NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Region 9
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INSPECTION REPORT

Spill Number: 2008000 **Inspection Date:** 04/14/21

Site Name: Mayville **Location:** Village of Mayville

Site Inspectors: Steven Moeller, Joshua Vaccaro

Weather Conditions: *Mostly clear, sunny, and calm; 48ºF.*

Description of Work Performed:

0910 - DEC arrived onsite at the Chautauqua County Emergency Operations Center (CCEOC) on Academy Street to meet with the surveyor (Mark Thompson - Kheops) and LiRo (Craig Taylor). Surveying began at monitoring well MW-7 and surrounding surface soil sampling locations SS-1 through SS-4. Surveying continued on to monitoring well MW-6, the former football field drainage manhole and outfall locations, and the groundwater seep sample location in the woods southwest of the CCEOC.

DEC staff inspected the drainage ditch along the north side of Route 430 (West Chautauqua Street). Flow within the ditch was approximately ½" deep and 8" wide. Most of the flow originated from the outfall pipe discharging drainage from the former football field. Flow from the outfall has created a small drainage rill that flows to the south and enters a concrete-lined highway ditch located along the north side of Route 430. The ditch transports the discharge from the former field southwestward towards Bloomer Road/Patterson Street for approximately 400 feet before it enters an underground drainage structure that flow southward under Route 430. The discharge then flows southwestward for approximately 400 feet in a concrete-lined highway ditch located along the south side of Route 430 towards Patterson Street. The discharge flows under Patterson Street and continues southwestward for approximately 1,700 feet in an unlined drainage ditch along the south side of Route 430 before entering Mud Creek.

Returned to vehicles at CCEOC. Spoke with Chris Wichlacz from the Chautauqua County Office of Emergency Services to discuss sampling their onsite Aqueous Film Forming Foam (AFFF) concentrates later today.

10:10 Surveyed the Mud Creek surface water sample location along Bloomer Road. Flow below road culvert was approximately 3' wide and 3" deep; the culvert pipe had an approximate diameter of 60". Also surveyed a Bloomer Road stream gauging/measuring point at the top center (small hole in pipe) of the south side of the 60" culvert pipe (Image 6).

10:30 Surveyed the Mud Creek – Sherman Mayville Road (Route 430) surface water sampling points in the ditch across from 5597 Route 430 and on the south side of Mud Creek. Established a Mud Creek (Route 430) stream gauging/measuring point (notch in south side of Route 430 concrete bridge over Mud Creek (Image 7), near connector for guard rails) and surveyed the measuring point. Also surveyed the location and ground elevation of the private water supply well at 5569 Route 430 since we have a well boring log for this location.

10:40 Surveyed monitoring well MW-5 and vented the well cap, drilled a weep hole in the stickup protective casing, and installed a lock on the protective-casing.

10:45 In the vicinity of Supply Well 3, surveyed monitoring wells TW-2 and MW-4, the Slope Drainage and Raceway surface water sample locations in the woods north of Supply Well 3. A lock was installed on MW-4. The Slope Drainage and Raceway sample locations were dry. Also surveyed the concrete floor elevation at the Supply Well 3 building.

11:20 Surveyed points surrounding the Mayville Department of Public Works (DPW) building on Morris Street. Monitoring well MW-2 was surveyed. MW-2 typically has artesian flow. A 2’ stickup was installed on the MW-2 riser to attempt to measure the hydraulic head, but the artesian flow overtopped the riser extension. The ground surface in the vicinity of MW-2 between the DPW building and Mud Creek was saturated with a few inches of standing water.

Surveyed the concrete floor elevations at the Supply Well 1 and 2 buildings. Surveyed monitoring well MW-1 and installed a lock on the stickup protective-casing. Surveyed monitoring well MW-3 and vented the well cap, drilled a weep hole in the stickup protective casing, and installed a lock on the protective-casing.

Established a Mud Creek (Morris Street) stream gauging/measuring point (notch in the middle, north side of Morris Street concrete bridge over Mud Creek; Image 8) and surveyed the measuring point.

11:50 Surveyed the Supply Well at the North Chautauqua Lake Sewer District facility (NCLSD) on Clark Street. DEC spoke with Scott Cummings (Director at NCLSD; Village of Mayville Fire Department member) at the NCLSD, who indicated that he would provide photos and videos from the June 2016 foam training event conducted by State Fire at the CCEOC via email. Also spoke with Rusty Hardenburg (Village of Mayville Fire Chief and operator at the NCLSD) to discuss sampling the Village of Mayville Fire Department. AFFF concentrates later today.

12:06 Craig from LiRo left the site. The 2 surface soil sample locations at Lakeside park were surveyed at the previously installed wooden stakes.

12:30 Survey complete.

13:30 Met Chris Wichlacz at the CCEOC to collect samples of Aqueous Film Foaming Foam (AFFF). A sample was collected from a white cylindrical 5-gallon plastic carboy container of *ChemGuard C363 3%-6% AR-AFFF* dated May 2015.The liquid appeared to be quite viscous with yellow color. The sample was collected using a metal ladle. The metal ladle was decontaminated between samples with Liquinox and tap water, followed by a tap water rinse, followed by a PFAS-free water rinse. Four (4) 125 ml unpreserved HDPE bottles were filled for each sample collected.

A sample was collected (13:45) from an older looking white cylindrical 5-gallon plastic carboy container of *Angus Fire 3-6% Alcoseal Alcohol Resistant Foam Concentrate*. The liquid was viscous with a dark brown color. The product had a distinctive odor, similar to an infant's stool. The sample was collected using a decontaminated metal ladle.

A sample was collected (14:00) from a newer looking blue rectangular 5-gallon plastic carboy container of *ChemGuard Class A Plus Foam Liquid Concentrate*. The liquid was not as viscous as the previous two foam concentrates and appeared clear. A slight magic marker odor was noted. The sample was collected using a decontaminated metal ladle.

A sample was collected (14:15) from the State Fire Foam Trailer containing (2) 330-gallon plastic totes of *National Foam Universal Gold 1%/3% AR-AFFF*. The sample was collected from the top of the forward tote using a new, dedicated and disposable, plastic hand sanitizer pump (used for gallon-size bottles). The sample was quite viscous, with a yellow color, and a magic marker odor.

15:00 The sampling of the AFFF concentrates at the CCEOC was completed. DEC staff met Rusty Hardenburg at the Village of Mayville Fire Department on South Erie Street to sample their AFFF concentrates. Two foam concentrates were present onsite: *ChemGuard Class A Plus Foam Liquid Concentrate* (previously sampled at the CCEOC) and *Solberg 3% - 6% Arctic 3x6 ATC AR-AFFF Foam Concentrate*. A sample was collected from the Solberg product using a new, dedicated and disposable, plastic gallon-size hand sanitizer pump. The sample was viscous with a yellow color and a magic marker odor.

15:30 DEC staff left the site. The samples were dropped off at Test America (EuroFins) lab in Amherst, NY. The samples were submitted for Total Oxidizable Precursor (TOP) assay analysis. This analysis is used to evaluate the potential of per- and poly-fluoroalkyl substances (PFAS) to transform in the natural environment. The TOP assay measures the concentration of non-discrete and difficult to measure PFAS compounds that are not determined by conventional analytical methods. TOP assay data can help to understand potential PFAS risk and can provide valuable details regarding the carbon chain lengths of the perfluoroalkyl acids (PFAA) precursors present at a site.

The process of the TOP assay analysis requires quantitation of both a pre-treatment (Pre-TOP) sample aliquot and a post-treatment (Post-TOP) sample aliquot. Treatment consists of adding oxidation reagents to the aqueous sample aliquots and placed the samples in a heated water bath for several hours. The oxidation is then quenched, and the post-

treatment assay aliquots are ready for solid phase extraction and analysis per Method 537M. The difference between the Pre-TOP concentrations and the Post-TOP concentrations is the concentration of the non-discrete oxidizable PFAS precursors. Tables 2 through 6 present the pre- and post-treatment results for the AFFF concentrates that were sampled during the April 14, 2021 site visit.

Attachments: Tables, Photos, Survey Figure, SDSs, and Lab Analytical Report

Table 1: AFFF Samples collected on April 14, 2021

AFFF Concentrate Product	Location	Sample Collected	Sample Time	Color	Odor
ChemGuard C363 3%-6% AR-AFFF	CCEOC	Yes	13:30	Yellow	-
Angus Fire 3-6% Alcoseal Alcohol Resistant Foam Concentrate	CCEOC	Yes	13:45	Dark Brown	Infant Stool
ChemGuard Class A Plus Foam Liquid Concentrate	CCEOC	Yes	14:00	Clear	Magic Marker
National Foam Universal Gold 1%/3% AR-AFFF	CCEOC	Yes	14:15	Yellow	Magic Marker
ChemGuard Class A Plus Foam Liquid Concentrate	Village of Mayville Fire Department	No	-	-	-
Solberg 3% - 6% Arctic 3x6 ATC AR-AFFF Foam Concentrate	Village of Mayville Fire Department	Yes	15:00	Yellow	Magic Marker

Sample Name (Sampled 4/14/21)	Analyte	Result (ng/l)	
		Pre-Treatment	Post Treatment
Chemguard 3-6	Perfluorobutanoic acid (PFBA)	ND	**92000000**
Chemguard 3-6	Perfluoropentanoic acid (PFPeA)	ND	**180000000**
Chemguard 3-6	Perfluorohexanoic acid (PFHxA)	**1600000**	**67000000**
Chemguard 3-6	Perfluoroheptanoic acid (PFHpA)	ND	**54000000**
Chemguard 3-6	Perfluorooctanoic acid (PFOA)	**390000**	**21000000**
Chemguard 3-6	Perfluorononanoic acid (PFNA)	ND	**24000000**
Chemguard 3-6	Perfluorodecanoic acid (PFDA)	ND	**10000000**
Chemguard 3-6	Perfluoroundecanoic acid (PFUnA)	ND	**7000000**
Chemguard 3-6	Perfluorododecanoic acid (PFDoA)	ND	**6600000**
Chemguard 3-6	Perfluorotridecanoic acid (PFTriA)	ND	**3300000**
Chemguard 3-6	Perfluorotetradecanoic acid (PFTeA)	ND	**2800000**
Chemguard 3-6	Perfluorobutanesulfonic acid (PFBS)	ND	ND
Chemguard 3-6	Perfluorohexanesulfonic acid (PFHxS)	ND	ND
Chemguard 3-6	Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND
Chemguard 3-6	Perfluorooctanesulfonic acid (PFOS)	ND	ND
Chemguard 3-6	Perfluorodecanesulfonic acid (PFDS)	ND	ND
Chemguard 3-6	Perfluorooctanesulfonamide (FOSA)	ND	ND
Chemguard 3-6	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND	ND
Chemguard 3-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND	ND
Chemguard 3-6	6:2 FTS	**5800000**	ND
Chemguard 3-6	8:2 FTS	**2500000**	ND
Chemguard 3-6	**Total PFCA**	**2000000**	**440000000**
Treatment Differences			
Chemguard 3-6	PFBA	**92000000**	
Chemguard 3-6	PFPA	**180000000**	
Chemguard 3-6	PFHxA	**65000000**	
Chemguard 3-6	PFHpA	**54000000**	
Chemguard 3-6	PFOA	**21000000**	
Chemguard 3-6	PFNA	**24000000**	
Chemguard 3-6	**Total PFCA**	**440000000**	

Table 2: ChemGuard 3% -6 % Analytical Results

Sample Name (Sampled 4/14/21)	Analyte	Result (ng/l)	
		Pre-Treatment	Post Treatment
Angus 3-6	Perfluorobutanoic acid (PFBA)	ND	**550000000**
Angus 3-6	Perfluoropentanoic acid (PFPeA)	ND	**1200000000**
Angus 3-6	Perfluorohexanoic acid (PFHxA)	**5200000**	**320000000**
Angus 3-6	Perfluoroheptanoic acid (PFHpA)	ND	**170000000**
Angus 3-6	Perfluorooctanoic acid (PFOA)	ND	**23000000**
Angus 3-6	Perfluorononanoic acid (PFNA)	ND	**6300000**
Angus 3-6	Perfluorodecanoic acid (PFDA)	ND	ND
Angus 3-6	Perfluoroundecanoic acid (PFUnA)	ND	ND
Angus 3-6	Perfluorododecanoic acid (PFDoA)	ND	ND
Angus 3-6	Perfluorotridecanoic acid (PFTriA)	ND	ND
Angus 3-6	Perfluorotetradecanoic acid (PFTeA)	ND	ND
Angus 3-6	Perfluorobutanesulfonic acid (PFBS)	ND	ND
Angus 3-6	Perfluorohexanesulfonic acid (PFHxS)	ND	ND
Angus 3-6	Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND
Angus 3-6	Perfluorooctanesulfonic acid (PFOS)	ND	ND
Angus 3-6	Perfluorodecanesulfonic acid (PFDS)	ND	ND
Angus 3-6	Perfluorooctanesulfonamide (FOSA)	ND	ND
Angus 3-6	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND	ND
Angus 3-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND	ND
Angus 3-6	6:2 FTS	**210000000**	ND
Angus 3-6	8:2 FTS	ND	ND
Angus 3-6	**Total PFCA**	**5200000**	**2300000000**
Treatment Differences			
Angus 3-6	PFBA	**550000000**	
Angus 3-6	PFPA	**1200000000**	
Angus 3-6	PFHxA	**310000000**	
Angus 3-6	PFHpA	**170000000**	
Angus 3-6	PFOA	**23000000**	
Angus 3-6	PFNA	**6300000**	
Angus 3-6	**Total PFCA**	**2300000000**	

Table 3: Alcoseal Angus 3 -6 Analytical Results

Sample Name (Sampled 4/14/21)	Analyte	Result (ng/l)	
		Pre-Treatment	Post Treatment
Chemguard Class A	Perfluorobutanoic acid (PFBA)	ND	ND
Chemguard Class A	Perfluoropentanoic acid (PFPeA)	ND	ND
Chemguard Class A	Perfluorohexanoic acid (PFHxA)	ND	ND
Chemguard Class A	Perfluoroheptanoic acid (PFHpA)	ND	ND
Chemguard Class A	Perfluorooctanoic acid (PFOA)	ND	ND
Chemguard Class A	Perfluorononanoic acid (PFNA)	ND	ND
Chemguard Class A	Perfluorodecanoic acid (PFDA)	ND	ND
Chemguard Class A	Perfluoroundecanoic acid (PFUnA)	ND	ND
Chemguard Class A	Perfluorododecanoic acid (PFDoA)	ND	ND
Chemguard Class A	Perfluorotridecanoic acid (PFTriA)	ND	ND
Chemguard Class A	Perfluorotetradecanoic acid (PFTeA)	ND	ND
Chemguard Class A	Perfluorobutanesulfonic acid (PFBS)	ND	ND
Chemguard Class A	Perfluorohexanesulfonic acid (PFHxS)	ND	ND
Chemguard Class A	Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND
Chemguard Class A	Perfluorooctanesulfonic acid (PFOS)	ND	ND
Chemguard Class A	Perfluorodecanesulfonic acid (PFDS)	ND	ND
Chemguard Class A	Perfluorooctanesulfonamide (FOSA)	ND	ND
Chemguard Class A	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND	ND
Chemguard Class A	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND	ND
Chemguard Class A	6:2 FTS	ND	ND
Chemguard Class A	8:2 FTS	ND	ND
Chemguard Class A	**Total PFCA**	**ND**	**ND**
Treatment Differences			
Chemguard Class A	PFBA	**ND**	
Chemguard Class A	PFPA	**ND**	
Chemguard Class A	PFHxA	**ND**	
Chemguard Class A	PFHpA	**ND**	
Chemguard Class A	PFOA	**ND**	
Chemguard Class A	PFNA	**ND**	
Chemguard Class A	**Total PFCA**	**ND**	

Table 4: ChemGuard Class A Plus Analytical Results

Sample Name (Sampled 4/14/21)	Analyte	Result (ng/l)	
		Pre-Treatment	Post Treatment
National Foam	Perfluorobutanoic acid (PFBA)	ND	**46000000**
National Foam	Perfluoropentanoic acid (PFPeA)	ND	**110000000**
National Foam	Perfluorohexanoic acid (PFHxA)	**430000**	**27000000**
National Foam	Perfluoroheptanoic acid (PFHpA)	ND	**6400000**
National Foam	Perfluorooctanoic acid (PFOA)	ND	ND
National Foam	Perfluorononanoic acid (PFNA)	ND	ND
National Foam	Perfluorodecanoic acid (PFDA)	ND	ND
National Foam	Perfluoroundecanoic acid (PFUnA)	ND	ND
National Foam	Perfluorododecanoic acid (PFDoA)	ND	ND
National Foam	Perfluorotridecanoic acid (PFTriA)	ND	ND
National Foam	Perfluorotetradecanoic acid (PFTeA)	ND	ND
National Foam	Perfluorobutanesulfonic acid (PFBS)	ND	ND
National Foam	Perfluorohexanesulfonic acid (PFHxS)	ND	ND
National Foam	Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND
National Foam	Perfluorooctanesulfonic acid (PFOS)	ND	ND
National Foam	Perfluorodecanesulfonic acid (PFDS)	ND	ND
National Foam	Perfluorooctanesulfonamide (FOSA)	ND	ND
National Foam	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND	ND
National Foam	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND	ND
National Foam	6:2 FTS	**15000000**	ND
National Foam	8:2 FTS	ND	ND
National Foam	**Total PFCA**	**430000**	**190000000**
Treatment Differences			
National Foam	PFBA	**46000000**	
National Foam	PFPA	**110000000**	
National Foam	PFHxA	**27000000**	
National Foam	PFHpA	**6400000**	
National Foam	PFOA	**ND**	
National Foam	PFNA	**ND**	
National Foam	**Total PFCA**	**190000000**	

Table 5: National Foam Universal Gold 1%/3% Analytical Results

Sample Name (Sampled 4/14/21)	Analyte	Result (ng/l)	
		Pre-Treatment	Post Treatment
Solberg 3-6	Perfluorobutanoic acid (PFBA)	ND	**210000000**
Solberg 3-6	Perfluoropentanoic acid (PFPeA)	ND	**460000000**
Solberg 3-6	Perfluorohexanoic acid (PFHxA)	**510000**	**130000000**
Solberg 3-6	Perfluoroheptanoic acid (PFHpA)	ND	**30000000**
Solberg 3-6	Perfluorooctanoic acid (PFOA)	ND	ND
Solberg 3-6	Perfluorononanoic acid (PFNA)	ND	ND
Solberg 3-6	Perfluorodecanoic acid (PFDA)	ND	ND
Solberg 3-6	Perfluoroundecanoic acid (PFUnA)	ND	ND
Solberg 3-6	Perfluorododecanoic acid (PFDoA)	ND	ND
Solberg 3-6	Perfluorotridecanoic acid (PFTriA)	ND	ND
Solberg 3-6	Perfluorotetradecanoic acid (PFTeA)	ND	ND
Solberg 3-6	Perfluorobutanesulfonic acid (PFBS)	ND	ND
Solberg 3-6	Perfluorohexanesulfonic acid (PFHxS)	ND	ND
Solberg 3-6	Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND
Solberg 3-6	Perfluorooctanesulfonic acid (PFOS)	ND	ND
Solberg 3-6	Perfluorodecanesulfonic acid (PFDS)	ND	ND
Solberg 3-6	Perfluorooctanesulfonamide (FOSA)	ND	ND
Solberg 3-6	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND	ND
Solberg 3-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND	ND
Solberg 3-6	6:2 FTS	**37000000**	ND
Solberg 3-6	8:2 FTS	ND	ND
Solberg 3-6	**Total PFCA**	**510000**	**830000000**
Treatment Differences			
Solberg 3-6	PFBA	**210000000**	
Solberg 3-6	PFPA	**460000000**	
Solberg 3-6	PFHxA	**130000000**	
Solberg 3-6	PFHpA	**30000000**	
Solberg 3-6	PFOA	**ND**	
Solberg 3-6	PFNA	**ND**	
Solberg 3-6	**Total PFCA**	**830000000**	

Table 6: Solberg 3% - 6% Analytical Results

Images

Image 1: Concrete lined highway ditch along north side of Route 430.

Image 2: Excavation of concrete lined ditch along north side of Route 430 (northeast direction)

Image 3: Surveying concrete lined ditch along Route 430 (southwest direction)

Image 4: Surveying ditch on southside Route 430. (Discharge pipe on shown on left transfers flow from north side of street to the south side)

Image 5: Surveying sample locations north of Supply Well 3.

Image 6: Surveyed Bloomer Road stream gauging point at the top center (small hole in pipe) of the south side of the 60” culvert pipe

Image 7: Surveyed saw cut on bridge along Sherman-Mayville Road.

Image 8: Surveyed saw cut on bridge along Morris Street.

Image 9: Sampled ChemGuard 3%-6%

Image 10: Sampled ChemGuard 3%-6%

Image 11: Sampled Angus 3-6

Image 12: Sampled Angus 3-6

Image 13: Sampled ChemGuard Class A Plus

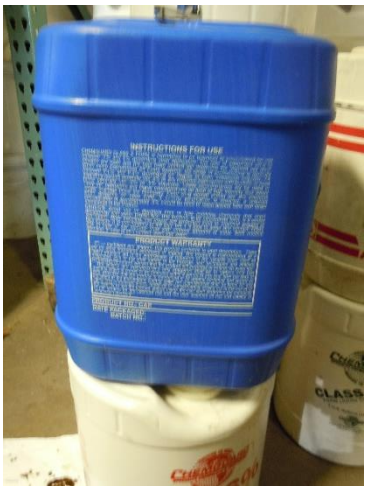


Image 14: Sampled ChemGuard Class A Plus

Image 15: Sampled ChemGuard Class A Plus

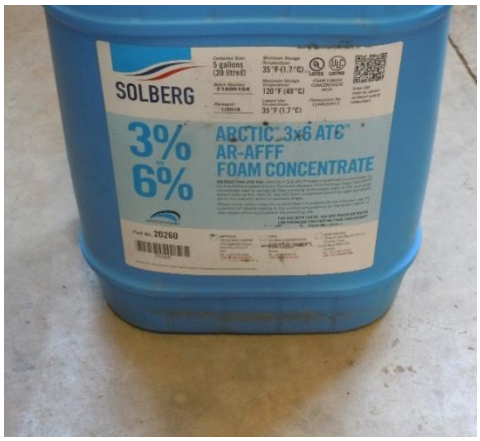
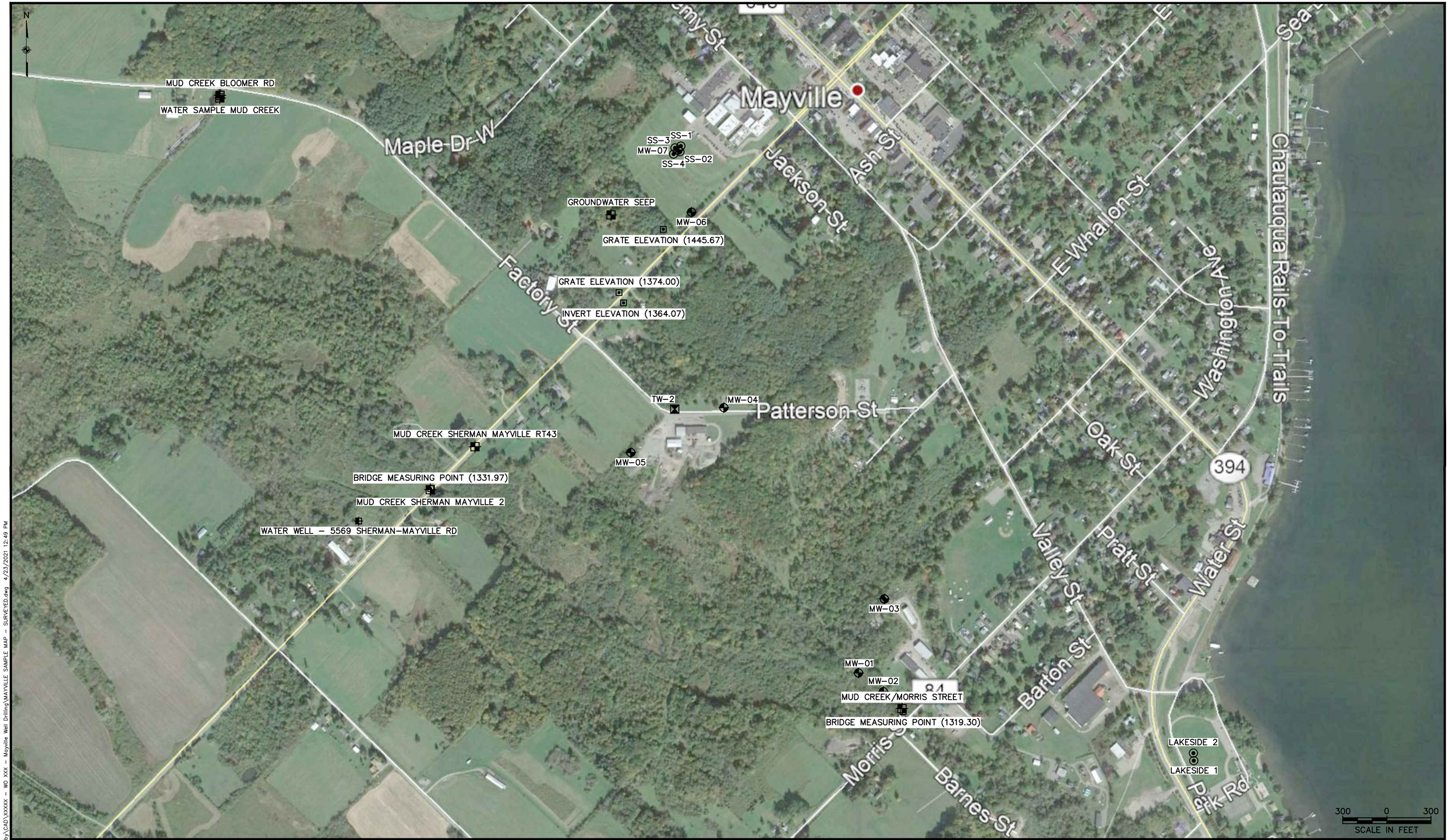


Image 16: Sampled Solberg 3%-6%

Image 17: State fire foam trailer

Image 18: Sampled National Foam Universal Gold 1%/3%



J:\17-013-0289 NYSDEC Standby\CAD\XXXXX – WO XXX – Mayville Well Drilling\MAYVILLE SAMPLE MAP – SURVEYED.dwg 4/23/2021 12:49 PM

WARNING

IT IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, OTHER THAN THOSE WHOSE SEAL APPEARS ON THIS DRAWING, TO ALTER IN ANY WAY AN ITEM ON THIS DRAWING. IF AN ITEM IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NO.	DATE	DESCRIPTION
REVISIONS		

LiRo Engineers, Inc.
690 Delaware Avenue
Buffalo, New York

PROJ. ENG.:	
DESIGNED BY:	
CHECKED BY:	
DRAWN BY:	
CLIENT:	NEW YORK STATE OF OPPORTUNITY. Department of Environmental Conservation
DATE:	APRIL 2021
SCALE:	AS SHOWN

JOB TITLE AND LOCATION:
EMERGING CONTAMINANT GROUNDWATER INVESTIGATION
VILLAGE OF MAYVILLE, CHAUTAUQUA COUNTY, NY
NYSDEC SPILL NO.: 2008000

LIRO JOB NO.: 17-013-0289

SHEET 1 OF 1

DRAWING TITLE:

FIGURE NO.

Safety Data Sheet

This safety data sheet complies with the requirements of: 2012 OSHA Hazard Communication Standard (29CFR 1910.1200)

Product name CHEMGUARD C363

1. Identification

1.1. Product Identifier

Product name	CHEMGUARD C363

1.2. Other means of identification

Product code	C363B
Synonyms	None
Chemical Family	Fire fighting foam, surfactant

1.3. Recommended use of the chemical and restrictions on use

Recommended use	Fire extinguishing agent.
Uses advised against	None known.

1.4. Details of the Supplier of the Safety Data Sheet

Company Name	Tyco Fire Protection Products One Stanton Street Marinette, WI 54143-2542 Telephone: 715-735-7411
Contact point	Product Stewardship at 1-715-735-7411
E-mail address	psra@tycofp.com

1.5. Emergency Telephone Number

Emergency telephone	CHEMTREC 001-800-424-9300 or 001-703-527-3887

2. Hazards Identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Serious eye damage/eye irritation - Category 1

2.2. Label Elements

Signal Word
DANGER

Hazard Statements
Causes serious eye damage

Precautionary Statements

Prevention
Wear protective gloves/protective clothing/eye protection/face protection.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

2.3. Hazards Not Otherwise Classified (HNOC)
Not Applicable.

2.4. Other Information

3. Composition/information on Ingredients

3.1. Mixture
The following component(s) in this product are considered hazardous under applicable OSHA(USA)

Chemical name	CAS No.	weight-%
1-(2-Butoxy-1-methylethoxy)propan-2-ol	29911-28-2	1 - 5
Sodium Decyl Sulfate	142-87-0	1 - 5
Sodium Octyl Sulfate	142-31-4	1 - 5

4. First aid measures

4.1. Description of first aid measures
General Advice Keep victim under observation. Move victim to a safe isolated area. Move victim to fresh air. Remove contaminated clothing and shoes.

Eye Contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact Wash skin with soap and water. Get medical attention if irritation develops and persists.

Inhalation Remove to fresh air. If breathing is difficult, give oxygen. (Get medical attention immediately if symptoms occur.).

Ingestion Rinse mouth. Do not induce vomiting without medical advice. If swallowed, call a poison control center or physician immediately.

4.2. Most Important Symptoms and Effects, Both Acute and Delayed
Symptoms No information available.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed
Note to physicians Treat symptomatically.

5. Fire-fighting measures

5.1. Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2. Unsuitable Extinguishing Media
None.

5.3. Specific Hazards Arising from the Chemical
None known.

Hazardous Combustion Products	Carbon oxides, Fluorinated oxides, Nitrogen oxides (NOx), Oxides of sulfur

5.4. Explosion Data

Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

5.5. Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal Precautions	Ensure adequate ventilation, especially in confined areas.
For emergency responders	Use personal protection recommended in Section 8.

6.2. Environmental Precautions

Environmental Precautions	Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas. See Section 12 for additional Ecological Information.

6.3. Methods and material for containment and cleaning up

Methods for Containment	Prevent further leakage or spillage if safe to do so.
Methods for Cleaning Up	Pick up and transfer to properly labeled containers.

7. Handling and Storage

7.1. Precautions for Safe Handling

Advice on safe handling	Avoid contact with skin and eyes. Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place.
Incompatible Materials	Strong oxidizing agents. Strong acids. Strong bases.

8. Exposure Controls/Personal Protection

8.1. Control Parameters

Exposure guidelines	This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

8.2. Appropriate Engineering Controls

Engineering controls	Ensure adequate ventilation, especially in confined areas.

8.3. Individual protection measures, such as personal protective equipment

Eye/Face Protection	Avoid contact with eyes. Tight sealing safety goggles.
Skin and Body Protection	Wear protective gloves and protective clothing.
Respiratory Protection	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
Ventilation	Use local exhaust or general dilution ventilation to control exposure with applicable limits

8.4. General hygiene considerations

Do not eat, drink or smoke when using this product. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State	Liquid		
Odor	Slight solvent	**Color**	Opaque
Odor Threshold	No data available		

Property	**Values**	**Remarks • Method**
pH	7 - 8.5	
Melting point/freezing point	-1 °C / 30 °F	
Boiling point / boiling range	> 100 °C / 212 °F	
Flash Point	> 100 °C / > 212 °F	
Evaporation Rate	No data available	
Flammability (solid, gas)	No data available	
Flammability limit in air		
Upper flammability limit:	No data available	
Lower flammability limit:	No data available	
Vapor Pressure	No data available	
Vapor Density	No data available	
Specific gravity	1	
Water Solubility	Completely soluble	
Solubility in Other Solvents	No data available	
Partition coefficient	No data available	
Autoignition Temperature	No data available	
Decomposition Temperature	No data available	
Kinematic viscosity	1500 min	

VOC content (%) 0.4507

10. Stability and Reactivity

10.1. Chemical Stability

Stable under recommended storage conditions.

10.2. Reactivity

No data available

10.3. Possibility of hazardous reactions

None under normal processing.

Hazardous Polymerization Hazardous polymerization does not occur.

10.4. Conditions to Avoid

Extremes of temperature and direct sunlight.

10.5. Incompatible Materials

Strong oxidizing agents. Strong acids. Strong bases.

10.6. Hazardous decomposition products

Carbon oxides. Nitrogen oxides (NOx). Oxides of sulfur. Fluorinated oxides.

11. Toxicological Information

11.1. Information on Likely Routes of Exposure

Product information No data available

Inhalation No data available.

Eye Contact Severely irritating to eyes.

Skin contact May cause irritation.

Ingestion No data available.

Component Information
Acute Toxicity

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
1-(2-Butoxy-1-methylethoxy)propan-2-ol 29911-28-2	= 1620 µL/kg (Rat)	= 5860 µL/kg (Rabbit)	= 42.1 ppm (Rat) 4 h
Sodium Decyl Sulfate 142-87-0	= 1950 mg/kg (Rat)	-	-
Sodium Octyl Sulfate 142-31-4	= 3200 mg/kg (Rat)	-	-

11.2. Information on Toxicological Effects

Symptoms No information available.

11.3. Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin Corrosion/Irritation Irritating to skin.
Serious eye damage/eye irritation Severely irritating to eyes.
Carcinogenicity No information available.
Reproductive Toxicity No information available.
STOT - Single Exposure No information available.
STOT - Repeated Exposure No information available.
Aspiration Hazard No information available.

11.4. Numerical Measures of Toxicity - Product information

The following values are calculated based on chapter 3.1 of the GHS document
Oral LD50 5660 mg/kg (rat)

12. Ecological Information

12.1. Ecotoxicity

Chemical name	Algae/aquatic plants	Fish	Crustacea
1-(2-Butoxy-1-methylethoxy)propan-2-ol 29911-28-2	-	LC50 (96h) static = 841 mg/L Poecilia reticulata	-
Cumene sulfonate, sodium salt 28348-53-0	EC50 (72h) > 1000 mg/L Desmodesmus subspicatus	-	EC50 (24h) > 1000 mg/L Daphnia magna
1,2-Propanediol 57-55-6	EC50 (96h) = 19000 mg/L Pseudokirchneriella subcapitata	LC50 (96h) static = 51600 mg/L Oncorhynchus mykiss LC50 (96h) static = 51400 mg/L Pimephales promelas LC50 (96h) = 710 mg/L Pimephales promelas LC50 (96h) static 41 - 47 mL/L Oncorhynchus mykiss	EC50 (48h) Static > 1000 mg/L Daphnia magna EC50 (24h) > 10000 mg/L Daphnia magna
Sodium chloride 7647-14-5	-	LC50 (96h) flow-through 4747 - 7824 mg/L Oncorhynchus mykiss LC50 (96h) semi-static = 7050 mg/L Pimephales promelas LC50 (96h) static = 12946 mg/L Lepomis macrochirus LC50 (96h) static 6020 - 7070 mg/L Pimephales promelas LC50 (96h) flow-through 5560 - 6080 mg/L Lepomis macrochirus LC50 (96h) static 6420 - 6700 mg/L Pimephales promelas	EC50 (48h) Static 340.7 - 469.2 mg/L Daphnia magna EC50 (48h) = 1000 mg/L Daphnia magna
t-Butanol 75-65-0	EC50 (72h) > 1000 mg/L Desmodesmus subspicatus	LC50 (96h) flow-through 6130 - 6700 mg/L Pimephales promelas	EC50 (48h) = 933 mg/L Daphnia magna EC50 (48h) Static 4607 - 6577 mg/L Daphnia magna
Potassium chloride 7447-40-7	EC50 (72h) = 2500 mg/L Desmodesmus subspicatus	LC50 (96h) static 750 - 1020 mg/L Pimephales promelas LC50 (96h) static = 1060 mg/L Lepomis macrochirus	EC50 (48h) = 825 mg/L Daphnia magna EC50 (48h) Static = 83 mg/L Daphnia magna
2-Methyl-2,4-pentanediol 107-41-5	-	LC50 (96h) static = 10700 mg/L Pimephales promelas LC50 (96h) static = 10000 mg/L Lepomis macrochirus LC50 (96h) flow-through = 8690 mg/L Pimephales promelas LC50 (96h) flow-through 10500 - 11000 mg/L Pimephales promelas	EC50 (48h) 2700 - 3700 mg/L Daphnia magna
Formaldehyde 50-00-0	-	LC50 (96h) static 100 - 136 mg/L Oncorhynchus mykiss LC50 (96h) flow-through 0.032 - 0.226 mL/L Oncorhynchus mykiss LC50 (96h) flow-through 22.6 - 25.7 mg/L Pimephales promelas LC50 (96h) static 23.2 - 29.7 mg/L Pimephales promelas LC50 (96h) static = 41 mg/L Brachydanio rerio LC50 (96h) static = 1510 µg/L Lepomis macrochirus	LC50 (48h) = 2 mg/L Daphnia magna EC50 (48h) Static 11.3 - 18 mg/L Daphnia magna
n-Butanol 71-36-3	EC50 (96h) > 500 mg/L Desmodesmus subspicatus EC50 (72h) > 500 mg/L Desmodesmus subspicatus	LC50 (96h) static = 1910000 µg/L Pimephales promelas LC50 (96h) static 1730 - 1910 mg/L Pimephales promelas LC50 (96h) flow-through = 1740 mg/L Pimephales promelas LC50 (96h) static 100000 - 500000 µg/L Lepomis macrochirus	EC50 (48h) Static 1897 - 2072 mg/L Daphnia magna EC50 (48h) = 1983 mg/L Daphnia magna
5-Chloro-2-methyl-4-isothiazolin-3-o	EC50 (96h) static 0.03 - 0.13 mg/L	LC50 (96h) semi-static = 1.6 mg/L	EC50 (48h) Flow through 0.12 - 0.3

ne 26172-55-4	Pseudokirchneriella subcapitata EC50 (72h) static 0.11 - 0.16 mg/L Pseudokirchneriella subcapitata EC50 (120h) = 0.31 mg/L Anabaena flos-aquae	Oncorhynchus mykiss	mg/L Daphnia magna EC50 (48h) Static 0.71 - 0.99 mg/L Daphnia magna EC50 (48h) = 4.71 mg/L Daphnia magna

12.2. Persistence and Degradability

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Biodegradability (B.O.D./C.O.D.)	65 %
Total Organic Carbon	8300 mg/l

12.3. Bioaccumulation

No information available.

12.4. Other Adverse Effects

No information available

13. Disposal Considerations

13.1. Waste Treatment Methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging Do not reuse container.

14. Transport Information

DOT NOT REGULATED

TDG NOT REGULATED

MEX NOT REGULATED NOT REGULATED

ICAO (air) NOT REGULATED

IATA NOT REGULATED

IMDG NOT REGULATED

15. Regulatory Information

15.1. International Inventories

TSCA	Complies
DSL/NDSL	Does not comply
ENCS	Does not comply
IECSC	Does not comply
KECL	Does not comply
PICCS	Does not comply
AICS	Does not comply

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

15.2. US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic health hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

15.3. US State Regulations

California Proposition 65
This product contains the following Proposition 65 chemicals

Chemical name	California Proposition 65
Formaldehyde - 50-00-0	Carcinogen
Perfluorooctanoic acid - 335-67-1	Developmental Toxicity

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
t-Butanol 75-65-0	X	X	X
n-Butanol 71-36-3	X	X	X
Magnesium Nitrate 10377-60-3	X	X	X

16. Other information, including date of preparation of the last revision

NFPA	**Health Hazards** 0	**Flammability** 1	**Instability** 0	**Physical and chemical properties** -
HMIS	**Health Hazards** 0	**Flammability** 1	**Physical Hazards** 0	**Personal Protection** X

Revision date 18-Jan-2019
Revision note No information available.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

MATERIAL SAFETY DATA SHEET #AMS183

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product identifier: ALCOSEAL 3/6%® AR-FFFP
Synonyms: Alcohol Resistant Film Forming Fluoroprotein (AR-FFFP)
CAS #: Mixture, no single CAS number is available
Product use: Fire fighting foam concentrate
Product description: Hydrolized protein solution containing fluorosurfactants and glycol solvent.

Supplier name and address:

Angus Fire
180 Sheree Boulevard, Suite 3900 · P.O. Box 695
Exton, PA 19341 USA
Phone: (610) 363-1400 · Fax: (610) 524-9073
www.nationalfoam.com

Emergency Telephone #: 1-800-334-3156

SECTION 2 - CHEMICAL COMPOSITION/HAZARDOUS INGREDIENTS

Ingredients	CAS #	% (weight)	LD50 mg/kg (rat, oral)	LC50 ppm (rat, ihl)	OSHA PEL	ACGIH TLV
Hydrolized protein	None	21-31	N/Av	N/Av	None	None
Fluorosurfactrants	N/Av	3-7	N/Av	N/Av	N/Av	N/Av
1,2 benzoisothiazelin-3-one	N/Av	1-5	N/Av	N/Av	N/Av	N/Av
Hexylene glycol	107-41-5	5-10	3700	>310 mg/m^3 /1H	N/Av	25 ppm (ceiling)
Water	7732-18-5	Balance	190 gm/kg	N/Av	None	None

SECTION 3 - HAZARD IDENTIFICATION

POTENTIAL HEALTH EFFECTS

Target organs: Lungs, skin, eyes
Signs and symptoms of short-term (acute) exposure:
Inhalation: Inhalation of vapours may cause respiratory irritation.
Skin contact: Can cause skin irritation.
Eye contact: Can cause eye irritation.
Ingestion: It is not likely that this product will be swallowed if used as intended. It may cause nausea and vomiting if swallowed.
Effects of long-term (chronic) exposure:
None known.
Other important hazards: None

SECTION 4 - FIRST AID MEASURES

Inhalation: If someone feels ill after inhaling vapours, remove them to fresh air. Call a physician if symptoms do not go away quickly.

Skin contact: If product gets on skin, wash off with large amounts of water

Eye contact: If liquid is splashed in eyes, immediately flush eyes with lots of water for 15 minutes, including under the eyelids. Call a physician right away.

Ingestion: If swallowed, call a physician or Poison Control Centre. DO NOT induce vomiting unless directed to do so by a physician. If vomiting does occur, position victim so that fluid does not drain back into lungs.

SECTION 5 - FIRE FIGHTING MEASURES

Fire hazards/conditions of flammability: Not flammable under normal conditions of use. May be combustible if heated above its flash point.

Flash point (Method): >190°F (>88°C) (Pensky Martens Closed Cup)

Lower/Upper flammable limit (% by volume): Product is not flammable under normal conditions.

Explosion data:

Sensitivity to mechanical impact: Not sensitive to mechanical impact.

Sensitivity to static discharge: Not sensitive to static discharge at temperatures below the flash point.

Oxidizing properties: Product is not an oxidizer

Auto-ignition temperature: N/Av

Suitable extinguishing media: Not applicable.

Special fire-fighting procedures/equipment: Not applicable.

Hazardous combustion products: Not applicable.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions: Wear appropriate protective equipment (see Section 8).

Environmental precautions: If in doubt about proper disposal, contact local, state or federal EPA (in USA) or municipal or provincial environmental authorities (in Canada).

Spill response/Cleanup: Wear appropriate protective equipment to collect spillage with an absorbent material. Flush area with water until foaming ceases, using caution as area may be slippery. Prevent discharge of concentrate into waterways. Obtain prior approval before discharge into sewer treatment systems. Disposal must be in accordance with federal, state or provincial, and local regulations.

Prohibited materials: None.

SECTION 7 - HANDLING AND STORAGE

Safe handling procedures: Product is for industrial and municipal fire department use only. Consult product literature for appropriate handling during fires.

Storage requirements: Store at 25°F - 120°F (-4°C - 49°C).

Incompatible materials: As with all aqueous solutions, ALCOSEAL should not be put in contact with any materials which react violently with water.

Special packaging materials: Use original container or store in stainless steel, fibreglass or bitumen-lined tanks.

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

Ventilation and engineering controls:	Provide adequate levels of ventilation to prevent a build-up of vapours from the product.
Respiratory protection:	Not normally required under normal conditions of use. If vapours reach irritating levels, wear a NIOSH-approved respirator equipped with organic vapour cartridges.
Protective gloves:	Wear impervious gloves of an approved material, for example Neoprene.
Eye protection:	Wear safety glasses, chemical goggles or a face shield of an approved type.
Other protective equipment:	Body-covering clothing is recommended.
Permissible exposure levels:	See Section 2, Hazardous Ingredients.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical form, color and odor: Dark brown viscous liquid, with an organic odor.
Odor threshold: Not available.
pH @ 68°F (20°C): 6.5 - 7.5
Boiling point: 212°F (100°C)
Melting/freezing point: 19°F (-7°C)
Vapour pressure: Not available.
Solubility in water: 100%
Coefficient of oil/water distribution: Not available.
Specific gravity (water = 1): 1.09
Vapour density: Not available
Volatile organic compounds (VOC's): Less than 20%
Evaporation rate: Not available

SECTION 10 - REACTIVITY AND STABILITY DATA

Stability and reactivity:	Stable. Hazardous polymerization will not occur.
Conditions to avoid:	None known.
Materials to avoid:	Contact with chemicals that react violently on contact with water, such as sodium metal.
Hazardous decomposition products:	None known.

SECTION 11 - TOXICOLOGICAL INFORMATION/HEALTH EFFECTS

LD_{50}: Not available for product.
LC_{50}: Not available for product.
Routes of exposure: Lungs, skin, eyes
Carcinogenicity: No ingredient classed as carcinogenic by OSHA, IARC, ACGIH or NTP
Teratogenicity, mutagenicity, other reproductive effects: None known.
Sensitization to material: Product is not known to cause allergies.
Conditions aggravated by exposure: None known.
Synergistic materials: None known.

SECTION 12 - ECOLOGICAL INFORMATION

Environmental effects: Readily biodegradable. Product is expected to have a relatively low risk to the environment

Important environmental characteristics: None known.

Chemical Oxygen Demand: COD 0.29 g/g

Biochemical Oxygen Demand: 5 day BOD 0.078 g/g (27%)
15 day BOD 0.23 g/g (29%)
28 day BOD 0.27 g/g (92%)

Aquatic toxicity: LC_{50} (Rainbow trout [*Ocorhynchus mykiss*], 3 hours): 8,500 ppm.
LC_{50} (Rainbow trout [*Ocorhynchus mykiss*], 24 hours): 3,700 ppm.
LC_{50} (Rainbow trout [*Ocorhynchus mykiss*], 72 hours): 3,300 ppm.

EC_{50} (Water flea [*Daphnia magna*], 24 hours): 10,700 ppm.
EC_{50} (Water flea [*Daphnia magna*], 48 hours): 9,800 ppm.

SECTION 13 - WASTE DISPOSAL

Handling for disposal: Avoid contact with eyes and skin, and excessive inhalation. Do not ingest. Rinse skin and eyes thoroughly in case of contact.

Methods of disposal: If in doubt about proper disposal, contact local, state or federal EPA (in USA) or municipal or provincial environmental authorities (in Canada).

SECTION 14 - TRANSPORT INFORMATION

Transportation of Dangerous Goods (TDG) information:

Shipping description: Not regulated as dangerous goods according to TDG Regulations.

49 CFR information:

Shipping description: Not regulated as hazardous material according to 49 CFR Hazardous Materials Regulations.

International Dangerous Goods information:

IMO: Not regulated as dangerous goods according to IMDG Code.

ICAO: Not regulated as dangerous goods according to ICAO Technical Instructions or IATA Regulations.

Other information: None.

SECTION 15 - REGULATORY INFORMATION

WHMIS information: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and this MSDS contains all the information required by the CPR. WHMIS classification is D2B, Toxic and Infectious Substances, Toxic Material.

CEPA information: All ingredients are listed on the DSL.

SARA information: This product does not contain any SARA Title III Section 313 chemicals.

TSCA information: All ingredients are listed in TSCA

RCRA information: Not a regulated waste

CERCLA information: Under U.S. EPA CERCLA regulations, releases to air, land or water which exceed the reportable quantity must be reported to the National Response Center (1-800-424-8802). There is no reportable quantity (RQ) for this product. There are no reportable materials in this product.

California Proposition 65 Information: To the best of our knowledge, this product does not contain any California Proposition 65 designated chemicals.

SECTION 16 - OTHER INFORMATION

Prepared for: Angus Fire
Telephone number: (610) 363-1400
Preparation date/revision number: October 16, 2013

Additional notes or references:

Abbreviations:

ACGIH:	American Conference of Governmental Industrial Hygienists
CEPA:	Canadian Environmental Protection Act
CERCLA:	Comprehensive Environmental Response Compensation and Liability Act
DOT:	Department of Transport
DSL:	Domestic Substance List
IARC:	International Agency for Research on Cancer
IATA:	International Air Transport Association
ICAO:	International Civil Aviation Organization
IMDG:	International Maritime Dangerous Goods Code
OSHA:	Occupational Safety and Health Administration
N/Ap	Not applicable
N/Av:	Not available
NIOSH:	National Institute for Occupational Safety and Health
NTP:	National Toxicology Program
RCRA:	Resource Conservation and Recovery Act
TSCA:	Toxic Substances Control Act
WHMIS:	Workplace Hazardous Materials Information System

References:

1. Van Nostrand Reinhold, Dangerous Properties of Industrial Materials, Seventh Edition, N. Irving Sax.
2. Canadian Centre for Occupational Health and Safety. RTECS (Registry of Toxic Effects) and CHEMINFO databases.
3. ACGIH, Threshold Limit Values and Biological Exposure Indices for 1997.
4. International Agency for Research on Cancer Monographs.

MATERIAL SAFETY DATA SHEET

CHEMGUARD CLASS A PLUS

Revision Date: 11/9/2006

1. PRODUCT IDENTIFICATION

Chemical Family: Surfactant mixture; fire fighting foam concentrate

Product name: Chemguard Class A Plus

Manufacturer: Chemguard, Inc.
204 South 6th Ave.
Mansfield, TX 76063
emergency phone: 817-473-9964

2. COMPOSITION / INFORMATION ON INGREDIENTS

		ACGIH/PPM		OSHA/PPM	
CAS NO.	Common Name	TWA	STEL	PEL	% by wt
7732-18-5	water				60 - 75 %
107-41-5	Hexylene glycol				3 - 7%

proprietary mixture of alkyl sulfates, ethoxylates,
amphoterics, solvents and corrosion inhibitors

3. HAZARDS IDENTIFICATION

Routes of entry: Dermal, inhalation and ingestion
Potential Health Effects: May cause skin and eye irritation.
Carcinogenicity: Not a carcinogen.

4. FIRST AID MEASURES

Ingestion: Do not induce vomiting. Call a physician.
Inhalation: Remove to fresh air.
Skin: Rinse with water. Wash with soap and water. Contaminated clothing should be washed before re-use.
Eyes: Rinse with water. Call a physician.

5. FIRE FIGHTING MEASURES

Flash Point:	no flash
Flammable Limits in air (lower % by volume):	not evaluated
Flammable Limits in air (upper % by volume):	not evaluated
Auto-ignition Temperature:	not evaluated

General Hazards: None known.
Fire Fighting Equipment: Self contained breathing apparatus
Fire Extinguishing Media: Water, Foam, Carbon Dioxide, Dry Chemical, Halon
Fire and Explosion Hazards: Decomposition products may be toxic.
Hazardous Combustion Products:

6. ACCIDENTAL RELEASE

Contain spills. Vacuum or pump into storage containers, absorb smaller quantities with absorbent materials, and dispose of properly. Washing area with water will create large amounts of foam.

Dispose of released and contained material in accordance with local, state, and federal regulations. Release to local waste treatment plant only with permission.

7. HANDLING AND STORAGE

Store in original container, or appropriate end-use device. Store at temperatures of 32° - 120° F. If the material freezes, it may be thawed without loss of performance.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

Eye Protection: Wear chemical goggles or face shield when handling concentrate.
Skin Protection: Wear latex or rubber gloves.
Respiratory Protection: Use organic vapor respirator if needed.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point:	205°F
Melting Point:	40°F
Specific Gravity:	1.01 g/ml
Vapor Pressure (mm Hg):	N/A
pH	7.0 - 8.5
Flash Point:	no flash, COC
Vapor Density (air = 1)	N/A
Solubility in water:	100%
Appearance:	clear amber liquid
Odor:	slight solvent odor

10. STABILITY AND REACTIVITY

Stability: Stable
Incompatibility: Strong oxidizers
Hazardous Polymerization: Will not occur.
Decomposition Products: Oxides of nitrogen, sulfur, carbon.

11. TOXICOLOGICAL INFORMATION

	CONCENTRATE	MIXED SOLUTION
Eye Irritation:	Severly irritating, Toxicity category I	Practically non-irritating Toxicity category IV
Skin Irritation:	Non-irritating	Slightly irritating
Acute Dermal LD50	>2020 mg/kg of body weight	>2020 mg/kg of body weight
Inhalation Toxicity:	not evaluated	
Sensitization:	not evaluated	
Teratology:	not evaluated	
Mutagenicity:	not evaluated	
Reproduction:	not evaluated	
Acute Oral LD50	>5050 mg/kg of body weight	>5050 mg/kg of body weight

12. ECOLOGICAL INFORMATION

	CONCENTRATE	SOLUTION (AS USED 0.5%)
Chemical Oxygen Demand:	760,000 mg/l	3800 mg/l
Biological Oxygen Demand (20 day):	417,000 mg/l	2085 mg/l
Biodegradability (B.O.D./C.O.D.)	55%	55%
Total Organic Carbon:	not determined	not determined
LC50 (96 hour pimephales promelas)	not determined	not determined
LC50 (48 hour, daphnia magna)	not determined	not determined

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with local, state, and federal regulations. Discharge to waste treatment plants only with permission. Anti-foam agents may be used to reduce foaming in waste streams.

14. TRANSPORTATION INFORMATION

Department of Transportation proper shipping name: not regulated

15. REGULATORY INFORMATION

All ingredients are on the TSCA inventory.
No components are reportable under SARA Title III, sec. 313
No components are priority pollutants listed under the U.S. Clean Water Act Section 307 (2)(1) Priority Pollutant List (40 CFR 401.15).
No components are reportable under **CERCLA**.

16. OTHER INFORMATION

NFPA Hazard Ratings		**HMIS Identification System**
2	Health Hazard Rating	2
0	Flammability Rating	0
0	Instability/Reactivity Rating	0

Change Log:

Revision 2, 1/26/06

Revision date changed.

Revision 3, 11/9/06

Flash point changed from ">196°F" to "No flash" based on new test results.

Flammability rating changed base on new test results.

SAFETY DATA SHEET – NMS#420
Universal Gold®C6 1%/3% Alcohol Resistant Aqueous Film Forming Foam Concentrate (AR-AFFF)

1. IDENTIFICATION

Product Name	Universal Gold®C6 1%/3% Alcohol Resistant Aqueous Film Forming Foam Concentrate (AR-AFFF)
Recommended use of the chemical and restrictions on use	
Identified uses	Firefighting Foam Concentrate
Restrictions on Use	See Section 15
Company Identification	National Foam 350 East Union Street West Chester, PA 19382
Customer Information Number	(610) 363-1400
Emergency Telephone Number	Infotrac at (800) 535-5053
Issue Date	November 20, 2020
Supersedes Date	August 21, 2019

Safety Data Sheet prepared in accordance with OSHA's Hazard Communication Standard (29 CFR 1910.1200, the Canadian Hazardous Products Regulations (HPR) and the Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

2. HAZARD IDENTIFICATION

Hazard Classification
Eye Damage/Irritation – Category 2A

Label Elements
Hazard Symbols

Signal Word: Warning

Hazard Statements
Causes serious eye irritation.

Precautionary Statements
Prevention
Wash hands thoroughly after handling.
Wear eye protection and face protection.
Response
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
Storage
None
Disposal
None

Other Hazards
This product contains fluoroalkyl surfactants which are and include PFAS (per- or poly- fluoroalkyl substances). See Sections 13 and 15 for additional information.

2. HAZARD IDENTIFICATION

Specific Concentration Limits
The values listed below represent the percentages of ingredients of unknown toxicity.

Acute oral toxicity	<5%
Acute dermal toxicity	5 - 15%
Acute inhalation toxicity	15 - 25%
Acute aquatic toxicity	15 - 25%

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CAS Number	Concentration*
Sodium decyl sulfate	142-87-0	1 - 5%
Alkylpolyglycoside	132778-08-6	1 - 5%
Dipropylene Glycol Monomethyl Ether	34590-94-8	1 - 5%

*Exact concentration withheld as trade secret.

This product contains fluoroalkyl surfactants which are and include PFAS (per- or poly- fluoroalkyl substances). See Sections 13 and 15 for additional information.

4. FIRST- AID MEASURES

Description of necessary first-aid measures
Eyes
Immediately flood the eye with plenty of water for at least 15 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.
Skin
Wash skin thoroughly with soap and water. Obtain medical attention if irritation persists.
Ingestion
Dilute by drinking large quantities of water and obtain medical attention.
Inhalation
Move victim to fresh air. Obtain medical attention immediately for any breathing difficulty.

Most important symptoms/effects, acute and delayed
Aside from the information found under Description of necessary first aid measures (above) and Indication of immediate medical attention and special treatment needed, no additional symptoms and effects are anticipated.

Indication of immediate medical attention and special treatment needed
Notes to Physicians
Treat symptomatically.

5. FIRE - FIGHTING MEASURES

Suitable Extinguishing Media
This preparation is used as an extinguishing agent and therefore is not a problem when trying to control a fire. Use extinguishing agent appropriate to other materials involved.

5. FIRE - FIGHTING MEASURES

Specific hazards arising from the chemical
None known

Special Protective Actions for Fire-Fighters
Wear full protective clothing and self-contained breathing apparatus as appropriate for specific fire conditions.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Wear appropriate protective clothing. Prevent skin and eye contact.

Environmental Precautions
Prevent foam concentrate or foam solution from entering ground water, surface water, or storm drains. Discharge and disposal of concentrate or foam solution should be made in accordance with federal, state, and local regulations. See Section 13 for disposal requirements.

Methods and materials for containment and cleaning up
Contain and absorb using appropriate inert material and transfer into suitable containers for recovery or disposal. See Section 13 for disposal requirements.

7. HANDLING AND STORAGE

Precautions for safe handling
Wear appropriate protective clothing. Prevent skin and eye contact.

Conditions for safe storage
Store in original containers between 35°F and 120°F (2°C and 49°C). Storage area should be: - cool - dry - well ventilated - under cover - out of direct sunlight

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Exposure limits are listed below, if they exist.

Dipropylene Glycol Monomethyl Ether
ACGIH TLV: 100 ppm (606 mg/m^3) 8hr TWA; 15 min STEL 150 ppm (909 mg/m^3); Danger of cutaneous absorption.
OSHA PEL: 100 ppm (600 mg/m3) Danger of cutaneous absorption.

Appropriate engineering controls
Use with adequate ventilation. If this product is used in a pressurized system, there should be local procedures for the selection, training, inspection and maintenance of this equipment. When used in large volumes, use local exhaust ventilation.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Individual protection measures
Respiratory Protection
Wear respiratory protection if there is a risk of exposure to high vapor concentrations, aerosols or if applied to hot surfaces. A NIOSH approved full face respirator may be worn. The specific respirator selected must be based on the airborne concentration found in the workplace and must not exceed the working limits of the respirator.
Skin Protection
Gloves
Eye/Face Protection
Chemical goggles or safety glasses with side shields.
Body Protection
Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical State	Liquid
Color	Amber
Odor	Mild, pleasant
Odor Threshold	No data available
pH	8.2
Specific Gravity	1.03
Boiling Range/Point (°C/F)	No data available
Melting Point (°C/F)	No data available
Flash Point (°C/F)	>200°F
Vapor Pressure	No data available
Evaporation Rate (BuAc=1)	No data available
Solubility in Water	Soluble
Vapor Density (Air = 1)	Not applicable
VOC (%)	No data available
Partition coefficient (n-octanol/water)	No data available
Viscosity	No data available
Auto-ignition Temperature	Not applicable
Decomposition Temperature	No data available
Upper explosive limit	Not applicable
Lower explosive limit	Not applicable
Flammability (solid, gas)	Not applicable

10. STABILITY AND REACTIVITY

Reactivity
No data available.

Chemical Stability
Stable under normal conditions.

Possibility of hazardous reactions
Hazardous polymerization will not occur.

10. STABILITY AND REACTIVITY

Conditions to Avoid
Contact with incompatible materials

Incompatible Materials
Water reactive materials – burning metals – electronically energized equipment

Hazardous Decomposition Products
Oxides of carbon – hydrogen fluoride – aldehydes – ketones – organic acids

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Product
Oral LD50 (rat) >5000mg/kg
Alkylpolyglycoside
Oral LD50 (rat) >5000mg/kg
Dipropylene Glycol Monomethyl Ether
Oral LD50 (rat) >5000 mg/kg
Dermal LD5 (rabbit) >9510 mg/kg
Inhalation LC50 (rat) > 3.35 mg/l,7h, vapour, no deaths occurred at this concentration

Specific Target Organ Toxicity (STOT) – single exposure
Available data indicates this product is not expected to cause target organ effects after a single exposure.

Specific Target Organ Toxicity (STOT) – repeat exposure
Available data indicates this component not expected to cause target organ effects after repeated exposure.

Serious Eye damage/Irritation
Product: Primary irritant (rabbit) (tested on a similar product)
Sodium decyl sulfate: Severe eye irritant (based on similar material)
Alkylpolyglycoside: Severely irritating (rabbit) (50% solution)

Skin Corrosion/Irritation
Product: Not a primary irritant (rabbit) (tested on a similar product)

Respiratory or Skin Sensitization
Available data indicates this product is not expected to cause skin sensitization.

Carcinogenicity
Not considered carcinogenic by NTP, IARC, and OSHA.

Germ Cell Mutagenicity
Available data indicates this product is is not expected to be mutagenic.

Reproductive Toxicity
Available data indicates this product is not expected to cause reproductive toxicity or birth defects.

Aspiration Hazard
Not an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity
No relevant studies identified.

Mobility in soil
No relevant studies identified.

Persistence/Degradability
No relevant studies identified.

Bioaccumulative Potential
No relevant studies identified.

Other adverse effects
No relevant studies identified.

13. DISPOSAL CONSIDERATIONS

Disposal Methods
This product, as sold, is not a RCRA-listed waste or hazardous waste as characterized by 40 CFR 261. However, state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Therefore, applicable local and state regulatory agencies should be contacted regarding disposal of waste foam concentrate or foam/foam solution.
Concentrate
Prevent foam concentrate from entering ground water, surface water or storm drains. Small quantities of foam concentrate may be collected on absorbents which can then be disposed of. Disposal should be made in accordance with local, state and federal regulations. High temperature incineration is required at a minimum of 1000°C with a minimum residence time of 2 seconds.
Foam/Foam Solution
Prevent foam/foam solution from entering ground water, surface water or storm drains. Small quantities of foam solution may be collected on absorbents which can then be disposed of. Disposal should be made in accordance with local, state and federal regulations. High temperature incineration is required at a minimum of 1000°C with a minimum residence time of 2 seconds.
NOTE: Please consult National Foam for additional information regarding the disposal of foam concentrates and foam solutions or visit http://nationalfoam.com/use-discharge-and-disposal-of-firefighting-foam-products/

14. TRANSPORT INFORMATION

Shipping Information

Shipping Description	Fire Extinguisher Charges or Compounds N.O.I., Class 70
National Motor Freight Code	69160 Sub 0

This information is not intended to convey all transportation classifications that may apply to this product. Classifications may vary by container volume and by regional regulations. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules when transporting this material.

15. REGULATORY INFORMATION

United States TSCA Inventory
This product contains an ingredient that has restricted use under the EPA Toxic Substance Control Act. This product may only be used as a fire fighting foam. Any other use of this product is strictly prohibited. Disposal of this product must be done by incineration at a minimum of 1000°C with a minimum residence time of 2 seconds.

Canada DSL Inventory
This product contains an ingredient that is not listed on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL).

SARA Title III Sect. 311/312 Categorization
Eye irritation

SARA Title III Sect. 313
This product does not contain any chemicals that are listed in Section 313 at or above de minimis concentrations.

California Proposition 65

WARNING: This product can expose you to chemicals including diethanolamine and formaldehyde, which are known to the State of California to cause cancer, and perfluorooctanoic acid and methanol, which are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov/

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
None

16. OTHER INFORMATION

NFPA Ratings
NFPA Code for Health - 0
NFPA Code for Flammability - 0
NFPA Code for Reactivity - 0
NFPA Code for Special Hazards - None

Legend
ACGIH: American Conference of Governmental Industrial Hygienists
CAS#: Chemical Abstracts Service Number
EC50: Effect Concentration 50%
IARC: International Agency for Research on Cancer
LC50: Lethal Concentration 50%
LD50: Lethal Dose 50%
N/A: Denotes no applicable information found or available
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limit
RQ: Reportable Quantity
STEL: Short Term Exposure Limit
N/A: Denotes no applicable information found or available
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limit
RQ: Reportable Quantity

16. OTHER INFORMATION

Legend, continued
STEL: Short Term Exposure Limit
TLV: Threshold Limit Value
TSCA: Toxic Substance Control Act

Revision Date: November 20, 2020
Replaces: August 21, 2019
Changes made: Changes to Sections 2 and 3.

Information Source and References
This SDS is prepared by Hazard Communication Specialists based on information provided by internal company references.

Prepared By: EnviroNet LLC.

Universal Gold is a registered trademark of Angus International.

The information and recommendations presented in this SDS are based on sources believed to be accurate. National Foam assumes no liability for the accuracy or completeness of this information. It is the user's responsibility to determine the suitability of the material for their particular purposes. In particular, we make NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, with respect to such information, and we assume no liability resulting from its use. Users should ensure that any use or disposal of the material is in accordance with applicable Federal, State, and local laws and regulations.

MATERIAL SAFETY DATA SHEET

Section 1. Chemical product and company identification

Product Name:	ARCTIC 3x6% ATC AR-AFFF
Synonym:	ARCTIC 3x6% ATC, ARCTIC 3x6%, 3x6%
Chemical Name:	N/A This product is a mixture
C.A.S No.:	N/A This product is a mixture
Chemical Formula:	N/A This product is a mixture
EINECS Number:	N/A This product is a mixture

Use of this product: The intended use of this product is as a fire extinguishing agent.

Company / Undertaking Identification:

Americas	Europe/Middle East/Africa	Asia-Pacific
The Solberg Company 1520 Brookfield Avenue Green Bay, WI 54313 United States	Solberg Scandinavian AS Radøyvegen 721 - Olsvollstranda N-5938 Sæbøvågen Norway	Solberg Asia Pacific Pty Ltd 3 Charles Street St. Marys NSW 2760 Australia
Tel: +1 920 593 9445	Tel: +47 56 34 97 00	Tel: +61 2 9673 5300

Telephone:	(920) 593-9445
Emergency Contacts:	Chemtrec: (800) 424-9300 or (703) 527-3887
Revised:	June, 2015

Section 2. Hazard identification and emergency overview

HMIS: Health 1, Flammability 0, Reactivity 0, PPE B
NFPA: Health 1, Flammability 0, Reactivity 0
WHMIS: D2B – may irritate eyes, skin, mucous membranes

Human Exposure:

Product:

EU Classification:	Xi	Irritant
R Phrases:	36	Irritating to eyes
S Phrases:	2	Keep out of reach of children
	24	Avoid contact with skin

	26	In case of contact with eyes, rinse immediately with copious amounts of water and seek medical advice.

Components:

Diethylene Glycol Monobutyl Ether:

EU Classification	Xi	Irritant
R Phrases	36	Irritating to eyes
S Phrases	2	Keep out of reach of children
	24	Avoid skin contact
	26	In case of contact with eyes, rinse immediately with copious amounts of water and seek medical advice

Limit Values for Exposure:

Diethylene Glycol Monobutyl Ether:

OSHA PEL (General Industry) 8 hour TWA: None established

MAK (DE) Limit Value: 100 mg/m^3

Short term exposure limit value

(8 times, 5 minutes): 200mg/m^3

Neither this product nor any of the ingredients contained in it have been listed as carcinogenic by the National Toxicology Program IARC, or OSHA

As part of good industrial and personal hygiene and safety procedure, avoid all unnecessary exposure to chemical substances and ensure prompt removal from skin, eyes, and clothing

Signs and Symptoms:

Acute Exposure:

Eye Contact:	May cause mild to moderate transient irritation
Skin Contact:	May cause mild transient irritation and/or dermatitis
Inhalation:	Not a normal route of entry
Ingestion:	Irritating to mucous membranes

Chronic Overexposure: Possible systemic and motor disorders, diethethylene glycol monobutyl ether did not interfere with reproduction; however, body weights of newborn animals were decreased.

Medical conditions generally aggravated by exposure: Diseases of the kidney and liver.

For Environment: As much as possible, keep from being washed into surface water.

Section 3. Composition/information on ingredients

Ingredient Name:	Proprietary mixture consisting of hydrocarbon surfactants, complex carbohydrates, inorganic salts, solvent and water
Chemical Formula:	N/A - This is a mixture
C.A.S. No.:	N/A - This is a mixture
EINECS Number:	N/A - This is a mixture
Concentration, Wt. %:	>85%
Hazard Classification:	See section 2

Ingredient Name:	**Diethylene Glycol Monobutyl Ether** (a)
Chemical Formula:	$C_4H_9O(CH_2CH_2O)_2H$
C.A.S. No.:	112-35-5
EINECS Number:	230-961-6
Concentration, Wt.%:	12%
Hazard Classification:	See section 2

(a) This chemical is subject to reporting requirements of SARA Title III Section 313 and 40CFR Section 372

Section 4. First aid measures

Eye Exposure:	Irrigate eyes at eye wash station and repeat until pain free. Seek medical attention immediately.
Skin Exposure:	In case of contact, wash with plenty of soap and water. If irritation persists seek medical attention.
Inhalation:	If respiratory irritation or distress occurs remove victim to fresh air. Provide oxygen if breathing is difficult. Seek medical attention if irritation develops or persists.

Ingestion: Do not induce vomiting. If victim is alert, give liquids such as milk or water. Seek immediate medical attention. Do not leave victim unattended. To prevent aspiration of swallowed product, lay victim on side with head lower than waist.

Medical conditions possibly aggravated by exposure: Inhalation of product may aggravate existing chronic respiratory conditions.

Section 5. Firefighting measures

This product is an extinguishing media. No special protective equipment is required for fire fighters.
Insensitive to mechanical impact or static discharge.

HMIS (hazardous materials identification system) rankings (as liquid):
health = 1, flammability = 0, reactivity = 0, personal protective equipment: eye and skin protection (see Section 8).

Section 6. Accidental release measures

For personal protection: Prevent skin and eye contact, see Heading 8
Clean up: Use an absorbent material, to include but not be limited to, diatomaceous earth, kitty litter, or saw dust, and sweep up. See Heading 12

Section 7. Handling and storage

Avoid eye, respiratory, and skin exposure. Use appropriate PPE (personal protective equipment) when handling, and wash thoroughly after handling (Section 8). Keep product in original container until packaging for use as extinguisher. Clean used equipment before storage. Use this product only in well ventilated areas. Do not mix with other extinguishing agents.

Section 8. Exposure controls/ personal protection

Respiratory protection:
None expected to be needed, mechanical ventilation is recommended

Hand Protection:
Use chemical resistant gloves when handling the product

Eye protection:
Chemical goggles are recommended

Skin protection:
Standard fire-fighting equipment should provide all necessary protection

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Section 9. Physical and chemical properties

Appearance: Liquid light brown color; mild sweet odor
Solubility: Completely soluble in water
Flammability: Non -flammable
Flash point: Does not flash
Vapor density (Air = 1): Not determined, but <1
Explosive properties: Not explosive
Oxidizing properties: Not an oxidizer
Relative density: 1.06 (Water = 1)
pH: 7.0 to 8.5
Boiling point: ~ 220° F

Section 10. Stability and reactivity

Stability: stable

Incompatibles: Reactive metals, electrically energized equipment, any material reactive with water and strong oxidizers

Conditions to avoid: There are no known conditions which may cause a dangerous reaction.

Section 11: Toxicological Information

Product: The toxicity of the product mixture has not been determined

Components:

Diethylene Glycol Monobutyl Ether

Toxicity Data:	Oral (rat) LD_{50}	5,660 mg/kg	
	Oral (rat) LD_{50}	9,626 mg/kg	(EINECS ESIS)
	Dermal (rabbit) LD_{50}	4,000 mg/kg	
	Dermal (rabbit) LD_{50}	2,764 mg/kg	(EINECS ESIS)
Irritation Data:	Eye (rabbit)	20 mg/day	Moderate (EINECS ESIS)
	Eye (rabbit)	Highly irritating	(EINECS ESIS)
	Skin (rabbit)	1000 mg/kg/day	Moderate with edema, fissuring, leathery appearance (EINECS ESIS)
Target organs:	Kidney, blood, liver, lungs, gastrointestinal, spleen		

Section 12. Ecological information

Ecotoxicity:

Components:

Diethylene Glycol Monobutyl Ether

Fish	Lepomis marcrochinus:	LC_{50} (96 hrs.)	1,300 mg/L
	Carassius auratus:	LC_{50} (24 hrs.)	2,700 mg/L
Daphnids, Daphnia magna:		EC_{50} 24 hrs.)	3,184 mg/L
Algae,	Scenedesmus subspicatus:	EC_{50} (96 hrs.)	>100 mg/L

Mobility

Diethylene Glycol Monobutyl Ether

Should not partition from a water column to organic matter contained in sediments and suspended solids.

Persistence/ Degradability:

Diethylene Glycol Monobutyl Ether:

Indirect photodegradation is about 50% in 3.5 hours
Aerobic degradation with adapted activated sludge is 60% after 28 days
COD = 2080 mg/g of substance
BOD_5 = 250 mg O_2/g substance
Theoretical oxygen demand = 2.17 mg/mg

Bioaccumulation:

Diethylene Glycol Monobutyl Ether:

Should not bioaccumulate.

Section 13. Disposal considerations

As much as possible, keep from being washed into surface water, see Heading 12. Dispose of in compliance with national, regional, and local provisions that may be in force.

Section 14. Transportation information

This product is not a hazardous material under U.S. Department of Transportation (DOT) 49 CFR 172, and is not regulated by the DOT, IMO, lATA, RID/ADR, or Canada's TDG.

Section 15: Other information

This MSDS conforms to requirements under U.S., U.K., Canadian, Australian, and EU regulations or standards, and conforms to the 2003 ANSI Z400.1 format.

The information herein is given in good faith to be correct but does not claim to be all inclusive and shall be used only as a guide. Solberg or Amerex Corporation shall not be held liable for any damage resulting from handling or from contact with the above product.

Date Prepared: April, 2012
Supersedes: January, 2015

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

Laboratory Job ID: 480-183383-1
Client Project/Site: Mayville #2008000-DEC PIN: H7221

For:
New York State D.E.C.
625 Broadway
Division of Environmental Remediation
Albany, New York 12233-7014

Attn: Mr. Joshua Vaccaro

Authorized for release by:
6/1/2021 9:18:04 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
Orlette.Johnson@Eurofinset.com

Table of Contents

Definitions/Glossary

Client: New York State D.E.C.
Job ID: 480-183383-1
Project/Site: Mayville #2008000-DEC PIN: H7221

Qualifiers

LCMS

Qualifier	Qualifier Description
*5+	Isotope dilution analyte is outside acceptance limits, high biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 480-183383-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative
480-183383-1

Receipt
The samples were received on 4/14/2021 5:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.9º C.

LCMS
Method 537 (modified): Results for sample Angus 3-6 (480-183383-2) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits.

Method 537 (modified): The labeled analyte M2-4:2FTS is employed in this analysis as a “Reverse Surrogate”. It is used to monitor the oxidation efficiency of the TOP assay. This analyte is fortified into all sample fractions prior to any processing. The recovery of this analyte should be 0% in Post-Treatment fractions, indicating complete oxidation of the sample. Angus 3-6 (480-183383-2), (LCS 320-482158/2-A), (LCS 320-482160/2-A), (LCSD 320-482158/3-A), (LCSD 320-482160/3-A), (MB 320-482158/1-A) and (MB 320-482160/1-A)

Method 537 (modified): Zero percent recovery of precursor analytes (4:2FTS, 6:2FTS, 8:2FTS, FOSA, NMeFOSAA, and NEtFOSAA) and enhanced recoveries of PFCAs is observed in the Post-Treatment Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) associated with these samples, consistent with the expected oxidation of precursor analytes. (LCS 320-482160/2-A) and (LCSD 320-482160/3-A)

Method 537 (modified): The IDA recovery limits for M2-4:2 FTS is 50 to 150%. (CCV 320-483287/3)

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for 13C4 PFOS in the following sample: Chemguard Class A (480-183383-3). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): Results for sample National Foam (480-183383-4) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits.

Method 537 (modified): The labeled analyte M2-4:2FTS is employed in this analysis as a “Reverse Surrogate”. It is used to monitor the oxidation efficiency of the TOP assay. This analyte is fortified into all sample fractions prior to any processing. The recovery of this analyte should be 0% in Post-Treatment fractions, indicating complete oxidation of the sample. Chemguard 3-6 (480-183383-1), Chemguard Class A (480-183383-3), National Foam (480-183383-4) and Solberg 3-6 (480-183383-5)

Method 537 (modified): Results for samples Chemguard 3-6 (480-183383-1), Angus 3-6 (480-183383-2) and Solberg 3-6 (480-183383-5) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits.

Method 537 (modified): The labeled analyte M2-4:2FTS is employed in this analysis as a “Reverse Surrogate”. It is used to monitor the oxidation efficiency of the TOP assay. This analyte is fortified into all sample fractions prior to any processing. The recovery of this analyte should be 0% in Post-Treatment fractions, indicating complete oxidation of the sample. Chemguard 3-6 (480-183383-1), Angus 3-6 (480-183383-2) and Solberg 3-6 (480-183383-5)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method TOP Post Prep: Due to the matrix, the initial volumes used for the following samples deviated from the standard procedure: Chemguard 3-6 (480-183383-1), Angus 3-6 (480-183383-2), Chemguard Class A (480-183383-3), National Foam (480-183383-4) and Solberg 3-6 (480-183383-5). A 50000x dilution was made on the samples, then fortified with IDA and extracted. The reporting limits (RLs) have been adjusted proportionately.

Job ID: 480-183383-1 (Continued)

Laboratory: Eurofins TestAmerica, Buffalo (Continued)

Method Code: TOPS_Post_Prep
Matrix: AFFF
preparation batch 320-482160 and 320-482160

Method TOP Post Prep: Due to the matrix, the initial volumes used for the following sample deviated from the standard procedure: Angus 3-6 (480-183383-2). A 50000000x dilution was made on the sample, then fortified with IDA and extracted. The reporting limits (RLs) have been adjusted proportionately.

Method Code: TOPS_Pre_Prep
Matrix: AFFF
preparation batch 320-482160

Method TOP Pre - Prep: Due to the matrix, the initial volumes used for the following samples deviated from the standard procedure: Chemguard 3-6 (480-183383-1), Angus 3-6 (480-183383-2), Chemguard Class A (480-183383-3), National Foam (480-183383-4) and Solberg 3-6 (480-183383-5). A 50000x dilution was made on the samples, then fortified with IDA and extracted. The reporting limits (RLs) have been adjusted proportionately.

Method Code: TOPS_Pre_Prep
Matrix: AFFF
preparation batch 320-482158

Method TOP Pre - Prep: Due to the matrix, the initial volumes used for the following sample deviated from the standard procedure: Angus 3-6 (480-183383-2). A 50000000x dilution was made on the sample, then fortified with IDA and extracted. The reporting limits (RLs) have been adjusted proportionately.

Method Code: TOPS_Pre_Prep
Matrix: AFFF
preparation batch 320-482158

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Total Oxidation Precursors

Client: New York State D.E.C.
Project/Site: Mayville #2008000-DEC PIN: H7221

TestAmerica Job ID: 480-183383-1

Client Sample ID: Chemguard 3-6

Lab Sample ID: 480-183383-1
Matrix: Water

	Pre-Treatment Method 537 (modified)			Post-Treatment Method 537 (modified)			Difference [1]	
Analyte	**Result**	**Qualifier**	**Unit**	**Result**	**Qualifier**	**Unit**	**Result**	**Unit**
Perfluorobutanoic acid (PFBA)	ND		ng/L	92000000		ng/L	92000000	ng/L
Perfluoropentanoic acid (PFPeA)	ND		ng/L	180000000		ng/L	180000000	ng/L
Perfluorohexanoic acid (PFHxA)	1600000		ng/L	67000000		ng/L	65000000	ng/L
Perfluoroheptanoic acid (PFHpA)	ND		ng/L	54000000		ng/L	54000000	ng/L
Perfluorooctanoic acid (PFOA)	390000		ng/L	21000000		ng/L	21000000	ng/L
Perfluorononanoic acid (PFNA)	ND		ng/L	24000000		ng/L	24000000	ng/L
Total PFCA	2000000		ng/L	440000000		ng/L	440000000	ng/L

Client Sample ID: Angus 3-6

Lab Sample ID: 480-183383-2
Matrix: Water

	Pre-Treatment Method 537 (modified)			Post-Treatment Method 537 (modified)			Difference [1]	
Analyte	**Result**	**Qualifier**	**Unit**	**Result**	**Qualifier**	**Unit**	**Result**	**Unit**
Perfluorobutanoic acid (PFBA)	ND		ng/L	550000000		ng/L	550000000	ng/L
Perfluoropentanoic acid (PFPeA)	ND		ng/L	1200000000		ng/L	1200000000	ng/L
Perfluorohexanoic acid (PFHxA)	5200000		ng/L	320000000		ng/L	310000000	ng/L
Perfluoroheptanoic acid (PFHpA)	ND		ng/L	170000000		ng/L	170000000	ng/L
Perfluorooctanoic acid (PFOA)	ND		ng/L	23000000		ng/L	23000000	ng/L
Perfluorononanoic acid (PFNA)	ND		ng/L	6300000		ng/L	6300000	ng/L
Total PFCA	5200000		ng/L	2300000000		ng/L	2300000000	ng/L

Client Sample ID: Chemguard Class A

Lab Sample ID: 480-183383-3
Matrix: Water

	Pre-Treatment Method 537 (modified)			Post-Treatment Method 537 (modified)			Difference [1]	
Analyte	**Result**	**Qualifier**	**Unit**	**Result**	**Qualifier**	**Unit**	**Result**	**Unit**
Perfluorobutanoic acid (PFBA)	ND		ng/L	ND		ng/L	0.00	ng/L
Perfluoropentanoic acid (PFPeA)	ND		ng/L	ND		ng/L	0.00	ng/L
Perfluorohexanoic acid (PFHxA)	ND		ng/L	ND		ng/L	0.00	ng/L
Perfluoroheptanoic acid (PFHpA)	ND		ng/L	ND		ng/L	0.00	ng/L
Perfluorooctanoic acid (PFOA)	ND		ng/L	ND		ng/L	0.00	ng/L
Perfluorononanoic acid (PFNA)	ND		ng/L	ND		ng/L	0.00	ng/L
Total PFCA	0.00		ng/L	0.00		ng/L	0.00	ng/L

Client Sample ID: National Foam

Lab Sample ID: 480-183383-4
Matrix: Water

	Pre-Treatment Method 537 (modified)			Post-Treatment Method 537 (modified)			Difference [1]	
Analyte	**Result**	**Qualifier**	**Unit**	**Result**	**Qualifier**	**Unit**	**Result**	**Unit**
Perfluorobutanoic acid (PFBA)	ND		ng/L	46000000		ng/L	46000000	ng/L
Perfluoropentanoic acid (PFPeA)	ND		ng/L	110000000		ng/L	110000000	ng/L
Perfluorohexanoic acid (PFHxA)	430000		ng/L	27000000		ng/L	27000000	ng/L
Perfluoroheptanoic acid (PFHpA)	ND		ng/L	6400000		ng/L	6400000	ng/L
Perfluorooctanoic acid (PFOA)	ND		ng/L	ND		ng/L	0.00	ng/L
Perfluorononanoic acid (PFNA)	ND		ng/L	ND		ng/L	0.00	ng/L
Total PFCA	430000		ng/L	190000000		ng/L	190000000	ng/L

[1] Difference = Post-Treatment - Pre-Treament

Total Oxidation Precursors

Client: New York State D.E.C.
Project/Site: Mayville #2008000-DEC PIN: H7221

TestAmerica Job ID: 480-183383-1

Client Sample ID: Solberg 3-6

Lab Sample ID: 480-183383-5
Matrix: Water

	Pre-Treatment Method 537 (modified)			Post-Treatment Method 537 (modified)			Difference [1]	
Analyte	**Result**	**Qualifier**	**Unit**	**Result**	**Qualifier**	**Unit**	**Result**	**Unit**
Perfluorobutanoic acid (PFBA)	ND		ng/L	210000000		ng/L	210000000	ng/L
Perfluoropentanoic acid (PFPeA)	ND		ng/L	460000000		ng/L	460000000	ng/L
Perfluorohexanoic acid (PFHxA)	510000		ng/L	130000000		ng/L	130000000	ng/L
Perfluoroheptanoic acid (PFHpA)	ND		ng/L	30000000		ng/L	30000000	ng/L
Perfluorooctanoic acid (PFOA)	ND		ng/L	ND		ng/L	0.00	ng/L
Perfluorononanoic acid (PFNA)	ND		ng/L	ND		ng/L	0.00	ng/L
Total PFCA	510000		ng/L	830000000		ng/L	830000000	ng/L

[1] Difference = Post-Treatment - Pre-Treament

Client: New York State D.E.C.
Project/Site: Mayville #2008000-DEC PIN: H7221

Job ID: 480-183383-1

Client Sample ID: Chemguard 3-6

Date Collected: 04/14/21 13:30
Date Received: 04/14/21 17:00

Lab Sample ID: 480-183383-1

Matrix: AFFF

Method: 537 (modified) - Fluorinated Alkyl Substances - Pre-Treatment

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		630000		ng/L		04/22/21 18:40	04/26/21 18:49	1
Perfluoropentanoic acid (PFPeA)	ND		250000		ng/L		04/22/21 18:40	04/26/21 18:49	1
Perfluorohexanoic acid (PFHxA)	**1600000**		250000		ng/L		04/22/21 18:40	04/26/21 18:49	1
Perfluoroheptanoic acid (PFHpA)	ND		250000		ng/L		04/22/21 18:40	04/26/21 18:49	1
Perfluorooctanoic acid (PFOA)	**390000**		250000		ng/L		04/22/21 18:40	04/26/21 18:49	1
Perfluorononanoic acid (PFNA)	ND		250000		ng/L		04/22/21 18:40	04/26/21 18:49	1
Perfluorodecanoic acid (PFDA)	ND		250000		ng/L		04/22/21 18:40	04/26/21 18:49	1
Perfluoroundecanoic acid (PFUnA)	ND		250000		ng/L		04/22/21 18:40	04/26/21 18:49	1
Perfluorododecanoic acid (PFDoA)	ND		250000		ng/L		04/22/21 18:40	04/26/21 18:49	1
Perfluorotridecanoic acid (PFTriA)	ND		250000		ng/L		04/22/21 18:40	04/26/21 18:49	1
Perfluorotetradecanoic acid (PFTeA)	ND		250000		ng/L		04/22/21 18:40	04/26/21 18:49	1
Perfluorobutanesulfonic acid (PFBS)	ND		250000		ng/L		04/22/21 18:40	04/26/21 18:49	1
Perfluorohexanesulfonic acid (PFHxS)	ND		250000		ng/L		04/22/21 18:40	04/26/21 18:49	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		250000		ng/L		04/22/21 18:40	04/26/21 18:49	1
Perfluorooctanesulfonic acid (PFOS)	ND		250000		ng/L		04/22/21 18:40	04/26/21 18:49	1
Perfluorodecanesulfonic acid (PFDS)	ND		250000		ng/L		04/22/21 18:40	04/26/21 18:49	1
Perfluorooctanesulfonamide (FOSA)	ND		250000		ng/L		04/22/21 18:40	04/26/21 18:49	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		630000		ng/L		04/22/21 18:40	04/26/21 18:49	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		630000		ng/L		04/22/21 18:40	04/26/21 18:49	1
6:2 FTS	**5800000**		630000		ng/L		04/22/21 18:40	04/26/21 18:49	1
8:2 FTS	**2500000**		250000		ng/L		04/22/21 18:40	04/26/21 18:49	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*96*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:49*	*1*
13C5 PFPeA	*88*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:49*	*1*
13C2 PFHxA	*84*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:49*	*1*
13C4 PFHpA	*101*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:49*	*1*
13C4 PFOA	*98*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:49*	*1*
13C5 PFNA	*85*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:49*	*1*
13C2 PFDA	*99*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:49*	*1*
13C2 PFUnA	*98*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:49*	*1*
13C2 PFDoA	*104*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:49*	*1*
13C2 PFTeDA	*102*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:49*	*1*
13C3 PFBS	*96*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:49*	*1*
18O2 PFHxS	*99*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:49*	*1*
13C4 PFOS	*83*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:49*	*1*
13C8 FOSA	*113*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:49*	*1*
d3-NMeFOSAA	*106*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:49*	*1*
d5-NEtFOSAA	*126*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:49*	*1*
M2-6:2 FTS	*76*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:49*	*1*
M2-8:2 FTS	*86*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:49*	*1*
M2-4:2 FTS	*77*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:49*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - Post-Treatment

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**92000000**		6300000		ng/L		04/22/21 11:47	04/27/21 17:11	10
Perfluoropentanoic acid (PFPeA)	**180000000**		2500000		ng/L		04/22/21 11:47	04/27/21 17:11	10
Perfluorohexanoic acid (PFHxA)	**67000000**		2500000		ng/L		04/22/21 11:47	04/27/21 17:11	10

Client Sample ID: Chemguard 3-6
Lab Sample ID: 480-183383-1

Date Collected: 04/14/21 13:30
Matrix: AFFF
Date Received: 04/14/21 17:00

Method: 537 (modified) - Fluorinated Alkyl Substances - Post-Treatment (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanoic acid (PFHpA)	**54000000**		2500000		ng/L		04/22/21 11:47	04/27/21 17:11	10
Perfluorooctanoic acid (PFOA)	**21000000**		2500000		ng/L		04/22/21 11:47	04/27/21 17:11	10
Perfluorononanoic acid (PFNA)	**24000000**		2500000		ng/L		04/22/21 11:47	04/27/21 17:11	10
Perfluorodecanoic acid (PFDA)	**10000000**		2500000		ng/L		04/22/21 11:47	04/27/21 17:11	10
Perfluoroundecanoic acid (PFUnA)	**7000000**		2500000		ng/L		04/22/21 11:47	04/27/21 17:11	10
Perfluorododecanoic acid (PFDoA)	**6600000**		2500000		ng/L		04/22/21 11:47	04/27/21 17:11	10
Perfluorotridecanoic acid (PFTriA)	**3300000**		2500000		ng/L		04/22/21 11:47	04/27/21 17:11	10
Perfluorotetradecanoic acid (PFTeA)	**2800000**		2500000		ng/L		04/22/21 11:47	04/27/21 17:11	10
Perfluorobutanesulfonic acid (PFBS)	ND		2500000		ng/L		04/22/21 11:47	04/27/21 17:11	10
Perfluorohexanesulfonic acid (PFHxS)	ND		2500000		ng/L		04/22/21 11:47	04/27/21 17:11	10
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2500000		ng/L		04/22/21 11:47	04/27/21 17:11	10
Perfluorooctanesulfonic acid (PFOS)	ND		2500000		ng/L		04/22/21 11:47	04/27/21 17:11	10
Perfluorodecanesulfonic acid (PFDS)	ND		2500000		ng/L		04/22/21 11:47	04/27/21 17:11	10
Perfluorooctanesulfonamide (FOSA)	ND		2500000		ng/L		04/22/21 11:47	04/27/21 17:11	10
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		6300000		ng/L		04/22/21 11:47	04/27/21 17:11	10
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		6300000		ng/L		04/22/21 11:47	04/27/21 17:11	10
6:2 FTS	ND		6300000		ng/L		04/22/21 11:47	04/27/21 17:11	10
8:2 FTS	ND		2500000		ng/L		04/22/21 11:47	04/27/21 17:11	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*83*		*25 - 150*	*04/22/21 11:47*	*04/27/21 17:11*	*10*
13C5 PFPeA	*83*		*25 - 150*	*04/22/21 11:47*	*04/27/21 17:11*	*10*
13C2 PFHxA	*82*		*25 - 150*	*04/22/21 11:47*	*04/27/21 17:11*	*10*
13C4 PFHpA	*94*		*25 - 150*	*04/22/21 11:47*	*04/27/21 17:11*	*10*
13C4 PFOA	*90*		*25 - 150*	*04/22/21 11:47*	*04/27/21 17:11*	*10*
13C5 PFNA	*89*		*25 - 150*	*04/22/21 11:47*	*04/27/21 17:11*	*10*
13C2 PFDA	*92*		*25 - 150*	*04/22/21 11:47*	*04/27/21 17:11*	*10*
13C2 PFUnA	*99*		*25 - 150*	*04/22/21 11:47*	*04/27/21 17:11*	*10*
13C2 PFDoA	*92*		*25 - 150*	*04/22/21 11:47*	*04/27/21 17:11*	*10*
13C2 PFTeDA	*99*		*25 - 150*	*04/22/21 11:47*	*04/27/21 17:11*	*10*
13C3 PFBS	*89*		*25 - 150*	*04/22/21 11:47*	*04/27/21 17:11*	*10*
18O2 PFHxS	*93*		*25 - 150*	*04/22/21 11:47*	*04/27/21 17:11*	*10*
13C4 PFOS	*99*		*25 - 150*	*04/22/21 11:47*	*04/27/21 17:11*	*10*
13C8 FOSA	*105*		*25 - 150*	*04/22/21 11:47*	*04/27/21 17:11*	*10*
d3-NMeFOSAA	*97*		*25 - 150*	*04/22/21 11:47*	*04/27/21 17:11*	*10*
d5-NEtFOSAA	*126*		*25 - 150*	*04/22/21 11:47*	*04/27/21 17:11*	*10*
M2-6:2 FTS	*66*		*25 - 150*	*04/22/21 11:47*	*04/27/21 17:11*	*10*
M2-8:2 FTS	*72*		*25 - 150*	*04/22/21 11:47*	*04/27/21 17:11*	*10*
M2-4:2 FTS	*0*		*0 - 10*	*04/22/21 11:47*	*04/27/21 17:11*	*10*

Method: Total PFCA-Dif - Total PFCA (Treatment Difference)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PFBA	**92000000**				ng/L			04/30/21 06:54	1
PFPA	**180000000**				ng/L			04/30/21 06:54	1
PFHxA	**65000000**				ng/L			04/30/21 06:54	1
PFHpA	**54000000**				ng/L			04/30/21 06:54	1

Client Sample ID: Chemguard 3-6
Lab Sample ID: 480-183383-1
Date Collected: 04/14/21 13:30
Matrix: AFFF
Date Received: 04/14/21 17:00

Method: Total PFCA-Dif - Total PFCA (Treatment Difference) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PFOA	**21000000**				ng/L			04/30/21 06:54	1
PFNA	**24000000**				ng/L			04/30/21 06:54	1
Total PFCA	**440000000**				ng/L			04/30/21 06:54	1

Method: Total PFCA-Sum - Total PFCA (Summary) - Pre-Treatment

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total PFCA	**2000000**				ng/L			04/30/21 06:47	1

Method: Total PFCA-Sum - Total PFCA (Summary) - Post-Treatment

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total PFCA	**440000000**				ng/L			04/30/21 06:49	1

Client Sample ID: Angus 3-6
Lab Sample ID: 480-183383-2
Date Collected: 04/14/21 13:45
Matrix: AFFF
Date Received: 04/14/21 17:00

Method: 537 (modified) - Fluorinated Alkyl Substances - Pre-Treatment

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		6300000		ng/L		04/22/21 18:40	04/27/21 16:44	10
Perfluoropentanoic acid (PFPeA)	ND		2500000		ng/L		04/22/21 18:40	04/27/21 16:44	10
Perfluorohexanoic acid (PFHxA)	**5200000**		2500000		ng/L		04/22/21 18:40	04/27/21 16:44	10
Perfluoroheptanoic acid (PFHpA)	ND		2500000		ng/L		04/22/21 18:40	04/27/21 16:44	10
Perfluorooctanoic acid (PFOA)	ND		2500000		ng/L		04/22/21 18:40	04/27/21 16:44	10
Perfluorononanoic acid (PFNA)	ND		2500000		ng/L		04/22/21 18:40	04/27/21 16:44	10
Perfluorodecanoic acid (PFDA)	ND		2500000		ng/L		04/22/21 18:40	04/27/21 16:44	10
Perfluoroundecanoic acid (PFUnA)	ND		2500000		ng/L		04/22/21 18:40	04/27/21 16:44	10
Perfluorododecanoic acid (PFDoA)	ND		2500000		ng/L		04/22/21 18:40	04/27/21 16:44	10
Perfluorotridecanoic acid (PFTriA)	ND		2500000		ng/L		04/22/21 18:40	04/27/21 16:44	10
Perfluorotetradecanoic acid (PFTeA)	ND		2500000		ng/L		04/22/21 18:40	04/27/21 16:44	10
Perfluorobutanesulfonic acid (PFBS)	ND		2500000		ng/L		04/22/21 18:40	04/27/21 16:44	10
Perfluorohexanesulfonic acid (PFHxS)	ND		2500000		ng/L		04/22/21 18:40	04/27/21 16:44	10
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2500000		ng/L		04/22/21 18:40	04/27/21 16:44	10
Perfluorooctanesulfonic acid (PFOS)	ND		2500000		ng/L		04/22/21 18:40	04/27/21 16:44	10
Perfluorodecanesulfonic acid (PFDS)	ND		2500000		ng/L		04/22/21 18:40	04/27/21 16:44	10
Perfluorooctanesulfonamide (FOSA)	ND		2500000		ng/L		04/22/21 18:40	04/27/21 16:44	10
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		6300000		ng/L		04/22/21 18:40	04/27/21 16:44	10
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		6300000		ng/L		04/22/21 18:40	04/27/21 16:44	10
6:2 FTS	**210000000**		6300000		ng/L		04/22/21 18:40	04/27/21 16:44	10
8:2 FTS	ND		2500000		ng/L		04/22/21 18:40	04/27/21 16:44	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*94*		*25 - 150*	*04/22/21 18:40*	*04/27/21 16:44*	*10*
13C5 PFPeA	*94*		*25 - 150*	*04/22/21 18:40*	*04/27/21 16:44*	*10*
13C2 PFHxA	*88*		*25 - 150*	*04/22/21 18:40*	*04/27/21 16:44*	*10*
13C4 PFHpA	*103*		*25 - 150*	*04/22/21 18:40*	*04/27/21 16:44*	*10*
13C4 PFOA	*98*		*25 - 150*	*04/22/21 18:40*	*04/27/21 16:44*	*10*
13C5 PFNA	*92*		*25 - 150*	*04/22/21 18:40*	*04/27/21 16:44*	*10*
13C2 PFDA	*100*		*25 - 150*	*04/22/21 18:40*	*04/27/21 16:44*	*10*
13C2 PFUnA	*106*		*25 - 150*	*04/22/21 18:40*	*04/27/21 16:44*	*10*

Client Sample ID: Angus 3-6
Date Collected: 04/14/21 13:45
Date Received: 04/14/21 17:00

Lab Sample ID: 480-183383-2
Matrix: AFFF

Method: 537 (modified) - Fluorinated Alkyl Substances - Pre-Treatment (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDoA	97		25 - 150	04/22/21 18:40	04/27/21 16:44	10
13C2 PFTeDA	86		25 - 150	04/22/21 18:40	04/27/21 16:44	10
13C3 PFBS	102		25 - 150	04/22/21 18:40	04/27/21 16:44	10
18O2 PFHxS	101		25 - 150	04/22/21 18:40	04/27/21 16:44	10
13C4 PFOS	102		25 - 150	04/22/21 18:40	04/27/21 16:44	10
13C8 FOSA	112		25 - 150	04/22/21 18:40	04/27/21 16:44	10
d3-NMeFOSAA	109		25 - 150	04/22/21 18:40	04/27/21 16:44	10
d5-NEtFOSAA	131		25 - 150	04/22/21 18:40	04/27/21 16:44	10
M2-6:2 FTS	73		25 - 150	04/22/21 18:40	04/27/21 16:44	10
M2-8:2 FTS	86		25 - 150	04/22/21 18:40	04/27/21 16:44	10
M2-4:2 FTS	66		25 - 150	04/22/21 18:40	04/27/21 16:44	10

Method: 537 (modified) - Fluorinated Alkyl Substances - Post-Treatment

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	**320000000**		2500000		ng/L		04/22/21 11:47	04/27/21 17:21	10
Perfluoroheptanoic acid (PFHpA)	**170000000**		2500000		ng/L		04/22/21 11:47	04/27/21 17:21	10
Perfluorooctanoic acid (PFOA)	**23000000**		2500000		ng/L		04/22/21 11:47	04/27/21 17:21	10
Perfluorononanoic acid (PFNA)	**6300000**		2500000		ng/L		04/22/21 11:47	04/27/21 17:21	10
Perfluorodecanoic acid (PFDA)	ND		2500000		ng/L		04/22/21 11:47	04/27/21 17:21	10
Perfluoroundecanoic acid (PFUnA)	ND		2500000		ng/L		04/22/21 11:47	04/27/21 17:21	10
Perfluorododecanoic acid (PFDoA)	ND		2500000		ng/L		04/22/21 11:47	04/27/21 17:21	10
Perfluorotridecanoic acid (PFTriA)	ND		2500000		ng/L		04/22/21 11:47	04/27/21 17:21	10
Perfluorotetradecanoic acid (PFTeA)	ND		2500000		ng/L		04/22/21 11:47	04/27/21 17:21	10
Perfluorobutanesulfonic acid (PFBS)	ND		2500000		ng/L		04/22/21 11:47	04/27/21 17:21	10
Perfluorohexanesulfonic acid (PFHxS)	ND		2500000		ng/L		04/22/21 11:47	04/27/21 17:21	10
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2500000		ng/L		04/22/21 11:47	04/27/21 17:21	10
Perfluorooctanesulfonic acid (PFOS)	ND		2500000		ng/L		04/22/21 11:47	04/27/21 17:21	10
Perfluorodecanesulfonic acid (PFDS)	ND		2500000		ng/L		04/22/21 11:47	04/27/21 17:21	10
Perfluorooctanesulfonamide (FOSA)	ND		2500000		ng/L		04/22/21 11:47	04/27/21 17:21	10
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		6300000		ng/L		04/22/21 11:47	04/27/21 17:21	10
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		6300000		ng/L		04/22/21 11:47	04/27/21 17:21	10
6:2 FTS	ND		6300000		ng/L		04/22/21 11:47	04/27/21 17:21	10
8:2 FTS	ND		2500000		ng/L		04/22/21 11:47	04/27/21 17:21	10

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	82		25 - 150	04/22/21 11:47	04/27/21 17:21	10
13C4 PFHpA	94		25 - 150	04/22/21 11:47	04/27/21 17:21	10
13C4 PFOA	95		25 - 150	04/22/21 11:47	04/27/21 17:21	10
13C5 PFNA	95		25 - 150	04/22/21 11:47	04/27/21 17:21	10
13C2 PFDA	99		25 - 150	04/22/21 11:47	04/27/21 17:21	10
13C2 PFUnA	97		25 - 150	04/22/21 11:47	04/27/21 17:21	10
13C2 PFDoA	92		25 - 150	04/22/21 11:47	04/27/21 17:21	10
13C2 PFTeDA	92		25 - 150	04/22/21 11:47	04/27/21 17:21	10
13C3 PFBS	89		25 - 150	04/22/21 11:47	04/27/21 17:21	10
18O2 PFHxS	93		25 - 150	04/22/21 11:47	04/27/21 17:21	10
13C4 PFOS	99		25 - 150	04/22/21 11:47	04/27/21 17:21	10
13C8 FOSA	111		25 - 150	04/22/21 11:47	04/27/21 17:21	10
d3-NMeFOSAA	105		25 - 150	04/22/21 11:47	04/27/21 17:21	10

Client Sample ID: Angus 3-6
Lab Sample ID: 480-183383-2
Date Collected: 04/14/21 13:45
Matrix: AFFF
Date Received: 04/14/21 17:00

Method: 537 (modified) - Fluorinated Alkyl Substances - Post-Treatment (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*128*		*25 - 150*	*04/22/21 11:47*	*04/27/21 17:21*	*10*
M2-6:2 FTS	*75*		*25 - 150*	*04/22/21 11:47*	*04/27/21 17:21*	*10*
M2-8:2 FTS	*81*		*25 - 150*	*04/22/21 11:47*	*04/27/21 17:21*	*10*
M2-4:2 FTS	*0*		*0 - 10*	*04/22/21 11:47*	*04/27/21 17:21*	*10*

Method: 537 (modified) - Fluorinated Alkyl Substances - Post-Treatment - DL

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	550000000		63000000	ng/L		04/22/21 11:47	04/25/21 18:21	100
Perfluoropentanoic acid (PFPeA)	1200000000		25000000	ng/L		04/22/21 11:47	04/25/21 18:21	100

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*75*		*25 - 150*	*04/22/21 11:47*	*04/25/21 18:21*	*100*
13C5 PFPeA	*79*		*25 - 150*	*04/22/21 11:47*	*04/25/21 18:21*	*100*

Method: Total PFCA-Dif - Total PFCA (Treatment Difference)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
PFBA	550000000			ng/L			04/30/21 06:54	1
PFPA	1200000000			ng/L			04/30/21 06:54	1
PFHxA	310000000			ng/L			04/30/21 06:54	1
PFHpA	170000000			ng/L			04/30/21 06:54	1
PFOA	23000000			ng/L			04/30/21 06:54	1
PFNA	6300000			ng/L			04/30/21 06:54	1
Total PFCA	2300000000			ng/L			04/30/21 06:54	1

Method: Total PFCA-Sum - Total PFCA (Summary) - Pre-Treatment

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total PFCA	5200000			ng/L			04/30/21 06:47	1

Method: Total PFCA-Sum - Total PFCA (Summary) - Post-Treatment

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total PFCA	2300000000			ng/L			04/30/21 06:49	1

Client Sample ID: Chemguard Class A
Lab Sample ID: 480-183383-3
Date Collected: 04/14/21 14:00
Matrix: AFFF
Date Received: 04/14/21 17:00

Method: 537 (modified) - Fluorinated Alkyl Substances - Pre-Treatment

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		630000	ng/L		04/22/21 18:40	04/26/21 18:58	1
Perfluoropentanoic acid (PFPeA)	ND		250000	ng/L		04/22/21 18:40	04/26/21 18:58	1
Perfluorohexanoic acid (PFHxA)	ND		250000	ng/L		04/22/21 18:40	04/26/21 18:58	1
Perfluoroheptanoic acid (PFHpA)	ND		250000	ng/L		04/22/21 18:40	04/26/21 18:58	1
Perfluorooctanoic acid (PFOA)	ND		250000	ng/L		04/22/21 18:40	04/26/21 18:58	1
Perfluorononanoic acid (PFNA)	ND		250000	ng/L		04/22/21 18:40	04/26/21 18:58	1
Perfluorodecanoic acid (PFDA)	ND		250000	ng/L		04/22/21 18:40	04/26/21 18:58	1
Perfluoroundecanoic acid (PFUnA)	ND		250000	ng/L		04/22/21 18:40	04/26/21 18:58	1
Perfluorododecanoic acid (PFDoA)	ND		250000	ng/L		04/22/21 18:40	04/26/21 18:58	1
Perfluorotridecanoic acid (PFTriA)	ND		250000	ng/L		04/22/21 18:40	04/26/21 18:58	1
Perfluorotetradecanoic acid (PFTeA)	ND		250000	ng/L		04/22/21 18:40	04/26/21 18:58	1
Perfluorobutanesulfonic acid (PFBS)	ND		250000	ng/L		04/22/21 18:40	04/26/21 18:58	1
Perfluorohexanesulfonic acid (PFHxS)	ND		250000	ng/L		04/22/21 18:40	04/26/21 18:58	1

Client Sample ID: Chemguard Class A
Lab Sample ID: 480-183383-3
Date Collected: 04/14/21 14:00
Matrix: AFFF
Date Received: 04/14/21 17:00

Method: 537 (modified) - Fluorinated Alkyl Substances - Pre-Treatment (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanesulfonic Acid (PFHpS)	ND		250000		ng/L		04/22/21 18:40	04/26/21 18:58	1
Perfluorooctanesulfonic acid (PFOS)	ND		250000		ng/L		04/22/21 18:40	04/26/21 18:58	1
Perfluorodecanesulfonic acid (PFDS)	ND		250000		ng/L		04/22/21 18:40	04/26/21 18:58	1
Perfluorooctanesulfonamide (FOSA)	ND		250000		ng/L		04/22/21 18:40	04/26/21 18:58	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		630000		ng/L		04/22/21 18:40	04/26/21 18:58	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		630000		ng/L		04/22/21 18:40	04/26/21 18:58	1
6:2 FTS	ND		630000		ng/L		04/22/21 18:40	04/26/21 18:58	1
8:2 FTS	ND		250000		ng/L		04/22/21 18:40	04/26/21 18:58	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*124*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:58*	*1*
13C5 PFPeA	*115*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:58*	*1*
13C2 PFHxA	*111*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:58*	*1*
13C4 PFHpA	*117*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:58*	*1*
13C4 PFOA	*97*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:58*	*1*
13C5 PFNA	*90*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:58*	*1*
13C2 PFDA	*106*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:58*	*1*
13C2 PFUnA	*108*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:58*	*1*
13C2 PFDoA	*120*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:58*	*1*
13C2 PFTeDA	*118*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:58*	*1*
13C3 PFBS	*120*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:58*	*1*
18O2 PFHxS	*119*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:58*	*1*
13C4 PFOS	*174*	**5+*	*25 - 150*	*04/22/21 18:40*	*04/26/21 18:58*	*1*
13C8 FOSA	*95*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:58*	*1*
d3-NMeFOSAA	*45*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:58*	*1*
d5-NEtFOSAA	*118*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:58*	*1*
M2-6:2 FTS	*57*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:58*	*1*
M2-8:2 FTS	*89*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:58*	*1*
M2-4:2 FTS	*97*		*25 - 150*	*04/22/21 18:40*	*04/26/21 18:58*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - Post-Treatment

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		630000		ng/L		04/22/21 11:47	04/26/21 18:12	1
Perfluoropentanoic acid (PFPeA)	ND		250000		ng/L		04/22/21 11:47	04/26/21 18:12	1
Perfluorohexanoic acid (PFHxA)	ND		250000		ng/L		04/22/21 11:47	04/26/21 18:12	1
Perfluoroheptanoic acid (PFHpA)	ND		250000		ng/L		04/22/21 11:47	04/26/21 18:12	1
Perfluorooctanoic acid (PFOA)	ND		250000		ng/L		04/22/21 11:47	04/26/21 18:12	1
Perfluorononanoic acid (PFNA)	ND		250000		ng/L		04/22/21 11:47	04/26/21 18:12	1
Perfluorodecanoic acid (PFDA)	ND		250000		ng/L		04/22/21 11:47	04/26/21 18:12	1
Perfluoroundecanoic acid (PFUnA)	ND		250000		ng/L		04/22/21 11:47	04/26/21 18:12	1
Perfluorododecanoic acid (PFDoA)	ND		250000		ng/L		04/22/21 11:47	04/26/21 18:12	1
Perfluorotridecanoic acid (PFTriA)	ND		250000		ng/L		04/22/21 11:47	04/26/21 18:12	1
Perfluorotetradecanoic acid (PFTeA)	ND		250000		ng/L		04/22/21 11:47	04/26/21 18:12	1
Perfluorobutanesulfonic acid (PFBS)	ND		250000		ng/L		04/22/21 11:47	04/26/21 18:12	1
Perfluorohexanesulfonic acid (PFHxS)	ND		250000		ng/L		04/22/21 11:47	04/26/21 18:12	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		250000		ng/L		04/22/21 11:47	04/26/21 18:12	1
Perfluorooctanesulfonic acid (PFOS)	ND		250000		ng/L		04/22/21 11:47	04/26/21 18:12	1

Client: New York State D.E.C.
Job ID: 480-183383-1
Project/Site: Mayville #2008000-DEC PIN: H7221

Client Sample ID: Chemguard Class A
Lab Sample ID: 480-183383-3
Date Collected: 04/14/21 14:00
Matrix: AFFF
Date Received: 04/14/21 17:00

Method: 537 (modified) - Fluorinated Alkyl Substances - Post-Treatment (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanesulfonic acid (PFDS)	ND		250000		ng/L		04/22/21 11:47	04/26/21 18:12	1
Perfluorooctanesulfonamide (FOSA)	ND		250000		ng/L		04/22/21 11:47	04/26/21 18:12	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		630000		ng/L		04/22/21 11:47	04/26/21 18:12	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		630000		ng/L		04/22/21 11:47	04/26/21 18:12	1
6:2 FTS	ND		630000		ng/L		04/22/21 11:47	04/26/21 18:12	1
8:2 FTS	ND		250000		ng/L		04/22/21 11:47	04/26/21 18:12	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*85*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:12*	*1*
13C5 PFPeA	*82*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:12*	*1*
13C2 PFHxA	*86*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:12*	*1*
13C4 PFHpA	*97*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:12*	*1*
13C4 PFOA	*92*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:12*	*1*
13C5 PFNA	*99*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:12*	*1*
13C2 PFDA	*94*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:12*	*1*
13C2 PFUnA	*101*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:12*	*1*
13C2 PFDoA	*99*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:12*	*1*
13C2 PFTeDA	*97*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:12*	*1*
13C3 PFBS	*96*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:12*	*1*
18O2 PFHxS	*93*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:12*	*1*
13C4 PFOS	*98*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:12*	*1*
13C8 FOSA	*114*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:12*	*1*
d3-NMeFOSAA	*113*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:12*	*1*
d5-NEtFOSAA	*138*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:12*	*1*
M2-6:2 FTS	*91*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:12*	*1*
M2-8:2 FTS	*105*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:12*	*1*
M2-4:2 FTS	*0*		*0 - 10*	*04/22/21 11:47*	*04/26/21 18:12*	*1*

Method: Total PFCA-Dif - Total PFCA (Treatment Difference)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PFBA	**0.00**				ng/L			04/30/21 06:54	1
PFPA	**0.00**				ng/L			04/30/21 06:54	1
PFHxA	**0.00**				ng/L			04/30/21 06:54	1
PFHpA	**0.00**				ng/L			04/30/21 06:54	1
PFOA	**0.00**				ng/L			04/30/21 06:54	1
PFNA	**0.00**				ng/L			04/30/21 06:54	1
Total PFCA	**0.00**				ng/L			04/30/21 06:54	1

Method: Total PFCA-Sum - Total PFCA (Summary) - Pre-Treatment

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total PFCA	**0.00**				ng/L			04/30/21 06:47	1

Method: Total PFCA-Sum - Total PFCA (Summary) - Post-Treatment

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total PFCA	**0.00**				ng/L			04/30/21 06:49	1

Client: New York State D.E.C.
Job ID: 480-183383-1
Project/Site: Mayville #2008000-DEC PIN: H7221

Client Sample ID: National Foam
Lab Sample ID: 480-183383-4
Date Collected: 04/14/21 14:15
Matrix: AFFF
Date Received: 04/14/21 17:00

Method: 537 (modified) - Fluorinated Alkyl Substances - Pre-Treatment

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		630000		ng/L		04/22/21 18:40	04/26/21 19:07	1
Perfluoropentanoic acid (PFPeA)	ND		250000		ng/L		04/22/21 18:40	04/26/21 19:07	1
Perfluorohexanoic acid (PFHxA)	**430000**		250000		ng/L		04/22/21 18:40	04/26/21 19:07	1
Perfluoroheptanoic acid (PFHpA)	ND		250000		ng/L		04/22/21 18:40	04/26/21 19:07	1
Perfluorooctanoic acid (PFOA)	ND		250000		ng/L		04/22/21 18:40	04/26/21 19:07	1
Perfluorononanoic acid (PFNA)	ND		250000		ng/L		04/22/21 18:40	04/26/21 19:07	1
Perfluorodecanoic acid (PFDA)	ND		250000		ng/L		04/22/21 18:40	04/26/21 19:07	1
Perfluoroundecanoic acid (PFUnA)	ND		250000		ng/L		04/22/21 18:40	04/26/21 19:07	1
Perfluorododecanoic acid (PFDoA)	ND		250000		ng/L		04/22/21 18:40	04/26/21 19:07	1
Perfluorotridecanoic acid (PFTriA)	ND		250000		ng/L		04/22/21 18:40	04/26/21 19:07	1
Perfluorotetradecanoic acid (PFTeA)	ND		250000		ng/L		04/22/21 18:40	04/26/21 19:07	1
Perfluorobutanesulfonic acid (PFBS)	ND		250000		ng/L		04/22/21 18:40	04/26/21 19:07	1
Perfluorohexanesulfonic acid (PFHxS)	ND		250000		ng/L		04/22/21 18:40	04/26/21 19:07	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		250000		ng/L		04/22/21 18:40	04/26/21 19:07	1
Perfluorooctanesulfonic acid (PFOS)	ND		250000		ng/L		04/22/21 18:40	04/26/21 19:07	1
Perfluorodecanesulfonic acid (PFDS)	ND		250000		ng/L		04/22/21 18:40	04/26/21 19:07	1
Perfluorooctanesulfonamide (FOSA)	ND		250000		ng/L		04/22/21 18:40	04/26/21 19:07	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		630000		ng/L		04/22/21 18:40	04/26/21 19:07	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		630000		ng/L		04/22/21 18:40	04/26/21 19:07	1
6:2 FTS	**15000000**		630000		ng/L		04/22/21 18:40	04/26/21 19:07	1
8:2 FTS	ND		250000		ng/L		04/22/21 18:40	04/26/21 19:07	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*95*		*25 - 150*	*04/22/21 18:40*	*04/26/21 19:07*	*1*
13C5 PFPeA	*94*		*25 - 150*	*04/22/21 18:40*	*04/26/21 19:07*	*1*
13C2 PFHxA	*87*		*25 - 150*	*04/22/21 18:40*	*04/26/21 19:07*	*1*
13C4 PFHpA	*103*		*25 - 150*	*04/22/21 18:40*	*04/26/21 19:07*	*1*
13C4 PFOA	*101*		*25 - 150*	*04/22/21 18:40*	*04/26/21 19:07*	*1*
13C5 PFNA	*102*		*25 - 150*	*04/22/21 18:40*	*04/26/21 19:07*	*1*
13C2 PFDA	*103*		*25 - 150*	*04/22/21 18:40*	*04/26/21 19:07*	*1*
13C2 PFUnA	*104*		*25 - 150*	*04/22/21 18:40*	*04/26/21 19:07*	*1*
13C2 PFDoA	*102*		*25 - 150*	*04/22/21 18:40*	*04/26/21 19:07*	*1*
13C2 PFTeDA	*98*		*25 - 150*	*04/22/21 18:40*	*04/26/21 19:07*	*1*
13C3 PFBS	*101*		*25 - 150*	*04/22/21 18:40*	*04/26/21 19:07*	*1*
18O2 PFHxS	*100*		*25 - 150*	*04/22/21 18:40*	*04/26/21 19:07*	*1*
13C4 PFOS	*105*		*25 - 150*	*04/22/21 18:40*	*04/26/21 19:07*	*1*
13C8 FOSA	*111*		*25 - 150*	*04/22/21 18:40*	*04/26/21 19:07*	*1*
d3-NMeFOSAA	*110*		*25 - 150*	*04/22/21 18:40*	*04/26/21 19:07*	*1*
d5-NEtFOSAA	*126*		*25 - 150*	*04/22/21 18:40*	*04/26/21 19:07*	*1*
M2-6:2 FTS	*79*		*25 - 150*	*04/22/21 18:40*	*04/26/21 19:07*	*1*
M2-8:2 FTS	*100*		*25 - 150*	*04/22/21 18:40*	*04/26/21 19:07*	*1*
M2-4:2 FTS	*83*		*25 - 150*	*04/22/21 18:40*	*04/26/21 19:07*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - Post-Treatment

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**46000000**		6300000		ng/L		04/22/21 11:47	04/26/21 18:22	10
Perfluoropentanoic acid (PFPeA)	**110000000**		2500000		ng/L		04/22/21 11:47	04/26/21 18:22	10
Perfluorohexanoic acid (PFHxA)	**27000000**		2500000		ng/L		04/22/21 11:47	04/26/21 18:22	10

Client Sample ID: National Foam
Lab Sample ID: 480-183383-4

Date Collected: 04/14/21 14:15
Matrix: AFFF

Date Received: 04/14/21 17:00

Method: 537 (modified) - Fluorinated Alkyl Substances - Post-Treatment (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanoic acid (PFHpA)	**6400000**		2500000		ng/L		04/22/21 11:47	04/26/21 18:22	10
Perfluorooctanoic acid (PFOA)	ND		2500000		ng/L		04/22/21 11:47	04/26/21 18:22	10
Perfluorononanoic acid (PFNA)	ND		2500000		ng/L		04/22/21 11:47	04/26/21 18:22	10
Perfluorodecanoic acid (PFDA)	ND		2500000		ng/L		04/22/21 11:47	04/26/21 18:22	10
Perfluoroundecanoic acid (PFUnA)	ND		2500000		ng/L		04/22/21 11:47	04/26/21 18:22	10
Perfluorododecanoic acid (PFDoA)	ND		2500000		ng/L		04/22/21 11:47	04/26/21 18:22	10
Perfluorotridecanoic acid (PFTriA)	ND		2500000		ng/L		04/22/21 11:47	04/26/21 18:22	10
Perfluorotetradecanoic acid (PFTeA)	ND		2500000		ng/L		04/22/21 11:47	04/26/21 18:22	10
Perfluorobutanesulfonic acid (PFBS)	ND		2500000		ng/L		04/22/21 11:47	04/26/21 18:22	10
Perfluorohexanesulfonic acid (PFHxS)	ND		2500000		ng/L		04/22/21 11:47	04/26/21 18:22	10
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2500000		ng/L		04/22/21 11:47	04/26/21 18:22	10
Perfluorooctanesulfonic acid (PFOS)	ND		2500000		ng/L		04/22/21 11:47	04/26/21 18:22	10
Perfluorodecanesulfonic acid (PFDS)	ND		2500000		ng/L		04/22/21 11:47	04/26/21 18:22	10
Perfluorooctanesulfonamide (FOSA)	ND		2500000		ng/L		04/22/21 11:47	04/26/21 18:22	10
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		6300000		ng/L		04/22/21 11:47	04/26/21 18:22	10
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		6300000		ng/L		04/22/21 11:47	04/26/21 18:22	10
6:2 FTS	ND		6300000		ng/L		04/22/21 11:47	04/26/21 18:22	10
8:2 FTS	ND		2500000		ng/L		04/22/21 11:47	04/26/21 18:22	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*89*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:22*	*10*
13C5 PFPeA	*87*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:22*	*10*
13C2 PFHxA	*87*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:22*	*10*
13C4 PFHpA	*96*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:22*	*10*
13C4 PFOA	*95*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:22*	*10*
13C5 PFNA	*94*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:22*	*10*
13C2 PFDA	*99*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:22*	*10*
13C2 PFUnA	*100*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:22*	*10*
13C2 PFDoA	*103*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:22*	*10*
13C2 PFTeDA	*94*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:22*	*10*
13C3 PFBS	*91*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:22*	*10*
18O2 PFHxS	*97*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:22*	*10*
13C4 PFOS	*100*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:22*	*10*
13C8 FOSA	*112*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:22*	*10*
d3-NMeFOSAA	*115*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:22*	*10*
d5-NEtFOSAA	*147*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:22*	*10*
M2-6:2 FTS	*82*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:22*	*10*
M2-8:2 FTS	*92*		*25 - 150*	*04/22/21 11:47*	*04/26/21 18:22*	*10*
M2-4:2 FTS	*0*		*0 - 10*	*04/22/21 11:47*	*04/26/21 18:22*	*10*

Method: Total PFCA-Dif - Total PFCA (Treatment Difference)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PFBA	**46000000**				ng/L			04/30/21 06:54	1
PFPA	**110000000**				ng/L			04/30/21 06:54	1
PFHxA	**27000000**				ng/L			04/30/21 06:54	1
PFHpA	**6400000**				ng/L			04/30/21 06:54	1
PFOA	**0.00**				ng/L			04/30/21 06:54	1
PFNA	**0.00**				ng/L			04/30/21 06:54	1

Client Sample ID: National Foam
Lab Sample ID: 480-183383-4
Date Collected: 04/14/21 14:15
Matrix: AFFF
Date Received: 04/14/21 17:00

Method: Total PFCA-Dif - Total PFCA (Treatment Difference) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total PFCA	**190000000**				ng/L			04/30/21 06:54	1

Method: Total PFCA-Sum - Total PFCA (Summary) - Pre-Treatment

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total PFCA	**430000**				ng/L			04/30/21 06:47	1

Method: Total PFCA-Sum - Total PFCA (Summary) - Post-Treatment

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total PFCA	**190000000**				ng/L			04/30/21 06:49	1

Client Sample ID: Solberg 3-6
Lab Sample ID: 480-183383-5
Date Collected: 04/14/21 15:00
Matrix: AFFF
Date Received: 04/14/21 17:00

Method: 537 (modified) - Fluorinated Alkyl Substances - Pre-Treatment

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		630000		ng/L		04/22/21 18:40	04/26/21 19:16	1
Perfluoropentanoic acid (PFPeA)	ND		250000		ng/L		04/22/21 18:40	04/26/21 19:16	1
Perfluorohexanoic acid (PFHxA)	**510000**		250000		ng/L		04/22/21 18:40	04/26/21 19:16	1
Perfluoroheptanoic acid (PFHpA)	ND		250000		ng/L		04/22/21 18:40	04/26/21 19:16	1
Perfluorooctanoic acid (PFOA)	ND		250000		ng/L		04/22/21 18:40	04/26/21 19:16	1
Perfluorononanoic acid (PFNA)	ND		250000		ng/L		04/22/21 18:40	04/26/21 19:16	1
Perfluorodecanoic acid (PFDA)	ND		250000		ng/L		04/22/21 18:40	04/26/21 19:16	1
Perfluoroundecanoic acid (PFUnA)	ND		250000		ng/L		04/22/21 18:40	04/26/21 19:16	1
Perfluorododecanoic acid (PFDoA)	ND		250000		ng/L		04/22/21 18:40	04/26/21 19:16	1
Perfluorotridecanoic acid (PFTriA)	ND		250000		ng/L		04/22/21 18:40	04/26/21 19:16	1
Perfluorotetradecanoic acid (PFTeA)	ND		250000		ng/L		04/22/21 18:40	04/26/21 19:16	1
Perfluorobutanesulfonic acid (PFBS)	ND		250000		ng/L		04/22/21 18:40	04/26/21 19:16	1
Perfluorohexanesulfonic acid (PFHxS)	ND		250000		ng/L		04/22/21 18:40	04/26/21 19:16	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		250000		ng/L		04/22/21 18:40	04/26/21 19:16	1
Perfluorooctanesulfonic acid (PFOS)	ND		250000		ng/L		04/22/21 18:40	04/26/21 19:16	1
Perfluorodecanesulfonic acid (PFDS)	ND		250000		ng/L		04/22/21 18:40	04/26/21 19:16	1
Perfluorooctanesulfonamide (FOSA)	ND		250000		ng/L		04/22/21 18:40	04/26/21 19:16	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		630000		ng/L		04/22/21 18:40	04/26/21 19:16	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		630000		ng/L		04/22/21 18:40	04/26/21 19:16	1
6:2 FTS	**37000000**		630000		ng/L		04/22/21 18:40	04/26/21 19:16	1
8:2 FTS	ND		250000		ng/L		04/22/21 18:40	04/26/21 19:16	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*97*		*25 - 150*	*04/22/21 18:40*	*04/26/21 19:16*	*1*
13C5 PFPeA	*89*		*25 - 150*	*04/22/21 18:40*	*04/26/21 19:16*	*1*
13C2 PFHxA	*87*		*25 - 150*	*04/22/21 18:40*	*04/26/21 19:16*	*1*
13C4 PFHpA	*99*		*25 - 150*	*04/22/21 18:40*	*04/26/21 19:16*	*1*
13C4 PFOA	*95*		*25 - 150*	*04/22/21 18:40*	*04/26/21 19:16*	*1*
13C5 PFNA	*99*		*25 - 150*	*04/22/21 18:40*	*04/26/21 19:16*	*1*
13C2 PFDA	*105*		*25 - 150*	*04/22/21 18:40*	*04/26/21 19:16*	*1*
13C2 PFUnA	*97*		*25 - 150*	*04/22/21 18:40*	*04/26/21 19:16*	*1*
13C2 PFDoA	*94*		*25 - 150*	*04/22/21 18:40*	*04/26/21 19:16*	*1*
13C2 PFTeDA	*100*		*25 - 150*	*04/22/21 18:40*	*04/26/21 19:16*	*1*

Client: New York State D.E.C.
Job ID: 480-183383-1
Project/Site: Mayville #2008000-DEC PIN: H7221

Client Sample ID: Solberg 3-6
Lab Sample ID: 480-183383-5
Date Collected: 04/14/21 15:00
Matrix: AFFF
Date Received: 04/14/21 17:00

Method: 537 (modified) - Fluorinated Alkyl Substances - Pre-Treatment (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 PFBS	96		25 - 150	04/22/21 18:40	04/26/21 19:16	1
18O2 PFHxS	98		25 - 150	04/22/21 18:40	04/26/21 19:16	1
13C4 PFOS	98		25 - 150	04/22/21 18:40	04/26/21 19:16	1
13C8 FOSA	114		25 - 150	04/22/21 18:40	04/26/21 19:16	1
d3-NMeFOSAA	109		25 - 150	04/22/21 18:40	04/26/21 19:16	1
d5-NEtFOSAA	128		25 - 150	04/22/21 18:40	04/26/21 19:16	1
M2-6:2 FTS	71		25 - 150	04/22/21 18:40	04/26/21 19:16	1
M2-8:2 FTS	94		25 - 150	04/22/21 18:40	04/26/21 19:16	1
M2-4:2 FTS	75		25 - 150	04/22/21 18:40	04/26/21 19:16	1

Method: 537 (modified) - Fluorinated Alkyl Substances - Post-Treatment

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**210000000**		6300000	ng/L		04/22/21 11:48	04/27/21 17:30	10
Perfluoropentanoic acid (PFPeA)	**460000000**		2500000	ng/L		04/22/21 11:48	04/27/21 17:30	10
Perfluorohexanoic acid (PFHxA)	**130000000**		2500000	ng/L		04/22/21 11:48	04/27/21 17:30	10
Perfluoroheptanoic acid (PFHpA)	**30000000**		2500000	ng/L		04/22/21 11:48	04/27/21 17:30	10
Perfluorooctanoic acid (PFOA)	ND		2500000	ng/L		04/22/21 11:48	04/27/21 17:30	10
Perfluorononanoic acid (PFNA)	ND		2500000	ng/L		04/22/21 11:48	04/27/21 17:30	10
Perfluorodecanoic acid (PFDA)	ND		2500000	ng/L		04/22/21 11:48	04/27/21 17:30	10
Perfluoroundecanoic acid (PFUnA)	ND		2500000	ng/L		04/22/21 11:48	04/27/21 17:30	10
Perfluorododecanoic acid (PFDoA)	ND		2500000	ng/L		04/22/21 11:48	04/27/21 17:30	10
Perfluorotridecanoic acid (PFTriA)	ND		2500000	ng/L		04/22/21 11:48	04/27/21 17:30	10
Perfluorotetradecanoic acid (PFTeA)	ND		2500000	ng/L		04/22/21 11:48	04/27/21 17:30	10
Perfluorobutanesulfonic acid (PFBS)	ND		2500000	ng/L		04/22/21 11:48	04/27/21 17:30	10
Perfluorohexanesulfonic acid (PFHxS)	ND		2500000	ng/L		04/22/21 11:48	04/27/21 17:30	10
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2500000	ng/L		04/22/21 11:48	04/27/21 17:30	10
Perfluorooctanesulfonic acid (PFOS)	ND		2500000	ng/L		04/22/21 11:48	04/27/21 17:30	10
Perfluorodecanesulfonic acid (PFDS)	ND		2500000	ng/L		04/22/21 11:48	04/27/21 17:30	10
Perfluorooctanesulfonamide (FOSA)	ND		2500000	ng/L		04/22/21 11:48	04/27/21 17:30	10
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		6300000	ng/L		04/22/21 11:48	04/27/21 17:30	10
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		6300000	ng/L		04/22/21 11:48	04/27/21 17:30	10
6:2 FTS	ND		6300000	ng/L		04/22/21 11:48	04/27/21 17:30	10
8:2 FTS	ND		2500000	ng/L		04/22/21 11:48	04/27/21 17:30	10

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	84		25 - 150	04/22/21 11:48	04/27/21 17:30	10
13C5 PFPeA	82		25 - 150	04/22/21 11:48	04/27/21 17:30	10
13C2 PFHxA	87		25 - 150	04/22/21 11:48	04/27/21 17:30	10
13C4 PFHpA	98		25 - 150	04/22/21 11:48	04/27/21 17:30	10
13C4 PFOA	96		25 - 150	04/22/21 11:48	04/27/21 17:30	10
13C5 PFNA	100		25 - 150	04/22/21 11:48	04/27/21 17:30	10
13C2 PFDA	96		25 - 150	04/22/21 11:48	04/27/21 17:30	10
13C2 PFUnA	95		25 - 150	04/22/21 11:48	04/27/21 17:30	10
13C2 PFDoA	101		25 - 150	04/22/21 11:48	04/27/21 17:30	10
13C2 PFTeDA	96		25 - 150	04/22/21 11:48	04/27/21 17:30	10
13C3 PFBS	93		25 - 150	04/22/21 11:48	04/27/21 17:30	10
18O2 PFHxS	95		25 - 150	04/22/21 11:48	04/27/21 17:30	10
13C4 PFOS	103		25 - 150	04/22/21 11:48	04/27/21 17:30	10

Client: New York State D.E.C.
Job ID: 480-183383-1
Project/Site: Mayville #2008000-DEC PIN: H7221

Client Sample ID: Solberg 3-6
Lab Sample ID: 480-183383-5
Date Collected: 04/14/21 15:00
Matrix: AFFF
Date Received: 04/14/21 17:00

Method: 537 (modified) - Fluorinated Alkyl Substances - Post-Treatment (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	113		25 - 150	04/22/21 11:48	04/27/21 17:30	10
d3-NMeFOSAA	110		25 - 150	04/22/21 11:48	04/27/21 17:30	10
d5-NEtFOSAA	135		25 - 150	04/22/21 11:48	04/27/21 17:30	10
M2-6:2 FTS	72		25 - 150	04/22/21 11:48	04/27/21 17:30	10
M2-8:2 FTS	80		25 - 150	04/22/21 11:48	04/27/21 17:30	10
M2-4:2 FTS	0		0 - 10	04/22/21 11:48	04/27/21 17:30	10

Method: Total PFCA-Dif - Total PFCA (Treatment Difference)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PFBA	210000000				ng/L			04/30/21 06:54	1
PFPA	460000000				ng/L			04/30/21 06:54	1
PFHxA	130000000				ng/L			04/30/21 06:54	1
PFHpA	30000000				ng/L			04/30/21 06:54	1
PFOA	0.00				ng/L			04/30/21 06:54	1
PFNA	0.00				ng/L			04/30/21 06:54	1
Total PFCA	830000000				ng/L			04/30/21 06:54	1

Method: Total PFCA-Sum - Total PFCA (Summary) - Pre-Treatment

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total PFCA	510000				ng/L			04/30/21 06:47	1

Method: Total PFCA-Sum - Total PFCA (Summary) - Post-Treatment

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total PFCA	830000000				ng/L			04/30/21 06:49	1

Lab Chronicle

Client: New York State D.E.C.
Job ID: 480-183383-1
Project/Site: Mayville #2008000-DEC PIN: H7221

Client Sample ID: Chemguard 3-6
Lab Sample ID: 480-183383-1
Date Collected: 04/14/21 13:30
Matrix: AFFF
Date Received: 04/14/21 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Post-Treatment	Prep	TOP Post Prep			482160	04/22/21 11:47	LN	TAL SAC
Post-Treatment	Analysis	537 (modified)		10	483592	04/27/21 17:11	MYV	TAL SAC
Pre-Treatment	Prep	TOP Pre - Prep			482158	04/22/21 18:40	JER	TAL SAC
Pre-Treatment	Analysis	537 (modified)		1	483300	04/26/21 18:49	MYV	TAL SAC
Total/NA	Analysis	Total PFCA-Dif		1	484571	04/30/21 06:54	MKW	TAL SAC
Post-Treatment	Analysis	Total PFCA-Sum		1	484570	04/30/21 06:49	MKW	TAL SAC
Pre-Treatment	Analysis	Total PFCA-Sum		1	484569	04/30/21 06:47	MKW	TAL SAC

Client Sample ID: Angus 3-6
Lab Sample ID: 480-183383-2
Date Collected: 04/14/21 13:45
Matrix: AFFF
Date Received: 04/14/21 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Post-Treatment	Prep	TOP Post Prep	DL		482160	04/22/21 11:47	LN	TAL SAC
Post-Treatment	Analysis	537 (modified)	DL	100	482930	04/25/21 18:21	JRB	TAL SAC
Post-Treatment	Prep	TOP Post Prep			482160	04/22/21 11:47	LN	TAL SAC
Post-Treatment	Analysis	537 (modified)		10	483592	04/27/21 17:21	MYV	TAL SAC
Pre-Treatment	Prep	TOP Pre - Prep			482158	04/22/21 18:40	JER	TAL SAC
Pre-Treatment	Analysis	537 (modified)		10	483592	04/27/21 16:44	MYV	TAL SAC
Total/NA	Analysis	Total PFCA-Dif		1	484571	04/30/21 06:54	MKW	TAL SAC
Post-Treatment	Analysis	Total PFCA-Sum		1	484570	04/30/21 06:49	MKW	TAL SAC
Pre-Treatment	Analysis	Total PFCA-Sum		1	484569	04/30/21 06:47	MKW	TAL SAC

Client Sample ID: Chemguard Class A
Lab Sample ID: 480-183383-3
Date Collected: 04/14/21 14:00
Matrix: AFFF
Date Received: 04/14/21 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Post-Treatment	Prep	TOP Post Prep			482160	04/22/21 11:47	LN	TAL SAC
Post-Treatment	Analysis	537 (modified)		1	483300	04/26/21 18:12	MYV	TAL SAC
Pre-Treatment	Prep	TOP Pre - Prep			482158	04/22/21 18:40	JER	TAL SAC
Pre-Treatment	Analysis	537 (modified)		1	483300	04/26/21 18:58	MYV	TAL SAC
Total/NA	Analysis	Total PFCA-Dif		1	484571	04/30/21 06:54	MKW	TAL SAC
Post-Treatment	Analysis	Total PFCA-Sum		1	484570	04/30/21 06:49	MKW	TAL SAC
Pre-Treatment	Analysis	Total PFCA-Sum		1	484569	04/30/21 06:47	MKW	TAL SAC

Client Sample ID: National Foam
Lab Sample ID: 480-183383-4
Date Collected: 04/14/21 14:15
Matrix: AFFF
Date Received: 04/14/21 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Post-Treatment	Prep	TOP Post Prep			482160	04/22/21 11:47	LN	TAL SAC
Post-Treatment	Analysis	537 (modified)		10	483300	04/26/21 18:22	MYV	TAL SAC

Lab Chronicle

Client: New York State D.E.C.
Job ID: 480-183383-1
Project/Site: Mayville #2008000-DEC PIN: H7221

Client Sample ID: National Foam
Lab Sample ID: 480-183383-4
Date Collected: 04/14/21 14:15
Matrix: AFFF
Date Received: 04/14/21 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Pre-Treatment	Prep	TOP Pre - Prep			482158	04/22/21 18:40	JER	TAL SAC
Pre-Treatment	Analysis	537 (modified)		1	483300	04/26/21 19:07	MYV	TAL SAC
Total/NA	Analysis	Total PFCA-Dif		1	484571	04/30/21 06:54	MKW	TAL SAC
Post-Treatment	Analysis	Total PFCA-Sum		1	484570	04/30/21 06:49	MKW	TAL SAC
Pre-Treatment	Analysis	Total PFCA-Sum		1	484569	04/30/21 06:47	MKW	TAL SAC

Client Sample ID: Solberg 3-6
Lab Sample ID: 480-183383-5
Date Collected: 04/14/21 15:00
Matrix: AFFF
Date Received: 04/14/21 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Post-Treatment	Prep	TOP Post Prep			482160	04/22/21 11:48	LN	TAL SAC
Post-Treatment	Analysis	537 (modified)		10	483592	04/27/21 17:30	MYV	TAL SAC
Pre-Treatment	Prep	TOP Pre - Prep			482158	04/22/21 18:40	JER	TAL SAC
Pre-Treatment	Analysis	537 (modified)		1	483300	04/26/21 19:16	MYV	TAL SAC
Total/NA	Analysis	Total PFCA-Dif		1	484571	04/30/21 06:54	MKW	TAL SAC
Post-Treatment	Analysis	Total PFCA-Sum		1	484570	04/30/21 06:49	MKW	TAL SAC
Pre-Treatment	Analysis	Total PFCA-Sum		1	484569	04/30/21 06:47	MKW	TAL SAC

Laboratory References:
TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: New York State D.E.C.
Job ID: 480-183383-1
Project/Site: Mayville #2008000-DEC PIN: H7221

Laboratory: Eurofins TestAmerica, Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-21
Arkansas DEQ	State	88-0691	06-17-21
California	State	2897	01-31-22
Colorado	State	CA0004	08-31-21
Connecticut	State	PH-0691	06-30-21
Florida	NELAP	E87570	06-30-21
Georgia	State	4040	01-29-22
Hawaii	State	<cert No.>	01-29-22
Illinois	NELAP	200060	03-18-22
Kansas	NELAP	E-10375	10-31-21
Louisiana	NELAP	01944	06-30-21
Maine	State	CA00004	04-14-22
Michigan	State	9947	01-29-22
Nevada	State	CA000442021-2	07-31-21
New Hampshire	NELAP	2997	04-18-22
New Jersey	NELAP	CA005	06-30-21
New York	NELAP	11666	04-01-22
Ohio	State	41252	01-29-22
Oregon	NELAP	4040	01-30-23
Texas	NELAP	T104704399-19-13	05-31-21
US Fish & Wildlife	US Federal Programs	58448	07-31-21
USDA	US Federal Programs	P330-18-00239	07-31-21
Utah	NELAP	CA000442021-12	03-01-22
Virginia	NELAP	460278	03-14-22
Washington	State	C581	05-05-21
West Virginia (DW)	State	9930C	12-31-21
Wisconsin	State	998204680	08-31-21
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: New York State D.E.C.
Job ID: 480-183383-1
Project/Site: Mayville #2008000-DEC PIN: H7221

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
Total PFCA-Dif	Total PFCA (Treatment Difference)	TAL SOP	TAL SAC
Total PFCA-Sum	Total PFCA (Summary)	TAL SOP	TAL SAC
TOP Post Prep	Solid-Phase Extraction (SPE)	SW846	TAL SAC
TOP Pre - Prep	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: New York State D.E.C.
Job ID: 480-183383-1
Project/Site: Mayville #2008000-DEC PIN: H7221

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-183383-1	Chemguard 3-6	AFFF	04/14/21 13:30	04/14/21 17:00	
480-183383-2	Angus 3-6	AFFF	04/14/21 13:45	04/14/21 17:00	
480-183383-3	Chemguard Class A	AFFF	04/14/21 14:00	04/14/21 17:00	
480-183383-4	National Foam	AFFF	04/14/21 14:15	04/14/21 17:00	
480-183383-5	Solberg 3-6	AFFF	04/14/21 15:00	04/14/21 17:00	

Eurofins TestAmerica, Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone: 916-373-5600 Fax: 916-372-1059

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: SM/JV Steve Mader Josh Vaccaro	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No: 480-159408-35048.1
Client Contact: Mr. Joshua Vaccaro	Phone: (716) 939-4574	E-Mail: Orlette.Johnson@Eurofinset.com	State of Origin:	Page: Page 1 of 1
Company: New York State D.E.C.	PWSID:			Job #:

Address: 625 Broadway Division of Environmental Remediation	Due Date Requested:	Analysis Requested	Preservation Codes:
City: Albany	TAT Requested (days): 10 day		A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Z - other (specify) Other:
State, Zip: NY, 12233-7014	Compliance Project: Δ Yes Δ No		
Phone: 518-402-9761(Tel)	PO #: CallOut ID 139660		
Email: joshua.vaccaro@dec.ny.gov	WO #:		
Project Name: Mayville #2008000-DEC PIN: H7221	Project #: 48023180		
Site:	SSOW#:		

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - (MOD) Pre Oxidation TOPS PFAS	PFC_IDA - (MOD) Post Oxidation TOPS PFAS	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N		
Chemguard 3-6	4/14/21	1330	G	Water			2	2		
Angus 3-6	4/14/21	13:45	G	Water			2	2		
Chemguard Class A	4/14/21	14:00	G	Water			2	2		
National Foam	4/14/21	14:15	G	Water			2	2		
Solberg 3-6	4/14/21	1500	G	Water			2	2		
				Water						
				Water						
				Water						

480-183383 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Date/Time	Company		Date/Time	Company
Relinquished by:	4/14/21 1700	DEC	Received by: Wallace	4/14/21 1700	TAS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 2.9 #1

Ver: 11/01/2020

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No: 480-62823.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Orlette.Johnson@Eurofinset.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 480-183383-1
Address: 880 Riverside Parkway,	Due Date Requested: 4/27/2021			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Mayville #2008000-DEC PIN: H7221	Project #: 48023180			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA/TOPS_Pre_Prep (MOD) Pre Oxidation TOPS PFAS	PFC_IDA/TOPS_Post_Prep (MOD) Post Oxidation TOPS PFAS	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Chemguard 3-6 (480-183383-1)	4/14/21	13:30 Eastern		Water			X	X	4	
Angus 3-6 (480-183383-2)	4/14/21	13:45 Eastern		Water			X	X	4	
Chemguard Class A (480-183383-3)	4/14/21	14:00 Eastern		Water			X	X	4	
National Foam (480-183383-4)	4/14/21	14:15 Eastern		Water			X	X	4	
Solberg 3-6 (480-183383-5)	4/14/21	15:00 Eastern		Water			X	X	4	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 1	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	4/16/21 1700	TA	[signature]	4-17-21 10:05	ETASAL
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: 145240	Cooler Temperature(s) °C and Other Remarks: 6.0

Ver: 11/01/2020

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Sacramento Sample Receiving Notes

480-183383 Field Sheet

Tracking # : 1888 3863 5762

Job: _____

SO / PO / FO / SAT / 2-Day / Ground / UPS / CDO / Courier

GSO / OnTrac / Goldstreak / USPS / Other _____

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations. File in the job folder with the COC.

Therm. ID: L-04 Corr. Factor: (+ / -) N/A °C

Ice ✓ Wet ✓ Gel _____ Other _____

Cooler Custody Seal: 1452 745

Cooler ID: _____

Temp Observed: 6.0 °C Corrected: 6.0 °C

From: Temp Blank ☐ Sample ☐

Opening/Processing The Shipment	Yes	No	NA
Cooler compromised/tampered with?	☐	☐	☐
Cooler Temperature is acceptable?	☐	☐	☐
Frozen samples show signs of thaw?	☐	☐	☐

Initials: NC Date: 4-17-21

Unpacking/Labeling The Samples	Yes	No	NA
CoC is complete w/o discrepancies?	☐	☐	☐
Samples compromised/tampered with?	☐	☐	☐
Sample containers have legible labels?	☐	☐	☐
Sample custody seal?	☐	☐	☐
Containers are not broken or leaking?	☐	☐	☐
Sample date/times are provided?	☐	☐	☐
Appropriate containers are used?	☐	☐	☐
Sample bottles are completely filled?	☐	☐	☐
Sample preservatives verified?	☐	☐	☐
Samples w/o discrepancies?	☐	☐	☐
Zero headspace?*	☐	☐	☐
Alkalinity has no headspace?	☐	☐	☐
Perchlorate has headspace? (Methods 314, 331, 6850)	☐	☐	☐
Multiphasic samples are not present?	☐	☐	☐

*Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

Initials: NC Date: 4-17-21

Notes: _____

Trizma Lot #(s): _____

Login Completion	Yes	No	NA
Receipt Temperature on COC?	☐	☐	☐
Samples received within hold time?	☐	☐	☐
NCM Filed?	☐	☐	☐
Log Release checked in TALS?	☐	☐	☐

Initials: NC Date: 4-17-21

WR3 160

Login Sample Receipt Checklist

Client: New York State D.E.C. Job Number: 480-183383-1

Login Number: 183383 **List Source: Eurofins TestAmerica, Buffalo**
List Number: 1
Creator: Sabuda, Brendan D

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.9 #1 ICE
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	True	

Login Sample Receipt Checklist

Client: New York State D.E.C. Job Number: 480-183383-1

Login Number: 183383 **List Source: Eurofins TestAmerica, Sacramento**
List Number: 2 **List Creation: 04/17/21 03:10 PM**
Creator: Cahill, Nicholas P

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	152740
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	6.0c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	