

SUBMITTAL TRANSMITTAL

ACTIVITY ID
31081500DATE
May 14, 2019CONTRACT NO
N62470-16-D-9004CONTRACT TITLE
RAC VII, TO N4008518F6147, Site 1 – Former Drum Marshalling Area, NWIRP BethpageSUBMI NO
SD-04-002SUBM ITEM DESCRIPTION
Clean Fill Sand - Geotechnical Test Data and Analytical ResultsSUBMITTAL PRIORITY? HIGH NORMAL
PREPARED BY CQC MGR? YES NO
SCHEDULE REFERENCED? YES NO
CRITICAL PATH? YES NOSPEC SECTION
31 23 00; Design Drawing C-503SPEC PARAGRAPH
31 23 00 Section 2.02 ASPEC PAGE NO
31 23 00 - 4

On 03/21/2019, APTIM collected samples (NWIRP-S1-WC-CF-021 through NWIRP-S1-WC-CF-026) of a clean fill sand source from 110 Sand located at 136 Spagnoli Road, Melville NY 11747.

The analytical data and geotechnical testing data for this clean fill sand source are enclosed. Please review and approve this off-site source as a source for clean fill sand for use on Site 1.

Enclosures:

- 1) Gradation and Compaction Test Reports, Municipal Testing Laboratories, Inc
- 2) LabLink Analytical Data Report, Forml's, and Final Report for samples NWIRP-S1-WC-CF-021 through NWIRP-S1-WC-CF-023 (VOAAs)
- 3) LabLink Analytical Data Report, Forml's, and Final Report for sample NWIRP-S1-WC-CF-024 (Full Suite)
- 4) LabLink Analytical Data Report, Forml's, and Final Report for samples NWIRP-S1-WC-CF-025 and NWIRP-S1-WC-CF-026 (PFAS)

Digitally signed by Monica Smeal
Date: 2019.05.14 07:37:27 -04'00'

May 14, 2019

CONTRACTOR/QUALITY CONTROL MANAGER

DATE

COMMENTS FOR DETAILED REVIEWER:

DETAILED REVIEWER 1 COMMENTS:

DETAILED REVIEWER 1 NAME/SIGNATURE

TITLE

RESPONSE DATE

DETAILED REVIEWER 2 COMMENTS:

DETAILED REVIEWER 2 NAME/SIGNATURE

TITLE

RESPONSE DATE

APPROVER'S COMMENTS:

SUBM STATUS

GOVERNMENT CONSTRUCTION MANAGER

DATE

MUNICIPAL TESTING LABORATORY, INC.

375 RABRO DRIVE, HAUPPAUGE, NY 11788
PHONE: 631 761 5555; FAX: 631 761 5560

CHAIN OF CUSTODY RECORD

CLIENT: APTIM Timothy.Collins@aptim.com
ADDRESS: 999 S. Oyster Bay Rd.
PHONE: 410 409 7307 FAX: _____ CELL: _____
CONTACT: Tim Collins
PROJECT: 50164 NWIRP Bethpage
COMPONENT/MATRIX/ TYPE: Soil
SAMPLED BY: TC
SAMPLING DATE & TIME: 4/4/19
SPECIFICATION/METHOD/AGENCY: _____
SAMPLE ID: SAND + Common FILL BORROW
SAMPLE LOCATION: _____
TESTS NEEDED: GRAVIM / PROCTOR
REMARKS: D422 + D698

2 Seperate samples	
MIL R # A209-B & A210	
4/8/19 Mw	

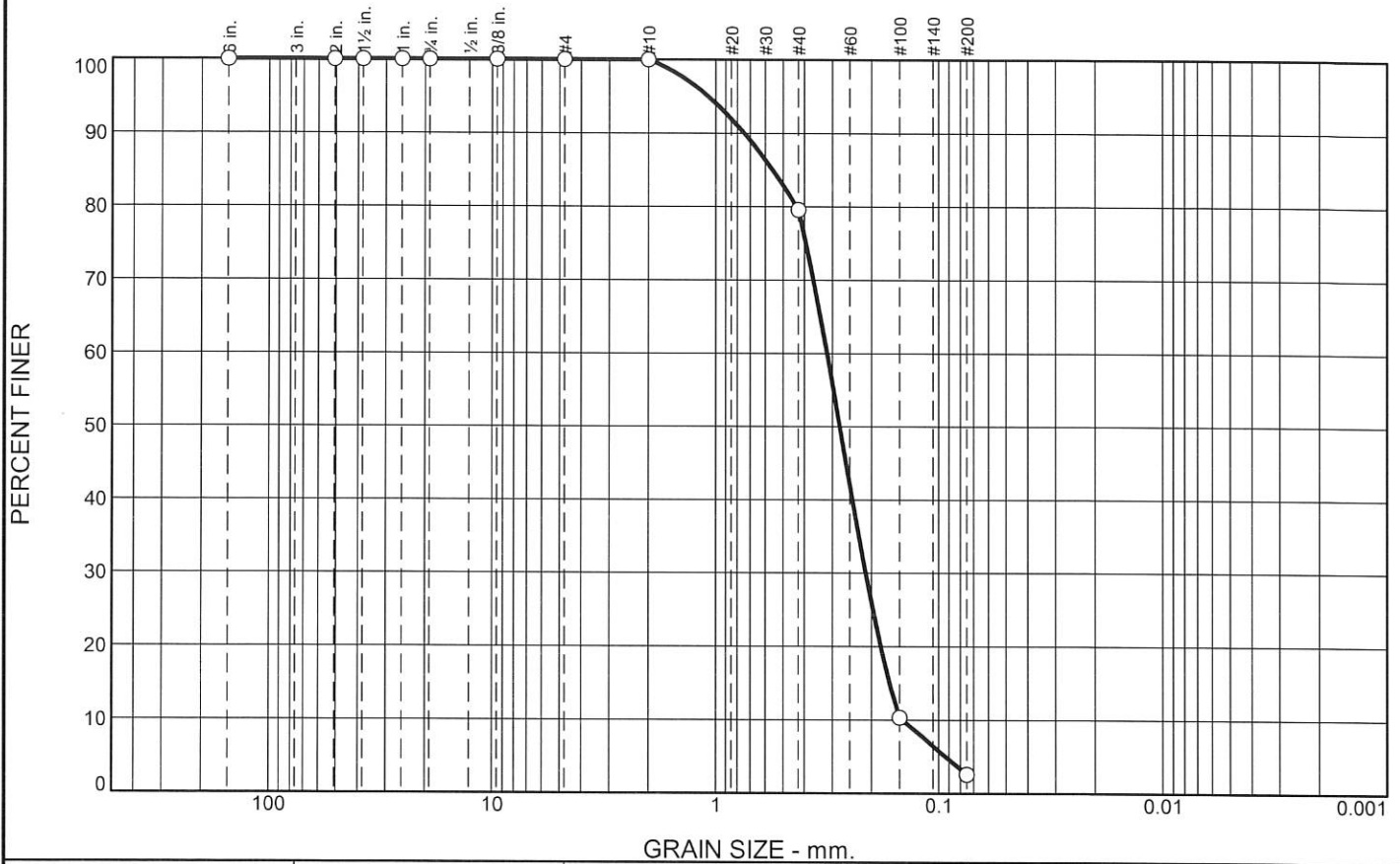
ALL INFORMATION MUST BE FILLED TO AVOID DELAY IN PROCESSING AND TESTING

DELIVERED BY:
TC

RECEIVED BY:
RF

DATE:
4/4/19

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	20.4	77.0	2.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
6	100.0	100.0	
2	100.0		
1.5	100.0		
1	100.0		
.75	100.0		
.375	100.0		
#4	100.0		
#10	100.0		
#40	79.6	75.0 - 100.0	
#100	10.3		
#200	2.6	0.0 - 48.0	

Soil Description

TAN COARSE TO FINE SAND. SAMPLED AND DELIVERED BY CLIENT ON 4/4/19

Atterberg Limits

PL= NP LL= NV PI= NA

Coefficients

D₉₀= 0.7447 D₈₅= 0.5560 D₆₀= 0.3170
D₅₀= 0.2777 D₃₀= 0.2122 D₁₅= 0.1662
D₁₀= 0.1457 C_u= 2.18 C_c= 0.97

Classification

USCS= AASHTO=

Remarks

REPORT#A209-R.ASTM TESTS - ASTM D422, D1140, D4318, & D2487. PARTICLE SIZE ANALYSIS, -200, LL, PL & SOIL CLASSIFICATION.

* APTIM FILL. SSW APPENDIX :I

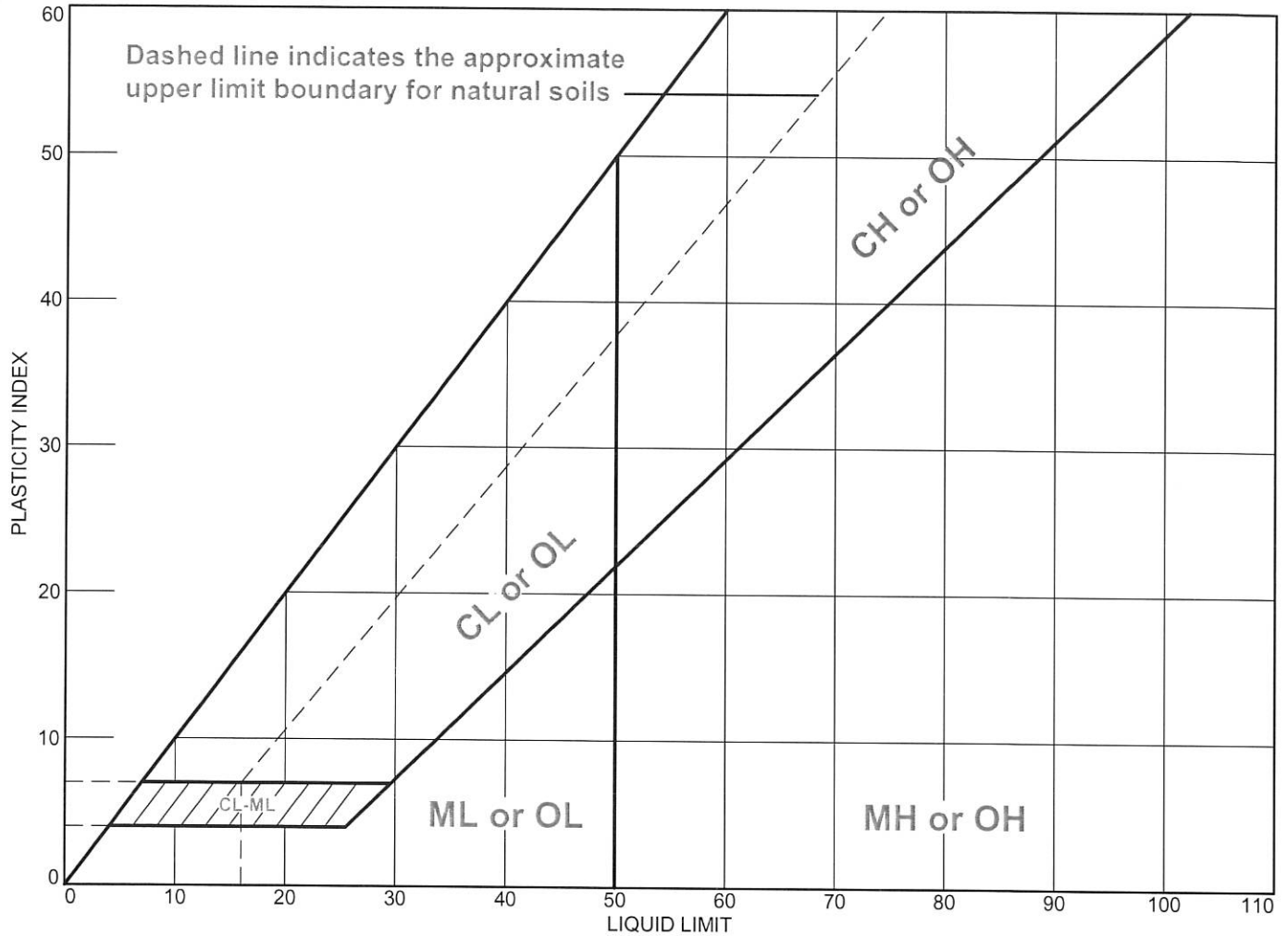
Location: NWIRP BETHPAGE
Sample Number: SAND **Depth:** EXISTING

Date: 4/08/19

MUNICIPAL TESTING LABORATORY, INC.	Client: APTIM Project: NWIRP BETHPAGE
Hauppauge, NY	Project No: F6147501164
	Figure

Tested By: W.MONSEES **Checked By:** M.MATHEW

LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
● BROWN SANDY SOIL WITH LITTLE SILT, TRACE OF BRICK, RCA AND ASPHALT. SAMPLED AND	NV	NP	NP	40	20.6	SM
■ TAN MEDIUM TO FINE SAND. SAMPLED AND DELIVERED BY CLIENT ON 4/4/19.	NV	NP	NP	20.4	2.6	SP

Project No. F6147501164 **Client:** APTIM
Project: NWIRP BETHPAGE

 ● **Location:** NWIRP BETHPAGE **Depth:** NA **Sample Number:** BORROW FILL
 ■ **Location:** NWIRP BETHPAGE **Depth:** EXISTING **Sample Number:** SAND

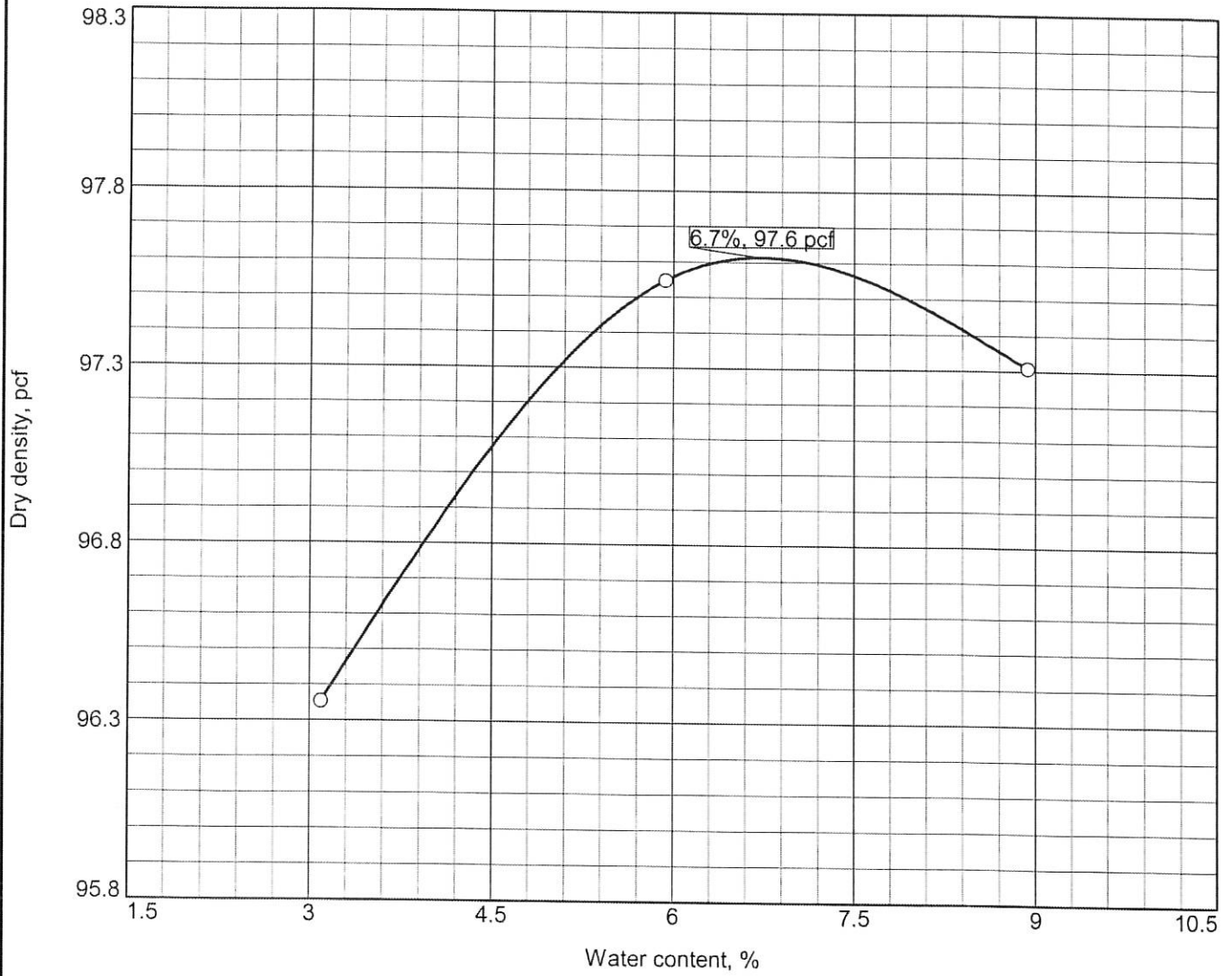
MUNICIPAL TESTING LABORATORY, INC.
 Hauppauge, NY

Remarks:
 ● MTL REPORT# A207-R. ASTM D2487. SOIL CLASSIFICATION. GROUP SYMBOL: SM
 ■ REPORT# A209-R. ASTM D4318

Figure

Tested By: W. MONSEES Checked By: M. MATHEW

COMPACTION TEST REPORT



Test specification: ASTM D 698-12 Method C Standard

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
EXISTING			3.7				0	2.6

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 97.6 pcf Optimum moisture = 6.7 %	TAN MEDIUM TO FINE SAND. SAMPLED AND DELIVERED BY CLIENT ON 4/4/19
Project No. F6147501164 Client: APTIM Project: NWIRP BETHPAGE Location: NWIRP BETHPAGE Sample Number: SAND MUNICIPAL TESTING LABORATORY, INC. Hauppauge, NY	Remarks: REPORT#A210. ASTM D698. DATE:4/08/ 19

Figure

Tested By: W.MONSEES Checked By: M.MATHEW

LabLink Analytical Data Report

Site 1 – Former Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

APTIM Project Number: 501164, F6147

Sample	Parameter	Cas No.	Method	Result	Qual	Units	LOQ	LOD	DF	Fill Material Criteria ¹	Client ID	Collected	Time
JC84952-1	Solids, Percent		SM2540 G 18TH ED MOD	95.0		%			1	----	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	Acetone	67-64-1	SW846 8260C	32.5		ug/kg	12	8.8	1	100,000	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	Benzene	71-43-2	SW846 8260C	0.47	U	ug/kg	0.58	0.47	1	2,900	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	2-Butanone (MEK)	78-93-3	SW846 8260C	8.8	U	ug/kg	12	8.8	1	100,000	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	n-Butylbenzene	104-51-8	SW846 8260C	0.58	U	ug/kg	2.3	0.58	1	100,000	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	sec-Butylbenzene	135-98-8	SW846 8260C	0.58	U	ug/kg	2.3	0.58	1	100,000	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	tert-Butylbenzene	98-06-6	SW846 8260C	0.58	U	ug/kg	2.3	0.58	1	100,000	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	Carbon tetrachloride	56-23-5	SW846 8260C	1.2	U	ug/kg	2.3	1.2	1	1,400	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	Chlorobenzene	108-90-7	SW846 8260C	1.2	U	ug/kg	2.3	1.2	1	100,000	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	Chloroform	67-66-3	SW846 8260C	0.58	U	ug/kg	2.3	0.58	1	10,000	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	1,2-Dichlorobenzene	95-50-1	SW846 8260C	0.88	U	ug/kg	1.2	0.88	1	100,000	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	1,3-Dichlorobenzene	541-73-1	SW846 8260C	0.58	U	ug/kg	1.2	0.58	1	17,000	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	1,4-Dichlorobenzene	106-46-7	SW846 8260C	0.58	U	ug/kg	1.2	0.58	1	9,800	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	1,1-Dichloroethane	75-34-3	SW846 8260C	0.58	U	ug/kg	1.2	0.58	1	19,000	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	1,2-Dichloroethane	107-06-2	SW846 8260C	0.58	U	ug/kg	1.2	0.58	1	2,300	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	1,1-Dichloroethene	75-35-4	SW846 8260C	0.88	U	ug/kg	1.2	0.88	1	100,000	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	cis-1,2-Dichloroethene	156-59-2	SW846 8260C	1.1	U	ug/kg	1.2	1.1	1	59,000	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	trans-1,2-Dichloroethene	156-60-5	SW846 8260C	0.88	U	ug/kg	1.2	0.88	1	100,000	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	1,4-Dioxane	123-91-1	SW846 8260C	120	U	ug/kg	150	120	1	9,800	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	Ethylbenzene	100-41-4	SW846 8260C	0.88	U	ug/kg	1.2	0.88	1	30,000	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	Methyl Tert Butyl Ether	1634-04-4	SW846 8260C	0.58	U	ug/kg	1.2	0.58	1	62,000	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	Methylene chloride	75-09-2	SW846 8260C	3.5	U	ug/kg	5.8	3.5	1	51,000	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	n-Propylbenzene	103-65-1	SW846 8260C	0.58	U	ug/kg	2.3	0.58	1	100,000	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	Tetrachloroethene	127-18-4	SW846 8260C	1.2	U	ug/kg	2.3	1.2	1	5,500	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	Toluene	108-88-3	SW846 8260C	0.76	J	ug/kg	1.2	0.88	1	100,000	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	1,1,1-Trichloroethane	71-55-6	SW846 8260C	1.2	U	ug/kg	2.3	1.2	1	100,000	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	Trichloroethene	79-01-6	SW846 8260C	0.94	U	ug/kg	1.2	0.94	1	10,000	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	1,2,4-Trimethylbenzene	95-63-6	SW846 8260C	1.2	U	ug/kg	2.3	1.2	1	47,000	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	1,3,5-Trimethylbenzene	108-67-8	SW846 8260C	1.2	U	ug/kg	2.3	1.2	1	47,000	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	Vinyl chloride	75-01-4	SW846 8260C	1.2	U	ug/kg	2.3	1.2	1	210	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	m,p-Xylene		SW846 8260C	0.88	U	ug/kg	1.2	0.88	1	100,000	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	o-Xylene	95-47-6	SW846 8260C	0.88	U	ug/kg	1.2	0.88	1	100,000	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	Xylene (total)	1330-20-7	SW846 8260C	0.88	U	ug/kg	1.2	0.88	1	100,000	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	Dibromofluoromethane	1868-53-7	SW846 8260C	106		%			1	----	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	1,2-Dichloroethane-D4	17060-07-0	SW846 8260C	108		%			1	----	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	Toluene-D8	2037-26-5	SW846 8260C	101		%			1	----	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-1	4-Bromofluorobenzene	460-00-4	SW846 8260C	102		%			1	----	NWIRP-S1-WC-CF-021	3/21/2019	11:01
JC84952-2	Solids, Percent		SM2540 G 18TH ED MOD	97.1		%			1	----	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	Acetone	67-64-1	SW846 8260C	38.8		ug/kg	12	8.8	1	100,000	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	Benzene	71-43-2	SW846 8260C	0.47	U	ug/kg	0.59	0.47	1	2,900	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	2-Butanone (MEK)	78-93-3	SW846 8260C	8.8	U	ug/kg	12	8.8	1	100,000	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	n-Butylbenzene	104-51-8	SW846 8260C	0.59	U	ug/kg	2.3	0.59	1	100,000	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	sec-Butylbenzene	135-98-8	SW846 8260C	0.59	U	ug/kg	2.3	0.59	1	100,000	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	tert-Butylbenzene	98-06-6	SW846 8260C	0.59	U	ug/kg	2.3	0.59	1	100,000	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	Carbon tetrachloride	56-23-5	SW846 8260C	1.2	U	ug/kg	2.3	1.2	1	1,400	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	Chlorobenzene	108-90-7	SW846 8260C	1.2	U	ug/kg	2.3	1.2	1	100,000	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	Chloroform	67-66-3	SW846 8260C	0.59	U	ug/kg	2.3	0.59	1	10,000	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	1,2-Dichlorobenzene	95-50-1	SW846 8260C	0.88	U	ug/kg	1.2	0.88	1	100,000	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	1,3-Dichlorobenzene	541-73-1	SW846 8260C	0.59	U	ug/kg	1.2	0.59	1	17,000	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	1,4-Dichlorobenzene	106-46-7	SW846 8260C	0.59	U	ug/kg	1.2	0.59	1	9,800	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	1,1-Dichloroethane	75-34-3	SW846 8260C	0.59	U	ug/kg	1.2	0.59	1	19,000	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	1,2-Dichloroethane	107-06-2	SW846 8260C	0.59	U	ug/kg	1.2	0.59	1	2,300	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	1,1-Dichloroethene	75-35-4	SW846 8260C	0.88	U	ug/kg	1.2	0.88	1	100,000	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	cis-1,2-Dichloroethene	156-59-2	SW846 8260C	1.1	U	ug/kg	1.2	1.1	1	59,000	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	trans-1,2-Dichloroethene	156-60-5	SW846 8260C	0.88	U	ug/kg	1.2	0.88	1	100,000	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	1,4-Dioxane	123-91-1	SW846 8260C	120	U	ug/kg	150	120	1	9,800	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	Ethylbenzene	100-41-4	SW846 8260C	0.88	U	ug/kg	1.2	0.88	1	30,000	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	Methyl Tert Butyl Ether	1634-04-4	SW846 8260C	0.59	U	ug/kg	1.2	0.59	1	62,000	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	Methylene chloride	75-09-2	SW846 8260C	3.5	U	ug/kg	5.9	3.5	1	51,000	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	n-Propylbenzene	103-65-1	SW846 8260C	0.59	U	ug/kg	2.3	0.59	1	100,000	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	Tetrachloroethene	127-18-4	SW846 8260C	1.2	U	ug/kg	2.3	1.2	1	5,500	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	Toluene	108-88-3	SW846 8260C	0.47	J	ug/kg	1.2	0.88	1	100,000	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	1,1,1-Trichloroethane	71-55-6	SW846 8260C	1.2	U	ug/kg	2.3	1.2	1	100,000	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	Trichloroethene	79-01-6	SW846 8260C	0.94	U	ug/kg	1.2	0.94	1	10,000	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	1,2,4-Trimethylbenzene	95-63-6	SW846 8260C	1.2	U	ug/kg	2.3	1.2	1	47,000	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	1,3,5-Trimethylbenzene	108-67-8	SW846 8260C	1.2	U	ug/kg	2.3	1.2	1	47,000	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	Vinyl chloride	75-01-4	SW846 8260C	1.2	U	ug/kg	2.3	1.2	1	210	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	m,p-Xylene		SW846 8260C	0.88	U	ug/kg	1.2	0.88	1	100,000	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	o-Xylene	95-47-6	SW846 8260C	0.88	U	ug/kg	1.2	0.88	1	100,000	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	Xylene (total)	1330-20-7	SW846 8260C	0.88	U	ug/kg	1.2	0.88	1	100,000	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	Dibromofluoromethane	1868-53-7	SW846 8260C	105		%			1	----	NWIRP-S1-WC-CF-022	3/21/2019	11:09
JC84952-2	1,2-Dichloroethane-D4	17060-07-0	SW846 8260C	106		%			1	----	NWIRP-S1-WC-CF-022	3/21/2019	1

LabLink Analytical Data Report

Site 1 – Former Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

APTIM Project Number: 501164, F6147

Sample	Parameter	Cas No.	Method	Result	Qual	Units	LOQ	LOD	DF	Fill Material Criteria ¹	Client ID	Collected	Time
JC84952-3	Solids, Percent		SM2540 G 18TH ED MOD	99.9		%			1	-----	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	Acetone	67-64-1	SW846 8260C	44		ug/kg	11	8.0	1	100,000	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	Benzene	71-43-2	SW846 8260C	0.43	U	ug/kg	0.53	0.43	1	2,900	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	2-Butanone (MEK)	78-93-3	SW846 8260C	8.0	U	ug/kg	11	8.0	1	100,000	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	n-Butylbenzene	104-51-8	SW846 8260C	0.53	U	ug/kg	2.1	0.53	1	100,000	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	sec-Butylbenzene	135-98-8	SW846 8260C	0.53	U	ug/kg	2.1	0.53	1	100,000	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	tert-Butylbenzene	98-06-6	SW846 8260C	0.53	U	ug/kg	2.1	0.53	1	100,000	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	Carbon tetrachloride	56-23-5	SW846 8260C	1.1	U	ug/kg	2.1	1.1	1	1,400	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	Chlorobenzene	108-90-7	SW846 8260C	1.1	U	ug/kg	2.1	1.1	1	100,000	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	Chloroform	67-66-3	SW846 8260C	0.53	U	ug/kg	2.1	0.53	1	10,000	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	1,2-Dichlorobenzene	95-50-1	SW846 8260C	0.80	U	ug/kg	1.1	0.80	1	100,000	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	1,3-Dichlorobenzene	541-73-1	SW846 8260C	0.53	U	ug/kg	1.1	0.53	1	17,000	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	1,4-Dichlorobenzene	106-46-7	SW846 8260C	0.53	U	ug/kg	1.1	0.53	1	9,800	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	1,1-Dichloroethane	75-34-3	SW846 8260C	0.53	U	ug/kg	1.1	0.53	1	19,000	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	1,2-Dichloroethane	107-06-2	SW846 8260C	0.53	U	ug/kg	1.1	0.53	1	2,300	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	1,1-Dichloroethene	75-35-4	SW846 8260C	0.80	U	ug/kg	1.1	0.80	1	100,000	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	cis-1,2-Dichloroethene	156-59-2	SW846 8260C	1.0	U	ug/kg	1.1	1.0	1	59,000	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	trans-1,2-Dichloroethene	156-60-5	SW846 8260C	0.80	U	ug/kg	1.1	0.80	1	100,000	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	1,4-Dioxane	123-91-1	SW846 8260C	110	U	ug/kg	130	110	1	9,800	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	Ethylbenzene	100-41-4	SW846 8260C	0.80	U	ug/kg	1.1	0.80	1	30,000	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	Methyl Tert Butyl Ether	1634-04-4	SW846 8260C	0.53	U	ug/kg	1.1	0.53	1	62,000	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	Methylene chloride	75-09-2	SW846 8260C	3.2	U	ug/kg	5.3	3.2	1	51,000	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	n-Propylbenzene	103-65-1	SW846 8260C	0.53	U	ug/kg	2.1	0.53	1	100,000	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	Tetrachloroethene	127-18-4	SW846 8260C	1.1	U	ug/kg	2.1	1.1	1	5,500	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	Toluene	108-88-3	SW846 8260C	0.57	J	ug/kg	1.1	0.80	1	100,000	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	1,1,1-Trichloroethane	71-55-6	SW846 8260C	1.1	U	ug/kg	2.1	1.1	1	100,000	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	Trichloroethene	79-01-6	SW846 8260C	0.85	U	ug/kg	1.1	0.85	1	10,000	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	1,2,4-Trimethylbenzene	95-63-6	SW846 8260C	1.1	U	ug/kg	2.1	1.1	1	47,000	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	1,3,5-Trimethylbenzene	108-67-8	SW846 8260C	1.1	U	ug/kg	2.1	1.1	1	47,000	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	Vinyl chloride	75-01-4	SW846 8260C	1.1	U	ug/kg	2.1	1.1	1	210	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	m,p-Xylene		SW846 8260C	0.80	U	ug/kg	1.1	0.80	1	100,000	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	o-Xylene	95-47-6	SW846 8260C	0.80	U	ug/kg	1.1	0.80	1	100,000	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	Xylene (total)	1330-20-7	SW846 8260C	0.80	U	ug/kg	1.1	0.80	1	100,000	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	Dibromofluoromethane	1868-53-7	SW846 8260C	106		%			1	-----	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	1,2-Dichloroethane-D4	17060-07-0	SW846 8260C	104		%			1	-----	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	Toluene-D8	2037-26-5	SW846 8260C	101		%			1	-----	NWIRP-S1-WC-CF-023	3/21/2019	11:17
JC84952-3	4-Bromofluorobenzene	460-00-4	SW846 8260C	101		%			1	-----	NWIRP-S1-WC-CF-023	3/21/2019	11:17

Red, Shaded, Italicized results exceeding Project Remediation Goals.

Found 0 results exceeding regulatory limits.

** Indicates result outside regulatory limits.

¹Fill material criteria are based on 6 NYCRR Part 375, Table 375-6.8(b): Restricted Use Soil Cleanup Objectives, Protection of Public Health, Residential. Following the receipt of the analytical results, the project team will review the data to ensure that the analytical results meet the fill material criteria.

Draft Final Sampling and Analysis Plan/Quality Assurance Plan Site 1 – Former Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage, New York, February 2019.

Laboratory Qualifiers:

J = Estimated value.

U = Not detected; the analyte was analyzed for, but not detected above the associated detection limit.

% = percent

ug/kg = microgram/kilogram = ppb

LOD = limit of detection

LOQ = limit of quantitation

(s) = surrogates

LabLink Analytical Data Report - Hits/J-Values Only
Site 1 – Former Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage
APTIM Project Number: 501164, F6147

Sample	Parameter	Cas No.	Method	Result	Qual	Units	LOQ	LOD	DF	Fill Material Criteria ¹	Client ID	Collected
JC84952-1	Acetone	67-64-1	SW846 8260C	32.5		ug/kg	12	8.8	1	100,000	NWIRP-S1-WC-CF-021	3/21/2019
JC84952-1	Toluene	108-88-3	SW846 8260C	0.76	J	ug/kg	1.2	0.88	1	100,000	NWIRP-S1-WC-CF-021	3/21/2019
JC84952-2	Acetone	67-64-1	SW846 8260C	38.8		ug/kg	12	8.8	1	100,000	NWIRP-S1-WC-CF-022	3/21/2019
JC84952-2	Toluene	108-88-3	SW846 8260C	0.47	J	ug/kg	1.2	0.88	1	100,000	NWIRP-S1-WC-CF-022	3/21/2019
JC84952-3	Acetone	67-64-1	SW846 8260C	44		ug/kg	11	8.0	1	100,000	NWIRP-S1-WC-CF-023	3/21/2019
JC84952-3	Toluene	108-88-3	SW846 8260C	0.57	J	ug/kg	1.1	0.80	1	100,000	NWIRP-S1-WC-CF-023	3/21/2019

Red, Shaded, Italicized results exceeding Project Remediation Goals.

Found 0 results exceeding regulatory limits.

**** Indicates result outside regulatory limits.**

Fill material criteria are based on 6 NYCRR Part 375, Table 375-6.8(b): Restricted Use Soil Cleanup Objectives, Protection of Public Health, Residential. Following the receipt of the analytical results, the project team will review the data to ensure that the analytical results meet the fill material criteria. Draft Final Sampling and Analysis Plan/Quality Assurance Plan Site 1 – Former Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage New York February 2019

Laboratory Qualifiers:

J = Estimated value.

µg/kg = microgram/kilogram = ppb

LOD = limit of detection

LOQ = limit of quantitation

Time
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The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

NOREAS, Inc.

Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

500689

SGS Job Number: JC84952

Sampling Date: 03/21/19

Report to:

APTIM

Natasha.Kelleysullivan@cbifederservices.com

ATTN: Natasha Sullivan

Total number of pages in report: 52



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

A handwritten signature in black ink, appearing to read "Brian McGuire".

Brian McGuire
General Manager

Client Service contact: Kristin Degraw 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

This report shall not be reproduced, except in its entirety, without the written approval of SGS.
Test results relate only to samples analyzed.

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Sample Summary

NOREAS, Inc.

Job No: JC84952

Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Project No: 500689

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
JC84952-1	03/21/19	11:01 NS	03/22/19	SO	Soil	NWIRP-S1-WC-CF-021
JC84952-2	03/21/19	11:09 NS	03/22/19	SO	Soil	NWIRP-S1-WC-CF-022
JC84952-3	03/21/19	11:17 NS	03/22/19	SO	Soil	NWIRP-S1-WC-CF-023

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: NOREAS, Inc.

Job No JC84952

Site: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reser

Report Date 4/5/2019 8:49:58 AM

On 03/22/2019, 3 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 2.1 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of JC84952 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

MS Volatiles By Method SW846 8260C

Matrix: SO

Batch ID: V3C6777

- All samples were analyzed within the recommended method holding time.
- Sample(s) JC85011-1MS, JC85011-2DUP were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

General Chemistry By Method SM2540 G 18TH ED MOD

Matrix: SO

Batch ID: GN93299

- Sample(s) JC84695-1DUP were used as the QC samples for Solids, Percent.

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS North America Inc indicated via signature on the report cover

Friday, April 05, 2019

Page 1 of 1

Summary of Hits

Job Number: JC84952
Account: NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage
Collected: 03/21/19



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
JC84952-1	NWIRP-S1-WC-CF-021					
Acetone		32.5	12	8.8	ug/kg	SW846 8260C
Toluene		0.76 J	1.2	0.88	ug/kg	SW846 8260C
JC84952-2	NWIRP-S1-WC-CF-022					
Acetone		38.8	12	8.8	ug/kg	SW846 8260C
Toluene		0.47 J	1.2	0.88	ug/kg	SW846 8260C
JC84952-3	NWIRP-S1-WC-CF-023					
Acetone		44.0	11	8.0	ug/kg	SW846 8260C
Toluene		0.57 J	1.1	0.80	ug/kg	SW846 8260C

Sample Results

Report of Analysis

Report of Analysis

Page 1 of 2

Client Sample ID:	NWIRP-S1-WC-CF-021		
Lab Sample ID:	JC84952-1	Date Sampled:	03/21/19
Matrix:	SO - Soil	Date Received:	03/22/19
Method:	SW846 8260C	Percent Solids:	95.0
Project:	Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3C150502.D	1	03/25/19 10:58	PS	n/a	n/a	V3C6777
Run #2							

	Initial Weight
Run #1	4.5 g
Run #2	

VOA Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
67-64-1	Acetone	32.5	12	8.8	5.8	ug/kg	
71-43-2	Benzene	0.47 U	0.58	0.47	0.44	ug/kg	
78-93-3	2-Butanone (MEK)	8.8 U	12	8.8	4.4	ug/kg	
104-51-8	n-Butylbenzene	0.58 U	2.3	0.58	0.48	ug/kg	
135-98-8	sec-Butylbenzene	0.58 U	2.3	0.58	0.43	ug/kg	
98-06-6	tert-Butylbenzene	0.58 U	2.3	0.58	0.41	ug/kg	
56-23-5	Carbon tetrachloride	1.2 U	2.3	1.2	0.64	ug/kg	
108-90-7	Chlorobenzene	1.2 U	2.3	1.2	0.41	ug/kg	
67-66-3	Chloroform	0.58 U	2.3	0.58	0.44	ug/kg	
95-50-1	1,2-Dichlorobenzene	0.88 U	1.2	0.88	0.36	ug/kg	
541-73-1	1,3-Dichlorobenzene	0.58 U	1.2	0.58	0.42	ug/kg	
106-46-7	1,4-Dichlorobenzene	0.58 U	1.2	0.58	0.40	ug/kg	
75-34-3	1,1-Dichloroethane	0.58 U	1.2	0.58	0.45	ug/kg	
107-06-2	1,2-Dichloroethane	0.58 U	1.2	0.58	0.55	ug/kg	
75-35-4	1,1-Dichloroethene	0.88 U	1.2	0.88	0.77	ug/kg	
156-59-2	cis-1,2-Dichloroethene	1.1 U	1.2	1.1	1.1	ug/kg	
156-60-5	trans-1,2-Dichloroethene	0.88 U	1.2	0.88	0.78	ug/kg	
123-91-1	1,4-Dioxane	120 U	150	120	43	ug/kg	
100-41-4	Ethylbenzene	0.88 U	1.2	0.88	0.65	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	0.58 U	1.2	0.58	0.41	ug/kg	
75-09-2	Methylene chloride	3.5 U	5.8	3.5	2.9	ug/kg	
103-65-1	n-Propylbenzene	0.58 U	2.3	0.58	0.36	ug/kg	
127-18-4	Tetrachloroethene	1.2 U	2.3	1.2	0.54	ug/kg	
108-88-3	Toluene	0.76	1.2	0.88	0.44	ug/kg	J
71-55-6	1,1,1-Trichloroethane	1.2 U	2.3	1.2	0.50	ug/kg	
79-01-6	Trichloroethene	0.94 U	1.2	0.94	0.89	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	1.2 U	2.3	1.2	0.74	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	1.2 U	2.3	1.2	0.42	ug/kg	
75-01-4	Vinyl chloride	1.2 U	2.3	1.2	0.55	ug/kg	
	m,p-Xylene	0.88 U	1.2	0.88	0.87	ug/kg	
95-47-6	o-Xylene	0.88 U	1.2	0.88	0.68	ug/kg	
1330-20-7	Xylene (total)	0.88 U	1.2	0.88	0.68	ug/kg	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	NWIRP-S1-WC-CF-021	
Lab Sample ID:	JC84952-1	Date Sampled: 03/21/19
Matrix:	SO - Soil	Date Received: 03/22/19
Method:	SW846 8260C	Percent Solids: 95.0
Project:	Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage	

VOA Soil Cleanup Objectives Priority List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		75-127%
17060-07-0	1,2-Dichloroethane-D4	108%		75-130%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	102%		79-127%

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 2

Client Sample ID:	NWIRP-S1-WC-CF-022		
Lab Sample ID:	JC84952-2	Date Sampled:	03/21/19
Matrix:	SO - Soil	Date Received:	03/22/19
Method:	SW846 8260C	Percent Solids:	97.1
Project:	Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3C150503.D	1	03/25/19 11:21	PS	n/a	n/a	V3C6777
Run #2							

	Initial Weight
Run #1	4.4 g
Run #2	

VOA Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
67-64-1	Acetone	38.8	12	8.8	5.9	ug/kg	
71-43-2	Benzene	0.47 U	0.59	0.47	0.44	ug/kg	
78-93-3	2-Butanone (MEK)	8.8 U	12	8.8	4.4	ug/kg	
104-51-8	n-Butylbenzene	0.59 U	2.3	0.59	0.48	ug/kg	
135-98-8	sec-Butylbenzene	0.59 U	2.3	0.59	0.43	ug/kg	
98-06-6	tert-Butylbenzene	0.59 U	2.3	0.59	0.41	ug/kg	
56-23-5	Carbon tetrachloride	1.2 U	2.3	1.2	0.64	ug/kg	
108-90-7	Chlorobenzene	1.2 U	2.3	1.2	0.41	ug/kg	
67-66-3	Chloroform	0.59 U	2.3	0.59	0.44	ug/kg	
95-50-1	1,2-Dichlorobenzene	0.88 U	1.2	0.88	0.36	ug/kg	
541-73-1	1,3-Dichlorobenzene	0.59 U	1.2	0.59	0.42	ug/kg	
106-46-7	1,4-Dichlorobenzene	0.59 U	1.2	0.59	0.40	ug/kg	
75-34-3	1,1-Dichloroethane	0.59 U	1.2	0.59	0.45	ug/kg	
107-06-2	1,2-Dichloroethane	0.59 U	1.2	0.59	0.55	ug/kg	
75-35-4	1,1-Dichloroethene	0.88 U	1.2	0.88	0.77	ug/kg	
156-59-2	cis-1,2-Dichloroethene	1.1 U	1.2	1.1	1.1	ug/kg	
156-60-5	trans-1,2-Dichloroethene	0.88 U	1.2	0.88	0.78	ug/kg	
123-91-1	1,4-Dioxane	120 U	150	120	43	ug/kg	
100-41-4	Ethylbenzene	0.88 U	1.2	0.88	0.65	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	0.59 U	1.2	0.59	0.41	ug/kg	
75-09-2	Methylene chloride	3.5 U	5.9	3.5	2.9	ug/kg	
103-65-1	n-Propylbenzene	0.59 U	2.3	0.59	0.37	ug/kg	
127-18-4	Tetrachloroethene	1.2 U	2.3	1.2	0.54	ug/kg	
108-88-3	Toluene	0.47	1.2	0.88	0.44	ug/kg	J
71-55-6	1,1,1-Trichloroethane	1.2 U	2.3	1.2	0.50	ug/kg	
79-01-6	Trichloroethene	0.94 U	1.2	0.94	0.89	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	1.2 U	2.3	1.2	0.74	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	1.2 U	2.3	1.2	0.42	ug/kg	
75-01-4	Vinyl chloride	1.2 U	2.3	1.2	0.55	ug/kg	
	m,p-Xylene	0.88 U	1.2	0.88	0.87	ug/kg	
95-47-6	o-Xylene	0.88 U	1.2	0.88	0.68	ug/kg	
1330-20-7	Xylene (total)	0.88 U	1.2	0.88	0.68	ug/kg	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	NWIRP-S1-WC-CF-022		
Lab Sample ID:	JC84952-2	Date Sampled:	03/21/19
Matrix:	SO - Soil	Date Received:	03/22/19
Method:	SW846 8260C	Percent Solids:	97.1
Project:	Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage		

VOA Soil Cleanup Objectives Priority List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		75-127%
17060-07-0	1,2-Dichloroethane-D4	106%		75-130%
2037-26-5	Toluene-D8	102%		80-120%
460-00-4	4-Bromofluorobenzene	102%		79-127%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 2

Client Sample ID:	NWIRP-S1-WC-CF-023		
Lab Sample ID:	JC84952-3	Date Sampled:	03/21/19
Matrix:	SO - Soil	Date Received:	03/22/19
Method:	SW846 8260C	Percent Solids:	99.9
Project:	Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3C150504.D	1	03/25/19 11:44	PS	n/a	n/a	V3C6777
Run #2							

	Initial Weight
Run #1	4.7 g
Run #2	

VOA Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
67-64-1	Acetone	44.0	11	8.0	5.3	ug/kg	
71-43-2	Benzene	0.43 U	0.53	0.43	0.40	ug/kg	
78-93-3	2-Butanone (MEK)	8.0 U	11	8.0	4.0	ug/kg	
104-51-8	n-Butylbenzene	0.53 U	2.1	0.53	0.43	ug/kg	
135-98-8	sec-Butylbenzene	0.53 U	2.1	0.53	0.39	ug/kg	
98-06-6	tert-Butylbenzene	0.53 U	2.1	0.53	0.37	ug/kg	
56-23-5	Carbon tetrachloride	1.1 U	2.1	1.1	0.59	ug/kg	
108-90-7	Chlorobenzene	1.1 U	2.1	1.1	0.38	ug/kg	
67-66-3	Chloroform	0.53 U	2.1	0.53	0.40	ug/kg	
95-50-1	1,2-Dichlorobenzene	0.80 U	1.1	0.80	0.32	ug/kg	
541-73-1	1,3-Dichlorobenzene	0.53 U	1.1	0.53	0.38	ug/kg	
106-46-7	1,4-Dichlorobenzene	0.53 U	1.1	0.53	0.37	ug/kg	
75-34-3	1,1-Dichloroethane	0.53 U	1.1	0.53	0.41	ug/kg	
107-06-2	1,2-Dichloroethane	0.53 U	1.1	0.53	0.50	ug/kg	
75-35-4	1,1-Dichloroethene	0.80 U	1.1	0.80	0.70	ug/kg	
156-59-2	cis-1,2-Dichloroethene	1.0 U	1.1	1.0	1.0	ug/kg	
156-60-5	trans-1,2-Dichloroethene	0.80 U	1.1	0.80	0.71	ug/kg	
123-91-1	1,4-Dioxane	110 U	130	110	39	ug/kg	
100-41-4	Ethylbenzene	0.80 U	1.1	0.80	0.59	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	0.53 U	1.1	0.53	0.37	ug/kg	
75-09-2	Methylene chloride	3.2 U	5.3	3.2	2.7	ug/kg	
103-65-1	n-Propylbenzene	0.53 U	2.1	0.53	0.33	ug/kg	
127-18-4	Tetrachloroethene	1.1 U	2.1	1.1	0.49	ug/kg	
108-88-3	Toluene	0.57	1.1	0.80	0.40	ug/kg	J
71-55-6	1,1,1-Trichloroethane	1.1 U	2.1	1.1	0.45	ug/kg	
79-01-6	Trichloroethene	0.85 U	1.1	0.85	0.81	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	1.1 U	2.1	1.1	0.68	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	1.1 U	2.1	1.1	0.38	ug/kg	
75-01-4	Vinyl chloride	1.1 U	2.1	1.1	0.50	ug/kg	
	m,p-Xylene	0.80 U	1.1	0.80	0.79	ug/kg	
95-47-6	o-Xylene	0.80 U	1.1	0.80	0.62	ug/kg	
1330-20-7	Xylene (total)	0.80 U	1.1	0.80	0.62	ug/kg	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	NWIRP-S1-WC-CF-023		
Lab Sample ID:	JC84952-3	Date Sampled:	03/21/19
Matrix:	SO - Soil	Date Received:	03/22/19
Method:	SW846 8260C	Percent Solids:	99.9
Project:	Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage		

VOA Soil Cleanup Objectives Priority List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		75-127%
17060-07-0	1,2-Dichloroethane-D4	104%		75-130%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	101%		79-127%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody
- QC Evaluation: DOD QSM5 Limits

SGS Sample Receipt Summary

Job Number: JC84952

Client: NOREAS-CB&I JV (NCBI)

Project: BACKFILL - BETHPAGE, NY

Date / Time Received: 3/22/2019 10:40:00 AM

Delivery Method: _____

Airbill #s: _____

Cooler Temps (Raw Measured) °C: Cooler 1: (3.1);

Cooler Temps (Corrected) °C: Cooler 1: (2.1);

Cooler Security

- | | | | | | | | |
|---------------------------|-------------------------------------|-----------|--------------------------|-----------------------|-------------------------------------|-----------|--------------------------|
| | <u>Y</u> | <u>or</u> | <u>N</u> | | <u>Y</u> | <u>or</u> | <u>N</u> |
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> | 3. COC Present: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> |
| 2. Custody Seals Intact: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> | | <input type="checkbox"/> |

Cooler Temperature

- | | | | |
|------------------------------|-------------------------------------|-----------|--------------------------|
| | <u>Y</u> | <u>or</u> | <u>N</u> |
| 1. Temp criteria achieved: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> |
| 2. Cooler temp verification: | IR Gun | | |
| 3. Cooler media: | Ice (Bag) | | |
| 4. No. Coolers: | 1 | | |

Quality Control Preservation

- | | | | | |
|---------------------------------|-------------------------------------|-----------|-------------------------------------|-------------------------------------|
| | <u>Y</u> | <u>or</u> | <u>N</u> | <u>N/A</u> |
| 1. Trip Blank present / cooler: | <input type="checkbox"/> | | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Trip Blank listed on COC: | <input type="checkbox"/> | | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Samples preserved properly: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> | |
| 4. VOCs headspace free: | <input type="checkbox"/> | | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Sample Integrity - Documentation

- | | | | |
|--|-------------------------------------|-----------|--------------------------|
| | <u>Y</u> | <u>or</u> | <u>N</u> |
| 1. Sample labels present on bottles: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> |
| 2. Container labeling complete: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> |

Sample Integrity - Condition

- | | | | |
|----------------------------------|-------------------------------------|-----------|--------------------------|
| | <u>Y</u> | <u>or</u> | <u>N</u> |
| 1. Sample recvd within HT: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> |
| 3. Condition of sample: | Intact | | |

Sample Integrity - Instructions

- | | | | | |
|---|-------------------------------------|-----------|-------------------------------------|-------------------------------------|
| | <u>Y</u> | <u>or</u> | <u>N</u> | <u>N/A</u> |
| 1. Analysis requested is clear: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> | |
| 2. Bottles received for unspecified tests | <input type="checkbox"/> | | <input checked="" type="checkbox"/> | |
| 3. Sufficient volume recvd for analysis: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> | |
| 4. Compositing instructions clear: | <input type="checkbox"/> | | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear: | <input type="checkbox"/> | | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Test Strip Lot #s: pH 1-12: 206717 pH 12+: 208717 Other: (Specify) _____

Comments

SM089-03
Rev. Date 12/7/17

JC84952: Chain of Custody

Page 2 of 2

5.1
5

Internal Sample Tracking Chronicle

NOREAS, Inc.

Job No: JC84952

Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage
 Project No: 500689

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC84952-1 Collected: 21-MAR-19 11:01 By: NS Received: 22-MAR-19 By: DG NWIRP-S1-WC-CF-021						
JC84952-1	SW846 8260C	25-MAR-19 10:58	PS			V8260SCO
JC84952-1	SM2540 G 18TH ED M	25-MAR-19 16:00	BG			SOL104
JC84952-2 Collected: 21-MAR-19 11:09 By: NS Received: 22-MAR-19 By: DG NWIRP-S1-WC-CF-022						
JC84952-2	SW846 8260C	25-MAR-19 11:21	PS			V8260SCO
JC84952-2	SM2540 G 18TH ED M	25-MAR-19 16:00	BG			SOL104
JC84952-3 Collected: 21-MAR-19 11:17 By: NS Received: 22-MAR-19 By: DG NWIRP-S1-WC-CF-023						
JC84952-3	SW846 8260C	25-MAR-19 11:44	PS			V8260SCO
JC84952-3	SM2540 G 18TH ED M	25-MAR-19 16:00	BG			SOL104

5.2
5

SGS Internal Chain of Custody

Job Number: JC84952
Account: NOREASCA NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage
Received: 03/22/19

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC84952-1.1	Secured Storage	Todd Shoemaker	03/25/19 10:52	Retrieve from Storage
JC84952-1.1	Todd Shoemaker	Secured Staging Area	03/25/19 10:52	Return to Storage
JC84952-1.1	Secured Staging Area	Benjamin Gaines	03/25/19 15:09	Retrieve from Storage
JC84952-1.1	Benjamin Gaines	Secured Storage	03/25/19 15:55	Return to Storage
JC84952-1.2	James Kwon	Secured Storage	03/22/19 12:41	Return to Storage
JC84952-1.3	James Kwon	Secured Storage	03/22/19 12:41	Return to Storage
JC84952-1.3	Secured Storage	Prashant Shukla	03/25/19 10:14	Retrieve from Storage
JC84952-1.3	Prashant Shukla	GCMS3C	03/25/19 10:14	Load on Instrument
JC84952-1.3	GCMS3C	Prashant Shukla	03/26/19 08:56	Unload from Instrument
JC84952-1.3	Prashant Shukla		03/26/19 08:56	Depleted
JC84952-1.4	James Kwon	Secured Storage	03/22/19 12:41	Return to Storage
JC84952-2.1	Secured Storage	Todd Shoemaker	03/25/19 10:52	Retrieve from Storage
JC84952-2.1	Todd Shoemaker	Secured Staging Area	03/25/19 10:52	Return to Storage
JC84952-2.1	Secured Staging Area	Benjamin Gaines	03/25/19 15:09	Retrieve from Storage
JC84952-2.1	Benjamin Gaines	Secured Storage	03/25/19 15:55	Return to Storage
JC84952-2.2	James Kwon	Secured Storage	03/22/19 12:41	Return to Storage
JC84952-2.3	James Kwon	Secured Storage	03/22/19 12:41	Return to Storage
JC84952-2.3	Secured Storage	Prashant Shukla	03/25/19 10:14	Retrieve from Storage
JC84952-2.3	Prashant Shukla	GCMS3C	03/25/19 10:14	Load on Instrument
JC84952-2.3	GCMS3C	Prashant Shukla	03/26/19 08:56	Unload from Instrument
JC84952-2.3	Prashant Shukla		03/26/19 08:56	Depleted
JC84952-2.4	James Kwon	Secured Storage	03/22/19 12:41	Return to Storage
JC84952-3.1	Secured Storage	Todd Shoemaker	03/25/19 10:52	Retrieve from Storage
JC84952-3.1	Todd Shoemaker	Secured Staging Area	03/25/19 10:52	Return to Storage
JC84952-3.1	Secured Staging Area	Benjamin Gaines	03/25/19 15:09	Retrieve from Storage
JC84952-3.1	Benjamin Gaines	Secured Storage	03/25/19 15:55	Return to Storage
JC84952-3.2	James Kwon	Secured Storage	03/22/19 12:41	Return to Storage
JC84952-3.3	James Kwon	Secured Storage	03/22/19 12:41	Return to Storage
JC84952-3.3	Secured Storage	Prashant Shukla	03/25/19 10:14	Retrieve from Storage
JC84952-3.3	Prashant Shukla	GCMS3C	03/25/19 10:14	Load on Instrument
JC84952-3.3	GCMS3C	Prashant Shukla	03/26/19 08:56	Unload from Instrument
JC84952-3.3	Prashant Shukla		03/26/19 08:56	Depleted
JC84952-3.4	James Kwon	Secured Storage	03/22/19 12:41	Return to Storage

5.3
5

QC Evaluation: DOD QSM5 Limits

Job Number: JC84952
Account: NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage
Collected: 03/21/19

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
--------------	------	---------	-------------	-------------	--------	-------	--------

V3C6777	SW846 8260C						
V3C6777-BS	67-64-1	Acetone	BSP	REC	124	%	36-164
V3C6777-BS	71-43-2	Benzene	BSP	REC	99	%	77-121
V3C6777-BS	78-93-3	2-Butanone (MEK)	BSP	REC	124	%	51-148
V3C6777-BS	104-51-8	n-Butylbenzene	BSP	REC	98	%	70-128
V3C6777-BS	135-98-8	sec-Butylbenzene	BSP	REC	97	%	73-126
V3C6777-BS	98-06-6	tert-Butylbenzene	BSP	REC	97	%	73-125
V3C6777-BS	56-23-5	Carbon tetrachloride	BSP	REC	105	%	70-135
V3C6777-BS	108-90-7	Chlorobenzene	BSP	REC	97	%	79-120
V3C6777-BS	67-66-3	Chloroform	BSP	REC	94	%	78-123
V3C6777-BS	95-50-1	1,2-Dichlorobenzene	BSP	REC	96	%	78-121
V3C6777-BS	541-73-1	1,3-Dichlorobenzene	BSP	REC	97	%	77-121
V3C6777-BS	106-46-7	1,4-Dichlorobenzene	BSP	REC	95	%	75-120
V3C6777-BS	75-34-3	1,1-Dichloroethane	BSP	REC	99	%	76-125
V3C6777-BS	107-06-2	1,2-Dichloroethane	BSP	REC	92	%	73-128
V3C6777-BS	75-35-4	1,1-Dichloroethene	BSP	REC	103	%	70-131
V3C6777-BS	156-59-2	cis-1,2-Dichloroethene	BSP	REC	100	%	77-123
V3C6777-BS	156-60-5	trans-1,2-Dichloroethene	BSP	REC	100	%	74-125
V3C6777-BS	123-91-1	1,4-Dioxane	BSP	REC	110	%	55-138
V3C6777-BS	100-41-4	Ethylbenzene	BSP	REC	95	%	76-122
V3C6777-BS	1634-04-4	Methyl Tert Butyl Ether	BSP	REC	98	%	73-125
V3C6777-BS	75-09-2	Methylene chloride	BSP	REC	94	%	70-128
V3C6777-BS	103-65-1	n-Propylbenzene	BSP	REC	96	%	73-125
V3C6777-BS	127-18-4	Tetrachloroethene	BSP	REC	108	%	73-128
V3C6777-BS	108-88-3	Toluene	BSP	REC	98	%	77-121
V3C6777-BS	71-55-6	1,1,1-Trichloroethane	BSP	REC	97	%	73-130
V3C6777-BS	79-01-6	Trichloroethene	BSP	REC	99	%	77-123
V3C6777-BS	95-63-6	1,2,4-Trimethylbenzene	BSP	REC	92	%	75-123
V3C6777-BS	108-67-8	1,3,5-Trimethylbenzene	BSP	REC	94	%	73-124
V3C6777-BS	75-01-4	Vinyl chloride	BSP	REC	101	%	56-135
V3C6777-BS		m,p-Xylene	BSP	REC	98	%	77-124
V3C6777-BS	95-47-6	o-Xylene	BSP	REC	96	%	77-123
V3C6777-BS	1330-20-7	Xylene (total)	BSP	REC	97	%	78-124
V3C6777-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	103	%	78-119
V3C6777-BS	17060-07-0	1,2-Dichloroethane-D4	BSP	SURR	102	%	71-136
V3C6777-BS	2037-26-5	Toluene-D8	BSP	SURR	104	%	85-116
V3C6777-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	104	%	79-119
JC85011-1MS*	67-64-1	Acetone	MS	REC	106	%	36-164
JC85011-1MS*	71-43-2	Benzene	MS	REC	96	%	77-121
JC85011-1MS*	78-93-3	2-Butanone (MEK)	MS	REC	119	%	51-148
JC85011-1MS*	104-51-8	n-Butylbenzene	MS	REC	83	%	70-128
JC85011-1MS*	135-98-8	sec-Butylbenzene	MS	REC	88	%	73-126
JC85011-1MS*	98-06-6	tert-Butylbenzene	MS	REC	89	%	73-125

* Sample used for QC is not from job JC84952

QC Evaluation: DOD QSM5 Limits

Job Number: JC84952
Account: NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage
Collected: 03/21/19

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
JC85011-1MS*	56-23-5	Carbon tetrachloride	MS	REC	98	%	70-135
JC85011-1MS*	108-90-7	Chlorobenzene	MS	REC	93	%	79-120
JC85011-1MS*	67-66-3	Chloroform	MS	REC	94	%	78-123
JC85011-1MS*	95-50-1	1,2-Dichlorobenzene	MS	REC	94	%	78-121
JC85011-1MS*	541-73-1	1,3-Dichlorobenzene	MS	REC	90	%	77-121
JC85011-1MS*	106-46-7	1,4-Dichlorobenzene	MS	REC	89	%	75-120
JC85011-1MS*	75-34-3	1,1-Dichloroethane	MS	REC	98	%	76-125
JC85011-1MS*	107-06-2	1,2-Dichloroethane	MS	REC	93	%	73-128
JC85011-1MS*	75-35-4	1,1-Dichloroethene	MS	REC	95	%	70-131
JC85011-1MS*	156-59-2	cis-1,2-Dichloroethene	MS	REC	97	%	77-123
JC85011-1MS*	156-60-5	trans-1,2-Dichloroethene	MS	REC	95	%	74-125
JC85011-1MS*	123-91-1	1,4-Dioxane	MS	REC	114	%	55-138
JC85011-1MS*	100-41-4	Ethylbenzene	MS	REC	90	%	76-122
JC85011-1MS*	1634-04-4	Methyl Tert Butyl Ether	MS	REC	103	%	73-125
JC85011-1MS*	75-09-2	Methylene chloride	MS	REC	95	%	70-128
JC85011-1MS*	103-65-1	n-Propylbenzene	MS	REC	86	%	73-125
JC85011-1MS*	127-18-4	Tetrachloroethene	MS	REC	95	%	73-128
JC85011-1MS*	108-88-3	Toluene	MS	REC	92	%	77-121
JC85011-1MS*	71-55-6	1,1,1-Trichloroethane	MS	REC	93	%	73-130
JC85011-1MS*	79-01-6	Trichloroethene	MS	REC	94	%	77-123
JC85011-1MS*	95-63-6	1,2,4-Trimethylbenzene	MS	REC	86	%	75-123
JC85011-1MS*	108-67-8	1,3,5-Trimethylbenzene	MS	REC	87	%	73-124
JC85011-1MS*	75-01-4	Vinyl chloride	MS	REC	100	%	56-135
JC85011-1MS*		m,p-Xylene	MS	REC	90	%	77-124
JC85011-1MS*	95-47-6	o-Xylene	MS	REC	90	%	77-123
JC85011-1MS*	1330-20-7	Xylene (total)	MS	REC	90	%	78-124
JC85011-1MS*	1868-53-7	Dibromofluoromethane	MS	SURR	106	%	78-119
JC85011-1MS*	17060-07-0	1,2-Dichloroethane-D4	MS	SURR	106	%	71-136
JC85011-1MS*	2037-26-5	Toluene-D8	MS	SURR	102	%	85-116
JC85011-1MS*	460-00-4	4-Bromofluorobenzene	MS	SURR	102	%	79-119
JC85011-2DUP*	67-64-1	Acetone	DUP	RPD	24	%	20
JC85011-2DUP*	71-43-2	Benzene	DUP	RPD	0	%	20
JC85011-2DUP*	78-93-3	2-Butanone (MEK)	DUP	RPD	0	%	20
JC85011-2DUP*	104-51-8	n-Butylbenzene	DUP	RPD	0	%	20
JC85011-2DUP*	135-98-8	sec-Butylbenzene	DUP	RPD	0	%	20
JC85011-2DUP*	98-06-6	tert-Butylbenzene	DUP	RPD	0	%	20
JC85011-2DUP*	56-23-5	Carbon tetrachloride	DUP	RPD	0	%	20
JC85011-2DUP*	108-90-7	Chlorobenzene	DUP	RPD	0	%	20
JC85011-2DUP*	67-66-3	Chloroform	DUP	RPD	0	%	20
JC85011-2DUP*	95-50-1	1,2-Dichlorobenzene	DUP	RPD	0	%	20
JC85011-2DUP*	541-73-1	1,3-Dichlorobenzene	DUP	RPD	0	%	20
JC85011-2DUP*	106-46-7	1,4-Dichlorobenzene	DUP	RPD	0	%	20
JC85011-2DUP*	75-34-3	1,1-Dichloroethane	DUP	RPD	0	%	20
JC85011-2DUP*	107-06-2	1,2-Dichloroethane	DUP	RPD	0	%	20
JC85011-2DUP*	75-35-4	1,1-Dichloroethene	DUP	RPD	0	%	20

* Sample used for QC is not from job JC84952

QC Evaluation: DOD QSM5 Limits

Job Number: JC84952
Account: NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage
Collected: 03/21/19

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
JC85011-2DUP*	156-59-2	cis-1,2-Dichloroethene	DUP	RPD	0	%	20
JC85011-2DUP*	156-60-5	trans-1,2-Dichloroethene	DUP	RPD	0	%	20
JC85011-2DUP*	123-91-1	1,4-Dioxane	DUP	RPD	0	%	20
JC85011-2DUP*	100-41-4	Ethylbenzene	DUP	RPD	0	%	20
JC85011-2DUP*	1634-04-4	Methyl Tert Butyl Ether	DUP	RPD	0	%	20
JC85011-2DUP*	75-09-2	Methylene chloride	DUP	RPD	0	%	20
JC85011-2DUP*	103-65-1	n-Propylbenzene	DUP	RPD	0	%	20
JC85011-2DUP*	127-18-4	Tetrachloroethene	DUP	RPD	0	%	20
JC85011-2DUP*	108-88-3	Toluene	DUP	RPD	0	%	20
JC85011-2DUP*	71-55-6	1,1,1-Trichloroethane	DUP	RPD	0	%	20
JC85011-2DUP*	79-01-6	Trichloroethene	DUP	RPD	0	%	20
JC85011-2DUP*	95-63-6	1,2,4-Trimethylbenzene	DUP	RPD	0	%	20
JC85011-2DUP*	108-67-8	1,3,5-Trimethylbenzene	DUP	RPD	0	%	20
JC85011-2DUP*	75-01-4	Vinyl chloride	DUP	RPD	0	%	20
JC85011-2DUP*		m,p-Xylene	DUP	RPD	0	%	20
JC85011-2DUP*	95-47-6	o-Xylene	DUP	RPD	0	%	20
JC85011-2DUP*	1330-20-7	Xylene (total)	DUP	RPD	0	%	20
JC85011-2DUP*	1868-53-7	Dibromofluoromethane	DUP	SURR	107	%	78-119
JC85011-2DUP*	17060-07-0	1,2-Dichloroethane-D4	DUP	SURR	106	%	71-136
JC85011-2DUP*	2037-26-5	Toluene-D8	DUP	SURR	101	%	85-116
JC85011-2DUP*	460-00-4	4-Bromofluorobenzene	DUP	SURR	101	%	79-119
V3C6777-MB	1868-53-7	Dibromofluoromethane	MB	SURR	101	%	78-119
V3C6777-MB	17060-07-0	1,2-Dichloroethane-D4	MB	SURR	97	%	71-136
V3C6777-MB	2037-26-5	Toluene-D8	MB	SURR	103	%	85-116
V3C6777-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	101	%	79-119
JC84952-1	1868-53-7	Dibromofluoromethane	SAMP	SURR	106	%	78-119
JC84952-1	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	108	%	71-136
JC84952-1	2037-26-5	Toluene-D8	SAMP	SURR	101	%	85-116
JC84952-1	460-00-4	4-Bromofluorobenzene	SAMP	SURR	102	%	79-119
JC84952-2	1868-53-7	Dibromofluoromethane	SAMP	SURR	105	%	78-119
JC84952-2	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	106	%	71-136
JC84952-2	2037-26-5	Toluene-D8	SAMP	SURR	102	%	85-116
JC84952-2	460-00-4	4-Bromofluorobenzene	SAMP	SURR	102	%	79-119
JC84952-3	1868-53-7	Dibromofluoromethane	SAMP	SURR	106	%	78-119
JC84952-3	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	104	%	71-136
JC84952-3	2037-26-5	Toluene-D8	SAMP	SURR	101	%	85-116
JC84952-3	460-00-4	4-Bromofluorobenzene	SAMP	SURR	101	%	79-119

* Sample used for QC is not from job JC84952

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

Method Blank Summary

Job Number: JC84952

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3C6777-MB	3C150501.D	1	03/25/19	PS	n/a	n/a	V3C6777

The QC reported here applies to the following samples:

Method: SW846 8260C

JC84952-1, JC84952-2, JC84952-3

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	5.0	ug/kg	
71-43-2	Benzene	ND	0.50	0.38	ug/kg	
78-93-3	2-Butanone (MEK)	ND	10	3.7	ug/kg	
104-51-8	n-Butylbenzene	ND	2.0	0.41	ug/kg	
135-98-8	sec-Butylbenzene	ND	2.0	0.37	ug/kg	
98-06-6	tert-Butylbenzene	ND	2.0	0.35	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.0	0.55	ug/kg	
108-90-7	Chlorobenzene	ND	2.0	0.35	ug/kg	
67-66-3	Chloroform	ND	2.0	0.37	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.31	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.36	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.34	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.0	0.39	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.0	0.47	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.0	0.66	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.96	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.67	ug/kg	
123-91-1	1,4-Dioxane	ND	130	37	ug/kg	
100-41-4	Ethylbenzene	ND	1.0	0.55	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.35	ug/kg	
75-09-2	Methylene chloride	ND	5.0	2.5	ug/kg	
103-65-1	n-Propylbenzene	ND	2.0	0.31	ug/kg	
127-18-4	Tetrachloroethene	ND	2.0	0.46	ug/kg	
108-88-3	Toluene	ND	1.0	0.38	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.43	ug/kg	
79-01-6	Trichloroethene	ND	1.0	0.76	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.64	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.36	ug/kg	
75-01-4	Vinyl chloride	ND	2.0	0.47	ug/kg	
	m,p-Xylene	ND	1.0	0.75	ug/kg	
95-47-6	o-Xylene	ND	1.0	0.58	ug/kg	
1330-20-7	Xylene (total)	ND	1.0	0.58	ug/kg	

Method Blank Summary

Job Number: JC84952
Account: NOREASCA NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3C6777-MB	3C150501.D	1	03/25/19	PS	n/a	n/a	V3C6777

The QC reported here applies to the following samples:

Method: SW846 8260C

JC84952-1, JC84952-2, JC84952-3

CAS No.	Surrogate Recoveries	Limits	
1868-53-7	Dibromofluoromethane	101%	75-127%
17060-07-0	1,2-Dichloroethane-D4	97%	75-130%
2037-26-5	Toluene-D8	103%	80-120%
460-00-4	4-Bromofluorobenzene	101%	79-127%

CAS No.	Tentatively Identified Compounds	R. T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

6.1.1
6

Blank Spike Summary

Job Number: JC84952

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3C6777-BS	3C150499.D	1	03/25/19	PS	n/a	n/a	V3C6777

The QC reported here applies to the following samples:

Method: SW846 8260C

JC84952-1, JC84952-2, JC84952-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
67-64-1	Acetone	200	248	124	48-149
71-43-2	Benzene	50	49.5	99	74-117
78-93-3	2-Butanone (MEK)	200	247	124	65-143
104-51-8	n-Butylbenzene	50	49.0	98	74-123
135-98-8	sec-Butylbenzene	50	48.7	97	74-123
98-06-6	tert-Butylbenzene	50	48.4	97	73-124
56-23-5	Carbon tetrachloride	50	52.6	105	69-136
108-90-7	Chlorobenzene	50	48.7	97	79-117
67-66-3	Chloroform	50	47.2	94	76-119
95-50-1	1,2-Dichlorobenzene	50	47.8	96	77-117
541-73-1	1,3-Dichlorobenzene	50	48.5	97	75-117
106-46-7	1,4-Dichlorobenzene	50	47.4	95	76-115
75-34-3	1,1-Dichloroethane	50	49.6	99	75-124
107-06-2	1,2-Dichloroethane	50	46.0	92	74-124
75-35-4	1,1-Dichloroethene	50	51.6	103	64-129
156-59-2	cis-1,2-Dichloroethene	50	50.2	100	74-118
156-60-5	trans-1,2-Dichloroethene	50	49.8	100	71-125
123-91-1	1,4-Dioxane	1250	1380	110	64-128
100-41-4	Ethylbenzene	50	47.7	95	75-118
1634-04-4	Methyl Tert Butyl Ether	50	48.9	98	75-123
75-09-2	Methylene chloride	50	46.9	94	73-120
103-65-1	n-Propylbenzene	50	47.9	96	75-120
127-18-4	Tetrachloroethene	50	54.0	108	69-128
108-88-3	Toluene	50	49.1	98	74-117
71-55-6	1,1,1-Trichloroethane	50	48.5	97	73-131
79-01-6	Trichloroethene	50	49.7	99	80-120
95-63-6	1,2,4-Trimethylbenzene	50	46.1	92	76-119
108-67-8	1,3,5-Trimethylbenzene	50	47.0	94	74-119
75-01-4	Vinyl chloride	50	50.3	101	55-145
	m,p-Xylene	100	97.5	98	75-120
95-47-6	o-Xylene	50	48.1	96	75-119
1330-20-7	Xylene (total)	150	146	97	76-119

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JC84952

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3C6777-BS	3C150499.D	1	03/25/19	PS	n/a	n/a	V3C6777

The QC reported here applies to the following samples:

Method: SW846 8260C

JC84952-1, JC84952-2, JC84952-3

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	103%	75-127%
17060-07-0	1,2-Dichloroethane-D4	102%	75-130%
2037-26-5	Toluene-D8	104%	80-120%
460-00-4	4-Bromofluorobenzene	104%	79-127%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JC84952

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC85011-1MS	3C150513.D	1	03/25/19	PS	n/a	n/a	V3C6777
JC85011-1	3C150505.D	1	03/25/19	PS	n/a	n/a	V3C6777

The QC reported here applies to the following samples:

Method: SW846 8260C

JC84952-1, JC84952-2, JC84952-3

CAS No.	Compound	JC85011-1 ug/kg	Spike Q	ug/kg	MS ug/kg	MS %	Limits
67-64-1	Acetone	33.2		183	228	106	10-157
71-43-2	Benzene	ND		45.8	44.0	96	58-125
78-93-3	2-Butanone (MEK)	ND		183	218	119	29-146
104-51-8	n-Butylbenzene	ND		45.8	38.2	83	23-149
135-98-8	sec-Butylbenzene	ND		45.8	40.1	88	33-147
98-06-6	tert-Butylbenzene	ND		45.8	40.7	89	39-145
56-23-5	Carbon tetrachloride	ND		45.8	44.7	98	51-143
108-90-7	Chlorobenzene	ND		45.8	42.8	93	54-130
67-66-3	Chloroform	ND		45.8	43.0	94	61-125
95-50-1	1,2-Dichlorobenzene	ND		45.8	42.9	94	41-134
541-73-1	1,3-Dichlorobenzene	ND		45.8	41.2	90	41-135
106-46-7	1,4-Dichlorobenzene	ND		45.8	40.9	89	41-133
75-34-3	1,1-Dichloroethane	ND		45.8	44.7	98	61-131
107-06-2	1,2-Dichloroethane	ND		45.8	42.8	93	56-126
75-35-4	1,1-Dichloroethene	ND		45.8	43.6	95	53-132
156-59-2	cis-1,2-Dichloroethene	ND		45.8	44.6	97	57-125
156-60-5	trans-1,2-Dichloroethene	ND		45.8	43.3	95	56-130
123-91-1	1,4-Dioxane	ND		1140	1300	114	53-140
100-41-4	Ethylbenzene	ND		45.8	41.0	90	49-132
1634-04-4	Methyl Tert Butyl Ether	ND		45.8	47.0	103	58-123
75-09-2	Methylene chloride	ND		45.8	43.5	95	57-123
103-65-1	n-Propylbenzene	ND		45.8	39.4	86	41-139
127-18-4	Tetrachloroethene	ND		45.8	43.6	95	39-154
108-88-3	Toluene	ND		45.8	42.1	92	54-127
71-55-6	1,1,1-Trichloroethane	ND		45.8	42.4	93	57-138
79-01-6	Trichloroethene	ND		45.8	43.2	94	52-140
95-63-6	1,2,4-Trimethylbenzene	ND		45.8	39.4	86	39-142
108-67-8	1,3,5-Trimethylbenzene	ND		45.8	39.8	87	40-140
75-01-4	Vinyl chloride	ND		45.8	45.7	100	43-146
	m,p-Xylene	ND		91.6	82.3	90	45-137
95-47-6	o-Xylene	ND		45.8	41.3	90	48-135
1330-20-7	Xylene (total)	ND		137	124	90	46-137

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JC84952

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC85011-1MS	3C150513.D	1	03/25/19	PS	n/a	n/a	V3C6777
JC85011-1	3C150505.D	1	03/25/19	PS	n/a	n/a	V3C6777

The QC reported here applies to the following samples:

Method: SW846 8260C

JC84952-1, JC84952-2, JC84952-3

CAS No.	Surrogate Recoveries	MS	JC85011-1	Limits
1868-53-7	Dibromofluoromethane	106%	106%	75-127%
17060-07-0	1,2-Dichloroethane-D4	106%	106%	75-130%
2037-26-5	Toluene-D8	102%	101%	80-120%
460-00-4	4-Bromofluorobenzene	102%	102%	79-127%

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC84952

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC85011-2DUP	3C150515.D	1	03/25/19	PS	n/a	n/a	V3C6777
JC85011-2	3C150506.D	1	03/25/19	PS	n/a	n/a	V3C6777

The QC reported here applies to the following samples:

Method: SW846 8260C

JC84952-1, JC84952-2, JC84952-3

CAS No.	Compound	JC85011-2 ug/kg	DUP Q	ug/kg	Q	RPD	Limits
67-64-1	Acetone	12.0		15.3		24	40
71-43-2	Benzene	ND		ND		nc	30
78-93-3	2-Butanone (MEK)	ND		ND		nc	30
104-51-8	n-Butylbenzene	ND		ND		nc	30
135-98-8	sec-Butylbenzene	ND		ND		nc	30
98-06-6	tert-Butylbenzene	ND		ND		nc	30
56-23-5	Carbon tetrachloride	ND		ND		nc	30
108-90-7	Chlorobenzene	ND		ND		nc	30
67-66-3	Chloroform	ND		ND		nc	30
95-50-1	1,2-Dichlorobenzene	ND		ND		nc	30
541-73-1	1,3-Dichlorobenzene	ND		ND		nc	30
106-46-7	1,4-Dichlorobenzene	ND		ND		nc	30
75-34-3	1,1-Dichloroethane	ND		ND		nc	30
107-06-2	1,2-Dichloroethane	ND		ND		nc	30
75-35-4	1,1-Dichloroethene	ND		ND		nc	30
156-59-2	cis-1,2-Dichloroethene	ND		ND		nc	30
156-60-5	trans-1,2-Dichloroethene	ND		ND		nc	30
123-91-1	1,4-Dioxane	ND		ND		nc	30
100-41-4	Ethylbenzene	ND		ND		nc	30
1634-04-4	Methyl Tert Butyl Ether	ND		ND		nc	30
75-09-2	Methylene chloride	ND		ND		nc	36
103-65-1	n-Propylbenzene	ND		ND		nc	30
127-18-4	Tetrachloroethene	ND		ND		nc	30
108-88-3	Toluene	ND		ND		nc	24
71-55-6	1,1,1-Trichloroethane	ND		ND		nc	30
79-01-6	Trichloroethene	ND		ND		nc	30
95-63-6	1,2,4-Trimethylbenzene	ND		ND		nc	30
108-67-8	1,3,5-Trimethylbenzene	ND		ND		nc	30
75-01-4	Vinyl chloride	ND		ND		nc	30
	m,p-Xylene	ND		ND		nc	32
95-47-6	o-Xylene	ND		ND		nc	30
1330-20-7	Xylene (total)	ND		ND		nc	33

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC84952

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC85011-2DUP	3C150515.D	1	03/25/19	PS	n/a	n/a	V3C6777
JC85011-2	3C150506.D	1	03/25/19	PS	n/a	n/a	V3C6777

The QC reported here applies to the following samples:

Method: SW846 8260C

JC84952-1, JC84952-2, JC84952-3

CAS No.	Surrogate Recoveries	DUP	JC85011-2	Limits
1868-53-7	Dibromofluoromethane	107%	105%	75-127%
17060-07-0	1,2-Dichloroethane-D4	106%	104%	75-130%
2037-26-5	Toluene-D8	101%	102%	80-120%
460-00-4	4-Bromofluorobenzene	101%	101%	79-127%

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: JC84952
Account: NOREASCA NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Sample: V3C6743-BFB	Injection Date: 02/13/19
Lab File ID: 3C149621.D	Injection Time: 17:27
Instrument ID: GCMS3C	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	20405	18.6	Pass
75	30.0 - 60.0% of mass 95	53912	49.2	Pass
95	Base peak, 100% relative abundance	109629	100.0	Pass
96	5.0 - 9.0% of mass 95	7437	6.78	Pass
173	Less than 2.0% of mass 174	0	0.00 (0.00) ^a	Pass
174	50.0 - 120.0% of mass 95	102597	93.6	Pass
175	5.0 - 9.0% of mass 174	7596	6.93 (7.40) ^a	Pass
176	95.0 - 101.0% of mass 174	99168	90.5 (96.7) ^a	Pass
177	5.0 - 9.0% of mass 176	6330	5.77 (6.38) ^b	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3C6743-IC6743	3C149623.D	02/13/19	18:33	01:06	Initial cal 0.5
V3C6743-IC6743	3C149624.D	02/13/19	18:56	01:29	Initial cal 1
V3C6743-IC6743	3C149628.D	02/13/19	20:29	03:02	Initial cal 2
V3C6743-IC6743	3C149629.D	02/13/19	20:52	03:25	Initial cal 4
V3C6743-IC6743	3C149630.D	02/13/19	21:15	03:48	Initial cal 8
V3C6743-IC6743	3C149631.D	02/13/19	21:39	04:12	Initial cal 20
V3C6743-ICC6743	3C149632.D	02/13/19	22:02	04:35	Initial cal 50
V3C6743-IC6743	3C149633.D	02/13/19	22:25	04:58	Initial cal 100
V3C6743-IC6743	3C149634.D	02/13/19	22:48	05:21	Initial cal 200
V3C6743-ICV6743	3C149637.D	02/13/19	23:59	06:32	Initial cal verification 50
V3C6743-ICV6743	3C149638.D	02/14/19	00:23	06:56	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: JC84952
Account: NOREASCA NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Sample: V3C6777-BFB	Injection Date: 03/25/19
Lab File ID: 3C150498.D	Injection Time: 09:10
Instrument ID: GCMS3C	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	13333	16.7	Pass
75	30.0 - 60.0% of mass 95	38202	47.8	Pass
95	Base peak, 100% relative abundance	79962	100.0	Pass
96	5.0 - 9.0% of mass 95	5418	6.78	Pass
173	Less than 2.0% of mass 174	0	0.00 (0.00) ^a	Pass
174	50.0 - 120.0% of mass 95	80643	100.9	Pass
175	5.0 - 9.0% of mass 174	5833	7.29 (7.23) ^a	Pass
176	95.0 - 101.0% of mass 174	79472	99.4 (98.5) ^a	Pass
177	5.0 - 9.0% of mass 176	5108	6.39 (6.43) ^b	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3C6777-CC6743	3C150498.D	03/25/19	09:10	00:00	Continuing cal 50
V3C6777-BS	3C150499.D	03/25/19	09:40	00:30	Blank Spike
ZZZZZZ	3C150501A.D	03/25/19	10:35	01:25	(unrelated sample)
V3C6777-MB	3C150501.D	03/25/19	10:35	01:25	Method Blank
JC84952-1	3C150502.D	03/25/19	10:58	01:48	NWIRP-S1-WC-CF-021
JC84952-2	3C150503.D	03/25/19	11:21	02:11	NWIRP-S1-WC-CF-022
JC84952-3	3C150504.D	03/25/19	11:44	02:34	NWIRP-S1-WC-CF-023
JC85011-1	3C150505.D	03/25/19	12:07	02:57	(used for QC only; not part of job JC84952)
JC85011-2	3C150506.D	03/25/19	12:30	03:20	(used for QC only; not part of job JC84952)
ZZZZZZ	3C150507.D	03/25/19	12:54	03:44	(unrelated sample)
ZZZZZZ	3C150508.D	03/25/19	13:17	04:07	(unrelated sample)
ZZZZZZ	3C150509.D	03/25/19	13:40	04:30	(unrelated sample)
ZZZZZZ	3C150510.D	03/25/19	14:03	04:53	(unrelated sample)
ZZZZZZ	3C150511.D	03/25/19	14:26	05:16	(unrelated sample)
ZZZZZZ	3C150512.D	03/25/19	14:49	05:39	(unrelated sample)
JC85011-1MS	3C150513.D	03/25/19	15:12	06:02	Matrix Spike
JC85011-2DUP	3C150515.D	03/25/19	15:59	06:49	Duplicate
ZZZZZZ	3C150516.D	03/25/19	16:22	07:12	(unrelated sample)
ZZZZZZ	3C150517.D	03/25/19	16:45	07:35	(unrelated sample)
ZZZZZZ	3C150518.D	03/25/19	17:08	07:58	(unrelated sample)

Internal Standard Area Summary

Job Number: JC84952
Account: NOREASCA NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Check Std: V3C6777-CC6743	Injection Date: 03/25/19
Lab File ID: 3C150498.D	Injection Time: 09:10
Instrument ID: GCMS3C	Method: SW846 8260C

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	61749	2.57	261352	4.03	352629	4.69	303003	7.40	166784	9.32
Upper Limit ^a	123498	3.07	522704	4.53	705258	5.19	606006	7.90	333568	9.82
Lower Limit ^b	30875	2.07	130676	3.53	176315	4.19	151502	6.90	83392	8.82

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
V3C6777-BS	62703	2.57	252687	4.03	339677	4.69	291469	7.40	159134	9.32
ZZZZZZ	44721	2.57	272255	4.03	357752	4.69	315948	7.39	172487	9.32
V3C6777-MB	44721	2.57	272255	4.03	357752	4.69	315948	7.39	172487	9.32
JC84952-1	59087	2.57	269914	4.03	360716	4.69	325807	7.40	180510	9.32
JC84952-2	57486	2.57	265321	4.03	354908	4.69	315233	7.40	175687	9.32
JC84952-3	55271	2.57	264925	4.03	362013	4.69	317423	7.39	175619	9.32
JC85011-1	58310	2.57	264101	4.03	357063	4.69	316359	7.39	175181	9.32
JC85011-2	54098	2.57	265645	4.03	359331	4.69	319002	7.39	178822	9.32
ZZZZZZ	56660	2.57	265870	4.03	364634	4.69	321237	7.40	178798	9.32
ZZZZZZ	55419	2.58	259699	4.03	357725	4.69	314416	7.39	174353	9.32
ZZZZZZ	50044	2.57	259677	4.03	356986	4.69	319107	7.40	176027	9.32
ZZZZZZ	53865	2.57	258800	4.03	355243	4.69	315070	7.39	173871	9.32
ZZZZZZ	50898	2.57	252693	4.03	338028	4.69	301657	7.39	157666	9.32
ZZZZZZ	56807	2.57	251103	4.03	346711	4.69	303384	7.40	169034	9.32
JC85011-1MS	61901	2.58	270145	4.03	367631	4.69	327022	7.40	179024	9.32
JC85011-2DUP	58049	2.57	262429	4.03	363241	4.69	322481	7.40	179818	9.32
ZZZZZZ	48812	2.57	261242	4.03	358830	4.69	310922	7.39	170420	9.32
ZZZZZZ	47795	2.57	261636	4.03	356168	4.69	313107	7.40	169120	9.32
ZZZZZZ	43025	2.57	258384	4.03	350501	4.69	304102	7.40	164115	9.32

- IS 1 = Tert Butyl Alcohol-D9
- IS 2 = Pentafluorobenzene
- IS 3 = 1,4-Difluorobenzene
- IS 4 = Chlorobenzene-D5
- IS 5 = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

6.6.1
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Surrogate Recovery Summary

Job Number: JC84952

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Method: SW846 8260C	Matrix: SO
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JC84952-1	3C150502.D	106	108	101	102
JC84952-2	3C150503.D	105	106	102	102
JC84952-3	3C150504.D	106	104	101	101
JC85011-1MS	3C150513.D	106	106	102	102
JC85011-2DUP	3C150515.D	107	106	101	101
V3C6777-BS	3C150499.D	103	102	104	104
V3C6777-MB	3C150501.D	101	97	103	101

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	75-127%
S2 = 1,2-Dichloroethane-D4	75-130%
S3 = Toluene-D8	80-120%
S4 = 4-Bromofluorobenzene	79-127%

Initial Calibration Summary

Job Number: JC84952 **Sample:** V3C6743-ICC6743
Account: NOREASCA NOREAS, Inc. **Lab FileID:** 3C149632.D
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Response Factor Report MS3C

Method : C:\MSDCHEM\1\METHODS\M3C6743.M (RTE Integrator)
Title : Method SW846 8260C, Rxi624 20m x 0.18mm x 1.0um
Last Update : Fri Feb 15 09:30:13 2019
Response via : Initial Calibration

Calibration Files

4 =3C149629.D 8 =3C149630.D 0.5 =3C149623.D 50 =3C149632.D
100 =3C149633.D 1 =3C149624.D 200 =3C149634.D 20 =3C149631.D
2 =3C149628.D =

Compound	4	8	0.5	50	100	1	200	20	2	Avg	%RSD
1) I Tert Butyl Alcohol-d9 -----ISTD-----											
2) ethanol										0.000	-1.00
3) tertiary butyl alcohol											
1.056 1.147			1.164	1.113		1.067	1.127	1.041		1.102	4.31
4) 1,4-dioxane											
0.131 0.123			0.142	0.140		0.135	0.135			0.134	4.96
5) I pentafluorobenzene -----ISTD-----											
6) chlorodifluoromethane											
0.320 0.313			0.327	0.291		0.266	0.320	0.283		0.303	7.64
7) dichlorodifluoromethane											
0.436 0.469			0.476	0.428	0.382	0.387	0.468	0.409		0.432	8.59
8) chloromethane											
0.372 0.389			0.385	0.342	0.322	0.317	0.382	0.344		0.357	8.13
9) 1,3-butadiene											
0.248 0.242			0.251	0.225	0.242	0.204	0.253	0.192		0.232	9.91
10) vinyl chloride											
0.389 0.398			0.400	0.359	0.267	0.332	0.391	0.333		0.359	12.92
11) bromomethane											
0.237 0.235			0.234	0.184		0.168	0.237	0.207		0.215	13.40
12) chloroethane											
0.228 0.234			0.238	0.215	0.156	0.209	0.235	0.190		0.213	13.14
13) vinyl Bromide											
0.316 0.335			0.346	0.315	0.233	0.301	0.340	0.277		0.308	12.28
14) trichlorofluoromethane											
0.544 0.577 0.497			0.589	0.538	0.476	0.515	0.574	0.467		0.531	8.45
15) ethyl ether											
0.157 0.156			0.164	0.154		0.145	0.164	0.118		0.151	10.69
16) 2-chloropropane											
0.119 0.127			0.136	0.126	0.117	0.113	0.129	0.098		0.121	9.63
17) acrolein											
0.023 0.030			0.036	0.033		0.032	0.033			0.031	14.56
18) freon 113											
0.268 0.266			0.288	0.269	0.225	0.255	0.281	0.180		0.254	13.92
19) 1,1-dichloroethene											
0.283 0.295			0.312	0.291	0.275	0.271	0.305	0.231		0.283	8.87
20) acetone											
0.016 0.016			0.017	0.016	0.015	0.015	0.016	0.013		0.016	7.61
21) acetonitrile											
0.027 0.024			0.025	0.022		0.021	0.024			0.024	7.93
22) iodomethane											
This compound does not meet initial calibration criteria											
0.108 0.126			0.326	0.329		0.311	0.191			0.232	44.37

Initial Calibration Summary

Job Number: JC84952 Sample: V3C6743-ICC6743
Account: NOREASCA NOREAS, Inc. Lab FileID: 3C149632.D
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

23)	carbon disulfide	0.826 0.803	0.819 0.761	0.712 0.805 0.822	0.793	5.28
24)	methylene chloride	0.338 0.319	0.316 0.290	0.276 0.316 0.310	0.309	6.67
25)	methyl acetate	0.155 0.160	0.160 0.148	0.141 0.155 0.125	0.149	8.50
26)	methyl tert butyl ether	0.794 0.779	0.816 0.748 0.772	0.716 0.782 0.625	0.754	7.96
27)	trans-1,2-dichloroethene	0.332 0.326	0.348 0.321 0.337	0.304 0.343 0.265	0.322	8.32
28)	hexane	0.525 0.526	0.545 0.498 0.546	0.468 0.552 0.420	0.510	9.01
29)	di-isopropyl ether	0.956 0.961 0.807	1.000 0.911 0.992	0.864 0.978 0.771	0.916	9.16
30)	ethyl tert-butyl ether	0.935 0.936 0.768	0.996 0.912 0.981	0.875 0.968 0.773	0.905	9.34
31)	2-butanone	0.023 0.026	0.028 0.025	0.025 0.027 0.019	0.025	11.52
32)	1,1-dichloroethane	0.539 0.552 0.406	0.584 0.540 0.550	0.510 0.576 0.454	0.523	11.16
33)	chloroprene	0.484 0.495 0.402	0.519 0.481 0.489	0.460 0.506 0.351	0.465	11.70
34)	acrylonitrile	0.062 0.061	0.069 0.063	0.061 0.065	0.064	5.03
35)	vinyl acetate	0.050 0.052	0.063 0.061	0.059 0.058	0.057	9.43
36)	ethyl acetate	0.011 0.028	0.036 0.033	0.032 0.032	0.029	31.43
	----- Linear regression -----			Coefficient = 0.9963		
				Response Ratio = -0.00125 + 0.03349 *A		
37)	2,2-dichloropropane	0.492 0.480	0.534 0.498 0.495	0.475 0.512 0.365	0.482	10.49
38)	cis-1,2-dichloroethene	0.355 0.360	0.381 0.355 0.340	0.335 0.375 0.283	0.348	8.75
39)	propionitrile	0.029 0.030	0.030 0.027 0.031	0.027 0.029 0.024	0.028	7.90
40)	bromochloromethane	0.202 0.204	0.210 0.192 0.198	0.182 0.210 0.163	0.195	8.16
41)	tetrahydrofuran	0.023	0.026 0.025	0.024 0.023	0.024	4.50
42)	chloroform	0.587 0.570	0.597 0.555 0.637	0.529 0.584 0.469	0.566	8.87
43)	tert-Butyl Formate	0.173 0.164	0.206 0.205	0.210 0.181 0.116	0.179	18.50
44)	isobutyl alcohol	0.043 0.044	0.047 0.042	0.041 0.046	0.044	5.28
45)	dibromofluoromethane (s)	0.357 0.363 0.359	0.367 0.364 0.361	0.362 0.360 0.358	0.361	0.93
46)	methacrylonitrile	0.080 0.086	0.094 0.089	0.086 0.089 0.063	0.084	12.09
47)	1,1,1-trichloroethane	0.519 0.525	0.566 0.531 0.502	0.508 0.550 0.387	0.511	10.62
48)	cyclohexane	0.543 0.573 0.508	0.571 0.524 0.442	0.494 0.565 0.483	0.523	8.56
49)	1,1-dichloropropene	0.181 0.173	0.186 0.170	0.160 0.181 0.123	0.168	12.92
50)	tert-amyl alcohol	0.022 0.022	0.022 0.023	0.022 0.022	0.022	1.91
51)	carbon tetrachloride					

Initial Calibration Summary

Job Number: JC84952 **Sample:** V3C6743-ICC6743
Account: NOREASCA NOREAS, Inc. **Lab FileID:** 3C149632.D
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

	0.403	0.415		0.459	0.443	0.363	0.426	0.433	0.288	0.404	13.60
52) I	1,4-difluorobenzene -----ISTD-----										
53)	1,2-dichloroethane-d4 (s)										
	0.273	0.271	0.278	0.269	0.265	0.279	0.267	0.269	0.274	0.272	1.75
54)	2,2,4-trimethylpentane										
	0.936	0.949		0.995	0.939	0.974	0.888	1.002	0.735	0.927	9.26
55)	tert-amyl methyl ether										
	0.209	0.209		0.223	0.214	0.216	0.206	0.212	0.168	0.207	8.03
56)	n-butyl alcohol										
	0.004	0.004		0.005	0.005		0.005	0.004		0.005	13.85
57)	benzene										
	0.959	0.955	0.838	0.976	0.911	1.007	0.859	0.975	0.796	0.920	7.93
58)	heptane										
	0.195	0.204		0.212	0.204		0.194	0.216	0.152	0.197	10.90
59)	isopropyl acetate										
	0.209	0.209		0.223	0.214		0.206	0.212		0.212	2.77
60)	1,2-dichloroethane										
	0.305	0.287		0.293	0.279	0.347	0.268	0.293	0.264	0.292	8.95
61)	trichloroethene										
	0.256	0.261		0.269	0.253	0.254	0.241	0.269	0.197	0.250	9.24
62)	ethyl acrylate										
	0.200	0.198		0.216	0.205		0.201	0.204		0.204	3.01
63)	2-nitropropane										
	0.058	0.057		0.066	0.065		0.065	0.062		0.062	6.04
64)	2-chloroethyl vinyl ether										
	0.123	0.123	0.110	0.128	0.120	0.138	0.115	0.124	0.106	0.121	7.99
65)	methyl methacrylate										
	0.042	0.049		0.058	0.055		0.053	0.054		0.052	10.93
66)	1,2-dichloropropane										
	0.215	0.226		0.232	0.218	0.249	0.207	0.227	0.174	0.219	10.13
67)	methylcyclohexane										
	0.507	0.477		0.477	0.449		0.423	0.488	0.445	0.466	6.23
68)	dibromomethane										
	0.122	0.120		0.128	0.123	0.115	0.120	0.125	0.104	0.120	6.13
69)	bromodichloromethane										
	0.264	0.263		0.307	0.301	0.297	0.294	0.280	0.216	0.278	10.69
70)	epichlorohydrin										
	0.015	0.014		0.016	0.015		0.015	0.015		0.015	3.25
71)	cis-1,3-dichloropropene										
	0.331	0.333		0.379	0.369	0.374	0.356	0.358	0.281	0.348	9.22
72)	4-methyl-2-pentanone										
	0.027	0.028		0.033	0.031	0.031	0.030	0.031	0.023	0.029	10.37
73)	3-methyl-1-butanol										
										0.000	-1.00
74) I	chlorobenzene-d5 -----ISTD-----										
75)	toluene-d8 (s)										
	1.238	1.242	1.234	1.240	1.240	1.233	1.234	1.245	1.232	1.238	0.35
76)	toluene										
	0.742	0.733	0.658	0.750	0.705	0.804	0.666	0.742	0.623	0.714	7.87
77)	trans-1,3-dichloropropene										
	0.308	0.317		0.373	0.355	0.326	0.347	0.338	0.260	0.328	10.57
78)	ethyl methacrylate										
	0.254	0.268		0.298	0.278	0.309	0.269	0.273	0.233	0.273	8.70
79)	1,1,2-trichloroethane										
	0.177	0.176		0.183	0.172	0.204	0.164	0.184	0.144	0.176	9.72
80)	2-hexanone										
	0.066	0.066		0.071	0.067	0.078	0.066	0.068	0.056	0.067	9.40
81)	tetrachloroethene										

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Initial Calibration Summary

Job Number: JC84952 **Sample:** V3C6743-ICC6743
Account: NOREASCA NOREAS, Inc. **Lab FileID:** 3C149632.D
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

		0.346	0.359	0.268	0.373	0.351	0.366	0.334	0.368	0.283	0.339	11.23
82)	1,3-dichloropropane	0.360	0.372	0.304	0.377	0.347	0.406	0.331	0.365	0.327	0.354	8.68
83)	butyl acetate	0.128	0.129		0.137	0.127		0.127	0.129	0.108	0.126	6.88
84)	dibromochloromethane	0.178	0.189		0.240	0.241	0.202	0.240	0.211	0.154	0.207	15.59
85)	1,2-dibromoethane	0.259	0.260		0.279	0.257	0.269	0.248	0.263	0.202	0.255	9.05
86)	n-butyl ether	1.189	1.224	1.061	1.225	1.145	1.291	1.107	1.206	1.005	1.161	7.78
87)	chlorobenzene	0.817	0.807	0.713	0.815	0.766	0.920	0.733	0.796	0.704	0.786	8.48
88)	1,1,1,2-tetrachloroethane	0.239	0.242		0.293	0.283	0.268	0.282	0.265	0.201	0.259	11.64
89)	ethylbenzene	1.421	1.421	1.316	1.438	1.341	1.585	1.273	1.429	1.206	1.381	8.03
90)	m,p-xylene	0.563	0.570	0.514	0.567	0.526	0.620	0.500	0.557	0.480	0.544	7.93
91)	o-xylene	1.152	1.120	1.039	1.137	1.059	1.202	1.026	1.120	0.975	1.092	6.56
92)	styrene	0.884	0.908	0.775	0.940	0.873	0.979	0.853	0.907	0.753	0.875	8.35
93)	bromoform	0.097	0.104		0.144	0.152		0.160	0.118		0.129	20.48
		----- Linear regression ----- Coefficient = 0.9974										
		Response Ratio = -0.00744 + 0.15778 *A										
94)	butyl acrylate	0.344	0.362		0.416	0.396	0.422	0.409	0.382	0.303	0.379	10.79
95)	isopropylbenzene	1.457	1.451	1.234	1.482	1.375	1.520	1.324	1.471	1.214	1.392	8.03
96)	cis-1,4-dichloro-2-butene	0.065	0.070		0.083	0.082		0.086	0.075		0.077	10.64
97) I	1,4-dichlorobenzene-d	-----ISTD-----										
98)	4-bromofluorobenzene (s)	0.817	0.838	0.846	0.815	0.808	0.824	0.799	0.821	0.830	0.822	1.76
99)	bromobenzene	0.672	0.692	0.626	0.686	0.636	0.776	0.604	0.680	0.594	0.663	8.40
100)	1,1,2,2-tetrachloroethane	0.452	0.441	0.431	0.469	0.442	0.522	0.437	0.458	0.404	0.451	7.20
101)	trans-1,4-dichloro-2-butene	0.033	0.039		0.064	0.063		0.065	0.049		0.052	26.81
		----- Linear regression ----- Coefficient = 0.9983										
		Response Ratio = -0.00341 + 0.06526 *A										
102)	1,2,3-trichloropropane	0.146	0.149		0.154	0.144		0.140	0.150	0.122	0.143	7.35
103)	n-propylbenzene	3.142	3.207		3.152	2.863	3.518	2.622	3.207	2.613	3.041	10.38
104)	2-chlorotoluene	0.648	0.666	0.534	0.657	0.612	0.708	0.578	0.653	0.539	0.622	9.67
105)	4-chlorotoluene	0.653	0.657	0.541	0.660	0.615	0.687	0.585	0.654	0.533	0.620	9.00
106)	1,3,5-trimethylbenzene	2.272	2.322	2.008	2.346	2.182	2.568	2.028	2.326	1.858	2.212	9.78
107)	tert-butylbenzene	2.074	2.090	1.725	2.087	1.946	2.146	1.819	2.129	1.702	1.969	8.99
108)	1,2,4-trimethylbenzene											

6.8.1
6

Initial Calibration Summary

Job Number: JC84952 **Sample:** V3C6743-ICC6743
Account: NOREASCA NOREAS, Inc. **Lab FileID:** 3C149632.D
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

109)	sec-butylbenzene	2.332	2.357	2.033	2.353	2.192	2.567	2.051	2.339	2.041	2.252	8.18
110)	1,3-dichlorobenzene	3.002	3.055	2.332	3.055	2.837	3.218	2.617	3.118	2.519	2.861	10.67
111)	p-isopropyltoluene	1.351	1.360	1.248	1.352	1.261	1.463	1.180	1.341	1.163	1.302	7.41
112)	1,4-dichlorobenzene	2.633	2.677	2.236	2.705	2.531	2.685	2.338	2.724	2.130	2.518	8.95
113)	1,2-dichlorobenzene	1.321	1.348	1.389	1.347	1.256	1.604	1.197	1.337	1.183	1.331	9.36
114)	n-butylbenzene	1.237	1.234	1.210	1.256	1.179	1.427	1.124	1.239	1.079	1.220	7.97
115)	1,2-dibromo-3-chloropropane	1.299	1.329	1.033	1.352	1.281	1.313	1.213	1.356	1.022	1.244	10.45
		0.070	0.085		0.114	0.115		0.115	0.096	0.052	0.092	26.79
		----- Linear regression ----- Coefficient = 0.9990										
		Response Ratio = -0.00335 + 0.11529 *A										
116)	1,3,5-Trichlorobenzene	1.248	1.221	1.024	1.254	1.178	1.335	1.100	1.244	1.049	1.184	8.84
117)	1,2,4-trichlorobenzene	1.044	1.055	0.945	1.071	1.015	1.189	0.933	1.050	0.873	1.019	9.10
118)	hexachlorobutadiene	0.644	0.652		0.700	0.676	0.603	0.623	0.692	0.490	0.635	10.62
119)	naphthalene	1.797	1.779	1.723	1.894	1.795	2.068	1.652	1.859	1.500	1.785	8.87
120)	1,2,3-trichlorobenzene	0.988	0.977	0.879	1.003	0.938	1.039	0.862	0.993	0.830	0.945	7.66
121)	hexachloroethane	0.237	0.265		0.373	0.394		0.403	0.310		0.330	21.17
		----- Linear regression ----- Coefficient = 0.9985										
		Response Ratio = -0.01860 + 0.40159 *A										
122)	Benzyl chloride	0.614	0.640		0.896	0.905		0.913	0.757		0.788	17.42
123)	2-ethylhexyl acrylate	0.317			0.524	0.536		0.530	0.396		0.460	21.54
		----- Linear regression ----- Coefficient = 0.9989										
		Response Ratio = -0.00815 + 0.54600 *A										
124)	2-methylnaphthalene	1.092	1.111		1.162	1.021		0.894	1.136		1.069	9.21

 (#) = Out of Range ### Number of calibration levels exceeded format ###

M3C6743.M

Fri Feb 15 11:14:06 2019

MS3C

Initial Calibration Verification

Job Number: JC84952 **Sample:** V3C6743-ICV6743
Account: NOREASCA NOREAS, Inc. **Lab FileID:** 3C149637.D
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\V3C6743\3C149637.D Vial: 17
 Acq On : 13 Feb 2019 11:59 pm Operator: juntaep
 Sample : ICV6743-50 Inst : MS3C
 Misc : MS32156,V3C6743,5.0,,,,1 Multiplr: 1.00
 MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\M3C6743.M (RTE Integrator)
 Title : Method SW846 8260C, Rxi624 20m x 0.18mm x 1.0um
 Last Update : Fri Feb 15 09:30:13 2019
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 30% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	99	0.00	2.58
2	ethanol			NA			
3	tertiary butyl alcohol	1.102	1.177	-6.8	100	0.00	2.64
4	1,4-dioxane	0.134	0.144	-7.5	100	0.00	5.29
5 I	pentafluorobenzene	1.000	1.000	0.0	98	0.00	4.03
6	chlorodifluoromethane	0.303	0.316	-4.3	95	0.00	1.10
7	dichlorodifluoromethane	0.432	0.505	-16.9	104	0.00	1.08
8	chloromethane	0.357	0.380	-6.4	97	0.00	1.22
9	1,3-butadiene	0.232	0.288	-24.1	113	0.00	1.32
10	vinyl chloride	0.359	0.402	-12.0	99	0.00	1.30
11	bromomethane	0.215	0.255	-18.6	107	0.00	1.54
12	chloroethane	0.213	0.239	-12.2	99	0.00	1.62
13	vinyl Bromide	0.308	0.275	10.7	78	0.00	1.75
14	trichlorofluoromethane	0.531	0.594	-11.9	99	0.00	1.77
15	ethyl ether	0.151	0.158	-4.6	95	0.00	1.99
16	2-chloropropane	0.121	0.131	-8.3	95	0.00	2.07
17	acrolein	0.031	0.031	0.0	84	0.00	2.14
18	freon 113	0.254	0.300	-18.1	103	0.00	2.13
19	1,1-dichloroethene	0.283	0.287	-1.4	91	0.00	2.16
20	acetone			NA			
21	acetonitrile			NA			
22	iodomethane	0.232	0.286	-23.3	86	0.00	2.29
23	carbon disulfide	0.793	0.886	-11.7	106	0.00	2.31
24	methylene chloride	0.309	0.305	1.3	95	0.00	2.56
25	methyl acetate	0.149	0.149	0.0	92	0.00	2.47
26	methyl tert butyl ether	0.754	0.806	-6.9	97	0.00	2.71
27	trans-1,2-dichloroethene	0.322	0.337	-4.7	95	0.00	2.73
28	hexane	0.510	0.525	-2.9	95	0.00	2.88
29	di-isopropyl ether	0.916	0.931	-1.6	92	0.00	3.08
30	ethyl tert-butyl ether	0.905	0.924	-2.1	91	0.00	3.37
31	2-butanone	0.025	0.027	-8.0	96	0.00	3.60
32	1,1-dichloroethane	0.523	0.572	-9.4	96	0.00	3.10
33	chloroprene	0.465	0.535	-15.1	101	0.00	3.13
34	acrylonitrile	0.064	0.068	-6.3	97	0.00	2.80
35	vinyl acetate	0.057	0.061	-7.0	95	0.00	3.12
	----- True	Calc.	% Drift	-----			
36	ethyl acetate	50.000	50.550	-1.1	89	0.00	3.61
	----- AvgRF	CCRF	% Dev	-----			
37	2,2-dichloropropane	0.482	0.524	-8.7	97	0.00	3.54

Initial Calibration Verification

Job Number: JC84952 **Sample:** V3C6743-ICV6743
Account: NOREASCA NOREAS, Inc. **Lab FileID:** 3C149637.D
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

38		cis-1,2-dichloroethene	0.348	0.377	-8.3	98	0.00	3.58
39		propionitrile	0.028	0.029	-3.6	96	0.00	3.72
40		bromochloromethane	0.195	0.204	-4.6	96	0.00	3.78
41		tetrahydrofuran	0.024	0.026	-8.3	99	0.00	3.78
42		chloroform	0.566	0.585	-3.4	97	0.00	3.85
43		tert-Butyl Formate	0.179	0.144	19.6	69	0.00	3.86
44		isobutyl alcohol	0.044	0.045	-2.3	95	0.00	4.26
45	S	dibromofluoromethane (s)	0.361	0.367	-1.7	98	0.00	3.99
46		methacrylonitrile	0.084	0.091	-8.3	96	0.00	3.81
47		1,1,1-trichloroethane	0.511	0.550	-7.6	96	0.00	3.96
48		cyclohexane	0.523	0.585	-11.9	101	0.00	3.94
49		1,1-dichloropropene	0.168	0.184	-9.5	97	0.00	4.11
50		tert-amyl alcohol	0.022	0.022	0.0	96	0.00	4.33
51		carbon tetrachloride	0.404	0.452	-11.9	97	0.00	4.07
52	I	1,4-difluorobenzene	1.000	1.000	0.0	98	0.00	4.69
53	S	1,2-dichloroethane-d4 (s)	0.272	0.264	2.9	96	0.00	4.31
54		2,2,4-trimethylpentane	0.927	0.958	-3.3	94	0.00	4.26
55		tert-amyl methyl ether	0.207	0.204	1.4	90	0.00	4.36
56		n-butyl alcohol	0.005	0.005	0.0	95	0.00	4.90
57		benzene	0.920	0.959	-4.2	96	0.00	4.28
58		heptane	0.197	0.231	-17.3	107	0.00	4.45
59		isopropyl acetate	0.212	0.204	3.8	90	0.00	4.36
60		1,2-dichloroethane	0.292	0.288	1.4	96	0.00	4.38
61		trichloroethene	0.250	0.267	-6.8	98	0.00	4.90
62		ethyl acrylate	0.204	0.206	-1.0	94	0.00	5.04
63		2-nitropropane	0.062	0.067	-8.1	99	0.00	5.75
64		2-chloroethyl vinyl ether	0.121	0.122	-0.8	94	0.00	5.76
65		methyl methacrylate	0.052	0.056	-7.7	95	0.00	5.27
66		1,2-dichloropropane	0.219	0.224	-2.3	95	0.00	5.17
67		methylcyclohexane	0.466	0.465	0.2	96	0.00	5.01
68		dibromomethane	0.120	0.127	-5.8	98	0.00	5.30
69		bromodichloromethane	0.278	0.295	-6.1	95	0.00	5.45
70		epichlorohydrin	0.015	0.016	-6.7	97	0.00	5.85
71		cis-1,3-dichloropropene	0.348	0.376	-8.0	97	0.00	5.89
72		4-methyl-2-pentanone	0.029	0.031	-6.9	94	0.00	6.04
73		3-methyl-1-butanol			-----NA-----			
74	I	chlorobenzene-d5	1.000	1.000	0.0	98	0.00	7.40
75	S	toluene-d8 (s)	1.238	1.242	-0.3	98	0.00	6.08
76		toluene	0.714	0.748	-4.8	98	0.00	6.15
77		trans-1,3-dichloropropene	0.328	0.345	-5.2	91	0.00	6.44
78		ethyl methacrylate	0.273	0.274	-0.4	90	0.00	6.47
79		1,1,2-trichloroethane	0.176	0.181	-2.8	97	0.00	6.60
80		2-hexanone	0.067	0.068	-1.5	94	0.00	6.80
81		tetrachloroethene			-----NA-----			
82		1,3-dichloropropane	0.354	0.374	-5.6	97	0.00	6.75
83		butyl acetate	0.126	0.131	-4.0	94	0.00	6.89
84		dibromochloromethane	0.207	0.244	-17.9	100	0.00	6.92
85		1,2-dibromoethane	0.255	0.257	-0.8	90	0.00	7.02
86		n-butyl ether	1.161	1.174	-1.1	94	0.00	7.47
87		chlorobenzene	0.786	0.805	-2.4	97	0.00	7.42
88		1,1,1,2-tetrachloroethane	0.259	0.291	-12.4	98	0.00	7.51
89		ethylbenzene	1.381	1.441	-4.3	98	0.00	7.49
90		m,p-xylene	0.544	0.576	-5.9	100	0.00	7.60
91		o-xylene	1.092	1.141	-4.5	98	0.00	7.93
92		styrene	0.875	0.923	-5.5	96	0.00	7.96
		----- True	Calc.	% Drift	-----			
93		bromoform	50.000	49.962	0.1	102	0.00	8.13

6.8.2
6



Initial Calibration Verification

Job Number: JC84952

Sample: V3C6743-ICV6743

Account: NOREASCA NOREAS, Inc.

Lab FileID: 3C149637.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

		AvgRF	CCRF	% Dev			
94	butyl acrylate	0.379	0.407	-7.4	96	0.00	7.92
95	isopropylbenzene	1.392	1.494	-7.3	99	0.00	8.23
96	cis-1,4-dichloro-2-butene	0.077	0.076	1.3	90	0.00	8.36
97 I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	98	0.00	9.33
98 S	4-bromofluorobenzene (s)	0.822	0.818	0.5	98	0.00	8.40
99	bromobenzene	0.663	0.673	-1.5	96	0.00	8.51
100	1,1,2,2-tetrachloroethane	0.451	0.446	1.1	93	0.00	8.55
		True	Calc.	% Drift			
101	trans-1,4-dichloro-2-bute	50.000	55.414	-10.8	104	0.00	8.60
		AvgRF	CCRF	% Dev			
102	1,2,3-trichloropropane	0.143	0.148	-3.5	94	0.00	8.59
103	n-propylbenzene	3.041	3.179	-4.5	98	0.00	8.57
104	2-chlorotoluene	0.622	0.655	-5.3	97	0.00	8.66
105	4-chlorotoluene	0.620	0.667	-7.6	99	0.00	8.75
106	1,3,5-trimethylbenzene	2.212	2.341	-5.8	97	0.00	8.72
107	tert-butylbenzene	1.969	2.115	-7.4	99	0.00	8.97
108	1,2,4-trimethylbenzene	2.252	2.396	-6.4	99	0.00	9.02
109	sec-butylbenzene	2.861	3.129	-9.4	100	0.00	9.14
110	1,3-dichlorobenzene	1.302	1.335	-2.5	96	0.00	9.26
111	p-isopropyltoluene	2.518	2.758	-9.5	99	0.00	9.26
112	1,4-dichlorobenzene	1.331	1.309	1.7	95	0.00	9.34
113	1,2-dichlorobenzene	1.220	1.221	-0.1	95	0.00	9.64
114	n-butylbenzene	1.244	1.365	-9.7	98	0.00	9.59
		True	Calc.	% Drift			
115	1,2-dibromo-3-chloropropa	50.000	49.548	0.9	95	0.00	10.27
		AvgRF	CCRF	% Dev			
116	1,3,5-Trichlorobenzene	1.184	1.197	-1.1	93	0.00	10.39
117	1,2,4-trichlorobenzene	1.019	1.013	0.6	92	0.00	10.89
118	hexachlorobutadiene	0.635	0.681	-7.2	95	0.00	10.97
119	naphthalene	1.785	1.801	-0.9	93	0.00	11.08
120	1,2,3-trichlorobenzene	0.945	0.928	1.8	90	0.00	11.27
		True	Calc.	% Drift			
121	hexachloroethane	50.000	51.693	-3.4	104	0.00	9.80
		AvgRF	CCRF	% Dev			
122	Benzyl chloride	0.788	0.675	14.3	73	0.00	9.46
		True	Calc.	% Drift			
123	2-ethylhexyl acrylate	10.000	9.962	0.4	94	0.00	11.02
		AvgRF	CCRF	% Dev			
124	2-methylnaphthalene	1.069	1.159	-8.4	97	0.00	11.94

(#) = Out of Range
3C149632.D M3C6743.M

SPCC's out = 0 CCC's out = 0
Fri Feb 15 11:14:05 2019 MS3C

6.8.2
6

Initial Calibration Verification

Job Number: JC84952 **Sample:** V3C6743-ICV6743
Account: NOREASCA NOREAS, Inc. **Lab FileID:** 3C149638.D
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\V3C6743\3C149638.D Vial: 18
 Acq On : 14 Feb 2019 12:23 am Operator: juntaep
 Sample : ICV6743-50 Inst : MS3C
 Misc : MS32156,V3C6743,5.0,,,,,1 Multiplr: 1.00
 MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\M3C6743.M (RTE Integrator)
 Title : Method SW846 8260C, Rxi624 20m x 0.18mm x 1.0um
 Last Update : Thu Feb 14 14:08:59 2019
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 30% Max. Rel. Area : 200%

Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I Tert Butyl Alcohol-d9	1.000	1.000	0.0	90	0.00	2.57
2 ethanol			NA			
3 tertiary butyl alcohol			NA			
4 1,4-dioxane			NA			
5 I pentafluorobenzene	1.000	1.000	0.0	98	0.00	4.03
6 chlorodifluoromethane			NA			
7 dichlorodifluoromethane			NA			
8 chloromethane			NA			
9 1,3-butadiene			NA			
10 vinyl chloride			NA			
11 bromomethane			NA			
12 chloroethane			NA			
13 vinyl Bromide			NA			
14 trichlorofluoromethane			NA			
15 ethyl ether			NA			
16 2-chloropropane			NA			
17 acrolein			NA			
18 freon 113			NA			
19 1,1-dichloroethene			NA			
20 acetone	0.016	0.015	6.3	85	0.00	2.25
21 acetonitrile	0.024	0.023	4.2	89	0.00	2.51
22 iodomethane			NA			
23 carbon disulfide			NA			
24 methylene chloride			NA			
25 methyl acetate			NA			
26 methyl tert butyl ether			NA			
27 trans-1,2-dichloroethene			NA			
28 hexane			NA			
29 di-isopropyl ether			NA			
30 ethyl tert-butyl ether			NA			
31 2-butanone			NA			
32 1,1-dichloroethane			NA			
33 chloroprene			NA			
34 acrylonitrile			NA			
35 vinyl acetate			NA			
----- True		Calc.	% Drift	-----		
36 ethyl acetate			NA			
----- AvgRF		CCRF	% Dev	-----		
37 2,2-dichloropropane			NA			

6.8.3
6

Initial Calibration Verification

Job Number: JC84952 **Sample:** V3C6743-ICV6743
Account: NOREASCA NOREAS, Inc. **Lab FileID:** 3C149638.D
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

38	cis-1,2-dichloroethene							
39	propionitrile							
40	bromochloromethane							
41	tetrahydrofuran							
42	chloroform							
43	tert-Butyl Formate							
44	isobutyl alcohol							
45 S	dibromofluoromethane (s)	0.361	0.358	0.8	95	0.00	3.99	
46	methacrylonitrile							
47	1,1,1-trichloroethane							
48	cyclohexane							
49	1,1-dichloropropene							
50	tert-amyl alcohol							
51	carbon tetrachloride							
52 I	1,4-difluorobenzene	1.000	1.000	0.0	96	0.00	4.69	
53 S	1,2-dichloroethane-d4 (s)	0.272	0.265	2.6	95	0.00	4.31	
54	2,2,4-trimethylpentane							
55	tert-amyl methyl ether							
56	n-butyl alcohol							
57	benzene							
58	heptane							
59	isopropyl acetate							
60	1,2-dichloroethane							
61	trichloroethene							
62	ethyl acrylate							
63	2-nitropropane							
64	2-chloroethyl vinyl ether							
65	methyl methacrylate							
66	1,2-dichloropropane							
67	methylcyclohexane							
68	dibromomethane							
69	bromodichloromethane							
70	epichlorohydrin							
71	cis-1,3-dichloropropene							
72	4-methyl-2-pentanone							
73	3-methyl-1-butanol							
74 I	chlorobenzene-d5	1.000	1.000	0.0	97	0.00	7.40	
75 S	toluene-d8 (s)	1.238	1.236	0.2	97	0.00	6.08	
76	toluene							
77	trans-1,3-dichloropropene							
78	ethyl methacrylate							
79	1,1,2-trichloroethane							
80	2-hexanone							
81	tetrachloroethene	0.339	0.390	-15.0	101	0.00	6.62	
82	1,3-dichloropropane							
83	butyl acetate							
84	dibromochloromethane							
85	1,2-dibromoethane							
86	n-butyl ether							
87	chlorobenzene							
88	1,1,1,2-tetrachloroethane							
89	ethylbenzene							
90	m,p-xylene							
91	o-xylene							
92	styrene							
93	bromoform							

----- True Calc. % Drift -----
 -----NA-----

6.8.3

6

Initial Calibration Verification

Job Number: JC84952

Sample: V3C6743-ICV6743

Account: NOREASCA NOREAS, Inc.

Lab FileID: 3C149638.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

		AvgRF	CCRF	% Dev			
94	butyl acrylate			NA			
95	isopropylbenzene			NA			
96	cis-1,4-dichloro-2-butene			NA			
97 I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	97	0.00	9.33
98 S	4-bromofluorobenzene (s)	0.822	0.817	0.6	97	0.00	8.40
99	bromobenzene			NA			
100	1,1,2,2-tetrachloroethane			NA			
		True	Calc.	% Drift			
101	trans-1,4-dichloro-2-bute			NA			
		AvgRF	CCRF	% Dev			
102	1,2,3-trichloropropane			NA			
103	n-propylbenzene			NA			
104	2-chlorotoluene			NA			
105	4-chlorotoluene			NA			
106	1,3,5-trimethylbenzene			NA			
107	tert-butylbenzene			NA			
108	1,2,4-trimethylbenzene			NA			
109	sec-butylbenzene			NA			
110	1,3-dichlorobenzene			NA			
111	p-isopropyltoluene			NA			
112	1,4-dichlorobenzene			NA			
113	1,2-dichlorobenzene			NA			
114	n-butylbenzene			NA			
		True	Calc.	% Drift			
115	1,2-dibromo-3-chloropropa			NA			
		AvgRF	CCRF	% Dev			
116	1,3,5-Trichlorobenzene			NA			
117	1,2,4-trichlorobenzene			NA			
118	hexachlorobutadiene			NA			
119	naphthalene			NA			
120	1,2,3-trichlorobenzene			NA			
		True	Calc.	% Drift			
121	hexachloroethane			NA			
		AvgRF	CCRF	% Dev			
122	Benzyl chloride			NA			
		True	Calc.	% Drift			
123	2-ethylhexyl acrylate			NA			
		AvgRF	CCRF	% Dev			
124	2-methylnaphthalene			NA			

(#) = Out of Range
3C149632.D M3C6743.M

SPCC's out = 0 CCC's out = 0
Thu Feb 14 14:13:20 2019 MS3C

6.8.3

6

Continuing Calibration Summary

Job Number: JC84952 **Sample:** V3C6777-CC6743
Account: NOREASCA NOREAS, Inc. **Lab FileID:** 3C150498.D
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Data File : X:\voa-gcms\complete...ng\v3c6777\3c150498.d Vial: 1
 Acq On : 25 Mar 2019 9:10 am Operator: Prashans
 Sample : CC6743-50 Inst : MS3C
 Misc : MS33397,V3C6777,5.0,,,,,1 Multiplr: 1.00
 MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\M3C6743.M (RTE Integrator)
 Title : Method SW846 8260C, Rxi624 20m x 0.18mm x 1.0um
 Last Update : Mon Sep 13 11:48:20 2010
 Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	103	0.00	2.57
2	ethanol			-----NA-----			
3	tertiary butyl alcohol	1.102	1.068	3.1	94	0.00	2.64
4	1,4-dioxane	0.134	0.149	-11.2	108	0.00	5.29
5 I	pentafluorobenzene	1.000	1.000	0.0	97	0.00	4.03
6	chlorodifluoromethane	0.303	0.309	-2.0	92	0.00	1.10
7	dichlorodifluoromethane	0.432	0.397	8.1	81	0.00	1.08
8	chloromethane	0.357	0.338	5.3	85	0.00	1.22
9	1,3-butadiene	0.232	0.253	-9.1	98	0.00	1.32
10	vinyl chloride	0.359	0.345	3.9	84	0.00	1.29
11	bromomethane	0.215	0.211	1.9	88	0.00	1.54
12	chloroethane	0.213	0.211	0.9	86	0.00	1.62
13	vinyl Bromide	0.308	0.222	27.9#	62	0.00	1.75
14	trichlorofluoromethane	0.531	0.482	9.2	80	0.00	1.77
15	ethyl ether	0.151	0.153	-1.3	91	0.00	1.99
16	2-chloropropane	0.121	0.117	3.3	84	0.00	2.07
17	acrolein	0.031	0.041#	-32.3#	111	0.00	2.14
18	freon 113	0.254	0.274	-7.9	93	0.00	2.13
19	1,1-dichloroethene	0.283	0.280	1.1	87	0.00	2.16
20	acetone	0.016	0.019#	-18.7	107	0.00	2.25
21	acetonitrile	0.024	0.027#	-12.5	104	0.00	2.51
22	iodomethane	0.232	0.222	4.3	66	0.00	2.29
23	carbon disulfide	0.793	0.756	4.7	90	0.00	2.31
24	methylene chloride	0.309	0.290	6.1	89	0.00	2.56
25	methyl acetate	0.149	0.157	-5.4	95	0.00	2.47
26	methyl tert butyl ether	0.754	0.724	4.0	86	0.00	2.71
27	trans-1,2-dichloroethene	0.322	0.309	4.0	86	0.00	2.73
28	hexane	0.510	0.539	-5.7	96	0.00	2.88
29	di-isopropyl ether	0.916	0.853	6.9	83	0.00	3.08
30	ethyl tert-butyl ether	0.905	0.835	7.7	82	0.00	3.36
31	2-butanone	0.025	0.028#	-12.0	100	0.00	3.59
32	1,1-dichloroethane	0.523	0.504	3.6	84	0.00	3.09
33	chloroprene	0.465	0.451	3.0	84	0.00	3.13
34	acrylonitrile	0.064	0.074	-15.6	103	0.00	2.80
35	vinyl acetate	0.057	0.065	-14.0	100	0.00	3.12
	----- True		Calc.	% Drift	-----		
36	ethyl acetate	50.000	55.586	-11.2	97	0.00	3.61
	----- AvgRF		CCRF	% Dev	-----		
37	2,2-dichloropropane	0.482	0.441	8.5	80	0.00	3.54

6.8.4
6

Continuing Calibration Summary

Job Number: JC84952

Sample: V3C6777-CC6743

Account: NOREASCA NOREAS, Inc.

Lab FileID: 3C150498.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

38		cis-1,2-dichloroethene	0.348	0.338	2.9	86	0.00	3.57	
39		propionitrile	0.028	0.033#	-17.9	108	0.00	3.71	
40		bromochloromethane	0.195	0.196	-0.5	91	0.00	3.78	
41		tetrahydrofuran	0.024	0.030#	-25.0#	112	0.00	3.78	
42		chloroform	0.566	0.520	8.1	85	0.00	3.84	
43		tert-Butyl Formate	0.179	0.146	18.4	69	0.00	3.85	
44		isobutyl alcohol	0.044	0.040#	9.1	83	0.00	4.26	
45	S	dibromofluoromethane (s)	0.361	0.372	-3.0	99	0.00	3.99	
46		methacrylonitrile	0.084	0.101	-20.2#	104	0.00	3.81	
47		1,1,1-trichloroethane	0.511	0.477	6.7	82	0.00	3.96	
48		cyclohexane	0.523	0.461	11.9	79	0.00	3.94	
49		1,1-dichloropropene	0.168	0.162	3.6	85	0.00	4.10	
50		tert-amyl alcohol	0.022	0.020#	9.1	86	0.00	4.33	
51		carbon tetrachloride	0.404	0.409	-1.2	87	0.00	4.06	
52	I	1,4-difluorobenzene	1.000	1.000	0.0	95	0.00	4.69	
53	S	1,2-dichloroethane-d4 (s)	0.272	0.278	-2.2	98	0.00	4.31	
54		2,2,4-trimethylpentane	0.927	0.888	4.2	85	0.00	4.26	
55		tert-amyl methyl ether	0.207	0.203	1.9	87	0.00	4.36	
56		n-butyl alcohol	0.005	0.006#	-20.0	104	0.00	4.90	
57		benzene	0.920	0.886	3.7	86	0.00	4.28	
58		heptane	0.197	0.192	2.5	86	0.00	4.45	
59		isopropyl acetate	0.212	0.203	4.2	87	0.00	4.36	
60		1,2-dichloroethane	0.292	0.267	8.6	87	0.00	4.38	
61		trichloroethene	0.250	0.241	3.6	85	0.00	4.90	
62		ethyl acrylate	0.204	0.230	-12.7	101	0.00	5.04	
63		2-nitropropane	0.062	0.065	-4.8	93	0.00	5.75	
64		2-chloroethyl vinyl ether	0.121	0.127	-5.0	95	0.00	5.76	
65		methyl methacrylate	0.052	0.057	-9.6	94	0.00	5.27	
66		1,2-dichloropropane	0.219	0.209	4.6	86	0.00	5.17	
67		methylcyclohexane	0.466	0.435	6.7	87	0.00	5.01	
68		dibromomethane	0.120	0.124	-3.3	93	0.00	5.29	
69		bromodichloromethane	0.278	0.288	-3.6	89	0.00	5.45	
70		epichlorohydrin	0.015	0.019#	-26.7#	111	0.00	5.84	
71		cis-1,3-dichloropropene	0.348	0.353	-1.4	89	0.00	5.89	
72		4-methyl-2-pentanone	0.029	0.035#	-20.7#	101	0.00	6.03	
73		3-methyl-1-butanol			-----NA-----				
74	I	chlorobenzene-d5	1.000	1.000	0.0	95	0.00	7.40	
75	S	toluene-d8 (s)	1.238	1.294	-4.5	99	0.00	6.08	
76		toluene	0.714	0.673	5.7	85	0.00	6.15	
77		trans-1,3-dichloropropene	0.328	0.344	-4.9	88	0.00	6.43	
78		ethyl methacrylate	0.273	0.287	-5.1	92	0.00	6.47	
79		1,1,2-trichloroethane	0.176	0.177	-0.6	92	0.00	6.60	
80		2-hexanone	0.067	0.078	-16.4	104	0.00	6.80	
81		tetrachloroethene	0.339	0.347	-2.4	89	0.00	6.62	
82		1,3-dichloropropane	0.354	0.352	0.6	89	0.00	6.75	
83		butyl acetate	0.126	0.141	-11.9	98	0.00	6.89	
84		dibromochloromethane	0.207	0.248	-19.8	99	0.00	6.92	
85		1,2-dibromoethane	0.255	0.272	-6.7	93	0.00	7.01	
86		n-butyl ether	1.161	1.029	11.4	80	0.00	7.47	
87		chlorobenzene	0.786	0.746	5.1	87	0.00	7.42	
88		1,1,1,2-tetrachloroethane	0.259	0.267	-3.1	87	0.00	7.50	
89		ethylbenzene	1.381	1.293	6.4	86	0.00	7.49	
90		m,p-xylene	0.544	0.513	5.7	86	0.00	7.60	
91		o-xylene	1.092	1.014	7.1	85	0.00	7.93	
92		styrene	0.875	0.844	3.5	86	0.00	7.96	
93		----- True	50.000	Calc.	55.708	% Drift	-----		
		bromoform				-11.4	111	0.00	8.13

Continuing Calibration Summary

Job Number: JC84952

Sample: V3C6777-CC6743

Account: NOREASCA NOREAS, Inc.

Lab FileID: 3C150498.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

-----		AvgRF	CCRF	% Dev	-----		
94	butyl acrylate	0.379	0.392	-3.4	90	0.00	7.92
95	isopropylbenzene	1.392	1.315	5.5	85	0.00	8.23
96	cis-1,4-dichloro-2-butene	0.077	0.083	-7.8	95	0.00	8.36
97 I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	95	0.00	9.32
98 S	4-bromofluorobenzene (s)	0.822	0.842	-2.4	98	0.00	8.39
99	bromobenzene	0.663	0.630	5.0	87	0.00	8.51
100	1,1,2,2-tetrachloroethane	0.451	0.476	-5.5	97	0.00	8.55
-----		True	Calc.	% Drift	-----		
101	trans-1,4-dichloro-2-bute	50.000	52.805	-5.6	97	0.00	8.60
-----		AvgRF	CCRF	% Dev	-----		
102	1,2,3-trichloropropane	0.143	0.152	-6.3	94	0.00	8.58
103	n-propylbenzene	3.041	2.818	7.3	85	0.00	8.56
104	2-chlorotoluene	0.622	0.601	3.4	87	0.00	8.66
105	4-chlorotoluene	0.620	0.603	2.7	87	0.00	8.75
106	1,3,5-trimethylbenzene	2.212	2.018	8.8	82	0.00	8.71
107	tert-butylbenzene	1.969	1.818	7.7	83	0.00	8.97
108	1,2,4-trimethylbenzene	2.252	2.034	9.7	82	0.00	9.02
109	sec-butylbenzene	2.861	2.682	6.3	84	0.00	9.14
110	1,3-dichlorobenzene	1.302	1.225	5.9	86	0.00	9.26
111	p-isopropyltoluene	2.518	2.373	5.8	84	0.00	9.26
112	1,4-dichlorobenzene	1.331	1.229	7.7	87	0.00	9.34
113	1,2-dichlorobenzene	1.220	1.152	5.6	87	0.00	9.63
114	n-butylbenzene	1.244	1.173	5.7	83	0.00	9.59
-----		True	Calc.	% Drift	-----		
115	1,2-dibromo-3-chloropropa	50.000	60.133	-20.3#	113	0.00	10.27
-----		AvgRF	CCRF	% Dev	-----		
116	1,3,5-Trichlorobenzene	1.184	1.165	1.6	89	0.00	10.39
117	1,2,4-trichlorobenzene	1.019	1.011	0.8	90	0.00	10.88
118	hexachlorobutadiene	0.635	0.664	-4.6	90	0.00	10.97
119	naphthalene	1.785	1.909	-6.9	96	0.00	11.07
120	1,2,3-trichlorobenzene	0.945	0.945	0.0	90	0.00	11.27
-----		True	Calc.	% Drift	-----		
121	hexachloroethane	50.000	50.481	-1.0	99	0.00	9.80
-----		AvgRF	CCRF	% Dev	-----		
122	Benzyl chloride	0.788	0.966	-22.6#	103	0.00	9.46
-----		True	Calc.	% Drift	-----		
123	2-ethylhexyl acrylate	10.000	8.932	10.7	81	0.00	11.02
-----		AvgRF	CCRF	% Dev	-----		
124	2-methylnaphthalene	1.069	1.315	-23.0#	108	0.00	11.94

(#) = Out of Range
3C149632.D M3C6743.M

SPCC's out = 0 CCC's out = 0
Fri Mar 29 13:21:16 2019

6.8.4
6

Continuing Calibration Summary

Job Number: JC84952 **Sample:** V3C6778-CC6743
Account: NOREASCA NOREAS, Inc. **Lab FileID:** 3C150519.D
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\eu...c6778-rush\3c150519.d Vial: 22
 Acq On : 25 Mar 2019 5:31 pm Operator: Prashans
 Sample : cc6743-50 Inst : MS3C
 Misc : MS33391,V3C6778,5.0,,,,,1 Multiplr: 1.00
 MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\M3C6743.M (RTE Integrator)
 Title : Method SW846 8260C, Rxi624 20m x 0.18mm x 1.0um
 Last Update : Mon Sep 13 11:48:20 2010
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	95	0.00	2.58
2	ethanol			-----NA-----			
3	tertiary butyl alcohol	1.102	1.065	3.4	87	0.00	2.64
4	1,4-dioxane	0.134	0.156	-16.4	105	0.00	5.29
5 I	pentafluorobenzene	1.000	1.000	0.0	99	0.00	4.03
6	chlorodifluoromethane	0.303	0.338	-11.6	103	0.00	1.10
7	dichlorodifluoromethane	0.432	0.417	3.5	87	0.00	1.08
8	chloromethane	0.357	0.370	-3.6	95	0.00	1.22
9	1,3-butadiene	0.232	0.273	-17.7	108	0.00	1.32
10	vinyl chloride	0.359	0.377	-5.0	93	0.00	1.30
11	bromomethane	0.215	0.213	0.9	90	0.00	1.54
12	chloroethane	0.213	0.230	-8.0	96	0.00	1.62
13	vinyl Bromide	0.308	0.240	22.1#	69	0.00	1.75
14	trichlorofluoromethane	0.531	0.516	2.8	87	0.00	1.77
15	ethyl ether	0.151	0.166	-9.9	101	0.00	1.99
16	2-chloropropane	0.121	0.125	-3.3	91	0.00	2.07
17	acrolein	0.031	0.040	-29.0#	111	0.00	2.14
18	freon 113	0.254	0.293	-15.4	101	0.00	2.13
19	1,1-dichloroethene	0.283	0.304	-7.4	97	0.00	2.16
20	acetone	0.016	0.018	-12.5	103	0.00	2.25
21	acetonitrile	0.024	0.026	-8.3	102	0.00	2.51
22	iodomethane	0.232	0.262	-12.9	80	0.00	2.29
23	carbon disulfide	0.793	0.817	-3.0	99	0.00	2.31
24	methylene chloride	0.309	0.313	-1.3	98	0.00	2.56
25	methyl acetate	0.149	0.153	-2.7	95	0.00	2.47
26	methyl tert butyl ether	0.754	0.766	-1.6	93	0.00	2.71
27	trans-1,2-dichloroethene	0.322	0.338	-5.0	96	0.00	2.73
28	hexane	0.510	0.529	-3.7	96	0.00	2.88
29	di-isopropyl ether	0.916	0.954	-4.1	95	0.00	3.08
30	ethyl tert-butyl ether	0.905	0.923	-2.0	92	0.00	3.36
31	2-butanone	0.025	0.028	-12.0	101	0.00	3.60
32	1,1-dichloroethane	0.523	0.551	-5.4	94	0.00	3.09
33	chloroprene	0.465	0.491	-5.6	94	0.00	3.13
34	acrylonitrile	0.064	0.072	-12.5	104	0.00	2.80
35	vinyl acetate	0.057	0.068	-19.3	106	0.00	3.12
	----- True		Calc.	% Drift	-----		
36	ethyl acetate	50.000	53.796	-7.6	96	0.00	3.61
	----- AvgRF		CCRF	% Dev	-----		
37	2,2-dichloropropane	0.482	0.441	8.5	82	0.00	3.54

Continuing Calibration Summary

Job Number: JC84952

Sample: V3C6778-CC6743

Account: NOREASCA NOREAS, Inc.

Lab FileID: 3C150519.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

38		cis-1,2-dichloroethene	0.348	0.369	-6.0	96	0.00	3.57
39		propionitrile	0.028	0.031	-10.7	104	0.00	3.71
40		bromochloromethane	0.195	0.209	-7.2	99	0.00	3.78
41		tetrahydrofuran	0.024	0.028	-16.7	109	0.00	3.78
42		chloroform	0.566	0.560	1.1	93	0.00	3.85
43		tert-Butyl Formate	0.179	0.135	24.6#	65	0.00	3.86
44		isobutyl alcohol	0.044	0.040	9.1	84	0.00	4.26
45	S	dibromofluoromethane (s)	0.361	0.385	-6.6	104	0.00	3.99
46		methacrylonitrile	0.084	0.099	-17.9	105	0.00	3.81
47		1,1,1-trichloroethane	0.511	0.513	-0.4	90	0.00	3.96
48		cyclohexane	0.523	0.490	6.3	85	0.00	3.94
49		1,1-dichloropropene	0.168	0.174	-3.6	93	0.00	4.11
50		tert-amyl alcohol	0.022	0.018	18.2	78	0.00	4.33
51		carbon tetrachloride	0.404	0.428	-5.9	93	0.00	4.07
52	I	1,4-difluorobenzene	1.000	1.000	0.0	99	0.00	4.69
53	S	1,2-dichloroethane-d4 (s)	0.272	0.282	-3.7	104	0.00	4.31
54		2,2,4-trimethylpentane	0.927	0.867	6.5	86	0.00	4.26
55		tert-amyl methyl ether	0.207	0.210	-1.4	94	0.00	4.36
56		n-butyl alcohol	0.005	0.005	0.0	98	0.00	4.90
57		benzene	0.920	0.946	-2.8	96	0.00	4.28
58		heptane	0.197	0.181	8.1	84	0.00	4.45
59		isopropyl acetate	0.212	0.210	0.9	94	0.00	4.36
60		1,2-dichloroethane	0.292	0.280	4.1	95	0.00	4.38
61		trichloroethene	0.250	0.255	-2.0	94	0.00	4.90
62		ethyl acrylate	0.204	0.228	-11.8	105	0.00	5.04
63		2-nitropropane	0.062	0.061	1.6	91	0.00	5.75
64		2-chloroethyl vinyl ether	0.121	0.129	-6.6	100	0.00	5.76
65		methyl methacrylate	0.052	0.056	-7.7	96	0.00	5.27
66		1,2-dichloropropane	0.219	0.225	-2.7	96	0.00	5.17
67		methylcyclohexane	0.466	0.448	3.9	93	0.00	5.01
68		dibromomethane	0.120	0.129	-7.5	100	0.00	5.29
69		bromodichloromethane	0.278	0.304	-9.4	98	0.00	5.45
70		epichlorohydrin	0.015	0.016	-6.7	102	0.00	5.84
71		cis-1,3-dichloropropene	0.348	0.372	-6.9	97	0.00	5.89
72		4-methyl-2-pentanone	0.029	0.033	-13.8	101	0.00	6.03
73		3-methyl-1-butanol			-----NA-----			
74	I	chlorobenzene-d5	1.000	1.000	0.0	101	0.00	7.40
75	S	toluene-d8 (s)	1.238	1.285	-3.8	105	0.00	6.08
76		toluene	0.714	0.710	0.6	96	0.00	6.15
77		trans-1,3-dichloropropene	0.328	0.355	-8.2	97	0.00	6.43
78		ethyl methacrylate	0.273	0.286	-4.8	97	0.00	6.47
79		1,1,2-trichloroethane	0.176	0.180	-2.3	100	0.00	6.60
80		2-hexanone	0.067	0.072	-7.5	103	0.00	6.80
81		tetrachloroethene	0.339	0.352	-3.8	96	0.00	6.62
82		1,3-dichloropropane	0.354	0.368	-4.0	99	0.00	6.75
83		butyl acetate	0.126	0.136	-7.9	101	0.00	6.89
84		dibromochloromethane	0.207	0.248	-19.8	105	0.00	6.92
85		1,2-dibromoethane	0.255	0.273	-7.1	99	0.00	7.01
86		n-butyl ether	1.161	1.108	4.6	92	0.00	7.47
87		chlorobenzene	0.786	0.775	1.4	96	0.00	7.42
88		1,1,1,2-tetrachloroethane	0.259	0.281	-8.5	97	0.00	7.50
89		ethylbenzene	1.381	1.338	3.1	94	0.00	7.49
90		m,p-xylene	0.544	0.535	1.7	96	0.00	7.60
91		o-xylene	1.092	1.064	2.6	95	0.00	7.93
92		styrene	0.875	0.877	-0.2	95	0.00	7.96
93		----- True	50.000	Calc.	% Drift	-----		
		bromoform		53.962	-7.9	114	0.00	8.13

6.8.5

6

Continuing Calibration Summary

Job Number: JC84952

Sample: V3C6778-CC6743

Account: NOREASCA NOREAS, Inc.

Lab FileID: 3C150519.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

-----		AvgRF	CCRF	% Dev	-----		
94	butyl acrylate	0.379	0.399	-5.3	97	0.00	7.92
95	isopropylbenzene	1.392	1.363	2.1	93	0.00	8.23
96	cis-1,4-dichloro-2-butene	0.077	0.078	-1.3	96	0.00	8.36
97 I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	102	0.00	9.32
98 S	4-bromofluorobenzene (s)	0.822	0.845	-2.8	106	0.00	8.39
99	bromobenzene	0.663	0.658	0.8	98	0.00	8.51
100	1,1,2,2-tetrachloroethane	0.451	0.471	-4.4	102	0.00	8.55
-----		True	Calc.	% Drift	-----		
101	trans-1,4-dichloro-2-bute	50.000	49.064	1.9	96	0.00	8.60
-----		AvgRF	CCRF	% Dev	-----		
102	1,2,3-trichloropropane	0.143	0.151	-5.6	100	0.00	8.58
103	n-propylbenzene	3.041	2.883	5.2	93	0.00	8.56
104	2-chlorotoluene	0.622	0.622	0.0	96	0.00	8.65
105	4-chlorotoluene	0.620	0.621	-0.2	96	0.00	8.75
106	1,3,5-trimethylbenzene	2.212	2.095	5.3	91	0.00	8.71
107	tert-butylbenzene	1.969	1.881	4.5	92	0.00	8.97
108	1,2,4-trimethylbenzene	2.252	2.105	6.5	91	0.00	9.02
109	sec-butylbenzene	2.861	2.768	3.3	92	0.00	9.14
110	1,3-dichlorobenzene	1.302	1.277	1.9	96	0.00	9.26
111	p-isopropyltoluene	2.518	2.413	4.2	91	0.00	9.26
112	1,4-dichlorobenzene	1.331	1.287	3.3	97	0.00	9.34
113	1,2-dichlorobenzene	1.220	1.193	2.2	97	0.00	9.64
114	n-butylbenzene	1.244	1.215	2.3	92	0.00	9.59
-----		True	Calc.	% Drift	-----		
115	1,2-dibromo-3-chloropropa	50.000	54.664	-9.3	109	0.00	10.27
-----		AvgRF	CCRF	% Dev	-----		
116	1,3,5-Trichlorobenzene	1.184	1.210	-2.2	98	0.00	10.39
117	1,2,4-trichlorobenzene	1.019	1.064	-4.4	101	0.00	10.88
118	hexachlorobutadiene	0.635	0.659	-3.8	96	0.00	10.97
119	naphthalene	1.785	1.889	-5.8	102	0.00	11.07
120	1,2,3-trichlorobenzene	0.945	0.988	-4.6	100	0.00	11.27
-----		True	Calc.	% Drift	-----		
121	hexachloroethane	50.000	50.787	-1.6	106	0.00	9.80
-----		AvgRF	CCRF	% Dev	-----		
122	Benzyl chloride	0.788	0.836	-6.1	95	0.00	9.46
-----		True	Calc.	% Drift	-----		
123	2-ethylhexyl acrylate	10.000	9.351	6.5	91	0.00	11.02
-----		AvgRF	CCRF	% Dev	-----		
124	2-methylnaphthalene	1.069	1.311	-22.6#	115	0.00	11.94

(#) = Out of Range
3C149632.D M3C6743.M

SPCC's out = 0 CCC's out = 0
Mon Mar 25 23:39:28 2019

6.8.5

6

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Percent Solids Raw Data Summary

Percent Solids Raw Data Summary

Job Number: JC84952
Account: NOREASCA NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Sample: JC84952-1 **Analyzed:** 25-MAR-19 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: NWIRP-S1-WC-CF-021

Wet Weight (Total)	35.69	g
Tare Weight	27.41	g
Dry Weight (Total)	35.28	g
Solids, Percent	95	%

Sample: JC84952-2 **Analyzed:** 25-MAR-19 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: NWIRP-S1-WC-CF-022

Wet Weight (Total)	35.14	g
Tare Weight	25.78	g
Dry Weight (Total)	34.87	g
Solids, Percent	97.1	%

Sample: JC84952-3 **Analyzed:** 25-MAR-19 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: NWIRP-S1-WC-CF-023

Wet Weight (Total)	27.29	g
Tare Weight	18.94	g
Dry Weight (Total)	27.28	g
Solids, Percent	99.9	%

Sample Summary

NOREAS, Inc.

Job No: JC84952

Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Project No: 500689

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
JC84952-1	03/21/19	11:01 NS	03/22/19	SO	Soil	NWIRP-S1-WC-CF-021
JC84952-2	03/21/19	11:09 NS	03/22/19	SO	Soil	NWIRP-S1-WC-CF-022
JC84952-3	03/21/19	11:17 NS	03/22/19	SO	Soil	NWIRP-S1-WC-CF-023

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Report of Analysis

Page 1 of 2

Client Sample ID:	NWIRP-S1-WC-CF-021		
Lab Sample ID:	JC84952-1	Date Sampled:	03/21/19
Matrix:	SO - Soil	Date Received:	03/22/19
Method:	SW846 8260C	Percent Solids:	95.0
Project:	Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3C150502.D	1	03/25/19 10:58	PS	n/a	n/a	V3C6777
Run #2							

	Initial Weight
Run #1	4.5 g
Run #2	

VOA Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
67-64-1	Acetone	32.5	12	8.8	5.8	ug/kg	
71-43-2	Benzene	0.47 U	0.58	0.47	0.44	ug/kg	
78-93-3	2-Butanone (MEK)	8.8 U	12	8.8	4.4	ug/kg	
104-51-8	n-Butylbenzene	0.58 U	2.3	0.58	0.48	ug/kg	
135-98-8	sec-Butylbenzene	0.58 U	2.3	0.58	0.43	ug/kg	
98-06-6	tert-Butylbenzene	0.58 U	2.3	0.58	0.41	ug/kg	
56-23-5	Carbon tetrachloride	1.2 U	2.3	1.2	0.64	ug/kg	
108-90-7	Chlorobenzene	1.2 U	2.3	1.2	0.41	ug/kg	
67-66-3	Chloroform	0.58 U	2.3	0.58	0.44	ug/kg	
95-50-1	1,2-Dichlorobenzene	0.88 U	1.2	0.88	0.36	ug/kg	
541-73-1	1,3-Dichlorobenzene	0.58 U	1.2	0.58	0.42	ug/kg	
106-46-7	1,4-Dichlorobenzene	0.58 U	1.2	0.58	0.40	ug/kg	
75-34-3	1,1-Dichloroethane	0.58 U	1.2	0.58	0.45	ug/kg	
107-06-2	1,2-Dichloroethane	0.58 U	1.2	0.58	0.55	ug/kg	
75-35-4	1,1-Dichloroethene	0.88 U	1.2	0.88	0.77	ug/kg	
156-59-2	cis-1,2-Dichloroethene	1.1 U	1.2	1.1	1.1	ug/kg	
156-60-5	trans-1,2-Dichloroethene	0.88 U	1.2	0.88	0.78	ug/kg	
123-91-1	1,4-Dioxane	120 U	150	120	43	ug/kg	
100-41-4	Ethylbenzene	0.88 U	1.2	0.88	0.65	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	0.58 U	1.2	0.58	0.41	ug/kg	
75-09-2	Methylene chloride	3.5 U	5.8	3.5	2.9	ug/kg	
103-65-1	n-Propylbenzene	0.58 U	2.3	0.58	0.36	ug/kg	
127-18-4	Tetrachloroethene	1.2 U	2.3	1.2	0.54	ug/kg	
108-88-3	Toluene	0.76	1.2	0.88	0.44	ug/kg	J
71-55-6	1,1,1-Trichloroethane	1.2 U	2.3	1.2	0.50	ug/kg	
79-01-6	Trichloroethene	0.94 U	1.2	0.94	0.89	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	1.2 U	2.3	1.2	0.74	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	1.2 U	2.3	1.2	0.42	ug/kg	
75-01-4	Vinyl chloride	1.2 U	2.3	1.2	0.55	ug/kg	
	m,p-Xylene	0.88 U	1.2	0.88	0.87	ug/kg	
95-47-6	o-Xylene	0.88 U	1.2	0.88	0.68	ug/kg	
1330-20-7	Xylene (total)	0.88 U	1.2	0.88	0.68	ug/kg	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: NWIRP-S1-WC-CF-021		Date Sampled: 03/21/19
Lab Sample ID: JC84952-1		Date Received: 03/22/19
Matrix: SO - Soil		Percent Solids: 95.0
Method: SW846 8260C		
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage		

VOA Soil Cleanup Objectives Priority List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		75-127%
17060-07-0	1,2-Dichloroethane-D4	108%		75-130%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	102%		79-127%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: NWIRP-S1-WC-CF-022		Date Sampled: 03/21/19
Lab Sample ID: JC84952-2		Date Received: 03/22/19
Matrix: SO - Soil		Percent Solids: 97.1
Method: SW846 8260C		
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3C150503.D	1	03/25/19 11:21	PS	n/a	n/a	V3C6777
Run #2							

	Initial Weight
Run #1	4.4 g
Run #2	

VOA Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
67-64-1	Acetone	38.8	12	8.8	5.9	ug/kg	
71-43-2	Benzene	0.47 U	0.59	0.47	0.44	ug/kg	
78-93-3	2-Butanone (MEK)	8.8 U	12	8.8	4.4	ug/kg	
104-51-8	n-Butylbenzene	0.59 U	2.3	0.59	0.48	ug/kg	
135-98-8	sec-Butylbenzene	0.59 U	2.3	0.59	0.43	ug/kg	
98-06-6	tert-Butylbenzene	0.59 U	2.3	0.59	0.41	ug/kg	
56-23-5	Carbon tetrachloride	1.2 U	2.3	1.2	0.64	ug/kg	
108-90-7	Chlorobenzene	1.2 U	2.3	1.2	0.41	ug/kg	
67-66-3	Chloroform	0.59 U	2.3	0.59	0.44	ug/kg	
95-50-1	1,2-Dichlorobenzene	0.88 U	1.2	0.88	0.36	ug/kg	
541-73-1	1,3-Dichlorobenzene	0.59 U	1.2	0.59	0.42	ug/kg	
106-46-7	1,4-Dichlorobenzene	0.59 U	1.2	0.59	0.40	ug/kg	
75-34-3	1,1-Dichloroethane	0.59 U	1.2	0.59	0.45	ug/kg	
107-06-2	1,2-Dichloroethane	0.59 U	1.2	0.59	0.55	ug/kg	
75-35-4	1,1-Dichloroethene	0.88 U	1.2	0.88	0.77	ug/kg	
156-59-2	cis-1,2-Dichloroethene	1.1 U	1.2	1.1	1.1	ug/kg	
156-60-5	trans-1,2-Dichloroethene	0.88 U	1.2	0.88	0.78	ug/kg	
123-91-1	1,4-Dioxane	120 U	150	120	43	ug/kg	
100-41-4	Ethylbenzene	0.88 U	1.2	0.88	0.65	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	0.59 U	1.2	0.59	0.41	ug/kg	
75-09-2	Methylene chloride	3.5 U	5.9	3.5	2.9	ug/kg	
103-65-1	n-Propylbenzene	0.59 U	2.3	0.59	0.37	ug/kg	
127-18-4	Tetrachloroethene	1.2 U	2.3	1.2	0.54	ug/kg	
108-88-3	Toluene	0.47	1.2	0.88	0.44	ug/kg	J
71-55-6	1,1,1-Trichloroethane	1.2 U	2.3	1.2	0.50	ug/kg	
79-01-6	Trichloroethene	0.94 U	1.2	0.94	0.89	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	1.2 U	2.3	1.2	0.74	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	1.2 U	2.3	1.2	0.42	ug/kg	
75-01-4	Vinyl chloride	1.2 U	2.3	1.2	0.55	ug/kg	
	m,p-Xylene	0.88 U	1.2	0.88	0.87	ug/kg	
95-47-6	o-Xylene	0.88 U	1.2	0.88	0.68	ug/kg	
1330-20-7	Xylene (total)	0.88 U	1.2	0.88	0.68	ug/kg	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: NWIRP-S1-WC-CF-022		Date Sampled: 03/21/19
Lab Sample ID: JC84952-2		Date Received: 03/22/19
Matrix: SO - Soil		Percent Solids: 97.1
Method: SW846 8260C		
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage		

VOA Soil Cleanup Objectives Priority List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		75-127%
17060-07-0	1,2-Dichloroethane-D4	106%		75-130%
2037-26-5	Toluene-D8	102%		80-120%
460-00-4	4-Bromofluorobenzene	102%		79-127%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 2

Client Sample ID:	NWIRP-S1-WC-CF-023		
Lab Sample ID:	JC84952-3	Date Sampled:	03/21/19
Matrix:	SO - Soil	Date Received:	03/22/19
Method:	SW846 8260C	Percent Solids:	99.9
Project:	Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3C150504.D	1	03/25/19 11:44	PS	n/a	n/a	V3C6777
Run #2							

	Initial Weight
Run #1	4.7 g
Run #2	

VOA Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
67-64-1	Acetone	44.0	11	8.0	5.3	ug/kg	
71-43-2	Benzene	0.43 U	0.53	0.43	0.40	ug/kg	
78-93-3	2-Butanone (MEK)	8.0 U	11	8.0	4.0	ug/kg	
104-51-8	n-Butylbenzene	0.53 U	2.1	0.53	0.43	ug/kg	
135-98-8	sec-Butylbenzene	0.53 U	2.1	0.53	0.39	ug/kg	
98-06-6	tert-Butylbenzene	0.53 U	2.1	0.53	0.37	ug/kg	
56-23-5	Carbon tetrachloride	1.1 U	2.1	1.1	0.59	ug/kg	
108-90-7	Chlorobenzene	1.1 U	2.1	1.1	0.38	ug/kg	
67-66-3	Chloroform	0.53 U	2.1	0.53	0.40	ug/kg	
95-50-1	1,2-Dichlorobenzene	0.80 U	1.1	0.80	0.32	ug/kg	
541-73-1	1,3-Dichlorobenzene	0.53 U	1.1	0.53	0.38	ug/kg	
106-46-7	1,4-Dichlorobenzene	0.53 U	1.1	0.53	0.37	ug/kg	
75-34-3	1,1-Dichloroethane	0.53 U	1.1	0.53	0.41	ug/kg	
107-06-2	1,2-Dichloroethane	0.53 U	1.1	0.53	0.50	ug/kg	
75-35-4	1,1-Dichloroethene	0.80 U	1.1	0.80	0.70	ug/kg	
156-59-2	cis-1,2-Dichloroethene	1.0 U	1.1	1.0	1.0	ug/kg	
156-60-5	trans-1,2-Dichloroethene	0.80 U	1.1	0.80	0.71	ug/kg	
123-91-1	1,4-Dioxane	110 U	130	110	39	ug/kg	
100-41-4	Ethylbenzene	0.80 U	1.1	0.80	0.59	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	0.53 U	1.1	0.53	0.37	ug/kg	
75-09-2	Methylene chloride	3.2 U	5.3	3.2	2.7	ug/kg	
103-65-1	n-Propylbenzene	0.53 U	2.1	0.53	0.33	ug/kg	
127-18-4	Tetrachloroethene	1.1 U	2.1	1.1	0.49	ug/kg	
108-88-3	Toluene	0.57	1.1	0.80	0.40	ug/kg	J
71-55-6	1,1,1-Trichloroethane	1.1 U	2.1	1.1	0.45	ug/kg	
79-01-6	Trichloroethene	0.85 U	1.1	0.85	0.81	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	1.1 U	2.1	1.1	0.68	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	1.1 U	2.1	1.1	0.38	ug/kg	
75-01-4	Vinyl chloride	1.1 U	2.1	1.1	0.50	ug/kg	
	m,p-Xylene	0.80 U	1.1	0.80	0.79	ug/kg	
95-47-6	o-Xylene	0.80 U	1.1	0.80	0.62	ug/kg	
1330-20-7	Xylene (total)	0.80 U	1.1	0.80	0.62	ug/kg	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: NWIRP-S1-WC-CF-023		Date Sampled: 03/21/19
Lab Sample ID: JC84952-3		Date Received: 03/22/19
Matrix: SO - Soil		Percent Solids: 99.9
Method: SW846 8260C		
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage		

VOA Soil Cleanup Objectives Priority List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		75-127%
17060-07-0	1,2-Dichloroethane-D4	104%		75-130%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	101%		79-127%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

CHAIN-OF-CUSTODY RECORD

50
SIL

KD1-03619-104

JC84952

COC Number: 501164-20190321
Subcontract Services Agreement # TBD



APTIM - 150 Boush Street, Suite 701, Norfolk, VA 23510 (757) 640-6200

SGS Accutest - New Jersey			2235 US-130, Dayton, NJ 08810 Phone: (732) 329-0200			Analysis Desired														
Site 1 - Former Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage, New York			Fill Material Samples			Vouches SW-466 5035A/82808														
F8147 501164 Natasha Kelley Sullivan (410)529-7588																				
NAVY			Monica L. Smeal E.I.T.																	
1	NWRP-S1-WC-CF-021	03/21/19	1101	X	Backfill Sand							3 X Terra Core Kit - (2- H2O/1-MeOH) 1 x 80 ml glass jar, none	X							
2	NWRP-S1-WC-CF-022	03/21/19	1109	X	Backfill Sand							3 X Terra Core Kit - (2- H2O/1-MeOH) 1 x 2 oz glass jar, none	X							
3	NWRP-S1-WC-CF-023	03/21/19	1117	X	Backfill Sand							3 X Terra Core Kit - (2- H2O/1-MeOH) 1 x 2 oz glass jar, none	X							
<i>[Signature]</i>						Initial Assessment <u>3P/2K</u> Label Verification _____														

1
2
3

PS1
14EB
4031

**** See attached list for SPECIFIC COMPOUNDS**
(please run most appropriate method to meet the action level requirements.)

Subcontractor: <input checked="" type="checkbox"/> 14 Day TAT	Company: McCutcheon, Sears, APTIM	Customer: [Blank]	Lab. Report: [Blank]				
Order #	Transfer From	Date	Time	Transfer To	Date	Time	Report Format
1	Sampler's Signature	Date	Time	Laboratory Sample Custody Sig	Date	Time	Full Report
2	<i>[Signature]</i>	3/21/19	10:00	<i>[Signature]</i>			EDD Excel+NRIS
3	<i>[Signature]</i>			<i>[Signature]</i>			Fax results to Natasha Sullivan (410) 529-7589
4							

3.10C
IP

SGS Sample Receipt Summary

Job Number: JC84952

Client: NOREAS-CB&I JV (NCBI)

Project: BACKFILL - BETHPAGE, NY

Date / Time Received: 3/22/2019 10:40:00 AM

Delivery Method: _____

Airbill #'s: _____

Cooler Temps (Raw Measured) °C: Cooler 1: (3.1);

Cooler Temps (Corrected) °C: Cooler 1: (2.1);

Cooler Security

Y or N

Y or N

- | | | | | | |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Cooler Temperature

Y or N

- | | | |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Cooler temp verification: | IR Gun | |
| 3. Cooler media: | Ice (Bag) | |
| 4. No. Coolers: | 1 | |

Quality Control Preservation

Y or N

N/A

- | | | | |
|---------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Trip Blank present / cooler: | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Trip Blank listed on COC: | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Samples preserved properly: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. VOCs headspace free: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Sample Integrity - Documentation

Y or N

- | | | |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Sample Integrity - Condition

Y or N

- | | | |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample: | Intact | |

Sample Integrity - Instructions

Y or N N/A

- | | | | |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 2. Bottles received for unspecified tests | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 3. Sufficient volume recvd for analysis: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. Compositing instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Test Strip Lot #s: pH 1-12: 206717 pH 12+: 208717 Other: (Specify) _____

Comments

SM089-03
Rev. Date 12/7/17

JC84952: Chain of Custody

Page 2 of 2

LabLink Analytical Data Report
 Site 1 - Former Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage
 APTIM Project Number: 501164, F6147

Sample	Parameter	Cas No.	Method	Result	Qual	Units	LOQ	LOD	DF	Fill Material Criteria ¹	Client ID	Collected	Time
JC84953-1	Terphenyl-d14	1718-51-0	SW846 8270D	94.0		%			1	----	NWIRP-S1-WC-CF-024	3/21/2019	11:25

Red, Shaded, Italicized results exceeding Project Remediation Goals.

Found 0 results exceeding regulatory limits.

*** Indicates result outside regulatory limits.*

¹Fill material criteria are based on 6 NYCRR Part 375, Table 375-6.8(b): Restricted Use Soil Cleanup Objectives, Protection of Public Health, Residential. Following the receipt of the analytical results, the project team will review the data to ensure that the analytical results meet the fill material criteria.

Draft Final Sampling and Analysis Plan/Quality Assurance Plan Site 1 – Former Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage, New York, February 2019.

Laboratory Qualifiers:

J = Estimated value.

U = Not detected; the analyte was analyzed for, but not detected above the associated detection limit.

% = percent

(s) = surrogates

LOD = limit of detection

LOQ = limit of quantitation

µg/kg = microgram/kilogram = ppb

mg/kg = milligrams/kilogram

LabLink Analytical Data Report - Hits/J-Values Only
Site 1 - Former Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage
APTIM Project Number: 501164, F6147

Sample	Parameter	Cas No.	Method	Result	Qual	Units	LOQ	LOD	DF	Fill Material Criteria ¹	Client ID	Collected	Time
JC84953-1	alpha-Chlordane	5103-71-9	SW846 8081B	0.59	J	ug/kg	0.70	0.56	1	910	NWIRP-S1-WC-CF-024	3/21/2019	11:25
JC84953-1	pH		SW846 9045D	7.68		su			1	----	NWIRP-S1-WC-CF-024	3/21/2019	11:25
JC84953-1	Chromium, Hexavalent	18540-29-9	SW846 3060A/7196A	0.63		mg/kg	0.42	0.37	1	22	NWIRP-S1-WC-CF-024	3/21/2019	11:25
JC84953-1	Chromium, Trivalent		SW846 6010/7196A M	4.8		mg/kg	1.4	0.89	1	36	NWIRP-S1-WC-CF-024	3/21/2019	11:25
JC84953-1	Redox Potential Vs H2		ASTM D1498-76M	329		mv			1	----	NWIRP-S1-WC-CF-024	3/21/2019	11:25
JC84953-1	Arsenic	7440-38-2	SW846 6010D	1.5	J	mg/kg	2.1	0.52	1	16	NWIRP-S1-WC-CF-024	3/21/2019	11:25
JC84953-1	Barium	7440-39-3	SW846 6010D	8.1	J	mg/kg	21.0	10.0	1	350	NWIRP-S1-WC-CF-024	3/21/2019	11:25
JC84953-1	Beryllium	7440-41-7	SW846 6010D	0.13	J	mg/kg	0.21	0.10	1	14	NWIRP-S1-WC-CF-024	3/21/2019	11:25
JC84953-1	Chromium, Total	7440-47-3	SW846 6010D	5.4		mg/kg	1.0	0.52	1	58	NWIRP-S1-WC-CF-024	3/21/2019	11:25
JC84953-1	Copper	7440-50-8	SW846 6010D	2.5	J	mg/kg	2.6	1.0	1	270	NWIRP-S1-WC-CF-024	3/21/2019	11:25
JC84953-1	Lead	7439-92-1	SW846 6010D	3.4		mg/kg	2.1	0.52	1	400	NWIRP-S1-WC-CF-024	3/21/2019	11:25
JC84953-1	Manganese	7439-96-5	SW846 6010D	50.7		mg/kg	1.5	1.0	1	2,000	NWIRP-S1-WC-CF-024	3/21/2019	11:25
JC84953-1	Nickel	7440-02-0	SW846 6010D	2.0	J	mg/kg	4.1	0.41	1	140	NWIRP-S1-WC-CF-024	3/21/2019	11:25
JC84953-1	Zinc	7440-66-6	SW846 6010D	5.6		mg/kg	5.2	4.1	1	2,200	NWIRP-S1-WC-CF-024	3/21/2019	11:25

Red, Shaded, Italicized results exceeding Project Remediation Goals.

Found 0 results exceeding regulatory limits.

**** Indicates result outside regulatory limits.**

¹Fill material criteria are based on 6 NYCRR Part 375, Table 375-6.8(b): Restricted Use Soil Cleanup Objectives, Protection of Public Health, Residential. Following the receipt of the analytical results, the project team will review the data to ensure that the analytical results meet the fill material criteria.
 Draft Final Sampling and Analysis Plan/Quality Assurance Plan Site 1 – Former Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage, New York, February 2019.

Laboratory Qualifiers:

J = Estimated value.

LOD = limit of detection

LOQ = limit of quantitation

µg/kg = microgram/kilogram = ppb

mg/kg = milligrams/kilogram

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

NOREAS, Inc.

Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage
500689

SGS Job Number: JC84953

Sampling Date: 03/21/19

Report to:

APTIM

Natasha.Kelleysullivan@cbifederservices.com

ATTN: Natasha Sullivan

Total number of pages in report: **223**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

A handwritten signature in black ink, appearing to read 'Brian McGuire', is written over a white background.

Brian McGuire
General Manager

Client Service contact: Kristin Degraw 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

This report shall not be reproduced, except in its entirety, without the written approval of SGS.
Test results relate only to samples analyzed.

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Sample Summary

NOREAS, Inc.

Job No: JC84953

Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Project No: 500689

Sample Number	Collected		Matrix			Client Sample ID
	Date	Time By	Received	Code	Type	
JC84953-1	03/21/19	11:25 NS	03/22/19	SO	Soil	NWIRP-S1-WC-CF-024

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: NOREAS, Inc. **Job No** JC84953
Site: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reser **Report Date** 4/11/2019 10:25:40 A

On 03/22/2019, 1 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 2.1 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of JC84953 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Please refer to certification exceptions summary for additional certification information.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

MS Semi-volatiles By Method SW846 8270D

Matrix: SO **Batch ID:** OP19327

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC84953-1MS, JC84953-1MSD were used as the QC samples indicated.

GC/LC Semi-volatiles By Method SW846 8081B

Matrix: SO **Batch ID:** OP19346

- All samples were extracted within the recommended method holding time.
- Sample(s) JC84953-1MS, JC84953-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- JC84953-1 for alpha-Chlordane: More than 40 % RPD for detected concentrations between the two GC columns.

GC/LC Semi-volatiles By Method SW846 8082A

Matrix: SO **Batch ID:** OP19345

- All samples were extracted within the recommended method holding time.
- Sample(s) JC84953-1MS, JC84953-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

GC/LC Semi-volatiles By Method SW846 8151A

Matrix: SO **Batch ID:** OP19325

- All samples were extracted within the recommended method holding time.
- Sample(s) JC84953-1MS, JC84953-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Metals Analysis By Method SW846 6010D

Matrix: SO **Batch ID:** MP13517

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC84953-1MS, JC84953-1MSD, JC84953-1PS, JC84953-1SDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Arsenic are outside control limits. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- MP13517-SD1 for Zinc: Serial dilution indicates possible matrix interference.

Metals Analysis By Method SW846 7471B

Matrix: SO **Batch ID:** MP13597

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC84953-1MS, JC84953-1MSD were used as the QC samples for metals.

General Chemistry By Method ASTM D1498-76M

Matrix: SO **Batch ID:** GN93703

- Sample(s) JC84522-1DUP were used as the QC samples for Redox Potential Vs H2.

General Chemistry By Method SM2540 G 18TH ED MOD

Matrix: SO **Batch ID:** GN93280

- Sample(s) JC84953-1DUP were used as the QC samples for Solids, Percent.

General Chemistry By Method SW846 3060A/7196A

Matrix: SO **Batch ID:** GP20460

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC84953-1DUP, JC84953-1MS were used as the QC samples for Chromium, Hexavalent.
- Matrix Spike Recovery(s) for Chromium, Hexavalent are outside control limits. Soluble XCR matrix spike recovery indicates possible matrix interference. Good post spike recovery (102%) on this sample.

General Chemistry By Method SW846 6010/7196A M

Matrix: SO **Batch ID:** R177456

- The data for SW846 6010/7196A M meets quality control requirements.
- JC84953-1 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

General Chemistry By Method SW846 9012B/LACHAT

Matrix: SO **Batch ID:** GP20214

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC84621-55DUP, JC84621-55MS were used as the QC samples for Cyanide.

General Chemistry By Method SW846 9045D

Matrix: SO **Batch ID:** GN93704

- Sample(s) JC84522-1DUP were used as the QC samples for pH.

Thursday, April 11, 2019

Page 2 of 3

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS North America Inc indicated via signature on the report cover

Summary of Hits

Job Number: JC84953

Account: NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Collected: 03/21/19



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
---------------	------------------	-----------------	-----	-----	-------	--------

JC84953-1 NWIRP-S1-WC-CF-024

alpha-Chlordane ^a	0.59 J	0.70	0.56	ug/kg	SW846 8081B
Arsenic	1.5 J	2.1	0.52	mg/kg	SW846 6010D
Barium	8.1 J	21	10	mg/kg	SW846 6010D
Beryllium	0.13 J	0.21	0.10	mg/kg	SW846 6010D
Chromium	5.4	1.0	0.52	mg/kg	SW846 6010D
Copper	2.5 J	2.6	1.0	mg/kg	SW846 6010D
Lead	3.4	2.1	0.52	mg/kg	SW846 6010D
Manganese	50.7	1.5	1.0	mg/kg	SW846 6010D
Nickel	2.0 J	4.1	0.41	mg/kg	SW846 6010D
Zinc	5.6	5.2	4.1	mg/kg	SW846 6010D
Chromium, Hexavalent	0.63	0.42	0.37	mg/kg	SW846 3060A/7196A
Chromium, Trivalent ^b	4.8	1.4	0.89	mg/kg	SW846 6010/7196A M
Redox Potential Vs H2	329		^c	mv	ASTM D1498-76M
pH	7.68		^c	su	SW846 9045D

(a) More than 40 % RPD for detected concentrations between the two GC columns.

(b) Calculated as: (Chromium) - (Chromium, Hexavalent)

(c) Value reported is laboratory DL (MDL).

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: NWIRP-S1-WC-CF-024	
Lab Sample ID: JC84953-1	Date Sampled: 03/21/19
Matrix: SO - Soil	Date Received: 03/22/19
Method: SW846 8270D SW846 3546	Percent Solids: 95.1
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F183469.D	1	03/28/19 02:33	CS	03/23/19 11:42	OP19327	EF7878
Run #2							

	Initial Weight	Final Volume
Run #1	30.6 g	1.0 ml
Run #2		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
95-48-7	2-Methylphenol	34 U	69	34	22	ug/kg	
	3&4-Methylphenol	34 U	69	34	28	ug/kg	
87-86-5	Pentachlorophenol	86 U	140	86	32	ug/kg	
108-95-2	Phenol	34 U	69	34	18	ug/kg	
83-32-9	Acenaphthene	17 U	34	17	12	ug/kg	
208-96-8	Acenaphthylene	26 U	34	26	17	ug/kg	
120-12-7	Anthracene	26 U	34	26	21	ug/kg	
56-55-3	Benzo(a)anthracene	17 U	34	17	9.7	ug/kg	
50-32-8	Benzo(a)pyrene	17 U	34	17	16	ug/kg	
205-99-2	Benzo(b)fluoranthene	17 U	34	17	15	ug/kg	
191-24-2	Benzo(g,h,i)perylene	26 U	34	26	17	ug/kg	
207-08-9	Benzo(k)fluoranthene	17 U	34	17	16	ug/kg	
218-01-9	Chrysene	17 U	34	17	11	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	17 U	34	17	15	ug/kg	
132-64-9	Dibenzofuran	17 U	69	17	14	ug/kg	
206-44-0	Fluoranthene	17 U	34	17	15	ug/kg	
86-73-7	Fluorene	34 U	34	34	16	ug/kg	
118-74-1	Hexachlorobenzene	17 U	69	17	8.7	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	17 U	34	17	16	ug/kg	
91-20-3	Naphthalene	17 U	34	17	9.7	ug/kg	
85-01-8	Phenanthrene	17 U	34	17	12	ug/kg	
129-00-0	Pyrene	17 U	34	17	11	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	72%		23-115%
4165-62-2	Phenol-d5	67%		27-114%
118-79-6	2,4,6-Tribromophenol	77%		19-152%
4165-60-0	Nitrobenzene-d5	73%		26-134%
321-60-8	2-Fluorobiphenyl	71%		39-124%
1718-51-0	Terphenyl-d14	94%		36-134%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: NWIRP-S1-WC-CF-024	
Lab Sample ID: JC84953-1	Date Sampled: 03/21/19
Matrix: SO - Soil	Date Received: 03/22/19
Method: SW846 8151A SW846 3546	Percent Solids: 95.1
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G122297.D	1	03/25/19 16:11	VDT	03/23/19 11:42	OP19325	G3G4270
Run #2							

	Initial Weight	Final Volume
Run #1	15.5 g	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
93-72-1	2,4,5-TP (Silvex)	3.0 U	3.3	3.0	2.8	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	67%		10-159%
19719-28-9	2,4-DCAA	64%		10-159%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID: NWIRP-S1-WC-CF-024	
Lab Sample ID: JC84953-1	Date Sampled: 03/21/19
Matrix: SO - Soil	Date Received: 03/22/19
Method: SW846 8081B SW846 3546	Percent Solids: 95.1
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G958058.D	1	03/26/19 12:10	MH	03/26/19 05:30	OP19346	G4G2709
Run #2							

	Initial Weight	Final Volume
Run #1	15.1 g	10.0 ml
Run #2		

Pesticides, Soil Cleanup Objectives

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
309-00-2	Aldrin	0.57 U	0.70	0.57	0.57	ug/kg	
319-84-6	alpha-BHC	0.57 U	0.70	0.57	0.57	ug/kg	
319-85-7	beta-BHC	0.63 U	0.70	0.63	0.63	ug/kg	
319-86-8	delta-BHC	0.67 U	0.70	0.67	0.67	ug/kg	
58-89-9	gamma-BHC (Lindane)	0.51 U	0.70	0.51	0.51	ug/kg	
5103-71-9	alpha-Chlordane ^a	0.59	0.70	0.56	0.56	ug/kg	J
60-57-1	Dieldrin	0.52 U	0.70	0.52	0.48	ug/kg	
72-54-8	4,4'-DDD	0.64 U	0.70	0.64	0.64	ug/kg	
72-55-9	4,4'-DDE	0.61 U	0.70	0.61	0.61	ug/kg	
50-29-3	4,4'-DDT	0.62 U	0.70	0.62	0.62	ug/kg	
72-20-8	Endrin	0.54 U	0.70	0.54	0.54	ug/kg	
1031-07-8	Endosulfan sulfate	0.54 U	0.70	0.54	0.54	ug/kg	
959-98-8	Endosulfan-I	0.52 U	0.70	0.52	0.40	ug/kg	
33213-65-9	Endosulfan-II	0.52 U	0.70	0.52	0.43	ug/kg	
76-44-8	Heptachlor	0.60 U	0.70	0.60	0.60	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	63%		25-135%
877-09-8	Tetrachloro-m-xylene	70%		25-135%
2051-24-3	Decachlorobiphenyl	68%		10-156%
2051-24-3	Decachlorobiphenyl	64%		10-156%

(a) More than 40 % RPD for detected concentrations between the two GC columns.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID: NWIRP-S1-WC-CF-024	
Lab Sample ID: JC84953-1	Date Sampled: 03/21/19
Matrix: SO - Soil	Date Received: 03/22/19
Method: SW846 8082A SW846 3546	Percent Solids: 95.1
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2433187.D	1	03/26/19 21:31	RK	03/26/19 05:30	OP19345	GXX6640
Run #2							

	Initial Weight	Final Volume
Run #1	15.1 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
12674-11-2	Aroclor 1016	17 U	35	17	14	ug/kg	
11104-28-2	Aroclor 1221	17 U	35	17	14	ug/kg	
11141-16-5	Aroclor 1232	17 U	35	17	9.3	ug/kg	
53469-21-9	Aroclor 1242	17 U	35	17	5.5	ug/kg	
12672-29-6	Aroclor 1248	28 U	35	28	20	ug/kg	
11097-69-1	Aroclor 1254	17 U	35	17	8.6	ug/kg	
11096-82-5	Aroclor 1260	17 U	35	17	11	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	88%		31-146%
877-09-8	Tetrachloro-m-xylene	86%		31-146%
2051-24-3	Decachlorobiphenyl	90%		17-164%
2051-24-3	Decachlorobiphenyl	90%		17-164%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID:	NWIRP-S1-WC-CF-024		
Lab Sample ID:	JC84953-1	Date Sampled:	03/21/19
Matrix:	SO - Soil	Date Received:	03/22/19
		Percent Solids:	95.1
Project:	Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage		

Metals Analysis

Analyte	Result	LOQ	LOD	DL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	1.5 J	2.1	0.52	0.29	mg/kg	1	03/27/19	03/28/19	ND	SW846 6010D ² SW846 3050B ³
Barium	8.1 J	21	10	2.0	mg/kg	1	03/27/19	03/28/19	ND	SW846 6010D ² SW846 3050B ³
Beryllium	0.13 J	0.21	0.10	0.082	mg/kg	1	03/27/19	03/28/19	ND	SW846 6010D ² SW846 3050B ³
Cadmium	0.21 U	0.52	0.21	0.072	mg/kg	1	03/27/19	03/28/19	ND	SW846 6010D ² SW846 3050B ³
Chromium	5.4	1.0	0.52	0.38	mg/kg	1	03/27/19	03/28/19	ND	SW846 6010D ² SW846 3050B ³
Copper	2.5 J	2.6	1.0	0.87	mg/kg	1	03/27/19	03/28/19	ND	SW846 6010D ² SW846 3050B ³
Lead	3.4	2.1	0.52	0.42	mg/kg	1	03/27/19	03/28/19	ND	SW846 6010D ² SW846 3050B ³
Manganese	50.7	1.5	1.0	0.42	mg/kg	1	03/27/19	03/28/19	ND	SW846 6010D ² SW846 3050B ³
Mercury	0.024 U	0.032	0.024	0.014	mg/kg	1	03/27/19	03/28/19	LL	SW846 7471B ¹ SW846 7471B ⁴
Nickel	2.0 J	4.1	0.41	0.36	mg/kg	1	03/27/19	03/28/19	ND	SW846 6010D ² SW846 3050B ³
Selenium	0.82 U	2.1	0.82	0.67	mg/kg	1	03/27/19	03/28/19	ND	SW846 6010D ² SW846 3050B ³
Silver	0.41 U	0.52	0.41	0.18	mg/kg	1	03/27/19	03/28/19	ND	SW846 6010D ² SW846 3050B ³
Zinc	5.6	5.2	4.1	2.4	mg/kg	1	03/27/19	03/28/19	ND	SW846 6010D ² SW846 3050B ³

(1) Instrument QC Batch: MA46370

(2) Instrument QC Batch: MA46381

(3) Prep QC Batch: MP13517

(4) Prep QC Batch: MP13597

LOQ = Limit of Quantitation

DL = Detection Limit

U = Indicates a result < LOD

LOD = Limit of Detection

B = Analyte found in associated blank

J = Indicates a result > = DL (MDL) but < LOQ

Report of Analysis

Client Sample ID:	NWIRP-S1-WC-CF-024		
Lab Sample ID:	JC84953-1	Date Sampled:	03/21/19
Matrix:	SO - Soil	Date Received:	03/22/19
		Percent Solids:	95.1
Project:	Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage		

General Chemistry

Analyte	Result	LOQ	LOD	DL	Units	DF	Analyzed	By Method
Chromium, Hexavalent	0.63	0.42	0.37	0.33	mg/kg	1	04/10/19 17:14	RI SW846 3060A/7196A
Chromium, Trivalent ^a	4.8	1.4	0.89	0.71	mg/kg	1	04/10/19 17:14	RI SW846 6010/7196A M
Cyanide	0.19 U	0.25	0.19	0.13	mg/kg	1	03/29/19 13:27	KI SW846 9012B/LCHAT
Redox Potential Vs H2	329				mv	1	04/04/19 19:48	EB ASTM D1498-76M
Solids, Percent	95.1				%	1	03/25/19 16:00	BG SM2540 G 18TH ED MOD
pH	7.68				su	1	04/04/19 19:48	EB SW846 9045D

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

LOQ = Limit of Quantitation DL = Detection Limit U = Indicates a result < LOD
 LOD = Limit of Detection B = Analyte found in associated blank J = Indicates a result > = DL (MDL) but < LOQ

4.1
4

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody
- QC Evaluation: DOD QSM5 Limits

Parameter Certification Exceptions

Job Number: JC84953

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

The following parameters included in this report are exceptions to NELAC certification. The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
Chromium, Trivalent		SW846 6010/7196A M	SO	SGS is not certified for this parameter. ^a
Redox Potential Vs H2		ASTM D1498-76M	SO	SGS is not certified for this parameter. ^a

(a) Lab cert for analyte not supported by NJDEP, OQA. Only methods/analytes required for reporting by the State of NJ can be certified in NJ. Use of this analyte for compliance must be verified through the appropriate regulatory office.

Certification exceptions shown are based on the New Jersey DEP certifications. Applicability in other states may vary. Please contact your laboratory representative if additional information is required for a specific regulatory program.

5.1
5

CHAIN-OF-CUSTODY RECORD

SO

KDI-03619-104

JC 84953

COC Number: 501164-20190321
Subcontract Services Agreement: TBD



APTIM - 150 Boush Street, Suite 701, Norfolk, VA 23510 (757) 640-6200

Client Information				Lab Processing Address				Analysis Desired							
SGS Accutest -New Jersey				2235 US-130, Dayton, NJ 08810 Phone: (732) 329-0200											
Site 1 - Former Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage, New York				Fill Material Samples											
Project Number: F8147		501164		Analyst: Natasha Kelley Sullivan		(410)529-7598									
Client: NAVY				Monica L. Smeal E.I.T.											
Sample No.	Sample Description	Date	Time	Lab	Size	Sample Container	Quantity of Containers	SVOC SW-846 8270D	Total PCBs SW-846 8002A	Pesticides SW-846 8081B	Herbicides 8151A	Metals - ICP SW846 6010C/7471A	Cyanide SW-846 9012B	Cr6 and Cr3	
1	NWIRP-S1-WC-CF-024	03/21/19	1125		X	Backfill Sand	2 x 8 oz glass jar, none	X	X	X	X	X	X	X	
<p>Initial Assessment <u>JBK</u></p> <p>Label Verification _____</p> <p><i>Sean M</i></p> <p style="text-align: right;">(D16)</p>															
<p>** See attached list for SPECIFIC COMPOUNDS AND REQUIRED METALS (please run most appropriate method to meet the action level requirements .</p>															

5.2
5

Turnaround Time Required: 14 Day TAT
Sampled By: McCutcheon, Sean, APTIM
Comments: Laboratory Report No.:

Transfer Number	Transfers Relinquished By	Date	Time	Transfers Accepted By	Date	Time	Report Format:
1	Sampler's Signature			Laboratory Sample Custody Sign			Full Report
2	<i>Sean M</i>	3/21/19	1500	<i>JBK</i>			EDD Excel+NIRIS
3	<i>Fed Ex</i>	3/22/19	1040	<i>[Signature]</i>			Fax results to Natasha Sullivan (410) 529-7599
4							

3.1 CF



SGS Sample Receipt Summary

Job Number: JC84953

Client: NOREAS-CB&I JV (NCBI)

Project: BACKFILL - BETHPAGE, NY

Date / Time Received: 3/22/2019 10:40:00 AM

Delivery Method: _____

Airbill #'s: _____

Cooler Temps (Raw Measured) °C: Cooler 1: (3.1);

Cooler Temps (Corrected) °C: Cooler 1: (2.1);

Cooler Security

- | | | | | | | | |
|---------------------------|-------------------------------------|-----------|--------------------------|-----------------------|-------------------------------------|-----------|--------------------------|
| | <u>Y</u> | <u>or</u> | <u>N</u> | | <u>Y</u> | <u>or</u> | <u>N</u> |
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> | 3. COC Present: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> |
| 2. Custody Seals Intact: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> | | <input type="checkbox"/> |

Cooler Temperature

- | | | | |
|------------------------------|-------------------------------------|-----------|--------------------------|
| | <u>Y</u> | <u>or</u> | <u>N</u> |
| 1. Temp criteria achieved: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> |
| 2. Cooler temp verification: | IR Gun | | |
| 3. Cooler media: | Ice (Bag) | | |
| 4. No. Coolers: | 1 | | |

Quality Control Preservation

- | | | | | |
|---------------------------------|-------------------------------------|-----------|-------------------------------------|-------------------------------------|
| | <u>Y</u> | <u>or</u> | <u>N</u> | <u>N/A</u> |
| 1. Trip Blank present / cooler: | <input type="checkbox"/> | | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Trip Blank listed on COC: | <input type="checkbox"/> | | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Samples preserved properly: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> | |
| 4. VOCs headspace free: | <input type="checkbox"/> | | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Sample Integrity - Documentation

- | | | | |
|--|-------------------------------------|-----------|--------------------------|
| | <u>Y</u> | <u>or</u> | <u>N</u> |
| 1. Sample labels present on bottles: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> |
| 2. Container labeling complete: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> |

Sample Integrity - Condition

- | | | | |
|----------------------------------|-------------------------------------|-----------|--------------------------|
| | <u>Y</u> | <u>or</u> | <u>N</u> |
| 1. Sample recvd within HT: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> |
| 3. Condition of sample: | Intact | | |

Sample Integrity - Instructions

- | | | | | |
|---|-------------------------------------|-----------|-------------------------------------|-------------------------------------|
| | <u>Y</u> | <u>or</u> | <u>N</u> | <u>N/A</u> |
| 1. Analysis requested is clear: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> | |
| 2. Bottles received for unspecified tests | <input type="checkbox"/> | | <input checked="" type="checkbox"/> | |
| 3. Sufficient volume recvd for analysis: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> | |
| 4. Compositing instructions clear: | <input type="checkbox"/> | | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear: | <input type="checkbox"/> | | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Test Strip Lot #s:	pH 1-12: 206717	pH 12+: 208717	Other: (Specify) _____
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Comments

SM089-03
Rev. Date 12/7/17

JC84953: Chain of Custody

Page 2 of 2

5.2
5

Internal Sample Tracking Chronicle

NOREAS, Inc.

Job No: JC84953

Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage
 Project No: 500689

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC84953-1	Collected: 21-MAR-19 11:25	By: NS		Received: 22-MAR-19	By: DG	
NWIRP-S1-WC-CF-024						

JC84953-1	SM2540 G 18TH ED MOD	25-MAR-19 16:00	BG			SOL104
JC84953-1	SW846 8151A	25-MAR-19 16:11	VDT	23-MAR-19	SA	H8151245TP
JC84953-1	SW846 8081B	26-MAR-19 12:10	MH	26-MAR-19	NT	P8081SCO
JC84953-1	SW846 8082A	26-MAR-19 21:31	RK	26-MAR-19	NT	P8082PCB
JC84953-1	SW846 8270D	28-MAR-19 02:33	CS	23-MAR-19	SA	AB8270SCO
JC84953-1	SW846 7471B	28-MAR-19 10:47	LL	27-MAR-19	EAL	HG
JC84953-1	SW846 6010D	28-MAR-19 14:42	ND	27-MAR-19	BP	AG,AS,BA,BE,CD,CR,CU,MN,NI, PB,SE,ZN
JC84953-1	SW846 9012B/LACHAT	29-MAR-19 13:27	KI	27-MAR-19	RC	CN
JC84953-1	SW846 9045D	04-APR-19 19:48	EB			PH
JC84953-1	ASTM D1498-76M	04-APR-19 19:48	EB			EH
JC84953-1	SW846 6010/7196A M	10-APR-19 17:14	RI			CR3
JC84953-1	SW846 3060A/7196A	10-APR-19 17:14	RI	08-APR-19	RI	XCRA

SGS Internal Chain of Custody

Job Number: JC84953
Account: NOREASCA NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage
Received: 03/22/19

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC84953-1.1	Secured Storage	Sahara Feliciano	03/22/19 20:50	Retrieve from Storage
JC84953-1.1	Sahara Feliciano	Secured Staging Area	03/22/19 20:51	Return to Storage
JC84953-1.1	Secured Staging Area	Natasha Torres	03/23/19 01:01	Retrieve from Storage
JC84953-1.1	Natasha Torres	Secured Storage	03/23/19 05:25	Return to Storage
JC84953-1.1	Secured Storage	Ruchitaben Chauhan	03/27/19 14:20	Retrieve from Storage
JC84953-1.1	Ruchitaben Chauhan	Secured Storage	03/27/19 17:40	Return to Storage
JC84953-1.1.1	Natasha Torres	Organics Prep	03/23/19 01:02	Extract from JC84953-1.1
JC84953-1.1.1	Organics Prep	Sauvelson Auguste	03/23/19 11:38	Extract from JC84953-1.1
JC84953-1.1.1	Sauvelson Auguste	Extract Storage	03/23/19 11:38	Return to Storage
JC84953-1.1.1	Extract Storage	Christopher Sowa	03/27/19 23:57	Retrieve from Storage
JC84953-1.1.1	Christopher Sowa	GCMSF	03/27/19 23:57	Load on Instrument
JC84953-1.1.1	GCMSF	Christine Change	03/28/19 14:09	Unload from Instrument
JC84953-1.1.1	Christine Change	Extract Freezer	03/28/19 14:09	Return to Storage
JC84953-1.1.2	Natasha Torres	Organics Prep	03/23/19 01:03	Extract from JC84953-1.1
JC84953-1.1.2	Organics Prep	Sauvelson Auguste	03/23/19 11:36	Extract from JC84953-1.1
JC84953-1.1.2	Sauvelson Auguste	Extract Storage	03/23/19 11:36	Return to Storage
JC84953-1.1.2	Extract Storage	Vincent Drago	03/25/19 14:11	Retrieve from Storage
JC84953-1.1.2	Vincent Drago	GC3G	03/25/19 14:11	Load on Instrument
JC84953-1.1.2	GC3G	Vincent Drago	03/29/19 14:10	Unload from Instrument
JC84953-1.1.2	Vincent Drago	Extract Freezer	03/29/19 14:10	Return to Storage
JC84953-1.2	Secured Storage	Sahara Feliciano	03/24/19 14:36	Retrieve from Storage
JC84953-1.2	Sahara Feliciano	Secured Staging Area	03/24/19 14:36	Return to Storage
JC84953-1.2	Secured Staging Area	Benjamin Gaines	03/25/19 09:15	Retrieve from Storage
JC84953-1.2	Secured Storage	Todd Shoemaker	03/25/19 14:24	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JC84953-1.2	Todd Shoemaker	Secured Staging Area	03/25/19 14:24	Return to Storage
JC84953-1.2	Secured Staging Area	Luis Jimenez	03/25/19 14:58	Retrieve from Storage
JC84953-1.2	Secured Storage	Matthew Robbins	03/25/19 17:19	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JC84953-1.2	Matthew Robbins	Secured Staging Area	03/25/19 17:19	Return to Storage
JC84953-1.2	Secured Staging Area	Lindsey Lee	03/26/19 07:40	Retrieve from Storage
JC84953-1.2	Lindsey Lee	Secured Storage	03/26/19 14:38	Return to Storage
JC84953-1.2	Secured Storage	Matthew Robbins	03/26/19 20:07	Retrieve from Storage
JC84953-1.2	Matthew Robbins	Secured Staging Area	03/26/19 20:07	Return to Storage
JC84953-1.2	Secured Staging Area	Lindsey Lee	03/27/19 07:32	Retrieve from Storage
JC84953-1.2	Lindsey Lee	Secured Storage	03/27/19 13:47	Return to Storage
JC84953-1.2	Secured Storage	Dwayne Johnson	03/28/19 12:54	Retrieve from Storage
JC84953-1.2	Dwayne Johnson	Secured Staging Area	03/28/19 12:54	Return to Storage
JC84953-1.2	Secured Staging Area	Jayna Patel	03/28/19 12:55	Retrieve from Storage
JC84953-1.2	Jayna Patel	Secured Storage	03/28/19 14:05	Return to Storage
JC84953-1.2	Secured Storage	Sahara Feliciano	04/07/19 12:12	Retrieve from Storage

5.4
5

SGS Internal Chain of Custody

Job Number: JC84953
Account: NOREASCA NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage
Received: 03/22/19

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC84953-1.2	Sahara Feliciano	Secured Staging Area	04/07/19 12:12	Return to Storage
JC84953-1.2	Secured Staging Area	Ruchitaben Chauhan	04/08/19 14:53	Retrieve from Storage
JC84953-1.2	Ruchitaben Chauhan	Secured Storage	04/08/19 17:46	Return to Storage
JC84953-1.2.1	Luis Jimenez	Organics Prep	03/25/19 15:02	Extract from JC84953-1.2
JC84953-1.2.1	Organics Prep	Natasha Torres	03/26/19 08:59	Extract from JC84953-1.2
JC84953-1.2.1	Natasha Torres	Extract Storage	03/26/19 08:59	Return to Storage
JC84953-1.2.1	Extract Storage	Summer Kotb	03/26/19 15:58	Retrieve from Storage
JC84953-1.2.1	Summer Kotb	GCXX	03/26/19 15:58	Load on Instrument
JC84953-1.2.2	Luis Jimenez	Organics Prep	03/25/19 15:02	Extract from JC84953-1.2
JC84953-1.2.2	Organics Prep	Natasha Torres	03/26/19 08:59	Extract from JC84953-1.2
JC84953-1.2.2	Natasha Torres	Extract Storage	03/26/19 08:59	Return to Storage
JC84953-1.2.2	Extract Storage	Mailisi Heshuote	03/26/19 10:33	Retrieve from Storage
JC84953-1.2.2	Mailisi Heshuote	GC4G	03/26/19 10:33	Load on Instrument
JC84953-1.2.3	Lindsey Lee	Bhooma Patel	03/27/19 07:54	Aliquot from JC84953-1.2
JC84953-1.2.3	Bhooma Patel		03/27/19 08:00	Depleted
JC84953-1.2.4	Bhooma Patel	Metals Digestion	03/27/19 07:59	Digestate from JC84953-1.2.3
JC84953-1.2.4	Metals Digestion	Bhooma Patel	03/27/19 08:00	Digestate from JC84953-1.2.3
JC84953-1.2.4	Bhooma Patel	Metals Digestate Storage	03/27/19 08:00	Return to Storage

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QC Evaluation: DOD QSM5 Limits

Job Number: JC84953
Account: NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage
Collected: 03/21/19

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP19327	SW846 8270D						
OP19327-BS1	95-48-7	2-Methylphenol	BSP	REC	83	%	32-122
OP19327-BS1		3&4-Methylphenol	BSP	REC	83	%	34-119
OP19327-BS1	87-86-5	Pentachlorophenol	BSP	REC	109	%	25-133
OP19327-BS1	108-95-2	Phenol	BSP	REC	79	%	34-121
OP19327-BS1	83-32-9	Acenaphthene	BSP	REC	86	%	40-123
OP19327-BS1	208-96-8	Acenaphthylene	BSP	REC	91	%	32-132
OP19327-BS1	120-12-7	Anthracene	BSP	REC	95	%	47-123
OP19327-BS1	56-55-3	Benzo(a)anthracene	BSP	REC	92	%	49-126
OP19327-BS1	50-32-8	Benzo(a)pyrene	BSP	REC	94	%	45-129
OP19327-BS1	205-99-2	Benzo(b)fluoranthene	BSP	REC	103	%	45-132
OP19327-BS1	191-24-2	Benzo(g,h,i)perylene	BSP	REC	92	%	43-134
OP19327-BS1	207-08-9	Benzo(k)fluoranthene	BSP	REC	101	%	47-132
OP19327-BS1	218-01-9	Chrysene	BSP	REC	94	%	50-124
OP19327-BS1	53-70-3	Dibenzo(a,h)anthracene	BSP	REC	90	%	45-134
OP19327-BS1	132-64-9	Dibenzofuran	BSP	REC	94	%	44-120
OP19327-BS1	206-44-0	Fluoranthene	BSP	REC	91	%	50-127
OP19327-BS1	86-73-7	Fluorene	BSP	REC	93	%	43-125
OP19327-BS1	118-74-1	Hexachlorobenzene	BSP	REC	89	%	45-122
OP19327-BS1	193-39-5	Indeno(1,2,3-cd)pyrene	BSP	REC	91	%	45-133
OP19327-BS1	91-20-3	Naphthalene	BSP	REC	80	%	35-123
OP19327-BS1	85-01-8	Phenanthrene	BSP	REC	92	%	50-121
OP19327-BS1	129-00-0	Pyrene	BSP	REC	101	%	47-127
OP19327-BS1	367-12-4	2-Fluorophenol	BSP	SURR	87	%	35-115
OP19327-BS1	4165-62-2	Phenol-d5	BSP	SURR	81	%	33-122
OP19327-BS1	118-79-6	2,4,6-Tribromophenol	BSP	SURR	98	%	39-132
OP19327-BS1	4165-60-0	Nitrobenzene-d5	BSP	SURR	80	%	37-122
OP19327-BS1	321-60-8	2-Fluorobiphenyl	BSP	SURR	88	%	44-115
OP19327-BS1	1718-51-0	Terphenyl-d14	BSP	SURR	109	%	54-127
OP19327-BSD	95-48-7	2-Methylphenol	BSD	REC	80	%	32-122
OP19327-BSD		3&4-Methylphenol	BSD	REC	82	%	34-119
OP19327-BSD	87-86-5	Pentachlorophenol	BSD	REC	107	%	25-133
OP19327-BSD	108-95-2	Phenol	BSD	REC	76	%	34-121
OP19327-BSD	83-32-9	Acenaphthene	BSD	REC	83	%	40-123
OP19327-BSD	208-96-8	Acenaphthylene	BSD	REC	87	%	32-132
OP19327-BSD	120-12-7	Anthracene	BSD	REC	92	%	47-123
OP19327-BSD	56-55-3	Benzo(a)anthracene	BSD	REC	88	%	49-126
OP19327-BSD	50-32-8	Benzo(a)pyrene	BSD	REC	90	%	45-129
OP19327-BSD	205-99-2	Benzo(b)fluoranthene	BSD	REC	101	%	45-132
OP19327-BSD	191-24-2	Benzo(g,h,i)perylene	BSD	REC	89	%	43-134
OP19327-BSD	207-08-9	Benzo(k)fluoranthene	BSD	REC	97	%	47-132
OP19327-BSD	218-01-9	Chrysene	BSD	REC	88	%	50-124
OP19327-BSD	53-70-3	Dibenzo(a,h)anthracene	BSD	REC	86	%	45-134

* Sample used for QC is not from job JC84953

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QC Evaluation: DOD QSM5 Limits

Job Number: JC84953
Account: NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage
Collected: 03/21/19

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP19327-BSD	132-64-9	Dibenzofuran	BSD	REC	90	%	44-120
OP19327-BSD	206-44-0	Fluoranthene	BSD	REC	87	%	50-127
OP19327-BSD	86-73-7	Fluorene	BSD	REC	88	%	43-125
OP19327-BSD	118-74-1	Hexachlorobenzene	BSD	REC	89	%	45-122
OP19327-BSD	193-39-5	Indeno(1,2,3-cd)pyrene	BSD	REC	87	%	45-133
OP19327-BSD	91-20-3	Naphthalene	BSD	REC	79	%	35-123
OP19327-BSD	85-01-8	Phenanthrene	BSD	REC	89	%	50-121
OP19327-BSD	129-00-0	Pyrene	BSD	REC	94	%	47-127
OP19327-BSD	367-12-4	2-Fluorophenol	BSD	SURR	85	%	35-115
OP19327-BSD	4165-62-2	Phenol-d5	BSD	SURR	79	%	33-122
OP19327-BSD	118-79-6	2,4,6-Tribromophenol	BSD	SURR	104	%	39-132
OP19327-BSD	4165-60-0	Nitrobenzene-d5	BSD	SURR	77	%	37-122
OP19327-BSD	321-60-8	2-Fluorobiphenyl	BSD	SURR	84	%	44-115
OP19327-BSD	1718-51-0	Terphenyl-d14	BSD	SURR	104	%	54-127
OP19327-MS	95-48-7	2-Methylphenol	MS	REC	63	%	32-122
OP19327-MS		3&4-Methylphenol	MS	REC	65	%	34-119
OP19327-MS	87-86-5	Pentachlorophenol	MS	REC	74	%	25-133
OP19327-MS	108-95-2	Phenol	MS	REC	58	%	34-121
OP19327-MS	83-32-9	Acenaphthene	MS	REC	71	%	40-123
OP19327-MS	208-96-8	Acenaphthylene	MS	REC	76	%	32-132
OP19327-MS	120-12-7	Anthracene	MS	REC	80	%	47-123
OP19327-MS	56-55-3	Benzo(a)anthracene	MS	REC	76	%	49-126
OP19327-MS	50-32-8	Benzo(a)pyrene	MS	REC	80	%	45-129
OP19327-MS	205-99-2	Benzo(b)fluoranthene	MS	REC	86	%	45-132
OP19327-MS	191-24-2	Benzo(g,h,i)perylene	MS	REC	80	%	43-134
OP19327-MS	207-08-9	Benzo(k)fluoranthene	MS	REC	83	%	47-132
OP19327-MS	218-01-9	Chrysene	MS	REC	77	%	50-124
OP19327-MS	53-70-3	Dibenzo(a,h)anthracene	MS	REC	73	%	45-134
OP19327-MS	132-64-9	Dibenzofuran	MS	REC	81	%	44-120
OP19327-MS	206-44-0	Fluoranthene	MS	REC	77	%	50-127
OP19327-MS	86-73-7	Fluorene	MS	REC	76	%	43-125
OP19327-MS	118-74-1	Hexachlorobenzene	MS	REC	79	%	45-122
OP19327-MS	193-39-5	Indeno(1,2,3-cd)pyrene	MS	REC	77	%	45-133
OP19327-MS	91-20-3	Naphthalene	MS	REC	68	%	35-123
OP19327-MS	85-01-8	Phenanthrene	MS	REC	80	%	50-121
OP19327-MS	129-00-0	Pyrene	MS	REC	83	%	47-127
OP19327-MS	367-12-4	2-Fluorophenol	MS	SURR	74	%	35-115
OP19327-MS	4165-62-2	Phenol-d5	MS	SURR	71	%	33-122
OP19327-MS	118-79-6	2,4,6-Tribromophenol	MS	SURR	90	%	39-132
OP19327-MS	4165-60-0	Nitrobenzene-d5	MS	SURR	70	%	37-122
OP19327-MS	321-60-8	2-Fluorobiphenyl	MS	SURR	74	%	44-115
OP19327-MS	1718-51-0	Terphenyl-d14	MS	SURR	93	%	54-127
OP19327-MSD	95-48-7	2-Methylphenol	MSD	REC	77	%	32-122
OP19327-MSD	95-48-7	2-Methylphenol	MSD	RPD	24 ^a	%	20
OP19327-MSD		3&4-Methylphenol	MSD	REC	76	%	34-119

* Sample used for QC is not from job JC84953

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QC Evaluation: DOD QSM5 Limits

Job Number: JC84953
Account: NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage
Collected: 03/21/19

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP19327-MSD		3&4-Methylphenol	MSD	RPD	19	%	20
OP19327-MSD	87-86-5	Pentachlorophenol	MSD	REC	97	%	25-133
OP19327-MSD	87-86-5	Pentachlorophenol	MSD	RPD	31 ^a	%	20
OP19327-MSD	108-95-2	Phenol	MSD	REC	72	%	34-121
OP19327-MSD	108-95-2	Phenol	MSD	RPD	25 ^a	%	20
OP19327-MSD	83-32-9	Acenaphthene	MSD	REC	78	%	40-123
OP19327-MSD	83-32-9	Acenaphthene	MSD	RPD	14	%	20
OP19327-MSD	208-96-8	Acenaphthylene	MSD	REC	83	%	32-132
OP19327-MSD	208-96-8	Acenaphthylene	MSD	RPD	13	%	20
OP19327-MSD	120-12-7	Anthracene	MSD	REC	94	%	47-123
OP19327-MSD	120-12-7	Anthracene	MSD	RPD	20	%	20
OP19327-MSD	56-55-3	Benzo(a)anthracene	MSD	REC	91	%	49-126
OP19327-MSD	56-55-3	Benzo(a)anthracene	MSD	RPD	21 ^a	%	20
OP19327-MSD	50-32-8	Benzo(a)pyrene	MSD	REC	90	%	45-129
OP19327-MSD	50-32-8	Benzo(a)pyrene	MSD	RPD	16	%	20
OP19327-MSD	205-99-2	Benzo(b)fluoranthene	MSD	REC	98	%	45-132
OP19327-MSD	205-99-2	Benzo(b)fluoranthene	MSD	RPD	17	%	20
OP19327-MSD	191-24-2	Benzo(g,h,i)perylene	MSD	REC	90	%	43-134
OP19327-MSD	191-24-2	Benzo(g,h,i)perylene	MSD	RPD	15	%	20
OP19327-MSD	207-08-9	Benzo(k)fluoranthene	MSD	REC	96	%	47-132
OP19327-MSD	207-08-9	Benzo(k)fluoranthene	MSD	RPD	19	%	20
OP19327-MSD	218-01-9	Chrysene	MSD	REC	90	%	50-124
OP19327-MSD	218-01-9	Chrysene	MSD	RPD	19	%	20
OP19327-MSD	53-70-3	Dibenzo(a,h)anthracene	MSD	REC	87	%	45-134
OP19327-MSD	53-70-3	Dibenzo(a,h)anthracene	MSD	RPD	21 ^a	%	20
OP19327-MSD	132-64-9	Dibenzofuran	MSD	REC	88	%	44-120
OP19327-MSD	132-64-9	Dibenzofuran	MSD	RPD	12	%	20
OP19327-MSD	206-44-0	Fluoranthene	MSD	REC	90	%	50-127
OP19327-MSD	206-44-0	Fluoranthene	MSD	RPD	19	%	20
OP19327-MSD	86-73-7	Fluorene	MSD	REC	84	%	43-125
OP19327-MSD	86-73-7	Fluorene	MSD	RPD	14	%	20
OP19327-MSD	118-74-1	Hexachlorobenzene	MSD	REC	89	%	45-122
OP19327-MSD	118-74-1	Hexachlorobenzene	MSD	RPD	16	%	20
OP19327-MSD	193-39-5	Indeno(1,2,3-cd)pyrene	MSD	REC	93	%	45-133
OP19327-MSD	193-39-5	Indeno(1,2,3-cd)pyrene	MSD	RPD	22 ^a	%	20
OP19327-MSD	91-20-3	Naphthalene	MSD	REC	77	%	35-123
OP19327-MSD	91-20-3	Naphthalene	MSD	RPD	16	%	20
OP19327-MSD	85-01-8	Phenanthrene	MSD	REC	91	%	50-121
OP19327-MSD	85-01-8	Phenanthrene	MSD	RPD	17	%	20
OP19327-MSD	129-00-0	Pyrene	MSD	REC	97	%	47-127
OP19327-MSD	129-00-0	Pyrene	MSD	RPD	20	%	20
OP19327-MSD	367-12-4	2-Fluorophenol	MSD	SURR	86	%	35-115
OP19327-MSD	4165-62-2	Phenol-d5	MSD	SURR	79	%	33-122
OP19327-MSD	118-79-6	2,4,6-Tribromophenol	MSD	SURR	107	%	39-132
OP19327-MSD	4165-60-0	Nitrobenzene-d5	MSD	SURR	78	%	37-122

* Sample used for QC is not from job JC84953

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QC Evaluation: DOD QSM5 Limits

Job Number: JC84953
Account: NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage
Collected: 03/21/19

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP19327-MSD	321-60-8	2-Fluorobiphenyl	MSD	SURR	81	%	44-115
OP19327-MSD	1718-51-0	Terphenyl-d14	MSD	SURR	108	%	54-127
OP19327-MB1	367-12-4	2-Fluorophenol	MB	SURR	71	%	35-115
OP19327-MB1	4165-62-2	Phenol-d5	MB	SURR	69	%	33-122
OP19327-MB1	118-79-6	2,4,6-Tribromophenol	MB	SURR	68	%	39-132
OP19327-MB1	4165-60-0	Nitrobenzene-d5	MB	SURR	72	%	37-122
OP19327-MB1	321-60-8	2-Fluorobiphenyl	MB	SURR	66	%	44-115
OP19327-MB1	1718-51-0	Terphenyl-d14	MB	SURR	99	%	54-127
JC84953-1	367-12-4	2-Fluorophenol	SAMP	SURR	72	%	35-115
JC84953-1	4165-62-2	Phenol-d5	SAMP	SURR	67	%	33-122
JC84953-1	118-79-6	2,4,6-Tribromophenol	SAMP	SURR	77	%	39-132
JC84953-1	4165-60-0	Nitrobenzene-d5	SAMP	SURR	73	%	37-122
JC84953-1	321-60-8	2-Fluorobiphenyl	SAMP	SURR	71	%	44-115
JC84953-1	1718-51-0	Terphenyl-d14	SAMP	SURR	94	%	54-127
OP19325	SW846 8151A						
OP19325-BS1	93-72-1	2,4,5-TP (Silvex)	BSP	REC	68	%	43-129
OP19325-BS1	19719-28-9	2,4-DCAA (sig#1)	BSP	SURR	70	%	27-122
OP19325-BS1	19719-28-9	2,4-DCAA (sig#2)	BSP	SURR	73	%	27-122
OP19325-MS	93-72-1	2,4,5-TP (Silvex)	MS	REC	59	%	43-129
OP19325-MS	19719-28-9	2,4-DCAA (sig#1)	MS	SURR	70	%	27-122
OP19325-MS	19719-28-9	2,4-DCAA (sig#2)	MS	SURR	74	%	27-122
OP19325-MSD	93-72-1	2,4,5-TP (Silvex)	MSD	REC	76	%	43-129
OP19325-MSD	93-72-1	2,4,5-TP (Silvex)	MSD	RPD	21	%	30
OP19325-MSD	19719-28-9	2,4-DCAA (sig#1)	MSD	SURR	72	%	27-122
OP19325-MSD	19719-28-9	2,4-DCAA (sig#2)	MSD	SURR	77	%	27-122
OP19325-MB1	19719-28-9	2,4-DCAA (sig#1)	MB	SURR	64	%	27-122
OP19325-MB1	19719-28-9	2,4-DCAA (sig#2)	MB	SURR	63	%	27-122
JC84953-1	19719-28-9	2,4-DCAA (sig#1)	SAMP	SURR	64	%	27-122
JC84953-1	19719-28-9	2,4-DCAA (sig#2)	SAMP	SURR	67	%	27-122
OP19345	SW846 8082A						
OP19345-BS1	12674-11-2	Aroclor 1016	BSP	REC	121	%	47-134
OP19345-BS1	11096-82-5	Aroclor 1260	BSP	REC	115	%	53-140
OP19345-BS1	877-09-8	Tetrachloro-m-xylene (sig#1)	BSP	SURR	107	%	44-130
OP19345-BS1	877-09-8	Tetrachloro-m-xylene (sig#2)	BSP	SURR	103	%	44-130
OP19345-MS	12674-11-2	Aroclor 1016	MS	REC	122	%	47-134
OP19345-MS	11096-82-5	Aroclor 1260	MS	REC	109	%	53-140
OP19345-MS	877-09-8	Tetrachloro-m-xylene (sig#1)	MS	SURR	102	%	44-130
OP19345-MS	877-09-8	Tetrachloro-m-xylene (sig#2)	MS	SURR	95	%	44-130
OP19345-MSD	12674-11-2	Aroclor 1016	MSD	REC	118	%	47-134
OP19345-MSD	12674-11-2	Aroclor 1016	MSD	RPD	1	%	30
OP19345-MSD	11097-69-1	Aroclor 1254	MSD	RPD	0	%	30

* Sample used for QC is not from job JC84953

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QC Evaluation: DOD QSM5 Limits

Job Number: JC84953
Account: NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage
Collected: 03/21/19

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP19345-MSD	11096-82-5	Aroclor 1260	MSD	REC	104	%	53-140
OP19345-MSD	11096-82-5	Aroclor 1260	MSD	RPD	2	%	30
OP19345-MSD	877-09-8	Tetrachloro-m-xylene (sig#1)	MSD	SURR	100	%	44-130
OP19345-MSD	877-09-8	Tetrachloro-m-xylene (sig#2)	MSD	SURR	98	%	44-130
OP19345-MB1	877-09-8	Tetrachloro-m-xylene (sig#1)	MB	SURR	79	%	44-130
OP19345-MB1	877-09-8	Tetrachloro-m-xylene (sig#2)	MB	SURR	77	%	44-130
JC84953-1	877-09-8	Tetrachloro-m-xylene (sig#1)	SAMP	SURR	88	%	44-130
JC84953-1	877-09-8	Tetrachloro-m-xylene (sig#2)	SAMP	SURR	86	%	44-130
OP19346	SW846 8081B						
OP19346-BS1	309-00-2	Aldrin	BSP	REC	79	%	45-136
OP19346-BS1	319-84-6	alpha-BHC	BSP	REC	79	%	45-137
OP19346-BS1	319-85-7	beta-BHC	BSP	REC	74	%	50-136
OP19346-BS1	319-86-8	delta-BHC	BSP	REC	65	%	47-139
OP19346-BS1	58-89-9	gamma-BHC (Lindane)	BSP	REC	77	%	49-135
OP19346-BS1	5103-71-9	alpha-Chlordane	BSP	REC	74	%	54-133
OP19346-BS1	60-57-1	Dieldrin	BSP	REC	83	%	56-136
OP19346-BS1	72-54-8	4,4'-DDD	BSP	REC	81	%	56-139
OP19346-BS1	72-55-9	4,4'-DDE	BSP	REC	85	%	56-134
OP19346-BS1	50-29-3	4,4'-DDT	BSP	REC	83	%	50-141
OP19346-BS1	72-20-8	Endrin	BSP	REC	82	%	57-140
OP19346-BS1	1031-07-8	Endosulfan sulfate	BSP	REC	74	%	55-136
OP19346-BS1	959-98-8	Endosulfan-I	BSP	REC	70	%	53-132
OP19346-BS1	33213-65-9	Endosulfan-II	BSP	REC	71	%	53-134
OP19346-BS1	76-44-8	Heptachlor	BSP	REC	76	%	47-136
OP19346-BS1	877-09-8	Tetrachloro-m-xylene (sig#1)	BSP	SURR	68	%	42-129
OP19346-BS1	877-09-8	Tetrachloro-m-xylene (sig#2)	BSP	SURR	75	%	42-129
OP19346-MS	309-00-2	Aldrin	MS	REC	68	%	45-136
OP19346-MS	319-84-6	alpha-BHC	MS	REC	67	%	45-137
OP19346-MS	319-85-7	beta-BHC	MS	REC	65	%	50-136
OP19346-MS	319-86-8	delta-BHC	MS	REC	56	%	47-139
OP19346-MS	58-89-9	gamma-BHC (Lindane)	MS	REC	66	%	49-135
OP19346-MS	5103-71-9	alpha-Chlordane	MS	REC	70	%	54-133
OP19346-MS	60-57-1	Dieldrin	MS	REC	72	%	56-136
OP19346-MS	72-54-8	4,4'-DDD	MS	REC	65	%	56-139
OP19346-MS	72-55-9	4,4'-DDE	MS	REC	70	%	56-134
OP19346-MS	50-29-3	4,4'-DDT	MS	REC	74	%	50-141
OP19346-MS	72-20-8	Endrin	MS	REC	67	%	57-140
OP19346-MS	1031-07-8	Endosulfan sulfate	MS	REC	66	%	55-136
OP19346-MS	959-98-8	Endosulfan-I	MS	REC	58	%	53-132
OP19346-MS	33213-65-9	Endosulfan-II	MS	REC	60	%	53-134
OP19346-MS	76-44-8	Heptachlor	MS	REC	69	%	47-136
OP19346-MS	877-09-8	Tetrachloro-m-xylene (sig#1)	MS	SURR	65	%	42-129
OP19346-MS	877-09-8	Tetrachloro-m-xylene (sig#2)	MS	SURR	67	%	42-129

* Sample used for QC is not from job JC84953

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QC Evaluation: DOD QSM5 Limits

Job Number: JC84953
Account: NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage
Collected: 03/21/19

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP19346-MSD	309-00-2	Aldrin	MSD	REC	98	%	45-136
OP19346-MSD	309-00-2	Aldrin	MSD	RPD	39 ^b	%	30
OP19346-MSD	319-84-6	alpha-BHC	MSD	REC	105	%	45-137
OP19346-MSD	319-84-6	alpha-BHC	MSD	RPD	46 ^b	%	30
OP19346-MSD	319-85-7	beta-BHC	MSD	REC	95	%	50-136
OP19346-MSD	319-85-7	beta-BHC	MSD	RPD	41 ^b	%	30
OP19346-MSD	319-86-8	delta-BHC	MSD	REC	82	%	47-139
OP19346-MSD	319-86-8	delta-BHC	MSD	RPD	40 ^b	%	30
OP19346-MSD	58-89-9	gamma-BHC (Lindane)	MSD	REC	98	%	49-135
OP19346-MSD	58-89-9	gamma-BHC (Lindane)	MSD	RPD	41 ^b	%	30
OP19346-MSD	5103-71-9	alpha-Chlordane	MSD	REC	98	%	54-133
OP19346-MSD	5103-71-9	alpha-Chlordane	MSD	RPD	35 ^b	%	30
OP19346-MSD	60-57-1	Dieldrin	MSD	REC	105	%	56-136
OP19346-MSD	60-57-1	Dieldrin	MSD	RPD	39 ^b	%	30
OP19346-MSD	72-54-8	4,4'-DDD	MSD	REC	94	%	56-139
OP19346-MSD	72-54-8	4,4'-DDD	MSD	RPD	39 ^b	%	30
OP19346-MSD	72-55-9	4,4'-DDE	MSD	REC	103	%	56-134
OP19346-MSD	72-55-9	4,4'-DDE	MSD	RPD	40 ^b	%	30
OP19346-MSD	50-29-3	4,4'-DDT	MSD	REC	107	%	50-141
OP19346-MSD	50-29-3	4,4'-DDT	MSD	RPD	39 ^b	%	30
OP19346-MSD	72-20-8	Endrin	MSD	REC	98	%	57-140
OP19346-MSD	72-20-8	Endrin	MSD	RPD	40 ^b	%	30
OP19346-MSD	1031-07-8	Endosulfan sulfate	MSD	REC	77	%	55-136
OP19346-MSD	1031-07-8	Endosulfan sulfate	MSD	RPD	18	%	30
OP19346-MSD	959-98-8	Endosulfan-I	MSD	REC	84	%	53-132
OP19346-MSD	959-98-8	Endosulfan-I	MSD	RPD	39 ^b	%	30
OP19346-MSD	33213-65-9	Endosulfan-II	MSD	REC	83	%	53-134
OP19346-MSD	33213-65-9	Endosulfan-II	MSD	RPD	34 ^b	%	30
OP19346-MSD	76-44-8	Heptachlor	MSD	REC	101	%	47-136
OP19346-MSD	76-44-8	Heptachlor	MSD	RPD	41 ^b	%	30
OP19346-MSD	877-09-8	Tetrachloro-m-xylene (sig#1)	MSD	SURR	84	%	42-129
OP19346-MSD	877-09-8	Tetrachloro-m-xylene (sig#2)	MSD	SURR	86	%	42-129
OP19346-MB1	877-09-8	Tetrachloro-m-xylene (sig#1)	MB	SURR	60	%	42-129
OP19346-MB1	877-09-8	Tetrachloro-m-xylene (sig#2)	MB	SURR	64	%	42-129
JC84953-1	877-09-8	Tetrachloro-m-xylene (sig#1)	SAMP	SURR	63	%	42-129
JC84953-1	877-09-8	Tetrachloro-m-xylene (sig#2)	SAMP	SURR	70	%	42-129

MP13517 SW846 6010D

MP13517-B1	7440-38-2	Arsenic	BSP	REC	96.8	%	82-111
MP13517-B1	7440-39-3	Barium	BSP	REC	103.5	%	83-113
MP13517-B1	7440-41-7	Beryllium	BSP	REC	97.9	%	83-113
MP13517-B1	7440-43-9	Cadmium	BSP	REC	96.3	%	82-113
MP13517-B1	7440-47-3	Chromium	BSP	REC	94.8	%	85-113
MP13517-B1	7440-50-8	Copper	BSP	REC	96.8	%	81-117

* Sample used for QC is not from job JC84953

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QC Evaluation: DOD QSM5 Limits

Job Number: JC84953
Account: NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage
Collected: 03/21/19

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
MP13517-B1	7439-92-1	Lead	BSP	REC	98.9	%	81-112
MP13517-B1	7439-96-5	Manganese	BSP	REC	95.3	%	84-114
MP13517-B1	7440-02-0	Nickel	BSP	REC	99.4	%	83-113
MP13517-B1	7782-49-2	Selenium	BSP	REC	96.3	%	78-111
MP13517-B1	7440-22-4	Silver	BSP	REC	97.6	%	82-112
MP13517-B1	7440-66-6	Zinc	BSP	REC	95.8	%	82-113
MP13517-S1	7440-38-2	Arsenic	MS	REC	94.3	%	82-111
MP13517-S1	7440-39-3	Barium	MS	REC	104.8	%	83-113
MP13517-S1	7440-41-7	Beryllium	MS	REC	96.4	%	83-113
MP13517-S1	7440-43-9	Cadmium	MS	REC	95	%	82-113
MP13517-S1	7440-47-3	Chromium	MS	REC	94.3	%	85-113
MP13517-S1	7440-50-8	Copper	MS	REC	95.7	%	81-117
MP13517-S1	7439-92-1	Lead	MS	REC	98.2	%	81-112
MP13517-S1	7439-96-5	Manganese	MS	REC	105	%	84-114
MP13517-S1	7440-02-0	Nickel	MS	REC	98	%	83-113
MP13517-S1	7782-49-2	Selenium	MS	REC	94.5	%	78-111
MP13517-S1	7440-22-4	Silver	MS	REC	97.2	%	82-112
MP13517-S1	7440-66-6	Zinc	MS	REC	94.2	%	82-113
MP13517-S2	7440-38-2	Arsenic	MSD	REC	95.8	%	82-111
MP13517-S2	7440-38-2	Arsenic	MSD	RPD	4.5	%	20
MP13517-S2	7440-39-3	Barium	MSD	REC	104.1	%	83-113
MP13517-S2	7440-39-3	Barium	MSD	RPD	2.2	%	20
MP13517-S2	7440-41-7	Beryllium	MSD	REC	97.4	%	83-113
MP13517-S2	7440-41-7	Beryllium	MSD	RPD	4	%	20
MP13517-S2	7440-43-9	Cadmium	MSD	REC	96.5	%	82-113
MP13517-S2	7440-43-9	Cadmium	MSD	RPD	4.5	%	20
MP13517-S2	7440-47-3	Chromium	MSD	REC	94.9	%	85-113
MP13517-S2	7440-47-3	Chromium	MSD	RPD	3.5	%	20
MP13517-S2	7440-50-8	Copper	MSD	REC	96.8	%	81-117
MP13517-S2	7440-50-8	Copper	MSD	RPD	4	%	20
MP13517-S2	7439-92-1	Lead	MSD	REC	99.2	%	81-112
MP13517-S2	7439-92-1	Lead	MSD	RPD	3.8	%	20
MP13517-S2	7439-96-5	Manganese	MSD	REC	93.3	%	84-114
MP13517-S2	7439-96-5	Manganese	MSD	RPD	7	%	20
MP13517-S2	7440-02-0	Nickel	MSD	REC	99.4	%	83-113
MP13517-S2	7440-02-0	Nickel	MSD	RPD	4.4	%	20
MP13517-S2	7782-49-2	Selenium	MSD	REC	95.6	%	78-111
MP13517-S2	7782-49-2	Selenium	MSD	RPD	4.1	%	20
MP13517-S2	7440-22-4	Silver	MSD	REC	98.5	%	82-112
MP13517-S2	7440-22-4	Silver	MSD	RPD	4.3	%	20
MP13517-S2	7440-66-6	Zinc	MSD	REC	95.8	%	82-113
MP13517-S2	7440-66-6	Zinc	MSD	RPD	4.4	%	20
MP13597	SW846 7471B						

* Sample used for QC is not from job JC84953

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QC Evaluation: DOD QSM5 Limits

Job Number: JC84953
Account: NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage
Collected: 03/21/19

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
MP13597-B1	7439-97-6	Mercury	BSP	REC	96	%	80-124
MP13597-S1	7439-97-6	Mercury	MS	REC	95.2	%	80-124
MP13597-S2	7439-97-6	Mercury	MSD	REC	94.2	%	80-124
MP13597-S2	7439-97-6	Mercury	MSD	RPD	0	%	20
GP20214 SW846 9012B/LACHAT							
GP20214-B1	57-12-5	Cyanide	BSP	REC	93.5	%	76-120
GP20214-S1*	57-12-5	Cyanide	MS	REC	98.9	%	76-120
GP20214-D1*	57-12-5	Cyanide	DUP	RPD	0	%	20
GP20460 SW846 3060A/7196A							
GP20460-B1	18540-29-9	Chromium, Hexavalent	BSP	REC	93.8	%	84-110
GP20460-B2	18540-29-9	Chromium, Hexavalent	BSP	REC	94.4	%	84-110
GP20460-S1	18540-29-9	Chromium, Hexavalent	MS	REC	44.6 ^c	%	84-110
GP20460-S2	18540-29-9	Chromium, Hexavalent	MS	REC	92.7 ^d	%	84-110
GP20460-D1	18540-29-9	Chromium, Hexavalent	DUP	RPD	17.4	%	20

- (a) Outside of program requirements.
- (b) Analytical precision exceeds program specific requirements.
- (c) Soluble XCR matrix spike recovery indicates possible matrix interference. Good post spike recovery (102%) on this sample.
- (d) Good recovery on insoluble XCR matrix spike. See additional comments on soluble matrix spike recovery.

* Sample used for QC is not from job JC84953

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (DFTPP)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

Method Blank Summary

Job Number: JC84953

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19327-MB1	F183464.D	1	03/28/19	CS	03/23/19	OP19327	EF7878

The QC reported here applies to the following samples:

Method: SW846 8270D

JC84953-1

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	67	21	ug/kg	
	3&4-Methylphenol	ND	67	27	ug/kg	
87-86-5	Pentachlorophenol	ND	130	31	ug/kg	
108-95-2	Phenol	ND	67	17	ug/kg	
83-32-9	Acenaphthene	ND	33	11	ug/kg	
208-96-8	Acenaphthylene	ND	33	17	ug/kg	
120-12-7	Anthracene	ND	33	20	ug/kg	
56-55-3	Benzo(a)anthracene	ND	33	9.4	ug/kg	
50-32-8	Benzo(a)pyrene	ND	33	15	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	33	15	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	33	17	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	33	16	ug/kg	
218-01-9	Chrysene	ND	33	10	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	33	15	ug/kg	
132-64-9	Dibenzofuran	ND	67	14	ug/kg	
206-44-0	Fluoranthene	ND	33	15	ug/kg	
86-73-7	Fluorene	ND	33	15	ug/kg	
118-74-1	Hexachlorobenzene	ND	67	8.4	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	33	16	ug/kg	
91-20-3	Naphthalene	ND	33	9.4	ug/kg	
85-01-8	Phenanthrene	ND	33	11	ug/kg	
129-00-0	Pyrene	ND	33	11	ug/kg	

CAS No.	Surrogate Recoveries	Limits	
367-12-4	2-Fluorophenol	71%	23-115%
4165-62-2	Phenol-d5	69%	27-114%
118-79-6	2,4,6-Tribromophenol	68%	19-152%
4165-60-0	Nitrobenzene-d5	72%	26-134%
321-60-8	2-Fluorobiphenyl	66%	39-124%
1718-51-0	Terphenyl-d14	99%	36-134%

Blank Spike/Blank Spike Duplicate Summary

Job Number: JC84953

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19327-BS1	F183465.D	1	03/28/19	CS	03/23/19	OP19327	EF7878
OP19327-BSD	F183466.D	1	03/28/19	CS	03/23/19	OP19327	EF7878

The QC reported here applies to the following samples:

Method: SW846 8270D

JC84953-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
95-48-7	2-Methylphenol	1670	1380	83	1340	80	3	40-126/30
	3&4-Methylphenol	1670	1380	83	1360	82	1	40-127/30
87-86-5	Pentachlorophenol	1670	1810	109	1790	107	1	15-149/30
108-95-2	Phenol	1670	1310	79	1260	76	4	50-109/30
83-32-9	Acenaphthene	1670	1430	86	1390	83	3	53-119/30
208-96-8	Acenaphthylene	1670	1520	91	1450	87	5	41-125/30
120-12-7	Anthracene	1670	1590	95	1530	92	4	51-120/30
56-55-3	Benzo(a)anthracene	1670	1530	92	1460	88	5	54-118/30
50-32-8	Benzo(a)pyrene	1670	1560	94	1500	90	4	55-121/30
205-99-2	Benzo(b)fluoranthene	1670	1720	103	1690	101	2	57-116/30
191-24-2	Benzo(g,h,i)perylene	1670	1530	92	1490	89	3	40-124/30
207-08-9	Benzo(k)fluoranthene	1670	1690	101	1620	97	4	59-116/30
218-01-9	Chrysene	1670	1560	94	1470	88	6	51-115/30
53-70-3	Dibenzo(a,h)anthracene	1670	1500	90	1430	86	5	48-121/30
132-64-9	Dibenzofuran	1670	1560	94	1500	90	4	51-119/30
206-44-0	Fluoranthene	1670	1520	91	1450	87	5	58-117/30
86-73-7	Fluorene	1670	1550	93	1460	88	6	56-114/30
118-74-1	Hexachlorobenzene	1670	1490	89	1480	89	1	50-128/30
193-39-5	Indeno(1,2,3-cd)pyrene	1670	1510	91	1450	87	4	49-124/30
91-20-3	Naphthalene	1670	1340	80	1310	79	2	44-116/30
85-01-8	Phenanthrene	1670	1540	92	1490	89	3	53-119/30
129-00-0	Pyrene	1670	1690	101	1560	94	8	54-124/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	87%	85%	23-115%
4165-62-2	Phenol-d5	81%	79%	27-114%
118-79-6	2,4,6-Tribromophenol	98%	104%	19-152%
4165-60-0	Nitrobenzene-d5	80%	77%	26-134%
321-60-8	2-Fluorobiphenyl	88%	84%	39-124%
1718-51-0	Terphenyl-d14	109%	104%	36-134%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC84953

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19327-MS	F183467.D	1	03/28/19	CS	03/23/19	OP19327	EF7878
OP19327-MSD	F183468.D	1	03/28/19	CS	03/23/19	OP19327	EF7878
JC84953-1	F183469.D	1	03/28/19	CS	03/23/19	OP19327	EF7878

The QC reported here applies to the following samples:

Method: SW846 8270D

JC84953-1

CAS No.	Compound	JC84953-1 ug/kg	Spike Q	ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
95-48-7	2-Methylphenol	69 U		1650	1040	63	1720	1320	77	24 ^a	10-138/33
	3&4-Methylphenol	69 U		1650	1070	65	1720	1300	76	19	10-143/33
87-86-5	Pentachlorophenol	140 U		1650	1220	74	1720	1670	97	31 ^a	10-148/39
108-95-2	Phenol	69 U		1650	959	58	1720	1230	72	25 ^a	24-114/32
83-32-9	Acenaphthene	34 U		1650	1170	71	1720	1340	78	14	21-136/34
208-96-8	Acenaphthylene	34 U		1650	1260	76	1720	1430	83	13	10-143/36
120-12-7	Anthracene	34 U		1650	1320	80	1720	1620	94	20	10-147/39
56-55-3	Benzo(a)anthracene	34 U		1650	1260	76	1720	1560	91	21 ^a	10-151/41
50-32-8	Benzo(a)pyrene	34 U		1650	1320	80	1720	1550	90	16	10-149/40
205-99-2	Benzo(b)fluoranthene	34 U		1650	1420	86	1720	1690	98	17	10-147/42
191-24-2	Benzo(g,h,i)perylene	34 U		1650	1330	80	1720	1550	90	15	10-150/41
207-08-9	Benzo(k)fluoranthene	34 U		1650	1370	83	1720	1650	96	19	12-142/41
218-01-9	Chrysene	34 U		1650	1270	77	1720	1540	90	19	10-151/41
53-70-3	Dibenzo(a,h)anthracene	34 U		1650	1210	73	1720	1500	87	21 ^a	10-152/38
132-64-9	Dibenzofuran	69 U		1650	1340	81	1720	1510	88	12	17-141/36
206-44-0	Fluoranthene	34 U		1650	1270	77	1720	1540	90	19	10-151/44
86-73-7	Fluorene	34 U		1650	1260	76	1720	1450	84	14	19-133/36
118-74-1	Hexachlorobenzene	69 U		1650	1300	79	1720	1530	89	16	18-142/37
193-39-5	Indeno(1,2,3-cd)pyrene	34 U		1650	1280	77	1720	1590	93	22 ^a	10-148/41
91-20-3	Naphthalene	34 U		1650	1130	68	1720	1320	77	16	10-136/36
85-01-8	Phenanthrene	34 U		1650	1330	80	1720	1570	91	17	11-145/45
129-00-0	Pyrene	34 U		1650	1370	83	1720	1670	97	20	11-155/44

CAS No.	Surrogate Recoveries	MS	MSD	JC84953-1	Limits
367-12-4	2-Fluorophenol	74%	86%	72%	23-115%
4165-62-2	Phenol-d5	71%	79%	67%	27-114%
118-79-6	2,4,6-Tribromophenol	90%	107%	77%	19-152%
4165-60-0	Nitrobenzene-d5	70%	78%	73%	26-134%
321-60-8	2-Fluorobiphenyl	74%	81%	71%	39-124%
1718-51-0	Terphenyl-d14	93%	108%	94%	36-134%

(a) Outside of program requirements.

* = Outside of Control Limits.

Instrument Performance Check (DFTPP)

Job Number: JC84953
Account: NOREASCA NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Sample: EF7873-DFTPP	Injection Date: 03/25/19
Lab File ID: F183413.D	Injection Time: 11:35
Instrument ID: GCMSF	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
51	30.0 - 60.0% of mass 198	12426	55.0	Pass
68	Less than 2.0% of mass 69	0	0.00 (0.00) ^a	Pass
69	Mass 69 relative abundance	13154	58.2	Pass
70	Less than 2.0% of mass 69	109	0.48 (0.83) ^a	Pass
127	40.0 - 60.0% of mass 198	12599	55.8	Pass
197	Less than 1.0% of mass 198	0	0.00	Pass
198	Base peak, 100% relative abundance	22587	100.0	Pass
199	5.0 - 9.0% of mass 198	1597	7.07	Pass
275	10.0 - 30.0% of mass 198	5418	24.0	Pass
365	1.0 - 100.0% of mass 198	761	3.37	Pass
441	Present, but less than mass 443	2608	11.5 (84.7) ^b	Pass
442	40.0 - 100.0% of mass 198	16385	72.5	Pass
443	17.0 - 23.0% of mass 442	3078	13.6 (18.8) ^c	Pass

- (a) Value is % of mass 69
- (b) Value is % of mass 443
- (c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
EF7873-IC7873	F183414.D	03/25/19	12:08	00:33	Initial cal 1
EF7873-IC7873	F183415.D	03/25/19	12:51	01:16	Initial cal 100
EF7873-IC7873	F183416.D	03/25/19	13:18	01:43	Initial cal 2
EF7873-IC7873	F183417.D	03/25/19	13:44	02:09	Initial cal 80
EF7873-IC7873	F183418.D	03/25/19	14:11	02:36	Initial cal 5
EF7873-ICC7873	F183419.D	03/25/19	14:38	03:03	Initial cal 50
EF7873-IC7873	F183420.D	03/25/19	15:04	03:29	Initial cal 10
EF7873-IC7873	F183422.D	03/25/19	15:58	04:23	Initial cal 25
EF7873-ICV7873	F183424.D	03/25/19	16:51	05:16	Initial cal verification 50
EF7873-ICV7873	F183428.D	03/25/19	18:38	07:03	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JC84953
Account: NOREASCA NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Sample: EF7874-DFTPP	Injection Date: 03/25/19
Lab File ID: F183429.D	Injection Time: 19:01
Instrument ID: GCMSF	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
51	30.0 - 60.0% of mass 198	8291	49.7	Pass
68	Less than 2.0% of mass 69	0	0.00 (0.00) ^a	Pass
69	Mass 69 relative abundance	8550	51.2	Pass
70	Less than 2.0% of mass 69	0	0.00 (0.00) ^a	Pass
127	40.0 - 60.0% of mass 198	8593	51.5	Pass
197	Less than 1.0% of mass 198	0	0.00	Pass
198	Base peak, 100% relative abundance	16697	100.0	Pass
199	5.0 - 9.0% of mass 198	1093	6.55	Pass
275	10.0 - 30.0% of mass 198	4522	27.1	Pass
365	1.0 - 100.0% of mass 198	709	4.25	Pass
441	Present, but less than mass 443	1922	11.5 (78.5) ^b	Pass
442	40.0 - 100.0% of mass 198	13657	81.8	Pass
443	17.0 - 23.0% of mass 442	2448	14.7 (17.9) ^c	Pass

- (a) Value is % of mass 69
- (b) Value is % of mass 443
- (c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
EF7874-IC7874	F183430.D	03/25/19	19:13	00:12	Initial cal 100
EF7874-IC7874	F183431.D	03/25/19	19:40	00:39	Initial cal 80
EF7874-ICC7874	F183432.D	03/25/19	20:07	01:06	Initial cal 50
EF7874-IC7874	F183433.D	03/25/19	20:33	01:32	Initial cal 25
EF7874-IC7874	F183434.D	03/25/19	21:00	01:59	Initial cal 10
EF7874-IC7874	F183435.D	03/25/19	21:27	02:26	Initial cal 5
EF7874-IC7874	F183436.D	03/25/19	21:53	02:52	Initial cal 2
EF7874-IC7874	F183437.D	03/25/19	22:20	03:19	Initial cal 1
EF7874-ICV7874	F183438.D	03/25/19	22:46	03:45	Initial cal verification 50
EF7874-ICV7874	F183439.D	03/25/19	23:13	04:12	Initial cal verification 50

6.4.2
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Instrument Performance Check (DFTPP)

Job Number: JC84953
Account: NOREASCA NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Sample: EF7875-DFTPP	Injection Date: 03/25/19
Lab File ID: F183440.D	Injection Time: 23:36
Instrument ID: GCMSF	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
51	30.0 - 60.0% of mass 198	8366	55.3	Pass
68	Less than 2.0% of mass 69	156	1.03 (1.97) ^a	Pass
69	Mass 69 relative abundance	7926	52.4	Pass
70	Less than 2.0% of mass 69	0	0.00 (0.00) ^a	Pass
127	40.0 - 60.0% of mass 198	8117	53.7	Pass
197	Less than 1.0% of mass 198	0	0.00	Pass
198	Base peak, 100% relative abundance	15127	100.0	Pass
199	5.0 - 9.0% of mass 198	1040	6.88	Pass
275	10.0 - 30.0% of mass 198	3850	25.5	Pass
365	1.0 - 100.0% of mass 198	495	3.27	Pass
441	Present, but less than mass 443	1899	12.6 (89.4) ^b	Pass
442	40.0 - 100.0% of mass 198	11115	73.5	Pass
443	17.0 - 23.0% of mass 442	2124	14.0 (19.1) ^c	Pass

- (a) Value is % of mass 69
- (b) Value is % of mass 443
- (c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
EF7875-IC7875	F183441.D	03/25/19	23:48	00:12	Initial cal 100
EF7875-IC7875	F183442.D	03/26/19	00:14	00:38	Initial cal 80
EF7875-ICC7875	F183443.D	03/26/19	00:41	01:05	Initial cal 50
EF7875-IC7875	F183444.D	03/26/19	01:07	01:31	Initial cal 25
EF7875-IC7875	F183445.D	03/26/19	01:34	01:58	Initial cal 10
EF7875-IC7875	F183446.D	03/26/19	02:01	02:25	Initial cal 5
EF7875-IC7875	F183447.D	03/26/19	02:27	02:51	Initial cal 2
EF7875-ICV7875	F183449.D	03/26/19	03:20	03:44	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JC84953
Account: NOREASCA NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Sample: EF7876-DFTPP	Injection Date: 03/26/19
Lab File ID: F183451.D	Injection Time: 16:44
Instrument ID: GCMSF	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
51	30.0 - 60.0% of mass 198	9045	56.1	Pass
68	Less than 2.0% of mass 69	135	0.84 (1.50) ^a	Pass
69	Mass 69 relative abundance	8978	55.7	Pass
70	Less than 2.0% of mass 69	0	0.00 (0.00) ^a	Pass
127	40.0 - 60.0% of mass 198	9066	56.3	Pass
197	Less than 1.0% of mass 198	0	0.00	Pass
198	Base peak, 100% relative abundance	16113	100.0	Pass
199	5.0 - 9.0% of mass 198	1102	6.84	Pass
275	10.0 - 30.0% of mass 198	4071	25.3	Pass
365	1.0 - 100.0% of mass 198	472	2.93	Pass
441	Present, but less than mass 443	1690	10.5 (87.0) ^b	Pass
442	40.0 - 100.0% of mass 198	10834	67.2	Pass
443	17.0 - 23.0% of mass 442	1942	12.1 (17.9) ^c	Pass

- (a) Value is % of mass 69
- (b) Value is % of mass 443
- (c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
EF7876-ICV7873	F183455.D	03/26/19	18:16	01:32	Initial cal verification 50
EF7876-ICV7873	F183456.D	03/26/19	18:42	01:58	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JC84953
Account: NOREASCA NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Sample: EF7877-DFTPP	Injection Date: 03/27/19
Lab File ID: F183457.D	Injection Time: 11:19
Instrument ID: GCMSF	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
51	30.0 - 60.0% of mass 198	9207	51.5	Pass
68	Less than 2.0% of mass 69	0	0.00 (0.00) ^a	Pass
69	Mass 69 relative abundance	9168	51.2	Pass
70	Less than 2.0% of mass 69	0	0.00 (0.00) ^a	Pass
127	40.0 - 60.0% of mass 198	9804	54.8	Pass
197	Less than 1.0% of mass 198	0	0.00	Pass
198	Base peak, 100% relative abundance	17890	100.0	Pass
199	5.0 - 9.0% of mass 198	1356	7.58	Pass
275	10.0 - 30.0% of mass 198	4698	26.3	Pass
365	1.0 - 100.0% of mass 198	608	3.40	Pass
441	Present, but less than mass 443	1981	11.1 (83.1) ^b	Pass
442	40.0 - 100.0% of mass 198	13553	75.8	Pass
443	17.0 - 23.0% of mass 442	2385	13.3 (17.6) ^c	Pass

- (a) Value is % of mass 69
- (b) Value is % of mass 443
- (c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
EF7877-ICV7873	F183458.D	03/27/19	11:47	00:28	Initial cal verification 50
EF7877-ICV7873	F183459.D	03/27/19	12:13	00:54	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JC84953
Account: NOREASCA NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Sample: EF7878-DFTPP	Injection Date: 03/27/19
Lab File ID: F183460.D	Injection Time: 22:43
Instrument ID: GCMSF	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
51	30.0 - 60.0% of mass 198	8721	51.1	Pass
68	Less than 2.0% of mass 69	0	0.00 (0.00) ^a	Pass
69	Mass 69 relative abundance	8941	52.4	Pass
70	Less than 2.0% of mass 69	0	0.00 (0.00) ^a	Pass
127	40.0 - 60.0% of mass 198	9342	54.7	Pass
197	Less than 1.0% of mass 198	0	0.00	Pass
198	Base peak, 100% relative abundance	17077	100.0	Pass
199	5.0 - 9.0% of mass 198	1119	6.55	Pass
275	10.0 - 30.0% of mass 198	4172	24.4	Pass
365	1.0 - 100.0% of mass 198	633	3.71	Pass
441	Present, but less than mass 443	1985	11.6 (82.7) ^b	Pass
442	40.0 - 100.0% of mass 198	12657	74.1	Pass
443	17.0 - 23.0% of mass 442	2400	14.1 (19.0) ^c	Pass

- (a) Value is % of mass 69
- (b) Value is % of mass 443
- (c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
EF7878-CC7873	F183461.D	03/27/19	23:03	00:20	Continuing cal 50
EF7878-CC7874	F183462.D	03/27/19	23:29	00:46	Continuing cal 50
EF7878-CC7875	F183463.D	03/27/19	23:55	01:12	Continuing cal 50
OP19327-MB1	F183464.D	03/28/19	00:21	01:38	Method Blank
OP19327-BS1	F183465.D	03/28/19	00:48	02:05	Blank Spike
OP19327-BSD	F183466.D	03/28/19	01:14	02:31	Blank Spike Duplicate
OP19327-MS	F183467.D	03/28/19	01:40	02:57	Matrix Spike
OP19327-MSD	F183468.D	03/28/19	02:07	03:24	Matrix Spike Duplicate
JC84953-1	F183469.D	03/28/19	02:33	03:50	NWIRP-S1-WC-CF-024
EF7878-ECC7873	F183470.D	03/28/19	02:59	04:16	Ending cal 50
EF7878-ECC7874	F183471.D	03/28/19	03:25	04:42	Ending cal 50
EF7878-ECC7875	F183472.D	03/28/19	03:52	05:09	Ending cal 50

6.4.6
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Internal Standard Area Summary

Job Number: JC84953
Account: NOREASCA NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Check Std:	EF7878-CC7873	Injection Date:	03/27/19
Lab File ID:	F183461.D	Injection Time:	23:03
Instrument ID:	GCMSF	Method:	SW846 8270D

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	31918	4.62	118978	5.55	62580	6.95	107584	8.78	91563	13.98	96793	17.01
Upper Limit ^a	63836	5.12	237956	6.05	125160	7.45	215168	9.28	183126	14.48	193586	17.51
Lower Limit ^b	15959	4.12	59489	5.05	31290	6.45	53792	8.28	45782	13.48	48397	16.51

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
OP19327-MB1	27695	4.62	102745	5.55	53702	6.95	85645	8.78	61087	13.97	64023	17.00
OP19327-BS1	26883	4.62	105356	5.55	47200	6.95	79008	8.78	61171	13.98	63231	17.00
OP19327-BSD	27761	4.62	106963	5.55	48276	6.95	78853	8.78	62126	13.98	62517	17.00
OP19327-MS	27386	4.62	106790	5.55	49273	6.95	78482	8.78	61374	13.97	61626	17.00
OP19327-MSD	25836	4.62	100290	5.55	47909	6.95	74780	8.78	58477	13.97	61760	16.99
JC84953-1	27573	4.62	97249	5.55	50907	6.95	81772	8.77	60072	13.97	61006	16.99
EF7878-ECC7873	31002	4.62	118267	5.55	63489	6.95	109370	8.78	95684	13.98	100172	17.01
EF7878-ECC7874	28129	4.62	101606	5.55	53459	6.95	92849	8.78	76034	13.97	80914	17.00
EF7878-ECC7875	26762	4.62	95689	5.55	49466	6.95	86031	8.78	67238	13.97	71275	17.00

- IS 1** = 1,4-Dichlorobenzene-d4
- IS 2** = Naphthalene-d8
- IS 3** = Acenaphthene-D10
- IS 4** = Phenanthrene-d10
- IS 5** = Chrysene-d12
- IS 6** = Perylene-d12

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.

(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Surrogate Recovery Summary

Job Number: JC84953

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Method: SW846 8270D	Matrix: SO
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
JC84953-1	F183469.D	72	67	77	73	71	94
OP19327-BS1	F183465.D	87	81	98	80	88	109
OP19327-BSD	F183466.D	85	79	104	77	84	104
OP19327-MB1	F183464.D	71	69	68	72	66	99
OP19327-MS	F183467.D	74	71	90	70	74	93
OP19327-MSD	F183468.D	86	79	107	78	81	108

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	23-115%
S2 = Phenol-d5	27-114%
S3 = 2,4,6-Tribromophenol	19-152%
S4 = Nitrobenzene-d5	26-134%
S5 = 2-Fluorobiphenyl	39-124%
S6 = Terphenyl-d14	36-134%

6.6.1

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Initial Calibration Summary

Job Number: JC84953

Sample: EF7873-ICC7873

Account: NOREASCA NOREAS, Inc.

Lab FileID: F183419.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Response Factor Report GCMSF

Method : C:\MSDCHEM\1\METHODS\MF7873.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Tue Mar 26 13:56:40 2019
Response via : Initial Calibration

Calibration Files

2 =F183416.D 5 =F183418.D 25 =F183421.D 80 =F183417.D
100 =F183415.D 50 =F183419.D 10 =F183420.D 1 =F183414.D

Compound	2	5	25	80	100	50	10	1	Avg	%RSD
1) I 1,4-Dichlorobenzene-d	-----ISTD-----									
2) 1,4-Dioxane	0.551	0.517	0.545	0.532	0.612	0.571	0.555	0.775	0.582	14.27
3) Pyridine	1.467	1.511	1.545	1.546	1.757	1.523	1.522	1.165	1.504	10.79
4) N-Nitrosodim	0.810	0.889	0.796	0.780	0.885	0.823	0.861	1.086	0.866	11.26
5) 2-Fluorophen	1.200	1.315	1.322	1.314	1.397	1.376	1.253	1.412	1.323	5.45
6) Indene	2.084	2.230	2.373	2.199	2.149	2.234	2.332	2.259	2.232	4.16
7) Cumene	3.360	3.340	3.353	3.238	3.301	3.450	3.292	3.323	3.332	1.85
8) Phenol-d5	1.916	1.646	1.721	1.716	1.739	1.758	1.742	1.681	1.740	4.57
9) Phenol	2.094	1.937	2.044	2.048	2.045	2.127	2.031	2.104	2.054	2.85
10) Aniline	2.121	2.183	2.070	1.932	1.895	1.994	2.156	2.258	2.076	6.13
11) bis(2-Chloro	1.367	1.372	1.365	1.377	1.362	1.379	1.325	1.532	1.385	4.46
12) 2-Chlorophen	1.321	1.388	1.411	1.389	1.370	1.428	1.384	1.345	1.380	2.48
13) Decane	1.696	1.720	1.767	1.652	1.680	1.817	1.782	1.758	1.734	3.24
14) 1,3-Dichloro	1.584	1.629	1.606	1.572	1.555	1.605	1.614	1.562	1.591	1.66
15) 1,4-Dichloro	1.536	1.608	1.619	1.653	1.630	1.624	1.689	1.699	1.632	3.12
16) Benzyl alcoh	0.883	0.789	0.918	0.887	0.879	0.907	0.930	0.814	0.876	5.67
17) 1,2-Dichloro	1.677	1.540	1.621	1.504	1.510	1.562	1.674	1.520	1.576	4.54
18) Acetophenone	1.901	1.945	2.132	1.997	1.989	2.051	2.176	2.112	2.038	4.73
19) 2-Methylphen	1.208	1.183	1.341	1.279	1.274	1.296	1.287	1.249	1.265	3.98
20) 2,2'-oxybis(0.354	0.345	0.390	0.385	0.367	0.390	0.381		0.373	4.83
21) 3&4-Methylph	1.328	1.275	1.381	1.366	1.325	1.368	1.347	1.139	1.316	6.01
22) n-Nitroso-di	1.058	1.094	1.226	1.129	1.140	1.151	1.192	1.086	1.135	4.92
23) Hexachloroet	0.496	0.577	0.570	0.571	0.560	0.571	0.584	0.560	0.561	4.90
24) I Naphthalene-d8	-----ISTD-----									
25) Nitrobenzene	0.396	0.423	0.436	0.442	0.433	0.442	0.430	0.401	0.426	4.13
26) Nitrobenzene	0.432	0.445	0.466	0.466	0.449	0.458	0.453	0.426	0.449	3.28
27) Quinoline	0.691	0.677	0.687	0.722	0.699	0.711	0.693	0.664	0.693	2.64
28) Isophorone	0.764	0.758	0.723	0.730	0.715	0.744	0.781	0.702	0.740	3.63
29) 2-Nitropheno	0.183	0.177	0.182	0.199	0.193	0.211	0.175	0.186	0.188	6.55
30) 2,4-Dimethyl	0.316	0.313	0.357	0.389	0.383	0.377	0.330	0.310	0.347	9.66
31) Benzoic acid	0.112	0.131	0.164	0.243	0.261	0.231	0.158		0.186	31.53
----- Quadratic regression -----										
Response Ratio = -0.00930 + 0.18887 *A + 0.03034 *A^2										
32) bis(2-Chloro	0.459	0.471	0.441	0.448	0.436	0.456	0.437	0.428	0.447	3.15
33) 2,4-Dichloro	0.259	0.280	0.290	0.311	0.306	0.310	0.297	0.283	0.292	6.15
34) 2,6-Dichloro	0.304	0.271	0.296	0.303	0.296	0.311	0.296	0.222	0.287	10.07
35) 1,3,5-Trichl	0.343	0.354	0.355	0.355	0.346	0.359	0.343	0.378	0.354	3.23
36) 1,2,4-Trichl	0.367	0.345	0.344	0.345	0.338	0.345	0.337	0.377	0.350	4.06
37) 1,2,3-Trichl	0.302	0.329	0.335	0.347	0.338	0.347	0.328	0.314	0.330	4.69
38) Naphthalene	1.069	1.067	1.042	1.048	1.007	1.051	1.046	1.072	1.050	1.99
39) 4-Chloroanil	0.471	0.416	0.424	0.431	0.407	0.431	0.421	0.369	0.421	6.74
40) 2,3-Dichloro	0.456	0.350	0.363	0.379	0.359	0.379	0.369	0.418	0.384	9.22
41) Caprolactam	0.188	0.182	0.194	0.211	0.200	0.210	0.201	0.191	0.197	5.16
42) Hexachlorobu	0.199	0.185	0.192	0.198	0.194	0.199	0.195	0.180	0.193	3.60

Initial Calibration Summary

Job Number: JC84953

Sample: EF7873-ICC7873

Account: NOREASCA NOREAS, Inc.

Lab FileID: F183419.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

43)	4-Chloro-3-m	0.306	0.321	0.322	0.339	0.332	0.340	0.318	0.318	0.324	3.65
44)	2-Methylnaph	0.555	0.593	0.579	0.578	0.569	0.587	0.566	0.677	0.588	6.46
45)	1-Methylnaph	0.752	0.729	0.717	0.727	0.708	0.734	0.751	0.872	0.749	6.96
46)	Dimethylnaph	0.612	0.656	0.625	0.648	0.615	0.643	0.621	0.673	0.637	3.41
47)	I Acenaphthene-d10	-----ISTD-----									
48)	Hexachlorocy	0.264	0.330	0.355	0.373	0.384	0.390	0.357	0.275	0.341	14.12
49)	2,4,6-Trichl	0.381	0.337	0.378	0.379	0.379	0.387	0.384	0.392	0.377	4.51
50)	2,4,5-Trichl	0.423	0.381	0.410	0.477	0.413	0.424	0.403	0.355	0.411	8.62
51)	2-Fluorobiph	1.466	1.449	1.434	1.582	1.402	1.679	1.436	1.448	1.487	6.33
52)	2-Chloronaph	1.076	1.155	1.227	1.209	1.192	1.268	1.191	1.182	1.187	4.74
53)	Biphenyl	1.407	1.547	1.588	1.564	1.546	1.668	1.600	1.622	1.568	4.88
54)	2-Nitroanili	0.362	0.374	0.422	0.437	0.435	0.453	0.418	0.406	0.413	7.63
55)	Dimethylphth	1.232	1.393	1.370	1.360	1.387	1.420	1.366	1.382	1.364	4.13
56)	Acenaphthyle	2.012	1.912	1.945	2.031	1.932	2.007	1.928	1.933	1.963	2.36
57)	2,6-Dinitrot	0.291	0.283	0.295	0.308	0.311	0.312	0.278	0.244	0.290	7.77
58)	3-Nitroanili	0.294	0.341	0.347	0.352	0.360	0.375	0.352	0.298	0.340	8.51
59)	Acenaphthene	1.306	1.309	1.337	1.300	1.269	1.362	1.337	1.347	1.321	2.28
60)	2,4-Dinitrop	0.077	0.104	0.125	0.167	0.171	0.167	0.115		0.132	27.85
	----- Quadratic regression -----	Coefficient = 0.9980									
	Response Ratio = -0.01838 + 0.15785 *A + 0.00345 *A^2										
61)	4-Nitropheno	0.179	0.214	0.227	0.231	0.236	0.187		0.212		11.23
62)	Dibenzofuran	1.559	1.675	1.710	1.667	1.648	1.736	1.665	1.678	1.667	3.11
63)	2,4-Dinitrot	0.308	0.353	0.395	0.418	0.417	0.431	0.370	0.370	0.383	10.67
64)	2,3,4,6-Tetr	0.279	0.295	0.308	0.343	0.345	0.347	0.301	0.238	0.307	12.36
65)	Diethylphtha	1.260	1.417	1.427	1.507	1.418	1.481	1.415	1.340	1.408	5.52
66)	Fluorene	1.295	1.353	1.337	1.359	1.342	1.369	1.366	1.240	1.333	3.32
67)	4-Chlorophen	0.597	0.632	0.619	0.623	0.610	0.629	0.627	0.596	0.617	2.29
68)	4-Nitroanili	0.292	0.345	0.378	0.377	0.381	0.390	0.372	0.289	0.353	11.50
69)	I Phenanthrene-d10	-----ISTD-----									
70)	4,6-Dinitro-	0.073	0.075	0.097	0.129	0.127	0.121	0.085		0.101	24.37
	----- Quadratic regression -----	Coefficient = 0.9984									
	Response Ratio = -0.00682 + 0.11849 *A + 0.00520 *A^2										
71)	n-Nitrosodip	0.548	0.507	0.539	0.548	0.515	0.551	0.525	0.562	0.537	3.59
72)	1,2-Diphenyl	0.942	0.934	0.976	0.949	0.893	1.158	0.941	0.920	0.964	8.47
73)	2,4,6-Tribr	0.103	0.107	0.122	0.126	0.124	0.147	0.105		0.119	12.98
74)	4-Bromopheny	0.221	0.200	0.215	0.238	0.200	0.214	0.207	0.207	0.213	5.84
75)	Hexachlorobe	0.269	0.248	0.245	0.262	0.236	0.252	0.249	0.271	0.254	4.75
76)	Pentachlorop	0.093	0.103	0.122	0.149	0.153	0.141	0.111		0.124	18.84
	----- Quadratic regression -----	Coefficient = 0.9997									
	Response Ratio = -0.00825 + 0.12946 *A + 0.00509 *A^2										
77)	Phenanthrene	1.144	1.122	1.184	1.206	1.118	1.185	1.122	1.053	1.142	4.32
78)	Anthracene	1.145	1.132	1.194	1.320	1.131	1.200	1.134	0.913	1.146	9.91
79)	Carbazole	1.207	1.019	1.073	1.068	1.057	1.096	1.010	0.905	1.054	8.11
80)	Di-n-butylph	1.376	1.295	1.413	1.416	1.425	1.416	1.332	1.024	1.337	10.07
81)	Fluoranthene	1.244	1.142	1.160	1.389	1.236	1.225	1.124	0.999	1.190	9.51
82)	Octadecane	0.523	0.577	0.636	0.596	0.583	0.621	0.595	0.578	0.589	5.72
83)	I Chrysene-d12	-----ISTD-----									
84)	Pyrene	1.495	1.393	1.408	1.613	1.394	1.588	1.423	1.296	1.451	7.38
85)	Terphenyl-d1	0.945	0.863	0.879	0.919	0.899	0.913	0.898	0.802	0.890	4.87
86)	Butylbenzylp	0.689	0.665	0.668	0.735	0.770	0.721	0.651	0.624	0.690	7.01
87)	Benzo[a]anth	1.565	1.290	1.248	1.299	1.265	1.299	1.255	1.311	1.316	7.81
88)	3,3'-Dichlor	0.397	0.437	0.432	0.486	0.470	0.477	0.424	0.317	0.430	12.69
89)	Chrysene	1.595	1.356	1.281	1.321	1.355	1.316	1.321	1.219	1.346	8.17
90)	bis(2-Ethylh	1.016	0.859	0.945	1.022	1.004	1.012	0.887	0.798	0.943	9.08

Initial Calibration Summary

Job Number: JC84953

Sample: EF7873-ICC7873

Account: NOREASCA NOREAS, Inc.

Lab FileID: F183419.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

91) I Perylene-d12	-----ISTD-----										
92) Di-n-octylph	1.046	1.225	1.398	1.615	1.478	1.607	1.112	1.166	1.331	16.82	
	----- Quadratic regression -----										
										Coefficient =	0.9967
										Response Ratio =	-0.07986 + 1.76688 *A + -0.08956 *A^2
93) Benzo[b]fluo	0.813	1.131	1.178	1.237	1.108	1.246	0.977	1.134	1.103	13.09	
94) Benzo[k]fluo	1.105	1.214	1.210	1.220	1.013	1.242	1.021	1.305	1.166	9.20	
95) Benzo[a]pyre	0.722	1.017	1.086	1.216		1.091	1.006	0.709	0.978	19.63	
	----- Quadratic regression -----										
										Coefficient =	0.9995
										Response Ratio =	0.00053 + 0.95488 *A + 0.12808 *A^2
96) Indeno[1,2,3	0.533	0.798	0.953	1.078	1.016	1.072	0.750	0.527	0.841	26.83	
	----- Quadratic regression -----										
										Coefficient =	0.9982
										Response Ratio =	-0.05180 + 1.15137 *A + -0.03931 *A^2
97) Dibenz(a,h)a		0.696	0.955	1.068	0.923	1.029	0.685		0.893	18.47	
98) Dibenz[a,h]a	0.628	0.985	1.038	1.125	1.103	1.147	0.952	0.575	0.944	23.54	
	----- Quadratic regression -----										
										Coefficient =	0.9995
										Response Ratio =	-0.03462 + 1.18159 *A + -0.02366 *A^2
99) 7,12-Dimethy		0.449	0.504	0.554	0.473	0.541	0.395		0.486	12.30	
100) Benzo[g,h,i]	0.764	1.031	1.063	1.302		1.183	0.885	0.746	0.996	21.02	
	----- Quadratic regression -----										
										Coefficient =	0.9999
										Response Ratio =	-0.01075 + 0.97936 *A + 0.16488 *A^2

(#) = Out of Range ### Number of calibration levels exceeded format ###

MF7873.M

Wed Mar 27 18:22:04 2019

Initial Calibration Verification

Job Number: JC84953 **Sample:** EF7873-ICV7873
Account: NOREASCA NOREAS, Inc. **Lab FileID:** F183424.D
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\EF7873\F183424.D Vial: 11
 Acq On : 25 Mar 2019 4:51 pm Operator: kristis
 Sample : icv7873-50 Inst : GCMSF
 Misc : op18378,ef7873,1000,,,1,1 Multiplr: 1.00
 MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MF7873.M (RTE Integrator)
 Title : Semi Volatile Extractables by GC/MS
 Last Update : Tue Mar 26 13:56:40 2019
 Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 30% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	133	0.00	4.64
6 t	Indene	2.232	2.425	-8.6	144	0.00	4.83
7 t	Cumene	3.332	3.073	7.8	118	0.00	4.05
13 t	Decane	1.734	1.486	14.3	108	0.00	4.53
24 I	Naphthalene-d8	1.000	1.000	0.0	134	0.00	5.57
27 t	Quinoline	0.693	0.634	8.5	119	0.00	5.82
40 t	2,3-Dichloroaniline	0.384	0.318	17.2	113	0.00	6.30-
46 t	Dimethylnaphthalene	0.637	0.570	10.5	119	0.00	6.59
47 I	Acenaphthene-d10	1.000	1.000	0.0	115	0.00	6.97
48 t	Hexachlorocyclopentadiene	0.341	0.353	-3.5	127	0.00	6.21
69 I	Phenanthrene-d10	1.000	1.000	0.0	123	0.00	8.82
82 t	Octadecane	0.589	0.549	6.8	109	0.00	8.73

 (#) = Out of Range SPCC's out = 0 CCC's out = 0
 F183443A.D MF7873.M Wed Mar 27 18:19:03 2019

Initial Calibration Verification

Job Number: JC84953

Sample: EF7873-ICV7873

Account: NOREASCA NOREAS, Inc.

Lab FileID: F183428.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\EF7873\F183428.D Vial: 15
Acq On : 25 Mar 2019 6:38 pm Operator: kristis
Sample : icv7873-50 Inst : GCMSF
Misc : op18378,ef7873,1000,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MF7873.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Tue Mar 26 13:56:40 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
83 I Chrysene-d12	1.000	1.000	0.0	101	-0.01	14.02
88 t 3,3'-Dichlorobenzidine	0.430	0.448	-4.2	95	0.00	14.05

(#) = Out of Range
F183443A.D MF7873.M

SPCC's out = 0 CCC's out = 0
Wed Mar 27 18:19:05 2019

6.7.3
6

Initial Calibration Summary

Job Number: JC84953

Sample: EF7874-ICC7874

Account: NOREASCA NOREAS, Inc.

Lab FileID: F183432.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Response Factor Report GCM5F

Method : C:\MSDCHEM\1\METHODS\MF7874.M (RTE Integrator)
 Title : Semi Volatile Extractables by GC/MS
 Last Update : Tue Mar 26 13:21:05 2019
 Response via : Initial Calibration

Calibration Files

2 =F183436.D 5 =F183435.D 25 =F183433.D 80 =F183431.D
 100 =F183430.D 50 =F183432.D 10 =F183434.D 1 =F183437.D

Compound	2	5	25	80	100	50	10	1	Avg %RSD
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156) I	1,4-Dichlorobenzene-d	-----ISTD-----									
157)	Benzaldehyde	1.124	1.105	1.207	1.101	1.101	1.162	1.175	1.125	1.138	3.48
158) I	Phenanthrene-d10b	-----ISTD-----									
159)	Atrazine	0.145	0.156	0.194	0.199	0.199	0.202	0.176	0.182	12.61	
162) I	Naphthalene-d8b	-----ISTD-----									
163)	Hydroquinone	0.235	0.309	0.316	0.313	0.314	0.254	0.290	12.43		
164) I	Acenaphthene-d10b	-----ISTD-----									
165)	1,2,4,5-Tetr	0.516	0.508	0.557	0.567	0.569	0.572	0.568	0.484	0.543	6.34

(#) = Out of Range ### Number of calibration levels exceeded format ###

MF7873.M

Tue Mar 26 13:25:13 2019

Initial Calibration Verification

Job Number: JC84953 **Sample:** EF7874-ICV7874
Account: NOREASCA NOREAS, Inc. **Lab FileID:** F183438.D
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\EF7873\F183438.D Vial: 24
Acq On : 25 Mar 2019 10:46 pm Operator: kristis
Sample : icv7874-50 Inst : GCMSF
Misc : op18378,ef7874,1000,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MF7873.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Tue Mar 26 13:21:05 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
156 I 1,4-Dichlorobenzene-d4b	1.000	1.000	0.0	153	0.00	4.64
157 Benzaldehyde	1.138	1.191	-4.7	157	0.00	4.32
158 I Phenanthrene-d10b	1.000	1.000	0.0	156	0.00	8.82
159 Atrazine	0.182	0.200	-9.9	155	0.02	8.43
164 I Acenaphthene-d10b	1.000	1.000	0.0	138	0.00	6.97
165 1,2,4,5-Tetrachlorobenzen	0.543	0.582	-7.2	140	0.00	6.22

(#) = Out of Range SPCC's out = 0 CCC's out = 0
F183432A.D MF7873.M Tue Mar 26 13:24:59 2019

6.7.5
6

Initial Calibration Verification

Job Number: JC84953 **Sample:** EF7874-ICV7874
Account: NOREASCA NOREAS, Inc. **Lab FileID:** F183439.D
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\EF7873\F183439.D Vial: 25
Acq On : 25 Mar 2019 11:13 pm Operator: kristis
Sample : icv7874-50 Inst : GCMSF
Misc : op18378,ef7874,1000,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MF7873.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Tue Mar 26 13:21:05 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
162 I Naphthalene-d8b	1.000	1.000	0.0	72	0.00	5.57
163 Hydroquinone	0.290	0.319	-10.0	73	-0.02	5.85

(#) = Out of Range SPCC's out = 0 CCC's out = 0
F183432A.D MF7873.M Tue Mar 26 13:25:01 2019

6.7.6
6

Initial Calibration Summary

Job Number: JC84953 **Sample:** EF7875-ICC7875
Account: NOREASCA NOREAS, Inc. **Lab FileID:** F183443.D
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Response Factor Report GCMSF

Method : C:\MSDCHEM\1\METHODS\MF7875.M (RTE Integrator)
 Title : Semi Volatile Extractables by GC/MS
 Last Update : Tue Mar 26 13:56:40 2019
 Response via : Initial Calibration

Calibration Files

2 =F183447.D 5 =F183446.D 25 =F183444.D 80 =F183442.D
 100 =F183441.D 50 =F183443.D 10 =F183445.D 1 =

Compound	2	5	25	80	100	50	10	1	Avg %RSD
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160) I Chrysene-d12b -----ISTD-----
 161) Benzidine 0.462 0.806 0.977 0.981 0.878 0.589 0.782 27.25
 ----- Quadratic regression ----- Coefficient = 0.9994
 Response Ratio = -0.06872 + 0.88812 *A + 0.05121 *A^2

(#) = Out of Range ### Number of calibration levels exceeded format ###

MF7873.M Tue Mar 26 14:00:33 2019

6.7.7

6

Initial Calibration Verification

Job Number: JC84953 **Sample:** EF7875-ICV7875
Account: NOREASCA NOREAS, Inc. **Lab FileID:** F183449.D
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\EF7873\F183449.D Vial: 34
Acq On : 26 Mar 2019 3:20 am Operator: kristis
Sample : icv7875-50 Inst : GCMSF
Misc : op18378,ef7875,1000,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MF7873.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Tue Mar 26 13:56:40 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
160 I Chrysene-d12b	1.000	1.000	0.0	125	0.00	14.02
----- True	Calc.	% Drift	-----			
161 Benzidine	50.000	42.109	15.8	105	0.01	11.30

(#) = Out of Range SPCC's out = 0 CCC's out = 0
F183443A.D MF7873.M Tue Mar 26 14:00:24 2019

6.7.8
6

Initial Calibration Verification

Job Number: JC84953 **Sample:** EF7876-ICV7873
Account: NOREASCA NOREAS, Inc. **Lab FileID:** F183455.D
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\EF7876\F183455.D Vial: 5
Acq On : 26 Mar 2019 6:16 pm Operator: angular
Sample : icv7873-50 Inst : GCMSF
Misc : op18378,ef7876,1000,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MF7873.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Tue Mar 26 13:56:40 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	121	0.00	4.64
5 S	2-Fluorophenol	1.323	1.361	-2.9	120	0.00	3.65
8 S	Phenol-d5	1.740	1.676	3.7	115	0.00	4.37
24 I	Naphthalene-d8	1.000	1.000	0.0	115	0.00	5.56
25 S	Nitrobenzene-d5	0.426	0.429	-0.7	112	0.00	5.04
47 I	Acenaphthene-d10	1.000	1.000	0.0	111	0.00	6.97
51 S	2-Fluorobiphenyl	1.487	1.433	3.6	95	0.00	6.36
69 I	Phenanthrene-d10	1.000	1.000	0.0	108	-0.01	8.80
73 S	2,4,6-Tribromophenol	0.119	0.113	5.0	83	-0.01	7.83
83 I	Chrysene-d12	1.000	1.000	0.0	105	-0.03	14.00
85 S	Terphenyl-d14	0.890	0.947	-6.4	109	-0.01	11.82

(#) = Out of Range SPCC's out = 0 CCC's out = 0
F183443A.D MF7873.M Wed Mar 27 18:21:47 2019

6.7.9
6

Initial Calibration Verification

Job Number: JC84953

Sample: EF7876-ICV7873

Account: NOREASCA NOREAS, Inc.

Lab FileID: F183456.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\EF7876\F183456.D Vial: 6
Acq On : 26 Mar 2019 6:42 pm Operator: angelar
Sample : icv7873-50 Inst : GCMSF
Misc : op18378,ef7876,1000,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MF7873.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Tue Mar 26 13:56:40 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
24 I Naphthalene-d8	1.000	1.000	0.0	80	0.00	5.56
31 t Benzoic acid	50.000	49.108	1.8	74	0.01	5.40

(#) = Out of Range
F183443A.D MF7873.M

SPCC's out = 0 CCC's out = 0
Wed Mar 27 18:21:49 2019

Initial Calibration Verification

Job Number: JC84953 **Sample:** EF7877-ICV7873
Account: NOREASCA NOREAS, Inc. **Lab FileID:** F183458.D
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\EF7877\F183458.D Vial: 2
 Acq On : 27 Mar 2019 11:47 am Operator: angelar
 Sample : icv7873-50 Inst : GCMSF
 Misc : op18378,ef7877,1000,,,1,1 Multiplr: 1.00
 MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MF7873.M (RTE Integrator)
 Title : Semi Volatile Extractables by GC/MS
 Last Update : Tue Mar 26 13:56:40 2019
 Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 30% Max. Rel. Area : 200%

Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I 1,4-Dichlorobenzene-d4	1.000	1.000	0.0	84	-0.02	4.62
3 t Pyridine	1.504	1.532	-1.9	85	-0.03	2.47
4 t N-Nitrosodimethylamine	0.866	0.868	-0.2	89	-0.02	2.44
9 t Phenol	2.054	1.933	5.9	77	-0.02	4.37
10 t Aniline	2.076	2.183	-5.2	92	-0.02	4.38
11 t bis(2-Chloroethyl)ether	1.385	1.369	1.2	84	-0.02	4.42
12 t 2-Chlorophenol	1.380	1.342	2.8	79	-0.02	4.47
14 t 1,3-Dichlorobenzene	1.591	1.537	3.4	81	-0.02	4.58
15 t 1,4-Dichlorobenzene	1.632	1.572	3.7	82	-0.02	4.64
16 t Benzyl alcohol	0.876	0.897	-2.4	83	-0.02	4.72
17 t 1,2-Dichlorobenzene	1.576	1.479	6.2	80	-0.02	4.75
19 t 2-Methylphenol	1.265	1.225	3.2	80	-0.02	4.81
20 t 2,2'-oxybis(1-Chloropropa	0.373	0.399	-7.0	86	-0.01	4.83
21 t 3&4-Methylphenol	1.316	1.281	2.7	79	-0.02	4.92
22 n-Nitroso-di-n-propylamin	1.135	1.060	6.6	78	-0.02	4.92
23 t Hexachloroethane	0.561	0.535	4.6	79	-0.02	5.00
24 I Naphthalene-d8	1.000	1.000	0.0	77	-0.02	5.55
26 t Nitrobenzene	0.449	0.452	-0.7	76	-0.02	5.04
28 t Isophorone	0.740	0.761	-2.8	78	-0.02	5.22
29 t 2-Nitrophenol	0.188	0.188	0.0	68	-0.02	5.27
30 t 2,4-Dimethylphenol	0.347	0.383	-10.4	78	-0.02	5.30
32 t bis(2-Chloroethoxy)methan	0.447	0.444	0.7	75	-0.02	5.37
33 t 2,4-Dichlorophenol	0.292	0.297	-1.7	73	-0.02	5.45
36 t 1,2,4-Trichlorobenzene	0.350	0.345	1.4	77	-0.02	5.51
38 t Naphthalene	1.050	1.060	-1.0	77	-0.02	5.57
39 t 4-Chloroaniline	0.421	0.414	1.7	74	-0.02	5.60
42 t Hexachlorobutadiene	0.193	0.196	-1.6	76	-0.02	5.66
43 t 4-Chloro-3-methylphenol	0.324	0.320	1.2	72	-0.02	5.95
44 t 2-Methylnaphthalene	0.588	0.615	-4.6	80	-0.02	6.06
45 t 1-Methylnaphthalene	0.749	0.676	9.7	71	-0.02	6.14
47 I Acenaphthene-d10	1.000	1.000	0.0	74	-0.02	6.95
49 t 2,4,6-Trichlorophenol	0.377	0.385	-2.1	74	-0.02	6.28
50 t 2,4,5-Trichlorophenol	0.411	0.417	-1.5	73	-0.02	6.31
52 t 2-Chloronaphthalene	1.187	1.192	-0.4	70	-0.02	6.45
54 t 2-Nitroaniline	0.413	0.408	1.2	67	-0.02	6.53
55 t Dimethylphthalate	1.364	1.324	2.9	69	-0.02	6.69
56 t Acenaphthylene	1.963	1.928	1.8	71	-0.02	6.81
57 t 2,6-Dinitrotoluene	0.290	0.297	-2.4	71	-0.02	6.74
58 t 3-Nitroaniline	0.340	0.333	2.1	66	-0.02	6.90
59 t Acenaphthene	1.321	1.210	8.4	66	-0.02	6.98

6.7.11
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Initial Calibration Verification

Job Number: JC84953

Sample: EF7877-ICV7873

Account: NOREASCA NOREAS, Inc.

Lab FileID: F183458.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

		True	Calc.	% Drift			
60	t	2,4-Dinitrophenol	50.000	44.866	10.3	86	-0.03 6.99
			AvgRF	CCRF	% Dev		
61	t	4-Nitrophenol	0.212	0.201	5.2	63	-0.03 7.06
62	t	Dibenzofuran	1.667	1.642	1.5	70	-0.02 7.15
63	t	2,4-Dinitrotoluene	0.383	0.378	1.3	65	-0.02 7.13
64	t	2,3,4,6-Tetrachlorophenol	0.307	0.338	-10.1	72	-0.03 7.28
65	t	Diethylphthalate	1.408	1.358	3.6	68	-0.02 7.40
66	t	Fluorene	1.333	1.290	3.2	70	-0.03 7.53
67	t	4-Chlorophenyl-phenylethe	0.617	0.599	2.9	71	-0.03 7.53
68	t	4-Nitroaniline	0.353	0.344	2.5	66	-0.02 7.55
69	I	Phenanthrene-d10	1.000	1.000	0.0	71	-0.03 8.78
			True	Calc.	% Drift		
70	t	4,6-Dinitro-2-methylpheno	50.000	43.830	12.3	60	-0.03 7.58
			AvgRF	CCRF	% Dev		
71	t	n-Nitrosodiphenylamine	0.537	0.624	-16.2	80	-0.03 7.67
72	t	1,2-Diphenylhydrazine	0.964	0.954	1.0	58	-0.03 7.72
74	t	4-Bromophenyl-phenylether	0.213	0.210	1.4	69	-0.03 8.15
75	t	Hexachlorobenzene	0.254	0.240	5.5	67	-0.03 8.23
			True	Calc.	% Drift		
76	t	Pentachlorophenol	50.000	52.290	-4.6	90	-0.03 8.51
			AvgRF	CCRF	% Dev		
77	t	Phenanthrene	1.142	1.142	0.0	68	-0.04 8.82
78	t	Anthracene	1.146	1.147	-0.1	68	-0.03 8.90
79	t	Carbazole	1.054	1.000	5.1	65	-0.03 9.16
80	t	Di-n-butylphthalate	1.337	1.294	3.2	65	-0.03 9.87
81	t	Fluoranthene	1.190	1.130	5.0	65	-0.04 10.92
83	I	Chrysene-d12	1.000	1.000	0.0	65	-0.05 13.98
84	t	Pyrene	1.451	1.428	1.6	59	-0.04 11.36
86	t	Butylbenzylphthalate	0.690	0.706	-2.3	64	-0.04 12.96
87	t	Benzo[a]anthracene	1.316	1.305	0.8	66	-0.04 13.97
89	t	Chrysene	1.346	1.263	6.2	63	-0.04 14.04
90	t	bis(2-Ethylhexyl)phthalat	0.943	0.976	-3.5	63	-0.04 14.37
91	I	Perylene-d12	1.000	1.000	0.0	66	-0.05 17.01
			True	Calc.	% Drift		
92	t	Di-n-octylphthalate	50.000	48.454	3.1	64	-0.04 15.80
			AvgRF	CCRF	% Dev		
93	t	Benzo[b]fluoranthene	1.103	1.107	-0.4	59	-0.05 16.26
94	t	Benzo[k]fluoranthene	1.166	1.160	0.5	62	-0.05 16.32
			True	Calc.	% Drift		
95	t	Benzo[a]pyrene	50.000	50.505	-1.0	69	-0.05 16.89
96	t	Indeno[1,2,3-cd]pyrene	50.000	50.890	-1.8	67	-0.05 18.94
			True	Calc.	% Drift		
98	t	Dibenz[a,h]anthracene	50.000	48.421	3.2	63	-0.05 19.01

6.7.11
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Initial Calibration Verification

Job Number: JC84953

Sample: EF7877-ICV7873

Account: NOREASCA NOREAS, Inc.

Lab FileID: F183458.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

	----- True	Calc.	% Drift	-----
100 t	Benzo[g,h,i]perylene	50.000	49.949	0.1 66 -0.04 19.38

(#) = Out of Range SPCC's out = 0 CCC's out = 0
F183443A.D MF7873.M Wed Mar 27 18:11:45 2019

6.7.11

6

Initial Calibration Verification

Job Number: JC84953

Sample: EF7877-ICV7873

Account: NOREASCA NOREAS, Inc.

Lab FileID: F183459.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\EF7877\F183459.D Vial: 3
Acq On : 27 Mar 2019 12:13 pm Operator: angular
Sample : icv7873-50 Inst : GCMSF
Misc : op18378,ef7877,1000,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MF7873.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Tue Mar 26 13:56:40 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	79	-0.02	4.62
2 t	1,4-Dioxane	0.582	0.568	2.4	79	-0.02	2.15
18 t	Acetophenone	2.038	1.953	4.2	75	-0.02	4.92
24 I	Naphthalene-d8	1.000	1.000	0.0	74	-0.02	5.55
34	2,6-Dichlorophenol	0.287	0.284	1.0	67	-0.02	5.61
41 t	Caprolactam	0.197	0.181	8.1	64	-0.03	5.83
47 I	Acenaphthene-d10	1.000	1.000	0.0	71	-0.03	6.95
53 t	Biphenyl	1.568	1.571	-0.2	67	-0.02	6.43
91 I	Perylene-d12	1.000	1.000	0.0	61	-0.06	17.00
99 t	7,12-Dimethylbenz(a)anthr	0.486	0.535	-10.1	61	-0.05	16.28

(#) = Out of Range
F183443A.D MF7873.M

SPCC's out = 0 CCC's out = 0
Wed Mar 27 18:11:47 2019

Continuing Calibration Summary

Job Number: JC84953

Sample: EF7878-CC7873

Account: NOREASCA NOREAS, Inc.

Lab FileID: F183461.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\EF7878\F183461.D Vial: 2
 Acq On : 27 Mar 2019 11:03 pm Operator: chriss2
 Sample : cc7873-50 Inst : GCMSF
 Misc : op18378,ef7878,1000,,,1,1 Multiplr: 1.00
 MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MF7873.M (RTE Integrator)
 Title : Semi Volatile Extractables by GC/MS
 Last Update : Tue Mar 26 13:56:40 2019
 Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	105	-0.02	4.62
2 t	1,4-Dioxane	0.582	0.568	2.4	104	-0.03	2.15
3 t	Pyridine	1.504	1.431	4.9	99	-0.03	2.47
4 t	N-Nitrosodimethylamine	0.866	0.820	5.3	104	-0.02	2.44
5 S	2-Fluorophenol	1.323	1.276	3.6	97	-0.02	3.63
6 t	Indene	2.232	2.037	8.7	96	-0.02	4.81
7 t	Cumene	3.332	3.201	3.9	97	-0.02	4.03
8 S	Phenol-d5	1.740	1.589	8.7	95	-0.02	4.35
9 t	Phenol	2.054	1.919	6.6	95	-0.02	4.37
10 t	Aniline	2.076	1.741	16.1	92	-0.02	4.38
11 t	bis(2-Chloroethyl)ether	1.385	1.273	8.1	97	-0.02	4.43
12 t	2-Chlorophenol	1.380	1.306	5.4	96	-0.02	4.47
13 t	Decane	1.734	1.695	2.2	98	-0.02	4.52
14 t	1,3-Dichlorobenzene	1.591	1.499	5.8	98	-0.02	4.58
15 t	1,4-Dichlorobenzene	1.632	1.517	7.0	98	-0.02	4.64
16 t	Benzyl alcohol	0.876	0.824	5.9	95	-0.01	4.73
17 t	1,2-Dichlorobenzene	1.576	1.431	9.2	96	-0.02	4.75
18 t	Acetophenone	2.038	1.870	8.2	96	-0.02	4.92
19 t	2-Methylphenol	1.265	1.194	5.6	97	-0.02	4.81
20 t	2,2'-oxybis(1-Chloropropa	0.373	0.338	9.4	91	-0.02	4.82
21 t	3&4-Methylphenol	1.316	1.227	6.8	94	-0.02	4.92
22	n-Nitroso-di-n-propylamin	1.135	1.064	6.3	97	-0.02	4.92
23 t	Hexachloroethane	0.561	0.542	3.4	100	-0.02	5.00
24 I	Naphthalene-d8	1.000	1.000	0.0	98	-0.02	5.55
25 S	Nitrobenzene-d5	0.426	0.431	-1.2	95	-0.02	5.03
26 t	Nitrobenzene	0.449	0.449	0.0	96	-0.02	5.04
27 t	Quinoline	0.693	0.646	6.8	89	-0.02	5.81
28 t	Isophorone	0.740	0.696	5.9	91	-0.02	5.21
29 t	2-Nitrophenol	0.188	0.184	2.1	85	-0.02	5.27
30 t	2,4-Dimethylphenol	0.347	0.366	-5.5	95	-0.02	5.31
----- True Calc. % Drift -----							
31 t	Benzoic acid	50.000	51.171	-2.3	95	0.00	5.39
----- AvgRF CCRF % Dev -----							
32 t	bis(2-Chloroethoxy)methan	0.447	0.418	6.5	90	-0.02	5.37
33 t	2,4-Dichlorophenol	0.292	0.288	1.4	91	-0.02	5.45
34	2,6-Dichlorophenol	0.287	0.284	1.0	89	-0.02	5.61
35	1,3,5-Trichlorobenzene	0.354	0.337	4.8	92	-0.02	5.28
36 t	1,2,4-Trichlorobenzene	0.350	0.318	9.1	90	-0.02	5.51
37	1,2,3-Trichlorobenzene	0.330	0.329	0.3	93	-0.02	5.67

6.7.13

6

Continuing Calibration Summary

Job Number: JC84953

Sample: EF7878-CC7873

Account: NOREASCA NOREAS, Inc.

Lab FileID: F183461.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

38 t	Naphthalene	1.050	0.990	5.7	92	-0.02	5.57
39 t	4-Chloroaniline	0.421	0.402	4.5	91	-0.02	5.60
40 t	2,3-Dichloroaniline	0.384	0.344	10.4	89	-0.02	6.28
41 t	Caprolactam	0.197	0.184	6.6	86	0.00	5.87
42 t	Hexachlorobutadiene	0.193	0.192	0.5	94	-0.02	5.66
43 t	4-Chloro-3-methylphenol	0.324	0.312	3.7	90	-0.02	5.95
44 t	2-Methylnaphthalene	0.588	0.543	7.7	90	-0.02	6.06
45 t	1-Methylnaphthalene	0.749	0.674	10.0	90	-0.02	6.14
46 t	Dimethylnaphthalene	0.637	0.580	8.9	88	-0.02	6.57
47 I	Acenaphthene-d10	1.000	1.000	0.0	94	-0.02	6.95
48 t	Hexachlorocyclopentadiene	0.341	0.383	-12.3	92	-0.02	6.19
49 t	2,4,6-Trichlorophenol	0.377	0.377	0.0	92	-0.02	6.28
50 t	2,4,5-Trichlorophenol	0.411	0.410	0.2	91	-0.02	6.32
51 S	2-Fluorobiphenyl	1.487	1.382	7.1	77	-0.02	6.35
52 t	2-Chloronaphthalene	1.187	1.190	-0.3	88	-0.02	6.45
53 t	Biphenyl	1.568	1.559	0.6	88	-0.02	6.43
54 t	2-Nitroaniline	0.413	0.536	-29.8#	111	-0.02	6.53
55 t	Dimethylphthalate	1.364	1.290	5.4	86	-0.02	6.69
56 t	Acenaphthylene	1.963	1.890	3.7	89	-0.02	6.81
57 t	2,6-Dinitrotoluene	0.290	0.292	-0.7	88	-0.02	6.74
58 t	3-Nitroaniline	0.340	0.332	2.4	83	-0.02	6.90
59 t	Acenaphthene	1.321	1.238	6.3	86	-0.02	6.98
		----- True	Calc.	% Drift	-----		
60 t	2,4-Dinitrophenol	100.000	89.191	10.8	79	-0.02	7.00
		----- AvgRF	CCRF	% Dev	-----		
61 t	4-Nitrophenol	0.212	0.216	-1.9	86	-0.02	7.06
62 t	Dibenzofuran	1.667	1.591	4.6	86	-0.02	7.15
63 t	2,4-Dinitrotoluene	0.383	0.387	-1.0	85	-0.02	7.13
64	2,3,4,6-Tetrachlorophenol	0.307	0.311	-1.3	84	-0.03	7.28
65 t	Diethylphthalate	1.408	1.349	4.2	86	-0.02	7.40
66 t	Fluorene	1.333	1.275	4.4	88	-0.03	7.53
67 t	4-Chlorophenyl-phenylethe	0.617	0.573	7.1	86	-0.03	7.53
68 t	4-Nitroaniline	0.353	0.337	4.5	81	-0.02	7.55
69 I	Phenanthrene-d10	1.000	1.000	0.0	90	-0.03	8.78
		----- True	Calc.	% Drift	-----		
70 t	4,6-Dinitro-2-methylpheno	50.000	48.279	3.4	86	-0.02	7.59
		----- AvgRF	CCRF	% Dev	-----		
71 t	n-Nitrosodiphenylamine	0.537	0.511	4.8	84	-0.03	7.67
72 t	1,2-Diphenylhydrazine	0.964	0.928	3.7	73	-0.03	7.72
73 S	2,4,6-Tribromophenol	0.119	0.120	-0.8	74	-0.03	7.82
74 t	4-Bromophenyl-phenylether	0.213	0.203	4.7	86	-0.03	8.15
75 t	Hexachlorobenzene	0.254	0.227	10.6	82	-0.03	8.23
		----- True	Calc.	% Drift	-----		
76 t	Pentachlorophenol	100.000	101.022	-1.0	90	-0.03	8.51
		----- AvgRF	CCRF	% Dev	-----		
77 t	Phenanthrene	1.142	1.070	6.3	82	-0.03	8.82
78 t	Anthracene	1.146	1.087	5.1	82	-0.03	8.90
79 t	Carbazole	1.054	0.979	7.1	81	-0.03	9.16
80 t	Di-n-butylphthalate	1.337	1.293	3.3	83	-0.04	9.86
81 t	Fluoranthene	1.190	1.081	9.2	80	-0.04	10.93
82 t	Octadecane	0.589	0.573	2.7	83	-0.03	8.70

6.7.13

6

Continuing Calibration Summary

Job Number: JC84953

Sample: EF7878-CC7873

Account: NOREASCA NOREAS, Inc.

Lab FileID: F183461.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

83	I	Chrysene-d12	1.000	1.000	0.0	87	-0.05	13.98
84	t	Pyrene	1.451	1.349	7.0	74	-0.04	11.36
85	S	Terphenyl-d14	0.890	0.859	3.5	82	-0.04	11.79
86	t	Butylbenzylphthalate	0.690	0.668	3.2	80	-0.04	12.96
87	t	Benzo[a]anthracene	1.316	1.209	8.1	81	-0.04	13.97
88	t	3,3'-Dichlorobenzidine	0.430	0.438	-1.9	80	-0.04	14.00
89	t	Chrysene	1.346	1.227	8.8	81	-0.04	14.04
90	t	bis(2-Ethylhexyl)phthalat	0.943	0.953	-1.1	82	-0.04	14.37
91	I	Perylene-d12	1.000	1.000	0.0	86	-0.05	17.01
			----- True	Calc.	% Drift	-----		
92	t	Di-n-octylphthalate	50.000	47.980	4.0	82	-0.04	15.80
			----- AvgRF	CCRF	% Dev	-----		
93	t	Benzo[b]fluoranthene	1.103	1.140	-3.4	79	-0.05	16.26
94	t	Benzo[k]fluoranthene	1.166	1.167	-0.1	81	-0.04	16.33
			----- True	Calc.	% Drift	-----		
95	t	Benzo[a]pyrene	50.000	45.972	8.1	80	-0.05	16.89
96	t	Indeno[1,2,3-cd]pyrene	50.000	48.842	2.3	83	-0.04	18.95
			----- AvgRF	CCRF	% Dev	-----		
97	t	Dibenz(a,h)acridine	0.893	0.937	-4.9	79	-0.05	18.59
			----- True	Calc.	% Drift	-----		
98	t	Dibenz[a,h]anthracene	50.000	47.024	6.0	79	-0.05	19.01
			----- AvgRF	CCRF	% Dev	-----		
99	t	7,12-Dimethylbenz(a)anthr	0.486	0.497	-2.3	79	-0.04	16.29
			----- True	Calc.	% Drift	-----		
100	t	Benzo[g,h,i]perylene	50.000	44.869	10.3	75	-0.04	19.38

(#) = Out of Range
F183443A.D MF7873.M

SPCC's out = 0 CCC's out = 0
Thu Mar 28 10:15:05 2019

Continuing Calibration Summary

Job Number: JC84953 **Sample:** EF7878-CC7874
Account: NOREASCA NOREAS, Inc. **Lab FileID:** F183462.D
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\EF7878\F183462.D Vial: 3
Acq On : 27 Mar 2019 11:29 pm Operator: chriss2
Sample : cc7874-50 Inst : GCMSF
Misc : op18378,ef7878,1000,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MF7873.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Tue Mar 26 13:56:40 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
101 I 1,4-Dichlorobenzene-d4b	1.000	1.000	0.0	102	-0.02	4.62
102 Benzaldehyde	1.138	1.160	-1.9	101	-0.02	4.30
103 I Phenanthrene-d10b	1.000	1.000	0.0	91	-0.04	8.78
104 Atrazine	0.182	0.196	-7.7	88	-0.03	8.39
107 I Naphthalene-d8b	1.000	1.000	0.0	97	-0.02	5.55
108 Hydroquinone	0.290	0.331	-14.1	102	-0.03	5.83
109 I Acenaphthene-d10b	1.000	1.000	0.0	91	-0.03	6.95
110 1,2,4,5-Tetrachlorobenzen	0.543	0.584	-7.6	93	-0.02	6.19

(#) = Out of Range
F183443A.D MF7873.M

SPCC's out = 0 CCC's out = 0
Thu Mar 28 10:15:07 2019

Continuing Calibration Summary

Job Number: JC84953 **Sample:** EF7878-CC7875
Account: NOREASCA NOREAS, Inc. **Lab FileID:** F183463.D
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\EF7878\F183463.D Vial: 4
Acq On : 27 Mar 2019 11:55 pm Operator: chriss2
Sample : cc7875-50 Inst : GCMSF
Misc : op18378,ef7878,1000,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MF7873.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Tue Mar 26 13:56:40 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
105 I Chrysene-d12b	1.000	1.000	0.0	98	-0.05	13.97
	True	Calc.	% Drift			
106 Benzidine	50.000	50.838	-1.7	102	-0.04	11.25

(#) = Out of Range SPCC's out = 0 CCC's out = 0
F183443A.D MF7873.M Thu Mar 28 10:15:09 2019

6.7.15
6

Continuing Calibration Summary

Job Number: JC84953 **Sample:** EF7878-ECC7873
Account: NOREASCA NOREAS, Inc. **Lab FileID:** F183470.D
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\EF7878\F183470.D Vial: 2
 Acq On : 28 Mar 2019 2:59 am Operator: chriss2
 Sample : ecc7873-50 Inst : GCMSF
 Misc : op19327,ef7878,30.6,,,1,1 Multiplr: 1.00
 MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MF7873.M (RTE Integrator)
 Title : Semi Volatile Extractables by GC/MS
 Last Update : Tue Mar 26 13:56:40 2019
 Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 50% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	102	-0.02	4.62
2 t	1,4-Dioxane	0.582	0.574	1.4	102	-0.03	2.15
3 t	Pyridine	1.504	1.507	-0.2	101	-0.03	2.47
4 t	N-Nitrosodimethylamine	0.866	0.792	8.5	98	-0.02	2.44
5 S	2-Fluorophenol	1.323	1.262	4.6	93	-0.02	3.63
6 t	Indene	2.232	2.088	6.5	95	-0.02	4.81
7 t	Cumene	3.332	3.290	1.3	97	-0.02	4.03
8 S	Phenol-d5	1.740	1.567	9.9	91	-0.02	4.35
9 t	Phenol	2.054	1.892	7.9	91	-0.02	4.37
10 t	Aniline	2.076	1.834	11.7	94	-0.02	4.38
11 t	bis(2-Chloroethyl)ether	1.385	1.271	8.2	94	-0.02	4.43
12 t	2-Chlorophenol	1.380	1.288	6.7	92	-0.02	4.47
13 t	Decane	1.734	1.666	3.9	93	-0.02	4.52
14 t	1,3-Dichlorobenzene	1.591	1.539	3.3	98	-0.02	4.58
15 t	1,4-Dichlorobenzene	1.632	1.575	3.5	99	-0.02	4.64
16 t	Benzyl alcohol	0.876	0.824	5.9	93	-0.02	4.72
17 t	1,2-Dichlorobenzene	1.576	1.471	6.7	96	-0.02	4.75
18 t	Acetophenone	2.038	1.918	5.9	95	-0.02	4.92
19 t	2-Methylphenol	1.265	1.196	5.5	94	-0.02	4.81
20 t	2,2'-oxybis(1-Chloropropa	0.373	0.369	1.1	96	-0.01	4.83
21 t	3&4-Methylphenol	1.316	1.254	4.7	93	-0.02	4.92
22	n-Nitroso-di-n-propylamin	1.135	1.061	6.5	94	-0.02	4.92
23 t	Hexachloroethane	0.561	0.551	1.8	98	-0.02	5.00
24 I	Naphthalene-d8	1.000	1.000	0.0	97	-0.02	5.55
25 S	Nitrobenzene-d5	0.426	0.413	3.1	91	-0.02	5.03
26 t	Nitrobenzene	0.449	0.438	2.4	93	-0.02	5.04
27 t	Quinoline	0.693	0.649	6.3	89	-0.02	5.80
28 t	Isophorone	0.740	0.691	6.6	90	-0.02	5.22
29 t	2-Nitrophenol	0.188	0.172	8.5	79	-0.02	5.27
30 t	2,4-Dimethylphenol	0.347	0.355	-2.3	92	-0.02	5.31
	----- True	Calc.	% Drift	-----			
31 t	Benzoic acid	50.000	48.091	3.8	88	0.00	5.39
	----- AvgRF	CCRF	% Dev	-----			
32 t	bis(2-Chloroethoxy)methan	0.447	0.418	6.5	89	-0.02	5.37
33 t	2,4-Dichlorophenol	0.292	0.282	3.4	88	-0.02	5.45
34	2,6-Dichlorophenol	0.287	0.286	0.3	90	-0.02	5.61
35	1,3,5-Trichlorobenzene	0.354	0.343	3.1	93	-0.02	5.28
36 t	1,2,4-Trichlorobenzene	0.350	0.326	6.9	92	-0.02	5.51
37	1,2,3-Trichlorobenzene	0.330	0.327	0.9	92	-0.02	5.67

6.7.16
6

Continuing Calibration Summary

Job Number: JC84953

Sample: EF7878-ECC7873

Account: NOREASCA NOREAS, Inc.

Lab FileID: F183470.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

38 t	Naphthalene	1.050	0.992	5.5	92	-0.02	5.56
39 t	4-Chloroaniline	0.421	0.391	7.1	88	-0.02	5.60
40 t	2,3-Dichloroaniline	0.384	0.342	10.9	88	-0.02	6.28
41 t	Caprolactam	0.197	0.176	10.7	82	0.00	5.86
42 t	Hexachlorobutadiene	0.193	0.189	2.1	93	-0.02	5.66
43 t	4-Chloro-3-methylphenol	0.324	0.305	5.9	87	-0.02	5.95
44 t	2-Methylnaphthalene	0.588	0.537	8.7	89	-0.02	6.06
45 t	1-Methylnaphthalene	0.749	0.666	11.1	88	-0.02	6.14
46 t	Dimethylnaphthalene	0.637	0.579	9.1	88	-0.02	6.56
47 I	Acenaphthene-d10	1.000	1.000	0.0	95	-0.03	6.95
48 t	Hexachlorocyclopentadiene	0.341	0.366	-7.3	89	-0.02	6.19
49 t	2,4,6-Trichlorophenol	0.377	0.369	2.1	91	-0.02	6.28
50 t	2,4,5-Trichlorophenol	0.411	0.403	1.9	91	-0.02	6.32
51 S	2-Fluorobiphenyl	1.487	1.375	7.5	78	-0.02	6.35
52 t	2-Chloronaphthalene	1.187	1.161	2.2	87	-0.02	6.45
53 t	Biphenyl	1.568	1.527	2.6	87	-0.02	6.43
54 t	2-Nitroaniline	0.413	0.506	-22.5	107	-0.02	6.53
55 t	Dimethylphthalate	1.364	1.281	6.1	86	-0.03	6.68
56 t	Acenaphthylene	1.963	1.834	6.6	87	-0.02	6.81
57 t	2,6-Dinitrotoluene	0.290	0.274	5.5	84	-0.02	6.74
58 t	3-Nitroaniline	0.340	0.327	3.8	83	-0.02	6.90
59 t	Acenaphthene	1.321	1.231	6.8	86	-0.03	6.98
		----- True	Calc.	% Drift	-----		
60 t	2,4-Dinitrophenol	100.000	80.112	19.9	71	-0.02	7.00
		----- AvgRF	CCRF	% Dev	-----		
61 t	4-Nitrophenol	0.212	0.209	1.4	84	-0.03	7.06
62 t	Dibenzofuran	1.667	1.564	6.2	86	-0.02	7.15
63 t	2,4-Dinitrotoluene	0.383	0.374	2.3	83	-0.03	7.13
64	2,3,4,6-Tetrachlorophenol	0.307	0.313	-2.0	86	-0.03	7.28
65 t	Diethylphthalate	1.408	1.314	6.7	85	-0.02	7.40
66 t	Fluorene	1.333	1.255	5.9	88	-0.03	7.53
67 t	4-Chlorophenyl-phenylethe	0.617	0.569	7.8	86	-0.03	7.53
68 t	4-Nitroaniline	0.353	0.335	5.1	82	-0.02	7.55
69 I	Phenanthrene-d10	1.000	1.000	0.0	92	-0.04	8.78
		----- True	Calc.	% Drift	-----		
70 t	4,6-Dinitro-2-methylpheno	50.000	45.526	8.9	82	-0.03	7.58
		----- AvgRF	CCRF	% Dev	-----		
71 t	n-Nitrosodiphenylamine	0.537	0.503	6.3	84	-0.03	7.67
72 t	1,2-Diphenylhydrazine	0.964	0.896	7.1	71	-0.03	7.72
73 S	2,4,6-Tribromophenol	0.119	0.116	2.5	73	-0.03	7.82
74 t	4-Bromophenyl-phenylether	0.213	0.205	3.8	88	-0.03	8.14
75 t	Hexachlorobenzene	0.254	0.232	8.7	85	-0.03	8.23
		----- True	Calc.	% Drift	-----		
76 t	Pentachlorophenol	100.000	97.805	2.2	89	-0.03	8.51
		----- AvgRF	CCRF	% Dev	-----		
77 t	Phenanthrene	1.142	1.063	6.9	83	-0.04	8.82
78 t	Anthracene	1.146	1.090	4.9	84	-0.03	8.90
79 t	Carbazole	1.054	0.975	7.5	82	-0.03	9.16
80 t	Di-n-butylphthalate	1.337	1.278	4.4	83	-0.04	9.86
81 t	Fluoranthene	1.190	1.099	7.6	83	-0.04	10.92
82 t	Octadecane	0.589	0.548	7.0	81	-0.03	8.70

6.7.16

6

Continuing Calibration Summary

Job Number: JC84953

Sample: EF7878-ECC7873

Account: NOREASCA NOREAS, Inc.

Lab FileID: F183470.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

83	I	Chrysene-d12	1.000	1.000	0.0	90	-0.05	13.98
84	t	Pyrene	1.451	1.326	8.6	76	-0.04	11.36
85	S	Terphenyl-d14	0.890	0.821	7.8	81	-0.04	11.79
86	t	Butylbenzylphthalate	0.690	0.637	7.7	80	-0.04	12.95
87	t	Benzo[a]anthracene	1.316	1.166	11.4	81	-0.04	13.96
88	t	3,3'-Dichlorobenzidine	0.430	0.429	0.2	82	-0.04	14.00
89	t	Chrysene	1.346	1.188	11.7	82	-0.04	14.04
90	t	bis(2-Ethylhexyl)phthalat	0.943	0.906	3.9	81	-0.04	14.37
91	I	Perylene-d12	1.000	1.000	0.0	89	-0.05	17.01
			----- True	Calc.	% Drift	-----		
92	t	Di-n-octylphthalate	50.000	44.948	10.1	80	-0.05	15.80
			----- AvgRF	CCRF	% Dev	-----		
93	t	Benzo[b]fluoranthene	1.103	1.147	-4.0	82	-0.05	16.26
94	t	Benzo[k]fluoranthene	1.166	1.133	2.8	81	-0.04	16.32
			----- True	Calc.	% Drift	-----		
95	t	Benzo[a]pyrene	50.000	45.542	8.9	82	-0.05	16.89
96	t	Indeno[1,2,3-cd]pyrene	50.000	47.171	5.7	83	-0.05	18.94
			----- AvgRF	CCRF	% Dev	-----		
97	t	Dibenz(a,h)acridine	0.893	0.942	-5.5	82	-0.05	18.58
			----- True	Calc.	% Drift	-----		
98	t	Dibenz[a,h]anthracene	50.000	45.053	9.9	79	-0.05	19.01
			----- AvgRF	CCRF	% Dev	-----		
99	t	7,12-Dimethylbenz(a)anthr	0.486	0.510	-4.9	84	-0.04	16.29
			----- True	Calc.	% Drift	-----		
100	t	Benzo[g,h,i]perylene	50.000	45.221	9.6	79	-0.04	19.37

(#) = Out of Range
F183443A.D MF7873.M

SPCC's out = 0 CCC's out = 0
Thu Mar 28 10:15:11 2019

Continuing Calibration Summary

Job Number: JC84953

Sample: EF7878-ECC7874

Account: NOREASCA NOREAS, Inc.

Lab FileID: F183471.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\EF7878\F183471.D Vial: 3
Acq On : 28 Mar 2019 3:25 am Operator: chriss2
Sample : ecc7874-50 Inst : GCMSF
Misc : op19327,ef7878,30.6,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MF7873.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Tue Mar 26 13:56:40 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
101 I 1,4-Dichlorobenzene-d4b	1.000	1.000	0.0	102	-0.02	4.62
102 Benzaldehyde	1.138	1.112	2.3	97	-0.02	4.30
103 I Phenanthrene-d10b	1.000	1.000	0.0	91	-0.04	8.78
104 Atrazine	0.182	0.198	-8.8	89	-0.03	8.39
107 I Naphthalene-d8b	1.000	1.000	0.0	96	-0.02	5.55
108 Hydroquinone	0.290	0.333	-14.8	102	-0.04	5.83
109 I Acenaphthene-d10b	1.000	1.000	0.0	92	-0.03	6.95
110 1,2,4,5-Tetrachlorobenzen	0.543	0.574	-5.7	92	-0.02	6.19

(#) = Out of Range
F183443A.D MF7873.M

SPCC's out = 0 CCC's out = 0
Thu Mar 28 10:15:13 2019

Continuing Calibration Summary

Job Number: JC84953 **Sample:** EF7878-ECC7875
Account: NOREASCA NOREAS, Inc. **Lab FileID:** F183472.D
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\EF7878\F183472.D Vial: 4
Acq On : 28 Mar 2019 3:52 am Operator: chriss2
Sample : ecc7875-50 Inst : GCMSF
Misc : op19327,ef7878,30.6,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MF7873.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Tue Mar 26 13:56:40 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
105 I Chrysene-d12b	1.000	1.000	0.0	98	-0.05	13.97
----- True Calc. % Drift -----						
106 Benzidine	50.000	52.732	-5.5	106	-0.04	11.25

(#) = Out of Range SPCC's out = 0 CCC's out = 0
F183443A.D MF7873.M Thu Mar 28 10:15:15 2019

GC/LC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- DDT/Endrin Breakdown Checks
- GC Identification Summaries (Hits)
- Surrogate Recovery Summaries
- GC Surrogate Retention Time Summaries
- Initial and Continuing Calibration Summaries

Method Blank Summary

Job Number: JC84953

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19325-MB1	3G122292.D	1	03/25/19	VDT	03/23/19	OP19325	G3G4270

The QC reported here applies to the following samples:

Method: SW846 8151A

JC84953-1

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	3.3	2.9	ug/kg	

CAS No.	Surrogate Recoveries	Limits	
19719-28-9	2,4-DCAA	63%	10-159%
19719-28-9	2,4-DCAA	64%	10-159%

7.1.1
7

Method Blank Summary

Job Number: JC84953

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19346-MB1	4G958054.D	1	03/26/19	MH	03/26/19	OP19346	G4G2709

The QC reported here applies to the following samples:

Method: SW846 8081B

JC84953-1

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.67	0.55	ug/kg	
319-84-6	alpha-BHC	ND	0.67	0.54	ug/kg	
319-85-7	beta-BHC	ND	0.67	0.60	ug/kg	
319-86-8	delta-BHC	ND	0.67	0.64	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	0.67	0.49	ug/kg	
5103-71-9	alpha-Chlordane	ND	0.67	0.54	ug/kg	
60-57-1	Dieldrin	ND	0.67	0.46	ug/kg	
72-54-8	4,4' -DDD	ND	0.67	0.61	ug/kg	
72-55-9	4,4' -DDE	ND	0.67	0.58	ug/kg	
50-29-3	4,4' -DDT	ND	0.67	0.59	ug/kg	
72-20-8	Endrin	ND	0.67	0.52	ug/kg	
1031-07-8	Endosulfan sulfate	ND	0.67	0.52	ug/kg	
959-98-8	Endosulfan-I	ND	0.67	0.38	ug/kg	
33213-65-9	Endosulfan-II	ND	0.67	0.42	ug/kg	
76-44-8	Heptachlor	ND	0.67	0.57	ug/kg	

CAS No.	Surrogate Recoveries	Limits	
877-09-8	Tetrachloro-m-xylene	60%	25-135%
877-09-8	Tetrachloro-m-xylene	64%	25-135%
2051-24-3	Decachlorobiphenyl	64%	10-156%
2051-24-3	Decachlorobiphenyl	61%	10-156%

7.1.2
7

Method Blank Summary

Job Number: JC84953

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19345-MB1	XX2433185.D	1	03/26/19	RK	03/26/19	OP19345	GXX6640

The QC reported here applies to the following samples:

Method: SW846 8082A

JC84953-1

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	33	13	ug/kg	
11104-28-2	Aroclor 1221	ND	33	14	ug/kg	
11141-16-5	Aroclor 1232	ND	33	8.9	ug/kg	
53469-21-9	Aroclor 1242	ND	33	5.3	ug/kg	
12672-29-6	Aroclor 1248	ND	33	20	ug/kg	
11097-69-1	Aroclor 1254	ND	33	8.2	ug/kg	
11096-82-5	Aroclor 1260	ND	33	11	ug/kg	

CAS No.	Surrogate Recoveries	Results	Limits
877-09-8	Tetrachloro-m-xylene	79%	31-146%
877-09-8	Tetrachloro-m-xylene	77%	31-146%
2051-24-3	Decachlorobiphenyl	90%	17-164%
2051-24-3	Decachlorobiphenyl	87%	17-164%

Blank Spike Summary

Job Number: JC84953

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19325-BS1	3G122293.D	1	03/25/19	VDT	03/23/19	OP19325	G3G4270

The QC reported here applies to the following samples:

Method: SW846 8151A

JC84953-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
93-72-1	2,4,5-TP (Silvex)	26.7	18.1	68	49-139

CAS No.	Surrogate Recoveries	BSP	Limits
19719-28-9	2,4-DCAA	73%	10-159%
19719-28-9	2,4-DCAA	70%	10-159%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JC84953

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19346-BS1	4G958055.D	1	03/26/19	MH	03/26/19	OP19346	G4G2709

The QC reported here applies to the following samples:

Method: SW846 8081B

JC84953-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
309-00-2	Aldrin	16.7	13.2	79	46-120
319-84-6	alpha-BHC	16.7	13.2	79	45-116
319-85-7	beta-BHC	16.7	12.4	74	42-121
319-86-8	delta-BHC	16.7	10.8	65	42-121
58-89-9	gamma-BHC (Lindane)	16.7	12.9	77	46-118
5103-71-9	alpha-Chlordane	16.7	12.4	74	49-119
60-57-1	Dieldrin	16.7	13.8	83	48-126
72-54-8	4,4'-DDD	16.7	13.5	81	47-120
72-55-9	4,4'-DDE	16.7	14.2	85	48-121
50-29-3	4,4'-DDT	16.7	13.9	83	45-135
72-20-8	Endrin	16.7	13.7	82	51-137
1031-07-8	Endosulfan sulfate	16.7	12.3	74	48-128
959-98-8	Endosulfan-I	16.7	11.6	70	47-118
33213-65-9	Endosulfan-II	16.7	11.8	71	49-121
76-44-8	Heptachlor	16.7	12.7	76	48-120

CAS No.	Surrogate Recoveries	BSP	Limits
877-09-8	Tetrachloro-m-xylene	68%	25-135%
877-09-8	Tetrachloro-m-xylene	75%	25-135%
2051-24-3	Decachlorobiphenyl	73%	10-156%
2051-24-3	Decachlorobiphenyl	71%	10-156%

* = Outside of Control Limits.

7.2.2
7

Blank Spike Summary

Job Number: JC84953

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19345-BS1	XX2433186.D	1	03/26/19	RK	03/26/19	OP19345	GXX6640

The QC reported here applies to the following samples:

Method: SW846 8082A

JC84953-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
12674-11-2	Aroclor 1016	133	162	121	67-157
11104-28-2	Aroclor 1221		ND		70-130
11141-16-5	Aroclor 1232		ND		70-130
53469-21-9	Aroclor 1242		ND		70-130
12672-29-6	Aroclor 1248		ND		70-130
11097-69-1	Aroclor 1254		ND		70-130
11096-82-5	Aroclor 1260	133	153	115	63-155

CAS No.	Surrogate Recoveries	BSP	Limits
877-09-8	Tetrachloro-m-xylene	107%	31-146%
877-09-8	Tetrachloro-m-xylene	103%	31-146%
2051-24-3	Decachlorobiphenyl	113%	17-164%
2051-24-3	Decachlorobiphenyl	110%	17-164%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC84953

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19325-MS	3G122295.D	1	03/25/19	VDT	03/23/19	OP19325	G3G4270
OP19325-MSD	3G122296.D	1	03/25/19	VDT	03/23/19	OP19325	G3G4270
JC84953-1	3G122297.D	1	03/25/19	VDT	03/23/19	OP19325	G3G4270

The QC reported here applies to the following samples:

Method: SW846 8151A

JC84953-1

CAS No.	Compound	JC84953-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
93-72-1	2,4,5-TP (Silvex)	3.3	U	27.5	16.3	59	26.6	20.2	76	21	10-159/51

CAS No.	Surrogate Recoveries	MS	MSD	JC84953-1	Limits
19719-28-9	2,4-DCAA	74%	77%	67%	10-159%
19719-28-9	2,4-DCAA	70%	72%	64%	10-159%

* = Outside of Control Limits.

7.3.1
7

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC84953

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19346-MS	4G958056.D	1	03/26/19	MH	03/26/19	OP19346	G4G2709
OP19346-MSD	4G958057.D	1	03/26/19	MH	03/26/19	OP19346	G4G2709
JC84953-1	4G958058.D	1	03/26/19	MH	03/26/19	OP19346	G4G2709

The QC reported here applies to the following samples:

Method: SW846 8081B

JC84953-1

CAS No.	Compound	JC84953-1 ug/kg	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
309-00-2	Aldrin	0.70 U	16.6	11.3	68	17.1	16.7	98	39 ^a	23-143/44
319-84-6	alpha-BHC	0.70 U	16.6	11.2	67	17.1	17.9	105	46 ^a	18-152/47
319-85-7	beta-BHC	0.70 U	16.6	10.8	65	17.1	16.3	95	41 ^a	7-143/48
319-86-8	delta-BHC	0.70 U	16.6	9.3	56	17.1	14.0	82	40 ^a	13-155/49
58-89-9	gamma-BHC (Lindane)	0.70 U	16.6	11.0	66	17.1	16.7	98	41 ^a	23-138/49
5103-71-9	alpha-Chlordane	0.59 J	16.6	12.2	70	17.1	17.4	98	35 ^a	16-149/46
60-57-1	Dieldrin	0.70 U	16.6	12.0	72	17.1	17.9	105	39 ^a	14-154/46
72-54-8	4,4'-DDD	0.70 U	16.6	10.8	65	17.1	16.1	94	39 ^a	18-149/51
72-55-9	4,4'-DDE	0.70 U	16.6	11.7	70	17.1	17.5	103	40 ^a	10-154/49
50-29-3	4,4'-DDT	0.70 U	16.6	12.3	74	17.1	18.3	107	39 ^a	10-170/50
72-20-8	Endrin	0.70 U	16.6	11.2	67	17.1	16.8	98	40 ^a	18-173/49
1031-07-8	Endosulfan sulfate	0.70 U	16.6	10.9	66	17.1	13.1	77	18	19-132/50
959-98-8	Endosulfan-I	0.70 U	16.6	9.6	58	17.1	14.3	84	39 ^a	18-143/46
33213-65-9	Endosulfan-II	0.70 U	16.6	10	60	17.1	14.1	83	34 ^a	21-132/46
76-44-8	Heptachlor	0.70 U	16.6	11.4	69	17.1	17.2	101	41 ^a	22-146/46

CAS No.	Surrogate Recoveries	MS	MSD	JC84953-1	Limits
877-09-8	Tetrachloro-m-xylene	65%	84%	63%	25-135%
877-09-8	Tetrachloro-m-xylene	67%	86%	70%	25-135%
2051-24-3	Decachlorobiphenyl	68%	87%	68%	10-156%
2051-24-3	Decachlorobiphenyl	61%	78%	64%	10-156%

(a) Analytical precision exceeds program specific requirements.

* = Outside of Control Limits.

7.3.2
7

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC84953

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19345-MS	XX2433188.D	1	03/26/19	RK	03/26/19	OP19345	GXX6640
OP19345-MSD	XX2433189.D	1	03/26/19	RK	03/26/19	OP19345	GXX6640
JC84953-1	XX2433187.D	1	03/26/19	RK	03/26/19	OP19345	GXX6640

The QC reported here applies to the following samples:

Method: SW846 8082A

JC84953-1

CAS No.	Compound	JC84953-1 ug/kg	Spike Q	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
12674-11-2	Aroclor 1016	35 U	137	166	122	140	165	118	1	36-191/60
11104-28-2	Aroclor 1221	35 U		ND			ND		nc	70-130/50
11141-16-5	Aroclor 1232	35 U		ND			ND		nc	70-130/1
53469-21-9	Aroclor 1242	35 U		ND			ND		nc	70-130/6
12672-29-6	Aroclor 1248	35 U		ND			ND		nc	70-130/33
11097-69-1	Aroclor 1254	35 U		ND			ND		nc	70-130/38
11096-82-5	Aroclor 1260	35 U	137	149	109	140	146	104	2	15-200/68

CAS No.	Surrogate Recoveries	MS	MSD	JC84953-1	Limits
877-09-8	Tetrachloro-m-xylene	102%	100%	88%	31-146%
877-09-8	Tetrachloro-m-xylene	95%	98%	86%	31-146%
2051-24-3	Decachlorobiphenyl	101%	101%	90%	17-164%
2051-24-3	Decachlorobiphenyl	103%	101%	90%	17-164%

* = Outside of Control Limits.

7.3.3
7

Internal Standard Area Summary

Job Number: JC84953
Account: NOREASCA NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Check Std: G4G2709-CC2706	Injection Date: 03/26/19
Lab File ID: 4G958050.D	Injection Time: 09:49
Instrument ID: GC4G	Method: SW846 8081B

IS 1		IS 2	
AREA	RT	AREA	RT

Check Std	294206094	1.82	253302074	11.49
Upper Limit ^a	588412188	2.32	5066041482	1.99
Lower Limit ^b	147103047	1.32	126651037	10.99

Lab Sample ID	IS 1 AREA	IS 1 RT	IS 2 AREA	IS 2 RT
OP19346-MB1	318567335	1.83	2683497565	1.49
OP19346-BS1	328497537	1.83	2803766605	1.50
OP19346-MS	331623386	1.83	2649221896	1.49
OP19346-MSD	361198904	1.83	2835845726	1.50
JC84953-1	315819782	1.83	2635375345	1.50

IS 1 = 1-Bromo-2-nitrobenzene (Signal #2)
IS 2 = 1-Bromo-2-nitrobenzene (Signal #1)

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

7.4.1
7

DDT/Endrin Breakdown Check

Job Number: JC84953
Account: NOREASCA NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Sample: G4G2706-DDT	Injection Date: 03/22/19
Lab File ID: 4G957998.D	Injection Time: 15:19
Instrument ID: GC4G	

Compound	Response Signal 1	Response Signal 2
4,4'-DDD	33159305	6007392
4,4'-DDE	48560760	4347064
4,4'-DDT	5073043397	618002878

DDT Breakdown ^a	1.6 %	1.6 %
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Endrin aldehyde	16382158	1083037
Endrin ketone	31542035	3167260
Endrin	3010294906	360926955

Endrin Breakdown ^b	1.6 %	1.2 %
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(a) Calculated as: $(DDD + DDE) / (DDD + DDE + DDT) \times 100$

(b) Calculated as: $(\text{Endrin Aldehyde} + \text{Endrin Ketone}) / (\text{Endrin Aldehyde} + \text{Endrin Ketone} + \text{Endrin}) \times 100$

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
G4G2706-IC2706	4G958000.D	03/22/19	15:53	00:34	Initial cal 1
G4G2706-IC2706	4G958001.D	03/22/19	16:10	00:51	Initial cal 2
G4G2706-IC2706	4G958002.D	03/22/19	16:27	01:08	Initial cal 5
G4G2706-IC2706	4G958003.D	03/22/19	16:44	01:25	Initial cal 10
G4G2706-ICC2706	4G958004.D	03/22/19	17:01	01:42	Initial cal 25
G4G2706-IC2706	4G958005.D	03/22/19	17:18	01:59	Initial cal 50
G4G2706-IC2706	4G958006.D	03/22/19	17:35	02:16	Initial cal 75
G4G2706-IC2706	4G958007.D	03/22/19	17:52	02:33	Initial cal 100
G4G2706-IC2706	4G958008.D	03/22/19	18:09	02:50	Initial cal 500
G4G2706-IC2706	4G958009.D	03/22/19	18:26	03:07	Initial cal 500
G4G2706-ICV2706	4G958010.D	03/22/19	18:43	03:24	Initial cal verification 25
G4G2706-ICV2706	4G958011.D	03/22/19	19:00	03:41	Initial cal verification 500
G4G2706-ICV2706	4G958012.D	03/22/19	19:17	03:58	Initial cal verification 500
G4G2706-ICV2706	4G958013.D	03/22/19	19:34	04:15	Initial cal verification 50
G4G2706-ICV2706	4G958014.D	03/22/19	19:51	04:32	Initial cal verification 50

7.5.1
7

DDT/Endrin Breakdown Check

Job Number: JC84953
Account: NOREASCA NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Sample: G4G2709-DDT	Injection Date: 03/26/19
Lab File ID: 4G958049.D	Injection Time: 09:32
Instrument ID: GC4G	

Compound	Response Signal 1	Response Signal 2
4,4'-DDD	54642334	11014392
4,4'-DDE	69021137	9010715
4,4'-DDT	4699281603	505739915

DDT Breakdown ^a	2.6 %	3.8 %
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Endrin aldehyde	8294398	807179
Endrin ketone	26896028	2871204
Endrin	2871297881	316933790

Endrin Breakdown ^b	1.2 %	1.1 %
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(a) Calculated as: $(DDD + DDE) / (DDD + DDE + DDT) \times 100$
 (b) Calculated as: $(\text{Endrin Aldehyde} + \text{Endrin Ketone}) / (\text{Endrin Aldehyde} + \text{Endrin Ketone} + \text{Endrin}) \times 100$

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
G4G2709-CC2706	4G958050.D	03/26/19	09:49	00:17	Continuing cal 25
G4G2709-CC2706	4G958051.D	03/26/19	10:11	00:39	Continuing cal 500
G4G2709-CC2706	4G958052.D	03/26/19	10:28	00:56	Continuing cal 500
OP19346-MB1	4G958054.D	03/26/19	11:02	01:30	Method Blank
OP19346-BS1	4G958055.D	03/26/19	11:19	01:47	Blank Spike
OP19346-MS	4G958056.D	03/26/19	11:36	02:04	Matrix Spike
OP19346-MSD	4G958057.D	03/26/19	11:53	02:21	Matrix Spike Duplicate
JC84953-1	4G958058.D	03/26/19	12:10	02:38	NWIRP-S1-WC-CF-024
G4G2709-CC2706	4G958059.D	03/26/19	13:33	04:01	Continuing cal 50

7.5.2
7

GC Identification Summary

Job Number: JC84953

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Check Std: G3G4270-CC4200

Injection Date: 03/25/19

Lab File ID: 3G122290.D

Injection Time: 12:50

Instrument ID: GC3G

Method: SW846 8151A

Sample ID: OP19325-BS1

Injection Date: 03/25/19

Lab File ID: 3G122293.D

Injection Time: 14:19

Client ID: Blank Spike

Compound	Column	RT	StdRT	Conc	Q	Units	RPD Conc
2,4,5-TP (Silvex)	1	10.04	10.05	19.0		ug/kg	4.9
2,4,5-TP (Silvex)	2 ^a	11.10	11.11	18.1		ug/kg	

(a) QC results reported from this column.

GC Identification Summary

Job Number: JC84953

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Check Std: G3G4270-CC4200

Injection Date: 03/25/19

Lab File ID: 3G122290.D

Injection Time: 12:50

Instrument ID: GC3G

Method: SW846 8151A

Sample ID: OP19325-MS

Injection Date: 03/25/19

Lab File ID: 3G122295.D

Injection Time: 15:15

Client ID: Matrix Spike

Compound	Column	RT	StdRT	Conc	Q	Units	RPD Conc
2,4,5-TP (Silvex)	1 ^a	10.04	10.05	16.3		ug/kg	2.5
2,4,5-TP (Silvex)	2	11.10	11.11	15.9		ug/kg	

(a) QC results reported from this column.

GC Identification Summary

Job Number: JC84953

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Check Std: G3G4270-CC4200

Injection Date: 03/25/19

Lab File ID: 3G122290.D

Injection Time: 12:50

Instrument ID: GC3G

Method: SW846 8151A

Sample ID: OP19325-MSD

Injection Date: 03/25/19

Lab File ID: 3G122296.D

Injection Time: 15:43

Client ID: Matrix Spike Duplicate

Compound	Column	RT	StdRT	Conc	Q	Units	RPD Conc
2,4,5-TP (Silvex)	1 ^a	10.03	10.05	20.2		ug/kg	1.0
2,4,5-TP (Silvex)	2	11.10	11.11	20.4		ug/kg	

(a) QC results reported from this column.

GC Identification Summary

Job Number: JC84953

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Check Std:	G4G2709-CC2706	Injection Date:	03/26/19
Lab File ID:	4G958050.D	Injection Time:	09:49
Instrument ID:	GC4G	Method:	SW846 8081B

Sample ID:	JC84953-1	Injection Date:	03/26/19
Lab File ID:	4G958058.D	Injection Time:	12:10
Client ID:	NWIRP-S1-WC-CF-024		

Compound	Column	RT	StdRT	Conc	Q	Units	RPD Conc
alpha-Chlordane	1	4.79	4.79	0.97		ug/kg	
alpha-Chlordane ^a	2 ^b	6.19	6.19	0.59	J	ug/kg	48.7

(a) More than 40 % RPD for detected concentrations between the two GC columns.

(b) Final result reported from this column.

GC Identification Summary

Job Number: JC84953
Account: NOREASCA NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Check Std: G4G2709-CC2706	Injection Date: 03/26/19
Lab File ID: 4G958050.D	Injection Time: 09:49
Instrument ID: GC4G	Method: SW846 8081B

Sample ID: OP19346-BS1	Injection Date: 03/26/19
Lab File ID: 4G958055.D	Injection Time: 11:19
Client ID: Blank Spike	

Compound	Column	RT	StdRT	Conc	Q	Units	RPD Conc
Aldrin	1 ^a	3.75	3.75	13.2		ug/kg	5.2
Aldrin	2	4.84	4.84	13.9		ug/kg	
alpha-BHC	1	2.61	2.61	14.0		ug/kg	5.9
alpha-BHC	2 ^a	3.37	3.37	13.2		ug/kg	
beta-BHC	1 ^a	2.99	2.99	12.4		ug/kg	11.4
beta-BHC	2	3.90	3.90	13.9		ug/kg	
delta-BHC	1 ^a	3.18	3.18	10.8		ug/kg	5.4
delta-BHC	2	4.30	4.30	11.4		ug/kg	
gamma-BHC (Lindane)	1 ^a	2.91	2.91	12.9		ug/kg	0.8
gamma-BHC (Lindane)	2	3.81	3.80	13.0		ug/kg	
alpha-Chlordane	1 ^a	4.79	4.79	12.4		ug/kg	12.8
alpha-Chlordane	2	6.19	6.19	14.1		ug/kg	
Dieldrin	1	5.29	5.29	13.9		ug/kg	0.7
Dieldrin	2 ^a	6.72	6.72	13.8		ug/kg	
4,4'-DDD	1 ^a	5.76	5.76	13.5		ug/kg	0.7
4,4'-DDD	2	7.41	7.41	13.6		ug/kg	
4,4'-DDE	1	4.92	4.92	14.5		ug/kg	2.1
4,4'-DDE	2 ^a	6.46	6.46	14.2		ug/kg	
4,4'-DDT	1 ^a	6.17	6.17	13.9		ug/kg	8.3
4,4'-DDT	2	7.94	7.94	15.1		ug/kg	
Endrin	1 ^a	5.61	5.61	13.7		ug/kg	1.4
Endrin	2	7.23	7.23	13.9		ug/kg	
Endosulfan sulfate	1	7.24	7.24	12.6		ug/kg	2.4
Endosulfan sulfate	2 ^a	8.63	8.62	12.3		ug/kg	
Endosulfan-I	1 ^a	4.97	4.97	11.6		ug/kg	15.9
Endosulfan-I	2	6.28	6.28	13.6		ug/kg	
Endosulfan-II	1 ^a	5.93	5.93	11.8		ug/kg	14.2
Endosulfan-II	2	7.58	7.58	13.6		ug/kg	
Heptachlor	1 ^a	3.41	3.41	12.7		ug/kg	5.4
Heptachlor	2	4.39	4.39	13.4		ug/kg	

(a) QC results reported from this column.

GC Identification Summary

Job Number: JC84953
Account: NOREASCA NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Check Std: G4G2709-CC2706	Injection Date: 03/26/19
Lab File ID: 4G958050.D	Injection Time: 09:49
Instrument ID: GC4G	Method: SW846 8081B

Sample ID: OP19346-MS	Injection Date: 03/26/19
Lab File ID: 4G958056.D	Injection Time: 11:36
Client ID: Matrix Spike	

Compound	Column	RT	StdRT	Conc	Q	Units	RPD Conc
Aldrin	1 ^a	3.75	3.75	11.3		ug/kg	1.8
Aldrin	2	4.84	4.84	11.1		ug/kg	
alpha-BHC	1 ^a	2.61	2.61	11.2		ug/kg	6.5
alpha-BHC	2	3.37	3.37	10.5		ug/kg	
beta-BHC	1 ^a	2.99	2.99	10.8		ug/kg	2.7
beta-BHC	2	3.90	3.90	11.1		ug/kg	
delta-BHC	1 ^a	3.18	3.18	9.3		ug/kg	2.2
delta-BHC	2	4.30	4.30	9.1		ug/kg	
gamma-BHC (Lindane)	1 ^a	2.91	2.91	11.0		ug/kg	6.6
gamma-BHC (Lindane)	2	3.81	3.80	10.3		ug/kg	
alpha-Chlordane	1	4.79	4.79	11.8		ug/kg	3.3
alpha-Chlordane	2 ^a	6.19	6.19	12.2		ug/kg	
Dieldrin	1 ^a	5.29	5.29	12.0		ug/kg	5.1
Dieldrin	2	6.72	6.72	11.4		ug/kg	
4,4'-DDD	1 ^a	5.76	5.76	10.8		ug/kg	0.9
4,4'-DDD	2	7.41	7.41	10.9		ug/kg	
4,4'-DDE	1 ^a	4.92	4.92	11.7		ug/kg	6.2
4,4'-DDE	2	6.46	6.46	11.0		ug/kg	
4,4'-DDT	1 ^a	6.17	6.17	12.3		ug/kg	0.0
4,4'-DDT	2	7.94	7.94	12.3		ug/kg	
Endrin	1 ^a	5.61	5.61	11.2		ug/kg	1.8
Endrin	2	7.23	7.23	11.0		ug/kg	
Endosulfan sulfate	1 ^a	7.24	7.24	10.9		ug/kg	0.0
Endosulfan sulfate	2	8.63	8.62	10.9		ug/kg	
Endosulfan-I	1 ^a	4.97	4.97	9.6		ug/kg	13.6
Endosulfan-I	2	6.28	6.28	11.0		ug/kg	
Endosulfan-II	1 ^a	5.93	5.93	10		ug/kg	4.9
Endosulfan-II	2	7.58	7.58	10.5		ug/kg	
Heptachlor	1 ^a	3.41	3.41	11.4		ug/kg	5.4
Heptachlor	2	4.39	4.39	10.8		ug/kg	

(a) QC results reported from this column.

GC Identification Summary

Job Number: JC84953
Account: NOREASCA NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Check Std: G4G2709-CC2706	Injection Date: 03/26/19
Lab File ID: 4G958050.D	Injection Time: 09:49
Instrument ID: GC4G	Method: SW846 8081B

Sample ID: OP19346-MSD	Injection Date: 03/26/19
Lab File ID: 4G958057.D	Injection Time: 11:53
Client ID: Matrix Spike Duplicate	

Compound	Column	RT	StdRT	Conc	Q	Units	RPD Conc
Aldrin	1 ^a	3.75	3.75	16.7		ug/kg	5.5
Aldrin	2	4.84	4.84	15.8		ug/kg	
alpha-BHC	1 ^a	2.61	2.61	17.9		ug/kg	15.0
alpha-BHC	2	3.37	3.37	15.4		ug/kg	
beta-BHC	1 ^a	3.00	2.99	16.3		ug/kg	2.5
beta-BHC	2	3.90	3.90	15.9		ug/kg	
delta-BHC	1 ^a	3.18	3.18	14.0		ug/kg	5.9
delta-BHC	2	4.30	4.30	13.2		ug/kg	
gamma-BHC (Lindane)	1 ^a	2.91	2.91	16.7		ug/kg	8.7
gamma-BHC (Lindane)	2	3.81	3.80	15.3		ug/kg	
alpha-Chlordane	1	4.79	4.79	17.4		ug/kg	0.0
alpha-Chlordane	2 ^a	6.19	6.19	17.4		ug/kg	
Dieldrin	1 ^a	5.29	5.29	17.9		ug/kg	6.9
Dieldrin	2	6.72	6.72	16.7		ug/kg	
4,4'-DDD	1 ^a	5.75	5.76	16.1		ug/kg	2.5
4,4'-DDD	2	7.41	7.41	15.7		ug/kg	
4,4'-DDE	1 ^a	4.92	4.92	17.5		ug/kg	8.3
4,4'-DDE	2	6.46	6.46	16.1		ug/kg	
4,4'-DDT	1 ^a	6.17	6.17	18.3		ug/kg	2.2
4,4'-DDT	2	7.94	7.94	17.9		ug/kg	
Endrin	1 ^a	5.61	5.61	16.8		ug/kg	6.8
Endrin	2	7.23	7.23	15.7		ug/kg	
Endosulfan sulfate	1 ^a	7.24	7.24	13.1		ug/kg	3.9
Endosulfan sulfate	2	8.63	8.62	12.6		ug/kg	
Endosulfan-I	1 ^a	4.97	4.97	14.3		ug/kg	10.6
Endosulfan-I	2	6.28	6.28	15.9		ug/kg	
Endosulfan-II	1 ^a	5.93	5.93	14.1		ug/kg	2.8
Endosulfan-II	2	7.58	7.58	14.5		ug/kg	
Heptachlor	1 ^a	3.41	3.41	17.2		ug/kg	9.8
Heptachlor	2	4.39	4.39	15.6		ug/kg	

(a) QC results reported from this column.

7.67
7

GC Identification Summary

Job Number: JC84953
Account: NOREASCA NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Check Std: GXX6640-CC6621	Injection Date: 03/26/19
Lab File ID: XX2433180.D	Injection Time: 19:24
Instrument ID: GCXX	Method: SW846 8082A

Sample ID: OP19345-BS1	Injection Date: 03/26/19
Lab File ID: XX2433186.D	Injection Time: 21:13
Client ID: Blank Spike	

Compound	Column	RT	StdRT	Conc	Q	Units	RPD Conc
Aroclor 1016	1			167		ug/kg	3.0
Aroclor 1016	2 ^a			162		ug/kg	
AR1016-A	1	3.70	3.69	177		ug/kg	
AR1016-A	2	4.75	4.75	186		ug/kg	
AR1016-B	1	4.13	4.13	174		ug/kg	
AR1016-B	2	5.32	5.32	155		ug/kg	
AR1016-C	1	4.71	4.71	155		ug/kg	
AR1016-C	2	5.98	5.98	154		ug/kg	
AR1016-D	1	4.89	4.88	169		ug/kg	
AR1016-D	2	6.17	6.17	158		ug/kg	
AR1016-E	1	5.42	5.42	161		ug/kg	
AR1016-E	2	6.85	6.85	159		ug/kg	
Aroclor 1260	1 ^a			153		ug/kg	3.8
Aroclor 1260	2			159		ug/kg	
AR1260-A	1	7.86	7.85	127		ug/kg	
AR1260-A	2	9.49	9.49	133		ug/kg	
AR1260-B	1	8.02	8.01	169		ug/kg	
AR1260-B	2	9.61	9.61	168		ug/kg	
AR1260-C	1	8.36	8.36	167		ug/kg	
AR1260-C	2	10.05	10.05	166		ug/kg	
AR1260-D	1	8.80	8.79	144		ug/kg	
AR1260-D	2	10.40	10.40	164		ug/kg	
AR1260-E	1	9.20	9.19	157		ug/kg	
AR1260-E	2	10.95	10.95	163		ug/kg	

(a) QC results reported from this column.

7.6.8
7

GC Identification Summary

Job Number: JC84953
Account: NOREASCA NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Check Std: GXX6640-CC6621	Injection Date: 03/26/19
Lab File ID: XX2433180.D	Injection Time: 19:24
Instrument ID: GCXX	Method: SW846 8082A

Sample ID: OP19345-MS	Injection Date: 03/26/19
Lab File ID: XX2433188.D	Injection Time: 21:50
Client ID: Matrix Spike	

Compound	Column	RT	StdRT	Conc	Q	Units	RPD Conc
Aroclor 1016	1 ^a			166		ug/kg	3.1
Aroclor 1016	2			161		ug/kg	
AR1016-A	1	3.69	3.69	176		ug/kg	
AR1016-A	2	4.75	4.75	162		ug/kg	
AR1016-B	1	4.13	4.13	173		ug/kg	
AR1016-B	2	5.33	5.32	159		ug/kg	
AR1016-C	1	4.71	4.71	142		ug/kg	
AR1016-C	2	5.98	5.98	158		ug/kg	
AR1016-D	1	4.89	4.88	175		ug/kg	
AR1016-D	2	6.18	6.17	157		ug/kg	
AR1016-E	1	5.42	5.42	161		ug/kg	
AR1016-E	2	6.85	6.85	169		ug/kg	
Aroclor 1260	1 ^a			149		ug/kg	4.6
Aroclor 1260	2			156		ug/kg	
AR1260-A	1	7.86	7.85	125		ug/kg	
AR1260-A	2	9.49	9.49	127		ug/kg	
AR1260-B	1	8.02	8.01	162		ug/kg	
AR1260-B	2	9.61	9.61	164		ug/kg	
AR1260-C	1	8.36	8.36	159		ug/kg	
AR1260-C	2	10.05	10.05	175		ug/kg	
AR1260-D	1	8.80	8.79	143		ug/kg	
AR1260-D	2	10.40	10.40	154		ug/kg	
AR1260-E	1	9.20	9.19	155		ug/kg	
AR1260-E	2	10.95	10.95	158		ug/kg	

(a) QC results reported from this column.

7.6.9
7

GC Identification Summary

Job Number: JC84953
Account: NOREASCA NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Check Std: GXX6640-CC6621	Injection Date: 03/26/19
Lab File ID: XX2433180.D	Injection Time: 19:24
Instrument ID: GCXX	Method: SW846 8082A

Sample ID: OP19345-MSD	Injection Date: 03/26/19
Lab File ID: XX2433189.D	Injection Time: 22:08
Client ID: Matrix Spike Duplicate	

Compound	Column	RT	StdRT	Conc	Q	Units	RPD Conc
Aroclor 1016	1 ^a			165		ug/kg	3.1
Aroclor 1016	2			160		ug/kg	
AR1016-A	1	3.69	3.69	171		ug/kg	
AR1016-A	2	4.75	4.75	161		ug/kg	
AR1016-B	1	4.13	4.13	170		ug/kg	
AR1016-B	2	5.32	5.32	167		ug/kg	
AR1016-C	1	4.72	4.71	148		ug/kg	
AR1016-C	2	5.98	5.98	153		ug/kg	
AR1016-D	1	4.89	4.88	175		ug/kg	
AR1016-D	2	6.17	6.17	150		ug/kg	
AR1016-E	1	5.42	5.42	159		ug/kg	
AR1016-E	2	6.85	6.85	171		ug/kg	
Aroclor 1260	1 ^a			146		ug/kg	6.0
Aroclor 1260	2			155		ug/kg	
AR1260-A	1	7.86	7.85	123		ug/kg	
AR1260-A	2	9.49	9.49	131		ug/kg	
AR1260-B	1	8.02	8.01	158		ug/kg	
AR1260-B	2	9.61	9.61	167		ug/kg	
AR1260-C	1	8.36	8.36	155		ug/kg	
AR1260-C	2	10.05	10.05	169		ug/kg	
AR1260-D	1	8.80	8.79	139		ug/kg	
AR1260-D	2	10.40	10.40	153		ug/kg	
AR1260-E	1	9.20	9.19	152		ug/kg	
AR1260-E	2	10.95	10.95	154		ug/kg	

(a) QC results reported from this column.

7.6.10
7

Surrogate Recovery Summary

Job Number: JC84953

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Method: SW846 8151A	Matrix: SO
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 ^a	S1 ^b
JC84953-1	3G122297.D	67	64
OP19325-BS1	3G122293.D	73	70
OP19325-MB1	3G122292.D	63	64
OP19325-MS	3G122295.D	74	70
OP19325-MSD	3G122296.D	77	72

Surrogate Compounds

Recovery Limits

S1 = 2,4-DCAA

10-159%

(a) Recovery from GC signal #2

(b) Recovery from GC signal #1

7.7.1
7

Surrogate Recovery Summary

Job Number: JC84953

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Method: SW846 8081B	Matrix: SO
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 ^a	S1 ^b	S2 ^a	S2 ^b
JC84953-1	4G958058.D	63	70	68	64
OP19346-BS1	4G958055.D	68	75	73	71
OP19346-MB1	4G958054.D	60	64	64	61
OP19346-MS	4G958056.D	65	67	68	61
OP19346-MSD	4G958057.D	84	86	87	78

Surrogate Compounds	Recovery Limits
S1 = Tetrachloro-m-xylene	25-135%
S2 = Decachlorobiphenyl	10-156%

- (a) Recovery from GC signal #1
- (b) Recovery from GC signal #2

7.7.2
7

Surrogate Recovery Summary

Job Number: JC84953

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Method: SW846 8082A	Matrix: SO
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 ^a	S1 ^b	S2 ^a	S2 ^b
JC84953-1	XX2433187.D	88	86	90	90
OP19345-BS1	XX2433186.D	107	103	113	110
OP19345-MB1	XX2433185.D	79	77	90	87
OP19345-MS	XX2433188.D	102	95	101	103
OP19345-MSD	XX2433189.D	100	98	101	101

Surrogate Compounds

Recovery Limits

S1 = Tetrachloro-m-xylene

31-146%

S2 = Decachlorobiphenyl

17-164%

(a) Recovery from GC signal #1

(b) Recovery from GC signal #2

7.7.3
7

GC Surrogate Retention Time Summary

Job Number: JC84953

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Check Std:	G3G4270-CC4200	Injection Date:	03/25/19
Lab File ID:	3G122290.D	Injection Time:	12:50
Instrument ID:	GC3G	Method:	SW846 8151A

S1^a **S1^b**
RT **RT**

Check Std	7.88	7.26
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Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 ^a RT	S1 ^b RT
OP19325-MB1	3G122292.D	03/25/19	13:50	7.89	7.27
OP19325-BS1	3G122293.D	03/25/19	14:19	7.88	7.26
OP19325-MS	3G122295.D	03/25/19	15:15	7.88	7.26
OP19325-MSD	3G122296.D	03/25/19	15:43	7.88	7.26
JC84953-1	3G122297.D	03/25/19	16:11	7.89	7.26

Surrogate Compounds

S1 = 2,4-DCAA

(a) Retention time from GC signal #2

(b) Retention time from GC signal #1

7.8.1
7

GC Surrogate Retention Time Summary

Job Number: JC84953

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Check Std: G4G2709-CC2706	Injection Date: 03/26/19
Lab File ID: 4G958050.D	Injection Time: 09:49
Instrument ID: GC4G	Method: SW846 8081B

	S1 ^a RT	S1 ^b RT	S2 ^a RT	S2 ^b RT
Check Std	2.12	2.68	9.50	11.70

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 ^a RT	S1 ^b RT	S2 ^a RT	S2 ^b RT
OP19346-MB1	4G958054.D	03/26/19	11:02	2.12	2.69	9.50	11.70
OP19346-BS1	4G958055.D	03/26/19	11:19	2.12	2.69	9.50	11.70
OP19346-MS	4G958056.D	03/26/19	11:36	2.12	2.69	9.50	11.70
OP19346-MSD	4G958057.D	03/26/19	11:53	2.13	2.69	9.50	11.70
JC84953-1	4G958058.D	03/26/19	12:10	2.13	2.69	9.50	11.70

Surrogate Compounds

S1 = Tetrachloro-m-xylene

S2 = Decachlorobiphenyl

(a) Retention time from GC signal #1

(b) Retention time from GC signal #2

GC Surrogate Retention Time Summary

Job Number: JC84953

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Check Std: GXX6640-CC6621	Injection Date: 03/26/19
Lab File ID: XX2433180.D	Injection Time: 19:24
Instrument ID: GCXX	Method: SW846 8082A

	S1 ^a RT	S1 ^b RT	S2 ^a RT	S2 ^b RT
Check Std	3.29	4.05	10.76	12.64

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 ^a RT	S1 ^b RT	S2 ^a RT	S2 ^b RT
ZZZZZZ	XX2433182.D	03/26/19	20:00	3.29	4.06	10.76	12.64
ZZZZZZ	XX2433183.D	03/26/19	20:18	3.29	4.06	10.76	12.64
OP19345-MB1	XX2433185.D	03/26/19	20:55	3.29	4.06	10.76	12.64
OP19345-BS1	XX2433186.D	03/26/19	21:13	3.29	4.06	10.76	12.64
JC84953-1	XX2433187.D	03/26/19	21:31	3.29	4.06	10.76	12.64
OP19345-MS	XX2433188.D	03/26/19	21:50	3.29	4.06	10.76	12.64
OP19345-MSD	XX2433189.D	03/26/19	22:08	3.29	4.06	10.76	12.64

Surrogate Compounds

S1 = Tetrachloro-m-xylene

S2 = Decachlorobiphenyl

(a) Retention time from GC signal #1

(b) Retention time from GC signal #2

Initial Calibration Summary

Job Number: JC84953

Sample: G3G4200-ICC4200

Account: NOREASCA NOREAS, Inc.

Lab FileID: 3G120244.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Response Factor Report GC3G

Method : C:\MSDCHEM\1\METHODS\3H4200.M (Chemstation Integrator)
Title : HERB
Last Update : Thu Dec 13 16:58:45 2018
Response via : Initial Calibration

Calibration Files

500 =3G120246.D 400 =3G120245.D 300 =3G120244.D 200 =3G120243.D
100 =3G120242.D 50 =3G120241.D

Compound	500	400	300	200	100	50	Avg	%RSD
1) Dalapon	0.907	0.926	0.964	1.034	1.069	1.094	0.999	E7 7.79
2) S 2,4-DCAA	4.972	5.105	5.316	5.693	6.073	6.481	5.606	E6 10.49
3) Dicamba	2.216	2.316	2.494	2.592	2.596	2.796	2.502	E7 8.38
4) MCPP	1.374	1.395	1.406	1.417	1.307		1.380	E4 3.16
5) MCPA	2.097	2.084	2.181	2.275	2.099		2.147	E4 3.78
6) Dichloroprop	5.336	5.589	5.878	6.413	7.046	7.608	6.312	E6 13.98
7) 2,4-D	7.259	7.756	8.161	8.884	9.123	9.668	8.475	E6 10.69
8) Pentachlorophenol	0.985	1.033	1.039	1.088	1.062	1.068	1.046	E8 3.44
9) 2,4,5-TP	3.996	4.100	4.207	4.455	4.543	4.557	4.310	E7 5.58
10) 2,4,5-T	3.732	3.900	4.125	4.176	4.146	4.100	4.030	E7 4.37
11) 2,4-DB	3.687	3.955	4.228	4.265	4.302	4.129	4.094	E6 5.74
12) Dinoseb	2.101	2.114	2.291	2.469	2.605	2.853	2.405	E7 12.26
13) Picloram	3.808	3.910	4.063	4.310	4.426	4.605	4.187	E7 7.42

Signal #2

1) Dalapon	1.809	1.839	1.866	1.983	2.081	2.175	1.959	E6 7.49
2) S 2,4-DCAA	0.945	0.944	0.945	0.974	1.028	1.105	0.990	E6 6.58
3) Dicamba	4.909	4.940	4.993	5.081	5.120	5.736	5.130	E6 6.00
4) MCPP	1.981	1.968	1.948	1.923	1.596		1.883	E3 8.62
5) MCPA	3.404	3.380	3.341	3.284	2.864		3.255	E3 6.86
6) Dichloroprop	1.158	1.168	1.190	1.253	1.336	1.406	1.252	E6 8.05
7) 2,4-D	1.468	1.493	1.509	1.600	1.735	1.823	1.605	E6 9.03
8) Pentachlorophenol	2.657	2.684	2.580	2.696	2.584	2.526	2.621	E7 2.59
9) 2,4,5-TP	1.060	1.066	1.067	1.087	1.064	1.060	1.067	E7 0.94
10) 2,4,5-T	0.956	0.965	0.963	0.979	0.991	1.003	0.976	E7 1.86
11) 2,4-DB	8.067	8.006	8.132	8.441	8.937	8.859	8.407	E5 4.87
12) Dinoseb	6.142	6.153	6.164	6.488	6.515	6.911	6.396	E6 4.77
13) Picloram	1.413	1.419	1.421	1.447	1.421	1.381	1.417	E7 1.50

(#) = Out of Range

3H4200.M

Fri Dec 14 08:38:26 2018

GC3G

Initial Calibration Verification

Job Number: JC84953

Sample: G3G4200-ICV4200

Account: NOREASCA NOREAS, Inc.

Lab FileID: 3G120247.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\3G4200\3G120247.D\ECD1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\3G4200\3G120247.D\ECD2B.CH
Acq On : 12-13-2018 03:24:26 PM Operator: thomas1
Sample : icv4200-300 Inst : GC3G
Misc : op17233,g3g4200,16.2,,,5,1 Multiplr: 1.00
IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e

Method : C:\MSDCHEM\1\METHODS\3H4200.M (Chemstation Integrator)
Title : HERB
Last Update : Thu Dec 13 16:58:45 2018
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.10min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT	Window
1	Dalapon	9.990	9.951 E6	0.4	103	0.00	2.33-	2.39
2 S	2,4-DCAA	5.606	5.216 E6	7.0	98	0.00	7.25-	7.32
3	Dicamba	25.017	24.569 E6	1.8	99	0.00	7.46-	7.52
4	MCPD	13.797	13.925 E3	-0.9	99	0.00	7.74-	7.80
5	MCPA	21.474	20.920 E3	2.6	96	0.00	7.93-	7.99
6	Dichloroprop	6.312	5.634 E6	10.7	96	0.00	8.44-	8.50
7	2,4-D	8.475	7.954 E6	6.1	97	0.00	8.76-	8.82
8	Pentachlorophenol	104.569	108.845 E6	-4.1	105	0.00	9.04-	9.10
9	2,4,5-TP	43.097	40.825 E6	5.3	97	0.00	10.05-	10.11
10	2,4,5-T	40.299	41.314 E6	-2.5	100	0.00	10.51-	10.57
11	2,4-DB	4.094	4.163 E6	-1.7	98	0.00	11.44-	11.51
12	Dinoseb	24.053	22.791 E6	5.2	99	0.00	13.29-	13.36
13	Picloram	41.869	38.879 E6	7.1	96	0.00	13.01-	13.08

***** Signal #2 *****

1	Dalapon	1.959	1.904 E6	2.8	102	0.00	2.36-	2.43
2 S	2,4-DCAA	990.023	979.357 E3	1.1	104	0.00	7.92-	7.98
3	Dicamba	5.130	5.442 E6	-6.1	109	0.00	8.17-	8.23
4	MCPD	1.883	1.933 E3	-2.7	99	0.00	8.35-	8.41
5	MCPA	3.255	3.170 E3	2.6	95	0.00	8.71-	8.77
6	Dichloroprop	1.252	1.184 E6	5.4	99	0.00	9.24-	9.30
7	2,4-D	1.605	1.524 E6	5.0	101	0.00	9.77-	9.83
8	Pentachlorophenol	26.213	28.186 E6	-7.5	109	0.00	10.33-	10.39
9	2,4,5-TP	10.674	10.356 E6	3.0	97	0.00	11.17-	11.23
10	2,4,5-T	9.762	9.897 E6	-1.4	103	0.00	11.91-	11.97
11	2,4-DB	840.702	845.160 E3	-0.5	104	0.00	12.90-	12.97
12	Dinoseb	6.396	6.260 E6	2.1	102	0.00	13.43-	13.50
13	Picloram	14.170	13.581 E6	4.2	96	0.00	15.50-	15.57

(#) = Out of Range
3G120244.D 3H4200.M

SPCC's out = 0 CCC's out = 0
Fri Dec 14 08:37:43 2018 GC3G

Continuing Calibration Summary

Job Number: JC84953 **Sample:** G3G4270-CC4200
Account: NOREASCA NOREAS, Inc. **Lab FileID:** 3G122290.D
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\3G4270\3G122290.D\ECD1A.CH Vial: 3
 Signal #2 : C:\MSDCHEM\1\DATA\3G4270\3G122290.D\ECD2B.CH
 Acq On : 25 Mar 2019 12:50 pm Operator: vinced
 Sample : cc4200-300 Inst : GC3G
 Misc : op19326,g3g4270,15.3,,,5,1 Multiplr: 1.00
 IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e

Method : C:\MSDCHEM\1\METHODS\3H4200.M (Chemstation Integrator)
 Title : HERB
 Last Update : Mon Mar 25 10:58:32 2019
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.10min
 Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT	Window
1	Dalapon	9.990	9.905 E6	0.9	103	0.00	2.31-	2.37
2 S	2,4-DCAA	5.606	5.904 E6	-5.3	111	0.00	7.22-	7.29
3	Dicamba	25.017	28.500 E6	-13.9	114	0.00	7.43-	7.49
4	MCPD	13.797	16.976 E3	-23.0#	121	0.00	7.70-	7.76
5	MCPA	21.474	27.536 E3	-28.2#	126	0.00	7.89-	7.95
6	Dichloroprop	6.312	6.364 E6	-0.8	108	0.00	8.40-	8.46
7	2,4-D	8.475	8.802 E6	-3.9	108	0.00	8.74-	8.80
8	Pentachlorophenol	104.569	114.365 E6	-9.4	110	0.00	9.00-	9.06
9	2,4,5-TP	43.097	41.040 E6	4.8	98	0.00	10.02-	10.08
10	2,4,5-T	40.299	45.402 E6	-12.7	110	0.02	10.50-	10.56
11	2,4-DB	4.094	4.736 E6	-15.7	112	0.02	11.42-	11.49
12	Dinoseb	24.053	26.050 E6	-8.3	114	0.00	13.25-	13.32
13	Picloram	41.869	38.533 E6	8.0	95	0.03	12.99-	13.06

***** Signal #2 *****

1	Dalapon	1.959	1.909 E6	2.6	102	0.00	2.31-	2.38
2 S	2,4-DCAA	990.023	977.814 E3	1.2	104	0.00	7.85-	7.91
3	Dicamba	5.130	5.943 E6	-15.8	119	0.00	8.10-	8.16
4	MCPD	1.883	2.004 E3	-6.4	103	0.00	8.27-	8.33
5	MCPA	3.255	3.144 E3	3.4	94	0.00	8.63-	8.69
6	Dichloroprop	1.252	1.259 E6	-0.6	106	0.00	9.16-	9.22
7	2,4-D	1.605	1.518 E6	5.4	101	0.00	9.69-	9.75
8	Pentachlorophenol	26.213	27.395 E6	-4.5	106	0.00	10.23-	10.29
9	2,4,5-TP	10.674	9.877 E6	7.5	93	0.00	11.08-	11.14
10	2,4,5-T	9.762	10.133 E6	-3.8	105	0.02	11.84-	11.90
11	2,4-DB	840.702	778.155 E3	7.4	96	0.02	12.82-	12.89
12	Dinoseb	6.396	5.859 E6	8.4	95	0.00	13.32-	13.39
13	Picloram	14.170	13.401 E6	5.4	94	0.02	15.41-	15.48

(#) = Out of Range
3G120244.D 3H4200.M

SPCC's out = 0 CCC's out = 0
Mon Mar 25 13:41:48 2019 GC3G

Continuing Calibration Summary

Job Number: JC84953 **Sample:** G3G4270-CC4200
Account: NOREASCA NOREAS, Inc. **Lab FileID:** 3G122298.D
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\3G4270\3G122298.D\ECD1A.CH Vial: 2
 Signal #2 : C:\MSDCHEM\1\DATA\3G4270\3G122298.D\ECD2B.CH
 Acq On : 3-25-2019 04:39:48 PM Operator: vinced
 Sample : cc4200-200 Inst : GC3G
 Misc : op19325,g3g4270,15.8,,,5,1 Multiplr: 1.00
 IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e

Method : C:\MSDCHEM\1\METHODS\3H4200.M (Chemstation Integrator)
 Title : HERB
 Last Update : Mon Mar 25 17:04:50 2019
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.10min
 Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT	Window
1	Dalapon	9.990	10.268 E6	-2.8	99	0.00	2.31-	2.37
2 S	2,4-DCAA	5.606	6.192 E6	-10.5	109	0.00	7.23-	7.30
3	Dicamba	25.017	29.030 E6	-16.0	112	0.00	7.43-	7.49
4	MCPD	13.797	18.184 E3	-31.8#	128	0.00	7.70-	7.76
5	MCPA	21.474	30.404 E3	-41.6#	134	0.00	7.90-	7.96
6	Dichloroprop	6.312	6.867 E6	-8.8	107	0.00	8.40-	8.46
7	2,4-D	8.475	9.200 E6	-8.6	104	0.00	8.75-	8.81
8	Pentachlorophenol	104.569	118.427 E6	-13.3	109	0.00	9.00-	9.06
9	2,4,5-TP	43.097	41.762 E6	3.1	94	0.00	10.02-	10.08
10	2,4,5-T	40.299	45.591 E6	-13.1	109	0.00	10.51-	10.57
11	2,4-DB	4.094	4.852 E6	-18.5	114	0.00	11.43-	11.50
12	Dinoseb	24.053	30.544 E6	-27.0#	124	0.00	13.26-	13.33
13	Picloram	41.869	37.249 E6	11.0	86	0.00	13.01-	13.08

***** Signal #2 *****

1	Dalapon	1.959	1.943 E6	0.8	98	0.00	2.31-	2.38
2 S	2,4-DCAA	990.023	997.223 E3	-0.7	102	0.00	7.86-	7.92
3	Dicamba	5.130	5.937 E6	-15.7	117	0.00	8.10-	8.16
4	MCPD	1.883	1.923 E3	-2.1	100	0.00	8.27-	8.33
5	MCPA	3.255	3.259 E3	-0.1	99	0.00	8.63-	8.69
6	Dichloroprop	1.252	1.303 E6	-4.1	104	0.00	9.16-	9.22
7	2,4-D	1.605	1.630 E6	-1.6	102	0.00	9.70-	9.76
8	Pentachlorophenol	26.213	27.365 E6	-4.4	101	0.00	10.23-	10.29
9	2,4,5-TP	10.674	9.624 E6	9.8	89	0.00	11.09-	11.15
10	2,4,5-T	9.762	10.021 E6	-2.7	102	0.00	11.85-	11.91
11	2,4-DB	840.702	765.606 E3	8.9	91	0.00	12.83-	12.90
12	Dinoseb	6.396	5.852 E6	8.5	90	0.00	13.33-	13.40
13	Picloram	14.170	12.668 E6	10.6	88	0.00	15.42-	15.49

(#) = Out of Range
3G120243.D 3H4200.M

SPCC's out = 0 CCC's out = 0
Mon Mar 25 17:07:59 2019 GC3G

Initial Calibration Summary

Job Number: JC84953

Sample: G4G2706-ICC2706

Account: NOREASCA NOREAS, Inc.

Lab FileID: 4G958004.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Response Factor Report GC4G

Method : C:\msdchem\1\METHODS\4PST2706.M (ChemStation Integrator)
Title : PEST/PCB
Last Update : Mon Mar 25 09:49:18 2019
Response via : Initial Calibration

Calibration Files

2 =4g958001.D 5 =4g958002.D 10 =4g958003.D 25 =4g958004.D
50 =4g958005.D 100 =4g958007.D 1 =4g958000.D 75 =4g958006.D

Compound	2	5	10	25	50	100	1	75	Avg	%RSD
1) I 1-bromo-2-nitrobenzen -----ISTD-----										
2) Tetrachloro-	0.986	0.914	0.917	0.842	0.829	0.807	1.031	0.826	0.894	9.18
3) hexachlorobe	1.251	1.161	1.133	1.083	1.055	1.037	1.318	1.074	1.139	8.78
4) alpha-BHC	1.213	1.188	1.180	1.164	1.158	1.166	1.235	1.192	1.187	2.20
5) gamma-BHC	1.138	1.145	1.105	1.090	1.067	1.058	1.358	1.080	1.130	8.60
6) Heptachlor	1.233	1.196	1.142	1.117	1.076	1.042	1.338	1.072	1.152	8.60
7) beta-BHC	0.497	0.494	0.477	0.468	0.469	0.464	0.518	0.478	0.483	3.81
8) delta-BHC	1.107	1.039	1.015	1.042	1.060	1.055	1.121	1.068	1.063	3.31
9) Aldrin	1.147	1.089	1.083	1.063	1.023	1.007	1.248	1.034	1.087	7.24
10)alachlor		0.126	0.120	0.126	0.119	0.113		0.121	0.121	4.19
11) Heptachlor E	1.093	1.007	0.990	0.975	0.923	0.897	1.205	0.923	1.002	10.25
12) gamma-Chlord	1.104	1.020	1.011	1.014	0.966	0.960	1.136	0.978	1.024	6.26
13) alpha-Chlord	1.089	1.036	1.005	0.989	0.935	0.927	1.303	0.944	1.029	12.03
14) Endosulfan I	1.150	1.092	1.078	1.058	0.987	0.942	1.165	0.975	1.056	7.74
15) 4,4'-DDE	0.874	0.809	0.782	0.824	0.808	0.826	0.954	0.832	0.839	6.36
16) Dieldrin	1.055	1.068	1.034	1.011	0.975	0.956	1.096	0.978	1.021	4.92
17) Endrin	1.058	1.010	0.970	0.962	0.924	0.895	1.173	0.923	0.989	9.17
18) 4,4'-DDD	0.809	0.780	0.735	0.794	0.769	0.774	0.906	0.782	0.794	6.31
19) Endosulfan I	1.013	0.948	0.894	0.910	0.868	0.856	1.183	0.872	0.943	11.64
20) 4,4'-DDT	0.782	0.826	0.797	0.857	0.826	0.838	0.814	0.843	0.823	3.00
21) Endrin Aldeh	0.729	0.762	0.720	0.744	0.701	0.689	0.755	0.702	0.725	3.70
22) Endosulfan S	0.852	0.803	0.775	0.788	0.750	0.734	0.862	0.754	0.790	5.93
23) Methoxychlor	0.492	0.439	0.423	0.438	0.412	0.407	0.554	0.416	0.448	11.34
24) Mirex	0.895	0.814	0.775	0.741	0.685	0.669	1.090	0.688	0.794	17.81
25) Endrin Keton	0.941	0.935	0.915	0.930	0.876	0.852	1.013	0.878	0.918	5.47
26) Decachlorobi	1.009	0.914	0.876	0.856	0.791	0.780	1.085	0.793	0.888	12.43
27) I 1-bromo-2-nitrobenzen -----ISTD-----										
28) Toxaphene{A}					0.016			0.016	0.00	
29) Toxaphene{B}					0.047			0.047	0.00	
30) Toxaphene{C}					0.037			0.037	0.00	
31) Toxaphene{D}					0.036			0.036	0.00	
32) Toxaphene{E}					0.030			0.030	0.00	
33) I 1-bromo-2-nitrobenzen -----ISTD-----										
34) Chlordane {A}					0.070			0.070	0.00	
35) Chlordane {B}					0.045			0.045	0.00	
36) Chlordane {C}					0.147			0.147	0.00	
37) Chlordane {D}					0.224			0.224	0.00	
38) Chlordane {E}					0.037			0.037	0.00	

Signal #2

1) I 1-bromo-2-nitrobenzen -----ISTD-----
2) Tetrachloro- 0.793 0.810 0.806 0.803 0.815 0.823 0.873 0.823 0.818 2.95

Initial Calibration Summary

Job Number: JC84953

Sample: G4G2706-ICC2706

Account: NOREASCA NOREAS, Inc.

Lab FileID: 4G958004.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

3)	hexachlorobe	1.091	1.137	1.113	1.093	1.084	1.091	1.057	1.097	1.095	2.10
4)	alpha-BHC	1.101	1.079	1.075	1.112	1.156	1.201	1.147	1.188	1.133	4.22
5)	gamma-BHC	0.995	1.005	1.004	1.029	1.063	1.100	1.083	1.088	1.046	4.07
6)	Heptachlor	1.067	1.038	1.016	1.041	1.025	1.065	1.139	1.066	1.057	3.65
7)	beta-BHC	0.445	0.426	0.434	0.438	0.437	0.446	0.460	0.445	0.441	2.28
8)	delta-BHC	0.938	0.921	0.924	0.967	1.004	1.055	1.064	1.037	0.989	5.96
9)	Aldrin	1.015	0.974	0.948	0.950	0.960	0.986	1.184	0.981	1.000	7.76
10)	alachlor		0.124	0.121	0.122	0.116	0.112		0.116	0.119	3.75
11)	Heptachlor E	0.884	0.898	0.881	0.898	0.896	0.907	0.975	0.904	0.906	3.28
12)	gamma-Chlord	0.941	0.907	0.882	0.886	0.890	0.917	0.992	0.909	0.916	4.00
13)	alpha-Chlord	0.846	0.866	0.848	0.860	0.861	0.879	0.886	0.874	0.865	1.64
14)	Endosulfan I	0.828	0.836	0.821	0.825	0.821	0.835	0.884	0.833	0.835	2.46
15)	4,4'-DDE	0.847	0.863	0.860	0.871	0.876	0.912	0.912	0.902	0.880	2.83
16)	Dieldrin	0.909	0.916	0.893	0.903	0.911	0.936	0.952	0.929	0.919	2.11
17)	Endrin	0.874	0.859	0.850	0.858	0.854	0.871	0.976	0.872	0.877	4.69
18)	4,4'-DDD	0.755	0.710	0.719	0.730	0.729	0.749	0.863	0.741	0.750	6.46
19)	Endosulfan I	0.859	0.833	0.817	0.819	0.807	0.824	1.022	0.819	0.850	8.38
20)	4,4'-DDT	0.576	0.594	0.627	0.660	0.700	0.749	0.583	0.734	0.653	10.52
21)	Endrin Aldehy	0.689	0.652	0.639	0.647	0.640	0.654	0.722	0.648	0.661	4.41
22)	Endosulfan S	0.694	0.721	0.707	0.712	0.701	0.714	0.845	0.711	0.726	6.73
23)	Methoxychlor	0.329	0.333	0.352	0.378	0.376	0.383	0.400	0.383	0.367	6.98
24)	Mirex	0.731	0.710	0.667	0.645	0.606	0.609	0.854	0.612	0.679	12.50
25)	Endrin Keton	0.851	0.852	0.837	0.859	0.854	0.875	0.973	0.869	0.871	4.92
26)	Decachlorobi	0.857	0.801	0.776	0.769	0.751	0.744	0.931	0.756	0.798	8.12
27)	I 1-bromo-2-nitrobenzen	-----ISTD-----									
28)	Toxaphene{A}					0.018			0.018	0.00	
29)	Toxaphene{B}					0.025			0.025	0.00	
30)	Toxaphene{C}					0.035			0.035	0.00	
31)	Toxaphene{D}					0.024			0.024	0.00	
32)	Toxaphene{E}					0.024			0.024	0.00	
33)	I 1-bromo-2-nitrobenzen	-----ISTD-----									
34)	Chlordane {A}					0.057			0.057	0.00	
35)	Chlordane {B}					0.030			0.030	0.00	
36)	Chlordane {C}					0.109			0.109	0.00	
37)	Chlordane {D}					0.175			0.175	0.00	
38)	Chlordane {E}					0.029			0.029	0.00	

(#) = Out of Range ### Number of calibration levels exceeded format ###

4PST2706.M

Mon Mar 25 10:23:31 2019

RPT1

7.95

7

Initial Calibration Verification

Job Number: JC84953

Sample: G4G2706-ICV2706

Account: NOREASCA NOREAS, Inc.

Lab FileID: 4G958010.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Signal #1 : C:\msdchem\1\DATA\4G2706\4g958010.D\ECD1A.ch Vial: 13
 Signal #2 : C:\msdchem\1\DATA\4G2706\4g958010.D\ECD2B.ch
 Acq On : 22 Mar 2019 6:43 pm Operator: mailisih
 Sample : icv2706-25 Inst : GC4G
 Misc : op19193,g4g2706,30,,,2,1 Multiplr: 1.00
 IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e

Method : C:\msdchem\1\METHODS\4PST2706.M (ChemStation Integrator)
 Title : PEST/PCB
 Last Update : Mon Mar 25 09:49:18 2019
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 20% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT	Window
1 I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	105	0.00	1.46-	1.52
2 SAB	Tetrachloro-m-xylene	0.894	0.828	7.4	103	0.00	2.09-	2.15
3	hexachlorobenzene			-----NA-----				
4 A	alpha-BHC	1.187	1.309	-10.3	118	0.00	2.58-	2.64
5 MA	gamma-BHC	1.130	1.185	-4.9	114	0.00	2.88-	2.94
6 MA	Heptachlor	1.152	1.213	-5.3	114	0.00	3.38-	3.44
7 B	beta-BHC	0.483	0.520	-7.7	117	0.00	2.96-	3.02
8 B	delta-BHC	1.063	1.177	-10.7	119	0.00	3.15-	3.21
9 MB	Aldrin	1.087	1.170	-7.6	116	0.00	3.71-	3.77
10	alachlor			-----NA-----				
11 B	Heptachlor Epoxide	1.002	1.075	-7.3	116	0.00	4.43-	4.49
12 B	gamma-Chlordane	1.024	1.105	-7.9	115	0.00	4.59-	4.65
13 B	alpha-Chlordane	1.029	1.078	-4.8	115	0.00	4.76-	4.82
14 A	Endosulfan I	1.056	1.194	-13.1	119	0.00	4.94-	5.00
15 B	4,4'-DDE	0.839	0.811	3.3	103	0.00	4.90-	4.96
16 MA	Dieldrin	1.021	1.117	-9.4	116	0.00	5.26-	5.32
17 MA	Endrin	0.989	1.063	-7.5	116	0.00	5.58-	5.64
18 A	4,4'-DDD	0.794	0.841	-5.9	111	0.02	5.75-	5.81
19 B	Endosulfan II	0.943	1.004	-6.5	116	0.00	5.91-	5.97
20 MA	4,4'-DDT	0.823	0.923	-12.2	113	0.00	6.15-	6.21
21 B	Endrin Aldehyde	0.725	0.824	-13.7	116	0.00	6.53-	6.59
22 B	Endosulfan Sulfate	0.790	0.857	-8.5	114	0.00	7.21-	7.27
23 A	Methoxychlor	0.448	0.423	5.6	102	0.02	6.96-	7.02
24	Mirex	0.794	0.735	7.4	104	0.00	7.06-	7.12
25 B	Endrin Ketone	0.918	1.024	-11.5	116	0.00	7.65-	7.71
26 SA	Decachlorobiphenyl	0.888	0.821	7.5	101	0.00	9.48-	9.54
27 I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	0#	0.00	1.39-	1.59
28 L8	Toxaphene{A}			-----NA-----				
29 L8	Toxaphene{B}			-----NA-----				
30 L8	Toxaphene{C}			-----NA-----				
31 L8	Toxaphene{D}			-----NA-----				
32 L8	Toxaphene{E}			-----NA-----				
33 I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	0#	0.00	1.39-	1.59
34	Chlordane {A}			-----NA-----				
35	Chlordane {B}			-----NA-----				
36	Chlordane {C}			-----NA-----				
37	Chlordane {D}			-----NA-----				
38	Chlordane {E}			-----NA-----				

Initial Calibration Verification

Job Number: JC84953

Sample: G4G2706-ICV2706

Account: NOREASCA NOREAS, Inc.

Lab FileID: 4G958010.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

***** Signal #2 *****

1	I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	103	0.00	1.79-	1.85
2	SAB	Tetrachloro-m-xylene	0.818	0.786	3.9	101	0.00	2.65-	2.71
3		hexachlorobenzene						-----NA-----	
4	A	alpha-BHC	1.133	1.244	-9.8	115	0.00	3.33-	3.39
5	MA	gamma-BHC	1.046	1.133	-8.3	113	0.00	3.77-	3.83
6	MA	Heptachlor	1.057	1.115	-5.5	110	0.00	4.35-	4.41
7	B	beta-BHC	0.441	0.486	-10.2	114	0.00	3.86-	3.92
8	B	delta-BHC	0.989	1.063	-7.5	113	0.00	4.27-	4.33
9	MB	Aldrin	1.000	1.048	-4.8	113	0.00	4.81-	4.87
10		alachlor						-----NA-----	
11	B	Heptachlor Epoxide	0.906	0.980	-8.2	112	0.00	5.64-	5.70
12	B	gamma-Chlordane	0.916	0.983	-7.3	114	0.00	5.93-	5.99
13	B	alpha-Chlordane	0.865	0.952	-10.1	114	0.00	6.15-	6.21
14	A	Endosulfan I	0.835	0.903	-8.1	112	0.00	6.25-	6.31
15	B	4,4'-DDE	0.880	0.977	-11.0	115	0.00	6.43-	6.49
16	MA	Dieldrin	0.919	1.009	-9.8	115	0.00	6.69-	6.75
17	MA	Endrin	0.877	0.954	-8.8	114	0.00	7.19-	7.25
18	A	4,4'-DDD	0.750	0.807	-7.6	113	0.00	7.39-	7.45
19	B	Endosulfan II	0.850	0.894	-5.2	112	0.00	7.55-	7.61
20	MA	4,4'-DDT	0.653	0.763	-16.8	119	0.00	7.91-	7.97
21	B	Endrin Aldehyde	0.661	0.728	-10.1	116	0.00	8.12-	8.18
22	B	Endosulfan Sulfate	0.726	0.779	-7.3	112	0.00	8.59-	8.65
23	A	Methoxychlor	0.367	0.397	-8.2	108	0.00	9.17-	9.23
24		Mirex	0.679	0.633	6.8	101	0.00	9.48-	9.54
25	B	Endrin Ketone	0.871	0.962	-10.4	115	0.00	9.56-	9.62
26	SA	Decachlorobiphenyl	0.798	0.758	5.0	101	0.00	11.67-	11.73
27	I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	0#	0.00	1.72-	1.92
28	L8	Toxaphene{A}						-----NA-----	
29	L8	Toxaphene{B}						-----NA-----	
30	L8	Toxaphene{C}						-----NA-----	
31	L8	Toxaphene{D}						-----NA-----	
32	L8	Toxaphene{E}						-----NA-----	
33	I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	0#	0.00	1.72-	1.92
34		Chlordane {A}						-----NA-----	
35		Chlordane {B}						-----NA-----	
36		Chlordane {C}						-----NA-----	
37		Chlordane {D}						-----NA-----	
38		Chlordane {E}						-----NA-----	

(#) = Out of Range
4g958004.D 4PST2706.M

SPCC's out = 0 CCC's out = 0
Mon Mar 25 10:14:37 2019 RPT1

7.9.6

7

Initial Calibration Verification

Job Number: JC84953 **Sample:** G4G2706-ICV2706
Account: NOREASCA NOREAS, Inc. **Lab FileID:** 4G958011.D
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Signal #1 : C:\msdchem\1\DATA\4G2706\4g958011.D\ECD1A.ch Vial: 14
 Signal #2 : C:\msdchem\1\DATA\4G2706\4g958011.D\ECD2B.ch
 Acq On : 22 Mar 2019 7:00 pm Operator: mailisih
 Sample : icv2706-500 Inst : GC4G
 Misc : op19193,g4g2706,30,,,2,1 Multiplr: 1.00
 IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e

Method : C:\msdchem\1\METHODS\4PST2706.M (ChemStation Integrator)
 Title : PEST/PCB
 Last Update : Mon Mar 25 09:49:18 2019
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 20% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT	Window
1 I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	96	0.00	1.46-	1.52
2 SAB	Tetrachloro-m-xylene	0.894	0.879	1.7	101	0.00	2.09-	2.15
3	hexachlorobenzene			-----NA-----				
4 A	alpha-BHC			-----NA-----				
5 MA	gamma-BHC			-----NA-----				
6 MA	Heptachlor			-----NA-----				
7 B	beta-BHC			-----NA-----				
8 B	delta-BHC			-----NA-----				
9 MB	Aldrin			-----NA-----				
10	alachlor			-----NA-----				
11 B	Heptachlor Epoxide			-----NA-----				
12 B	gamma-Chlordane			-----NA-----				
13 B	alpha-Chlordane			-----NA-----				
14 A	Endosulfan I			-----NA-----				
15 B	4,4'-DDE			-----NA-----				
16 MA	Dieldrin			-----NA-----				
17 MA	Endrin			-----NA-----				
18 A	4,4'-DDD			-----NA-----				
19 B	Endosulfan II			-----NA-----				
20 MA	4,4'-DDT			-----NA-----				
21 B	Endrin Aldehyde			-----NA-----				
22 B	Endosulfan Sulfate			-----NA-----				
23 A	Methoxychlor			-----NA-----				
24	Mirex			-----NA-----				
25 B	Endrin Ketone			-----NA-----				
26 SA	Decachlorobiphenyl	0.888	0.786	11.5	95	0.00	9.48-	9.54
27 I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	94	0.00	1.39-	1.59
28 L8	Toxaphene{A}			-----NA-----				
29 L8	Toxaphene{B}			-----NA-----				
30 L8	Toxaphene{C}			-----NA-----				
31 L8	Toxaphene{D}			-----NA-----				
32 L8	Toxaphene{E}			-----NA-----				
33 I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	106	0.00	1.39-	1.59
34	Chlordane {A}	0.070	0.059	15.7	90	0.00	3.31-	3.51
35	Chlordane {B}	0.045	0.037	17.8	86	0.00	3.79-	3.99
36	Chlordane {C}	0.147	0.127	13.6	92	0.00	4.52-	4.72
37	Chlordane {D}	0.224	0.199	11.2	94	0.00	4.68-	4.88
38	Chlordane {E}	0.037	0.034	8.1	100	0.00	5.74-	5.94

7.9.7

Initial Calibration Verification

Job Number: JC84953

Sample: G4G2706-ICV2706

Account: NOREASCA NOREAS, Inc.

Lab FileID: 4G958011.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

***** Signal #2 *****

1	I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	98	0.00	1.79- 1.85
2	SAB	Tetrachloro-m-xylene	0.818	0.758	7.3	91	0.00	2.65- 2.71
3		hexachlorobenzene					-----NA-----	
4	A	alpha-BHC					-----NA-----	
5	MA	gamma-BHC					-----NA-----	
6	MA	Heptachlor					-----NA-----	
7	B	beta-BHC					-----NA-----	
8	B	delta-BHC					-----NA-----	
9	MB	Aldrin					-----NA-----	
10		alachlor					-----NA-----	
11	B	Heptachlor Epoxide					-----NA-----	
12	B	gamma-Chlordane					-----NA-----	
13	B	alpha-Chlordane					-----NA-----	
14	A	Endosulfan I					-----NA-----	
15	B	4,4'-DDE					-----NA-----	
16	MA	Dieldrin					-----NA-----	
17	MA	Endrin					-----NA-----	
18	A	4,4'-DDD					-----NA-----	
19	B	Endosulfan II					-----NA-----	
20	MA	4,4'-DDT					-----NA-----	
21	B	Endrin Aldehyde					-----NA-----	
22	B	Endosulfan Sulfate					-----NA-----	
23	A	Methoxychlor					-----NA-----	
24		Mirex					-----NA-----	
25	B	Endrin Ketone					-----NA-----	
26	SA	Decachlorobiphenyl	0.798	0.727	8.9	95	0.00	11.67-11.73
27	I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	98	0.00	1.72- 1.92
28	L8	Toxaphene{A}					-----NA-----	
29	L8	Toxaphene{B}					-----NA-----	
30	L8	Toxaphene{C}					-----NA-----	
31	L8	Toxaphene{D}					-----NA-----	
32	L8	Toxaphene{E}					-----NA-----	
33	I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	98	0.00	1.72- 1.92
34		Chlordane {A}	0.057	0.055	3.5	95	0.00	4.28- 4.48
35		Chlordane {B}	0.030	0.029	3.3	95	0.00	4.94- 5.14
36		Chlordane {C}	0.109	0.107	1.8	96	0.00	5.86- 6.06
37		Chlordane {D}	0.175	0.176	-0.6	98	0.00	6.08- 6.28
38		Chlordane {E}	0.029	0.027	6.9	92	0.00	7.56- 7.76

(#) = Out of Range
4g958005.D 4PST2706.M

SPCC's out = 0 CCC's out = 0
Mon Mar 25 10:15:04 2019 RPT1

7.97
7

Initial Calibration Verification

Job Number: JC84953

Sample: G4G2706-ICV2706

Account: NOREASCA NOREAS, Inc.

Lab FileID: 4G958012.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Signal #1 : C:\msdchem\1\DATA\4G2706\4g958012.D\ECD1A.ch Vial: 15
 Signal #2 : C:\msdchem\1\DATA\4G2706\4g958012.D\ECD2B.ch
 Acq On : 22 Mar 2019 7:17 pm Operator: mailish
 Sample : icv2706-500 Inst : GC4G
 Misc : op19193,g4g2706,30,,,2,1 Multiplr: 1.00
 IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e

Method : C:\msdchem\1\METHODS\4PST2706.M (ChemStation Integrator)
 Title : PEST/PCB
 Last Update : Mon Mar 25 09:49:18 2019
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 20% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT	Window
1 I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	97	0.00	1.45-	1.51
2 SAB	Tetrachloro-m-xylene	0.894	0.783	12.4	92	0.00	2.09-	2.15
3	hexachlorobenzene			-----NA-----				
4 A	alpha-BHC			-----NA-----				
5 MA	gamma-BHC			-----NA-----				
6 MA	Heptachlor			-----NA-----				
7 B	beta-BHC			-----NA-----				
8 B	delta-BHC			-----NA-----				
9 MB	Aldrin			-----NA-----				
10	alachlor			-----NA-----				
11 B	Heptachlor Epoxide			-----NA-----				
12 B	gamma-Chlordane			-----NA-----				
13 B	alpha-Chlordane			-----NA-----				
14 A	Endosulfan I			-----NA-----				
15 B	4,4'-DDE			-----NA-----				
16 MA	Dieldrin			-----NA-----				
17 MA	Endrin			-----NA-----				
18 A	4,4'-DDD			-----NA-----				
19 B	Endosulfan II			-----NA-----				
20 MA	4,4'-DDT			-----NA-----				
21 B	Endrin Aldehyde			-----NA-----				
22 B	Endosulfan Sulfate			-----NA-----				
23 A	Methoxychlor			-----NA-----				
24	Mirex			-----NA-----				
25 B	Endrin Ketone			-----NA-----				
26 SA	Decachlorobiphenyl	0.888	0.798	10.1	98	0.00	9.48-	9.54
27 I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	96	0.00	1.38-	1.58
28 L8	Toxaphene{A}	0.016	0.013	18.8	79	0.00	5.20-	5.40
29 L8	Toxaphene{B}	0.047	0.041	12.8	83	0.00	5.82-	6.02
30 L8	Toxaphene{C}	0.037	0.035	5.4	91	0.00	6.00-	6.20
31 L8	Toxaphene{D}	0.036	0.033	8.3	88	0.00	6.34-	6.54
32 L8	Toxaphene{E}	0.030	0.029	3.3	95	0.00	6.99-	7.19
33 I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	108	0.00	1.38-	1.58
34	Chlordane {A}			-----NA-----				
35	Chlordane {B}			-----NA-----				
36	Chlordane {C}			-----NA-----				
37	Chlordane {D}			-----NA-----				
38	Chlordane {E}			-----NA-----				

Initial Calibration Verification

Job Number: JC84953

Sample: G4G2706-ICV2706

Account: NOREASCA NOREAS, Inc.

Lab FileID: 4G958012.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

***** Signal #2 *****

1	I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	100	0.00	1.79- 1.85
2	SAB	Tetrachloro-m-xylene	0.818	0.774	5.4	95	0.00	2.65- 2.71
3		hexachlorobenzene			-----NA-----			
4	A	alpha-BHC			-----NA-----			
5	MA	gamma-BHC			-----NA-----			
6	MA	Heptachlor			-----NA-----			
7	B	beta-BHC			-----NA-----			
8	B	delta-BHC			-----NA-----			
9	MB	Aldrin			-----NA-----			
10		alachlor			-----NA-----			
11	B	Heptachlor Epoxide			-----NA-----			
12	B	gamma-Chlordane			-----NA-----			
13	B	alpha-Chlordane			-----NA-----			
14	A	Endosulfan I			-----NA-----			
15	B	4,4'-DDE			-----NA-----			
16	MA	Dieldrin			-----NA-----			
17	MA	Endrin			-----NA-----			
18	A	4,4'-DDD			-----NA-----			
19	B	Endosulfan II			-----NA-----			
20	MA	4,4'-DDT			-----NA-----			
21	B	Endrin Aldehyde			-----NA-----			
22	B	Endosulfan Sulfate			-----NA-----			
23	A	Methoxychlor			-----NA-----			
24		Mirex			-----NA-----			
25	B	Endrin Ketone			-----NA-----			
26	SA	Decachlorobiphenyl	0.798	0.735	7.9	98	0.00	11.67-11.73
27	I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	100	0.00	1.72- 1.92
28	L8	Toxaphene{A}	0.018	0.020	-11.1	108	0.00	6.59- 6.79
29	L8	Toxaphene{B}	0.025	0.027	-8.0	107	0.00	7.45- 7.65
30	L8	Toxaphene{C}	0.035	0.037	-5.7	105	0.00	7.61- 7.81
31	L8	Toxaphene{D}	0.024	0.026	-8.3	106	0.00	8.05- 8.25
32	L8	Toxaphene{E}	0.024	0.025	-4.2	106	0.00	8.96- 9.16
33	I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	100	0.00	1.72- 1.92
34		Chlordane {A}			-----NA-----			
35		Chlordane {B}			-----NA-----			
36		Chlordane {C}			-----NA-----			
37		Chlordane {D}			-----NA-----			
38		Chlordane {E}			-----NA-----			

(#) = Out of Range
4g958005.D 4PST2706.M

SPCC's out = 0 CCC's out = 0
Mon Mar 25 10:15:06 2019 RPT1

Initial Calibration Verification

Job Number: JC84953

Sample: G4G2706-ICV2706

Account: NOREASCA NOREAS, Inc.

Lab FileID: 4G958013.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Signal #1 : C:\msdchem\1\DATA\4G2706\4g958013.D\ECD1A.ch Vial: 16
Signal #2 : C:\msdchem\1\DATA\4G2706\4g958013.D\ECD2B.ch
Acq On : 22 Mar 2019 7:34 pm Operator: mailisih
Sample : icv2706-50 Inst : GC4G
Misc : op19193,g4g2706,30,,,2,1 Multiplr: 1.00
IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e

Method : C:\msdchem\1\METHODS\4PST2706.M (ChemStation Integrator)
Title : PEST/PCB
Last Update : Mon Mar 25 09:49:18 2019
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT	Window
1 I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	100	0.00	1.46-	1.52
2 SAB	Tetrachloro-m-xylene			-----NA-----				
3	hexachlorobenzene	1.139	1.051	7.7	100	0.00	2.43-	2.49
4 A	alpha-BHC			-----NA-----				
5 MA	gamma-BHC			-----NA-----				
6 MA	Heptachlor			-----NA-----				
7 B	beta-BHC			-----NA-----				
8 B	delta-BHC			-----NA-----				
9 MB	Aldrin			-----NA-----				
10	alachlor			-----NA-----				
11 B	Heptachlor Epoxide			-----NA-----				
12 B	gamma-Chlordane			-----NA-----				
13 B	alpha-Chlordane			-----NA-----				
14 A	Endosulfan I			-----NA-----				
15 B	4,4'-DDE			-----NA-----				
16 MA	Dieldrin			-----NA-----				
17 MA	Endrin			-----NA-----				
18 A	4,4'-DDD			-----NA-----				
19 B	Endosulfan II			-----NA-----				
20 MA	4,4'-DDT			-----NA-----				
21 B	Endrin Aldehyde			-----NA-----				
22 B	Endosulfan Sulfate			-----NA-----				
23 A	Methoxychlor			-----NA-----				
24	Mirex			-----NA-----				
25 B	Endrin Ketone			-----NA-----				
26 SA	Decachlorobiphenyl			-----NA-----				
27 I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	98	0.00	1.39-	1.59
28 L8	Toxaphene{A}			-----NA-----				
29 L8	Toxaphene{B}			-----NA-----				
30 L8	Toxaphene{C}			-----NA-----				
31 L8	Toxaphene{D}			-----NA-----				
32 L8	Toxaphene{E}			-----NA-----				
33 I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	111	0.00	1.39-	1.59
34	Chlordane {A}			-----NA-----				
35	Chlordane {B}			-----NA-----				
36	Chlordane {C}			-----NA-----				
37	Chlordane {D}			-----NA-----				
38	Chlordane {E}			-----NA-----				

Initial Calibration Verification

Job Number: JC84953

Sample: G4G2706-ICV2706

Account: NOREASCA NOREAS, Inc.

Lab FileID: 4G958013.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

***** Signal #2 *****

1	I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	103	0.00	1.79-	1.85
2	SAB	Tetrachloro-m-xylene						-----NA-----	
3		hexachlorobenzene	1.095	1.050	4.1	100	0.00	3.18-	3.24
4	A	alpha-BHC						-----NA-----	
5	MA	gamma-BHC						-----NA-----	
6	MA	Heptachlor						-----NA-----	
7	B	beta-BHC						-----NA-----	
8	B	delta-BHC						-----NA-----	
9	MB	Aldrin						-----NA-----	
10		alachlor						-----NA-----	
11	B	Heptachlor Epoxide						-----NA-----	
12	B	gamma-Chlordane						-----NA-----	
13	B	alpha-Chlordane						-----NA-----	
14	A	Endosulfan I						-----NA-----	
15	B	4,4'-DDE						-----NA-----	
16	MA	Dieldrin						-----NA-----	
17	MA	Endrin						-----NA-----	
18	A	4,4'-DDD						-----NA-----	
19	B	Endosulfan II						-----NA-----	
20	MA	4,4'-DDT						-----NA-----	
21	B	Endrin Aldehyde						-----NA-----	
22	B	Endosulfan Sulfate						-----NA-----	
23	A	Methoxychlor						-----NA-----	
24		Mirex						-----NA-----	
25	B	Endrin Ketone						-----NA-----	
26	SA	Decachlorobiphenyl						-----NA-----	

27	I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	103	0.00	1.72-	1.92
28	L8	Toxaphene{A}						-----NA-----	
29	L8	Toxaphene{B}						-----NA-----	
30	L8	Toxaphene{C}						-----NA-----	
31	L8	Toxaphene{D}						-----NA-----	
32	L8	Toxaphene{E}						-----NA-----	

33	I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	103	0.00	1.72-	1.92
34		Chlordane {A}						-----NA-----	
35		Chlordane {B}						-----NA-----	
36		Chlordane {C}						-----NA-----	
37		Chlordane {D}						-----NA-----	
38		Chlordane {E}						-----NA-----	

(#) = Out of Range
4g958005.D 4PST2706.M

SPCC's out = 0 CCC's out = 0
Mon Mar 25 10:15:08 2019 RPT1

Initial Calibration Verification

Job Number: JC84953

Sample: G4G2706-ICV2706

Account: NOREASCA NOREAS, Inc.

Lab FileID: 4G958014.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Signal #1 : C:\msdchem\1\DATA\4G2706\4g958014.D\ECD1A.ch Vial: 17
Signal #2 : C:\msdchem\1\DATA\4G2706\4g958014.D\ECD2B.ch
Acq On : 22 Mar 2019 7:51 pm Operator: mailisih
Sample : icv2706-50 Inst : GC4G
Misc : op19193,g4g2706,30,,,2,1 Multiplr: 1.00
IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e

Method : C:\msdchem\1\METHODS\4PST2706.M (ChemStation Integrator)
Title : PEST/PCB
Last Update : Mon Mar 25 09:49:18 2019
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT	Window
1 I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	102	0.00	1.46-	1.52
2 SAB	Tetrachloro-m-xylene			-----NA-----				
3	hexachlorobenzene			-----NA-----				
4 A	alpha-BHC			-----NA-----				
5 MA	gamma-BHC			-----NA-----				
6 MA	Heptachlor			-----NA-----				
7 B	beta-BHC			-----NA-----				
8 B	delta-BHC			-----NA-----				
9 MB	Aldrin			-----NA-----				
10	alachlor	0.121	0.117	3.3	101	0.00	3.86-	3.92
11 B	Heptachlor Epoxide			-----NA-----				
12 B	gamma-Chlordane			-----NA-----				
13 B	alpha-Chlordane			-----NA-----				
14 A	Endosulfan I			-----NA-----				
15 B	4,4'-DDE			-----NA-----				
16 MA	Dieldrin			-----NA-----				
17 MA	Endrin			-----NA-----				
18 A	4,4'-DDD			-----NA-----				
19 B	Endosulfan II			-----NA-----				
20 MA	4,4'-DDT			-----NA-----				
21 B	Endrin Aldehyde			-----NA-----				
22 B	Endosulfan Sulfate			-----NA-----				
23 A	Methoxychlor			-----NA-----				
24	Mirex			-----NA-----				
25 B	Endrin Ketone			-----NA-----				
26 SA	Decachlorobiphenyl			-----NA-----				
27 I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	101	0.00	1.39-	1.59
28 L8	Toxaphene{A}			-----NA-----				
29 L8	Toxaphene{B}			-----NA-----				
30 L8	Toxaphene{C}			-----NA-----				
31 L8	Toxaphene{D}			-----NA-----				
32 L8	Toxaphene{E}			-----NA-----				
33 I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	113	0.00	1.39-	1.59
34	Chlordane {A}			-----NA-----				
35	Chlordane {B}			-----NA-----				
36	Chlordane {C}			-----NA-----				
37	Chlordane {D}			-----NA-----				
38	Chlordane {E}			-----NA-----				

Initial Calibration Verification

Job Number: JC84953

Sample: G4G2706-ICV2706

Account: NOREASCA NOREAS, Inc.

Lab FileID: 4G958014.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

***** Signal #2 *****

1	I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	103	0.00	1.79- 1.85
2	SAB	Tetrachloro-m-xylene					-----NA-----	
3		hexachlorobenzene					-----NA-----	
4	A	alpha-BHC					-----NA-----	
5	MA	gamma-BHC					-----NA-----	
6	MA	Heptachlor					-----NA-----	
7	B	beta-BHC					-----NA-----	
8	B	delta-BHC					-----NA-----	
9	MB	Aldrin					-----NA-----	
10		alachlor	0.119	0.116	2.5	103	0.00	4.62- 4.68
11	B	Heptachlor Epoxide					-----NA-----	
12	B	gamma-Chlordane					-----NA-----	
13	B	alpha-Chlordane					-----NA-----	
14	A	Endosulfan I					-----NA-----	
15	B	4,4'-DDE					-----NA-----	
16	MA	Dieldrin					-----NA-----	
17	MA	Endrin					-----NA-----	
18	A	4,4'-DDD					-----NA-----	
19	B	Endosulfan II					-----NA-----	
20	MA	4,4'-DDT					-----NA-----	
21	B	Endrin Aldehyde					-----NA-----	
22	B	Endosulfan Sulfate					-----NA-----	
23	A	Methoxychlor					-----NA-----	
24		Mirex					-----NA-----	
25	B	Endrin Ketone					-----NA-----	
26	SA	Decachlorobiphenyl					-----NA-----	
27	I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	103	0.00	1.72- 1.92
28	L8	Toxaphene{A}					-----NA-----	
29	L8	Toxaphene{B}					-----NA-----	
30	L8	Toxaphene{C}					-----NA-----	
31	L8	Toxaphene{D}					-----NA-----	
32	L8	Toxaphene{E}					-----NA-----	
33	I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	103	0.00	1.72- 1.92
34		Chlordane {A}					-----NA-----	
35		Chlordane {B}					-----NA-----	
36		Chlordane {C}					-----NA-----	
37		Chlordane {D}					-----NA-----	
38		Chlordane {E}					-----NA-----	

(#) = Out of Range
4g958005.D 4PST2706.M

SPCC's out = 0 CCC's out = 0
Mon Mar 25 10:15:10 2019 RPT1

7.9.10
7

Continuing Calibration Summary

Job Number: JC84953 **Sample:** G4G2709-CC2706
Account: NOREASCA NOREAS, Inc. **Lab FileID:** 4G958050.D
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Signal #1 : C:\msdchem\1\DATA\4G2709\4g958050.D\ECD1A.ch Vial: 2
 Signal #2 : C:\msdchem\1\DATA\4G2709\4g958050.D\ECD2B.ch
 Acq On : 26 Mar 2019 9:49 am Operator: mailisih
 Sample : cc2706-25 Inst : GC4G
 Misc : op19299,g4g2709,16.7,,,10,1 Multiplr: 1.00
 IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e

Method : C:\msdchem\1\METHODS\4PST2706.M (ChemStation Integrator)
 Title : PEST/PCB
 Last Update : Mon Mar 25 15:43:56 2019
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 20% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT	Window
1 I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	89	0.00	1.46	1.52
2 SAB	Tetrachloro-m-xylene	0.894	1.039	-16.2	110	0.00	2.09	2.15
3	hexachlorobenzene	1.139	1.315	-15.5	108	0.00	2.44	2.50
4 A	alpha-BHC	1.187	1.374	-15.8	105	0.00	2.58	2.64
5 MA	gamma-BHC	1.130	1.236	-9.4	101	0.00	2.88	2.94
6 MA	Heptachlor	1.152	1.246	-8.2	100	0.00	3.38	3.44
7 B	beta-BHC	0.483	0.519	-7.5	99	0.00	2.96	3.02
8 B	delta-BHC	1.063	1.091	-2.6	94	0.00	3.15	3.21
9 MB	Aldrin	1.087	1.154	-6.2	97	0.00	3.72	3.78
10	alachlor	0.121	0.145	-19.8	102	0.00	3.86	3.92
11 B	Heptachlor Epoxide	1.002	0.992	1.0	91	0.00	4.43	4.49
12 B	gamma-Chlordane	1.024	1.007	1.7	89	0.00	4.59	4.65
13 B	alpha-Chlordane	1.029	0.959	6.8	87	0.00	4.76	4.82
14 A	Endosulfan I	1.056	1.037	1.8	88	0.00	4.94	5.00
15 B	4,4'-DDE	0.839	0.920	-9.7	100	0.00	4.89	4.95
16 MA	Dieldrin	1.021	1.103	-8.0	98	0.00	5.26	5.32
17 MA	Endrin	0.989	1.046	-5.8	97	0.00	5.58	5.64
18 A	4,4'-DDD	0.794	0.819	-3.1	92	0.00	5.73	5.79
19 B	Endosulfan II	0.943	0.940	0.3	92	0.00	5.90	5.96
20 MA	4,4'-DDT	0.823	0.880	-6.9	92	0.00	6.14	6.20
21 B	Endrin Aldehyde	0.725	0.771	-6.3	93	0.00	6.53	6.59
22 B	Endosulfan Sulfate	0.790	0.814	-3.0	92	0.00	7.21	7.27
23 A	Methoxychlor	0.448	0.485	-8.3	99	0.00	6.94	7.00
24	Mirex	0.794	0.777	2.1	94	0.00	7.06	7.12
25 B	Endrin Ketone	0.918	0.946	-3.1	91	0.00	7.65	7.71
26 SA	Decachlorobiphenyl	0.888	0.951	-7.1	99	0.00	9.47	9.53
27 I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	0#	0.00	1.39	1.59
28 L8	Toxaphene{A}			-----NA-----				
29 L8	Toxaphene{B}			-----NA-----				
30 L8	Toxaphene{C}			-----NA-----				
31 L8	Toxaphene{D}			-----NA-----				
32 L8	Toxaphene{E}			-----NA-----				
33 I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	0#	0.00	1.39	1.59
34	Chlordane {A}			-----NA-----				
35	Chlordane {B}			-----NA-----				
36	Chlordane {C}			-----NA-----				
37	Chlordane {D}			-----NA-----				
38	Chlordane {E}			-----NA-----				

7.9.11

7

Continuing Calibration Summary

Job Number: JC84953

Sample: G4G2709-CC2706

Account: NOREASCA NOREAS, Inc.

Lab FileID: 4G958050.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

***** Signal #2 *****

1	I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	83	0.00	1.79- 1.85
2	SAB	Tetrachloro-m-xylene	0.818	0.930	-13.7	96	0.00	2.65- 2.71
3		hexachlorobenzene	1.095	1.256	-14.7	96	0.00	3.18- 3.24
4	A	alpha-BHC	1.133	1.250	-10.3	94	0.00	3.34- 3.40
5	MA	gamma-BHC	1.046	1.138	-8.8	92	0.00	3.77- 3.83
6	MA	Heptachlor	1.057	1.136	-7.5	91	0.00	4.36- 4.42
7	B	beta-BHC	0.441	0.496	-12.5	94	0.00	3.87- 3.93
8	B	delta-BHC	0.989	1.022	-3.3	88	0.00	4.27- 4.33
9	MB	Aldrin	1.000	1.043	-4.3	91	0.00	4.81- 4.87
10		alachlor	0.119	0.142	-19.3	97	0.00	4.62- 4.68
11	B	Heptachlor Epoxide	0.906	0.985	-8.7	91	0.00	5.64- 5.70
12	B	gamma-Chlordane	0.916	0.979	-6.9	92	0.00	5.93- 5.99
13	B	alpha-Chlordane	0.865	0.950	-9.8	92	0.00	6.16- 6.22
14	A	Endosulfan I	0.835	0.906	-8.5	91	0.00	6.25- 6.31
15	B	4,4'-DDE	0.880	0.968	-10.0	93	0.00	6.43- 6.49
16	MA	Dieldrin	0.919	0.995	-8.3	92	0.00	6.69- 6.75
17	MA	Endrin	0.877	0.953	-8.7	93	0.00	7.20- 7.26
18	A	4,4'-DDD	0.750	0.785	-4.7	90	0.00	7.38- 7.44
19	B	Endosulfan II	0.850	0.889	-4.6	90	0.00	7.55- 7.61
20	MA	4,4'-DDT	0.653	0.732	-12.1	92	0.00	7.91- 7.97
21	B	Endrin Aldehyde	0.661	0.701	-6.1	90	0.00	8.12- 8.18
22	B	Endosulfan Sulfate	0.726	0.753	-3.7	88	0.00	8.59- 8.65
23	A	Methoxychlor	0.367	0.419	-14.2	92	0.00	9.16- 9.22
24		Mirex	0.679	0.695	-2.4	90	0.00	9.48- 9.54
25	B	Endrin Ketone	0.871	0.880	-1.0	85	0.00	9.56- 9.62
26	SA	Decachlorobiphenyl	0.798	0.829	-3.9	90	0.00	11.67-11.73
27	I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	0#	0.00	1.72- 1.92
28	L8	Toxaphene{A}			-----NA-----			
29	L8	Toxaphene{B}			-----NA-----			
30	L8	Toxaphene{C}			-----NA-----			
31	L8	Toxaphene{D}			-----NA-----			
32	L8	Toxaphene{E}			-----NA-----			
33	I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	0#	0.00	1.72- 1.92
34		Chlordane {A}			-----NA-----			
35		Chlordane {B}			-----NA-----			
36		Chlordane {C}			-----NA-----			
37		Chlordane {D}			-----NA-----			
38		Chlordane {E}			-----NA-----			

(#) = Out of Range
4g958004.D 4PST2706.M

SPCC's out = 0 CCC's out = 0
Tue Mar 26 13:33:02 2019 RPT1

7.9.11
7

Continuing Calibration Summary

Job Number: JC84953

Sample: G4G2709-CC2706

Account: NOREASCA NOREAS, Inc.

Lab FileID: 4G958051.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Signal #1 : C:\msdchem\1\DATA\4G2709\4g958051.D\ECD1A.ch Vial: 5
Signal #2 : C:\msdchem\1\DATA\4G2709\4g958051.D\ECD2B.ch
Acq On : 26 Mar 2019 10:11 am Operator: mailisih
Sample : cc2706-500 Inst : GC4G
Misc : op19299,g4g2709,16.7,,,10,1 Multiplr: 1.00
IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e

Method : C:\msdchem\1\METHODS\4PST2706.M (ChemStation Integrator)
Title : PEST/PCB
Last Update : Mon Mar 25 15:43:56 2019
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT	Window
1 I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	94	0.03	1.48-	1.54
2 SAB	Tetrachloro-m-xylene	0.894	1.072	-19.9	121	0.02	2.11-	2.17
3	hexachlorobenzene			-----NA-----				
4 A	alpha-BHC			-----NA-----				
5 MA	gamma-BHC			-----NA-----				
6 MA	Heptachlor			-----NA-----				
7 B	beta-BHC			-----NA-----				
8 B	delta-BHC			-----NA-----				
9 MB	Aldrin			-----NA-----				
10	alachlor			-----NA-----				
11 B	Heptachlor Epoxide			-----NA-----				
12 B	gamma-Chlordane			-----NA-----				
13 B	alpha-Chlordane			-----NA-----				
14 A	Endosulfan I			-----NA-----				
15 B	4,4'-DDE			-----NA-----				
16 MA	Dieldrin			-----NA-----				
17 MA	Endrin			-----NA-----				
18 A	4,4'-DDD			-----NA-----				
19 B	Endosulfan II			-----NA-----				
20 MA	4,4'-DDT			-----NA-----				
21 B	Endrin Aldehyde			-----NA-----				
22 B	Endosulfan Sulfate			-----NA-----				
23 A	Methoxychlor			-----NA-----				
24	Mirex			-----NA-----				
25 B	Endrin Ketone			-----NA-----				
26 SA	Decachlorobiphenyl	0.888	0.887	0.1	106	0.00	9.49-	9.55
27 I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	92	0.03	1.41-	1.61
28 L8	Toxaphene{A}			-----NA-----				
29 L8	Toxaphene{B}			-----NA-----				
30 L8	Toxaphene{C}			-----NA-----				
31 L8	Toxaphene{D}			-----NA-----				
32 L8	Toxaphene{E}			-----NA-----				
33 I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	104	0.03	1.41-	1.61
34	Chlordane {A}	0.070	0.066	5.7	99	0.02	3.33-	3.53
35	Chlordane {B}	0.045	0.037	17.8	84	0.02	3.81-	4.01
36	Chlordane {C}	0.147	0.123	16.3	87	0.02	4.54-	4.74
37	Chlordane {D}	0.224	0.190	15.2	88	0.02	4.70-	4.90
38	Chlordane {E}	0.037	0.036	2.7	101	0.02	5.76-	5.96

Continuing Calibration Summary

Job Number: JC84953

Sample: G4G2709-CC2706

Account: NOREASCA NOREAS, Inc.

Lab FileID: 4G958051.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

***** Signal #2 *****

1	I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	91	0.01	1.80- 1.86
2	SAB	Tetrachloro-m-xylene	0.818	0.893	-9.2	99	0.00	2.66- 2.72
3		hexachlorobenzene						-----NA-----
4	A	alpha-BHC						-----NA-----
5	MA	gamma-BHC						-----NA-----
6	MA	Heptachlor						-----NA-----
7	B	beta-BHC						-----NA-----
8	B	delta-BHC						-----NA-----
9	MB	Aldrin						-----NA-----
10		alachlor						-----NA-----
11	B	Heptachlor Epoxide						-----NA-----
12	B	gamma-Chlordane						-----NA-----
13	B	alpha-Chlordane						-----NA-----
14	A	Endosulfan I						-----NA-----
15	B	4,4'-DDE						-----NA-----
16	MA	Dieldrin						-----NA-----
17	MA	Endrin						-----NA-----
18	A	4,4'-DDD						-----NA-----
19	B	Endosulfan II						-----NA-----
20	MA	4,4'-DDT						-----NA-----
21	B	Endrin Aldehyde						-----NA-----
22	B	Endosulfan Sulfate						-----NA-----
23	A	Methoxychlor						-----NA-----
24		Mirex						-----NA-----
25	B	Endrin Ketone						-----NA-----
26	SA	Decachlorobiphenyl	0.798	0.781	2.1	94	0.00	11.67-11.73
27	I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	91	0.01	1.73- 1.93
28	L8	Toxaphene{A}						-----NA-----
29	L8	Toxaphene{B}						-----NA-----
30	L8	Toxaphene{C}						-----NA-----
31	L8	Toxaphene{D}						-----NA-----
32	L8	Toxaphene{E}						-----NA-----
33	I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	91	0.00	1.73- 1.93
34		Chlordane {A}	0.057	0.060	-5.3	96	0.00	4.29- 4.49
35		Chlordane {B}	0.030	0.031	-3.3	94	0.00	4.94- 5.14
36		Chlordane {C}	0.109	0.115	-5.5	96	0.00	5.86- 6.06
37		Chlordane {D}	0.175	0.188	-7.4	97	0.00	6.09- 6.29
38		Chlordane {E}	0.029	0.031	-6.9	97	0.00	7.56- 7.76

(#) = Out of Range
4g958005.D 4PST2706.M

SPCC's out = 0 CCC's out = 0
Tue Mar 26 13:35:00 2019 RPT1

7.9.12
7

Continuing Calibration Summary

Job Number: JC84953 Sample: G4G2709-CC2706
Account: NOREASCA NOREAS, Inc. Lab FileID: 4G958052.D
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Signal #1 : C:\msdchem\1\DATA\4G2709\4g958052.D\ECD1A.ch Vial: 6
Signal #2 : C:\msdchem\1\DATA\4G2709\4g958052.D\ECD2B.ch
Acq On : 26 Mar 2019 10:28 am Operator: mailisih
Sample : cc2706-500 Inst : GC4G
Misc : op19299,g4g2709,16.7,,,10,1 Multiplr: 1.00
IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e

Method : C:\msdchem\1\METHODS\4PST2706.M (ChemStation Integrator)
Title : PEST/PCB
Last Update : Mon Mar 25 15:43:56 2019
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT	Window
1 I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	106	0.01	1.47-	1.53
2 SAB	Tetrachloro-m-xylene	0.894	0.896	-0.2	114	0.00	2.10-	2.16
3	hexachlorobenzene			-----NA-----				
4 A	alpha-BHC			-----NA-----				
5 MA	gamma-BHC			-----NA-----				
6 MA	Heptachlor			-----NA-----				
7 B	beta-BHC			-----NA-----				
8 B	delta-BHC			-----NA-----				
9 MB	Aldrin			-----NA-----				
10	alachlor			-----NA-----				
11 B	Heptachlor Epoxide			-----NA-----				
12 B	gamma-Chlordane			-----NA-----				
13 B	alpha-Chlordane			-----NA-----				
14 A	Endosulfan I			-----NA-----				
15 B	4,4'-DDE			-----NA-----				
16 MA	Dieldrin			-----NA-----				
17 MA	Endrin			-----NA-----				
18 A	4,4'-DDD			-----NA-----				
19 B	Endosulfan II			-----NA-----				
20 MA	4,4'-DDT			-----NA-----				
21 B	Endrin Aldehyde			-----NA-----				
22 B	Endosulfan Sulfate			-----NA-----				
23 A	Methoxychlor			-----NA-----				
24	Mirex			-----NA-----				
25 B	Endrin Ketone			-----NA-----				
26 SA	Decachlorobiphenyl	0.888	0.827	6.9	110	0.00	9.48-	9.54
27 I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	104	0.01	1.40-	1.60
28 L8	Toxaphene{A}	0.016	0.018	-12.5	118	0.00	5.20-	5.40
29 L8	Toxaphene{B}	0.047	0.049	-4.3	107	0.00	5.82-	6.02
30 L8	Toxaphene{C}	0.037	0.039	-5.4	111	0.00	6.00-	6.20
31 L8	Toxaphene{D}	0.036	0.040	-11.1	116	0.00	6.34-	6.54
32 L8	Toxaphene{E}	0.030	0.032	-6.7	112	0.00	6.99-	7.19
33 I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	117	0.01	1.40-	1.60
34	Chlordane {A}			-----NA-----				
35	Chlordane {B}			-----NA-----				
36	Chlordane {C}			-----NA-----				
37	Chlordane {D}			-----NA-----				
38	Chlordane {E}			-----NA-----				

Continuing Calibration Summary

Job Number: JC84953

Sample: G4G2709-CC2706

Account: NOREASCA NOREAS, Inc.

Lab FileID: 4G958052.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

***** Signal #2 *****

1	I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	100	0.01	1.80- 1.86
2	SAB	Tetrachloro-m-xylene	0.818	0.885	-8.2	109	0.00	2.66- 2.72
3		hexachlorobenzene			-----NA-----			
4	A	alpha-BHC			-----NA-----			
5	MA	gamma-BHC			-----NA-----			
6	MA	Heptachlor			-----NA-----			
7	B	beta-BHC			-----NA-----			
8	B	delta-BHC			-----NA-----			
9	MB	Aldrin			-----NA-----			
10		alachlor			-----NA-----			
11	B	Heptachlor Epoxide			-----NA-----			
12	B	gamma-Chlordane			-----NA-----			
13	B	alpha-Chlordane			-----NA-----			
14	A	Endosulfan I			-----NA-----			
15	B	4,4'-DDE			-----NA-----			
16	MA	Dieldrin			-----NA-----			
17	MA	Endrin			-----NA-----			
18	A	4,4'-DDD			-----NA-----			
19	B	Endosulfan II			-----NA-----			
20	MA	4,4'-DDT			-----NA-----			
21	B	Endrin Aldehyde			-----NA-----			
22	B	Endosulfan Sulfate			-----NA-----			
23	A	Methoxychlor			-----NA-----			
24		Mirex			-----NA-----			
25	B	Endrin Ketone			-----NA-----			
26	SA	Decachlorobiphenyl	0.798	0.740	7.3	99	0.00	11.67-11.73
27	I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	100	0.01	1.73- 1.93
28	L8	Toxaphene{A}	0.018	0.021	-16.7	117	0.00	6.59- 6.79
29	L8	Toxaphene{B}	0.025	0.028	-12.0	113	0.00	7.45- 7.65
30	L8	Toxaphene{C}	0.035	0.040	-14.3	115	0.00	7.61- 7.81
31	L8	Toxaphene{D}	0.024	0.027	-12.5	112	0.00	8.05- 8.25
32	L8	Toxaphene{E}	0.024	0.024	0.0	103	0.00	8.96- 9.16
33	I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	100	0.00	1.73- 1.93
34		Chlordane {A}			-----NA-----			
35		Chlordane {B}			-----NA-----			
36		Chlordane {C}			-----NA-----			
37		Chlordane {D}			-----NA-----			
38		Chlordane {E}			-----NA-----			

(#) = Out of Range
4g958005.D 4PST2706.M

SPCC's out = 0 CCC's out = 0
Tue Mar 26 13:33:29 2019 RPT1

7.9.13
7

Continuing Calibration Summary

Job Number: JC84953 **Sample:** G4G2709-CC2706
Account: NOREASCA NOREAS, Inc. **Lab FileID:** 4G958059.D
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Signal #1 : C:\msdchem\1\DATA\4G2709\4g958059.D\ECD1A.ch Vial: 4
 Signal #2 : C:\msdchem\1\DATA\4G2709\4g958059.D\ECD2B.ch
 Acq On : 26 Mar 2019 1:33 pm Operator: mailisih
 Sample : cc2706-50 Inst : GC4G
 Misc : op19346,g4g2709,15.1,,,10,1 Multiplr: 1.00
 IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e

Method : C:\msdchem\1\METHODS\4PST2706.M (ChemStation Integrator)
 Title : PEST/PCB
 Last Update : Mon Mar 25 15:43:56 2019
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 20% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT	Window
1 I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	90	0.00	1.47-	1.53
2 SAB	Tetrachloro-m-xylene	0.894	0.921	-3.0	100	0.01	2.10-	2.16
3	hexachlorobenzene	1.139	1.223	-7.4	104	0.00	2.44-	2.50
4 A	alpha-BHC	1.187	1.319	-11.1	102	0.00	2.58-	2.64
5 MA	gamma-BHC	1.130	1.188	-5.1	100	0.00	2.88-	2.94
6 MA	Heptachlor	1.152	1.187	-3.0	99	0.00	3.38-	3.44
7 B	beta-BHC	0.483	0.528	-9.3	101	0.00	2.97-	3.03
8 B	delta-BHC	1.063	1.070	-0.7	91	0.00	3.16-	3.22
9 MB	Aldrin	1.087	1.169	-7.5	103	0.00	3.71-	3.77
10	alachlor	0.121	0.145	-19.8	109	0.00	3.86-	3.92
11 B	Heptachlor Epoxide	1.002	1.049	-4.7	102	0.00	4.42-	4.48
12 B	gamma-Chlordane	1.024	1.114	-8.8	104	0.00	4.59-	4.65
13 B	alpha-Chlordane	1.029	1.070	-4.0	103	0.00	4.76-	4.82
14 A	Endosulfan I	1.056	1.230	-16.5	112	0.00	4.93-	4.99
15 B	4,4'-DDE	0.839	0.779	7.2	86	0.00	4.89-	4.95
16 MA	Dieldrin	1.021	1.110	-8.7	102	0.00	5.26-	5.32
17 MA	Endrin	0.989	0.978	1.1	95	0.00	5.58-	5.64
18 A	4,4'-DDD	0.794	0.818	-3.0	96	0.00	5.74-	5.80
19 B	Endosulfan II	0.943	0.969	-2.8	100	0.00	5.90-	5.96
20 MA	4,4'-DDT	0.823	0.858	-4.3	93	0.00	6.14-	6.20
21 B	Endrin Aldehyde	0.725	0.807	-11.3	103	0.00	6.52-	6.58
22 B	Endosulfan Sulfate	0.790	0.780	1.3	93	0.00	7.20-	7.26
23 A	Methoxychlor	0.448	0.424	5.4	93	0.00	6.95-	7.01
24	Mirex	0.794	0.805	-1.4	105	0.00	7.06-	7.12
25 B	Endrin Ketone	0.918	0.918	0.0	94	0.00	7.64-	7.70
26 SA	Decachlorobiphenyl	0.888	0.929	-4.6	106	0.00	9.47-	9.53
27 I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	88	0.01	1.40-	1.60
28 L8	Toxaphene{A}			-----NA-----				
29 L8	Toxaphene{B}			-----NA-----				
30 L8	Toxaphene{C}			-----NA-----				
31 L8	Toxaphene{D}			-----NA-----				
32 L8	Toxaphene{E}			-----NA-----				
33 I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	99	0.01	1.40-	1.60
34	Chlordane {A}			-----NA-----				
35	Chlordane {B}			-----NA-----				
36	Chlordane {C}			-----NA-----				
37	Chlordane {D}			-----NA-----				
38	Chlordane {E}			-----NA-----				

7.9.14
7

Continuing Calibration Summary

Job Number: JC84953

Sample: G4G2709-CC2706

Account: NOREASCA NOREAS, Inc.

Lab FileID: 4G958059.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

***** Signal #2 *****

1	I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	89	0.00	1.80- 1.86
2	SAB	Tetrachloro-m-xylene	0.818	0.887	-8.4	96	0.01	2.66- 2.72
3		hexachlorobenzene	1.095	1.195	-9.1	98	0.00	3.19- 3.25
4	A	alpha-BHC	1.133	1.230	-8.6	94	0.00	3.34- 3.40
5	MA	gamma-BHC	1.046	1.124	-7.5	94	0.00	3.78- 3.84
6	MA	Heptachlor	1.057	1.131	-7.0	98	0.00	4.36- 4.42
7	B	beta-BHC	0.441	0.490	-11.1	99	0.00	3.87- 3.93
8	B	delta-BHC	0.989	0.978	1.1	86	0.00	4.27- 4.33
9	MB	Aldrin	1.000	1.042	-4.2	96	0.00	4.81- 4.87
10		alachlor	0.119	0.137	-15.1	104	0.00	4.63- 4.69
11	B	Heptachlor Epoxide	0.906	0.978	-7.9	97	0.00	5.64- 5.70
12	B	gamma-Chlordane	0.916	0.985	-7.5	98	0.00	5.93- 5.99
13	B	alpha-Chlordane	0.865	0.947	-9.5	97	0.00	6.16- 6.22
14	A	Endosulfan I	0.835	0.898	-7.5	97	0.00	6.25- 6.31
15	B	4,4'-DDE	0.880	0.972	-10.5	98	0.00	6.43- 6.49
16	MA	Dieldrin	0.919	0.990	-7.7	96	0.00	6.69- 6.75
17	MA	Endrin	0.877	0.869	0.9	90	0.00	7.20- 7.26
18	A	4,4'-DDD	0.750	0.781	-4.1	95	0.00	7.39- 7.45
19	B	Endosulfan II	0.850	0.894	-5.2	98	0.00	7.55- 7.61
20	MA	4,4'-DDT	0.653	0.711	-8.9	90	0.00	7.92- 7.98
21	B	Endrin Aldehyde	0.661	0.718	-8.6	99	0.00	8.13- 8.19
22	B	Endosulfan Sulfate	0.726	0.705	2.9	89	0.00	8.59- 8.65
23	A	Methoxychlor	0.367	0.390	-6.3	92	0.00	9.17- 9.23
24		Mirex	0.679	0.683	-0.6	100	0.00	9.48- 9.54
25	B	Endrin Ketone	0.871	0.855	1.8	89	0.00	9.56- 9.62
26	SA	Decachlorobiphenyl	0.798	0.830	-4.0	98	0.00	11.67-11.73
27	I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	89	0.01	1.73- 1.93
28	L8	Toxaphene{A}			-----NA-----			
29	L8	Toxaphene{B}			-----NA-----			
30	L8	Toxaphene{C}			-----NA-----			
31	L8	Toxaphene{D}			-----NA-----			
32	L8	Toxaphene{E}			-----NA-----			
33	I	1-bromo-2-nitrobenzene	1.000	1.000	0.0	88	0.00	1.73- 1.93
34		Chlordane {A}			-----NA-----			
35		Chlordane {B}			-----NA-----			
36		Chlordane {C}			-----NA-----			
37		Chlordane {D}			-----NA-----			
38		Chlordane {E}			-----NA-----			

(#) = Out of Range
4g958005.D 4PST2706.M

SPCC's out = 0 CCC's out = 0
Tue Mar 26 15:45:26 2019 RPT1

7.9.14
7

Initial Calibration Summary

Job Number: JC84953

Sample: GXX6621-ICC6621

Account: NOREASCA NOREAS, Inc.

Lab FileID: XX2432205.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Response Factor Report HP G1530A

Method : C:\MSDCHEM\1\METHODS\PCB6621.M (Chemstation Integrator)
Title :
Last Update : Tue Mar 05 09:28:51 2019
Response via : Initial Calibration

Calibration Files

50 =xx2432202.D 250 =xx2432203.D 500 =xx2432204.D 1000=xx2432205.D
2000 =xx2432206.D 3000 =xx2432207.D

Compound	50	250	500	1000	2000	3000	Avg	%RSD
1) S Tetrachloro-m-xylen		1.689	1.812	1.903	1.954	1.987	1.869 E7	6.44
2) AR1221-A				1.301			1.301 E5	0.00
3) AR1221-B				2.061			2.061 E5	0.00
4) AR1221-C				6.191			6.191 E5	0.00
5) AR1221-D				1.032			1.032 E5	0.00
6) AR1221-E				1.138			1.138 E5	0.00
7) AR1232-A				4.808			4.808 E5	0.00
8) AR1232-B				3.247			3.247 E5	0.00
9) AR1232-C				7.047			7.047 E5	0.00
10) AR1232-D				2.621			2.621 E5	0.00
11) AR1232-E				2.551			2.551 E5	0.00
12) AR1242-A				5.011			5.011 E5	0.00
13) AR1242-B				1.173			1.173 E6	0.00
14) AR1242-C				4.311			4.311 E5	0.00
15) AR1242-D				4.626			4.626 E5	0.00
16) AR1242-E				7.343			7.343 E5	0.00
17) AR1248-A				2.653			2.653 E5	0.00
18) AR1248-B				7.182			7.182 E5	0.00
19) AR1248-C				7.299			7.299 E5	0.00
20) AR1248-D				7.344			7.344 E5	0.00
21) AR1248-E				6.674			6.674 E5	0.00
22) AR1248-F				1.276			1.276 E6	0.00
23) AR1248-G				5.452			5.452 E5	0.00
24) AR1254-A				5.578			5.578 E5	0.00
25) AR1254-B				1.188			1.188 E6	0.00
26) AR1254-C				6.566			6.566 E5	0.00
27) AR1254-D				1.192			1.192 E6	0.00
28) AR1254-E				8.770			8.770 E5	0.00
29) AR1254-F				7.564			7.564 E5	0.00
30) AR1254-G				1.184			1.184 E6	0.00
31) AR1262-A				8.935			8.935 E5	0.00
32) AR1262-B				1.092			1.092 E6	0.00
33) AR1262-C				1.054			1.054 E6	0.00
34) AR1262-D				2.317			2.317 E6	0.00
35) AR1262-E				2.575			2.575 E6	0.00
36) AR1268-A				2.639			2.639 E6	0.00
37) AR1268-B				2.630			2.630 E6	0.00
38) AR1268-C				2.196			2.196 E6	0.00
39) AR1268-D				8.889			8.889 E5	0.00
40) AR1268-E				7.687			7.687 E6	0.00
41) AR1016-A	3.745	3.378	3.517	3.504	3.404	3.339	3.481 E5	4.22
42) AR1016-B	5.946	5.956	6.136	6.041	5.897	5.771	5.958 E5	2.09
43) AR1016-C	1.391	1.366	1.431	1.448	1.444	1.432	1.418 E6	2.30
44) AR1016-D	5.387	5.081	5.244	5.256	5.236	5.209	5.235 E5	1.87
45) AR1016-E	5.899	5.396	5.559	5.534	5.518	5.518	5.571 E5	3.06
46) AR1260-A	1.423	1.434	1.504	1.550	1.577	1.580	1.511 E6	4.62
47) AR1260-B	6.492	6.243	6.479	6.617	6.706	6.729	6.545 E5	2.76

7.9.15

7

Initial Calibration Summary

Job Number: JC84953

Sample: GXX6621-ICC6621

Account: NOREASCA NOREAS, Inc.

Lab FileID: XX2432205.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

48)	AR1260-C	7.492	7.068	7.381	7.542	7.665	7.685	7.472	E5	3.05
49)	AR1260-D	1.633	1.676	1.781	1.844	1.885	1.894	1.785	E6	6.15
50)	AR1260-E	1.617	1.655	1.741	1.798	1.838	1.853	1.750	E6	5.56
51) S	Decachlorobiphenyl	1.919	1.799	1.817	1.808	1.875	1.880	1.850	E7	2.62

Signal #2

1) S	Tetrachloro-m-xylen	1.174	1.258	1.282	1.302	1.317	1.267	E7	4.44	
2)	AR1221-A			7.384			7.384	E4	0.00	
3)	AR1221-B			1.351			1.351	E5	0.00	
4)	AR1221-C			3.250			3.250	E5	0.00	
5)	AR1221-D			6.608			6.608	E4	0.00	
6)	AR1221-E			4.870			4.870	E4	0.00	
7)	AR1232-A			2.632			2.632	E5	0.00	
8)	AR1232-B			2.100			2.100	E5	0.00	
9)	AR1232-C			4.532			4.532	E5	0.00	
10)	AR1232-D			1.737			1.737	E5	0.00	
11)	AR1232-E			1.237			1.237	E5	0.00	
12)	AR1242-A			3.467			3.467	E5	0.00	
13)	AR1242-B			7.459			7.459	E5	0.00	
14)	AR1242-C			2.802			2.802	E5	0.00	
15)	AR1242-D			2.239			2.239	E5	0.00	
16)	AR1242-E			2.792			2.792	E5	0.00	
17)	AR1248-A			1.801			1.801	E5	0.00	
18)	AR1248-B			4.952			4.952	E5	0.00	
19)	AR1248-C			2.746			2.746	E5	0.00	
20)	AR1248-D			3.687			3.687	E5	0.00	
21)	AR1248-E			4.066			4.066	E5	0.00	
22)	AR1248-F			4.930			4.930	E5	0.00	
23)	AR1248-G			4.820			4.820	E5	0.00	
24)	AR1254-A			4.407			4.407	E5	0.00	
25)	AR1254-B			4.985			4.985	E5	0.00	
26)	AR1254-C			4.075			4.075	E5	0.00	
27)	AR1254-D			7.958			7.958	E5	0.00	
28)	AR1254-E			6.122			6.122	E5	0.00	
29)	AR1254-F			6.552			6.552	E5	0.00	
30)	AR1254-G			7.845			7.845	E5	0.00	
31)	AR1262-A			5.787			5.787	E5	0.00	
32)	AR1262-B			9.188			9.188	E5	0.00	
33)	AR1262-C			7.377			7.377	E5	0.00	
34)	AR1262-D			1.791			1.791	E6	0.00	
35)	AR1262-E			1.954			1.954	E6	0.00	
36)	AR1268-A			2.187			2.187	E6	0.00	
37)	AR1268-B			1.975			1.975	E6	0.00	
38)	AR1268-C			1.705			1.705	E6	0.00	
39)	AR1268-D			6.958			6.958	E5	0.00	
40)	AR1268-E			5.024			5.024	E6	0.00	
41)	AR1016-A	2.025	1.983	1.973	1.954	1.897	1.863	1.949	E5	3.05
42)	AR1016-B	4.801	4.190	4.178	4.115	4.019	3.963	4.211	E5	7.18
43)	AR1016-C	9.974	8.946	9.059	9.054	8.944	8.912	9.148	E5	4.47
44)	AR1016-D	3.555	3.374	3.411	3.394	3.334	3.328	3.399	E5	2.44
45)	AR1016-E	2.941	2.661	2.677	2.659	2.631	2.625	2.699	E5	4.45
46)	AR1260-A	1.078	1.007	1.036	1.051	1.037	1.049	1.043	E6	2.21
47)	AR1260-B	5.831	5.507	5.674	5.717	5.613	5.686	5.671	E5	1.90
48)	AR1260-C	5.786	5.447	5.642	5.698	5.600	5.714	5.648	E5	2.08
49)	AR1260-D	1.398	1.375	1.448	1.476	1.432	1.447	1.429	E6	2.57
50)	AR1260-E	1.362	1.266	1.314	1.330	1.286	1.337	1.316	E6	2.67
51) S	Decachlorobiphenyl	1.236	1.131	1.163	1.166	1.168	1.184	1.175	E7	2.95

(#) = Out of Range

7.9.15
7

Initial Calibration Summary

Job Number: JC84953

Sample: GXX6621-ICC6621

Account: NOREASCA NOREAS, Inc.

Lab FileID: XX2432205.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

PCB6621.M

Tue Mar 05 10:22:32 2019

Initial Calibration Verification

Job Number: JC84953

Sample: GXX6621-ICV6621

Account: NOREASCA NOREAS, Inc.

Lab FileID: XX2432213.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Signal #1 : C:\msdchem\1\DATA\gx...\xx2432213.D\ECD1A.CH Vial: 15
 Signal #2 : C:\msdchem\1\DATA\gx6621\xx2432213.D\ECD2B.CH
 Acq On : 05 Mar 2019 6:44 am Operator: tianweir
 Sample : icv6621-1000 Inst : HP G1530A
 Misc : opl7615,GXX6621,1000,,,5,1 Multiplr: 1.00
 IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e

Method : C:\MSDCHEM\1\METHODS\PCB6621.M (Chemstation Integrator)
 Title :
 Last Update : Tue Mar 05 09:28:51 2019
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.10min
 Max. RRF Dev : 20% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT	Window
1 S	Tetrachloro-m-xylene	18.690	24.457 E6	-30.9#	129	0.00	3.25-	3.31
2	AR1221-A	130.146	131.023 E3	-0.7	101	0.00	2.62-	2.82
3	AR1221-B	206.143	189.292 E3	8.2	92	0.00	3.37-	3.57
4	AR1221-C	619.123	560.583 E3	9.5	91	0.00	3.59-	3.79
5	AR1221-D	103.224	86.764 E3	15.9	84	0.00	4.03-	4.23
6	AR1221-E	113.771	106.585 E3	6.3	94	0.00	4.18-	4.38
7	AR1232-A			-----NA-----				
8	AR1232-B			-----NA-----				
9	AR1232-C			-----NA-----				
10	AR1232-D			-----NA-----				
11	AR1232-E			-----NA-----				
12	AR1242-A			-----NA-----				
13	AR1242-B			-----NA-----				
14	AR1242-C			-----NA-----				
15	AR1242-D			-----NA-----				
16	AR1242-E			-----NA-----				
17	AR1248-A			-----NA-----				
18	AR1248-B			-----NA-----				
19	AR1248-C			-----NA-----				
20	AR1248-D			-----NA-----				
21	AR1248-E			-----NA-----				
22	AR1248-F			-----NA-----				
23	AR1248-G			-----NA-----				
24	AR1254-A	557.761	557.856 E3	-0.0	100	0.00	5.84-	6.04
25	AR1254-B	1.188	1.176 E6	1.0	99	0.00	6.19-	6.39
26	AR1254-C	656.558	652.836 E3	0.6	99	0.00	6.57-	6.77
27	AR1254-D	1.192	1.183 E6	0.8	99	0.00	6.73-	6.93
28	AR1254-E	877.006	868.692 E3	0.9	99	0.00	7.12-	7.32
29	AR1254-F	756.443	752.519 E3	0.5	99	0.00	7.38-	7.58
30	AR1254-G	1.184	1.174 E6	0.8	99	0.00	7.76-	7.96
31	AR1262-A			-----NA-----				
32	AR1262-B			-----NA-----				
33	AR1262-C			-----NA-----				
34	AR1262-D			-----NA-----				
35	AR1262-E			-----NA-----				
36	AR1268-A			-----NA-----				
37	AR1268-B			-----NA-----				
38	AR1268-C			-----NA-----				
39	AR1268-D			-----NA-----				
40	AR1268-E			-----NA-----				
41	AR1016-A			-----NA-----				

7.9.16
7

Initial Calibration Verification

Job Number: JC84953

Sample: GXX6621-ICV6621

Account: NOREASCA NOREAS, Inc.

Lab FileID: XX2432213.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

42	AR1016-B								-----NA-----
43	AR1016-C								-----NA-----
44	AR1016-D								-----NA-----
45	AR1016-E								-----NA-----
46	AR1260-A								-----NA-----
47	AR1260-B								-----NA-----
48	AR1260-C								-----NA-----
49	AR1260-D								-----NA-----
50	AR1260-E								-----NA-----
51 S	Decachlorobiphenyl	18.498	23.135	E6	-25.1#	128	0.00	10.74-10.81	

***** Signal #2 *****

1 S	Tetrachloro-m-xylene	12.668	15.875	E6	-25.3#	124	0.00	4.02- 4.08	
2	AR1221-A	73.843	77.443	E3	-4.9	105	0.00	3.41- 3.47	
3	AR1221-B	135.114	124.781	E3	7.6	92	0.00	4.36- 4.56	
4	AR1221-C	324.957	296.957	E3	8.6	91	0.00	4.65- 4.85	
5	AR1221-D	66.076	55.819	E3	15.5	84	0.00	5.22- 5.42	
6	AR1221-E	48.705	47.911	E3	1.6	98	0.00	5.30- 5.50	
7	AR1232-A							-----NA-----	
8	AR1232-B							-----NA-----	
9	AR1232-C							-----NA-----	
10	AR1232-D							-----NA-----	
11	AR1232-E							-----NA-----	
12	AR1242-A							-----NA-----	
13	AR1242-B							-----NA-----	
14	AR1242-C							-----NA-----	
15	AR1242-D							-----NA-----	
16	AR1242-E							-----NA-----	
17	AR1248-A							-----NA-----	
18	AR1248-B							-----NA-----	
19	AR1248-C							-----NA-----	
20	AR1248-D							-----NA-----	
21	AR1248-E							-----NA-----	
22	AR1248-F							-----NA-----	
23	AR1248-G							-----NA-----	
24	AR1254-A	440.660	435.968	E3	1.1	99	0.00	7.36- 7.56	
25	AR1254-B	498.464	495.250	E3	0.6	99	0.00	7.62- 7.82	
26	AR1254-C	407.460	404.683	E3	0.7	99	0.00	8.13- 8.33	
27	AR1254-D	795.800	790.737	E3	0.6	99	0.00	8.30- 8.50	
28	AR1254-E	612.210	605.135	E3	1.2	99	0.00	8.61- 8.81	
29	AR1254-F	655.188	649.686	E3	0.8	99	0.00	9.13- 9.33	
30	AR1254-G	784.501	778.793	E3	0.7	99	0.00	9.40- 9.60	
31	AR1262-A							-----NA-----	
32	AR1262-B							-----NA-----	
33	AR1262-C							-----NA-----	
34	AR1262-D							-----NA-----	
35	AR1262-E							-----NA-----	
36	AR1268-A							-----NA-----	
37	AR1268-B							-----NA-----	
38	AR1268-C							-----NA-----	
39	AR1268-D							-----NA-----	
40	AR1268-E							-----NA-----	
41	AR1016-A							-----NA-----	
42	AR1016-B							-----NA-----	
43	AR1016-C							-----NA-----	
44	AR1016-D							-----NA-----	
45	AR1016-E							-----NA-----	
46	AR1260-A							-----NA-----	
47	AR1260-B							-----NA-----	

7.9.16
7

Initial Calibration Verification

Job Number: JC84953

Sample: GXX6621-ICV6621

Account: NOREASCA NOREAS, Inc.

Lab FileID: XX2432213.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

48	AR1260-C								-----NA-----
49	AR1260-D								-----NA-----
50	AR1260-E								-----NA-----
51 S	Decachlorobiphenyl	11.746	13.901	E6	-18.3	119	0.00	12.62-12.68	

(#) = Out of Range
xx2432205.D PCB6621.M

SPCC's out = 0 CCC's out = 0
Tue Mar 05 10:21:30 2019

Initial Calibration Verification

Job Number: JC84953

Sample: GXX6621-ICV6621

Account: NOREASCA NOREAS, Inc.

Lab FileID: XX2432214.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Signal #1 : C:\msdchem\1\DATA\gx...\xx2432214.D\ECD1A.CH Vial: 16
Signal #2 : C:\msdchem\1\DATA\gxx6621\xx2432214.D\ECD2B.CH
Acq On : 05 Mar 2019 7:02 am Operator: tianweir
Sample : icv6621-1000 Inst : HP G1530A
Misc : op17615,GXX6621,1000,,,5,1 Multiplr: 1.00
IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e

Method : C:\MSDCHEM\1\METHODS\PCB6621.M (Chemstation Integrator)
Title :
Last Update : Tue Mar 05 09:28:51 2019
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.10min
Max. RRF Dev : 20% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT	Window
1 S	Tetrachloro-m-xylene	18.690	24.638 E6	-31.8	# 129	0.00	3.25-	3.31
2	AR1221-A							
3	AR1221-B							
4	AR1221-C							
5	AR1221-D							
6	AR1221-E							
7	AR1232-A	480.844	452.585 E3	5.9	94	0.00	3.59-	3.79
8	AR1232-B	324.655	311.869 E3	3.9	96	0.00	4.03-	4.23
9	AR1232-C	704.653	669.586 E3	5.0	95	0.00	4.61-	4.81
10	AR1232-D	262.102	249.795 E3	4.7	95	0.00	4.79-	4.99
11	AR1232-E	255.058	242.708 E3	4.8	95	0.00	5.32-	5.52
12	AR1242-A							
13	AR1242-B							
14	AR1242-C							
15	AR1242-D							
16	AR1242-E							
17	AR1248-A							
18	AR1248-B							
19	AR1248-C							
20	AR1248-D							
21	AR1248-E							
22	AR1248-F							
23	AR1248-G							
24	AR1254-A							
25	AR1254-B							
26	AR1254-C							
27	AR1254-D							
28	AR1254-E							
29	AR1254-F							
30	AR1254-G							
31	AR1262-A	893.472	910.790 E3	-1.9	102	0.00	7.37-	7.57
32	AR1262-B	1.092	1.112 E6	-1.8	102	0.00	7.93-	8.13
33	AR1262-C	1.054	1.074 E6	-1.9	102	0.00	8.27-	8.47
34	AR1262-D	2.317	2.354 E6	-1.6	102	0.00	8.71-	8.91
35	AR1262-E	2.575	2.631 E6	-2.2	102	0.00	9.16-	9.36
36	AR1268-A							
37	AR1268-B							
38	AR1268-C							
39	AR1268-D							
40	AR1268-E							
41	AR1016-A							

7.9.17
7

Initial Calibration Verification

Job Number: JC84953

Sample: GXX6621-ICV6621

Account: NOREASCA NOREAS, Inc.

Lab FileID: XX2432214.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

42	AR1016-B								-----NA-----
43	AR1016-C								-----NA-----
44	AR1016-D								-----NA-----
45	AR1016-E								-----NA-----
46	AR1260-A								-----NA-----
47	AR1260-B								-----NA-----
48	AR1260-C								-----NA-----
49	AR1260-D								-----NA-----
50	AR1260-E								-----NA-----
51 S	Decachlorobiphenyl	18.498	23.810	E6	-28.7#	132	0.00	10.74-10.81	
***** Signal #2 *****									
1 S	Tetrachloro-m-xylene	12.668	16.362	E6	-29.2#	128	0.00	4.02- 4.08	
2	AR1221-A								-----NA-----
3	AR1221-B								-----NA-----
4	AR1221-C								-----NA-----
5	AR1221-D								-----NA-----
6	AR1221-E								-----NA-----
7	AR1232-A	263.238	249.294	E3	5.3	95	0.00	4.64- 4.84	
8	AR1232-B	209.991	202.168	E3	3.7	96	0.00	5.22- 5.42	
9	AR1232-C	453.240	429.430	E3	5.3	95	0.00	5.88- 6.08	
10	AR1232-D	173.736	164.611	E3	5.3	95	0.00	6.08- 6.28	
11	AR1232-E	123.749	118.021	E3	4.6	95	0.00	6.75- 6.95	
12	AR1242-A								-----NA-----
13	AR1242-B								-----NA-----
14	AR1242-C								-----NA-----
15	AR1242-D								-----NA-----
16	AR1242-E								-----NA-----
17	AR1248-A								-----NA-----
18	AR1248-B								-----NA-----
19	AR1248-C								-----NA-----
20	AR1248-D								-----NA-----
21	AR1248-E								-----NA-----
22	AR1248-F								-----NA-----
23	AR1248-G								-----NA-----
24	AR1254-A								-----NA-----
25	AR1254-B								-----NA-----
26	AR1254-C								-----NA-----
27	AR1254-D								-----NA-----
28	AR1254-E								-----NA-----
29	AR1254-F								-----NA-----
30	AR1254-G								-----NA-----
31	AR1262-A	578.715	588.316	E3	-1.7	102	0.00	8.86- 9.06	
32	AR1262-B	918.799	928.514	E3	-1.1	101	0.00	9.52- 9.72	
33	AR1262-C	737.743	745.803	E3	-1.1	101	0.00	9.96-10.16	
34	AR1262-D	1.791	1.802	E6	-0.6	101	0.00	10.30-10.50	
35	AR1262-E	1.954	1.974	E6	-1.0	101	0.00	10.83-11.03	
36	AR1268-A								-----NA-----
37	AR1268-B								-----NA-----
38	AR1268-C								-----NA-----
39	AR1268-D								-----NA-----
40	AR1268-E								-----NA-----
41	AR1016-A								-----NA-----
42	AR1016-B								-----NA-----
43	AR1016-C								-----NA-----
44	AR1016-D								-----NA-----
45	AR1016-E								-----NA-----
46	AR1260-A								-----NA-----
47	AR1260-B								-----NA-----

7.9.17
7

Initial Calibration Verification

Job Number: JC84953

Sample: GXX6621-ICV6621

Account: NOREASCA NOREAS, Inc.

Lab FileID: XX2432214.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

48	AR1260-C									-----NA-----
49	AR1260-D									-----NA-----
50	AR1260-E									-----NA-----
51 S	Decachlorobiphenyl	11.746	14.815	E6	-26.1#	127	0.00		12.62-12.68	

(#) = Out of Range
xx2432205.D PCB6621.M

SPCC's out = 0 CCC's out = 0
Tue Mar 05 10:21:31 2019

Initial Calibration Verification

Job Number: JC84953 **Sample:** GXX6621-ICV6621
Account: NOREASCA NOREAS, Inc. **Lab FileID:** XX2432215.D
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Signal #1 : C:\msdchem\1\DATA\gx...\xx2432215.D\ECD1A.CH Vial: 17
 Signal #2 : C:\msdchem\1\DATA\gxx6621\xx2432215.D\ECD2B.CH
 Acq On : 05 Mar 2019 7:20 am Operator: tianweir
 Sample : icv6621-1000 Inst : HP G1530A
 Misc : opl7615,GXX6621,1000,,,5,1 Multiplr: 1.00
 IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e

Method : C:\MSDCHEM\1\METHODS\PCB6621.M (Chemstation Integrator)
 Title :
 Last Update : Tue Mar 05 09:28:51 2019
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.10min
 Max. RRF Dev : 20% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT	Window
1 S	Tetrachloro-m-xylene	18.690	24.659 E6	-31.9#	130	0.00	3.25-	3.31
2	AR1221-A			-----NA-----				
3	AR1221-B			-----NA-----				
4	AR1221-C			-----NA-----				
5	AR1221-D			-----NA-----				
6	AR1221-E			-----NA-----				
7	AR1232-A			-----NA-----				
8	AR1232-B			-----NA-----				
9	AR1232-C			-----NA-----				
10	AR1232-D			-----NA-----				
11	AR1232-E			-----NA-----				
12	AR1242-A	501.119	534.862 E3	-6.7	107	0.00	4.03-	4.23
13	AR1242-B	1.173	1.245 E6	-6.1	106	0.00	4.61-	4.81
14	AR1242-C	431.139	461.709 E3	-7.1	107	0.00	4.79-	4.99
15	AR1242-D	462.648	480.854 E3	-3.9	104	0.00	5.32-	5.52
16	AR1242-E	734.323	753.134 E3	-2.6	103	0.00	5.93-	6.13
17	AR1248-A			-----NA-----				
18	AR1248-B			-----NA-----				
19	AR1248-C			-----NA-----				
20	AR1248-D			-----NA-----				
21	AR1248-E			-----NA-----				
22	AR1248-F			-----NA-----				
23	AR1248-G			-----NA-----				
24	AR1254-A			-----NA-----				
25	AR1254-B			-----NA-----				
26	AR1254-C			-----NA-----				
27	AR1254-D			-----NA-----				
28	AR1254-E			-----NA-----				
29	AR1254-F			-----NA-----				
30	AR1254-G			-----NA-----				
31	AR1262-A			-----NA-----				
32	AR1262-B			-----NA-----				
33	AR1262-C			-----NA-----				
34	AR1262-D			-----NA-----				
35	AR1262-E			-----NA-----				
36	AR1268-A	2.639	2.601 E6	1.4	99	0.00	9.16-	9.36
37	AR1268-B	2.630	2.580 E6	1.9	98	0.00	9.22-	9.42
38	AR1268-C	2.196	2.153 E6	2.0	98	0.00	9.49-	9.69
39	AR1268-D	888.871	885.359 E3	0.4	100	0.00	9.99-	10.19
40	AR1268-E	7.687	7.563 E6	1.6	98	0.00	10.40-	10.60
41	AR1016-A			-----NA-----				

7.9.18
7

Initial Calibration Verification

Job Number: JC84953

Sample: GXX6621-ICV6621

Account: NOREASCA NOREAS, Inc.

Lab FileID: XX2432215.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

42	AR1016-B								-----NA-----
43	AR1016-C								-----NA-----
44	AR1016-D								-----NA-----
45	AR1016-E								-----NA-----
46	AR1260-A								-----NA-----
47	AR1260-B								-----NA-----
48	AR1260-C								-----NA-----
49	AR1260-D								-----NA-----
50	AR1260-E								-----NA-----
51 S	Decachlorobiphenyl	18.498	59.419	E6	-221.2#	329#	0.00	10.74-10.81	
*****	Signal #2	*****							
1 S	Tetrachloro-m-xylene	12.668	16.639	E6	-31.3#	130	0.00	4.02- 4.08	
2	AR1221-A								-----NA-----
3	AR1221-B								-----NA-----
4	AR1221-C								-----NA-----
5	AR1221-D								-----NA-----
6	AR1221-E								-----NA-----
7	AR1232-A								-----NA-----
8	AR1232-B								-----NA-----
9	AR1232-C								-----NA-----
10	AR1232-D								-----NA-----
11	AR1232-E								-----NA-----
12	AR1242-A	346.669	368.576	E3	-6.3	106	0.00	5.22- 5.42	
13	AR1242-B	745.856	787.321	E3	-5.6	106	0.00	5.88- 6.08	
14	AR1242-C	280.197	299.074	E3	-6.7	107	0.00	6.08- 6.28	
15	AR1242-D	223.892	232.036	E3	-3.6	104	0.00	6.75- 6.95	
16	AR1242-E	279.225	284.581	E3	-1.9	102	0.00	7.36- 7.56	
17	AR1248-A								-----NA-----
18	AR1248-B								-----NA-----
19	AR1248-C								-----NA-----
20	AR1248-D								-----NA-----
21	AR1248-E								-----NA-----
22	AR1248-F								-----NA-----
23	AR1248-G								-----NA-----
24	AR1254-A								-----NA-----
25	AR1254-B								-----NA-----
26	AR1254-C								-----NA-----
27	AR1254-D								-----NA-----
28	AR1254-E								-----NA-----
29	AR1254-F								-----NA-----
30	AR1254-G								-----NA-----
31	AR1262-A								-----NA-----
32	AR1262-B								-----NA-----
33	AR1262-C								-----NA-----
34	AR1262-D								-----NA-----
35	AR1262-E								-----NA-----
36	AR1268-A	2.187	2.138	E6	2.2	98	0.00	10.83-11.03	
37	AR1268-B	1.975	1.922	E6	2.7	97	0.00	10.90-11.10	
38	AR1268-C	1.705	1.672	E6	1.9	98	0.00	11.28-11.48	
39	AR1268-D	695.839	668.958	E3	3.9	96	0.00	11.68-11.88	
40	AR1268-E	5.024	4.838	E6	3.7	96	0.00	12.16-12.36	
41	AR1016-A								-----NA-----
42	AR1016-B								-----NA-----
43	AR1016-C								-----NA-----
44	AR1016-D								-----NA-----
45	AR1016-E								-----NA-----
46	AR1260-A								-----NA-----
47	AR1260-B								-----NA-----

7.9.18
7

Initial Calibration Verification

Job Number: JC84953

Sample: GXX6621-ICV6621

Account: NOREASCA NOREAS, Inc.

Lab FileID: XX2432215.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

48	AR1260-C									-----NA-----
49	AR1260-D									-----NA-----
50	AR1260-E									-----NA-----
51 S	Decachlorobiphenyl	11.746	37.243	E6	-217.1#	319#	0.00		12.62-12.68	

(#) = Out of Range
xx2432205.D PCB6621.M

SPCC's out = 0 CCC's out = 0
Tue Mar 05 10:21:32 2019

7.9.18

7

Initial Calibration Verification

Job Number: JC84953 **Sample:** GXX6621-ICV6621
Account: NOREASCA NOREAS, Inc. **Lab FileID:** XX2432216.D
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Signal #1 : C:\msdchem\1\DATA\gx...\xx2432216.D\ECD1A.CH Vial: 18
Signal #2 : C:\msdchem\1\DATA\gxx6621\xx2432216.D\ECD2B.CH
Acq On : 05 Mar 2019 7:39 am Operator: tianweir
Sample : icv6621-1000 Inst : HP G1530A
Misc : op17615,GXX6621,1000,,,5,1 Multiplr: 1.00
IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e

Method : C:\MSDCHEM\1\METHODS\PCB6621.M (Chemstation Integrator)
Title :
Last Update : Tue Mar 05 09:28:51 2019
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.10min
Max. RRF Dev : 20% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT	Window
1 S	Tetrachloro-m-xylene	18.690	24.819 E6	-32.8#	130	0.00	3.25-	3.31
2	AR1221-A			-----NA-----				
3	AR1221-B			-----NA-----				
4	AR1221-C			-----NA-----				
5	AR1221-D			-----NA-----				
6	AR1221-E			-----NA-----				
7	AR1232-A			-----NA-----				
8	AR1232-B			-----NA-----				
9	AR1232-C			-----NA-----				
10	AR1232-D			-----NA-----				
11	AR1232-E			-----NA-----				
12	AR1242-A			-----NA-----				
13	AR1242-B			-----NA-----				
14	AR1242-C			-----NA-----				
15	AR1242-D			-----NA-----				
16	AR1242-E			-----NA-----				
17	AR1248-A	265.334	253.457 E3	4.5	96	0.00	4.02-	4.22
18	AR1248-B	718.152	726.781 E3	-1.2	101	0.00	4.61-	4.81
19	AR1248-C	729.921	748.199 E3	-2.5	103	0.00	5.06-	5.26
20	AR1248-D	734.434	770.584 E3	-4.9	105	0.00	5.32-	5.52
21	AR1248-E	667.373	705.210 E3	-5.7	106	0.00	5.44-	5.64
22	AR1248-F	1.276	1.398 E6	-9.6	110	0.00	5.89-	6.09
23	AR1248-G	545.225	594.913 E3	-9.1	109	0.00	6.19-	6.39
24	AR1254-A			-----NA-----				
25	AR1254-B			-----NA-----				
26	AR1254-C			-----NA-----				
27	AR1254-D			-----NA-----				
28	AR1254-E			-----NA-----				
29	AR1254-F			-----NA-----				
30	AR1254-G			-----NA-----				
31	AR1262-A			-----NA-----				
32	AR1262-B			-----NA-----				
33	AR1262-C			-----NA-----				
34	AR1262-D			-----NA-----				
35	AR1262-E			-----NA-----				
36	AR1268-A			-----NA-----				
37	AR1268-B			-----NA-----				
38	AR1268-C			-----NA-----				
39	AR1268-D			-----NA-----				
40	AR1268-E			-----NA-----				
41	AR1016-A			-----NA-----				

7.9.19
7

Initial Calibration Verification

Job Number: JC84953

Sample: GXX6621-ICV6621

Account: NOREASCA NOREAS, Inc.

Lab FileID: XX2432216.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

42	AR1016-B										-----NA-----
43	AR1016-C										-----NA-----
44	AR1016-D										-----NA-----
45	AR1016-E										-----NA-----
46	AR1260-A										-----NA-----
47	AR1260-B										-----NA-----
48	AR1260-C										-----NA-----
49	AR1260-D										-----NA-----
50	AR1260-E										-----NA-----
51 S	Decachlorobiphenyl	18.498	24.295	E6	-31.3#	134	0.00	10.74-10.81			

***** Signal #2 *****

1 S	Tetrachloro-m-xylene	12.668	16.921	E6	-33.6#	132	0.00	4.02- 4.08			
2	AR1221-A										-----NA-----
3	AR1221-B										-----NA-----
4	AR1221-C										-----NA-----
5	AR1221-D										-----NA-----
6	AR1221-E										-----NA-----
7	AR1232-A										-----NA-----
8	AR1232-B										-----NA-----
9	AR1232-C										-----NA-----
10	AR1232-D										-----NA-----
11	AR1232-E										-----NA-----
12	AR1242-A										-----NA-----
13	AR1242-B										-----NA-----
14	AR1242-C										-----NA-----
15	AR1242-D										-----NA-----
16	AR1242-E										-----NA-----
17	AR1248-A	180.075	171.181	E3	4.9	95	0.00	5.22- 5.42			
18	AR1248-B	495.243	497.470	E3	-0.4	100	0.00	5.88- 6.08			
19	AR1248-C	274.643	283.579	E3	-3.3	103	0.00	6.35- 6.55			
20	AR1248-D	368.695	384.261	E3	-4.2	104	0.00	6.75- 6.95			
21	AR1248-E	406.579	435.516	E3	-7.1	107	0.00	6.93- 7.13			
22	AR1248-F	492.956	535.730	E3	-8.7	109	0.00	7.36- 7.56			
23	AR1248-G	482.027	533.343	E3	-10.6	111	0.00	7.70- 7.90			
24	AR1254-A										-----NA-----
25	AR1254-B										-----NA-----
26	AR1254-C										-----NA-----
27	AR1254-D										-----NA-----
28	AR1254-E										-----NA-----
29	AR1254-F										-----NA-----
30	AR1254-G										-----NA-----
31	AR1262-A										-----NA-----
32	AR1262-B										-----NA-----
33	AR1262-C										-----NA-----
34	AR1262-D										-----NA-----
35	AR1262-E										-----NA-----
36	AR1268-A										-----NA-----
37	AR1268-B										-----NA-----
38	AR1268-C										-----NA-----
39	AR1268-D										-----NA-----
40	AR1268-E										-----NA-----
41	AR1016-A										-----NA-----
42	AR1016-B										-----NA-----
43	AR1016-C										-----NA-----
44	AR1016-D										-----NA-----
45	AR1016-E										-----NA-----
46	AR1260-A										-----NA-----
47	AR1260-B										-----NA-----

7.9.19
7

Initial Calibration Verification

Job Number: JC84953

Sample: GXX6621-ICV6621

Account: NOREASCA NOREAS, Inc.

Lab FileID: XX2432216.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

48	AR1260-C					-----NA-----			
49	AR1260-D					-----NA-----			
50	AR1260-E					-----NA-----			
51 S	Decachlorobiphenyl	11.746	15.158	E6	-29.0#	130	0.00	12.62-12.68	

(#) = Out of Range
xx2432205.D PCB6621.M

SPCC's out = 0 CCC's out = 0
Tue Mar 05 10:21:33 2019

Initial Calibration Verification

Job Number: JC84953

Sample: GXX6621-ICV6621

Account: NOREASCA NOREAS, Inc.

Lab FileID: XX2432220.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Signal #1 : C:\msdchem\1\DATA\gx...\xx2432220.D\ECD1A.CH Vial: 21
Signal #2 : C:\msdchem\1\DATA\gxx6621\xx2432220.D\ECD2B.CH
Acq On : 05 Mar 2019 9:59 am Operator: summerk
Sample : icv6621-1000 Inst : HP G1530A
Misc : opl8918,GXX6621,1.0,,,10,1 Multiplr: 1.00
IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e

Method : C:\MSDCHEM\1\METHODS\PCB6621.M (Chemstation Integrator)
Title :
Last Update : Tue Mar 05 09:28:51 2019
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.10min
Max. RRF Dev : 20% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT	Window
1 S	Tetrachloro-m-xylene	18.690	16.492 E6	11.8	87	0.03	3.28-	3.34
2	AR1221-A			NA				
3	AR1221-B			NA				
4	AR1221-C			NA				
5	AR1221-D			NA				
6	AR1221-E			NA				
7	AR1232-A			NA				
8	AR1232-B			NA				
9	AR1232-C			NA				
10	AR1232-D			NA				
11	AR1232-E			NA				
12	AR1242-A			NA				
13	AR1242-B			NA				
14	AR1242-C			NA				
15	AR1242-D			NA				
16	AR1242-E			NA				
17	AR1248-A			NA				
18	AR1248-B			NA				
19	AR1248-C			NA				
20	AR1248-D			NA				
21	AR1248-E			NA				
22	AR1248-F			NA				
23	AR1248-G			NA				
24	AR1254-A			NA				
25	AR1254-B			NA				
26	AR1254-C			NA				
27	AR1254-D			NA				
28	AR1254-E			NA				
29	AR1254-F			NA				
30	AR1254-G			NA				
31	AR1262-A			NA				
32	AR1262-B			NA				
33	AR1262-C			NA				
34	AR1262-D			NA				
35	AR1262-E			NA				
36	AR1268-A			NA				
37	AR1268-B			NA				
38	AR1268-C			NA				
39	AR1268-D			NA				
40	AR1268-E			NA				
41	AR1016-A	348.113	341.117 E3	2.0	97	0.03	3.69-	3.75

7.9.20
7

Initial Calibration Verification

Job Number: JC84953

Sample: GXX6621-ICV6621

Account: NOREASCA NOREAS, Inc.

Lab FileID: XX2432220.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

42	AR1016-B	595.772	600.035	E3	-0.7	99	0.02	4.12-	4.18
43	AR1016-C	1.418	1.411	E6	0.5	97	0.02	4.70-	4.76
44	AR1016-D	523.547	525.574	E3	-0.4	100	0.02	4.88-	4.94
45	AR1016-E	557.070	545.901	E3	2.0	99	0.02	5.41-	5.48
46	AR1260-A	1.511	1.331	E6	11.9	86	0.02	7.85-	7.91
47	AR1260-B	654.458	704.114	E3	-7.6	106	0.02	8.01-	8.07
48	AR1260-C	747.236	806.785	E3	-8.0	107	0.02	8.35-	8.42
49	AR1260-D	1.785	1.932	E6	-8.2	105	0.02	8.79-	8.85
50	AR1260-E	1.750	1.877	E6	-7.3	104	0.01	9.19-	9.25
51 S	Decachlorobiphenyl	18.498	18.154	E6	1.9	100	0.01	10.75-	10.82

***** Signal #2 *****

1 S	Tetrachloro-m-xylene	12.668	11.588	E6	8.5	90	0.00	4.03-	4.09
2	AR1221-A								
3	AR1221-B								
4	AR1221-C								
5	AR1221-D								
6	AR1221-E								
7	AR1232-A								
8	AR1232-B								
9	AR1232-C								
10	AR1232-D								
11	AR1232-E								
12	AR1242-A								
13	AR1242-B								
14	AR1242-C								
15	AR1242-D								
16	AR1242-E								
17	AR1248-A								
18	AR1248-B								
19	AR1248-C								
20	AR1248-D								
21	AR1248-E								
22	AR1248-F								
23	AR1248-G								
24	AR1254-A								
25	AR1254-B								
26	AR1254-C								
27	AR1254-D								
28	AR1254-E								
29	AR1254-F								
30	AR1254-G								
31	AR1262-A								
32	AR1262-B								
33	AR1262-C								
34	AR1262-D								
35	AR1262-E								
36	AR1268-A								
37	AR1268-B								
38	AR1268-C								
39	AR1268-D								
40	AR1268-E								
41	AR1016-A	194.928	207.440	E3	-6.4	106	0.00	4.72-	4.78
42	AR1016-B	421.104	399.174	E3	5.2	97	0.00	5.30-	5.36
43	AR1016-C	914.832	902.378	E3	1.4	100	0.00	5.95-	6.01
44	AR1016-D	339.943	338.950	E3	0.3	100	0.00	6.15-	6.21
45	AR1016-E	269.903	267.477	E3	0.9	101	0.00	6.83-	6.89
46	AR1260-A	1.043	0.932	E6	10.6	89	0.00	9.47-	9.53
47	AR1260-B	567.144	610.899	E3	-7.7	107	0.00	9.59-	9.65

7.9.20
7

Initial Calibration Verification

Job Number: JC84953

Sample: GXX6621-ICV6621

Account: NOREASCA NOREAS, Inc.

Lab FileID: XX2432220.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

48	AR1260-C	564.774	589.694	E3	-4.4	103	0.00	10.03-10.09
49	AR1260-D	1.429	1.574	E6	-10.1	107	0.00	10.38-10.44
50	AR1260-E	1.316	1.393	E6	-5.9	105	0.00	10.93-10.99
51 S	Decachlorobiphenyl	11.746	11.308	E6	3.7	97	0.00	12.63-12.69

(#) = Out of Range
xx2432205.D PCB6621.M

SPCC's out = 0 CCC's out = 0
Tue Mar 05 13:17:08 2019

Continuing Calibration Summary

Job Number: JC84953

Sample: GXX6640-CC6621

Account: NOREASCA NOREAS, Inc.

Lab FileID: XX2433180.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Signal #1 : C:\msdchem\1\data\ch...\xx2433180.d\ECD1A.CH Vial: 56
Signal #2 : C:\msdchem\1\data\chris...6640\xx2433180.d\ECD2B.CH
Acq On : 26 Mar 2019 7:24 pm Operator: summerk
Sample : cc6621-1000 Inst : HP G1530A
Misc : op19357,GXX6640,1000,,,5,1 Multiplr: 1.00
IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e

Method : C:\MSDCHEM\1\METHODS\pcb6621.m (ChemStation Integrator)
Title :
Last Update : Wed Mar 27 08:12:30 2019
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.10min
Max. RRF Dev : 20% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT	Window
1 S	Tetrachloro-m-xylene	18.690	19.277 E6	-3.1	101	0.00	3.26-	3.32
2	AR1221-A			NA				
3	AR1221-B			NA				
4	AR1221-C			NA				
5	AR1221-D			NA				
6	AR1221-E			NA				
7	AR1232-A			NA				
8	AR1232-B			NA				
9	AR1232-C			NA				
10	AR1232-D			NA				
11	AR1232-E			NA				
12	AR1242-A			NA				
13	AR1242-B			NA				
14	AR1242-C			NA				
15	AR1242-D			NA				
16	AR1242-E			NA				
17	AR1248-A			NA				
18	AR1248-B			NA				
19	AR1248-C			NA				
20	AR1248-D			NA				
21	AR1248-E			NA				
22	AR1248-F			NA				
23	AR1248-G			NA				
24	AR1254-A			NA				
25	AR1254-B			NA				
26	AR1254-C			NA				
27	AR1254-D			NA				
28	AR1254-E			NA				
29	AR1254-F			NA				
30	AR1254-G			NA				
31	AR1262-A			NA				
32	AR1262-B			NA				
33	AR1262-C			NA				
34	AR1262-D			NA				
35	AR1262-E			NA				
36	AR1268-A			NA				
37	AR1268-B			NA				
38	AR1268-C			NA				
39	AR1268-D			NA				
40	AR1268-E			NA				
41	AR1016-A	348.113	383.864 E3	-10.3	110	0.00	3.66-	3.72

7.9.21

7

Continuing Calibration Summary

Job Number: JC84953

Sample: GXX6640-CC6621

Account: NOREASCA NOREAS, Inc.

Lab FileID: XX2433180.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

42	AR1016-B	595.772	688.631	E3	-15.6	114	0.00	4.10- 4.16
43	AR1016-C	1.418	1.624	E6	-14.5	112	0.00	4.68- 4.74
44	AR1016-D	523.547	602.719	E3	-15.1	115	0.00	4.85- 4.91
45	AR1016-E	557.070	624.323	E3	-12.1	113	0.00	5.38- 5.45
46	AR1260-A	1.511	1.412	E6	6.6	91	0.00	7.82- 7.88
47	AR1260-B	654.458	778.228	E3	-18.9	118	0.00	7.98- 8.04
48	AR1260-C	747.236	863.521	E3	-15.6	114	0.00	8.32- 8.39
49	AR1260-D	1.785	1.863	E6	-4.4	101	0.00	8.76- 8.82
50	AR1260-E	1.750	2.035	E6	-16.3	113	0.00	9.16- 9.22
51 S	Decachlorobiphenyl	18.498	18.292	E6	1.1	101	0.00	10.72-10.79

***** Signal #2 *****

1 S	Tetrachloro-m-xylene	12.668	11.967	E6	5.5	93	0.00	4.02- 4.08
2	AR1221-A				-----NA-----			
3	AR1221-B				-----NA-----			
4	AR1221-C				-----NA-----			
5	AR1221-D				-----NA-----			
6	AR1221-E				-----NA-----			
7	AR1232-A				-----NA-----			
8	AR1232-B				-----NA-----			
9	AR1232-C				-----NA-----			
10	AR1232-D				-----NA-----			
11	AR1232-E				-----NA-----			
12	AR1242-A				-----NA-----			
13	AR1242-B				-----NA-----			
14	AR1242-C				-----NA-----			
15	AR1242-D				-----NA-----			
16	AR1242-E				-----NA-----			
17	AR1248-A				-----NA-----			
18	AR1248-B				-----NA-----			
19	AR1248-C				-----NA-----			
20	AR1248-D				-----NA-----			
21	AR1248-E				-----NA-----			
22	AR1248-F				-----NA-----			
23	AR1248-G				-----NA-----			
24	AR1254-A				-----NA-----			
25	AR1254-B				-----NA-----			
26	AR1254-C				-----NA-----			
27	AR1254-D				-----NA-----			
28	AR1254-E				-----NA-----			
29	AR1254-F				-----NA-----			
30	AR1254-G				-----NA-----			
31	AR1262-A				-----NA-----			
32	AR1262-B				-----NA-----			
33	AR1262-C				-----NA-----			
34	AR1262-D				-----NA-----			
35	AR1262-E				-----NA-----			
36	AR1268-A				-----NA-----			
37	AR1268-B				-----NA-----			
38	AR1268-C				-----NA-----			
39	AR1268-D				-----NA-----			
40	AR1268-E				-----NA-----			
41	AR1016-A	194.928	199.466	E3	-2.3	102	0.00	4.72- 4.78
42	AR1016-B	421.104	409.863	E3	2.7	100	0.00	5.29- 5.35
43	AR1016-C	914.832	943.300	E3	-3.1	104	0.00	5.95- 6.01
44	AR1016-D	339.943	354.007	E3	-4.1	104	0.00	6.14- 6.20
45	AR1016-E	269.903	272.691	E3	-1.0	103	0.00	6.82- 6.88
46	AR1260-A	1.043	0.899	E6	13.8	86	0.00	9.46- 9.52
47	AR1260-B	567.144	614.500	E3	-8.3	107	0.00	9.58- 9.64

7.9.21

7

Continuing Calibration Summary

Job Number: JC84953

Sample: GXX6640-CC6621

Account: NOREASCA NOREAS, Inc.

Lab FileID: XX2433180.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

48	AR1260-C	564.774	585.308	E3	-3.6	103	0.00	10.02-10.08
49	AR1260-D	1.429	1.486	E6	-4.0	101	0.00	10.37-10.43
50	AR1260-E	1.316	1.461	E6	-11.0	110	0.00	10.92-10.98
51 S	Decachlorobiphenyl	11.746	11.154	E6	5.0	96	0.00	12.61-12.67

(#) = Out of Range
xx2432205.D pcb6621.m

SPCC's out = 0 CCC's out = 0
Wed Mar 27 08:53:45 2019

Continuing Calibration Summary

Job Number: JC84953

Sample: GXX6640-CC6621

Account: NOREASCA NOREAS, Inc.

Lab FileID: XX2433191.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Evaluate Continuing Calibration Report

Signal #1 : C:\msdchem\1\data\ch...\xx2433191.d\ECD1A.CH Vial: 64
Signal #2 : C:\msdchem\1\data\chrisc...6640\xx2433191.d\ECD2B.CH
Acq On : 26 Mar 2019 11:15 pm Operator: summerk
Sample : cc6621-500 Inst : HP G1530A
Misc : op19345,GXX6640,15.0,,,10,1 Multiplr: 1.00
IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e

Method : C:\MSDCHEM\1\METHODS\pcb6621.m (ChemStation Integrator)
Title :
Last Update : Wed Mar 27 08:12:30 2019
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.10min
Max. RRF Dev : 20% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT	Window
1 S	Tetrachloro-m-xylene	18.690	18.811 E6	-0.6	104	0.00	3.26-	3.32
2	AR1221-A			NA				
3	AR1221-B			NA				
4	AR1221-C			NA				
5	AR1221-D			NA				
6	AR1221-E			NA				
7	AR1232-A			NA				
8	AR1232-B			NA				
9	AR1232-C			NA				
10	AR1232-D			NA				
11	AR1232-E			NA				
12	AR1242-A			NA				
13	AR1242-B			NA				
14	AR1242-C			NA				
15	AR1242-D			NA				
16	AR1242-E			NA				
17	AR1248-A			NA				
18	AR1248-B			NA				
19	AR1248-C			NA				
20	AR1248-D			NA				
21	AR1248-E			NA				
22	AR1248-F			NA				
23	AR1248-G			NA				
24	AR1254-A			NA				
25	AR1254-B			NA				
26	AR1254-C			NA				
27	AR1254-D			NA				
28	AR1254-E			NA				
29	AR1254-F			NA				
30	AR1254-G			NA				
31	AR1262-A			NA				
32	AR1262-B			NA				
33	AR1262-C			NA				
34	AR1262-D			NA				
35	AR1262-E			NA				
36	AR1268-A			NA				
37	AR1268-B			NA				
38	AR1268-C			NA				
39	AR1268-D			NA				
40	AR1268-E			NA				
41	AR1016-A	348.113	396.557 E3	-13.9	113	0.00	3.66-	3.72

7.9.22
7

Continuing Calibration Summary

Job Number: JC84953

Sample: GXX6640-CC6621

Account: NOREASCA NOREAS, Inc.

Lab FileID: XX2433191.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

42	AR1016-B	595.772	713.477	E3	-19.8	116	0.00	4.10-	4.16
43	AR1016-C	1.418	1.594	E6	-12.4	111	0.00	4.68-	4.74
44	AR1016-D	523.547	609.894	E3	-16.5	116	0.00	4.85-	4.91
45	AR1016-E	557.070	625.729	E3	-12.3	113	0.00	5.38-	5.45
46	AR1260-A	1.511	1.341	E6	11.3	89	0.00	7.82-	7.88
47	AR1260-B	654.458	756.051	E3	-15.5	117	0.00	7.99-	8.05
48	AR1260-C	747.236	832.274	E3	-11.4	113	0.00	8.32-	8.39
49	AR1260-D	1.785	1.717	E6	3.8	96	0.00	8.77-	8.83
50	AR1260-E	1.750	1.973	E6	-12.7	113	0.00	9.17-	9.23
51 S	Decachlorobiphenyl	18.498	18.127	E6	2.0	100	0.00	10.72-	10.79

***** Signal #2 *****

1 S	Tetrachloro-m-xylene	12.668	12.049	E6	4.9	96	0.00	4.03-	4.09
2	AR1221-A				-----NA-----				
3	AR1221-B				-----NA-----				
4	AR1221-C				-----NA-----				
5	AR1221-D				-----NA-----				
6	AR1221-E				-----NA-----				
7	AR1232-A				-----NA-----				
8	AR1232-B				-----NA-----				
9	AR1232-C				-----NA-----				
10	AR1232-D				-----NA-----				
11	AR1232-E				-----NA-----				
12	AR1242-A				-----NA-----				
13	AR1242-B				-----NA-----				
14	AR1242-C				-----NA-----				
15	AR1242-D				-----NA-----				
16	AR1242-E				-----NA-----				
17	AR1248-A				-----NA-----				
18	AR1248-B				-----NA-----				
19	AR1248-C				-----NA-----				
20	AR1248-D				-----NA-----				
21	AR1248-E				-----NA-----				
22	AR1248-F				-----NA-----				
23	AR1248-G				-----NA-----				
24	AR1254-A				-----NA-----				
25	AR1254-B				-----NA-----				
26	AR1254-C				-----NA-----				
27	AR1254-D				-----NA-----				
28	AR1254-E				-----NA-----				
29	AR1254-F				-----NA-----				
30	AR1254-G				-----NA-----				
31	AR1262-A				-----NA-----				
32	AR1262-B				-----NA-----				
33	AR1262-C				-----NA-----				
34	AR1262-D				-----NA-----				
35	AR1262-E				-----NA-----				
36	AR1268-A				-----NA-----				
37	AR1268-B				-----NA-----				
38	AR1268-C				-----NA-----				
39	AR1268-D				-----NA-----				
40	AR1268-E				-----NA-----				
41	AR1016-A	194.928	210.022	E3	-7.7	106	0.00	4.72-	4.78
42	AR1016-B	421.104	427.514	E3	-1.5	102	0.00	5.29-	5.35
43	AR1016-C	914.832	954.297	E3	-4.3	105	0.00	5.95-	6.01
44	AR1016-D	339.943	362.496	E3	-6.6	106	0.00	6.14-	6.20
45	AR1016-E	269.903	275.795	E3	-2.2	103	0.00	6.82-	6.88
46	AR1260-A	1.043	0.887	E6	15.0	86	0.00	9.46-	9.52
47	AR1260-B	567.144	620.742	E3	-9.5	109	0.00	9.58-	9.64

7.9.22
7

Continuing Calibration Summary

Job Number: JC84953

Sample: GXX6640-CC6621

Account: NOREASCA NOREAS, Inc.

Lab FileID: XX2433191.D

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

48	AR1260-C	564.774	591.899	E3	-4.8	105	0.00	10.02-10.08
49	AR1260-D	1.429	1.457	E6	-2.0	101	0.00	10.37-10.43
50	AR1260-E	1.316	1.443	E6	-9.7	110	-0.03	10.89-10.95
51 S	Decachlorobiphenyl	11.746	11.166	E6	4.9	96	0.00	12.61-12.67

(#) = Out of Range
xx2432204.D pcb6621.m

SPCC's out = 0 CCC's out = 0
Wed Mar 27 09:23:39 2019

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Instrument Runlogs
- Initial and Continuing Calibration Blanks
- Initial and Continuing Calibration Checks
- High and Low Check Standards
- Interfering Element Check Standards
- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries
- IDL and Linear Range Summaries

SGS Instrument Runlog
Inorganics Analyses

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: H8032819S1.CSV

Date Analyzed: 03/28/19

Methods: SW846 7471B

Analyst: LL

Run ID: MA46370

Parameters: Hg

Time	Sample Description	Dilution Factor	PS Recov	Comments
09:46	MA46370-STD1	1		B=1.0003E-004, C=-2.2145E-002, RHO=0.9996402
09:47	MA46370-STD2	1		STDB
09:48	MA46370-STD3	1		STDC
09:50	MA46370-STD4	1		STDD
09:51	MA46370-STD5	1		STDE
09:53	MA46370-STD6	1		STDF
09:57	MA46370-ICV1	1		
09:58	MA46370-ICB1	1		
10:00	MA46370-CCV1	1		
10:01	MA46370-CCB1	1		
10:03	ZZZZZZ	1		
10:04	MA46370-CCV2	1		
10:06	MA46370-CCB2	1		
10:33	MA46370-CCV3	1		
10:35	MA46370-CCB3	1		
10:36	MA46370-CRI1	1		
10:41	MP13597-MB1	1		
10:42	MP13597-B1	1		
10:43	MP13597-S1	1		
10:45	MP13597-S2	1		
10:47	JC84953-1	1		
----->	Last reportable sample/prep for job JC84953			
10:48	MP13598-MB1	1		
10:50	MA46370-CCV4	1		
10:51	MA46370-CCB4	1		
10:53	MP13598-B1	1		
10:54	MP13598-S1	1		
10:56	MP13598-S2	1		
10:58	JC85100-16	1		(sample used for QC only; not part of login JC84953)
10:59	ZZZZZZ	1		
11:01	ZZZZZZ	1		
11:02	ZZZZZZ	1		
11:04	ZZZZZZ	1		
11:05	ZZZZZZ	1		

8.1
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SGS Instrument Runlog
Inorganics Analyses

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: H8032819S1.CSV

Date Analyzed: 03/28/19

Methods: SW846 7471B

Analyst: LL

Run ID: MA46370

Parameters: Hg

Time	Sample Description	Dilution Factor	PS Recov	Comments
11:07	MA46370-CCV5	1		
11:09	MA46370-CCB5	1		
11:10	ZZZZZZ	1		
11:12	ZZZZZZ	1		
11:13	ZZZZZZ	1		
11:15	ZZZZZZ	1		
11:16	ZZZZZZ	1		
11:17	ZZZZZZ	1		
11:19	ZZZZZZ	1		
11:20	ZZZZZZ	1		
11:21	ZZZZZZ	1		
11:23	MA46370-CCV6	1		
11:24	MA46370-CCB6	1		
11:26	ZZZZZZ	1		
11:27	ZZZZZZ	1		
11:29	ZZZZZZ	1		
11:31	ZZZZZZ	1		
11:33	ZZZZZZ	1		
11:36	MP13600-MB1	1		
11:38	MP13600-B1	1		
11:39	MP13600-S1	1		%Sol
11:41	MP13600-S2	1		%Sol
11:43	MA46370-CCV7	1		
11:44	MA46370-CCB7	1		
11:46	JC84987-1	1		(sample used for QC only; not part of login JC84953)
11:48	ZZZZZZ	1		
11:49	ZZZZZZ	1		
11:50	ZZZZZZ	1		
11:52	ZZZZZZ	1		
11:53	ZZZZZZ	1		
11:54	ZZZZZZ	1		
11:56	ZZZZZZ	1		
11:57	ZZZZZZ	1		

8.1
8

SGS Instrument Runlog
Inorganics Analyses

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: H8032819S1.CSV

Date Analyzed: 03/28/19

Methods: SW846 7471B

Analyst: LL

Run ID: MA46370

Parameters: Hg

Time	Sample Description	Dilution Factor	PS Recov	Comments
11:58	MA46370-CCV8	1		
11:59	MA46370-CCB8	1		
12:01	ZZZZZZ	1		
12:03	ZZZZZZ	1		
12:04	ZZZZZZ	1		
12:05	ZZZZZZ	1		
12:07	ZZZZZZ	1		
12:08	ZZZZZZ	1		
12:10	ZZZZZZ	1		
12:11	ZZZZZZ	1		
12:13	ZZZZZZ	1		
12:14	MA46370-CCV9	1		
12:16	MA46370-CCB9	1		
12:17	ZZZZZZ	1		
12:19	ZZZZZZ	20		
12:20	ZZZZZZ	20		
12:22	ZZZZZZ	2		
12:24	ZZZZZZ	10		
12:25	ZZZZZZ	20		
12:29	MA46370-CCV10	1		
12:30	MA46370-CCB10	1		
12:43	MP13603-MB1	1		
12:45	MP13603-B1	1		
12:46	MP13603-B2	1		
12:48	ZZZZZZ	1		
12:49	ZZZZZZ	1		
13:09	ZZZZZZ	100		
13:35	ZZZZZZ	1000		
13:36	ZZZZZZ	1000		
13:39	ZZZZZZ	1000		
13:40	MA46370-CCV11	1		
13:42	MA46370-CCB11	1		
13:43	ZZZZZZ	1000		

8.1
8

SGS Instrument Runlog
Inorganics Analyses

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: H8032819S1.CSV

Date Analyzed: 03/28/19

Methods: SW846 7471B

Analyst: LL

Run ID: MA46370

Parameters: Hg

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:45	ZZZZZZ	1000		
13:46	ZZZZZZ	1000		
13:48	ZZZZZZ	1000		
13:51	ZZZZZZ	1		
13:54	ZZZZZZ	1000		
13:58	ZZZZZZ	1000		
14:00	ZZZZZZ	1000		
14:02	ZZZZZZ	1000		
14:21	MA46370-CCV12	1		
14:22	MA46370-CCB12	1		
14:24	ZZZZZZ	1000		
14:25	ZZZZZZ	1000		
14:26	ZZZZZZ	1000		
14:28	ZZZZZZ	1000		
14:29	ZZZZZZ	1000		
14:30	MP13604-MB1	1		
14:32	MP13604-B1	1		
14:33	MP13604-B2	1		
14:35	ZZZZZZ	1000		
14:36	MA46370-CCV13	1		
14:38	MA46370-CCB13	1		
14:40	ZZZZZZ	1000		
14:41	ZZZZZZ	1000		
14:42	ZZZZZZ	1000		
14:44	ZZZZZZ	1000		
14:51	ZZZZZZ	1		
14:52	ZZZZZZ	1		
14:55	ZZZZZZ	1		
14:57	ZZZZZZ	1		
14:59	ZZZZZZ	1		
15:01	MA46370-CCV14	1		
15:03	MA46370-CCB14	1		
15:05	ZZZZZZ	100		

8.1
8

SGS Instrument Runlog
Inorganics Analyses

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: H8032819S1.CSV

Date Analyzed: 03/28/19

Methods: SW846 7471B

Analyst: LL

Run ID: MA46370

Parameters: Hg

Time	Sample Description	Dilution Factor	PS Recov	Comments
15:06	ZZZZZZ	100		
15:08	ZZZZZZ	500		
15:09	ZZZZZZ	10000		
15:11	ZZZZZZ	500		
15:13	ZZZZZZ	20		
15:15	ZZZZZZ	20		
15:16	ZZZZZZ	5		
15:18	ZZZZZZ	10		
15:20	MA46370-CCV15	1		
15:21	MA46370-CCB15	1		
15:23	ZZZZZZ	100		
15:24	ZZZZZZ	1		
15:28	ZZZZZZ	1		
15:29	ZZZZZZ	1		
15:34	ZZZZZZ	100		
15:37	ZZZZZZ	1		
15:38	ZZZZZZ	10		
15:40	ZZZZZZ	20		
15:42	ZZZZZZ	1		
15:47	MA46370-CCV16	1		
15:48	MA46370-CCB16	1		
15:50	ZZZZZZ	20		
15:51	ZZZZZZ	2000		
15:53	ZZZZZZ	1		
15:54	ZZZZZZ	20		
15:56	ZZZZZZ	1000		
15:58	ZZZZZZ	10		
16:00	ZZZZZZ	50		
16:02	ZZZZZZ	20		
16:03	ZZZZZZ	5		
16:05	MA46370-CCV17	1		
16:07	MA46370-CCB17	1		
16:09	ZZZZZZ	5		

8.1
8

SGS Instrument Runlog
Inorganics Analyses

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: H8032819S1.CSV

Date Analyzed: 03/28/19

Methods: SW846 7471B

Analyst: LL

Run ID: MA46370

Parameters: Hg

Time	Sample Description	Dilution Factor	PS Recov	Comments
16:11	ZZZZZZ	2000		
16:12	ZZZZZZ	2000		
16:21	ZZZZZZ	5		
16:22	ZZZZZZ	2000		
16:42	MA46370-CRI2	1		
16:43	MA46370-CCV18	1		
16:45	MA46370-CCB18	1		
----->	Last reportable CCB for job JC84953			
16:48	ZZZZZZ	1		
16:49	ZZZZZZ	1		
16:51	ZZZZZZ	1		
16:52	ZZZZZZ	1		
16:53	ZZZZZZ	1		
16:55	ZZZZZZ	1		
16:56	ZZZZZZ	1		
17:01	ZZZZZZ	2000		
17:04	MA46370-CRI3	1		
17:05	MA46370-CCV19	1		
17:06	MA46370-CCB19	1		

Refer to raw data for calibration curve and standards.

8.1

8

REPORTED ELEMENTS SUMMARY

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: H8032819S1.CSV

Date Analyzed: 03/28/19

Methods: SW846 7471B

Analyst: LL

Run ID: MA46370

Parameters: Hg

Time	Sample Description	Element:	H Dilution	g
09:57	MA46370-ICV1	1	X	
09:58	MA46370-ICB1	1	X	
10:00	MA46370-CCV1	1	X	
10:01	MA46370-CCB1	1	X	
10:03	ZZZZZZ	1		
10:04	MA46370-CCV2	1	X	
10:06	MA46370-CCB2	1	X	
10:33	MA46370-CCV3	1	X	
10:35	MA46370-CCB3	1	X	
10:36	MA46370-CRI1	1	X	
10:41	MP13597-MB1	1	X	
10:42	MP13597-B1	1	X	
10:43	MP13597-S1	1	X	
10:45	MP13597-S2	1	X	
10:47	JC84953-1	1	X	
10:48	MP13598-MB1	1	X	
10:50	MA46370-CCV4	1	X	
10:51	MA46370-CCB4	1	X	
10:53	MP13598-B1	1	X	
10:54	MP13598-S1	1	X	
10:56	MP13598-S2	1	X	
10:58	JC85100-16	1	X (a)	
10:59	ZZZZZZ	1		
11:01	ZZZZZZ	1		
11:02	ZZZZZZ	1		
11:04	ZZZZZZ	1		
11:05	ZZZZZZ	1		
11:07	MA46370-CCV5	1	X	
11:09	MA46370-CCB5	1	X	
11:10	ZZZZZZ	1		
11:12	ZZZZZZ	1		
11:13	ZZZZZZ	1		
11:15	ZZZZZZ	1		

Element: H
g

REPORTED ELEMENTS SUMMARY

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: H8032819S1.CSV

Date Analyzed: 03/28/19

Methods: SW846 7471B

Analyst: LL

Run ID: MA46370

Parameters: Hg

Time	Sample Description	Element: H Dilution g
11:16	ZZZZZZ	1
11:17	ZZZZZZ	1
11:19	ZZZZZZ	1
11:20	ZZZZZZ	1
11:21	ZZZZZZ	1
11:23	MA46370-CCV6	1 X
11:24	MA46370-CCB6	1 X
11:26	ZZZZZZ	1
11:27	ZZZZZZ	1
11:29	ZZZZZZ	1
11:31	ZZZZZZ	1
11:33	ZZZZZZ	1
11:36	MP13600-MB1	1 X
11:38	MP13600-B1	1 X
11:39	MP13600-S1	1 X
11:41	MP13600-S2	1 X
11:43	MA46370-CCV7	1 X
11:44	MA46370-CCB7	1 X
11:46	JC84987-1	1 X (a)
11:48	ZZZZZZ	1
11:49	ZZZZZZ	1
11:50	ZZZZZZ	1
11:52	ZZZZZZ	1
11:53	ZZZZZZ	1
11:54	ZZZZZZ	1
11:56	ZZZZZZ	1
11:57	ZZZZZZ	1
11:58	MA46370-CCV8	1 X
11:59	MA46370-CCB8	1 X
12:01	ZZZZZZ	1
12:03	ZZZZZZ	1
12:04	ZZZZZZ	1
12:05	ZZZZZZ	1

Element: H
g

8.1.1
8

REPORTED ELEMENTS SUMMARY

Login Number: JC84953
 Account: NOREASCA - NOREAS, Inc.
 Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: H8032819S1.CSV Date Analyzed: 03/28/19 Methods: SW846 7471B
 Analyst: LL Run ID: MA46370
 Parameters: Hg

Time	Sample Description	Element: H Dilution g
12:07	ZZZZZZ	1
12:08	ZZZZZZ	1
12:10	ZZZZZZ	1
12:11	ZZZZZZ	1
12:13	ZZZZZZ	1
12:14	MA46370-CCV9	1 X
12:16	MA46370-CCB9	1 X
12:17	ZZZZZZ	1
12:19	ZZZZZZ	20
12:20	ZZZZZZ	20
12:22	ZZZZZZ	2
12:24	ZZZZZZ	10
12:25	ZZZZZZ	20
12:29	MA46370-CCV10	1 X
12:30	MA46370-CCB10	1 X
12:43	MP13603-MB1	1 X
12:45	MP13603-B1	1 X
12:46	MP13603-B2	1 X
12:48	ZZZZZZ	1
12:49	ZZZZZZ	1
13:09	ZZZZZZ	100
13:35	ZZZZZZ	1000
13:36	ZZZZZZ	1000
13:39	ZZZZZZ	1000
13:40	MA46370-CCV11	1 X
13:42	MA46370-CCB11	1 X
13:43	ZZZZZZ	1000
13:45	ZZZZZZ	1000
13:46	ZZZZZZ	1000
13:48	ZZZZZZ	1000
13:51	ZZZZZZ	1
13:54	ZZZZZZ	1000
13:58	ZZZZZZ	1000

Element: H
g

8.1.1
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REPORTED ELEMENTS SUMMARY

Login Number: JC84953
 Account: NOREASCA - NOREAS, Inc.
 Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: H8032819S1.CSV Date Analyzed: 03/28/19 Methods: SW846 7471B
 Analyst: LL Run ID: MA46370
 Parameters: Hg

Time	Sample Description	Element:	Dilution	H g
14:00	ZZZZZZ		1000	
14:02	ZZZZZZ		1000	
14:21	MA46370-CCV12	1		X
14:22	MA46370-CCB12	1		X
14:24	ZZZZZZ		1000	
14:25	ZZZZZZ		1000	
14:26	ZZZZZZ		1000	
14:28	ZZZZZZ		1000	
14:29	ZZZZZZ		1000	
14:30	MP13604-MB1	1		X
14:32	MP13604-B1	1		X
14:33	MP13604-B2	1		X
14:35	ZZZZZZ		1000	
14:36	MA46370-CCV13	1		X
14:38	MA46370-CCB13	1		X
14:40	ZZZZZZ		1000	
14:41	ZZZZZZ		1000	
14:42	ZZZZZZ		1000	
14:44	ZZZZZZ		1000	
14:51	ZZZZZZ		1	
14:52	ZZZZZZ		1	
14:55	ZZZZZZ		1	
14:57	ZZZZZZ		1	
14:59	ZZZZZZ		1	
15:01	MA46370-CCV14	1		X
15:03	MA46370-CCB14	1		X
15:05	ZZZZZZ		100	
15:06	ZZZZZZ		100	
15:08	ZZZZZZ		500	
15:09	ZZZZZZ		10000	
15:11	ZZZZZZ		500	
15:13	ZZZZZZ		20	
15:15	ZZZZZZ		20	
		Element:	H g	

8.1.1
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REPORTED ELEMENTS SUMMARY

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: H8032819S1.CSV

Date Analyzed: 03/28/19

Methods: SW846 7471B

Analyst: LL

Run ID: MA46370

Parameters: Hg

Time	Sample Description	Element: H Dilution g
15:16	ZZZZZZ	5
15:18	ZZZZZZ	10
15:20	MA46370-CCV15	1 X
15:21	MA46370-CCB15	1 X
15:23	ZZZZZZ	100
15:24	ZZZZZZ	1
15:28	ZZZZZZ	1
15:29	ZZZZZZ	1
15:34	ZZZZZZ	100
15:37	ZZZZZZ	1
15:38	ZZZZZZ	10
15:40	ZZZZZZ	20
15:42	ZZZZZZ	1
15:47	MA46370-CCV16	1 X
15:48	MA46370-CCB16	1 X
15:50	ZZZZZZ	20
15:51	ZZZZZZ	2000
15:53	ZZZZZZ	1
15:54	ZZZZZZ	20
15:56	ZZZZZZ	1000
15:58	ZZZZZZ	10
16:00	ZZZZZZ	50
16:02	ZZZZZZ	20
16:03	ZZZZZZ	5
16:05	MA46370-CCV17	1 X
16:07	MA46370-CCB17	1 X
16:09	ZZZZZZ	5
16:11	ZZZZZZ	2000
16:12	ZZZZZZ	2000
16:21	ZZZZZZ	5
16:22	ZZZZZZ	2000
16:42	MA46370-CRI2	1 X
16:43	MA46370-CCV18	1 X
		Element: H g

8.1.1
8

REPORTED ELEMENTS SUMMARY

Login Number: JC84953
 Account: NOREASCA - NOREAS, Inc.
 Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: H8032819S1.CSV Date Analyzed: 03/28/19 Methods: SW846 7471B
 Analyst: LL Run ID: MA46370
 Parameters: Hg

Time	Sample Description	Element: H Dilution g
16:45	MA46370-CCB18	1 X
16:48	ZZZZZZ	1
16:49	ZZZZZZ	1
16:51	ZZZZZZ	1
16:52	ZZZZZZ	1
16:53	ZZZZZZ	1
16:55	ZZZZZZ	1
16:56	ZZZZZZ	1
17:01	ZZZZZZ	2000
17:04	MA46370-CRI3	1 X
17:05	MA46370-CCV19	1 X
17:06	MA46370-CCB19	1 X

(a) Sample used for QC only; not part of login JC84953.

Element: H
g

8.1.1
8

BLANK RESULTS SUMMARY
 Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC84953
 Account: NOREASCA - NOREAS, Inc.
 Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: H8032819S1.CSV Date Analyzed: 03/28/19 Methods: SW846 7471B
 QC Limits: result < RL Run ID: MA46370 Units: ug/l

Time:			09:58			10:01			10:06			10:35
Sample ID:	RL	IDL	ICB1	final	CCB1	final	CCB2	final	CCB3	final	CCB3	final
Metal			raw		raw		raw		raw		raw	
Mercury	0.20	.02	0.0191	<0.20	0.0181	<0.20	0.0154	<0.20	0.0164	<0.20		

(*) Outside of QC limits
 (anr) Analyte not requested

8.1.2
 8

BLANK RESULTS SUMMARY
 Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC84953
 Account: NOREASCA - NOREAS, Inc.
 Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: H8032819S1.CSV Date Analyzed: 03/28/19 Methods: SW846 7471B
 QC Limits: result < RL Run ID: MA46370 Units: ug/l

	Time:			10:51		11:09		11:24		11:44	
	Sample ID:			CCB4		CCB5		CCB6		CCB7	
Metal	RL	IDL		raw	final	raw	final	raw	final	raw	final
Mercury	0.20	.02		-0.00170	<0.20	-0.0145	<0.20	-0.0107	<0.20	0.000300	<0.20

(*) Outside of QC limits
 (anr) Analyte not requested

8.1.2
 8

BLANK RESULTS SUMMARY
 Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC84953
 Account: NOREASCA - NOREAS, Inc.
 Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: H8032819S1.CSV Date Analyzed: 03/28/19 Methods: SW846 7471B
 QC Limits: result < RL Run ID: MA46370 Units: ug/l

Time:			11:59		12:16		12:30		13:42	
Sample ID:			CCB8		CCB9		CCB10		CCB11	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Mercury	0.20	.02	-0.00350	<0.20	-0.00650	<0.20	-0.00280	<0.20	-0.00570	<0.20

(*) Outside of QC limits
 (anr) Analyte not requested

8.1.2
 8

BLANK RESULTS SUMMARY
 Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC84953
 Account: NOREASCA - NOREAS, Inc.
 Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: H8032819S1.CSV Date Analyzed: 03/28/19 Methods: SW846 7471B
 QC Limits: result < RL Run ID: MA46370 Units: ug/l

	Time:		14:22		14:38		15:03		15:21	
	Sample ID:		CCB12		CCB13		CCB14		CCB15	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Mercury	0.20	.02	-0.00420	<0.20	-0.0145	<0.20	-0.0593	<0.20	-0.0169	<0.20

(*) Outside of QC limits
 (anr) Analyte not requested

8.1.2
 8

BLANK RESULTS SUMMARY
 Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC84953
 Account: NOREASCA - NOREAS, Inc.
 Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: H8032819S1.CSV Date Analyzed: 03/28/19 Methods: SW846 7471B
 QC Limits: result < RL Run ID: MA46370 Units: ug/l

	Time:		15:48		16:07		16:45	
	Sample ID:		CCB16		CCB17		CCB18	
Metal	RL	IDL	raw	final	raw	final	raw	final
Mercury	0.20	.02	-0.00790	<0.20	-0.0171	<0.20	-0.00610	<0.20

(*) Outside of QC limits
 (anr) Analyte not requested

8.1.2
 8

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: H8032819S1.CSV

Date Analyzed: 03/28/19

Methods: SW846 7471B

QC Limits: 90 to 110 % Recovery

Run ID: MA46370

Units: ug/l

	Time:		09:57		10:00		10:04		
Sample ID:	ICV	ICV1	ICV1	CCV	CCV1	CCV	CCV2	CCV2	CCV2
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Mercury	3	3.15	105.0	2.5	2.62	104.8	2.5	2.63	105.2

(*) Outside of QC limits

(anr) Analyte not requested

8.1.3

8

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: H8032819S1.CSV

Date Analyzed: 03/28/19

Methods: SW846 7471B

QC Limits: 90 to 110 % Recovery

Run ID: MA46370

Units: ug/l

	Time:		10:33		10:50		11:07		
Sample ID:	CCV		CCV3	CCV	CCV4	CCV	CCV5		
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Mercury	2.5	2.59	103.6	2.5	2.51	100.4	2.5	2.48	99.2

(*) Outside of QC limits

(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: H8032819S1.CSV Date Analyzed: 03/28/19 Methods: SW846 7471B
QC Limits: 90 to 110 % Recovery Run ID: MA46370 Units: ug/l

	Time:	11:23		11:43		11:58			
Sample ID:	CCV	CCV6	CCV	CCV7	CCV	CCV8			
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Mercury	2.5	2.46	98.4	2.5	2.57	102.8	2.5	2.52	100.8

(*) Outside of QC limits
(anr) Analyte not requested

8.1.3
8

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: H8032819S1.CSV

Date Analyzed: 03/28/19

Methods: SW846 7471B

QC Limits: 90 to 110 % Recovery

Run ID: MA46370

Units: ug/l

	Time:	12:14		12:29		13:40			
Sample ID:	CCV	CCV9		CCV10		CCV11			
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Mercury	2.5	2.51	100.4	2.5	2.57	102.8	2.5	2.49	99.6

(*) Outside of QC limits

(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: H8032819S1.CSV

Date Analyzed: 03/28/19

Methods: SW846 7471B

QC Limits: 90 to 110 % Recovery

Run ID: MA46370

Units: ug/l

	Time:	14:21		14:36		15:01			
Sample ID:	CCV	CCV12		CCV13		CCV14			
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Mercury	2.5	2.44	97.6	2.5	2.36	94.4	2.5	2.28	91.2

(*) Outside of QC limits

(anr) Analyte not requested

8.1.3
8

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: H8032819S1.CSV Date Analyzed: 03/28/19 Methods: SW846 7471B
QC Limits: 90 to 110 % Recovery Run ID: MA46370 Units: ug/l

	Time:	15:20		15:47		16:05			
Sample ID:	CCV	CCV15		CCV16		CCV17			
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Mercury	2.5	2.39	95.6	2.5	2.40	96.0	2.5	2.47	98.8

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: H8032819S1.CSV Date Analyzed: 03/28/19 Methods: SW846 7471B
QC Limits: 90 to 110 % Recovery Run ID: MA46370 Units: ug/l

Time:	16:43		
Sample ID: CCV	CCV18		
Metal	True	Results	% Rec
Mercury	2.5	2.39	95.6

(*) Outside of QC limits
(anr) Analyte not requested

8.1.3
8

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: H8032819S1.CSV

Date Analyzed: 03/28/19

Methods: SW846 7471B

QC Limits: 70 to 130 % Recovery

Run ID: MA46370

Units: ug/l

	Time:		10:36		16:42	
Sample ID:	CRI	CRIA	CRI1		CRI2	
Metal	True	True	Results	% Rec	Results	% Rec
Mercury	0.20		0.178	89.0	0.174	87.0

(*) Outside of QC limits

(anr) Analyte not requested

SGS Instrument Runlog
Inorganics Analyses

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: SC032819M1L.ICP

Date Analyzed: 03/28/19

Methods: EPA 200.7, SW846 6010D

Analyst: ND

Run ID: MA46381

Parameters: As,Ba,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
09:57	MA46381-STD1	1		STDA
10:02	MA46381-STD2	1		STDB
10:08	ZZZZZZ	1		
10:13	ZZZZZZ	1		
10:18	MA46381-ICV1	1		
10:23	MA46381-ICB1	1		
10:29	MA46381-CCV1	1		
10:34	MA46381-CCB1	1		
10:39	MA46381-CRI1	1		
10:44	MA46381-CRID1	1		
10:49	MA46381-ICSA1	1		
10:54	MA46381-ICSAB1	1		
11:00	MA46381-HSTD1	1		
11:06	MA46381-HSTD2	1		
11:11	ZZZZZZ	1		
11:16	ZZZZZZ	1		
11:22	ZZZZZZ	1		
11:27	MA46381-CCV2	1		
11:32	MA46381-CCB2	1		
11:37	ZZZZZZ	1		
11:42	ZZZZZZ	1		
11:47	MP13344-MB1	1		
11:52	MP13344-B1	1		
11:57	MP13344-S1	1		
12:02	MP13344-S2	1		
12:30	MA46381-CCV3	1		
12:35	MA46381-CCB3	1		
12:50	JC84392-2	1		(sample used for QC only; not part of login JC84953)
12:55	MP13344-SD1	5		
13:00	MP13344-PS1	1		
13:06	ZZZZZZ	1		
13:11	ZZZZZZ	1		
13:16	ZZZZZZ	1		

8.2
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SGS Instrument Runlog
Inorganics Analyses

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: SC032819M1L.ICP

Date Analyzed: 03/28/19

Methods: EPA 200.7, SW846 6010D

Analyst: ND

Run ID: MA46381

Parameters: As,Ba,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:21	ZZZZZZ	1		
13:26	ZZZZZZ	1		
13:31	ZZZZZZ	1		
13:36	MA46381-CCV4	1		
13:41	MA46381-CCB4	1		
13:46	ZZZZZZ	1		
13:51	ZZZZZZ	1		
13:57	ZZZZZZ	1		
14:02	ZZZZZZ	1		
14:07	ZZZZZZ	1		
14:12	MP13517-B1	1		
14:17	MP13517-MB1	1		
14:22	MP13517-S1	1		
14:27	MP13517-S2	1		
14:32	MA46381-CCV5	1		
14:37	MA46381-CCB5	1		
14:42	JC84953-1	1		
14:47	MP13517-SD1	5		
14:52	MP13517-PS1	1		
----->	Last reportable sample/prep for job JC84953			
14:57	MA46381-CCV6	1		
15:02	MA46381-CCB6	1		
----->	Last reportable CCB for job JC84953			
15:07	ZZZZZZ	1		
15:12	ZZZZZZ	1		
15:17	ZZZZZZ	1		
15:23	ZZZZZZ	1		
15:28	ZZZZZZ	1		
15:33	ZZZZZZ	1		
15:38	ZZZZZZ	1		

Refer to raw data for calibration curve and standards.

8.2
8

REPORTED ELEMENTS SUMMARY

Login Number: JC84953
 Account: NOREASCA - NOREAS, Inc.
 Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: SC032819M1L.ICP Date Analyzed: 03/28/19 Methods: EPA 200.7, SW846 6010D
 Analyst: ND Run ID: MA46381
 Parameters: As,Ba,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Zn

Time	Sample Description	Dilution	Element: s a e d r u b n i e g n	A	B	B	C	C	C	P	M	N	S	A	Z
10:08	ZZZZZZ	1													
10:13	ZZZZZZ	1													
10:18	MA46381-ICV1	1	X	X	X	X	X	X	X	X	X	X	X	X	X
10:23	MA46381-ICB1	1	X	X	X	X	X	X	X	X	X	X	X	X	X
10:29	MA46381-CCV1	1	X	X	X	X	X	X	X	X	X	X	X	X	X
10:34	MA46381-CCB1	1	X	X	X	X	X	X	X	X	X	X	X	X	X
10:39	MA46381-CRI1	1	X	X	X	X	X	X	X	X	X	X	X	X	X
10:44	MA46381-CRID1	1	X	X	X	X	X	X	X	X	X	X	X	X	X
10:49	MA46381-ICSA1	1	X	X	X	X	X	X	X	X	X	X	X	X	X
10:54	MA46381-ICSAB1	1	X	X	X	X	X	X	X	X	X	X	X	X	X
11:00	MA46381-HSTD1	1	X	X	X	X	X	X	X	X	X	X	X	X	X
11:06	MA46381-HSTD2	1													
11:11	ZZZZZZ	1													
11:16	ZZZZZZ	1													
11:22	ZZZZZZ	1													
11:27	MA46381-CCV2	1	X	X	X	X	X	X	X	X	X	X	X	X	X
11:32	MA46381-CCB2	1	X	X	X	X	X	X	X	X	X	X	X	X	X
11:37	ZZZZZZ	1													
11:42	ZZZZZZ	1													
11:47	MP13344-MB1	1						X							
11:52	MP13344-B1	1						X							
11:57	MP13344-S1	1						X							
12:02	MP13344-S2	1						X							
12:30	MA46381-CCV3	1	X	X	X	X	X	X	X	X	X	X	X	X	X
12:35	MA46381-CCB3	1	X	X	X	X	X	X	X	X	X	X	X	X	X
12:50	JC84392-2	1						X							(a)
12:55	MP13344-SD1	5						X							
13:00	MP13344-PS1	1						X							
13:06	ZZZZZZ	1													
13:11	ZZZZZZ	1													
13:16	ZZZZZZ	1													
13:21	ZZZZZZ	1													
13:26	ZZZZZZ	1													

8.2.1
8

REPORTED ELEMENTS SUMMARY

Login Number: JC84953
 Account: NOREASCA - NOREAS, Inc.
 Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: SC032819M1L.ICP Date Analyzed: 03/28/19 Methods: EPA 200.7, SW846 6010D
 Analyst: ND Run ID: MA46381
 Parameters: As,Ba,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Zn

Time	Sample Description	Element: Dilution	A	B	B	C	C	C	P	M	N	S	A	Z
			s	a	e	d	r	u	b	n	i	e	g	n
13:31	ZZZZZZ	1												
13:36	MA46381-CCV4	1	X	X	X	X	X	X	X	X	X	X	X	X
13:41	MA46381-CCB4	1	X	X	X	X	X	X	X	X	X	X	X	X
13:46	ZZZZZZ	1												
13:51	ZZZZZZ	1												
13:57	ZZZZZZ	1												
14:02	ZZZZZZ	1												
14:07	ZZZZZZ	1												
14:12	MP13517-B1	1	X	X	X	X	X	X	X	X	X	X	X	X
14:17	MP13517-MB1	1	X	X	X	X	X	X	X	X	X	X	X	X
14:22	MP13517-S1	1	X	X	X	X	X	X	X	X	X	X	X	X
14:27	MP13517-S2	1	X	X	X	X	X	X	X	X	X	X	X	X
14:32	MA46381-CCV5	1	X	X	X	X	X	X	X	X	X	X	X	X
14:37	MA46381-CCB5	1	X	X	X	X	X	X	X	X	X	X	X	X
14:42	JC84953-1	1	X	X	X	X	X	X	X	X	X	X	X	X
14:47	MP13517-SD1	5	X	X	X	X	X	X	X	X	X	X	X	X
14:52	MP13517-PS1	1	X	X	X	X	X	X	X	X	X	X	X	X
14:57	MA46381-CCV6	1	X	X	X	X	X	X	X	X	X	X	X	X
15:02	MA46381-CCB6	1	X	X	X	X	X	X	X	X	X	X	X	X
15:07	ZZZZZZ	1												
15:12	ZZZZZZ	1												
15:17	ZZZZZZ	1												
15:23	ZZZZZZ	1												
15:28	ZZZZZZ	1												
15:33	ZZZZZZ	1												
15:38	ZZZZZZ	1												

(a) Sample used for QC only; not part of login JC84953.

Element: A B B C C C P M N S A Z
 s a e d r u b n i e g n

INTERNAL STANDARD SUMMARY

Login Number: JC84953
 Account: NOREASCA - NOREAS, Inc.
 Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: SC032819M1L.ICP Date Analyzed: 03/28/19 Methods: EPA 200.7, SW846 6010D
 Analyst: ND Run ID: MA46381
 Parameters: As,Ba,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
09:57	MA46381-STD1	6753 R	165790 R	31468 R	9050 R
10:02	MA46381-STD2	6286	151410	30943	8192
10:08	ZZZZZZ	6553	156720	31070	8429
10:13	ZZZZZZ	6810	165290	31368	9124
10:18	MA46381-ICV1	6524	158100	30990	8417
10:23	MA46381-ICB1	6748	166510	32097	9067
10:29	MA46381-CCV1	6474	156100	30836	8361
10:34	MA46381-CCB1	6836	165740	31764	9107
10:39	MA46381-CRI1	6718	164660	31567	8841
10:44	MA46381-CRID1	6824	165850	31884	9057
10:49	MA46381-ICSA1	6003	144390	30277	7662
10:54	MA46381-ICSAB1	6019	144130	30307	7693
11:00	MA46381-HSTD1	6595	160710	31767	9019
11:06	MA46381-HSTD2	6108	146340	30810	7688
11:11	ZZZZZZ	6761	164820	32145	9193
11:16	ZZZZZZ	6659	168350	32420	9102
11:22	ZZZZZZ	6882	168750	32262	9136
11:27	MA46381-CCV2	6522	157860	31563	8350
11:32	MA46381-CCB2	6860	166010	32170	9106
11:37	ZZZZZZ	6796	166510	32108	8894
11:42	ZZZZZZ	6813	167970	32302	9006
11:47	MP13344-MB1	6917	170840	32702	9154
11:52	MP13344-B1	6643	162160	32084	8506
11:57	MP13344-S1	6510	159100	32150	8371
12:02	MP13344-S2	6512	160190	32060	8356
12:30	MA46381-CCV3	6427	156170	31337	8238
12:35	MA46381-CCB3	6791	166150	31860	9012
12:50	JC84392-2	6645	161930	32104	8573
12:55	MP13344-SD1	6845	167680	32188	8931
13:00	MP13344-PS1	6551	159930	32101	8378
13:06	ZZZZZZ	6892	169910	32715	9074
13:11	ZZZZZZ	6601	162500	32276	8443
13:16	ZZZZZZ	6805	167050	32459	8839

8.2.2
8

INTERNAL STANDARD SUMMARY

Login Number: JC84953
 Account: NOREASCA - NOREAS, Inc.
 Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: SC032819M1L.ICP Date Analyzed: 03/28/19 Methods: EPA 200.7, SW846 6010D
 Analyst: ND Run ID: MA46381
 Parameters: As,Ba,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
13:21	ZZZZZZ	6799	167110	32764	8838
13:26	ZZZZZZ	6903	169820	32508	9074
13:31	ZZZZZZ	6698	165000	32440	8569
13:36	MA46381-CCV4	6470	158760	31644	8239
13:41	MA46381-CCB4	6843	168550	32132	9006
13:46	ZZZZZZ	6605	161900	31998	8417
13:51	ZZZZZZ	6855	168280	32469	8836
13:57	ZZZZZZ	6807	168110	32427	8791
14:02	ZZZZZZ	6682	164130	32200	8526
14:07	ZZZZZZ	6684	164300	32226	8505
14:12	MP13517-B1	6660	163650	32255	8486
14:17	MP13517-MB1	6942	171990	33089	9092
14:22	MP13517-S1	6677	162550	32130	8469
14:27	MP13517-S2	6645	162100	32380	8441
14:32	MA46381-CCV5	6504	158760	31573	8248
14:37	MA46381-CCB5	6870	168710	31916	9014
14:42	JC84953-1	6962	170060	32861	8899
14:47	MP13517-SD1	6915	170390	32418	8988
14:52	MP13517-PS1	6674	163520	32230	8450
14:57	MA46381-CCV6	6540	159110	31479	8260
15:02	MA46381-CCB6	6868	169040	31780	8973
15:07	ZZZZZZ	6933	170990	32260	9038
15:12	ZZZZZZ	6859	168910	32014	8995
15:17	ZZZZZZ	6881	169470	32068	8968
15:23	ZZZZZZ	6831	166710	30768	8932
15:28	ZZZZZZ	6928	169890	32456	9018
15:33	ZZZZZZ	6687	153670	32377	8115
15:38	ZZZZZZ	6915	169380	32163	9022

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC84953
Account: NOREASCA - NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: SC032819M1L.ICP Date Analyzed: 03/28/19 Methods: EPA 200.7, SW846 6010D
QC Limits: result < 1/2 RL Run ID: MA46381 Units: ug/l

Metal	Time:			10:23		10:34		11:32		
	Sample ID:	RL	IDL	LOD	ICB1	final	CCB1	final	CCB2	final
Aluminum		200	14	100						
Antimony		6.0	1.4	5.0						
Arsenic		5.0	1.5	3.0	-0.200	<5.0	-2.50	<5.0*(a)	-2.70	<5.0*(a)
Barium		200	.5	100	-0.400	<200	-0.100	<200	-0.300	<200
Beryllium		2.0	.1	1.0	0.00	<2.0	0.100	<2.0	0.00	<2.0
Bismuth		20	1.8	10						
Boron		200	.8	100						
Cadmium		3.0	.3	2.0	-0.100	<3.0	0.200	<3.0	0.00	<3.0
Calcium		5000	3.9	200						
Chromium		10	.3	5.0	0.200	<10	0.200	<10	-0.300	<10
Cobalt		50	.3	10						
Copper		10	.6	8.0	0.100	<10	0.100	<10	-0.100	<10
Iron		100	2.6	50						
Lead		5.0	1.6	3.0	0.500	<5.0	0.800	<5.0	-0.500	<5.0
Lithium		50	2.1	20						
Magnesium		5000	16	500						
Manganese		15	.1	5.0	0.100	<15	0.300	<15	0.00	<15
Molybdenum		20	.4	8.0						
Nickel		10	.5	8.0	0.200	<10	0.200	<10	0.100	<10
Phosphorus		50	1.9	25						
Potassium		10000	79	500						
Selenium		10	3	8.0	-1.80	<10	-1.10	<10	0.00	<10
Silicon		200	1.2	150						
Silver		10	.5	4.0	0.00	<10	0.200	<10	-0.200	<10
Sodium		10000	9.9	1000						
Strontium		10	.3	2.0						
Sulfur		100	3.5	50						
Thallium		10	1.3	5.0						
Tin		10	.7	8.0						
Titanium		10	.5	4.0						
Tungsten		100	1.7	50						
Vanadium		50	.5	4.0						
Zinc		20	.2	10	0.100	<20	0.200	<20	0.100	<20

8.2.3
8

BLANK RESULTS SUMMARY
 Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC84953
 Account: NOREASCA - NOREAS, Inc.
 Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: SC032819M1L.ICP Date Analyzed: 03/28/19 Methods: EPA 200.7, SW846 6010D
 QC Limits: result < 1/2 RL Run ID: MA46381 Units: ug/l

Time:				10:23		10:34		11:32	
Sample ID:	RL	IDL	LOD	ICB1	final	CCB1	final	CCB2	final
Metal				raw		raw		raw	

Zirconium 10 .3 5.0

(*) Outside of QC limits
 (anr) Analyte not requested
 (a) No AQ samples reported for this element in the area bracketed by this QC.

8.2.3
 8

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC84953
Account: NOREASCA - NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: SC032819M1L.ICP Date Analyzed: 03/28/19 Methods: EPA 200.7, SW846 6010D
QC Limits: result < 1/2 RL Run ID: MA46381 Units: ug/l

Metal	RL	IDL	LOD	12:35		13:41		14:37	
				CCB3 raw	final	CCB4 raw	final	CCB5 raw	final
Aluminum	200	14	100						
Antimony	6.0	1.4	5.0						
Arsenic	5.0	1.5	3.0	-2.00	<5.0	-1.60	<5.0	-1.30	<5.0
Barium	200	.5	100	-0.100	<200	-0.100	<200	0.300	<200
Beryllium	2.0	.1	1.0	0.00	<2.0	0.100	<2.0	0.400	<2.0
Bismuth	20	1.8	10						
Boron	200	.8	100						
Cadmium	3.0	.3	2.0	0.00	<3.0	0.400	<3.0	0.300	<3.0
Calcium	5000	3.9	200						
Chromium	10	.3	5.0	-0.100	<10	0.200	<10	0.300	<10
Cobalt	50	.3	10						
Copper	10	.6	8.0	0.00	<10	-0.200	<10	0.100	<10
Iron	100	2.6	50						
Lead	5.0	1.6	3.0	0.200	<5.0	0.100	<5.0	0.200	<5.0
Lithium	50	2.1	20						
Magnesium	5000	16	500						
Manganese	15	.1	5.0	0.100	<15	0.200	<15	0.400	<15
Molybdenum	20	.4	8.0						
Nickel	10	.5	8.0	0.00	<10	0.200	<10	0.300	<10
Phosphorus	50	1.9	25						
Potassium	10000	79	500						
Selenium	10	3	8.0	0.00	<10	0.900	<10	-1.50	<10
Silicon	200	1.2	150						
Silver	10	.5	4.0	0.00	<10	-0.300	<10	-0.700	<10
Sodium	10000	9.9	1000						
Strontium	10	.3	2.0						
Sulfur	100	3.5	50						
Thallium	10	1.3	5.0						
Tin	10	.7	8.0						
Titanium	10	.5	4.0						
Tungsten	100	1.7	50						
Vanadium	50	.5	4.0						
Zinc	20	.2	10	0.100	<20	0.300	<20	0.400	<20

8.2.3
8

BLANK RESULTS SUMMARY
 Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC84953
 Account: NOREASCA - NOREAS, Inc.
 Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: SC032819M1L.ICP Date Analyzed: 03/28/19 Methods: EPA 200.7, SW846 6010D
 QC Limits: result < 1/2 RL Run ID: MA46381 Units: ug/l

Time:				12:35			13:41			14:37
Sample ID:	RL	IDL	LOD	CCB3	final	CCB4	final	CCB5	final	
Metal				raw		raw		raw		

Zirconium 10 .3 5.0

(*) Outside of QC limits
 (anr) Analyte not requested

BLANK RESULTS SUMMARY
 Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC84953
 Account: NOREASCA - NOREAS, Inc.
 Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: SC032819M1L.ICP Date Analyzed: 03/28/19 Methods: EPA 200.7, SW846 6010D
 QC Limits: result < 1/2 RL Run ID: MA46381 Units: ug/l

Metal	RL	IDL	LOD	15:02 CCB6 raw	final
Aluminum	200	14	100		
Antimony	6.0	1.4	5.0		
Arsenic	5.0	1.5	3.0	-1.80	<5.0
Barium	200	.5	100	0.200	<200
Beryllium	2.0	.1	1.0	0.300	<2.0
Bismuth	20	1.8	10		
Boron	200	.8	100		
Cadmium	3.0	.3	2.0	0.200	<3.0
Calcium	5000	3.9	200		
Chromium	10	.3	5.0	0.600	<10
Cobalt	50	.3	10		
Copper	10	.6	8.0	-0.200	<10
Iron	100	2.6	50		
Lead	5.0	1.6	3.0	0.500	<5.0
Lithium	50	2.1	20		
Magnesium	5000	16	500		
Manganese	15	.1	5.0	0.400	<15
Molybdenum	20	.4	8.0		
Nickel	10	.5	8.0	0.500	<10
Phosphorus	50	1.9	25		
Potassium	10000	79	500		
Selenium	10	3	8.0	-0.600	<10
Silicon	200	1.2	150		
Silver	10	.5	4.0	-0.400	<10
Sodium	10000	9.9	1000		
Strontium	10	.3	2.0		
Sulfur	100	3.5	50		
Thallium	10	1.3	5.0		
Tin	10	.7	8.0		
Titanium	10	.5	4.0		
Tungsten	100	1.7	50		
Vanadium	50	.5	4.0		
Zinc	20	.2	10	0.300	<20

8.2.3
8

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JC84953
Account: NOREASCA - NOREAS, Inc.
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: SC032819M1L.ICP Date Analyzed: 03/28/19 Methods: EPA 200.7, SW846 6010D
QC Limits: result < 1/2 RL Run ID: MA46381 Units: ug/l

Time:				15:02	
Sample ID:				CCB6	
Metal	RL	IDL	LOD	raw	final

Zirconium 10 .3 5.0

(*) Outside of QC limits
(anr) Analyte not requested

8.2.3
8

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: SC032819M1L.ICP Date Analyzed: 03/28/19 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA46381 Units: ug/l

Metal	Time:	10:18	% Rec	CCV	10:29	% Rec	CCV	11:27	% Rec
	Sample ID:	ICV1			ICV			CCV1	
Aluminum									
Antimony									
Arsenic	2000	1930	96.5	2000	1980	99.0	2000	2010	100.5
Barium	2000	2080	104.0	2000	2120	106.0	2000	2130	106.5
Beryllium	2000	2010	100.5	2000	2070	103.5	2000	2030	101.5
Bismuth									
Boron	anr								
Cadmium	2000	1970	98.5	2000	2010	100.5	2000	2020	101.0
Calcium									
Chromium	2000	1940	97.0	2000	2000	100.0	2000	1990	99.5
Cobalt									
Copper	2000	1940	97.0	2000	1980	99.0	2000	1990	99.5
Iron									
Lead	2000	1980	99.0	2000	2030	101.5	2000	2050	102.5
Lithium	anr								
Magnesium									
Manganese	2000	1980	99.0	2000	2040	102.0	2000	2020	101.0
Molybdenum									
Nickel	2000	2000	100.0	2000	2040	102.0	2000	2060	103.0
Phosphorus									
Potassium									
Selenium	2000	1930	96.5	2000	1990	99.5	2000	2030	101.5
Silicon									
Silver	250	241	96.4	250	246	98.4	250	247	98.8
Sodium									
Strontium									
Sulfur									
Thallium									
Tin									
Titanium									
Tungsten									
Vanadium									
Zinc	2000	1960	98.0	2000	2020	101.0	2000	2020	101.0

8.2.4
8

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: SC032819M1L.ICP

Date Analyzed: 03/28/19

Methods: EPA 200.7, SW846 6010D

QC Limits: 95 to 105 % Recovery

Run ID: MA46381

Units: ug/l

	Time:		10:18		10:29		11:27		
Sample ID:	ICV	ICV1	CCV	CCV1	CCV	CCV2			
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec

Zirconium

(*) Outside of QC limits
(anr) Analyte not requested



8.2.4
8

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: SC032819M1L.ICP Date Analyzed: 03/28/19 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA46381 Units: ug/l

Metal	Time:	12:30	% Rec	13:36	% Rec	14:32	% Rec		
	Sample ID:	CCV3		CCV4		CCV5			
	True	Results		True		True			
Aluminum									
Antimony									
Arsenic	2000	2040	102.0	2000	2040	102.0	2000	2030	101.5
Barium	2000	2170	108.5	2000	2150	107.5	2000	2170	108.5
Beryllium	2000	2080	104.0	2000	2040	102.0	2000	2050	102.5
Bismuth									
Boron	anr								
Cadmium	2000	2060	103.0	2000	2040	102.0	2000	2020	101.0
Calcium									
Chromium	2000	2030	101.5	2000	1990	99.5	2000	2000	100.0
Cobalt									
Copper	2000	2040	102.0	2000	2010	100.5	2000	2020	101.0
Iron									
Lead	2000	2080	104.0	2000	2080	104.0	2000	2070	103.5
Lithium	anr								
Magnesium									
Manganese	2000	2030	101.5	2000	2000	100.0	2000	2000	100.0
Molybdenum									
Nickel	2000	2090	104.5	2000	2090	104.5	2000	2080	104.0
Phosphorus									
Potassium									
Selenium	2000	2060	103.0	2000	2060	103.0	2000	2050	102.5
Silicon									
Silver	250	252	100.8	250	248	99.2	250	249	99.6
Sodium									
Strontium									
Sulfur									
Thallium									
Tin									
Titanium									
Tungsten									
Vanadium									
Zinc	2000	2050	102.5	2000	2030	101.5	2000	2010	100.5

8.2.4
8

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

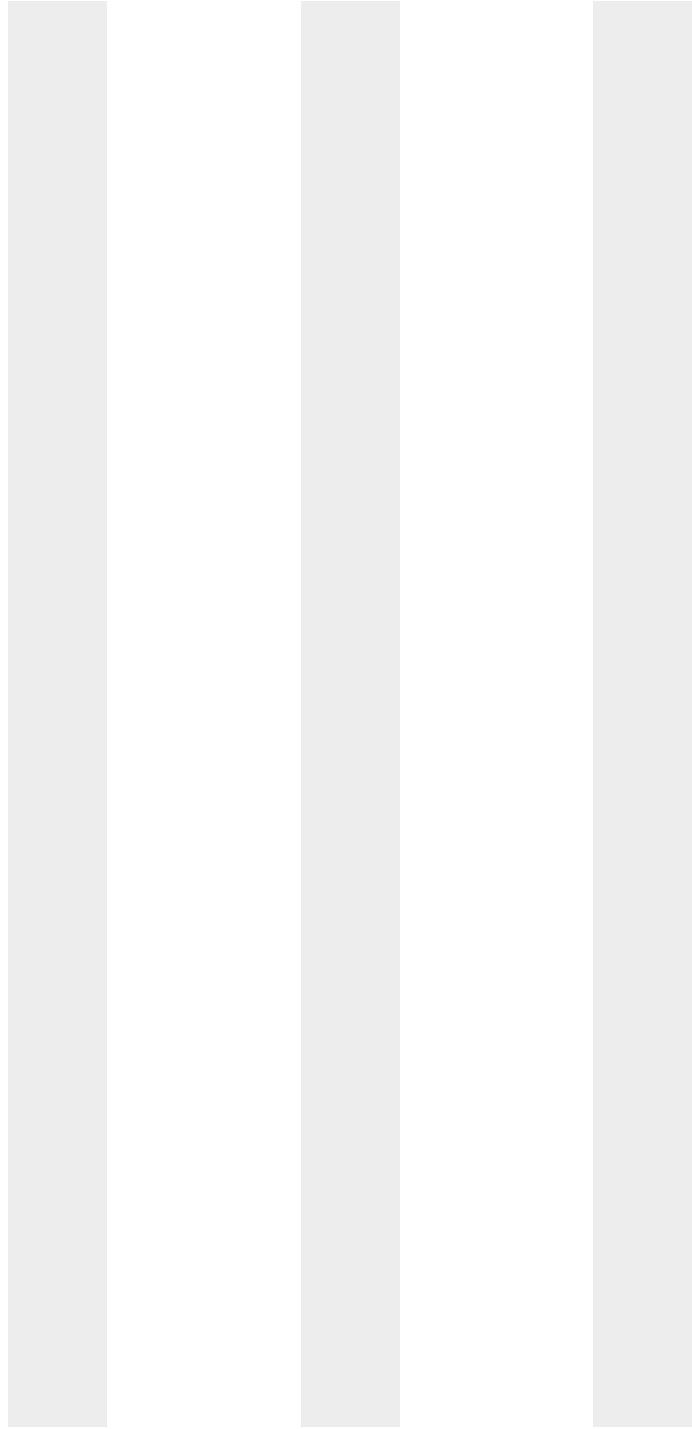
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: SC032819M1L.ICP Date Analyzed: 03/28/19 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA46381 Units: ug/l

	Time:				12:30			13:36		14:32	
Sample ID:	CCV	CCV3	CCV	CCV4	CCV	CCV5					
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec		

Zirconium

(*) Outside of QC limits
(anr) Analyte not requested



8.2.4
8

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: SC032819M1L.ICP Date Analyzed: 03/28/19 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA46381 Units: ug/l

Time:	14:57		
Sample ID:	CCV	CCV6	
Metal	True	Results	% Rec

Aluminum			
Antimony			
Arsenic	2000	2030	101.5
Barium	2000	2180	109.0
Beryllium	2000	2040	102.0
Bismuth			
Boron	anr		
Cadmium	2000	2020	101.0
Calcium			
Chromium	2000	2000	100.0
Cobalt			
Copper	2000	2020	101.0
Iron			
Lead	2000	2080	104.0
Lithium	anr		
Magnesium			
Manganese	2000	2010	100.5
Molybdenum			
Nickel	2000	2090	104.5
Phosphorus			
Potassium			
Selenium	2000	2050	102.5
Silicon			
Silver	250	249	99.6
Sodium			
Strontium			
Sulfur			
Thallium			
Tin			
Titanium			
Tungsten			
Vanadium			
Zinc	2000	2010	100.5

8.2.4
8

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: SC032819M1L.ICP

Date Analyzed: 03/28/19

Methods: EPA 200.7, SW846 6010D

QC Limits: 95 to 105 % Recovery

Run ID: MA46381

Units: ug/l

Time:	14:57		
Sample ID: CCV	CCV6		
Metal	True	Results	% Rec

Zirconium

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: SC032819M1L.ICP
QC Limits: 90 to 110 % Recovery

Date Analyzed: 03/28/19
Run ID: MA46381

Methods: EPA 200.7, SW846 6010D
Units: ug/l

Metal	Time: 11:00		% Rec	Time: 11:06		% Rec
	HSTD	HSTD1		HSTD	HSTD2	
Aluminum						
Antimony						
Arsenic	8000	8050	100.6			
Barium	8000	8430	105.4			
Beryllium	8000	7900	98.8			
Bismuth						
Boron	anr					
Cadmium	8000	7880	98.5			
Calcium						
Chromium	8000	8140	101.8			
Cobalt						
Copper	8000	7980	99.8			
Iron						
Lead	8000	8120	101.5			
Lithium	anr					
Magnesium						
Manganese	8000	8010	100.1			
Molybdenum						
Nickel	8000	7990	99.9			
Phosphorus						
Potassium						
Selenium	8000	8130	101.6			
Silicon						
Silver	625	599	95.8			
Sodium						
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						
Zinc	8000	8180	102.3			

8.2.5
8

HIGH STANDARD CHECK SUMMARY

Login Number: JC84953
 Account: NOREASCA - NOREAS, Inc.
 Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: SC032819M1L.ICP Date Analyzed: 03/28/19 Methods: EPA 200.7, SW846 6010D
 QC Limits: 90 to 110 % Recovery Run ID: MA46381 Units: ug/l

Time:	11:00	11:06	
Sample ID:	HSTD HSTD1	HSTD HSTD2	
Metal	True Results % Rec	True Results % Rec	

Zirconium

(*) Outside of QC limits
 (anr) Analyte not requested

8.2.5
 8

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: SC032819M1L.ICP Date Analyzed: 03/28/19 Methods: EPA 200.7, SW846 6010D
 QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA46381 Units: ug/l

Time:	10:39	10:44					
Sample ID:	CRI	CRIA	CRID	CRI1	CRID1		
Metal	True	True	True	Results	% Rec	Results	% Rec
Aluminum	200	500	100				
Antimony	6.0	20	3.0				
Arsenic	8.0	20	3.0	7.20	90.0	1.30U	0.0* (a)
Barium	200		4.0	210	105.0	4.10	102.5
Beryllium	2.0		1.0	2.10	105.0	1.00	100.0
Bismuth	20						
Boron	100		10	anr			
Cadmium	3.0		1.0	3.10	103.3	1.00	100.0
Calcium	5000	2000	1000				
Chromium	10		2.0	10.2	102.0	1.80	90.0
Cobalt	50		3.0				
Copper	10		2.0	9.60	96.0	-0.100U	0.0* (a)
Iron	100	500					
Lead	3.0	20	2.5	3.60	120.0	0.400U	0.0* (a)
Lithium	50			anr			
Magnesium	5000	2000	100				
Manganese	15		3.0	15.9	106.0	3.10	103.3
Molybdenum	20						
Nickel	10		4.0	10.4	104.0	4.00	100.0
Phosphorus	50						
Potassium	5000		2000				
Selenium	10	20	5.0	8.60	86.0	3.20	64.0*(a)
Silicon	200						
Silver	5.0		2.0	4.10	82.0	0.100U	0.0* (a)
Sodium	5000		1000				
Strontium	10						
Sulfur	50						
Thallium	10		2.0				
Tin	10						
Titanium	10						
Tungsten	50						
Vanadium	50		2.0				
Zinc	20		10	20.8	104.0	10.8	108.0

8.2.6
8

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: SC032819M1L.ICP

Date Analyzed: 03/28/19

Methods: EPA 200.7, SW846 6010D

QC Limits: CRI 80-120% CRIA 80-120%

Run ID: MA46381

Units: ug/l

Time:				10:39			10:44
Sample ID:	CRI	CRIA	CRID	CRID1			CRID1
Metal	True	True	True	Results	% Rec	Results	% Rec

Zirconium 10

(*) Outside of QC limits

(anr) Analyte not requested

(a) No samples reported for this element at this RL in the area bracketed by this QC.

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: SC032819M1L.ICP
QC Limits: 80 to 120 % Recovery

Date Analyzed: 03/28/19
Run ID: MA46381

Methods: EPA 200.7, SW846 6010D
Units: ug/l

Metal	Time:		10:49		10:54	
	Sample ID:	ICSA	ICSAB	ICSAL	ICSAB1	ICSAB1
	True	True	Results	% Rec	Results	% Rec
Aluminum	500000	500000	493000	98.6	502000	100.4
Antimony		1000	4.20*(a)		1090	109.0
Arsenic		1000	0.700		1100	110.0
Barium		500	0.500		546	109.2
Beryllium		500	0.100		506	101.2
Bismuth		500	-0.100		502	100.4
Boron		500	-0.600		499	99.8
Cadmium		1000	0.900		1030	103.0
Calcium	400000	400000	391000	97.8	389000	97.3
Chromium		500	1.60		486	97.2
Cobalt		500	0.600		496	99.2
Copper		500	0.900		507	101.4
Iron	200000	200000	196000	98.0	189000	94.5
Lead		1000	1.30		959	95.9
Lithium		500	7.80		562	112.4
Magnesium	500000	500000	508000	101.6	508000	101.6
Manganese		500	0.800		507	101.4
Molybdenum		500	0.00		502	100.4
Nickel		1000	0.300		980	98.0
Phosphorus		500	-40.1*(a)		594	118.8
Potassium			398		252	
Selenium		1000	-1.80		1080	108.0
Silicon		500	1.50		514	102.8
Silver		1000	1.90		1050	105.0
Sodium			167		157	
Strontium		500	-0.200		595	119.0
Sulfur		500	-1.60		508	101.6
Thallium		1000	-0.300		1040	104.0
Tin		500	-1.30		479	95.8
Titanium		500	-1.70		494	98.8
Tungsten		500	0.300		469	93.8
Vanadium		500	-0.800		499	99.8
Zinc		1000	-0.700		964	96.4

8.2.7
8

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
 Part 1 - ICSA and ICSAB Standards

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: SC032819M1L.ICP

Date Analyzed: 03/28/19

Methods: EPA 200.7, SW846 6010D

QC Limits: 80 to 120 % Recovery

Run ID: MA46381

Units: ug/l

Time:		10:49		10:54		
Sample ID:	ICSAB	ICSAB	ICSAB1	ICSAB1	ICSAB1	
Metal	True	True	Results	% Rec	Results	% Rec

Zirconium		500	2.30		536	107.2
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(*) Outside of QC limits

(anr) Analyte not requested

(a) No samples reported for this element in the area bracketed by this QC.

8.2.7

8

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

QC Batch ID: MP13517

Methods: SW846 6010D

Matrix Type: SOLID

Units: mg/kg

Prep Date:

03/27/19

Metal	RL	IDL	MDL	MB raw	final
Aluminum	50	1.4	8.1		
Antimony	2.0	.14	.41		
Arsenic	2.0	.15	.28	-0.28	<2.0
Barium	20	.05	1.9	0.0	<20
Beryllium	0.20	.01	.08	0.020	<0.20
Bismuth	2.0	.18	.52		
Boron	10	.08	.15		
Cadmium	0.50	.03	.07	0.0	<0.50
Calcium	500	.39	44		
Chromium	1.0	.03	.37	0.10	<1.0
Cobalt	5.0	.03	.28		
Copper	2.5	.06	.84	0.090	<2.5
Iron	50	.26	19		
Lead	2.0	.16	.41	-0.070	<2.0
Lithium	5.0	.21	.92		
Magnesium	500	1.6	14		
Manganese	1.5	.01	.41	0.040	<1.5
Molybdenum	2.0	.04	.32		
Nickel	4.0	.05	.35	0.050	<4.0
Potassium	1000	7.9	32		
Selenium	2.0	.3	.65	-0.15	<2.0
Silicon	20	.12	11		
Silver	0.50	.05	.17	0.010	<0.50
Sodium	1000	.99	78		
Strontium	5.0	.03	.18		
Sulfur	20	.35	9.4		
Thallium	1.0	.13	.58		
Tin	10	.07	3.8		
Titanium	1.0	.05	.34		
Tungsten	5.0	.17	1.8		
Vanadium	5.0	.05	.19		
Zinc	5.0	.02	2.3	0.35	<5.0
Zirconium	2.0	.03	.23		

8.3.1

8

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

QC Batch ID: MP13517

Methods: SW846 6010D

Matrix Type: SOLID

Units: mg/kg

Prep Date:

03/27/19

Metal	RL	IDL	MDL	MB raw	final
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Associated samples MP13517: JC84953-1

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(anr) Analyte not requested

8.3.1

8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

QC Batch ID: MP13517

Methods: SW846 6010D

Matrix Type: SOLID

Units: mg/kg

Prep Date: 03/27/19

Metal	JC84953-1 Original MS		SpikeLot MPSPK2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	1.5	194	204	94.3	75-125
Barium	8.1	222	204	104.8	75-125
Beryllium	0.13	197	204	96.4	75-125
Bismuth					
Boron					
Cadmium	0.0	194	204	95.0	75-125
Calcium					
Chromium	5.4	198	204	94.3	75-125
Cobalt					
Copper	2.5	198	204	95.7	75-125
Iron					
Lead	3.4	204	204	98.2	75-125
Lithium					
Magnesium					
Manganese	50.7	265	204	105.0	75-125
Molybdenum					
Nickel	2.0	202	204	98.0	75-125
Potassium					
Selenium	0.0	193	204	94.5	75-125
Silicon					
Silver	0.0	24.8	25.5	97.2	75-125
Sodium					
Strontium					
Sulfur					
Thallium					
Tin					
Titanium					
Tungsten					
Vanadium					
Zinc	5.6	198	204	94.2	75-125
Zirconium					

8.3.2
8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

QC Batch ID: MP13517

Methods: SW846 6010D

Matrix Type: SOLID

Units: mg/kg

Prep Date:

03/27/19

Metal	JC84953-1 Original MS	SpikeLot MPSPK2	% Rec	QC Limits
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Associated samples MP13517: JC84953-1

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

8.3.2

8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

QC Batch ID: MP13517

Methods: SW846 6010D

Matrix Type: SOLID

Units: mg/kg

Prep Date:

03/27/19

Metal	JC84953-1 Original MSD		SpikeLot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	1.5	203	210	95.8	4.5	20
Barium	8.1	227	210	104.1	2.2	20
Beryllium	0.13	205	210	97.4	4.0	20
Bismuth						
Boron						
Cadmium	0.0	203	210	96.5	4.5	20
Calcium						
Chromium	5.4	205	210	94.9	3.5	20
Cobalt						
Copper	2.5	206	210	96.8	4.0	20
Iron						
Lead	3.4	212	210	99.2	3.8	20
Lithium						
Magnesium						
Manganese	50.7	247	210	93.3	7.0	20
Molybdenum						
Nickel	2.0	211	210	99.4	4.4	20
Potassium						
Selenium	0.0	201	210	95.6	4.1	20
Silicon						
Silver	0.0	25.9	26.3	98.5	4.3	20
Sodium						
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						
Zinc	5.6	207	210	95.8	4.4	20
Zirconium						

8.3.2
8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

QC Batch ID: MP13517

Methods: SW846 6010D

Matrix Type: SOLID

Units: mg/kg

Prep Date:

03/27/19

Metal	JC84953-1 Original MSD	SpikeLot MPSPK2	% Rec	MSD RPD	QC Limit
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Associated samples MP13517: JC84953-1

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

8.3.2

8

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

QC Batch ID: MP13517

Methods: SW846 6010D

Matrix Type: SOLID

Units: mg/kg

Prep Date: 03/27/19

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	188	194	96.8	80-120
Barium	201	194	103.5	80-120
Beryllium	190	194	97.9	80-120
Bismuth				
Boron				
Cadmium	187	194	96.3	80-120
Calcium				
Chromium	184	194	94.8	80-120
Cobalt				
Copper	188	194	96.8	80-120
Iron				
Lead	192	194	98.9	80-120
Lithium				
Magnesium				
Manganese	185	194	95.3	80-120
Molybdenum				
Nickel	193	194	99.4	80-120
Potassium				
Selenium	187	194	96.3	80-120
Silicon				
Silver	23.7	24.3	97.6	80-120
Sodium				
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				
Zinc	186	194	95.8	80-120
Zirconium				

8.3.3
8

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

QC Batch ID: MP13517

Methods: SW846 6010D

Matrix Type: SOLID

Units: mg/kg

Prep Date:

03/27/19

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
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Associated samples MP13517: JC84953-1

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(anr) Analyte not requested

8.3.3

8

SERIAL DILUTION RESULTS SUMMARY

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

QC Batch ID: MP13517

Methods: SW846 6010D

Matrix Type: SOLID

Units: ug/l

Prep Date: 03/27/19

Metal	JC84953-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	14.5	0.00	100.0 (a)	0-10
Barium	78.4	79.7	1.7	0-10
Beryllium	1.30	1.40	7.7	0-10
Bismuth				
Boron				
Cadmium	0.00	0.00	NC	0-10
Calcium				
Chromium	52.1	52.1	0.0	0-10
Cobalt				
Copper	24.5	26.2	6.9	0-10
Iron				
Lead	32.6	33.9	4.0	0-10
Lithium				
Magnesium				
Manganese	492	497	1.1	0-10
Molybdenum				
Nickel	19.0	18.6	2.1	0-10
Potassium				
Selenium	0.00	0.00	NC	0-10
Silicon				
Silver	0.00	0.00	NC	0-10
Sodium				
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				
Zinc	54.8	60.4	10.2* (b)	0-10
Zirconium				

8.3.4
8

SERIAL DILUTION RESULTS SUMMARY

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

QC Batch ID: MP13517

Methods: SW846 6010D

Matrix Type: SOLID

Units: ug/l

Prep Date:

03/27/19

	JC84953-1		QC
Metal	Original SDL 1:5	%DIF	Limits

Associated samples MP13517: JC84953-1

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(anr) Analyte not requested

(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

(b) Serial dilution indicates possible matrix interference.

POST DIGESTATE SPIKE SUMMARY

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

QC Batch ID: MP13517

Methods: SW846 6010D

Matrix Type: SOLID

Units: ug/l

Prep Date:

03/27/19

Metal	Sample ml	Final ml	JC84953-1 Raw	PS Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Aluminum										
Antimony										
Arsenic	19.25	20	14.5	13.95625	2125	0.2	200	2000	105.6	80-120
Barium	19.25	20	78.4	75.46	2269	0.2	200	2000	109.7	80-120
Beryllium	19.25	20	1.3	1.25125	2052	0.2	200	2000	102.5	80-120
Bismuth										
Boron										
Cadmium	19.25	20			2056	0.2	200	2000	102.8	80-120
Calcium										
Chromium	19.25	20	52.1	50.14625	2055	0.2	200	2000	100.2	80-120
Cobalt										
Copper	19.25	20	24.5	23.58125	2085	0.2	200	2000	103.1	80-120
Iron										
Lead	19.25	20	32.6	31.3775	2139	0.2	200	2000	105.4	80-120
Lithium										
Magnesium										
Manganese	19.25	20	491.7	473.2613	2469	0.2	200	2000	99.8	80-120
Molybdenum										
Nickel	19.25	20	19	18.2875	2135	0.2	200	2000	105.8	80-120
Potassium										
Selenium	19.25	20			2081	0.2	200	2000	104.1	80-120
Silicon										
Silver	19.25	20			252.6	0.25	20	250	101.0	80-120
Sodium										
Strontium										
Sulfur										
Thallium										
Tin										
Titanium										
Tungsten										
Vanadium										
Zinc	19.25	20	54.8	52.745	2082	0.2	200	2000	101.5	80-120
Zirconium										

8.3.5

8

POST DIGESTATE SPIKE SUMMARY

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

QC Batch ID: MP13517

Methods: SW846 6010D

Matrix Type: SOLID

Units: ug/l

Prep Date:

03/27/19

Metal	Sample ml	Final ml	JC84953-1 Raw	PS Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
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Associated samples MP13517: JC84953-1

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(**) Corr. sample result = Raw * (sample volume / final volume)

(anr) Analyte not requested

8.3.5

8

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

QC Batch ID: MP13597

Methods: SW846 7471B

Matrix Type: SOLID

Units: mg/kg

Prep Date:

03/27/19

Metal	RL	IDL	MDL	MB	
				raw	final
Mercury	0.033	.0033	.015	0.0033	<0.033

Associated samples MP13597: JC84953-1

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

QC Batch ID: MP13597

Methods: SW846 7471B

Matrix Type: SOLID

Units: mg/kg

Prep Date: 03/27/19

Metal	JC84953-1 Original MS	SpikeLot HGPWS1	% Rec	QC Limits
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Mercury	0.0	0.30	0.315	95.2	80-120
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Associated samples MP13597: JC84953-1

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

8.4.2

8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

QC Batch ID: MP13597

Methods: SW846 7471B

Matrix Type: SOLID

Units: mg/kg

Prep Date:

03/27/19

Metal	JC84953-1 Original MSD	SpikeLot HGPWS1	% Rec	MSD RPD	QC Limit
Mercury	0.0	0.30	0.318	94.2	0.0 20

Associated samples MP13597: JC84953-1

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

8.4.2

8

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

QC Batch ID: MP13597

Methods: SW846 7471B

Matrix Type: SOLID

Units: mg/kg

Prep Date: 03/27/19

Metal	BSP Result	Spikelot HGPWS1	% Rec	QC Limits
Mercury	0.32	0.333	96.0	80-120

Associated samples MP13597: JC84953-1

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(anr) Analyte not requested

8.4.3

8

Instrument Detection Limits

Job Number: JC84953

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Instrument ID: LEEMANHG8	Effective Date: 01/31/19
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Analyte	IDL ug/l
Mercury	.0201

The above applies to the following instrument runs:
MA46370

8.5
8

Instrument Detection Limits

Job Number: JC84953

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Instrument ID: SSTRACE3	Effective Date: 02/18/19
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Analyte	IDL ug/l
Aluminum	14.3
Antimony	1.4
Arsenic	1.5
Barium	.5
Beryllium	.1
Bismuth	1.8
Boron	.8
Cadmium	.3
Calcium	3.9
Chromium	.3
Cobalt	.3
Copper	.6
Iron	2.6
Lead	1.6
Lithium	2.1
Magnesium	16.3
Manganese	.1
Molybdenum	.4
Nickel	.5
Phosphorus	1.9
Potassium	79
Selenium	3
Silicon	1.2
Silver	.5
Sodium	9.9
Sulfur	3.5
Strontium	.3
Thallium	1.3
Tin	.7
Titanium	.5
Tungsten	1.7
Vanadium	.5
Yttrium	5
Zinc	.2
Zirconium	.3

The above applies to the following instrument runs:
MA46381

8.5
8

Instrument Linear Ranges

Job Number: JC84953

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Instrument ID: LEEMANHG8	Effective Date: 03/10/17
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Analyte	Linear Range ug/l
Mercury	5

The above applies to the following instrument runs:
MA46370

8.5
8

Instrument Linear Ranges

Job Number: JC84953

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Instrument ID: SSTRACE3	Effective Date: 07/16/18
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Analyte	Linear Range ug/l
Aluminum	300000
Antimony	8000
Arsenic	8000
Barium	8000
Beryllium	8000
Bismuth	8000
Boron	8000
Cadmium	8000
Calcium	200000
Chromium	8000
Cobalt	8000
Copper	8000
Iron	200000
Lead	8000
Lithium	8000
Magnesium	300000
Manganese	8000
Molybdenum	8000
Nickel	8000
Palladium	8000
Phosphorus	8000
Potassium	200000
Selenium	8000
Silicon	25000
Silver	625
Sodium	200000
Sulfur	100000
Strontium	8000
Thallium	8000
Tin	8000
Titanium	8000
Tungsten	8000
Vanadium	8000
Zinc	8000
Zirconium	8000

The above applies to the following instrument runs:
MA46381

8.5
8

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries
- Instrument Runlogs/QC
- Percent Solids Raw Data Summary

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP20460/GN93935	0.40	0.0	mg/kg	40	37.5	93.8	80-120%
Chromium, Hexavalent	GP20460/GN93935			mg/kg	798.02	753	94.4	80-120%
Cyanide	GP20214/GN93481	0.24	0.0	mg/kg	2	1.87	93.5	90-110%

Associated Samples:

Batch GP20214: JC84953-1

Batch GP20460: JC84953-1

(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP20460/GN93935	JC84953-1	mg/kg	0.63	0.75	17.4	0-20%
Cyanide	GP20214/GN93481	JC84621-55	mg/kg	0.0	0.0	0.0	0-49%
Redox Potential Vs H2	GN93703	JC84522-1	mv	714	716	0.3	0-15%
Solids, Percent	GN93280	JC84953-1	%	95.1	95.4	0.3	0-5%
pH	GN93704	JC84522-1	su	2.24	2.28	1.8	0-5%

Associated Samples:

Batch GN93280: JC84953-1

Batch GN93703: JC84953-1

Batch GN93704: JC84953-1

Batch GP20214: JC84953-1

Batch GP20460: JC84953-1

(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP20460/GN93935	JC84953-1	mg/kg	0.63	41.4	19.1	44.6N(a)	75-125%
Chromium, Hexavalent	GP20460/GN93935	JC84953-1	mg/kg	0.63	925	858	92.7(b)	75-125%
Cyanide	GP20214/GN93481	JC84621-55	mg/kg	0.0	2.32	2.3	98.9	75-125%

Associated Samples:

Batch GP20214: JC84953-1

Batch GP20460: JC84953-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(a) Soluble XCR matrix spike recovery indicates possible matrix interference. Good post spike recovery (102%) on this sample.

(b) Good recovery on insoluble XCR matrix spike. See additional comments on soluble matrix spike recovery.

SGS Instrument Runlog
Inorganics Analyses

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: E032919W1.CN

Date Analyzed: 03/29/19

Methods: EPA 335.4/LACHAT, SW846 9012B/LACHAT

Analyst: KI

Run ID: GN93481

Parameters: Cyanide

Time	Sample Description	Dilution Factor	PS Recov	Comments
12:47	GN93481-STD1	1		STDA
12:48	GN93481-STD2	1		STDB
12:50	GN93481-STD3	1		STDC
12:51	GN93481-STD4	1		STDD
12:53	GN93481-STD5	1		STDE
12:54	GN93481-STD6	1		STDF
12:55	GN93481-STD7	1		STDG
12:57	GN93481-ICV1	1		
12:58	GN93481-ICB1	1		
12:59	GN93481-CCV1	1		
13:01	GN93481-CCB1	1		
13:02	GP20214-MB1	1		
13:03	GP20214-B1	1		
13:05	GP20214-S1	1		
13:06	GP20214-S2	1		
13:07	GP20214-D1	1		
13:09	JC84690-1	1		(sample used for QC only; not part of login JC84953)
13:10	ZZZZZZ	1		
13:12	ZZZZZZ	1		
13:13	ZZZZZZ	1		
13:14	JC84621-55	1		(sample used for QC only; not part of login JC84953)
13:16	GN93481-CCV2	1		
13:17	GN93481-CCB2	1		
13:18	ZZZZZZ	1		
13:20	ZZZZZZ	1		
13:21	ZZZZZZ	1		
13:22	ZZZZZZ	1		
13:24	ZZZZZZ	1		
13:25	ZZZZZZ	1		
13:27	JC84953-1	1		
13:28	ZZZZZZ	1		
13:29	ZZZZZZ	1		
13:31	ZZZZZZ	1		

9.4
9

SGS Instrument Runlog
Inorganics Analyses

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: E032919W1.CN

Date Analyzed: 03/29/19

Methods: EPA 335.4/LACHAT, SW846 9012B/LACHAT

Analyst: KI

Run ID: GN93481

Parameters: Cyanide

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:32	GN93481-CCV3	1		
13:33	GN93481-CCB3	1		
13:35	ZZZZZZ	1		
13:36	ZZZZZZ	1		
13:37	ZZZZZZ	1		
13:39	ZZZZZZ	1		
13:44	GP20244-MB1	1		
13:46	GP20244-B1	1		
13:47	GP20244-S1	1		
13:48	GP20244-S2	1		
13:50	GP20244-D1	1		
13:51	JC84645-1	1		(sample used for QC only; not part of login JC84953)
13:53	GN93481-CCV4	1		
13:54	GN93481-CCB4	1		
13:55	JC84645-2	1		(sample used for QC only; not part of login JC84953)
13:57	JC84645-3	1		(sample used for QC only; not part of login JC84953)
13:58	ZZZZZZ	1		
13:59	ZZZZZZ	1		
14:01	ZZZZZZ	1		
14:02	ZZZZZZ	1		
14:03	ZZZZZZ	1		
14:05	ZZZZZZ	1		
14:06	ZZZZZZ	1		
14:07	ZZZZZZ	1		
14:09	GN93481-CCV5	1		
14:10	GN93481-CCB5	1		
14:12	ZZZZZZ	1		
14:13	ZZZZZZ	1		
14:14	GP20245-MB1	1		
14:16	GP20245-B1	1		
14:17	GP20245-S1	1		
14:18	GP20245-S2	1		
14:20	GP20245-D1	1		

9.4
9

SGS Instrument Runlog
Inorganics Analyses

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: E032919W1.CN

Date Analyzed: 03/29/19

Methods: EPA 335.4/LACHAT, SW846 9012B/LACHAT

Analyst: KI

Run ID: GN93481

Parameters: Cyanide

Time	Sample Description	Dilution Factor	PS Recov	Comments
14:21	JC85172-1A	1		(sample used for QC only; not part of login JC84953)
14:22	ZZZZZZ	1		
14:24	ZZZZZZ	1		
14:25	GN93481-CCV6	1		
14:26	GN93481-CCB6	1		
14:28	ZZZZZZ	1		
14:29	ZZZZZZ	1		
14:31	ZZZZZZ	1		
14:32	ZZZZZZ	1		
14:33	ZZZZZZ	1		
14:35	ZZZZZZ	1		
14:36	ZZZZZZ	1		
14:37	ZZZZZZ	1		
14:39	ZZZZZZ	1		
14:40	ZZZZZZ	1		
14:42	GN93481-CCV7	1		
14:43	GN93481-CCB7	1		
14:44	ZZZZZZ	1		
14:46	JC85173-1A	1		(sample used for QC only; not part of login JC84953)
14:49	GN93481-CCV8	1		
14:50	GN93481-CCB8	1		

Refer to raw data for calibration curve and standards.

Instrument QC Summary
Inorganics Analyses

Login Number: JC84953

Account: NOREASCA - NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

File ID: E032919W1.CN

Date Analyzed: 03/29/19
Run ID: GN93481

Methods: EPA 335.4/LACHAT, SW846 9012B/LACHAT
Units: mg/l

Sample Number	Parameter	Result	RL	IDL/MDL	True Value	% Recov.	QC Limits
GN93481-ICV1	Cyanide	0.312	0.010	0.0041	.3	104.0	90-110
GN93481-ICB1	Cyanide	-0.00415	0.010	0.0041			
GN93481-CCV1	Cyanide	0.412	0.010	0.0041	.4	103.0	90-110
GN93481-CCB1	Cyanide	0.0041 U	0.010	0.0041			
GN93481-CCV2	Cyanide	0.416	0.010	0.0041	.4	104.0	90-110
GN93481-CCB2	Cyanide	0.0041 U	0.010	0.0041			
GN93481-CCV3	Cyanide	0.395	0.010	0.0041	.4	98.8	90-110
GN93481-CCB3	Cyanide	0.0041 U	0.010	0.0041			
GN93481-CCV4	Cyanide	0.416	0.010	0.0041	.4	104.0	90-110
GN93481-CCB4	Cyanide	0.0041 U	0.010	0.0041			
GN93481-CCV5	Cyanide	0.415	0.010	0.0041	.4	103.8	90-110
GN93481-CCB5	Cyanide	0.0041 U	0.010	0.0041			
GN93481-CCV6	Cyanide	0.417	0.010	0.0041	.4	104.3	90-110
GN93481-CCB6	Cyanide	0.0041 U	0.010	0.0041			
GN93481-CCV7	Cyanide	0.416	0.010	0.0041	.4	104.0	90-110
GN93481-CCB7	Cyanide	0.0041 U	0.010	0.0041			
GN93481-CCV8	Cyanide	0.419	0.010	0.0041	.4	104.8	90-110
GN93481-CCB8	Cyanide	0.0041 U	0.010	0.0041			

(!) Outside of QC limits

9.4
9

Percent Solids Raw Data Summary

Job Number: JC84953

Account: NOREASCA NOREAS, Inc.

Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Sample: JC84953-1 **Analyzed:** 25-MAR-19 by BG

Method: SM2540 G 18TH ED MOD

ClientID: NWIRP-S1-WC-CF-024

Wet Weight (Total)	37.33	g
Tare Weight	27.9	g
Dry Weight (Total)	36.87	g
Solids, Percent	95.1	%

Sample Summary

NOREAS, Inc.

Job No: JC84953

Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

Project No: 500689

Sample Number	Collected		Matrix			Client Sample ID
	Date	Time By	Received	Code	Type	
JC84953-1	03/21/19	11:25 NS	03/22/19	SO	Soil	NWIRP-S1-WC-CF-024

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Report of Analysis

Page 1 of 1

Client Sample ID:	NWIRP-S1-WC-CF-024		
Lab Sample ID:	JC84953-1	Date Sampled:	03/21/19
Matrix:	SO - Soil	Date Received:	03/22/19
Method:	SW846 8270D SW846 3546	Percent Solids:	95.1
Project:	Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F183469.D	1	03/28/19 02:33	CS	03/23/19 11:42	OP19327	EF7878
Run #2							

	Initial Weight	Final Volume
Run #1	30.6 g	1.0 ml
Run #2		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
95-48-7	2-Methylphenol	34 U	69	34	22	ug/kg	
	3&4-Methylphenol	34 U	69	34	28	ug/kg	
87-86-5	Pentachlorophenol	86 U	140	86	32	ug/kg	
108-95-2	Phenol	34 U	69	34	18	ug/kg	
83-32-9	Acenaphthene	17 U	34	17	12	ug/kg	
208-96-8	Acenaphthylene	26 U	34	26	17	ug/kg	
120-12-7	Anthracene	26 U	34	26	21	ug/kg	
56-55-3	Benzo(a)anthracene	17 U	34	17	9.7	ug/kg	
50-32-8	Benzo(a)pyrene	17 U	34	17	16	ug/kg	
205-99-2	Benzo(b)fluoranthene	17 U	34	17	15	ug/kg	
191-24-2	Benzo(g,h,i)perylene	26 U	34	26	17	ug/kg	
207-08-9	Benzo(k)fluoranthene	17 U	34	17	16	ug/kg	
218-01-9	Chrysene	17 U	34	17	11	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	17 U	34	17	15	ug/kg	
132-64-9	Dibenzofuran	17 U	69	17	14	ug/kg	
206-44-0	Fluoranthene	17 U	34	17	15	ug/kg	
86-73-7	Fluorene	34 U	34	34	16	ug/kg	
118-74-1	Hexachlorobenzene	17 U	69	17	8.7	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	17 U	34	17	16	ug/kg	
91-20-3	Naphthalene	17 U	34	17	9.7	ug/kg	
85-01-8	Phenanthrene	17 U	34	17	12	ug/kg	
129-00-0	Pyrene	17 U	34	17	11	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	72%		23-115%
4165-62-2	Phenol-d5	67%		27-114%
118-79-6	2,4,6-Tribromophenol	77%		19-152%
4165-60-0	Nitrobenzene-d5	73%		26-134%
321-60-8	2-Fluorobiphenyl	71%		39-124%
1718-51-0	Terphenyl-d14	94%		36-134%

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: NWIRP-S1-WC-CF-024		Date Sampled: 03/21/19
Lab Sample ID: JC84953-1		Date Received: 03/22/19
Matrix: SO - Soil		Percent Solids: 95.1
Method: SW846 8151A SW846 3546		
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G122297.D	1	03/25/19 16:11	VDT	03/23/19 11:42	OP19325	G3G4270
Run #2							

	Initial Weight	Final Volume
Run #1	15.5 g	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
93-72-1	2,4,5-TP (Silvex)	3.0 U	3.3	3.0	2.8	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	67%		10-159%
19719-28-9	2,4-DCAA	64%		10-159%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: NWIRP-S1-WC-CF-024	
Lab Sample ID: JC84953-1	Date Sampled: 03/21/19
Matrix: SO - Soil	Date Received: 03/22/19
Method: SW846 8081B SW846 3546	Percent Solids: 95.1
Project: Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G958058.D	1	03/26/19 12:10	MH	03/26/19 05:30	OP19346	G4G2709
Run #2							

	Initial Weight	Final Volume
Run #1	15.1 g	10.0 ml
Run #2		

Pesticides, Soil Cleanup Objectives

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
309-00-2	Aldrin	0.57 U	0.70	0.57	0.57	ug/kg	
319-84-6	alpha-BHC	0.57 U	0.70	0.57	0.57	ug/kg	
319-85-7	beta-BHC	0.63 U	0.70	0.63	0.63	ug/kg	
319-86-8	delta-BHC	0.67 U	0.70	0.67	0.67	ug/kg	
58-89-9	gamma-BHC (Lindane)	0.51 U	0.70	0.51	0.51	ug/kg	
5103-71-9	alpha-Chlordane ^a	0.59	0.70	0.56	0.56	ug/kg	J
60-57-1	Dieldrin	0.52 U	0.70	0.52	0.48	ug/kg	
72-54-8	4,4'-DDD	0.64 U	0.70	0.64	0.64	ug/kg	
72-55-9	4,4'-DDE	0.61 U	0.70	0.61	0.61	ug/kg	
50-29-3	4,4'-DDT	0.62 U	0.70	0.62	0.62	ug/kg	
72-20-8	Endrin	0.54 U	0.70	0.54	0.54	ug/kg	
1031-07-8	Endosulfan sulfate	0.54 U	0.70	0.54	0.54	ug/kg	
959-98-8	Endosulfan-I	0.52 U	0.70	0.52	0.40	ug/kg	
33213-65-9	Endosulfan-II	0.52 U	0.70	0.52	0.43	ug/kg	
76-44-8	Heptachlor	0.60 U	0.70	0.60	0.60	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	63%		25-135%
877-09-8	Tetrachloro-m-xylene	70%		25-135%
2051-24-3	Decachlorobiphenyl	68%		10-156%
2051-24-3	Decachlorobiphenyl	64%		10-156%

(a) More than 40 % RPD for detected concentrations between the two GC columns.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	NWIRP-S1-WC-CF-024		
Lab Sample ID:	JC84953-1	Date Sampled:	03/21/19
Matrix:	SO - Soil	Date Received:	03/22/19
Method:	SW846 8082A SW846 3546	Percent Solids:	95.1
Project:	Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2433187.D	1	03/26/19 21:31	RK	03/26/19 05:30	OP19345	GXX6640
Run #2							

	Initial Weight	Final Volume
Run #1	15.1 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
12674-11-2	Aroclor 1016	17 U	35	17	14	ug/kg	
11104-28-2	Aroclor 1221	17 U	35	17	14	ug/kg	
11141-16-5	Aroclor 1232	17 U	35	17	9.3	ug/kg	
53469-21-9	Aroclor 1242	17 U	35	17	5.5	ug/kg	
12672-29-6	Aroclor 1248	28 U	35	28	20	ug/kg	
11097-69-1	Aroclor 1254	17 U	35	17	8.6	ug/kg	
11096-82-5	Aroclor 1260	17 U	35	17	11	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	88%		31-146%
877-09-8	Tetrachloro-m-xylene	86%		31-146%
2051-24-3	Decachlorobiphenyl	90%		17-164%
2051-24-3	Decachlorobiphenyl	90%		17-164%

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	NWIRP-S1-WC-CF-024		
Lab Sample ID:	JC84953-1	Date Sampled:	03/21/19
Matrix:	SO - Soil	Date Received:	03/22/19
		Percent Solids:	95.1
Project:	Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage		

Metals Analysis

Analyte	Result	LOQ	LOD	DL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	1.5 J	2.1	0.52	0.29	mg/kg	1	03/27/19	03/28/19	ND	SW846 6010D ² SW846 3050B ³
Barium	8.1 J	21	10	2.0	mg/kg	1	03/27/19	03/28/19	ND	SW846 6010D ² SW846 3050B ³
Beryllium	0.13 J	0.21	0.10	0.082	mg/kg	1	03/27/19	03/28/19	ND	SW846 6010D ² SW846 3050B ³
Cadmium	0.21 U	0.52	0.21	0.072	mg/kg	1	03/27/19	03/28/19	ND	SW846 6010D ² SW846 3050B ³
Chromium	5.4	1.0	0.52	0.38	mg/kg	1	03/27/19	03/28/19	ND	SW846 6010D ² SW846 3050B ³
Copper	2.5 J	2.6	1.0	0.87	mg/kg	1	03/27/19	03/28/19	ND	SW846 6010D ² SW846 3050B ³
Lead	3.4	2.1	0.52	0.42	mg/kg	1	03/27/19	03/28/19	ND	SW846 6010D ² SW846 3050B ³
Manganese	50.7	1.5	1.0	0.42	mg/kg	1	03/27/19	03/28/19	ND	SW846 6010D ² SW846 3050B ³
Mercury	0.024 U	0.032	0.024	0.014	mg/kg	1	03/27/19	03/28/19	LL	SW846 7471B ¹ SW846 7471B ⁴
Nickel	2.0 J	4.1	0.41	0.36	mg/kg	1	03/27/19	03/28/19	ND	SW846 6010D ² SW846 3050B ³
Selenium	0.82 U	2.1	0.82	0.67	mg/kg	1	03/27/19	03/28/19	ND	SW846 6010D ² SW846 3050B ³
Silver	0.41 U	0.52	0.41	0.18	mg/kg	1	03/27/19	03/28/19	ND	SW846 6010D ² SW846 3050B ³
Zinc	5.6	5.2	4.1	2.4	mg/kg	1	03/27/19	03/28/19	ND	SW846 6010D ² SW846 3050B ³

(1) Instrument QC Batch: MA46370

(2) Instrument QC Batch: MA46381

(3) Prep QC Batch: MP13517

(4) Prep QC Batch: MP13597

LOQ = Limit of Quantitation DL = Detection Limit U = Indicates a result < LOD
 LOD = Limit of Detection B = Analyte found in associated blank J = Indicates a result > = DL (MDL) but < LOQ

Report of Analysis

Client Sample ID:	NWIRP-S1-WC-CF-024		
Lab Sample ID:	JC84953-1	Date Sampled:	03/21/19
Matrix:	SO - Soil	Date Received:	03/22/19
		Percent Solids:	95.1
Project:	Site 1-Fmr Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage		

General Chemistry

Analyte	Result	LOQ	LOD	DL	Units	DF	Analyzed	By Method
Chromium, Hexavalent	0.63	0.42	0.37	0.33	mg/kg	1	04/10/19 17:14	RI SW846 3060A/7196A
Chromium, Trivalent ^a	4.8	1.4	0.89	0.71	mg/kg	1	04/10/19 17:14	RI SW846 6010/7196A M
Cyanide	0.19 U	0.25	0.19	0.13	mg/kg	1	03/29/19 13:27	KI SW846 9012B/LACHAT
Redox Potential Vs H2	329				mv	1	04/04/19 19:48	EB ASTM D1498-76M
Solids, Percent	95.1				%	1	03/25/19 16:00	BG SM2540 G 18TH ED MOD
pH	7.68				su	1	04/04/19 19:48	EB SW846 9045D

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

LOQ = Limit of Quantitation DL = Detection Limit U = Indicates a result < LOD
 LOD = Limit of Detection B = Analyte found in associated blank J = Indicates a result > = DL (MDL) but < LOQ

CHAIN-OF-CUSTODY RECORD

SO

KDI-03619-104

JC 84953

COC Number: 501164-20190321
 Subcontract Services Agreement: TBD



APTIM - 150 Boush Street, Suite 701, Norfolk, VA 23510 (757) 640-6200

SGS Accutest -New Jersey		2235 US-130, Dayton, NJ 08810 Phone: (732) 329-0200		Analysis Desired															
Site 1 - Former Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage, New York		Fill Material Samples										SVOC SW-846 8270D	Total PCBs SW-846 8002A	Pesticides SW-846 8081B	Herbicides 8151A	Metals - ICP SW-846 6010C/7471A	Cyanide SW-846 9012B	Cr6 and Cr3	
F8147	501164	Natasha Kelley Sullivan (410)529-7598																	
NAVY		Monica L. Smeal E.I.T.																	
Sample No.	Sample Description	Date	Time	Lab	Size	Sample Container	Quantity of Container	SVOC SW-846 8270D	Total PCBs SW-846 8002A	Pesticides SW-846 8081B	Herbicides 8151A	Metals - ICP SW-846 6010C/7471A	Cyanide SW-846 9012B	Cr6 and Cr3					
1	NWIRP-S1-WC-CF-024	03/21/19	1125		X	Backfill Sand	2 x 8 oz glass jar, none	X	X	X	X	X	X	X					

Initial Assessment JBK
 Label Verification _____

Sean M

(D16)

**** See attached list for SPECIFIC COMPOUNDS AND REQUIRED METALS (please run most appropriate method to meet the action level requirements .**

Turnaround Time Required	Sampled By	COMMENTS	Laboratory Report No.
<input checked="" type="checkbox"/> 14 Day TAT	McCutcheon, Sean, APTIM		

Transfers Relinquished By	Date	Time	Transfers Accepted By	Date	Time	Report Format:
Sample's Signature	Date	Time	Laboratory Sample Custody Sig	Date	Time	Full Report
<i>Sean M</i>	3/21/19	1500	<i>JBK</i>			EDD Excel+NIRIS
<i>Fed Ex</i>	3/22/19	1040	<i>[Signature]</i>			Fax results to Natasha Sullivan (410) 529-7599

3.1°CIP

JC84953: Chain of Custody

Page 1 of 2

SGS Sample Receipt Summary

Job Number: JC84953

Client: NOREAS-CB&I JV (NCBI)

Project: BACKFILL - BETHPAGE, NY

Date / Time Received: 3/22/2019 10:40:00 AM

Delivery Method: _____

Airbill #'s: _____

Cooler Temps (Raw Measured) °C: Cooler 1: (3.1);

Cooler Temps (Corrected) °C: Cooler 1: (2.1);

Cooler Security

Y or N

Y or N

- | | | | | | |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Cooler Temperature

Y or N

- | | | |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Cooler temp verification: | IR Gun | |
| 3. Cooler media: | Ice (Bag) | |
| 4. No. Coolers: | 1 | |

Quality Control Preservation

Y or N

N/A

- | | | | |
|---------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Trip Blank present / cooler: | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Trip Blank listed on COC: | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Samples preserved properly: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. VOCs headspace free: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Sample Integrity - Documentation

Y or N

- | | | |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Sample Integrity - Condition

Y or N

- | | | |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample: | Intact | |

Sample Integrity - Instructions

Y or N

N/A

- | | | | |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 2. Bottles received for unspecified tests | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 3. Sufficient volume recvd for analysis: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. Compositing instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Test Strip Lot #s:

pH 1-12: 206717

pH 12+: 208717

Other: (Specify) _____

Comments

SM089-03
Rev. Date 12/7/17

JC84953: Chain of Custody

Page 2 of 2

LabLink Analytical Data Report
Site 1 – Former Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage
APTIM Project Number: 501164, F6147

Sample	Parameter	Cas No.	Method	Result	Qual	Units	LOQ	LOD	DF	Client ID	Collected	Time
FA62603-1	Solids, Percent		SM19 2540G	96.3		%			1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	Perfluorobutanoic acid	375-22-4	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	Perfluoropentanoic acid	2706-90-3	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	Perfluorohexanoic acid	307-24-4	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	Perfluoroheptanoic acid	375-85-9	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	Perfluorooctanoic acid	335-67-1	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	Perfluorononanoic acid	375-95-1	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	Perfluorodecanoic acid	335-76-2	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	Perfluoroundecanoic acid	2058-94-8	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	Perfluorododecanoic acid	307-55-1	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	Perfluorotridecanoic acid	72629-94-8	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	Perfluorotetradecanoic acid	376-06-7	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	Perfluorobutanesulfonic acid	375-73-5	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	Perfluoropentanesulfonic acid	2706-91-4	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	Perfluorohexanesulfonic acid	355-46-4	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	Perfluoroheptanesulfonic acid	375-92-8	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	Perfluorooctanesulfonic acid	1763-23-1	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	Perfluorononanesulfonic acid	68259-12-1	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	Perfluorodecanesulfonic acid	335-77-3	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	PFOSA	754-91-6	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	MeFOSAA	2355-31-9	EPA 537M QSM5.1 B-15	1.0	U	ug/kg	2.6	1.0	1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	EiFOSAA	2991-50-6	EPA 537M QSM5.1 B-15	1.0	U	ug/kg	2.6	1.0	1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	4:2 Fluorotelomer sulfonate	757124-72-4	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	6:2 Fluorotelomer sulfonate	27619-97-2	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	8:2 Fluorotelomer sulfonate	39108-34-4	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	13C4-PFBA		EPA 537M QSM5.1 B-15	72.0	%				1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	13C5-PFPeA		EPA 537M QSM5.1 B-15	72.0	%				1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	13C5-PFHxA		EPA 537M QSM5.1 B-15	72.0	%				1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	13C4-PFHpA		EPA 537M QSM5.1 B-15	75.0	%				1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	13C8-PFOA		EPA 537M QSM5.1 B-15	77.0	%				1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	13C9-PFNA		EPA 537M QSM5.1 B-15	77.0	%				1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	13C6-PFDA		EPA 537M QSM5.1 B-15	79.0	%				1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	13C7-PFUnDA		EPA 537M QSM5.1 B-15	95.0	%				1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	13C2-PFDoDA		EPA 537M QSM5.1 B-15	85.0	%				1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	13C2-PFTeDA		EPA 537M QSM5.1 B-15	78.0	%				1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	13C3-PFBS		EPA 537M QSM5.1 B-15	73.0	%				1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	13C3-PFHxS		EPA 537M QSM5.1 B-15	74.0	%				1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	13C8-PFOS		EPA 537M QSM5.1 B-15	76.0	%				1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	13C8-FOSA		EPA 537M QSM5.1 B-15	78.0	%				1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	d3-MeFOSAA		EPA 537M QSM5.1 B-15	78.0	%				1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	13C2-4:2FTS		EPA 537M QSM5.1 B-15	68.0	%				1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	13C2-6:2FTS		EPA 537M QSM5.1 B-15	73.0	%				1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-1	13C2-8:2FTS		EPA 537M QSM5.1 B-15	74.0	%				1	NWIRP-S1-WC-CF-025	3/21/2019	10:50
FA62603-2	Solids, Percent		SM19 2540G	95.7		%			1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	Perfluorobutanoic acid	375-22-4	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	Perfluoropentanoic acid	2706-90-3	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	Perfluorohexanoic acid	307-24-4	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	Perfluoroheptanoic acid	375-85-9	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	Perfluorooctanoic acid	335-67-1	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	Perfluorononanoic acid	375-95-1	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	Perfluorodecanoic acid	335-76-2	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	Perfluoroundecanoic acid	2058-94-8	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	Perfluorododecanoic acid	307-55-1	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	Perfluorotridecanoic acid	72629-94-8	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	Perfluorotetradecanoic acid	376-06-7	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	Perfluorobutanesulfonic acid	375-73-5	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	Perfluoropentanesulfonic acid	2706-91-4	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	Perfluorohexanesulfonic acid	355-46-4	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	Perfluoroheptanesulfonic acid	375-92-8	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	Perfluorooctanesulfonic acid	1763-23-1	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	Perfluorononanesulfonic acid	68259-12-1	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	Perfluorodecanesulfonic acid	335-77-3	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	PFOSA	754-91-6	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	MeFOSAA	2355-31-9	EPA 537M QSM5.1 B-15	1.0	U	ug/kg	2.6	1.0	1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	EiFOSAA	2991-50-6	EPA 537M QSM5.1 B-15	1.0	U	ug/kg	2.6	1.0	1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	4:2 Fluorotelomer sulfonate	757124-72-4	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	6:2 Fluorotelomer sulfonate	27619-97-2	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	8:2 Fluorotelomer sulfonate	39108-34-4	EPA 537M QSM5.1 B-15	0.52	U	ug/kg	1.0	0.52	1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	13C4-PFBA		EPA 537M QSM5.1 B-15	68.0	%				1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	13C5-PFPeA		EPA 537M QSM5.1 B-15	68.0	%				1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	13C5-PFHxA		EPA 537M QSM5.1 B-15	68.0	%				1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	13C4-PFHpA		EPA 537M QSM5.1 B-15	70.0	%				1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	13C8-PFOA		EPA 537M QSM5.1 B-15	73.0	%				1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	13C9-PFNA		EPA 537M QSM5.1 B-15	72.0	%				1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	13C6-PFDA		EPA 537M QSM5.1 B-15	74.0	%				1	NWIRP-S1-WC-CF-026	3/21/2019	10:55

LabLink Analytical Data Report

Site 1 – Former Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage

APTIM Project Number: 501164, F6147

Sample	Parameter	Cas No.	Method	Result	Qual	Units	LOQ	LOD	DF	Client ID	Collected	Time
FA62603-2	13C7-PFUnDA		EPA 537M QSM5.1 B-15	89.0		%			1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	13C2-PFDoDA		EPA 537M QSM5.1 B-15	80.0		%			1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	13C2-PFTeDA		EPA 537M QSM5.1 B-15	72.0		%			1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	13C3-PFBS		EPA 537M QSM5.1 B-15	68.0		%			1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	13C3-PFHxS		EPA 537M QSM5.1 B-15	70.0		%			1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	13C8-PFOS		EPA 537M QSM5.1 B-15	72.0		%			1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	13C8-FOSA		EPA 537M QSM5.1 B-15	70.0		%			1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	d3-MeFOSAA		EPA 537M QSM5.1 B-15	75.0		%			1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	13C2-4:2FTS		EPA 537M QSM5.1 B-15	64.0		%			1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	13C2-6:2FTS		EPA 537M QSM5.1 B-15	69.0		%			1	NWIRP-S1-WC-CF-026	3/21/2019	10:55
FA62603-2	13C2-8:2FTS		EPA 537M QSM5.1 B-15	69.0		%			1	NWIRP-S1-WC-CF-026	3/21/2019	10:55

Laboratory Qualifiers:

U = Not detected; the analyte was analyzed for, but not detected above the associated detection limit.

% = percent

µg/kg = microgram/kilogram = ppb

LOD = limit of detection

LOQ = limit of quantitation

(s) = surrogates

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

NOREAS, Inc.

ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

APTIM 007 RAC WO #12

SGS Job Number: FA62603

Sampling Date: 03/21/19

Report to:

APTIM

natasha.sullivan@aptim.com

ATTN: Natasha Sullivan

Total number of pages in report: **54**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

A handwritten signature in black ink that reads "Caitlin Brice".

Caitlin Brice, M.S.
General Manager

Client Service contact: Heather Wandrey 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), IL(200063), NC(573), NJ(FL002), NY(12022), SC(96038001)
DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177),
AK, AR, IA, KY, MA, MS, ND, NH, NV, OK, OR, UT, WA, WV

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Test results relate only to samples analyzed.

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Sample Summary

NOREAS, Inc.

Job No: FA62603

ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY
Project No: APTIM 007 RAC WO #12

Sample Number	Collected		Matrix			Client Sample ID
	Date	Time By	Received	Code	Type	
FA62603-1	03/21/19	10:50 SM	03/22/19	SO	Soil	NWIRP-S1-WC-CF-025
FA62603-2	03/21/19	10:55 SM	03/22/19	SO	Soil	NWIRP-S1-WC-CF-026

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: NOREAS,Inc.

Job No: FA62603

Site: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage,NY

Report Date 3/28/2019 7:31:12 PM

2 Samples were collected on 03/21/2019 and were received at SGS North America Inc - Orlando on 03/22/2019 properly preserved, at 2.3 Deg. C and intact. These Samples received an SGS Orlando job number of FA62603. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section. Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Semi-volatiles By Method EPA 537M QSM5.1 B-15

Matrix: SO

Batch ID: OP74299

All samples were extracted within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

Sample(s) FA62520-3MS, FA62520-3MSD were used as the QC samples indicated.

All method blanks for this batch meet method specific criteria.

General Chemistry By Method SM19 2540G

Matrix: SO

Batch ID: GN81449

Sample(s) FA62580-5DUP were used as the QC samples for Solids, Percent.

SGS Orlando certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS Orlando and as stated on the COC. SGS Orlando certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Orlando Quality Manual except as noted above. This report is to be used in its entirety. SGS Orlando is not responsible for any assumptions of data quality if partial data packages are used.

Narrative prepared by:

Ariel Hartney, Client Services (*Signature on File*)

Summary of Hits

Job Number: FA62603
Account: NOREAS, Inc.
Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY
Collected: 03/21/19



Lab Sample ID	Client Sample ID	Result/ Analyte	LOQ	LOD	Units	Method
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FA62603-1 **NWIRP-S1-WC-CF-025**

No hits reported in this sample.

FA62603-2 **NWIRP-S1-WC-CF-026**

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: NWIRP-S1-WC-CF-025	
Lab Sample ID: FA62603-1	Date Sampled: 03/21/19
Matrix: SO - Soil	Date Received: 03/22/19
Method: EPA 537M QSM5.1 B-15 IN HOUSE	Percent Solids: 96.3
Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage,NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q28184.D	1	03/26/19 21:03	NG	03/25/19 11:00	OP74299	S2Q449
Run #2							

	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

PFAS List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
2706-90-3	Perfluoropentanoic acid	0.52 U	1.0	0.52	0.21	ug/kg	
307-24-4	Perfluorohexanoic acid	0.52 U	1.0	0.52	0.21	ug/kg	
375-85-9	Perfluoroheptanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
335-67-1	Perfluorooctanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
375-95-1	Perfluorononanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
335-76-2	Perfluorodecanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
2058-94-8	Perfluoroundecanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
307-55-1	Perfluorododecanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
72629-94-8	Perfluorotridecanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
376-06-7	Perfluorotetradecanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
PERFLUOROALKYLSULFONATES							
375-73-5	Perfluorobutanesulfonic acid	0.52 U	1.0	0.52	0.26	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.52 U	1.0	0.52	0.26	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	0.52 U	1.0	0.52	0.26	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.52 U	1.0	0.52	0.26	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.52 U	1.0	0.52	0.26	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	0.52 U	1.0	0.52	0.26	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	0.52 U	1.0	0.52	0.26	ug/kg	
PERFLUOROOCCTANESULFONAMIDES							
754-91-6	PFOSA	0.52 U	1.0	0.52	0.26	ug/kg	
PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	1.0 U	2.6	1.0	0.52	ug/kg	
2991-50-6	EtFOSAA	1.0 U	2.6	1.0	0.52	ug/kg	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.52 U	1.0	0.52	0.26	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.52 U	1.0	0.52	0.26	ug/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID:	NWIRP-S1-WC-CF-025		
Lab Sample ID:	FA62603-1	Date Sampled:	03/21/19
Matrix:	SO - Soil	Date Received:	03/22/19
Method:	EPA 537M QSM5.1 B-15 IN HOUSE	Percent Solids:	96.3
Project:	ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage,NY		

PFAS List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.52 U	1.0	0.52	0.26	ug/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	72%		50-150%
	13C5-PFPeA	72%		50-150%
	13C5-PFHxA	72%		50-150%
	13C4-PFHpA	75%		50-150%
	13C8-PFOA	77%		50-150%
	13C9-PFNA	77%		50-150%
	13C6-PFDA	79%		50-150%
	13C7-PFUnDA	95%		50-150%
	13C2-PFDoDA	85%		50-150%
	13C2-PFTeDA	78%		50-150%
	13C3-PFBS	73%		50-150%
	13C3-PFHxS	74%		50-150%
	13C8-PFOS	76%		50-150%
	13C8-FOSA	78%		50-150%
	d3-MeFOSAA	78%		50-150%
	13C2-4:2FTS	68%		50-150%
	13C2-6:2FTS	73%		50-150%
	13C2-8:2FTS	74%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: NWIRP-S1-WC-CF-026	
Lab Sample ID: FA62603-2	Date Sampled: 03/21/19
Matrix: SO - Soil	Date Received: 03/22/19
Method: EPA 537M QSM5.1 B-15 IN HOUSE	Percent Solids: 95.7
Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage,NY	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q28185.D	1	03/26/19 21:19	NG	03/25/19 11:00	OP74299	S2Q449
Run #2							

	Initial Weight	Final Volume
Run #1	2.02 g	1.0 ml
Run #2		

PFAS List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
2706-90-3	Perfluoropentanoic acid	0.52 U	1.0	0.52	0.21	ug/kg	
307-24-4	Perfluorohexanoic acid	0.52 U	1.0	0.52	0.21	ug/kg	
375-85-9	Perfluoroheptanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
335-67-1	Perfluorooctanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
375-95-1	Perfluorononanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
335-76-2	Perfluorodecanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
2058-94-8	Perfluoroundecanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
307-55-1	Perfluorododecanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
72629-94-8	Perfluorotridecanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
376-06-7	Perfluorotetradecanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
PERFLUOROALKYLSULFONATES							
375-73-5	Perfluorobutanesulfonic acid	0.52 U	1.0	0.52	0.26	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.52 U	1.0	0.52	0.26	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	0.52 U	1.0	0.52	0.26	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.52 U	1.0	0.52	0.26	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.52 U	1.0	0.52	0.26	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	0.52 U	1.0	0.52	0.26	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	0.52 U	1.0	0.52	0.26	ug/kg	
PERFLUOROOCCTANESULFONAMIDES							
754-91-6	PFOSA	0.52 U	1.0	0.52	0.26	ug/kg	
PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	1.0 U	2.6	1.0	0.52	ug/kg	
2991-50-6	EtFOSAA	1.0 U	2.6	1.0	0.52	ug/kg	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.52 U	1.0	0.52	0.26	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.52 U	1.0	0.52	0.26	ug/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.2
4

Report of Analysis

Client Sample ID:	NWIRP-S1-WC-CF-026		
Lab Sample ID:	FA62603-2	Date Sampled:	03/21/19
Matrix:	SO - Soil	Date Received:	03/22/19
Method:	EPA 537M QSM5.1 B-15 IN HOUSE	Percent Solids:	95.7
Project:	ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage,NY		

PFAS List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.52 U	1.0	0.52	0.26	ug/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	68%		50-150%
	13C5-PFPeA	68%		50-150%
	13C5-PFHxA	68%		50-150%
	13C4-PFHpA	70%		50-150%
	13C8-PFOA	73%		50-150%
	13C9-PFNA	72%		50-150%
	13C6-PFDA	74%		50-150%
	13C7-PFUnDA	89%		50-150%
	13C2-PFDoDA	80%		50-150%
	13C2-PFTeDA	72%		50-150%
	13C3-PFBS	68%		50-150%
	13C3-PFHxS	70%		50-150%
	13C8-PFOS	72%		50-150%
	13C8-FOSA	70%		50-150%
	d3-MeFOSAA	75%		50-150%
	13C2-4:2FTS	64%		50-150%
	13C2-6:2FTS	69%		50-150%
	13C2-8:2FTS	69%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5 Limits

CHAIN-OF-CUSTODY RECORD **FA62603**

COC Number: 501164-20190321
 Subcontract Services Agreement 1 TBD



APTIM - 150 Boush Street, Suite 701, Norfolk, VA 23510 (757) 640-6200

Lab Destination: SGS Accutest - Orlando		Lab Receiving Address: 4405 Vineland Rd. Suite C-15 Orlando, FL, 32811 (407) 425-6700		Analysis Desired									
Project Name: Site 1 - Former Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage, New York		Sample Location: Fill Material Samples										PFOAs LCQSM6SYDODFL	
T.O. Project Number: F6147 501164	APTIM Contact: Natasha Kelley Sullivan	APTIM Contact Number: (410)529-7598											
Client Ref: NAVY		Deputy Project Manager: Monica L. Smeal E.I.T.											
Item No.	Sample Number	Date	Time	Matrix	Soil	Sample Description	Number of Containers						
1	NWIRP-S1-WC-CF-025	03/21/19	1050		X	Backfill Sand	1 x 4 oz Poly WM, None	X					
2	NWIRP-S1-WC-CF-026	03/21/19	1055		X	Backfill Sand	1 x 4 oz Poly WM, None	X					

Turnaround Time Required: 14 Day TAT	Sampled By: McCutcheon, Sean, APTIM	COMMENTS:	Laboratory Report No.:
--	--	-----------	------------------------

Transfer Number	Transfers Requisitioned By	Date	Time	Transfers Accepted By	Date	Time	Report Format:
1	Sampler's Signature			Laboratory Sample Custody S			Full Report
2	<i>[Signature]</i>	3/21/19	1500	Fed Ex			Deliverables: EDD Excel+NIRIS
3	Fed Ex			<i>[Signature]</i>	03/22/19	915	Fax results to Natasha Sullivan (410) 529-7599
4							

2.3

5.1
5



SGS Sample Receipt Summary

Job Number: FA62603

Client: APTIM

Project: SITE 1

Date / Time Received: 3/22/2019 9:15:00 AM

Delivery Method: FED EX

Airbill #'s: 1001891723160003281100786174339924

Therm ID: IR 1; Therm CF: -0.2; # of Coolers: 1

Cooler Temps (Raw Measured) °C: Cooler 1: (2.5);

Cooler Temps (Corrected) °C: Cooler 1: (2.3);

<u>Cooler Information</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Custody Seals Present	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Custody Seals Intact	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Temp criteria achieved	<input checked="" type="checkbox"/>		<input type="checkbox"/>
4. Cooler temp verification	<u>IR Gun</u>		
5. Cooler media	<u>Ice (Bag)</u>		

<u>Sample Information</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Sample labels present on bottles	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Samples preserved properly	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
3. Sufficient volume/containers recvd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Condition of sample	<u>Intact</u>			
5. Sample recvd within HT	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
6. Dates/Times/IDs on COC match Sample Label	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
7. VOCs have headspace	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
9. Compositing instructions clear	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
10. Voa Soil Kits/Jars received past 48hrs?	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. % Solids Jar received?	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
12. Residual Chlorine Present?	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

<u>Trip Blank Information</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Trip Blank present / cooler	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Trip Blank listed on COC	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

<u>W</u>	<u>or</u>	<u>S</u>	<u>N/A</u>	
3. Type Of TB Received	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____
 Test Strip Lot #s: pH 0-3 230315
 Residual Chlorine Test Strip Lot #: _____

Number of 5035 Field Kits: _____
 pH 10-12 219813A

Number of Lab Filtered Metals: _____
 Other: (Specify) _____

Comments

SM001 Technician: SHAYLAP Date: 3/22/2019 9:15:00 AM Reviewer: _____ Date: _____
 Rev. Date 05/24/17



5.1
5

QC Evaluation: DOD QSM5 Limits

Job Number: FA62603

Account: NOREAS, Inc.

Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

Collected: 03/21/19

QC Sample ID	CAS#	Analyte	Sample Result Type	Result Type	Units	Limits
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No Exceptions found.

* Sample used for QC is not from job FA62603

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Injection Standard Area Summaries
- Isotope Dilution Standard Recovery Summaries
- Initial and Continuing Calibration Summaries

Instrument Blank

Job Number: FA62603
Account: NOREASCA NOREAS, Inc.
Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q449-IBLK	2Q28169.D	1	03/26/19	NG	n/a	n/a	S2Q449

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.1 B-15

FA62603-1, FA62603-2

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.25	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	1.0	0.20	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	1.0	0.20	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	1.0	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	1.0	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	1.0	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	1.0	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	1.0	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	1.0	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	1.0	0.25	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	1.0	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	1.0	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	1.0	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	1.0	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	1.0	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	1.0	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	1.0	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	1.0	0.25	ug/kg	
754-91-6	PFOSA	ND	1.0	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	2.5	0.50	ug/kg	
2991-50-6	EtFOSAA	ND	2.5	0.50	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	93% 50-150%
	13C5-PFPeA	94% 50-150%
	13C5-PFHxA	94% 50-150%
	13C4-PFHpA	95% 50-150%
	13C8-PFOA	98% 50-150%
	13C9-PFNA	96% 50-150%
	13C6-PFDA	99% 50-150%
	13C7-PFUnDA	97% 50-150%

Instrument Blank

Job Number: FA62603

Account: NOREASCA NOREAS, Inc.

Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q449-IBLK	2Q28169.D	1	03/26/19	NG	n/a	n/a	S2Q449

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.1 B-15

FA62603-1, FA62603-2

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	95% 50-150%
	13C2-PFTeDA	93% 50-150%
	13C3-PFBS	93% 50-150%
	13C3-PFHxS	95% 50-150%
	13C8-PFOS	97% 50-150%
	13C8-FOSA	99% 50-150%
	d3-MeFOSAA	96% 50-150%
	13C2-4:2FTS	88% 50-150%
	13C2-6:2FTS	92% 50-150%
	13C2-8:2FTS	90% 50-150%

6.1.1
6

Method Blank Summary

Job Number: FA62603
Account: NOREASCA NOREAS, Inc.
Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP74299-MB	2Q28183.D	1	03/26/19	NG	03/25/19	OP74299	S2Q449

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.1 B-15

FA62603-1, FA62603-2

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.25	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	1.0	0.20	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	1.0	0.20	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	1.0	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	1.0	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	1.0	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	1.0	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	1.0	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	1.0	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	1.0	0.25	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	1.0	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	1.0	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	1.0	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	1.0	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	1.0	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	1.0	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	1.0	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	1.0	0.25	ug/kg	
754-91-6	PFOSA	ND	1.0	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	2.5	0.50	ug/kg	
2991-50-6	EtFOSAA	ND	2.5	0.50	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits	
	13C4-PFBA	81%	50-150%
	13C5-PFPeA	81%	50-150%
	13C5-PFHxA	81%	50-150%
	13C4-PFHpA	85%	50-150%
	13C8-PFOA	89%	50-150%
	13C9-PFNA	85%	50-150%
	13C6-PFDA	87%	50-150%
	13C7-PFUnDA	104%	50-150%

Method Blank Summary

Job Number: FA62603
Account: NOREASCA NOREAS, Inc.
Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP74299-MB	2Q28183.D	1	03/26/19	NG	03/25/19	OP74299	S2Q449

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.1 B-15

FA62603-1, FA62603-2

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	95% 50-150%
	13C2-PFTeDA	80% 50-150%
	13C3-PFBS	81% 50-150%
	13C3-PFHxS	84% 50-150%
	13C8-PFOS	83% 50-150%
	13C8-FOSA	88% 50-150%
	d3-MeFOSAA	89% 50-150%
	13C2-4:2FTS	77% 50-150%
	13C2-6:2FTS	88% 50-150%
	13C2-8:2FTS	81% 50-150%

Blank Spike Summary

Job Number: FA62603
Account: NOREASCA NOREAS, Inc.
Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP74299-BS	2Q28182.D	1	03/26/19	NG	03/25/19	OP74299	S2Q449

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.1 B-15

FA62603-1, FA62603-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
375-22-4	Perfluorobutanoic acid	10	9.83	98	60-134
2706-90-3	Perfluoropentanoic acid	10	9.37	94	62-134
307-24-4	Perfluorohexanoic acid	10	9.35	94	63-130
375-85-9	Perfluoroheptanoic acid	10	9.54	95	63-122
335-67-1	Perfluorooctanoic acid	10	9.42	94	71-128
375-95-1	Perfluorononanoic acid	10	9.61	96	66-124
335-76-2	Perfluorodecanoic acid	10	9.43	94	68-127
2058-94-8	Perfluoroundecanoic acid	10	9.40	94	61-137
307-55-1	Perfluorododecanoic acid	10	9.47	95	71-126
72629-94-8	Perfluorotridecanoic acid	10	9.90	99	60-137
376-06-7	Perfluorotetradecanoic acid	10	9.60	96	61-131
375-73-5	Perfluorobutanesulfonic acid	10	9.44	94	70-135
2706-91-4	Perfluoropentanesulfonic acid	10	9.55	96	70-130
355-46-4	Perfluorohexanesulfonic acid	10	9.24	92	72-129
375-92-8	Perfluoroheptanesulfonic acid	10	9.80	98	62-129
1763-23-1	Perfluorooctanesulfonic acid	10	8.94	89	69-125
68259-12-1	Perfluorononanesulfonic acid	10	9.36	94	70-130
335-77-3	Perfluorodecanesulfonic acid	10	9.24	92	63-141
754-91-6	PFOSA	10	9.61	96	65-140
2355-31-9	MeFOSAA	10	10.5	105	71-124
2991-50-6	EtFOSAA	10	9.80	98	63-129
757124-72-44:2	Fluorotelomer sulfonate	10	9.49	95	70-130
27619-97-2	6:2 Fluorotelomer sulfonate	10	9.42	94	76-131
39108-34-4	8:2 Fluorotelomer sulfonate	10	9.19	92	60-138

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	70%	50-150%
	13C5-PFPeA	71%	50-150%
	13C5-PFHxA	71%	50-150%
	13C4-PFHpA	72%	50-150%
	13C8-PFOA	73%	50-150%
	13C9-PFNA	73%	50-150%
	13C6-PFDA	73%	50-150%
	13C7-PFUnDA	86%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA62603
Account: NOREASCA NOREAS, Inc.
Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP74299-BS	2Q28182.D	1	03/26/19	NG	03/25/19	OP74299	S2Q449

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.1 B-15

FA62603-1, FA62603-2

CAS No.	ID Standard Recoveries	BSP	Limits
	13C2-PFDoDA	80%	50-150%
	13C2-PFTeDA	69%	50-150%
	13C3-PFBS	71%	50-150%
	13C3-PFHxS	73%	50-150%
	13C8-PFOS	73%	50-150%
	13C8-FOSA	75%	50-150%
	d3-MeFOSAA	75%	50-150%
	13C2-4:2FTS	70%	50-150%
	13C2-6:2FTS	72%	50-150%
	13C2-8:2FTS	75%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA62603
Account: NOREASCA NOREAS, Inc.
Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP74299-MS	2Q28193.D	1	03/26/19	NG	03/25/19	OP74299	S2Q449
OP74299-MSD	2Q28273.D	1	03/27/19	NG	03/25/19	OP74299	S2Q449
FA62520-3	2Q28192.D	1	03/26/19	NG	03/25/19	OP74299	S2Q449

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.1 B-15

FA62603-1, FA62603-2

CAS No.	Compound	FA62520-3 ug/kg	Spike Q ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
375-22-4	Perfluorobutanoic acid	1.2 U	11.7	11.1	94	11.6	10.2	88	8	60-134/30
2706-90-3	Perfluoropentanoic acid	1.2 U	11.7	11.6	99	11.6	10.2	88	13	62-134/30
307-24-4	Perfluorohexanoic acid	1.2 U	11.7	11.2	95	11.6	10.0	86	11	63-130/30
375-85-9	Perfluoroheptanoic acid	1.2 U	11.7	11.6	99	11.6	10.3	89	12	63-122/30
335-67-1	Perfluorooctanoic acid	1.2 U	11.7	11.3	96	11.6	10.2	88	10	71-128/30
375-95-1	Perfluorononanoic acid	1.2 U	11.7	11.6	99	11.6	10.3	89	12	66-124/30
335-76-2	Perfluorodecanoic acid	1.2 U	11.7	11.1	94	11.6	9.76	84	13	68-127/30
2058-94-8	Perfluoroundecanoic acid	1.2 U	11.7	11.0	94	11.6	9.92	85	10	61-137/30
307-55-1	Perfluorododecanoic acid	1.2 U	11.7	11.2	95	11.6	10.1	87	10	71-126/30
72629-94-8	Perfluorotridecanoic acid	1.2 U	11.7	12.0	102	11.6	11.0	95	9	60-137/30
376-06-7	Perfluorotetradecanoic acid	1.2 U	11.7	11.5	98	11.6	10.1	87	13	61-131/30
375-73-5	Perfluorobutanesulfonic acid	1.2 U	11.7	11.3	96	11.6	10.0	86	12	70-135/30
2706-91-4	Perfluoropentanesulfonic acid	1.2 U	11.7	11.3	96	11.6	10.2	88	10	70-130/30
355-46-4	Perfluorohexanesulfonic acid	1.2 U	11.7	10.9	93	11.6	9.98	86	9	72-129/30
375-92-8	Perfluoroheptanesulfonic acid	1.2 U	11.7	11.4	97	11.6	10.2	88	11	62-129/30
1763-23-1	Perfluorooctanesulfonic acid	1.2 U	11.7	10.8	92	11.6	9.55	82	12	69-125/30
68259-12-1	Perfluorononanesulfonic acid	1.2 U	11.7	11.1	94	11.6	9.76	84	13	70-130/30
335-77-3	Perfluorodecanesulfonic acid	1.2 U	11.7	11.2	95	11.6	9.97	86	12	63-141/30
754-91-6	PFOSA	1.2 U	11.7	11.4	97	11.6	10.1	87	12	65-140/30
2355-31-9	MeFOSAA	3.0 U	11.7	11.6	99	11.6	10.7	92	8	71-124/30
2991-50-6	EtFOSAA	3.0 U	11.7	11.8	100	11.6	10.5	90	12	63-129/30
757124-72-44:2	Fluorotelomer sulfonate	1.2 U	11.7	11.3	96	11.6	10.4	89	8	70-130/30
27619-97-2	6:2 Fluorotelomer sulfonate	1.2 U	11.7	11.1	94	11.6	10.1	87	9	76-131/30
39108-34-4	8:2 Fluorotelomer sulfonate	1.2 U	11.7	11.3	96	11.6	10.1	87	11	60-138/30

CAS No.	ID Standard Recoveries	MS	MSD	FA62520-3	Limits
	13C4-PFBA	78%	94%	74%	50-150%
	13C5-PFPeA	78%	93%	75%	50-150%
	13C5-PFHxA	78%	95%	75%	50-150%
	13C4-PFHpA	80%	96%	78%	50-150%
	13C8-PFOA	81%	97%	79%	50-150%
	13C9-PFNA	80%	97%	79%	50-150%
	13C6-PFDA	82%	104%	82%	50-150%
	13C7-PFUnDA	96%	121%	94%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA62603
Account: NOREASCA NOREAS, Inc.
Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP74299-MS	2Q28193.D	1	03/26/19	NG	03/25/19	OP74299	S2Q449
OP74299-MSD	2Q28273.D	1	03/27/19	NG	03/25/19	OP74299	S2Q449
FA62520-3	2Q28192.D	1	03/26/19	NG	03/25/19	OP74299	S2Q449

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.1 B-15

FA62603-1, FA62603-2

CAS No.	ID Standard Recoveries	MS	MSD	FA62520-3	Limits
13C2-PFDoDA		86%	106%	84%	50-150%
13C2-PFTeDA		71%	93%	68%	50-150%
13C3-PFBS		80%	95%	77%	50-150%
13C3-PFHxS		83%	98%	79%	50-150%
13C8-PFOS		82%	99%	81%	50-150%
13C8-FOSA		82%	98%	81%	50-150%
d3-MeFOSAA		83%	104%	81%	50-150%
13C2-4:2FTS		80%	94%	72%	50-150%
13C2-6:2FTS		83%	98%	75%	50-150%
13C2-8:2FTS		81%	99%	75%	50-150%

* = Outside of Control Limits.

Injection Standard Area Summary

Job Number: FA62603
Account: NOREASCA NOREAS, Inc.
Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

Check Std: S2Q449-CC449	Injection Date: 03/26/19
Lab File ID: 2Q28180.D	Injection Time: 20:00
Instrument ID: GCMS2Q	Method: EPA 537M QSM5.1 B-15

	IS 1 AREA	RT	IS 2 AREA	RT
Initial Cal ^a	390599	6.45	58145	7.05
Check Std ^b	403894	6.45	60605	7.05
Upper Limit ^c	585899	7.45	87218	8.05
Lower Limit ^d	195300	5.45	29073	6.05

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT
OP74299-BS	295551	6.45	46008	7.05
OP74299-MB	351196	6.45	50716	7.05
FA62603-1	320669	6.45	49255	7.05
FA62603-2	303206	6.45	47022	7.05
ZZZZZZ	382401	6.45	60050	7.05
ZZZZZZ	358293	6.43	55877	7.04
ZZZZZZ	276441	6.43	42266	7.04
ZZZZZZ	327705	6.43	51000	7.04

IS 1 = 13C2-PFOA
IS 2 = 13C4-PFOS

- (a) Initial Cal is: S2Q449-ICC449 2Q28166.D 03/26/19 16:17
- (b) Check Std Limit = -50 to + 50% of initial cal area.
- (c) Upper Limit = + 50% of initial standard area; Retention time + 1 minutes of check standard.
- (d) Lower Limit = -50% of initial standard area; Retention time -1 minutes of check standard.

Injection Standard Area Summary

Job Number: FA62603
Account: NOREASCA NOREAS, Inc.
Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

Check Std: S2Q449-CC449	Injection Date: 03/26/19
Lab File ID: 2Q28190.D	Injection Time: 22:38
Instrument ID: GCMS2Q	Method: EPA 537M QSM5.1 B-15

	IS 1 AREA	RT	IS 2 AREA	RT
Initial Cal ^a	390599	6.45	58145	7.05
Check Std ^b	309991	6.43	47724	7.04
Upper Limit ^c	585899	7.43	87218	8.04
Lower Limit ^d	195300	5.43	29073	6.04

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT
FA62520-3	323745	6.43	50677	7.04
OP74299-MS	326292	6.43	51720	7.04
ZZZZZZ	329558	6.42	50894	7.04
ZZZZZZ	349737	6.42	54897	7.02
ZZZZZZ	327602	6.42	51241	7.02
ZZZZZZ	335135	6.42	48747	7.02
ZZZZZZ	309864	6.41	47810	7.02

IS 1 = 13C2-PFOA
IS 2 = 13C4-PFOS

- (a) Initial Cal is: S2Q449-ICC449 2Q28166.D 03/26/19 16:17
- (b) Check Std Limit = -50 to + 50% of initial cal area.
- (c) Upper Limit = + 50% of initial standard area; Retention time + 1 minutes of check standard.
- (d) Lower Limit = -50% of initial standard area; Retention time -1 minutes of check standard.

Injection Standard Area Summary

Job Number: FA62603
Account: NOREASCA NOREAS, Inc.
Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

Check Std: S2Q449-CC449	Injection Date: 03/27/19
Lab File ID: 2Q28271.D	Injection Time: 19:59
Instrument ID: GCMS2Q	Method: EPA 537M QSM5.1 B-15

	IS 1 AREA	RT	IS 2 AREA	RT
Initial Cal ^a	390599	6.45	58145	7.05
Check Std ^b	351022	6.41	56557	7.02
Upper Limit ^c	585899	7.41	87218	8.02
Lower Limit ^d	195300	5.41	29073	6.02

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT
OP74299-MSD	360467	6.41	56866	7.01
ZZZZZZ				
ZZZZZZ				
ZZZZZZ				
ZZZZZZ				
ZZZZZZ				
ZZZZZZ				

IS 1 = 13C2-PFOA
IS 2 = 13C4-PFOS

- (a) Initial Cal is: S2Q449-ICC449 2Q28166.D 03/26/19 16:17
- (b) Check Std Limit = -50 to + 50% of initial cal area.
- (c) Upper Limit = + 50% of initial standard area; Retention time + 1 minutes of check standard.
- (d) Lower Limit = -50% of initial standard area; Retention time -1 minutes of check standard.

6.4.3
6

Isotope Dilution Standard Recovery Summary

Job Number: FA62603

Account: NOREASCA NOREAS, Inc.

Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

Method: EPA 537M QSM5.1 B-15	Matrix: SO
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6	S7	S8
FA62603-1	2Q28184.D	72	72	72	75	77	77	79	95
FA62603-2	2Q28185.D	68	68	68	70	73	72	74	89
OP74299-BS	2Q28182.D	70	71	71	72	73	73	73	86
OP74299-MB	2Q28183.D	81	81	81	85	89	85	87	104
OP74299-MS	2Q28193.D	78	78	78	80	81	80	82	96
OP74299-MSD	2Q28273.D	94	93	95	96	97	97	104	121
S2Q449-IBLK	2Q28169.D	93	94	94	95	98	96	99	97

Isotope Dilution Standards

Recovery Limits

S1 = 13C4-PFBA	50-150%
S2 = 13C5-PFPeA	50-150%
S3 = 13C5-PFHxA	50-150%
S4 = 13C4-PFHpA	50-150%
S5 = 13C8-PFOA	50-150%
S6 = 13C9-PFNA	50-150%
S7 = 13C6-PFDA	50-150%
S8 = 13C7-PFUnDA	50-150%

Isotope Dilution Standard Recovery Summary

Job Number: FA62603
Account: NOREASCA NOREAS, Inc.
Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

Method: EPA 537M QSM5.1 B-15	Matrix: SO
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S9	S10	S11	S12	S13	S14	S15	S16
FA62603-1	2Q28184.D	85	78	73	74	76	78	78	68
FA62603-2	2Q28185.D	80	72	68	70	72	70	75	64
OP74299-BS	2Q28182.D	80	69	71	73	73	75	75	70
OP74299-MB	2Q28183.D	95	80	81	84	83	88	89	77
OP74299-MS	2Q28193.D	86	71	80	83	82	82	83	80
OP74299-MSD	2Q28273.D	106	93	95	98	99	98	104	94
S2Q449-IBLK	2Q28169.D	95	93	93	95	97	99	96	88

Isotope Dilution Standards	Recovery Limits
S9 = 13C2-PFD _o DA	50-150%
S10 = 13C2-PFTeDA	50-150%
S11 = 13C3-PFBS	50-150%
S12 = 13C3-PFH _x S	50-150%
S13 = 13C8-PFOS	50-150%
S14 = 13C8-FOSA	50-150%
S15 = d3-MeFOSAA	50-150%
S16 = 13C2-4:2FTS	50-150%

Isotope Dilution Standard Recovery Summary

Job Number: FA62603

Account: NOREASCA NOREAS, Inc.

Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

Method: EPA 537M QSM5.1 B-15	Matrix: SO
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S17	S18
FA62603-1	2Q28184.D	73	74
FA62603-2	2Q28185.D	69	69
OP74299-BS	2Q28182.D	72	75
OP74299-MB	2Q28183.D	88	81
OP74299-MS	2Q28193.D	83	81
OP74299-MSD	2Q28273.D	98	99
S2Q449-IBLK	2Q28169.D	92	90

Isotope Dilution Standards	Recovery Limits
S17 = 13C2-6:2FTS	50-150%
S18 = 13C2-8:2FTS	50-150%

Initial Calibration Summary

Job Number: FA62603

Account: NOREASCA NOREAS, Inc.

Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

Sample:

S2Q449-ICC449

Lab FileID:

Q2Q28166.D

Initial Calibration Report

Method Path	D:\MassHunter\data\methods											
Method File	ID_GENX_032619_S2Q449_quantmethod.xml											
Batch Name	D:\MassHunter\Data\0326_ID_GENX_S2Q449\QuantResults\2q449_batch.bin											
Last Calib Update	3/27/2019 12:34:18 PM											
Level Name	Calibration Files	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
S 13C4-PFBA	D:\MassHunter\Data\0326_ID_GENX_S2Q449\Q28161.d	Linear	7679	7768	7652	7643	7546	8698	7322	7457	7721	5.427
S 13C5-PFPeA	D:\MassHunter\Data\0326_ID_GENX_S2Q449\Q28162.d	Linear	6464	6579	6525	6449	6459	7408	6299	6304	6561	5.420
S 13C3-PFBs	D:\MassHunter\Data\0326_ID_GENX_S2Q449\Q28163.d	Linear	1113	1135	1119	1120	1103	1268	1075	1071	1125	5.502
S 13C2-4:2FTS	D:\MassHunter\Data\0326_ID_GENX_S2Q449\Q28164.d	Linear	3831	3882	3868	3883	3909	4620	4267	4783	4131	9.219
S 13C5-PFHA	D:\MassHunter\Data\0326_ID_GENX_S2Q449\Q28165.d	Linear	9392	9515	9378	9328	9266	10582	9050	9000	9439	5.229
S 13C3-HFO-DA	D:\MassHunter\Data\0326_ID_GENX_S2Q449\Q28166.d	Linear	1748	1832	1809	1765	1751	1994	1594	1513	1751	8.384
S 13C4-PFHPa	D:\MassHunter\Data\0326_ID_GENX_S2Q449\Q28167.d	Linear	13353	13480	13319	13229	13071	14945	12651	12329	13297	5.800
S 13C3-PFHS	D:\MassHunter\Data\0326_ID_GENX_S2Q449\Q28168.d	Linear	1247	1255	1217	1221	1207	1378	1161	1138	1228	5.904
S 13C2-6:2FTS		Linear	4329	4452	4381	4336	4362	5058	4553	4861	4541	6.018
S 13C8-PFOA		Linear	14021	14182	14180	14008	13820	15539	12861	12148	13845	7.223
S 13C8-PFOS		Linear	5931	6042	5959	5952	5839	6521	5226	4656	5766	9.889
S 13C9-PFNA		Linear	1621	1637	1581	1615	1582	1820	1522	1448	1603	6.664
S d3-MeFOSAA		Linear	14415	14491	14480	14348	14255	16139	13397	12929	14307	6.559
S 13C6-PFDA		Linear	2377	2416	2423	2372	2426	2755	2304	2226	2412	6.406
S 13C2-8:2FTS		Linear	19847	20083	19926	19822	19584	21828	17908	16706	19463	7.888
S 13C7-PFUnDA		Linear	3141	3195	3183	3220	3241	3753	3460	3753	3368	7.599
S 13C2-PFDODA		Linear	25143	25320	25131	24938	24668	27720	23118	21621	24707	7.163
S 13C2-PFTeDA		Linear	27303	27576	27447	27397	27537	30939	26329	24988	27439	6.089
I 13C2-PFOA		Linear	18753	18468	18783	18712	18873	21431	18384	17707	18889	5.783
S M2-PFOA		Linear	1.0010	1.0026	1.0005	1.0010	1.0005	1.0011	1.0039	1.0014	1.0015	0.117
I 13C4-PFOS		Linear	1.0015	1.0021	1.0010	0.9419	0.9999	1.0030	1.0005	1.0006	0.9938	2.111
S M4-PFOS		Linear	0.2120	0.1958	0.1921	0.1864	0.1863	0.1853	0.1902	0.1924	0.1926	4.494
I M4-PFBA		Linear	1.0007	0.9117	0.8652	0.8643	0.8433	0.8518	0.8771	0.8901	0.8880	5.675
T PFBA		Linear										
I M5-PFPeA		Linear										
T PFPeA		Linear										



Initial Calibration Summary

Job Number: FA62603
 Account: NOREASCA NOREAS, Inc.
 Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

Sample: S2Q449-ICC449
 Lab FileID: 2Q28166.D

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M5-PFHxA	Linear	0.4026	0.3329	0.3199	0.3180	0.3150	0.3176	0.3276	0.3280	0.3327	8.692
T PFHxA						ISTD					
I M4-PFHpA	Linear	0.9487	0.8839	0.8720	0.8597	0.8608	0.8488	0.8778	0.8924	0.8805	3.516
T PFHpA						ISTD					
I M8-PFOA	Quadratic	1.0289	0.9489	0.9443	0.9385	0.9378	0.9616	1.0185	1.0727	0.9814	5.244
T ADONA	Linear	0.6113	0.5365	0.5189	0.5090	0.5138	0.5120	0.5269	0.5356	0.5330	6.254
T PFOA						ISTD					
I M9-PFNA	Linear	0.6662	0.6175	0.6013	0.5974	0.5858	0.5888	0.6125	0.6145	0.6105	4.156
T PFNA						ISTD					
I M6-PFDA	Quadratic	0.0700	0.0721	0.0661	0.0659	0.0641	0.0666	0.0726	0.0760	0.0692	5.973
T 9C-PF3ONS	Linear	0.4482	0.4159	0.4009	0.3926	0.3937	0.3939	0.4100	0.4079	0.4079	4.519
T PFDA						ISTD					
I M7-PFUnDA	Linear	0.4468	0.4076	0.3974	0.3948	0.4015	0.3979	0.4085	0.4173	0.4090	4.150
T PFUnDA						ISTD					
I M2-PFDODA	Linear	0.2747	0.2438	0.2363	0.2342	0.2360	0.2386	0.2454	0.2528	0.2452	5.464
T 11Cl-PF3OUds	Linear	0.5014	0.4469	0.4403	0.4393	0.4380	0.4401	0.4569	0.4601	0.4529	4.707
T PFDODA						ISTD					
I M2-PFTeDA	Linear	0.8409	0.7672	0.7389	0.7373	0.7470	0.7402	0.7588	0.7596	0.7612	4.472
T PFTeDA	Linear	0.7431	0.6673	0.6390	0.6282	0.6341	0.6384	0.6580	0.6613	0.6587	5.608
I M8-FOSA	Quadratic	0.5386	0.4593	0.4722	0.4506	0.4612	0.4555	0.4769	0.4819	0.4745	5.916
T FOSA						ISTD					
I M3-PFBS	Linear	1.7544	1.6493	1.6473	1.5903	1.5604	1.5639	1.6064	1.6224	1.6243	3.844
T PFBS	Linear	1.2337	1.0925	1.1500	1.0656	1.0612	1.0397	1.0808	1.0685	1.0990	5.767
T PFPeS						ISTD					
I M3-PFHxS	Linear	1.2422	1.1799	1.1136	1.1157	1.0931	1.0993	1.1381	1.1547	1.1421	4.360
T PFHxS	Linear	1.1434	1.0552	1.0323	1.0204	0.9908	0.9833	1.0224	0.9949	1.0303	5.004
T PFHpS						ISTD					
I M8-PFOS	Linear	1.1841	1.0449	0.9763	0.9745	0.9806	0.9407	0.9890	1.0214	1.0139	7.460
T PFOS	Linear	0.9073	0.7971	0.7715	0.7325	0.7168	0.7245	0.7512	0.7513	0.7690	8.016
T PFNS	Linear	0.3861	0.3871	0.3722	0.3675	0.3732	0.3745	0.3781	0.3806	0.3774	1.822
T PFDS						ISTD					
I M2-4:2FTS	Avg RF	0.6883	0.6253	0.6035	0.5935	0.5681	0.5539	0.5338	0.4806	0.5809	10.761
T 4:2FTS						ISTD					
I M2-6:2FTS						ISTD					

Initial Calibration Summary

Job Number: FA62603

Account: NOREASCA NOREAS, Inc.

Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

Sample:

S2Q449-ICC449

Lab FileID:

2Q28166.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
T 6:2FTS	Avg RF	0.6032	0.5979	0.5202	0.5115	0.4922	0.4830	0.4663	0.4147	0.5111	12.497
I M2-8:2FTS	Avg RF	0.6645	0.5722	0.5352	0.5146	0.5012	0.5082	0.4813	0.4223	0.5249	13.510
T 8:2FTS						ISTD					
I M3-MeFOSAA	Quadratic	0.7115	0.5359	0.5151	0.5195	0.4946	0.5035	0.5191	0.5427	0.5427	12.888
T MeFOSAA	Quadratic	0.5567	0.4674	0.4566	0.4386	0.4134	0.4030	0.4124	0.4065	0.4443	11.556
T EtFOSAA						ISTD					
I M3-HFPO-DA	Linear	1.4065	1.2719	1.2317	1.2247	1.1938	1.1885	1.2336	1.2108	1.2452	5.639
T HFPO-DA						ISTD					

(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike

Initial Calibration Summary

Job Number: FA62603

Account: NOREASCA NOREAS, Inc.

Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

Sample:

S2Q449-ICC449

Lab FileID:

Q2Q8166.D

Initial Calibration Report

Compounds with curve fitting not using Avg Response Factor:

Compound	Curve Fit	Curve Fit Formula	Curve Fit R2
S 13C4-PFBA	Linear	$y = 7720.638576 * x$	0.000000
T PFBA	Linear	$y = 0.191697 * x$	0.999905
T PFPeA	Linear	$y = 0.886035 * x$	0.999848
S 13C5-PFPeA	Linear	$y = 6560.837346 * x$	0.000000
T PFBS	Linear	$y = 1.617017 * x$	0.999909
S 13C3-PFBS	Linear	$y = 1125.473892 * x$	0.000000
S 13C2-4:2FTS	Linear	$y = 4130.541839 * x$	0.000000
S 13C5-PFHxA	Linear	$y = 9438.927658 * x$	0.000000
T PFHxA	Linear	$y = 0.327441 * x$	0.999935
T PFPeS	Linear	$y = 1.069961 * x$	0.999927
S 13C3-HFO-DA	Linear	$y = 1750.716241 * x$	0.000000
T HFO-DA	Linear	$y = 1.214365 * x$	0.999891
T PFHpA	Linear	$y = 0.887974 * x$	0.999829
S 13C4-PFHpA	Linear	$y = 13297.207690 * x$	0.000000
S 13C3-PFHxS	Linear	$y = 1228.018210 * x$	0.000000
T PFHxS	Linear	$y = 1.149269 * x$	0.999829
T ADONA	Quadratic	$y = 0.024294 * x^2 + 0.951813 * x$	0.999974
S 13C2-6:2FTS	Linear	$y = 4541.400367 * x$	0.000000
S 13C8-PFOA	Linear	$y = 13844.887865 * x$	0.000000
S M2-PFOA	Linear	$y = 1.001493 * x$	0.000000
T PFOA	Linear	$y = 0.532981 * x$	0.999841
T PFHpS	Linear	$y = 0.999836 * x$	0.999806
T FOSA	Quadratic	$y = 0.003631 * x^2 + 0.464095 * x$	0.999948
S 13C8-FOSA	Linear	$y = 5765.863851 * x$	0.000000
S 13C8-PFOS	Linear	$y = 1603.290336 * x$	0.000000
S M4-PFOS	Linear	$y = 0.993804 * x$	0.000000
T PFOS	Linear	$y = 1.012264 * x$	0.995508
S 13C9-PFNA	Linear	$y = 14306.879513 * x$	0.000000
T PFNA	Linear	$y = 0.613084 * x$	0.999896
T 9Cl-PF3ONS	Quadratic	$y = 0.001758 * x^2 + 0.067269 * x$	0.999873
S d3-MeFOSAA	Linear	$y = 2412.260516 * x$	0.000000
T MeFOSAA	Quadratic	$y = 0.009502 * x^2 + 0.495155 * x$	0.999988
T PFNS	Linear	$y = 0.750129 * x$	0.999916
S 13C6-PFDA	Linear	$y = 19463.001766 * x$	0.000000
T PFDA	Linear	$y = 0.407706 * x$	0.999919
T EtFOSAA	Quadratic	$y = -0.001547 * x^2 + 0.414394 * x$	0.999945
S 13C2-8:2FTS	Linear	$y = 3368.224373 * x$	0.000000
T PFDS	Linear	$y = 0.379866 * x$	0.999973
S 13C7-PFUnDA	Linear	$y = 24707.345984 * x$	0.000000
T PFUnDA	Linear	$y = 0.414815 * x$	0.999797
T 11Cl-PF3OUdS	Linear	$y = 0.247748 * x$	0.999301
T PFDoDA	Linear	$y = 0.458649 * x$	0.999879
S 13C2-PFDoDA	Linear	$y = 27439.354330 * x$	0.000000

Initial Calibration Summary

Job Number: FA62603

Sample: S2Q449-ICC449

Account: NOREASCA NOREAS, Inc.

Lab FileID: 2Q28166.D

Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

Initial Calibration Report

T PFTeDA	Linear	$y = 0.758678 * x$	0.999965
T PFTeDA	Linear	$y = 0.659679 * x$	0.999918
S 13C2-PFTeDA	Linear	$y = .18888.744585 * x$	0.000000

(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike

Initial Calibration Verification

Job Number: FA62603

Sample: S2Q449-ICV449

Account: NOREASCA NOREAS, Inc.

Lab FileID: 2Q28170.D

Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

Continuing Calibration Report

Batch: D:\MassHunter\Data\0326_ID_GENX_S2Q449\s2q449.batch.bin

Level ID: Calibration File

- 1:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28161.d
- 2:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28162.d
- 3:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28163.d
- 4:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28164.d
- 5:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28165.d
- 6:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28166.d
- 7:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28167.d
- 8:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28168.d

Data File: 2Q28170

Type : QC

Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	17.674	-11.6	88.4
13C2-6:2FTS	20.000	18.227	-8.9	91.1
13C2-8:2FTS	20.000	18.090	-9.5	90.5
13C2-PFDoDA	20.000	18.969	-5.2	94.8
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	18.754	-6.2	93.8
13C3-PFBS	20.000	18.822	-5.9	94.1
13C3-PFHxS	20.000	18.985	-5.1	94.9
13C4-PFBA	20.000	18.705	-6.5	93.5
13C4-PFHpA	20.000	19.154	-4.2	95.8
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	18.944	-5.3	94.7
13C5-PFPeA	20.000	18.967	-5.2	94.8
13C6-PFDA	20.000	19.756	-1.2	98.8
13C7-PFUnDA	20.000	19.463	-2.7	97.3
13C8-FOSA	20.000	19.849	-0.8	99.2
13C8-PFOA	20.000	19.406	-3.0	97.0
13C8-PFOS	20.000	19.130	-4.4	95.6
13C9-PFNA	20.000	19.274	-3.6	96.4
4:2FTS	20.000	0.000	# -100.0	0.0
6:2FTS	20.000	0.000	# -100.0	0.0
8:2FTS	20.000	0.000	# -100.0	0.0
d3-MeFOSAA	20.000	18.752	-6.2	93.8
M2-PFOA	20.000	19.988	-0.1	99.9
EtFOSAA	20.000	17.838	-10.8	89.2
FOSA	20.000	0.000	# -100.0	0.0
MeFOSAA	20.000	18.598	-7.0	93.0
PFBA	20.000	0.000	# -100.0	0.0
PFBS	20.000	0.000	# -100.0	0.0
PFDA	20.000	0.000	# -100.0	0.0
PFDoDA	20.000	0.000	# -100.0	0.0
PFDS	20.000	0.000	# -100.0	0.0
PFHpA	20.000	0.000	# -100.0	0.0
PFHpS	20.000	0.000	# -100.0	0.0
PFHxA	20.000	0.000	# -100.0	0.0
PFHxS	20.000	0.000	# -100.0	0.0
PFNA	20.000	0.000	# -100.0	0.0

Initial Calibration Verification

Job Number: FA62603

Sample: S2Q449-ICV449

Account: NOREASCA NOREAS, Inc.

Lab FileID: 2Q28170.D

Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

PFNS	20.000	0.000	# -100.0	0.0
PFOA	20.000	17.010	-14.9	85.1
PFOS	20.000	19.073	-4.6	95.4
PFPeA	20.000	0.000	# -100.0	0.0
PFPeS	20.000	0.000	# -100.0	0.0
PFTeDA	20.000	0.000	# -100.0	0.0
PFTTrDA	20.000	0.000	# -100.0	0.0
PFUnDA	20.000	0.000	# -100.0	0.0
M4-PFOS	20.000	20.140	0.7	100.7
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDODA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	20.000	0.000	# -100.0	0.0
13C3-HFPO-DA	100.000	101.449	1.4	101.4
9C1-PF3ONS	20.000	0.000	# -100.0	0.0
ADONA	20.000	0.000	# -100.0	0.0
HFPO-DA	100.000	0.000	# -100.0	0.0
M3-HFPO-DA	---	--ISTD--		

CC Criteria: +/- 30%

Initial Calibration Verification

Job Number: FA62603

Sample: S2Q449-ICV449

Account: NOREASCA NOREAS, Inc.

Lab FileID: 2Q28171.D

Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

Continuing Calibration Report

Batch: D:\MassHunter\Data\0326_ID_GENX_S2Q449\s2q449.batch.bin

Level ID: Calibration File

- 1:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28161.d
- 2:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28162.d
- 3:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28163.d
- 4:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28164.d
- 5:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28165.d
- 6:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28166.d
- 7:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28167.d
- 8:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28168.d

Data File: 2Q28171

Type : QC

Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	18.087	-9.6	90.4
13C2-6:2FTS	20.000	18.342	-8.3	91.7
13C2-8:2FTS	20.000	18.253	-8.7	91.3
13C2-PFDoDA	20.000	18.572	-7.1	92.9
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	18.674	-6.6	93.4
13C3-PFBS	20.000	18.362	-8.2	91.8
13C3-PFHxS	20.000	18.638	-6.8	93.2
13C4-PFBA	20.000	18.255	-8.7	91.3
13C4-PFHpA	20.000	18.392	-8.0	92.0
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	18.533	-7.3	92.7
13C5-PFPeA	20.000	18.364	-8.2	91.8
13C6-PFDA	20.000	18.580	-7.1	92.9
13C7-PFUnDA	20.000	18.598	-7.0	93.0
13C8-FOSA	20.000	18.555	-7.2	92.8
13C8-PFOA	20.000	18.467	-7.7	92.3
13C8-PFOS	20.000	18.736	-6.3	93.7
13C9-PFNA	20.000	18.544	-7.3	92.7
4:2FTS	20.000	17.285	-13.6	86.4
6:2FTS	20.000	17.996	-10.0	90.0
8:2FTS	20.000	18.063	-9.7	90.3
d3-MeFOSAA	20.000	18.367	-8.2	91.8
M2-PFOA	20.000	19.982	-0.1	99.9
EtFOSAA	20.000	20.031	0.2	100.2
FOSA	20.000	19.592	-2.0	98.0
MeFOSAA	20.000	20.641	3.2	103.2
PFBA	20.000	18.839	-5.8	94.2
PFBS	20.000	16.072	-19.6	80.4
PFDA	20.000	17.493	-12.5	87.5
PFDoDA	20.000	19.569	-2.2	97.8
PFDS	20.000	17.451	-12.7	87.3
PFHpA	20.000	19.610	-1.9	98.1
PFHpS	20.000	18.347	-8.3	91.7
PFHxA	20.000	16.915	-15.4	84.6
PFHxS	20.000	16.054	-19.7	80.3
PFNA	20.000	17.602	-12.0	88.0

Initial Calibration Verification

Job Number: FA62603

Sample: S2Q449-ICV449

Account: NOREASCA NOREAS, Inc.

Lab FileID: 2Q28171.D

Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

PFNS	20.000	17.733	-11.3	88.7
PFOA	20.000	18.684	-6.6	93.4
PFOS	20.000	18.132	-9.3	90.7
PFPeA	20.000	17.893	-10.5	89.5
PFPeS	20.000	15.721	-21.4	78.6
PFTeDA	20.000	17.477	-12.6	87.4
PFTrDA	20.000	20.893	4.5	104.5
PFUnDA	20.000	19.005	-5.0	95.0
M4-PFOS	20.000	20.178	0.9	100.9
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDODA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	20.000	0.000	# -100.0	0.0
13C3-HFPO-DA	100.000	96.026	-4.0	96.0
9C1-PF3ONS	20.000	0.000	# -100.0	0.0
ADONA	20.000	0.000	# -100.0	0.0
HFPO-DA	100.000	0.000	# -100.0	0.0
M3-HFPO-DA	---	--ISTD--		

CC Criteria: +/- 30%

6.6.3

6

Initial Calibration Verification

Job Number: FA62603

Sample: S2Q449-ICV449

Account: NOREASCA NOREAS, Inc.

Lab FileID: 2Q28172.D

Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

Continuing Calibration Report

Batch: D:\MassHunter\Data\0326_ID_GENX_S2Q449\s2q449.batch.bin

Level ID: Calibration File

- 1:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28161.d
- 2:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28162.d
- 3:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28163.d
- 4:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28164.d
- 5:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28165.d
- 6:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28166.d
- 7:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28167.d
- 8:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28168.d

Data File: 2Q28172

Type : QC

Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	17.632	-11.8	88.2
13C2-6:2FTS	20.000	18.213	-8.9	91.1
13C2-8:2FTS	20.000	17.980	-10.1	89.9
13C2-PFDoDA	20.000	19.118	-4.4	95.6
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	19.185	-4.1	95.9
13C3-PFBS	20.000	18.736	-6.3	93.7
13C3-PFHxS	20.000	18.655	-6.7	93.3
13C4-PFBA	20.000	18.757	-6.2	93.8
13C4-PFHpA	20.000	18.819	-5.9	94.1
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	18.690	-6.5	93.5
13C5-PFPeA	20.000	18.996	-5.0	95.0
13C6-PFDA	20.000	19.349	-3.3	96.7
13C7-PFUnDA	20.000	19.284	-3.6	96.4
13C8-FOSA	20.000	19.857	-0.7	99.3
13C8-PFOA	20.000	19.440	-2.8	97.2
13C8-PFOS	20.000	19.130	-4.3	95.7
13C9-PFNA	20.000	18.858	-5.7	94.3
4:2FTS	20.000	0.000	# -100.0	0.0
6:2FTS	20.000	0.000	# -100.0	0.0
8:2FTS	20.000	0.000	# -100.0	0.0
d3-MeFOSAA	20.000	19.342	-3.3	96.7
M2-PFOA	20.000	19.990	0.0	100.0
EtFOSAA	20.000	17.612	-11.9	88.1
FOSA	20.000	0.000	# -100.0	0.0
MeFOSAA	20.000	18.085	-9.6	90.4
PFBA	20.000	0.000	# -100.0	0.0
PFBS	20.000	18.667	-6.7	93.3
PFDA	20.000	18.868	-5.7	94.3
PFDoDA	20.000	18.648	-6.8	93.2
PFDS	20.000	0.000	# -100.0	0.0
PFHpA	20.000	18.995	-5.0	95.0
PFHpS	20.000	0.000	# -100.0	0.0
PFHxA	20.000	18.737	-6.3	93.7
PFHxS	20.000	19.313	-3.4	96.6
PFNA	20.000	19.903	-0.5	99.5

6.6.4
6

Initial Calibration Verification

Job Number: FA62603

Sample: S2Q449-ICV449

Account: NOREASCA NOREAS, Inc.

Lab FileID: 2Q28172.D

Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

PFNS	20.000	0.000	# -100.0	0.0
PFOA	20.000	19.156	-4.2	95.8
PFOS	20.000	17.955	-10.2	89.8
PFPeA	20.000	0.000	# -100.0	0.0
PFPeS	20.000	0.000	# -100.0	0.0
PFTeDA	20.000	18.924	-5.4	94.6
PFTrDA	20.000	19.553	-2.2	97.8
PFUnDA	20.000	18.732	-6.3	93.7
M4-PFOS	20.000	20.145	0.7	100.7
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	20.000	19.728	-1.4	98.6
13C3-HFPO-DA	100.000	94.839	-5.2	94.8
9C1-PF3ONS	20.000	20.025	0.1	100.1
ADONA	20.000	19.510	-2.5	97.5
HFPO-DA	20.000	19.017	-5.0	95.0
M3-HFPO-DA	---	--ISTD--		

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA62603

Sample: S2Q449-CC449

Account: NOREASCA NOREAS, Inc.

Lab FileID: 2Q28180.D

Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

Continuing Calibration Report

Batch: D:\MassHunter\Data\0326_ID_GENX_S2Q449\s2q449.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28161.d
2:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28162.d
3:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28163.d
4:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28164.d
5:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28165.d
6:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28166.d
7:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28167.d
8:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28168.d

Data File: 2Q28180

Type : QC

Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	22.983	14.9	114.9
13C2-6:2FTS	20.000	23.178	15.9	115.9
13C2-8:2FTS	20.000	22.980	14.9	114.9
13C2-PFDoDA	20.000	22.645	13.2	113.2
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	22.138	10.7	110.7
13C3-PFBS	20.000	23.300	16.5	116.5
13C3-PFHxS	20.000	23.405	17.0	117.0
13C4-PFBA	20.000	23.350	16.7	116.7
13C4-PFHpA	20.000	23.144	15.7	115.7
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	23.232	16.2	116.2
13C5-PFPeA	20.000	23.309	16.5	116.5
13C6-PFDA	20.000	23.013	15.1	115.1
13C7-PFUnDA	20.000	23.033	15.2	115.2
13C8-FOSA	20.000	22.987	14.9	114.9
13C8-PFOA	20.000	23.238	16.2	116.2
13C8-PFOS	20.000	23.494	17.5	117.5
13C9-PFNA	20.000	23.058	15.3	115.3
4:2FTS	20.000	19.351	-3.2	96.8
6:2FTS	20.000	18.785	-6.1	93.9
8:2FTS	20.000	19.540	-2.3	97.7
d3-MeFOSAA	20.000	23.338	16.7	116.7
M2-PFOA	20.000	19.980	-0.1	99.9
EtFOSAA	20.000	20.004	0.0	100.0
FOSA	20.000	19.595	-2.0	98.0
MeFOSAA	20.000	20.321	1.6	101.6
PFBA	20.000	19.175	-4.1	95.9
PFBS	20.000	19.253	-3.7	96.3
PFDA	20.000	19.277	-3.6	96.4
PFDoDA	20.000	19.210	-3.9	96.1
PFDS	20.000	19.358	-3.2	96.8
PFHpA	20.000	19.325	-3.4	96.6
PFHpS	20.000	19.688	-1.6	98.4
PFHxA	20.000	19.077	-4.6	95.4
PFHxS	20.000	18.987	-5.1	94.9
PFNA	20.000	19.499	-2.5	97.5

Continuing Calibration Summary

Job Number: FA62603 **Sample:** S2Q449-CC449
Account: NOREASCA NOREAS, Inc. **Lab FileID:** 2Q28180.D
Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

PFNS	20.000	18.878	-5.6	94.4
PFOA	20.000	19.346	-3.3	96.7
PFOS	20.000	18.593	-7.0	93.0
PFPeA	20.000	19.235	-3.8	96.2
PFPeS	20.000	19.394	-3.0	97.0
PFTeDA	20.000	19.293	-3.5	96.5
PFTTrDA	20.000	20.023	0.1	100.1
PFUnDA	20.000	19.207	-4.0	96.0
M4-PFOS	20.000	20.126	0.6	100.6
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDODA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	20.000	19.715	-1.4	98.6
13C3-HFPO-DA	100.000	111.332	11.3	111.3
9C1-PF3ONS	20.000	19.617	-1.9	98.1
ADONA	20.000	19.739	-1.3	98.7
HFPO-DA	100.000	93.113	-6.9	93.1
M3-HFPO-DA	---	--ISTD--		

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA62603

Sample: S2Q449-CC449

Account: NOREASCA NOREAS, Inc.

Lab FileID: 2Q28190.D

Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

Continuing Calibration Report

Batch: D:\MassHunter\Data\0326_ID_GENX_S2Q449\s2q449.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28161.d
2:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28162.d
3:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28163.d
4:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28164.d
5:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28165.d
6:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28166.d
7:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28167.d
8:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28168.d

Data File: 2Q28190

Type : QC

Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	17.504	-12.5	87.5
13C2-6:2FTS	20.000	17.875	-10.6	89.4
13C2-8:2FTS	20.000	17.923	-10.4	89.6
13C2-PFDoDA	20.000	17.673	-11.6	88.4
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	16.637	-16.8	83.2
13C3-PFBS	20.000	17.839	-10.8	89.2
13C3-PFHxS	20.000	18.105	-9.5	90.5
13C4-PFBA	20.000	17.816	-10.9	89.1
13C4-PFHpA	20.000	17.517	-12.4	87.6
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	17.355	-13.2	86.8
13C5-PFPeA	20.000	17.466	-12.7	87.3
13C6-PFDA	20.000	17.954	-10.2	89.8
13C7-PFUnDA	20.000	18.091	-9.5	90.5
13C8-FOSA	20.000	18.366	-8.2	91.8
13C8-PFOA	20.000	17.678	-11.6	88.4
13C8-PFOS	20.000	18.404	-8.0	92.0
13C9-PFNA	20.000	17.597	-12.0	88.0
4:2FTS	20.000	19.478	-2.6	97.4
6:2FTS	20.000	19.186	-4.1	95.9
8:2FTS	20.000	18.954	-5.2	94.8
d3-MeFOSAA	20.000	18.262	-8.7	91.3
M2-PFOA	20.000	19.981	-0.1	99.9
EtFOSAA	20.000	20.229	1.1	101.1
FOSA	20.000	19.676	-1.6	98.4
MeFOSAA	20.000	19.918	-0.4	99.6
PFBA	20.000	18.952	-5.2	94.8
PFBS	20.000	19.444	-2.8	97.2
PFDA	20.000	19.266	-3.7	96.3
PFDoDA	20.000	19.270	-3.6	96.4
PFDS	20.000	18.825	-5.9	94.1
PFHpA	20.000	19.641	-1.8	98.2
PFHpS	20.000	19.485	-2.6	97.4
PFHxA	20.000	19.104	-4.5	95.5
PFHxS	20.000	19.058	-4.7	95.3
PFNA	20.000	19.818	-0.9	99.1

Continuing Calibration Summary

Job Number: FA62603 **Sample:** S2Q449-CC449
Account: NOREASCA NOREAS, Inc. **Lab FileID:** 2Q28190.D
Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

PFNS	20.000	19.018	-4.9	95.1
PFOA	20.000	19.520	-2.4	97.6
PFOS	20.000	18.599	-7.0	93.0
PFPeA	20.000	19.793	-1.0	99.0
PFPeS	20.000	19.194	-4.0	96.0
PFTeDA	20.000	19.510	-2.5	97.5
PFTTrDA	20.000	20.257	1.3	101.3
PFUnDA	20.000	18.941	-5.3	94.7
M4-PFOS	20.000	20.145	0.7	100.7
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDODA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	20.000	19.178	-4.1	95.9
13C3-HFPO-DA	100.000	88.732	-11.3	88.7
9C1-PF3ONS	20.000	18.886	-5.6	94.4
ADONA	20.000	19.914	-0.4	99.6
HFPO-DA	100.000	93.672	-6.3	93.7
M3-HFPO-DA	---	--ISTD--		

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA62603

Sample: S2Q449-CC449

Account: NOREASCA NOREAS, Inc.

Lab FileID: 2Q28200.D

Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

Continuing Calibration Report

Batch: D:\MassHunter\Data\0326_ID_GENX_S2Q449\s2q449.batch.bin

Level ID: Calibration File

- 1:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28161.d
- 2:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28162.d
- 3:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28163.d
- 4:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28164.d
- 5:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28165.d
- 6:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28166.d
- 7:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28167.d
- 8:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28168.d

Data File: 2Q28200

Type : QC

Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	23.688	18.4	118.4
13C2-6:2FTS	20.000	24.006	20.0	120.0
13C2-8:2FTS	20.000	24.941	24.7	124.7
13C2-PFDoDA	20.000	25.590	28.0	128.0
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	25.830	29.1	129.1
13C3-PFBS	20.000	24.231	21.2	121.2
13C3-PFHxS	20.000	24.180	20.9	120.9
13C4-PFBA	20.000	24.313	21.6	121.6
13C4-PFHpA	20.000	23.559	17.8	117.8
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	23.606	18.0	118.0
13C5-PFPeA	20.000	23.740	18.7	118.7
13C6-PFDA	20.000	24.303	21.5	121.5
13C7-PFUnDA	20.000	25.052	25.3	125.3
13C8-FOSA	20.000	22.977	14.9	114.9
13C8-PFOA	20.000	23.608	18.0	118.0
13C8-PFOS	20.000	24.526	22.6	122.6
13C9-PFNA	20.000	23.777	18.9	118.9
4:2FTS	20.000	19.402	-3.0	97.0
6:2FTS	20.000	19.263	-3.7	96.3
8:2FTS	20.000	19.254	-3.7	96.3
d3-MeFOSAA	20.000	24.817	24.1	124.1
M2-PFOA	20.000	19.991	0.0	100.0
EtFOSAA	20.000	20.172	0.9	100.9
FOSA	20.000	19.366	-3.2	96.8
MeFOSAA	20.000	20.482	2.4	102.4
PFBA	20.000	18.973	-5.1	94.9
PFBS	20.000	19.282	-3.6	96.4
PFDA	20.000	19.210	-3.9	96.1
PFDoDA	20.000	19.133	-4.3	95.7
PFDS	20.000	18.933	-5.3	94.7
PFHpA	20.000	19.699	-1.5	98.5
PFHpS	20.000	19.480	-2.6	97.4
PFHxA	20.000	18.982	-5.1	94.9
PFHxS	20.000	19.188	-4.1	95.9
PFNA	20.000	19.435	-2.8	97.2

Continuing Calibration Summary

Job Number: FA62603 **Sample:** S2Q449-CC449
Account: NOREASCA NOREAS, Inc. **Lab FileID:** 2Q28200.D
Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

PFNS	20.000	18.699	-6.5	93.5
PFOA	20.000	19.305	-3.5	96.5
PFOS	20.000	18.694	-6.5	93.5
PFPeA	20.000	19.779	-1.1	98.9
PFPeS	20.000	19.129	-4.4	95.6
PFTeDA	20.000	19.486	-2.6	97.4
PFTTrDA	20.000	19.645	-1.8	98.2
PFUnDA	20.000	18.819	-5.9	94.1
M4-PFOS	20.000	20.157	0.8	100.8
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDODA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	20.000	18.179	-9.1	90.9
13C3-HFPO-DA	100.000	119.380	19.4	119.4
9C1-PF3ONS	20.000	19.215	-3.9	96.1
ADONA	20.000	20.116	0.6	100.6
HFPO-DA	100.000	94.145	-5.9	94.1
M3-HFPO-DA	---	--ISTD--		

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA62603

Sample: S2Q449-CC449

Account: NOREASCA NOREAS, Inc.

Lab FileID: 2Q28271.D

Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

Continuing Calibration Report

Batch: D:\MassHunter\Data\0326_ID_GENX_S2Q449\s2q449.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28161.d
2:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28162.d
3:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28163.d
4:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28164.d
5:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28165.d
6:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28166.d
7:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28167.d
8:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28168.d

Data File: 2Q28271

Type : QC

Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	18.952	-5.2	94.8
13C2-6:2FTS	20.000	19.190	-4.0	96.0
13C2-8:2FTS	20.000	19.811	-0.9	99.1
13C2-PFDoDA	20.000	19.804	-1.0	99.0
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	19.024	-4.9	95.1
13C3-PFBS	20.000	19.003	-5.0	95.0
13C3-PFHxS	20.000	19.176	-4.1	95.9
13C4-PFBA	20.000	18.966	-5.2	94.8
13C4-PFHpA	20.000	18.643	-6.8	93.2
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	18.785	-6.1	93.9
13C5-PFPeA	20.000	18.594	-7.0	93.0
13C6-PFDA	20.000	19.800	-1.0	99.0
13C7-PFUnDA	20.000	19.997	0.0	100.0
13C8-FOSA	20.000	19.246	-3.8	96.2
13C8-PFOA	20.000	19.082	-4.6	95.4
13C8-PFOS	20.000	19.506	-2.5	97.5
13C9-PFNA	20.000	19.000	-5.0	95.0
4:2FTS	20.000	21.504	7.5	107.5
6:2FTS	20.000	21.159	5.8	105.8
8:2FTS	20.000	20.994	5.0	105.0
d3-MeFOSAA	20.000	19.990	0.0	100.0
M2-PFOA	20.000	19.993	0.0	100.0
EtFOSAA	20.000	22.385	11.9	111.9
FOSA	20.000	21.957	9.8	109.8
MeFOSAA	20.000	22.668	13.3	113.3
PFBA	20.000	21.423	7.1	107.1
PFBS	20.000	21.656	8.3	108.3
PFDA	20.000	20.767	3.8	103.8
PFDoDA	20.000	21.630	8.2	108.2
PFDS	20.000	21.455	7.3	107.3
PFHpA	20.000	22.145	10.7	110.7
PFHpS	20.000	21.938	9.7	109.7
PFHxA	20.000	21.164	5.8	105.8
PFHxS	20.000	21.496	7.5	107.5
PFNA	20.000	22.181	10.9	110.9

Continuing Calibration Summary

Job Number: FA62603 **Sample:** S2Q449-CC449
Account: NOREASCA NOREAS, Inc. **Lab FileID:** 2Q28271.D
Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

PFNS	20.000	21.069	5.3	105.3
PFOA	20.000	21.565	7.8	107.8
PFOS	20.000	20.392	2.0	102.0
PFPeA	20.000	22.133	10.7	110.7
PFPeS	20.000	21.679	8.4	108.4
PFTeDA	20.000	21.669	8.3	108.3
PFTTrDA	20.000	22.714	13.6	113.6
PFUnDA	20.000	21.281	6.4	106.4
M4-PFOS	20.000	20.130	0.6	100.6
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDODA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	20.000	20.530	2.6	102.6
13C3-HFPO-DA	100.000	0.000	# -100.0	0.0
9C1-PF3ONS	20.000	20.788	3.9	103.9
ADONA	20.000	22.071	10.4	110.4
HFPO-DA	100.000	0.000	# -100.0	0.0
M3-HFPO-DA	---	--ISTD--		

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA62603

Sample: S2Q449-CC449

Account: NOREASCA NOREAS, Inc.

Lab FileID: 2Q28280.D

Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

Continuing Calibration Report

Batch: D:\MassHunter\Data\0326_ID_GENX_S2Q449\s2q449.batch.bin

Level ID: Calibration File

- 1:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28161.d
- 2:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28162.d
- 3:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28163.d
- 4:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28164.d
- 5:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28165.d
- 6:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28166.d
- 7:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28167.d
- 8:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28168.d

Data File: 2Q28280

Type : QC

Level : 2

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	18.920	-5.4	94.6
13C2-6:2FTS	20.000	20.077	0.4	100.4
13C2-8:2FTS	20.000	20.578	2.9	102.9
13C2-PFDoDA	20.000	21.879	9.4	109.4
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	20.532	2.7	102.7
13C3-PFBS	20.000	20.319	1.6	101.6
13C3-PFHxS	20.000	20.618	3.1	103.1
13C4-PFBA	20.000	20.140	0.7	100.7
13C4-PFHpA	20.000	20.178	0.9	100.9
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	20.208	1.0	101.0
13C5-PFPeA	20.000	19.876	-0.6	99.4
13C6-PFDA	20.000	22.347	11.7	111.7
13C7-PFUnDA	20.000	22.483	12.4	112.4
13C8-FOSA	20.000	21.237	6.2	106.2
13C8-PFOA	20.000	21.035	5.2	105.2
13C8-PFOS	20.000	21.298	6.5	106.5
13C9-PFNA	20.000	20.817	4.1	104.1
4:2FTS	1.000	1.084	8.4	108.4
6:2FTS	1.000	1.195	19.5	119.5
8:2FTS	1.000	1.111	11.1	111.1
d3-MeFOSAA	20.000	21.241	6.2	106.2
M2-PFOA	20.000	19.978	-0.1	99.9
EtFOSAA	1.000	1.099	9.9	109.9
FOSA	1.000	0.999	-0.1	99.9
MeFOSAA	1.000	1.107	10.7	110.7
PFBA	1.000	1.028	2.8	102.8
PFBS	1.000	0.997	-0.3	99.7
PFDA	1.000	0.922	-7.8	92.2
PFDoDA	1.000	0.978	-2.2	97.8
PFDS	1.000	0.937	-6.3	93.7
PFHpA	1.000	1.007	0.7	100.7
PFHpS	1.000	0.969	-3.1	96.9
PFHxA	1.000	0.969	-3.1	96.9
PFHxS	1.000	0.966	-3.4	96.6
PFNA	1.000	0.999	-0.1	99.9

Continuing Calibration Summary

Job Number: FA62603 **Sample:** S2Q449-CC449
Account: NOREASCA NOREAS, Inc. **Lab FileID:** 2Q28280.D
Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

PFNS	1.000	0.995	-0.5	99.5
PFOA	1.000	1.028	2.8	102.8
PFOS	1.000	0.945	-5.5	94.5
PFPeA	1.000	1.031	3.1	103.1
PFPeS	1.000	1.001	0.1	100.1
PFTeDA	1.000	1.006	0.6	100.6
PFTTrDA	1.000	1.042	4.2	104.2
PFUnDA	1.000	0.953	-4.7	95.3
M4-PFOS	20.000	20.124	0.6	100.6
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDODA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	1.000	0.905	-9.5	90.5
13C3-HFPO-DA	100.000	113.531	13.5	113.5
9C1-PF3ONS	1.000	0.952	-4.8	95.2
ADONA	1.000	0.998	-0.2	99.8
HFPO-DA	5.000	4.653	-6.9	93.1
M3-HFPO-DA	---	--ISTD--		

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA62603 **Sample:** S2Q449-CC449
Account: NOREASCA NOREAS, Inc. **Lab FileID:** 2Q28281.D
Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

Continuing Calibration Report

Batch: D:\MassHunter\Data\0326_ID_GENX_S2Q449\s2q449.batch.bin

Level ID: Calibration File

- 1:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28161.d
- 2:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28162.d
- 3:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28163.d
- 4:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28164.d
- 5:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28165.d
- 6:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28166.d
- 7:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28167.d
- 8:D:\MassHunter\Data\0326_ID_GENX_S2Q449\2Q28168.d

Data File: 2Q28281
 Type : QC
 Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.133	0.7	100.7
13C2-6:2FTS	20.000	20.204	1.0	101.0
13C2-8:2FTS	20.000	21.183	5.9	105.9
13C2-PFDoDA	20.000	21.307	6.5	106.5
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	20.558	2.8	102.8
13C3-PFBS	20.000	20.292	1.5	101.5
13C3-PFHxS	20.000	20.480	2.4	102.4
13C4-PFBA	20.000	20.256	1.3	101.3
13C4-PFHpA	20.000	19.866	-0.7	99.3
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	20.098	0.5	100.5
13C5-PFPeA	20.000	19.965	-0.2	99.8
13C6-PFDA	20.000	21.093	5.5	105.5
13C7-PFUnDA	20.000	21.650	8.2	108.2
13C8-FOSA	20.000	20.220	1.1	101.1
13C8-PFOA	20.000	20.268	1.3	101.3
13C8-PFOS	20.000	20.695	3.5	103.5
13C9-PFNA	20.000	20.368	1.8	101.8
4:2FTS	20.000	21.619	8.1	108.1
6:2FTS	20.000	21.146	5.7	105.7
8:2FTS	20.000	21.512	7.6	107.6
d3-MeFOSAA	20.000	21.549	7.7	107.7
M2-PFOA	20.000	19.979	-0.1	99.9
EtFOSAA	20.000	22.519	12.6	112.6
FOSA	20.000	22.027	10.1	110.1
MeFOSAA	20.000	23.295	16.5	116.5
PFBA	20.000	21.265	6.3	106.3
PFBS	20.000	21.450	7.2	107.2
PFDA	20.000	21.100	5.5	105.5
PFDoDA	20.000	21.399	7.0	107.0
PFDS	20.000	21.593	8.0	108.0
PFHpA	20.000	21.964	9.8	109.8
PFHpS	20.000	21.694	8.5	108.5
PFHxA	20.000	21.086	5.4	105.4
PFHxS	20.000	21.498	7.5	107.5
PFNA	20.000	21.830	9.1	109.1

6.6.10 6

Continuing Calibration Summary

Job Number: FA62603 **Sample:** S2Q449-CC449
Account: NOREASCA NOREAS, Inc. **Lab FileID:** 2Q28281.D
Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

PFNS	20.000	21.495	7.5	107.5
PFOA	20.000	21.631	8.2	108.2
PFOS	20.000	20.758	3.8	103.8
PFPeA	20.000	21.998	10.0	110.0
PFPeS	20.000	21.770	8.8	108.8
PFTeDA	20.000	21.698	8.5	108.5
PFTTrDA	20.000	22.706	13.5	113.5
PFUnDA	20.000	21.166	5.8	105.8
M4-PFOS	20.000	20.133	0.7	100.7
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDODA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11C1-PF3OUdS	20.000	20.441	2.2	102.2
13C3-HFPO-DA	100.000	0.000	# -100.0	0.0
9C1-PF3ONS	20.000	20.709	3.5	103.5
ADONA	20.000	22.242	11.2	111.2
HFPO-DA	100.000	0.000	# -100.0	0.0
M3-HFPO-DA	---	--ISTD--		

CC Criteria: +/- 30%

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Percent Solids Raw Data Summary

Percent Solids Raw Data Summary

Job Number: FA62603
Account: NOREASCA NOREAS, Inc.
Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY

Sample: FA62603-1 **Analyzed:** 26-MAR-19 by AC **Method:** SM19 2540G
ClientID: NWIRP-S1-WC-CF-025

Wet Weight (Total)	18.59	g
Tare Weight	2.55	g
Dry Weight (Total)	18	g
Solids, Percent	96.3	%

Sample: FA62603-2 **Analyzed:** 26-MAR-19 by AC **Method:** SM19 2540G
ClientID: NWIRP-S1-WC-CF-026

Wet Weight (Total)	19.42	g
Tare Weight	2.53	g
Dry Weight (Total)	18.7	g
Solids, Percent	95.7	%

7.1
7

Sample Summary

NOREAS, Inc.

Job No: FA62603

ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY
Project No: APTIM 007 RAC WO #12

Sample Number	Collected		Matrix			Client Sample ID
	Date	Time By	Received	Code	Type	
FA62603-1	03/21/19	10:50 SM	03/22/19	SO	Soil	NWIRP-S1-WC-CF-025
FA62603-2	03/21/19	10:55 SM	03/22/19	SO	Soil	NWIRP-S1-WC-CF-026

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Report of Analysis

Client Sample ID: NWIRP-S1-WC-CF-025		
Lab Sample ID: FA62603-1		Date Sampled: 03/21/19
Matrix: SO - Soil		Date Received: 03/22/19
Method: EPA 537M QSM5.1 B-15 IN HOUSE		Percent Solids: 96.3
Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q28184.D	1	03/26/19 21:03	NG	03/25/19 11:00	OP74299	S2Q449
Run #2							

	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

PFAS List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
2706-90-3	Perfluoropentanoic acid	0.52 U	1.0	0.52	0.21	ug/kg	
307-24-4	Perfluorohexanoic acid	0.52 U	1.0	0.52	0.21	ug/kg	
375-85-9	Perfluoroheptanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
335-67-1	Perfluorooctanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
375-95-1	Perfluorononanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
335-76-2	Perfluorodecanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
2058-94-8	Perfluoroundecanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
307-55-1	Perfluorododecanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
72629-94-8	Perfluorotridecanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
376-06-7	Perfluorotetradecanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
PERFLUOROALKYLSULFONATES							
375-73-5	Perfluorobutanesulfonic acid	0.52 U	1.0	0.52	0.26	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.52 U	1.0	0.52	0.26	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	0.52 U	1.0	0.52	0.26	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.52 U	1.0	0.52	0.26	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.52 U	1.0	0.52	0.26	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	0.52 U	1.0	0.52	0.26	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	0.52 U	1.0	0.52	0.26	ug/kg	
PERFLUOROOCCTANESULFONAMIDES							
754-91-6	PFOSA	0.52 U	1.0	0.52	0.26	ug/kg	
PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	1.0 U	2.6	1.0	0.52	ug/kg	
2991-50-6	EtFOSAA	1.0 U	2.6	1.0	0.52	ug/kg	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.52 U	1.0	0.52	0.26	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.52 U	1.0	0.52	0.26	ug/kg	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: NWIRP-S1-WC-CF-025		Date Sampled: 03/21/19
Lab Sample ID: FA62603-1		Date Received: 03/22/19
Matrix: SO - Soil		Percent Solids: 96.3
Method: EPA 537M QSM5.1 B-15 IN HOUSE		
Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY		

PFAS List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.52 U	1.0	0.52	0.26	ug/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	72%		50-150%
	13C5-PFPeA	72%		50-150%
	13C5-PFHxA	72%		50-150%
	13C4-PFHpA	75%		50-150%
	13C8-PFOA	77%		50-150%
	13C9-PFNA	77%		50-150%
	13C6-PFDA	79%		50-150%
	13C7-PFUnDA	95%		50-150%
	13C2-PFDoDA	85%		50-150%
	13C2-PFTeDA	78%		50-150%
	13C3-PFBS	73%		50-150%
	13C3-PFHxS	74%		50-150%
	13C8-PFOS	76%		50-150%
	13C8-FOSA	78%		50-150%
	d3-MeFOSAA	78%		50-150%
	13C2-4:2FTS	68%		50-150%
	13C2-6:2FTS	73%		50-150%
	13C2-8:2FTS	74%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	NWIRP-S1-WC-CF-026		
Lab Sample ID:	FA62603-2	Date Sampled:	03/21/19
Matrix:	SO - Soil	Date Received:	03/22/19
Method:	EPA 537M QSM5.1 B-15 IN HOUSE	Percent Solids:	95.7
Project:	ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q28185.D	1	03/26/19 21:19	NG	03/25/19 11:00	OP74299	S2Q449
Run #2							

	Initial Weight	Final Volume
Run #1	2.02 g	1.0 ml
Run #2		

PFAS List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
2706-90-3	Perfluoropentanoic acid	0.52 U	1.0	0.52	0.21	ug/kg	
307-24-4	Perfluorohexanoic acid	0.52 U	1.0	0.52	0.21	ug/kg	
375-85-9	Perfluoroheptanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
335-67-1	Perfluorooctanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
375-95-1	Perfluorononanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
335-76-2	Perfluorodecanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
2058-94-8	Perfluoroundecanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
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72629-94-8	Perfluorotridecanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
376-06-7	Perfluorotetradecanoic acid	0.52 U	1.0	0.52	0.26	ug/kg	
PERFLUOROALKYLSULFONATES							
375-73-5	Perfluorobutanesulfonic acid	0.52 U	1.0	0.52	0.26	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.52 U	1.0	0.52	0.26	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	0.52 U	1.0	0.52	0.26	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.52 U	1.0	0.52	0.26	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.52 U	1.0	0.52	0.26	ug/kg	
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335-77-3	Perfluorodecanesulfonic acid	0.52 U	1.0	0.52	0.26	ug/kg	
PERFLUOROOCCTANESULFONAMIDES							
754-91-6	PFOSA	0.52 U	1.0	0.52	0.26	ug/kg	
PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	1.0 U	2.6	1.0	0.52	ug/kg	
2991-50-6	EtFOSAA	1.0 U	2.6	1.0	0.52	ug/kg	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.52 U	1.0	0.52	0.26	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.52 U	1.0	0.52	0.26	ug/kg	

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: NWIRP-S1-WC-CF-026		Date Sampled: 03/21/19
Lab Sample ID: FA62603-2		Date Received: 03/22/19
Matrix: SO - Soil		Percent Solids: 95.7
Method: EPA 537M QSM5.1 B-15 IN HOUSE		
Project: ITVAVAB: Former Drum Marshalling Area NWIRP Bethpage, NY		

PFAS List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.52 U	1.0	0.52	0.26	ug/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	68%		50-150%
	13C5-PFPeA	68%		50-150%
	13C5-PFHxA	68%		50-150%
	13C4-PFHpA	70%		50-150%
	13C8-PFOA	73%		50-150%
	13C9-PFNA	72%		50-150%
	13C6-PFDA	74%		50-150%
	13C7-PFUnDA	89%		50-150%
	13C2-PFDoDA	80%		50-150%
	13C2-PFTeDA	72%		50-150%
	13C3-PFBS	68%		50-150%
	13C3-PFHxS	70%		50-150%
	13C8-PFOS	72%		50-150%
	13C8-FOSA	70%		50-150%
	d3-MeFOSAA	75%		50-150%
	13C2-4:2FTS	64%		50-150%
	13C2-6:2FTS	69%		50-150%
	13C2-8:2FTS	69%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

CHAIN-OF-CUSTODY RECORD **FA62603**

COC Number: 501164-20190321
 Subcontract Services Agreement 1 TBD



APTIM - 150 Boush Street, Suite 701, Norfolk, VA 23510 (757) 640-6200

Lab Destination: SGS Accutest - Orlando		Lab Receiving Address: 4405 Vineland Rd. Suite C-15 Orlando, FL, 32811 (407) 425-6700		Analysis Desired									
Project Name: Site 1 - Former Drum Marshalling Area Naval Weapons Industrial Reserve Plant Bethpage, New York		Sample Location: Fill Material Samples										PFOAs LCQSM6SYD0DFL	
T.O. Project Number: F6147 501164	APTIM Contact: Natasha Kelley Sullivan	APTIM Contact Number: (410)529-7598											
Client Ref: NAVY		Deputy Project Manager: Monica L. Smeal E.I.T.											
Item No.	Sample Number	Date	Time	Matrix	Soil	Sample Description	Number of Containers						
1	NWIRP-S1-WC-CF-025	03/21/19	1050		X	Backfill Sand	1 x 4 oz Poly WM, None	X					
2	NWIRP-S1-WC-CF-026	03/21/19	1055		X	Backfill Sand	1 x 4 oz Poly WM, None	X					

Turnaround Time Required: 14 Day TAT	Sampled By: McCutcheon, Sean, APTIM	COMMENTS:	Laboratory Report No.:
--	--	-----------	------------------------

Transfer Number	Transfers Requisitioned By	Date	Time	Transfers Accepted By	Date	Time	Report Format:
1	Sampler's Signature	Date	Time	Laboratory Sample Custody S	Date	Time	Full Report
2	<i>[Signature]</i>	3/21/19	1500	Fed Ex			Deliverables: EDD Excel+NIRIS
3	Fed Ex			<i>[Signature]</i>	03/22/19	915	Fax results to Natasha Sullivan (410) 529-7599
4							

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SGS Sample Receipt Summary

Job Number: FA62603

Client: APTIM

Project: SITE 1

Date / Time Received: 3/22/2019 9:15:00 AM

Delivery Method: FED EX

Airbill #'s: 1001891723160003281100786174339924

Therm ID: IR 1; Therm CF: -0.2; # of Coolers: 1

Cooler Temps (Raw Measured) °C: Cooler 1: (2.5);

Cooler Temps (Corrected) °C: Cooler 1: (2.3);

Cooler Information

Y or N

- 1. Custody Seals Present
- 2. Custody Seals Intact
- 3. Temp criteria achieved
- 4. Cooler temp verification IR Gun
- 5. Cooler media Ice (Bag)

Trip Blank Information

Y or N N/A

- 1. Trip Blank present / cooler
 - 2. Trip Blank listed on COC
- W or S N/A
- 3. Type Of TB Received

Sample Information

Y or N N/A

- 1. Sample labels present on bottles
- 2. Samples preserved properly
- 3. Sufficient volume/containers recvd for analysis:
- 4. Condition of sample Intact
- 5. Sample recvd within HT
- 6. Dates/Times/IDs on COC match Sample Label
- 7. VOCs have headspace
- 8. Bottles received for unspecified tests
- 9. Compositing instructions clear
- 10. Voa Soil Kits/Jars received past 48hrs?
- 11. % Solids Jar received?
- 12. Residual Chlorine Present?

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____

Test Strip Lot #s: pH 0-3 230315

Residual Chlorine Test Strip Lot #: _____

Number of 5035 Field Kits: _____

pH 10-12 219813A

Number of Lab Filtered Metals: _____

Other: (Specify) _____

Comments

SM001
Rev. Date 05/24/17

Technician: SHAYLAP

Date: 3/22/2019 9:15:00 AM

Reviewer: _____

Date: _____

FA62603: Chain of Custody

Page 2 of 2