695E+03	

P - Peakbackground subtraction

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide		Time of Count Activity pCi/L	Time Corrected Activity pCi/L	Uncertainty Counting pCi/L	2 Sigma Total pCi/L	MDA pCi/L
Be-7	#B	3.2054E+02	3.5102E+02	4.8144E+02	4.8182E+02	5.313E+02
Na-22	#B	-6.3760E+00	-6.4087E+00	5.9383E+01	5.9384E+01	5.525E+01
K-40	F	7.0656E+02	7.0656E+02	6.0420E+02	6.0549E+02	5.430E+02
Sc-46	#B	8.0508E+00	8.5306E+00	5.6812E+01	5.6814E+01	5.725E+01
Cr-51	#B	-5.6676E+01	-6.7521E+01	5.7854E+02	5.7856E+02	6.655E+02
Mn-54	#B	0.0000E+00	0.0000E+00	3.1204E+01	3.1204E+01	6.243E+01
Co-56	#	1.7605E+03	1.8745E+03	8.9121E+01	1.4675E+02	5.979E+02
Co-57	#B	0.0000E+00	0.0000E+00	4.8445E+01	4.8445E+01	1.045E+02
Co-58	#B	0.0000E+00	0.0000E+00	2.2003E+01	2.2003E+01	5.720E+01
Fe-59	#B	0.0000E+00	0.0000E+00	1.9512E+01	1.9512E+01	1.161E+02
Co-60	#B	5.0333E+00	5.0460E+00	5.5716E+01	5.5717E+01	5.196E+01
Zn-65	#	2.3690E+02	2.4165E+02	1.1822E+02	1.1898E+02	1.101E+02
SE-75	#B	7.0298E+01	7.3187E+01	9.0379E+01	9.0483E+01	1.034E+02
Kr-85	#	4.8550E+04	4.8610E+04	8.9719E+03	9.3560E+03	9.034E+03
Y-88	B	1.7925E+01	1.8759E+01	6.5180E+01	6.5191E+01	5.658E+01
Nb-94	#B	5.0327E+01	5.0327E+01	2.5053E+01	2.5212E+01	5.450E+01
Zr-95	F	1.3670E+02	1.4746E+02	4.2469E+01	4.3264E+01	1.086E+02
Nb-95	#B	4.7250E+01	5.4277E+01	6.2409E+01	6.2483E+01	6.428E+01
Ru-103	#B	0.0000E+00	0.0000E+00	2.2588E+01	2.2588E+01	6.788E+01
Ag-108M	#B	0.0000E+00	0.0000E+00	2.1232E+01	2.1232E+01	7.182E+01
Ru-106	#B	1.2184E+02	1.2344E+02	4.7341E+02	4.7346E+02	5.074E+02
Cd-109	#B	0.0000E+00	0.0000E+00	2.4838E+03	2.4838E+03	7.284E+01

Ag-110M#F	2.4045E+02	2.4516E+02	5.7847E+01	5.9419E+01	5.687E+01
Sn-113 #B	0.0000E+00	0.0000E+00	2.9057E+01	2.9057E+01	9.722E+01
Sb-124 #B	-6.0962E+00	-6.6077E+00	5.3814E+01	5.3815E+01	5.772E+01
Sb-125 #F	1.3357E+03	1.3422E+03	1.3887E+02	1.5734E+02	1.842E+02
Te-129 #F	1.4530E+03	1.6786E+03	6.2258E+02	6.2933E+02	2.780E+02
Te-129M#B	0.0000E+00	0.0000E+00	7.9355E+02	7.9355E+02	2.142E+03
I-131 #B	0.0000E+00	0.0000E+00	5.1862E+01	5.1862E+01	1.224E+02
I-132	2.4410E+02	1.1112E+03	1.9473E+02	2.0445E+02	2.908E+02
Te-132 #B	-1.4594E+01	-6.6436E+01	3.1329E+02	3.1332E+02	3.594E+02
I-133 #B	1.1413E+01	3.0744E+03	1.5383E+04	1.5384E+04	1.647E+04
Ba-133 #B	-7.5281E+01	-7.5376E+01	8.1245E+01	8.1284E+01	8.944E+01
Cs-134	5.5151E+02	5.5508E+02	5.7583E+01	6.5474E+01	5.740E+01
Cs-136 #B	0.0000E+00	0.0000E+00	2.1607E+01	2.1607E+01	8.439E+01
Cs-137 #B	2.8269E+01	2.8282E+01	5.6486E+01	5.6508E+01	5.840E+01
Ce-139 #B	5.3588E+00	5.5510E+00	8.1846E+01	8.1847E+01	9.793E+01
Ba-140 #B	3.7975E+01	5.5552E+01	3.0029E+02	3.0031E+02	3.215E+02
La-140 #F	8.3404E+01	1.2201E+02	5.2460E+01	5.2932E+01	1.016E+02
Ce-141 #B	5.7551E+01	6.6814E+01	1.6324E+02	1.6328E+02	1.950E+02
Ce-144 #B	2.1676E+00	2.2048E+00	6.5557E+02	6.5557E+02	7.846E+02
ND-147 #B	0.0000E+00	0.0000E+00	2.7006E+02	2.7006E+02	6.497E+02
Eu-152 #B	5.0760E+01	5.0809E+01	2.5838E+02	2.5840E+02	3.090E+02

Eu-154 #B	0.0000E+00	0.0000E+00	5.3278E+01	5.3278E+01	2.187E+02
Eu-155	7.2431E+02	7.2634E+02	2.2346E+02	2.3052E+02	4.754E+02
Lu-176 #B	1.9025E+00	1.9025E+00	5.1760E+01	5.1760E+01	5.957E+01
Ir-192 #B	0.0000E+00	0.0000E+00	3.7317E+01	3.7317E+01	7.270E+01
Hg-203 #B	0.0000E+00	0.0000E+00	1.9630E+01	1.9630E+01	8.219E+01
Tl-208	4.3742E+03	4.4048E+03	1.0989E+02	2.6542E+02	7.765E+01
Pb-210 #B	5.4662E+03	5.4694E+03	5.3395E+04	5.3397E+04	6.700E+04
Bi-212	1.5441E+04	1.5549E+04	9.3668E+02	1.2771E+03	8.125E+02
Pb-212	1.2688E+04	1.2777E+04	1.5919E+02	7.7499E+02	1.315E+02
Bi-214	2.2071E+04	2.2071E+04	2.3742E+02	1.2375E+03	1.304E+02
Pb-214	2.3348E+04	2.3349E+04	2.7158E+02	1.3546E+03	1.699E+02
Ra-223 #B	0.0000E+00	0.0000E+00	4.1046E+02	4.1046E+02	4.355E+02
Ra-224	1.1793E+04	1.1875E+04	1.8520E+03	1.9816E+03	2.973E+03
Ra-226	5.8464E+04	5.8464E+04	2.1955E+03	4.0296E+03	2.187E+03
Ac-227 #F	2.9969E+03	2.9987E+03	3.4668E+02	3.8969E+02	4.439E+02
Ac-228	1.3231E+04	1.3261E+04	2.6498E+02	7.9162E+02	2.339E+02
Th-228	1.8501E+04	1.8630E+04	6.0960E+03	6.2949E+03	9.833E+03
Th-230 #B	2.9104E+03	2.9104E+03	4.9741E+04	4.9744E+04	6.239E+04
Pa-231 #B	2.8437E+02	2.8437E+02	3.2473E+03	3.2474E+03	3.733E+03
Pa-234M#A	-1.5814E+03	-1.5814E+03	6.3531E+03	6.3537E+03	6.219E+03
Th-232 #B	-6.2399E+03	-6.2399E+03	8.4566E+04	8.4577E+04	1.061E+05
Th-234 #B	8.1813E+02	8.1813E+02	4.8300E+03	4.8334E+03	6.057E+03
U-235 #B	0.0000E+00	0.0000E+00	3.6159E+02	3.6159E+02	7.497E+02
U-238 #F	8.0677E+03	8.0677E+03	1.6765E+03	1.7605E+03	1.992E+03
Am-241 #B	1.6956E+02	1.6957E+02	8.2145E+02	8.2254E+02	1.030E+03
Am-243 #B	0.0000E+00	0.0000E+00	2.9193E+02	2.9193E+02	4.829E+02
Pm-144 #B	0.0000E+00	0.0000E+00	1.1125E+01	1.1125E+01	5.806E+01
Pm-146 #F	1.0817E+02	1.0843E+02	7.4313E+01	7.4550E+01	8.145E+01

- All peaks for activity calculation had bad shape.
* - Activity omitted from total
& - Activity omitted from total and all peaks had bad shape.
< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.

H - Halflife limit exceeded

S U M M A R Y

Total Activity (30.3 to 2038.5 keV) 1.814E+05 pCi/L
Total Decayed Activity (30.3 to 2038.5 keV) 1.8277359E+05 pCi/L

The library has energies which are not separable.

Analyzed by: _____
Operator

Reviewed by: _____
Supervisor

Laboratory: Pace

ORTEC g v - i (3263) Env32 G701W047 9/24/2024 4:57:33 PM Page 1
Pace Spectrum name: 30715870001.An1

Sample description
81318

Spectrum Filename: C:\User\Spectra\30715870001.An1

Acquisition information
Start time: 9/24/2024 9:26:58 AM
Live time: 1800
Real time: 1831
Dead time: 1.67 %
Detector ID: 2

Detector system
DET 2

Calibration
Filename: DET_2_2L MAR_23-047(113023).Clb
DET 2 2L MARINELLI

Energy Calibration
Created: 11/30/2023 7:00:31 AM
Zero offset: 0.281 keV
Gain: 0.250 keV/channel
Quadratic: -1.344E-08 keV/channel^2

Efficiency Calibration
Created: 11/30/2023 7:26:21 AM
Type: Polynomial
Uncertainty: 1.699 %
Coefficients: -0.225215 -3.983441 0.474906
-0.072106 0.003754 -0.000081

Library Files
Main analysis library: Pace Master w Ra226U235 (wo PS)
Library Match Width: 0.500
Peak stripping: Library based

Analysis parameters
Analysis engine: Env32 G701W047
Start channel: 120 (30.33keV)
Stop channel: 8144 (2038.53keV)
Peak rejection level: 30.000%
Peak search sensitivity: 3
Sample Size: 2.0000E+00
Activity scaling factor: 1.0000E+06/(1.0000E+00* 2.0000E+00) =
5.0000E+05
Detection limit method: Reg. Guide 4.16 Method

Random error: 0.0000000E+00
Systematic error: 0.0000000E+00
Fraction Limit: 0.000%
Background width: average of three points.

Half lives decay limit: 12.000

WTF 9-25-24
AM 9/25/24

Activity range factor: 2.000
Min. step backg. energy 0.000
Multiplet shift channel 2.000

Corrections	Status	Comments
Decay correct to date:	YES	9/4/2024 9:35:00 AM
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	YES	Det_2_Bkg_092024Ra226U235(2LITER 9/24/2024 4:14:26 PM
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

total peaks alloc. 0 cutoff: 0.00E+00 %
Energy Calibration
Normalized diff: 0.0776

***** S U M M A R Y O F P E A K S I N R A N G E *****

Peak Energy	Area	Uncert	FWHM	Corrctn Factor	Nuclide Energy	Brnch. Ratio	Act. pCi/L	Nuc
74.89	477.	10.02	0.97	1.584E-02	74.66	68.200	3.318E+02	Am243
					74.81	6.330	3.555E+03	Pb214
					74.81	10.400	2.207E+03	Pb212
					74.81	10.400	2.207E+03	Pb212
77.15	946.	5.53	0.97	1.718E-02	77.11	17.500	2.410E+03	Pb212
					77.11	10.700	3.864E+03	Pb214
					77.11	17.500	2.410E+03	Pb212
84.01	202.	21.38	0.98	2.117E-02	83.78	24.900	2.879E+02	Ra223
					84.37	1.266	5.605E+03	Th228
87.18	424.	10.77	0.98	2.295E-02	86.54	30.700	4.632E+02	Eu155
					87.20	3.700	3.748E+03	Pb214
					87.30	7.800	1.808E+03	Pb212
					88.03	3.610	3.882E+03	Cd109
					87.30	7.800	1.808E+03	Pb212
89.88	237.	18.33	0.98	2.442E-02	89.95	3.560	2.045E+03	U235
					91.10	28.300	8.784E+02	ND147
					89.95	3.560	2.045E+03	U235
129.26	274.	21.95	1.36	4.055E-02				
186.20	3962.	2.68	1.02	4.782E-02	186.10	3.500	1.769E+04	Ra226
209.38	445.	13.16	0.90	4.782E-02				
242.04	1922.	4.88	0.99	4.663E-02	241.92	7.470	4.138E+03	Pb214
256.09	208.	26.03	1.14	4.589E-02	256.25	7.000	4.869E+02	Ac227
					256.25	7.000	4.869E+02	Ac227
258.57	229.	23.15	1.13	4.576E-02				
295.27	4582.	2.10	1.17	4.357E-02	295.22	19.200	4.111E+03	Pb214
					295.96	28.670	3.325E+03	Ir192
					295.96	28.670	3.325E+03	Ir192

pk energy	area	uncert	fwhm	corr	nuclide	brnch.	act.	nuc
327.96	310.	15.72	1.51	4.158E-02	328.76	20.300	8.186E+02	La140

					329.85	2.700	2.082E+03	Ac227
					330.00	1.300	4.319E+03	Pa231
					328.76	20.300	8.186E+02	La140
338.51	1062.	6.62	1.25	4.095E-02	338.32	11.300	1.732E+03	Ac228
351.99	8516.	1.37	1.21	4.017E-02	351.99	37.100	4.286E+03	Pb214
463.13	407.	11.73	1.09	3.465E-02	463.36	10.500	8.496E+02	Sb125
					463.36	10.500	8.496E+02	Sb125
562.41	138.	22.47	0.53	3.101E-02				
609.42	7687.	1.28	1.44	2.961E-02	609.31	44.800	4.346E+03	Bi214
623.47	53.	28.26	0.88	2.923E-02				
665.58	270.	12.32	1.37	2.815E-02				
703.41	148.	25.71	0.60	2.727E-02	702.62	97.900	4.155E+01	Nb94
768.50	786.	4.32	1.61	2.593E-02	768.36	4.800	4.740E+03	Bi214
773.00	90.	21.64	1.61	2.584E-02	772.60	75.600	2.563E+03	I132
794.86	324.	11.88	1.52	2.543E-02	795.86	85.530	1.133E+02	Cs134
911.34	1597.	3.60	1.56	2.353E-02	911.21	26.600	1.925E+03	Ac228
934.14	460.	8.98	1.36	2.320E-02				
936.89	94.	29.04	1.75	2.315E-02	937.49	34.130	9.423E+01	Ag110M
					937.49	34.130	9.423E+01	Ag110M
965.01	192.	25.27	1.77	2.279E-02	964.13	14.340	4.412E+02	Eu152
					964.13	14.340	4.412E+02	Eu152
969.14	764.	6.21	1.26	2.272E-02	968.97	16.200	1.560E+03	Ac228
1120.44	2080.	2.89	1.93	2.093E-02	1120.29	14.800	5.042E+03	Bi214
1238.20	788.	4.97	1.64	1.976E-02	1238.11	5.860	5.098E+03	Bi214
					1238.28	66.070	5.410E+02	Co56
1377.96	567.	7.71	2.24	1.858E-02	1377.67	3.920	5.840E+03	Bi214
1408.17	276.	12.58	2.12	1.835E-02	1408.01	20.870	5.427E+02	Eu152
					1408.01	20.870	5.427E+02	Eu152
1461.10	174.	17.50	0.53	1.795E-02	1461.00	10.670	6.803E+02	K40
1764.26	1821.	2.47	2.10	1.602E-02	1764.49	15.360	5.527E+03	Bi214

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Centroid Channel	Energy	Background Counts	Net Area Counts	Efficiency * Area	Uncert 2 Sigma %	FWHM keV	Suspected Nuclide	
357.97	89.89	852.	219.	8.957E+03	40.10	0.981	AC-228	D
515.15	129.26	1060.	274.	6.769E+03	43.90	1.359	PU-239	sM
835.13	209.38	896.	445.	9.305E+03	26.33	0.904	AC-228	M
1031.62	258.57	704.	229.	5.005E+03	46.30	1.127	XE-138	s
1309.79	327.96	515.	254.	6.107E+03	28.23	1.213	AC-228	D
1848.71	463.13	387.	407.	1.174E+04	23.46	1.092	AC-228	M
2245.32	562.41	190.	138.	4.450E+03	44.94	0.528	NB-95	sM
2489.26	623.47	63.	53.	1.802E+03	56.52	0.882	PR-144	sM
2657.49	665.58	180.	270.	9.604E+03	24.64	1.369	BI-214	sM
2808.59	703.41	260.	148.	5.427E+03	51.42	0.598	NB-94	sM

Channel	Energy	Background	Net area	Eff*Area	Uncert	FWHM	Suspected	
3173.95	794.86	198.	324.	1.273E+04	23.76	1.519	AC-228	sM
3730.44	934.14	192.	460.	1.985E+04	17.97	1.356	BI-214	s

s - Peak fails shape tests.
D - Peak area deconvoluted.
L - Peak written from unknown list.
C - Area < Critical level.
M - Peak is close to a library peak.

This section based on library: Pace Master w Ra226U235 (wo PS)

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	FWHM keV
Pb-214	297.66	74.81	907.	452.	0.251	16.96	0.966D
Pb-212	297.66	74.81	1171.	413.	0.230	32.49	0.966D
Pb-212	306.85	77.11	1118.	928.	0.515	15.00	0.969D
Pb-214	306.85	77.11	897.	946.	0.525	11.08	0.969D
Pb-214	347.15	87.20	944.	384.	0.213	24.87	0.979D
Pb-212	347.18	87.21	1118.	400.	0.222	33.56	0.979
Ra-226	742.55	186.20	1639.	3944.	2.191	5.38	1.023
Pb-214	965.59	242.04	1378.	1920.	1.067	9.77	0.986
Ac-227	1021.73	256.09	653.	208.	0.116	52.07	1.145s
Pb-214	1178.23	295.27	933.	4581.	2.545	4.20	1.172
Ac-228	1350.91	338.51	777.	1061.	0.589	13.26	1.247
Pb-214	1404.77	351.99	868.	8508.	4.727	2.74	1.205
Sb-125	1848.22	463.00	428.	332.	0.185	28.61	1.340
Bi-214	2433.10	609.42	357.	7680.	4.267	2.56	1.444
Bi-214	3068.07	768.36	183.	786.	0.436	8.64	1.611D
I-132	3085.03	772.60	159.	93.	0.051	43.92	1.614D
Ac-228	3639.34	911.34	254.	1594.	0.886	7.22	1.561
Ag-110M	3741.41	936.89	111.	94.	0.052	58.07	1.753s
Eu-152	3853.78	965.01	370.	192.	0.106	50.55	1.774s
Ac-228	3870.27	969.14	274.	760.	0.422	12.50	1.261s
Bi-214	4474.82	1120.44	180.	2080.	1.156	5.78	1.933
Co-56	4945.69	1238.28	97.	637.	0.354	10.42	1.644D
Bi-214	5503.85	1377.96	161.	567.	0.315	15.44	2.241
Eu-152	5624.60	1408.17	143.	276.	0.153	25.16	2.116
K-40	5836.11	1461.10	92.	174.	0.096	35.01	0.532s
Bi-214	7048.65	1764.49	132.	1652.	0.918	5.30	2.361D

s - Peak fails shape tests.
D - Peak area deconvoluted.
A Derived peak area.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

- Nuclide - Name	Code	Average Activity pCi/L	Peak Energy keV	Peak Activity pCi/L	Code	MDA Value pCi/L	COMMENTS
Be-7	C	6.9365E+00				5.34E+01	
			477.56	6.937E+00	&(	2.624E+02 1.67E+03 1.03E+01	G K
Na-22	C	-4.9013E+00				9.50E+02	
			1274.53	-4.901E+00	%(	2.492E+01 2.68E+02 9.99E+01	G K
K-40	N	6.8031E+02				4.68E+11	
			1461.00	6.803E+02	(P	1.862E+02 1.75E+01 1.07E+01	G K
Cr-51	F	-7.7895E+01				2.77E+01	
			320.08	-7.789E+01	&(	3.721E+02 2.06E+02 1.01E+01	G K
Mn-54	C	3.4062E+00				3.12E+02	
			834.85	3.406E+00	%(P	2.637E+01 3.78E+02 1.00E+02	G K

Co-56	C	4.3833E+02					7.73E+01		
			1238.28	4.383E+02	}	P	3.351E+01	5.21E+00	6.61E+01 G K
			1771.35	0.000E+00	%(		2.854E+02	1.00E+03	1.55E+01 G
Co-57	C	-2.3026E+01					2.72E+02		
			122.06	-2.303E+01	%(		4.424E+01	8.02E+01	8.56E+01 G K
			136.47	0.000E+00	%	P	3.281E+02	1.00E+03	1.07E+01 G
Fe-59	F	7.0039E+00					4.45E+01		
			1099.25	7.004E+00	%(		5.607E+01	4.10E+02	5.65E+01 G K
			1291.60	-1.784E+01	%		7.055E+01	2.08E+02	4.32E+01 G
Co-60	F	8.9019E+00					1.92E+03		
			1332.50	8.902E+00	%(	P	2.109E+01	1.23E+02	1.00E+02 G K
			1173.24	4.137E+00	&	P	2.287E+01	2.80E+02	1.00E+02 G
Zn-65	F	7.8565E+00					2.44E+02		
			1115.55	7.856E+00	%(	P	5.359E+01	3.51E+02	5.06E+01 G K
SE-75		4.2207E+00					1.20E+02		
			264.66	4.221E+00	%(		4.571E+01	4.66E+02	5.86E+01 G K
			136.00	-6.156E+00	%		6.257E+01	4.21E+02	5.83E+01 G
			279.54	0.000E+00	%	P	1.084E+02	1.00E+03	2.48E+01 G
			121.12	1.354E+01	&	P	2.388E+02	7.31E+02	1.64E+01 G

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Y-88	C -2.7584E-01					1.07E+02	
		1836.06	-2.758E-01	%(		2.513E+01	5.04E+03 9.92E+01 G K
		898.04	1.301E+01	%	P	2.576E+01	9.71E+01 9.37E+01 G
Nb-94	I 5.4015E+00					7.41E+06	
		871.09	5.401E+00	%(	P	2.283E+01	2.06E+02 9.99E+01 G K
		702.62	0.000E+00	&	P	2.556E+01	1.00E+03 9.79E+01 G
Zr-95	I 4.6470E+01					6.40E+01	
		756.73	4.647E+01	%(		5.000E+01	5.20E+01 5.45E+01 G K
		724.20	-5.128E+01	%		7.115E+01	6.68E+01 4.42E+01 G
Ru-103	I 2.9815E+00					3.93E+01	
		497.08	2.981E+00	%(	P	3.116E+01	4.79E+02 9.10E+01 G K
Ru-106	I 1.7526E+02					3.73E+02	
		621.93	1.753E+02	%(	P	1.646E+02	4.41E+01 9.93E+00 G K
Ag-110M	F 2.5100E+01					2.50E+02	
		657.76	0.000E+00	%(	P	2.341E+01	1.00E+03 9.40E+01 G K
		1505.04	0.000E+00	%	P	3.295E+02	1.00E+03 1.29E+01 G
		1384.30	1.595E+02	%	P	9.995E+01	3.43E+01 2.41E+01 G
		937.49	9.423E+01	?(		5.206E+01	2.90E+01 3.41E+01 G
		884.68	6.890E-01	&		3.303E+01	2.32E+03 7.22E+01 G
		763.94	-2.733E+01	%		1.142E+02	1.98E+02 2.21E+01 G
		744.28	5.755E+01	&	P	4.809E+02	3.95E+02 4.70E+00 G
		706.68	1.299E+02	%	P	1.345E+02	5.01E+01 1.63E+01 G
Sb-124	F -6.9718E+00					6.02E+01	
		602.73	-6.972E+00	%(		2.847E+01	1.88E+02 9.78E+01 G K
		645.85	9.600E+01	%	P	3.529E+02	1.75E+02 7.38E+00 G

			722.79	0.000E+00	%	P	2.855E+02	1.00E+03	1.08E+01 G
			1690.98	1.620E+01	%		4.776E+01	1.60E+02	4.73E+01 G
Sb-125	I	1.9894E+02						1.01E+03	
			427.88	2.294E+01	%(	P	7.130E+01	1.39E+02	2.96E+01 G K
			176.31	0.000E+00	&	P	4.306E+02	1.00E+03	6.82E+00 G
			463.36	6.951E+02	(	P	2.074E+02	1.43E+01	1.05E+01 G
			600.60	1.658E+01	%	P	1.209E+02	3.33E+02	1.79E+01 G
			635.95	1.352E+02	&		1.693E+02	6.02E+01	1.13E+01 G
Te-129M	I	-3.6279E+02						3.36E+01	
			695.88	-3.628E+02	&(		1.165E+03	1.53E+02	3.00E+00 G K
I-131	I	-9.2420E+01						8.02E+00	
			364.49	-9.242E+01	&(		1.556E+02	7.58E+01	8.17E+01 G K
			636.99	0.000E+00	%	P	1.773E+03	1.00E+03	7.17E+00 G

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
		284.30	-4.279E+02	%		2.151E+03	2.17E+02 6.14E+00 G
I-132	I 2.7042E+03						3.20E+00
		772.60	2.704E+03	(	P	1.798E+03	2.20E+01 7.56E+01 G K
		522.65	2.297E+03	%		9.465E+03	1.90E+02 1.60E+01 G
		630.19	-4.063E+03	%		1.207E+04	1.41E+02 1.33E+01 G
		954.55	-4.952E+03	%		1.043E+04	1.06E+02 1.76E+01 G
Te-132	I 5.7419E+02						3.20E+00
		228.16	5.742E+02	&(	P	2.186E+03	1.65E+02 8.80E+01 G K
I-133	I 5.3329E+00						8.67E-01
		529.87	5.333E+00	&(		2.308E+01	1.99E+02 8.70E+01 G K
		875.33	1.660E+02	%		5.021E+02	1.48E+02 4.51E+00 G
Ba-133	F -1.6722E+00						3.84E+03
		356.02	-1.672E+00	&(		3.404E+01	9.05E+02 6.20E+01 G K
		81.00	3.357E+01	%	P	1.925E+02	2.38E+02 3.41E+01 G
		302.85	0.000E+00	&	P	1.215E+02	1.00E+03 1.83E+01 G
		276.40	-5.253E+01	%		3.520E+02	2.89E+02 7.16E+00 G
		383.85	9.874E+00	%		2.331E+02	1.05E+03 8.94E+00 G
Cs-136	F -5.7398E+01						1.32E+01
		818.51	-5.740E+01	%(		7.321E+01	6.33E+01 9.97E+01 G K
		176.60	-3.845E+02	&		8.393E+02	9.10E+01 1.00E+01 G
		273.65	-2.693E+02	&		6.761E+02	1.09E+02 1.11E+01 G
		340.55	3.580E+01	%		1.408E+02	1.69E+02 4.22E+01 G
		1048.07	2.310E+01	%		7.045E+01	1.52E+02 8.00E+01 G
		1235.36	0.000E+00	&		4.096E+02	1.00E+03 2.00E+01 G
Cs-137	I -2.3136E+01						1.10E+04
		661.66	-2.314E+01	&(		2.593E+01	5.42E+01 9.01E+01 G K
Ce-139	F 1.3594E+01						1.38E+02
		165.85	1.359E+01	&(		3.907E+01	1.20E+02 7.99E+01 G K
Ba-140	I 1.2136E+02						1.28E+01
		537.26	1.214E+02	%(		2.503E+02	9.55E+01 2.44E+01 G K
		162.66	5.090E+02	%	P	1.389E+03	1.14E+02 6.22E+00 G
La-140	I 3.7752E+00						1.28E+01

1596.21	3.775E+00	%(	P	8.404E+01	1.19E+03	9.54E+01	G	K
487.02	1.952E+02	%		1.269E+02	3.09E+01	4.55E+01	G	
815.77	5.973E+00	&	P	2.774E+02	2.25E+03	2.33E+01	G	
328.76	-2.513E+02	&		3.297E+02	5.72E+01	2.03E+01	G	

Nuclide		Ave activity	Energy		Activity	Code	Peak	MDA	Comments
Ce-141	I	2.2422E+01						3.25E+01	
			145.44	2.242E+01	%(		1.008E+02	1.87E+02	4.82E+01 G K
Ce-144	I	2.1327E+01						2.85E+02	
			133.51	2.133E+01	%(		3.095E+02	6.01E+02	1.11E+01 G K
Eu-154	I	2.2857E+01						3.14E+03	
			123.07	2.286E+01	%(		8.302E+01	1.51E+02	4.06E+01 G K
			1274.44	-1.385E+01	%		7.044E+01	2.68E+02	3.50E+01 G
			1004.72	7.155E+01	%		1.095E+02	7.73E+01	1.79E+01 G
			996.26	-1.974E+01	%		2.187E+02	5.53E+02	1.05E+01 G
			873.19	9.905E+01	%	P	1.847E+02	9.17E+01	1.22E+01 G
			723.30	0.000E+00	%	P	1.279E+02	1.00E+03	2.01E+01 GA
			247.93	4.660E+01	%	P	3.436E+02	3.18E+02	6.91E+00 G
Eu-155	I	7.2746E-01						1.74E+03	
			86.54	7.275E-01	%(		1.754E+02	7.19E+03	3.07E+01 G K
			105.31	5.463E+01	%		1.922E+02	1.46E+02	2.12E+01 G
Hg-203	F	1.8209E+01						4.66E+01	
			279.20	1.821E+01	%(	P	3.796E+01	9.03E+01	8.15E+01 G K
Pb-210	N	5.2403E+03						8.14E+03	
			46.54	5.240E+03	&(	P	2.629E+04	1.98E+02	4.25E+00 G K
Bi-212	N	2.4518E+02						6.98E+02	
			727.33	2.452E+02	%(	P	3.230E+02	6.32E+01	6.58E+00 G K
			1620.50	1.076E+01	%	P	1.357E+03	6.80E+03	1.49E+00 G
Pb-212	N	8.9127E+02						6.98E+02	
			238.63	4.756E+01	%(	P	6.148E+01	5.63E+01	4.33E+01 G K
									Energy duplication
			77.11	2.364E+03	(	P	4.041E+02	7.50E+00	1.75E+01 G
									Energy duplication
			74.81	1.925E+03	(	P	7.552E+02	1.62E+01	1.04E+01 G
			87.30	1.706E+03		P	6.765E+02	1.68E+01	7.80E+00 GA
Bi-214	N	4.3817E+03						5.84E+05	
			609.31	4.346E+03	(	P	5.136E+01	1.28E+00	4.48E+01 G K
			1120.29	5.042E+03	+		1.581E+02	2.89E+00	1.48E+01 GA
			2204.21	0.000E+00	=		0.000E+00	0.00E+00	4.86E+00 G
			1764.49	5.042E+03	+	P	1.716E+02	2.65E+00	1.54E+01 G
			1377.67	5.840E+03	+	P	6.382E+02	7.72E+00	3.92E+00 G
			1238.11	0.000E+00	}	P	4.020E+02	4.01E+03	5.86E+00 G
			768.36	4.740E+03	(		3.970E+02	4.32E+00	4.80E+00 G
Pb-214	N	4.1653E+03						5.84E+05	
			351.99	4.286E+03	(	P	7.054E+01	1.37E+00	3.71E+01 G K
			295.22	4.111E+03	(	P	1.302E+02	2.10E+00	1.92E+01 G

Nuclide		Ave activity	Energy	Activity	Code	Peak	MDA	Comments
			241.92	4.138E+03	(P	3.786E+02	4.89E+00	7.47E+00 G
			87.20	3.391E+03	- P	1.290E+03	1.24E+01	3.70E+00 G
								Energy duplication
			77.11	3.864E+03	(P	5.815E+02	5.54E+00	1.07E+01 G
								Energy duplication
			74.81	3.389E+03	} P	1.073E+03	8.48E+00	6.33E+00 G
Ra-223	N	2.5455E+02						7.96E+03
			269.46	2.546E+02	&(P	1.843E+02	3.19E+01	1.37E+01 G K
			83.78	1.890E+02	% P	2.324E+02	3.77E+01	2.49E+01 G
			323.87	-3.127E+01	%	5.765E+02	7.91E+02	3.93E+00 G
			154.21	2.196E+02	&	5.663E+02	1.07E+02	5.62E+00 G
			94.90	0.000E+00	% P	4.265E+02	1.00E+03	1.13E+01 G
			81.07	1.143E+02	% P	4.188E+02	1.49E+02	1.50E+01 G
Ra-226	N	1.7692E+04						5.84E+05
			186.10	1.769E+04	(P	8.584E+02	2.69E+00	3.50E+00 G K
Ac-227	N	-1.4943E+02						7.95E+03
			235.97	-1.494E+02	%(	2.213E+02	6.45E+01	1.23E+01 G K
			256.25	4.869E+02	& P	2.852E+02	2.60E+01	7.00E+00 G
			300.00	1.398E+02	&	9.477E+02	2.91E+02	2.30E+00 G
			329.85	-6.561E+02	%	9.603E+02	6.37E+01	2.70E+00 G
Ac-228	N	1.8673E+03						2.10E+03
			911.21	1.925E+03	(P	9.289E+01	3.61E+00	2.66E+01 G K
			968.97	1.560E+03	- P	1.639E+02	6.25E+00	1.62E+01 G
			338.32	1.732E+03	(P	2.166E+02	6.63E+00	1.13E+01 G
Th-228	N	3.2739E+03						6.98E+02
			84.37	3.274E+03	%(P	4.531E+03	4.23E+01	1.27E+00 G K
			215.99	-3.054E+01	%	1.021E+04	1.44E+04	2.63E-01 GA
			166.41	3.703E+03	%	2.726E+04	3.05E+02	1.08E-01 GA
			131.61	4.967E+03	% P	2.404E+04	2.01E+02	1.35E-01 GA
Th-230	N	1.1984E+03						2.75E+07
			67.67	1.198E+03	%(	2.563E+04	8.44E+02	3.80E-01 G K
Pa-234M	N	7.8207E+02						1.63E+12
								Energy duplication
			1001.03	7.821E+02	&(P	2.633E+03	1.68E+02	8.37E-01 G
Th-232	N	1.6132E+04						4.17E+12
			63.81	1.613E+04	%(	4.385E+04	1.08E+02	2.67E-01 G K
U-235	N	1.1239E+02						2.57E+11
			143.76	1.124E+02	&(P	2.861E+02	1.06E+02	1.10E+01 G K
			205.31	-1.486E+02	&	5.097E+02	1.42E+02	5.01E+00 G
			89.95	1.350E+03	%	1.463E+03	4.55E+01	3.56E+00 GA

Nuclide		Ave activity	Energy	Activity	Code	Peak	MDA	Comments
U-238	N	1.6004E+02						1.63E+12
			92.59	1.600E+02	%(P	8.778E+02	2.22E+02	5.60E+00 G K
								Energy duplication
			1001.03	7.793E+02	& P	2.624E+03	1.68E+02	8.40E-01 G K

```
Pm-146   C  -1.1579E+00                                          2.02E+03
                          453.88-1.158E+00 &(  3.314E+01 1.27E+03 6.52E+01 G K
                          747.16 0.000E+00 % P 6.664E+01 1.00E+03 3.40E+01 G
                          735.72 0.000E+00 & P 1.049E+02 1.00E+03 2.25E+01 GA
   ( - This peak used in the nuclide activity average.

   * - Peak is too wide, but only one peak in library.
   ! - Peak is part of a multiplet and this area went
       negative during deconvolution.
   ? - Peak is too narrow.
   @ - Peak is too wide at FW25M, but ok at FWHM.
   % - Peak fails sensitivity test.
   $ - Peak identified, but first peak of this nuclide
       failed one or more qualification tests.
   + - Peak activity higher than counting uncertainty range.
   - - Peak activity lower than counting uncertainty range.
   = - Peak outside analysis energy range.
   & - Calculated peak centroid is not close enough to the
       library energy centroid for positive identification.
   P - Peakbackground subtraction
   } - Peak is too close to another for the activity
       to be found directly.

   Nuclide Codes:                      Peak Codes:
   T - Thermal Neutron Activation      G - Gamma Ray
   F - Fast Neutron Activation         X - X-Ray
   I - Fission Product                 P - Positron Decay
   N - Naturally Occurring Isotope     S - Single-Escape
   P - Photon Reaction                 D - Double-Escape
   C - Charged Particle Reaction       K - Key Line
   M - No MDA Calculation              A - Not in Average
   R - Coincidence Corrected           C - Coincidence Peak
   H - Halflife limit exceeded

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

 ********** D I S C A R D E D  I S O T O P E  P E A K S **********
 Nuclide Centroid  Background  Net Area   Intensity   Uncert   Activity
           Energy    Counts     Counts     Cts/Sec  2 Sigma %

 Pb-212     74.81      1171.      413.      0.230     32.49   1.925E+03  P
 Pb-212     77.11      1118.      928.      0.515     15.00   2.364E+03  P
 Pb-212     87.21      1118.      400.      0.222     33.56   1.706E+03  P
 Ac-227    256.09       653.      208.      0.116     52.07   4.869E+02  P
 Sb-125    463.00       428.      332.      0.185     28.61   6.951E+02  P
 Ag-110M   936.89       111.       94.      0.052     58.07   9.423E+01
```



```
 Nuclide  Channel   Energy  Background  Net area  Cnts/sec   Uncert   FWHM
 Eu-152     965.01      370.       192.     0.106     50.55   4.412E+02  P
 Eu-152    1408.17      143.       276.     0.153     25.16   5.427E+02
   P - Peakbackground subtraction

 *****   S U M M A R Y   O F   N U C L I D E S   I N   S A M P L E   *****
          Time of Count  Time Corrected  Uncertainty  2 Sigma
 Nuclide     Activity       Activity       Counting     Total          MDA
                pCi/L          pCi/L          pCi/L        pCi/L        pCi/L
```

Be-7	#B	5.3509E+00	6.9365E+00	2.3219E+02	2.3219E+02	2.624E+02
Na-22	#B	-4.8303E+00	-4.9013E+00	2.6254E+01	2.6255E+01	2.492E+01
K-40		6.8031E+02	6.8031E+02	2.3817E+02	2.4119E+02	1.862E+02
Sc-46	#B	0.0000E+00	0.0000E+00	4.3305E+00	4.3306E+00	2.697E+01
Cr-51	#B	-4.7230E+01	-7.7895E+01	3.2044E+02	3.2048E+02	3.721E+02
Mn-54	#B	3.2583E+00	3.4062E+00	2.5769E+01	2.5770E+01	2.637E+01
Co-56	#	3.6636E+02	4.3833E+02	4.3760E+01	5.1558E+01	2.854E+02
Co-57	#B	-2.1881E+01	-2.3026E+01	3.6931E+01	3.6956E+01	4.424E+01
Co-58	#B	0.0000E+00	0.0000E+00	9.9058E+00	9.9059E+00	2.881E+01
Fe-59	#B	5.1296E+00	7.0039E+00	5.7487E+01	5.7489E+01	5.607E+01
Co-60	#B	8.8380E+00	8.9019E+00	2.1863E+01	2.1869E+01	2.109E+01
Zn-65	#B	7.4225E+00	7.8565E+00	5.5094E+01	5.5095E+01	5.359E+01
SE-75	#B	3.7618E+00	4.2207E+00	3.9365E+01	3.9366E+01	4.571E+01
Kr-85	#B	0.0000E+00	0.0000E+00	1.2045E+03	1.2045E+03	6.082E+03
Y-88	#B	-2.4223E-01	-2.7584E-01	2.7787E+01	2.7787E+01	2.513E+01
Nb-94	#B	5.4014E+00	5.4015E+00	2.2296E+01	2.2298E+01	2.283E+01
Zr-95	B	3.7424E+01	4.6470E+01	4.8321E+01	4.8391E+01	5.000E+01
Nb-95	#B	0.0000E+00	0.0000E+00	1.5588E+01	1.5588E+01	3.471E+01
Ru-103	#B	2.0947E+00	2.9815E+00	2.8591E+01	2.8591E+01	3.116E+01
Ag-108M	#B	0.0000E+00	0.0000E+00	1.0160E+01	1.0160E+01	2.688E+01
Ru-106	#F	1.6886E+02	1.7526E+02	1.5457E+02	1.5487E+02	1.646E+02
Cd-109	#B	0.0000E+00	0.0000E+00	9.4726E+02	9.4726E+02	6.745E+01
Ag-110M	#F	2.3745E+01	2.5100E+01	1.4576E+01	1.4642E+01	2.341E+01
Sn-113	#B	0.0000E+00	0.0000E+00	8.0009E+00	8.0009E+00	4.451E+01
Sb-124	#B	-5.5381E+00	-6.9718E+00	2.6211E+01	2.6214E+01	2.847E+01
Sb-125	#F	1.9623E+02	1.9894E+02	5.6920E+01	5.7966E+01	7.130E+01
Te-129	#B	0.0000E+00	0.0000E+00	2.2490E+02	2.2491E+02	4.622E+02
Te-129M	#B	-2.4017E+02	-3.6279E+02	1.1088E+03	1.1090E+03	1.165E+03
I-131	#B	-1.6416E+01	-9.2420E+01	1.4017E+02	1.4027E+02	1.556E+02
I-132		3.5574E+01	2.7042E+03	1.1876E+03	1.1973E+03	1.798E+03
Te-132	#B	7.5534E+00	5.7419E+02	1.8911E+03	1.8914E+03	2.186E+03
I-133	#B	5.3329E+00	>12 Halflives	2.1224E+01	2.1226E+01	2.308E+01
Ba-133	#B	-1.6662E+00	-1.6722E+00	3.0271E+01	3.0271E+01	3.404E+01
Cs-134	#B	0.0000E+00	0.0000E+00	1.2883E+01	1.2883E+01	2.541E+01
Cs-136	#B	-2.0023E+01	-5.7398E+01	7.2713E+01	7.2785E+01	7.321E+01
Cs-137	#B	-2.3107E+01	-2.3136E+01	2.5066E+01	2.5098E+01	2.593E+01
Ce-139	#B	1.2292E+01	1.3594E+01	3.2513E+01	3.2522E+01	3.907E+01
Ba-140	#B	4.0927E+01	1.2136E+02	2.3189E+02	2.3199E+02	2.503E+02

La-140	#B	1.2731E+00	3.7752E+00	9.0139E+01	9.0139E+01	8.404E+01
Ce-141	#B	1.4638E+01	2.2422E+01	8.3730E+01	8.3740E+01	1.008E+02
Ce-144	#B	2.0315E+01	2.1327E+01	2.5648E+02	2.5649E+02	3.095E+02
ND-147	#B	0.0000E+00	0.0000E+00	2.2597E+02	2.2597E+02	5.982E+02
Eu-152	#B	0.0000E+00	0.0000E+00	5.3368E+01	5.3368E+01	1.260E+02
Eu-154	#B	2.2756E+01	2.2857E+01	6.8984E+01	6.8997E+01	8.302E+01
Eu-155	B	7.2168E-01	7.2746E-01	1.0465E+02	1.0465E+02	1.754E+02
Lu-176	#B	0.0000E+00	0.0000E+00	1.0475E+01	1.0475E+01	2.421E+01
Ir-192	#B	0.0000E+00	0.0000E+00	1.5388E+01	1.5388E+01	3.282E+01
Hg-203	#B	1.3525E+01	1.8209E+01	3.2902E+01	3.2920E+01	3.796E+01
Tl-208	#B	0.0000E+00	0.0000E+00	1.5003E+01	1.5003E+01	3.140E+01
Pb-210	#B	5.2313E+03	5.2403E+03	2.0773E+04	2.0777E+04	2.629E+04
Bi-212	#B	2.4036E+02	2.4518E+02	3.0992E+02	3.1022E+02	3.230E+02
Pb-212	#F	8.7374E+02	8.9127E+02	1.3373E+02	1.4382E+02	6.148E+01
Bi-214		4.3816E+03	4.3817E+03	1.1227E+02	2.6596E+02	5.136E+01
Pb-214		4.1652E+03	4.1653E+03	1.1395E+02	2.6275E+02	7.054E+01
Ra-223	#F	2.5411E+02	2.5455E+02	1.6249E+02	1.6319E+02	1.843E+02
Ra-224	#B	0.0000E+00	0.0000E+00	2.7952E+02	2.7953E+02	7.418E+02
Ra-226		1.7692E+04	1.7692E+04	9.5270E+02	1.3976E+03	8.584E+02

Ac-227 #B	-1.4917E+02	-1.4943E+02	1.9279E+02	1.9299E+02	2.213E+02
Ac-228	1.8550E+03	1.8673E+03	1.3490E+02	1.7097E+02	9.289E+01
Th-228 B	3.2095E+03	3.2739E+03	2.7729E+03	2.7866E+03	4.531E+03
Th-230 #B	1.1984E+03	1.1984E+03	2.0226E+04	2.0227E+04	2.563E+04
Pa-231 #B	0.0000E+00	0.0000E+00	4.7583E+02	4.7584E+02	1.467E+03
Pa-234M#A	7.8207E+02	7.8207E+02	2.6306E+03	2.6310E+03	2.633E+03
Th-232 #B	1.6132E+04	1.6132E+04	3.4828E+04	3.5004E+04	4.385E+04
Th-234 #B	0.0000E+00	0.0000E+00	1.3862E+03	1.3863E+03	2.651E+03
U-235 #B	1.1239E+02	1.1239E+02	2.3828E+02	2.3837E+02	2.861E+02
U-238 #B	1.6004E+02	1.6004E+02	7.1038E+02	7.1046E+02	8.778E+02
Am-241 #B	0.0000E+00	0.0000E+00	2.1509E+02	2.1511E+02	4.243E+02
Am-243 #B	0.0000E+00	0.0000E+00	1.2054E+02	1.2054E+02	2.005E+02
Pm-144 #B	0.0000E+00	0.0000E+00	9.4061E+00	9.4061E+00	2.465E+01
Pm-146 #B	-1.1500E+00	-1.1579E+00	2.9384E+01	2.9384E+01	3.314E+01

- All peaks for activity calculation had bad shape.
* - Activity omitted from total
& - Activity omitted from total and all peaks had bad shape.
< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

---------- S U M M A R Y ----------

Total Activity (30.3 to 2038.5 keV) 2.881E+04 pCi/L
Total Decayed Activity (30.3 to 2038.5 keV) 3.1491342E+04 pCi/L

The library has energies which are not separable.

Analyzed by: _____
Operator

Reviewed by: _____
Supervisor

Laboratory: Pace

ORTEC g v - i (3263) Env32 G701W047 9/24/2024 4:58:16 PM Page 1
Pace Spectrum name: 30716130001.An1

Sample description
81318

Spectrum Filename: C:\User\Spectra\30716130001.An1

Acquisition information
Start time: 9/24/2024 10:03:12 AM
Live time: 3600
Real time: 3666
Dead time: 1.79 %
Detector ID: 2

Detector system
DET 2

Calibration
Filename: DET_2_2L MAR_23-047(113023).Clb
DET 2 2L MARINELLI

Energy Calibration
Created: 11/30/2023 7:00:31 AM
Zero offset: 0.281 keV
Gain: 0.250 keV/channel
Quadratic: -1.344E-08 keV/channel^2

Efficiency Calibration
Created: 11/30/2023 7:26:21 AM
Type: Polynomial
Uncertainty: 1.699 %
Coefficients: -0.225215 -3.983441 0.474906
-0.072106 0.003754 -0.000081

Library Files
Main analysis library: Pace Master w Ra226U235 (wo PS)
Library Match Width: 0.500
Peak stripping: Library based

Analysis parameters
Analysis engine: Env32 G701W047
Start channel: 120 (30.33keV)
Stop channel: 8144 (2038.53keV)
Peak rejection level: 30.000%
Peak search sensitivity: 3
Sample Size: 2.0000E+00
Activity scaling factor: 1.0000E+06/(1.0000E+00* 2.0000E+00) =
5.0000E+05
Detection limit method: Reg. Guide 4.16 Method

Random error: 0.0000000E+00
Systematic error: 0.0000000E+00
Fraction Limit: 0.000%
Background width: average of three points.

Half lives decay limit: 12.000

WI-FQ-LS-24

9/26/24

ORTEC g v - i (3263) Env32 G701W047 9/24/2024 4:58:16 PM Page 2
Pace Spectrum name: 30716130001.An1

Activity range factor: 2.000
Min. step backg. energy 0.000
Multiplet shift channel 2.000

Corrections	Status	Comments
Decay correct to date:	YES	9/4/2024 10:30:00 AM
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	YES	Det_2_Bkg_092024Ra226U235(2LITER 9/24/2024 4:14:26 PM
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

total peaks alloc. 0 cutoff: 0.00E+00 %
Energy Calibration
Normalized diff: 0.0899

***** S U M M A R Y O F P E A K S I N R A N G E *****

Peak Energy	Area	Uncert	FWHM	Corrctn Factor	Nuclide Energy	Brnch. Ratio	Act. pCi/L	Nuc
74.79	1034.	6.67	0.97	1.579E-02	74.66	68.200	3.599E+02	Am243
					74.81	6.330	3.856E+03	Pb214
					74.81	10.400	2.394E+03	Pb212
					74.81	10.400	2.394E+03	Pb212
77.12	1880.	3.85	0.97	1.718E-02	77.11	17.500	2.393E+03	Pb212
					77.11	10.700	3.837E+03	Pb214
					77.11	17.500	2.393E+03	Pb212
83.87	343.	17.81	0.98	2.107E-02	83.78	24.900	2.438E+02	Ra223
					84.37	1.266	4.736E+03	Th228
87.16	780.	7.96	0.98	2.292E-02	86.54	30.700	4.257E+02	Eu155
					87.20	3.700	3.445E+03	Pb214
					87.30	7.800	1.661E+03	Pb212
					88.03	3.610	3.568E+03	Cd109
					87.30	7.800	1.661E+03	Pb212
89.98	546.	11.13	0.98	2.446E-02	89.95	3.560	2.355E+03	U235
					89.95	3.560	2.355E+03	U235
93.42	344.	16.95	0.98	2.628E-02	92.59	5.600	8.049E+02	U238
					92.60	2.800	1.609E+03	Th234
					92.60	2.800	1.609E+03	Th234
					92.59	5.600	8.049E+02	U238
129.41	380.	22.28	0.69	4.059E-02				
131.55	312.	29.91	1.02	4.118E-02	131.61	0.135	2.140E+04	Th228
154.12	325.	24.19	0.77	4.550E-02	154.21	5.620	4.778E+02	Ra223
186.20	6556.	1.99	1.06	4.782E-02	186.10	3.500	1.462E+04	Ra226
209.24	588.	14.28	1.14	4.783E-02				
242.04	3572.	3.50	1.11	4.663E-02	241.92	7.470	3.845E+03	Pb214
					241.00	3.900	7.493E+03	Ra224

ORTEC g v - i (3263) Env32 G701W047 9/24/2024 4:58:16 PM Page 3
Pace Spectrum name: 30716130001.An1

pk energy	area	uncert	fwhm	corr	nuclide	brnch.	act.	nuc
270.40	810.	11.34	1.72	4.507E-02				

295.29	8776.	1.65	1.17	4.357E-02	295.22	19.200	3.936E+03	Pb214
					295.96	28.670	3.184E+03	Ir192
					295.96	28.670	3.184E+03	Ir192
328.11	434.	17.29	1.09	4.157E-02	328.76	20.300	5.720E+02	La140
					329.85	2.700	1.456E+03	Ac227
					330.00	1.300	3.019E+03	Pa231
					328.76	20.300	5.720E+02	La140
338.41	1698.	4.78	1.16	4.096E-02	338.32	11.300	1.384E+03	Ac228
351.99	16071.	0.95	1.19	4.017E-02	351.99	37.100	4.044E+03	Pb214
401.75	157.	29.95	1.07	3.749E-02				
409.67	283.	19.92	0.86	3.709E-02				
463.02	658.	9.84	1.41	3.465E-02	463.36	10.500	6.864E+02	Sb125
					463.36	10.500	6.864E+02	Sb125
609.42	13972.	0.98	1.46	2.961E-02	609.31	44.800	3.949E+03	Bi214
665.28	431.	12.55	1.44	2.816E-02				
702.78	247.	21.97	0.81	2.728E-02	702.62	97.900	3.467E+01	Nb94
					702.62	97.900	3.467E+01	Nb94
768.41	1305.	4.72	1.51	2.593E-02	768.36	4.800	3.936E+03	Bi214
772.83	177.	16.78	1.61	2.584E-02	772.60	75.600	2.573E+03	I132
786.24	334.	14.20	1.36	2.559E-02				
795.17	537.	10.43	1.58	2.542E-02	795.86	85.530	9.385E+01	Cs134
806.38	384.	14.60	1.52	2.522E-02				
911.39	2543.	3.04	1.68	2.353E-02	911.21	26.600	1.532E+03	Ac228
934.17	803.	7.26	1.92	2.320E-02				
936.61	141.	26.95	1.75	2.315E-02	937.49	34.130	7.063E+01	Ag110M
					937.49	34.130	7.063E+01	Ag110M
964.78	554.	6.27	1.77	2.278E-02	964.13	14.340	6.315E+02	Eu152
					964.13	14.340	6.315E+02	Eu152
969.31	1443.	3.11	1.78	2.272E-02	968.97	16.200	1.472E+03	Ac228
1120.48	3482.	2.16	1.91	2.093E-02	1120.29	14.800	4.219E+03	Bi214
1155.18	468.	9.41	1.56	2.057E-02				
1238.35	1274.	4.62	2.15	1.976E-02	1238.11	5.860	4.118E+03	Bi214
					1238.28	66.070	4.370E+02	Co56
1377.94	1037.	4.72	2.05	1.858E-02	1377.67	3.920	5.343E+03	Bi214
1385.33	211.	15.28	2.10	1.853E-02	1384.30	24.120	1.874E+02	Ag110M
					1384.30	24.120	1.874E+02	Ag110M
1408.33	520.	8.59	1.33	1.834E-02	1408.01	20.870	5.112E+02	Eu152
					1408.01	20.870	5.112E+02	Eu152
1460.16	234.	21.25	2.10	1.795E-02	1461.00	10.670	4.582E+02	K40
1509.44	498.	7.45	1.79	1.761E-02				
1637.17	72.	22.34	0.57	1.677E-02				
1764.77	3145.	2.08	2.34	1.601E-02	1764.49	15.360	4.768E+03	Bi214

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Centroid Channel	Energy	Background Counts	Net Area Counts	Efficiency * Area	Uncert 2 Sigma %	FWHM keV	Suspected Nuclide	
333.74	83.85	1697.	343.	1.628E+04	35.62	0.975	HG-203	D
358.13	89.96	1576.	548.	2.241E+04	22.20	0.982	AC-228	D
515.73	129.41	2032.	380.	9.353E+03	44.56	0.688	PU-239	sM
614.43	154.12	1952.	325.	7.143E+03	48.38	0.766	ND-147	sM
834.57	209.24	1845.	588.	1.229E+04	28.55	1.144	AC-228	M
1078.89	270.40	1694.	810.	1.797E+04	22.67	1.717	AC-228	sM
1309.39	328.11	1152.	434.	1.043E+04	34.57	1.093	BI-207	M
1603.55	401.75	616.	157.	4.188E+03	59.89	1.072	XE-138	s
1635.17	409.67	697.	283.	7.639E+03	39.84	0.862	AC-228	s
1848.30	463.02	683.	658.	1.898E+04	19.68	1.405	AC-228	s

2656.28	665.28	455.	431.	1.533E+04	25.09	1.437	AS-76	s
2806.08	702.78	476.	247.	9.053E+03	43.94	0.807	NB-94	s
3139.52	786.24	360.	334.	1.307E+04	28.39	1.362	PA-234M	s
3220.14	806.38	300.	312.	1.237E+04	19.36	1.643	BI-214	D
3730.53	934.17	379.	803.	3.460E+04	14.51	1.916	BI-214	
3854.02	964.77	313.	568.	2.492E+04	12.18	1.775	AC-228	D
4613.63	1155.18	226.	468.	2.273E+04	18.81	1.559	BI-214	s
5507.05	1378.75	726.	397.	2.140E+04	21.63	2.095	BI-214	D
5625.23	1408.33	221.	520.	2.835E+04	17.17	1.330	EU-152	s
6029.29	1509.44	139.	498.	2.830E+04	14.89	1.788	BI-214	s
6539.77	1637.17	44.	72.	4.273E+03	44.69	0.569	-	s

s - Peak fails shape tests.
D - Peak area deconvoluted.
L - Peak written from unknown list.
C - Area < Critical level.
M - Peak is close to a library peak.

This section based on library: Pace Master w Ra226U235 (wo PS)

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	FWHM keV
Pb-214	297.66	74.81	1865.	1045.	0.290	9.14	0.966D
Pb-212	297.66	74.81	2041.	1052.	0.292	17.22	0.966D
Pb-212	306.85	77.11	2167.	1747.	0.485	11.06	0.969D
Pb-214	306.85	77.11	1686.	1879.	0.522	7.72	0.969D
Pb-214	347.15	87.20	1662.	782.	0.217	16.40	0.979D
Pb-212	347.16	87.20	2087.	754.	0.209	24.33	0.979s
U-235	358.14	89.95	2182.	457.	0.127	41.07	0.982D
U-238	371.89	93.40	1527.	345.	0.096	33.75	0.985

Nuclide	Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM
Th-228	524.26	131.55	2185.	312.	0.087	59.82	1.023
Ra-226	742.57	186.20	2671.	6519.	1.811	4.02	1.060
Pb-214	965.60	242.04	2420.	3568.	0.991	7.01	1.113
Pb-214	1178.29	295.29	2076.	8773.	2.437	3.29	1.168
Ac-228	1350.53	338.41	1129.	1696.	0.471	9.58	1.160
Pb-214	1404.77	351.99	1372.	16055.	4.460	1.90	1.194
Sb-125	1848.61	463.10	726.	496.	0.138	24.77	1.340s
Bi-214	2432.69	609.31	661.	13624.	3.784	1.80	1.472D
Bi-214	3068.07	768.36	379.	1273.	0.354	7.08	1.611D
I-132	3085.03	772.60	347.	177.	0.049	33.57	1.615D
Cs-134	3175.19	795.17	415.	533.	0.148	21.04	1.581s
Ac-228	3639.55	911.39	487.	2537.	0.705	6.11	1.678
Ag-110M	3740.30	936.61	222.	141.	0.039	53.91	1.753s
Eu-152	3853.67	964.99	456.	497.	0.138	22.54	1.774s
Ac-228	3869.60	968.97	372.	1435.	0.399	6.51	1.779D
Bi-214	4474.97	1120.48	292.	3482.	0.967	4.33	1.908
Co-56	4945.69	1238.28	290.	1030.	0.286	9.76	2.149D
Bi-214	5502.69	1377.67	514.	638.	0.177	12.81	2.094D
Ag-110M	5533.30	1385.33	127.	211.	0.059	30.55	2.099s
Eu-152	5624.76	1408.22	280.	464.	0.129	20.59	2.116s
K-40	5832.37	1460.16	269.	234.	0.065	42.50	2.101
Bi-214	7048.65	1764.49	384.	2814.	0.782	4.26	2.361D

s - Peak fails shape tests.
D - Peak area deconvoluted.
A Derived peak area.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

- Nuclide - Name	Code	Average Activity pCi/L	Peak Energy keV	Peak Activity pCi/L	Code	Peak MDA Value pCi/L	COMMENTS
Be-7	C	-1.1859E+02				5.34E+01	
			477.56	-1.186E+02	%(	1.851E+02 7.05E+01 1.03E+01	G K
Na-22	C	8.6263E+00				9.50E+02	
			1274.53	8.626E+00	%(	1.408E+01 8.73E+01 9.99E+01	G K
K-40	N	4.5822E+02				4.68E+11	
			1461.00	4.582E+02	(P	1.551E+02 2.13E+01 1.07E+01	G K
Cr-51	F	-2.6281E+01				2.77E+01	
			320.08	-2.628E+01	%(	2.394E+02 3.93E+02 1.01E+01	G K
Mn-54	C	1.2453E+01				3.12E+02	
			834.85	1.245E+01	%(P	1.734E+01 6.94E+01 1.00E+02	G K

Nuclide	Ave activity	Energy	Activity	Code	Peak MDA	Comments
Co-56	C 3.5404E+02				7.73E+01	
		1238.28	3.540E+02	} P	2.824E+01 4.88E+00 6.61E+01	G K
		1771.35	0.000E+00	%(	2.065E+02 1.00E+03 1.55E+01	G
Co-57	C -2.8030E-01				2.72E+02	
		122.06	-2.803E-01	%(	2.828E+01 4.19E+03 8.56E+01	G K
		136.47	1.241E+01	& P	2.157E+02 7.23E+02 1.07E+01	G
Co-58	C 2.1668E+00				7.08E+01	
		810.78	2.167E+00	%(P	1.701E+01 3.84E+02 9.94E+01	G K
Fe-59	F -3.6298E+01				4.45E+01	
		1099.25	-3.630E+01	%(	4.075E+01 5.91E+01 5.65E+01	G K
		1291.60	1.845E+00	%	4.522E+01 1.29E+03 4.32E+01	G
Co-60	F 1.0299E+01				1.92E+03	
		1332.50	1.030E+01	%(P	1.435E+01 7.35E+01 1.00E+02	G K
		1173.24	0.000E+00	& P	1.452E+01 1.00E+03 1.00E+02	G
Zn-65	F 3.4805E+01				2.44E+02	
		1115.55	3.480E+01	%(P	3.187E+01 4.83E+01 5.06E+01	G K
SE-75	-7.3065E+00				1.20E+02	
		264.66	-7.307E+00	%(	3.044E+01 1.81E+02 5.86E+01	G K
		136.00	-7.581E+00	&	4.262E+01 2.34E+02 5.83E+01	G
		279.54	0.000E+00	& P	7.365E+01 1.00E+03 2.48E+01	G
		121.12	8.885E+01	& P	1.527E+02 7.19E+01 1.64E+01	G
Y-88	C 7.8608E+00				1.07E+02	
		1836.06	7.861E+00	%(	1.344E+01 9.67E+01 9.92E+01	G K
		898.04	7.999E-01	% P	1.830E+01 1.12E+03 9.37E+01	G

Zr-95	I	3.5938E+01					6.40E+01		
			756.73	3.594E+01	&(	3.338E+01	4.51E+01	5.45E+01	G K
			724.20	-2.924E+01	&	4.439E+01	7.32E+01	4.42E+01	G
Nb-95	I	2.0982E+01					3.50E+01		
			765.81	2.098E+01	%(P	2.087E+01	4.83E+01	9.98E+01	G K
Ru-106	I	6.8236E+01					3.73E+02		
			621.93	6.824E+01	&(P	1.306E+02	8.90E+01	9.93E+00	G K
Ag-110M	F	4.8716E+01					2.50E+02		
			657.76	5.170E+00	&(P	1.528E+01	1.41E+02	9.40E+01	G K
			1505.04	1.436E+02	% P	1.100E+02	4.27E+01	1.29E+01	G
			1384.30	1.874E+02	?(P	4.901E+01	1.53E+01	2.41E+01	G
			937.49	7.063E+01	?(	3.625E+01	2.70E+01	3.41E+01	G

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
		884.68	-3.330E+00	&	2.252E+01	3.32E+02	7.22E+01 G
		763.94	-5.787E+01	&	8.051E+01	6.72E+01	2.21E+01 G
		744.28	0.000E+00	% P	3.462E+02	1.00E+03	4.70E+00 G
		706.68	0.000E+00	% P	1.070E+02	1.00E+03	1.63E+01 G
Sb-124	F -3.5124E-01					6.02E+01	
		602.73	-3.512E-01	&(	1.849E+01	2.43E+03	9.78E+01 G K
		645.85	0.000E+00	% P	2.442E+02	1.00E+03	7.38E+00 G
		722.79	0.000E+00	% P	1.832E+02	1.00E+03	1.08E+01 G
		1690.98	1.013E+01	%	3.309E+01	1.80E+02	4.73E+01 G
Sb-125	I 1.5985E+02					1.01E+03	
		427.88	3.253E+01	%(P	4.923E+01	6.84E+01	2.96E+01 G K
		176.31	1.558E+02	% P	2.797E+02	7.51E+01	6.82E+00 G
		463.36	5.188E+02	*(P	1.342E+02	1.24E+01	1.05E+01 G
		600.60	0.000E+00	% P	8.472E+01	1.00E+03	1.79E+01 G
		635.95	-5.789E+01	%	1.353E+02	1.12E+02	1.13E+01 G
Te-129M	I -4.6944E+02					3.36E+01	
		695.88	-4.694E+02	%(	8.075E+02	8.29E+01	3.00E+00 G K
I-131	I 1.5713E+01					8.02E+00	
		364.49	1.571E+01	%(	9.452E+01	2.69E+02	8.17E+01 G K
		636.99	1.963E+02	% P	1.096E+03	2.67E+02	7.17E+00 G
		284.30	2.966E+02	&	1.396E+03	2.04E+02	6.14E+00 G
I-132	I 2.5725E+03					3.20E+00	
		772.60	2.573E+03	(P	1.304E+03	1.68E+01	7.56E+01 G K
		522.65	3.757E+03	%	5.956E+03	7.39E+01	1.60E+01 G
		630.19	-2.075E+03	%	7.906E+03	1.82E+02	1.33E+01 G
		954.55	-1.329E+03	%	6.615E+03	2.52E+02	1.76E+01 G
I-133	I 6.4085E+00					8.67E-01	
		529.87	6.408E+00	&(	1.467E+01	1.06E+02	8.70E+01 G K
		875.33	7.779E+01	&	3.354E+02	2.12E+02	4.51E+00 G
Ba-133	F 3.0404E-01					3.84E+03	
		356.02	3.040E-01	%(	2.128E+01	3.13E+03	6.20E+01 G K
		81.00	8.263E+01	% P	1.264E+02	6.41E+01	3.41E+01 G
		302.85	0.000E+00	& P	8.253E+01	1.00E+03	1.83E+01 G
		276.40	-2.019E+01	%	2.325E+02	4.98E+02	7.16E+00 G

			383.85	-2.194E+01	&	1.619E+02	3.30E+02	8.94E+00	G
Cs-134	I	9.3846E+01						7.52E+02	
			795.86	9.385E+01	@(P	1.717E+01	1.05E+01	8.55E+01	G K
			604.72	0.000E+00	%	2.067E+01	1.00E+03	9.76E+01	GA
			569.33	0.000E+00	& P	9.584E+01	1.00E+03	1.54E+01	GA
			801.95	3.321E+00	% P	1.708E+02	2.50E+03	8.69E+00	GA

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Cs-136	F -1.3154E+01					1.32E+01	
		818.51	-1.315E+01	%(	4.316E+01	1.62E+02	9.97E+01 G K
		176.60	4.303E+01	&	5.514E+02	5.33E+02	1.00E+01 G
		273.65	2.799E+02	&	4.132E+02	6.44E+01	1.11E+01 G
		340.55	3.224E+01	%	9.851E+01	1.32E+02	4.22E+01 G
		1048.07	-2.319E+01	&	5.430E+01	1.19E+02	8.00E+01 G
		1235.36	0.000E+00	%	2.804E+02	1.00E+03	2.00E+01 G
Cs-137	I 1.3611E+01					1.10E+04	
		661.66	1.361E+01	%(	1.409E+01	5.02E+01	9.01E+01 G K
Ce-139	F 1.4815E-01					1.38E+02	
		165.85	1.481E-01	&(	2.716E+01	7.62E+03	7.99E+01 G K
Ba-140	I -7.3768E+01					1.28E+01	
		537.26	-7.377E+01	&(	1.778E+02	1.12E+02	2.44E+01 G K
		162.66	0.000E+00	% P	9.727E+02	1.00E+03	6.22E+00 G
La-140	I 2.3507E-01					1.28E+01	
		1596.21	2.351E-01	&(P	5.135E+01	1.18E+04	9.54E+01 G K
		487.02	7.707E+01	%	9.254E+01	5.63E+01	4.55E+01 G
		815.77	0.000E+00	% P	1.871E+02	1.00E+03	2.33E+01 G
		328.76	-1.858E+02	%	2.143E+02	5.04E+01	2.03E+01 G
Ce-141	I 2.4711E+01					3.25E+01	
		145.44	2.471E+01	%(	6.769E+01	1.14E+02	4.82E+01 G K
Ce-144	I -7.1373E+01					2.85E+02	
		133.51	-7.137E+01	&(	2.111E+02	1.23E+02	1.11E+01 G K
Eu-154	I 5.3945E+00					3.14E+03	
		123.07	5.395E+00	&(	5.602E+01	4.32E+02	4.06E+01 G K
		1274.44	2.438E+01	%	3.980E+01	8.73E+01	3.50E+01 G
		1004.72	2.805E+01	%	7.634E+01	1.38E+02	1.79E+01 G
		996.26	-4.642E+01	&	1.435E+02	1.56E+02	1.05E+01 G
		873.19	1.023E+02	% P	1.135E+02	5.53E+01	1.22E+01 G
		723.30	0.000E+00	% P	7.977E+01	1.00E+03	2.01E+01 GA
		247.93	7.929E+00	& P	2.342E+02	1.28E+03	6.91E+00 G
Eu-155	I 2.6008E+01					1.74E+03	
		86.54	2.601E+01	%(	1.142E+02	1.32E+02	3.07E+01 G K
		105.31	1.521E+02	%	1.188E+02	3.30E+01	2.12E+01 G
Pb-210	N 7.2804E+02					8.14E+03	
		46.54	7.280E+02	&(P	1.774E+04	9.65E+02	4.25E+00 G K

Nuclide		Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Bi-212	N	1.7122E+02					6.98E+02	
			727.33	1.712E+02	%(P	2.200E+02	6.20E+01	6.58E+00 G K
			1620.50	1.076E+01	% P	9.425E+02	4.81E+03	1.49E+00 G
Pb-212	N	9.2032E+02					6.98E+02	
			238.63	2.511E+01	%(P	4.019E+01	6.96E+01	4.33E+01 G K
								Energy duplication
			77.11	2.227E+03	(P	2.798E+02	5.53E+00	1.75E+01 G
								Energy duplication
			74.81	2.449E+03	(P	4.966E+02	8.61E+00	1.04E+01 G
			87.30	1.609E+03	P	4.600E+02	1.22E+01	7.80E+00 GA
Bi-214	N	3.9473E+03					5.84E+05	
			609.31	3.855E+03	(P	3.467E+01	8.98E-01	4.48E+01 G K
			1120.29	4.219E+03		9.987E+01	2.16E+00	1.48E+01 GA
			2204.21	0.000E+00	=	0.000E+00	0.00E+00	4.86E+00 G
			1764.49	4.293E+03	(P	1.435E+02	2.13E+00	1.54E+01 G
			1377.67	3.290E+03	- P	5.582E+02	6.41E+00	3.92E+00 G
			1238.11	4.156E+02	} P	2.718E+02	4.06E+01	5.86E+00 G
			768.36	3.841E+03	(	2.817E+02	3.54E+00	4.80E+00 G
Pb-214	N	3.9594E+03					5.84E+05	
			351.99	4.044E+03	(P	4.416E+01	9.51E-01	3.71E+01 G K
			295.22	3.936E+03	(P	9.650E+01	1.65E+00	1.92E+01 G
			241.92	3.845E+03	(P	2.499E+02	3.51E+00	7.47E+00 G
			87.20	3.457E+03	- P	8.517E+02	8.20E+00	3.70E+00 G
								Energy duplication
			77.11	3.839E+03	(P	3.965E+02	3.86E+00	1.07E+01 G
								Energy duplication
			74.81	3.919E+03	} P	7.650E+02	4.57E+00	6.33E+00 G
Ra-223	N	1.7660E+01					7.96E+03	
			269.46	1.766E+01	%(P	1.106E+02	2.71E+02	1.37E+01 G K
			83.78	1.383E+02	% P	1.625E+02	3.60E+01	2.49E+01 G
			323.87	2.269E+02	%	3.626E+02	6.95E+01	3.93E+00 G
			154.21	3.680E+02	%	3.716E+02	4.24E+01	5.62E+00 G
			94.90	1.022E+02	% P	2.540E+02	7.53E+01	1.13E+01 G
			81.07	1.674E+02	% P	2.776E+02	6.79E+01	1.50E+01 G
Ra-226	N	1.4622E+04					5.84E+05	
			186.10	1.462E+04	(P	5.462E+02	2.01E+00	3.50E+00 G K
Ac-227	N	-1.1283E+02					7.95E+03	
			235.97	-1.128E+02	%(	1.426E+02	5.52E+01	1.23E+01 G K
			256.25	0.000E+00	% P	2.350E+02	1.00E+03	7.00E+00 G
			300.00	-5.226E+01	&	6.560E+02	5.42E+02	2.30E+00 G
			329.85	0.000E+00	%	6.629E+02	1.00E+03	2.70E+00 G
Ac-228	N	1.4833E+03					2.10E+03	
			911.21	1.532E+03	(P	6.370E+01	3.05E+00	2.66E+01 G K
			968.97	1.473E+03	(P	9.504E+01	3.26E+00	1.62E+01 G

Nuclide		Ave activity	Energy	Activity	Code	Peak	MDA	Comments
			338.32	1.384E+03	(P	1.301E+02	4.79E+00	1.13E+01 G
Th-228	N	1.5002E+03					6.98E+02	

```
                                 84.37 1.500E+03 %(P 2.890E+03 5.86E+01 1.27E+00 G K
                                215.99-1.074E+03 %   6.827E+03 2.76E+02 2.63E-01 GA
                                166.41-8.433E+03 %   1.899E+04 9.41E+01 1.08E-01 GA
                                131.61 2.140E+04   P 1.514E+04 2.99E+01 1.35E-01 GA

Th-230    N  -2.5680E+03                                          2.75E+07
                                 67.67-2.568E+03 &(  1.744E+04 2.70E+02 3.80E-01 G K

Th-232    N   1.2099E+04                                          4.17E+12
                                 63.81 1.210E+04 &(  2.911E+04 9.59E+01 2.67E-01 G K

U-235     N   7.4382E+01                                          2.57E+11
                                143.76 7.438E+01 %(P 1.959E+02 1.10E+02 1.10E+01 G K
                                205.31 1.851E+01 %   3.428E+02 7.69E+02 5.01E+00 G
                                                                  Energy duplication
                                 89.95 1.972E+03     9.502E+02 2.05E+01 3.56E+00 GA

U-238     N   8.9564E+02                                          1.63E+12
                                 92.59 8.956E+02 &(P 4.790E+02 1.69E+01 5.60E+00 G K
                                                                  Energy duplication
                               1001.03 0.000E+00 % P 1.925E+03 1.00E+03 8.40E-01 G K

Pm-144    C   2.6243E+00                                          3.63E+02
                                696.51 2.624E+00 &(P 1.540E+01 2.80E+02 9.90E+01 G K
                                618.01-7.001E+00 &   1.480E+01 9.82E+01 9.86E+01 G

Pm-146    C  -4.7969E+00                                          2.02E+03
                                453.88-4.797E+00 &(  2.193E+01 2.05E+02 6.52E+01 G K
                                747.16 2.926E-01 & P 4.315E+01 7.01E+03 3.40E+01 G
                                735.72 1.330E+01 % P 6.286E+01 2.25E+02 2.25E+01 GA
   ( - This peak used in the nuclide activity average.

   * - Peak is too wide, but only one peak in library.
   ! - Peak is part of a multiplet and this area went
       negative during deconvolution.
   ? - Peak is too narrow.
   @ - Peak is too wide at FW25M, but ok at FWHM.
   % - Peak fails sensitivity test.
   $ - Peak identified, but first peak of this nuclide
       failed one or more qualification tests.
   + - Peak activity higher than counting uncertainty range.
   - - Peak activity lower than counting uncertainty range.
   = - Peak outside analysis energy range.
   & - Calculated peak centroid is not close enough to the
       library energy centroid for positive identification.
   P - Peakbackground subtraction
```



```
   } - Peak is too close to another for the activity
       to be found directly.

   Nuclide Codes:                      Peak Codes:
   T - Thermal Neutron Activation      G - Gamma Ray
   F - Fast Neutron Activation         X - X-Ray
   I - Fission Product                 P - Positron Decay
   N - Naturally Occurring Isotope     S - Single-Escape
   P - Photon Reaction                 D - Double-Escape
   C - Charged Particle Reaction       K - Key Line
   M - No MDA Calculation              A - Not in Average
   R - Coincidence Corrected           C - Coincidence Peak
                                       Page 9
```

H - Halflife limit exceeded

- - - -

Ba-133 #B	3.0294E-01	3.0404E-01	1.9007E+01	1.9007E+01	2.128E+01
Cs-134 #	9.2135E+01	9.3846E+01	1.9748E+01	2.0438E+01	1.717E+01
Cs-136 #B	-4.5918E+00	-1.3154E+01	4.2530E+01	4.2536E+01	4.316E+01
Cs-137 #B	1.3594E+01	1.3611E+01	1.3655E+01	1.3675E+01	1.409E+01
Ce-139 #B	1.3396E-01	1.4815E-01	2.2575E+01	2.2575E+01	2.716E+01
Ba-140 #B	-2.4895E+01	-7.3768E+01	1.6534E+02	1.6539E+02	1.778E+02
La-140 #B	7.9330E-02	2.3507E-01	5.5500E+01	5.5500E+01	5.135E+01
Ce-141 #B	1.6137E+01	2.4711E+01	5.6500E+01	5.6517E+01	6.769E+01
Ce-144 #B	-6.7986E+01	-7.1373E+01	1.7617E+02	1.7622E+02	2.111E+02
ND-147 #B	0.0000E+00	0.0000E+00	1.0300E+02	1.0300E+02	3.759E+02
Eu-152 #B	0.0000E+00	0.0000E+00	1.9663E+01	1.9663E+01	8.313E+01
Eu-154 #B	5.3707E+00	5.3945E+00	4.6587E+01	4.6588E+01	5.602E+01
Eu-155 B	2.5801E+01	2.6008E+01	6.8828E+01	6.8858E+01	1.142E+02
Lu-176 #B	0.0000E+00	0.0000E+00	8.9634E+00	8.9634E+00	1.572E+01
Ir-192 #B	0.0000E+00	0.0000E+00	1.3842E+01	1.3842E+01	2.202E+01
Hg-203 #B	0.0000E+00	0.0000E+00	1.3043E+01	1.3043E+01	2.617E+01
Tl-208 #B	0.0000E+00	0.0000E+00	7.1490E+00	7.1491E+00	2.071E+01
Pb-210 #B	7.2680E+02	7.2804E+02	1.4044E+04	1.4044E+04	1.774E+04
Bi-212 #B	1.6785E+02	1.7122E+02	2.1217E+02	2.1239E+02	2.200E+02
Pb-212 #F	9.0223E+02	9.2032E+02	1.0181E+02	1.1554E+02	4.019E+01
Bi-214	3.9472E+03	3.9473E+03	7.0870E+01	2.2847E+02	3.467E+01
Pb-214	3.9593E+03	3.9594E+03	7.5330E+01	2.3732E+02	4.416E+01
Ra-223 B	1.7629E+01	1.7660E+01	9.5815E+01	9.5821E+01	1.106E+02
Ra-224 #B	0.0000E+00	0.0000E+00	1.8421E+02	1.8422E+02	4.644E+02
Ra-226	1.4622E+04	1.4622E+04	5.8731E+02	1.0291E+03	5.462E+02
Ac-227 #B	-1.1264E+02	-1.1283E+02	1.2453E+02	1.2471E+02	1.426E+02
Ac-228	1.4735E+03	1.4833E+03	6.4754E+01	1.0562E+02	6.370E+01
Th-228 B	1.4707E+03	1.5002E+03	1.7581E+03	1.7627E+03	2.890E+03
Th-230 #B	-2.5680E+03	-2.5680E+03	1.3845E+04	1.3853E+04	1.744E+04
Pa-231 #B	0.0000E+00	0.0000E+00	3.7468E+02	3.7469E+02	1.013E+03
Pa-234M#A	0.0000E+00	0.0000E+00	6.5327E+02	6.5327E+02	1.932E+03
Th-232 #B	1.2099E+04	1.2099E+04	2.3203E+04	2.3352E+04	2.911E+04
Th-234 #B	0.0000E+00	0.0000E+00	8.3040E+02	8.3045E+02	1.708E+03

U-235 #B	7.4382E+01	7.4382E+01	1.6356E+02	1.6362E+02	1.959E+02
U-238 #F	8.9564E+02	8.9564E+02	3.0226E+02	3.0809E+02	4.790E+02
Am-241 #B	0.0000E+00	0.0000E+00	1.3764E+02	1.3765E+02	2.834E+02
Am-243 #B	0.0000E+00	0.0000E+00	8.6060E+01	8.6060E+01	1.427E+02
Pm-144 #B	2.5260E+00	2.6243E+00	1.4706E+01	1.4707E+01	1.540E+01
Pm-146 #B	-4.7641E+00	-4.7969E+00	1.9643E+01	1.9645E+01	2.193E+01

- All peaks for activity calculation had bad shape.
* - Activity omitted from total
& - Activity omitted from total and all peaks had bad shape.
< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

S U M M A R Y

Total Activity (30.3 to 2038.5 keV) 2.459E+04 pCi/L
Total Decayed Activity (30.3 to 2038.5 keV) 2.7136543E+04 pCi/L

The library has energies which are not separable.

Analyzed by: _____
Operator

Reviewed by: _____
Supervisor

Laboratory: Pace

ORTEC g v - i (3263) Env32 G701W047 9/24/2024 4:59:09 PM Page 1
Pace Spectrum name: 30716183001.An1

Sample description
81318

Spectrum Filename: C:\User\Spectra\30716183001.An1

Acquisition information
Start time: 9/24/2024 11:10:23 AM
Live time: 3600
Real time: 3668
Dead time: 1.86 %
Detector ID: 2

Detector system
DET 2

Calibration
Filename: DET_2_2L MAR_23-047(113023).Clb
DET 2 2L MARINELLI

Energy Calibration
Created: 11/30/2023 7:00:31 AM
Zero offset: 0.281 keV
Gain: 0.250 keV/channel
Quadratic: -1.344E-08 keV/channel^2

Efficiency Calibration
Created: 11/30/2023 7:26:21 AM
Type: Polynomial
Uncertainty: 1.699 %
Coefficients: -0.225215 -3.983441 0.474906
-0.072106 0.003754 -0.000081

Library Files
Main analysis library: Pace Master w Ra226U235 (wo PS)
Library Match Width: 0.500
Peak stripping: Library based

Analysis parameters
Analysis engine: Env32 G701W047
Start channel: 120 (30.33keV)
Stop channel: 8144 (2038.53keV)
Peak rejection level: 30.000%
Peak search sensitivity: 3
Sample Size: 2.0000E+00
Activity scaling factor: 1.0000E+06/(1.0000E+00* 2.0000E+00) =
5.0000E+05
Detection limit method: Reg. Guide 4.16 Method

Random error: 0.0000000E+00
Systematic error: 0.0000000E+00
Fraction Limit: 0.000%
Background width: average of three points.

Half lives decay limit: 12.000

WTF 9.25.24

JM 9/25/24

ORTEC g v - i (3263) Env32 G701W047 9/24/2024 4:59:09 PM Page 2
Pace Spectrum name: 30716183001.An1

Activity range factor:	2.000
Min. step backg. energy	0.000
Multiplet shift channel	2.000

Corrections	Status	Comments
Decay correct to date:	YES	9/4/2024 11:30:00 AM
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	YES	Det_2_Bkg_092024Ra226U235(2LITER 9/24/2024 4:14:26 PM
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

total peaks alloc. 0 cutoff: 0.00E+00 %
Energy Calibration
Normalized diff: 0.0708

***** S U M M A R Y O F P E A K S I N R A N G E *****

Peak Energy	Area	Uncert	FWHM	Corrctn Factor	Nuclide Energy	Brnch. Ratio	Act. pCi/L	Nuc
74.82	1170.	6.05	0.97	1.581E-02	74.66	68.200	4.076E+02	Am243
					74.81	6.330	4.367E+03	Pb214
					74.81	10.400	2.711E+03	Pb212
77.16	2244.	3.36	0.97	1.719E-02	77.11	17.500	2.858E+03	Pb212
					77.11	10.700	4.582E+03	Pb214
83.75	375.	16.28	0.98	2.098E-02	83.78	24.900	2.668E+02	Ra223
87.21	942.	7.21	0.98	2.295E-02	86.54	30.700	5.138E+02	Eu155
					87.20	3.700	4.159E+03	Pb214
					87.30	7.800	2.006E+03	Pb212
					88.03	3.610	4.307E+03	Cd109
90.03	569.	11.27	0.98	2.449E-02	89.95	3.560	2.452E+03	U235
					91.10	28.300	1.053E+03	ND147
					89.95	3.560	2.452E+03	U235
93.20	402.	14.90	0.98	2.617E-02	92.59	5.600	9.551E+02	U238
					92.60	2.800	1.910E+03	Th234
					92.60	2.800	1.910E+03	Th234
					92.59	5.600	9.551E+02	U238
129.03	461.	21.59	0.91	4.049E-02				
186.21	7366.	2.11	1.02	4.782E-02	186.10	3.500	1.644E+04	Ra226
209.30	611.	15.07	1.18	4.782E-02				
238.82	308.	18.40	1.13	4.679E-02	238.63	43.300	5.461E+01	Pb212
242.05	4338.	1.98	1.13	4.663E-02	241.00	3.900	9.104E+03	Ra224
					241.92	7.470	4.670E+03	Pb214
					241.00	3.900	9.104E+03	Ra224
259.06	390.	18.80	1.00	4.573E-02				
270.39	792.	12.36	1.85	4.507E-02				
295.29	10178.	1.46	1.15	4.357E-02	295.22	19.200	4.566E+03	Pb214

ORTEC g v - i (3263) Env32 G701W047 9/24/2024 4:59:09 PM Page 3
Pace Spectrum name: 30716183001.An1

pk energy	area	uncert	fwhm	corr	nuclide	brnch.	act.	nuc
					295.96	28.670	3.693E+03	Ir192

					295.96	28.670	3.693E+03	Ir192
328.24	392.	21.11	1.07	4.156E-02	328.76	20.300	5.173E+02	La140
					330.00	1.300	2.730E+03	Pa231
					328.76	20.300	5.173E+02	La140
338.38	1627.	6.14	1.18	4.096E-02	338.32	11.300	1.326E+03	Ac228
352.01	18148.	0.92	1.17	4.017E-02	351.99	37.100	4.567E+03	Pb214
409.65	289.	18.62	0.70	3.709E-02				
463.06	553.	11.46	1.05	3.465E-02	463.36	10.500	5.769E+02	Sb125
					463.36	10.500	5.769E+02	Sb125
580.23	170.	21.98	0.66	3.046E-02				
609.45	15542.	0.90	1.47	2.961E-02	609.31	44.800	4.393E+03	Bi214
665.61	446.	13.83	1.01	2.815E-02				
703.62	262.	20.20	0.87	2.726E-02	702.62	97.900	3.684E+01	Nb94
706.52	206.	19.89	1.56	2.720E-02	706.68	16.330	1.844E+02	Ag110M
					706.68	16.330	1.844E+02	Ag110M
727.17	116.	28.08	0.85	2.676E-02	727.33	6.580	2.434E+02	Bi212
768.45	1452.	4.57	1.55	2.592E-02	768.36	4.800	4.381E+03	Bi214
786.26	409.	13.02	1.82	2.559E-02				
794.99	494.	9.90	1.57	2.543E-02	795.86	85.530	8.617E+01	Cs134
806.55	402.	12.06	1.32	2.522E-02				
911.35	2570.	2.73	1.73	2.353E-02	911.21	26.600	1.548E+03	Ac228
934.20	887.	5.82	2.03	2.320E-02				
936.92	164.	22.81	1.75	2.315E-02	937.49	34.130	8.251E+01	Ag110M
					937.49	34.130	8.251E+01	Ag110M
964.78	555.	6.47	1.77	2.278E-02	964.13	14.340	6.318E+02	Eu152
					964.13	14.340	6.318E+02	Eu152
969.24	1475.	3.16	1.78	2.272E-02	968.97	16.200	1.506E+03	Ac228
1120.50	3906.	2.14	1.84	2.093E-02	1120.29	14.800	4.734E+03	Bi214
1155.58	479.	9.00	1.90	2.056E-02				
1238.26	1440.	3.57	1.97	1.976E-02	1238.11	5.860	4.655E+03	Bi214
					1238.28	66.070	4.940E+02	Co56
1281.10	359.	11.00	1.43	1.938E-02				
1378.18	1064.	3.67	2.09	1.858E-02	1377.67	3.920	5.482E+03	Bi214
1408.42	569.	7.05	2.00	1.834E-02	1408.01	20.870	5.596E+02	Eu152
					1408.01	20.870	5.596E+02	Eu152
1461.12	338.	12.69	0.38	1.795E-02	1461.00	10.670	6.620E+02	K40
1504.58	140.	26.55	2.19	1.764E-02	1505.04	12.950	2.432E+02	Ag110M
					1505.04	12.950	2.432E+02	Ag110M
1509.59	522.	10.56	2.01	1.761E-02				
1588.70	257.	10.51	0.88	1.708E-02				
1729.84	940.	3.66	2.12	1.621E-02				
1764.73	3684.	1.85	2.41	1.601E-02	1764.49	15.360	5.591E+03	Bi214

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Efficiency * Area	Uncert 2 Sigma %	FWHM keV	Suspected Nuclide	
333.38	83.69	1678.	375.	1.788E+04	32.56	0.975	HG-203	D
358.43	90.02	1771.	569.	2.323E+04	22.54	0.982	AC-228	D
514.22	129.03	2579.	461.	1.139E+04	43.17	0.907	AC-228	sM
834.84	209.30	2147.	611.	1.278E+04	30.13	1.180	AC-228	M
1033.57	259.06	1360.	390.	8.529E+03	37.60	1.002	PB-214	sM
1078.84	270.39	1953.	792.	1.757E+04	24.72	1.848	AC-228	sM
1309.92	328.24	1435.	392.	9.432E+03	42.23	1.069	BI-207	M
1635.11	409.65	709.	289.	7.782E+03	37.24	0.702	AC-228	sM
1848.46	463.06	770.	553.	1.596E+04	22.93	1.055	AC-228	
2316.50	580.23	352.	170.	5.597E+03	43.96	0.661	PB-214	s

2657.62	665.61	560.	446.	1.585E+04	27.66	1.014 BI-214	s
2809.43	703.62	464.	262.	9.628E+03	40.40	0.870 NB-94	s
3139.61	786.26	441.	409.	1.598E+04	26.03	1.817 PA-234M	s
3220.11	806.55	316.	348.	1.382E+04	17.97	1.643 BI-214	D
3730.69	934.20	324.	887.	3.823E+04	11.65	2.030 BI-214	s
3853.64	964.73	362.	560.	2.459E+04	12.79	1.775 AC-228	D
4615.21	1155.58	230.	479.	2.330E+04	18.00	1.896 BI-214	
5116.78	1281.10	200.	359.	1.852E+04	22.00	1.425 BI-214	s
5625.59	1408.42	179.	569.	3.103E+04	14.11	2.004 EU-152	
6029.91	1509.59	308.	522.	2.964E+04	21.13	2.009 BI-214	M
6346.04	1588.70	105.	257.	1.505E+04	21.02	0.882 AC-228	sM
6910.13	1729.84	32.	940.	5.800E+04	7.32	2.123 BI-214	

s - Peak fails shape tests.
D - Peak area deconvoluted.
L - Peak written from unknown list.
C - Area < Critical level.
M - Peak is close to a library peak.

This section based on library: Pace Master w Ra226U235 (wo PS)

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	FWHM keV
Pb-212	297.66	74.81	2274.	1082.	0.301	13.88	0.966D
Pb-214	306.85	77.11	1726.	2243.	0.623	6.74	0.969D
Ra-223	333.28	83.73	2285.	395.	0.110	35.69	0.975
Pb-214	347.15	87.20	1836.	941.	0.261	14.45	0.979D
Pb-212	347.25	87.23	2122.	1023.	0.284	14.19	0.979
U-238	371.11	93.20	1592.	402.	0.112	29.80	0.985
Ra-226	742.58	186.21	3518.	7329.	2.036	4.25	1.016

Nuclide	Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM
Pb-212	951.98	238.63	1362.	283.	0.079	38.73	1.128D
Pb-214	965.12	241.92	1428.	4334.	1.204	3.92	1.131D
Pb-214	1178.31	295.29	2158.	10175.	2.826	2.92	1.151
La-140	1309.74	328.20	1368.	322.	0.089	48.20	1.214
Ac-228	1350.42	338.38	1675.	1624.	0.451	12.32	1.183
Pb-214	1404.86	352.01	1724.	18132.	5.037	1.84	1.168
Sb-125	1848.49	463.07	842.	489.	0.136	26.75	1.340
Bi-214	2432.69	609.31	666.	15303.	4.251	1.69	1.472D
Ag-110M	2821.01	706.52	285.	206.	0.057	39.78	1.557s
Bi-212	2903.52	727.17	277.	112.	0.031	58.84	0.854s
Bi-214	3068.46	768.45	523.	1452.	0.403	9.15	1.549
Cs-134	3175.82	795.32	333.	339.	0.094	23.68	1.246s
Ac-228	3639.29	911.33	446.	2595.	0.721	5.70	1.729
Ag-110M	3741.52	936.92	213.	164.	0.046	45.62	1.753s
Eu-152	3853.39	964.91	625.	382.	0.106	33.16	1.774s
Ac-228	3869.60	968.97	370.	1467.	0.408	6.41	1.779D
Bi-214	4475.04	1120.50	390.	3906.	1.085	4.27	1.841s
Co-56	4945.69	1238.28	204.	1164.	0.323	7.77	1.969D
Bi-214	5502.69	1377.67	315.	980.	0.272	8.21	2.094D
Eu-152	5625.23	1408.33	258.	532.	0.148	17.70	2.116
K-40	5836.17	1461.12	198.	338.	0.094	25.37	0.379s
Ag-110M	6009.85	1504.58	181.	140.	0.039	53.11	2.186s
Bi-214	7048.65	1764.49	509.	3169.	0.880	4.09	2.361D

s - Peak fails shape tests.
D - Peak area deconvoluted.
A Derived peak area.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

Nuclide Name	Code	Average Activity pCi/L	Peak Energy kev	Peak Activity pCi/L	Code	MDA Value pCi/L			COMMENTS
Be-7	C	-1.0057E+02						5.34E+01	
			477.56	-1.006E+02	%(	1.803E+02	8.07E+01	1.03E+01	G K
Na-22	C	2.4507E+00						9.50E+02	
			1274.53	2.451E+00	&(	1.522E+01	3.29E+02	9.99E+01	G K
K-40	N	6.6202E+02						4.68E+11	
			1461.00	6.620E+02	@(P	1.339E+02	1.27E+01	1.07E+01	G K
Sc-46	F	2.3801E+00						8.38E+01	
			889.28	2.380E+00	&(P	1.940E+01	4.01E+02	1.00E+02	G K
Cr-51	F	-5.0135E+01						2.77E+01	
			320.08	-5.013E+01	%(	2.509E+02	2.16E+02	1.01E+01	G K

Nuclide	Code	Ave activity	Energy	Activity	Code	Peak MDA			Comments
Mn-54	C	1.4437E+01						3.12E+02	
			834.85	1.444E+01	%(P	1.784E+01	6.17E+01	1.00E+02	G K
Co-56	C	4.0022E+02						7.73E+01	
			1238.28	4.002E+02	} P	2.380E+01	3.89E+00	6.61E+01	G K
			1771.35	0.000E+00	%(	2.445E+02	1.00E+03	1.55E+01	G
Co-57	C	-8.0489E+00						2.72E+02	
			122.06	-8.049E+00	%(	3.033E+01	1.57E+02	8.56E+01	G K
			136.47	3.395E+01	% P	2.227E+02	2.73E+02	1.07E+01	G
Fe-59	F	-2.6154E+01						4.45E+01	
			1099.25	-2.615E+01	&(	4.127E+01	8.27E+01	5.65E+01	G K
			1291.60	2.060E+01	&	4.675E+01	1.21E+02	4.32E+01	G
SE-75		-2.4321E+01						1.20E+02	
			264.66	-2.432E+01	&(	3.300E+01	5.92E+01	5.86E+01	G K
			136.00	-3.448E+00	&	4.415E+01	5.33E+02	5.83E+01	G
			279.54	0.000E+00	% P	7.508E+01	1.00E+03	2.48E+01	G
			121.12	6.719E+01	& P	1.633E+02	1.02E+02	1.64E+01	G
Y-88	C	1.0206E+01						1.07E+02	
			1836.06	1.021E+01	&(	1.465E+01	8.17E+01	9.92E+01	G K
			898.04	0.000E+00	& P	1.986E+01	1.00E+03	9.37E+01	G
Nb-94	I	8.0944E-01						7.41E+06	
			871.09	8.094E-01	%(P	1.589E+01	9.64E+02	9.99E+01	G K
			702.62	0.000E+00	% P	1.713E+01	1.00E+03	9.79E+01	G
Zr-95	I	1.7016E+01						6.40E+01	

			756.73	1.702E+01	%(	3.665E+01	1.03E+02	5.45E+01	G K
			724.20	-7.803E+00	%	4.291E+01	2.63E+02	4.42E+01	G
Nb-95	I	2.1379E+01						3.50E+01	
			765.81	2.138E+01	%(P	1.903E+01	4.33E+01	9.98E+01	G K
Ru-106	I	2.1095E+01						3.73E+02	
			621.93	2.110E+01	%(P	1.402E+02	3.07E+02	9.93E+00	G K
Ag-110M	F	5.7025E+01						2.50E+02	
			657.76	0.000E+00	&(P	1.663E+01	1.00E+03	9.40E+01	G K
			1505.04	2.432E+02	?(P	1.136E+02	2.66E+01	1.29E+01	G
			1384.30	9.376E+01	% P	7.760E+01	4.50E+01	2.41E+01	G
			937.49	8.251E+01	&(	3.548E+01	2.28E+01	3.41E+01	G
			884.68	-1.631E+01	&	2.508E+01	7.64E+01	7.22E+01	G
			763.94	-1.091E+01	&	7.688E+01	3.36E+02	2.21E+01	G
			744.28	6.554E+01	% P	3.407E+02	2.48E+02	4.70E+00	G

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
		706.68	1.844E+02	?(P	7.266E+01	1.99E+01	1.63E+01 G
Sb-124	F -1.8914E-01					6.02E+01	
		602.73	-1.891E-01	%(	2.056E+01	5.02E+03	9.78E+01 G K
		645.85	0.000E+00	% P	2.413E+02	1.00E+03	7.38E+00 G
		722.79	0.000E+00	% P	1.982E+02	1.00E+03	1.08E+01 G
		1690.98	3.220E+01	%	3.147E+01	5.50E+01	4.73E+01 G
Sb-125	I 1.3475E+02					1.01E+03	
		427.88	9.301E-01	&(P	5.287E+01	2.54E+03	2.96E+01 G K
		176.31	0.000E+00	& P	3.053E+02	1.00E+03	6.82E+00 G
		463.36	5.120E+02	(P	1.443E+02	1.34E+01	1.05E+01 G
		600.60	1.254E+01	% P	8.674E+01	3.19E+02	1.79E+01 G
		635.95	-7.324E+01	%	1.385E+02	9.10E+01	1.13E+01 G
Te-129M	I -1.3889E+02					3.36E+01	
		695.88	-1.389E+02	&(	7.911E+02	2.72E+02	3.00E+00 G K
I-131	I -1.5393E+01					8.02E+00	
		364.49	-1.539E+01	%(	1.005E+02	2.93E+02	8.17E+01 G K
		636.99	3.953E+02	& P	1.084E+03	1.31E+02	7.17E+00 G
		284.30	1.425E+02	%	1.491E+03	4.52E+02	6.14E+00 G
I-132	I 1.0118E+02					3.20E+00	
		772.60	1.012E+02	%(P	1.745E+03	8.22E+02	7.56E+01 G K
		522.65	2.220E+03	%	6.461E+03	1.35E+02	1.60E+01 G
		630.19	-2.396E+03	%	8.704E+03	1.74E+02	1.33E+01 G
		954.55	7.297E+02	%	6.663E+03	4.61E+02	1.76E+01 G
Te-132	I 1.9300E+02					3.20E+00	
		228.16	1.930E+02	%(P	1.558E+03	3.50E+02	8.80E+01 G K
I-133	I 1.0980E+00					8.67E-01	
		529.87	1.098E+00	&(	1.714E+01	7.22E+02	8.70E+01 G K
		875.33	-9.681E+01	%	3.646E+02	1.86E+02	4.51E+00 G
Ba-133	F -2.2347E+01					3.84E+03	
		356.02	-2.235E+01	&(	2.563E+01	5.20E+01	6.20E+01 G K
		81.00	0.000E+00	% P	1.360E+02	1.00E+03	3.41E+01 G
		302.85	0.000E+00	% P	8.443E+01	1.00E+03	1.83E+01 G

			276.40	7.056E+01	&	2.372E+02	1.46E+02	7.16E+00	G
			383.85	-1.059E+02	%	1.727E+02	7.37E+01	8.94E+00	G
Cs-134	I	5.9718E+01						7.52E+02	
			795.86	5.972E+01	(P	1.543E+01	1.18E+01	8.55E+01	G K
			604.72	0.000E+00	%	2.067E+01	1.00E+03	9.76E+01	GA
			569.33	0.000E+00	% P	1.006E+02	1.00E+03	1.54E+01	GA
			801.95	0.000E+00	% P	1.820E+02	1.00E+03	8.69E+00	GA

Nuclide		Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Cs-136	F	-3.4295E+01					1.32E+01	
			818.51	-3.429E+01	%(	4.808E+01	6.97E+01	9.97E+01 G K
			176.60	4.191E+01	&	5.762E+02	5.72E+02	1.00E+01 G
			273.65	5.613E+01	&	4.378E+02	3.38E+02	1.11E+01 G
			340.55	2.851E+01	&	1.065E+02	1.62E+02	4.22E+01 G
			1048.07	-3.577E+01	%	5.800E+01	8.27E+01	8.00E+01 G
			1235.36	0.000E+00	%	2.758E+02	1.00E+03	2.00E+01 G
Cs-137	I	-3.6919E-01					1.10E+04	
			661.66	-3.692E-01	&(	1.708E+01	2.20E+03	9.01E+01 G K
Ce-139	F	4.0743E+00					1.38E+02	
			165.85	4.074E+00	&(	2.860E+01	2.92E+02	7.99E+01 G K
Ba-140	I	-3.1282E+01					1.28E+01	
			537.26	-3.128E+01	&(	1.855E+02	2.75E+02	2.44E+01 G K
			162.66	2.708E+02	% P	9.918E+02	1.53E+02	6.22E+00 G
La-140	I	7.4562E+01					1.28E+01	
			1596.21	0.000E+00	%(P	6.069E+01	1.00E+03	9.54E+01 G K
			487.02	7.951E+01	%	9.448E+01	5.57E+01	4.55E+01 G
			815.77	0.000E+00	% P	2.145E+02	1.00E+03	2.33E+01 G
			328.76	4.250E+02	(	2.310E+02	2.41E+01	2.03E+01 G
Ce-141	I	2.8090E+01					3.25E+01	
			145.44	2.809E+01	&(	6.919E+01	1.03E+02	4.82E+01 G K
Ce-144	I	-2.0900E+01					2.85E+02	
			133.51	-2.090E+01	&(	2.188E+02	4.36E+02	1.11E+01 G K
Eu-154	I	-2.7092E+01					3.14E+03	
			123.07	-2.709E+01	&(	6.141E+01	9.47E+01	4.06E+01 G K
			1274.44	1.662E+00	&	4.432E+01	1.41E+03	3.50E+01 G
			1004.72	1.860E+01	%	8.362E+01	2.27E+02	1.79E+01 G
			996.26	-2.401E+00	&	1.519E+02	3.19E+03	1.05E+01 G
			873.19	0.000E+00	& P	1.354E+02	1.00E+03	1.22E+01 G
			723.30	0.000E+00	% P	8.445E+01	1.00E+03	2.01E+01 GA
			247.93	9.370E+01	& P	2.405E+02	1.12E+02	6.91E+00 G
Eu-155	I	-1.8915E+01					1.74E+03	
			86.54	-1.891E+01	%(	1.221E+02	2.63E+02	3.07E+01 G K
			105.31	1.293E+02	%	1.300E+02	4.23E+01	2.12E+01 G
Hg-203	F	3.9113E+00					4.66E+01	
			279.20	3.911E+00	%(P	2.693E+01	2.98E+02	8.15E+01 G K

Nuclide		Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Tl-208	N	2.3107E+01					6.98E+02	
			583.19	2.311E+01	%(P	1.665E+01	3.40E+01	8.45E+01 G K
			860.56	2.220E+01	&	1.269E+02	2.81E+02	1.24E+01 G
			277.36	0.000E+00	% P	2.904E+02	1.00E+03	6.31E+00 G
Bi-212	N	2.4336E+02					6.98E+02	
			727.33	2.434E+02	(P	1.746E+02	2.94E+01	6.58E+00 G K
			1620.50	0.000E+00	% P	1.158E+03	1.00E+03	1.49E+00 G
Pb-212	N	5.3566E+01					6.98E+02	
			238.63	5.357E+01	(P	3.301E+01	1.94E+01	4.33E+01 G K
								Energy duplication
			77.11	0.000E+00	% P	1.094E+01	1.00E+03	1.75E+01 G
								Energy duplication
			74.81	2.520E+03	+ P	5.238E+02	6.94E+00	1.04E+01 G
			87.30	2.183E+03	+ P	4.638E+02	7.10E+00	7.80E+00 GA
Bi-214	N	4.3370E+03					5.84E+05	
			609.31	4.330E+03	(P	3.480E+01	8.43E-01	4.48E+01 G K
			1120.29	4.734E+03	@	1.147E+02	2.14E+00	1.48E+01 GA
			2204.21	0.000E+00	=	0.000E+00	0.00E+00	4.86E+00 G
			1764.49	4.835E+03	+ P	1.646E+02	2.04E+00	1.54E+01 G
			1377.67	5.049E+03	+ P	4.403E+02	4.10E+00	3.92E+00 G
			1238.11	3.772E+02	} P	2.718E+02	4.76E+01	5.86E+00 G
			768.36	4.381E+03	(	3.295E+02	4.57E+00	4.80E+00 G
Pb-214	N	4.5453E+03					5.84E+05	
			351.99	4.567E+03	(P	4.942E+01	9.20E-01	3.71E+01 G K
			295.22	4.566E+03	(P	9.836E+01	1.46E+00	1.92E+01 G
			241.92	4.670E+03	(P	1.927E+02	1.96E+00	7.47E+00 G
			87.20	4.159E+03	(P	8.946E+02	7.22E+00	3.70E+00 G
								Energy duplication
			77.11	4.583E+03	(P	4.011E+02	3.37E+00	1.07E+01 G
								Energy duplication
			74.81	2.038E+02	} P	7.461E+02	1.10E+02	6.33E+00 G
Ra-223	N	1.9273E+02					7.96E+03	
			269.46	2.699E+01	%(P	1.198E+02	1.93E+02	1.37E+01 G K
			83.78	2.839E+02	(P	1.618E+02	1.78E+01	2.49E+01 G
			323.87	1.007E+02	%	3.950E+02	1.70E+02	3.93E+00 G
			154.21	1.963E+02	%	3.959E+02	8.43E+01	5.62E+00 G
			94.90	1.937E+02	% P	2.634E+02	4.16E+01	1.13E+01 G
			81.07	1.476E+01	% P	2.970E+02	6.05E+02	1.50E+01 G
Ra-224	N	1.9249E+02					6.98E+02	
			241.00	1.925E+02	%(P	4.260E+02	9.62E+01	3.90E+00 G K
Ra-226	N	1.6439E+04					5.84E+05	
			186.10	1.644E+04	(P	6.260E+02	2.12E+00	3.50E+00 G K

Pace Spectrum name: 30716183001.An1

Nuclide		Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Ac-227	N	-1.5204E+00					7.95E+03	
			235.97	-1.520E+00	%(	1.389E+02	3.95E+03	1.23E+01 G K
			256.25	0.000E+00	% P	2.434E+02	1.00E+03	7.00E+00 G

			300.00	3.337E+01 %	6.799E+02	8.80E+02	2.30E+00	G
			329.85	-3.661E+02 %	5.960E+02	7.09E+01	2.70E+00	G
Ac-228	N	1.5438E+03				2.10E+03		
			911.21	1.567E+03 (P	6.103E+01	2.85E+00	2.66E+01	G K
			968.97	1.506E+03 (P	9.476E+01	3.21E+00	1.62E+01	G
			338.32	1.326E+03 - P	1.579E+02	6.16E+00	1.13E+01	G
Th-230	N	1.8832E+03				2.75E+07		
			67.67	1.883E+03 %(	1.796E+04	3.79E+02	3.80E-01	G K
Pa-234M	N	3.3311E+02				1.63E+12		
						Energy duplication		
			1001.03	3.331E+02 &(P	1.816E+03	2.74E+02	8.37E-01	G
Th-232	N	-8.7511E+03				4.17E+12		
			63.81	-8.751E+03 %(	3.175E+04	1.44E+02	2.67E-01	G K
U-235	N	2.0886E+01				2.57E+11		
			143.76	2.089E+01 &(P	2.030E+02	4.05E+02	1.10E+01	G K
			205.31	5.424E+01 %	3.620E+02	2.78E+02	5.01E+00	G
			89.95	1.345E+03 %	1.046E+03	3.28E+01	3.56E+00	GA
U-238	N	1.0419E+03				1.63E+12		
			92.59	1.042E+03 &(P	4.891E+02	1.49E+01	5.60E+00	G K
						Energy duplication		
			1001.03	3.319E+02 & P	1.809E+03	2.74E+02	8.40E-01	G K
Pm-146	C	1.1496E+01				2.02E+03		
			453.88	1.150E+01 %(	2.265E+01	8.87E+01	6.52E+01	G K
			747.16	0.000E+00 % P	4.466E+01	1.00E+03	3.40E+01	G
			735.72	0.000E+00 % P	7.142E+01	1.00E+03	2.25E+01	GA

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide failed one or more qualification tests.
\+ - Peak activity higher than counting uncertainty range.
\- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.

& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction
} - Peak is too close to another for the activity to be found directly.

Nuclide Codes:
T - Thermal Neutron Activation
F - Fast Neutron Activation
I - Fission Product
N - Naturally Occurring Isotope
P - Photon Reaction
C - Charged Particle Reaction

Peak Codes:
G - Gamma Ray
X - X-Ray
P - Positron Decay
S - Single-Escape
D - Double-Escape
K - Key Line

M - No MDA Calculation
R - Coincidence Corrected
H - Halflife limit exceeded
A - Not in Average
C - Coincidence Peak

********** D I S C A R D E D I S O T O P E P E A K S **********

Nuclide	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	Activity	
La-140	328.20	1368.	322.	0.089	48.20	4.250E+02	
Sb-125	463.07	842.	489.	0.136	26.75	5.120E+02	P
Ag-110M	706.52	285.	206.	0.057	39.78	1.844E+02	P
Ag-110M	936.92	213.	164.	0.046	45.62	8.251E+01	
Eu-152	964.91	625.	382.	0.106	33.16	4.400E+02	P
Eu-152	1408.33	258.	532.	0.148	17.70	5.225E+02	
Ag-110M	1504.58	181.	140.	0.039	53.11	2.432E+02	P

P - Peakbackground subtraction

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide		Time of Count Activity pCi/L	Time Corrected Activity pCi/L	Uncertainty Counting pCi/L	2 Sigma Total pCi/L	MDA pCi/L
Be-7	#B	-7.7588E+01	-1.0057E+02	1.6242E+02	1.6251E+02	1.803E+02
Na-22	#B	2.4152E+00	2.4507E+00	1.6132E+01	1.6133E+01	1.522E+01
K-40	#	6.6202E+02	6.6202E+02	1.6796E+02	1.7200E+02	1.339E+02
Sc-46	#B	2.0174E+00	2.3801E+00	1.9099E+01	1.9100E+01	1.940E+01
Cr-51	#B	-3.0404E+01	-5.0135E+01	2.1704E+02	2.1706E+02	2.509E+02
Mn-54	B	1.3811E+01	1.4437E+01	1.7808E+01	1.7826E+01	1.784E+01
Co-56		3.3453E+02	4.0022E+02	2.8694E+01	3.7987E+01	2.445E+02
Co-57	#B	-7.6489E+00	-8.0489E+00	2.5291E+01	2.5295E+01	3.033E+01
Co-58	#B	0.0000E+00	0.0000E+00	8.6554E+00	8.6554E+00	1.966E+01
Fe-59	#B	-1.9157E+01	-2.6154E+01	4.3270E+01	4.3294E+01	4.127E+01
Co-60	#B	0.0000E+00	0.0000E+00	7.3823E+00	7.3823E+00	1.658E+01
Zn-65	#B	0.0000E+00	0.0000E+00	1.1353E+01	1.1353E+01	4.058E+01
SE-75	#B	-2.1677E+01	-2.4321E+01	2.8806E+01	2.8842E+01	3.300E+01
Kr-85	#B	0.0000E+00	0.0000E+00	1.5476E+03	1.5476E+03	4.227E+03
Y-88	#B	8.9624E+00	1.0206E+01	1.6682E+01	1.6695E+01	1.465E+01

Nb-94	#B	8.0944E-01	8.0944E-01	1.5612E+01	1.5612E+01	1.589E+01
Zr-95	#B	1.3705E+01	1.7016E+01	3.5205E+01	3.5218E+01	3.665E+01
Nb-95	#F	1.4387E+01	2.1379E+01	1.8531E+01	1.8570E+01	1.903E+01
Ru-103	#B	0.0000E+00	0.0000E+00	1.3338E+01	1.3338E+01	2.295E+01
Ag-108M	#B	0.0000E+00	0.0000E+00	3.1713E+00	3.1713E+00	1.866E+01
Ru-106	B	2.0325E+01	2.1095E+01	1.2945E+02	1.2945E+02	1.402E+02
Cd-109	#B	0.0000E+00	0.0000E+00	6.8244E+02	6.8245E+02	3.373E+01
Ag-110M	#F	5.3949E+01	5.7025E+01	2.2682E+01	2.2901E+01	1.663E+01
Sn-113	#B	0.0000E+00	0.0000E+00	8.6415E+00	8.6416E+00	2.967E+01
Sb-124	#B	-1.5026E-01	-1.8914E-01	1.8986E+01	1.8986E+01	2.056E+01
Sb-125	#F	1.3291E+02	1.3475E+02	3.6044E+01	3.6801E+01	5.287E+01
Te-129	#B	0.0000E+00	0.0000E+00	1.2351E+02	1.2351E+02	3.000E+02
Te-129M	#B	-9.1965E+01	-1.3889E+02	7.5604E+02	7.5608E+02	7.911E+02
I-131	#B	-2.7361E+00	-1.5393E+01	9.0122E+01	9.0126E+01	1.005E+02
I-132	#B	1.3333E+00	1.0118E+02	1.6632E+03	1.6632E+03	1.745E+03
Te-132	#B	2.5433E+00	1.9300E+02	1.3509E+03	1.3509E+03	1.558E+03
I-133	#B	1.0980E+00	>12 Halflives	1.5846E+01	1.5846E+01	1.714E+01

Ba-133 #B	-2.2266E+01	-2.2347E+01	2.3251E+01	2.3263E+01	2.563E+01
Cs-134	5.8629E+01	5.9718E+01	1.4141E+01	1.4533E+01	1.543E+01
Cs-136 #B	-1.1969E+01	-3.4295E+01	4.7837E+01	4.7876E+01	4.808E+01
Cs-137 #B	-3.6873E-01	-3.6919E-01	1.6279E+01	1.6279E+01	1.708E+01
Ce-139 #B	3.6842E+00	4.0743E+00	2.3816E+01	2.3817E+01	2.860E+01
Ba-140 #B	-1.0554E+01	-3.1282E+01	1.7188E+02	1.7189E+02	1.855E+02
La-140 #F	2.5155E+01	7.4562E+01	3.5938E+01	3.6196E+01	6.069E+01
Ce-141 #B	1.8341E+01	2.8090E+01	5.7785E+01	5.7808E+01	6.919E+01
Ce-144 #B	-1.9908E+01	-2.0900E+01	1.8214E+02	1.8214E+02	2.188E+02
ND-147 #B	0.0000E+00	0.0000E+00	2.0855E+02	2.0855E+02	3.993E+02
Eu-152 #B	0.0000E+00	0.0000E+00	3.5583E+01	3.5583E+01	8.677E+01
Eu-154 #B	-2.6973E+01	-2.7092E+01	5.1315E+01	5.1339E+01	6.141E+01
Eu-155 #B	-1.8764E+01	-1.8915E+01	9.9338E+01	9.9349E+01	1.221E+02
Lu-176 #B	0.0000E+00	0.0000E+00	3.5354E+00	3.5354E+00	1.625E+01
Ir-192 #B	0.0000E+00	0.0000E+00	1.0259E+01	1.0259E+01	2.258E+01
Hg-203 #B	2.9056E+00	3.9113E+00	2.3322E+01	2.3324E+01	2.693E+01
Tl-208 #F	2.2652E+01	2.3107E+01	1.5721E+01	1.5772E+01	1.665E+01
Pb-210 #B	0.0000E+00	0.0000E+00	4.6951E+03	4.6951E+03	1.896E+04
Bi-212	2.3858E+02	2.4336E+02	1.4320E+02	1.4385E+02	1.746E+02
Pb-212	5.2513E+01	5.3566E+01	2.0744E+01	2.0987E+01	3.301E+01
Bi-214	4.3369E+03	4.3370E+03	7.3135E+01	2.4960E+02	3.480E+01
Pb-214	4.5452E+03	4.5453E+03	8.3664E+01	2.7156E+02	4.942E+01
Ra-223 F	1.9239E+02	1.9273E+02	6.8776E+01	6.9715E+01	1.198E+02
Ra-224 #B	1.8871E+02	1.9249E+02	3.7029E+02	3.7047E+02	4.260E+02
Ra-226	1.6439E+04	1.6439E+04	6.9839E+02	1.1792E+03	6.260E+02
Ac-227 #B	-1.5177E+00	-1.5204E+00	1.2014E+02	1.2014E+02	1.389E+02
Ac-228	1.5336E+03	1.5438E+03	6.6236E+01	1.0921E+02	6.103E+01
Th-228 #B	0.0000E+00	0.0000E+00	1.7910E+03	1.7910E+03	3.136E+03
Th-230 #B	1.8832E+03	1.8832E+03	1.4256E+04	1.4261E+04	1.796E+04
Pa-231 #B	0.0000E+00	0.0000E+00	5.4390E+02	5.4390E+02	1.032E+03
Pa-234M#A	3.3311E+02	3.3311E+02	1.8275E+03	1.8276E+03	1.816E+03
Th-232 #B	-8.7511E+03	-8.7511E+03	2.5268E+04	2.5340E+04	3.175E+04

Th-234 #B	0.0000E+00	0.0000E+00	7.2721E+02	7.2725E+02	1.800E+03
U-235 #B	2.0886E+01	2.0886E+01	1.6903E+02	1.6904E+02	2.030E+02
U-238 #F	1.0419E+03	1.0419E+03	3.1049E+02	3.1815E+02	4.891E+02
Am-241 #B	0.0000E+00	0.0000E+00	1.0953E+02	1.0954E+02	2.933E+02
Am-243 #B	0.0000E+00	0.0000E+00	7.2166E+01	7.2166E+01	1.198E+02
Pm-144 #B	0.0000E+00	0.0000E+00	9.3443E+00	9.3443E+00	1.642E+01
Pm-146 B	1.1418E+01	1.1496E+01	2.0399E+01	2.0409E+01	2.265E+01

- All peaks for activity calculation had bad shape.
* - Activity omitted from total
& - Activity omitted from total and all peaks had bad shape.
< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

S U M M A R Y

Total Activity (30.3 to 2038.5 keV) 2.787E+04 pCi/L
Total Decayed Activity (30.3 to 2038.5 keV) 2.7884195E+04 pCi/L

The library has energies which are not separable.

Analyzed by: _____
Operator

30716183001.Rpt

Reviewed by: _____
Supervisor

Laboratory: Pace

ORTEC g v - i (3263) Env32 G701W047 9/18/2024 9:48:46 AM Page 1
Pace Spectrum name: 30716565001.An1

Sample description
81318

Spectrum Filename: C:\User\Spectra\30716565001.An1

Acquisition information
Start time: 9/18/2024 8:43:03 AM
Live time: 3600
Real time: 3665
Dead time: 1.78 %
Detector ID: 2

Detector system
DET 2

Calibration
Filename: DET_2_2L MAR_23-047(113023).Clb
DET 2 2L MARINELLI

Energy Calibration
Created: 11/30/2023 7:00:31 AM
Zero offset: 0.281 keV
Gain: 0.250 keV/channel
Quadratic: -1.344E-08 keV/channel^2

Efficiency Calibration
Created: 11/30/2023 7:26:21 AM
Type: Polynomial
Uncertainty: 1.699 %
Coefficients: -0.225215 -3.983441 0.474906
-0.072106 0.003754 -0.000081

Library Files
Main analysis library: Pace Master w Ra226U235 (wo PS)
Library Match Width: 0.500
Peak stripping: Library based

Analysis parameters
Analysis engine: Env32 G701W047
Start channel: 120 (30.33keV)
Stop channel: 8144 (2038.53keV)
Peak rejection level: 30.000%
Peak search sensitivity: 3
Sample Size: 2.0000E+00
Activity scaling factor: 1.0000E+06/(1.0000E+00* 2.0000E+00) =
5.0000E+05
Detection limit method: Reg. Guide 4.16 Method

Random error: 0.0000000E+00
Systematic error: 0.0000000E+00
Fraction Limit: 0.000%
Background width: average of three points.

Half lives decay limit: 12.000

WTF 9-19-24

JM 9/18/24

ORTEC g v - i (3263) Env32 G701W047 9/18/2024 9:48:46 AM Page 2
Pace Spectrum name: 30716565001.An1

Activity range factor:	2.000
Min. step backg. energy	0.000
Multiplet shift channel	2.000

Corrections	Status	Comments
Decay correct to date:	YES	9/4/2024 11:30:00 AM
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	YES	Det_2_Bkg_091324Ra226U235(2LITER 9/16/2024 9:13:41 AM
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

9/18/24 WTF 9-19-24

total peaks alloc. 0 cutoff: 0.00E+00 %
Energy Calibration
Normalized diff: 0.1306

***** S U M M A R Y O F P E A K S I N R A N G E *****

Peak Energy	Area	Uncert	FWHM	Corrctn Factor	Nuclide Energy	Brnch. Ratio	Act. pCi/L	Nuc
77.12	51.	27.55	0.97	1.717E-02	77.11	17.500	PBC<MDA	Pb212
					77.11	10.700	1.045E+02	Pb214
					77.11	17.500	PBC<MDA	Pb212
241.86	100.	16.78	1.00	4.664E-02	241.92	7.470	1.071E+02	Pb214
295.20	197.	9.56	1.23	4.357E-02	295.22	19.200	8.623E+01	Pb214
					295.96	28.670	6.745E+01	Ir192
351.91	351.	7.50	1.10	4.017E-02	351.99	37.100	8.517E+01	Pb214
609.28	272.	8.17	1.46	2.962E-02	609.31	44.800	7.216E+01	Bi214
1120.49	72.	16.35	0.35	2.093E-02	1120.29	14.800	8.766E+01	Bi214
1238.74	35.	21.94	0.43	1.976E-02	1238.28	66.070	1.145E+01	Co56
1764.90	45.	19.89	2.36	1.602E-02	1764.49	15.360	6.867E+01	Bi214

No unknown peaks passed sensitivity test.

This section based on library: Pace Master w Ra226U235 (wo PS)

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	FWHM keV
Pb-214	306.85	77.11	71.	51.	0.014	55.11	0.969D
Pb-214	964.88	241.86	54.	99.	0.028	34.84	0.995s
Pb-214	1177.95	295.20	42.	192.	0.053	20.13	1.225s
Pb-214	1404.47	351.91	74.	338.	0.094	15.85	1.101
Bi-214	2432.56	609.28	58.	255.	0.071	18.04	1.457
Bi-214	4475.01	1120.49	11.	72.	0.020	32.70	0.351s

ORTEC g v - i (3263) Env32 G701W047 9/18/2024 9:48:46 AM Page 3
Pace Spectrum name: 30716565001.An1

Nuclide	Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM
Co-56	4945.69	1238.28	7.	35.	0.010	43.88	0.426D

Bi-214	7048.65	1764.49	16.	45.	0.013	39.78	2.361D

s - Peak fails shape tests.
D - Peak area deconvoluted.
A Derived peak area.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

- Nuclide - Name	Code	Average Activity pCi/L	Peak Energy keV	Peak Activity pCi/L	Code	MDA Value pCi/L		COMMENTS
Na-22	C	9.7591E-02					9.50E+02	
			1274.53	9.759E-02	%(	4.224E+00	2.08E+03 9.99E+01	G K
Sc-46	F	1.2639E+00					8.38E+01	
			889.28	1.264E+00	%(P	4.819E+00	1.80E+02 1.00E+02	G K
Cr-51	F	-2.2980E+00					2.77E+01	
			320.08	-2.298E+00	%(	5.325E+01	9.53E+02 1.01E+01	G K
Co-56	C	1.1447E+01					7.73E+01	
			1238.28	1.145E+01	} P	4.782E+00	2.19E+01 6.61E+01	G K
			1771.35	0.000E+00	%(P	4.026E+01	1.00E+03 1.55E+01	G
Fe-59	F	-2.3393E+00					4.45E+01	
			1099.25	-2.339E+00	%(	1.117E+01	2.34E+02 5.65E+01	G K
			1291.60	0.000E+00	& P	1.787E+01	1.00E+03 4.32E+01	G
Co-60	F	3.7840E-01					1.92E+03	
			1332.50	3.784E-01	%(P	4.701E+00	5.87E+02 1.00E+02	G K
			1173.24	0.000E+00	% P	6.595E+00	1.00E+03 1.00E+02	G
Zn-65	F	3.2175E+00					2.44E+02	
			1115.55	3.217E+00	%(P	1.027E+01	1.55E+02 5.06E+01	G K
SE-75		1.0187E-01					1.20E+02	
			264.66	1.019E-01	%(	6.875E+00	2.78E+03 5.86E+01	G K
			136.00	0.000E+00	& P	9.815E+00	1.00E+03 5.83E+01	G
			279.54	0.000E+00	% P	1.943E+01	1.00E+03 2.48E+01	G
			121.12	1.246E+01	&	3.016E+01	9.84E+01 1.64E+01	G
Y-88	C	1.7232E+00					1.07E+02	
			1836.06	1.723E+00	%(	3.868E+00	1.14E+02 9.92E+01	G K
			898.04	2.748E+00	% P	4.643E+00	8.22E+01 9.37E+01	G

Nuclide	Ave activity	Energy	Activity	Code	Peak MDA	Comments
Nb-94	I 7.0048E-01				7.41E+06	
		871.09	7.005E-01	%(	4.493E+00 2.96E+02 9.99E+01	G K
		702.62	0.000E+00	% P	4.273E+00 1.00E+03 9.79E+01	G
Zr-95	I -8.6786E-01				6.40E+01	
		756.73	-8.679E-01	%(	1.049E+01 5.46E+02 5.45E+01	G K
		724.20	5.348E+00	% P	9.661E+00 8.55E+01 4.42E+01	G
Ru-103	I 1.0139E+00				3.93E+01	
		497.08	1.014E+00	%(P	5.301E+00 2.34E+02 9.10E+01	G K

Ag-108M	C	7.7004E-02					1.53E+05		
			722.94	7.700E-02	%(	4.812E+00	2.79E+03	9.08E+01	G K
			614.28	5.613E+00	& P	3.908E+00	3.45E+01	8.98E+01	G
			433.94	0.000E+00	% P	5.410E+00	1.00E+03	9.05E+01	G
			79.13	-1.756E+01	%	1.459E+02	3.24E+02	6.60E+00	G
Ru-106	I	1.9881E+00					3.73E+02		
			621.93	1.988E+00	%(	3.987E+01	8.65E+02	9.93E+00	G K
Sn-113	F	1.0907E+00					1.15E+02		
			391.69	1.091E+00	%(	6.832E+00	2.69E+02	6.40E+01	G K
Sb-124	F	2.6446E+00					6.02E+01		
			602.73	2.645E+00	%(	4.546E+00	7.76E+01	9.78E+01	G K
			645.85	1.794E+01	% P	5.262E+01	1.33E+02	7.38E+00	G
			722.79	7.623E-01	&	4.764E+01	2.79E+03	1.08E+01	G
			1690.98	9.325E-01	% P	1.081E+01	5.93E+02	4.73E+01	G
Sb-125	I	6.7168E-02					1.01E+03		
			427.88	6.717E-02	&(P	1.462E+01	9.33E+03	2.96E+01	G K
			176.31	0.000E+00	%	7.066E+01	1.00E+03	6.82E+00	G
			463.36	0.000E+00	%	4.242E+01	1.00E+03	1.05E+01	G
			600.60	0.000E+00	% P	2.953E+01	1.00E+03	1.79E+01	G
			635.95	0.000E+00	% P	4.264E+01	1.00E+03	1.13E+01	G
Te-129	I	5.0555E+00					3.36E+01		
			459.60	5.055E+00	%(P	6.225E+01	5.27E+02	7.70E+00	G K
			487.39	0.000E+00	% P	4.257E+02	1.00E+03	1.42E+00	G
I-131	I	4.0239E+00					8.02E+00		
			364.49	4.024E+00	%(P	1.224E+01	1.35E+02	8.17E+01	G K
			636.99	0.000E+00	% P	2.203E+02	1.00E+03	7.17E+00	G
			284.30	0.000E+00	& P	2.052E+02	1.00E+03	6.14E+00	G

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
I-132	I 9.7187E+00				3.20E+00		
		772.60	9.719E+00	%(	1.215E+02	5.60E+02	7.56E+01 G K
		522.65	9.589E+01	& P	4.907E+02	2.28E+02	1.60E+01 G
		630.19	0.000E+00	%	7.776E+02	1.00E+03	1.33E+01 G
		954.55	3.452E+01	&	4.824E+02	6.52E+02	1.76E+01 G
Te-132	I -2.0398E+01				3.20E+00		
		228.16	-2.040E+01	%(	8.929E+01	1.84E+02	8.80E+01 G K
Cs-134	I 1.7371E+00				7.52E+02		
		795.86	1.737E+00	%(P	3.186E+00	8.52E+01	8.55E+01 G K
		604.72	-1.724E+00	%	5.281E+00	1.38E+02	9.76E+01 GA
		569.33	1.130E+01	% P	2.331E+01	9.47E+01	1.54E+01 GA
		801.95	2.594E+01	%	4.656E+01	8.52E+01	8.69E+00 GA
Cs-137	I -1.4516E+00				1.10E+04		
		661.66	-1.452E+00	%(	5.057E+00	1.60E+02	9.01E+01 G K
Ce-139	F -1.2571E-01				1.38E+02		
		165.85	-1.257E-01	&(	5.704E+00	1.81E+03	7.99E+01 G K
La-140	I -3.5224E+00				1.28E+01		

			1596.21	-3.522E+00	&(	1.370E+01	2.00E+02	9.54E+01	G K
			487.02	4.935E+00	% P	1.815E+01	1.65E+02	4.55E+01	G
			815.77	3.012E+01	%	2.285E+01	3.84E+01	2.33E+01	G
			328.76	-4.736E-01	%	3.856E+01	3.33E+03	2.03E+01	G
Ce-141	I	6.7188E-01						3.25E+01	
			145.44	6.719E-01	%(	1.339E+01	8.00E+02	4.82E+01	G K
Ce-144	I	1.8631E+01						2.85E+02	
			133.51	1.863E+01	&(	4.238E+01	9.29E+01	1.11E+01	G K
ND-147		7.4551E-01						1.11E+01	
			531.00	7.455E-01	%(P	6.322E+01	3.71E+03	1.35E+01	G K
			91.10	-5.221E+01	&	8.441E+01	6.56E+01	2.83E+01	G
Eu-154	I	1.8724E+00						3.14E+03	
			123.07	1.872E+00	%(P	1.159E+01	2.51E+02	4.06E+01	G K
			1274.44	2.767E-01	%	1.198E+01	2.08E+03	3.50E+01	G
			1004.72	-7.397E+00	%	2.816E+01	1.83E+02	1.79E+01	G
			996.26	-1.599E+00	%	4.445E+01	1.30E+03	1.05E+01	G
			873.19	1.027E+01	% P	3.207E+01	1.48E+02	1.22E+01	G
			723.30	0.000E+00	% P	2.596E+01	1.00E+03	2.01E+01	GA
			247.93	8.636E+00	& P	5.508E+01	2.70E+02	6.91E+00	G

Nuclide		Ave activity	Energy			Activity	Code	Peak	MDA	Comments
Eu-155	I	-7.2571E-01							1.74E+03	
			86.54	-7.257E-01	%(	2.895E+01	1.56E+03	3.07E+01	G K	
			105.31	-1.103E+01	%	3.011E+01	1.11E+02	2.12E+01	G	
Pb-210	N	3.5471E+02							8.14E+03	
			46.54	3.547E+02	&(	4.432E+03	4.74E+02	4.25E+00	G K	
Bi-212	N	2.8323E+01							6.98E+02	
			727.33	2.832E+01	&(P	5.908E+01	9.55E+01	6.58E+00	G K	
			1620.50	0.000E+00	% P	3.543E+02	1.00E+03	1.49E+00	G	
Bi-214	N	7.1268E+01							5.84E+05	
			609.31	7.216E+01	(P	1.080E+01	9.02E+00	4.48E+01	G K	
			1120.29	8.766E+01	@	2.173E+01	1.64E+01	1.48E+01	GA	
			2204.21	0.000E+00	=	0.000E+00	0.00E+00	4.86E+00	G	
			1764.49	6.867E+01	(P	3.258E+01	1.99E+01	1.54E+01	G	
			1377.67	0.000E+00	% P	1.755E+02	1.00E+03	3.92E+00	G	
			1238.11	0.000E+00	} P	8.693E+01	9.17E+02	5.86E+00	G	
			768.36	4.122E+01	&	8.933E+01	9.98E+01	4.80E+00	G	
Pb-214	N	8.8567E+01							5.84E+05	
			351.99	8.517E+01	(P	1.077E+01	7.92E+00	3.71E+01	G K	
			295.22	8.623E+01	@(P	1.474E+01	1.01E+01	1.92E+01	G	
			241.92	1.071E+02	+ P	3.968E+01	1.74E+01	7.47E+00	G	
			87.20	1.076E+02	&	2.081E+02	7.93E+01	3.70E+00	G	
										Energy duplication
			77.11	1.045E+02	(P	8.567E+01	2.76E+01	1.07E+01	G	
										Energy duplication
			74.81	6.305E+01	% P	1.677E+02	1.04E+02	6.33E+00	G	
Ra-226	N	3.2747E+01							5.84E+05	
			186.10	3.275E+01	%(P	1.321E+02	1.57E+02	3.50E+00	G K	

Ac-228	N	6.8684E-01					2.10E+03		
			911.21	6.868E-01	&(P	1.958E+01	1.30E+03	2.66E+01	G K
			968.97	0.000E+00	% P	3.864E+01	1.00E+03	1.62E+01	G
			338.32	0.000E+00	% P	2.883E+01	1.00E+03	1.13E+01	G
Th-230	N	8.5599E+01					2.75E+07		
			67.67	8.560E+01	%(	4.221E+03	1.87E+03	3.80E-01	G K
Pa-231	N	-5.4754E+01					1.20E+07		
			283.70	-5.475E+01	%(	2.384E+02	1.82E+02	1.60E+00	G K
			330.00	-2.902E+01	%	2.706E+02	3.83E+02	1.30E+00	G
Th-232	N	-6.8487E+02					4.17E+12		
			63.81	-6.849E+02	%(	9.171E+03	5.16E+02	2.67E-01	G K

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
U-235	N 6.5471E+00					2.57E+11	
		143.76	6.547E+00	%(P	4.209E+01	2.61E+02	1.10E+01 G K
		205.31	-8.605E+00	%	7.474E+01	3.47E+02	5.01E+00 G
		89.95	-3.234E+01	%	2.386E+02	2.97E+02	3.56E+00 GA
U-238	N 1.9461E+01					1.63E+12	
		92.59	1.946E+01	%(P	1.507E+02	2.94E+02	5.60E+00 G K
							Energy duplication
		1001.03	0.000E+00	&	5.570E+02	1.00E+03	8.40E-01 G K
Am-243	T 5.8855E+00					2.69E+06	
		74.66	5.886E+00	%(P	1.565E+01	1.04E+02	6.82E+01 G K
Pm-144	C 2.5163E+00					3.63E+02	
		696.51	2.516E+00	%(P	3.965E+00	7.61E+01	9.90E+01 G K
		618.01	0.000E+00	%	5.367E+00	1.00E+03	9.86E+01 G
Pm-146	C 2.3868E+00					2.02E+03	
		453.88	2.387E+00	%(P	4.557E+00	8.52E+01	6.52E+01 G K
		747.16	-4.702E+00	%	1.558E+01	1.53E+02	3.40E+01 G
		735.72	1.253E+00	% P	1.935E+01	6.89E+02	2.25E+01 GA

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide failed one or more qualification tests.
\+ - Peak activity higher than counting uncertainty range.
\- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction
} - Peak is too close to another for the activity to be found directly.

Nuclide Codes:
T - Thermal Neutron Activation

Peak Codes:
G - Gamma Ray

F - Fast Neutron Activation
I - Fission Product
N - Naturally Occurring Isotope
P - Photon Reaction
C - Charged Particle Reaction
M - No MDA Calculation
X - X-Ray
P - Positron Decay
S - Single-Escape
D - Double-Escape
K - Key Line
A - Not in Average

R - Coincidence Corrected
H - Halflife limit exceeded
C - Coincidence Peak

- -

********** D I S C A R D E D I S O T O P E P E A K S **********

Nuclide	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	Activity

P - Peakbackground subtraction

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide		Time of Count Activity pCi/L	Time Corrected Activity pCi/L	Uncertainty Counting pCi/L	2 Sigma Total pCi/L	MDA pCi/L
Be-7	#B	0.0000E+00	0.0000E+00	3.6247E+00	3.6247E+00	5.235E+01
Na-22	#B	9.6607E-02	9.7591E-02	4.0521E+00	4.0521E+00	4.224E+00
K-40	#B	0.0000E+00	0.0000E+00	5.5427E+00	5.5427E+00	5.122E+01
Sc-46	#B	1.1267E+00	1.2639E+00	4.5454E+00	4.5459E+00	4.819E+00
Cr-51	#B	-1.6235E+00	-2.2980E+00	4.3803E+01	4.3803E+01	5.325E+01
Mn-54	#B	0.0000E+00	0.0000E+00	1.7715E+00	1.7715E+00	6.050E+00
Co-56	A	1.0106E+01	1.1447E+01	5.0111E+00	5.0614E+00	4.026E+01
Co-57	#B	0.0000E+00	0.0000E+00	1.9792E+00	1.9792E+00	6.764E+00
Co-58	#B	0.0000E+00	0.0000E+00	6.8787E-01	6.8788E-01	6.384E+00
Fe-59	#B	-1.8843E+00	-2.3393E+00	1.0949E+01	1.0950E+01	1.117E+01
Co-60	#B	3.7651E-01	3.7840E-01	4.4406E+00	4.4406E+00	4.701E+00
Zn-65	#B	3.0930E+00	3.2175E+00	9.9621E+00	9.9637E+00	1.027E+01
SE-75	#B	9.4044E-02	1.0187E-01	5.6659E+00	5.6659E+00	6.875E+00
Kr-85	#B	0.0000E+00	0.0000E+00	2.5138E+02	2.5138E+02	1.878E+03
Y-88	#B	1.5745E+00	1.7232E+00	3.9410E+00	3.9426E+00	3.868E+00
Nb-94	#B	7.0048E-01	7.0048E-01	4.1506E+00	4.1508E+00	4.493E+00
Zr-95	#B	-7.4673E-01	-8.6786E-01	9.4833E+00	9.4834E+00	1.049E+01
Nb-95	#B	0.0000E+00	0.0000E+00	1.9441E+00	1.9441E+00	7.174E+00
Ru-103	#B	7.9351E-01	1.0139E+00	4.7429E+00	4.7432E+00	5.301E+00
Ag-108M	#B	7.6999E-02	7.7004E-02	4.2929E+00	4.2929E+00	4.812E+00
Ru-106	#B	1.9374E+00	1.9881E+00	3.4384E+01	3.4384E+01	3.987E+01
Cd-109	#B	0.0000E+00	0.0000E+00	1.2435E+02	1.2435E+02	2.586E+02
Ag-110M	#B	0.0000E+00	0.0000E+00	1.4934E+00	1.4934E+00	5.279E+00
Sn-113	#B	1.0032E+00	1.0907E+00	5.8684E+00	5.8688E+00	6.832E+00
Sb-124	#B	2.2539E+00	2.6446E+00	4.1026E+00	4.1051E+00	4.546E+00
Sb-125	#B	6.6530E-02	6.7168E-02	1.2531E+01	1.2531E+01	1.462E+01
Te-129	#B	3.7964E+00	5.0555E+00	5.3238E+01	5.3239E+01	6.225E+01
Te-129M	#B	0.0000E+00	0.0000E+00	7.0819E+01	7.0819E+01	2.628E+02
I-131	#B	1.2120E+00	4.0239E+00	1.0843E+01	1.0845E+01	1.224E+01
I-132	#B	4.8030E-01	9.7187E+00	1.0892E+02	1.0892E+02	1.215E+02
Te-132	#B	-1.0080E+00	-2.0398E+01	7.4888E+01	7.4898E+01	8.929E+01
I-133	#B	0.0000E+00	>12 Halflives	2.3130E+00	2.3131E+00	4.755E+00
Ba-133	#B	0.0000E+00	0.0000E+00	9.6039E-01	9.6039E-01	6.332E+00
Cs-134	#B	1.7150E+00	1.7371E+00	2.9610E+00	2.9626E+00	3.186E+00

Cs-136 #B	0.0000E+00	0.0000E+00	1.2512E+00	1.2512E+00	1.156E+01

Cs-137 #B	-1.4503E+00	-1.4516E+00	4.6367E+00	4.6374E+00	5.057E+00
Ce-139 #B	-1.1722E-01	-1.2571E-01	4.5537E+00	4.5537E+00	5.704E+00
Ba-140 #B	0.0000E+00	0.0000E+00	1.2339E+01	1.2339E+01	3.836E+01
La-140 #B	-1.6559E+00	-3.5224E+00	1.4125E+01	1.4126E+01	1.370E+01
Ce-141 #B	4.9968E-01	6.7188E-01	1.0745E+01	1.0745E+01	1.339E+01
Ce-144 #B	1.8012E+01	1.8631E+01	3.4615E+01	3.4632E+01	4.238E+01
ND-147 #B	3.1229E-01	7.4551E-01	5.5360E+01	5.5360E+01	6.322E+01
Eu-152 #B	0.0000E+00	0.0000E+00	5.7826E+00	5.7826E+00	1.856E+01
Eu-154 #B	1.8666E+00	1.8724E+00	9.3938E+00	9.3944E+00	1.159E+01
Eu-155 #B	-7.2171E-01	-7.2571E-01	2.2614E+01	2.2614E+01	2.895E+01
Lu-176 #B	0.0000E+00	0.0000E+00	1.5365E+00	1.5365E+00	4.281E+00
Ir-192 #B	0.0000E+00	0.0000E+00	9.1426E-01	9.1426E-01	5.450E+00
Hg-203 #B	0.0000E+00	0.0000E+00	2.0346E+00	2.0346E+00	6.370E+00
Tl-208 #B	0.0000E+00	0.0000E+00	2.5167E+00	2.5167E+00	6.166E+00
Pb-210 #B	3.5429E+02	3.5471E+02	3.3597E+03	3.3598E+03	4.432E+03
Bi-212 #B	2.7935E+01	2.8323E+01	5.4088E+01	5.4111E+01	5.908E+01
Pb-212 #B	0.0000E+00	0.0000E+00	4.7219E+00	4.7220E+00	1.061E+01
Bi-214	7.1267E+01	7.1268E+01	1.2855E+01	1.3440E+01	1.080E+01
Pb-214	8.8566E+01	8.8567E+01	1.4034E+01	1.4910E+01	1.077E+01
Ra-223 #B	0.0000E+00	0.0000E+00	1.1142E+01	1.1142E+01	2.928E+01
Ra-224 #B	0.0000E+00	0.0000E+00	6.7785E+01	6.7785E+01	1.226E+02
Ra-226 #B	3.2746E+01	3.2747E+01	1.0260E+02	1.0262E+02	1.321E+02
Ac-227 #B	0.0000E+00	0.0000E+00	6.3807E+00	6.3808E+00	3.240E+01
Ac-228 #B	6.8370E-01	6.8684E-01	1.7823E+01	1.7823E+01	1.958E+01
Th-228 #B	0.0000E+00	0.0000E+00	2.6984E+02	2.6984E+02	6.725E+02
Th-230 #B	8.5599E+01	8.5599E+01	3.2074E+03	3.2074E+03	4.221E+03
Pa-231 #B	-5.4754E+01	-5.4754E+01	1.9922E+02	1.9925E+02	2.384E+02
Pa-234M#A	0.0000E+00	0.0000E+00	2.2022E+02	2.2022E+02	5.590E+02
Th-232 #B	-6.8487E+02	-6.8487E+02	7.0618E+03	7.0634E+03	9.171E+03
Th-234 #B	0.0000E+00	0.0000E+00	2.2836E+02	2.2837E+02	4.980E+02
U-235 #B	6.5471E+00	6.5471E+00	3.4112E+01	3.4114E+01	4.209E+01
U-238 #B	1.9461E+01	1.9461E+01	1.1437E+02	1.1438E+02	1.507E+02
Am-241 #B	0.0000E+00	0.0000E+00	1.5623E+01	1.5624E+01	7.457E+01
Am-243 #B	5.8855E+00	5.8855E+00	1.2296E+01	1.2321E+01	1.565E+01
Pm-144 #B	2.4504E+00	2.5163E+00	3.8280E+00	3.8305E+00	3.965E+00
Pm-146 #B	2.3755E+00	2.3868E+00	4.0656E+00	4.0677E+00	4.557E+00

- All peaks for activity calculation had bad shape.
* - Activity omitted from total
& - Activity omitted from total and all peaks had bad shape.
< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

---------- S U M M A R Y ----------

Total Activity (30.3 to 2038.5 keV) 1.598E+02 pCi/L
Total Decayed Activity (30.3 to 2038.5 keV) 1.5983546E+02 pCi/L

The library has energies which are not separable.

Analyzed by: _____
Operator

Reviewed by: _____
Supervisor

Laboratory: Pace

ORTEC g v - i (3263) Env32 G701W047 9/18/2024 10:49:30 AM Page 1
Pace Spectrum name: 30716573001.An1

Sample description
81318

Spectrum Filename: C:\User\Spectra\30716573001.An1

Acquisition information
Start time:	9/18/2024 9:47:41 AM
Live time:	3600
Real time:	3652
Dead time:	1.41 %
Detector ID:	2

Detector system
DET 2

Calibration
Filename: DET_2_2L MAR_23-047(113023).Clb
DET 2 2L MARINELLI

Energy Calibration
Created:	11/30/2023 7:00:31 AM
Zero offset:	0.281 keV
Gain:	0.250 keV/channel
Quadratic:	-1.344E-08 keV/channel^2

Efficiency Calibration
Created:	11/30/2023 7:26:21 AM
Type:	Polynomial
Uncertainty:	1.699 %
Coefficients:	-0.225215 -3.983441 0.474906
	-0.072106 0.003754 -0.000081

Library Files
Main analysis library:	Pace Master w Ra226U235 (wo PS)
Library Match Width:	0.500
Peak stripping:	Library based

Analysis parameters
Analysis engine:	Env32 G701W047
Start channel:	120 (30.33keV)
Stop channel:	8144 (2038.53keV)
Peak rejection level:	30.000%
Peak search sensitivity:	3
Sample Size:	2.0000E+00
Activity scaling factor:	1.0000E+06/(1.0000E+00* 2.0000E+00) = 5.0000E+05
Detection limit method:	Reg. Guide 4.16 Method
Random error:	0.0000000E+00
Systematic error:	0.0000000E+00
Fraction Limit:	0.000%
Background width:	average of three points.
Half lives decay limit:	12.000

WTF 9-19-24

9/18/24

Activity range factor: 2.000
Min. step backg. energy 0.000
Multiplet shift channel 2.000

Corrections	Status	Comments
Decay correct to date:	YES	9/5/2024 12:50:00 PM
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	YES	Det_2_Bkg_091324Ra226U235(2LITER 9/16/2024 9:13:41 AM
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

total peaks alloc. 0 cutoff: 0.00E+00 %
Energy Calibration
Normalized diff: 0.1160

9/18/24

***** S U M M A R Y O F P E A K S I N R A N G E *****

Peak Energy	Area	Uncert	FWHM	Corrctn Factor	Nuclide Energy	Brnch. Ratio	Act. pCi/L	Nuc
77.18	53.	28.39	0.60	1.721E-02	77.11	17.500	PBC<MDA	Pb212
					77.11	10.700	1.079E+02	Pb214
					77.11	17.500	6.345E+01	Pb212
242.12	98.	19.62	0.83	4.663E-02	241.00	3.900	1.888E+02	Ra224
					241.92	7.470	1.048E+02	Pb214
295.28	276.	9.79	1.19	4.357E-02	295.22	19.200	1.213E+02	Pb214
					295.96	28.670	9.335E+01	Ir192
					295.96	28.670	9.335E+01	Ir192
352.07	476.	5.96	1.03	4.016E-02	351.99	37.100	1.167E+02	Pb214
609.42	396.	6.67	1.74	2.961E-02	609.31	44.800	1.070E+02	Bi214
768.19	81.	18.21	0.72	2.593E-02	768.36	4.800	2.433E+02	Bi214
1120.68	123.	11.00	1.40	2.093E-02	1120.29	14.800	1.491E+02	Bi214
1237.85	65.	13.23	0.69	1.977E-02	1238.11	5.860	2.109E+02	Bi214
					1238.28	66.070	PBC<MDA	Co56
1764.83	92.	11.62	1.29	1.602E-02	1764.49	15.360	1.398E+02	Bi214

No unknown peaks passed sensitivity test.

WTF 9-19-24

This section based on library: Pace Master w Ra226U235 (wo PS)

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	FWHM keV
Pb-214	306.85	77.11	76.	60.	0.017	49.41	0.969D
Pb-214	965.74	242.08	96.	93.	0.026	48.40	1.131s
Pb-214	1178.27	295.28	93.	270.	0.075	20.20	1.190
Pb-214	1405.08	352.07	87.	463.	0.129	12.44	1.031

Bi-214	2433.11	609.42	74.	378.	0.105	14.29	1.741s
Bi-214	3067.43	768.19	21.	81.	0.022	36.42	0.722s
Bi-214	4475.75	1120.68	10.	123.	0.034	22.00	1.396s
Bi-214	4943.97	1237.85	1.	65.	0.018	26.46	0.688s
Bi-214	7050.00	1764.83	9.	92.	0.025	23.25	1.287s

s - Peak fails shape tests.
D - Peak area deconvoluted.
A Derived peak area.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

- Nuclide - Name	Code	Average Activity pCi/L	Peak Energy keV	Peak Activity pCi/L	Code	Peak MDA pCi/L	Peak Value pCi/L	COMMENTS
Sc-46	F	1.0783E+00					8.38E+01	
			889.28	1.078E+00	%(P	4.015E+00	1.74E+02	1.00E+02 G K
Cr-51	F	2.5054E+01					2.77E+01	
			320.08	2.505E+01	&(	4.975E+01	8.41E+01	1.01E+01 G K
Co-56	C	8.0319E+00					7.73E+01	
			1238.28	8.032E+00	%(P	1.003E+01	6.44E+01	6.61E+01 G K
			1771.35	1.320E+01	% P	1.349E+01	4.88E+01	1.55E+01 G
Fe-59	F	6.7163E+00					4.45E+01	
			1099.25	6.716E+00	%(	8.081E+00	6.08E+01	5.65E+01 G K
			1291.60	0.000E+00	% P	1.759E+01	1.00E+03	4.32E+01 G
Co-60	F	2.0705E+00					1.92E+03	
			1332.50	2.070E+00	%(P	4.084E+00	9.47E+01	1.00E+02 G K
			1173.24	0.000E+00	% P	5.163E+00	1.00E+03	1.00E+02 G
SE-75		2.2281E+00					1.20E+02	
			264.66	2.228E+00	&(	6.835E+00	1.29E+02	5.86E+01 G K
			136.00	5.570E-01	% P	9.017E+00	6.57E+02	5.83E+01 G
			279.54	0.000E+00	& P	1.880E+01	1.00E+03	2.48E+01 G
			121.12	3.663E+00	&	3.382E+01	3.70E+02	1.64E+01 G

Nuclide	Ave activity	Energy	Activity	Code	Peak MDA	Peak Value	Comments
Y-88	C -2.6336E-01					1.07E+02	
		1836.06	-2.634E-01	%(	5.139E+00	9.92E+02	9.92E+01 G K
		898.04	0.000E+00	& P	5.984E+00	1.00E+03	9.37E+01 G
Nb-94	I -2.7241E+00					7.41E+06	
		871.09	-2.724E+00	&(	6.381E+00	1.13E+02	9.99E+01 G K
		702.62	0.000E+00	% P	5.467E+00	1.00E+03	9.79E+01 G
Nb-95	I 2.4622E+00					3.50E+01	
		765.81	2.462E+00	&(P	4.666E+00	8.77E+01	9.98E+01 G K
Ag-108M	C 1.7967E-01					1.53E+05	
		722.94	1.797E-01	%(	5.276E+00	1.32E+03	9.08E+01 G K
		614.28	0.000E+00	% P	5.627E+00	1.00E+03	8.98E+01 G
		433.94	3.105E-01	% P	4.166E+00	5.73E+02	9.05E+01 G
		79.13	5.680E+01	%	1.459E+02	1.02E+02	6.60E+00 G

Ru-106	I	-1.3890E+01						3.73E+02		
			621.93	-1.389E+01	%(	5.033E+01	1.62E+02	9.93E+00	G	K
Ag-110M	F	1.5786E+00						2.50E+02		
			657.76	1.579E+00	%(P	3.878E+00	1.14E+02	9.40E+01	G	K
			1505.04	2.741E+01	% P	3.421E+01	6.37E+01	1.29E+01	G	
			1384.30	8.461E+00	% P	1.922E+01	1.15E+02	2.41E+01	G	
			937.49	0.000E+00	%	2.213E+01	1.00E+03	3.41E+01	G	
			884.68	3.040E+00	%	5.588E+00	8.68E+01	7.22E+01	G	
			763.94	0.000E+00	& P	3.049E+01	1.00E+03	2.21E+01	G	
			744.28	2.371E+01	% P	1.037E+02	2.02E+02	4.70E+00	G	
			706.68	4.818E+00	%	2.737E+01	2.57E+02	1.63E+01	G	
Sn-113	F	1.0007E+00						1.15E+02		
			391.69	1.001E+00	&(	7.575E+00	3.27E+02	6.40E+01	G	K
Sb-124	F	-2.1161E+00						6.02E+01		
			602.73	-2.116E+00	&(	6.941E+00	1.48E+02	9.78E+01	G	K
			645.85	0.000E+00	% P	9.236E+01	1.00E+03	7.38E+00	G	
			722.79	1.758E+00	%	5.163E+01	1.32E+03	1.08E+01	G	
			1690.98	3.254E+00	% P	8.005E+00	1.28E+02	4.73E+01	G	
Sb-125	I	2.5400E+00						1.01E+03		
			427.88	2.540E+00	%(P	1.315E+01	2.23E+02	2.96E+01	G	K
			176.31	-1.248E+01	%	6.404E+01	2.07E+02	6.82E+00	G	
			463.36	1.145E+01	&	3.427E+01	1.29E+02	1.05E+01	G	
			600.60	0.000E+00	% P	2.874E+01	1.00E+03	1.79E+01	G	
			635.95	1.755E+00	% P	3.395E+01	8.62E+02	1.13E+01	G	

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Te-129	I 1.2972E+00					3.36E+01	
		459.60	1.297E+00	%(P	7.684E+01	2.55E+03	7.70E+00 G K
		487.39	1.691E+02	% P	3.425E+02	9.24E+01	1.42E+00 G
I-131	I 4.2186E+00					8.02E+00	
		364.49	4.219E+00	&(P	1.407E+01	1.47E+02	8.17E+01 G K
		636.99	0.000E+00	% P	1.696E+02	1.00E+03	7.17E+00 G
		284.30	0.000E+00	% P	2.137E+02	1.00E+03	6.14E+00 G
Te-132	I 2.6904E+00					3.20E+00	
		228.16	2.690E+00	%(	7.800E+01	1.21E+03	8.80E+01 G K
I-133	I 2.0467E+00					8.67E-01	
		529.87	2.047E+00	%(P	4.005E+00	8.77E+01	8.70E+01 G K
		875.33	1.532E+01	% P	9.845E+01	2.93E+02	4.51E+00 G
Ba-133	F 1.0628E+00					3.84E+03	
		356.02	1.063E+00	%(	6.331E+00	2.56E+02	6.20E+01 G K
		81.00	0.000E+00	& P	3.246E+01	1.00E+03	3.41E+01 G
		302.85	5.846E+00	& P	2.034E+01	1.48E+02	1.83E+01 G
		276.40	-1.096E+01	&	6.322E+01	2.42E+02	7.16E+00 G
		383.85	1.556E+00	% P	4.205E+01	1.16E+03	8.94E+00 G
Cs-136	F 8.8977E-01					1.32E+01	
		818.51	8.898E-01	%(	7.985E+00	4.10E+02	9.97E+01 G K
		176.60	-4.465E+01	%	9.061E+01	8.34E+01	1.00E+01 G
		273.65	1.880E+01	%	6.679E+01	1.49E+02	1.11E+01 G

			340.55	-8.941E+00	%	2.033E+01	9.64E+01	4.22E+01	G
			1048.07	8.860E+00	%	1.090E+01	6.11E+01	8.00E+01	G
			1235.36	0.000E+00	%	6.104E+01	1.00E+03	2.00E+01	G
Ce-139	F	7.1472E-02						1.38E+02	
			165.85	7.147E-02	&(	5.994E+00	3.36E+03	7.99E+01	G K
Ba-140	I	5.0870E+00						1.28E+01	
			537.26	5.087E+00	%(P	3.124E+01	2.73E+02	2.44E+01	G K
			162.66	4.820E+01	% P	1.474E+02	1.26E+02	6.22E+00	G
La-140	I	4.8072E+00						1.28E+01	
			1596.21	4.807E+00	%(	8.666E+00	9.18E+01	9.54E+01	G K
			487.02	6.741E-02	% P	1.956E+01	1.29E+04	4.55E+01	G
			815.77	2.656E+01	%	1.632E+01	3.28E+01	2.33E+01	G
			328.76	0.000E+00	&	3.885E+01	1.00E+03	2.03E+01	G
Ce-141	I	-4.2548E-01						3.25E+01	
			145.44	-4.255E-01	%(	1.257E+01	1.18E+03	4.82E+01	G K

Nuclide		Ave activity	Energy			Activity	Code	Peak	MDA	Comments
Ce-144	I	-2.2358E+00							2.85E+02	
			133.51	-2.236E+00	%(	4.878E+01	8.76E+02	1.11E+01	G K	
ND-147		5.1835E-02							1.11E+01	
			531.00	5.184E-02	%(P	6.994E+01	5.96E+04	1.35E+01	G K	
			91.10	-2.964E+01	%	7.651E+01	1.04E+02	2.83E+01	G	
Eu-155	I	3.2644E+00							1.74E+03	
			86.54	3.264E+00	%(	2.831E+01	3.40E+02	3.07E+01	G K	
			105.31	-3.428E+00	%	2.943E+01	3.45E+02	2.12E+01	G	
Ir-192	F	1.0460E+00							7.38E+01	
			316.51	1.046E+00	%(P	5.092E+00	2.05E+02	8.28E+01	G K	
			468.07	1.543E+00	%	8.462E+00	2.33E+02	4.78E+01	G	
			308.46	5.659E+00	% P	1.338E+01	1.01E+02	3.00E+01	G	
			295.96	0.000E+00	% P	1.688E+01	1.00E+03	2.87E+01	GA	
Pb-210	N	1.1147E+03							8.14E+03	
			46.54	1.115E+03	&(	3.777E+03	1.30E+02	4.25E+00	G K	
Bi-212	N	1.6775E+01							6.98E+02	
			727.33	1.678E+01	%(P	6.644E+01	1.79E+02	6.58E+00	G K	
			1620.50	0.000E+00	% P	3.995E+02	1.00E+03	1.49E+00	G	
Pb-212	N	2.1166E+00							6.98E+02	
			238.63	2.117E+00	&(P	1.095E+01	2.13E+02	4.33E+01	G K	
										Energy duplication
			77.11	4.637E+01	% P	6.811E+01	5.85E+01	1.75E+01	G	
										Energy duplication
			74.81	3.425E+01	% P	1.120E+02	1.28E+02	1.04E+01	G	
			87.30	7.620E+01	& P	9.351E+01	5.00E+01	7.80E+00	GA	
Bi-214	N	1.0701E+02							5.84E+05	
			609.31	1.070E+02	(P	1.209E+01	7.14E+00	4.48E+01	G K	
			1120.29	1.491E+02	+	2.114E+01	1.10E+01	1.48E+01	GA	
			2204.21	0.000E+00	=	0.000E+00	0.00E+00	4.86E+00	G	
			1764.49	1.398E+02	+ P	2.589E+01	1.16E+01	1.54E+01	G	

			1377.67	7.339E+01	%	P	1.428E+02	9.97E+01	3.92E+00 G
			1238.11	2.109E+02	+	P	2.389E+01	1.32E+01	5.86E+00 G
			768.36	2.433E+02	+		7.310E+01	1.82E+01	4.80E+00 G
Pb-214	N	1.1889E+02							5.84E+05
			351.99	1.167E+02	(P		1.161E+01	6.22E+00	3.71E+01 G K
			295.22	1.213E+02	(P		2.134E+01	1.01E+01	1.92E+01 G
			241.92	1.001E+02	- P		5.214E+01	2.42E+01	7.47E+00 G
			87.20	1.680E+02	&		2.019E+02	5.02E+01	3.70E+00 G
									Energy duplication
			77.11	1.222E+02	(P		8.865E+01	2.47E+01	1.07E+01 G
									Energy duplication
			74.81	5.555E+01	%	P	1.816E+02	1.28E+02	6.33E+00 G

Nuclide		Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Ra-226	N	2.7887E+01						5.84E+05
			186.10	2.789E+01	&(P		1.309E+02	1.82E+02 3.50E+00 G K
Ac-227	N	9.2944E+00						7.95E+03
			235.97	9.294E+00	%(P		3.469E+01	1.60E+02 1.23E+01 G K
			256.25	0.000E+00	% P		6.058E+01	1.00E+03 7.00E+00 G
			300.00	-2.580E+01	%		1.788E+02	2.89E+02 2.30E+00 G
			329.85	-1.902E+01	%		1.564E+02	3.42E+02 2.70E+00 G
Th-230	N	-1.8404E+03						2.75E+07
			67.67	-1.840E+03	%(		4.994E+03	1.06E+02 3.80E-01 G K
Pa-231	N	8.6547E+01						1.20E+07
			283.70	8.655E+01	%(		2.205E+02	1.07E+02 1.60E+00 G K
			330.00	-3.947E+01	%		3.245E+02	3.42E+02 1.30E+00 G
Pa-234M	N	2.0103E+02						1.63E+12
								Energy duplication
			1001.03	2.010E+02	%(		5.590E+02	1.34E+02 8.37E-01 G
Th-234	N	8.0978E+00						1.63E+12
			63.29	8.098E+00	%(P		4.891E+02	2.28E+03 4.80E+00 G K
			92.60	0.000E+00	% P		2.940E+02	1.00E+03 2.80E+00 GA
Am-241	T	3.3228E+01						1.58E+05
			59.54	3.323E+01	%(P		6.272E+01	7.50E+01 3.63E+01 G K
Am-243	T	5.1853E+00						2.69E+06
			74.66	5.185E+00	%(P		1.695E+01	1.28E+02 6.82E+01 G K
Pm-144	C	3.9048E+00						3.63E+02
			696.51	3.905E+00	%(P		4.203E+00	5.30E+01 9.90E+01 G K
			618.01	6.420E-01	%		4.379E+00	2.99E+02 9.86E+01 G

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide failed one or more qualification tests.

+ - Peak activity higher than counting uncertainty range.
- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the

library energy centroid for positive identification.
P - Peakbackground subtraction
} - Peak is too close to another for the activity
to be found directly.

Nuclide Codes:
T - Thermal Neutron Activation
F - Fast Neutron Activation
I - Fission Product
N - Naturally Occurring Isotope
P - Photon Reaction
C - Charged Particle Reaction
M - No MDA Calculation
R - Coincidence Corrected
H - Halflife limit exceeded

Peak Codes:
G - Gamma Ray
X - X-Ray
P - Positron Decay
S - Single-Escape
D - Double-Escape
K - Key Line
A - Not in Average
C - Coincidence Peak

********** D I S C A R D E D I S O T O P E P E A K S **********

Nuclide	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	Activity

P - Peakbackground subtraction

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide		Time of Count Activity pCi/L	Time Corrected Activity pCi/L	Uncertainty Counting pCi/L	2 Sigma Total pCi/L	MDA pCi/L
Be-7	#B	0.0000E+00	0.0000E+00	7.9994E+00	7.9995E+00	4.772E+01
Na-22	#B	0.0000E+00	0.0000E+00	5.5165E-01	5.5165E-01	5.750E+00
K-40	#B	0.0000E+00	0.0000E+00	7.8385E+00	7.8385E+00	7.269E+01
Sc-46	#B	9.6937E-01	1.0783E+00	3.7587E+00	3.7592E+00	4.015E+00
Cr-51	#B	1.8154E+01	2.5054E+01	4.2165E+01	4.2190E+01	4.975E+01
Mn-54	#B	0.0000E+00	0.0000E+00	1.0824E+00	1.0824E+00	5.594E+00
Co-56	#B	7.1559E+00	8.0319E+00	1.0344E+01	1.0354E+01	1.003E+01
Co-57	#B	0.0000E+00	0.0000E+00	1.4157E+00	1.4157E+00	7.008E+00
Co-58	#B	0.0000E+00	0.0000E+00	1.0769E+00	1.0769E+00	5.816E+00
Fe-59	#B	5.4960E+00	6.7163E+00	8.1624E+00	8.1710E+00	8.081E+00
Co-60	#B	2.0609E+00	2.0705E+00	3.9223E+00	3.9239E+00	4.084E+00
Zn-65	#B	0.0000E+00	0.0000E+00	4.8661E+00	4.8661E+00	1.243E+01
SE-75	#B	2.0690E+00	2.2281E+00	5.7466E+00	5.7481E+00	6.835E+00
Kr-85	#B	0.0000E+00	0.0000E+00	3.1245E+02	3.1245E+02	2.067E+03
Y-88	#B	-2.4223E-01	-2.6336E-01	5.2276E+00	5.2277E+00	5.139E+00
Nb-94	#B	-2.7241E+00	-2.7241E+00	6.1383E+00	6.1402E+00	6.381E+00
Zr-95	#B	0.0000E+00	0.0000E+00	6.0594E-01	6.0594E-01	8.446E+00
Nb-95	#B	1.9078E+00	2.4622E+00	4.3208E+00	4.3230E+00	4.666E+00
Ru-103	#B	0.0000E+00	0.0000E+00	2.6028E+00	2.6028E+00	5.986E+00
Ag-108M	B	1.7966E-01	1.7967E-01	4.7515E+00	4.7515E+00	5.276E+00
Ru-106	#B	-1.3562E+01	-1.3890E+01	4.4933E+01	4.4940E+01	5.033E+01
Cd-109	#B	0.0000E+00	0.0000E+00	8.7797E+01	8.7797E+01	3.156E+02
Ag-110M	#B	1.5232E+00	1.5786E+00	3.5985E+00	3.5996E+00	3.878E+00

Sn-113 #B	9.2607E-01	1.0007E+00	6.5367E+00	6.5370E+00	7.575E+00
Sb-124 #B	-1.8246E+00	-2.1161E+00	6.2687E+00	6.2698E+00	6.941E+00
Sb-125 #B	2.5176E+00	2.5400E+00	1.1351E+01	1.1352E+01	1.315E+01
Te-129 #B	9.9462E-01	1.2972E+00	6.6137E+01	6.6137E+01	7.684E+01
Te-129M#B	0.0000E+00	0.0000E+00	1.2700E+02	1.2700E+02	2.639E+02
I-131 #B	1.3867E+00	4.2186E+00	1.2442E+01	1.2444E+01	1.407E+01
I-132 #B	0.0000E+00	0.0000E+00	1.9753E+01	1.9753E+01	1.114E+02
Te-132 #B	1.6550E-01	2.6904E+00	6.4971E+01	6.4972E+01	7.800E+01
I-133 #B	2.0467E+00	>12 Halflives	3.5893E+00	3.5910E+00	4.005E+00
Ba-133 #B	1.0603E+00	1.0628E+00	5.4488E+00	5.4489E+00	6.331E+00
Cs-134 #B	0.0000E+00	0.0000E+00	6.9908E-01	6.9909E-01	5.787E+00
Cs-136 #B	4.5165E-01	8.8977E-01	7.3012E+00	7.3013E+00	7.985E+00
Cs-137 #B	0.0000E+00	0.0000E+00	1.2525E+00	1.2525E+00	5.654E+00
Ce-139 #B	6.6985E-02	7.1472E-02	4.7958E+00	4.7958E+00	5.994E+00
Ba-140 #B	2.5265E+00	5.0870E+00	2.7794E+01	2.7796E+01	3.124E+01
La-140 #B	2.3875E+00	4.8072E+00	8.8296E+00	8.8340E+00	8.666E+00
Ce-141 #B	-3.2332E-01	-4.2548E-01	1.0050E+01	1.0051E+01	1.257E+01
Ce-144 #B	-2.1669E+00	-2.2358E+00	3.9173E+01	3.9173E+01	4.878E+01
ND-147 #B	2.3133E-02	5.1835E-02	6.1766E+01	6.1766E+01	6.994E+01
Eu-152 #B	0.0000E+00	0.0000E+00	4.0295E+00	4.0295E+00	1.835E+01
Eu-154 #B	0.0000E+00	0.0000E+00	2.7916E+00	2.7916E+00	1.281E+01
Eu-155 #B	3.2477E+00	3.2644E+00	2.2211E+01	2.2213E+01	2.831E+01
Lu-176 #B	0.0000E+00	0.0000E+00	8.7398E-01	8.7398E-01	4.497E+00
Ir-192 #B	9.2693E-01	1.0460E+00	4.2872E+00	4.2877E+00	5.092E+00
Hg-203 #B	0.0000E+00	0.0000E+00	3.2084E+00	3.2084E+00	6.366E+00
Tl-208 #B	0.0000E+00	0.0000E+00	1.0264E+00	1.0264E+00	5.833E+00
Pb-210 #B	1.1135E+03	1.1147E+03	2.8912E+03	2.8926E+03	3.777E+03
Bi-212 #B	1.6562E+01	1.6775E+01	6.0196E+01	6.0203E+01	6.644E+01
Pb-212 #B	2.0897E+00	2.1166E+00	9.0055E+00	9.0063E+00	1.095E+01
Bi-214	1.0700E+02	1.0701E+02	1.5288E+01	1.6383E+01	1.209E+01
Pb-214	1.1889E+02	1.1889E+02	1.4785E+01	1.6256E+01	1.161E+01
Ra-223 #B	0.0000E+00	0.0000E+00	1.1404E+01	1.1404E+01	2.834E+01
Ra-224 #B	0.0000E+00	0.0000E+00	3.3932E+01	3.3932E+01	1.250E+02
Ra-226 #B	2.7886E+01	2.7887E+01	1.0131E+02	1.0133E+02	1.309E+02
Ac-227 #B	9.2840E+00	9.2944E+00	2.9651E+01	2.9656E+01	3.469E+01
Ac-228 #B	0.0000E+00	0.0000E+00	9.4848E+00	9.4849E+00	2.054E+01
Th-228 #B	0.0000E+00	0.0000E+00	2.5137E+02	2.5138E+02	7.321E+02
Th-230 #B	-1.8404E+03	-1.8404E+03	3.9049E+03	3.9196E+03	4.994E+03
Pa-231 #B	8.6547E+01	8.6547E+01	1.8557E+02	1.8564E+02	2.205E+02
Pa-234M#A	2.0103E+02	2.0103E+02	5.3817E+02	5.3829E+02	5.590E+02
Th-232 #B	0.0000E+00	0.0000E+00	3.3065E+03	3.3067E+03	8.653E+03
Th-234 #B	8.0978E+00	8.0978E+00	3.6906E+02	3.6907E+02	4.891E+02
U-235 #B	0.0000E+00	0.0000E+00	1.5462E+01	1.5462E+01	4.860E+01
U-238 #B	0.0000E+00	0.0000E+00	7.6202E+01	7.6202E+01	1.466E+02
Am-241 #B	3.3226E+01	3.3228E+01	4.9829E+01	5.0515E+01	6.272E+01
Am-243 #B	5.1853E+00	5.1853E+00	1.3265E+01	1.3282E+01	1.695E+01
Pm-144 #B	3.8100E+00	3.9048E+00	4.1371E+00	4.1428E+00	4.203E+00
Pm-146 #B	0.0000E+00	0.0000E+00	1.4759E+00	1.4759E+00	7.218E+00

- All peaks for activity calculation had bad shape.
* - Activity omitted from total
& - Activity omitted from total and all peaks had bad shape.
< - MDA value printed.

A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

S U M M A R Y

Total Activity (	30.3 to 2038.5 keV)	2.259E+02	pCi/L
Total Decayed Activity (	30.3 to 2038.5 keV)	2.2589633E+02	pCi/L

The library has energies which are not separable.

Analyzed by: _____
Operator

Reviewed by: _____
Supervisor

Laboratory: Pace

ORTEC g v - i (3263) Env32 G701W047 9/24/2024 4:55:36 PM Page 1
Pace Spectrum name: 30716573002.An1

Sample description
81318

Spectrum Filename: C:\User\Spectra\30716573002.An1

Acquisition information
Start time: 9/23/2024 4:10:39 PM
Live time: 3600
Real time: 3640
Dead time: 1.11 %
Detector ID: 2

Detector system
DET 2

Calibration
Filename: DET_2_2L MAR_23-047(113023).Clb
DET 2 2L MARINELLI

Energy Calibration
Created: 11/30/2023 7:00:31 AM
Zero offset: 0.281 keV
Gain: 0.250 keV/channel
Quadratic: -1.344E-08 keV/channel^2

Efficiency Calibration
Created: 11/30/2023 7:26:21 AM
Type: Polynomial
Uncertainty: 1.699 %
Coefficients: -0.225215 -3.983441 0.474906
-0.072106 0.003754 -0.000081

Library Files
Main analysis library: Pace Master w Ra226U235 (wo PS)
Library Match Width: 0.500
Peak stripping: Library based

Analysis parameters
Analysis engine: Env32 G701W047
Start channel: 120 (30.33keV)
Stop channel: 8144 (2038.53keV)
Peak rejection level: 30.000%
Peak search sensitivity: 3
Sample Size: 2.0000E+00
Activity scaling factor: 1.0000E+06/(1.0000E+00* 2.0000E+00) =
5.0000E+05
Detection limit method: Reg. Guide 4.16 Method

Random error: 0.0000000E+00
Systematic error: 0.0000000E+00
Fraction Limit: 0.000%
Background width: average of three points.

Half lives decay limit: 12.000

WTF 9-25-24
JM 9/25/24

ORTEC g v - i (3263) Env32 G701W047 9/24/2024 4:55:36 PM Page 2
Pace Spectrum name: 30716573002.An1

Activity range factor:	2.000
Min. step backg. energy	0.000
Multiplet shift channel	2.000

Corrections	Status	Comments
Decay correct to date:	YES	9/5/2024 8:00:00 AM
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	YES	Det_2_Bkg_092024Ra226U235(2LITER 9/24/2024 4:14:26 PM
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

total peaks alloc. 0 cutoff: 0.00E+00 %
Energy Calibration
Normalized diff: 0.1165

WTF 9-25-24

On 9/25/24

***** S U M M A R Y O F P E A K S I N R A N G E *****

Peak Energy	Area	Uncert	FWHM	Corrctn Factor	Nuclide Energy	Brnch. Ratio	Act. pCi/L	Nuc
198.60	69.	18.62	1.25	4.794E-02				
609.29	79.	18.17	0.82	2.962E-02	609.31	44.800	2.223E+01	Bi214
1835.25	13.	27.74	2.41	1.562E-02	1836.06	99.200	3.548E+00	Y88

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Efficiency * Area	Uncert 2 Sigma %	FWHM keV	Suspected Nuclide
792.10	198.60	32.	69.	1.439E+03	37.23	1.246	SE-75

s - Peak fails shape tests.
D - Peak area deconvoluted.
L - Peak written from unknown list.
C - Area < Critical level.

This section based on library: Pace Master w Ra226U235 (wo PS)

ORTEC g v - i (3263) Env32 G701W047 9/24/2024 4:55:36 PM Page 3
Pace Spectrum name: 30716573002.An1

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	FWHM keV
Bi-214	2432.60	609.29	32.	79.	0.022	36.33	0.820s
Y-88	7331.46	1835.25	0.	13.	0.004	55.47	2.407s

s - Peak fails shape tests.
D - Peak area deconvoluted.

A Derived peak area.

***** SUMMARY OF LIBRARY PEAK USAGE *****

Nuclide Name	Code	Average Activity pCi/L	Peak Energy keV	Peak Activity pCi/L	Code	MDA Value pCi/L		COMMENTS
Cr-51	F	1.2378E+01					2.77E+01	
			320.08	1.238E+01	&(	4.570E+01	1.52E+02	1.01E+01 G K
Co-57	C	-2.4125E+00					2.72E+02	
			122.06	-2.413E+00	%(	6.333E+00	1.07E+02	8.56E+01 G K
			136.47	0.000E+00	& P	3.941E+01	1.00E+03	1.07E+01 G
Co-58	C	6.0537E-01					7.08E+01	
			810.78	6.054E-01	%(P	5.120E+00	3.83E+02	9.94E+01 G K
Zn-65	F	5.2119E+00					2.44E+02	
			1115.55	5.212E+00	&(P	4.022E+00	3.90E+01	5.06E+01 G K
SE-75		9.1452E-01					1.20E+02	
			264.66	9.145E-01	%(	6.092E+00	2.75E+02	5.86E+01 G K
			136.00	1.581E+00	%	7.234E+00	1.83E+02	5.83E+01 G
			279.54	3.920E+00	% P	1.694E+01	1.83E+02	2.48E+01 G
			121.12	1.597E+01	% P	2.708E+01	7.11E+01	1.64E+01 G
Y-88	C	3.5476E+00					1.07E+02	
			1836.06	3.548E+00	?(	2.011E+00	2.77E+01	9.92E+01 G K
			898.04	1.647E+00	% P	4.514E+00	1.28E+02	9.37E+01 G
Zr-95	I	-1.7144E+00					6.40E+01	
			756.73	-1.714E+00	&(	9.519E+00	2.50E+02	5.45E+01 G K
			724.20	0.000E+00	%	1.324E+01	1.00E+03	4.42E+01 G
Nb-95	I	6.3236E-01					3.50E+01	
			765.81	6.324E-01	%(P	5.112E+00	3.64E+02	9.98E+01 G K

Nuclide	Ave activity		Energy	Activity	Code	Peak MDA		Comments
Ru-106	I	1.7467E+01					3.73E+02	
			621.93	1.747E+01	%(P	3.533E+01	9.12E+01	9.93E+00 G K
Sn-113	F	-2.3270E+00					1.15E+02	
			391.69	-2.327E+00	&(	7.017E+00	1.31E+02	6.40E+01 G K
Sb-124	F	-1.0075E+00					6.02E+01	
			602.73	-1.007E+00	%(	6.237E+00	2.75E+02	9.78E+01 G K
			645.85	0.000E+00	% P	7.328E+01	1.00E+03	7.38E+00 G
			722.79	0.000E+00	& P	4.763E+01	1.00E+03	1.08E+01 G
			1690.98	0.000E+00	%	1.541E+01	1.00E+03	4.73E+01 G
Te-129M	I	-3.9945E+01					3.36E+01	
			695.88	-3.994E+01	%(	2.374E+02	2.71E+02	3.00E+00 G K
I-131	I	1.7045E+00					8.02E+00	
			364.49	1.704E+00	&(	2.135E+01	5.32E+02	8.17E+01 G K
			636.99	0.000E+00	& P	3.319E+02	1.00E+03	7.17E+00 G

			284.30	6.069E+01	&	2.555E+02	1.74E+02	6.14E+00	G
I-133	I	3.3611E-01					8.67E-01		
			529.87	3.361E-01	%(	4.044E+00	5.20E+02	8.70E+01	G K
			875.33	1.383E+01	%	7.773E+01	2.54E+02	4.51E+00	G
Ba-133	F	7.5987E-01					3.84E+03		
			356.02	7.599E-01	&(	5.001E+00	2.79E+02	6.20E+01	G K
			81.00	3.924E+00	% P	2.402E+01	2.49E+02	3.41E+01	G
			302.85	0.000E+00	% P	2.029E+01	1.00E+03	1.83E+01	G
			276.40	-1.058E+01	%	5.658E+01	2.24E+02	7.16E+00	G
			383.85	1.974E+01	&	2.639E+01	5.89E+01	8.94E+00	G
Cs-136	F	1.9778E+00					1.32E+01		
			818.51	1.978E+00	%(	1.065E+01	2.48E+02	9.97E+01	G K
			176.60	-4.293E+01	&	9.781E+01	9.29E+01	1.00E+01	G
			273.65	-3.894E+01	%	9.224E+01	1.00E+02	1.11E+01	G
			340.55	-8.586E+00	%	2.480E+01	1.21E+02	4.22E+01	G
			1048.07	0.000E+00	%	1.577E+01	1.00E+03	8.00E+01	G
			1235.36	-7.891E+00	%	7.658E+01	4.75E+02	2.00E+01	G
Cs-137	I	9.8441E-02					1.10E+04		
			661.66	9.844E-02	%(	4.373E+00	1.97E+03	9.01E+01	G K
Ce-139	F	4.4080E-01					1.38E+02		
			165.85	4.408E-01	&(	5.033E+00	4.54E+02	7.99E+01	G K

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Ba-140	I 1.0918E+00					1.28E+01	
		537.26	1.092E+00	%(	4.320E+01	1.72E+03	2.44E+01 G K
		162.66	8.904E+00	% P	1.788E+02	8.07E+02	6.22E+00 G
La-140	I 5.4337E+00					1.28E+01	
		1596.21	5.434E+00	%(P	9.594E+00	8.67E+01	9.54E+01 G K
		487.02	5.533E-01	%	2.189E+01	1.72E+03	4.55E+01 G
		815.77	0.000E+00	% P	5.408E+01	1.00E+03	2.33E+01 G
		328.76	1.971E+01	%	4.330E+01	9.23E+01	2.03E+01 G
Ce-141	I -1.0431E+00					3.25E+01	
		145.44	-1.043E+00	%(	1.191E+01	4.54E+02	4.82E+01 G K
Ce-144	I 1.8126E+01					2.85E+02	
		133.51	1.813E+01	%(	3.629E+01	8.17E+01	1.11E+01 G K
Eu-152	F 5.9592E-01					4.95E+03	
		121.78	5.959E-01	&(P	1.650E+01	1.11E+03	2.84E+01 G K
		1408.01	-3.932E+00	%	2.415E+01	3.03E+02	2.09E+01 GA
		1112.12	0.000E+00	%	3.488E+01	1.00E+03	1.36E+01 GA
		1085.91	3.740E-01	& P	3.780E+01	4.63E+03	9.92E+00 GA
		964.13	0.000E+00	% P	3.275E+01	1.00E+03	1.43E+01 GA
		344.28	1.066E+00	% P	1.362E+01	5.54E+02	2.66E+01 GA
		244.70	1.279E+01	&	4.199E+01	1.37E+02	7.49E+00 GA
Eu-154	I -3.7548E+00					3.14E+03	
		123.07	-3.755E+00	%(	1.224E+01	1.32E+02	4.06E+01 G K
		1274.44	0.000E+00	%	1.752E+01	1.00E+03	3.50E+01 G
		1004.72	8.192E+00	&	2.193E+01	1.27E+02	1.79E+01 G
		996.26	-1.040E+01	%	5.351E+01	2.48E+02	1.05E+01 G

			873.19	0.000E+00	% P	3.288E+01	1.00E+03	1.22E+01	G
			723.30	0.000E+00	% P	2.109E+01	1.00E+03	2.01E+01	GA
			247.93	8.515E+00	% P	4.266E+01	2.12E+02	6.91E+00	G
Eu-155	I	8.9058E+00						1.74E+03	
			86.54	8.906E+00	%(	2.094E+01	9.31E+01	3.07E+01	G K
			105.31	1.142E+01	%	2.154E+01	7.69E+01	2.12E+01	G
Ir-192	F	1.7372E+00						7.38E+01	
			316.51	1.737E+00	%(P	3.876E+00	9.64E+01	8.28E+01	G K
			468.07	-2.436E+00	%	1.017E+01	1.80E+02	4.78E+01	G
			308.46	3.071E+00	&	1.134E+01	1.52E+02	3.00E+01	G
			295.96	1.496E+01	% P	1.367E+01	4.11E+01	2.87E+01	GA
Hg-203	F	7.5954E-01						4.66E+01	
			279.20	7.595E-01	&(P	6.322E+00	3.49E+02	8.15E+01	G K

Nuclide		Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Tl-208	N	8.7486E-01					6.98E+02	
			583.19	8.749E-01	%(P	4.801E+00	2.29E+02	8.45E+01	G K
			860.56	-1.140E+01	%	4.302E+01	1.78E+02	1.24E+01	G
			277.36	0.000E+00	& P	6.876E+01	1.00E+03	6.31E+00	G
Pb-210	N	5.2517E+02					8.14E+03		
			46.54	5.252E+02	%(P	3.989E+03	2.91E+02	4.25E+00	G K
Pb-212	N	2.8357E+00					6.98E+02		
			238.63	2.836E+00	%(P	7.865E+00	1.10E+02	4.33E+01	G K
								Energy duplication	
			77.11	1.706E+01	% P	5.861E+01	1.35E+02	1.75E+01	G
								Energy duplication	
			74.81	2.392E+01	% P	1.024E+02	1.65E+02	1.04E+01	G
			87.30	0.000E+00	% P	9.696E+01	1.00E+03	7.80E+00	GA
Bi-214	N	2.2229E+01					5.84E+05		
			609.31	2.223E+01	*(P	8.275E+00	1.82E+01	4.48E+01	G K
			1120.29	1.616E+01	%	2.896E+01	8.90E+01	1.48E+01	GA
			2204.21	0.000E+00	=	0.000E+00	0.00E+00	4.86E+00	G
			1764.49	0.000E+00	% P	4.436E+01	1.00E+03	1.54E+01	G
			1377.67	2.999E+01	% P	1.271E+02	2.15E+02	3.92E+00	G
			1238.11	0.000E+00	% P	1.040E+02	1.00E+03	5.86E+00	G
			768.36	2.715E+01	%	7.846E+01	1.31E+02	4.80E+00	G
Pb-214	N	1.0491E+01					5.84E+05		
			351.99	1.049E+01	%(P	8.411E+00	3.17E+01	3.71E+01	G K
			295.22	1.272E+01	% P	1.940E+01	6.61E+01	1.92E+01	G
			241.92	0.000E+00	% P	4.866E+01	1.00E+03	7.47E+00	G
			87.20	2.106E+01	% P	1.965E+02	3.74E+02	3.70E+00	G
								Energy duplication	
			77.11	2.740E+01	% P	9.413E+01	1.35E+02	1.07E+01	G
								Energy duplication	
			74.81	3.860E+01	% P	1.652E+02	1.65E+02	6.33E+00	G
Th-230	N	-8.1319E+02					2.75E+07		
			67.67	-8.132E+02	%(	4.736E+03	2.25E+02	3.80E-01	G K
Pa-231	N	4.2867E+01					1.20E+07		
			283.70	4.287E+01	%(P	2.086E+02	2.02E+02	1.60E+00	G K

```
                                330.00-1.068E+02 %   3.134E+02 1.23E+02 1.30E+00 G

Th-232    N  -2.8917E+03                                          4.17E+12
                                 63.81-2.892E+03 &(  8.653E+03 1.17E+02 2.67E-01 G K

U-238     N   5.4614E+01                                          1.63E+12
                                 92.59 5.461E+01 %(P 1.144E+02 7.78E+01 5.60E+00 G K
                                                                 Energy duplication
                               1001.03 0.000E+00 % P 7.387E+02 1.00E+03 8.40E-01 G K
```



```
 Nuclide  Ave activity   Energy    Activity  Code Peak MDA  Comments

Am-241    T   7.0471E+00                                          1.58E+05
                                 59.54 7.047E+00 %(P 6.276E+01 3.43E+02 3.63E+01 G K

Am-243    T   3.6027E+00                                          2.69E+06
                                 74.66 3.603E+00 %(P 1.542E+01 1.65E+02 6.82E+01 G K

Pm-144    C   1.7331E+00                                          3.63E+02
                                696.51 1.733E+00 %(P 4.157E+00 1.11E+02 9.90E+01 G K
                                618.01 2.237E+00 %   2.813E+00 5.72E+01 9.86E+01 G

Pm-146    C   1.6532E-01                                          2.02E+03
                                453.88 1.653E-01 %(  5.441E+00 1.38E+03 6.52E+01 G K
                                747.16 2.542E+00 & P 1.056E+01 1.86E+02 3.40E+01 G
                                735.72 0.000E+00 % P 2.016E+01 1.00E+03 2.25E+01 GA
```

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went
negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide
failed one or more qualification tests.
\+ - Peak activity higher than counting uncertainty range.
\- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the
library energy centroid for positive identification.
P - Peakbackground subtraction
} - Peak is too close to another for the activity
to be found directly.

Nuclide Codes:	Peak Codes:
T - Thermal Neutron Activation	G - Gamma Ray
F - Fast Neutron Activation	X - X-Ray
I - Fission Product	P - Positron Decay
N - Naturally Occurring Isotope	S - Single-Escape
P - Photon Reaction	D - Double-Escape
C - Charged Particle Reaction	K - Key Line
M - No MDA Calculation	A - Not in Average
R - Coincidence Corrected	C - Coincidence Peak
H - Halflife limit exceeded	

********** D I S C A R D E D I S O T O P E P E A K S **********

Nuclide	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	Activity
Y-88	1835.25	0.	13.	0.004	55.47	3.548E+00

P - Peakbackground subtraction

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide		Time of Count Activity pCi/L	Time Corrected Activity pCi/L	Uncertainty Counting pCi/L	2 Sigma Total pCi/L	MDA pCi/L
Be-7	#B	0.0000E+00	0.0000E+00	6.6521E+00	6.6521E+00	5.103E+01
Na-22	#B	0.0000E+00	0.0000E+00	1.7514E+00	1.7514E+00	6.193E+00
K-40	#B	0.0000E+00	0.0000E+00	2.2171E+01	2.2171E+01	6.271E+01
Sc-46	#B	0.0000E+00	0.0000E+00	8.9724E-01	8.9724E-01	5.300E+00
Cr-51	#B	7.8225E+00	1.2378E+01	3.7639E+01	3.7646E+01	4.570E+01
Mn-54	#B	0.0000E+00	0.0000E+00	2.0497E+00	2.0497E+00	5.402E+00
Co-56	#B	0.0000E+00	0.0000E+00	4.0665E+00	4.0665E+00	1.088E+01
Co-57	#B	-2.3023E+00	-2.4125E+00	5.1620E+00	5.1639E+00	6.333E+00
Co-58	#B	5.0590E-01	6.0537E-01	4.6392E+00	4.6394E+00	5.120E+00
Fe-59	#B	0.0000E+00	0.0000E+00	2.6431E+00	2.6431E+00	1.365E+01
Co-60	#B	0.0000E+00	0.0000E+00	1.9545E+00	1.9545E+00	6.338E+00
Zn-65	#F	4.9472E+00	5.2119E+00	4.0613E+00	4.0716E+00	4.022E+00
SE-75	#B	8.2288E-01	9.1452E-01	5.0220E+00	5.0223E+00	6.092E+00
Kr-85	#B	0.0000E+00	0.0000E+00	3.5579E+02	3.5579E+02	2.151E+03
Y-88	#	3.1489E+00	3.5476E+00	1.9678E+00	1.9811E+00	2.011E+00
Nb-94	#B	0.0000E+00	0.0000E+00	7.6258E-01	7.6259E-01	4.512E+00
Zr-95	#B	-1.4056E+00	-1.7144E+00	8.5665E+00	8.5671E+00	9.519E+00
Nb-95	#B	4.3967E-01	6.3236E-01	4.6073E+00	4.6075E+00	5.112E+00
Ru-103	#B	0.0000E+00	0.0000E+00	8.3924E-01	8.3924E-01	7.646E+00
Ag-108M	#B	0.0000E+00	0.0000E+00	1.0670E+00	1.0670E+00	4.571E+00
Ru-106	#B	1.6881E+01	1.7467E+01	3.1874E+01	3.1889E+01	3.533E+01
Cd-109	#B	0.0000E+00	0.0000E+00	5.4779E+01	5.4779E+01	2.155E+02
Ag-110M	#B	0.0000E+00	0.0000E+00	1.8279E+00	1.8279E+00	4.447E+00
Sn-113	#B	-2.0837E+00	-2.3270E+00	6.0967E+00	6.0981E+00	7.017E+00
Sb-124	#B	-8.1570E-01	-1.0075E+00	5.5361E+00	5.5363E+00	6.237E+00
Sb-125	#B	0.0000E+00	0.0000E+00	2.6536E+00	2.6536E+00	1.303E+01
Te-129	#B	0.0000E+00	0.0000E+00	2.4541E+01	2.4542E+01	6.844E+01
Te-129M	#B	-2.7361E+01	-3.9945E+01	2.1648E+02	2.1649E+02	2.374E+02
I-131	#B	3.4928E-01	1.7045E+00	1.8146E+01	1.8146E+01	2.135E+01
I-132	#B	0.0000E+00	0.0000E+00	2.8871E+01	2.8871E+01	3.528E+02
Te-132	#B	0.0000E+00	0.0000E+00	4.4993E+01	4.4993E+01	2.350E+02
I-133	#B	3.3611E-01	>12 Halflives	3.4981E+00	3.4982E+00	4.044E+00
Ba-133	#B	7.5736E-01	7.5987E-01	4.2335E+00	4.2336E+00	5.001E+00
Cs-134	#B	0.0000E+00	0.0000E+00	2.3827E+00	2.3827E+00	6.456E+00
Cs-136	#B	7.5275E-01	1.9778E+00	9.8018E+00	9.8024E+00	1.065E+01

Cs-137	#B	9.8328E-02	9.8441E-02	3.8831E+00	3.8831E+00	4.373E+00
Ce-139	#B	4.0191E-01	4.4080E-01	4.0027E+00	4.0028E+00	5.033E+00
Ba-140	#B	4.0282E-01	1.0918E+00	3.7484E+01	3.7484E+01	4.320E+01
La-140	#B	2.0048E+00	5.4337E+00	9.4252E+00	9.4305E+00	9.594E+00
Ce-141	#B	-7.0543E-01	-1.0431E+00	9.4722E+00	9.4724E+00	1.191E+01

Ce-144 #B	1.7335E+01	1.8126E+01	2.9615E+01	2.9634E+01	3.629E+01
ND-147 #B	0.0000E+00	0.0000E+00	2.8977E+01	2.8977E+01	7.958E+01
Eu-152 #B	5.9439E-01	5.9592E-01	1.3278E+01	1.3278E+01	1.650E+01
Eu-154 #B	-3.7396E+00	-3.7548E+00	9.9211E+00	9.9235E+00	1.224E+01
Eu-155 #B	8.8409E+00	8.9058E+00	1.6590E+01	1.6605E+01	2.094E+01
Lu-176 #B	0.0000E+00	0.0000E+00	6.4548E-01	6.4548E-01	3.933E+00
Ir-192 #B	1.4624E+00	1.7372E+00	3.3487E+00	3.3502E+00	3.876E+00
Hg-203 #B	5.7823E-01	7.5954E-01	5.3030E+00	5.3032E+00	6.322E+00
Tl-208 #B	8.5906E-01	8.7486E-01	4.0076E+00	4.0079E+00	4.801E+00
Pb-210 #B	5.2435E+02	5.2517E+02	3.0519E+03	3.0522E+03	3.989E+03
Bi-212 #B	0.0000E+00	0.0000E+00	3.1917E+01	3.1917E+01	7.474E+01
Pb-212 #B	2.7845E+00	2.8357E+00	6.2103E+00	6.2126E+00	7.865E+00
Bi-214 #	2.2228E+01	2.2229E+01	8.0765E+00	8.1686E+00	8.275E+00
Pb-214 F	1.0491E+01	1.0491E+01	6.6577E+00	6.6843E+00	8.411E+00
Ra-223 #B	0.0000E+00	0.0000E+00	7.4972E+00	7.4973E+00	2.307E+01
Ra-224 #B	0.0000E+00	0.0000E+00	3.8944E+01	3.8944E+01	1.100E+02
Ra-226 #B	0.0000E+00	0.0000E+00	6.0184E+01	6.0184E+01	1.201E+02
Ac-227 #B	0.0000E+00	0.0000E+00	8.8372E+00	8.8372E+00	3.086E+01
Ac-228 #B	0.0000E+00	0.0000E+00	7.2405E+00	7.2405E+00	1.980E+01
Th-228 #B	0.0000E+00	0.0000E+00	2.6508E+02	2.6508E+02	6.097E+02
Th-230 #B	-8.1319E+02	-8.1319E+02	3.6548E+03	3.6579E+03	4.736E+03
Pa-231 #B	4.2867E+01	4.2867E+01	1.7322E+02	1.7323E+02	2.086E+02
Pa-234M#A	0.0000E+00	0.0000E+00	1.7058E+02	1.7058E+02	7.414E+02
Th-232 #B	-2.8917E+03	-2.8917E+03	6.7481E+03	6.7775E+03	8.653E+03
Th-234 #B	0.0000E+00	0.0000E+00	2.2429E+02	2.2430E+02	4.481E+02
U-235 #B	0.0000E+00	0.0000E+00	9.1075E+00	9.1076E+00	3.723E+01
U-238 #B	5.4614E+01	5.4614E+01	8.5000E+01	8.5077E+01	1.144E+02
Am-241 #B	7.0465E+00	7.0471E+00	4.8288E+01	4.8320E+01	6.276E+01
Am-243 #B	3.6027E+00	3.6027E+00	1.1910E+01	1.1919E+01	1.542E+01
Pm-144 #B	1.6734E+00	1.7331E+00	3.8600E+00	3.8612E+00	4.157E+00
Pm-146 #B	1.6428E-01	1.6532E-01	4.5575E+00	4.5575E+00	5.441E+00

- All peaks for activity calculation had bad shape.
* - Activity omitted from total
& - Activity omitted from total and all peaks had bad shape.
< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

---------- S U M M A R Y ----------

Total Activity (30.3 to 2038.5 keV) 2.223E+01 pCi/L
Total Decayed Activity (30.3 to 2038.5 keV) 2.2228975E+01 pCi/L

ORTEC g v - i (3263) Env32 G701W047 9/24/2024 4:55:36 PM Page 10
Pace Spectrum name: 30716573002.An1

The library has energies which are not separable.

Analyzed by: _____
Operator

Reviewed by: _____
Supervisor

Laboratory: Pace

ORTEC g v - i (3263) Env32 G701W047 9/24/2024 4:56:30 PM Page 1
Pace Spectrum name: 30716573003.An1

Sample description
81318

Spectrum Filename: C:\User\Spectra\30716573003.An1

Acquisition information
Start time: 9/23/2024 8:46:26 PM
Live time: 3600
Real time: 3642
Dead time: 1.16 %
Detector ID: 2

Detector system
DET 2

Calibration
Filename: DET_2_2L MAR_23-047(113023).Clb
DET 2 2L MARINELLI

Energy Calibration
Created: 11/30/2023 7:00:31 AM
Zero offset: 0.281 keV
Gain: 0.250 keV/channel
Quadratic: -1.344E-08 keV/channel^2

Efficiency Calibration
Created: 11/30/2023 7:26:21 AM
Type: Polynomial
Uncertainty: 1.699 %
Coefficients: -0.225215 -3.983441 0.474906
-0.072106 0.003754 -0.000081

Library Files
Main analysis library: Pace Master w Ra226U235 (wo PS)
Library Match Width: 0.500
Peak stripping: Library based

Analysis parameters
Analysis engine: Env32 G701W047
Start channel: 120 (30.33keV)
Stop channel: 8144 (2038.53keV)
Peak rejection level: 30.000%
Peak search sensitivity: 3
Sample Size: 2.0000E+00
Activity scaling factor: 1.0000E+06/(1.0000E+00* 2.0000E+00) = WTF 9-25-24
5.0000E+05
Detection limit method: Reg. Guide 4.16 Method

Random error: 0.0000000E+00
Systematic error: 0.0000000E+00
Fraction Limit: 0.000%
Background width: average of three points.

Half lives decay limit: 12.000

DM 9/25/24

Activity range factor:	2.000
Min. step backg. energy	0.000
Multiplet shift channel	2.000

Corrections	Status	Comments
Decay correct to date:	YES	9/5/2024 10:10:00 AM
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	YES	Det_2_Bkg_092024Ra226U235(2LITER 9/24/2024 4:14:26 PM
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

WTF 9-25-24

total peaks alloc. 0 cutoff: 0.00E+00 %

Energy Calibration
Normalized diff: 0.0409

On 9/25/24

***** S U M M A R Y O F P E A K S I N R A N G E *****

Peak Energy	Area	Uncert	FWHM	Corrctn Factor	Nuclide Energy	Brnch. Ratio	Act.. pCi/L	Nuc
241.92	88.	18.83	1.04	4.664E-02	241.00	3.900	1.656E+02	Ra224
					241.92	7.470	9.071E+01	Pb214
295.18	211.	11.68	0.62	4.357E-02	295.22	19.200	9.341E+01	Pb214
					295.96	28.670	7.506E+01	Ir192
352.01	323.	6.92	1.05	4.017E-02	351.99	37.100	7.737E+01	Pb214
609.39	309.	8.62	1.37	2.961E-02	609.31	44.800	8.334E+01	Bi214
1120.51	66.	22.69	1.90	2.093E-02	1120.29	14.800	8.019E+01	Bi214
1596.49	28.	21.69	2.25	1.703E-02	1596.21	95.400	1.732E+01	La140
					1596.21	95.400	1.732E+01	La140

No unknown peaks passed sensitivity test.

This section based on library: Pace Master w Ra226U235 (wo PS)

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	FWHM keV
Pb-214	965.11	241.92	60.	84.	0.023	40.16	1.044
Pb-214	1177.86	295.18	75.	208.	0.058	23.99	0.620s
Pb-214	1404.85	352.01	64.	307.	0.085	14.85	1.052
Bi-214	2433.01	609.39	72.	295.	0.082	18.38	1.367
Bi-214	4475.07	1120.51	26.	66.	0.018	45.39	1.899s
La-140	6377.21	1596.49	1.	28.	0.008	43.38	2.249s

s - Peak fails shape tests.
D - Peak area deconvoluted.
A Derived peak area.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

- Nuclide - Name	Code	Average Activity pCi/L	Peak Energy keV	Peak Activity pCi/L	Peak Code	MDA Value pCi/L		COMMENTS
Be-7	C	8.1578E+00					5.34E+01	
			477.56	8.158E+00 %(		4.117E+01	2.13E+02 1.03E+01	G K
Na-22	C	9.7916E-01					9.50E+02	
			1274.53	9.792E-01 %(		3.557E+00	1.75E+02 9.99E+01	G K
Cr-51	F	1.2878E+01					2.77E+01	
			320.08	1.288E+01 %(		5.184E+01	1.67E+02 1.01E+01	G K
Co-56	C	3.4110E+00					7.73E+01	
			1238.28	3.411E+00 %(P		1.152E+01	1.66E+02 6.61E+01	G K
			1771.35	1.373E+01 %		3.416E+01	1.28E+02 1.55E+01	G
Co-57	C	1.7949E-01					2.72E+02	
			122.06	1.795E-01 %(		6.186E+00	1.37E+03 8.56E+01	G K
			136.47	0.000E+00 % P		5.180E+01	1.00E+03 1.07E+01	G
Co-58	C	6.0597E-01					7.08E+01	
			810.78	6.060E-01 %(P		5.762E+00	4.36E+02 9.94E+01	G K
Fe-59	F	-4.8832E+00					4.45E+01	
			1099.25	-4.883E+00 %(		1.515E+01	1.56E+02 5.65E+01	G K
			1291.60	3.002E+00 &		1.475E+01	2.43E+02 4.32E+01	G
Zn-65	F	2.3564E+00					2.44E+02	
			1115.55	2.356E+00 %(P		9.460E+00	1.93E+02 5.06E+01	G K
SE-75		7.5819E-01					1.20E+02	
			264.66	7.582E-01 %(		6.929E+00	3.79E+02 5.86E+01	G K
			136.00	-5.932E-01 %		9.377E+00	6.34E+02 5.83E+01	G
			279.54	3.986E+00 & P		1.663E+01	1.76E+02 2.48E+01	G
			121.12	0.000E+00 & P		3.627E+01	1.00E+03 1.64E+01	G
Y-88	C	8.1921E-01					1.07E+02	
			1836.06	8.192E-01 %(		5.328E+00	3.34E+02 9.92E+01	G K
			898.04	2.886E+00 & P		4.937E+00	8.17E+01 9.37E+01	G
Nb-94	I	1.2764E+00					7.41E+06	
			871.09	1.276E+00 %(P		4.512E+00	1.69E+02 9.99E+01	G K
			702.62	8.244E-01 & P		4.828E+00	2.73E+02 9.79E+01	G

Nuclide	Ave activity	Energy	Activity	Code	Peak MDA		Comments
Zr-95	I -1.5554E+00					6.40E+01	
		756.73	-1.555E+00 %(		1.102E+01	3.22E+02 5.45E+01	G K
		724.20	0.000E+00 %		1.482E+01	1.00E+03 4.42E+01	G
Ru-103	I 4.4105E-01					3.93E+01	
		497.08	4.410E-01 %(P		5.914E+00	5.99E+02 9.10E+01	G K
Ag-110M	F 5.5071E-01					2.50E+02	

			657.76	5.507E-01	%(P	4.449E+00	3.55E+02	9.40E+01	G K
			1505.04	0.000E+00	% P	5.248E+01	1.00E+03	1.29E+01	G
			1384.30	1.203E+01	% P	1.630E+01	7.05E+01	2.41E+01	G
			937.49	1.017E+01	%	8.599E+00	4.31E+01	3.41E+01	G
			884.68	-1.029E+00	&	6.601E+00	2.96E+02	7.22E+01	G
			763.94	6.746E+00	%	1.912E+01	1.29E+02	2.21E+01	G
			744.28	7.269E+01	% P	6.247E+01	4.32E+01	4.70E+00	G
			706.68	0.000E+00	% P	2.957E+01	1.00E+03	1.63E+01	G
Sn-113	F	-3.4495E-01						1.15E+02	
			391.69	-3.450E-01	%(	6.847E+00	8.45E+02	6.40E+01	G K
Sb-124	F	3.6896E+00						6.02E+01	
			602.73	3.690E+00	&(	5.671E+00	7.01E+01	9.78E+01	G K
			645.85	9.378E+00	% P	5.886E+01	2.84E+02	7.38E+00	G
			722.79	0.000E+00	% P	4.769E+01	1.00E+03	1.08E+01	G
			1690.98	6.466E+00	%	8.524E+00	6.85E+01	4.73E+01	G
Te-129M	I	-2.2238E+00						3.36E+01	
			695.88	-2.224E+00	&(	2.555E+02	5.21E+03	3.00E+00	G K
I-131	I	-3.7255E+00						8.02E+00	
			364.49	-3.726E+00	&(	2.445E+01	2.83E+02	8.17E+01	G K
			636.99	0.000E+00	% P	3.573E+02	1.00E+03	7.17E+00	G
			284.30	0.000E+00	%	3.662E+02	1.00E+03	6.14E+00	G
I-133	I	-1.7926E-01						8.67E-01	
			529.87	-1.793E-01	%(	4.243E+00	1.02E+03	8.70E+01	G K
			875.33	0.000E+00	%	9.309E+01	1.00E+03	4.51E+00	G
Ba-133	F	1.2158E+00						3.84E+03	
			356.02	1.216E+00	%(	6.033E+00	2.13E+02	6.20E+01	G K
			81.00	1.273E+00	& P	2.953E+01	9.40E+02	3.41E+01	G
			302.85	0.000E+00	% P	2.187E+01	1.00E+03	1.83E+01	G
			276.40	-3.194E+01	%	6.249E+01	8.36E+01	7.16E+00	G
			383.85	-1.865E+01	%	4.573E+01	1.07E+02	8.94E+00	G

Nuclide	Ave activity	Energy	Activity	Code	Peak MDA	Comments
Cs-136	F 3.7780E+00				1.32E+01	
		818.51	3.778E+00	%(	9.868E+00	1.22E+02 9.97E+01 G K
		176.60	-4.873E+00	%	1.093E+02	8.96E+02 1.00E+01 G
		273.65	3.948E+01	&	7.734E+01	8.29E+01 1.11E+01 G
		340.55	-2.685E+00	%	2.394E+01	3.68E+02 4.22E+01 G
		1048.07	-5.988E+00	%	1.907E+01	1.55E+02 8.00E+01 G
		1235.36	0.000E+00	%	1.194E+02	1.00E+03 2.00E+01 G
Cs-137	I -2.1411E+00				1.10E+04	
		661.66	-2.141E+00	%(	5.840E+00	1.27E+02 9.01E+01 G K
Ce-139	F -2.4624E+00				1.38E+02	
		165.85	-2.462E+00	%(	6.535E+00	1.08E+02 7.99E+01 G K
La-140	I 1.7323E+01				1.28E+01	
		1596.21	1.732E+01	?(P	5.288E+00	2.17E+01 9.54E+01 G K
		487.02	1.780E+00	%	2.107E+01	5.14E+02 4.55E+01 G
		815.77	1.514E+01	% P	5.125E+01	1.61E+02 2.33E+01 G
		328.76	-1.335E+01	%	5.259E+01	1.65E+02 2.03E+01 G

Ce-141	I	1.3067E-01					3.25E+01		
			145.44	1.307E-01	%(	1.351E+01	4.12E+03	4.82E+01	G K
Ce-144	I	-2.8329E-01					2.85E+02		
			133.51	-2.833E-01	%(	4.752E+01	6.71E+03	1.11E+01	G K
ND-147		1.6570E+01					1.11E+01		
			531.00	1.657E+01	%(P	8.009E+01	2.14E+02	1.35E+01	G K
			91.10	-4.986E+01	%	1.092E+02	8.82E+01	2.83E+01	G
Eu-152	F	2.4402E+00					4.95E+03		
			121.78	2.440E+00	%(P	1.697E+01	2.82E+02	2.84E+01	G K
			1408.01	-5.406E+00	%	3.108E+01	2.91E+02	2.09E+01	GA
			1112.12	-6.828E+00	%	4.062E+01	2.92E+02	1.36E+01	GA
			1085.91	0.000E+00	% P	5.401E+01	1.00E+03	9.92E+00	GA
			964.13	0.000E+00	% P	4.279E+01	1.00E+03	1.43E+01	GA
			344.28	2.459E+00	& P	1.362E+01	2.42E+02	2.66E+01	GA
			244.70	-1.891E+01	&	5.889E+01	1.32E+02	7.49E+00	GA
Eu-154	I	-5.5924E-01					3.14E+03		
			123.07	-5.592E-01	&(	1.254E+01	8.96E+02	4.06E+01	G K
			1274.44	2.770E+00	&	1.006E+01	1.75E+02	3.50E+01	G
			1004.72	1.544E+01	%	1.626E+01	5.22E+01	1.79E+01	G
			996.26	-1.547E+01	&	5.070E+01	1.59E+02	1.05E+01	G
			873.19	0.000E+00	% P	4.229E+01	1.00E+03	1.22E+01	G
			723.30	0.000E+00	% P	1.991E+01	1.00E+03	2.01E+01	GA
			247.93	1.008E+01	% P	5.871E+01	2.47E+02	6.91E+00	G

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Eu-155	I 3.0899E+00					1.74E+03	
		86.54	3.090E+00	&(	3.169E+01	4.04E+02	3.07E+01 G K
		105.31	7.521E+00	%	2.661E+01	1.43E+02	2.12E+01 G
Ir-192	F 4.4247E-01					7.38E+01	
		316.51	4.425E-01	&(P	5.544E+00	5.27E+02	8.28E+01 G K
		468.07	2.574E+00	%	9.250E+00	1.54E+02	4.78E+01 G
		308.46	-1.276E+00	%	1.448E+01	4.68E+02	3.00E+01 G
		295.96	5.434E+00	% P	1.676E+01	1.32E+02	2.87E+01 GA
Hg-203	F 4.8853E-01					4.66E+01	
		279.20	4.885E-01	%(P	6.331E+00	5.42E+02	8.15E+01 G K
Bi-214	N 8.3342E+01					5.84E+05	
		609.31	8.334E+01	(P	1.199E+01	9.19E+00	4.48E+01 G K
		1120.29	8.019E+01	?	3.199E+01	2.27E+01	1.48E+01 GA
		2204.21	0.000E+00	=	0.000E+00	0.00E+00	4.86E+00 G
		1764.49	6.205E+01	% P	5.148E+01	3.99E+01	1.54E+01 G
		1377.67	2.226E+01	% P	1.832E+02	4.23E+02	3.92E+00 G
		1238.11	3.259E+01	% P	1.100E+02	1.66E+02	5.86E+00 G
		768.36	-8.547E+00	&	1.265E+02	6.78E+02	4.80E+00 G
Pb-214	N 8.3762E+01					5.84E+05	
		351.99	7.737E+01	(P	1.006E+01	7.42E+00	3.71E+01 G K
		295.22	9.341E+01	(P	1.930E+01	1.20E+01	1.92E+01 G
		241.92	9.071E+01	(P	4.175E+01	2.01E+01	7.47E+00 G
		87.20	1.478E+02	% P	2.266E+02	6.37E+01	3.70E+00 G
							Energy duplication
		77.11	1.017E+02	% P	9.187E+01	3.03E+01	1.07E+01 G

								Energy duplication	
			74.81	5.173E+01	%	P	1.860E+02	1.40E+02	6.33E+00 G
Ra-223	N	1.4009E+01						7.96E+03	
			269.46	1.401E+01	%(	P	2.246E+01	7.02E+01	1.37E+01 G K
			83.78	0.000E+00	%	P	3.769E+01	1.00E+03	2.49E+01 G
			323.87	-1.449E+01	&		9.103E+01	2.60E+02	3.93E+00 G
			154.21	1.740E+01	&		7.782E+01	1.81E+02	5.62E+00 G
			94.90	0.000E+00	%	P	7.272E+01	1.00E+03	1.13E+01 G
			81.07	0.000E+00	&	P	6.967E+01	1.00E+03	1.50E+01 G
Ac-227	N	-1.0424E+01						7.95E+03	
			235.97	-1.042E+01	%(		3.418E+01	1.38E+02	1.23E+01 G K
			256.25	1.005E+01	%	P	5.673E+01	2.39E+02	7.00E+00 G
			300.00	6.673E+01	&		1.503E+02	9.50E+01	2.30E+00 G
			329.85	3.750E+01	%		1.239E+02	1.37E+02	2.70E+00 G
Ac-228	N	3.1799E+00						2.10E+03	
			911.21	3.180E+00	%(	P	1.980E+01	2.84E+02	2.66E+01 G K
			968.97	0.000E+00	%	P	3.550E+01	1.00E+03	1.62E+01 G

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
		338.32	5.059E+00 %	P	3.161E+01	2.61E+02	1.13E+01 G
Th-230	N -8.5599E+01					2.75E+07	
		67.67	-8.560E+01 %(		4.602E+03	2.05E+03	3.80E-01 G K
Pa-231	N 2.2432E+00					1.20E+07	
		283.70	2.243E+00 %(	P	2.276E+02	4.17E+03	1.60E+00 G K
		330.00	7.778E+01 &		2.570E+02	1.37E+02	1.30E+00 G
Th-232	N 2.4351E+03					4.17E+12	
		63.81	2.435E+03 %(		7.680E+03	1.22E+02	2.67E-01 G K
U-235	N 1.4768E+01					2.57E+11	
		143.76	1.477E+01 %(	P	3.723E+01	1.03E+02	1.10E+01 G K
		205.31	-2.973E+01 %		8.377E+01	1.15E+02	5.01E+00 G
		89.95	-2.371E+01 %		2.386E+02	4.04E+02	3.56E+00 GA
U-238	N 4.2516E+01					1.63E+12	
		92.59	4.252E+01 %(	P	1.446E+02	1.29E+02	5.60E+00 G K
						Energy duplication	
		1001.03	0.000E+00 %	P	6.020E+02	1.00E+03	8.40E-01 G K
Am-241	T 7.0471E+00					1.58E+05	
		59.54	7.047E+00 &(	P	7.639E+01	4.19E+02	3.63E+01 G K
Am-243	T 4.8282E+00					2.69E+06	
		74.66	4.828E+00 %(	P	1.736E+01	1.40E+02	6.82E+01 G K
Pm-144	C 1.4799E-02					3.63E+02	
		696.51	1.480E-02 %(	P	5.422E+00	1.67E+04	9.90E+01 G K
		618.01	2.416E+00 %		3.364E+00	6.31E+01	9.86E+01 G
Pm-146	C 1.6532E+00					2.02E+03	
		453.88	1.653E+00 &(		5.006E+00	1.29E+02	6.52E+01 G K
		747.16	5.986E+00 %	P	9.666E+00	7.48E+01	3.40E+01 G
		735.72	7.819E+00 %	P	1.571E+01	9.30E+01	2.25E+01 GA

(- This peak used in the nuclide activity average.

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   * - Peak is too wide, but only one peak in library.
   ! - Peak is part of a multiplet and this area went
       negative during deconvolution.
   ? - Peak is too narrow.
   @ - Peak is too wide at FW25M, but ok at FWHM.
   % - Peak fails sensitivity test.
   $ - Peak identified, but first peak of this nuclide
       failed one or more qualification tests.
   + - Peak activity higher than counting uncertainty range.
   - - Peak activity lower than counting uncertainty range.
```



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   = - Peak outside analysis energy range.
   & - Calculated peak centroid is not close enough to the
       library energy centroid for positive identification.
   P - Peakbackground subtraction
   } - Peak is too close to another for the activity
       to be found directly.

   Nuclide Codes:                        Peak Codes:
   T - Thermal Neutron Activation        G - Gamma Ray
   F - Fast Neutron Activation           X - X-Ray
   I - Fission Product                   P - Positron Decay
   N - Naturally Occurring Isotope       S - Single-Escape
   P - Photon Reaction                   D - Double-Escape
   C - Charged Particle Reaction         K - Key Line
   M - No MDA Calculation                A - Not in Average
   R - Coincidence Corrected             C - Coincidence Peak
   H - Halflife limit exceeded
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- -

********** D I S C A R D E D I S O T O P E P E A K S **********

Nuclide	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	Activity	
La-140	1596.49	1.	28.	0.008	43.38	1.732E+01	P

P - Peakbackground subtraction

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide		Time of Count Activity pCi/L	Time Corrected Activity pCi/L	Uncertainty Counting pCi/L	2 Sigma Total pCi/L	MDA pCi/L
Be-7	#B	6.4211E+00	8.1578E+00	3.4770E+01	3.4773E+01	4.117E+01
Na-22	#B	9.6607E-01	9.7916E-01	3.4257E+00	3.4261E+00	3.557E+00
K-40	#B	0.0000E+00	0.0000E+00	2.7153E+01	2.7153E+01	6.680E+01
Sc-46	#B	0.0000E+00	0.0000E+00	1.1593E+00	1.1593E+00	6.238E+00
Cr-51	#B	8.1177E+00	1.2878E+01	4.2933E+01	4.2939E+01	5.184E+01
Mn-54	#B	0.0000E+00	0.0000E+00	6.3270E-01	6.3271E-01	5.151E+00
Co-56	#B	2.8909E+00	3.4110E+00	1.1348E+01	1.1349E+01	1.152E+01
Co-57	#B	1.7124E-01	1.7949E-01	4.9342E+00	4.9342E+00	6.186E+00
Co-58	#B	5.0590E-01	6.0597E-01	5.2884E+00	5.2885E+00	5.762E+00
Fe-59	#B	-3.6640E+00	-4.8832E+00	1.5214E+01	1.5216E+01	1.515E+01
Co-60	#B	0.0000E+00	0.0000E+00	2.7641E+00	2.7641E+00	6.338E+00
Zn-65	#B	2.2361E+00	2.3564E+00	9.1124E+00	9.1134E+00	9.460E+00
SE-75	#B	6.8182E-01	7.5819E-01	5.7397E+00	5.7398E+00	6.929E+00

Kr-85	#B	0.0000E+00	0.0000E+00	5.1447E+02	5.1448E+02	2.136E+03
Y-88	#B	7.2668E-01	8.1921E-01	5.4751E+00	5.4753E+00	5.328E+00
Nb-94	#B	1.2764E+00	1.2764E+00	4.3063E+00	4.3069E+00	4.512E+00
Zr-95	#B	-1.2738E+00	-1.5554E+00	1.0005E+01	1.0005E+01	1.102E+01
Nb-95	#B	0.0000E+00	0.0000E+00	2.5725E+00	2.5725E+00	8.322E+00
Ru-103	#B	3.1848E-01	4.4105E-01	5.2846E+00	5.2847E+00	5.914E+00
Ag-108M	#B	0.0000E+00	0.0000E+00	8.7122E-01	8.7122E-01	4.571E+00

Ru-106	#B	0.0000E+00	0.0000E+00	6.5483E+00	6.5484E+00	4.887E+01
Cd-109	#B	0.0000E+00	0.0000E+00	8.3689E+01	8.3689E+01	2.784E+02
Ag-110M	#B	5.2324E-01	5.5071E-01	3.9137E+00	3.9139E+00	4.449E+00
Sn-113	#B	-3.0869E-01	-3.4495E-01	5.8286E+00	5.8286E+00	6.847E+00
Sb-124	#B	2.9837E+00	3.6896E+00	5.1757E+00	5.1797E+00	5.671E+00
Sb-125	#B	0.0000E+00	0.0000E+00	7.3022E+00	7.3022E+00	1.487E+01
Te-129	#B	0.0000E+00	0.0000E+00	3.5733E+01	3.5733E+01	7.107E+01
Te-129M	#B	-1.5201E+00	-2.2238E+00	2.3176E+02	2.3176E+02	2.555E+02
I-131	#B	-7.5678E-01	-3.7255E+00	2.1051E+01	2.1052E+01	2.445E+01
I-132	#B	0.0000E+00	0.0000E+00	4.1735E+01	4.1735E+01	4.279E+02
Te-132	#B	0.0000E+00	0.0000E+00	5.1884E+01	5.1885E+01	3.206E+02
I-133	#B	-1.7926E-01	>12 Halflives	3.6731E+00	3.6732E+00	4.243E+00
Ba-133	#B	1.2118E+00	1.2158E+00	5.1895E+00	5.1897E+00	6.033E+00
Cs-134	#B	0.0000E+00	0.0000E+00	2.2769E+00	2.2770E+00	5.929E+00
Cs-136	#B	1.4302E+00	3.7780E+00	9.1812E+00	9.1836E+00	9.868E+00
Cs-137	#B	-2.1386E+00	-2.1411E+00	5.4248E+00	5.4261E+00	5.840E+00
Ce-139	#B	-2.2440E+00	-2.4624E+00	5.3431E+00	5.3449E+00	6.535E+00
Ba-140	#B	0.0000E+00	0.0000E+00	1.6664E+01	1.6664E+01	4.521E+01
La-140	#	6.3563E+00	1.7323E+01	7.5144E+00	7.5809E+00	5.288E+00
Ce-141	#B	8.8179E-02	1.3067E-01	1.0764E+01	1.0764E+01	1.351E+01
Ce-144	#B	-2.7086E-01	-2.8329E-01	3.8005E+01	3.8005E+01	4.752E+01
ND-147	#B	5.2164E+00	1.6570E+01	7.1039E+01	7.1045E+01	8.009E+01
Eu-152	#B	2.4339E+00	2.4402E+00	1.3757E+01	1.3758E+01	1.697E+01
Eu-154	#B	-5.5697E-01	-5.5924E-01	1.0018E+01	1.0018E+01	1.254E+01
Eu-155	#B	3.0673E+00	3.0899E+00	2.4961E+01	2.4962E+01	3.169E+01
Lu-176	#B	0.0000E+00	0.0000E+00	6.4548E-01	6.4548E-01	3.851E+00
Ir-192	#B	3.7213E-01	4.4247E-01	4.6615E+00	4.6616E+00	5.544E+00
Hg-203	#B	3.7135E-01	4.8853E-01	5.2970E+00	5.2971E+00	6.331E+00
Tl-208	#B	0.0000E+00	0.0000E+00	2.1894E+00	2.1894E+00	5.392E+00
Pb-210	#B	0.0000E+00	0.0000E+00	9.0681E+02	9.0682E+02	4.613E+03
Bi-212	#B	0.0000E+00	0.0000E+00	1.7375E+01	1.7375E+01	7.778E+01
Pb-212	#B	0.0000E+00	0.0000E+00	4.8030E+00	4.8031E+00	1.029E+01
Bi-214		8.3340E+01	8.3342E+01	1.5318E+01	1.5989E+01	1.199E+01
Pb-214		8.3760E+01	8.3762E+01	1.2436E+01	1.3316E+01	1.006E+01
Ra-223	#B	1.3986E+01	1.4009E+01	1.9658E+01	1.9675E+01	2.246E+01
Ra-224	#B	0.0000E+00	0.0000E+00	6.7275E+01	6.7276E+01	1.129E+02
Ra-226	#B	0.0000E+00	0.0000E+00	7.6916E+01	7.6917E+01	1.412E+02
Ac-227	#B	-1.0407E+01	-1.0424E+01	2.8872E+01	2.8879E+01	3.418E+01
Ac-228	#B	3.1606E+00	3.1799E+00	1.8057E+01	1.8058E+01	1.980E+01
Th-228	#B	0.0000E+00	0.0000E+00	1.7421E+02	1.7421E+02	7.616E+02
Th-230	#B	-8.5599E+01	-8.5599E+01	3.5127E+03	3.5127E+03	4.602E+03
Pa-231	#B	2.2432E+00	2.2432E+00	1.8727E+02	1.8727E+02	2.276E+02
Pa-234M	#A	0.0000E+00	0.0000E+00	1.1372E+02	1.1372E+02	6.042E+02
Th-232	#B	2.4351E+03	2.4351E+03	5.9608E+03	5.9843E+03	7.680E+03
Th-234	#B	0.0000E+00	0.0000E+00	2.0425E+02	2.0426E+02	4.990E+02
U-235	#B	1.4768E+01	1.4768E+01	3.0284E+01	3.0295E+01	3.723E+01
U-238	#B	4.2516E+01	4.2516E+01	1.0997E+02	1.1001E+02	1.446E+02
Am-241	#B	7.0465E+00	7.0471E+00	5.9006E+01	5.9033E+01	7.639E+01
Am-243	#B	4.8281E+00	4.8282E+00	1.3497E+01	1.3512E+01	1.736E+01

Pm-144 #B	1.4287E-02	1.4799E-02	4.9516E+00	4.9516E+00	5.422E+00
Pm-146 #B	1.6428E+00	1.6532E+00	4.2793E+00	4.2803E+00	5.006E+00

- All peaks for activity calculation had bad shape.
* - Activity omitted from total
& - Activity omitted from total and all peaks had bad shape.
< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

---------- S U M M A R Y ----------

Total Activity (30.3 to 2038.5 keV) 1.671E+02 pCi/L
Total Decayed Activity (30.3 to 2038.5 keV) 1.6710391E+02 pCi/L

The library has energies which are not separable.

Analyzed by: _____
Operator

Reviewed by: _____
Supervisor

Laboratory: Pace

ORTEC g v - i (3263) Env32 G701W047 9/24/2024 5:02:52 PM Page 1
PACE Spectrum name: 30717346001.An1

Sample description
81318

Spectrum Filename: C:\User\30717346001.An1

Acquisition information
Start time: 9/24/2024 11:10:53 AM
Live time: 3600
Real time: 3771
Dead time: 4.54 %
Detector ID: 5

Detector system
DET 5

Calibration
Filename: DET_5_2L_MAR_23-047(021924).Clb
DET_5_2L_MAR_23-047(021924)

Energy Calibration
Created: 2/23/2024 11:14:34 AM
Zero offset: 0.513 keV
Gain: 0.250 keV/channel
Quadratic: -4.543E-10 keV/channel^2

Efficiency Calibration
Created: 2/23/2024 11:15:45 AM
Type: Polynomial
Uncertainty: 1.566 %
Coefficients: -0.317713 -4.992960 0.533353
-0.071649 0.003819 -0.000077

Library Files
Main analysis library: Pace Master w Ra226U235 (wo PS)
Library Match Width: 0.500
Peak stripping: Library based

Analysis parameters
Analysis engine: Env32 G701W047
Start channel: 120 (30.51keV)
Stop channel: 8144 (2036.02keV)
Peak rejection level: 30.000%
Peak search sensitivity: 3
Sample Size: 2.0000E+00
Activity scaling factor: 1.0000E+06/(1.0000E+00* 2.0000E+00) = 5.0000E+05
Detection limit method: Reg. Guide 4.16 Method

Random error: 1.0000000E+00
Systematic error: 1.0000000E+00
Fraction Limit: 0.000%
Background width: average of three points.

Half lives decay limit: 12.000

WTF 9.25.24

JM 9/25/24

ORTEC g v - i (3263) Env32 G701W047 9/24/2024 5:02:52 PM Page 2
PACE Spectrum name: 30717346001.An1

Activity range factor: 2.000
Min. step backg. energy 0.000
Multiplet shift channel 2.000

Corrections	Status	Comments
Decay correct to date:	YES	9/9/2024 3:00:00 PM
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	YES	Det_5_Bkg_092024Ra226U235(2L).Pb 9/24/2024 4:22:29 PM
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

WTF 9-25-24

total peaks alloc. 0 cutoff: 0.00E+00 %
Energy Calibration
Normalized diff: 0.1315

***** S U M M A R Y O F P E A K S I N R A N G E *****

Peak Energy	Area	Uncert	FWHM	Corrctn Factor	Nuclide Energy	Brnch. Ratio	Act. pCi/L	Nuc
74.84	924.	8.81	1.32	1.771E-02	74.66	68.200	2.875E+02	Am243
					74.81	6.330	3.092E+03	Pb214
					74.81	10.400	1.910E+03	Pb212
77.04	1603.	5.09	1.32	1.819E-02	77.11	17.500	1.916E+03	Pb212
					77.11	10.700	3.088E+03	Pb214
81.01	301.	21.73	1.33	1.903E-02	81.00	34.100	PBC<MDA	Ba133
					81.07	15.000	3.962E+02	Ra223
					81.00	34.100	PBC<MDA	Ba133
83.72	415.	13.98	1.33	1.956E-02	83.78	24.900	3.206E+02	Ra223
					84.37	1.266	6.356E+03	Th228
87.24	628.	10.95	1.33	2.023E-02	86.54	30.700	3.851E+02	Eu155
					87.20	3.700	3.158E+03	Pb214
					87.30	7.800	1.511E+03	Pb212
					88.03	3.610	3.285E+03	Cd109
89.56	471.	14.13	1.33	2.063E-02	89.95	3.560	2.404E+03	U235
					91.10	28.300	7.478E+02	ND147
					91.10	28.300	7.478E+02	ND147
					89.95	3.560	2.404E+03	U235
93.26	586.	11.25	1.34	2.123E-02	92.60	2.800	3.485E+03	Th234
					92.59	5.600	1.763E+03	U238
186.09	4570.	2.88	1.54	2.407E-02	186.10	3.500	2.026E+04	Ra226
209.16	694.	14.42	1.75	2.305E-02				
238.75	211.	22.97	1.43	2.161E-02	238.63	43.300	8.583E+01	Pb212
242.10	1461.	6.07	1.70	2.144E-02	241.00	3.900	6.621E+03	Ra224
					241.92	7.470	3.423E+03	Pb214
270.32	747.	9.38	1.83	2.009E-02	269.46	13.700	1.018E+03	Ra223
295.23	3687.	2.45	1.70	1.899E-02	295.22	19.200	3.794E+03	Pb214

ORTEC g v - i (3263) Env32 G701W047 9/24/2024 5:02:52 PM Page 3
PACE Spectrum name: 30717346001.An1

pk energy	area	uncert	fwhm	corr	nuclide	brnch.	act.	nuc
					295.96	28.670	2.925E+03	Ir192

					295.96	28.670	2.925E+03	Ir192
327.89	312.	12.30	1.49	1.768E-02	328.76	20.300	7.323E+02	La140
					329.85	2.700	2.440E+03	Ac227
					330.00	1.300	5.094E+03	Pa231
					328.76	20.300	7.323E+02	La140
338.43	1361.	5.24	1.64	1.729E-02	338.32	11.300	2.625E+03	Ac228
					340.55	42.200	1.537E+03	Cs136
351.98	6342.	1.73	1.66	1.682E-02	351.99	37.100	3.809E+03	Pb214
463.11	470.	11.47	1.40	1.376E-02	463.36	10.500	1.230E+03	Sb125
					463.36	10.500	1.230E+03	Sb125
609.39	5144.	1.64	1.80	1.124E-02	609.31	44.800	3.828E+03	Bi214
768.29	445.	9.67	1.77	9.504E-03	768.36	4.800	3.654E+03	Bi214
795.07	260.	12.20	1.14	9.266E-03	795.86	85.530	1.249E+02	Cs134
911.07	1546.	3.44	2.06	8.410E-03	911.21	26.600	2.590E+03	Ac228
964.53	280.	8.71	1.87	8.072E-03	964.13	14.340	9.048E+02	Eu152
					964.13	14.340	9.048E+02	Eu152
969.10	805.	4.18	1.88	8.045E-03	968.97	16.200	2.329E+03	Ac228
1120.44	1155.	3.79	2.11	7.246E-03	1120.29	14.800	4.033E+03	Bi214
1238.13	361.	6.61	2.02	6.735E-03	1235.36	20.000	2.193E+03	Cs136
					1238.11	5.860	3.431E+03	Bi214
					1238.28	66.070	3.477E+02	Co56
1238.26	382.	2.18	2.03	6.736E-03	1235.36	20.000	2.324E+03	Cs136
					1238.11	5.860	3.635E+03	Bi214
					1238.28	66.070	3.684E+02	Co56
1377.94	297.	7.77	2.09	6.221E-03	1377.67	3.920	4.568E+03	Bi214
1407.98	161.	17.62	2.12	6.119E-03	1408.01	20.870	4.742E+02	Eu152
					1408.01	20.870	4.742E+02	Eu152
1460.10	141.	17.62	0.58	5.950E-03	1461.00	10.670	8.356E+02	K40
1764.70	870.	3.57	2.31	5.125E-03	1764.49	15.360	4.149E+03	Bi214

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Efficiency * Area	Uncert 2 Sigma %	FWHM keV	Suspected Nuclide	
357.05	89.81	1934.	516.	2.502E+04	25.65	1.333	PB-214	D
371.85	93.51	1890.	565.	2.663E+04	23.32	1.336	U-235	D
834.79	209.16	1696.	694.	3.013E+04	28.83	1.748	AC-228	s
1080.10	270.32	1043.	475.	2.364E+04	21.31	1.450	AC-228	D
1309.81	328.00	580.	312.	1.765E+04	24.60	1.487	AC-228	D
1850.84	463.11	429.	470.	3.412E+04	22.94	1.397	AC-228	s
3857.75	964.62	155.	284.	3.516E+04	17.18	1.875	AC-228	D

s - Peak fails shape tests.
D - Peak area deconvoluted.
L - Peak written from unknown list.
C - Area < Critical level.

ORTEC g v - i (3263) Env32 G701W047 9/24/2024 5:02:52 PM Page 4
PACE Spectrum name: 30717346001.An1

This section based on library: Pace Master w Ra226U235 (wo PS)

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	FWHM keV	
Pb-212	297.26	74.81	2524.	1046.	0.291	14.92	1.323	D
Pb-212	306.46	77.11	0.	0.	0.000	0.00	0.000	D

Pb-214	306.46	77.11	2540.	1710.	0.475	9.64	1.325D
Ra-223	322.30	81.07	1981.	301.	0.084	43.46	1.327D
Ra-223	333.15	83.78	1958.	415.	0.115	27.96	1.329D
Eu-155	344.21	86.54	1922.	606.	0.168	16.80	1.331D
Pb-214	346.83	87.20	2059.	174.	0.048	53.64	1.331D
Cd-109	0.00	88.03	0.	0.	0.000	0.00	0.000
ND-147	359.35	90.33	2408.	355.	0.099	59.65	1.334s
Ra-226	742.46	186.09	2346.	4546.	1.263	5.80	1.545
Pb-212	952.70	238.63	1062.	211.	0.059	45.95	1.430D
Pb-214	965.85	241.92	1051.	1394.	0.387	8.49	1.432D
Ra-223	1076.03	269.46	1163.	171.	0.048	58.39	1.450D
Pb-214	1179.12	295.23	869.	3685.	1.024	4.91	1.700s
Ac-228	1351.99	338.43	722.	1360.	0.378	10.50	1.643
Pb-214	1406.20	351.98	854.	6332.	1.759	3.46	1.662
Sb-125	1851.01	463.16	405.	429.	0.119	23.44	1.572s
Bi-214	2435.77	609.31	486.	4846.	1.346	3.15	1.662D
Bi-214	3071.85	768.29	243.	444.	0.123	19.44	1.770
Cs-134	3178.97	795.07	173.	260.	0.072	24.40	1.143s
Ac-228	3644.05	911.31	234.	1581.	0.439	7.38	2.064
Eu-152	3857.96	964.77	203.	247.	0.068	31.40	1.874s
Ac-228	3874.75	968.97	179.	805.	0.224	8.50	1.877D
Bi-214	4480.79	1120.44	96.	1152.	0.320	7.61	2.115
Bi-214	4951.57	1238.11	99.	382.	0.106	4.35	2.031D
Co-56	4952.26	1238.28	57.	361.	0.100	13.23	2.025D
Bi-214	5511.01	1377.94	44.	297.	0.082	15.54	2.091s
Eu-152	5631.23	1407.98	99.	161.	0.045	35.23	2.125s
K-40	5839.75	1460.10	74.	141.	0.039	35.25	0.578s
Bi-214	7057.63	1764.49	45.	870.	0.242	7.13	2.314D

s - Peak fails shape tests.
D - Peak area deconvoluted.
A Derived peak area.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

- Nuclide - Name	Code	Average Activity pCi/L	Peak Energy keV	Peak Activity pCi/L	Code	MDA Value pCi/L		COMMENTS
K-40	N	8.3564E+02				4.68E+11		
			1461.00	8.356E+02	@(P	2.525E+02	1.76E+01 1.07E+01 G K	
Cr-51	F	-1.1361E+02				2.77E+01		
			320.08	-1.136E+02	%(	4.004E+02	1.64E+01 1.01E+01 G K	
Mn-54	C	7.6568E+00				3.12E+02		
			834.85	7.657E+00	%(	3.670E+01	2.42E+02 1.00E+02 G K	
Co-56	C	3.4769E+02				7.73E+01		
			1238.28	3.477E+02	}	3.642E+01	6.61E+00 6.61E+01 G K	
			1771.35	0.000E+00	%(	2.409E+02	1.00E+03 1.55E+01 G	
Co-57	C	7.0920E+00				2.72E+02		
			122.06	7.092E+00	%(P	4.108E+01	2.61E+02 8.56E+01 G K	
			136.47	-4.311E+01	&	3.463E+02	3.75E+02 1.07E+01 G	
Fe-59	F	5.7544E+01				4.45E+01		

			1099.25	5.754E+01	%(	4.983E+01	4.55E+01	5.65E+01	G	K
			1291.60	0.000E+00	% P	8.232E+01	1.00E+03	4.32E+01	G	
Co-60	F	1.7622E+01						1.92E+03		
			1332.50	1.762E+01	%(P	2.552E+01	7.54E+01	1.00E+02	G	K
			1173.24	1.221E+01	&	2.698E+01	1.13E+02	1.00E+02	G	
Zn-65	F	4.0807E+00						2.44E+02		
			1115.55	4.081E+00	&(	5.204E+01	6.44E+02	5.06E+01	G	K
Nb-94	I	-2.0263E+01						7.41E+06		
			871.09	-2.026E+01	&(	3.220E+01	8.07E+01	9.99E+01	G	K
			702.62	4.641E+00	% P	3.501E+01	3.69E+02	9.79E+01	G	
Zr-95	I	2.4289E+01						6.40E+01		
			756.73	2.429E+01	%(	7.186E+01	1.50E+02	5.45E+01	G	K
			724.20	0.000E+00	%	9.551E+01	1.00E+03	4.42E+01	G	
Ru-103	I	-9.0290E+00						3.93E+01		
			497.08	-9.029E+00	%(	3.815E+01	2.01E+02	9.10E+01	G	K
Ag-108M	C	-9.5757E+00						1.53E+05		
			722.94	-9.576E+00	%(	3.405E+01	1.74E+02	9.08E+01	G	K
			614.28	0.000E+00	% P	4.451E+01	1.00E+03	8.98E+01	G	

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
		433.94	0.000E+00 %		3.523E+01	1.00E+03	9.05E+01 G
		79.13	1.010E+03 &		6.631E+02	3.00E+01	6.60E+00 G
Sn-113	F -4.8404E+01						1.15E+02
		391.69	-4.840E+01 %(		5.325E+01	5.33E+01	6.40E+01 G K
Sb-124	F 1.4262E+01						6.02E+01
		602.73	1.426E+01 %(		3.594E+01	1.24E+02	9.78E+01 G K
		645.85	0.000E+00 % P		5.074E+02	1.00E+03	7.38E+00 G
		722.79	-5.209E+01 %		3.330E+02	3.12E+02	1.08E+01 G
		1690.98	3.313E+01 %		6.290E+01	1.03E+02	4.73E+01 G
Sb-125	I 3.0253E+02						1.01E+03
		427.88	1.054E+01 %(		9.833E+01	4.45E+02	2.96E+01 G K
		176.31	2.697E+02 &		4.927E+02	8.56E+01	6.82E+00 G
		463.36	1.126E+03 (P		2.534E+02	1.17E+01	1.05E+01 G
		600.60	4.301E+01 & P		1.673E+02	1.91E+02	1.79E+01 G
		635.95	-9.546E+01 %		2.666E+02	1.37E+02	1.13E+01 G
Te-129	I 2.1429E+02						3.36E+01
		459.60	2.143E+02 &(P		4.705E+02	1.05E+02	7.70E+00 G K
		487.39	1.233E+03 &		2.477E+03	9.63E+01	1.42E+00 G
I-131	I -5.5388E+01						8.02E+00
		364.49	-5.539E+01 %(		1.224E+02	1.06E+02	8.17E+01 G K
		636.99	3.642E+02 &		1.397E+03	1.88E+02	7.17E+00 G
		284.30	4.125E+02 % P		1.633E+03	1.84E+02	6.14E+00 G
I-132	I 3.4953E+01						3.20E+00
		772.60	3.495E+01 %(P		1.161E+03	1.67E+03	7.56E+01 G K
		522.65	0.000E+00 % P		4.341E+03	1.00E+03	1.60E+01 G
		630.19	3.010E+01 & P		5.172E+03	8.36E+03	1.33E+01 G
		954.55	0.000E+00 % P		3.857E+03	1.00E+03	1.76E+01 G

Te-132	I	-2.3841E+02					3.20E+00		
			228.16	-2.384E+02	&(	8.393E+02	1.64E+02	8.80E+01	G K
I-133	I	-3.9823E+00					8.67E-01		
			529.87	-3.982E+00	%(	3.166E+01	3.77E+02	8.70E+01	G K
			875.33	1.838E+02	% P	6.533E+02	1.78E+02	4.51E+00	G
Ba-133	F	-3.8482E+01					3.84E+03		
			356.02	-3.848E+01	%(	4.726E+01	5.95E+01	6.20E+01	G K
			81.00	8.017E+01	% P	1.382E+02	7.81E+01	3.41E+01	G
			302.85	3.412E+01	& P	1.435E+02	1.95E+02	1.83E+01	G
			276.40	0.000E+00	& P	4.049E+02	1.00E+03	7.16E+00	G
			383.85	-1.124E+02	%	3.187E+02	1.36E+02	8.94E+00	G

Nuclide		Ave activity	Energy		Activity	Code	Peak	MDA	Comments
Cs-134	I	1.2488E+02						7.52E+02	
			795.86	1.249E+02	(P	3.072E+01	1.22E+01	8.55E+01	G K
			604.72	0.000E+00	%	4.009E+01	1.00E+03	9.76E+01	GA
			569.33	0.000E+00	& P	1.944E+02	1.00E+03	1.54E+01	GA
			801.95	0.000E+00	% P	3.792E+02	1.00E+03	8.69E+00	GA
Ce-139	F	-1.4637E+01						1.38E+02	
			165.85	-1.464E+01	%(	4.619E+01	1.48E+02	7.99E+01	G K
La-140	I	3.4393E+01						1.28E+01	
			1596.21	3.439E+01	%(	6.080E+01	9.46E+01	9.54E+01	G K
			487.02	8.049E+01	& P	1.233E+02	7.37E+01	4.55E+01	G
			815.77	-7.938E+00	%	2.743E+02	1.72E+03	2.33E+01	G
			328.76	-6.418E+01	&	3.126E+02	2.34E+02	2.03E+01	G
Ce-141	I	8.9629E+01						3.25E+01	
			145.44	8.963E+01	%(P	9.784E+01	5.14E+01	4.82E+01	G K
Ce-144	I	4.1571E+01						2.85E+02	
			133.51	4.157E+01	&(	3.289E+02	3.69E+02	1.11E+01	G K
ND-147		3.3610E+02						1.11E+01	
			531.00	-1.586E+02	&(	5.407E+02	1.68E+02	1.35E+01	G K
			91.10	5.721E+02	?(P	3.732E+02	2.98E+01	2.83E+01	G
Eu-152	F	5.1912E+00						4.95E+03	
			121.78	5.191E+00	%(	1.204E+02	1.04E+03	2.84E+01	G K
			1408.01	4.742E+02	@	1.445E+02	1.76E+01	2.09E+01	GA
			1112.12	1.473E+02	%	1.908E+02	6.72E+01	1.36E+01	GA
			1085.91	3.160E+01	& P	2.568E+02	4.12E+02	9.92E+00	GA
			964.13	8.008E+02	P	2.247E+02	1.57E+01	1.43E+01	GA
			344.28	0.000E+00	% P	1.088E+02	1.00E+03	2.66E+01	GA
			244.70	4.988E+02	%	3.464E+02	3.29E+01	7.49E+00	GA
Eu-154	I	-5.7417E+01						3.14E+03	
			123.07	-5.742E+01	&(	8.796E+01	6.94E+01	4.06E+01	G K
			1274.44	1.550E+01	&	7.796E+01	2.62E+02	3.50E+01	G
			1004.72	1.162E+01	%	1.405E+02	6.13E+02	1.79E+01	G
			996.26	-1.942E+02	%	2.965E+02	7.94E+01	1.05E+01	G
			873.19	-5.163E+01	%	2.544E+02	2.47E+02	1.22E+01	G
			723.30	-9.810E+01	%	1.634E+02	8.24E+01	2.01E+01	GA
			247.93	2.633E+01	& P	4.066E+02	7.17E+02	6.91E+00	G

Nuclide		Ave activity	Energy		Activity	Code	Peak	MDA	Comments
Eu-155	I	3.7142E+02						1.74E+03	
			86.54	3.714E+02	}		1.269E+02	8.40E+00	3.07E+01 G K
			105.31	1.322E+02	%(P		1.706E+02	5.85E+01	2.12E+01 G

Nuclide		Ave activity	Energy		Activity	Code	Peak	MDA	Comments
Ir-192	F	-3.1157E+00						7.38E+01	
			316.51	-3.116E+00	%(		3.780E+01	5.61E+02	8.28E+01 G K
			468.07	0.000E+00	& P		7.125E+01	1.00E+03	4.78E+01 G
			308.46	-5.044E+01	%		1.028E+02	9.50E+01	3.00E+01 G
			295.96	0.000E+00	% P		1.127E+02	1.00E+03	2.87E+01 GA
Hg-203	F	2.3349E-01						4.66E+01	
			279.20	2.335E-01	%(P		4.311E+01	8.55E+03	8.15E+01 G K
Tl-208	N	7.0083E+00						6.98E+02	
			583.19	7.008E+00	&(P		3.952E+01	2.77E+02	8.45E+01 G K
			860.56	-1.517E+01	%		2.363E+02	7.76E+02	1.24E+01 G
			277.36	0.000E+00	% P		4.774E+02	1.00E+03	6.31E+00 G
U-236	I	-2.8983E+04						8.55E+09	
			49.46	-2.898E+04	%(		1.195E+05	1.86E+02	7.80E-02 G K
			112.79	0.000E+00	% P		1.879E+05	1.00E+03	1.90E-02 G
			171.15	0.000E+00	& P		5.565E+07	1.00E+03	6.20E-05 G
Sm-145	I	-1.8222E+01						3.40E+02	
			61.23	-1.822E+01	%(		4.910E+02	1.21E+03	1.21E+01 G K
			431.40	6.168E+07	% P		4.742E+07	3.75E+01	5.20E-05 G
Cd-113M	I	-7.6824E-01						5.15E+03	
			263.70	-7.682E-01	%(		2.809E+01	1.70E+03	1.00E+02 G K
Pb-210	N	2.0191E+03						8.14E+03	
			46.54	2.019E+03	%(P		2.922E+03	6.55E+01	4.25E+00 G K
Bi-212	N	4.8022E+02						6.98E+02	
			727.33	4.802E+02	%(P		4.261E+02	4.44E+01	6.58E+00 G K
			1620.50	-9.239E+02	%		2.017E+03	1.17E+02	1.49E+00 G
Pb-212	N	8.5831E+01						6.98E+02	
			238.63	8.583E+01	(P		6.294E+01	2.30E+01	4.33E+01 G K
									Energy duplication
			77.11	0.000E+00	-		8.807E+00	0.00E+00	1.75E+01 G
									Energy duplication
			74.81	2.164E+03	+		4.897E+02	7.46E+00	1.04E+01 G
			87.30	5.058E+01	% P		5.048E+02	3.00E+02	7.80E+00 GA
Bi-214	N	3.6354E+03						5.84E+05	
			609.31	3.611E+03	(P		7.854E+01	1.58E+00	4.48E+01 G K
			1120.29	4.033E+03	P		1.691E+02	3.80E+00	1.48E+01 GA
			2204.21	0.000E+00	=		0.000E+00	0.00E+00	4.86E+00 G
			1764.49	4.149E+03	+ P		1.620E+02	3.57E+00	1.54E+01 G
			1377.67	4.568E+03	+ P		5.188E+02	7.77E+00	3.92E+00 G
			1238.11	3.635E+03	}		4.667E+02	2.18E+00	5.86E+00 G
			768.36	3.654E+03	(P		6.200E+02	9.72E+00	4.80E+00 G

Nuclide		Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Pb-214	N	3.8041E+03					5.84E+05	
			351.99	3.809E+03	(P	8.356E+01	1.73E+00	3.71E+01 G K
			295.22	3.794E+03	@(P	1.443E+02	2.45E+00	1.92E+01 G
			241.92	3.266E+03	-	3.604E+02	4.24E+00	7.47E+00 G
			87.20	8.747E+02	}	1.077E+03	2.68E+01	3.70E+00 G
								Energy duplication
			77.11	3.294E+03	-	4.575E+02	4.82E+00	1.07E+01 G
								Energy duplication
			74.81	0.000E+00	}	7.792E+02	5.45E+03	6.33E+00 G
Ra-223	N	3.2065E+02					7.96E+03	
			269.46	2.332E+02	(	2.203E+02	2.92E+01	1.37E+01 G K
			83.78	3.206E+02	} P	1.612E+02	1.40E+01	2.49E+01 G
			323.87	0.000E+00	% P	6.993E+02	1.00E+03	3.93E+00 G
			154.21	5.784E+02	%	6.321E+02	5.14E+01	5.62E+00 G
			94.90	0.000E+00	% P	3.662E+02	1.00E+03	1.13E+01 G
			81.07	3.962E+02	(P	2.766E+02	2.17E+01	1.50E+01 G
Ra-224	N	2.8592E+02					6.98E+02	
			241.00	2.859E+02	%(P	7.402E+02	7.85E+01	3.90E+00 G K
Ra-226	N	2.0258E+04					5.84E+05	
			186.10	2.026E+04	(P	1.018E+03	2.90E+00	3.50E+00 G K
Ac-227	N	1.2919E+02					7.95E+03	
			235.97	1.292E+02	&(P	2.300E+02	8.32E+01	1.23E+01 G K
			256.25	0.000E+00	% P	4.188E+02	1.00E+03	7.00E+00 G
			300.00	-1.508E+02	%	1.185E+03	3.64E+02	2.30E+00 G
			329.85	1.325E+02	% P	1.245E+03	4.51E+02	2.70E+00 G
Ac-228	N	2.6535E+03					2.10E+03	
			911.21	2.666E+03	(P	1.249E+02	3.69E+00	2.66E+01 G K
			968.97	2.329E+03	- P	1.884E+02	4.25E+00	1.62E+01 G
			338.32	2.625E+03	(P	2.469E+02	5.25E+00	1.13E+01 G
Th-228	N	1.6273E+03					6.98E+02	
								Derived Ave Activity
			84.37	7.817E+02	}(	4.726E+03	1.82E+02	1.27E+00 G K
			215.99	4.680E+03	}	1.961E+04	1.27E+02	2.63E-01 GA
			166.41	5.418E+03	}	4.188E+04	2.33E+02	1.08E-01 GA
			131.61	5.962E+02	}	3.038E+04	8.57E+03	1.35E-01 GA
Th-230	N	5.5384E+03					2.75E+07	
			67.67	5.538E+03	%(	1.429E+04	1.17E+02	3.80E-01 G K
Pa-231	N	1.5563E+02					1.20E+07	
			283.70	1.556E+02	%(P	1.760E+03	5.25E+02	1.60E+00 G K
			330.00	0.000E+00	% P	2.807E+03	1.00E+03	1.30E+00 G

Nuclide		Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Pa-234M	N	2.9442E+02					1.63E+12	
								Energy duplication
			1001.03	2.944E+02	&(P	3.125E+03	5.40E+02	8.37E-01 G

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Th-234    N   2.9223E+02                                          1.63E+12
                          63.29 2.922E+02 &(P 1.159E+03 1.79E+02 4.80E+00 G K
                          92.60 0.000E+00 & P 1.633E+03 1.00E+03 2.80E+00 GA

U-235     N   1.1192E+02                                          2.57E+11
                         143.76 1.119E+02 &(P 3.196E+02 1.34E+02 1.10E+01 G K
                         205.31 0.000E+00 % P 6.102E+02 1.00E+03 5.01E+00 G
                          89.95-8.243E+02 %   1.366E+03 7.51E+01 3.56E+00 GA

Am-241    T   7.3415E+01                                          1.58E+05
                          59.54 7.341E+01 %(P 1.613E+02 9.93E+01 3.63E+01 G K
   ( - This peak used in the nuclide activity average.

   * - Peak is too wide, but only one peak in library.
   ! - Peak is part of a multiplet and this area went
       negative during deconvolution.
   ? - Peak is too narrow.
   @ - Peak is too wide at FW25M, but ok at FWHM.
   % - Peak fails sensitivity test.
   $ - Peak identified, but first peak of this nuclide
       failed one or more qualification tests.
   + - Peak activity higher than counting uncertainty range.
   - - Peak activity lower than counting uncertainty range.
   = - Peak outside analysis energy range.
   & - Calculated peak centroid is not close enough to the
       library energy centroid for positive identification.
   P - Peakbackground subtraction
   } - Peak is too close to another for the activity
       to be found directly.

   Nuclide Codes:                      Peak Codes:
   T - Thermal Neutron Activation      G - Gamma Ray
   F - Fast Neutron Activation         X - X-Ray
   I - Fission Product                 P - Positron Decay
   N - Naturally Occurring Isotope     S - Single-Escape
   P - Photon Reaction                 D - Double-Escape
   C - Charged Particle Reaction       K - Key Line
   M - No MDA Calculation              A - Not in Average
   R - Coincidence Corrected           C - Coincidence Peak
   H - Halflife limit exceeded

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
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********** D I S C A R D E D I S O T O P E P E A K S **********

Nuclide	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	Activity	
ND-147	90.33	2408.	355.	0.099	59.65	5.721E+02	P
Sb-125	463.16	405.	429.	0.119	23.44	1.126E+03	P
Eu-152	964.77	203.	247.	0.068	31.40	8.008E+02	P
Eu-152	1407.98	99.	161.	0.045	35.23	4.742E+02	

P - Peakbackground subtraction

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide	Time of Count Activity pCi/L	Time Corrected Activity pCi/L	Uncertainty 2 Sigma Counting pCi/L	Total pCi/L	MDA pCi/L

Be-7	#B	0.0000E+00	0.0000E+00	9.0538E+01	9.0538E+01	3.641E+02
Na-22	#B	0.0000E+00	0.0000E+00	1.4839E+01	1.4839E+01	3.001E+01
K-40	#	8.3564E+02	8.3564E+02	2.9456E+02	2.9889E+02	2.525E+02
Sc-46	#B	0.0000E+00	0.0000E+00	1.5370E+01	1.5370E+01	3.314E+01
Cr-51	#B	-7.8368E+01	-1.1361E+02	3.7198E+02	3.7206E+02	4.004E+02
Mn-54	#B	7.4087E+00	7.6568E+00	3.7001E+01	3.7004E+01	3.670E+01
Co-56		3.0435E+02	3.4769E+02	4.4799E+01	5.0398E+01	2.409E+02
Co-57	#B	6.8286E+00	7.0920E+00	3.7028E+01	3.7031E+01	4.108E+01
Co-58	#B	0.0000E+00	0.0000E+00	7.9878E+00	7.9879E+00	3.960E+01
Fe-59	#F	4.5667E+01	5.7544E+01	5.2388E+01	5.2503E+01	4.983E+01
Co-60	#B	1.7528E+01	1.7622E+01	2.6562E+01	2.6583E+01	2.552E+01
Zn-65	#B	3.9122E+00	4.0807E+00	5.2550E+01	5.2550E+01	5.204E+01
SE-75	#B	0.0000E+00	0.0000E+00	2.2550E+01	2.2550E+01	5.245E+01
Kr-85	#B	0.0000E+00	0.0000E+00	2.2905E+03	2.2905E+03	8.075E+03
Y-88	#B	0.0000E+00	0.0000E+00	2.3766E+00	2.3766E+00	2.836E+01
Nb-94	#B	-2.0263E+01	-2.0263E+01	3.2704E+01	3.2728E+01	3.220E+01
Zr-95	#B	2.0684E+01	2.4289E+01	7.2690E+01	7.2705E+01	7.186E+01
Nb-95	#B	0.0000E+00	0.0000E+00	1.5715E+01	1.5716E+01	4.796E+01
Ru-103	#B	-6.9478E+00	-9.0290E+00	3.6335E+01	3.6339E+01	3.815E+01
Ag-108M	#B	-9.5751E+00	-9.5757E+00	3.3380E+01	3.3385E+01	3.405E+01
Ru-106	#B	0.0000E+00	0.0000E+00	1.4917E+02	1.4917E+02	3.159E+02
Cd-109	#A	0.0000E+00	0.0000E+00	7.8405E+02	7.8405E+02	3.854E+01
Ag-110M	#B	0.0000E+00	0.0000E+00	1.4174E+01	1.4174E+01	3.275E+01
Sn-113	#B	-4.4265E+01	-4.8404E+01	5.1636E+01	5.1730E+01	5.325E+01
Sb-124	#B	1.2022E+01	1.4262E+01	3.5401E+01	3.5412E+01	3.594E+01
Sb-125	#F	2.9946E+02	3.0253E+02	7.0918E+01	7.3423E+01	9.833E+01
Te-129	#B	1.5778E+02	2.1429E+02	4.5147E+02	4.5166E+02	4.705E+02
Te-129M	#B	0.0000E+00	0.0000E+00	6.2290E+02	6.2291E+02	1.452E+03
I-131	#B	-1.5359E+01	-5.5388E+01	1.1765E+02	1.1771E+02	1.224E+02
I-132	#B	1.4040E+00	3.4953E+01	1.1646E+03	1.1646E+03	1.161E+03
Te-132	#B	-9.5765E+00	-2.3841E+02	7.8262E+02	7.8279E+02	8.393E+02
I-133	#B	-3.9823E+00	>12 Halflives	3.0064E+01	3.0065E+01	3.166E+01

Ba-133	#B	-3.8379E+01	-3.8482E+01	4.5759E+01	4.5796E+01	4.726E+01
Cs-134		1.2319E+02	1.2488E+02	3.0472E+01	3.1401E+01	3.072E+01
Cs-136	#B	0.0000E+00	0.0000E+00	1.0872E+01	1.0872E+01	6.695E+01
Cs-137	#B	0.0000E+00	0.0000E+00	1.4479E+01	1.4479E+01	4.038E+01
Ce-139	#B	-1.3583E+01	-1.4637E+01	4.3199E+01	4.3209E+01	4.619E+01
Ba-140	#B	0.0000E+00	0.0000E+00	1.0035E+02	1.0035E+02	2.875E+02
La-140	#B	1.5349E+01	3.4393E+01	6.5083E+01	6.5119E+01	6.080E+01
Ce-141	#B	6.5311E+01	8.9629E+01	9.2057E+01	9.2222E+01	9.784E+01
Ce-144	#B	4.0097E+01	4.1571E+01	3.0709E+02	3.0710E+02	3.289E+02
ND-147	#B	1.3260E+02	3.3610E+02	2.0050E+02	2.0152E+02	5.407E+02
Eu-152	#B	5.1804E+00	5.1912E+00	1.0831E+02	1.0831E+02	1.204E+02
Eu-154	#B	-5.7229E+01	-5.7417E+01	7.9689E+01	7.9771E+01	8.796E+01
Eu-155		3.6923E+02	3.7142E+02	5.8283E+01	6.3013E+01	1.706E+02
Lu-176	#B	0.0000E+00	0.0000E+00	5.4929E+00	5.4929E+00	2.981E+01
Ir-192	#B	-2.7105E+00	-3.1157E+00	3.4978E+01	3.4979E+01	3.780E+01
Hg-203	#B	1.8724E-01	2.3349E-01	3.9948E+01	3.9948E+01	4.311E+01
Tl-208	B	6.9057E+00	7.0083E+00	3.8867E+01	3.8870E+01	3.952E+01
U-236	#B	-2.8983E+04	-2.8983E+04	1.0757E+05	1.0771E+05	1.195E+05
Sm-145	#B	-1.7679E+01	-1.8222E+01	4.4155E+02	4.4158E+02	4.910E+02
Cd-113M	#B	-7.6671E-01	-7.6824E-01	2.6044E+01	2.6044E+01	2.809E+01
I-129	#	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.000E+00
Pb-210	#B	2.0165E+03	2.0191E+03	2.6470E+03	2.6523E+03	2.922E+03
Bi-212	#F	4.7320E+02	4.8022E+02	4.2656E+02	4.2755E+02	4.261E+02
Pb-212		8.4574E+01	8.5831E+01	3.9436E+01	3.9890E+01	6.294E+01

Bi-214	3.6354E+03	3.6354E+03	1.1453E+02	2.4648E+02	7.854E+01
Pb-214	3.8041E+03	3.8041E+03	1.1421E+02	2.7755E+02	8.356E+01
Ra-223	3.2023E+02	3.2065E+02	8.4773E+01	8.7702E+01	2.203E+02
Ra-224 B	2.8173E+02	2.8592E+02	4.4864E+02	4.4908E+02	7.402E+02
Ra-226	2.0258E+04	2.0258E+04	1.1745E+03	1.7732E+03	1.018E+03
Ac-227 #B	1.2902E+02	1.2919E+02	2.1488E+02	2.1507E+02	2.300E+02
Ac-228	2.6405E+03	2.6535E+03	1.7024E+02	2.3480E+02	1.249E+02
Th-228 A	1.6035E+03	1.6273E+03	4.1205E+03	4.1230E+03	4.726E+03
Th-230 #B	5.5384E+03	5.5384E+03	1.2908E+04	1.2956E+04	1.429E+04
Pa-231 #B	1.5562E+02	1.5563E+02	1.6333E+03	1.6333E+03	1.760E+03
Pa-234M#A	2.9442E+02	2.9442E+02	3.1783E+03	3.1783E+03	3.125E+03
Th-232 #B	0.0000E+00	0.0000E+00	1.0377E+04	1.0377E+04	2.145E+04
Th-234 #B	2.9223E+02	2.9223E+02	1.0438E+03	1.0462E+03	1.159E+03
U-235 #B	1.1192E+02	1.1192E+02	2.9912E+02	2.9920E+02	3.196E+02
U-238 #B	0.0000E+00	0.0000E+00	4.4549E+02	4.4549E+02	8.156E+02
Am-241 #B	7.3410E+01	7.3415E+01	1.4586E+02	1.4726E+02	1.613E+02
Am-243 #B	0.0000E+00	0.0000E+00	8.2635E+01	8.2635E+01	1.370E+02
Pm-144 #B	0.0000E+00	0.0000E+00	1.8129E+01	1.8129E+01	3.456E+01
Pm-146 #B	0.0000E+00	0.0000E+00	1.7417E+01	1.7417E+01	4.347E+01

- All peaks for activity calculation had bad shape.
* - Activity omitted from total
& - Activity omitted from total and all peaks had bad shape.

< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

S U M M A R Y

Total Activity (30.5 to 2036.0 keV) 3.207E+04 pCi/L
Total Decayed Activity (30.5 to 2036.0 keV) 3.2089965E+04 pCi/L

The library has energies which are not separable.

Analyzed by: _____
Operator

Reviewed by: _____
Supervisor

Laboratory: PACE

ORTEC g v - i (3263) Env32 G701W047 9/24/2024 5:00:02 PM Page 1
Pace Spectrum name: 30717759001.An1

Sample description
81318

Spectrum Filename: C:\User\Spectra\30717759001.An1

Acquisition information
Start time: 9/24/2024 12:20:26 PM
Live time: 1800
Real time: 1837
Dead time: 2.01 %
Detector ID: 2

Detector system
DET 2

Calibration
Filename: DET_2_2L MAR_23-047(113023).Clb
DET 2 2L MARINELLI

Energy Calibration
Created: 11/30/2023 7:00:31 AM
Zero offset: 0.281 keV
Gain: 0.250 keV/channel
Quadratic: -1.344E-08 keV/channel^2

Efficiency Calibration
Created: 11/30/2023 7:26:21 AM
Type: Polynomial
Uncertainty: 1.699 %
Coefficients: -0.225215 -3.983441 0.474906
-0.072106 0.003754 -0.000081

Library Files
Main analysis library: Pace Master w Ra226U235 (wo PS)
Library Match Width: 0.500
Peak stripping: Library based

Analysis parameters
Analysis engine: Env32 G701W047
Start channel: 120 (30.33keV)
Stop channel: 8144 (2038.53keV)
Peak rejection level: 30.000%
Peak search sensitivity: 3
Sample Size: 2.0000E+00
Activity scaling factor: 1.0000E+06/(1.0000E+00* 2.0000E+00) = 5.0000E+05 WTF 9.25.24
Detection limit method: Reg. Guide 4.16 Method

Random error: 0.0000000E+00
Systematic error: 0.0000000E+00
Fraction Limit: 0.000%
Background width: average of three points.

Half lives decay limit: 12.000

9/25/24

ORTEC g v - i (3263) Env32 G701W047 9/24/2024 5:00:02 PM Page 2
Pace Spectrum name: 30717759001.An1

Activity range factor:	2.000
Min. step backg. energy	0.000
Multiplet shift channel	2.000

Corrections	Status	Comments
Decay correct to date:	YES	9/11/2024 10:30:00 AM
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	YES	Det_2_Bkg_092024Ra226U235(2LITER 9/24/2024 4:14:26 PM
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

WTF 9-25-24

total peaks alloc. 0 cutoff: 0.00E+00 %
Energy Calibration
Normalized diff: 0.0882

9/25/24

***** S U M M A R Y O F P E A K S I N R A N G E *****

Peak Energy	Area	Uncert	FWHM	Corrctn Factor	Nuclide Energy	Brnch. Ratio	Act. pCi/L	Nuc
74.77	580.	8.97	0.97	1.577E-02	74.66	68.200	4.036E+02	Am243
					74.81	6.330	4.324E+03	Pb214
					74.81	10.400	2.666E+03	Pb212
					74.81	10.400	2.666E+03	Pb212
77.12	1041.	5.37	0.97	1.716E-02	77.11	17.500	2.633E+03	Pb212
					77.11	10.700	4.252E+03	Pb214
					77.11	17.500	2.633E+03	Pb212
83.88	224.	19.61	0.98	2.107E-02	83.78	24.900	3.185E+02	Ra223
					84.37	1.266	6.170E+03	Th228
87.21	485.	9.87	0.98	2.293E-02	87.20	3.700	4.281E+03	Pb214
					87.30	7.800	2.051E+03	Pb212
					88.03	3.610	4.388E+03	Cd109
					87.30	7.800	2.051E+03	Pb212
90.07	288.	16.11	0.98	2.449E-02	89.95	3.560	2.483E+03	U235
					89.95	3.560	2.483E+03	U235
186.22	4072.	2.27	0.97	4.782E-02	186.10	3.500	1.818E+04	Ra226
209.32	320.	17.25	0.87	4.782E-02				
242.04	2228.	2.79	1.13	4.663E-02	241.92	7.470	4.797E+03	Pb214
					241.00	3.900	9.287E+03	Ra224
258.98	166.	29.41	0.63	4.573E-02				
270.24	336.	18.41	0.89	4.508E-02	269.46	13.700	4.084E+02	Ra223
295.29	5286.	1.91	1.18	4.357E-02	295.22	19.200	4.743E+03	Pb214
					295.96	28.670	3.595E+03	Ir192
					295.96	28.670	3.595E+03	Ir192
328.06	282.	15.63	1.19	4.157E-02	328.76	20.300	5.103E+02	La140
					329.85	2.700	1.890E+03	Ac227
					330.00	1.300	3.921E+03	Pa231

ORTEC g v - i (3263) Env32 G701W047 9/24/2024 5:00:02 PM Page 3
Pace Spectrum name: 30717759001.An1

pk energy	area	uncert	fwhm	corr	nuclide	brnch.	act.	nuc
					328.76	20.300	5.103E+02	La140

338.40	868.	4.71	1.22	4.096E-02	338.32	11.300	1.412E+03	Ac228
352.03	9327.	1.26	1.15	4.017E-02	351.99	37.100	4.695E+03	Pb214
462.71	358.	12.98	1.57	3.467E-02	463.36	10.500	7.439E+02	Sb125
					463.36	10.500	7.439E+02	Sb125
609.45	7915.	1.29	1.46	2.961E-02	609.31	44.800	4.475E+03	Bi214
665.73	272.	15.06	1.51	2.814E-02				
768.42	831.	5.87	1.45	2.592E-02	768.36	4.800	5.014E+03	Bi214
795.20	251.	12.19	1.16	2.542E-02	795.86	85.530	8.713E+01	Cs134
806.42	239.	14.07	1.14	2.522E-02				
911.38	1348.	3.63	1.82	2.353E-02	911.21	26.600	1.621E+03	Ac228
934.39	487.	9.23	1.39	2.320E-02				
969.23	667.	6.90	1.54	2.272E-02	968.97	16.200	1.358E+03	Ac228
1120.46	2096.	2.69	1.88	2.093E-02	1120.29	14.800	5.082E+03	Bi214
1236.10	130.	19.41	1.99	1.979E-02	1235.36	20.000	4.922E+02	Cs136
					1235.36	20.000	4.922E+02	Cs136
1238.42	871.	4.77	1.22	1.976E-02	1238.11	5.860	5.632E+03	Bi214
					1238.28	66.070	5.617E+02	Co56
1377.82	624.	6.30	1.73	1.858E-02	1377.67	3.920	6.431E+03	Bi214
1408.28	237.	15.68	2.12	1.835E-02	1408.01	20.870	4.655E+02	Eu152
					1408.01	20.870	4.655E+02	Eu152
1460.78	397.	8.31	1.42	1.795E-02	1461.00	10.670	1.556E+03	K40
1588.65	128.	16.53	0.91	1.708E-02				
1764.81	1972.	2.47	2.12	1.601E-02	1764.49	15.360	5.988E+03	Bi214

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Efficiency * Area	Uncert 2 Sigma %	FWHM keV	Suspected Nuclide	
358.49	90.02	931.	289.	1.178E+04	32.15	0.982	AC-228	D
834.91	209.32	864.	320.	6.702E+03	34.51	0.871	AC-228	M
1033.28	258.98	665.	166.	3.630E+03	58.81	0.628	PB-214	sM
1078.23	270.24	873.	336.	7.453E+03	36.83	0.889	AC-228	sM
1309.19	328.06	472.	282.	6.771E+03	31.26	1.191	BI-212	sM
1847.07	462.71	360.	358.	1.033E+04	25.95	1.568	CS-138	
2658.10	665.73	256.	272.	9.682E+03	30.11	1.512	BI-214	M
3220.14	806.42	162.	239.	9.476E+03	28.13	1.139	BI-214	s
3731.41	934.39	209.	487.	2.099E+04	18.46	1.386	TE-131	s
6345.86	1588.65	62.	128.	7.524E+03	33.07	0.914	AC-228	s

s - Peak fails shape tests.
D - Peak area deconvoluted.
L - Peak written from unknown list.
C - Area < Critical level.
M - Peak is close to a library peak.

This section based on library: Pace Master w Ra226U235 (wo PS)

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	FWHM keV
Pb-214	297.66	74.81	1002.	534.	0.297	13.37	0.966D
Pb-212	297.66	74.81	1308.	488.	0.271	29.17	0.966D
Pb-212	306.85	77.11	1071.	1079.	0.600	12.88	0.969D
Pb-214	306.85	77.11	923.	1040.	0.578	10.33	0.969D

Th-228	333.79	83.86	851.	224.	0.124	39.27	0.975
Pb-214	347.15	87.20	981.	484.	0.269	20.43	0.979D
Pb-212	347.15	87.20	1276.	435.	0.242	32.84	0.979
Ra-226	742.64	186.22	1303.	4054.	2.252	4.57	0.972
Pb-214	965.12	241.92	771.	2226.	1.237	5.52	1.131D
Pb-214	1178.30	295.29	924.	5285.	2.936	3.82	1.183
Ac-228	1350.18	338.32	402.	867.	0.481	9.44	1.223D
Pb-214	1404.94	352.03	858.	9319.	5.177	2.51	1.154
Sb-125	1848.19	462.99	396.	260.	0.144	34.82	1.340
Bi-214	2432.69	609.31	314.	7766.	4.314	2.36	1.472D
Bi-214	3068.34	768.42	266.	831.	0.462	11.74	1.450s
Cs-134	3175.97	795.36	162.	204.	0.113	29.46	1.098s
Ac-228	3639.50	911.38	182.	1345.	0.747	7.28	1.824
Ac-228	3870.64	969.23	261.	663.	0.368	13.91	1.540
Bi-214	4474.90	1120.46	158.	2096.	1.165	5.37	1.876
Cs-136	4936.99	1236.10	83.	130.	0.072	38.82	1.988s
Bi-214	4945.00	1238.11	177.	678.	0.377	3.82	1.990D
Co-56	4945.69	1238.28	111.	704.	0.391	10.04	1.223D
Bi-214	5503.32	1377.82	120.	624.	0.347	12.60	1.732s
Eu-152	5625.02	1408.28	176.	237.	0.132	31.36	2.116s
K-40	5834.84	1460.78	104.	397.	0.221	16.62	1.417s
Bi-214	7048.65	1764.49	260.	1723.	0.957	5.50	2.361D

s - Peak fails shape tests.
D - Peak area deconvoluted.
A Derived peak area.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

- Nuclide - Name	Code	Average Activity pCi/L	Peak Energy keV	Peak Activity pCi/L	Code	MDA Value pCi/L		COMMENTS
Be-7	C	-8.4967E+01				5.34E+01		
			477.56	-8.497E+01	&(	2.541E+02	1.34E+02	1.03E+01 G K
Na-22	C	-1.5410E+01				9.50E+02		
			1274.53	-1.541E+01	%(	2.555E+01	8.84E+01	9.99E+01 G K

Nuclide	Ave activity		Energy	Activity	Code	Peak MDA		Comments
K-40	N	1.5556E+03				4.68E+11		
			1461.00	1.556E+03	*(P	1.970E+02	8.31E+00	1.07E+01 G K
Sc-46	F	1.3645E+01				8.38E+01		
			889.28	1.365E+01	%(P	2.288E+01	8.25E+01	1.00E+02 G K
Cr-51	F	1.0851E+02				2.77E+01		
			320.08	1.085E+02	%(	3.012E+02	1.20E+02	1.01E+01 G K
Co-56	C	4.5508E+02				7.73E+01		
			1238.28	4.551E+02	} P	3.351E+01	5.02E+00	6.61E+01 G K
			1771.35	0.000E+00	%(	3.126E+02	1.00E+03	1.55E+01 G
Co-57	C	-9.8362E+00				2.72E+02		
			122.06	-9.836E+00	%(	4.446E+01	1.88E+02	8.56E+01 G K
			136.47	1.037E+02	& P	3.090E+02	1.24E+02	1.07E+01 G

Fe-59	F	1.6299E+01					4.45E+01		
			1099.25	1.630E+01	%(	4.601E+01	1.45E+02	5.65E+01	G K
			1291.60	-3.810E+01	%	7.019E+01	9.80E+01	4.32E+01	G
Zn-65	F	4.0123E+01					2.44E+02		
			1115.55	4.012E+01	&(P	5.195E+01	6.76E+01	5.06E+01	G K
SE-75		-2.5603E+01					1.20E+02		
			264.66	-2.560E+01	%(	4.630E+01	7.86E+01	5.86E+01	G K
			136.00	1.588E+01	&	5.956E+01	1.56E+02	5.83E+01	G
			279.54	0.000E+00	% P	1.060E+02	1.00E+03	2.48E+01	G
			121.12	0.000E+00	% P	2.375E+02	1.00E+03	1.64E+01	G
Y-88	C	7.3840E+00					1.07E+02		
			1836.06	7.384E+00	%(	2.124E+01	1.60E+02	9.92E+01	G K
			898.04	1.299E+01	& P	2.490E+01	9.41E+01	9.37E+01	G
Nb-94	I	1.3543E+00					7.41E+06		
			871.09	1.354E+00	%(P	2.283E+01	8.19E+02	9.99E+01	G K
			702.62	1.940E+01	% P	2.422E+01	6.03E+01	9.79E+01	G
Zr-95	I	9.7164E+00					6.40E+01		
			756.73	9.716E+00	%(	4.639E+01	2.26E+02	5.45E+01	G K
			724.20	0.000E+00	%	7.003E+01	1.00E+03	4.42E+01	G
Nb-95	I	1.6673E+01					3.50E+01		
			765.81	1.667E+01	%(P	2.419E+01	6.94E+01	9.98E+01	G K

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Ru-103	I 7.5300E+00					3.93E+01	
		497.08	7.530E+00	&(P	2.905E+01	1.78E+02	9.10E+01 G K
Ag-110M	F 1.5081E+01					2.50E+02	
		657.76	1.508E+01	&(P	1.997E+01	6.34E+01	9.40E+01 G K
		1505.04	0.000E+00	% P	3.502E+02	1.00E+03	1.29E+01 G
		1384.30	9.111E+01	% P	1.174E+02	6.91E+01	2.41E+01 G
		937.49	6.042E+01	%	4.781E+01	4.08E+01	3.41E+01 G
		884.68	-5.408E+00	%	3.272E+01	2.95E+02	7.22E+01 G
		763.94	-2.771E+01	%	1.105E+02	1.89E+02	2.21E+01 G
		744.28	0.000E+00	% P	5.166E+02	1.00E+03	4.70E+00 G
		706.68	0.000E+00	% P	1.805E+02	1.00E+03	1.63E+01 G
Sb-124	F -7.9353E+00					6.02E+01	
		602.73	-7.935E+00	%(	2.629E+01	1.53E+02	9.78E+01 G K
		645.85	0.000E+00	% P	3.426E+02	1.00E+03	7.38E+00 G
		722.79	0.000E+00	% P	2.808E+02	1.00E+03	1.08E+01 G
		1690.98	2.618E+01	%	4.411E+01	9.24E+01	4.73E+01 G
Sb-125	I 1.8271E+02					1.01E+03	
		427.88	5.569E+01	%(P	7.178E+01	5.82E+01	2.96E+01 G K
		176.31	6.363E+01	& P	4.361E+02	2.84E+02	6.82E+00 G
		463.36	5.408E+02	(P	1.989E+02	1.74E+01	1.05E+01 G
		600.60	0.000E+00	& P	1.267E+02	1.00E+03	1.79E+01 G
		635.95	-5.878E+01	%	1.961E+02	1.59E+02	1.13E+01 G
Te-129	I 2.2647E+02					3.36E+01	
		459.60	2.265E+02	%(P	3.087E+02	6.14E+01	7.70E+00 G K
		487.39	1.071E+03	% P	1.953E+03	8.48E+01	1.42E+00 G

Te-129M	I	-6.3904E+02					3.36E+01		
			695.88	-6.390E+02	% (	1.055E+03	7.92E+01	3.00E+00	G K
I-131	I	3.2804E+01					8.02E+00		
			364.49	3.280E+01	% (	7.552E+01	1.03E+02	8.17E+01	G K
			636.99	8.466E+01	% P	8.863E+02	4.95E+02	7.17E+00	G
			284.30	-4.607E+02	%	1.238E+03	1.16E+02	6.14E+00	G
I-133	I	8.6044E+00					8.67E-01		
			529.87	8.604E+00	&(	2.240E+01	1.20E+02	8.70E+01	G K
			875.33	-4.218E+02	%	5.741E+02	6.75E+01	4.51E+00	G
Ba-133	F	-1.7460E+01					3.84E+03		
			356.02	-1.746E+01	%(	3.760E+01	9.68E+01	6.20E+01	G K
			81.00	0.000E+00	% P	1.986E+02	1.00E+03	3.41E+01	G
			302.85	5.207E+01	% P	1.157E+02	9.62E+01	1.83E+01	G
			276.40	5.246E+01	%	3.592E+02	2.95E+02	7.16E+00	G

Nuclide	Ave activity	Energy		Activity	Code	Peak	MDA	Comments
		383.85	-1.063E+02 %	2.572E+02		1.09E+02	8.94E+00	G
Cs-134	I 7.1343E+01					7.52E+02		
		795.86	7.134E+01 (P	2.168E+01		1.47E+01	8.55E+01	G K
		604.72	0.000E+00 %	2.896E+01		1.00E+03	9.76E+01	GA
		569.33	0.000E+00 % P	1.446E+02		1.00E+03	1.54E+01	GA
		801.95	0.000E+00 % P	2.809E+02		1.00E+03	8.69E+00	GA
Cs-136	F 6.5267E+01					1.32E+01		
		818.51	-2.039E+01 %(	4.829E+01		1.16E+02	9.97E+01	G K
		176.60	1.926E+02 &	5.798E+02		1.25E+02	1.00E+01	G
		273.65	6.252E+01 &	4.649E+02		3.21E+02	1.11E+01	G
		340.55	2.762E+01 %	9.914E+01		1.55E+02	4.22E+01	G
		1048.07	-1.433E+00 %	5.663E+01		1.97E+03	8.00E+01	G
		1235.36	4.922E+02 ?(	1.703E+02		1.94E+01	2.00E+01	G
Cs-137	I 1.2350E+01					1.10E+04		
		661.66	1.235E+01 %(	2.163E+01		8.37E+01	9.01E+01	G K
Ce-139	F -1.1018E+01					1.38E+02		
		165.85	-1.102E+01 %(	4.134E+01		1.56E+02	7.99E+01	G K
Ba-140	I -8.8569E+00					1.28E+01		
		537.26	-8.857E+00 %(	1.840E+02		9.53E+02	2.44E+01	G K
		162.66	0.000E+00 % P	1.010E+03		1.00E+03	6.22E+00	G
La-140	I 4.4734E+00					1.28E+01		
		1596.21	4.473E+00 %(P	5.770E+01		6.92E+02	9.54E+01	G K
		487.02	6.234E+01 %	9.325E+01		6.97E+01	4.55E+01	G
		815.77	3.947E+01 % P	1.849E+02		2.28E+02	2.33E+01	G
		328.76	-1.493E+02 &	2.238E+02		6.52E+01	2.03E+01	G
Ce-141	I 2.8747E+00					3.25E+01		
		145.44	2.875E+00 %(	9.001E+01		1.30E+03	4.82E+01	G K
Ce-144	I -1.0849E+02					2.85E+02		
		133.51	-1.085E+02 %(	3.109E+02		1.19E+02	1.11E+01	G K
ND-147	3.3074E+00					1.11E+01		

			531.00	3.307E+00	&(P	3.574E+02	4.95E+03	1.35E+01	G K
			91.10	-1.337E+02	%	3.946E+02	1.20E+02	2.83E+01	G
Eu-154	I	2.9525E+00						3.14E+03	
			123.07	2.952E+00	&(	9.057E+01	1.27E+03	4.06E+01	G K
			1274.44	-4.371E+01	%	7.247E+01	8.84E+01	3.50E+01	G
			1004.72	2.958E+01	&	1.179E+02	1.99E+02	1.79E+01	G
			996.26	1.140E+02	&	1.996E+02	8.84E+01	1.05E+01	G
			873.19	1.613E+00	% P	1.880E+02	5.65E+03	1.22E+01	G

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
		723.30	0.000E+00	% P	1.379E+02	1.00E+03	2.01E+01 GA
		247.93	5.436E+01	% P	3.520E+02	2.79E+02	6.91E+00 G
Eu-155	I -2.3941E+01						1.74E+03
		86.54	-2.394E+01	%(	1.780E+02	2.23E+02	3.07E+01 G K
		105.31	9.748E+01	%	1.889E+02	8.08E+01	2.12E+01 G
Lu-176	N 6.6592E+00						1.38E+13
		306.78	6.659E+00	&(P	2.297E+01	1.49E+02	9.40E+01 G K
		201.83	3.135E+00	% P	3.048E+01	4.03E+02	8.65E+01 G
Pb-210	N 1.1836E+03						8.14E+03
		46.54	1.184E+03	%(P	2.713E+04	9.03E+02	4.25E+00 G K
Bi-212	N 3.2559E+02						6.98E+02
		727.33	3.256E+02	%(P	3.208E+02	4.76E+01	6.58E+00 G K
		1620.50	3.989E+02	% P	1.395E+03	1.91E+02	1.49E+00 G
Pb-212	N 1.0010E+03						6.98E+02
		238.63	0.000E+00	%(P	6.327E+01	1.00E+03	4.33E+01 G K
							Energy duplication
		77.11	2.732E+03	(P	3.928E+02	6.44E+00	1.75E+01 G
							Energy duplication
		74.81	2.257E+03	(P	7.922E+02	1.46E+01	1.04E+01 G
		87.30	1.846E+03	P	7.168E+02	1.64E+01	7.80E+00 GA
Bi-214	N 4.3943E+03						5.84E+05
		609.31	4.394E+03	(P	4.828E+01	1.18E+00	4.48E+01 G K
		1120.29	5.082E+03	+	1.483E+02	2.69E+00	1.48E+01 GA
		2204.21	0.000E+00	=	0.000E+00	0.00E+00	4.86E+00 G
		1764.49	5.260E+03	+ P	2.374E+02	2.75E+00	1.54E+01 G
		1377.67	6.431E+03	+ P	5.543E+02	6.30E+00	3.92E+00 G
		1238.11	4.394E+03	} P	4.199E+02	1.91E+00	5.86E+00 G
		768.36	5.014E+03	+	4.747E+02	5.87E+00	4.80E+00 G
Pb-214	N 4.6067E+03						5.84E+05
		351.99	4.695E+03	(P	7.013E+01	1.26E+00	3.71E+01 G K
		295.22	4.743E+03	(P	1.296E+02	1.91E+00	1.92E+01 G
		241.92	4.797E+03	(P	2.847E+02	2.76E+00	7.47E+00 G
		87.20	4.282E+03	(P	1.314E+03	1.02E+01	3.70E+00 G
							Energy duplication
		77.11	4.251E+03	(P	5.895E+02	5.17E+00	1.07E+01 G
							Energy duplication
		74.81	4.005E+03	} P	1.127E+03	6.69E+00	6.33E+00 G
Ra-224	N 3.3669E+02						6.98E+02
		241.00	3.367E+02	%(P	6.353E+02	8.19E+01	3.90E+00 G K

Ra-226	N	1.8184E+04						5.84E+05		
			186.10	1.818E+04	(P	7.669E+02	2.29E+00	3.50E+00	G	K

Nuclide		Ave activity	Energy	Activity	Code	Peak	MDA	Comments		
Ac-227	N	7.7057E+01						7.95E+03		
			235.97	7.706E+01	&(	2.047E+02	1.15E+02	1.23E+01	G	K
			256.25	4.164E+01	% P	3.476E+02	3.60E+02	7.00E+00	G	
			300.00	1.221E+02	&	9.386E+02	3.30E+02	2.30E+00	G	
			329.85	0.000E+00	%	1.019E+03	1.00E+03	2.70E+00	G	
Ac-228	N	1.6206E+03						2.10E+03		
			911.21	1.621E+03	(P	7.893E+01	3.64E+00	2.66E+01	G	K
			968.97	1.358E+03	- P	1.597E+02	6.95E+00	1.62E+01	G	
			338.32	1.412E+03	- P	1.565E+02	4.72E+00	1.13E+01	G	
Th-228	N	6.2831E+03						6.98E+02		
			84.37	6.283E+03	(P	3.898E+03	1.96E+01	1.27E+00	G	K
			215.99	-2.336E+03	%	1.021E+04	1.89E+02	2.63E-01	GA	
			166.41	-1.360E+03	%	2.886E+04	8.79E+02	1.08E-01	GA	
			131.61	0.000E+00	% P	2.543E+04	1.00E+03	1.35E-01	GA	
Th-230	N	-8.9879E+03						2.75E+07		
			67.67	-8.988E+03	%(	2.689E+04	1.19E+02	3.80E-01	G	K
Th-232	N	6.8487E+03						4.17E+12		
			63.81	6.849E+03	%(	4.355E+04	2.51E+02	2.67E-01	G	K
Th-234	N	1.6954E+02						1.63E+12		
			63.29	1.695E+02	&(P	2.496E+03	5.81E+02	4.80E+00	G	K
			92.60	8.986E+00	% P	1.814E+03	8.15E+03	2.80E+00	GA	
U-235	N	3.4552E+01						2.57E+11		
			143.76	3.455E+01	&(P	2.974E+02	3.57E+02	1.10E+01	G	K
			205.31	-7.614E+01	%	5.139E+02	2.80E+02	5.01E+00	G	
			89.95	1.397E+03	%	1.533E+03	4.61E+01	3.56E+00	GA	
U-238	N	4.4938E+00						1.63E+12		
			92.59	4.494E+00	%(P	9.071E+02	8.15E+03	5.60E+00	G	K
								Energy duplication		
			1001.03	0.000E+00	& P	2.818E+03	1.00E+03	8.40E-01	G	K
Am-241	T	3.4622E+01						1.58E+05		
			59.54	3.462E+01	&(P	4.411E+02	5.03E+02	3.63E+01	G	K
Pm-144	C	5.1888E+00						3.63E+02		
			696.51	5.189E+00	%(P	2.206E+01	2.01E+02	9.90E+01	G	K
			618.01	2.037E+00	%	2.186E+01	4.91E+02	9.86E+01	G	
Pm-146	C	-4.9506E-01						2.02E+03		
			453.88	-4.951E-01	&(	3.357E+01	3.01E+03	6.52E+01	G	K
			747.16	0.000E+00	% P	6.796E+01	1.00E+03	3.40E+01	G	
			735.72	5.184E+01	% P	8.671E+01	7.99E+01	2.25E+01	GA	

(- This peak used in the nuclide activity average.

```
   * - Peak is too wide, but only one peak in library.
   ! - Peak is part of a multiplet and this area went
       negative during deconvolution.
   ? - Peak is too narrow.
   @ - Peak is too wide at FW25M, but ok at FWHM.
   % - Peak fails sensitivity test.
   $ - Peak identified, but first peak of this nuclide
       failed one or more qualification tests.
   + - Peak activity higher than counting uncertainty range.
   - - Peak activity lower than counting uncertainty range.
   = - Peak outside analysis energy range.
   & - Calculated peak centroid is not close enough to the
       library energy centroid for positive identification.
   P - Peakbackground subtraction
   } - Peak is too close to another for the activity
       to be found directly.

   Nuclide Codes:                          Peak Codes:
   T - Thermal Neutron Activation          G - Gamma Ray
   F - Fast Neutron Activation             X - X-Ray
   I - Fission Product                     P - Positron Decay
   N - Naturally Occurring Isotope         S - Single-Escape
   P - Photon Reaction                     D - Double-Escape
   C - Charged Particle Reaction           K - Key Line
   M - No MDA Calculation                  A - Not in Average
   R - Coincidence Corrected               C - Coincidence Peak
   H - Halflife limit exceeded
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********** D I S C A R D E D I S O T O P E P E A K S **********

Nuclide	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	Activity	
Pb-212	74.81	1308.	488.	0.271	29.17	2.257E+03	P
Pb-212	77.11	1071.	1079.	0.600	12.88	2.732E+03	P
Pb-212	87.20	1276.	435.	0.242	32.84	1.846E+03	P
Sb-125	462.99	396.	260.	0.144	34.82	5.408E+02	P
Cs-136	1236.10	83.	130.	0.072	38.82	4.922E+02	
Eu-152	1408.28	176.	237.	0.132	31.36	4.655E+02	

P - Peakbackground subtraction

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide		Time of Count Activity pCi/L	Time Corrected Activity pCi/L	Uncertainty Counting pCi/L	2 Sigma Total pCi/L	MDA pCi/L
Be-7	#B	-7.1702E+01	-8.4967E+01	2.2698E+02	2.2703E+02	2.541E+02
Na-22	#B	-1.5264E+01	-1.5410E+01	2.7245E+01	2.7258E+01	2.555E+01
K-40	#	1.5556E+03	1.5556E+03	2.5851E+02	2.7277E+02	1.970E+02
Sc-46	#B	1.2246E+01	1.3645E+01	2.2525E+01	2.2538E+01	2.288E+01

Cr-51	#B	7.8225E+01	1.0851E+02	2.6008E+02	2.6016E+02	3.012E+02
Mn-54	#B	0.0000E+00	0.0000E+00	1.2059E+01	1.2059E+01	2.744E+01
Co-56		4.0471E+02	4.5508E+02	4.3581E+01	5.1966E+01	3.126E+02
Co-57	#B	-9.5136E+00	-9.8362E+00	3.6947E+01	3.6952E+01	4.446E+01

Co-58	#B	0.0000E+00	0.0000E+00	1.0834E+01	1.0834E+01	2.626E+01
Fe-59	#B	1.3295E+01	1.6299E+01	4.7345E+01	4.7354E+01	4.601E+01
Co-60	#B	0.0000E+00	0.0000E+00	8.3526E+00	8.3527E+00	2.328E+01
Zn-65	#B	3.8659E+01	4.0123E+01	5.4266E+01	5.4312E+01	5.195E+01
SE-75	#B	-2.3746E+01	-2.5603E+01	4.0229E+01	4.0257E+01	4.630E+01
Kr-85	#B	0.0000E+00	0.0000E+00	1.3974E+03	1.3974E+03	6.465E+03
Y-88	#B	6.7823E+00	7.3840E+00	2.3623E+01	2.3627E+01	2.124E+01
Nb-94	B	1.3543E+00	1.3543E+00	2.2182E+01	2.2183E+01	2.283E+01
Zr-95	B	8.4337E+00	9.7164E+00	4.3920E+01	4.3924E+01	4.639E+01
Nb-95	#B	1.2867E+01	1.6673E+01	2.3156E+01	2.3175E+01	2.419E+01
Ru-103	#B	5.9776E+00	7.5300E+00	2.6807E+01	2.6810E+01	2.905E+01
Ag-108M	#B	0.0000E+00	0.0000E+00	4.2680E+00	4.2680E+00	2.863E+01
Ru-106	#B	0.0000E+00	0.0000E+00	6.3523E+01	6.3523E+01	2.112E+02
Cd-109	#B	0.0000E+00	0.0000E+00	9.7777E+02	9.7778E+02	6.676E+01
Ag-110M	#B	1.4544E+01	1.5081E+01	1.9126E+01	1.9144E+01	1.997E+01
Sn-113	#B	0.0000E+00	0.0000E+00	1.6115E+01	1.6115E+01	4.290E+01
Sb-124	#B	-6.8261E+00	-7.9353E+00	2.4241E+01	2.4245E+01	2.629E+01
Sb-125	#F	1.8108E+02	1.8271E+02	6.3621E+01	6.4414E+01	7.178E+01
Te-129	#B	1.7292E+02	2.2647E+02	2.7809E+02	2.7837E+02	3.087E+02
Te-129M	#B	-4.8795E+02	-6.3904E+02	1.0128E+03	1.0134E+03	1.055E+03
I-131	#B	1.0595E+01	3.2804E+01	6.7683E+01	6.7709E+01	7.552E+01
I-132	#B	0.0000E+00	0.0000E+00	2.7260E+02	2.7260E+02	5.752E+02
Te-132	#B	0.0000E+00	0.0000E+00	1.8031E+02	1.8031E+02	5.110E+02
I-133	#B	8.6044E+00	>12 Halflives	2.0669E+01	2.0674E+01	2.240E+01
Ba-133	#B	-1.7419E+01	-1.7460E+01	3.3799E+01	3.3804E+01	3.760E+01
Cs-134		7.0488E+01	7.1343E+01	2.1015E+01	2.1393E+01	2.168E+01
Cs-136	#F	3.2777E+01	6.5267E+01	2.5339E+01	2.5603E+01	4.829E+01
Cs-137	#B	1.2340E+01	1.2350E+01	2.0673E+01	2.0684E+01	2.163E+01
Ce-139	#B	-1.0316E+01	-1.1018E+01	3.4384E+01	3.4390E+01	4.134E+01
Ba-140	#B	-4.3505E+00	-8.8569E+00	1.6880E+02	1.6880E+02	1.840E+02
La-140	#B	2.1973E+00	4.4734E+00	6.1942E+01	6.1942E+01	5.770E+01
Ce-141	#B	2.1751E+00	2.8747E+00	7.4607E+01	7.4608E+01	9.001E+01
Ce-144	#B	-1.0509E+02	-1.0849E+02	2.5885E+02	2.5893E+02	3.109E+02
ND-147	#B	1.4573E+00	3.3074E+00	3.2730E+02	3.2730E+02	3.574E+02
Eu-152	#B	0.0000E+00	0.0000E+00	4.7438E+01	4.7438E+01	1.321E+02
Eu-154	#B	2.9440E+00	2.9525E+00	7.5049E+01	7.5049E+01	9.057E+01
Eu-155	#B	-2.3816E+01	-2.3941E+01	1.0676E+02	1.0677E+02	1.780E+02
Lu-176	#B	6.6592E+00	6.6592E+00	1.9807E+01	1.9811E+01	2.297E+01
Ir-192	#B	0.0000E+00	0.0000E+00	1.1959E+01	1.1959E+01	3.201E+01
Hg-203	#B	0.0000E+00	0.0000E+00	9.4826E+00	9.4827E+00	3.662E+01
Tl-208	#B	0.0000E+00	0.0000E+00	1.3227E+01	1.3227E+01	3.033E+01
Pb-210	#B	1.1823E+03	1.1836E+03	2.1365E+04	2.1365E+04	2.713E+04
Bi-212	#F	3.2139E+02	3.2559E+02	3.1009E+02	3.1062E+02	3.208E+02
Pb-212	#F	9.8810E+02	1.0010E+03	1.2892E+02	1.4195E+02	6.327E+01
Bi-214		4.3943E+03	4.3943E+03	1.0371E+02	2.6310E+02	4.828E+01

Pb-214		4.6066E+03	4.6067E+03	1.1584E+02	2.8632E+02	7.013E+01
Ra-223	#B	0.0000E+00	0.0000E+00	1.5236E+02	1.5236E+02	1.794E+02
Ra-224	#B	3.3235E+02	3.3669E+02	5.5137E+02	5.5173E+02	6.353E+02
Ra-226		1.8183E+04	1.8184E+04	8.3156E+02	1.3401E+03	7.669E+02
Ac-227	#B	7.6969E+01	7.7057E+01	1.7738E+02	1.7744E+02	2.047E+02
Ac-228		1.6136E+03	1.6206E+03	1.1795E+02	1.4907E+02	7.893E+01
Th-228	#F	6.2020E+03	6.2831E+03	2.4671E+03	2.5233E+03	3.898E+03
Th-230	#B	-8.9879E+03	-8.9879E+03	2.1366E+04	2.1430E+04	2.689E+04
Pa-231	#B	0.0000E+00	0.0000E+00	6.7025E+02	6.7026E+02	1.520E+03
Pa-234M	#A	0.0000E+00	0.0000E+00	9.5822E+02	9.5822E+02	2.828E+03
Th-232	#B	6.8487E+03	6.8487E+03	3.4430E+04	3.4463E+04	4.355E+04
Th-234	#B	1.6954E+02	1.6954E+02	1.9692E+03	1.9695E+03	2.496E+03
U-235	#B	3.4552E+01	3.4552E+01	2.4668E+02	2.4669E+02	2.974E+02

U-238	#B	4.4938E+00	4.4938E+00	7.3220E+02	7.3220E+02	9.071E+02
Am-241	#B	3.4620E+01	3.4622E+01	3.4814E+02	3.4825E+02	4.411E+02
Am-243	#B	0.0000E+00	0.0000E+00	1.3168E+02	1.3168E+02	2.189E+02
Pm-144	#B	5.0608E+00	5.1888E+00	2.0904E+01	2.0906E+01	2.206E+01
Pm-146	#B	-4.9284E-01	-4.9506E-01	2.9764E+01	2.9764E+01	3.357E+01

- All peaks for activity calculation had bad shape.
* - Activity omitted from total
& - Activity omitted from total and all peaks had bad shape.
< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

---------- S U M M A R Y ----------

Total Activity (30.3 to 2038.5 keV) 3.042E+04 pCi/L
Total Decayed Activity (30.3 to 2038.5 keV) 3.0432156E+04 pCi/L

The library has energies which are not separable.

Analyzed by: _____
Operator

Reviewed by: _____
Supervisor

Laboratory: Pace

ORTEC g v - i (3263) Env32 G701W047 9/24/2024 5:00:58 PM Page 1
Pace Spectrum name: 30717760001.An1

Sample description
81318

Spectrum Filename: C:\User\Spectra\30717760001.An1

Acquisition information
Start time: 9/24/2024 12:51:58 PM
Live time: 1800
Real time: 1836
Dead time: 1.93 %
Detector ID: 2

Detector system
DET 2

Calibration
Filename: DET_2_2L MAR_23-047(113023).Clb
DET 2 2L MARINELLI

Energy Calibration
Created: 11/30/2023 7:00:31 AM
Zero offset: 0.281 keV
Gain: 0.250 keV/channel
Quadratic: -1.344E-08 keV/channel^2

Efficiency Calibration
Created: 11/30/2023 7:26:21 AM
Type: Polynomial
Uncertainty: 1.699 %
Coefficients: -0.225215 -3.983441 0.474906
-0.072106 0.003754 -0.000081

Library Files
Main analysis library: Pace Master w Ra226U235 (wo PS)
Library Match Width: 0.500
Peak stripping: Library based

Analysis parameters
Analysis engine: Env32 G701W047
Start channel: 120 (30.33keV)
Stop channel: 8144 (2038.53keV)
Peak rejection level: 30.000%
Peak search sensitivity: 3
Sample Size: 2.0000E+00
Activity scaling factor: 1.0000E+06/(1.0000E+00* 2.0000E+00) =
5.0000E+05
Detection limit method: Reg. Guide 4.16 Method

Random error: 0.0000000E+00
Systematic error: 0.0000000E+00
Fraction Limit: 0.000%
Background width: average of three points.

Half lives decay limit: 12.000

WTF 9-25-24

JM 9/25/24

ORTEC g v - i (3263) Env32 G701W047 9/24/2024 5:00:58 PM Page 2
Pace Spectrum name: 30717760001.An1

Activity range factor: 2.000
Min. step backg. energy 0.000
Multiplet shift channel 2.000

Corrections	Status	Comments
Decay correct to date:	YES	9/11/2024 11:40:00 AM
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	YES	Det_2_Bkg_092024Ra226U235(2LITER 9/24/2024 4:14:26 PM
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

total peaks alloc. 0 cutoff: 0.00E+00 %
Energy Calibration
Normalized diff: 0.1046

JM 9/25/24
WTF 9.25.24

***** S U M M A R Y O F P E A K S I N R A N G E *****

Peak Energy	Area	Uncert	FWHM	Corrctn Factor	Nuclide Energy	Brnch. Ratio	Act. pCi/L	Nuc
74.84	410.	10.55	0.97	1.583E-02	74.66	68.200	2.851E+02	Am243
					74.81	10.400	1.883E+03	Pb212
					74.81	6.330	3.054E+03	Pb214
77.17	728.	6.52	0.97	1.721E-02	77.11	10.700	2.972E+03	Pb214
					77.11	17.500	1.841E+03	Pb212
83.89	199.	18.76	0.98	2.108E-02	83.78	24.900	2.823E+02	Ra223
					84.37	1.266	5.459E+03	Th228
87.08	346.	12.39	0.98	2.287E-02	86.54	30.700	3.766E+02	Eu155
					87.20	3.700	3.055E+03	Pb214
					87.30	7.800	1.463E+03	Pb212
					88.03	3.610	3.132E+03	Cd109
90.01	249.	16.81	0.98	2.447E-02	89.95	3.560	2.144E+03	U235
					89.95	3.560	2.144E+03	U235
186.21	3701.	2.42	1.05	4.782E-02	186.10	3.500	1.652E+04	Ra226
209.09	347.	16.81	0.97	4.783E-02				
238.66	287.	13.48	1.13	4.680E-02	238.63	43.300	1.040E+02	Pb212
242.05	1623.	3.33	1.13	4.663E-02	241.92	7.470	3.494E+03	Pb214
259.44	195.	25.76	0.79	4.571E-02				
270.16	394.	14.39	1.00	4.509E-02	269.46	13.700	4.793E+02	Ra223
295.29	3674.	2.44	1.10	4.357E-02	295.22	19.200	3.296E+03	Pb214
					295.96	28.670	2.498E+03	Ir192
					295.96	28.670	2.498E+03	Ir192
328.40	271.	16.94	1.20	4.155E-02	328.76	20.300	4.906E+02	La140
					330.00	1.300	3.775E+03	Pa231
					328.76	20.300	4.906E+02	La140
338.46	942.	7.11	1.07	4.095E-02	338.32	11.300	1.533E+03	Ac228
352.00	6827.	1.47	1.18	4.017E-02	351.99	37.100	3.435E+03	Pb214

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Pace Spectrum name: 30717760001.An1

pk energy	area	uncert	fwhm	corr	nuclide	brnch.	act.	nuc
409.44	168.	23.40	1.03	3.710E-02				

463.01	359.	12.07	1.50	3.465E-02	463.36	10.500	7.459E+02	Sb125
					463.36	10.500	7.459E+02	Sb125
609.46	5832.	1.51	1.45	2.961E-02	609.31	44.800	3.296E+03	Bi214
665.52	202.	13.35	1.17	2.815E-02				
727.49	121.	27.08	0.69	2.675E-02	727.33	6.580	5.215E+02	Bi212
768.12	539.	5.76	1.61	2.593E-02	768.36	4.800	3.252E+03	Bi214
772.31	78.	24.65	1.61	2.585E-02	772.60	75.600	4.900E+02	I132
					772.60	75.600	4.900E+02	I132
795.18	218.	15.56	1.43	2.541E-02	795.86	85.530	7.612E+01	Cs134
911.40	1384.	3.77	1.68	2.353E-02	911.21	26.600	1.664E+03	Ac228
934.52	319.	11.34	1.31	2.320E-02				
964.73	275.	9.20	1.77	2.278E-02	964.13	14.340	6.259E+02	Eu152
					964.13	14.340	6.259E+02	Eu152
969.28	756.	4.14	1.78	2.272E-02	968.97	16.200	1.540E+03	Ac228
1120.49	1582.	3.29	1.76	2.093E-02	1120.29	14.800	3.835E+03	Bi214
1238.28	585.	6.35	1.68	1.976E-02	1238.11	5.860	3.780E+03	Bi214
					1238.28	66.070	3.769E+02	Co56
1280.90	210.	15.12	1.07	1.938E-02				
1377.80	475.	6.50	1.81	1.858E-02	1377.67	3.920	4.895E+03	Bi214
1385.83	155.	15.06	0.58	1.852E-02	1384.30	24.120	2.696E+02	Ag110M
1408.48	209.	12.64	1.31	1.834E-02	1408.01	20.870	4.112E+02	Eu152
					1408.01	20.870	4.112E+02	Eu152
1461.06	393.	8.15	0.44	1.795E-02	1461.00	10.670	1.539E+03	K40
1764.72	1436.	2.82	2.41	1.601E-02	1764.49	15.360	4.352E+03	Bi214

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Efficiency * Area	Uncert 2 Sigma %	FWHM keV	Suspected Nuclide	
358.05	89.98	748.	250.	1.022E+04	33.41	0.981	AC-228	D
834.00	209.09	835.	347.	7.262E+03	33.61	0.966	AC-228	M
1035.10	259.44	582.	195.	4.266E+03	51.52	0.791	PB-214	sM
1077.93	270.16	678.	394.	8.746E+03	28.77	0.998	AC-228	sM
1310.55	328.40	459.	271.	6.522E+03	33.88	1.203	BI-207	M
1634.24	409.44	329.	168.	4.519E+03	46.81	1.025	AC-228	
1848.25	463.01	304.	359.	1.036E+04	24.15	1.500	AC-228	s
2657.22	665.52	127.	202.	7.188E+03	26.71	1.174	BI-214	M
3084.83	772.32	150.	74.	2.878E+03	51.96	1.614	AC-228	D
3731.96	934.52	165.	319.	1.375E+04	22.68	1.312	TE-131	s
3853.73	964.72	177.	281.	1.236E+04	17.90	1.775	AC-228	D
5115.98	1280.90	102.	210.	1.086E+04	30.25	1.067	SR-91	s
5535.30	1385.83	52.	155.	8.370E+03	30.12	0.575	-	sM
5625.82	1408.48	74.	209.	1.141E+04	25.29	1.306	EU-152	s

s - Peak fails shape tests.
D - Peak area deconvoluted.
L - Peak written from unknown list.
C - Area < Critical level.
M - Peak is close to a library peak.

This section based on library: Pace Master w Ra226U235 (wo PS)

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	FWHM keV

Pb-212	297.66	74.81	993.	386.	0.214	25.26	0.966D
Pb-214	306.85	77.11	765.	728.	0.404	13.07	0.969D
Th-228	333.59	83.81	593.	200.	0.111	37.27	0.975
Pb-214	347.15	87.20	751.	347.	0.193	24.77	0.979D
Pb-212	346.91	87.14	889.	353.	0.196	26.15	0.979
Ra-226	742.59	186.21	1152.	3682.	2.046	4.88	1.049
Pb-212	951.98	238.63	611.	279.	0.155	27.76	1.128D
Pb-214	965.12	241.92	614.	1622.	0.901	6.59	1.131D
Pb-214	1178.27	295.29	816.	3673.	2.041	4.88	1.103
La-140	1309.42	328.12	595.	175.	0.097	59.00	1.214s
Ac-228	1350.74	338.46	689.	941.	0.523	14.25	1.068
Pb-214	1404.81	352.00	641.	6819.	3.788	2.95	1.177
Sb-125	1848.37	463.04	295.	324.	0.180	25.07	1.340s
Bi-214	2432.69	609.31	287.	5777.	3.210	2.76	1.472D
Bi-212	2904.80	727.49	173.	121.	0.067	54.16	0.686s
Bi-214	3068.07	768.36	150.	600.	0.333	10.00	1.611D
I-132	3084.76	772.53	115.	91.	0.051	57.30	1.614s
Cs-134	3175.24	795.18	175.	218.	0.121	31.12	1.431
Ac-228	3639.58	911.40	195.	1381.	0.767	7.57	1.677
Eu-152	3853.25	964.88	274.	212.	0.118	39.99	1.774s
Ac-228	3869.60	968.97	145.	752.	0.418	8.59	1.779D
Bi-214	4475.03	1120.49	140.	1582.	0.879	6.57	1.759
Bi-214	4945.00	1238.11	110.	514.	0.286	4.08	1.990D
Co-56	4945.69	1238.28	113.	472.	0.262	13.11	1.679D
Bi-214	5503.21	1377.80	70.	475.	0.264	13.02	1.813s
Eu-152	5625.37	1408.37	143.	140.	0.078	46.72	2.116s
K-40	5835.94	1461.06	81.	393.	0.218	16.29	0.441s
Bi-214	7048.65	1764.49	193.	1219.	0.677	6.58	2.361D

s - Peak fails shape tests.
D - Peak area deconvoluted.
A Derived peak area.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

Nuclide Name	Code	Average Activity pCi/L	Peak Energy keV	Peak Activity pCi/L	Code	MDA Value pCi/L	COMMENTS
Be-7	C	-1.1029E+02				5.34E+01	
			477.56	-1.103E+02	%(	2.355E+02	9.56E+01 1.03E+01 G K
Na-22	C	-6.2420E+00				9.50E+02	
			1274.53	-6.242E+00	%(	2.362E+01	1.99E+02 9.99E+01 G K
K-40	N	1.5386E+03				4.68E+11	
			1461.00	1.539E+03	@(P	1.754E+02	8.15E+00 1.07E+01 G K
Cr-51	F	-1.0271E+02				2.77E+01	
			320.08	-1.027E+02	%(	2.924E+02	1.23E+02 1.01E+01 G K
Mn-54	C	2.0859E+01				3.12E+02	
			834.85	2.086E+01	%(P	2.136E+01	5.10E+01 1.00E+02 G K
Co-56	C	3.0538E+02				7.73E+01	
			1238.28	3.054E+02	} P	3.374E+01	6.55E+00 6.61E+01 G K

			1771.35	0.000E+00	%(	2.800E+02	1.00E+03	1.55E+01	G
Co-57	C	-1.7704E+00						2.72E+02	
			122.06	-1.770E+00	%(	3.899E+01	9.11E+02	8.56E+01	G K
			136.47	7.254E+01	% P	2.864E+02	1.64E+02	1.07E+01	G
Fe-59	F	-3.5791E+01						4.45E+01	
			1099.25	-3.579E+01	&(	5.300E+01	7.72E+01	5.65E+01	G K
			1291.60	0.000E+00	%	6.683E+01	1.00E+03	4.32E+01	G
Co-60	F	5.2959E+00						1.92E+03	
			1332.50	5.296E+00	%(P	1.904E+01	1.84E+02	1.00E+02	G K
			1173.24	1.659E+00	% P	1.978E+01	5.97E+02	1.00E+02	G
SE-75		-2.4332E+00						1.20E+02	
			264.66	-2.433E+00	%(	3.990E+01	7.04E+02	5.86E+01	G K
			136.00	2.202E+01	%	5.409E+01	1.02E+02	5.83E+01	G
			279.54	0.000E+00	% P	9.858E+01	1.00E+03	2.48E+01	G
			121.12	0.000E+00	% P	2.175E+02	1.00E+03	1.64E+01	G
Y-88	C	1.3447E+01						1.07E+02	
			1836.06	1.345E+01	%(	1.544E+01	6.43E+01	9.92E+01	G K
			898.04	3.051E-01	% P	2.405E+01	3.80E+03	9.37E+01	G

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Nb-94	I 1.3543E+00					7.41E+06	
		871.09	1.354E+00	%(P	2.103E+01	7.52E+02	9.99E+01 G K
		702.62	1.143E+01	% P	2.265E+01	9.48E+01	9.79E+01 G
Zr-95	I 1.4469E+01					6.40E+01	
		756.73	1.447E+01	%(	4.447E+01	1.46E+02	5.45E+01 G K
		724.20	3.358E+01	%	4.698E+01	6.70E+01	4.42E+01 G
Nb-95	I 1.0914E+01					3.50E+01	
		765.81	1.091E+01	%(P	2.305E+01	1.00E+02	9.98E+01 G K
Ru-103	I 1.9296E-01					3.93E+01	
		497.08	1.930E-01	&(P	2.584E+01	6.12E+03	9.10E+01 G K
Ru-106	I 3.4499E+01					3.73E+02	
		621.93	3.450E+01	%(P	1.994E+02	2.64E+02	9.93E+00 G K
Ag-110M	F 7.9869E-02					2.50E+02	
		657.76	7.987E-02	%(P	2.152E+01	1.26E+04	9.40E+01 G K
		1505.04	0.000E+00	% P	2.805E+02	1.00E+03	1.29E+01 G
		1384.30	6.672E+01	% P	7.853E+01	6.27E+01	2.41E+01 G
		937.49	3.940E+00	%	5.795E+01	7.29E+02	3.41E+01 G
		884.68	-6.308E+00	&	3.208E+01	2.48E+02	7.22E+01 G
		763.94	-2.118E+01	%	9.638E+01	2.15E+02	2.21E+01 G
		744.28	1.882E+02	& P	3.948E+02	9.97E+01	4.70E+00 G
		706.68	0.000E+00	% P	1.473E+02	1.00E+03	1.63E+01 G
Sn-113	F -3.5063E+00					1.15E+02	
		391.69	-3.506E+00	%(	3.397E+01	4.30E+02	6.40E+01 G K
Sb-124	F -1.0677E+01					6.02E+01	
		602.73	-1.068E+01	%(	2.614E+01	1.13E+02	9.78E+01 G K
		645.85	0.000E+00	% P	2.976E+02	1.00E+03	7.38E+00 G

			722.79	0.000E+00	% P	2.684E+02	1.00E+03	1.08E+01 G
			1690.98	1.496E+00	&	4.409E+01	1.58E+03	4.73E+01 G
Sb-125	I	1.7678E+02						1.01E+03
			427.88	0.000E+00	%(P	7.205E+01	1.00E+03	2.96E+01 G K
			176.31	5.193E+01	% P	3.781E+02	3.02E+02	6.82E+00 G
			463.36	6.751E+02	@(P	1.723E+02	1.25E+01	1.05E+01 G
			600.60	0.000E+00	% P	1.225E+02	1.00E+03	1.79E+01 G
			635.95	-6.457E+01	%	1.758E+02	1.29E+02	1.13E+01 G
Te-129	I	8.0681E-01						3.36E+01
			459.60	8.068E-01	&(P	3.034E+02	1.66E+04	7.70E+00 G K
			487.39	1.228E+03	% P	1.757E+03	6.66E+01	1.42E+00 G

Nuclide		Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Te-129M	I	-9.5505E+01						3.36E+01
			695.88	-9.550E+01	&(	8.668E+02	4.28E+02	3.00E+00 G K
I-131	I	5.3948E+01						8.02E+00
			364.49	5.395E+01	%(	6.651E+01	5.57E+01	8.17E+01 G K
			636.99	0.000E+00	% P	8.503E+02	1.00E+03	7.17E+00 G
			284.30	-1.821E+02	%	1.054E+03	2.49E+02	6.14E+00 G
I-132	I	5.9038E+02						3.20E+00
			772.60	5.904E+02	?(P	3.419E+02	2.86E+01	7.56E+01 G K
			522.65	-7.881E+02	%	2.175E+03	1.27E+02	1.60E+01 G
			630.19	-4.595E+02	%	2.507E+03	2.58E+02	1.33E+01 G
			954.55	-2.620E+02	%	1.963E+03	3.73E+02	1.76E+01 G
I-133	I	-1.4789E+01						8.67E-01
			529.87	-1.479E+01	%(	2.321E+01	7.30E+01	8.70E+01 G K
			875.33	1.106E+02	&	4.617E+02	2.03E+02	4.51E+00 G
Ba-133	F	-1.0932E+01						3.84E+03
			356.02	-1.093E+01	&(	3.281E+01	1.34E+02	6.20E+01 G K
			81.00	1.991E+01	% P	1.723E+02	3.58E+02	3.41E+01 G
			302.85	0.000E+00	% P	1.109E+02	1.00E+03	1.83E+01 G
			276.40	2.322E+02	%	2.973E+02	5.58E+01	7.16E+00 G
			383.85	5.369E+01	%	2.036E+02	1.69E+02	8.94E+00 G
Cs-134	I	7.6119E+01						7.52E+02
			795.86	7.612E+01	(P	2.252E+01	1.56E+01	8.55E+01 G K
			604.72	-2.421E+01	%	2.653E+01	5.14E+01	9.76E+01 GA
			569.33	0.000E+00	% P	1.293E+02	1.00E+03	1.54E+01 GA
			801.95	0.000E+00	% P	2.514E+02	1.00E+03	8.69E+00 GA
Cs-136	F	-1.8560E+01						1.32E+01
			818.51	-1.856E+01	&(	4.176E+01	1.10E+02	9.97E+01 G K
			176.60	-4.350E+01	%	5.182E+02	4.93E+02	1.00E+01 G
			273.65	-9.988E+00	%	3.994E+02	1.72E+03	1.11E+01 G
			340.55	1.019E+02	%	7.973E+01	3.45E+01	4.22E+01 G
			1048.07	-1.803E+01	%	5.050E+01	1.40E+02	8.00E+01 G
			1235.36	-3.331E+01	%	2.018E+02	3.08E+02	2.00E+01 G
Cs-137	I	1.0628E+01						1.10E+04
			661.66	1.063E+01	&(	2.026E+01	9.08E+01	9.01E+01 G K
Ce-139	F	4.2563E+00						1.38E+02

			165.85	4.256E+00	&(	3.504E+01	3.41E+02	7.99E+01	G K

Nuclide		Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Ba-140	I	-4.7168E+01					1.28E+01	
			537.26	-4.717E+01	%(	1.810E+02	1.77E+02	2.44E+01 G K
			162.66	0.000E+00	% P	8.896E+02	1.00E+03	6.22E+00 G
La-140	I	5.6839E+01					1.28E+01	
			1596.21	1.649E+00	%(P	5.114E+01	1.65E+03	9.54E+01 G K
			487.02	6.906E+01	%	8.398E+01	5.68E+01	4.55E+01 G
			815.77	0.000E+00	% P	1.729E+02	1.00E+03	2.33E+01 G
			328.76	3.162E+02	?(	2.107E+02	2.95E+01	2.03E+01 G
Ce-141	I	4.6591E-01					3.25E+01	
			145.44	4.659E-01	&(	8.032E+01	7.13E+03	4.82E+01 G K
Ce-144	I	-3.0756E+01					2.85E+02	
			133.51	-3.076E+01	%(	2.774E+02	3.73E+02	1.11E+01 G K
Eu-152	F	2.7202E+01					4.95E+03	
			121.78	2.720E+01	%(P	1.112E+02	1.70E+02	2.84E+01 G K
			1408.01	2.750E+02		1.148E+02	2.34E+01	2.09E+01 GA
			1112.12	-6.603E+00	%	1.525E+02	1.17E+03	1.36E+01 GA
			1085.91	1.531E+02	& P	1.561E+02	5.18E+01	9.92E+00 GA
			964.13	4.883E+02	? P	1.837E+02	2.00E+01	1.43E+01 GA
			344.28	4.720E+00	& P	7.943E+01	7.49E+02	2.66E+01 GA
			244.70	3.923E+01	%	2.862E+02	3.14E+02	7.49E+00 GA
Eu-154	I	2.5694E+01					3.14E+03	
			123.07	2.569E+01	&(	7.808E+01	1.26E+02	4.06E+01 G K
			1274.44	-2.822E+01	%	7.033E+01	1.32E+02	3.50E+01 G
			1004.72	-1.448E+01	%	1.146E+02	3.93E+02	1.79E+01 G
			996.26	-2.344E+01	%	1.996E+02	4.24E+02	1.05E+01 G
			873.19	6.306E+01	% P	1.613E+02	1.25E+02	1.22E+01 G
			723.30	0.000E+00	% P	1.248E+02	1.00E+03	2.01E+01 GA
			247.93	1.203E+01	& P	3.173E+02	1.13E+03	6.91E+00 G
Eu-155	I	-7.6175E+00					1.74E+03	
			86.54	-7.617E+00	%(	1.541E+02	6.03E+02	3.07E+01 G K
			105.31	7.116E+01	%	1.699E+02	9.93E+01	2.12E+01 G
Lu-176	N	2.3115E+00					1.38E+13	
			306.78	2.311E+00	&(P	2.143E+01	3.98E+02	9.40E+01 G K
			201.83	0.000E+00	% P	2.817E+01	1.00E+03	8.65E+01 G
Tl-208	N	6.2539E+00					6.98E+02	
			583.19	6.254E+00	%(P	2.649E+01	1.94E+02	8.45E+01 G K
			860.56	2.771E+01	%	1.720E+02	3.02E+02	1.24E+01 G
			277.36	0.000E+00	% P	3.752E+02	1.00E+03	6.31E+00 G

Nuclide		Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Bi-212	N	5.2145E+02					6.98E+02	
			727.33	5.215E+02	*(P	2.768E+02	2.71E+01	6.58E+00 G K

			1620.50	1.079E+03	%	P	1.247E+03	6.42E+01	1.49E+00 G
Pb-212	N	1.0483E+02						6.98E+02	
			238.63	1.048E+02		(P	4.424E+01	1.39E+01	4.33E+01 G K
								Energy duplication	
			77.11	0.000E+00	%	P	1.865E+01	1.00E+03	1.75E+01 G
								Energy duplication	
			74.81	1.785E+03	+	P	6.918E+02	1.26E+01	1.04E+01 G
			87.30	1.497E+03	+	P	6.003E+02	1.31E+01	7.80E+00 GA
Bi-214	N	3.3326E+03						5.84E+05	
			609.31	3.269E+03		(P	4.619E+01	1.38E+00	4.48E+01 G K
			1120.29	3.835E+03	+		1.402E+02	3.29E+00	1.48E+01 GA
			2204.21	0.000E+00	=		0.000E+00	0.00E+00	4.86E+00 G
			1764.49	3.720E+03	+	P	2.059E+02	3.29E+00	1.54E+01 G
			1377.67	4.895E+03	+	P	4.300E+02	6.51E+00	3.92E+00 G
			1238.11	3.333E+03	}	P	3.348E+02	2.04E+00	5.86E+00 G
			768.36	3.621E+03		(	3.605E+02	5.00E+00	4.80E+00 G
Pb-214	N	3.4003E+03						5.84E+05	
			351.99	3.435E+03		(P	6.081E+01	1.47E+00	3.71E+01 G K
			295.22	3.296E+03		(P	1.219E+02	2.44E+00	1.92E+01 G
			241.92	3.494E+03		(P	2.548E+02	3.29E+00	7.47E+00 G
			87.20	3.070E+03	-	P	1.153E+03	1.24E+01	3.70E+00 G
								Energy duplication	
			77.11	2.973E+03	-	P	5.377E+02	6.54E+00	1.07E+01 G
								Energy duplication	
			74.81	9.606E+01	}	P	9.671E+02	2.95E+02	6.33E+00 G
Ra-224	N	4.7036E+02						6.98E+02	
			241.00	4.704E+02	%(	P	5.210E+02	3.42E+01	3.90E+00 G K
Ra-226	N	1.6518E+04						5.84E+05	
			186.10	1.652E+04		(P	7.216E+02	2.44E+00	3.50E+00 G K
Ac-227	N	5.9258E+01						7.95E+03	
			235.97	5.926E+01	&(		1.780E+02	1.30E+02	1.23E+01 G K
			256.25	0.000E+00	%	P	3.247E+02	1.00E+03	7.00E+00 G
			300.00	1.409E+02	%		8.652E+02	2.64E+02	2.30E+00 G
			329.85	0.000E+00	%		8.345E+02	1.00E+03	2.70E+00 G
Ac-228	N	1.5995E+03						2.10E+03	
			911.21	1.664E+03		(P	8.163E+01	3.79E+00	2.66E+01 G K
			968.97	1.540E+03		(P	1.204E+02	4.29E+00	1.62E+01 G
			338.32	1.533E+03		(P	2.037E+02	7.13E+00	1.13E+01 G
Th-228	N	5.6166E+03						6.98E+02	
			84.37	5.617E+03		(P	3.266E+03	1.86E+01	1.27E+00 G K
			215.99	4.975E+03	%		8.702E+03	7.60E+01	2.63E-01 GA

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
		166.41	3.577E+03 %		2.447E+04	2.83E+02	1.08E-01 GA
		131.61	0.000E+00 %	P	2.325E+04	1.00E+03	1.35E-01 GA
Th-230 N	-8.1319E+03					2.75E+07	
		67.67	-8.132E+03 %(		2.369E+04	1.16E+02	3.80E-01 G K
Th-232 N	1.0197E+04					4.17E+12	
		63.81	1.020E+04 &(		4.012E+04	1.56E+02	2.67E-01 G K

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Am-241   T   9.7431E+01                                          1.58E+05
                          59.54 9.743E+01 %(P 3.726E+02 1.51E+02 3.63E+01 G K

Pm-146   C   2.1617E+01                                          2.02E+03
                         453.88 2.162E+01 %(  2.679E+01 5.59E+01 6.52E+01 G K
                         747.16 7.519E+00 % P 5.434E+01 3.39E+02 3.40E+01 G
                         735.72 5.247E+01 % P 8.408E+01 7.66E+01 2.25E+01 GA
   ( - This peak used in the nuclide activity average.

   * - Peak is too wide, but only one peak in library.
   ! - Peak is part of a multiplet and this area went
       negative during deconvolution.
   ? - Peak is too narrow.
   @ - Peak is too wide at FW25M, but ok at FWHM.
   % - Peak fails sensitivity test.
   $ - Peak identified, but first peak of this nuclide
       failed one or more qualification tests.
   + - Peak activity higher than counting uncertainty range.
   - - Peak activity lower than counting uncertainty range.
   = - Peak outside analysis energy range.
   & - Calculated peak centroid is not close enough to the
       library energy centroid for positive identification.
   P - Peakbackground subtraction
   } - Peak is too close to another for the activity
       to be found directly.

   Nuclide Codes:                      Peak Codes:
   T - Thermal Neutron Activation      G - Gamma Ray
   F - Fast Neutron Activation         X - X-Ray
   I - Fission Product                 P - Positron Decay
   N - Naturally Occurring Isotope     S - Single-Escape
   P - Photon Reaction                 D - Double-Escape
   C - Charged Particle Reaction       K - Key Line
   M - No MDA Calculation              A - Not in Average
   R - Coincidence Corrected           C - Coincidence Peak
   H - Halflife limit exceeded

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
```


********** D I S C A R D E D I S O T O P E P E A K S **********

Nuclide	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	Activity	
La-140	328.12	595.	175.	0.097	59.00	3.162E+02	
Sb-125	463.04	295.	324.	0.180	25.07	6.751E+02	P
I-132	772.53	115.	91.	0.051	57.30	5.904E+02	P
Eu-152	964.88	274.	212.	0.118	39.99	4.883E+02	P
Eu-152	1408.37	143.	140.	0.078	46.72	2.750E+02	

P - Peakbackground subtraction

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide	Time of Count Activity pCi/L	Time Corrected Activity pCi/L	Uncertainty Counting pCi/L	2 Sigma Total pCi/L	MDA pCi/L

Be-7	#B	-9.3106E+01	-1.1029E+02	2.1084E+02	2.1093E+02	2.355E+02
Na-22	#B	-6.1828E+00	-6.2420E+00	2.4882E+01	2.4885E+01	2.362E+01
K-40	#	1.5386E+03	1.5386E+03	2.5064E+02	2.6502E+02	1.754E+02
Sc-46	#B	0.0000E+00	0.0000E+00	1.1437E+01	1.1437E+01	2.472E+01
Cr-51	#B	-7.4092E+01	-1.0271E+02	2.5235E+02	2.5242E+02	2.924E+02
Mn-54	#B	2.0264E+01	2.0859E+01	2.1283E+01	2.1315E+01	2.136E+01
Co-56		2.7165E+02	3.0538E+02	3.8964E+01	4.3347E+01	2.800E+02
Co-57	#B	-1.7124E+00	-1.7704E+00	3.2252E+01	3.2252E+01	3.899E+01
Co-58	#B	0.0000E+00	0.0000E+00	4.4217E+00	4.4217E+00	2.713E+01
Fe-59	#B	-2.9207E+01	-3.5791E+01	5.5270E+01	5.5306E+01	5.300E+01
Co-60	#B	5.2711E+00	5.2959E+00	1.9473E+01	1.9475E+01	1.904E+01
Zn-65	#B	0.0000E+00	0.0000E+00	1.7492E+01	1.7492E+01	5.195E+01
SE-75	#B	-2.2571E+00	-2.4332E+00	3.4274E+01	3.4274E+01	3.990E+01
Kr-85	#B	0.0000E+00	0.0000E+00	1.8625E+03	1.8625E+03	5.699E+03
Y-88	#B	1.2354E+01	1.3447E+01	1.7306E+01	1.7328E+01	1.544E+01
Nb-94	#B	1.3543E+00	1.3543E+00	2.0379E+01	2.0379E+01	2.103E+01
Zr-95	B	1.2563E+01	1.4469E+01	4.2199E+01	4.2206E+01	4.447E+01
Nb-95	#B	8.4271E+00	1.0914E+01	2.1876E+01	2.1885E+01	2.305E+01
Ru-103	#B	1.5325E-01	1.9296E-01	2.3606E+01	2.3606E+01	2.584E+01
Ag-108M	#B	0.0000E+00	0.0000E+00	7.9370E+00	7.9370E+00	2.737E+01
Ru-106	#B	3.3672E+01	3.4499E+01	1.8231E+02	1.8232E+02	1.994E+02
Cd-109	#B	0.0000E+00	0.0000E+00	8.5233E+02	8.5234E+02	6.676E+01
Ag-110M	#B	7.7029E-02	7.9869E-02	2.0175E+01	2.0175E+01	2.152E+01
Sn-113	#B	-3.2413E+00	-3.5063E+00	3.0182E+01	3.0182E+01	3.397E+01
Sb-124	#B	-9.1873E+00	-1.0677E+01	2.4165E+01	2.4172E+01	2.614E+01
Sb-125	#F	1.7520E+02	1.7678E+02	4.4323E+01	4.5381E+01	7.205E+01
Te-129	#B	6.1639E-01	8.0681E-01	2.6721E+02	2.6721E+02	3.034E+02
Te-129M	#B	-7.2964E+01	-9.5505E+01	8.1687E+02	8.1688E+02	8.668E+02
I-131	#B	1.7464E+01	5.3948E+01	6.0087E+01	6.0165E+01	6.651E+01
I-132	#	3.4954E+01	5.9038E+02	3.3826E+02	3.3988E+02	3.419E+02
Te-132	#B	0.0000E+00	0.0000E+00	1.9517E+02	1.9517E+02	4.610E+02

I-133	#B	-1.4789E+01	>12 Halflives	2.1587E+01	2.1602E+01	2.321E+01
Ba-133	#B	-1.0906E+01	-1.0932E+01	2.9350E+01	2.9352E+01	3.281E+01
Cs-134		7.5209E+01	7.6119E+01	2.3691E+01	2.4074E+01	2.252E+01
Cs-136	#B	-9.3341E+00	-1.8560E+01	4.0950E+01	4.0963E+01	4.176E+01
Cs-137	#B	1.0619E+01	1.0628E+01	1.9308E+01	1.9317E+01	2.026E+01
Ce-139	#B	3.9856E+00	4.2563E+00	2.9017E+01	2.9018E+01	3.504E+01
Ba-140	#B	-2.3203E+01	-4.7168E+01	1.6689E+02	1.6691E+02	1.810E+02
La-140	#F	2.7960E+01	5.6839E+01	3.3536E+01	3.3697E+01	5.114E+01
Ce-141	#B	3.5272E-01	4.6591E-01	6.6441E+01	6.6441E+01	8.032E+01
Ce-144	#B	-2.9795E+01	-3.0756E+01	2.2974E+02	2.2975E+02	2.774E+02
ND-147	#B	0.0000E+00	0.0000E+00	8.5398E+01	8.5398E+01	3.338E+02
Eu-152	#B	2.7152E+01	2.7202E+01	9.2254E+01	9.2267E+01	1.112E+02
Eu-154	#B	2.5620E+01	2.5694E+01	6.4900E+01	6.4917E+01	7.808E+01
Eu-155	#B	-7.5780E+00	-7.6175E+00	9.1901E+01	9.1903E+01	1.541E+02
Lu-176	#B	2.3115E+00	2.3115E+00	1.8379E+01	1.8379E+01	2.143E+01
Ir-192	#B	0.0000E+00	0.0000E+00	6.1333E+00	6.1333E+00	2.845E+01
Hg-203	#B	0.0000E+00	0.0000E+00	1.1803E+01	1.1803E+01	3.462E+01
Tl-208	B	6.1733E+00	6.2539E+00	2.4304E+01	2.4307E+01	2.649E+01
Pb-210	#B	0.0000E+00	0.0000E+00	1.3346E+04	1.3346E+04	2.448E+04
Bi-212	#	5.1473E+02	5.2145E+02	2.8239E+02	2.8389E+02	2.768E+02
Pb-212		1.0348E+02	1.0483E+02	2.9096E+01	2.9754E+01	4.424E+01
Bi-214		3.3326E+03	3.3326E+03	9.1962E+01	2.0515E+02	4.619E+01
Pb-214		3.4002E+03	3.4003E+03	9.8729E+01	2.1702E+02	6.081E+01
Ra-223	#B	0.0000E+00	0.0000E+00	1.1563E+02	1.1563E+02	1.591E+02
Ra-224	B	4.6430E+02	4.7036E+02	3.2215E+02	3.2336E+02	5.210E+02
Ra-226		1.6518E+04	1.6518E+04	8.0578E+02	1.2493E+03	7.216E+02
Ac-227	#B	5.9190E+01	5.9258E+01	1.5386E+02	1.5390E+02	1.780E+02

Ac-228	1.5927E+03	1.5995E+03	9.7483E+01	1.3266E+02	8.163E+01
Th-228 #F	5.5442E+03	5.6166E+03	2.0931E+03	2.1459E+03	3.266E+03
Th-230 #B	-8.1319E+03	-8.1319E+03	1.8797E+04	1.8857E+04	2.369E+04
Pa-231 #B	0.0000E+00	0.0000E+00	4.0880E+02	4.0880E+02	1.384E+03
Pa-234M#A	0.0000E+00	0.0000E+00	1.2457E+03	1.2457E+03	2.667E+03
Th-232 #B	1.0197E+04	1.0197E+04	3.1748E+04	3.1826E+04	4.012E+04
Th-234 #B	0.0000E+00	0.0000E+00	1.3603E+03	1.3603E+03	2.356E+03
U-235 #B	0.0000E+00	0.0000E+00	1.0767E+02	1.0767E+02	2.750E+02
U-238 #B	0.0000E+00	0.0000E+00	4.8328E+02	4.8328E+02	8.606E+02
Am-241 #B	9.7425E+01	9.7431E+01	2.9465E+02	2.9565E+02	3.726E+02
Am-243 #B	0.0000E+00	0.0000E+00	8.4422E+01	8.4422E+01	1.410E+02
Pm-144 #B	0.0000E+00	0.0000E+00	3.0003E+00	3.0003E+00	2.101E+01
Pm-146 #B	2.1521E+01	2.1617E+01	2.4174E+01	2.4203E+01	2.679E+01

- All peaks for activity calculation had bad shape.
* - Activity omitted from total
& - Activity omitted from total and all peaks had bad shape.
< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

S U M M A R Y

Total Activity (30.3 to 2038.5 keV) 2.708E+04 pCi/L
Total Decayed Activity (30.3 to 2038.5 keV) 2.7091254E+04 pCi/L

The library has energies which are not separable.

Analyzed by: _____
Operator

Reviewed by: _____
Supervisor

Laboratory: Pace

Gamma Spec Quality Control Sample Performance Assessment

Pace Analytical™ www.pacelabs.com

Analyst: MAH
Date: 9/19/2024
Batch ID: 81318
Matrix: WATER

Method: EPA 901.1

Geometry: 2 LITER
Activity Units: pCi
Aliquot Units: L

Method Blank Assessment Method Blank ID: 3390410

Analytes of Interest	MB Result	2 Sigma CSU	MB MDC	Numerical Indicator	MB Evaluation
Bi-214	0.000	6.757	14.010	0.000	Pass
Pb-210	0.000	183.960	398.600	0.000	Pass
Pb-212	0.000	4.487	8.870	0.000	Pass
Pb-214	0.000	5.596	12.160	0.000	Pass
Ra-224	14.410	86.983	95.640	0.325	Pass
Ra-226	0.000	100.630	117.600	0.000	Pass
Ra-228	0.000	9.946	23.370	0.000	Pass
Th-228	0.000	169.730	345.600	0.000	Pass
Th-230	222.730	1479.800	1673.000	0.295	Pass
Th-232	0.000	1500.700	2865.000	0.000	Pass
U-234	45.060	138.750	150.800	0.637	Pass
U-235	-1.946	30.992	34.000	0.123	Pass
U-238	19.040	72.315	86.310	0.516	Pass

Duplicate Sample Precision Assessment Sample ID: Duplicate Sample ID:

Analytes of Interest	Sample Results	Sample 2 Sigma CSU	Duplicate Results	Duplicate 2 Sigma CSU	Numerical Indicator	% RPD	Evaluation
Bi-214					#DIV/0!	#DIV/0!	#DIV/0!
Pb-210					#DIV/0!	#DIV/0!	#DIV/0!
Pb-212					#DIV/0!	#DIV/0!	#DIV/0!
Pb-214					#DIV/0!	#DIV/0!	#DIV/0!
Ra-224					#DIV/0!	#DIV/0!	#DIV/0!
Ra-226					#DIV/0!	#DIV/0!	#DIV/0!
Ra-228					#DIV/0!	#DIV/0!	#DIV/0!
Th-228					#DIV/0!	#DIV/0!	#DIV/0!
Th-230					#DIV/0!	#DIV/0!	#DIV/0!
Th-232					#DIV/0!	#DIV/0!	#DIV/0!
U-234					#DIV/0!	#DIV/0!	#DIV/0!
U-235					#DIV/0!	#DIV/0!	#DIV/0!
U-238					#DIV/0!	#DIV/0!	#DIV/0!

Duplicate LCS Precision Assessment

Analyte	LCS Concentration	LCS 2 Sigma CSU	LCSD Concentration	LCSD 2 Sigma CSU	Numerical Indicator	Percent RPD	Precision Evaluation
Americium-241	17937.000	4597.400	18239.000	5081.600	-0.086	1.7%	Pass
Cobalt-60	3020.900	181.630	2944.000	212.480	0.539	2.6%	Pass
Cesium-137	7535.800	440.920	7449.500	503.330	0.253	1.2%	Pass

Laboratory Control Sample Assessment

	Analyte	Americium-241	Cobalt-60	Cesium-137
	Count Date	9/16/2024	9/16/2024	9/16/2024
	Reference ID	17-029Am	17-029Co	17-029Cs
Volume or Mass of Reference Geometry	Reference Concentration	24230.455	2806.710	7426.346
	Reference Uncertainty	0.018	0.025	0.028
	LCS Concentration	17937	3020.9	7535.8
	LCS 2 Sigma CSU	4597.400	181.630	440.920
	Numerical Indicator	2.68	-2.31	-0.49
	Percent Recovery	74.0%	107.6%	101.5%
	LCS Evaluation	Fail	Pass	Pass

Laboratory Control Sample Duplicate Assessment

Analyte	Americium-241	Cobalt-60	Cesium-137
Count Date	9/16/2024	9/16/2024	9/16/2024
Reference ID	17-029Am	17-029Co	17-029Cs
Reference Concentration	24230.455	2806.710	7426.346
Reference Uncertainty	0.018	0.025	0.028
LCSD Concentration	18239	2944	7449.5
LCSD 2 Sigma CSU	5081.600	212.480	503.330
Numerical Indicator	2.31	-1.27	-0.09
Percent Recovery	75.3%	104.9%	100.3%
LCSD Evaluation	Pass	Pass	Pass

Evaluation: If the sample or Duplicate sample activity is below the associated MDC, the %RPD evaluation is not applicable and the sample duplicate precision criteria is acceptable.

Comments:

WTF 9-19-24

* PARAMETER PASSES PER SOP.

NI < 3 acceptable

Assessment 9/19/20243:34 PM

9/27/24

1 of 1

JMA 9/19/24

Gamma QCC 81318.xls
Gamma Spec QC Sheet (ENV-FRM-GBUR-0330 00)

ORTEC g v - i (3263) Env32 G701W047 9/16/2024 10:32:49 AM Page 1
Pace Spectrum name: LCS81318.An1

Sample description
81318

Spectrum Filename: C:\User\Spectra\LCS81318.An1

Acquisition information
Start time: 9/16/2024 10:13:41 AM
Live time: 900
Real time: 920
Dead time: 2.14 %
Detector ID: 2

Detector system
DET 2

Calibration
Filename: DET_2_2L MAR_23-047(113023).Clb
DET 2 2L MARINELLI

Energy Calibration
Created: 11/30/2023 7:00:31 AM
Zero offset: 0.281 keV
Gain: 0.250 keV/channel
Quadratic: -1.344E-08 keV/channel^2

Efficiency Calibration
Created: 11/30/2023 7:26:21 AM
Type: Polynomial
Uncertainty: 1.699 %
Coefficients: -0.225215 -3.983441 0.474906
-0.072106 0.003754 -0.000081

Library Files
Main analysis library: Pace Master w Ra226U235 (wo PS)
Library Match Width: 0.500
Peak stripping: Library based

Analysis parameters
Analysis engine: Env32 G701W047
Start channel: 120 (30.33keV)
Stop channel: 8144 (2038.53keV)
Peak rejection level: 30.000%
Peak search sensitivity: 3
Sample Size: 2.0000E+00
Activity scaling factor: 1.0000E+06/(1.0000E+00* 2.0000E+00) =
5.0000E+05
Detection limit method: Reg. Guide 4.16 Method

WTF 9-19-24

Random error: 0.0000000E+00
Systematic error: 0.0000000E+00
Fraction Limit: 0.000%
Background width: average of three points.

JM 9/16/24

Half lives decay limit: 12.000

ORTEC g v - i (3263) Env32 G701W047 9/16/2024 10:32:49 AM Page 2
Pace Spectrum name: LCS81318.An1

Activity range factor: 2.000
Min. step backg. energy 0.000
Multiplet shift channel 2.000

Corrections	Status	Comments
Decay correct to date:	YES	9/16/2024 10:13:41 AM
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	YES	Det_2_Bkg_091324Ra226U235(2LITER 9/16/2024 9:13:41 AM
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

total peaks alloc. 0 cutoff: 0.00E+00 %
Energy Calibration
Normalized diff: 0.0438

***** S U M M A R Y O F P E A K S I N R A N G E *****

Peak Energy	Area	Uncert	FWHM	Corrctn Factor	Nuclide Energy	Brnch. Ratio	Act. pCi/L	Nuc
59.49	2928.	2.91	0.87	6.723E-03	59.54	36.300	1.794E+04	Am241
659.46	171.	27.56	1.51	2.834E-02	657.76	94.000	9.631E+01	Ag110M
					657.76	94.000	9.631E+01	Ag110M
661.73	12773.	0.94	1.49	2.824E-02	661.66	90.110	7.536E+03	Cs137
1173.30	4076.	1.69	1.84	2.038E-02	1173.24	99.974	3.002E+03	Co60
1332.59	3836.	1.65	1.94	1.894E-02	1332.50	99.986	3.040E+03	Co60

No unknown peaks passed sensitivity test.

This section based on library: Pace Master w Ra226U235 (wo PS)

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	FWHM keV
Am-241	236.48	59.49	898.	2927.	3.253	5.82	0.873
Ag-110M	2633.03	659.46	396.	171.	0.190	55.11	1.515s
Cs-137	2642.10	661.73	269.	12773.	14.193	1.88	1.488
Co-60	4686.02	1173.30	93.	4074.	4.527	3.39	1.837
Co-60	5322.57	1332.59	23.	3836.	4.262	3.31	1.940

s - Peak fails shape tests.
D - Peak area deconvoluted.
A Derived peak area.

ORTEC g v - i (3263) Env32 G701W047 9/16/2024 10:32:49 AM Page 3
Pace Spectrum name: LCS81318.An1

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

- Nuclide -	Average	Peak

Name	Code	Activity pCi/L	Energy keV	Activity pCi/L	Code	MDA Value pCi/L			COMMENTS
Be-7	C	1.7928E+02						5.34E+01	
			477.56	1.793E+02	%(P	3.923E+02	9.79E+01	1.03E+01	G K
Na-22	C	4.2507E+00						9.50E+02	
			1274.53	4.251E+00	%(	2.098E+01	2.47E+02	9.99E+01	G K
K-40	N	5.7273E+01						4.68E+11	
			1461.00	5.727E+01	%(P	1.407E+02	1.04E+02	1.07E+01	G K
Cr-51	F	-2.1017E+02						2.77E+01	
			320.08	-2.102E+02	%(	3.645E+02	7.51E+01	1.01E+01	G K
Mn-54	C	8.6651E+00						3.12E+02	
			834.85	8.665E+00	&(P	3.287E+01	1.83E+02	1.00E+02	G K
Co-56	C	3.0201E+01						7.73E+01	
			1238.28	3.020E+01	%(P	2.437E+01	4.22E+01	6.61E+01	G K
			1771.35	1.530E+01	% P	8.846E+01	2.74E+02	1.55E+01	G
Co-57	C	2.5420E+01						2.72E+02	
			122.06	2.542E+01	%(P	4.408E+01	7.21E+01	8.56E+01	G K
			136.47	0.000E+00	% P	3.363E+02	1.00E+03	1.07E+01	G
Co-58	C	2.1917E-01						7.08E+01	
			810.78	2.192E-01	&(P	3.361E+01	7.35E+03	9.94E+01	G K
Fe-59	F	-1.2562E+00						4.45E+01	
			1099.25	-1.256E+00	%(	7.629E+01	3.09E+03	5.65E+01	G K
			1291.60	0.000E+00	% P	5.327E+01	1.00E+03	4.32E+01	G
Co-60	F	3.0209E+03						1.92E+03	
			1332.50	3.040E+03	(P	2.002E+01	1.65E+00	1.00E+02	G K
			1173.24	3.002E+03	(P	3.513E+01	1.69E+00	1.00E+02	G
SE-75		7.7116E+00						1.20E+02	
			264.66	7.712E+00	&(	5.807E+01	3.22E+02	5.86E+01	G K
			136.00	5.445E+00	& P	5.925E+01	4.46E+02	5.83E+01	G
			279.54	0.000E+00	% P	1.470E+02	1.00E+03	2.48E+01	G
			121.12	1.393E+02	%	2.278E+02	6.80E+01	1.64E+01	G

Nuclide	Ave activity	Energy	Activity	Code	Peak MDA			Comments
Nb-94	I -1.6189E+01						7.41E+06	
		871.09	-1.619E+01	%(	4.062E+01	1.23E+02	9.99E+01	G K
		702.62	0.000E+00	& P	3.194E+01	1.00E+03	9.79E+01	G
Zr-95	I -3.9181E+01						6.40E+01	
		756.73	-3.918E+01	%(	6.385E+01	7.77E+01	5.45E+01	G K
		724.20	0.000E+00	% P	6.840E+01	1.00E+03	4.42E+01	G
Ag-108M	C -2.6693E+00						1.53E+05	
		722.94	-2.669E+00	%(	3.155E+01	5.48E+02	9.08E+01	G K
		614.28	2.327E+00	% P	3.853E+01	7.52E+02	8.98E+01	G
		433.94	2.536E+01	% P	4.445E+01	7.87E+01	9.05E+01	G
		79.13	-1.281E+02	%	1.036E+03	3.23E+02	6.60E+00	G

Ru-106	I	-2.0493E+02					3.73E+02		
			621.93	-2.049E+02	&	3.852E+02	8.69E+01	9.93E+00	G K
Cd-109	F	2.9506E+01					4.64E+02		
			88.03	2.951E+01	%(P	1.626E+03	2.25E+03	3.61E+00	G K
Ag-110M	F	9.6308E+01					2.50E+02		
			657.76	9.631E+01	?(P	5.380E+01	2.76E+01	9.40E+01	G K
			1505.04	1.166E+01	% P	1.249E+02	5.13E+02	1.29E+01	G
			1384.30	0.000E+00	% P	9.930E+01	1.00E+03	2.41E+01	G
			937.49	3.578E+01	%	1.298E+02	1.82E+02	3.41E+01	G
			884.68	-1.260E+01	%	5.737E+01	2.21E+02	7.22E+01	G
			763.94	0.000E+00	% P	1.563E+02	1.00E+03	2.21E+01	G
			744.28	0.000E+00	& P	6.944E+02	1.00E+03	4.70E+00	G
			706.68	1.217E+02	&	1.456E+02	5.72E+01	1.63E+01	G
Sn-113	F	-2.8091E+01					1.15E+02		
			391.69	-2.809E+01	&(	6.375E+01	1.02E+02	6.40E+01	G K
Sb-124	F	6.6973E+00					6.02E+01		
			602.73	6.697E+00	%(	3.396E+01	2.31E+02	9.78E+01	G K
			645.85	0.000E+00	% P	5.477E+02	1.00E+03	7.38E+00	G
			722.79	-2.252E+01	%	2.662E+02	5.48E+02	1.08E+01	G
			1690.98	5.460E+00	% P	2.758E+01	2.43E+02	4.73E+01	G
Sb-125	I	1.6699E+01					1.01E+03		
			427.88	1.670E+01	%(P	1.404E+02	3.73E+02	2.96E+01	G K
			176.31	5.489E+01	&	4.742E+02	3.55E+02	6.82E+00	G
			463.36	-2.167E+02	%	4.678E+02	9.69E+01	1.05E+01	G
			600.60	6.953E+01	& P	1.848E+02	1.21E+02	1.79E+01	G
			635.95	1.020E+02	% P	3.161E+02	1.47E+02	1.13E+01	G

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Te-129M	I 2.5404E+02				3.36E+01		
		695.88	2.540E+02	%(P	9.886E+02	1.82E+02	3.00E+00 G K
I-132	I -3.5862E+00				3.20E+00		
		772.60	-3.586E+00	&(	4.076E+01	5.28E+02	7.56E+01 G K
		522.65	1.115E+01	& P	2.342E+02	9.59E+02	1.60E+01 G
		630.19	-1.108E+02	&	2.897E+02	1.24E+02	1.33E+01 G
		954.55	-5.522E+01	%	2.770E+02	2.52E+02	1.76E+01 G
Te-132	I 8.4254E-01				3.20E+00		
		228.16	8.425E-01	&(	4.160E+01	2.11E+03	8.80E+01 G K
I-133	I 1.1054E+01				8.67E-01		
		529.87	1.105E+01	%(P	4.015E+01	1.66E+02	8.70E+01 G K
		875.33	8.402E+00	% P	8.486E+02	4.85E+03	4.51E+00 G
Ba-133	F -3.1809E+01				3.84E+03		
		356.02	-3.181E+01	%(	6.164E+01	8.70E+01	6.20E+01 G K
		81.00	0.000E+00	& P	2.056E+02	1.00E+03	3.41E+01 G
		302.85	0.000E+00	% P	2.045E+02	1.00E+03	1.83E+01 G
		276.40	2.398E+02	%	4.576E+02	8.24E+01	7.16E+00 G
		383.85	0.000E+00	% P	4.518E+02	1.00E+03	8.94E+00 G
Cs-136	F -1.0539E+01				1.32E+01		

			818.51	-1.054E+01	%(	3.881E+01	1.79E+02	9.97E+01 G K
			176.60	1.001E+01	&	3.253E+02	1.33E+03	1.00E+01 G
			273.65	5.726E+01	%	2.953E+02	2.21E+02	1.11E+01 G
			340.55	5.287E+01	%	7.390E+01	6.06E+01	4.22E+01 G
			1048.07	-1.123E+01	%	5.542E+01	2.47E+02	8.00E+01 G
			1235.36	3.351E+01	%	1.166E+02	1.72E+02	2.00E+01 G
Cs-137	I	7.5358E+03						1.10E+04
			661.66	7.536E+03	(	4.666E+01	9.40E-01	9.01E+01 G K
Ce-139	F	-9.4449E+00						1.38E+02
			165.85	-9.445E+00	%(	4.231E+01	1.85E+02	7.99E+01 G K
Ba-140	I	1.7673E+01						1.28E+01
			537.26	1.767E+01	&(P	1.519E+02	3.93E+02	2.44E+01 G K
			162.66	0.000E+00	% P	5.487E+02	1.00E+03	6.22E+00 G
La-140	I	-6.1614E-01						1.28E+01
			1596.21	-6.161E-01	&(	1.722E+01	1.34E+03	9.54E+01 G K
			487.02	7.138E+00	% P	8.938E+01	5.74E+02	4.55E+01 G
			815.77	9.524E+01	%	1.263E+02	6.52E+01	2.33E+01 G
			328.76	-7.718E+01	%	1.796E+02	1.00E+02	2.03E+01 G

Nuclide		Ave activity	Energy		Activity	Code	Peak	MDA	Comments
Ce-141	I	4.1973E+01							3.25E+01
			145.44	4.197E+01	%(	6.900E+01	6.84E+01	4.82E+01 G K
Ce-144	I	2.0965E+02							2.85E+02
			133.51	2.096E+02	&(	2.984E+02	5.94E+01	1.11E+01 G K
Eu-152	F	3.5124E+01							4.95E+03
			121.78	3.512E+01	%(P	1.381E+02	1.62E+02	2.84E+01 G K
			1408.01	-3.921E+00	%	7.123E+01	8.51E+02	2.09E+01 GA
			1112.12	-2.549E+01	&	3.447E+02	6.92E+02	1.36E+01 GA
			1085.91	1.516E+02	%	3.904E+02	1.29E+02	9.92E+00 GA
			964.13	1.145E+02	% P	2.990E+02	1.31E+02	1.43E+01 GA
			344.28	4.517E+01	%	1.291E+02	1.28E+02	2.66E+01 GA
			244.70	-5.030E+00	%	4.764E+02	4.05E+03	7.49E+00 GA
Eu-155	I	-6.0624E+01							1.74E+03
			86.54	-6.062E+01	%(	2.015E+02	1.34E+02	3.07E+01 G K
			105.31	-3.097E+01	%	2.142E+02	2.84E+02	2.12E+01 G
Tl-208	N	9.2298E+00							6.98E+02
			583.19	9.230E+00	%(P	3.839E+01	1.89E+02	8.45E+01 G K
			860.56	0.000E+00	& P	3.439E+02	1.00E+03	1.24E+01 G
			277.36	9.668E+01	% P	5.375E+02	2.38E+02	6.31E+00 G
Pb-210	N	-3.6441E+03							8.14E+03
			46.54	-3.644E+03	%(	4.244E+04	4.57E+02	4.25E+00 G K
Bi-212	N	2.6535E+02							6.98E+02
			727.33	2.653E+02	%(P	3.784E+01	6.76E+01	6.58E+00 G K
			1620.50	2.007E+02	% P	1.151E+03	2.86E+02	1.49E+00 G
Pb-212	N	3.9913E+01							6.98E+02
			238.63	3.991E+01	%(P	8.106E+01	8.76E+01	4.33E+01 G K
								Energy duplication

			77.11	4.141E+01	& P	3.895E+02	3.66E+02	1.75E+01 G
							Energy duplication	
			74.81	0.000E+00	% P	7.630E+02	1.00E+03	1.04E+01 G
			87.30	7.595E+00	& P	7.491E+02	3.93E+03	7.80E+00 GA
Pb-214	N	7.0227E+01					5.84E+05	
			351.99	7.023E+01	&(P	9.098E+01	5.83E+01	3.71E+01 G K
			295.22	2.610E+01	% P	1.806E+02	2.96E+02	1.92E+01 G
			241.92	0.000E+00	% P	4.873E+02	1.00E+03	7.47E+00 G
			87.20	-5.304E+01	%	1.641E+03	1.26E+03	3.70E+00 G
							Energy duplication	
			77.11	7.312E+01	& P	6.363E+02	3.39E+02	1.07E+01 G
							Energy duplication	
			74.81	0.000E+00	% P	1.254E+03	1.00E+03	6.33E+00 G

Nuclide		Ave activity	Energy			Activity	Code	Peak	MDA	Comments
Ra-223	N	4.7769E+01							7.96E+03	
			269.46	4.777E+01	%(P	2.408E+02		2.16E+02	1.37E+01	G K
			83.78	1.440E+01	% P	2.633E+02		7.47E+02	2.49E+01	G
			323.87	-6.547E+01	%	8.371E+02		5.45E+02	3.93E+00	G
			154.21	4.109E+01	&	5.911E+02		5.89E+02	5.62E+00	G
			94.90	-5.239E+01	&	4.444E+02		3.39E+02	1.13E+01	G
			81.07	0.000E+00	& P	4.528E+02		1.00E+03	1.50E+01	G
Th-230	N	-1.3696E+03							2.75E+07	
			67.67	-1.370E+03	%(	2.833E+04		8.05E+02	3.80E-01	G K
Pa-231	N	-1.4837E+02							1.20E+07	
			283.70	-1.484E+02	&(	2.122E+03		6.11E+02	1.60E+00	G K
			330.00	-1.393E+03	&	2.848E+03		8.83E+01	1.30E+00	G
Pa-234M	N	2.1443E+02							1.63E+12	
									Energy duplication	
			1001.03	2.144E+02	%(	5.022E+03		1.16E+03	8.37E-01	G
Th-232	N	8.8272E+03							4.17E+12	
			63.81	8.827E+03	%(	5.058E+04		2.24E+02	2.67E-01	G K
U-238	N	3.1068E+02							1.63E+12	
			92.59	3.107E+02	&(P	8.926E+02		1.15E+02	5.60E+00	G K
									Energy duplication	
			1001.03	2.137E+02	%	5.004E+03		1.16E+03	8.40E-01	G K
Am-241	T	1.7937E+04							1.58E+05	
			59.54	1.794E+04	(P	8.721E+02		2.91E+00	3.63E+01	G K
Pm-144	C	1.4825E+01							3.63E+02	
			696.51	1.482E+01	%(P	2.781E+01		8.87E+01	9.90E+01	G K
			618.01	-8.467E+00	&	3.743E+01		2.02E+02	9.86E+01	G
Pm-146	C	5.6841E-01							2.02E+03	
			453.88	5.684E-01	&(P	6.909E+01		5.39E+03	6.52E+01	G K
			747.16	-4.247E+01	&	1.028E+02		1.15E+02	3.40E+01	G
			735.72	0.000E+00	% P	1.358E+02		1.00E+03	2.25E+01	GA

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went

negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide failed one or more qualification tests.

+ - Peak activity higher than counting uncertainty range.
- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction
} - Peak is too close to another for the activity to be found directly.

Nuclide Codes:
T - Thermal Neutron Activation
F - Fast Neutron Activation
I - Fission Product
N - Naturally Occurring Isotope
P - Photon Reaction
C - Charged Particle Reaction
M - No MDA Calculation
R - Coincidence Corrected
H - Halflife limit exceeded

Peak Codes:
G - Gamma Ray
X - X-Ray
P - Positron Decay
S - Single-Escape
D - Double-Escape
K - Key Line
A - Not in Average
C - Coincidence Peak

- -

********** D I S C A R D E D I S O T O P E P E A K S **********

Nuclide	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	Activity	
Ag-110M	659.46	396.	171.	0.190	55.11	9.631E+01	P

P - Peakbackground subtraction

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide		Time of Count Activity pCi/L	Time Corrected Activity pCi/L	Uncertainty Counting pCi/L	2 Sigma Total pCi/L	MDA pCi/L
Be-7	#B	1.7928E+02	1.7928E+02	3.5099E+02	3.5113E+02	3.923E+02
Na-22	#B	4.2507E+00	4.2507E+00	2.0981E+01	2.0983E+01	2.098E+01
K-40	#B	5.7273E+01	5.7273E+01	1.1868E+02	1.1872E+02	1.407E+02
Sc-46	#B	0.0000E+00	0.0000E+00	7.9621E+00	7.9622E+00	4.253E+01
Cr-51	#B	-2.1017E+02	-2.1017E+02	3.1570E+02	3.1593E+02	3.645E+02
Mn-54	#B	8.6651E+00	8.6651E+00	3.1758E+01	3.1762E+01	3.287E+01
Co-56	#F	3.0201E+01	3.0201E+01	2.5481E+01	2.5535E+01	2.437E+01
Co-57	#B	2.5420E+01	2.5420E+01	3.6646E+01	3.6676E+01	4.408E+01
Co-58	#B	2.1917E-01	2.1917E-01	3.2200E+01	3.2200E+01	3.361E+01
Fe-59	#B	-1.2562E+00	-1.2562E+00	7.7717E+01	7.7717E+01	7.629E+01
Co-60		3.0209E+03	3.0209E+03	7.1535E+01	1.8163E+02	2.002E+01
Zn-65	#B	0.0000E+00	0.0000E+00	3.7743E+01	3.7743E+01	9.268E+01
SE-75	#B	7.7116E+00	7.7116E+00	4.9707E+01	4.9709E+01	5.807E+01
Kr-85	#B	0.0000E+00	0.0000E+00	4.4654E+03	4.4654E+03	1.000E+04
Y-88	#B	0.0000E+00	0.0000E+00	1.9378E+00	1.9378E+00	2.565E+01
Nb-94	#B	-1.6189E+01	-1.6189E+01	3.9693E+01	3.9704E+01	4.062E+01

Zr-95	#B	-3.9181E+01	-3.9181E+01	6.0878E+01	6.0918E+01	6.385E+01
Nb-95	#B	0.0000E+00	0.0000E+00	1.4924E+01	1.4924E+01	3.603E+01

Ru-103	#B	0.0000E+00	0.0000E+00	1.9678E+01	1.9678E+01	4.591E+01
Ag-108M	#B	-2.6693E+00	-2.6693E+00	2.9259E+01	2.9260E+01	3.155E+01
Ru-106	#B	-2.0493E+02	-2.0493E+02	3.5620E+02	3.5638E+02	3.852E+02
Cd-109	#B	2.9506E+01	2.9506E+01	1.3267E+03	1.3267E+03	1.626E+03
Ag-110M	#	9.6308E+01	9.6308E+01	5.3080E+01	5.3347E+01	5.380E+01
Sn-113	#B	-2.8091E+01	-2.8091E+01	5.7124E+01	5.7145E+01	6.375E+01
Sb-124	#B	6.6973E+00	6.6973E+00	3.0951E+01	3.0953E+01	3.396E+01
Sb-125	#B	1.6699E+01	1.6699E+01	1.2473E+02	1.2473E+02	1.404E+02
Te-129	#B	0.0000E+00	0.0000E+00	3.7068E+02	3.7068E+02	6.177E+02
Te-129M	#B	2.5404E+02	2.5404E+02	9.2396E+02	9.2407E+02	9.886E+02
I-131	#B	0.0000E+00	0.0000E+00	2.2198E+01	2.2198E+01	4.844E+01
I-132	#B	-3.5862E+00	-3.5862E+00	3.7880E+01	3.7881E+01	4.076E+01
Te-132	#B	8.4254E-01	8.4254E-01	3.5601E+01	3.5601E+01	4.160E+01
I-133	#B	1.1054E+01	1.1054E+01	3.6811E+01	3.6816E+01	4.015E+01
Ba-133	#B	-3.1809E+01	-3.1809E+01	5.5322E+01	5.5332E+01	6.164E+01
Cs-134	#B	0.0000E+00	0.0000E+00	1.4359E+01	1.4359E+01	4.176E+01
Cs-136	#B	-1.0539E+01	-1.0539E+01	3.7757E+01	3.7761E+01	3.881E+01
Cs-137		7.5358E+03	7.5358E+03	1.4174E+02	4.4092E+02	4.666E+01
Ce-139	#B	-9.4449E+00	-9.4449E+00	3.4860E+01	3.4864E+01	4.231E+01
Ba-140	#B	1.7673E+01	1.7673E+01	1.3884E+02	1.3884E+02	1.519E+02
La-140	#B	-6.1614E-01	-6.1614E-01	1.6573E+01	1.6573E+01	1.722E+01
Ce-141	#B	4.1973E+01	4.1973E+01	5.7415E+01	5.7465E+01	6.900E+01
Ce-144	#B	2.0965E+02	2.0965E+02	2.4886E+02	2.4916E+02	2.984E+02
ND-147	#B	0.0000E+00	0.0000E+00	1.4949E+02	1.4949E+02	2.855E+02
Eu-152	#B	3.5124E+01	3.5124E+01	1.1374E+02	1.1376E+02	1.381E+02
Eu-154	#B	0.0000E+00	0.0000E+00	3.3075E+01	3.3075E+01	1.034E+02
Eu-155	#B	-6.0624E+01	-6.0624E+01	1.6241E+02	1.6248E+02	2.015E+02
Lu-176	#B	0.0000E+00	0.0000E+00	1.7919E+01	1.7919E+01	4.071E+01
Ir-192	#B	0.0000E+00	0.0000E+00	1.0005E+01	1.0005E+01	3.999E+01
Hg-203	#B	0.0000E+00	0.0000E+00	9.2889E+00	9.2889E+00	4.458E+01
Tl-208	#B	9.2298E+00	9.2298E+00	3.4934E+01	3.4938E+01	3.839E+01
Pb-210	#B	-3.6441E+03	-3.6441E+03	3.3281E+04	3.3282E+04	4.244E+04
Bi-212	#B	2.6535E+02	2.6535E+02	3.5870E+02	3.5901E+02	3.784E+02
Pb-212	#B	3.9913E+01	3.9913E+01	6.9956E+01	6.9996E+01	8.106E+01
Bi-214	#B	0.0000E+00	0.0000E+00	3.2800E+01	3.2800E+01	8.576E+01
Pb-214	#B	7.0227E+01	7.0227E+01	8.1901E+01	8.1998E+01	9.098E+01
Ra-223	#B	4.7769E+01	4.7769E+01	2.0627E+02	2.0629E+02	2.408E+02
Ra-224	#B	0.0000E+00	0.0000E+00	1.9516E+02	1.9517E+02	9.491E+02
Ra-226	#B	0.0000E+00	0.0000E+00	3.7294E+02	3.7294E+02	1.042E+03
Ac-227	#B	0.0000E+00	0.0000E+00	6.7846E+01	6.7846E+01	3.037E+02
Ac-228	#B	0.0000E+00	0.0000E+00	8.0855E+01	8.0856E+01	1.532E+02
Th-228	#B	0.0000E+00	0.0000E+00	1.8966E+03	1.8966E+03	5.196E+03
Th-230	#B	-1.3696E+03	-1.3696E+03	2.2047E+04	2.2048E+04	2.833E+04
Pa-231	#B	-1.4837E+02	-1.4837E+02	1.8123E+03	1.8124E+03	2.122E+03
Pa-234M	#A	2.1443E+02	2.1443E+02	4.9863E+03	4.9863E+03	5.022E+03
Th-232	#B	8.8272E+03	8.8272E+03	3.9561E+04	3.9607E+04	5.058E+04
Th-234	#B	0.0000E+00	0.0000E+00	1.5317E+03	1.5318E+03	3.018E+03
U-235	#B	0.0000E+00	0.0000E+00	1.5806E+02	1.5806E+02	3.385E+02
U-238	#B	3.1068E+02	3.1068E+02	7.1571E+02	7.1601E+02	8.926E+02

Am-241		1.7937E+04	1.7937E+04	1.0445E+03	4.5974E+03	8.721E+02
Am-243	#B	0.0000E+00	0.0000E+00	3.5430E+01	3.5430E+01	1.170E+02

Pm-144 #B	1.4825E+01	1.4825E+01	2.6312E+01	2.6325E+01	2.781E+01
Pm-146 #B	5.6841E-01	5.6841E-01	6.1296E+01	6.1296E+01	6.909E+01

- All peaks for activity calculation had bad shape.
* - Activity omitted from total
& - Activity omitted from total and all peaks had bad shape.
< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

---------- S U M M A R Y ----------

Total Activity (30.3 to 2038.5 keV) 2.849E+04 pCi/L
Total Decayed Activity (30.3 to 2038.5 keV) 2.8494211E+04 pCi/L

The library has energies which are not separable.

Analyzed by: _____
Operator

Reviewed by: _____
Supervisor

Laboratory: Pace

ORTEC g v - i (3263) Env32 G701W047 9/16/2024 10:51:10 AM Page 1
PACE Spectrum name: LCSD81318.An1

Sample description
81318

Spectrum Filename: C:\User\LCSD81318.An1

Acquisition information
Start time: 9/16/2024 10:31:22 AM
Live time: 900
Real time: 936
Dead time: 3.84 %
Detector ID: 5

Detector system
DET 5

Calibration
Filename: DET_5_2L_MAR_23-047(021924).Clb
DET_5_2L_MAR_23-047(021924)

Energy Calibration
Created: 2/23/2024 11:14:34 AM
Zero offset: 0.513 keV
Gain: 0.250 keV/channel
Quadratic: -4.543E-10 keV/channel^2

Efficiency Calibration
Created: 2/23/2024 11:15:45 AM
Type: Polynomial
Uncertainty: 1.566 %
Coefficients: -0.317713 -4.992960 0.533353
-0.071649 0.003819 -0.000077

Library Files
Main analysis library: Pace Master w Ra226U235 (wo PS)
Library Match Width: 0.500
Peak stripping: Library based

Analysis parameters
Analysis engine: Env32 G701W047
Start channel: 120 (30.51keV)
Stop channel: 8144 (2036.02keV)
Peak rejection level: 30.000%
Peak search sensitivity: 3
Sample Size: 2.0000E+00
Activity scaling factor: 1.0000E+06/(1.0000E+00* 2.0000E+00) =
5.0000E+05
Detection limit method: Reg. Guide 4.16 Method

Random error: 1.0000000E+00
Systematic error: 1.0000000E+00
Fraction Limit: 0.000%
Background width: average of three points.

Half lives decay limit: 12.000

WTF 9-19-24

Jm 9/16/24

Activity range factor: 2.000
Min. step backg. energy 0.000
Multiplet shift channel 2.000

Corrections	Status	Comments
Decay correct to date:	YES	9/16/2024 10:31:22 AM
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	YES	Det_5_Bkg_091324Ra226U235(2L).Pb 9/16/2024 9:21:01 AM
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

total peaks alloc. 0 cutoff: 0.00E+00 %
Energy Calibration
Normalized diff: 0.0346

***** S U M M A R Y O F P E A K S I N R A N G E *****

Peak Energy	Area	Uncert	FWHM	Corrctn Factor	Nuclide Energy	Brnch. Ratio	Act. pCi/L	Nuc
59.47	5888.	2.06	1.40	1.333E-02	59.54	36.300	1.824E+04	Am241
					61.23	12.150	5.204E+04	Sm145
661.69	4734.	1.54	1.81	1.059E-02	661.66	90.110	7.449E+03	Cs137
1173.32	1373.	2.77	1.56	7.007E-03	1173.24	99.974	2.943E+03	Co60
1332.55	1251.	2.88	1.75	6.378E-03	1332.50	99.986	2.945E+03	Co60

No unknown peaks passed sensitivity test.

This section based on library: Pace Master w Ra226U235 (wo PS)

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	FWHM keV
Am-241	235.88	59.47	1563.	5888.	6.542	4.13	1.400
Sm-145	239.25	60.31	256.	566.	0.629	14.63	1.314s
Cs-137	2645.34	661.69	80.	4734.	5.260	3.08	1.808
Co-60	4692.36	1173.32	13.	1373.	1.526	5.53	1.562
Co-60	5329.41	1332.55	7.	1251.	1.390	5.77	1.748

s - Peak fails shape tests.
D - Peak area deconvoluted.
A Derived peak area.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

- Nuclide - Name	Code	Average Activity	Peak Energy	Activity Code	MDA Value

		pCi/L	keV	pCi/L	pCi/L		COMMENTS
Be-7	C	-1.0293E+02				5.34E+01	
			477.56	-1.029E+02 %(	8.474E+02	3.89E+02 1.03E+01	G K
Na-22	C	1.8115E+00				9.50E+02	
			1274.53	1.812E+00 %(P	3.263E+01	7.77E+02 9.99E+01	G K
Sc-46	F	3.9026E+01				8.38E+01	
			889.28	3.903E+01 %(P	7.006E+01	8.89E+01 1.00E+02	G K
Cr-51	F	2.9966E+02				2.77E+01	
			320.08	2.997E+02 %(	5.831E+02	8.98E+01 1.01E+01	G K
Mn-54	C	1.8731E+01				3.12E+02	
			834.85	1.873E+01 &(	6.651E+01	1.74E+02 1.00E+02	G K
Co-56	C	1.7925E+01				7.73E+01	
			1238.28	1.793E+01 %(P	4.664E+01	1.22E+02 6.61E+01	G K
			1771.35	0.000E+00 % P	2.738E+02	1.00E+03 1.55E+01	G
Co-57	C	-4.3029E+01				2.72E+02	
			122.06	-4.303E+01 &(	7.016E+01	7.33E+01 8.56E+01	G K
			136.47	-2.660E+02 %	5.667E+02	9.89E+01 1.07E+01	G
Co-58	C	1.7063E+01				7.08E+01	
			810.78	1.706E+01 %(	6.777E+01	1.95E+02 9.94E+01	G K
Fe-59	F	-5.8478E+01				4.45E+01	
			1099.25	-5.848E+01 %(	1.768E+02	1.54E+02 5.65E+01	G K
			1291.60	0.000E+00 %	1.152E+02	1.00E+03 4.32E+01	G
Co-60	F	2.9440E+03				1.92E+03	
			1332.50	2.945E+03 (P	3.562E+01	2.89E+00 1.00E+02	G K
			1173.24	2.943E+03 (	4.182E+01	2.77E+00 1.00E+02	G
Zn-65	F	1.1703E+02				2.44E+02	
			1115.55	1.170E+02 &(	1.334E+02	5.87E+01 5.06E+01	G K
Kr-85	I	7.9083E+03				3.93E+03	
			514.01	7.908E+03 %(P	1.559E+04	9.31E+01 4.30E-01	G K

Nuclide		Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Nb-94	I	7.4419E+01					7.41E+06	
			871.09	7.442E+01 %(	4.812E+01	3.39E+01	9.99E+01	G K
			702.62	0.000E+00 %	6.577E+01	1.00E+03	9.79E+01	G
Zr-95	I	4.7824E-01					6.40E+01	
			756.73	4.782E-01 %(	1.138E+02	1.15E+04	5.45E+01	G K
			724.20	6.855E+01 %	1.051E+02	7.38E+01	4.42E+01	G
Ru-103	I	6.1981E+01					3.93E+01	
			497.08	6.198E+01 &(P	6.948E+01	5.38E+01	9.10E+01	G K
Ag-108M	C	-3.0807E+01					1.53E+05	
			722.94	-3.081E+01 %(	7.238E+01	1.13E+02	9.08E+01	G K
			614.28	1.122E+01 &	7.799E+01	3.34E+02	8.98E+01	G

			433.94	6.698E+01	%	P	7.646E+01	5.50E+01	9.05E+01 G
			79.13	0.000E+00	%	P	1.076E+03	1.00E+03	6.60E+00 G
Ru-106	I	-1.3650E+02							3.73E+02
			621.93	-1.365E+02	%(		6.699E+02	2.35E+02	9.93E+00 G K
Cd-109	F	9.1814E+02							4.64E+02
			88.03	9.181E+02	&(	P	1.677E+03	8.16E+01	3.61E+00 G K
Ag-110M	F	6.0552E+01							2.50E+02
			657.76	6.055E+01	%(	P	6.537E+01	5.33E+01	9.40E+01 G K
			1505.04	9.785E+01	%	P	1.469E+02	4.68E+01	1.29E+01 G
			1384.30	0.000E+00	%	P	2.214E+02	1.00E+03	2.41E+01 G
			937.49	4.407E+01	%	P	2.592E+02	2.90E+02	3.41E+01 G
			884.68	-1.776E+01	%		1.229E+02	3.42E+02	7.22E+01 G
			763.94	-3.198E+01	%		3.012E+02	4.59E+02	2.21E+01 G
			744.28	3.364E+02	%	P	1.212E+03	1.75E+02	4.70E+00 G
			706.68	0.000E+00	%	P	3.638E+02	1.00E+03	1.63E+01 G
Sn-113	F	-3.8175E+01							1.15E+02
			391.69	-3.817E+01	%(		1.169E+02	1.46E+02	6.40E+01 G K
Sb-124	F	1.7294E+01							6.02E+01
			602.73	1.729E+01	%(	P	6.056E+01	1.68E+02	9.78E+01 G K
			645.85	4.367E+02	%	P	7.759E+02	8.60E+01	7.38E+00 G
			722.79	-2.740E+02	%		6.107E+02	1.08E+02	1.08E+01 G
			1690.98	-6.981E+00	%		8.546E+01	5.77E+02	4.73E+01 G
Sb-125	I	-1.7614E+02							1.01E+03
			427.88	-1.761E+02	%(		2.740E+02	7.46E+01	2.96E+01 G K
			176.31	0.000E+00	%	P	8.351E+02	1.00E+03	6.82E+00 G
			463.36	0.000E+00	%	P	8.729E+02	1.00E+03	1.05E+01 G
			600.60	3.342E+01	%	P	3.472E+02	4.94E+02	1.79E+01 G

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
		635.95	7.925E+01	%	5.584E+02	3.36E+02	1.13E+01 G
Te-129	I -1.9724E+02						3.36E+01
		459.60	-1.972E+02	&(	1.222E+03	2.94E+02	7.70E+00 G K
		487.39	0.000E+00	&	P 5.367E+03	1.00E+03	1.42E+00 G
I-131	I 1.3671E+01						8.02E+00
		364.49	1.367E+01	&(	P 8.287E+01	2.86E+02	8.17E+01 G K
		636.99	0.000E+00	%	P 1.161E+03	1.00E+03	7.17E+00 G
		284.30	7.749E+01	%	1.014E+03	5.98E+02	6.14E+00 G
I-132	I 1.7565E+01						3.20E+00
		772.60	1.757E+01	%(	P 8.368E+01	2.32E+02	7.56E+01 G K
		522.65	-1.752E+02	&	4.631E+02	1.25E+02	1.60E+01 G
		630.19	1.927E+02	%	P 4.602E+02	1.15E+02	1.33E+01 G
		954.55	4.895E+01	&	5.325E+02	5.36E+02	1.76E+01 G
Te-132	I 2.1081E+01						3.20E+00
		228.16	2.108E+01	%(	6.959E+01	1.52E+02	8.80E+01 G K
I-133	I 1.1886E+01						8.67E-01
		529.87	1.189E+01	%(	P 7.718E+01	3.03E+02	8.70E+01 G K
		875.33	0.000E+00	%	P 1.687E+03	1.00E+03	4.51E+00 G

Ba-133	F	1.2330E+01					3.84E+03			
			356.02	1.233E+01	%(	1.081E+02	4.14E+02	6.20E+01	G	K
			81.00	4.167E+01	&	1.868E+02	1.99E+02	3.41E+01	G	
			302.85	-6.948E+01	%	3.540E+02	2.34E+02	1.83E+01	G	
			276.40	-2.644E+02	%	8.810E+02	1.53E+02	7.16E+00	G	
			383.85	-7.087E+00	&	8.377E+02	5.57E+03	8.94E+00	G	
Cs-137	I	7.4495E+03					1.10E+04			
			661.66	7.449E+03	(	6.992E+01	1.54E+00	9.01E+01	G	K
Ce-139	F	3.6590E+01					1.38E+02			
			165.85	3.659E+01	&(P	6.449E+01	8.18E+01	7.99E+01	G	K
Ba-140	I	-2.2462E+01					1.28E+01			
			537.26	-2.246E+01	%(	2.883E+02	6.17E+02	2.44E+01	G	K
			162.66	0.000E+00	% P	9.191E+02	1.00E+03	6.22E+00	G	
Ce-144	I	1.2424E+02					2.85E+02			
			133.51	1.242E+02	%(P	4.937E+02	1.83E+02	1.11E+01	G	K
Eu-152	F	-1.0143E+02					4.95E+03			
			121.78	-1.014E+02	%(	2.081E+02	9.19E+01	2.84E+01	G	K
			1408.01	4.703E+01	%	8.665E+01	5.00E+01	2.09E+01	GA	
			1112.12	-4.386E+02	%	8.139E+02	9.57E+01	1.36E+01	GA	

Nuclide	Ave activity	Energy	Activity	Code	Peak	MDA	Comments
		1085.91	-3.403E+00 %		8.352E+02	1.22E+04	9.92E+00 GA
		964.13	0.000E+00 % P		7.111E+02	1.00E+03	1.43E+01 GA
		344.28	1.209E+02 % P		2.247E+02	8.85E+01	2.66E+01 GA
		244.70	-2.038E+02 %		8.214E+02	1.85E+02	7.49E+00 GA
Eu-154	I 3.8748E+01					3.14E+03	
		123.07	3.875E+01 %(P		1.286E+02	1.48E+02	4.06E+01 G K
		1274.44	4.418E+01 % P		4.795E+01	4.01E+01	3.50E+01 G
		1004.72	1.711E+02 %		4.214E+02	1.25E+02	1.79E+01 G
		996.26	4.178E+02 & P		7.732E+02	9.40E+01	1.05E+01 G
		873.19	0.000E+00 & P		7.370E+02	1.00E+03	1.22E+01 G
		723.30	1.504E+01 &		2.779E+02	8.65E+02	2.01E+01 GA
		247.93	4.845E+02 & P		8.512E+02	8.15E+01	6.91E+00 G
Eu-155	I 6.3521E+01					1.74E+03	
		86.54	6.352E+01 %(P		2.085E+02	1.46E+02	3.07E+01 G K
		105.31	0.000E+00 % P		2.697E+02	1.00E+03	2.12E+01 G
Lu-176	N -8.1996E+00					1.38E+13	
		306.78	-8.200E+00 %(		6.775E+01	3.78E+02	9.40E+01 G K
		201.83	-3.006E+01 %		7.525E+01	1.16E+02	8.65E+01 G
Ir-192	F 2.2468E+01					7.38E+01	
		316.51	2.247E+01 &(P		7.166E+01	1.46E+02	8.28E+01 G K
		468.07	-5.172E+01 &		1.879E+02	1.73E+02	4.78E+01 G
		308.46	5.429E+01 %		1.992E+02	1.68E+02	3.00E+01 G
		295.96	4.420E+01 %		2.027E+02	2.10E+02	2.87E+01 GA
Hg-203	F 2.2926E+01					4.66E+01	
		279.20	2.293E+01 %(P		7.034E+01	1.41E+02	8.15E+01 G K
U-236	I 4.2796E+05					8.55E+09	
		49.46	4.280E+05 %(		4.654E+05	4.94E+01	7.80E-02 G K

			112.79	0.000E+00	% P	3.091E+05	1.00E+03	1.90E-02	G
			171.15	3.345E+07	% P	8.425E+07	1.16E+02	6.20E-05	G
Sm-145	I	5.0075E+03						3.40E+02	
			61.23	5.008E+03	?(	6.824E+02	7.31E+00	1.21E+01	G K
			431.40	6.603E+07	&	1.352E+08	9.75E+01	5.20E-05	G
Cd-113M	I	3.0178E+01						5.15E+03	
			263.70	3.018E+01	%(	5.655E+01	8.67E+01	1.00E+02	G K
Bi-212	N	2.0074E+02						6.98E+02	
			727.33	2.007E+02	%(P	8.908E+02	2.10E+02	6.58E+00	G K
			1620.50	0.000E+00	% P	3.459E+03	1.00E+03	1.49E+00	G

Nuclide		Ave activity	Energy	Activity	Code	Peak	MDA	Comments
Pb-214	N	8.5407E+01						5.84E+05
			351.99	8.541E+01	%(P	1.696E+02	9.37E+01	3.71E+01 G K
			295.22	0.000E+00	% P	3.117E+02	1.00E+03	1.92E+01 G
			241.92	6.141E+01	% P	8.072E+02	6.01E+02	7.47E+00 G
			87.20	0.000E+00	% P	1.910E+03	1.00E+03	3.70E+00 G
								Energy duplication
			77.11	0.000E+00	% P	7.197E+02	1.00E+03	1.07E+01 G
								Energy duplication
			74.81	0.000E+00	% P	1.166E+03	1.00E+03	6.33E+00 G
Ra-224	N	6.5985E+02						6.98E+02
			241.00	6.598E+02	&(	1.483E+03	1.04E+02	3.90E+00 G K
Ac-227	N	1.3847E+01						7.95E+03
			235.97	1.385E+01	%(P	4.988E+02	1.65E+03	1.23E+01 G K
			256.25	1.447E+02	%	8.609E+02	2.73E+02	7.00E+00 G
			300.00	7.376E+01	% P	2.679E+03	1.65E+03	2.30E+00 G
			329.85	1.437E+03	&	2.231E+03	7.43E+01	2.70E+00 G
Th-230	N	5.1980E+03						2.75E+07
			67.67	5.198E+03	&(	1.997E+04	1.70E+02	3.80E-01 G K
Pa-231	N	9.7115E+02						1.20E+07
			283.70	9.711E+02	&(	3.727E+03	1.76E+02	1.60E+00 G K
			330.00	2.712E+03	%	4.679E+03	8.24E+01	1.30E+00 G
Pa-234M	N	1.0827E+04						1.63E+12
								Energy duplication
			1001.03	1.083E+04	%(P	7.049E+03	3.47E+01	8.37E-01 G
U-235	N	3.5966E+02						2.57E+11
			143.76	3.597E+02	&(	4.658E+02	6.04E+01	1.10E+01 G K
			205.31	-4.494E+02	%	1.330E+03	1.37E+02	5.01E+00 G
			89.95	-8.984E+02	%	1.888E+03	9.41E+01	3.56E+00 GA
Am-241	T	1.8239E+04						1.58E+05
			59.54	1.824E+04	(	5.792E+02	2.06E+00	3.63E+01 G K
Am-243	T	8.7177E+00						2.69E+06
			74.66	8.718E+00	%(	1.064E+02	5.39E+02	6.82E+01 G K
Pm-144	C	5.1723E+01						3.63E+02
			696.51	5.172E+01	%(P	4.572E+01	4.39E+01	9.90E+01 G K

618.01 4.379E+01 & 6.110E+01 6.83E+01 9.86E+01 G

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went
negative during deconvolution.

? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide
failed one or more qualification tests.
+ - Peak activity higher than counting uncertainty range.
- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the
library energy centroid for positive identification.
P - Peakbackground subtraction
} - Peak is too close to another for the activity
to be found directly.

Nuclide Codes:
T - Thermal Neutron Activation
F - Fast Neutron Activation
I - Fission Product
N - Naturally Occurring Isotope
P - Photon Reaction
C - Charged Particle Reaction
M - No MDA Calculation
R - Coincidence Corrected
H - Halflife limit exceeded

Peak Codes:
G - Gamma Ray
X - X-Ray
P - Positron Decay
S - Single-Escape
D - Double-Escape
K - Key Line
A - Not in Average
C - Coincidence Peak

- -

********** D I S C A R D E D I S O T O P E P E A K S **********

Nuclide	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	Activity
Sm-145	60.31	256.	566.	0.629	14.63	5.008E+03

P - Peakbackground subtraction

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide		Time of Count Activity pCi/L	Time Corrected Activity pCi/L	Uncertainty Counting pCi/L	2 Sigma Total pCi/L	MDA pCi/L
Be-7	#B	-1.0293E+02	-1.0293E+02	8.0082E+02	8.0085E+02	8.474E+02
Na-22	#B	1.8115E+00	1.8115E+00	2.8134E+01	2.8134E+01	3.263E+01
K-40	#B	0.0000E+00	0.0000E+00	4.7305E+01	4.7305E+01	3.734E+02
Sc-46	B	3.9026E+01	3.9026E+01	6.9388E+01	6.9429E+01	7.006E+01
Cr-51	#B	2.9966E+02	2.9966E+02	5.3829E+02	5.3868E+02	5.831E+02
Mn-54	#B	1.8731E+01	1.8731E+01	6.5200E+01	6.5210E+01	6.651E+01
Co-56	#B	1.7925E+01	1.7925E+01	4.3573E+01	4.3586E+01	4.664E+01
Co-57	#B	-4.3029E+01	-4.3029E+01	6.3082E+01	6.3140E+01	7.016E+01
Co-58	#B	1.7063E+01	1.7063E+01	6.6468E+01	6.6476E+01	6.777E+01
Fe-59	#B	-5.8478E+01	-5.8478E+01	1.8036E+02	1.8039E+02	1.768E+02
Co-60		2.9440E+03	2.9440E+03	1.1768E+02	2.1248E+02	3.562E+01

Zn-65	#B	1.1703E+02	1.1703E+02	1.3748E+02	1.3767E+02	1.334E+02
SE-75	#B	0.0000E+00	0.0000E+00	5.8613E+01	5.8613E+01	1.119E+02

Kr-85	#B	7.9083E+03	7.9083E+03	1.4722E+04	1.4730E+04	1.559E+04
Y-88	#B	0.0000E+00	0.0000E+00	6.1039E+00	6.1040E+00	2.249E+01
Nb-94	#F	7.4419E+01	7.4419E+01	5.0418E+01	5.0621E+01	4.812E+01
Zr-95	#B	4.7824E-01	4.7824E-01	1.0989E+02	1.0989E+02	1.138E+02
Nb-95	#B	0.0000E+00	0.0000E+00	3.6832E+01	3.6832E+01	6.912E+01
Ru-103	#B	6.1981E+01	6.1981E+01	6.6706E+01	6.6813E+01	6.948E+01
Ag-108M	#B	-3.0807E+01	-3.0807E+01	6.9801E+01	6.9825E+01	7.238E+01
Ru-106	#B	-1.3650E+02	-1.3650E+02	6.4287E+02	6.4292E+02	6.699E+02
Cd-109	#B	9.1814E+02	9.1814E+02	1.4987E+03	1.5004E+03	1.677E+03
Ag-110M	#B	6.0552E+01	6.0552E+01	6.4556E+01	6.4659E+01	6.537E+01
Sn-113	#B	-3.8175E+01	-3.8175E+01	1.1115E+02	1.1117E+02	1.169E+02
Sb-124	#B	1.7294E+01	1.7294E+01	5.8067E+01	5.8077E+01	6.056E+01
Sb-125	#B	-1.7614E+02	-1.7614E+02	2.6278E+02	2.6301E+02	2.740E+02
Te-129	#B	-1.9724E+02	-1.9724E+02	1.1594E+03	1.1595E+03	1.222E+03
Te-129M	#B	0.0000E+00	0.0000E+00	6.6506E+02	6.6507E+02	2.074E+03
I-131	#B	1.3671E+01	1.3671E+01	7.8245E+01	7.8250E+01	8.287E+01
I-132	#B	1.7565E+01	1.7565E+01	8.1453E+01	8.1460E+01	8.368E+01
Te-132	#B	2.1081E+01	2.1081E+01	6.4194E+01	6.4211E+01	6.959E+01
I-133	#B	1.1886E+01	1.1886E+01	7.2070E+01	7.2073E+01	7.718E+01
Ba-133	#B	1.2330E+01	1.2330E+01	1.0198E+02	1.0198E+02	1.081E+02
Cs-134	#B	0.0000E+00	0.0000E+00	2.1435E+01	2.1435E+01	8.298E+01
Cs-136	#B	0.0000E+00	0.0000E+00	8.1245E+00	8.1245E+00	5.862E+01
Cs-137		7.4495E+03	7.4495E+03	2.2931E+02	5.0333E+02	6.992E+01
Ce-139	#B	3.6590E+01	3.6590E+01	5.9843E+01	5.9888E+01	6.449E+01
Ba-140	#B	-2.2462E+01	-2.2462E+01	2.7733E+02	2.7734E+02	2.883E+02
La-140	#B	0.0000E+00	0.0000E+00	5.6672E+00	5.6672E+00	3.999E+01
Ce-141	#B	0.0000E+00	0.0000E+00	4.3806E+01	4.3806E+01	1.126E+02
Ce-144	#B	1.2424E+02	1.2424E+02	4.5476E+02	4.5483E+02	4.937E+02
ND-147	#B	0.0000E+00	0.0000E+00	1.5382E+02	1.5382E+02	5.702E+02
Eu-152	#B	-1.0143E+02	-1.0143E+02	1.8643E+02	1.8654E+02	2.081E+02
Eu-154	#B	3.8748E+01	3.8748E+01	1.1436E+02	1.1439E+02	1.286E+02
Eu-155	#B	6.3521E+01	6.3521E+01	1.8539E+02	1.8546E+02	2.085E+02
Lu-176	#B	-8.1996E+00	-8.1996E+00	6.1950E+01	6.1953E+01	6.775E+01
Ir-192	#B	2.2468E+01	2.2468E+01	6.5754E+01	6.5772E+01	7.166E+01
Hg-203	#B	2.2926E+01	2.2926E+01	6.4659E+01	6.4679E+01	7.034E+01
Tl-208	#B	0.0000E+00	0.0000E+00	1.1452E+01	1.1452E+01	7.627E+01
U-236	#B	4.2796E+05	4.2796E+05	4.2264E+05	4.3066E+05	4.654E+05
Sm-145	#	5.0075E+03	5.0075E+03	7.3239E+02	1.5026E+03	6.824E+02
Cd-113M	#B	3.0178E+01	3.0178E+01	5.2333E+01	5.2376E+01	5.655E+01
I-129	#	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.000E+00
Pb-210	#B	0.0000E+00	0.0000E+00	4.8522E+03	4.8523E+03	1.130E+04
Bi-212	#B	2.0074E+02	2.0074E+02	8.4148E+02	8.4157E+02	8.908E+02
Pb-212	#B	0.0000E+00	0.0000E+00	7.0028E+01	7.0029E+01	1.552E+02
Bi-214	#B	0.0000E+00	0.0000E+00	6.8490E+01	6.8490E+01	1.557E+02
Pb-214	#B	8.5407E+01	8.5407E+01	1.6006E+02	1.6016E+02	1.696E+02
Ra-223	#B	0.0000E+00	0.0000E+00	1.8285E+02	1.8285E+02	4.377E+02
Ra-224	#B	6.5985E+02	6.5985E+02	1.3706E+03	1.3714E+03	1.483E+03
Ra-226	#B	0.0000E+00	0.0000E+00	8.5848E+02	8.5849E+02	1.739E+03
Ac-227	#B	1.3847E+01	1.3847E+01	4.5661E+02	4.5661E+02	4.988E+02

Ac-228	#B	0.0000E+00	0.0000E+00	5.6962E+01	5.6962E+01	3.140E+02
Th-228	#B	0.0000E+00	0.0000E+00	2.2171E+03	2.2171E+03	5.209E+03

Th-230 #B	5.1980E+03	5.1980E+03	1.7718E+04	1.7749E+04	1.997E+04
Pa-231 #B	9.7115E+02	9.7115E+02	3.4208E+03	3.4215E+03	3.727E+03
Pa-234M	1.0827E+04	1.0827E+04	7.5220E+03	7.5508E+03	7.049E+03
Th-232 #B	0.0000E+00	0.0000E+00	1.1137E+04	1.1138E+04	3.531E+04
Th-234 #B	0.0000E+00	0.0000E+00	3.3018E+02	3.3020E+02	2.703E+03
U-235 #B	3.5966E+02	3.5966E+02	4.3462E+02	4.3518E+02	4.658E+02
U-238 #B	0.0000E+00	0.0000E+00	5.5483E+02	5.5484E+02	1.102E+03
Am-241	1.8239E+04	1.8239E+04	7.5237E+02	5.0816E+03	5.792E+02
Am-243 #B	8.7177E+00	8.7177E+00	9.4008E+01	9.4016E+01	1.064E+02
Pm-144 #F	5.1723E+01	5.1723E+01	4.5455E+01	4.5561E+01	4.572E+01
Pm-146 #B	0.0000E+00	0.0000E+00	2.4227E+01	2.4228E+01	1.376E+02

- All peaks for activity calculation had bad shape.
* - Activity omitted from total
& - Activity omitted from total and all peaks had bad shape.
< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

---------- S U M M A R Y ----------

Total Activity (30.5 to 2036.0 keV) 2.863E+04 pCi/L
Total Decayed Activity (30.5 to 2036.0 keV) 2.8632262E+04 pCi/L

The library has energies which are not separable.

Analyzed by: _____
Operator

Reviewed by: _____
Supervisor

Laboratory: PACE

Gamma Spectroscopy Calibrations

Calibration Data from file: DET_2_2L MAR_23-047(113023).Clb
Energy Calibration Date: 11/30/2023 Time: 7:00:31 AM
Efficiency Calibration Date: 11/30/2023 Time: 7:26:21 AM

Calibration Description:
DET 2 2L MARINELLI

Energy Calibration Fit
Energy = 0.2813 +0.250385*Channel -1.34366e-008*Channel**2
FWHM (ch) = 3.5594 +0.001017*Channel -2.59325e-008*Channel**2

Energy/FWHM Table

Channel	Energy(keV)	Fit(keV)	Delta	FWHM(keV)	Fit(keV)	Delta
184.88	46.52	46.57	-0.11%	0.91	0.94	-3.26%
350.39	88.03	88.01	0.03%	0.99	0.98	0.81%
486.32	122.07	122.05	0.02%	1.02	1.01	1.12%
661.12	165.85	165.81	0.02%	1.05	1.06	-0.42%
1277.37	320.08	320.09	-0.00%	1.24	1.21	2.95%
1563.50	391.69	391.73	-0.01%	1.26	1.27	-0.96%
2051.87	514.00	513.98	0.00%	1.39	1.39	-0.05%
2641.85	661.66	661.67	-0.00%	1.51	1.52	-0.31%
3586.17	898.02	898.03	-0.00%	1.72	1.72	-0.10%
4685.71	1173.24	1173.22	0.00%	1.95	1.94	0.40%
5322.18	1332.50	1332.50	0.00%	2.04	2.06	-0.82%
7334.52	1836.01	1836.01	-0.00%	2.41	2.41	0.26%

Efficiency Calibration Fit
Polynomial Uncertainty = 1.6991 %
Coefficients:
-0.225215 -3.983441 0.474906 -0.072106 0.003754 -0.000081

Efficiency Table

Energy	Efficiency	Fit	Delta
46.52	8.6798E-004	8.6775E-004	0.03%
88.03	2.3221E-002	2.3411E-002	-0.82%
122.07	3.8890E-002	3.8415E-002	1.22%
165.85	4.5919E-002	4.6765E-002	-1.84%
320.08	4.3037E-002	4.2052E-002	2.29%
391.69	3.7313E-002	3.8001E-002	-1.84%
514.00	3.3047E-002	3.2657E-002	1.18%
661.66	2.9791E-002	2.8244E-002	5.19%
898.02	2.3481E-002	2.3725E-002	-1.04%
1173.24	2.0311E-002	2.0384E-002	-0.36%
1332.50	1.7993E-002	1.8946E-002	-5.30%
1836.01	1.5994E-002	1.5622E-002	2.33%

11/30/23

Calibration Certificate Table

Isotope	Energy	Pct	Halflife	Activity	GPS	Error	Date & Time
PB-210	46.52	4.00	8.12E+003	17184.00	687.34	3.10%	4/1/2023 12:00:00 PM
CD-109	88.03	3.61	4.63E+002	17312.00	624.95	2.80%	4/1/2023 12:00:00 PM
CO-57	122.07	85.60	2.72E+002	390.53	334.29	1.70%	4/1/2023 12:00:00 PM
CE-139	165.85	79.95	1.38E+002	578.39	462.42	2.00%	4/1/2023 12:00:00 PM
CR-51	320.08	10.00	2.77E+001	16740.00	1673.96	2.10%	4/1/2023 12:00:00 PM
SN-113	391.69	64.16	1.15E+002	1014.40	650.82	2.60%	4/1/2023 12:00:00 PM
SR-85	514.00	96.00	6.48E+001	1364.90	1310.26	2.10%	4/1/2023 12:00:00 PM
CS-137	661.66	85.21	1.10E+004	487.44	415.35	2.80%	4/1/2023 12:00:00 PM
Y-88	898.02	95.00	1.07E+002	1680.90	1596.86	2.20%	4/1/2023 12:00:00 PM
Y-88	1836.01	99.35	1.07E+002	1701.80	1690.70	2.20%	4/1/2023 12:00:00 PM
CO-60	1173.24	99.90	1.93E+003	780.44	779.66	2.50%	4/1/2023 12:00:00 PM
CO-60	1332.50	99.98	1.93E+003	780.81	780.67	2.50%	4/1/2023 12:00:00 PM

BSS 11-30-23

SRM:	126583		Reference Date	
Geometry:	***2.0L Marinelli***		4/1/2023 12:00	
Cal Standard ID:	**23-047**			
Total SRM Mass (g)	Source Mass (g)	% of Total		
5.3022	2.6896	0.507261137		

Source ID	Standard Mass (g)	Total Mass of Primary (g)	Radionuclide	Energy (keV)	Total Source Gammas	Certificate Unc (%)	Cal Source GPS
23-047	2.6896	5.3022	Pb-210	46.5	1355	3.1	687.34
23-047	2.6896	5.3022	Cd-109	88.0	1232	2.8	624.95
23-047	2.6896	5.3022	Co-57	122.1	659	1.7	334.29
23-047	2.6896	5.3022	Ce-139	165.9	911.6	2.0	462.42
23-047	2.6896	5.3022	Cr-51	320.1	3300	2.1	1673.96
23-047	2.6896	5.3022	Sn-113	391.7	1283	2.6	650.82
23-047	2.6896	5.3022	Sr-85	514.0	2583	2.1	1310.26
23-047	2.6896	5.3022	Cs-137	661.7	818.8	2.8	415.35
23-047	2.6896	5.3022	Y-88	898.0	3148	2.2	1596.86
23-047	2.6896	5.3022	Y-88	1836.1	3333	2.2	1690.70
23-047	2.6896	5.3022	Co-60	1173.2	1537	2.5	779.66
23-047	2.6896	5.3022	Co-60	1332.5	1539	2.5	780.67

Radiological Standards Dilution Logbook

Logbook ID: 2-0168-0 **SOP ID: ENV-SOP-GBUR-0074**

Nuclide: Mixed Gamma
Standard ID: 23-047
Parent Source: 126583
Parent Conc: See Cert
Reference Date: 4/1/2023 1200 EST

Std Conc.: See Cert
Prepared By: JAL
Prep Date: 7/31/2023
Initial Expiration Date: 7/31/2028

Balance ID: B610197175
Diluent: 4 N HCL
Diluent IDs: DL23-0860

Conversions: 60 dpm = 1 dps
1 Bq = 1 dps
2.22 dpm = 1 pCi

Dilution Description:

2.6896 g of 126583 diluted to 2.0 L w/ 4N HCl

CJL 7/31/23

Dilution Calculations:

Standard Verification Date Verified	New Expiration Date	File	% Recovery	Analyst
1				
2				
3				
4				

Analyst initials: _____ Date: _____
Standard Final Disposal (circle one) **Consumed** **Destroyed** **Discarded**

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404·352·8677
Fax 404·352·2837
www.ezag.com

CERTIFICATE OF CALIBRATION

Standard Reference Source

SRS Number: 126583
Source Description: 5 mL Liquid in 5 mL Glass Flame Sealed Ampoule
Product Code: 8602
Customer: Pace Analytical Services
P.O. Number: 0061727, Item 1

21 MAR 23-047

This standard radionuclide source was prepared from an aliquot measured gravimetrically from a master radionuclide solution calibrated with a germanium gamma-ray spectrometer system. Additional radionuclides were added gravimetrically from solutions calibrated by gamma-ray spectrometry, ionization chamber, or liquid scintillation counting. Calibration and purity were checked using germanium gamma-ray spectrometry. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology (NIST) through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 2, July 2007, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST."

Reference Date: 01-April-2023 12:00 PM EST

GRS Mixture

Isotope	Gamma-Ray Energy, keV	Half-Life, d	Activity, Bq	Flux, s^{-1}	Uncertainty u_A, %	Uncertainty u_B, %	Uncertainty U, %*	Calibration Method**
Pb-210	46.5	8.109E+03	3.188E+04	1.355E+03	0.1	1.5	3.1	4π LS
Cd-109	88.0	4.614E+02	3.330E+04	1.232E+03	0.5	1.3	2.8	HPGe
Co-57	122.1	2.717E+02	7.699E+02	6.590E+02	0.4	0.7	1.7	HPGe
Ce-139	165.9	1.376E+02	1.139E+03	9.116E+02	0.4	0.9	2.0	HPGe
Cr-51	320.1	2.770E+01	3.330E+04	3.300E+03	0.1	1.0	2.1	IC
Sn-113	391.7	1.151E+02	1.975E+03	1.283E+03	0.4	1.2	2.6	HPGe
Sr-85	514.0	6.485E+01	2.622E+03	2.583E+03	0.1	1.0	2.1	IC
Cs-137	661.7	1.099E+04	9.622E+02	8.188E+02	0.7	1.2	2.8	HPGe
Y-88	898.0	1.066E+02	3.360E+03	3.148E+03	0.7	0.8	2.2	HPGe
Y-88	1836.1	———	———	3.333E+03	0.7	0.8	2.2	———
Co-60	1173.2	1.925E+03	1.539E+03	1.537E+03	0.7	1.0	2.5	HPGe
Co-60	1332.5	———	———	1.539E+03	0.7	1.0	2.5	———

Gamma-Ray (GRS) master solution is EZA's mixture that consists of Cd-109, Co-57, Ce-139, Sn-113, Cs-137, Y-88, and Co-60 (calibrated quarterly) with the addition of Cr-51 and Sr-85. ***Uncertainty:** U - Relative expanded uncertainty, $k = 2$. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results." ****Calibration Methods:** 4π LS - 4π Liquid Scintillation Counting, HPGe - High Purity Germanium Gamma-Ray Spectrometer, IC - Ionization Chamber.

(Certificate continued on reverse side)

rec'd 5/8/2023

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia, 30318

SRS Number: 126583

Comments:

5.30220 g of 4 M HCl solution with approximately 30 µg/g each of Cd, Co, Ce, Cr, Sn, Sr, Cs, and Y carriers.

Expiration Date: 05-May-2024

This source was wipe tested in its inactive areas with leak test results < 185 Bq (5 nCi) of removable activity per ISO 9978:1992.

Source Prepared by: _____

Z. House, Radiochemist

QC Approved by: _____ Date: 03-MAY-23

J. Lahr, Spectroscopist

Mixed Gamma Water Source 22-003

Calibration for Verification:	DET_2_2L MAR_23-047(113023).CLB
Detector:	2
Cal Ver Analysis Date:	11/30/2023
Source Used forCalVerification:	22-003
Cal Geometry:	2L MAR
Geometry Mass (L):	2

Isotope	Half-Life (Days)	Reference Date	Energy	Abundance	Primary Source Bq	Decay Factor
Pb-210	8.109E+03	7/1/2021	46.5	0.0425	3.269E+04	0.9274
Cd-109	4.614E+02	7/1/2021	88.0	0.0361	3.320E+04	0.2659
Co-57	2.718E+02	7/1/2021	122.0	0.8560	7.593E+02	0.1055
Ce-139	1.376E+02	7/1/2021	165.9	0.7989	1.142E+03	0.0118
Cr-51	2.770E+01	7/1/2021	320.1	0.1000	3.327E+04	0.0000
Sn-113	1.151E+02	7/1/2021	391.7	0.6400	1.974E+03	0.0049
Sr-85	6.485E+01	7/1/2021	514.0	0.9600	2.666E+03	0.0001
Cs-137	1.099E+04	7/1/2021	661.7	0.8510	9.429E+02	0.9459
Y-88	1.066E+02	7/1/2021	898.0	0.9370	3.328E+03	0.0032
Co-60	1.925E+03	7/1/2021	1173.0	0.9997	1.537E+03	0.7279
Co-60	1.925E+03	7/1/2021	1332.0	0.9999	1.537E+03	0.7279
Y-88	1.066E+02	7/1/2021	1836.0	0.9920	3.328E+03	0.0032

Isotope	Primary Source Mass (g)	Mass Used for Dilution (g)	Target Peak Total pCi	Energy	Target pCi/L	Cal Ver Result pCi/L	Cal Ver %REC
Cd-109	5.30159	1.0698	181064.3	88	90532.147	92202.00	101.84%
Co-57	5.30159	1.0698	4141.0	122	2070.514	2160.30	104.34%
Ce-139	5.30159	1.0698	6228.2	166	3114.088	2921.10	93.80%
Cs-137	5.30159	1.0698	5142.3	662	2571.168	2701.70	105.08%
Co-60	5.30159	1.0698	8382.4	1332	4191.202	4148.20	98.97%

BSS 12-1-23

Pace Analytical™ www.pacelabs.com

Pace Analytical Services-PGH

Radiological Standards Dilution Logbook

Logbook ID: 1-0168-0 **SOP ID: ENV-SOP-GBUR-0074**

Nuclide: Mixed Gamma w Pb210
Standard ID: 22-003
Parent Source: 22-002
Parent Conc: Varies by nuclide
Reference Date: 7/1/21 1200 EST

Std Conc.:
Prepared By: RMC
Prep Date: 1/30/22
Initial Expiration Date: 1/30/27

Balance ID: MA
Diluent: DI
Diluent IDs: NA

Conversions: 60 dpm = 1 dps
1 Bq = 1 dps
2.22 dpm = 1 pCi

Dilution Description: Diluted entire contents of 22-002 to 2.0L using DI. Final acid concentration is 1N HCl.

Dilution Calculations:

Standard Verification Date Verified	New Expiration Date	File	% Recovery	Analyst
1				
2				
3				
4				

Standard Final Disposal (circle one) **Consumed** **Destroyed** **Discarded**
Analyst initials: _____ Date: _____

Pace Analytical
www.pacelabs.com

Pace Analytical Services-PGH

Radiological Standards Dilution Logbook

Logbook ID: 1-0168-0 **SOP ID: ENV-SOP-GBUR-0074**

Nuclide: Mixed Gamma w/ Pb 210
Standard ID: 221007
Parent Source: 119671
Parent Conc: see cert
Reference Date: 7/1/2021 1200 EST

Std Conc.: See Calc
Prepared By: JAV
Prep Date: 1/19/2022
Initial Expiration Date: 1/19/2027

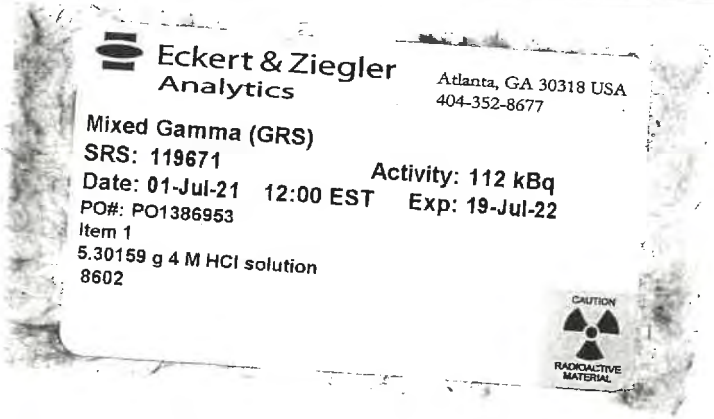
Balance ID: BL0197175
Diluent: 4 M HCl
Diluent IDs: DL21-1398

Conversions: 60 dpm = 1 dps
1 Bq = 1 dps
2.22 dpm = 1 pCi

Dilution Description:

1.0698 g diluted to 500.0 ml in 4N HCl and transferred to 500 ml SSJ on 1/19/2022.

Dilution Calculations:



Standard Verification Date Verified	New Expiration Date	File	% Recovery	Analyst
1				
2				
3				
4				

Standard Final Disposal (circle one) **Consumed** **Destroyed** **Discarded**
Analyst initials: _____ Date: _____

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404·352·8677
Fax 404·352·2837
www.ezag.com

CERTIFICATE OF CALIBRATION
Standard Reference Source

SRS Number: 119671
Source Description: 5 mL Liquid in 5 mL Flame Sealed Ampoule
Product Code: 8602
Customer: Pace Analytical Services
P.O. Number: PO1386953, Item 1

2 L MAR 22 003

This standard radionuclide source was prepared from an aliquot measured gravimetrically from a master radionuclide solution calibrated with a germanium gamma-ray spectrometer system. Additional radionuclides were added gravimetrically from solutions calibrated by gamma-ray spectrometry, ionization chamber, or liquid scintillation counting. Calibration and purity were checked using germanium gamma-ray spectrometry. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology (NIST) through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 2, July 2007, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST."

Reference Date: 01-July-2021 12:00 PM EST

GRS Mixture

Isotope	Gamma-Ray Energy, keV	Half-Life, d	Activity, Bq	Flux, s^{-1}	Uncertainty u_A, %	Uncertainty u_B, %	Uncertainty U, %*	Calibration Method**
Pb-210	46.5	8.109E+03	3.269E+04	1.389E+03	0.1	1.5	3.1	4π LS
Cd-109	88.0	4.614E+02	3.320E+04	1.229E+03	0.5	1.3	2.8	HPGe
Co-57	122.1	2.717E+02	7.593E+02	6.500E+02	0.4	0.7	1.7	HPGe
Ce-139	165.9	1.376E+02	1.142E+03	9.135E+02	0.4	0.9	2.0	HPGe
Cr-51	320.1	2.770E+01	3.327E+04	3.297E+03	0.1	1.0	2.1	IC
Sn-113	391.7	1.151E+02	1.974E+03	1.283E+03	0.4	1.2	2.6	HPGe
Sr-85	514.0	6.485E+01	2.666E+03	2.626E+03	0.1	1.0	2.1	IC
Cs-137	661.7	1.099E+04	9.429E+02	8.024E+02	0.7	1.2	2.8	HPGe
Y-88	898.0	1.066E+02	3.328E+03	3.118E+03	0.7	0.8	2.2	HPGe
Y-88	1836.1	———	———	3.301E+03	0.7	0.8	2.2	———
Co-60	1173.2	1.925E+03	1.537E+03	1.535E+03	0.7	1.0	2.5	HPGe
Co-60	1332.5	———	———	1.537E+03	0.7	1.0	2.5	———

Gamma-Ray (GRS) master solution is EZA's mixture that consists of Cd-109, Co-57, Ce-139, Sn-113, Cs-137, Y-88, and Co-60 (calibrated quarterly) with the addition of Cr-51 and Sr-85. ***Uncertainty:** U - Relative expanded uncertainty, $k = 2$. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results." ****Calibration Methods:** 4π LS - 4π Liquid Scintillation Counting, HPGe - High Purity Germanium Gamma-Ray Spectrometer, IC - Ionization Chamber.

(Certificate continued on reverse side)

Rec'd 7/20/2021

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia, 30318

SRS Number: 119671

Comments:

5.30159 g of 4 M HCl solution with approximately 30 µg/g each of Cd, Co, Ce, Cr, Sn, Sr, Cs, and Y carriers.

Expiration Date: 19-July-2022

This source was wipe tested in its inactive areas with leak test results < 185 Bq (5 nCi) of removable activity per ISO 9978:1992.

Source Prepared by: _____

K. Eardley, Radiochemist

QC Approved by: _____ Date: 13-JUL-21

J. Lahr, Spectroscopist

ORTEC g v - i (3263) Env32 G701W047 12/1/2023 8:11:29 AM Page 1
PACE Spectrum name: CV-D2-2L-MAR-22-003(113023).An1

Sample description
CV

Spectrum Filename: C:\User\Spectra\CV-D2-2L-MAR-22-003(113023).An1

Acquisition information
Start time: 11/30/2023 7:33:09 AM
Live time: 43200
Real time: 44561
Dead time: 3.05 %
Detector ID: 2

Detector system
DET 2

Calibration
Filename: DET_2_2L MAR_23-047(113023).clb
DET 2 2L MARINELLI

Energy Calibration
Created: 11/30/2023 7:00:31 AM
Zero offset: 0.281 keV
Gain: 0.250 keV/channel
Quadratic: -1.344E-08 keV/channel^2

Efficiency Calibration
Created: 11/30/2023 7:26:21 AM
Type: Polynomial
Uncertainty: 1.699 %
Coefficients: -0.225215 -3.983441 0.474906
-0.072106 0.003754 -0.000081

Library Files
Main analysis library: 000WaterCalib(No Am)072423.Lib
Library Match Width: 0.400
Peak stripping: Library based

Analysis parameters
Analysis engine: Env32 G701W047
Start channel: 120 (30.33keV)
Stop channel: 8144 (2038.53keV)
Peak rejection level: 100.000%
Peak search sensitivity: 3
Sample Size: 2.0000E+00
Activity scaling factor: 1.0000E+06/(1.0000E+00* 2.0000E+00) =
5.0000E+05
Detection limit method: Reg. Guide 4.16 Method

Random error: 4.0300002E+00
Systematic error: 3.7400000E+00
Fraction Limit: 0.000%
Background width: average of three points.

Half lives decay limit: 12.000

BSS 12-1-23

Activity range factor: 2.000
Min. step backg. energy 0.000
Multiplet shift channel 2.000

Corrections	Status	Comments
Decay correct to date:	YES	7/1/2021 12:00:00 PM
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	YES	DET 7 BKG 081123 QT 2L MAR.Pbc 8/11/2023 7:26:45 AM
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

total peaks alloc. 0 cutoff: 0.00E+00 %
Energy Calibration
Normalized diff: 0.0368

***** S U M M A R Y O F P E A K S I N R A N G E *****

Peak Energy	Area	Uncert	FWHM	Corrctn Factor	Nuclide Energy	Brnch. Ratio	Act. pCi/L	Nuc
46.54	10717.	2.34	0.88	8.726E-04	46.52	4.000	1.034E+05	PB210
57.77	182.	76.31	0.29	5.755E-03				
76.80	254.	68.08	0.48	1.699E-02				
88.02	66473.	0.60	0.98	2.340E-02	88.03	3.610	9.220E+04	CD109
122.04	24010.	1.32	1.01	3.841E-02	122.07	85.600	2.161E+03	CO57
136.45	3181.	5.02	1.03	4.235E-02				
139.98	619.	25.05	1.03	4.311E-02				
157.41	246.	61.70	0.67	4.591E-02				
165.80	4110.	5.13	0.97	4.676E-02	165.85	79.950	2.921E+03	CE139
185.83	691.	23.21	1.08	4.781E-02				
189.55	213.	74.52	1.08	4.789E-02				
198.42	650.	33.78	0.80	4.794E-02				
214.13	214.	73.95	0.45	4.772E-02				
219.28	236.	56.94	0.58	4.757E-02				
236.45	285.	49.97	0.34	4.690E-02				
260.91	216.	60.15	0.68	4.562E-02				
284.97	171.	65.32	0.46	4.420E-02				
391.76	2148.	8.29	1.32	3.800E-02	391.69	64.160	5.477E+03	SN113
524.36	161.	71.08	0.54	3.229E-02				
559.48	124.	67.19	0.23	3.111E-02				
612.62	104.	57.80	0.30	2.952E-02				
661.63	196646.	0.26	1.50	2.824E-02	661.66	85.210	2.702E+03	CS137
672.17	62.	74.16	0.42	2.799E-02				
699.89	185.	57.14	0.49	2.735E-02				
821.56	921.	18.68	2.71	2.496E-02				
898.15	2032.	7.66	1.55	2.372E-02	898.02	95.000	8.720E+03	Y88
988.98	109.	61.28	0.40	2.246E-02				

pk energy	area	uncert	fwhm	corr	nuclide	brnch.	act.	nuc
1014.06	114.	57.11	0.31	2.215E-02				

1151.03	217.	39.50	1.92	2.061E-02				
1173.15	196009.	0.26	1.91	2.039E-02	1173.24	99.900	4.136E+03	CO60
1332.41	183412.	0.26	2.04	1.895E-02	1332.50	99.982	4.160E+03	CO60
1500.76	41.	53.42	0.55	1.767E-02				
1595.76	144.	34.97	0.52	1.703E-02				
1835.96	1576.	4.59	2.29	1.562E-02	1836.01	99.350	9.804E+03	Y88
1870.30	64.	40.46	0.48	1.544E-02				
1959.23	78.	43.69	0.41	1.499E-02				
2027.82	102.	30.87	0.42	1.465E-02				

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Efficiency * Area	Uncert 2 Sigma %	FWHM keV	Suspected Nuclide	
229.59	57.77	7192.	182.	3.168E+04	152.62	0.288	TH-234	c
305.61	76.80	11088.	254.	1.493E+04	136.16	0.476	PB-212	s
543.87	136.43	11136.	3181.	7.511E+04	10.03	1.028	CO-57	D
557.95	139.96	11734.	619.	1.437E+04	50.11	1.031	CE-143	D
627.56	157.41	8523.	246.	5.351E+03	123.40	0.670	TA-182	s
741.10	185.90	12511.	691.	1.445E+04	46.42	1.076	U-235	D
755.93	189.61	12486.	213.	4.447E+03	149.05	1.080	FE-59	c
791.37	198.42	13612.	650.	1.357E+04	67.57	0.800	SE-75	s
854.11	214.13	9310.	214.	4.485E+03	147.89	0.449	-	sc
874.69	219.28	7617.	236.	4.954E+03	113.89	0.583	-	s
943.26	236.45	7998.	285.	6.077E+03	99.94	0.336	TH-227	s
1040.98	260.91	6698.	216.	4.745E+03	120.31	0.681	SR-91	s
1137.07	284.97	5253.	171.	3.861E+03	130.64	0.457	NP-239	s
2093.34	524.36	4312.	161.	4.987E+03	142.16	0.537	-	s
2233.60	559.48	2727.	124.	3.986E+03	134.38	0.232	AS-76	s
2445.89	612.62	1755.	104.	3.523E+03	115.61	0.299	RU-103	s
2683.82	672.17	1132.	62.	2.227E+03	148.33	0.419	SB-125	sc
2794.54	699.89	3309.	185.	6.777E+03	114.28	0.491	BA-140	s
3280.63	821.56	5938.	921.	3.691E+04	37.37	2.706	SR-91	s
3949.53	988.98	2015.	109.	4.860E+03	122.55	0.395	SB-126	s
4049.73	1014.06	1892.	114.	5.133E+03	114.22	0.310	-	s
4597.02	1151.03	3582.	217.	1.055E+04	79.00	1.923	CS-138	D
5994.61	1500.76	188.	41.	2.320E+03	106.84	0.547	RB-89	s
6374.27	1595.76	451.	144.	8.474E+03	69.94	0.516	LA-140	s
7471.57	1870.30	182.	64.	4.145E+03	80.93	0.484	-	s
7827.01	1959.23	256.	78.	5.171E+03	87.37	0.415	-	s
8101.21	2027.82	207.	102.	6.983E+03	61.74	0.416	-	s

s - Peak fails shape tests.
D - Peak area deconvoluted.
L - Peak written from unknown list.
C - Area < Critical level.

This section based on library: 000WaterCalib(No Am)072423.Lib

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	FWHM keV
PB-210	184.75	46.54	13678.	10639.	0.246	4.76	0.880
CD-109	350.41	88.02	22527.	66461.	1.538	1.21	0.981

CO-57	486.31	122.04	18393.	23974.	0.555	2.66	1.012
CE-139	661.08	165.80	12089.	4110.	0.095	10.25	0.968
SN-113	1563.64	391.76	8095.	2109.	0.049	17.06	1.317
CS-137	2641.71	661.63	10256.	196605.	4.551	0.51	1.500
Y-88	3586.63	898.15	5786.	2032.	0.047	15.31	1.550
CO-60	4685.43	1173.15	10064.	196009.	4.537	0.53	1.914
CO-60	5321.85	1332.41	6105.	183400.	4.245	0.52	2.036
Y-88	7334.30	1835.96	540.	1573.	0.036	9.34	2.287

s - Peak fails shape tests.
D - Peak area deconvoluted.
A Derived peak area.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

- Nuclide - Name	Code	Average Activity pCi/L	Peak Energy keV	Peak Activity pCi/L	Code	MDA Value pCi/L			COMMENTS
PB-210		1.0338E+05				8.12E+03			
			46.52	1.034E+05	(P	5.322E+03	2.38E+00	4.00E+00	G
CD-109		9.2202E+04				4.63E+02			
			88.03	9.220E+04	(P	9.741E+02	6.05E-01	3.61E+00	G
CO-57		2.1613E+03				2.72E+02			
			122.07	2.161E+03	(P	5.722E+01	1.33E+00	8.56E+01	G
CE-139		2.9211E+03				1.38E+02			
			165.85	2.921E+03	(	3.661E+02	5.13E+00	7.99E+01	G
CR-51	F	3.6643E+00				2.77E+01			
			320.08	3.664E+00	&(P	3.291E+01	3.63E+02	1.00E+01	K
SN-113		5.4769E+03				1.15E+02			
			391.69	5.477E+03	(P	1.096E+03	8.53E+00	6.42E+01	G
CS-137		2.7017E+03				1.10E+04			
			661.66	2.702E+03	(P	6.522E+00	2.57E-01	8.52E+01	G

Nuclide	Ave activity	Energy	Activity	Code	Peak MDA			Comments
Y-88	9.8040E+03				1.07E+02			
		1836.01	9.804E+03	(P	6.913E+02	4.67E+00	9.93E+01	G
		898.02	8.720E+03	-	1.532E+03	7.66E+00	9.50E+01	G
CO-60	4.1482E+03				1.93E+03			
		1173.24	4.136E+03	(	9.922E+00	2.64E-01	9.99E+01	G
		1332.50	4.160E+03	(P	8.321E+00	2.61E-01	1.00E+02	G

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide

failed one or more qualification tests.
+ - Peak activity higher than counting uncertainty range.
- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction
} - Peak is too close to another for the activity to be found directly.

Nuclide Codes:	Peak Codes:
T - Thermal Neutron Activation	G - Gamma Ray
F - Fast Neutron Activation	X - X-Ray
I - Fission Product	P - Positron Decay
N - Naturally Occurring Isotope	S - Single-Escape
P - Photon Reaction	D - Double-Escape
C - Charged Particle Reaction	K - Key Line
M - No MDA Calculation	A - Not in Average
R - Coincidence Corrected	C - Coincidence Peak
H - Halflife limit exceeded	

- -

********** D I S C A R D E D I S O T O P E P E A K S **********

Nuclide	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	Activity

P - Peakbackground subtraction

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide	Time of Count Activity pCi/L	Time Corrected Activity pCi/L	Uncertainty Counting pCi/L	2 Sigma Total pCi/L	MDA pCi/L
PB-210	9.5880E+04	1.0338E+05	4.9245E+03	1.3469E+04	5.322E+03
CD-109	2.4599E+04	9.2202E+04	1.1152E+03	1.1084E+04	9.741E+02
CO-57	2.2807E+02	2.1613E+03	5.7482E+01	2.4115E+02	5.722E+01
CE-139	3.4386E+01	2.9211E+03	2.9954E+02	4.3073E+02	3.661E+02
CR-51 #B	3.6643E+00	>12 Halflives	2.6636E+01	2.6639E+01	3.291E+01
SN-113	2.7056E+01	5.4769E+03	9.3428E+02	1.1197E+03	1.096E+03
SR-85 #B	0.0000E+00	>12 Halflives	1.5766E+00	1.5767E+00	4.542E+00
CS-137	2.5554E+03	2.7017E+03	1.3880E+01	2.5810E+02	6.522E+00
Y-88	3.1712E+01	9.8040E+03	9.1548E+02	1.3430E+03	6.913E+02
CO-60	3.0198E+03	4.1482E+03	1.5392E+01	3.9237E+02	9.922E+00

- All peaks for activity calculation had bad shape.
* - Activity omitted from total
& - Activity omitted from total and all peaks had bad shape.
< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

BJS 12-1-23

---------- S U M M A R Y ----------

Total Activity (30.3 to 2038.5 keV) 1.264E+05 pCi/L

Total Decayed Activity (30.3 to 2038.5 keV) 2.2279166E+05 pCi/L

Analyzed by: _____
BSKOFF

Reviewed by: _____
Supervisor

Laboratory: PACE

Logbook ID: 7-0054-0

SOP ID: ENV-SOP-GBUR-0078

Gamma Spectrometry Run Log

REMINDER: Perform and Log Daily Checks!

Detector #	Sample No.	Batch ID	Aliquots (g, L,S, F)	Geometry	Count Time (min)	Count Start date/ time	Count Analyst
2	CV-02-20z-can-21-044(112823)	CV	97.52	20z	126	11-28-23 0818	355
2	Det-2-80z-Tuna-23-029(112823)	CAL	322,78	80z Tuna	111	11-28-23 1112	355
2	CV-02-80z-Tuna-21-044(112823)	CV	351.68	80z Tuna	75	11-28-23 1326	355
2	DBD2 112923	DBKG	—	—	5	11/29/23 927	[illegible]
2	DCD2 112923 (QA2000 21) ✗	DCHK	—	D2 CHECK SOURCE	8	11/29/23 927	[illegible]
2	DCD2 112923 (QA2000 21) ✓	DCHK	—	check source 2	8	11-29-23 1143	355
2	DCD2 112923 (QA2000 22) ✓	DCHK	—	check source 2	8	11-29-23 1154	355
2	Det-2-2L-23-047(112923)	CAL	2L	2 Liter	114	11-29-23 1209	355
2	DET-2-2L-23-047(112923)-B	CAL	2L	2 Liter	935	11-29-23 1410	355
1	DET-1-40z-23-038(112923)	CAL	355 11-29-23 40z 170.34	40z	720	11-29-23 355 11-29-23 1710 1724	355
2	DCD2 113023 (QA2000 22) ✓	DCHK	—	D2 check source	8	11-30-23 0623	355
2	DBD2 113023	DBKG	—	—	5	11-30-23 0636	355
2	CV-D2-2L-MAR-22-003(113023)	CV	2.0	2 Liter	720	11-30-23 0733	355
1	CV-01-40z-21-043(113023)	CV	204.87	40z	720	11-30-23 1043	355
2	DCD2 120123 (QA2000 23) ✓	DCHK	—	check source 2	8	12-1-23 0729	355
2	DBD2 120123	DBKG	—	—	5	12-1-23 0744	355

Comments:

Logbook review documented on Rad Data Review Verification form.

Calibration Data from file: DET_5_2L_MAR_23-047(021924).Clb
Energy Calibration Date: 2/23/2024 Time: 10:31:02 AM
Efficiency Calibration Date: 2/23/2024 Time: 10:40:00 AM

Calibration Description:
DET_5_2L_MAR_23-047(021924)

Energy Calibration Fit
Energy = 0.5125 +0.249943*Channel -4.54328e-010*Channel**2
FWHM (ch) = 5.0984 +0.000662*Channel -1.03263e-008*Channel**2

Energy/FWHM Table

Channel	Energy(keV)	Fit(keV)	Delta	FWHM(keV)	Fit(keV)	Delta
184.84	46.52	46.71	-0.41%	1.31	1.30	0.09%
349.61	88.03	87.89	0.16%	1.32	1.33	-0.79%
485.70	122.07	121.91	0.13%	1.36	1.35	0.12%
661.42	165.85	165.83	0.01%	1.40	1.38	1.11%
1566.01	391.69	391.92	-0.06%	1.52	1.53	-0.55%
2054.47	514.00	514.01	-0.00%	1.61	1.60	0.23%
2644.81	661.66	661.56	0.02%	1.69	1.69	-0.06%
3590.68	898.02	897.97	0.01%	1.82	1.84	-0.77%
4692.03	1173.24	1173.24	-0.00%	1.99	1.99	-0.08%
5329.35	1332.50	1332.53	-0.00%	2.10	2.08	0.90%
7343.75	1836.01	1836.01	0.00%	2.34	2.35	-0.25%

Efficiency Calibration Fit
Polynomial Uncertainty = 26.1638 %
Coefficients:
-0.314768 -5.000961 0.539221 -0.072857 0.003910 -0.000079

Efficiency Table

Energy	Efficiency	Fit	Delta
46.52	5.4999E-003	5.4990E-003	0.02%
88.03	2.0195E-002	2.0334E-002	-0.69%
122.07	2.4508E-002	2.4246E-002	1.07%
165.85	2.4345E-002	2.4760E-002	-1.70%
320.08	3.4582E-002	1.8015E-002	47.91%
391.69	1.5252E-002	1.5595E-002	-2.25%
514.00	1.3492E-002	1.2755E-002	5.46%
661.66	1.0543E-002	1.0592E-002	-0.47%
898.02	8.4031E-003	8.4953E-003	-1.10%
1173.24	6.9066E-003	7.0045E-003	-1.42%
1332.50	6.3276E-003	6.3765E-003	-0.77%
1836.01	5.0132E-003	4.9609E-003	1.04%

2/23/24

Calibration Certificate Table

Isotope	Energy	Pct	Halflife	Activity	GPS	Error	Date & Time
PB-210	46.52	4.00	8.12E+003	17184.00	687.34	3.10%	4/1/2023 12:00:00 PM
CD-109	88.03	3.61	4.63E+002	17312.00	624.95	2.80%	4/1/2023 12:00:00 PM
CO-57	122.07	85.60	2.72E+002	390.53	334.29	1.70%	4/1/2023 12:00:00 PM
CE-139	165.85	79.95	1.38E+002	578.39	462.42	2.00%	4/1/2023 12:00:00 PM
CR-51	320.08	10.00	2.77E+001	16740.00	1673.96	2.10%	4/1/2023 12:00:00 PM
SN-113	391.69	64.16	1.15E+002	1014.40	650.82	2.60%	4/1/2023 12:00:00 PM
SR-85	514.00	96.00	6.48E+001	1364.90	1310.26	2.10%	4/1/2023 12:00:00 PM
CS-137	661.66	90.11	1.10E+004	460.94	415.35	2.80%	4/1/2023 12:00:00 PM
Y-88	898.02	95.00	1.07E+002	1680.90	1596.86	2.20%	4/1/2023 12:00:00 PM
Y-88	1836.01	99.35	1.07E+002	1701.80	1690.70	2.20%	4/1/2023 12:00:00 PM
CO-60	1173.24	99.90	1.93E+003	780.44	779.66	2.50%	4/1/2023 12:00:00 PM
CO-60	1332.50	99.98	1.93E+003	780.81	780.67	2.50%	4/1/2023 12:00:00 PM

355 2-23-24

	SRM:	126583		Reference Date			
	Geometry:	*2.0L Marinelli*		4/1/2023 12:00			
	Cal Standard ID:	23-047					
	Total SRM Mass (g)	Source Mass (g)	% of Total				
	5.3022	2.6896	0.507261137				
Source ID	Standard Mass (g)	Total Mass of Primary (g)	Radionuclide	Energy (keV)	Total Source Gammas	Certificate Unc (%)	Cal Source GPS
23-047	2.6896	5.3022	Pb-210	46.5	1355	3.1	687.34
23-047	2.6896	5.3022	Cd-109	88.0	1232	2.8	624.95
23-047	2.6896	5.3022	Co-57	122.1	659	1.7	334.29
23-047	2.6896	5.3022	Ce-139	165.9	911.6	2.0	462.42
23-047	2.6896	5.3022	Cr-51	320.1	3300	2.1	1673.96
23-047	2.6896	5.3022	Sn-113	391.7	1283	2.6	650.82
23-047	2.6896	5.3022	Sr-85	514.0	2583	2.1	1310.26
23-047	2.6896	5.3022	Cs-137	661.7	818.8	2.8	415.35
23-047	2.6896	5.3022	Y-88	898.0	3148	2.2	1596.86
23-047	2.6896	5.3022	Y-88	1836.1	3333	2.2	1690.70
23-047	2.6896	5.3022	Co-60	1173.2	1537	2.5	779.66
23-047	2.6896	5.3022	Co-60	1332.5	1539	2.5	780.67

BSF 2-23-24

Radiological Standards Dilution Logbook

Logbook ID: 2-0168-0 **SOP ID: ENV-SOP-GBUR-0074**

Nuclide: Mixed Gamma
Standard ID: 23-047
Parent Source: 126583
Parent Conc: See Cert
Reference Date: 4/1/2023 1200EST

Std Conc.: See Cert
Prepared By: JAL
Prep Date: 7/31/2023
Initial Expiration Date: 7/31/2028

Balance ID: B610197175
Diluent: 4N HCL
Diluent IDs: DL23-0860

Conversions: 60 dpm = 1 dps
1 Bq = 1 dps
2.22 dpm = 1 pCi

Dilution Description:

2.6896g of 126583 diluted to 2.0L w/ 4N HCl

JAL 7/31/23

Dilution Calculations:

Standard Verification Date Verified	New Expiration Date	File	% Recovery	Analyst
1				
2				
3				
4				

Analyst initials: _____ Date: _____
Standard Final Disposal (circle one) **Consumed** **Destroyed** **Discarded**

BSS 2-23-24

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404·352·8677
Fax 404·352·2837
www.ezag.com

CERTIFICATE OF CALIBRATION
Standard Reference Source

SRS Number: 126583
Source Description: 5 mL Liquid in 5 mL Glass Flame Sealed Ampoule
Product Code: 8602
Customer: Pace Analytical Services
P.O. Number: 0061727, Item 1

21 MAR 23-047

This standard radionuclide source was prepared from an aliquot measured gravimetrically from a master radionuclide solution calibrated with a germanium gamma-ray spectrometer system. Additional radionuclides were added gravimetrically from solutions calibrated by gamma-ray spectrometry, ionization chamber, or liquid scintillation counting. Calibration and purity were checked using germanium gamma-ray spectrometry. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology (NIST) through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 2, July 2007, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST."

Reference Date: 01-April-2023 12:00 PM EST

GRS Mixture

Isotope	Gamma-Ray Energy, keV	Half-Life, d	Activity, Bq	Flux, s^{-1}	Uncertainty u_A, %	Uncertainty u_B, %	Uncertainty U, %*	Calibration Method**
Pb-210	46.5	8.109E+03	3.188E+04	1.355E+03	0.1	1.5	3.1	4π LS
Cd-109	88.0	4.614E+02	3.330E+04	1.232E+03	0.5	1.3	2.8	HPGe
Co-57	122.1	2.717E+02	7.699E+02	6.590E+02	0.4	0.7	1.7	HPGe
Ce-139	165.9	1.376E+02	1.139E+03	9.116E+02	0.4	0.9	2.0	HPGe
Cr-51	320.1	2.770E+01	3.330E+04	3.300E+03	0.1	1.0	2.1	IC
Sn-113	391.7	1.151E+02	1.975E+03	1.283E+03	0.4	1.2	2.6	HPGe
Sr-85	514.0	6.485E+01	2.622E+03	2.583E+03	0.1	1.0	2.1	IC
Cs-137	661.7	1.099E+04	9.622E+02	8.188E+02	0.7	1.2	2.8	HPGe
Y-88	898.0	1.066E+02	3.360E+03	3.148E+03	0.7	0.8	2.2	HPGe
Y-88	1836.1	———	———	3.333E+03	0.7	0.8	2.2	———
Co-60	1173.2	1.925E+03	1.539E+03	1.537E+03	0.7	1.0	2.5	HPGe
Co-60	1332.5	———	———	1.539E+03	0.7	1.0	2.5	———

Gamma-Ray (GRS) master solution is EZA's mixture that consists of Cd-109, Co-57, Ce-139, Sn-113, Cs-137, Y-88, and Co-60 (calibrated quarterly) with the addition of Cr-51 and Sr-85. ***Uncertainty:** U - Relative expanded uncertainty, k= 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results." ****Calibration Methods:** 4π LS - 4π Liquid Scintillation Counting, HPGe - High Purity Germanium Gamma-Ray Spectrometer, IC - Ionization Chamber.

(Certificate continued on reverse side)

BSS 2-23-24

rec'd 5/8/2023

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia, 30318

SRS Number: 126583

Comments:
5.30220 g of 4 M HCl solution with approximately 30 µg/g each of Cd, Co, Ce, Cr, Sn, Sr, Cs, and Y carriers.

Expiration Date: 05-May-2024

This source was wipe tested in its inactive areas with leak test results < 185 Bq (5 nCi) of removable activity per ISO 9978:1992.

Source Prepared by: _____
Z. House, Radiochemist

QC Approved by: _____ Date: 03-MAY-23
J. Lahr, Spectroscopist

Mixed Gamma Water Source 22-003

Calibration for Verification:	DET_5_2L_MAR_23-047(021924).CLB
Detector:	5
Cal Ver Analysis Date:	2/23/2024
Source Used forCalVerification:	22-003
Cal Geometry:	2L MAR
Geometry Mass (L):	2

Isotope	Half-Life (Days)	Reference Date	Energy	Abundance	Primary Source Bq	Decay Factor
Pb-210	8.109E+03	7/1/2021	46.5	0.0425	3.269E+04	0.9207
Cd-109	4.614E+02	7/1/2021	88.0	0.0361	3.320E+04	0.2340
Co-57	2.718E+02	7/1/2021	122.0	0.8560	7.593E+02	0.0850
Ce-139	1.376E+02	7/1/2021	165.9	0.7989	1.142E+03	0.0077
Cr-51	2.770E+01	7/1/2021	320.1	0.1000	3.327E+04	0.0000
Sn-113	1.151E+02	7/1/2021	391.7	0.6400	1.974E+03	0.0030
Sr-85	6.485E+01	7/1/2021	514.0	0.9600	2.666E+03	0.0000
Cs-137	1.099E+04	7/1/2021	661.7	0.8510	9.429E+02	0.9408
Y-88	1.066E+02	7/1/2021	898.0	0.9370	3.328E+03	0.0019
Co-60	1.925E+03	7/1/2021	1173.0	0.9997	1.537E+03	0.7060
Co-60	1.925E+03	7/1/2021	1332.0	0.9999	1.537E+03	0.7060
Y-88	1.066E+02	7/1/2021	1836.0	0.9920	3.328E+03	0.0019

Isotope	Primary Source Mass (g)	Mass Used for Dilution (g)	Target Peak Total pCi	Energy	Target pCi/L	Cal Ver Result pCi/L	Cal Ver %REC
Cd-109	5.30159	1.0698	181064.3	88.03	90532.147	94745.00	104.65%
Co-57	5.30159	1.0698	4141.0	122	2070.514	2093.20	101.10%
Ce-139	5.30159	1.0698	6228.2	166	3114.088	3362.50	107.98%
Cs-137	5.30159	1.0698	5142.3	662	2571.168	2567.50	99.86%
Co-60	5.30159	1.0698	8382.4	1332	4191.202	4172.20	99.55%

1355 2-23-24

Pace Analytical™ www.pacelabs.com

Pace Analytical Services-PGH

Radiological Standards Dilution Logbook

Logbook ID: 1-0168-0 SOP ID: ENV-SOP-GBUR-0074

Nuclide: mixed Gamma w Pb210
Standard ID: 22-003
Parent Source: 22-002
Parent Conc: Varies by nuclide
Reference Date: 7/1/21 1200 EST

Std Conc.: See calcs
Prepared By: KMH
Prep Date: 1/30/22
Initial Expiration Date: 1/30/27

Balance ID: MA
Diluent: DI
Diluent IDs: NA

Conversions: 60 dpm = 1 dps
1 Bq = 1 dps
2.22 dpm = 1 pCi

Dilution Description: Diluted entire contents of 22-002 to 20L using DI. Final acid concentration is 1N HCl.

Dilution Calculations:

See calculations sheet

Standard Verification Date Verified	New Expiration Date	File	% Recovery	Analyst
1				
2				
3				
4				

Standard Final Disposal (circle one) **Consumed** **Destroyed** **Discarded**
Analyst initials: _____ Date: _____

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Pace Analytical Services-PGH

Radiological Standards Dilution Logbook

Logbook ID: 1-0168-0 **SOP ID: ENV-SOP-GBUR-0074**

Nuclide: Mixed Gamma w/ Pb 210
Standard ID: 22002
Parent Source: 119671
Parent Conc: See Cert
Reference Date: 7/1/2021 1200 EST

Std Conc.: See Calc
Prepared By: JAV
Prep Date: 1/19/2022
Initial Expiration Date: 1/19/2027

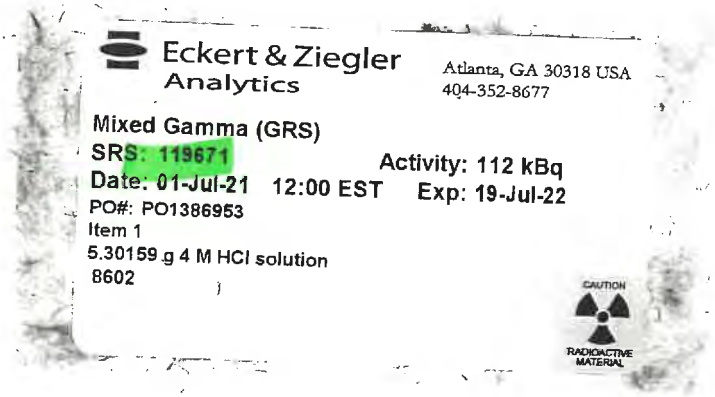
Balance ID: B1d0197175
Diluent: 4 M HCl
Diluent IDs: Dil 21-1398

Conversions: 60 dpm = 1 dps
1 Bq = 1 dps
2.22 dpm = 1 pCi

Dilution Description:

1.0698 g diluted to 500.0 ml in 4M HCl and transferred to 500 ml SSJ JAV 1/19/2022.

Dilution Calculations:



Standard Verification Date Verified	New Expiration Date	File	% Recovery	Analyst
1				
2				
3				
4				

Standard Final Disposal (circle one) **Consumed** **Destroyed** **Discarded**
Analyst initials: _____ Date: _____

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404·352·8677
Fax 404·352·2837
www.ezag.com

CERTIFICATE OF CALIBRATION
Standard Reference Source

SRS Number: 119671
Source Description: 5 mL Liquid in 5 mL Flame Sealed Ampoule
Product Code: 8602
Customer: Pace Analytical Services
P.O. Number: PO1386953, Item 1

This standard radionuclide source was prepared from an aliquot measured gravimetrically from a master radionuclide solution calibrated with a germanium gamma-ray spectrometer system. Additional radionuclides were added gravimetrically from solutions calibrated by gamma-ray spectrometry, ionization chamber, or liquid scintillation counting. Calibration and purity were checked using germanium gamma-ray spectrometry. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology (NIST) through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 2, July 2007, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST."

Reference Date: 01-July-2021 12:00 PM EST

GRS Mixture

Isotope	Gamma-Ray Energy, keV	Half-Life, d	Activity, Bq	Flux, s^{-1}	Uncertainty u_A, %	Uncertainty u_B, %	Uncertainty U, %*	Calibration Method**
Pb-210	46.5	8.109E+03	3.269E+04	1.389E+03	0.1	1.5	3.1	4π LS
Cd-109	88.0	4.614E+02	3.320E+04	1.229E+03	0.5	1.3	2.8	HPGe
Co-57	122.1	2.717E+02	7.593E+02	6.500E+02	0.4	0.7	1.7	HPGe
Ce-139	165.9	1.376E+02	1.142E+03	9.135E+02	0.4	0.9	2.0	HPGe
Cr-51	320.1	2.770E+01	3.327E+04	3.297E+03	0.1	1.0	2.1	IC
Sn-113	391.7	1.151E+02	1.974E+03	1.283E+03	0.4	1.2	2.6	HPGe
Sr-85	514.0	6.485E+01	2.666E+03	2.626E+03	0.1	1.0	2.1	IC
Cs-137	661.7	1.099E+04	9.429E+02	8.024E+02	0.7	1.2	2.8	HPGe
Y-88	898.0	1.066E+02	3.328E+03	3.118E+03	0.7	0.8	2.2	HPGe
Y-88	1836.1	———	———	3.301E+03	0.7	0.8	2.2	———
Co-60	1173.2	1.925E+03	1.537E+03	1.535E+03	0.7	1.0	2.5	HPGe
Co-60	1332.5	———	———	1.537E+03	0.7	1.0	2.5	———

Gamma-Ray (GRS) master solution is EZA's mixture that consists of Cd-109, Co-57, Ce-139, Sn-113, Cs-137, Y-88, and Co-60 (calibrated quarterly) with the addition of Cr-51 and Sr-85. ***Uncertainty:** U - Relative expanded uncertainty, $k = 2$. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results." ****Calibration Methods:** 4π LS - 4π Liquid Scintillation Counting, HPGe - High Purity Germanium Gamma-Ray Spectrometer, IC - Ionization Chamber.

(Certificate continued on reverse side)

Rec'd 7/20/2021

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia, 30318

SRS Number: 119671

Comments:

5.30159 g of 4 M HCl solution with approximately 30 µg/g each of Cd, Co, Ce, Cr, Sn, Sr, Cs, and Y carriers.

Expiration Date: 19-July-2022

This source was wipe tested in its inactive areas with leak test results < 185 Bq (5 nCi) of removable activity per ISO 9978:1992.

Source Prepared by: _____

K. Eardley, Radiochemist

QC Approved by: _____ Date: 13-JUL-21

J. Lahr, Spectroscopist

ORTEC g v - i (3263) Env32 G701W047 2/23/2024 11:20:28 AM Page 1
PACE Spectrum name: CVD522-003-2L-021524.An1

Sample description
CALVER

Spectrum Filename: C:\User\CVD522-003-2L-021524.An1

Acquisition information
Start time: 2/15/2024 3:26:23 PM
Live time: 36000
Real time: 36036
Dead time: 0.10 %
Detector ID: 5

Detector system
DET 5

Calibration
Filename: DET_5_2L_MAR_23-047(021924).Clb
DET_5_2L_MAR_23-047(021924)

Energy Calibration
Created: 2/23/2024 11:14:34 AM
Zero offset: 0.513 keV
Gain: 0.250 keV/channel
Quadratic: -4.543E-10 keV/channel^2

Efficiency Calibration
Created: 2/23/2024 11:15:45 AM
Type: Polynomial
Uncertainty: 1.566 %
Coefficients: -0.317713 -4.992960 0.533353
-0.071649 0.003819 -0.000077

Library Files
Main analysis library: WaterCalib(No Am)091819.Lib
Library Match Width: 0.500
Peak stripping: Library based

Analysis parameters
Analysis engine: Env32 G701W047
Start channel: 120 (30.51keV)
Stop channel: 8144 (2036.02keV)
Peak rejection level: 30.000%
Peak search sensitivity: 3
Sample Size: 2.0000E+00
Activity scaling factor: 1.0000E+06/(1.0000E+00* 2.0000E+00) =
5.0000E+05
Detection limit method: Reg. Guide 4.16 Method

Random error: 1.0000000E+00
Systematic error: 1.0000000E+00
Fraction Limit: 0.000%
Background width: average of three points.

Half lives decay limit: 12.000

BSS 2-23-24

Activity range factor: 2.000
Min. step backg. energy 0.000
Multiplet shift channel 2.000

Corrections	Status	Comments
Decay correct to date:	YES	7/1/2021 12:00:00 PM
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	YES	Det_5_Bkg_020924Ra226U235(2L).Pb 2/12/2024 9:37:26 AM
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

total peaks alloc. 0 cutoff: 0.00E+00 %
Energy Calibration
Normalized diff: 0.0954

***** S U M M A R Y O F P E A K S I N R A N G E *****

Peak Energy	Area	Uncert	FWHM	Corrctn Factor	Nuclide Energy	Brnch. Ratio	Act. pCi/L	Nuc
32.45	1312.	17.16	1.26	5.178E-04				
46.75	55684.	0.73	1.32	5.689E-03	46.52	4.000	1.031E+05	PB210
87.91	44014.	0.86	1.33	2.031E-02	88.03	3.610	9.474E+04	CD109
121.91	10031.	2.84	1.36	2.425E-02	122.07	85.600	2.093E+03	CO57
136.38	1460.	8.26	1.36	2.484E-02				
165.88	1412.	13.74	1.46	2.473E-02	165.85	79.950	3.362E+03	CE139
392.17	678.	21.42	1.38	1.557E-02	391.69	64.160	8.215E+03	SN113
510.86	1475.	16.01	2.30	1.280E-02				
514.22	454.	27.73	1.60	1.274E-02	514.00	96.000	HL>Cutoff	SR85
					514.00	96.000	HL>Cutoff	SR85
661.55	58104.	0.52	1.69	1.059E-02	661.66	85.210	2.568E+03	CS137
897.66	721.	20.65	1.36	8.497E-03	898.02	95.000	1.714E+04	Y88
1173.24	54631.	0.47	1.96	7.007E-03	1173.24	99.900	4.137E+03	CO60
1332.53	50609.	0.46	2.06	6.378E-03	1332.50	99.982	4.207E+03	CO60
1836.15	307.	10.63	1.50	4.960E-03	1836.01	99.350	1.197E+04	Y88

BSS 2-23-24

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Centroid Channel	Energy	Background Counts	Net Area Counts	Efficiency * Area	Uncert 2 Sigma %	FWHM keV	Suspected Nuclide	
127.76	32.45	13453.	1312.	2.533E+06	34.31	1.255	XE-138	s
543.59	136.39	6536.	1460.	5.876E+04	16.52	1.364	CO-57	D
2041.85	510.86	6264.	1475.	1.153E+05	32.01	2.296	RH-106M	

s - Peak fails shape tests.
D - Peak area deconvoluted.
L - Peak written from unknown list.
C - Area < Critical level.

This section based on library: WaterCalib(No Am)091819.Lib

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	FWHM keV
PB-210	185.01	46.75	22633.	55641.	1.546	1.47	1.318
CD-109	349.66	87.91	18425.	44014.	1.223	1.71	1.328
CO-57	485.71	121.91	12969.	10031.	0.279	5.69	1.361
CE-139	661.61	165.88	8060.	1412.	0.039	27.49	1.461
SN-113	1566.97	392.17	4226.	678.	0.019	42.84	1.383
SR-85	2055.29	514.22	2988.	454.	0.013	55.47	1.604s
CS-137	2644.78	661.55	4142.	58089.	1.614	1.03	1.691
Y-88	3589.45	897.66	3507.	721.	0.020	41.30	1.357s
CO-60	4692.02	1173.24	1587.	54619.	1.517	0.94	1.955
CO-60	5329.33	1332.53	473.	50609.	1.406	0.92	2.064
Y-88	7344.34	1836.15	83.	307.	0.009	21.26	1.495s

s - Peak fails shape tests.
D - Peak area deconvoluted.
A Derived peak area.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

Nuclide Name	Code	Average Activity pCi/L	Peak Energy keV	Peak Activity pCi/L	Code	MDA Value pCi/L			COMMENTS
PB-210		1.0306E+05						8.12E+03	
			46.52	1.031E+05	(P	1.304E+03	7.33E-01	4.00E+00	G
CD-109		9.4745E+04						4.63E+02	
			88.03	9.474E+04	(	1.367E+03	8.57E-01	3.61E+00	G
CO-57		2.0932E+03						2.72E+02	
			122.07	2.093E+03	(	1.113E+02	2.84E+00	8.56E+01	G
CE-139		3.3625E+03						1.38E+02	
			165.85	3.362E+03	(	1.002E+03	1.37E+01	7.99E+01	G
SN-113		8.2154E+03						1.15E+02	
			391.69	8.215E+03	(P	3.704E+03	2.14E+01	6.42E+01	G

ORTEC g v - i (3263) Env32 G701W047 2/23/2024 11:20:28 AM Page 4
PACE Spectrum name: CVD522-003-2L-021524.An1

Nuclide		Ave activity	Energy	Activity	Code	Peak MDA			Comments
SR-85	C	1.3947E+01						6.48E+01	
			514.00	1.395E+01	?(	7.899E+00	2.77E+01	9.60E+01	G K
CS-137		2.5675E+03						1.10E+04	
			661.66	2.568E+03	(P	1.338E+01	5.17E-01	8.52E+01	G
Y-88		1.1972E+04						1.07E+02	
			1836.01	1.197E+04	(P	1.754E+03	1.06E+01	9.93E+01	G
			898.02	1.714E+04	+ P	6.624E+03	2.06E+01	9.50E+01	G

CO-60 4.1722E+03 1.93E+03
1173.24 4.137E+03 (P 1.427E+01 4.69E-01 9.99E+01 G
1332.50 4.207E+03 (8.651E+00 4.61E-01 1.00E+02 G

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide failed one or more qualification tests.
+ - Peak activity higher than counting uncertainty range.
- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction
} - Peak is too close to another for the activity to be found directly.

Nuclide Codes:
T - Thermal Neutron Activation
F - Fast Neutron Activation
I - Fission Product
N - Naturally Occurring Isotope
P - Photon Reaction
C - Charged Particle Reaction
M - No MDA Calculation
R - Coincidence Corrected
H - Halflife limit exceeded

Peak Codes:
G - Gamma Ray
X - X-Ray
P - Positron Decay
S - Single-Escape
D - Double-Escape
K - Key Line
A - Not in Average
C - Coincidence Peak

- -

********** D I S C A R D E D I S O T O P E P E A K S **********

Nuclide	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 2 Sigma %	Activity
SR-85	514.22	2988.	454.	0.013	55.47	0.000E+00

P - Peakbackground subtraction

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide	Time of Count Activity pCi/L	Time Corrected Activity pCi/L	Uncertainty 2 Sigma Counting pCi/L	Total pCi/L	MDA pCi/L
PB-210	9.4955E+04	1.0306E+05	1.5102E+03	8.6788E+03	1.304E+03
CD-109	2.2512E+04	9.4745E+04	1.6240E+03	7.8017E+03	1.367E+03
CO-57	1.8135E+02	2.0932E+03	1.1904E+02	1.7741E+02	1.113E+02
CE-139	2.6812E+01	3.3625E+03	9.2424E+02	9.4598E+02	1.002E+03
CR-51 #B	0.0000E+00	>12 Halflives	2.0070E+01	2.0071E+01	7.291E+01
SN-113	2.5474E+01	8.2154E+03	3.5196E+03	3.5707E+03	3.704E+03
SR-85 #	1.3947E+01	>12 Halflives	7.7361E+00	7.7822E+00	7.899E+00
CS-137	2.4167E+03	2.5673E+03	2.6558E+01	9.5850E+01	1.338E+01
Y-88	2.3421E+01	1.1972E+04	2.5456E+03	2.6077E+03	1.754E+03

BSS 2-23-24

CO-60	2.9539E+03	4.1722E+03	2.7448E+01	1.4346E+02	1.427E+01	BSS 2-23-24

- All peaks for activity calculation had bad shape.
* - Activity omitted from total
& - Activity omitted from total and all peaks had bad shape.
< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

---------- S U M M A R Y ----------

Total Activity (30.5 to 2036.0 keV) 1.231E+05 pCi/L
Total Decayed Activity (30.5 to 2036.0 keV) 2.3018406E+05 pCi/L

Analyzed by: _____ Operator

Reviewed by: _____ Supervisor

Laboratory: PACE

Logbook ID: 8-0054-0

SOP ID: ENV-SOP-GBUR-0078

Gamma Spectrometry Run Log

REMINDER: Perform and Log Daily Checks!

Detector #	Sample No.	Batch ID	Aliquots (g, L,S, F)	Geometry	Count Time (min)	Count Start date/ time	Count Analyst
5	30660572001 (194)	77480	2.0L	2 LITER	90	2/14/24 838	[illegible]
6	30655233001	77397	100.82g	8 OZ TUNA	60	2/14/24 847	[illegible]
6	DBD6021524	DBKG	-	-	5	2-15-24 0702	BSS
5	DCD502152 4 (QA5B0673) ✓	DCHK	-	check source 5	BSS 2-15-24 5	2-15-24 0705	BSS
5	DBD5021524	DBKG	-	-	5	2-15-24 0711	BSS
6	DCD6021524 (QA600645) ✓	DCHK	-	check source 5	5	2-15-24 0713	BSS
6	30655520001	77397	294.04g	8 OZ TUNA	15	2/15/24 750	[illegible]
6	30655521001	77397	399.52g	8 OZ TUNA	15	2/15/24 806	[illegible]
6	30655784001	77397	250.08g	8 OZ TUNA	15	2/15/24 822	[illegible]
6	30660572004	77624	52.18g	8 OZ TUNA	150	2/15/24 840	[illegible]
6	30660572003	77624	266.48g	8 OZ TUNA	30	2/15/24 1125	[illegible]
6	30660572002	77624	61.17g	8 OZ TUNA	150	2/15/24 1156	[illegible]
2-23-24 BSS 5 6	CUD522-003-2L-021524	CALIBER	2.0L	2 LITER	600	2/15/24 1526	[illegible]
6	DBD6021624	DBKG	-	-	5	2-16-24 0713	BSS
5	DCD502162 4 (QA5B0674) ✓	DCHK	-	check source 5	5	2-16-24 0715	BSS
5	DBD5021624	DBKG	-	-	5	2-16-24 0728	BSS
6	DCD6021624 (QA600646) ✓	DCHK	-	check source 5	5	2-16-24 0730	BSS
5	3065 6129 001	77492	22.37	10Z	60	2-16-24 1008	BSS
(1) 6	~~3065 6113 001 3163846~~ BSS 2-16-24	~~77687~~	~~22.30~~	~~20Z~~	~~60~~	~~2-16-24 1031~~	~~BSS~~
5	3065 6174 001	77492	22.36	10Z	60	2-16-24 1138	BSS
(2) ~~6~~	~~LCS 77687~~	~~77687~~	~~BSS 2-16-24 22.47 52~~	~~20Z~~	~~60~~	~~2-16-24 1145~~	~~BSS~~
(3) ~~6~~	~~LCSD 77687~~	~~77687~~	~~47.52~~	~~20Z~~	~~60~~	~~2-16-24 1315~~	~~BSS~~
5	~~LB 02.16.24~~ BSS 2-17-24 LBD5021624	LBKG	—	empty Shield	1000	2-16-24 1548	KDW
6	LBD6021624	LBKG	—	empty Shield	1000	2-16-24 1551	KDW

Comments: (1-3) counted on wrong detector. BSS 2-17-24

Logbook review documented on Rad Data Review Verification form.

BSS 2-23-24

Logbook ID: 8-0054-0

SOP ID: ENV-SOP-GBUR-0078

Gamma Spectrometry Run Log

REMINDER: Perform and Log Daily Checks!

Detector #	Sample No.	Batch ID	Aliquots (g, L,S, F)	Geometry	Count Time (min)	Count Start date/ time	Count Analyst
6	DBD6021924	DBKG	–	–	5	2-19-24 0658	BSS
5	DCD5021924 (QA5B0675) ✓	DCHK	–	check source 5	5	2-19-24 0700	BSS
6	DCD6021924 (QA600646) ✓	DCHK	–	check source 5	5	2-19-24 0713	BSS
5	BSS 2-19-24 DBK5006 DBD6021924	DBKG	–	–	5	2-19-24 0714	BSS
~~5~~	~~BSS 2-19-24 Det_5_2L_MAR_23-047 (021924)~~	~~CAL~~	~~2L~~	~~2L Mar~~		~~2-19-24 0858~~	~~BSS~~
6	3143324	77416	318.71	8oz Tuna	BSS 2-19-24 ~~1800~~ 30	2-19-24 0908	BSS
5	LCS77416 (13-056)	77416	371.44	8oz Tuna	BSS 2-19-24 ~~1800~~ 30	2-19-24 0943	BSS
6	3065 6241 001	77416	326.70	8oz Tuna	30	2-19-24 0946	BSS
6	LCSD 77416 (13-056)	77416	371.44	8oz Tuna	30	2-19-24 1114	BSS
5	3065 6584 001	77416	83.74	8oz Tuna	60	2-19-24 1117	BSS
6	3065 6585 001	77416	86.58	8oz Tuna	60	2-19-24 1202	BSS
5	3065 6554 001	77492	21.89	1oz	60	2-19-24 1305	BSS
6	Det_6_Half_oz_23-025(021924)	CAL	20.13	½ oz	948	2-19-24 1418	BSS
5	Det_5_2L_Mar_23-047(021924)	CAL	2L	2L Mar	439	2-19-24 1423	BSS
6	DBD6022024	DBKG	–	–	5	2-20-24 0614	BSS
5	DCD5022024 (QA5B0675) ✓	DCHK	–	check source 5	8	2-20-24 0615	BSS
5	DBD5022024	DBKG	–	–	5	2-20-24 0627	BSS
6	DCD6022024 (QA600646) ✓	DCHK	–	check source 5	5	2-20-24 0629	BSS
BSS 2-20-24 ~~5~~ 6	3065 6183 006	77416	291.25	8oz Tuna	60	2-20-24 0802	BSS
5	3065 6396 001	77416	202.69	8oz Tuna	60	2-20-24 0805	BSS
5	3065 6782 001	77492	22.23	1oz	60	2-20-24 0912	BSS
6	1068 1960 005	77416	378.66	8oz Tuna	60	2-20-24 0917	BSS
5	LCS77490 (21-043)	77490	204.87	4oz	60	2-20-24 1026	BSS
6	3149598	77490	197.84	4oz	60	2-20-24 1028	BSS

Comments:

Logbook review documented on Rad Data Review Verification form.

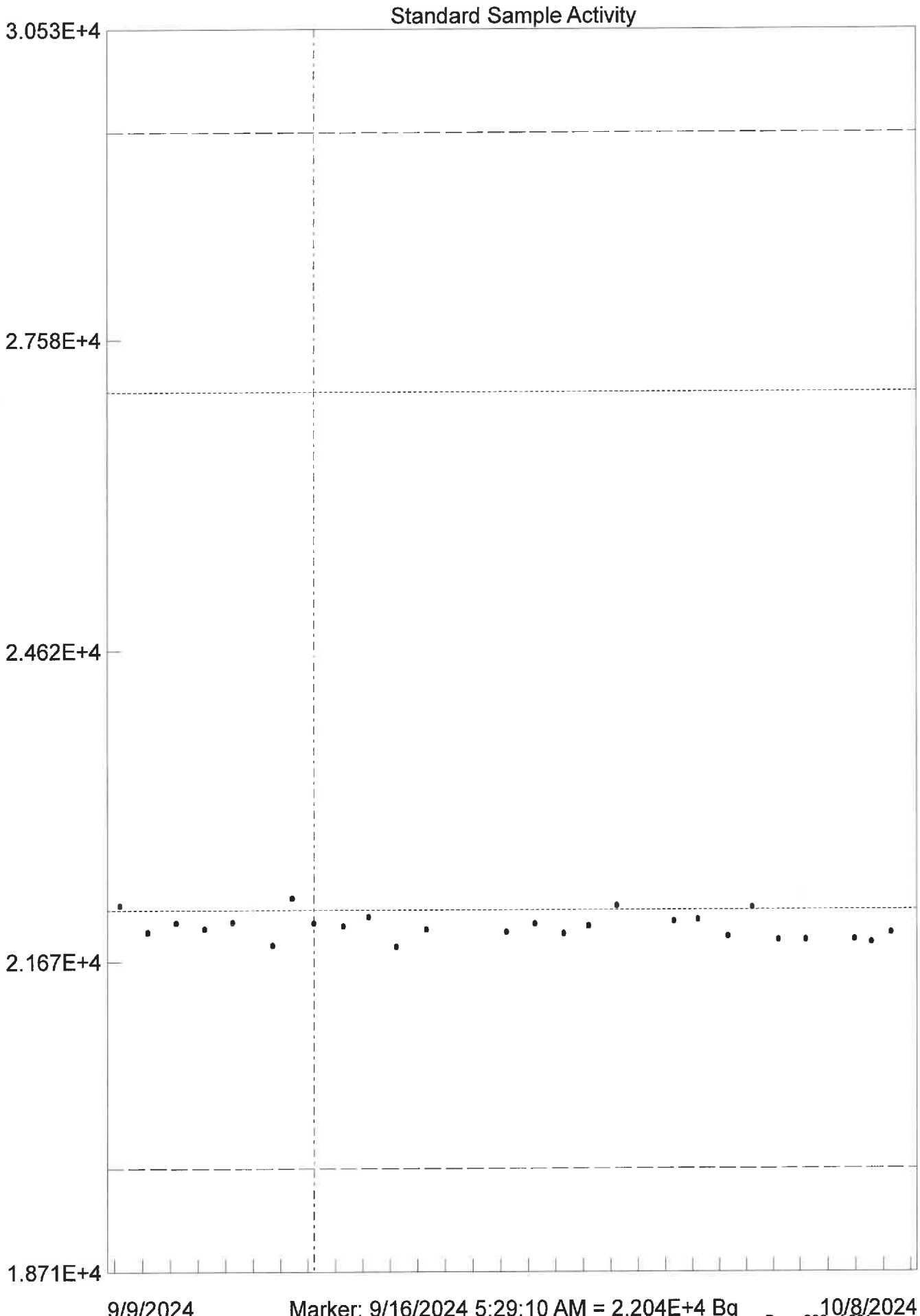
Gamma Spectroscopy Daily Checks

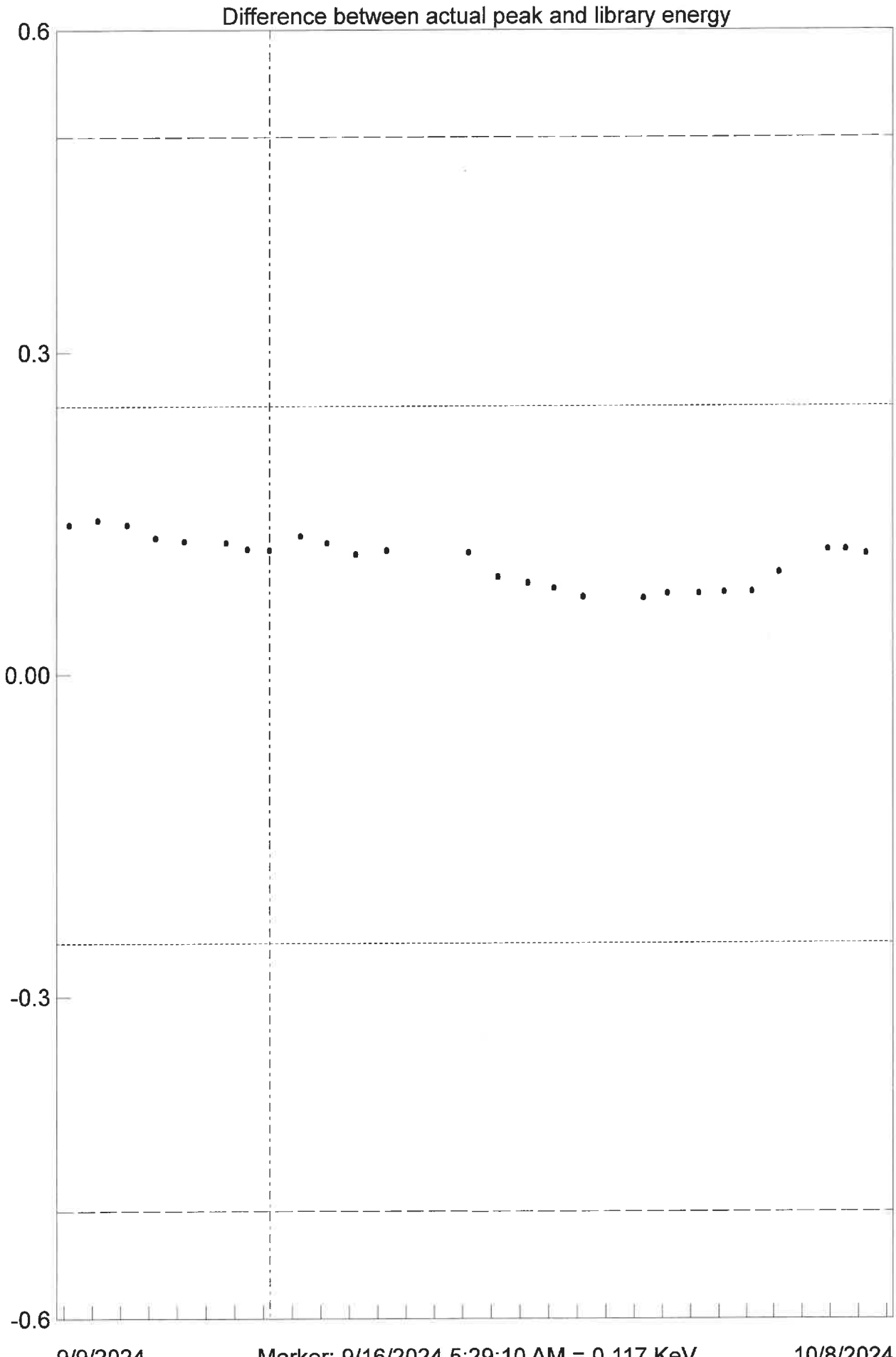
BATCH 8/31/8 DAFLCES

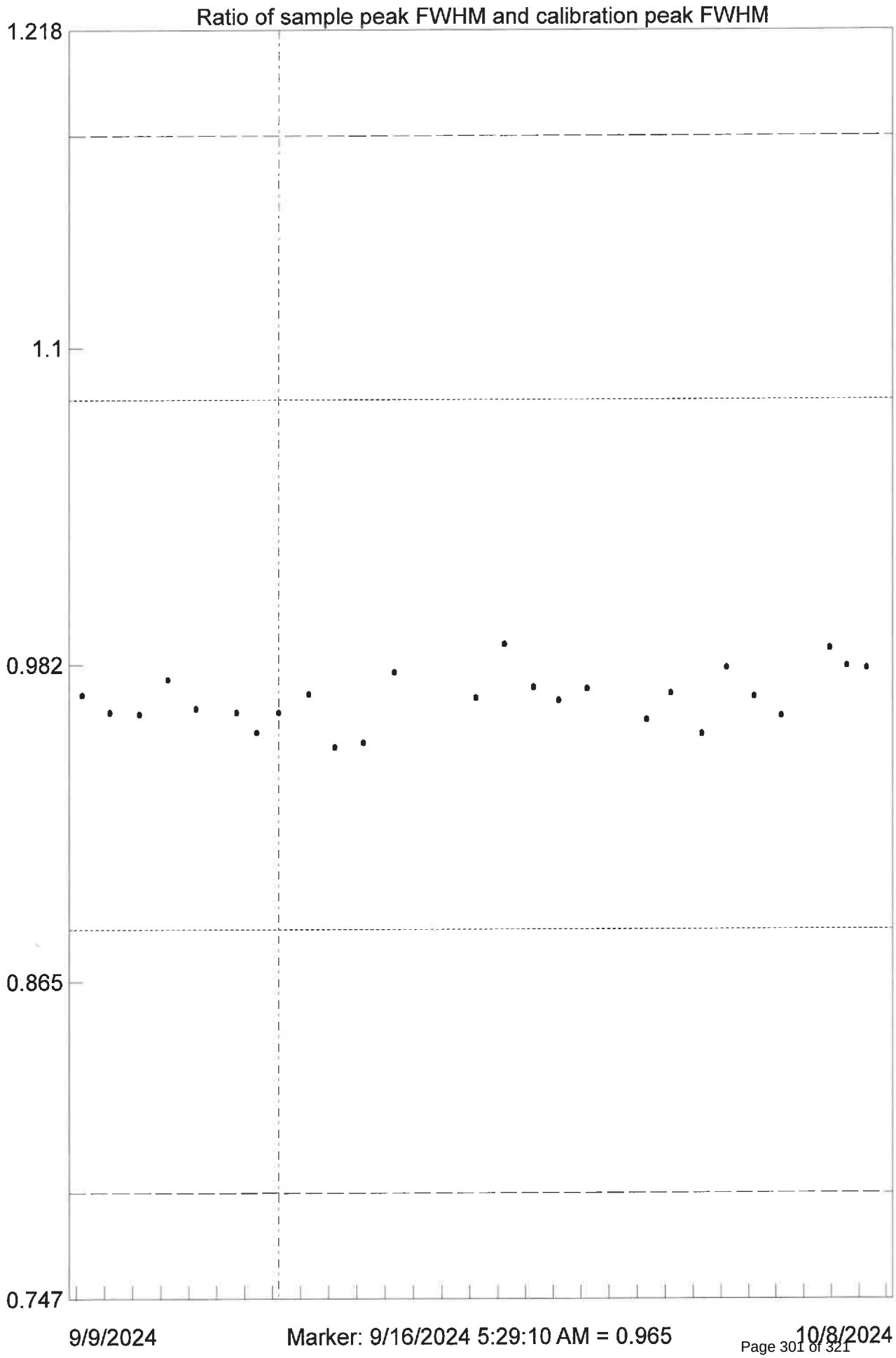
3390410 9/18 D5
LCS8/31/8 9/16 D2
LCSD8/31/8 9/16 D5

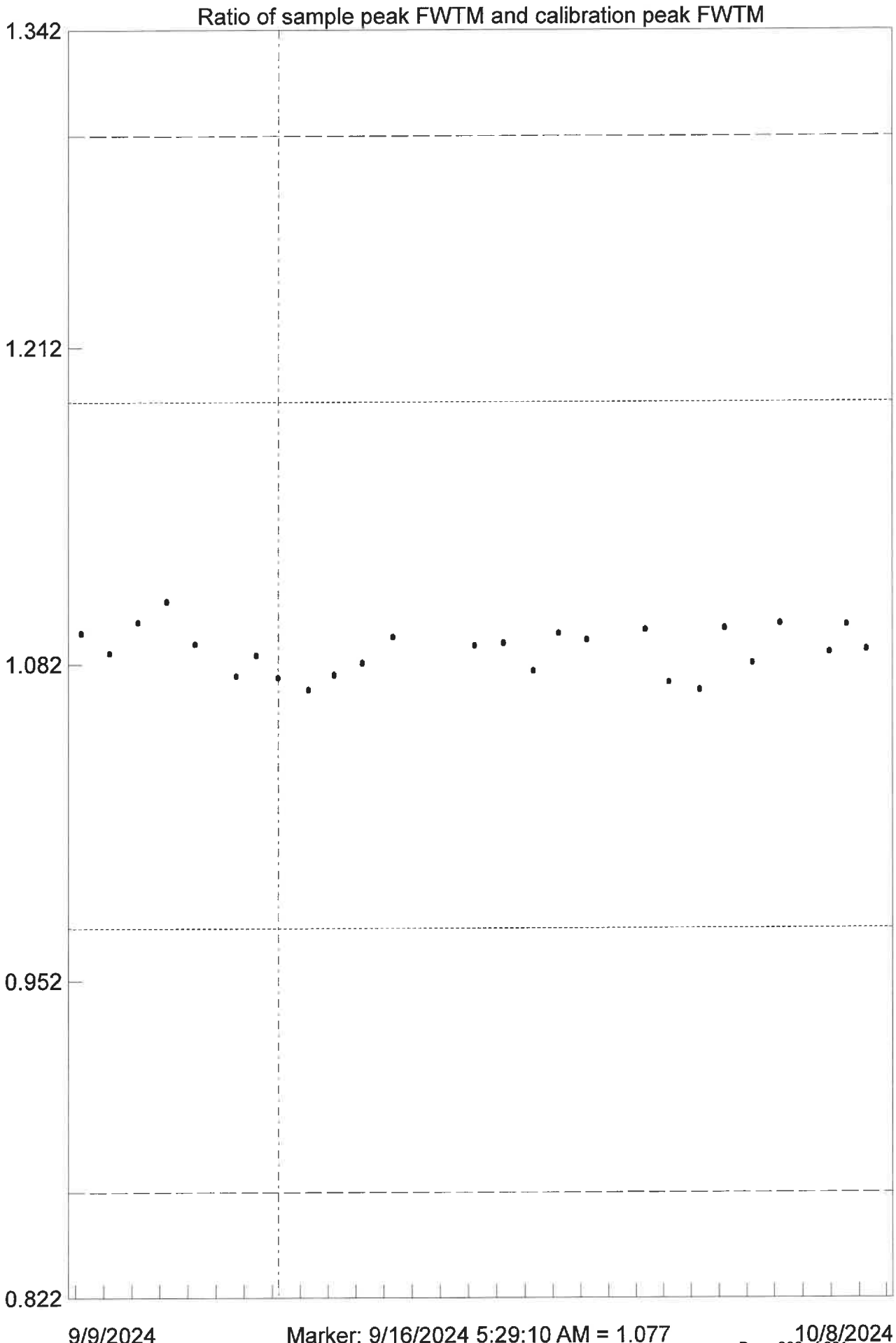
30716565001
9/18 D2

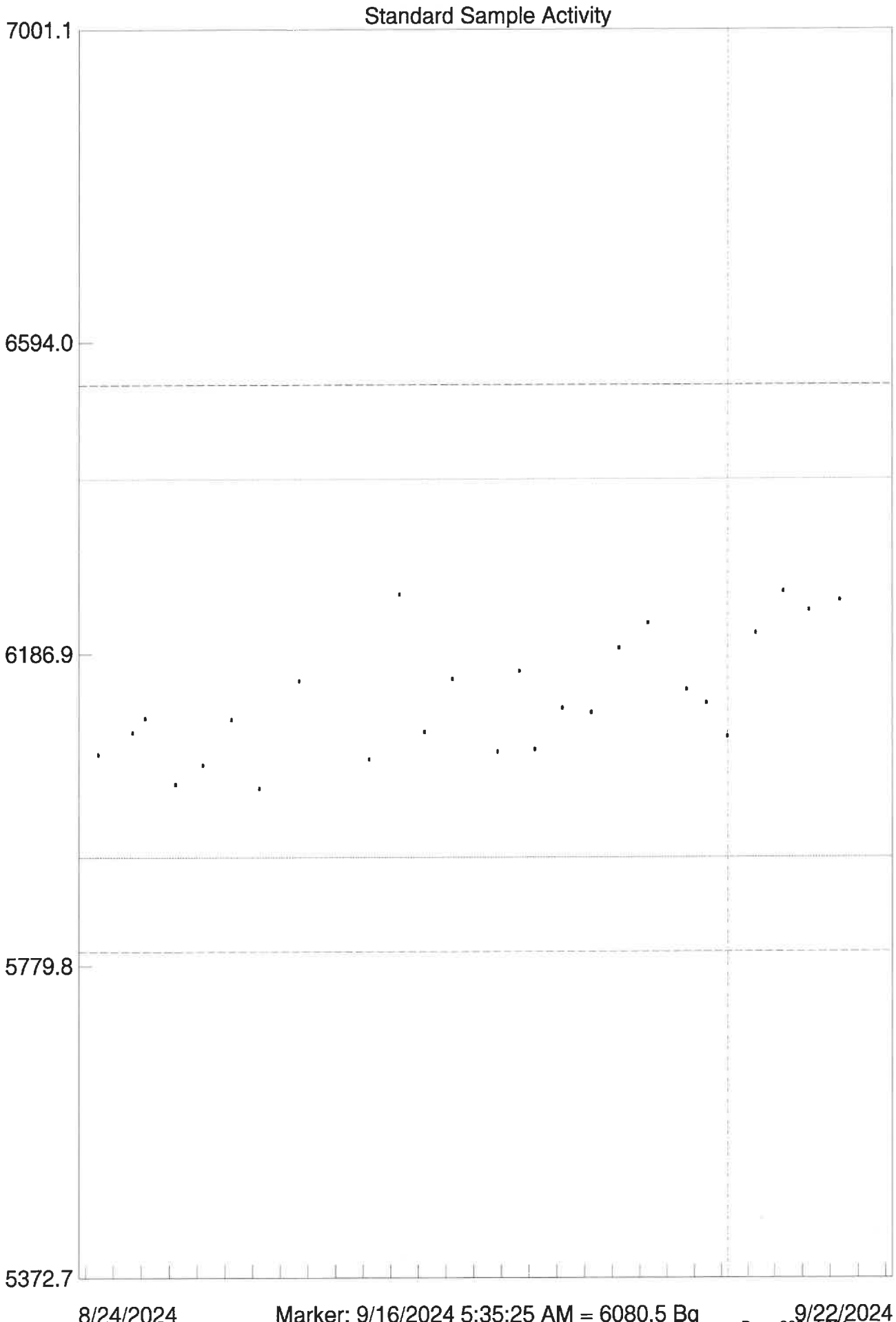
30716573001 9/18 D2
2 9/23 D2
3

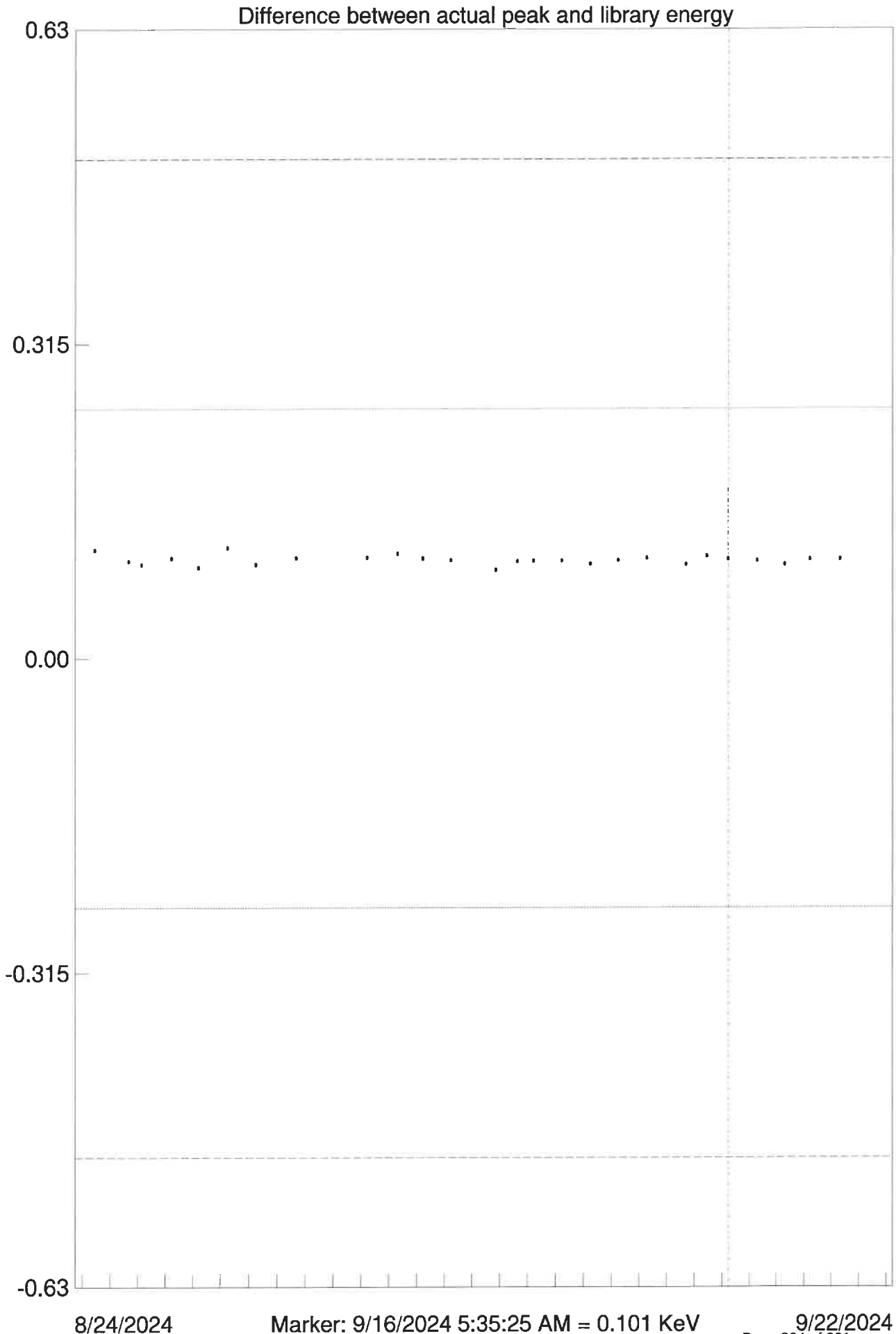

Standard Sample Activity
3.053E+4
2.758E+4
2.462E+4
2.167E+4
1.871E+4
9/9/2024
Marker: 9/16/2024 5:29:10 AM = 2.204E+4 Bq
10/8/2024

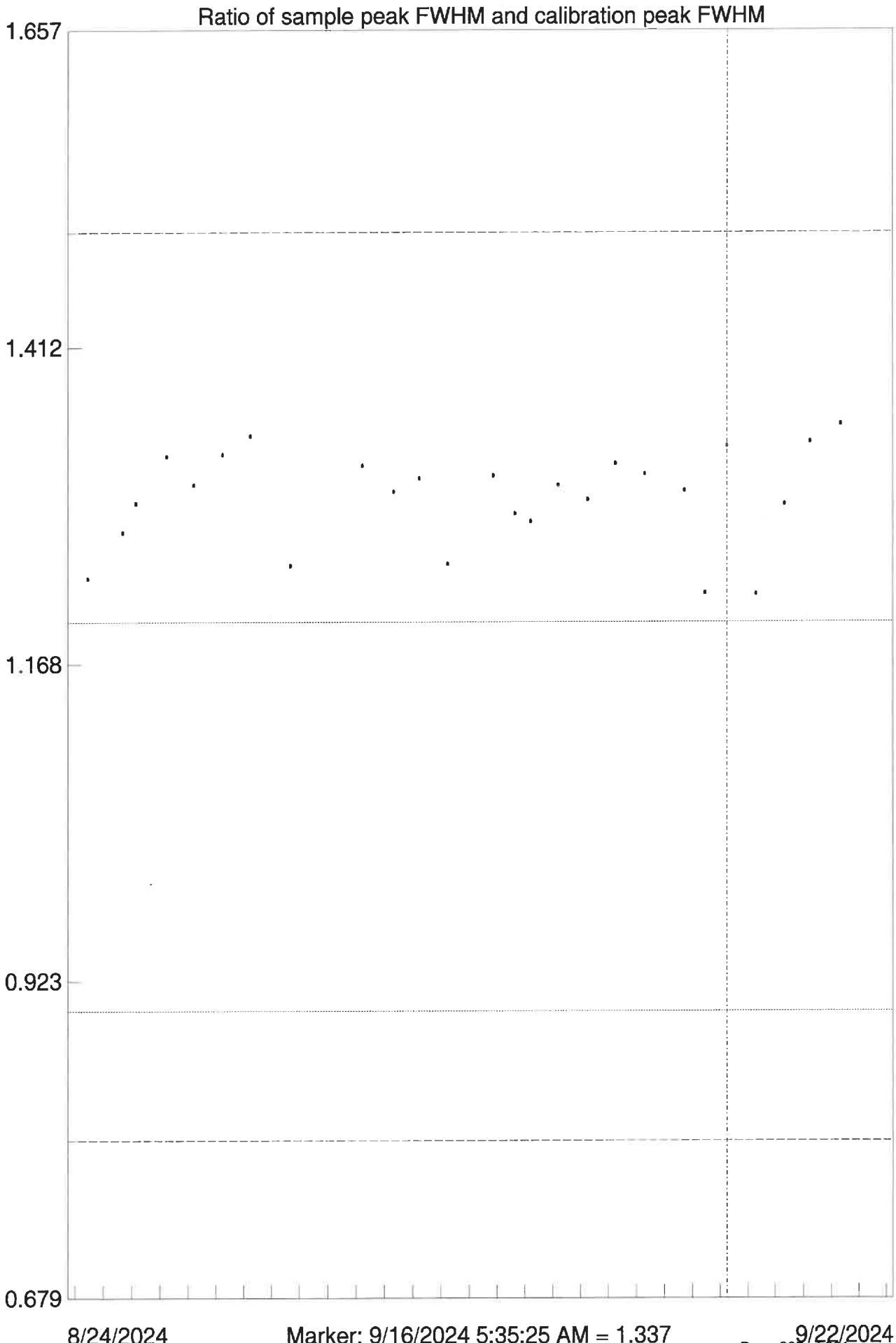

Difference between actual peak and library energy
0.6
0.3
0.00
-0.3
-0.6
9/9/2024
Marker: 9/16/2024 5:29:10 AM = 0.117 KeV
10/8/2024

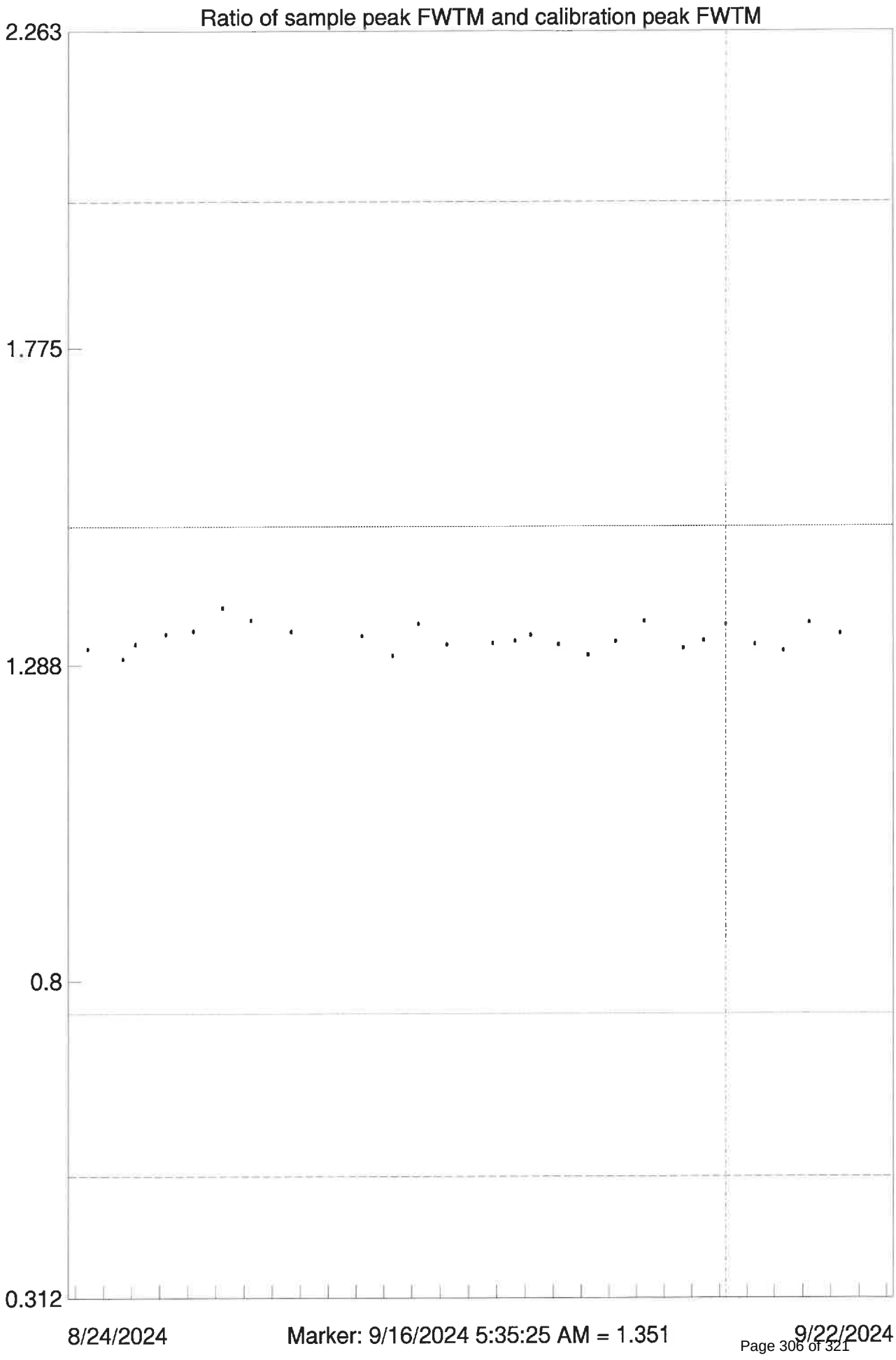

Ratio of sample peak FWHM and calibration peak FWHM
1.218
1.1
0.982
0.865
0.747
9/9/2024
Marker: 9/16/2024 5:29:10 AM = 0.965
10/8/2024


Ratio of sample peak FWTM and calibration peak FWTM
1.342
1.212
1.082
0.952
0.822
9/9/2024
Marker: 9/16/2024 5:29:10 AM = 1.077
10/8/2024


Standard Sample Activity
7001.1
6594.0
6186.9
5779.8
5372.7
8/24/2024
Marker: 9/16/2024 5:35:25 AM = 6080.5 Bq
9/22/2024

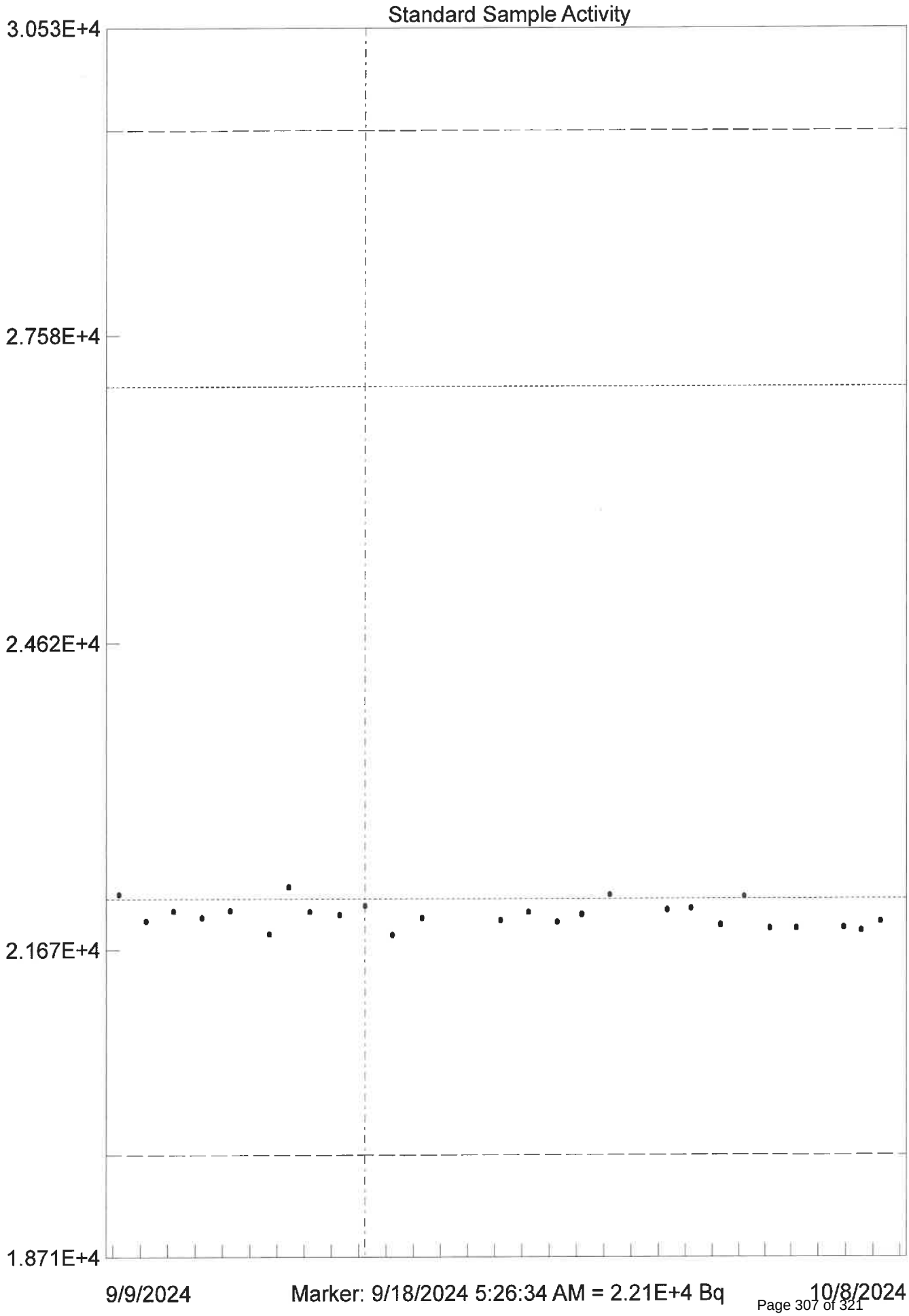

Difference between actual peak and library energy
0.63
0.315
0.00
-0.315
-0.63
8/24/2024
Marker: 9/16/2024 5:35:25 AM = 0.101 KeV
9/22/2024

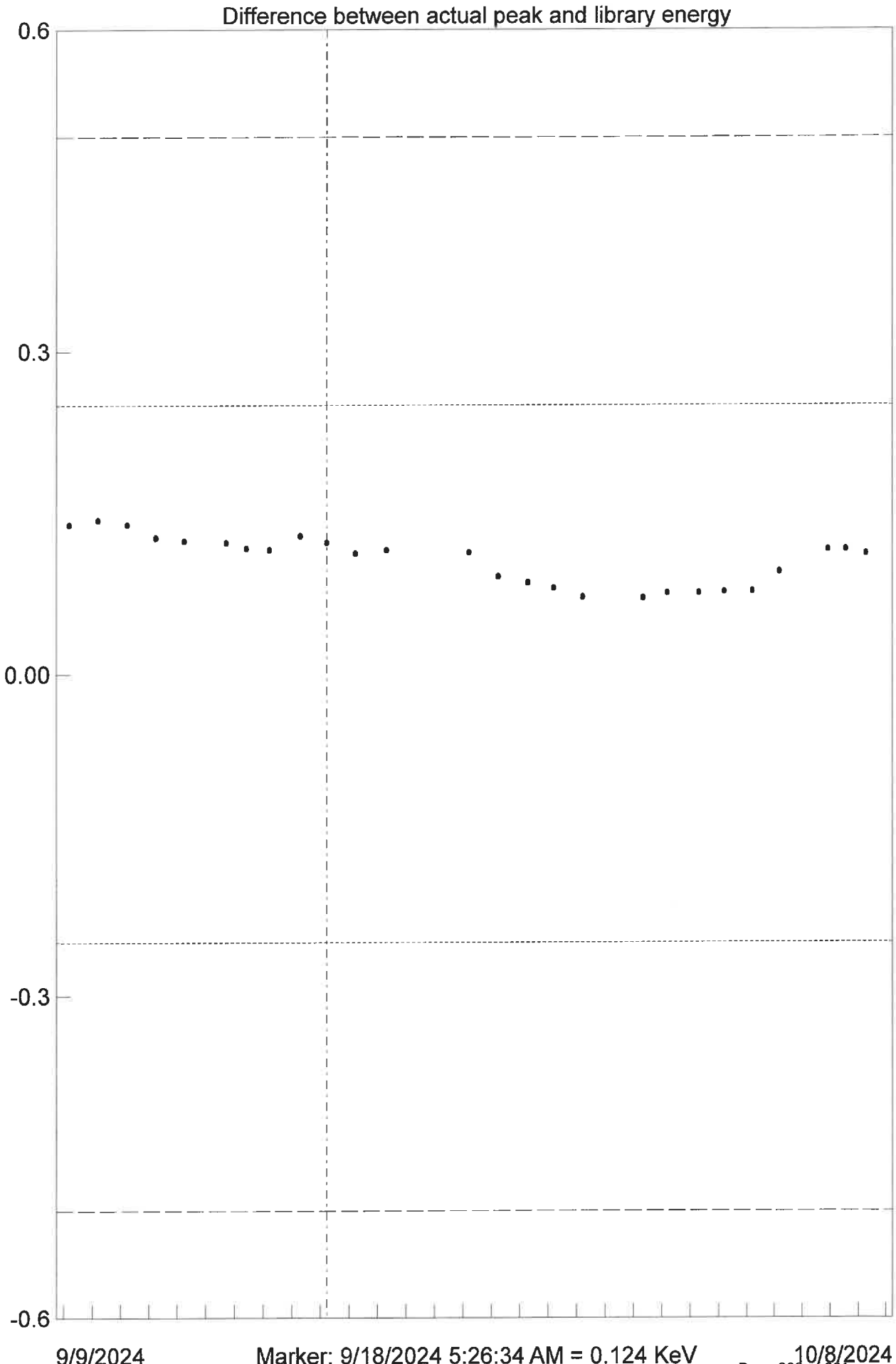

Ratio of sample peak FWHM and calibration peak FWHM
1.657
1.412
1.168
0.923
0.679
8/24/2024
Marker: 9/16/2024 5:35:25 AM = 1.337
9/22/2024

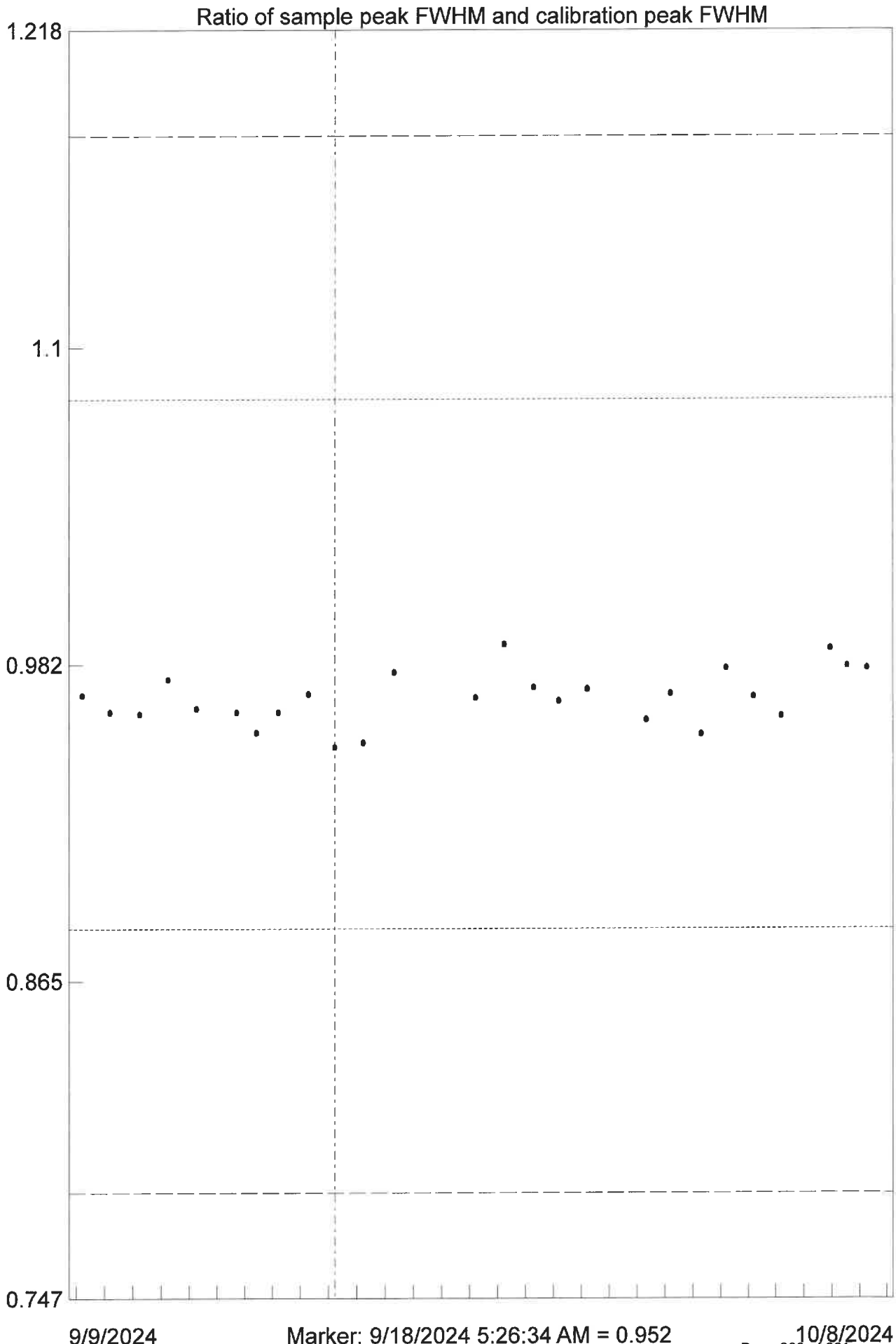

Ratio of sample peak FWTM and calibration peak FWTM
2.263
1.775
1.288
0.8
0.312
8/24/2024
Marker: 9/16/2024 5:35:25 AM = 1.351
9/22/2024

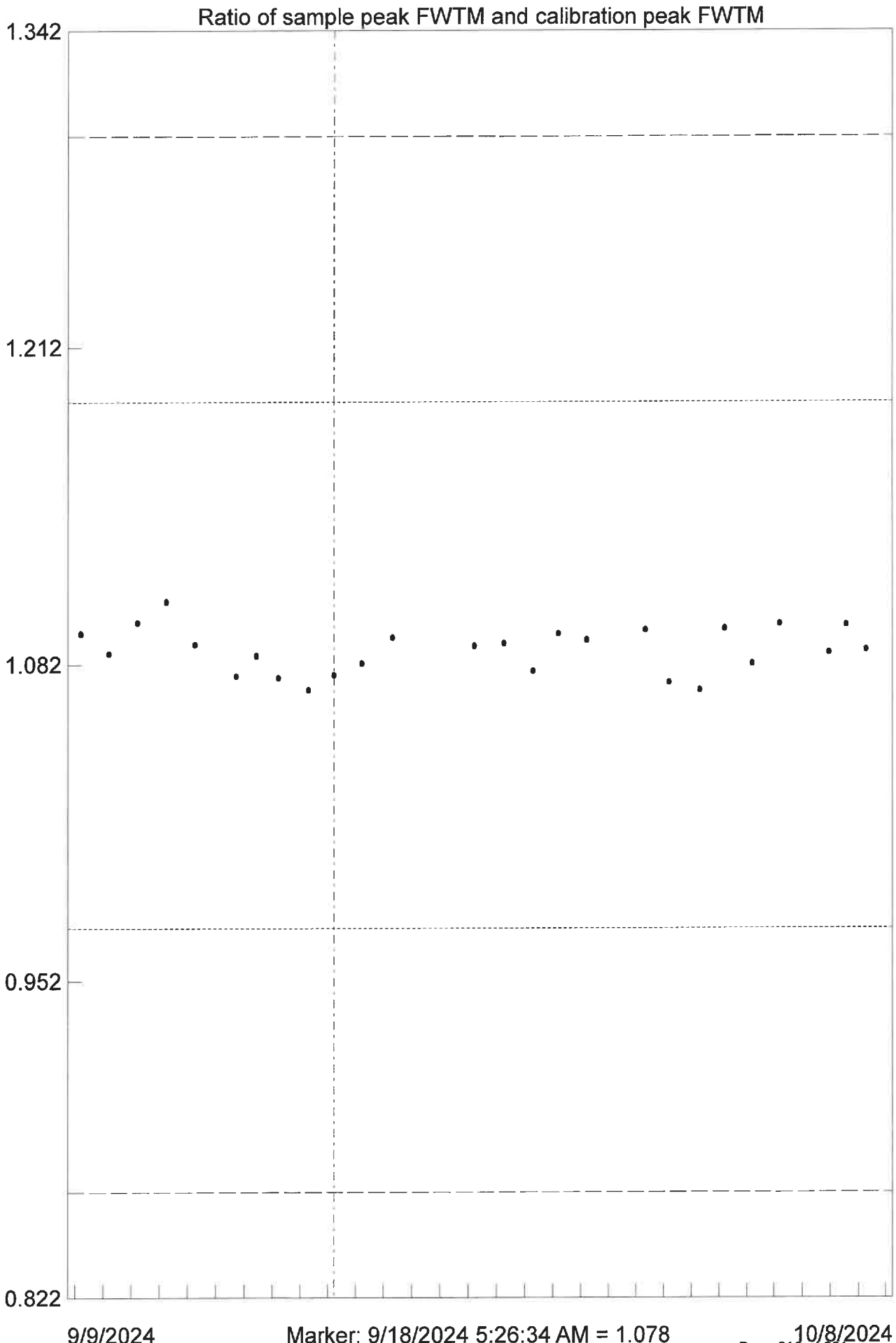
ORTEC
2 DET 2

10/28/2024 8:21:00 AM



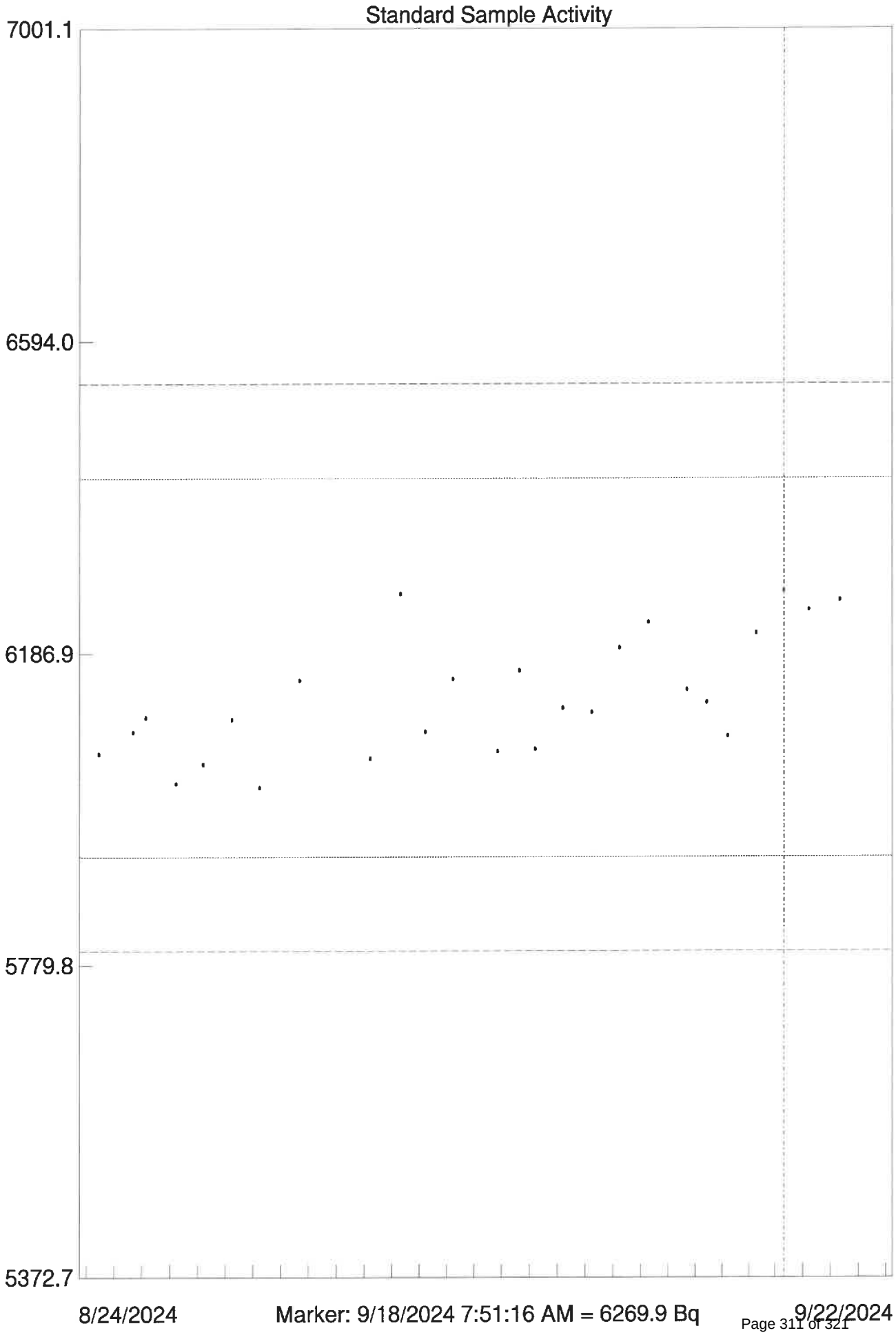

Difference between actual peak and library energy
0.6
0.3
0.00
-0.3
-0.6
9/9/2024
Marker: 9/18/2024 5:26:34 AM = 0.124 KeV
10/8/2024


Ratio of sample peak FWHM and calibration peak FWHM
1.218
1.1
0.982
0.865
0.747
9/9/2024
Marker: 9/18/2024 5:26:34 AM = 0.952
10/8/2024


Ratio of sample peak FWTM and calibration peak FWTM
1.342
1.212
1.082
0.952
0.822
9/9/2024
Marker: 9/18/2024 5:26:34 AM = 1.078
10/8/2024

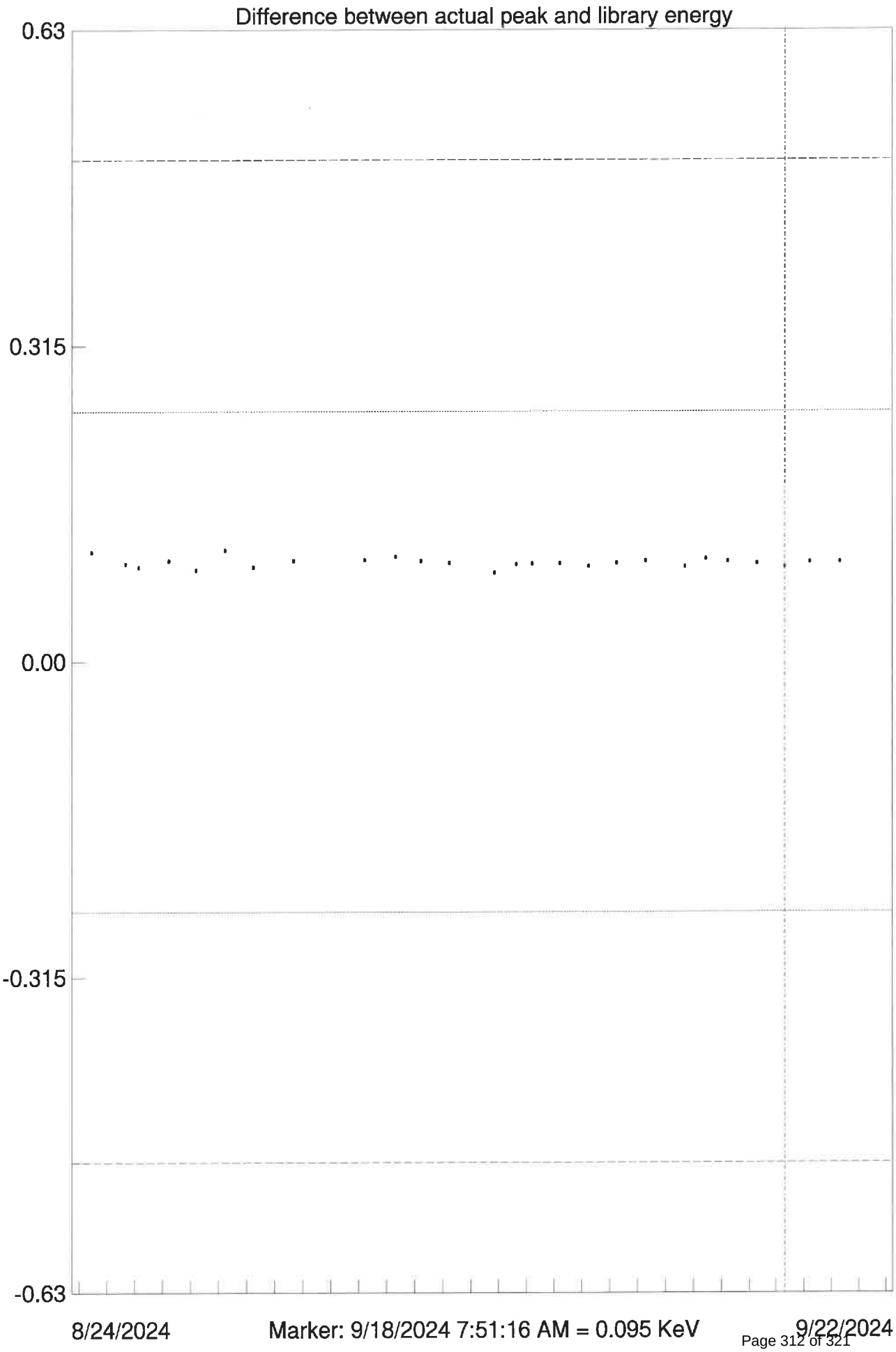
ORTEC
5 DET 5

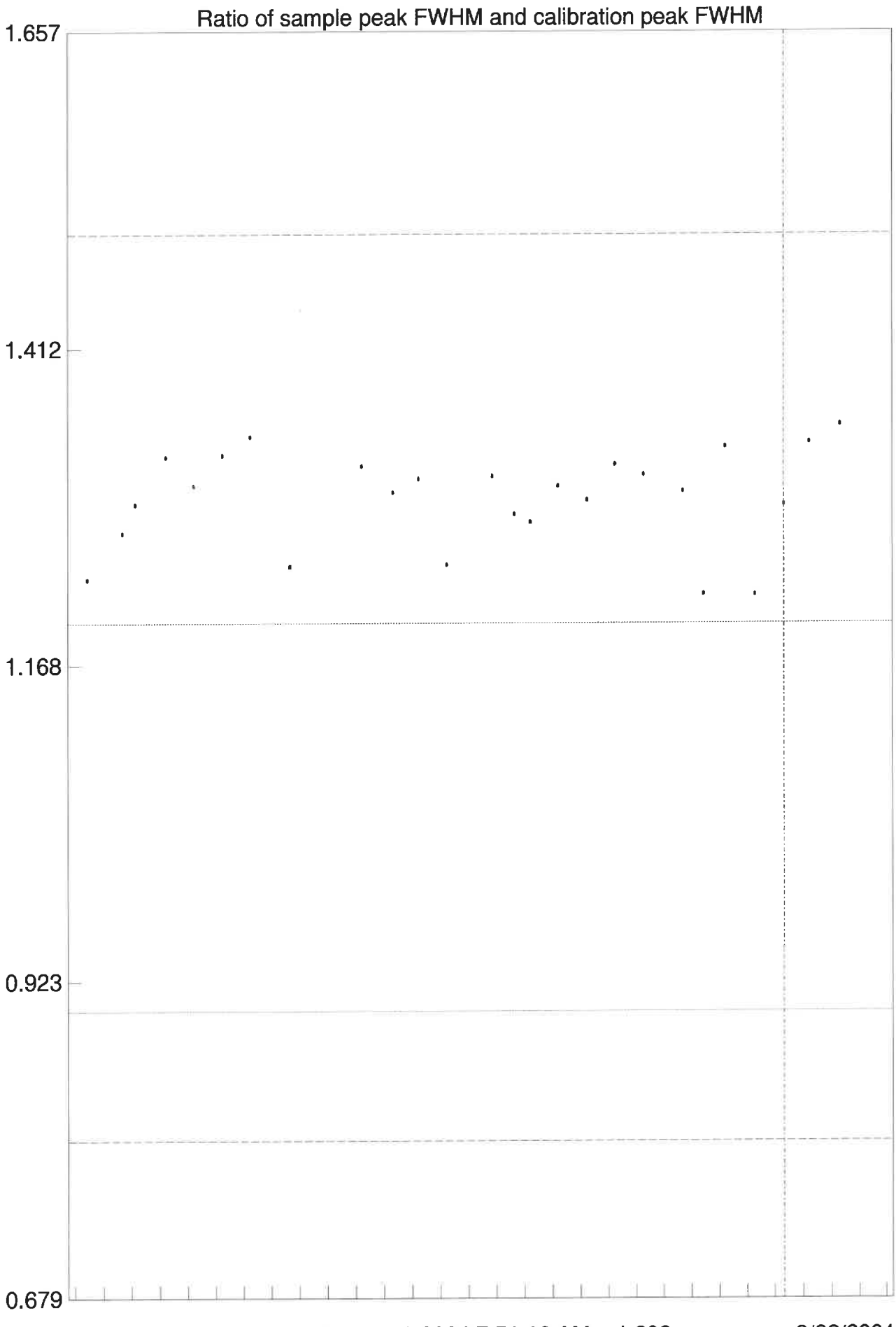
10/28/2024 8:24:07 AM

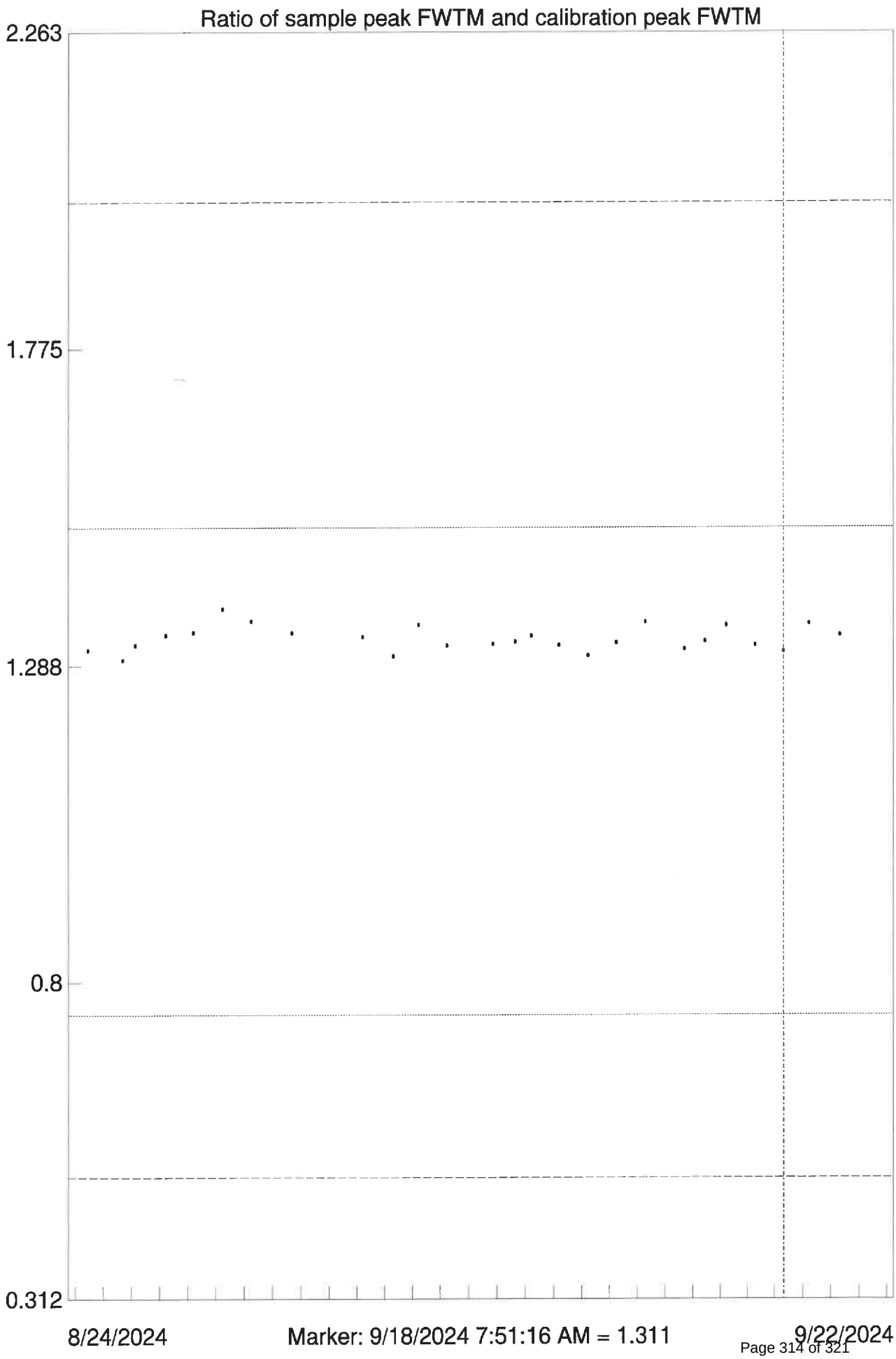


ORTEC
5 DET 5

10/28/2024 8:24:32 AM

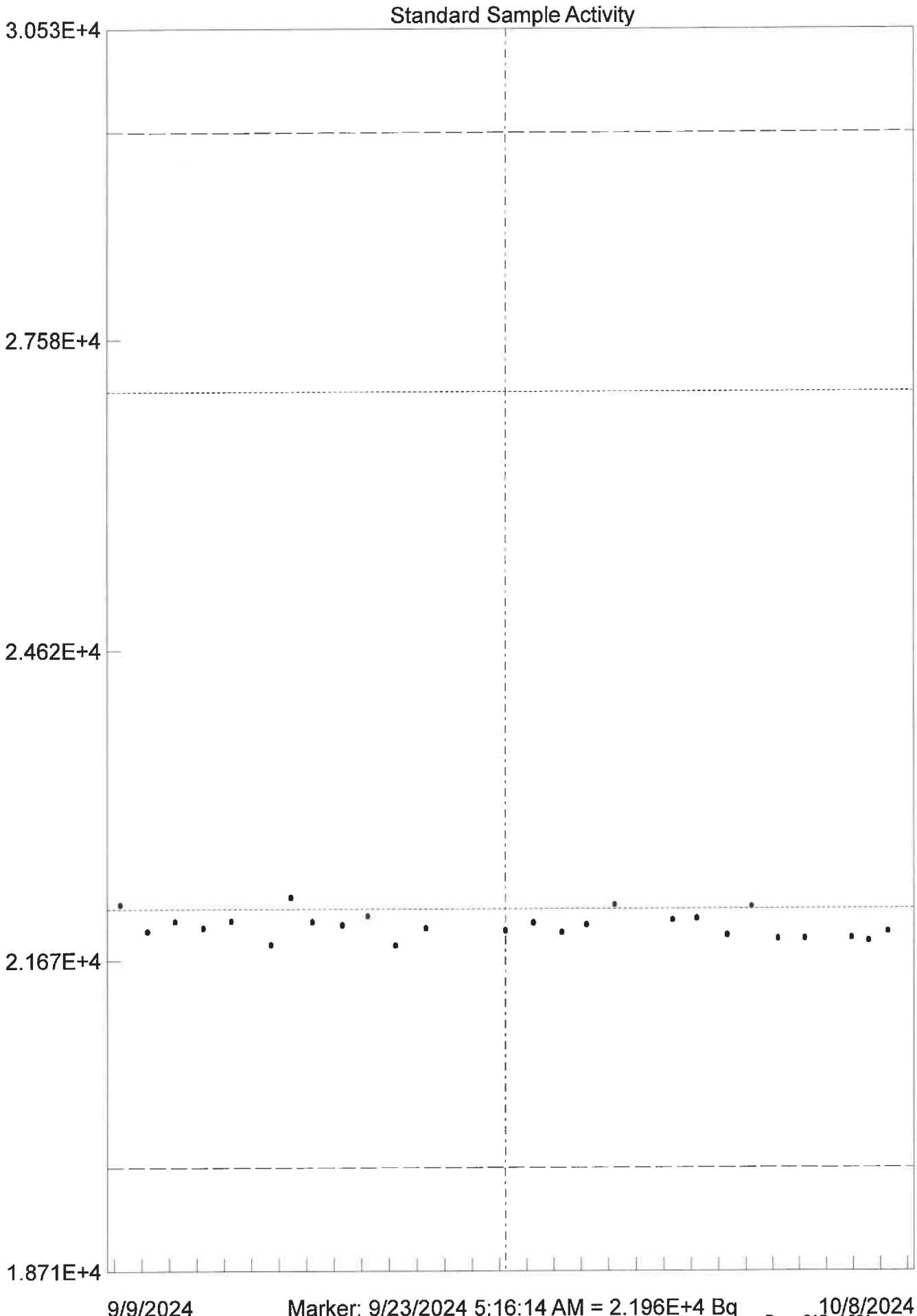


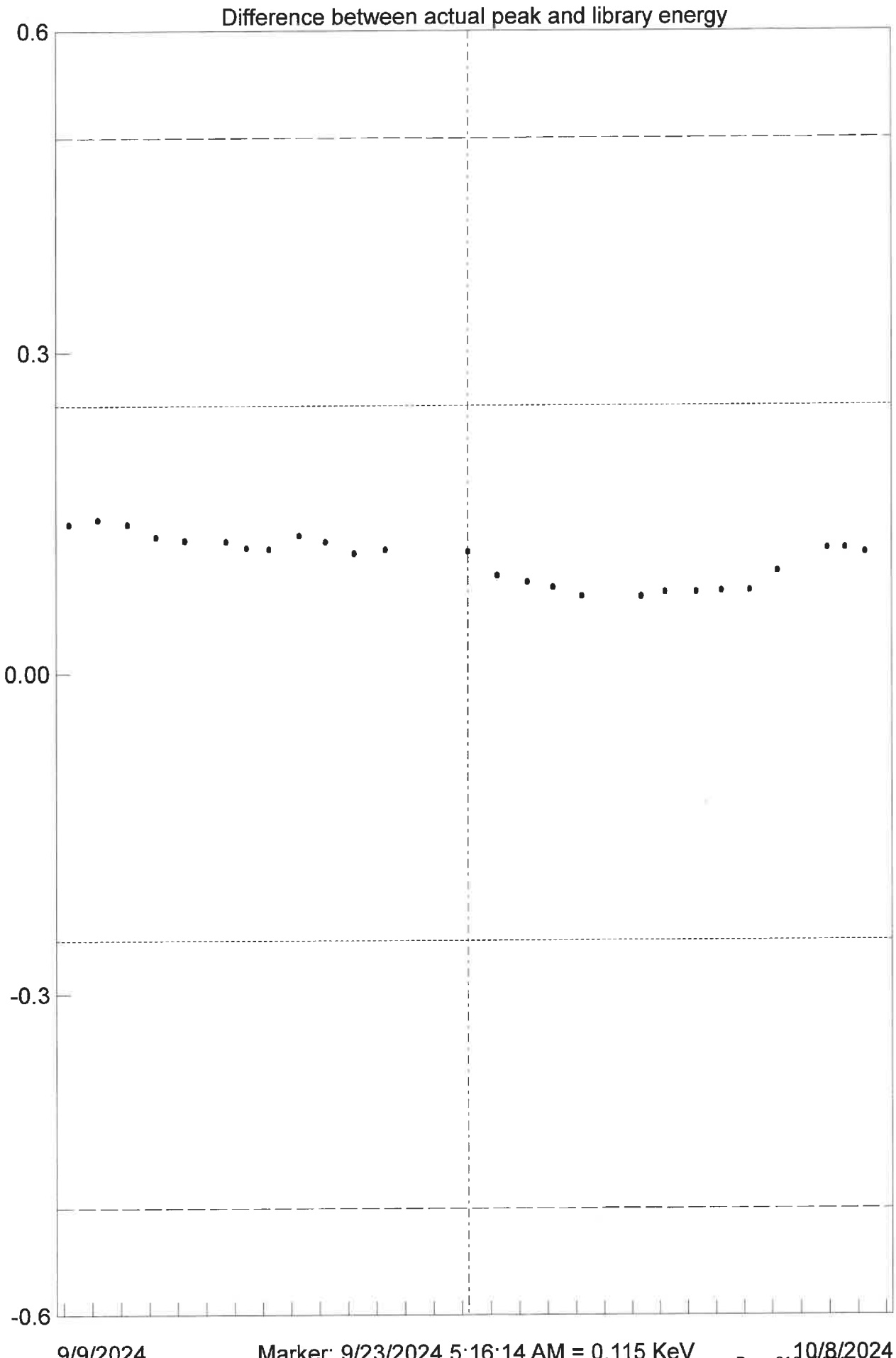

Ratio of sample peak FWHM and calibration peak FWHM
1.657
1.412
1.168
0.923
0.679
8/24/2024
Marker: 9/18/2024 7:51:16 AM = 1.292
9/22/2024

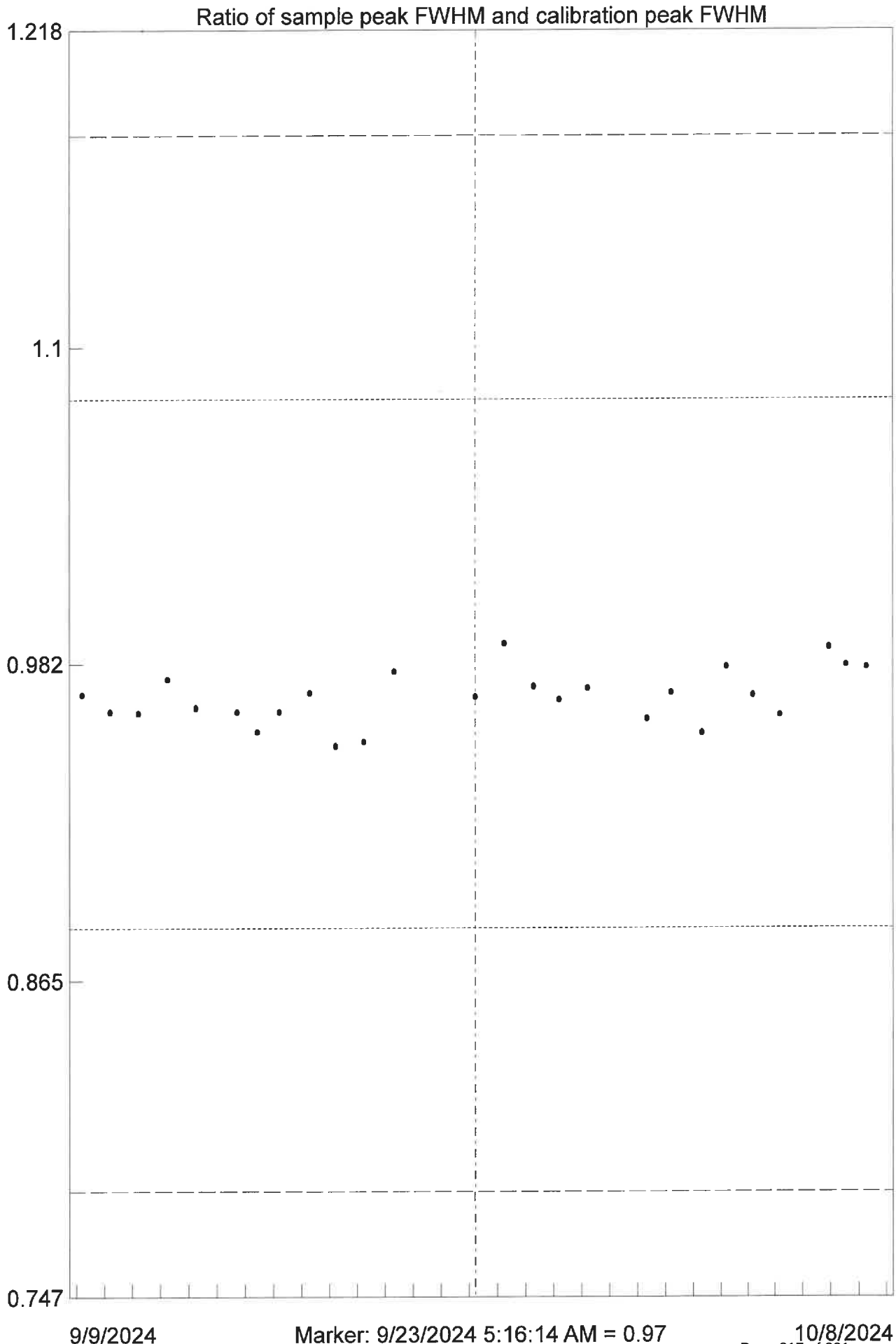

Ratio of sample peak FWTM and calibration peak FWTM
2.263
1.775
1.288
0.8
0.312
8/24/2024
Marker: 9/18/2024 7:51:16 AM = 1.311
9/22/2024

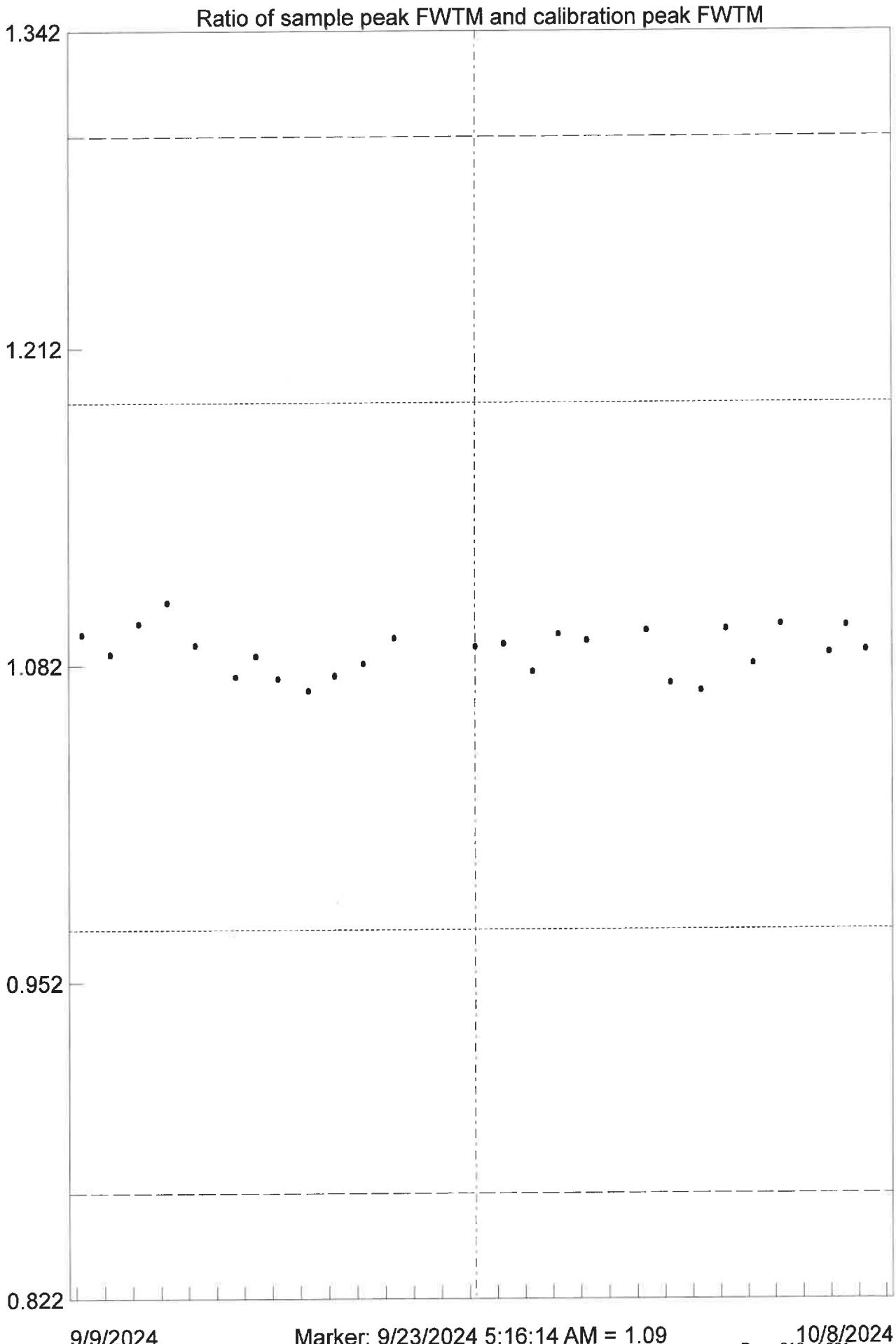
ORTEC
2 DET 2

10/28/2024 8:21:07 AM




Difference between actual peak and library energy
0.6
0.3
0.00
-0.3
-0.6
9/9/2024
Marker: 9/23/2024 5:16:14 AM = 0.115 KeV
10/8/2024


Ratio of sample peak FWHM and calibration peak FWHM
1.218
1.1
0.982
0.865
0.747
9/9/2024
Marker: 9/23/2024 5:16:14 AM = 0.97
10/8/2024


Ratio of sample peak FWTM and calibration peak FWTM
1.342
1.212
1.082
0.952
0.822
9/9/2024
Marker: 9/23/2024 5:16:14 AM = 1.09
10/8/2024

Standards

Pace Analytical™ www.pacelabs.com

Pace Analytical Services-PGH

Radiological Standards Dilution Logbook

Logbook ID: 1-R056-2 **SOP ID: PGH-R-018**

Nuclide: Mixed Gamma
Standard ID: 17-029
Parent Source: 84383-493
Parent Conc: Varies by Isotope
Reference Date: 4/1/11 1200 EST

Std Conc.: * See below
Prepared By: RMC
Prep Date: 6/22/17
Initial Expiration Date: 6/22/19

Balance ID: _____
Diluent: 0.1 M HCl, 2N HCl
Diluent IDs: DL17-0790 (2N HCl)

Conversions: 60 dpm = 1 dps
1 Bq = 1 dps
2.22 dpm = 1 pCi

Dilution Description: Diluted 1.0680g of 84383-493 to 2.0L using 200mL of 2N HCl and 1799mL(g) of DI water.

2 6/22/17

Dilution Calculations: Calc of pCi/L

*

$$Am\text{-}241 = \frac{(3276\ GPS/5.31955g)(1.0680g)(60dpm/dps)}{(0.359G/decay)(2.22dpm/pCi)(2.0L)} = 24{,}758\ pCi/L$$

$$Cs\text{-}137 = \frac{(3176GPS/5.31955g)(1.0680g)(60dpm/dps)}{(0.8516/decay)(2.22dpm/pCi)(2.0L)} = 10{,}125\ pCi/L$$

$$Co\text{-}60 = \frac{(6076GPS/5.31955g)(1.0680g)(60dpm/dps)}{(1.006/decay)(2.22dpm/pCi)(2.0L)} = 16{,}485\ pCi/L$$

Standard Verification Date Verified	New Expiration Date	File	% Recovery	Analyst
1				
2				
3				
4				

Standard Final Disposal (circle one) **Consumed** **Destroyed** **Discarded**
Analyst initials: _____ Date: _____

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404•352•8677
Fax 404•352•2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

84383-493
5 mL Liquid in Flame Sealed Vial

Customer: Pace Analytical/Greensburg, PA
P.O. No.: PI-14395, Item 1
Reference Date: 01-Apr-2011 12:00 PM EST **Grams of Master Source:** 0.028686

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solutions. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma ray emission rates for the most intense gamma-ray lines are given. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Nuclide	Gamma-Ray Energy (keV)	Half-Life, Days	Master Source* γps/gram	This Source γps	Uncertainty , % Type u_A	u_B	U	Calibration Method
Am-241	59.5	1.580E+05	———	3.276E+03	0.1	0.9	1.8	4π LS
Cd-109	88.0	4.626E+02	1.659E+05	4.759E+03	0.6	1.7	3.6	HPGe
Co-57	122.1	2.718E+02	8.949E+04	2.567E+03	0.6	1.3	2.9	HPGe
Ce-139	165.9	1.376E+02	1.247E+05	3.577E+03	0.6	1.1	2.5	HPGe
Hg-203	279.2	4.661E+01	2.899E+05	8.316E+03	0.6	1.1	2.5	HPGe
Sn-113	391.7	1.151E+02	1.739E+05	4.988E+03	0.6	1.1	2.5	HPGe
Cs-137	661.7	1.098E+04	1.107E+05	3.176E+03	0.8	1.2	2.9	HPGe
Y-88	898.0	1.066E+02	4.246E+05	1.218E+04	0.6	1.1	2.5	HPGe
Co-60	1173.2	1.925E+03	2.118E+05	6.076E+03	0.7	1.1	2.6	HPGe
Co-60	1332.5	1.925E+03	2.118E+05	6.076E+03	0.7	1.1	2.6	HPGe
Y-88	1836.1	1.066E+02	4.495E+05	1.289E+04	0.7	1.1	2.6	HPGe

* Master Source refers to Analytics' 8-isotope mixture which is calibrated quarterly.

Calibration Methods: 4π LS - 4 pi Liquid Scintillation Counting, HPGe - High Purity Germanium Gamma-Ray Spectrometer, IC - Ionization Chamber. **Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1955

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia, 30318

November 4, 2024

Mitchell Ostrowski
Pace Analytical
8 Walkup Dr.
Westborough, MA 01581
Email: Mitchell.ostrowski@pacelabs.com ; west.subreports@pacelabs.com

Dear Mr. Ostrowski

Enclosed is a copy of the raw data you requested for the following sample:

GLI Lab ID#	Sample ID
V-0475 (U-7947)	MW-4A
V-0476 (U-7948)	MW-4B
V-0477 (U-7949)	MW-3A
V-0478 (U-7950)	MW-3B
V-0479 (U-7951)	MX-2A
V-0480 (U-7952)	MW-2A-MS
V-0481 (U-7953)	MW-2A-MSD
V-0482 (U-7954)	MW-2B
V-0483 (U-7955)	MW-9A
V-0484 (U-7956)	MW-9B
V-0485 (U-7957)	MW-5A
V-0486 (U-7958)	MW-5B
V-0487 (U-7959)	MW-6A
V-0488 (U-7960)	MW-6B
V-0489 (U-7961)	MW-7A
V-0490 (U-7962)	MW-7B
V-0491 (U-7963)	MW-8A
V-0492 (U-7964)	MW-8B
V-0493 (U-7965)	MW-10A
V-0494 (U-7966)	MW-10B
V-0495 (U-7967)	DUP

Please note that all the data has been verified to be certified copies of the original data.
Please feel free to contact us if you have any questions.

Thank you,

Taylor Kline
Raw Data Clerk
Galbraith Laboratories, Inc.

K2180

GALBRAITH
A BUREAU VERITAS COMPANY

Analytical Request Form

Please fill out all fields. For assistance, contact us at 1-877-449-8797 or email labinfo@galbraith.com

ISO 17025 Certificate #2777.01

ACCREDITED

Contact Information		Payment Information	
Name	Mitchell Ostrowski	Company	Pace Analytical
Company	Pace Analytical	Bill to Address	
Address	8 Walkup Drive	Address (2)	
Address (2)		City, State/Province	
City, State/Province	Westborough, MA	Zip/Postal Code	
Zip/Postal Code	01581	Country	
Country	USA	Phone	
Phone	(716) 427-5225	Email	
Quote Number		PO Number	
Report Results to (List emails)	Mitchell.Ostrowski@pacelabs.com, west.subreports@pacelabs.com		
Information is only released to the contact above. If others are permitted to receive information, list their names here.			

Turnaround Time

- (●) STANDARD - Approximately 10 business days
- ( ) RUSH - 5 business days (100% surcharge)
- ( ) PRIORITY - 2 business days (200% surcharge)

Regulatory Information

Regulatory services incur an 85% surcharge

( ) No Regulations	( ) GMP 21 CFR 210/211 21 CFR 820
( ) FIFRA 40 CFR 160	( ) GLP 21 CFR 58
( ) TSCA 40 CFR 792	( ) NRC
( ) RCRA	( ) QA Custom

Special Handling

- [ ] Dry prior to analysis (provide conditions below, $37 per sample)
- [ ] _____ Hours _____ °C Vacuum ( ) Yes ( ) No
- [ ] Grind ($54 per sample, subject to rush surcharge)
- [ ] Cryogenic Grind ($132 per sample, subject to rush surcharge)
- [x] Cold Storage (2 to 8°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-18 to -25°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-70°C) ($14 per sample or $63 per 5+ samples)
- [ ] Handle under Nitrogen ($39 per sample, subject to rush surcharge)
- [ ] Handle under Argon ($42 per sample, subject to rush surcharge)

Replicates

( ) Single ( ) Duplicate ( ) Triplicate ( ) Other_____

[ ] Duplicate if 1st analysis disagrees with theory/range

Note: A 100% surcharge is added for each additional replicate

Data Delivery

[ ] Raw Data ($75 per sample)

Sample Information

Sample Identification	Amount	Sample Composition
MW-4A, MW-4B, MW-3A, MW-3B		
MX-2A, MW-2A-MS, MW-2A-MSD		
MW-2B, MW-9A, MW-9B		
MW-5A, MW-5B, MW-6A, MW-6B,		
MW-7A, MW-7B, MW-8A, MW-8B		
MW-10A, MW-10B, DUP		

Sample Disposition After Testing

The sample remains your property at all times. Select one of these options

(●) **Discard** [By checking this box, you certify that the material is suitable for disposal in a sanitary landfill. This is not available for hazardous samples.]

( ) **Return to Sender** [Non-hazardous: $12/spl or $26/batch of 3 or more. Hazardous: $90/spl or batch.]

Hazards

( ) SDS Required if hazardous	[ ] Unknown	[ ] Inhalation
	[ ] Biohazard ($15 per sample)	[ ] Pyrophoric
( ) No SDS	[ ] Cytotoxic	[ ] Reproductive

Testing Information

Test Requested	Detection Limit	Theory/Range*	Method/Procedure
Viscosity	0.99 - 1.20		ASTM D445-15

*Are the stated Theory/Range values regulatory specifications? ( ) Yes ( ) No

Notes & Comments

Alpha Job #L2450786
RD1, 10-29-24 MAS

V0475

OCT 29 2024

MAS 10-29-24 V 0475

-95

Date Received	Internal Lab ID
SEP 10 2024	U 7947-67

Ship samples to 2323 Sycamore Dr Knoxville, TN 37921. If rush turnaround time is requested, please indicate on the outside of box by writing RUSH or PRIORITY on your shipping label. Pricing subject to change. For the most updated pricing, please contact us at labinfo@galbraith.com. A sample submitted for testing constitutes acceptance of Galbraith's Terms and Conditions. See our Catalog of Services or website at galbraith.com for our Terms and Conditions.

GALBRAITH
A BUREAU VERITAS COMPANY

Analytical Request Form

Please fill out all fields. For assistance, contact us at 1-877-449-8797 or email labinfo@galbraith.com

ISO 17025 Certificate #2777.01

ACCREDITED

Contact Information

Name	Mitchell Ostrowski
Company	Pace Analytical
Address	8 Walkup Drive
Address (2)	
City, State/Province	Westborough, MA
Zip/Postal Code	01581
Country	USA
Phone	(716) 427-5225
Quote Number	
Report Results to (List emails)	Mitchell.Ostrowski@pacelabs.com, west.subreports@pacelabs.com
Information is only released to the contact above. If others are permitted to receive information, list their names here.	

Payment Information

Company	Pace Analytical
Bill to Address	
Address (2)	
City, State/Province	
Zip/Postal Code	
Country	
Phone	
Email	
PO Number	

Turnaround Time

- (●) STANDARD - Approximately 10 business days
- ( ) RUSH - 5 business days (100% surcharge)
- ( ) PRIORITY - 2 business days (200% surcharge)

Replicates

( ) Single ( ) Duplicate ( ) Triplicate ( ) Other_____

[ ] Duplicate if 1st analysis disagrees with theory/range

Note: A 100% surcharge is added for each additional replicate

Regulatory Information

Regulatory services incur an 85% surcharge

( ) No Regulations	( ) GMP 21 CFR 210/211 21 CFR 820
( ) FIFRA 40 CFR 160	( ) GLP 21 CFR 58
( ) TSCA 40 CFR 792	( ) NRC
( ) RCRA	( ) QA Custom

Data Delivery

[ ] Raw Data ($75 per sample)

Special Handling

- [ ] Dry prior to analysis (provide conditions below, $37 per sample)
- [ ] _____Hours_____°C Vacuum ( ) Yes ( ) No
- [ ] Grind ($54 per sample, subject to rush surcharge)
- [ ] Cryogenic Grind ($132 per sample, subject to rush surcharge)
- [✓] Cold Storage (2 to 8°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-18 to -25°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-70°C) ($14 per sample or $63 per 5+ samples)
- [ ] Handle under Nitrogen ($39 per sample, subject to rush surcharge)
- [ ] Handle under Argon ($42 per sample, subject to rush surcharge)

Sample Information

Sample Identification	Amount	Sample Composition
MW-4A MW-4B, MW-3A, MW-3B		
MX-2A, MW-2A-MS, MW-2A-MSD		
MW-2B, MW-9A, MW-9B		
MW-5A, MW-5B, MW-6A, MW-6B,		
MW-7A, MW-7B, MW-8A, MW-8B		
MW-10A, MW-10B, DUP		

Sample Disposition After Testing

The sample remains your property at all times. Select one of these options

- (✓) **Discard** [By checking this box, you certify that the material is suitable for disposal in a sanitary landfill. This is not available for hazardous samples.]
- ( ) **Return to Sender** [Non-hazardous: $12/spl or $26/batch of 3 or more. Hazardous: $90/spl or batch.]

Hazards

( ) SDS Required if hazardous	[ ] Unknown	[ ] Inhalation
	[ ] Biohazard	[ ] Pyrophoric
( ) No SDS	[ ] Cytotoxic	[ ] Reproductive

Testing Information

Test Requested	Detection Limit	Theory/Range*	Method/Procedure
Viscosity	0.99 - 1.20		ASTM D445-15

*Are the stated Theory/Range values regulatory specifications? ( ) Yes ( ) No

Notes & Comments

Alpha Job #L2450786

1) RDL, 10-29-24 MAS

V0476

OCT 29 2024

MAS 10-29-24 V 0476

Date Received	Internal Lab ID
SEP 10 2024	U 7948

Ship samples to 2323 Sycamore Dr Knoxville, TN 37921. If rush turnaround time is requested, please indicate on the outside of box by writing RUSH or PRIORITY on your shipping label. Pricing subject to change. For the most updated pricing, please contact us at labinfo@galbraith.com. A sample submitted for testing constitutes acceptance of Galbraith's Terms and Conditions. See our Catalog of Services or website at galbraith.com for our Terms and Conditions.

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Analytical Request Form

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ISO 17025 Certificate #2777.01

Contact Information

Name	Mitchell Ostrowski
Company	Pace Analytical
Address	8 Walkup Drive
Address (2)	
City, State/Province	Westborough, MA
Zip/Postal Code	01581
Country	USA
Phone	(716) 427-5225
Quote Number	
Report Results to (List emails)	Mitchell.Ostrowski@pacelabs.com, west.subreports@pacelabs.com

Information is only released to the contact above. If others are permitted to receive information, list their names here.

Payment Information

Company	Pace Analytical
Bill to Address	
Address (2)	
City, State/Province	
Zip/Postal Code	
Country	
Phone	
Email	
PO Number	

Turnaround Time

- (●) STANDARD - Approximately 10 business days
- ( ) RUSH - 5 business days (100% surcharge)
- ( ) PRIORITY - 2 business days (200% surcharge)

Replicates

( ) Single ( ) Duplicate ( ) Triplicate ( ) Other_____

[ ] Duplicate if 1st analysis disagrees with theory/range

Note: A 100% surcharge is added for each additional replicate

Regulatory Information

Regulatory services incur an 85% surcharge

( ) No Regulations	( ) GMP 21 CFR 210/211 21 CFR 820
( ) FIFRA 40 CFR 160	( ) GLP 21 CFR 58
( ) TSCA 40 CFR 792	( ) NRC
( ) RCRA	( ) QA Custom

Data Delivery

[ ] Raw Data ($75 per sample)

Special Handling

- [ ] Dry prior to analysis (provide conditions below, $37 per sample)
- [ ] _____Hours_____°C Vacuum ( ) Yes ( ) No
- [ ] Grind ($54 per sample, subject to rush surcharge)
- [ ] Cryogenic Grind ($132 per sample, subject to rush surcharge)
- [✓] Cold Storage (2 to 8°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-18 to -25°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-70°C) ($14 per sample or $63 per 5+ samples)
- [ ] Handle under Nitrogen ($39 per sample, subject to rush surcharge)
- [ ] Handle under Argon ($42 per sample, subject to rush surcharge)

Sample Information

Sample Identification	Amount	Sample Composition
MW-4A, MW-4B, MW-3A, MW-3B		
MX-2A, MW-2A-MS, MW-2A-MSD		
MW-2B, MW-9A, MW-9B		
MW-5A, MW-5B, MW-6A, MW-6B,		
MW-7A, MW-7B, MW-8A, MW-8B		
MW-10A, MW-10B, DUP		

Sample Disposition After Testing

The sample remains your property at all times. Select one of these options

- (●) **Discard** [By checking this box, you certify that the material is suitable for disposal in a sanitary landfill. This is not available for hazardous samples.]
- ( ) **Return to Sender** [Non-hazardous: $12/spl or $26/batch of 3 or more. Hazardous: $90/spl or batch.]

Hazards

( ) SDS Required if hazardous	[ ] Unknown	[ ] Inhalation
( ) No SDS	[ ] Biohazard ($10 per sample)	[ ] Pyrophoric
	[ ] Cytotoxic	[ ] Reproductive

Testing Information

Test Requested	Detection Limit	Theory/Range*	Method/Procedure
Viscosity	0.99 - 1.20		ASTM D445-15

*Are the stated Theory/Range values regulatory specifications? ( ) Yes ( ) No

Notes & Comments

Alpha Job #L2450786

RD1, 10-29-24 mgs

OCT 29 2024

MAS 10-29-24

V0477

Date Received / Internal Lab ID

Internal Use Only

SEP 10 2024 U 7949

Ship samples to 2323 Sycamore Dr Knoxville, TN 37921. If rush turnaround time is requested, please indicate on the outside of box by writing RUSH or PRIORITY on your shipping label. Pricing subject to change. For the most updated pricing, please contact us at labinfo@galbraith.com. A sample submitted for testing constitutes acceptance of Galbraith's Terms and Conditions. See our Catalog of Services or website at www.galbraith.com for our Terms and Conditions.

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Contact Information

me	Mitchell Ostrowski
.npany	Pace Analytical
Address	8 Walkup Drive
Address (2)	
City, State/Province	Westborough, MA
Zip/Postal Code	01581
Country	USA
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Payment Information

Company	Pace Analytical
Bill to Address	
Address (2)	
City, State/Province	
Zip/Postal Code	
Country	
Phone	
Email	
PO Number	

Turnaround Time

- (●) STANDARD - Approximately 10 business days
- ( ) RUSH - 5 business days (100% surcharge)
- ( ) PRIORITY - 2 business days (200% surcharge)

Regulatory Information

Regulatory services incur an 85% surcharge

( ) No Regulations	( ) GMP 21 CFR 210/211 21 CFR 820
( ) FIFRA 40 CFR 160	( ) GLP 21 CFR 58
( ) TSCA 40 CFR 792	( ) NRC
( ) RCRA	( ) QA Custom

Special Handling

- [ ] Dry prior to analysis (provide conditions below, $37 per sample)
- [ ] _____ Hours _____ °C Vacuum ( ) Yes ( ) No
- [ ] Grind ($54 per sample, subject to rush surcharge)
- [ ] Cryogenic Grind ($132 per sample, subject to rush surcharge)
- [✓] Cold Storage (2 to 8°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-18 to -25°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-70°C) ($14 per sample or $63 per 5+ samples)
- [ ] Handle under Nitrogen ($39 per sample, subject to rush surcharge)
- [ ] Handle under Argon ($42 per sample, subject to rush surcharge)

Replicates

( ) Single ( ) Duplicate ( ) Triplicate ( ) Other_____

[ ] Duplicate if 1st analysis disagrees with theory/range

Note: A 100% surcharge is added for each additional replicate

Data Delivery

[ ] Raw Data ($75 per sample)

Sample Information

Sample Identification	Amount	Sample Composition
MW-4A, MW-4B, MW-3A, MW-3B		
MX-2A, MW-2A-MS, MW-2A-MSD		
MW-2B, MW-9A, MW-9B		
MW-5A, MW-5B, MW-6A, MW-6B,		
MW-7A, MW-7B, MW-8A, MW-8B		
MW-10A, MW-10B, DUP		

Sample Disposition After Testing

The sample remains your property at all times. Select one of these options

- (●) **Discard** [By checking this box, you certify that the material is suitable for disposal in a sanitary landfill. This is not available for hazardous samples.]
- ( ) **Return to Sender** [Non-hazardous: $12/spl or $26/batch of 3 or more. Hazardous: $80/spl or batch.]

Hazards

( ) SDS Required if hazardous	[ ] Unknown	[ ] Inhalation
	[ ] Biohazard [$15 per sample]	[ ] Pyrophoric
( ) No SDS	[ ] Cytotoxic	[ ] Reproductive

Testing Information

Test Requested	Detection Limit	Theory/Range*	Method/Procedure
Viscosity	0.99 - 1.20		ASTM D445-15

*Are the stated Theory/Range values regulatory specifications? ( ) Yes ( ) No

Notes & Comments

Alpha Job #L2450786

1 RDL, 10-29-24 MAS

V0478

OCT 29 2024

MAS 10-29-24 V 0478

Internal

Date Received	Internal Lab ID
SEP 10 2024	U 7950

Ship samples to 2323 Sycamore Dr Knoxville, TN 37921. If rush turnaround time is requested, please indicate on the outside of box by writing RUSH or PRIORITY on your shipping label. Pricing subject to change. For the most updated pricing, please contact us at labinfo@galbraith.com. A sample submitted for testing constitutes acceptance of Galbraith's Terms and Conditions. See our Catalog of Services or website at galbraith.com for our Terms and Conditions.

Form 3.1.18 Version 28

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Contact Information

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Company	Pace Analytical
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City, State/Province	Westborough, MA
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Zip/Postal Code	
Country	
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PO Number	

Turnaround Time

- (●) STANDARD - Approximately 10 business days
- ( ) RUSH - 5 business days (100% surcharge)
- ( ) PRIORITY - 2 business days (200% surcharge)

Regulatory Information

Regulatory services incur an 85% surcharge

( ) No Regulations	( ) GMP 21 CFR 210/211 21 CFR 820
( ) FIFRA 40 CFR 160	( ) GLP 21 CFR 58
( ) TSCA 40 CFR 792	( ) NRC
( ) RCRA	( ) QA Custom

Special Handling

- [ ] Dry prior to analysis (provide conditions below, $37 per sample)
- [ ] _____ Hours _____ °C Vacuum ( ) Yes ( ) No
- [ ] Grind ($54 per sample, subject to rush surcharge)
- [ ] Cryogenic Grind ($192 per sample, subject to rush surcharge)
- [✓] Cold Storage (2 to 8°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-18 to -25°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-70°C) ($14 per sample or $63 per 5+ samples)
- [ ] Handle under Nitrogen ($39 per sample, subject to rush surcharge)
- [ ] Handle under Argon ($42 per sample, subject to rush surcharge)

Replicates

( ) Single ( ) Duplicate ( ) Triplicate ( ) Other_____

[ ] Duplicate if 1st analysis disagrees with theory/range

Note: A 100% surcharge is added for each additional replicate

Data Delivery

[ ] Raw Data ($75 per sample)

Sample Information

Sample Identification	Amount	Sample Composition
MW-4A, MW-4B, MW-3A, MW-3B		
MW-2A, MW-2A-MS, MW-2A-MSD		
MW-2B, MW-9A, MW-9B		
MW-5A, MW-5B, MW-6A, MW-6B,		
MW-7A, MW-7B, MW-8A, MW-8B		
MW-10A, MW-10B, DUP		

Sample Disposition After Testing

The sample remains your property at all times. Select one of these options

(●) **Discard** [By checking this box, you certify that the material is suitable for disposal in a sanitary landfill. This is not available for hazardous samples.]

( ) **Return to Sender** [Non-hazardous: $12/spl or $26/batch of 3 or more. Hazardous: $90/spl or batch.]

Hazards

( ) SDS Required if hazardous	[ ] Unknown	[ ] Inhalation
	[ ] Biohazard	[ ] Pyrophoric
( ) No SDS	[ ] Cytotoxic	[ ] Reproductive

Testing Information

Test Requested	Detection Limit	Theory/Range*	Method/Procedure
Viscosity	0.99 - 1.20		ASTM D445-15

*Are the stated Theory/Range values regulatory specifications? ( ) Yes ( ) No

Notes & Comments

Alpha Job #L2450786

1) ID on Sample: MW-2A

2) RDL, 10-29-24 mm

V0479

OCT 29 2024

MAS 10-24 V 0479

Internal

Date Received	Internal Lab ID
SEP 10 2024	U 7951

Ship samples to 2323 Sycamore Dr Knoxville, TN 37921. If rush turnaround time is requested, please indicate on the outside of box by writing RUSH or PRIORITY on your shipping label. Pricing subject to change. For the most updated pricing, please contact us at labinfo@galbraith.com. A sample submitted for testing constitutes acceptance of Galbraith's Terms and Conditions. See our Catalog of Services or website at www.galbraith.com for our Terms and Conditions.

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Contact Information

Name	Mitchell Ostrowski
Company	Pace Analytical
Address	8 Walkup Drive
Address (2)	
City, State/Province	Westborough, MA
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Country	USA
Phone	(716) 427-5225
Quote Number	
Report Results to (List emails)	Mitchell.Ostrowski@pacelabs.com, west.subreports@pacelabs.com

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Payment Information

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City, State/Province	
Zip/Postal Code	
Country	
Phone	
Email	
PO Number	

Turnaround Time

- (•) STANDARD - Approximately 10 business days
- ( ) RUSH - 5 business days (100% surcharge)
- ( ) PRIORITY - 2 business days (200% surcharge)

Replicates

( ) Single ( ) Duplicate ( ) Triplicate ( ) Other_____

[ ] Duplicate if 1st analysis disagrees with theory/range

Note: A 100% surcharge is added for each additional replicate

Regulatory Information

Regulatory services incur an 85% surcharge

( ) No Regulations	( ) GMP 21 CFR 210/211 21 CFR 820
( ) FIFRA 40 CFR 160	( ) GLP 21 CFR 58
( ) TSCA 40 CFR 792	( ) NRC
( ) RCRA	( ) QA Custom

Data Delivery

[ ] Raw Data ($75 per sample)

Special Handling

- [ ] Dry prior to analysis (provide conditions below, $37 per sample)
- [ ] _____Hours _____°C Vacuum (•) Yes ( ) No
- [ ] Grind ($54 per sample, subject to rush surcharge)
- [ ] Cryogenic Grind ($132 per sample, subject to rush surcharge)
- [✓] Cold Storage (2 to 8°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-18 to -25°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-70°C) ($14 per sample or $63 per 5+ samples)
- [ ] Handle under Nitrogen ($39 per sample, subject to rush surcharge)
- [ ] Handle under Argon ($42 per sample, subject to rush surcharge)

Sample Information

Sample Identification	Amount	Sample Composition
MW-4A, MW-4B, MW-3A, MW-3B		
MX-2A, MW-2A-MS, MW-2A-MSD		
MW-2B, MW-9A, MW-9B		
MW-5A, MW-5B, MW-6A, MW-6B,		
MW-7A, MW-7B, MW-8A, MW-8B		
MW-10A, MW-10B, DUP		

Sample Disposition After Testing

The sample remains your property at all times. Select one of these options

- (•) **Discard** (By checking this box, you certify that the material is suitable for disposal in a sanitary landfill. This is not available for hazardous samples.)
- ( ) **Return to Sender** (Non-hazardous: $12/spl or $26/batch of 9 or more. Hazardous: $90/spl or batch.)

Hazards

( ) SDS Required if hazardous	[ ] Unknown	[ ] Inhalation
	[ ] Biohazard (S15 per sample)	[ ] Pyrophoric
( ) No SDS	[ ] Cytotoxic	[ ] Reproductive

Testing Information

Test Requested	Detection Limit	Theory/Range*	Method/Procedure
Viscosity	0.99 - 1.20		ASTM D445-15

*Are the stated Theory/Range values regulatory specifications? ( ) Yes ( ) No

Notes & Comments

Alpha Job #L2450786

RDL, 10-29-24 MAS

OCT 29 2024

V0480

MAS 10-29-24 V 0480

Date Received: SEP 10 2024

Internal Lab ID: U 7952

Ship samples to 2323 Sycamore Dr Knoxville, TN 37921. If rush turnaround time is requested, please indicate on the outside of box by writing RUSH or PRIORITY on your shipping label. Pricing subject to change. For the most updated pricing, please contact us at labinfo@galbraith.com. A sample submitted for testing constitutes acceptance of Galbraith's Terms and Conditions. See our Catalog of Services or website at galbraith.com for our Terms and Conditions.

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Contact Information

Name	Mitchell Ostrowski
Company	Pace Analytical
Address	8 Walkup Drive
Address (2)	
City, State/Province	Westborough, MA
Zip/Postal Code	01581
Country	USA
Phone	(716) 427-5225
Quote Number	
Report Results to (List emails)	Mitchell.Ostrowski@pacelabs.com, west.subreports@pacelabs.com

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Payment Information

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Bill to Address	
Address (2)	
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Zip/Postal Code	
Country	
Phone	
Email	
PO Number	

Turnaround Time

- (•) STANDARD - Approximately 10 business days
- ( ) RUSH - 5 business days (100% surcharge)
- ( ) PRIORITY - 2 business days (200% surcharge)

Regulatory Information

Regulatory services incur an 85% surcharge

- ( ) No Regulations
- ( ) GMP 21 CFR 210/211 21 CFR 820
- ( ) FIFRA 40 CFR 160
- ( ) GLP 21 CFR 58
- ( ) TSCA 40 CFR 792
- ( ) NRC
- ( ) RCRA
- ( ) QA Custom

Special Handling

- [ ] Dry prior to analysis (provide conditions below, $37 per sample)
- [ ] _____ Hours _____ °C Vacuum ( ) Yes ( ) No
- [ ] Grind ($54 per sample, subject to rush surcharge)
- [ ] Cryogenic Grind ($152 per sample, subject to rush surcharge)
- [x] Cold Storage (2 to 8°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-18 to -25°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-70°C) ($14 per sample or $63 per 5+ samples)
- [ ] Handle under Nitrogen ($39 per sample, subject to rush surcharge)
- [ ] Handle under Argon ($42 per sample, subject to rush surcharge)

Replicates

- ( ) Single ( ) Duplicate ( ) Triplicate ( ) Other_____
- [ ] Duplicate if 1st analysis disagrees with theory/range

Note: A 100% surcharge is added for each additional replicate

Data Delivery

- [ ] Raw Data ($75 per sample)

Sample Information

Sample Identification	Amount	Sample Composition
MW-4A, MW-4B, MW-3A, MW-3B		
MX-2A, MW-2A-MS, MW-2A-MSD		
MW-2B, MW-9A, MW-9B		
MW-5A, MW-5B, MW-6A, MW-6B,		
MW-7A, MW-7B, MW-8A, MW-8B		
MW-10A, MW-10B, DUP		

Sample Disposition After Testing

The sample remains your property at all times. Select one of these options

- (•) **Discard** [By checking this box, you certify that the material is suitable for disposal in a sanitary landfill. This is not available for hazardous samples.]
- ( ) **Return to Sender** [Non-hazardous: $12/spl or $26/batch of 3 or more. Hazardous: $90/spl or batch.]

Hazards

( ) SDS Required if hazardous	[ ] Unknown	[ ] Inhalation
	[ ] Biohazard (15 per samples)	[ ] Pyrophoric
( ) No SDS	[ ] Cytotoxic	[ ] Reproductive

Testing Information

Test Requested	Detection Limit	Theory/Range*	Method/Procedure
Viscosity	0.99 - 1.20		ASTM D445-15

*Are the stated Theory/Range values regulatory specifications? ( ) Yes ( ) No

Notes & Comments

Alpha Job #L2450786

RD, 10-29-24 MAS

V0481

OCT 29 2024

MAS 10-30-24 V 0481

Internal

Date Received	Internal Lab ID
SEP 10 2024	U 7953

Ship samples to 2323 Sycamore Dr Knoxville, TN 37921. If rush turnaround time is requested, please indicate on the outside of box by writing RUSH or PRIORITY on your shipping label. Pricing subject to change. For the most updated pricing, please contact us at labinfo@galbraith.com. A sample submitted for testing constitutes acceptance of Galbraith's Terms and Conditions. See our Catalog of Services or website at gal.galbraith.com for our Terms and Conditions.

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Contact Information

Name	Mitchell Ostrowski
Company	Pace Analytical
Address	8 Walkup Drive
Address (2)	
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Country	USA
Phone	(716) 427-5225
Quote Number	
Report Results to (List emails)	Mitchell.Ostrowski@pacelabs.com, west.subreports@pacelabs.com
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Payment Information

Company	Pace Analytical
Bill to Address	
Address (2)	
City, State/Province	
Zip/Postal Code	
Country	
Phone	
Email	
PO Number	

Turnaround Time

- (•) STANDARD - Approximately 10 business days
- ( ) RUSH - 5 business days (100% surcharge)
- ( ) PRIORITY - 2 business days (200% surcharge)

Regulatory Information

Regulatory services incur an 85% surcharge

- ( ) No Regulations
- ( ) GMP 21 CFR 210/211 21 CFR 820
- ( ) FIFRA 40 CFR 160
- ( ) GLP 21 CFR 58
- ( ) TSCA 40 CFR 792
- ( ) NRC
- ( ) RCRA
- ( ) QA Custom

Special Handling

- [ ] Dry prior to analysis (provide conditions below, $37 per sample)
- [ ] _____ Hours _____ °C Vacuum ( ) Yes ( ) No
- [ ] Grind ($54 per sample, subject to rush surcharge)
- [ ] Cryogenic Grind ($132 per sample, subject to rush surcharge)
- [x] Cold Storage (2 to 8°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-18 to -25°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-70°C) ($14 per sample or $63 per 5+ samples)
- [ ] Handle under Nitrogen ($39 per sample, subject to rush surcharge)
- [ ] Handle under Argon ($42 per sample, subject to rush surcharge)

Replicates

- ( ) Single ( ) Duplicate ( ) Triplicate ( ) Other_____
- [ ] Duplicate if 1st analysis disagrees with theory/range

Note: A 100% surcharge is added for each additional replicate

Data Delivery

- [ ] Raw Data ($75 per sample)

Sample Information

Sample Identification	Amount	Sample Composition
MW-4A, MW-4B, MW-3A, MW-3B		
MX-2A, MW-2A-MS, MW-2A-MSD		
MW-2B, MW-9A, MW-9B		
MW-5A, MW-5B, MW-6A, MW-6B,		
MW-7A, MW-7B, MW-8A, MW-8B		
MW-10A, MW-10B, DUP		

Sample Disposition After Testing

The sample remains your property at all times. Select one of these options

- (•) **Discard** [By checking this box, you certify that the material is suitable for disposal in a sanitary landfill. This is not available for hazardous samples.]
- ( ) **Return to Sender** [Non-hazardous: $12/spl or $26/batch of 3 or more. Hazardous: $90/spl or batch.]

Hazards

( ) SDS Required if hazardous	[ ] Unknown	[ ] Inhalation
( ) No SDS	[ ] Biohazard (533 per sample)	[ ] Pyrophoric
	[ ] Cytotoxic	[ ] Reproductive

Testing Information

Test Requested	Detection Limit	Theory/Range*	Method/Procedure
Viscosity	0.99 - 1.20		ASTM D445-15

*Are the stated Theory/Range values regulatory specifications? ( ) Yes ( ) No

Notes & Comments

Alpha Job #L2450786
RDY 10-29-24 mas

V0482

OCT 29 2024 V 0482
MAS 10-29-24

Internal

Date Received	Internal Lab ID
SEP 10 2024	U 7954

Ship samples to 2323 Sycamore Dr Knoxville, TN 37921. If rush turnaround time is requested, please indicate on the outside of box by writing RUSH or PRIORITY on your shipping label. Pricing subject to change. For the most updated pricing, please contact us at labinfo@galbraith.com. A sample submitted for testing constitutes acceptance of Galbraith's Terms and Conditions. See our Catalog of Services or website at galbraith.com for our Terms and Conditions.

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Contact Information

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Payment Information

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Zip/Postal Code	
Country	
Phone	
Email	
PO Number	

Turnaround Time

- (●) STANDARD - Approximately 10 business days
- ( ) RUSH - 5 business days (100% surcharge)
- ( ) PRIORITY - 2 business days (200% surcharge)

Regulatory Information

Regulatory services incur an 85% surcharge

( ) No Regulations	( ) GMP 21 CFR 210/211 21 CFR 820
( ) FIFRA 40 CFR 160	( ) GLP 21 CFR 58
( ) TSCA 40 CFR 792	( ) NRC
( ) RCRA	( ) QA Custom

Special Handling

- [ ] Dry prior to analysis (provide conditions below, $37 per sample)
- [ ] _____ Hours _____ °C Vacuum ( ) Yes ( ) No
- [ ] Grind ($54 per sample, subject to rush surcharge)
- [ ] Cryogenic Grind ($132 per sample, subject to rush surcharge)
- [✓] Cold Storage (2 to 8°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-18 to -25°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-70°C) ($14 per sample or $63 per 5+ samples)
- [ ] Handle under Nitrogen ($39 per sample, subject to rush surcharge)
- [ ] Handle under Argon ($42 per sample, subject to rush surcharge)

Replicates

( ) Single ( ) Duplicate ( ) Triplicate ( ) Other_____

[ ] Duplicate if 1st analysis disagrees with theory/range

Note: A 100% surcharge is added for each additional replicate

Data Delivery

[ ] Raw Data ($75 per sample)

Sample Information

Sample Identification	Amount	Sample Composition
MW-4A, MW-4B, MW-3A, MW-3B		
MX-2A, MW-2A-MS, MW-2A-MSD		
MW-2B, MW-9A, MW-9B		
MW-5A, MW-5B, MW-6A, MW-6B,		
MW-7A, MW-7B, MW-8A, MW-8B		
MW-10A, MW-10B, DUP		

Sample Disposition After Testing

The sample remains your property at all times. Select one of these options

(●) **Discard** [By checking this box, you certify that the material is suitable for disposal in a sanitary landfill. This is not available for hazardous samples.]

( ) **Return to Sender** [Non-hazardous: $12/spl or $26/batch of 3 or more. Hazardous: $90/spl or batch.]

Hazards

( ) SDS Required if hazardous	[ ] Unknown	[ ] Inhalation
	[ ] Biohazard	[ ] Pyrophoric
( ) No SDS	[ ] Cytotoxic	[ ] Reproductive

Testing Information

Test Requested	Detection Limit	Theory/Range*	Method/Procedure
Viscosity	0.99 - 1.20		ASTM D445-15

*Are the stated Theory/Range values regulatory specifications? ( ) Yes ( ) No

Notes & Comments

Alpha Job #L2450786

RDI, 10-29-24 MAS

V0483

OCT 29 2024

MAS 10-29-24

V 0483

Date Received / Internal Lab ID

Initial

SEP 10 2024

U 7955

Ship samples to 2323 Sycamore Dr Knoxville, TN 37921. If rush turnaround time is requested, please indicate on the outside of box by writing RUSH or PRIORITY on your shipping label. Pricing subject to change. For the most updated pricing, please contact us at labinfo@galbraith.com. A sample submitted for testing constitutes acceptance of Galbraith's Terms and Conditions. See our Catalog of Services or website at galbraith.com for our Terms and Conditions.

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Analytical Request Form

Please fill out all fields. For assistance, contact us at 1-877-449-8797 or email labinfo@galbraith.com

ISO 17025 Certificate #2777.01

AS CREDITED

Contact Information

Name	Mitchell Ostrowski
Company	Pace Analytical
Address	8 Walkup Drive
Address (2)	
City, State/Province	Westborough, MA
Zip/Postal Code	01581
Country	USA
Phone	(716) 427-5225
Quote Number	
Report Results to (List emails)	Mitchell.Ostrowski@pacelabs.com, west.subreports@pacelabs.com
Information is only released to the contact above. If others are permitted to receive information, list their names here.	

Payment Information

Company	Pace Analytical
Bill to Address	
Address (2)	
City, State/Province	
Zip/Postal Code	
Country	
Phone	
Email	
PO Number	

Turnaround Time

- (●) STANDARD - Approximately 10 business days
- ( ) RUSH - 5 business days (100% surcharge)
- ( ) PRIORITY - 2 business days (200% surcharge)

Replicates

( ) Single ( ) Duplicate ( ) Triplicate ( ) Other_____

[ ] Duplicate if 1st analysis disagrees with theory/range

Note: A 100% surcharge is added for each additional replicate

Regulatory Information

Regulatory services incur an 85% surcharge

( ) No Regulations	( ) GMP 21 CFR 210/211 21 CFR 820
( ) FIFRA 40 CFR 160	( ) GLP 21 CFR 58
( ) TSCA 40 CFR 792	( ) NRC
( ) RCRA	( ) QA Custom

Data Delivery

[ ] Raw Data ($75 per sample)

Special Handling

- [ ] Dry prior to analysis (provide conditions below, $37 per sample)
- [ ] _____ Hours _____ °C Vacuum ( ) Yes ( ) No
- [ ] Grind ($54 per sample, subject to rush surcharge)
- [ ] Cryogenic Grind ($132 per sample, subject to rush surcharge)
- [✓] Cold Storage (2 to 8°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-18 to -25°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-70°C) ($14 per sample or $63 per 5+ samples)
- [ ] Handle under Nitrogen ($39 per sample, subject to rush surcharge)
- [ ] Handle under Argon ($42 per sample, subject to rush surcharge)

Sample Information

Sample Identification	Amount	Sample Composition
MW-4A, MW-4B, MW-3A, MW-3B		
MX-2A, MW-2A-MS, MW-2A-MSD		
MW-2B, MW-9A, MW-9B		
MW-5A, MW-5B, MW-6A, MW-6B,		
MW-7A, MW-7B, MW-8A, MW-8B		
MW-10A, MW-10B, DUP		

Sample Disposition After Testing

The sample remains your property at all times. Select one of these options

(●) **Discard** [By checking this box, you certify that the material is suitable for disposal in a sanitary landfill. This is not available for hazardous samples.]

( ) **Return to Sender** [Non-hazardous: $12/spl or $26/batch of 3 or more. Hazardous: $90/spl or batch.]

Hazards

( ) SDS Required if hazardous	[ ] Unknown	[ ] Inhalation
	[ ] Biohazard ($35 per sample)	[ ] Pyrophoric
( ) No SDS	[ ] Cytotoxic	[ ] Reproductive

Testing Information

Test Requested	Detection Limit	Theory/Range*	Method/Procedure
Viscosity	0.99 - 1.20		ASTM D445-15

*Are the stated Theory/Range values regulatory specifications? ( ) Yes ( ) No

Notes & Comments

Alpha Job #L2450786

RD 10-29-24 MAS

V0484

OCT 29 2024

MAS 10-30-24 V 0484

Date Received / Internal Lab ID

Received: SEP 10 2024 | U 7956

Ship samples to 2323 Sycamore Dr Knoxville, TN 37921. If rush turnaround time is requested, please indicate on the outside of box by writing RUSH or PRIORITY on your shipping label. Pricing subject to change. For the most updated pricing, please contact us at labinfo@galbraith.com. A sample submitted for testing constitutes acceptance of Galbraith's Terms and Conditions. See our Catalog of Services or website at www.galbraith.com for our Terms and Conditions.

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ISO 17025 Certificate #2777.01

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Contact Information

Name	Mitchell Ostrowski
Company	Pace Analytical
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Address (2)	
City, State/Province	Westborough, MA
Zip/Postal Code	01581
Country	USA
Phone	(716) 427-5225
Quote Number	
Report Results to (List emails)	Mitchell.Ostrowski@pacelabs.com, west.subreports@pacelabs.com
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Payment Information

Company	Pace Analytical
Bill to Address	
Address (2)	
City, State/Province	
Zip/Postal Code	
Country	
Phone	
Email	
PO Number	

Turnaround Time

- (●) STANDARD - Approximately 10 business days
- ( ) RUSH - 5 business days (100% surcharge)
- ( ) PRIORITY - 2 business days (200% surcharge)

Regulatory Information

Regulatory services incur an 85% surcharge

( ) No Regulations	( ) GMP 21 CFR 210/211 21 CFR 820
( ) FIFRA 40 CFR 160	( ) GLP 21 CFR 58
( ) TSCA 40 CFR 792	( ) NRC
( ) RCRA	( ) QA Custom

Special Handling

- [ ] Dry prior to analysis (provide conditions below, $37 per sample)
- [ ] _____ Hours _____ °C Vacuum ( ) Yes ( ) No
- [ ] Grind ($54 per sample, subject to rush surcharge)
- [ ] Cryogenic Grind ($132 per sample, subject to rush surcharge)
- [✓] Cold Storage (2 to 8°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-18 to -25°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-70°C) ($14 per sample or $63 per 5+ samples)
- [ ] Handle under Nitrogen ($39 per sample, subject to rush surcharge)
- [ ] Handle under Argon ($42 per sample, subject to rush surcharge)

Replicates

( ) Single ( ) Duplicate ( ) Triplicate ( ) Other_____

[ ] Duplicate if 1st analysis disagrees with theory/range

Note: A 100% surcharge is added for each additional replicate

Data Delivery

[ ] Raw Data ($75 per sample)

Sample Information

Sample Identification	Amount	Sample Composition
MW-4A, MW-4B, MW-3A, MW-3B		
MX-2A, MW-2A-MS, MW-2A-MSD		
MW-2B, MW-9A, MW-9B		
MW-5A, MW-5B, MW-6A, MW-6B,		
MW-7A, MW-7B, MW-8A, MW-8B		
MW-10A, MW-10B, DUP		

Sample Disposition After Testing

The sample remains your property at all times. Select one of these options

(●) **Discard** [By checking this box, you certify that the material is suitable for disposal in a sanitary landfill. This is not available for hazardous samples.]

( ) **Return to Sender** [Non-hazardous: $12/spl or $26/batch of 3 or more. Hazardous: $90/spl or batch.]

Hazards

( ) SDS Required if hazardous	[ ] Unknown	[ ] Inhalation
	[ ] Biohazard	[ ] Pyrophoric
( ) No SDS	[ ] Cytotoxic	[ ] Reproductive

Testing Information

Test Requested	Detection Limit	Theory/Range*	Method/Procedure
Viscosity	0.99 - 1.20		ASTM D445-15

*Are the stated Theory/Range values regulatory specifications? ( ) Yes ( ) No

Notes & Comments

Alpha Job #L2450786

ORDI; 10-29-24 mAS

OCT 29 2024 V0485

MAS 10-29-24 V 0485

Date Received / Internal Lab ID

SEP 10 2024 U 7957

Ship samples to 2323 Sycamore Dr Knoxville, TN 37921. If rush turnaround time is requested, please indicate on the outside of box by writing RUSH or PRIORITY on your shipping label. Pricing subject to change. For the most updated pricing, please contact us at labinfo@galbraith.com. A sample submitted for testing constitutes acceptance of Galbraith's Terms and Conditions. See our Catalog of Services or website at www.galbraith.com for our Terms and Conditions.

Form 9.1.18 Version 28

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Contact Information

Name	Mitchell Ostrowski
Company	Pace Analytical
Address	8 Walkup Drive
Address (2)	
City, State/Province	Westborough, MA
Zip/Postal Code	01581
Country	USA
Phone	(716) 427-5225
Quote Number	
Report Results to (List emails)	Mitchell.Ostrowski@pacelabs.com, west.subreports@pacelabs.com
Information is only released to the contact above. If others are permitted to receive information, list their names here.	

Payment Information

Company	Pace Analytical
Bill to Address	
Address (2)	
City, State/Province	
Zip/Postal Code	
Country	
Phone	
Email	
PO Number	

Turnaround Time

- (●) STANDARD - Approximately 10 business days
- ( ) RUSH - 5 business days (100% surcharge)
- ( ) PRIORITY - 2 business days (200% surcharge)

Regulatory Information

Regulatory services incur an 85% surcharge

( ) No Regulations	( ) GMP 21 CFR 210/211 21 CFR 820
( ) FIFRA 40 CFR 160	( ) GLP 21 CFR 58
( ) TSCA 40 CFR 792	( ) NRC
( ) RCRA	( ) QA Custom

Special Handling

- [ ] Dry prior to analysis (provide conditions below, $37 per sample)
- [ ] _____ Hours _____ °C Vacuum ( ) Yes ( ) No
- [ ] Grind ($54 per sample, subject to rush surcharge)
- [ ] Cryogenic Grind ($192 per sample, subject to rush surcharge)
- [x] Cold Storage (2 to 8°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-18 to -25°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-70°C) ($14 per sample or $63 per 5+ samples)
- [ ] Handle under Nitrogen ($39 per sample, subject to rush surcharge)
- [ ] Handle under Argon ($42 per sample, subject to rush surcharge)

Replicates

( ) Single ( ) Duplicate ( ) Triplicate ( ) Other_____

[ ] Duplicate if 1st analysis disagrees with theory/range

Note: A 100% surcharge is added for each additional replicate

Data Delivery

[ ] Raw Data ($75 per sample)

Sample Information

Sample Identification	Amount	Sample Composition
MW-4A, MW-4B, MW-3A, MW-3B		
MX-2A, MW-2A-MS, MW-2A-MSD		
MW-2B, MW-9A, MW-9B		
MW-5A, MW-5B, MW-6A, MW-6B,		
MW-7A, MW-7B, MW-8A, MW-8B		
MW-10A, MW-10B, DUP		

Sample Disposition After Testing

The sample remains your property at all times. Select one of these options

(●) **Discard** [By checking this box, you certify that the material is suitable for disposal in a sanitary landfill. This is not available for hazardous samples.]

( ) **Return to Sender** [Non-hazardous: $12/spl or $26/batch of 3 or more. Hazardous: $90/spl or batch.]

Hazards

( ) SDS Required if hazardous	[ ] Unknown	[ ] Inhalation
	[ ] Biohazard	[ ] Pyrophoric
( ) No SDS	[ ] Cytotoxic	[ ] Reproductive

Testing Information

Test Requested	Detection Limit	Theory/Range*	Method/Procedure
Viscosity	0.99 - 1.20		ASTM D445-15

*Are the stated Theory/Range values regulatory specifications? ( ) Yes ( ) No

Notes & Comments

Alpha Job #L2450786

RDL 10-29-24 MMS

V0486

OCT 29 2024

MMS 10-30-24 V 0486

Internal

Date Received: SEP 10 2024

Internal Lab ID: U 7958

Ship samples to 2323 Sycamore Dr Knoxville, TN 37921. If rush turnaround time is requested, please indicate on the outside of box by writing RUSH or PRIORITY on your shipping label. Pricing subject to change. For the most updated pricing, please contact us at labinfo@galbraith.com. A sample submitted for testing constitutes acceptance of Galbraith's Terms and Conditions. See our Catalog of Services or website at galbraith.com for our Terms and Conditions.

Form 3.1.18 Version 2R

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Contact Information

Name	Mitchell Ostrowski
Company	Pace Analytical
Address	8 Walkup Drive
Address (2)	
City, State/Province	Westborough, MA
Zip/Postal Code	01581
Country	USA
Phone	(716) 427-5225
Quote Number	
Report Results to (List emails)	Mitchell.Ostrowski@pacelabs.com, west.subreports@pacelabs.com

Information is only released to the contact above. If others are permitted to receive information, list their names here.

Payment Information

Company	Pace Analytical
Bill to Address	
Address (2)	
City, State/Province	
Zip/Postal Code	
Country	
Phone	
Email	
PO Number	

Turnaround Time

- (•) STANDARD - Approximately 10 business days
- ( ) RUSH - 5 business days (100% surcharge)
- ( ) PRIORITY - 2 business days (200% surcharge)

Regulatory Information

Regulatory services incur an 85% surcharge

( ) No Regulations	( ) GMP 21 CFR 210/211, 21 CFR 820
( ) FIFRA 40 CFR 160	( ) GLP 21 CFR 58
( ) TSCA 40 CFR 792	( ) NRC
( ) RCRA	( ) QA Custom

Special Handling

- [ ] Dry prior to analysis (provide conditions below, $37 per sample)
- [ ] _____Hours _____°C Vacuum ( ) Yes ( ) No
- [ ] Grind ($54 per sample, subject to rush surcharge)
- [ ] Cryogenic Grind ($132 per sample, subject to rush surcharge)
- [x] Cold Storage (2 to 8°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-18 to -25°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-70°C) ($14 per sample or $63 per 5+ samples)
- [ ] Handle under Nitrogen ($39 per sample, subject to rush surcharge)
- [ ] Handle under Argon ($42 per sample, subject to rush surcharge)

Replicates

( ) Single ( ) Duplicate ( ) Triplicate ( ) Other_____

[ ] Duplicate if 1st analysis disagrees with theory/range

Note: A 100% surcharge is added for each additional replicate

Data Delivery

[ ] Raw Data ($75 per sample)

Sample Information

Sample Identification	Amount	Sample Composition
MW-4A, MW-4B, MW-3A, MW-3B		
MX-2A, MW-2A-MS, MW-2A-MSD		
MW-2B, MW-9A, MW-9B		
MW-5A, MW-5B, MW-6A, MW-6B,		
MW-7A, MW-7B, MW-8A, MW-8B		
MW-10A, MW-10B, DUP		

Sample Disposition After Testing

The sample remains your property at all times. Select one of these options

- (•) **Discard** [By checking this box, you certify that the material is suitable for disposal in a sanitary landfill. This is not available for hazardous samples.]
- ( ) **Return to Sender** [Non-hazardous: $12/spl or $26/batch of 3 or more. Hazardous: $90/spl or batch.]

Hazards

( ) SDS Required if hazardous	[ ] Unknown	[ ] Inhalation
	[ ] Biohazard	[ ] Pyrophoric
( ) No SDS	[ ] Cytotoxic	[ ] Reproductive

Testing Information

Test Requested	Detection Limit	Theory/Range*	Method/Procedure
Viscosity	0.99 - 1.20		ASTM D445-15

*Are the stated Theory/Range values regulatory specifications? ( ) Yes ( ) No

Notes & Comments

Alpha Job #L2450786

RDL 029-24 MAS

V0487

OCT 29 2024

MA 9-10-24 V 0487

Date Received	Internal Lab ID
SEP 10 2024	U 7959

Ship samples to 2323 Sycamore Dr Knoxville, TN 37921. If rush turnaround time is requested, please indicate on the outside of box by writing RUSH or PRIORITY on your shipping label. Pricing subject to change. For the most updated pricing, please contact us at labinfo@galbraith.com. A sample submitted for testing constitutes acceptance of Galbraith's Terms and Conditions. See our Catalog of Services or website at galbraith.com for our Terms and Conditions.

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Analytical Request Form

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ISO 17025 Certificate #2777.01

Contact Information

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Company	Pace Analytical
Address	8 Walkup Drive
Address (2)	
City, State/Province	Westborough, MA
Zip/Postal Code	01581
Country	USA
Phone	(716) 427-5225
Quote Number	
Report Results to (List emails)	Mitchell.Ostrowski@pacelabs.com, west.subreports@pacelabs.com
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Payment Information

Company	Pace Analytical
Bill to Address	
Address (2)	
City, State/Province	
Zip/Postal Code	
Country	
Phone	
Email	
PO Number	

Turnaround Time

- (●) STANDARD - Approximately 10 business days
- ( ) RUSH - 5 business days (100% surcharge)
- ( ) PRIORITY - 2 business days (200% surcharge)

Regulatory Information

Regulatory services incur an 85% surcharge

( ) No Regulations	( ) GMP 21 CFR 210/211 21 CFR 820
( ) FIFRA 40 CFR 160	( ) GLP 21 CFR 58
( ) TSCA 40 CFR 792	( ) NRC
( ) RCRA	( ) QA Custom

Special Handling

- [ ] Dry prior to analysis (provide conditions below, $37 per sample)
- [ ] _____ Hours _____ °C Vacuum ( ) Yes ( ) No
- [ ] Grind ($54 per sample, subject to rush surcharge)
- [ ] Cryogenic Grind ($132 per sample, subject to rush surcharge)
- [x] Cold Storage (2 to 8°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-18 to -25°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-70°C) ($14 per sample or $63 per 5+ samples)
- [ ] Handle under Nitrogen ($39 per sample, subject to rush surcharge)
- [ ] Handle under Argon ($42 per sample, subject to rush surcharge)

Replicates

( ) Single ( ) Duplicate ( ) Triplicate ( ) Other_____

[ ] Duplicate if 1st analysis disagrees with theory/range

Note: A 100% surcharge is added for each additional replicate

Data Delivery

[ ] Raw Data ($75 per sample)

Sample Information

Sample Identification	Amount	Sample Composition
MW-4A, MW-4B, MW-3A, MW-3B		
MX-2A, MW-2A-MS, MW-2A-MSD		
MW-2B, MW-9A, MW-9B		
MW-5A, MW-5B, MW-6A, MW-6B,		
MW-7A, MW-7B, MW-8A, MW-8B		
MW-10A, MW-10B, DUP		

Sample Disposition After Testing

The sample remains your property at all times. Select one of these options

- (●) **Discard** [By checking this box, you certify that the material is suitable for disposal in a sanitary landfill. This is not available for hazardous samples.]
- ( ) **Return to Sender** [Non-hazardous: $12/spl or $26/batch of 9 or more. Hazardous: $90/spl or batch.]

Hazards

( ) SDS Required if hazardous	[ ] Unknown	[ ] Inhalation
	[ ] Biohazard ($10 per sample)	[ ] Pyrophoric
( ) No SDS	[ ] Cytotoxic	[ ] Reproductive

Testing Information

Test Requested	Detection Limit	Theory/Range*	Method/Procedure
Viscosity	0.99 - 1.20		ASTM D445-15

*Are the stated Theory/Range values regulatory specifications? ( ) Yes ( ) No

Notes & Comments

Alpha Job #L2450786

1) RDI, 10-29-24 MAS

V0488

OCT 29 2024 V 0488

MAS 10-29-24

Date Received / Internal Lab ID

Date Received: SEP 10 2024

Internal Lab ID: U 7960

Ship samples to 2323 Sycamore Dr Knoxville, TN 37921. If rush turnaround time is requested, please indicate on the outside of box by writing RUSH or PRIORITY on your shipping label. Pricing subject to change. For the most updated pricing, please contact us at labinfo@galbraith.com. A sample submitted for testing constitutes acceptance of Galbraith's Terms and Conditions. See our Catalog of Services or website at galbraith.com for our Terms and Conditions.

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Contact Information

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Company	Pace Analytical
Address	8 Walkup Drive
Address (2)	
City, State/Province	Westborough, MA
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Country	USA
Phone	(716) 427-5225
Quote Number	
Report Results to (List emails)	Mitchell.Ostrowski@pacelabs.com, west.subreports@pacelabs.com
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Payment Information

Company	Pace Analytical
Bill to Address	
Address (2)	
City, State/Province	
Zip/Postal Code	
Country	
Phone	
Email	
PO Number	

Turnaround Time

- (●) STANDARD - Approximately 10 business days
- ( ) RUSH - 5 business days (100% surcharge)
- ( ) PRIORITY - 2 business days (200% surcharge)

Regulatory Information

Regulatory services incur an 85% surcharge

( ) No Regulations	( ) GMP 21 CFR 210/211, 21 CFR 820
( ) FIFRA 40 CFR 160	( ) GLP 21 CFR 58
( ) TSCA 40 CFR 792	( ) NRC
( ) RCRA	( ) QA Custom

Special Handling

- [ ] Dry prior to analysis (provide conditions below, $37 per sample)
- [ ] _____ Hours _____ °C Vacuum ( ) Yes ( ) No
- [ ] Grind ($54 per sample, subject to rush surcharge)
- [ ] Cryogenic Grind ($132 per sample, subject to rush surcharge)
- [x] Cold Storage (2 to 8°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-18 to -25°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-70°C) ($14 per sample or $63 per 5+ samples)
- [ ] Handle under Nitrogen ($39 per sample, subject to rush surcharge)
- [ ] Handle under Argon ($42 per sample, subject to rush surcharge)

Replicates

( ) Single ( ) Duplicate ( ) Triplicate ( ) Other_____

[ ] Duplicate if 1st analysis disagrees with theory/range

Note: A 100% surcharge is added for each additional replicate

Data Delivery

[ ] Raw Data ($75 per sample)

Sample Information

Sample Identification	Amount	Sample Composition
MW-4A, MW-4B, MW-3A, MW-3B		
MX-2A, MW-2A-MS, MW-2A-MSD		
MW-2B, MW-9A, MW-9B		
MW-5A, MW-5B, MW-6A, MW-6B,		
MW-7A, MW-7B, MW-8A, MW-8B		
MW-10A, MW-10B, DUP		

Sample Disposition After Testing

The sample remains your property at all times. Select one of these options

(●) **Discard** [By checking this box, you certify that the material is suitable for disposal in a sanitary landfill. This is not available for hazardous samples.]

( ) **Return to Sender** [Non-hazardous: $12/spl or $26/batch of 3 or more. Hazardous: $90/spl or batch.]

Hazards

( ) SDS Required if hazardous	[ ] Unknown	[ ] Inhalation
	[ ] Biohazard ($15 per sample)	[ ] Pyrophoric
( ) No SDS	[ ] Cytotoxic	[ ] Reproductive

Testing Information

Test Requested	Detection Limit	Theory/Range*	Method/Procedure
Viscosity	0.99 - 1.20		ASTM D445-15

*Are the stated Theory/Range values regulatory specifications? ( ) Yes ( ) No

Notes & Comments

Alpha Job #L2450786

RDL, 10-29-24 MAS

V0489

OCT 29 2024 V 0489

MAS 10-29-24

Date Received / Internal Lab ID

Initial: SEP 10 2024 — U 7961

Ship samples to 2323 Sycamore Dr Knoxville, TN 37921. If rush turnaround time is requested, please indicate on the outside of box by writing RUSH or PRIORITY on your shipping label. Pricing subject to change. For the most updated pricing, please contact us at labinfo@galbraith.com. A sample submitted for testing constitutes acceptance of Galbraith's Terms and Conditions. See our Catalog of Services or website at galbraith.com for our Terms and Conditions.

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ISO 17025 Certificate #2777.01

ACCREDITED

Contact Information

Name	Mitchell Ostrowski
Company	Pace Analytical
Address	8 Walkup Drive
Address (2)	
City, State/Province	Westborough, MA
Zip/Postal Code	01581
Country	USA
Phone	(716) 427-5225
Quote Number	
Report Results to (List emails)	Mitchell.Ostrowski@pacelabs.com, west.subreports@pacelabs.com
Information is only released to the contact above. If others are permitted to receive information, list their names here.	

Payment Information

Company	Pace Analytical
Bill to Address	
Address (2)	
City, State/Province	
Zip/Postal Code	
Country	
Phone	
Email	
PO Number	

Turnaround Time

- (●) STANDARD - Approximately 10 business days
- ( ) RUSH - 5 business days (100% surcharge)
- ( ) PRIORITY - 2 business days (200% surcharge)

Regulatory Information

Regulatory services incur an 85% surcharge

- ( ) No Regulations
- ( ) GMP 21 CFR 210/211 21 CFR 820
- ( ) FIFRA 40 CFR 160
- ( ) GLP 21 CFR 58
- ( ) TSCA 40 CFR 792
- ( ) NRC
- ( ) RCRA
- ( ) QA Custom

Special Handling

- [ ] Dry prior to analysis (provide conditions below, $37 per sample)
- [ ] _____ Hours _____ °C Vacuum ( ) Yes ( ) No
- [ ] Grind ($54 per sample, subject to rush surcharge)
- [ ] Cryogenic Grind ($132 per sample, subject to rush surcharge)
- [x] Cold Storage (2 to 8°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-18 to -25°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-70°C) ($14 per sample or $63 per 5+ samples)
- [ ] Handle under Nitrogen ($39 per sample, subject to rush surcharge)
- [ ] Handle under Argon ($42 per sample, subject to rush surcharge)

Replicates

- ( ) Single ( ) Duplicate ( ) Triplicate ( ) Other_____
- [ ] Duplicate if 1st analysis disagrees with theory/range

Note: A 100% surcharge is added for each additional replicate

Data Delivery

- [ ] Raw Data ($75 per sample)

Sample Information

Sample Identification	Amount	Sample Composition
MW-4A, MW-4B, MW-3A, MW-3B		
MX-2A, MW-2A-MS, MW-2A-MSD		
MW-2B, MW-9A, MW-9B		
MW-5A, MW-5B, MW-6A, MW-6B,		
MW-7A, MW-7B, MW-8A, MW-8B		
MW-10A, MW-10B, DUP		

Sample Disposition After Testing

The sample remains your property at all times. Select one of these options

- (●) **Discard** [By checking this box, you certify that the material is suitable for disposal in a sanitary landfill. This is not available for hazardous samples.]
- ( ) **Return to Sender** [Non-hazardous: $12/spl or $26/batch of 3 or more. Hazardous: $90/spl or batch.]

Hazards

( ) SDS Required if hazardous	[ ] Unknown	[ ] Inhalation
	[ ] Biohazard ($25 per sample)	[ ] Pyrophoric
( ) No SDS	[ ] Cytotoxic	[ ] Reproductive

Testing Information

Test Requested	Detection Limit	Theory/Range*	Method/Procedure
Viscosity	0.99 - 1.20		ASTM D445-15

*Are the stated Theory/Range values regulatory specifications? ( ) Yes ( ) No

Notes & Comments

Alpha Job #L2450786

1) RDL 10-29-24 MAS

V0490

OCT 29 2024

MAS 9-10-24 V 0490

Date Received: SEP 10 2024

Internal Lab ID: U 7962

Ship samples to 2323 Sycamore Dr Knoxville, TN 37921. If rush turnaround time is requested, please indicate on the outside of box by writing RUSH or PRIORITY on your shipping label. Pricing subject to change. For the most updated pricing, please contact us at labinfo@galbraith.com. A sample submitted for testing constitutes acceptance of Galbraith's Terms and Conditions. See our Catalog of Services or website at www.galbraith.com for our Terms and Conditions.

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Analytical Request Form

Please fill out all fields. For assistance, contact us at 1-877-445-8797 or email labinfo@galbraith.com

ISO 17025 Certificate #2777.01

ACCREDITED

Contact Information

Name	Mitchell Ostrowski
Company	Pace Analytical
Address	8 Walkup Drive
Address (2)	
City, State/Province	Westborough, MA
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Country	USA
Phone	(716) 427-5225
Quote Number	
Report Results to (List emails)	Mitchell.Ostrowski@pacelabs.com, west.subreports@pacelabs.com

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Payment Information

Company	Pace Analytical
Bill to Address	
Address (2)	
City, State/Province	
Zip/Postal Code	
Country	
Phone	
Email	
PO Number	

Turnaround Time

- (•) STANDARD - Approximately 10 business days
- ( ) RUSH - 5 business days (100% surcharge)
- ( ) PRIORITY - 2 business days (200% surcharge)

Replicates

( ) Single ( ) Duplicate ( ) Triplicate ( ) Other_____

[ ] Duplicate if 1st analysis disagrees with theory/range

Note: A 100% surcharge is added for each additional replicate

Regulatory Information

Regulatory services incur an 85% surcharge

( ) No Regulations	( ) GMP 21 CFR 210/211 21 CFR 820
( ) FIFRA 40 CFR 160	( ) GLP 21 CFR 58
( ) TSCA 40 CFR 792	( ) NRC
( ) RCRA	( ) QA Custom

Data Delivery

[ ] Raw Data ($75 per sample)

Special Handling

- [ ] Dry prior to analysis (provide conditions below, $37 per sample)
- [ ] _____ Hours _____ °C Vacuum ( ) Yes ( ) No
- [ ] Grind ($54 per sample, subject to rush surcharge)
- [ ] Cryogenic Grind ($132 per sample, subject to rush surcharge)
- [✓] Cold Storage (2 to 8°C) ($14 per sample or $69 per 5+ samples)
- [ ] Freezer Storage (-18 to -25°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-70°C) ($14 per sample or $63 per 5+ samples)
- [ ] Handle under Nitrogen ($39 per sample, subject to rush surcharge)
- [ ] Handle under Argon ($42 per sample, subject to rush surcharge)

Sample Information

Sample Identification	Amount	Sample Composition
MW-4A, MW-4B, MW-3A, MW-3B		
MX-2A, MW-2A-MS, MW-2A-MSD		
MW-2B, MW-9A, MW-9B		
MW-5A, MW-5B, MW-6A, MW-6B,		
MW-7A, MW-7B, MW-8A, MW-8B		
MW-10A, MW-10B, DUP		

Sample Disposition After Testing

The sample remains your property at all times. Select one of these options

- (•) **Discard** [By checking this box, you certify that the material is suitable for disposal in a sanitary landfill. This is not available for hazardous samples.]
- ( ) **Return to Sender** [Non-hazardous: $12/spl or $26/batch of 3 or more. Hazardous: $90/spl or batch.]

Hazards

( ) SDS Required if hazardous	[ ] Unknown	[ ] Inhalation
	[ ] Biohazard	[ ] Pyrophoric
( ) No SDS	[ ] Cytotoxic	[ ] Reproductive

Testing Information

Test Requested	Detection Limit	Theory/Range*	Method/Procedure
Viscosity	0.99 - 1.20		ASTM D445-15

*Are the stated Theory/Range values regulatory specifications? ( ) Yes ( ) No

Notes & Comments

Alpha Job #L2450786

RDL, 10-29-24 MAS

V0491

OCT 29 2024 V 0491

MAS 9-10-24

Internal Use

Date Received	Internal Lab ID
SEP 10 2024	U 7963

Ship samples to 2323 Sycamore Dr Knoxville, TN 37921. If rush turnaround time is requested, please indicate on the outside of box by writing RUSH or PRIORITY on your shipping label. Pricing subject to change. For the most updated pricing, please contact us at labinfo@galbraith.com. A sample submitted for testing constitutes acceptance of Galbraith's Terms and Conditions. See our Catalog of Services or website at galbraith.com for our Terms and Conditions.

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Analytical Request Form

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ISO 17025 Certificate #2777.01

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Contact Information

Name	Mitchell Ostrowski
Company	Pace Analytical
Address	8 Walkup Drive
Address (2)	
City, State/Province	Westborough, MA
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Country	USA
Phone	(716) 427-5225
Quote Number	
Report Results to (List emails)	Mitchell.Ostrowski@pacelabs.com, west.subreports@pacelabs.com

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Payment Information

Company	Pace Analytical
Bill to Address	
Address (2)	
City, State/Province	
Zip/Postal Code	
Country	
Phone	
Email	
PO Number	

Turnaround Time

- (●) STANDARD - Approximately 10 business days
- ( ) RUSH - 5 business days (100% surcharge)
- ( ) PRIORITY - 2 business days (200% surcharge)

Regulatory Information

Regulatory services incur an 85% surcharge

( ) No Regulations	( ) GMP 21 CFR 210/211 21 CFR 820
( ) FIFRA 40 CFR 160	( ) GLP 21 CFR 58
( ) TSCA 40 CFR 792	( ) NRC
( ) RCRA	( ) QA Custom

Special Handling

- [ ] Dry prior to analysis (provide conditions below, $97 per sample)
- [ ] _____ Hours _____ °C Vacuum ( ) Yes ( ) No
- [ ] Grind ($54 per sample, subject to rush surcharge)
- [ ] Cryogenic Grind ($132 per sample, subject to rush surcharge)
- [✓] Cold Storage (2 to 8°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-18 to -25°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-70°C) ($14 per sample or $63 per 5+ samples)
- [ ] Handle under Nitrogen ($39 per sample, subject to rush surcharge)
- [ ] Handle under Argon ($42 per sample, subject to rush surcharge)

Replicates

( ) Single ( ) Duplicate ( ) Triplicate ( ) Other_____

[ ] Duplicate if 1st analysis disagrees with theory/range

Note: A 100% surcharge is added for each additional replicate

Data Delivery

[ ] Raw Data ($75 per sample)

Sample Information

Sample Identification	Amount	Sample Composition
MW-4A, MW-4B, MW-3A, MW-3B		
MX-2A, MW-2A-MS, MW-2A-MSD		
MW-2B, MW-9A, MW-9B		
MW-5A, MW-5B, MW-6A, MW-6B,		
MW-7A, MW-7B, MW-8A, MW-8B		
MW-10A, MW-10B, DUP		

Sample Disposition After Testing

The sample remains your property at all times. Select one of these options

( ) **Discard** [By checking this box, you certify that the material is suitable for disposal in a sanitary landfill. This is not available for hazardous samples.]

( ) **Return to Sender** [Non-hazardous: $12/spl or $25/batch of 3 or more. Hazardous: $90/spl or batch.]

Hazards

( ) SDS Required if hazardous	[ ] Unknown	[ ] Inhalation
	[ ] Biohazard ($10 per sample)	[ ] Pyrophoric
( ) No SDS	[ ] Cytotoxic	[ ] Reproductive

Testing Information

Test Requested	Detection Limit	Theory/Range*	Method/Procedure
Viscosity	0.99 - 1.20		ASTM D445-15

*Are the stated Theory/Range values regulatory specifications? ( ) Yes ( ) No

Notes & Comments

Alpha Job #L2450786

CRDL, 10-29-24 MMS

V0492

OCT 29 2024

MMS 10-29-24 V 0492

Date Received / Internal Lab ID

SEP 10 2024 U 7964

Ship samples to 2323 Sycamore Dr Knoxville, TN 37921. If rush turnaround time is requested, please indicate on the outside of box by writing RUSH or PRIORITY on your shipping label. Pricing subject to change. For the most updated pricing, please contact us at labinfo@galbraith.com. A sample submitted for testing constitutes acceptance of Galbraith's Terms and Conditions. See our Catalog of Services or website at www.galbraith.com for our Terms and Conditions.

Form 9.1.16 Version 28

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ISO 17025 Certificate #2777.01

Contact Information

Name	Mitchell Ostrowski
Company	Pace Analytical
Address	8 Walkup Drive
Address (2)	
City, State/Province	Westborough, MA
Zip/Postal Code	01581
Country	USA
Phone	(716) 427-5225
Quote Number	
Report Results to (List emails)	Mitchell.Ostrowski@pacelabs.com, west.subreports@pacelabs.com

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Payment Information

Company	Pace Analytical
Bill to Address	
Address (2)	
City, State/Province	
Zip/Postal Code	
Country	
Phone	
Email	
PO Number	

Turnaround Time

- (•) STANDARD - Approximately 10 business days
- ( ) RUSH - 5 business days (100% surcharge)
- ( ) PRIORITY - 2 business days (200% surcharge)

Regulatory Information

Regulatory services incur an 85% surcharge

( ) No Regulations	( ) GMP 21 CFR 210/211 21 CFR 820
( ) FIFRA 40 CFR 160	( ) GLP 21 CFR 58
( ) TSCA 40 CFR 792	( ) NRC
( ) RCRA	( ) QA Custom

Special Handling

- [ ] Dry prior to analysis (provide conditions below, $37 per sample)
- [ ] _____ Hours _____ °C Vacuum ( ) Yes ( ) No
- [ ] Grind ($54 per sample, subject to rush surcharge)
- [ ] Cryogenic Grind ($132 per sample, subject to rush surcharge)
- [✓] Cold Storage (2 to 8°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-18 to -25°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-70°C) ($14 per sample or $63 per 5+ samples)
- [ ] Handle under Nitrogen ($39 per sample, subject to rush surcharge)
- [ ] Handle under Argon ($42 per sample, subject to rush surcharge)

Replicates

( ) Single ( ) Duplicate ( ) Triplicate ( ) Other_____

[ ] Duplicate if 1st analysis disagrees with theory/range

Note: A 100% surcharge is added for each additional replicate

Data Delivery

[ ] Raw Data ($75 per sample)

Sample Information

Sample Identification	Amount	Sample Composition
MW-4A, MW-4B, MW-3A, MW-3B		
MX-2A, MW-2A-MS, MW-2A-MSD		
MW-2B, MW-9A, MW-9B		
MW-5A, MW-5B, MW-6A, MW-6B,		
MW-7A, MW-7B, MW-8A, MW-8B		
MW-10A, MW-10B, DUP		

Sample Disposition After Testing

The sample remains your property at all times. Select one of these options

- (•) Discard (By checking this box, you certify that the material is suitable for disposal in a sanitary landfill. This is not available for hazardous samples.)
- ( ) Return to Sender (Non-hazardous: $12/spl or $26/batch of 3 or more. Hazardous: $90/spl or batch.)

Hazards

( ) SDS Required if hazardous	[ ] Unknown	[ ] Inhalation
	[ ] Biohazard (123 per sample)	[ ] Pyrophoric
( ) No SDS	[ ] Cytotoxic	[ ] Reproductive

Testing Information

Test Requested	Detection Limit	Theory/Range*	Method/Procedure
Viscosity	0.99 - 1.20		ASTM D445-15

*Are the stated Theory/Range values regulatory specifications? ( ) Yes ( ) No

Notes & Comments

Alpha Job #L2450786

(1) RDL 10-29-24 MAS

V0493

OCT 29 2024 V 0493

MAS 10-30-24

Date Received: SEP 10 2024

Internal Lab ID: U 7965

Ship samples to 2323 Sycamore Dr Knoxville, TN 37921. If rush turnaround time is requested, please indicate on the outside of box by writing RUSH or PRIORITY on your shipping label. Pricing subject to change. For the most updated pricing, please contact us at labinfo@galbraith.com. A sample submitted for testing constitutes acceptance of Galbraith's Terms and Conditions. See our Catalog of Services or website at galbraithlabs.com for our Terms and Conditions.

Form 9.1.18 Version 2R

GALBRAITH — Analytical Request Form

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Please fill out all fields. For assistance, contact us at 1-877-449 8297 or email labinfo@galbraith.com

ISO 17025 Certificate #2777.01

Contact Information

Name	Mitchell Ostrowski
Company	Pace Analytical
Address	8 Walkup Drive
Address (2)	
City, State/Province	Westborough, MA
Zip/Postal Code	01581
Country	USA
Phone	(716) 427-5225
Quote Number	
Report Results to (List emails)	Mitchell.Ostrowski@pacelabs.com, west.subreports@pacelabs.com
Information is only released to the contact above. If others are permitted to receive information, list their names here.	

Payment Information

Company	Pace Analytical
Bill to Address	
Address (2)	
City, State/Province	
Zip/Postal Code	
Country	
Phone	
Email	
PO Number	

Turnaround Time

- (•) STANDARD - Approximately 10 business days
- ( ) RUSH - 5 business days (100% surcharge)
- ( ) PRIORITY - 2 business days (200% surcharge)

Regulatory Information

Regulatory services incur an 85% surcharge

( ) No Regulations	( ) GMP 21 CFR 210/211 21 CFR 820
( ) FIFRA 40 CFR 160	( ) GLP 21 CFR 58
( ) TSCA 40 CFR 792	( ) NRC
( ) RCRA	( ) QA Custom

Special Handling

- [ ] Dry prior to analysis (provide conditions below, $97 per sample)
- [ ] _____ Hours _____ °C Vacuum ( ) Yes ( ) No
- [ ] Grind ($54 per sample, subject to rush surcharge)
- [ ] Cryogenic Grind ($132 per sample, subject to rush surcharge)
- [✓] Cold Storage (2 to 8°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-18 to -25°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-70°C) ($14 per sample or $63 per 5+ samples)
- [ ] Handle under Nitrogen ($39 per sample, subject to rush surcharge)
- [ ] Handle under Argon ($42 per sample, subject to rush surcharge)

Replicates

( ) Single ( ) Duplicate ( ) Triplicate ( ) Other_____

[ ] Duplicate if 1st analysis disagrees with theory/range

Note: A 100% surcharge is added for each additional replicate

Data Delivery

[ ] Raw Data ($75 per sample)

Sample Information

Sample Identification	Amount	Sample Composition
MW-4A, MW-4B, MW-3A, MW-3B		
MX-2A, MW-2A-MS, MW-2A-MSD		
MW-2B, MW-9A, MW-9B		
MW-5A, MW-5B, MW-6A, MW-6B,		
MW-7A, MW-7B, MW-8A, MW-8B		
MW-10A, MW-10B, DUP		

Sample Disposition After Testing

The sample remains your property at all times. Select one of these options

- (•) **Discard** [By checking this box, you certify that the material is suitable for disposal in a sanitary landfill. This is not available for hazardous samples.]
- ( ) **Return to Sender** [Non-hazardous: $12/spl or $26/batch of 3 or more. Hazardous: $90/spl or batch.]

Hazards

( ) SDS Required if hazardous	[ ] Unknown	[ ] Inhalation
	[ ] Biohazard ($15 per sample)	[ ] Pyrophoric
( ) No SDS	[ ] Cytotoxic	[ ] Reproductive

Testing Information

Test Requested	Detection Limit	Theory/Range*	Method/Procedure
Viscosity	0.99 - 1.20		ASTM D445-15

*Are the stated Theory/Range values regulatory specifications? ( ) Yes ( ) No

Notes & Comments

Alpha Job #L2450786

RDL, 10-29-24 MAS

V0494

OCT 29 2024

MAS 10-10-24 V 0494

Internal

Date Received	Internal Lab ID
SEP 10 2024	U 7966

Ship samples to 2323 Sycamore Dr Knoxville, TN 37921. If rush turnaround time is requested, please indicate on the outside of box by writing RUSH or PRIORITY on your shipping label. Pricing subject to change. For the most updated pricing, please contact us at labinfo@galbraith.com. A sample submitted for testing constitutes acceptance of Galbraith's Terms and Conditions. See our Catalog of Services or website at galbraith.com for our Terms and Conditions.

Form 3.1.1A Version 3R

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Analytical Request Form

Please fill out all fields. For assistance, contact us at 1-877-449-8797 or email labinfo@galbraith.com

ISO 17025 Certificate #2777.01

Contact Information

Name	Mitchell Ostrowski
Company	Pace Analytical
Address	8 Walkup Drive
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Zip/Postal Code	01581
Country	USA
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Quote Number	
Report Results to (List emails)	Mitchell.Ostrowski@pacelabs.com, west.subreports@pacelabs.com
Information is only released to the contact above. If others are permitted to receive information, list their names here.	

Payment Information

Company	Pace Analytical
Bill to Address	
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City, State/Province	
Zip/Postal Code	
Country	
Phone	
Email	
PO Number	

Turnaround Time

- (●) STANDARD - Approximately 10 business days
- ( ) RUSH - 5 business days (100% surcharge)
- ( ) PRIORITY - 2 business days (200% surcharge)

Regulatory Information

Regulatory services incur an 85% surcharge

( ) No Regulations	( ) GMP 21 CFR 210/211 21 CFR 820
( ) FIFRA 40 CFR 160	( ) GLP 21 CFR 58
( ) TSCA 40 CFR 792	( ) NRC
( ) RCRA	( ) QA Custom

Special Handling

- [ ] Dry prior to analysis (provide conditions below, $37 per sample)
- [ ] _____ Hours _____ °C Vacuum ( ) Yes ( ) No
- [ ] Grind ($54 per sample, subject to rush surcharge)
- [ ] Cryogenic Grind ($132 per sample, subject to rush surcharge)
- [✓] Cold Storage (2 to 8°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-18 to -25°C) ($14 per sample or $63 per 5+ samples)
- [ ] Freezer Storage (-70°C) ($14 per sample or $63 per 5+ samples)
- [ ] Handle under Nitrogen ($39 per sample, subject to rush surcharge)
- [ ] Handle under Argon ($42 per sample, subject to rush surcharge)

Replicates

( ) Single ( ) Duplicate ( ) Triplicate ( ) Other_____

[ ] Duplicate if 1st analysis disagrees with theory/range

Note: A 100% surcharge is added for each additional replicate

Data Delivery

[ ] Raw Data ($75 per sample)

Sample Information

Sample Identification	Amount	Sample Composition
MW-4A, MW-4B, MW-3A, MW-3B		
MX-2A, MW-2A-MS, MW-2A-MSD		
MW-2B, MW-9A, MW-9B		
MW-5A, MW-5B, MW-6A, MW-6B,		
MW-7A, MW-7B, MW-8A, MW-8B		
MW-10A, MW-10B, DUP		

Sample Disposition After Testing

The sample remains your property at all times. Select one of these options

- (●) **Discard** [By checking this box, you certify that the material is suitable for disposal in a sanitary landfill. This is not available for hazardous samples.]
- ( ) **Return to Sender** [Non-hazardous: $12/spl or $26/batch of 3 or more. Hazardous: $90/spl or batch.]

Hazards

( ) SDS Required if hazardous	[ ] Unknown	[ ] Inhalation
	[ ] Biohazard ($15 per sample)	[ ] Pyrophoric
( ) No SDS	[ ] Cytotoxic	[ ] Reproductive

Testing Information

Test Requested	Detection Limit	Theory/Range*	Method/Procedure
Viscosity	0.99 - 1.20		ASTM D445-15

*Are the stated Theory/Range values regulatory specifications? ( ) Yes ( ) No

Notes & Comments

Alpha Job #L2450786

RD/MAS 10-29-24

V0495

OCT 29 2024 V 0495

MAS 10-29-24

Internal

Date Received	Internal Lab ID
SEP 10 2024	U 7967

Ship samples to 2323 Sycamore Dr Knoxville, TN 37921. If rush turnaround time is requested, please indicate on the outside of box by writing RUSH or PRIORITY on your shipping label. Pricing subject to change. For the most updated pricing, please contact us at labinfo@galbraith.com. A sample submitted for testing constitutes acceptance of Galbraith's Terms and Conditions. See our Catalog of Services or website at www.galbraith.com for our Terms and Conditions.

2024

ION CHROMATOGRAPHY

Datasheet# 000758

Prep Method #1 G-35A Rev. 16
Balance# 188 Analyst/Date GAD 9/16/24

Prep Method #2 N/A
Balance# N/A Analyst/Date N/A

Determination Method ME-40 Rev. 12
Analyst/Date GAD 9/17/24
Instrument # 838
Eluent RL # 45248-18-13
Reagent RL # N/A
Pipettors P86

Data Reviewed and Approved:
VERIFIED BY:
HMF 9/18/24

③ Samples transcribed from DJ # 752. HMF 9/18/24

	Sample Identification	U-7729	U-7730	U-7731	U-7960	U-7961	U-7962	U-7963
	Analyte	NHyt	NHyt	NHyt	NHyt	NHyt	NHyt	NHyt
	Info (dry, grn, C/N, etc.)							
Standard	Source Conc. (N/A)							
Standard	Mass (N/A g)		①			①		①
Standard	(A) Working Conc. (µg)							
	Gross weight (N/A g)							
	Tare weight (N/A g)							215.61
	(B) Sample weight (mg) ③	204.07	200.83	214.24	210.61	231.22	220.13	~~204.80~~ ②
	Flask/Bomb ID	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	(C) Volume (mL)	5	5	5	5	5	5	5
	(D) Theory = (A) / (C)	N/A	N/A	N/A				
	Aliquot (mL)	1	1	1	①		①	
	Dilution Volume (mL)	100	100	100				
	(E) Dilution Factor	X100	X100	X100				
	Run #	13	15	17	19	21	23	25
	(F) Sample Conc. (µg/mL)	1.5936	0.5027	1.3185	ND	ND	ND	0.0365
	(G) Blank (µg/mL)	ND	ND	ND	ND	ND	ND	ND
	(H) Result (N/A)	0.390%	0.125%	0.308%	<5 ppm	<5 ppm	<5 ppm	<5 ppm
	Comments							

Calculations for G-35A

$$ppm = \frac{(F \times E) \times C}{B} \quad (Y) = \frac{mg}{L} = (F \times E)$$

Matrix Spike Calculation

$$R\% = \frac{Y_S - \left[Y_U \times \frac{B_S \times C_U}{B_U \times C_S}\right]}{D} \times 100$$

where,
S = spiked sample, U = unspiked sample, B = sample weig

Calculations for G-55 and G-40

$$ppm = \frac{[(F \times E) - G] \times C}{B} \quad (Y) = \frac{mg}{L} = (F \times E) - G$$

① GAD 9/18/24
② copied incorrect weight by mistake GAD 9/18/24

EXACT COPY OF RAW DATA TDK 11/4/24

2024
ION CHROMATOGRAPHY

Datasheet# 000759

Prep Method #1 G-35A Rev.16
Balance# 188 Analyst/Date GAO 9/16/24

Prep Method #2 N/A
Balance# N/A Analyst/Date N/A

Determination Method MF-40 Rev.12
Analyst/Date GAO 9/16/24 9/17/24 ②
Instrument # 838
Eluent RL # 4524A-18-12
Reagent RL # N/A
Pipettors P86

Data Reviewed and Approved:
VERIFIED BY: HMF 9/18/24
RRS VERIFIED CNC 9-18-24

① samples transcribed from DS#752. HMF 9/18/24

Sample Identification	U-7964	U-7965	U-7966	U-7967	C-0000	P-2711	
Analyte	NHyt	NHyt	NHyt	NHyt	NHyt	NHyt	
Info (dry, grn, C/N, etc.)						30033	
Standard: Source Conc. (N/A)							
Standard: Mass (N/A g)		①					
Standard: (A) Working Conc. (µg)							①
Gross weight (N/A g)					①	①	
Tare weight (N/A g)							
(B) Sample weight (mg) ②	218.31	202.58	202.52	202.51			
Flask/Bomb ID	N/A	N/A	N/A	N/A			
(C) Volume (mL)	5	5	5	5			①
(D) Theory = (A) / (C)							
Aliquot (mL)		①					
Dilution Volume (mL)							
(E) Dilution Factor							
Run #	29	31	33	35	11	12	
(F) Sample Conc. (µg/mL)	ND	ND	0.0227	ND	ND	1.0448	
(G) Blank (µg/mL)	ND	ND	ND	ND	ND	ND	
(H) Result (mg/mL theory)	<5ppm	<5ppm	<5ppm	<5ppm	ND	104.48% 1ppm eq.	
Comments							

Calculations for G-35A

$$ppm = \frac{(F \times E) \times C}{B} \quad (Y) = \frac{mg}{L} = (F \times E)$$

Matrix Spike Calculation

$$R\% = \frac{Y_S - \left[Y_U \times \frac{B_S \times C_U}{B_U \times C_S}\right]}{D} \times 100$$

where,
S = spiked sample, U = unspiked sample, B = sample weig

Calculations for G-55 and G-40

$$ppm = \frac{[(F \times E) - G] \times C}{B} \quad (Y) = \frac{mg}{L} = (F \times E) - G$$

① GAO 9/18/24

② corrected determination date to match injection time stamps. HMF 9/18/24

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Page 1 of 5

2024
ION CHROMATOGRAPHY

Datasheet# 000752

Prep Method #1 G-35A Rev. 16
Balance# 188 Analyst/Date GAD 9/16/24

Prep Method #2 NA
Balance# N/A Analyst/Date N/A

Determination Method MF-4D Rev. 12
Analyst/Date GAD 9/16/24
Instrument # 838
Eluent RL # 4524B-18-11
Reagent RL # N/A
Pipettors P86

Data Reviewed and Approved:
VERIFIED BY:
HMF 9/18/24

Calculations for G-35A

$$ppm = \frac{(F \times E) \times C}{B} \quad (Y) = \frac{mg}{L} = (F \times E)$$

Matrix Spike Calculation

$$R\% = \frac{Y_S - \left[Y_U \times \frac{B_S \times C_U}{B_U \times C_S}\right]}{D} \times 100$$

where,
S = spiked sample, U = unspiked sample, B = sample weig

Calculations for G-55 and G-40

$$ppm = \frac{[(F \times E) - G] \times C}{B} \quad (Y) = \frac{mg}{L} = (F \times E) - G$$

Sample Identification		U-7729	U-7730	U-7731	U-7947	U-7948	U-7949	U-7950
Analyte		NHyt	NHyt	NHyt	NHyt	NHyt	NHyt	NHyt
Info (dry, grn, C/N, etc.)								
Standard	Source Conc. (N/A)							
Standard	Mass (N/A g)							
Standard	(A) Working Conc. (µg)							
Gross weight (N/A g)								
Tare weight (N/A g)								
(B) Sample weight (m g)		~~2~~ 204.07	200.83	214.24	204.15	204.01	203.92	203.71
Flask/Bomb ID		N/A	N/A	N/A	N/A	N/A	N/A	N/A
(C) Volume (mL)		5	5	5	5	5	5	5
(D) Theory = (A) / (C)								
Aliquot (mL)								
Dilution Volume (mL)								
(E) Dilution Factor								
Run #		13	15	17	19	21	23	25
(F) Sample Conc. (µg/mL)		no result	no result	no result	0.0275	0.0022	0.0033	ND
(G) Blank (µg/mL)		NO	NO	NO	NO	NO	NO	NO
(H) Result (N/A)		no result	no result	no result	<5 ppm	<5 ppm	<5 ppm	<5 ppm
Comments		INV OR	INV OR	INV OR	RFG 12:15 PM	RFG 12:20 PM	RFG 12:22 PM	

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DK 9/19/24

① for clarity GAD 9/16/24
② GAD 9/17/24

2024

ION CHROMATOGRAPHY

Datasheet# 000753

Prep Method #1 G-35A Rev. 16
Balance# 188 Analyst/Date GAO 9/16/24

Prep Method #2 N/A
Balance# N/A Analyst/Date N/A

Determination Method ME-40 Rev. 12
Analyst/Date GAO 9/16/24
Instrument # 838
Eluent RL # 4524B-18-11
Reagent RL # N/A
Pipettors P86

Data Reviewed and Approved:
VERIFIED BY:
HMF 9/18/24

Sample Identification		U-7951	U-7952	U-7953	U-7954	U-7955	U-7956	U-7957
Analyte		NHy+	NHy+	NHy+	NHy+	NHy+	NHy+	NHy+
Info (dry, grn, C/N, etc.)								
Standard	Source Conc. (N/A)							
Standard	Mass (N/A g)		①			①		
Standard	(A) Working Conc. (µg)							
Gross weight (N/A g)								
Tare weight (N/A g)								
(B) Sample weight (M g)		203.47	203.91	202.80	205.07	218.14	211.27	223.12
Flask/Bomb ID		N/A	N/A	N/A	N/A	N/A	N/A	N/A
(C) Volume (mL)		5	5	5	5	5	5	5
(D) Theory = (A) / (C)								
Aliquot (mL)			①			①		
Dilution Volume (mL)								
(E) Dilution Factor								
Run #		28	30	32	34	36	38	40
(F) Sample Conc. (µg/mL)		0.0060	0.0118	ND	0.0025	0.0080	0.0247	ND
(G) Blank (µg/mL)		ND	ND	ND	ND	ND	ND	ND
(H) Result (N/A)		<5 ppm	<5 ppm	<5 ppm	<5 ppm	<5 ppm	<5 ppm	<5 ppm
Comments		RFG 12:28 PM	RFG 1:55 PM	RFG 2:05 PM	RFG 2:02 PM	RFG 2:10 PM	RFG 3:05 PM	RFG 3:18 PM

Calculations for G-35A

$$\text{ppm} = \frac{(F \times E) \times C}{B} \quad (Y) = \frac{\text{mg}}{\text{L}} = (F \times E)$$

Matrix Spike Calculation

$$R\% = \frac{Y_S - \left[Y_U \times \frac{B_S \times C_U}{B_U \times C_S}\right]}{D} \times 100$$

where,
S = spiked sample, U = unspiked sample, B = sample weig

Calculations for G-55 and G-40

$$\text{ppm} = \frac{[(F \times E) - G] \times C}{B} \quad (Y) = \frac{\text{mg}}{\text{L}} = (F \times E) - G$$

① GAO 9/17/24

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ION CHROMATOGRAPHY

Datasheet# 000754

Prep Method #1 G-35A Rev.16
Balance# 188 Analyst/Date GAO 9/16/24

Prep Method #2 N/A
Balance# N/A Analyst/Date N/A

Determination Method ME-40 Rev.12
Analyst/Date GAO 9/16/24
Instrument # 838
Eluent RL # Y524B-18-11
Reagent RL # N/A
Pipettors P86

Data Reviewed and Approved:
VERIFIED BY:
HMF 9/18/24

	Sample Identification	U-7958	U-7959	U-7960 ⑤	U-7961 ⑤	U-7962 ⑤	U-7963	U-7963 ⑤
	Analyte	NHyt	NHyt	NHyt	NHyt	NHyt	NHyt	NHyt
	Info (dry, grn, C/N, etc.)							
Standard	Source Conc. (N/A)							
Standard	Mass (N/A g)		②			③		
Standard	(A) Working Conc. (µg)	-						
	Gross weight (N/A g)							
	Tare weight (N/A g)							
	(B) Sample weight (dry g)	206.78	213.17	210.61	231.22	220.13	209.90	215.61
	Flask/Bomb ID	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	(C) Volume (mL)	5	5	5	5	5	5	5
	(D) Theory = (A) / (C)							
	Aliquot (mL)	②			②		②	②
	Dilution Volume (mL)							
	(E) Dilution Factor							
	Run#	42	44					
	(F) Sample Conc. (µg/mL)	ND	ND					
	(G) Blank (µg/mL)	ND	ND					
	(H) Result (N/A)	<5 ppm	<5 ppm	test aborted ⑥	test aborted ⑥	test aborted	test aborted	test aborted ⑥
	Comments	RFG 3:20PM	RFG 3:25PM	3:30PM RFG ③	RFG 3:36PM ③	RFG 3:40PM ③	RFG 3:43PM ① INV AB	RFG 3:46PM ③

Calculations for G-35A

$$ppm = \frac{(F \times E) \times C}{B} \quad (Y) = \frac{mg}{L} = (F \times E)$$

Matrix Spike Calculation

$$R\% = \frac{Y_S - \left[Y_U \times \frac{B_S \times C_U}{B_U \times C_S}\right]}{D} \times 100$$

where,
S = spiked sample, U = unspiked sample, B = sample weig

Calculations for G-55 and G-40

$$ppm = \frac{[(F \times E) - G] \times C}{B} \quad (Y) = \frac{mg}{L} = (F \times E) - G$$

③ did not ~~run~~ run sample GAO 9/17/24

④ transcription error GAO 9/17/24

⑤ These sample preps transcribed to DS #758. Performed on a separate sequence. HMF 9/18/24.

⑥ Removed result value. See ⑤. HMF 9/18/24

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① over diluted sample by mistake GAO 9/16/24

② GAO 9/17/24

2024

ION CHROMATOGRAPHY

Datasheet# 000755

Prep Method #1 G-35A Rev. 16
Balance# 188 Analyst/Date GAO 9/16/24

Prep Method #2 N/A
Balance# N/A Analyst/Date N/A

Determination Method ME-4D Rev.12
Analyst/Date GAO 9/16/24
Instrument # 838
Eluent RL # 4524B-18-11
Reagent RL # N/A
Pipettors P86

Data Reviewed and Approved:
VERIFIED BY:
HMF 9/18/24

Sample Identification		U-7964 ⑥	U-7965 ⑥	U-7966 ⑥	U-7967 ⑥	U-7967	
Analyte		NHyt	NHyt	NHyt	NHyt	~~NHyt~~ ③ NHyt ⑤	
Info (dry, grn, C/N, etc.)							
Standard	Source Conc. (N/A)						
	Mass (N/A g)			④			
	(A) Working Conc. (µg)					④	④
Gross weight (N/A g)							
Tare weight (N/A g)							
(B) Sample weight (mg)		218.31	202.58	202.52	202.31	202.51	
Flask/Bomb ID		N/A	N/A	N/A	N/A	N/A	
(C) Volume (mL)		5	5	5	5	5	
(D) Theory = (A) / (C)							
Aliquot (mL)			⑦		⑦	⑦	
Dilution Volume (mL)							
(E) Dilution Factor							
Run #							
(F) Sample Conc. (µg/mL)							
(G) Blank (µg/mL)							
(H) Result (N/A)		~~test aborted~~	~~test aborted~~ ②	~~test aborted~~	~~test aborted~~	~~test aborted~~ ⑤	
Comments		RFG 3:45pm ⑤	⑤	RFG ~~4:15pm~~ 4:15pm ⑤	② INV AB	RFG 4:20 ⑤	

Calculations for G-35A

$$ppm = \frac{(F \times E) \times C}{B} \quad (Y) = \frac{mg}{L} = (F \times E)$$

Matrix Spike Calculation

$$R\% = \frac{Y_S - \left[Y_U \times \frac{B_S \times C_U}{B_U \times C_S}\right]}{D} \times 100$$

where,
S = spiked sample, U = unspiked sample, B = sample weig

Calculations for G-55 and G-40

$$ppm = \frac{[(F \times E) - G] \times C}{B} \quad (Y) = \frac{mg}{L} = (F \times E) - G$$

⑤ did not run samples GAO 9/17/24

⑥ These sample preps transcribed to DS# 755. Performed on a separate sequence. HMF 9/18/24

⑦ Removed result value see ⑥. HMF 9/18/24.

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③ transcription error GAO 9/17/24
⑨ GAO 9/17/24

① for clarity GAO 9/16/24
② forgot to write down correct weight MGallion

2024

ION CHROMATOGRAPHY

Datasheet# 000756

Prep Method #1 G-35A Rev.16
Balance# 188 Analyst/Date GAD 9/16/24

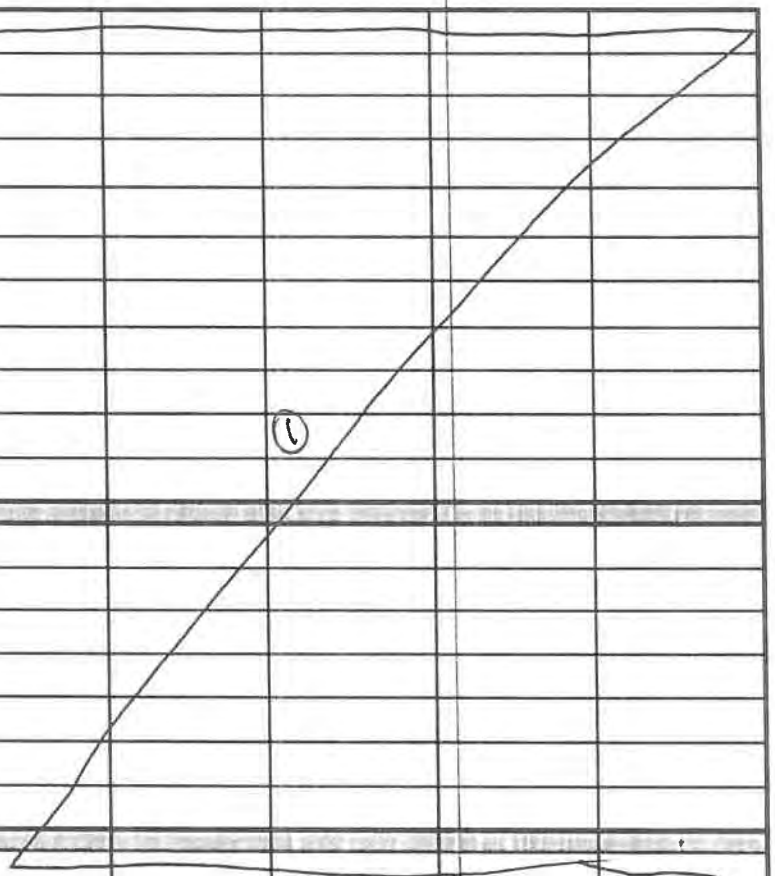
Prep Method #2 N/A
Balance# N/A Analyst/Date N/A

Determination Method ME-4D Rev.12
Analyst/Date GAD 9/16/24
Instrument # 838
Eluent RL # V524B-18-11
Reagent RL # N/A
Pipettors P86

Data Reviewed and Approved:

VERIFIED BY:
HMF 9/18/24

Sample Identification		C-0000	P-2711
Analyte		NH4+	NH4+
Info (dry, grn, C/N, etc.)			30033
Standard	Source Conc. (N/A)		
Standard	Mass (N/A g)		
Standard	(A) Working Conc. (µg)		
Gross weight (N/A g)		①	①
Tare weight (N/A g)			
(B) Sample weight (N/A g)			
Flask/Bomb ID			
(C) Volume (mL)			
(D) Theory = (A) / (C)			
Aliquot (mL)			
Dilution Volume (mL)			
(E) Dilution Factor			
Run #		11	12
(F) Sample Conc. (µg/mL)		ND	0.9963
(G) Blank (µg/mL)		ND	ND
(H) Result (mg/mL)		ND	99.63%
Comments		theory	1 ppm



① GAD 9/17/24

Calculations for G-35A

$$\text{ppm} = \frac{(F \times E) \times C}{B} \quad (Y) = \frac{mg}{L} = (F \times E)$$

Matrix Spike Calculation

$$R\% = \frac{Y_S - \left[Y_U \times \frac{B_S \times C_U}{B_U \times C_S}\right]}{D} \times 100$$

where,
S = spiked sample, U = unspiked sample, B = sample weig

Calculations for G-55 and G-40

$$\text{ppm} = \frac{[(F \times E) - G] \times C}{B} \quad (Y) = \frac{mg}{L} = (F \times E) - G$$

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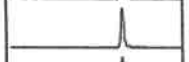
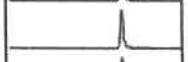
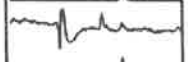
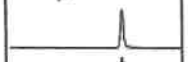
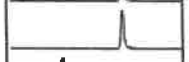
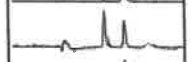
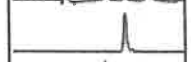
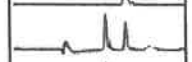
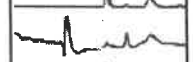
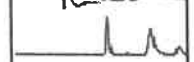
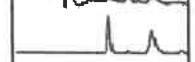
RAW DATA
TDK 11/4/24

Sequence: 20240917b cations
Last Update Operator: gregory.duncan

9/17/24
ME-40 Rev. 12
#838
DS#758

ECD_1	Name	Type	Level	Position	Volume [µl]	Instrument Method	Processing Method	Status
	RT test	Unknown		GA1	50.0	IQ-IM	IQ-PM	Finished
	DI H2O	Unknown		GA2	50.0	IQ-IM	IQ-PM	Finished
	Cal1	Calibration Standard	1	GA3	50.0	IQ-IM	IQ-PM	Finished
	Cal2	Calibration Standard	2	GA4	50.0	IQ-IM	IQ-PM	Finished
	Cal3	Calibration Standard	3	GA5	50.0	IQ-IM	IQ-PM	Finished
	Cal4	Calibration Standard	4	GA6	50.0	IQ-IM	IQ-PM	Finished
	Cal5	Calibration Standard	5	GA7	50.0	IQ-IM	IQ-PM	Finished
	Cal3 for RSD	Unknown		GA8	50.0	IQ-IM	IQ-PM	Finished
	Cal3 for RSD	Unknown		GA8	50.0	IQ-IM	IQ-PM	Finished
	Cal3 for RSD	Unknown		GA8	50.0	IQ-IM	IQ-PM	Finished
	c-0000	Unknown		GB1	50.0	IQ-IM	IQ-PM	Finished
	ICS 1 ppm	Unknown		GB2	50.0	IQ-IM	IQ-PM	Finished
	U-7729 X 100	Unknown		GB3	50.0	IQ-IM	IQ-PM	Finished
	DI H2O	Unknown		GB4	50.0	IQ-IM	IQ-PM	Finished
	U-7730 X 100	Unknown		GB5	50.0	IQ-IM	IQ-PM	Finished
	DI H2O	Unknown		GB4	50.0	IQ-IM	IQ-PM	Finished
	U-7731 X 100	Unknown		GB6	50.0	IQ-IM	IQ-PM	Finished
	DI H2O	Unknown		GB4	50.0	IQ-IM	IQ-PM	Finished
	U-7960	Unknown		GB7	50.0	IQ-IM	IQ-PM	Finished
	DI H2O	Unknown		GB8	50.0	IQ-IM	IQ-PM	Finished
	U-7961	Unknown		GC1	50.0	IQ-IM	IQ-PM	Finished
	DI H2O	Unknown		GB8	50.0	IQ-IM	IQ-PM	Finished
	U-7962	Unknown		GC2	50.0	IQ-IM	IQ-PM	Finished
	DI H2O	Unknown		GB8	50.0	IQ-IM	IQ-PM	Finished

VERIFIED BY: HMF 9/18/24

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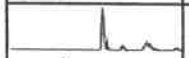
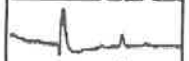
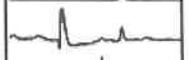
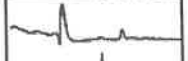
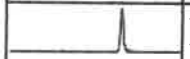
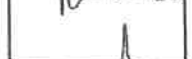
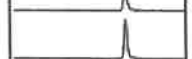
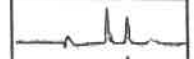
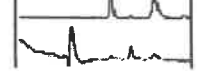
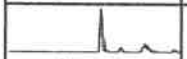
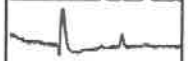
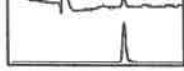
TDH 11/4/24

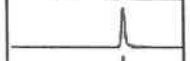
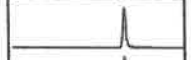
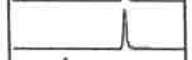
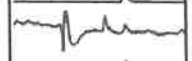
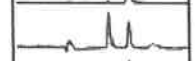
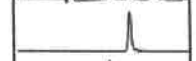
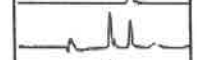
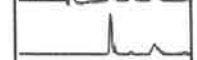
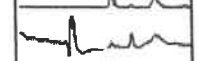
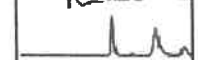
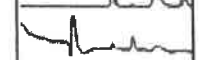
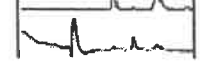
Sequence: 20240917b cations
Last Update Operator: gregory.duncan

ECD_1	Name	Type	Level	Position	Volume [µl]	Instrument Method	Processing Method	Status
	U-7963	Unknown		GC3	50.0	IQ-IM	IQ-PM	Finished
	DI H2O	Unknown		GC4	50.0	IQ-IM	IQ-PM	Finished
	CCV 1 ppm	Unknown		GC5	50.0	IQ-IM	IQ-PM	Finished
	DI H2O	Unknown		GC4	50.0	IQ-IM	IQ-PM	Finished
	U-7964	Unknown		GC6	50.0	IQ-IM	IQ-PM	Finished
	DI H2O	Unknown		GC7	50.0	IQ-IM	IQ-PM	Finished
	U-7965	Unknown		GC8	50.0	IQ-IM	IQ-PM	Finished
	DI H2O	Unknown		GC7	50.0	IQ-IM	IQ-PM	Finished
	U-7966	Unknown		GD1	50.0	IQ-IM	IQ-PM	Finished
	DI H2O	Unknown		GC7	50.0	IQ-IM	IQ-PM	Finished
	U-7967	Unknown		GD2	50.0	IQ-IM	IQ-PM	Finished
	DI H2O	Unknown		GD3	50.0	IQ-IM	IQ-PM	Finished
	CCV 1 ppm	Unknown		GD4	50.0	IQ-IM	IQ-PM	Finished

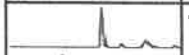
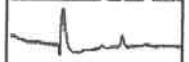
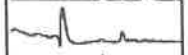
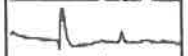
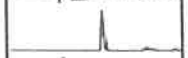
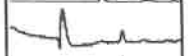
Sequence: 20240917b cations
Last Update Operator: gregory.duncan

ECD_1	Name	Inject Time	Lock Status	Weight	Dilution	IntStd	Replicate ID	Comment
	RT test	9/17/2024 3:57:14 PM -04:00		1.0000	1.0000	1.0000		
	DI H2O	9/17/2024 4:12:05 PM -04:00		1.0000	1.0000	1.0000		
	Cal1	9/17/2024 4:26:52 PM -04:00		1.0000	1.0000	1.0000		
	Cal2	9/17/2024 4:41:39 PM -04:00		1.0000	1.0000	1.0000		
	Cal3	9/17/2024 4:56:26 PM -04:00		1.0000	1.0000	1.0000		
	Cal4	9/17/2024 5:11:13 PM -04:00		1.0000	1.0000	1.0000		
	Cal5	9/17/2024 5:26:01 PM -04:00		1.0000	1.0000	1.0000		
	Cal3 for RSD	9/17/2024 5:40:49 PM -04:00		1.0000	1.0000	1.0000		
	Cal3 for RSD	9/17/2024 5:55:36 PM -04:00		1.0000	1.0000	1.0000		
	Cal3 for RSD	9/17/2024 6:10:23 PM -04:00		1.0000	1.0000	1.0000		
	c-0000	9/17/2024 6:25:11 PM -04:00		1.0000	1.0000	1.0000		
	ICS 1 ppm	9/17/2024 6:39:59 PM -04:00		1.0000	1.0000	1.0000		
	U-7729 X 100	9/17/2024 6:54:48 PM -04:00		1.0000	1.0000	1.0000		
	DI H2O	9/17/2024 7:09:35 PM -04:00		1.0000	1.0000	1.0000		
	U-7730 X 100	9/17/2024 7:24:23 PM -04:00		1.0000	1.0000	1.0000		
	DI H2O	9/17/2024 7:39:10 PM -04:00		1.0000	1.0000	1.0000		
	U-7731 X 100	9/17/2024 7:53:57 PM -04:00		1.0000	1.0000	1.0000		
	DI H2O	9/17/2024 8:08:45 PM -04:00		1.0000	1.0000	1.0000		
	U-7960	9/17/2024 8:23:32 PM -04:00		1.0000	1.0000	1.0000		
	DI H2O	9/17/2024 8:38:20 PM -04:00		1.0000	1.0000	1.0000		
	U-7961	9/17/2024 8:53:07 PM -04:00		1.0000	1.0000	1.0000		
	DI H2O	9/17/2024 9:07:55 PM -04:00		1.0000	1.0000	1.0000		
	U-7962	9/17/2024 9:22:42 PM -04:00		1.0000	1.0000	1.0000		
	DI H2O	9/17/2024 9:37:30 PM -04:00		1.0000	1.0000	1.0000		

ECD_1	Name	Inject Time	Lock Status	Weight	Dilution	IntStd	Replicate ID	Comment
	U-7963	9/17/2024 9:52:17 PM -04:00		1.0000	1.0000	1.0000		
	DI H2O	9/17/2024 10:07:04 PM -04:00		1.0000	1.0000	1.0000		
	CCV 1 ppm	9/17/2024 10:21:51 PM -04:00		1.0000	1.0000	1.0000		
	DI H2O	9/17/2024 10:36:38 PM -04:00		1.0000	1.0000	1.0000		
	U-7964	9/17/2024 10:51:25 PM -04:00		1.0000	1.0000	1.0000		
	DI H2O	9/17/2024 11:06:12 PM -04:00		1.0000	1.0000	1.0000		
	U-7965	9/17/2024 11:21:00 PM -04:00		1.0000	1.0000	1.0000		
	DI H2O	9/17/2024 11:35:47 PM -04:00		1.0000	1.0000	1.0000		
	U-7966	9/17/2024 11:50:36 PM -04:00		1.0000	1.0000	1.0000		
	DI H2O	9/18/2024 12:05:23 AM -04:00		1.0000	1.0000	1.0000		
	U-7967	9/18/2024 12:20:11 AM -04:00		1.0000	1.0000	1.0000		
	DI H2O	9/18/2024 12:34:57 AM -04:00		1.0000	1.0000	1.0000		
	CCV 1 ppm	9/18/2024 12:49:45 AM -04:00		1.0000	1.0000	1.0000		

ECD_1	Name	Re-injections	Spike Group
	RT test	0	
	DI H2O	0	
	Cal1	0	
	Cal2	0	
	Cal3	0	
	Cal4	0	
	Cal5	0	
	Cal3 for RSD	0	
	Cal3 for RSD	0	
	Cal3 for RSD	0	
	c-0000	0	
	ICS 1 ppm	0	
	U-7729 X 100	0	
	DI H2O	0	
	U-7730 X 100	0	
	DI H2O	0	
	U-7731 X 100	0	
	DI H2O	0	
	U-7960	0	
	DI H2O	0	
	U-7961	0	
	DI H2O	0	
	U-7962	0	
	DI H2O	0	

Sequence: 20240917b cations
Last Update Operator: gregory.duncan

ECD_1	Name	Re-injections	Spike Group
	U-7963	0	
	DI H2O	0	
	CCV 1 ppm	0	
	DI H2O	0	
	U-7964	0	
	DI H2O	0	
	U-7965	0	
	DI H2O	0	
	U-7966	0	
	DI H2O	0	
	U-7967	0	
	DI H2O	0	
	CCV 1 ppm	0	

Name	**IQ-IM**
Data Vault	**ChromeleonLocal**
Path	**chrom://gli2258/ChromeleonLocal/Instrument Data/GLI838/2023/Sept/20240917b cations.seq/IQ-IM.instmeth**
Comment	
Description	
Run time	**11.000 [min]**
Instrument	**GLI838 on gli2258**
Created	**11/30/2022 4:00:45 PM -05:00 nick.doubrley**
Last Update	**9/17/2024 1:53:32 PM -04:00 gregory.duncan**

Stage	Time min	Command	Value	Comment
Instrument Setup				
	initial			
		Sampler.AcquireExclusiveAccess		
		Wait	Sampler.Ready, Run=Hold, Timeout=Infinite	
		Sampler.DiverterValve	Position_1	
		Wait	Sampler.Ready, Run=Hold, Timeout=Infinite	
		Pump_ECD.Flow	1 [ml/min]	
		Pump_ECD.Suppressor_H2SO4	0.0 [mM]	
		Pump_ECD.Suppressor_MSA	48.0 [mM]	
		Sampler.CycleTime	0 [min]	
		Sampler.LoopOverfill	5.000	
		Sampler.InjectMode	PushSeqFull	
		Sampler.BufferWashFactor	2.000	
		Sampler.WashDispSpeed	20.0 [µl/s]	
		Sampler.InjectWash	AfterInj	
		Sampler.WashSpeed	20.0 [µl/s]	
		Sampler.WashVolume	250.0 [µl]	
		Sampler.SampleHeight	2.000 [mm]	
		Sampler.WasteSpeed	20.0 [µl/s]	
		Sampler.DispenseDelay	2.0 [s]	
		Sampler.DispSpeed	5.0 [µl/s]	
		Sampler.DrawSpeed	5.0 [µl/s]	
		Sampler.DrawDelay	3.0 [s]	
		Sampler.DilutionMixDispenseSpeed	60.0 [µl/s]	
		Sampler.DilutionMixIterations	3	
		Sampler.DilutionMixSpeed	30.0 [µl/s]	
		Pump_ECD.Pressure.UpperLimit	1800 [psi]	
		Pump_ECD.%A.Equate	"Water"	
		Pump_ECD.Pressure.LowerLimit	200 [psi]	
		Pump_ECD.ColumnTemperature.Nominal	35.0 [°C]	
		Pump_ECD.CellTemperature.Nominal	35.0 [°C]	
		Pump_ECD.Data_Collection_Rate	5.0 [Hz]	
		Pump_ECD.Suppressor_Type	CERS_4mm	
		Pump_ECD.Suppressor_RecommendedCurrent	141 [mA]	
		Pump_ECD.Suppressor_OtherEluent	0.0 [mN]	
		Pump_ECD.Suppressor_Current	150 [mA]	
		Sampler.PunctureOffset	3 [mm]	
Inject				
	0.000			

		Wait	Sampler.CycleTimeState, Run=Hold, Timeout=Infinite
		Sampler.Inject	
Start Run			
	0.000		
		Pump_ECD.Channel_Pressure.AcqOn	
		Pump_ECD.ECD_1.AcqOn	
		Pump_ECD.Autozero	
		Sampler.ReleaseExclusiveAccess	
Run			Duration = 11.000 [min]
	0.000		
Stop Run			
	11.000		
		Pump_ECD.Channel_Pressure.AcqOff	
		Pump_ECD.ECD_1.AcqOff	
End			

2024

000252

STANDARDS PREPARATION LOG

Galbraith Laboratories, Inc.
Governing SOP: 3.2.3.1

Instrument # 838
Department 45

Initials	Date	C/N	Status: N-New O-Out I-In	Stock Preparation			Intermediate Preparation			Working Standard			Comments	Data Sheet Ref.	STD Review
				Weight / Volume Taken	Dilution Volume	Concentration mg/mL	Aliquot	Dilution Volume	Concentration	Aliquot µL	Dilution Volume mL	Concentration mg/mL			
GAD	9/17/24	29841	I	N/A	N/A	1000	N/A	N/A	N/A	20	100	0.2	Cal. Std.	758	(2)
										40	100	0.4	Cal. Std.	N/A	(2)
										100	100	1.0	Cal. Std.	N/A	(2)
										200	100	2.0	Cal. Std.	N/A	(2)
			(1)							100	25	4.0	Cal. Std.	N/A	(2)
											(1)				
GAD	9/17/24	30033	I	N/A	N/A	1000	N/A	N/A	N/A	100	100	1.0	ICS	N/A	(2)
		(1)						(1)				(1)			

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FORM 3.2.3.1D Ver 2

(1) GAD 9/17/24
(2) VRV 9.17.24

Detection Settings

Algorithm: **Cobra**

Ret.Time	Param. Name	Param.Value	Inj. Type	Channel
<Initial>	Consider Void Peak	Off	Any	All Channels
<Initial>	Baseline Noise Range	Auto	Any	All Channels
<Initial>	Smoothing Width	Auto	Any	All Channels
0.000 [min]	Tailing Sensitivity Factor	0.500	Any	All Channels
0.300 [min]	Inhibit Integration	On	Any	All Channels
5.000 [min]	Inhibit Integration	Off	Any	All Channels

Component Table

Name	Ret.Time	Window	Level "1"	Level "2"	Level "3"	Level "4"	Level "5"	Charge
NH4+	7.150	0.300 AF	0.200000	0.400000	1.000000	2.000000	4.000000	

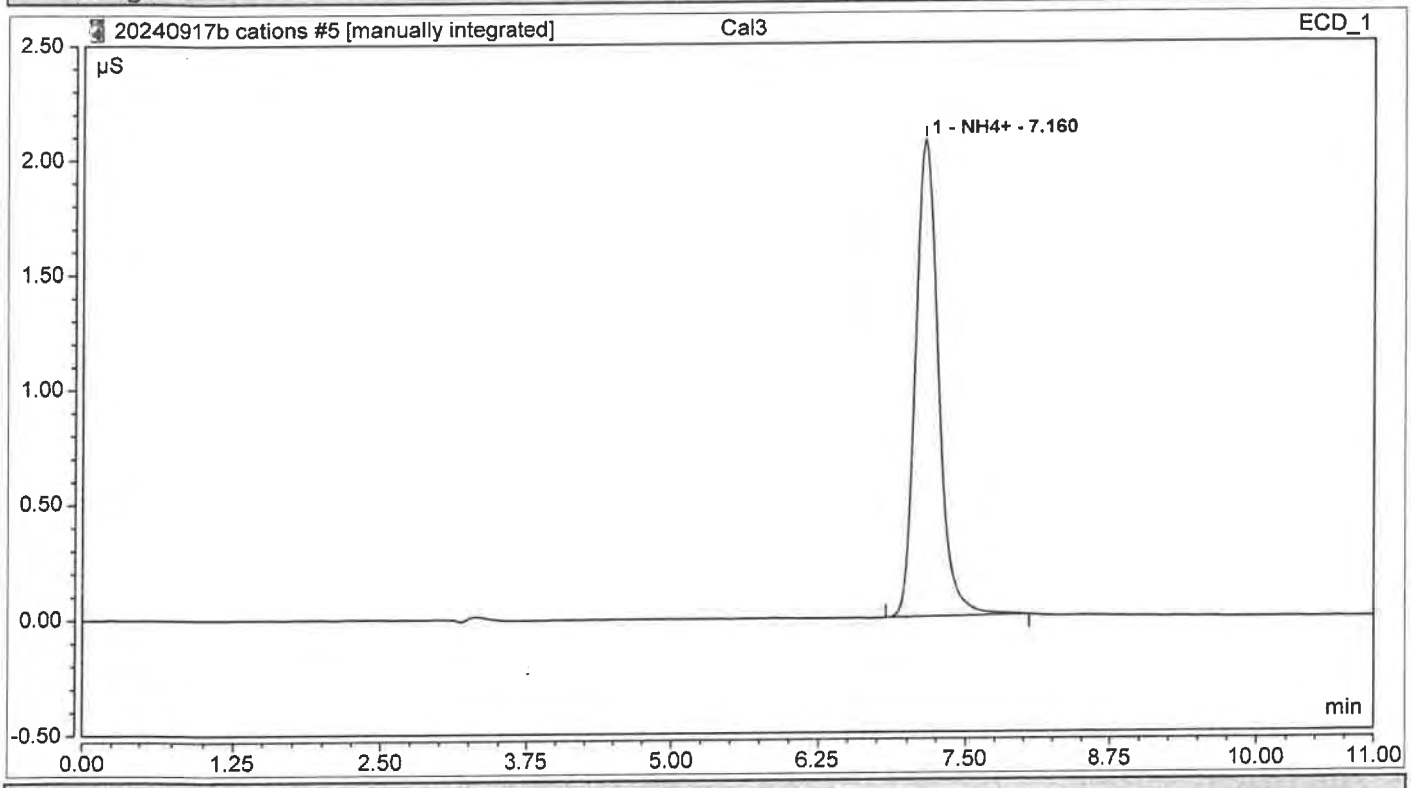
Name	**IQ-PM**
Data Vault	**ChromeleonLocal**
Path	**chrom://gli2258/ChromeleonLocal/Instrument Data/GLI838/2023/Sept/20240917b cations.seq/IQ-PM.procmeth**
Created	**11/28/2022 3:42:30 PM -05:00 nick.doubrley**
Last Update	**9/17/2024 3:01:11 PM -04:00 gregory.duncan**

Peak Analysis

Injection Details

Injection Name:	**Cal3**	*Run Time (min):*	**11.00**
Vial Number:	**GA5**	*Injection Volume:*	**50.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**3**	*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 16:56**	*Sample Weight:*	**1.0000**

Chromatogram



Peak Results

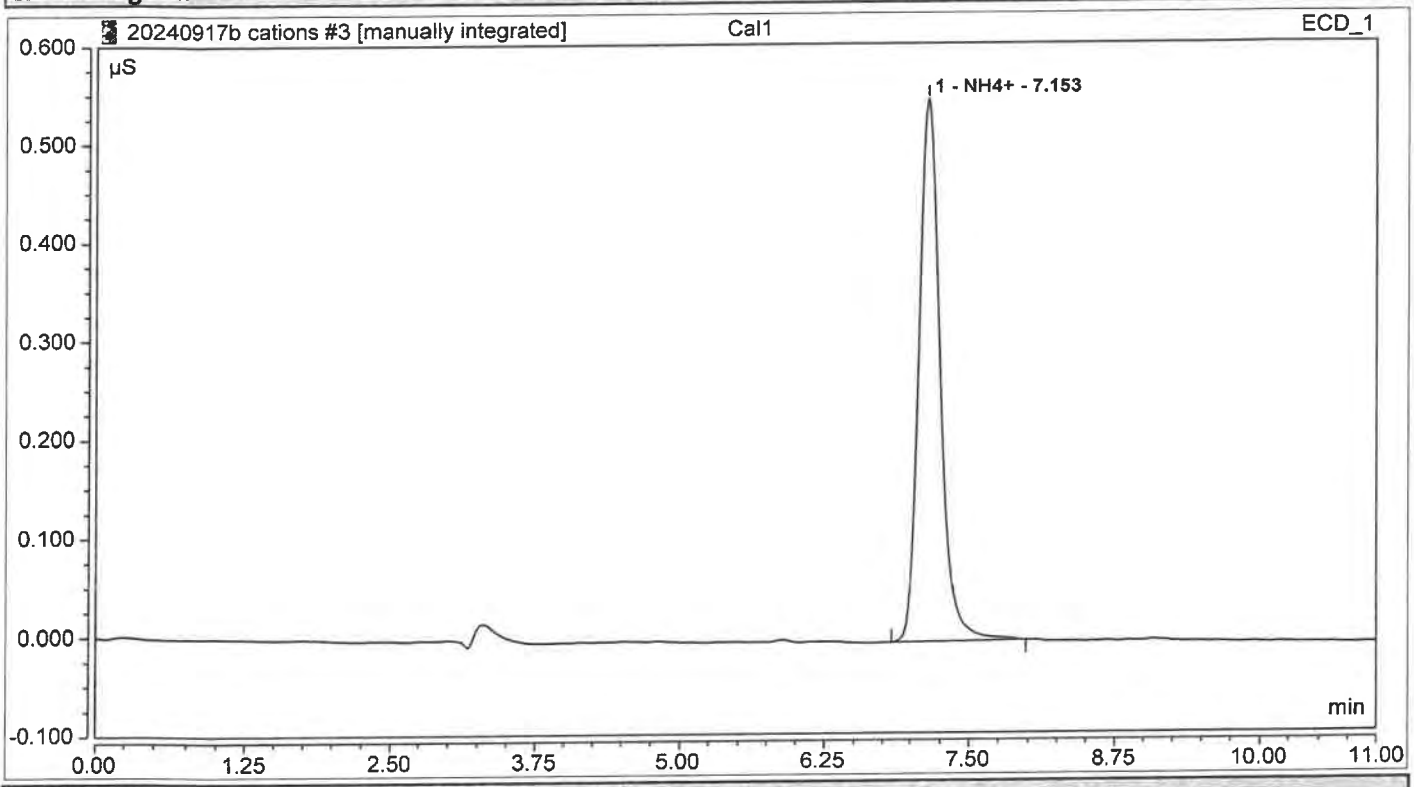
No.	Peak Name	Retention Time min	Width (50%) min	Type	Resolution (EP)	Asymmetry (EP)	S/N
1	NH4+	7.160	0.209	BMB*	n.a.	1.22	825.4

Peak Analysis

Injection Details

Injection Name:	**Cal1**	*Run Time (min):*	**11.00**
Vial Number:	**GA3**	*Injection Volume:*	**50.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**1**	*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 16:26**	*Sample Weight:*	**1.0000**

Chromatogram



Peak Results

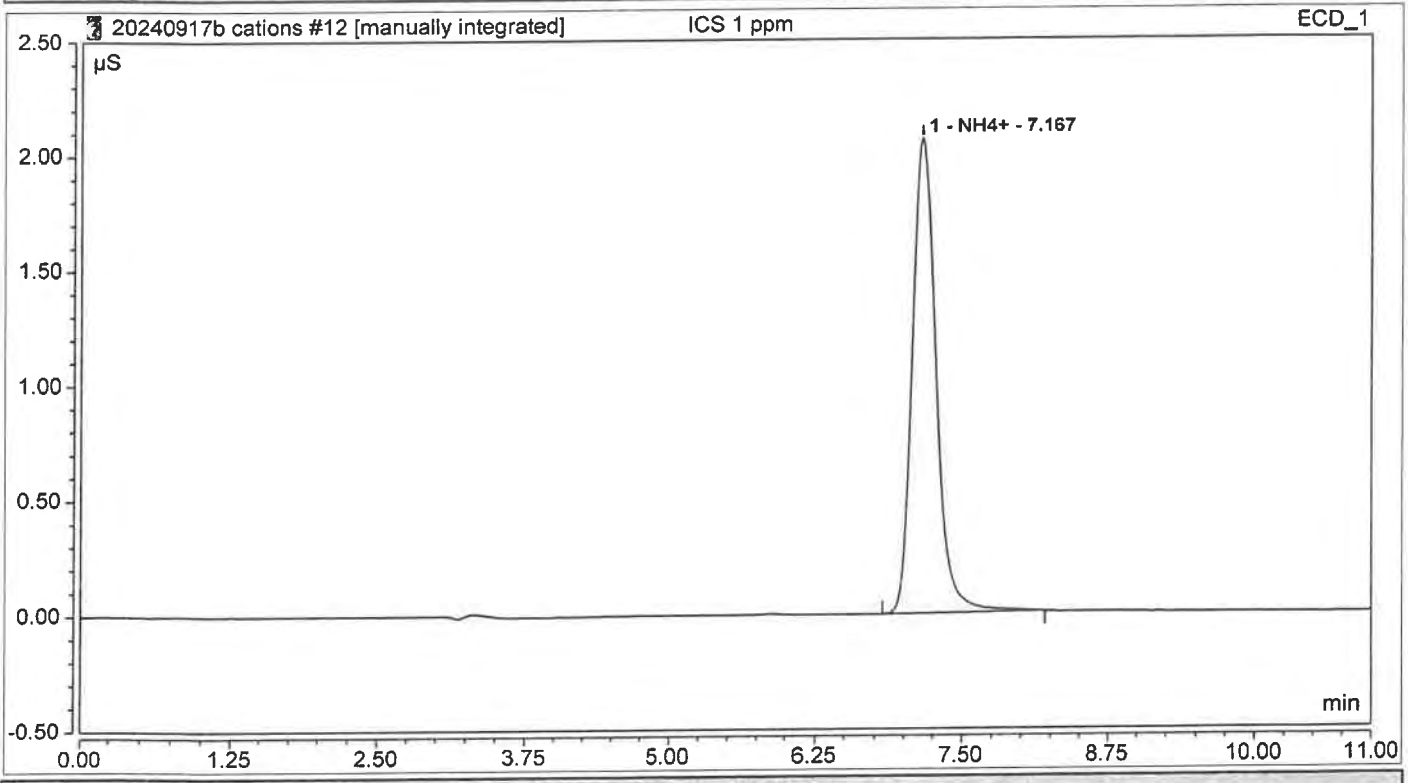
No.	Peak Name	Retention Time min	Width (50%) min	Type	Resolution (EP)	Asymmetry (EP)	S/N
1	NH4+	7.153	0.182	BMB*	n.a.	1.23	401.5

Peak Analysis

Injection Details

Injection Name:	**ICS 1 ppm**	*Run Time (min):*	**11.00**
Vial Number:	**GB2**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 18:39**	*Sample Weight:*	**1.0000**

Chromatogram



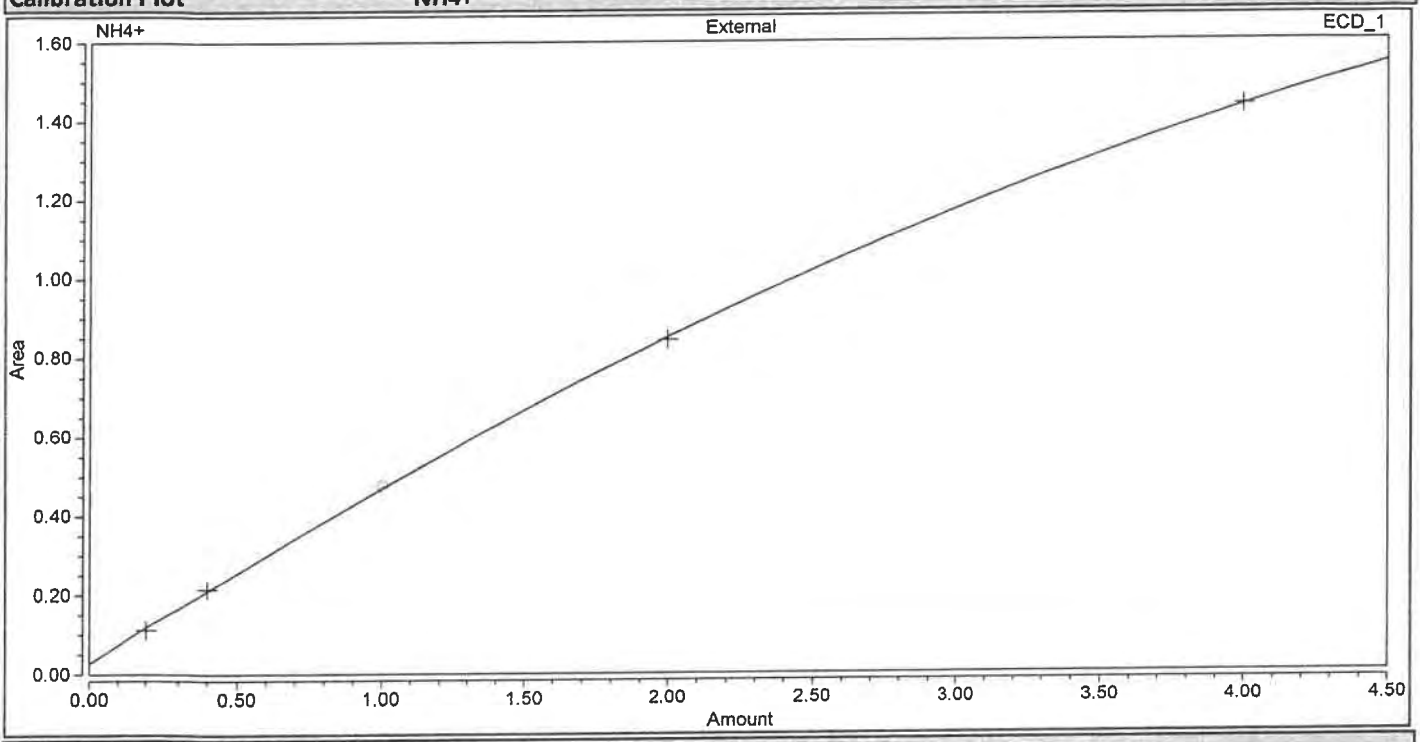
Peak Results

No.	Peak Name	Retention Time min	Width (50%) min	Type	Resolution (EP)	Asymmetry (EP)	S/N
1	NH4+	7.167	0.212	BMB*	n.a.	1.21	758.3

Calibration

Calibration Details	NH4+		
Calibration Type	Quad, WithOffset	*Offset (C0)*	0.0274
Evaluation Type	Area	*Slope (C1)*	0.4713
Number of Calibration Points	5	*Curve (C2)*	-0.0299
Number of disabled Calibration Points	0	*R-Square*	0.9998

Calibration Plot NH4+



Calibration Results NH4+

No.	Injection Name	Calibration Level	X Value ECD_1 NH4+	Y Value ECD_1 NH4+	Y Value ECD_1 NH4+	Area µS*min ECD_1 NH4+	R-Squared % ECD_1 NH4+
3	Cal1	1	0.2000	0.1127	0.1127	0.113	99.981
4	Cal2	2	0.4000	0.2154	0.2154	0.215	99.981
5	Cal3	3	1.0000	0.4780	0.4780	0.478	99.981
6	Cal4	4	2.0000	0.8434	0.8434	0.843	99.981
7	Cal5	5	4.0000	1.4356	1.4356	1.436	99.981

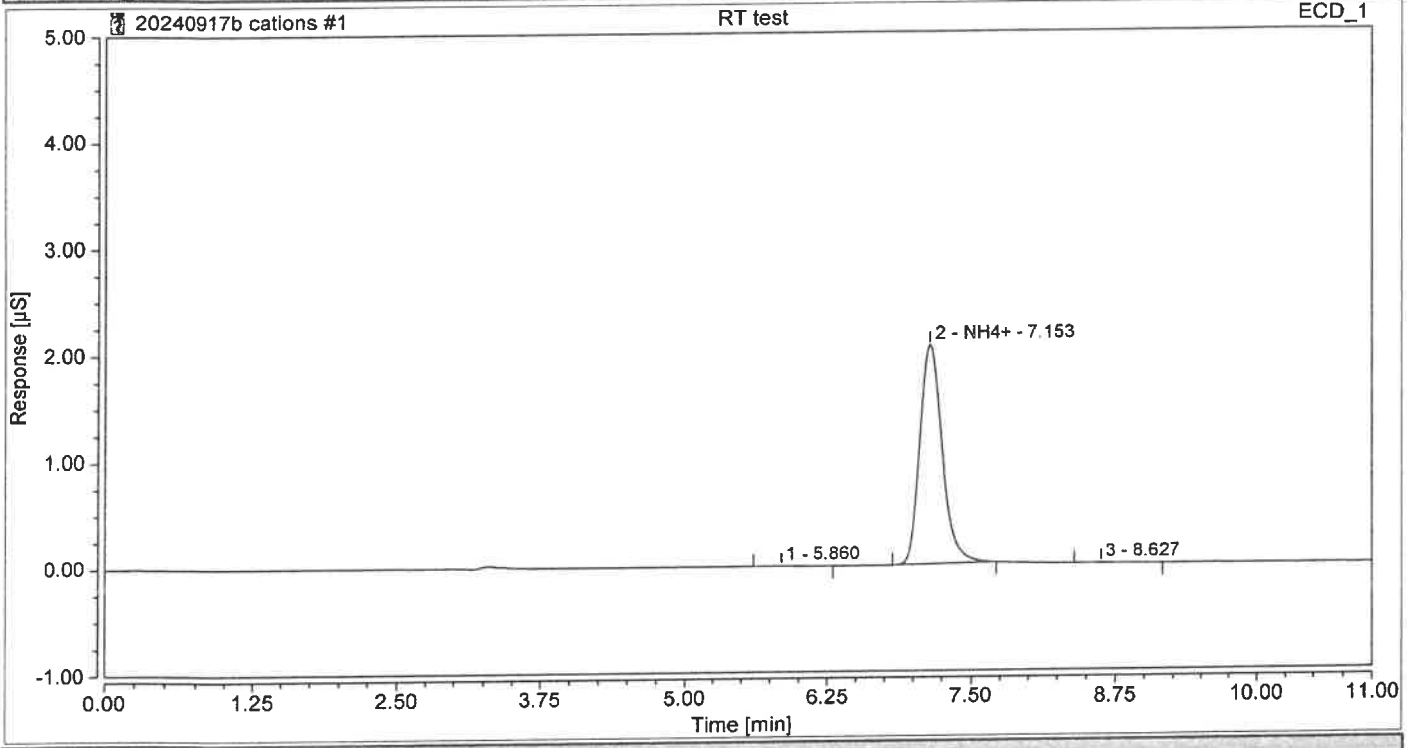
					Average	Std. Dev.	RSD	
NH4+	0.478	0.4851	0.4807	0.4836	0.48185	0.00315	0.653758	%

Chromatogram and Results

Injection Details

Injection Name:	**RT test**	*Run Time (min):*	**11.00**
Vial Number:	**GA1**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 15:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

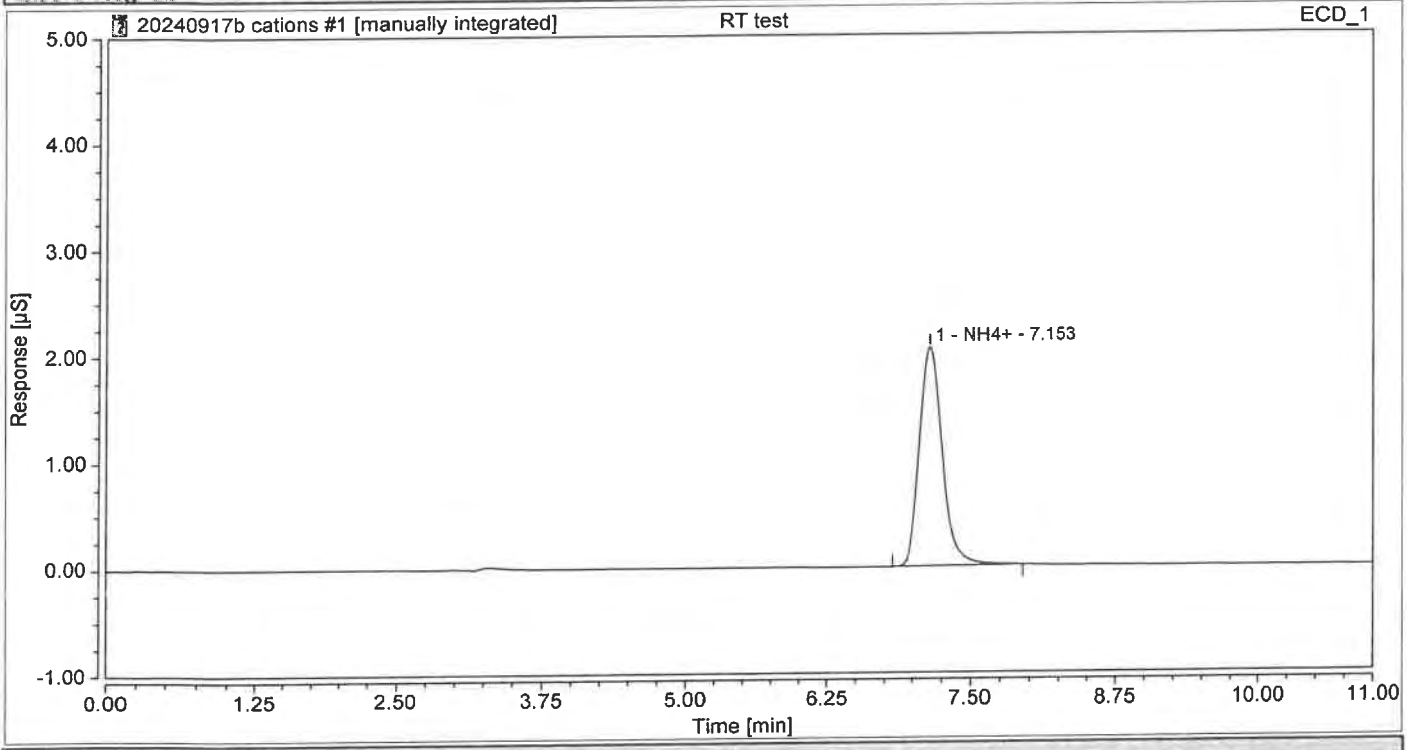
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		5.860	0.0006	0.002	0.12	0.11	n.a.
2	NH4+	7.153	0.4648	2.059	99.73	99.78	0.9993
3		8.627	0.0007	0.002	0.15	0.11	n.a.
Total:			**0.466**	**2.063**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**RT test**	*Run Time (min):*	**11.00**
Vial Number:	**GA1**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 15:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

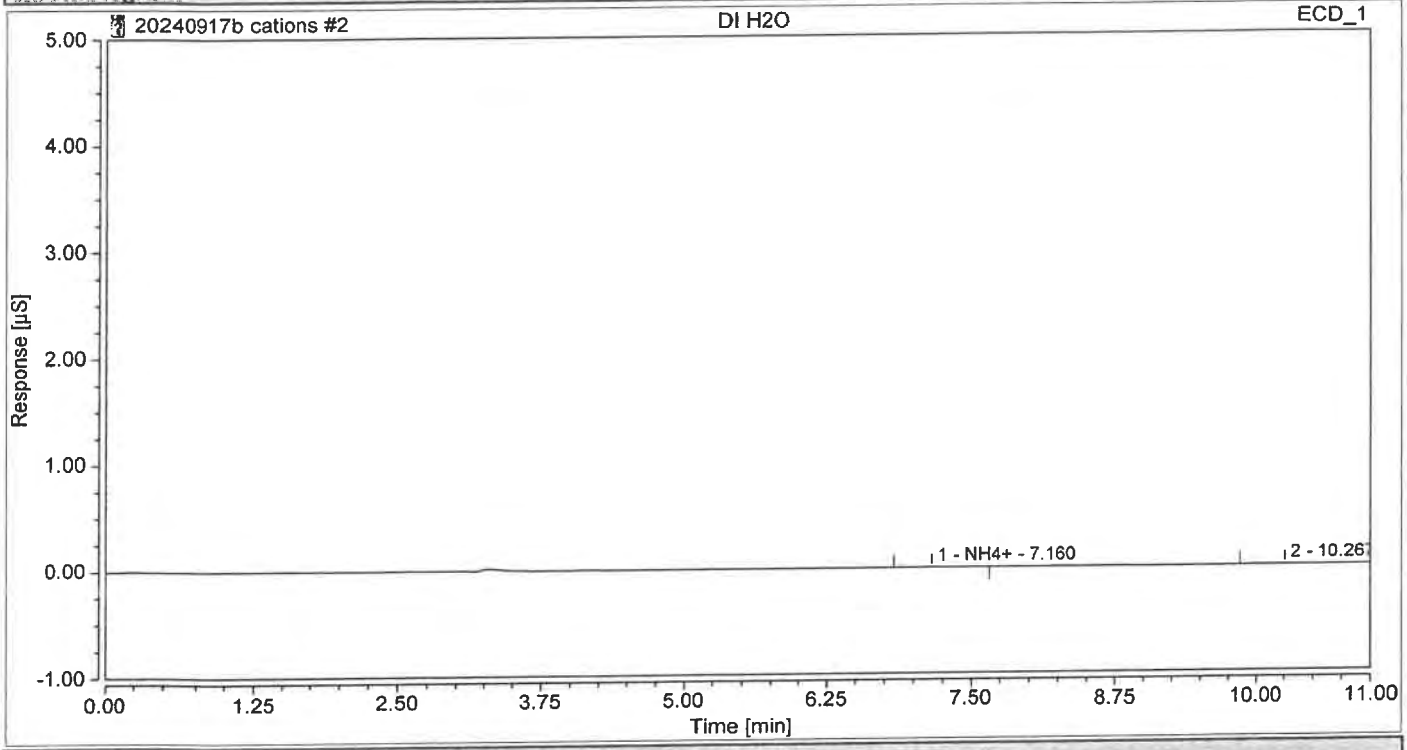
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	7.153	0.4701	2.062	100.00	100.00	1.0033
Total:			**0.470**	**2.062**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**11.00**
Vial Number:	**GA2**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 16:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

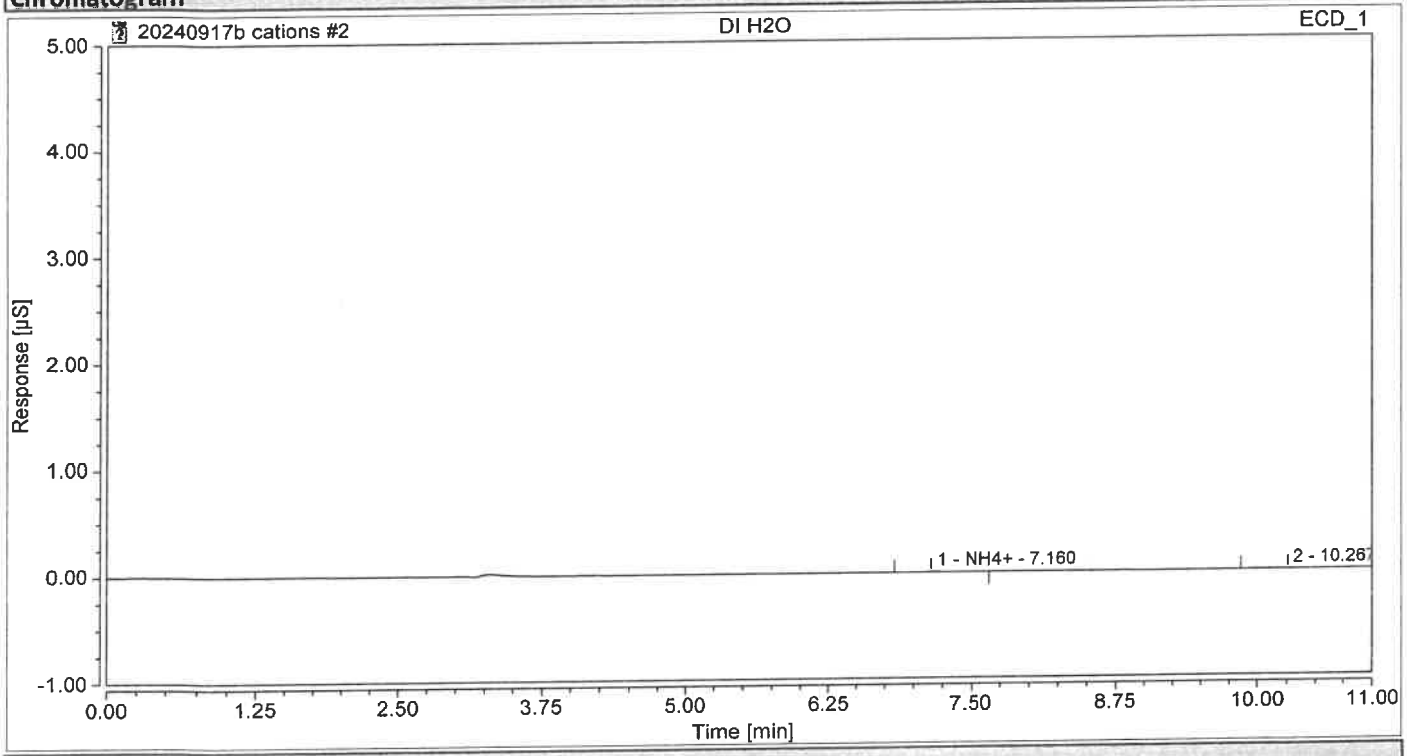
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	7.160	0.0010	0.004	27.51	49.07	n.a.
2		10.267	0.0026	0.004	72.49	50.93	n.a.
Total:			**0.004**	**0.008**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**11.00**
Vial Number:	**GA2**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 16:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

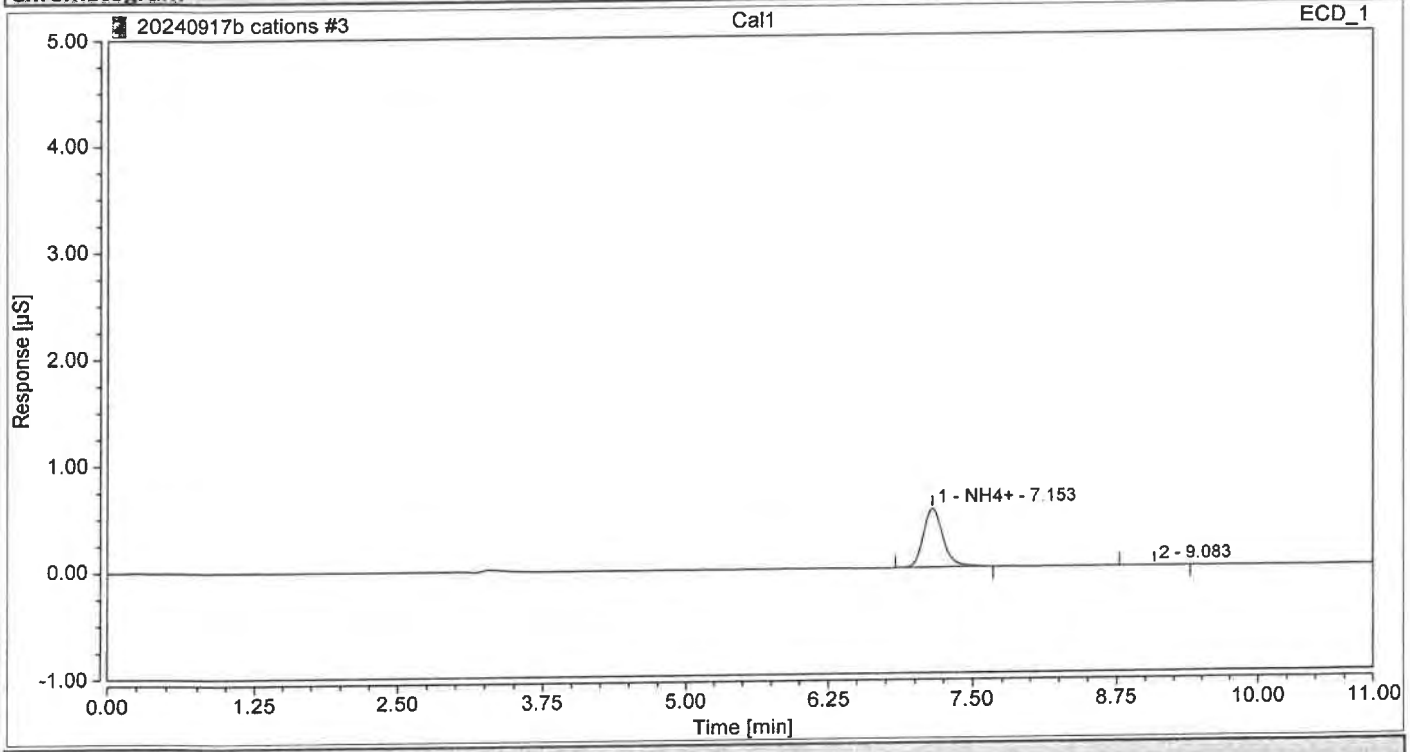
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	7.160	0.0010	0.004	27.51	49.07	n.a.
2		10.267	0.0026	0.004	72.49	50.93	n.a.
Total:			**0.004**	**0.008**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Cal1**	*Run Time (min):*	**11.00**
Vial Number:	**GA3**	*Injection Volume:*	**50.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**1**	*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 16:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

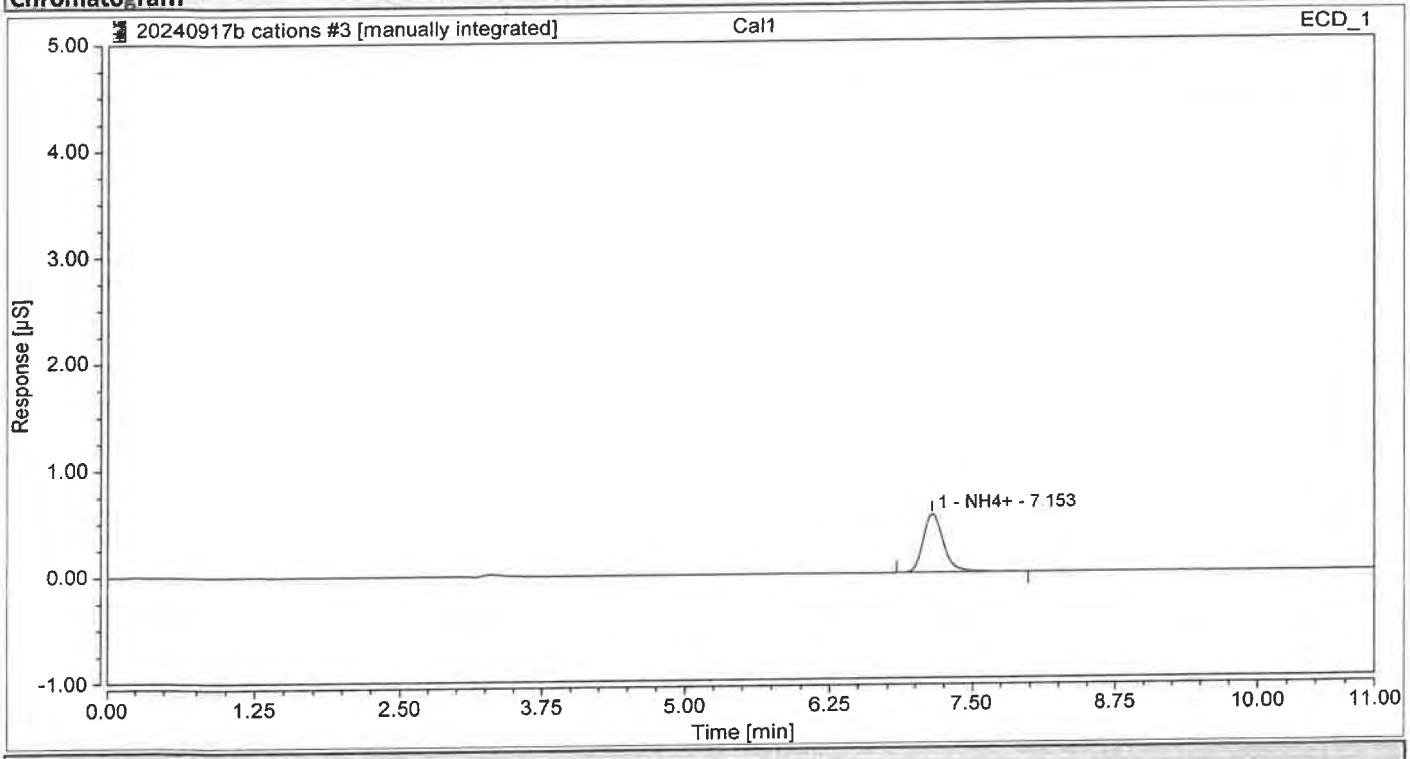
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	7.153	0.1104	0.549	99.55	99.68	0.1855
2		9.083	0.0005	0.002	0.45	0.32	n.a.
Total:			**0.111**	**0.551**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Cal1**	*Run Time (min):*	**11.00**
Vial Number:	**GA3**	*Injection Volume:*	**50.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**1**	*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 16:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

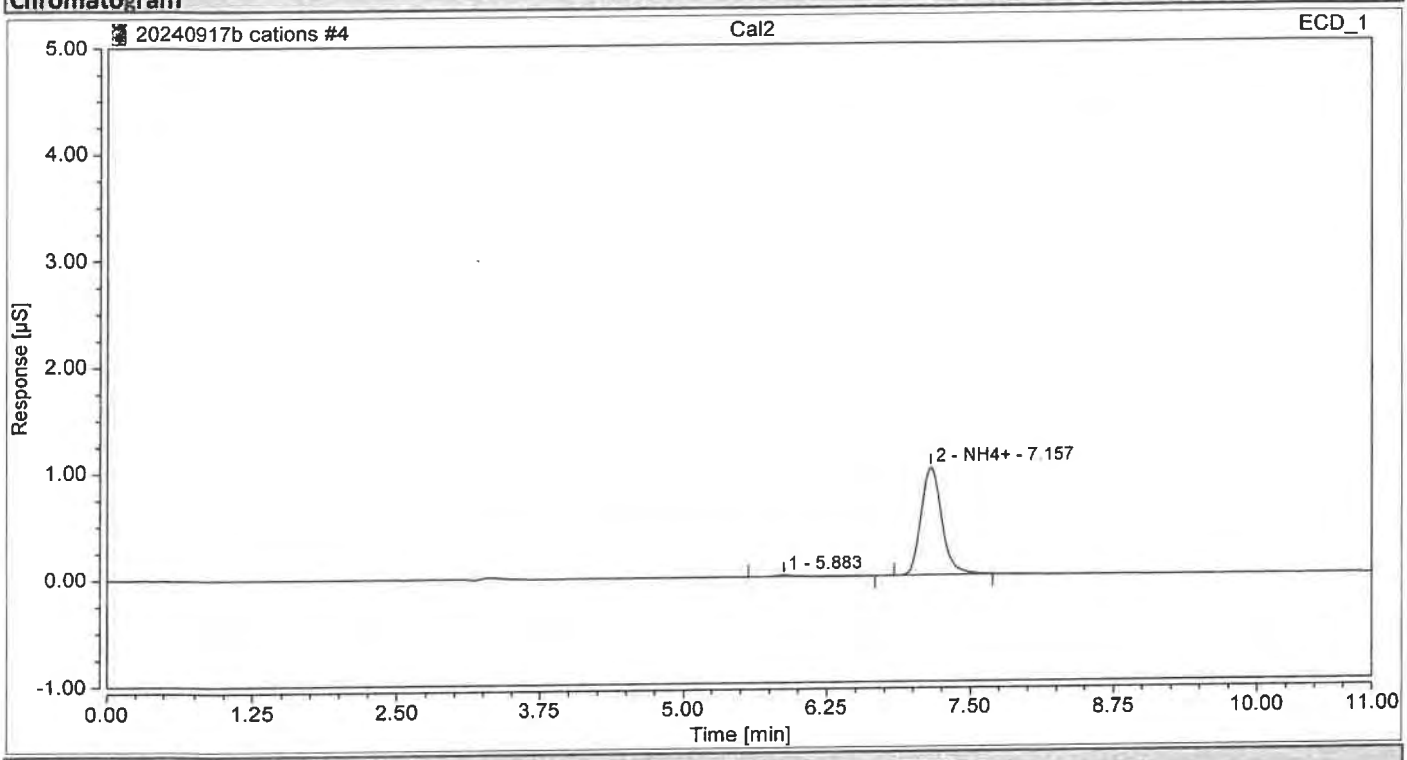
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	7.153	0.1127	0.551	100.00	100.00	0.1833
Total:			**0.113**	**0.551**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Cal2**	*Run Time (min):*	**11.00**
Vial Number:	**GA4**	*Injection Volume:*	**50.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**2**	*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 16:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

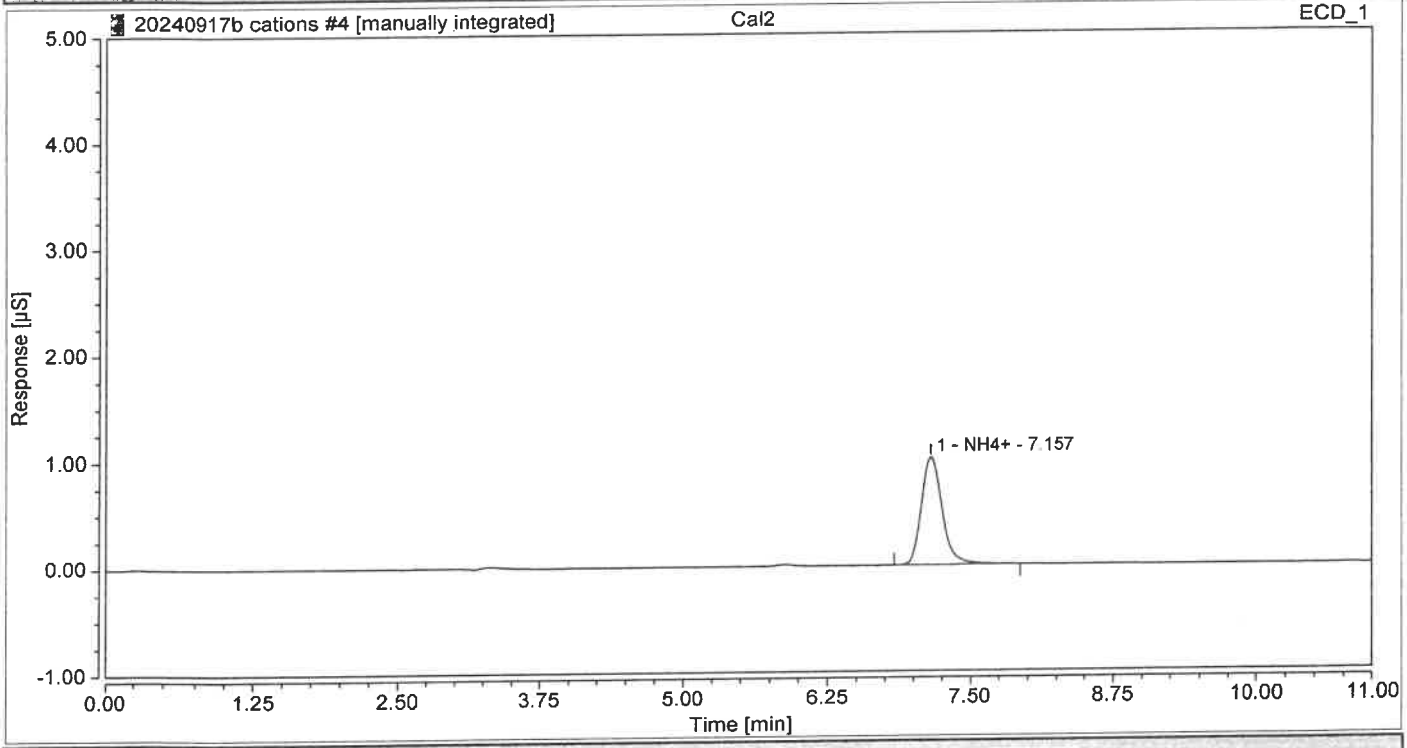
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		5.883	0.0031	0.015	1.45	1.49	n.a.
2	NH4+	7.157	0.2130	1.010	98.55	98.51	0.4117
Total:			**0.216**	**1.026**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Cal2**	*Run Time (min):*	**11.00**
Vial Number:	**GA4**	*Injection Volume:*	**50.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**2**	*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 16:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

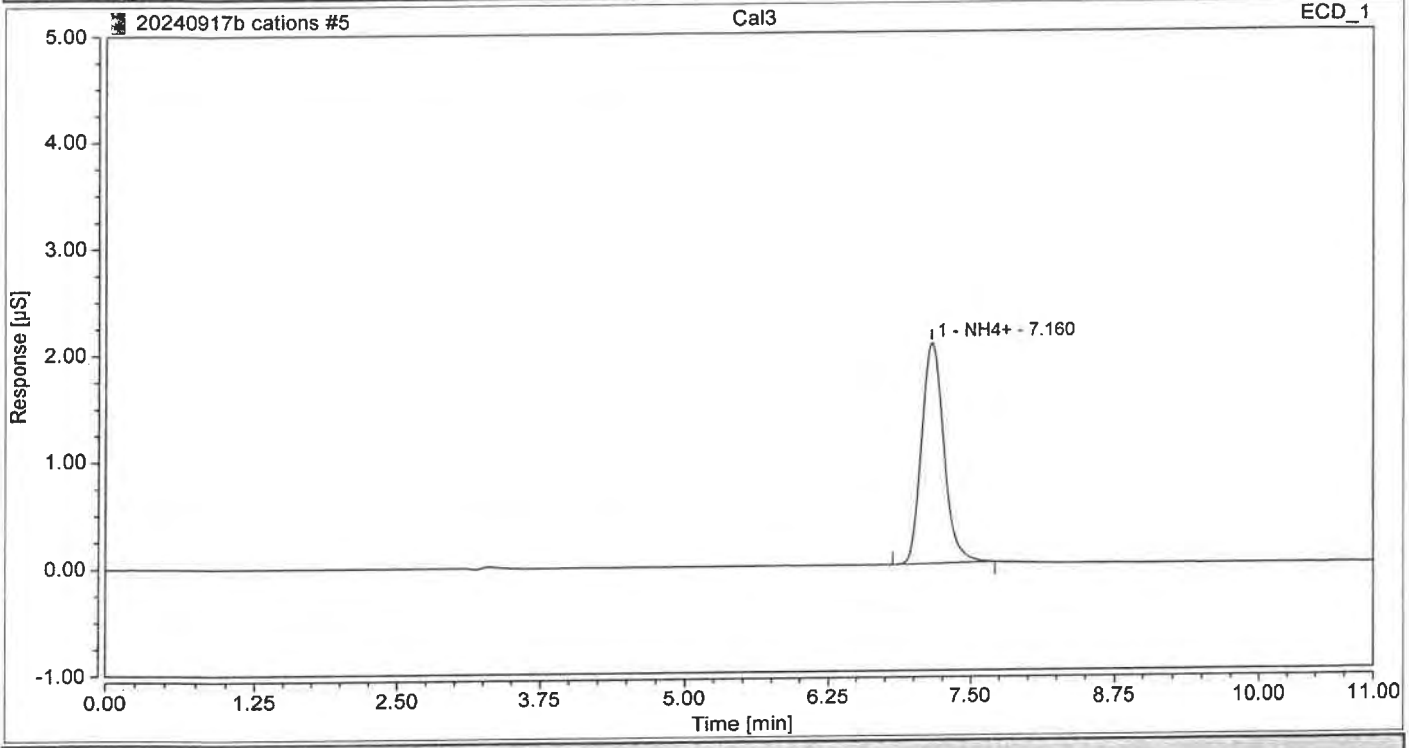
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	7.157	0.2154	1.012	100.00	100.00	0.4097
Total:			**0.215**	**1.012**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Cal3**	*Run Time (min):*	**11.00**
Vial Number:	**GA5**	*Injection Volume:*	**50.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**3**	*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 16:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

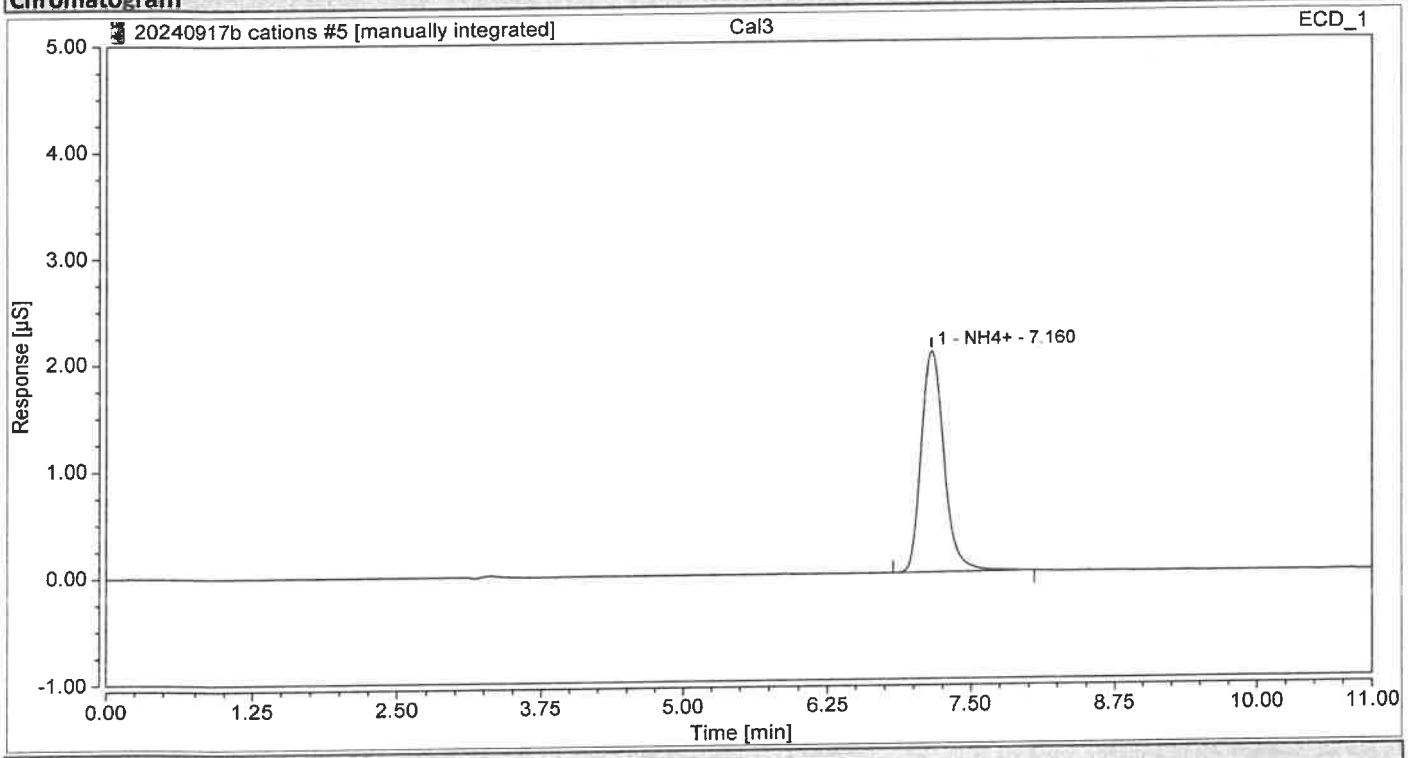
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	7.160	0.4702	2.071	100.00	100.00	1.0125
Total:			**0.470**	**2.071**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Cal3**	*Run Time (min):*	**11.00**
Vial Number:	**GA5**	*Injection Volume:*	**50.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**3**	*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 16:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

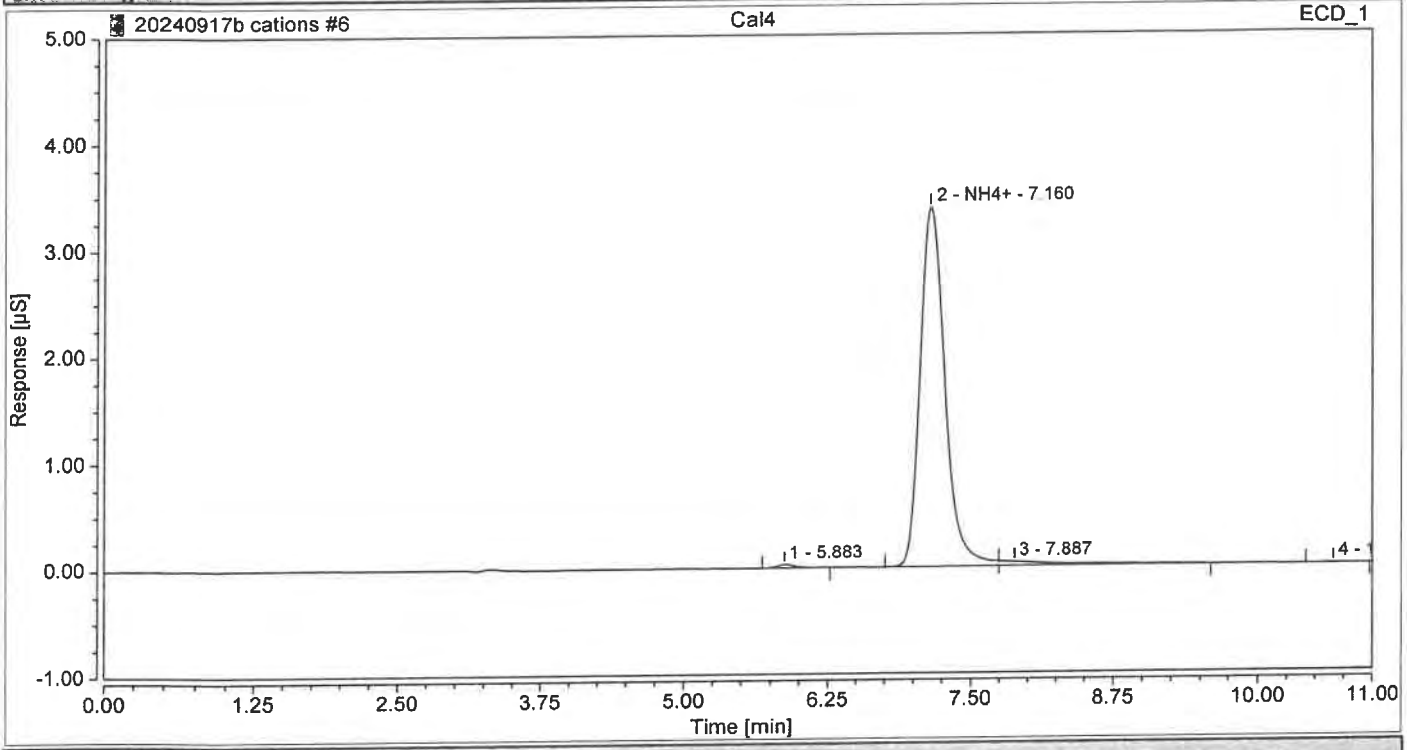
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	7.160	0.4780	2.076	100.00	100.00	1.0225
Total:			**0.478**	**2.076**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Cal4**	*Run Time (min):*	**11.00**
Vial Number:	**GA6**	*Injection Volume:*	**50.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**4**	*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 17:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

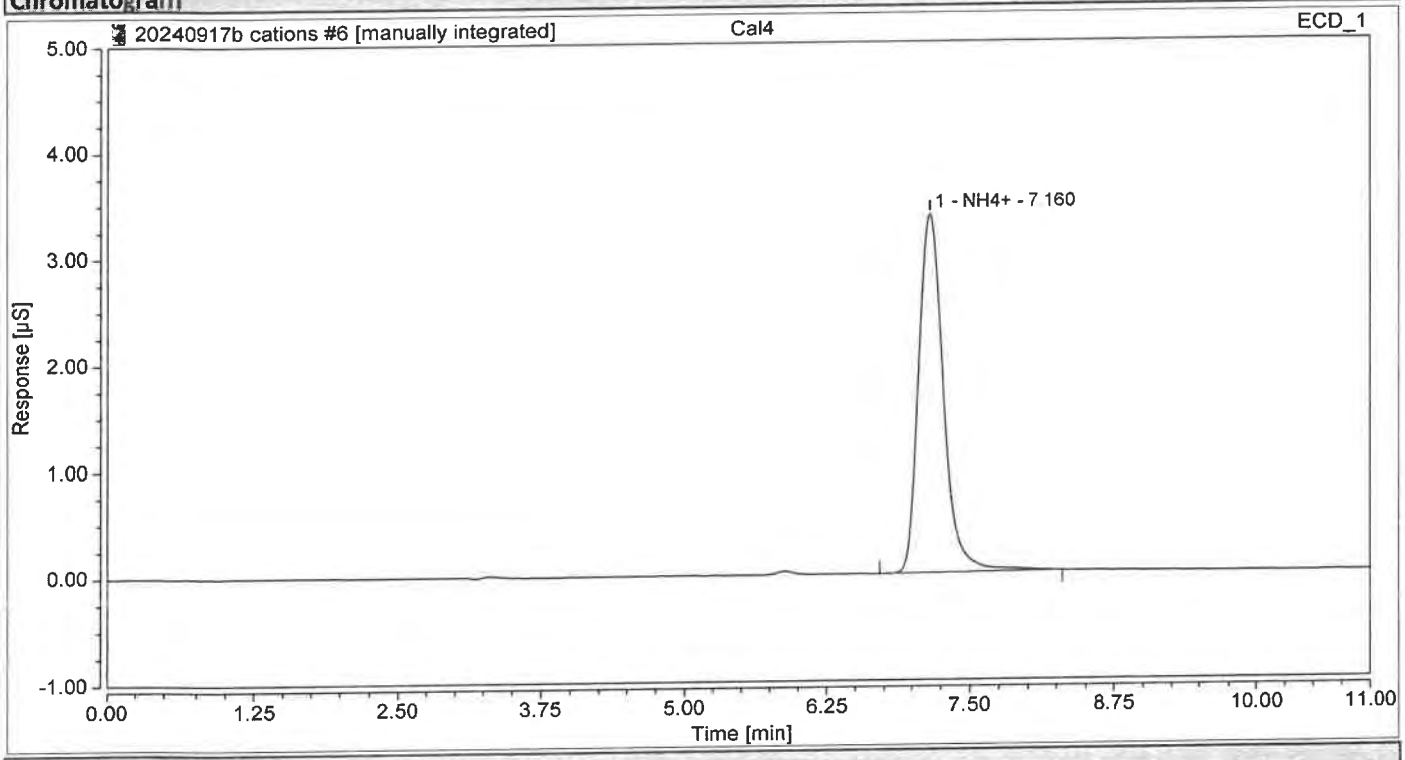
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		5.883	0.0052	0.032	0.60	0.91	n.a.
2	NH4+	7.160	0.8399	3.380	96.29	97.88	1.9872
3		7.887	0.0261	0.037	3.00	1.08	n.a.
4		10.663	0.0010	0.004	0.12	0.12	n.a.
Total:			**0.872**	**3.453**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Cal4**	*Run Time (min):*	**11.00**
Vial Number:	**GA6**	*Injection Volume:*	**50.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**4**	*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 17:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

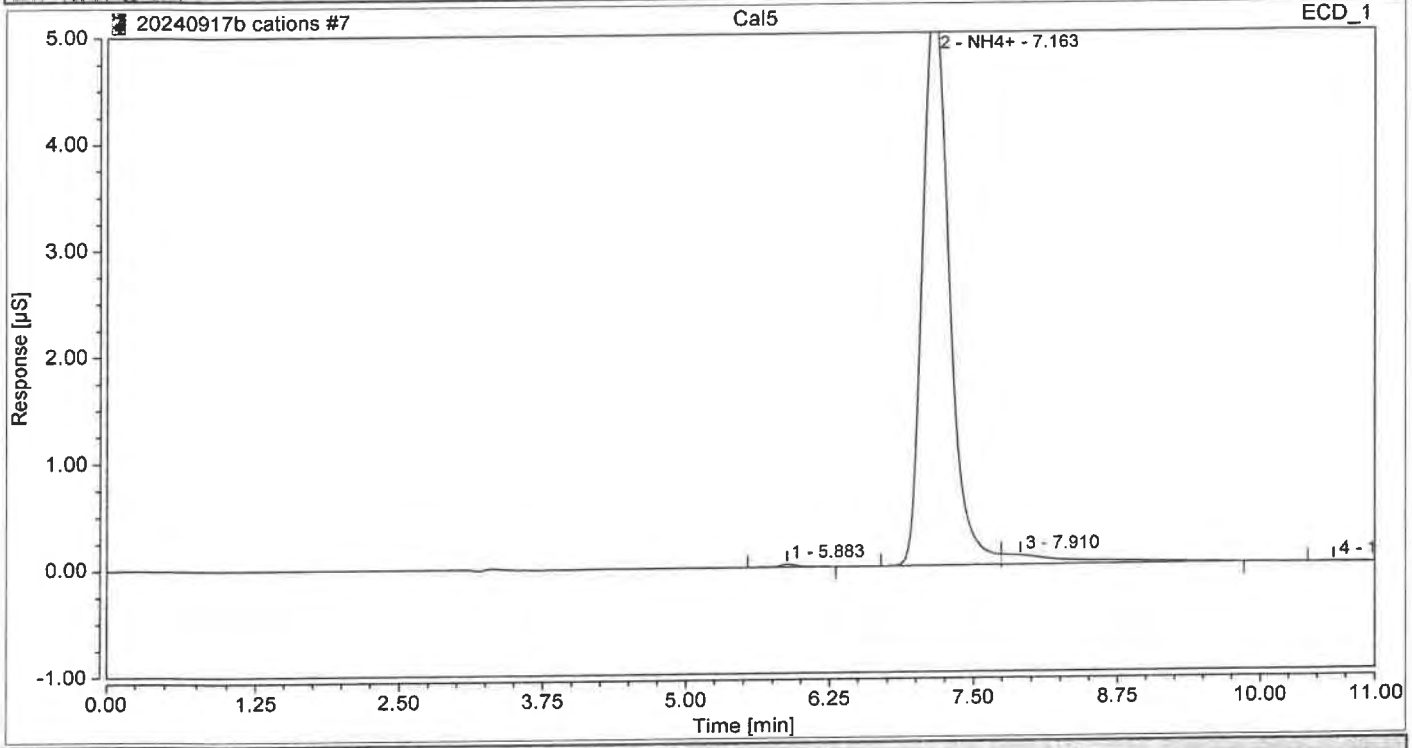
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	7.160	0.8434	3.376	100.00	100.00	1.9801
Total:			**0.843**	**3.376**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Cal5**	*Run Time (min):*	**11.00**
Vial Number:	**GA7**	*Injection Volume:*	**50.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**5**	*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 17:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

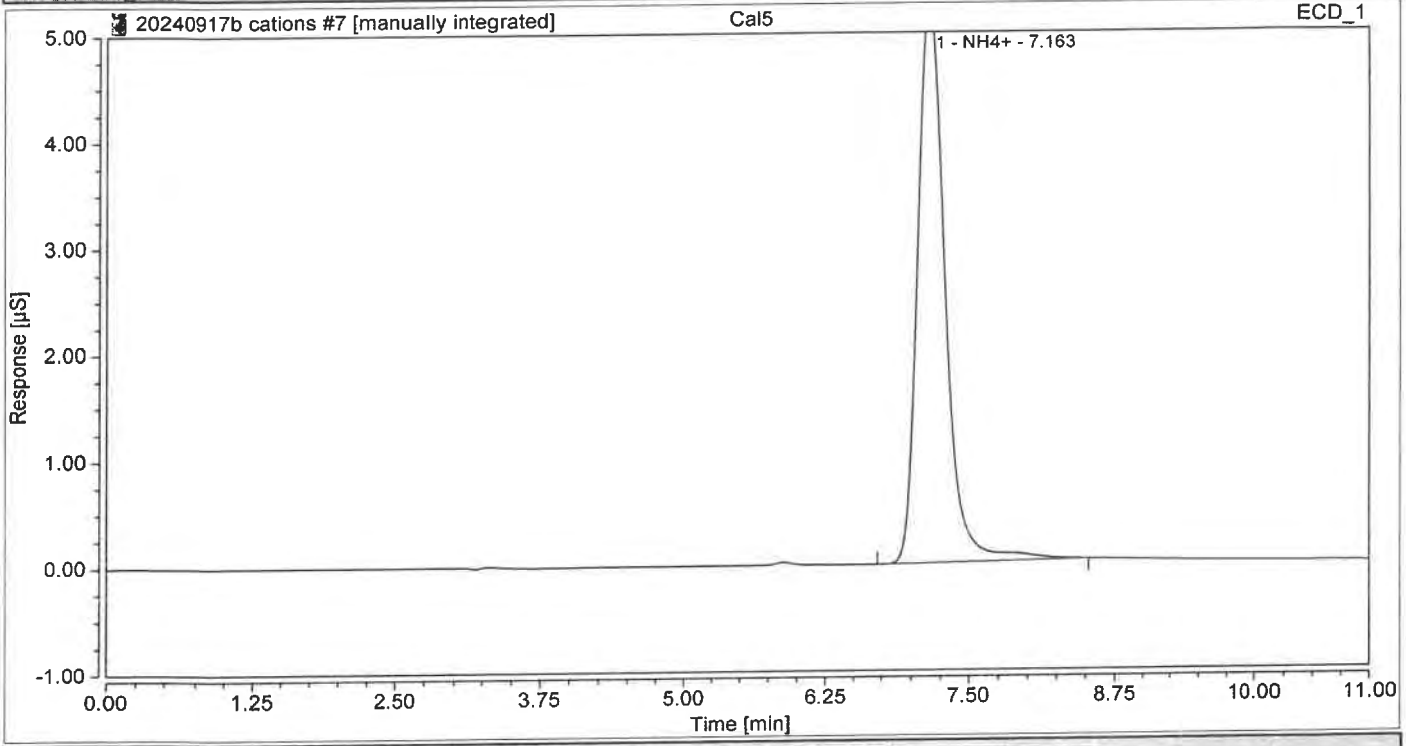
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		5.883	0.0045	0.026	0.30	0.47	n.a.
2	NH4+	7.163	1.4178	5.294	95.11	97.85	4.0034
3		7.910	0.0675	0.087	4.53	1.61	n.a.
4		10.653	0.0009	0.004	0.06	0.07	n.a.
Total:			**1.491**	**5.410**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Cal5**	*Run Time (min):*	**11.00**
Vial Number:	**GA7**	*Injection Volume:*	**50.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**5**	*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 17:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

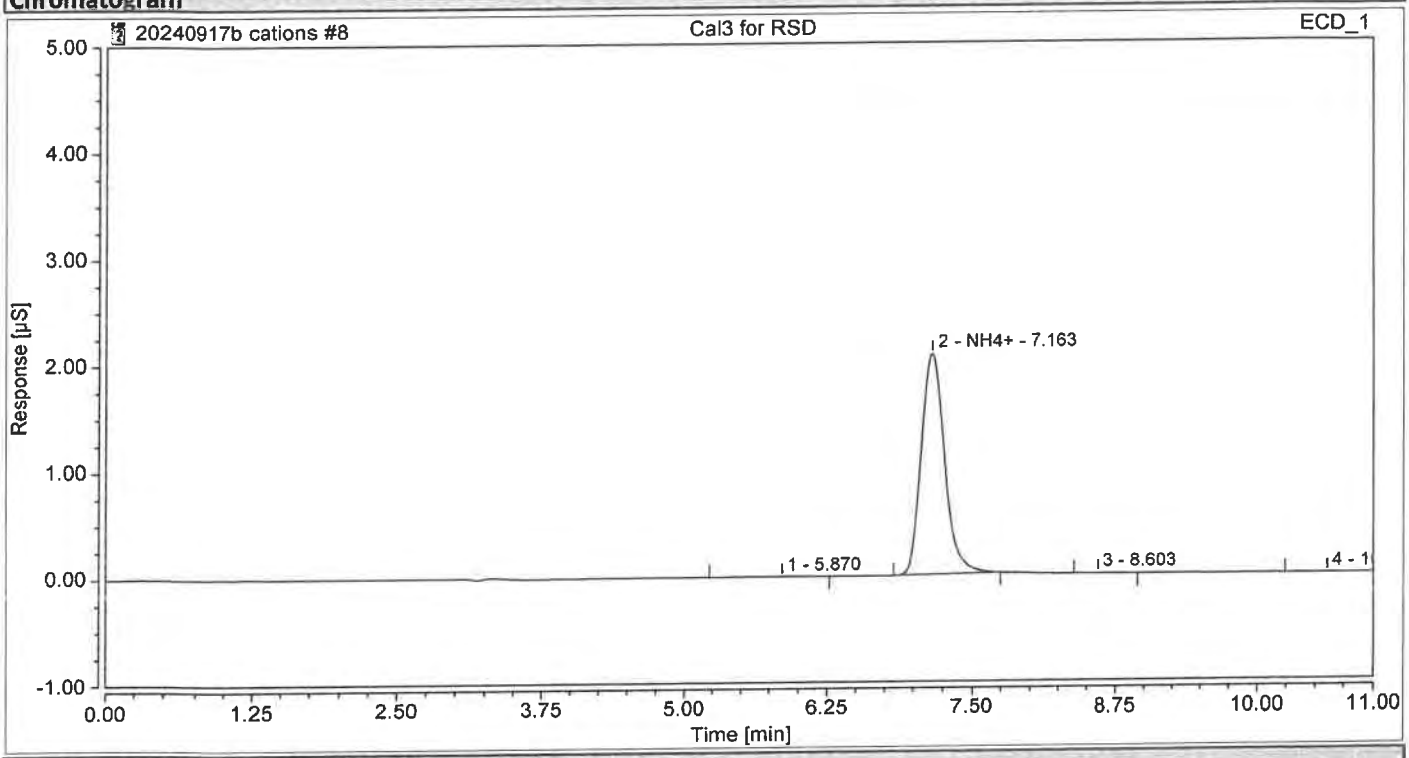
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	7.163	1.4356	5.286	100.00	100.00	4.0050
Total:			**1.436**	**5.286**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Cal3 for RSD**	*Run Time (min):*	**11.00**
Vial Number:	**GA8**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 17:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

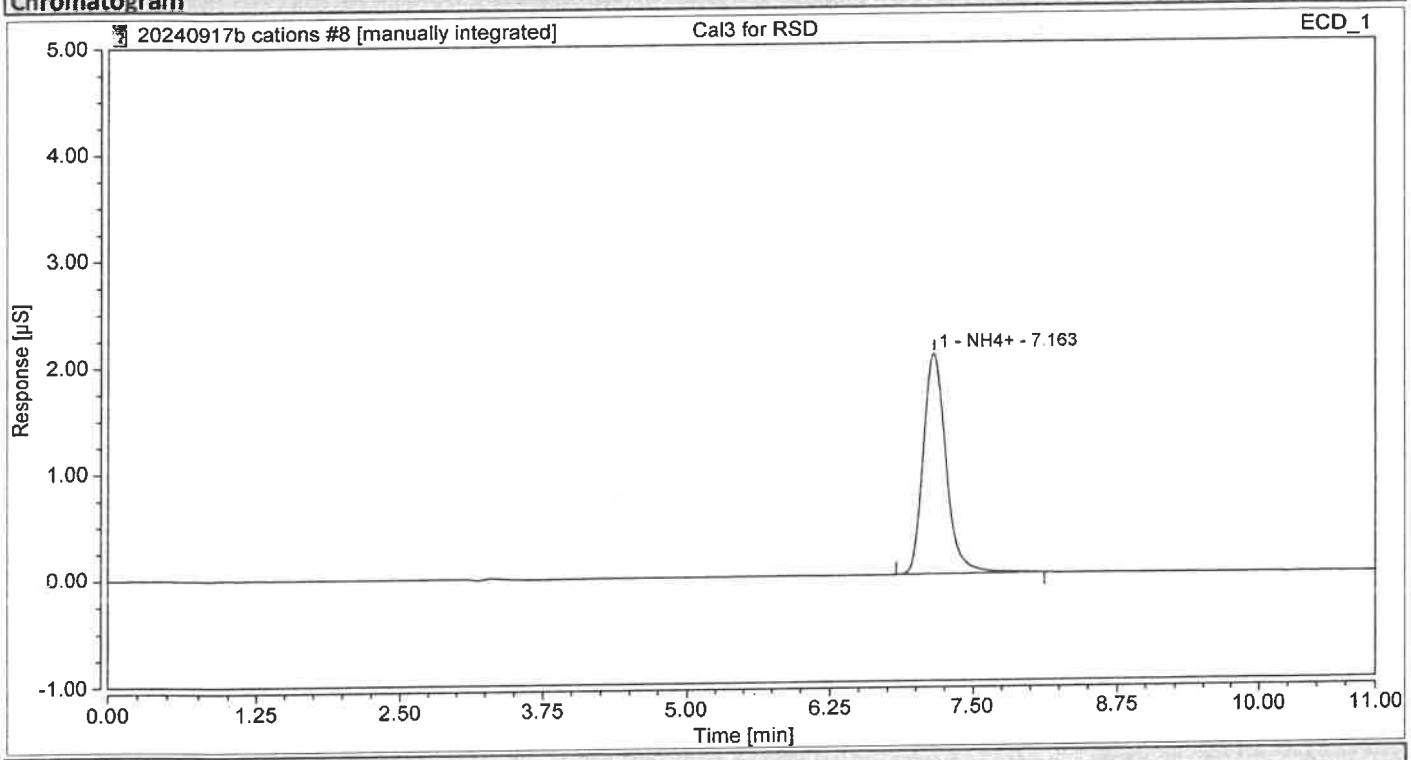
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		5.870	0.0013	0.003	0.26	0.15	n.a.
2	NH4+	7.163	0.4759	2.074	99.45	99.64	1.0263
3		8.603	0.0006	0.002	0.13	0.11	n.a.
4		10.610	0.0008	0.002	0.16	0.09	n.a.
Total:			**0.478**	**2.081**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Cal3 for RSD**	*Run Time (min):*	**11.00**
Vial Number:	**GA8**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 17:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

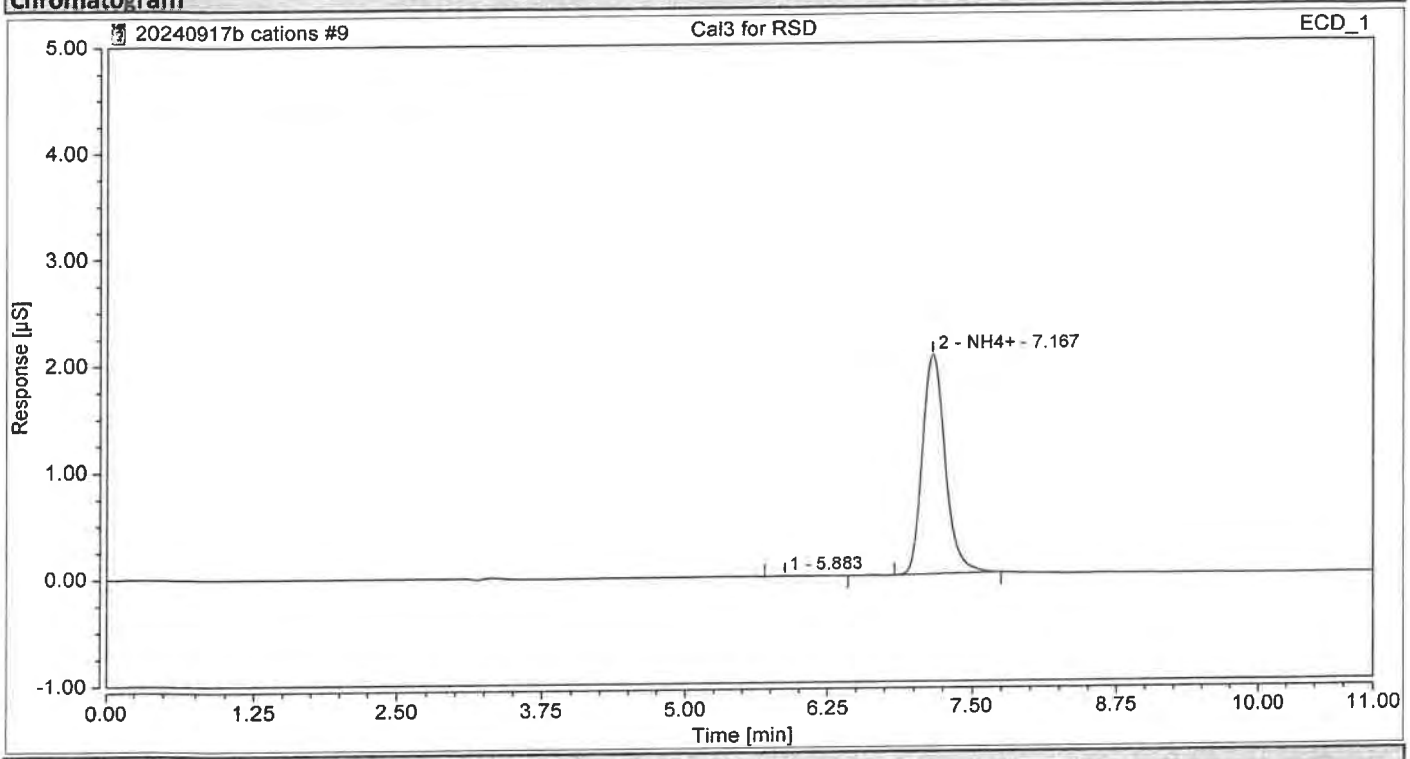
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	7.163	0.4851	2.079	100.00	100.00	1.0397
Total:			**0.485**	**2.079**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Cal3 for RSD**	*Run Time (min):*	**11.00**
Vial Number:	**GA8**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 17:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

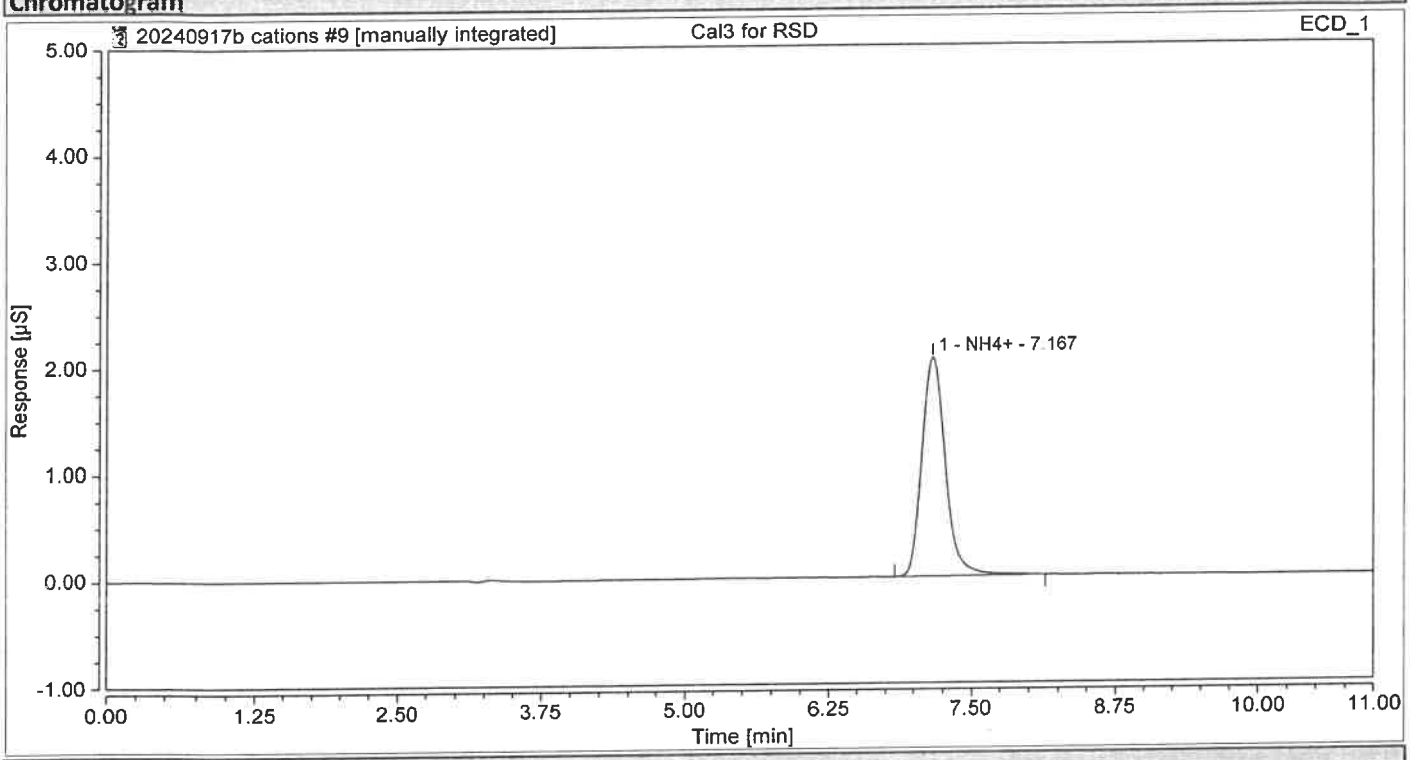
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		5.883	0.0008	0.003	0.17	0.14	n.a.
2	NH4+	7.167	0.4715	2.055	99.83	99.86	1.0157
Total:			**0.472**	**2.058**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Cal3 for RSD**	*Run Time (min):*	**11.00**
Vial Number:	**GA8**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 17:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

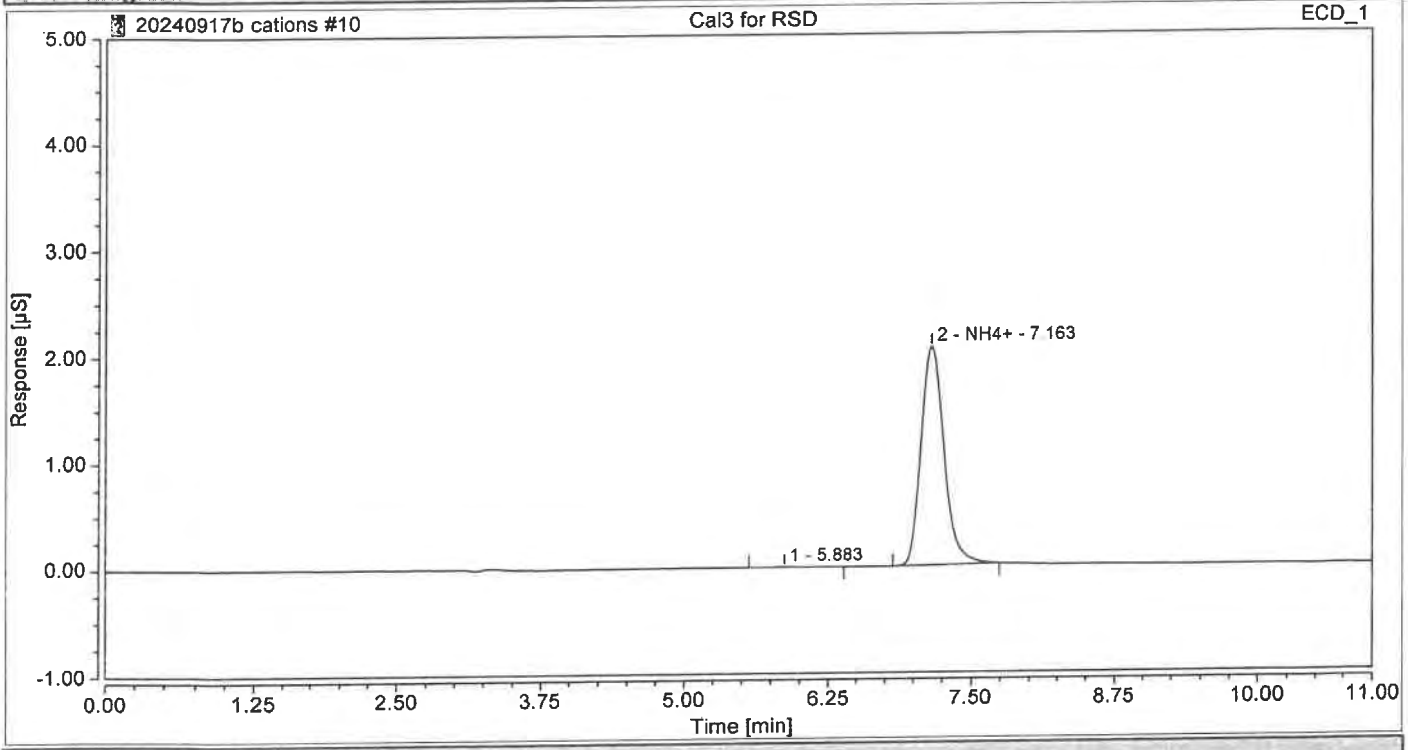
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	7.167	0.4807	2.060	100.00	100.00	1.0290
Total:			**0.481**	**2.060**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Cal3 for RSD**	*Run Time (min):*	**11.00**
Vial Number:	**GA8**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 18:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

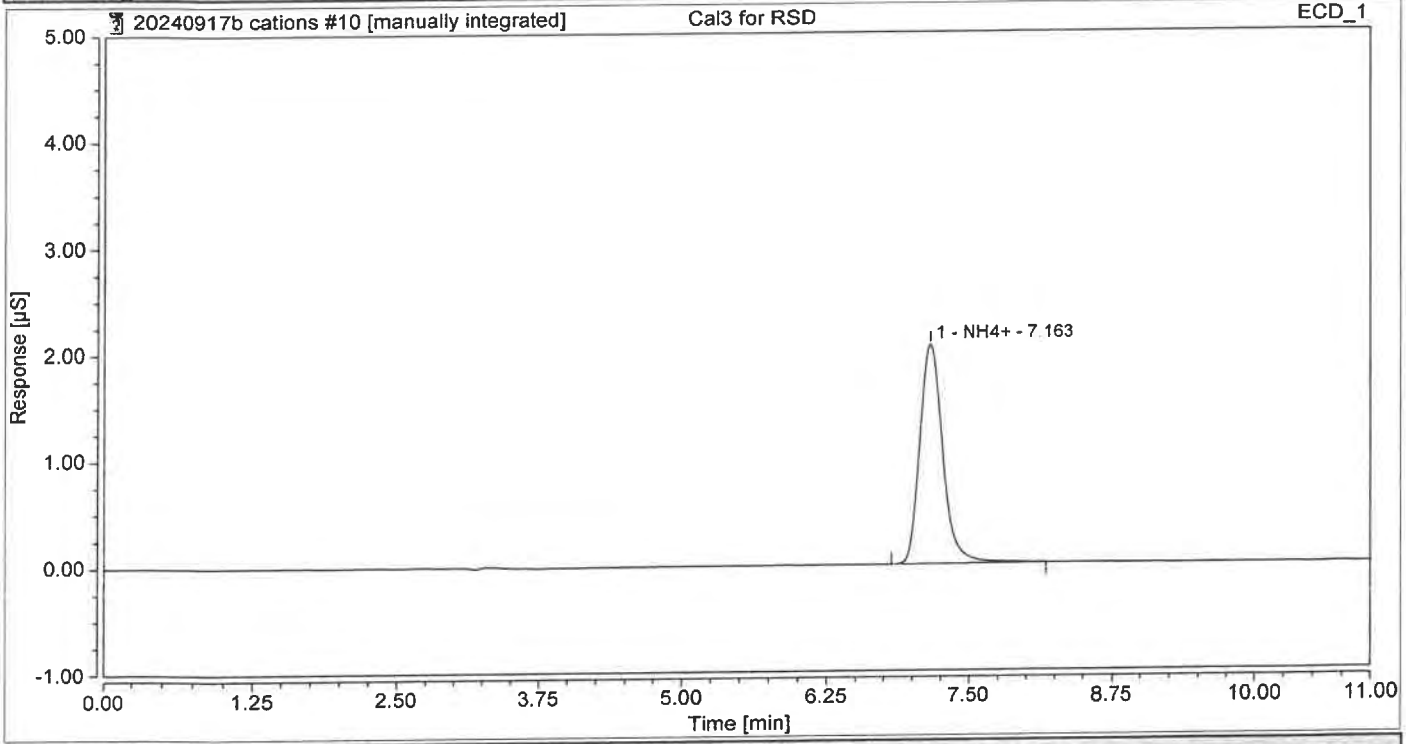
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		5.883	0.0009	0.004	0.19	0.18	n.a.
2	NH4+	7.163	0.4738	2.059	99.81	99.82	1.0212
Total:			**0.475**	**2.063**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Cal3 for RSD**	*Run Time (min):*	**11.00**
Vial Number:	**GA8**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 18:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

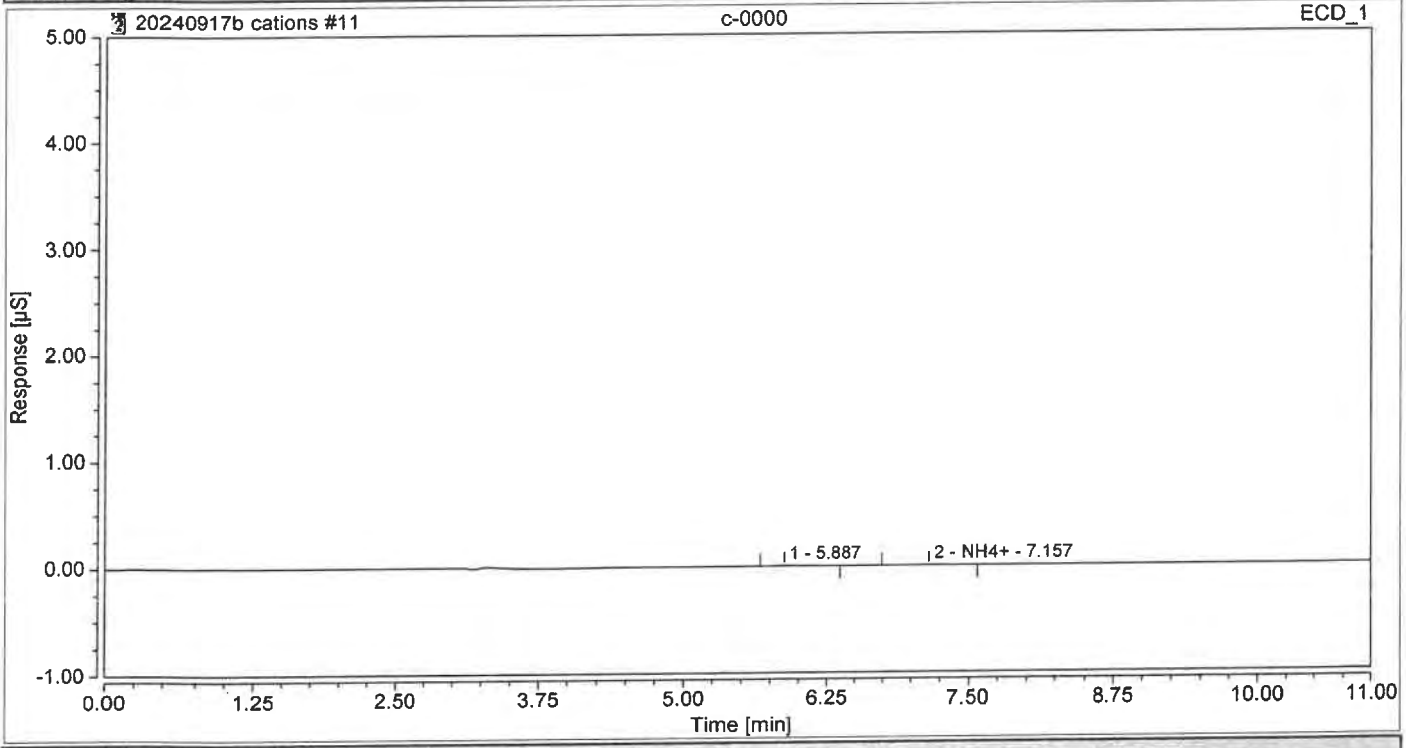
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	7.163	0.4836	2.065	100.00	100.00	1.0361
Total:			**0.484**	**2.065**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**c-0000**	*Run Time (min):*	**11.00**
Vial Number:	**GB1**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 18:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

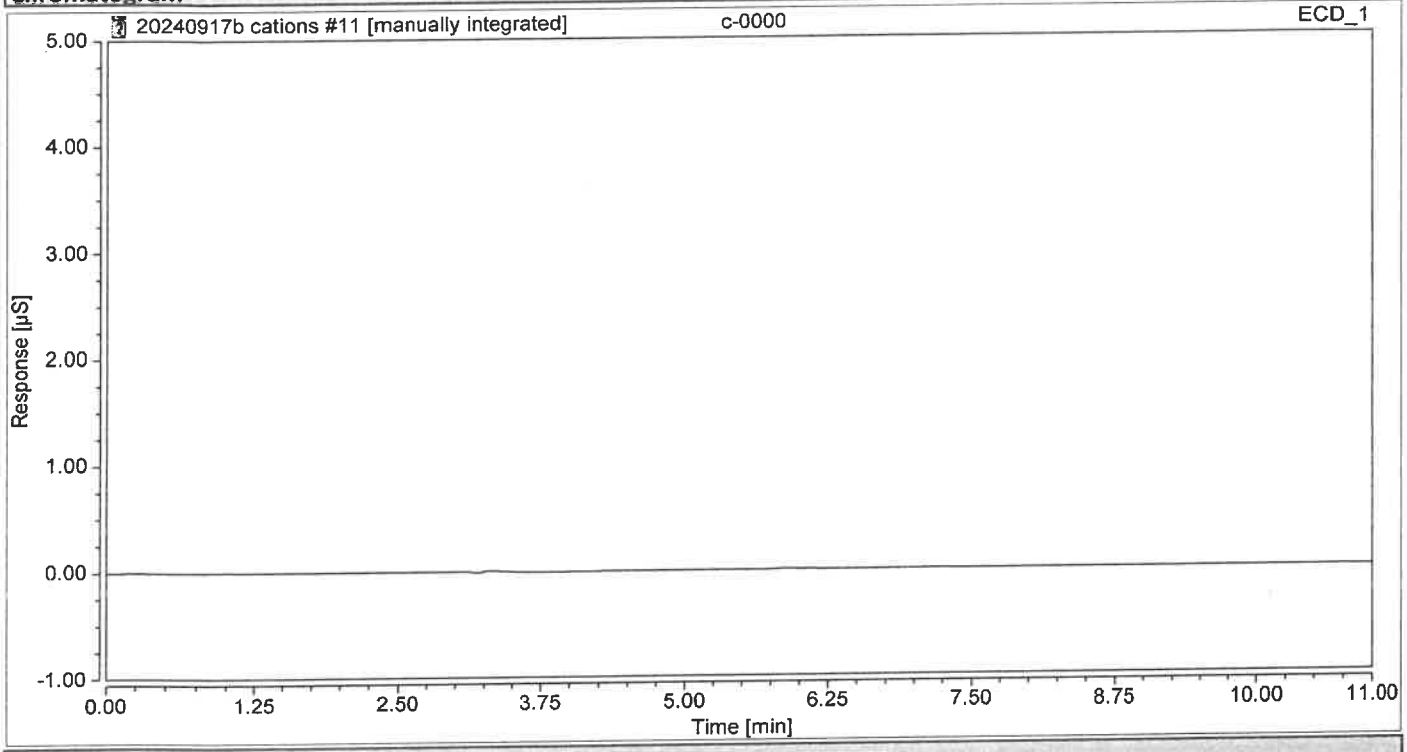
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		5.887	0.0013	0.006	57.38	64.94	n.a.
2	NH4+	7.157	0.0010	0.003	42.62	35.06	n.a.
Total:			**0.002**	**0.010**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**c-0000**	*Run Time (min):*	**11.00**
Vial Number:	**GB1**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 18:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

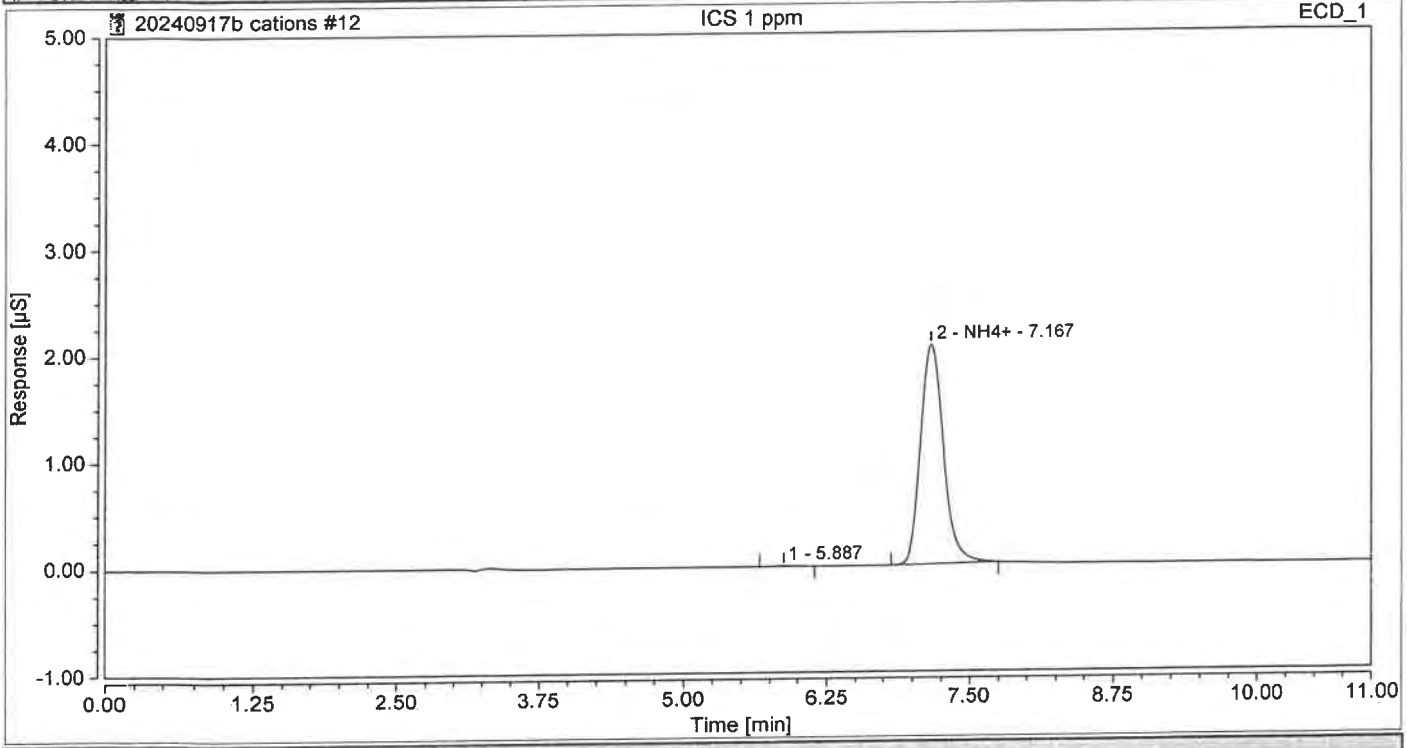
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICS 1 ppm**	*Run Time (min):*	**11.00**
Vial Number:	**GB2**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 18:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

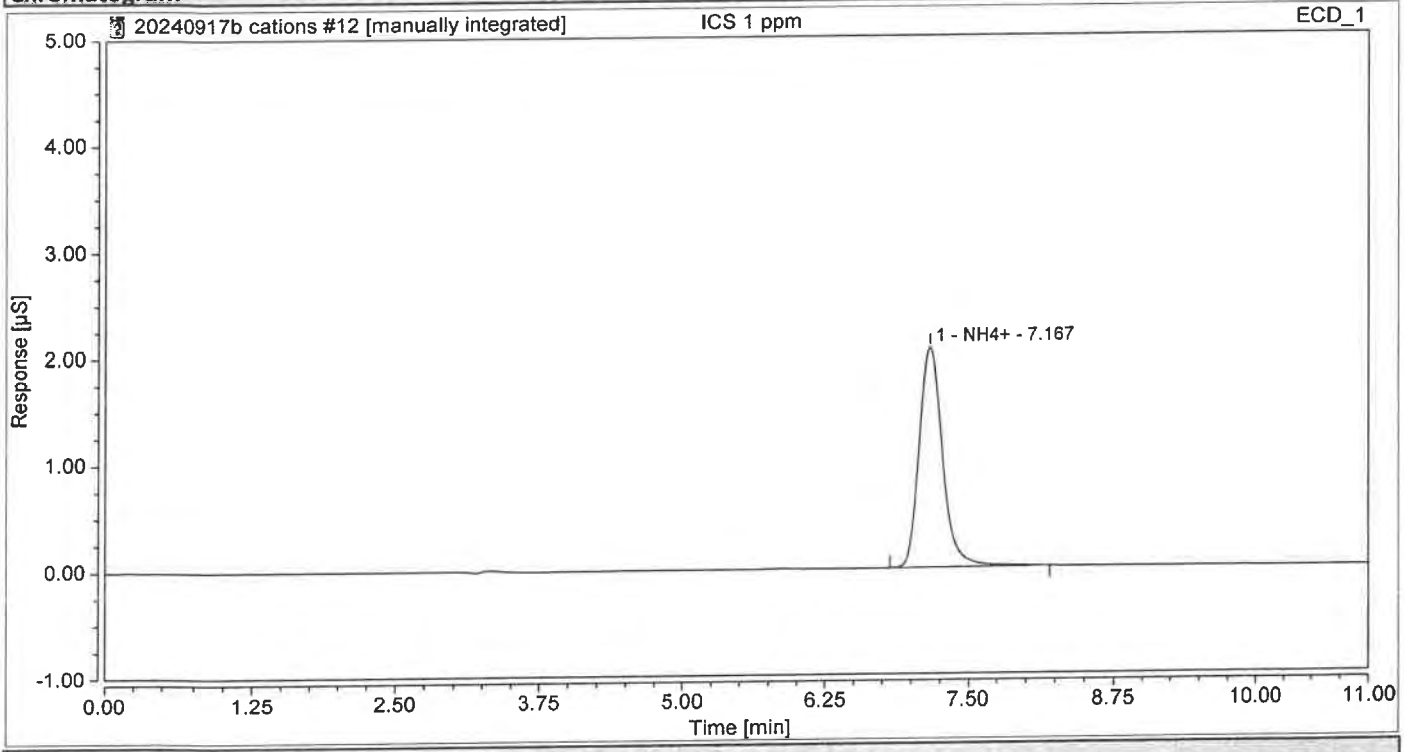
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		5.887	0.0007	0.005	0.16	0.22	n.a.
2	NH4+	7.167	0.4764	2.063	99.84	99.78	1.0275
Total:			**0.477**	**2.067**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICS 1 ppm**	*Run Time (min):*	**11.00**
Vial Number:	**GB2**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 18:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

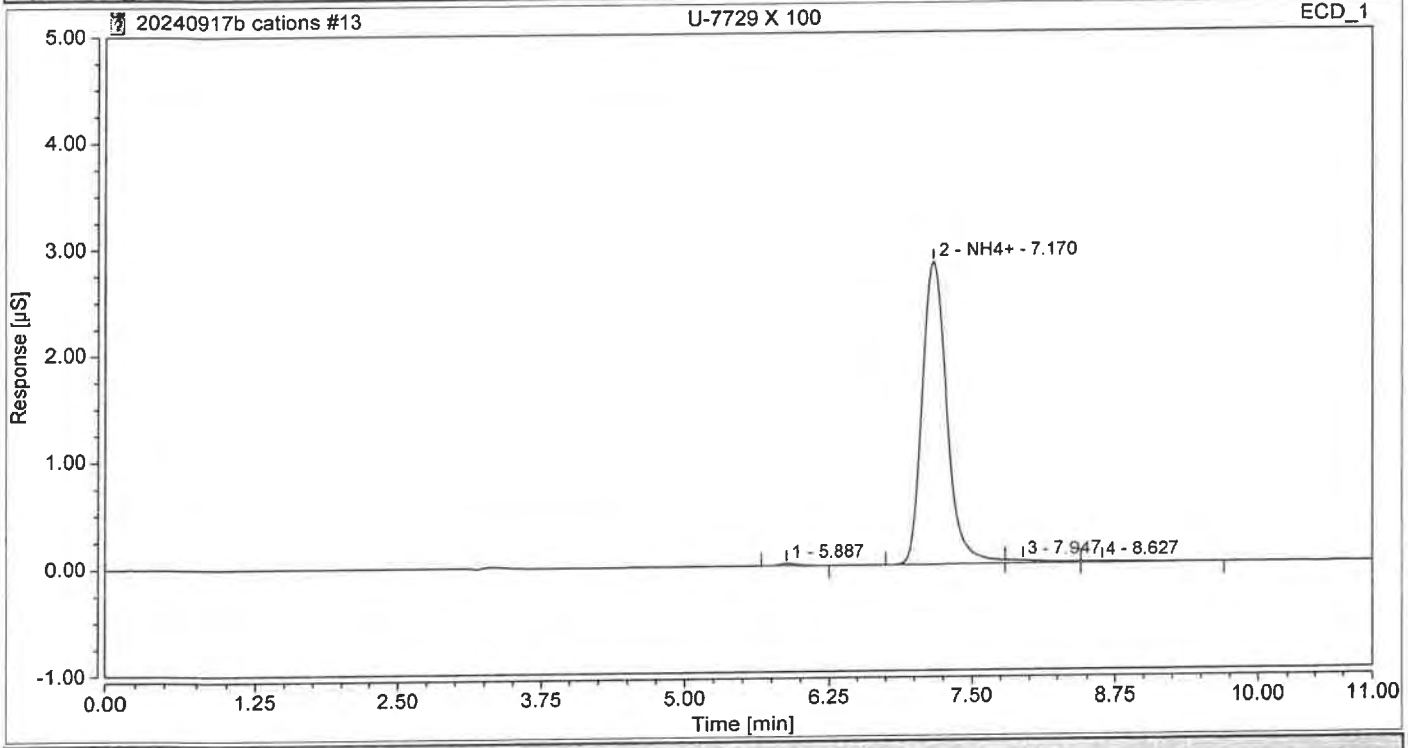
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	7.167	0.4872	2.069	100.00	100.00	1.0448
Total:			**0.487**	**2.069**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7729 X 100**	*Run Time (min):*	**11.00**
Vial Number:	**GB3**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 18:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

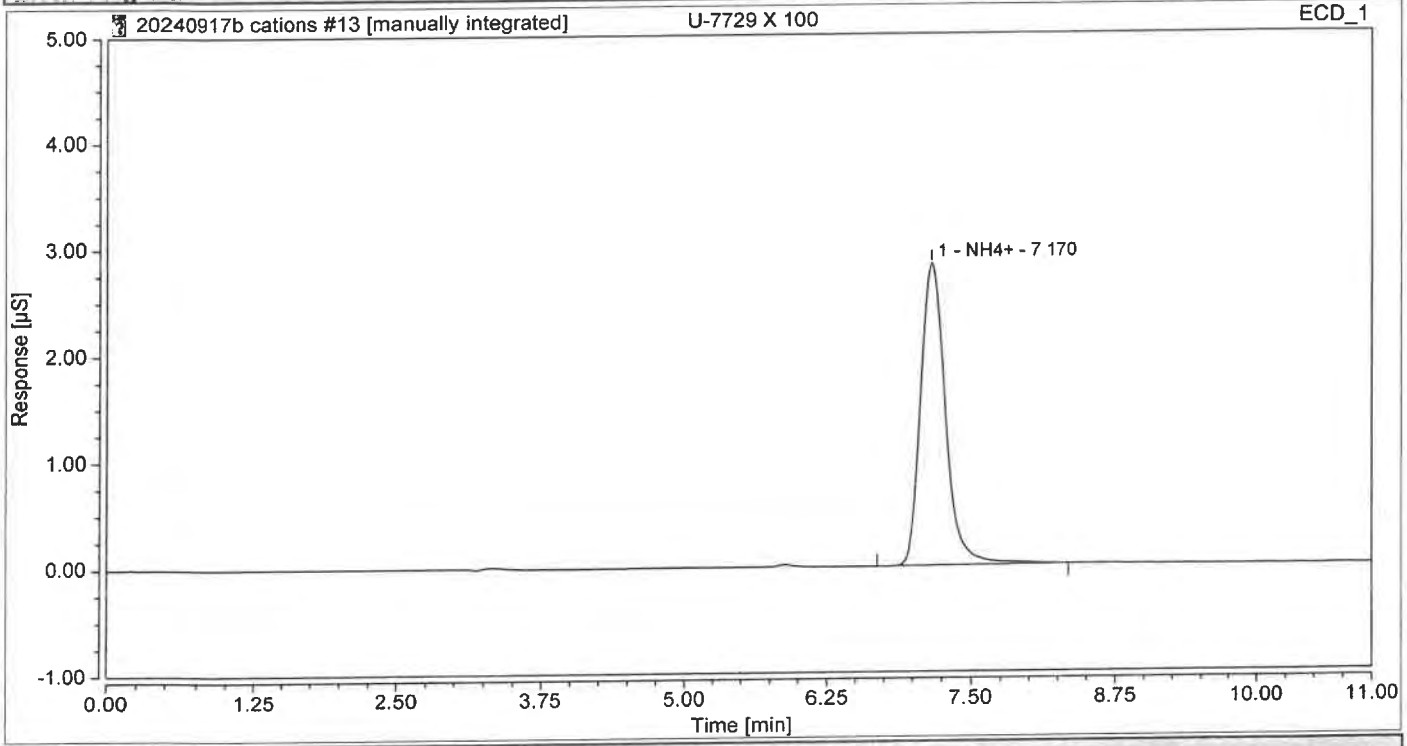
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		5.887	0.0035	0.022	0.49	0.75	n.a.
2	NH4+	7.170	0.7004	2.841	96.78	97.97	1.6007
3		7.947	0.0127	0.027	1.75	0.92	n.a.
4		8.627	0.0071	0.011	0.98	0.36	n.a.
Total:			**0.724**	**2.900**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7729 X 100**	*Run Time (min):*	**11.00**
Vial Number:	**GB3**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 18:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

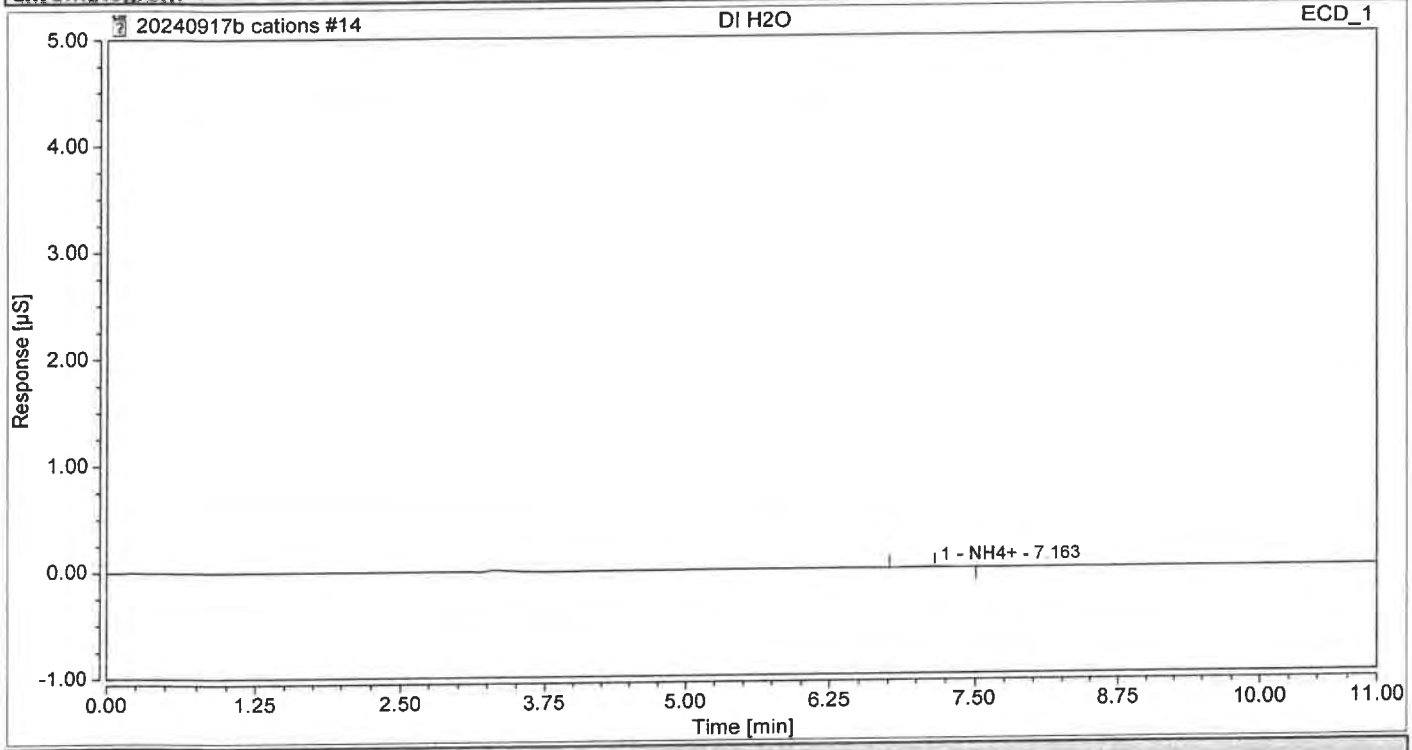
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	7.170	0.7025	2.838	100.00	100.00	1.5936
Total:			**0.703**	**2.838**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**11.00**
Vial Number:	**GB4**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 19:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

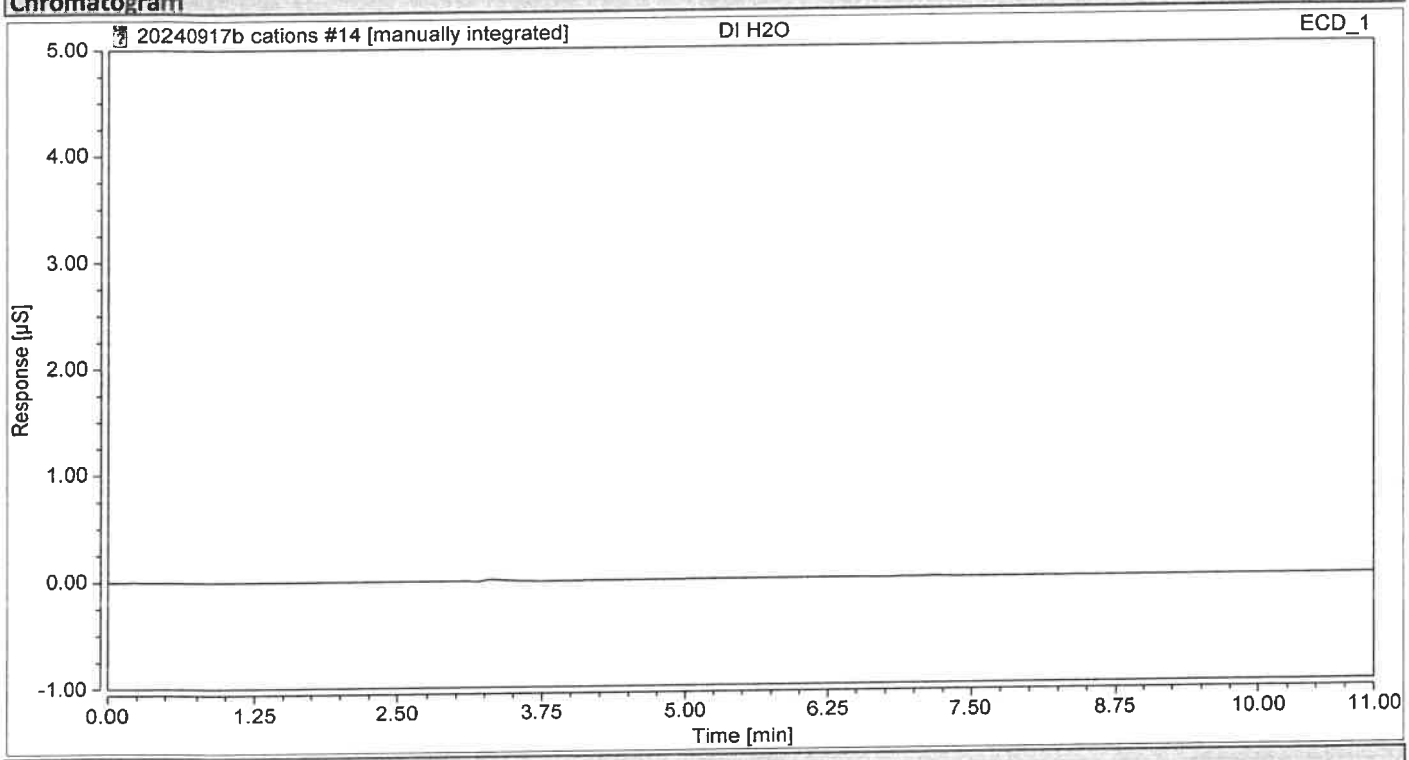
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	7.163	0.0013	0.007	100.00	100.00	n.a.
Total:			**0.001**	**0.007**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**11.00**
Vial Number:	**GB4**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 19:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

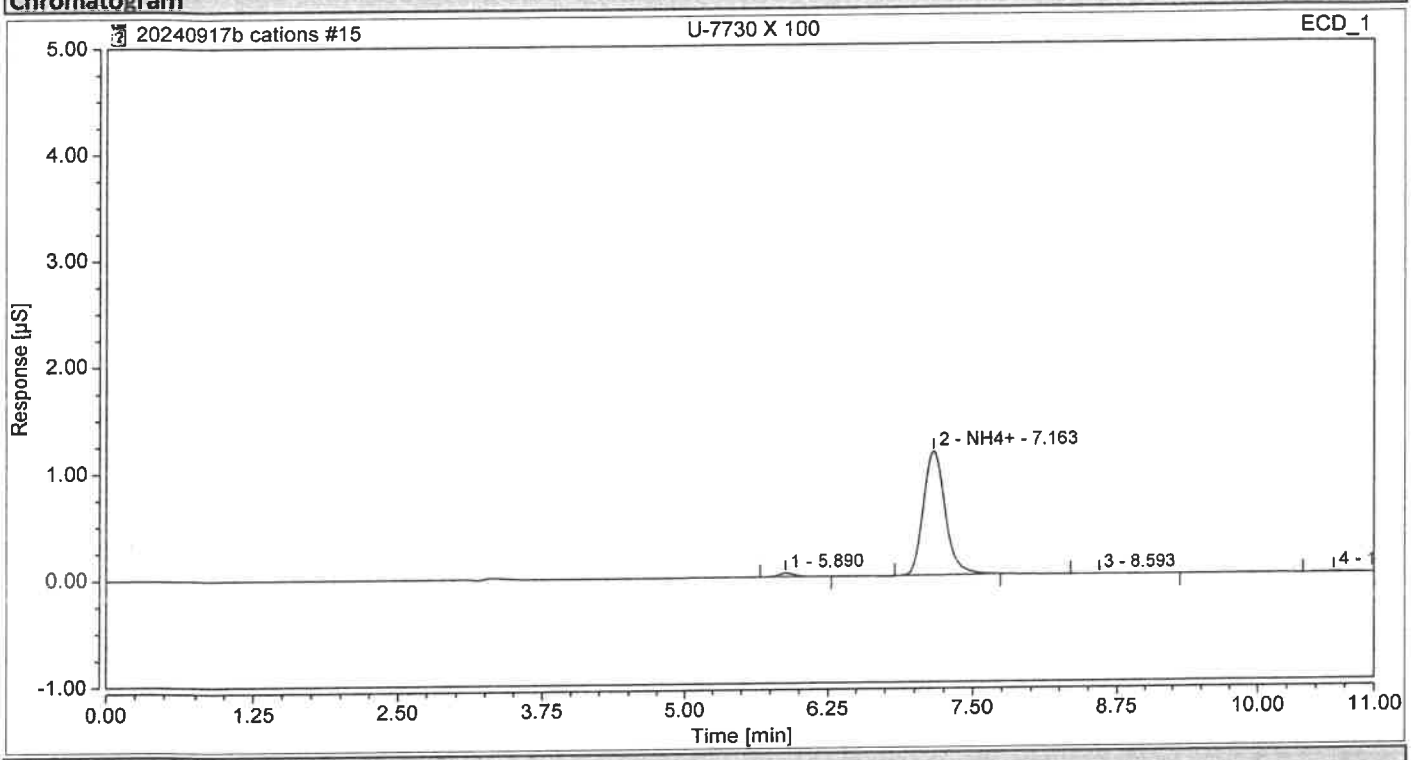
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7730 X 100**	*Run Time (min):*	**11.00**
Vial Number:	**GB5**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 19:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

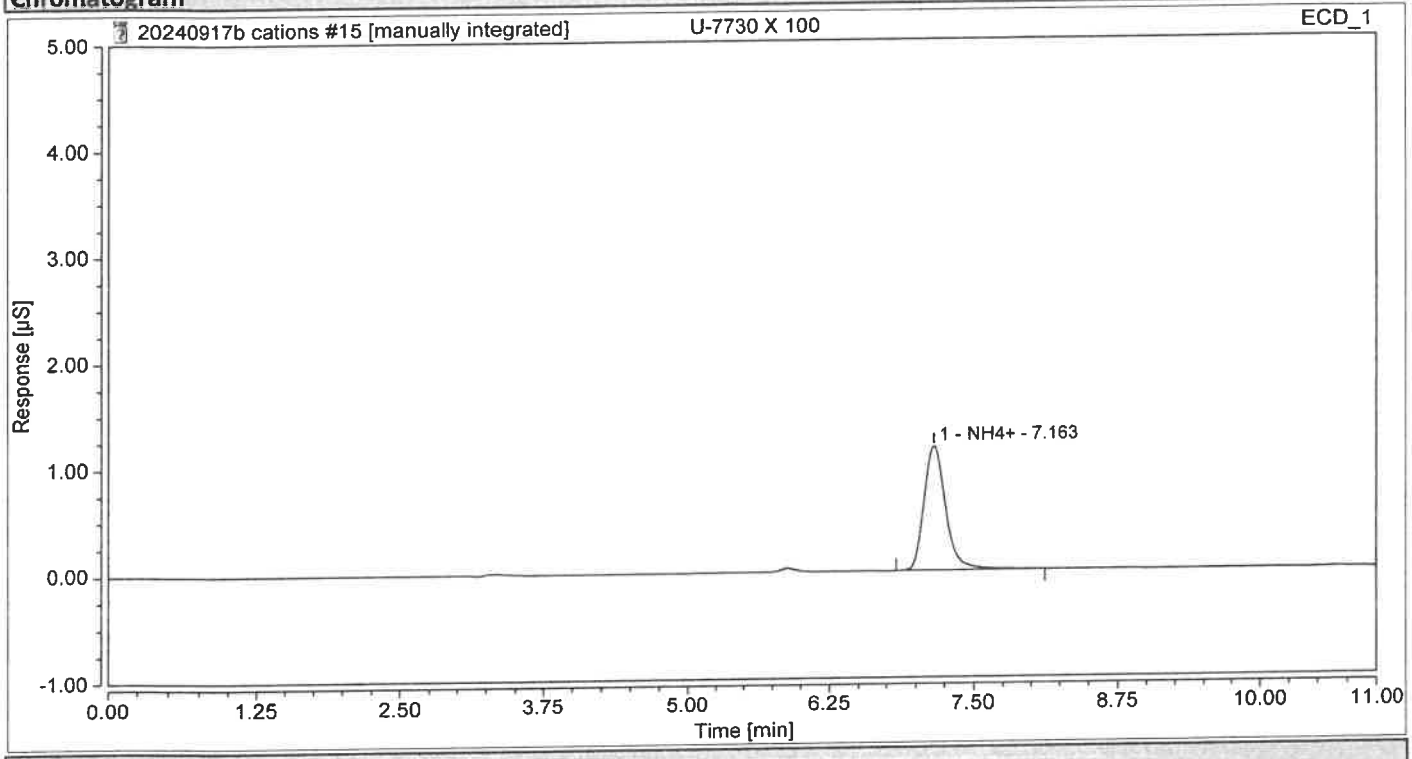
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		5.890	0.0058	0.036	2.24	2.96	n.a.
2	NH4+	7.163	0.2519	1.163	96.95	96.57	0.4993
3		8.593	0.0010	0.002	0.40	0.17	n.a.
4		10.657	0.0011	0.004	0.40	0.30	n.a.
Total:			**0.260**	**1.205**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7730 X 100**	*Run Time (min):*	**11.00**
Vial Number:	**GB5**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 19:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

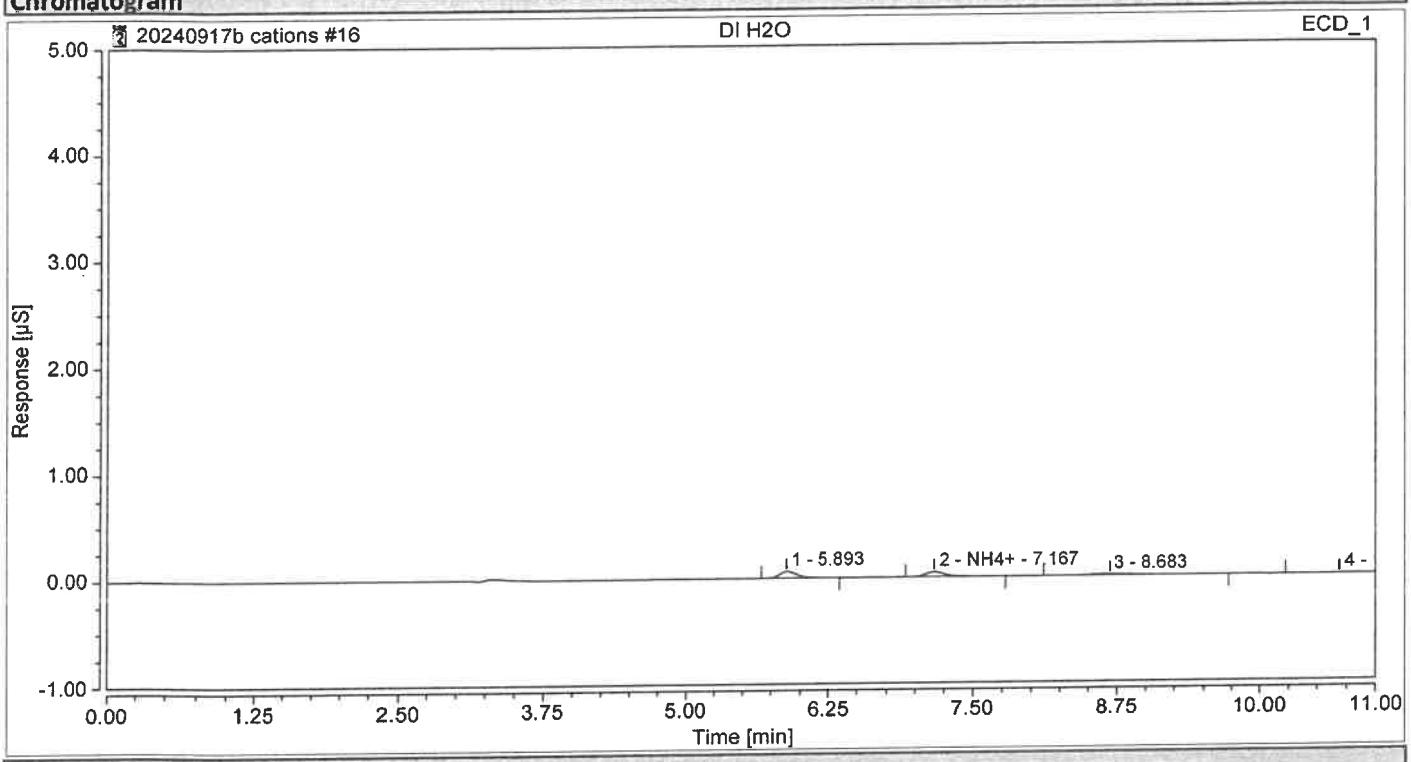
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	7.163	0.2567	1.166	100.00	100.00	0.5027
Total:			**0.257**	**1.166**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**11.00**
Vial Number:	**GB4**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 19:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

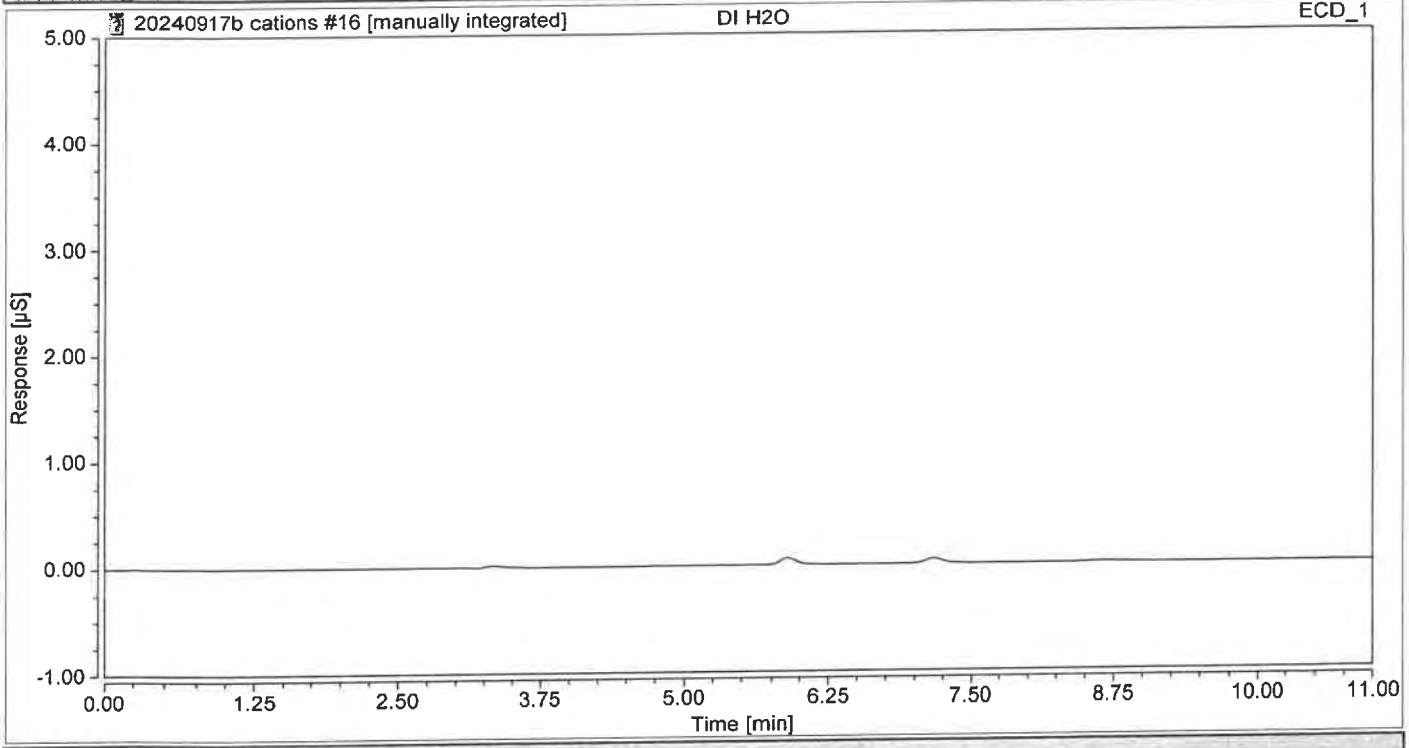
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	5.893	0.0106	0.063	43.30	52.60	n.a.
2		7.167	0.0087	0 045	35.60	37.43	n.a.
3		8.683	0.0044	0.009	18.06	7.76	n.a.
4		10.693	0.0007	0.003	3.04	2.21	n.a.
Total:			**0.025**	**0.120**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**11.00**
Vial Number:	**GB4**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 19:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

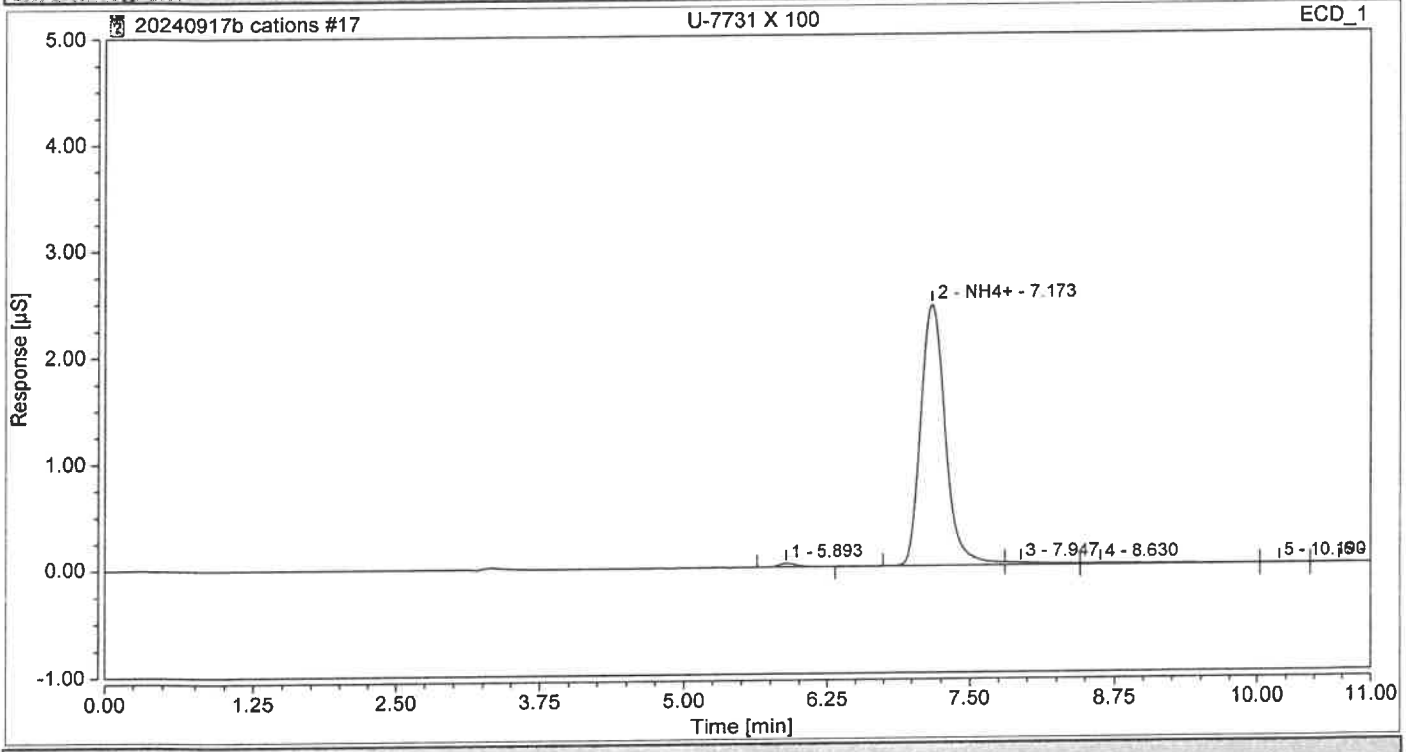
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7731 X 100**	*Run Time (min):*	**11.00**
Vial Number:	**GB6**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 19:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

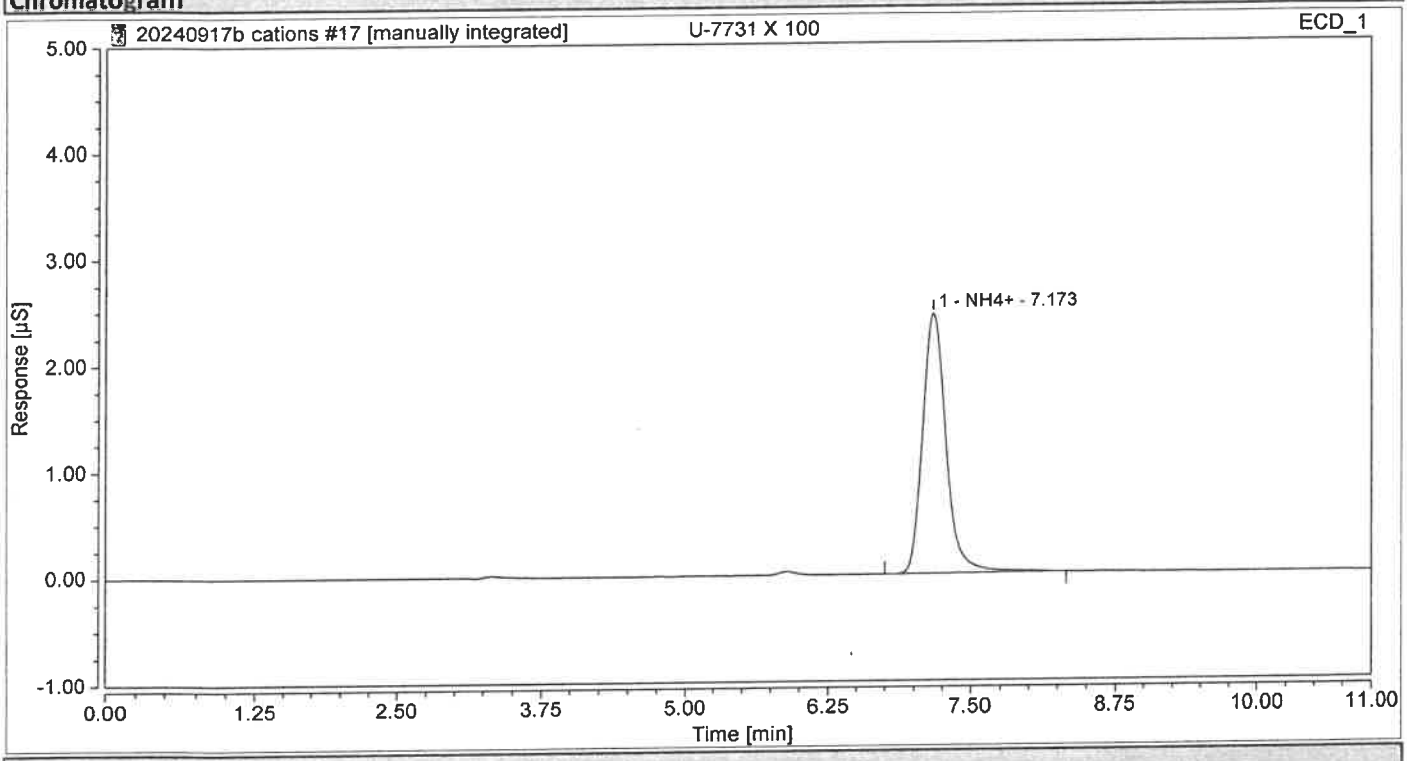
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		5.893	0.0059	0.035	0.94	1.38	n.a.
2	NH4+	7.173	0.5961	2.454	95.37	97.06	1.3274
3		7.947	0.0112	0.023	1.79	0.92	n.a.
4		8.630	0.0103	0.011	1.64	0.45	n.a.
5		10.190	0.0009	0.003	0.15	0.11	n.a.
6		10.720	0.0007	0.002	0.11	0.08	n.a.
Total:			**0.625**	**2.528**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7731 X 100**	*Run Time (min):*	**11.00**
Vial Number:	**GB6**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 19:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

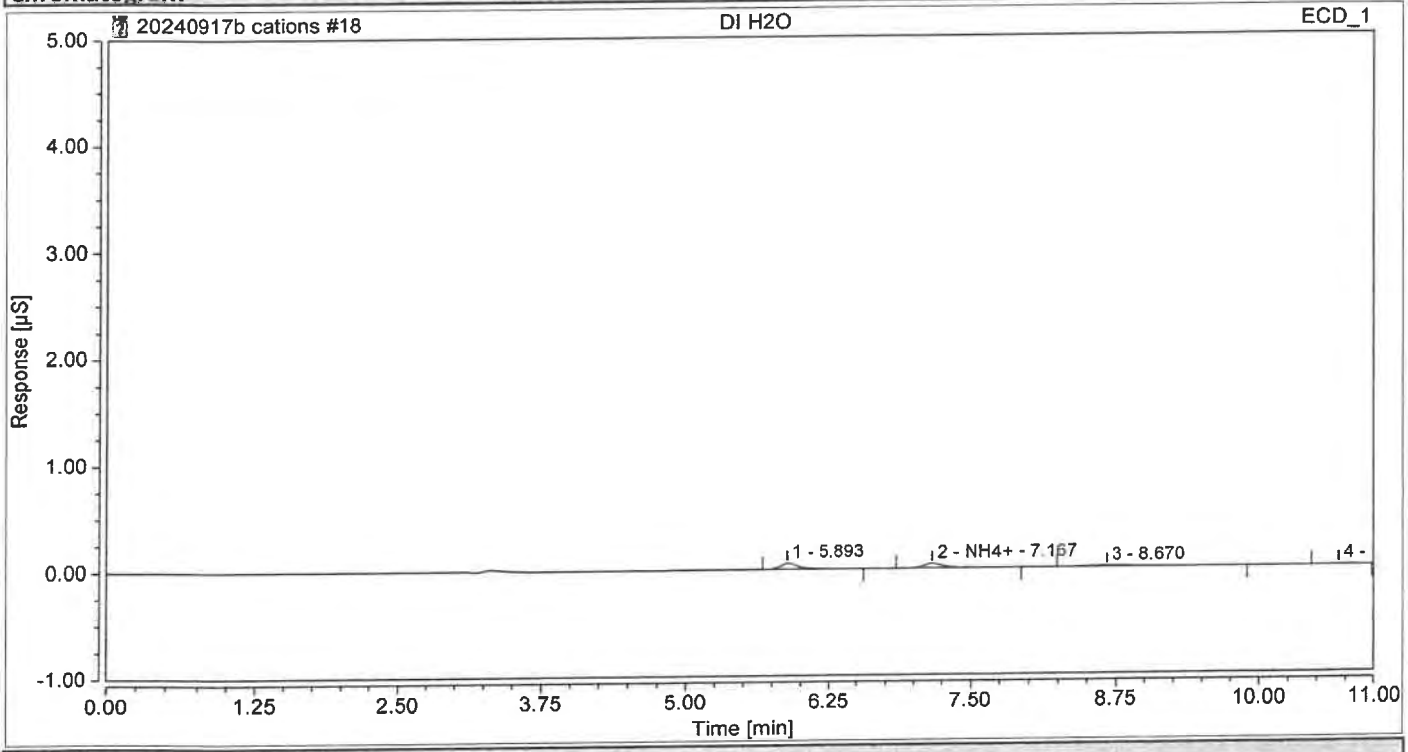
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	7.173	0.5968	2.451	100.00	100.00	1.3185
Total:			**0.597**	**2.451**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**11.00**
Vial Number:	**GB4**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 20:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

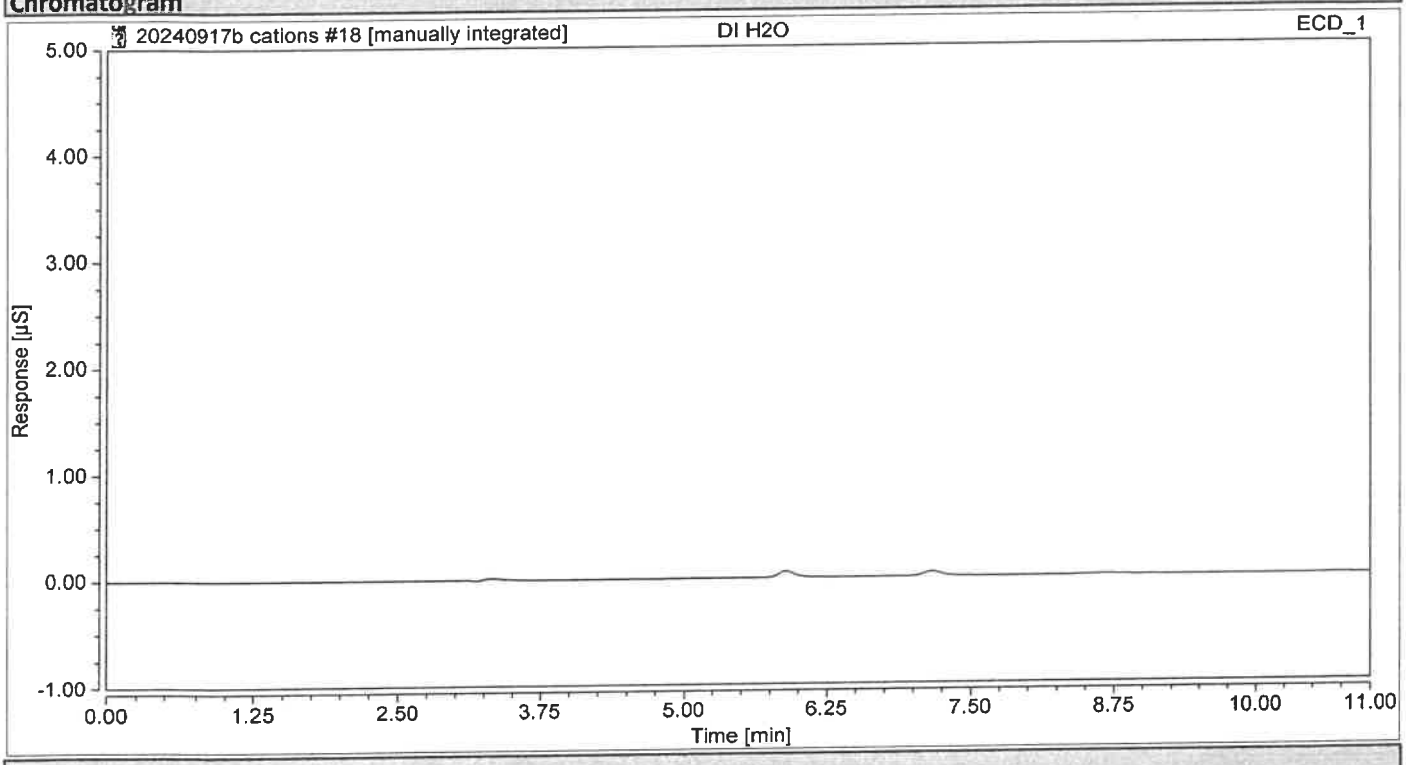
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		5.893	0.0102	0.058	43.54	52.26	n.a.
2	NH4+	7.167	0.0085	0.042	36.44	38.13	n.a.
3		8.670	0.0042	0.008	17.86	7.63	n.a.
4		10.697	0.0005	0.002	2.16	1.98	n.a.
Total:			**0.023**	**0.111**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**11.00**
Vial Number:	**GB4**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 20:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

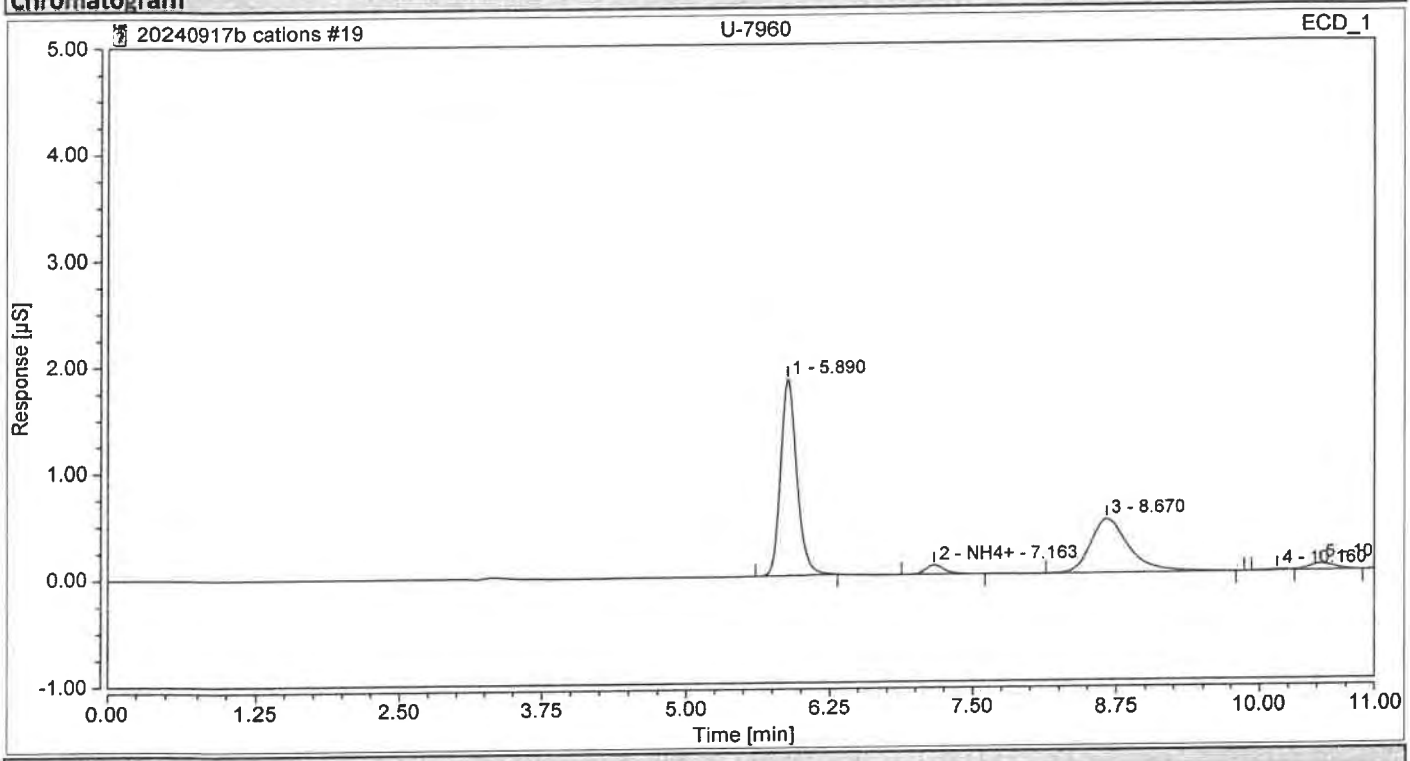
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7960**	*Run Time (min):*	**11.00**
Vial Number:	**GB7**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 20:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

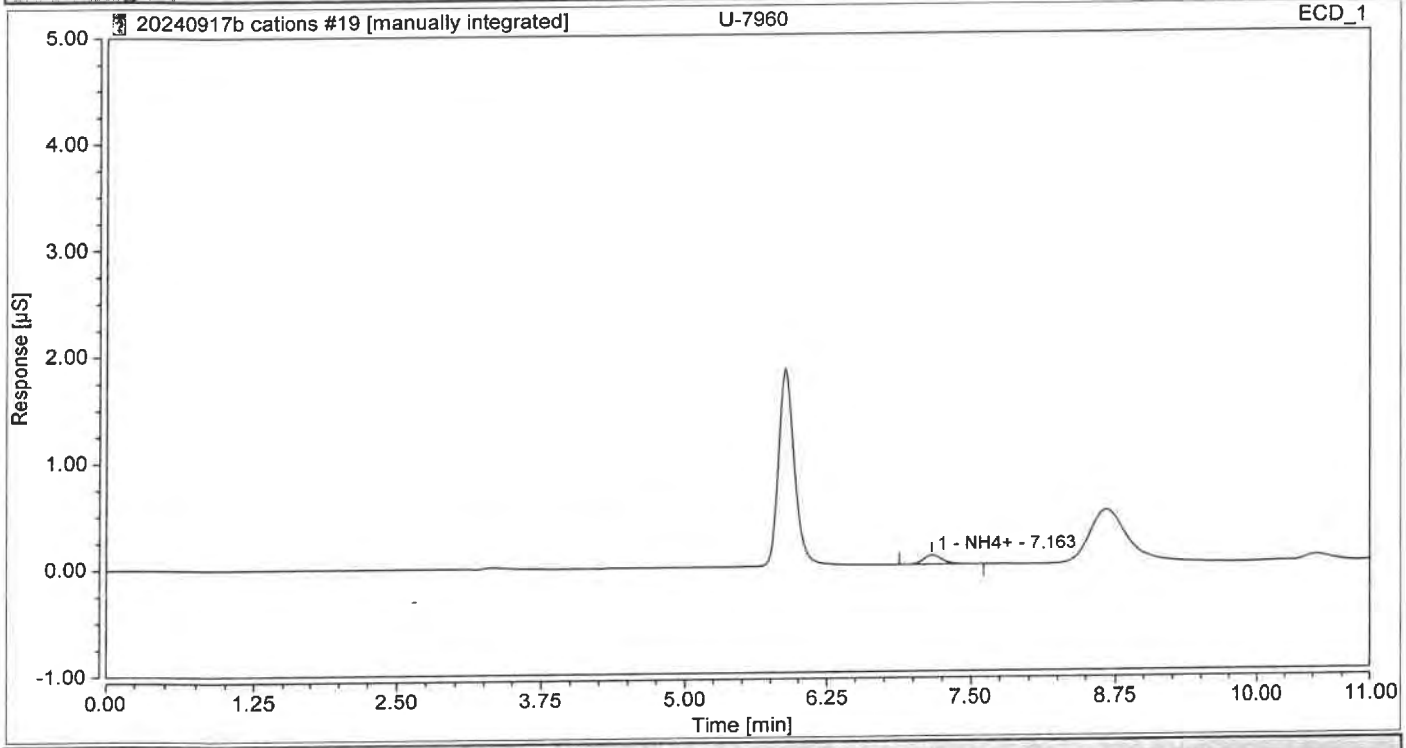
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		5.890	0.3022	1.846	56.82	73.86	n.a.
2	NH4+	7.163	0.0166	0.087	3.11	3.47	n.a.
3		8.670	0.1949	0.504	36.64	20.17	n.a.
4		10.160	0.0006	0.003	0.11	0.13	n.a.
5		10.530	0.0176	0.060	3.31	2.38	n.a.
Total:			**0.532**	**2.500**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7960**	*Run Time (min):*	**11.00**
Vial Number:	**GB7**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 20:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

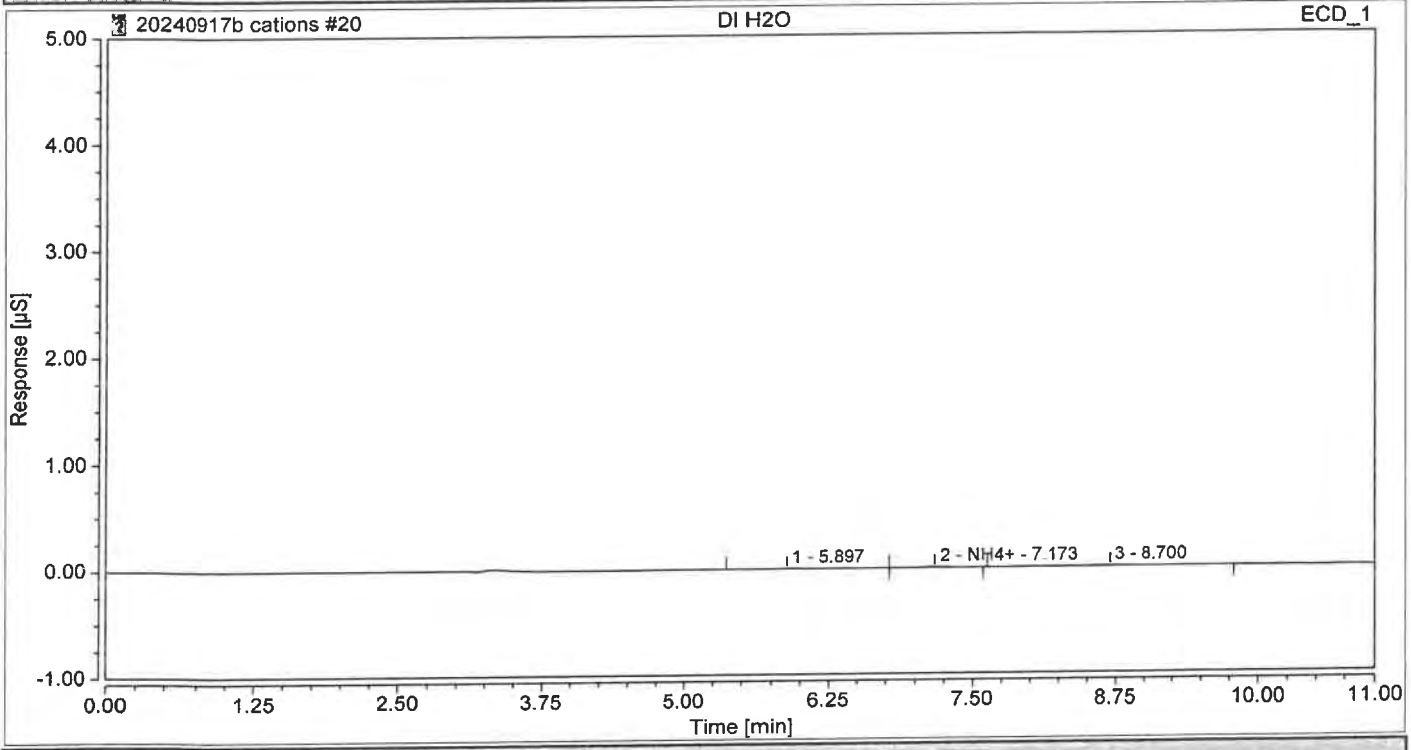
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	7.163	0.0166	0.087	100.00	100.00	n.a.
Total:			**0.017**	**0.087**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**11.00**
Vial Number:	**GB8**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 20:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

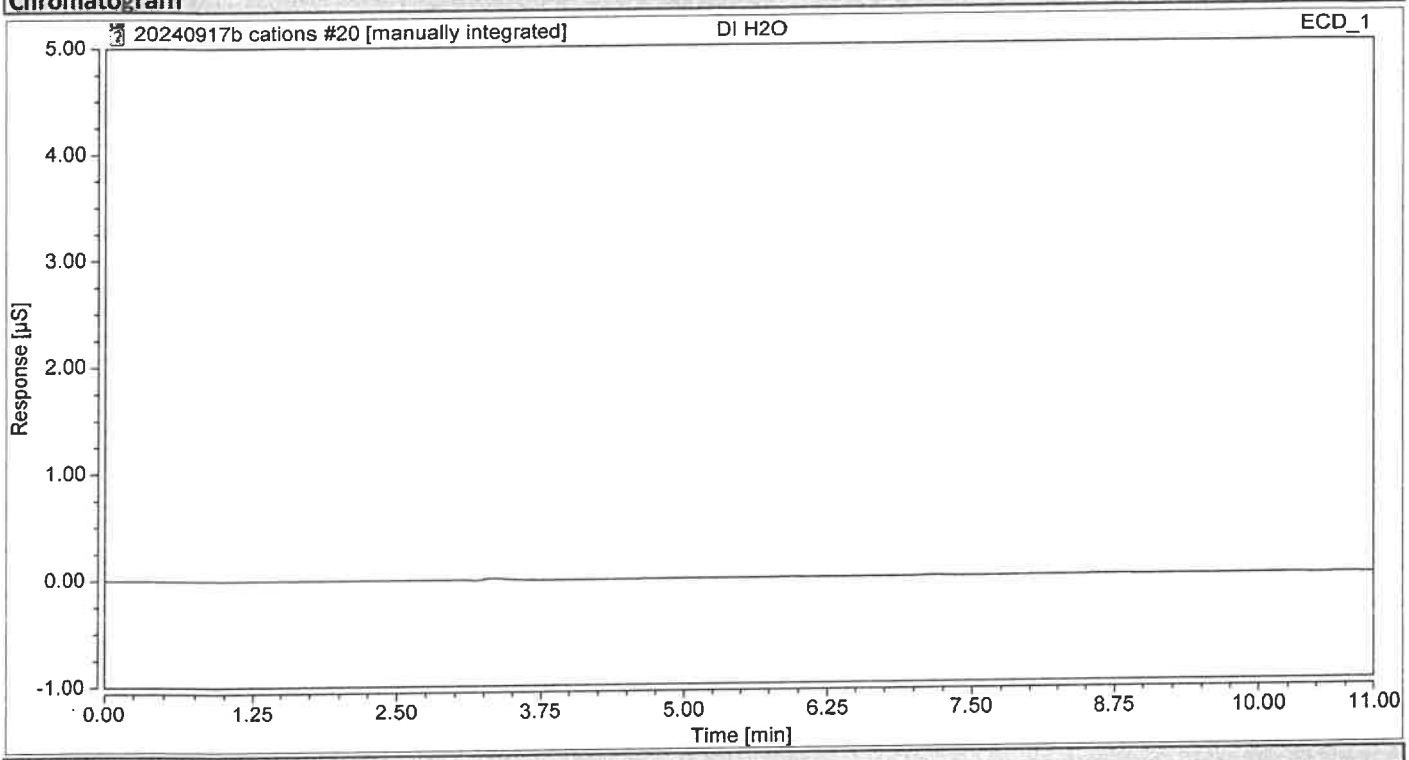
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		5.897	0.0013	0.003	19.50	20.96	n.a.
2	NH4+	7.173	0.0015	0.007	22.29	45.97	n.a.
3		8.700	0.0038	0.005	58.21	33.08	n.a.
Total:			**0.007**	**0.015**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**11.00**
Vial Number:	**GB8**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 20:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

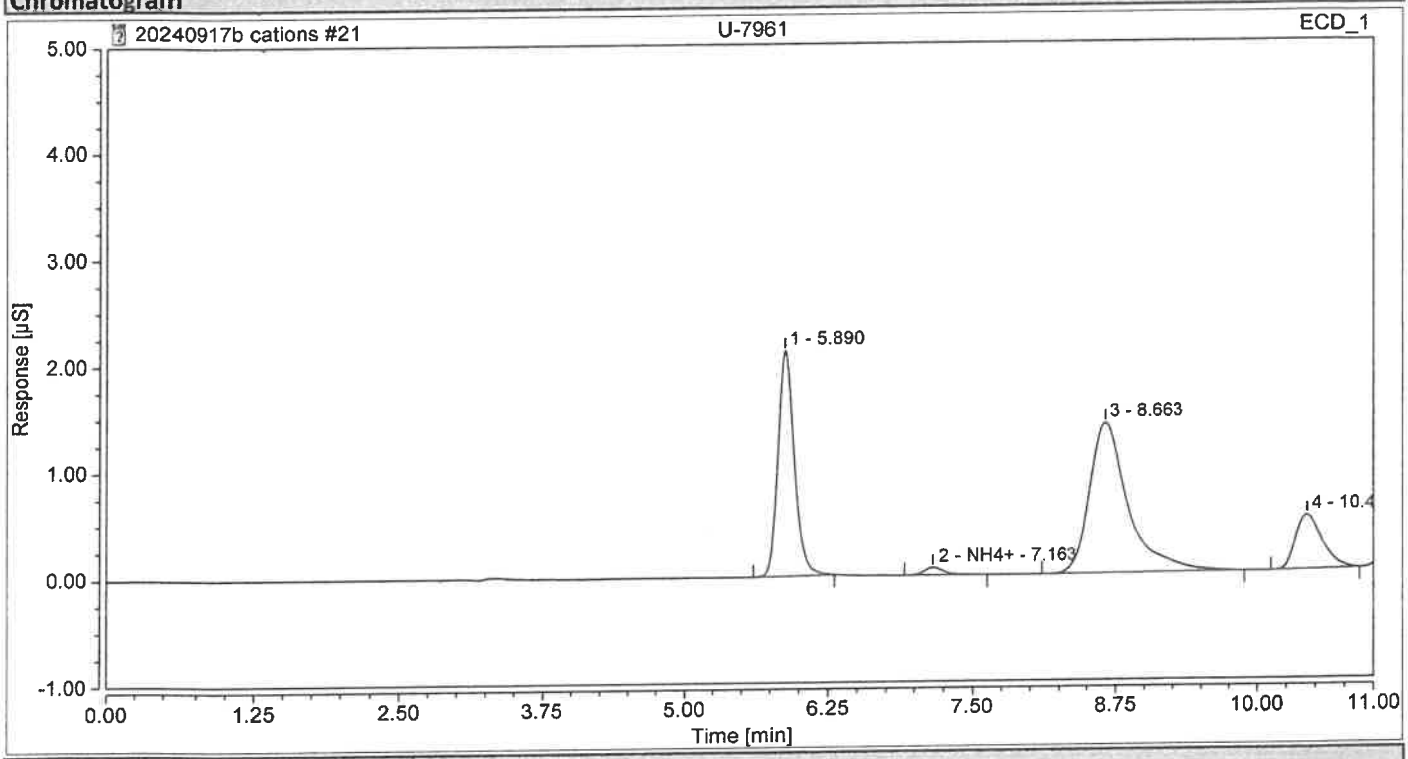
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7961**	*Run Time (min):*	**11.00**
Vial Number:	**GC1**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 20:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

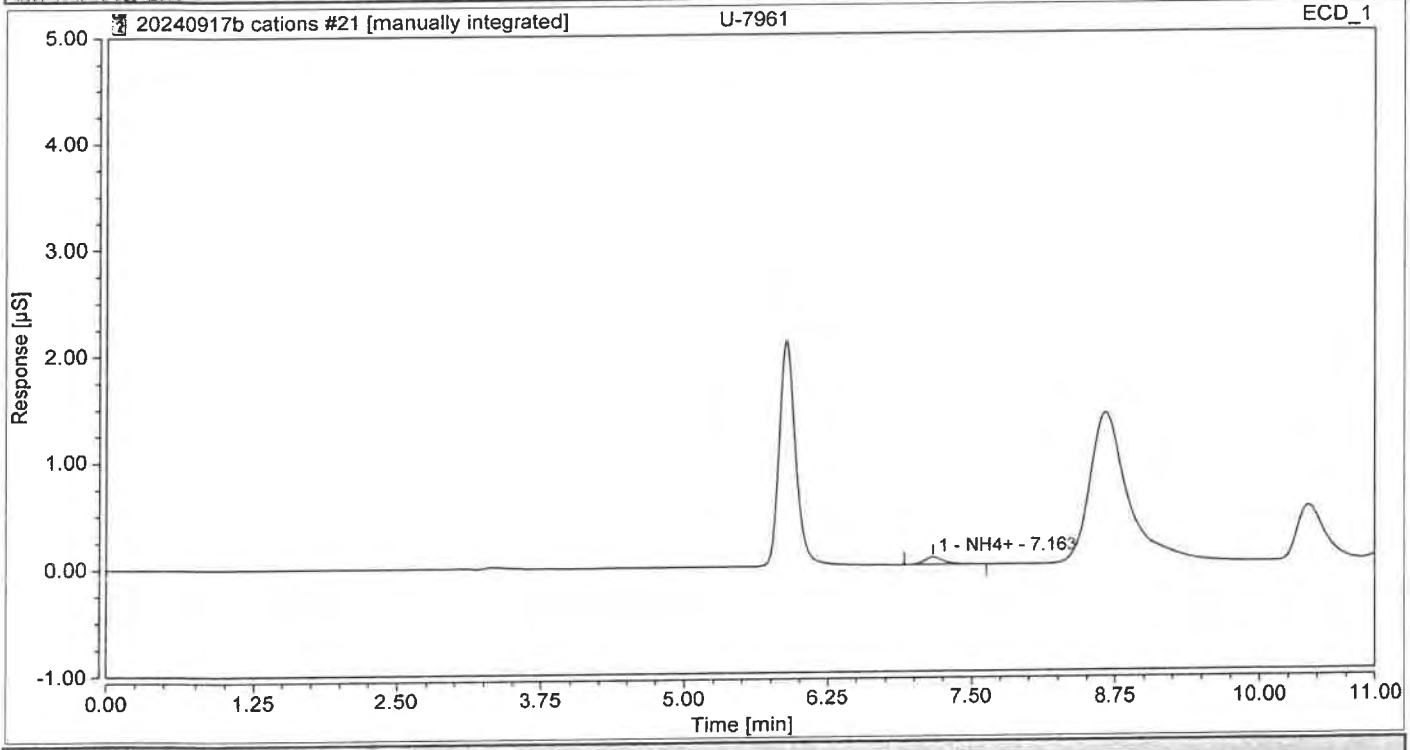
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	5.890	0.3462	2.115	33.03	51.54	n.a.
2		7.163	0.0132	0.070	1.26	1.70	n.a.
3		8.663	0.5541	1.411	52.88	34.37	n.a.
4		10.427	0.1344	0.508	12.83	12.39	n.a.
Total:			**1.048**	**4.104**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7961**	*Run Time (min):*	**11.00**
Vial Number:	**GC1**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 20:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

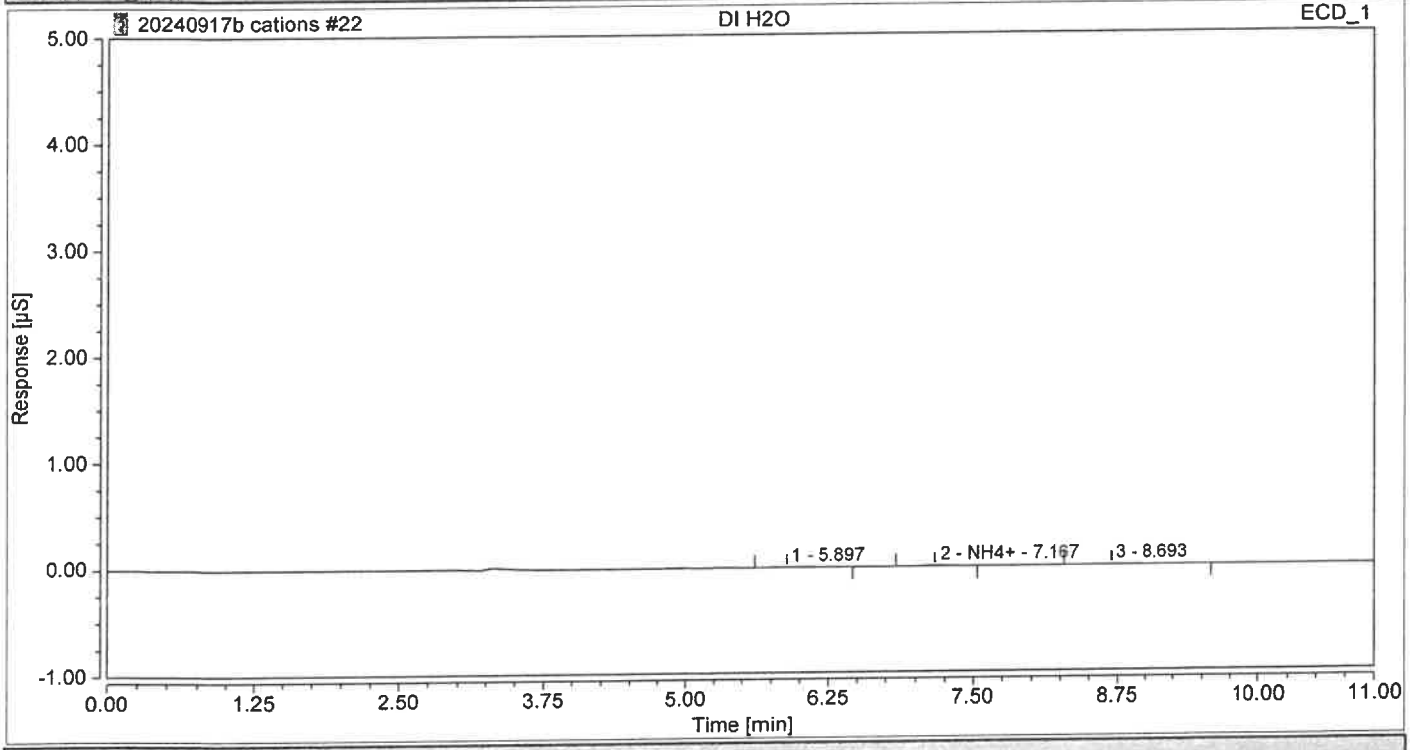
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	7.163	0.0132	0.070	100.00	100.00	n.a.
Total:			**0.013**	**0.070**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**11.00**
Vial Number:	**GB8**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 21:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

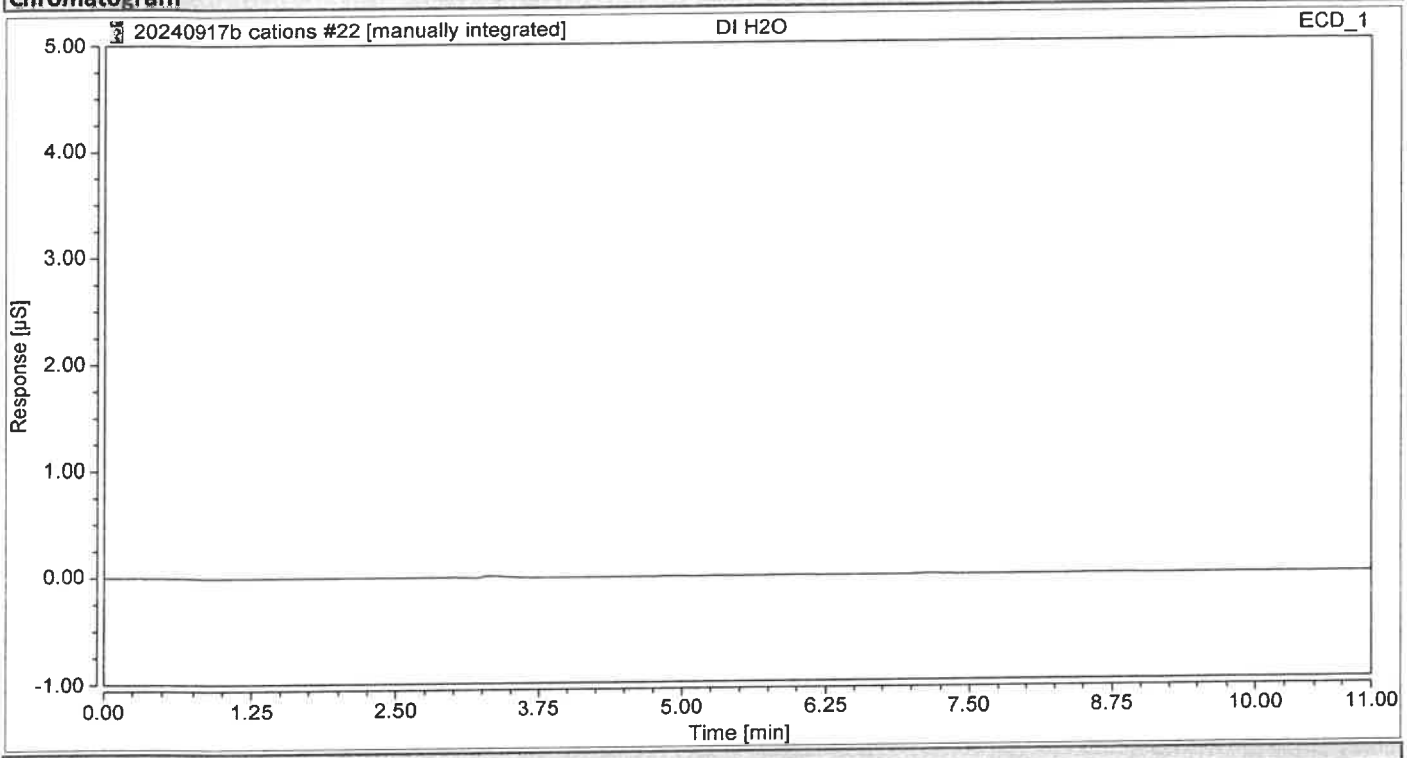
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		5.897	0.0008	0.003	20.02	23.66	n.a.
2	NH4+	7.167	0.0013	0.007	35.25	50.50	n.a.
3		8.693	0.0017	0.003	44.73	25.83	n.a.
Total:			**0.004**	**0.013**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**11.00**
Vial Number:	**GB8**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 21:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

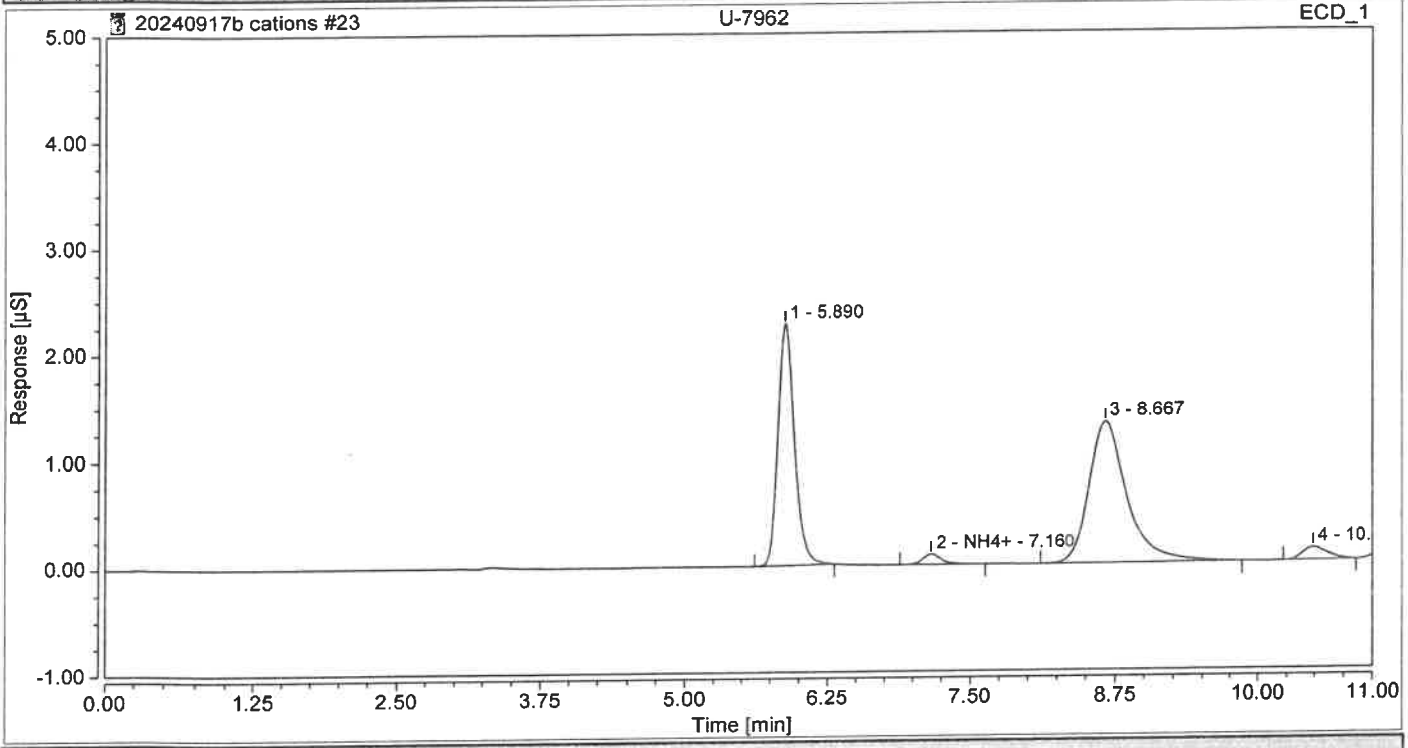
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7962**	*Run Time (min):*	**11.00**
Vial Number:	**GC2**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 21:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

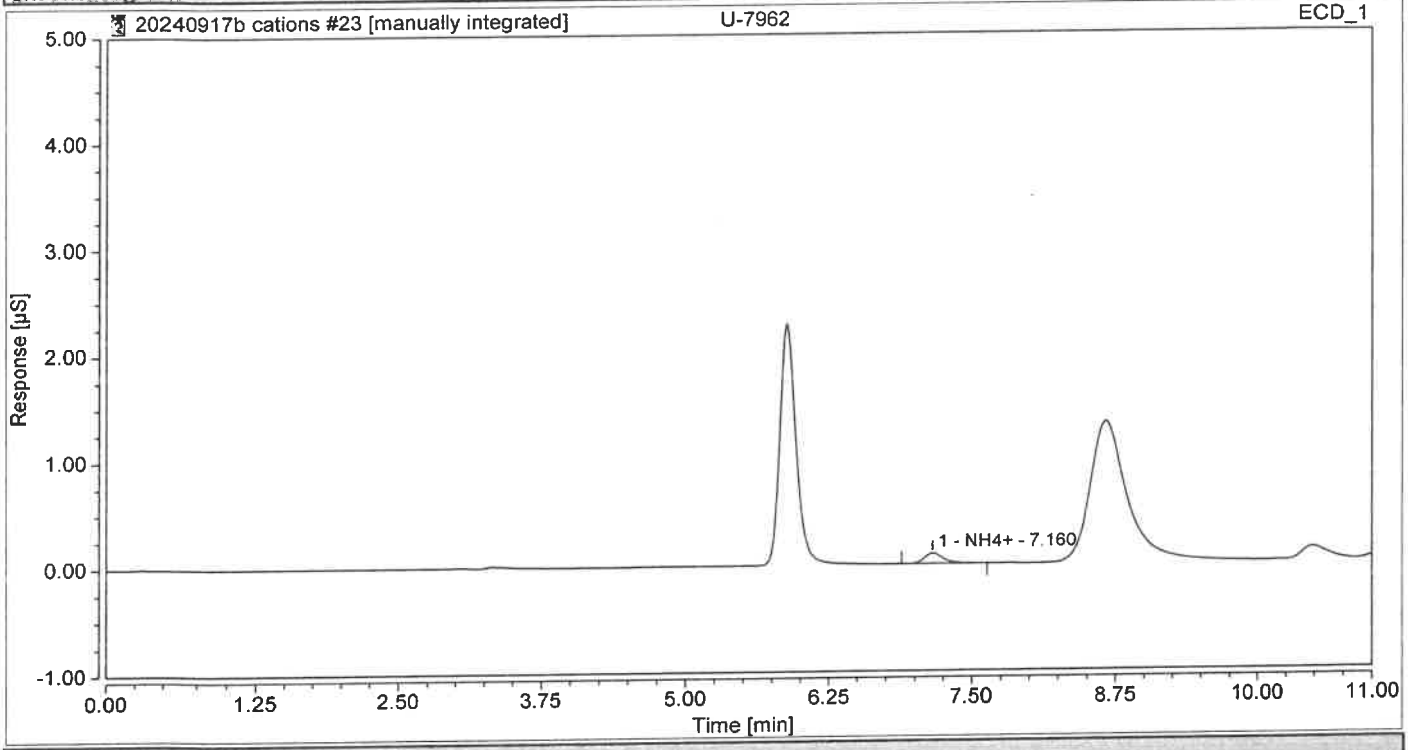
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		5.890	0.3701	2.266	40.21	59.61	n.a.
2	NH4+	7.160	0.0186	0.097	2.02	2.56	n.a.
3		8.667	0.5021	1.322	54.55	34.76	n.a.
4		10.490	0.0296	0.117	3.21	3.07	n.a.
Total:			**0.920**	**3.802**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7962**	*Run Time (min):*	**11.00**
Vial Number:	**GC2**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 21:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

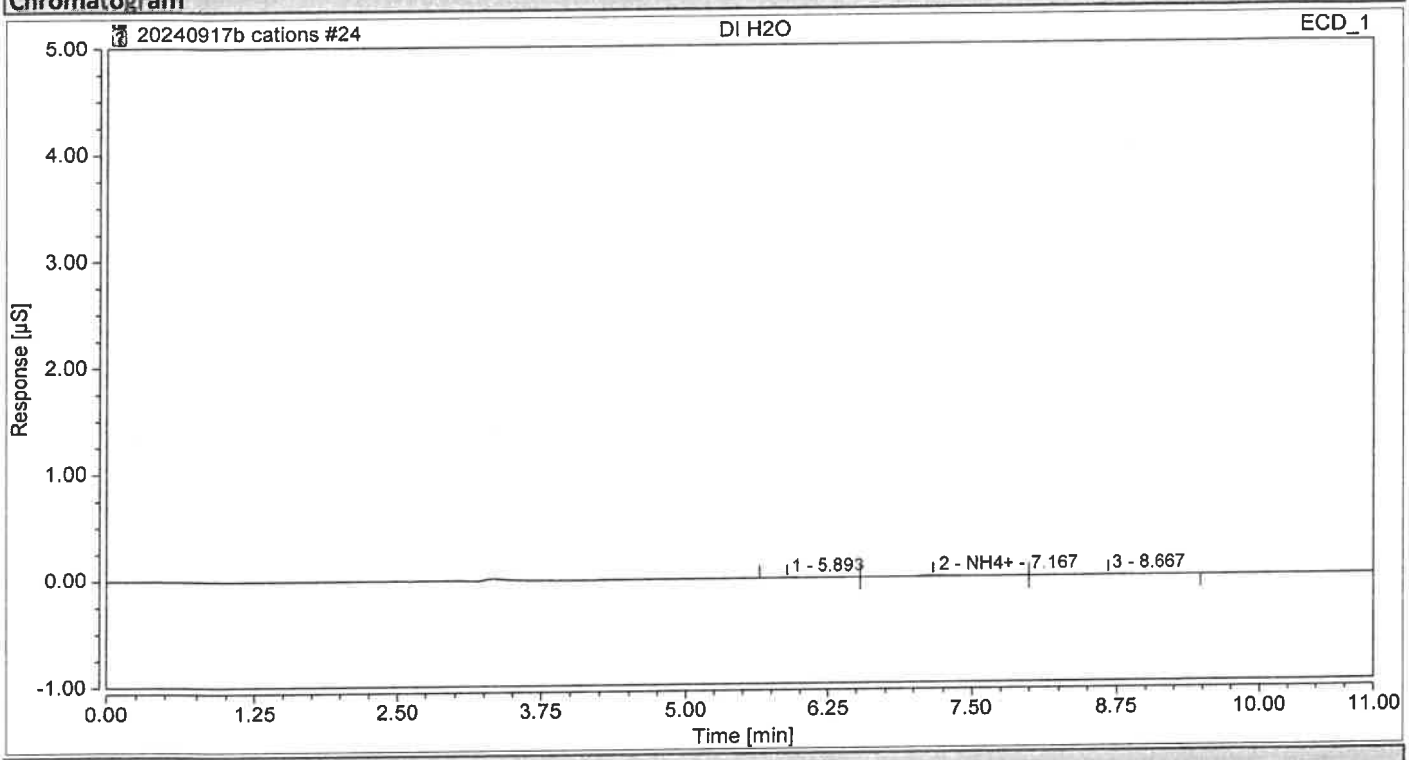
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	7.160	0.0186	0.097	100.00	100.00	n.a.
Total:			**0.019**	**0.097**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**11.00**
Vial Number:	**GB8**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 21:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

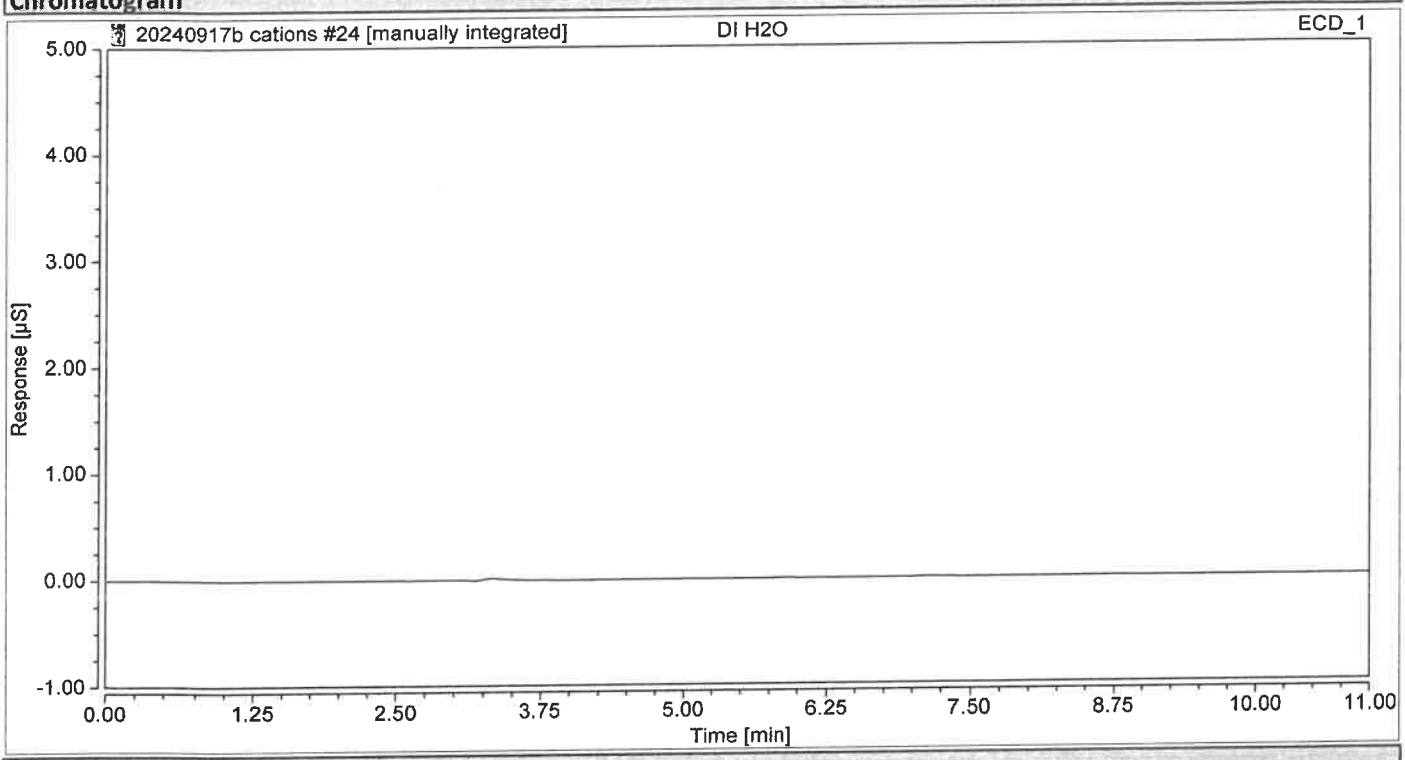
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		5.893	0.0009	0.003	15.12	19.23	n.a.
2	NH4+	7.167	0.0028	0.008	45.80	54.00	n.a.
3		8.667	0.0024	0.004	39.09	26.77	n.a.
Total:			**0.006**	**0.014**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**11.00**
Vial Number:	**GB8**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 21:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

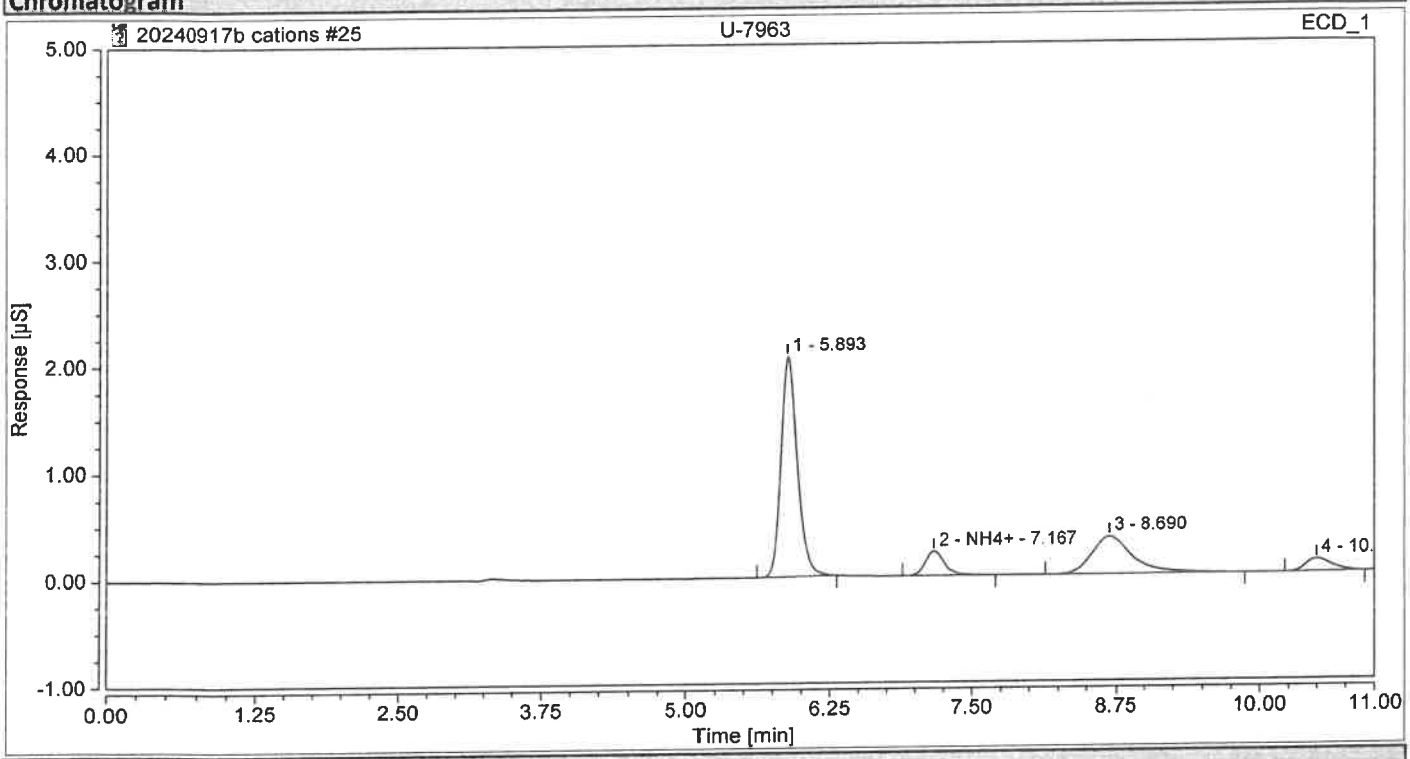
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7963**	*Run Time (min):*	**11.00**
Vial Number:	**GC3**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 21:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

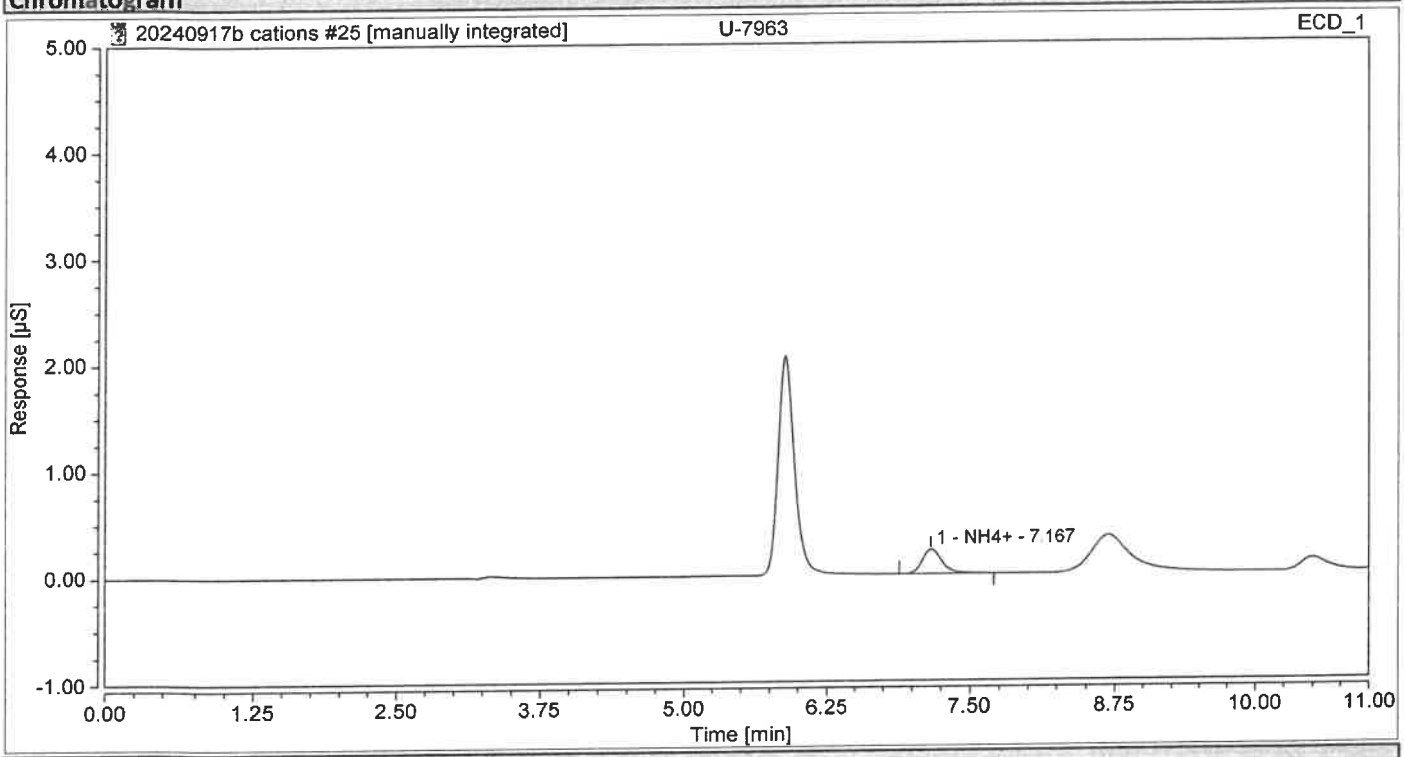
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		5.893	0.3365	2.057	60.55	74.73	n.a.
2	NH4+	7.167	0.0445	0.228	8.01	8.27	0.0439
3		8.690	0.1436	0.350	25.83	12.71	n.a.
4		10.500	0.0312	0.118	5.61	4.29	n.a.
Total:			**0.556**	**2.753**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7963**	*Run Time (min):*	**11.00**
Vial Number:	**GC3**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 21:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

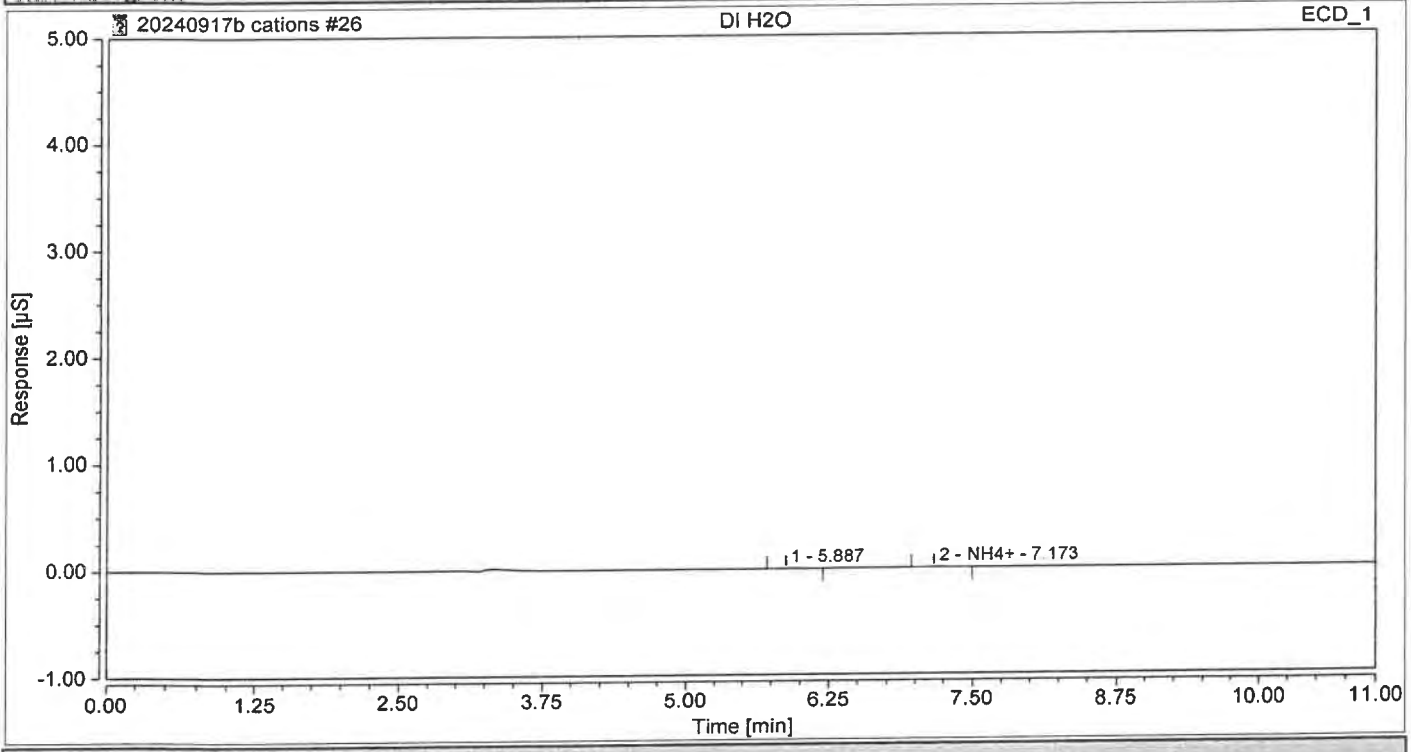
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	7.167	0.0445	0.228	100.00	100.00	0.0365
Total:			**0.045**	**0.228**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**11.00**
Vial Number:	**GC4**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 22:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

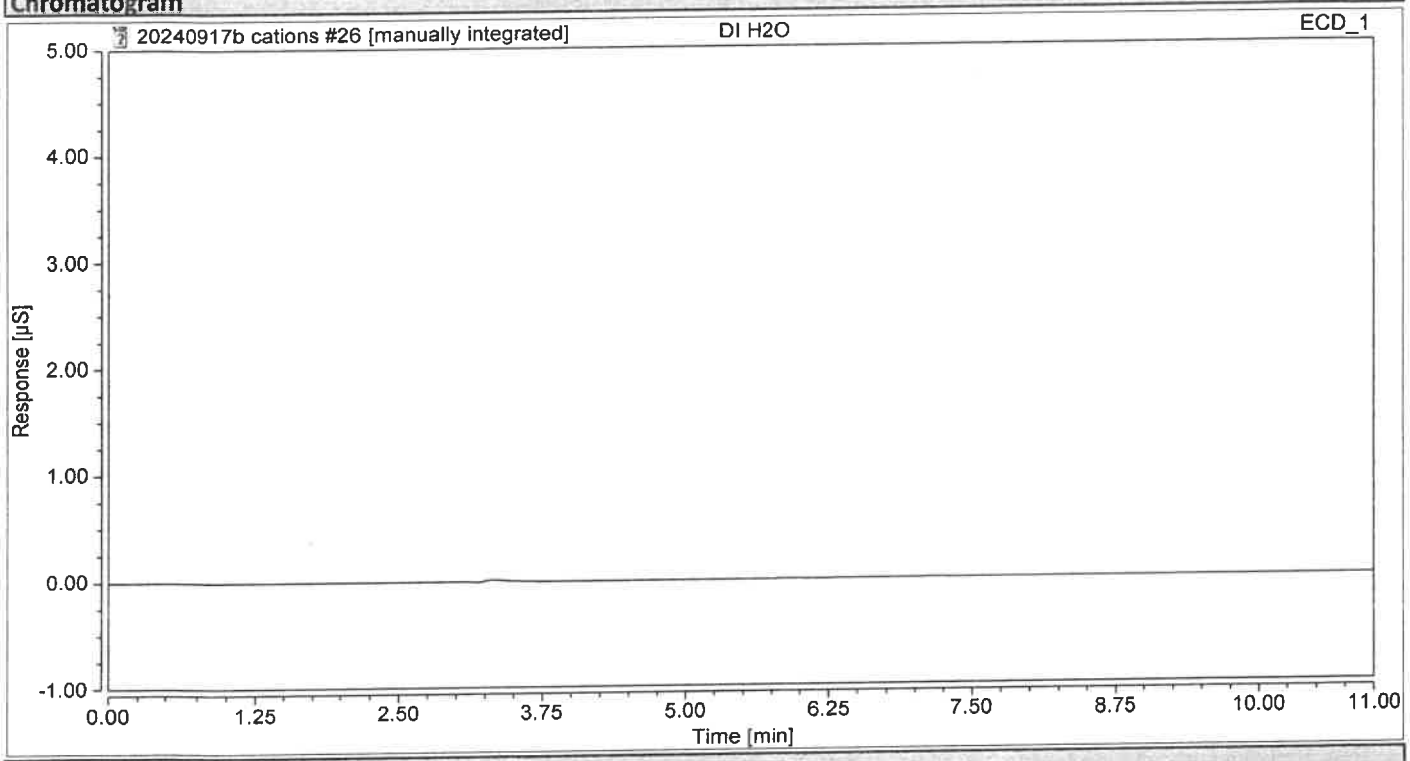
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		5.887	0.0003	0.002	23.89	24.66	n.a.
2	NH4+	7.173	0.0010	0.006	76.11	75.34	n.a.
Total:			**0.001**	**0.007**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**11.00**
Vial Number:	**GC4**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 22:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

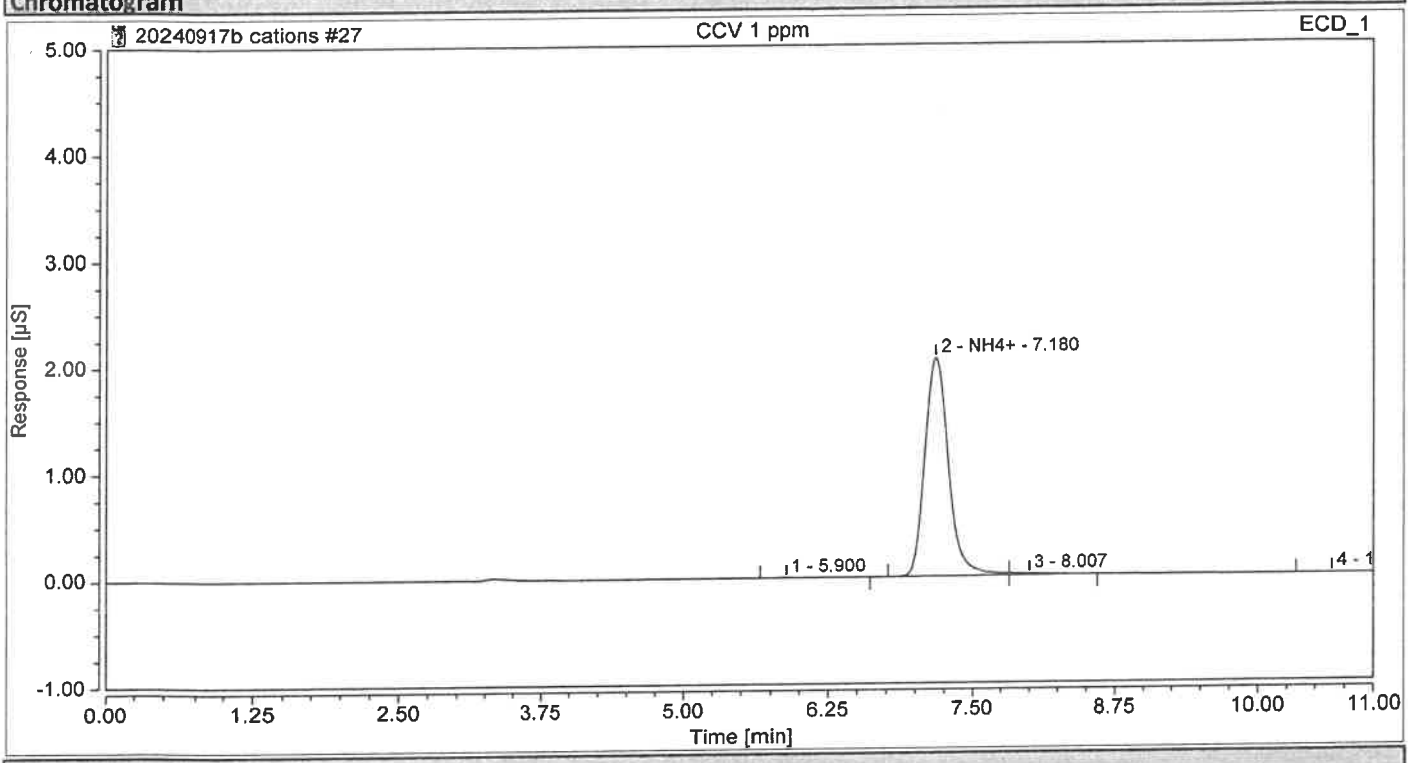
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV 1 ppm**	*Run Time (min):*	**11.00**
Vial Number:	**GC5**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 22:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

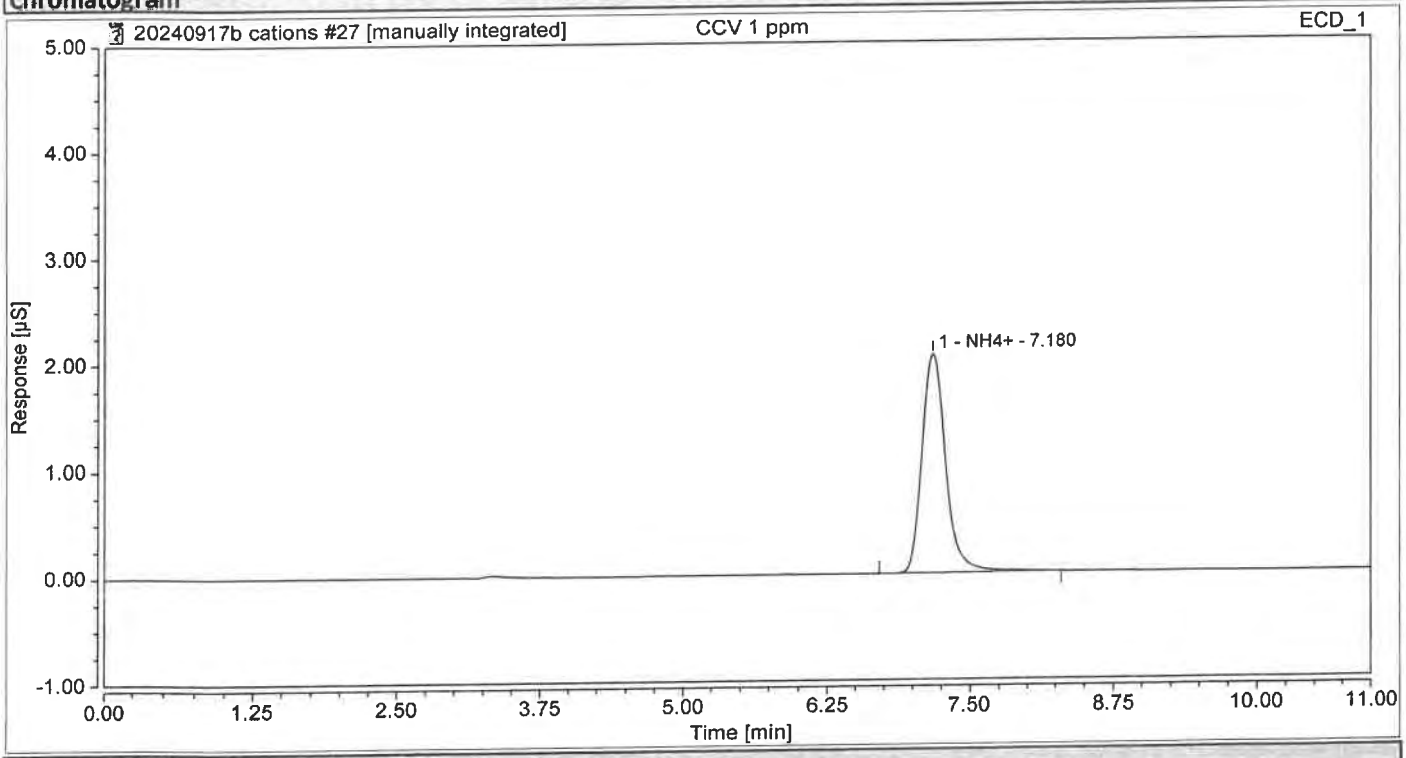
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		5.900	0.0006	0.003	0.12	0.13	n.a.
2	NH4+	7.180	0.4925	2.056	98.69	99.18	1.0672
3		8.007	0.0054	0.012	1.09	0.60	n.a.
4		10.647	0.0005	0.002	0.10	0.08	n.a.
Total:			**0.499**	**2.073**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV 1 ppm**	*Run Time (min):*	**11.00**
Vial Number:	**GC5**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 22:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	7.180	0.4941	2.054	100.00	100.00	1.0618
Total:			**0.494**	**2.054**	**100.00**	**100.00**	

106.189 ppb

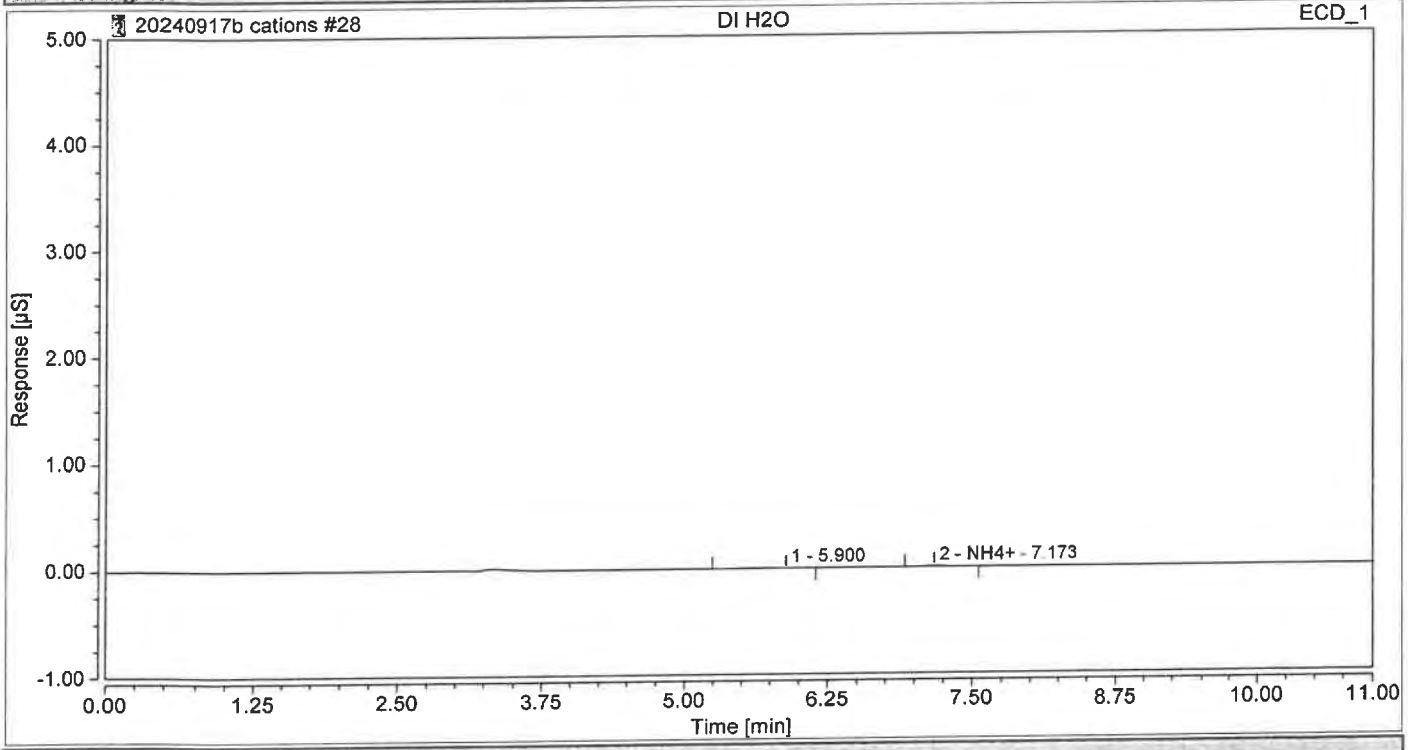
GAO
9/18/24

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**11.00**
Vial Number:	**GC4**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 22:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

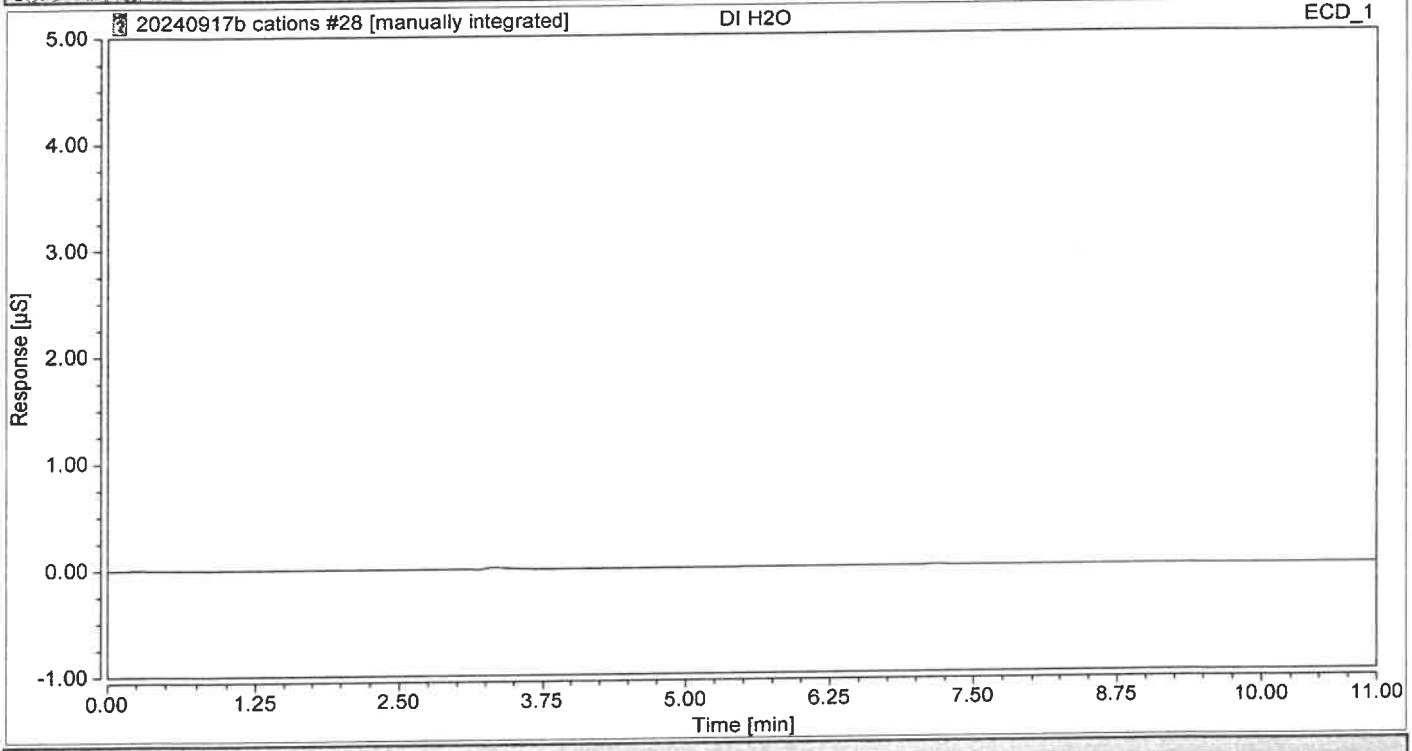
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		5.900	0.0006	0.002	33.47	23.16	n.a.
2	NH4+	7.173	0.0012	0.006	66.53	76.84	n.a.
Total:			**0.002**	**0.008**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**11.00**
Vial Number:	**GC4**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 22:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

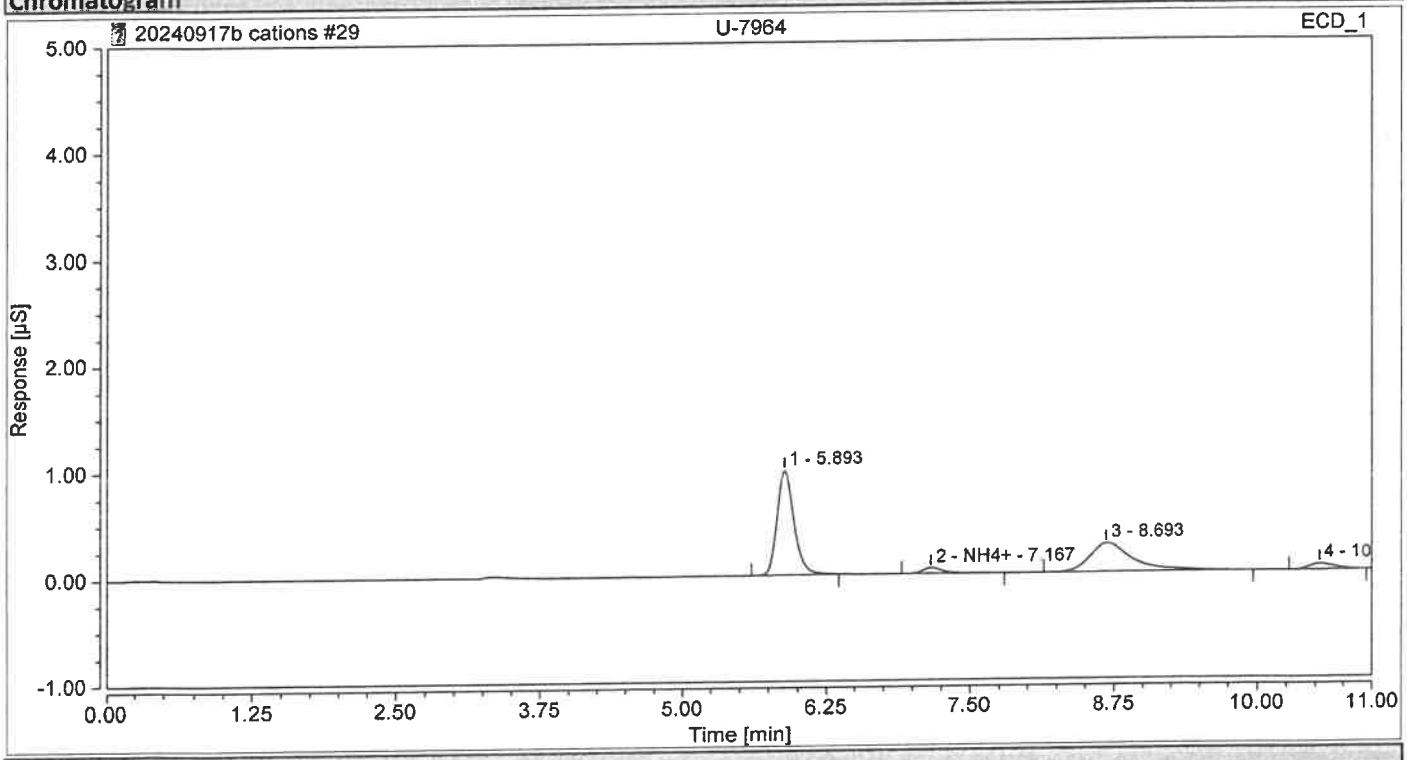
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7964**	*Run Time (min):*	**11.00**
Vial Number:	**GC6**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 22:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

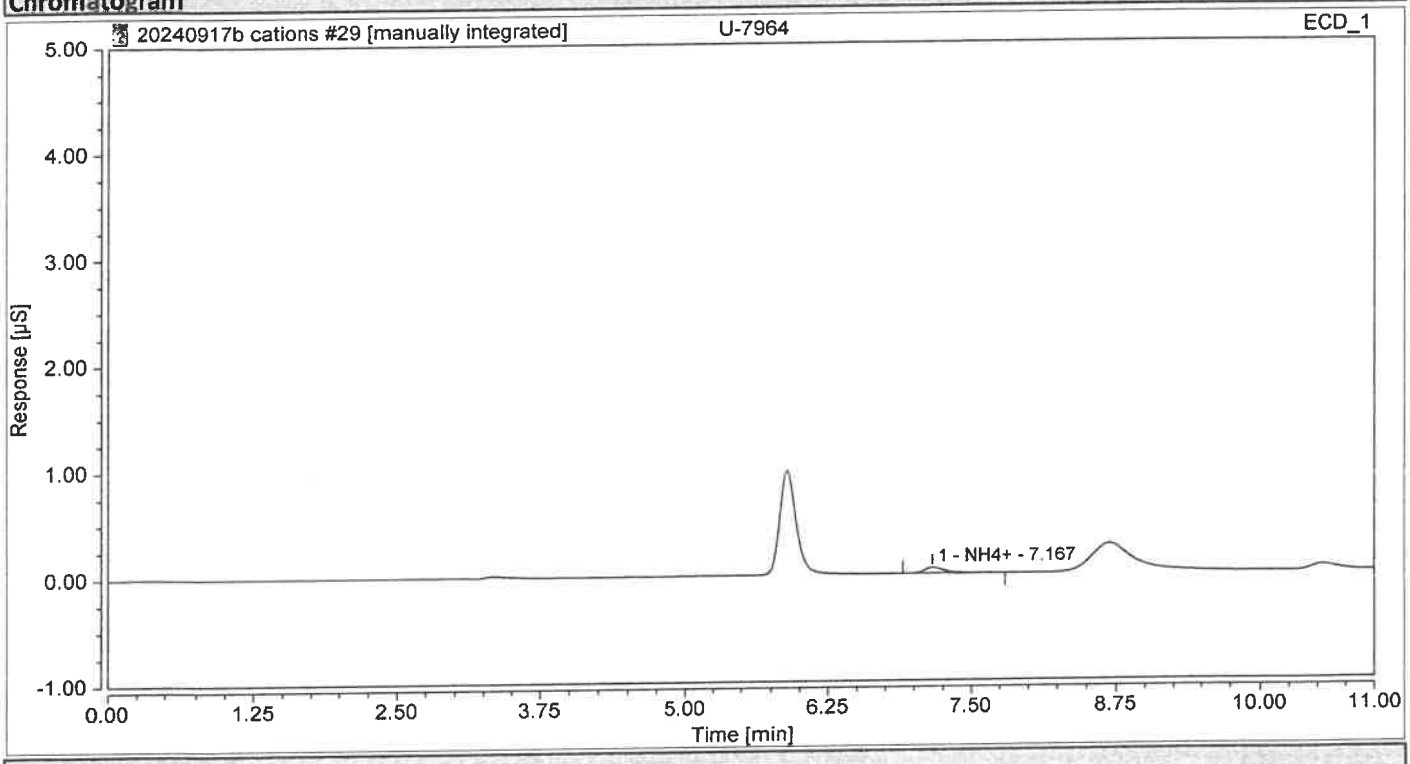
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	5.893	0.1621	0.981	53.72	72.36	n.a.
2		7.167	0.0107	0.054	3.53	3.99	n.a.
3		8.693	0.1149	0.267	38.07	19.72	n.a.
4		10.543	0.0141	0.053	4.68	3.92	n.a.
Total:			**0.302**	**1.356**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7964**	*Run Time (min):*	**11.00**
Vial Number:	**GC6**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 22:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

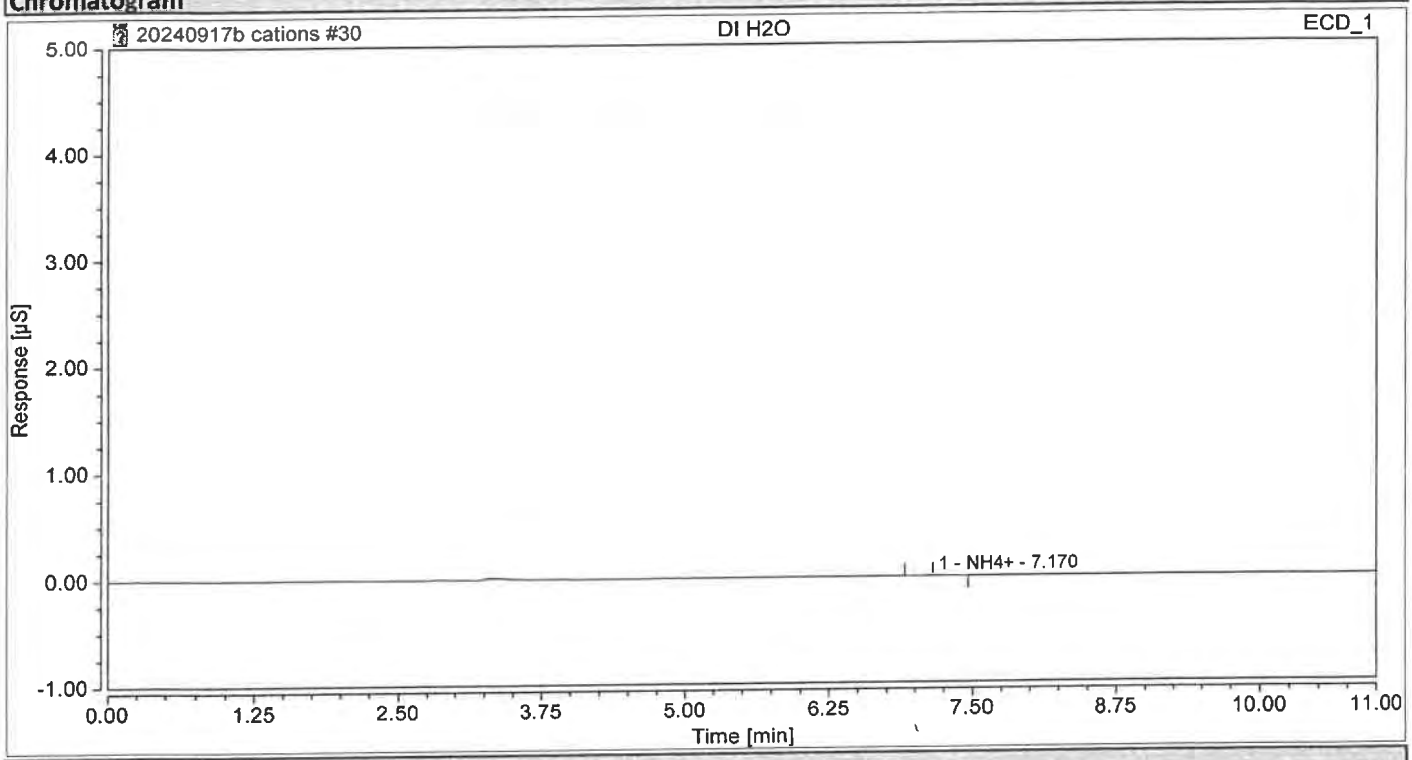
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	7.167	0.0107	0.054	100.00	100.00	n.a.
Total:			**0.011**	**0.054**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**11.00**
Vial Number:	**GC7**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 23:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

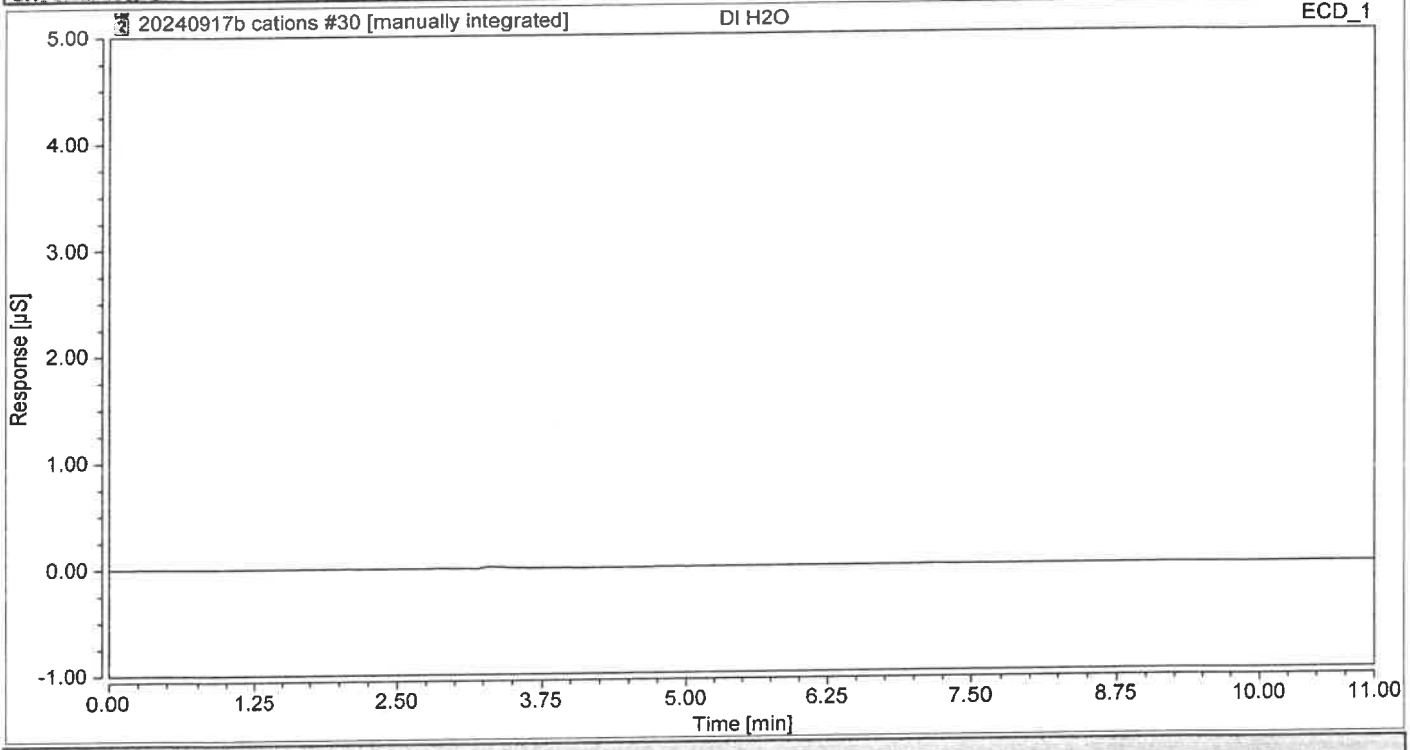
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	7.170	0.0009	0.005	100.00	100.00	n.a.
Total:			**0.001**	**0.005**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**11.00**
Vial Number:	**GC7**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 23:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

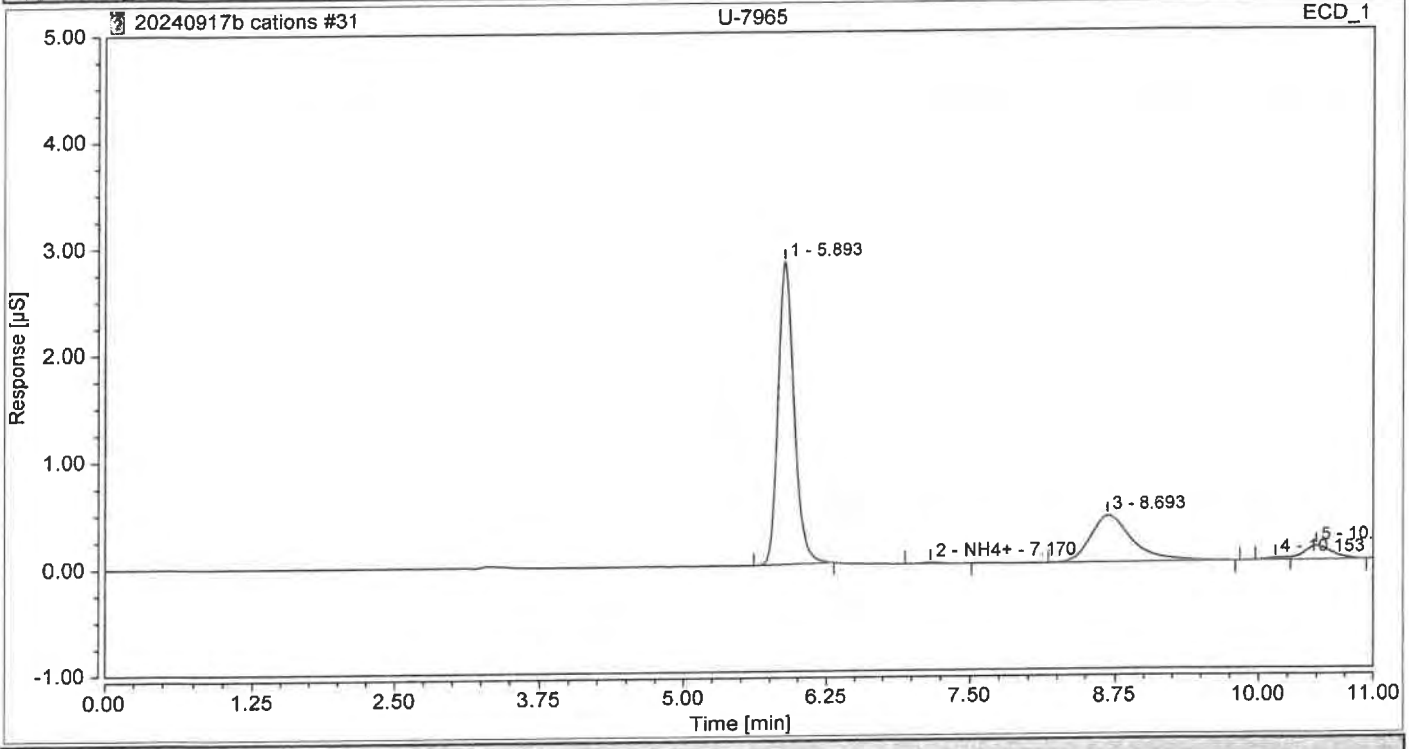
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7965**	*Run Time (min):*	**11.00**
Vial Number:	**GC8**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 23:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

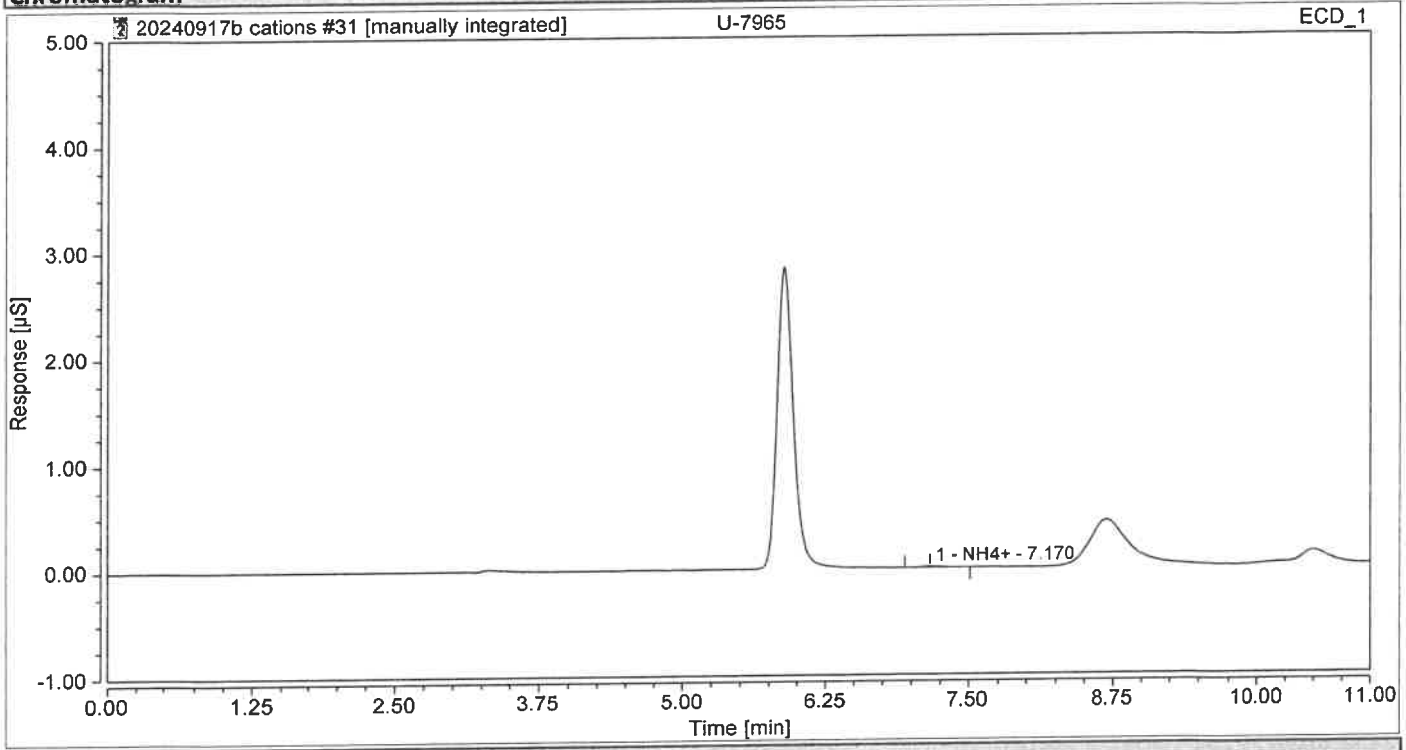
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	5.893	0.4644	2.833	67.78	83.20	n.a.
2		7.170	0.0016	0.009	0.24	0.26	n.a.
3		8.693	0.1784	0.434	26.04	12.73	n.a.
4		10.153	0.0006	0.004	0.09	0.11	n.a.
5		10.500	0.0401	0.126	5.86	3.70	n.a.
Total:			**0.685**	**3.405**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7965**	*Run Time (min):*	**11.00**
Vial Number:	**GC8**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 23:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

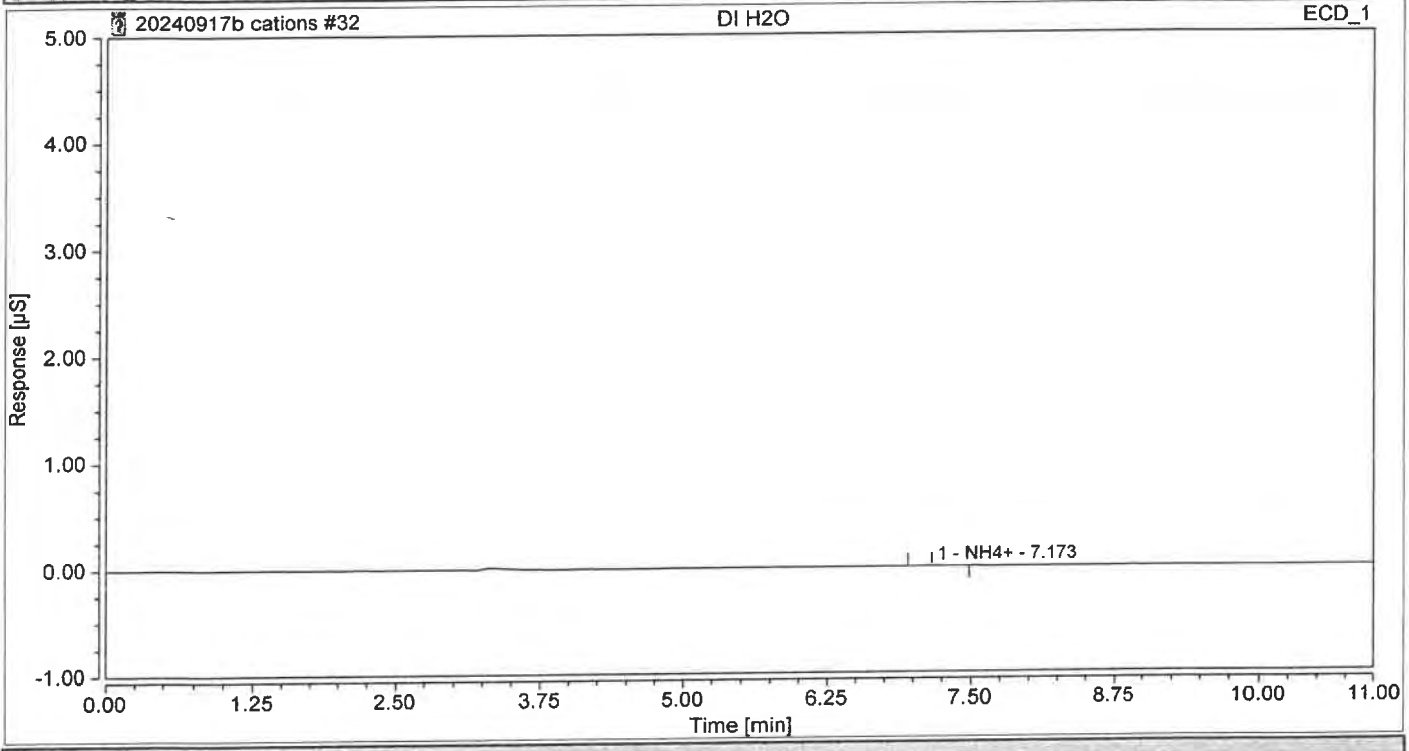
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	7.170	0.0016	0.009	100.00	100.00	n.a.
Total:			**0.002**	**0.009**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**11.00**
Vial Number:	**GC7**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 23:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

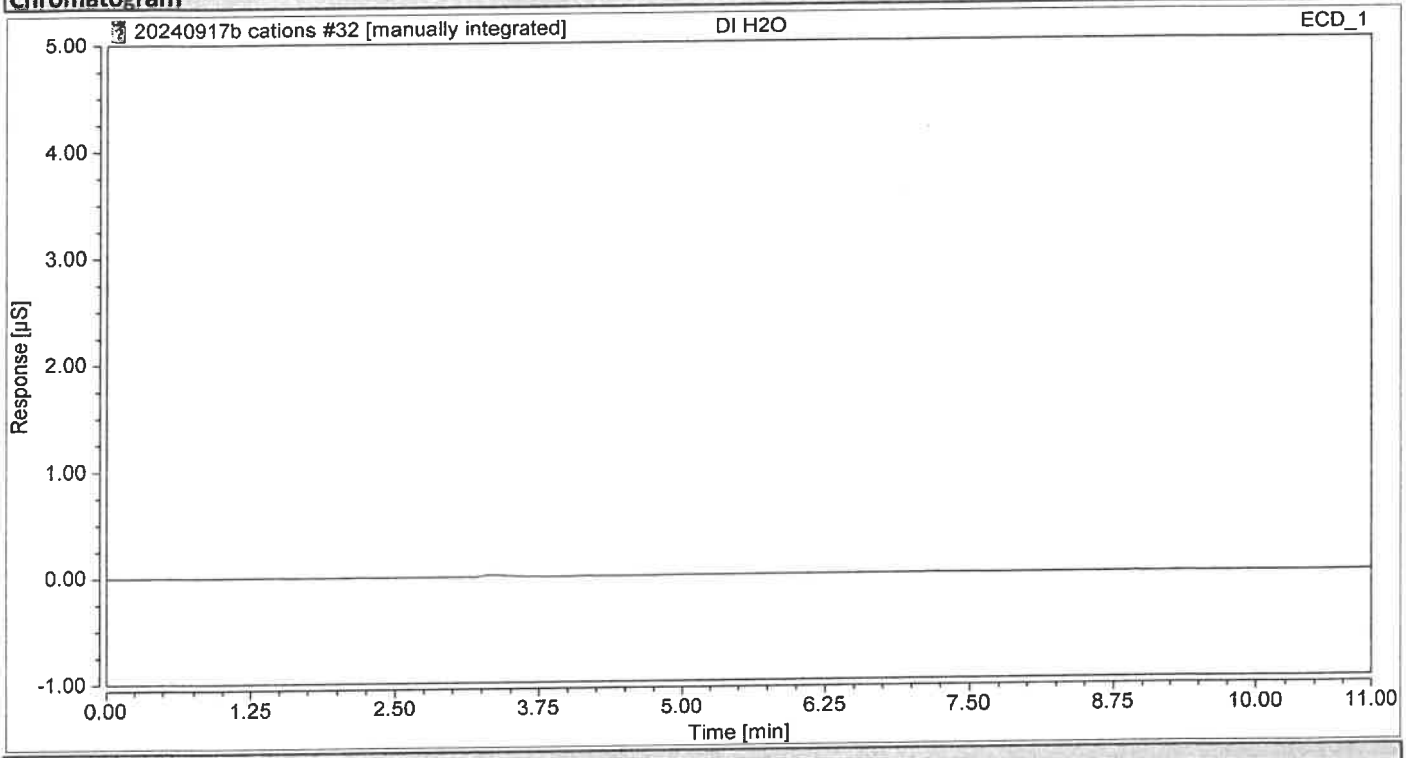
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	7.173	0.0009	0.005	100.00	100.00	n.a.
Total:			**0.001**	**0.005**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**11.00**
Vial Number:	**GC7**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 23:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

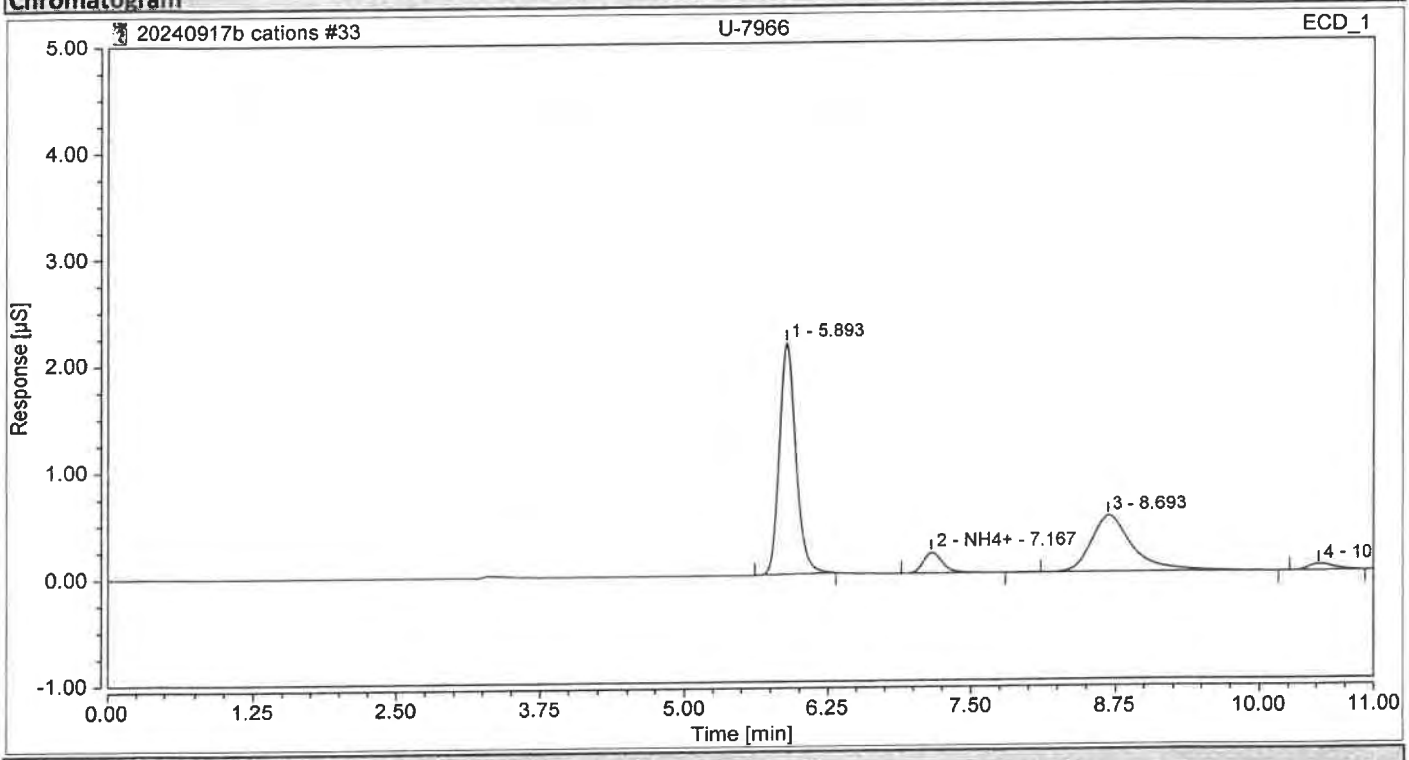
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7966**	*Run Time (min):*	**11.00**
Vial Number:	**GD1**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 23:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

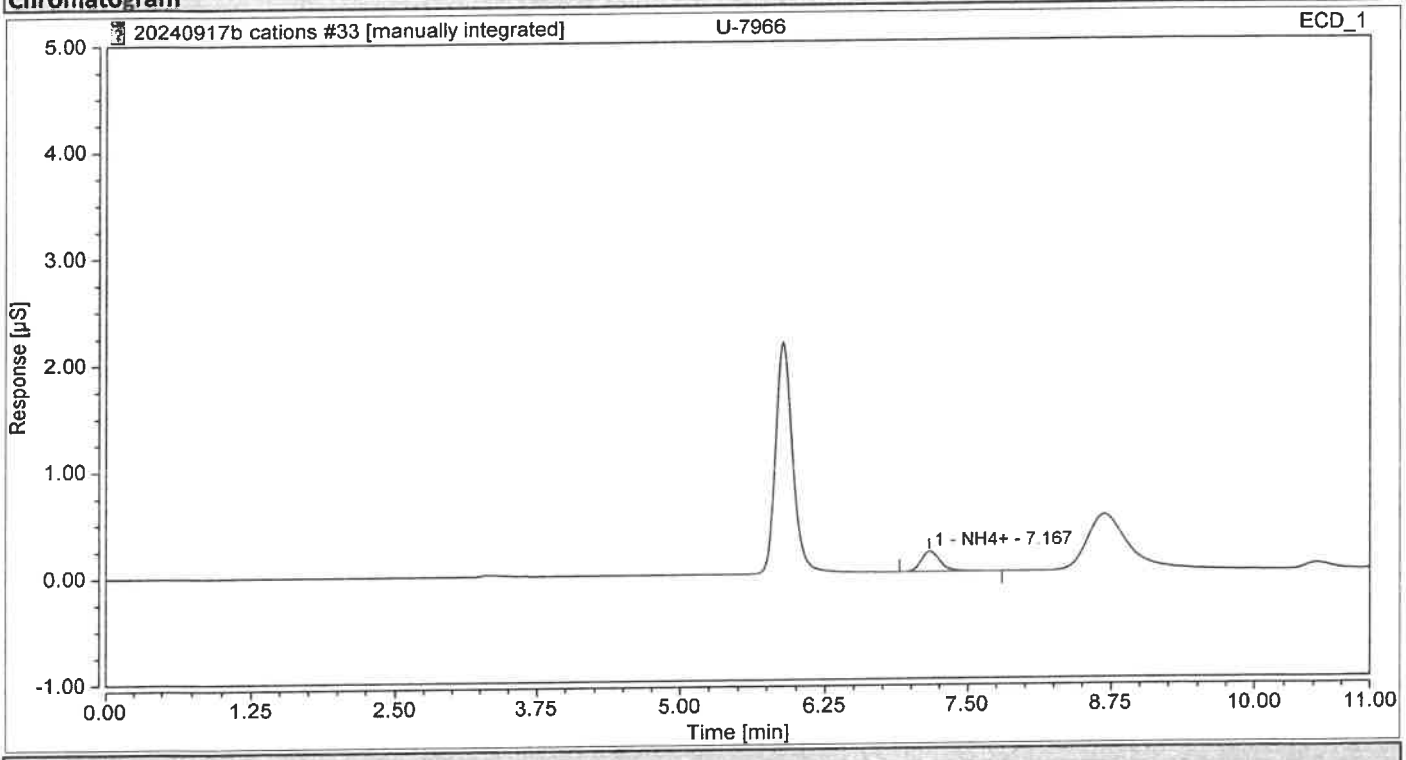
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		5.893	0.3565	2.168	56.52	73.55	n.a.
2	NH4+	7.167	0.0381	0.193	6.03	6.54	0.0301
3		8.693	0.2208	0.528	35.01	17.90	n.a.
4		10.530	0.0154	0.059	2.44	2.00	n.a.
Total:			**0.631**	**2.948**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7966**	*Run Time (min):*	**11.00**
Vial Number:	**GD1**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 23:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

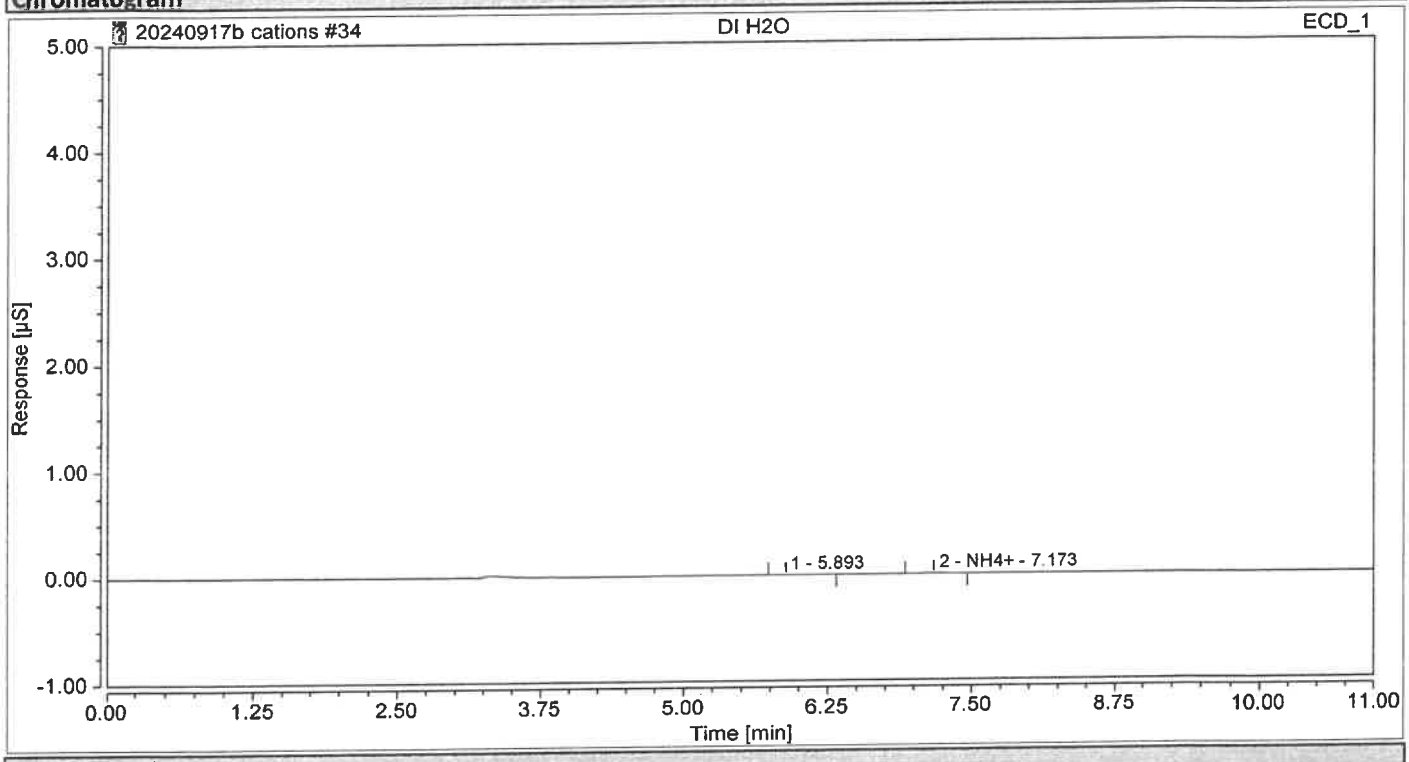
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	7.167	0.0381	0.193	100.00	100.00	0.0227
Total:			**0.038**	**0.193**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**11.00**
Vial Number:	**GC7**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Sep/24 00:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

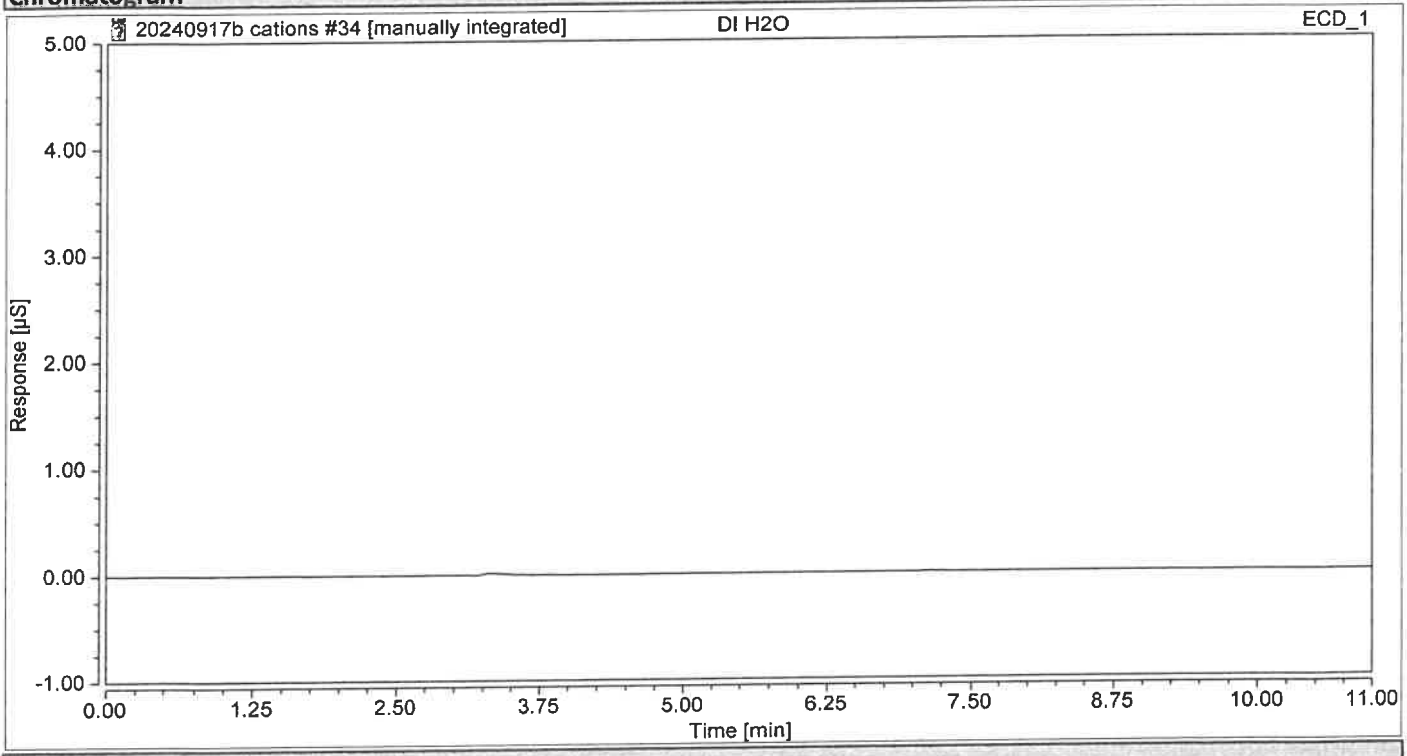
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		5.893	0.0002	0.001	20.24	17.74	n.a.
2	NH4+	7.173	0.0009	0.005	79.76	82.26	n.a.
Total:			**0.001**	**0.006**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**11.00**
Vial Number:	**GC7**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Sep/24 00:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

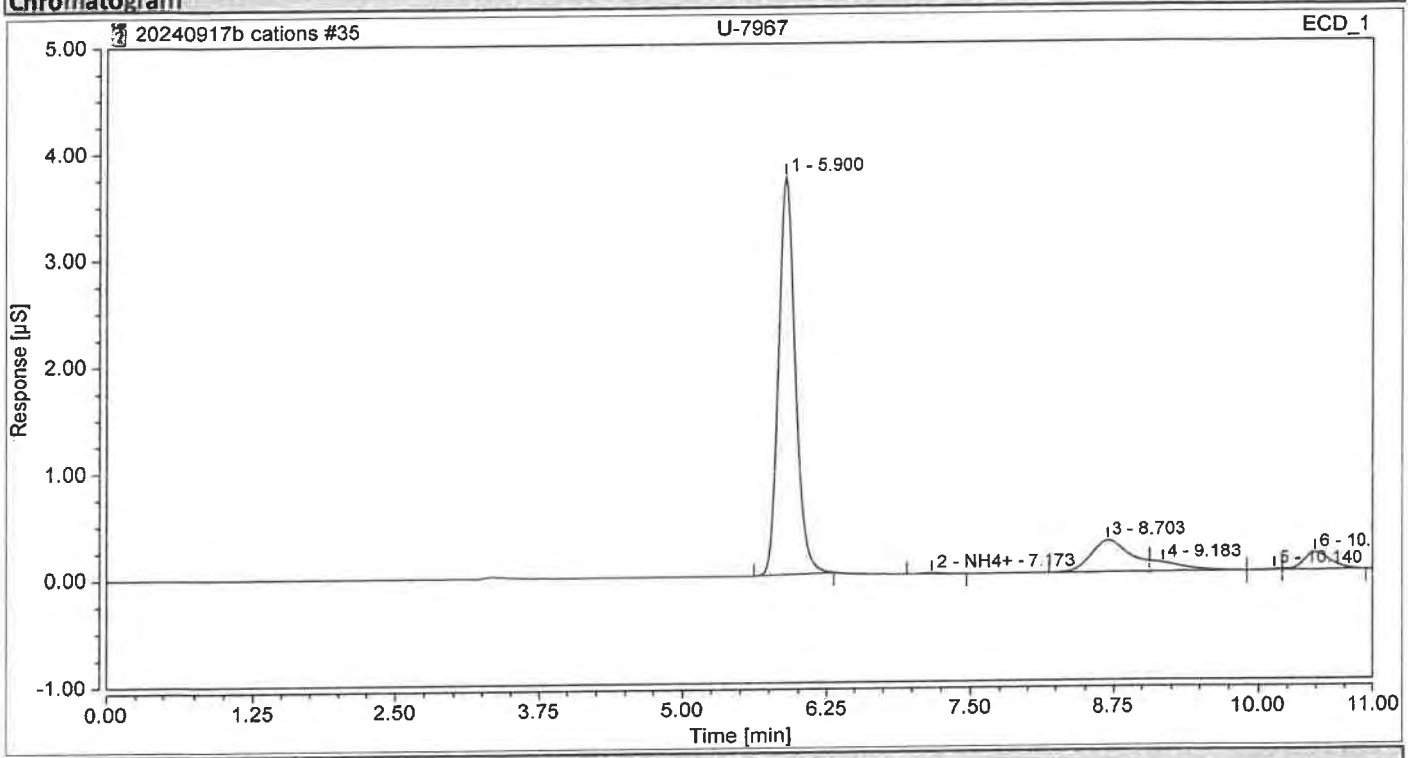
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7967**	*Run Time (min):*	**11.00**
Vial Number:	**GD2**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Sep/24 00:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

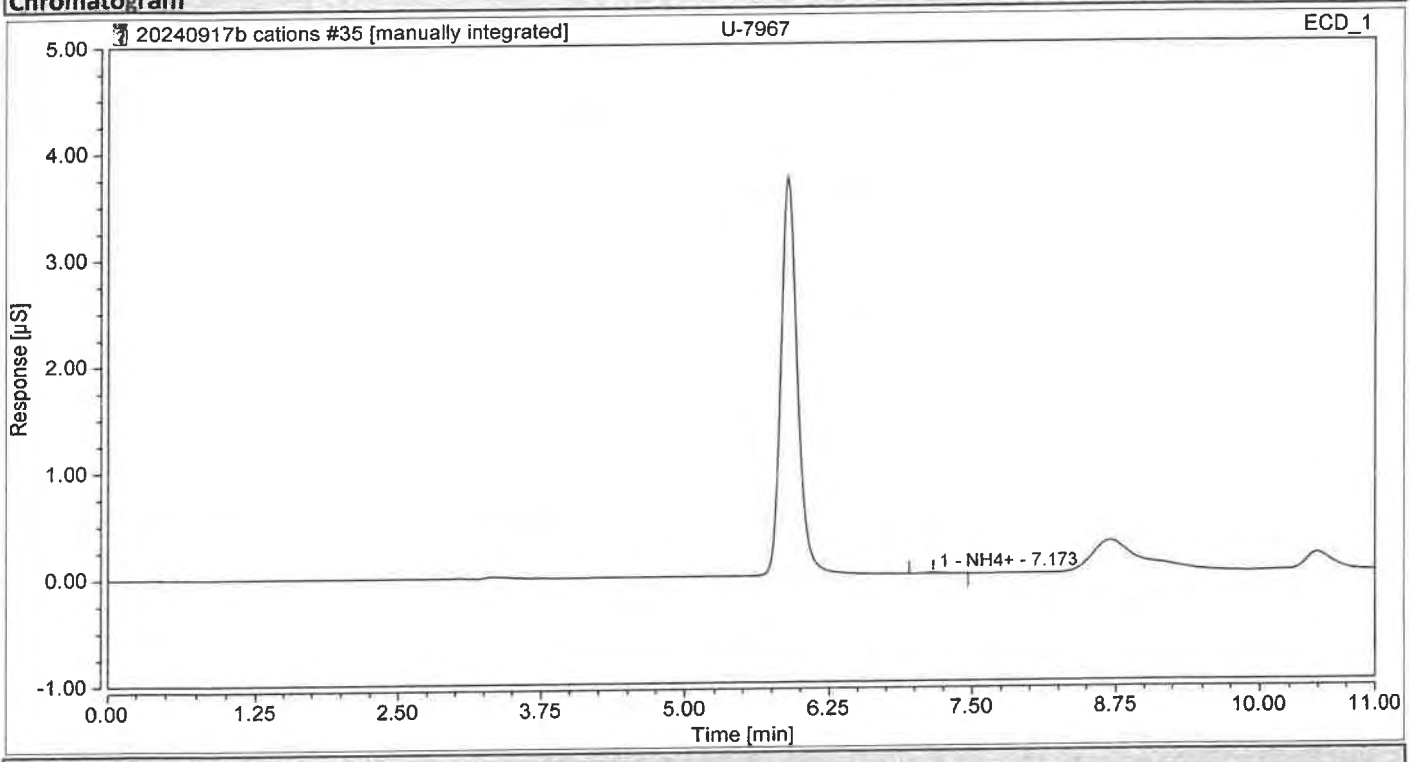
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		5.900	0.6152	3.736	75.87	87.08	n.a.
2	NH4+	7.173	0.0015	0.009	0.19	0.20	n.a.
3		8.703	0.1192	0.296	14.71	6.91	n.a.
4		9.183	0.0291	0.081	3.59	1.90	n.a.
5		10.140	0.0013	0.007	0.17	0.16	n.a.
6		10.493	0.0444	0.161	5.47	3.75	n.a.
Total:			**0.811**	**4.290**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7967**	*Run Time (min):*	**11.00**
Vial Number:	**GD2**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Sep/24 00:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

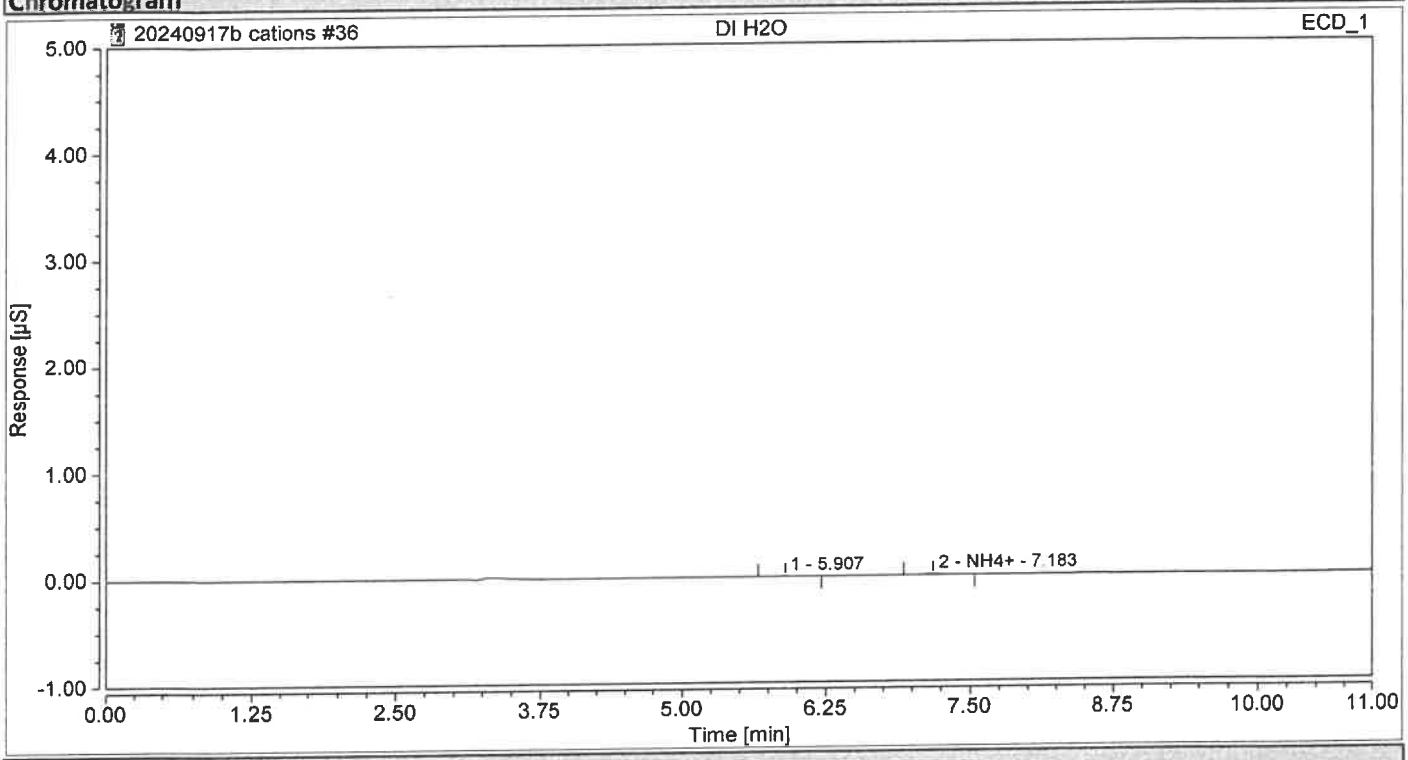
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	7.173	0.0015	0.009	100.00	100.00	n.a.
Total:			**0.002**	**0.009**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**11.00**
Vial Number:	**GD3**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Sep/24 00:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

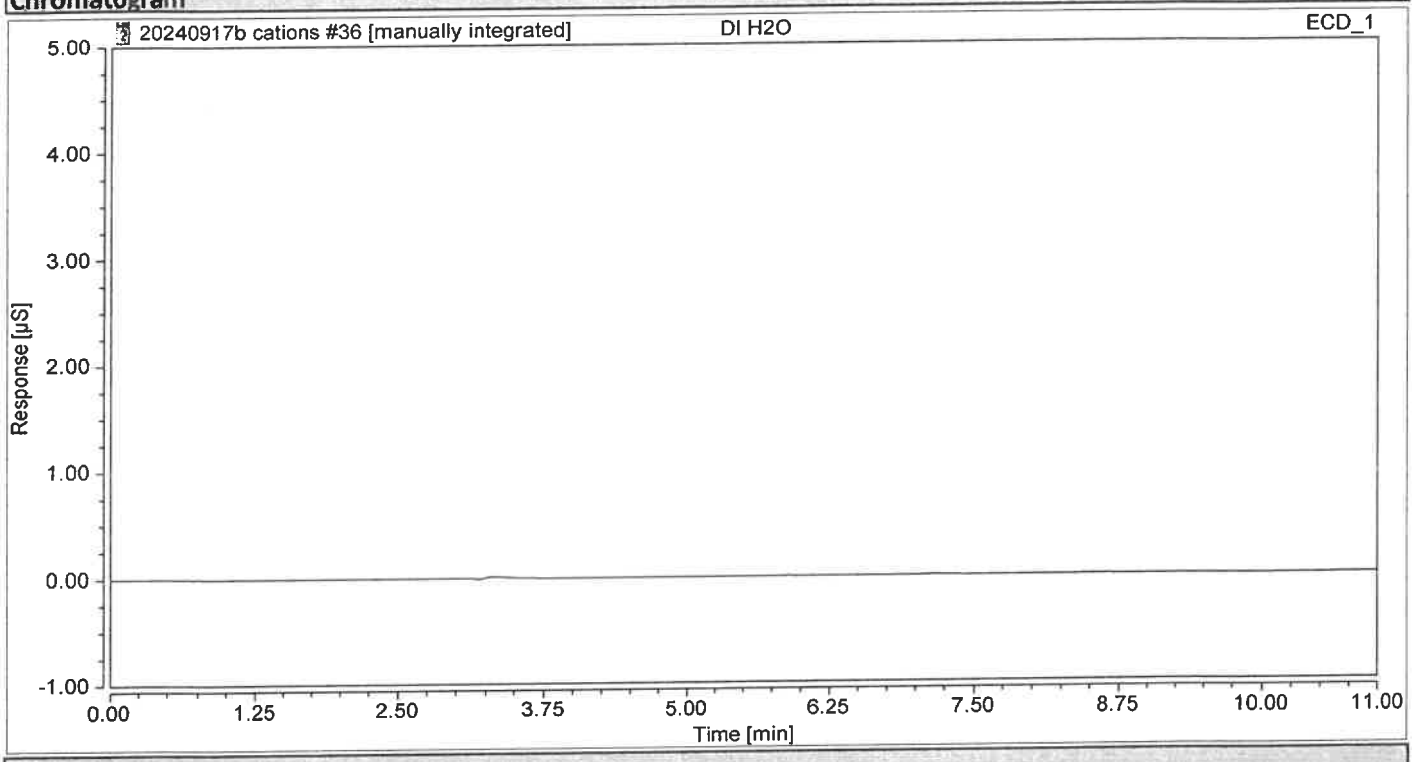
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		5.907	0.0002	0.001	18.37	16.50	n.a.
2	NH4+	7.183	0.0010	0.005	81.63	83.50	n.a.
Total:			**0.001**	**0.006**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**11.00**
Vial Number:	**GD3**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Sep/24 00:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

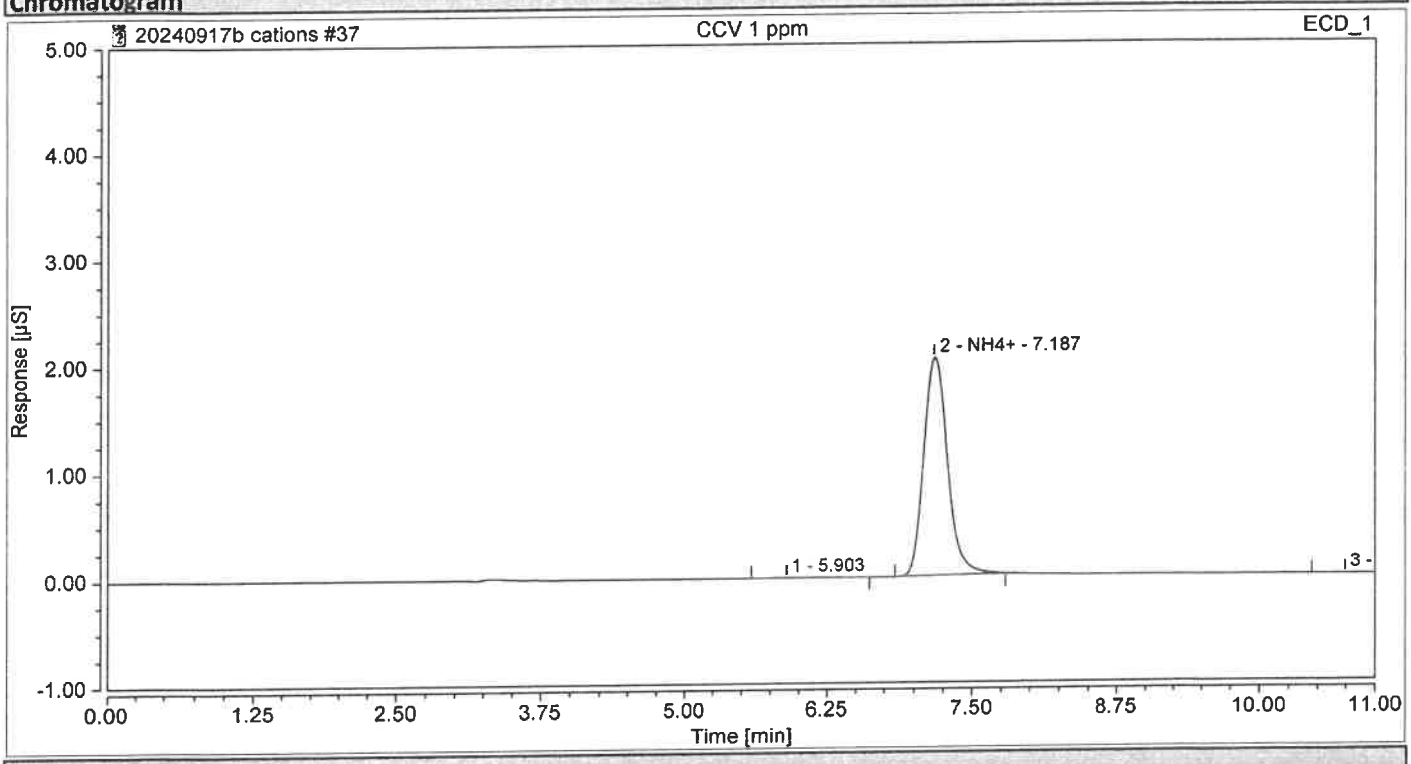
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV 1 ppm**	*Run Time (min):*	**11.00**
Vial Number:	**GD4**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Sep/24 00:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

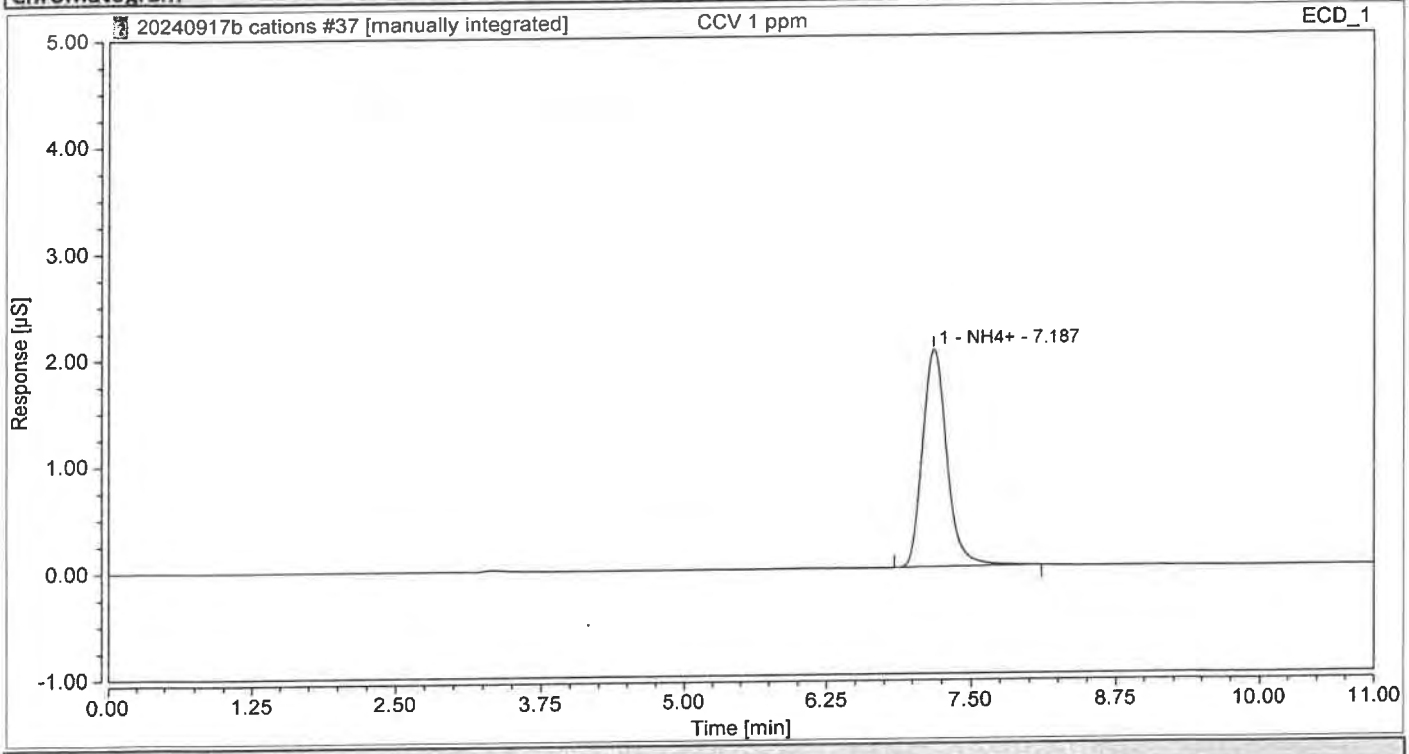
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		5.903	0.0008	0.003	0.16	0.14	n.a.
2	NH4+	7.187	0.4856	2.041	99.71	99.75	1.0501
3		10.743	0.0006	0.002	0.13	0.11	n.a.
Total:			**0.487**	**2.046**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV 1 ppm**	*Run Time (min):*	**11.00**
Vial Number:	**GD4**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**18/Sep/24 00:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	7.187	0.4936	2.046	100.00	100.00	1.0605
Total:			**0.494**	**2.046**	**100.00**	**100.00**	

106.05 µL

GAO
9/18/24

2024

ION CHROMATOGRAPHY

Datasheet# 000752

Prep Method #1 G-35A Rev. 16
Balance# 188 Analyst/Date GAD 9/16/24

Prep Method #2 N/A
Balance# N/A Analyst/Date N/A

Determination Method ME-4D Rev. 12
Analyst/Date GAD 9/16/24
Instrument # 838
Eluent RL # 4524B-18-11
Reagent RL # N/A
Pipettors P86

Data Reviewed and Approved:

VERIFIED BY: HMF 9/18/24 RRS VERIFIED CNC 9-18-24

Sample Identification	U-7729	U-7730	U-7731	U-7947	U-7948	U-7949	U-7950
Analyte	NHyt	NHyt	NHyt	NHyt	NHyt	NHyt	NHyt
Info (dry, grn, C/N, etc.)							
Standard: Source Conc. (N/A)							
Standard: Mass (N/A g)							
Standard: (A) Working Conc. (µg)		②				②	
Gross weight (N/A g)							
Tare weight (N/A g)							
(B) Sample weight (m g) ①	~~2~~ 204.07	200.83	214.24	204.15	204.01	203.92	203.71
Flask/Bomb ID	N/A	N/A	N/A	N/A	N/A	N/A	N/A
(C) Volume (mL)	5	5	5	5	5	5	5
(D) Theory = (A) / (C)							
Aliquot (mL)		②					
Dilution Volume (mL)						②	
(E) Dilution Factor							
Run #	13	15	17	19	21	23	25
(F) Sample Conc. (µg/mL)	no result	no result	no result	0.0275	0.0022	0.0033	ND
(G) Blank (µg/mL)	NO	NO	NO	NO	NO	NO	NO
(H) Result (N/A)	no result	no result	no result	<5 ppm	<5 ppm	<5 ppm	<5 ppm
Comments	INV OR	INV OR	INV OR	RFG 12:15 PM	RFG 12:20 PM	RFG 12:22 PM	

Calculations for G-35A

$$ppm = \frac{(F \times E) \times C}{B} \quad (Y) = \frac{mg}{L} = (F \times E)$$

Matrix Spike Calculation

$$R\% = \frac{Y_S - \left[Y_U \times \frac{B_S \times C_U}{B_U \times C_S}\right]}{D} \times 100$$

where,
S = spiked sample, U = unspiked sample, B = sample weig

Calculations for G-55 and G-40

$$ppm = \frac{[(F \times E) - G] \times C}{B} \quad (Y) = \frac{mg}{L} = (F \times E) - G$$

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① for clarity GAD 9/16/24
② GAD 9/17/24

2024

ION CHROMATOGRAPHY

Datasheet# 000753

Prep Method #1 G-35A Rev. 16
Balance# 188 Analyst/Date GAO 9/16/24

Prep Method #2 N/A
Balance# N/A Analyst/Date N/A

Determination Method ME-40 Rev. 12
Analyst/Date GAO 9/16/24
Instrument # 838
Eluent RL # 4524B-18-11
Reagent RL # N/A
Pipettors P86

Data Reviewed and Approved:
VERIFIED BY: HMF 9/18/24
RRS VERIFIED CNC 9-18-24

Calculations for G-35A

$$ppm = \frac{(F \times E) \times C}{B} \quad (Y) = \frac{mg}{L} = (F \times E)$$

Sample Identification		U-7951	U-7952	U-7953	U-7954	U-7955	U-7956	U-7957
Analyte		NHy+	NHy+	NHy+	NHy+	NHy+	NHy+	NHy+
Info (dry, grn, C/N, etc.)								
Standard	Source Conc. (N/A)							
	Mass (N/A g)		①			①		
	(A) Working Conc. (µg)							
Gross weight (N/A g)								
Tare weight (N/A g)								
(B) Sample weight (M g)		203.47	203.91	202.80	205.07	218.14	211.27	223.12
Flask/Bomb ID		N/A	N/A	N/A	N/A	N/A	N/A	N/A
(C) Volume (mL)		5	5	5	5	5	5	5
(D) Theory = (A) / (C)								
Aliquot (mL)			①			①		
Dilution Volume (mL)								
(E) Dilution Factor								
Run#		28	30	32	34	36	38	40
(F) Sample Conc. (µg/mL)		0.0060	0.0118	ND	0.0025	0.0080	0.0247	NO
(G) Blank (µg/mL)		NO	NO	NO	NO	NO	NO	NO
(H) Result (N/A)		<5 ppm	<5 ppm	<5 ppm	<5 ppm	<5 ppm	<5 ppm	<5 ppm
Comments		RFG 12:28 PM	RFG 1:55 PM	RFG 2:05 PM	RFG 2:02 PM	RFG 2:10 PM	RFG 3:05 PM	RFG 3:18 PM

Matrix Spike Calculation

$$R\% = \frac{Y_S - \left[Y_U \times \frac{B_S \times C_U}{B_U \times C_S}\right]}{D} \times 100$$

where,
S = spiked sample, U = unspiked sample, B = sample weig

Calculations for G-55 and G-40

$$ppm = \frac{[(F \times E) - G] \times C}{B} \quad (Y) = \frac{mg}{L} = (F \times E) - G$$

① GAO 9/17/24

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2024

ION CHROMATOGRAPHY

Datasheet# 000754

Prep Method #1 G-35A Rev.16
Balance# 188 Analyst/Date GAO 9/16/24

Prep Method #2 N/A
Balance# N/A Analyst/Date N/A

Determination Method ME-40 Rev.12
Analyst/Date GAO 9/16/24
Instrument # 838
Eluent RL # 4524B-18-11
Reagent RL # N/A
Pipettors P86

Data Reviewed and Approved:

VERIFIED BY: HMF 9/18/24
RRS VERIFIED CNC 9-18-24

Calculations for G-35A

$$ppm = \frac{(F \times E) \times C}{B} \quad (Y) = \frac{mg}{L} = (F \times E)$$

Sample Identification		U-7958	U-7959	U-7960 ⑤	U-7961 ⑤	U-7962 ⑤	U-7963	U-7963 ⑤
Analyte		N Hyt	N Hyt	N Hyt	N Hyt	N Hyt	N Hyt	N Hyt
Info (dry, grn, C/N, etc.)								
Standard	Source Conc. (N/A)							
	Mass (N/A g)		②			②		
	(A) Working Conc. (µg)	-						
Gross weight (N/A g)								
Tare weight (N/A g)								
(B) Sample weight (N/A g)		206.78	213.17	210.61	231.22	220.13	209.90	215.61
Flask/Bomb ID		N/A	N/A	N/A	N/A	N/A	N/A	N/A
(C) Volume (mL)		5	5	5	5	5	5	5
(D) Theory = (A) / (C)		②			②		②	②
Aliquot (mL)								
Dilution Volume (mL)								
(E) Dilution Factor								
Run #		42	44					
(F) Sample Conc. (µg/mL)		NO	NO					
(G) Blank (µg/mL)		NO	NO					
(H) Result (N/A)		<5 ppm	<5 ppm	test aborted ⑥	test aborted	test aborted	test aborted	test aborted ⑥
Comments		RFG 3:20PM	RFG 3:25PM	3:30PM RFG ③	RFG 3:36PM ③	RFG 3:40PM ③	RFG 3:43PM ④ INV AB	RFG 3:46PM ③

Matrix Spike Calculation

$$R\% = \frac{Y_S - \left[Y_U \times \frac{B_S \times C_U}{B_U \times C_S}\right]}{D} \times 100$$

where,
S = spiked sample, U = unspiked sample, B = sample weig

Calculations for G-55 and G-40

$$ppm = \frac{[(F \times E) - G] \times C}{B} \quad (Y) = \frac{mg}{L} = (F \times E) - G$$

③ did not ~~run~~ run sample GAO 9/17/24

④ transcription error GAO 9/17/24

⑤ These sample preps transcribed to DS #758. Performed on a separate sequence. AMF 9/18/24.

⑥ Removed result value. See ⑤. HMF 9/18/24

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① over diluted sample by mistake GAO 9/16/24
② GAO 9/17/24

2024

ION CHROMATOGRAPHY

Datasheet# 000755

Prep Method #1 G-35A Rev. 16
Balance# 188 Analyst/Date GAO 9/16/24

Prep Method #2 N/A
Balance# N/A Analyst/Date N/A

Determination Method ME-40 Rev. 12
Analyst/Date GAO 9/16/24
Instrument # 838
Eluent RL # 4524B-18-11
Reagent RL # N/A
Pipettors P86

Data Reviewed and Approved:
VERIFIED BY: HMF 9/18/24
RRS VERIFIED: ORG 9-18-24

Calculations for G-35A

$$ppm = \frac{(F \times E) \times C}{B} \quad (Y) = \frac{mg}{L} = (F \times E)$$

Sample Identification		U-7964 ⑥	U-7965 ⑥	U-7966 ⑥	U-7967	U-7967 ⑥	
Analyte		N Hyt	N Hyt	N Hyt	N Hyt	N Hyt ③	
Info (dry, grn, C/N, etc.)							
Standard	Source Conc. (N/A)						
	Mass (N/A g)			④			
	(A) Working Conc. (µg)					④	④
Gross weight (N/A g)							
Tare weight (N/A g)							
(B) Sample weight (g)		218.31	202.58	202.52	202.31	202.51	
Flask/Bomb ID		N/A	N/A	N/A	N/A	N/A	
(C) Volume (mL)		5	5	5	5	5	
(D) Theory = (A) / (C)							
Aliquot (mL)			④		④	④	
Dilution Volume (mL)							
(E) Dilution Factor							
Run #							
(F) Sample Conc. (µg/mL)							
(G) Blank (µg/mL)							
(H) Result (N/A)		test aborted	② test aborted	test aborted	test aborted	test ② aborted	
Comments		RFG 3:45 pm ⑤	⑤	RFG 4:15 pm ① 4:15 pm ⑤	② INV AB	RFG 4:20 ⑤	

Matrix Spike Calculation

$$R\% = \frac{Y_S - \left[Y_U \times \frac{B_S \times C_U}{B_U \times C_S}\right]}{D} \times 100$$

where,
S = spiked sample, U = unspiked sample, B = sample weig

Calculations for G-55 and G-40

$$ppm = \frac{[(F \times E) - G] \times C}{B} \quad (Y) = \frac{mg}{L} = (F \times E) - G$$

⑤ did not run samples GAO 9/17/24

⑥ These sample preps transcribed to DS# 758. Performed on a separate sequence. HMF 9/18/24

② Removed result value see ⑥. HMF 9/18/24.

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③ transcription error GAO 9/17/24
④ GAO 9/17/24

① for clarity GAO 9/16/24
② forgot to write down correct weight GAO 9/16/24

2024

ION CHROMATOGRAPHY

Datasheet# 000756

Prep Method #1 G-35A Rev.16
Balance# 188 Analyst/Date GAD 9/16/24

Prep Method #2 N/A
Balance# N/A Analyst/Date N/A

Determination Method ME-4D Rev.12
Analyst/Date GAD 9/16/24
Instrument # 838
Eluent RL # Y524B-18-11
Reagent RL # N/A
Pipettors P86

Data Reviewed and Approved:

VERIFIED BY: RRS VER.
HMF 9/18/24 CWC 9-18-24

Sample Identification		C-0000	P-2211
Analyte		NH4+	NH4+
Info (dry, grn, C/N, etc.)			30033
Standard	Source Conc. (N/A)		
Standard	Mass (N/A g)		
Standard	(A) Working Conc. (µg)		
Gross weight (N/A g)		①	①
Tare weight (N/A g)			
(B) Sample weight (N/A g)			
Flask/Bomb ID			
(C) Volume (mL)			
(D) Theory = (A) / (C)			
Aliquot (mL)			
Dilution Volume (mL)			
(E) Dilution Factor			
Run #		11	12
(F) Sample Conc. (µg/mL)		ND	0.9963
(G) Blank (µg/mL)		ND	ND
(H) Result (mg/mL)		ND	99.63%
Comments		theory	1,000 ppm

① GAD 9/17/24

Calculations for G-35A

$$ppm = \frac{(F \times E) \times C}{B} \quad (Y) = \frac{mg}{L} = (F \times E)$$

Matrix Spike Calculation

$$R\% = \frac{Y_S - \left[Y_U \times \frac{B_S \times C_U}{B_U \times C_S}\right]}{D} \times 100$$

where,
S = spiked sample, U = unspiked sample, B = sample weig

Calculations for G-55 and G-40

$$ppm = \frac{[(F \times E) - G] \times C}{B} \quad (Y) = \frac{mg}{L} = (F \times E) - G$$

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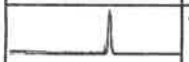
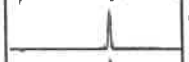
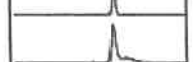
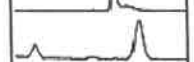
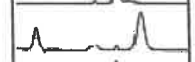
RAW DATA
TDK 11/4/24

Sequence: 20240916c cations
Last Update Operator: gregory.duncan

9/16/24
ME-4D Rev.12
#838

DS#752

ECD_1	Name	Type	Level	Position	Volume [µl]	Instrument Method	Processing Method	Status
	RT test	Unknown		GA1	50.0	IQ-IM	IQ-PM	Finished
	DI H2O	Unknown		GA2	50.0	IQ-IM	IQ-PM	Finished
	Cal1	Calibration Standard	1	GA3	50.0	IQ-IM	IQ-PM	Finished
	Cal2	Calibration Standard	2	GA4	50.0	IQ-IM	IQ-PM	Finished
	Cal3	Calibration Standard	3	GA5	50.0	IQ-IM	IQ-PM	Finished
	Cal4	Calibration Standard	4	GA6	50.0	IQ-IM	IQ-PM	Finished
	Cal5	Calibration Standard	5	GA7	50.0	IQ-IM	IQ-PM	Finished
	Cal3 for RSD	Unknown		GA8	50.0	IQ-IM	IQ-PM	Finished
	Cal3 for RSD	Unknown		GA8	50.0	IQ-IM	IQ-PM	Finished
	Cal3 for RSD	Unknown		GA8	50.0	IQ-IM	IQ-PM	Finished
	c-0000	Unknown		GB1	50.0	IQ-IM	IQ-PM	Finished
	ICS 1 ppm	Unknown		GB2	50.0	IQ-IM	IQ-PM	Finished
	U-7729	Unknown		GB3	50.0	IQ-IM	IQ-PM	Finished
	DI H2O	Unknown		GB4	50.0	IQ-IM	IQ-PM	Finished
	U-7730	Unknown		GB5	50.0	IQ-IM	IQ-PM	Finished
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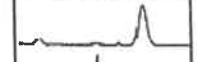
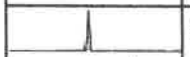
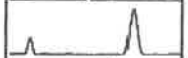
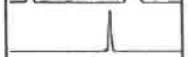
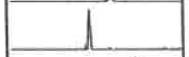
	U-7731	Unknown		GB6	50.0	IQ-IM	IQ-PM	Finished
	DI H2O	Unknown		GB4	50.0	IQ-IM	IQ-PM	Finished
	U-7947	Unknown		GB7	50.0	IQ-IM	IQ-PM	Finished
	DI H2O	Unknown		GB4	50.0	IQ-IM	IQ-PM	Finished
	U-7948	Unknown		GB8	50.0	IQ-IM	IQ-PM	Finished
	DI H2O	Unknown		GC1	50.0	IQ-IM	IQ-PM	Finished
	U-7949	Unknown		GC2	50.0	IQ-IM	IQ-PM	Finished
	DI H2O	Unknown		GC1	50.0	IQ-IM	IQ-PM	Finished

VERIFIED BY:
HMF 9/18/24

EXACT COPY OF
RAW DATA
TDK 11/4/24

ECD_1	Name	Type	Level	Position	Volume [µl]	Instrument Method	Processing Method	Status
	U-7950	Unknown		GC3	50.0	IQ-IM	IQ-PM	Finished
	DI H2O	Unknown		GC1	50.0	IQ-IM	IQ-PM	Finished
	CCV 1 ppm	Unknown		GC4	50.0	IQ-IM	IQ-PM	Finished
	U-7951	Unknown		GC5	50.0	IQ-IM	IQ-PM	Finished
	DI H2O	Unknown		GC6	50.0	IQ-IM	IQ-PM	Finished
	U-7952	Unknown		GC7	50.0	IQ-IM	IQ-PM	Finished
	DI H2O	Unknown		GC6	50.0	IQ-IM	IQ-PM	Finished
	U-7953	Unknown		GC8	50.0	IQ-IM	IQ-PM	Finished
	DI H2O	Unknown		GC6	50.0	IQ-IM	IQ-PM	Finished
	U-7954	Unknown		GD1	50.0	IQ-IM	IQ-PM	Finished
	DI H2O	Unknown		GD2	50.0	IQ-IM	IQ-PM	Finished
	U-7955	Unknown		GD3	50.0	IQ-IM	IQ-PM	Finished
	DI H2O	Unknown		GD2	50.0	IQ-IM	IQ-PM	Finished
	U-7956	Unknown		GD4	50.0	IQ-IM	IQ-PM	Finished
	DI H2O	Unknown		GD2	50.0	IQ-IM	IQ-PM	Finished
	U-7957	Unknown		GD5	50.0	IQ-IM	IQ-PM	Finished
	DI H2O	Unknown		GD2	50.0	IQ-IM	IQ-PM	Finished
	U-7958	Unknown		GD6	50.0	IQ-IM	IQ-PM	Finished
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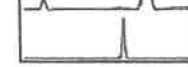
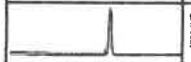
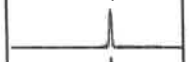
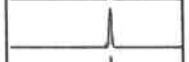
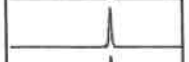
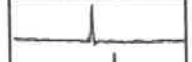
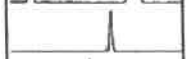
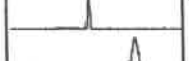
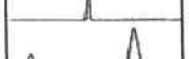
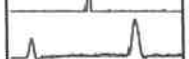
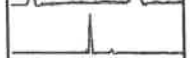
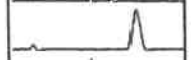
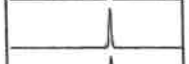
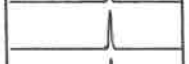
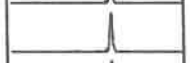
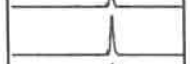
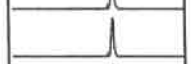
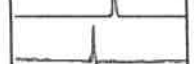
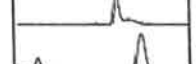
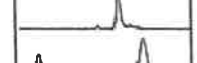
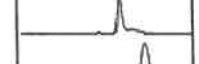
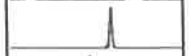
	DI H2O	Unknown		GD7	50.0	IQ-IM	IQ-PM	Finished
	CCV 1 ppm	Unknown		GE1	50.0	IQ-IM	IQ-PM	Finished

ECD_1	Name	Inject Time	Lock Status	Weight	Dilution	IntStd	Replicate ID	Comment
	RT test	9/16/2024 5:38:07 PM -04:00		1.0000	1.0000	1.0000		
	DI H2O	9/16/2024 5:58:55 PM -04:00		1.0000	1.0000	1.0000		
	Cal1	9/16/2024 6:19:43 PM -04:00		1.0000	1.0000	1.0000		
	Cal2	9/16/2024 6:40:30 PM -04:00		1.0000	1.0000	1.0000		
	Cal3	9/16/2024 7:01:18 PM -04:00		1.0000	1.0000	1.0000		
	Cal4	9/16/2024 7:22:05 PM -04:00		1.0000	1.0000	1.0000		
	Cal5	9/16/2024 7:42:53 PM -04:00		1.0000	1.0000	1.0000		
	Cal3 for RSD	9/16/2024 8:03:41 PM -04:00		1.0000	1.0000	1.0000		
	Cal3 for RSD	9/16/2024 8:24:29 PM -04:00		1.0000	1.0000	1.0000		
	Cal3 for RSD	9/16/2024 8:45:16 PM -04:00		1.0000	1.0000	1.0000		
	c-0000	9/16/2024 9:06:04 PM -04:00		1.0000	1.0000	1.0000		
	ICS 1 ppm	9/16/2024 9:26:52 PM -04:00		1.0000	1.0000	1.0000		
	U-7729	9/16/2024 9:47:40 PM -04:00		1.0000	1.0000	1.0000		
	DI H2O	9/16/2024 10:08:28 PM -04:00		1.0000	1.0000	1.0000		
	U-7730	9/16/2024 10:29:16 PM -04:00		1.0000	1.0000	1.0000		
	DI H2O	9/16/2024 10:50:04 PM -04:00		1.0000	1.0000	1.0000		
	U-7731	9/16/2024 11:10:52 PM -04:00		1.0000	1.0000	1.0000		
	DI H2O	9/16/2024 11:31:39 PM -04:00		1.0000	1.0000	1.0000		
	U-7947	9/16/2024 11:52:26 PM -04:00		1.0000	1.0000	1.0000		
	DI H2O	9/17/2024 12:13:13 AM -04:00		1.0000	1.0000	1.0000		
	U-7948	9/17/2024 12:34:01 AM -04:00		1.0000	1.0000	1.0000		
	DI H2O	9/17/2024 12:54:48 AM -04:00		1.0000	1.0000	1.0000		
	U-7949	9/17/2024 1:15:35 AM -04:00		1.0000	1.0000	1.0000		
	DI H2O	9/17/2024 1:36:23 AM -04:00		1.0000	1.0000	1.0000		

ECD_1	Name	Inject Time	Lock Status	Weight	Dilution	IntStd	Replicate ID	Comment
	U-7950	9/17/2024 1:57:10 AM -04:00		1.0000	1.0000	1.0000		
	DI H2O	9/17/2024 2:17:58 AM -04:00		1.0000	1.0000	1.0000		
	CCV 1 ppm	9/17/2024 2:38:45 AM -04:00		1.0000	1.0000	1.0000		
	U-7951	9/17/2024 2:59:32 AM -04:00		1.0000	1.0000	1.0000		
	DI H2O	9/17/2024 3:20:20 AM -04:00		1.0000	1.0000	1.0000		
	U-7952	9/17/2024 3:41:08 AM -04:00		1.0000	1.0000	1.0000		
	DI H2O	9/17/2024 4:01:56 AM -04:00		1.0000	1.0000	1.0000		
	U-7953	9/17/2024 4:22:44 AM -04:00		1.0000	1.0000	1.0000		
	DI H2O	9/17/2024 4:43:31 AM -04:00		1.0000	1.0000	1.0000		
	U-7954	9/17/2024 5:04:19 AM -04:00		1.0000	1.0000	1.0000		
	DI H2O	9/17/2024 5:25:06 AM -04:00		1.0000	1.0000	1.0000		
	U-7955	9/17/2024 5:45:54 AM -04:00		1.0000	1.0000	1.0000		
	DI H2O	9/17/2024 6:06:40 AM -04:00		1.0000	1.0000	1.0000		
	U-7956	9/17/2024 6:27:28 AM -04:00		1.0000	1.0000	1.0000		
	DI H2O	9/17/2024 6:48:15 AM -04:00		1.0000	1.0000	1.0000		
	U-7957	9/17/2024 7:09:02 AM -04:00		1.0000	1.0000	1.0000		
	DI H2O	9/17/2024 7:29:50 AM -04:00		1.0000	1.0000	1.0000		
	U-7958	9/17/2024 7:50:37 AM -04:00		1.0000	1.0000	1.0000		
	DI H2O	9/17/2024 8:11:24 AM -04:00		1.0000	1.0000	1.0000		
	U-7959	9/17/2024 8:32:11 AM -04:00		1.0000	1.0000	1.0000		
	DI H2O	9/17/2024 8:52:59 AM -04:00		1.0000	1.0000	1.0000		
	CCV 1 ppm	9/17/2024 9:13:48 AM -04:00		1.0000	1.0000	1.0000		

ECD_1	Name	Re-injections	Spike Group
	RT test	0	
	DI H2O	0	
	Cal1	0	
	Cal2	0	
	Cal3	0	
	Cal4	0	
	Cal5	0	
	Cal3 for RSD	0	
	Cal3 for RSD	0	
	Cal3 for RSD	0	
	c-0000	0	
	ICS 1 ppm	0	
	U-7729	0	
	DI H2O	0	
	U-7730	0	
	DI H2O	0	
	U-7731	0	
	DI H2O	0	
	U-7947	0	
	DI H2O	0	
	U-7948	0	
	DI H2O	0	
	U-7949	0	
	DI H2O	0	

Sequence: 20240916c cations
Last Update Operator: gregory.duncan

ECD_1	Name	Re-injections	Spike Group
	U-7950	0	
	DI H2O	0	
	CCV 1 ppm	0	
	U-7951	0	
	DI H2O	0	
	U-7952	0	
	DI H2O	0	
	U-7953	0	
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	U-7954	0	
	DI H2O	0	
	U-7955	0	
	DI H2O	0	
	U-7956	0	
	DI H2O	0	
	U-7957	0	
	DI H2O	0	
	U-7958	0	
	DI H2O	0	
	U-7959	0	
	DI H2O	0	
	CCV 1 ppm	0	

Name	**IQ-IM**
Data Vault	**ChromeleonLocal**
Path	**chrom://gli2258/ChromeleonLocal/Instrument Data/GLI838/2023/Sept/20240916c cations.seq/IQ-IM.instmeth**
Comment	
Description	
Run time	**17.000 [min]**
Instrument	**GLI838 on gli2258**
Created	**11/30/2022 4:00:45 PM -05:00 nick.doubrley**
Last Update	**9/16/2024 5:28:34 PM -04:00 gregory.duncan**

Stage	Time min	Command	Value	Comment
Instrument Setup				
	initial			
		Sampler.AcquireExclusiveAccess		
		Wait	Sampler.Ready, Run=Hold, Timeout=Infinite	
		Sampler.DiverterValve	Position_1	
		Wait	Sampler.Ready, Run=Hold, Timeout=Infinite	
		Pump_ECD.Flow	1.20 [ml/min]	
		Pump_ECD.Suppressor_H2SO4	0.0 [mM]	
		Pump_ECD.Suppressor_MSA	23.0 [mM]	
		Sampler.CycleTime	0 [min]	
		Sampler.LoopOverfill	5.000	
		Sampler.InjectMode	PushSeqFull	
		Sampler.BufferWashFactor	2.000	
		Sampler.WashDispSpeed	20.0 [µl/s]	
		Sampler.InjectWash	AfterInj	
		Sampler.WashSpeed	20.0 [µl/s]	
		Sampler.WashVolume	250.0 [µl]	
		Sampler.SampleHeight	2.000 [mm]	
		Sampler.WasteSpeed	20.0 [µl/s]	
		Sampler.DispenseDelay	2.0 [s]	
		Sampler.DispSpeed	5.0 [µl/s]	
		Sampler.DrawSpeed	5.0 [µl/s]	
		Sampler.DrawDelay	3.0 [s]	
		Sampler.DilutionMixDispenseSpeed	60.0 [µl/s]	
		Sampler.DilutionMixIterations	3	
		Sampler.DilutionMixSpeed	30.0 [µl/s]	
		Pump_ECD.Pressure.UpperLimit	1800 [psi]	
		Pump_ECD.%A.Equate	"Water"	
		Pump_ECD.Pressure.LowerLimit	200 [psi]	
		Pump_ECD.ColumnTemperature.Nominal	35.0 [°C]	
		Pump_ECD.CellTemperature.Nominal	35.0 [°C]	
		Pump_ECD.Data_Collection_Rate	5.0 [Hz]	
		Pump_ECD.Suppressor_Type	CERS_4mm	
		Pump_ECD.Suppressor_RecommendedCurrent	81 [mA]	
		Pump_ECD.Suppressor_OtherEluent	0.0 [mN]	
		Pump_ECD.Suppressor_Current	75 [mA]	
		Sampler.PunctureOffset	3 [mm]	
Inject				
	0.000			

		Wait	Sampler.CycleTimeState, Run=Hold, Timeout=Infinite
		Sampler.Inject	
Start Run			
	0.000		
		Pump_ECD.Channel_Pressure.AcqOn	
		Pump_ECD.ECD_1.AcqOn	
		Pump_ECD.Autozero	
		Sampler.ReleaseExclusiveAccess	
Run			Duration = 17.000 [min]
	0.000		
Stop Run			
	17.000		
		Pump_ECD.Channel_Pressure.AcqOff	
		Pump_ECD.ECD_1.AcqOff	
End			

Name	**IQ-PM**
Data Vault	**ChromeleonLocal**
Path	**chrom://gli2258/ChromeleonLocal/Instrument Data/GLI838/2023/Sept/20240916c cations.seq/IQ-PM.procmeth**
Created	**11/28/2022 3:42:30 PM -05:00 nick.doubrley**
Last Update	**9/17/2024 9:11:45 AM -04:00 gregory.duncan**

2024

000251

STANDARDS PREPARATION LOG

Galbraith Laboratories, Inc.
Governing SOP: 3.2.3.1

Instrument # 835
Department 45

Initials	Date	C/N		Stock Preparation			Intermediate Preparation			Working Standard			Comments	Data Sheet Ref.	STD Review
			Status: N-New O-Out I In	Weight / Volume Taken	Dilution Volume	Concentration µg/mL	Aliquot	Dilution Volume	Concentration	Aliquot mL	Dilution Volume mL	Concentration µg/mL			
GAO	9/16/24	29941	I	N/A	N/A	1000	N/A	N/A	N/A	20	100	0.2	Cal. Std.	753	②
										40	100	0.4	Cal. Std.	N/A	②
										100	100	1.0	Cal. Std.	N/A	②
										200	100	2.0	Cal. Std.	N/A	②
		①								100	25	4.0	Cal. Std.	N/A	②
										①			①		
GAO	9/16/24	30033	I	N/A	N/A	1000	N/A	N/A	N/A	100	100	1.0	ICS	N/A	②
		①				①						①			

COPY

FORM 3.2.3.1D Ver 2

① GAO 9/16/24

② Reviewed by HMF 9/16/24

Detection Settings

Algorithm: **Cobra**

Ret.Time	Param. Name	Param.Value	Inj. Type	Channel
<Initial>	Consider Void Peak	Off	Any	All Channels
<Initial>	Baseline Noise Range	Auto	Any	All Channels
<Initial>	Smoothing Width	Auto	Any	All Channels
0.000 [min]	Tailing Sensitivity Factor	0.500	Any	All Channels
0.300 [min]	Inhibit Integration	On	Any	All Channels
5.000 [min]	Inhibit Integration	Off	Any	All Channels
7.000 [min]	Inhibit Integration	On	Any	All Channels
7.800 [min]	Inhibit Integration	Off	Any	All Channels

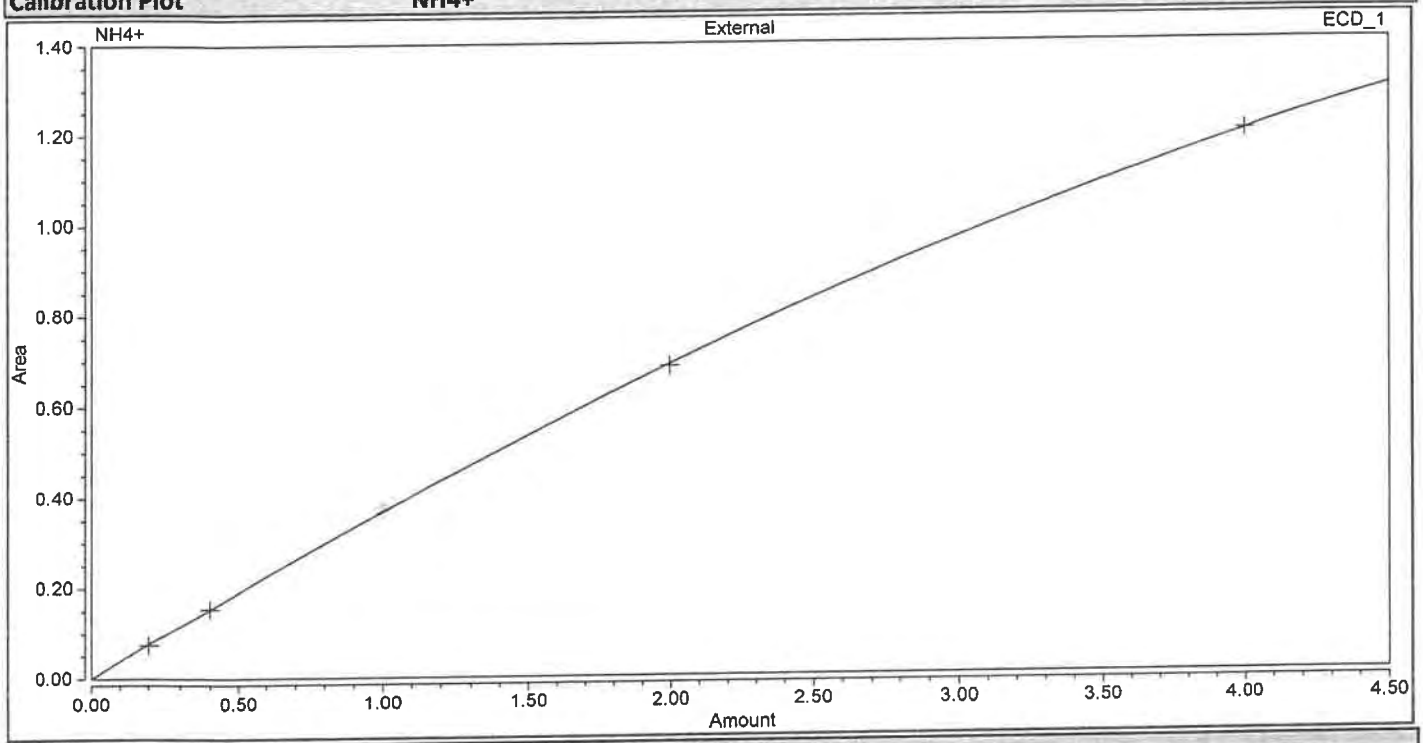
Component Table

Name	Ret.Time	Window	Level "1"	Level "2"	Level "3"	Level "4"	Level "5"	Charge
NH4+	9.770	0.300 AF	0.200000	0.400000	1.000000	2.000000	4.000000	

Calibration

Calibration Details	NH4+		
Calibration Type	Quad, WithOffset	*Offset (C0)*	0.0013
Evaluation Type	Area	*Slope (C1)*	0.3891
Number of Calibration Points	5	*Curve (C2)*	-0.0225
Number of disabled Calibration Points	0	*R-Square*	0.9999

Calibration Plot NH4+



Calibration Results NH4+

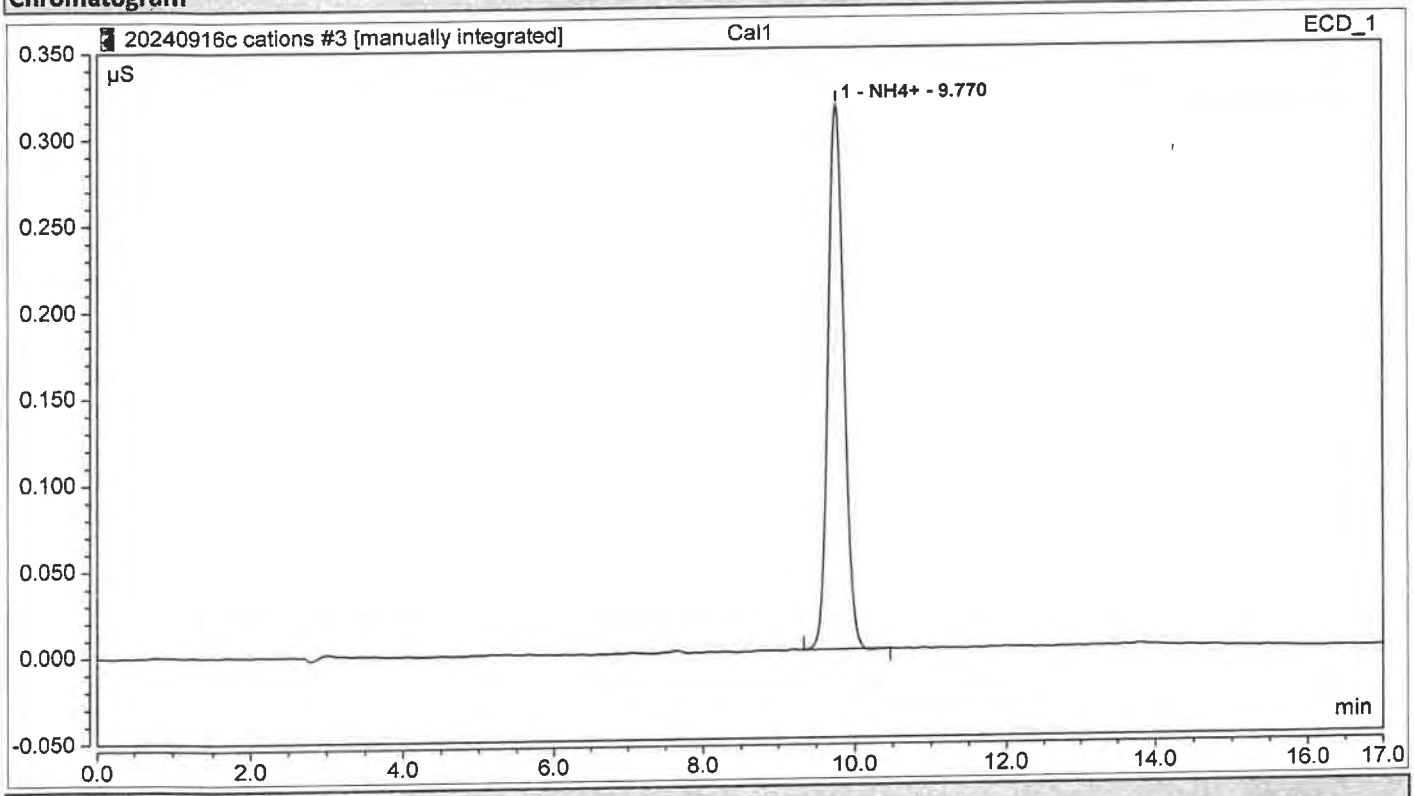
No.	Injection Name	Calibration Level	X Value ECD_1 NH4+	Y Value ECD_1 NH4+	Y Value ECD_1 NH4+	Area µS*min ECD_1 NH4+	R-Squared % ECD_1 NH4+
3	Cal1	1	0.2000	0.0747	0.0747	0.075	99.991
4	Cal2	2	0.4000	0.1542	0.1542	0.154	99.991
5	Cal3	3	1.0000	0.3744	0.3744	0.374	99.991
6	Cal4	4	2.0000	0.6850	0.6850	0.685	99.991
7	Cal5	5	4.0000	1.1983	1.1983	1.198	99.991

Peak Analysis

Injection Details

Injection Name:	**Cal1**	*Run Time (min):*	**17.00**
Vial Number:	**GA3**	*Injection Volume:*	**50.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**1**	*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 18:19**	*Sample Weight:*	**1.0000**

Chromatogram



Peak Results

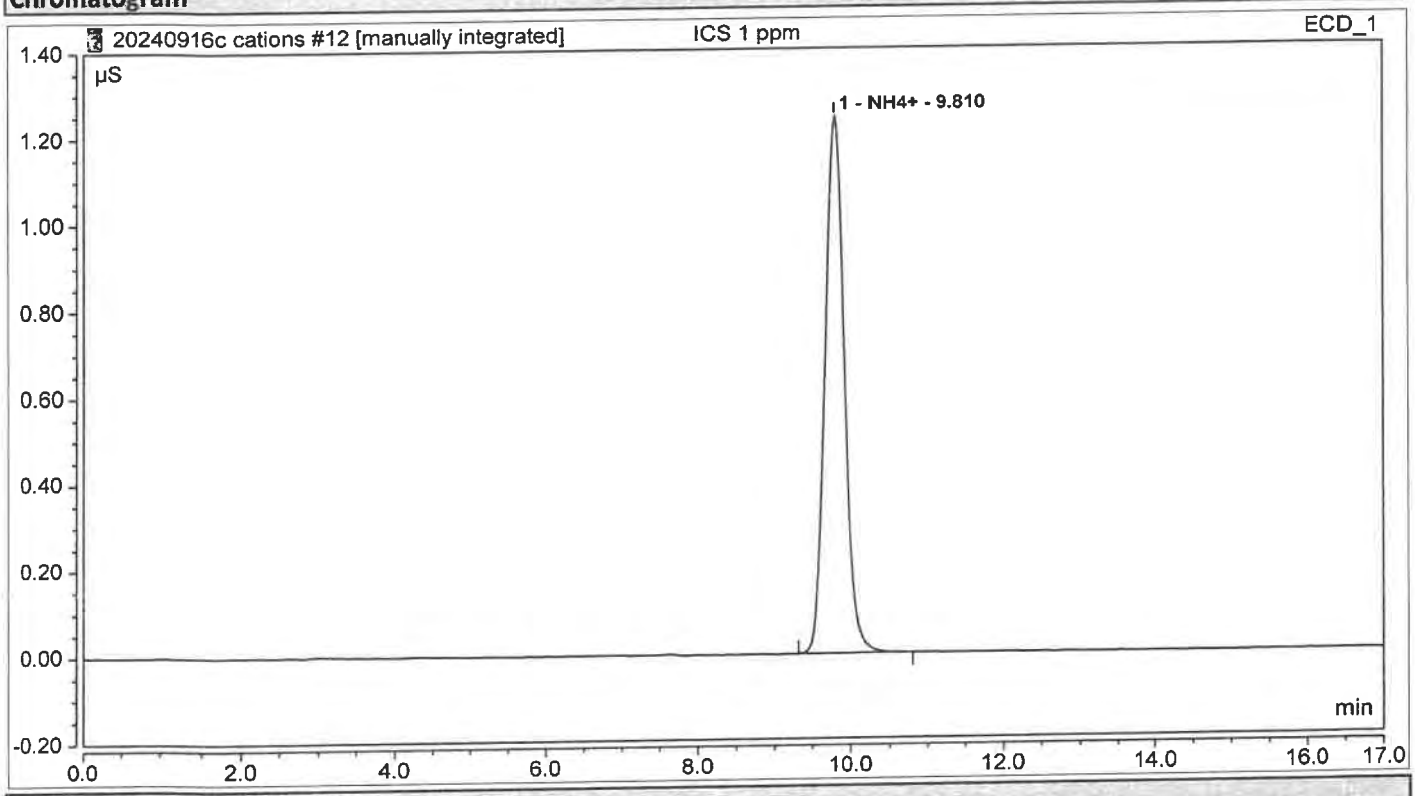
No.	Peak Name	Retention Time min	Width (50%) min	Type	Resolution (EP)	Asymmetry (EP)	S/N
1	NH4+	9.770	0.221	BMB*	n.a.	1.04	342.4

Peak Analysis

Injection Details

Injection Name:	**ICS 1 ppm**	*Run Time (min):*	**17.00**
Vial Number:	**GB2**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 21:26**	*Sample Weight:*	**1.0000**

Chromatogram



Peak Results

No.	Peak Name	Retention Time min	Width (50%) min	Type	Resolution (EP)	Asymmetry (EP)	S/N
1	NH4+	9.810	0.273	BMB*	n.a.	1.03	1547.0

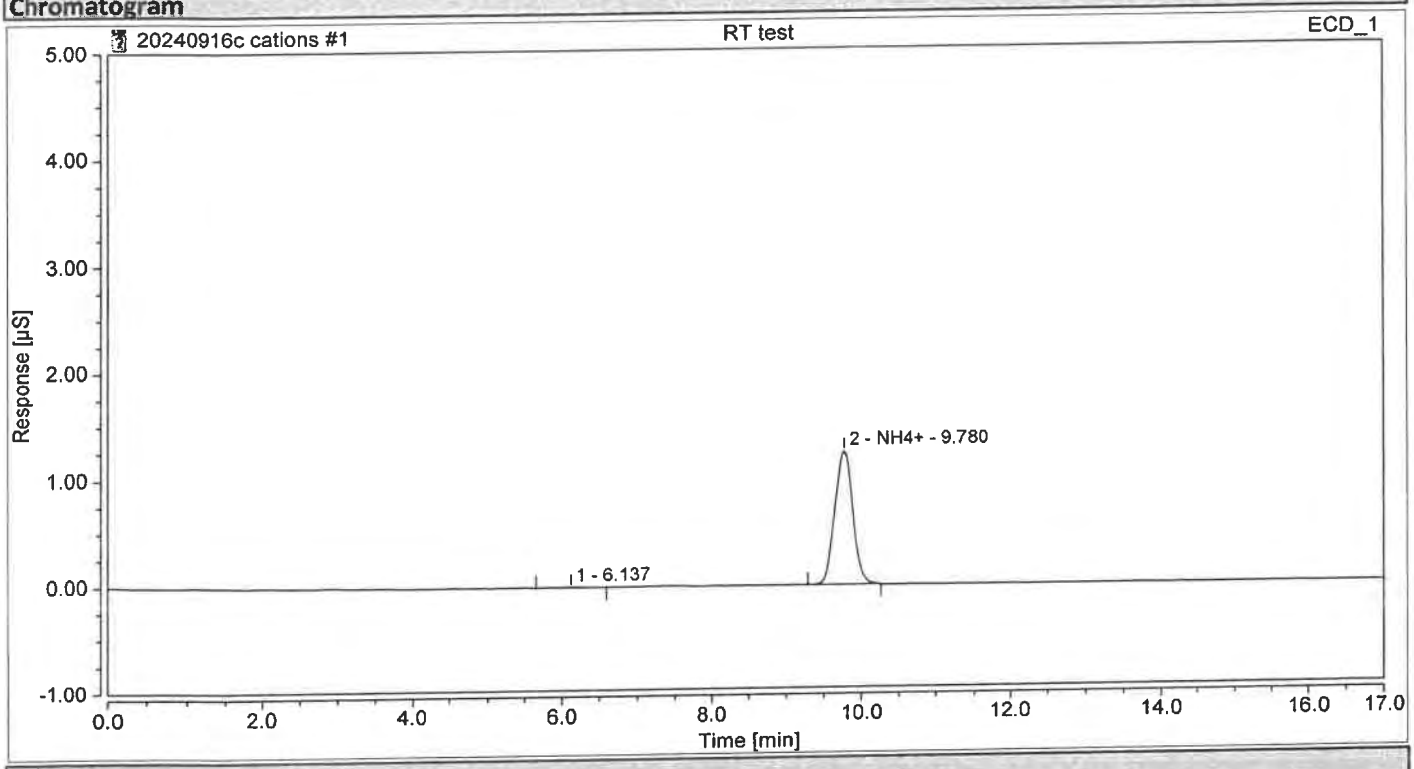
					Average	Std. Dev.	RSD
NH4+	0.3744	0.3665	0.3664	0.3578	0.366275	0.00678	1.851084 %

Chromatogram and Results

Injection Details

Injection Name:	**RT test**	*Run Time (min):*	**17.00**
Vial Number:	**GA1**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 17:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

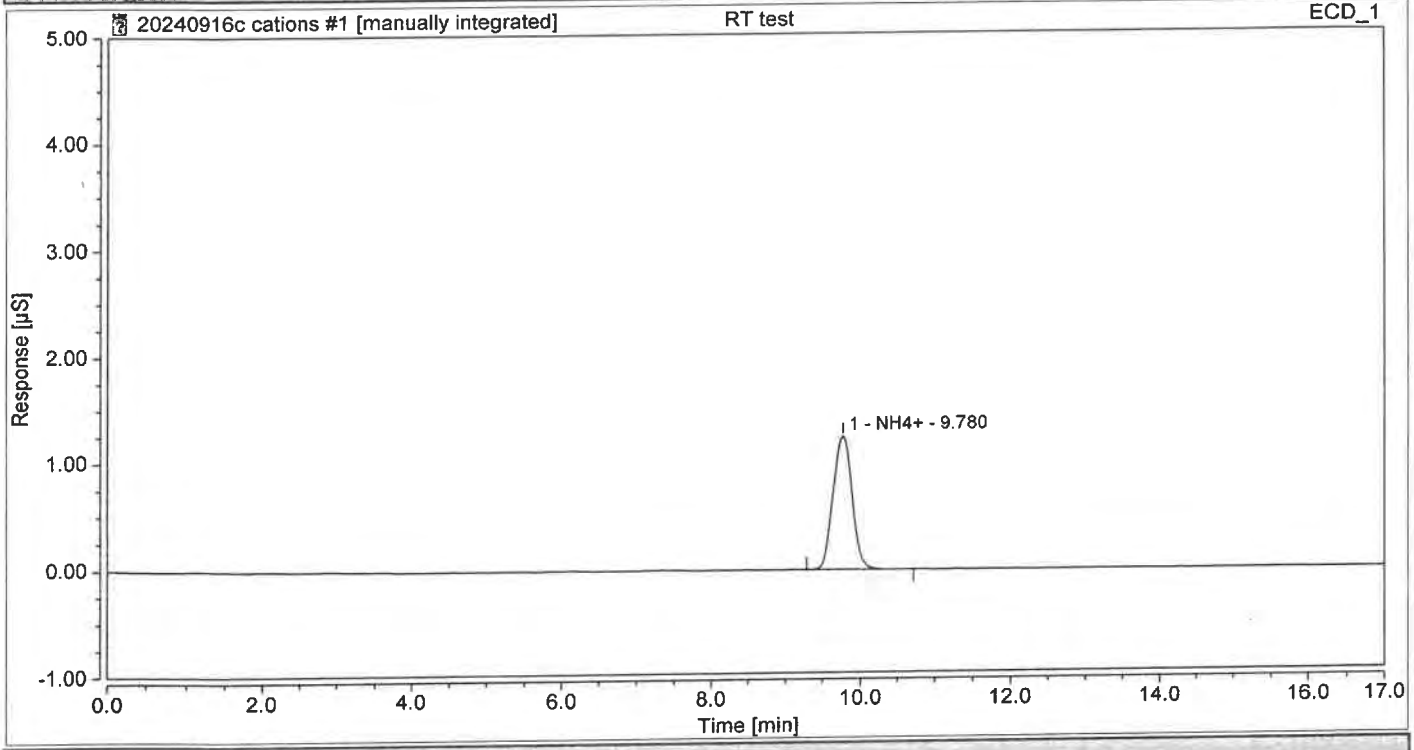
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		6.137	0.0020	0.006	0.55	0.46	n.a.
2	NH4+	9.780	0.3548	1.252	99.45	99.54	0.9702
Total:			**0.357**	**1.258**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**RT test**	*Run Time (min):*	**17.00**
Vial Number:	**GA1**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 17:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

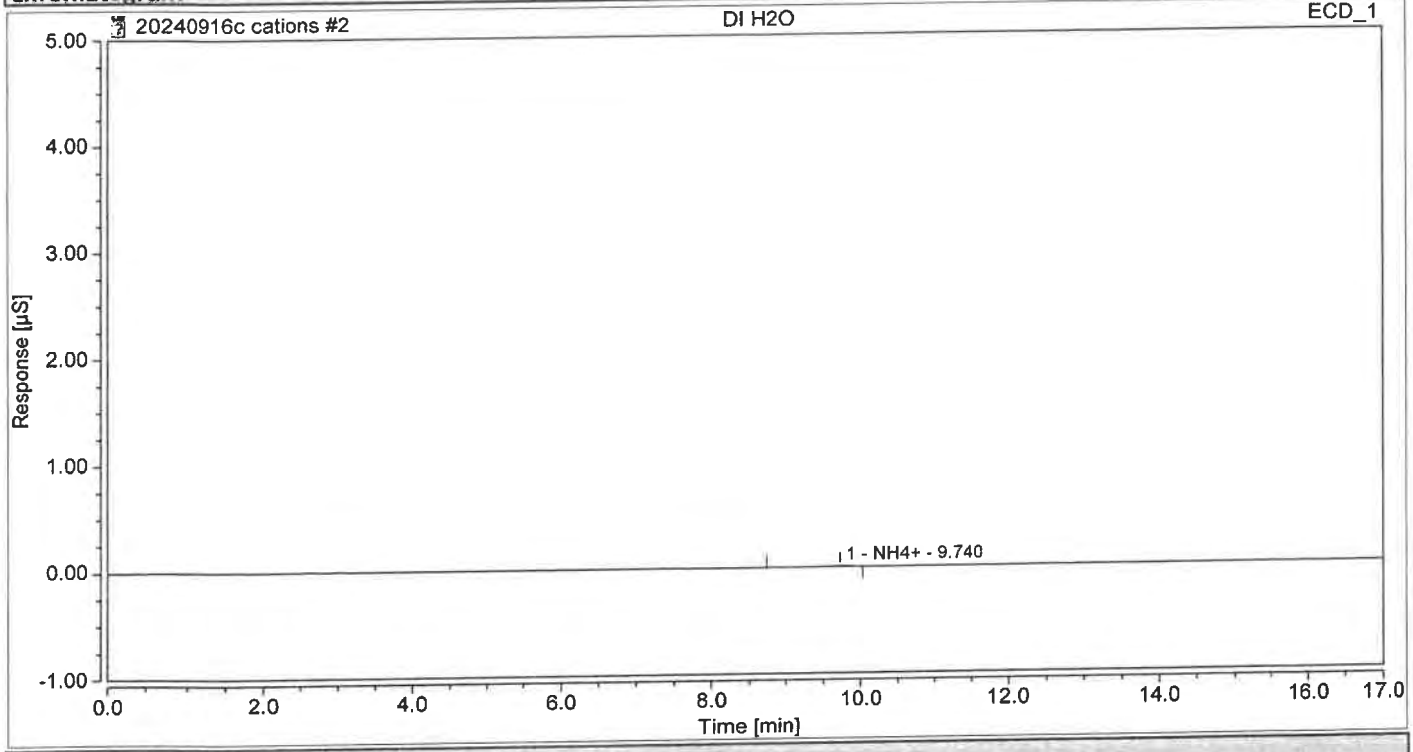
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.780	0.3547	1.252	100.00	100.00	0.9618
Total:			**0.355**	**1.252**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GA2**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 17:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

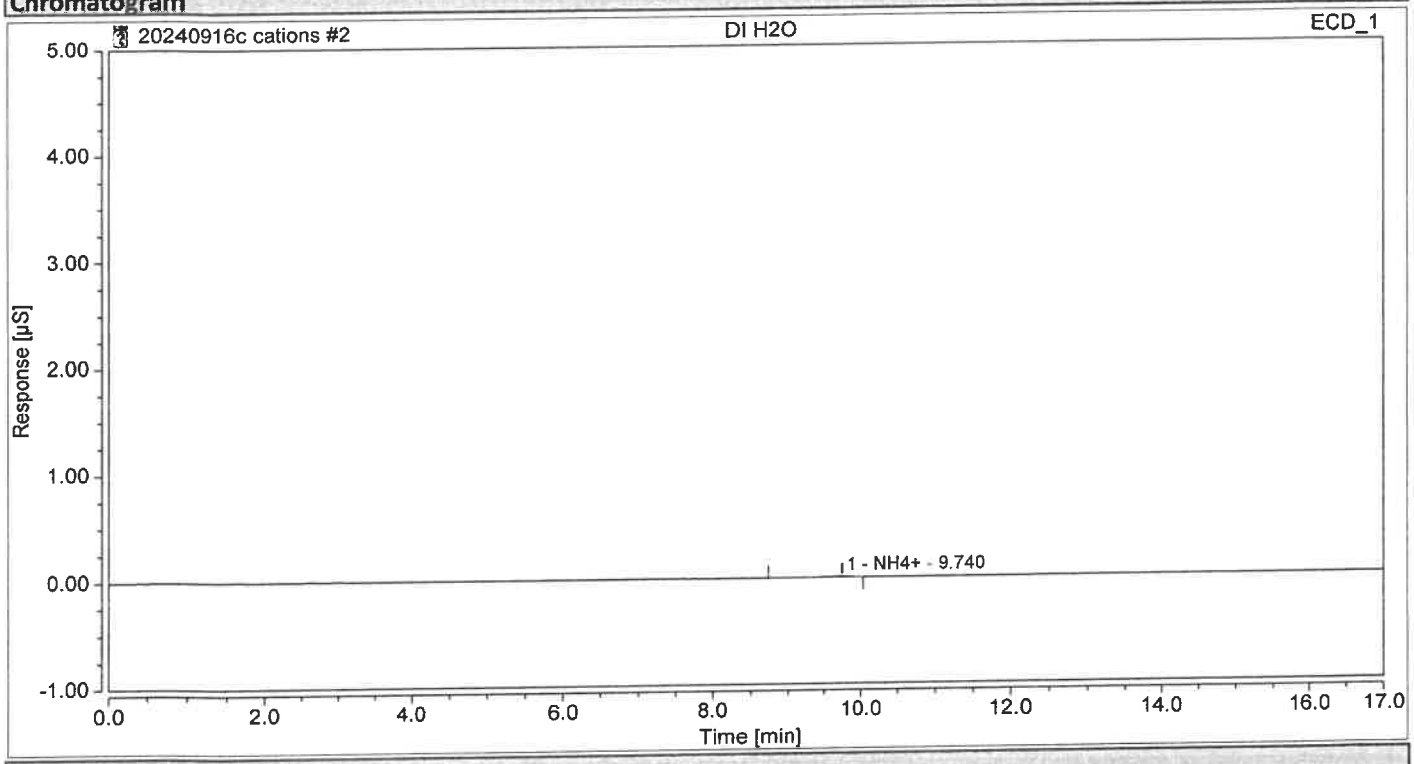
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.740	0.0021	0.008	100.00	100.00	0.0008
Total:			**0.002**	**0.008**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GA2**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 17:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

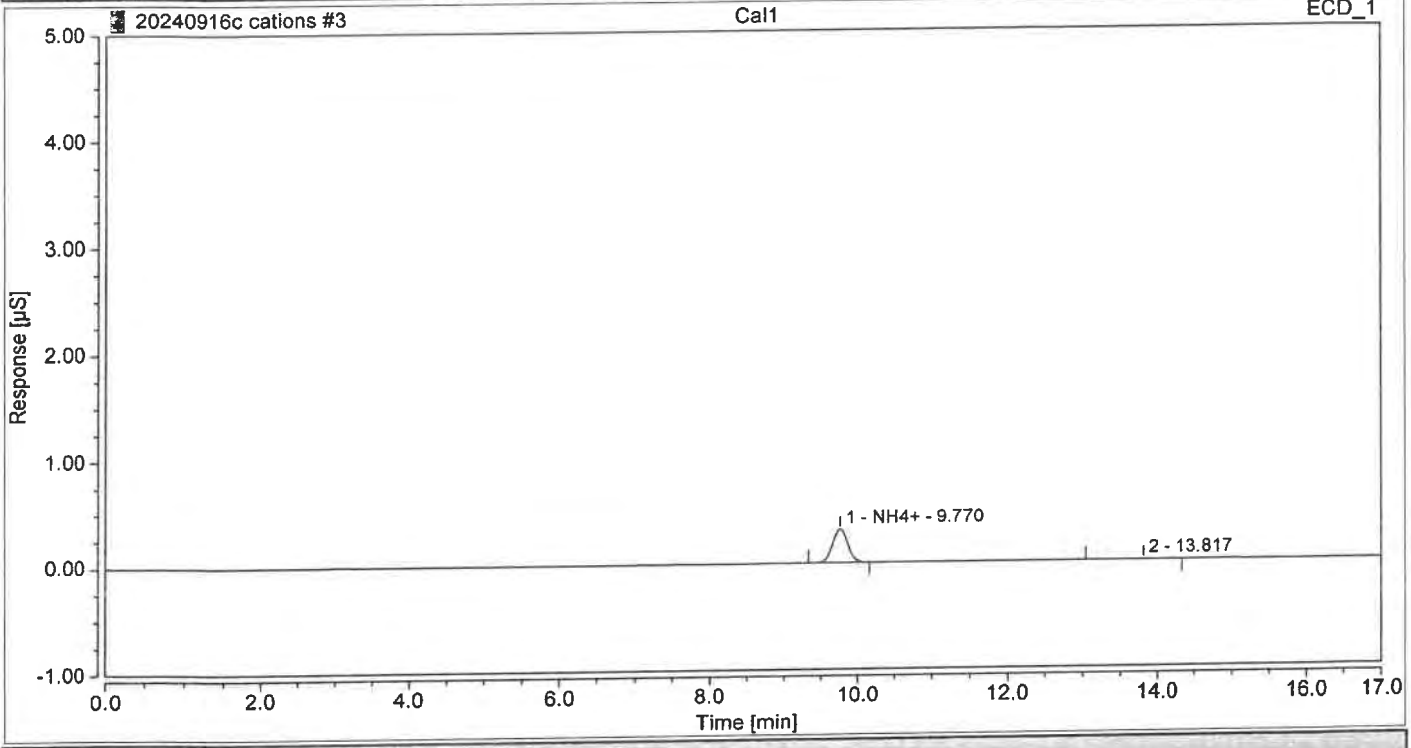
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.740	0.0021	0.008	100.00	100.00	0.0021
Total:			**0.002**	**0.008**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Cal1**	*Run Time (min):*	**17.00**
Vial Number:	**GA3**	*Injection Volume:*	**50.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**1**	*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 18:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

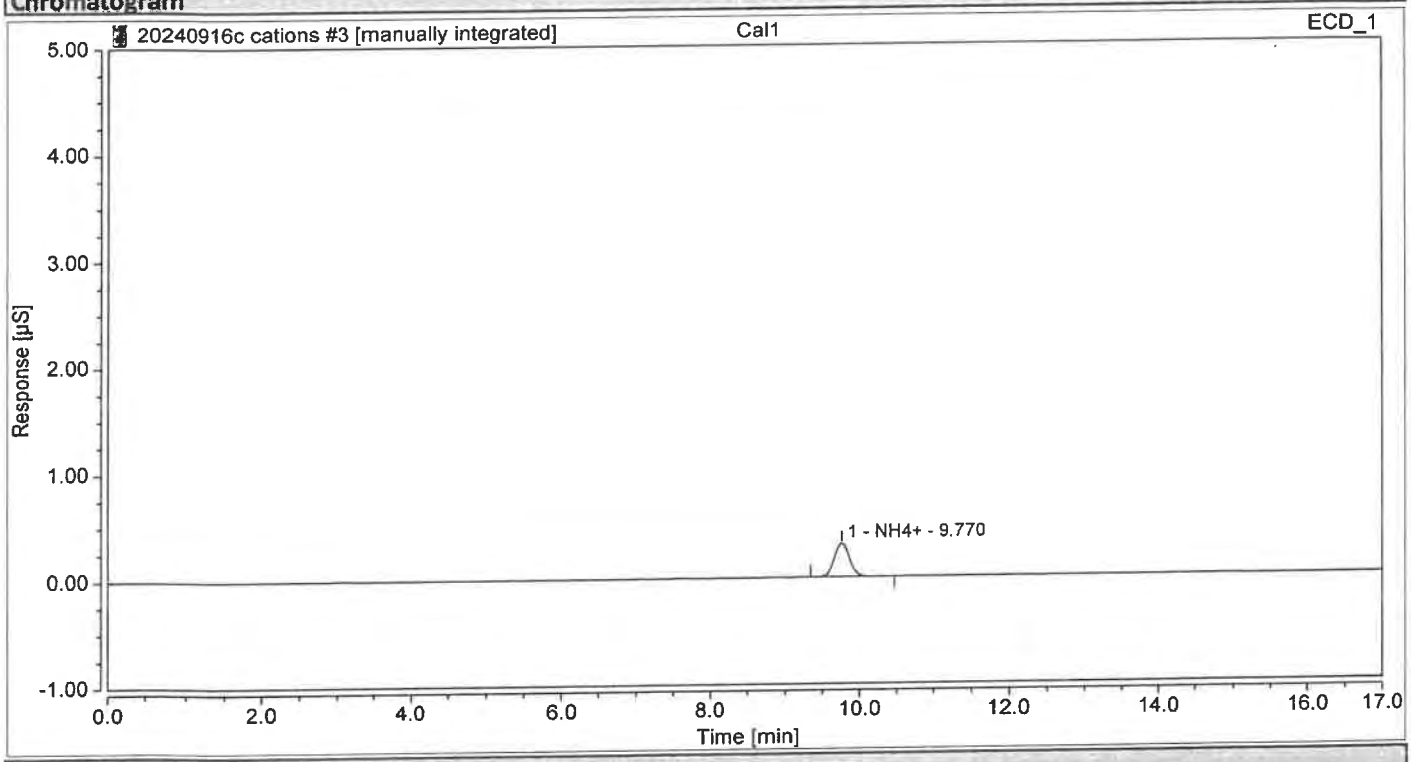
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.770	0.0750	0.316	99.04	99.57	0.1918
2		13.817	0.0007	0.001	0.96	0.43	n.a.
Total:			**0.076**	**0.318**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Cal1**	*Run Time (min):*	**17.00**
Vial Number:	**GA3**	*Injection Volume:*	**50.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**1**	*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 18:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

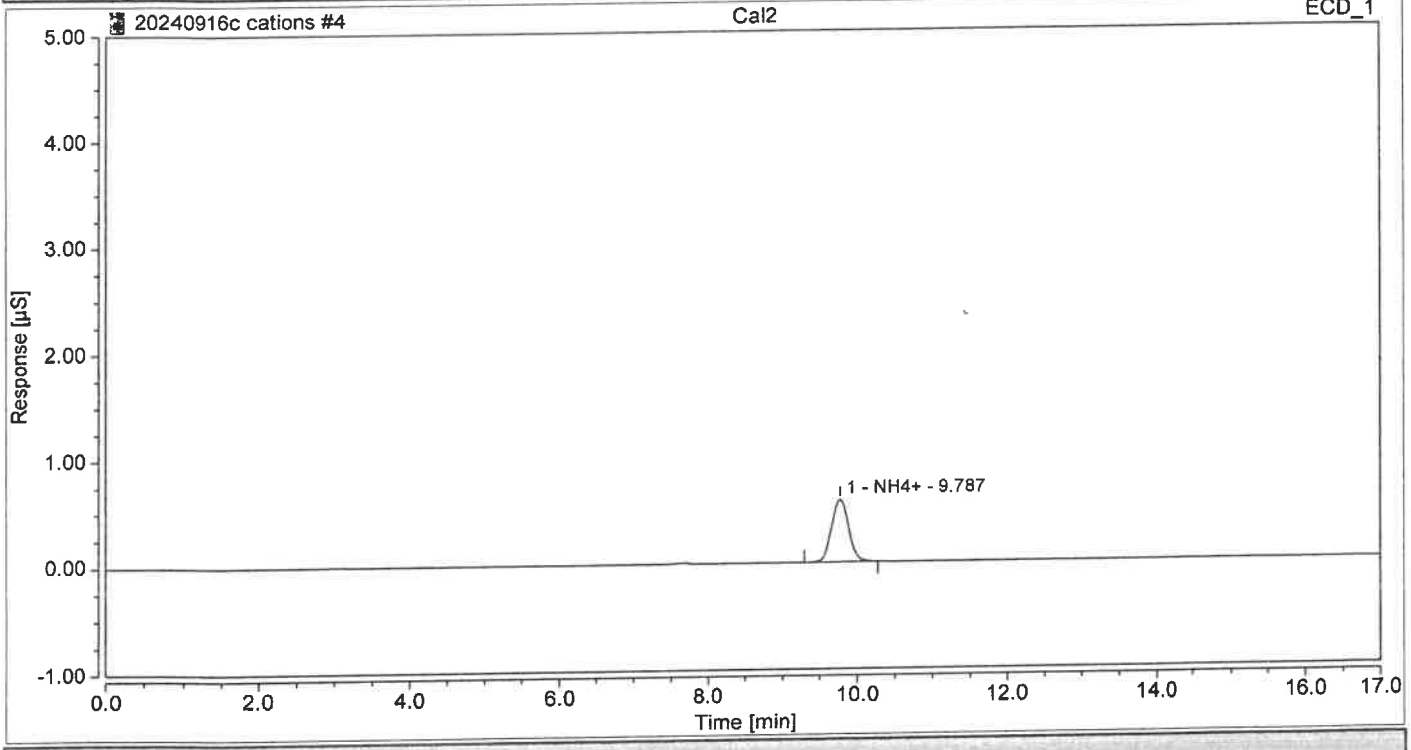
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.770	0.0747	0.316	100.00	100.00	0.1907
Total:			**0.075**	**0.316**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Cal2**	*Run Time (min):*	**17.00**
Vial Number:	**GA4**	*Injection Volume:*	**50.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**2**	*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 18:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

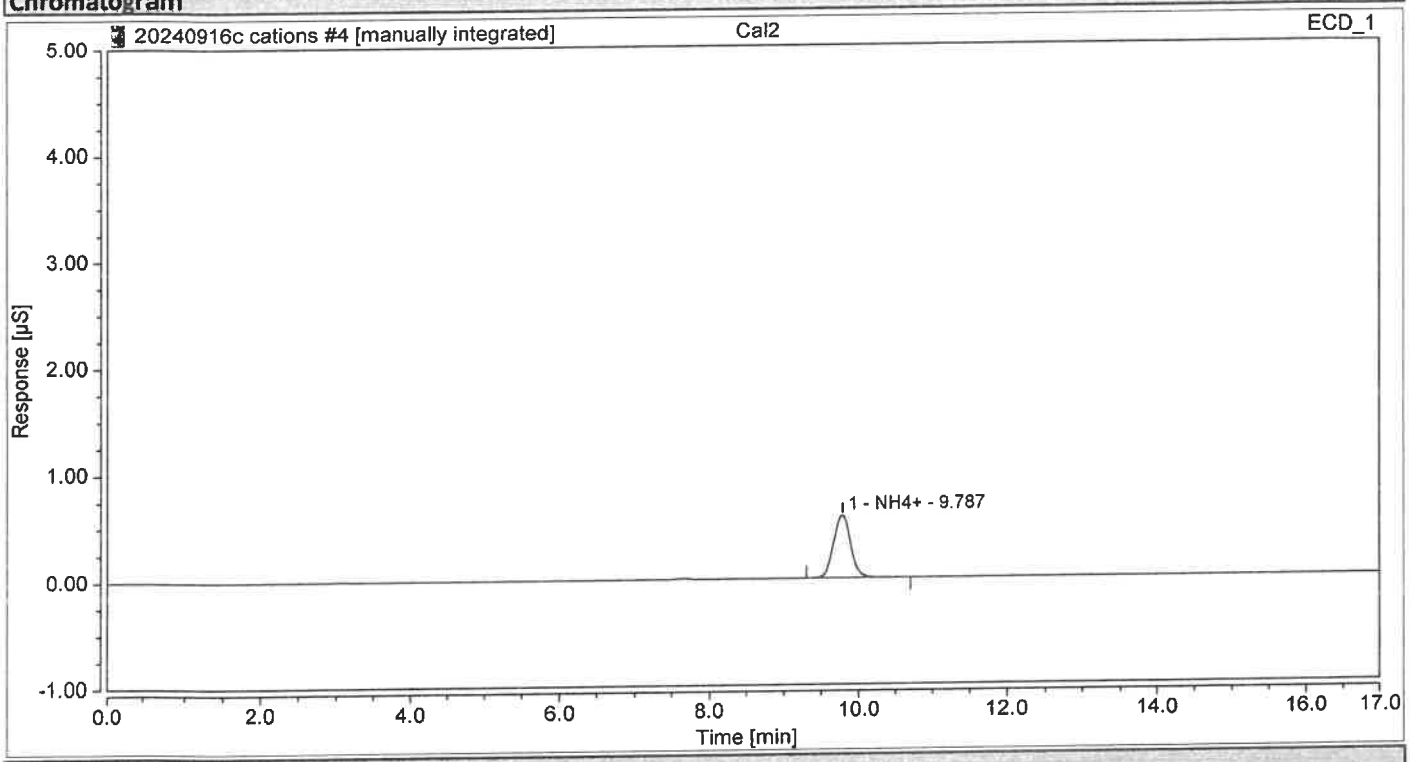
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.787	0.1530	0.585	100.00	100.00	0.4012
Total:			**0.153**	**0.585**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Cal2**	*Run Time (min):*	**17.00**
Vial Number:	**GA4**	*Injection Volume:*	**50.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**2**	*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 18:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

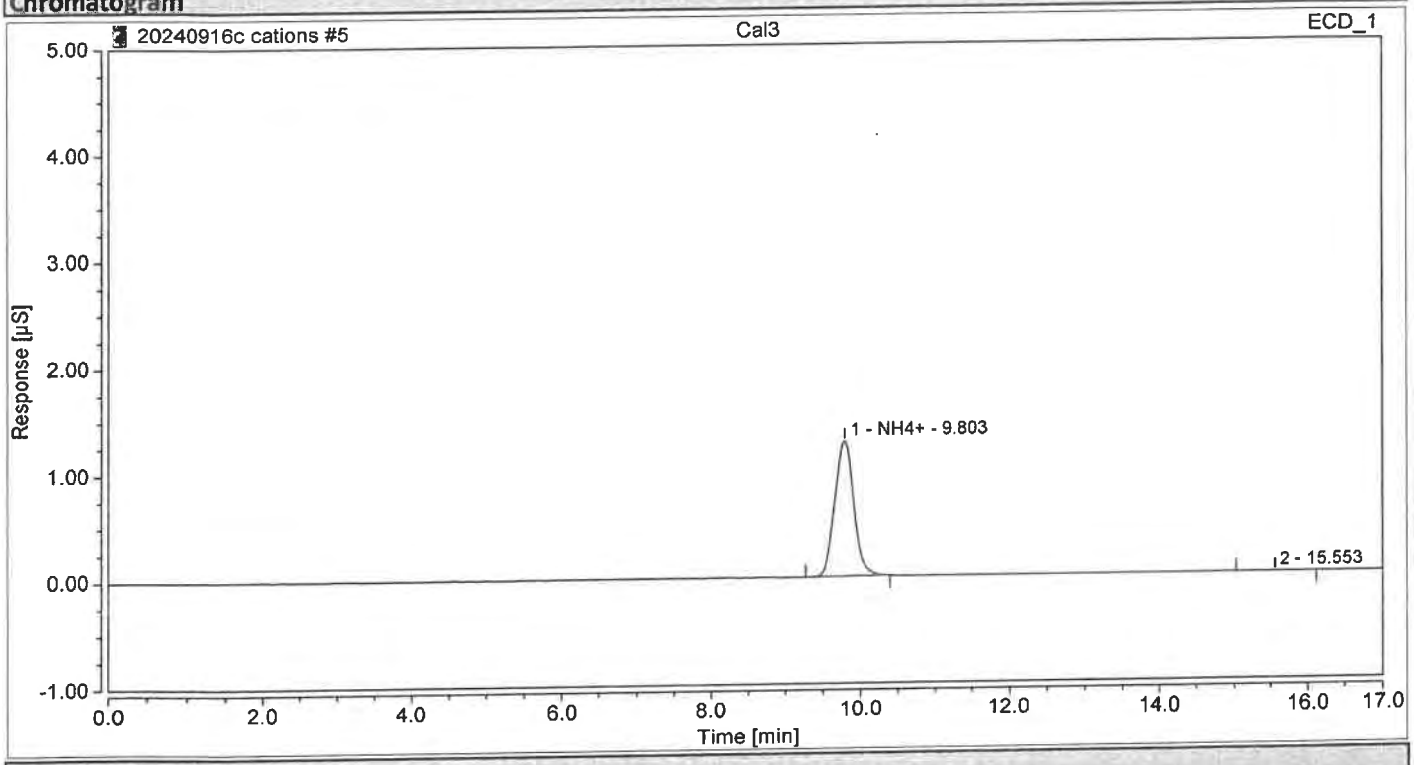
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.787	0.1542	0.586	100.00	100.00	0.4022
Total:			**0.154**	**0.586**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Cal3**	*Run Time (min):*	**17.00**
Vial Number:	**GA5**	*Injection Volume:*	**50.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**3**	*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 19:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

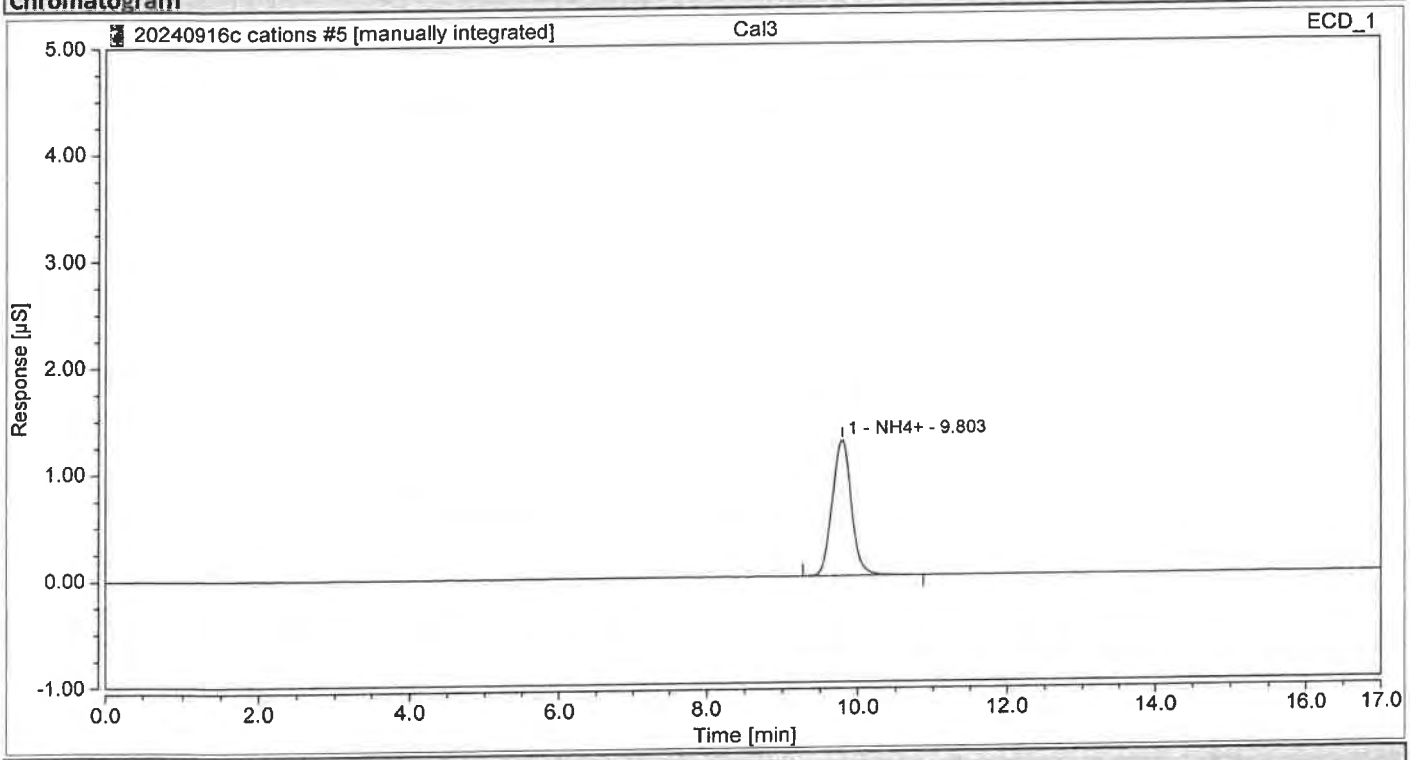
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.803	0.3712	1.271	99.81	99.88	1.0183
2		15.553	0.0007	0.001	0.19	0.12	n.a.
Total:			**0.372**	**1.272**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Cal3**	*Run Time (min):*	**17.00**
Vial Number:	**GA5**	*Injection Volume:*	**50.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**3**	*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 19:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

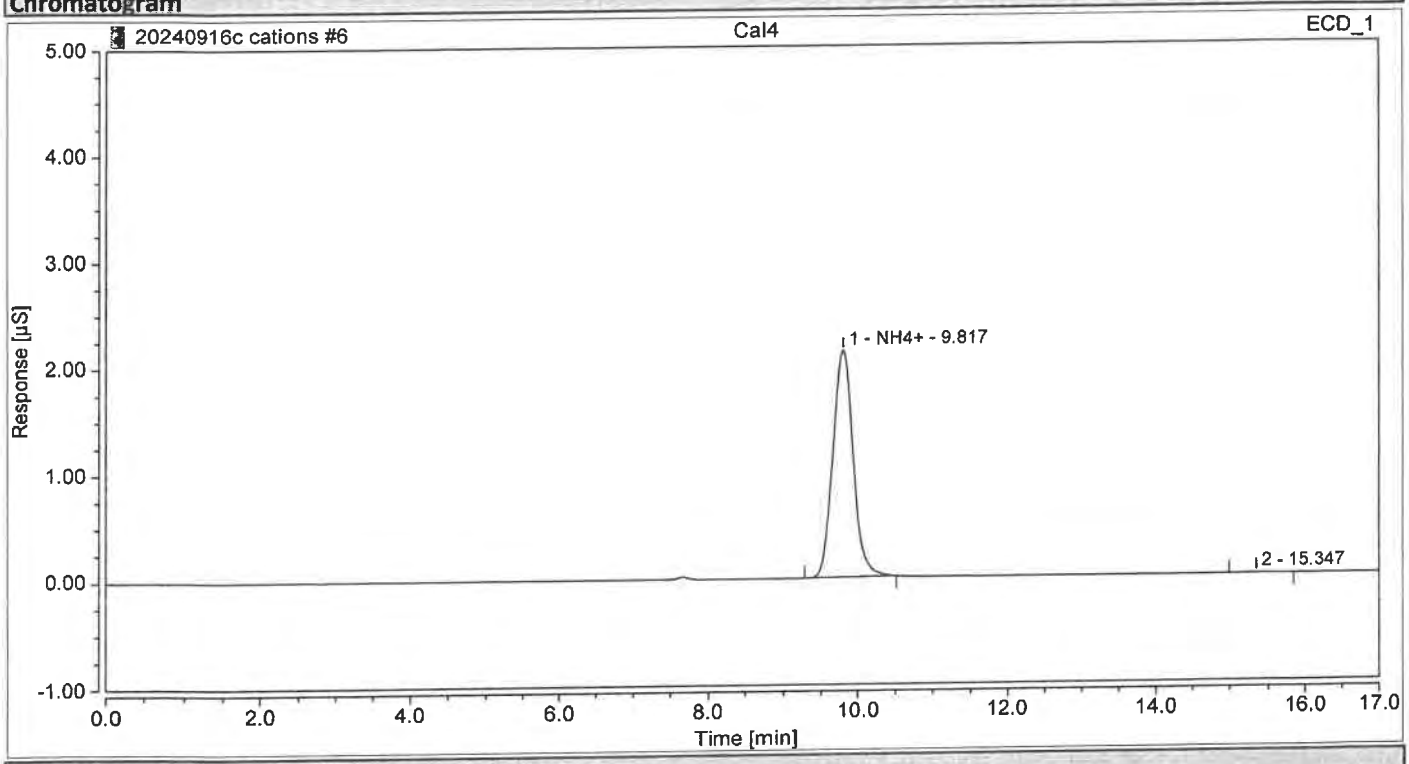
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.803	0.3744	1.273	100.00	100.00	1.0188
Total:			**0.374**	**1.273**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Cal4**	*Run Time (min):*	**17.00**
Vial Number:	**GA6**	*Injection Volume:*	**50.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**4**	*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 19:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

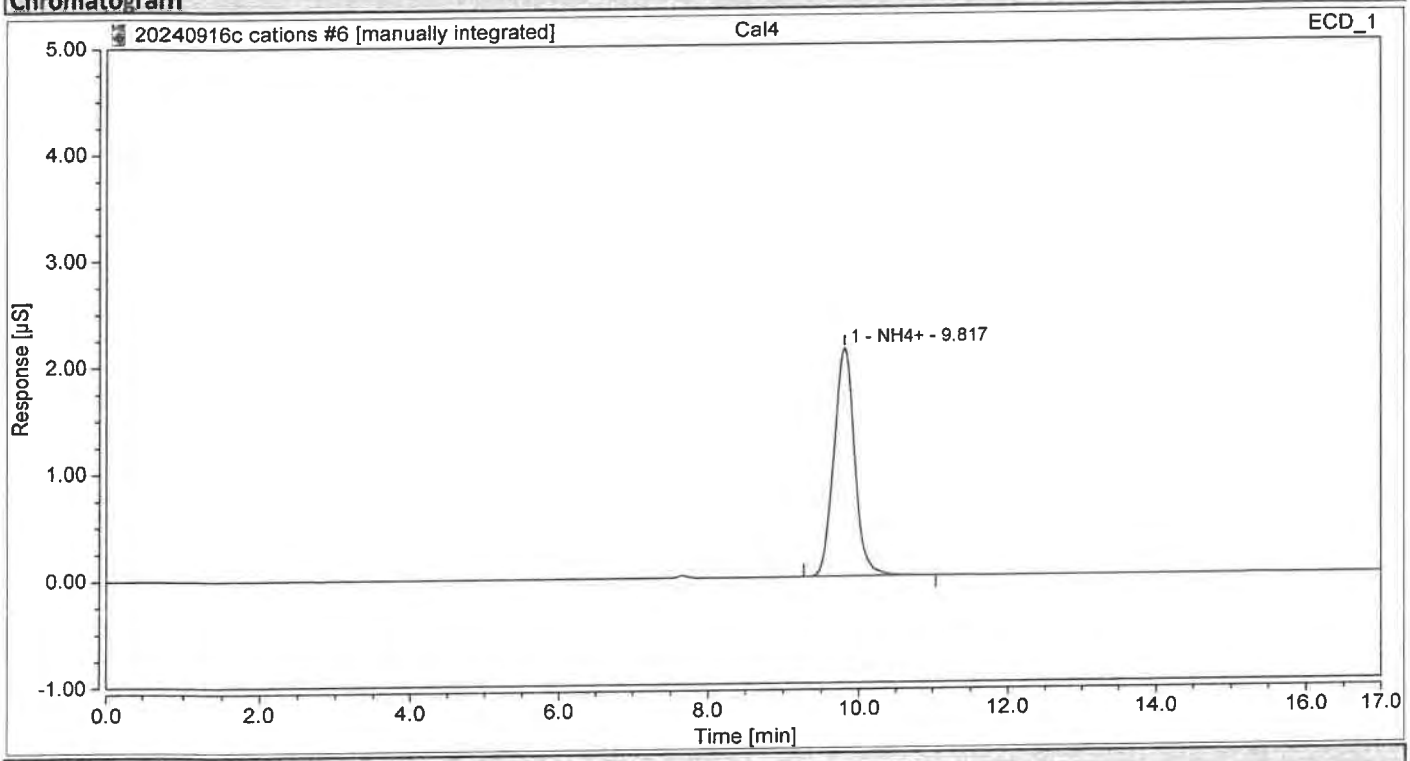
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.817	0.6785	2.131	99.79	99.79	1.9856
2		15.347	0.0014	0.004	0.21	0.21	n.a.
Total:			**0.680**	**2.135**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Cal4**	*Run Time (min):*	**17.00**
Vial Number:	**GA6**	*Injection Volume:*	**50.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**4**	*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 19:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

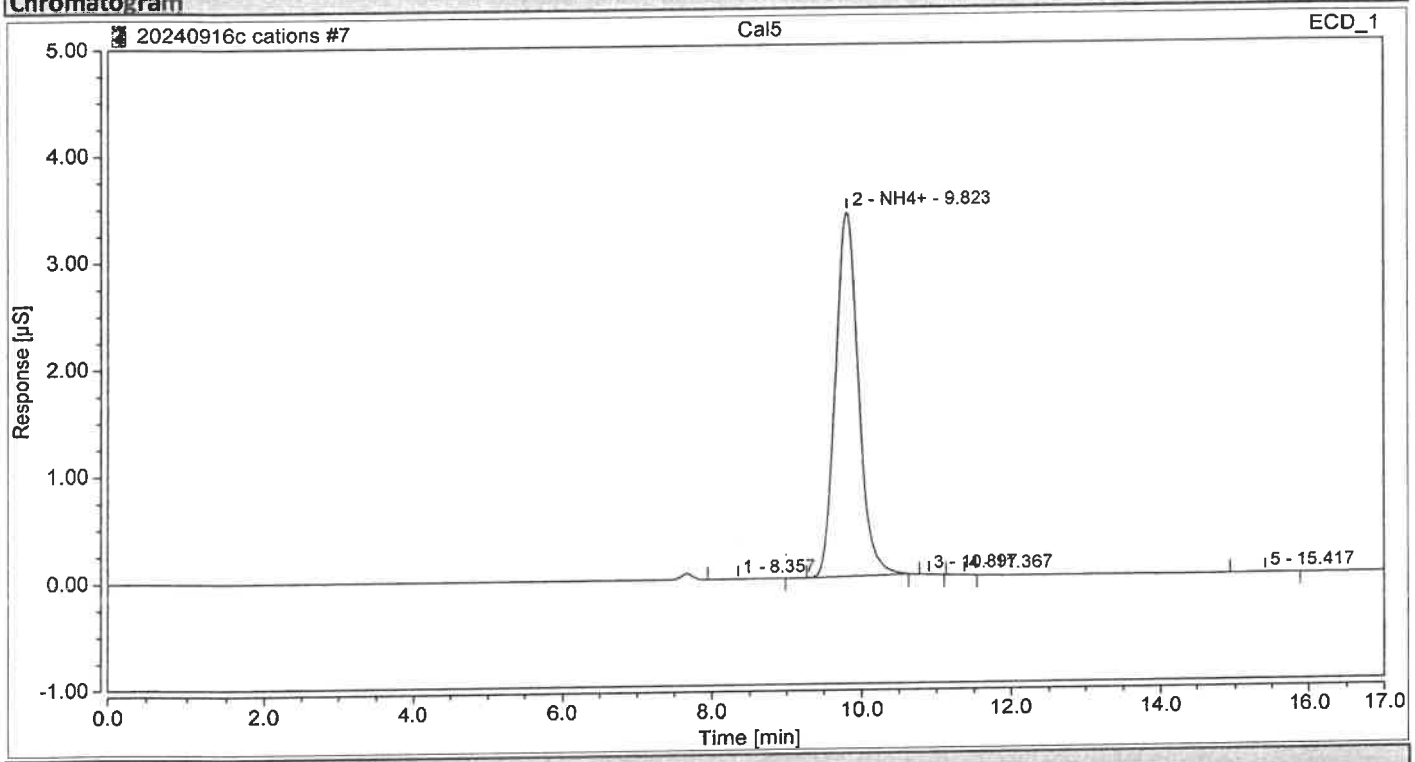
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.817	0.6850	2.134	100.00	100.00	1.9851
Total:			**0.685**	**2.134**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Cal5**	*Run Time (min):*	**17.00**
Vial Number:	**GA7**	*Injection Volume:*	**50.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**5**	*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 19:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

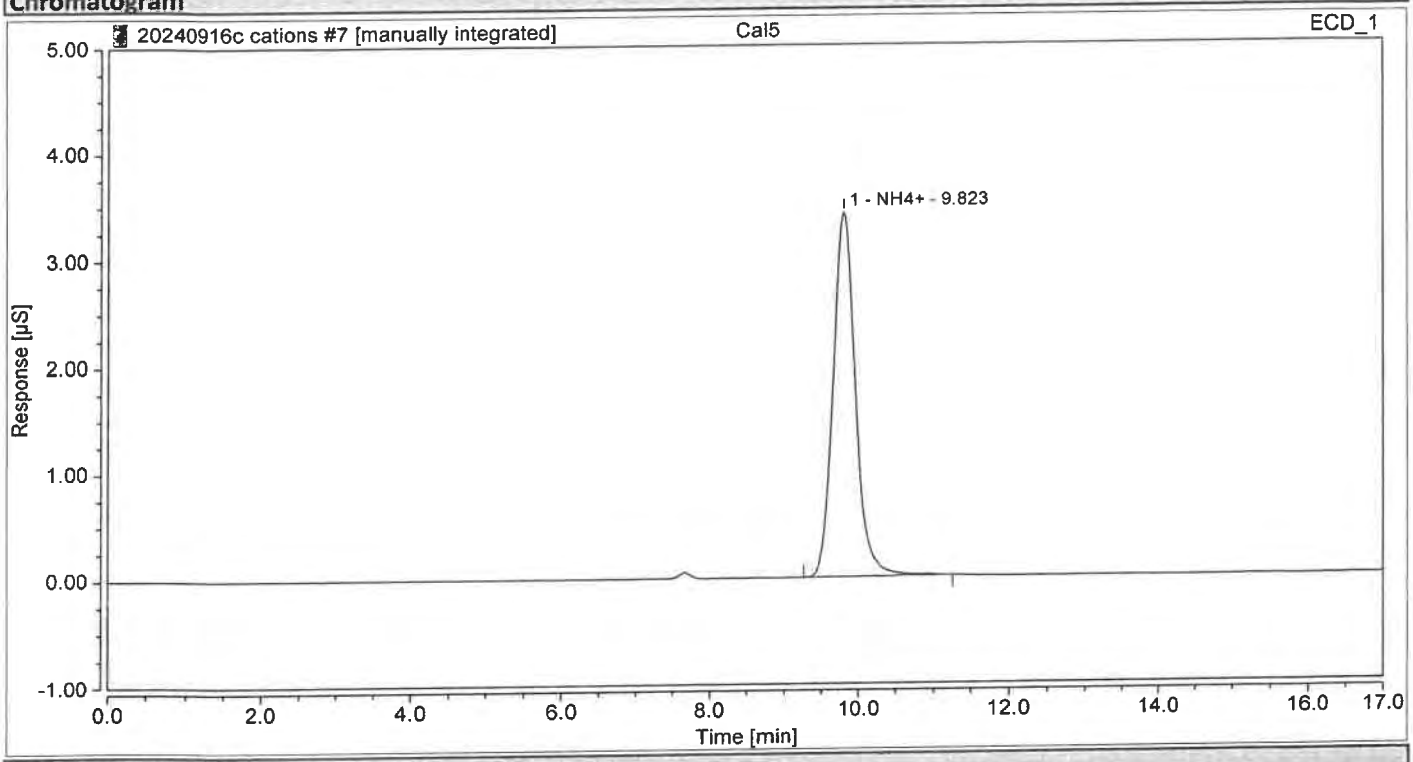
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		8.357	0.0009	0.002	0.08	0.05	n.a.
2	NH4+	9.823	1.1830	3.417	99.78	99.74	4.0033
3		10.897	0.0005	0.003	0.04	0.07	n.a.
4		11.367	0.0005	0.002	0.04	0.07	n.a.
5		15.417	0.0008	0.002	0.07	0.07	n.a.
Total:			**1.186**	**3.426**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Cal5**	*Run Time (min):*	**17.00**
Vial Number:	**GA7**	*Injection Volume:*	**50.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**5**	*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 19:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

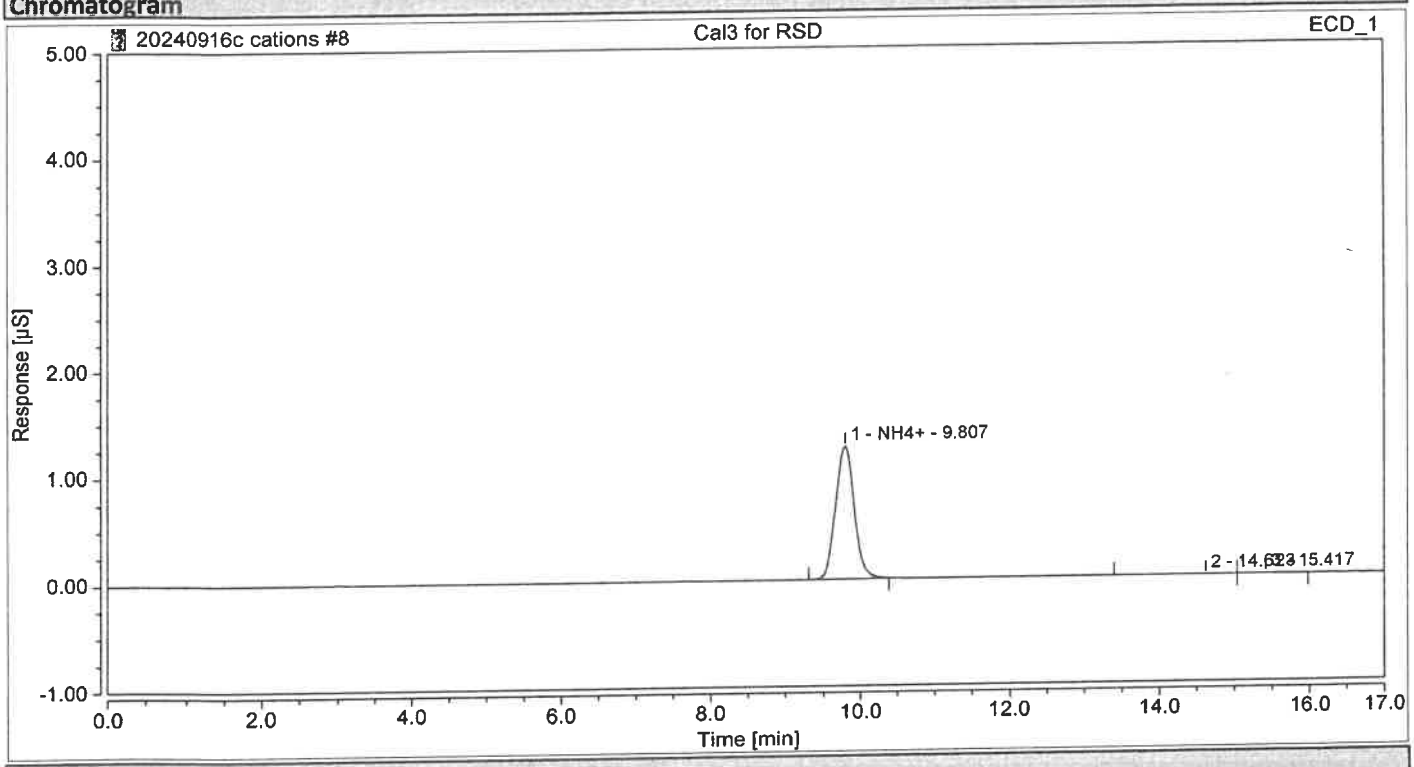
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.823	1.1983	3.423	100.00	100.00	4.0034
Total:			**1.198**	**3.423**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Cal3 for RSD**	*Run Time (min):*	**17.00**
Vial Number:	**GA8**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 20:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

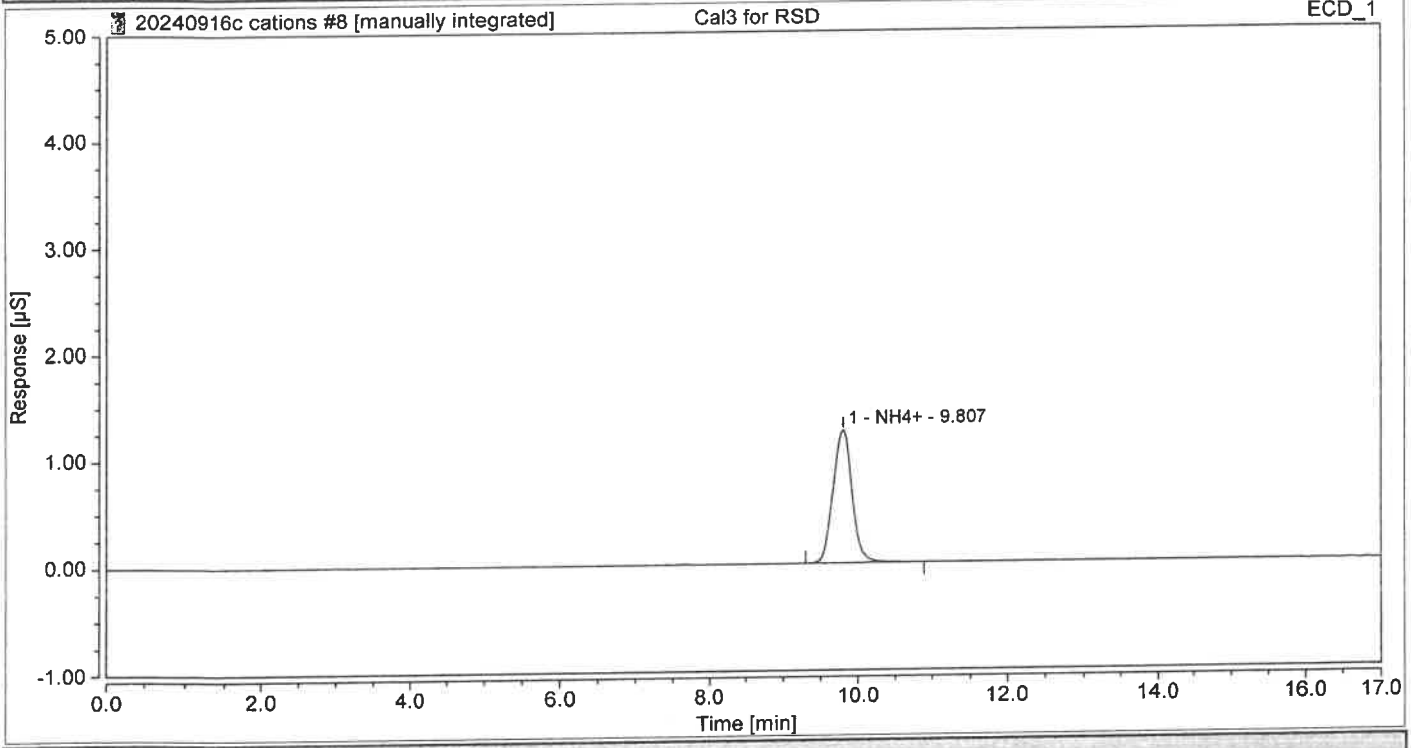
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.807	0.3632	1.245	99.70	99.82	0.9947
2		14.623	0.0005	0.001	0.14	0.06	n.a.
3		15.417	0.0006	0.002	0.16	0.12	n.a.
Total:			**0.364**	**1.247**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Cal3 for RSD**	*Run Time (min):*	**17.00**
Vial Number:	**GA8**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 20:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

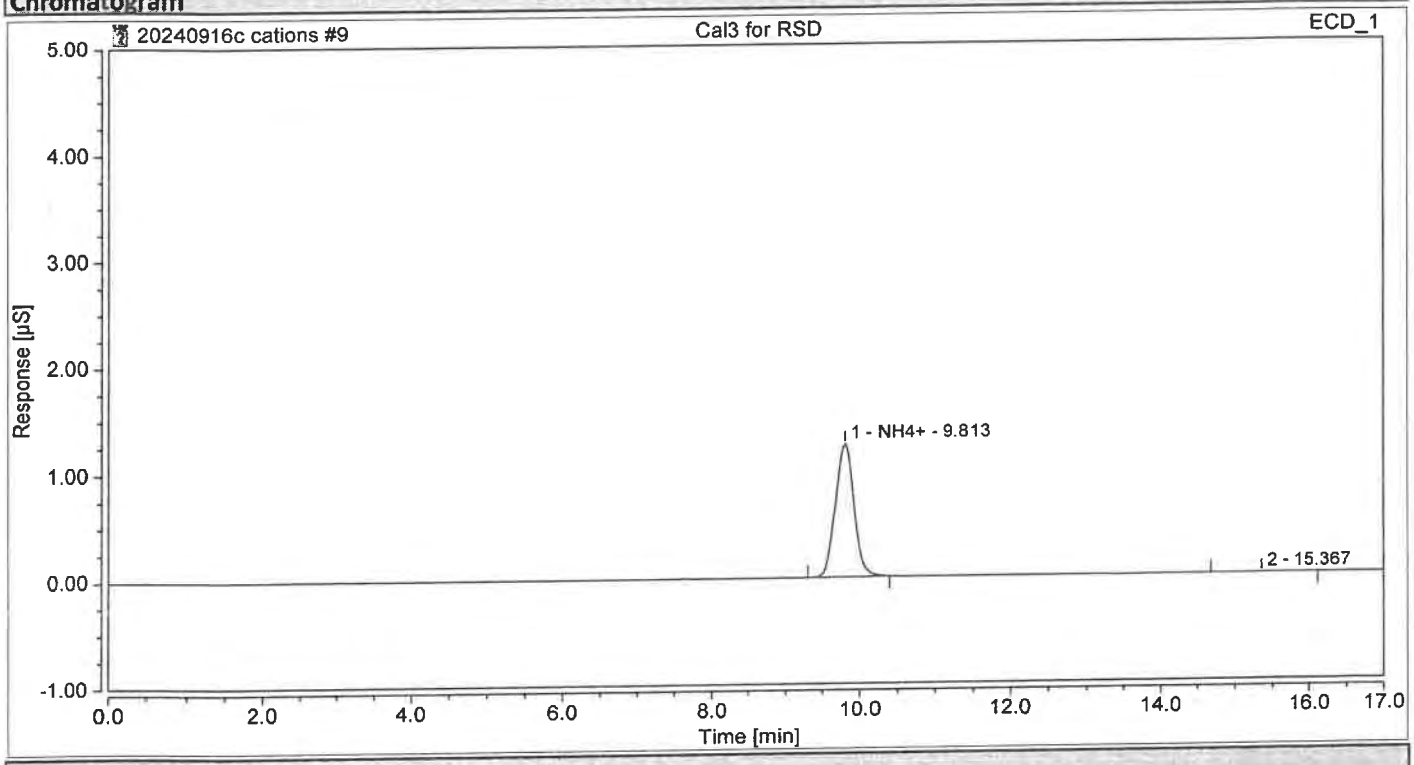
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.807	0.3665	1.247	100.00	100.00	0.9958
Total:			**0.366**	**1.247**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Cal3 for RSD**	*Run Time (min):*	**17.00**
Vial Number:	**GA8**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 20:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

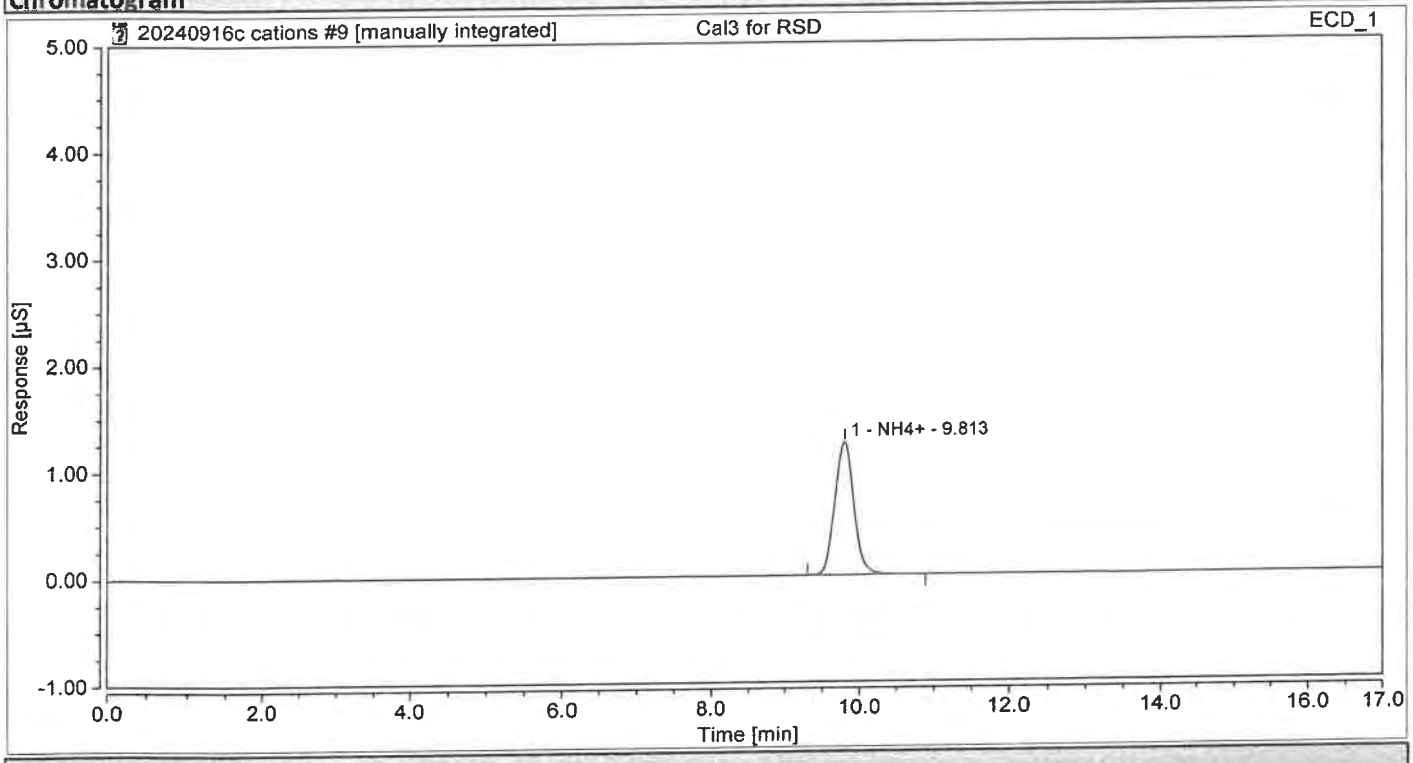
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.813	0.3636	1.242	99.78	99.87	0.9959
2		15.367	0.0008	0.002	0.22	0.13	n.a.
Total:			**0.364**	**1.244**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Cal3 for RSD**	*Run Time (min):*	**17.00**
Vial Number:	**GA8**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 20:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

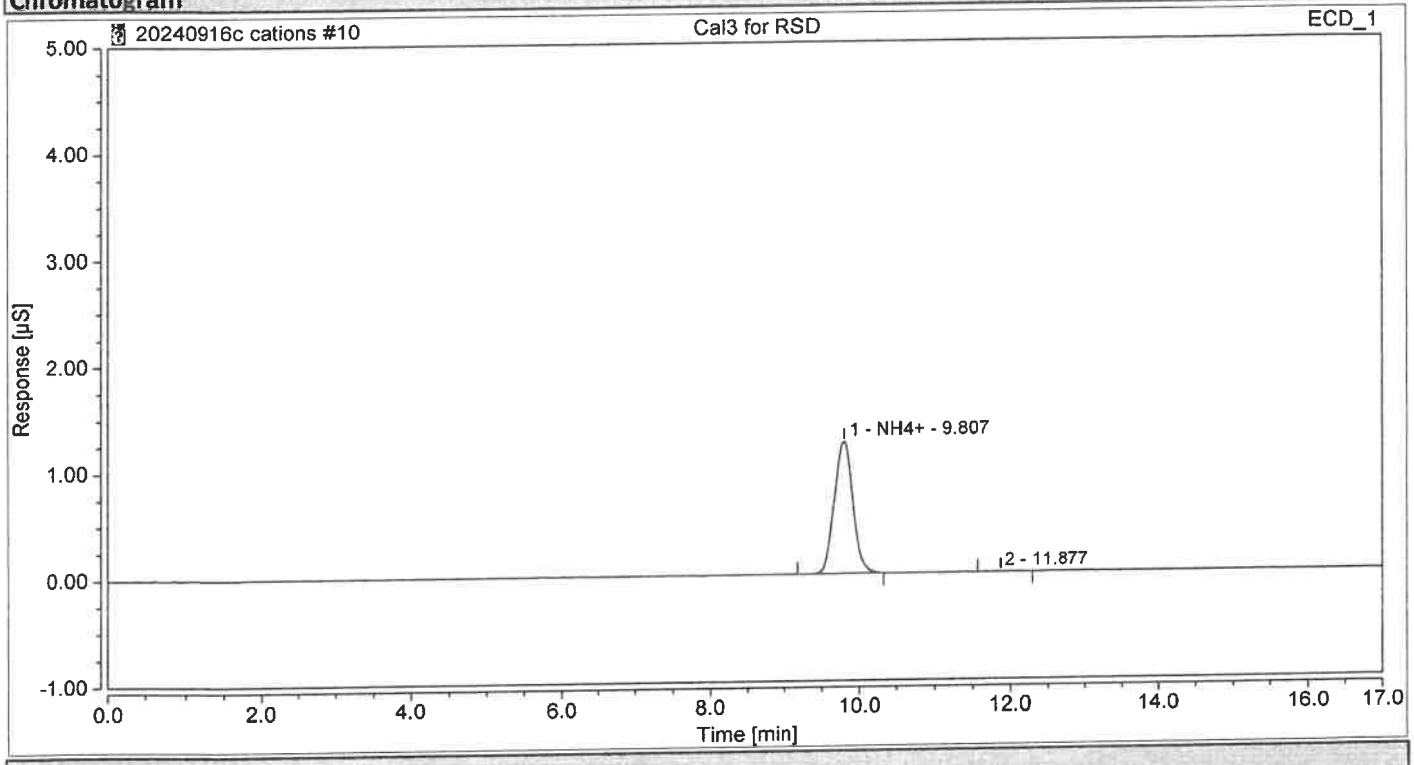
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.813	0.3664	1.244	100.00	100.00	0.9954
Total:			**0.366**	**1.244**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Cal3 for RSD**	*Run Time (min):*	**17.00**
Vial Number:	**GA8**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 20:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

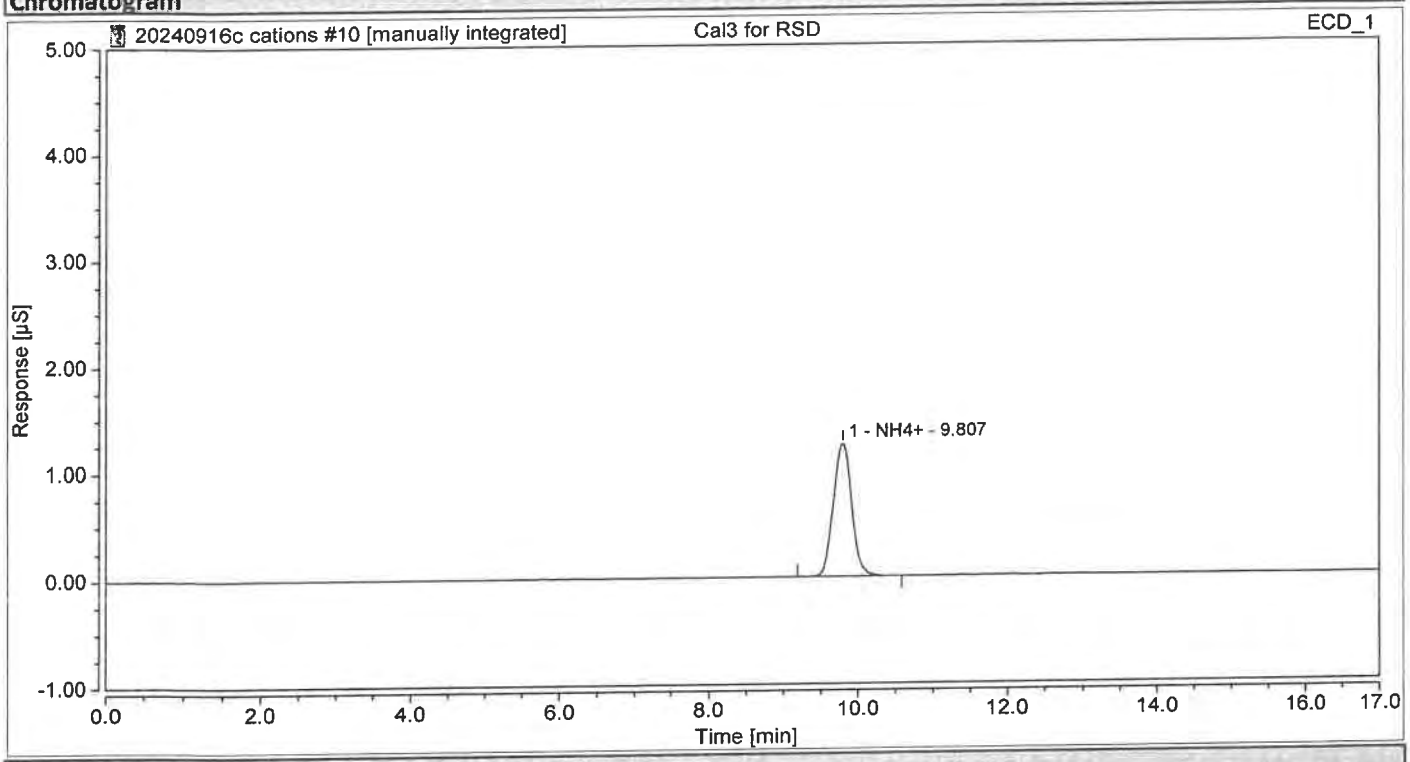
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.807	0.3566	1.243	99.82	99.86	0.9755
2		11.877	0.0007	0.002	0.18	0.14	n.a.
Total:			**0.357**	**1.245**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Cal3 for RSD**	*Run Time (min):*	**17.00**
Vial Number:	**GA8**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 20:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

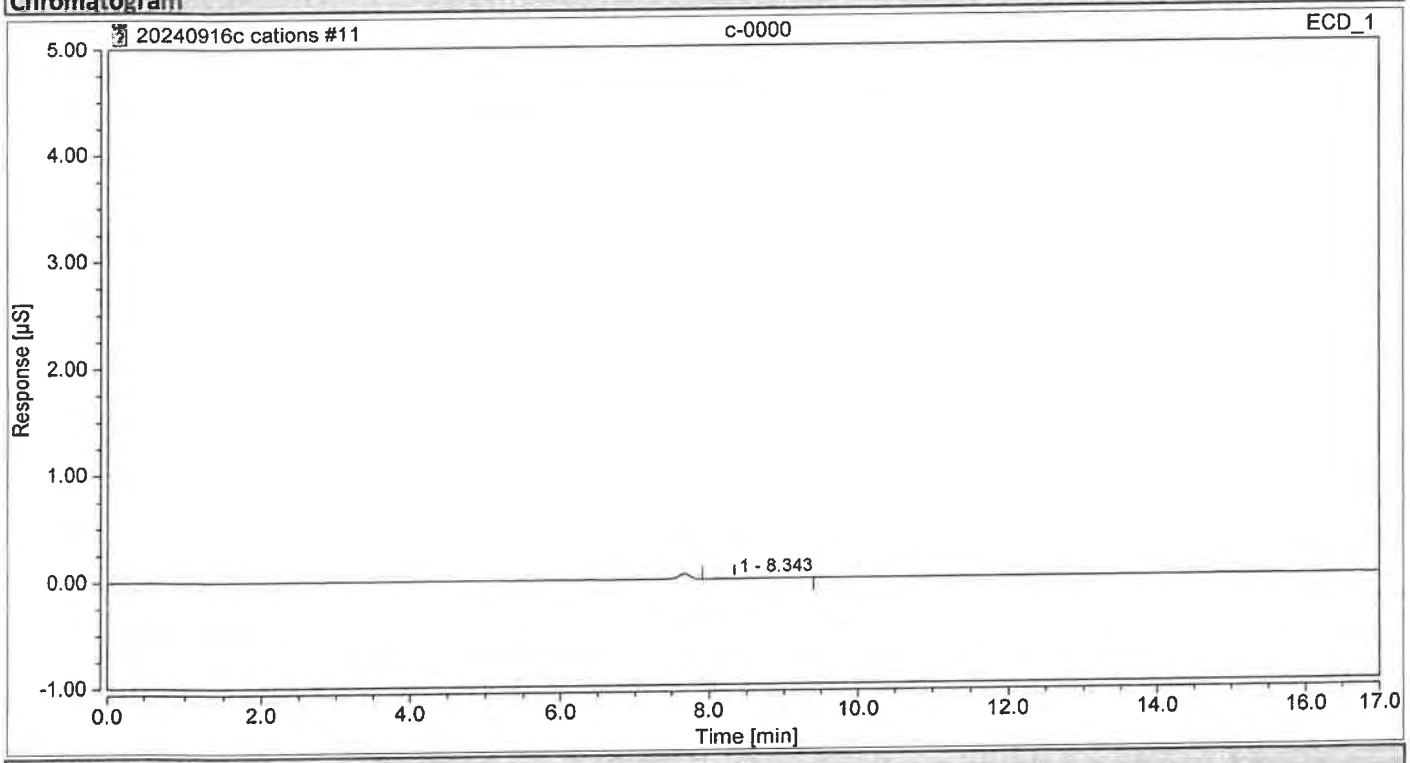
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.807	0.3578	1.244	100.00	100.00	0.9707
Total:			**0.358**	**1.244**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**c-0000**	*Run Time (min):*	**17.00**
Vial Number:	**GB1**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 21:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

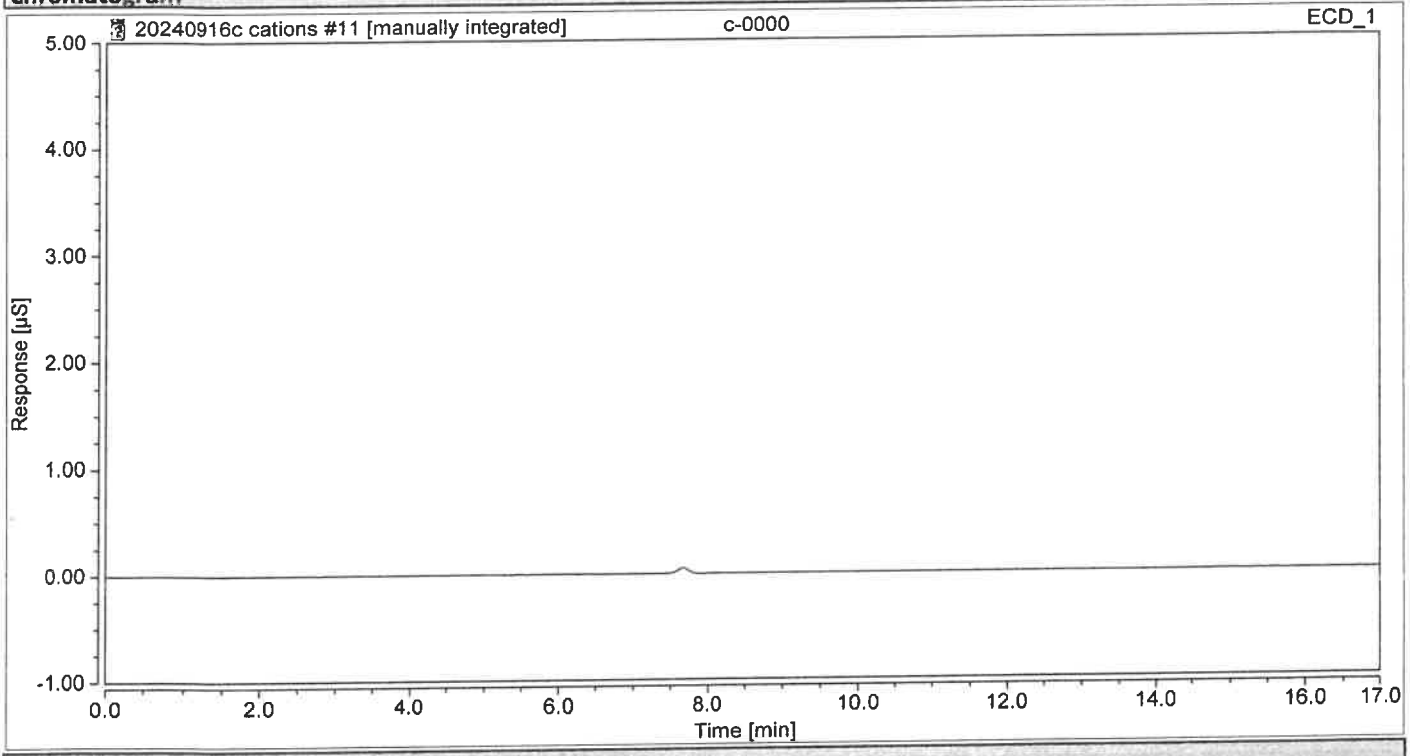
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		8.343	0.0024	0.003	100.00	100.00	n.a.
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.002**	**0.003**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**c-0000**	*Run Time (min):*	**17.00**
Vial Number:	**GB1**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 21:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

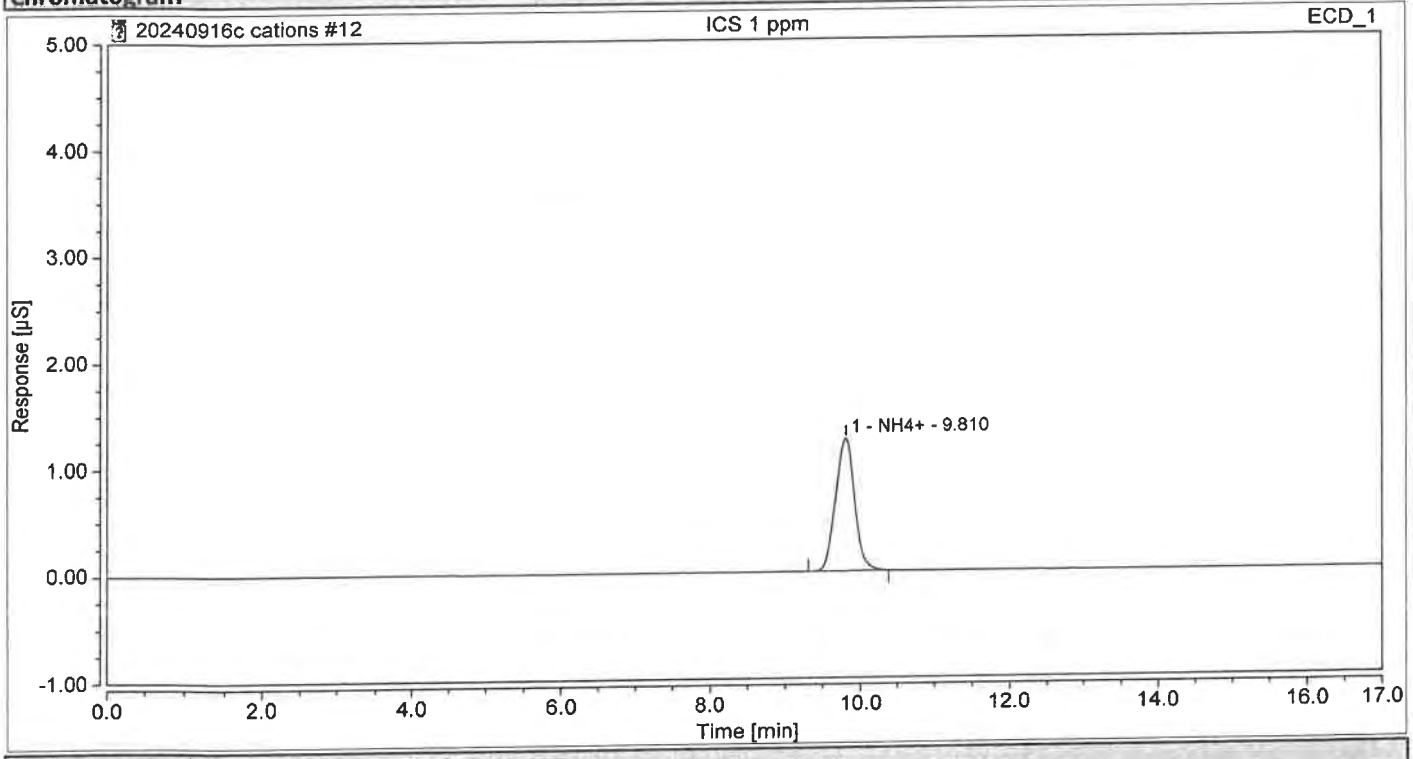
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICS 1 ppm**	*Run Time (min):*	**17.00**
Vial Number:	**GB2**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 21:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

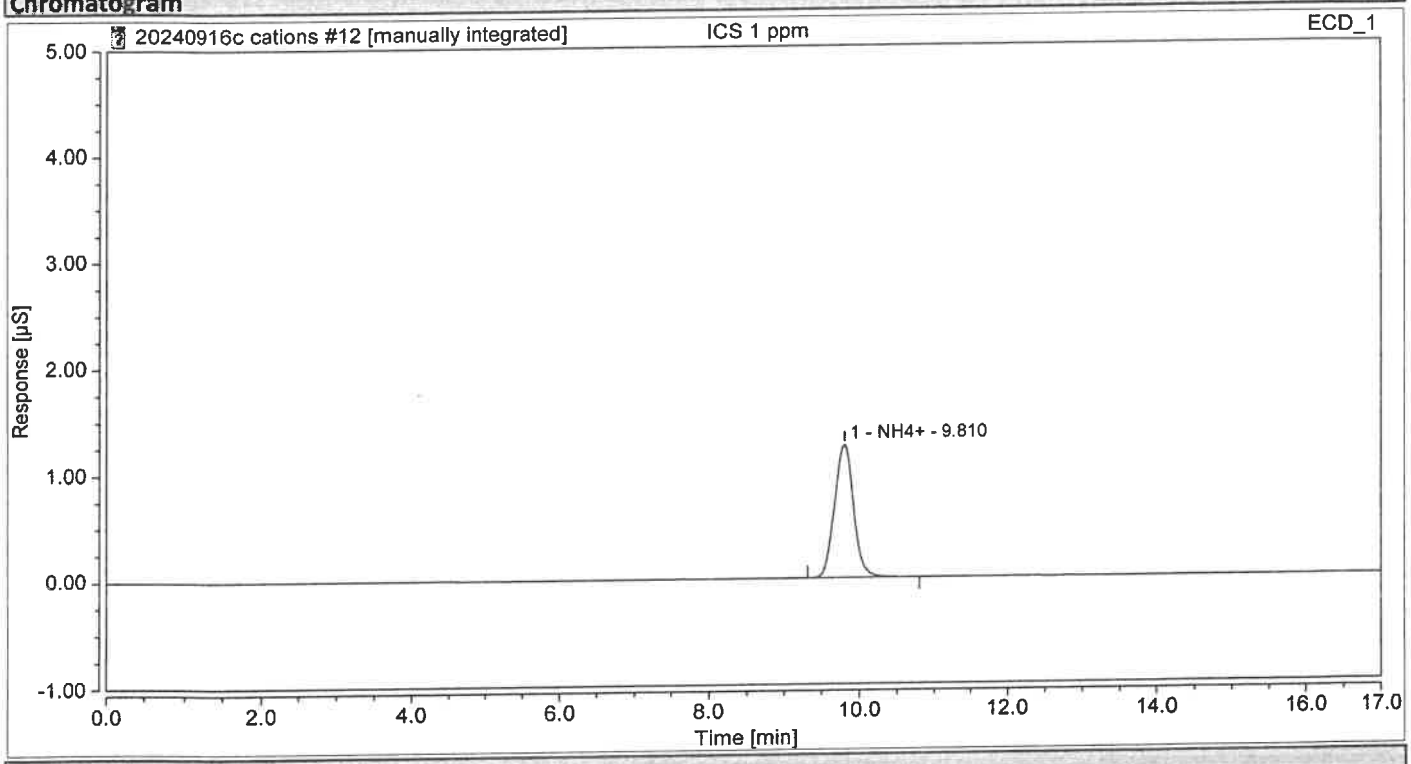
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.810	0.3641	1.245	100.00	100.00	0.9975
Total:			**0.364**	**1.245**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICS 1 ppm**	*Run Time (min):*	**17.00**
Vial Number:	**GB2**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 21:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

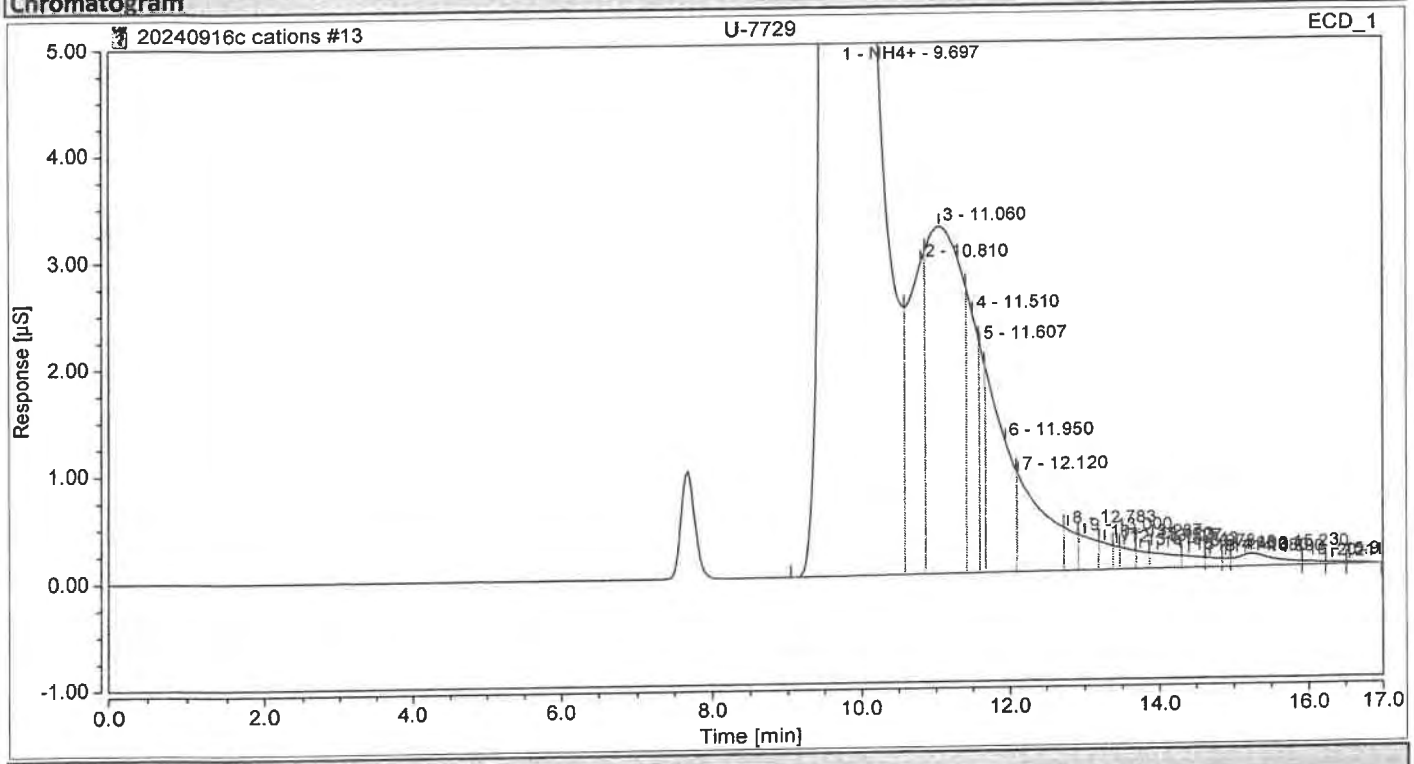
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.810	0.3666	1.247	100.00	100.00	0.9963
Total:			**0.367**	**1.247**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7729**	*Run Time (min):*	**17.00**
Vial Number:	**GB3**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 21:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

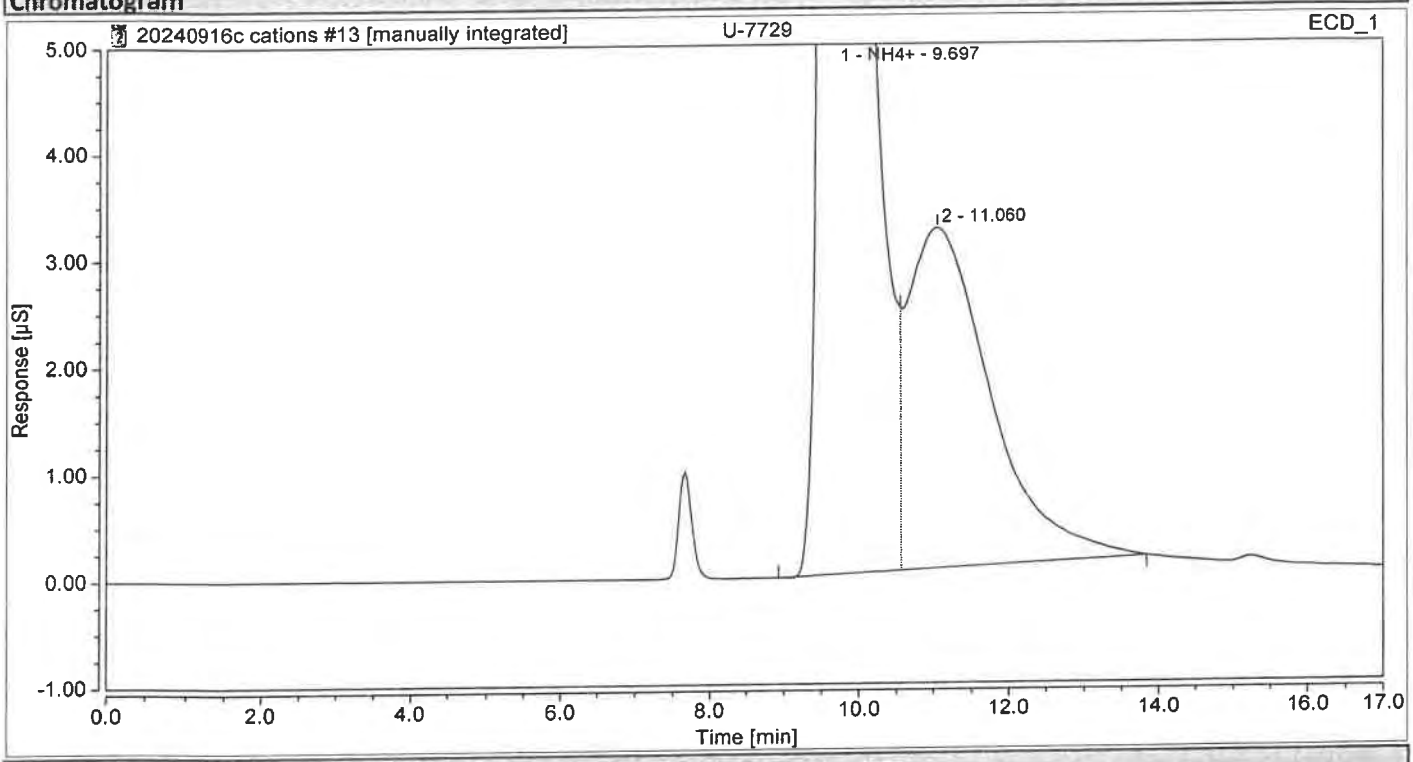
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.697	14.7809	28.697	76.61	65.75	n.a.
2		10.810	0.7454	2.919	3.86	6.69	n.a.
3		11.060	1.7015	3.252	8.82	7.45	n.a.
4		11.510	0.4236	2.418	2.20	5.54	n.a.
5		11.607	0.1724	2.133	0.89	4.89	n.a.
6		11.950	0.5881	1.218	3.05	2.79	n.a.
7		12.120	0.3926	0.905	2.04	2.07	n.a.
8		12.783	0.0708	0.384	0.37	0.88	n.a.
9		13.000	0.0783	0.313	0.41	0.72	n.a.
10		13.267	0.0437	0.246	0.23	0.56	n.a.
11		13.420	0.0207	0.214	0.11	0.49	n.a.
12		13.527	0.0411	0.196	0.21	0.45	n.a.
13		13.743	0.0278	0.162	0.14	0.37	n.a.
14		13.973	0.0554	0.139	0.29	0.32	n.a.
15		14.400	0.0333	0.106	0.17	0.24	n.a.
16		14.680	0.0180	0.086	0.09	0.20	n.a.
17		14.890	0.0086	0.074	0.04	0.17	n.a.
18		15.230	0.0725	0.119	0.38	0.27	n.a.
19		15.913	0.0093	0.034	0.05	0.08	n.a.
20		16.317	0.0052	0.021	0.03	0.05	n.a.
21		16.560	0.0038	0.014	0.02	0.03	n.a.

Chromatogram and Results

Injection Details

Injection Name:	**U-7729**	*Run Time (min):*	**17.00**
Vial Number:	**GB3**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 21:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.697	14.6732	28.673	78.39	89.99	n.a.
2		11.060	4.0456	3.188	21.61	10.01	n.a.
Total:			**18.719**	**31.861**	**100.00**	**100.00**	

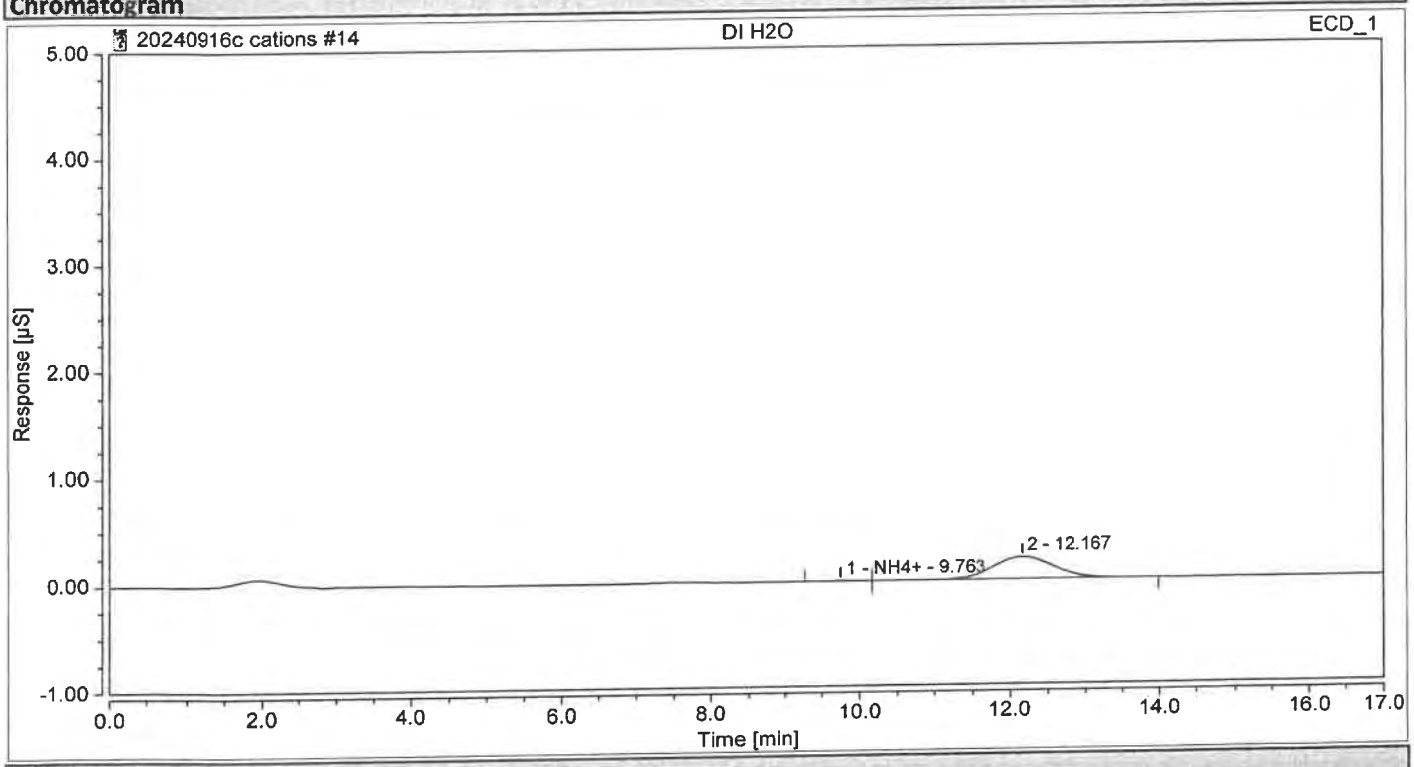
Total:	**19.293**	**43.648**	**100.00**	**100.00**

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GB4**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 22:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

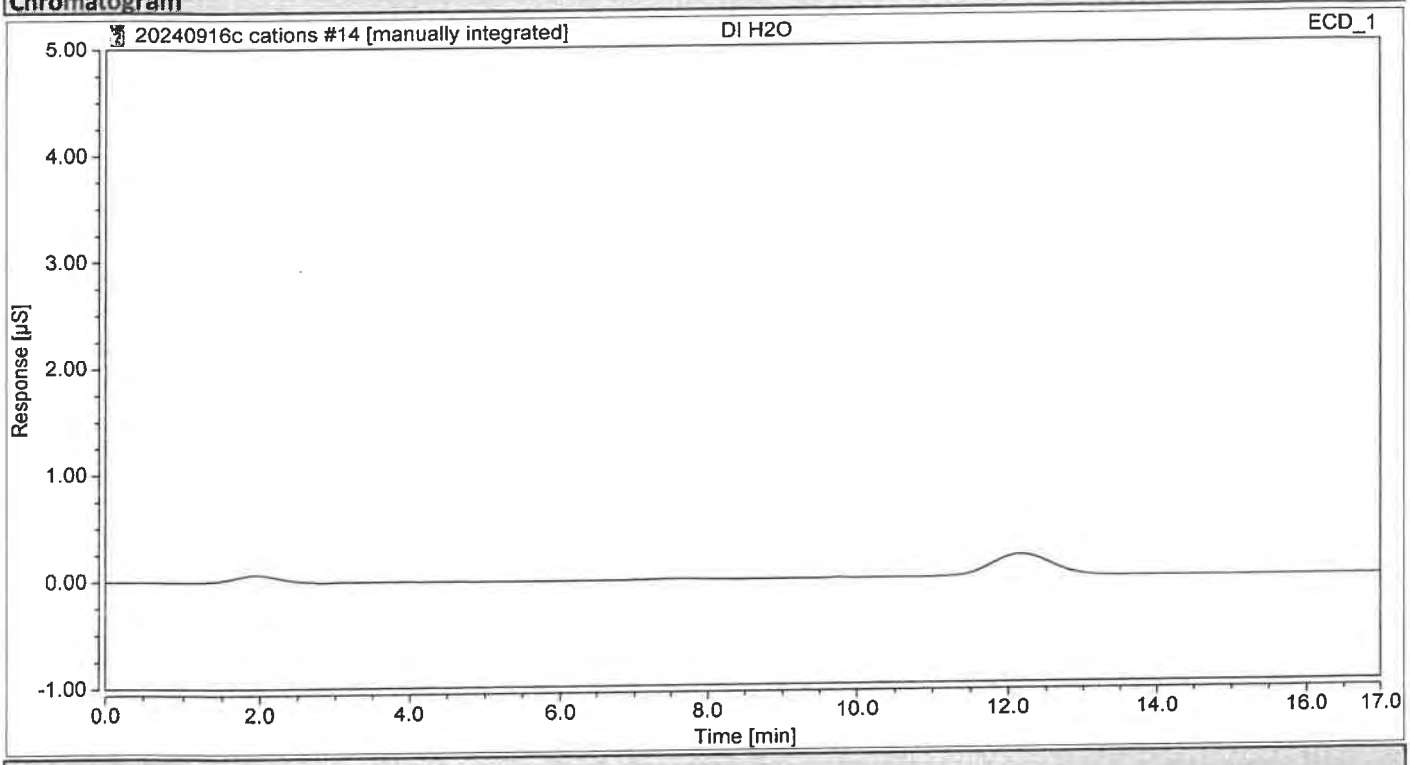
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.763	0.0020	0.008	1.02	3.80	0.0004
2		12.167	0.1924	0.206	98.98	96.20	n.a.
Total:			**0.194**	**0.214**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GB4**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 22:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

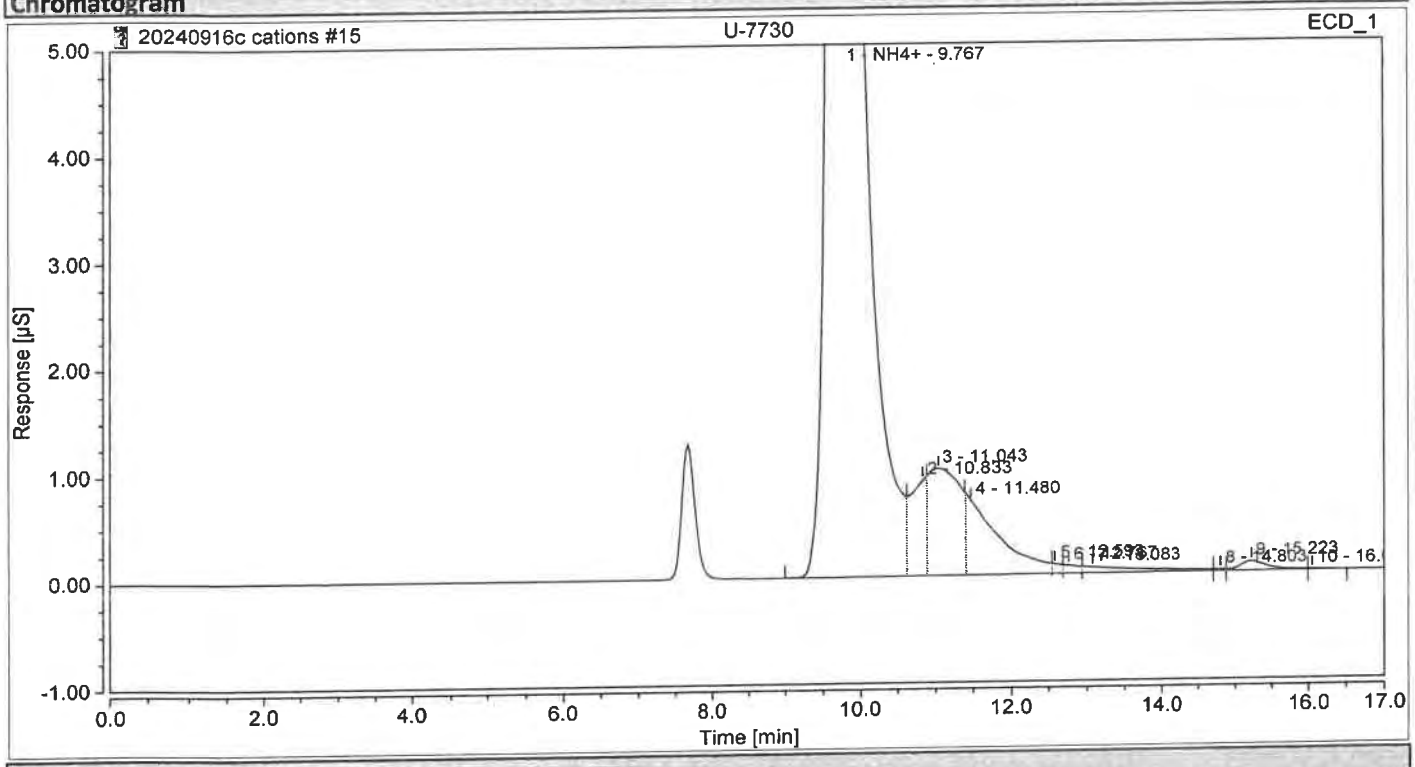
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7730**	*Run Time (min):*	**17.00**
Vial Number:	**GB5**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 22:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

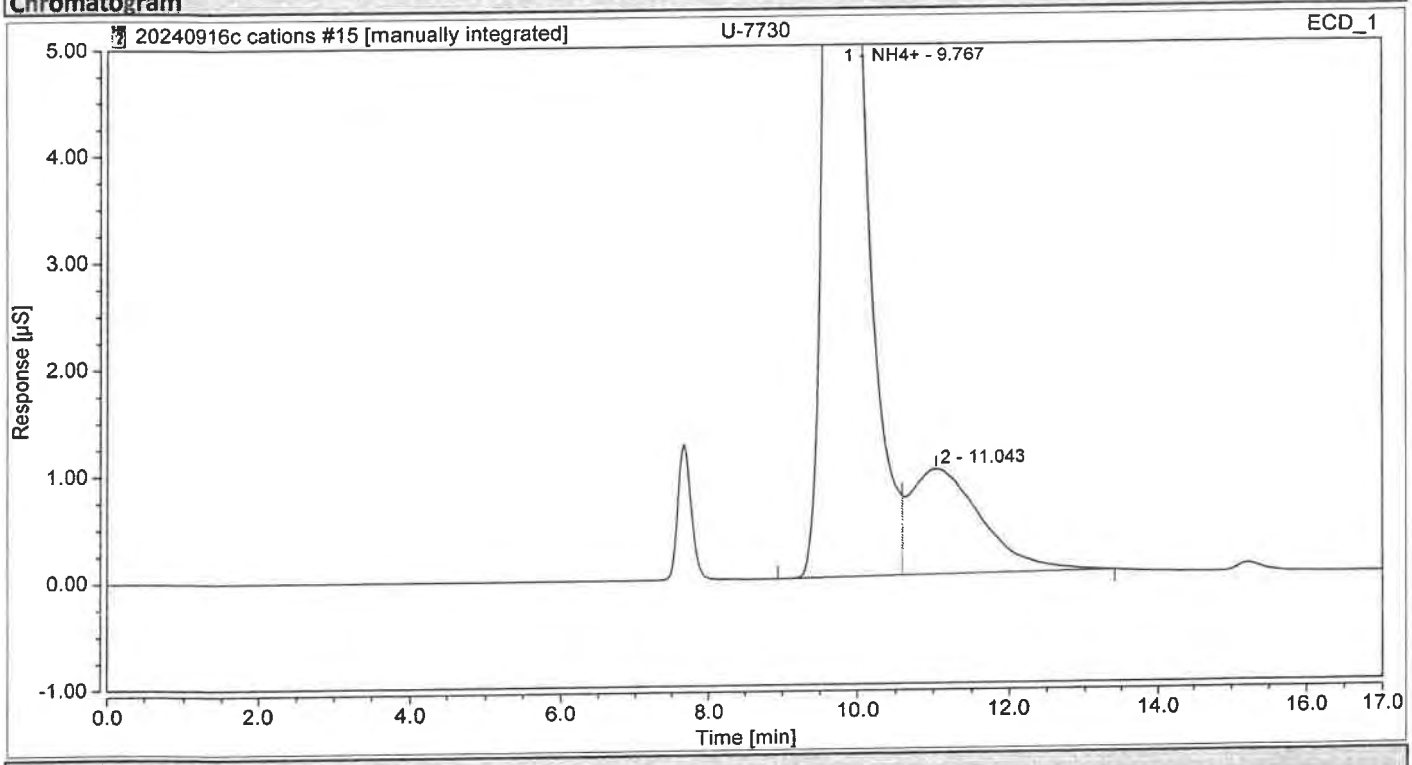
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.767	7.0517	15.058	85.41	83.70	n.a.
2		10.833	0.2132	0.898	2.58	4.99	n.a.
3		11.043	0.4869	1.006	5.90	5.59	n.a.
4		11.480	0.3769	0.703	4.57	3.91	n.a.
5		12.593	0.0122	0.091	0.15	0.50	n.a.
6		12.767	0.0176	0.074	0.21	0.41	n.a.
7		13.083	0.0558	0.055	0.68	0.31	n.a.
8		14.803	0.0025	0.014	0.03	0.08	n.a.
9		15.223	0.0383	0.087	0.46	0.48	n.a.
10		16.050	0.0012	0.005	0.01	0.03	n.a.
Total:			**8.256**	**17.990**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7730**	*Run Time (min):*	**17.00**
Vial Number:	**GB5**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 22:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

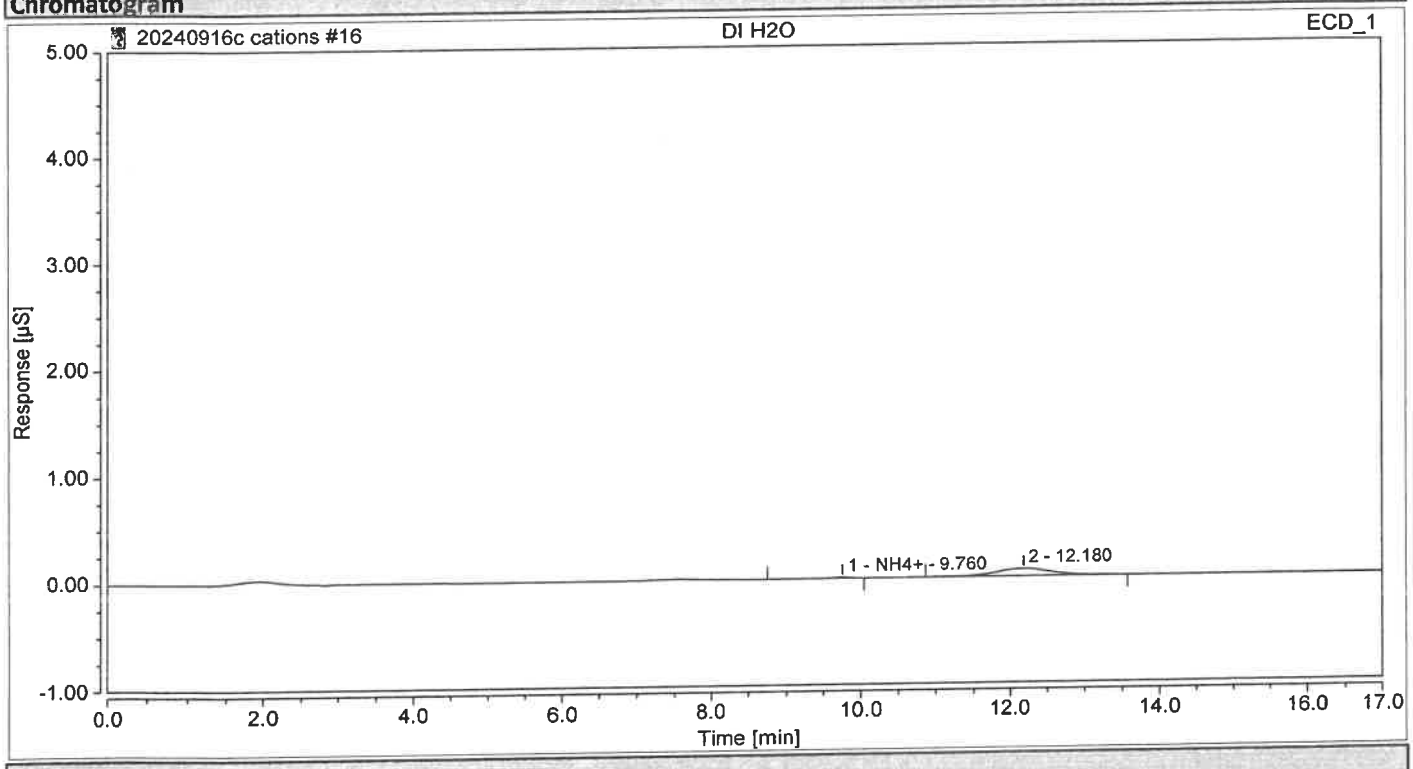
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.767	7.0141	15.051	86.70	93.85	n.a.
2		11.043	1.0756	0.986	13.30	6.15	n.a.
Total:			**8.090**	**16.037**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GB4**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 22:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

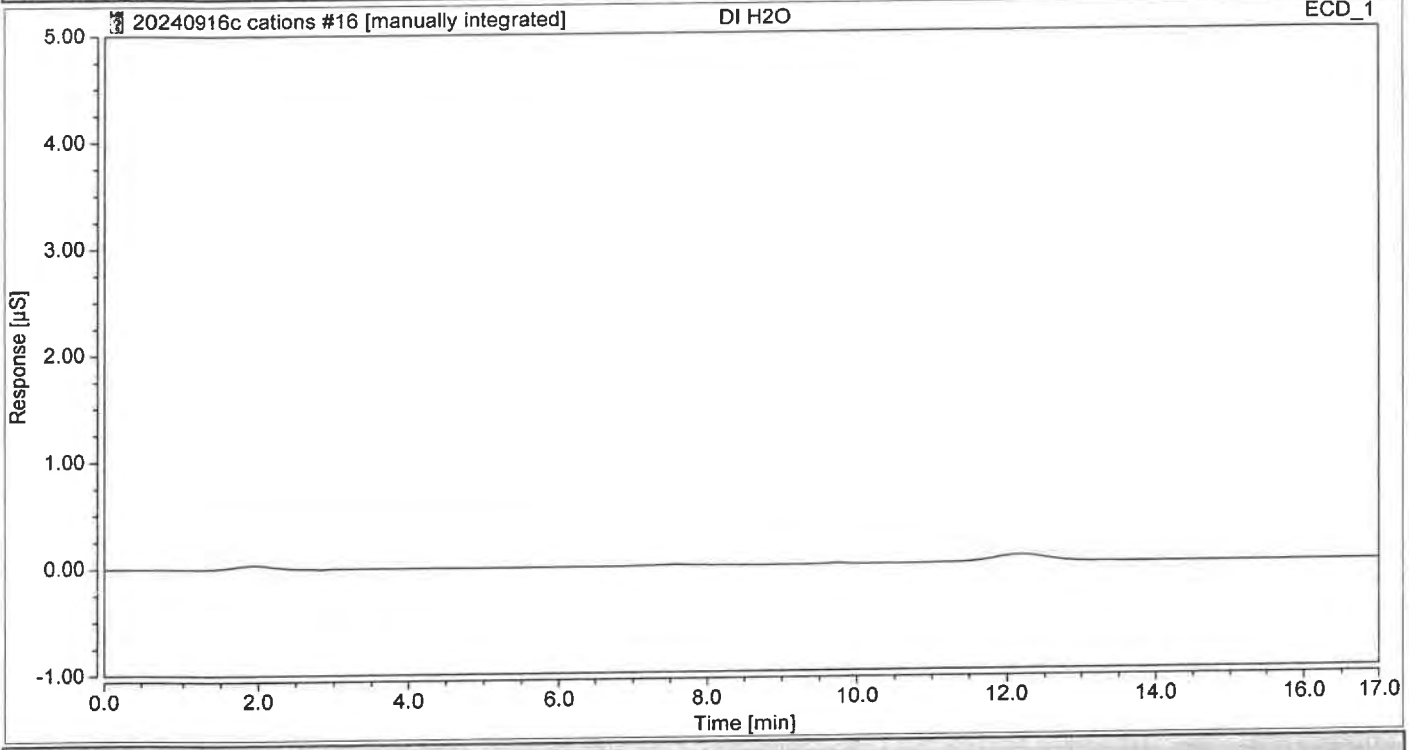
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.760	0.0020	0.008	3.53	11.16	0.0006
2		12.180	0.0558	0.065	96.47	88.84	n.a.
Total:			**0.058**	**0.074**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GB4**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 22:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

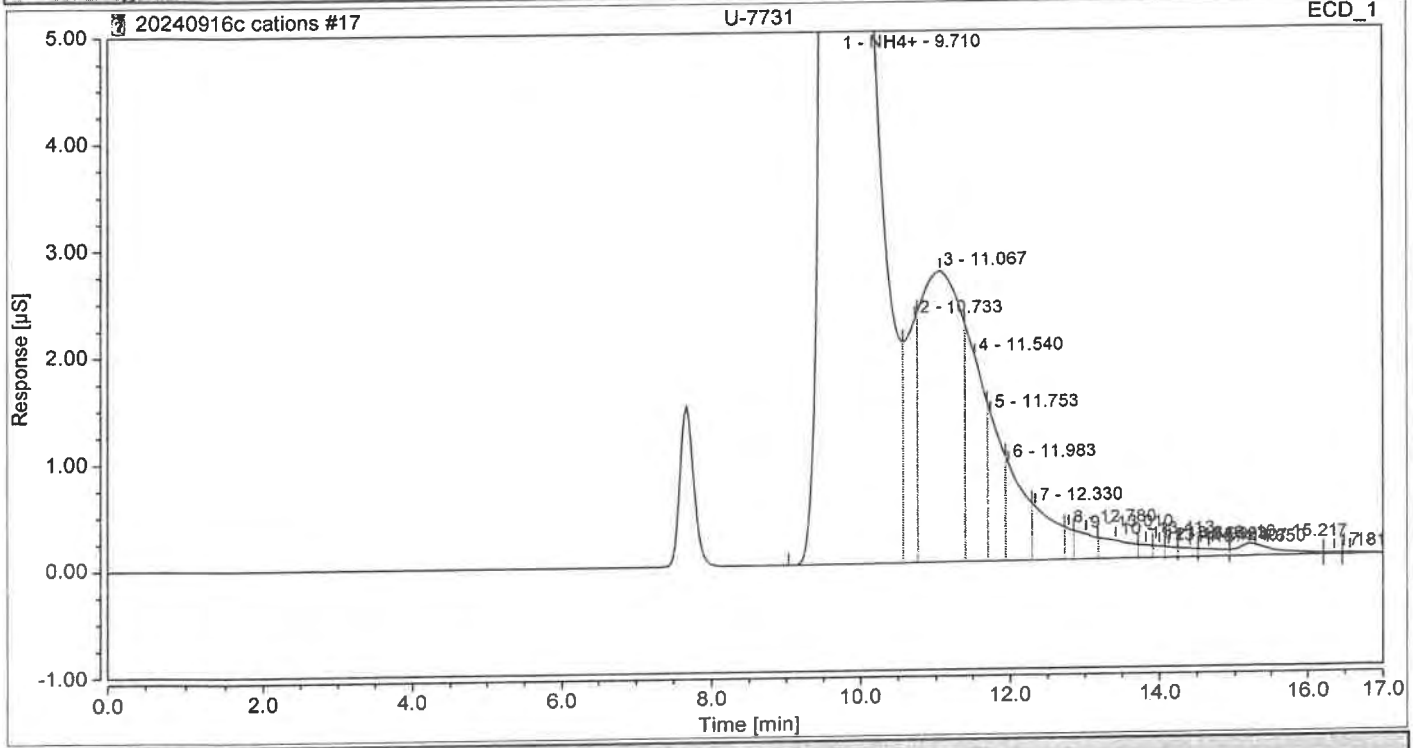
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7731**	*Run Time (min):*	**17.00**
Vial Number:	**GB6**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 23:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

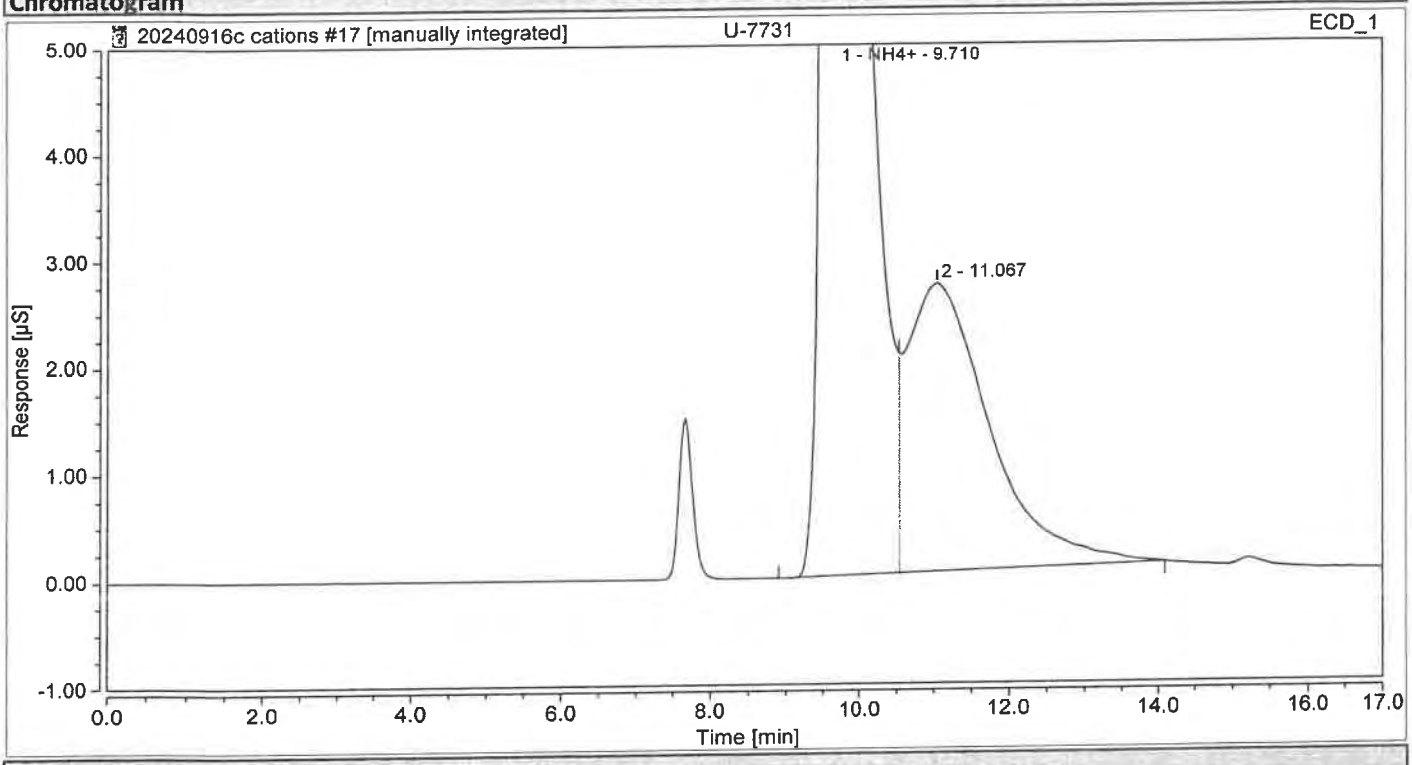
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.710	13.0599	25.647	77.79	69.86	n.a.
2		10.733	0.4149	2.291	2.47	6.24	n.a.
3		11.067	1.6533	2.734	9.85	7.45	n.a.
4		11.540	0.5670	1.925	3.38	5.24	n.a.
5		11.753	0.2852	1.386	1.70	3.78	n.a.
6		11.983	0.2511	0.913	1.50	2.49	n.a.
7		12.330	0.1773	0.506	1.06	1.38	n.a.
8		12.780	0.0363	0.291	0.22	0.79	n.a.
9		13.010	0.0741	0.239	0.44	0.65	n.a.
10		13.413	0.0873	0.169	0.52	0.46	n.a.
11		13.810	0.0229	0.119	0.14	0.32	n.a.
12		13.993	0.0171	0.106	0.10	0.29	n.a.
13		14.123	0.0160	0.095	0.10	0.26	n.a.
14		14.407	0.0218	0.080	0.13	0.22	n.a.
15		14.650	0.0260	0.068	0.16	0.19	n.a.
16		15.217	0.0701	0.113	0.42	0.31	n.a.
17		16.343	0.0035	0.014	0.02	0.04	n.a.
18		16.560	0.0040	0.012	0.02	0.03	n.a.
Total:			**16.788**	**36.711**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7731**	*Run Time (min):*	**17.00**
Vial Number:	**GB6**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 23:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

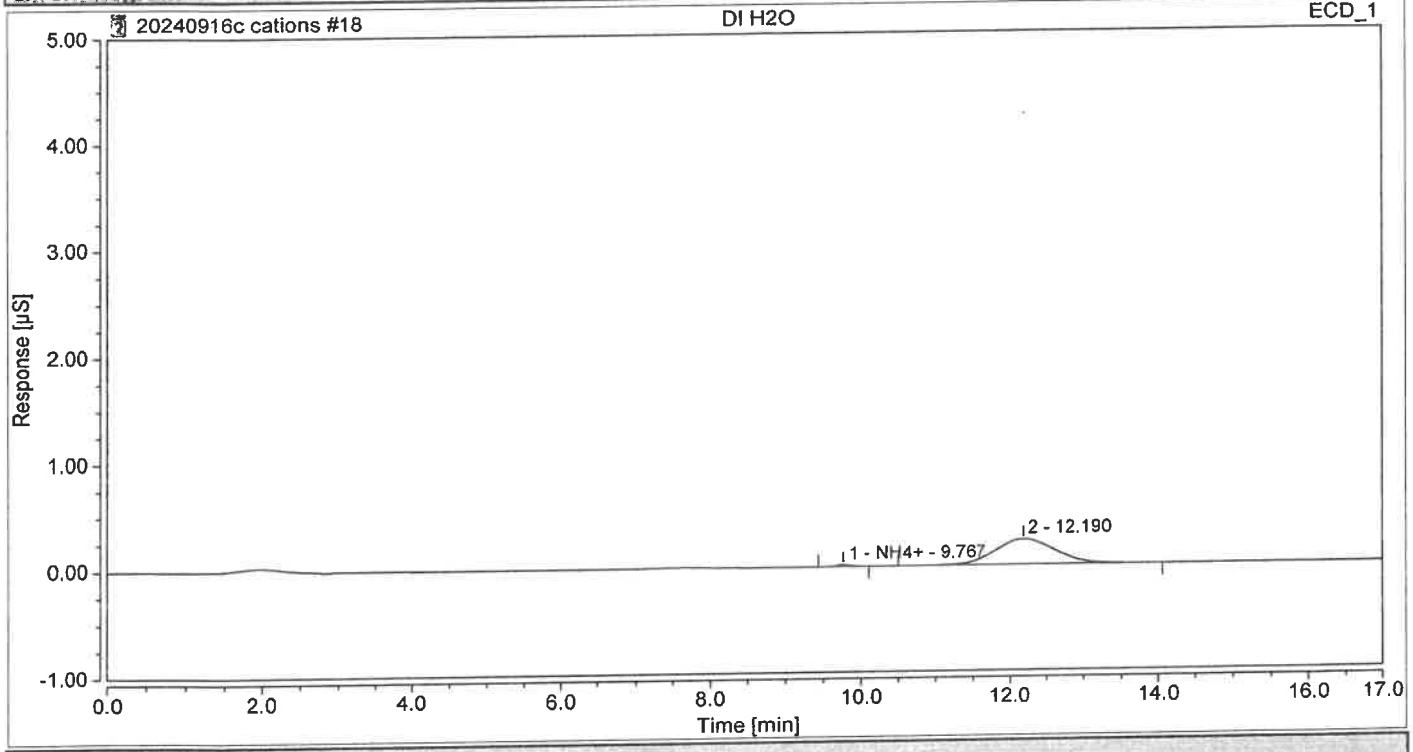
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.710	12.9717	25.632	79.12	90.49	n.a.
2		11.067	3.4228	2.694	20.88	9.51	n.a.
Total:			**16.395**	**28.325**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GB4**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 23:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

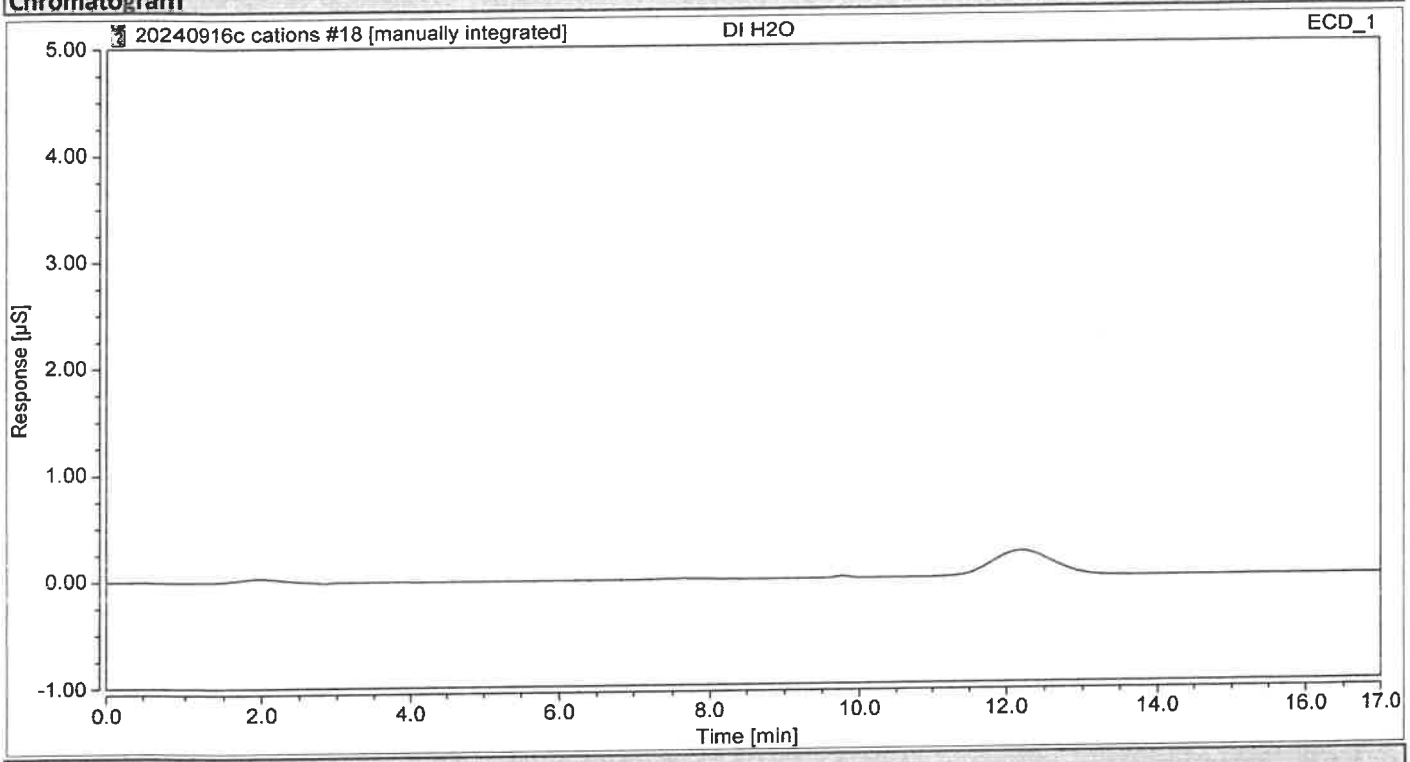
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.767	0.0040	0.017	1.74	6.87	0.0056
2		12.190	0.2246	0.237	98.26	93.13	n.a.
Total:			**0.229**	**0.254**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GB4**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 23:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

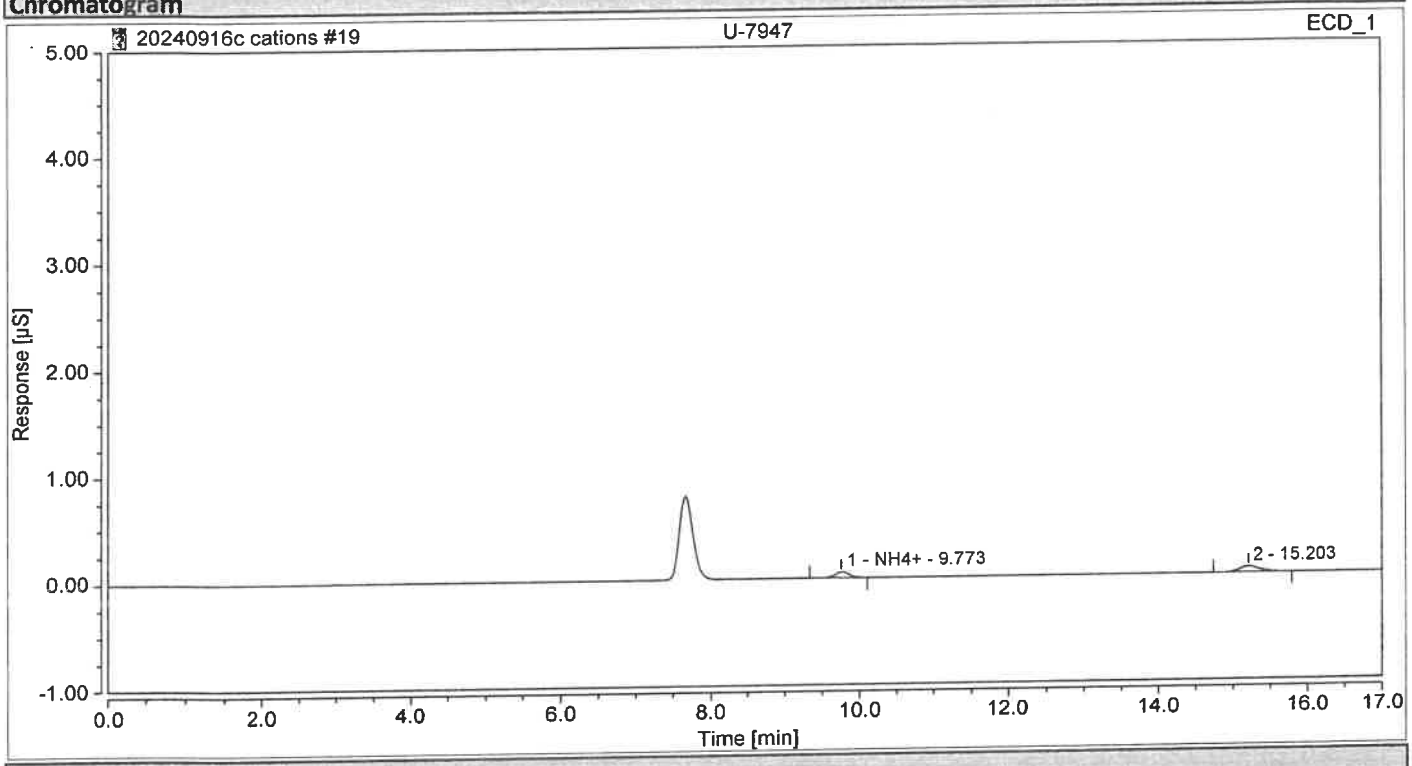
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7947**	*Run Time (min):*	**17.00**
Vial Number:	**GB7**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 23:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

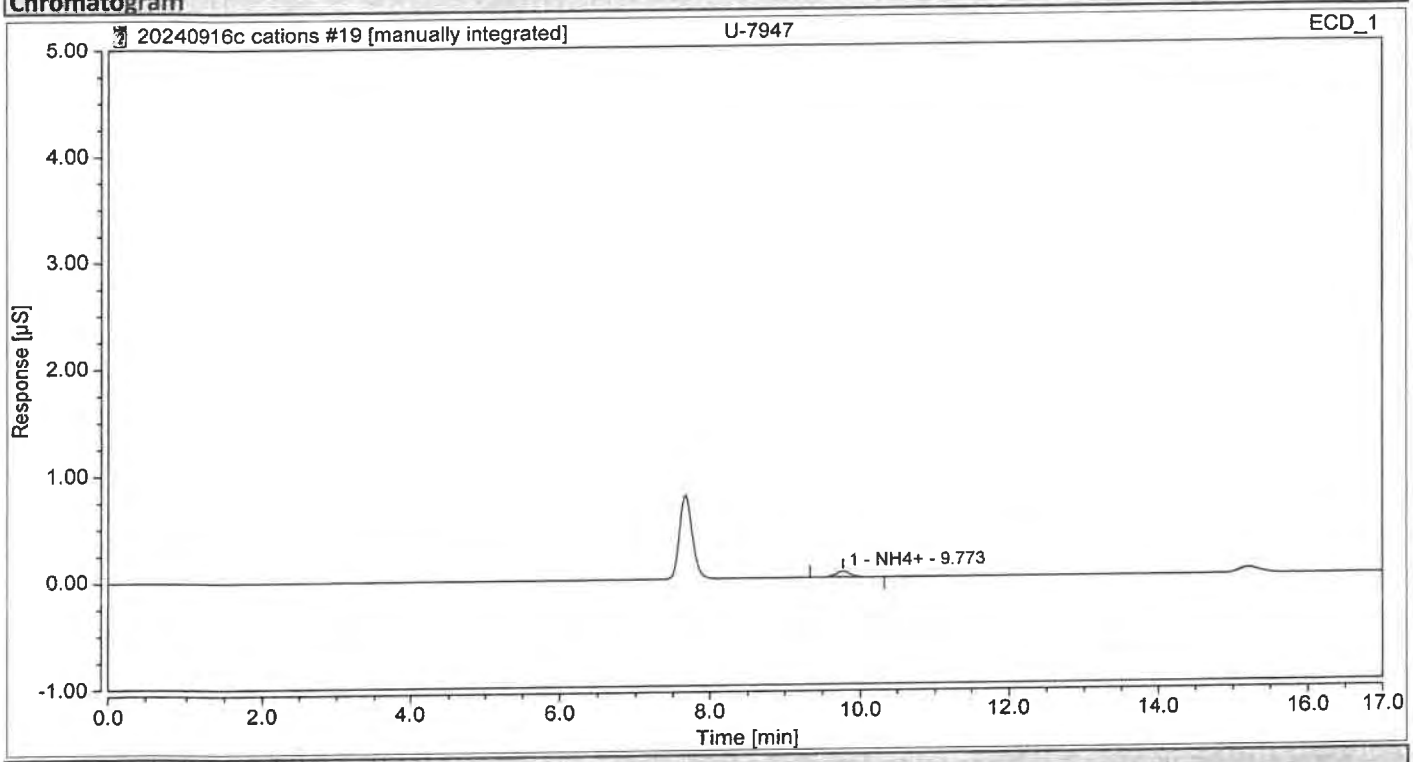
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.773	0.0121	0.055	40.77	50.12	0.0267
2		15.203	0.0176	0.054	59.23	49.88	n.a.
Total:			**0.030**	**0.109**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7947**	*Run Time (min):*	**17.00**
Vial Number:	**GB7**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Sep/24 23:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

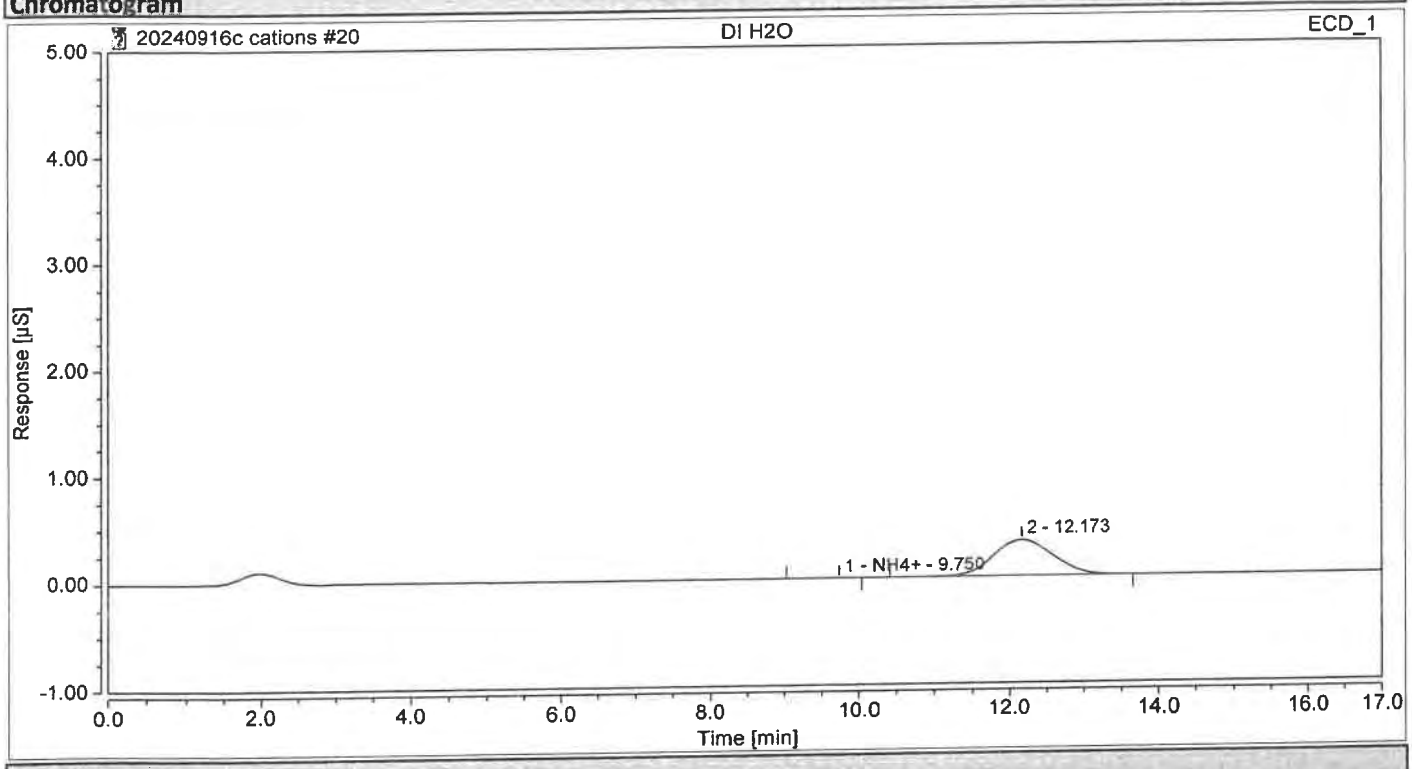
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.773	0.0120	0.054	100.00	100.00	0.0275
Total:			**0.012**	**0.054**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GB4**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 00:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

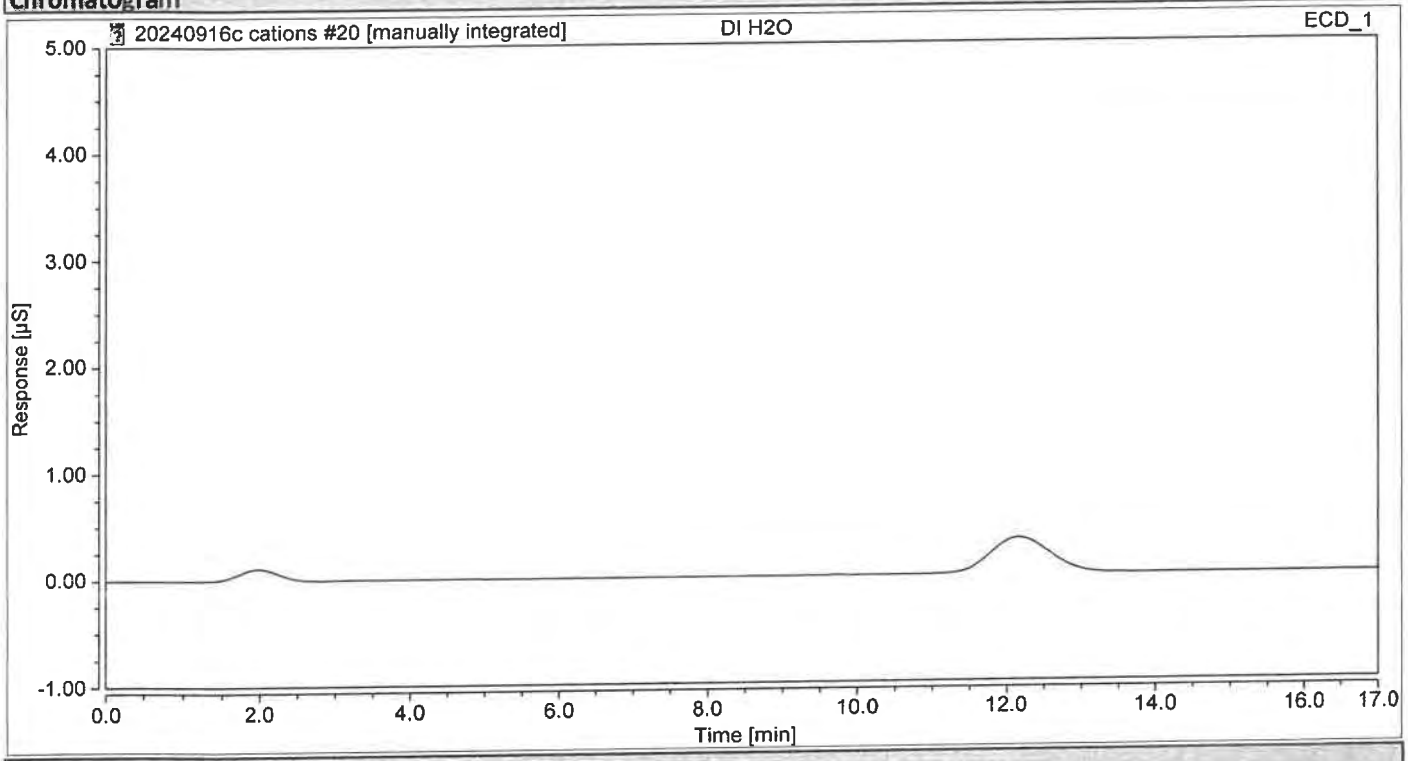
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.750	0.0013	0.004	0.43	1.14	n.a.
2		12.173	0.3106	0.334	99.57	98.86	n.a.
Total:			**0.312**	**0.338**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GB4**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 00:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

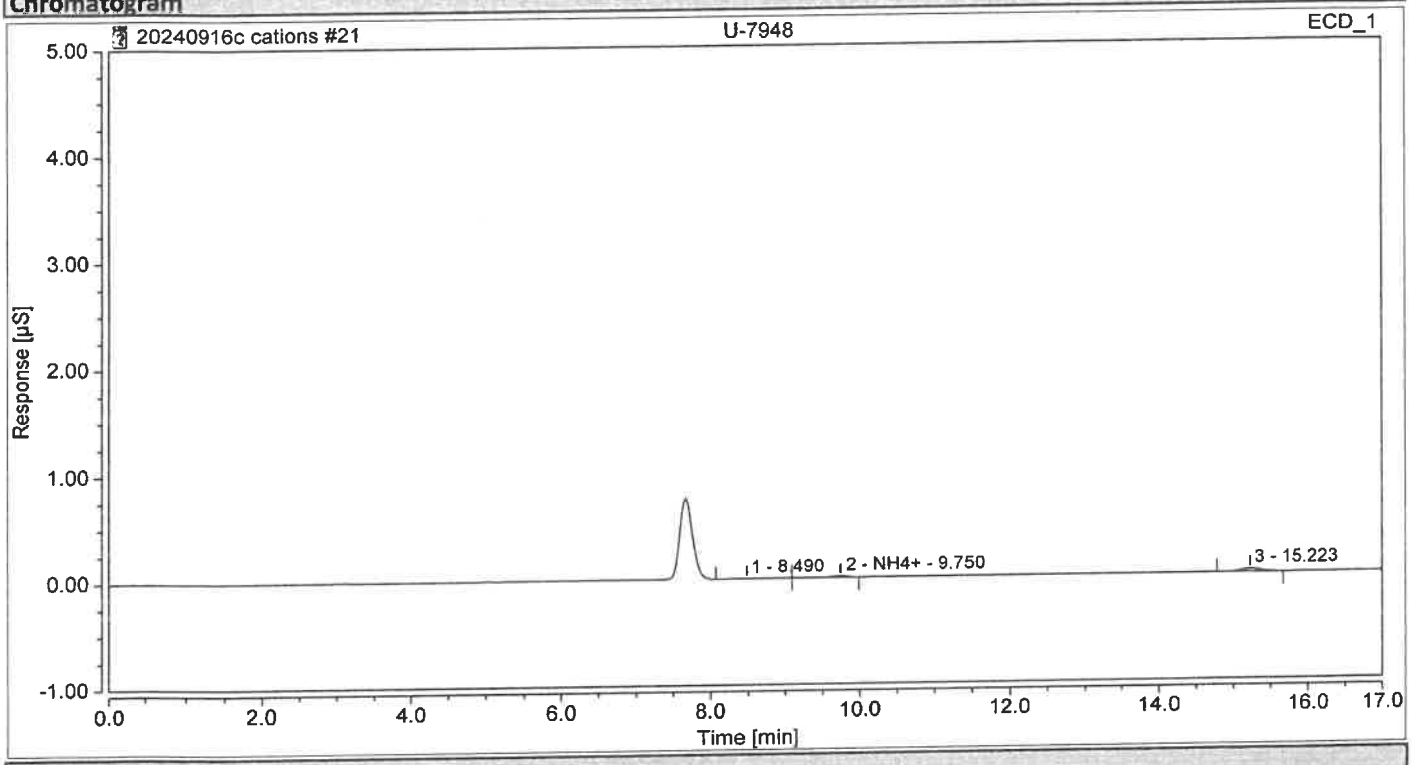
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7948**	*Run Time (min):*	**17.00**
Vial Number:	**GB8**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 00:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

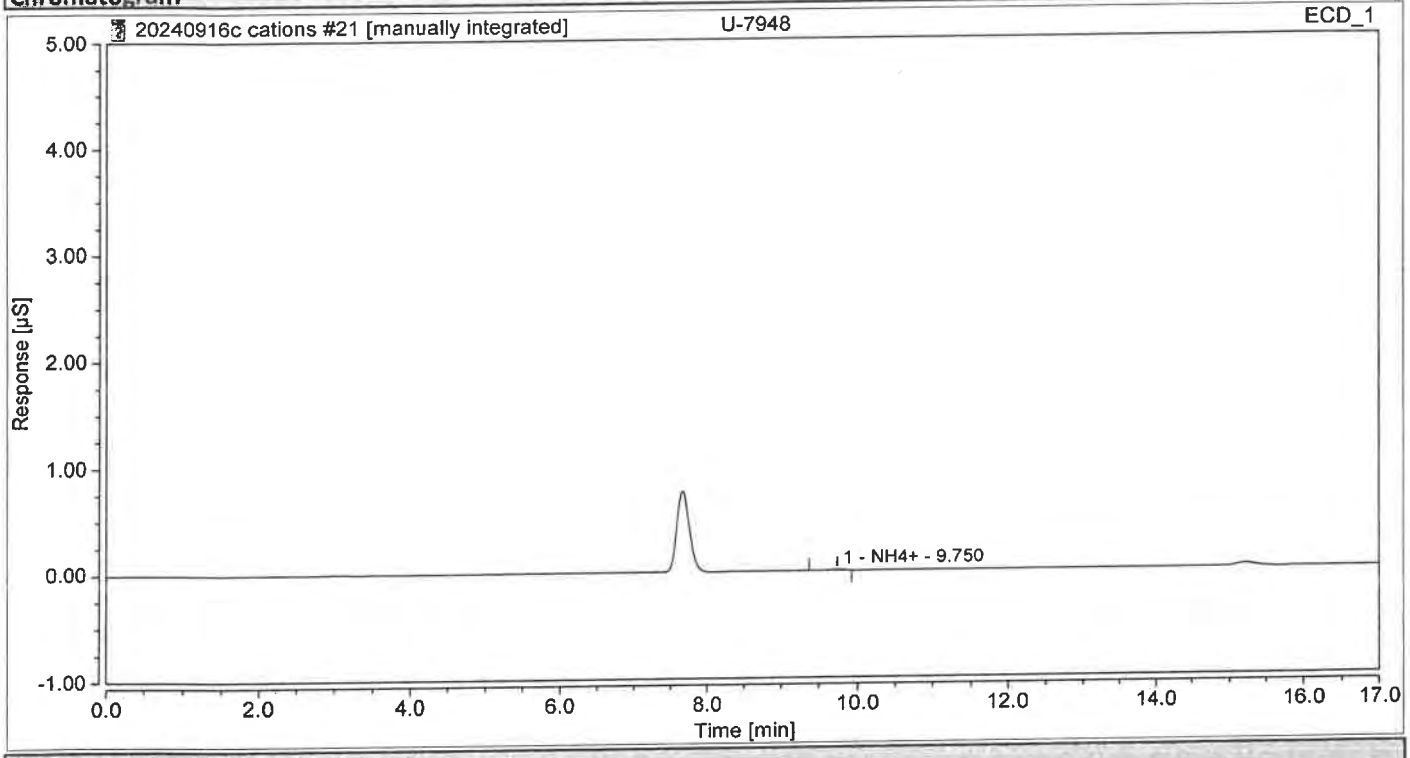
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		8.490	0.0024	0.003	15.83	6.90	n.a.
2	NH4+	9.750	0.0039	0.012	26.29	28.06	0.0054
3		15.223	0.0086	0.028	57.88	65.04	n.a.
Total:			**0.015**	**0.043**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7948**	*Run Time (min):*	**17.00**
Vial Number:	**GB8**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 00:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

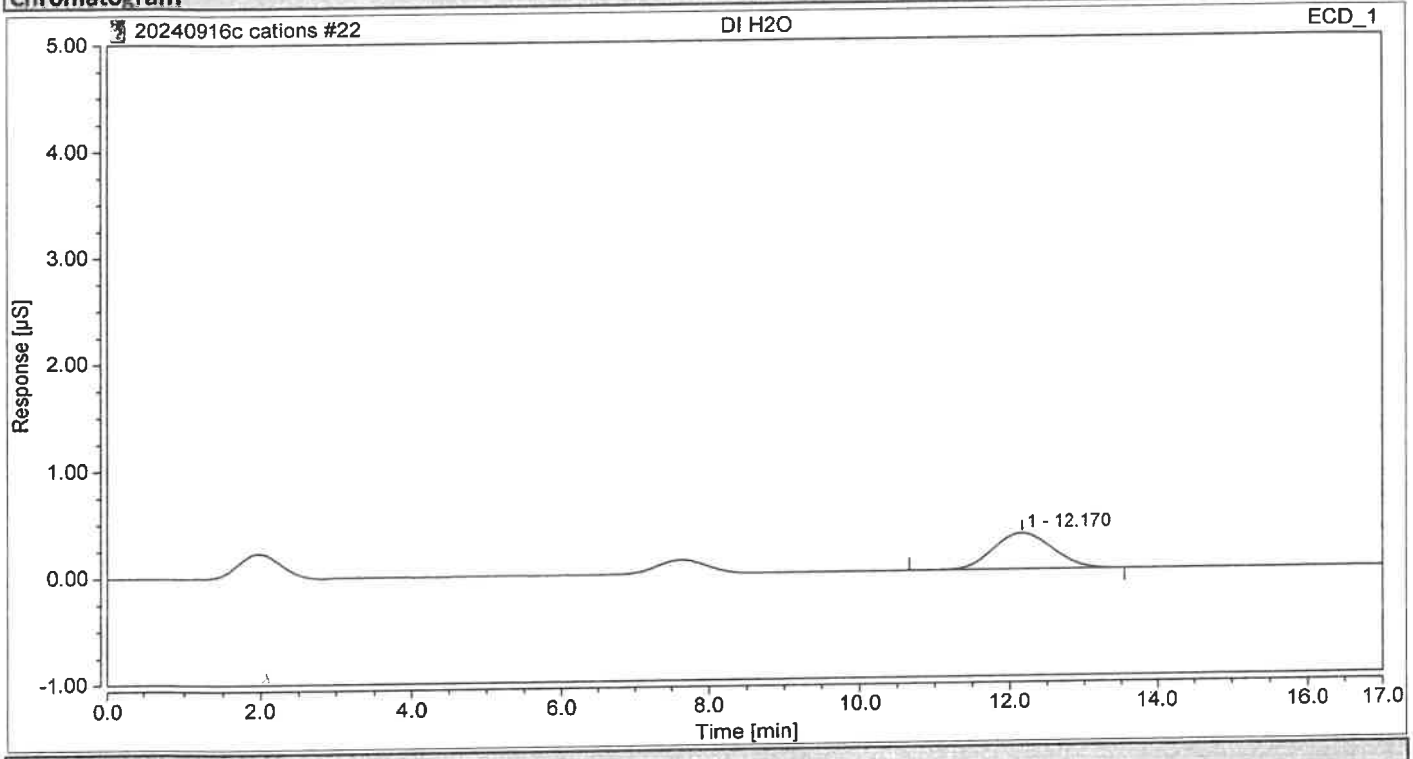
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.750	0.0022	0.011	100.00	100.00	0.0022
Total:			**0.002**	**0.011**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GC1**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 00:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

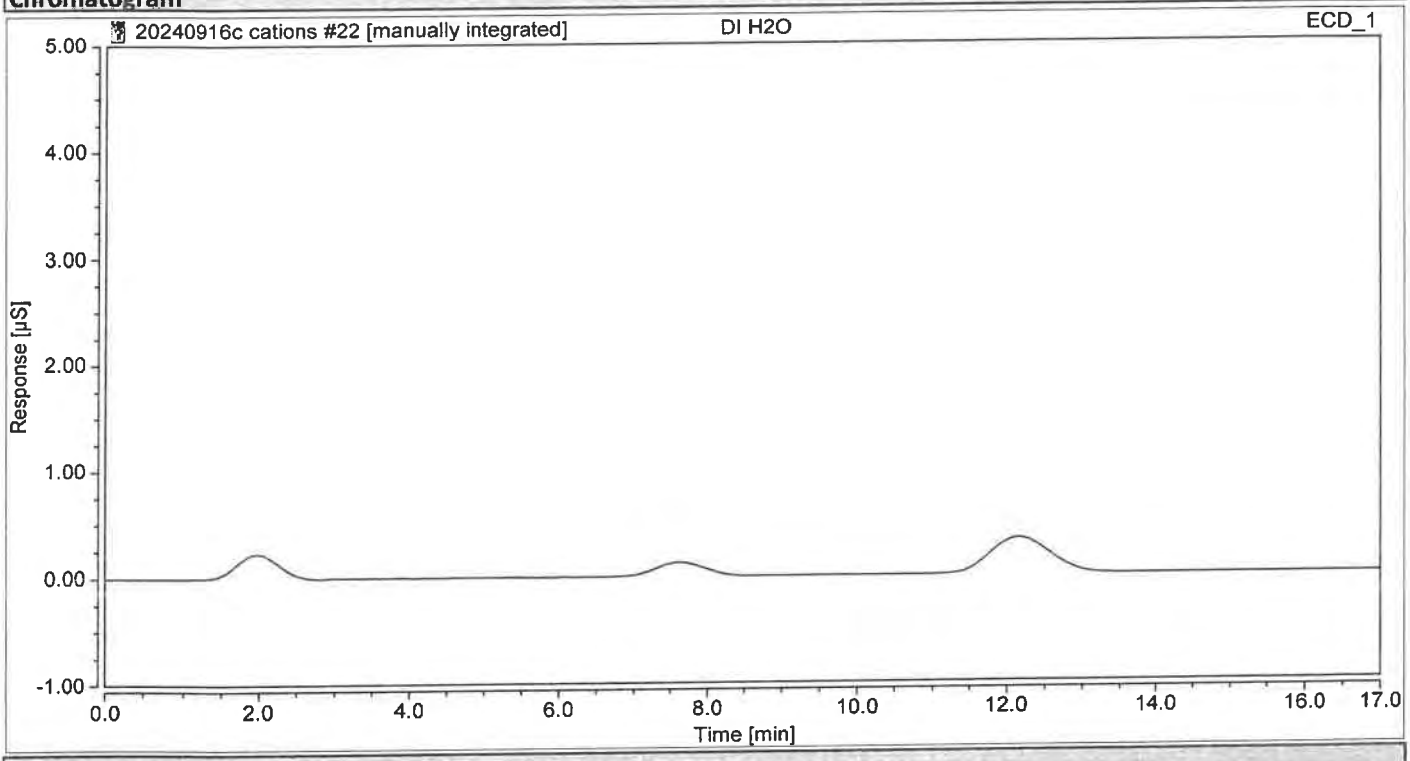
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		12.170	0.3081	0.336	100.00	100.00	n.a.
Total:			**0.308**	**0.336**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GC1**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 00:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

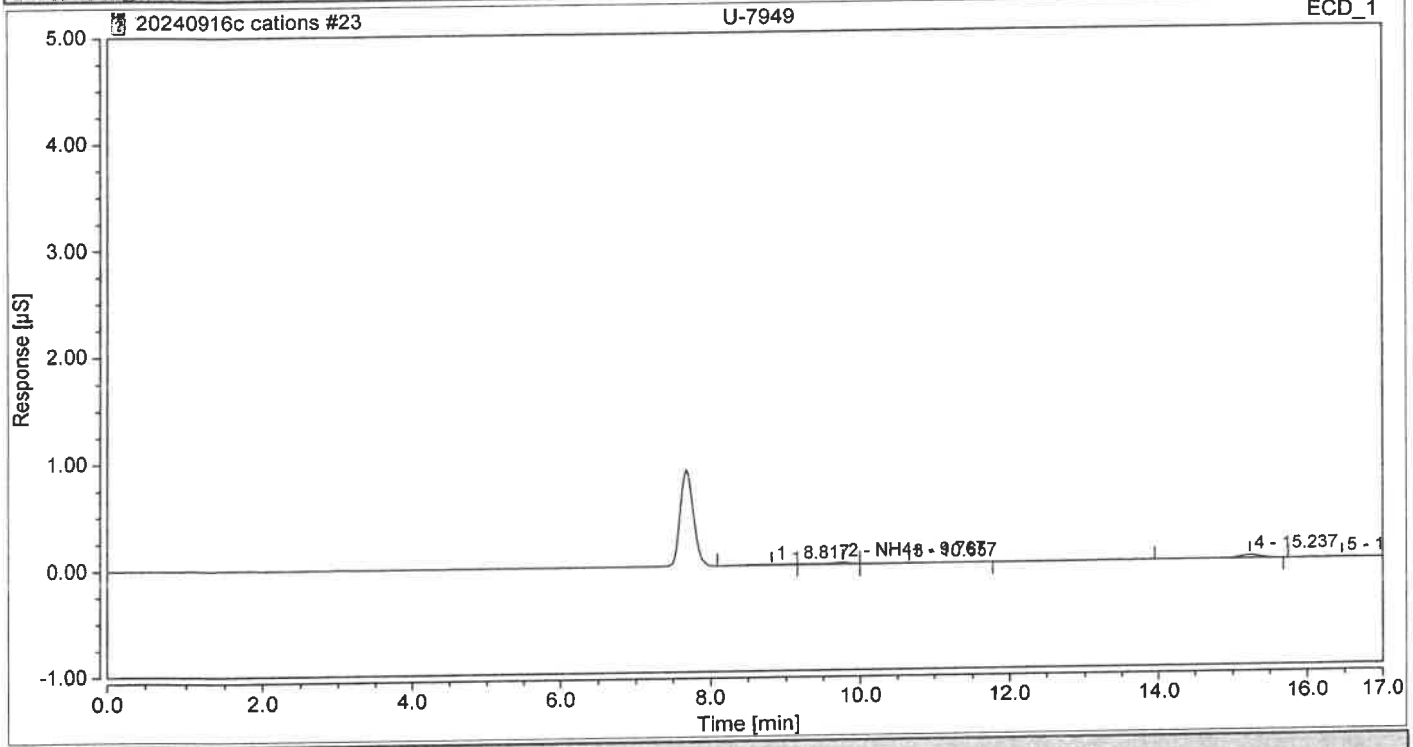
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7949**	*Run Time (min):*	**17.00**
Vial Number:	**GC2**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 01:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

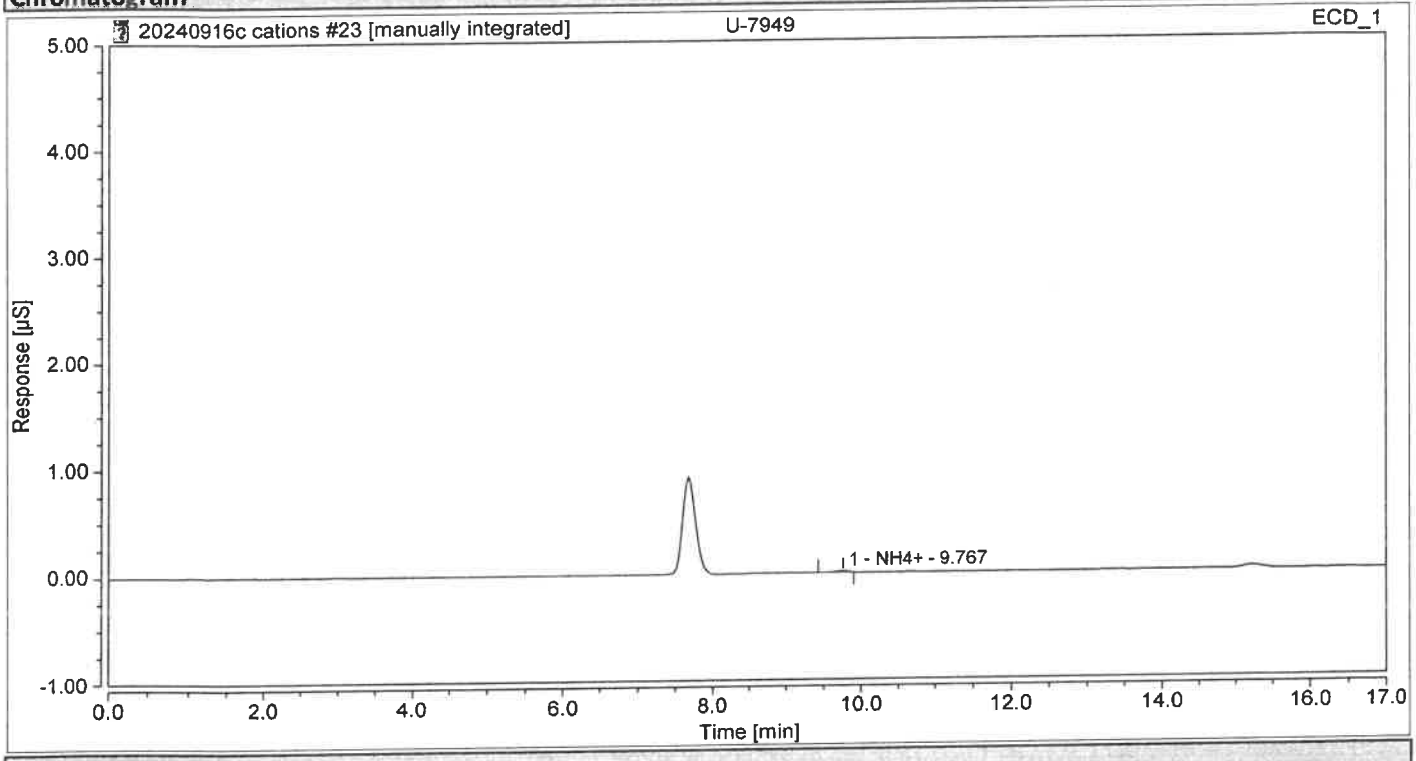
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		8.817	0.0034	0.004	15.71	7.63	n.a.
2	NH4+	9.767	0.0052	0.017	23.77	31.76	0.0088
3		10.657	0.0024	0.002	10.79	4.39	n.a.
4		15.237	0.0100	0.030	45.59	54.08	n.a.
5		16.463	0.0009	0.001	4.14	2.14	n.a.
Total:			**0.022**	**0.055**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7949**	*Run Time (min):*	**17.00**
Vial Number:	**GC2**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 01:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

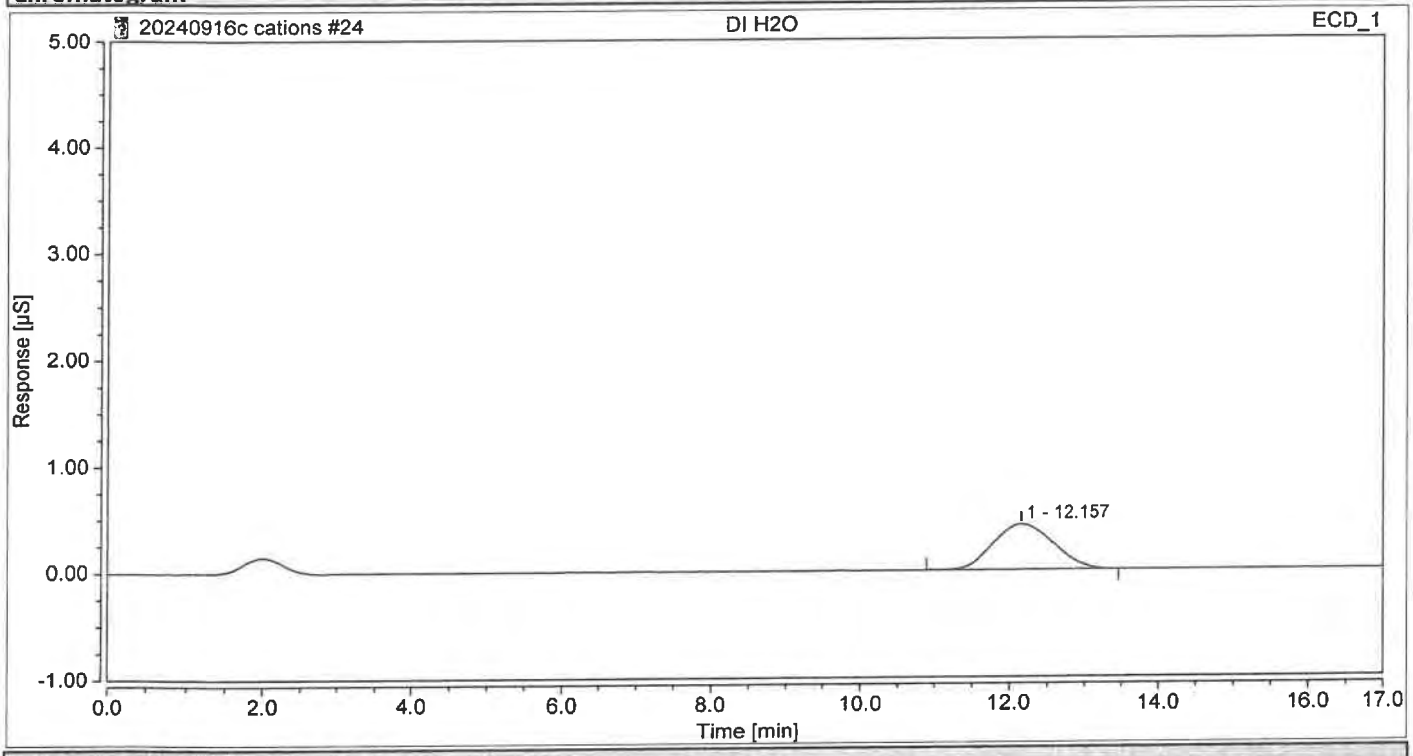
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.767	0.0026	0.014	100.00	100.00	0.0033
Total:			**0.003**	**0.014**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GC1**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 01:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

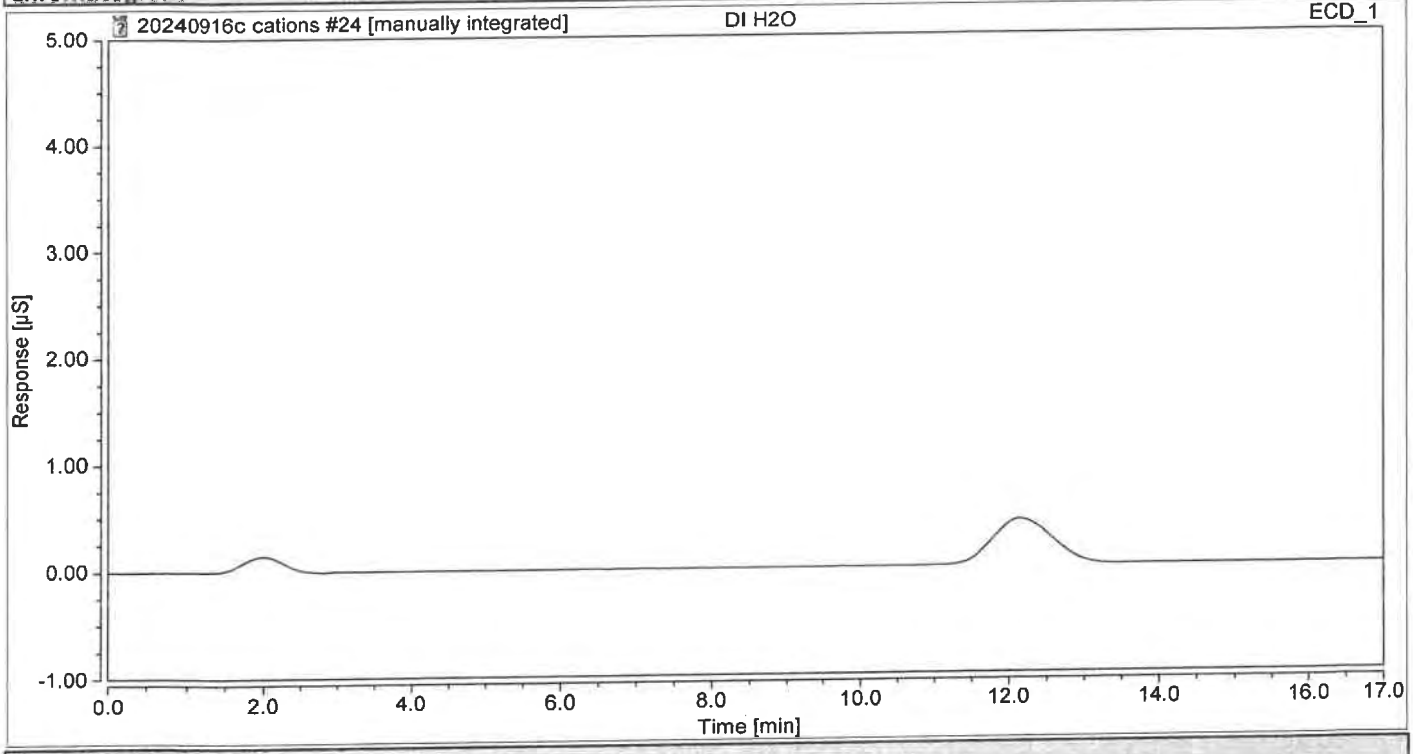
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		12.157	0.3907	0.425	100.00	100.00	n.a.
Total:			**0.391**	**0.425**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GC1**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 01:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

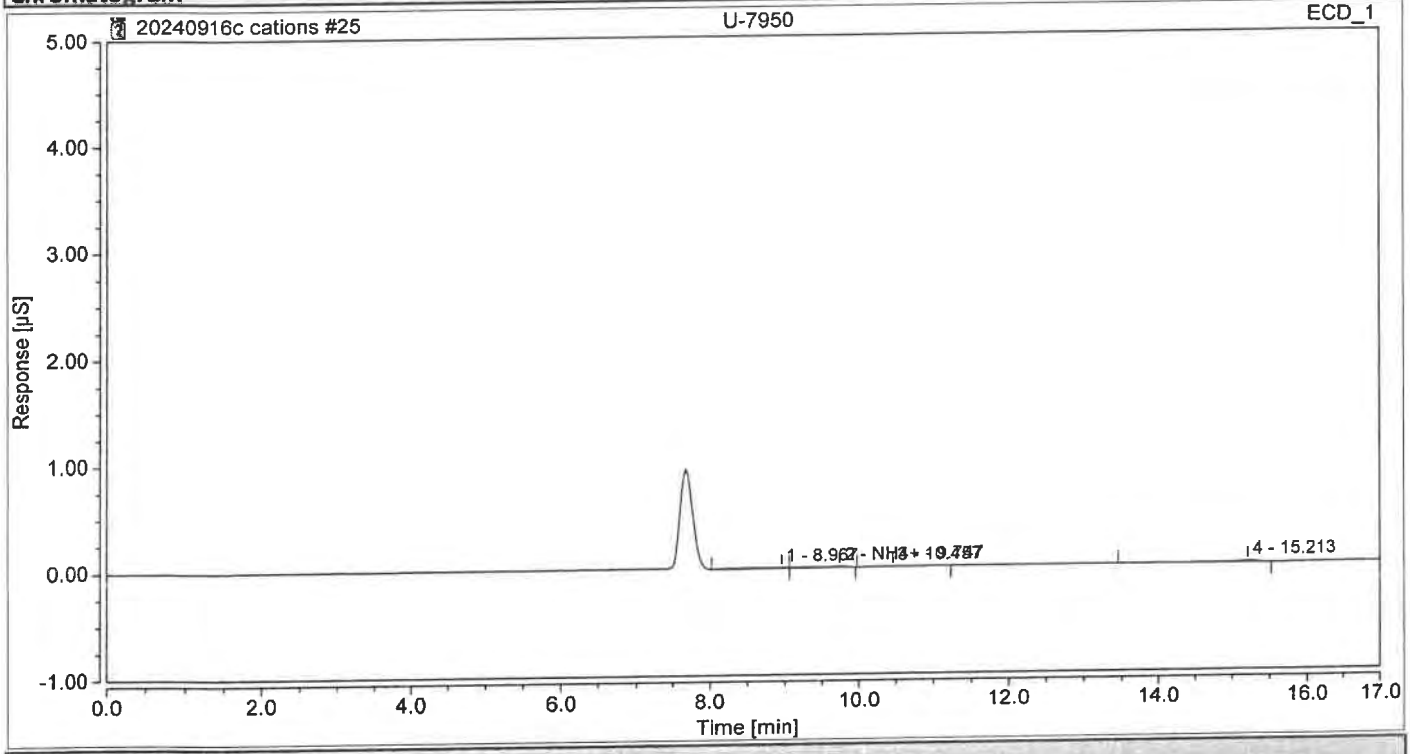
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7950**	*Run Time (min):*	**17.00**
Vial Number:	**GC3**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 01:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

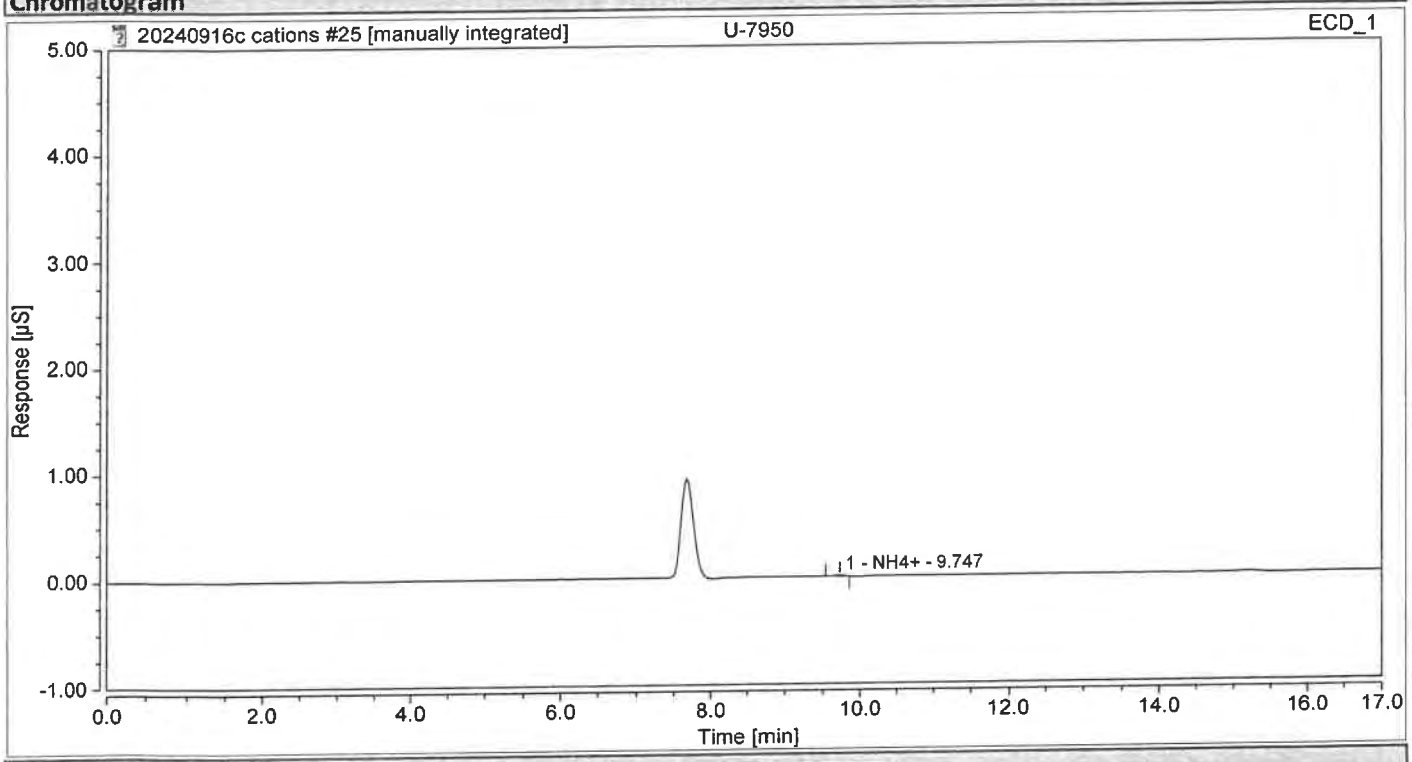
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	8.967	0.0077	0.008	31.03	21.71	n.a.
2		9.747	0.0066	0.012	26.41	33.30	0.0123
3		10.457	0.0029	0.004	11.69	10.75	n.a.
4		15.213	0.0077	0.013	30.87	34.24	n.a.
Total:			**0.025**	**0.037**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7950**	*Run Time (min):*	**17.00**
Vial Number:	**GC3**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 01:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

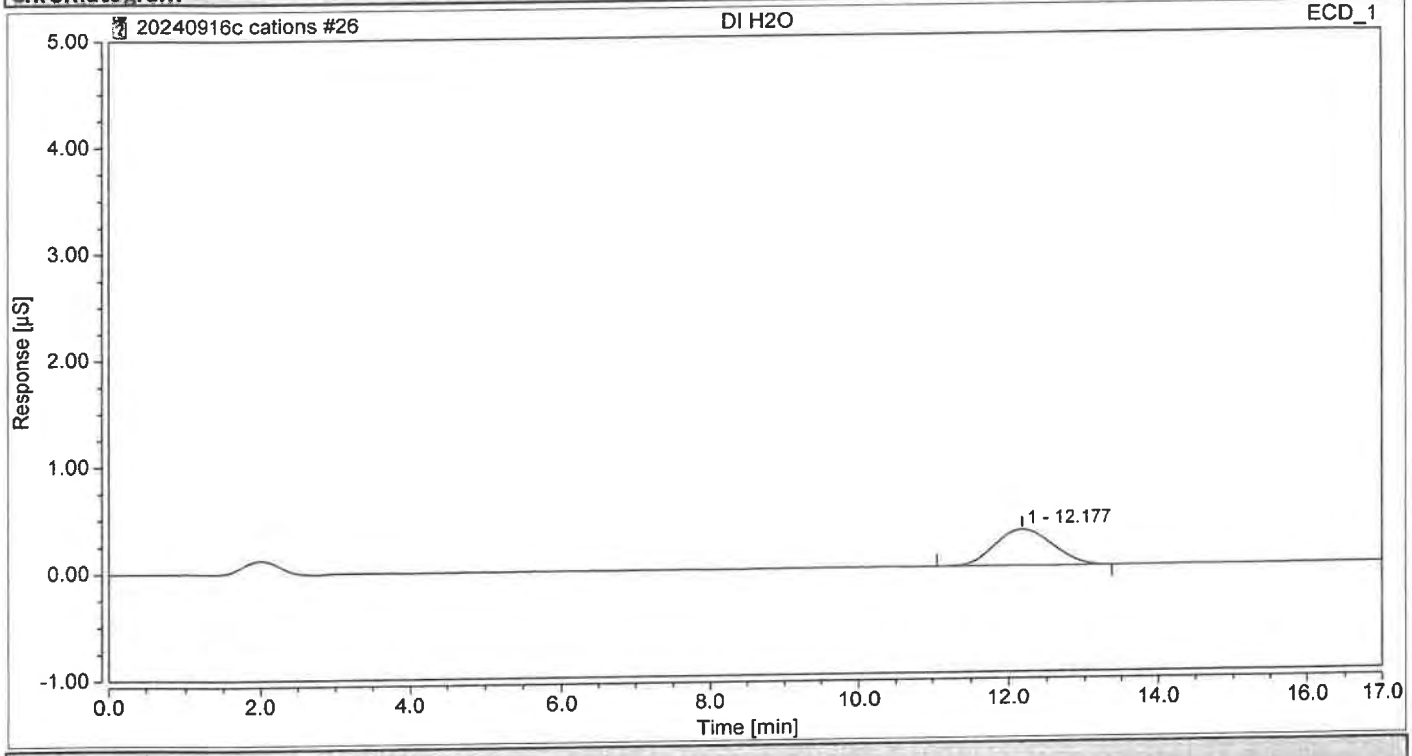
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.747	0.0012	0.007	100.00	100.00	n.a.
Total:			**0.001**	**0.007**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GC1**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 02:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

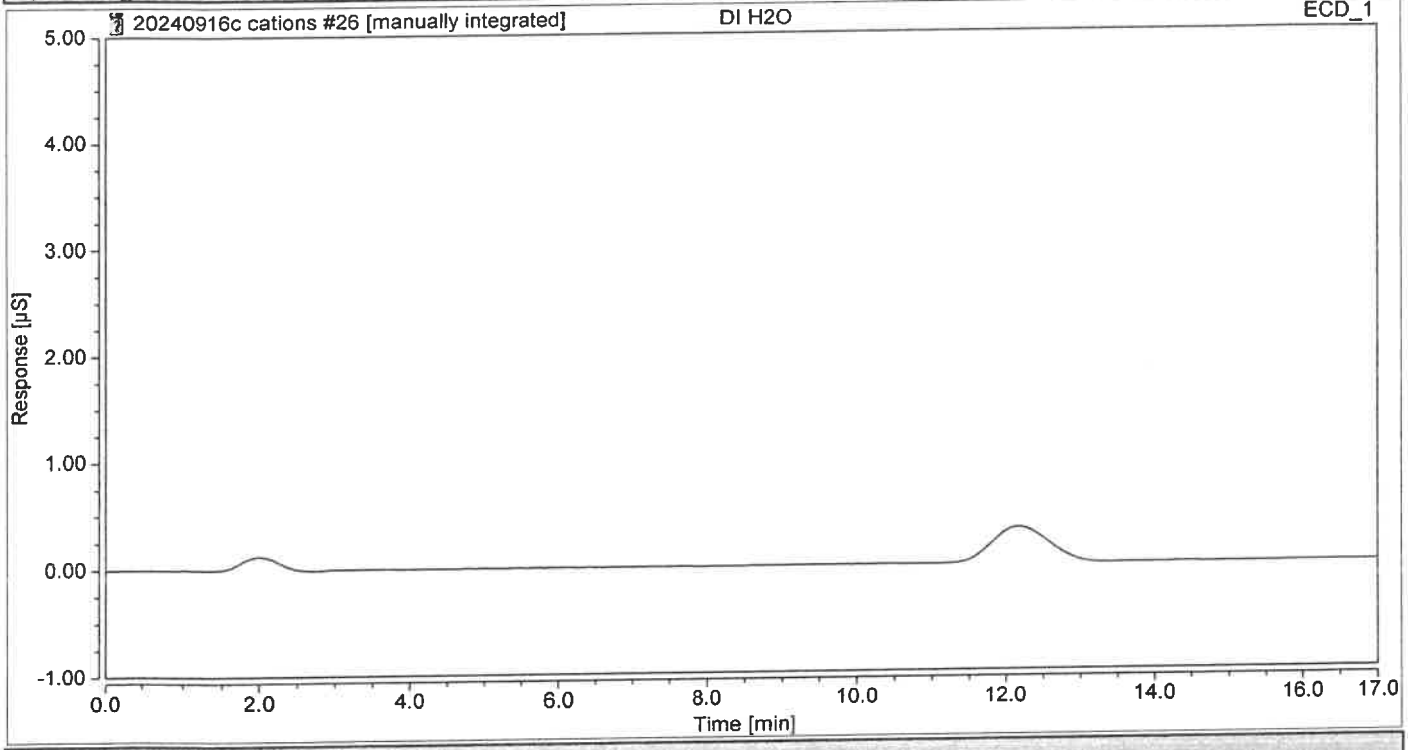
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		12.177	0.2954	0.335	100.00	100.00	n.a.
Total:			**0.295**	**0.335**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GC1**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 02:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

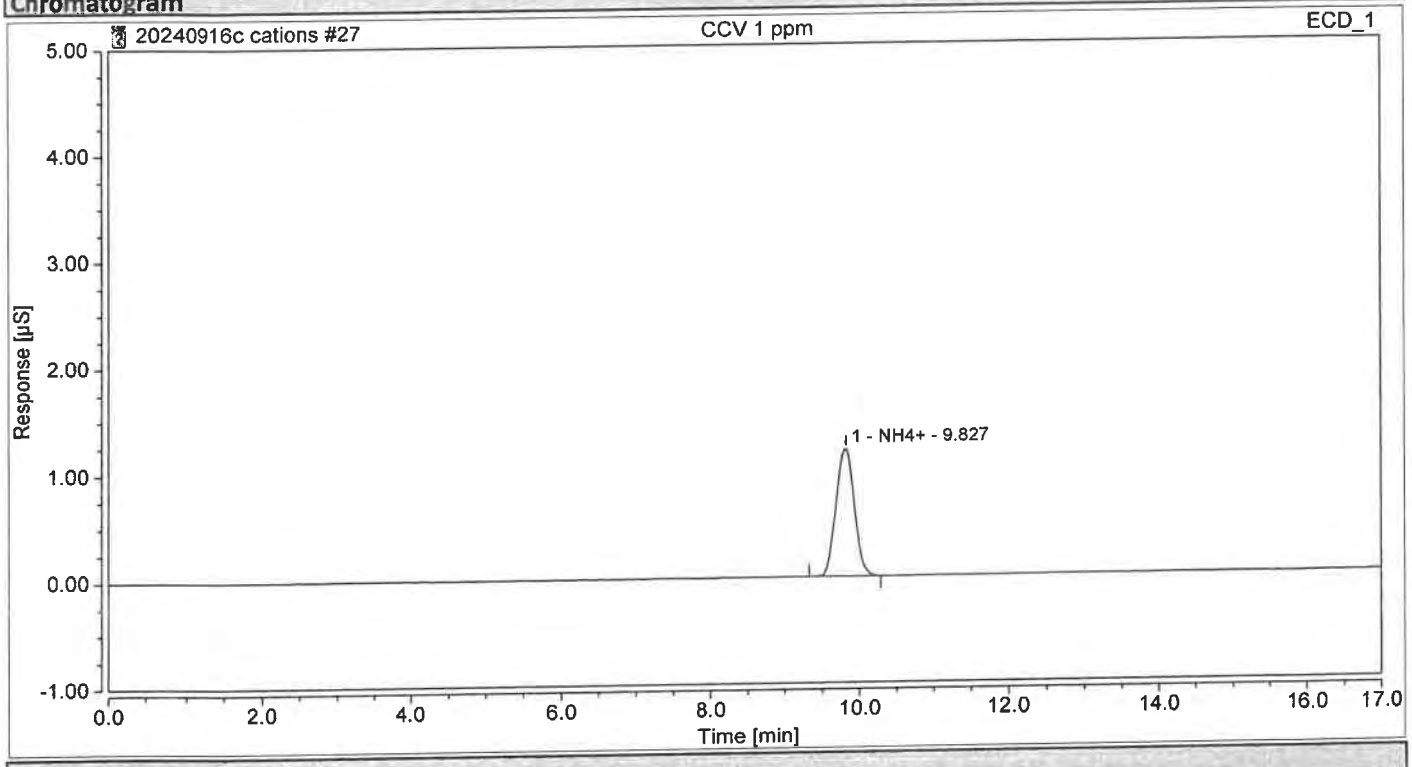
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV 1 ppm**	*Run Time (min):*	**17.00**
Vial Number:	**GC4**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 02:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

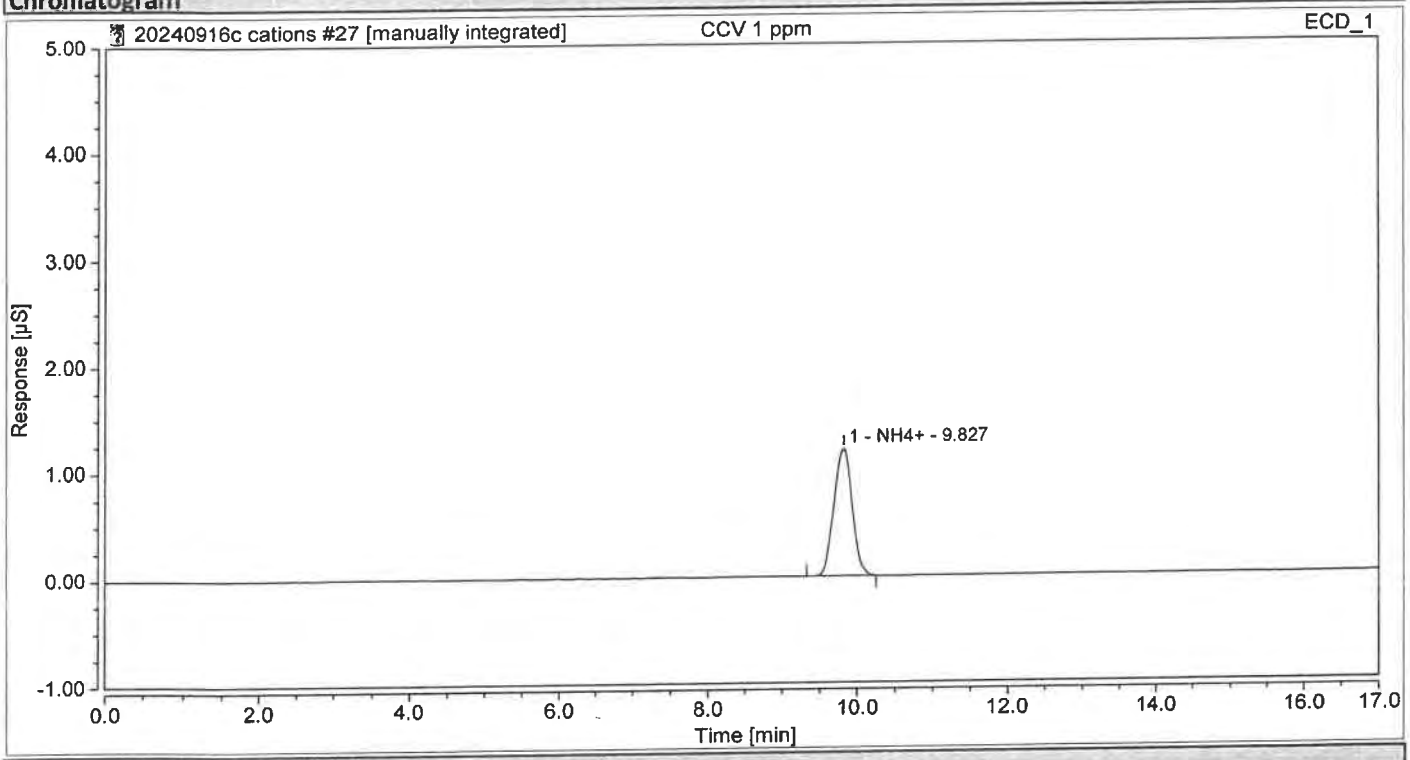
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.827	0.3413	1.197	100.00	100.00	0.9307
Total:			**0.341**	**1.197**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV 1 ppm**	*Run Time (min):*	**17.00**
Vial Number:	**GC4**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 02:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.827	0.3403	1.196	100.00	100.00	0.9201
Total:			**0.340**	**1.196**	**100.00**	**100.00**	

92.0

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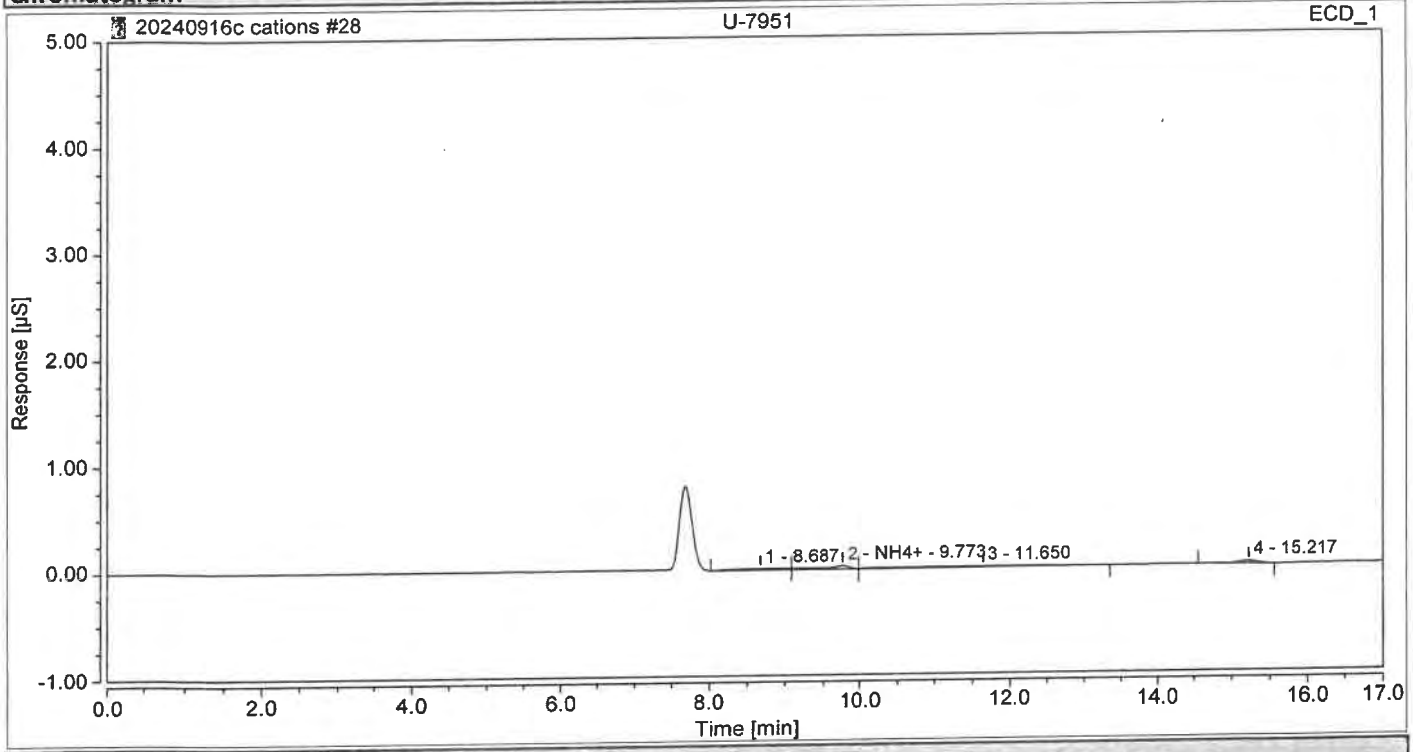
9/17/24

Chromatogram and Results

Injection Details

Injection Name:	**U-7951**	*Run Time (min):*	**17.00**
Vial Number:	**GC5**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 02:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

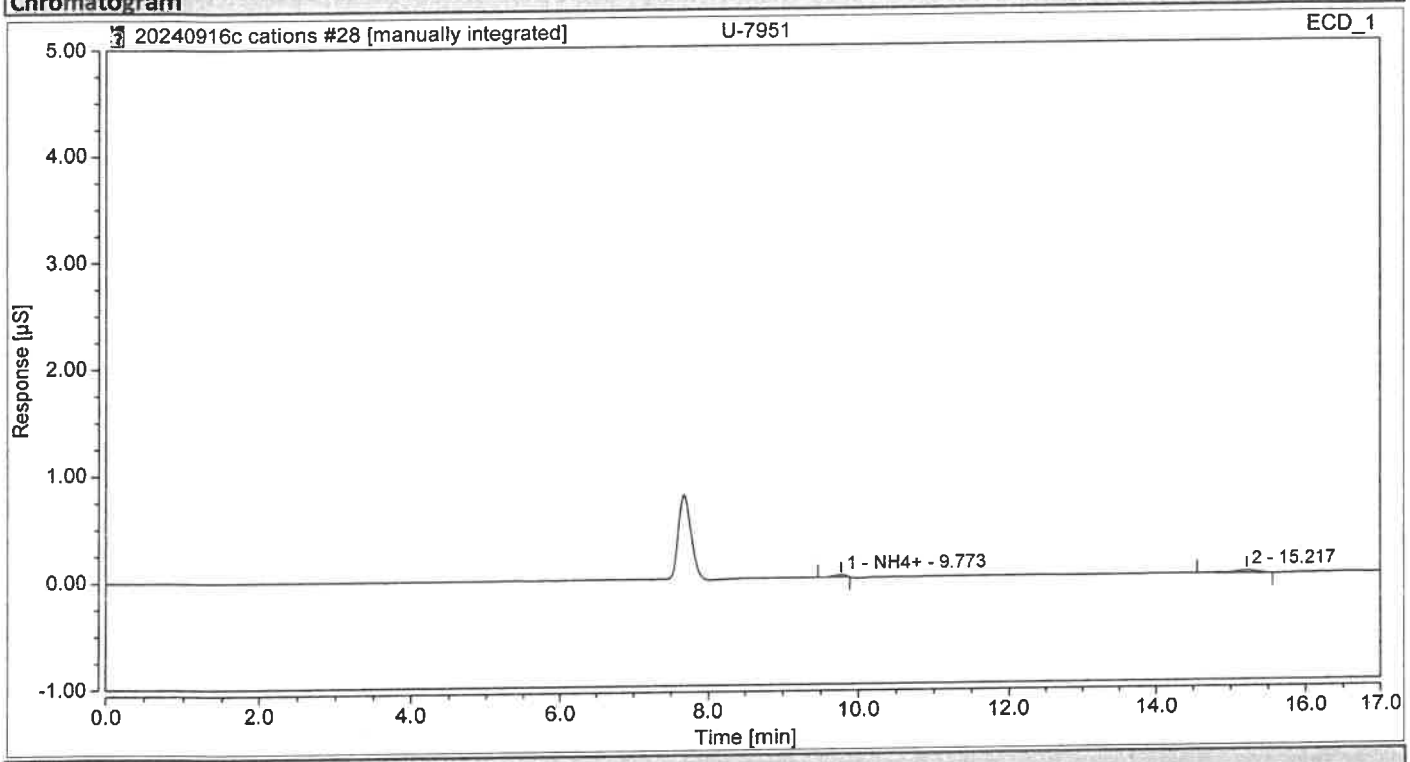
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		8.687	0.0112	0.013	21.88	16.73	n.a.
2	NH4+	9.773	0.0133	0.033	25.90	41.16	0.0298
3		11.650	0.0186	0.008	36.21	10.52	n.a.
4		15.217	0.0082	0.025	16.02	31.59	n.a.
Total:			**0.051**	**0.080**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7951**	*Run Time (min):*	**17.00**
Vial Number:	**GC5**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 02:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

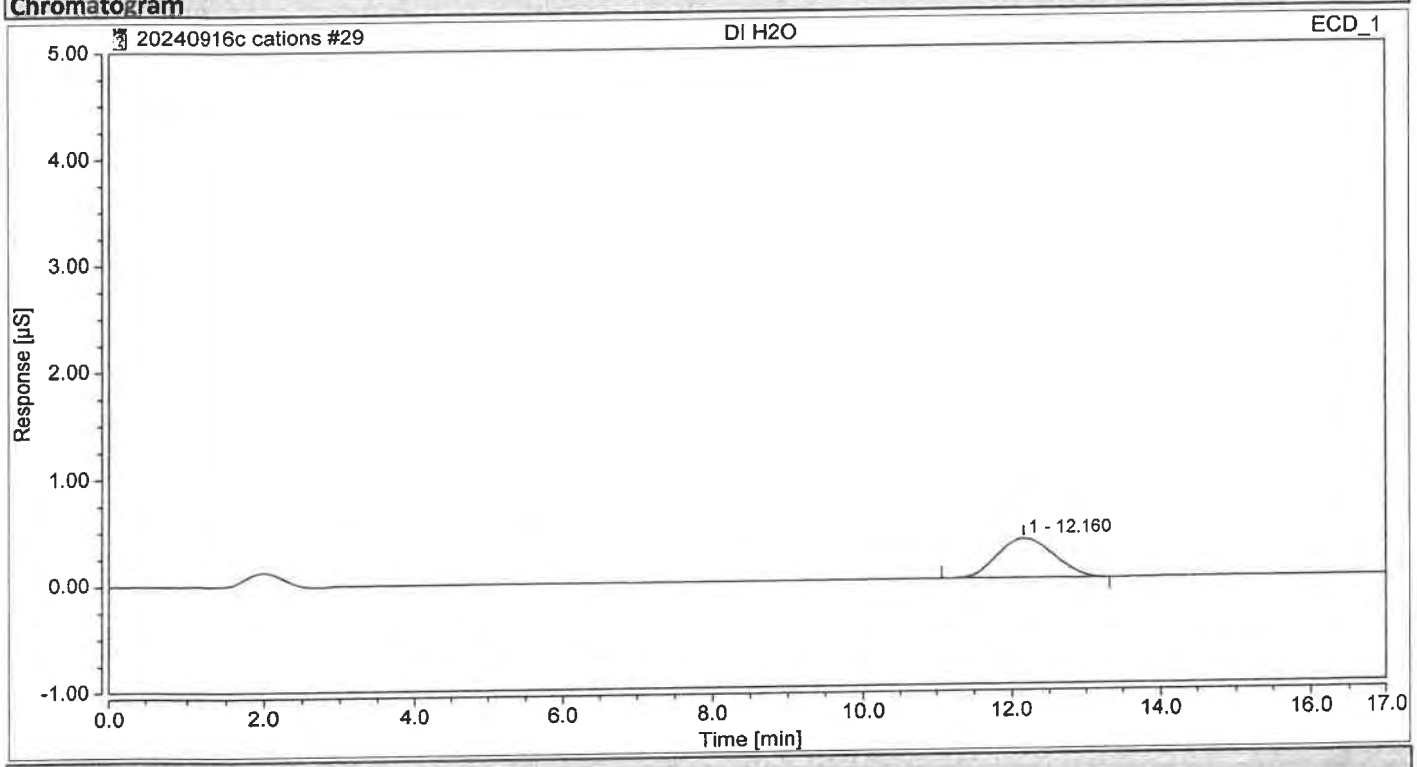
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.773	0.0036	0.022	30.71	46.29	0.0060
2		15.217	0.0082	0.025	69.29	53.71	n.a.
Total:			**0.012**	**0.047**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GC6**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 03:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

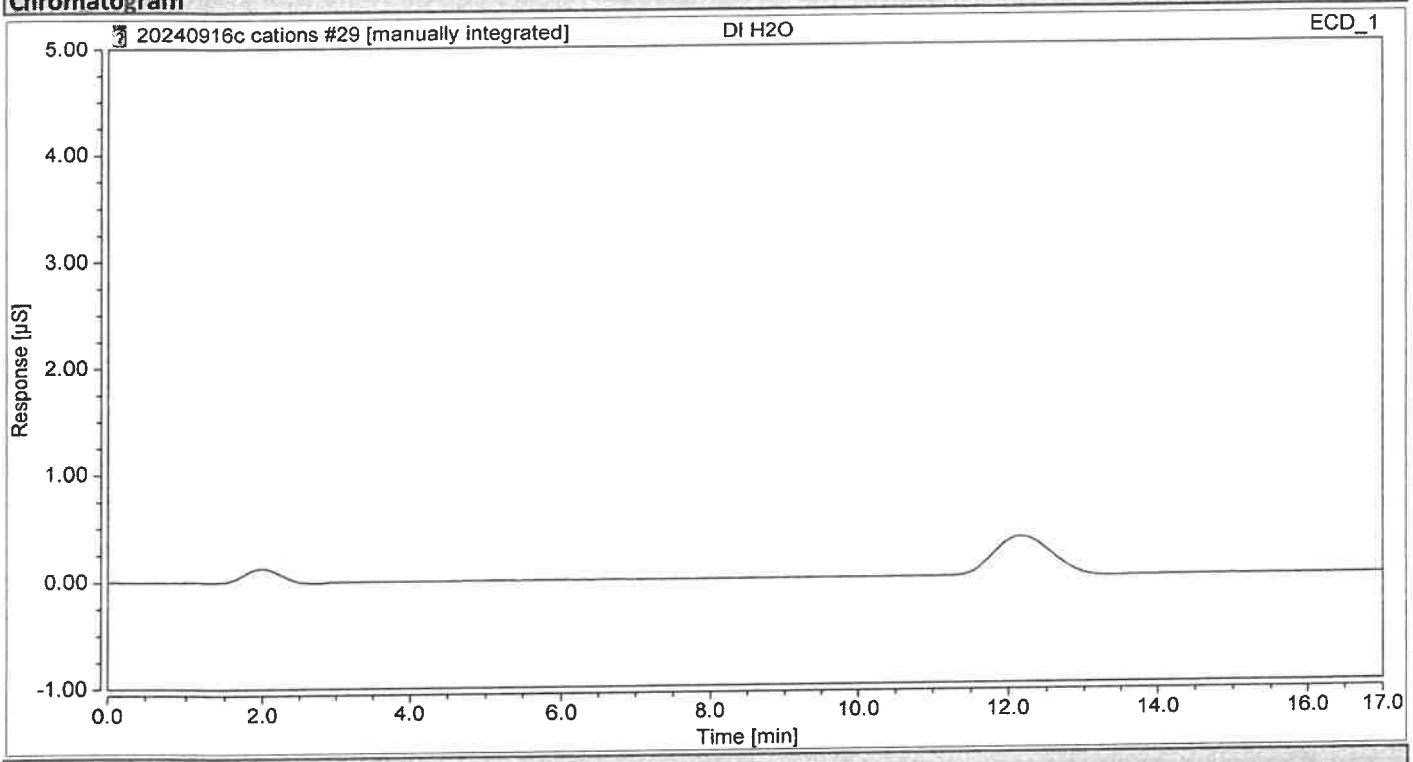
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		12.160	0.3225	0.367	100.00	100.00	n.a.
Total:			**0.323**	**0.367**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GC6**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 03:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

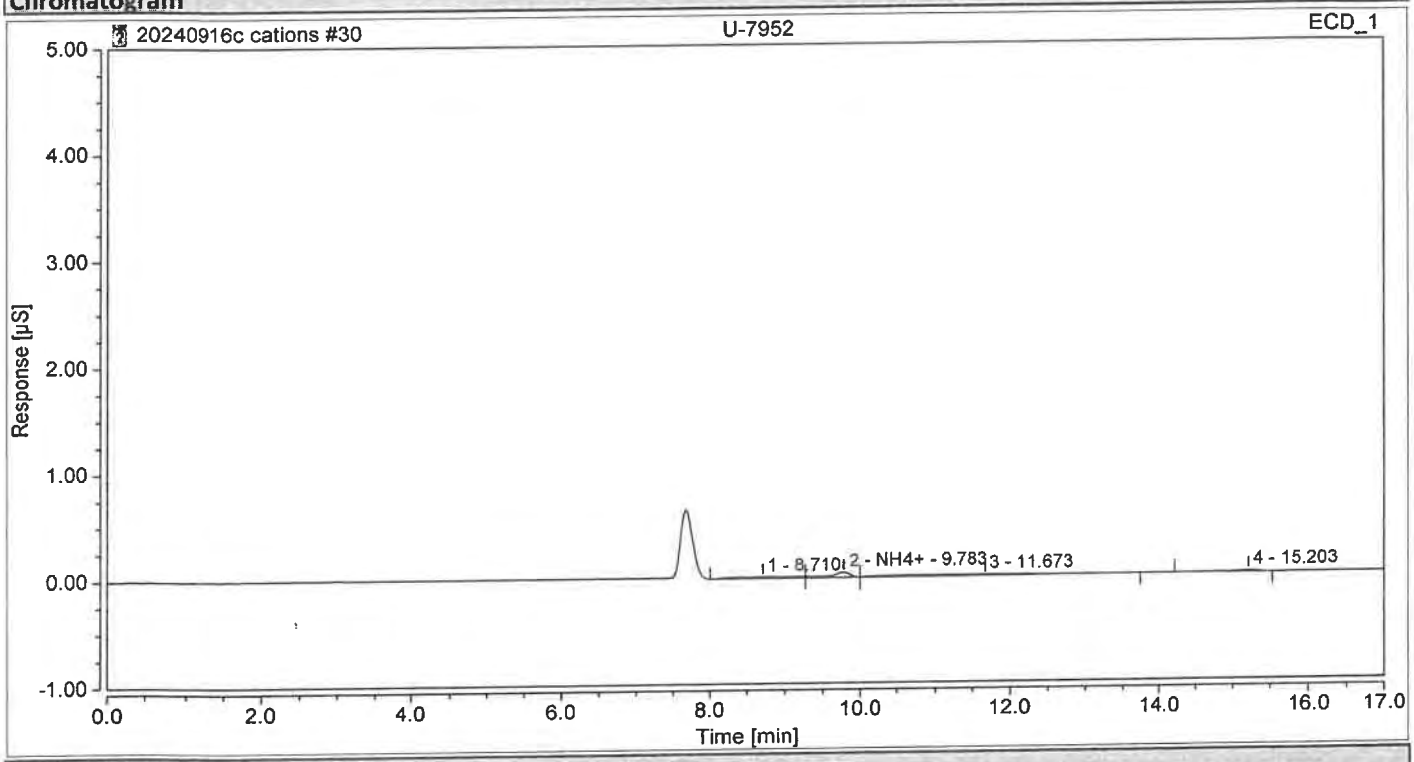
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7952**	*Run Time (min):*	**17.00**
Vial Number:	**GC7**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 03:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

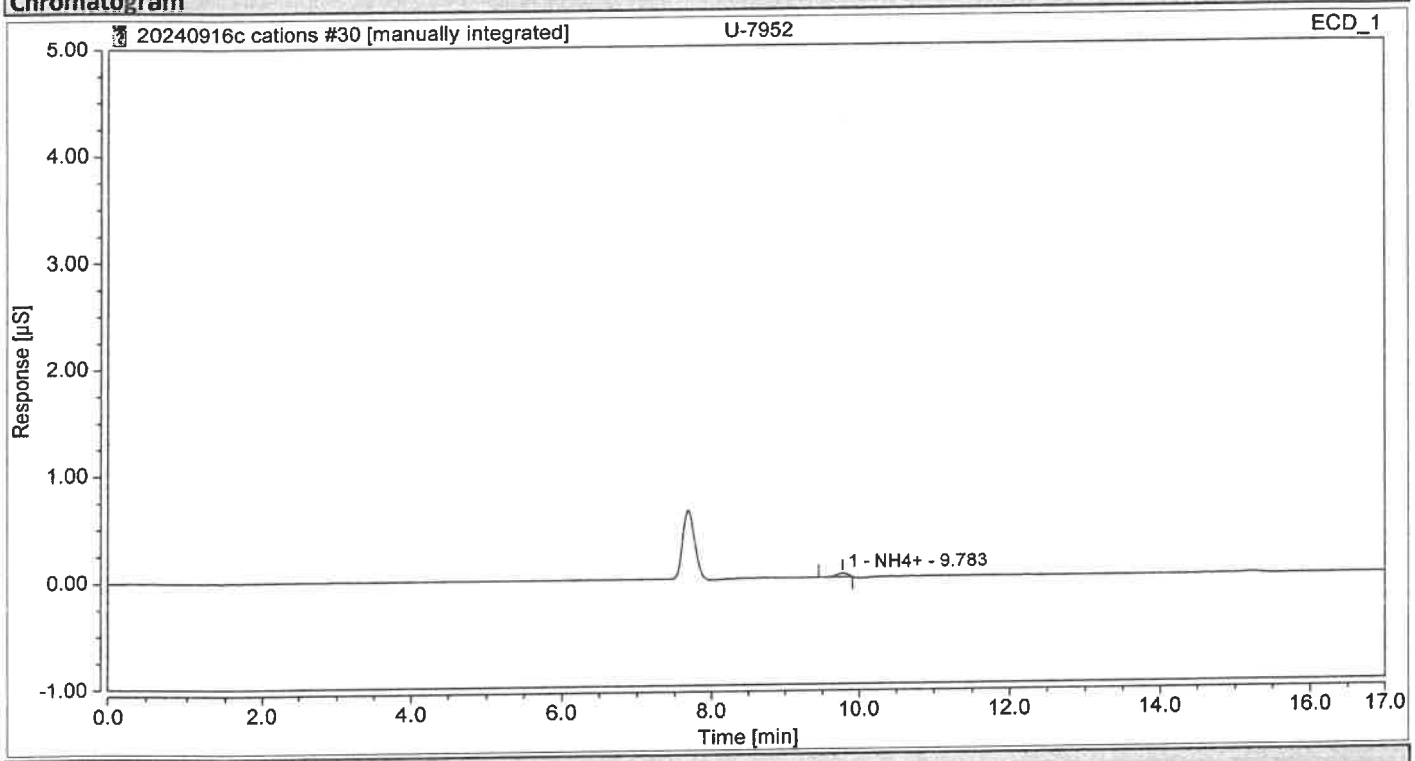
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		8.710	0.0148	0.015	25.16	17.28	n.a.
2	NH4+	9.783	0.0141	0.047	24.03	55.20	0.0319
3		11.673	0.0240	0.010	40.86	11.35	n.a.
4		15.203	0.0058	0.014	9.95	16.16	n.a.
Total:			**0.059**	**0.085**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7952**	*Run Time (min):*	**17.00**
Vial Number:	**GC7**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 03:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

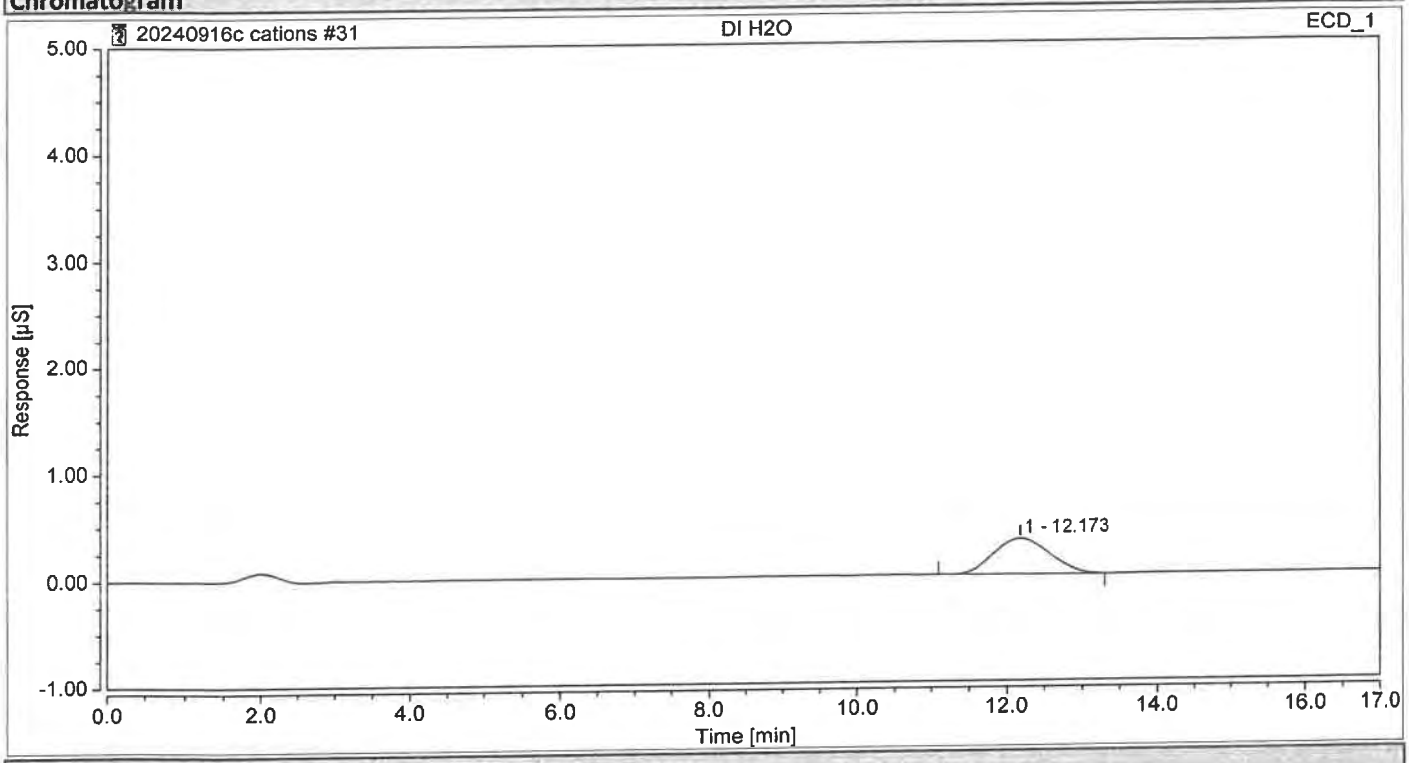
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.783	0.0059	0.035	100.00	100.00	0.0118
Total:			**0.006**	**0.035**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GC6**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 04:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

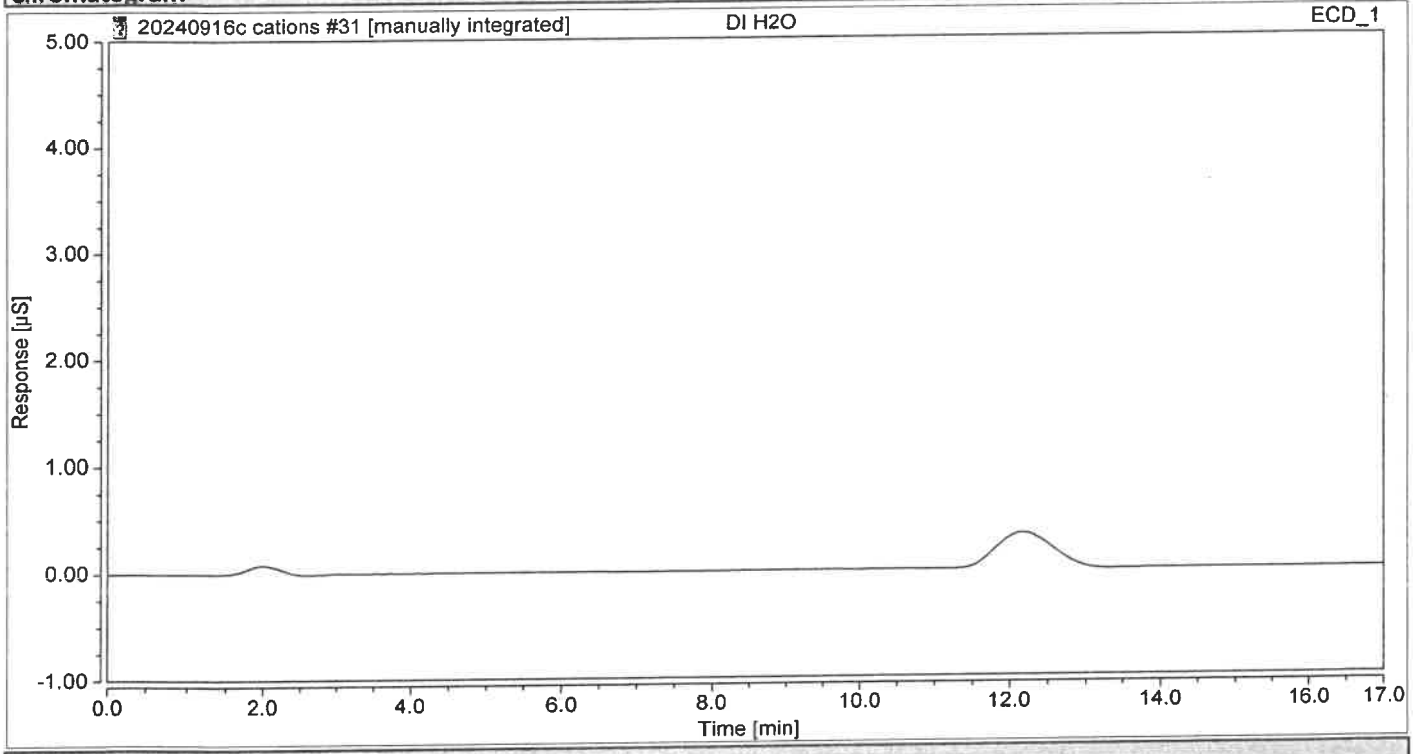
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		12.173	0.2886	0.333	100.00	100.00	n.a.
Total:			**0.289**	**0.333**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GC6**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 04:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

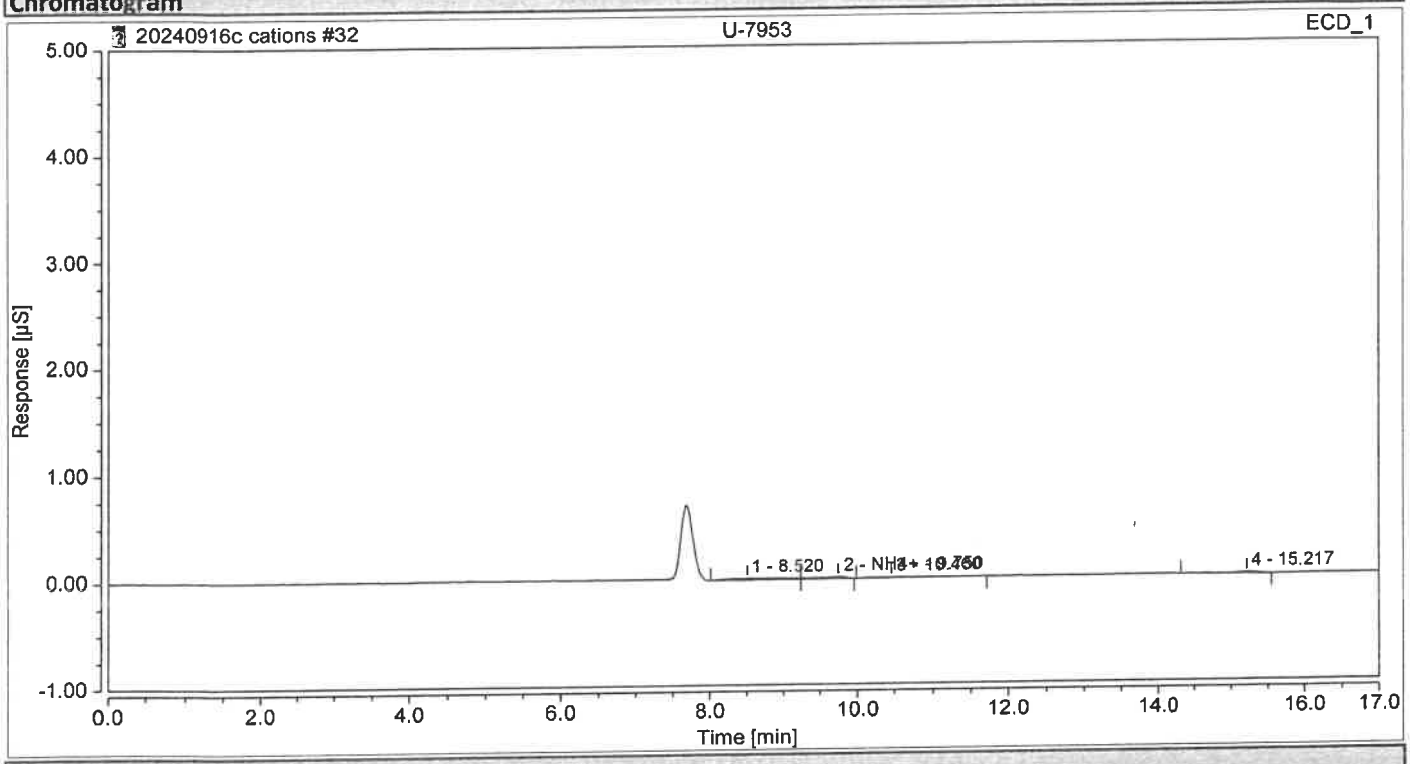
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7953**	*Run Time (min):*	**17.00**
Vial Number:	**GC8**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 04:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

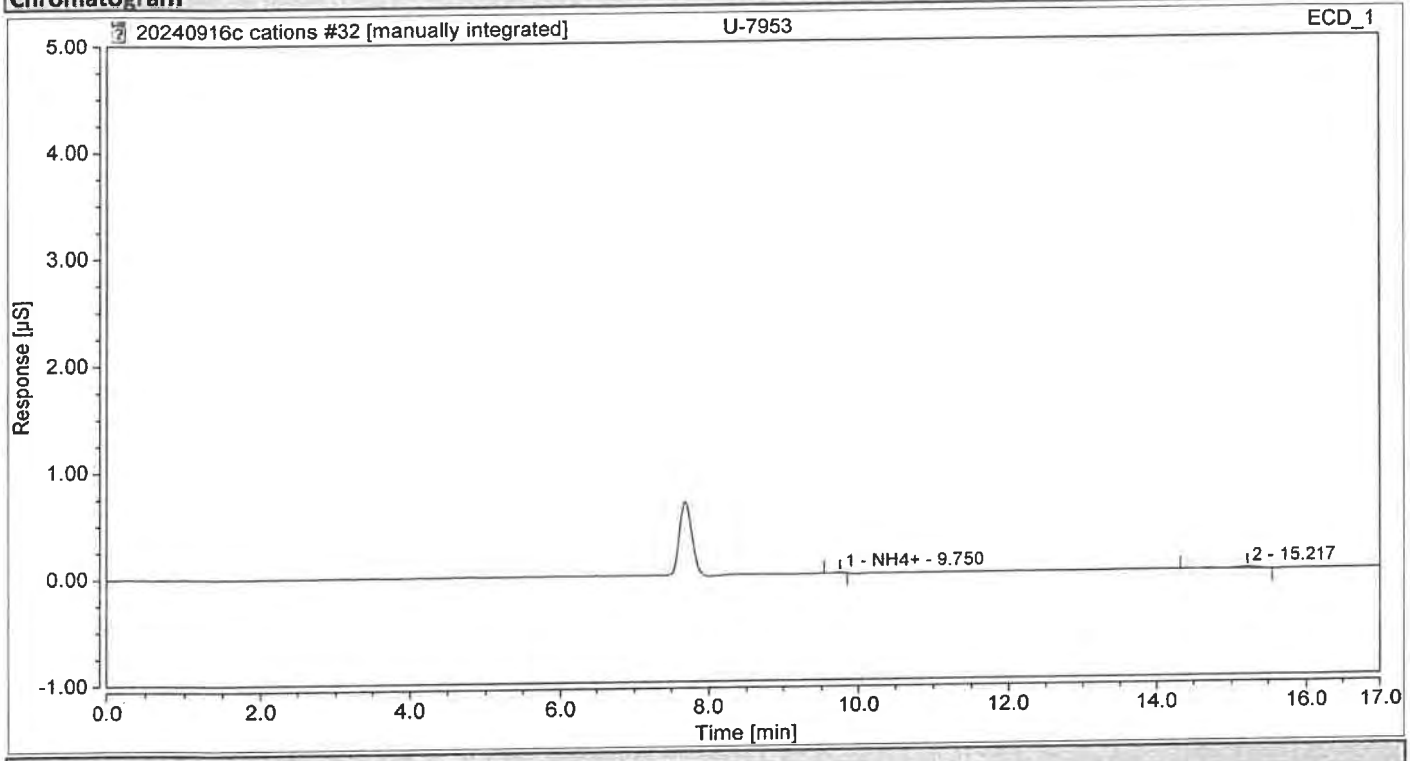
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		8.520	0.0121	0.012	41.24	25.77	n.a.
2	NH4+	9.750	0.0067	0.017	22.99	35.09	0.0127
3		10.460	0.0054	0.006	18.58	12.04	n.a.
4		15.217	0.0050	0.013	17.19	27.10	n.a.
Total:			**0.029**	**0.048**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7953**	*Run Time (min):*	**17.00**
Vial Number:	**GC8**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 04:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

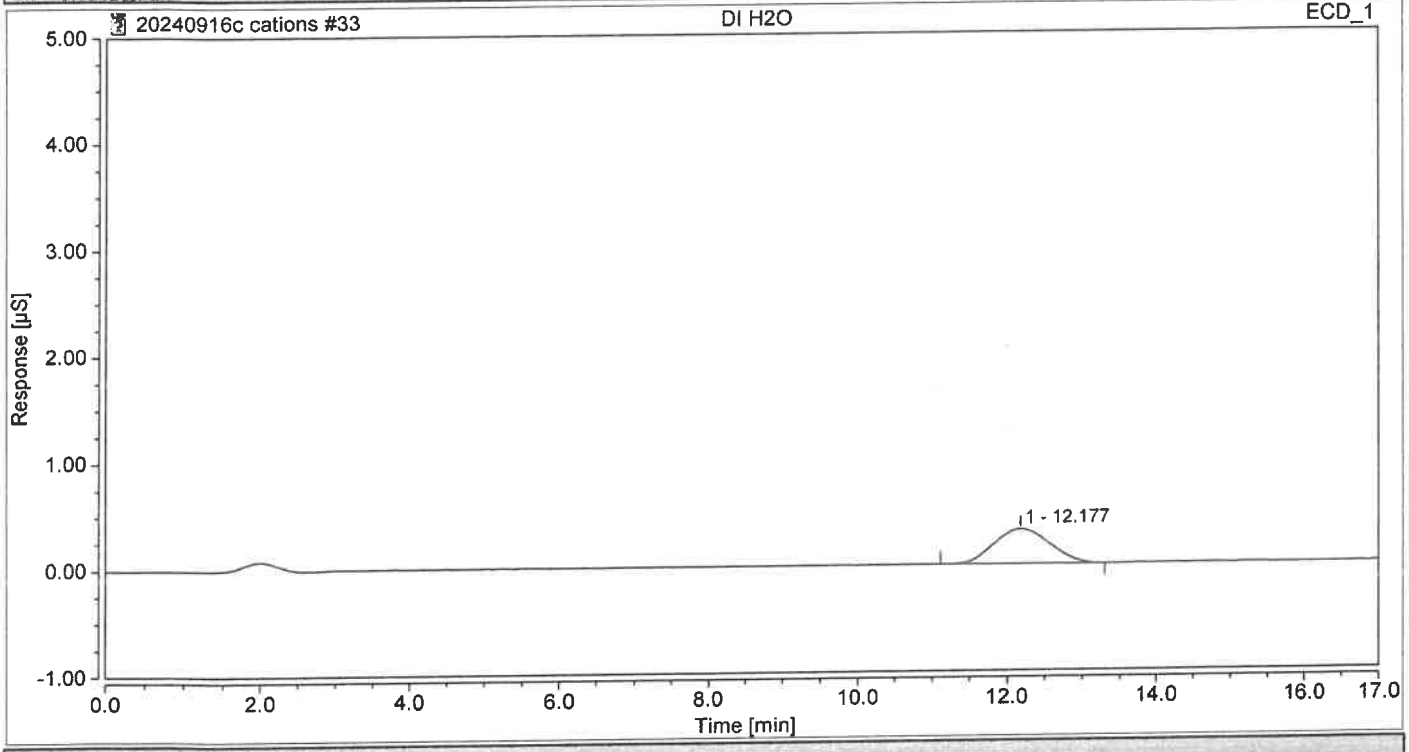
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.750	0.0012	0.008	19.43	39.52	n.a.
2		15.217	0.0050	0.013	80.57	60.48	n.a.
Total:			**0.006**	**0.021**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GC6**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 04:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

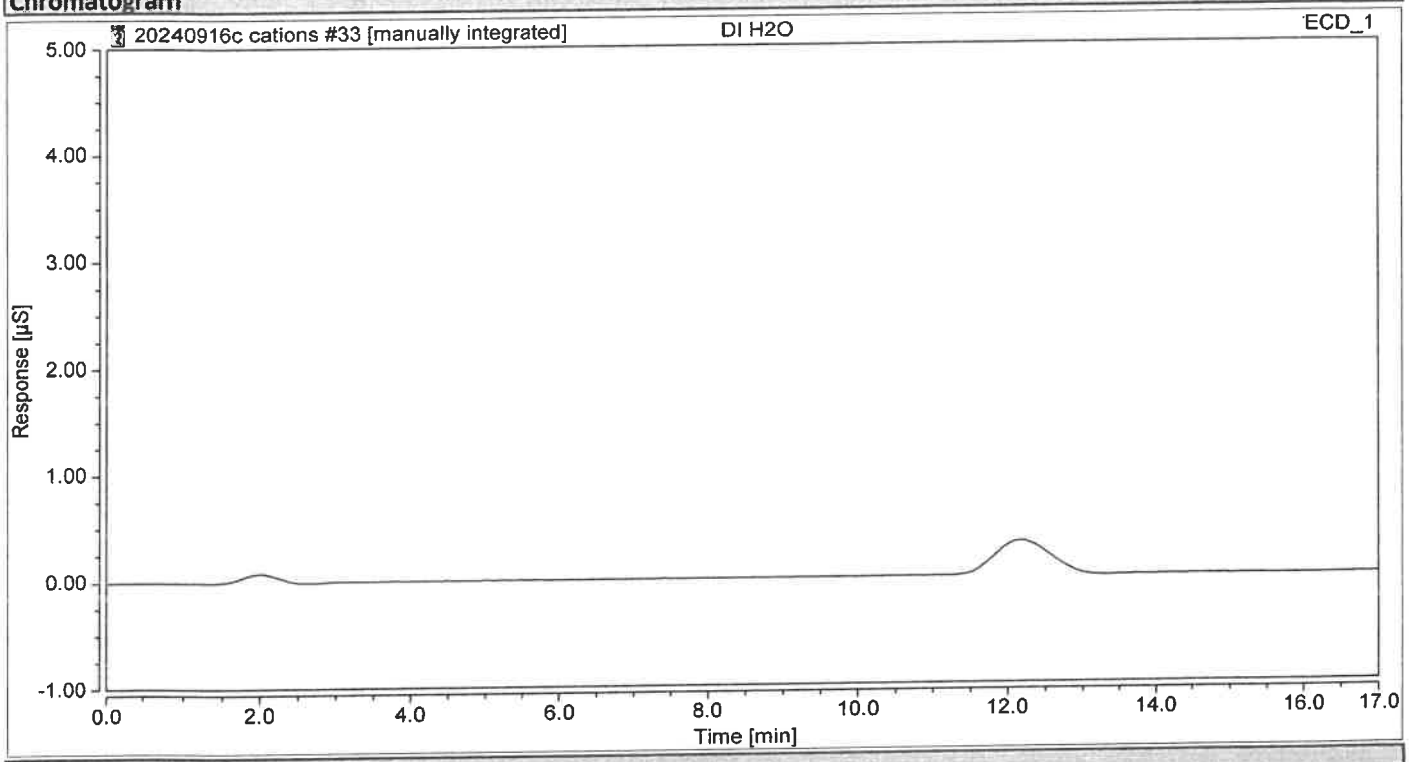
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		12.177	0.2775	0.323	100.00	100.00	n.a.
Total:			**0.277**	**0.323**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GC6**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 04:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

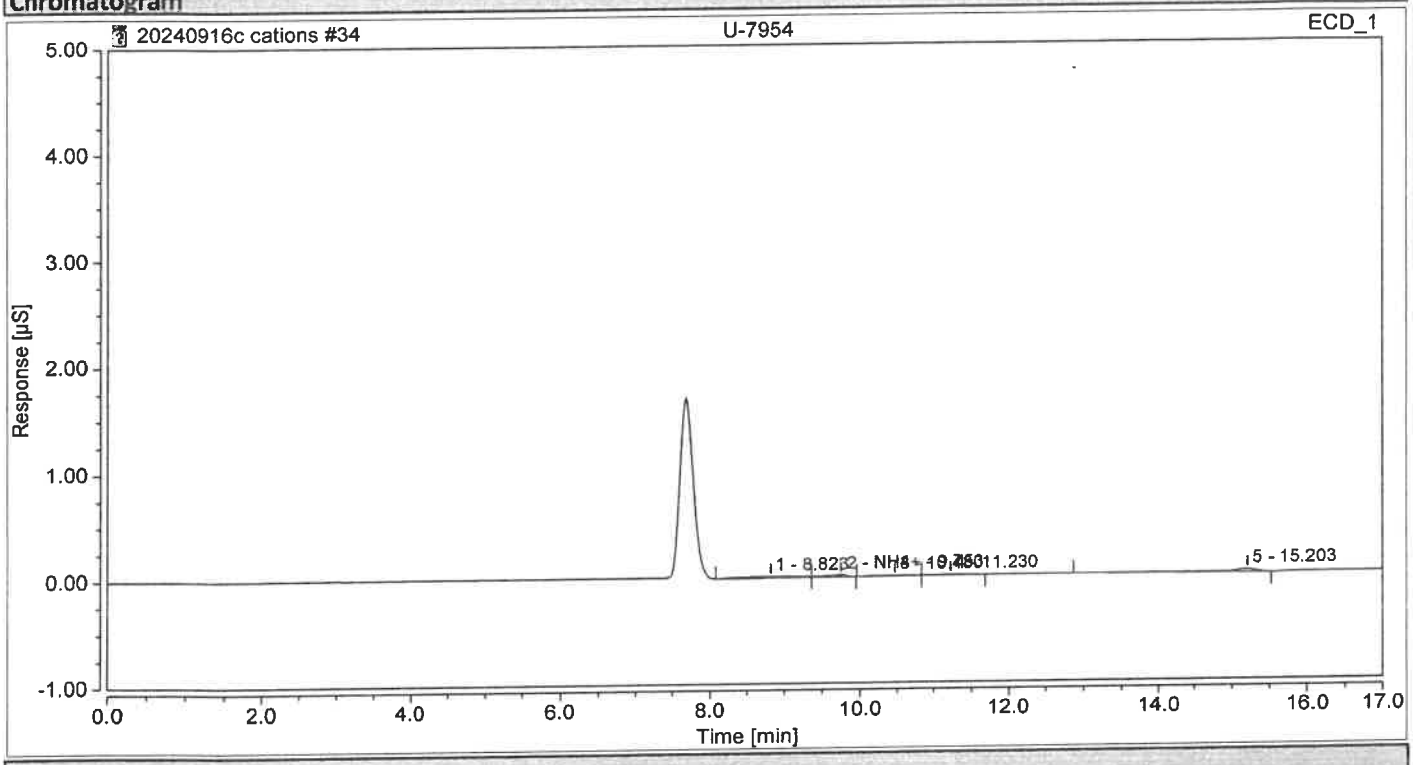
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7954**	*Run Time (min):*	**17.00**
Vial Number:	**GD1**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 05:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

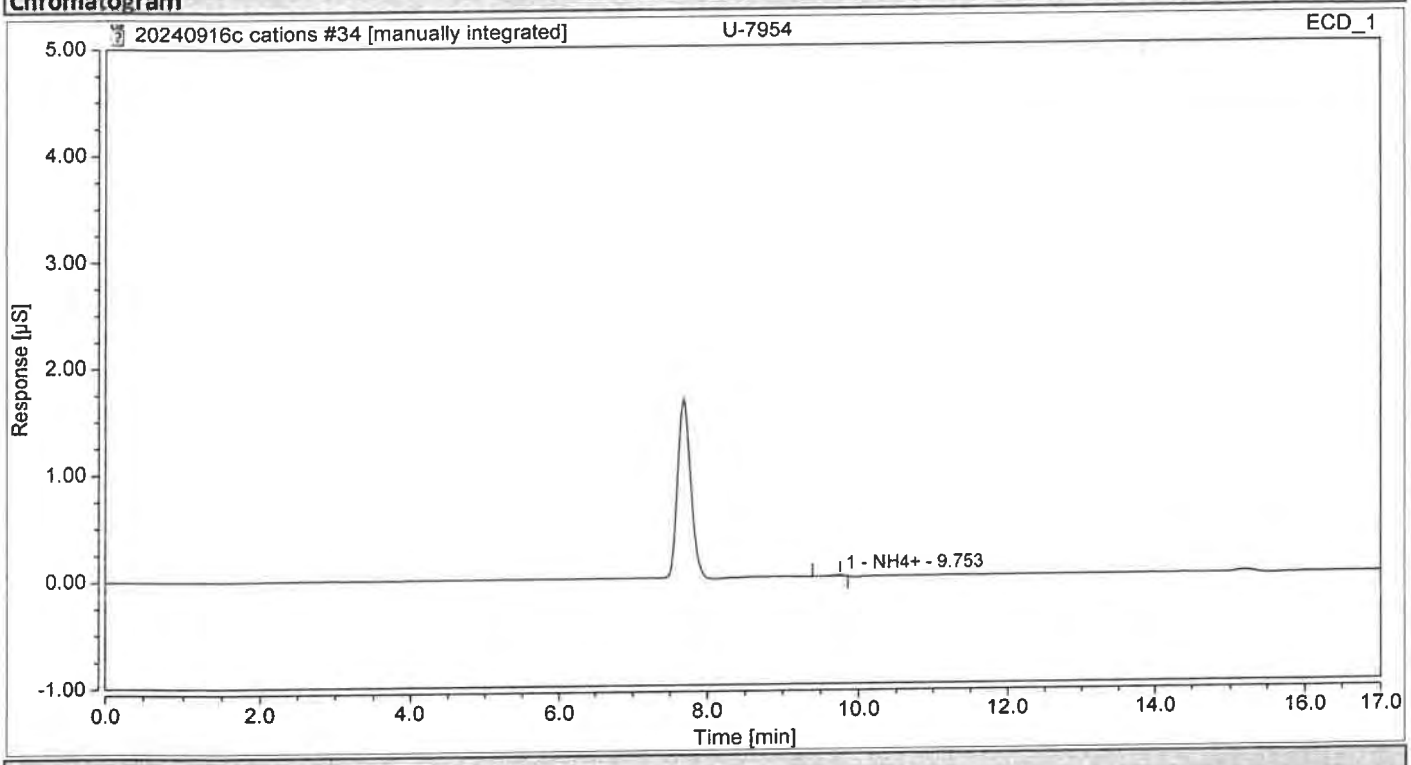
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		8.823	0.0140	0.014	30.70	18.75	n.a.
2	NH4+	9.753	0.0067	0.021	14.64	28.04	0.0125
3		10.480	0.0041	0.007	9.05	8.91	n.a.
4		11.230	0.0025	0.005	5.57	7.41	n.a.
5		15.203	0.0182	0.027	40.03	36.89	n.a.
Total:			**0.045**	**0.073**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7954**	*Run Time (min):*	**17.00**
Vial Number:	**GD1**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 05:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

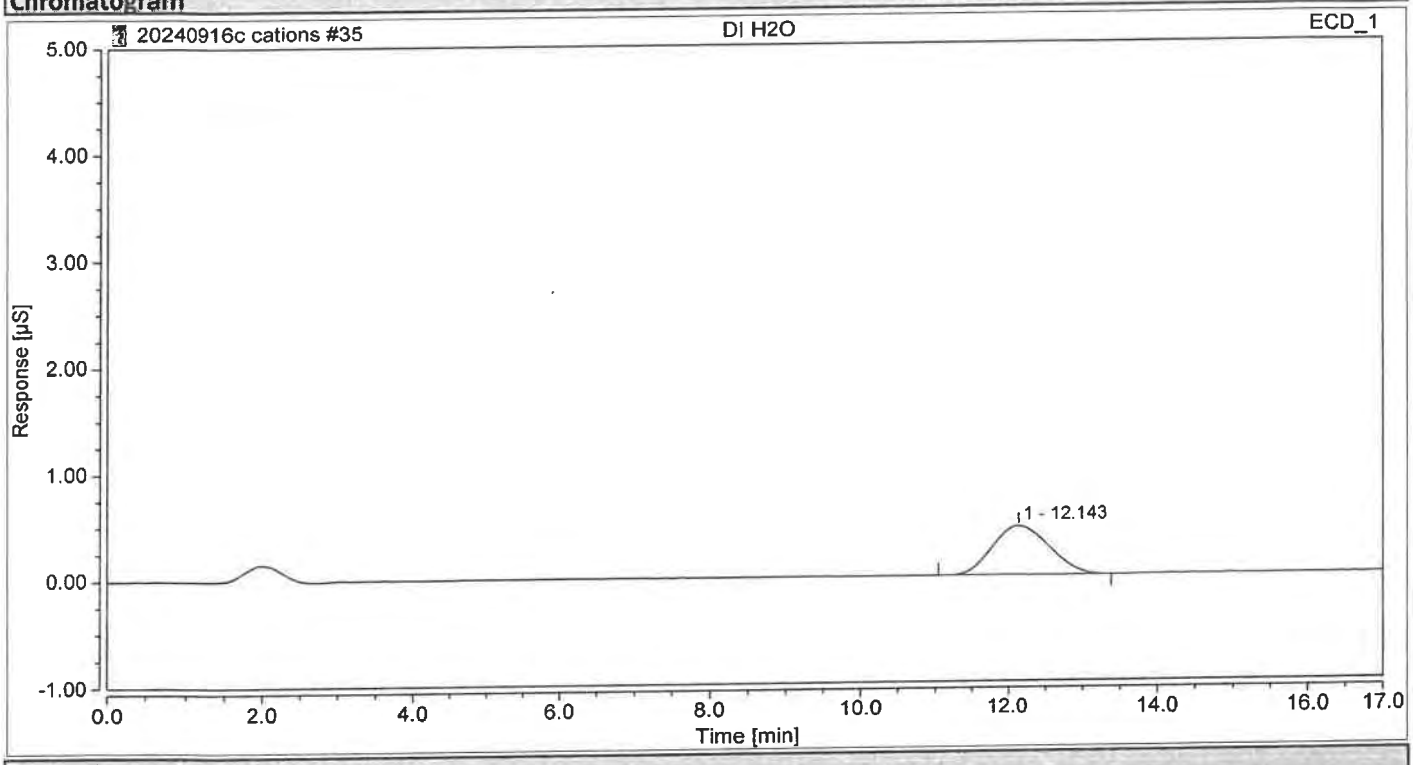
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.753	0.0023	0.013	100.00	100.00	0.0025
Total:			**0.002**	**0.013**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GD2**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 05:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

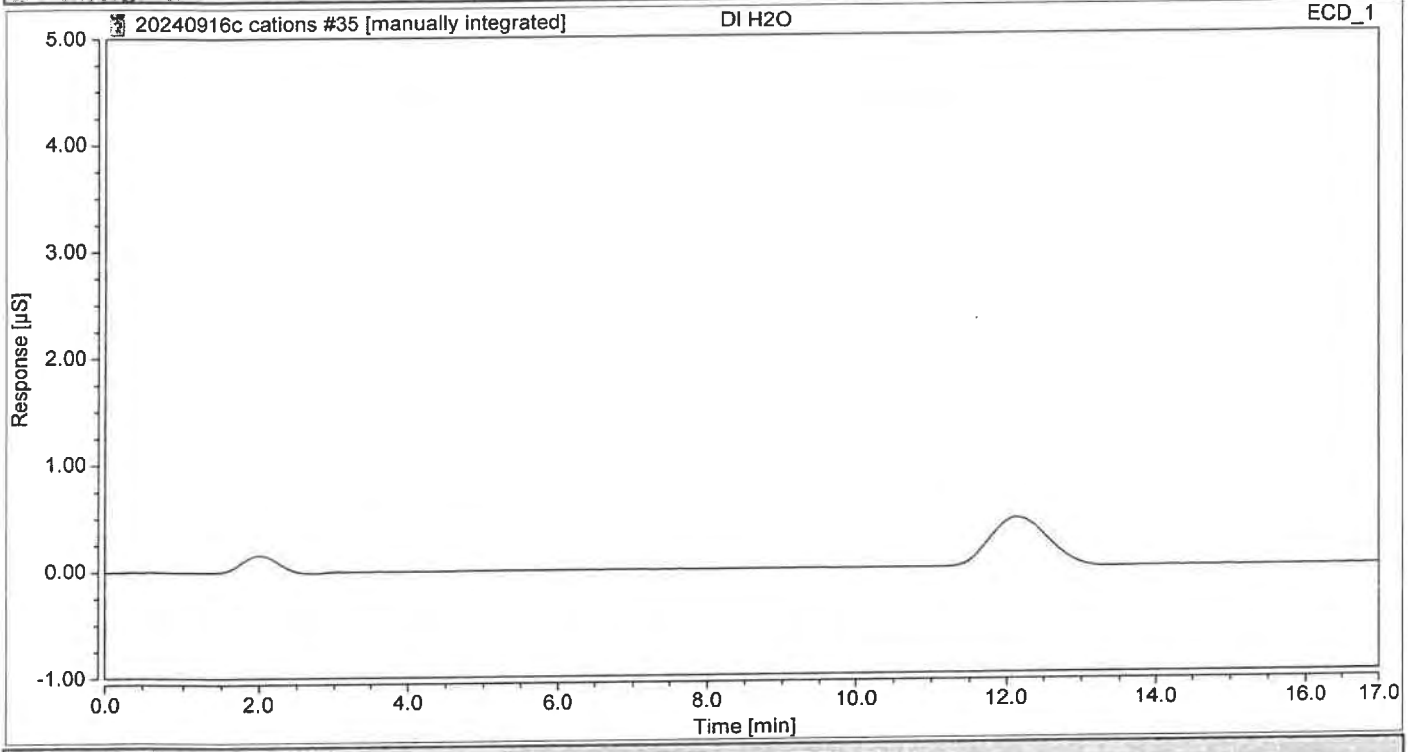
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		12.143	0.4123	0.461	100.00	100.00	n.a.
Total:			**0.412**	**0.461**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GD2**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 05:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

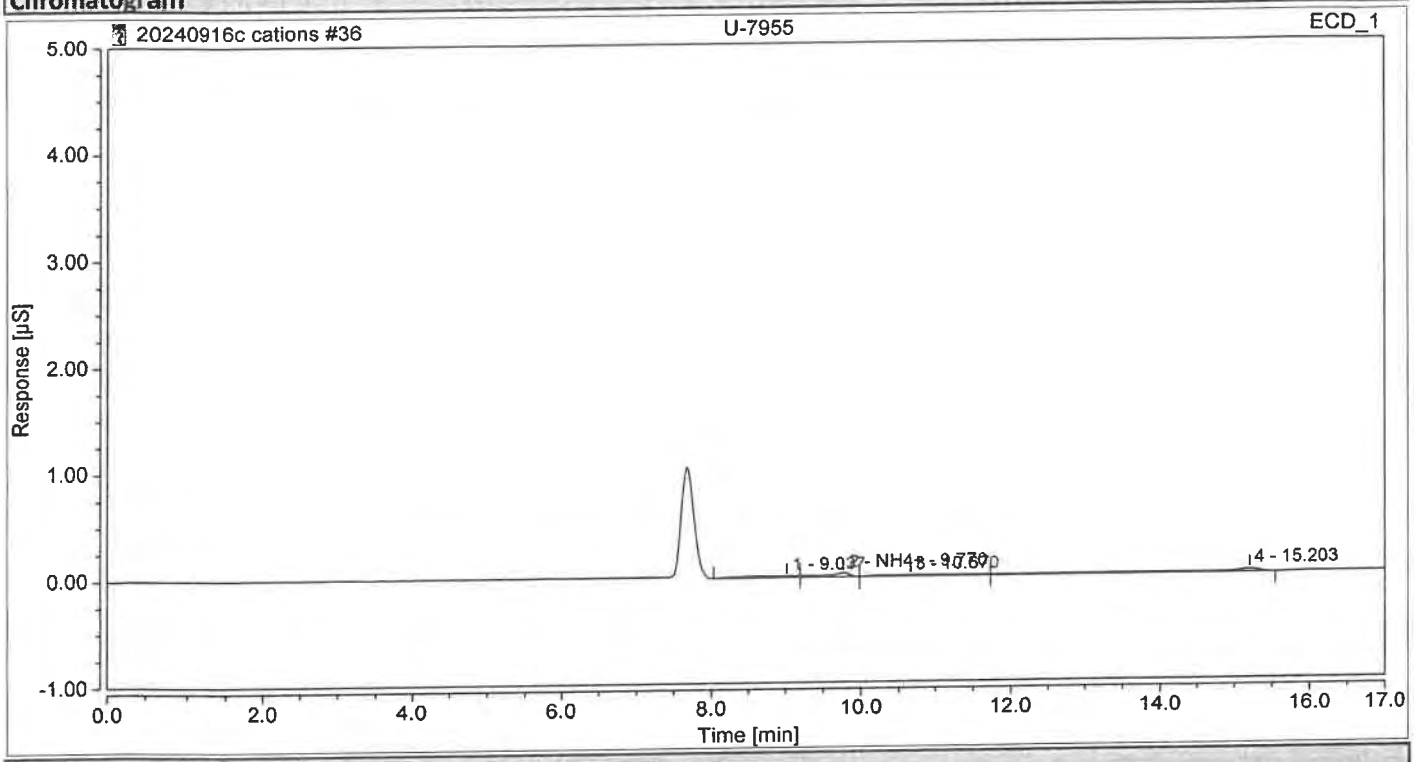
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7955**	*Run Time (min):*	**17.00**
Vial Number:	**GD3**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 05:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

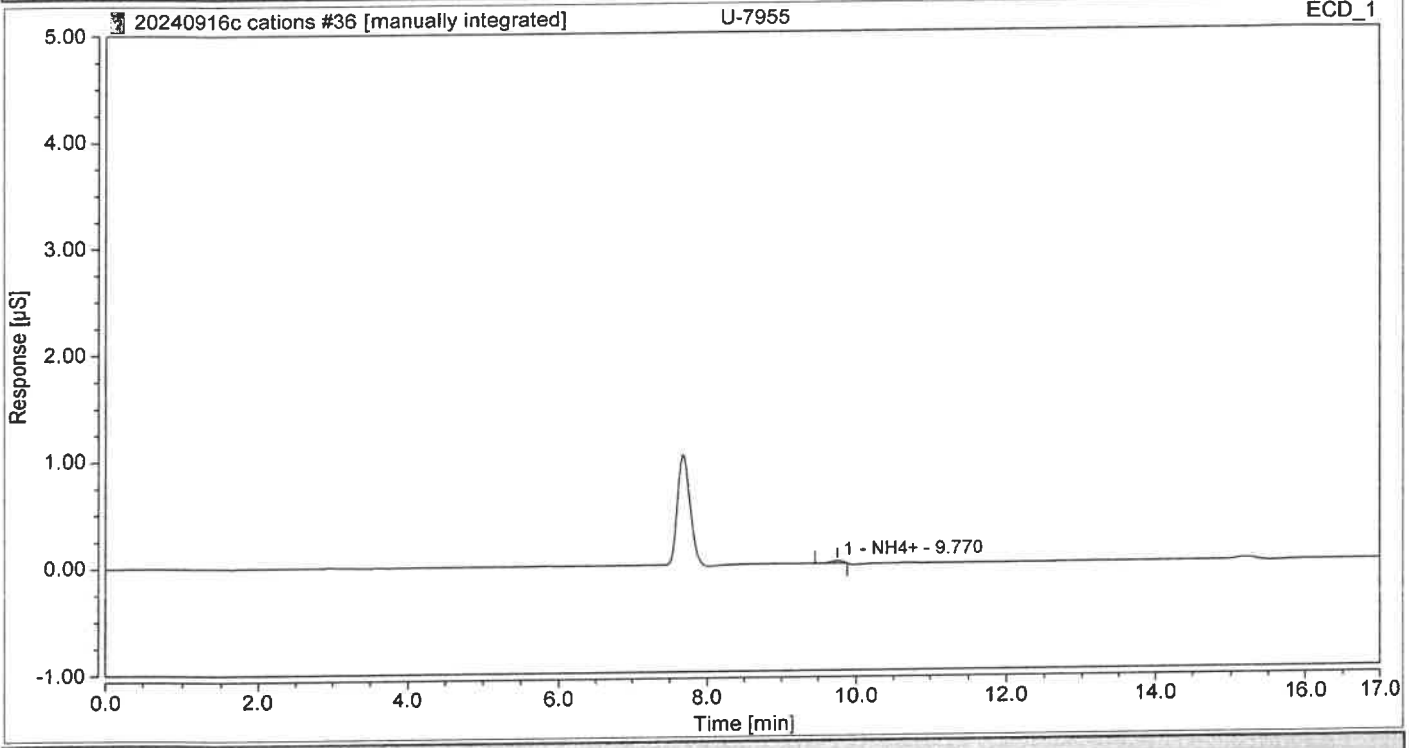
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.037	0.0164	0.017	18.99	18.42	n.a.
2		9.770	0.0143	0.037	16.52	39.62	0.0323
3		10.670	0.0156	0.011	18.04	12.07	n.a.
4		15.203	0.0401	0.028	46.45	29.90	n.a.
Total:			**0.086**	**0.095**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7955**	*Run Time (min):*	**17.00**
Vial Number:	**GD3**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 05:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

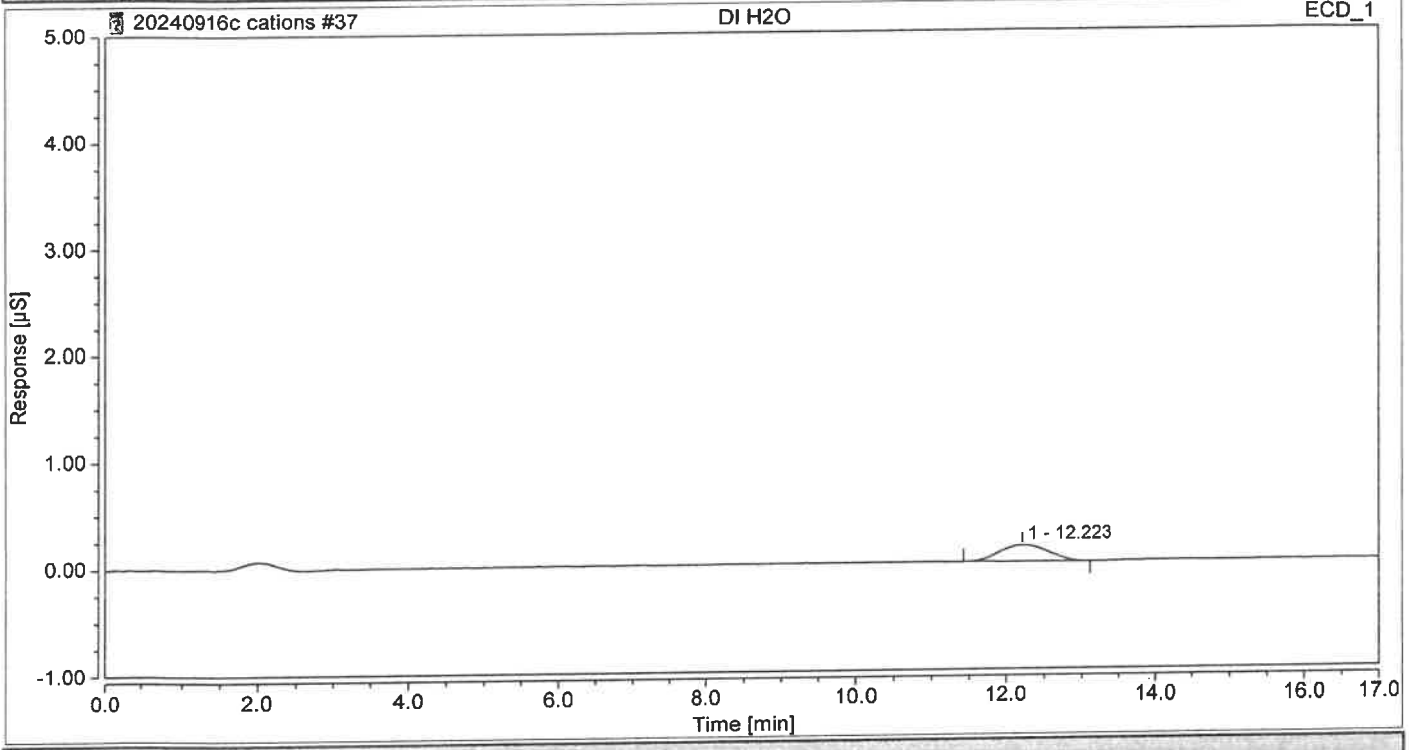
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.770	0.0044	0.025	100.00	100.00	0.0080
Total:			**0.004**	**0.025**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GD2**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 06:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

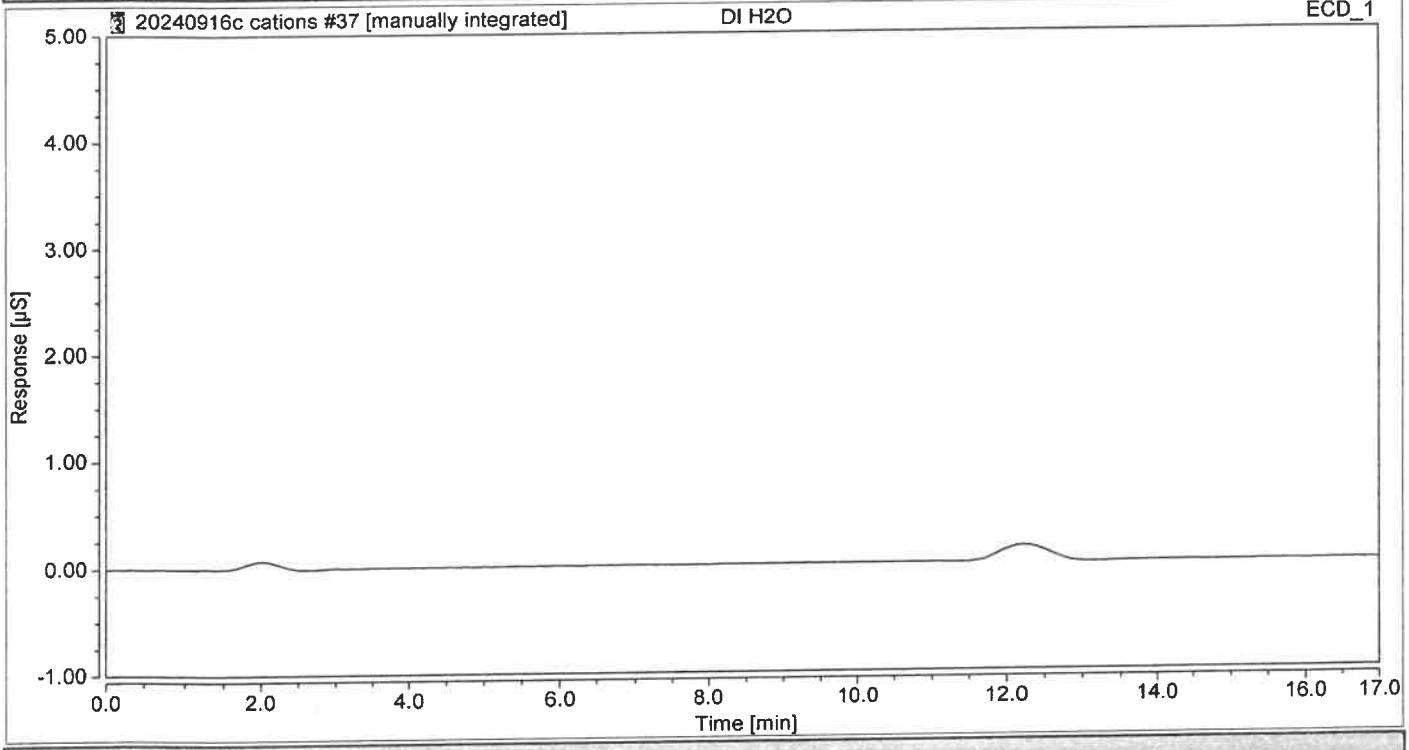
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		12.223	0.1124	0.151	100.00	100.00	n.a.
Total:			**0.112**	**0.151**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GD2**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 06:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

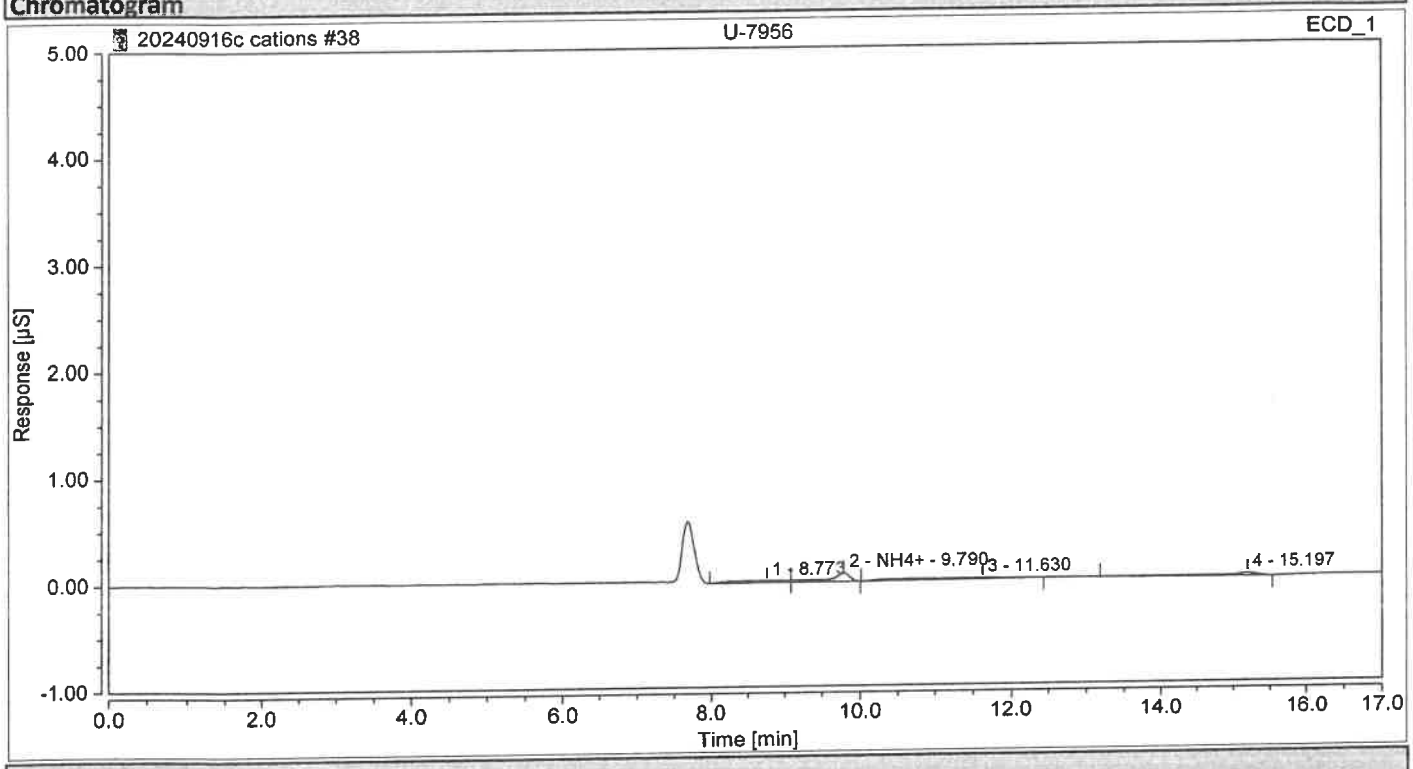
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7956**	*Run Time (min):*	**17.00**
Vial Number:	**GD4**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 06:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

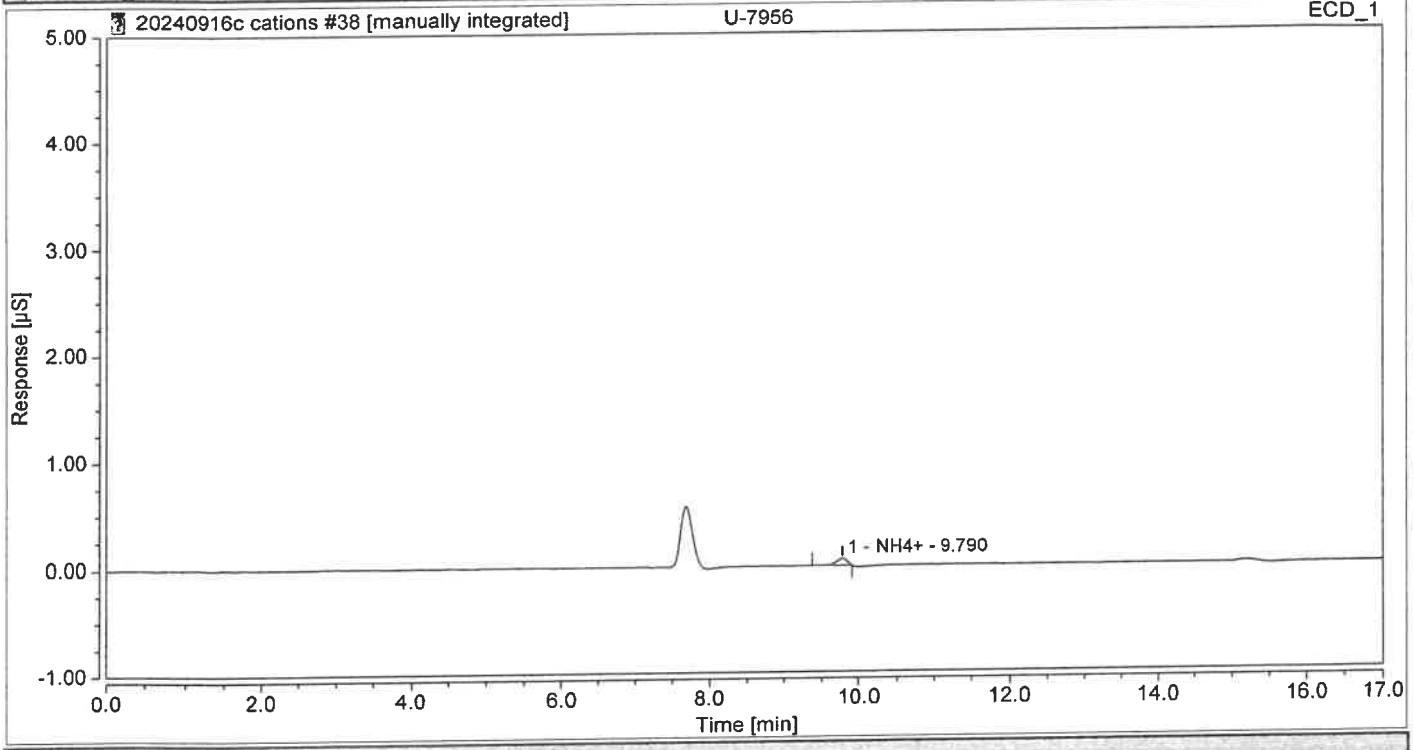
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		8.773	0.0176	0.019	22.20	14.40	n.a.
2	NH4+	9.790	0.0256	0.079	32.28	60.10	0.0618
3		11.630	0.0204	0.009	25.69	6.97	n.a.
4		15.197	0.0157	0.024	19.84	18.53	n.a.
Total:			**0.079**	**0.132**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7956**	*Run Time (min):*	**17.00**
Vial Number:	**GD4**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 06:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

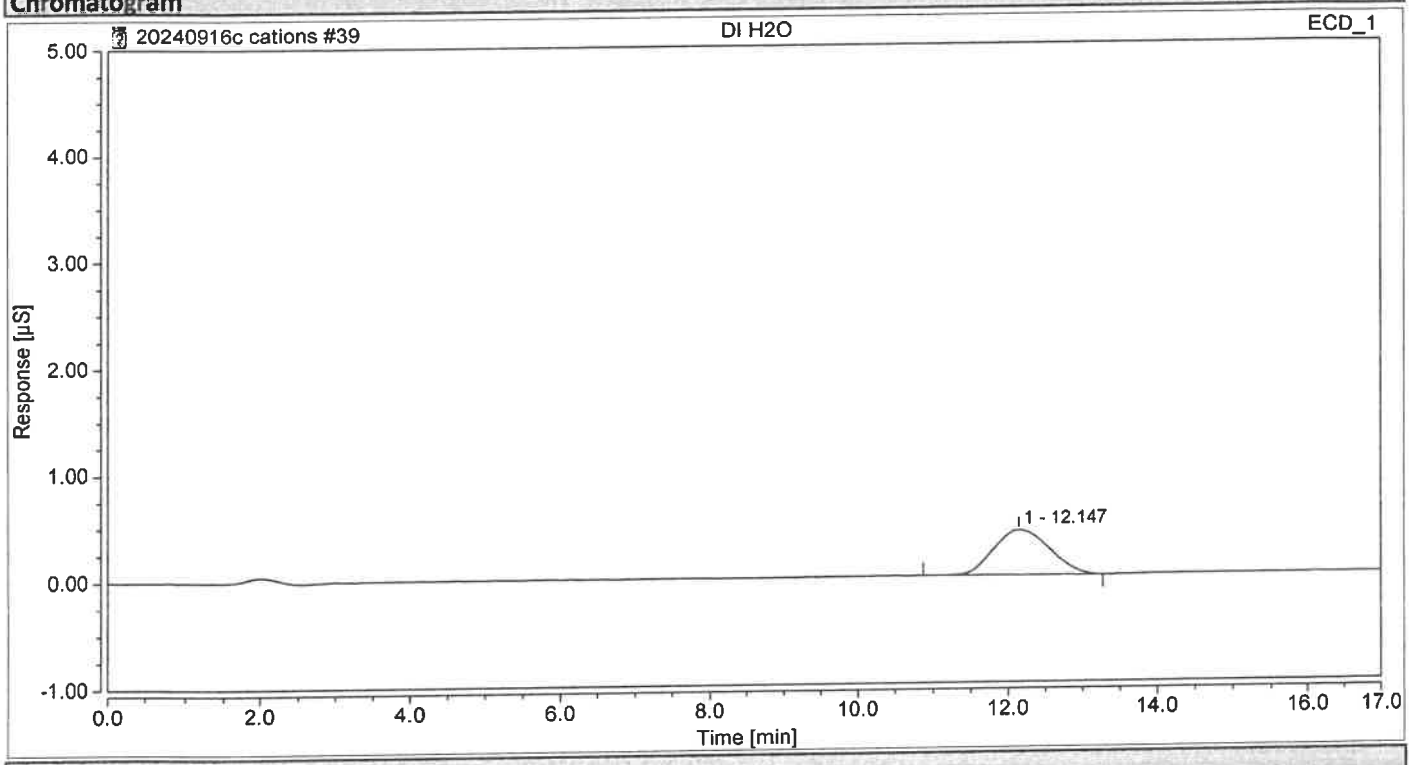
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.790	0.0109	0.063	100.00	100.00	0.0247
Total:			**0.011**	**0.063**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GD2**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 06:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

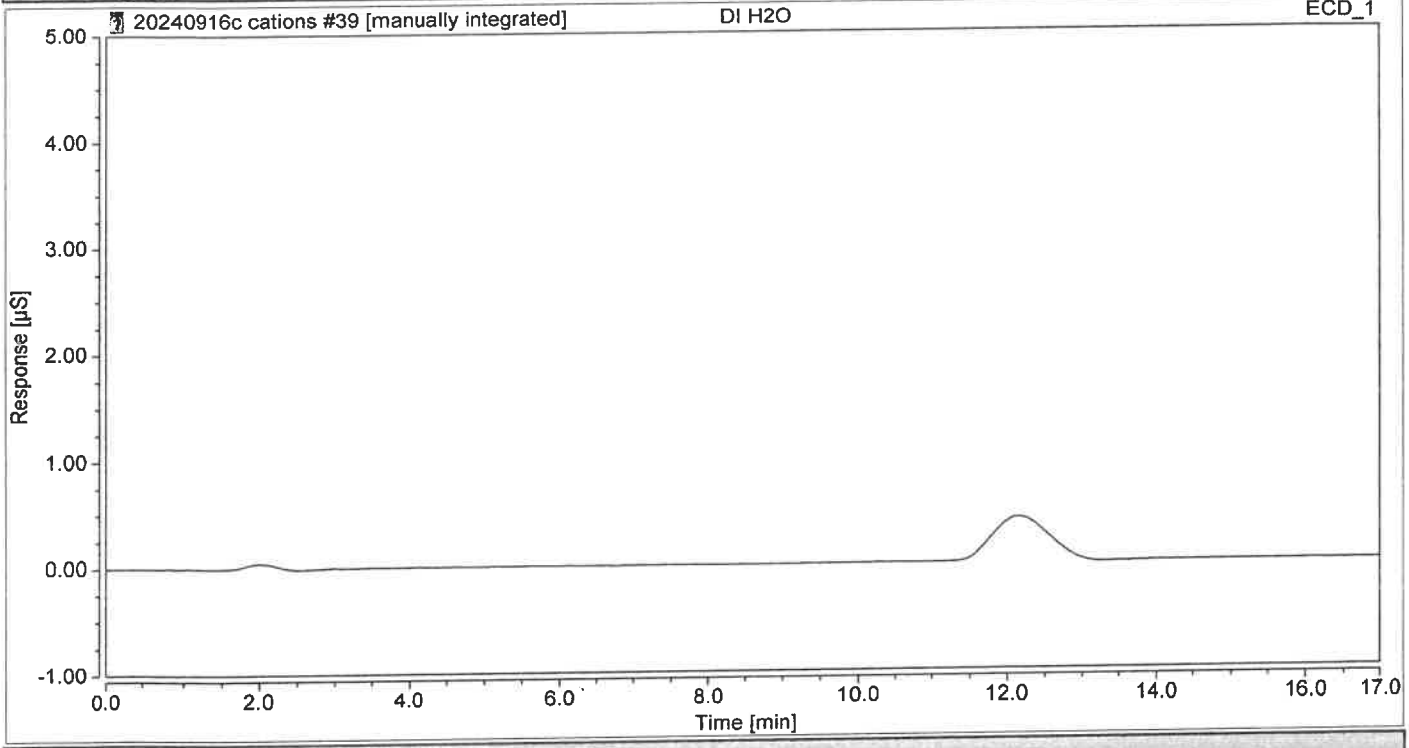
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		12.147	0.3683	0.422	100.00	100.00	n.a.
Total:			**0.368**	**0.422**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GD2**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 06:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

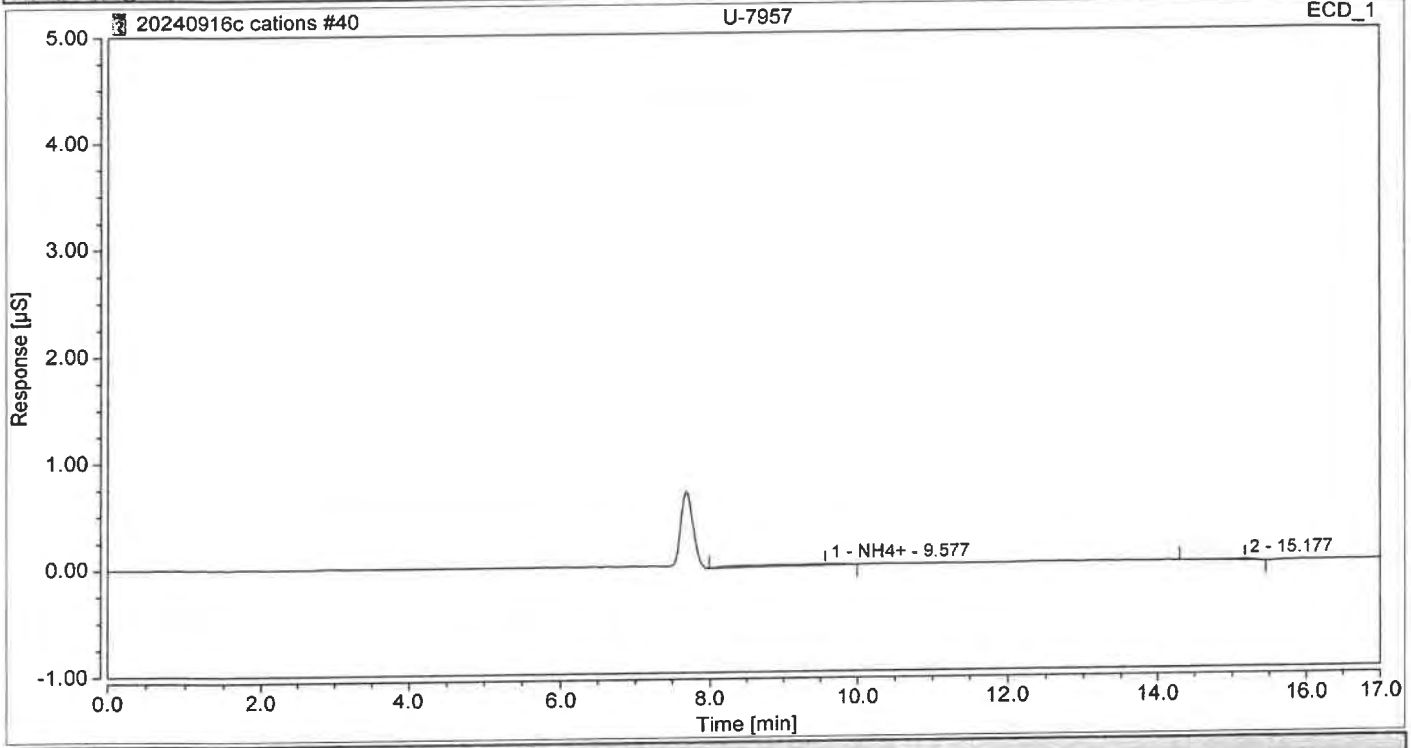
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7957**	*Run Time (min):*	**17.00**
Vial Number:	**GD5**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 07:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

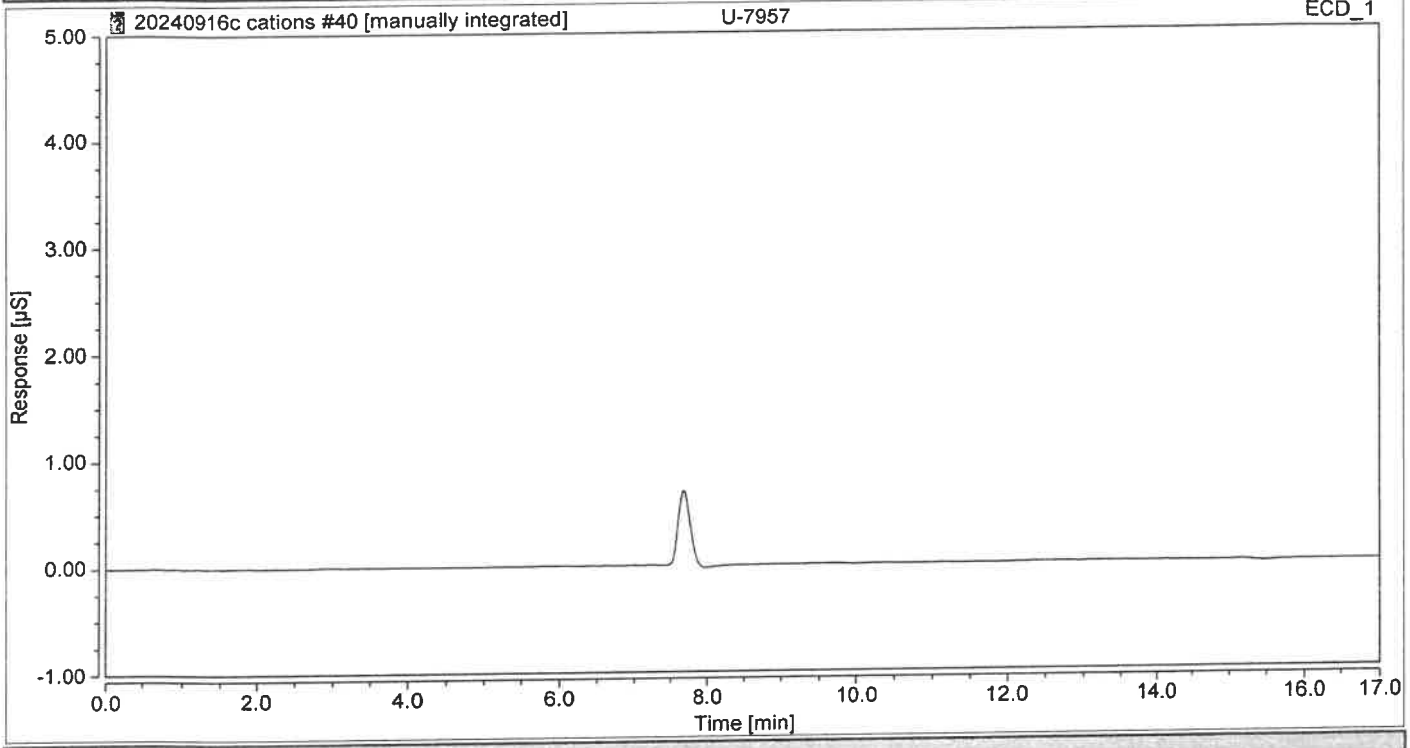
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.577	0.0221	0.011	83.46	46.38	0.0528
2		15.177	0.0044	0.012	16.54	53.62	n.a.
Total:			**0.027**	**0.023**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7957**	*Run Time (min):*	**17.00**
Vial Number:	**GD5**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 07:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

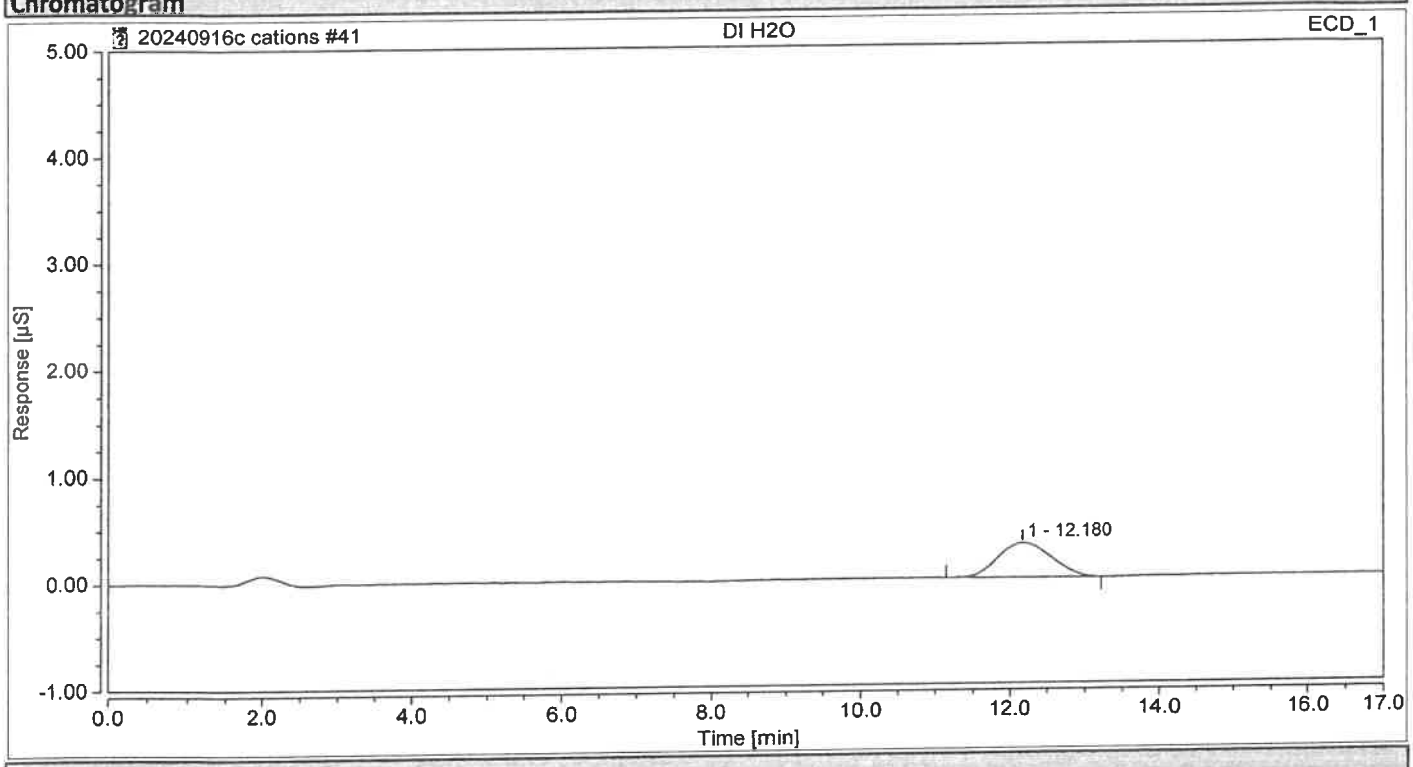
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GD2**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 07:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

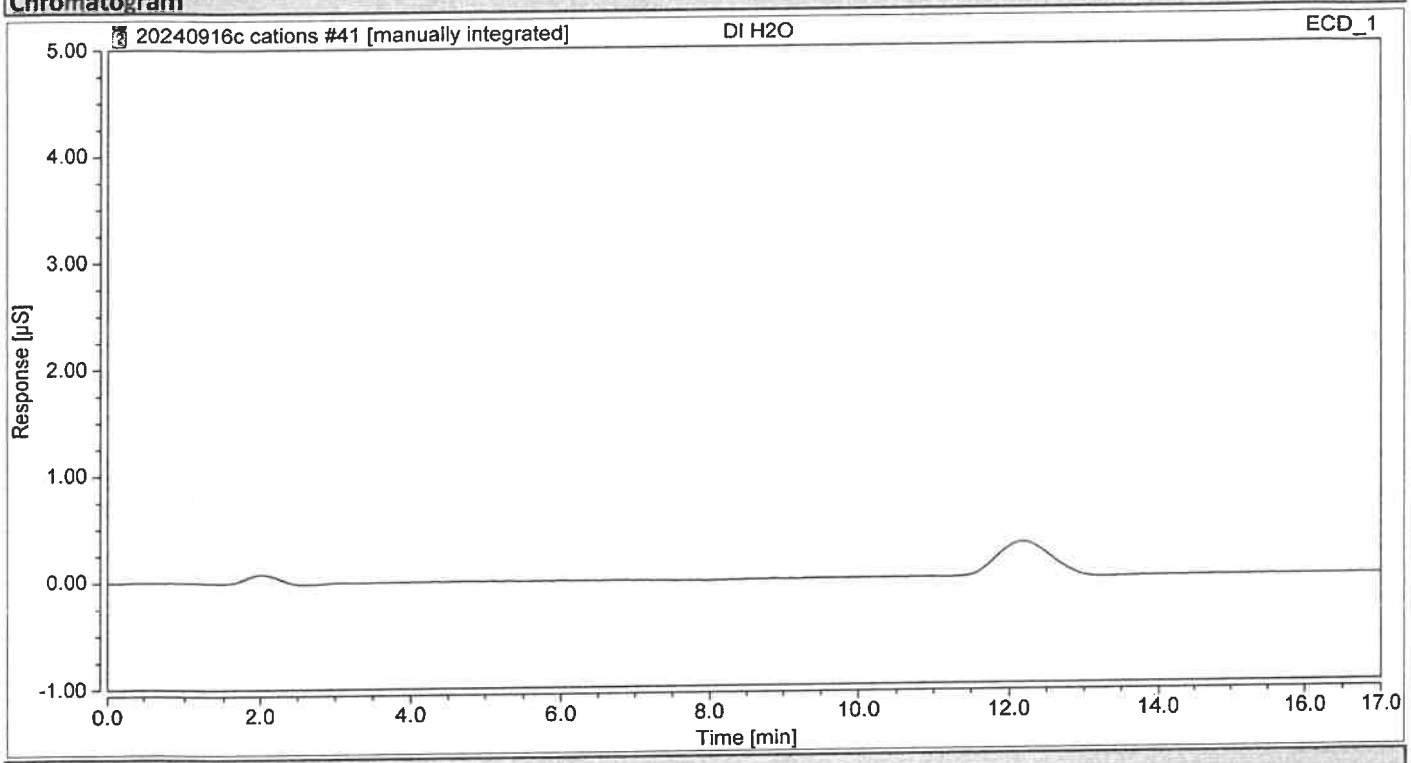
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		12.180	0.2709	0.325	100.00	100.00	n.a.
Total:			**0.271**	**0.325**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GD2**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 07:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

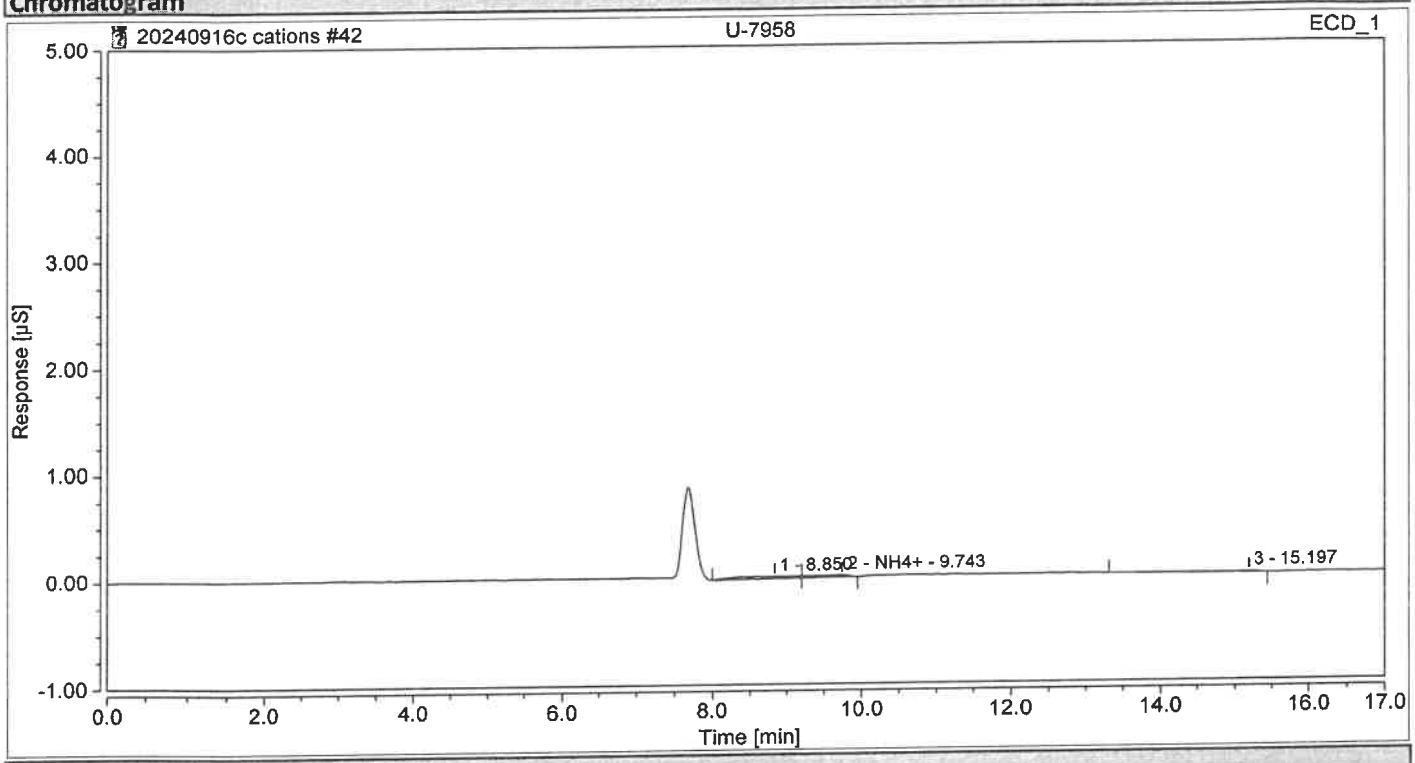
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7958**	*Run Time (min):*	**17.00**
Vial Number:	**GD6**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 07:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

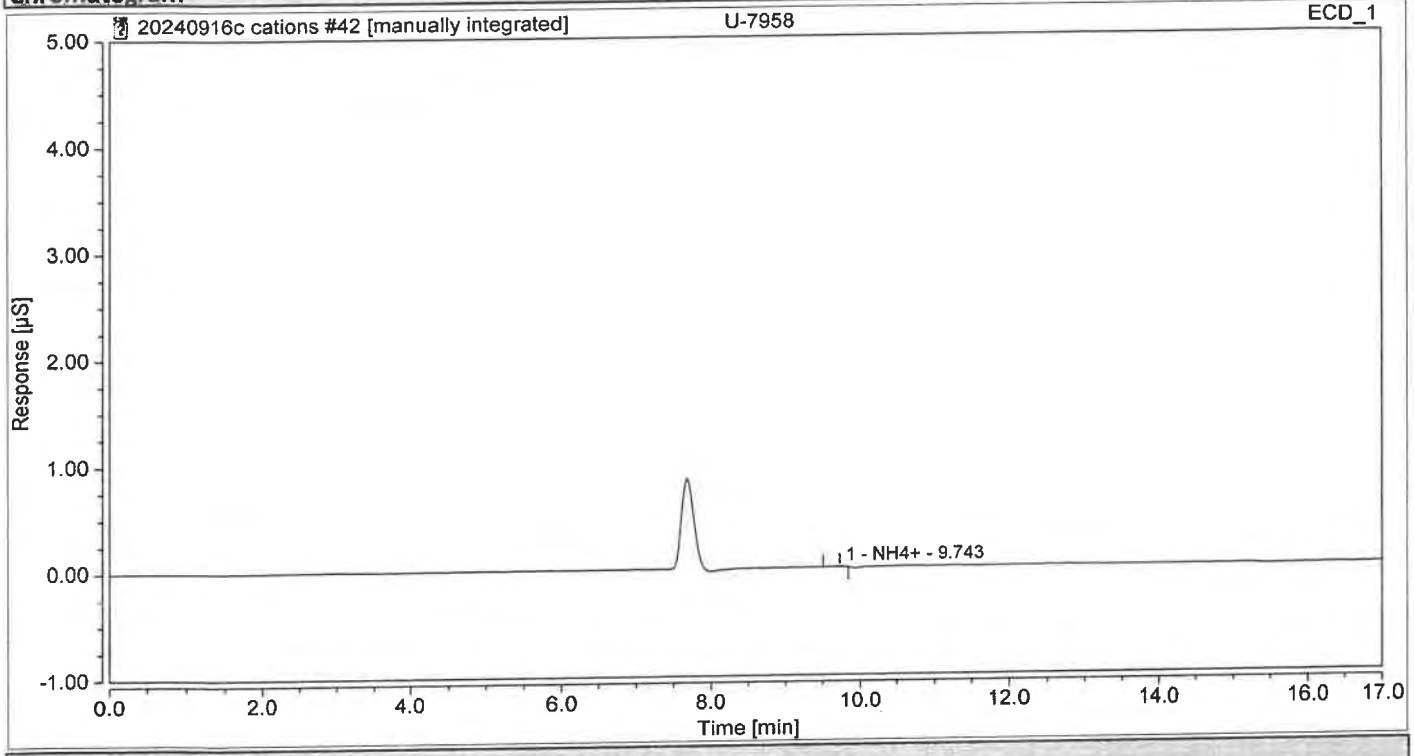
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		8.850	0.0221	0.020	52.08	40.56	n.a.
2	NH4+	9.743	0.0111	0.019	26.20	38.69	0.0241
3		15.197	0.0092	0.010	21.72	20.75	n.a.
Total:			**0.042**	**0.050**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7958**	*Run Time (min):*	**17.00**
Vial Number:	**GD6**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 07:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

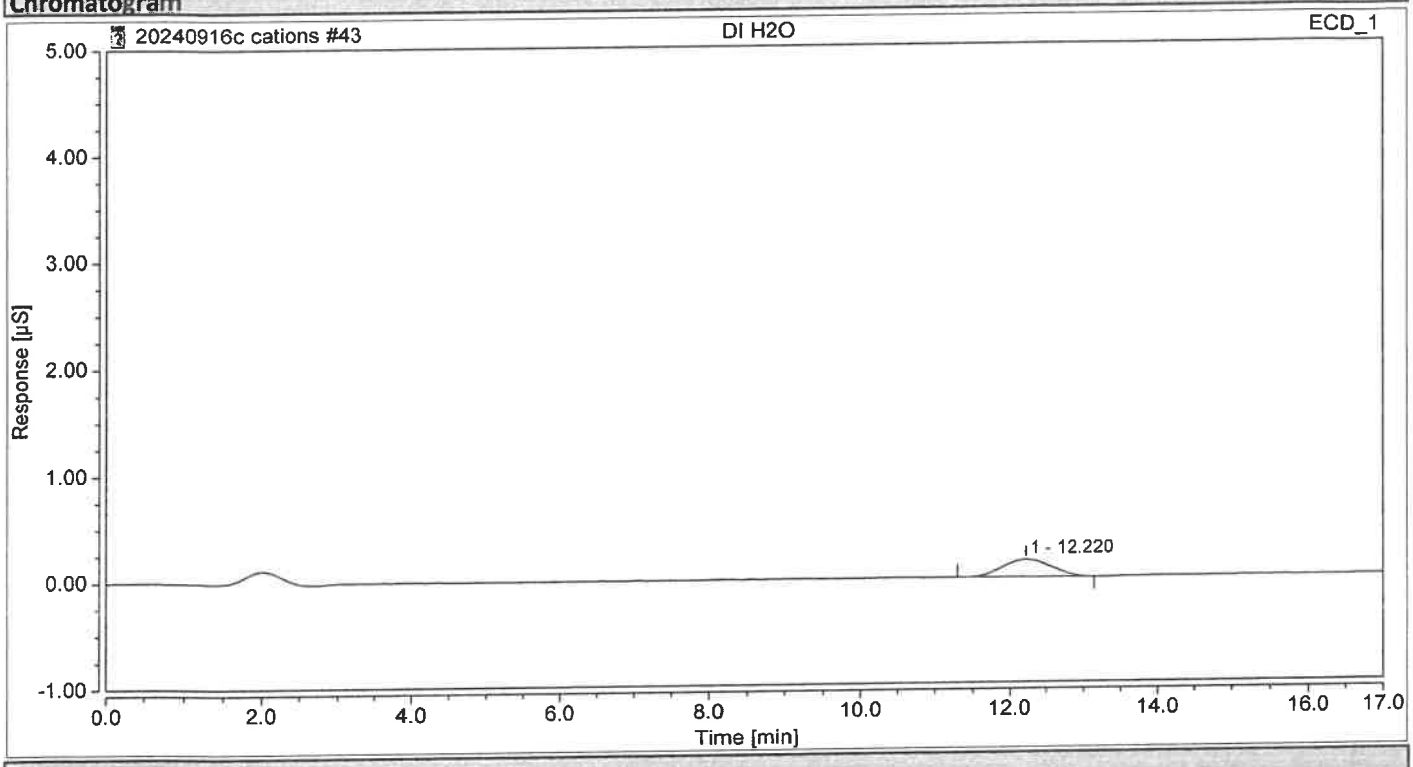
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.743	0.0013	0.007	100.00	100.00	0.0000
Total:			**0.001**	**0.007**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GD7**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 08:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

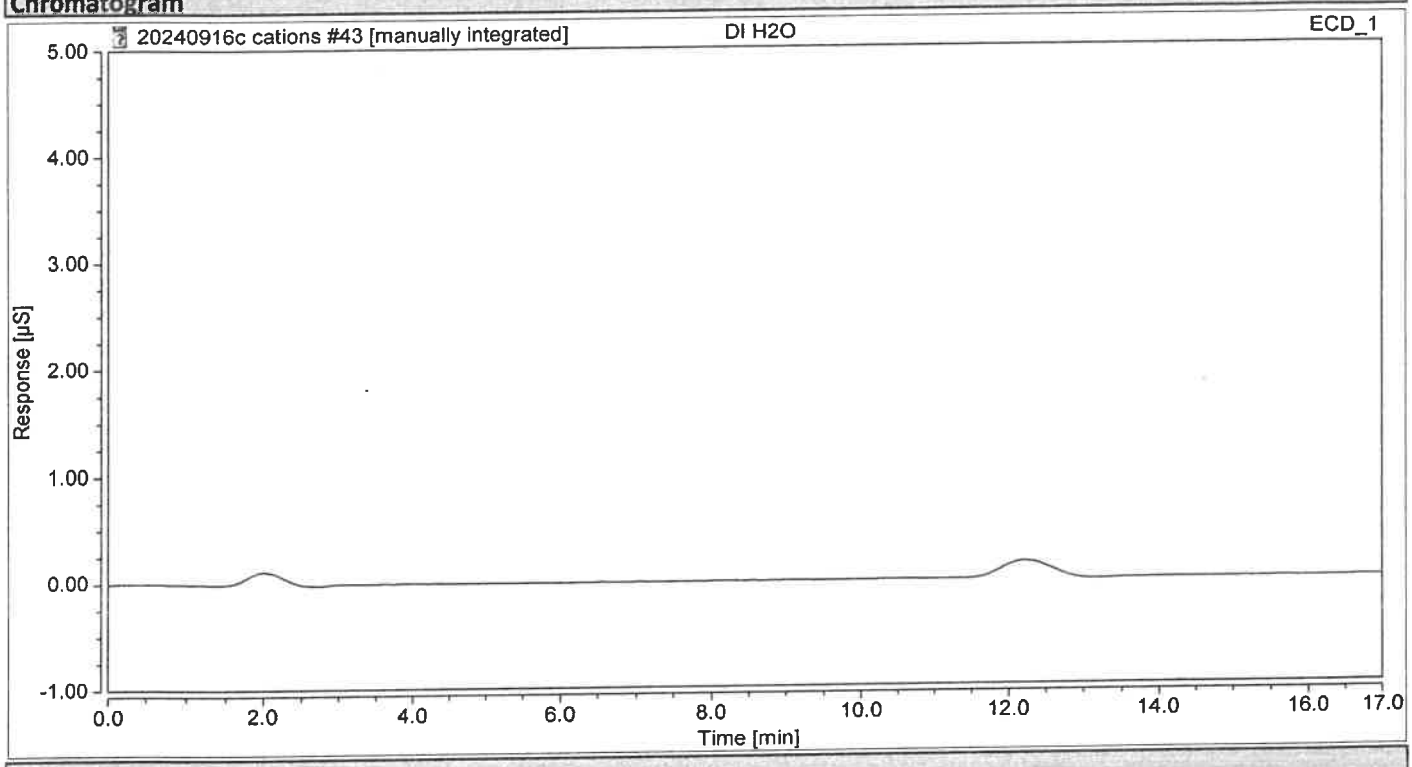
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		12.220	0.1255	0.163	100.00	100.00	n.a.
Total:			**0.126**	**0.163**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GD7**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 08:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

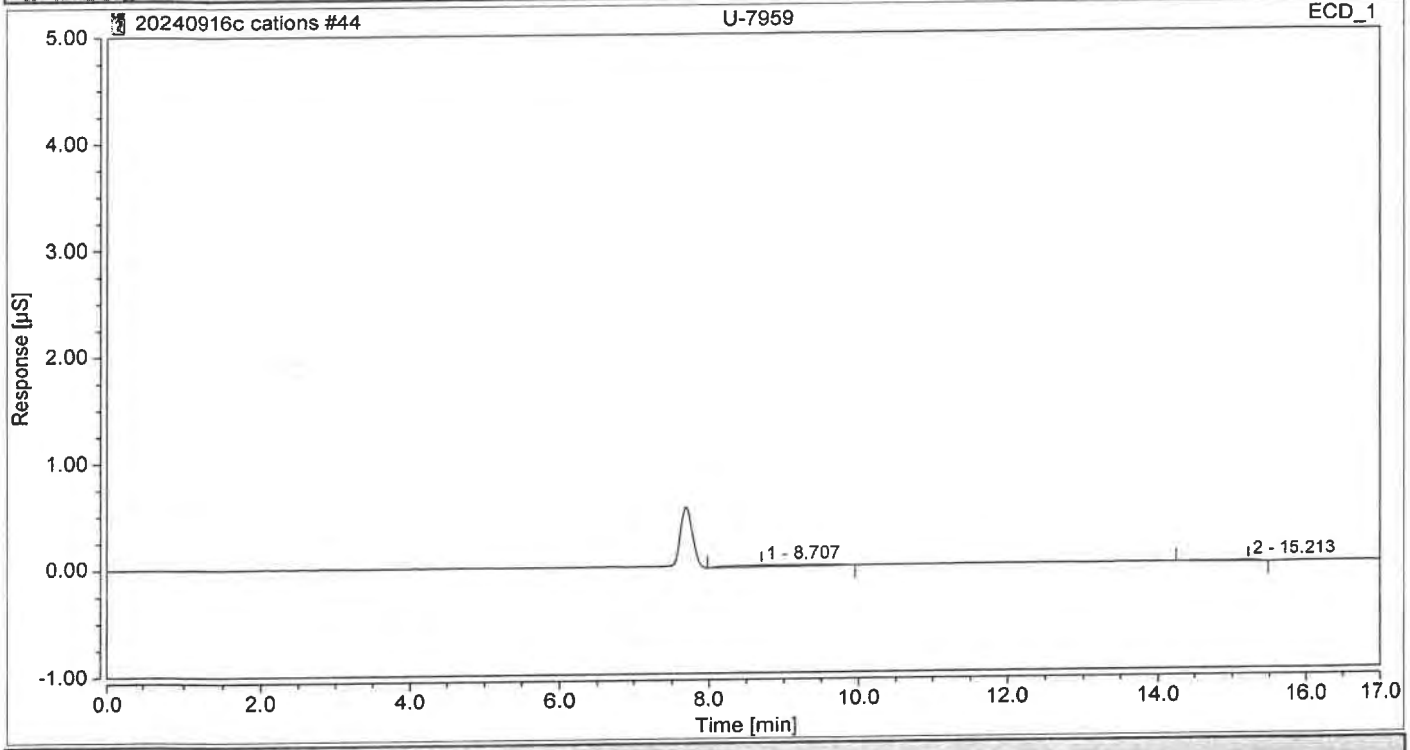
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7959**	*Run Time (min):*	**17.00**
Vial Number:	**GD8**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 08:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

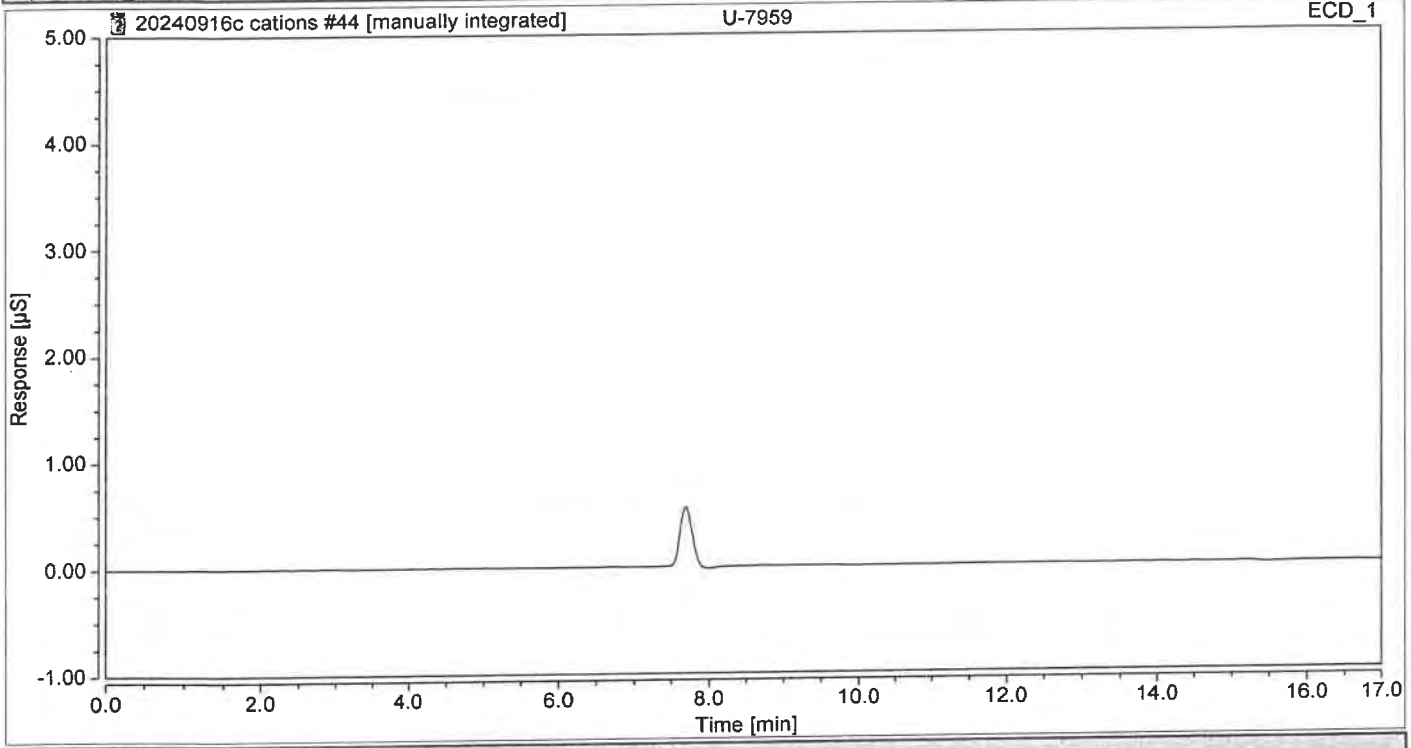
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1		8.707	0.0208	0.016	80.76	61.67	n.a.
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2		15.213	0.0050	0.010	19.24	38.33	n.a.
Total:			**0.026**	**0.026**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**U-7959**	*Run Time (min):*	**17.00**
Vial Number:	**GD8**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 08:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

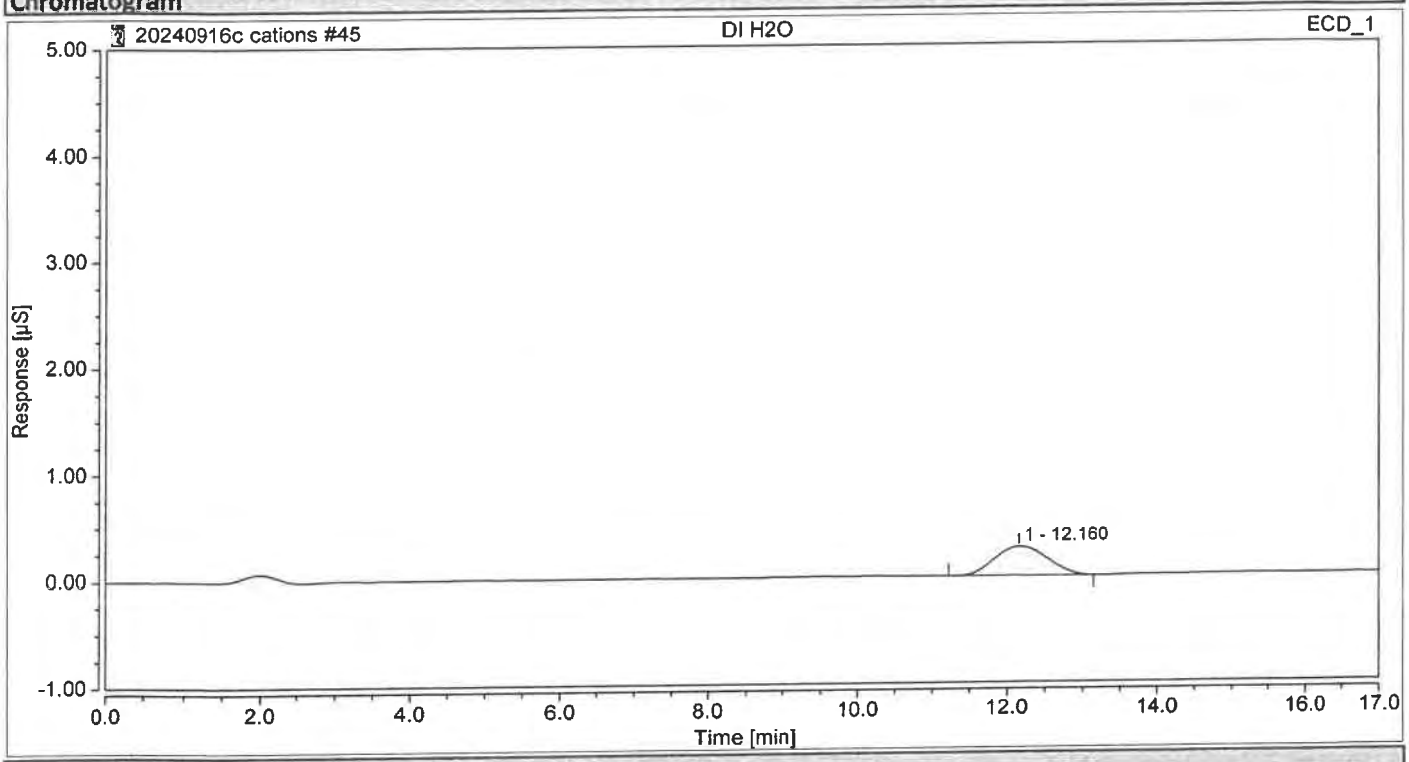
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GD7**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 08:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

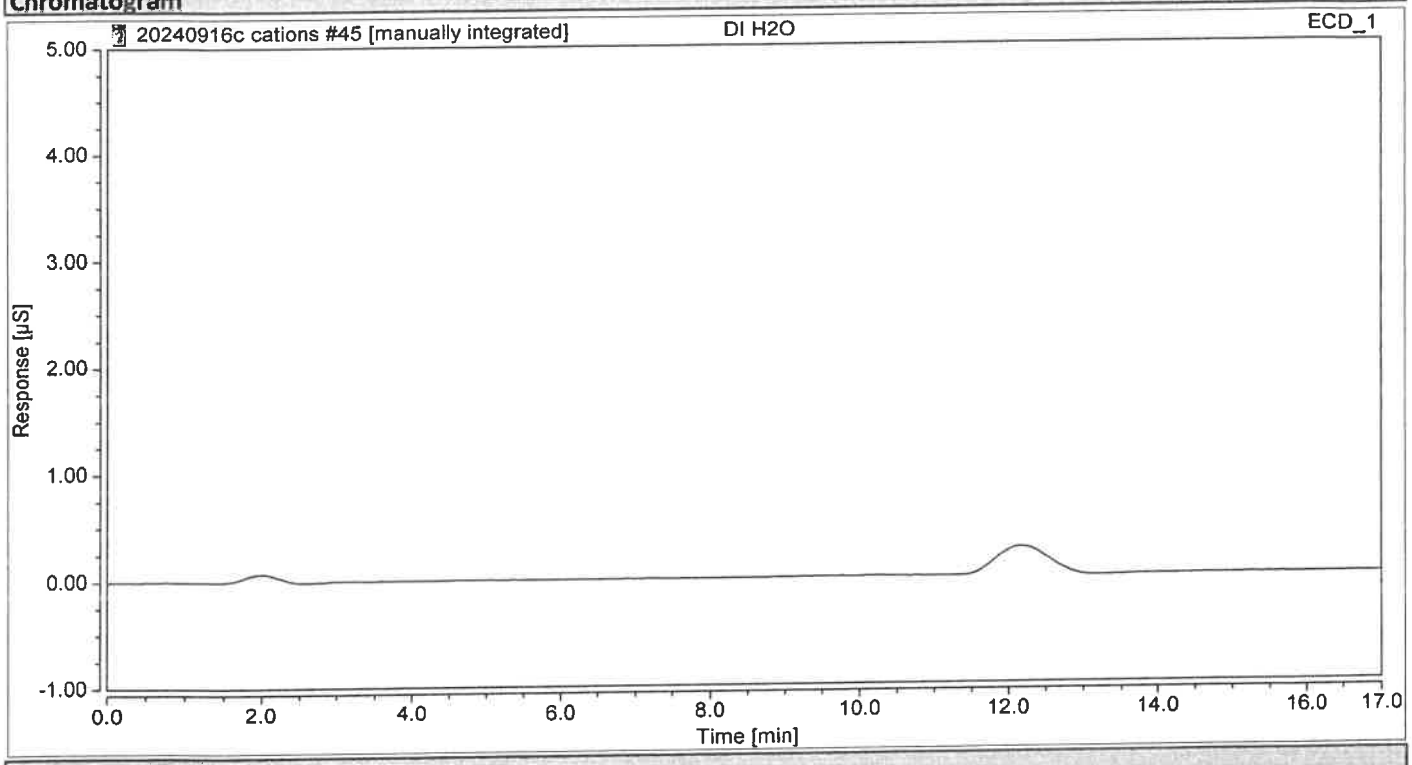
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		12.160	0.2208	0.271	100.00	100.00	n.a.
Total:			**0.221**	**0.271**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**DI H2O**	*Run Time (min):*	**17.00**
Vial Number:	**GD7**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 08:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

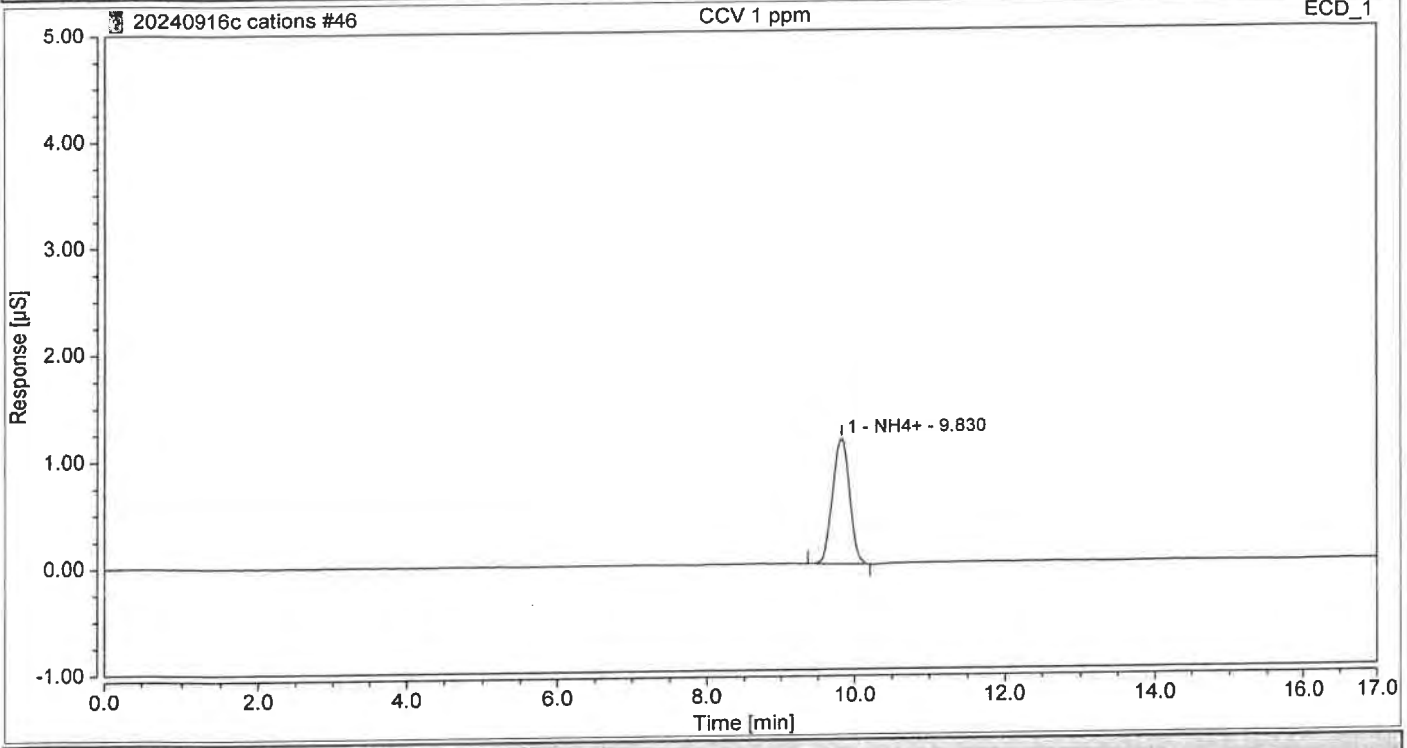
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
n.a.	NH4+	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV 1 ppm**	*Run Time (min):*	**17.00**
Vial Number:	**GE1**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 09:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

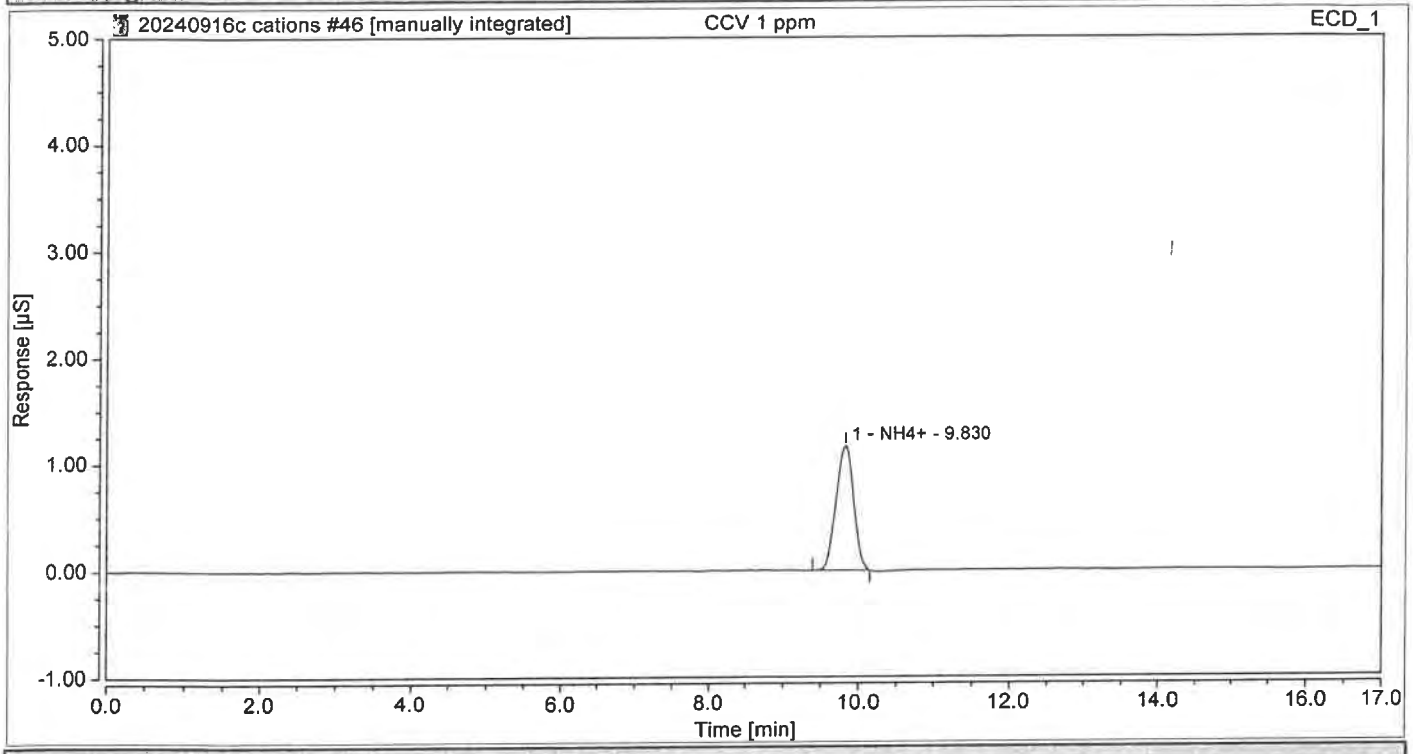
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.830	0.3205	1.177	100.00	100.00	0.8703
Total:			**0.320**	**1.177**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV 1 ppm**	*Run Time (min):*	**17.00**
Vial Number:	**GE1**	*Injection Volume:*	**50.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**IQ-IM**	*Bandwidth:*	**n.a.**
Processing Method:	**IQ-PM**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/Sep/24 09:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	NH4+	9.830	0.3158	1.170	100.00	100.00	0.8499
Total:			**0.316**	**1.170**	**100.00**	**100.00**	

84.99 ea.

GAD
9/17/24

CCV %R within ± 15%.
Half
9/18/24